CERTIFICATE OF REGISTRATION NM/001/00458
AND
AIR QUALITY AUTHORITY-TO-CONSTRUCT PERMIT # 902

Issued to: Mr. Peter H. Cantrup, Vice-President
American Cement Corp.
P.O. Box 38
Espanola, NM 87532

Pursuant to the Air Quality Control Act, Chapter 74, Article 2 New Mexico Statute Annotated 1978 (1996 REPL.); the Albuquerque Joint Air Quality Control Board Ordinance, 9-5-1-1 ROA 1974; the Bernalillo County Joint Air Quality Control Board Ordinance, Bernalillo County Ordinance 94-5, and the Albuquerque/Bernalillo County Air Quality Control Board (A/BCAQCB) Regulation Title 20, New Mexico Administrative Code (NMAC), Chapter 11, Part 40 (20 NMAC 11.40), Air Contaminant Source Registration, and A/BCAQCB Regulation Title 20, NMAC, Chapter 11, Part 41 (20 NMAC 11.41), Authority-To-Construct, American Cement Corp. (Company) is hereby issued this REGISTRATION CERTIFICATE and authorized to operate the following processes at:

Location	Process Description	SIC
4702 Carlton NW	Unloading, storage and loading of portland cement and flyash	5032

This registration also incorporates Authority-To-Construct Permit No. 902 and places federally enforceable emission limits and standards on the following emission points:

This REGISTRATION CERTIFICATE and Authority-to-Construct Permit No. 902 has been issued based on the Application received by the Albuquerque Environmental Health Department (Department) on December 29, 1997, and on the National Ambient Air Quality, New Mexico Ambient Air Quality Standards, and Air Quality Control Regulations for Albuquerque/Bernalillo County, as amended through May, 1997. As these standards and regulations are updated or amended, the applicable changes will be incorporated into this REGISTRATION CERTIFICATE and will apply to the Company.

Issued on the 24th day of April, 1998

Angel Martinez, Jr, Supervisor
Air Quality Services Section
Air Quality Division
Environmental Health Department
City of Albuquerque

Prepared by
George L. Dingman
April 22, 1998

TABLE A: APPLICABLE REQUIREMENTS FOR THE FACILITY

Process Equipment		Applicable Requirements	Facility Potential PM Emissions	Monitoring Requirements	Record Keeping Requirements	Reporting Requirements	Facility Emission Limits Pounds per Hour (lb/hr) Tons per year (TPY)
ID	Description						
Whirl-Air Baghouse Collector	Cement & Flyash Offloading System LOADING SILO	20 NMAC11.41 - Authority-to-Construct 20 NMAC11.05 - Visible Air Contaminants	29.03 TPY	20 NMAC 11.90.II.2.6.A & B – Performance Testing – Within 90 days of permit issuance the owner or operator shall conduct performance testing on the 2 baghouses to verify emissions of particulate matter and particulate matter less than 10 microns in size. 20 NMAC 11.05.II.4 – Monitoring of Visible Emissions shall be performed once per quarter utilizing 40 CFR 60 Appendix A, Method 9, or other methods as approved by the Department. 20 NMAC 11.02.II.2.4 – Monitor operational limitations as necessary to calculate total tons per year for annual fee calc.	20 NMAC 11.02 – Log total tons per year from Jan. 1 through Dec. 31 of billing year, if fee adjustment is sought. 20 NMAC 11.41.II.7.2.II and 20 NMAC 11.42. II. 1.3.D – Maintain records of Visible Emissions Monitoring on-site using forms found attached to this Permit or in a format approved by the Department.	-20 NMAC 11.90.II.2.6.A A report of the results of performance tests shall be submitted to Department within 30 days from the date of testing. -20 NMAC 11.02.II.2.4.F - - Submit Emissions Inventory to Department by April 1 of billing year if fee adjustment is sought. -20 NMAC 11.05.II.4 - Provide records of visible emission monitoring to the Department within 10 days of request. -20 NMAC 11.90 - Any deviation from the conditions set forth within this permit shall be reported no later than two (2) hours following the occurrence to the Department via facsimile to the breakdown line at (505) 768-1977.	0.84 lb/hr 1.45 TPY TSP
Whirl-Air Baghouse Collector	Cement & Flyash Load-out System	Emissions from the baghouse collectors shall not exceed 20% opacity, 6 minute timed average.	15.52 TPY				0.45 lb/hr 0.78 TPY TSP
Backup Generator	Carbon Monoxide 0.10 TPY	Oxides of Nitrogen 1.3 TPY	VOC's 0.02 TPY	Oxides of Sulfur 0.02 TPY	Total Suspended Particuletes 0.0.02 TPY		Total Generator Emissions 1.8 lb/hr 0.46 TPY
Facility Total			44.55 TPY				3.1 lb/hr 2.69 TPY

TABLE B: GENERAL APPLICABLE REQUIREMENTS

Regulation	Description	Compliance Requirements
20 NMAC 11.02	-Annual Permit Fee	$ 93.00 fee due July 1st of each year
20 NMAC 11.41	-Authority -to-Construct -Modifications	Source shall submit a proper application if proposed modification shall trigger Part 41 requirements.
20 NMAC 11.05	Visible Air Contaminants	Under this Authority-to-Construct Permit and 20 NMAC 11.05 visible emissions are restricted as listed above.
20 NMAC 11.90	Administration, Enforcement, and Inspection	Facility is subject to conditions as listed in this Permit and to all applicable Air Quality Control Regulations

All air pollution emitting facilities within Bernalillo County are subject to all applicable Albuquerque/Bernalillo County Air Quality Control Regulations, whether listed under Table B of this registration/permit or not.

TABLE A: APPLICABLE REQUIREMENTS FOR THE FACILITY

Process Equipment		Applicable Requirements	Facility Potential PM Emissions	Monitoring Requirements	Record Keeping Requirements	Reporting Requirements	Facility Emission Limits Pounds per Hour (lb/hr) Tons per year (TPY)
ID	Description						
Whirl-Air Baghouse Collector	Cement & Flyash Offloading System LOADING SILO	20 NMAC11.41 - Authority-to-Construct 20 NMAC11.05 - Visible Air Contaminants Emissions from the baghouse collectors shall not exceed 20% opacity, 6 minute timed average.	29.03 TPY	**20 NMAC 11.90.II.2.6.A & B** – Performance Testing – Within 90 days of permit issuance the owner or operator shall conduct performance testing on the 2 baghouses to verify emissions of particulate matter and particulate matter less than 10 microns in size. **20 NMAC 11.05.II.4** – Monitoring of Visible Emissions shall be performed once per quarter utilizing 40 CFR 60 Appendix A, Method 9, or other methods as approved by the Department. **20 NMAC 11.02.II.2.4** – Monitor operational limitations as necessary to calculate total tons per year for annual fee calc.	**20 NMAC 11.02** – Log total tons per year from Jan. 1 through Dec. 31 of billing year, if fee adjustment is sought. **20 NMAC 11.41.II.7.2.H and 20 NMAC 11.42. II. 1.3.D** – Maintain records of Visible Emissions Monitoring on-site using forms found attached to this Permit or in a format approved by the Department.	**-20 NMAC 11.90.II.2.6.A** A report of the results of performance tests shall be submitted to Department within 30 days from the date of testing. **-20 NMAC 11.02.II.2.4.F** - - Submit Emissions Inventory to Department by April 1 of billing year if fee adjustment is sought. **-20 NMAC 11.05.II.4** - Provide records of visible emission monitoring to the Department within 10 days of request. **-20 NMAC 11.90** - Any deviation from the conditions set forth within this permit shall be reported no later than two (2) hours following the occurrence to the Department via facsimile to the breakdown line at (505) 768-1977.	0.84 lb/hr 1.45 TPY TSP
Whirl-Air Baghouse Collector	Cement & Flyash Load-out System		15.52 TPY				0.45 lb/hr 0.78 TPY TSP
Backup Generator	Carbon Monoxide 0.10 TPY	Oxides of Nitrogen 1.3 TPY	VOC's 0.02 TPY	Oxides of Sulfur 0.02 TPY	Total Suspended Particuletes 0.0.02 TPY		Total Generator Emissions 1.8 lb/hr 0.46 TPY
Facility Total			44.55 TPY				**3.1 lb/hr** **2.69 TPY**

100,000 tons/year Cement Limit for ~~[illegible]~~

Flyash ~~Cement~~; 15,000 tons

Restricted To 3456 tons/yr

CPA 1/19/00

1.29 lb/hr; 2.23 tpy

Typo ?? Should be 0.3

2/18/00

TABLE B: GENERAL APPLICABLE REQUIREMENTS

Regulation	Description	Compliance Requirements
20 NMAC 11.02	-Annual Permit Fee	$ 93.00 fee due July 1st of each year
20 NMAC 11.41	-Authority -to-Construct -Modifications	Source shall submit a proper application if proposed modification shall trigger Part 41 requirements.
20 NMAC 11.05	Visible Air Contaminants	Under this Authority-to-Construct Permit and 20 NMAC 11.05 visible emissions are restricted as listed above.
20 NMAC 11.90	Administration, Enforcement, and Inspection	Facility is subject to conditions as listed in this Permit and to all applicable Air Quality Control Regulations

$100/YR

All air pollution emitting facilities within Bernalillo County are subject to all applicable Albuquerque/Bernalillo County Air Quality Control Regulations, whether listed under Table B of this registration/permit or not.

Compliance Assurance / Enforcem

a. The issuance of a permit or registration does not relieve the Company from responsibility of complying with the provisions of the Air Quality Control Act, and the laws and regulations in force pursuant to the Act. (Part 41.II.6)

b. Any conditions imposed upon the Company as the result of an Authority-To-Construct Permit or other permit issued to the issued by the Department shall be enforceable to the same extent as a regulation of the Board. (Part 41.II.7.3)

c. Whenever two or more parts of the Air Quality Control Act, or the laws and regulations in force pursuant to the Act, limit, control or regulate the emissions of a particulate air contaminant, the more restrictive or stringent shall govern. (Part 1)

d. The Department is authorized to issue a compliance order requiring compliance and assessing a civil penalty not to exceed Fifteen Thousand and no/100 Dollars ($15,000) per day of non-compliance for each violation and commence a civil action in district court for appropriate relief, including a temporary and permanent injunction. (74-2-12 NMSA)

e. Scheduled and Unscheduled Inspection (74-2-13 NMSA)

   1) The Department will conduct scheduled and unscheduled inspections to insure compliance with the Air Quality Control Act, and the laws and regulations in force pursuant to the Act, and this Permit, and, upon presentation of credentials:

   2) Shall have a right of entry to, upon, or through any premises on which an emission source is located or on which any records required to be maintained by regulations of the Board or by any permit condition are located, and;

   3) May at any reasonable time have access to and copy any records required to be established and maintained by Regulations of the Board, or any permit condition, and;

   4) May inspect any monitoring equipment and method required by Regulations of the Board or by any permit condition, and;

   5) Sample any emissions that are required to be sampled pursuant to Regulation of the Board, or any permit condition.

f. Performance Tests

   1) By permit condition or at the request of the Department, and in accordance with 20 NMAC 11.90.II.2, <u>Source Surveillance</u>, the Company will perform the performance tests deemed necessary by the Department to demonstrate compliance with the Air Quality Control Act, the laws and regulations in force pursuant to the Act, and any Permit. (Part 90.II.2)

   2) If requested to do so by the Department, the Company shall provide such facilities, utilities, and openings (exclusive of instruments and sensing devices), as may be necessary to determine the nature, extent, quantity, and degree of air contaminants emitted by the Company. Such facilities may be either temporary or permanent at the discretion of the Company, and shall be suitable for determinations consistent with emission limits established by any Authority-To-Construct Permit incorporated into this Registration, or requirements of the Regulations. (Part 90.II.3)

g. Any credible evidence may be used to establish whether the Company has violated or is in violation of any regulation of the Board, or any other provision of law. Credible evidence and testing shall include, but is not limited to: (Part 41.II)

1) A monitoring method approved for the source pursuant to 20 NMAC 11.42 and incorporated into an operating permit;

2) Compliance methods specified in the Regulations, conditions in a permit issued to the Company, or other provision of law;

3) Federally enforceable monitoring or testing methods, including methods in 40 CFR parts 51, 60, 61, and 75; and,

4) Other testing, monitoring or information-gathering methods that produce information comparable to that produced by any CFR method and approved by the Department and EPA.

h. Stratospheric Ozone Protection (20 NMAC 11.23)

1) The Facility shall comply with the standards for labeling of products using ozone-depleting substances pursuant to 40 CFR 82, Subpart E.

2) The Facility shall comply with the standards for recycling and emissions reductions pursuant to 40 CFR 82, Subpart F, except as provided for motor vehicle air conditioners (MVAC) in Subpart B.

3) If the Facility manufactures, transforms, destroys, imports, or exports a Class I or Class II substance, the Facility is subject to all the requirements as specified in 40 CFR 82, Subpart A, Production and Consumption Controls.

4) If the Facility performs service on motor (fleet) vehicles when this service involves ozone-depleting substances refrigerant, or regulated substitute substances, in the MVAC, the Facility is subject to all the applicable requirements as specified in 40 CFR 82, Subpart B, Servicing of Motor Vehicle Air Conditioners. The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term "MVAC" as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or system used on passenger buses using HCFC-22 refrigerant.

5) The Facility shall be allowed to switch from any ozone-depleting substance to any alternative that is listed in the Significant New Alternatives Program promulgated pursuant to 40 CFR 82, Subpart G, Significant Alternatives Policy Program.

i. Motor Vehicle Visible Emissions (20 NMAC 11.103)

1) The Facility shall not cause to be emitted from any diesel powered non-highway motor vehicle continuous visible air contaminant emission while the vehicle is in operation for a period greater than ten (10) consecutive seconds, which is a shade or density of more than 40% opacity.

2) Diesel powered highway and non-highway motor vehicles exceeding these requirements shall be exempt for a period of ten minutes, if the excessive visible air contaminant emissions are a direct result of cold engine start-up and provided that the motor vehicle is in a stationary position.

Albuquerque Environmental Health Department - Air Quality Services Section
11850 Sunset Gardens SW - Albuquerque, New Mexico 87121
(505) 768 - 1930 (Voice) (505) 768 - 2482 (TTY) (505) 768 - 1977 (Fax)

Application for Source Registration, Authority-to-Construct, or General Operating Permits for Air Pollutant Sources in Bernalillo County
(20 NMAC 11.40, 20 NMAC 11.41, and 20 NMAC 11.42)

Clearly handwrite or type **Corporate Information** **Submittal Date:** ____/____/____

1. Company Name___AMERICAN CEMENT CORPORATION__2. Street Address______518 PASEO de ONATE___________Zip__87532__

3. Company City__ ESPANOLA__4. Company State__NM__5. Company Phone (505)__753-6269__6. Company Fax (505)__747-3069__

7. Company Mailing Address:________________P. 0. BOX 38 ESPANOLA, NM __________________________________Zip___87532__

8. Company Contact___________PETER H. CANTRUP_____________9. Phone (505)__753-6269__ 10.Title____VICE-PRESIDENT____

Stationary Source (Facility) Information: **[provide a plot plan (legal description/drawing of facility property) with overlay sketch of facility processes;location of emission points;pollutant type&distances to property boundaries]**

1. Facility Name___AMERICAN CEMENT CORPORATION__2. Street Address______________4702 CARLTON NW_________________

3. City__ALBUQUERQUE__ 4. State NM 5. Facility Phone (505)_____344-1901________________6. Facility Fax (505)____344-5352______

7. Facility Mailing Address (Local)___________4702 CARLTON NW ALBUQUERQUE, NM ________________________Zip__87107___

8. Latitude - Longitude or UTM Coordinates of Facility____

9. Facility Contact_____TOM FITZGERALD_____________10. Phone (505)___344-1910________11.Title_____MANAGER___________

General Operation Information (if any further information request does not pertain to your facility, write N/A on the line or in the box)

1. Facility Type (description of your facility operations)____TRANSFER STATION FOR WHOLESALE BULK CEMENT AND FLYASH_____
____2. Standard Industrial Classification (SIC 4 digit #)__5032___

3. Is facility currently operating in Bernalillo Cnty._YES_If yes, date of original construction_O7_/_-_/_88_If no, planned startup is____/___/____

4. Is facility permanent __YES__ If no, give dates for requested temporary operation - from _____/_____/_____ through _____/______/______

5. Is facility process equipment new___NO___ If no, give actual or estimated manufacture or installation dates in the Process Equipment Table

6. Is application for a modification, expansion, or reconstruction (altering process, or adding, or replacing process equipment, etc.) to an existing facility which will result in a change in emissions__YES__If yes, give the manufacture date of modified, added, or replacement equipment in the Process Equipment Table modification date column , or the operation changes to existing process/equipment which cause an emission increase

7. Is facility operation continuous,intermittent,batch__________8. Estimated % of production Jan-Mar_15_Apr-Jun_30_Jul-Sep_40_Oct-Dec_15_

9. Current or requested operating times of facility_12_hrs/day_6_days/wk_4.33_wks/mo_12_mos/yr 10. Business hrs__6:00__am/pm to __6:00__am/pm

11. Will there be special or seasonal operating times other than shown above__NO__If yes, explain____

12. Raw materials processed______________NONE__________________13. Saleable item(s) ~~produced~~_____CEMENT & FLYASH_________

PROCESS EQUIPMENT TABLE

(Generator-Crusher-Screen-Conveyor-Boiler-Mixer-Spray Guns-Saws-Sander-Oven-Dryer-Furnace-Incinerator, etc.)

Process Equipment Unit	Manufacturer	Model #	Serial #	Manufacture Date	Installation Date	Modification Date	Size or Process Rate (Hp;kW;Btu;ft³;lbs; tons;yd³;etc.)	Fuel Type
Example 1. Generator	Unigen	B-2500	A56732195C-222	7/96	7/97	N/A	250 Hp - HR. ~~YR.~~	Diesel
Example 2. Spray Gun	HVLP Systems	Spray 'N' Stay 1100	k26-56-95	01/97	11/97	N/A	0.25 gal. - HR. ~~YR.~~	Electric Compressor
1. Cement & Flyash Offloading to Silos	N/A	N/A	N/A	N/A	7/88	1996	Flyash - 33 T/HR. Cement - 30 T/ HR.	ELECTRIC
2. Truck Load - out from Silos	N/A	N/A	N/A	N/A	7/88	N/A	100 TONS HR.	ELECTRIC
3. GENERATOR	N/A	N/A	N/A	N/A	1996	N/A	300 Hp HR.	DIESEL

1. Basis for Equipment Size or Process Rate (Manufacturers data, Field Observation/Test, etc.)________________________FIELD OBSERVATIONS____________________
Submit information for each unit as an attachment

UNCONTROLLED EMISSIONS OF INDIVIDUAL AND COMBINED PROCESSES

(Process potential under physical/operational limitations during a 24 hr/day and 365 day/year = 8,760 hrs)

Process Equipment Unit*	Carbon Monoxide (CO)	Oxides of Nitrogen (NOx)	Nonmethane Hydrocarbons NMHC (VOC's)	Oxides of Sulfur (SOx)	Total Suspended Particulate Matter (TSP)	Method(s) used for Determination of Emissions (AP-42, Material balance, field tests, manufacturers data, etc.)
Example	1. 9.1 lbs/hr	27.7 lbs/hr	1.3 lbs/hr	0.5 lbs/hr	2.0 lbs/hr	AP-42
1. Generator	1a. 39.9 tons/yr	121.3 tons/yr	5.7 tons/yr	2.2 tons/yr	8.8 tons/yr	
1. Cement & Flyash OFFLOADING	1. lbs/hr	lbs/hr	lbs/hr	lbs/hr	16.8 lbs/hr	AP-42
	1a. tons/yr	tons/yr	tons/yr	tons/yr	29.03 tons/yr	
2. Cement & Flyash LOAD-OUT	2. lbs/hr	lbs/hr	lbs/hr	lbs/hr	9.0 lbs/hr	AP-42
	2a. tons/yr	tons/yr	tons/yr	tons/yr	15.52 tons/yr	
3. GENERATOR	3. 0.3 lbs/hr	1.2 lbs/hr	0.1 lbs/hr	0.1 lbs/hr	0.1 lbs/hr	✓ AP-42
	3a. 0.1 tons/yr	0.3 tons/yr	0.02 tons/yr	0.02 tons/yr	0.02 tons/yr	

* **If any one (1) of these process units, <u>or</u> combination of units, has an uncontrolled emission greater than (>) 10 lbs/hr or 25 tons/yr for any of the above pollutants (based on 8760 hrs of operation), then a permit will be required. Complete this application along with additional checklist information requested on accompanying instruction sheet.**

* **If all of these process units, individually <u>and</u> in combination, have an uncontrolled emission less than or equal to (≤) 10 lbs/hr or 25 tons/yr for all of the above pollutants (based on 8760 hrs of operation), but > 1 ton/yr for any of the above pollutants - then a source registration is required.**

Note: <u>If your source does not require a registration or permit, based on above pollutant emissions, complete the remainder of this application to determine if a registration or permit would be required for any Toxic or Hazardous air pollutants used at your facility.</u>

<u>Copy this page if additional space is needed for either table (begin numbering with 4., 5., etc.)</u>

CONTROLLED EMISSIONS OF INDIVIDUAL AND COMBINED PROCESSES

(Based on current operations with emission controls OR requested operations with emission controls)

Process Equipment Units listed on this Table should match up to the same numbered line and Unit as listed on Uncontrolled Table (pg.2)

Process Equipment Unit	Carbon Monoxide (CO)	Oxides of Nitrogen (NOx)	Nonmethane Hydrocarbons NMHC (VOC's)	Oxides of Sulfur (SOx)	Total Suspended Particulate Matter (TSP)	Control Equipment	% Efficiency
Example	1. 9.1 lbs/hr	27.7 lbs/hr	1.3 lbs/hr	0.5 lbs/hr	2.0 lbs/hr	Operating Hours	N/A
1. Generator	1a. 18.2 tons/yr	55.4 tons/yr	2.6 tons/yr	1.0 tons/yr	4.0 tons/yr		
1. Cement & Flyash OFFLOADING	1. lbs/hr	lbs/hr	lbs/hr	lbs/hr	0.84 lbs/hr	Baghouse & Operating Hours	95%
	1a. tons/yr	tons/yr	tons/yr	tons/yr	1.45 tons/yr		
2. Cement & Flyash LOAD-OUT	2. lbs/hr	lbs/hr	lbs/hr	lbs/hr	0.45 lbs/hr	Baghouse & Operating Hours	95%
	2a. tons/yr	tons/yr	tons/yr	tons/yr	0.78 tons/yr		
3. GENERATOR	3. .3 lbs/hr	1.2 lbs/hr	.1 lbs/hr	.1 lbs/hr	0.1 lbs/hr	None	None
	3a. .1 tons/yr	.3 tons/yr	.02 tons/yr	.02 tons/yr	0.02 tons/yr		

1. Basis for Control Equipment % Efficiency (Manufacturers data, Field Observation/Test, AP-42 , etc.)
Submit information for each unit as an attachment ________Manufacturers Data & Field Observation________

2. Explain and give estimated amounts of any Fugitive Emissions associated with facility processes__Insignificant amounts from hook-ups, breakdown, & trimmie_

**TOXIC EMISSIONS

VOLATILE, HAZARDOUS, & VOLATILE HAZARDOUS AIR POLLUTANT EMISSION TABLE

Product Categories (Coatings, Solvents, Thinners, etc.)	Volatile Organic Compound (VOC), Hazardous Air Pollutant (HAP), or Volatile Hazardous Air Pollutant (VHAP) Primary To The Representative "As Purchased" Product	Chemical Abstract Service Number (CAS) Of VOC, HAP, Or VHAP From Representative "As Purchased" Product	VOC, HAP, Or VHAP Concentration Of Representative "As Purchased" Product (pounds/gallon, or %)	1. How were Concentrations Determined (CPDS, MSDS, etc.)	Total Product Purchases For Category	(-)	Quantity Of Product Recovered & Disposed For Category	(=)	Total Product Usage For Category
EXAMPLE 1. Cleaning Solvents	TOLUENE	108883	70%	PRODUCT LABEL	lbs/yr 200 gal/yr	(-)	lbs/yr 50 gal/yr	(=)	lbs/yr 150 gal/yr
Table 1. Not Applicable					lbs/yr gal/yr	(-)	lbs/yr gal/yr	(=)	lbs/yr gal/yr
2.					lbs/yr gal/yr	(-)	lbs/yr gal/yr	(=)	lbs/yr gal/yr
3.					lbs/yr gal/yr	(-)	lbs/yr gal/yr	(=)	lbs/yr gal/yr

1. Basis for percent (%) determinations (Certified Product Data Sheets, Material Safety Data Sheets, etc.). Submit, as an attachment, information on one (1) product from each Category listed above which best represents the average of all the products purchased in that Category.

NOTE: **A REGISTRATION IS REQUIRED, AT MINIMUM, FOR ANY AMOUNT OF HAP OR VHAP EMISSION. A PERMIT MAY BE REQUIRED FOR THESE EMISSIONS, DETERMINED ON A CASE BY CASE EVALUATION.

Copy this page if additional space is needed for either table (begin numbering with 4., 5., etc.)

MATERIAL AND FUEL STORAGE TABLE

(Tanks, barrels, silos, stockpiles, etc.) Copy this table if additional space is needed (begin numbering with 4., 5., etc.)

Storage Equipment	Product Stored	Capacity (bbls - tons gal - acres,etc)	Above or Below Ground	Construction (welded, riveted) & Color	Install Date	Loading Rate	Offloading Rate	True Vapor Pressure	Control Equipment	Seal Type	% Eff.
Example 1. Tank	diesel fuel	5,000 gal.	Below	welded/ brown	3/93	3000gal HR. ~~YR.~~	500 gal. - HR. ~~YR.~~	N/A Psia	N/A	N/A	N/A
Example 2. Barrels	Solvent	55 gal Drum	Above - in storage room	welded/green	N/A	N/A HR. YR.	N/A HR. YR.	N/A Psia	N/A	N/A	N/A
1. TANK	DIESEL	6,000 GAL.	BELOW	GLASS/STEEL	1990	N/A HR. YR.	N/A HR. YR.	N/A Psia	N/A	N/A	N/A
2.						HR. YR.	HR. YR.	Psia			
3.						HR. YR.	HR. YR.	Psia			

1. Basis for Loading/Offloading Rate (Manufacturers data, Field Observation/Test, etc.) N/A
Submit information for each unit as an attachment

2. Basis for Control Equipment % Efficiency (Manufacturers data, Field Observation/Test,AP-42, etc.) N/A
Submit information for each unit as an attachment

STACK AND EMISSION MEASUREMENT TABLE

If any equipment from the Process Equipment Table (Page 2) is also listed in this Stack Table, use the same numbered line for the Process Equipment unit on both Tables to show the association between the Process Equipment and it's Stack. Copy this table if additional space is needed (begin numbering with 4., 5., etc.).

Process Equipment	Pollutant (CO,NOx,TSP, Toluene,etc)	Control Equipment	Control Efficiency	Stack Height & Diameter in feet	Stack Temp.	Stack Velocity & Exit Direction	Emission Measurement Equipment Type	Range-Sensitivity-Accuracy-
Example 1. Generator	CO, NOx, TSP, SO_2, NMHC	N/A	N/A	18 ft. - H 0.8 ft. - D	225°F	6,000 ft^3/min - V Exit - upward	N/A	N/A
Example 2. Spray Gun	TSP, xylene, toluene, MIBK	Spray Booth	99% for TSP	9 ft. - H 0.5 ft. -D	ambient	10,000 ft^3/min - V Exit - horizontal	N/A	N/A
1. Offloading to Silos	Particulate	Baghouse	95 %	75 ft. - H 1.0 ft. - D	Ambient	V -1850 / 2725 cfm Exit - Upwards	N/A	N/A
2. Load - out from Silos	Particulate	Baghouse	95 %	75 ft. - H 1.0 ft. - D	Ambient	V -1850 / 2725 cfm Exit - Upwards	N/A	N/A
3. Generator	CO, NOx, TSP, SO_2, NMHC	N/A	N/A	6 ft. H	?	V - ? Exit - Upwards	N/A	N/A

1. Basis for Control Equipment % Efficiency (Manufacturers data, Field Observation/Test,AP-42, etc.)
Submit information for each unit as an attachment Manufacturers Data & Field Observations

ADDITIONAL COMMENTS OR INFORMATION

This application reflects changes in product types and storage capacities as is evidenced by 1994 application and modeling on file with AEHD

I, the undersigned, a responsible officer of the applicant company, certify that to the best of my knowledge, the information stated on this application, together with associated drawings, specifications, and other data, give a true and complete representation of the existing, modified existing, or planned new stationary source with respect to air pollution sources and control equipment. I also understand that any significant omissions, errors, or misrepresentations in these data will be cause for revocation of part or all of the resulting registration or permit.

Signed this 22nd day of Dec., 19 97

American Cement Corp.
Print Name

Peter H. Cantrup Vice Pres.
Print Title

Signature

Application can be mailed to address across the top front of this form (Page 1), or may be hand delivered (between the hours of 8:00am - 4:00pm Mon. through Fri.) to the same address.

AIR POLLUTION CONTROL DIVISION   AIR QUALITY SERVICES SECTION

INSTRUCTIONS FOR COMPLETING THE *Application For Source Registration, Authority - To - Construct, or General Operating Permits for Air Pollutant Sources Located in Bernalillo County* (20 NMAC 11.40, 20 NMAC 11.41, and 20 NMAC 11.42).

The asterisk (*) below the UNCONTROLLED Emissions table or (**) below the Toxic Emissions table on the application form, give the applicability determination for registration or permit requirements for stationary sources in Bernalillo County, New Mexico.

IF THE SOURCE YOU ARE SUBMITTING AN APPLICATION FOR IS ONLY SUBJECT TO REGISTRATION REQUIREMENTS, THEN ONLY SUBMIT THE COMPLETED APPLICATION FORM.

IF THE SOURCE YOU ARE SUBMITTING AN APPLICATION FOR IS SUBJECT TO PERMIT REQUIREMENTS, the following checklist indicates the additional information required for completing your application for an air quality permit. Check the line (___) to the right of each number of the checklist to indicate that each item has received your attention and been addressed.

!!! RETURN THIS CHECKLIST, ALONG WITH THE COMPLETED APPLICATION FORM AND ADDITIONAL ITEMS REQUESTED BELOW, IF SUBJECT TO PERMIT REQUIREMENTS!!!

1. ✓ **Provide a complete written description of the Stationary Source to be constructed or modified, including all operations determined to be an air emission point.**

2. ✓ **Provide necessary information to indicate the amount and type of pollutants, including hazardous air pollutants, being emitted from each point source (or as a fugitive source) during normal operations, maximum operations, or abnormal operations such as malfunction, breakdown, start-up, or shutdown. A preliminary operational plan defining the measures to be taken to mitigate source emissions during equipment malfunction, breakdown, start-up, or shutdown must also be provided.** BACKUP GENERATOR IF POWER FAILS.
CALL IN # IF BREAKDOWN (BAG FAILURE, ETC.)

3. ✓ **Provide all calculations used to estimate Uncontrolled and Controlled emissions, including fuel burning equipment, and the reference for emission factors utilized (AP-42, Manufacturers specifications, etc.).**

4. ✓ **Provide a process flow chart (diagram) showing normal and maximum raw material and finished product throughput capacities (include operational limitations, if any).**

5.* ___ **Provide an ambient impact analysis of the entire source (whether a new source or modifying an existing source) using an atmospheric dispersion model approved by the U. S. Environmental Protection Agency (EPA) and the Albuquerque Environmental Health Department (AEHD). Modeling must demonstrate compliance with the ambient air quality standards (see back of this sheet) for the City of Albuquerque/Bernalillo County.**

6. ✓ **Provide any anticipated operational needs or changes to allow for future operational scenarios which may help to avoid the delays of re-permitting this source.**

* **The requirements for air dispersion modeling may not be necessary for all sources requiring permitting. Phone the AEHD at the number(s) provided at the top of the application form if you wish to determine the applicability of the modeling requirements for your source.**

NOTE! SOME INFORMATION REQUESTED ALREADY EXISTS IN ENV. HLTH. FILES.

AMERICAN CEMENT CORPORATION
NOVEMBER 1997

American Cement began temporary operations for bulk Portland Cement distribution in Bernalillo County in the Summer of 1983, after filing an Authority-to-Construct or modify application with the City of Albuquerque Environmental Health & Energy Dept.

A second Source Registration/Authority-to-Construct application for cement distribution was received by the Albuquerque Environmental Health Dept. (AEHD) on 7/18/88, when a permanent facility location was established at Carlton Rd. NW. A letter from the AEHD dated 7/25/88 was issued to American Cement stating that a Source Registration or Permit for this operation would not be required, (based on the information submitted in the application), and that only Air Quality Control Regulations No. 5 (Visible Emissions); No. 8 (Particulate Matter); and 9.06 (Fugitive Dust) would be applicable to this facility.

At the request of American Cement in the Summer of 1993, the AEHD sent permitting information and an application for updating of facility operations.

In August of 1994, American Cement was issued an additional application for Source Registration/Permitting since inspection of facility at that time determined that an expansion of facility storage and product distribution had changed (both cement and lime were now being handled). A thorough inventory of equipment, product throughputs, emissions, and control equipment efficiencies was requested. The AEHD received this application on 8/29/94.

In November of 1994 an Air Quality Modeling Analysis for this facility was submitted to the AEHD by Kramer & Assoc. as an accompanying document to 8/29/94 application, for emissions information.

A re-inspection of facility in 9/95 incorrectly determined that the AEHD had not received required application information along with modeling (application had actually been misplaced by AEHD and was discovered in 1996).

In 1996, American Cement again changed its product types (now handling cement and flyash) and methods of offloading and storage of these products at their Albuquerque facility.

The Albuquerque/Bernalillo County Air Quality Assistance Program (AQAP) has been contacted by American Cement to assist with the Source Registration/Permitting requirements that they may need to meet at this time.

The following information represents the potential-to-emit, 1996 throughputs and emissions, and the requested operations requested by American Cement Corporation.

PROCESS FLOW

Prior to 1996, cement and lime were received at this facility by railcar. The cement was received in bottom dump railway hopper cars (100 ton capacity) along the facility's west fenceline railspur, and offloaded to an underground "pod" storage hopper by attaching vibrating plates to the railcar. The cement was then pneumatically conveyed to the cement storage silo through a fixed pipeline. Lime railcars (90 ton capacity) were pneumatically offloaded directly to the lime storage silo by use of a separate compressor and flexible hose hookups. The lime railspur was located outside the facility's east fenceline. Cement and lime were then distributed from the silos to tanker trucks for deliveries.

Currently, this facility is handling cement and flyash products and no longer receives or distributes lime.

The west railspur no longer handles cement railcars and has been modified to receive and offload cement by tanker trucks only. Cement is still offloaded to the underground "pod" (8.5 ton capacity) and pneumatically conveyed to the cement storage silo (south silo - 575 ton capacity) through a fixed pipeline. The cement is then distributed from the silo to tanker trucks, or to railcars along the east railspur for deliveries.

Flyash is delivered by railcar along the east fenceline railspur, which has now been acquired by American Cement from the railroad and is contained within the property fenceline. The railcars delivering flyash are Pressure Differential Rail Cars which connect directly to the flyash silo (north silo - 575 ton capacity) by flexible hose thus creating a "closed system". The flyash is then distributed from the silo to tanker trucks for deliveries. Occasionally, railcars may be loaded by tanker trucks.

The four (4) "guppie" tankers that also stored cement and lime prior to 1996, are no longer on site for additional storage.

The air compressors (2) used for conveyance of cement and flyash to or from silos are electric.

There is a diesel generator on site as backup for compressors.

PROCESS CONTROL

1) Whirl-Air Baghouse Collectors (2) serve as emission control for the offloading of cement and flyash from tankers and railcars, conveying to storage silos, and loadout operations. Product loadout to tankers from silos is also controlled through gate valves and retractable "trimmie" spouts which are surrounded by a vacuum return system to the baghouses. Manufacturers data list the baghouses as having efficiency factors of 99.0% for particulate > 1 micron. Calculations for this application will be using 95% to insure a conservative emission which will be based on AP-42 emission factors.

EMISSION CALCULATIONS FOR CEMENT

Potential - To - Emit (PTE):

Given:
Max. Process Rate offloading tanker to underground "pod" = 30 ton/hr
Max. Process Rate loading silo from "pod" = 60 ton/hr
Max. Process Rate offloading silo to tanker = 100 ton/hr

Maximum operations of the cement facility on an 8,760 hr/yr basis to determine registration/permit applicability, would be to offload & loadout at ~30 ton/hr rate to keep all processes operating around the clock.

Even though the "pod" to silo transfer may not be able to be loaded at this rate (30 ton/hr), given the setup time for each truck (~26 ton capacity) offloading to "pod", it is considered compensating for the higher loading rates from "pod" to silo (60 ton/hr) and silo to tankers (100 ton/hr) which are not being used to determine PTE since those rates cannot be met continuously. Therefore,

30 tons/hr x 8,760 hrs/yr = 262,800 tons/yr theoretical throughput

Factors from AP-42, Section 11.12 - Concrete Batching, are being used to estimate emissions from this facility's processes.

Cement Unloading from tanker to "pod" (pneumatic)

(262,800 tons/yr) x (0.27 lbs/ton) = ~ 71,000 lbs/yr
= ~ 35.5 tons/yr
= ~ 8.1 lbs/hr

Cement Loading from "pod" to silo (pneumatic)

(262,800 tons/yr) x (0.27 lbs/ton) = ~ 71,000 lbs/yr
= ~ 35.5 tons/yr
= ~ 8.1 lbs/hr

Cement Unloading from silo to tankers (pneumatic)

(262,800 tons/yr) x (0.27 lbs/ton) = ~ 71,000 lbs/yr
= ~ 35.5 tons/yr
= ~ 8.1 lbs/hr

TOTAL FROM ALL CEMENT PROCESSES = ~ 213,000 lbs/yr
= ~ 106.5 tons/yr
= ~ 24.3 lbs/hr

Factor given in AP-42 for cement loading to silo is used for all cement/flyash transfer points.

EMISSION CALCULATIONS FOR FLYASH

Potential - To - Emit (PTE):

Given:
Max. Process Rate offloading railcar to silo = 33 ton/hr
Max. Process Rate offloading tanker to silo = 13 ton/hr
Max. Process Rate offloading silo to tanker = 100 ton/hr

Maximum operations of the flyash facility on an 8,760 hr/yr basis to determine registration/permit applicability, would be to offload from railcars only & loadout at ~33 ton/hr rate to keep this process operating around the clock at maximum throughput.

Even though the pressure differential railcars may not be able to be offloaded at this rate (33 ton/hr), given the setup time for each car offloading to silo, it is still being used to determine PTE. Therefore,

33 tons/hr x 8,760 hrs/yr= 289,080 tons/yr theoretical throughput

Factors from AP-42, Section 11.12 - Concrete Batching, are being used to estimate emissions from this facility's processes.

Flyash Unloading from railcar to silo (pneumatic)

(289,080 tons/yr) x (0.27 lbs/ton) = ~ 78,000 lbs/yr
= ~ 39.0 tons/yr
= ~ 8.9 lbs/hr

Flyash Loading from silo to tankers (pneumatic)

(289,080 tons/yr) x (0.27 lbs/ton) = ~ 78,000 lbs/yr
= ~ 39.0 tons/yr
= ~ 8.9 lbs/hr

TOTAL FROM FLYASH PROCESSES = ~ 156,000 lbs/yr
= ~ 78 tons/yr
= ~ 17.8 lbs/hr

POTENTIAL-TO-EMIT TOTAL FROM CEMENT & FLYASH PROCESSES

~ **106.5 tons/yr** (CEMENT) + ~ **78 tons/yr** (FLYASH) = ~ **184.5 tons/yr**
= ~ **42.0 lbs/hr**

Note: Cement & Flyash cannot be offloaded simultaneously from silos to tankers through "trimmie" since only one tanker truck can be loaded at this location at any given time. Therefore, this theoretical Potential-to-Emit would have to be for throughput of alternating cement and flyash load-outs.

Factor given in AP-42 for cement loading to silo is used for all cement/flyash transfer points.

1996 EMISSION CALCULATIONS FOR CEMENT

Given:
Max. Process Rate offloading tanker to underground "pod" = 30 ton/hr
Max. Process Rate loading silo from "pod" = 60 ton/hr
Max. Process Rate offloading silo to tanker = 100 ton/hr
Baghouse Control Efficiency = 95.0%

Requested: 12 hrs/day; 6 days/wk; 4 wks/mo; 12 mo/yr = ~ 3,456 hrs/yr

Factors from AP-42, Section 11.12 - Concrete Batching, are being used to estimate emissions from this facility's processes.

In 1996 American Cement sold ~ 79,858 tons of cement of which ~ 67% (~53,505 tons) was actually passed through facility processes. Hours of operation to determine (lbs/hr) reflect those being requested in this application, which also represents the range of operations for 1996. Therefore,

1996 UNCONTROLLED EMISSIONS - CEMENT

1996 Cement Unloading from tanker to "pod" (pneumatic)

(53,505 tons/yr) x (0.27 lbs/ton) = ~ 14,450 lbs/yr
= ~ 7.2 tons/yr
= ~ 4.2 lbs/hr (Based on 3,456 hrs/yr)

Cement Loading from "pod" to silo (pneumatic)

(53,505 tons/yr) x (0.27 lbs/ton) = ~ 14,450 lbs/yr
= ~ 7.2 tons/yr
= ~ 4.2 lbs/hr (Based on 3,456 hrs/yr)

Cement Unloading from silo to tankers (pneumatic)

(53,505 tons/yr) x (0.27 lbs/ton) = ~ 14,450 lbs/yr
= ~ 7.2 tons/yr
= ~ 4.2 lbs/hr (Based on 3,456 hrs/yr)

TOTAL FROM ALL CEMENT PROCESSES = ~ 43,350 lbs/yr
= ~ 21.7 tons/yr
= ~ 12.5 lbs/hr

1996 CONTROLLED EMISSIONS - CEMENT

= **~ 1.1 Tons/yr @ 95.0 % eff.**
= **~ 0.63 lb/hr @ 95.0 % eff.**

Factor given in AP-42 for cement loading to silo is used for all cement/flyash transfer points.

1996 EMISSION CALCULATIONS FOR FLYASH

Given:
Max. Process Rate offloading railcar to silo = 33 ton/hr
Max. Process Rate offloading tanker to silo = 13 ton/hr
Max. Process Rate offloading silo to tanker = 100 ton/hr
Baghouse Control Efficiency = 95.0 % efficiency

Requested: 12 hrs/day; 6 days/wk; 4 wks/mo; 12 mo/yr = ~ 3,456 hrs/yr

Factors from AP-42, Section 11.12 - Concrete Batching, are being used to estimate emissions from this facility's processes.

In 1996 American Cement sold ~ 3,381 tons of flyash of which ~ 67% (~2,265 tons) was actually passed through facility processes. Hours of operation to determine (lbs/hr) reflect those being requested in this application, which also represents the range of operations for 1996. Therefore,

1996 UNCONTROLLED EMISSIONS - FLYASH

Flyash Unloading from railcar to silo (pneumatic)

(2,265 tons/yr) x (0.27 lbs/ton) = ~ 612 lbs/yr
= ~ 0.3 tons/yr
= ~ 0.2 lbs/hr (Based on 3,456 hrs/yr)

Flyash Loading from silo to tankers (pneumatic)

(2,265 tons/yr) x (0.27 lbs/ton) = ~ 612 lbs/yr
= ~ 0.3 tons/yr
= ~ 0.2 lbs/hr (Based on 3,456 hrs/yr)

TOTAL FROM FLYASH PROCESSES = ~ 1,224 lbs/yr
= ~ 0.6 tons/yr
= ~ 0.4 lbs/hr

1996 CONTROLLED EMISSIONS - FLYASH

= ~ 0.03 Tons/yr @ 95.0 % eff.
= ~ 0.02 lb/hr @ 95.0 % eff.

Factor given in AP-42 for cement loading to silo is used for all cement/flyash transfer points.

1996 UNCONTROLLED EMISSIONS FROM CEMENT & FLYASH PROCESSES

~ **21.7 tons/yr** (CEMENT) + ~ **0.6 tons/yr** (FLYASH) = ~ **22.3 tons/yr**
= ~ **12.9 lbs/hr (3,456 hrs/yr)**

1996 CONTROLLED EMISSIONS FROM CEMENT & FLYASH PROCESSES

~ **1.1 Tons/yr** (CEMENT) + ~ **0.03 Tons/yr** (FLYASH) = ~ **1.13 tons/yr (95.0% eff.)**
= ~ **0.65 lbs/hr (3,456 hrs/yr)**

AMERICAN CEMENT ANTICIPATES THAT ONCE 1997 THROUGHPUT OF CEMENT AND FLYASH IS TOTALLED, AMOUNTS WILL BE SIMILAR TO PRODUCT PROCESSED THROUGH PLANT IN 1996. HOWEVER, SINCE MARKET DEMAND FOR THIS INDUSTRY WILL FLUCTUATE FROM YEAR TO YEAR, AMERICAN CEMENT IS REQUESTING PERMIT ALLOWABLE EMISSIONS FOR THEIR FACILITY TO BE BASED ON 100,000 TONS OF CEMENT THROUGHPUT PER YEAR AND 15,000 TONS OF FLYASH THROUGHPUT PER YEAR.

THE FOLLOWING EMISSIONS CALCULATIONS (PAGES 8 & 9) REFLECT THE REQUESTED PERMIT ALLOWABLE THROUGHPUTS FOR THIS FACILITY.

ALTHOUGH MANUFACTURERS DATA LIST BAGHOUSE EFFICIENCIES AS 99% FOR 1 MICRON AND LARGER PARTICLES, CALCULATIONS FOR THIS APPLICATION WILL BE USING 95% TO INSURE A CONSERVATIVE EMISSION WHICH WILL BE BASED ON AP-42 EMISSION FACTORS.

Factor given in AP-42 for cement loading to silo is used for all cement/flyash transfer points.

REQUESTED PERMIT ALLOWABLE EMISSIONS FOR THE AMERICAN CEMENT CORPORATION

REQUESTED PERMIT ALLOWABLE UNCONTROLLED EMISSIONS - CEMENT

Cement Unloading from tanker to "pod" (pneumatic)

(100,000 tons/yr) x (0.27 lbs/ton) = ~ 27,000 lbs/yr
= ~ 13.5 tons/yr
= ~ 7.8 lbs/hr (Based on 3,456 hrs/yr)

Cement Loading from "pod" to silo (pneumatic)

(100,000 tons/yr) x (0.27 lbs/ton) = ~ 27,000 lbs/yr
= ~ 13.5 tons/yr
= ~ 7.8 lbs/hr (Based on 3,456 hrs/yr)

Cement Unloading from silo to tankers (pneumatic)

(100,000 tons/yr) x (0.27 lbs/ton) = ~ 27,000 lbs/yr
= ~ 13.5 tons/yr
= ~ 7.8 lbs/hr (Based on 3,456 hrs/yr)

TOTAL FROM ALL CEMENT PROCESSES = ~ 81,000 lbs/yr
= **~ 40.5 tons/yr (permit trigger)**
= **~ 23.4 lbs/hr (permit trigger)**

REQUESTED PERMIT ALLOWABLE CONTROLLED EMISSIONS - CEMENT

= **~ 2.03 Tons/yr (95.0 % eff.)**
= **~ 1.2 lb/hr (3,456 hrs/yr)**

Factor given in AP-42 for cement loading to silo is used for all cement/flyash transfer points.

REQUESTED PERMIT ALLOWABLE UNCONTROLLED EMISSIONS - FLYASH

Flyash Unloading from railcar to silo (pneumatic)

(15,000 tons/yr) x (0.27 lbs/ton) = ~ 4,050 lbs/yr
= ~ 2.0 tons/yr
= ~ 1.2 lbs/hr (Based on 3,456 hrs/yr)

Flyash Loading from silo to tankers (pneumatic)

(15,000 tons/yr) x (0.27 lbs/ton) = ~ 4,050 lbs/yr
= ~ 2.0 tons/yr
= ~ 1.2 lbs/hr (Based on 3,456 hrs/yr)

TOTAL FROM FLYASH PROCESSES = ~ 8,100 lbs/yr ✓
= **~ 4.1 tons/yr** 4.05 tpy
= **~ 2.4 lbs/hr** 2.34 lb/hr ✓

REQUESTED PERMIT ALLOWABLE CONTROLLED EMISSIONS - FLYASH

= **~ 0.21 Tons/yr (95.0 % eff.)**
= **~ 0.12 lb/hr (3,456 hrs/yr)**

THEREFORE,

UNCONTROLLED EMISSIONS FROM CEMENT & FLYASH PROCESSES

~ **40.5 tons/yr** (CEMENT) + ~ **4.1 tons/yr** (FLYASH) = ~ **44.6 tons/yr**
= ~ **25.8 lbs/hr (3,456 hrs/yr)**

CONTROLLED EMISSIONS FROM CEMENT & FLYASH PROCESSES

(FEE POLLUTANT TOTALS)

~**2.03** Tons/yr (CEMENT) + ~ **0.21** Tons/yr (FLYASH) = ~ **2.24 tons/yr (95.0% eff.)**
= ~ **1.3 lbs/hr (3,456 hrs/yr)**

Factor given in AP-42 for cement loading to silo is used for all cement/flyash transfer points.

BACK-UP GENERATOR (COMPRESSOR)

GIVEN:

300 Hp diesel engine
2 gallons diesel fuel/hour
137,000 Btu/gal of diesel fuel
500 hour maximum operating time per year

* 2 gallons diesel fuel/hour X 500 hour maximum operating time per year = 1,000 GAL/YR

* 1,000 gal/yr X 137,000 Btu/gal of diesel fuel = 137MM Btu/yr

NOx - 137MM Btu/yr X 4.41 lb/MMBtu = 604 lb/yr
= 0.3 ton/yr

CO - 137MM Btu/yr X 0.95 lb/MMBtu = 130 lb/yr
= 0.1 ton/yr

SOx - 137MM Btu/yr X 0.29 lb/MMBtu = 40 lb/yr
= 0.02 ton/yr

Particulate - 137MM Btu/yr X 0.31 lb/MMBtu = 43 lb/yr
= 0.02 ton/yr

NMHC - 137MM Btu/yr X 0.36 lb/MMBtu = 49 lb/yr
= 0.02 ton/yr

Factor given in AP-42 for cement loading to silo is used for all cement/flyash transfer points.

Table 11.12-2 (English Units). EMISSION FACTORS FOR CONCRETE BATCHING[a,b]

Source (SCC)	Filterable[c]			Condensable PM[d]	
	PM	RATING	PM-10	Inorganic	Organic
Sand and aggregate transfer to elevated bin (3-05-011-06)[e]	0.029 (0.05)	E	ND	ND	ND
Cement unloading to elevated storage silo					
Pneumatic[f]	0.27 (0.07)	D	ND	ND	ND
Bucket elevator (3-05-011-07)[g]	0.24 (0.06)	E	ND	ND	ND
Weigh hopper loading (3-05-011-08)[h]	0.02 (0.04)	E	ND	ND	ND
Mixer loading (central mix) (3-05-011-09)[h]	0.04 (0.07)	E	ND	ND	ND
Truck loading (truck mix) (3-05-011-10)[h]	0.02 (0.04)	E	ND	ND	ND
Vehicle traffic (unpaved roads) (3-05-011-__)[i]	16 (0.02)	C	ND	ND	ND
Wind erosion from sand and aggregate storage piles (3-05-011-__)[j]	3.5[k] (0.1)[l]	D	ND	ND	ND
Total process emissions (truck mix) (3-05-011-__)[m]	0.1 (0.2)	E	ND	ND	ND

[a] Factors represent uncontrolled emissions unless otherwise noted. All emission factors are in lb/ton (lb/yd^3) of material mixed unless noted. SCC = Source Classification Code. ND = no data.

[b] Based on a typical yd^3 weighing 1.818 kg (4,000 lb) and containing 227 kg (500 lb) cement, 564 kg (1,240 lb) sand, 864 kg (1,900 lb) coarse aggregate, and 164 kg (360 lb) water.

[c] Filterable PM is that PM collected on or prior to the filter of an EPA Method 5 (or equivalent) sampling train.

[d] Condensable PM is that PM collected in the impinger portion of a PM sampling train.

[e] Reference 6.

[f] For uncontrolled emissions measured before filter. Based on 2 tests on pneumatic conveying controlled by a fabric filter.

[g] Reference 7. From test of mechanical unloading to hopper and subsequent transport of cement by enclosed bucket elevator to elevated bins with fabric socks over bin vent.

[h] Reference 5. Engineering judgment, based on observations and emission tests of similar controlled sources.

[i] From Section 13.2.1, with $k = 0.8$, $s = 12$, $S = 20$, $W = 20$, $w = 14$, and $p = 100$; units of lb/vehicle miles traveled; based on facility producing 23,100 m^3/yr (30,000 yd^3/yr) of concrete, with average truck load of 6.2 m^3 (8 yd^3) and plant road length of 161 meters (0.1 mile).

[j] From Section 11.19.1, for emissions <30 micrometers from inactive storage piles.

[k] Units of lb/acre/day.

[l] Assumes 1,011 m^2 (1/4 acre) of sand and aggregate storage at plant with production of 23,000 m^3/yr (30,000 yd^3/yr).

[m] Based on pneumatic conveying of cement at a truck mix facility; does not include vehicle traffic or wind erosion from storage piles.

Predictive equations that allow for emission factor adjustment based on plant-specific conditions are given in Chapter 13. Whenever plant specific data are available, they should be used in lieu of the fugitive emission factors presented in Table 11.12-1.

TABLE 3.3-1. (ENGLISH UNITS) EMISSION FACTORS FOR UNCONTROLLED GASOLINE AND DIESEL INDUSTRIAL ENGINES[a]

(Source Classification Codes)

Pollutant [Rating][b]	Gasoline Fuel (SCC 20200301, 20300301)		Diesel Fuel (SCC 20200102, 20300101)	
	[grams/hp-hr] (power output)	[lb/MMBtu] (fuel input)	[grams/hp-hr] (power output)	[lb/MMBtu] (fuel input)
NO_x [D]	5.16	1.63	14.0	4.41
CO [D]	199	62.7	3.03	0.95
SO_x [D]	0.268	0.084	0.931	0.29
Particulate [D]	0.327	0.10	1.00	0.31
CO_2 [B][c]	493	155	525	165
Aldehydes [D]	0.22	0.07	0.21	0.07
Hydrocarbons				
Exhaust [D]	6.68	2.10	1.12	0.35
Evaporative [E]	0.30	0.09	0.00	0.00
Crankcase [E]	2.20	0.69	0.02	0.01
Refueling [E]	0.49	0.15	0.00	0.00

[a] Data based on uncontrolled levels for each fuel from References 1, 3 and 6. When necessary, the average brake specific fuel consumption (BSFC) value was used to convert from g/hp-hr to lb/MMBtu was 7000 Btu/hp-hr.

[b] "D" and "E" rated emission factors are most appropriate when applied to a population of industrial engines rather than to an individual power plant, due to the aggregate nature of the emissions data.

[c] Based on assumed 100 percent conversion of carbon in fuel to CO_2 with 87 weight percent carbon in diesel, 86 weight percent carbon in gasoline, average brake specific fuel consumption of 7000 Btu/hp-hr, diesel heating value of 19300 Btu/lb, and gasoline heating value of 20300 Btu/lb.

FLY ASH
~~HYDRATED~~ ~~LIME~~ DUST COLLECTOR
NORTH SILO

Pollution Control Agency
Division of Air Quality

For Agency Use Only
DAQ No. ________

Fabric Filter (Baghouse) Application
(DS-7)

1. Name of Division or Plant: AMERICAN CEMENT COMPANY
2. Address: 4702 CARLTON N.W.
3. City: ALBUQUERQUE State: NM. Zip: 87107
4. Manufacturer: WHIRL-AIR-FLOW
5. Model: 330-56 Type BIN VENT
6. Emission Equipment Served: X Primary ______ Secondary ______
7. Gas Straem Cooling: ____ Yes X No Liquid Spray ______
8. Bag Cleaning Method: ____ Shaker, ____ Reverse Air ____, X Pulse Air
9. Cleaning Cycle: Average Filteration Time: 5-7 SECONDS BETWEEN BANKS
Average Bag Cleaning Time: .1 SECOND ON
10. Cleaning Pulse Pressure: 90 psig
11. No. of Bags Cleaned at One Time: 3/4/7
12. No. of Bags: 37 Total Cloth Area: 330 sq. ft.
13. Filter (Gas/Cloth) Ratio: 3:1 Normal Operation: 3 acfm/sq ft
Cleaning Cycle: 2.2 acfm/sq ft
14. Reverse Air Fan: 5 H.P.: 1850 acfm
15. Media Material (Cloth): WOVEN POLYESTER Coating: NONE
16. Media Weight: 16 oz./sq. ft. Media Thickness: .125 inches
17. Filter Drag: 3 inches of $H_2O/ACFM/Ft^2$
18. Media Maximum Operating Temperature: 250 °F.
19. Rated or Design Gas Capacity: ______ acfm Inlet Gas Temp.: 100 °F.
20. Baseline (Rated-Maximum-Nominal) Pressure Differential
Drop 3 TO 4 inches of H_2O
21. Exhaust Gas Dew Point: N/A °F.
22. Exhaust Emissions: .01 gr/dscf
23. Guarenteed (or Design) Collection Efficiency: 99% ON 1 MICRON OR LARGER
24. Estimated Bag Life: 2 years
25. By-Pass ____ Yes X No Purpose: ______ Length of Time ______ Min.
26. Unit Exhausts to Outside Air Through Stack/Vent Number: FAN

CEMENT DUST COLLECTOR
SOUTH ~~NORTH~~ SILO

Pollution Control Agency
Division of Air Quality

For Agency Use Only
DAQ No.

Fabric Filter (Baghouse) Application
(DS-7)

1. Name of Division or Plant: AMERICAN CEMENT COMPANY
2. Address: 4702 CARLTON N.W.
3. City: ALBUQUERQUE State: N.M. Zip: 87107
4. Manufacturer: WHIRL-AIR-FLOW
5. Model: 450-56 Type BIN VENT
6. Emission Equipment Served: X Primary Secondary
7. Gas Straem Cooling: Yes X No Liquid Spray
8. Bag Cleaning Method: Shaker, Reverse Air , X Pulse Air
9. Cleaning Cycle: Average Filteration Time: 5-7 SECONDS BETWEEN BANKS
Average Bag Cleaning Time: .1 SECOND ON
10. Cleaning Pulse Pressure: 90 psig
11. No. of Bags Cleaned at One Time: 3/4/7
12. No. of Bags: 37 Total Cloth Area: 450 sq. ft.
13. Filter (Gas/Cloth) Ratio: 1.8:1 Normal Operation: 3 acfm/sq ft.
Cleaning Cycle: 2.2 acfm/sq ft.
14. Reverse Air Fan: 10 H.P.: 2725 acfm
15. Media Material (Cloth): WOVEN POLYESTER Coating: NONE
16. Media Weight: 16 oz./sq. ft. Media Thickness: .125 inches
17. Filter Drag: 3 inches of $H_2O/ACFM/Ft^2$
18. Media Maximum Operating Temperature: 250 °F.
19. Rated or Design Gas Capacity: 3600 acfm Inlet Gas Temp.: 100 °F.
20. Baseline (Rated-Maximum-Nominal) Pressure Differential
Drop 3 TO 4 inches of H_2O
21. Exhaust Gas Dew Point: N/A °F.
22. Exhaust Emissions: .01 gr/dscf
23. Guarenteed (or Design) Collection Efficiency: 99% ON 1 MICRON OR LARGER
24. Estimated Bag Life: 2 years
25. By-Pass Yes X No Purpose: Length of Time Min.
26. Unit Exhausts to Outside Air Through Stack/Vent Number: FAN

February 7, 2006

William Gallegos
Enforcement and compliance

Dear Billy:

Enclosed are Performance Tests for the last two quarters of 2005 for both Fly ash and Cement for your files.

Thank you very much.

Very truly,

Peter H. Cantrup
American Cement Corp.

RECEIVED
2006 FEB 10 PM 12: 19
CITY OF ALBUQUERQUE
AIR QUALITY DIVISION

EPA
VISIBLE EMISSION OBSERVATION FORM 1

Method Used (Circle One) [✓ Method 9] 203A 203B Other: ______

Company Name: American Cement Company
Facility Name: Albuquerque Terminal
Street Address: 4702 Carlton NE
City: Albuquerque State: NM Zip: 87107

Process: Bulk Flyash Unit #: Operating Mode:
Control Equipment: Baghouse Operating Mode:

Describe Emission Point: Baghouse at top of Silo

Height of Emiss. Pt. Start: 60 ft. End:
Height of Emiss. Pt. Rel. to Observer Start: 60 ft. End:
Distance to Emiss. Pt. Start: 65 yards End:
Direction to Emiss. Pt. (Degrees) Start: West End:

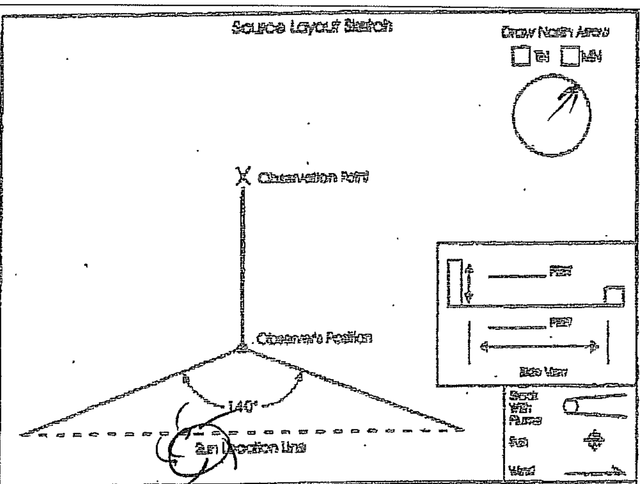
Vertical Angle to Obs. Pt. Start: End:
Direction to Obs. Pt. (Degrees) Start: End:
Distance and Direction to Observation Point from Emission Point Start: End:

Describe Emissions Start: N/A End:
Emission Color Start: N/A End:
Water Droplet Plume Attached ☐ Detached ☐ None ☑

Describe Plume Background Start: Blue Sky End:
Background Color Start: Blue End:
Sky Conditions Start: clear End:
Wind Speed Start: 0 End:
Wind Direction Start: N/A End:
Ambient Temp. Start: End:
Wet Bulb Temp.
RH Percent

Source Layout Sketch

Draw North Arrow ☐ TN ☐ MN



Longitude Latitude Declination

Additional Information

VEOF1.1

Form Number Page of
Continued on VEO Form Number

Observation Date: Aug 16, 05 Time Zone: Start Time: 0910 End Time: 0917

Sec / Min	0	15	30	45	Comments
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					To
17				0	
18					
19					
20					
21					
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24					
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26					
27					
28					
29					
30					

Observer's Name (Print): RALPH E MARTINEZ
Observer's Signature: Date: 08-16-05
Organization: Espanola Mercantile Co.
Certified By: ETA Date: Feb. 05

EPA
VISIBLE EMISSION OBSERVATION FORM 1

Method Used (Circle One)
[✓ Method 9] 203A 203B Other: ____

Company Name: American Cement Co.

Facility Name: Albuquerque Terminal

Street Address: 4002 Carlton NE

City: Albuquerque State: NM Zip: 87107

Process: Bulk Cement Unit #: Operating Mode:

Control Equipment: Baghouse Operating Mode:

Describe Emission Point: Baghouse at top of Silo

Height of Emiss. Pt. Start — End 50 ft.
Height of Emiss. Pt. Rel. to Observer Start — End 50 ft.

Distance to Emiss. Pt. Start 60 yards
Direction to Emiss. Pt. (Degrees) Start West

Vertical Angle to Obs. Pt. Start End
Direction to Obs. Pt. (Degrees) Start End

Distance and Direction to Observation Point from Emission Point Start End

Describe Emissions Start N/A End

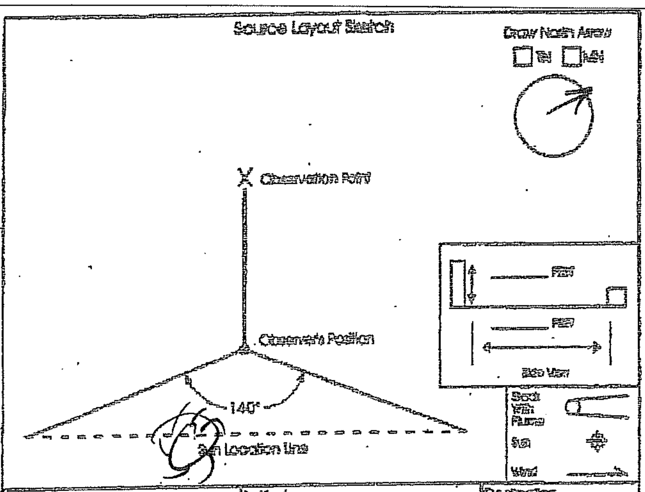
Emission Color Start N/A End
Water Droplet Plume Attached ☐ Detached ☐ None ☑

Describe Plume Background Start Blue Sky End

Background Color Start Blue End
Sky Conditions Start Clear End

Wind Speed Start 0 End to 5 mph
Wind Direction Start North to South End

Ambient Temp. Start End
Wet Bulb Temp.
RH Percent



Longitude Latitude Declination

Additional Information

VEOF1.1

Form Number Page Of

Continued on VEO Form Number

Observation Date: Aug. 16, 05 Time Zone: Mtn. Start Time: 0845 End Time: 0852

Min \ Sec	0	15	30	45	Comments
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2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7					
8					
9					
10					
11					0 %
12					
13					
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28					
29					
30					

Observer's Name (Print): [illegible] E. MARTINEZ

Observer's Signature: Date: 08-16-05

Organization: Espanola Mercantile Co.

Certified By: ETA Date: Feb 05

EPA
VISIBLE EMISSION OBSERVATION FORM 1

Method Used (Circle One) [✓ Method 9] 203A 203B Other: ____

Company Name: American Cement Co.
Facility Name: Albuquerque Terminal
Street Address: 4702 Carlton NE
City: Albuq. State: NM Zip: 87107

Process: Bulk Cement Unit #: Operating Mode:
Control Equipment: Baghouse Operating Mode:

Describe Emission Point: Baghouse at top of Silo

Height of Emiss. Pt. Start: 60 ft. End:
Height of Emiss. Pt. Rel. to Observer Start: 60 ft. End:
Distance to Emiss. Pt. Start: 10 yards End:
Direction to Emiss. Pt. (Degrees) Start: West End:

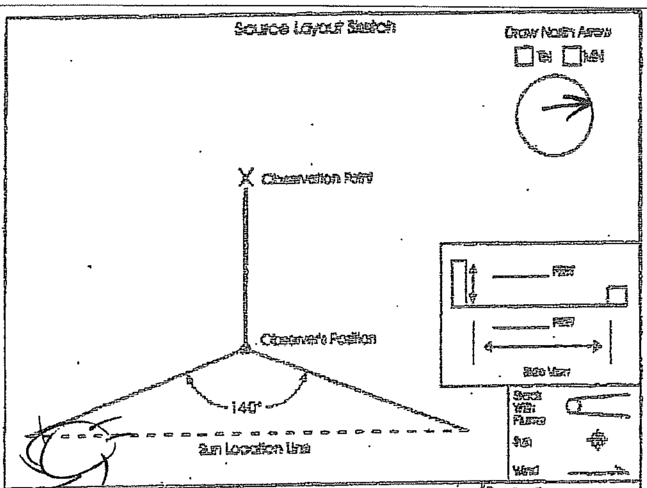
Vertical Angle to Obs. Pt. Start: End:
Direction to Obs. Pt. (Degrees) Start: End:
Distance and Direction to Observation Point from Emission Point Start: End:

Describe Emissions Start: N/A End:
Emission Color Start: N/A End:
Water Droplet Plume Attached ☐ Detached ☐ None ☑

Describe Plume Background Start: Blue Sky End:
Background Color Start: Blue End:
Sky Conditions Start: clear End:
Wind Speed Start: 5 to 10 mph End:
Wind Direction Start: NW to SE End:
Ambient Temp. Start: End:
Wet Bulb Temp.
RH Percent

Source Layout Sketch

Draw North Arrow ☐ TN ☐ MN



Longitude Latitude Declination

Additional Information

Form Number Page Of
Continued on VEO Form Number

Observation Date: Dec. 6, 05 Time Zone: Mtn Start Time: 1015 End Time: 1022

Min \ Sec	0	15	30	45	Comments
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18			0%		
19					
20					
21					
22					
23					
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27					
28					
29					
30					

Observer's Name (Print): Rafael E. Martinez
Observer's Signature: Date: 12-06-05
Organization: Espanola Mercantile Co.
Certified By: EPA Date: Aug 31 05

VEOF1.1

EPA
VISIBLE EMISSION OBSERVATION FORM 1

Method Used (Circle One) [✓ Method 9] 203A 203B Other: ______

Company Name: American Cement Co.
Facility Name: Albuquerque Terminal
Street Address: 4701 Carlton NE
City: Albuquerque State: NM Zip: 87107

Process: [illegible] Unit #: Operating Mode:
Control Equipment: Baghouse Operating Mode:

Describe Emission Point: Baghouse at top of Silo

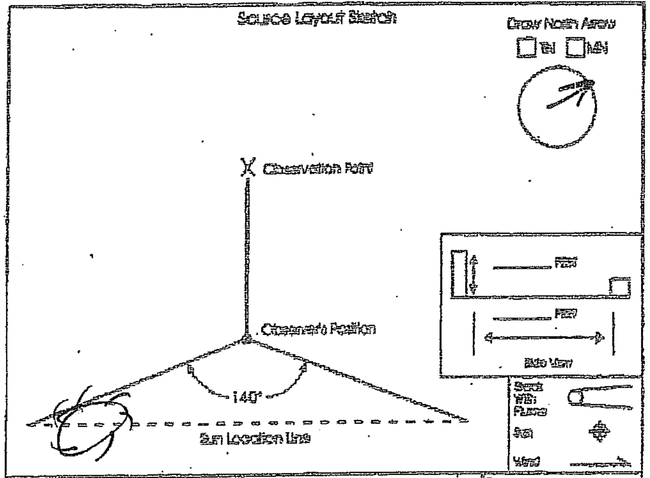
Height of Emiss. Pt. Start: 60 ft. End
Height of Emiss. Pt. Rel. to Observer Start: 60 ft. End
Distance to Emiss. Pt. Start: 65 yards End
Direction to Emiss. Pt. (Degrees) Start: W by NW End

Vertical Angle to Obs. Pt. Start End
Direction to Obs. Pt. (Degrees) Start End
Distance and Direction to Observation Point from Emission Point Start End

Describe Emissions Start: N/A End
Emission Color Start: N/A End
Water Droplet Plume: Attached ☐ Detached ☐ None ☒

Describe Plume Background Start: Blue Sky End
Background Color Start: Blue End
Sky Conditions Start: Scattered End
Wind Speed Start: 5 to 10 mph End
Wind Direction Start: NW to SE End
Ambient Temp. Start End
Wet Bulb Temp.
RH Percent

Source Layout Sketch



Longitude Latitude Declination

Additional Information

Form Number Page of
Continued on VEO Form Number

Observation Date: Dec. 06,05 Time Zone: Mtn Start Time: 1030 End Time: 1037

Sec / Min	0	15	30	45	Comments
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7					
8					
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13					
14					0%
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28					
29					
30					

Observer's Name (Print): [illegible] E. MARTINEZ
Observer's Signature: Date: 12-06-05
Organization: Espanola Mercantile Co.
Certified By: ETA Date: Aug. 05

VEOF1.1

EMISSIONS TEST REPORT

Cement and Fly Ash Silo

American Cement, Company
Albuquerque, New Mexico

A/BC Air Permit No. 902

by

Kramer & Associates, Inc.
4501 Bogan NE Suite A-1
Albuquerque, New Mexico 87109
505-881-0243

May, 1999

Table of Contents

Introduction:

A. Reason for Tests:
A/BC AQCB Permit No. 902 Requirement.

B. New Source Performance Standards (NSPS):
None

B. Process Description:
Cement and fly ash are loaded into the silos and from the silos into concrete trucks.

D. Facility Name and Location:
American Cement Company
P.O. Box 38
Espanola, NM 87532
Contact: Eric Quintana (505-753-2145)
(4702 Carlton NE - Abuquerque) - Site

E. Testing Firm:
Kramer & Associates, Inc.
4501 Bogan NE, Suite A-1
Albuquerque, NM 87109
Gary R. Kramer 505 881-0243

F. Individuals Present at Test:
1. American Cement - Tom
2. Kramer & Associates, Inc. - Buster Wright, Bill Ristau
3. A/BC Air Pollution Control Bureau: Matt Stebleton

G. Dates of Test:
May 19, 20, 21, 1999

H. Operating Conditions:
Samples were collected only while loading cement or ash into the silos

I. Control Equipment:
Baghouses

Table 1

Data Summary

Parameter	Test Run No. 1	Test Run No. 2	Test Run No. 3	Average
Cement Silo:				
Gr/DSCF	0.00102	0.00016	0.00039	**0.00052**
Lb/Hr	0.0053	0.00093	0.0034	**0.0032**
Permit Maximum, lb/hr				**0.84**
Ash Silo:				
Gr/DSCF	0.0077	0.078	0.105	**0.0636**
Lb/Hr	0.093	0.97	1.31	**0.79**
Permit Maximum, lb/hr				**0.84**

Test Procedures:

A. Source Sampling Location:

See Figures 1.

B. Sampling Systems Schematics:

See Figures 2.

C. Operating Procedures:

Total Suspended Particulates (TSP): 40CFR Part 60, Method 5

TSP samples were collected using an Anderson Model CU-3 Source Sampler equipped with a stainless steel nozzle and Pyrex probe liner. Following each of the three 60-minute sampling runs, the nozzle and all glassware upstream from the filter were cleaned with distilled water which was collected in a jar with Teflon lid and transported to the KAI Laboratory for analyses. Jars were emptied (and rinsed) into tared beakers for evaporation of the distilled water and gravimetric analyses. Filters were desiccated at least 24 hours prior to reweighing. All samples were in the custody of KAI personnel at all times.

D. Deviations from EPA Methods:

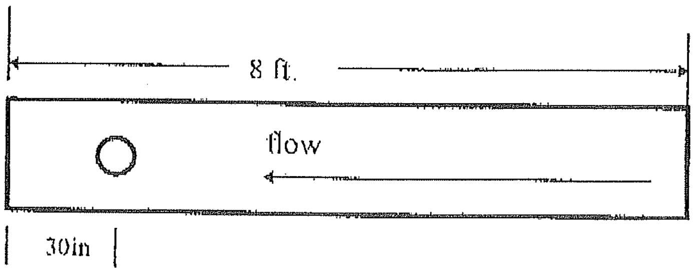
Only one traverse was sampled due to access difficulties to the vertical port on the horizontal duct section sampled..

E. Test Instrumentation:

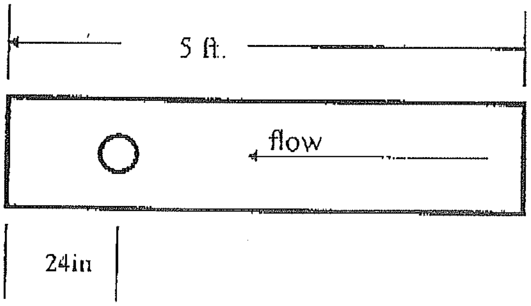
Anderson Model CU3 Source Sampler
Sartorius Analytical Balance

F. Unit Operating Parameters:

Sampling was conducted only while silos were being loaded.



Cement Silo Stack Diagram



Fly Ash Silo Stack Diagram

Figure 1

Silo Baghouse Emissions Sampling Location

American Cement Co. Inc.
Albuquerque, New Mexico

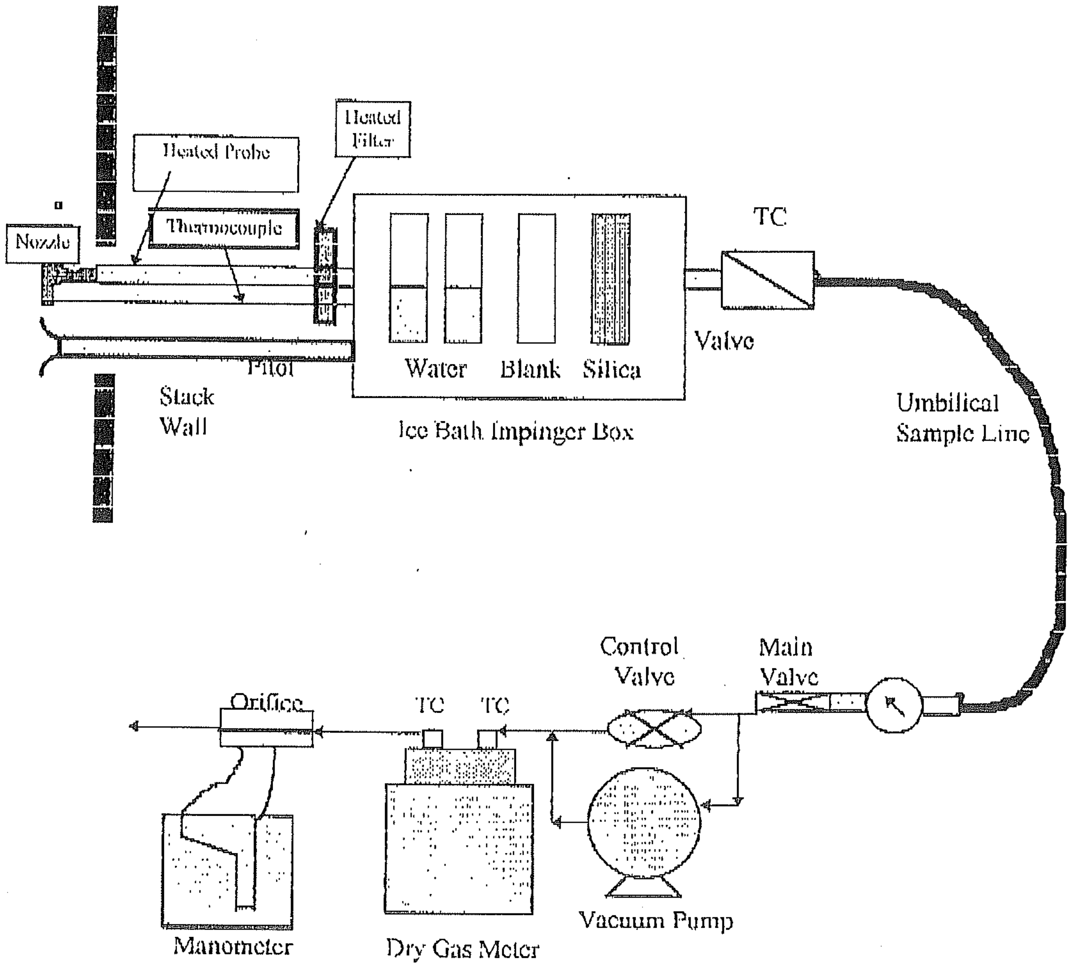


Figure 2

TSP Sampling System Schematic Diagram

Method 5

Data and Calculations:

This Section contains the following:

Part 1. Cement Silo Field Data and Calculations Summaries
  a. Field Sampling Data and Calculations Summary
  b. Laboratory Analyses Weight Records

Part 2. Fly Ash Field Data and Calculations Summaries
  a. Field Sampling Data and Calculations Summaries
  b. Laboratory Analyses Weight Records

Kramer & Associates, Inc.

Particulates Sampling and Analysis Data

Plant Name:	American Cement	Date:	5/19/99
Plant Location:	Albuquerque, New Mexico	Time:	9:00
Stack Designation:	Cement Silo	Run:	1

Barometric Pressure:	24.96	in Hg
Static Pressure:	0.10	in H2O
Stack Pressure:	24.97	in Hg
Stack Diameter:	12	in
Stack Area:	0.7854	

Orsat Analysis Data

Run:	1	2	3	Average
CO2				0
CO2 + O2	20.9	20.9	20.9	
O2	20.9	20.9	20.9	20.9
Operating Rate:				

Console ID:	Anderson	Y - Value:	0.983	Probe Length:	4
Nozzle Diameter:	0.5	Cp:	0.85	ΔH@:	0.997
Assumed Moisture:	1 %	Calculated ΔP/ΔH Ratio:			

Leak Check Data

Initial	0.003	cfm @	10	in Hg
Final	0.005	cfm @	10	in Hg

Equipment Pressure Drop

ΔP: in H2O

Laboratory Data

Filter ID:	AC/C1	Jar No.	AC/C1	Acetone Beaker:	AC/C1
Filter Final Weight:	0.7857	Beaker Final Weight:	65.2241		
Filter Tare Weight:	0.7853	Beaker Tare Weight:	65.2203	Total Particulates (mg)	4.2
Filter Particulates:	0.0004	Beaker Particulates:	0.0038		

Moisture Data:

Impinger #1:	100	mL	Final Wt of Silica Gel:	201	g
Impinger #2:	102	mL	Initial Wt of Silica Gel:	200	g
Impinger #3:	0	mL	Net Water in Silica Gel:	1	mL
Initial Impinger Water:	200	mL	Net Impinger Water:	2	mL
Net Impinger Water:	2	mL	Total Water Collected:	3	mL

Kramer & Associates, Inc. TSP

Time	Gas Meter Reading	ΔP Pitot Reading	Orifice ΔH Actual	Dry Gas Meter Temperature Inlet	Dry Gas Meter Temperature Outlet	Stack Temp
min	cubic ft	in H2O	in H2O	deg F	deg F	deg F
0	460.11	0.03	1.15	79	75	75
10		0.10	3.80	83	77	87
20		0.06	2.30	90	81	89
30		0.07	2.80	94	88	92
40		0.07	2.80	98	92	89
50		0.06	2.30	101	95	90
60						
60	539.73					
Ave.	79.620	0.25	2.53	90.83	84.67	87.00

Location American Cement

Run No: 1

Calculations Summary

Cement Silo

Vmstd = 17.647*Vm*Y*(Pbar+ΔH/13.6)Tmave
Vmstd = 63.41 Ft3

Vol H2O Collected = 0.04707*ml H2O
Vm = 0.14 Ft3

% Moisture in Stack = Vw/(Vw+vmstd)
Bwo = 0.22 %
Fd = 1.00

Dry Mole Wt. = 0.44*CO2+0.32*O2+0.28*N2
DMWt = 28.84
Wet Mole Wt = Fd*DMWt+Bwo/100*18
WMWT = 28.81

Ave Velocity=85.49*Cp*SqrtΔP*Sqrt(Ts/DMWT/Ps)
Vsa = 15.93 fps

Ave Stack Flow=1058.82*Vsa*Fd*Area*Ps/Ts
Qsa = 603.36

Iso Ratio=17.316*Vmstd*Tsa/Vsa/Fd/Ps/Dn/Dn/Time
Iso = 100.88 %

gr/DSCF T 0.0154*Mg TSP/Vmstd
TSP= 0.00102 gr/DSCF
Lb/Hr TSP= 0.0001428*60*Qsa*gr/DSCF
TSP= 0.0053 lb/hr

Kramer & Associates, Inc.

Particulates Sampling and Analysis Data

Plant Name: American Cement
Plant Location: Albuquerque, New Mexico
Stack Designation: Cement Silo

Date: 5/19/99
Time: 11:00
Run: 2

Barometric Pressure: 24.96 in Hg
Static Pressure: 0.10 in H2O
Stack Pressure: 24.97 in Hg

Stack Diameter: 12 in
Stack Area: 0.7854

Orsat Analysis Data				
Run:	1	2	3	Average
CO2				0
CO2 + O2	20.9	20.9	20.9	
O2	20.9	20.9	20.9	20.9

Operating Rate:

Console ID: Anderson
Nozzle Diameter: 0.5
Assumed Moisture: 1 %

Y - Value: 0.983
Cp: 0.85
Calculated ΔP/ΔH Ratio: 1/2.9

Probe Length: 4
ΔH@: 0.997

Leak Check Data

Initial 0.009 cfm @ 12 in Hg
Final 0.005 cfm @ 12 in Hg

Equipment Pressure Drop

ΔP: in H2O

Laboratory Data

Filter ID: AC/C2
Filter Final Weight: 0.7855
Filter Tare Weight: 0.7852
Filter Particulates: 0.0003

Jar No. AC/C2
Beaker Final Weight: 65.8652
Beaker Tare Weight: 65.8648
Beaker Particulates: 0.0004

Acetone Beaker: AC/C2
Total Particulates (mg) 0.7

Moisture Data:

Impinger #1: 101 mL
Impinger #2: 100 mL
Impinger #3: 0 mL
Initial Impinger Water: 200 mL
Net Impinger Water: 1 mL

Final Wt of Silica Gel: 201 g
Initial Wt of Silica Gel: 200 g
Net Water in Silica Gel: 1 mL
Net Impinger Water: 1 mL
Total Water Collected: 2 mL

Kramer & Associates, Inc. TSP

Time	Gas Meter Reading	ΔP Pitot Reading	Orifice ΔH Actual	Dry Gas Meter Temperature		Stack Temp
				Inlet	Outlet	
min	cubic ft	in H2O	in H2O	deg F	deg F	deg F
0	539.92	0.07	2.70	92	92	80
10		0.09	3.20	94	91	81
20		0.08	3.00	99	92	82
30		0.07	2.70	102	95	86
40		0.09	3.20	103	97	85
50		0.08	3.00	105	93	87
60						
60	626.27					
Ave.	86.35	0.28	2.97	99.17	93.33	83.50

Location American Cement

Run No: 2

Calculations Summary

Cement Silo

Vmstd = 17.647*Vm*Y*(Pbar+ΔH/13.6)Tmave

Vmstd = 67.80 Ft3

Vol H2O Collected = 0.04707*ml H2O

Vm = 0.09 Ft3

% Moisture in Stack = Vw/(Vw+vmstd)

Bwo = 0.14 %

Fd = 1.00

Dry Mole Wt. = 0.44*CO2+0.32*O2+0.28*N2

DMWt = 28.84

Wet Mole Wt = Fd*DMWt+Bwo/100*18

WMWT = 28.82

Ave Velocity=85.49*Cp*SqrtΔP*Sqrt(Ts/DMWT/Ps)

Vsa = 17.84 fps

Ave Stack Flow=1058.82*Vsa*Fd*Area*Ps/Ts

Qsa = 680.54

Iso Ratio=17.316*Vmstd*Tsa/Vsa/Fd/Ps/Dn/Dn/Time

Iso = 95.64 %

gr/DSCF T 0.0154*Mg TSP/Vmstd

TSP= 0.00016 gr/DSCF

Lb/Hr TSP= 0.0001428*60*Qsa*gr/DSCF

TSP= 0.00093 lb/hr

Kramer & Associates, Inc.
Particulates Sampling and Analysis Data

Plant Name: American Cement
Plant Location: Albuquerque, New Mexico
Stack Designation: Cement Silo

Date: 5/20/99
Time: 8:20
Run: 3

Barometric Pressure: 24.96 in Hg
Static Pressure: 0.10 in H2O
Stack Pressure: 24.97 in Hg

Stack Diameter: 12 in
Stack Area: 0.7854

Orsat Analysis Data

Run:	1	2	3	Average
CO2				
CO2 + O2	20.9	20.9	20.9	
O2	20.9	20.9	20.9	20.9

Operating Rate:

Console ID: Anderson
Nozzle Diameter: 0.375
Assumed Moisture: 1 %

Y - Value: 0.983
Cp: 0.85
Calculated ΔP/ΔH Ratio: 1/2.8

Probe Length: 4
ΔH@: 0.997

Leak Check Data

Initial 0.009 cfm @ 10 in Hg
Final 0.005 cfm @ 10 in Hg

Equipment Pressure Drop

ΔP: in H2O

Laboratory Data

Filter ID: AC/C3
Filter Final Weight: 0.7783
Filter Tare Weight: 0.7776
Filter Particulates: 0.0007

Jar No. AC/C3
Beaker Final Weight: 66.5415
Beaker Tare Weight: 66.5407
Beaker Particulates: 0.0008

Acetone Beaker: AC/C3
Total Particulates (mg) 1.5

Moisture Data:

Impinger #1: 101 mL
Impinger #2: 102 mL
Impinger #3: 0 mL
Initial Impinger Water: 200 mL
Net Impinger Water: 3 mL

Final Wt of Silica Gel: 201 g
Initial Wt of Silica Gel: 200 g
Net Water in Silica Gel: 1 mL
Net Impinger Water: 3 mL
Total Water Collected: 4 mL

Kramer & Associates, Inc. TSP

Time	Gas Meter Reading	ΔP Pitot Reading	Orifice ΔH Actual	Dry Gas Meter Temperature Inlet	Dry Gas Meter Temperature Outlet	Stack Temp
min	cubic ft	in H2O	in H2O	deg F	deg F	deg F
0	626.660	0.15	1.80	67	67	60
		0.20	2.40	74	69	65
		0.25	3.00	82	74	66
		0.20	2.40	88	80	68
		0.20	2.40	94	85	74
		0.10	1.20	96	88	74
60	700.59					
Ave.	73.93	0.42	2.20	83.50	77.17	67.83

Location American Cement | Run No: 3

Calculations Summary

Cement Silo

Vmstd = 17.647*Vm*Y*(Pbar+ΔH/13.6)Tmave

Vmstd = 59.63 Ft3

Vol H2O Collected = 0.04707*ml H2O

Vm = 0.19 Ft3

% Moisture in Stack = Vw/(Vw+vmstd)

Bwo = 0.31 %

Fd = 1.00

Dry Mole Wt. = 0.44*CO2+0.32*O2+0.28*N2

DMWt = 28.84

Wet Mole Wt = Fd*DMWt+Bwo/100*18

WMWT = 28.80

Ave Velocity=85.49*Cp*SqrtΔP*Sqrt(Ts/DMWT/Ps)

Vsa = 26.41 fps

Ave Stack Flow=1058.82*Vsa*Fd*Area*Ps/Ts

Qsa = 1035.55

Iso Ratio=17.316*Vmstd*Tsa/Vsa/Fd/Ps/Dn/Dn/Time

Iso = 98.27 %

gr/DSCF T 0.0154*Mg TSP/Vmstd

TSP= 0.00039 gr/DSCF

Lb/Hr TSP= 0.0001428*60*Qsa*gr/DSCF

TSP= 0.0034 lb/hr

Kramer & Associates, Inc.

Particulates Sampling and Analysis Data

Plant Name: American Cement
Plant Location: Albuquerque, New Mexico
Stack Designation: Cement Silo

Date: 5/19/99
Time: 0900
Run: 1

Barometric Pressure: 24.96 in Hg
Static Pressure: 0.1 in H2O
Stack Pressure: in Hg
Ambient Temp: 80 deg F
Stack Diameter: 12 in
Plant Operator:

Orsat Analysis Data			
Run:	1	2	3
CO2			
CO2 + O2			
O2	20.9	20.9	20.9

Operating Load/Rate:

Console ID: ANDERSON
Nozzle Diameter: 0.50
Assumed Moisture: 1 %
Y - Value: 0.987
Cp: 0.85
Calculated ΔP/ΔH Ratio: 0.03/1.15
Probe Length: 3'
ΔH@: 1.0

Leak Check Data

Initial 0.003 cfm @ 10 in Hg
Final 0.005 cfm @ 10 in Hg

Equipment Pressure Drop

ΔP: in H2O

Laboratory Data

Filter ID: AC/C1
Acetone Jar: AC/C1
Acetone Beaker: AC/C1
Filter Final Weight: 0.7857
Filter Tare Weight: 0.7853
Filter Particulates: 0.0004
Beaker Final Weight: 65.2241
Beaker Tare Weight: 65.2203
Beaker Particulates: 0.0038
Total Particulates (mg) 4.2

Moisture Data:

Impinger #1: 100 mL
Impinger #2: 102 mL
Impinger #3: 0 mL
Initial Impinger Water: 200 mL
Net Impinger Water: 2 mL
Final Wt of Silica Gel: 201 g
Initial Wt of Silica Gel: 200 g
Net Water in Silica Gel: 1 mL
Net Impinger Water: 2 mL
Total Water Collected: 3 mL

Kramer & Associates, Inc.

Particulates Sampling Data

Points #: 6 Location: American Cement

Run: 1 Stack: Cement Silo

Point	Time	Gas Meter Reading	ΔP Pitot Reading	Orifice ΔH Actual	Dry Gas Meter Temperature Inlet	Dry Gas Meter Temperature Outlet	Stack Temp	Oven Temp	Impinger Temp	Probe Temp	Vacuum Gauge
	min	cubic ft	in H2O	in H2O	deg F	deg F	deg F	deg F	deg F	deg F	in Hg
1	0	460.11	0.03	1.15	79	75	78	300	60	100	1
2	10	469.00	0.19	3.8	83	77	87	300	48	100	6
3	20	485.50	0.08	2.3	90	81	89	290	50	100	2
4	30	498.70	0.07	2.5	94	88	92	290	51	100	2
5	40	512.20	0.07	2.8	98	92	89	290	51	100	2
6	50	526.60	0.06	2.3	101	95	90	280	49	100	2
	60	539.73									

Kramer & Associates, Inc.

Particulates Sampling and Analysis Data

Plant Name: American Cement
Plant Location: Albuquerque, New Mexico
Stack Designation: Cement Silo

Date: 5/19/99
Time: 11:00
Run: 2

Barometric Pressure: 24.96 in Hg
Static Pressure: in H2O
Stack Pressure: in Hg
Ambient Temp: 85 deg F
Stack Diameter: 12 in
Plant Operator:

Orsat Analysis Data			
Run:	1	2	3
CO2			
CO2 + O2	A	IR	
O2			

Operating Load/Rate:

Console ID: ANDERSON
Nozzle Diameter: 0.5
Assumed Moisture: 1 %

Y - Value: 0.987
Cp: 0.85
Calculated ΔP/ΔH Ratio:

Probe Length: 4
ΔH@: 0.997

Leak Check Data

Initial 0.009 cfm @ 12 in Hg
Final 0.005 cfm @ 12 in Hg

Equipment Pressure Drop

ΔP: in H2O

Laboratory Data

Filter ID: AC/C2
Filter Final Weight: ~~0.790~~ 0.7853
Filter Tare Weight: 0.7852
Filter Particulates:

Acetone Jar: AC/C2
Beaker Final Weight: 105.8252
Beaker Tare Weight: 105.8248
Beaker Particulates: 0.0004

Acetone Beaker: AC/C2

Total Particulates (mg) 0.7

Moisture Data:

Impinger #1: 101 mL
Impinger #2: 100 mL
Impinger #3: 0 mL
Initial Impinger Water: 200 mL
Net Impinger Water: 1 mL

Final Wt of Silica Gel: 201 g
Initial Wt of Silica Gel: 200 g
Net Water in Silica Gel: 1 mL
Net Impinger Water: 1 mL
Total Water Collected: 2 mL

Kramer & Associates, Inc.

Particulates Sampling Data

Points #: 6 Location: American Cement

Run: 2 Stack: Cement Silo

Point	Time	Gas Meter Reading	ΔP Pitot Reading	Orifice ΔH Actual	Dry Gas Meter Temperature Inlet	Dry Gas Meter Temperature Outlet	Stack Temp	Oven Temp	Impinger Temp	Probe Temp	Vacuum Gauge
	min	cubic ft	in H2O	in H2O	deg F	deg F	deg F	deg F	deg F	deg F	in Hg
1	0	539.92	0.07	2.7	92	92	81 ~~168~~	160	58	100	5
2	10	553.40	0.09	3.2	94	91	81	165	64	100	5
3	20	568.10	0.08	3.0	99	92	82	170	64	180	4
4	30	580.00	0.07	2.7	102	95	86	180	60	100	4
5	40	596.60	0.09	3.2	103	97	85	190	61	108	4
6	50	611.71	0.08	3.0	105	94	87	198	58	180	4
	60	626.25									

Kramer & Associates, Inc.

Particulates Sampling and Analysis Data

Plant Name: American Cement

Plant Location: Albuquerque, New Mexico

Stack Designation: Cement Silo

Date: 5/20/99

Time: 0820

Run: 3

Barometric Pressure: 25.0 in Hg

Static Pressure: in H2O

Stack Pressure: in Hg

Ambient Temp: deg F

Stack Diameter: 12 in

Plant Operator:

Orsat Analysis Data			
Run:	1	2	3
CO2			
CO2 + O2	Air		
O2			

Operating Load/Rate:

Console ID: Anderson

Nozzle Diameter: 0.250

Assumed Moisture: 1 %

Y - Value:

Cp: 0.85

Probe Length: 3

ΔH@: 1.0

Calculated ΔP/ΔH Ratio: .03/1.15

Leak Check Data

Initial	0.009	cfm @	10	in Hg
Final	0.005	cfm @	10	in Hg

Equipment Pressure Drop

ΔP: 0.1/1.2 in H2O

Laboratory Data

Filter ID: AC/C3

Acetone Jar: AC/C3

Acetone Beaker: AC/C3

Filter Final Weight: 0.7783

Filter Tare Weight: 0.7776

Filter Particulates: 0.0007

Beaker Final Weight:

Beaker Tare Weight:

Beaker Particulates:

Total Particulates (mg):

Moisture Data:

Impinger #1: 101 mL

Impinger #2: 102 mL

Impinger #3: 0 mL

Initial Impinger Water: 200 mL

Net Impinger Water: 3 mL

Final Wt of Silica Gel: 201 g

Initial Wt of Silica Gel: 200 g

Net Water in Silica Gel: 1 mL

Net Impinger Water: 3 mL

Total Water Collected: 4 mL

Kramer & Associates, Inc.

Particulates Sampling Data

Points #:	6	Location:	American Cement
Run:	# 3	Stack:	Cement Silo

Point	Time	Gas Meter Reading	ΔP Pitot Reading	Orifice ΔH Actual	Dry Gas Meter Temperature Inlet	Dry Gas Meter Temperature Outlet	Stack Temp	Oven Temp	Impinger Temp	Probe Temp	Vacuum Gauge
	min	cubic ft	in H2O	in H2O	deg F	deg F	deg F	deg F	deg F	deg F	in Hg
1	0	626.66	0.15	1.8	67	67	60	250	60	100	2
2	10	637.30	0.2	2.4	74	69	65	240	48	100	3
3	20	650.60	0.25	3.0	82	74	66	235	41	100	3
4	30	664.60	0.20	2.4	88	80	68	230	42	100	3
5	40	677.57	0.20	2.4	90	85	74	220	43	100	3
6	50	691.00	0.10	1.2	96	88	74	220	45	100	1
	60	700.59									

Part 1

Cement Silo Baghouse Test Data and Calculations Summaries

Part 2

Fly Ash Baghouse Field Test Data and Calculations Summaries

Kramer & Associates, Inc.
Particulates Sampling and Analysis Data

Plant Name: American Cement
Plant Location: Albuquerque, New Mexico
Stack Designation: Fly Ash Silo

Date: 5/20/99
Time: 10:00
Run: 1

Barometric Pressure: 25 in Hg
Static Pressure: 0.10 in H2O
Stack Pressure: 25.01 in Hg

Stack Diameter: 12 in
Stack Area: 0.7854

Orsat Analysis Data

Run:	1	2	3	Average
CO2				0
CO2 + O2	20.9	20.9	20.9	
O2	20.9	20.9	20.9	20.9

Operating Rate:

Console ID: Anderson
Nozzle Diameter: 0.313
Assumed Moisture: 1 %

Y - Value: 0.983
Cp: 0.85
Calculated ΔP/ΔH Ratio:

Probe Length: 4
ΔH@: 0.997

Leak Check Data

Initial 0.006 cfm @ 12 in Hg
Final 0.005 cfm @ 10 in Hg

Equipment Pressure Drop

ΔP: in H2O

Laboratory Data

Filter ID: AC/F1
Jar No. AC/C1
Acetone Beaker: AC/C1

Filter Final Weight: 0.8183
Filter Tare Weight: 0.7966
Filter Particulates: 0.0217

Beaker Final Weight: 82.8746
Beaker Tare Weight: 82.8680
Beaker Particulates: 0.0066

Total Particulates (mg) 28.3

Moisture Data:

Impinger #1: 102 mL
Impinger #2: 102 mL
Impinger #3: 0 mL
Initial Impinger Water: 200 mL
Net Impinger Water: 4 mL

Final Wt of Silica Gel: 201 g
Initial Wt of Silica Gel: 200 g
Net Water in Silica Gel: 1 mL
Net Impinger Water: 4 mL
Total Water Collected: 5 mL

Kramer & Associates, Inc. TSP

Location American Cement | Run No: 1

Time	Gas Meter Reading	ΔP Pitot Reading	Orifice ΔH Actual	Dry Gas Meter Temperature Inlet	Dry Gas Meter Temperature Outlet	Stack Temp
min	cubic ft	in H2O	in H2O	deg F	deg F	deg F
0	701.00	0.50	2.90	94	84	71
10		0.50	2.90	90	84	70
20		0.40	2.30	94	86	77
30		0.30	1.70	98	90	80
40		0.20	1.15	100	94	76
50		0.20	1.15	100	95	74
60						
60	772.83					
Ave.	71.830	0.58	2.02	96.00	88.83	74.67

Calculations Summary

Fly Ash Silo

Vmstd = 17.647*Vm*Y*(Pbar+ΔH/13.6)Tmave

Vmstd = 56.72 Ft3

Vol H2O Collected = 0.04707*ml H2O

Vm = 0.24 Ft3

% Moisture in Stack = Vw/(Vw+vmstd)

Bwo = 0.41 %

Fd = 1.00

Dry Mole Wt. = 0.44*CO2+0.32*O2+0.28*N2

DMWt = 28.84

Wet Mole Wt = Fd*DMWt+Bwo/100*18

WMWT = 28.79

Ave Velocity=85.49*Cp*SqrtΔP*Sqrt(Ts/DMWT/Ps)

Vsa = 36.41 fps

Ave Stack Flow=1058.82*Vsa*Fd*Area*Ps/Ts

Qsa = 1410.38

Iso Ratio=17.316*Vmstd*Tsa/Vsa/Fd/Ps/Dn/Dn/Time

Iso = 98.53 %

gr/DSCF T 0.0154*Mg TSP/Vmstd

TSP= 0.0077 gr/DSCF

Lb/Hr TSP= 0.0001428*60*Qsa*gr/DSCF

TSP= 0.093 lb/hr

Kramer & Associates, Inc.

Particulates Sampling and Analysis Data

Plant Name: American Cement
Plant Location: Albuquerque, New Mexico
Stack Designation: Cement Silo

Date: 5/21/99
Time: 7:30
Run: 2

Barometric Pressure: 25 in Hg
Static Pressure: 0.10 in H2O
Stack Pressure: 25.01 in Hg
Stack Diameter: 12 in
Stack Area: 0.7854

Orsat Analysis Data				
Run:	1	2	3	Average
CO2				0
CO2 + O2	20.9	20.9	20.9	
O2	20.9	20.9	20.9	20.9
Operating Rate:				

Console ID: Anderson
Nozzle Diameter: 0.313
Assumed Moisture: 1 %

Y - Value: 0.983
Cp: 0.85
Calculated ΔP/ΔH Ratio: 1/2.9

Probe Length: 4
ΔH@: 0.997

Leak Check Data

Initial 0.01 cfm @ 12 in Hg
Final 0.008 cfm @ 12 in Hg

Equipment Pressure Drop

ΔP: in H2O

Laboratory Data

Filter ID: AC/F2
Filter Final Weight: 1.0406
Filter Tare Weight: 0.7833
Filter Particulates: 0.2573

Jar No. AC/F2
Beaker Final Weight: 83.2932
Beaker Tare Weight: 83.2467
Beaker Particulates: 0.0465

Acetone Beaker: AC/F2
Total Particulates (mg) 303.8

Moisture Data:

Impinger #1: 101 mL
Impinger #2: 100 mL
Impinger #3: 0 mL
Initial Impinger Water: 200 mL
Net Impinger Water: 1 mL

Final Wt of Silica Gel: 201 g
Initial Wt of Silica Gel: 200 g
Net Water in Silica Gel: 1 mL
Net Impinger Water: 1 mL
Total Water Collected: 2 mL

Kramer & Associates, Inc. TSP

Location American Cement | Run No: 2

Calculations Summary
Cement Silo

Time	Gas Meter Reading	ΔP Pitot Reading	Orifice ΔH Actual	Dry Gas Meter Temperature Inlet	Dry Gas Meter Temperature Outlet	Stack Temp
min	cubic ft	in H2O	in H2O	deg F	deg F	deg F
0	773.03	0.55	3.30	60	60	67
10		0.35	2.10	69	63	79
20		0.30	1.80	75	68	87
30		0.40	2.40	79	73	87
40		0.25	1.50	84	78	83
50		0.35	2.10	87	81	87
60						
60	846.33					
Ave.	73.30	0.60	2.20	75.67	70.50	81.67

Vmstd = 17.647*Vm*Y*(Pbar+ΔH/13.6)Tmave
Vmstd = 60.02 Ft3

Vol H2O Collected = 0.04707*ml H2O
Vm = 0.09 Ft3

% Moisture in Stack = Vw/(Vw+vmstd)
Bwo = 0.16 %
Fd = 1.00

Dry Mole Wt. = 0.44*CO2+0.32*O2+0.28*N2
DMWt = 28.84
Wet Mole Wt = Fd*DMWt+Bwo/100*18
WMWT = 28.82

Ave Velocity=85.49*Cp*SqrtΔP*Sqrt(Ts/DMWT/Ps)
Vsa = 37.85 fps

Ave Stack Flow=1058.82*Vsa*Fd*Area*Ps/Ts
Qsa = 1450.94

Iso Ratio=17.316*Vmstd*Tsa/Vsa/Fd/Ps/Dn/Dn/Time
Iso = 101.33 %

gr/DSCF T 0.0154*Mg TSP/Vmstd
TSP= 0.078 gr/DSCF
Lb/Hr TSP= 0.0001428*60*Qsa*gr/DSCF
TSP= 0.97 lb/hr

Kramer & Associates, Inc.

Particulates Sampling and Analysis Data

Plant Name: American Cement
Plant Location: Albuquerque, New Mexico
Stack Designation: Fly Ash Silo

Date: 5/21/99
Time: 9:30
Run: 3

Barometric Pressure: 25 in Hg
Static Pressure: 0.10 in H_2O
Stack Pressure: 25.01 in Hg

Stack Diameter: 12 in
Stack Area: 0.7854

Orsat Analysis Data

Run:	1	2	3	Average
CO_2				
$CO_2 + O_2$	20.9	20.9	20.9	
O_2	20.9	20.9	20.9	20.9

Operating Rate:

Console ID: Anderson
Nozzle Diameter: 0.313
Assumed Moisture: 1 %
Y - Value: 0.983
Cp: 0.85
Calculated ΔP/ΔH Ratio: 1/2.8
Probe Length: 8
ΔH@: 0.997

Leak Check Data

Initial	0.009	cfm @	12	in Hg
Final	0.008	cfm @	15	in Hg

Equipment Pressure Drop

ΔP: in H_2O

Laboratory Data

Filter ID: AC/F3
Jar No. AC/F3
Acetone Beaker: AC/F3

Filter Final Weight:	1.0275	Beaker Final Weight:	65.3856
Filter Tare Weight:	0.7849	Beaker Tare Weight:	65.2214
Filter Particulates:	0.2426	Beaker Particulates:	0.1642

Total Particulates (mg): 406.8

Moisture Data:

Impinger #1:	102	mL	Final Wt of Silica Gel:	201	g
Impinger #2:	100	mL	Initial Wt of Silica Gel:	200	g
Impinger #3:	0	mL	Net Water in Silica Gel:	1	mL
Initial Impinger Water:	200	mL	Net Impinger Water:	2	mL
Net Impinger Water:	2	mL	Total Water Collected:	3	mL

Kramer & Associates, Inc. TSP

Location American Cement | Run No: 3

Calculations Summary

Fly Ash Silo

Time	Gas Meter Reading	ΔP Pitot Reading	Orifice ΔH Actual	Dry Gas Meter Temperature Inlet	Dry Gas Meter Temperature Outlet	Stack Temp
min	cubic ft	in H2O	in H2O	deg F	deg F	deg F
0	846.500	0.35	2.10	71	71	77
		0.40	2.40	77	77	80
		0.45	2.70	78	78	83
		0.30	1.80	80	80	84
		0.35	2.10	81	81	83
		0.35	2.10	80	80	82
60	919.91					
Ave.	73.41	0.60	2.20	77.83	77.83	81.50

Vmstd = 17.647*Vm*Y*(Pbar+ΔH/13.6)Tmave

Vmstd = 59.58 Ft3

Vol H2O Collected = 0.04707*ml H2O

Vm = 0.14 Ft3

% Moisture in Stack = Vw/(Vw+vmstd)

Bwo = 0.24 %

Fd.= 1.00

Dry Mole Wt. = 0.44*CO2+0.32*O2+0.28*N2

DMWt = 28.84

Wet Mole Wt = Fd*DMWt+Bwo/100*18

WMWT = 28.81

Ave Velocity=85.49*Cp*SqrtΔP*Sqrt(Ts/DMWT/Ps)

Vsa = 38.07 fps

Ave Stack Flow=1058.82*Vsa*Fd*Area*Ps/Ts

Qsa = 1458.59

Iso Ratio=17.316*Vmstd*Tsa/Vsa/Fd/Ps/Dn/Dn/Time

Iso = 100.06 %

gr/DSCF T 0.0154*Mg TSP/Vmstd

TSP= 0.105 gr/DSCF

Lb/Hr TSP= 0.0001428*60*Qsa*gr/DSCF

TSP= 1.31 lb/hr

Kramer & Associates, Inc.

Particulates Sampling and Analysis Data

Plant Name: American [illegible]

Plant Location:

Stack Designation: Fly Ash

Date: [illegible]

Time: [illegible]

Run: # 1

Barometric Pressure: 25.0 in Hg

Static Pressure: in H2O

Stack Pressure: in Hg

Ambient Temp: deg F

Stack Diameter: 12 in

Plant Operator:

Orsat Analysis Data			
Run:	1	2	3
CO2			
CO2 + O2	Air		
O2			

Operating Load/Rate:

Console ID: Anderson

Nozzle Diameter: 0.313

Assumed Moisture: 1 %

Y - Value: 0 997

Cp: 0.85

Probe Length: 3'

ΔH@: 0 997

Calculated ΔP/ΔH Ratio: 1.0/1.2

Leak Check Data

Initial	0.006	cfm @	12	in Hg
Final	0.005	cfm @	10	in Hg

Equipment Pressure Drop

ΔP: in H2O

Laboratory Data

Filter ID: AC-F1

Acetone Jar:

Acetone Beaker:

Total Particulates Collected: mg

Moisture Data:

Impinger #1: 102 mL

Impinger #2: 102 mL

Impinger #3: 0 mL

Initial Impinger Water: 200 mL

Net Impinger Water: 4 mL

Final Wt of Silica Gel: 201 g

Initial Wt of Silica Gel: 200 g

Net Water in Silica Gel: 1 mL

Net Impinger Water: 4 mL

Total Water Collected: 5 mL

Kramer & Associates, Inc.

Particulates Sampling Data

Points #: 6
Run: 1
Location: [illegible]
Stack: [illegible]

Point	Time	Gas Meter Reading	ΔP Pitot Reading	Orifice ΔH Actual	Dry Gas Meter Temperature		Stack Temp	Oven Temp	Impinger Temp	Probe Temp	Vacuum Gauge
					Inlet	Outlet					
	min	cubic ft	in H2O	in H2O	deg F	deg F	deg F	deg F	deg F	deg F	in Hg
1	0	701.00	0.50	2.9	84	84	71	160	66	100	6
2	10	714.30	0.50	2.9	90	84	70	212	60	120	6
3	20	728.72	0.40	2.3	94	86	77	250	56	100	5
4	30	742.20	0.30	1.7	98	90	80	260	56	100	5
5	40	753.50	0.20	1.15	100	90	76	255	58	100	4
6	50	763.10	0.20	1.15	102	95	74	240	60	100	
	60	772.83									

Kramer & Associates, Inc.

Particulates Sampling and Analysis Data

Plant Name: American Cement
Plant Location: Albuquerque
Stack Designation: Fly Ash

Date: 5/21/03
Time: 0730
Run: # 3

Barometric Pressure: 25.0 in Hg
Static Pressure: in H2O
Stack Pressure: in Hg
Ambient Temp: deg F
Stack Diameter: 12 in
Plant Operator:

Orsat Analysis Data

Run:	1	2	3
CO2			
CO2 + O2			
O2			

Operating Load/Rate:

Console ID: Anderson
Nozzle Diameter: 0.313
Assumed Moisture: 1 %

Y - Value: 0.987
Cp: 0.85
Calculated ΔP/ΔH Ratio:

Probe Length: 3
ΔH@: 0.997

Leak Check Data

Initial	0.01	cfm @	[illegible]	in Hg
Final	0.008	cfm @	12	in Hg

Equipment Pressure Drop

ΔP: 0.1/0.6 in H2O

Laboratory Data

Filter ID: AC/F2
Filter Final Weight:
Filter Tare Weight:
Filter Particulates:

Acetone Jar: AC/F2
Beaker Final Weight:
Beaker Tare Weight:
Beaker Particulates:

Acetone Beaker:
Total Particulates (mg)

Moisture Data:

Impinger #1: 101 mL
Impinger #2: 100 mL
Impinger #3: 0 mL
Initial Impinger Water: 200 mL
Net Impinger Water: 1 mL

Final Wt of Silica Gel: 201 g
Initial Wt of Silica Gel: 200 g
Net Water in Silica Gel: 1 mL
Net Impinger Water: 1 mL
Total Water Collected: 2 mL

Kramer & Associates, Inc.

Particulates Sampling Data

Points #: 6
Run: #2
Location: American Cannon
Stack: [illegible]

Point	Time	Gas Meter Reading	ΔP Pitot Reading	Orifice ΔH Actual	Dry Gas Meter Temperature		Stack Temp	Oven Temp	Impinger Temp	Probe Temp	Vacuum Gauge
					Inlet	Outlet					
	min	cubic ft	in H2O	in H2O	deg F	deg F	deg F	deg F	deg F	deg F	in Hg
1	0	775.03	0.55	3.3	60	62	67	226	63	190	2
2	10	787.63	0.35	2.1	69	63	79	[illegible]	55	190	1
3	20	799.66	0.30	1.7	75	68	87	215	58	190	1
4	30	811.11	0.40	2.4	79	73	87	220	60	190	1
5	40	823.20	0.25	1.6	86	78	83	[illegible]	61	190	1
6	50	834.14	0.35	2.1	87	81	87	226	64	190	1
	60	846.33									

Kramer & Associates, Inc.

Particulates Sampling and Analysis Data

Plant Name: American Cement
Plant Location: A.V.O
Stack Designation: Fly Ash

Date: 5/2/09
Time: 0930
Run: #3

Barometric Pressure: 25.0 in Hg
Static Pressure: in H2O
Stack Pressure: in Hg
Ambient Temp: deg F
Stack Diameter: 12 in
Plant Operator:

Orsat Analysis Data

Run:	1	2	3
CO2			
CO2 + O2	AIR		
O2			

Operating Load/Rate:

Console ID: Anderson
Nozzle Diameter: 0.313
Assumed Moisture: 1 %

Y - Value: 0.987
Cp: 0.85
Calculated ΔP/ΔH Ratio: 11.6

Probe Length: 3
ΔH@: 1.997

Leak Check Data

Initial	0.009	cfm @	12	in Hg
Final	0.008	cfm @	15	in Hg

Equipment Pressure Drop

ΔP: in H2O

Laboratory Data

Filter ID: AC/F3
Acetone Jar: AC/F3
Acetone Beaker: AC/F3

Filter Final Weight:
Filter Tare Weight:
Filter Particulates:

Beaker Final Weight:
Beaker Tare Weight:
Beaker Particulates:

Total Particulates (mg)

Moisture Data:

Impinger #1: 102 mL
Impinger #2: 100 mL
Impinger #3: 0 mL
Initial Impinger Water: 200 mL
Net Impinger Water: 2 mL

Final Wt of Silica Gel: 201 g
Initial Wt of Silica Gel: 200 g
Net Water in Silica Gel: 1 mL
Net Impinger Water: 2 mL
Total Water Collected: 3 mL

Kramer & Associates, Inc.

Particulates Sampling Data

Points #: 6
Run: #3
Location: American Cent.
Stack: Fly Ash

Point	Time	Gas Meter Reading	ΔP Pitot Reading	Orifice ΔH Actual	Dry Gas Meter Temperature Inlet	Dry Gas Meter Temperature Outlet	Stack Temp	Oven Temp	Impinger Temp	Probe Temp	Vacuum Gauge
	min	cubic ft	in H2O	in H2O	deg F	deg F	deg F	deg F	deg F	deg F	in Hg
1	0	846.50	0.35	2.1	71	71	77	158	65	100	5
2	10	858.33	0.40	2.4	77	73	80	192	60	100	6
3	20	871.17	0.45	2.7	78	74	83	220	60	100	7
4	30	884.58	0.30	1.8	80	75	84	228	55	100	6
5	40	890.00	0.35	2.1	81	78	83	235	61	100	7
6	50	908.01	0.35	2.1	80	78	82	249	57	100	7
	60	919.91									

ACETONE WASH AND FILTER WEIGHT RECORDS

FACILITY: American Cement
TESTING DATES: 5/19/99

DATE OF TARE WEIGHING: 5/18/99 WEIGHED BY: BW ✓
DATE OF FINAL WEIGHING: 5/21/99 WEIGHED BY: BW

ID NO.	TARE WT. (grams)	FINAL WT. 1 (grams)	FINAL WT. 2 (grams)	NET WT (mg)
AC/C1	0.7853	0.7857		0.4
AC/C2	0.7852	0.7855		0.3
AC/C3	0.7776	0.7783		0.7
AC/F1	0.7966	0.8183		21.7
AC/F2	0.7833	1.0406		257.3
AC/F3	0.7849	1.0275		242.6
AC/C1	105.2203	105.2241		3.8
AC/C2	105.8648	105.8652		0.4
AC/C3	106.5407	106.5415		0.8
AC/F1	82.8680	82.8746		6.6
AC/F2	83.2467	83.2932		46.5
AC/F3	165.2214	165.3856		164.2

W
A
S
H

Appendix

Equipment Calibrations

KRAMER & ASSOCIATES INC.

DRY METER AND ORIFICE CALIBRATION DATA

DATE: 4/5/99 **LOCATION:** Kramer & Assoc. Lab

BAROMETRIC PRESSURE: 24.92 in. Hg **Console ID:** Anderson

WET METER SER. #: 11AM9

DRY METER SER. #: ____

Orifice Setting ΔH	Metered Gas Volume		Meter Temp. F		Metering Time Minutes t	Accuracy Ratio G*	Orifice Coefficient ΔH@
	Wet Test Vw	Dry Vd	Wet Test Tw	Dry (avg.) Td			
0.5	11.54	11.85	60.9	69.5	20	0.988	0.98
0.5	11.54	11.9	61	72.8	20	0.990	0.97
0.5	11.63	11.87	61.9	65.5	20	0.985	0.97
0.75	14.15	14.52	61.5	68.3	20	0.985	0.98
0.75	14.08	14.6	61.5	74.7	20	0.987	0.98
0.75	14.76	15.44	61.7	77.7	21	0.983	0.98
1.0	12.06	12.62	61.7	78.5	15	0.983	0.99
1.0	12.06	12.65	61.7	79.1	15	0.982	0.99
1.0	12.04	12.63	61.9	79.2	15	0.982	1.00
1.5	9.78	10.29	61.9	80	10	0.979	1.01
1.5	9.78	10.3	61.9	80.3	10	0.979	1.01
1.5	9.79	10.3	61.9	80.2	10	0.979	1.00
2.0	11.16	11.74	61.9	80.8	10	0.979	1.03
2.0	11.16	11.74	62	81	10	0.979	1.03
2.0	11.15	11.7	61.9	81.5	10	0.983	1.03
					avg.:	0.983	0.997

$$*G= \frac{Vw*Pb*(Td+460)}{Vd*(Pb+(\Delta H/13.6))*Tw+460} \qquad *\Delta H@= \frac{0.0317*\Delta H}{Pb*(Td+460)} * \frac{Tw+460}{Vw} \text{ ^2}$$

G= ratio of accuracy of wet test meter to dry test meter
ΔH@= orifice pressure differential that gives 0.75 cfm of air
at 70 deg. F. and 29.92 inches Hg

CFR 40 CALIBRATION LIMITS: Triplicate runs at each ΔH setting with <0.03 deviation in the accuracy ratio. The accuracy ratio should be between 0.95 and 1.05.

Kramer & Associates

Console Meter Calibrations

Console Id: Anderson
Date: 6.30.98
Ref. Instrument: Omega T-136841
Technician: Buster Wright

Switch Position		Ref. Temp Deg. F.		Meter Temp.F.		Difference *
Oven		50		43		1.4%
Oven		100		93		1.3%
Oven		150		145		0.8%
Oven		200		196		0.6%
Oven		275		273		0.3%
Oven		300		298		0.3%
Oven		350		348		0.2%
Oven		400		397		0.4%
Probe		50		43		1.4%
Probe		100		94		1.1%
Probe		150		145		0.8%
Probe		200		197		0.5%
Probe		225		222		0.4%
Probe		250		248		0.3%
Probe		275		273		0.3%
Probe		300		299		0.1%
Probe		350		348		0.2%
Probe		400		397		0.4%
Stack		50		42		1.6%
Stack		100		94		1.1%
Stack		150		145		0.8%
Stack		200		197		0.5%
Stack		225		223		0.3%
Stack		250		248		0.3%
Stack		275		274		0.1%
Stack		300		299		0.1%
Stack		350		348		0.2%
Stack		400		398		0.2%
Impinger		20		14		1.3%
Impinger		30		24		1.2%
Impinger		40		34		1.2%
Impinger		50		44		1.2%
Impinger		60		54		1.2%
Impinger		70		63		1.3%
Impinger		80		74		1.1%
Impinger		90		84		1.1%
Impinger		100		94		1.1%

* Difference is based on absulute Temperature (R)

KRAMER & ASSOCIATES

TSP NOZZLE CALIBRATION DATA SHEET

NOZZLE	READING 1	READING 2	READING 3	READING 4	READING 5	READING 6	READING 7	READING 8	READING 9	READING 10	AVERAGE
1	0.122	0.123	0.121	0.121	0.122	0.121	0.121	0.122	0.121	0.122	**0.122**
2	0.124	0.125	0.125	0.123	0.125	0.124	0.125	0.124	0.124	0.125	**0.124**
3	0.178	0.178	0.18	0.178	0.18	0.18	0.18	0.18	0.18	0.18	**0.179**
4	0.214	0.211	0.21	0.21	0.212	0.21	0.211	0.21	0.21	0.2	**0.210**
5	0.232	0.232	0.233	0.233	0.24	0.235	0.238	0.238	0.239	0.238	**0.236**
6	0.239	0.238	0.238	0.235	0.235	0.24	0.239	0.238	0.238	0.238	**0.238**
7	0.242	0.244	0.24	0.24	0.239	0.24	0.24	0.238	0.239	0.24	**0.240**
8	0.245	0.244	0.245	0.245	0.245	0.244	0.245	0.245	0.245	0.245	**0.245**
9	0.247	0.247	0.246	0.245	0.247	0.247	0.246	0.247	0.248	0.247	**0.247**
10	0.254	0.255	0.254	0.253	0.254	0.254	0.253	0.254	0.253	0.254	**0.254**
11	0.25	0.252	0.25	0.25	0.25	0.249	0.25	0.25	0.25	0.249	**0.250**
12	0.311	0.311	0.31	0.312	0.315	0.312	0.312	0.312	0.311	0.311	**0.312**
13	0.312	0.312	0.312	0.311	0.313	0.315	0.312	0.312	0.315	0.312	**0.313**
14	0.315	0.315	0.315	0.315	0.315	0.315	0.315	0.315	0.315	0.315	**0.315**
15	0.366	0.365	0.366	0.366	0.366	0.367	0.366	0.366	0.365	0.366	**0.366**
16	0.367	0.367	0.368	0.368	0.366	0.367	0.368	0.367	0.367	0.368	**0.367**
17	0.375	0.374	0.373	0.374	0.375	0.374	0.374	0.375	0.374	0.374	**0.374**
18	0.374	0.373	0.374	0.374	0.373	0.374	0.374	0.374	0.374	0.374	**0.374**
19	0.375	0.375	0.375	0.376	0.375	0.375	0.375	0.376	0.375	0.375	**0.375**
20	0.479	0.479	0.48	0.48	0.48	0.48	0.477	0.478	0.48	0.48	**0.479**
21	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	**0.480**
22	0.49	0.49	0.49	0.49	0.489	0.49	0.49	0.49	0.49	0.49	**0.490**
23	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.499	0.5	0.5	**0.500**
24	0.5	0.5	0.5	0.5	0.5	0.501	0.5	0.5	0.5	0.502	**0.500**

DATE CALIBRATED: 6/29/98
TECHNICIAN: Buster L. Wright

KRAMER & ASSOCIATES
PITOT CALIBRATIONS

DATE: 6/23/97
TECHNICIAN: Buster L. Wright

PROBE #	α1	α2	β1	β2	z	w	x
	degrees	degrees	degrees	degrees	inches	inches	inches
1	1	1	<1	3	0.0625	0.031	0.87
2	<1	<1	2	<1	0.125	0.015	0.75
3	1	<1	<2	2	0.125	0.015	1.114
4	2	1	3	2	0.0625	0.015	1.155
5	3	3	4	3	0.0625	0.018	0.882
6	2	3	2	2	0.125	0.013	0.764

α tolerance <10 degrees
z tolerance <.125 inches
x tolerance >0.750 inches

β tolerance <5 degrees
w tolerance <.0313 inches