STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

October 21, 1983

Dr. E. J. Scharf
Plant Manager
American Cyanamid Company
Milton, Florida 32570

Re: American Cyanamid Application
No. AC 57-72403

Dear Dr. Scharf:

This letter is to to clarify the procedural options which we discussed at our meeting on October 20, 1983, with regard to your application for a construction permit as well as your application for a variance from the opacity standard for small boilers. As we have informed you on previous occasions, the Department cannot issue a construction permit for an air pollution source without reasonable assurances that the source will operate in compliance with all applicable standards. Since such assurances cannot be given in regard to Rule 17-2.600(6)(a), F.A.C., for your project as proposed, a rule change either by way of a variance or a source specific rule revision would be necessary prior to issuance of a permit for your project as currently proposed. In either case, a revision to the State Implementation Plan approved by EPA would also be necessary. At this point, however, the 90-day period for processing the permit application continues to run.

The following options were discussed at the meeting:

1. Withdrawal of your permit application, with reapplication when and if your variance and SIP revision are approved. The Department would waive the permit fee on reapplication if this option is selected;

2. Amendment of your permit application to give reasonable assurance that the project will not violate Department rules. A waiver of the 90-day clock for a sufficient length of time for you to compile the information supporting such an amendment may be necessary;

3. Waiver of the 90-day clock on the permit application until at least July 1, 1984, to allow time for processing of the variance request and, if granted, the SIP revision; or

4. Waiver of the 90-day clock on the permit application until December 14, 1983, to allow you time to consider the staff recommendations on your variance request prior to selection of one of the other options.

If any of these options are selected by American Cyanamid, the Department must receive in writing either the withdrawal, amendment, or signed waiver form no later than 12:00 noon on November 4, 1983. Otherwise, the Department will propose action on the permit application.

If you or your attorney has any further questions concerning these options, please write or call me at (904) 488-1344 or Ms. Nancy Wright, Assistant General Counsel, at (904) 488-9730.

Sincerely,

Steve Smallwood, P.E.
Chief
Bureau of Air Quality Management

SS/NW/ht

CC: Bob Kriegel
Nancy Wright

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

August 10, 1983

Mr. E. J. Scharf, Manager
Santa Rosa Plant
American Cyanamid Company
Milton, Florida 32570

Dear Mr. Scharf:

The Department has received your application for a temporary permit to modify No. 7 boiler at Santa Rosa Plant in Milton, Florida. From the initial review of your application, we determined that additional application fee is required.

The current State rule 17-4.05, Procedure to Obtain Permit; Application, requires $1,000 application fee for any source having potential emissions of more than 100 tons per year of any single pollutant. Your proposed particulate emission rate is 226 tons per year which is larger than 100 tons per year. Therefore, the application fee for this modification should be $1,000. Under the rule in effect prior to July 1982, the fee was $20.

Since your application would require a federal permit, we sent a copy of the application to USEPA Region IV for their review.

As soon as additional application fee ($980) is received, we will resume processing your application. If you have any questions, please call Bill Thomas at (904) 488-1344.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/BK/s

CYANAMID

American Cyanamid Company
Fibers Division
Santa Rosa Plant
Milton, Fla. 32570
Tel. (904) 994-5311

July 7, 1983

Mr. Clair Fancy
Assistant Chief
Bureau of Air Quality Management
Florida Department of Environmental Regulation
2600 Blairstone Road
Tallahassee, Florida 32301

Dear Mr. Fancy:

Attached is a Permit Application to temporarily modify a boiler at American Cyanamid Company's Santa Rosa Plant near Milton, Florida for experimental purposes. The application was prepared by J. E. Sirrine Company, Engineers, of Greenville, South Carolina.

The permit requested would authorize Cyanamid to evaluate an innovative thermal energy technology using domestic, non-petroleum fuel, intended to make our fiber manufacturing operation more competitive with manufacturers in other states and to reduce our reliance on natural gas and/or fuel oil.

A detailed air quality analysis was made and indicated no adverse ambient air quality impact.

In view of the potential positive benefits and absence of adverse air quality impact from this experimental project, we request the Department approve this permit application to modify Boiler #7.

We would appreciate your prompt action on this matter.

Sincerely,

E. J. Scharf

E. J. Scharf
Plant Manager
Santa Rosa Plant

/gg

attachment

cc: Mr. R. V. Kriegel
FDER, Pensacola

Creslan
*CYANAMID TRADEMARK FOR ACRYLIC FIBER

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

July 27, 1983

Mr. James T. Wilburn, Chief
Air Management Branch
Air and Waste Management Division
USEPA, Region IV
345 Courtland Street
Atlanta, Georgia 30365

Re: American Cyanamid Company

Dear Mr. Wilburn:

The Bureau of Air Quality Management has received an application for a temporary permit (one year) from the above referenced company to modify an existing oil and gas fired boiler to evaluate micronized coal as an alternative fuel. The project is expected to run approximately 180 days. The coal will contain 0.9% sulfur and 2.5% ash by weight. There is no control equipment proposed. Also, it is our understanding that the company has already discussed this project with you, Roger Pfaff and Bill Voshell.

Since part of the process would require a federal permit, does USEPA-Region IV consider this project permittable? A copy of the application is enclosed for your review. Please advise us as soon as possible. A written response is requested.

If there are any questions, please write to me at the above address or call me at (904) 488-1344.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/BM/s

cc: E. J. Scharf
N. W. Dunlap, Jr.
R. V. Kriegel
Nancy Wright

Via Telecopier 65: Dr. E. J. Scharf
Santa Rosa Plant

From Farina

American Cyanamid Company
Fibers Division
Wayne, NJ 07470

Martin B. Friedman
Plant Site

July 8, 1983

TO WHOM IT MAY CONCERN:

This will certify that Dr. E. J. Scharf, Plant Manager of American Cyanamid Company's Santa Rosa Plant, is an authorized representative of American Cyanamid Company for the purpose of signing a certain application to modify air pollution point sources.

Very truly yours,

Martin B. Friedman

MBF:FF

J. E. SIRRINE COMPANY

ARCHITECTS ENGINEERS PLANNERS

SIRRINE
ENGINEERS • ARCHITECTS • PLANNERS

June 13, 1983

DER

JUL 11 1983

BAQM

American Cyanamid Company
1801 Cyanamid Road
Milton, Florida 32570

Attention: Mr. Neal Sharitz

Dear Mr. Sharitz:

Enclosed are three (3) copies of the temporary permit application required for approval of the proposed Santa Rosa Coal Fuel Project at Milton, Florida. We appreciate the privilege of preparing this important air permitting document.

Very truly yours,

J. E. SIRRINE COMPANY

N. W. Dunlap, Jr., P. E.

NWDJr:bwh

Enclosures

N. W. DUNLAP, JR. CERTIFICATE No. 22587 STATE OF FLORIDA REGISTERED ENGINEER

J.E. Sirrine Company
Post Office Box 5456, Greenville, South Carolina 29606
Telephone (803)298-6000

SIRRINE

APPLICATION

TO THE

FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

FOR

A TEMPORARY PERMIT TO MODIFY A

BOILER

IN

MILTON, FLORIDA

SIRRINE JOB NO. S-2216

JUNE 13, 1983

J. E. SIRRINE COMPANY
ENGINEERS
SOUTH CAROLINA DIVISION
GREENVILLE, SOUTH CAROLINA

SIRRINE

TABLE OF CONTENTS

SUMMARY

SIRRINE

SUMMARY

American Cyanamid proposes to modify an existing oil and gas-fired boiler to evaluate micronized coal as an alternative fuel. This will be an experimental project which is expected to last less than 180 days. After completing this project, Cyanamid will determine whether the results justify modification on a permanent basis.

Considering the temporary nature and technical uncertainties of this project, Cyanamid is proposing to minimize pollutant emissions by use of low sulfur and low ash coal. This will necessitate the need of a temporary one-year variance of the opacity limitation in order to permit the project.

An air quality analysis was performed to assess the impact of these proposed pollutant levels. Four years of air modeling with worst case boiler conditions and Pensacola, Florida, meteorological data were used to determine the temporary ambient air quality. These concentrations were also compared to an indicated fine particulate ambient air standard which might be proposed in the future by the U. S. Environmental Protection Agency. No violations of any ambient air quality standard were predicted by the study.

Because the study predicts no violations of the ambient air quality standards, Cyanamid requests approval of this permit application. If Cyanamid decides to modify on a permanent basis, they will comply with all environmental regulations.

SOURCE DESCRIPTION

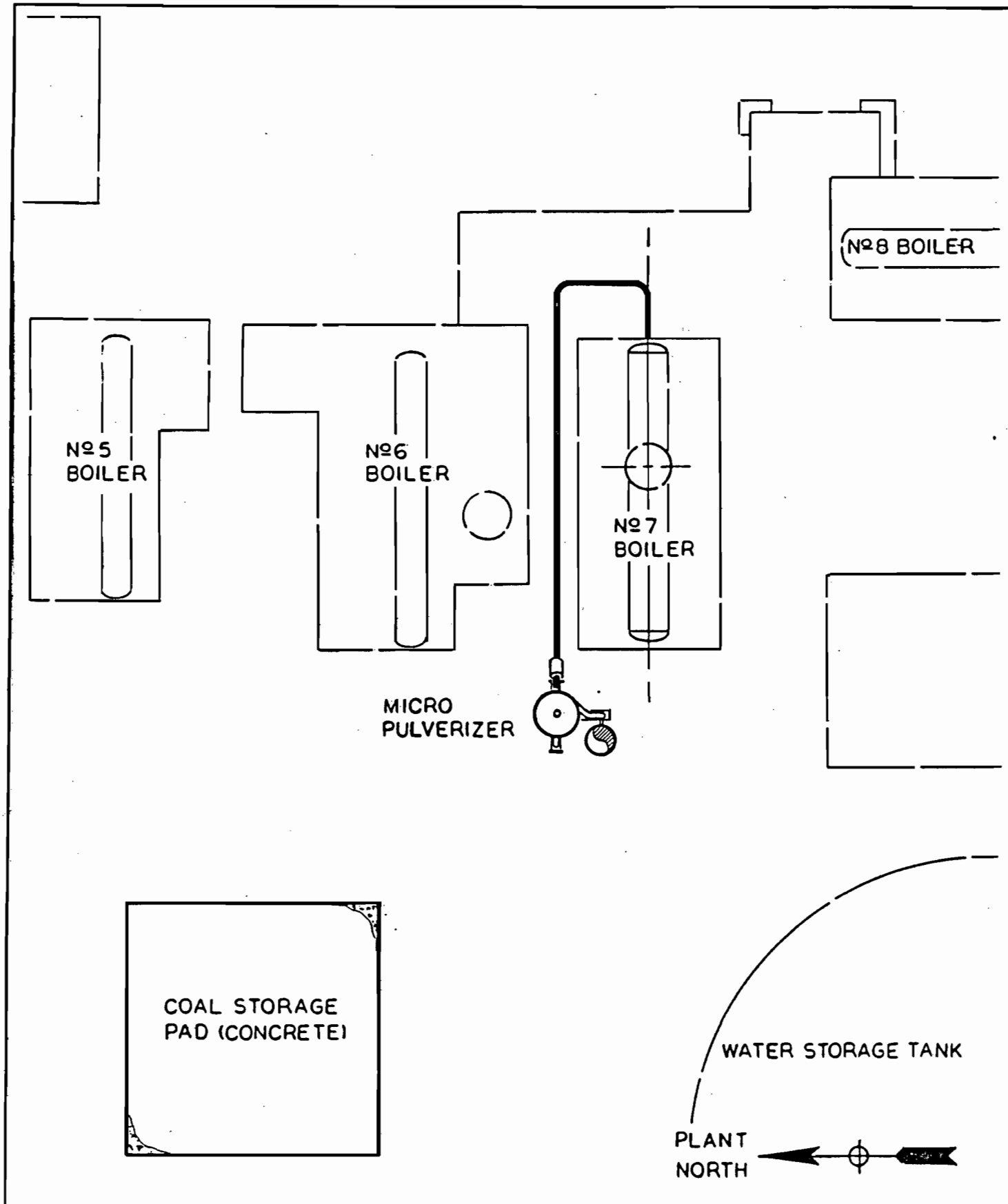
SIRRINE

SOURCE DESCRIPTION

A. Detailed Description of the Project

Cyanamid proposes to modify Boiler No. 7 at their Santa Rosa plant in Milton, Florida. This boiler is a 22M Erie City Keystone, shop assembled package water tube steam generator. It has a continuous capacity of 115,000 pounds of steam per hour when operating at 650 pounds pressure at the superheater outlet with a steam temperature of 750°F based on natural gas as the fuel. The boiler, installed in 1970, is capable of a maximum rating of 135,000 pounds of steam per hour which is equal to 176.1 million BTU per hour input.

The proposed modifications for this project include the installation of a coal micro-pulverizer with a small coal bunker, a new coal-fired burner assembly, and the possible addition of new ash doors on the boiler, and possible more soot blowers. Drawing SK-1 depicts the proposed general arrangement and Drawing SK-2 is a flow diagram of Boiler No. 7 firing micronized coal. The coal will be brought to the plant site by trucks and stored near the boiler. A front-end loader will convey the coal from storage to the coal bunker feeding the pulverizer. Coal storage will be on a concrete pad, with any run-off draining to the chemical sewer. The chemical sewer discharges to a waste water treatment system operated under State and Federal Permits. All requirements of these permits will be maintained. The maximum size of the coal pile will be 400 tons. Fugitive dust emissions will be minimized by the application of water when necessary.



GENERAL ARRANGEMENT MICRONIZED COAL FIRING AMERICAN CYANAMID CO. SANTA ROSA PLANT MILTON, FLORIDA

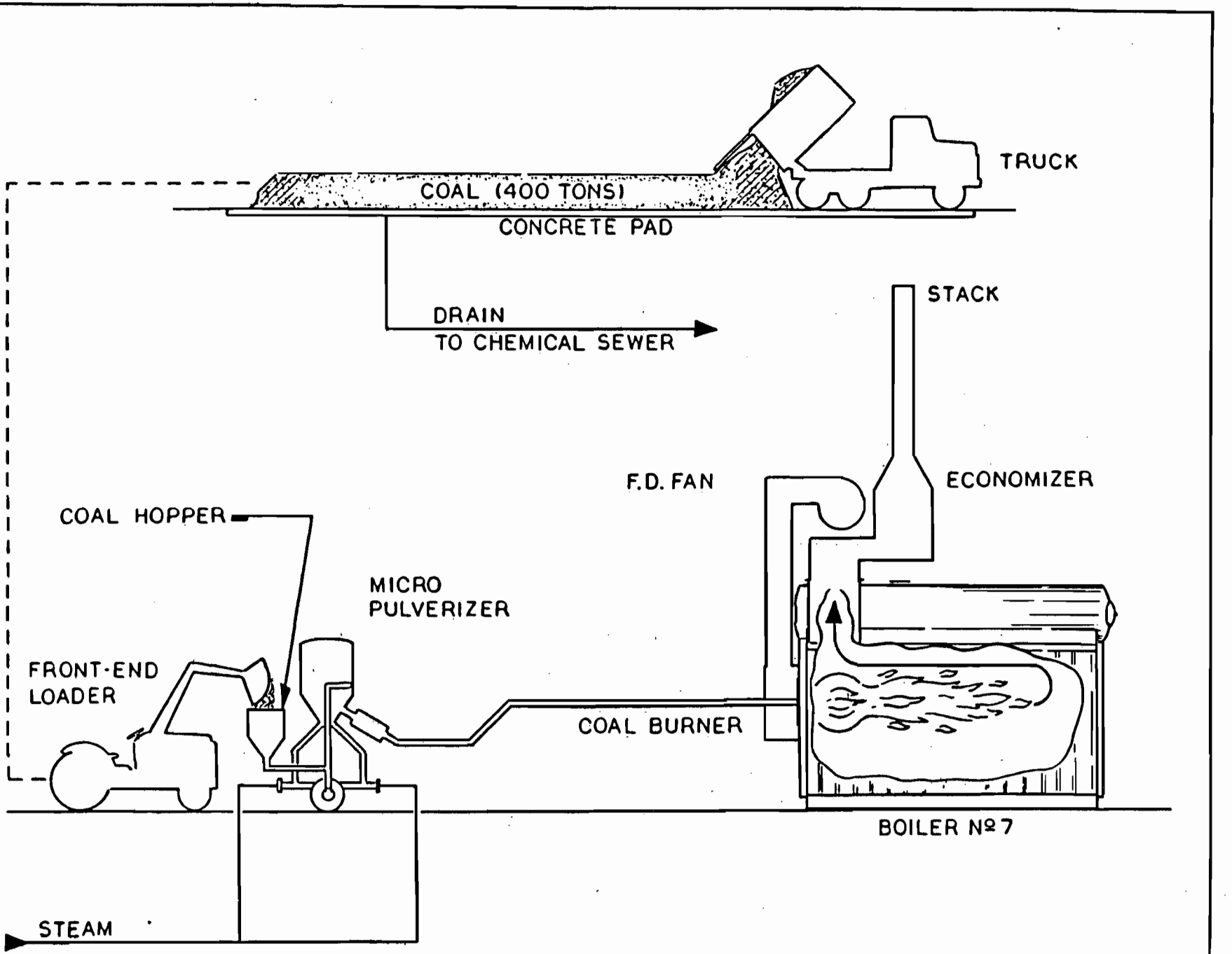
J. E. SIRRINE COMPANY
ARCHITECTS ENGINEERS PLANNERS
GREENVILLE, SOUTH CAROLINA

S-2216

DR.	W. YEARY
CH.	P. NEIL
SCALE	NONE
DATE	6-17-83
FILE NO.	–
DWG. NO.	SK-1

MAY 77 — JES 17

FLOW DIAGRAM
MICRONIZED COAL FIRING
AMERICAN CYANAMID CO.
SANTA ROSA PLANT
MILTON, FLORIDA



J. E. SIRRINE COMPANY
GREENVILLE, SOUTH CAROLINA

S-2216

DR. W.YEARY	
CH. P. NEIL	
SCALE NONE	
DATE 6-17-83	
FILE NO. -	
DWG. NO. SK-2	

SOURCE DESCRIPTION - continued

A. Detailed Description of the Project - continued

The technical considerations in converting a package boiler designed for natural gas to coal firing are numerous (refer to CE Report in Appendix A). Boilers are designed for a specific fuel to optimize their operation and efficiency. Natural gas burns very rapidly compared to conventional pulverized coal. Therefore, less furnace volume is required for combustion of natural gas. The difference in design criteria for these two fuels is significant. Table 1 lists the major design parameters that the boiler manufacturers use in their designs. For a unit designed for gas, the reduction in capacity in going to pulverized coal firing can amount to 60 to 70 percent. The result of conventional coal conversion of a shop assembled, gas designed boiler is that the project would be uneconomical and likely inoperable.

Micronized coal is a possible solution to these design limitations (refer to B & W Report in Appendix A). The difference between micronized and pulverized coal is their respective particle size distribution. Conventional pulverized coal has a size distribution in which 70 percent has a maximum size of 74 microns, 28 percent between 74-300 microns, and 2 percent larger than 300 microns. Micronized coal particles have a maximum size of 44 microns and an average size equal to or less than 10 microns.

SIRRINE

TABLE 1

BOILER DESIGN CRITERIA

	Natural Gas	Pulverized Coal
Heat Release Rates		
BTU/HR - EPRS*	200,000	70,000 to 120,000
BTU/HR - $Ft.^3$	50,000 - 100,000	15,000 to 22,000
Flue Gas Velocity		
Thru Boiler Tube Banks Ft./Sec.	100	65 - 70
Thru Economizer Ft./Sec.	100	50 - 60
Tube Spacing		
Superheater (Inches Clear)	2	8
Boiler (Inches Clear)	1	1-1/2
Excess Air (percent)	5	20

*EPRS - Effective projected radiant heat absorbing surface. ($ft.^2$)

SOURCE DESCRIPTION - continued

A. Detailed Description of the Project - continued

This report and another (refer to IGT Report in Appendix A) have indicated that micronized coal burns more like natural gas than conventional pulverized coal. This could mean a much higher heat release rate and a less down-rating in steam capacity for the existing unit. These studies also indicate the fly ash size distribution is such that the particles follow the flue gas stream around rather than impinging on the tubes. The studies also stated that the excess air required for combustion could be significantly less than that required for pulverized coal. This makes possible lower flue gas velocities and less erosion.

However, the results obtained from the Babcock and Wilcox, Basic Combustion Test Unit, a 4 million BTU/hr. combustor, do not guarantee how micronized coal will burn in a boiler designed for natural gas. Cyanamid will be among the first to try this innovative technology.

There is the possibility that micronized coal will not be a viable solution for coal conversion. For this reason, Cyanamid is asking for relief from the state opacity limitation until this technology can be demonstrated on a commercial scale. If the project is successful, all regulatory requirements will be addressed in converting total plant to coal. Cyanamid estimates that the test period will take less than 180 days. However, Cyanamid is asking for a full year's variance

SOURCE DESCRIPTION - continued

A. Detailed Description of the Project - continued

because the exemptions from the federal regulations are not renewable and because of the possibility of any delaying or unanticipated difficulties.

SIRRINE

SOURCE DESCRIPTION - continued

B. Environmental Assessment

Boiler No. 7 is permitted to emit 0.1 pounds per million BTU of particulates and 2.75 pounds per million BTU of sulfur dioxide. Total annual emission rates for these two pollutants are reported yearly to the Florida Department of Environmental Regulation along with detailed fuel usages. The reported 1982 emission rates for particulates and sulfur dioxide, and the calculated emission rates for the other pollutants using actual 1982 fuel usage provide an estimate of the current emissions for Boiler No. 7. An estimate of the proposed emission rates when the boiler is modified to burn micronized coal was determined based upon a 10,000-ton supply of low ash (2.5 percent) and low sulfur (0.9 percent) coal. These emissions are based on a testing period of six months. A total annual proposed emission rate was calculated using half the current emissions plus the 6-month coal firing emissions. The emissions were calculated using USEPA AP-42 (revised 8-82) except for the current sulfur dioxide and particulates which were taken from the 1982 fuel analysis and stack test and the particulate emission rate during coal firing. The coal firing rate was computed assuming that 90 percent of the ash in the coal would be carried out the stack. In Table 2 these emission rates are listed along with the resultant change in emissions on an annual basis. Table 3 lists emission rates on a pound per hour basis.

SIRRINE

TABLE 2

PROPOSED AND EXISTING EMISSIONS
OF BOILER NO. 7

SANTA ROSA PLANT, MILTON, FLORIDA

AMERICAN CYANAMID COMPANY

Pollutants	Proposed Coal Fired Emissions 6 Months	Total Proposed Emissions TPY	Actual 1982 Emissions TPY	Change in Emissions TPY
Particulate	225.0*	226.2	2.3**	+223.9
Sulfur Dioxide	175.5***	335.2	319.4**	+ 15.8
Carbon Monoxide	3.0	10.5	15.0	- 4.5
Hydrocarbons	0.4	0.9	1.0	- 0.1
Nitrogen Oxides	105.0	207.3	204.6	+ 3.0
Lead and Non-Criteria Pollutants	Negligible	---	Negligible	---

NOTES:

1. Emissions are computed according to EPA Document AP-42 unless noted.
2. Proposed coal firing emissions are based on firing 10,000 tons of coal. Natural gas or fuel oil will be fired when the boiler is not firing coal. These emissions have been included in the total proposed emissions, and were assumed to be half the 1982 emissions.
3. *Assume a 90% emission rate and a 2.5% ash.
4. **Reported to FDER.
5. ***A 0.9 percent sulfur coal.
6. Refer to Appendix B for calculations.

SIRRINE

TABLE 3

PROPOSED HOURLY EMISSIONS
OF BOILER NO. 7

SANTA ROSA PLANT, MILTON, FLORIDA

AMERICAN CYANAMID COMPANY

Pollutants	Proposed Coal-Fired Emissions* lbs/hr	Maximum Possible Emissions With Either Gas or Oil lbs/hr	Change in Emissions lbs/hr
Particulate	236.6**	17.6	+219.0
Sulfur Dioxide	205.6***	484.3	-278.7
Carbon Monoxide	3.5	6.7	-3.2
Hydrocarbons	0.3	0.9	-0.6
Nitrogen Oxides	123.0	92.3	+30.7
Lead and Non-Criteria Pollutants	Negligible	Negligible	--

NOTES:

1. *95% load on micronized coal
2. **2.5 percent ash
3. ***0.9 percent sulfur
4. Refer to Appendix B for detailed calculations.

SOURCE DESCRIPTION - continued

B. Environmental Assessment - continued

As a conventional and permanent modification, the following regulations are believed to apply:

I. The prevention of significant deterioration regulations (PSD) to those pollutants which significantly increase emissions because of the modification. It is believed only the particulate emissions will fall into this category.

II. State emission rate regulations for those pollutants which are not controlled by the PSD regulations. These rules would apply to the sulfur dioxide emissions.

a. Particulate Emissions

The PSD regulations would require consideration of the following for the particulate emissions:

1. Application of the state emission limitations
2. Application of best available control technology (BACT)
3. Ambient impact analysis
4. Additional impact analysis
5. Preconstruction air quality monitoring and analysis
6. Post construction monitoring
7. Permit application information

SOURCE DESCRIPTION - continued

B. Environmental Assessment - continued

However, for a temporary project, the regulations allow exemption of items 3, 4, 5, and 6. This is provided that the project's duration will not exceed two years and the emissions will not cause or contribute to a violation of any ambient air quality standard or have a significant impact on a Class I area or on an area where PSD increments are known to be violated. Cyanamid's project qualifies for this exemption because the project's duration will be one year or less and because the air quality analysis predicts no violations of standards or significant impacts on Class I areas or areas where PSD increments are known to be violated.

In regard to PSD requirement No. 1, the application of the state emission limitations will be satisfied by the approval of a temporary variance (presented in Section III) to deviate from the opacity limitation.

In regard to PSD requirement No. 2, the application of BACT requires "an emission limitation, including a visible emission standard, based on the maximum degree of reduction of each pollutant emitted which the Department, on a case-by-case basis, taking into account energy, environmental,

SOURCE DESCRIPTION - continued

B. Environmental Assessment - continued

and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques for control of each such pollutant." Considering that this project will be the first instance where micronized coal will be fired in a packaged boiler, the Florida Department of Environmental Regulation is requested to take the following into account:

1. Cyanamid is prepared to discontinue the test, if the experimental project results in excessive downrating of capacity, excessive erosion or deposition on the boiler tubes, or other good cause. Cyanamid is leasing the major pieces of equipment to be prepared for this contingency. They have made only minor capital investments and are not committed to running the equipment for its useful life.

2. No one has adequate experience in controlling micronized-coal fly ash, especially in regard to the effects on opacity. It is planned that particulate control device manufacturers will test pilot-size units to ascertain the achievable emission rates. These tests will be used to determine BACT if the project is successful.

SOURCE DESCRIPTION - continued

B. Environmental Assessment - continued

3. Cyanamid is paying a substantial premium for its proposed control method of firing low ash coal, as compared to conventional coal which contains three to four times as much ash.

For these reasons, Cyanamid believes that low ash coal is BACT for the particulate emissions and opacity for this experimental project.

In regard to PSD requirement No. 7, permit application information is fulfilled with the submittal of this report.

b. Sulfur Dioxide Emissions

The state emission rate regulations for existing or new fossil fuel steam generators with less than 250 million BTU per hour require BACT for sulfur dioxide emissions. It is expected that micronizing the coal will not have an effect on the sulfur dioxide emission rate. Therefore, Cyanamid proposes the firing of a 1% sulfur coal as BACT. This level of emissions corresponds to recent BACT determination made in EPA Region IV for industrial sized boilers. The following is a list of recent BACT determinations:

SIRRINE

SOURCE DESCRIPTION - continued

B. Environmental Assessment - continued

Location	Company	Boiler Size Million BTU/Hr.	BACT Level	Date
La Grange, Ga.	Milliken	120	1% Sulfur Coal	1981
Erwin, N. C.	Burlington	122	1% Sulfur Coal	1980
Hartsville, S. C.	Cargill	160	1% Sulfur Coal	1981
Athens, AL	Saginaw Steering Gear	121	1% Sulfur Coal	1980

c. Nitrogen Oxides Emissions

In regard to nitrogen oxides emissions, there are no state emission limitations. It is assumed that the emission rate will equal or be less than that predicted by AP-42 (refer to IGT Report In Appendix A). Nitrogen oxide emissions will be determined during the testing period.

VARIANCE PETITION

SIRRINE

VARIANCE PETITION

Although Cyanamid has presented evidence that a low ash coal is BACT in this case for the particulate emissions and opacity, the state regulations have an opacity limitation which cannot be exceeded without a variance. This limitation states that the visible emissions cannot exceed Number 1 on the Ringlemann Chart (20 percent opacity). The opacity is likely to be greater than 20 percent due to the fineness of the fly ash at the proposed particulate emission rate.

The state regulations allows the Department to consider variances provided that the following eight items are addressed by the petitioner:

1. List the regulation from which a variance should be granted.

   Cyanamid requests a temporary variance be granted from F.A.C. 17-2.600(6)(a) the Visible Emission Limitation.

2. List the reason why a variance should be granted.

   The variance should be granted to avoid the necessity to commit large amounts of capital for environmental control equipment for which design criteria is unavailable.

3. Time period asked for.

   Cyanamid expects the testing period will require 180 days. However, Cyanamid requests a full year's variance because the federal PSD regulations allow no renewals and due to the possibility of any delays or unanticipated difficulties.

SIRRINE

VARIANCE PETITION - continued

4. List problem is compliance.

   The harm which could result if compliance is necessary before an adequate testing period is that the control device applied may not do a proper job in meeting the particulate/opacity limitation.

5. Describe what will be done at the end of the test program.

   Cyanamid will comply with all the applicable regulations as soon as the testing is complete. Should the test be evaluated as successful, the permanent conversion of the Santa Rosa boilers to micronized coal would be pursued in compliance with all environmental regulations and requirements. Should the project be evaluated as failing to provide adequate economics or technical know how, operations would return to those specified in the existing permit.

6. Describe what will be done during the test program to meet the regulations.

   The use of a very low ash coal is the best means in controlling emissions at this time. A project team will be studying the emission parameters during the test so that once the project is determined to be a success, compliance will be achievable.

VARIANCE PETITION - continued

7. Review the air quality impacts.

   Refer to Section V - Air Quality Analysis.

8. Review the economic and social impacts of granting or denying the variance.

   Refer to Section VII - Conclusion.

PERMIT APPLICATION

SIRRINE

STATE PERMIT APPLICATION

AC 57-72403

DER

JUL 11 1983

BAQM

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Steam Generator [ ] New[1] [X] Existing[1]

APPLICATION TYPE: [ ] Construction [ ] Operation [X] Modification

COMPANY NAME: American Cyanamid Company COUNTY: Santa Rosa

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) No. 7 Boiler

SOURCE LOCATION: Street State Rd. 191B & 197A City Milton

UTM: East 488.91 North 3381.51

Latitude 30 ° 33 ' 25 "N Longitude 87 ° 06 ' 45 "W

APPLICANT NAME AND TITLE: Dr. E. J. Scharf, Plant Manager

APPLICANT ADDRESS: Santa Rosa Plant, Milton, FL 32570

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of American Cyanamid Company

I certify that the statements made in this application for a Construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: E. J. Scharf

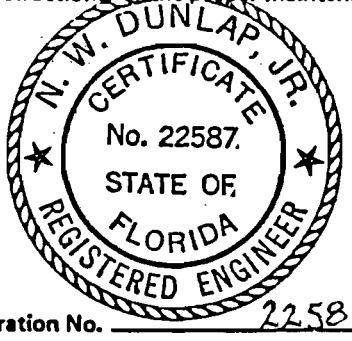
Dr. E. J. Scharf, Plant Manager
Name and Title (Please Type)

Date: 7/8/83 Telephone No. 904/994-5311

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

(Affix Seal)



Signed: N. W. Dunlap Jr

N. W. Dunlap
Name (Please Type)

J. E. Sirrine Company
Company Name (Please Type)

P. O. Box 5456 - Greenville, S. C. 29606
Mailing Address (Please Type)

Florida Registration No. 22587 Date: 6/13/83 Telephone No. 803/298-6000

[1]See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

Modify a boiler designed for natural gas to micronized coal

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction Not before 9/1/83 Completion of Construction Not after 3/30/84

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Refer to Report Section II - Source Description.

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

A057-2066

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes X No

F. Normal equipment operating time: hrs/day ____; days/wk ____; wks/yr ____; if power plant, hrs/yr ____; if seasonal, describe: experimental test schedules

G. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? No
   a. If yes, has "offset" been applied?
   b. If yes, has "Lowest Achievable Emission Rate" been applied?
   c. If yes, list non-attainment pollutants.
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. Yes
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII. Yes
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? No
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
N/A				

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): _____

2. Product Weight (lbs/hr): _____

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
N/A							

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5]
N/A				

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

[3] Calculated from operating rate and applicable standard

[4] Emission, if source operated without control (See Section V, Item 3)

[5] If Applicable

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Micronized coal	9,866 lbs.	11,716 lbs.	167.3

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis:

Percent Sulfur: 0.9% Percent Ash: 2.5

Density: N/A lbs/gal Typical Percent Nitrogen: N/A

Heat Capacity: 14,280 BTU/lb N/A BTU/gal

Other Fuel Contaminants (which may cause air pollution): N/A

F. If applicable, indicate the percent of fuel used for space heating. Annual Average N/A Maximum

G. Indicate liquid or solid wastes generated and method of disposal.

Bottom ash - disposed by landfill

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 50 ft. Stack Diameter: 4'-10" ft.

Gas Flow Rate: 53,651 ACFM Gas Exit Temperature: 340 °F.

Water Vapor Content: 7.4 % Velocity: 48.9 FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							

Description of Waste

Total Weight Incinerated (lbs/hr) Design Capacity (lbs/hr)

Approximate Number of Hours of Operation per day days/week

Manufacturer

Date Constructed Model No.

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diameter _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner [ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight – show derivation.
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.,) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.).
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency).
6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
7. An 8½" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
[ ] Yes [X] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy) [X] Yes [ ] No

Contaminant	Rate or Concentration
Refer to Report Section II - Source Description (pages II-11 thru II-15)	

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration
Refer to Report - Section II - Sources Description (pages II-8 thru II-10)	

D. Describe the existing control and treatment technology (if any).

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:
5. Useful Life:
6. Operating Costs:
7. Energy:
8. Maintenance Cost:
9. Emissions:

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

10. Stack Parameters

a. Height: ft. b. Diameter: ft.

c. Flow Rate: ACFM d. Temperature: °F

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy*: h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy**: h. Maintenance Costs:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power – KWH design rate.

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Life: f. Operating Cost:

g. Energy: h. Maintenance Cost:

*Explain method of determining efficiency above.

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space and operate within proposed levels:

4.

a. Control Device

b. Operating Principles:

c. Efficiency*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency*:

3. Capital Cost:

4. Life:

5. Operating Cost:

6. Energy:

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII – PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data

1. _____ no sites _____ TSP _____( )SO^2* _____ Wind spd/dir

Period of monitoring ___/___/___ to ___/___/___
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

a) Was instrumentation EPA referenced or its equivalent? ____ Yes ____ No

b) Was instrumentation calibrated in accordance with Department procedures? ____ Yes ____ No ____ Unknown

B. Meteorological Data Used for Air Quality Modeling

1. 4 Year(s) of data from 1 / 1 / 72 to 12 / 31 / 75
month day year month day year

2. Surface data obtained from (location) Pensacola, FL

3. Upper air (mixing height) data obtained from (location) Boothville, LA

4. Stability wind rose (STAR) data obtained from (location) _____

C. Computer Models Used

1. PTMAX Modified? If yes, attach description.

2. PTPLU Modified? If yes, attach description.

3. CRSTER Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
TSP	33.21 grams/sec
SO^2	25.91 grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

*Specify bubbler (B) or continuous (C).

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

Refer to Report Sections V and VII (pages V-1 thru V-14, and page VII-1).

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

AIR QUALITY ANALYSIS

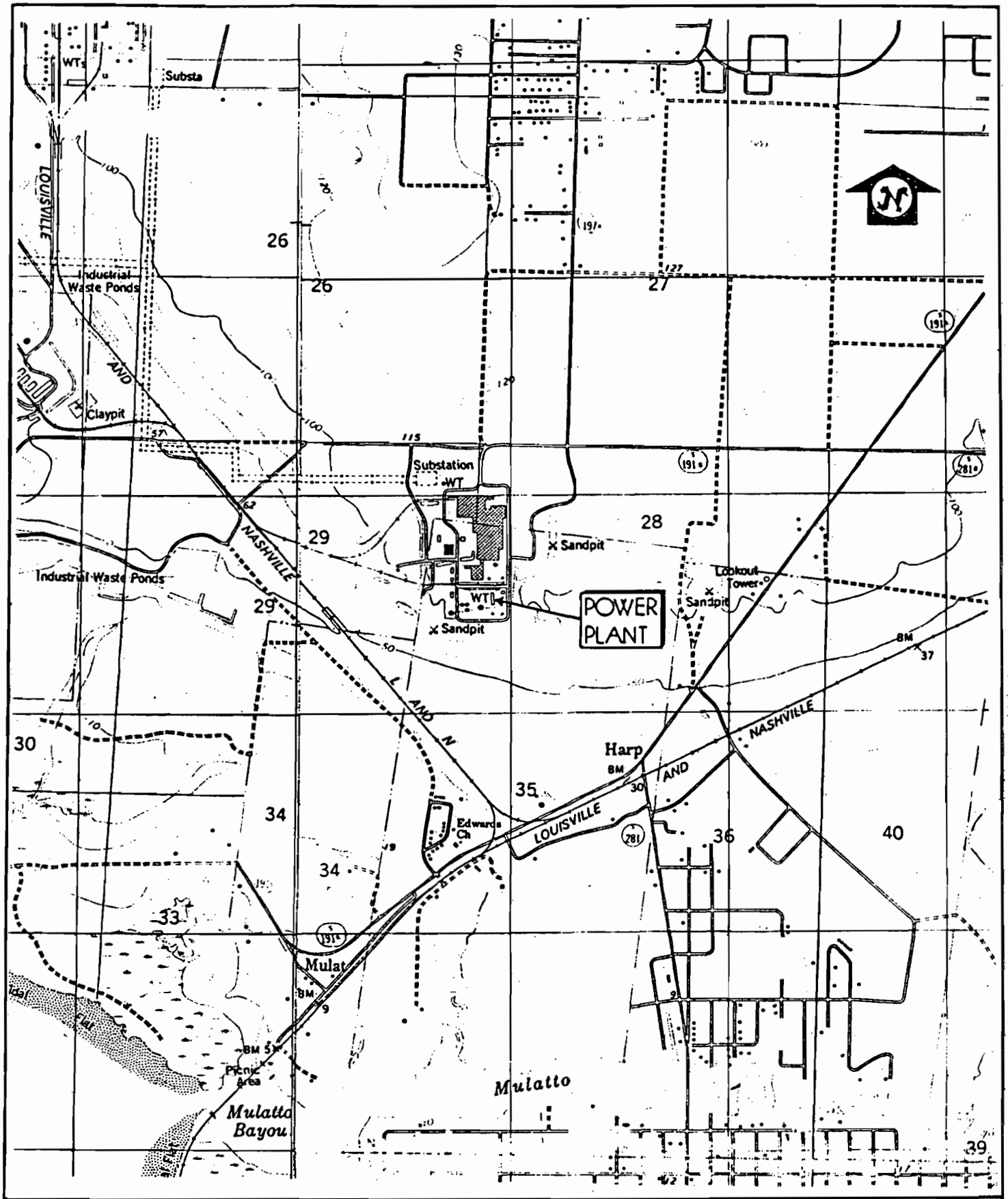
SIRRINE

AIR QUALITY ANALYSIS

A. Existing Air Quality

The Santa Rosa Plant is located in a sparsely populated area of Santa Rosa County. This plant is one of two major facilities in the general vicinity. Air Products Chemical is located adjacent to Cyanamid's Santa Rosa facility, but is not a significant source of particulate and sulfur dioxide emissions. The nearest town, Pace, is situated about 5.6 Km (3.5 miles) to the northeast. Pensacola and Milton are both located about 8.0 Km (5.0 miles) away. The nearest major sources to the plant are the Gulf Power Crist power plant, 10.5 Km (6.5 miles), and the Monsanto Textile facility, 13.4 Km (8.3 miles). Drawing SK-3 illustrates the general area around the plant and gives the location of the boiler area. The plant boundary extends from 0.5 Km to 3.1 Km (.33 miles to 1.9 miles) from Boiler No. 7. Drawing SK-4 depicts the boundary line. Table 4 lists the distances from Boiler No. 7 to the boundary line in ten degree increments. This information was used in determining the air quality impacts outside Cyanamid's property.

According to the Florida Department of Environmental Regulation (FDER), the area is in attainment for all the criteria pollutants. The nearest monitoring of the criteria pollutants is at the Ellyson Field site which is located 8.9 Km (5.5 miles) away, and at the University of West Florida site which is located 10.1 Km (6.3 miles) away. These



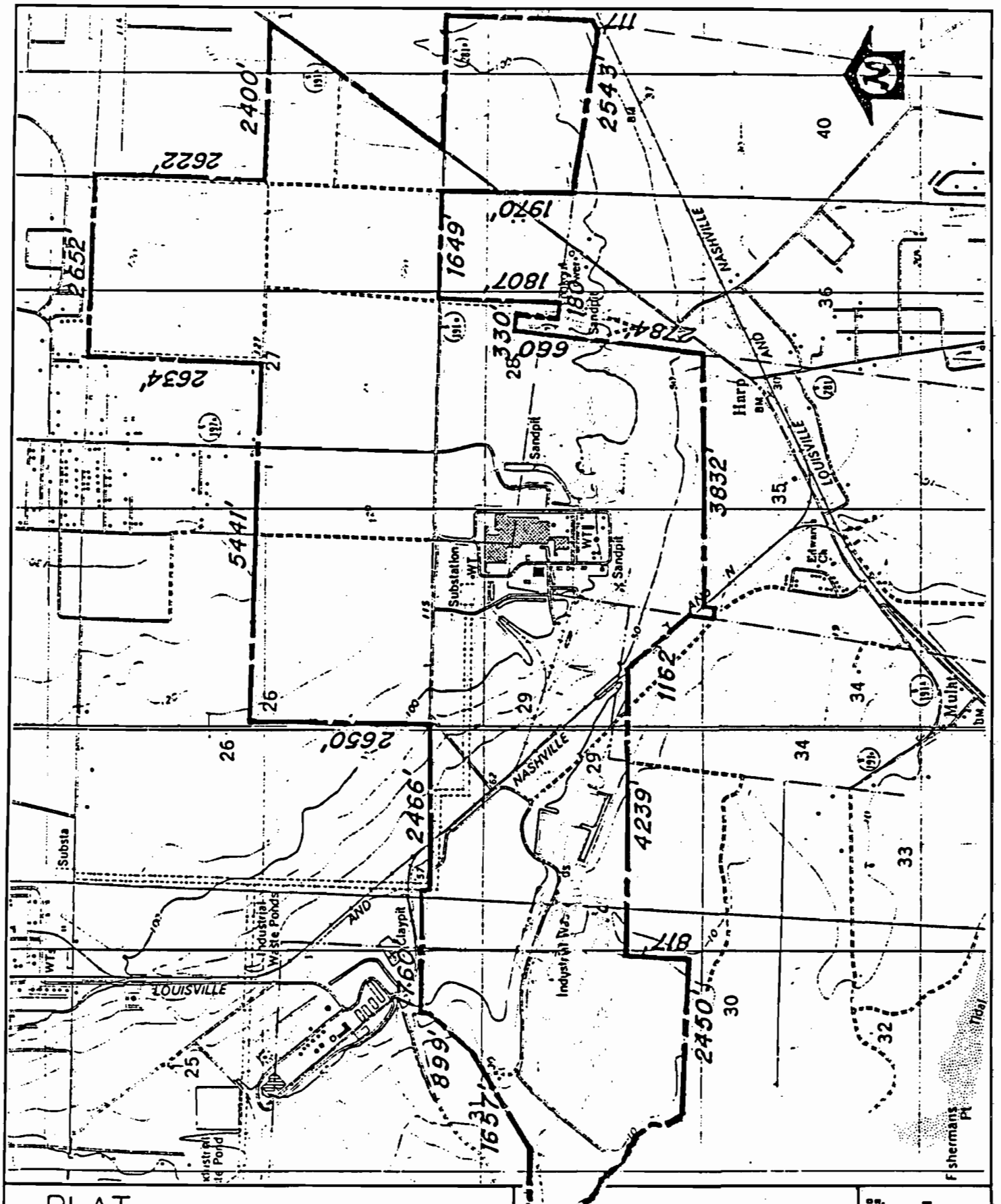
LOCATION PLAN
MICRONIZED COAL FIRING
AMERICAN CYANAMID CO.
SANTA ROSA PLANT
MILTON, FLORIDA

J. E. SIRRINE COMPANY
ARCHITECTS ENGINEERS PLANNERS
GREENVILLE, SOUTH CAROLINA

S-2216

DR.	-
CH.	P. NEIL
SCALE	
DATE	6-17-83
FILE NO.	-
DWG. NO.	SK-3

MAY 77 — JES 1



PLAT
MICRONIZED COAL FIRING
AMERICAN CYANAMID CO.
SANTA ROSA PLANT
MILTON, FLORIDA

J. E. SIRRINE COMPANY
ARCHITECTS ENGINEERS PLANNERS
GREENVILLE, SOUTH CAROLINA

S-2216

DR.	-
CH.	P. NEIL
SCALE	-
DATE	6-17-83
FILE NO.	-
DWG. NO.	SK-4

MAY 77 — JES 17.

DUNCAN-PARNELL, INC. CHARLOTTE 188

SIRRINE

TABLE 4

DISTANCES OF BOILER NO. 7
TO THE PLANT BOUNDARY LINE

Direction (Degrees)	Distance (Km)	Direction (Degrees)	Distance (Km)
10	1.56	190	0.52
20	1.63	200	0.55
30	2.68	210	0.60
40	2.50	220	0.61
50	2.35	230	0.60
60	1.22	240	0.61
70	0.96	250	0.63
80	0.90	260	0.88
90	0.87	270	3.08
100	0.87	280	2.57
110	0.88	290	2.19
120	0.93	300	1.43
130	0.79	310	1.18
140	0.66	320	1.40
150	0.60	330	1.79
160	0.55	340	1.66
170	0.51	350	1.57
180	0.51	360	1.55

AIR QUALITY ANALYSIS - continued

A. Existing Air Quality - continued

two sites are operated by the Northwest District of the FDER and were used to determine if the project would contribute to or cause an ambient air quality standard violation. Table 5 lists some recent air quality data measured by the Northwest District of FDER. A complete list of air quality data for Escambia County, a neighboring county, is included in Appendix C.

SIRRINE

TABLE 5

MONITORED AIR QUALITY DATA
(ug/m^3)

TOTAL SUSPENDED PARTICULATES

Station (year)	H24hr	H2H24hr	Annual Mean	Geo Mean
Ellyson (1982)	135	85	37	33
Ellyson (1981)	109	94	46	42
University of W. F. (1982)	69	67	36	34
University of W. F. (1981)	113	105	46	42

SULFUR DIOXIDE (CONTINUOUS DATA)

Station (year)	H3hr	H2H3hr	H24hr	H2H24hr	Annual Mean
Ellyson (1982)	639	544	142	126	21

NITROGEN OXIDES (CONTINUOUS DATA)

Station (year)	Annual Mean
Ellyson (1982)	15

NOTE: H3hr or H24hr refers to the highest 3 or 24 hour concentration measured. H2H3hr or H2H24hr refers to the highest second highest 3 or 24 hour concentration measured.

AIR QUALITY ANALYSIS - continued

B. Predicted Air Quality Impact of Boiler No. 7

Accurate estimation of the actual emission rates from Boiler No. 7 when firing micronized coal is difficult. However, for this study conservative emission rates and worst case environmental conditions were used in assessing the air quality impact. It is expected that once operating experience is obtained in firing micronized coal, these emission rates will prove to be very high. The following stack parameters were used in the air quality models:

Stack Height	Stack Diameter	Stack Temperature	Stack Flow
15.24 M	1.47 M	444.3°K	25.32 M^3/sec.

The particulate emission rate was based on a boiler capacity of 95 percent and assuming that 90 percent of the ash in the coal would be carried out the stack. This emission rate equals 33.21 grams/sec. Four complete years of meteorological data (1972 - 1975) were obtained from the FDER. These data included surface observations from the Pensacola Sherman station (03855) and mixing heights from the Bootheville station (12844). The modeling was performed with USEPA approved models and under Region IV modeling guidelines. The first model used was PTMAX. From these results, ring distances outside of the plant boundary were chosen for the CRSTER model. PTPLU was also run to obtain addi-

AIR QUALITY ANALYSIS - continued

B. Predicted Air Quality Impact of Boiler No. 7 - continued

tional ring distances. In all, ten rings for each year was computed for this study. The last two rings, 8.9 Km and 10.1 Km, correspond to the distances to the monitoring stations. Table 6 lists the results of the CRSTER modeling. As is evident, the modeling predicts no violations of any ambient standard due to the boiler.

SIRRINE

TABLE 6

AIR QUALITY IMPACT OF BOILER NO. 7
(ug/m^3)

TOTAL SUSPENDED PARTICULATES

Year	H24hr	H2H24hr	Annual Mean
1972	88.8	71.8	4.9
1973	115.5	82.0	5.8
1974	122.5	67.9	5.0
1975	108.2	77.9	5.2
NAAQS	150	--	60

SULFUR DIOXIDE

Year	H3hr	H2H3hr	H24hr	H2H24hr	Annual Mean
1972	179.9	157.5	69.3	56.0	3.8
1973	157.9	153.9	90.1	64.0	4.5
1974	239.1	157.4	95.6	53.0	3.9
1975	156.8	154.5	84.4	60.8	4.1
NAAQS	1300	--	365	--	80

NITROGEN OXIDES

Year	Annual Mean
1972	2.3
1973	2.7
1974	2.3
1975	2.4
NAAQS	100

NOTES: 1. H3hr or H24hr refers to highest 3 or 24 hour and H2H3hr or H2H24hr refers to highest second highest 3 or 24 hour.

2. NAAQS: National Ambient Air Quality Standard

AIR QUALITY ANALYSIS - continued

C. Overall Air Quality Impact

In assessing the significance of a source, the total impact of the background and the source need to be considered. There are two approaches to analyzing this situation. The first approach involves modeling all the major sources in the general area. This can be a very expensive method.

The second approach involves using the measured air quality levels in the area. For annual averages, using the recorded levels at a nearby monitoring station is usually an appropriate technique. For shorter averaging times, EPA recommends that a detailed meteorological analysis be conducted for the predicted highest and second highest levels and relating these conditions to the background data. This is also an expensive and laborious method.

Due to the relatively isolated location of the plant, it is felt that using the annual averages for the shorter time periods will give a very conservative estimate of the overall impact. There are several reasons for use of the annual average.

If modeling the major sources was required, the results should show that their particulate concentration impact upon Boiler No. 7 would be minimal since the sources are located so far away. In addition, there is no plume overlap with Boiler No. 7's highest and second highest

AIR QUALITY ANALYSIS - continued

C. Overall Air Quality Impact - continued

receptors. These sources would contribute their maximum impact to Boiler No. 7 along their plume centerline in the 80-115 degree sector. None of Boiler No. 7's highest and second highest levels occur in or near this sector. Therefore, modeling these major sources should not change the predicted levels.

If the second approach, a detailed meteorological analysis, was used the background level would decrease. This type of analysis excludes data which is not truly background for the highest and second highest receptors. The monitors are located so close to the major sources that they are no doubt strongly influenced by them. Since the highest and second highest receptors occur where the major sources should not have a simultaneous impact with Boiler No. 7, monitored data influenced by the major sources would be excluded. Background levels would be expected to decrease significantly. Therefore, the use of an annual average for shorter averaging periods would result in very conservative values.

When modeling more than one year, the established practice is to combine the predicted highest second highest concentrations with a background level to obtain an overall air quality impact. Annual concentrations are combined with background annual averages. Table 7 lists the

AIR QUALITY ANALYSIS - continued

C. Overall Air Quality Impact - continued

overall air quality impact from Boiler No. 7. These results show no violations of any of the standards. The modeling results were also reviewed to determine the impact upon the monitors; these results are also listed in Table 7. An important consideration about the particulate emissions is that the fly ash from micronized coal has a finer particle size distribution than fly ash from conventional pulverized coal. The particle size averages about 40 microns for pulverized coal fly ash and about 4 microns for micronized coal fly ash (refer to B and W Report in Appendix A). The EPA is considering a new ambient air quality standard for particulates with a particle size cut-off of 10 microns. The current standard has a particle size cut-off of 30 microns. Micronized coal will therefore have a pronounced effect upon the current and possible future particulate standards as compared to the emissions from conventional pulverized coal. Because of this effect, the proposed air impact was compared to a best-guess estimate of where EPA will possibly set the new standard. News reports indicate that the EPA staff is reviewing an annual average with a range of 55 to 70 ug/M^3 and a 24-hour average with a range of 180 ug/M^3 to 250 ug/M^3. To be conservative, the lower levels were used in this report. The overall predicted impacts are much less than these levels.

SIRRINE

TABLE 7

OVERALL AIR QUALITY IMPACT
(ug/M^3)

TOTAL SUSPENDED PARTICULATES

	Predicted Level at the H2H Receptor	NAAQS	Possible Fine NAAQS	Predicted Level at the Ellyson Station	Predicted Level at the U. W. F.
Annual Average	51.8	60	55	46.9	46.8
24 hr Average	128.0	150	180	105.8	117.2

SULFUR DIOXIDE

	Predicted Level at the H2H Receptor	NAAQS	Predicted Level at the Ellyson Station
Annual Average	25.5	80	21.7
24 hr Average	85.0	365	135.2
3 hr Average	178.5	1300	588.4

NITROGEN OXIDES

	Predicted Level at the H2H Receptor	NAAQS	Predicted Level at the Ellyson Station
Annual Average	17.7	100	15.4

NOTES: 1. H2H refers to the highest second highest value.

AIR QUALITY ANALYSIS - continued

C. Overall Air Quality Impact - continued

One final requirement in obtaining a variance is that temporary emissions cannot significantly impact upon a Class I area nor an area where PSD increments are known to be violated. Since there are no known areas where the PSD increments are violated and the nearest Class I area is over 100 kilometers away, this requirement is satisfied.

LETTER OF SUPPORT

STATE OF FLORIDA

Office of the Governor

THE CAPITOL

TALLAHASSEE 32301

BOB GRAHAM
GOVERNOR

MAY 1983

May 6, 1983

Mr. G. J. Kenngott
Manager, Manufacturing Services
American Cyanamid Company
Santa Rosa Plant
Milton, Florida 32570

Dear Mr. Kenngott:

Thank you for the information you provided on the consideration American Cyanamid Company is giving to the use of micronized coal at its plant in Santa Rosa County.

As you know, Florida continues to be a highly petroleum-dependent state, despite considerable progress in the last few years converting to other fuels. As a result, it is important to the state to encourage the use of fossil fuels such as coal that are available domestically at lower prices, as well as renewable resources.

Conversions from oil to coal, when such are cost-effective and not in conflict with Florida's environmental policies, are beneficial to the state because they help reduce fuel costs and vulnerability to interruptions in supply of petroleum.

We are interested in the results of your proposal to convert from oil to coal at your Santa Rosa plant. Please keep us informed on its progress.

With kind regards,

Sincerely,

Jay Hakes

Jay Hakes
Director
Governor's Energy Office

JH/acs

CONCLUSION

SIRRINE

CONCLUSION

Cyanamid is sensitive to the potential environmental impact of this experimental project. They intend to make certain no ambient air quality standard will be violated and they plan on conducting this test as quickly and efficiently as possible.

The positive aspects of this project proceeding as indicated include the possible plant conversion to a non-petroleum dependent fuel and the possible environmental benefits in converting to a lower sulfur content fuel. There is also the possibility that this project could become a showpiece of innovative technology. The experience which could be gained in this experimental project could benefit the nation's energy balance and the environment.

The air quality analysis was conducted in a very conservative manner to determine any possible adverse effects. Extensive modeling was performed to assure that the national ambient air quality standards would not be violated. In addition, the predicted particulate levels were compared to a standard still in development to insure that all environmental consequences were reviewed. This study found no adverse air quality impacts.

In light of the positive benefits and non-adverse air quality impacts of the project, Cyanamid requests that the Department grant a permit to modify Boiler No. 7.

APPENDIX A

SIRRINE

APPENDIX

A. Supporting Information

1. Combustion Engineering Report
"Conversion of Oil and Gas Fired Industrial Boilers to Coal-Firing."

2. Babcock and Wilcox Report
"Micronized Coal as an Alternate Fuel for Oil and Gas Fired Boilers."

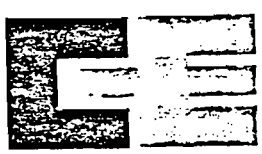
3. Institute of Gas Technology Report
"Combustion Characteristics of Fine Ground Coal."

CONVERSION OF OIL- AND GAS-FIRED INDUSTRIAL BOILERS TO COAL FIRING

STEWART N. RULNICK, Supervisor
Performance Design, Power Systems Services

BERNARD H. SMITH, Manager
Performance Design, Power Systems Services
Fossil Power Systems
Combustion Engineering, Inc.
Windsor, Connecticut

AMERICAN SOCIETY OF MECHANICAL ENGINEERS
INDUSTRIAL POWER CONFERENCE
Memphis, Tennessee
May 16–19, 1976



POWER SYSTEMS

CONVERSION OF OIL- AND GAS-FIRED INDUSTRIAL BOILERS TO COAL FIRING

INTRODUCTION

The need to reduce the dependence on oil as an industrial boiler fuel in the U.S. became quite obvious during the oil embargo of 1973. The shortage of natural gas in the U.S., and the precedent need for it in the home heating and petrochemical markets, makes gas unavailable as a substitute. Many industrial users of oil and gas began looking toward coal, a plentiful United States resource, as a fuel for existing and future steam generating equipment. New boilers can be designed for coal firing, or with provisions for future coal firing. The subject of this paper, however, is the conversion to coal firing of existing oil- and gas-fired boilers that were not originally designed for coal firing.

For the purpose of discussion only, pulverized coal firing and spreader stoker coal firing will be considered, since these are the predominant firing systems used for industrial boilers. Coal firing with traveling grate or under feed stokers is limited to relatively steady load applications and certain types of coal. Therefore, these firing systems will not be considered, since their use is rather limited and they are not suitable for most applications.

DESIGN CRITERIA

Since practically all steam generating units for industrial use are purchased on a custom basis to suit specific plant cycle and fuel availability requirements, any discussion of fuel changes for a particular unit must be specific to that unit. Generically, however, there are basic differences between units designed for oil and gas firing and those designed for coal firing.

Oil and gas burn more rapidly than coal and less combustion volume is needed. To avoid excessive ash accumulation on furnace wall tubes and to avoid objectionable slagging of this ash, coal-fired units must have larger furnaces than oil and gas fired units, both in terms of total volume and heating surface. The ash characteristics of the coal will determine the exact extent of this increase in size.

Some of the more important design criteria are the furnace heat release rate relative to both volume and effective projected radiant heat absorbing surface (EPRS), and grate heat release rates. Table I lists typical values or ranges of these criteria for these types of fuels. As can be seen, coal fired units must have a larger furnace than oil and gas fired units for a given heat input or steam capacity. This means that a unit designed for oil and gas must be downrated for coal firing, in order to maintain heat release rates within acceptable design criteria. On some field-erected units, this can amount to a 40 to 50 percent reduction in capacity. With shop-assembled units the load reduction could be 60 to 70 percent.

Other design criteria are flue gas velocities through tube banks and tube spacings. Table II lists general values for these considerations. The lower velocities and wider tube spacings required for coal firing will also affect the extent of unit downrating. Higher excess air is required for coal firing—30 to 35 percent for spreader stoker and 20 to 25 percent for pulverized coal—versus 10 percent for gas and 15 percent for oil.

TABLE I

DESIGN CRITERIA AFFECTING FURNACE SIZE

	Btu/HR-EPRS	Btu/HR-FT³
Oil		
Shop-assembled	200,000	(50,000–100,000)
Field-erected	200,000	(25,000– 50,000)
Natural Gas		
Shop-assembled	200,000	(50,000–100,000)
Field-erected	200,000	(25,000– 50,000)
Coal		
Pulverized	70,000 to 120,000	15,000 to 22,000
Spreader stoker	80,000 to 130,000	25,000 to 30,000

Stoker grate heat release rates

Continuous discharge spreader — 650,000—700,000 Btu/hr. sq. ft.
Dump grate spreader — 450,000—550,000 Btu/hr. sq. ft.

TABLE II

RECOMMENDED FLUE GAS VELOCITIES AND TUBE SPACINGS

Recommended Flue Gas Velocity through Tube Banks, ft/sec

	Single-Pass Boiler	Baffled Boiler	Economizer
Gas or distillate oil	100	100	100
Residual oil	100	75	100
Coal: (not lignite)			
Low ash	65–70	50	50–60
High ash	50	NA	40–50

Recommended Tube Spacing, Perpendicular to Gas Flow, Inches Clear

	Superheater		Boiler		Economizer
	Front	Rear	Front	Rear	
Gas or distillate oil	2	2	1	1	1
Residual oil	4–6	2	1½	1	1
Coal: (not lignite)					
Low ash/high fusion temp.	8	3–6	1½	1	1
High ash/low fusion temp.	10–16	4–6	2	1–2	1

COAL SELECTION

The selection of the type of coal to be used is the first consideration in a coal conversion.

Coal is a very heterogeneous substance and all coal contains some mineral matter. Coal is frequently, but not too accurately, simply classified as Eastern bituminous, Midwestern bituminous, Western sub-bituminous and lignite. Aside from representing very general geographic mining areas and the general range of coal bed (equilibrium) moisture, classification does not specify a single type of coal. Generally speaking, moisture content increases as coal rank (geological age) decreases. As volatile matter on a dry, mineral-matter free basis increases, the coal grindability, a measure of the ease of reducing coal to a specific size, is generally reduced. Frequently, Western coal is referred to as low sulfur, low heating value coal, but Western coal includes everything from the poorest of lignites, at 5000 Btu per lb, to the best of high volatile bituminous of 13,000 Btu per lb, as the map indicates (Fig. 1).

In the past, the geographic location of the steam plant has, in large part, determined the areas from which coal was obtained. The cost of coal transport was the primary concern and coal was supplied from relatively contiguous mining areas. Present environmental restrictions on the discharge of sulfur dioxide to the atmosphere (Table III) limit the choice of coals to be used. To use any coal, regardless of its source, a specific analysis of the coal must be available in order to determine its acceptability and effect on unit rating.

Coal selection for a given installation must be based on the coal's heating value, moisture content, mineral matter content, ash fusion and chemical characteristics, and grindability (for pulverized coal firing).

The heating value determines the amount of coal to be burned. The moisture content is important because of its effect on combustion gas weight and gas pass velocities, unit efficiency, heat transfer rates, air heater air outlet temperature requirements, and low temperature heating surface corrosion. Ash content and ash fusion characteristics affect the rate of ash accumulation and possible slag formation in the furnace and convection passes, ash removal by conventional cleaning methods, and the allowable convection surface gas pass velocities (erosion effect).

STEAM GENERATOR CONVERSION

After selecting the coal to be used, the next determination to be made on an oil and/or gas-to-coal conversion is the type of firing equipment to be used: either spreader stoker or pulverized coal firing. In general terms, the bottom-supported field erected unit is more adaptable to spreader stoker firing, as the addition of a spreader stoker is compatible with maintaining the bottom support concept. The furnace bottom can be modified so that the difference in elevation between the lower side wall headers and lower drum supports does not present a differential expansion problem. In addition, these units usually have rather shallow furnace height and a low heat release rate per square foot of furnace plan area, which is more in line with spreader stoker grate heat release rate requirements of about 700,000 Btu/hr-ft². The capacity with spreader stoker coal firing is limited, due to physical grate size, to approximately 300,000 pounds of steam per hour.

For pulverized coal firing, due to the need for a hopper bottom for furnace ash collection and removal, a top-supported unit allows greater flexibility in adding a hopper bottom without the use of complex support modifications. The unit expands from the top down and expansion differences between pressure parts can

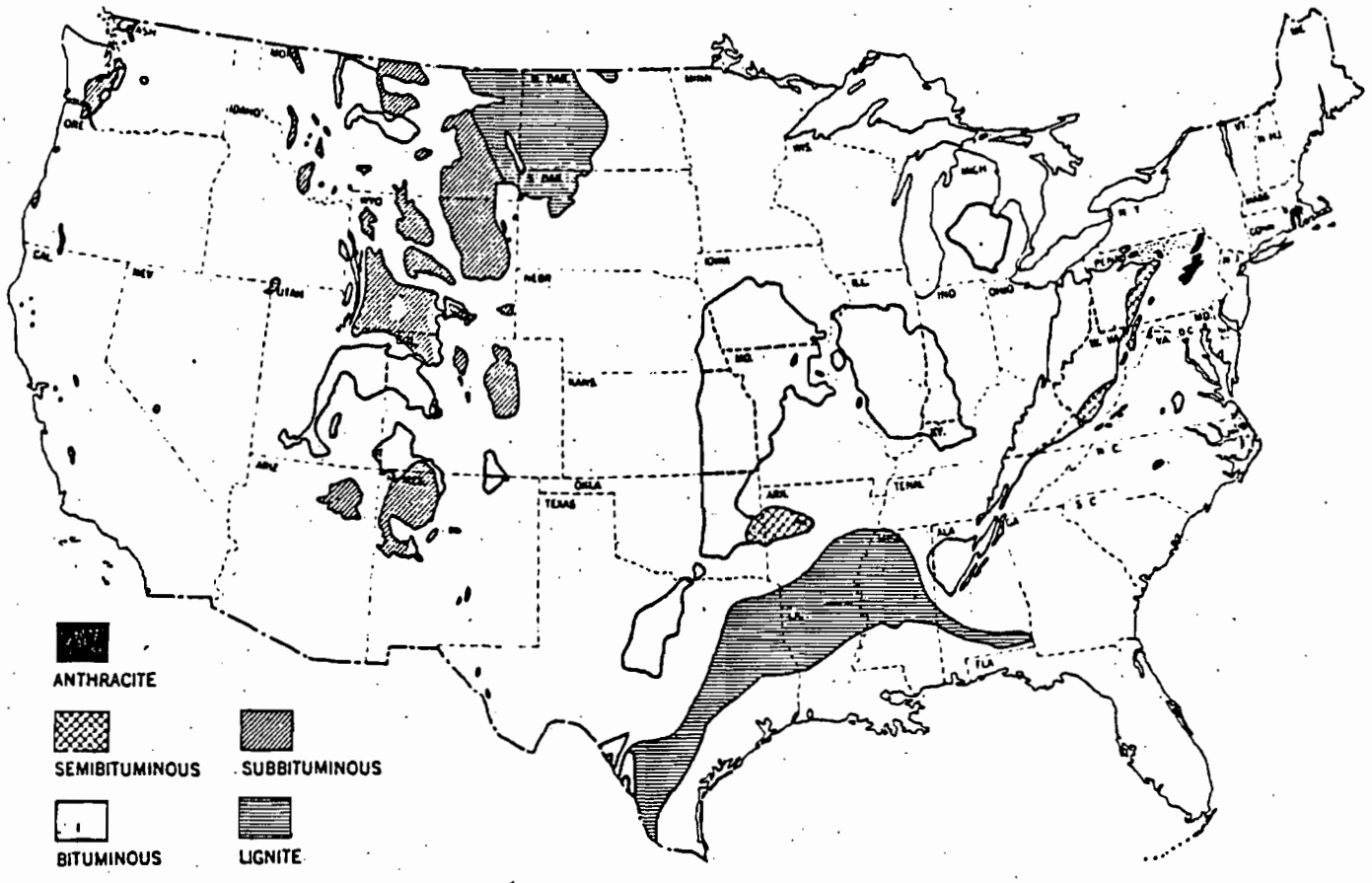


Fig. 1: Coal fields of the United States

be handled with relative ease. In general, the capacity for pulverized coal firing will be limited to a greater degree by furnace size (volume and EPRS) and to a lesser degree by furnace plan area.

Figure 2 shows a comparison between a bottom supported oil/gas-fired unit rated at 300,000 pounds of steam per hour and the same unit converted to spreader stoker coal firing. The capacity on coal firing, as limited by furnace size and grate area, would be approximately 200,000 pounds of steam per hour. However, due to the need to limit velocities through the baffled boiler bank to reduce erosion to acceptable values, the nominal rated capacity would be approximately 150,000 to 175,000 pounds of steam per hour depending upon the coal selection and the ash constituents produced in the burning process.

In general, this conversion requires the following modifications:

1. Modify the furnace bottom pressure parts to accommodate a spreader stoker and an overfire air system.
2. Provide space for a dropped furnace bottom, ash hopper, and ash removal system.
3. Add superheater surface to maintain design steam temperature.
4. Add additional soot blowers to keep convection surfaces clean.
5. Add hoppers for gas pass fly ash collection and reinjection to minimize carbon loss.
6. Modify the air heater to limit air temperature to the grate, and install an economizer to regain the heat recovery lost by the air heater modification.

TABLE III

FEDERAL PERFORMANCE STANDARDS FOR FOSSIL-FUEL FIRED BOILERS

	SO_2		NO_x		Particulate
	lb/10^6 Btu	ppm	lb/10^6 Btu	ppm	lb/10^6 Btu
Coal	1.20	520	0.70	525	0.10
Oil	0.80	550	0.30	227	0.10
Gas	—	—	0.20	165	—

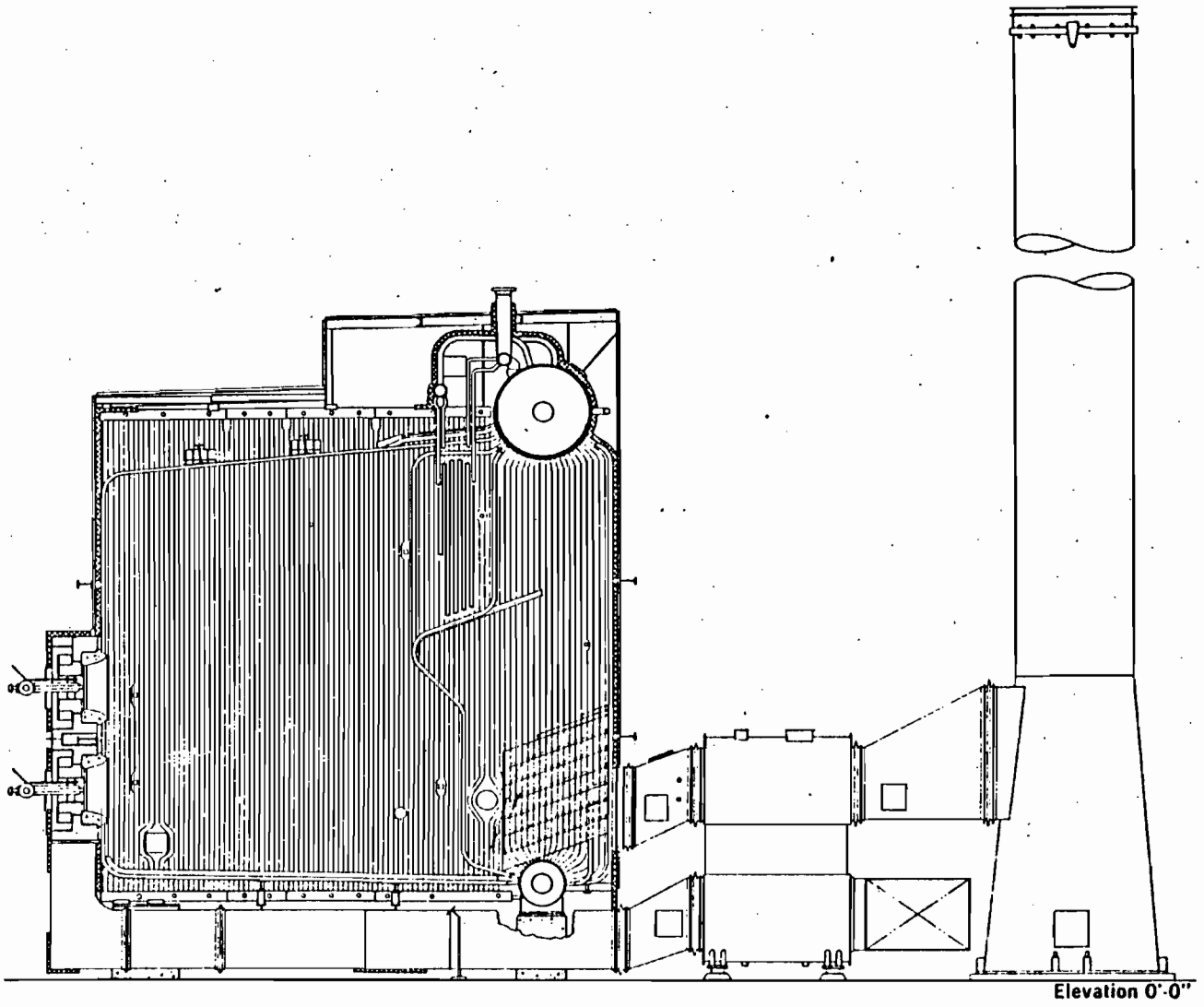


Fig. 2a: Bottom supported unit designed for oil and gas firing

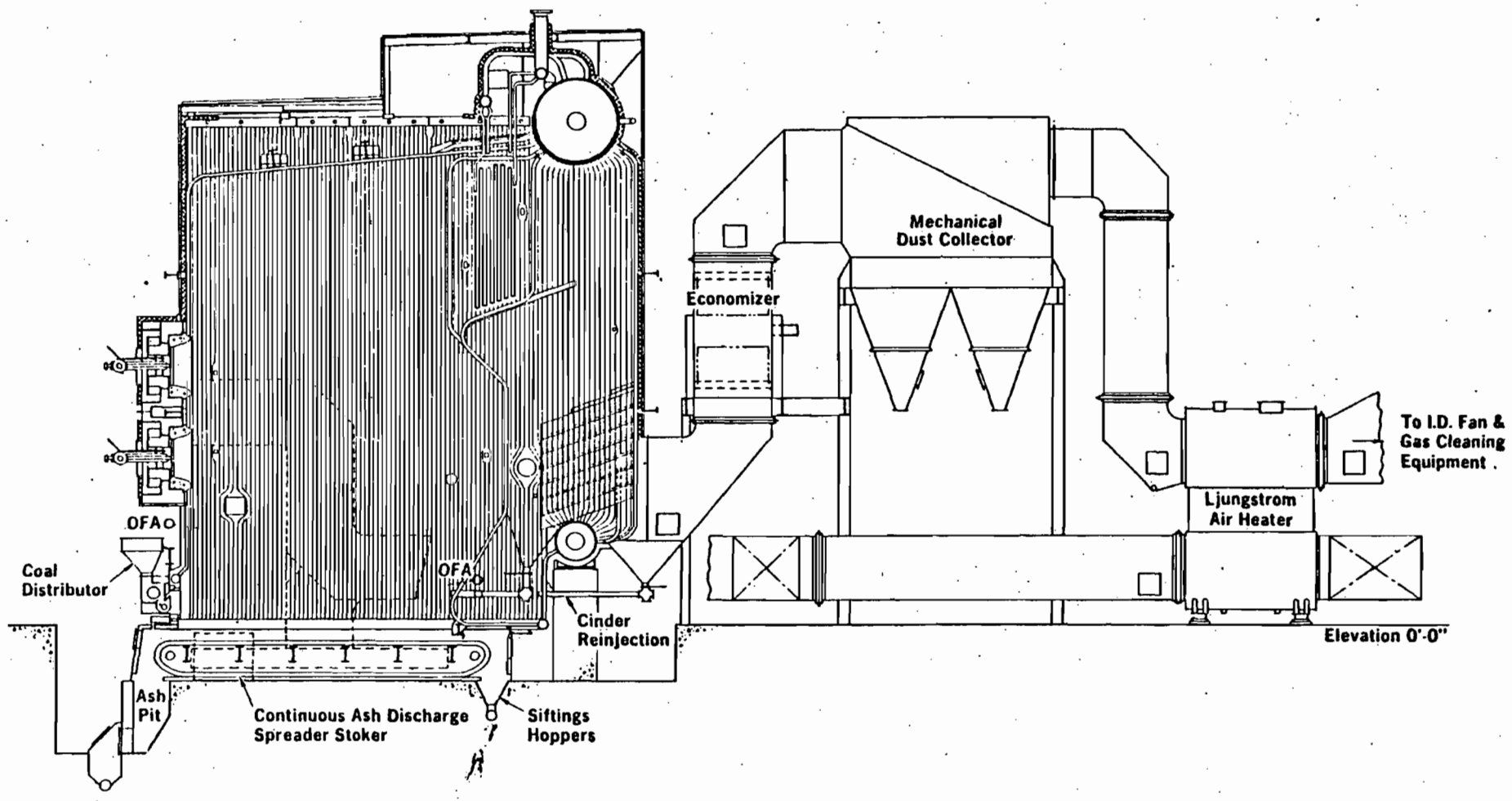


Fig. 2b: Bottom supported unit converted to spreader stoker coal firing

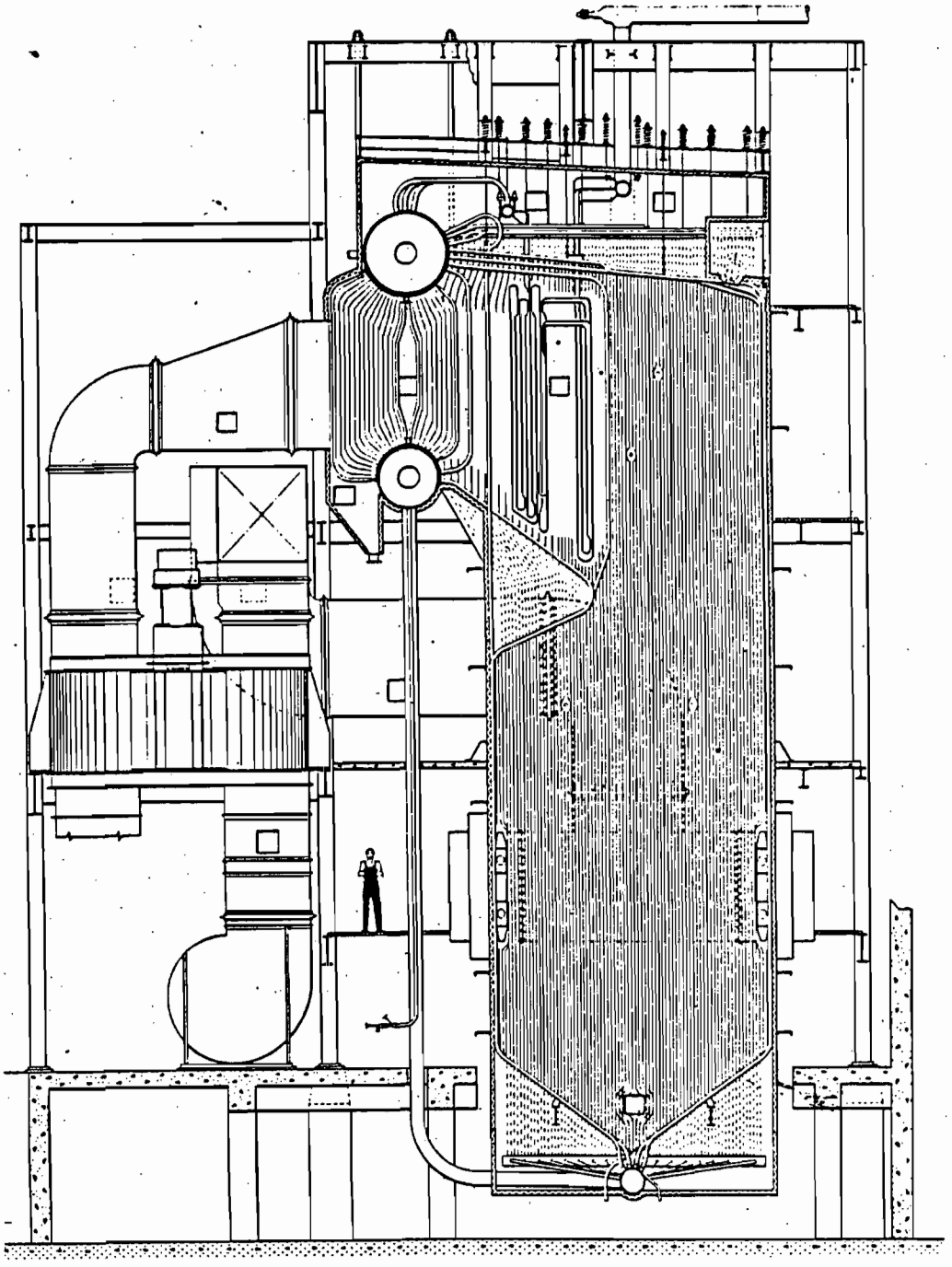


Fig. 3a: Top supported unit designed for oil and gas firing

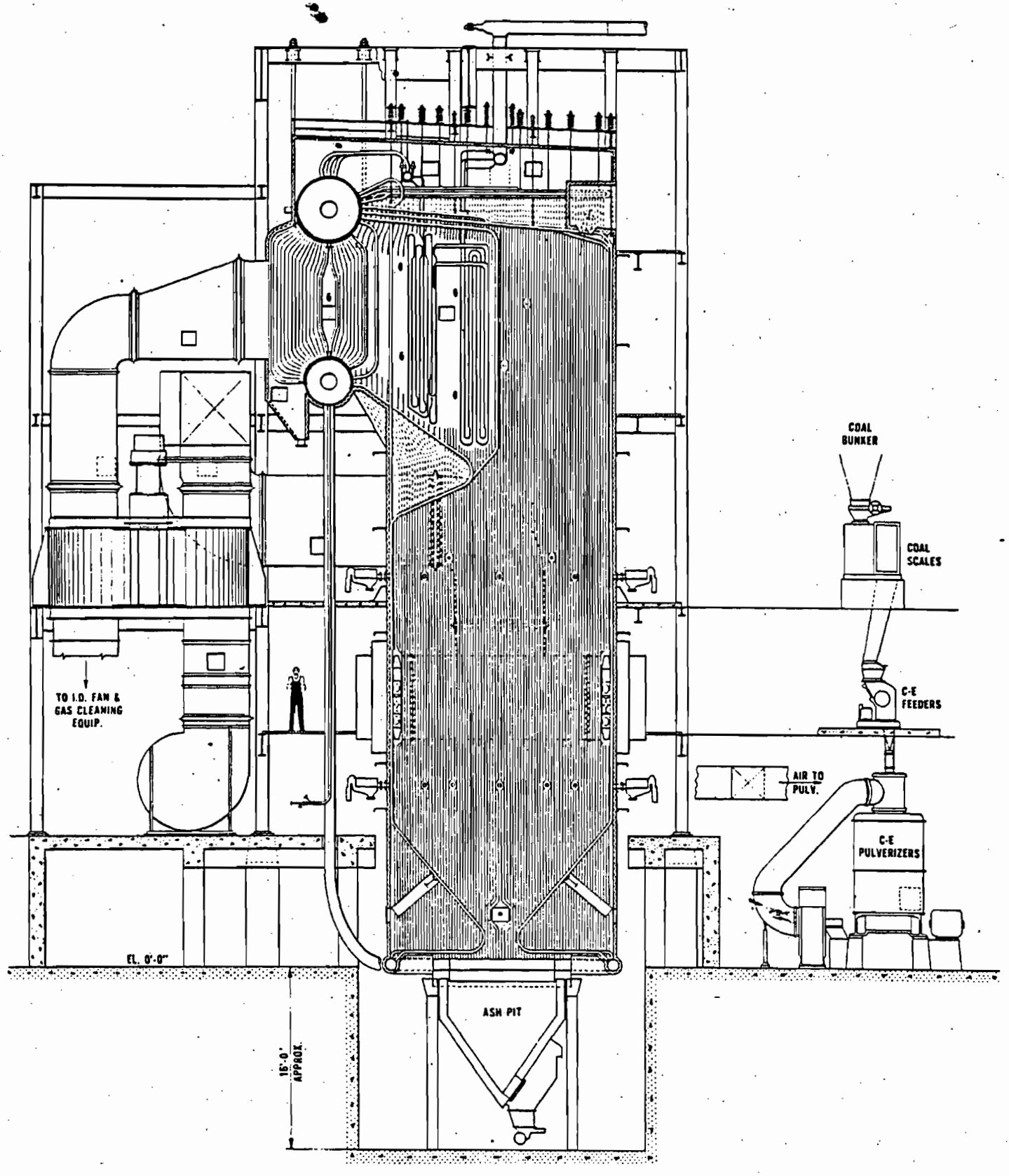


Fig. 3b: Top supported unit converted to pulverized coal firing

7. Install a dust collector ahead of the air heater to prevent air heater plugging. Tubular air heaters will not require this modification.

8. Install new foundations, supporting steel, platforms and ductwork as required.

9. Modify the combustion and safety controls.

10. Add an ID fan for balanced draft operation.

11. Modify the furnace buckstays and add ductwork stiffeners as required for balanced draft operation.

A comparison of a top-supported distillate oil- and gas-fired unit rated at 400,000 pounds of steam per hour converted to pulverized coal firing is shown in Fig. 3. The capacity obtained with pulverized coal firing will be a nominal 265,000 pounds of steam per hour as limited by furnace release rates and will vary depending upon the coal selected. The single-pass boiler bank, with the higher allowable flue gas velocity, does not become a limiting factor. If a spreader stoker were selected, the maximum obtainable capacity would be 200,000 pounds of steam per hour, limited physically by the size of the grate that can be installed.

In general, this conversion requires the following modifications:

1. Modify the furnace bottom pressure parts to accommodate a hopper bottom for furnace ash collection and removal.

2. Provide space for a dropped furnace bottom, ash hopper, and ash removal system.

3. Modify the windboxes to accommodate coal nozzles and ignition equipment.

4. Add pulverizers and their associated coal piping. Space adjacent to the boiler will be required.

5. Add soot blowers to the furnace walls, and the superheater and boiler bank to keep heating surfaces clean.

6. Modify the superheater to obtain the desired tube spacings.

7. Modify the air heater, as required for acceptable heating surfaces for coal firing, to prevent air heater plugging. Add a primary flow air heater if a higher mill air inlet temperature is required because of coal moisture content.

8. Install new foundations, supporting steel, platforms and ductwork as required.

9. Modify the combustion and safety controls.

10. Add an ID fan for balanced draft operation.

11. Modify the furnace buckstays and add ductwork stiffeners as required for balanced draft operation.

Shop assembled boilers are not adaptable for conversion to either a pulverized coal or a spreader stoker fired system. A typical shop assembled boiler is shown in Fig. 4. The modifications required to handle ash in the furnace and convection pass, increased firing clearances, soot blowing, etc., are completely uneconomical, aside from being almost physically impossible, in most installations. The end result would be a significant compromise of good design, with a resulting reduced capacity to approximately one-third that obtained with oil and/or gas.

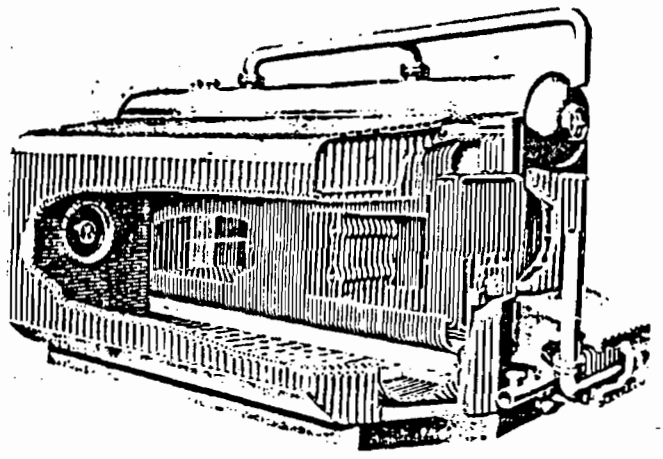


Fig. 4: Shop-assembled boiler

OTHER CONSIDERATIONS

There are many significant considerations in a conversion to coal firing other than the modifications to the boiler. Attention must be given to:

A. Coal storage, unloading, and transporting equipment and their location relative to the boiler and docks or railroad tracks.

B. Physical limits in locating new equipment, such as stoker, pulverizers, ductwork and pulverized coal piping, etc.

C. Dust cleaning equipment to meet EPA, state, and local particulate emissions standards.

D. Ash disposal systems to handle both furnace ash and fly ash collected by the dust cleaning equipment.

CONCLUSIONS

Conversion of industrial boilers designed for only oil and gas firing to coal firing is not a simple modification. In all cases, an appreciable capacity downrating will result. The physical space required to effect a conversion will not be available in many plants. In most cases, conversion to coal firing will be neither practical nor economically acceptable, unless oil and gas fuel are not available.

MICRONIZED COAL AS AN ALTERNATE FUEL FOR OIL AND GAS FIRED BOILERS

T.A. Morris
and
G. Haider
Babcock & Wilcox Company
Alliance Research Center
Alliance, Ohio

A.E. Margulies
and
G.F. Moore
Stone & Webster Engineering Corporation
Boston, Massachusetts

R.J. West
Gulf States Utilities Company
Beaumont, Texas

ABSTRACT

Three micronized coals* were tested in the Babcock & Wilcox Laboratory Ashing Furnace at approximately 200,000 Btu/hr to determine the feasibility of burning them in boilers designed for oil or gas. Following these tests, one of the three coals was tested in Babcock & Wilcox's Basic Combustion Test Unit at a burn rate of approximately 4 million Btu/hr. These included load and excess air tests and an around-the-clock deposition test. To evaluate the deposition potential, flue gas was diverted through a test section in which the tube size, tube spacing, gas temperature, and gas velocity are similar to those of an oil or gas designed boiler. Results from the first two phases indicate:

- Ash deposition rates on ceramic probes in the Laboratory Ashing Furnace were less for micronized coal than for pulverized coal.
- Fly ash from micronized coal had a finer particle size distribution than fly ash from conventional pulverized coal.
- Combustion performance of micronized coal was superior to pulverized coal.
- Deposits formed on a tightly spaced tube bank when firing micronized coal were removable by sootblowing with air.
- When tubes were blown every hour, base deposits (deposits on the tubes immediately after sootblowing) did not increase with time.
- The micronized coal flame was significantly shorter than a pulverized coal flame.

*In this text, micronized coal is any coal with a top size no greater than 325 mesh (44 microns). For comparison, conventional pulverized coal is considered 70% less than 200 mesh (75 microns) and 98% less than 50 mesh (300 microns).

Test results support a preliminary conclusion that micronized coal would be a feasible substitute fuel in boilers designed for oil and gas, with minimal deratings. Therefore, subsequent planned phases of longer term demonstration testing are justified in industrial and utility boilers.

INTRODUCTION

Micronized coal is currently being investigated as a substitute fuel for industrial and utility boilers designed for oil and gas. This paper presents the results of the first two phases of a four-phase test and demonstration program [1] for evaluation of micronized coal for application to oil- and gas-fired boilers.

Background

Oil- and gas-fired boilers for several reasons have smaller furnace volumes than a coal-fired boiler having the same heat input. First, the volume of the firebox in a coal-fired boiler must be greater due to additional heat transfer surface required in this region of the boiler. This additional heat transfer surface helps to lower the gas temperature entering the convective tube banks so that slagging can be controlled by sootblowers. Second, additional firebox volume is required in a coal-fired boiler because of the increased residence time needed for complete combustion of the coal.

Convective heat transfer tubes in coal-fired boilers must be spaced much farther apart than in oil- and gas-fired boilers to reduce the tendency for bridging by ash deposits between adjacent tubes. Thus, if an oil- or gas-fired boiler were to be converted to conventional pulverized coal, the convective heat transfer surface would have to be replaced with tubes spaced farther apart or the boiler would have to be operated with a significant derating of plant capacity.

The large amount of ash present in coal would probably necessitate further modifications to an existing oil-designed boiler. A hopper would have to be added to the bottom of the furnace to collect large ash and slag as they fall. With increased ash loading in the convective passes, more ash would be deposited on these tubes. Therefore, additional sootblowers would have to be provided and used more frequently than they would if oil were being fired. If the boiler was designed for firing natural gas, sootblowers would have to be added with the new tube bank. Since the ash loading in the boiler would be much higher with coal than with oil or natural gas, the tail-end particulate cleanup system (baghouse, electrostatic precipitator) would have to be added if designed for natural gas firing.

In many cases, the cost of equipment modifications and/or the amount of derating would be so substantial that conversion to conventional pulverized coal could not be justified economically. If some of the previously mentioned modifications could be reduced or eliminated by firing micronized coal in boilers designed for oil and gas firing, then micronized coal could be a viable substitute for oil or gas.

Micronized coal is being examined as a potential substitute fuel for oil- and gas-designed boilers because preliminary tests have indicated that the finer grinding (1) increases the burning rate of coal to permit completion of combustion in the relatively smaller furnaces of oil- and gas-fired units, and (2) reduces the mean particle size of the ash particles procuded during combustion so that they follow flow streams around the tightly spaced tubes of these boilers [2, 3].

Phase I Description - Fuels Characterization and Laboratory Ash Furnace Tests

During Phase I, fuel chemical and physical analyses were performed and then fuel combustion tests were conducted in the Babcock & Wilcox (B&W) Laboratory Ashing Furnace (LAF) located at B&W's Research Center in Alliance, Ohio [4]. This small furnace was designed to produce fly ash with properties similar to ash from an industrial or utility steam generator. This testing was performed using three coals, a portion of each ground to a pulverized and a micronized size consist. Table 1 presents a comparison of the three coals tested.

Phase I Results and Discussion

Evaluation of the potential for ash deposition requires data on the ash deposition rate and the ease of ash deposit removal. Figure 1 presents the comparison of deposition probes exposed to combustion gases for one hour during micronized and pulverized coal testing of West Virginia coal. Deposition rates on the ceramic probes were dramatically less when burning micronized coal than for pulverized coal. This confirms the concept that the smaller ash particles will follow the gas stream around the tubes.

The results of fly ash sintering strength tests indicate that deposits from micronized coals, if left on tubes for the same time, would be harder to remove than those from pulverized coal. Since the deposit rates for micronized coal are slower, deposit buildup may be controlled with sootblowing, as is done for pulverized coal.

The decreased deposition rates observed in the above tests confirm less impingement of ash particles on the tubes. This should result in lower rates of tube erosion with micronized coal than with pulverized coal, at equivalent boiler capacities.

Another concern of deposition was that ash particles would agglomerate into larger particles during combustion. Table 2 presents the comparison of the mass mean particle sizes of micronized and pulverized coals and fly ash produced from burning each coal. Ash particles from micronized coal were finer than those from pulverized coal.

TABLE 2

Comparison of Mass Mean Particle Sizes of Pulverized and Micronized Coal and Fly Ash from Each

	Mass Mean Particle Size, Microns			
Origin of Coal	Pulverized Coal	Fly Ash	Micronized Coal	Fly Ash
West Virginia	43.67	37.73	7.76	5.12
Ohio	48.00	39.98	8.32	4.25
Indiana	53.72	7.53	6.98	4.03

The relatively finer ash from pulverized Indiana coal may be due to the fine mineral matter distribution in the coal. However, the deposit on the probe from pulverized Indiana coal was comparable to the deposit of pulverized West Virginia and Ohio coals even though the Indiana pulverized coal fly ash was finer. The reason for this behavior is

TABLE 1

MOISTURE, PROXIMATE, ULTIMATE AND SULFUR FORMS ANALYSES, CALORIFIC VALUES FOR PARENT COALS, ASH ANALYSES AND ASH-FUSION TEMPERATURES

	Indiana Parent Coal		Ohio Parent Coal		West Virginia Parent Coal	
	As Received	Dry	As Received	Dry	As Received	Dry
Total Moisture, %	13.0	---	5.2	---	4.8	---
Proximate Analysis, %						
Moisture	13.0	---	5.2	---	4.8	---
Volatile Matter	37.7	43.4	38.1	40.2	28.6	30.1
Fixed Carbon	41.2	47.3	48.1	50.7	62.5	65.6
Ash	8.1	9.3	8.6	9.1	4.1	4.3
Ultimate Analysis, %						
Moisture	13.0	---	5.2	---	4.8	---
Carbon	62.0	71.2	70.2	74.0	79.5	83.5
Hydrogen	4.5	5.1	4.9	5.1	4.8	1.29
Nitrogen	1.03	1.18	1.55	1.64	1.23	1.29
Sulfur	3.24	3.73	2.16	2.28	0.75	0.79
Ash	8.1	9.3	8.6	9.1	4.1	4.3
Oxygen (Difference)	8.13	9.49	7.39	7.88	4.82	5.22
Total	100.00	100.00	100.00	100.00	100.00	100.00
Sulfur Forms, % as S						
Pyritic	0.76	0.87	0.74	0.78	0.01	0.01
Sulfate	0.50	0.57	0.17	0.18	0.02	0.02
Organic (Difference)	1.98	2.29	1.25	1.32	0.72	0.76
Total	3.24	3.73	2.16	2.26	0.75	0.79
Gross Calorific Value						
Btu/lb	11,100	12,760	12,540	13,230	14,000	14,710
Btu/Lb.(M&A Free)*	------	14,080	------	14,550	------	15,380

TABLE 1 (CONT'D)

MOISTURE, PROXIMATE, ULTIMATE AND SULFUR FORMS ANALYSES, CALORIFIC VALUES FOR PARENT COALS, ASH ANALYSES AND ASH-FUSION TEMPERATURES

	Indiana Parent Coal		Ohio Parent Coal			West Virginia Parent Coal		
Ash Analysis (Spectrographic), %								
Silicon as SiO_2	43.53		50.58			44.87		
Aluminum as Al_2O_3	20.34		24.62			27.85		
Iron as Fe_2O_3	22.02		17.16			13.06		
Titanium as TiO_2	0.96		1.10			1.17		
Calcium as CaO	4.06		1.13			3.39		
Magnesium as MgO	0.77		0.62			1.16		
Sodium as Na_2O**	0.46		0.39			1.02		
Potassium as K_2O**	2.41		1.99			2.11		
Sulfur as SO_3	4.40		1.11			4.08		
Phosphorus as P_2O_5	0.61		0.39			0.54		
Ash-Fusion Temperatures, °F								
	Red.	Oxid.	Red.	Oxid.		Red	Oxid	
Atmosphere								
A (I.D.)	2,000	2,380	2,220	2,560		2,310	2,610	
B (S.T., Sp)	2,090	2,490	2,440	2,640		2,500	2,670	
C (S.T., HSp)	2,130	2,520	2,470	2,650		2,520	2,690	
D (F.T., 1/16")	2,260	2,560	2,570	2,670		2,570	2,720	
E (F.T., Flat)	2,570	2,650	2,750+	2,750+		2,750+	2,750+	

NOTES: *Moisture and ash free
**By flame photometer

unclear; however, it may be related to the lower ash fusion temperature and higher slagging index of Indiana coal (See Table 3).

TABLE 3

Ash-Fusion Temperature and Slagging Index for Ash Prepared from Test Coals

Coal	Ash-Fusion Temperatures Hemispherical Temperatures (HT) in Reducing Atmosphere, °F	Slagging Index Calculated From Elemental Analysis of Ash
West Virginia	2520	0.22
Ohio	2470	0.64
Indiana	2130	1.75

The fact that smaller particles will require less time to burn than larger particles is due to the larger surface area for combustion per unit mass. Table 4 shows the ignition temperatures and burnout temperatures obtained from burning profiles of the micronized and pulverized coals.

TABLE 4

Ignition Temperatures and Burnout Temperatures of Micronized and Pulverized Coals

	Ignition Temperature Approx., °F		Burnout Temperature Approx., °F	
Coal	Micronized Coal	Pulverized Coal	Micronized Coal	Pulverized Coal
West Virginia	600	600	1500	1800
Ohio	470	590	1410	1650
Indiana	430	510	1290	1400

The ignition temperatures and burnout temperatures were generally lower with micronized coal. This indicates that the intensity of combustion of micronized coal will increase. This increased intensity will shorten combustion times further.

The possibility that the micronized coal particles would agglomerate in the feed system to the combustor was considered. The particle size distribution of micronized coal passing through the feed system proved that agglomeration was not occurring.

The bulk of the accumulated data supports a conclusion that conversion to micronized coal, instead of pulverized coal, will require less boiler modification and/or less boiler derating. Therefore, scaled-up tests in the Basic Combustion Test Unit (BCTU) followed.

Phase II Description - Small Scale Combustion/Depostion Testing

The Phase II testing took place in B&W's 4 million Btu/hr BCTU. The coal was fired in the BCTU in a batch mode. A small test section was added to the existing BCTU furnace through which the flue gas was divarted. This test section was designed to simulate a superheater section of boilers designed for oil and gas firing. Tubes were 2-inch

O.D. on 3-inch centers. Gas velocities through the tubes were approximately 100 ft/sec at nominal load. The tubes were air-cooled, and surface metal temperatures could vary up to 1000°F. An air sootblower was installed for tube cleaning.

Phase II testing was performed using West Virginia Sewell No. 1 coal. This was the same West Virginia coal that was tested in the Phase I LAF testing.

Figure 2 illustrates the mass fraction distributions of the intermediate and ultrafine micronized coals tested in the BCTU. It appears as if there is very little difference between these two samples; however, by calculating the number distributions from the mass fraction distributions and by plotting them on a histogram, definite differences in the samples appear, as shown in Figure 3.

The mass mean diameters were 8.3 and 9.4 microns for the ultrafine and intermediate micronized coal samples, respectively. The Sauter mean diameters were 4.8 and 6.7 microns for the finer and coarser micronized coal samples, respectively.

The Phase II testing consisted of a 64-hour, around-the-clock deposition test plus a series of parametric combustion tests using coal micronized to an intermediate fineness. In addition, some limited testing was performed using coal micronized to an ultrafine consistency. For comparison, some testing was performed using conventional pulverized coal.

The initial testing was performed using pulverized coal. Five parametric tests were planned for this grind, but before these could be completed, the deposition test section plugged with ash as shown in Figure 4. This occurred within seven hours after starting up on pulverized coal. Tube temperatures (surface metal temperature) during this period ranged from 400 to 600°F.

The coal ground to intermediate fineness was then tested under different excess air and load conditions in the BCTU. Figure 5 shows the relationship of NO_x emissions with load for the intermediate fineness coal. The increase in NO_x emissions with load is due to the higher furnace temperature and increased turbulence resulting in better fuel/air mixing.

The coal micronized to intermediate fineness was then tested in the BCTU for 64 hours continuously. The tubes were blown with compressed air every hour, and photographs were taken before and after soot blowing. Tube metal temperatures averaged around 900°-1000°F for these tests. The hourly sootblowing provided controllable deposition, as shown in Figure 6. Occasionally, the coal would hang up in the feed hopper, suddenly free itself, and then start feeding again. When this happened, the coal feed rate would increase briefly and level out shortly. This, in turn, would increase the tube surface temperature about 100° to 200°F. A few times, the tube metal temperatures exceeded 1200°F due either to a coal surge or loss of a compressor supplying cooling air to the tubes. These high metal temperatures increased the deposition rates drastically. However, after the temperatures leveled out, the air sootblowing again cleaned the tubes quite well. The base deposit did not appear to grow over the extended test (i.e., the sootblowing seemed to clean the tubes to the same degree each time).

Although limited testing was performed with the ultrafine micronized coal, a very interesting observation was made with regard to its performance. During some shakedown tests with this ultrafine coal, the stack

oxygen concentration was reduced to low levels (about 0.5 - 1.0 percent by volume). When firing conventional pulverized coal in the BCTU, these low oxygen levels would result in a very smokey furnace and a dirty stack. However, when firing the ultrafine micronized coal under these conditions, the stack gas was very clean and the rear of the furnace was very clear.

As expected, the flames of the conventional pulverized and the flames of the coal micronized to intermediate and ultrafine consistency were visibly different. The flame of ultrafine micronized coal was very short. It extended from the burner about 2-4 feet down the furnace (to about one-half of the furnace length). This flame was very bright orange to white, and one could look into the flame from the back of the furnace and see the coal impeller and various parts of the burner; however, not as clear as the blue flame from natural gas. The increased brightness was due to the more intense combustion (more heat release per unit volume) than is typically seen with conventional pulverized coal. Because the coal particles are smaller and the surface where combustion reactions can occur is significantly larger, the particles burn in a shorter time. The flame of the conventional pulverized coal was not as clear and it occupied the entire furnace.

The flame from the coal micronized to intermediate fineness was not as bright as the flame from the ultrafine micronized coal. Occasionally, parts of the burner could be seen through the flame, but usually only a bright halo around the impeller could be seen through the orangish flame. This flame occupied a large percentage of the furnace region, but not as much as the pulverized coal flame.

CONCLUSIONS

The LAF test results support the contention that ash deposition rates, ash impingement on tubes and combustion times will be less for micronized coal than for pulverized coal. The results, though not completely conclusive, indicate that equipment modifications and/or plant derating will be significantly less in converting to coal if micronized coal is used instead of pulverized coal.

The shape of the flame when firing intermediate micronized coal in the BTCU was slightly different from a conventional pulverized coal flame; it did not occupy the entire furnace. The flame from the ultrafine micronized coal was significantly shorter.

The deposits formed on the tightly-spaced tube bank in the BCTU when firing micronized coal to an intermediate consistency were removed by sootblowing with air. During the 64-hour continuous test, tubes were blown every hour, and base deposits (deposits on the tubes immediately after sootblowing) did not appear to increase with time. However, longer duration testing in full size boilers is required to confirm these test results and address the question of erosion.

REFERENCES

1) Margulies, A.E., Moore, G.F., West, R.J., Ultrafine Pulverized Coal as an Alternate Fuel for Oil and Gas Fired Boilers, presented at 9th Energy Technology Conference, Washington, DC, February 16-18 1982.

2) Bayles, A.L., "Effects of Particles Size on Firing Pulverized Solid Fuels in Boilers", presented at ASME Annual Meeting, ASME Paper No. 57-A-276, December 1-6, 1957.

3) Briceland, C.L., Khinkis, M.J., and Waibel, R.T., "Preliminary Investigation of Fine-Ground Coal Combustion", Institute of Gas Technology.

4) Haider, G., Morris, T.A., et al, "Potential of Micronized Coal As an Alternate Fuel in Oil- and Gas-Fired Boilers, presented at American Flame Research Committee International Symposium on Conversion to Solid Fuels, Newport Beach, California, October 26, 1982.

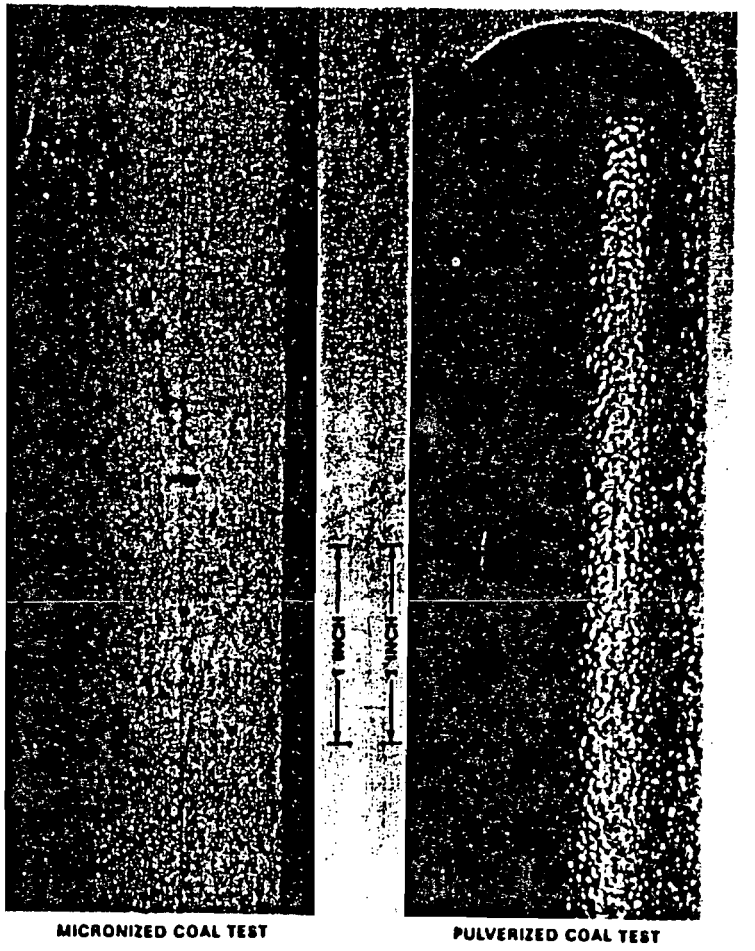


FIGURE 1 COMPARISON OF DEPOSITS FROM MICRONIZED AND PULVERIZED COALS

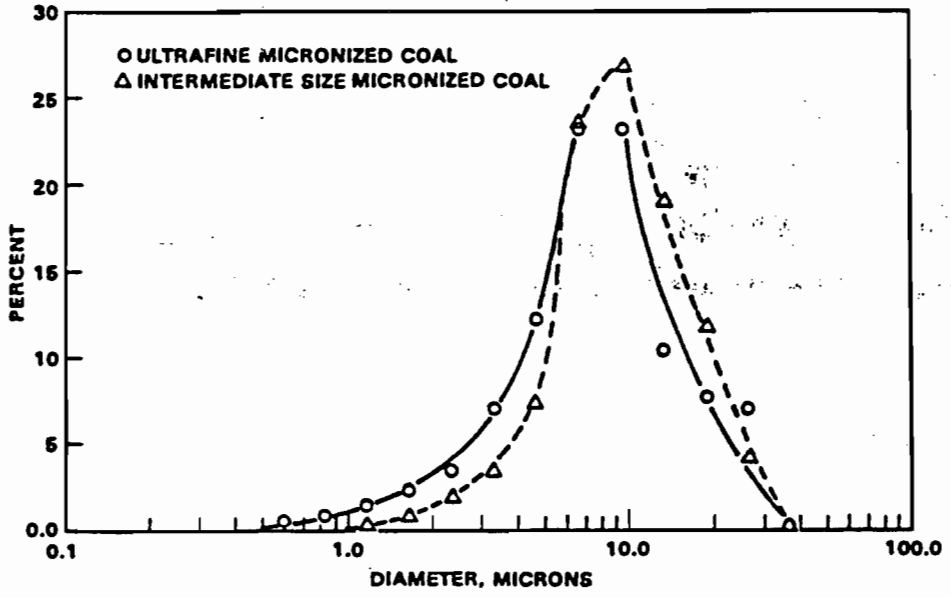


FIGURE 2 MASS FRACTION DISTRIBUTION OF COAL SAMPLES

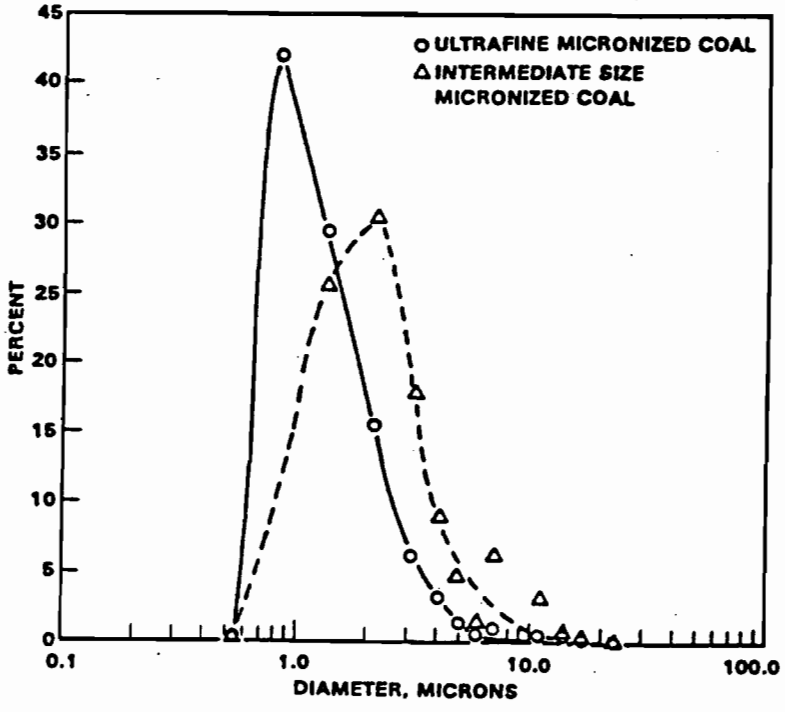


FIGURE 3 NUMBER DISTRIBUTION OF COAL SAMPLES

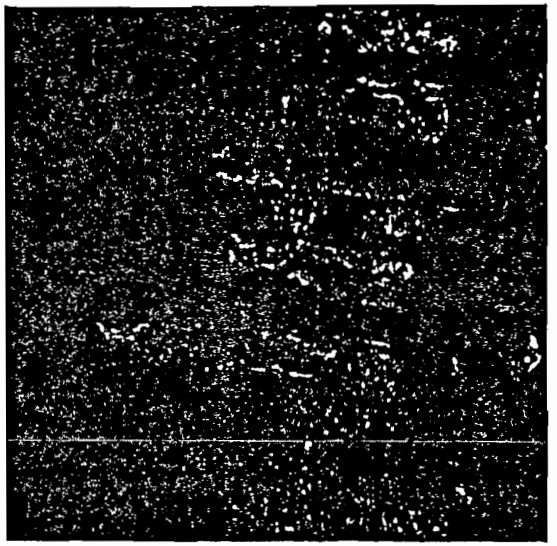


FIGURE 4 DEPOSITION FROM PULVERIZED COAL DURING PARAMETRIC TEST (Without Sootblowing)

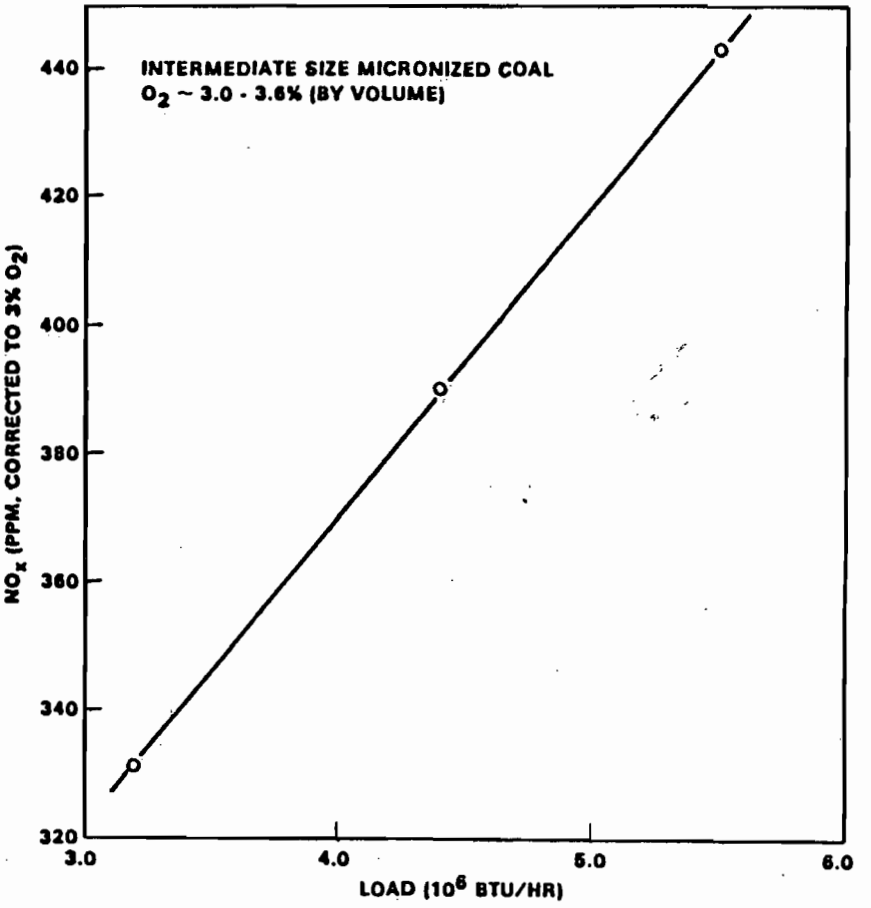


FIGURE 5 NO_x-LOAD RELATIONSHIP

COMBUSTION CHARACTERISTICS OF FINE-GROUND COAL

PETC CONTRACT NO. DE-AC22-81PC40269

IGT PROJECT NO. 61052

PREPARED BY

CHARLES L. BRICELAND
MARK J. KHINKIS
RICHARD T. WAIBEL

PRESENTED AT

UTILIZATION AR&TD CONTRACTORS REVIEW MEETING

APRIL 5-8, 1983

Date: Wednesday, April 6, 1983

TITLE: COMBUSTION CHARACTERISTICS OF FINE-GROUND COAL

PI'S (AUTHORS): Charles L. Briceland, Mark J. Khinkis, and Richard T. Waibel

INSTITUTION/ORGANIZATION: Institute of Gas Technology
Energy Development Center
4201 West 36th Street
Chicago, Illinois 60632

CONTRACT NO: DE-AC22-81PC40269

PERIOD OF PERFORMANCE: March 1, 1981 to September 30, 1982

I. ABSTRACT

OBJECTIVE: To experimentally determine the effect of coal particle size on pulverized coal flame characteristics for boiler application. Specifically, flame characteristics such as flame temperatures, radiant heat transfer and overall heat transfer to the furnace load, specific heat release density and NO_x emissions, and also the effect on fly ash slagging and fouling tendencies were to be determined at the high furnace combustion gas temperatures typical of boilers designed for natural gas- and oil-firing.

WORK DONE AND CONCLUSIONS: An on-line milling and feeding system was developed and constructed at IGT's Applied Research Facility to prepare and burn this micronized coal at about two million Btu/hr firing rate. The research furnace was equipped with a single-stage swirl type boiler burner. The boiler radiant section was simulated using water cooling tubes along the walls of the combustion chamber, and the boiler convection section was simulated using gas cooling tubes in the flue. A 35 mm (1.38 in.) ID pipe burner nozzle was used with firing rates from 470 kW (1.6 X 10^6 Btu/hr) to 730 kW (2.5 X 10^6 Btu/hr).

All tests were performed with combustion air at ambient temperature with about 20% excess air (3.4% to 3.9% O_2 in the flue). The combustion trials were conducted at the high furnace combustion gas temperatures typical of boilers designed for natural gas- and oil-firing. Slag and ash deposition tests were performed maintaining flue gas temperature entering the slag and ash deposition probe at about 1300°C (2370°F). The coal fired in the tests was a high volatile bituminous coal from Pittsburgh No. 8 seam.

The combustion characteristics, slagging and fouling tendencies of three different coal particle sizes were studied, namely: 99.9% below 15.8 μm (average particle size 6.6 μm), 99.9% below 55 μm (average particle size 18.1 μm), and 99.9% below 148.0 μm (average particle size 41 μm). Some limited data were also collected firing a bimodal distribution particle size with 99.9% below 174.6 μm (average particle size 33 μm). The coarsest coal used in these experiments was finer than the standard boiler grind pulverized coal (99.9% below 330 μm, average particle size 55 μm) and so the results should be evaluated with this in mind.

It was found that the flame length was sensitive to the size of grind of the coal and was reduced by about 60% from the largest to smallest particle size. The combustion intensity achieved with the flame for the finest grind of coal was more than twice that with the coarsest coal grind. The radiation heat flux and the overall amount of heat absorbed by furnace load was considerably higher for fine-ground coals compared to the coarser coal. The slag and ash deposition rate on the convective tube passes, at relatively high (1300°C or 2370°F) flue gas temperature, was reduced by about 80% with the finest coal compared to the coarsest coal. Nitrogen oxide emissions did not change with coal particle size.

The finest coal (99.9% less than 15.8 μm) tested caused feeding and transport difficulties, but was successfully burned in this program. Pneumatic transport from the feeder to the burner was not easily achieved; therefore, the feeding and transport systems for very fine coal should be further improved.

SIGNIFICANCE TO FOSSIL ENERGY PROGRAM: The project proved that finely ground coal offers promise for a substitute for oil in industrial and utility application. The experimental data should assist evaluation of the technical and economic feasibility of converting boilers, furnaces and process heaters, designed for natural gas- and oil-firing, to fine-ground coal combustion.

II. HIGHLIGHT ACCOMPLISHMENTS

A relatively versatile and smooth operating coal grinding, feeding and transport system has been designed and installed that enables combustion and ash fouling tests with a wide variety of coal types over a wide variety of sizes of grinds, feed rates, furnace conditions, etc. The test results to date with coal grinds to less than 15 μm maximum particle size have shown significant benefits in flame characteristics such as flame size, radiation, heat transfer and ash fouling rates due to fine grinding. These results can be used by boiler and furnace designers to estimate combustion chamber size requirements for burnout and heat transfer and to estimate de-rating requirements, if necessary, for retrofit applications.

OBJECTIVE

OVERALL

PRELIMINARY EVALUATION OF COAL UTILIZATION IN GAS- OR OIL-FIRED BOILERS.

SPECIFIC

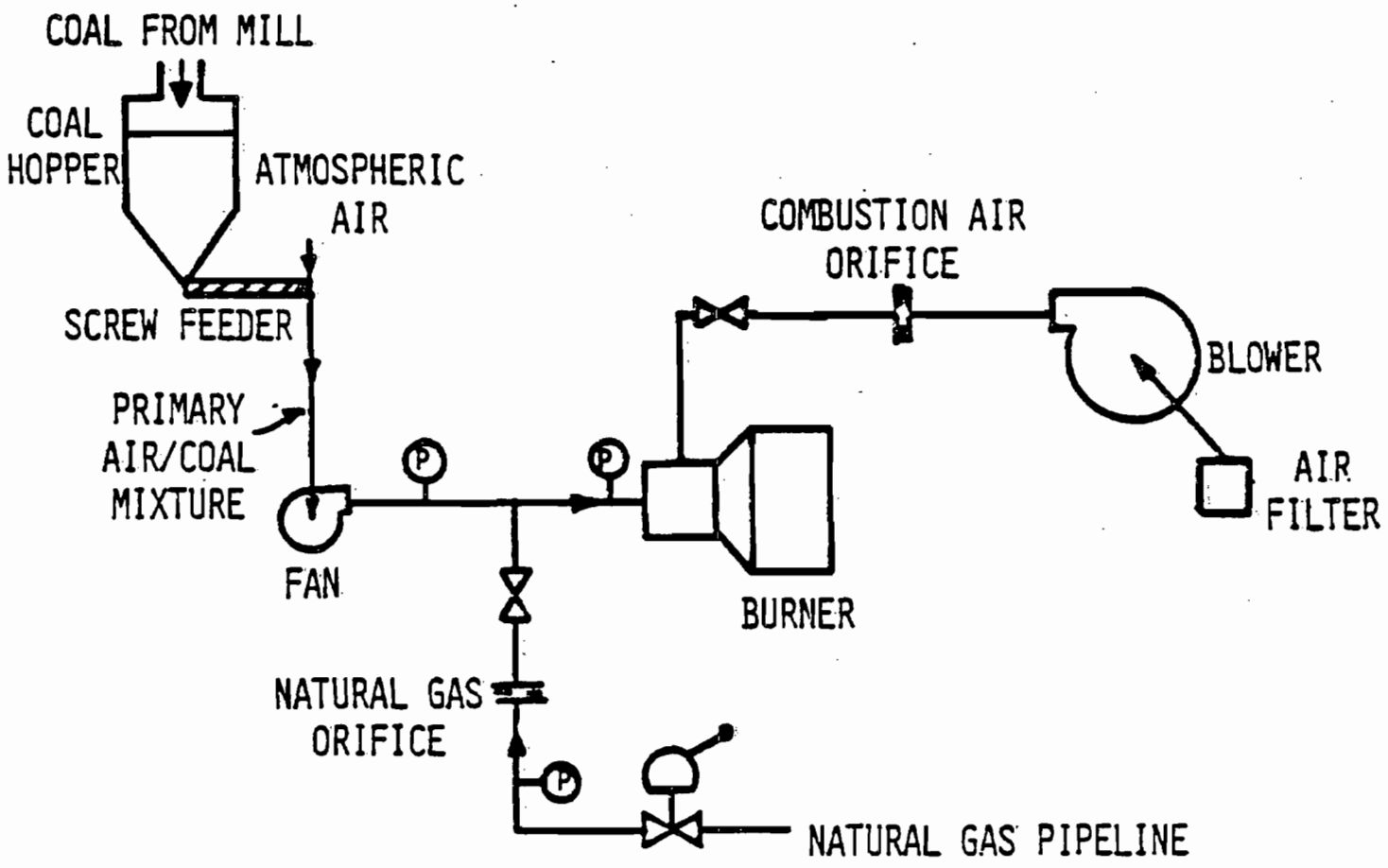
EXPERIMENTALLY DETERMINE EFFECT OF PARTICLE SIZE ON PULVERIZED COAL FLAME AND ASH FOULING CHARACTERISTICS FOR BOILER APPLICATIONS.

IGT

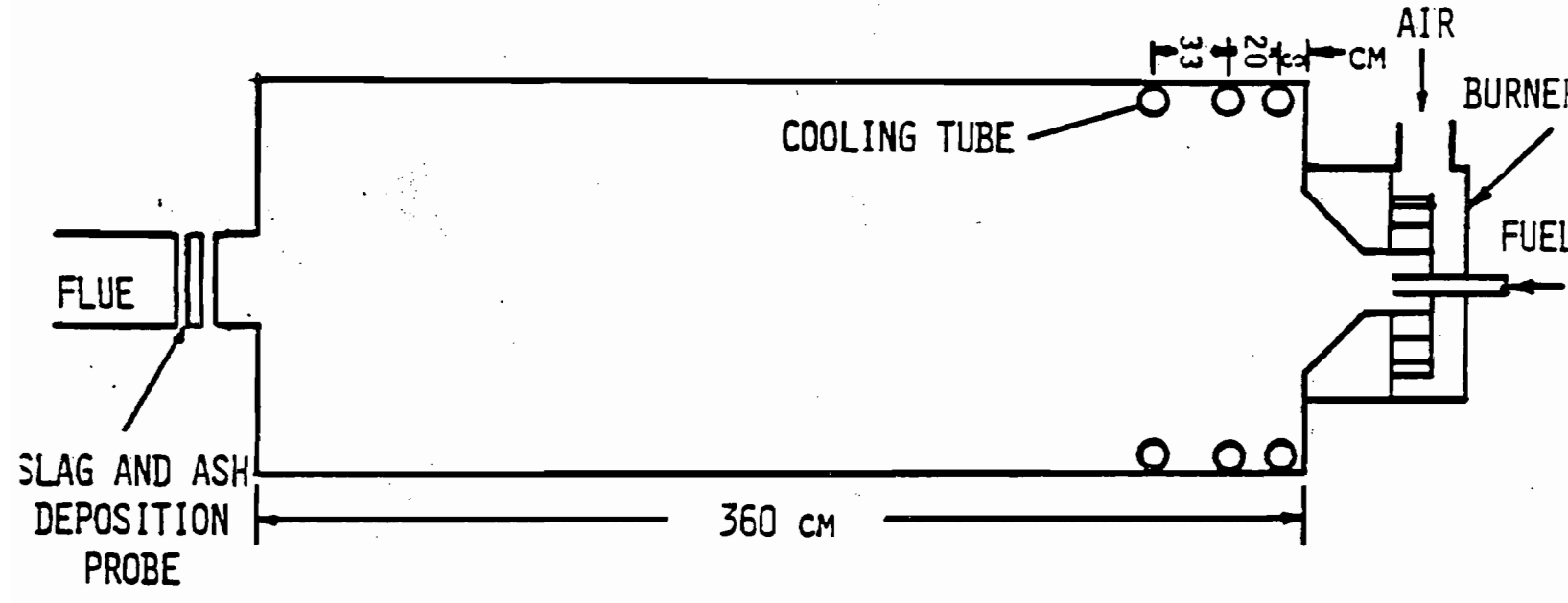
FACILITIES

- ON-LINE COAL MILLING AND FEEDING SYSTEM, 90 KG/HR (200 LB/HR)
- SINGLE SWIRL TYPE BOILER BURNER
- REFRACTORY LINED FURNACE WITH WATER-COOLING TUBES TO SIMULATE RADIANT SECTION
- GAS-COOLED TUBES FOR CONVECTIVE SECTION IN THE FLUE

IGT

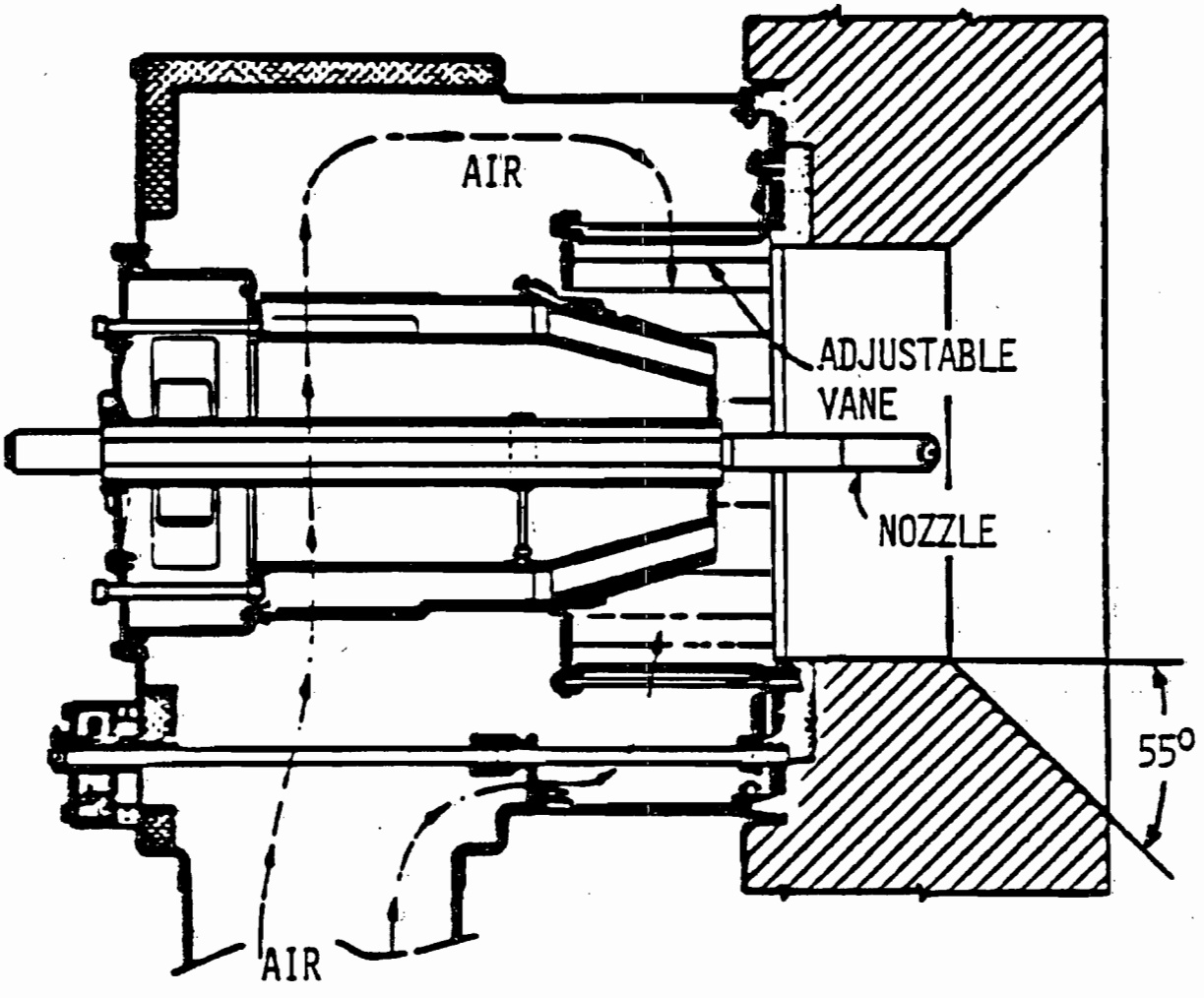


FINE-GROUND COAL FEEDING SYSTEM

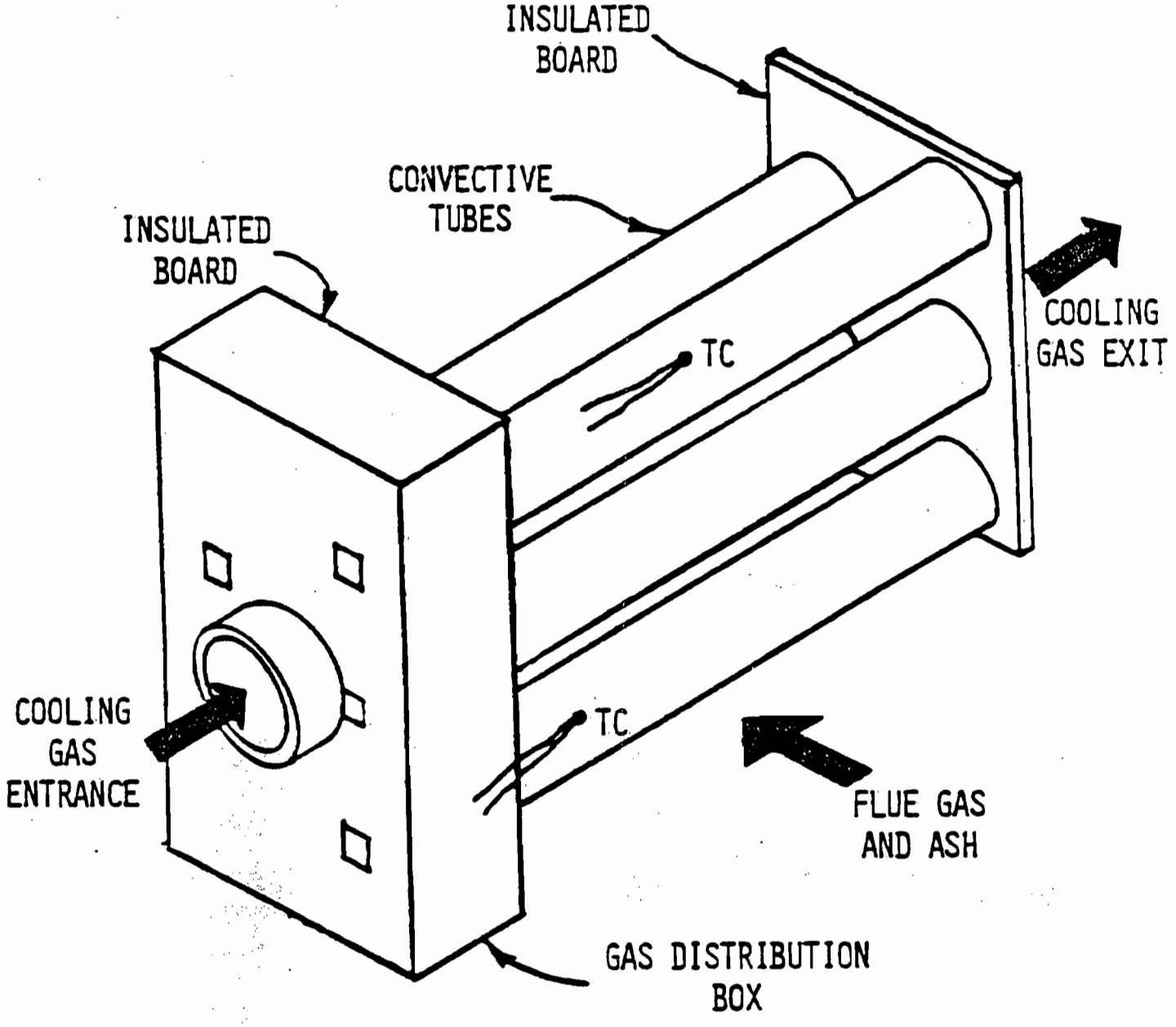


PLACEMENT OF WATER-COOLED TUBES IN FURNACE NO. 1

IGT



SCHEMATIC CROSS SECTION OF THE MOVABLE-VANE BOILER BURNER

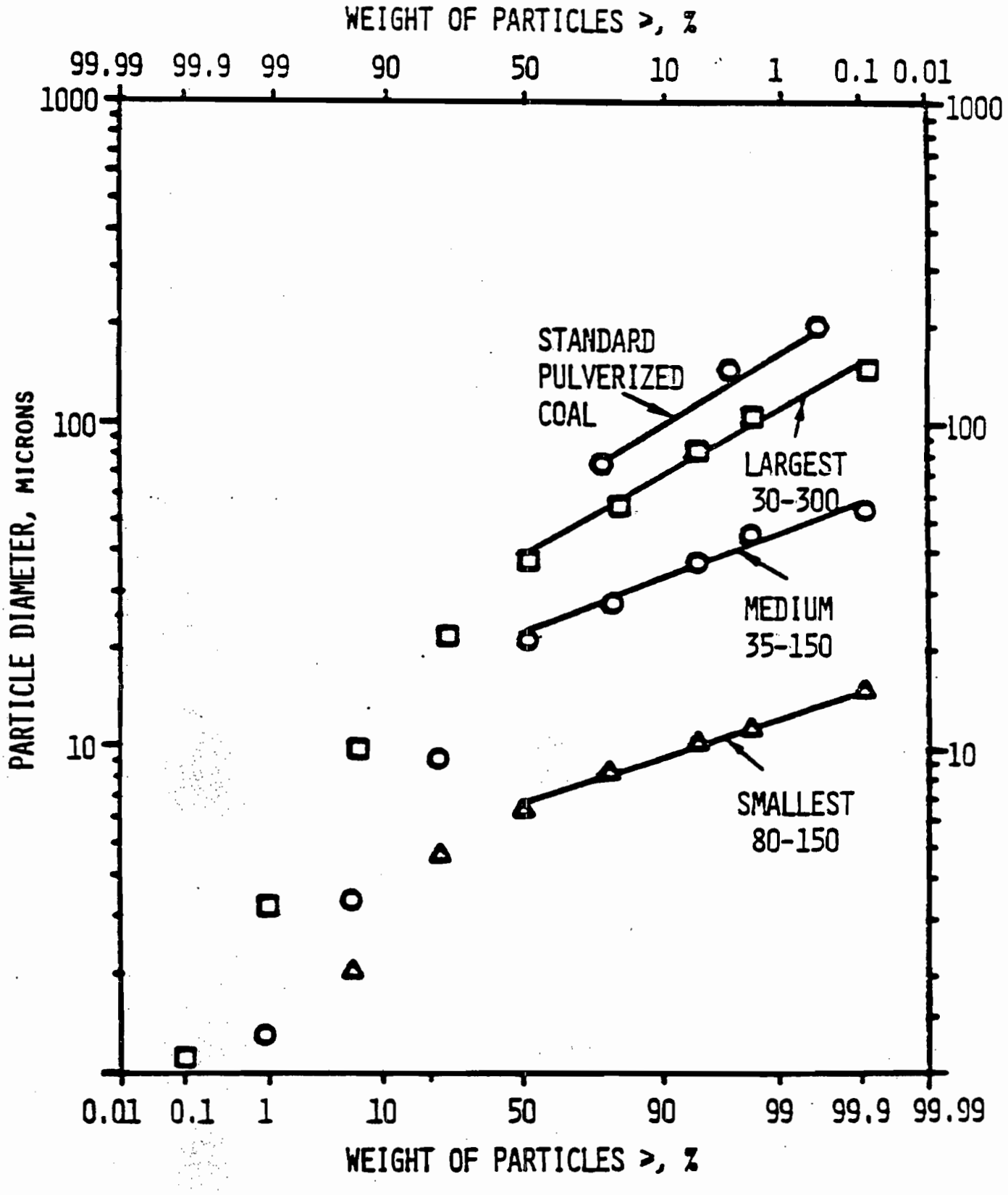


SLAG AND ASH DEPOSTTION PROBE

COAL TYPE AND SIZE

- HIGH VOLATILE BITUMINOUS COAL (PITTSBURGH No. 8 SEAM)
- 99.9% BELOW 15.8 μM (AVERAGE PARTICLE SIZE 6.6 μM)
- 99.9% BELOW 55 μM (AVERAGE PARTICLE SIZE 18.1 μM)
- 99.9% BELOW 148 μM (AVERAGE PARTICLE SIZE 41 μM)

IGT



IGT

COAL PARTICLE SIZE ANALYSIS FOR TRIALS 1 THROUGH 10 AND FOR CONVENTIONAL PULVERIZED COAL

OPERATING CONDITIONS

- FIRING RATES FROM 470 kW (1.6×10^6 Btu/hr) TO 730 kW (2.5×10^6 Btu/hr)
- EXCESS AIR ABOUT 20% (From 3.4% to 3.9% O_2 IN THE FLUE)
- COMBUSTION AIR TEMPERATURE – AMBIENT
- FLUE GAS TEMPERATURE FROM 1200°C (2190°F) TO 1300°C (2370°F)

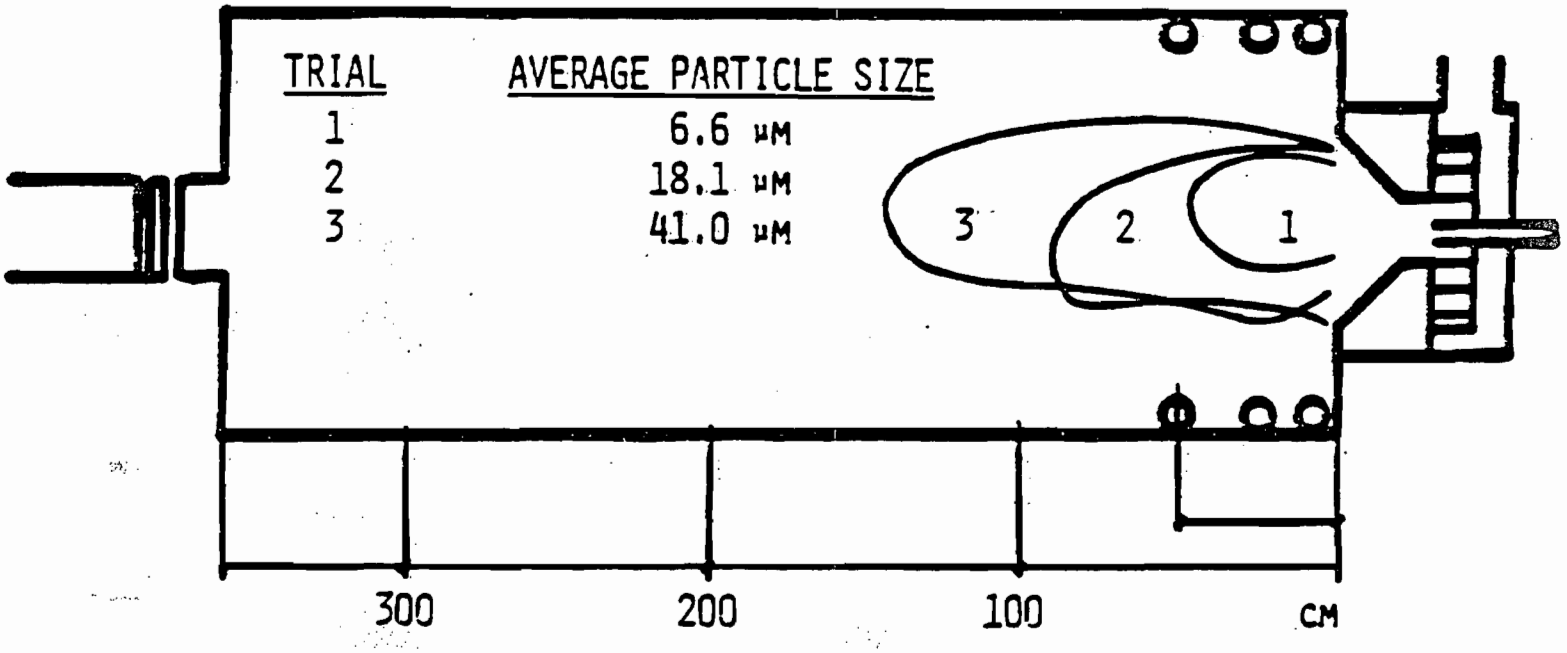
FURNACE AND BURNER OPERATING CONDITIONS

TRIAL	PARTICLE SIZE, μM	FIRING RATE, kW	FIRING RATE, (10^6 BTU/HR)	VISUAL FLAME LENGTH, CM	VISUAL FLAME LENGTH, (IN.)	FLUE GAS TEMPERATURE,* °C	FLUE GAS TEMPERATURE,* (°F)
1	6.6	470	(1.6)	50	(20)	1200	(2190)
2	18.1	640	(2.2)	90	(35)	1270	(2320)
3	41.0	730	(2.5)	140	(55)	1300	(2370)
4	33.0	730	(2.5)	--	--	--	--
5	6.6	700	(2.4)	60	(24)	1240	(2260)

*BY SUCTION PYROMETER

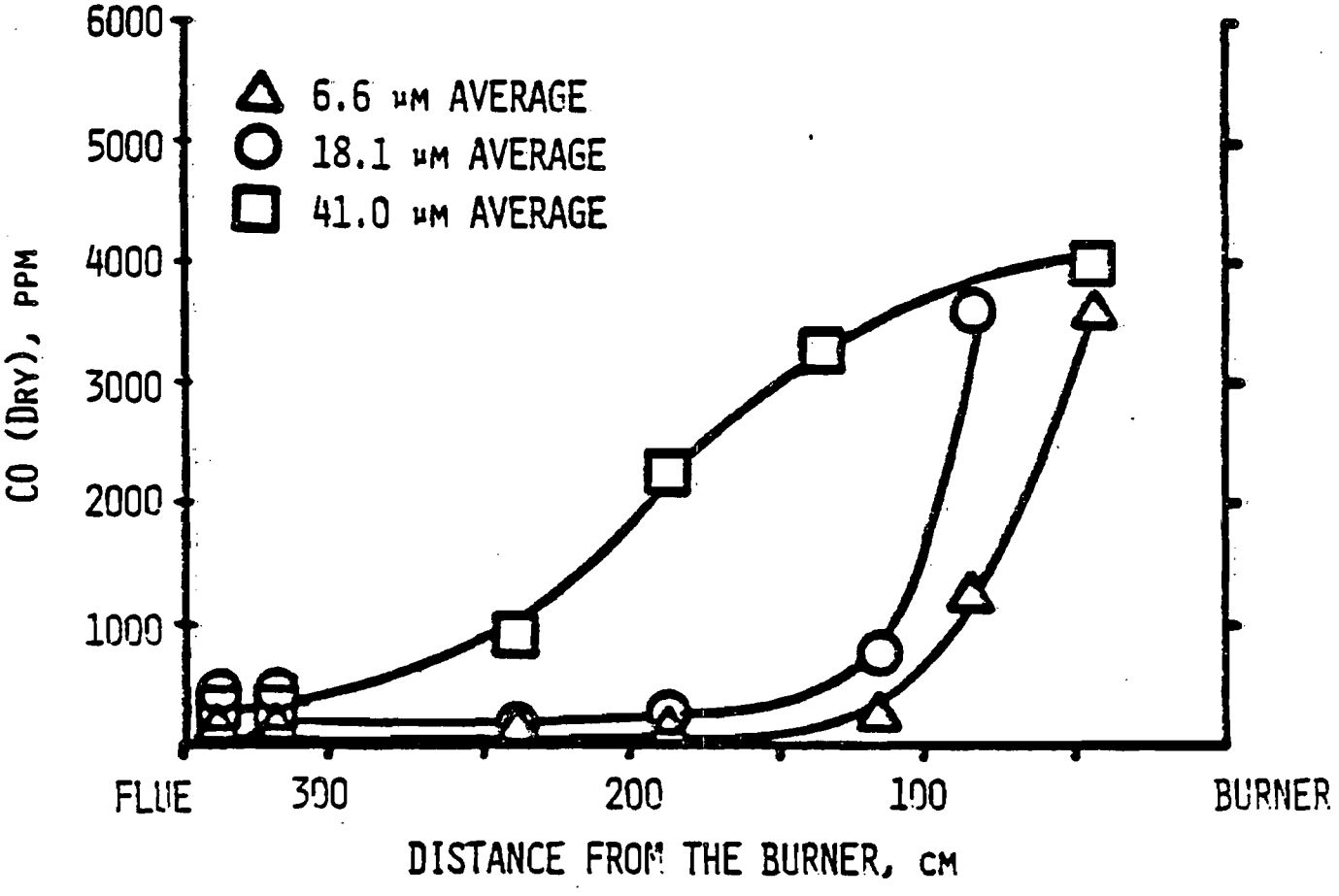
FLAME LENGTH

- 60 CM (20 IN.) FOR FINEST COAL
- 90 CM (35 IN.) FOR MIDDLE-SIZE COAL
- 140 CM (55 IN.) FOR COARSEST COAL



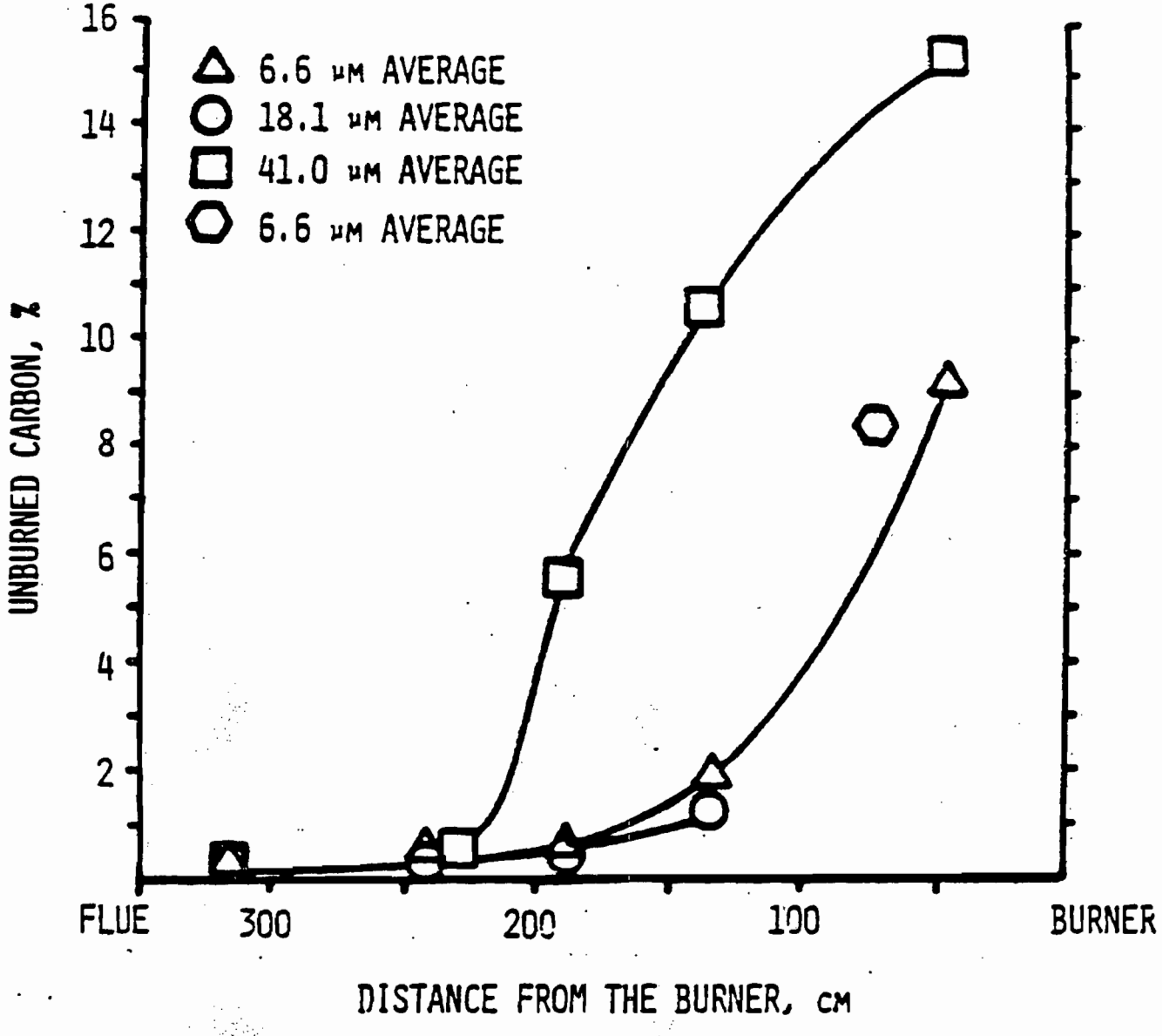
FLAME SHAPES (99% COMBUSTION)

IGT



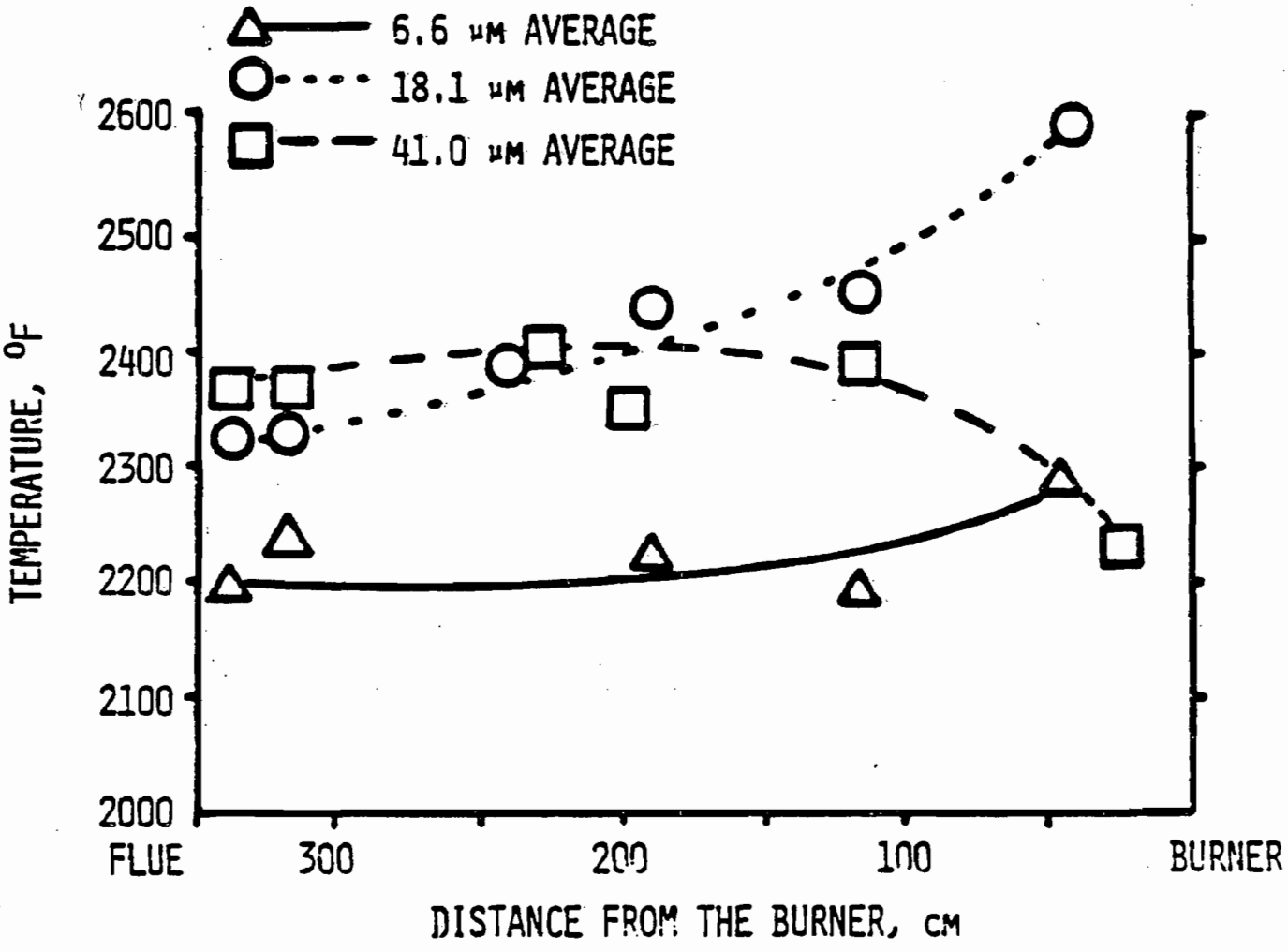
CARBON MONOXIDE CONCENTRATION ON THE FURNACE AXIS
ALONG THE FURNACE LENGTH FOR TRIALS 1, 2, AND 3

IGT



UNBURNED CARBON IN FLY ASH SAMPLED ON THE FURNACE AXIS ALONG THE FURNACE LENGTH FOR TRIALS 1, 2, 3, AND 5

IGT



COMBUSTION GAS TEMPERATURE (BY SUCTION PYROMETER) ON THE FURNACE AXIS ALONG THE FURNACE LENGTH FOR TRIALS 1, 2, AND 3

COMBUSTION INTENSITY

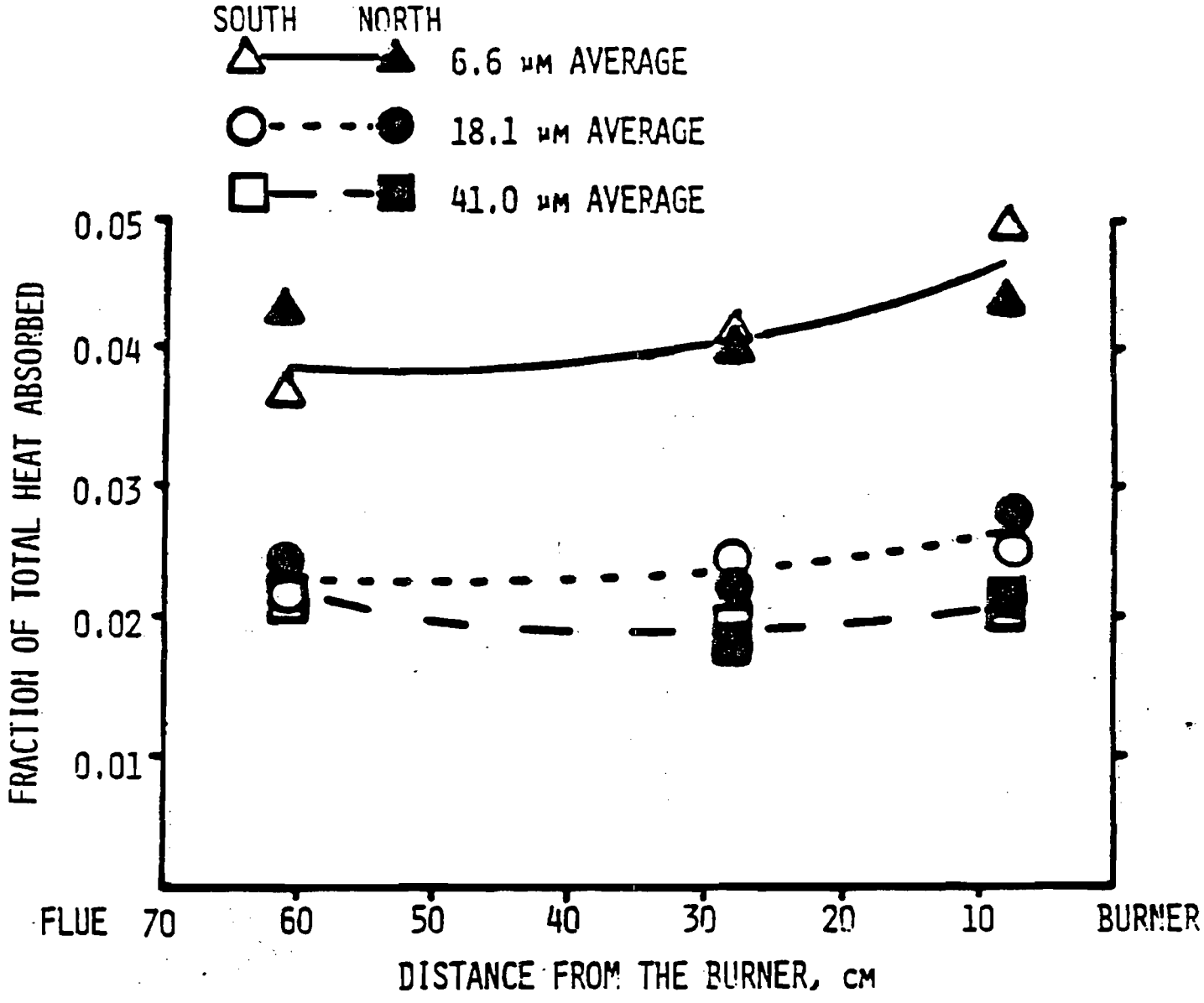
- 0.8×10^6 KCAL/HR-M^3 (0.9×10^5 BTU/HR-FT^3) – FOR FINEST COAL
- 0.6×10^6 KCAL/HR-M^3 (0.7×10^5 BTU/HR-FT^3) – FOR MIDDLE-SIZE COAL
- 0.35×10^6 KCAL/HR-M^3 (0.4×10^5 BTU/HR-FT^3) – FOR COARSEST COAL

IGT

HEAT TRANSFER TO LOAD

CONSIDERABLY HIGHER FOR FINE-GROUND

COALS COMPARED TO THE COARSER COAL



HEAT ABSORPTION PROFILE FOR WATER-COOLED TUBES (LOAD)
ON THE SIDE WALLS FOR TRIALS 1, 2, AND 3

SLAG AND ASH DEPOSITION RATE

- 63.5 GR/HR (0.14 LB/HR) – FOR FINEST COAL
- 105.9 GR/HR (0.23 LB/HR) – FOR MIDDLE-SIZE COAL
- 284 GR/HR (0.63 LB/HR) – FOR COARSEST COAL

IGT

SLAG AND ASH DEPOSITION TEST TRIALS

TRIAL	AVERAGE PARTICLE SIZE, μM	RATE OF DEPOSITION, GRAM/HR	RATE OF DEPOSITION, LB/HR	RATIO OF ASH DEPOSITION,* %
6	6.6	55.3	0.12	0.9
7	6.6	63.5	0.14	1.1
8	18.1	105.9	0.23	2.0
9	41.0	284.0	0.63	4.8
10	33.0	109.4	0.24	1.8

* $\frac{\text{ASH DEPOSITED, LB/HR}}{\text{ASH IN THE COAL BURNED, LB/HR}} \times 100$

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NITROGEN OXIDE EMISSIONS

NO RELATION WAS FOUND BETWEEN COAL

PARTICLE SIZES AND NO_x EMISSIONS

FLUE GAS ANALYSES FOR TRIALS 1 THROUGH 5

TRIAL	AVERAGE PARTICLE SIZE, μM	FLUE GAS ANALYSIS				CONVERSION OF FUEL N_2 TO NO_x,* %
		O_2, %	CO, PPM	CORRECTED NO, PPM	CORRECTED (NO_x, PPM @ 0% O_2)	
1	6.6	3.4	75	526	562	12
2	18.1	3.4	350	660	757	16
3	41.0	3.9	100	550	586	13
4	33.0	3.8	100	709	770	16
5	6.6	3.7	450	--	--	--

*$\frac{\text{MEASURED } NO_x - \text{THERMAL } NO_x}{\text{MAXIMUM FUEL } NO_x}$ [ASSUMES 180 PPM (CORRECTED TO 0% O_2) THERMAL NO_x (NATURAL GAS AS FUEL)]

MAJOR CONCLUSIONS

- COMBUSTION CHARACTERISTICS, SLAGGING AND FOULING TENDENCIES ARE SENSITIVE TO THE SIZE OF COAL GRIND
- FLAME LENGTH WAS REDUCED BY ABOUT 60% FOR THE SMALLEST PARTICLE SIZE
- COMBUSTION INTENSITY WAS INCREASED MORE THAN TWICE FOR THE FINEST GRIND
- HEAT TRANSFER RATE TO THE LOAD WAS HIGHER FOR THE SMALLEST PARTICLE SIZE
- THE SLAG AND ASH DEPOSITION RATE WAS ABOUT 80% LOWER FOR THE FINEST GRIND
- NITROGEN OXIDE EMISSIONS DID NOT CHANGE WITH COAL PARTICLE SIZE

IGT

APPENDIX B

SIRRINE

APPENDIX

B. Detailed Calculations

DESIGN SHEET

SIRRINE

Job American Cyanamid
Structure
Live Load Per Square Foot

Job No. S-2216 Date 4-26-83
Computed By P. Neil
Working Stress

Boiler No 7. Existing Emissions 1982

Fuel Consumption (Annual)
as reported to FDER in AC letter of
2-28-83

10^6 Ft^3 Natural Gas	10^3 Gallons #6 Fuel Oil	% S
562.9	1487	2.56

AP-42 page 1.4-2 Natural Gas Emissions
Revised 8-82

	lb/10^6 Ft^3		TPY
Particulates	1-5	(use 3)	0.8
SO_2	0.6		0.2
CO	40		11.3
HC	1.4		0.4
NO_2	550		154.8

DESIGN SHEET

SIRRINE

Job American Cyanamid
Structure
Live Load Per Square Foot

Job No. S-2216 Date 4-28-83
Computed By P. Neil
Working Stress

Boiler No 7 Existing Emissions 1982

AP-42 page 1.3-2 Fuel Oil Emissions
Revised 8-82

	lb/10^3 gal	TPY
Particulates	10(S) + 3	21.3
SO_2	157 S	298.8
SO_3	2.9 S	5.5
CO	5	3.7
HC	0.76	0.6
NOx	67	49.8

Total Existing Emission @ AP-42

	TPY		
Particulates	22.1	Reported	2.3 *
SO_2	299.0	Reported	319.4 *
SO_3	5.5		
CO	15.0		
HC	1.0		
NOx	204.6		

* use reported values.

DESIGN SHEET

SIRRINE

Job American Cyanamid
Structure
Live Load Per Square Foot

Job No. S-2216 Date 4-28-83
Computed By P. Neel
Working Stress

Boiler No 7 Proposed Emissions

Fuel Consumption for test program

10,000 Tons of Coal
assume annual consumption

Fuel Analysis: Walker County - Ala, Black Creek

Vol	36.3 %
Moisture	3 %
Sulfur	0.9 %
BTU/lb	14,280
Ash	2.5 %
Softening	2,460 °F

AP-42 page 1.1-3 Coal Emissions
Revised 8-82
@ Pulverized - Dry Bottom

	lb/Ton	TPY
Particulates	10 A	125.0
SO_2	39 S	175.5
CO	0.6	3.0
HC	0.07	0.4
NO_x	21	105.0

DESIGN SHEET

SIRRINE

Job American Cyanamid
Structure
Live Load Per Square Foot

Job No. S-2216 Date 4-28-23
Computed By
Working Stress F. Neel

Boiler No 7 Proposed Emissions

Review particulate emissions

assume 100 % ash emitted from stock

$$10{,}000 \text{ TON} \times \frac{2.5 \text{ lb ash}}{100 \text{ lb coal}} = 250 \frac{\text{TON}}{\text{Year}}$$

More realistic to assume a lesser emission rate ~ 90 %

225 TON / YEAR

fugitive emissions

Majority of the emissions will come from the storage pile

Erosion

$$EF = .05 \left(\frac{S}{1.5}\right)\left(\frac{d}{235}\right)\left(\frac{f}{15}\right)\left(\frac{D}{90}\right)$$

S = silt content, 5% (EPA average),

d = number of dry days, (235 conservative)

f = percentage of time wind speed exceeds 12 MPH at 1 foot above ground (20% conservative),

DESIGN SHEET

SIRRINE

Job American Cyanamid
Structure
Live Load Per Square Foot

Job No. S-2216 Date 4-28-83
Computed By P. Neil
Working Stress

Boiler No 7 Proposed Emissions

D = duration of material storage, 180 days

$$EF = .44 \frac{lb}{TON}$$

Annual Emission @ 10,000 Tons uncontrolled = 2.2 TPY

Maintenance

$$EF = .10\ K \left(\frac{S}{1.5}\right)\left(\frac{d}{235}\right)$$

K = activity correction, 0.2 frontend loade
S = Silt content, 5% - EPA average
d = number of dry days, 235 conservative

$$EF = .07 \frac{lb}{Ton}$$

Annual Emission @ 10,000 Tons uncontrolled = .3 TPY

With a wetted pile emissions are reduced 90 per cent. Therefore fugitive emissions are expected to be negligible.

References: Particulate emission factors Applicable to the Iron and Steel Industry, EPA-450/4-79-028 September 1979.

DESIGN SHEET

SIRRINE

Job American Cyanamid
Structure
Live Load Per Square Foot

Job No. S-2216 Date 5-11-83
Computed By
Working Stress P. Neal

Boiler No 7 Existing Emissions

BTU-based Emissions

Permitted: Particulates — 0.1 lbs / 10^6 BTU

SO_2 — 2.75 lbs / 10^6 BTU

Natural gas — AP-42 page 1.4-2
Revised 8-82

$$1 \times 10^6 \text{ BTU} * \frac{\text{Ft}^3}{1050 \text{ BTU}} = 952.4 \text{ Ft}^3$$

	lb/10^6 Ft^3	lb/10^6 BTU
CO	40	.038
HC	1.4	.001
NO_2	550	.524

Fuel Oil — AP-42 page 1.3-2
Revised 8-82

$$1 \times 10^6 \text{ BTU} * \frac{\text{gal}}{150{,}000 \text{ BTU}} = 6.67 \text{ gal}$$

DESIGN SHEET

SIRRINE

Job American Cyanamid
Structure
Live Load Per Square Foot

Job No. S-2216 Date 5-11-82
Computed By
Working Stress P. Neel

	lb/10^3 gal	lb/10^6 BTU
CO	5.0	.033
HC	0.76	.005
NO_x	67	.447

Coal Emissions - AP-42 page 1.1-3
Revised 8-82
@ Pulverized - Dry Bottom

$$1 \times 10^6 \text{ BTU} \times \frac{\text{lb}}{14{,}280 \text{ BTU}} \times \frac{\text{TON}}{2000 \text{ lb}} = .035 \text{ TON}$$

	lb / TON coal	lb / 10^6 BTU
Particulate @ 90%	.035 x .025 x .9 =	1.58
SO_2	39.S	1.23
CO	0.6	0.021
HC	0.07	0.002
NO_x	21	0.735

DESIGN SHEET

BIRRINE

Job American Cyanamid Job No. S-2216 Date 5-11-83
Structure Computed By
Live Load Per Square Foot Working Stress F. No. 9

Boiler No 7 Existing Emission

Hourly Emissions

TSP	0.1 $\frac{lbs}{10^6 BTU}$	×	176.1 × $10^6 \frac{BTU}{hr}$	=	17.6	$\frac{lb}{hr}$
SO_2	2.75 $\frac{lbs}{10^6 BTU}$	×	"	=	484.3	
CO	use .038	×	"	=	6.7	
HC	use .005	×	"	=	0.9	
NO_x	use .524	×	"	=	92.3	

Boiler No. 7 Firing Micronized Coal

TSP	1.58 lbs/10^6 Btu	×	167.3 × $10^6 \frac{BTU}{hr}$	=	263.6	
SO_2	1.23	×	"	=	205.6	
CO	0.021	×	"	=	3.5	
HC	0.002	×	"	=	0.3	
NO_x	0.735	×	"	=	122.96	

DESIGN SHEET

BIRRINE

Job American Cyanamid Job No. S-2216 Date 6-2-83
Structure Computed By
Live Load Per Square Foot Working Stress F. Neal

PT-MAX Input File PTMAC

Fly ash loading — use the 2.5% ash coal @ max load

$$= .95 \times 176.1 \times 10^6 \frac{BTU}{hr} \times \frac{1b\ coal}{14{,}280\ BTU} \times \frac{.025\ lb\ ash}{1\ lb\ coal}$$

$$= 292.9 \frac{lb}{hr}$$ 100% carried out the stack

assume 90% emission factor

note AP-42 use 80% for General Pulverized
85% for Dry bottom "
also revised AP-42
use 50% for Dry bottom "

= SO emission rate is particulate

$$263.61 \frac{lb}{hr}$$

$$263.61 \frac{lb}{hr} \times \frac{453.6 gr}{1\ lb} \times \frac{1 hr}{60 m} \times \frac{1 m}{60 sec} = 33.21 \frac{gr}{sec}$$

DESIGN SHEET

SIRRINE

Job American Cyanamid
Structure
Live Load Per Square Foot

Job No. S-2216 Date 6-2-83
Computed By
Working Stress

PT-MAX Input

Stack is 50 feet tall

$$50 \text{ feet} \times \frac{.3048 \text{ m}}{1 \text{ ft}} = \underline{15.24 \text{ meters}}$$

Stack Temp. is 340 °F

$$C = 5/9 (F - 32) = 171.1 \text{ °C}$$

$$K = 171.1 + 273.2$$

$$K = \underline{444.3°}$$

Stack Diameter is 4'-10"

$$\underline{4.833 \text{ feet}} \times \frac{.3048 \text{ m}}{1 \text{ ft}} = \underline{1.47 \text{ meter}}$$

Stack Area = πR^2

$= 1.70 \text{ m}^2$

Volume Flow

$$53{,}651 \frac{\text{Ft}^3}{\text{MIN}} \times \frac{.02832 \text{ M}^3}{1 \text{ Ft}^3} \times \frac{1 \text{ MIN}}{60 \text{ sec}} = \underline{25.32 \frac{\text{M}^3}{\text{sec}}}$$

Velocity: $25.32 \frac{\text{M}^3}{\text{sec}} \times \frac{1}{1.70 \text{ M}^2} = \underline{14.90 \frac{\text{Meter}}{\text{Sec}}}$

APPENDIX C

SIRRINE

APPENDIX

C. State Air Quality Report

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHWEST DISTRICT

160 GOVERNMENTAL CENTER
PENSACOLA, FLORIDA 32501-5794

May 26, 1983

Mr. K. N. Sharitz
Manager, Plant Technical
American Cyanamid Company
Santa Rosa Plant
Milton, FL 32570

Dear Neal:

Hope this is what you need.

Sincerely,

Robert J. Brazzell

Robert J. Brazzell, Supervisor
Technical Assistance Section

RJB/rbg

Attachment

1982

AIR QUALITY DATA

ESCAMBIA COUNTY, FL.

BEST AVAILABLE COPY

POLLUTANT: TOTAL SUSPENDED PARTICULATES STATE: 10 FLORIDA YEAR: 1982

AREA	SITE		LOCATION	SAMPLING PERIOD	NUM OBS	MIN	MAXIMA 1ST	MAXIMA 2ND	MAXIMA 3RD	ARITH MEAN	GEO MEAN	GSD	EXCEEDANCES * PRIMARY #>260	PRIMARY GM>75	SECONDARY #>150	SECONDARY GM>60
1760	001	G09	/ HIGH SCHOOL 251 E 47TH ST HIALEAH, DADE C	JAN-DEC	55	18	105	102	89	50	47	1.44				
1800	001	G01	HOMESTEAD/ FIRE STA 325 NW 2ND ST, HOMESTEAD,	JAN-DEC	58	12	82	76	71	47	45	1.39				
2700	016	G01	MIAMI/ FIRE STA NW 12TH AV & 20TH ST, #40, MI	JAN-MAR	12	50	135	131	119	96	92	1.36		*		*
2700	020	G01	MIAMI/ GOODWILL BLDG 2121 NW 21ST AV MIAMI DA	JAN-DEC	57	22	98	73	72	46	44	1.34				
2720	007	G01	MIAMI BEACH/ COMMUNITY CTR 2100 WASHINGTON AV	JAN-DEC	59	16	81	73	72	37	34	1.46				
3040	001	G01	NORTH MIAMI BEACH/ 17011 NE 19TH AV, N MIAMI	JAN-DEC	55	18	77	62	61	36	34	1.39				
1960	004	H02	JACKSONVILLE/ 1070 E ADAMS ST, JACKSONVILLE,	JAN-DEC	328	20	416	280	259	81	74	1.54	2		17	*
1960	038	H02	JACKSONVILLE/ 1565 HENDRICKS AV, JACKSONVILLE	JAN-DEC	60	15	176	142	135	55	48	1.65			1	
1960	040	H01	JACKSONVILLE/ LEMMERRITT PARK 5501 VERNA BLVD	JAN-DEC	47	19	99	86	78	43	40	1.47				
1960	045	H02	JACKSONVILLE/ JACKSONVILLE UNIV 2800 UNIV BLV	JAN-DEC	54	20	73	73	71	39	37	1.43				
1960	099	H01	JACKSONVILLE/ 515 W 6TH ST, JACKSONVILLE, DUV	JAN-DEC	334	14	175	103	96	41	44	1.92			1	
1960	053	H02	JACKSONVILLE/ SEWAGE TRTMT PLT 2221 BUCKMAN S	JAN-DEC	86	20	120	100	96	48	45	1.50				
1960	069	H05	JACKSONVILLE/ 1245 E ADAMS ST, JACKSONVILLE D	JAN-JAN	15	27	115	99	95	73	69	1.44				*
1960	071	H01	JACKSONVILLE/ CRAIG AIR FIELD, JACKSONVILLE,	JAN-DEC	61	16	79	58	58	32	30	1.47				
1960	077	H03	JACKSONVILLE/ SHEFFIELD SCH, 13333 LANIER RD	JAN-DEC	60	11	64	54	53	31	29	1.46				
1960	079	H02	JACKSONVILLE/ FT CAROLINE STP, JACKSONVILLE D	JAN-DEC	61	18	163	97	82	44	40	1.48			1	
1960	081	H02	JACKSONVILLE/ CEDAR BAY STP, 1840 CEDAR BAY R	MAR-DEC	49	14	58	57	55	32	30	1.43				
1960	088	H02	JACKSONVILLE/ 4821 EVERGREEN AVE JACKSONVILLE	JAN-DEC	59	24	102	95	78	46	43	1.39				
1960	089	H05	JACKSONVILLE/ 600 GEORGIA ST, (GRANT & GEORGI	JAN-DEC	122	22	147	144	123	58	54	1.42				
1960	090	H05	JACKSONVILLE/ 300 WATER ST, CORNER OF CIVIC A	JAN-JAN	13	26	76	72	69	58	56	1.35				
[redacted]					55	18	[redacted]				41	1.40				
[redacted]					57	10	[redacted]				39	1.50				
[redacted]					57	11	[redacted]				33	1.51				
[redacted]					59	11	[redacted]				33	1.57				
[redacted]					60	11	[redacted]				35	1.48				
[redacted]					60	12	[redacted]				35	1.54				
[redacted]					58	12	[redacted]				36	1.59				
3740	001	F01	PORT ST JOE/ PORT ST JOE SEWAGE TRTMT PLT GUL	JAN-DEC	47	13	92	88	81	41	37	1.59				
1660	015	F02	WHITE SPRINGS/ COUNTY RD 137 AT ENTRANCEOF OC	APR-DEC	45	5	89	66	51	30	26	1.74				
0660	001	F01	CLEWISTON/ HENDRY GEN HOSP, CLEWISTON, HENDRY	JAN-DEC	45	9	144	126	86	45	40	1.60				
1780	001	F03	/ ARCHBOLD BIO STA, OLD SR 8, LAKE PLACID,	JAN-DEC	56	10	44	42	40	22	20	1.50				
0370	001	G01	BRANDON/ BRANDON WATER & SEWER CO RAINBOW TR,	JAN-DEC	72	13	98	65	63	33	31	1.47				
1800	003	G01	RUSKIN/ RUSKIN FIRE STA, HILLSBOROUGH CO	JAN-DEC	58	14	63	62	51	30	29	1.39				
1800	019	G01	SUN CITY/ WATER TREATMENT PLANT, SUN CITY, HI	JAN-APR	18	17	264	81	75	59	48	1.81	1		1	
1800	066	G02	GIBSONTON/ ICWU BLDG, HWY 41 N, GIBSONTON, HI	JAN-DEC	61	20	84	81	69	38	36	1.40				
1800	082	G02	/ CO MAINT BARN, #82, ORIENT RD, HILLSBOROU	JAN-DEC	58	21	149	126	116	57	53	1.51				
1800	082	G09	/ CO MAINT BARN, #82, ORIENT RD, HILLSBOROU	JAN-DEC	61	20	166	117	112	59	54	1.50			1	
1800	083	G02	/ GARDINIER PARK, US 41, HILLSBOROUGH CO	JAN-DEC	60	11	96	85	70	41	38	1.50				
1800	084	G02	APOLLO BEACH/ APOLLO BEACH, MILLER MAC RD, HI	JAN-APR	17	18	68	60	46	35	33	1.44				
1800	085	G02	/ EISENHOWER JR HS, BIG BEND RD HILLSBOROUG	JAN-DEC	56	15	69	64	60	35	33	1.45				
1800	096	G02	TAMPA/ BUNGALOW 125 STATE ROAD 574A TAMAX PHO	JAN-DEC	60	16	97	90	88	43	40	1.48				
3660	001	G01	PLANT CITY/ WATER PLANT, PLANT CITY, HILLSBOR	JAN-DEC	62	15	76	67	59	36	34	1.37				
4360	002	G01	TAMPA/ HCHD #1, 1105 E KENNEDY, TAMPA, HILLSB	JAN-DEC	60	16	116	104	102	56	53	1.42				
4360	002	G09	TAMPA/ HCHD #1, 1105 E KENNEDY, TAMPA, HILLSB	JAN-DEC	62	16	110	96	82	54	52	1.38				
4360	024	G02	TAMPA/ 311 S 22ND ST, TAMPA, HILLSBOROUGH CO	JAN-DEC	59	30	133	91	90	56	53	1.35				
4360	030	G01	TAMPA/ LIBRARY, NEPTUNE & CHURCH, PALMA CEIA,	JAN-DEC	58	15	77	74	71	42	40	1.36				

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* THE PRIMARY AMBIENT AIR QUALITY STANDARD IS 75 UG/M3 ANNUAL GEOMETRIC MEAN, AND A MAXIMUM OF 260 UG/M3 AVERAGED OVER A 24-HOUR PERIOD NOT TO BE EXCEEDED MORE THAN ONCE PER YEAR. THE SECONDARY STANDARD IS 150 UG/M3, A 24 HOUR MAX NOT TO BE EXCEEDED MORE THAN ONCE PER YEAR. A 60 UG/M3 AGM (GUIDE) IS USED TO ASSESS VIOLATIONS OF THE 24-HOUR SECONDARY STANDARD

POLLUTANT: [redacted] STATE: 10 FLORIDA. [redacted]

AREA	SITE	LOCATION	SAMPLING PERIOD	METH	NUM OBS	MAX 1-HOUR 1ST	MAX 1-HOUR 2ND	MAX 3-HOUR 1ST	MAX 3-HOUR 2ND	MAX 24-HOUR 1ST	MAX 24-HOUR 2ND	ARITH MEAN	GSD	EXCEEDANCES * 3HR #>1300	24HR #>260	ANN AM>60
0020	010	FO2 GAINESVILLE/ SANTA FE COMM COL BY SR 20	JAN-DEC	20	6109	131	79	74	61	50	49	12	1.83			
3980	002	FO1 / PANAMA CITY WASTE WATER TRTMT PLT. BA	JAN-DEC	97	49					3	3	3	1.00			
0380	004	FO2 TITUSVILLE/ TICO AIRPORT OFF US 1. TITU	JAN-MAY	97	22					12	12	4	1.63			
0380	C04	FO9 / TICO AIRPORT OFF US 1, TITUSVILLE. BR	JAN-MAY	97	23					14	6	3	1.51			
0380	005	JO2 DELESPINE/ PCC =2 2.25 MI ESE OF CAPE	JAN-JUN	97	28					7	6	3	1.28			
0380	006	JO2 DELESPINE/ PCC =1 2.75 MI ENE OF CAPE	JAN-JUN	97	27					11	8	3	1.51			
2680	002	GO1 MERRITT ISLAND/ 2575 N COURTENAY PKWY I	JAN-DEC	20	8115	314	288	258	203	89	58	8	1.38			
0910	002	GO1 DAVIE/ U OF F AG RSCH. 3205 SW 70TH AV.	JAN-DEC	97	43					10	10	3	1.49			
1260	003	GO1 FT LAUDERDALE/ 2101 NW 6TH ST. FT LAUDE	JAN-DEC	97	56					18	16	5	1.81			
1260	004	GO1 FT LAUDERDALE/ 500 SW 14TH COURT #12, F	JAN-DEC	97	58					18	16	4	1.66			
1260	004	GO9 FT LAUDERDALE/ 500 SW 14TH COURT #12, F	JAN-DEC	97	58					18	16	4	1.67			
126C	C05	JO2 FT LAUDERDALE/ PFE =3 8.2 MI SW OF POR	JAN-JUN	97	41					17	11	4	1.58			
126C	C06	JO2 FT LAUDERDALE/ PPE =2 4.8 MI E OF PORT	JAN-JUN	97	57					9	7	3	1.39			
1260	007	JO2 FT LAUDERDALE/ PFE =1 2.3 MI ENE OF PO	JAN-JUN	97	32					5	4	3	1.13			
2270	001	GO1 LAUDERDALE LAKES/ AIR LAB 1, 3701 N SR	JAN-DEC	97	57					3	3	3	1.00			
2270	001	GO9 LAUDERDALE LAKES/ AIR LAB 1, 3701 N SR	JAN-DEC	97	56					3	3	3	1.00			
3530	001	GO1 PEMBROKE PINES/ PEMBROKE PINES PLT 2, 7	JAN-DEC	97	59					10	5	3	1.24			
3760	002	FO1 PUNTA GORDA/ 3201 GOLF COURSE BLVD, PUN	JAN-AUG	97	30					8	5	3	1.36			
0580	002	FO2 CRYSTAL RIVER/ CLRTIS TOOL CO 4 MI " "N	JAN-DEC	20	6617	796	597	509	473	137	85	11	1.74			
0580	003	JO2 CRYSTAL RIVER/ MAIN RIVERS MARINA OPN H	JAN-DEC	20	7078	275	157	138	96	64	45	9	1.58			
0580	004	JO2 CRYSTAL RIVER/ TOP OF FPC DIST OFC. CRY	JAN-DEC	97	56					21	16	5	1.95			
0580	004	JO9 CRYSTAL RIVER/ TOP OF FPC DIST OFC. CRY	JAN-DEC	97	55					24	22	5	1.96			
058C	C05	JO2 CRYSTAL RIVER/ E OF EPC PLT. NEAR RT-0-	JAN-DEC	20	7510	472	458	279	258	64	60	9	1.55			
2080	003	FO1 NAPLES/ E NAPLES FIRE DEPT, SR 858, COL	JAN-AUG	97	30					7	4	3	1.21			
0860	C15	JO2 MIAMI/ PTP =2 7.5 MI W OF TURKEY PT PW	JAN-JUN	97	49					5	5	3	1.15			
0860	016	JO2 MIAMI/ PTP =1 2.2 MI W OF TURKEY PT PW	JAN-JUN	97	36					5	5	3	1.25			
0860	026	NO2 / EVERGLADES NATL. PARK RESEARCH CENTER	MAY-DEC	20	2356	26	26	22	17	12	9	7	1.17			
2700	002	GO1 MIAMI/ METRO ANNEX 864 NW 23RD ST. MIAM	JAN-NOV	20	6750	39	39	39	39	26	26	10	1.53			
196C	032	NO2 JACKSONVILLE/ KOCKER PARK 2900 BENNETT	JAN-DEC	20	7193	367	341	295	282	121	98	18	2.18			
1960	079	NO2 JACKSONVILLE/ FT CAROLINE SUP. JACKSONV	JAN-DEC	20	7041	236	210	210	175	87	81	13	1.82			
1960	080	NO2 JACKSONVILLE/ 1605 MINERVA ST JACKSONVI	JAN-DEC	20	7376	327	314	288	253	216	130	19	2.24			
1960	C81	NO2 JACKSONVILLE/ CEDAR BAY STP. 1840 CEDAR	JAN-DEC	20	7270	406	354	323	301	144	99	17	2.09			
[redacted]			JAN-DEC	97	55					[redacted]			3.00			
[redacted]			JAN-DEC	97	57					[redacted]			3.13			
[redacted]			JAN-DEC	20	8582	734	700	639	548	[redacted]			2.32			
[redacted]			JAN-DEC	97	58					[redacted]			2.32			
[redacted]			JAN-DEC	97	58					[redacted]			1.82			
1660	015	FO2 WHITE SPRINGS/ COUNTY RD 137 AT ENTRANC	APR-DEC	20	5197	1048	943	786	782	231	212	18	2.19			
0660	C01	FO1 CLEWISTON/ HENRY GEN HOSP, CLEWISTON.	JAN-AUG	97	36					4	4	2	1.00			
0370	C01	GO1 BRANDON/ BRANDON WATER & SEWER CO RAINB	JAN-DEC	97	56					37	24	6	2.13			
1800	003	GO3 RUSKIN/ RUSKIN FIRE STA, HILLSBOROUGH C	JAN-DEC	97	53					115	95	8	2.35			
1800	021	GO2 / TECO =2 BB CO BARN ON BIG BEND RD. RI	JAN-DEC	20	7714	956	969	693	629	160	125	15	2.01			
1800	066	GO2 GIBSONTON/ ICWU BLDG, HWY 41 N, GIBSONT	JAN-DEC	97	51					39	24	8	2.31			
1800	083	GO2 / GARDINIER PARK, US 41, HILLSBOROUGH C	JAN-DEC	97	51					52	31	8	2.36			
1800	C83	GO9 / GARDINIER PARK, US 41, HILLSBOROUGH C	JAN-DEC	97	62					55	39	9	2.45			
180C	084	GO2 APOLLO BEACH/ APOLLO BEACH, MILLER MAC	JAN-DEC	20	2225	445	432	386	227	68	63	15	2.05			

* THE AIR QUALITY STANDARDS FOR SO2 ARE AN ANNUAL ARITHMETIC AVERAGE OF 60 UG/M3, A MAXIMUM 24-HOUR CONCENTRATIO
260 UG/M3 NOT TO BE EXCEEDED MORE THAN ONCE PER YEAR, AN
EXCEEDED MORE THAN ONCE PER YEAR.

POLLUTANT: [illegible]OXIDE STATE: 10 FLORIDA YEAR: [illegible]

AREA	SITE	LOCATION	SAMPLING PERIOD	METHOD	NUM OBS	MAXIMA 1-HOUR 1ST	MAXIMA 1-HOUR 2ND	MAXIMA 24-HOUR 1ST	MAXIMA 24-HOUR 2ND	ARITH MEAN	GEO MEAN	GSD	A.M. ANNUAL
3480	002	FOI	/ PANAMA CITY WASTE WATER TRTMT PLT, BAY CO	JAN-DEC	84	49		39	36	16	14	1.51	
0380	C05	J02	DELESPINE/ PCC =2 2.25 MI ESE OF CAPE CANAVE	JAN-JUN	84	29		32	29	13	11	1.90	
0380	006	J02	DELESPINE/ PCC =1 2.75 MI ENE OF CAPE CANAVE	JAN-JUN	84	28		28	25	9	7	1.97	
0910	002	G01	DAVIE/ U OF F AG RSCH, 3205 SW 70TH AV, DAVIE	JAN-DEC	84	58		49	49	27	26	1.44	
1260	C03	G01	FT LAUDERDALE/ 2101 NW 6TH ST. FT LAUDERDALE,	JAN-DEC	84	58		98	79	38	33	1.79	
1260	004	G01	FT LAUDERDALE/ 500 SW 14TH COURT #12, FT LAUD	JAN-DEC	84	59		83	62	30	28	1.59	
1260	004	G09	FT LAUDERDALE/ 500 SW 14TH COURT #12, FT LAUD	JAN-DEC	84	54		64	53	30	27	1.58	
1260	C05	J02	FT LAUDERDALE/ PFE =3 0.2 MI SW OF PORT EVER	JAN-JUN	84	27		74	65	37	33	1.60	
1260	006	J02	FT LAUDERDALE/ PFE =2 4.8 MI E OF PORT EVERG	JAN-JUN	84	29		108	89	50	46	1.48	
1260	007	J02	FT LAUDERDALE/ PPE =1 2.3 MI ENE OF PORT EVE	JAN-JUN	84	26		82	49	21	17	1.95	
2270	C01	G01	LAUDERDALE LAKES/ AIR LAB 1, 3101 N SR 7, LAU	JAN-DEC	84	58		60	56	33	31	1.40	
2270	C01	G09	LAUDERDALE LAKES/ AIR LAB 1, 3701 N SR 7, LAU	JAN-DEC	84	57		60	56	34	32	1.40	
3530	001	G01	PEMBROKE PINES/ PEMBROKE PINES PLT 2, 7900 JO	JAN-DEC	84	57		79	49	28	26	1.52	
3760	002	F01	PUNTA GORDA/ 3201 GOLF COURSE BLVD, PUNTA GOR	JAN-AUG	84	22		29	14	7	6	2.00	
2080	003	F01	NAPLES/ E NAPLES FIRE DEPT, SR 858, COLLIER C	JAN-AUG	84	27		56	27	15	13	1.69	
0060	015	J02	MIAMI/ PTP =2 7.5 MI W OF TURKEY PT PWR PLT,	JAN-JUN	84	24		33	28	12	9	2.06	
0860	016	J02	MIAMI/ PTP =1 2.2 MI W OF TURKEY PT PWR PLT,	JAN-JUN	84	26		38	28	14	12	2.05	
0860	023	G01	MIAMI/ VIRGINIA KEY STP #36, MIAMI, DADE CO	AUG-DEC	14	3131	263 216			26	17	2.35	
2700	002	G01	MIAMI/ METRO ARNEX 864 NW 23RD ST, MIAMI, DAD	MAR-DEC	14	5461	216 216			43	35	1.94	
1960	D12	H02	JACKSONVILLE/ BOOKER PARK 2900 BENNETT ST, JA	JAN-FEB	14	1069	98 98			30	25	1.83	
1960	D10	H01	JACKSONVILLE/ NAVAL AIR STATION, JACKSONVILLE	JAN-DEC	14	6949	197 197			17	14	1.81	
[illegible]			[illegible]	JAN-DEC	84	56		[illegible]			14	1.52	
[illegible]			[illegible]	JAN-DEC	84	51		[illegible]			14	1.47	
[illegible]			[illegible]	FEB-DEC	14	7462	118 117			[illegible]	12	1.67	
[illegible]			[illegible]	JAN-DEC	84	58		[illegible]			15	1.52	
[illegible]			[illegible]	JAN-DEC	84	58		[illegible]			14	1.49	
0660	001	F01	CLEWISTON/ HENDRY GEN HOSP, CLEWISTON, HENDRY	JAN-AUG	84	32		26	25	15	14	1.34	
0370	C01	G01	BRANDON/ BRANDON WATER & SEWER CO RAINDON TR,	JAN-DEC	84	68		60	41	22	21	1.47	
4360	022	G02	TAMPA/ 111 N DALE MABRY HWY, TAMPA, HILLSBORO	JAN-DEC	84	56		100	90	52	49	1.46	
4360	022	G09	TAMPA/ 111 N DALE MABRY HWY TAMPA, HILLSBOROU	JAN-DEC	84	55		105	98	54	51	1.39	
4360	045	G01	TAMPA/ TAMPA STADIUM, BUFFALO & DALE MABRY, H	JAN-DEC	84	62		79	66	41	38	1.48	
4360	051	G02	TAMPA/ LEHMAN AV, HOOKERS PT, TAMPA, HILLSBOR	JAN-DEC	84	61		56	53	30	28	1.44	
4360	052	G01	TAMPA/ HCEPC OFC, YBOR CITY, HILLSBOROUGH CO	JAN-DEC	14	6002	188 156			40	33	1.86	
4360	053	G02	TAMPA/ BALLAST PT PARK, INTERBAY BLVD, TAMPA,	JAN-DEC	84	60		56	51	24	21	1.57	
4360	055	G01	TAMPA/ TAMPA PUMP STA, BEACH PK, BAY WAY ST,	APR-DEC	14	4997	184 142			25	20	1.99	
1300	002	F01	FT MYERS/ FT MYERS SEWAGE TREATMENT PLT, DALE	JAN-AUG	84	26		29	27	14	12	1.77	
1300	002	F09	FORT MYERS/ FT MYERS SEWAGE TREATMENT PLT, DA	JAN-AUG	84	22		28	28	13	11	1.91	
2620	C05	F02	/ HALES DAIRY RD N OF SR 71 MARTIN CO	JAN-NOV	84	45		25	22	8	7	1.77	
3240	C02	J05	ORLANDO/ NE COR OF SEC 13, 10 MILES E OF ORLA	APR-JUN	14	1542	23 21			9	9	1.05	
4900	002	F01	WINTER PARK/ LAKE ISLE ESTATES, WINTER PARK,	JAN-SEP	14	2045	192 186			33	25	2.16	
3840	C01	J02	RIVIERA BEACH/ 2 MI NW OF RIVIERA PWR PLT, PA	APR-JUN	84	15		54	45	28	27	1.41	
3040	002	J02	RIVIERA BEACH/ 0.8 MI NW OF RIVIERA PWR PLT,	APR-JUN	84	15		47	33	24	23	1.41	
4760	001	G01	WEST PALM BEACH/ 1ST ST & TAMARIND AV, W PALM	JAN-DEC	14	3954	130 117			19	15	1.92	
3980	C10	G01	ST PETERSBURG/ AZALEA PARK, 7200 22ND AV N, S	JAN-DEC	14	7758	235 188			27	20	2.14	
0180	C02	F01	BARTOW/ 1702 U S HWY 17 S BARTOW POLK CO	JAN-DEC	84	57		36	35	20	18	1.66	
2160	001	F01	LAKELAND/ LAKELAND PUBLIC WORKS POLK CO	JAN-DEC	84	56		56	52	28	27	1.42	

* THE AIR QUALITY STANDARD FOR OXIDES OF NITROGEN EXPRESSED AS NITROGEN DIOXIDE IS 100 UG/M3 (0.05 PPM) ANNUAL ARITHMETIC MEAN

1981

AIR QUALITY DATA

ESCAMBIA COUNTY, FL.

BEST AVAILABLE COPY

DATE: 82/07/07

COMPARISON OF AIR QUALITY DATA WITH
THE NATIONAL AMBIENT AIR QUALITY STANDARDS

POLLUTANT: TOTAL SUSPENDED PARTICULATES STATE: 10 FLORIDA YEAR: 1981

COUNTY	AREA	SITE	LOCATION	SAMPLING PERIOD	NUM OBS	MIN	MAXIMA 1ST	MAXIMA 2ND	MAXIMA 3RD	ARITH MEAN	GEO MEAN	GSD	EXCEEDANCES * PRIMARY #>260	PRIMARY GM>75	SECONDARY #>150	SECONDARY GM>60
DADE CONT.	1760	001 G01	/ HIGH SCHOOL 251 E 47TH ST, HIALEAH, DADE	MAR-DEC	45	31	172	126	105	67	62	1.45			1	*
	1760	001 G09	/ HIGH SCHOOL 251 E 47TH ST HIALEAH, DADE C	MAR-DEC	44	31	177	125	101	66	61	1.47			1	*
	1880	001 G01	/ FIRE STA 325 NW 2ND ST, HOMESTEAD, DADE C	JAN-DEC	61	23	139	90	90	56	53	1.40				
	2700	016 G01	/ FIRE STA NW 12TH AV & 20TH ST, #40, MIAMI	JAN-DEC	54	35	189	173	167	103	97	1.40		*	6	*
	2700	020 G01	/ GOODWILL BLDG 2121 NW 21ST AV MIAMI DADE	APR-DEC	42	28	130	115	95	66	62	1.39				*
	2720	007 G01	/ COMMUNITY CTR 2100 WASHINGTON AV, MIAMI B	JAN-DEC	60	22	142	90	84	49	45	1.46				
	3040	001 G01	/ 17011 NE 19TH AV, N MIAMI BEACH, DADE CO	JAN-DEC	58	21	132	106	85	49	45	1.46				
	3560	002 G01	/ FIRE STA, 9201 SW 152 ST, ROCKDALE, DADE	JAN-JAN	2	59	67	59		63	63	1.09				*
DUVAL	1960	004 H02	/ 1070 E ADAMS ST, JACKSONVILLE, DUVAL CO	JAN-DEC	345	29	290	290	265	86	79	1.51	3	*	23	*
	1960	038 H02	/ 1464 HENDRICKS AV, JACKSONVILLE, DUVAL CO	JAN-NOV	36	33	109	96	90	61	58	1.36				
	1960	040 H01	/ LEMMERRITT PARK 5501 VERNA BLVD, JACKSONV	DEC-DEC	3	39	84	73	39	65	62	1.50				*
	1960	045 H02	/ JACKSONVILLE UNIV 2800 UNIV BLVD, JACKSON	JAN-DEC	59	25	125	118	100	53	50	1.40				
	1960	049 H01	/ 515 W 6TH ST, JACKSONVILLE, DUVAL CO	JAN-DEC	334	23	221	140	115	57	54	1.35			1	
	1960	053 H02	/ SEWAGE TRTMT PLT 2221 BUCKMAN ST JACKSONV	JAN-DEC	56	34	134	110	109	67	63	1.40				*
	1960	069 H05	JACKSONVILLE/ 1245 E ADAMS ST, JACKSONVILLE D	NOV-DEC	36	29	126	112	106	64	60	1.42				
	1960	071 H01	/ CRAIG AIR FIELD, JACKSONVILLE, DUVAL CO	JAN-DEC	52	16	101	97	95	47	44	1.48				
	1960	073 H02	/ SHELL OIL TERMINAL, JACKSONVILLE, DUVAL C	JAN-JUN	28	43	226	130	107	76	70	1.45			1	*
	1960	077 H03	/ SHEFFIELD SCH, 13333 LANIER RD JACKSONVIL	JAN-DEC	59	18	87	80	73	43	41	1.38				
	1960	078 H01	/ BEAVER IND, 1123 ELLIS RD, JACKSONVILLE.	APR-OCT	31	30	102	91	86	59	56	1.37				
	1960	079 H02	/ FT CAROLINE STP, JACKSONVILLE DUVAL CO	JAN-DEC	57	28	107	105	102	56	53	1.40				
	1960	081 H02	/ CEDAR BAY STP, 1840 CEDAR BAY RD, JACKSON	JAN-OCT	48	25	104	97	79	49	47	1.40				
	1960	088 H02	JACKSONVILLE/ 4821 EVERGREEN AVE JACKSONVILLE	AUG-DEC	30	31	76	73	71	50	49	1.26				
	1960	089 H05	JACKSONVILLE/ 600 GEORGIA ST. (GRANT & GEORGI	AUG-DEC	72	31	137	132	124	63	60	1.37				
	1960	090 H05	JACKSONVILLE/ 300 WATER ST. CORNER OF CIVIC A	AUG-SEP	31	25	96	86	83	55	52	1.42				
ESCAMBIA	[redacted]	[redacted]	[redacted] MENT,	[redacted]	54	21	[redacted]	[redacted]	[redacted]	[redacted]	52	1.44				
	[redacted]	[redacted]	[redacted] CO	[redacted]	57	11	[redacted]	[redacted]	[redacted]	[redacted]	42	1.55				
	[redacted]	[redacted]	[redacted] CO	[redacted]	59	12	[redacted]	[redacted]	[redacted]	[redacted]	41	1.55				
	[redacted]	[redacted]	[redacted] ESC	[redacted]	61	12	[redacted]	[redacted]	[redacted]	[redacted]	42	1.55				
	[redacted]	[redacted]	[redacted] COLA.	[redacted]	61	15	[redacted]	[redacted]	[redacted]	[redacted]	48	1.49				
	[redacted]	[redacted]	[redacted] CO	[redacted]	60	19	[redacted]	[redacted]	[redacted]	[redacted]	46	1.60	1		1	
	[redacted]	[redacted]	[redacted] SACO	[redacted]	61	17	[redacted]	[redacted]	[redacted]	[redacted]	47	1.61	1		1	
GULF	3740	001 F01	/ PORT ST JOE SEWAGE TRTMT PLT GULF CO	JAN-DEC	46	27	106	103	87	57	54	1.42				
HENDRY	0660	001 F01	CLEWISTON/ HENDRY GEN HOSP, CLEWISTON, HENDRY	JAN-DEC	39	14	127	115	109	65	59	1.60				
HIGHLANDS	1780	001 F03	/ ARCHBOLD BIO STA, OLD SR 8, LAKE PLACID.	FEB-NOV	38	14	90	74	63	35	32	1.55				
HILLSBOROUGH	0370	001 G01	BRANDON/ BRANDON WATER & SEWER CO RAINBOW TR.	JAN-DEC	63	21	134	92	88	50	47	1.47				
	1800	003 G03	/ RUSKIN FIRE STA, HILLSBOROUGH CO	JAN-DEC	55	21	98	90	86	45	43	1.40				
	1800	019 G01	/ WATER TREATMENT PLANT, SUN CITY, HILLSBOR	JAN-DEC	59	22	114	99	90	48	44	1.50				
	1800	066 G02	/ ICWU BLDG, HWY 41 N, GIBSONTON, HILLSBORO	JAN-DEC	58	28	165	125	117	67	61	1.50			1	*
	1800	062 G02	/ CO MAINT BARN, #82, ORIENT RD, HILLSBOROU	JAN-DEC	112	34	163	155	145	79	74	1.43			2	*
	1800	066 G02	/ ICWU BLDG, HWY 41 N, GIBSONTON, HILLSBORO	JAN-DEC	58	28	165	125	117	67	61	1.50			1	*
	1800	062 G02	/ CO MAINT BARN, #82, ORIENT RD, HILLSBOROU	JAN-DEC	112	34	163	155	145	79	74	1.43			2	*
	1800	062 G09	/ CO MAINT BARN, #82, ORIENT RD, HILLSBOROU	JAN-DEC	56	37	148	142	141	81	76	1.44		*		*
	1800	063 G02	/ GARDINIER PARK, US 41, HILLSBOROUGH CO	JAN-DEC	62	26	199	197	144	74	67	1.59			2	*
	1800	064 G02	/ APOLLO BEACH, FILLER [illegible] RD, HILLSBOROUGH	JAN-DEC	69	21	93	88	82	47	44	1.44				
	1800	065 G02	/ EISENHOWER JR HS, BIG BEND RD HILLSBOROUG	JAN-DEC	[illegible]	[illegible]	114	106	[illegible]	[illegible]	47	[illegible]				
	1800	076 G02	TAMPA/ [illegible] STATE [illegible] TAMPA [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
	[illegible]	001 G01	/ WATER PLANT, PLANT CITY, HILLS [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	*		*	*
	[illegible]	002 [illegible]	/ [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				

THE NATIONAL AMBIENT AIR QUALITY STANDARDS
POLLUTANT: TOTAL SUSPENDED PARTICULATES STATE: 10 FLORIDA YEAR: 1981

STATE (10): FLORIDA

SITE CODE: 10-0468-003-F-02 AGENCY TYPE: STATE COUNTY: 1160
AGENCY/PROJECT: [redacted] SITE ADDRESS: ST [redacted] CITY: CANTONMENT

POLLUTANT NAME / POLL-METH-INTRV-UNITS CODE	METHOD OF COLLECTION AND ANALYSIS	INTERVAL	UNITS
TOTAL [redacted] 11101-91-8-01	HI-VOL SAMPLER - GRAVIMETRIC	DAILY	[redacted]

YEAR	PCT OBS	NUM OBS	MIN DETEC	MIN OBS	PERCENTILES 10	30	50	70	90	95	99	MAX OBS	2ND MAX	3RD MAX	ARIT MEAN	ARIT ST DEV	GEOM MEAN	GEOM ST DEV
[redacted]	14.8	54	1.000	21.00	34.	43.	54.	66.	77.	101.	118.	[redacted]	[redacted]	[redacted]	20.22	52.22	1.441	

SITE CODE: 10-3540-003-F-02 AGENCY TYPE: STATE COUNTY: 1160
AGENCY/PROJECT: FD2 SITE ADDRESS: [redacted] CITY:

POLLUTANT NAME / POLL-METH-INTRV-UNITS CODE / YEAR	PCT OBS	NBR OBS	MIN DETEC	MIN OBS	PERCENTILES 10	30	50	70	90	95	99	MAX OBS	2ND MAX	3RD MAX	ARIT MEAN	ARIT ST DEV	GEOM MEAN	GEOM ST DEV	TIME HALF M DE SUB
[redacted] PARTICULATES 11101-91-8-01					HI-VOL SAMPLER			- GRAVIMETRIC						DAILY					
[redacted]	15.6	57	1.000	11.00	24.	34.	43.	54.	66.	78.	113.	[redacted]	45.64	19.63	41.62	1.552	.		0
[redacted] 42401-97-8-07					GAS BUBBLER TEMP CONTROL			- PARAROSANILINE						DAILY					
[redacted]	15.6	57	.0020	.0010	.001	.001	.001	.001	.028	.055	.180	[redacted]	[redacted]	[redacted]	.0276	.0025	4.696	.	41
[redacted] NITROGEN DIOXIDE 42602-84-8-07					GAS BUBBLER ORIFICE			- SODIUM ARSENITE						DAILY					
[redacted]	15.6	57	.0027	.0050	.006	.009	.011	.013	.018	.020	.022	[redacted]	[redacted]	[redacted]	.0044	.0104	1.497	.	0

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AQDHS-II STATISTICAL ANALYSIS REPORT
ANALYSIS BY YEAR
STATE (10): FLORIDA

SITE CODE: 10-3540-004-F-01 AGENCY TYPE: STATE COUNTY: 1160
AGENCY/PROJECT: F01 SITE ADDRESS: [redacted] CITY:

POLLUTANT NAME — METHOD OF COLLECTION AND ANALYSIS — INTERVAL — UNITS — TI[M]
POLL-METH-INTRV-UNITS CODE — HA[L] — M [ ]

YEAR	PCT OBS	NBR OBS	MIN DETEC	MIN OBS	10	30	50	70	90	95	99	MAX OBS	2ND MAX	3RD MAX	ARIT MEAN	ARIT ST DEV	GEOM MEAN	GEOM ST DEV	SU[ ]
[redacted] — INSTRUMENTAL - PULSED FLUORESCENT — HOURLY — [redacted]																			
42401-20-1-08																			
[redacted]	92.6	8115	5.000	.0000	0.	1.	4.	8.	19.	34.	114.	[redacted]			[redacted]	22.10	5.119	2.577	4.3
TOTAL HYDRO-CARBONS — INSTRUMENTAL - FLAME IONIZATION — HOURLY — PARTS PER MILLION (VOL/VOL)																			
43101-11-1-07																			
81	35.4	3101	.2000	1.200	1.5	1.6	1.6	1.7	2.0	2.1	2.5	5.000	4.300	4.000	1.679	.2456	1.664	1.134	.
METHANE — INSTRUMENTAL - FLAME IONIZATION — HOURLY — PARTS PER MILLION (VOL/VOL)																			
43201-11-1-07																			
81	36.6	3209	.1000	.2000	1.4	1.5	1.6	1.6	1.8	1.8	2.0	2.300	2.300	2.300	1.583	.1359	1.577	1.094	.
OZONE — INSTRUMENTAL - CHEMILUMINESCENCE — HOURLY — PARTS PER BILLION (VOL/VOL)																			
44201-11-1-08																			
81	94.3	8260	10.00	.0000	2.	17.	27.	37.	53.	61.	78.	112.0	108.0	107.0	28.29	18.32	21.31	2.312	1.6
WIND SPEED — INSTRUMENTAL - ELECTRONIC OR MACHINE AVG — HOURLY — MILES PER HOUR																			
61101-50-1-12																			
81	99.7	8735	.7000	.0000	.7	2.1	3.5	5.0	7.6	8.8	11.5	16.30	15.80	15.60	3.871	2.657	2.793	2.532	.8
WIND DIRECTION — INSTRUMENTAL - ELECTRONIC OR MACHINE AVG — HOURLY — DEGREES-COMPASS																			
61102-50-1-14																			
81	99.7	8735	1.000	.0000	57.	146.	223.	267.	330.	343.	356.	360.0	360.0	360.0	202.4	99.80	159.4	2.423	.
[redacted] — HI-VOL SAMPLER - GRAVIMETRIC — DAILY — [redacted]																			
11101-91-0-01																			
[redacted]	16.7	61	1.000	12.00	24.	33.	45.	54.	72.	75.	109.	[redacted]			[redacted]	19.28	42.34	1.551	.

																			3.071	2.657	2.791	2.532
[illegible]				INSTRUMENTAL							- ELECTRONIC OR MACHINE AVG				HOURLY		DEGREES-COMPASS			
61102-50-1-14																				
61	99.7	8735	1.000	.0000	57.	146.	223.	267.	330.	343.	[illegible]	360.0	360.0	360.0	202.4	99.00	159.4	2.473		
TOTAL SUSPENDED PARTICULATES				HI-VOL SAMPLER							-.GRAVIMETRIC				DAILY		MICROGRAMS/CUBIC METER (2			
11101-91-8-01																				
01	16.7	61	1.000	12.00	24.	33.	45.	54.	72.	75.	109.	109.0	94.00	75.00	46.29	19.28	42.34	1.551		

AQDHS-II STATISTICAL ANALYSIS REPORT
ANALYSIS BY YEAR
STATE (10): FLORIDA

PAGE

SITE CODE: 10-3540-015-F-01 AGENCY TYPE: STATE COUNTY: 1160
AGENCY/PROJECT: F01 SITE ADDRESS: [redacted], CITY:

POLLUTANT NAME				METHOD OF COLLECTION AND ANALYSIS									INTERVAL	UNITS				
POLL-METH-INTRV-UNITS CODE																		
YEAR	PCT OBS	NBR OBS	MIN DETEC	MIN OBS	PERCENTILES 10	30	50	70	90	95	99	MAX OBS	2ND MAX	3RD MAX	ARIT MEAN	ARIT ST DEV	GEOM MEAN	GEOM ST DEV
[illegible]					HI-VOL SAMPLER			- GRAVIMETRIC					DAILY		MI[illegible]			
11101-91-8-01																		
[illegible]	16.7	61	1.000	15.00	28.	41.	47.	61.	76.	78.	116.	[illegible]	[illegible]	58	20.18	48.11	1.490	

ANALYSIS BY YEAR
STATE (10): FLORIDA

SITE CODE: 10-3540-016-F-02 AGENCY TYPE: STATE COUNTY: 1160
AGENCY/PROJECT: [redacted] SITE ADDRESS: [redacted] CO CITY:

POLLUTANT NAME METHOD OF COLLECTION AND ANALYSIS INTERVAL UNITS
POLL-METH-INTRV-UNITS CODE

YEAR	PCT OBS	NAR OBS	MIN DETEC	MIN OBS	PERCENTILES 10	30	50	70	90	95	99	MAX OBS	2ND MAX	3RD MAX	ARIT MEAN	ARIT ST DEV	GEOM MEAN	GEOM ST DEV
[redacted]					HI-VOL SAMPLER			- GRAVIMETRIC						DAILY				
11101-91-8-01																		
[redacted]	16.4	60	1.000	19.00	27.	35.	47.	59.	78.	91.	281.	[redacted]			5[redacted]	35.75	46.38	1.604
[redacted]					GAS BUBBLER TEMP CONTROL			- PARAROSANILINE						DAILY				
42401-97-8-07																		
[redacted]	16.7	61	.0020	.0010	.001	.001	.001	.001	.001	.010	.092	[redacted]			[redacted]	.0124	.0012	2.312
[redacted]					GAS BUBBLER ORIFICE			- SODIUM ARSENITE						DAILY				
42602-84-8-07																		
[redacted]	16.7	61	.0027	.0050	.005	.008	.009	.011	.015	.019	.025	[redacted]			[redacted]	.0043	.0092	1.491

[redacted] ANALYSIS REPORT
ANALYSIS BY YEAR
STATE CODE: FLORIDA

SITE CODE: 10-3540-016-F-09 AGENCY TYPE: STATE COUNTY: 1160
AGENCY/PROJECT: [redacted] SITE ADDRESS: [redacted] SACO CITY:

POLLUTANT NAME — METHOD OF COLLECTION AND ANALYSIS — INTERVAL — UNITS

POLL-METH-INTRV-UNITS CODE / YEAR	PCT OBS	NBR OBS	MIN DETEC	MIN OBS	PERCENTILES 10	30	50	70	90	95	99	MAX OBS	2ND MAX	3RD MAX	ARIT MEAN	ARIT ST DEV	GEOM MEAN	GEOM ST DEV	TI HA M SI
[redacted]ATES — HI-VOL SAMPLER - GRAVIMETRIC — DAILY — [redacted]																			
11101-91-8-01																			
[redacted]	16.7	61	1.000	17.00	28.	35.	47.	61.	79.	92.	264.	[redacted]			34.00	46.96	1.607	.	
[redacted] — GAS BUBBLER TEMP CONTROL - PARAROSANILINE — DAILY — [redacted]																			
42401-97-8-07																			
[redacted]	16.7	61	.0020	.0010	.001	.001	.001	.001	.010	.016	.101	[redacted]			.0139	.0014	2.775	.	
[redacted] — GAS BUBBLER ORIFICE - SODIUM ARSENITE — DAILY — [redacted]																			
42602-84-8-07																			
[redacted]	16.7	61	.0027	.0050	.006	.009	.011	.013	.017	.021	.034	[redacted]			.0051	.0107	1.495	.	

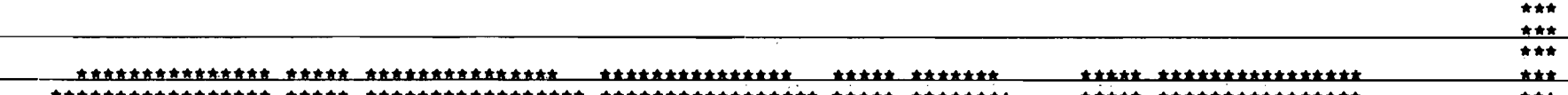
APPENDIX D

SIRRINE

APPENDIX

D. Air Modeling Printouts

NOTE: American Cyanamid's Santa Rosa Plant boundary line has been indicated on the CRSTER results.



E N G I N E E R S , A R C H I T E C T S , P L A N N E R S

THE J.E. SIRRINE COMPANY
CORPORATE HEADQUARTERS
PULP & PAPER DIVISION SOUTH CAROLINA DIVISION
CONSTRUCTION MANAGEMENT DIVISION
ARCHITECT-ENGINEER DIVISION SIRRINE SERVICES, INC.

216 S. PLEASANTBURG
GREENVILLE, SOUTH CAROLINA (803) 298-6000

NORTH CAROLINA DIVISION
P.O. BOX 12748
RESEARCH TRIANGLE PARK, N.C.
(919) 541-2081

TEXAS DIVISION
10000 RICHMOND HOUSTON, TEXAS
(713) 974-8400

DORCHESTER COUNTY DIVISION
107 WEST 5TH STREET, NORTH
SUMMERVILLE, SOUTH CAROLINA
(803) 871-2060

PROGRAM NAME: PTMAX APPLICATION NUMBER: 5038

EPA - CONCENTRATION OF POLLUTANT/WIND SPEED
RUN ON 06/03/83 AT 2:20 PM

AMERICAN CYANAMID PARTICULATE @ 90% EMISSION RATE

KST= 1 EFF. HT = 521.6 XMAX = 999.000 CMAX = 9.9000E 01 KM = 5
NO COMPUTATION WAS ATTEMPTED FOR THIS HEIGHT AS STABILITY AND WIND SPEED CHANGES WITH HEIGHT MAY EASILY BE SUFFICIENT TO CAUSE A COMPUTATION TO BE MISLEADING.

KST= 1 EFF. HT = 331.7 XMAX = 0.794 CMAX = 3.3048E-06 KM = 4
THE PLUME IS OF SUFFICIENT HEIGHT THAT EXTREME CAUTION SHOULD BE USED IN INTERPRETING THIS COMPUTATION AS THIS STABILITY TYPE MAY NOT EXIST TO THIS HEIGHT. ALSO, WIND SPEED VARIATIONS WITH HEIGHT MAY EXERT A DOMINATING INFLUENCE.

KST= 1 EFF. HT = 268.4 XMAX = 0.718 CMAX = 4.4610E-06 KM = 4
THE PLUME IS OF SUFFICIENT HEIGHT THAT EXTREME CAUTION SHOULD BE USED IN INTERPRETING THIS COMPUTATION AS THIS STABILITY TYPE MAY NOT EXIST TO THIS HEIGHT. ALSO, WIND SPEED VARIATIONS WITH HEIGHT MAY EXERT A DOMINATING INFLUENCE.

KST= 2 EFF. HT = 521.6 XMAX = 999.000 CMAX = 9.9000E 01 KM = 5
NO COMPUTATION WAS ATTEMPTED FOR THIS HEIGHT AS STABILITY AND WIND SPEED CHANGES WITH HEIGHT MAY EASILY BE SUFFICIENT TO CAUSE A COMPUTATION TO BE MISLEADING.

KST= 2 EFF. HT = 331.7 XMAX = 2.101 CMAX = 1.7553E-06 KM = 4
THE PLUME IS OF SUFFICIENT HEIGHT THAT EXTREME CAUTION SHOULD BE USED IN INTERPRETING THIS COMPUTATION AS THIS STABILITY TYPE MAY NOT EXIST TO THIS HEIGHT. ALSO, WIND SPEED VARIATIONS WITH HEIGHT MAY EXERT A DOMINATING INFLUENCE.

KST= 2 EFF. HT = 268.4 XMAX = 1.731 CMAX = 2.5727E-06 KM = 4
THE PLUME IS OF SUFFICIENT HEIGHT THAT EXTREME CAUTION SHOULD BE USED IN INTERPRETING THIS COMPUTATION AS THIS STABILITY TYPE MAY NOT EXIST TO THIS HEIGHT. ALSO, WIND SPEED VARIATIONS WITH HEIGHT MAY EXERT A DOMINATING INFLUENCE.

KST= 4 EFF. HT = 521.6 XMAX = 999.000 CMAX = 9.9000E 01 KM = 5
NO COMPUTATION WAS ATTEMPTED FOR THIS HEIGHT AS STABILITY AND WIND SPEED CHANGES WITH HEIGHT MAY EASILY BE SUFFICIENT TO CAUSE A COMPUTATION TO BE MISLEADING.

AMERICAN CYANAMID PARTICULATE @ 90% EMISSION RATE

ANALYSIS OF CONCENTRATION AS A FUNCTION OF STABILITY AND WIND SPEED. (D. B. TURNER)

EMISSION RATE (G/SEC) = 33.21, PHY HT (M) = 15.24, STACK TEMP (DEG,K) = 444.30, STACK VEL (M/SEC) = 14.90.
DIAM (M) = 1.47, VOLUME FLOW (CU M/SEC) = 25.32

WIND SPEED (M/SEC)	0.5	0.8	1.0	1.5	2.0	2.5	3.0	4.0	5.0
STABILITY = 1									
MAX CONC (G/CU M)	9.9000E 01	1.3719E-04	1.4815E-04	1.6864E-04	1.8360E-04	1.9628E-04	2.0610E-04		
DIST OF MAX (KM)	999.000(1)	0.794	0.718	0.601	0.529	0.472	0.431		
PLUME HEIGHT (M)	521.6(2)	331.7(2)	268.4(2)	184.0	141.8	116.5	99.6		
STABILITY = 2									
MAX CONC (G/CU M)	9.9000E 01	7.2668E-05	8.5438E-05	1.1269E-04	1.3561E-04	1.5503E-04	1.7164E-04	1.9846E-04	2.1895E-04
DIST OF MAX (KM)	999.000(1)	2.101	1.731	1.226	0.966	0.807	0.700	0.563	0.477
PLUME HEIGHT (M)	521.6(2)	331.7(2)	268.4(2)	184.0	141.8	116.5	99.6	78.5	65.9
STABILITY = 3									
MAX CONC (G/CU M)					1.1531E-04	1.3631E-04	1.5500E-04	1.8712E-04	2.1277E-04
DIST OF MAX (KM)					1.722	1.388	1.169	0.901	0.743
PLUME HEIGHT (M)					141.8	116.5	99.6	78.5	65.9
STABILITY = 4									
MAX CONC (G/CU M)	9.9000E 01	1.6178E-05	2.2259E-05	3.9015E-05	5.6652E-05	7.3334E-05	8.9632E-05	1.2035E-04	1.4685E-04
DIST OF MAX (KM)	999.000(1)	21.703	15.134	7.959	5.146	3.778	2.954	2.032	1.567
PLUME HEIGHT (M)	521.6(2)	331.7	268.4	184.0	141.8	116.5	99.6	78.5	65.9
STABILITY = 5									
MAX CONC (G/CU M)					1.5778E-04	1.4831E-04	1.4075E-04	1.2840E-04	1.1884E-04
DIST OF MAX (KM)					4.017	3.630	3.345	2.961	2.706
PLUME HEIGHT (M)					80.5	75.8	72.2	67.0	63.3
STABILITY = 6									
MAX CONC (G/CU M)					1.4883E-04	1.4100E-04	1.3461E-04	1.2462E-04	1.1696E-04
DIST OF MAX (KM)					6.878	6.122	5.575	4.824	4.322
PLUME HEIGHT (M)					69.4	65.5	62.5	58.2	55.1

WIND SPEED (M/SEC)	7.0	10.0	12.0	15.0	20.0
STABILITY = 3					
MAX CONC (G/CU M)	2.4959E-04	2.8073E-04	2.9144E-04	2.9845E-04	
DIST OF MAX (KM)	0.566	0.436	0.387	0.338	
PLUME HEIGHT (M)	51.4	40.6	36.3	32.1	
STABILITY = 4					
MAX CONC (G/CU M)	1.8626E-04	2.2576E-04	2.3830E-04	2.4792E-04	2.5071E-04
DIST OF MAX (KM)	1.136	0.835	0.729	0.627	0.529
PLUME HEIGHT (M)	51.4	40.6	36.3	32.1	27.9

(1) THE DISTANCE TO THE POINT OF MAXIMUM CONCENTRATION IS SO GREAT THAT THE SAME STABILITY IS NOT LIKELY TO PERSIST LONG ENOUGH FOR THE PLUME TO TRAVEL THIS FAR.

(2) THE PLUME IS OF SUFFICIENT HEIGHT THAT EXTREME CAUTION SHOULD BE USED IN INTERPRETING THIS COMPUTATION AS THIS STABILITY TYPE MAY NOT EXIST TO THIS HEIGHT. ALSO WIND SPEED VARIATIONS WITH HEIGHT MAY EXERT A DOMINATING INFLUENCE.

(3) NO COMPUTATION WAS ATTEMPTED FOR THIS HEIGHT AS THE POINT OF MAXIMUM CONCENTRATION IS GREATER THAN 100 KILOMETERS FROM THE SOURCE.

E N G I N E E R S . A R C H I T E C T S . P L A N N E R S

THE J.E. SIRRINE COMPANY
CORPORATE HEADQUARTERS
PULP & PAPER DIVISION . SOUTH CAROLINA DIVISION
CONSTRUCTION MANAGEMENT DIVISION
ARCHITECT-ENGINEER DIVISION . SIRRINE SERVICES, INC.

216 S. PLEASANTBURG
GREENVILLE, SOUTH CAROLINA (803) 298-6000

NORTH CAROLINA DIVISION
P.O. BOX 12748
RESEARCH TRIANGLE PARK, N.C.
(919) 541-2081

TEXAS DIVISION
10000 RICHMOND HOUSTON, TEXAS
(713) 974-8400

DORCHESTER COUNTY DIVISION
107 WEST 5TH STREET, NORTH
SUMMERVILLE, SOUTH CAROLINA
(803) 871-2060

PROGRAM NAME: CRSTER APPLICATION NUMBER: 5010

SINGLE SOURCE AIR QUALITY MODEL
RUN ON 06/06/83 AT 2:10 PM

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                              ECHO PRINT OF INPUT DATA

                  1         2         3         4         5         6         7         8
CARD     12345678901234567890123456789012345678901234567890123456789012345678901234567890

   1     AMERICAN CYANAMID       TSP
   2
   3      $NAM1 IUR=1,RNG=.5,0.7,1.1,4.,10.1,ISS=03855,ISY=72,IUS=12884,IUY=72,
   4     IMET=0,DAY=366*1,$END
   5     BOILER NO 7  MICRONIZED COAL  95% LOAD  90% EMISSION FACTOR
   6     33.21              15.24     1.47      14.90     444.3
   7
   8

                  1         2         3         4         5         6         7         8
         12345678901234567890123456789012345678901234567890123456789012345678901234567890

PLANT NAME: AMERICAN CYANAMID          POLLUTANT:  TSP      EMISSION UNITS: GM/SEC     AIR QUALITY UNITS: GM/M**3 12/80

             MET FILE      REQUESTED
           STN NO. YR    STN NO. YR
 SURFACE      3855  72      3855  72
 UPPER AIR   12884  72     12884  72
PLANT LOCATION: RURAL
ANEMOMETER HEIGHT IS  7.0 METERS
WIND PROFILE EXPONENTS ARE:   0.100,  0.150,  0.200,  0.250,  0.300,  0.300,
NO TAPE OUTPUT
MET DATA WILL NOT BE PRINTED

DAY--  1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1

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    ALL TABLES, INCLUDING SOURCE CONTRIBUTION, THAT CONTAIN "ANNUAL" IN THE HEADING ARE BASED ONLY ON THOSE DAYS

    MARKED BY "1" IN THE ABOVE TABLE
```

RING DIST. ES(KM)= 0.50 0.70 1.10 4.00 10.10

PLANT ELEVATION (FEET ABOVE SEA LEVEL)— 0. PLANT ELEVATION (METERS ABOVE SEA LEVEL)— 0.

RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)						RECEPTOR ELEVATIONS (METERS ABOVE SEA LEVEL)				
DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5	RING#1	RING#2	RING#3	RING#4	RING#5
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
26	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
27	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
28	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
30	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
32	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
33	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
35	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
36	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

STACK # L- ILER NO 7 MICRONIZED COAL 95% LOAD 90% EMISSION FA ?

STACK	MONTH	EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	ALL	33.2100	15.24	1.47	14.90	444.30	25.29

PLANT NA AMERICAN CYANAMID POLLUTANT: TSP EMISS. UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3

MAXIMUM MEAN CONC= 6.7172E-06 DIRECTION= 36 DISTANCE= 0.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR \ RANGE	0.5 KM	0.7 KM	1.1 KM	4.0 KM	10.1 KM
1	4.27696E-06	5.57373E-06	5.23405E-06	1.69247E-06	6.65628E-07
2	2.94697E-06	3.83554E-06	3.67320E-06	1.26324E-06	4.52073E-07
3	3.06039E-06	4.09074E-06	4.12831E-06	1.73135E-06	8.22176E-07
4	3.04624E-06	4.32550E-06	4.52702E-06	1.60825E-06	5.96874E-07
5	2.81692E-06	4.02599E-06	4.15670E-06	1.56541E-06	6.57984E-07
6	2.82641E-06	4.23194E-06	4.50997E-06	1.82947E-06	7.30256E-07
7	1.47292E-06	2.24994E-06	2.44191E-06	1.06918E-06	4.39956E-07
8	7.90551E-07	1.29186E-06	1.54073E-06	9.06155E-07	4.01276E-07
9	7.34754E-07	1.25766E-06	1.57932E-06	1.06938E-06	5.45462E-07
10	5.19566E-07	8.14666E-07	9.69872E-07	7.01504E-07	4.77147E-07
11	5.32025E-07	7.65452E-07	7.92762E-07	5.13428E-07	3.82027E-07
12	8.66319E-07	1.21480E-06	1.23032E-06	7.61633E-07	4.92223E-07
13	9.92707E-07	1.39913E-06	1.45161E-06	7.50688E-07	3.88703E-07
14	1.39738E-06	1.93065E-06	1.95504E-06	9.56085E-07	4.86709E-07
15	1.86290E-06	2.63419E-06	2.66005E-06	1.42015E-06	7.63115E-07
16	1.95136E-06	2.78246E-06	2.82842E-06	1.29055E-06	6.41483E-07
17	2.53662E-06	3.69190E-06	3.87380E-06	1.75973E-06	8.09512E-07
18	2.90949E-06	4.43717E-06	4.83610E-06	* 2.61611E-06	1.34755E-06
19	2.44602E-06	3.67157E-06	3.87219E-06	1.89072E-06	9.94628E-07
20	2.03628E-06	3.18300E-06	3.52082E-06	1.75586E-06	8.02368E-07
21	1.75268E-06	2.80833E-06	3.24235E-06	1.84672E-06	9.00174E-07
22	1.28950E-06	1.99850E-06	2.25102E-06	1.33085E-06	6.78278E-07
23	1.01128E-06	1.52640E-06	1.72411E-06	1.02877E-06	5.29198E-07
24	1.51890E-06	2.27100E-06	2.50681E-06	1.13377E-06	4.62824E-07
25	2.03328E-06	3.02016E-06	3.22939E-06	1.23717E-06	4.78080E-07
26	2.53758E-06	3.81691E-06	4.06717E-06	1.39745E-06	4.69422E-07
27	2.66782E-06	4.11406E-06	4.46092E-06	1.83411E-06	6.90021E-07
28	1.84987E-06	2.79404E-06	2.98386E-06	1.13337E-06	4.28802E-07
29	2.02997E-06	2.78243E-06	2.69800E-06	8.25524E-07	2.95634E-07
30	3.40059E-06	4.60181E-06	4.46238E-06	1.50331E-06	5.73983E-07
31	3.67634E-06	4.68710E-06	4.23684E-06	1.28806E-06	4.60393E-07
32	3.07582E-06	3.88808E-06	3.63193E-06	1.26099E-06	4.94147E-07
33	2.98188E-06	3.89653E-06	3.85517E-06	1.54516E-06	6.54218E-07
34	3.08559E-06	3.66957E-06	3.27766E-06	1.18578E-06	4.95731E-07
35	4.20358E-06	5.09346E-06	4.50740E-06	1.33671E-06	4.43191E-07
36	5.33906E-06	6.71723E-06	6.18084E-06	2.11018E-06	8.37957E-07

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3
YEARLY MAX 24-HOUR CONC= 8.8766E-05 DIRECTION= 19 DISTANCE= .7 KM DAY= 15

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.5 KM	0.7 KM	1.1 KM	4.0 KM	10.1 KM
1	4.2249E-05 (94)	6.7731E-05 (94)	7.2484E-05 (94)	1.9509E-05 (94)	2.4874E-05 (123)
2	3.8975E-05 (186)	3.6610E-05 (13)	4.4893E-05 (10)	1.6089E-05 (112)	7.7616E-06 (73)
3	5.4090E-05 (186)	5.6763E-05 (210)	5.2332E-05 (10)	2.1052E-05 (23)	1.5902E-05 (203)
4	5.9053E-05 (184)	5.7813E-05 (184)	5.8493E-05 (209)	2.1295E-05 (209)	1.1287E-05 (231)
5	5.6066E-05 (211)	6.3398E-05 (211)	5.8126E-05 (103)	2.0968E-05 (103)	1.6080E-05 (238)
6	5.3840E-05 (98)	7.4559E-05 (98)	7.2228E-05 (98)	2.2270E-05 (98)	1.6111E-05 (75)
7	4.3797E-05 (98)	5.0511E-05 (98)	5.2657E-05 (179)	1.4857E-05 (179)	1.1878E-05 (237)
8	2.4463E-05 (177)	3.9305E-05 (177)	3.9068E-05 (177)	1.5343E-05 (181)	6.7320E-06 (315)
9	3.1206E-05 (221)	2.8748E-05 (331)	2.9765E-05 (331)	1.5469E-05 (331)	9.8857E-06 (182)
10	1.6065E-05 (331)	2.5484E-05 (359)	2.7325E-05 (359)	9.5401E-06 (359)	1.4850E-05 (156)
11	3.0826E-05 (173)	3.1416E-05 (173)	2.2481E-05 (173)	1.2183E-05 (158)	1.4663E-05 (205)
12	4.6716E-05 (173)	4.3263E-05 (173)	3.3091E-05 (331)	1.2191E-05 (207)	1.4814E-05 (207)
13	3.5019E-05 (172)	3.8672E-05 (172)	4.3461E-05 (331)	1.4828E-05 (187)	1.4215E-05 (196)
14	6.4568E-05 (172)	7.2064E-05 (172)	5.7236E-05 (172)	2.0366E-05 (44)	1.2478E-05 (217)
15	5.2362E-05 (50)	7.2532E-05 (50)	6.5063E-05 (50)	2.0518E-05 (142)	1.6181E-05 (263)
16	4.5593E-05 (142)	5.0511E-05 (142)	4.8257E-05 (319)	1.7055E-05 (194)	1.1545E-05 (174)
17	6.7738E-05 (350)	7.3290E-05 (351)	7.1136E-05 (351)	2.3647E-05 (313)	1.2530E-05 (313)
18	5.7770E-05 (15)	7.7756E-05 (15)	6.6494E-05 (15)	2.3645E-05 (279)	1.9814E-05 (279)
19	6.8960E-05 (15)	8.8766E-05 (15) *	7.3391E-05 (15)	1.8333E-05 (316)	1.8135E-05 (219)
20	3.8381E-05 (153)	5.4472E-05 (31)	7.0379E-05 (31)	2.2274E-05 (31)	1.1685E-05 (309)
21	3.7054E-05 (90)	5.1177E-05 (90)	4.7677E-05 (69)	1.8943E-05 (116)	1.7140E-05 (160)
22	4.4018E-05 (90)	6.2554E-05 (90)	5.6185E-05 (25)	1.3910E-05 (25)	8.2393E-06 (243)
23	2.1001E-05 (90)	2.7375E-05 (90)	2.2535E-05 (90)	1.3012E-05 (310)	1.9083E-05 (267)
24	3.3883E-05 (139)	3.8688E-05 (149)	4.4228E-05 (294)	1.4779E-05 (353)	6.0353E-06 (59)
25	5.1408E-05 (170)	6.7522E-05 (170)	6.1645E-05 (170)	2.4681E-05 (353)	1.0785E-05 (110)
26	5.0731E-05 (323)	7.7238E-05 (323)	7.3078E-05 (323)	2.4046E-05 (41)	6.9066E-06 (41)
27	4.0931E-05 (295)	7.0554E-05 (311)	7.3471E-05 (311)	2.2994E-05 (346)	1.0813E-05 (346)
28	2.7231E-05 (311)	4.6187E-05 (312)	5.1977E-05 (312)	2.0004E-05 (255)	9.0446E-06 (255)
29	3.1327E-05 (133)	5.8483E-05 (133)	6.3133E-05 (133)	1.5933E-05 (133)	6.4801E-06 (121)
30	3.7641E-05 (201)	5.2993E-05 (305)	6.5946E-05 (305)	2.9391E-05 (305)	1.0735E-05 (305)
31	5.2733E-05 (119)	8.2034E-05 (119)	7.8000E-05 (119)	2.4917E-05 (165)	9.0119E-06 (345)
32	4.8596E-05 (119)	7.6653E-05 (119)	7.8343E-05 (119)	2.0211E-05 (119)	1.2521E-05 (60)
33	2.5180E-05 (365)	5.0858E-05 (365)	5.8499E-05 (365)	2.3247E-05 (306)	1.1181E-05 (271)
34	3.5204E-05 (131)	3.9566E-05 (365)	4.8822E-05 (365)	1.3814E-05 (365)	9.6417E-06 (345)
35	3.2948E-05 (131)	4.3887E-05 (267)	3.9028E-05 (267)	1.6382E-05 (270)	8.7836E-06 (109)
36	4.1931E-05 (195)	6.4801E-05 (61)	7.2994E-05 (270)	3.0936E-05 (270)	1.3465E-05 (155)

PLANT NA AMERICAN CYANAMID POLLUTANT: TSP EMISSI UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3
YEARLY SECO.. MAXIMUM 24-HOUR CONC= 7.5692E-05 DIRECTION= 31 DISTANCE= 0.7 KM DAY=166

SECOND HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.5 KM	0.7 KM	1.1 KM	4.0 KM	10.1 KM
1	3.9822E-05 (214)	4.6876E-05 (102)	4.8613E-05 (112)	1.9358E-05 (24)	1.1105E-05 (73)
2	3.3466E-05 (223)	3.4782E-05 (112)	3.9494E-05 (13)	1.4599E-05 (10)	6.6552E-06 (169)
3	4.9415E-05 (210)	5.1973E-05 (186)	5.1566E-05 (13)	1.9272E-05 (215)	1.2705E-05 (249)
4	4.2075E-05 (104)	5.3828E-05 (104)	4.8903E-05 (103)	1.9274E-05 (28)	1.1007E-05 (230)
5	4.3939E-05 (103)	5.7634E-05 (103)	5.0593E-05 (211)	1.7916E-05 (135)	1.3937E-05 (162)
6	4.9505E-05 (180)	7.2363E-05 (178)	7.1541E-05 (178)	1.9776E-05 (75)	9.0706E-06 (144)
7	4.0698E-05 (177)	4.8038E-05 (179)	4.2505E-05 (129)	1.1177E-05 (129)	5.9358E-06 (22)
8	2.1456E-05 (76)	3.4771E-05 (76)	3.5311E-05 (181)	1.2420E-05 (290)	5.5775E-06 (290)
9	1.9258E-05 (331)	2.8746E-05 (330)	2.7211E-05 (330)	1.3415E-05 (172)	8.6364E-06 (207)
10	1.4969E-05 (359)	2.0638E-05 (331)	2.2465E-05 (99)	8.3385E-06 (185)	1.3629E-05 (157)
11	9.8844E-06 (74)	1.5761E-05 (181)	1.8727E-05 (181)	6.7964E-06 (205)	9.6643E-06 (158)
12	2.9754E-05 (85)	3.7364E-05 (85)	3.0214E-05 (85)	8.1835E-06 (173)	8.2453E-06 (273)
13	3.2554E-05 (183)	3.6223E-05 (331)	2.9444E-05 (172)	1.2460E-05 (331)	7.3939E-06 (187)
14	5.4045E-05 (49)	6.2268E-05 (49)	4.7476E-05 (49)	1.4006E-05 (356)	8.4195E-06 (139)
15	3.6483E-05 (49)	4.4995E-05 (49)	3.7701E-05 (49)	1.8077E-05 (50)	1.3521E-05 (217)
16	3.5563E-05 (50)	4.4756E-05 (34)	4.1922E-05 (357)	1.4746E-05 (319)	8.7212E-06 (71)
17	4.7481E-05 (351)	7.1819E-05 (350) *	5.9783E-05 (325)	2.1313E-05 (335)	7.7535E-06 (335)
18	3.5046E-05 (217)	4.8838E-05 (5)	5.0503E-05 (5)	2.1406E-05 (6)	1.4266E-05 (361)
19	4.1730E-05 (38)	6.4754E-05 (38)	6.2222E-05 (38)	1.8287E-05 (65)	1.5931E-05 (242)
20	2.9845E-05 (90)	4.3625E-05 (90)	4.4783E-05 (14)	1.5790E-05 (309)	1.0609E-05 (235)
21	3.5234E-05 (275)	4.2865E-05 (69)	4.4315E-05 (90)	1.7393E-05 (352)	9.7481E-06 (229)
22	4.1089E-05 (25)	5.8335E-05 (25)	5.5233E-05 (90)	1.3275E-05 (342)	7.6307E-06 (7)
23	1.8889E-05 (171)	2.1879E-05 (25)	2.1844E-05 (25)	1.2155E-05 (267)	1.2235E-05 (109)
24	3.1929E-05 (170)	3.8401E-05 (294)	4.3989E-05 (149)	1.1626E-05 (294)	5.8533E-06 (198)
25	3.0625E-05 (276)	4.2110E-05 (276)	4.5992E-05 (353)	1.6688E-05 (17)	9.4193E-06 (353)
26	3.0265E-05 (285)	5.6813E-05 (311)	6.9606E-05 (41)	1.8815E-05 (311)	5.7351E-06 (27)
27	4.0342E-05 (311)	7.0237E-05 (295)	7.1564E-05 (295)	1.8149E-05 (26)	9.0823E-06 (203)
28	2.5690E-05 (255)	4.4825E-05 (311)	5.1608E-05 (132)	1.6034E-05 (132)	5.1899E-06 (169)
29	2.5604E-05 (295)	4.4442E-05 (295)	4.8301E-05 (295)	1.3983E-05 (33)	6.3571E-06 (305)
30	3.4307E-05 (244)	4.4695E-05 (127)	4.8815E-05 (364)	1.9467E-05 (364)	1.0607E-05 (167)
31	5.0832E-05 (166)	7.5692E-05 (166)	7.2442E-05 (166)	2.4199E-05 (120)	8.4641E-06 (165)
32	3.2728E-05 (118)	3.8151E-05 (296)	3.8409E-05 (268)	1.9097E-05 (268)	7.2875E-06 (27)
33	2.5125E-05 (117)	4.6556E-05 (306)	5.7621E-05 (306)	1.8899E-05 (344)	8.1067E-06 (359)
34	2.9691E-05 (196)	3.7276E-05 (196)	3.5964E-05 (306)	1.3265E-05 (19)	5.6761E-06 (87)
35	3.2018E-05 (106)	4.0612E-05 (106)	3.7564E-05 (61)	1.5050E-05 (355)	8.7289E-06 (270)
36	3.7794E-05 (61)	4.9644E-05 (270)	6.8470E-05 (61)	1.8643E-05 (307)	1.3112E-05 (198)

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3
YEARLY MAX 3-HOUR CONC= 2.6052E-04 DIRECTION= 4 DIST = 0.5 KM DAY=184 TIME PERIOD= 4

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

RANGE DIR	0.5 KM	0.7 KM	1.1 KM	4.0 KM	10.1 KM
1	2.0012E-04 (102, 4)	2.1730E-04 (102, 4)	1.7005E-04 (94, 5)	7.1149E-05 (271, 6)	8.9866E-05 (123, 1)
2	2.1612E-04 (223, 5)	2.2245E-04 (223, 5)	1.7547E-04 (57, 1)	7.1731E-05 (169, 7)	5.3239E-05 (169, 7)
3	2.5420E-04 (186, 4)	2.0418E-04 (186, 4)	1.6930E-04 (13, 3)	8.7099E-05 (261, 1)	9.9928E-05 (249, 1)
4	2.6052E-04 (184, 4)	2.1553E-04 (184, 4)	1.9600E-04 (209, 6)	7.2698E-05 (28, 8)	8.0902E-05 (231, 1)
5	1.8927E-04 (180, 5)	1.8697E-04 (211, 5)	1.8348E-04 (222, 6)	9.4979E-05 (162, 7)	1.0138E-04 (162, 7)
6	2.0314E-04 (213, 4)	2.1289E-04 (178, 5)	1.9086E-04 (176, 8)	6.5565E-05 (98, 1)	7.7248E-05 (75, 2)
7	1.8792E-04 (177, 5)	1.8947E-04 (98, 8)	1.7868E-04 (98, 8)	6.3255E-05 (237, 7)	4.8956E-05 (237, 7)
8	1.2346E-04 (221, 5)	1.8158E-04 (76, 6)	1.8647E-04 (76, 6)	6.7806E-05 (290, 8)	5.0508E-05 (315, 6)
9	1.6697E-04 (221, 5)	1.3496E-04 (180, 3)	1.3155E-04 (180, 3)	6.0972E-05 (209, 2)	5.4029E-05 (182, 7)
10	1.1975E-04 (359, 5)	2.0387E-04 (359, 5)	2.1860E-04 (359, 5)	7.6321E-05 (359, 5)	8.3073E-05 (156, 8)
11	1.2748E-04 (173, 4)	1.2120E-04 (173, 4)	1.1645E-04 (359, 5)	6.9896E-05 (158, 1)	7.2610E-05 (205, 1)
12	2.2203E-04 (173, 4)	2.0444E-04 (173, 4)	1.2668E-04 (173, 4)	5.6086E-05 (138, 7)	6.1540E-05 (138, 7)
13	1.3102E-04 (183, 3)	1.3769E-04 (183, 3)	1.4262E-04 (62, 8)	6.3554E-05 (187, 2)	6.5028E-05 (196, 1)
14	1.5457E-04 (172, 4)	1.8875E-04 (49, 3)	1.5996E-04 (220, 3)	7.6949E-05 (356, 5)	6.7348E-05 (139, 1)
15	2.0895E-04 (281, 4)	2.3064E-04 (281, 4) *	1.6407E-04 (281, 4)	6.6493E-05 (281, 1)	9.7334E-05 (217, 8)
16	2.1266E-04 (142, 4)	1.7914E-04 (108, 4)	1.5698E-04 (319, 7)	7.7639E-05 (194, 7)	7.8501E-05 (174, 8)
17	1.6177E-04 (350, 7)	1.7120E-04 (350, 7)	1.7036E-04 (325, 1)	7.9754E-05 (11, 6)	4.7538E-05 (84, 1)
18	2.1544E-04 (217, 4)	1.8574E-04 (217, 4)	1.7413E-04 (5, 4)	8.5327E-05 (279, 2)	7.1011E-05 (279, 2)
19	1.7087E-04 (15, 1)	2.0778E-04 (15, 1)	1.8571E-04 (38, 5)	6.0222E-05 (309, 1)	9.1798E-05 (206, 1)
20	2.1037E-04 (171, 3)	2.2057E-04 (171, 3)	1.7147E-04 (342, 2)	7.5068E-05 (63, 8)	4.4471E-05 (224, 2)
21	1.8565E-04 (153, 4)	1.7831E-04 (90, 3)	1.9162E-04 (69, 1)	7.7401E-05 (352, 6)	8.5915E-05 (160, 1)
22	1.8931E-04 (25, 4)	2.1785E-04 (25, 4)	1.6701E-04 (25, 4)	7.0378E-05 (264, 2)	5.1362E-05 (263, 1)
23	1.4439E-04 (171, 1)	1.5920E-04 (171, 1)	1.1810E-04 (171, 1)	7.0185E-05 (230, 2)	8.4072E-05 (267, 2)
24	1.9214E-04 (139, 4)	1.8636E-04 (139, 4)	1.5337E-04 (116, 3)	5.7136E-05 (354, 1)	4.0027E-05 (190, 2)
25	1.5805E-04 (188, 4)	1.6670E-04 (188, 4)	1.5933E-04 (17, 3)	6.6008E-05 (353, 6)	8.6280E-05 (110, 1)
26	1.5922E-04 (255, 4)	1.8047E-04 (323, 8)	1.8139E-04 (41, 4)	7.4565E-05 (304, 1)	3.6385E-05 (265, 2)
27	1.5214E-04 (233, 4)	1.6682E-04 (295, 1)	1.8752E-04 (300, 7)	7.5656E-05 (346, 7)	6.9451E-05 (265, 8)
28	1.1672E-04 (228, 3)	1.5891E-04 (311, 4)	1.5599E-04 (312, 3)	5.8826E-05 (101, 1)	4.0130E-05 (169, 8)
29	1.2544E-04 (150, 5)	1.5850E-04 (133, 4)	1.6222E-04 (133, 4)	5.5903E-05 (3, 5)	3.9800E-05 (305, 1)
30	2.1595E-04 (201, 4)	1.9219E-04 (256, 4)	2.0457E-04 (364, 7)	8.4649E-05 (364, 7)	4.7733E-05 (156, 1)
31	2.2417E-04 (265, 4)	2.3514E-04 (265, 4)	1.8016E-04 (133, 6)	6.0068E-05 (165, 1)	5.5232E-05 (191, 1)
32	1.8868E-04 (118, 4)	1.6727E-04 (119, 3)	1.4494E-04 (119, 3)	7.3389E-05 (344, 6)	8.9087E-05 (60, 1)
33	1.5484E-04 (247, 4)	1.6665E-04 (127, 5)	1.8815E-04 (133, 7)	7.1998E-05 (268, 8)	5.0379E-05 (271, 2)
34	1.7592E-04 (197, 4)	1.9807E-04 (197, 4)	1.4140E-04 (197, 4)	5.6134E-05 (87, 2)	5.9245E-05 (345, 1)
35	1.6244E-04 (200, 5)	1.7478E-04 (75, 5)	1.7848E-04 (161, 4)	6.8582E-05 (161, 4)	4.5165E-05 (109, 8)
36	1.9829E-04 (71, 5)	2.2730E-04 (71, 5)	2.0378E-04 (318, 4)	8.3661E-05 (318, 4)	8.9718E-05 (198, 2)

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3
YEARLY SECOND MAXIMUM 3-HOUR CONC= 2.0745E-04 DIRECTION= 6 DISTANCE= 0.7 KM DAY=182 TIME PERIOD= 4

SECOND HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.5 KM	0.7 KM	1.1 KM	4.0 KM	10.1 KM
1	1.9261E-04 (258, 5)	1.9498E-04 (258, 5)	1.6347E-04 (307, 4)	6.5277E-05 (266, 6)	8.9859E-05 (123, 2)
2	1.8137E-04 (186, 5)	1.6607E-04 (94, 4)	1.6797E-04 (104, 7)	6.0679E-05 (57, 1)	4.7753E-05 (216, 2)
3	1.6646E-04 (211, 4)	1.7433E-04 (13, 3)	1.4397E-04 (297, 4)	6.5365E-05 (102, 8)	9.8879E-05 (203, 7)
4	1.9078E-04 (103, 4)	2.0609E-04 (13, 5)	1.8643E-04 (13, 5)	6.8510E-05 (28, 7)	7.3365E-05 (230, 7)
5	1.8890E-04 (211, 5)	1.5642E-04 (180, 5)	1.7093E-04 (297, 5)	7.5247E-05 (103, 2)	9.5028E-05 (262, 1)
6	2.0039E-04 (182, 4)	2.0745E-04 (182, 4)	1.9057E-04 (98, 7)	6.4339E-05 (75, 2)	7.2543E-05 (144, 7)
7	1.4039E-04 (98, 5)	1.5619E-04 (180, 8)	1.5335E-04 (180, 8)	5.7260E-05 (252, 7)	4.6069E-05 (237, 8)
8	1.0722E-04 (76, 6)	1.3556E-04 (177, 2)	1.4962E-04 (177, 2)	5.6243E-05 (220, 1)	4.1581E-05 (71, 7)
9	8.6435E-05 (180, 3)	1.3214E-04 (221, 5)	1.2396E-04 (134, 5)	6.0594E-05 (135, 2)	5.3810E-05 (236, 8)
10	1.1116E-04 (331, 5)	1.4154E-04 (222, 4)	1.5055E-04 (185, 3)	6.6706E-05 (185, 3)	8.2588E-05 (308, 2)
11	1.0134E-04 (173, 5)	1.1153E-04 (181, 3)	1.0882E-04 (181, 3)	5.2400E-05 (271, 7)	6.6220E-05 (158, 1)
12	1.3978E-04 (173, 5)	1.2948E-04 (85, 5)	1.2378E-04 (312, 6)	5.1336E-05 (207, 7)	6.0362E-05 (260, 2)
13	1.2941E-04 (183, 4)	1.3201E-04 (331, 2)	1.3252E-04 (331, 2)	4.5212E-05 (196, 2)	5.6656E-05 (258, 1)
14	1.4898E-04 (49, 5)	1.7197E-04 (171, 8)	1.5683E-04 (49, 3)	5.5041E-05 (143, 8)	6.3577E-05 (217, 1)
15	1.4069E-04 (142, 3)	1.6642E-04 (142, 3)	1.4222E-04 (96, 4)	5.7133E-05 (322, 3)	6.8493E-05 (263, 2)
16	1.6561E-04 (108, 4)	1.7816E-04 (142, 4)	1.4892E-04 (324, 7)	6.3970E-05 (263, 8)	4.9331E-05 (45, 1)
17	1.5750E-04 (142, 4)	1.7089E-04 (325, 1)	1.6159E-04 (313, 1)	6.6300E-05 (224, 8)	4.3930E-05 (224, 8)
18	1.5005E-04 (351, 1)	1.8262E-04 (5, 4)	1.6727E-04 (309, 5)	8.3766E-05 (259, 3)	6.4912E-05 (279, 1)
19	1.3945E-04 (116, 4)	2.0193E-04 (38, 5) *	1.7819E-04 (366, 8)	5.9082E-05 (316, 8)	8.4754E-05 (219, 1)
20	1.5137E-04 (153, 4)	1.8510E-04 (333, 8)	1.6465E-04 (299, 1)	6.0733E-05 (349, 1)	4.4201E-05 (249, 2)
21	1.4682E-04 (171, 2)	1.6690E-04 (69, 1)	1.5534E-04 (294, 1)	7.3039E-05 (116, 2)	5.4996E-05 (113, 8)
22	9.5088E-05 (153, 4)	1.4300E-04 (100, 1)	1.6003E-04 (100, 1)	6.3036E-05 (150, 1)	5.0851E-05 (141, 1)
23	1.2213E-04 (242, 4)	1.3074E-04 (25, 5)	1.1312E-04 (329, 3)	6.6577E-05 (109, 2)	6.9201E-05 (109, 2)
24	1.5332E-04 (170, 4)	1.3690E-04 (116, 3)	1.4042E-04 (149, 7)	5.1502E-05 (8, 1)	3.5640E-05 (304, 2)
25	1.4633E-04 (191, 3)	1.6273E-04 (191, 3)	1.4650E-04 (329, 5)	5.4718E-05 (3, 3)	3.4954E-05 (59, 1)
26	1.5889E-04 (191, 4)	1.7965E-04 (42, 4)	1.6640E-04 (41, 3)	5.9084E-05 (27, 2)	3.6203E-05 (253, 8)
27	1.1878E-04 (126, 4)	1.6209E-04 (311, 8)	1.7187E-04 (311, 8)	6.1563E-05 (17, 8)	4.7776E-05 (203, 1)
28	1.1169E-04 (245, 4)	1.4863E-04 (228, 3)	1.4884E-04 (311, 4)	5.3013E-05 (346, 1)	3.7015E-05 (255, 7)
29	1.1095E-04 (284, 4)	1.5420E-04 (284, 4)	1.5645E-04 (3, 5)	5.4454E-05 (19, 5)	3.9635E-05 (121, 8)
30	1.9876E-04 (256, 4)	1.9139E-04 (163, 4)	1.8595E-04 (364, 8)	7.4667E-05 (166, 1)	4.4596E-05 (278, 7)
31	1.8961E-04 (250, 4)	1.8975E-04 (128, 3)	1.7797E-04 (166, 3)	5.8624E-05 (339, 8)	3.8935E-05 (339, 8)
32	1.6213E-04 (190, 5)	1.6173E-04 (190, 5)	1.2502E-04 (344, 6)	5.8805E-05 (106, 1)	4.0079E-05 (190, 8)
33	1.3857E-04 (147, 4)	1.5465E-04 (71, 4)	1.6268E-04 (160, 6)	7.0361E-05 (21, 5)	4.6258E-05 (28, 1)
34	1.5955E-04 (131, 5)	1.4549E-04 (196, 4)	1.3932E-04 (365, 5)	5.5786E-05 (345, 1)	4.3272E-05 (87, 2)
35	1.5649E-04 (75, 5)	1.7128E-04 (365, 7)	1.6782E-04 (365, 7)	6.0229E-05 (307, 7)	4.1498E-05 (270, 8)
36	1.9002E-04 (247, 5)	2.0155E-04 (307, 5)	1.7771E-04 (270, 5)	6.9193E-05 (56, 7)	8.2832E-05 (155, 7)

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216 S. PLEASANTBURG
GREENVILLE, SOUTH CAROLINA (803) 298-6000

NORTH CAROLINA DIVISION
P.O. BOX 12748
RESEARCH TRIANGLE PARK, N.C.
(919) 541-2081

TEXAS DIVISION
10000 RICHMOND HOUSTON, TEXAS
(713) 974-8400

DORCHESTER COUNTY DIVISION
107 WEST 5TH STREET, NORTH
SUMMERVILLE, SOUTH CAROLINA
(803) 871-2060

PROGRAM NAME: CRSTER APPLICATION NUMBER: 5010

SINGLE SOURCE AIR QUALITY MODEL
RUN ON 06/06/83 AT 4:16 PM

ECHO PRINT OF INPUT DATA

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                  1         2         3         4         5         6         7         8
CARD     12345678901234567890123456789012345678901234567890123456789012345678901234567890
  1      AMERICAN CYANAMID         TSP
  2
  3       $NAM1 IUR=1,RNG=.5,0.7,1.1,4.,10.1,ISS=03855,ISY=73,IUS=12884,IUY=73,
  4      IMET=0,DAY=365*1,1*0,$END
  5      BOILER NO 7  MICRONIZED COAL   95% LOAD  90% EMISSION FACTOR
  6      33.21                 15.24      1.47        14.90     444.3
  7
  8

                  1         2         3         4         5         6         7         8
         12345678901234567890123456789012345678901234567890123456789012345678901234567890

PLANT NAME: AMERICAN CYANAMID        POLLUTANT:  TSP     EMISSION UNITS: GM/SEC    AIR QUALITY UNITS: GM/M**3 12/80

              MET FILE      REQUESTED
             STN NO. YR    STN NO. YR
 SURFACE       3855  73      3855  73
 UPPER AIR    12884  73     12884  73
PLANT LOCATION: RURAL
ANEMOMETER HEIGHT IS   7.0 METERS
WIND PROFILE EXPONENTS ARE:   0.100,  0.150,  0.200,  0.250,  0.300,  0.300,
NO TAPE OUTPUT
MET DATA WILL NOT BE PRINTED

DAY--  1111111111  1111111111  1111111111  1111111111  1111111111
       1111111111  1111111111  1111111111  1111111111  1111111111
       1111111111  1111111111  1111111111  1111111111  1111111111
       1111111111  1111111111  1111111111  1111111111  1111111111
       1111111111  1111111111  1111111111  1111111111  1111111111
       1111111111  1111111111  1111111111  1111111111  1111111111
       1111111111  1111111111  1111111111  1111111111  1111111111
       1111111111  111110


* * * * * * * * * * * * * * * * * * * * NOTE * * * * * * * * * * * * * * * * * * * *

      ALL TABLES, INCLUDING SOURCE CONTRIBUTION, THAT CONTAIN "ANNUAL" IN THE HEADING ARE BASED ONLY ON THOSE DAYS

      MARKED BY "1" IN THE ABOVE TABLE
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RING DISTANCES(KM)= 0.50 0.70 1.10 4.00 10.10

PLANT ELEVATION (FEET ABOVE SEA LEVEL)— 0. PLANT ELEVATION (METERS ABOVE SEA LEVEL)— 0.

	RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)					RECEPTOR ELEVATIONS (METERS ABOVE SEA LEVEL)				
DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5	RING#1	RING#2	RING#3	RING#4	RING#5
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
26	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
27	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
28	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
30	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
32	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
33	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
35	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
36	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

STACK # 1--BOILER NO 7 MICRONIZED COAL 95% LOAD 90% EMISSION FACTOR

STACK	MONTH	EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	ALL	33.2100	15.24	1.47	14.90	444.30	25.29

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3
MAXIMUM MEAN CONC= 6.5246E-06 DIRECTION= 33 DISTANCE= 0.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE	0.5 KM	0.7 KM	1.1 KM	4.0 KM	10.1 KM
1		3.69215E-06	4.84618E-06	4.53237E-06	1.46021E-06	6.06162E-07
2		2.32556E-06	3.00526E-06	2.88219E-06	9.87992E-07	3.73736E-07
3		3.00359E-06	3.98682E-06	3.87718E-06	1.38801E-06	5.79736E-07
4		3.20704E-06	3.94713E-06	3.55387E-06	9.76587E-07	3.24667E-07
5		3.37585E-06	3.99206E-06	3.53884E-06	1.03749E-06	3.83372E-07
6		3.10492E-06	4.15748E-06	4.12986E-06	1.59658E-06	7.23242E-07
7		1.56658E-06	2.40731E-06	2.63715E-06	1.05580E-06	3.76820E-07
8		1.14035E-06	1.79043E-06	2.05198E-06	1.01279E-06	4.25767E-07
9		9.31655E-07	1.42148E-06	1.63554E-06	1.29037E-06	8.41123E-07
10		7.97473E-07	1.10321E-06	1.15766E-06	7.70888E-07	4.73067E-07
11		7.14936E-07	9.64757E-07	9.87567E-07	6.86298E-07	4.17179E-07
12		1.24403E-06	1.76924E-06	1.82651E-06	1.06545E-06	6.83535E-07
13		1.75171E-06	2.49367E-06	2.51395E-06	1.12359E-06	5.69136E-07
14		1.80027E-06	2.48450E-06	2.45898E-06	1.09833E-06	5.20219E-07
15		2.22549E-06	3.09599E-06	3.12452E-06	1.50993E-06	7.31315E-07
16		1.92480E-06	2.74355E-06	2.83100E-06	1.35267E-06	6.96495E-07
17		1.65180E-06	2.43380E-06	2.62427E-06	1.47892E-06	7.86372E-07
18		2.02126E-06	3.25498E-06	3.78353E-06	2.33457E-06	1.31329E-06
19		1.64523E-06	2.57542E-06	2.92719E-06	1.67533E-06	9.78558E-07
20		1.60417E-06	2.46858E-06	2.78677E-06	1.56153E-06	8.31104E-07
21		1.58705E-06	2.52592E-06	2.93324E-06	1.73321E-06	9.18100E-07
22		1.10208E-06	1.74967E-06	1.97021E-06	1.17356E-06	6.51646E-07
23		9.32807E-07	1.41202E-06	1.58941E-06	1.01308E-06	5.66536E-07
24		1.12634E-06	1.72585E-06	1.97412E-06	1.06090E-06	5.30411E-07
25		1.44923E-06	2.22459E-06	2.40058E-06	9.31653E-07	3.65778E-07
26		2.03259E-06	3.15222E-06	3.36328E-06	1.19741E-06	4.51171E-07
27		2.21289E-06	3.54978E-06	3.93010E-06	1.37910E-06	4.96998E-07
28		1.74040E-06	2.68325E-06	2.88496E-06	1.07932E-06	4.08670E-07
29		2.00322E-06	3.00286E-06	3.12172E-06	9.96525E-07	3.58291E-07
30		3.62365E-06	5.57746E-06	5.90031E-06	1.98730E-06	7.24397E-07
31		4.45334E-06	6.30913E-06	6.12559E-06	1.87635E-06	6.53252E-07
32		4.47157E-06	6.10679E-06	5.79012E-06	1.76756E-06	6.46978E-07
33		4.59175E-06	6.52457E-06	6.42386E-06	1.95541E-06	7.26000E-07
34		3.80715E-06	5.28729E-06	5.00966E-06	1.41435E-06	4.73776E-07
35		4.40519E-06	5.68798E-06	5.18951E-06	1.44466E-06	4.74526E-07
36		4.60763E-06	6.01322E-06	5.64225E-06	1.70626E-06	5.82812E-07

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3
YEARLY MAXIMUM 24-HOUR CONC= 1.2275E-04 DIRECTION= 33 DISTANCE= 1.1 KM DAY=249

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.5 KM	0.7 KM	1.1 KM	4.0 KM	10.1 KM
1	7.8529E-05 (147)	9.9940E-05 (147)	8.2895E-05 (147)	1.9758E-05 (319)	1.3188E-05 (203)
2	4.9492E-05 (147)	5.2892E-05 (147)	3.7688E-05 (147)	1.2958E-05 (203)	8.5538E-06 (169)
3	7.2621E-05 (148)	9.0298E-05 (148)	7.3496E-05 (148)	2.0652E-05 (181)	2.0993E-05 (165)
4	7.6460E-05 (148)	9.3039E-05 (148)	7.3397E-05 (148)	1.4160E-05 (148)	7.4554E-06 (209)
5	6.0952E-05 (142)	6.8574E-05 (142)	5.6070E-05 (142)	1.2094E-05 (128)	1.2663E-05 (225)
6	5.5165E-05 (139)	6.1654E-05 (139)	5.7456E-05 (144)	2.4492E-05 (217)	2.6648E-05 (217)
7	4.7773E-05 (179)	6.2818E-05 (179)	5.8372E-05 (179)	1.5213E-05 (179)	6.2055E-06 (102)
8	4.9281E-05 (347)	5.5471E-05 (347)	4.5636E-05 (26)	1.4319E-05 (84)	1.0457E-05 (300)
9	1.8720E-05 (347)	2.4013E-05 (136)	2.4979E-05 (136)	1.7583E-05 (253)	2.0681E-05 (166)
10	1.8194E-05 (360)	2.9393E-05 (360)	2.9824E-05 (360)	1.8372E-05 (167)	2.7532E-05 (167)
11	2.0511E-05 (196)	2.6001E-05 (354)	2.1560E-05 (354)	2.2318E-05 (210)	2.0539E-05 (210)
12	4.8334E-05 (85)	6.2795E-05 (33)	6.4618E-05 (33)	1.7662E-05 (33)	1.9465E-05 (220)
13	6.3956E-05 (28)	8.2021E-05 (28)	6.9274E-05 (28)	1.9986E-05 (117)	9.9083E-06 (313)
14	3.7457E-05 (117)	4.6816E-05 (354)	3.9039E-05 (117)	1.7154E-05 (254)	1.1338E-05 (118)
15	4.7638E-05 (355)	7.3616E-05 (355)	7.2311E-05 (355)	2.0702E-05 (355)	1.4752E-05 (301)
16	4.7047E-05 (350)	5.5645E-05 (350)	5.4128E-05 (332)	1.5889E-05 (261)	1.4145E-05 (174)
17	4.0285E-05 (233)	6.1543E-05 (41)	6.2902E-05 (41)	2.0225E-05 (135)	1.0246E-05 (175)
18	4.4513E-05 (8)	7.7066E-05 (12)	8.2635E-05 (12)	3.3051E-05 (58)	1.6134E-05 (335)
19	4.5970E-05 (40)	6.3004E-05 (40)	6.5827E-05 (9)	1.9968E-05 (9)	2.1733E-05 (187)
20	3.2493E-05 (40)	5.1836E-05 (1)	6.2686E-05 (1)	2.1258E-05 (10)	1.0491E-05 (279)
21	3.7349E-05 (133)	4.7805E-05 (314)	6.4047E-05 (290)	3.2580E-05 (290)	1.1756E-05 (221)
22	3.2723E-05 (133)	4.1217E-05 (290)	5.1541E-05 (290)	1.7364E-05 (290)	1.9857E-05 (183)
23	2.5843E-05 (234)	2.9607E-05 (2)	4.2188E-05 (2)	1.6865E-05 (293)	1.3936E-05 (212)
24	2.5998E-05 (278)	3.5598E-05 (278)	3.5600E-05 (50)	1.6289E-05 (50)	1.6156E-05 (171)
25	2.7210E-05 (296)	3.2924E-05 (296)	4.5142E-05 (269)	1.6148E-05 (269)	8.8870E-06 (87)
26	2.7965E-05 (43)	5.0297E-05 (43)	5.4014E-05 (43)	1.5460E-05 (49)	8.9620E-06 (164)
27	3.2734E-05 (315)	5.3155E-05 (315)	5.6614E-05 (88)	1.6613E-05 (88)	9.3767E-06 (265)
28	2.8014E-05 (69)	4.9228E-05 (69)	5.2260E-05 (69)	1.6509E-05 (352)	1.2500E-05 (317)
29	3.2050E-05 (31)	4.6424E-05 (31)	4.2071E-05 (31)	1.5784E-05 (327)	1.0461E-05 (238)
30	4.2648E-05 (110)	6.2892E-05 (284)	6.4764E-05 (284)	1.8194E-05 (284)	1.2624E-05 (201)
31	7.2280E-05 (107)	1.2005E-04 (107)	1.2188E-04 (107)	3.0204E-05 (107)	1.0506E-05 (265)
32	4.2082E-05 (121)	5.5620E-05 (109)	5.8164E-05 (120)	1.8522E-05 (286)	1.2911E-05 (265)
33	5.8906E-05 (121)	1.0673E-04 (249)	1.2275E-04 (249)	3.3155E-05 (249)	1.1062E-05 (188)
34	3.8055E-05 (21)	5.4137E-05 (21)	5.7590E-05 (127)	1.9111E-05 (74)	8.6864E-06 (357)
35	6.1782E-05 (114)	8.4305E-05 (114)	8.5536E-05 (114)	2.3112E-05 (114)	6.1542E-06 (114)
36	4.8410E-05 (203)	5.9557E-05 (128)	5.8659E-05 (365)	2.1126E-05 (61)	9.7165E-06 (50)

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3
YEARLY SECOND MAXIMUM 24-HOUR CONC= 8.4798E-05 DIRECTION= 33 DISTANCE= 1.1 KM DAY=248

SECOND HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.5 KM	0.7 KM	1.1 KM	4.0 KM	10.1 KM
1	5.6785E-05 (115)	7.1848E-05 (115)	6.1902E-05 (75)	1.6859E-05 (147)	1.1502E-05 (204)
2	3.6024E-05 (338)	4.1338E-05 (338)	3.5029E-05 (346)	1.1462E-05 (39)	5.7178E-06 (203)
3	4.6794E-05 (143)	5.2824E-05 (143)	5.3161E-05 (346)	1.7526E-05 (272)	1.1717E-05 (211)
4	5.6303E-05 (143)	6.2936E-05 (143)	5.1633E-05 (143)	1.0343E-05 (143)	6.3606E-06 (218)
5	5.5916E-05 (139)	6.2929E-05 (139)	5.2339E-05 (139)	1.1507E-05 (142)	1.0311E-05 (226)
6	5.0356E-05 (179)	5.3139E-05 (179)	4.8861E-05 (139)	2.3220E-05 (144)	2.0978E-05 (207)
7	3.5821E-05 (137)	4.8454E-05 (84)	4.2341E-05 (84)	1.4675E-05 (102)	5.8307E-06 (140)
8	3.2028E-05 (26)	4.7617E-05 (26)	4.1812E-05 (347)	1.4278E-05 (22)	8.5618E-06 (22)
9	1.8646E-05 (195)	2.3648E-05 (347)	2.2393E-05 (253)	1.5056E-05 (198)	1.3701E-05 (198)
10	1.3609E-05 (99)	1.8398E-05 (99)	1.8492E-05 (347)	1.7962E-05 (15)	9.6487E-06 (15)
11	2.0250E-05 (85)	2.0754E-05 (91)	2.0559E-05 (33)	8.6649E-06 (15)	7.7848E-06 (229)
12	3.8159E-05 (33)	5.4674E-05 (85)	4.4597E-05 (85)	1.6448E-05 (85)	1.1601E-05 (236)
13	5.1363E-05 (76)	7.1877E-05 (117)	6.8226E-05 (117)	1.9153E-05 (100)	7.8912E-06 (257)
14	3.6334E-05 (354)	4.6369E-05 (117)	3.8692E-05 (354)	1.7149E-05 (118)	8.5696E-06 (95)
15	4.0331E-05 (350)	5.5214E-05 (29)	5.5425E-05 (29)	1.8364E-05 (46)	1.2522E-05 (175)
16	4.1262E-05 (190)	4.8477E-05 (355)	5.0053E-05 (355)	1.5457E-05 (23)	1.2721E-05 (23)
17	3.6439E-05 (41)	4.0475E-05 (233)	3.9076E-05 (12)	1.8975E-05 (41)	8.2788E-06 (101)
18	4.2810E-05 (12)	7.4529E-05 (8)	7.7598E-05 (8) *	2.8938E-05 (341)	1.5536E-05 (185)
19	3.7717E-05 (174)	4.8138E-05 (9)	5.4642E-05 (1)	1.7244E-05 (320)	1.4624E-05 (213)
20	3.1580E-05 (174)	4.5686E-05 (40)	4.8106E-05 (10)	1.7199E-05 (1)	8.7116E-06 (294)
21	2.7571E-05 (135)	4.1159E-05 (133)	5.6855E-05 (48)	2.3986E-05 (48)	1.0861E-05 (290)
22	2.4160E-05 (124)	3.3068E-05 (133)	3.2397E-05 (314)	1.5678E-05 (183)	7.9855E-06 (119)
23	1.9109E-05 (124)	2.5214E-05 (234)	2.9359E-05 (25)	1.3714E-05 (2)	1.1030E-05 (287)
24	2.2317E-05 (291)	3.1887E-05 (291)	3.1987E-05 (291)	1.2114E-05 (5)	8.4074E-06 (349)
25	2.1355E-05 (232)	3.0867E-05 (269)	2.9522E-05 (49)	1.2602E-05 (295)	5.1562E-06 (16)
26	2.7458E-05 (353)	3.9792E-05 (353)	4.1180E-05 (269)	1.4619E-05 (243)	6.9021E-06 (68)
27	2.7811E-05 (353)	4.3704E-05 (88)	5.2377E-05 (315)	1.6068E-05 (325)	6.6053E-06 (87)
28	2.4662E-05 (265)	3.7651E-05 (17)	4.0738E-05 (17)	1.3611E-05 (69)	6.5076E-06 (352)
29	3.1050E-05 (201)	3.4236E-05 (87)	4.2053E-05 (20)	1.5381E-05 (20)	6.3124E-06 (20)
30	3.7437E-05 (205)	5.5660E-05 (358)	6.0582E-05 (358)	1.7951E-05 (358)	9.0444E-06 (273)
31	5.6839E-05 (83)	7.2961E-05 (358)	6.9954E-05 (358)	1.7675E-05 (110)	8.8242E-06 (228)
32	4.0755E-05 (153)	5.5088E-05 (121)	5.7063E-05 (109)	1.6817E-05 (250)	9.9566E-06 (316)
33	5.2894E-05 (249)	7.8321E-05 (121)	8.4798E-05 (248)	3.1883E-05 (72)	1.0741E-05 (229)
34	3.1278E-05 (202)	5.1729E-05 (127)	5.7445E-05 (324)	1.8129E-05 (113)	6.8605E-06 (111)
35	4.4703E-05 (108)	6.9885E-05 (108)	6.7548E-05 (108)	2.1753E-05 (113)	6.0039E-06 (113)
36	4.4312E-05 (181)	5.1722E-05 (272)	5.8052E-05 (74)	2.0800E-05 (365)	7.9613E-06 (61)

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3

YEARLY MAXIMUM 3-HOUR CONC= 2.4336E-04 DIRECTION= 31 DISTANCE= 0.5 KM DAY=194 TIME PERIOD= 4

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.5 KM	0.7 KM	1.1 KM	4.0 KM	10.1 KM
1	1.9686E-04 (164, 5)	2.1600E-04 (115, 4)	1.9316E-04 (75, 2)	6.3522E-05 (146, 3)	9.2018E-05 (204, 1)
2	1.8445E-04 (147, 6)	1.8964E-04 (147, 6)	1.7182E-04 (304, 2)	5.8336E-05 (203, 1)	6.3372E-05 (169, 1)
3	2.0435E-04 (166, 4)	2.2249E-04 (148, 6)	1.7923E-04 (148, 6)	1.0046E-04 (181, 7)	1.1671E-04 (165, 1)
4	2.3264E-04 (167, 4)	2.0763E-04 (178, 5)	1.6359E-04 (364, 5)	7.1879E-05 (364, 5)	5.5417E-05 (209, 2)
5	2.3690E-04 (139, 4)	1.7443E-04 (128, 5)	1.5580E-04 (128, 6)	5.0283E-05 (187, 7)	8.7675E-05 (225, 8)
6	2.0328E-04 (139, 5)	2.1304E-04 (139, 5)	1.6554E-04 (197, 6)	7.3898E-05 (208, 1)	9.6062E-05 (217, 8)
7	1.3469E-04 (347, 3)	1.8143E-04 (347, 3)	1.6636E-04 (179, 6)	6.6584E-05 (102, 8)	3.6454E-05 (140, 8)
8	1.8200E-04 (347, 5)	1.9230E-04 (347, 5)	1.7281E-04 (21, 8)	6.6228E-05 (161, 8)	4.9616E-05 (300, 7)
9	1.1391E-04 (195, 5)	1.1636E-04 (195, 5)	1.3161E-04 (22, 1)	6.8736E-05 (197, 1)	1.0006E-04 (166, 1)
10	9.3076E-05 (102, 4)	1.2783E-04 (347, 7)	1.3485E-04 (347, 7)	7.9877E-05 (167, 2)	1.1734E-04 (167, 2)
11	1.5544E-04 (196, 4)	1.4388E-04 (196, 4)	1.0518E-04 (91, 3)	6.1557E-05 (232, 7)	5.3760E-05 (277, 7)
12	1.9117E-04 (85, 4)	1.9265E-04 (85, 4)	1.4659E-04 (33, 5)	6.2063E-05 (54, 1)	7.9534E-05 (220, 7)
13	1.5057E-04 (76, 3)	2.0084E-04 (117, 2)	1.8096E-04 (117, 2)	6.4895E-05 (302, 6)	4.7309E-05 (361, 1)
14	1.7967E-04 (117, 4)	1.9584E-04 (117, 4)	1.4854E-04 (117, 4)	7.3329E-05 (118, 1)	6.7682E-05 (118, 1)
15	1.6462E-04 (350, 6)	1.9982E-04 (34, 5) *	1.7237E-04 (34, 5)	7.5126E-05 (76, 8)	6.7134E-05 (301, 1)
16	1.5245E-04 (190, 4)	1.5905E-04 (175, 3)	1.5150E-04 (332, 8)	5.7411E-05 (261, 1)	8.8070E-05 (174, 8)
17	1.9315E-04 (233, 4)	1.8877E-04 (233, 4)	1.6695E-04 (41, 3)	6.0088E-05 (135, 1)	7.8612E-05 (175, 7)
18	1.5188E-04 (174, 5)	1.8943E-04 (350, 3)	1.9616E-04 (58, 4)	6.8011E-05 (24, 6)	7.6613E-05 (233, 1)
19	1.7026E-04 (174, 4)	1.7666E-04 (174, 4)	1.4256E-04 (1, 2)	6.7779E-05 (187, 2)	1.1699E-04 (213, 1)
20	1.4098E-04 (176, 4)	1.7203E-04 (39, 8)	1.8161E-04 (313, 8)	5.6253E-05 (279, 1)	6.4751E-05 (279, 1)
21	1.4478E-04 (133, 4)	1.4146E-04 (135, 3)	1.4588E-04 (290, 2)	6.8773E-05 (264, 2)	5.9168E-05 (235, 1)
22	1.1289E-04 (124, 4)	1.3219E-04 (124, 3)	1.2967E-04 (290, 4)	5.9300E-05 (279, 2)	7.1981E-05 (183, 2)
23	1.6444E-04 (234, 4)	1.5715E-04 (234, 4)	1.7290E-04 (2, 5)	6.5154E-05 (212, 2)	9.2042E-05 (212, 2)
24	1.1260E-04 (296, 5)	1.2755E-04 (278, 4)	1.2108E-04 (291, 2)	9.1993E-05 (5, 6)	9.1798E-05 (171, 1)
25	1.7003E-04 (232, 4)	1.5500E-04 (266, 3)	1.5744E-04 (242, 3)	5.3190E-05 (326, 2)	3.5080E-05 (87, 1)
26	1.7514E-04 (232, 4)	1.9587E-04 (353, 2)	1.7504E-04 (353, 2)	6.6487E-05 (312, 2)	3.6614E-05 (312, 2)
27	1.5125E-04 (317, 4)	1.7828E-04 (244, 1)	1.8413E-04 (246, 2)	5.8894E-05 (325, 8)	6.3554E-05 (265, 1)
28	1.4762E-04 (265, 4)	1.5623E-04 (265, 4)	1.4693E-04 (69, 3)	6.9090E-05 (216, 6)	4.8598E-05 (317, 7)
29	1.8085E-04 (251, 4)	1.8572E-04 (31, 7)	1.7617E-04 (20, 5)	6.6795E-05 (20, 6)	4.5972E-05 (238, 8)
30	1.8109E-04 (65, 5)	2.1402E-04 (65, 5)	2.0350E-04 (247, 4)	6.3700E-05 (65, 4)	1.0010E-04 (201, 1)
31	2.4336E-04 (194, 4)	2.0409E-04 (107, 6)	1.8588E-04 (359, 1)	8.2834E-05 (265, 7)	7.8947E-05 (265, 7)
32	1.8072E-04 (219, 5)	1.8999E-04 (121, 5)	1.9737E-04 (359, 2)	7.2720E-05 (27, 6)	6.1639E-05 (316, 7)
33	1.8720E-04 (202, 4)	2.0706E-04 (267, 4)	1.9878E-04 (248, 6)	7.1500E-05 (72, 2)	6.0543E-05 (229, 1)
34	1.9626E-04 (151, 4)	1.7638E-04 (127, 7)	1.7533E-04 (127, 7)	6.6208E-05 (305, 6)	6.9491E-05 (357, 1)
35	2.3044E-04 (114, 4)	2.1059E-04 (114, 4)	1.9385E-04 (318, 8)	5.6892E-05 (311, 5)	4.3556E-05 (104, 7)
36	2.3322E-04 (182, 5)	2.4235E-04 (182, 5)	1.8877E-04 (331, 5)	6.2589E-05 (61, 6)	6.0988E-05 (50, 7)

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3
YEARLY SECOND MAXIMUM 3-HOUR CONC= 2.3452E-04 DIRECTION= 5 DISTANCE= 0.5 KM DAY=142 TIME PERIOD= 4

SECOND HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.5 KM	0.7 KM	1.1 KM	4.0 KM	10.1 KM
1	1.8036E-04 (115, 4)	2.1232E-04 (75, 2)	1.9196E-04 (146, 4)	5.8075E-05 (319, 6)	7.6985E-05 (203, 7)
2	1.3684E-04 (97, 4)	1.7375E-04 (304, 2)	1.4431E-04 (331, 6)	5.7386E-05 (3, 7)	4.2911E-05 (168, 8)
3	1.8353E-04 (148, 6)	2.0741E-04 (166, 4)	1.7740E-04 (256, 2)	7.5694E-05 (272, 8)	8.2171E-05 (211, 7)
4	2.1559E-04 (143, 4)	1.8468E-04 (152, 4)	1.6277E-04 (178, 5)	5.5427E-05 (163, 6)	3.4813E-05 (15, 2)
5	2.3452E-04 (142, 4)	1.7416E-04 (142, 5)	1.5482E-04 (77, 6)	4.1277E-05 (225, 8)	4.6459E-05 (182, 7)
6	1.9696E-04 (137, 5)	1.9588E-04 (137, 5)	1.5798E-04 (139, 5)	7.0186E-05 (217, 7)	9.1610E-05 (222, 8)
7	1.3034E-04 (179, 4)	1.7125E-04 (179, 6)	1.6602E-04 (139, 1)	5.6352E-05 (364, 3)	3.5960E-05 (151, 7)
8	1.3753E-04 (304, 5)	1.8437E-04 (21, 8)	1.6423E-04 (139, 2)	6.4997E-05 (139, 2)	4.8796E-05 (161, 8)
9	1.0839E-04 (187, 5)	1.1135E-04 (141, 3)	1.1625E-04 (136, 7)	6.4050E-05 (143, 1)	9.9687E-05 (214, 1)
10	8.1176E-05 (51, 4)	1.2401E-04 (360, 4)	1.2547E-04 (360, 4)	6.8436E-05 (189, 7)	8.9072E-05 (167, 1)
11	1.0833E-04 (222, 5)	1.3518E-04 (222, 5)	1.0274E-04 (222, 5)	5.6202E-05 (15, 7)	5.3759E-05 (210, 1)
12	1.5713E-04 (100, 5)	1.6941E-04 (33, 5)	1.3956E-04 (132, 3)	5.9718E-05 (220, 7)	7.5170E-05 (220, 8)
13	1.3886E-04 (117, 2)	1.9080E-04 (76, 3)	1.5760E-04 (76, 3)	6.0466E-05 (98, 2)	4.6970E-05 (213, 7)
14	1.1455E-04 (15, 4)	1.4934E-04 (29, 1)	1.3219E-04 (344, 5)	6.2883E-05 (100, 7)	4.8913E-05 (54, 8)
15	1.4679E-04 (34, 5)	1.9717E-04 (350, 6) *	1.7123E-04 (28, 8)	6.3977E-05 (175, 1)	5.1642E-05 (19, 8)
16	1.4110E-04 (233, 5)	1.4058E-04 (192, 4)	1.1751E-04 (332, 7)	5.6583E-05 (340, 6)	6.1054E-05 (261, 1)
17	1.3104E-04 (175, 3)	1.6301E-04 (41, 3)	1.2790E-04 (123, 6)	5.9074E-05 (101, 1)	6.6209E-05 (101, 1)
18	1.4262E-04 (350, 3)	1.7303E-04 (58, 4)	1.8308E-04 (47, 6)	6.0741E-05 (23, 2)	7.1906E-05 (185, 1)
19	1.2034E-04 (176, 3)	1.4888E-04 (176, 3)	1.3498E-04 (40, 1)	6.4864E-05 (186, 7)	1.0000E-04 (187, 2)
20	1.2559E-04 (174, 4)	1.6885E-04 (313, 8)	1.5074E-04 (39, 8)	5.1506E-05 (209, 8)	6.2103E-05 (209, 8)
21	1.3088E-04 (176, 4)	1.3998E-04 (234, 3)	1.3652E-04 (48, 3)	6.8528E-05 (290, 7)	5.2597E-05 (264, 2)
22	9.9363E-05 (234, 3)	1.1749E-04 (124, 4)	1.2874E-04 (124, 3)	5.6003E-05 (235, 2)	6.9642E-05 (183, 1)
23	1.1024E-04 (134, 4)	1.3053E-04 (2, 5)	1.2698E-04 (25, 1)	6.1678E-05 (293, 1)	5.9244E-05 (287, 8)
24	1.0603E-04 (291, 5)	1.2640E-04 (81, 4)	1.2057E-04 (278, 4)	5.4633E-05 (43, 1)	6.7259E-05 (349, 1)
25	1.2005E-04 (296, 5)	1.5364E-04 (287, 3)	1.3576E-04 (50, 4)	5.0379E-05 (16, 2)	3.4257E-05 (16, 2)
26	1.4213E-04 (315, 4)	1.8499E-04 (315, 4)	1.6005E-04 (271, 2)	6.2176E-05 (49, 7)	3.5806E-05 (164, 2)
27	1.3926E-04 (237, 4)	1.6560E-04 (317, 4)	1.8063E-04 (245, 1)	5.8313E-05 (281, 3)	4.5079E-05 (207, 1)
28	1.3091E-04 (240, 4)	1.4842E-04 (69, 3)	1.3015E-04 (17, 5)	4.7683E-05 (89, 3)	3.5957E-05 (16, 8)
29	1.5045E-04 (201, 3)	1.6993E-04 (31, 6)	1.6570E-04 (31, 7)	5.3028E-05 (20, 5)	3.2271E-05 (172, 1)
30	1.5645E-04 (353, 5)	2.0230E-04 (246, 4)	1.8311E-04 (112, 6)	5.9337E-05 (163, 7)	7.2355E-05 (273, 8)
31	2.0891E-04 (156, 4)	2.0263E-04 (156, 4)	1.8326E-04 (60, 7)	6.9364E-05 (110, 1)	7.0541E-05 (228, 7)
32	1.6958E-04 (159, 4)	1.8530E-04 (219, 5)	1.8948E-04 (155, 2)	6.9634E-05 (157, 8)	4.9954E-05 (265, 8)
33	1.8256E-04 (267, 4)	1.7969E-04 (112, 4)	1.9854E-04 (249, 1)	6.2486E-05 (126, 8)	5.7129E-05 (188, 8)
34	1.7299E-04 (212, 4)	1.6817E-04 (212, 4)	1.4250E-04 (359, 4)	5.9566E-05 (111, 8)	5.2873E-05 (111, 8)
35	1.9575E-04 (218, 5)	2.0921E-04 (218, 5)	1.8511E-04 (108, 8)	5.4727E-05 (113, 3)	2.7245E-05 (120, 2)
36	2.0191E-04 (183, 5)	2.0783E-04 (183, 5)	1.7698E-04 (224, 8)	6.0691E-05 (306, 7)	4.3107E-05 (306, 7)

E N G I N E E R S . A R C H I T E C T S . P L A N N E R S

THE J.E. SIRRINE COMPANY
CORPORATE HEADQUARTERS
PULP & PAPER DIVISION SOUTH CAROLINA DIVISION
CONSTRUCTION MANAGEMENT DIVISION
ARCHITECT-ENGINEER DIVISION SIRRINE SERVICES, INC.

216 S. PLEASANTBURG
GREENVILLE, SOUTH CAROLINA (803) 298-6000

NORTH CAROLINA DIVISION
P.O. BOX 12748
RESEARCH TRIANGLE PARK, N.C.
(919) 541-2081

TEXAS DIVISION
10000 RICHMOND HOUSTON, TEXAS
(713) 974-8400

DORCHESTER COUNTY DIVISION
107 WEST 5TH STREET, NORTH
SUMMERVILLE, SOUTH CAROLINA
(803) 871-2060

PROGRAM NAME: CRSTER APPLICATION NUMBER: 5010

SINGLE SOURCE AIR QUALITY MODEL
RUN ON 06/06/83 AT 4:22 PM

ECHO PRINT OF INPUT DATA

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                 1         2         3         4         5         6         7         8
CARD    12345678901234567890123456789012345678901234567890123456789012345678901234567890

  1     AMERICAN CYANAMID        TSP
  2
  3      $NAM1 IUR=1,RNG=.5,0.7,1.1.4.,10.1,ISS=03855,ISY=74,IUS=12884,IUY=74,
  4     IMET=0,DAY=365*1,1*0,$END
  5     BOILER NO 7  MICRONIZED COAL  95% LOAD  90% EMISSION FACTOR
  6     33.21              15.24     1.47      14.90    444.3
  7
  8

                 1         2         3         4         5         6         7         8
        12345678901234567890123456789012345678901234567890123456789012345678901234567890
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PLANT NAME: AMERICAN CYANAMID       POLLUTANT:  TSP      EMISSION UNITS: GM/SEC    AIR QUALITY UNITS: GM/M**3 12/80

              MET FILE      REQUESTED
            STN NO. YR    STN NO. YR
 SURFACE       3855  74      3855  74
 UPPER AIR    12884  74     12884  74
PLANT LOCATION: RURAL
ANEMOMETER HEIGHT IS  7.0 METERS
WIND PROFILE EXPONENTS ARE:   0.100,  0.150,  0.200,  0.250,  0.300,  0.300,
NO TAPE OUTPUT
MET DATA WILL NOT BE PRINTED

DAY-- 1111111111 1111111111 1111111111 1111111111 1111111111
      1111111111 1111111111 1111111111 1111111111 1111111111
      1111111111 1111111111 1111111111 1111111111 1111111111
      1111111111 1111111111 1111111111 1111111111 1111111111
      1111111111 1111111111 1111111111 1111111111 1111111111
      1111111111 1111111111 1111111111 1111111111 1111111111
      1111111111 1111111111 1111111111 1111111111 1111111111
      1111111111 111110
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* N O T E *

ALL TABLES, INCLUDING SOURCE CONTRIBUTION, THAT CONTAIN "ANNUAL" IN THE HEADING ARE BASED ONLY ON THOSE DAYS

MARKED BY "1" IN THE ABOVE TABLE

RING DISTANCES(KM)= 0.50 0.70 1.10 4.00 10.10

PLANT ELEVATION (FEET ABOVE SEA LEVEL)— 0. PLANT ELEVATION (METERS ABOVE SEA LEVEL)— 0.

	RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)					RECEPTOR ELEVATIONS (METERS ABOVE SEA LEVEL)				
DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5	RING#1	RING#2	RING#3	RING#4	RING#5
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
26	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
27	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
28	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
30	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
32	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
33	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
35	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
36	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

STACK # 1—BOILER NO 7 MICRONIZED COAL 95% LOAD 90% EMISSION FACTOR ?

STACK	MONTH	EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	ALL	33.2100	15.24	1.47	14.90	444.30	25.29

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3
MAXIMUM MEAN CONC= 7.1346E-06 DIRECTION= 36 DISTANCE= 0.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.5 KM	0.7 KM	1.1 KM	4.0 KM	10.1 KM
1	4.20195E-06	5.47907E-06	5.16252E-06	1.80179E-06	7.05337E-07
2	3.08016E-06	4.18235E-06	4.18534E-06	1.48398E-06	5.54398E-07
3	3.64139E-06	5.05651E-06	5.07417E-06	1.65698E-06	6.11203E-07
4	3.26466E-06	4.61920E-06	4.73590E-06	1.58658E-06	5.48398E-07
5	2.53939E-06	3.73319E-06	3.94653E-06	1.39234E-06	5.27245E-07
6	1.71434E-06	2.66000E-06	2.98603E-06	1.25835E-06	5.23097E-07
7	1.12116E-06	1.65735E-06	1.74583E-06	8.27482E-07	4.04779E-07
8	5.91150E-07	9.23364E-07	1.04893E-06	7.07474E-07	3.96627E-07
9	5.84172E-07	9.58227E-07	1.14038E-06	8.28173E-07	4.56875E-07
10	7.07586E-07	9.84083E-07	1.00594E-06	6.63080E-07	3.42726E-07
11	6.74020E-07	8.99152E-07	8.63943E-07	4.97718E-07	2.99124E-07
12	7.50332E-07	1.02807E-06	1.03903E-06	6.86508E-07	4.20654E-07
13	1.20224E-06	1.69364E-06	1.65385E-06	7.72764E-07	4.28453E-07
14	1.71924E-06	2.34964E-06	2.22146E-06	9.02619E-07	4.88941E-07
15	2.08863E-06	2.96097E-06	2.91249E-06	1.31439E-06	6.76682E-07
16	2.01062E-06	2.84360E-06	2.78936E-06	1.29936E-06	6.89601E-07
17	2.43649E-06	3.65157E-06	3.84753E-06	2.07362E-06	1.06908E-06
18	2.30112E-06	3.61511E-06	4.00585E-06	2.22338E-06	1.15250E-06
19	1.95603E-06	3.21329E-06	3.68826E-06	2.15414E-06	1.19747E-06
20	1.55870E-06	2.48086E-06	2.83235E-06	1.88479E-06	1.08888E-06
21	1.41078E-06	2.20901E-06	2.49660E-06	1.55563E-06	9.01881E-07
22	1.25388E-06	2.01163E-06	2.30347E-06	1.50015E-06	8.24725E-07
23	1.00609E-06	1.58951E-06	1.77320E-06	9.15272E-07	4.53013E-07
24	1.25195E-06	2.08276E-06	2.39323E-06	1.23919E-06	6.78602E-07
25	1.40054E-06	2.28588E-06	2.56435E-06	1.14392E-06	5.11514E-07
26	1.70070E-06	2.70516E-06	3.03534E-06	1.26447E-06	5.40710E-07
27	1.89544E-06	2.77044E-06	2.90526E-06	1.12027E-06	4.37958E-07
28	1.62045E-06	2.23620E-06	2.37424E-06	9.58179E-07	3.69114E-07
29	1.92318E-06	2.66916E-06	2.77026E-06	1.06910E-06	3.91234E-07
30	3.14030E-06	4.19956E-06	4.12722E-06	1.37766E-06	4.93851E-07
31	3.52895E-06	4.48033E-06	4.11113E-06	1.28914E-06	5.35318E-07
32	3.54051E-06	4.69219E-06	4.48280E-06	1.54870E-06	5.84285E-07
33	3.29762E-06	4.57778E-06	4.70859E-06	1.96190E-06	8.55865E-07
34	3.94464E-06	5.24786E-06	5.13275E-06	1.74276E-06	6.42284E-07
35	5.50190E-06	7.06875E-06	6.56653E-06	1.97472E-06	7.02508E-07
36	5.51131E-06	7.13463E-06	6.61472E-06	2.15493E-06	9.31521E-07

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3

YEARLY MAXIMUM 24-HOUR CONC= 1.1674E-04 DIRECTION= 26 DISTANCE= 1.1 KM DAY=267

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

RANGE DIR	0.5 KM	0.7 KM	1.1 KM	4.0 KM	10.1 KM
1	4.1709E-05 (181)	4.8102E-05 (151)	5.2027E-05 (308)	2.3310E-05 (61)	1.6358E-05 (61)
2	3.9707E-05 (243)	6.1076E-05 (152)	6.7172E-05 (152)	1.6479E-05 (152)	9.2423E-06 (117)
3	4.4140E-05 (164)	8.0486E-05 (78)	9.0810E-05 (78)	3.1066E-05 (45)	1.9626E-05 (60)
4	5.4374E-05 (150)	6.3898E-05 (150)	5.2100E-05 (150)	1.6296E-05 (363)	1.3769E-05 (182)
5	6.6824E-05 (150)	8.7489E-05 (150)	8.0453E-05 (150)	1.8128E-05 (150)	1.2077E-05 (222)
6	3.6728E-05 (88)	5.2722E-05 (88)	5.1795E-05 (88)	1.9080E-05 (87)	1.6355E-05 (183)
7	4.5611E-05 (98)	6.4072E-05 (88)	5.7273E-05 (88)	1.2325E-05 (123)	1.1444E-05 (222)
8	2.2844E-05 (89)	3.7417E-05 (89)	3.8235E-05 (89)	1.0852E-05 (223)	1.2316E-05 (223)
9	2.1148E-05 (50)	2.6032E-05 (208)	2.7902E-05 (71)	2.0075E-05 (71)	1.2328E-05 (105)
10	3.0412E-05 (50)	3.3586E-05 (50)	2.7651E-05 (34)	1.4033E-05 (325)	7.3088E-06 (144)
11	2.7241E-05 (167)	2.8787E-05 (167)	2.0700E-05 (89)	1.0670E-05 (192)	1.0351E-05 (180)
12	3.5110E-05 (53)	5.1908E-05 (53)	4.7167E-05 (53)	1.6098E-05 (113)	1.4242E-05 (205)
13	3.3325E-05 (334)	5.6865E-05 (336)	6.2685E-05 (336)	2.5259E-05 (336)	1.2110E-05 (28)
14	3.2991E-05 (193)	5.6198E-05 (335)	6.3543E-05 (335)	1.6671E-05 (316)	1.4529E-05 (257)
15	6.0678E-05 (193)	5.9297E-05 (193)	5.3731E-05 (342)	1.8773E-05 (342)	1.3779E-05 (270)
16	4.0924E-05 (39)	6.4612E-05 (39)	6.1747E-05 (39)	2.0816E-05 (290)	1.9239E-05 (290)
17	4.7997E-05 (281)	7.0449E-05 (56)	6.7870E-05 (56)	2.5362E-05 (281)	1.5147E-05 (338)
18	4.0296E-05 (329)	6.3294E-05 (329)	6.2162E-05 (329)	2.0882E-05 (176)	1.0304E-05 (198)
19	3.5336E-05 (265)	6.6085E-05 (265)	7.3775E-05 (265)	2.4180E-05 (258)	1.6179E-05 (209)
20	2.7670E-05 (176)	4.5513E-05 (1)	4.9966E-05 (247)	2.1643E-05 (261)	1.5374E-05 (116)
21	3.1225E-05 (176)	3.2459E-05 (83)	3.3564E-05 (1)	1.5563E-05 (276)	1.9157E-05 (213)
22	2.9604E-05 (177)	3.2310E-05 (319)	4.6477E-05 (249)	2.0218E-05 (312)	1.0112E-05 (254)
23	1.5786E-05 (133)	2.7170E-05 (248)	2.9824E-05 (266)	9.5578E-06 (320)	8.0935E-06 (304)
24	2.6902E-05 (177)	3.8168E-05 (266)	4.0577E-05 (266)	1.4535E-05 (312)	9.3772E-06 (255)
25	3.3660E-05 (177)	4.7571E-05 (268)	6.2819E-05 (268)	2.9978E-05 (268)	1.1877E-05 (268)
26	6.1747E-05 (267)	1.0886E-04 (267)	1.1674E-04 (267) *	2.9967E-05 (267)	1.3178E-05 (233)
27	2.9642E-05 (277)	4.9813E-05 (277)	5.0747E-05 (277)	1.5363E-05 (269)	7.5326E-06 (301)
28	1.7879E-05 (171)	3.0174E-05 (348)	3.4338E-05 (348)	1.4908E-05 (361)	6.0411E-06 (347)
29	2.6304E-05 (237)	3.1677E-05 (19)	5.1361E-05 (19)	2.2803E-05 (361)	9.7299E-06 (344)
30	4.1707E-05 (237)	5.8792E-05 (141)	7.3313E-05 (19)	2.9283E-05 (19)	1.3699E-05 (303)
31	8.9436E-05 (101)	1.0994E-04 (101)	9.0435E-05 (101)	1.8064E-05 (101)	1.5259E-05 (313)
32	6.6421E-05 (101)	7.7290E-05 (101)	6.1792E-05 (101)	2.8548E-05 (24)	1.0650E-05 (24)
33	5.3387E-05 (251)	6.8477E-05 (251)	5.7312E-05 (251)	3.3931E-05 (25)	1.8338E-05 (66)
34	4.4044E-05 (63)	6.2250E-05 (63)	6.8879E-05 (159)	1.8394E-05 (159)	8.9529E-06 (73)
35	5.3110E-05 (130)	7.2746E-05 (159)	7.8618E-05 (135)	2.3897E-05 (62)	1.0813E-05 (62)
36	5.1000E-05 (242)	7.3253E-05 (158)	7.4715E-05 (158)	2.5901E-05 (156)	2.0222E-05 (306)

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3
YEARLY SECOND MAXIMUM 24-HOUR CONC= 6.9308E-05 DIRECTION= 32 DISTANCE= 0.7 KM DAY=111

SECOND HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

RANGE DIR	0.5 KM	0.7 KM	1.1 KM	4.0 KM	10.1 KM
1	3.5638E-05 (151)	4.4489E-05 (308)	4.6908E-05 (151)	1.9652E-05 (44)	1.4573E-05 (109)
2	3.1857E-05 (181)	4.3064E-05 (243)	4.0061E-05 (308)	1.6177E-05 (215)	7.1372E-06 (215)
3	4.2036E-05 (78)	5.7484E-05 (79)	6.4297E-05 (152)	2.6623E-05 (78)	1.1492E-05 (45)
4	5.0387E-05 (149)	5.7789E-05 (149)	5.0998E-05 (122)	1.6037E-05 (362)	6.9517E-06 (362)
5	4.3326E-05 (149)	5.3218E-05 (149)	4.6602E-05 (149)	1.6750E-05 (363)	1.0388E-05 (221)
6	3.3272E-05 (173)	4.6088E-05 (173)	4.7948E-05 (87)	1.3727E-05 (363)	9.6226E-06 (120)
7	4.4657E-05 (88)	4.8043E-05 (98)	3.5579E-05 (153)	1.2292E-05 (88)	1.1251E-05 (223)
8	1.8648E-05 (153)	2.5746E-05 (341)	2.7692E-05 (341)	9.4007E-06 (89)	7.9186E-06 (283)
9	1.6826E-05 (208)	2.4867E-05 (50)	2.7699E-05 (208)	1.5775E-05 (191)	7.9656E-06 (240)
10	1.7779E-05 (55)	2.5876E-05 (34)	2.6229E-05 (50)	1.2740E-05 (50)	7.1143E-06 (208)
11	2.2304E-05 (89)	2.5391E-05 (89)	1.9346E-05 (75)	8.5015E-06 (351)	5.7174E-06 (200)
12	1.9836E-05 (334)	2.6703E-05 (334)	2.2480E-05 (334)	1.2536E-05 (206)	1.1462E-05 (206)
13	3.1557E-05 (336)	5.2451E-05 (334)	5.1204E-05 (334)	1.2613E-05 (335)	8.7113E-06 (203)
14	3.2757E-05 (191)	3.6806E-05 (336)	3.9250E-05 (336)	1.6258E-05 (335)	9.2357E-06 (316)
15	2.9224E-05 (39)	4.7727E-05 (39)	4.7987E-05 (39)	1.6040E-05 (316)	1.1536E-05 (232)
16	3.4941E-05 (193)	4.8894E-05 (95)	4.5118E-05 (95)	1.9667E-05 (291)	1.2659E-05 (291)
17	4.4386E-05 (56)	6.0910E-05 (72)	6.6779E-05 (289) *	2.1630E-05 (246)	1.2963E-05 (246)
18	3.8208E-05 (175)	5.1367E-05 (175)	5.4585E-05 (176)	2.0786E-05 (4)	1.0079E-05 (258)
19	3.1141E-05 (57)	5.5842E-05 (247)	6.3655E-05 (247)	2.3004E-05 (265)	1.2278E-05 (321)
20	2.7304E-05 (1)	3.8263E-05 (247)	4.4654E-05 (1)	1.5932E-05 (116)	1.3907E-05 (261)
21	2.5852E-05 (113)	3.0621E-05 (113)	3.1504E-05 (12)	1.5509E-05 (311)	1.1021E-05 (256)
22	1.8950E-05 (250)	3.1547E-05 (249)	3.7081E-05 (319)	1.8086E-05 (249)	9.6659E-06 (319)
23	1.5416E-05 (276)	2.6371E-05 (266)	2.8333E-05 (248)	8.7774E-06 (86)	8.0825E-06 (253)
24	2.1493E-05 (266)	3.4635E-05 (278)	3.9900E-05 (278)	1.4030E-05 (278)	8.9562E-06 (187)
25	2.4836E-05 (268)	3.4564E-05 (177)	3.6941E-05 (248)	1.5291E-05 (340)	8.0155E-06 (243)
26	3.2525E-05 (268)	5.2392E-05 (268)	5.8926E-05 (268)	2.4198E-05 (269)	9.3123E-06 (269)
27	2.7489E-05 (267)	3.5403E-05 (294)	4.0066E-05 (294)	1.2581E-05 (2)	6.2428E-06 (352)
28	1.7234E-05 (139)	2.0759E-05 (255)	2.7425E-05 (2)	1.4259E-05 (85)	5.6511E-06 (361)
29	2.4213E-05 (216)	3.1029E-05 (237)	3.8788E-05 (361)	2.2635E-05 (19)	7.7696E-06 (361)
30	3.9145E-05 (141)	4.5511E-05 (237)	5.6973E-05 (141)	2.5719E-05 (365)	8.5050E-06 (19)
31	3.8485E-05 (111)	4.3976E-05 (111)	4.0450E-05 (74)	1.7874E-05 (365)	8.9579E-06 (205)
32	5.2931E-05 (111)	6.9308E-05 (111)	6.1239E-05 (111)	2.5661E-05 (302)	9.6969E-06 (302)
33	4.0915E-05 (102)	4.7949E-05 (141)	5.7011E-05 (302)	2.4211E-05 (137)	1.3248E-05 (58)
34	4.0508E-05 (130)	6.1062E-05 (159)	6.2481E-05 (63)	1.7769E-05 (63)	7.8109E-06 (358)
35	4.8940E-05 (159)	6.8910E-05 (135)	6.7885E-05 (159)	2.2694E-05 (135)	8.1712E-06 (65)
36	4.9729E-05 (158)	6.4722E-05 (157)	6.7696E-05 (156)	2.1131E-05 (61)	1.4211E-05 (54)

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3
YEARLY MAXIMUM 3-HOUR CONC= 3.0184E-04 DIRECTION= 15 DISTANCE= 1.1 KM DAY=342 TIME PERIOD= 4

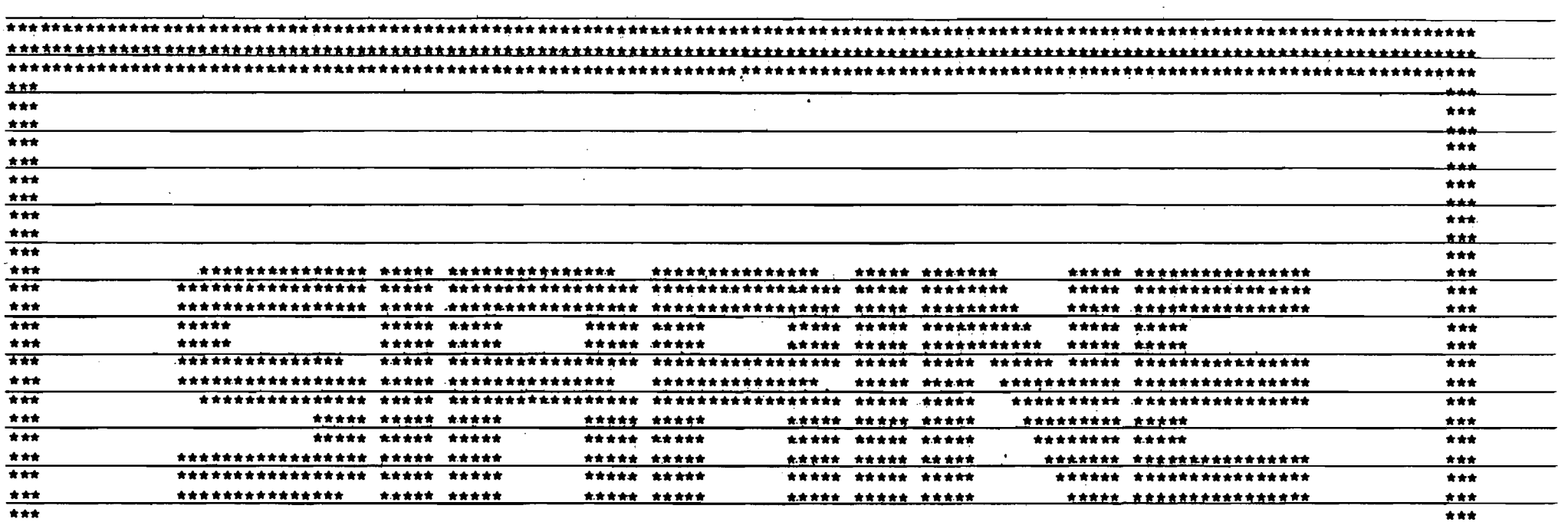
HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.5 KM	0.7 KM	1.1 KM	4.0 KM	10.1 KM
1	2.1724E-04 (163, 4)	2.3130E-04 (187, 5)	1.8214E-04 (353, 2)	6.7949E-05 (254, 6)	8.0102E-05 (109, 8)
2	1.6741E-04 (181, 4)	1.6011E-04 (243, 5)	1.3446E-04 (152, 2)	5.8687E-05 (215, 2)	5.4226E-05 (118, 1)
3	2.0787E-04 (149, 4)	1.9430E-04 (121, 5)	1.7465E-04 (78, 6)	6.5240E-05 (96, 6)	8.1354E-05 (60, 1)
4	1.8228E-04 (230, 5)	1.7839E-04 (201, 5)	1.8818E-04 (318, 4)	7.6056E-05 (133, 7)	9.5549E-05 (182, 2)
5	1.9761E-04 (150, 4)	1.7054E-04 (150, 8)	1.8461E-04 (150, 8)	6.5177E-05 (242, 7)	7.0279E-05 (222, 2)
6	1.6358E-04 (153, 5)	1.6871E-04 (153, 5)	1.7238E-04 (173, 7)	6.4850E-05 (33, 8)	8.0129E-05 (183, 2)
7	1.4683E-04 (98, 5)	1.9776E-04 (88, 6)	1.6951E-04 (88, 6)	6.2717E-05 (31, 2)	9.1555E-05 (222, 8)
8	1.2788E-04 (153, 4)	1.2895E-04 (89, 6)	1.2341E-04 (341, 6)	5.2687E-05 (172, 8)	6.3349E-05 (283, 7)
9	1.0584E-04 (53, 1)	1.6645E-04 (324, 3)	1.8946E-04 (324, 3)	8.3236E-05 (71, 2)	9.8624E-05 (105, 1)
10	1.3628E-04 (50, 4)	1.4726E-04 (50, 4)	1.4834E-04 (11, 4)	7.7600E-05 (208, 1)	5.5238E-05 (208, 1)
11	1.1087E-04 (167, 3)	1.1724E-04 (50, 6)	1.0200E-04 (50, 6)	6.7438E-05 (192, 7)	5.5211E-05 (180, 7)
12	1.3310E-04 (89, 4)	1.4027E-04 (53, 5)	1.2232E-04 (53, 5)	7.0107E-05 (113, 8)	9.0944E-05 (206, 1)
13	1.2316E-04 (334, 5)	1.8492E-04 (334, 5)	1.7255E-04 (334, 5)	5.7755E-05 (336, 7)	6.9518E-05 (28, 7)
14	1.9674E-04 (191, 3)	2.1152E-04 (191, 3)	1.4674E-04 (191, 3)	7.2293E-05 (257, 2)	6.3737E-05 (257, 2)
15	2.3678E-04 (193, 4)	2.5981E-04 (342, 4)	3.0184E-04 (342, 4) *	1.1100E-04 (342, 4)	9.1061E-05 (270, 8)
16	1.7123E-04 (132, 4)	1.6962E-04 (39, 1)	1.5770E-04 (39, 1)	6.6285E-05 (41, 3)	6.9461E-05 (290, 1)
17	2.0176E-04 (179, 4)	1.7968E-04 (179, 4)	1.6279E-04 (289, 3)	7.4999E-05 (246, 2)	7.8731E-05 (69, 1)
18	1.5014E-04 (329, 4)	2.0851E-04 (329, 4)	1.8396E-04 (329, 4)	7.2298E-05 (168, 2)	7.8382E-05 (198, 2)
19	1.5232E-04 (57, 4)	1.9844E-04 (57, 4)	1.9379E-04 (265, 7)	9.0764E-05 (261, 1)	8.9467E-05 (197, 1)
20	1.1902E-04 (261, 4)	1.7241E-04 (265, 8)	1.8772E-04 (265, 8)	7.8950E-05 (116, 2)	7.4649E-05 (116, 2)
21	1.8704E-04 (113, 4)	1.8941E-04 (113, 4)	1.7113E-04 (249, 3)	6.2089E-05 (213, 1)	1.0915E-04 (213, 1)
22	1.5855E-04 (177, 4)	1.5060E-04 (250, 3)	1.6661E-04 (292, 4)	7.6675E-05 (299, 2)	8.0654E-05 (254, 1)
23	9.2573E-05 (311, 4)	1.2527E-04 (311, 4)	1.1575E-04 (248, 7)	6.8616E-05 (304, 1)	6.4748E-05 (304, 1)
24	1.4957E-04 (115, 3)	1.5349E-04 (115, 3)	1.4615E-04 (249, 6)	6.8227E-05 (126, 8)	7.1648E-05 (187, 1)
25	1.4756E-04 (177, 5)	1.4567E-04 (263, 3)	1.4955E-04 (263, 3)	8.6253E-05 (268, 7)	5.1383E-05 (243, 2)
26	1.4025E-04 (268, 4)	1.7509E-04 (267, 2)	1.9161E-04 (267, 2)	6.7580E-05 (220, 1)	6.8498E-05 (233, 1)
27	1.5091E-04 (127, 4)	1.4886E-04 (267, 5)	1.7190E-04 (36, 3)	6.0954E-05 (36, 3)	3.7679E-05 (352, 2)
28	1.4303E-04 (171, 4)	1.6106E-04 (169, 4)	1.8905E-04 (169, 4)	6.5238E-05 (169, 4)	4.3917E-05 (164, 2)
29	1.1811E-04 (255, 5)	1.4726E-04 (255, 5)	1.6218E-04 (361, 4)	7.8619E-05 (234, 7)	7.4473E-05 (344, 6)
30	1.9694E-04 (239, 4)	2.0297E-04 (216, 4)	1.8118E-04 (19, 5)	7.2222E-05 (18, 7)	7.5732E-05 (303, 8)
31	2.0491E-04 (140, 4)	2.0452E-04 (101, 6)	1.7430E-04 (101, 6)	6.3242E-05 (6, 6)	7.8022E-05 (313, 7)
32	1.9914E-04 (101, 4)	2.0513E-04 (250, 7)	1.5965E-04 (250, 7)	7.4565E-05 (264, 6)	6.6006E-05 (66, 7)
33	1.8911E-04 (102, 4)	1.8558E-04 (141, 7)	1.9483E-04 (252, 1)	7.4310E-05 (25, 7)	8.1519E-05 (66, 8)
34	1.8267E-04 (128, 5)	2.0171E-04 (63, 4)	1.8936E-04 (159, 8)	7.9812E-05 (3, 6)	5.5466E-05 (73, 7)
35	2.1601E-04 (198, 4)	2.1706E-04 (116, 5)	1.8005E-04 (97, 4)	6.0781E-05 (119, 1)	4.7030E-05 (195, 8)
36	2.3962E-04 (242, 4)	2.3611E-04 (242, 4)	1.8740E-04 (215, 5)	8.6256E-05 (6, 7)	8.7254E-05 (306, 7)

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3
YEARLY SECOND MAXIMUM 3-HOUR CONC= 2.2192E-04 DIRECTION= 36 DISTANCE= 0.5 KM DAY=155 TIME PERIOD= 4

SECOND HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.5 KM	0.7 KM	1.1 KM	4.0 KM	10.1 KM
1	2.1301E-04 (187, 5)	1.9880E-04 (163, 4)	1.7352E-04 (157, 6)	6.6566E-05 (32, 8)	5.4990E-05 (61, 8)
2	1.5335E-04 (243, 5)	1.5164E-04 (98, 1)	1.3161E-04 (197, 6)	5.4898E-05 (161, 2)	5.2780E-05 (117, 8)
3	1.6864E-04 (121, 5)	1.8396E-04 (149, 4)	1.7004E-04 (121, 4)	5.2850E-05 (45, 7)	6.3806E-05 (60, 7)
4	1.8156E-04 (150, 4)	1.7641E-04 (318, 4)	1.5524E-04 (121, 6)	7.2741E-05 (182, 2)	4.3491E-05 (133, 7)
5	1.5483E-04 (191, 5)	1.6835E-04 (71, 5)	1.6900E-04 (150, 1)	6.3150E-05 (30, 8)	6.8321E-05 (30, 8)
6	1.2878E-04 (98, 4)	1.4538E-04 (98, 4)	1.5778E-04 (150, 3)	5.7719E-05 (79, 1)	7.4998E-05 (127, 7)
7	1.4564E-04 (88, 6)	1.4699E-04 (98, 5)	1.2098E-04 (153, 3)	5.3616E-05 (163, 7)	4.9600E-05 (223, 2)
8	9.6392E-05 (89, 6)	1.2893E-04 (50, 3)	1.1706E-04 (50, 3)	4.5015E-05 (223, 7)	6.2531E-05 (223, 7)
9	8.7737E-05 (324, 3)	1.3300E-04 (208, 4)	1.3815E-04 (208, 4)	6.7915E-05 (146, 7)	4.4348E-05 (240, 7)
10	1.0838E-04 (55, 5)	1.4390E-04 (55, 5)	1.2172E-04 (55, 5)	6.0324E-05 (104, 7)	3.8386E-05 (108, 7)
11	1.0932E-04 (89, 4)	1.1525E-04 (167, 3)	1.0088E-04 (47, 2)	6.3126E-05 (166, 7)	4.5721E-05 (200, 7)
12	9.9611E-05 (53, 5)	1.2294E-04 (75, 6)	1.0507E-04 (75, 6)	6.9504E-05 (229, 7)	8.1603E-05 (205, 8)
13	1.1075E-04 (209, 4)	1.2985E-04 (336, 2)	1.4468E-04 (336, 2)	4.5009E-05 (47, 3)	3.9099E-05 (326, 7)
14	1.5649E-04 (192, 3)	1.4623E-04 (192, 3)	1.1387E-04 (325, 4)	5.9848E-05 (40, 2)	4.5591E-05 (257, 1)
15	1.6195E-04 (99, 4)	1.9489E-04 (193, 4)	1.3670E-04 (98, 7)	6.7336E-05 (204, 7)	5.6485E-05 (232, 2)
16	1.6114E-04 (178, 4)	1.5110E-04 (178, 4)	1.2538E-04 (95, 3)	6.5010E-05 (290, 1)	5.2050E-05 (290, 7)
17	1.9772E-04 (132, 4)	1.6202E-04 (281, 4)	1.4631E-04 (12, 1)	6.9800E-05 (282, 7)	6.4949E-05 (338, 7)
18	1.2696E-04 (175, 6)	1.8712E-04 (175, 6)	1.7994E-04 (177, 8)	6.7601E-05 (175, 7)	6.4837E-05 (231, 1)
19	1.2823E-04 (261, 4)	1.9773E-04 (258, 3) *	1.9233E-04 (258, 3)	7.4936E-05 (293, 6)	8.8072E-05 (209, 8)
20	1.1022E-04 (176, 4)	1.2980E-04 (1, 3)	1.4405E-04 (7, 4)	7.2157E-05 (261, 2)	6.3889E-05 (293, 1)
21	1.4096E-04 (258, 4)	1.5004E-04 (12, 5)	1.7003E-04 (12, 5)	5.8728E-05 (311, 2)	8.8168E-05 (256, 1)
22	1.1096E-04 (176, 5)	1.4347E-04 (177, 4)	1.3238E-04 (319, 4)	7.1050E-05 (312, 6)	5.1646E-05 (319, 7)
23	9.0343E-05 (276, 5)	1.1523E-04 (319, 5)	1.0795E-04 (319, 5)	6.5814E-05 (286, 2)	6.4660E-05 (253, 1)
24	1.0267E-04 (168, 3)	1.3373E-04 (259, 3)	1.3384E-04 (278, 2)	5.8657E-05 (217, 7)	6.7110E-05 (217, 7)
25	1.1431E-04 (313, 4)	1.3820E-04 (248, 6)	1.4731E-04 (268, 7)	5.6921E-05 (279, 1)	3.7855E-05 (268, 7)
26	1.3916E-04 (313, 4)	1.6517E-04 (267, 1)	1.9066E-04 (267, 1)	6.4891E-05 (304, 2)	4.2804E-05 (220, 1)
27	1.4554E-04 (170, 4)	1.4835E-04 (284, 3)	1.4019E-04 (294, 8)	5.1839E-05 (270, 3)	3.5806E-05 (204, 8)
28	1.3782E-04 (139, 4)	1.3625E-04 (171, 4)	1.3742E-04 (74, 3)	5.5528E-05 (87, 1)	2.8815E-05 (301, 1)
29	1.1441E-04 (254, 4)	1.3449E-04 (73, 4)	1.4393E-04 (19, 8)	7.0307E-05 (344, 6)	3.5901E-05 (204, 1)
30	1.7906E-04 (237, 4)	1.9615E-04 (239, 4)	1.6247E-04 (141, 3)	6.6713E-05 (19, 5)	5.7886E-05 (235, 7)
31	1.7175E-04 (101, 5)	1.7837E-04 (137, 5)	1.6032E-04 (137, 5)	5.2847E-05 (313, 6)	7.1648E-05 (205, 1)
32	1.7344E-04 (250, 7)	1.6711E-04 (101, 4)	1.5456E-04 (24, 5)	6.9380E-05 (66, 7)	5.2276E-05 (300, 7)
33	1.5801E-04 (134, 4)	1.8550E-04 (102, 4)	1.8750E-04 (141, 7)	7.3475E-05 (139, 7)	6.8380E-05 (59, 1)
34	1.7975E-04 (63, 4)	1.9292E-04 (128, 5)	1.7944E-04 (160, 1)	7.7758E-05 (358, 1)	3.8975E-05 (344, 7)
35	2.0320E-04 (130, 4)	2.0406E-04 (182, 4)	1.6690E-04 (28, 1)	6.0362E-05 (156, 1)	4.4156E-05 (196, 1)
36	2.2192E-04 (155, 4)	1.9982E-04 (97, 7)	1.8001E-04 (156, 7)	6.8248E-05 (156, 7)	7.5623E-05 (60, 8)



THE J.E. SIRRINE COMPANY
CORPORATE HEADQUARTERS
PULP & PAPER DIVISION SOUTH CAROLINA DIVISION
CONSTRUCTION MANAGEMENT DIVISION
ARCHITECT-ENGINEER DIVISION SIRRINE SERVICES, INC.

216 S. PLEASANTBURG
GREENVILLE, SOUTH CAROLINA (803) 298-6000

NORTH CAROLINA DIVISION
P.O. BOX 12748
RESEARCH TRIANGLE PARK, N.C.
(919) 541-2081

TEXAS DIVISION
10000 RICHMOND HOUSTON, TEXAS
(713) 974-8400

DORCHESTER COUNTY DIVISION
107 WEST 5TH STREET, NORTH
SUMMERVILLE, SOUTH CAROLINA
(803) 871-2060

PROGRAM NAME: CRSTER APPLICATION NUMBER: 5010

SINGLE SOURCE AIR QUALITY MODEL
RUN ON 06/06/83 AT 4:09 PM

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                                        ECHO PRINT OF INPUT DATA

                   1         2         3         4         5         6         7         8
CARD      12345678901234567890123456789012345678901234567890123456789012345678901234567890

  1       AMERICAN CYANAMID          TSP
  2
  3        $NAMI IUR=1,RNG=.5,0.7,1.1,4.,10.1,ISS=03855,ISY=75,IUS=12884,IUY=75,
  4       IMET=0,DAY=365*1,1*0,$END
  5       BOILER NO 7  MICRONIZED COAL  95% LOAD  90% EMISSION FACTOR
  6       33.21                  15.24     1.47       14.90     444.3
  7
  8

                   1         2         3         4         5         6         7         8
          12345678901234567890123456789012345678901234567890123456789012345678901234567890

PLANT NAME: AMERICAN CYANAMID          POLLUTANT:  TSP      EMISSION UNITS: GM/SEC    AIR QUALITY UNITS: GM/M**3 12/80

               MET FILE      REQUESTED
            STN NO.  YR    STN NO.  YR
 SURFACE      3855   75      3855   75
 UPPER AIR   12884   75     12884   75
PLANT LOCATION: RURAL
ANEMOMETER HEIGHT IS  7.0 METERS
WIND PROFILE EXPONENTS ARE:   0.100,  0.150,  0.200,  0.250,  0.300,  0.300,
NO TAPE OUTPUT
MET DATA WILL NOT BE PRINTED

DAY--  1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 0

 * * * * * * * * * * * * * * * * * * * * *  N O T E  * * * * * * * * * * * * * * * * * * * * *

     ALL TABLES, INCLUDING SOURCE CONTRIBUTION, THAT CONTAIN "ANNUAL" IN THE HEADING ARE BASED ONLY ON THOSE DAYS

     MARKED BY "1" IN THE ABOVE TABLE
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RING DISTANCES(KM)= 0.50 0.70 1.10 4.00 10.10

PLANT ELEVATION (FEET ABOVE SEA LEVEL)— 0. PLANT ELEVATION (METERS ABOVE SEA LEVEL)— 0.

RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)						RECEPTOR ELEVATIONS (METERS ABOVE SEA LEVEL)				
DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5	RING#1	RING#2	RING#3	RING#4	RING#5
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
26	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
27	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
28	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
30	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
32	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
33	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
35	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
36	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

STACK # 1—BOILER NO 7 MICRONIZED COAL 95% LOAD 90% EMISSION FACTOR

STACK	MONTH	EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	ALL	33.2100	15.24	1.47	14.90	444.30	25.29

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3
MAXIMUM MEAN CONC= 6.3151E-06 DIRECTION= 30 DISTANCE= 1.1 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR \ RANGE	0.5 KM	0.7 KM	1.1 KM	4.0 KM	10.1 KM
1	3.47456E-06	4.46726E-06	4.21720E-06	1.31136E-06	4.73419E-07
2	2.92921E-06	3.88121E-06	3.73862E-06	1.27147E-06	5.07191E-07
3	2.65424E-06	3.45421E-06	3.31014E-06	1.23300E-06	5.56131E-07
4	2.66969E-06	3.57958E-06	3.49220E-06	1.21737E-06	4.99223E-07
5	2.44916E-06	3.27887E-06	3.15268E-06	1.12866E-06	4.72488E-07
6	1.74896E-06	2.55913E-06	2.76626E-06	1.19493E-06	4.93660E-07
7	1.04175E-06	1.56049E-06	1.78349E-06	1.03084E-06	5.51430E-07
8	6.55479E-07	1.18903E-06	1.51702E-06	8.90678E-07	4.60101E-07
9	6.09814E-07	1.08229E-06	1.36888E-06	9.39643E-07	5.20944E-07
10	4.97884E-07	8.40258E-07	9.92021E-07	6.13786E-07	3.91070E-07
11	5.86259E-07	9.05281E-07	9.55480E-07	4.98961E-07	3.29495E-07
12	7.33292E-07	1.24350E-06	1.44307E-06	7.49109E-07	3.96198E-07
13	6.97352E-07	1.12765E-06	1.27759E-06	6.89635E-07	4.03146E-07
14	9.42016E-07	1.42630E-06	1.61548E-06	9.13501E-07	4.89659E-07
15	1.53106E-06	2.33516E-06	2.57163E-06	1.27765E-06	6.11848E-07
16	1.78446E-06	2.74470E-06	2.99828E-06	1.49100E-06	7.86346E-07
17	2.25341E-06	3.63346E-06	4.07924E-06 *	2.22297E-06	1.11984E-06
18	1.88555E-06	3.09275E-06	3.58849E-06	2.13933E-06	1.15414E-06
19	1.56726E-06	2.52358E-06	2.84266E-06	1.61656E-06	9.07718E-07
20	1.23573E-06	2.11233E-06	2.51007E-06	1.63337E-06	9.10931E-07
21	1.03972E-06	1.81328E-06	2.29830E-06	1.61775E-06	8.89084E-07
22	8.38266E-07	1.48885E-06	1.91652E-06	1.46055E-06	8.37163E-07
23	7.95091E-07	1.45738E-06	1.96669E-06	1.34359E-06	7.60266E-07
24	9.67403E-07	1.75656E-06	2.27680E-06	1.27798E-06	5.77692E-07
25	1.27798E-06	2.22388E-06	2.77295E-06	1.46169E-06	6.63805E-07
26	1.74084E-06	3.01633E-06	3.75362E-06	1.83603E-06	8.17305E-07
27	2.22193E-06	3.44130E-06	3.78096E-06	1.66660E-06	7.03145E-07
28	2.40860E-06	3.67924E-06	3.93075E-06	1.39180E-06	5.33198E-07
29	3.20383E-06	4.54840E-06	4.63570E-06	1.48862E-06	5.10232E-07
30	4.31457E-06	6.07138E-06	6.31514E-06	2.28158E-06	7.96517E-07
31	3.56373E-06	4.59637E-06	4.46252E-06	1.63896E-06	6.48124E-07
32	2.96826E-06	3.94249E-06	3.98832E-06	1.50947E-06	5.78355E-07
33	2.68390E-06	3.60169E-06	3.63871E-06	1.46506E-06	6.34128E-07
34	3.68868E-06	4.86959E-06	4.69371E-06	1.57452E-06	5.73287E-07
35	4.87654E-06	6.08258E-06	5.57954E-06	1.73059E-06	6.43514E-07
36	4.90130E-06	6.20025E-06	5.83870E-06	1.89303E-06	6.93537E-07

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3
YEARLY MAXIMUM 24-HOUR CONC= 1.0185E-04 DIRECTION= 17 DISTANCE= 0.7 KM DAY=352

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.5 KM	0.7 KM	1.1 KM	4.0 KM	10.1 KM
1	5.0866E-05 (161)	5.4621E-05 (161)	5.0951E-05 (92)	1.5270E-05 (119)	8.2860E-06 (27)
2	4.2819E-05 (136)	5.1456E-05 (136)	4.8127E-05 (216)	1.7786E-05 (204)	1.8212E-05 (204)
3	5.1305E-05 (211)	5.9180E-05 (211)	5.3700E-05 (136)	1.4322E-05 (140)	1.2548E-05 (132)
4	3.0785E-05 (229)	5.3177E-05 (81)	6.6743E-05 (81)	2.0389E-05 (81)	1.9788E-05 (117)
5	4.1145E-05 (188)	5.7611E-05 (217)	5.5918E-05 (217)	1.3383E-05 (217)	1.2838E-05 (59)
6	3.8990E-05 (137)	4.8895E-05 (25)	5.8787E-05 (25)	1.9481E-05 (25)	1.6400E-05 (15)
7	5.2028E-05 (160)	4.8642E-05 (160)	3.9015E-05 (190)	2.0736E-05 (163)	1.6583E-05 (216)
8	2.1314E-05 (191)	4.1024E-05 (191)	5.3620E-05 (191)	1.7117E-05 (191)	1.9884E-05 (167)
9	3.4926E-05 (359)	5.0505E-05 (359)	4.5539E-05 (359)	1.5799E-05 (157)	1.0950E-05 (140)
10	2.3304E-05 (365)	3.5693E-05 (189)	4.2721E-05 (189)	1.3977E-05 (189)	9.7445E-06 (284)
11	3.6535E-05 (186)	3.9495E-05 (55)	4.4061E-05 (55)	1.3936E-05 (55)	1.3140E-05 (214)
12	2.1431E-05 (365)	3.0863E-05 (365)	2.9324E-05 (365)	1.3914E-05 (354)	1.0577E-05 (163)
13	1.9744E-05 (290)	3.8058E-05 (290)	4.5550E-05 (290)	1.4460E-05 (290)	8.6607E-06 (107)
14	3.1795E-05 (138)	3.6051E-05 (266)	3.0847E-05 (266)	1.6006E-05 (325)	1.4611E-05 (155)
15	3.9163E-05 (13)	6.4834E-05 (13)	6.6550E-05 (13)	2.6799E-05 (13)	1.2816E-05 (13)
16	3.5587E-05 (43)	4.7786E-05 (43)	4.7607E-05 (351)	1.8724E-05 (351)	1.1795E-05 (215)
17	6.3438E-05 (352)	1.0185E-04 (352) *	9.9765E-05 (352)	2.3595E-05 (352)	1.3780E-05 (226)
18	4.1118E-05 (93)	4.9851E-05 (352)	6.3784E-05 (101)	2.3269E-05 (101)	1.4165E-05 (153)
19	4.0300E-05 (265)	6.4126E-05 (303)	6.9974E-05 (303)	2.4457E-05 (303)	1.9448E-05 (329)
20	3.1587E-05 (265)	4.6009E-05 (265)	5.0122E-05 (265)	1.6122E-05 (23)	1.5167E-05 (180)
21	2.3941E-05 (265)	3.4788E-05 (265)	5.1377E-05 (23)	2.7074E-05 (23)	1.5001E-05 (301)
22	3.0149E-05 (130)	3.6195E-05 (130)	3.3857E-05 (62)	1.5689E-05 (321)	1.3491E-05 (321)
23	1.5944E-05 (130)	2.3017E-05 (278)	4.6185E-05 (278)	1.8969E-05 (278)	1.0223E-05 (345)
24	1.2104E-05 (68)	2.7832E-05 (257)	4.9664E-05 (257)	2.0377E-05 (257)	1.0950E-05 (171)
25	2.2308E-05 (209)	2.1197E-05 (199)	3.0886E-05 (277)	2.0559E-05 (347)	9.9003E-06 (347)
26	2.7394E-05 (258)	4.2337E-05 (304)	5.0390E-05 (304)	2.3315E-05 (111)	1.8414E-05 (111)
27	3.2965E-05 (258)	4.4162E-05 (258)	4.3036E-05 (258)	1.6147E-05 (338)	1.3451E-05 (253)
28	2.3387E-05 (363)	4.6802E-05 (52)	6.3143E-05 (52)	2.0507E-05 (52)	1.5740E-05 (311)
29	5.9589E-05 (86)	7.9571E-05 (86)	8.5418E-05 (87)	2.2085E-05 (87)	8.9856E-06 (28)
30	6.9234E-05 (86)	8.9457E-05 (86)	7.4627E-05 (86)	2.4247E-05 (28)	1.1530E-05 (28)
31	3.5237E-05 (170)	3.7431E-05 (288)	4.6911E-05 (288)	2.6687E-05 (288)	1.3897E-05 (144)
32	3.1152E-05 (240)	4.7681E-05 (10)	5.4196E-05 (9)	2.4344E-05 (126)	1.3199E-05 (169)
33	3.4440E-05 (234)	3.6235E-05 (234)	4.8750E-05 (114)	2.6717E-05 (114)	1.1782E-05 (114)
34	3.8114E-05 (145)	6.8385E-05 (71)	8.2797E-05 (71)	2.5421E-05 (71)	9.3506E-06 (107)
35	5.4016E-05 (148)	7.1934E-05 (71)	7.5995E-05 (71)	2.0712E-05 (71)	1.3867E-05 (340)
36	4.9969E-05 (47)	8.0646E-05 (47)	8.0365E-05 (47)	2.9718E-05 (118)	1.5260E-05 (242)

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3
YEARLY SECOND MAXIMUM 24-HOUR CONC= 7.7803E-05 DIRECTION= 29 DISTANCE= 0.7 KM DAY= 87

SECOND HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.5 KM	0.7 KM	1.1 KM	4.0 KM	10.1 KM
1	3.2834E-05 (215)	4.1228E-05 (92)	4.6953E-05 (161)	1.4366E-05 (92)	7.6964E-06 (219)
2	3.5199E-05 (203)	4.7004E-05 (162)	4.7343E-05 (136)	1.6138E-05 (216)	8.1540E-06 (361)
3	3.9353E-05 (136)	5.3562E-05 (136)	4.5378E-05 (211)	1.4108E-05 (203)	1.2118E-05 (203)
4	3.0087E-05 (137)	4.4922E-05 (281)	4.2378E-05 (281)	1.5170E-05 (194)	9.2749E-06 (194)
5	3.7869E-05 (217)	4.7076E-05 (188)	4.2912E-05 (81)	1.1904E-05 (59)	7.4506E-06 (80)
6	3.8718E-05 (160)	4.3149E-05 (137)	3.6599E-05 (137)	1.9326E-05 (137)	9.6247E-06 (124)
7	3.3956E-05 (163)	4.0522E-05 (163)	3.8814E-05 (163)	1.4794E-05 (190)	1.0417E-05 (142)
8	1.7486E-05 (359)	2.8834E-05 (359)	3.0305E-05 (218)	1.7108E-05 (192)	9.9852E-06 (164)
9	2.4908E-05 (187)	3.4185E-05 (191)	3.7008E-05 (191)	1.2599E-05 (158)	8.5379E-06 (139)
10	2.0721E-05 (189)	3.3421E-05 (365)	3.1948E-05 (365)	1.3358E-05 (152)	9.0023E-06 (152)
11	2.2727E-05 (55)	3.5449E-05 (186)	2.4101E-05 (186)	9.5233E-06 (214)	1.2871E-05 (165)
12	1.7308E-05 (55)	2.7516E-05 (55)	2.7546E-05 (266)	9.6733E-06 (224)	6.7382E-06 (354)
13	1.8552E-05 (138)	2.9700E-05 (73)	3.0530E-05 (73)	1.1043E-05 (219)	7.1948E-06 (219)
14	3.0837E-05 (266)	2.9998E-05 (138)	2.8697E-05 (325)	1.3924E-05 (290)	1.4219E-05 (59)
15	3.5626E-05 (317)	5.8999E-05 (317)	6.0087E-05 (317)	1.6134E-05 (317)	9.0323E-06 (261)
16	2.9470E-05 (20)	4.2315E-05 (20)	4.3707E-05 (317)	1.7858E-05 (13)	1.0584E-05 (245)
17	3.4524E-05 (12)	6.5221E-05 (67)	7.6513E-05 (67) *	2.1956E-05 (67)	1.3201E-05 (60)
18	3.1151E-05 (102)	4.6327E-05 (101)	5.1901E-05 (352)	2.0958E-05 (50)	1.3483E-05 (335)
19	3.6132E-05 (303)	6.1455E-05 (265)	6.1244E-05 (265)	1.9169E-05 (292)	1.8148E-05 (292)
20	2.0404E-05 (270)	3.4556E-05 (270)	3.8528E-05 (303)	1.5141E-05 (265)	9.5327E-06 (344)
21	2.0691E-05 (130)	2.8687E-05 (23)	4.1293E-05 (265)	2.2194E-05 (276)	1.0567E-05 (23)
22	2.5544E-05 (302)	3.0033E-05 (302)	3.0435E-05 (278)	1.4691E-05 (268)	1.1739E-05 (268)
23	1.2649E-05 (74)	2.0334E-05 (277)	2.9098E-05 (277)	1.2023E-05 (345)	1.0052E-05 (165)
24	1.1283E-05 (111)	2.6622E-05 (277)	3.9700E-05 (278)	1.3500E-05 (278)	7.8853E-06 (322)
25	1.6159E-05 (285)	2.0275E-05 (103)	2.5454E-05 (306)	2.0081E-05 (279)	7.3379E-06 (250)
26	1.9733E-05 (304)	3.8431E-05 (258)	4.9162E-05 (259)	1.8609E-05 (251)	1.0735E-05 (251)
27	2.6283E-05 (182)	3.4162E-05 (338)	3.8233E-05 (52)	1.3733E-05 (173)	1.0106E-05 (338)
28	2.1836E-05 (170)	3.6968E-05 (362)	4.7038E-05 (3)	1.6137E-05 (3)	7.1882E-06 (98)
29	4.1315E-05 (87)	7.7803E-05 (87)	7.2598E-05 (86)	2.1104E-05 (28)	8.9023E-06 (220)
30	4.7422E-05 (174)	6.6084E-05 (87)	7.2666E-05 (289)	2.0981E-05 (310)	8.2411E-06 (99)
31	2.9296E-05 (174)	3.6070E-05 (127)	4.3096E-05 (313)	1.8453E-05 (29)	9.6768E-06 (288)
32	2.8681E-05 (198)	4.6746E-05 (9)	5.0709E-05 (10)	1.6806E-05 (9)	8.3641E-06 (64)
33	2.5355E-05 (246)	3.4484E-05 (114)	3.8506E-05 (70)	1.5292E-05 (296)	1.0173E-05 (253)
34	3.6211E-05 (71)	4.4042E-05 (88)	5.3427E-05 (88)	2.0200E-05 (88)	7.8588E-06 (29)
35	4.5123E-05 (71)	5.9977E-05 (47)	6.4961E-05 (47)	1.6820E-05 (47)	7.5280E-06 (246)
36	4.8934E-05 (161)	6.5732E-05 (161)	7.6575E-05 (118)	2.8576E-05 (69)	1.1109E-05 (69)

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3
YEARLY MAXIMUM 3-HOUR CONC= 2.4893E-04 DIRECTION= 11 DISTANCE= 0.5 KM DAY=186 TIME PERIOD= 4

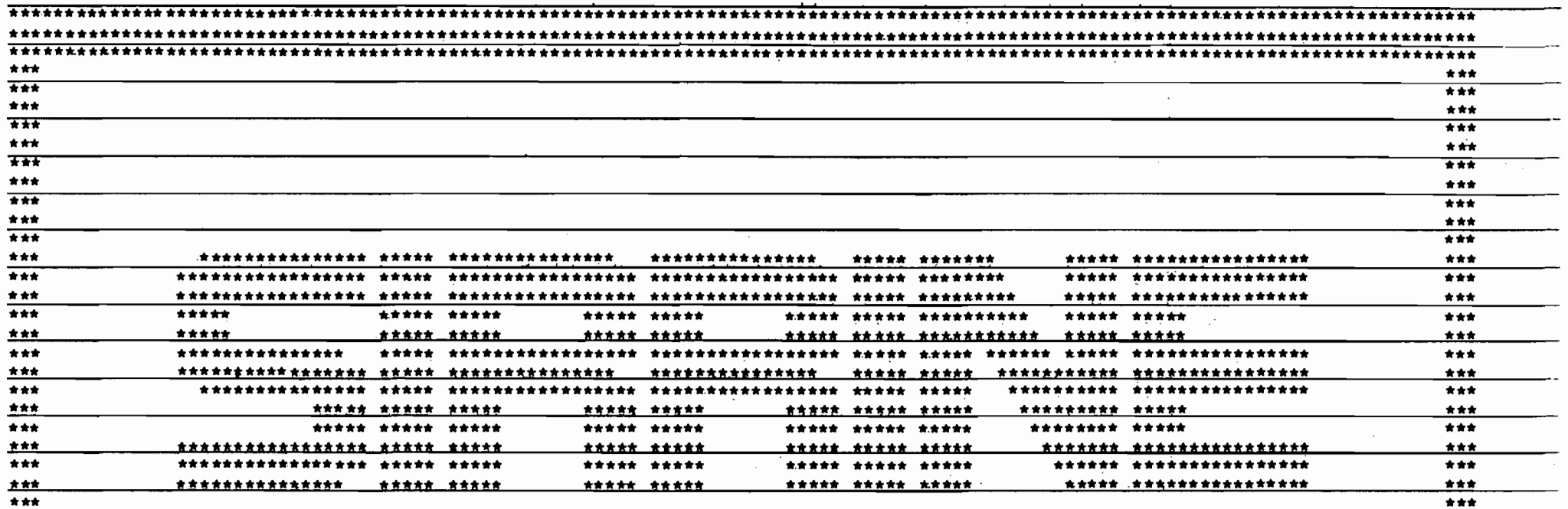
HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

RANGE DIR	0.5 KM	0.7 KM	1.1 KM	4.0 KM	10.1 KM
1	2.1008E-04 (161, 4)	1.7595E-04 (184, 5)	1.5025E-04 (149, 2)	8.2314E-05 (119, 1)	4.3847E-05 (220, 1)
2	2.2486E-04 (136, 4)	2.2437E-04 (136, 4)	1.6966E-04 (216, 5)	6.3190E-05 (216, 6)	9.1363E-05 (204, 1)
3	1.6024E-04 (153, 5)	1.9444E-04 (119, 5)	2.1023E-04 (119, 5)	7.4965E-05 (203, 2)	8.3876E-05 (203, 2)
4	1.9019E-04 (155, 5)	1.8603E-04 (281, 4)	1.8520E-04 (281, 4)	6.6976E-05 (3, 6)	1.1439E-04 (117, 1)
5	2.1882E-04 (188, 5)	2.2688E-04 (188, 5)	1.9544E-04 (217, 8)	5.6200E-05 (58, 6)	8.2308E-05 (59, 2)
6	1.5315E-04 (208, 5)	1.7281E-04 (191, 6)	1.8542E-04 (25, 7)	6.2710E-05 (25, 8)	8.2907E-05 (15, 8)
7	2.4467E-04 (160, 4)	2.0315E-04 (160, 4)	1.1881E-04 (190, 5)	6.7007E-05 (163, 6)	8.3255E-05 (216, 2)
8	1.0139E-04 (187, 5)	1.2122E-04 (66, 7)	1.3173E-04 (191, 1)	7.9035E-05 (167, 2)	1.1664E-04 (167, 2)
9	1.8732E-04 (187, 5)	1.7479E-04 (359, 8)	1.6806E-04 (189, 1)	6.3234E-05 (230, 2)	6.7882E-05 (139, 1)
10	1.0437E-04 (186, 4)	1.4986E-04 (189, 3)	1.4865E-04 (189, 3)	3.6732E-05 (360, 2)	5.9015E-05 (283, 7)
11	2.4893E-04 (186, 4)	2.2104E-04 (186, 4)	1.5795E-04 (55, 1)	5.8966E-05 (165, 2)	6.7181E-05 (165, 2)
12	1.2634E-04 (231, 4)	1.3484E-04 (365, 4)	1.2431E-04 (55, 3)	7.2700E-05 (163, 7)	8.3025E-05 (163, 7)
13	9.8172E-05 (185, 4)	1.3332E-04 (25, 5)	1.3410E-04 (25, 5)	4.8942E-05 (354, 7)	6.9285E-05 (107, 1)
14	1.6790E-04 (266, 3)	1.6917E-04 (266, 3)	1.4012E-04 (186, 3)	6.0591E-05 (139, 2)	7.7837E-05 (59, 7)
15	1.8116E-04 (138, 4)	1.8230E-04 (20, 1)	1.7164E-04 (78, 5)	8.6466E-05 (261, 2)	6.3898E-05 (13, 8)
16	1.4759E-04 (138, 4)	1.5948E-04 (20, 2)	1.3247E-04 (317, 1)	6.5443E-05 (231, 2)	9.4363E-05 (215, 1)
17	1.4189E-04 (105, 5)	1.9322E-04 (12, 4) *	1.8536E-04 (316, 6)	6.3648E-05 (200, 7)	8.7464E-05 (225, 8)
18	2.0419E-04 (93, 4)	1.7199E-04 (93, 4)	1.6671E-04 (89, 3)	6.8751E-05 (270, 8)	9.9529E-05 (153, 1)
19	1.1967E-04 (105, 4)	1.7782E-04 (265, 5)	1.6909E-04 (265, 5)	6.6265E-05 (95, 8)	7.6945E-05 (318, 8)
20	1.2424E-04 (270, 4)	1.8739E-04 (270, 4)	1.8132E-04 (270, 4)	8.2085E-05 (336, 6)	7.2909E-05 (338, 1)
21	1.0600E-04 (130, 5)	1.3203E-04 (130, 5)	1.4463E-04 (276, 3)	7.2245E-05 (302, 6)	6.7151E-05 (301, 2)
22	1.3045E-04 (130, 5)	1.6797E-04 (130, 5)	1.2534E-04 (130, 5)	6.5969E-05 (240, 7)	6.0792E-05 (321, 8)
23	8.9490E-05 (77, 2)	1.0965E-04 (77, 2)	1.1980E-04 (237, 8)	8.9152E-05 (305, 8)	8.0416E-05 (165, 1)
24	8.9974E-05 (111, 5)	1.2209E-04 (111, 5)	1.5995E-04 (257, 5)	6.0239E-05 (307, 1)	5.0706E-05 (252, 8)
25	1.2890E-04 (285, 4)	1.5765E-04 (199, 3)	1.6341E-04 (199, 3)	6.3636E-05 (346, 1)	5.2827E-05 (312, 2)
26	1.1048E-04 (285, 4)	1.4304E-04 (304, 2)	1.6955E-04 (305, 2)	6.7459E-05 (16, 3)	6.2569E-05 (111, 7)
27	1.5513E-04 (182, 4)	1.4207E-04 (305, 4)	1.4244E-04 (304, 8)	7.6471E-05 (197, 1)	5.8971E-05 (253, 1)
28	1.3160E-04 (182, 4)	1.5818E-04 (322, 4)	1.5429E-04 (52, 7)	6.8304E-05 (251, 7)	7.9160E-05 (311, 2)
29	1.8222E-04 (263, 4)	1.8906E-04 (263, 4)	1.7674E-04 (87, 6)	7.5279E-05 (113, 6)	7.1218E-05 (220, 8)
30	2.0998E-04 (174, 4)	2.2849E-04 (86, 5)	1.9376E-04 (87, 2)	8.2992E-05 (99, 2)	4.6263E-05 (17, 6)
31	2.0723E-04 (132, 4)	1.9170E-04 (253, 4)	1.7904E-04 (113, 5)	7.7622E-05 (348, 8)	6.1386E-05 (46, 2)
32	1.9473E-04 (131, 4)	1.8735E-04 (240, 4)	1.8427E-04 (10, 1)	6.2428E-05 (169, 8)	8.6253E-05 (169, 8)
33	1.8939E-04 (246, 5)	1.9332E-04 (246, 5)	1.5979E-04 (114, 5)	7.6789E-05 (18, 7)	8.1337E-05 (253, 8)
34	1.8472E-04 (145, 4)	1.8563E-04 (169, 3)	1.7982E-04 (71, 1)	7.7627E-05 (107, 7)	6.0896E-05 (107, 7)
35	2.0338E-04 (148, 5)	2.0363E-04 (148, 5)	1.6852E-04 (71, 8)	6.3578E-05 (40, 1)	5.4687E-05 (114, 1)
36	1.9860E-04 (72, 6)	2.1951E-04 (72, 6)	1.8198E-04 (211, 1)	8.9248E-05 (65, 8)	7.8599E-05 (242, 7)

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3
YEARLY SECOND MAXIMUM 3-HOUR CONC= 2.1050E-04 DIRECTION= 36 DISTANCE= 0.7 KM DAY=211 TIME PERIOD= 1

SECOND HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.5 KM	0.7 KM	1.1 KM	4.0 KM	10.1 KM
1	1.7188E-04 (215, 5)	1.7081E-04 (161, 4)	1.4363E-04 (92, 2)	6.0224E-05 (27, 3)	3.7448E-05 (219, 8)
2	1.6987E-04 (193, 5)	1.6516E-04 (83, 3)	1.6023E-04 (83, 3)	6.0002E-05 (349, 6)	6.0025E-05 (311, 1)
3	1.5576E-04 (155, 5)	1.5963E-04 (153, 5)	1.3041E-04 (168, 3)	6.4499E-05 (140, 7)	6.9450E-05 (133, 1)
4	1.3976E-04 (156, 4)	1.6968E-04 (155, 5)	1.6494E-04 (3, 6)	6.5859E-05 (75, 6)	6.0502E-05 (223, 2)
5	1.6535E-04 (165, 5)	1.9675E-04 (217, 8)	1.6691E-04 (188, 5)	4.8873E-05 (229, 7)	4.5701E-05 (320, 6)
6	1.4282E-04 (156, 5)	1.6812E-04 (188, 6)	1.4600E-04 (191, 6)	5.7939E-05 (121, 6)	5.4902E-05 (124, 8)
7	1.5001E-04 (163, 4)	1.3496E-04 (163, 4)	1.1762E-04 (160, 4)	6.3514E-05 (156, 1)	7.1335E-05 (156, 1)
8	7.2911E-05 (56, 5)	1.1312E-04 (187, 5)	1.3145E-04 (66, 7)	5.3971E-05 (191, 1)	6.1911E-05 (164, 1)
9	1.1956E-04 (359, 8)	1.5281E-04 (187, 5)	1.5941E-04 (359, 8)	5.2790E-05 (121, 3)	5.4651E-05 (132, 1)
10	8.9202E-05 (189, 3)	1.0391E-04 (55, 6)	1.1108E-04 (360, 2)	3.6104E-05 (164, 3)	5.0267E-05 (262, 7)
11	1.2123E-04 (55, 1)	1.7414E-04 (55, 1)	1.3785E-04 (78, 1)	4.4662E-05 (214, 7)	6.5173E-05 (214, 7)
12	1.0655E-04 (365, 4)	1.2587E-04 (55, 3)	1.2091E-04 (78, 2)	5.5329E-05 (354, 8)	4.3773E-05 (281, 8)
13	8.8179E-05 (189, 5)	1.1035E-04 (290, 5)	1.1924E-04 (290, 5)	4.7635E-05 (192, 1)	3.8702E-05 (65, 1)
14	1.1977E-04 (93, 1)	1.5927E-04 (186, 3)	1.2582E-04 (25, 4)	5.2679E-05 (290, 7)	6.6315E-05 (155, 1)
15	1.3398E-04 (20, 1)	1.8229E-04 (78, 5)	1.5830E-04 (20, 1)	7.1502E-05 (13, 8)	5.4027E-05 (261, 2)
16	1.4656E-04 (43, 5)	1.4022E-04 (291, 5)	1.3037E-04 (89, 5)	6.5117E-05 (245, 1)	6.4000E-05 (231, 2)
17	1.3203E-04 (352, 1)	1.8976E-04 (316, 6) *	1.7970E-04 (12, 4)	5.5681E-05 (327, 1)	6.2169E-05 (319, 7)
18	1.5450E-04 (105, 4)	1.5833E-04 (105, 4)	1.5101E-04 (40, 7)	5.8605E-05 (291, 6)	6.3918E-05 (335, 8)
19	1.1664E-04 (184, 3)	1.6260E-04 (303, 5)	1.6812E-04 (62, 1)	6.4899E-05 (292, 6)	7.5789E-05 (329, 1)
20	9.3528E-05 (331, 4)	1.2926E-04 (271, 3)	1.2771E-04 (271, 3)	7.0291E-05 (22, 1)	6.4118E-05 (180, 2)
21	1.0395E-04 (176, 3)	1.2114E-04 (176, 3)	1.4302E-04 (265, 1)	6.8192E-05 (23, 3)	5.9078E-05 (331, 7)
22	1.1839E-04 (302, 4)	1.3381E-04 (176, 3)	1.2020E-04 (94, 3)	6.4406E-05 (6, 3)	5.8258E-05 (242, 1)
23	7.0076E-05 (244, 4)	8.3473E-05 (68, 2)	1.0798E-04 (68, 2)	6.4733E-05 (238, 2)	7.2194E-05 (150, 8)
24	8.0012E-05 (321, 4)	1.1112E-04 (283, 4)	1.1977E-04 (277, 7)	5.8939E-05 (257, 5)	4.4375E-05 (196, 1)
25	1.0559E-04 (209, 4)	1.5017E-04 (285, 4)	1.3298E-04 (23, 2)	6.0066E-05 (347, 3)	4.8361E-05 (250, 7)
26	1.0383E-04 (258, 4)	1.4009E-04 (5, 4)	1.6464E-04 (304, 2)	6.4814E-05 (251, 1)	5.3167E-05 (251, 1)
27	1.2737E-04 (258, 4)	1.3784E-04 (182, 4)	1.4013E-04 (52, 8)	5.5880E-05 (253, 1)	4.4375E-05 (253, 2)
28	1.2059E-04 (112, 4)	1.4820E-04 (7, 4)	1.5202E-04 (3, 3)	5.6294E-05 (260, 3)	4.6757E-05 (311, 3)
29	1.6304E-04 (170, 4)	1.6927E-04 (86, 3)	1.7670E-04 (307, 4)	5.3502E-05 (305, 6)	2.9503E-05 (167, 8)
30	1.9042E-04 (238, 4)	1.8831E-04 (85, 5)	1.8726E-04 (86, 5)	7.5291E-05 (347, 7)	3.8829E-05 (198, 7)
31	1.8444E-04 (253, 4)	1.8725E-04 (132, 4)	1.6563E-04 (212, 8)	5.7931E-05 (288, 1)	5.6368E-05 (144, 1)
32	1.8996E-04 (240, 4)	1.6790E-04 (10, 1)	1.7331E-04 (9, 7)	6.2331E-05 (110, 6)	4.0397E-05 (231, 1)
33	1.5708E-04 (234, 4)	1.3936E-04 (114, 5)	1.3204E-04 (364, 7)	7.2364E-05 (258, 6)	5.0811E-05 (97, 7)
34	1.6319E-04 (169, 3)	1.5091E-04 (72, 4)	1.5575E-04 (72, 4)	6.8701E-05 (118, 1)	4.8621E-05 (118, 1)
35	1.7289E-04 (107, 4)	1.7751E-04 (297, 5)	1.6001E-04 (334, 5)	5.9865E-05 (334, 5)	4.2946E-05 (340, 6)
36	1.8409E-04 (220, 4)	2.1050E-04 (211, 1)	1.7297E-04 (49, 4)	7.2648E-05 (161, 8)	5.6441E-05 (65, 8)



THE J.E. SIRRINE COMPANY
CORPORATE HEADQUARTERS
PULP & PAPER DIVISION SOUTH CAROLINA DIVISION
CONSTRUCTION MANAGEMENT DIVISION
ARCHITECT-ENGINEER DIVISION SIRRINE SERVICES, INC.

216 S. PLEASANTBURG
GREENVILLE, SOUTH CAROLINA (803) 298-6000

NORTH CAROLINA DIVISION
P.O. BOX 12748
RESEARCH TRIANGLE PARK, N.C.
(919) 541-2081

TEXAS DIVISION
10000 RICHMOND HOUSTON, TEXAS
(713) 974-8400

DORCHESTER COUNTY DIVISION
107 WEST 5TH STREET, NORTH
SUMMERVILLE, SOUTH CAROLINA
(803) 871-2060

PROGRAM NAME: PTPLU APPLICATION NUMBER: 5439

PT. SOURCE DISPERSION GAUSSIAN SCREENING MODEL
RUN ON 06/07/83 AT 3:23 PM

ECHO PRINT OF INPUT DATA

```
                1         2         3         4         5         6         7         8
CARD    12345678901234567890123456789012345678901234567890123456789012345678901234567890

  1     0,0,0,293.0,5000.0,0.0
  2     7.0,0.1,0.15,0.20,0.25,0.3,0.3
  3     AMERICAN CYANAMID   TSP  90% EMISSION RATE              FILE:PTPACI
  4     33,21,15,24,444,3,14,9,1,47

                1         2         3         4         5         6         7         8
        12345678901234567890123456789012345678901234567890123456789012345678901234567890
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PTPLU (VERSION 81036)
AN AIR QUALITY DISPERSION MODEL IN
SECTION 3. MODELS PROPOSED SEP80 FOR 81 GUIDELINES.
IN UNAMAP (VERSION 4) DEC 80
SOURCE: FILE 13 ON UNAMAP MAGNETIC TAPE FROM NTIS.

AMERICAN CYANAMID TSP 90% EMISSION RATE FILE:PTPAC1

>>>INPUT PARAMETERS<<<

SOURCE		***OPTIONS***	***METEOROLOGY***	
EMISSION RATE =	33.21 (G/SEC)	IF = 1, USE OPTION	AMBIENT AIR TEMPERATURE =	293.00 (K)
STACK HEIGHT =	15.24 (M)	IF = 0, IGNORE OPTION	ANEMOMETER HEIGHT =	7.00 (M)
STACK DIAM. =	1.47 (M)	IOPT(1) = 0 (GRAD PLUME RISE)	MIXING HEIGHT =	5000.00 (M)
EXIT VELOCITY =	14.90 (M/SEC)	IOPT(2) = 0 (STACK DOWNWASH)	WIND PROFILE EXPONENTS =	A: 0.10 B: 0.15 C: 0.20
STK GAS TEMP =	444.30 (K)	IOPT(3) = 0 (BUOY. INDUCED DISP.)		D: 0.25 E: 0.30 F: 0.30
			RECEPTOR HEIGHT =	0. (M)

>>>CALCULATED PARAMETERS<<<

VOLUMETRIC FLOW = 25.29 (M**3/SEC) BUOYANCY FLUX PARAMETER = 26.88 (M**4/SEC**3)

ANALYSIS OF CONCENTRATION AS A FUNCTION OF STABILITY AND WIND SPEED

					****EXTRAPOLATED WINDS****			
STABILITY	WIND SPEED (M/SEC)	MAX CONC (G/CU M)	DIST OF MAX (KM)	EFFECT HT (M)	WIND SPEED (M/SEC)	MAX CONC (G/CU M)	DIST OF MAX (KM)	EFFECT HT (M)
1	0.50	1.1567E-04	0.983	521.1(2)	0.54	1.1908E-04	0.949	483.2(2)
1	0.80	1.3729E-04	0.794	331.4(2)	0.86	1.4108E-04	0.766	307.7(2)
1	1.00	1.4828E-04	0.718	268.2(2)	1.08	1.5219E-04	0.694	249.2(2)
1	1.50	1.6884E-04	0.601	183.9	1.62	1.7279E-04	0.581	171.2
1	2.00	1.8324E-04	0.531	141.7	2.16	1.8700E-04	0.514	132.2
1	2.50	1.9533E-04	0.472	116.4	2.70	2.0008E-04	0.454	108.8
1	3.00	2.0629E-04	0.431	99.5	3.24	2.1075E-04	0.415	93.2

					****EXTRAPOLATED WINDS****			
STABILITY	WIND SPEED (M/SEC)	MAX CONC (G/CU M)	DIST OF MAX (KM)	EFFECT HT (M)	WIND SPEED (M/SEC)	MAX CONC (G/CU M)	DIST OF MAX (KM)	EFFECT HT (M)
2	0.50	5.1425E-05	3.173	521.1(2)	0.56	5.6122E-05	2.861	465.4(2)
2	0.80	7.2800E-05	2.098	331.4(2)	0.90	7.9191E-05	1.896	296.6(2)
2	1.00	8.5426E-05	1.729	268.2(2)	1.12	9.2719E-05	1.564	240.3(2)
2	1.50	1.1285E-04	1.225	183.9	1.69	1.2182E-04	1.111	165.3
2	2.00	1.3576E-04	0.966	141.7	2.25	1.4578E-04	0.878	127.8
2	2.50	1.5522E-04	0.807	116.4	2.81	1.6583E-04	0.736	105.3
2	3.00	1.7189E-04	0.699	99.5	3.37	1.8277E-04	0.640	90.3
2	4.00	1.9871E-04	0.563	78.5	4.50	2.0941E-04	0.517	71.5
2	5.00	2.1889E-04	0.479	65.8	5.62	2.2882E-04	0.442	60.3

					****EXTRAPOLATED WINDS****			
STABILITY	WIND SPEED (M/SEC)	MAX CONC (G/CU M)	DIST OF MAX (KM)	EFFECT HT (M)	WIND SPEED (M/SEC)	MAX CONC (G/CU M)	DIST OF MAX (KM)	EFFECT HT (M)
3	2.00	1.1524E-04	1.720	141.7	2.34	1.2974E-04	1.480	123.5
3	2.50	1.3638E-04	1.387	116.4	2.92	1.5240E-04	1.198	101.8
3	3.00	1.5524E-04	1.168	99.5	3.51	1.7226E-04	1.013	87.4
3	4.00	1.8716E-04	0.900	78.5	4.67	2.0496E-04	0.786	69.4
3	5.00	2.1267E-04	0.743	65.8	5.84	2.3013E-04	0.653	58.5
3	7.00	2.4932E-04	0.566	51.4	8.18	2.6424E-04	0.503	46.2
3	10.00	2.8038E-04	0.437	40.5	11.68	2.8979E-04	0.394	36.9
3	12.00	2.9110E-04	0.387	36.3	14.02	2.9677E-04	0.352	33.3
3	15.00	2.9815E-04	0.338	32.1	17.53	2.9877E-04	0.310	29.7

****EXTRAPOLATED WINDS****

STABILITY	WIND SPEED (M/SEC)	MAX CONC (G/CU M)	DIST OF MAX (KM)	EFFECT HT (M)	WIND SPEED (M/SEC)	MAX CONC (G/CU M)	DIST OF MAX (KM)	EFFECT HT (M)
4	0.50	8.0944E-06	47.360	521.1(2)	0.61	1.1084E-05	32.643	431.7(2)
4	0.80	1.6675E-05	21.360	331.4(2)	0.97	2.2026E-05	15.373	275.5(2)
4	1.00	2.2941E-05	14.651	268.2(2)	1.21	3.0172E-05	10.588	223.5(2)
4	1.50	3.9755E-05	7.885	183.9	1.82	5.0741E-05	5.876	154.1
4	2.00	5.6886E-05	5.114	141.7	2.43	7.1767E-05	3.844	119.3
4	2.50	7.4206E-05	3.688	116.4	3.04	9.2285E-05	2.890	98.5
4	3.00	9.1131E-05	2.937	99.5	3.64	1.1079E-04	2.280	84.6
4	4.00	1.2111E-04	2.026	78.5	4.86	1.4436E-04	1.595	67.3
4	5.00	1.4796E-04	1.541	65.8	6.07	1.7322E-04	1.227	56.9
4	7.00	1.9223E-04	1.047	51.4	8.50	2.1357E-04	0.953	45.0
4	10.00	2.2664E-04	0.837	40.5	12.15	2.3924E-04	0.725	36.1
4	12.00	2.3857E-04	0.731	36.3	14.58	2.4727E-04	0.640	32.6
4	15.00	2.4817E-04	0.628	32.1	18.22	2.5141E-04	0.556	29.1
4	20.00	2.5119E-04	0.527	27.9	24.29	2.4709E-04	0.476	25.7

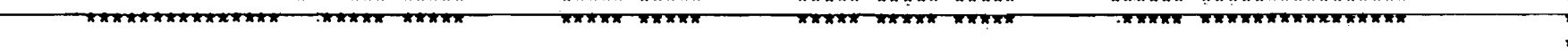
STABILITY	WIND SPEED (M/SEC)	MAX CONC (G/CU M)	DIST OF MAX (KM)	EFFECT HT (M)	****EXTRAPOLATED WINDS**** WIND SPEED (M/SEC)	MAX CONC (G/CU M)	DIST OF MAX (KM)	EFFECT HT (M)
5	2.00	1.3416E-04	4.282	85.9	2.53	1.2648E-04	4.001	80.6
5	2.50	1.2685E-04	4.001	80.8	3.16	1.1809E-04	3.659	75.9
5	3.00	1.1999E-04	3.748	77.0	3.79	1.1145E-04	3.361	72.4
5	4.00	1.0951E-04	3.278	71.3	5.05	1.0141E-04	2.946	67.1
5	5.00	1.0176E-04	2.960	67.3	6.31	9.3987E-05	2.665	63.4

STABILITY	WIND SPEED (M/SEC)	MAX CONC (G/CU M)	DIST OF MAX (KM)	EFFECT HT (M)	****EXTRAPOLATED WINDS**** WIND SPEED (M/SEC)	MAX CONC (G/CU M)	DIST OF MAX (KM)	EFFECT HT (M)
6	2.00	1.2245E-04	7.693	73.9	2.53	1.1745E-04	7.001	69.5
6	2.50	1.1771E-04	7.001	69.7	3.16	1.1128E-04	6.390	65.6
6	3.00	1.1271E-04	6.574	66.5	3.79	1.0621E-04	5.779	62.6
6	4.00	1.0471E-04	5.611	61.8	5.05	9.8291E-05	4.948	58.3
6	5.00	9.8572E-05	4.974	58.4	6.31	9.2244E-05	4.397	55.2

(1) THE DISTANCE TO THE POINT OF MAXIMUM CONCENTRATION IS SO GREAT THAT THE SAME STABILITY IS NOT LIKELY TO PERSIST LONG ENOUGH FOR THE PLUME TO TRAVEL THIS FAR.

(2) THE PLUME IS OF SUFFICIENT HEIGHT THAT EXTREME CAUTION SHOULD BE USED IN INTERPRETING THIS COMPUTATION AS THIS STABILITY TYPE MAY NOT EXIST TO THIS HEIGHT. ALSO WIND SPEED VARIATIONS WITH HEIGHT MAY EXERT A DOMINATING INFLUENCE.

(3) NO COMPUTATION WAS ATTEMPTED FOR THIS HEIGHT AS THE POINT OF MAXIMUM CONCENTRATION IS GREATER THAN 100 KILOMETERS FROM THE SOURCE.



E N G I N E E R S . A R C H I T E C T S . P L A N N E R S

THE J.E. SIRRINE COMPANY
CORPORATE HEADQUARTERS
PULP & PAPER DIVISION SOUTH CAROLINA DIVISION
CONSTRUCTION MANAGEMENT DIVISION
ARCHITECT-ENGINEER DIVISION SIRRINE SERVICES, INC.

216 S. PLEASANTBURG
GREENVILLE, SOUTH CAROLINA (803) 298-6000

NORTH CAROLINA DIVISION
P.O. BOX 12748
RESEARCH TRIANGLE PARK, N.C.
(919) 541-2081

TEXAS DIVISION
10000 RICHMOND HOUSTON, TEXAS
(713) 974-8400

DORCHESTER COUNTY DIVISION
107 WEST 5TH STREET, NORTH
SUMMERVILLE, SOUTH CAROLINA
(803) 871-2060

PROGRAM NAME: CRSTER APPLICATION NUMBER: 5010

SINGLE SOURCE AIR QUALITY MODEL
RUN ON 06/08/83 AT 7:30 PM

ECHO PRINT OF INPUT DATA

```
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CARD    12345678901234567890123456789012345678901234567890123456789012345678901234567890
  1     AMERICAN CYANAMID         TSP
  2
  3      $NAM1 IUR=1,RNG=.9,1.2,1.6,2.1,8.9,ISS=03855,ISY=72,IUS=12884,IUY=72,
  4     IMET=0,DAY=366*1,$END
  5     BOILER NO 7  MICRONIZED COAL  95% LOAD  90% EMISSION FACTOR
  6     33.21               .    15.24     1.47       14.90     444.3
  7
  8

                 1         2         3         4         5         6         7         8
        12345678901234567890123456789012345678901234567890123456789012345678901234567890

PLANT NAME: AMERICAN CYANAMID         POLLUTANT: TSP      EMISSION UNITS: GM/SEC     AIR QUALITY UNITS: GM/M**3 12/80

              MET FILE      REQUESTED
            STN NO. YR    STN NO. YR
 SURFACE       3855  72      3855  72
 UPPER AIR    12884  72     12884  72
PLANT LOCATION: RURAL
ANEMOMETER HEIGHT IS  7.0 METERS
WIND PROFILE EXPONENTS ARE:    0.100,  0.150,  0.200,  0.250,  0.300,  0.300,
NO TAPE OUTPUT
MET DATA WILL NOT BE PRINTED

DAY-- 1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
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      1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1

 * * * * * * * * * * * * * * * * * * * *  N O T E  * * * * * * * * * * * * * * * * * * * *

    ALL TABLES, INCLUDING SOURCE CONTRIBUTION, THAT CONTAIN "ANNUAL" IN THE HEADING ARE BASED ONLY ON THOSE DAYS

    MARKED BY "1" IN THE ABOVE TABLE
```

RING DISTANCES(KM)= 0.90 1.20 1.60 2.10 8.90

PLANT ELEVATION (FEET ABOVE SEA LEVEL)-- 0. PLANT ELEVATION (METERS ABOVE SEA LEVEL)-- 0.

	RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)					RECEPTOR ELEVATIONS (METERS ABOVE SEA LEVEL)				
DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5	RING#1	RING#2	RING#3	RING#4	RING#5
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
26	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
27	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
28	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
30	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
32	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
33	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
35	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
36	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

STACK # 1--BOILER NO 7 MICRONIZED COAL 95% LOAD 90% EMISSION FACTOR

STACK	MONTH	EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	ALL	33.2100	15.24	1.47	14.90	444.30	25.29

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3

MAXIMUM MEAN CONC= 6.6986E-06 DIRECTION= 36 DISTANCE= 0.9 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.9 KM	1.2 KM	1.6 KM	2.1 KM	8.9 KM
1	5.65631E-06	4.96119E-06	3.99793E-06	3.15125E-06	7.58951E-07
2	3.92945E-06	3.49847E-06	2.87670E-06	2.31501E-06	5.24623E-07
3	4.31642E-06	3.97003E-06	3.38009E-06	2.82119E-06	9.16465E-07
4	4.69587E-06	4.35420E-06	3.66367E-06	2.96863E-06	8.86760E-07
5	4.34389E-06	3.98756E-06	3.34109E-06	2.72457E-06	7.45718E-07
6	4.65114E-06	4.35327E-06	3.73436E-06	3.11863E-06	8.34917E-07
7	2.49571E-06	2.36703E-06	2.06420E-06	1.75272E-06	5.02269E-07
8	1.50712E-06	1.52284E-06	1.42903E-06	1.30589E-06	4.55681E-07
9	1.51604E-06	1.57160E-06	1.50596E-06	1.41165E-06	6.08918E-07
10	9.46911E-07	9.59531E-07	8.99625E-07	8.35173E-07	5.14590E-07
11	8.21829E-07	7.65942E-07	6.69647E-07	5.97853E-07	4.08644E-07
12	1.27973E-06	1.19126E-06	1.05764E-06	9.50476E-07	5.33440E-07
13	1.49693E-06	1.40666E-06	1.23444E-06	1.07510E-06	4.31947E-07
14	2.03553E-06	1.88750E-06	1.63956E-06	1.41230E-06	5.40915E-07
15	2.77789E-06	2.56693E-06	2.24029E-06	1.96439E-06	8.44484E-07
16	2.95686E-06	2.72128E-06	2.32439E-06	1.96546E-06	7.14943E-07
17	3.99744E-06	3.74550E-06	3.24363E-06	2.75539E-06	9.10979E-07
18	4.91439E-06 *	4.70674E-06	4.18671E-06	3.68779E-06	1.49970E-06
19	4.00020E-06	3.74009E-06	3.23138E-06	2.76579E-06	1.10191E-06
20	3.56555E-06	3.42788E-06	3.04097E-06	2.64919E-06	9.05173E-07
21	3.21953E-06	3.18215E-06	2.90457E-06	2.60619E-06	1.00927E-06
22	2.24992E-06	2.20633E-06	2.01388E-06	1.81900E-06	7.56793E-07
23	1.71677E-06	1.69225E-06	1.54964E-06	1.40238E-06	5.89609E-07
24	2.52923E-06	2.44346E-06	2.16306E-06	1.85301E-06	5.28371E-07
25	3.31593E-06	3.12121E-06	2.66963E-06	2.19791E-06	5.47816E-07
26	4.19655E-06	3.91876E-06	3.30797E-06	2.67352E-06	5.47645E-07
27	4.56746E-06	4.31656E-06	3.72968E-06	3.13120E-06	7.96981E-07
28	3.07930E-06	2.87457E-06	2.43726E-06	2.00331E-06	4.93643E-07
29	2.89314E-06	2.56047E-06	2.06291E-06	1.61240E-06	3.40910E-07
30	4.77041E-06	4.24714E-06	3.47451E-06	2.77463E-06	6.57373E-07
31	4.65792E-06	3.99118E-06	3.16571E-06	2.46835E-06	5.33157E-07
32	3.91805E-06	3.45067E-06	2.82415E-06	2.26912E-06	5.65480E-07
33	4.05253E-06	3.70170E-06	3.13537E-06	2.60123E-06	7.41650E-07
34	3.58165E-06	3.10363E-06	2.52811E-06	2.04651E-06	5.62599E-07
35	4.96173E-06	4.25023E-06	3.38549E-06	2.64298E-06	5.17263E-07
36	6.69862E-06	5.86512E-06	4.77408E-06	3.82014E-06	9.54585E-07

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3

YEARLY MAXIMUM 24-HOUR CONC= 8.5493E-05 DIRECTION= 31 DISTANCE= 0.9 KM DAY=119

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.9 KM	1.2 KM	1.6 KM	2.1 KM	8.9 KM
1	7.5573E-05 (194)	6.9252E-05 (94)	5.6031E-05 (94)	4.2853E-05 (94)	2.5162E-05 (123)
2	4.3714E-05 (10)	4.3896E-05 (10)	3.7904E-05 (10)	3.0372E-05 (10)	8.5685E-06 (73)
3	5.3675E-05 (210)	5.0853E-05 (10)	4.3580E-05 (10)	3.5213E-05 (10)	1.6253E-05 (203)
4	5.8866E-05 (209)	5.6804E-05 (209)	4.8999E-05 (209)	4.0219E-05 (209)	1.1473E-05 (230)
5	6.0695E-05 (103)	5.5960E-05 (103)	4.7734E-05 (103)	3.9290E-05 (103)	1.6851E-05 (238)
6	7.7486E-05 (98)	6.8722E-05 (98)	5.6194E-05 (98)	4.4475E-05 (98)	1.7139E-05 (75)
7	5.4522E-05 (179)	5.0465E-05 (179)	4.1376E-05 (179)	3.2111E-05 (179)	1.2478E-05 (237)
8	4.2170E-05 (177)	3.6860E-05 (177)	3.1008E-05 (181)	2.6468E-05 (181)	7.0252E-06 (315)
9	3.0521E-05 (331)	2.9135E-05 (331)	2.7006E-05 (331)	2.4409E-05 (331)	1.0424E-05 (182)
10	2.8505E-05 (359)	2.6159E-05 (359)	2.1520E-05 (359)	1.7116E-05 (359)	1.4922E-05 (156)
11	2.7153E-05 (173)	2.0398E-05 (173)	1.5611E-05 (181)	1.2497E-05 (181)	1.4561E-05 (205)
12	3.6127E-05 (331)	3.1134E-05 (331)	2.4108E-05 (331)	1.7830E-05 (331)	1.5278E-05 (207)
13	4.3811E-05 (331)	4.1958E-05 (331)	3.4847E-05 (331)	2.7084E-05 (331)	1.4540E-05 (196)
14	6.6456E-05 (172)	5.2781E-05 (172)	3.8795E-05 (172)	2.7753E-05 (172)	1.2557E-05 (217)
15	7.2295E-05 (50)	6.1090E-05 (50)	4.7936E-05 (50)	3.6860E-05 (50)	1.6755E-05 (263)
16	4.8162E-05 (319)	4.6762E-05 (319)	3.9380E-05 (319)	3.1070E-05 (319)	1.1917E-05 (174)
17	7.7110E-05 (351)	6.7167E-05 (351)	5.2794E-05 (351)	3.9732E-05 (351)	1.3939E-05 (313)
18	7.5540E-05 (15)	6.1789E-05 (15)	4.6347E-05 (15)	3.3651E-05 (15)	2.1248E-05 (279)
19	8.4403E-05 (15) *	6.7900E-05 (15)	5.0272E-05 (15)	3.6103E-05 (15)	1.8910E-05 (219)
20	6.8876E-05 (31)	6.8658E-05 (31)	5.8810E-05 (31)	4.6795E-05 (31)	1.2556E-05 (309)
21	5.0231E-05 (90)	4.5564E-05 (69)	3.6743E-05 (69)	2.7972E-05 (69)	1.7212E-05 (160)
22	6.2211E-05 (90)	5.3104E-05 (25)	4.1808E-05 (25)	3.1430E-05 (25)	8.7782E-06 (243)
23	2.6060E-05 (90)	2.0994E-05 (25)	1.8943E-05 (40)	1.5837E-05 (40)	1.9486E-05 (267)
24	4.5461E-05 (294)	4.2374E-05 (294)	3.4370E-05 (294)	2.6197E-05 (294)	6.4230E-06 (198)
25	6.8011E-05 (170)	5.7854E-05 (170)	4.4631E-05 (170)	3.7657E-05 (353)	1.0927E-05 (353)
26	8.0194E-05 (323)	6.8613E-05 (323)	5.9393E-05 (41)	4.8186E-05 (41)	8.2711E-06 (41)
27	7.8030E-05 (311)	6.9706E-05 (311)	5.5183E-05 (311)	4.1456E-05 (311)	1.2269E-05 (346)
28	5.3699E-05 (312)	5.0285E-05 (132)	4.2857E-05 (132)	3.3939E-05 (132)	1.0255E-05 (255)
29	6.6317E-05 (133)	6.0095E-05 (133)	4.7952E-05 (133)	3.6196E-05 (133)	6.9135E-06 (121)
30	6.4953E-05 (305)	6.4604E-05 (305)	5.7869E-05 (305)	4.9388E-05 (305)	1.2488E-05 (305)
31	8.5493E-05 (119)	7.3270E-05 (119)	5.6471E-05 (119)	4.3589E-05 (165)	9.9343E-06 (345)
32	8.3205E-05 (119)	7.4452E-05 (119)	5.9474E-05 (119)	4.5154E-05 (119)	1.2764E-05 (60)
33	6.0114E-05 (365)	5.6484E-05 (306)	5.0304E-05 (306)	4.2411E-05 (306)	1.1628E-05 (271)
34	4.8959E-05 (365)	4.7138E-05 (365)	3.9034E-05 (365)	3.0174E-05 (365)	1.0452E-05 (345)
35	4.3547E-05 (267)	3.6849E-05 (61)	3.2130E-05 (61)	2.6775E-05 (355)	9.7321E-06 (270)
36	7.2066E-05 (61)	7.2893E-05 (270)	6.7406E-05 (270)	5.7384E-05 (270)	1.4006E-05 (155)

PLANT NAM. AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3

YEARLY SECOND MAXIMUM 24-HOUR CONC= 7.9039E-05 DIRECTION= 31 DISTANCE= 0.9 KM DAY=166

SECOND HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.9 KM	1.2 KM	1.6 KM	2.1 KM	8.9 KM
1	4.9652E-05 (112)	4.6859E-05 (112)	3.9424E-05 (112)	3.3628E-05 (24)	1.2028E-05 (73)
2	4.1245E-05 (13)	3.7719E-05 (13)	3.3047E-05 (112)	2.8365E-05 (112)	7.2764E-06 (169)
3	5.2881E-05 (13)	4.9655E-05 (13)	4.1316E-05 (13)	3.2429E-05 (13)	1.2699E-05 (249)
4	5.3901E-05 (104)	4.7752E-05 (37)	4.1818E-05 (37)	3.3895E-05 (37)	1.1446E-05 (231)
5	5.8409E-05 (211)	4.6876E-05 (211)	3.6024E-05 (28)	2.9462E-05 (28)	1.4819E-05 (162)
6	7.6875E-05 (178)	6.7743E-05 (178)	5.3575E-05 (178)	4.0360E-05 (178)	9.2471E-06 (189)
7	4.7148E-05 (98)	4.0109E-05 (129)	3.1695E-05 (129)	2.4187E-05 (129)	6.4170E-06 (175)
8	3.7159E-05 (76)	3.4665E-05 (181)	2.8707E-05 (177)	2.1279E-05 (177)	6.3864E-06 (290)
9	2.9897E-05 (330)	2.5522E-05 (330)	1.9653E-05 (134)	1.5964E-05 (180)	9.1772E-06 (207)
10	2.2254E-05 (99)	2.1799E-05 (99)	1.8417E-05 (185)	1.5778E-05 (185)	1.3740E-05 (157)
11	1.8650E-05 (181)	1.8223E-05 (181)	1.4220E-05 (173)	1.0947E-05 (99)	1.0439E-05 (158)
12	3.5016E-05 (85)	2.7889E-05 (85)	2.0521E-05 (85)	1.4676E-05 (85)	8.4333E-06 (273)
13	3.4841E-05 (172)	2.6950E-05 (172)	2.1512E-05 (187)	1.9412E-05 (187)	8.3089E-06 (187)
14	5.6140E-05 (49)	4.3536E-05 (49)	3.1761E-05 (319)	2.7404E-05 (44)	9.4467E-06 (44)
15	4.2837E-05 (49)	3.5562E-05 (142)	3.2808E-05 (142)	3.0114E-05 (142)	1.3662E-05 (217)
16	4.6122E-05 (142)	4.0997E-05 (357)	3.5699E-05 (357)	2.9034E-05 (357)	9.0927E-06 (71)
17	6.2359E-05 (350)	5.7646E-05 (325)	4.7757E-05 (325)	3.7097E-05 (325)	9.0432E-06 (335)
18	5.3275E-05 (5)	4.8208E-05 (5)	3.9522E-05 (5)	3.1956E-05 (351)	1.4603E-05 (361)
19	6.7863E-05 (38)	5.8569E-05 (38)	4.5445E-05 (38)	3.4178E-05 (328)	1.6541E-05 (242)
20	4.6831E-05 (14)	4.2667E-05 (14)	3.4080E-05 (14)	2.6549E-05 (334)	1.0793E-05 (224)
21	4.9503E-05 (69)	4.1158E-05 (90)	3.0727E-05 (90)	2.6539E-05 (116)	1.0490E-05 (229)
22	6.0794E-05 (25)	5.1394E-05 (90)	3.8541E-05 (90)	2.7823E-05 (90)	8.2745E-06 (7)
23	2.3002E-05 (25)	2.0765E-05 (90)	1.7915E-05 (25)	1.5822E-05 (310)	1.2888E-05 (109)
24	4.5429E-05 (149)	4.2073E-05 (149)	3.3935E-05 (149)	2.5730E-05 (149)	6.1266E-06 (353)
25	4.4516E-05 (353)	4.5398E-05 (353)	4.1982E-05 (353)	3.3013E-05 (170)	1.0888E-05 (110)
26	6.7997E-05 (311)	6.8196E-05 (41)	5.3131E-05 (311)	4.1091E-05 (311)	6.5469E-06 (27)
27	7.6623E-05 (295)	6.7729E-05 (295)	5.3253E-05 (295)	3.9826E-05 (295)	9.9406E-06 (203)
28	5.0583E-05 (132)	4.9776E-05 (312)	4.0435E-05 (312)	3.0981E-05 (312)	5.7244E-06 (338)
29	5.0321E-05 (295)	4.6150E-05 (295)	3.7285E-05 (295)	2.8426E-05 (295)	6.7751E-06 (305)
30	4.9192E-05 (364)	4.7395E-05 (364)	4.0953E-05 (364)	3.3910E-05 (364)	1.1458E-05 (167)
31	7.9039E-05 (166)	6.8150E-05 (166)	* 5.2746E-05 (166)	4.2237E-05 (120)	9.9283E-06 (165)
32	3.7309E-05 (268)	3.8033E-05 (268)	3.5553E-05 (268)	3.1609E-05 (268)	8.3119E-06 (27)
33	5.6667E-05 (306)	5.6062E-05 (365)	4.5543E-05 (365)	3.4853E-05 (365)	8.7251E-06 (306)
34	3.5729E-05 (306)	3.4929E-05 (306)	2.9615E-05 (306)	2.3445E-05 (306)	6.1744E-06 (87)
35	3.9571E-05 (106)	3.6463E-05 (267)	3.0170E-05 (355)	2.5957E-05 (61)	9.2456E-06 (109)
36	6.7355E-05 (270)	6.5251E-05 (61)	5.2526E-05 (61)	4.0133E-05 (61)	1.3605E-05 (198)

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3

YEARLY MAXIMUM 3-HOUR CONC= 2.2804E-04 DIRECTION= 10 DISTANCE= 0.9 KM DAY=359 TIME PERIOD= 5

DIR	RANGE 0.9 KM	1.2 KM	1.6 KM	2.1 KM	8.9 KM
	HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR				
1	1.8549E-04 (102, 4)	1.6124E-04 (94, 5)	1.2739E-04 (94, 5)	1.0898E-04 (350, 1)	8.9601E-05 (123, 1)
2	1.8539E-04 (223, 5)	1.7300E-04 (57, 1)	1.5217E-04 (57, 1)	1.2325E-04 (57, 1)	5.8206E-05 (169, 7)
3	1.8427E-04 (13, 3)	1.5944E-04 (13, 3)	1.2381E-04 (13, 3)	1.0705E-04 (261, 1)	1.0006E-04 (203, 7)
4	2.0708E-04 (13, 5)	1.9282E-04 (209, 6)	1.6830E-04 (209, 6)	1.3549E-04 (209, 6)	8.0230E-05 (231, 1)
5	1.8296E-04 (222, 6)	1.7760E-04 (222, 6)	1.4831E-04 (222, 6)	1.1566E-04 (222, 6)	1.0669E-04 (162, 7)
6	2.1082E-04 (98, 7)	1.8262E-04 (273, 8)	1.5385E-04 (273, 8)	1.2080E-04 (273, 8)	7.9797E-05 (75, 2)
7	1.9618E-04 (98, 8)	1.6789E-04 (98, 8)	1.2975E-04 (98, 8)	9.6172E-05 (98, 8)	5.2982E-05 (237, 7)
8	1.9859E-04 (76, 6)	1.7696E-04 (76, 6)	1.4054E-04 (76, 6)	1.0619E-04 (76, 6)	5.2239E-05 (315, 6)
9	1.4252E-04 (180, 3)	1.2421E-04 (180, 3)	1.1672E-04 (136, 4)	1.0199E-04 (136, 4)	5.5238E-05 (182, 7)
10	2.2804E-04 (359, 5) *	2.0927E-04 (359, 5)	1.7216E-04 (359, 5)	1.3693E-04 (359, 5)	8.3780E-05 (156, 8)
11	1.1800E-04 (181, 3)	1.1305E-04 (359, 5)	9.5922E-05 (359, 5)	7.7166E-05 (359, 5)	7.2257E-05 (205, 1)
12	1.6233E-04 (173, 4)	1.1719E-04 (312, 6)	9.2391E-05 (312, 6)	6.9399E-05 (312, 6)	6.3944E-05 (138, 7)
13	1.4240E-04 (331, 2)	1.3838E-04 (62, 8)	1.1636E-04 (62, 8)	9.1118E-05 (62, 8)	6.4834E-05 (196, 1)
14	1.7991E-04 (49, 3)	1.5340E-04 (220, 3)	1.2495E-04 (220, 3)	9.5719E-05 (220, 3)	6.8006E-05 (139, 1)
15	1.9999E-04 (281, 4)	1.4806E-04 (281, 4)	1.0776E-04 (359, 6)	8.7628E-05 (359, 6)	9.6769E-05 (217, 8)
16	1.6201E-04 (324, 7)	1.5345E-04 (319, 7)	1.3159E-04 (319, 7)	1.0896E-04 (194, 7)	8.0222E-05 (174, 8)
17	1.8376E-04 (325, 1)	1.6093E-04 (325, 1)	1.2713E-04 (313, 1)	9.7816E-05 (313, 1)	4.9126E-05 (84, 1)
18	1.9050E-04 (5, 4)	1.6380E-04 (5, 4)	1.3998E-04 (309, 5)	1.1628E-04 (348, 8)	7.6393E-05 (279, 2)
19	2.0563E-04 (38, 5)	1.7408E-04 (38, 5)	1.4782E-04 (366, 8)	1.1688E-04 (366, 8)	9.1629E-05 (206, 1)
20	1.9077E-04 (171, 3)	1.6454E-04 (342, 2)	1.3434E-04 (342, 2)	1.0327E-04 (342, 2)	4.4662E-05 (224, 2)
21	1.9691E-04 (69, 1)	1.8385E-04 (69, 1)	1.5021E-04 (69, 1)	1.1571E-04 (69, 1)	8.6545E-05 (160, 1)
22	1.9669E-04 (25, 4)	1.5353E-04 (25, 4)	1.2385E-04 (100, 1)	9.6612E-05 (100, 2)	5.4044E-05 (264, 2)
23	1.4073E-04 (171, 1)	1.1210E-04 (329, 3)	1.0016E-04 (31, 7)	8.2617E-05 (31, 7)	8.6338E-05 (267, 2)
24	1.5859E-04 (116, 3)	1.4686E-04 (116, 3)	1.1925E-04 (116, 3)	1.0337E-04 (354, 1)	4.1045E-05 (190, 2)
25	1.6476E-04 (17, 3)	1.5251E-04 (17, 3)	1.2369E-04 (17, 3)	9.4634E-05 (17, 3)	8.7105E-05 (110, 1)
26	1.7894E-04 (41, 4)	1.7625E-04 (41, 4)	1.4880E-04 (41, 4)	1.1707E-04 (41, 4)	3.6225E-05 (265, 2)
27	1.8979E-04 (300, 7)	1.8106E-04 (300, 7)	1.5096E-04 (300, 7)	1.1820E-04 (300, 7)	7.2529E-05 (265, 8)
28	1.6421E-04 (311, 4)	1.5142E-04 (312, 3)	1.2741E-04 (312, 3)	9.9798E-05 (312, 3)	4.1162E-05 (169, 8)
29	1.7351E-04 (133, 4)	1.5539E-04 (3, 5)	1.3888E-04 (3, 5)	1.1333E-04 (3, 5)	4.0789E-05 (305, 1)
30	2.0136E-04 (364, 7)	2.0040E-04 (364, 7)	1.7729E-04 (364, 7)	1.4818E-04 (364, 7)	4.9349E-05 (156, 1)
31	1.9786E-04 (265, 4)	1.7303E-04 (133, 6)	1.4196E-04 (101, 6)	1.1314E-04 (101, 6)	5.5224E-05 (191, 1)
32	1.6397E-04 (119, 3)	1.3483E-04 (119, 3)	1.3920E-04 (344, 6)	1.2713E-04 (344, 6)	8.8628E-05 (60, 1)
33	1.8734E-04 (133, 7)	1.8233E-04 (133, 7)	1.5294E-04 (133, 7)	1.2501E-04 (160, 6)	5.2125E-05 (271, 2)
34	1.7223E-04 (197, 4)	1.3568E-04 (365, 5)	1.1500E-04 (365, 5)	9.0395E-05 (365, 5)	6.2575E-05 (345, 1)
35	1.8212E-04 (365, 7)	1.7696E-04 (161, 4)	1.6227E-04 (161, 4)	1.3486E-04 (161, 4)	4.4711E-05 (109, 8)
36	1.9911E-04 (71, 5)	2.0041E-04 (318, 4)	1.7841E-04 (318, 4)	1.4882E-04 (318, 4)	9.1209E-05 (198, 2)

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3

YEARLY SECOND MAXIMUM 3-HOUR CONC= 2.0742E-04 DIRECTION= 6 DISTANCE= 0.9 KM DAY=178 TIME PERIOD= 5

SECOND HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.9 KM	1.2 KM	1.6 KM	2.1 KM	8.9 KM
1	1.8102E-04 (94, 5)	1.5554E-04 (307, 4)	1.2414E-04 (307, 4)	9.7738E-05 (86, 6)	8.9481E-05 (123, 2)
2	1.6582E-04 (57, 1)	1.6494E-04 (104, 7)	1.4316E-04 (104, 7)	1.1466E-04 (104, 7)	4.9231E-05 (216, 2)
3	1.5492E-04 (297, 4)	1.3614E-04 (297, 4)	1.0822E-04 (209, 8)	9.1931E-05 (13, 3)	9.9441E-05 (249, 1)
4	1.8807E-04 (209, 6)	1.7489E-04 (13, 5)	1.3651E-04 (13, 5)	1.1799E-04 (28, 8)	7.5474E-05 (230, 7)
5	1.7317E-04 (297, 5)	1.6460E-04 (297, 5)	1.3553E-04 (297, 5)	1.0463E-04 (297, 5)	9.5547E-05 (262, 1)
6	2.0742E-04 (178, 5)	1.8022E-04 (176, 8)	1.4117E-04 (178, 8)	1.0565E-04 (176, 8)	7.3977E-05 (189, 7)
7	1.6609E-04 (180, 8)	1.4463E-04 (180, 8)	1.1268E-04 (180, 8)	8.3705E-05 (180, 8)	4.6844E-05 (237, 8)
8	1.5606E-04 (177, 2)	1.4274E-04 (177, 2)	1.1455E-04 (301, 6)	8.9821E-05 (301, 6)	4.4202E-05 (220, 1)
9	1.2506E-04 (330, 6)	1.2085E-04 (134, 5)	1.0438E-04 (159, 6)	9.1680E-05 (159, 6)	5.5221E-05 (236, 8)
10	1.3779E-04 (222, 4)	1.5354E-04 (185, 3)	1.4733E-04 (185, 3)	1.2622E-04 (185, 3)	8.2459E-05 (308, 2)
11	1.1575E-04 (359, 5)	1.0354E-04 (99, 2)	9.1176E-05 (99, 2)	7.3605E-05 (99, 2)	7.0780E-05 (158, 1)
12	1.3265E-04 (312, 6)	1.1233E-04 (173, 4)	7.4410E-05 (331, 1)	6.0306E-05 (158, 3)	6.0983E-05 (260, 2)
13	1.4135E-04 (62, 8)	1.2537E-04 (331, 2)	1.1115E-04 (331, 3)	9.0089E-05 (331, 3)	5.6877E-05 (258, 1)
14	1.8490E-04 (220, 3)	1.4531E-04 (49, 3)	1.0815E-04 (49, 3)	8.4849E-05 (356, 5)	6.4276E-05 (217, 1)
15	1.5340E-04 (142, 3)	1.3409E-04 (96, 4)	1.0349E-04 (96, 4)	8.6783E-05 (97, 2)	6.9288E-05 (263, 2)
16	1.5647E-04 (91, 4)	1.4024E-04 (324, 7)	1.0884E-04 (324, 7)	1.0454E-04 (319, 7)	5.2045E-05 (45, 1)
17	1.6503E-04 (313, 1)	1.5526E-04 (313, 1)	1.2607E-04 (325, 1)	9.7664E-05 (335, 3)	4.8258E-05 (224, 8)
18	1.7798E-04 (293, 6)	1.6346E-04 (309, 5)	1.3586E-04 (366, 6)	1.1100E-04 (309, 5)	6.8058E-05 (279, 1)
19	1.9271E-04 (15, 1) *	1.7368E-04 (366, 8)	1.4104E-04 (299, 2)	1.0975E-04 (299, 2)	8.6834E-05 (219, 1)
20	1.8200E-04 (333, 8)	1.5883E-04 (299, 1)	1.3153E-04 (299, 1)	1.0275E-04 (31, 6)	4.3813E-05 (249, 2)
21	1.7330E-04 (90, 3)	1.5012E-04 (294, 1)	1.2506E-04 (294, 1)	9.7527E-05 (294, 1)	5.8163E-05 (229, 1)
22	1.6587E-04 (100, 1)	1.5306E-04 (100, 1)	1.1992E-04 (100, 2)	9.4547E-05 (100, 1)	5.3474E-05 (141, 1)
23	1.2769E-04 (25, 5)	1.1067E-04 (31, 7)	9.9665E-05 (329, 3)	8.1171E-05 (329, 3)	7.2998E-05 (109, 2)
24	1.4836E-04 (139, 4)	1.3455E-04 (149, 7)	1.1624E-04 (354, 1)	9.1243E-05 (116, 3)	3.8729E-05 (304, 2)
25	1.5344E-04 (170, 8)	1.4174E-04 (329, 5)	1.1810E-04 (329, 5)	9.2466E-05 (3, 3)	3.8452E-05 (353, 6)
26	1.7262E-04 (323, 8)	1.6164E-04 (41, 3)	1.3632E-04 (41, 3)	1.0711E-04 (41, 3)	3.6121E-05 (253, 8)
27	1.8176E-04 (295, 1)	1.6337E-04 (311, 8)	1.3001E-04 (311, 8)	1.0520E-04 (17, 8)	5.1411E-05 (203, 1)
28	1.5431E-04 (312, 3)	1.3949E-04 (311, 4)	1.1436E-04 (101, 2)	8.9618E-05 (3, 6)	4.0121E-05 (255, 7)
29	1.5640E-04 (202, 4)	1.5358E-04 (133, 4)	1.2090E-04 (133, 4)	9.7407E-05 (295, 6)	4.0599E-05 (121, 8)
30	1.9218E-04 (364, 8)	1.7876E-04 (364, 8)	1.5034E-04 (364, 8)	1.2310E-04 (364, 8)	4.8315E-05 (167, 2)
31	1.9541E-04 (128, 3)	1.6787E-04 (166, 3)	1.4157E-04 (133, 6)	1.0894E-04 (133, 6)	4.2689E-05 (339, 8)
32	1.4578E-04 (296, 6)	1.3206E-04 (344, 6)	1.1810E-04 (18, 6)	1.0501E-04 (106, 1)	4.1516E-05 (347, 7)
33	1.7152E-04 (127, 5)	1.6336E-04 (160, 6)	1.5026E-04 (160, 6)	1.1985E-04 (133, 7)	4.7463E-05 (28, 1)
34	1.3618E-04 (365, 5)	1.2717E-04 (197, 4)	1.0019E-04 (306, 5)	8.8266E-05 (244, 6)	4.6776E-05 (87, 2)
35	1.6287E-04 (234, 5)	1.5819E-04 (365, 7)	1.2314E-04 (365, 7)	9.6935E-05 (20, 3)	4.4197E-05 (270, 8)
36	1.9832E-04 (318, 4)	1.6876E-04 (270, 5)	1.5212E-04 (270, 4)	1.2615E-04 (270, 4)	8.5673E-05 (155, 7)

E N G I N E E R S . A R C H I T E C T S . P L A N N E R S

THE J.E. SIRRINE COMPANY
CORPORATE HEADQUARTERS
PULP & PAPER DIVISION SOUTH CAROLINA DIVISION
CONSTRUCTION MANAGEMENT DIVISION
ARCHITECT-ENGINEER DIVISION SIRRINE SERVICES, INC.

216 S. PLEASANTBURG
GREENVILLE, SOUTH CAROLINA (803) 298-6000

NORTH CAROLINA DIVISION
P.O. BOX 12748
RESEARCH TRIANGLE PARK, N.C.
(919) 541-2081

TEXAS DIVISION
10000 RICHMOND HOUSTON, TEXAS
(713) 974-8400

DORCHESTER COUNTY DIVISION
107 WEST 5TH STREET, NORTH
SUMMERVILLE, SOUTH CAROLINA
(803) 871-2060

PROGRAM NAME: CRSTER APPLICATION NUMBER: 5010

SINGLE SOURCE AIR QUALITY MODEL
RUN ON 06/08/83 AT 6:01 PM

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                                  ECHO PRINT OF INPUT DATA

                      1         2         3         4         5         6         7         8
CARD         12345678901234567890123456789012345678901234567890123456789012345678901234567890

  1          AMERICAN CYANAMID         TSP
  2
  3           $NAM1 IUR=1,RNG=.9,1.2,1.6,2.1,8.9,ISS=03855,ISY=73,IUS=12884,IUY=73,
  4          IMET=0,DAY=365*1,1*0,$END
  5          BOILER NO 7  MICRONIZED COAL  95% LOAD  90% EMISSION FACTOR
  6          33.21                  15.24      1.47         14.90     444.3
  7
  8

                      1         2         3         4         5         6         7         8
             12345678901234567890123456789012345678901234567890123456789012345678901234567890

PLANT NAME: AMERICAN CYANAMID          POLLUTANT:  TSP       EMISSION UNITS: GM/SEC    AIR QUALITY UNITS: GM/M**3 12/80

               MET FILE      REQUESTED
             STN NO.  YR   STN NO.  YR
 SURFACE       3855   73     3855   73
 UPPER AIR    12884   73    12884   73
PLANT LOCATION: RURAL
ANEMOMETER HEIGHT IS  7.0 METERS
WIND PROFILE EXPONENTS ARE:   0.100,  0.150,  0.200,  0.250,  0.300,  0.300,
NO TAPE OUTPUT
MET DATA WILL NOT BE PRINTED

DAY--  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 0

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          ALL TABLES, INCLUDING SOURCE CONTRIBUTION, THAT CONTAIN "ANNUAL" IN THE HEADING ARE BASED ONLY ON THOSE DAYS

          MARKED BY "1" IN THE ABOVE TABLE
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RING DISTANCES(KM)= 0.90 1.20 1.60 2.10 8.90

PLANT ELEVATION (FEET ABOVE SEA LEVEL)— 0. PLANT ELEVATION (METERS ABOVE SEA LEVEL)— 0.

RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL) RECEPTOR ELEVATIONS (METERS ABOVE SEA LEVEL)

DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5	RING#1	RING#2	RING#3	RING#4	RING#5
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
26	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
27	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
28	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
30	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
32	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
33	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
35	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
36	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

STACK # 1—BOILER NO 7 MICRONIZED COAL 95% LOAD 90% EMISSION FACTOR

STACK	MONTH	EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	ALL	33.2100	15.24	1.47	14.90	444.30	25.29

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3

MAXIMUM MEAN CONC= 6.0569E-06 DIRECTION= 33 DISTANCE= 0.9 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.9 KM	1.2 KM	1.6 KM	2.1 KM	8.9 KM
1	4.91223E-06	4.29264E-06	3.45188E-06	2.71340E-06	6.85066E-07
2	3.07621E-06	2.74955E-06	2.27097E-06	1.82466E-06	4.28949E-07
3	4.12524E-06	3.70203E-06	3.06009E-06	2.46814E-06	6.56495E-07
4	3.90719E-06	3.34683E-06	2.63451E-06	2.01565E-06	3.77836E-07
5	3.90351E-06	3.33270E-06	2.64030E-06	2.04535E-06	4.39710E-07
6	4.35644E-06	3.95737E-06	3.32192E-06	2.72272E-06	8.10383E-07
7	2.69087E-06	2.55486E-06	2.21234E-06	1.85041E-06	4.38366E-07
8	2.04228E-06	2.01232E-06	1.82367E-06	1.59656E-06	4.84829E-07
9	1.61114E-06	1.61705E-06	1.53823E-06	1.47057E-06	9.14089E-07
10	1.18123E-06	1.12978E-06	1.03091E-06	9.49094E-07	5.16515E-07
11	1.01739E-06	9.61173E-07	8.77990E-07	8.19059E-07	4.56852E-07
12	1.89187E-06	1.76753E-06	1.55676E-06	1.37773E-06	7.40373E-07
13	2.64310E-06	2.41272E-06	2.04365E-06	1.71618E-06	6.32453E-07
14	2.59875E-06	2.35676E-06	1.99208E-06	1.67870E-06	5.84509E-07
15	3.26463E-06	3.01294E-06	2.61374E-06	2.25327E-06	8.18214E-07
16	2.94492E-06	2.72700E-06	2.33840E-06	1.99241E-06	7.74010E-07
17	2.67192E-06	2.55438E-06	2.28655E-06	2.03617E-06	8.72142E-07
18	3.74717E-06	3.71829E-06	3.41008E-06	3.08695E-06	1.44651E-06
19	2.93304E-06	2.85815E-06	2.55197E-06	2.25250E-06	1.07268E-06
20	2.79324E-06	2.72245E-06	2.43875E-06	2.15704E-06	9.22095E-07
21	2.90177E-06	2.88235E-06	2.63035E-06	2.36105E-06	1.01913E-06
22	1.97775E-06	1.92468E-06	1.72861E-06	1.54779E-06	7.20181E-07
23	1.58559E-06	1.55925E-06	1.42774E-06	1.30256E-06	6.25710E-07
24	1.95978E-06	1.93628E-06	1.75137E-06	1.54356E-06	5.91257E-07
25	2.46104E-06	2.31897E-06	1.97703E-06	1.62959E-06	4.18960E-07
26	3.47967E-06	3.23361E-06	2.70389E-06	2.18230E-06	5.19119E-07
27	4.01129E-06	3.79600E-06	3.21088E-06	2.59494E-06	5.73841E-07
28	2.97147E-06	2.78106E-06	2.35589E-06	1.92933E-06	4.70011E-07
29	3.26585E-06	2.98778E-06	2.45763E-06	1.94030E-06	4.12879E-07
30	6.13310E-06	5.66365E-06	4.71401E-06	3.77028E-06	8.33898E-07
31	6.58097E-06	5.81171E-06	4.68256E-06	3.66629E-06	7.57402E-07
32	6.26611E-06	5.48033E-06	4.38703E-06	3.42268E-06	7.44722E-07
33	6.85694E-06	6.10633E-06	4.92464E-06	3.83552E-06	8.32421E-07
34	5.42579E-06	4.73559E-06	3.75538E-06	2.88531E-06	5.51569E-07
35	5.68257E-06	4.89288E-06	3.86118E-06	2.96137E-06	5.54351E-07
36	6.09418E-06	5.35188E-06	4.31098E-06	3.36964E-06	6.77378E-07

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3

YEARLY MAXIMUM 24-HOUR CONC= 1.3031E-04 DIRECTION= 31 DISTANCE= 0.9 KM DAY=107

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.9 KM	1.2 KM	1.6 KM	2.1 KM	8.9 KM
1	9.5134E-05 (147)	7.6755E-05 (147)	5.6957E-05 (147)	4.0956E-05 (147)	1.3565E-05 (203)
2	4.5781E-05 (147)	3.4194E-05 (147)	2.5982E-05 (346)	2.1586E-05 (39)	8.6437E-06 (169)
3	8.4902E-05 (148)	6.7912E-05 (148)	5.0128E-05 (148)	3.5927E-05 (148)	2.0851E-05 (165)
4	8.5839E-05 (148)	6.7530E-05 (148)	4.9235E-05 (148)	3.4968E-05 (148)	7.7048E-06 (209)
5	6.4306E-05 (142)	5.1925E-05 (142)	3.8644E-05 (142)	2.7896E-05 (142)	1.2755E-05 (225)
6	5.8417E-05 (144)	5.5586E-05 (144)	4.7756E-05 (144)	3.6901E-05 (144)	2.7424E-05 (217)
7	6.3703E-05 (179)	5.5071E-05 (179)	4.3526E-05 (179)	3.3204E-05 (179)	7.1475E-06 (102)
8	4.9694E-05 (26)	4.2991E-05 (26)	3.3461E-05 (26)	2.4880E-05 (26)	1.1173E-05 (300)
9	2.6049E-05 (136)	2.4002E-05 (136)	2.4118E-05 (253)	2.3382E-05 (253)	2.1222E-05 (166)
10	3.1842E-05 (360)	2.8292E-05 (360)	2.2619E-05 (360)	1.9870E-05 (15)	2.7938E-05 (167)
11	2.4815E-05 (354)	2.0160E-05 (33)	1.7450E-05 (33)	1.3906E-05 (33)	2.1879E-05 (240)
12	6.8542E-05 (33)	6.1480E-05 (33)	4.9492E-05 (33)	3.8057E-05 (33)	1.9829E-05 (220)
13	7.8830E-05 (28)	6.4856E-05 (100)	5.2554E-05 (100)	4.0715E-05 (100)	9.8176E-06 (313)
14	4.4485E-05 (354)	3.6260E-05 (117)	2.7223E-05 (117)	2.5139E-05 (254)	1.2415E-05 (118)
15	7.7679E-05 (355)	6.8656E-05 (355)	5.5344E-05 (355)	4.2979E-05 (355)	1.5382E-05 (301)
16	5.5176E-05 (332)	5.2034E-05 (332)	4.2653E-05 (332)	3.2815E-05 (332)	1.4567E-05 (174)
17	6.6845E-05 (41)	5.9915E-05 (41)	4.8837E-05 (41)	3.8391E-05 (41)	1.0406E-05 (175)
18	8.6756E-05 (12)	7.8749E-05 (12)	6.3205E-05 (12)	4.9846E-05 (341)	1.7364E-05 (335)
19	6.3809E-05 (9)	6.4243E-05 (9)	5.4705E-05 (9)	4.3072E-05 (9)	2.1955E-05 (187)
20	6.3269E-05 (1)	6.0416E-05 (1)	4.9789E-05 (1)	4.0753E-05 (10)	1.0911E-05 (279)
21	5.7758E-05 (290)	6.4596E-05 (290)	6.2174E-05 (290)	5.5275E-05 (290)	1.2788E-05 (290)
22	5.1130E-05 (290)	5.0117E-05 (290)	4.2903E-05 (290)	3.4580E-05 (290)	2.0552E-05 (183)
23	4.0288E-05 (2)	4.1396E-05 (2)	3.5835E-05 (2)	2.8624E-05 (2)	1.4453E-05 (212)
24	3.5466E-05 (278)	3.6254E-05 (50)	3.4970E-05 (50)	3.0279E-05 (50)	1.6133E-05 (171)
25	4.2421E-05 (269)	4.4598E-05 (269)	3.9515E-05 (269)	3.2209E-05 (269)	9.2665E-06 (87)
26	5.6728E-05 (43)	5.1437E-05 (43)	4.1124E-05 (43)	3.1122E-05 (43)	9.3780E-06 (164)
27	5.6695E-05 (315)	5.4982E-05 (88)	4.6257E-05 (88)	3.6152E-05 (88)	9.6434E-06 (265)
28	5.4989E-05 (69)	4.9780E-05 (69)	3.9921E-05 (69)	3.0340E-05 (69)	1.3007E-05 (317)
29	4.6837E-05 (31)	4.1216E-05 (20)	3.5779E-05 (20)	2.8908E-05 (20)	1.0833E-05 (238)
30	6.8640E-05 (284)	6.1704E-05 (284)	5.0019E-05 (284)	3.8756E-05 (284)	1.2593E-05 (201)
31	1.3031E-04 (107)	1.1548E-04 (107) *	9.1249E-05 (107)	6.8601E-05 (107)	1.1242E-05 (265)
32	6.0703E-05 (109)	5.5745E-05 (120)	4.5379E-05 (120)	3.6277E-05 (286)	1.3558E-05 (265)
33	1.2608E-04 (249)	1.1772E-04 (249)	9.5906E-05 (249)	7.3509E-05 (249)	1.1911E-05 (72)
34	5.9652E-05 (127)	5.5107E-05 (127)	4.7878E-05 (74)	3.8901E-05 (74)	8.8873E-06 (357)
35	9.0120E-05 (114)	8.1598E-05 (114)	6.6083E-05 (114)	5.0780E-05 (114)	7.4257E-06 (114)
36	5.9855E-05 (128)	5.8077E-05 (365)	5.1755E-05 (365)	4.2276E-05 (365)	1.0004E-05 (50)

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3

YEARLY SECOND MAXIMUM 24-HOUR CONC= 8.8408E-05 DIRECTION= 33 DISTANCE= 0.9 KM DAY=248

SECOND HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.9 KM	1.2 KM	1.6 KM	2.1 KM	8.9 KM
1	6.9110E-05 (75)	5.7895E-05 (75)	4.4273E-05 (75)	3.2638E-05 (75)	1.2227E-05 (319)
2	3.8403E-05 (304)	3.3148E-05 (346)	2.5244E-05 (39)	1.9318E-05 (346)	6.5374E-06 (203)
3	5.5933E-05 (346)	5.0789E-05 (346)	4.1669E-05 (346)	3.2868E-05 (346)	1.2509E-05 (181)
4	5.9108E-05 (143)	4.7800E-05 (143)	3.5444E-05 (143)	2.5444E-05 (143)	6.5992E-06 (218)
5	5.9699E-05 (139)	4.8512E-05 (139)	3.6096E-05 (139)	2.6210E-05 (128)	1.0470E-05 (226)
6	5.6872E-05 (139)	4.4972E-05 (139)	3.3986E-05 (145)	2.8260E-05 (141)	2.1327E-05 (207)
7	4.7787E-05 (84)	3.9410E-05 (84)	3.1297E-05 (139)	2.4267E-05 (139)	6.4794E-06 (140)
8	4.9570E-05 (347)	3.8339E-05 (347)	2.7762E-05 (347)	2.4184E-05 (84)	9.3418E-06 (22)
9	2.2516E-05 (256)	2.3170E-05 (253)	2.0211E-05 (136)	1.6323E-05 (136)	1.4702E-05 (198)
10	1.9774E-05 (347)	1.7517E-05 (347)	1.8432E-05 (15)	1.7627E-05 (360)	1.0730E-05 (15)
11	2.1076E-05 (91)	1.9928E-05 (354)	1.4691E-05 (354)	1.2097E-05 (208)	8.0725E-06 (229)
12	5.0284E-05 (85)	4.2093E-05 (85)	3.4681E-05 (85)	2.8997E-05 (85)	1.1602E-05 (236)
13	7.4113E-05 (117)	6.4545E-05 (117)	5.1693E-05 (117)	4.0262E-05 (117)	8.3580E-06 (257)
14	4.4435E-05 (117)	3.5813E-05 (354)	2.7186E-05 (29)	2.0213E-05 (29)	9.3092E-06 (95)
15	5.9204E-05 (29)	5.2654E-05 (29)	4.2417E-05 (29)	3.2912E-05 (29)	1.3692E-05 (175)
16	5.2676E-05 (355)	4.7786E-05 (355)	3.8841E-05 (355)	3.0010E-05 (355)	1.3721E-05 (23)
17	4.0131E-05 (12)	3.7481E-05 (12)	3.0574E-05 (12)	2.7322E-05 (135)	9.3543E-06 (135)
18	8.2032E-05 (8) *	7.3848E-05 (8)	5.9151E-05 (8)	4.8826E-05 (58)	1.5915E-05 (345)
19	6.1634E-05 (40)	5.3146E-05 (1)	4.4954E-05 (1)	3.5334E-05 (1)	1.4514E-05 (213)
20	4.5218E-05 (40)	4.9195E-05 (10)	4.7502E-05 (10)	3.8343E-05 (1)	9.3410E-06 (294)
21	5.5700E-05 (314)	5.7079E-05 (48)	5.3328E-05 (48)	4.5411E-05 (48)	1.2058E-05 (221)
22	3.3331E-05 (314)	3.1207E-05 (314)	2.6388E-05 (314)	2.1468E-05 (314)	8.4185E-06 (119)
23	2.7271E-05 (25)	2.9107E-05 (25)	2.6012E-05 (25)	2.1304E-05 (25)	1.1612E-05 (287)
24	3.3981E-05 (291)	3.0401E-05 (291)	2.4337E-05 (291)	1.8551E-05 (291)	8.4883E-06 (349)
25	3.1009E-05 (296)	2.9389E-05 (49)	2.6456E-05 (49)	2.2574E-05 (295)	5.9719E-06 (269)
26	4.0193E-05 (269)	4.0144E-05 (269)	3.4167E-05 (269)	2.7560E-05 (243)	7.6856E-06 (68)
27	5.5801E-05 (88)	4.9362E-05 (315)	3.8175E-05 (315)	2.8107E-05 (315)	7.2094E-06 (87)
28	4.2372E-05 (17)	3.8902E-05 (17)	3.1225E-05 (17)	2.5354E-05 (352)	7.4824E-06 (352)
29	4.0580E-05 (20)	3.9346E-05 (31)	3.1820E-05 (327)	2.8129E-05 (327)	7.1087E-06 (20)
30	6.3350E-05 (358)	5.7761E-05 (358)	4.6465E-05 (358)	3.5741E-05 (358)	9.2950E-06 (273)
31	7.6363E-05 (358)	6.5801E-05 (358)	5.0953E-05 (358)	3.7892E-05 (358)	9.5711E-06 (107)
32	6.0030E-05 (120)	5.4168E-05 (109)	4.5065E-05 (286)	3.4721E-05 (120)	1.0015E-05 (316)
33	8.8408E-05 (248)	8.0958E-05 (248)	6.5212E-05 (248)	5.5667E-05 (72)	1.1415E-05 (229)
34	5.9330E-05 (324)	5.4965E-05 (324)	4.6976E-05 (113)	3.7680E-05 (113)	7.3993E-06 (111)
35	7.3521E-05 (108)	6.4154E-05 (113)	5.5640E-05 (113)	4.4805E-05 (113)	7.2243E-06 (113)
36	5.7155E-05 (74)	5.6432E-05 (74)	4.7651E-05 (74)	3.7605E-05 (331)	9.1340E-06 (61)

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3

YEARLY MAXIMUM 3-HOUR CONC= 2.1468E-04 DIRECTION= 1 DISTANCE= 0.9 KM DAY= 75 TIME PERIOD= 2

DIR	HIGHEST RANGE 0.9 KM	3-HOUR CONCENTRATION AT EACH RECEPTOR 1.2 KM	1.6 KM	2.1 KM	8.9 KM
1	2.1468E-04 (75, 2)	1.8083E-04 (75, 2)	1.4546E-04 (364, 8)	1.1764E-04 (363, 3)	9.1873E-05 (204, 1)
2	1.8574E-04 (304, 2)	1.6219E-04 (304, 2)	1.2879E-04 (304, 2)	1.0393E-04 (3, 7)	8.3042E-05 (169, 1)
3	2.0734E-04 (148, 6)	1.6959E-04 (256, 1)	1.4557E-04 (256, 1)	1.2340E-04 (123, 3)	1.1581E-04 (165, 1)
4	1.8990E-04 (178, 5)	1.6139E-04 (364, 5)	1.4438E-04 (364, 5)	1.2180E-04 (364, 5)	5.6446E-05 (209, 2)
5	1.7096E-04 (128, 5)	1.4843E-04 (128, 6)	1.1916E-04 (128, 6)	9.0658E-05 (128, 6)	8.7270E-05 (225, 8)
6	1.8796E-04 (139, 5)	1.6231E-04 (197, 6)	1.4143E-04 (197, 6)	1.1431E-04 (197, 6)	9.5366E-05 (217, 8)
7	1.8065E-04 (179, 6)	1.6200E-04 (139, 1)	1.3814E-04 (139, 1)	1.0922E-04 (139, 1)	3.9432E-05 (140, 8)
8	1.9020E-04 (21, 8)	1.6502E-04 (139, 2)	1.5224E-04 (139, 2)	1.2709E-04 (139, 2)	5.3058E-05 (300, 7)
9	1.2918E-04 (22, 1)	1.2811E-04 (22, 1)	1.0873E-04 (22, 1)	8.5861E-05 (22, 1)	9.9591E-05 (166, 1)
10	1.4255E-04 (347, 7)	1.2825E-04 (347, 7)	1.0243E-04 (347, 7)	7.7741E-05 (347, 7)	1.1961E-04 (167, 2)
11	1.2266E-04 (222, 5)	9.6810E-05 (91, 3)	6.8486E-05 (91, 3)	5.4651E-05 (257, 3)	5.4549E-05 (277, 7)
12	1.6600E-04 (33, 5)	1.3630E-04 (33, 5)	1.1248E-04 (33, 8)	8.8596E-05 (33, 8)	8.1893E-05 (220, 7)
13	2.0181E-04 (117, 2)	1.6922E-04 (117, 2)	1.2919E-04 (117, 2)	9.5056E-05 (117, 2)	4.9370E-05 (361, 1)
14	1.7542E-04 (117, 4)	1.3632E-04 (117, 4)	1.0497E-04 (199, 6)	8.5896E-05 (199, 6)	7.2386E-05 (118, 1)
15	1.9514E-04 (34, 5)	1.6074E-04 (361, 4)	1.3184E-04 (361, 4)	1.0145E-04 (361, 4)	6.7879E-05 (301, 1)
16	1.4793E-04 (332, 8)	1.4757E-04 (332, 8)	1.2517E-04 (332, 8)	9.8509E-05 (332, 8)	8.9108E-05 (174, 8)
17	1.7833E-04 (41, 3)	1.5822E-04 (41, 3)	1.2508E-04 (41, 3)	9.4150E-05 (41, 3)	7.9193E-05 (175, 7)
18	2.0241E-04 (58, 4) *	1.8796E-04 (58, 4)	1.5306E-04 (58, 4)	1.1763E-04 (58, 4)	7.7246E-05 (233, 1)
19	1.4951E-04 (174, 4)	1.4056E-04 (1, 2)	1.2298E-04 (1, 2)	9.8717E-05 (1, 2)	1.1611E-04 (213, 1)
20	1.9082E-04 (313, 8)	1.7300E-04 (313, 8)	1.3865E-04 (313, 8)	1.0536E-04 (313, 8)	6.7859E-05 (279, 1)
21	1.3802E-04 (48, 3)	1.4413E-04 (290, 2)	1.2750E-04 (290, 2)	1.0356E-04 (290, 2)	6.2301E-05 (235, 1)
22	1.4028E-04 (124, 3)	1.2580E-04 (290, 4)	1.0817E-04 (216, 2)	8.7786E-05 (216, 2)	7.3538E-05 (183, 2)
23	1.6941E-04 (2, 5)	1.6831E-04 (2, 5)	1.4272E-04 (2, 5)	1.1251E-04 (2, 5)	9.4339E-05 (212, 2)
24	1.3203E-04 (278, 4)	1.1741E-04 (291, 2)	9.8577E-05 (291, 2)	9.0655E-05 (43, 1)	9.1629E-05 (171, 1)
25	1.5959E-04 (242, 3)	1.5172E-04 (242, 3)	1.2527E-04 (242, 3)	9.6976E-05 (242, 3)	3.7592E-05 (16, 2)
26	1.9580E-04 (353, 2)	1.6352E-04 (353, 2)	1.3205E-04 (271, 2)	1.0425E-04 (271, 2)	4.1181E-05 (312, 2)
27	1.8911E-04 (244, 1)	1.7790E-04 (246, 2)	1.4791E-04 (246, 2)	1.1906E-04 (281, 3)	6.3382E-05 (265, 1)
28	1.5897E-04 (69, 3)	1.3858E-04 (69, 3)	1.0932E-04 (89, 3)	9.1814E-05 (89, 3)	4.8802E-05 (317, 7)
29	1.8542E-04 (31, 7)	1.6900E-04 (20, 5)	1.3844E-04 (20, 6)	1.1713E-04 (20, 6)	4.5594E-05 (238, 8)
30	2.1270E-04 (247, 4)	1.9422E-04 (247, 4)	1.5650E-04 (247, 4)	1.2789E-04 (65, 4)	9.9628E-05 (201, 1)
31	1.9793E-04 (107, 6)	1.7982E-04 (60, 7)	1.5603E-04 (60, 7)	1.2519E-04 (60, 7)	8.3797E-05 (265, 7)
32	2.0645E-04 (359, 2)	1.8841E-04 (359, 2)	1.5209E-04 (359, 2)	1.1632E-04 (359, 2)	6.1132E-05 (316, 7)
33	2.0665E-04 (248, 6)	1.9118E-04 (249, 1)	1.5770E-04 (249, 1)	1.2633E-04 (126, 8)	6.2931E-05 (229, 1)
34	1.8933E-04 (127, 7)	1.6555E-04 (127, 7)	1.2952E-04 (127, 7)	9.7626E-05 (113, 6)	7.1098E-05 (357, 1)
35	2.0015E-04 (318, 8)	1.8571E-04 (318, 8)	1.5110E-04 (318, 8)	1.1601E-04 (318, 8)	4.3123E-05 (104, 7)
36	2.0318E-04 (182, 5)	1.8214E-04 (331, 5)	1.5325E-04 (224, 8)	1.2361E-04 (224, 8)	6.0546E-05 (50, 7)

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3
YEARLY SECOND MAXIMUM 3-HOUR CONC= 2.1161E-04 DIRECTION= 1 DISTANCE= 0.9 KM DAY=146 TIME PERIOD= 4

SECOND HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.9 KM	1.2 KM	1.6 KM	2.1 KM	8.9 KM
1	2.1161E-04 (146, 4)	1.8018E-04 (146, 4)	1.4466E-04 (363, 3)	1.1582E-04 (146, 3)	7.7902E-05 (203, 7)
2	1.6206E-04 (147, 6)	1.3570E-04 (331, 6)	1.1631E-04 (3, 7)	9.4602E-05 (304, 2)	4.2982E-05 (168, 8)
3	1.9168E-04 (256, 2)	1.6746E-04 (256, 2)	1.4539E-04 (123, 3)	1.1577E-04 (256, 1)	8.5250E-05 (211, 7)
4	1.6741E-04 (148, 7)	1.4962E-04 (178, 5)	1.2026E-04 (163, 6)	1.0225E-04 (163, 6)	3.6288E-05 (15, 2)
5	1.6650E-04 (77, 6)	1.4644E-04 (77, 6)	1.1519E-04 (77, 6)	8.6349E-05 (77, 6)	4.6322E-05 (182, 7)
6	1.6733E-04 (137, 5)	1.4947E-04 (144, 2)	1.3118E-04 (217, 6)	1.1325E-04 (217, 6)	9.1420E-05 (222, 8)
7	1.7619E-04 (347, 3)	1.5685E-04 (179, 6)	1.2227E-04 (179, 6)	9.8459E-05 (364, 3)	3.5852E-05 (151, 7)
8	1.7034E-04 (26, 6)	1.6224E-04 (21, 8)	1.2509E-04 (21, 8)	1.0020E-04 (84, 3)	5.2938E-05 (161, 8)
9	1.1829E-04 (254, 5)	1.1419E-04 (136, 7)	1.0062E-04 (136, 7)	8.2669E-05 (136, 7)	9.9174E-05 (214, 1)
10	1.3417E-04 (360, 4)	1.1886E-04 (360, 4)	9.3863E-05 (360, 4)	7.0482E-05 (360, 4)	9.0167E-05 (167, 1)
11	1.2057E-04 (91, 3)	9.3284E-05 (222, 5)	6.5037E-05 (349, 4)	5.2880E-05 (349, 4)	5.4432E-05 (210, 1)
12	1.6565E-04 (85, 4)	1.3264E-04 (33, 8)	1.0223E-04 (33, 5)	8.4292E-05 (54, 1)	7.5439E-05 (220, 8)
13	1.8096E-04 (76, 3)	1.4601E-04 (76, 3)	1.0921E-04 (117, 1)	8.5176E-05 (117, 1)	4.8043E-05 (213, 7)
14	1.4594E-04 (29, 1)	1.2593E-04 (344, 5)	1.0067E-04 (344, 5)	7.6366E-05 (254, 3)	5.2394E-05 (54, 8)
15	1.9072E-04 (28, 8) *	1.6041E-04 (34, 5)	1.2256E-04 (28, 8)	9.0310E-05 (28, 8)	5.2758E-05 (19, 8)
16	1.3745E-04 (175, 3)	1.1371E-04 (332, 7)	9.7952E-05 (355, 6)	8.3532E-05 (355, 6)	6.4420E-05 (261, 1)
17	1.5024E-04 (233, 4)	1.2185E-04 (123, 6)	9.8662E-05 (135, 6)	8.3226E-05 (135, 6)	6.9453E-05 (101, 1)
18	1.8608E-04 (47, 6)	1.7630E-04 (47, 6)	1.4687E-04 (133, 6)	1.1748E-04 (133, 6)	7.3354E-05 (185, 1)
19	1.4795E-04 (40, 1)	1.2915E-04 (333, 5)	1.0622E-04 (333, 5)	8.9765E-05 (215, 3)	1.0206E-04 (187, 2)
20	1.6967E-04 (39, 8)	1.4235E-04 (8, 7)	1.1148E-04 (8, 7)	8.6835E-05 (261, 4)	6.3815E-05 (209, 8)
21	1.3697E-04 (290, 2)	1.3168E-04 (48, 3)	1.0904E-04 (48, 3)	9.3751E-05 (48, 7)	5.7192E-05 (264, 2)
22	1.2887E-04 (290, 4)	1.2186E-04 (216, 2)	1.0596E-04 (290, 4)	8.3385E-05 (290, 4)	7.2248E-05 (183, 1)
23	1.2749E-04 (234, 4)	1.2791E-04 (25, 1)	1.1974E-04 (25, 1)	1.0155E-04 (25, 1)	6.2424E-05 (287, 8)
24	1.2017E-04 (291, 2)	1.1321E-04 (278, 4)	9.6974E-05 (43, 1)	7.7234E-05 (291, 2)	6.7906E-05 (349, 1)
25	1.5005E-04 (287, 3)	1.2975E-04 (50, 4)	1.1383E-04 (71, 4)	9.3738E-05 (71, 4)	3.6597E-05 (87, 1)
26	1.7823E-04 (315, 4)	1.5569E-04 (271, 2)	1.2449E-04 (353, 2)	9.1412E-05 (353, 2)	3.7439E-05 (164, 2)
27	1.8581E-04 (245, 1)	1.7320E-04 (245, 1)	1.4750E-04 (281, 3)	1.1510E-04 (246, 2)	4.4650E-05 (207, 1)
28	1.4007E-04 (69, 4)	1.2533E-04 (17, 5)	1.0798E-04 (69, 3)	9.0578E-05 (216, 6)	3.8837E-05 (16, 8)
29	1.8100E-04 (20, 5)	1.5476E-04 (31, 7)	1.3804E-04 (20, 5)	1.0668E-04 (20, 5)	3.4191E-05 (172, 1)
30	1.9905E-04 (246, 4)	1.7649E-04 (112, 6)	1.5642E-04 (65, 4)	1.1941E-04 (247, 4)	7.4360E-05 (273, 8)
31	1.9560E-04 (359, 1)	1.7699E-04 (359, 1)	1.4166E-04 (359, 1)	1.0781E-04 (109, 8)	7.3526E-05 (228, 7)
32	1.9348E-04 (155, 2)	1.8212E-04 (155, 2)	1.4940E-04 (155, 2)	1.1526E-04 (155, 2)	5.0144E-05 (265, 8)
33	2.0169E-04 (249, 1)	1.9003E-04 (248, 6)	1.5515E-04 (126, 8)	1.2222E-04 (249, 1)	5.7277E-05 (188, 8)
34	1.4889E-04 (21, 2)	1.3774E-04 (359, 4)	1.1838E-04 (113, 6)	9.6730E-05 (127, 7)	5.6670E-05 (111, 8)
35	1.9031E-04 (108, 8)	1.7756E-04 (108, 8)	1.4492E-04 (108, 8)	1.1145E-04 (108, 8)	2.9664E-05 (120, 2)
36	1.9041E-04 (331, 5)	1.7458E-04 (224, 8)	1.5095E-04 (331, 5)	1.1725E-04 (331, 5)	4.7053E-05 (306, 7)

THE J.E. SIRRINE COMPANY
CORPORATE HEADQUARTERS
PULP & PAPER DIVISION SOUTH CAROLINA DIVISION
CONSTRUCTION MANAGEMENT DIVISION
ARCHITECT-ENGINEER DIVISION SIRRINE SERVICES, INC.

216 S. PLEASANTBURG
GREENVILLE, SOUTH CAROLINA (803) 298-6000

NORTH CAROLINA DIVISION
P.O. BOX 12748
RESEARCH TRIANGLE PARK, N.C.
(919) 541-2031

TEXAS DIVISION
10000 RICHMOND HOUSTON, TEXAS
(713) 974-8400

DORCHESTER COUNTY DIVISION
107 WEST 5TH STREET, NORTH
SUMMERVILLE, SOUTH CAROLINA
(803) 871-2060

PROGRAM NAME: CRSTER APPLICATION NUMBER: 5010

SINGLE SOURCE AIR QUALITY MODEL
RUN ON 06/08/83 AT 7:34 PM

ECHO PRINT OF INPUT DATA

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                 1         2         3         4         5         6         7         8
CARD    12345678901234567890123456789012345678901234567890123456789012345678901234567890

  1     AMERICAN CYANAMID        TSP
  2
  3      $NAM1 IUR=1,RNG=.9,1.2,1.6,2.1,8.9,ISS=03855,ISY=74,IUS=12884,IUY=74,
  4     IMET=0,DAY=365*1,1*0,$END
  5     BOILER NO 7  MICRONIZED COAL  95% LOAD  90% EMISSION FACTOR
  6     33.21                    15.24      1.47        14.90     444.3
  7
  8

                 1         2         3         4         5         6         7         8
        12345678901234567890123456789012345678901234567890123456789012345678901234567890
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PLANT NAME: AMERICAN CYANAMID          POLLUTANT:  TSP      EMISSION UNITS: GM/SEC    AIR QUALITY UNITS: GM/M**3 12/80

             MET FILE      REQUESTED
           STN NO. YR    STN NO. YR
 SURFACE     3855  74      3855  74
 UPPER AIR  12884  74     12884  74
PLANT LOCATION: RURAL
ANEMOMETER HEIGHT IS  7.0 METERS
WIND PROFILE EXPONENTS ARE:    0.100,  0.150,  0.200,  0.250,  0.300,  0.300,
NO TAPE OUTPUT
MET DATA WILL NOT BE PRINTED

DAY--  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 0
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* N O T E *

ALL TABLES, INCLUDING SOURCE CONTRIBUTION, THAT CONTAIN "ANNUAL" IN THE HEADING ARE BASED ONLY ON THOSE DAYS

MARKED BY "1" IN THE ABOVE TABLE

RING DISTANCES(KM)= 0.90 1.20 1.60 2.10 8.90

PLANT ELEVATION (FEET ABOVE SEA LEVEL)-- 0. PLANT ELEVATION (METERS ABOVE SEA LEVEL)-- 0.

RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)						RECEPTOR ELEVATIONS (METERS ABOVE SEA LEVEL)				
DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5	RING#1	RING#2	RING#3	RING#4	RING#5
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
26	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
27	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
28	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
30	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
32	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
33	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
35	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
36	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

STACK # 1—BOILER NO 7 MICRONIZED COAL 95% LOAD 90% EMISSION FACTOR

STACK	MONTH	EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	ALL	33.2100	15.24	1.47	14.90	444.30	25.29

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3
MAXIMUM MEAN CONC= 7.1941E-06 DIRECTION= 36 DISTANCE= 0.9 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.9 KM	1.2 KM	1.6 KM	2.1 KM	8.9 KM
1	5.56561E-06	4.90446E-06	4.00967E-06	3.22520E-06	8.07366E-07
2	4.40716E-06	4.00857E-06	3.34850E-06	2.71428E-06	6.37802E-07
3	5.35917E-06	4.84739E-06	3.98955E-06	3.16809E-06	7.02524E-07
4	4.96085E-06	4.53771E-06	3.77200E-06	3.02177E-06	6.37785E-07
5	4.09096E-06	3.79415E-06	3.18203E-06	2.56877E-06	6.04962E-07
6	3.01626E-06	2.90263E-06	2.53404E-06	2.12995E-06	5.93970E-07
7	1.80044E-06	1.68957E-06	1.47618E-06	1.26748E-06	4.51393E-07
8	1.04336E-06	1.03295E-06	9.71533E-07	9.07652E-07	4.37452E-07
9	1.11516E-06	1.12989E-06	1.08266E-06	1.03030E-06	5.05604E-07
10	1.04083E-06	9.77658E-07	8.92275E-07	8.32506E-07	3.83397E-07
11	9.17836E-07	8.30089E-07	7.22812E-07	6.40949E-07	3.27729E-07
12	1.07914E-06	1.00810E-06	9.09718E-07	8.37504E-07	4.59705E-07
13	1.76497E-06	1.57818E-06	1.31933E-06	1.11006E-06	4.72672E-07
14	2.39848E-06	2.10931E-06	1.72537E-06	1.40741E-06	5.37689E-07
15	3.08998E-06	2.78708E-06	2.34798E-06	1.97523E-06	7.50745E-07
16	2.96518E-06	2.68186E-06	2.27039E-06	1.92033E-06	7.62669E-07
17	3.95878E-06	3.73286E-06	3.31172E-06	2.92467E-06	1.18864E-06
18	4.04479E-06	3.90962E-06	3.51786E-06	3.12538E-06	1.28086E-06
19	3.68603E-06	3.60728E-06	3.25630E-06	2.90872E-06	1.31948E-06
20	2.82567E-06	2.77780E-06	2.55520E-06	2.35585E-06	1.19921E-06
21	2.50492E-06	2.43955E-06	2.20617E-06	1.99731E-06	9.90736E-07
22	2.29397E-06	2.26064E-06	2.08172E-06	1.91683E-06	9.13225E-07
23	1.78635E-06	1.73053E-06	1.54370E-06	1.34906E-06	5.05522E-07
24	2.39693E-06	2.33438E-06	2.05735E-06	1.77635E-06	7.47483E-07
25	2.59587E-06	2.48934E-06	2.15944E-06	1.82418E-06	5.77619E-07
26	3.06800E-06	2.94694E-06	2.54761E-06	2.12423E-06	6.11868E-07
27	3.00243E-06	2.80194E-06	2.38376E-06	1.96287E-06	5.01467E-07
28	2.42350E-06	2.30263E-06	1.99793E-06	1.66883E-06	4.23603E-07
29	2.86328E-06	2.67376E-06	2.29019E-06	1.89751E-06	4.52283E-07
30	4.37204E-06	3.94266E-06	3.25275E-06	2.59987E-06	5.70831E-07
31	4.47779E-06	3.88714E-06	3.10706E-06	2.42578E-06	6.04957E-07
32	4.80888E-06	4.26464E-06	3.49358E-06	2.80709E-06	6.72531E-07
33	4.88779E-06	4.54034E-06	3.89451E-06	3.26210E-06	9.65212E-07
34	5.44747E-06	4.90086E-06	4.04411E-06	3.24331E-06	7.39863E-07
35	7.12295E-06	6.21687E-06	4.98745E-06	3.89230E-06	8.10034E-07
36	7.19406E-06	6.25438E-06	5.00709E-06 *	3.93414E-06	1.04822E-06

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3

YEARLY MAXIMUM 24-HOUR CONC= 1.2254E-04 DIRECTION= 26 DISTANCE= 0.9 KM DAY=267

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

RANGE DIR	0.9 KM	1.2 KM	1.6 KM	2.1 KM	8.9 KM
1	5.2545E-05 (308)	5.0364E-05 (308)	4.2838E-05 (308)	3.4569E-05 (308)	1.7773E-05 (61)
2	7.0269E-05 (152)	6.3956E-05 (152)	5.0924E-05 (152)	3.8235E-05 (152)	9.7249E-06 (117)
3	9.3511E-05 (78)	8.7177E-05 (78)	7.1796E-05 (78)	5.6047E-05 (78)	2.0099E-05 (60)
4	6.0102E-05 (150)	4.8063E-05 (150)	3.6405E-05 (122)	2.9417E-05 (363)	1.4421E-05 (182)
5	8.8637E-05 (150)	7.5456E-05 (150)	5.7995E-05 (150)	4.2723E-05 (150)	1.2135E-05 (222)
6	5.5706E-05 (88)	4.8996E-05 (88)	4.4511E-05 (87)	3.7330E-05 (87)	1.6502E-05 (183)
7	6.4153E-05 (88)	5.3423E-05 (88)	4.0395E-05 (88)	2.9399E-05 (88)	1.1434E-05 (222)
8	4.0780E-05 (89)	3.6243E-05 (89)	2.8643E-05 (89)	2.1504E-05 (89)	1.2793E-05 (223)
9	2.8645E-05 (208)	2.8205E-05 (71)	2.8886E-05 (71)	2.8192E-05 (71)	1.2264E-05 (105)
10	3.0099E-05 (50)	2.6605E-05 (34)	2.2202E-05 (34)	1.8474E-05 (50)	7.8056E-06 (208)
11	2.3800E-05 (167)	1.9152E-05 (89)	1.5336E-05 (75)	1.1896E-05 (75)	1.0551E-05 (180)
12	5.2561E-05 (53)	4.4065E-05 (53)	3.3456E-05 (53)	2.4418E-05 (53)	1.4713E-05 (205)
13	6.4339E-05 (336)	6.0676E-05 (336)	5.2770E-05 (336)	4.4483E-05 (336)	1.2399E-05 (28)
14	6.5774E-05 (335)	6.0727E-05 (335)	4.8892E-05 (335)	3.7046E-05 (335)	1.5157E-05 (257)
15	5.4517E-05 (342)	5.1828E-05 (342)	4.3324E-05 (342)	3.4602E-05 (342)	1.3780E-05 (270)
16	6.7638E-05 (39)	5.7985E-05 (39)	4.4599E-05 (39)	3.2795E-05 (39)	2.0441E-05 (290)
17	7.4000E-05 (56)	6.4263E-05 (289)	5.2875E-05 (289)	4.0842E-05 (289)	1.6334E-05 (338)
18	6.7022E-05 (329)	5.8867E-05 (329)	4.6933E-05 (329)	3.8225E-05 (176)	1.1224E-05 (258)
19	7.6096E-05 (265)	7.0858E-05 (265)	5.8733E-05 (265)	4.6438E-05 (265)	1.6337E-05 (209)
20	4.8827E-05 (247)	4.8678E-05 (247)	4.1305E-05 (247)	3.2471E-05 (247)	1.6417E-05 (116)
21	3.4092E-05 (1)	3.2292E-05 (1)	2.8518E-05 (12)	2.4668E-05 (12)	1.9183E-05 (213)
22	4.3131E-05 (249)	4.6230E-05 (249)	4.2018E-05 (249)	3.5072E-05 (249)	1.0692E-05 (319)
23	3.0746E-05 (266)	2.8548E-05 (266)	2.3086E-05 (266)	1.7626E-05 (86)	8.5703E-06 (304)
24	4.2795E-05 (266)	3.8624E-05 (278)	3.2951E-05 (278)	2.6773E-05 (278)	9.8730E-06 (255)
25	6.0117E-05 (268)	6.2086E-05 (268)	5.6620E-05 (268)	4.9043E-05 (268)	1.3603E-05 (268)
26	1.2254E-04 (267) *	1.1119E-04 (267)	8.8941E-05 (267)	6.7352E-05 (267)	1.3900E-05 (233)
27	5.4290E-05 (277)	4.8026E-05 (277)	3.7735E-05 (277)	2.8200E-05 (277)	8.1040E-06 (301)
28	3.5178E-05 (348)	3.2974E-05 (348)	2.8075E-05 (85)	2.5204E-05 (85)	6.6414E-06 (347)
29	4.6432E-05 (19)	5.1505E-05 (19)	4.8112E-05 (19)	4.1333E-05 (19)	1.0244E-05 (344)
30	6.4456E-05 (19)	7.3876E-05 (19)	6.8678E-05 (19)	5.7546E-05 (19)	1.4564E-05 (303)
31	1.0406E-04 (101)	8.3622E-05 (101)	6.1796E-05 (101)	4.4274E-05 (101)	1.5660E-05 (313)
32	7.1820E-05 (101)	5.7076E-05 (111)	4.8535E-05 (302)	4.3145E-05 (24)	1.2378E-05 (24)
33	6.5373E-05 (251)	5.6508E-05 (302)	5.5736E-05 (25)	5.3495E-05 (25)	1.8882E-05 (66)
34	7.1005E-05 (159)	6.5978E-05 (159)	5.3559E-05 (159)	4.0941E-05 (159)	9.7159E-06 (73)
35	8.0107E-05 (135)	7.5720E-05 (135)	6.2711E-05 (135)	4.8826E-05 (135)	1.2224E-05 (62)
36	7.9303E-05 (158)	7.0958E-05 (158)	5.8642E-05 (156)	4.8796E-05 (156)	2.0661E-05 (306)

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3
YEARLY SECOND MAXIMUM 24-HOUR CONC= 7.4999E-05 DIRECTION= 35 DISTANCE= 0.9 KM DAY=159

SECOND HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.9 KM	1.2 KM	1.6 KM	2.1 KM	8.9 KM
1	5.0357E-05 (151)	4.4400E-05 (151)	3.5029E-05 (151)	2.6275E-05 (151)	1.4900E-05 (109)
2	3.7506E-05 (308)	3.9628E-05 (308)	3.5214E-05 (308)	2.8691E-05 (308)	8.1204E-06 (215)
3	6.4406E-05 (152)	6.2115E-05 (152)	5.1517E-05 (152)	4.4786E-05 (45)	1.3407E-05 (45)
4	5.6586E-05 (122)	4.7716E-05 (122)	3.5268E-05 (149)	2.7071E-05 (149)	7.9609E-06 (362)
5	5.1820E-05 (149)	4.3774E-05 (149)	3.7268E-05 (271)	3.1222E-05 (363)	1.1009E-05 (221)
6	4.7482E-05 (173)	4.8119E-05 (87)	3.8604E-05 (88)	2.8963E-05 (88)	9.9740E-06 (120)
7	4.1492E-05 (98)	3.3349E-05 (153)	2.5661E-05 (153)	1.8973E-05 (153)	1.1368E-05 (223)
8	2.9158E-05 (341)	2.6329E-05 (341)	2.0921E-05 (341)	1.5726E-05 (341)	7.8780E-06 (283)
9	2.6248E-05 (71)	2.6746E-05 (208)	2.3182E-05 (208)	1.9700E-05 (208)	9.1489E-06 (71)
10	2.8586E-05 (34)	2.4681E-05 (50)	2.0857E-05 (50)	1.7532E-05 (34)	7.7630E-06 (144)
11	2.3793E-05 (89)	1.8603E-05 (75)	1.4236E-05 (89)	1.0897E-05 (351)	6.1791E-06 (166)
12	2.5798E-05 (334)	2.0835E-05 (336)	1.7187E-05 (75)	1.3991E-05 (248)	1.1967E-05 (113)
13	5.5480E-05 (334)	4.8325E-05 (334)	3.7888E-05 (334)	2.8439E-05 (334)	9.9367E-06 (336)
14	4.0726E-05 (336)	3.7820E-05 (336)	3.2280E-05 (336)	2.6566E-05 (336)	1.0290E-05 (316)
15	5.1479E-05 (39)	4.5865E-05 (335)	3.8784E-05 (335)	3.0991E-05 (335)	1.2382E-05 (232)
16	4.9919E-05 (95)	4.2225E-05 (95)	3.2178E-05 (95)	2.3487E-05 (95)	1.3892E-05 (291)
17	6.7888E-05 (289) *	6.3910E-05 (56)	4.9788E-05 (56)	3.7201E-05 (56)	1.4134E-05 (246)
18	5.5431E-05 (176)	5.2945E-05 (176)	4.5930E-05 (176)	3.6062E-05 (329)	1.0366E-05 (198)
19	6.5149E-05 (247)	6.1120E-05 (247)	4.9655E-05 (247)	3.7677E-05 (247)	1.3563E-05 (258)
20	4.8577E-05 (1)	4.1993E-05 (1)	3.3604E-05 (265)	2.6097E-05 (265)	1.5315E-05 (261)
21	3.2362E-05 (83)	3.1153E-05 (12)	2.6551E-05 (249)	2.1438E-05 (311)	1.0887E-05 (256)
22	3.7996E-05 (319)	3.5688E-05 (319)	3.5813E-05 (312)	3.3214E-05 (312)	1.0460E-05 (254)
23	3.0108E-05 (248)	2.6865E-05 (248)	2.1454E-05 (86)	1.7514E-05 (266)	8.2504E-06 (253)
24	4.0497E-05 (278)	3.8555E-05 (266)	3.0568E-05 (266)	2.2926E-05 (266)	9.2673E-06 (217)
25	3.6934E-05 (248)	3.5786E-05 (248)	3.0055E-05 (248)	2.3564E-05 (248)	8.2845E-06 (243)
26	6.0005E-05 (268)	5.6821E-05 (268)	4.7374E-05 (268)	4.1779E-05 (269)	1.0625E-05 (269)
27	4.1347E-05 (294)	3.8387E-05 (294)	3.1269E-05 (294)	2.6879E-05 (269)	6.7915E-06 (352)
28	2.4196E-05 (169)	2.7837E-05 (2)	2.7062E-05 (348)	2.2389E-05 (2)	6.5822E-06 (361)
29	3.1564E-05 (361)	4.0239E-05 (361)	4.1127E-05 (361)	3.7607E-05 (361)	9.0752E-06 (361)
30	6.1781E-05 (141)	5.3746E-05 (141)	4.3131E-05 (365)	4.1313E-05 (365)	1.0110E-05 (19)
31	4.1175E-05 (111)	3.8973E-05 (74)	3.2307E-05 (74)	2.5156E-05 (74)	8.9137E-06 (205)
32	6.8668E-05 (111)	5.6903E-05 (101)	4.5650E-05 (24)	4.2553E-05 (302)	1.1195E-05 (302)
33	5.3260E-05 (302)	5.3333E-05 (251)	5.0603E-05 (302)	4.1524E-05 (302)	1.4754E-05 (25)
34	6.5926E-05 (63)	5.9616E-05 (63)	4.8437E-05 (63)	3.7594E-05 (63)	8.9088E-06 (358)
35	7.4999E-05 (159)	6.3444E-05 (159)	4.8445E-05 (158)	3.7514E-05 (63)	9.2598E-06 (65)
36	6.8503E-05 (159)	6.6345E-05 (156)	5.6465E-05 (158)	4.2644E-05 (158)	1.4621E-05 (54)

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3

YEARLY MAXIMUM 3-HOUR CONC= 3.0650E-04 DIRECTION= 15 DISTANCE= 0.9 KM DAY=342 TIME PERIOD= 4

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.9 KM	1.2 KM	1.6 KM	2.1 KM	8.9 KM
1	1.9883E-04 (187, 5)	1.7453E-04 (353, 2)	1.4209E-04 (353, 2)	1.0912E-04 (353, 2)	7.9318E-05 (109, 8)
2	1.4185E-04 (98, 1)	1.2916E-04 (197, 6)	1.1223E-04 (197, 6)	9.0127E-05 (197, 6)	5.4102E-05 (118, 1)
3	1.8028E-04 (121, 5)	1.6882E-04 (78, 6)	1.4677E-04 (96, 6)	1.2436E-04 (96, 6)	8.2476E-05 (60, 1)
4	1.9799E-04 (318, 4)	1.7924E-04 (318, 4)	1.4366E-04 (318, 4)	1.0918E-04 (318, 4)	9.8655E-05 (182, 2)
5	1.9341E-04 (150, 8)	1.7603E-04 (150, 8)	1.5373E-04 (242, 7)	1.2808E-04 (242, 7)	7.1954E-05 (30, 8)
6	1.7348E-04 (173, 7)	1.6632E-04 (173, 7)	1.4174E-04 (33, 8)	1.2170E-04 (33, 8)	7.9491E-05 (183, 2)
7	1.9245E-04 (88, 6)	1.5756E-04 (88, 6)	1.1823E-04 (88, 6)	8.5843E-05 (88, 6)	9.1473E-05 (222, 8)
8	1.3132E-04 (341, 6)	1.1700E-04 (341, 6)	9.2380E-05 (341, 6)	6.9294E-05 (341, 6)	6.4191E-05 (223, 7)
9	1.9452E-04 (324, 3)	1.8195E-04 (324, 3)	1.4923E-04 (324, 3)	1.1533E-04 (324, 3)	9.8111E-05 (105, 1)
10	1.5134E-04 (11, 4)	1.4248E-04 (11, 4)	1.1636E-04 (11, 4)	8.9193E-05 (11, 4)	6.0332E-05 (208, 1)
11	1.1560E-04 (50, 6)	9.4695E-05 (50, 6)	7.1914E-05 (47, 2)	6.5639E-05 (192, 7)	5.6211E-05 (180, 7)
12	1.3832E-04 (53, 5)	1.1374E-04 (53, 5)	8.5226E-05 (53, 5)	6.1617E-05 (53, 5)	9.0682E-05 (206, 1)
13	1.9008E-04 (334, 5)	1.6197E-04 (334, 5)	1.2486E-04 (334, 5)	9.4239E-05 (47, 3)	6.9384E-05 (28, 7)
14	1.8065E-04 (191, 3)	1.3191E-04 (191, 3)	8.8205E-05 (191, 3)	7.7506E-05 (40, 2)	6.8266E-05 (257, 2)
15	3.0650E-04 (342, 4) *	2.9142E-04 (342, 4)	2.4524E-04 (342, 4)	1.9804E-04 (342, 4)	9.0812E-05 (270, 8)
16	1.7410E-04 (39, 1)	1.4790E-04 (39, 1)	1.2140E-04 (41, 3)	1.0998E-04 (41, 3)	7.3402E-05 (290, 1)
17	1.6744E-04 (289, 3)	1.5604E-04 (289, 3)	1.2694E-04 (289, 3)	1.0312E-04 (337, 3)	7.8088E-05 (69, 1)
18	2.0643E-04 (329, 4)	1.7555E-04 (177, 8)	1.4972E-04 (177, 8)	1.1850E-04 (177, 8)	7.8284E-05 (198, 2)
19	2.0825E-04 (258, 3)	1.8523E-04 (265, 7)	1.4996E-04 (265, 7)	1.1486E-04 (265, 7)	8.8493E-05 (197, 1)
20	1.9648E-04 (265, 8)	1.7903E-04 (265, 8)	1.4390E-04 (265, 8)	1.0954E-04 (265, 8)	7.9893E-05 (116, 2)
21	1.7384E-04 (12, 5)	1.6688E-04 (249, 3)	1.4207E-04 (249, 3)	1.1221E-04 (249, 3)	1.0989E-04 (213, 1)
22	1.6249E-04 (292, 4)	1.6310E-04 (292, 4)	1.4278E-04 (292, 4)	1.1782E-04 (292, 4)	8.3406E-05 (254, 1)
23	1.2435E-04 (248, 7)	1.0941E-04 (248, 7)	8.5734E-05 (248, 7)	7.4489E-05 (165, 2)	6.8562E-05 (304, 1)
24	1.4258E-04 (249, 6)	1.4236E-04 (249, 6)	1.2063E-04 (249, 6)	9.4707E-05 (249, 6)	7.1290E-05 (187, 1)
25	1.6000E-04 (263, 3)	1.4676E-04 (268, 7)	1.4014E-04 (268, 7)	1.2796E-04 (268, 7)	5.2340E-05 (243, 2)
26	2.0009E-04 (267, 2)	1.8306E-04 (267, 1)	1.4985E-04 (267, 1)	1.1553E-04 (267, 1)	6.9989E-05 (233, 1)
27	1.6722E-04 (36, 3)	1.6781E-04 (36, 3)	1.4377E-04 (36, 3)	1.1523E-04 (36, 3)	4.0462E-05 (352, 2)
28	1.9142E-04 (169, 4)	1.8236E-04 (169, 4)	1.4909E-04 (169, 4)	1.1722E-04 (169, 4)	4.3500E-05 (164, 2)
29	1.4621E-04 (361, 4)	1.6204E-04 (361, 4)	1.4708E-04 (361, 4)	1.2129E-04 (361, 4)	7.8137E-05 (344, 6)
30	1.8081E-04 (141, 3)	1.8018E-04 (19, 5)	1.6186E-04 (19, 5)	1.3287E-04 (19, 5)	7.6498E-05 (303, 8)
31	1.9820E-04 (101, 6)	1.6196E-04 (101, 6)	1.2151E-04 (101, 6)	9.0563E-05 (102, 2)	7.7064E-05 (313, 7)
32	1.8724E-04 (250, 7)	1.5203E-04 (24, 5)	1.3259E-04 (24, 5)	1.1564E-04 (302, 6)	7.0526E-05 (66, 7)
33	2.0102E-04 (141, 7)	1.8727E-04 (252, 1)	1.5380E-04 (252, 1)	1.1885E-04 (252, 1)	8.3110E-05 (66, 8)
34	1.9143E-04 (159, 8)	1.8255E-04 (159, 8)	1.5090E-04 (159, 8)	1.2790E-04 (3, 6)	5.9075E-05 (73, 7)
35	1.9615E-04 (97, 4)	1.6955E-04 (97, 4)	1.4066E-04 (37, 1)	1.1700E-04 (37, 1)	4.6877E-05 (195, 8)
36	1.9365E-04 (242, 4)	1.8348E-04 (215, 5)	1.6356E-04 (156, 7)	1.3514E-04 (156, 7)	8.8199E-05 (306, 7)

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3
YEARLY SECOND MAXIMUM 3-HOUR CONC= 2.0175E-04 DIRECTION= 19 DISTANCE= 0.9 KM DAY=265 TIME PERIOD= 7

SECOND HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.9 KM	1.2 KM	1.6 KM	2.1 KM	8.9 KM
1	1.8793E-04 (353, 2)	1.6695E-04 (157, 6)	1.3715E-04 (157, 6)	1.0574E-04 (157, 6)	5.8650E-05 (61, 8)
2	1.3947E-04 (152, 2)	1.2841E-04 (152, 2)	1.0575E-04 (222, 8)	8.6775E-05 (308, 2)	5.3339E-05 (117, 8)
3	1.7511E-04 (78, 6)	1.6354E-04 (121, 4)	1.4053E-04 (78, 6)	1.0940E-04 (78, 6)	6.5040E-05 (60, 7)
4	1.7060E-04 (201, 5)	1.4974E-04 (121, 6)	1.2397E-04 (121, 6)	9.6185E-05 (121, 6)	4.8295E-05 (133, 7)
5	1.7574E-04 (179, 6)	1.6681E-04 (242, 7)	1.4143E-04 (150, 8)	1.0760E-04 (150, 8)	7.0229E-05 (222, 2)
6	1.5640E-04 (150, 3)	1.5296E-04 (150, 3)	1.3760E-04 (173, 7)	1.0652E-04 (173, 7)	7.6760E-05 (127, 7)
7	1.3013E-04 (153, 3)	1.1437E-04 (153, 3)	9.3514E-05 (309, 3)	7.2482E-05 (309, 3)	5.0464E-05 (31, 2)
8	1.3030E-04 (50, 3)	1.0950E-04 (50, 3)	8.4184E-05 (89, 8)	6.6374E-05 (89, 8)	6.3024E-05 (283, 7)
9	1.4630E-04 (208, 4)	1.3139E-04 (208, 4)	1.1952E-04 (146, 7)	1.0754E-04 (146, 7)	4.6065E-05 (228, 7)
10	1.3895E-04 (55, 5)	1.1594E-04 (359, 4)	9.4970E-05 (359, 4)	8.2444E-05 (345, 8)	4.2155E-05 (108, 7)
11	1.1237E-04 (47, 2)	9.4334E-05 (47, 2)	7.1827E-05 (89, 1)	5.3488E-05 (89, 1)	4.9093E-05 (166, 7)
12	1.1963E-04 (75, 6)	9.7470E-05 (75, 6)	7.5152E-05 (53, 2)	5.9754E-05 (246, 3)	8.0970E-05 (205, 8)
13	1.5003E-04 (336, 2)	1.3837E-04 (336, 2)	1.1809E-04 (47, 3)	9.2409E-05 (334, 5)	4.0890E-05 (316, 8)
14	1.2125E-04 (325, 4)	1.0776E-04 (325, 4)	8.5983E-05 (75, 7)	7.1058E-05 (143, 6)	4.6997E-05 (188, 8)
15	1.4440E-04 (193, 4)	1.3078E-04 (98, 7)	1.0721E-04 (178, 6)	8.4441E-05 (178, 6)	6.0850E-05 (232, 2)
16	1.3615E-04 (95, 3)	1.2146E-04 (41, 3)	1.1372E-04 (39, 1)	8.3997E-05 (39, 1)	5.4156E-05 (290, 7)
17	1.4298E-04 (281, 4)	1.4389E-04 (12, 1)	1.2550E-04 (12, 1)	1.0086E-04 (12, 1)	6.8038E-05 (338, 7)
18	1.8961E-04 (175, 6)	1.7174E-04 (329, 4)	1.3064E-04 (329, 4)	9.9441E-05 (80, 8)	6.6717E-05 (231, 1)
19	2.0175E-04 (265, 7) *	1.8163E-04 (258, 3)	1.4599E-04 (265, 4)	1.1142E-04 (265, 4)	8.7125E-05 (209, 8)
20	1.4728E-04 (7, 4)	1.3824E-04 (7, 4)	1.1261E-04 (7, 4)	8.6110E-05 (7, 4)	6.7357E-05 (293, 1)
21	1.6693E-04 (113, 4)	1.6371E-04 (12, 5)	1.3561E-04 (12, 5)	1.0575E-04 (12, 5)	8.7094E-05 (256, 1)
22	1.4676E-04 (250, 3)	1.2734E-04 (319, 4)	1.0511E-04 (105, 4)	9.4895E-05 (312, 6)	5.4725E-05 (319, 7)
23	1.1983E-04 (319, 5)	1.0044E-04 (319, 5)	8.0247E-05 (249, 5)	7.0763E-05 (249, 5)	6.6003E-05 (253, 1)
24	1.3480E-04 (259, 3)	1.3035E-04 (278, 2)	1.1071E-04 (278, 2)	8.7427E-05 (278, 2)	6.9257E-05 (217, 7)
25	1.4760E-04 (248, 6)	1.4101E-04 (263, 3)	1.1627E-04 (268, 2)	9.6016E-05 (268, 2)	4.2798E-05 (268, 7)
26	1.9546E-04 (267, 1)	1.8291E-04 (267, 2)	1.4742E-04 (267, 2)	1.1247E-04 (267, 2)	4.7472E-05 (220, 1)
27	1.4903E-04 (250, 4)	1.3339E-04 (294, 8)	1.0639E-04 (294, 8)	9.0514E-05 (361, 3)	3.7439E-05 (204, 8)
28	1.4043E-04 (74, 3)	1.3190E-04 (74, 3)	1.0747E-04 (74, 3)	8.7367E-05 (3, 2)	3.1637E-05 (169, 4)
29	1.4573E-04 (19, 8)	1.3862E-04 (19, 8)	1.2408E-04 (287, 6)	1.0673E-04 (287, 6)	4.0633E-05 (234, 7)
30	1.7854E-04 (216, 4)	1.5197E-04 (141, 3)	1.1957E-04 (301, 8)	9.8228E-05 (301, 8)	6.0237E-05 (235, 7)
31	1.8011E-04 (137, 5)	1.4910E-04 (101, 1)	1.1694E-04 (101, 1)	8.8283E-05 (101, 6)	7.1290E-05 (205, 1)
32	1.6375E-04 (111, 8)	1.4689E-04 (250, 7)	1.3095E-04 (302, 8)	1.0648E-04 (24, 5)	5.5681E-05 (300, 7)
33	1.9911E-04 (252, 1)	1.7752E-04 (141, 7)	1.4223E-04 (301, 8)	1.1318E-04 (25, 7)	6.7581E-05 (59, 1)
34	1.8536E-04 (160, 1)	1.7192E-04 (160, 1)	1.4254E-04 (159, 7)	1.1843E-04 (358, 1)	4.2297E-05 (307, 7)
35	1.8465E-04 (116, 5)	1.6105E-04 (28, 1)	1.3337E-04 (28, 1)	1.0340E-04 (28, 1)	4.3625E-05 (196, 1)
36	1.8735E-04 (97, 7)	1.7992E-04 (156, 7)	1.5565E-04 (215, 5)	1.2091E-04 (215, 5)	7.7484E-05 (60, 8)

E N G I N E E R S . A R C H I T E C T S . P L A N N E R S

THE J.E. SIRRINE COMPANY
CORPORATE HEADQUARTERS
PULP & PAPER DIVISION SOUTH CAROLINA DIVISION
CONSTRUCTION MANAGEMENT DIVISION
ARCHITECT-ENGINEER DIVISION SIRRINE SERVICES, INC.

216 S. PLEASANTBURG
GREENVILLE, SOUTH CAROLINA (803) 298-6000

NORTH CAROLINA DIVISION
P.O. BOX 12748
RESEARCH TRIANGLE PARK, N.C.
(919) 541-2081

TEXAS DIVISION
10000 RICHMOND HOUSTON, TEXAS
(713) 974-8400

DORCHESTER COUNTY DIVISION
107 WEST 5TH STREET, NORTH
SUMMERVILLE, SOUTH CAROLINA
(803) 871-2060

PROGRAM NAME: CRSTER APPLICATION NUMBER: 5010

SINGLE SOURCE AIR QUALITY MODEL
RUN ON 06/08/83 AT 7:35 PM

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                                    ECHO PRINT OF INPUT DATA

                   1         2         3         4         5         6         7         8
CARD      12345678901234567890123456789012345678901234567890123456789012345678901234567890

  1       AMERICAN CYANAMID         TSP
  2
  3        $NAM1 IUR=1,RNG=.9,1.2,1.6,2.1,8.9,ISS=03855,ISY=75,IUS=12884,IUY=75,
  4       IMET=0,DAY=365*1,1*0,$END
  5       BOILER NO 7  MICRONIZED COAL  95% LOAD  90% EMISSION FACTOR
  6       33.21                15.24     1.47      14.90     444.3
  7
  8

                   1         2         3         4         5         6         7         8
          12345678901234567890123456789012345678901234567890123456789012345678901234567890

PLANT NAME: AMERICAN CYANAMID          POLLUTANT:  TSP      EMISSION UNITS: GM/SEC    AIR QUALITY UNITS: GM/M**3 12/80

          MET FILE      REQUESTED
        STN NO. YR    STN NO. YR
 SURFACE    3855  75     3855  75
 UPPER AIR  12884  75    12884  75
PLANT LOCATION: RURAL
ANEMOMETER HEIGHT IS  7.0 METERS
WIND PROFILE EXPONENTS ARE:    0.100,  0.150,  0.200,  0.250,  0.300,  0.300,
NO TAPE OUTPUT
MET DATA WILL NOT BE PRINTED

DAY==  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
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 * * * * * * * * * * * * * * * * * * * * N O T E * * * * * * * * * * * * * * * * * * * *

        ALL TABLES, INCLUDING SOURCE CONTRIBUTION, THAT CONTAIN "ANNUAL" IN THE HEADING ARE BASED ONLY ON THOSE DAYS

        MARKED BY "1" IN THE ABOVE TABLE
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RING DISTANCES(KM)= 0.90 1.20 1.80 2.10 8.90

PLANT ELEVATION (FEET ABOVE SEA LEVEL)— 0. PLANT ELEVATION (METERS ABOVE SEA LEVEL)— 0.

	RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)					RECEPTOR ELEVATIONS (METERS ABOVE SEA LEVEL)				
DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5	RING#1	RING#2	RING#3	RING#4	RING#5
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
26	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
27	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
28	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
30	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
32	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
33	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
35	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
36	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

STACK # 1—BOILER NO 7 MICRONIZED COAL 95% LOAD 90% EMISSION FACTOR

STACK	MONTH	EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	ALL	33.2100	15.24	1.47	14.90	444.30	25.29

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3

MAXIMUM MEAN CONC= 6.5442E-06 DIRECTION= 30 DISTANCE= 0.9 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.9 KM	1.2 KM	1.6 KM	2.1 KM	8.9 KM
1	4.54273E-06	4.00218E-06	3.23398E-06	2.54054E-06	5.45589E-07
2	4.00002E-06	3.55853E-06	2.91207E-06	2.32759E-06	5.77112E-07
3	3.54243E-06	3.15260E-06	2.59341E-06	2.09905E-06	6.24700E-07
4	3.72044E-06	3.32944E-06	2.73954E-06	2.19880E-06	5.66256E-07
5	3.38268E-06	2.99822E-06	2.45494E-06	1.97693E-06	5.36163E-07
6	2.82228E-06	2.68420E-06	2.34449E-06	1.98558E-06	5.61916E-07
7	1.77237E-06	1.74998E-06	1.59366E-06	1.42400E-06	6.10559E-07
8	1.46122E-06	1.50010E-06	1.38619E-06	1.24403E-06	5.11669E-07
9	1.31652E-06	1.35855E-06	1.28579E-06	1.19765E-06	5.76236E-07
10	9.83213E-07	9.72696E-07	8.82490E-07	7.91570E-07	4.24278E-07
11	9.95012E-07	9.17680E-07	7.76869E-07	6.60521E-07	3.56366E-07
12	1.44608E-06	1.40632E-06	1.24178E-06	1.07706E-06	4.39365E-07
13	1.28675E-06	1.24414E-06	1.09736E-06	9.53782E-07	4.41609E-07
14	1.61455E-06	1.58090E-06	1.42503E-06	1.26376E-06	5.42285E-07
15	2.60557E-06	2.50184E-06	2.20306E-06	1.90272E-06	6.87037E-07
16	3.04845E-06	2.91275E-06	2.55125E-06	2.19185E-06	8.70190E-07
17	4.10532E-06	3.98348E-06	3.57607E-06	3.16139E-06	1.24989E-06
18	3.56196E-06	3.52197E-06	3.21335E-06	2.88983E-06	1.27927E-06
19	2.85711E-06	2.77466E-06	2.48334E-06	2.19812E-06	9.99605E-07
20	2.47017E-06	2.47151E-06	2.28619E-06	2.09971E-06	1.00627E-06
21	2.19550E-06	2.28942E-06	2.18941E-06	2.05424E-06	9.84049E-07
22	1.81820E-06	1.91446E-06	1.85263E-06	1.76787E-06	9.23588E-07
23	1.83519E-06	1.97141E-06	1.90258E-06	1.76774E-06	8.35418E-07
24	2.16522E-06	2.26471E-06	2.12663E-06	1.90893E-06	6.52061E-07
25	2.67700E-06	2.74222E-06	2.52454E-06	2.22895E-06	7.47642E-07
26	3.63547E-06	3.70291E-06	3.36283E-06	2.91436E-06	9.21294E-07
27	3.84052E-06	3.66958E-06	3.19756E-06	2.71183E-06	7.99282E-07
28	4.05806E-06	3.78240E-06	3.17147E-06	2.55847E-06	6.10830E-07
29	4.86521E-06	4.43622E-06	3.65885E-06	2.90049E-06	5.93229E-07
30	6.54424E-06	6.08305E-06	5.15017E-06	4.20069E-06	9.26437E-07
31	4.72262E-06	4.27395E-06	3.57895E-06	2.91886E-06	7.39653E-07
32	4.14713E-06	3.84499E-06	3.27873E-06	2.70048E-06	6.62885E-07
33	3.79252E-06	3.50351E-06	2.98194E-06	2.47424E-06	7.15907E-07
34	5.00195E-06	4.47767E-06	3.68633E-06	2.94963E-06	6.61423E-07
35	6.06194E-06	5.28304E-06	4.24594E-06	3.32747E-06	7.38759E-07
36	6.27492E-06	5.55209E-06	4.52483E-06	3.58915E-06	7.98995E-07

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3

YEARLY MAXIMUM 24-HOUR CONC= 1.0817E-04 DIRECTION= 17 DISTANCE= 0.9 KM DAY=352

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.9 KM	1.2 KM	1.6 KM	2.1 KM	8.9 KM
1	5.2003E-05 (161)	4.9217E-05 (92)	4.0818E-05 (92)	3.1604E-05 (92)	9.1125E-06 (27)
2	5.1160E-05 (136)	4.7369E-05 (216)	4.1408E-05 (216)	3.3334E-05 (216)	1.8871E-05 (204)
3	5.6819E-05 (136)	5.1101E-05 (136)	4.0949E-05 (136)	3.1086E-05 (136)	1.3101E-05 (132)
4	6.8096E-05 (81)	6.4846E-05 (81)	5.4911E-05 (81)	4.3337E-05 (81)	1.9579E-05 (117)
5	6.0637E-05 (217)	5.2734E-05 (217)	4.1161E-05 (217)	3.0696E-05 (217)	1.3197E-05 (59)
6	5.9066E-05 (25)	5.6965E-05 (25)	4.8376E-05 (25)	3.8823E-05 (25)	1.6488E-05 (15)
7	4.0658E-05 (163)	3.8313E-05 (190)	3.3851E-05 (190)	3.0090E-05 (163)	1.7005E-05 (216)
8	5.1998E-05 (191)	5.2452E-05 (191)	4.5194E-05 (191)	3.6039E-05 (191)	2.0453E-05 (167)
9	5.0847E-05 (359)	4.2521E-05 (359)	3.2236E-05 (359)	2.3497E-05 (359)	1.1508E-05 (140)
10	4.2326E-05 (189)	4.1652E-05 (189)	3.5935E-05 (189)	2.8923E-05 (189)	9.8648E-06 (152)
11	4.5215E-05 (55)	4.2442E-05 (55)	3.5548E-05 (55)	2.8287E-05 (55)	1.3365E-05 (214)
12	3.1929E-05 (365)	2.7651E-05 (365)	2.1608E-05 (365)	1.6492E-05 (325)	1.1063E-05 (163)
13	4.5705E-05 (290)	4.4147E-05 (290)	3.7394E-05 (290)	2.9777E-05 (290)	8.5719E-06 (107)
14	3.4210E-05 (266)	2.9220E-05 (266)	2.8562E-05 (325)	2.5901E-05 (325)	1.4744E-05 (155)
15	7.0731E-05 (13)	6.3304E-05 (13)	5.1600E-05 (13)	4.2031E-05 (13)	1.4393E-05 (13)
16	4.7892E-05 (43)	4.6837E-05 (351)	4.2012E-05 (351)	3.5292E-05 (351)	1.1739E-05 (215)
17	1.0817E-04 (352) *	9.4068E-05 (352)	7.3277E-05 (352)	5.4493E-05 (352)	1.4221E-05 (226)
18	6.0910E-05 (101)	6.2831E-05 (101)	5.5703E-05 (101)	4.5848E-05 (101)	1.4337E-05 (153)
19	7.2322E-05 (303)	6.7397E-05 (303)	5.7093E-05 (303)	4.6510E-05 (303)	1.9498E-05 (329)
20	5.1250E-05 (265)	4.8384E-05 (265)	4.0602E-05 (265)	3.2037E-05 (265)	1.5327E-05 (180)
21	4.4417E-05 (23)	5.2353E-05 (23)	5.1115E-05 (23)	4.5353E-05 (23)	1.5842E-05 (301)
22	3.2449E-05 (62)	3.3351E-05 (62)	3.0525E-05 (278)	2.6302E-05 (278)	1.4430E-05 (321)
23	3.9310E-05 (278)	4.6936E-05 (278)	4.4431E-05 (278)	3.7492E-05 (278)	1.0880E-05 (345)
24	4.3732E-05 (257)	5.0062E-05 (257)	4.6694E-05 (257)	3.9341E-05 (257)	1.1516E-05 (171)
25	2.5079E-05 (277)	3.1974E-05 (277)	3.2068E-05 (277)	2.9890E-05 (279)	1.1170E-05 (347)
26	5.1204E-05 (304)	4.8473E-05 (304)	4.1205E-05 (259)	3.2678E-05 (259)	1.9413E-05 (111)
27	4.6169E-05 (258)	4.0733E-05 (258)	3.2122E-05 (258)	2.4714E-05 (52)	1.3767E-05 (253)
28	6.0847E-05 (52)	6.1877E-05 (52)	5.3574E-05 (52)	4.2882E-05 (52)	1.5966E-05 (311)
29	8.9108E-05 (87)	8.1508E-05 (87)	6.5506E-05 (87)	4.9713E-05 (87)	1.0351E-05 (28)
30	8.5453E-05 (86)	6.9840E-05 (289)	5.7233E-05 (289)	4.4045E-05 (289)	1.3026E-05 (28)
31	4.5148E-05 (288)	4.6701E-05 (288)	4.4843E-05 (288)	4.1219E-05 (288)	1.4116E-05 (144)
32	5.4837E-05 (9)	5.2429E-05 (9)	4.6675E-05 (126)	4.2338E-05 (126)	1.3896E-05 (169)
33	4.4547E-05 (114)	4.9077E-05 (114)	4.6850E-05 (114)	4.1663E-05 (114)	1.3320E-05 (114)
34	8.2628E-05 (71)	8.0308E-05 (71)	6.7870E-05 (71)	5.3635E-05 (71)	1.0226E-05 (107)
35	7.9437E-05 (71)	7.2636E-05 (71)	5.9036E-05 (71)	4.5435E-05 (71)	1.4364E-05 (340)
36	8.6592E-05 (47)	7.6458E-05 (118)	6.9904E-05 (118)	5.8342E-05 (118)	1.5503E-05 (242)

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3

YEARLY SECOND MAXIMUM 24-HOUR CONC= 7.9574E-05 DIRECTION= 29 DISTANCE= 0.9 KM DAY= 86

SECOND HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.9 KM	1.2 KM	1.6 KM	2.1 KM	8.9 KM
1	5.1076E-05 (92)	4.4102E-05 (161)	3.7977E-05 (149)	3.0310E-05 (149)	7.8120E-06 (219)
2	5.0505E-05 (162)	4.4897E-05 (136)	3.6078E-05 (138)	3.0131E-05 (205)	8.7214E-06 (361)
3	5.3467E-05 (211)	4.1700E-05 (211)	3.2717E-05 (119)	2.5426E-05 (119)	1.2924E-05 (203)
4	4.6529E-05 (281)	3.9709E-05 (281)	3.1849E-05 (217)	2.5770E-05 (217)	1.0194E-05 (194)
5	4.5495E-05 (81)	4.0737E-05 (81)	3.2276E-05 (81)	2.4208E-05 (81)	7.4554E-06 (80)
6	4.0362E-05 (137)	3.4900E-05 (137)	3.0523E-05 (137)	2.7526E-05 (137)	9.9462E-06 (124)
7	4.0634E-05 (160)	3.7618E-05 (163)	3.3606E-05 (163)	2.8040E-05 (190)	1.0358E-05 (142)
8	3.1032E-05 (359)	3.0731E-05 (218)	2.9598E-05 (218)	2.7150E-05 (192)	1.0357E-05 (164)
9	3.8407E-05 (191)	3.5357E-05 (191)	2.8437E-05 (191)	2.2844E-05 (189)	8.6511E-06 (139)
10	3.4595E-05 (365)	3.0230E-05 (365)	2.4027E-05 (365)	1.8304E-05 (365)	9.8030E-06 (284)
11	2.9683E-05 (186)	2.1724E-05 (186)	1.4873E-05 (186)	1.1570E-05 (78)	1.3126E-05 (165)
12	2.8986E-05 (55)	2.6292E-05 (266)	2.1453E-05 (325)	1.6180E-05 (78)	7.6396E-06 (354)
13	3.2423E-05 (73)	2.8950E-05 (73)	2.2803E-05 (73)	1.7000E-05 (73)	7.9577E-06 (219)
14	2.5908E-05 (73)	2.9098E-05 (325)	2.4563E-05 (290)	2.2295E-05 (290)	1.4095E-05 (59)
15	6.4089E-05 (317)	5.7039E-05 (317)	4.5622E-05 (317)	3.4943E-05 (317)	1.0070E-05 (261)
16	4.6493E-05 (351)	4.2242E-05 (317)	3.6475E-05 (317)	3.0578E-05 (317)	1.1419E-05 (245)
17	7.7945E-05 (67)	7.3629E-05 (67)	6.0792E-05 (67)	4.7274E-05 (67)	1.3823E-05 (60)
18	5.5038E-05 (352)	4.9263E-05 (352)	4.0076E-05 (50)	3.4958E-05 (50)	1.4296E-05 (335)
19	6.5599E-05 (265)	5.8046E-05 (265)	4.5985E-05 (265)	3.4658E-05 (265)	1.9269E-05 (292)
20	3.9382E-05 (303)	3.8412E-05 (23)	3.6062E-05 (23)	3.0497E-05 (23)	9.6957E-06 (344)
21	4.0824E-05 (265)	4.0296E-05 (265)	3.4770E-05 (265)	3.2318E-05 (276)	1.2015E-05 (23)
22	3.2000E-05 (130)	3.1283E-05 (278)	2.9649E-05 (62)	2.4497E-05 (62)	1.2637E-05 (268)
23	2.7778E-05 (277)	2.8545E-05 (277)	2.5600E-05 (63)	2.1252E-05 (63)	9.9619E-06 (165)
24	3.6874E-05 (277)	3.9413E-05 (278)	3.5070E-05 (278)	2.8371E-05 (278)	8.7262E-06 (322)
25	2.3363E-05 (306)	2.6046E-05 (279)	3.0013E-05 (279)	2.8336E-05 (277)	8.1431E-06 (279)
26	4.7758E-05 (259)	4.8043E-05 (259)	3.9792E-05 (304)	3.0630E-05 (304)	1.1846E-05 (251)
27	3.9080E-05 (174)	3.7017E-05 (52)	3.1213E-05 (52)	2.4116E-05 (258)	1.1057E-05 (338)
28	4.6145E-05 (362)	4.6497E-05 (3)	4.1022E-05 (3)	3.3169E-05 (3)	7.4895E-06 (98)
29	7.9574E-05 (86)	6.8548E-05 (86)	5.4472E-05 (86)	4.1811E-05 (86)	9.0836E-06 (220)
30	7.4153E-05 (289)	6.9166E-05 (86)	5.5069E-05 (310)	4.4045E-05 (310)	9.3269E-06 (99)
31	4.0638E-05 (313)	4.2465E-05 (313)	3.7180E-05 (313)	2.9887E-05 (313)	1.1297E-05 (288)
32	5.3566E-05 (10)	4.8175E-05 (10)	4.4130E-05 (9)	3.4946E-05 (9)	8.9019E-06 (126)
33	3.7389E-05 (70)	3.7625E-05 (70)	3.2246E-05 (70)	2.7073E-05 (296)	1.0120E-05 (253)
34	5.2091E-05 (88)	5.2523E-05 (88)	4.6794E-05 (88)	3.8937E-05 (88)	8.7156E-06 (29)
35	6.7881E-05 (47)	6.1980E-05 (47)	4.9849E-05 (47)	3.7871E-05 (47)	8.3356E-06 (246)
36	7.5485E-05 (69)	7.5905E-05 (47)	6.0910E-05 (69)	4.9925E-05 (69)	1.2774E-05 (69)

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3

YEARLY MAXIMUM 3-HOUR CONC= 2.2002E-04 DIRECTION= 3 DISTANCE= 0.9 KM DAY=119 TIME PERIOD= 5

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.9 KM	1.2 KM	1.6 KM	2.1 KM	8.9 KM
1	1.6091E-04 (184, 5)	1.4540E-04 (149, 2)	1.2107E-04 (149, 2)	1.0896E-04 (119, 1)	4.3424E-05 (220, 1)
2	1.8491E-04 (136, 4)	1.6488E-04 (216, 5)	1.4605E-04 (216, 6)	1.2283E-04 (216, 6)	9.1146E-05 (204, 1)
3	2.2002E-04 (119, 5)	2.0065E-04 (119, 5)	1.6187E-04 (119, 5)	1.2375E-04 (119, 5)	8.8156E-05 (203, 2)
4	1.9871E-04 (281, 4)	1.7518E-04 (281, 4)	1.5306E-04 (3, 6)	1.2864E-04 (3, 6)	1.1325E-04 (117, 1)
5	2.1089E-04 (217, 8)	1.8465E-04 (217, 8)	1.4483E-04 (217, 8)	1.0849E-04 (217, 8)	8.1765E-05 (59, 2)
6	1.8422E-04 (25, 7)	1.7976E-04 (25, 7)	1.5089E-04 (25, 7)	1.1826E-04 (25, 7)	8.2016E-05 (15, 8)
7	1.5426E-04 (160, 4)	1.1522E-04 (190, 5)	9.6983E-05 (218, 5)	8.0813E-05 (43, 2)	8.5724E-05 (216, 2)
8	1.3787E-04 (66, 7)	1.3340E-04 (191, 1)	1.2526E-04 (191, 1)	1.0544E-04 (191, 1)	1.1883E-04 (167, 2)
9	1.7706E-04 (359, 8)	1.6341E-04 (189, 1)	1.3823E-04 (189, 1)	1.0881E-04 (189, 1)	6.8716E-05 (139, 1)
10	1.6080E-04 (189, 3)	1.4019E-04 (189, 3)	1.0916E-04 (189, 3)	8.1082E-05 (189, 3)	5.9619E-05 (283, 7)
11	1.7568E-04 (55, 1)	1.4779E-04 (55, 1)	1.1293E-04 (55, 1)	8.3003E-05 (55, 1)	6.9347E-05 (165, 2)
12	1.3427E-04 (55, 3)	1.1745E-04 (55, 3)	9.8017E-05 (78, 2)	7.6706E-05 (78, 2)	8.6783E-05 (163, 7)
13	1.4447E-04 (25, 5)	1.2651E-04 (25, 5)	9.8194E-05 (25, 5)	7.6887E-05 (290, 4)	6.8576E-05 (107, 1)
14	1.5706E-04 (186, 3)	1.3035E-04 (186, 3)	1.0424E-04 (325, 3)	8.2528E-05 (325, 3)	7.6994E-05 (59, 7)
15	1.8880E-04 (78, 5)	1.6111E-04 (78, 5)	1.2407E-04 (78, 5)	9.1652E-05 (78, 5)	6.8558E-05 (13, 8)
16	1.4829E-04 (20, 2)	1.2696E-04 (317, 1)	1.0302E-04 (317, 1)	8.0817E-05 (324, 6)	9.3912E-05 (215, 1)
17	2.0103E-04 (316, 6) *	1.7487E-04 (316, 6)	1.3665E-04 (316, 6)	1.0212E-04 (316, 6)	8.7037E-05 (225, 8)
18	1.6225E-04 (40, 7)	1.6278E-04 (89, 3)	1.3911E-04 (89, 3)	1.1022E-04 (89, 3)	9.9111E-05 (153, 1)
19	1.8529E-04 (265, 5)	1.6542E-04 (62, 1)	1.4434E-04 (62, 1)	1.1608E-04 (62, 1)	7.8923E-05 (318, 8)
20	1.9657E-04 (270, 4)	1.7121E-04 (270, 4)	1.3437E-04 (270, 4)	1.0557E-04 (264, 3)	7.6158E-05 (338, 1)
21	1.3591E-04 (276, 3)	1.4363E-04 (265, 1)	1.3195E-04 (265, 1)	1.0950E-04 (265, 1)	7.0549E-05 (301, 2)
22	1.5143E-04 (130, 5)	1.1368E-04 (94, 3)	9.1542E-05 (62, 3)	8.1868E-05 (278, 4)	6.3934E-05 (321, 8)
23	1.0659E-04 (68, 2)	1.2451E-04 (237, 8)	1.2595E-04 (237, 8)	1.1193E-04 (237, 8)	7.9695E-05 (165, 1)
24	1.4452E-04 (257, 5)	1.5963E-04 (257, 5)	1.4432E-04 (257, 5)	1.1856E-04 (257, 5)	5.0700E-05 (252, 8)
25	1.7284E-04 (199, 3)	1.5523E-04 (199, 3)	1.2300E-04 (199, 3)	1.0548E-04 (347, 3)	5.3387E-05 (312, 2)
26	1.6899E-04 (304, 2)	1.6575E-04 (305, 2)	1.4257E-04 (305, 2)	1.1377E-04 (305, 2)	6.4637E-05 (111, 7)
27	1.4205E-04 (305, 4)	1.3854E-04 (304, 8)	1.1777E-04 (52, 8)	9.3229E-05 (52, 8)	6.1441E-05 (253, 1)
28	1.5681E-04 (7, 4)	1.5082E-04 (52, 7)	1.2941E-04 (52, 7)	1.0284E-04 (52, 7)	7.8423E-05 (311, 2)
29	1.8033E-04 (87, 6)	1.7039E-04 (307, 4)	1.4950E-04 (113, 6)	1.3388E-04 (113, 6)	7.2669E-05 (220, 8)
30	2.1554E-04 (86, 5)	1.8517E-04 (87, 2)	1.4984E-04 (87, 2)	1.1551E-04 (333, 7)	9.0778E-05 (17, 6)
31	1.9033E-04 (113, 5)	1.6999E-04 (113, 5)	1.3513E-04 (113, 5)	1.0213E-04 (113, 5)	6.0986E-05 (46, 2)
32	1.9201E-04 (10, 1)	1.7604E-04 (10, 1)	1.4227E-04 (10, 1)	1.0875E-04 (10, 1)	8.8938E-05 (169, 8)
33	1.6169E-04 (114, 5)	1.5416E-04 (114, 5)	1.2567E-04 (114, 5)	9.4693E-05 (114, 5)	8.0902E-05 (253, 8)
34	1.7419E-04 (71, 1)	1.7569E-04 (71, 1)	1.5045E-04 (71, 1)	1.1944E-04 (71, 1)	8.5930E-05 (107, 7)
35	1.7283E-04 (27, 4)	1.6209E-04 (71, 8)	1.4536E-04 (334, 5)	1.1982E-04 (334, 5)	5.4673E-05 (114, 1)
36	2.0586E-04 (211, 1)	1.6939E-04 (211, 1)	1.3736E-04 (49, 4)	1.1505E-04 (161, 8)	8.0303E-05 (242, 7)

PLANT NAME: AMERICAN CYANAMID POLLUTANT: TSP EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3
YEARLY SECOND MAXIMUM 3-HOUR CONC= 2.0184E-04 DIRECTION= 30 DISTANCE= 0.9 KM DAY= 87 TIME PERIOD= 2

SECOND HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.9 KM	1.2 KM	1.6 KM	2.1 KM	8.9 KM
1	1.4961E-04 (149, 2)	1.3939E-04 (92, 2)	1.1724E-04 (92, 2)	9.3960E-05 (149, 2)	4.0254E-05 (27, 2)
2	1.7449E-04 (83, 3)	1.5648E-04 (216, 6)	1.3908E-04 (216, 5)	1.0910E-04 (216, 5)	6.1767E-05 (311, 1)
3	1.4595E-04 (168, 3)	1.2154E-04 (168, 3)	9.5541E-05 (136, 7)	8.7977E-05 (124, 6)	7.0224E-05 (132, 7)
4	1.5991E-04 (243, 5)	1.6552E-04 (3, 6)	1.3761E-04 (281, 4)	1.0298E-04 (281, 4)	6.2477E-05 (223, 2)
5	1.9904E-04 (188, 5)	1.5275E-04 (188, 5)	1.1024E-04 (188, 5)	8.3334E-05 (8, 6)	4.8219E-05 (320, 6)
6	1.6639E-04 (191, 6)	1.3560E-04 (191, 6)	1.1512E-04 (25, 8)	1.0325E-04 (25, 8)	5.4852E-05 (124, 8)
7	1.1985E-04 (207, 6)	1.1397E-04 (218, 5)	9.6963E-05 (190, 5)	7.8666E-05 (193, 6)	7.4916E-05 (156, 1)
8	1.1873E-04 (192, 6)	1.2523E-04 (66, 7)	1.0362E-04 (192, 6)	8.6568E-05 (244, 6)	6.2151E-05 (164, 1)
9	1.6544E-04 (189, 1)	1.4921E-04 (359, 8)	1.1482E-04 (121, 3)	9.4524E-05 (121, 3)	5.4685E-05 (132, 1)
10	1.0555E-04 (360, 2)	1.0916E-04 (360, 2)	9.4871E-05 (360, 2)	7.6024E-05 (360, 2)	5.0234E-05 (262, 7)
11	1.7309E-04 (186, 4)	1.2985E-04 (78, 1)	1.0070E-04 (78, 1)	7.4492E-05 (78, 1)	6.6536E-05 (214, 7)
12	1.3049E-04 (266, 5)	1.1709E-04 (78, 2)	9.2212E-05 (55, 3)	6.9197E-05 (55, 3)	4.4722E-05 (123, 1)
13	1.2507E-04 (290, 5)	1.1358E-04 (290, 5)	9.2884E-05 (290, 4)	7.2514E-05 (25, 5)	3.9537E-05 (65, 1)
14	1.4304E-04 (266, 3)	1.2246E-04 (325, 3)	9.5124E-05 (186, 3)	7.8796E-05 (207, 8)	6.7681E-05 (155, 1)
15	1.7875E-04 (20, 1)	1.4845E-04 (13, 2)	1.1730E-04 (13, 2)	8.8304E-05 (13, 2)	6.0014E-05 (261, 2)
16	1.4338E-04 (89, 5)	1.2268E-04 (38, 2)	1.0260E-04 (38, 2)	8.0293E-05 (38, 2)	6.8149E-05 (231, 2)
17	1.9804E-04 (12, 4) *	1.6871E-04 (12, 4)	1.3095E-04 (67, 4)	9.9918E-05 (67, 4)	6.3200E-05 (319, 7)
18	1.6175E-04 (89, 3)	1.4286E-04 (40, 7)	1.2204E-04 (50, 3)	9.7215E-05 (50, 3)	6.6387E-05 (270, 8)
19	1.7543E-04 (303, 5)	1.5892E-04 (265, 5)	1.2280E-04 (265, 5)	9.1175E-05 (357, 4)	7.5930E-05 (209, 1)
20	1.3990E-04 (271, 3)	1.2320E-04 (264, 3)	1.2137E-04 (264, 3)	1.0086E-04 (270, 4)	6.6884E-05 (336, 6)
21	1.2659E-04 (265, 1)	1.4333E-04 (276, 3)	1.2845E-04 (276, 3)	1.0677E-04 (23, 1)	5.9263E-05 (331, 7)
22	1.2892E-04 (94, 3)	1.1313E-04 (130, 5)	9.1089E-05 (278, 4)	7.1932E-05 (277, 2)	6.1269E-05 (242, 1)
23	1.0339E-04 (77, 2)	1.0695E-04 (277, 4)	1.0080E-04 (279, 1)	8.8616E-05 (279, 1)	7.4286E-05 (150, 8)
24	1.1706E-04 (111, 5)	1.1928E-04 (257, 4)	1.0930E-04 (257, 4)	9.0810E-05 (257, 4)	4.5402E-05 (307, 1)
25	1.3974E-04 (23, 2)	1.2674E-04 (23, 2)	1.1789E-04 (347, 3)	9.2303E-05 (199, 3)	5.2514E-05 (250, 7)
26	1.6458E-04 (305, 2)	1.5797E-04 (304, 2)	1.2895E-04 (304, 2)	9.9075E-05 (304, 2)	5.6927E-05 (251, 1)
27	1.3966E-04 (304, 8)	1.3720E-04 (52, 8)	1.1693E-04 (304, 8)	9.2806E-05 (125, 6)	4.4554E-05 (338, 7)
28	1.5407E-04 (322, 4)	1.4905E-04 (3, 3)	1.2865E-04 (3, 3)	1.0247E-04 (3, 3)	4.9302E-05 (311, 3)
29	1.7835E-04 (307, 4)	1.6988E-04 (87, 6)	1.4088E-04 (307, 4)	1.0915E-04 (307, 4)	3.1581E-05 (167, 8)
30	2.0184E-04 (87, 2)	1.7343E-04 (86, 5)	1.4589E-04 (333, 7)	1.1472E-04 (87, 2)	4.3533E-05 (99, 2)
31	1.7665E-04 (301, 5)	1.5876E-04 (212, 8)	1.2904E-04 (212, 8)	9.8656E-05 (212, 8)	5.6433E-05 (144, 1)
32	1.8373E-04 (9, 7)	1.6458E-04 (9, 7)	1.3070E-04 (9, 7)	1.0497E-04 (125, 8)	4.1466E-05 (231, 1)
33	1.6006E-04 (246, 5)	1.2837E-04 (364, 7)	1.0870E-04 (364, 7)	8.7968E-05 (114, 4)	5.4205E-05 (97, 7)
34	1.6624E-04 (72, 4)	1.4750E-04 (72, 4)	1.2135E-04 (115, 4)	1.0085E-04 (114, 8)	5.3222E-05 (118, 1)
35	1.7222E-04 (54, 3)	1.5999E-04 (334, 5)	1.3316E-04 (71, 8)	1.0519E-04 (149, 1)	4.5484E-05 (340, 6)
36	1.9445E-04 (72, 6)	1.6644E-04 (49, 4)	1.2770E-04 (211, 1)	1.0834E-04 (133, 6)	6.2200E-05 (65, 8)