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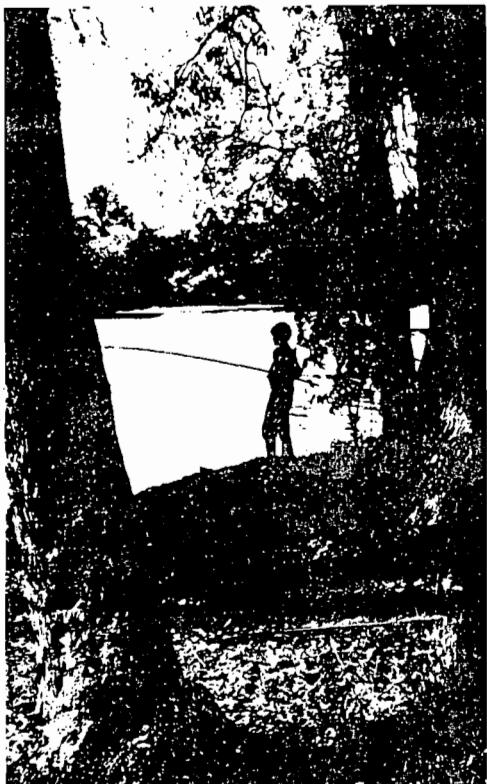
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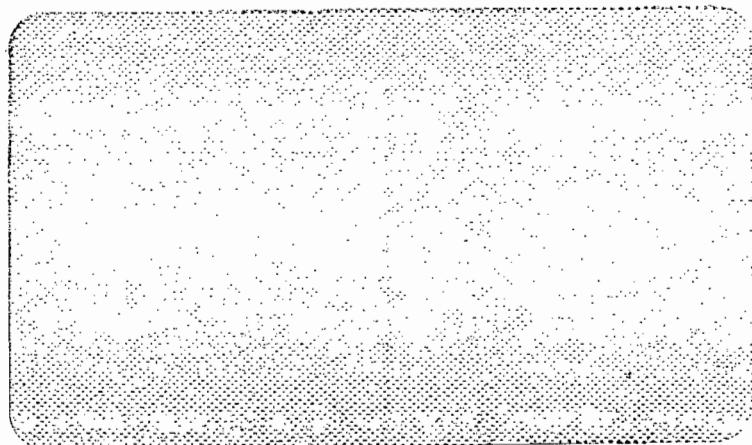
***environmental science  
and engineering, inc.***

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OFFICE/LABORATORY LOCATION: FIVE MILES WEST OF INTERSTATE 75 ON STATE ROAD 28 (NEWBERRY ROAD)



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SIGNIFICANT DETERIORATION ANALYSIS OF THE  
PROPOSED COAL FIRED POWER PLANT

FLORIDA POWER CORPORATION

CRYSTAL RIVER UNITS 4 AND 5

CITRUS COUNTY, FLORIDA

VOLUME I - ATMOSPHERIC DISPERSION MODELING

NOVEMBER 1977

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VOLUME I - ATMOSPHERIC DISPERSION MODELING

Prepared For:  
FLORIDA POWER CORPORATION

November, 1977

Prepared By:  
ENVIRONMENTAL SCIENCE AND ENGINEERING, INC.  
Gainesville, Florida

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1.0

SUMMARY

Florida Power Corporation is proposing to construct and operate a 1390 megawatt (gross) power plant in western Citrus County, near their existing generating facilities. The proposed facility will be coal fired. The burning of coal will result in the emissions of sulfur dioxide and suspended particulate matter.

The Federal Government requires that certain new sources of sulfur dioxide and particulate matter emissions undergo Prevention of Significant Deterioration of air quality evaluation. Steam electric power generating plants with a capacity of 1000 million Btu/hr or greater is one of the source categories which must be reviewed.

Federal regulations related to the Prevention of Significant Deterioration(PSD) were promulgated by the Environmental Protection Agency (EPA) in 1974, and were revised in 1977 according to the Clean Air Act Amendments of 1977.

A PSD analysis was conducted by Environmental Science and Engineering, Inc. of Gainesville, Florida for the purpose of determining compliance of the proposed facility with the PSD laws and regulations. The analysis, which utilized approved and suggested EPA dispersion models and methods, showed that promulgated allowable PSD increments (Public Law 95-95) and Florida Ambient Air Quality Standards (AAQS) may be violated due to operation of the proposed

and existing facilities at allowable emission limitations. A control strategy is proposed which, if implemented, would achieve full compliance with AAQS's and PSD's increments.

This report provides a comprehensive description of the methods, data bases, results and conclusions of the PSD analysis. Because the Clean Air Act Amendments of 1977 have just recently been passed by Congress and signed into law, the full ramifications and interpretations of those laws related to PSD are not known at this time. Therefore, portions of the analysis were based upon prior experience under the older, EPA promulgated regulations. As definitive interpretations of the law become available, it may be necessary to revise portions of this report accordingly.

## 2.0

INTRODUCTION

Federal regulations related to the Prevention of Significant Deterioration (PSD) of air quality were first promulgated on December 5, 1974, by the Environmental Protection Agency (EPA). The rules and regulations were published in the Federal Register (1974). The original regulations were modified frequently thereafter to provide consistency and clarifications, and have since been superseded by the Clean Air Act Amendments of 1977. The amendments were signed into law on August 7, 1977 (Public Law 95-95).

The PSD law allows maximum incremental increases in sulfur dioxide ( $\text{SO}_2$ ) and total suspended particulate matter (TSP) concentrations above a specified air quality baseline level. The exact increment which cannot be exceeded is dependent upon the classification of the area of interest. Listed in Table 1 are the PSD increments for the three class designations. Presently, Citrus County is a Class II area. In addition the Chassahowitzka National Wilderness Area, a designated Class I area, is located 21 km south of the proposed site.

The annual PSD increments cannot be exceeded in any specific area. However, the short-term (24 hours or less) increments may be exceeded once per year at any specific location within an area. This definition is consistent with the short-term AAQS, which allow the standards to be exceeded once per year.

Table 1. Prevention of Significant Deterioration Increments ( $\mu\text{g}/\text{m}^3$ ).

Pollutant/Averaging Time	Class		
	I	II	III
<b>Particulate Matter</b>			
Annual Geometric Mean	5	19	37
24-hour Maximum *	10	37	75
<b>Sulfur Dioxide</b>			
Annual Arithmetic Mean	2	20	40
24-hour Maximum *	5	91	182
3-hour Maximum *	25	512	700

\* Increment can be exceeded once per year.

Source: Clean Air Act Amendments of 1977.

At the present time, the exact period or date which defines baseline air quality according to the Clean Air Act Amendments of 1977 has not been determined. EPA promulgated regulations which defined baseline air quality as essentially that which existed on January 1, 1975, considering the additional effects of those sources which were permitted to construct prior to January 1, 1975, but were not yet operating. In determining compliance with the allowable increments, the effects of growth or reductions in emissions from sources other than the proposed new source since January 1, 1975, must be accounted for, as well as the effect of emissions from sources permitted after January 1, 1975, but not operating as of the start-up date of the proposed new source. This EPA definition of baseline air quality will be used in the PSD analysis for lack of a strict interpretation of the amended definition by EPA Region IV.

This report presents the methodology, data bases, results, and conclusions of the significant deterioration analysis for the proposed power plant as required by the EPA.

3.0                   ATMOSPHERIC DISPERSION MODELING METHODOLOGY

3.1                   GENERAL

The measurement of ambient air quality provides accurate information regarding pollution levels in the atmosphere but is specific to the particular sites at which the measurements were made. To completely evaluate the impact of emissions and determine compliance with Ambient Air Quality Standards and other regulations, the relationship between atmospheric emissions and air quality must be established and the spatial distribution of atmospheric pollution in the vicinity of pollution sources determined.

One approach to determine this relationship is to assume that a change in emissions would cause a proportionate change in air quality. This approach, however, does not explicitly include the effects of meteorology, topography, and stack gas parameters and can only be applied to the specific locations where observed air quality data are available. Therefore, this approach alone cannot insure an accurate estimate of the impact of emissions on the overall air quality.

In response to this deficiency, the air quality "dispersion model" has become an accepted method for estimating the spatial distribution of pollutant concentrations. Currently, the dispersion models are generally restricted to nonreactive or slow reacting pollutants, such as sulfur dioxide, suspended particulates, and carbon monoxide. Current state-of-the-art techniques in dispersion modeling cannot

accurately predict concentrations for reactive pollutant species such as NO<sub>2</sub>, HC, and photochemical oxidants.

Mathematical dispersion models simulate the effects of stack height, stack flow parameters, source distributions, and atmospheric elements, such as air flow and mixing, on the transport and dispersion of pollutants emitted into the atmosphere. Dispersion models are useful for calculating the spatial distribution of concentrations that result from various sources and can be manipulated to estimate ground-level concentrations for extreme meteorological conditions. Figure 1, which illustrates the procedure to follow in applying a mathematical model, shows that by compiling existing emissions, meteorological and air quality data, a dispersion model can estimate the spatial distribution of air quality. After calibration of the model, it is possible to adjust the input parameters for emissions and meteorology to simulate the expected change in air quality for future years.

Several atmospheric dispersion models have been developed and are currently being applied by governmental agencies and private industry to simulate the impact of emission control strategies. The type of dispersion model that seems to simulate the dispersion most accurately is the type that uses the Gaussian diffusion equation.

The Federal Environmental Protection Agency (EPA) has developed several dispersion models using the Gaussian diffusion equation and recommends their use. The basic formulation of the Gaussian equation

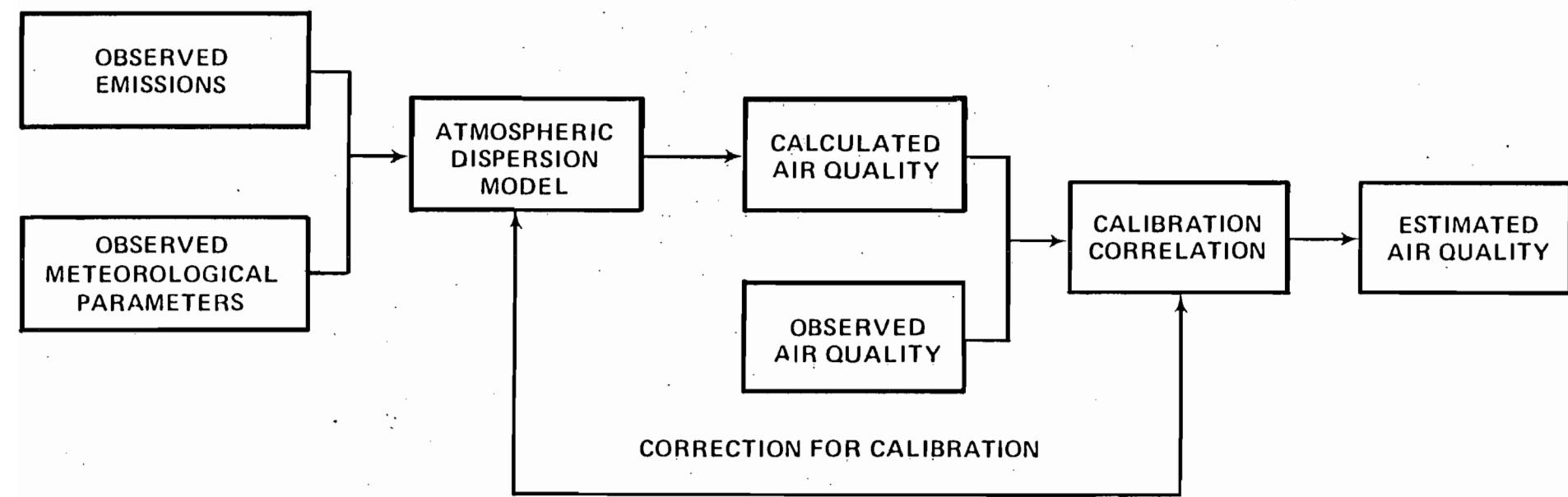


Figure 1. Flow Diagram for Application of Atmospheric Dispersion Models.

assumes that the ground-level concentration is inversely proportional to the mean wind speed and that the horizontal and vertical pollutant dispersion in a plane normal to the wind direction is described by a Gaussian distribution.

It should be recognized, however, that the dispersion models also have rather severe limitations. The models cannot reasonably predict expected ground-level pollutant concentrations from a multitude of sources under calm winds, aerodynamic downwash, or fumigation conditions. It has been the experience of ESE that many of the higher pollutant concentrations are generally observed under calm wind, downwash, or fumigation conditions.

An atmospheric dispersion model can be defined as a mathematical description of the transport, dispersion, and transformation processes that occur in the atmosphere. In the case of sulfur dioxide, it is generally assumed that chemical conversion of this substance is small with respect to its average residence time in the atmosphere. In the case of particulate matter, it is assumed that no particles are scavenged from the atmosphere by fallout or washout. These assumptions are conservative and will tend to result in predicted concentrations being higher than actual measured concentrations.

The Florida and the Federal EPA Ambient Air Quality Standards for suspended particulate matter and  $\text{SO}_2$  are for annual, 24-hour and 3-hour periods of time; therefore, the dispersion models must predict

concentrations for various averaging times. Most dispersion models estimate concentrations for a 1-hour period or for seasonal or annual time periods. If an average concentration for an intermediate period is required, two options are available. One, the short-term model can be used to estimate concentrations hour-by-hour for the period of interest and an average of all hours can be taken with consideration given to an appropriate calibration factor. Two, statistical techniques suggested by Larsen (1971) for log-normally distributed data or empirical techniques as summarized by Strom (1976) for point sources can be utilized to convert a concentration for one averaging time to another.

Several widely recognized and suggested techniques for estimating or predicting ground-level pollutant concentrations were utilized in this study. These techniques are discussed in detail in the following sections. Three EPA-approved models were utilized--the Air Quality Display Model (AQDM), the Point Multiple Model with wind shear effects (PTMTPW), and the CRSTER Single Source Model.

The AQDM determines annual average levels of atmospheric pollution from annual emissions and meteorological data and was used to conduct the long-term impact evaluation. The short-term impact assessment was conducted using the PTMTPW and CRSTER, which calculate hourly pollutant concentrations from hourly emissions and meteorological parameters. These hourly levels can be averaged over any longer time period to facilitate comparisons of estimated air quality with air

quality standards. A more thorough description of these models is included in Appendix A. The remainder of this chapter discusses the application of the models to the significant deterioration analysis for Florida Power Corporation's Units 4 and 5.

### 3.2 APPLICATION OF THE DISPERSION MODELS

#### 3.2.1 GENERAL

The methodology employed in applying the atmospheric dispersion models to the significant deterioration analysis essentially follows EPA's Guideline on Air Quality Models (U.S. Environmental Protection Agency 1977a). This guideline recommends the use of specific models for analysis of significant deterioration and compliance with AAQS. In addition, requirements for emissions inventories, meteorological data and other model inputs are discussed.

#### 3.2.2 LONG-TERM MODELING

The long-term model AQDM (with Briggs plume rise) requires annual average emissions, stack parameters and meteorological data in order to calculate annual average concentrations. Annual average emissions and stack parameters for all SO<sub>2</sub> and particulate matter sources in Citrus and surrounding counties were obtained through the Florida Department of Environmental Regulation. These data included information on both point and area source emissions. Emissions inventories representative of the year 1974 were provided in order to determine significant deterioration of air quality since the baseline year (1974).

An emission inventory was also developed for FPC's Crystal River Units 1 and 2. As a result of a Federal Energy Administration notice to order coal conversion, FPC has been actively pursuing the conversion of Units 1 and 2 from heavy oil to coal. These activities were initiated, i.e. "construction commenced," prior to the January 5, 1975 limit for inclusion of these sources in baseline determination. Currently, Unit 2 is coal fired while Unit 1 is undergoing conversion. These conversions, while they are not complete, must be considered in determination of baseline. As a consequence, the maximum allowable emission limitations for Units 1 and 2 on coal were utilized in the determination of baseline. Listings of the emission inventories can be found in Appendix B.

The SO<sub>2</sub> and particulate matter emissions utilized for Units 4 and 5 are listed in Table 2. Both annual average and 24-hour maximum emission rates are shown. Annual average emission rates were calculated, based on the average load factors projected for these units. Stack parameters utilized for the facility in the dispersion modeling are listed in Appendix B.

Meteorological data (wind speed and direction) for input to the AQDM was obtained from FPC's meteorological station located on the Crystal River site. Cloud cover and ceilings were obtained from National Climatic Center, Ashville, North Carolina for Tampa (1975). These data were utilized to determine Pasquill stabilities. The data resulted in 1975 annual average data in the "STAR" format. This is the proper format for input to the AQDM and contains the frequency of

Table 2. Emission Inventories for Florida Power Corporation's Existing Crystal River Units 1 and 2 and Proposed Units 4 and 5.

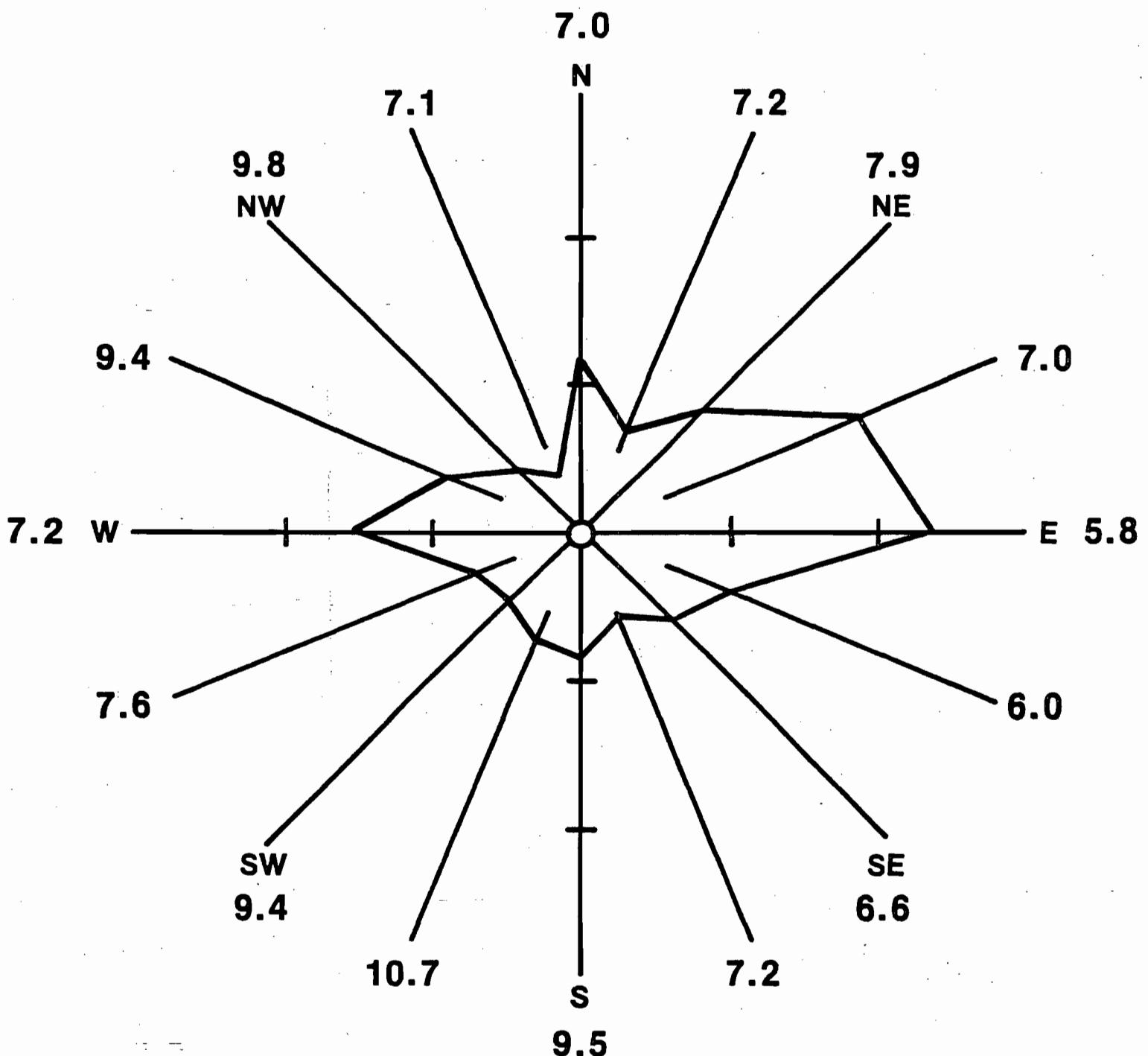
Unit No.	Emission Limitation (lbs/10 <sup>6</sup> Btu)		Emission Rates (grams/sec)					
	SO <sub>2</sub>	Particulate	Annual Average		24-Hour Maximum		3-Hour Maximum	
	SO <sub>2</sub>	Particulate	SO <sub>2</sub>	Particulate	SO <sub>2</sub>	Particulate	SO <sub>2</sub>	Particulate
1	6.17	0.1	2,320	38	2,421	39	3,024	49
2	6.17	0.1	2,712	44	2,932	48	3,666	59
4	1.2	0.1	717	60	796	68	1,009	84
5	1.2	0.1	717	60	796	67	1,009	84

Unit No.	Diameter (m)	Height (m)	Stack Parameters			
			Velocity (mls) Maximum	Velocity (mls) Annual	Temperature (°K) Maximum	Temperature (°K) Annual
1	4.6	152.0	42.1	31.7	422	412
2	4.9	153.0	44.8	32.6	422	410
4	6.9	182.9	27.4	20.7	400	396
5	6.9	182.9	27.4	20.7	400	396

occurrence of wind direction and wind speed as a function of atmospheric stability class. The wind roses reflective of the 1975 average meteorological data are shown in Figure 2. The figure reflects a prevailing on-site wind direction.

A 1.0 km grid spacing was utilized in the AQDM to estimate the spatial distribution of ground-level concentrations and to determine maximum annual-average concentrations. AQDM predicted concentrations were not calibrated (i.e., no adjustments to model values were made) for either SO<sub>2</sub> or TSP. An annual average background TSP level of 30 ug/m<sup>3</sup> was assumed. Zero background was assumed for SO<sub>2</sub>.

**FIGURE 2. MONTHLY AND ANNUAL WIND ROSES FOR THE FPC CRYSTAL RIVER SITE, 1975. TICK MARKS ON ROSE REPRESENT 6%. AVERAGE WIND SPEED IN ROOTS IS GIVEN FOR EACH SECTON.**



**ANNUAL  
CALM - 2.4%**

The long-term ambient air quality standard for TSP is expressed in terms of annual geometric mean. The long-term air dispersion models, however, calculate annual arithmetic mean concentrations. Thus a method of conversion from arithmetic mean to geometric mean concentration is necessary in order to compare estimates with air quality standards. Larsen (1971) has developed an equation which expresses the relationship for log-normally distributed data:

$$M_g = \frac{M_{aa}}{\exp(0.5 \ln^2 S_g)}$$

where:  $M_g$  = geometric mean  
 $M_{aa}$  = arithmetic mean  
 $S_g$  = standard geometric deviation

An analysis of many years of ambient TSP data indicates that the log-normal assumption is a good approximation for suspended particulates in suburban and urban areas. This analysis also showed that  $S_g$  values normally range from 1.0 to 2.0 for an annual period. Inserting an  $S_g$  of 1.4 into the above equation results in a  $M_g/M_{aa}$  ratio of 0.94. This ratio can be used to convert arithmetic mean TSP levels to geometric mean TSP levels, based upon the modeling results. Through use of this technique, the primary TSP standard of  $75 \mu\text{g}/\text{m}^3$  annual geometric mean is equivalent to  $80 \mu\text{g}/\text{m}^3$ , annual arithmetic average. Similarly, the secondary standard of  $60 \mu\text{g}/\text{m}^3$  is equivalent to  $64 \mu\text{g}/\text{m}^3$ , annual arithmetic average concentration.

### 3.2.3 SHORT-TERM MODELING

The CRSTER short-term dispersion model (EPA, 1977b) was utilized as a tool in identifying worst-case 24-hour meteorological conditions for both SO<sub>2</sub> emissions and particulate matter emissions. The model was applied to emission conditions as they existed in the vicinity of the proposed facility as of January 1, 1975, and as they are expected to exist in 1984 with the proposed Units 4 and 5 in operation. The coal conversions of Units 1 and 2 were included in the baseline. All sources within 50 km of the proposed facility were considered, utilizing their annual averaged emissions and stack parameters. Area sources were not considered in the short-term modeling, however, a short-term background level of 30 ug/m<sup>3</sup> was added to all total TSP concentrations estimates to account for area source emissions.

Because the CRSTER model is a single source model, it is first necessary to screen the sources of concern to determine which source or sources will have the primary impact upon maximum short-term concentrations. This can often be accomplished by examining the total emissions from each source. If a particular source's emissions are of much greater magnitude than other sources in the area, it is generally safe to assume this source will be of primary concern. For less obvious cases, it may also be necessary to examine stack heights or make multiple runs of CRSTER to determine which source is most critical for the meteorology of the region.

Once the critical sources have been determined, the critical meteorological conditions are determined from execution of the CRSTER. The

major sources are then aligned with other sources in the area, with respect to wind direction, and utilizing the critical meteorology, maximum concentrations for the area are determined by use of the PTMTPW model. The PTMTPW allows for much greater flexibility than the CRSTER in that multiple sources and up to 30 receptor distances can be specified.

The evaluation of short-term maximum concentrations for future conditions with the proposed plant in operation, center on three scenarios: 1) the maximum concentration in the area, due to all sources, 2) the maximum concentration at the point of maximum impact of the proposed new source, and 3) the maximum concentration in the Class I area. These maximum concentrations can then be compared to maximum baseline concentration estimates to determine compliance with the significant deterioration increments.

Short-term concentration estimates as provided by the models were not adjusted (i.e. a calibration factor of 1.0 was employed) for either SO<sub>2</sub> or TSP. A minimum receptor grid spacing of 0.1 km was utilized in the PTMTPW to estimate maximum short-term concentrations.

Meteorological data utilized in the short-term models consisted of 1975 hourly on-site data. Since only 1 year of meteorological data was utilized, the highest maximum concentrations estimated for the various emission strategies were evaluated, even though the allowable short-term increments can be exceeded once per year, dictating evaluation of the highest, second-highest concentrations.

To determine 3-hour worst case SO<sub>2</sub> concentrations in the study and Class I areas, worst case meteorology was obtained from CRSTER. Sources were then aligned with the PTMTPW similiar to the 24-hour methodology, to determine maximum calculated concentrations.

4.0

#### SIGNIFICANT DETERIORATION ANALYSIS

4.1

##### LONG-TERM ANALYSIS

Shown in Figure 3 are isopleths of annual average ground-level concentrations of  $\text{SO}_2$  for baseline conditions, as estimated by the AQDM.

Shown in Figure 4 are isopleths of annual average  $\text{SO}_2$  concentrations predicted for 1984 with the proposed Units 4 and 5 in operation.

Comparison of Figures 3 and 4 show that annual average  $\text{SO}_2$  concentrations are expected to slightly increase in 1984 as compared to the baseline year.

Shown in Figure 5 are the resultant increases in annual average  $\text{SO}_2$  levels due to the addition of Units 4 and 5. Since no major changes in  $\text{SO}_2$  emissions will occur in the area from the baseline year until 1984, Figure 5 is the expected degradation of air quality. The maximum degradation in the area is  $4 \text{ ug/m}^3$ . The point of maximum annual average  $\text{SO}_2$  impact of the proposed units is "7 kilometers east of the plant."

Shown in Figure 6 are isopleths of annual average ground-level concentrations of total suspended particulate matter, estimated for the baseline year. The concentrations reflect an annual average TSP level of  $30 \text{ ug/m}^3$ .

Presented in Figure 7 are isopleths of annual average TSP concentrations predicted for 1984 with the proposed new facility in operation.

Shown in Figure 8 are the resultant increases predicted in TSP air quality levels with Units 4 and 5 in operation. Similar to the  $\text{SO}_2$  analysis, no major

Figure 3

**ISOPLETHS OF PREDICTED ANNUAL AVERAGE GROUND-LEVEL  
SULFUR DIOXIDE CONCENTRATIONS ( $\mu\text{g}/\text{m}^3$ ), CITRUS COUNTY,  
FLORIDA, BASELINE**

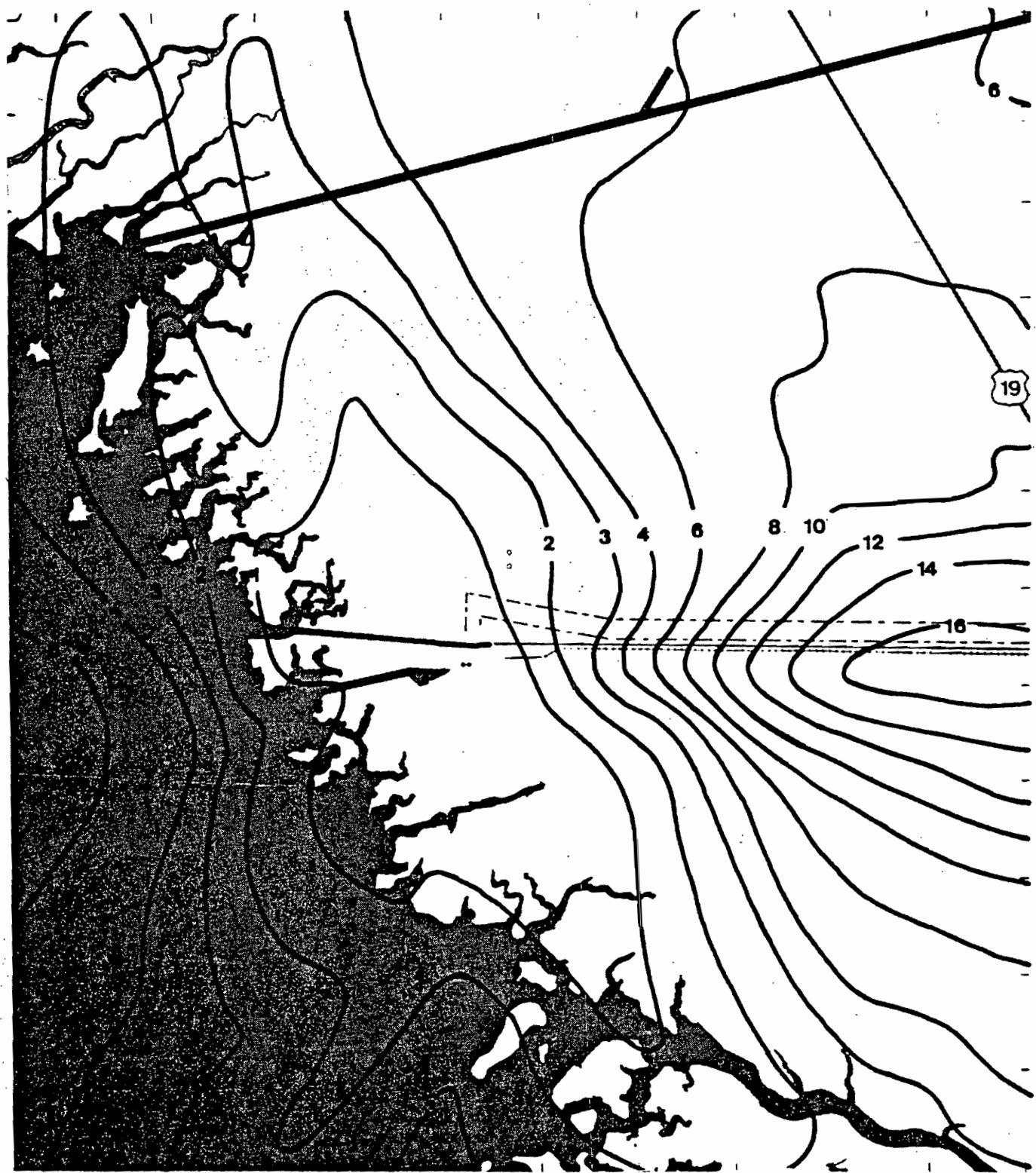
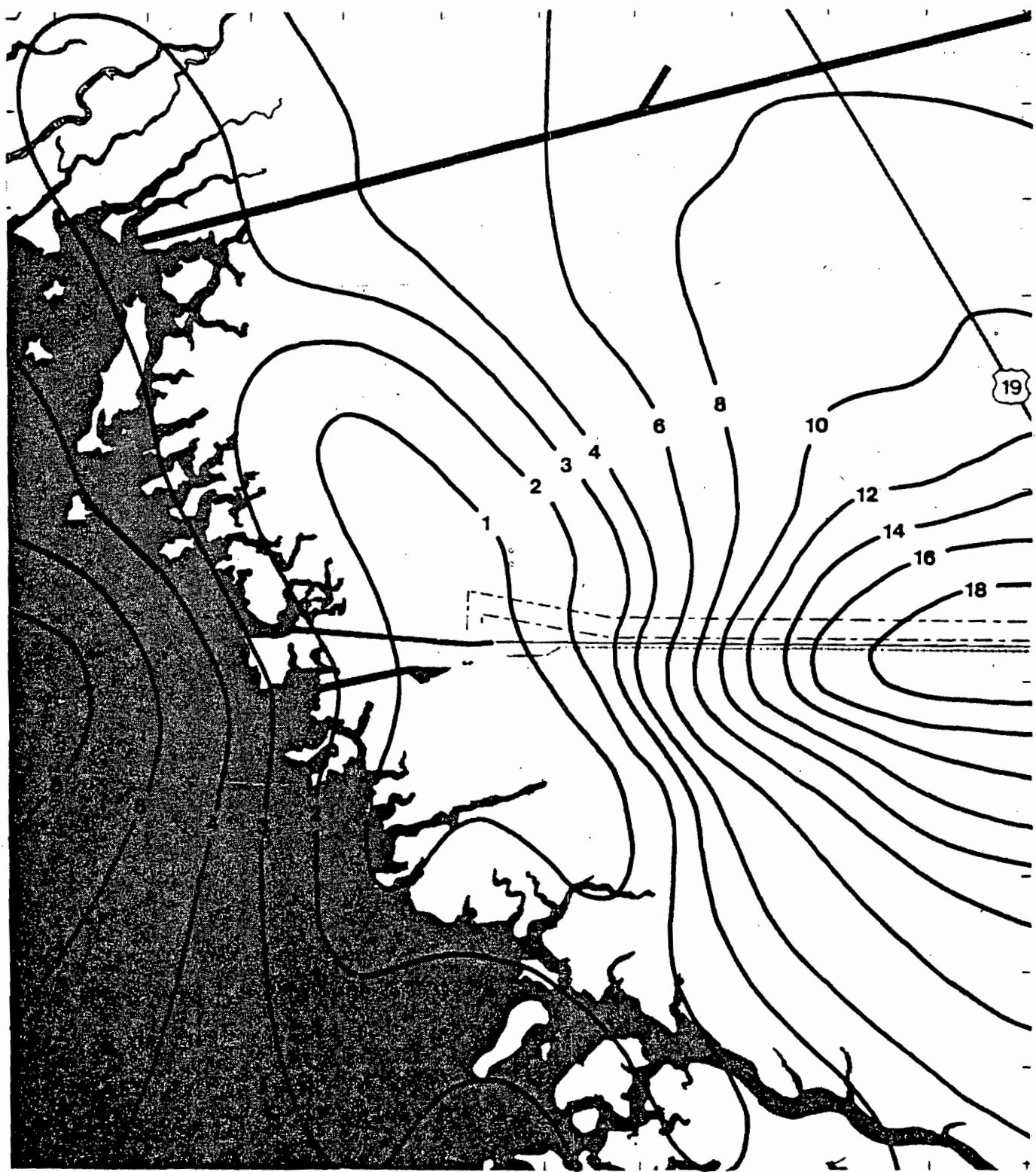


Figure 4  
ISOPLETHS OF PREDICTED ANNUAL AVERAGE GROUND-LEVEL  
SULFUR DIOXIDE CONCENTRATIONS ( $\mu\text{g}/\text{m}^3$ ), CITRUS COUNTY,  
FLORIDA, 1984. WITH FPC'S UNITS 4 AND 5 IN OPERATION



0 1 2

Figure 5  
**ISOPLETHS OF THE INCREMENTAL CONTRIBUTIONS TO  
PREDICTED ANNUAL AVERAGE GROUND-LEVEL SULFUR  
DIOXIDE CONCENTRATIONS ( $\mu\text{g}/\text{m}^3$ ), FLORIDA POWER  
CORPORATIONS' UNITS 4 AND 5, CITRUS COUNTY,  
FLORIDA, 1984**

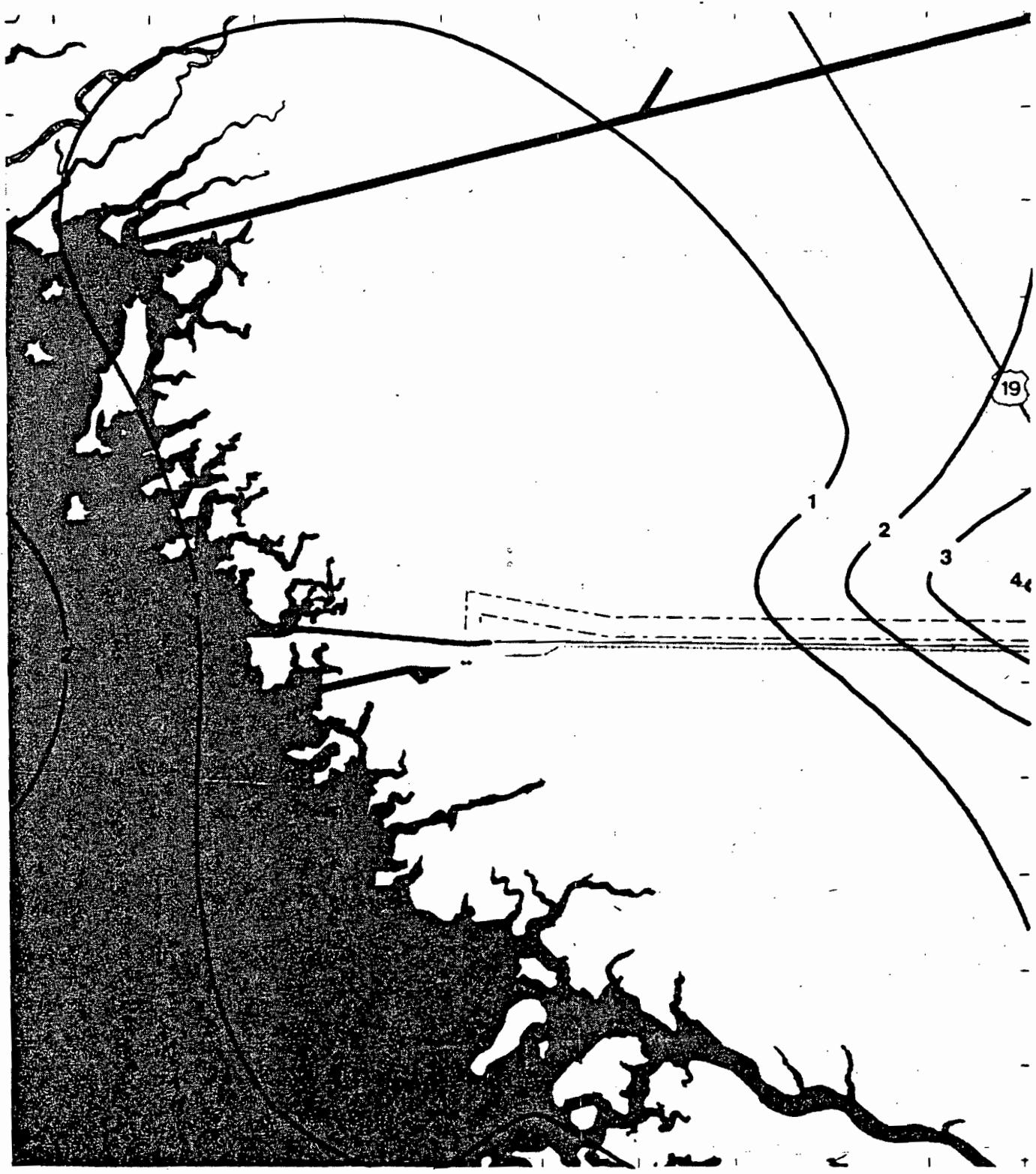


Figure 6

**ISOPLETHS OF PREDICTED ANNUAL AVERAGE GROUND-LEVEL  
TOTAL SUSPENDED PARTICULATE MATTER CONCENTRATIONS  
( $\mu\text{g}/\text{m}^3$ ), CITRUS COUNTY, FLORIDA, BASELINE**

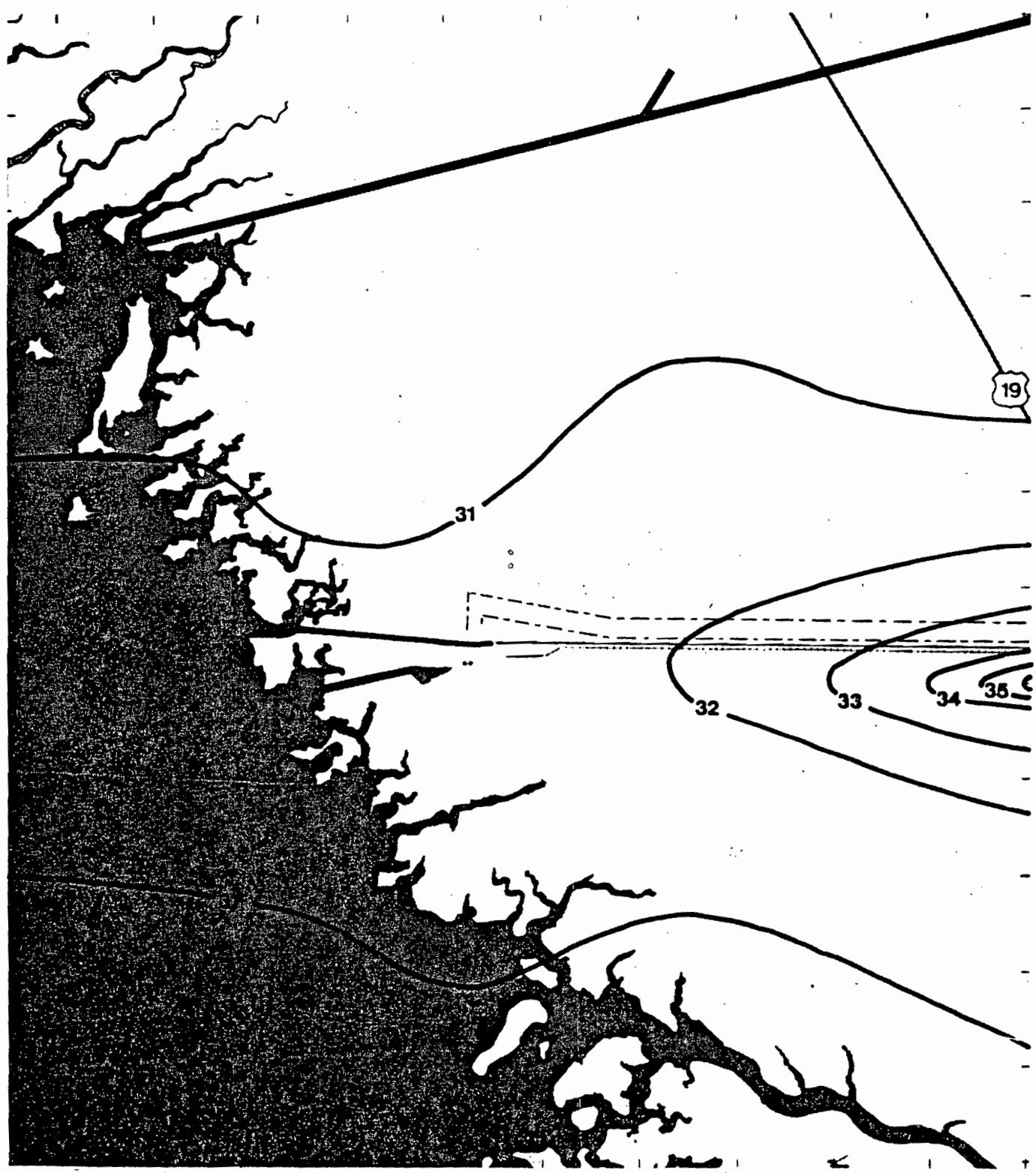
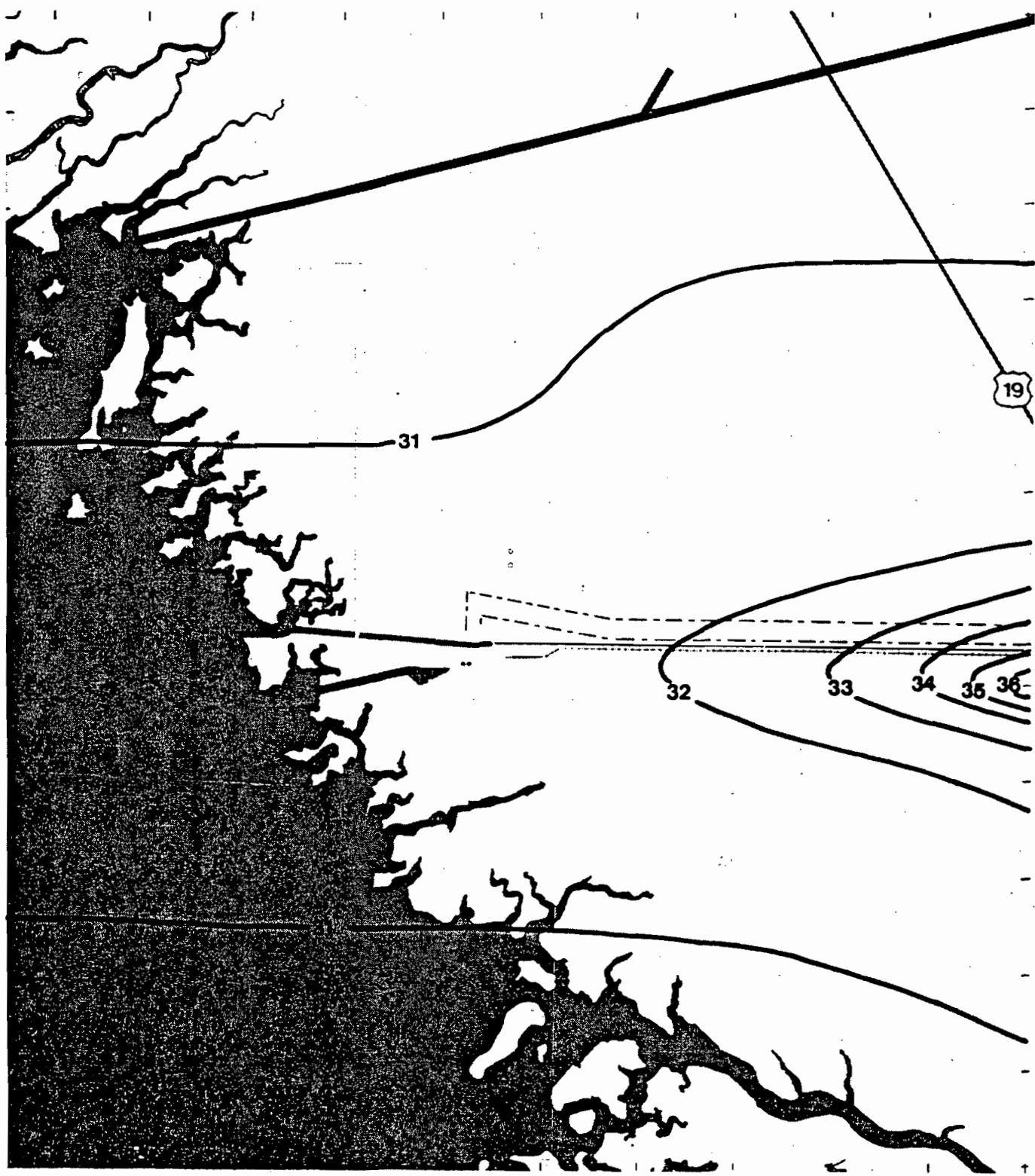


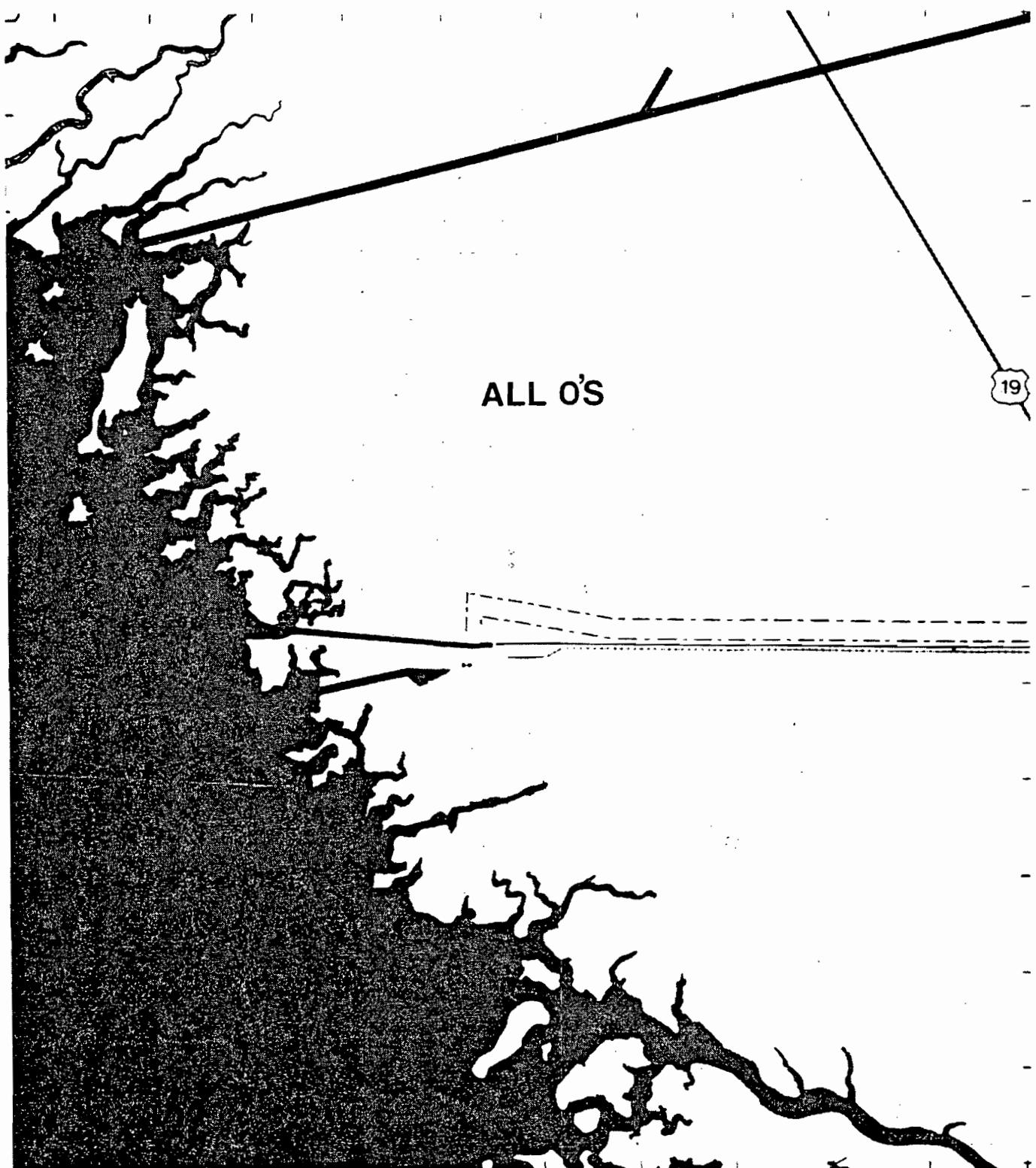
Figure 7  
**ISOPLETHS OF PREDICTED ANNUAL AVERAGE  
GROUND-LEVEL TOTAL SUSPENDED PARTICULATE MATTER  
CONCENTRATIONS ( $\mu\text{g}/\text{m}^3$ ), WITH FPC'S UNITS 4 AND 5 IN  
OPERATION, CITRUS COUNTY, FLORIDA, 1984**



0 1 2

Figure 8

**INCREMENTAL CONTRIBUTIONS TO PREDICTED ANNUAL  
AVERAGE GROUND-LEVEL TOTAL SUSPENDED PARTICULATE  
MATTER CONCENTRATIONS ( $\mu\text{g}/\text{m}^3$ ), FLORIDA POWER  
CORPORATIONS' UNITS 4 AND 5, CITRUS COUNTY,  
FLORIDA, 1984**



changes in TSP emissions are expected to occur from 1974 to 1984 with the exception of Units 4 and 5. The maximum increase in the area, which is located 7 kilometers east of the plant is predicted to be less than 1 ug/m<sup>3</sup>.

Summarized in Table 3 are the maximum estimated annual SO<sub>2</sub> and TSP concentrations for the various emission scenarios. The incremental impact of Units 4 and 5 is shown along with the two points of concern for the study: the point of maximum concentration is the study area, and the point at which the proposed facility's impact is greatest. The values listed for TSP in the table are annual geometric mean concentrations, and should be distinguished from the values represented in the isopleth figures, which are annual arithmetic mean concentrations. The method used in converting the arithmetic mean to geometric mean concentration was discussed in Section 3.2.2.

#### 4.2 SHORT TERM ANALYSIS

The highest 24-hour concentration was predicted to be 53 ug/m<sup>3</sup> for SO<sub>2</sub>, and 4 ug/m<sup>3</sup> for TSP. The 3-hour maximum SO<sub>2</sub> concentration was estimated to be 261 ug/m<sup>3</sup>. Also shown in Table 3 are the maximum

Table 3. Summary of Significant Deterioration Analysis, Class II Areas, Florida Power Corporations Crystal River Units 4 and 5, Citrus County, Florida

Scenario	Maximum Concentration ( $\mu\text{g}/\text{m}^3$ )					
	$\text{SO}_2$	TSP*				
	Annual Average	24-Hour	3-Hour	Annual Geo. mean	24-Hour	
Crystal River Units 4 and 5 Increment Impact	4	53	261	< 1	4	
Maximum in Area 1974 Baseline	17	223	1,168	34	126	
1984 with Units 4 and 5	19	275	1,380	35	123	
Increase Since Baseline	2	52	212	1	-3	
Allowable Federal Increment	20	91	512	19	37	

\*Concentrations include a background level of  $30 \mu\text{g}/\text{m}^3$ .

estimated short-term SO<sub>2</sub> and TSP concentrations for the various emission strategies.

The maximum 24-hour short-term TSP level estimated to exist in the study area during the baseline year is ug/m<sup>3</sup>. This value, which is in compliance with both the Federal Primary Ambient Air Quality Standard (AAQS) and the Florida AAQS (150 ug/m<sup>3</sup>) includes a short-term background TSP concentration of 34 ug/m<sup>3</sup>.

The maximum 24-hour SO<sub>2</sub> concentration estimated to exist in the baseline year is 223 ug/m<sup>3</sup>. This maximum occurs in the vicinity of FPC's Crystal River Units 1 and 2. The maximum 3-hour SO<sub>2</sub> concentration estimated under baseline conditions is 1,168 ug/m<sup>3</sup>. These concentrations, which are the highest calculated, are numerically less than the AAQS's for those averaging times.

Two short-term maximum concentrations are of concern for future years with the proposed facility in operation. These are 24-hour and 3-hour SO<sub>2</sub> maximums which were determined to be 275 ug/m<sup>3</sup> and 1,380 ug/m<sup>3</sup> respectively. Both of these maximums which were predicted in the vicinity of the Crystal River site are violations of Florida's AAQS. These maxima are within a few kilometers of the proposed site and are due largely to the impact of the existing Crystal River Units 1 and 2. The maximums are obtained by first determining the maximum incremental 24-hour concentration due to the new source only, and then, utilizing the worst case meteorology, aligning the winds in order to obtain maximum contributions from other sources.

The Clean Air Act Amendments of 1977 require that all national wilderness areas which exceed 5,000 acres in size be designated as Class I areas for PSD purposes. Chassahowitzka National Wilderness Area is required to be a Class I area. The allowable PSD increments for Class I areas are:

Particulate Matter:	
Annual geometric mean	5 ug/m <sup>3</sup>
24-hour maximum	10 ug/m <sup>3</sup>

Sulfur Dioxide:	
Annual arithmetic mean	2 ug/m <sup>3</sup>
24-hour maximum	5 ug/m <sup>3</sup>
3-hour maximum	25 ug/m <sup>3</sup>

The distance from the proposed source to the nearest Chassahowitzka National Wilderness Area boundary is approximately 13 miles or 21 kilometers. Presented in Table 4 is the maximum predicted baseline, incremental and 1984 estimated SO<sub>2</sub> concentrations. As seen from this table, the 24 and 3-hour SO<sub>2</sub> increments are expected to be exceeded.

#### 4.3 SULFUR DIOXIDE CONTROL STRATEGY

The preceding air quality analysis indicates that violations of Florida AAQS and PSD increments may result from the operation of Units 4 and 5 without controls. As a consequence, the approval necessary by a regulatory agency to construct these units will be dependent upon evaluation of the control methods. In order to achieve the goal of operating new coal-fired generation facilities at Crystal River, FPC will implement a control strategy to meet AAQS's and PSD increments.

Table 4. Summary of Significant Deterioration Analysis, Class I Area--Chassahowitzka National Wilderness Area, Florida Power Corporation's Units 4 and 5, Citrus County, Florida

Scenario	Maximum Concentration ( $\mu\text{g}/\text{m}^3$ )					
	Sulfur Dioxide			Total Suspended Particulate*		
	Annual Average	24-Hour	3-Hour	Annual Average	24-Hour	
Crystal River Units 4 and 5 Incremental Impact	<< 1	21	117	<< 1	2	
Maximum in Class I Area						
1974 Baseline	2	98	417	30	32	
1984 With Units 4 and 5	2	117	534	30	34	
Increase Since Baseline	0	19	117	0	2	
Allowable Federal Increment	2	5	25	5	10	

\*Background TSP concentration of  $30 \mu\text{g}/\text{m}^3$  added to modeling results.

There are two control strategy options available to achieve compliance with AAQ's and PSD increments. The first option would be to decrease SO<sub>2</sub> emissions from Units 4 and 5 below New Source Performance Standards (1.2 lbs. SO<sub>2</sub>/10<sup>6</sup> Btu NSPS). The second option would be to reduce baseline sufficiently to allow Units 4 and 5 at NSPS emission limitations. In order to reduce baseline concentrations, FPC's Crystal River Units 1 and 2 must reduce emissions below the maximum allowable emission limitation of 6.17 lb SO<sub>2</sub>/10<sup>6</sup> Btu.

Presented in Table 5 are two alternative control strategies, either of which if implemented by Florida Power Corporation, would comply with state and federal AAQS and PSD increments. Also contained in the table are the resultant ambient SO<sub>2</sub> air quality concentrations for those alternate control strategies.

Table 5. Summary of Sulfur Dioxide Strategy Evaluation for Florida Power Corporation's Crystal River Units 4 and 5, Citrus County, Florida

Control Strategy	Maximum Sulfur Dioxide Concentration (ug/m <sup>3</sup> )			
	Class II Maximum		Class I Maximum	
	24-Hour	3-Hour	24-Hour	3-Hour
<b>Units 1 and 2 at 6.17 lb SO<sub>2</sub>/10<sup>6</sup> Btu; and Units 4 and 5 at 0.26 lb SO<sub>2</sub>/10<sup>6</sup> Btu</b>				
Units 4 and 5 increment	12	56	4.6	25
1974 Baseline	223	1,168	98	417
1984 with Units 4 and 5	234	1,214	102	442
Increase Above Baseline	11	46	4	25
<b>Units 1 and 2 at 4.8 lb SO<sub>2</sub>/10<sup>6</sup> Btu; and Units 4 and 5 at 1.2 lb SO<sub>2</sub>/10<sup>6</sup> Btu</b>				
1974 Baseline	223	1,168	98	417
1984 with Units 4 and 5	225	1,120	97	441
Increase Above Baseline	2	-48	-1	24
Allowable Increment	91	512	5	25

## 5.0

CONCLUSIONS

From review of Tables 3, 4, and 5, the following salient conclusions can be drawn from the PSD analysis:

- 1) Although annual average  $\text{SO}_2$  levels are generally expected to increase by 1984 due to the proposed Units 4 and 5 facility by 1984, the proposed source's maximum impact is only  $4 \text{ ug/m}^3$ . The maximum increase in  $\text{SO}_2$  levels above the baseline in the study area is predicted to be 20 percent of the allowable PSD Class II increment.
- 2) Short-term  $\text{SO}_2$  levels are expected to similarly increase in the study area by 1984. The proposed new source contributes a maximum of  $53 \text{ ug/m}^3$ , 24-hour average and  $261 \text{ ug/m}^3$ , 3-hour average, to these increases. The maximum increases in the area above baseline for short-term  $\text{SO}_2$  levels represent about 60 percent of the 24-hour Class II increment, and about 50 percent of the 3-hour Class II increment.
- 3) Both maximum annual average and short-term TSP levels are expected to generally increase in the study area. The maximum impact of the proposed source was predicted to be less than  $1 \text{ ug/m}^3$ , annual geometric mean, and  $4 \text{ ug/m}^3$ , 24-hour maximum. Maximum increases in TSP levels since the baseline year for the area were predicted to be 0 percent of the annual TSP Class II increment and 11 percent of the 24-hour TSP Class II increment.
- 4) In combination with existing Units 1 and 2, the new units are calculated to cause a violation of the Florida 24-hour and 3-hour  $\text{SO}_2$  AAQS's. These standards are exceeded by 6 percent.

- 5) Short-term SO<sub>2</sub> levels estimated in the Chassahowitzka National Wilderness Area for Units 4 and 5 will exceed the 24-hour and 3-hour increments by 320 percent and 370 percent respectively.
- 6) If a control strategy of Units 1 and 2 at emissions of 6.17 lb SO<sub>2</sub>/10<sup>6</sup> Btu were utilized both Florida AAQS and Federal Class I PSD increments will be met. Under this control strategy, a maximum of 13 percent of the Class II increment will be used by the proposed units.
- 7) If a control strategy of Units 1 and 2 at emissions of 4.8 lb SO<sub>2</sub>/10<sup>6</sup> Btu, and Units 4 and 5 at emissions of 1.2 lb SO<sub>2</sub>/10<sup>6</sup> Btu were utilized both Florida AAQS and Federal Class I PSD increments will be met. Under this strategy only 2 percent of the Class II increment would be used.

It must be emphasized that the above conclusions incorporate the use of only one year's worth of meteorological data. Since sources and source impacts were aligned these analyses are conservative. Additional analysis with a greater meteorological data base may change the above conclusions.

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**APPENDIX A**

**Descriptions of the Atmospheric  
Dispersion Models**

APPENDIX A  
DESCRIPTIONS OF ATMOSPHERIC DISPERSION MODELS

THE AIR QUALITY DISPLAY MODEL

The Air Quality Display Model (AQDM) was developed by the U.S. Environmental Protection Agency and is an approved technique for computing annual or seasonal arithmetic average concentrations of gaseous and suspended particulate pollutants. The AQDM is based on the diffusion model developed by Martin and Tikvart (1968). It uses the Pasquill-Gifford plume dispersion equation, which is summarized by Turner (1969) and the plume rise equation developed by Briggs (1972) to simulate plume behavior.

Annual average emissions data and stack parameters from multiple point sources are used as inputs to the AQDM in conjunction with annual or seasonal meteorological stability wind rose data to determine ground-level concentrations at designated receptor points and points comprising a receptor grid network. The model can be calibrated by comparing ambient air quality data for a given annual time period with computed concentrations obtained from the AQDM using emissions and meteorological data for the same period. Once calibrated, the AQDM may be used to predict ambient air quality for any annual time period by adjusting the input data to correspond to the time period of interest.

According to the Pasquill-Gifford diffusion equation, the concentration, C, at a position (x, y, z) for the substances emitted at (0, 0, H) is given by:

$$C(x,y,z;H) = \frac{Q}{2\pi\sigma_y\sigma_z u} \exp[-1/2(y\sigma_y)^2] A$$

for:

$$A = \exp[-1/2(z-H/\sigma_z)^2] + \exp[-1/2(z+H/\sigma_z)^2]$$

where:

C (x, y, z; H) = pollutant concentration (grams/meter<sup>3</sup>) at point x, y, z  
for an effective stack height, H

Q = emission rate (grams/sec)

$\sigma_y$ ,  $\sigma_z$  = standard deviation of the plume concentration distribution in the cross plume and vertical directions (meters). ( $\sigma_y$  and  $\sigma_z$  are given as functions of downwind distance and atmospheric stability).

In the AQDM, the effective stack height, H, is computed from the Briggs plume rise equation according to the relation:

$$H = h + 1.6F^{1/3}u^{-1} (3.5z)^{2/3} \text{ for } r > 3.5z$$

and

$$H = h + 1.6F^{1/3}u^{-1} r^{2/3} \text{ for } r \leq 3.5z$$

$$z = 34F^{2/5} \text{ if } F > 55$$

$$z = 14F^{5/8} \text{ if } F \leq 55$$

H = effective stack height (meters)

h = actual stack height (meters)

$$F = fV_s R_s^2 [T_s - T_a]/T_s \text{ (meters}^4/\text{seconds}^3\text{)}$$

g = acceleration due to gravity (meters/sec<sup>2</sup>)

$V_s$  = exit velocity of stack gases (meters/sec)

$R_s$  = inside radius of stack (meters)

$T_s$  = exit temperature of stack gases (°K)

$T_a$  = ambient air temperature

U = wind speed at stack height

r = distance from source to receptor (meters)

### The PTMTPW Short-Term Model

The PTMTPW is an EPA model which is a modified version of the PTMTP model. The major difference in the PTMTPW is that this model accounts for the vertical wind shear effect (increase in wind speed with height) which is known to exist in the atmospheric boundary layer. Hourly wind speeds are input into the model along with the height at which the measurements were made. The wind shear correction at stack height for each source is then accomplished by use of the following equation:

$$U_z = U_L \left( \frac{z}{z_0} \right)^P$$

where  $U_L$  is the wind speed at height  $z_0$ ,  $z$  is the stack height or emission release point, and  $P$  depends upon atmospheric stability class (De-Marrais, 1959).

The effect of the wind shear modification is to increase ground-level concentrations as compared to those calculated by the PTMTP model. All other calculation techniques used by the PTMTPW to estimate ground-level pollutant concentrations are the same as those used in the PTMTP. It is important to note that since the wind shear modification tends to increase ground-level concentrations over those calculated by the PTMTP, the PTMTPW should overcalculate actual concentrations even more severely than the PTMTP.

In addition to a wind shear law, the model uses an hourly average emission inventory and stack data from multiple point sources in conjunction with hourly meteorological data to calculate hourly pollutant concentrations at designated receptor points. These hourly concentrations can be averaged over longer periods of time, such as 3 hours or 24 hours, in order to aid in the comparison of calculated concentrations with concentrations observed over a period of time greater than one hour. The PTMTPW uses the Pasquill-Gifford plume dispersion equation in conjunction with the plume rise equation developed by Briggs to simulate plume behavior. Using the Briggs equation, effective stack height,  $H$ , is determined according to the following relation:

$$H = h + 1.6F^{1/3}u^{-1} (3.5z)^{2/3} \text{ for } r > 3.5z$$

and

$$H = h + 1.6F^{1/3}u^{-1} r^{2/3} \text{ for } r \leq 3.5z$$

$$z = 34F^{2/5} \text{ if } F > 55$$

$$z = 14F^{5/8} \text{ if } F \leq 55$$

$H$  = effective stack height (meters)

$h$  = actual stack height (meters)  
 $F = fV_s R_s^2 [(T_s - T_a)/T_s]$  (meters<sup>4</sup>/seconds<sup>3</sup>)  
 $g$  = acceleration due to gravity (meters/sec<sup>2</sup>)  
 $V_s$  = exit velocity of stack gases (meters/sec)  
 $R_s$  = inside radius of stack (meters)  
 $T_s$  = exit temperature of stack gases ( $^{\circ}$ K)  
 $T_a$  = ambient air temperature  
 $U$  = wind speed at stack height  
 $r$  = distance from source to receptor (meters)

### The CRSTER Model

CRSTER is a steady state Gaussian plume model applicable in uneven or flat terrain. The purposes of the model are to: (1) determine the maximum concentrations from a single facility for various averaging times using one or more years of meteorological data, (2) determine the meteorological conditions which cause these maximum concentrations and, (3) store concentration information useful in calculating frequency distributions for various averaging times.

A concentration for each hour of the year is calculated from emissions data, stack parameters, and hourly meteorological conditions. Twenty-four hour averages are calculated from midnight-to-midnight of each day. This model employs the Briggs (1972) final plume rise equation.

General output for the model includes the highest and second highest 1,3, and 24-hour concentrations at each receptor for the year, plus the annual arithmetical average at each receptor. Receptors are specified for five downwind distances. For each downwind distance, receptors are located along the 36 standard wind directions (10° increments), resulting in a total of 180 receptors. Hourly concentrations for each

receptor can be output onto magnetic tape for further processing of frequency distributions.

ESE's CRSTER model has the option of inputing a varying number of years of meteorological data. All meteorological data are preprocessed, initially with a CRSTER Preprocessor program. In addition, an averaging time other than the standard 24, three- or one-hour averaging times can be determined.

Using the Briggs' equation, effective stack height, H, is determined according to the following relation:

$$H = h + 1.6F^{1/3}u^{-1} (3.5z)^{2/3} \text{ for } r > 3.5z$$

and

$$H = h + 1.6F^{1/3}u^{-1} r^{2/3} \text{ for } r \leq 3.5z$$

$$z = 34F^{2/5} \text{ if } F > 55$$

$$z = 14F^{5/8} \text{ if } F \leq 55$$

H = effective stack height (meters)

h = actual stack height (meters)

$$F = fV_s R_s^2 [(T_s - T_a)/T_s] (\text{meters}^4/\text{second}^3)$$

g = acceleration due to gravity (meters/sec<sup>2</sup>)

V<sub>s</sub> = exit velocity of stack gases (meters/sec)

R<sub>s</sub> = inside radius of stack (meters)

T<sub>s</sub> = exit temperature of stack gases (°K)

T<sub>a</sub> = ambient air temperature

U = wind speed at stack height

r = distance from source to receptor (meters)

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**APPENDIX B**

**Crystal River Units 4 and 5**

**Emissions Inventory**

FPC CR UNITS 485 AT MAX, ALLOWABLE, 72% LOAD

SOURCE DATA

SOURCE NUMBER	SOURCE LOCATION (KILOMETERS)	SOURCE AREA SQUARE HORIZONTAL	EMISSION RATE (TONS/DAY)	STACK DATA						
				SQUARE VERTICAL	KILOMETERS	SO <sub>2</sub>	PABI	HT (M)	DIAM (M)	VEL (M/SEC)
1	335.5	3204.9	0.0	136.500	11.370	182.9	6.9	20.7	396.	CR 485 COMBINED

FPC CR UNITS 4&5 AT MAX, ALLOWABLE, 72% LOAD

INPUT REGRESSION PARAMETERS ARE:

PELLETIANI Y=INTERCEPT SLOPE

SO2 0.0 1.0000

PARTICULATES 0.0 1.0000

## FPC CR UNITS 485 AT MAX. ALLOWABLE, 72% LOAD

RECEPTOR CONCENTRATION DATA					
RECEPTOR NUMBER	RECEPTOR LOCATION		EXPECTED ARITHMETIC MEAN		
	(KILOMETERS)		SC2	(MICROGRAMS/CU. METER) PARTICLES	
	HORIZ	VERT			
1	340.0	3200.0	1.	0.	
2	340.0	3201.0	1.	0.	
3	340.0	3202.0	0.	0.	
4	340.0	3203.0	1.	0.	
5	340.0	3204.0	3.	0.	
6	340.0	3205.0	4.	0.	
7	340.0	3206.0	3.	0.	
8	340.0	3207.0	2.	0.	
9	340.0	3208.0	2.	0.	
10	340.0	3209.0	2.	0.	
11	341.0	3200.0	1.	0.	
12	341.0	3201.0	1.	0.	
13	341.0	3202.0	1.	0.	
14	341.0	3203.0	2.	0.	
15	341.0	3204.0	3.	0.	
16	341.0	3205.0	4.	0.	
17	341.0	3206.0	3.	0.	
18	341.0	3207.0	2.	0.	
19	341.0	3208.0	2.	0.	
20	341.0	3209.0	2.	0.	
21	342.0	3200.0	1.	0.	
22	342.0	3201.0	1.	0.	
23	342.0	3202.0	2.	0.	
24	342.0	3203.0	2.	0.	
25	342.0	3204.0	3.	0.	
26	342.0	3205.0	4.	0.	
27	342.0	3206.0	3.	0.	
28	342.0	3207.0	2.	0.	
29	342.0	3208.0	2.	0.	
30	342.0	3209.0	2.	0.	
31	343.0	3200.0	1.	0.	
32	343.0	3201.0	1.	0.	
33	343.0	3202.0	2.	0.	
34	343.0	3203.0	2.	0.	
35	343.0	3204.0	3.	0.	
36	343.0	3205.0	4.	0.	
37	343.0	3206.0	3.	0.	
38	343.0	3207.0	2.	0.	
39	343.0	3208.0	2.	0.	
40	343.0	3209.0	2.	0.	

RECEPTOR CONCENTRATION DATA					
RECEPTOR NUMBER	RECEPTOR LOCATION		EXPECTED ARITHMETIC MEAN		
	(KILOMETERS) HORIZ	VERT	(MICROGRAMS/CU. METER) SO2	PARTICULATES	
41	344.0	3200.0	1.	0.	
42	344.0	3201.0	1.	0.	
43	344.0	3202.0	2.	0.	
44	344.0	3203.0	2.	0.	
45	344.0	3204.0	3.	0.	
46	344.0	3205.0	4.	0.	
47	344.0	3206.0	3.	0.	
48	344.0	3207.0	2.	0.	
49	344.0	3208.0	2.	0.	
50	344.0	3209.0	2.	0.	
51	345.0	3200.0	1.	0.	
52	345.0	3201.0	1.	0.	
53	345.0	3202.0	2.	0.	
54	345.0	3203.0	2.	0.	
55	345.0	3204.0	3.	0.	
56	345.0	3205.0	3.	0.	
57	345.0	3206.0	3.	0.	
58	345.0	3207.0	2.	0.	
59	345.0	3208.0	2.	0.	
60	345.0	3209.0	1.	0.	
61	346.0	3200.0	1.	0.	
62	346.0	3201.0	1.	0.	
63	346.0	3202.0	2.	0.	
64	346.0	3203.0	2.	0.	
65	346.0	3204.0	3.	0.	
66	346.0	3205.0	3.	0.	
67	346.0	3206.0	3.	0.	
68	346.0	3207.0	2.	0.	
69	346.0	3208.0	2.	0.	
70	346.0	3209.0	1.	0.	
71	347.0	3200.0	1.	0.	
72	347.0	3201.0	1.	0.	
73	347.0	3202.0	2.	0.	
74	347.0	3203.0	2.	0.	
75	347.0	3204.0	3.	0.	
76	347.0	3205.0	3.	0.	
77	347.0	3206.0	3.	0.	
78	347.0	3207.0	2.	0.	
79	347.0	3208.0	2.	0.	
80	347.0	3209.0	1.	0.	

RECEPTOR CONCENTRATION DATA					
RECEPTOR NUMBER	RECEPTOR LOCATION		EXPECTED ARITHMETIC MEAN		
	(KILOMETERS)		(MICROGRAMS/CL. METER)		
	HORIZ	VERT	SO2	PARTICULATES	
81	348.0	3200.0	1.	0.	
82	348.0	3201.0	1.	0.	
83	348.0	3202.0	2.	0.	
84	348.0	3203.0	2.	0.	
85	348.0	3204.0	2.	0.	
86	348.0	3205.0	3.	0.	
87	348.0	3206.0	2.	0.	
88	348.0	3207.0	2.	0.	
89	348.0	3208.0	2.	0.	
90	348.0	3209.0	1.	0.	
91	349.0	3200.0	1.	0.	
92	349.0	3201.0	1.	0.	
93	349.0	3202.0	2.	0.	
94	349.0	3203.0	2.	0.	
95	349.0	3204.0	2.	0.	
96	349.0	3205.0	3.	0.	
97	349.0	3206.0	2.	0.	
98	349.0	3207.0	2.	0.	
99	349.0	3208.0	2.	0.	
100	349.0	3209.0	1.	0.	
101	335.5	3183.9	0.	0.	

APC CR UNITS 485 AT MAX. ALLOWABLE, 72% LOAD

SOURCE CONTRIBUTIONS TO FIVE MAXIMUM RECEPTORS

ANNUAL SC2

MICROGRAMS PER CUBIC METER

SOURCE	RECEPTOR 1	RECEPTOR 2	RECEPTOR 3	RECEPTOR 4	RECEPTOR 5
	26	16	36	6	46
I	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
	3.9215	3.8632	3.7647	3.6507	3.5312
BACK- GROUND	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
TOTAL	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %
	3.9215	3.8632	3.7647	3.6507	3.5312

FPC CR UNITS 4&5 AT MAX. ALLOWABLE, 72% LOAD

SOURCE CONTRIBUTIONS TO FIVE MAXIMUM RECEPTORS

ANNUAL PARTICULATES

MICROGRAMS PER CUBIC METER

SOURCE	RECEPTOR	RECEPTOR	RECEPTOR	RECEPTOR	RECEPTOR	RECEPTOR
	26	16	36	6	46	
1	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	
	0.3267	0.3218	0.3136	0.3041	0.2941	
BACK-	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	
GRDLSL	0	0	0	0	0	
TOTAL	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	
	0.3267	0.3218	0.3136	0.3041	0.2941	

## IMPACT OF ALL SOURCES WITH NEW UNITS AT SITE

## SOURCE DATA

SOURCE NUMBER	SOURCE LOCATION		ANNUAL SOURCE EMISSION RATE (TONS/DAY)	STACK DATA				
	HORIZONTAL KILOMETERS	VERTICAL KILOMETERS		SOURCE AREA SQUARE KILOMETERS	SC2 PART	HT (M)	DIAH (M)	VEL 1M/SEC
1	334.7	3205.3	136.500	0.0	11.370	182.9	6.9	20.7
2	334.2	3204.2	221.000	0.0	3.600	152.0	4.6	31.7
3	334.2	3204.2	258.300	0.0	4.190	153.0	4.9	32.6
4	358.7	3192.8	0.208	0.0	0.050	11.9	2.5	4.5
5	341.0	3204.2	0.0	0.0	0.410	9.1	0.9	11.6
6	364.5	3158.3	0.476	0.0	0.131	9.1	0.7	14.4
7	364.5	3158.3	0.127	0.0	0.016	9.1	0.6	10.5
8	359.1	3162.8	1.070	0.0	0.274	30.5	3.9	1.0
9	359.1	3162.8	0.357	0.0	0.220	9.1	2.7	2.6
10	385.7	3242.5	0.019	0.0	0.003	9.1	0.3	5.0
11	385.7	3242.5	0.019	0.0	0.003	6.4	0.2	5.0
12	381.6	3223.6	0.021	0.0	0.054	6.4	0.9	16.9

CR 485 COMBINED  
 CR 1 AT 77% LOAD  
 CR 2 AT 74% LOAD  
 CARRILL CONST  
 FLA. LIME WORKS  
 DAIRY SEV. CORP  
 DAIRY SEV. CORP  
 CHEM. LIME INC  
 CHEM. LIME INC  
 FLA. CORRECT. IN  
 FLA. CORRECT. IN  
 O-NEAL CONSTRA

IMPACT OF ALL SOURCES WITH NEW UNITS AT SITE

INPUT REGRESSION PARAMETERS ARE:

POLLUTANT Y-INTERCEPT SLOPE

SO2 0.0 1,0000

PARTICULATES 0.0 1,0000

## IMPACT OF ALL SOURCES WITH NEW UNITS AT SITE

RECEPATOR CONCENTRATION DATA					
RECEPATOR NUMBER	RECEPATOR LOCATION		EXPECTED ARITHMETIC MEAN		
	(KILMETERS)		(MICROGRAMS/CU. METER)	S02	PARTICLES
	HORIZ	VERI			
1	330.0	3199.0	4.	0.	
2	330.0	3200.0	5.	1.	
3	330.0	3201.0	6.	1.	
4	330.0	3202.0	7.	1.	
5	330.0	3203.0	8.	1.	
6	330.0	3204.0	9.	1.	
7	330.0	3205.0	7.	1.	
8	330.0	3206.0	4.	1.	
9	330.0	3207.0	4.	1.	
10	330.0	3208.0	3.	0.	
11	330.0	3209.0	3.	0.	
12	330.0	3210.0	3.	0.	
13	330.0	3211.0	3.	0.	
14	331.0	3199.0	4.	0.	
15	331.0	3200.0	4.	1.	
16	331.0	3201.0	4.	1.	
17	331.0	3202.0	5.	1.	
18	331.0	3203.0	6.	1.	
19	331.0	3204.0	6.	1.	
20	331.0	3205.0	4.	1.	
21	331.0	3206.0	3.	1.	
22	331.0	3207.0	3.	1.	
23	331.0	3208.0	3.	0.	
24	331.0	3209.0	3.	0.	
25	331.0	3210.0	3.	0.	
26	331.0	3211.0	3.	0.	
27	332.0	3199.0	3.	0.	
28	332.0	3200.0	3.	1.	
29	332.0	3201.0	3.	1.	
30	332.0	3202.0	3.	1.	
31	332.0	3203.0	3.	1.	
32	332.0	3204.0	3.	1.	
33	332.0	3205.0	2.	1.	
34	332.0	3206.0	2.	1.	
35	332.0	3207.0	2.	1.	
36	332.0	3208.0	3.	0.	
37	332.0	3209.0	3.	0.	
38	332.0	3210.0	3.	0.	
39	332.0	3211.0	4.	0.	
40	333.0	3199.0	3.	0.	

## IMPACT OF ALL SOURCES WITH NEW UNITS AT SITE

RECEPTOR CONCENTRATION DATA					
RECEPTOR NUMBER	RECEPTOR LOCATION		EXPECTED ARITHMETIC MEAN		
	(KILOMETERS)		(MICROGRAMS/CU. METER)		
	HORIZ	VERT	SC2	PARTICLES	
41	333.0	3200.0	3.	1.	
42	333.0	3201.0	2.	1.	
43	333.0	3202.0	1.	1.	
44	333.0	3203.0	1.	1.	
45	333.0	3204.0	2.	1.	
46	333.0	3205.0	1.	1.	
47	333.0	3206.0	1.	1.	
48	333.0	3207.0	1.	1.	
49	333.0	3208.0	3.	0.	
50	333.0	3209.0	4.	0.	
51	333.0	3210.0	2.	0.	
52	333.0	3211.0	5.	0.	
53	334.0	3199.0	3.	0.	
54	334.0	3200.0	3.	1.	
55	334.0	3201.0	2.	1.	
56	334.0	3202.0	1.	1.	
57	334.0	3203.0	1.	1.	
58	334.0	3204.0	0.	1.	
59	334.0	3205.0	0.	1.	
60	334.0	3206.0	1.	1.	
61	334.0	3207.0	2.	1.	
62	334.0	3208.0	4.	0.	
63	334.0	3209.0	5.	0.	
64	334.0	3210.0	5.	0.	
65	334.0	3211.0	5.	0.	
66	335.0	3199.0	3.	0.	
67	335.0	3200.0	3.	1.	
68	335.0	3201.0	2.	1.	
69	335.0	3202.0	1.	1.	
70	335.0	3203.0	0.	1.	
71	335.0	3204.0	1.	1.	
72	335.0	3205.0	2.	1.	
73	335.0	3206.0	2.	1.	
74	335.0	3207.0	4.	1.	
75	335.0	3208.0	6.	1.	
76	335.0	3209.0	6.	1.	
77	335.0	3210.0	6.	0.	
78	335.0	3211.0	6.	0.	
79	336.0	3199.0	2.	0.	
80	336.0	3200.0	2.	1.	

## IMPACT OF ALL SOURCES WITH NEW UNITS AT SITE

RECEPFILE CONCENTRATION DATA				
RECEPTOR NUMBER	RECEPTOR LOCATION		EXPECTED ARITHMETIC MEAN	
	(KILOMETERS)		(MICROGRAMS/CU. METER)	
	ELEV	VERT	S02	PARTICULATES
81	336.0	3201.0	2.	1.
82	336.0	3202.0	1.	1.
83	336.0	3203.0	1.	1.
84	336.0	3204.0	4.	2.
85	336.0	3205.0	3.	1.
86	336.0	3206.0	5.	1.
87	336.0	3207.0	6.	1.
88	336.0	3208.0	7.	1.
89	336.0	3209.0	8.	1.
90	336.0	3210.0	7.	0.
91	336.0	3211.0	7.	0.
92	337.0	3199.0	2.	0.
93	337.0	3200.0	2.	1.
94	337.0	3201.0	3.	1.
95	337.0	3202.0	4.	1.
96	337.0	3203.0	5.	1.
97	337.0	3204.0	11.	2.
98	337.0	3205.0	9.	2.
99	337.0	3206.0	8.	1.
100	337.0	3207.0	9.	1.
101	337.0	3208.0	9.	1.
102	337.0	3209.0	8.	1.
103	337.0	3210.0	8.	0.
104	337.0	3211.0	7.	0.
105	338.0	3199.0	3.	0.
106	338.0	3200.0	3.	1.
107	338.0	3201.0	4.	1.
108	338.0	3202.0	6.	1.
109	338.0	3203.0	9.	2.
110	338.0	3204.0	17.	3.
111	338.0	3205.0	15.	2.
112	338.0	3206.0	11.	1.
113	338.0	3207.0	10.	1.
114	338.0	3208.0	9.	1.
115	338.0	3209.0	9.	1.
116	338.0	3210.0	8.	0.
117	338.0	3211.0	7.	0.
118	339.0	3199.0	3.	0.
119	339.0	3200.0	4.	1.
120	339.0	3201.0	6.	1.

## IMPACT OF ALL SOURCES WITH NEW UNITS AT SITE

RECEPTOR CONCENTRATION DATA					
RECEPTOR NUMBER	RECEPTOR LOCATION		EXPECTED ARITHMETIC MEAN		
	(KILOMETERS)		(MICROGRAMS/CU. METER)		
	HORIZ	VERT	SC2	PARTICULATES	
121	339.0	3202.0	8.	1.	
122	339.0	3203.0	13.	2.	
123	339.0	3204.0	19.	4.	
124	339.0	3205.0	18.	2.	
125	339.0	3206.0	12.	1.	
126	339.0	3207.0	10.	1.	
127	339.0	3208.0	10.	1.	
128	339.0	3209.0	9.	1.	
129	339.0	3210.0	8.	0.	
130	339.0	3211.0	7.	0.	
131	340.0	3199.0	4.	1.	
132	340.0	3200.0	5.	1.	
133	340.0	3201.0	7.	1.	
134	340.0	3202.0	9.	1.	
135	340.0	3203.0	14.	2.	
136	340.0	3204.0	19.	7.	
137	340.0	3205.0	18.	3.	
138	340.0	3206.0	14.	1.	
139	340.0	3207.0	11.	1.	
140	340.0	3208.0	10.	1.	
141	340.0	3209.0	9.	1.	
142	340.0	3210.0	8.	0.	
143	340.0	3211.0	7.	0.	
144	341.0	3199.0	8.	1.	
145	341.0	3200.0	6.	1.	
146	341.0	3201.0	8.	1.	
147	341.0	3202.0	10.	2.	
148	341.0	3203.0	15.	3.	
149	341.0	3204.0	19.	4.	
150	341.0	3205.0	18.	3.	
151	341.0	3206.0	14.	1.	
152	341.0	3207.0	11.	1.	
153	341.0	3208.0	9.	1.	
154	341.0	3209.0	8.	1.	
155	341.0	3210.0	7.	0.	
156	341.0	3211.0	7.	0.	
157	342.0	3199.0	5.	1.	
158	342.0	3200.0	6.	1.	
159	342.0	3201.0	8.	1.	
160	342.0	3202.0	11.	1.	

## IMPACT OF ALL SOURCES WITH NEW UNITS AT SITE

RECEPTOR CONCENTRATION DATA					
RECEPTOR NUMBER	RECEPTOR LOCATION		EXPECTED ARITHMETIC MEAN		
	(KILOMETERS)		(MICROGRAMS/CU. METER)		
	HUEIZ	VERT	S02	PARTICLES	
161	342.0	3203.0	14.	1.	
162	342.0	3204.0	18.	4.	
163	342.0	3205.0	17.	2.	
164	342.0	3206.0	14.	1.	
165	342.0	3207.0	10.	1.	
166	342.0	3208.0	9.	1.	
167	342.0	3209.0	8.	0.	
168	342.0	3210.0	7.	0.	
169	342.0	3211.0	7.	0.	
170	334.7	3184.3	2.	0.	

## IMPACT OF ALL SOURCES WITH NEW UNITS AT SITE

## SOURCE CONTRIBUTIONS TO FIVE MAXIMUM RECEPTORS

ANNUAL SC2

MICROGRAMS PER CUBIC METER

SOURCE	RECEPTOR 1	RECEPTOR 123	RECEPTOR 149	RECEPTOR 137	RECEPTOR 150
1	12.64 %	9.90 %	14.80 %	19.46 %	20.62 %
	2.4555	1.8829	2.7950	3.5881	3.7409
2	42.29 %	44.23 %	40.79 %	38.93 %	37.96 %
	8.2165	8.4095	7.7157	7.1777	7.8872
3	44.50 %	45.26 %	43.83 %	41.03 %	40.83 %
	8.6455	8.6041	8.2903	7.5609	7.4083
4	0.16 %	0.15 %	0.17 %	0.16 %	0.17 %
	0.0301	0.0288	0.0315	0.0294	0.0304
5	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
	0.0	0.0	0.0	0.0	0.0
6	0.13 %	0.14 %	0.12 %	0.13 %	0.12 %
	0.0247	0.0258	0.0235	0.0236	0.0224
7	0.03 %	0.04 %	0.03 %	0.03 %	0.03 %
	0.0066	0.0069	0.0063	0.0063	0.0060
8	0.18 %	0.19 %	0.17 %	0.18 %	0.17 %
	0.0343	0.0345	0.0319	0.0329	0.0313
9	0.06 %	0.06 %	0.06 %	0.06 %	0.06 %
	0.0115	0.0122	0.0107	0.0108	0.0105
10	0.01 %	0.01 %	0.01 %	0.01 %	0.01 %
	0.0018	0.0019	0.0018	0.0019	0.0019
11	0.01 %	0.01 %	0.01 %	0.01 %	0.01 %
	0.0018	0.0019	0.0018	0.0019	0.0019
12	0.02 %	0.02 %	0.02 %	0.02 %	0.02 %
	0.0032	0.0031	0.0032	0.0033	0.0033
BACK-GROUND	0	0	0	0	0
TOTAL	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %
	19.4315	19.0141	18.9156	18.4492	18.1481

## IMPACT OF ALL SOURCES WITH NEW UNITS AT SITE

## SOURCE CONTRIBUTIONS TO FIVE MAXIMUM RECEPTORS

## ANNUAL PARTICULATES

## MICROGRAMS PER CUBIC METER

SOURCE	RECEPTOR 136	RECEPTOR 149	RECEPTOR 123	RECEPTOR 162	RECEPTOR 150
1	3.11 % 0.2045	6.18 % 0.2331	4.21 % 0.1568	6.84 % 0.2402	9.14 % 0.3116
2	2.03 % 0.1335	3.33 % 0.1257	3.68 % 0.1370	3.27 % 0.1148	3.29 % 0.1122
3	2.13 % 0.1402	3.56 % 0.1345	3.75 % 0.1396	3.55 % 0.1246	3.52 % 0.1202
4	0.11 % 0.0072	0.20 % 0.0076	0.19 % 0.0069	0.23 % 0.0079	0.22 % 0.0074
5	92.13 % 6.0424	85.92 % 3.2014	87.28 % 3.2515	85.24 % 2.9931	82.95 % 2.8286
6	0.10 % 0.0068	0.17 % 0.0065	0.19 % 0.0071	0.17 % 0.0061	0.18 % 0.0062
7	0.01 % 0.0008	0.02 % 0.0008	0.02 % 0.0009	0.02 % 0.0007	0.02 % 0.0008
8	0.13 % 0.0088	0.22 % 0.0082	0.25 % 0.0094	0.24 % 0.0085	0.24 % 0.0080
9	0.15 % 0.0088	0.22 % 0.0082	0.25 % 0.0094	0.24 % 0.0085	0.24 % 0.0080
10	0.00 % 0.0003	0.01 % 0.0003	0.01 % 0.0003	0.01 % 0.0003	0.01 % 0.0003
11	0.00 % 0.0003	0.01 % 0.0003	0.01 % 0.0003	0.01 % 0.0003	0.01 % 0.0003
12	0.10 % 0.0063	0.17 % 0.0064	0.17 % 0.0063	0.18 % 0.0065	0.19 % 0.0066
HACK-GROUND	0.0 % 0.				
TOTAL	100.0 % 6.5806	100.0 % 3.7729	100.0 % 3.7254	100.0 % 3.5116	100.0 % 3.4101

## CR WORST DAY 186, STIE IMPACT OF CR1,2,4,5 AT 100% LOAD

1. 7.0

## A A A S C U R C E S \* \* \*

NO.	R (G/SEC)	HP (M)	TS (DEG-K)	VS (M/SEC)	D(M)	VF(M**3/SEC)	R (KM)	S (KM)
1.	2017.61	182.9	400.0	27.4	6.86	0.0	0.0	0.0
2.	3024.16	152.0	422.0	42.1	4.57	0.0	0.0	1.200
3.	3665.54	153.0	422.0	44.8	4.88	0.0	0.0	1.200

## A A A P R E C E P T O R S \* \* \*

NO.	RREC(KM)	SREC(KM)	Z (M)			
1.	0.0	1.000	0.0			
2.	0.0	2.000	0.0			
3.	0.0	3.000	0.0			
4.	0.0	4.000	0.0			
5.	0.0	5.000	0.0			
6.	0.0	6.000	0.0			
7.	0.0	7.000	0.0			
8.	0.0	8.000	0.0			
9.	0.0	9.000	0.0			
10.	0.0	10.000	0.0			
11.	0.0	12.000	0.0			
12.	0.0	15.000	0.0			
13.	0.0	20.000	0.0			
14.	0.0	25.000	0.0			
1.	217.	4.0	5	1886.	301.0	0.0
2.	221.	4.3	5	1878.	300.0	0.0
3.	228.	4.5	5	1870.	301.0	0.0
4.	227.	3.5	5	1863.	300.0	0.0
5.	264.	3.5	5	1855.	300.0	0.0
6.	261.	2.5	4	68.	300.0	0.0
7.	177.	4.3	3	283.	298.0	0.0
8.	162.	2.5	3	497.	299.0	0.0
9.	154.	2.5	2	712.	300.0	0.0
10.	184.	4.5	3	927.	300.0	0.0
11.	171.	4.3	2	1142.	300.0	0.0
12.	178.	4.5	2	1356.	301.0	0.0
13.	169.	3.5	2	1571.	301.0	0.0
14.	181.	5.5	3	1786.	302.0	0.0
15.	180.	4.5	3	1786.	302.0	0.0
16.	181.	5.0	3	1786.	302.0	0.0
17.	177.	4.0	3	1786.	301.0	0.0
18.	179.	4.5	3	1786.	301.0	0.0
19.	188.	4.0	4	1786.	301.0	0.0
20.	183.	3.8	4	1778.	300.0	0.0
21.	183.	3.5	4	1763.	298.0	0.0
22.	184.	4.0	5	1749.	300.0	0.0
23.	338.	10.0	4	1734.	297.0	0.0
24.	29.	3.0	5	1719.	294.0	0.0

AVERAGE CONCENTRATIONS FOR 24 HOURS.

AAA RECEPTOR NUMBER \*\*\*

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.

SOURCE PARTIAL CONCENTRATIONS (G/M\*\*3)

|    |           |           |           |           |           |           |           |           |           |           |           |           |
|----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 1. | 2.584E-06 | 1.329E-05 | 3.497E-05 | 4.918E-05 | 5.309E-05 | 5.098E-05 | 4.659E-05 | 4.179E-05 | 3.729E-05 | 3.335E-05 | 2.709E-05 | 2.082E-05 |
| 2. | 0.0       | 7.020E-09 | 2.947E-05 | 8.094E-05 | 1.066E-04 | 1.073E-04 | 9.764E-05 | 8.585E-05 | 7.495E-05 | 6.572E-05 | 5.189E-05 | 3.898E-05 |
| 3. | 0.0       | 1.258E-09 | 2.391E-05 | 7.507E-05 | 1.073E-04 | 1.141E-04 | 1.074E-04 | 9.655E-05 | 8.545E-05 | 7.553E-05 | 6.000E-05 | 4.499E-05 |

TOTAL CONCENTRATION (G/M\*\*3)

2.584E-08 1.329E-05 8.835E-05 2.052E-04 2.670E-04 2.724E-04 2.517E-04 2.242E-04 1.977E-04 1.746E-04 1.390E-04 1.048E-04

AAA RECEPTOR NUMBER \*\*\*

13. 14.

SOURCE PARTIAL CONCENTRATIONS (G/M\*\*3)

|    |           |           |
|----|-----------|-----------|
| 1. | 1.501E-05 | 1.190E-05 |
| 2. | 2.768E-05 | 2.170E-05 |
| 3. | 3.172E-05 | 2.481E-05 |

TOTAL CONCENTRATION (G/M\*\*3)

7.401E-05 5.841E-05

## CR WFCST DAY 276, CLASS I AREA IMPACT OF CR1,2,4,5 AT 100% LOAD

I. 7.0

## \*\*\* SOURCEES \*\*\*

| NO. | G (G/SEC) | HP (M) | TS (DEG-K) | VS (M/SEC) | D(M) | VF(M**3/SEC) | R (KM) | S (KM) |
|-----|-----------|--------|------------|------------|------|--------------|--------|--------|
| 1.  | 2017.61   | 182.9  | 400.0      | 27.4       | 6.86 | 0.0          | 0.0    | 1.200  |
| 2.  | 3024.16   | 152.0  | 422.0      | 42.1       | 4.57 | 0.0          | 0.0    | 0.0    |
| 3.  | 3665.54   | 153.0  | 422.0      | 44.8       | 4.88 | 0.0          | 0.0    | 0.0    |

## \*\*\* RECEP T GRS \*\*\*

| NO. | RREC(KM) | SREC(KM) | Z (M) |       |       |     |
|-----|----------|----------|-------|-------|-------|-----|
| 1.  | 0.0      | 20.000   | 0.0   |       |       |     |
| 2.  | 0.0      | 21.000   | 0.0   |       |       |     |
| 3.  | 0.0      | 22.000   | 0.0   |       |       |     |
| 1.  | 186.     | 3.4      | 4     | 1507. | 296.0 | 0.0 |
| 2.  | 182.     | 4.7      | 4     | 1502. | 296.0 | 0.0 |
| 3.  | 180.     | 4.6      | 4     | 1496. | 295.0 | 0.0 |
| 4.  | 179.     | 5.1      | 5     | 1491. | 295.0 | 0.0 |
| 5.  | 180.     | 4.9      | 5     | 1486. | 295.0 | 0.0 |
| 6.  | 178.     | 4.4      | 4     | 1480. | 295.0 | 0.0 |
| 7.  | 177.     | 4.4      | 4     | 1475. | 296.0 | 0.0 |
| 8.  | 195.     | 4.0      | 4     | 1470. | 296.0 | 0.0 |
| 9.  | 193.     | 4.8      | 3     | 1465. | 298.0 | 0.0 |
| 10. | 179.     | 6.4      | 4     | 1459. | 300.0 | 0.0 |
| 11. | 197.     | 6.3      | 4     | 1454. | 300.0 | 0.0 |
| 12. | 185.     | 6.1      | 4     | 1449. | 301.0 | 0.0 |
| 13. | 181.     | 4.4      | 4     | 1443. | 301.0 | 0.0 |
| 14. | 163.     | 4.0      | 4     | 1438. | 301.0 | 0.0 |
| 15. | 181.     | 5.6      | 4     | 1438. | 300.0 | 0.0 |
| 16. | 194.     | 5.9      | 4     | 1438. | 298.0 | 0.0 |
| 17. | 179.     | 4.9      | 4     | 1438. | 298.0 | 0.0 |
| 18. | 180.     | 5.8      | 4     | 1438. | 298.0 | 0.0 |
| 19. | 186.     | 3.4      | 4     | 1438. | 297.0 | 0.0 |
| 20. | 157.     | 4.0      | 4     | 1437. | 296.0 | 0.0 |
| 21. | 157.     | 4.2      | 4     | 1437. | 296.0 | 0.0 |
| 22. | 183.     | 4.4      | 4     | 1436. | 296.0 | 0.0 |
| 23. | 192.     | 3.9      | 4     | 1436. | 295.0 | 0.0 |
| 24. | 164.     | 3.4      | 5     | 1435. | 295.0 | 0.0 |

AVERAGE CONCENTRATIONS FOR 24 HOURS.

\*\*\* RECEPTOR NUMBER \*\*\*

1. 2. 3.

SOURCE PARTIAL CONCENTRATIONS (G/M\*\*3)

|    |           |           |           |
|----|-----------|-----------|-----------|
| 1. | 1.844E-05 | 1.909E-05 | 1.960E-05 |
| 2. | 4.812E-05 | 4.825E-05 | 4.821E-05 |
| 3. | 4.836E-05 | 4.894E-05 | 4.932E-05 |

TOTAL CONCENTRATION (G/M\*\*3)

1.149E-04 1.163E-04 1.171E-04

## CPU AND CRG, MAX IMPACT AT THE SITE, 80XLOAD

1. 7.0

\*\*\* SOURCE \*\*\*

| NO. | G (G/SEC) | HP (M) | TS (DEG-K) | VS (M/SEC) | D(M) | VF(M**3/SEC) | R (KM) | S (KM) |
|-----|-----------|--------|------------|------------|------|--------------|--------|--------|
| 1.  | 1592.95   | 182.9  | 398.0      | 22.4       | 6.86 | 0.0          | 0.0    | 0.0    |

\*\*\* RECEP 1 C R S \*\*\*

| NO. | RREC(KM) | SREC(KM) | Z (M) |
|-----|----------|----------|-------|
|-----|----------|----------|-------|

|     |      |       |     |       |       |     |
|-----|------|-------|-----|-------|-------|-----|
| 1.  | 0.0  | 4.500 | 0.0 |       |       |     |
| 2.  | 0.0  | 4.600 | 0.0 |       |       |     |
| 3.  | 0.0  | 4.700 | 0.0 |       |       |     |
| 4.  | 0.0  | 4.800 | 0.0 |       |       |     |
| 5.  | 0.0  | 4.900 | 0.0 |       |       |     |
| 6.  | 0.0  | 5.000 | 0.0 |       |       |     |
| 7.  | 0.0  | 5.100 | 0.0 |       |       |     |
| 8.  | 0.0  | 5.200 | 0.0 |       |       |     |
| 9.  | 0.0  | 5.300 | 0.0 |       |       |     |
| 10. | 0.0  | 5.400 | 0.0 |       |       |     |
| 11. | 0.0  | 5.500 | 0.0 |       |       |     |
| 12. | 0.0  | 5.600 | 0.0 |       |       |     |
| 13. | 0.0  | 5.700 | 0.0 |       |       |     |
| 14. | 0.0  | 5.800 | 0.0 |       |       |     |
| 15. | 0.0  | 5.900 | 0.0 |       |       |     |
| 16. | 0.0  | 6.000 | 0.0 |       |       |     |
| 17. | 0.0  | 6.100 | 0.0 |       |       |     |
| 18. | 0.0  | 6.200 | 0.0 |       |       |     |
| 19. | 0.0  | 6.300 | 0.0 |       |       |     |
| 20. | 0.0  | 6.400 | 0.0 |       |       |     |
| 21. | 0.0  | 6.500 | 0.0 |       |       |     |
| 1.  | 217. | 4.0   | 5   | 1886. | 301.0 | 0.0 |
| 2.  | 221. | 4.3   | 5   | 1878. | 300.0 | 0.0 |
| 3.  | 228. | 4.5   | 5   | 1870. | 301.0 | 0.0 |
| 4.  | 227. | 3.5   | 5   | 1863. | 300.0 | 0.0 |
| 5.  | 261. | 3.5   | 5   | 1855. | 300.0 | 0.0 |
| 6.  | 261. | 2.5   | 4   | 68.   | 300.0 | 0.0 |
| 7.  | 177. | 4.3   | 3   | 283.  | 298.0 | 0.0 |
| 8.  | 162. | 2.5   | 3   | 497.  | 299.0 | 0.0 |
| 9.  | 154. | 2.5   | 2   | 712.  | 300.0 | 0.0 |
| 10. | 181. | 4.5   | 3   | 927.  | 300.0 | 0.0 |
| 11. | 171. | 4.3   | 2   | 1142. | 300.0 | 0.0 |
| 12. | 178. | 4.5   | 2   | 1356. | 301.0 | 0.0 |
| 13. | 169. | 3.5   | 2   | 1571. | 301.0 | 0.0 |
| 14. | 181. | 5.5   | 3   | 1786. | 302.0 | 0.0 |
| 15. | 180. | 4.5   | 3   | 1786. | 302.0 | 0.0 |
| 16. | 181. | 5.0   | 3   | 1786. | 302.0 | 0.0 |
| 17. | 177. | 4.0   | 3   | 1786. | 301.0 | 0.0 |
| 18. | 179. | 4.5   | 3   | 1786. | 301.0 | 0.0 |
| 19. | 188. | 4.0   | 1   | 1786. | 301.0 | 0.0 |
| 20. | 183. | 3.8   | 4   | 1778. | 300.0 | 0.0 |
| 21. | 183. | 3.5   | 4   | 1763. | 298.0 | 0.0 |
| 22. | 181. | 4.0   | 5   | 1749. | 300.0 | 0.0 |
| 23. | 338. | 10.0  | 4   | 1734. | 297.0 | 0.0 |
| 24. | 29.  | 3.0   | 5   | 1719. | 294.0 | 0.0 |

AVERAGE CONCENTRATIONS FOR 24 HOURS.

A A A R E C E P T O R   N U M B E R \* \* \*

1.        2.        3.        4.        5.        6.        7.        8.        9.        10.      11.      12.

SOURCE      PARTIAL CONCENTRATIONS (G/M\*\*3)

1.      4.841E-05 4.846E-05 4.845E-05 4.837E-05 4.824E-05 4.807E-05 4.785E-05 4.759E-05 4.729E-05 4.697E-05 4.662E-05 4.624E-05

TOTAL CONCENTRATION (G/M\*\*3)

4.841E-05 4.846E-05 4.845E-05 4.837E-05 4.824E-05 4.807E-05 4.785E-05 4.759E-05 4.729E-05 4.697E-05 4.662E-05 4.624E-05

A A A R E C E P T O R   N U M B E R \* \* \*

13.      14.      15.      16.      17.      18.      19.      20.      21.

SOURCE      PARTIAL CONCENTRATIONS (G/M\*\*3)

1.      4.584E-05 4.543E-05 4.500E-05 4.455E-05 4.410E-05 4.364E-05 4.316E-05 4.269E-05 4.221E-05

TOTAL CONCENTRATION (G/M\*\*3)

4.584E-05 4.543E-05 4.500E-05 4.455E-05 4.410E-05 4.364E-05 4.316E-05 4.269E-05 4.221E-05

## CR WCRST DAY 186, SITE IMPACT OF CRI,2,4,5 AT 100% LOAD

1. 7.0

## \*\*\* SOURCES \*\*\*

| NO. | R (G/SEC) | HP (H) | TS (DEG-K) | VS (M/SEC) | D(M) | VF(M**3/SEC) | R (KM) | S (KM) |
|-----|-----------|--------|------------|------------|------|--------------|--------|--------|
| 1.  | 2017.61   | 182.9  | 400.0      | 27.4       | 6.86 | 0.0          | 0.0    | 0.0    |
| 2.  | 3024.16   | 152.0  | 422.0      | 42.1       | 4.57 | 0.0          | 0.0    | 1.200  |
| 3.  | 3665.54   | 153.0  | 422.0      | 44.8       | 4.88 | 0.0          | 0.0    | 1.200  |

## \*\*\* REFLECTORS \*\*\*

| NO. | RREC(KM) | SREC(KM) | Z (M) |
|-----|----------|----------|-------|
|-----|----------|----------|-------|

|     |      |       |     |       |       |     |
|-----|------|-------|-----|-------|-------|-----|
| 1.  | 0.0  | 4.500 | 0.0 |       |       |     |
| 2.  | 0.0  | 4.600 | 0.0 |       |       |     |
| 3.  | 0.0  | 4.700 | 0.0 |       |       |     |
| 4.  | 0.0  | 4.800 | 0.0 |       |       |     |
| 5.  | 0.0  | 4.900 | 0.0 |       |       |     |
| 6.  | 0.0  | 5.000 | 0.0 |       |       |     |
| 7.  | 0.0  | 5.100 | 0.0 |       |       |     |
| 8.  | 0.0  | 5.200 | 0.0 |       |       |     |
| 9.  | 0.0  | 5.300 | 0.0 |       |       |     |
| 10. | 0.0  | 5.400 | 0.0 |       |       |     |
| 11. | 0.0  | 5.500 | 0.0 |       |       |     |
| 12. | 0.0  | 5.600 | 0.0 |       |       |     |
| 13. | 0.0  | 5.700 | 0.0 |       |       |     |
| 14. | 0.0  | 5.800 | 0.0 |       |       |     |
| 15. | 0.0  | 5.900 | 0.0 |       |       |     |
| 16. | 0.0  | 6.000 | 0.0 |       |       |     |
| 17. | 0.0  | 6.100 | 0.0 |       |       |     |
| 18. | 0.0  | 6.200 | 0.0 |       |       |     |
| 19. | 0.0  | 6.300 | 0.0 |       |       |     |
| 20. | 0.0  | 6.400 | 0.0 |       |       |     |
| 21. | 0.0  | 6.500 | 0.0 |       |       |     |
| 1.  | 217. | 4.0   | 5   | 1886. | 301.0 | 0.0 |
| 2.  | 221. | 4.3   | 5   | 1878. | 300.0 | 0.0 |
| 3.  | 226. | 4.5   | 5   | 1870. | 301.0 | 0.0 |
| 4.  | 227. | 3.5   | 5   | 1863. | 300.0 | 0.0 |
| 5.  | 264. | 3.5   | 5   | 1855. | 300.0 | 0.0 |
| 6.  | 261. | 2.5   | 4   | 68.   | 300.0 | 0.0 |
| 7.  | 177. | 4.3   | 3   | 283.  | 298.0 | 0.0 |
| 8.  | 162. | 2.5   | 3   | 497.  | 299.0 | 0.0 |
| 9.  | 154. | 2.5   | 2   | 712.  | 300.0 | 0.0 |
| 10. | 181. | 4.5   | 3   | 927.  | 300.0 | 0.0 |
| 11. | 171. | 4.3   | 2   | 1142. | 300.0 | 0.0 |
| 12. | 178. | 4.5   | 2   | 1356. | 301.0 | 0.0 |
| 13. | 169. | 3.5   | 2   | 1571. | 301.0 | 0.0 |
| 14. | 181. | 5.5   | 3   | 1786. | 302.0 | 0.0 |
| 15. | 180. | 4.5   | 3   | 1786. | 302.0 | 0.0 |
| 16. | 181. | 5.0   | 3   | 1786. | 302.0 | 0.0 |
| 17. | 177. | 4.0   | 3   | 1786. | 301.0 | 0.0 |
| 18. | 179. | 4.5   | 3   | 1786. | 301.0 | 0.0 |
| 19. | 188. | 4.0   | 4   | 1786. | 301.0 | 0.0 |
| 20. | 183. | 3.8   | 4   | 1778. | 300.0 | 0.0 |
| 21. | 183. | 3.5   | 4   | 1763. | 298.0 | 0.0 |
| 22. | 184. | 4.0   | 5   | 1749. | 300.0 | 0.0 |
| 23. | 338. | 10.0  | 4   | 1734. | 297.0 | 0.0 |
| 24. | 29.  | 3.0   | 5   | 1719. | 294.0 | 0.0 |

AVERAGE CONCENTRATIONS FOR 24 HOURS.

\*\*\*A A R E C E P T O R   N U M B E R \*\*\*

1.      2.      3.      4.      5.      6.      7.      8.      9.      10.     11.    12.

SOURCE      PARTIAL CONCENTRATIONS (G/M\*\*3)

|    |           |           |           |           |           |           |           |           |           |           |           |           |
|----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 1. | 5.220E-05 | 5.252E-05 | 5.277E-05 | 5.294E-05 | 5.305E-05 | 5.309E-05 | 5.307E-05 | 5.300E-05 | 5.287E-05 | 5.271E-05 | 5.250E-05 | 5.225E-05 |
| 2. | 9.780E-05 | 1.002E-04 | 1.022E-04 | 1.040E-04 | 1.054E-04 | 1.066E-04 | 1.076E-04 | 1.083E-04 | 1.087E-04 | 1.090E-04 | 1.091E-04 | 1.090E-04 |
| 3. | 9.480E-05 | 9.789E-05 | 1.007E-04 | 1.032E-04 | 1.054E-04 | 1.073E-04 | 1.090E-04 | 1.104E-04 | 1.115E-04 | 1.125E-04 | 1.132E-04 | 1.137E-04 |

TOTAL CONCENTRATION (G/M\*\*3)

2.448E-04 2.506E-04 2.557E-04 2.601E-04 2.639E-04 2.670E-04 2.696E-04 2.716E-04 2.731E-04 2.742E-04 2.748E-04 2.750E-04

\*\*\*A A R E C E P T O R   N U M B E R \*\*\*

13.     14.     15.     16.     17.     18.     19.     20.     21.

SOURCE      PARTIAL CONCENTRATIONS (G/M\*\*3)

|    |           |           |           |           |           |           |           |           |           |
|----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 1. | 5.198E-05 | 5.167E-05 | 5.133E-05 | 5.098E-05 | 5.060E-05 | 5.020E-05 | 4.979E-05 | 4.936E-05 | 4.892E-05 |
| 2. | 1.088E-04 | 1.084E-04 | 1.079E-04 | 1.073E-04 | 1.066E-04 | 1.058E-04 | 1.050E-04 | 1.041E-04 | 1.031E-04 |
| 3. | 1.140E-04 | 1.142E-04 | 1.142E-04 | 1.141E-04 | 1.138E-04 | 1.134E-04 | 1.129E-04 | 1.124E-04 | 1.117E-04 |

TOTAL CONCENTRATION (G/M\*\*3)

2.748E-04 2.743E-04 2.735E-04 2.724E-04 2.710E-04 2.695E-04 2.677E-04 2.658E-04 2.637E-04

## CR WCRST DAY 276, CLASS I AREA IMPACT OF CR1,2,4,5 AT 100% LOAD

1. 7.0

\*\*\* SOURCE S \*\*\*

| NO. | G (G/SEC) | HP (M) | TS (DEG-K) | VS (M/SEC) | D(M) | VF(M**3/SEC) | R (KM) | S (KM) |
|-----|-----------|--------|------------|------------|------|--------------|--------|--------|
| 1.  | 2017.61   | 182.9  | 400.0      | 27.4       | 6.86 | 0.0          | 0.0    | 0.0    |
| 2.  | 3024.16   | 152.0  | 422.0      | 42.1       | 4.57 | 0.0          | 0.0    | 1.200  |
| 3.  | 3665.54   | 153.0  | 422.0      | 40.8       | 4.88 | 0.0          | 0.0    | 1.200  |

\*\*\* RECEP TS \*\*\*

| NO. | PREC(KM) | SREC(KM) | Z (M) |
|-----|----------|----------|-------|
| 1.  | 0.0      | 20,000   | 0.0   |
| 2.  | 0.0      | 21,000   | 0.0   |
| 3.  | 0.0      | 22,000   | 0.0   |
| 4.  | 186.     | 3.4      | 4     |
| 5.  | 182.     | 4.7      | 4     |
| 6.  | 180.     | 4.6      | 4     |
| 7.  | 179.     | 5.1      | 5     |
| 8.  | 180.     | 4.9      | 5     |
| 9.  | 178.     | 4.4      | 4     |
| 10. | 177.     | 4.4      | 4     |
| 11. | 195.     | 4.0      | 4     |
| 12. | 193.     | 4.8      | 3     |
| 13. | 179.     | 6.0      | 4     |
| 14. | 197.     | 6.3      | 4     |
| 15. | 185.     | 6.1      | 4     |
| 16. | 181.     | 4.4      | 4     |
| 17. | 163.     | 4.0      | 4     |
| 18. | 181.     | 5.6      | 4     |
| 19. | 191.     | 5.9      | 4     |
| 20. | 179.     | 4.9      | 4     |
| 21. | 180.     | 5.8      | 4     |
| 22. | 186.     | 3.4      | 4     |
| 23. | 157.     | 4.0      | 4     |
| 24. | 157.     | 4.2      | 4     |
| 25. | 183.     | 4.0      | 4     |
| 26. | 192.     | 3.9      | 4     |
| 27. | 164.     | 3.4      | 5     |

1438. 298.0 0.0

AVERAGE CONCENTRATIONS FOR 24 HOURS.

\* \* \* RECEPTOR NUMBER \* \* \*

1. 2. 3.

SOURCE PARTIAL CONCENTRATIONS (G/M\*\*3)

|    |           |           |           |
|----|-----------|-----------|-----------|
| 1. | 1.921E-05 | 1.969E-05 | 2.006E-05 |
| 2. | 4.756E-05 | 4.805E-05 | 4.824E-05 |
| 3. | 4.719E-05 | 4.819E-05 | 4.884E-05 |

TOTAL CONCENTRATION (G/M\*\*3)

1.140E-04 1.159E-04 1.171E-04

## CR WCRST 3-HR PERIOD, SITE, DAY 165, PD 5, CP1,2,4,5 AT 100% LOAD

1. 7.0

A A \* S C O U R C E S \* \* \*

| NO. | R (G/SEC) | HP (M) | TG (DEG-K) | VS (M/SEC) | C(M) | VF(M**3/SEC) | R (KM) | S (KM) |
|-----|-----------|--------|------------|------------|------|--------------|--------|--------|
|-----|-----------|--------|------------|------------|------|--------------|--------|--------|

|    |         |       |       |      |      |     |     |       |
|----|---------|-------|-------|------|------|-----|-----|-------|
| 1. | 2017.61 | 182.9 | 400.0 | 27.4 | 6.86 | 0.0 | 0.0 | 1.200 |
| 2. | 3024.16 | 152.0 | 422.0 | 42.1 | 4.57 | 0.0 | 0.0 | 0.0   |
| 3. | 3665.54 | 153.0 | 422.0 | 44.8 | 4.88 | 0.0 | 0.0 | 0.0   |

A A \* R E C E P T O R S \* \* \*

| NO. | PREC(KM) | SREC(KM) | Z (M) |
|-----|----------|----------|-------|
|-----|----------|----------|-------|

|     |      |       |     |       |       |     |
|-----|------|-------|-----|-------|-------|-----|
| 1.  | 0.0  | 3.500 | 0.0 |       |       |     |
| 2.  | 0.0  | 3.600 | 0.0 |       |       |     |
| 3.  | 0.0  | 3.700 | 0.0 |       |       |     |
| 4.  | 0.0  | 3.800 | 0.0 |       |       |     |
| 5.  | 0.0  | 3.900 | 0.0 |       |       |     |
| 6.  | 0.0  | 4.000 | 0.0 |       |       |     |
| 7.  | 0.0  | 4.100 | 0.0 |       |       |     |
| 8.  | 0.0  | 4.200 | 0.0 |       |       |     |
| 9.  | 0.0  | 4.300 | 0.0 |       |       |     |
| 10. | 0.0  | 4.400 | 0.0 |       |       |     |
| 11. | 0.0  | 4.500 | 0.0 |       |       |     |
| 1.  | 182. | 3.7   | 2   | 1715. | 302.0 | 0.0 |
| 2.  | 174. | 4.1   | 2   | 1705. | 302.0 | 0.0 |
| 3.  | 180. | 3.8   | 2   | 1705. | 303.0 | 0.0 |

AVERAGE CONCENTRATIONS FOR 3 HOURS.

\* \* \* RECEPTOR NUMBER \* \* \*

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11.

SOURCE PARTIAL CONCENTRATIONS (G/M\*\*3)

|    |           |           |           |           |           |           |           |           |           |           |           |
|----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 1. | 1.838E-04 | 1.980E-04 | 2.099E-04 | 2.195E-04 | 2.270E-04 | 2.326E-04 | 2.364E-04 | 2.387E-04 | 2.397E-04 | 2.396E-04 | 2.385E-04 |
| 2. | 4.283E-04 | 4.183E-04 | 4.081E-04 | 3.977E-04 | 3.873E-04 | 3.769E-04 | 3.666E-04 | 3.564E-04 | 3.464E-04 | 3.366E-04 | 3.270E-04 |
| 3. | 4.722E-04 | 4.638E-04 | 4.548E-04 | 4.453E-04 | 4.355E-04 | 4.255E-04 | 4.154E-04 | 4.052E-04 | 3.951E-04 | 3.851E-04 | 3.751E-04 |

TOTAL CONCENTRATION (G/M\*\*3)

1.087E-03 1.090E-03 1.073E-03 1.063E-03 1.050E-03 1.035E-03 1.018E-03 1.000E-03 9.812E-04 9.613E-04 9.407E-04

## CR WORST 3-HR PERIOD, CLASS 1 AREA, DAY 172, PERIOD 6, CR 1,2,4,5 AT 100% LOAD

1. 7.0

\*\*\* SOURCES \*\*\*

| NO. | G (G/SEC) | HP (M) | TS (DEG-K) | VS (M/SEC) | D(M) | VF(M**3/SEC) | R (KM) | S (KM) |
|-----|-----------|--------|------------|------------|------|--------------|--------|--------|
| 1.  | 2017.61   | 182.9  | 400.0      | 27.4       | 6.86 | 0.0          | 0.0    | 0.0    |
| 2.  | 3024.16   | 152.0  | 422.0      | 42.1       | 4.57 | 0.0          | 0.0    | 1.200  |
| 3.  | 3665.54   | 153.0  | 422.0      | 44.8       | 4.88 | 0.0          | 0.0    | 1.200  |

\*\*\* AREAS \*\*\*

| NO. | PREC(KM) | SREC(KM) | Z (M) |       |       |     |
|-----|----------|----------|-------|-------|-------|-----|
| 1.  | 0.0      | 20,000   | 0.0   |       |       |     |
| 2.  | 0.0      | 21,000   | 0.0   |       |       |     |
| 3.  | 0.0      | 22,000   | 0.0   |       |       |     |
| 4.  | 0.0      | 23,000   | 0.0   |       |       |     |
| 5.  | 0.0      | 24,000   | 0.0   |       |       |     |
| 6.  | 0.0      | 25,000   | 0.0   |       |       |     |
| 7.  | 0.0      | 26,000   | 0.0   |       |       |     |
| 8.  | 0.0      | 27,000   | 0.0   |       |       |     |
| 1.  | 180.     | 1.7      | 3     | 1386. | 296.0 | 0.0 |
| 2.  | 184.     | 1.1      | 2     | 1386. | 297.0 | 0.0 |
| 3.  | 183.     | 1.0      | 3     | 1386. | 298.0 | 0.0 |

AVERAGE CONCENTRATIONS FOR 3 HOURS.

\* \* \* R E C E P T O R   N U M B E R \* \* \*

1.        2.        3.        4.        5.        6.        7.        8.

SOURCE      PARTIAL CONCENTRATIONS (G/M\*\*3)

|    |           |           |           |           |           |           |           |           |
|----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 1. | 1.194E-04 | 1.166E-04 | 1.137E-04 | 1.107E-04 | 1.076E-04 | 1.046E-04 | 1.017E-04 | 9.878E-05 |
| 2. | 1.960E-04 | 1.907E-04 | 1.854E-04 | 1.800E-04 | 1.747E-04 | 1.695E-04 | 1.644E-04 | 1.595E-04 |
| 3. | 2.313E-04 | 2.262E-04 | 2.208E-04 | 2.151E-04 | 2.094E-04 | 2.036E-04 | 1.979E-04 | 1.922E-04 |

TOTAL CONCENTRATION (G/M\*\*3)

5.467E-04 5.335E-04 5.198E-04 5.058E-04 4.917E-04 4.777E-04 4.639E-04 4.505E-04

CR WORST 3-HR PERIOD, SITE, DAY 165, PD 5: CR1,2,4,5 AT 75% LOAD

1. 7.0

\* \* \* S O U R C E S \* \* \*

| NO. | O (G/SEC) | H (M) | TS (DEG-K) | VS (M/SEC) | F (M) | VF(M**3/SEC) | R (KM) | S (KM) |
|-----|-----------|-------|------------|------------|-------|--------------|--------|--------|
| 1.  | 1486.78   | 182.9 | 397.0      | 21.2       | 6.86  | 0.0          | 0.0    | 0.0    |
| 2.  | 2270.07   | 152.0 | 411.0      | 30.8       | 4.57  | 0.0          | 0.0    | 1.200  |
| 3.  | 2748.96   | 153.0 | 411.0      | 32.9       | 4.88  | 0.0          | 0.0    | 1.200  |

\* \* \* A R E C E P T O R S \* \* \*

| NO. | RREC(KM) | SREC(KM) | Z (M) |       |       |     |
|-----|----------|----------|-------|-------|-------|-----|
| 1.  | 0.0      | 3.500    | 0.0   |       |       |     |
| 2.  | 0.0      | 3.600    | 0.0   |       |       |     |
| 3.  | 0.0      | 3.700    | 0.0   |       |       |     |
| 4.  | 0.0      | 3.800    | 0.0   |       |       |     |
| 5.  | 0.0      | 3.900    | 0.0   |       |       |     |
| 6.  | 0.0      | 4.000    | 0.0   |       |       |     |
| 7.  | 0.0      | 4.100    | 0.0   |       |       |     |
| 8.  | 0.0      | 4.200    | 0.0   |       |       |     |
| 9.  | 0.0      | 4.300    | 0.0   |       |       |     |
| 10. | 0.0      | 4.400    | 0.0   |       |       |     |
| 11. | 0.0      | 4.500    | 0.0   |       |       |     |
| 1.  | 182.     | 3.7      | 2     | 1715. | 302.0 | 0.0 |
| 2.  | 176.     | 4.1      | 2     | 1705. | 302.0 | 0.0 |
| 3.  | 180.     | 3.8      | 2     | 1705. | 303.0 | 0.0 |

AVERAGE CONCENTRATIONS FOR 3 HOURS.

\* \* \* A R E C E P T O R   N U M B E R \* \* \*

1.        2.        3.        4.        5.        6.        7.        8.        9.        10.      11.

SOURCE

PARTIAL CONCENTRATIONS (G/M\*\*3)

|    |           |           |           |           |           |           |           |           |           |           |           |
|----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 1. | 1.976E-04 | 1.934E-04 | 1.890E-04 | 1.846E-04 | 1.800E-04 | 1.754E-04 | 1.709E-04 | 1.664E-04 | 1.619E-04 | 1.575E-04 | 1.532E-04 |
| 2. | 4.613E-04 | 4.640E-04 | 4.631E-04 | 4.593E-04 | 4.532E-04 | 4.453E-04 | 4.361E-04 | 4.259E-04 | 4.151E-04 | 4.038E-04 | 3.922E-04 |
| 3. | 4.724E-04 | 4.774E-04 | 4.800E-04 | 4.895E-04 | 4.879E-04 | 4.837E-04 | 4.775E-04 | 4.697E-04 | 4.606E-04 | 4.507E-04 | 4.401E-04 |

TOTAL CONCENTRATION (G/M\*\*3)

1.132E-03 1.140E-03 1.140E-03 1.133E-03 1.121E-03 1.104E-03 1.084E-03 1.062E-03 1.038E-03 1.012E-03 9.855E-04

PLANT NAME: FPC CRYSTAL RIVER POLLUTANT: SO<sub>2</sub> EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M\*\*3  
CRI R 2 AT 6.17%, IMPACT AT SITE AND IN CLASS 1 AREA, 100% LOAD  
CRYSTAL RIVER MET DATA, 1975 W/ TPA CLOUD COVER & CEILING--

IHC2141 F1OCS - UNFORMATTED I/C, RECORD FORMAT SPECIFIED AS F, U CR V OR UNFORMATTED I/O REQUEST ON ASCII TAPE; UNITS 9

TRACEBACK ROUTINE CALLED FROM TSN REG. 14 REG. 15 REG. 0 REG. 1

IBCCM 0033E030 0034F7F4 00000000 0037AFFE

MAIN 00020D80 0133RF38 FD000008 0037AFFC

ENTRY POINT= 0133BF38

STANDARD FIXUP TAKEN, EXECUTION CONTINUING

NET FILE REQUESTED

STN NO. YR STN NO. YR

SURFACE 12842 71 12842 71

UPPER AIR 12842 71 12842 71

**PLANT LOCATION: RURAL**

NO TAPE OUTPUT

NET DATA WILL NOT BE PRINTED

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

MARKED BY "1" IN THE ABOVE TABLE

STACK # 1--UNIT 1  
STACK # 2--UNIT 2

| STACK | MONTH | EMISSION RATE<br>(GMS/SEC) | HEIGHT<br>(METERS) | DIAMETER<br>(METERS) | EXIT VELOCITY<br>(M/SEC) | TEMP<br>(DEG.K) | VOLUMETRIC FLOW<br>(M**3/SEC) |
|-------|-------|----------------------------|--------------------|----------------------|--------------------------|-----------------|-------------------------------|
| 1     | ALL   | 3024.1599                  | 152.00             | 4.57                 | 42.10                    | 422.00          | 690.56                        |
| 2     | ALL   | 3665.5400                  | 153.00             | 4.88                 | 44.80                    | 422.00          | 837.93                        |

PLANT NAME: FFC CRYSTAL RIVER POLLUTANT: SO2 EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/H\*\*3

YEARLY MAXIMUM 24-HOUR CONC= 1.6800E-04 DIRECTION= 9 DISTANCE= 4.0 KM DAY=128

## HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

| RANGE | 4.0 KM            | 4.5 KM           | 5.0 KM           | 5.5 KM           | 24.0 KM          |
|-------|-------------------|------------------|------------------|------------------|------------------|
| DIR   |                   |                  |                  |                  |                  |
| 1     | 9.8624E-05 (229)  | 9.5882E-05 (229) | 9.1465E-05 (229) | 8.6312E-05 (229) | 4.4713E-05 ( 31) |
| 2     | 9.3751E-05 (113)  | 9.2796E-05 (113) | 9.0034E-05 (113) | 8.6638E-05 (113) | 6.4956E-05 ( 61) |
| 3     | 9.7556E-05 (331)  | 9.5251E-05 (331) | 9.1171E-05 (331) | 8.6277E-05 (331) | 2.6653E-05 ( 57) |
| 4     | 7.8086E-05 (205)  | 8.0767E-05 (205) | 8.1513E-05 (205) | 8.1206E-05 (205) | 3.1323E-05 (116) |
| 5     | 8.8541E-05 (234)  | 7.9588E-05 (234) | 7.2349E-05 (234) | 6.7678E-05 (205) | 2.8309E-05 (112) |
| 6     | 9.2143E-05 (200)  | 8.2959E-05 (200) | 7.4731E-05 (200) | 6.7702E-05 (200) | 5.4538E-05 (114) |
| 7     | 1.1736E-04 (280)  | 1.2415E-04 (280) | 1.2449E-04 (280) | 1.2104E-04 (280) | 3.9182E-05 (114) |
| 8     | 1.0801E-04 (230)  | 9.6023E-05 (230) | 8.9289E-05 (139) | 8.6228E-05 ( 11) | 3.3301E-05 (256) |
| 9     | 1.6800E-04 (128)  | 1.5841E-04 (128) | 1.4723E-04 (128) | 1.3590E-04 (128) | 7.1993E-05 (167) |
| 10    | 1.5032E-04 (168)  | 1.5158E-04 (168) | 1.4739E-04 (168) | 1.4038E-04 (168) | 6.2298E-05 (172) |
| 11    | 8.4310E-05 (197)  | 7.9178E-05 (197) | 7.3638E-05 (197) | 6.8182E-05 (197) | 5.1530E-05 ( 96) |
| 12    | 1.0826E-04 (198)  | 9.5468E-05 (198) | 9.0012E-05 (123) | 8.6613E-05 (136) | 4.6849E-05 ( 39) |
| 13    | 8.8503E-05 (198)  | 8.1342E-05 (198) | 7.4242E-05 (198) | 6.7754E-05 (198) | 3.4019E-05 (123) |
| 14    | 1.0409E-04 (104)  | 1.0160E-04 (104) | 9.6637E-05 (104) | 9.0668E-05 (104) | 3.9816E-05 ( 66) |
| 15    | 1.3023E-04 (222)  | 1.2938E-04 (222) | 1.2476E-04 (222) | 1.1824E-04 (222) | 4.3894E-05 ( 40) |
| 16    | 6.49412E-05 (121) | 6.3792E-05 (221) | 6.6965E-05 (221) | 6.7558E-05 (221) | 3.9162E-05 ( 89) |
| 17    | 6.2985E-05 (317)  | 6.3735E-05 (317) | 6.2488E-05 (317) | 6.0159E-05 (317) | 2.7104E-05 ( 67) |
| 18    | 8.1198E-05 (124)  | 8.0792E-05 (124) | 7.7701E-05 (124) | 7.3290E-05 (124) | 4.7220E-05 (226) |
| 19    | 6.7547E-05 (316)  | 7.3727E-05 (316) | 7.5882E-05 (316) | 7.5332E-05 (316) | 5.2281E-05 ( 20) |
| 20    | 4.8440E-05 (263)  | 4.3405E-05 (263) | 4.1243E-05 ( 99) | 3.9741E-05 ( 99) | 2.6796E-05 (301) |
| 21    | 7.3303E-05 (137)  | 6.6964E-05 (311) | 6.6591E-05 (311) | 6.4394E-05 (311) | 4.2352E-05 ( 7)  |
| 22    | 7.6712E-05 (142)  | 7.7624E-05 (142) | 7.5817E-05 (142) | 7.2467E-05 (142) | 4.9067E-05 (358) |
| 23    | 1.0618E-04 (156)  | 9.7204E-05 (156) | 8.7950E-05 (156) | 7.9336E-05 (156) | 6.7311E-05 (270) |
| 24    | 1.1766E-04 ( 90)  | 1.1587E-04 ( 90) | 1.1082E-04 ( 90) | 1.0425E-04 ( 90) | 4.9110E-05 (319) |
| 25    | 7.8209E-05 (285)  | 8.1344E-05 (285) | 8.0852E-05 (285) | 7.8264E-05 (285) | 3.5507E-05 (335) |
| 26    | 7.0100E-05 (267)  | 7.5554E-05 (267) | 7.7058E-05 (267) | 7.5995E-05 (267) | 4.9193E-05 ( 33) |
| 27    | 1.1964E-04 (101)  | 1.1765E-04 (190) | 1.1743E-04 (190) | 1.1506E-04 (190) | 5.1634E-05 (265) |
| 28    | 1.1797E-04 (231)  | 1.1294E-04 (231) | 1.0640E-04 (231) | 9.9525E-05 (231) | 3.7711E-05 (244) |
| 29    | 1.0845E-04 (231)  | 1.0057E-04 (231) | 9.2830E-05 (231) | 8.5764E-05 (231) | 4.8894E-05 (245) |
| 30    | 1.2885E-04 (138)  | 1.2277E-04 (138) | 1.2774E-04 (138) | 1.2381E-04 (138) | 4.4976E-05 (353) |
| 31    | 6.8173E-05 (243)  | 7.1989E-05 (243) | 7.2371E-05 (243) | 7.0600E-05 (243) | 3.1516E-05 (348) |
| 32    | 1.2116E-04 (230)  | 1.1755E-04 (230) | 1.1231E-04 (230) | 1.0657E-04 (230) | 4.1614E-05 (230) |
| 33    | 9.4074E-05 (363)  | 1.0532E-04 (363) | 1.1022E-04 (363) | 1.1097E-04 (363) | 5.1953E-05 (227) |
| 34    | 1.0235E-04 (187)  | 1.0641E-04 (187) | 1.0565E-04 (187) | 1.0209E-04 (187) | 3.8165E-05 (227) |
| 35    | 8.0588E-05 (260)  | 7.1739E-05 (259) | 6.6622E-05 (259) | 6.1301E-05 (259) | 2.0490E-05 ( 61) |
| 36    | 1.2127E-04 (229)  | 1.1888E-04 (229) | 1.1472E-04 (229) | 1.0980E-04 (229) | 4.0333E-05 (228) |

PLANT NAME: FPC CRYSTAL RIVER

POLLUTANT:

SO2

EMISSION UNITS: GM/SEC

AIR QUALITY UNITS: GM/M\*\*3

YEARLY SECOND MAXIMUM 24-HOUR CONC= 1.6430E-04 DIRECTION= 9 DISTANCE= 4.0 KM DAY=220

## SECOND HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

| RANGE | 4.0 KM           | 4.5 KM           | 5.0 KM           | 5.5 KM           | 24.0 KM          |
|-------|------------------|------------------|------------------|------------------|------------------|
| DIR   |                  |                  |                  |                  |                  |
| 1     | 8.4804E-05 (260) | 7.7224E-05 (260) | 7.0672E-05 (260) | 6.5010E-05 (260) | 3.5105E-05 ( 58) |
| 2     | 7.6065E-05 (236) | 7.0810E-05 (331) | 6.9474E-05 (331) | 6.7607E-05 ( 25) | 5.4532E-05 ( 30) |
| 3     | 7.5462E-05 (205) | 7.4296E-05 (205) | 7.1365E-05 (205) | 6.7590E-05 (205) | 2.4531E-05 (354) |
| 4     | 7.6667E-05 (234) | 7.7954E-05 (127) | 8.1151E-05 (127) | 8.0795E-05 (205) | 2.1452E-05 (205) |
| 5     | 7.5331E-05 (288) | 6.8091E-05 (288) | 6.6082E-05 (205) | 6.6372E-05 (234) | 2.5028E-05 (118) |
| 6     | 8.2202E-05 (206) | 7.1289E-05 (206) | 6.5993E-05 (159) | 6.2808E-05 (159) | 4.7470E-05 (118) |
| 7     | 9.5265E-05 (103) | 8.7995E-05 (197) | 8.2353E-05 (197) | 7.6904E-05 (197) | 2.7489E-05 (201) |
| 8     | 9.7720E-05 (139) | 9.4499E-05 (139) | 8.6568E-05 ( 11) | 8.3384E-05 (139) | 2.9421E-05 (117) |
| 9     | 1.6430E-04 (220) | 1.5077E-04 (220) | 1.3703E-04 (220) | 1.2931E-04 (167) | 6.9239E-05 (166) |
| 10    | 1.3133E-04 (204) | 1.2507E-04 (204) | 1.1734E-04 (204) | 1.0935E-04 (204) | 4.8931E-05 (165) |
| 11    | 7.6238E-05 (129) | 7.2875E-05 (129) | 6.8237E-05 (129) | 6.4646E-05 (183) | 4.0435E-05 (183) |
| 12    | 9.2883E-05 (123) | 9.2750E-05 (123) | 8.8768E-05 (136) | 8.6111E-05 (123) | 4.1933E-05 ( 44) |
| 13    | 5.9799E-05 (136) | 6.2488E-05 (136) | 6.2248E-05 (136) | 6.0246E-05 (136) | 2.8417E-05 ( 40) |
| 14    | 5.0384E-05 (222) | 5.3175E-05 (199) | 5.7249E-05 (199) | 5.8823E-05 (199) | 3.1437E-05 ( 63) |
| 15    | 6.6599E-05 (121) | 6.5744E-05 (121) | 6.7420E-05 ( 21) | 5.1120E-05 (121) | 3.5933E-05 ( 66) |
| 16    | 5.6997E-05 (221) | 6.0085E-05 (121) | 5.5093E-05 (121) | 5.1129E-05 (169) | 3.7781E-05 ( 1)  |
| 17    | 5.5079E-05 (162) | 5.6240E-05 (162) | 5.4606E-05 (162) | 5.1662E-05 (162) | 2.4831E-05 ( 19) |
| 18    | 5.3659E-05 (316) | 5.8385E-05 (316) | 5.9666E-05 (316) | 5.8704E-05 (316) | 3.0494E-05 ( 20) |
| 19    | 4.9102E-05 ( 41) | 4.7971E-05 ( 41) | 4.5717E-05 ( 41) | 4.3114E-05 ( 41) | 2.7218E-05 (338) |
| 20    | 4.2605E-05 ( 18) | 4.1816E-05 ( 99) | 3.9340E-05 (263) | 3.5987E-05 (263) | 2.3329E-05 (308) |
| 21    | 6.4295E-05 (311) | 6.6026E-05 (137) | 6.1608E-05 (326) | 6.4036E-05 (326) | 3.6193E-05 (272) |
| 22    | 6.4376E-05 ( 68) | 6.2214E-05 ( 41) | 6.2735E-05 ( 41) | 6.1635E-05 ( 41) | 4.2851E-05 (292) |
| 23    | 8.0030E-05 (270) | 8.1100E-05 (270) | 7.9341E-05 (270) | 7.6246E-05 (270) | 6.4262E-05 (292) |
| 24    | 9.0567E-05 (156) | 8.9221E-05 (156) | 7.6204E-05 (156) | 8.2364E-05 (156) | 4.7407E-05 (352) |
| 25    | 7.0160E-05 (137) | 7.2856E-05 (137) | 7.2252E-05 (137) | 6.9731E-05 (137) | 3.3427E-05 ( 93) |
| 26    | 6.5404E-05 (156) | 6.2268E-05 (281) | 6.4930E-05 (281) | 6.5416E-05 (281) | 4.2876E-05 ( 94) |
| 27    | 1.1397E-04 (190) | 1.1493E-04 (101) | 1.0886E-04 (101) | 1.0240E-04 (101) | 4.3196E-05 (190) |
| 28    | 9.8933E-05 (101) | 9.7124E-05 (101) | 9.3407E-05 (101) | 8.8733E-05 (101) | 2.6671E-05 (327) |
| 29    | 6.7841E-05 (214) | 7.5204E-05 (214) | 7.8362E-05 (214) | 7.8595E-05 (214) | 4.3579E-05 (281) |
| 30    | 9.0233E-05 (231) | 9.1281E-05 (231) | 9.0941E-05 (231) | 8.9405E-05 (231) | 4.0304E-05 (138) |
| 31    | 5.5260E-05 (278) | 6.0323E-05 (278) | 6.1991E-05 (278) | 6.1489E-05 (278) | 3.0583E-05 (209) |
| 32    | 8.9358E-05 ( 2)  | 8.6533E-05 ( 2)  | 8.2655E-05 ( 2)  | 7.7958E-05 ( 2)  | 3.7966E-05 ( 35) |
| 33    | 5.7717E-05 ( 11) | 5.7717E-05 ( 11) | 5.9241E-05 ( 91) | 8.6162E-05 ( 91) | 4.0534E-05 (332) |
| 34    | 1.0104E-04 (259) | 9.6501E-05 (259) | 9.0222E-05 (259) | 8.3566E-05 (259) | 2.3780E-05 (205) |
| 35    | 7.5650E-05 (259) | 7.1423E-05 (260) | 6.3469E-05 (260) | 5.6810E-05 (260) | 1.9876E-05 ( 58) |
| 36    | 1.1383E-04 (260) | 1.0349E-04 (260) | 9.4318E-05 (260) | 8.6378E-05 (260) | 3.8488E-05 ( 9)  |

PLANT NAME: FPC CRYSTAL RIVER

POLLUTANTS: SO2

EMISSION UNITS: GM/SEC

AIR QUALITY UNITS: GM/M\*\*3

YEARLY MAXIMUM

3-HOUR CONC= 8.2853E-04

DIRECTION= 10

DISTANCE= 4.0 KM

DAY=204

TIME PERIOD= 5

| DIR | RANGE                | HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR |                     |                     |                     |         |
|-----|----------------------|---|---------------------|---------------------|---------------------|---------|
|     |                      | 4.0 KM  | 4.5 KM              | 5.0 KM              | 5.5 KM              | 24.0 KM |
| 1   | 5.2146E-04 (229, 4)  | 4.8998E-04 (229, 4)                           | 4.5736E-04 (229, 4) | 4.2605E-04 (229, 4) | 2.1280E-04 (239, 4) |         |
| 2   | 5.0287E-04 (236, 5)  | 4.6332E-04 (236, 5)                           | 4.4233E-04 (113, 5) | 4.1774E-04 (113, 5) | 2.0955E-04 ( 9, 4)  |         |
| 3   | 6.4779E-04 (331, 5)  | 6.1288E-04 (331, 5)                           | 5.7292E-04 (331, 5) | 5.3292E-04 (331, 5) | 1.6041E-04 (263, 6) |         |
| 4   | 5.5856E-04 (234, 4)  | 5.7384E-04 (127, 4)                           | 5.9834E-04 (127, 4) | 5.9972E-04 (127, 4) | 1.4293E-04 (180, 4) |         |
| 5   | 7.0608E-04 (234, 4)  | 6.3496E-04 (234, 4)                           | 5.7744E-04 (234, 4) | 5.2991E-04 (234, 4) | 1.5138E-04 ( 24, 5) |         |
| 6   | 7.3712E-04 (200, 4)  | 6.6366E-04 (200, 4)                           | 5.9784E-04 (200, 4) | 5.4161E-04 (200, 4) | 1.6338E-04 (114, 2) |         |
| 7   | 5.5811E-04 (197, 3)  | 5.1341E-04 (280, 4)                           | 5.1014E-04 (177, 5) | 4.9585E-04 (177, 5) | 1.6010E-04 (114, 5) |         |
| 8   | 5.8037E-04 (257, 5)  | 5.7373E-04 (257, 5)                           | 5.5184E-04 (257, 5) | 5.2699E-04 (232, 5) | 2.0019E-04 (254, 4) |         |
| 9   | 7.9424E-04 (220, 5)  | 7.6738E-04 (362, 5)                           | 7.6732E-04 (362, 5) | 7.4707E-04 (362, 5) | 2.1449E-04 (362, 5) |         |
| 10  | 8.2853E-04 (204, 5)  | 7.9092E-04 (204, 5)                           | 7.4536E-04 (204, 5) | 6.9772E-04 (204, 5) | 1.7558E-04 (165, 7) |         |
| 11  | 4.1949E-04 (196, 4)  | 4.1981E-04 (196, 4)                           | 4.0514E-04 (196, 4) | 3.9638E-04 (220, 6) | 1.7642E-04 ( 44, 5) |         |
| 12  | 5.3193E-04 (198, 4)  | 4.7022E-04 (198, 4)                           | 4.6135E-04 (136, 4) | 4.5653E-04 (136, 4) | 1.9677E-04 (150, 6) |         |
| 13  | 4.3352E-04 (136, 4)  | 4.5721E-04 (136, 4)                           | 4.5862E-04 (136, 4) | 4.4627E-04 (136, 4) | 1.4162E-04 (239, 5) |         |
| 14  | 5.9101E-04 (104, 4)  | 5.8665E-04 (104, 4)                           | 5.6513E-04 (104, 4) | 5.3567E-04 (104, 4) | 1.6686E-04 (151, 6) |         |
| 15  | 5.1840E-04 (162, 4)  | 5.2827E-04 (222, 5)                           | 5.2055E-04 (222, 5) | 5.0019E-04 (222, 5) | 1.8870E-04 (298, 6) |         |
| 16  | 4.3231E-04 (162, 4)  | 4.2272E-04 (169, 4)                           | 4.1441E-04 (169, 4) | 4.0034E-04 (169, 4) | 1.7100E-04 ( 1, 4)  |         |
| 17  | 4.10063E-04 (162, 4) | 4.4992E-04 (162, 4)                           | 4.3685E-04 (162, 4) | 4.1329E-04 (162, 4) | 1.5822E-04 (100, 3) |         |
| 18  | 4.9348E-04 (124, 5)  | 4.8725E-04 (124, 5)                           | 4.6607E-04 (124, 5) | 4.3789E-04 (124, 5) | 1.8060E-04 ( 89, 3) |         |
| 19  | 3.9237E-04 ( 41, 5)  | 3.8272E-04 ( 41, 5)                           | 3.6370E-04 ( 41, 5) | 3.4151E-04 ( 41, 5) | 1.6295E-04 (338, 3) |         |
| 20  | 3.8752E-04 (263, 5)  | 3.4724E-04 (263, 5)                           | 3.2143E-04 ( 99, 4) | 3.0963E-04 ( 99, 4) | 1.9558E-04 (301, 5) |         |
| 21  | 4.8467E-04 (263, 5)  | 4.5600E-04 ( 18, 4)                           | 4.2249E-04 ( 18, 4) | 4.4683E-04 (334, 5) | 1.6188E-04 (334, 5) |         |
| 22  | 4.4831E-04 (142, 5)  | 4.5208E-04 (142, 5)                           | 4.4113E-04 (142, 5) | 4.2177E-04 (142, 5) | 1.8243E-04 (291, 5) |         |
| 23  | 6.3869E-04 (270, 4)  | 6.4475E-04 (270, 4)                           | 6.2654E-04 (270, 4) | 5.9567E-04 (270, 4) | 2.1126E-04 (358, 6) |         |
| 24  | 4.3332E-04 ( 90, 4)  | 4.1357E-04 (269, 4)                           | 4.0757E-04 (269, 4) | 3.9235E-04 (269, 4) | 1.7813E-04 (293, 1) |         |
| 25  | 6.2537E-04 (285, 4)  | 6.5002E-04 (285, 4)                           | 6.4538E-04 (285, 4) | 6.2367E-04 (285, 4) | 1.8013E-04 (336, 6) |         |
| 26  | 4.8810E-04 (360, 4)  | 4.9107E-04 (360, 4)                           | 4.7953E-04 (360, 4) | 4.6042E-04 (360, 4) | 1.7000E-04 (232, 4) |         |
| 27  | 5.0496E-04 ( 86, 5)  | 4.9221E-04 ( 86, 5)                           | 4.9147E-04 (265, 4) | 4.9042E-04 (190, 3) | 1.8750E-04 (248, 4) |         |
| 28  | 7.1254E-04 (231, 4)  | 6.5417E-04 (231, 4)                           | 5.9675E-04 (231, 4) | 5.4523E-04 (231, 4) | 2.1327E-04 (244, 6) |         |
| 29  | 8.1347E-04 (231, 4)  | 7.4590E-04 (231, 4)                           | 6.8276E-04 (231, 4) | 6.2713E-04 (231, 4) | 3.0263E-04 (245, 4) |         |
| 30  | 6.2380E-04 (182, 4)  | 5.9116E-04 (182, 4)                           | 5.5512E-04 (182, 4) | 5.1932E-04 (182, 4) | 1.8490E-04 (211, 3) |         |
| 31  | 3.7228E-04 (243, 4)  | 3.7937E-04 (243, 4)                           | 3.7089E-04 (243, 4) | 3.5387E-04 (243, 4) | 1.1459E-04 (261, 4) |         |
| 32  | 7.6059E-04 (230, 4)  | 7.0311E-04 (230, 4)                           | 6.4555E-04 (230, 4) | 5.9278E-04 (230, 4) | 1.8131E-04 (230, 3) |         |
| 33  | 6.41523E-04 (230, 4) | 6.6315E-04 ( 91, 5)                           | 6.5458E-04 ( 91, 5) | 6.3231E-04 ( 77, 5) | 1.8683E-04 (333, 1) |         |
| 34  | 6.2761E-04 (187, 4)  | 6.5189E-04 (187, 4)                           | 6.4658E-04 (187, 4) | 6.2393E-04 (187, 4) | 1.8447E-04 (157, 8) |         |
| 35  | 5.6269E-04 (260, 4)  | 5.0065E-04 (260, 4)                           | 4.4589E-04 (260, 4) | 3.9977E-04 (260, 4) | 1.1026E-04 ( 61, 3) |         |
| 36  | 7.4374E-04 (229, 4)  | 7.3661E-04 (229, 4)                           | 7.1790E-04 (229, 4) | 6.9346E-04 (229, 4) | 2.1618E-04 (239, 4) |         |

PLANT NAME: FPC CRYSTAL RIVER

POLLUTANT:

SO2

EMISSION UNITS: GM/SEC

AIR QUALITY UNITS: GM/M\*\*3

YEARLY SECOND MAXIMUM

3-HOUR CONC= 7.9409E-04

DIRECTION= 9

DISTANCE= 4.0 KM

DAY=238

TIME PERIOD= 5

| DIR | RANGE      | SECOND HIGHEST<br>4.0 KM | 3-HOUR CONCENTRATION AT EACH RECEPTOR |          |            |          |            |          |
|-----|------------|--------------------------|---------------------------------------|----------|------------|----------|------------|----------|
|     |            |                          | 4.5 KM                                | 5.0 KM   | 5.5 KM     | 24.0 KM  |            |          |
| 1   | 4.2471E-04 | ( 92, 4)                 | 4.3679E-04                            | ( 92, 4) | 4.3040E-04 | ( 92, 4) | 4.1344E-04 | ( 4, 6)  |
| 2   | 4.6904E-04 | (113, 5)                 | 4.6169E-04                            | (113, 5) | 4.2270E-04 | (236, 5) | 3.9484E-04 | ( 66, 1) |
| 3   | 4.9684E-04 | (236, 5)                 | 4.5455E-04                            | (236, 5) | 4.1425E-04 | (236, 5) | 3.7796E-04 | (236, 5) |
| 4   | 5.1625E-04 | (127, 4)                 | 5.1989E-04                            | (131, 4) | 5.2987E-04 | (131, 4) | 5.2208E-04 | (131, 4) |
| 5   | 5.6185E-04 | (240, 5)                 | 5.0113E-04                            | (240, 5) | 4.6596E-04 | ( 55, 5) | 4.5165E-04 | (219, 6) |
| 6   | 5.7189E-04 | (206, 5)                 | 5.0100E-04                            | (159, 4) | 4.8911E-04 | (159, 4) | 4.6933E-04 | (159, 4) |
| 7   | 4.9405E-04 | (280, 4)                 | 5.1018E-04                            | (197, 3) | 5.0590E-04 | (280, 4) | 4.8444E-04 | (280, 4) |
| 8   | 5.7999E-04 | (230, 5)                 | 5.1792E-04                            | (230, 5) | 5.1524E-04 | (232, 5) | 5.2182E-04 | (257, 5) |
| 9   | 7.9400E-04 | (238, 5)                 | 7.4051E-04                            | (238, 5) | 6.8492E-04 | (238, 5) | 6.3919E-04 | (119, 4) |
| 10  | 6.8905E-04 | (168, 4)                 | 7.0036E-04                            | (168, 4) | 6.8413E-04 | (168, 4) | 6.5287E-04 | (168, 4) |
| 11  | 4.0149E-04 | (129, 5)                 | 3.9569E-04                            | (129, 5) | 3.9714E-04 | (220, 6) | 3.8291E-04 | (196, 4) |
| 12  | 4.7636E-04 | (123, 5)                 | 4.6857E-04                            | (123, 5) | 4.5362E-04 | (141, 3) | 4.5571E-04 | (141, 3) |
| 13  | 3.7605E-04 | (123, 4)                 | 3.7929E-04                            | (123, 4) | 3.6829E-04 | (123, 4) | 3.4981E-04 | (123, 4) |
| 14  | 3.6470E-04 | (199, 6)                 | 4.2345E-04                            | (199, 6) | 4.5624E-04 | (199, 6) | 4.6904E-04 | (199, 6) |
| 15  | 5.1378E-04 | (222, 5)                 | 4.9970E-04                            | (162, 4) | 4.6867E-04 | (162, 4) | 4.3544E-04 | (162, 4) |
| 16  | 4.2108E-04 | (169, 4)                 | 4.1465E-04                            | (162, 4) | 3.8574E-04 | (162, 4) | 3.5540E-04 | (124, 6) |
| 17  | 3.7673E-04 | ( 99, 4)                 | 3.4821E-04                            | ( 99, 4) | 3.1679E-04 | ( 99, 4) | 2.9125E-04 | (315, 5) |
| 18  | 3.9719E-04 | (162, 4)                 | 4.1081E-04                            | (162, 4) | 4.0244E-04 | (162, 4) | 3.8318E-04 | (162, 4) |
| 19  | 3.4129E-04 | ( 99, 4)                 | 3.3880E-04                            | ( 99, 4) | 3.2644E-04 | ( 99, 4) | 3.1522E-04 | (316, 5) |
| 20  | 3.4084E-04 | ( 18, 4)                 | 3.2611E-04                            | ( 99, 4) | 3.1472E-04 | (263, 5) | 2.8789E-04 | (263, 5) |
| 21  | 4.8395E-04 | ( 18, 4)                 | 4.3804E-04                            | (263, 5) | 4.2171E-04 | (334, 5) | 3.9031E-04 | ( 18, 4) |
| 22  | 3.8333E-04 | (291, 5)                 | 3.9462E-04                            | (291, 5) | 3.9272E-04 | (291, 5) | 3.8380E-04 | (291, 5) |
| 23  | 4.8488E-04 | (156, 4)                 | 4.3183E-04                            | (156, 4) | 3.8171E-04 | (156, 4) | 3.6583E-04 | (273, 4) |
| 24  | 4.2216E-04 | (156, 4)                 | 4.1153E-04                            | ( 90, 4) | 3.8436E-04 | ( 90, 4) | 3.5594E-04 | ( 90, 4) |
| 25  | 4.6122E-04 | ( 55, 5)                 | 4.5471E-04                            | ( 55, 5) | 4.5272E-04 | (137, 4) | 4.3895E-04 | (137, 4) |
| 26  | 4.0190E-04 | (267, 5)                 | 4.2675E-04                            | (267, 5) | 4.3027E-04 | (267, 5) | 4.2037E-04 | (267, 5) |
| 27  | 4.5788E-04 | (240, 4)                 | 4.8100E-04                            | (265, 4) | 4.8455E-04 | (190, 3) | 4.8744E-04 | (265, 4) |
| 28  | 4.7002E-04 | ( 68, 5)                 | 4.4085E-04                            | ( 68, 5) | 4.0624E-04 | (101, 5) | 3.7236E-04 | (101, 5) |
| 29  | 4.3410E-04 | (277, 4)                 | 4.6300E-04                            | (277, 4) | 4.6812E-04 | (360, 5) | 4.6293E-04 | (360, 5) |
| 30  | 4.5296E-04 | (138, 5)                 | 4.6450E-04                            | (211, 3) | 4.9738E-04 | (211, 3) | 5.1442E-04 | (211, 3) |
| 31  | 2.7744E-04 | (360, 5)                 | 2.8416E-04                            | (346, 4) | 3.0312E-04 | (346, 4) | 3.1016E-04 | (346, 4) |
| 32  | 4.3702E-04 | (323, 4)                 | 4.4578E-04                            | (323, 4) | 4.4272E-04 | (139, 3) | 4.5270E-04 | (139, 3) |
| 33  | 6.4318E-04 | ( 91, 5)                 | 6.5326E-04                            | ( 77, 5) | 6.5189E-04 | ( 77, 5) | 6.2959E-04 | ( 91, 5) |
| 34  | 5.5392E-04 | (259, 4)                 | 5.4809E-04                            | (259, 4) | 5.2560E-04 | (259, 4) | 4.9593F-04 | (259, 4) |
| 35  | 5.2387E-04 | (211, 4)                 | 4.5183E-04                            | (211, 4) | 3.8975E-04 | (211, 4) | 3.4760E-04 | (259, 4) |
| 36  | 6.1719E-04 | (260, 4)                 | 5.6558E-04                            | (260, 4) | 5.1732E-04 | (260, 4) | 5.1165E-04 | (179, 3) |

PLANT NAME: FPC CRYSTAL RIVER POLLUTANT: SO<sub>2</sub> EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M\*\*3  
CRYSTAL RIVER MET DATA, 1975 W/ TPA CLOUD COVER & CEILING--  
100 PERCENT LOAD, UNITS 1 & 2 AT 6,17#/MMBTU(MAX ALLOW)  
MET FILE REQUESTED  
STN NO. YR STN NO. YR  
SURFACE 12842 75 12842 75  
UPPER AIR 12842 75 12842 75  
PLANT LOCATION: RURAL  
NO TAPE OUTPUT  
MET DATA WILL NOT BE PRINTED

NOTE: The following table lists the names of the members of the Standing Committee on Environment and Sustainable Development.

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

MARKED BY "1" IN THE ABOVE TABLE

STACK # 1--UNIT 1  
STACK # 2--UNIT 2

| STACK | MONTH | EMISSION RATE<br>(GMS/SEC) | HEIGHT<br>(METERS) | DIAMETER<br>(METERS) | EXIT VELOCITY<br>(M/SEC) | TEMP<br>(DEG.K) | VOLUMETRIC FLOW<br>(M**3/SEC) |
|-------|-------|----------------------------|--------------------|----------------------|--------------------------|-----------------|-------------------------------|
| 1     | ALL   | 3024.1599                  | 152.00             | 4.57                 | 42.10                    | 422.00          | 690.56                        |
| 2     | ALL   | 3665.5400                  | 153.00             | 4.88                 | 44.80                    | 422.00          | 837.93                        |

PLANT NAME: FPC CRYSTAL RIVER

POLLUTANT:

SO2

EMISSION UNITS: GM/SEC

AIR QUALITY UNITS: GM/M\*\*3

YEARLY MAXIMUM 24-HOUR CONC= 2.2295E-04 DIRECTION= 7 DISTANCE= 4.5 KM DAY=186

## HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

| RANGE | 2.5 KM           | 3.5 KM           | 4.5 KM           | 5.5 KM           | 6.0 KM           |
|-------|------------------|------------------|------------------|------------------|------------------|
| DIR   |                  |                  |                  |                  |                  |
| 1     | 5.8940E-05 (261) | 6.6689E-05 (261) | 6.2233E-05 (118) | 5.6073E-05 (210) | 5.6487E-05 (210) |
| 2     | 6.6791E-05 (201) | 8.0813E-05 (201) | 7.8044E-05 (201) | 7.7613E-05 (158) | 7.6333E-05 (158) |
| 3     | 1.2777E-04 (166) | 1.2187E-04 (166) | 9.7563E-05 (166) | 1.0047E-04 (24)  | 1.0061E-04 (24)  |
| 4     | 1.1602E-04 (217) | 1.1128E-04 (217) | 1.0355E-04 (260) | 9.4124E-05 (215) | 9.0864E-05 (215) |
| 5     | 1.2496E-04 (216) | 1.4764E-04 (216) | 1.3559E-04 (216) | 1.1714E-04 (244) | 1.1045E-04 (244) |
| 6     | 1.3643E-04 (250) | 1.2974E-04 (186) | 1.1911E-04 (190) | 1.2059E-04 (190) | 1.1789E-04 (190) |
| 7     | 1.5315E-04 (188) | 2.0343E-04 (186) | 2.2295E-04 (186) | 2.1118E-04 (186) | 2.0070E-04 (186) |
| 8     | 1.3165E-04 (167) | 1.6765E-04 (179) | 1.6357E-04 (179) | 1.4322E-04 (179) | 1.3235E-04 (179) |
| 9     | 1.4261E-04 (164) | 1.7425E-04 (179) | 1.8533E-04 (179) | 1.7171E-04 (179) | 1.6193E-04 (179) |
| 10    | 1.6250E-04 (157) | 1.9891E-04 (156) | 2.0787E-04 (156) | 1.9349E-04 (156) | 1.8366E-04 (156) |
| 11    | 1.1040E-04 (97)  | 1.5207E-04 (97)  | 1.3923E-04 (97)  | 1.2829E-04 (140) | 1.2573E-04 (140) |
| 12    | 8.2609E-05 (165) | 9.8863E-05 (165) | 1.0204E-04 (231) | 9.7861E-05 (231) | 9.3106E-05 (231) |
| 13    | 5.4611E-05 (176) | 6.3177E-05 (165) | 6.5288E-05 (144) | 7.1243E-05 (143) | 7.1225E-05 (143) |
| 14    | 8.9517E-05 (180) | 9.9210E-05 (180) | 1.0504E-04 (56)  | 1.0743E-04 (56)  | 1.0494E-04 (56)  |
| 15    | 8.1287E-05 (180) | 9.8237E-05 (180) | 9.3392E-05 (180) | 8.4255E-05 (180) | 7.9676E-05 (180) |
| 16    | 3.7050E-05 (170) | 6.1236E-05 (170) | 6.1542E-05 (170) | 5.7683E-05 (14)  | 5.4909E-05 (14)  |
| 17    | 3.4117E-05 (125) | 6.1042E-05 (125) | 6.7497E-05 (125) | 6.4717E-05 (125) | 6.1904E-05 (125) |
| 18    | 5.3441E-05 (293) | 6.5276E-05 (293) | 6.5504E-05 (293) | 6.2839E-05 (293) | 6.0946E-05 (293) |
| 19    | 7.5898E-05 (293) | 8.8678E-05 (293) | 7.7465E-05 (293) | 8.2156E-05 (303) | 8.2892E-05 (303) |
| 20    | 8.1480E-05 (106) | 8.6129E-05 (106) | 8.2298E-05 (106) | 7.5084E-05 (106) | 7.1127E-05 (106) |
| 21    | 8.4086E-05 (106) | 1.0968E-04 (106) | 1.1297E-04 (106) | 1.0723E-04 (106) | 1.0315E-04 (106) |
| 22    | 7.0147E-05 (177) | 7.5088E-05 (303) | 9.0528E-05 (85)  | 9.3593E-05 (85)  | 9.1525E-05 (85)  |
| 23    | 6.7277E-05 (294) | 1.0112E-04 (294) | 1.2544E-04 (321) | 1.2760E-04 (321) | 1.2391E-04 (321) |
| 24    | 1.0222E-04 (285) | 1.2564E-04 (285) | 1.1633E-04 (285) | 1.1659E-04 (111) | 1.1626E-04 (111) |
| 25    | 1.2461E-04 (253) | 1.4783E-04 (253) | 1.4021E-04 (253) | 1.2707E-04 (253) | 1.2047E-04 (253) |
| 26    | 9.5815E-05 (338) | 1.3021E-04 (338) | 1.3686E-04 (338) | 1.3104E-04 (338) | 1.2855E-04 (183) |
| 27    | 1.2070E-04 (254) | 1.5619E-04 (251) | 1.4840E-04 (251) | 1.3003E-04 (251) | 1.2076E-04 (251) |
| 28    | 1.2433E-04 (254) | 1.2450E-04 (254) | 1.3440E-04 (113) | 1.3901E-04 (288) | 1.3667E-04 (288) |
| 29    | 8.6524E-05 (142) | 9.2787E-05 (142) | 9.0104E-05 (212) | 9.5407E-05 (212) | 9.3670E-05 (212) |
| 30    | 7.9323E-05 (234) | 8.2489E-05 (234) | 8.6920E-05 (265) | 9.2126E-05 (265) | 9.1321E-05 (265) |
| 31    | 5.8237E-05 (205) | 7.6073E-05 (289) | 1.0913E-04 (289) | 1.1827E-04 (289) | 1.1750E-04 (289) |
| 32    | 5.3085E-05 (205) | 5.9907E-05 (149) | 7.4999E-05 (149) | 7.7178E-05 (149) | 7.5898E-05 (149) |
| 33    | 7.7370E-05 (215) | 7.6973E-05 (215) | 7.6657E-05 (211) | 7.5265E-05 (211) | 7.2466E-05 (211) |
| 34    | 8.8266E-05 (215) | 8.8131E-05 (214) | 7.8301E-05 (214) | 6.7036E-05 (214) | 6.4620E-05 (250) |
| 35    | 7.5659E-05 (215) | 7.9503E-05 (215) | 6.8883E-05 (108) | 6.9375E-05 (108) | 6.7660E-05 (108) |
| 36    | 5.8935E-05 (128) | 8.8183E-05 (128) | 8.7158E-05 (128) | 7.7359E-05 (128) | 7.2230E-05 (128) |

PLANT NAME: FPC CRYSTAL RIVER

POLLUTANT: SO2

EMISSION UNITS: GM/SEC

AIR QUALITY UNITS: GM/M\*\*3

YEARLY SECOND MAXIMUM 24-HOUR CONC= 1.7727E-04 DIRECTION= 10 DISTANCE= 5.5 KM DAY= 58

## SECOND HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

| RANGE | DIR               | 2.5 KM           | 3.5 KM           | 4.5 KM           | 5.5 KM           | 6.0 KM |
|-------|-------------------|------------------|------------------|------------------|------------------|--------|
| 1     | 4.1491E-05 (118)  | 6.2233E-05 (118) | 6.0026E-05 (181) | 5.5624E-05 (181) | 5.2403E-05 (181) |        |
| 2     | 6.1670E-05 (100)  | 5.7023E-05 (100) | 7.4810E-05 (158) | 7.3238E-05 (82)  | 7.1384E-05 (82)  |        |
| 3     | 8.1257E-05 (217)  | 8.9334E-05 (100) | 8.9271E-05 (24)  | 8.0609E-05 (100) | 7.6325E-05 (210) |        |
| 4     | 1.0907E-04 (166)  | 1.0867E-04 (215) | 1.0087E-04 (215) | 9.4034E-05 (260) | 8.8321E-05 (260) |        |
| 5     | 9.4549E-05 (244)  | 1.3151E-04 (244) | 1.2950E-04 (244) | 1.1545E-04 (216) | 1.0568E-04 (216) |        |
| 6     | 1.1803E-04 (186)  | 1.1262E-04 (134) | 1.1447E-04 (189) | 1.0782E-04 (189) | 1.0225E-04 (189) |        |
| 7     | 1.3157E-04 (134)  | 1.7394E-04 (188) | 1.5992E-04 (188) | 1.3748E-04 (188) | 1.2655E-04 (188) |        |
| 8     | 1.2841E-04 (129)  | 1.3934E-04 (129) | 1.3360E-04 (129) | 1.2089E-04 (129) | 1.1378E-04 (129) |        |
| 9     | 1.4220E-04 (185)  | 1.6769E-04 (185) | 1.5465E-04 (185) | 1.3335E-04 (185) | 1.2287E-04 (185) |        |
| 10    | 1.3155E-04 (156)  | 1.5400E-04 (157) | 1.7678E-04 (58)  | 1.7727E-04 (58)  | 1.7165E-04 (58)  |        |
| 11    | 1.0983E-04 (65)   | 1.3756E-04 (65)  | 1.2350E-04 (65)  | 1.1608E-04 (97)  | 1.0505E-04 (97)  |        |
| 12    | 7.2985E-05 (65)   | 8.8155E-05 (231) | 8.3227E-05 (165) | 6.5300E-05 (165) | 5.8384E-05 (106) |        |
| 13    | 5.4002E-05 (165)  | 5.5288E-05 (231) | 6.3845E-05 (143) | 6.5776E-05 (144) | 6.3598E-05 (144) |        |
| 14    | 8.3142E-05 (176)  | 8.1292E-05 (56)  | 8.6464E-05 (180) | 7.3533E-05 (180) | 6.8172E-05 (180) |        |
| 15    | 5.2244E-05 (176)  | 4.3112E-05 (176) | 4.1567E-05 (14)  | 4.2225E-05 (185) | 4.1234E-05 (185) |        |
| 16    | 2.7948E-05 (14)   | 5.3095E-05 (14)  | 6.0352E-05 (14)  | 5.4061E-05 (170) | 5.1842E-05 (125) |        |
| 17    | 3.3356E-05 (94)   | 5.3100E-05 (206) | 5.2473E-05 (206) | 4.7767E-05 (361) | 5.3562E-05 (61)  |        |
| 18    | 4.5470E-05 (106)  | 6.2576E-05 (94)  | 6.5126E-05 (94)  | 6.1377E-05 (94)  | 5.9367E-05 (267) |        |
| 19    | 6.9399E-05 (106)  | 5.3154E-05 (106) | 7.3093E-05 (303) | 6.4761E-05 (293) | 5.9298E-05 (293) |        |
| 20    | 6.5483E-05 (96)   | 7.9185E-05 (96)  | 7.1458E-05 (96)  | 6.0362E-05 (96)  | 5.5326E-05 (96)  |        |
| 21    | 6.9970E-05 (177)  | 6.9994E-05 (96)  | 6.3748E-05 (96)  | 6.6233E-05 (319) | 6.7027E-05 (319) |        |
| 22    | 5.1046E-05 (15)   | 6.9261E-05 (85)  | 8.2493E-05 (303) | 8.5563E-05 (76)  | 8.9002E-05 (76)  |        |
| 23    | 5.5523E-05 (85)   | 9.7176E-05 (321) | 1.1176E-04 (294) | 1.0932E-04 (294) | 1.0576E-04 (294) |        |
| 24    | 8.1848E-05 (184)  | 1.0479E-04 (258) | 1.1220E-04 (258) | 1.0659E-04 (258) | 1.0171E-04 (258) |        |
| 25    | 1.1706E-04 (284)  | 1.4442E-04 (284) | 1.2589E-04 (284) | 1.0540E-04 (285) | 9.7127E-05 (285) |        |
| 26    | 9.0595E-05 (253)  | 1.0587E-04 (251) | 1.2311E-04 (183) | 1.3020E-04 (183) | 1.2613E-04 (338) |        |
| 27    | 1.1858E-04 (251)  | 1.4480E-04 (235) | 1.3879E-04 (235) | 1.2278E-04 (235) | 1.1777E-04 (322) |        |
| 28    | 9.3939E-05 (251)  | 1.2383E-04 (251) | 1.3094E-04 (288) | 1.2544E-04 (113) | 1.1854E-04 (113) |        |
| 29    | 8.1480E-05 (234)  | 8.0464E-05 (234) | 8.0213E-05 (242) | 8.8011E-05 (242) | 8.9676E-05 (242) |        |
| 30    | 4.11093E-05 (142) | 6.4390E-05 (265) | 8.1806E-05 (289) | 8.3259E-05 (289) | 8.0680E-05 (289) |        |
| 31    | 3.5737E-05 (248)  | 5.2520E-05 (313) | 5.9529E-05 (313) | 5.6120E-05 (196) | 5.7574E-05 (195) |        |
| 32    | 3.8892E-05 (215)  | 4.8265E-05 (53)  | 4.8762E-05 (46)  | 4.9218E-05 (46)  | 4.8714E-05 (217) |        |
| 33    | 3.5322E-05 (246)  | 6.4819E-05 (211) | 7.0805E-05 (215) | 6.3399E-05 (215) | 5.9871E-05 (215) |        |
| 34    | 7.7357E-05 (214)  | 8.0397E-05 (215) | 6.6825E-05 (215) | 6.4109E-05 (250) | 6.2276E-05 (214) |        |
| 35    | 6.7241E-05 (214)  | 7.6735E-05 (214) | 6.7654E-05 (215) | 5.7149E-05 (214) | 5.2751E-05 (214) |        |
| 36    | 4.2710E-05 (205)  | 5.5263E-05 (205) | 5.0424E-05 (203) | 4.6740E-05 (200) | 4.4608E-05 (331) |        |

PLANT NAME: FPC CRYSTAL RIVER

POLLUTANT: SO2

EMISSION UNITS: GM/SEC

AIR QUALITY UNITS: GM/M\*\*3

YEARLY MAXIMUM 3-HOUR CONC= 9.2362E-04 DIRECTION= 8 DISTANCE= 2.5 KM DAY=165 TIME PERIOD= 5

| RANGE<br>1-IR | HIGHEST<br>2.5 KM   | 3-HOUR CONCENTRATION AT EACH RECEPTOR |                     |                     |                     |  |
|---------------|---------------------|---------------------------------------|---------------------|---------------------|---------------------|--|
|               |                     | 3.5 KM                                | 4.5 KM              | 5.5 KM              | 6.0 KM              |  |
| 1             | 4.6968E-04 (261, 5) | 5.3132E-04 (261, 5)                   | 4.3885E-04 (261, 5) | 3.7807E-04 (19, 5)  | 3.8481E-04 (19, 5)  |  |
| 2             | 5.5366E-04 (201, 4) | 6.3106E-04 (201, 4)                   | 5.7254E-04 (201, 4) | 4.9604E-04 (201, 4) | 4.6113E-04 (201, 4) |  |
| 3             | 7.9461E-04 (166, 4) | 7.1757E-04 (166, 4)                   | 5.5425E-04 (115, 4) | 4.9146E-04 (115, 4) | 4.7223E-04 (24, 5)  |  |
| 4             | 7.7577E-04 (166, 4) | 7.0165E-04 (166, 4)                   | 5.9216E-04 (127, 4) | 5.9483E-04 (127, 4) | 5.7406E-04 (127, 4) |  |
| 5             | 6.0060E-04 (242, 4) | 6.3280E-04 (244, 5)                   | 5.5099E-04 (216, 5) | 5.0355E-04 (108, 5) | 4.7234E-04 (108, 5) |  |
| 6             | 5.8229E-04 (250, 4) | 6.0996E-04 (163, 4)                   | 6.2145E-04 (119, 5) | 5.8489E-04 (119, 5) | 5.5195E-04 (119, 5) |  |
| 7             | 7.0417E-04 (145, 4) | 8.1786E-04 (134, 5)                   | 6.8790E-04 (134, 5) | 6.9939E-04 (186, 6) | 6.7986E-04 (186, 6) |  |
| 8             | 9.2362E-04 (165, 5) | 8.9950E-04 (165, 5)                   | 7.0117E-04 (165, 5) | 6.7192E-04 (222, 5) | 6.6011E-04 (222, 5) |  |
| 9             | 7.1526E-04 (163, 5) | 7.4735E-04 (200, 5)                   | 6.3629E-04 (230, 5) | 5.8538E-04 (179, 6) | 5.7059E-04 (179, 6) |  |
| 10            | 8.4436E-04 (129, 4) | 8.5324E-04 (156, 4)                   | 7.5557E-04 (129, 4) | 6.9891E-04 (163, 6) | 6.8914E-04 (163, 6) |  |
| 11            | 6.1948E-04 (156, 4) | 6.9900E-04 (156, 4)                   | 6.0265E-04 (156, 4) | 5.7201E-04 (140, 6) | 5.6853E-04 (140, 6) |  |
| 12            | 6.6086E-04 (165, 4) | 7.9114E-04 (165, 4)                   | 6.6579E-04 (165, 4) | 5.2226E-04 (165, 4) | 4.6135E-04 (165, 4) |  |
| 13            | 4.5201E-04 (165, 4) | 5.0541E-04 (165, 4)                   | 5.0913E-04 (143, 6) | 5.6900E-04 (143, 6) | 5.6906E-04 (143, 6) |  |
| 14            | 5.2485E-04 (176, 4) | 4.7255E-04 (56, 5)                    | 6.0552E-04 (56, 5)  | 6.0902E-04 (56, 5)  | 5.8776E-04 (56, 5)  |  |
| 15            | 3.7009E-04 (176, 4) | 3.9868E-04 (180, 3)                   | 4.0122E-04 (180, 4) | 3.8527E-04 (180, 4) | 3.7164E-04 (180, 4) |  |
| 16            | 2.9640E-04 (170, 6) | 4.8989E-04 (170, 6)                   | 4.9234E-04 (170, 6) | 4.6144E-04 (14, 5)  | 4.3925E-04 (14, 5)  |  |
| 17            | 2.6580E-04 (94, 4)  | 4.2480E-04 (206, 4)                   | 4.1978E-04 (206, 4) | 3.8214E-04 (361, 4) | 4.2394E-04 (61, 6)  |  |
| 18            | 5.6376E-04 (106, 4) | 5.0060E-04 (94, 4)                    | 5.2101E-04 (94, 4)  | 4.9101E-04 (94, 4)  | 4.7011E-04 (94, 4)  |  |
| 19            | 5.5477E-04 (106, 4) | 4.2374E-04 (106, 4)                   | 4.2771E-04 (303, 4) | 4.8515E-04 (303, 4) | 4.9204E-04 (303, 4) |  |
| 20            | 6.3422E-04 (106, 4) | 6.0769E-04 (106, 4)                   | 5.1954E-04 (106, 4) | 4.3475E-04 (106, 4) | 4.1018E-04 (273, 5) |  |
| 21            | 6.4780E-04 (106, 4) | 7.6028E-04 (106, 4)                   | 6.9943E-04 (106, 4) | 6.0781E-04 (106, 4) | 5.6553E-04 (106, 4) |  |
| 22            | 5.5975E-04 (177, 4) | 4.7126E-04 (15, 5)                    | 5.0805E-04 (337, 4) | 5.6175E-04 (302, 4) | 5.7780E-04 (302, 4) |  |
| 23            | 4.1715E-04 (85, 4)  | 5.8019E-04 (85, 4)                    | 5.9770E-04 (85, 4)  | 5.5177E-04 (85, 4)  | 5.2230E-04 (85, 4)  |  |
| 24            | 4.9689E-04 (285, 4) | 6.0695E-04 (258, 4)                   | 7.1149E-04 (258, 4) | 6.9615E-04 (258, 4) | 6.6835E-04 (258, 4) |  |
| 25            | 6.7274E-04 (253, 4) | 7.3303E-04 (253, 4)                   | 6.6755E-04 (183, 4) | 6.5148E-04 (183, 4) | 6.2254E-04 (183, 4) |  |
| 26            | 5.4105E-04 (45, 5)  | 5.9795E-04 (45, 5)                    | 5.4835E-04 (181, 4) | 5.7913E-04 (183, 3) | 5.8983E-04 (183, 3) |  |
| 27            | 6.3927E-04 (235, 4) | 7.5252E-04 (112, 5)                   | 7.4528E-04 (112, 5) | 6.5931E-04 (112, 5) | 6.4066E-04 (322, 5) |  |
| 28            | 5.3646E-04 (254, 4) | 6.4426E-04 (254, 4)                   | 6.8835E-04 (113, 4) | 6.3515E-04 (113, 4) | 5.9578E-04 (113, 4) |  |
| 29            | 6.1002E-04 (142, 4) | 6.3303E-04 (142, 4)                   | 5.8554E-04 (212, 4) | 6.2212E-04 (212, 4) | 6.1171E-04 (212, 4) |  |
| 30            | 3.9987E-04 (234, 4) | 5.1511E-04 (265, 4)                   | 6.9524E-04 (265, 4) | 7.3638E-04 (265, 4) | 7.2937E-04 (265, 4) |  |
| 31            | 4.6589E-04 (205, 5) | 3.6783E-04 (313, 4)                   | 4.1978E-04 (313, 4) | 3.9711E-04 (313, 4) | 3.7548E-04 (313, 4) |  |
| 32            | 4.2468E-04 (205, 5) | 4.7900E-04 (149, 3)                   | 5.5985E-04 (149, 3) | 6.1735E-04 (149, 3) | 6.0712E-04 (149, 3) |  |
| 33            | 5.9332E-04 (215, 5) | 5.9137E-04 (215, 5)                   | 6.1326E-04 (211, 4) | 6.0212E-04 (211, 4) | 5.7973E-04 (211, 4) |  |
| 34            | 4.7486E-04 (215, 5) | 4.9161E-04 (261, 4)                   | 4.8065E-04 (261, 4) | 4.2354E-04 (261, 4) | 3.9569E-04 (261, 4) |  |
| 35            | 4.3236E-04 (215, 4) | 5.1846E-04 (215, 4)                   | 4.5418E-04 (215, 4) | 3.9971E-04 (31, 4)  | 3.8879E-04 (31, 4)  |  |
| 36            | 4.7146E-04 (128, 4) | 7.0546E-04 (128, 4)                   | 6.9727E-04 (128, 4) | 6.1887E-04 (128, 4) | 5.7784E-04 (128, 4) |  |

PLANT NAME: FPC CRYSTAL RIVER POLLUTANT: SO2 EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M\*\*3

YEARLY SECOND MAXIMUM 3-HOUR CONC= 8.2897E-04 DIRECTION= 8 DISTANCE= 2.5 KM DAY=167 TIME PERIOD= 5

| DIR | RANGE               | SECOND HIGHEST<br>2.5 KM | 3-HOUR CONCENTRATION AT EACH RECEPTOR |                     |                     |        |
|-----|---------------------|--------------------------|---------------------------------------|---------------------|---------------------|--------|
|     |                     |                          | 3.5 KM                                | 4.5 KM              | 5.5 KM              | 6.0 KM |
| 1   | 2.9864E-04 (161, 3) | 3.9141E-04 (118, 3)      | 3.7127E-04 (118, 3)                   | 3.4137E-04 (261, 5) | 3.3912E-04 (119, 3) |        |
| 2   | 4.6423E-04 (100, 5) | 4.4664E-04 (100, 5)      | 4.9768E-04 (47, 5)                    | 4.7552E-04 (47, 5)  | 4.5054E-04 (47, 5)  |        |
| 3   | 5.5852E-04 (201, 4) | 6.2311E-04 (201, 4)      | 5.4559E-04 (166, 4)                   | 4.7454E-04 (24, 5)  | 4.6039E-04 (115, 4) |        |
| 4   | 6.1453E-04 (255, 4) | 6.3913E-04 (255, 4)      | 5.3531E-04 (255, 4)                   | 4.7118E-04 (119, 4) | 4.4482E-04 (119, 4) |        |
| 5   | 5.4609E-04 (216, 4) | 6.1408E-04 (242, 4)      | 5.4563E-04 (244, 5)                   | 4.8711E-04 (216, 5) | 4.5089E-04 (216, 5) |        |
| 6   | 5.4789E-04 (186, 4) | 5.4867E-04 (119, 5)      | 5.6104E-04 (163, 4)                   | 4.8366E-04 (163, 4) | 4.5561E-04 (189, 5) |        |
| 7   | 6.8818E-04 (188, 4) | 6.6080E-04 (123, 5)      | 6.8199E-04 (186, 6)                   | 5.6002E-04 (186, 5) | 5.3092E-04 (186, 5) |        |
| 8   | 8.2897E-04 (167, 5) | 7.7023E-04 (167, 5)      | 6.8559E-04 (218, 5)                   | 5.9000E-04 (218, 5) | 5.6499E-04 (80, 5)  |        |
| 9   | 6.8980E-04 (171, 4) | 6.8994E-04 (230, 5)      | 6.1885E-04 (200, 5)                   | 5.5510E-04 (179, 4) | 5.3469E-04 (165, 6) |        |
| 10  | 7.8820E-04 (163, 5) | 8.1810E-04 (129, 4)      | 7.3177E-04 (156, 4)                   | 6.6815E-04 (129, 4) | 6.2505E-04 (129, 4) |        |
| 11  | 6.1031E-04 (129, 4) | 6.4637E-04 (97, 5)       | 5.5808E-04 (129, 4)                   | 5.6904E-04 (326, 5) | 5.5835E-04 (326, 5) |        |
| 12  | 4.4779E-04 (65, 5)  | 4.9921E-04 (65, 5)       | 4.3320E-04 (144, 5)                   | 4.1567E-04 (102, 5) | 3.9893E-04 (102, 5) |        |
| 13  | 3.2394E-04 (231, 4) | 3.7649E-04 (231, 4)      | 4.4353E-04 (144, 6)                   | 4.5833E-04 (144, 6) | 4.4681E-04 (144, 6) |        |
| 14  | 3.8236E-04 (160, 3) | 4.7245E-04 (180, 3)      | 4.1429E-04 (180, 3)                   | 3.8086E-04 (230, 4) | 3.7767E-04 (230, 4) |        |
| 15  | 3.2682E-04 (180, 3) | 3.8721E-04 (180, 4)      | 3.4592E-04 (180, 3)                   | 3.0903E-04 (14, 5)  | 2.9100E-04 (14, 5)  |        |
| 16  | 2.2355E-04 (14, 5)  | 4.2474E-04 (14, 5)       | 4.8280E-04 (14, 5)                    | 4.3249E-04 (170, 6) | 3.9881E-04 (170, 6) |        |
| 17  | 2.5216E-04 (206, 4) | 3.4069E-04 (94, 4)       | 3.7534E-04 (361, 4)                   | 3.6680E-04 (206, 4) | 3.7092E-04 (361, 4) |        |
| 18  | 3.4161E-04 (94, 4)  | 3.9128E-04 (291, 4)      | 4.0611E-04 (291, 4)                   | 3.7807E-04 (302, 5) | 3.6379E-04 (302, 5) |        |
| 19  | 3.1230E-04 (293, 5) | 3.9372E-04 (293, 5)      | 4.1739E-04 (94, 4)                    | 4.2421E-04 (94, 4)  | 4.1550E-04 (94, 4)  |        |
| 20  | 4.9332E-04 (96, 5)  | 5.3132E-04 (96, 5)       | 4.4734E-04 (63, 5)                    | 4.2343E-04 (63, 5)  | 4.0509E-04 (63, 5)  |        |
| 21  | 5.5975E-04 (177, 4) | 4.7609E-04 (15, 5)       | 4.2069E-04 (15, 5)                    | 4.2996E-04 (319, 4) | 4.3280E-04 (319, 4) |        |
| 22  | 4.0401E-04 (15, 5)  | 4.6188E-04 (337, 4)      | 4.7689E-04 (302, 4)                   | 5.4610E-04 (76, 5)  | 5.5828E-04 (76, 5)  |        |
| 23  | 5.4738E-04 (285, 4) | 5.2299E-04 (337, 4)      | 5.6622E-04 (337, 4)                   | 5.4300E-04 (337, 4) | 5.2184E-04 (337, 4) |        |
| 24  | 4.5580E-04 (295, 4) | 5.6926E-04 (285, 4)      | 5.1613E-04 (294, 4)                   | 5.3741E-04 (111, 4) | 5.3577E-04 (111, 4) |        |
| 25  | 5.9605E-04 (164, 4) | 6.2894E-04 (284, 4)      | 6.4056E-04 (253, 4)                   | 5.4357E-04 (253, 4) | 5.0224E-04 (253, 4) |        |
| 26  | 5.0393E-04 (253, 4) | 5.6192E-04 (253, 4)      | 5.0123E-04 (183, 3)                   | 5.2660E-04 (181, 4) | 5.0563E-04 (181, 4) |        |
| 27  | 5.8162E-04 (254, 4) | 6.7860E-04 (235, 4)      | 6.5557E-04 (235, 4)                   | 6.5480E-04 (322, 5) | 6.1050E-04 (112, 5) |        |
| 28  | 4.9218E-04 (242, 5) | 6.3325E-04 (113, 4)      | 6.0308E-04 (348, 4)                   | 6.0749E-04 (348, 4) | 5.8727E-04 (348, 4) |        |
| 29  | 4.7069E-04 (242, 5) | 4.9180E-04 (242, 5)      | 5.0609E-04 (142, 4)                   | 4.4680E-04 (242, 5) | 4.2078E-04 (242, 5) |        |
| 30  | 3.4607E-04 (142, 4) | 4.7100E-04 (324, 4)      | 5.2482E-04 (324, 4)                   | 5.2498E-04 (324, 4) | 5.1529E-04 (324, 4) |        |
| 31  | 2.8589E-04 (248, 5) | 3.4513E-04 (205, 5)      | 3.6086E-04 (289, 4)                   | 3.8081E-04 (289, 4) | 3.7365E-04 (289, 4) |        |
| 32  | 3.1055E-04 (215, 5) | 3.4571E-04 (215, 5)      | 3.3093E-04 (215, 5)                   | 3.6946E-04 (195, 4) | 3.8971E-04 (217, 3) |        |
| 33  | 2.8248E-04 (246, 4) | 5.1855E-04 (211, 4)      | 5.4874E-04 (215, 5)                   | 4.9427E-04 (215, 5) | 4.6756E-04 (215, 5) |        |
| 34  | 4.2871E-04 (234, 4) | 3.8851E-04 (214, 3)      | 3.8513E-04 (169, 3)                   | 3.5637E-04 (169, 3) | 3.3827E-04 (169, 3) |        |
| 35  | 3.5979E-04 (234, 4) | 4.2643E-04 (128, 4)      | 4.2861E-04 (128, 4)                   | 3.8467E-04 (215, 4) | 3.5659E-04 (215, 4) |        |
| 36  | 3.4168E-04 (203, 3) | 4.4210E-04 (203, 3)      | 4.0339E-04 (203, 3)                   | 3.7392E-04 (200, 4) | 3.5509E-04 (200, 4) |        |

PLANT NAME: FPC CRYSTAL RIVER POLLUTANT: SO<sub>2</sub> EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M\*\*3  
CRYSTAL RIVER MET DATA, 1975 W/ TPA CLOUD COVER & CEILING---  
100 PERCENT LOAD, UNITS 1 & 2 AT 6.17#/MMBTU(MAX ALLOW)  
MET FILE REQUESTED  
STN NC. YR STN NC. YR  
SURFACE 12842 75 12842 75  
UPPER AIR 12842 75 12842 75  
PLANT LOCATION: RURAL  
NO TAPE OUTPT  
MET DATA WILL NOT BE PRINTED

ALL TABLES, INCLUDING SOURCE CONTRIBUTION, THAT CONTAIN "ANNUAL" IN THE HEADING ARE BASED ONLY ON THOSE DAYS MARKED BY "1" IN THE ABOVE TABLE

STACK # 1--UNIT 1  
STACK # 2--UNIT 2

| STACK | MUNTH | EMISSION RATE<br>(GMS/SEC) | HEIGHT<br>(METERS) | DIAMETER<br>(METERS) | EXIT VELOCITY<br>(M/SEC) | TEMP<br>(DEG.K) | VOLUMETRIC FLOW<br>(M**3/SEC) |
|-------|-------|----------------------------|--------------------|----------------------|--------------------------|-----------------|-------------------------------|
| 1     | ALL   | 3024.1599                  | 152.00             | 4.57                 | 42.10                    | 422.00          | 690.56                        |
| 2     | ALL   | 3665.5400                  | 153.00             | 4.88                 | 44.80                    | 422.00          | 837.93                        |

PLANT NAME: FPC CRYSTAL RIVER POLLUTANT: SO2 EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M\*\*3

YEARLY MAXIMUM 24-HOUR CCNC= 2.1933E-04 DIRECTION= 7 DISTANCE= 5.0 KM DAY=186

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

| RANGE | 1.0 KM           | 2.0 KM           | 3.0 KM           | 5.0 KM           | 21.0 KM          |
|-------|------------------|------------------|------------------|------------------|------------------|
| DIR   |                  |                  |                  |                  |                  |
| 1     | 1.3293E-05 (234) | 3.5830E-05 (261) | 6.7594E-05 (261) | 5.9094E-05 (118) | 5.2571E-05 ( 43) |
| 2     | 3.0055E-05 (234) | 4.4581E-05 (166) | 7.8163E-05 (201) | 7.7316E-05 (158) | 6.1591E-05 ( 83) |
| 3     | 6.3366E-05 (234) | 9.6290E-05 (166) | 1.3089E-04 (166) | 9.7056E-05 ( 24) | 7.8625E-05 (351) |
| 4     | 9.8512E-05 (126) | 8.5831E-05 (217) | 1.1990E-04 (217) | 9.9365E-05 (260) | 5.0114E-05 (151) |
| 5     | 1.1258E-04 (126) | 8.5172E-05 (216) | 1.4358E-04 (216) | 1.2566E-04 (216) | 5.2664E-05 (191) |
| 6     | 1.0158E-04 (250) | 1.5412E-04 (250) | 1.3061E-04 (186) | 1.2133E-04 (190) | 3.7773E-05 (190) |
| 7     | 9.4131E-05 (250) | 1.4642E-04 (250) | 1.7328E-04 (186) | 2.1933E-04 (186) | 6.9769E-05 (189) |
| 8     | 8.3890E-05 (247) | 1.1157E-04 (129) | 1.5430E-04 (179) | 1.5409E-04 (179) | 3.3602E-05 (188) |
| 9     | 1.3143E-04 (224) | 1.3200E-04 (171) | 1.6333E-04 (185) | 1.8014E-04 (179) | 5.2534E-05 (157) |
| 10    | 1.6765E-04 (224) | 1.3406E-04 (171) | 1.7477E-04 (156) | 2.0209E-04 (156) | 6.7068E-05 (156) |
| 11    | 1.0662E-04 (224) | 8.2967E-05 (247) | 1.4261E-04 ( 97) | 1.2778E-04 (140) | 7.2519E-05 ( 73) |
| 12    | 4.3326E-05 (247) | 5.1989E-05 (224) | 9.8289E-05 (165) | 1.0125E-04 (231) | 4.1671E-05 ( 78) |
| 13    | 5.2446E-05 (176) | 6.2699E-05 (176) | 6.3441E-05 (165) | 6.9077E-05 (143) | 6.2823E-05 ( 13) |
| 14    | 7.9244E-05 (176) | 8.7749E-05 (176) | 1.0003E-04 (180) | 1.0793E-04 ( 56) | 4.3018E-05 ( 56) |
| 15    | 5.9876E-05 (176) | 5.9936E-05 (176) | 9.4488E-05 (180) | 8.8931E-05 (180) | 3.8664E-05 (317) |
| 16    | 2.2496E-05 (176) | 1.9611E-05 (176) | 5.3251E-05 (170) | 5.9736E-05 ( 14) | 6.0788E-05 (317) |
| 17    | 2.2886E-05 (106) | 1.9001E-05 ( 94) | 5.0856E-05 (125) | 6.6781E-05 (125) | 6.8888E-05 ( 61) |
| 18    | 6.0918E-05 (106) | 5.6290E-05 (106) | 6.2265E-05 (293) | 6.4409E-05 (293) | 5.4891E-05 (352) |
| 19    | 8.0586E-05 (106) | 8.1671E-05 (106) | 8.8195E-05 (293) | 7.9210E-05 (303) | 3.6711E-05 (303) |
| 20    | 5.2998E-05 (106) | 7.3483E-05 (106) | 8.5386E-05 (106) | 7.8902E-05 (106) | 2.1371E-05 (106) |
| 21    | 8.6423E-05 (177) | 8.5537E-05 (177) | 1.0098E-04 (106) | 1.1071E-04 (106) | 4.0923E-05 (106) |
| 22    | 8.6424E-05 (177) | 8.5667E-05 (177) | 6.4914E-05 (303) | 9.3655E-05 ( 85) | 4.1637E-05 ( 76) |
| 23    | 6.4259E-05 (258) | 4.0930E-05 (177) | 8.7877E-05 (294) | 1.2868E-04 (321) | 9.7325E-05 (276) |
| 24    | 8.5000E-05 (258) | 6.3226E-05 (258) | 1.2160E-04 (285) | 1.1411E-04 (111) | 6.0730E-05 (321) |
| 25    | 6.0963E-05 (248) | 8.0456E-05 (253) | 1.4345E-04 (253) | 1.3379E-04 (253) | 7.6234E-05 ( 52) |
| 26    | 8.6481E-05 (248) | 6.5227E-05 (254) | 1.1807E-04 (338) | 1.3490E-04 (338) | 5.6157E-05 (183) |
| 27    | 1.1153E-04 (254) | 1.2626E-04 (254) | 1.4644E-04 (251) | 1.3951E-04 (251) | 4.4715E-05 ( 86) |
| 28    | 8.9563E-05 (254) | 1.2126E-04 (254) | 1.2680E-04 (254) | 1.3773E-04 (288) | 4.1779E-05 (197) |
| 29    | 7.2256E-05 (234) | 7.3389E-05 (234) | 9.5968E-05 (142) | 9.4656E-05 (212) | 4.1224E-05 (242) |
| 30    | 5.9504E-05 (205) | 6.0904E-05 (234) | 8.4603E-05 (234) | 9.1016E-05 (265) | 4.3403E-05 (265) |
| 31    | 7.4014E-05 (205) | 7.0977E-05 (205) | 4.9625E-05 (289) | 1.1595E-04 (289) | 3.4832E-05 (289) |
| 32    | 6.9011E-05 (205) | 6.5068E-05 (205) | 4.5975E-05 ( 53) | 7.7149E-05 (149) | 2.8042E-05 (149) |
| 33    | 7.0097E-05 (215) | 8.0568E-05 (215) | 7.7888E-05 (215) | 7.6948E-05 (211) | 3.3425E-05 (365) |
| 34    | 8.0998E-05 (234) | 8.7614E-05 (215) | 8.7711E-05 (214) | 7.2440E-05 (214) | 5.0307E-05 (359) |
| 35    | 7.0470E-05 (234) | 6.0043E-05 (215) | 8.1445E-05 (215) | 7.0022E-05 (108) | 4.8441E-05 ( 12) |
| 36    | 3.1262E-05 (234) | 2.9770E-05 (128) | 7.9014E-05 (128) | 8.2572E-05 (128) | 4.4500E-05 ( 8)  |

PLANT NAME: FPC CRYSTAL RIVER

POLLUTANT: SO2

EMISSION UNITS: GM/SEC

AIR QUALITY UNITS: GM/M★3

YEARLY SECOND MAXIMUM 24-HOUR CONC= 1.7969E-04 DIRECTION= 10 DISTANCE= 5.0 KM DAY= 58

| DIR | SECOND HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR |                  |                  |                  |                  |
|-----|---|------------------|------------------|------------------|------------------|
|     | RANGE   | 1.0 KM           | 2.0 KM           | 3.0 KM           | 5.0 KM           |
| 1   | 3.3851E-06 (126)                                      | 2.6609E-05 (161) | 5.5331E-05 (118) | 5.8365E-05 (181) | 3.5494E-05 ( 25) |
| 2   | 1.9674E-05 (126)                                      | 4.3369E-05 (100) | 6.7706E-05 (100) | 7.5596E-05 (201) | 5.1167E-05 (351) |
| 3   | 5.8793E-05 (126)                                      | 5.9774E-05 (217) | 8.4007E-05 (217) | 8.6936E-05 (166) | 5.2010E-05 ( 50) |
| 4   | 6.7948E-05 (234)                                      | 8.5271E-05 (166) | 1.1131E-04 (215) | 9.7418E-05 (215) | 4.4909E-05 ( 49) |
| 5   | 8.3657E-05 (246)                                      | 7.9039E-05 (250) | 1.2068E-04 (244) | 1.2374E-04 (244) | 3.7582E-05 ( 93) |
| 6   | 1.0063E-04 (126)                                      | 8.2781E-05 (186) | 1.2320E-04 (250) | 1.1233E-04 (189) | 3.6831E-05 ( 1)  |
| 7   | 8.3492E-05 (129)                                      | 1.1264E-04 (188) | 1.7057E-04 (188) | 1.4889E-04 (188) | 5.2948E-05 (191) |
| 8   | 7.9982E-05 (236)                                      | 1.0425E-04 (167) | 1.3690E-04 (129) | 1.2770E-04 (129) | 3.3126E-05 (129) |
| 9   | 1.0029E-04 (171)                                      | 1.1240E-04 (178) | 1.5235E-04 (179) | 1.4420E-04 (185) | 4.5037E-05 (207) |
| 10  | 1.0181E-04 (171)                                      | 1.2976E-04 (157) | 1.6471E-04 (157) | 1.7969E-04 ( 58) | 5.0648E-05 ( 58) |
| 11  | 7.2653E-05 (247)                                      | 8.0525E-05 (129) | 1.3293E-04 ( 65) | 1.2776E-04 ( 97) | 5.1146E-05 (154) |
| 12  | 3.4109E-05 (224)                                      | 5.1169E-05 (176) | 8.5980E-05 ( 65) | 7.3915E-05 (165) | 4.0272E-05 ( 67) |
| 13  | 1.3151E-05 (247)                                      | 3.5319E-05 (180) | 5.1700E-05 (231) | 6.6619E-05 (144) | 3.0675E-05 (317) |
| 14  | 1.9604E-06 (247)                                      | 6.0596E-05 (180) | 8.1121E-05 (176) | 7.9648E-05 (180) | 3.6676E-05 ( 55) |
| 15  | 4.1011E-07 (180)                                      | 5.3914E-05 (180) | 4.7285E-05 (176) | 4.2374E-05 (185) | 3.7582E-05 (153) |
| 16  | 4.2723E-06 (106)                                      | 1.5479E-05 (170) | 4.2959E-05 ( 14) | 5.8156E-05 (170) | 4.3476E-05 (318) |
| 17  | 4.2179E-06 (176)                                      | 1.7629E-05 (106) | 4.6112E-05 (206) | 4.9291E-05 (206) | 3.7813E-05 (318) |
| 18  | 1.3013E-06 (177)                                      | 3.3677E-05 (293) | 5.5677E-05 ( 94) | 6.3627E-05 ( 94) | 3.1065E-05 (102) |
| 19  | 1.0605E-05 (177)                                      | 4.5975E-05 (293) | 6.0299E-05 (106) | 7.0884E-05 (293) | 3.5826E-05 (302) |
| 20  | 4.2946E-05 (177)                                      | 3.9914E-05 ( 96) | 7.7061E-05 ( 96) | 6.5855E-05 ( 96) | 2.0453E-05 ( 63) |
| 21  | 1.7350E-05 (106)                                      | 5.6287E-05 (106) | 6.7785E-05 ( 96) | 6.4598E-05 ( 85) | 3.2889E-05 (353) |
| 22  | 2.4140E-05 (258)                                      | 2.9875E-05 ( 15) | 6.0049E-05 ( 15) | 8.1946E-05 (303) | 3.7755E-05 ( 85) |
| 23  | 4.2950E-05 (177)                                      | 4.0898E-05 (258) | 6.9361E-05 (321) | 1.1160E-04 (294) | 6.3787E-05 (257) |
| 24  | 2.1355E-05 (248)                                      | 6.0614E-05 (184) | 9.3374E-05 (258) | 1.1039E-04 (258) | 5.7259E-05 ( 34) |
| 25  | 5.5872E-05 (258)                                      | 7.5543E-05 (184) | 1.4120E-04 (284) | 1.1501E-04 (285) | 4.9724E-05 (346) |
| 26  | 7.3435E-05 (254)                                      | 5.9895E-05 (253) | 1.0118E-04 (251) | 1.2888E-04 (183) | 5.0692E-05 (338) |
| 27  | 8.5578E-05 (235)                                      | 9.6252E-05 (235) | 1.3681E-04 (235) | 1.3108E-04 (235) | 3.7950E-05 (235) |
| 28  | 8.3043E-05 (234)                                      | 7.1119E-05 (242) | 1.1560E-04 (251) | 1.3122E-04 (113) | 3.7492E-05 (113) |
| 29  | 5.8543E-05 (254)                                      | 6.5811E-05 (242) | 8.3121E-05 (234) | 8.4898E-05 (242) | 3.2408E-05 (263) |
| 30  | 3.1431E-05 (234)                                      | 3.9389E-05 (205) | 5.1505E-05 (324) | 8.4037E-05 (289) | 3.2577E-05 (196) |
| 31  | 9.8921E-06 (215)                                      | 2.6540E-05 (234) | 4.9506E-05 (205) | 5.8494E-05 (313) | 3.2090E-05 (195) |
| 32  | 3.7354E-05 (215)                                      | 3.8602E-05 (215) | 4.5115E-05 (149) | 4.9831E-05 ( 46) | 2.6803E-05 (289) |
| 33  | 4.6331E-05 (234)                                      | 3.3780E-05 (234) | 4.9850E-05 (211) | 6.7078E-05 (215) | 2.7735E-05 (215) |
| 34  | 6.5394E-05 (215)                                      | 6.5259E-05 (234) | 8.5926E-05 (215) | 6.2379E-05 (250) | 4.4433E-05 ( 11) |
| 35  | 3.0346E-05 (215)                                      | 5.5308E-05 (234) | 7.6446E-05 (214) | 6.2134E-05 (214) | 3.4703E-05 ( 10) |
| 36  | 7.0020E-06 (215)                                      | 2.6358E-05 (216) | 5.2582E-05 (203) | 4.8439E-05 (200) | 4.0842E-05 ( 25) |

PLANT NAME: FPC CRYSTAL RIVER POLLUTANT: SO2 EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M\*\*3

YEARLY MAXIMUM 3-HOUR CONC= 9.6403E-04 DIRECTION= 8 DISTANCE= 3.0 KM DAY=165 TIME PERIOD= 5

| DIR | RANGE               | HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR |                     |                     |                     |         |
|-----|---------------------|---|---------------------|---------------------|---------------------|---------|
|     |                     | 1.0 KM  | 2.0 KM              | 3.0 KM              | 5.0 KM              | 21.0 KM |
| 1   | 5.4080E-05 (234, 5) | 2.8580E-04 (261, 5)                           | 5.3849E-04 (261, 5) | 3.8783E-04 (261, 5) | 2.3110E-04 ( 4, 5)  |         |
| 2   | 2.3487E-04 (234, 5) | 3.4042E-04 (100, 5)                           | 6.2052E-04 (201, 4) | 5.3381E-04 (201, 4) | 4.0403E-04 (172, 6) |         |
| 3   | 5.0687E-04 (234, 5) | 6.2300E-04 (166, 4)                           | 7.9142E-04 (166, 4) | 5.2343E-04 (115, 4) | 2.1160E-04 (358, 6) |         |
| 4   | 7.8809E-04 (126, 4) | 6.0803E-04 (166, 4)                           | 7.7322E-04 (166, 4) | 6.0355E-04 (127, 4) | 1.6768E-04 ( 43, 6) |         |
| 5   | 9.0060E-04 (126, 4) | 6.2517E-04 (126, 4)                           | 6.4532E-04 (242, 4) | 5.2960E-04 (108, 5) | 2.5077E-04 (191, 7) |         |
| 6   | 8.0497E-04 (126, 4) | 6.2281E-04 (250, 5)                           | 5.8914E-04 (163, 4) | 6.1056E-04 (119, 5) | 1.7294E-04 (261, 6) |         |
| 7   | 6.6758E-04 (129, 4) | 7.3047E-04 (145, 4)                           | 8.1406E-04 (134, 5) | 7.0325E-04 (186, 6) | 2.1112E-04 (189, 6) |         |
| 8   | 6.3976E-04 (236, 4) | 6.6490E-04 (165, 5)                           | 9.6403E-04 (165, 5) | 6.7856E-04 (222, 5) | 2.4662E-04 (222, 5) |         |
| 9   | 8.0170E-04 (171, 4) | 8.4972E-04 (171, 4)                           | 7.5456E-04 (200, 5) | 5.9218E-04 (230, 5) | 1.5997E-04 ( 40, 5) |         |
| 10  | 8.1387E-04 (171, 4) | 8.9932E-04 (129, 4)                           | 8.6242E-04 (156, 4) | 7.1271E-04 (129, 4) | 3.3620E-04 (153, 6) |         |
| 11  | 5.6327E-04 (247, 5) | 6.4282E-04 (129, 4)                           | 7.0206E-04 (156, 4) | 5.6725E-04 (326, 5) | 2.1582E-04 ( 73, 5) |         |
| 12  | 3.4524E-04 (247, 5) | 3.7011E-04 (165, 4)                           | 7.8631E-04 (165, 4) | 5.9126E-04 (165, 4) | 1.7246E-04 (269, 6) |         |
| 13  | 4.1647E-04 (176, 4) | 3.8816E-04 (176, 4)                           | 5.0753E-04 (165, 4) | 5.5138E-04 (143, 6) | 1.7957E-04 ( 13, 2) |         |
| 14  | 6.3359E-04 (176, 4) | 6.3790E-04 (176, 4)                           | 4.6193E-04 (180, 3) | 6.1775E-04 ( 56, 5) | 1.6163E-04 ( 13, 4) |         |
| 15  | 4.7899E-04 (176, 4) | 4.5842E-04 (176, 4)                           | 3.9217E-04 (180, 3) | 3.9585E-04 (180, 4) | 1.8342E-04 (332, 4) |         |
| 16  | 1.7997E-04 (176, 4) | 1.5659E-04 (176, 4)                           | 4.2601E-04 (170, 6) | 4.7787E-04 ( 14, 5) | 1.9451E-04 (317, 8) |         |
| 17  | 1.8309E-04 (106, 4) | 1.5096E-04 ( 94, 4)                           | 3.6889E-04 (206, 4) | 3.9432E-04 (206, 4) | 4.2746E-04 ( 61, 6) |         |
| 18  | 4.8735E-04 (106, 4) | 4.5032E-04 (106, 4)                           | 4.4541E-04 ( 94, 4) | 5.0901E-04 ( 94, 4) | 1.6103E-04 (355, 8) |         |
| 19  | 6.4469E-04 (106, 4) | 6.5329E-04 (106, 4)                           | 4.8143E-04 (106, 4) | 4.6550E-04 (303, 4) | 2.1438E-04 (303, 4) |         |
| 20  | 4.2398E-04 (106, 4) | 5.8503E-04 (106, 4)                           | 6.3657E-04 (106, 4) | 4.7522E-04 (106, 4) | 1.4967E-04 ( 14, 4) |         |
| 21  | 6.9130E-04 (177, 4) | 6.8429E-04 (177, 4)                           | 7.4157E-04 (106, 4) | 6.5347E-04 (106, 4) | 1.8593E-04 (106, 4) |         |
| 22  | 6.9139E-04 (177, 4) | 6.8429E-04 (177, 4)                           | 4.7506E-04 (177, 4) | 5.2926E-04 (302, 4) | 2.4953E-04 (198, 5) |         |
| 23  | 5.1406E-04 (258, 5) | 2.9954E-04 (177, 4)                           | 5.2075E-04 ( 85, 4) | 5.7847E-04 ( 85, 4) | 2.2634E-04 ( 15, 4) |         |
| 24  | 6.7799E-04 (258, 5) | 3.7718E-04 (258, 5)                           | 5.7172E-04 (285, 4) | 7.1321E-04 (258, 4) | 2.1989E-04 (111, 4) |         |
| 25  | 4.8770E-04 (248, 4) | 4.5007E-04 (253, 4)                           | 7.4306E-04 (253, 4) | 6.6941E-04 (183, 4) | 1.9786E-04 ( 86, 1) |         |
| 26  | 6.9185E-04 (248, 4) | 4.6515E-04 (248, 4)                           | 6.1113E-04 ( 45, 5) | 5.5130E-04 (183, 3) | 2.4275E-04 (183, 3) |         |
| 27  | 6.8462E-04 (235, 4) | 6.4356E-04 (235, 4)                           | 6.8075E-04 (112, 5) | 7.0621E-04 (112, 5) | 1.8846E-04 (235, 4) |         |
| 28  | 6.6428E-04 (234, 4) | 5.6893E-04 (242, 5)                           | 6.2065E-04 (254, 4) | 6.6852E-04 (113, 4) | 1.7408E-04 ( 76, 8) |         |
| 29  | 5.7783E-04 (234, 4) | 5.2641E-04 (242, 5)                           | 6.6259E-04 (142, 4) | 6.1621E-04 (212, 4) | 1.8986E-04 (242, 3) |         |
| 30  | 3.1603E-04 (205, 5) | 3.4330E-04 (234, 4)                           | 4.1204E-04 (324, 4) | 7.2784E-04 (265, 4) | 2.8223E-04 (265, 4) |         |
| 31  | 5.9211E-04 (205, 5) | 5.6781E-04 (205, 5)                           | 3.9605E-04 (205, 5) | 4.1358E-04 (313, 4) | 1.5571E-04 ( 88, 1) |         |
| 32  | 5.5209E-04 (205, 5) | 5.2055E-04 (205, 5)                           | 3.6058E-04 (149, 3) | 6.1709E-04 (149, 3) | 2.2434E-04 (149, 3) |         |
| 33  | 5.6073E-04 (215, 5) | 6.2694E-04 (215, 5)                           | 5.9628E-04 (215, 5) | 6.1558E-04 (211, 4) | 2.0497E-04 (211, 4) |         |
| 34  | 6.4198E-04 (234, 4) | 5.5882E-04 (215, 5)                           | 4.3160E-04 (261, 4) | 4.5289E-04 (261, 4) | 1.8072E-04 ( 11, 1) |         |
| 35  | 5.6341E-04 (234, 4) | 4.4239E-04 (234, 4)                           | 5.1099E-04 (215, 4) | 4.1733E-04 (215, 4) | 1.7969E-04 (258, 6) |         |
| 36  | 2.4343E-04 (234, 4) | 2.3816E-04 (128, 4)                           | 6.3211E-04 (128, 4) | 6.6057E-04 (128, 4) | 1.9367E-04 ( 25, 2) |         |

PLANT NAME: FPC CRYSTAL RIVER

POLLUTANT:

SO2

EMISSION UNITS: GM/SEC

AIR QUALITY UNITS: GM/M\*\*3

YEARLY SECOND MAXIMUM

3-HOUR CONC=

8.7967E-04 DIRECTION= 10 DISTANCE= 2.0 KM DAY=171 TIME PERIOD= 4

| DIR | RANGE               | SECOND HIGHEST      |                     | 3-HOUR CONCENTRATION AT EACH RECEPTOR |                     |         |  |
|-----|---------------------|---------------------|---------------------|---------------------------------------|---------------------|---------|--|
|     |                     | 1.0 KM              | 2.0 KM              | 3.0 KM                                | 5.0 KM              | 21.0 KM |  |
| 1   | 5.2266E-05 (234, 4) | 2.0876E-04 (161, 3) | 3.6258E-04 (118, 3) | 3.5986E-04 ( 19, 5)                   | 2.2876E-04 ( 99, 6) |         |  |
| 2   | 1.5739E-04 (126, 4) | 3.2143E-04 (201, 4) | 4.8062E-04 (100, 5) | 4.9340E-04 ( 47, 5)                   | 1.8940E-04 ( 83, 8) |         |  |
| 3   | 4.7034E-04 (126, 4) | 3.8905E-04 (234, 5) | 6.3221E-04 (201, 4) | 4.9358E-04 (100, 5)                   | 1.8868E-04 ( 89, 4) |         |  |
| 4   | 5.4358E-04 (234, 5) | 6.0407E-04 (126, 4) | 6.6531E-04 (255, 4) | 4.9129E-04 (119, 4)                   | 1.6176E-04 ( 49, 6) |         |  |
| 5   | 6.6925E-04 (246, 4) | 5.8194E-04 (246, 4) | 6.3215E-04 (244, 5) | 5.218AE-04 (216, 5)                   | 1.9285E-04 ( 89, 7) |         |  |
| 6   | 5.8364E-04 (250, 4) | 6.0942E-04 (250, 4) | 5.5439E-04 (250, 4) | 5.2241E-04 (163, 4)                   | 1.5452E-04 (203, 5) |         |  |
| 7   | 6.0829E-04 (145, 4) | 6.8023E-04 (250, 5) | 7.0541E-04 (123, 5) | 6.1102E-04 (134, 5)                   | 1.8154E-04 ( 1, 5)  |         |  |
| 8   | 6.3428E-04 (247, 4) | 6.3555E-04 (167, 5) | 8.3983E-04 (167, 5) | 6.3824E-04 (218, 5)                   | 2.1254E-04 (311, 6) |         |  |
| 9   | 6.1692E-04 (142, 5) | 6.6686E-04 (178, 4) | 7.3208E-04 (163, 5) | 5.8796E-04 (179, 4)                   | 1.5745E-04 ( 78, 7) |         |  |
| 10  | 6.7121E-04 (224, 4) | 8.7947E-04 (171, 4) | 8.3188E-04 (129, 4) | 6.8981E-04 (163, 6)                   | 2.0844E-04 (129, 4) |         |  |
| 11  | 5.3452E-04 (179, 4) | 5.3028E-04 (171, 4) | 6.2543E-04 ( 97, 5) | 5.5946E-04 (140, 6)                   | 2.0221E-04 (326, 5) |         |  |
| 12  | 2.1535E-04 (179, 4) | 3.3661E-04 (224, 5) | 5.0984E-04 ( 65, 5) | 4.2434E-04 (102, 5)                   | 1.7108E-04 (336, 6) |         |  |
| 13  | 1.0515E-04 (247, 5) | 2.4974E-04 ( 62, 5) | 3.6155E-04 (231, 4) | 4.5927E-04 (144, 6)                   | 1.7123E-04 ( 56, 1) |         |  |
| 14  | 1.5915E-05 (247, 5) | 2.6984E-04 (180, 4) | 4.4768E-04 (176, 4) | 3.7976E-04 (180, 7)                   | 1.6081E-04 (230, 4) |         |  |
| 15  | 3.1707E-06 (106, 4) | 2.4617E-04 (180, 4) | 3.6374E-04 (180, 4) | 3.2415E-04 ( 14,                      | 1.5936E-04 (153, 6) |         |  |
| 16  | 3.4179E-05 (106, 4) | 1.2383E-04 (170, 6) | 3.4365E-04 ( 14, 5) | 4.6525E-04 (170, 6,                   | 1.4790E-04 (318, 3) |         |  |
| 17  | 3.3743E-05 (176, 4) | 1.4104E-04 (106, 4) | 3.2668E-04 ( 94, 4) | 3.8544E-04 (361, 4)                   | 1.2839E-04 (327, 4) |         |  |
| 18  | 1.0411E-05 (177, 4) | 1.8984E-04 (176, 4) | 3.5508E-04 (176, 4) | 3.8615E-04 (302, 5)                   | 1.5314E-04 (155, 3) |         |  |
| 19  | 8.4840E-05 (177, 4) | 1.9746E-04 (293, 4) | 3.8294E-04 (293, 5) | 4.2584E-04 ( 94, 4)                   | 1.7617E-04 (302, 5) |         |  |
| 20  | 3.4357E-04 (177, 4) | 3.1303E-04 ( 96, 5) | 5.4911E-04 ( 96, 5) | 4.3860E-04 ( 63, 5)                   | 1.2262E-04 (102, 3) |         |  |
| 21  | 1.3880E-04 (106, 4) | 4.4629E-04 (106, 4) | 4.7505E-04 (177, 4) | 4.1517E-04 (319, 4)                   | 1.7808E-04 (353, 2) |         |  |
| 22  | 1.9312E-04 (258, 5) | 2.3834E-04 ( 15, 5) | 4.6903E-04 ( 15, 5) | 5.1350E-04 ( 76, 5)                   | 2.4742E-04 (302, 4) |         |  |
| 23  | 3.4357E-04 (177, 4) | 2.7449E-04 ( 85, 4) | 4.5263E-04 (337, 4) | 5.5920E-04 (337, 4)                   | 1.9317E-04 (296, 3) |         |  |
| 24  | 1.7084E-04 (248, 4) | 3.2607E-04 (184, 4) | 5.1481E-04 (295, 4) | 5.3214E-04 (294, 4)                   | 2.1401E-04 ( 34, 4) |         |  |
| 25  | 4.4697E-04 (258, 5) | 4.1291E-04 (184, 4) | 6.3383E-04 (284, 4) | 5.9006E-04 (253, 4)                   | 1.9659E-04 ( 30, 4) |         |  |
| 26  | 4.8261E-04 (235, 4) | 4.0696E-04 (235, 4) | 5.6265E-04 (253, 4) | 5.4237E-04 (181, 4)                   | 1.6241E-04 (126, 3) |         |  |
| 27  | 6.2845E-04 (254, 4) | 5.3836E-04 (254, 4) | 6.6401E-04 (235, 4) | 6.5263E-04 (322, 5)                   | 1.6512E-04 (254, 4) |         |  |
| 28  | 4.8262E-04 (235, 4) | 5.5671E-04 (254, 5) | 5.2035E-04 (113, 4) | 6.1555E-04 (348, 4)                   | 1.7273E-04 (172, 4) |         |  |
| 29  | 2.5282E-04 (242, 5) | 4.1843E-04 (234, 4) | 4.7457E-04 (242, 5) | 4.7113E-04 (242, 5)                   | 1.8408E-04 (237, 6) |         |  |
| 30  | 2.5127E-04 (234, 4) | 3.1511E-04 (205, 5) | 3.9583E-04 (234, 4) | 5.2927E-04 (324, 4)                   | 2.1011E-04 (195, 6) |         |  |
| 31  | 7.9136E-05 (215, 5) | 2.0103E-04 (248, 5) | 3.0147E-04 (248, 5) | 3.7833E-04 (289, 4)                   | 1.3826E-04 (261, 3) |         |  |
| 32  | 2.9883E-04 (215, 5) | 3.0832E-04 (215, 5) | 3.5958E-04 (205, 5) | 3.5608E-04 (195, 4)                   | 1.7772E-04 (217, 3) |         |  |
| 33  | 3.7065E-04 (234, 4) | 2.7022E-04 (234, 4) | 3.9880E-04 (211, 4) | 5.2162E-04 (215, 5)                   | 1.7827E-04 (127, 3) |         |  |
| 34  | 5.2286E-04 (215, 5) | 5.2207E-04 (234, 4) | 4.2194E-04 (215, 5) | 3.7291E-04 (169, 3)                   | 1.5552E-04 (166, 3) |         |  |
| 35  | 2.4227E-04 (215, 5) | 2.5806E-04 (215, 4) | 3.7896E-04 (214, 3) | 4.0720E-04 ( 31, 4)                   | 1.6858E-04 (350, 4) |         |  |
| 36  | 5.5786E-05 (215, 5) | 2.1080E-04 (216, 3) | 4.2065E-04 (203, 3) | 3.8752E-04 (200, 4)                   | 1.8860E-04 (128, 4) |         |  |