

Evaluation of the Control  
Strategy for Attainment  
of National Ambient Air  
Quality Standards for  
Total Suspended Particulates

Hudson Valley  
AQCR #161

Prepared by  
Environmental Protection Agency  
Region II  
Air Branch

Revised January 1976

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## I. AQCR Characteristics

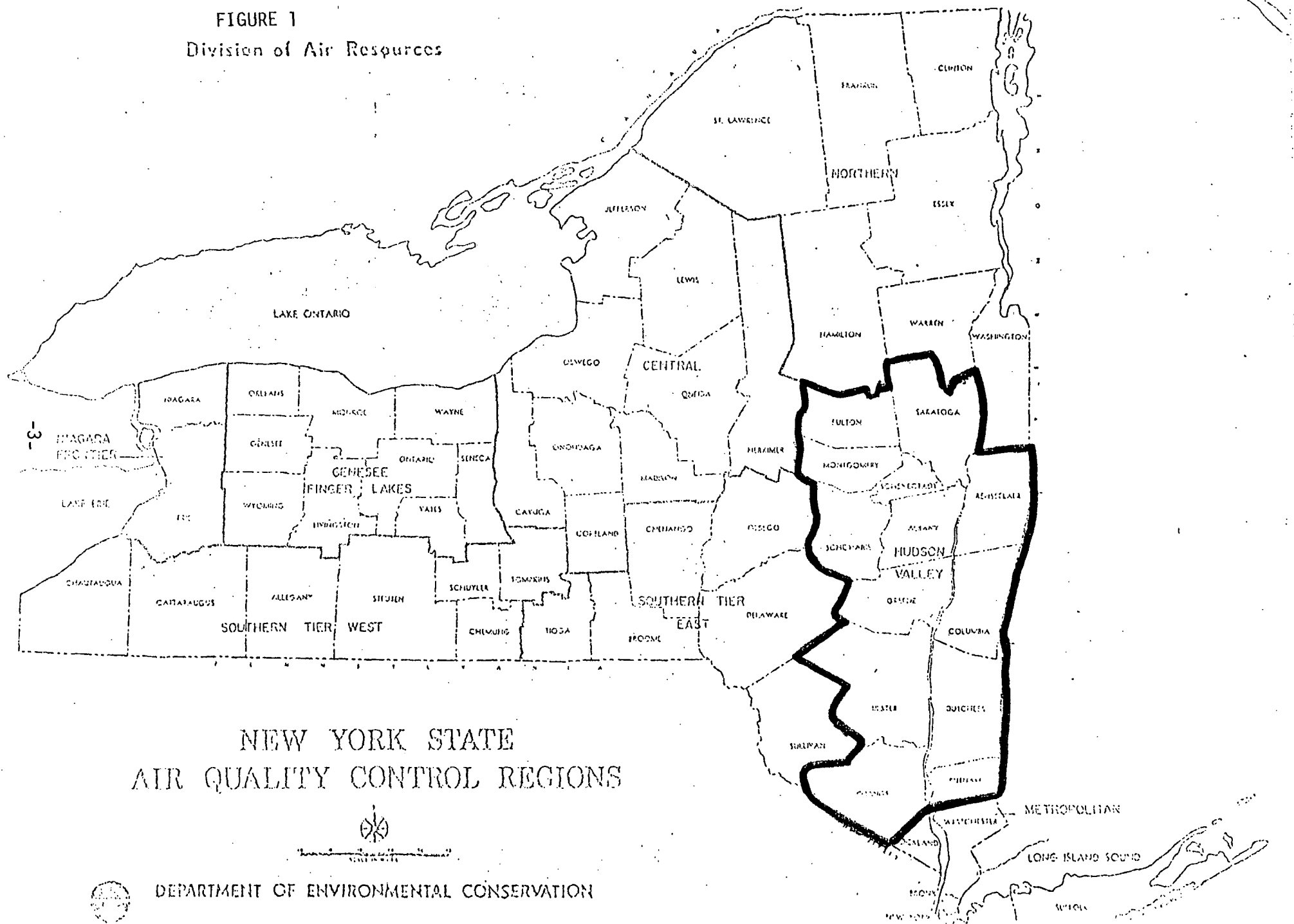
The Hudson Valley AQCR is comprised of thirteen counties in the mid-eastern portion of New York State. The counties are: Albany, Columbia, Dutchess, Fulton, Greene, Montgomery, Orange, Putnam, Rensselaer, Saratoga, Schenectady, Schoharie and Ulster (see Figure 1).

Topographically, the region is bounded to the north by the Adirondack mountains, to the east by the Taconic mountains, to the west by the Appalachian plateau (Catskills mountains) and to the south by the wide river channel of the Hudson River.

The Hudson Valley area is subject to relatively frequent storm passages during most of the year. Periods of general atmospheric stagnation occasionally occur, and their effect is compounded by terrain induced stagnation. Much of the region's climate is dominated by its river valley topography which exerts a strong channeling effect on wind direction (see Figure 2) and may at times severely inhibit pollutant dispersion. Consequently, in those valley areas where sources are located pollutants accumulate more frequently and disperse more slowly than otherwise could be expected.

The area is mainly residential with only 1,402,356 acres (14% of the total land area) agriculturally developed. The Bureau of Census estimated the 1973 population to be 1,661,518 persons, which is about 10% of the total state population.

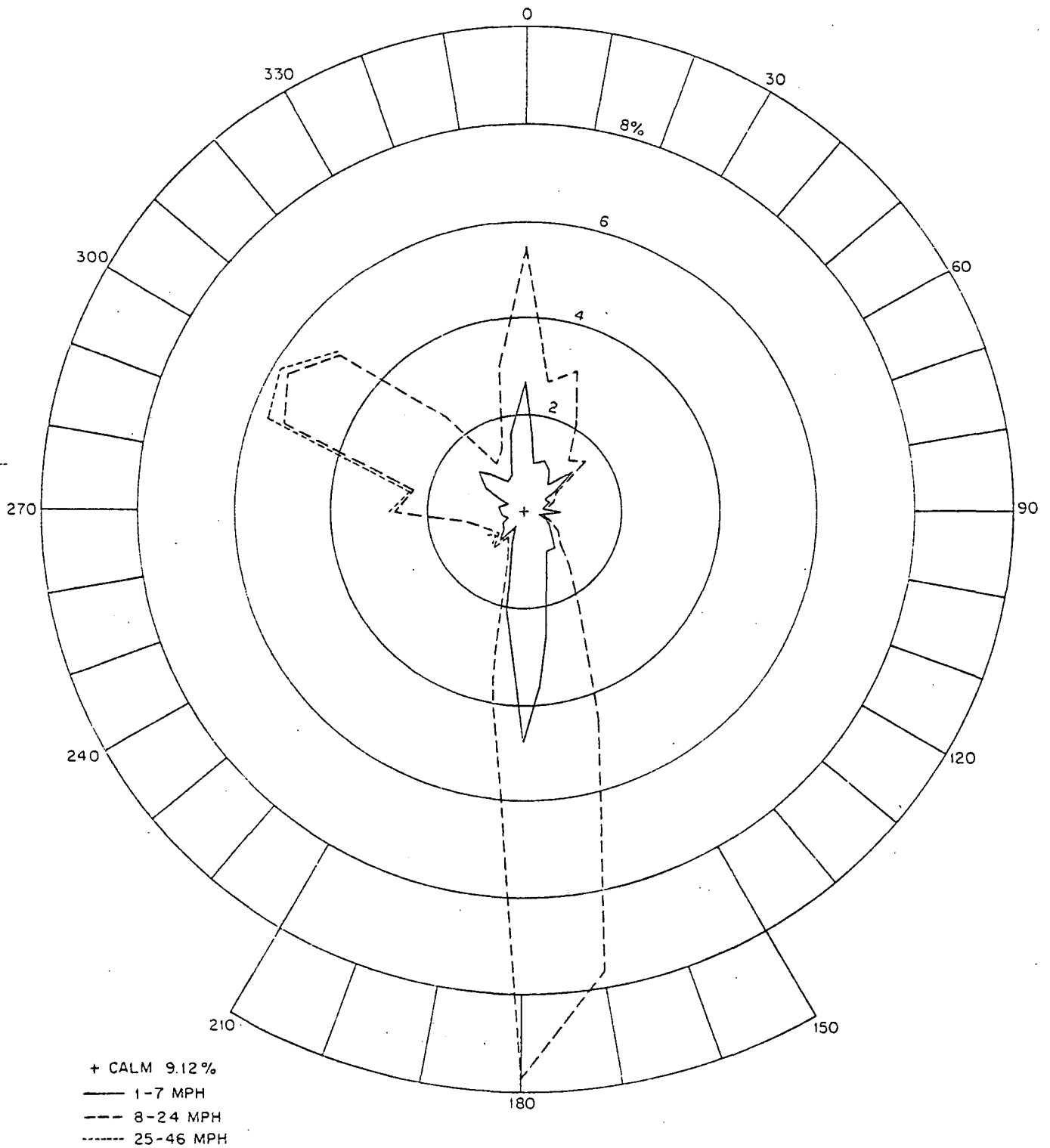
FIGURE 1  
Division of Air Resources



WIND SPEED AND DIRECTION  
3 HOUR INTERVALS  
BASED ON WEATHER BUREAU DATA

ALBANY  
JANUARY - DECEMBER 1972

FIGURE 2



## II Problem Definition

The areas within the AQCR which exhibit high concentrations of total suspended particulate matter (TSP) are located along the Hudson River in downtown Albany, the Port of Albany and the City of Rensselaer.

The monitoring sites at the Federal Building on Broadway in Albany and the Goodyear Tire Company warehouse in the Port of Albany reported annual geometric mean TSP concentrations in 1974 of  $100 \text{ ug/m}^3$  and  $76 \text{ ug/m}^3$ , respectively. These values are above the primary National Ambient Air Quality Standard for particulates of  $75 \text{ ug/m}^3$ . The second highest 24-hour concentrations recorded in 1974 were  $184 \text{ ug/m}^3$  and  $253 \text{ ug/m}^3$  at the Federal Building and Goodyear Tire Company monitoring sites, respectively. These values are below the primary standard of  $260 \text{ ug/m}^3$  but above the secondary standard of  $150 \text{ ug/m}^3$ . From 1970 through 1974 the State operated a monitoring site on the Grant Building in downtown Albany. This site was discontinued in 1975 since the building was closed and the Federal Building monitoring site replaced the discontinued site. The new site began operation in 1974 and is located within one block of the old site. Its 1974 annual geometric mean was higher than the old site. Thus, the Federal Building site is used for evaluation purposes.

At the Cementon monitoring site in Greene County, an annual geometric mean concentration of  $103 \text{ ug/m}^3$  and a second highest 24-hour concentration of  $248 \text{ ug/m}^3$  was recorded in 1974. These values contravened the primary annual standard and the secondary 24-hour standard.

All other sites in the AQCR are currently recording concentrations below both the annual primary standard and the primary 24-hour standard.

There are six sites in the AQCR where primary standards were attained in 1974 but which remained in violation of the secondary 24-hour maximum concentration standard. They are listed below:

<u>Site</u>	<u>SAROAD ID No.</u>	<u>2nd Maximum 24-hr Concentration</u>
Newburgh, N.Y.	334560001F01	163 ug/m <sup>3</sup>
Schenectady, N.Y.	336020001F01	198 ug/m <sup>3</sup>
Schenectady, N.Y.	336020002F01	150 ug/m <sup>3</sup>
Schoharie, N.Y.	336060002F01	224 ug/m <sup>3</sup>
Shawangunk, N.Y.	336840001F01	209 ug/m <sup>3</sup>
Kingston, N.Y.	336840002F01	260 ug/m <sup>3</sup>

The Schoharie and Shawangunk monitoring sites exhibited high concentrations only during the second quarter of 1974. It is expected that some atypical occurrence caused these values. The Regional Office will investigate these values and present a detailed analysis.

Table 1 presents a listing of annual geometric means and second highest 24-hour concentrations for the three sites where primary standards were violated during 1974 as discussed above.

### III Newtork Adequacy

The network of monitoring sites in the AQCR is sufficient to satisfy the Federal requirements in 40 CFR 51.17 of eleven (11) monitoring

Table 1

Problem Sites in Hudson Valley AQCR

SAROAD # 330040003F01 (0101-10)  
Goodyear Tire Company Warehouse  
Port of Albany, Albany

	Annual Geometric Mean (ug/m <sup>3</sup> )	2nd Maximum 24-hour Concentration (ug/m <sup>3</sup> )
1971	105	346
1972	108	334
1973	102	389
1974	76	253
1975	75	217**

SAROAD # 330040004F01 (0101-02)  
Federal Building  
Broadway, Albany

	Annual Geometric Mean (ug/m <sup>3</sup> )	2nd Maximum 24-hour Concentration (ug/m <sup>3</sup> )
1972	*	170
1973	111	233
1974	*	184
1975	79	191**

\*Insufficient number of observations to meet computational criteria

\*\*Arithmetic 99 percentile used to approximate the Second Maximum 24-hour Concentration

Table 1  
(continued)

SAROAD # 332660001F01 (1853-02)  
Krisinski Residence  
Maple Avenue, Cementon

	Annual Geometric Mean <u>(ug/m<sup>3</sup>)</u>	2nd Maximum 24-hour <u>Concentration (ug/m<sup>3</sup>)</u>
1973	*	211
1974	103	248
1975	64	172**

\*Insufficient number of observations to meet computational criteria

\*\*Arithmetic 99 percentile which is close to the 2nd Maximum 24-hour Concentration

sites. In 1974, thirty-seven (37) sites reported valid data so that an annual geometric mean could be calculated. The TSP monitoring sites in the AQCR and the observed annual geometric mean concentrations are presented in Table 2. This data is summarized in Table 3. The statistical evaluation presented in Table 3 includes a combined index which describes the overall trend of particulate matter in the AQCR. This combined index compensates for monitoring sites terminating and new stations starting during the period of analysis. The table also includes a normalized "combined index" which is the ratio of the base year and the periods delineated.

The monitors are in good condition and receive maintenance and calibration every 400 hours of operation. Most monitors are located such that they record values which are experienced by the general populace. The monitors are also sensitive to area sources of particulates as well as to emissions from point sources.

#### IV Impacting Sources and Controls

##### A. Federal Building Monitoring Site

The point sources which impact on the Federal Building monitoring site are listed in Table 4. Figure 3 shows the location of the sources in relation to the monitoring site. The running annual geometric mean for the site is plotted in Figure 4.

##### 1. Sheridan Avenue Power Plant

This utility is currently burning coal. Its uncontrolled emissions are 82 tons/year. By 1976 the plant will be using solid waste

Table 2  
Environmental Quality Report

AQCR: Hudson Valley (161)  
Attainment Date: May 1975

Pollutant: Total Suspended Particulates Primary 75 ug/m<sup>3</sup>  
National Ambient Air Quality Standards Secondary 60 ug/m<sup>3</sup>

Monitoring Station Location				Annual Geometric Mean (ug/m <sup>3</sup> )				
EPA ID # (State ID #)	County	Municipality	Site Description	1970	1971	1972	1973	1974
330040001A01 (N/A)	Albany	Albany		I*	I	63	I	X
330040001F01 (0101-03)	Albany	Albany	Center City-Commercial	70	67	59	57	48
330040001P01 (N/A)	Albany	Albany	Center City-Residential	X	X	X	X	I
330040003F01 (0101-10)	Albany	Albany	Center City-Industrial	X	105	108	102	76
330040002F01 (0101-08)	Albany	Albany	Center City-Commercial	122	124	118	101	85
330040004F01 (0101-02)	Albany	Albany	Center City-Commercial	X	X	I	111	I
330040005F01 (0101-13)	Albany	Albany	Center City-Commercial	X	X	X	93	68

\* I = failed to meet average criteria

\*\* t = station terminated

Table 2  
(continued)

Environmental Quality Report

AQCR: Hudson Valley (161)  
Attainment Date: May 1975

Pollutant: Total Suspended Particulates Primary 75 ug/m<sup>3</sup>  
National Ambient Air Quality Standards Secondary 60 ug/m<sup>3</sup>

Monitoring Station Location				Annual Geometric Mean (ug/m <sup>3</sup> )				
EPA ID # (State ID #)	County	Municipality	Site Description	1970	1971	1972	1973	1974
331170001F01 (0152-01)	Albany	Coeymans	Suburban-Residential		I	58	61	42
331170002F01 (0152-02)	Albany	Ravena	Suburban-Commercial			53	53	50
331180001F01 (0102-01)	Albany	Cohoes	Center City-Industrial	61	64	I	61	66
331200002F01 (0153-03)	Albany	Colonie	Suburban-Residential				55	50
331220001F01	Columbia	Philmont	Suburban-Industrial	33	I*	32	29	27
331220002F01 (1056-03)	Columbia	Copake	Remote	28	I	I		
331220003F01 (1058-01)	Columbia	Germantowne	Suburban-Residential			I	51	44
333140001F01 (1001-02)	Columbia	Hudson	Center City-Residential	62	60	52	56	55

\* I = failed to meet average criteria

\*\* t = station terminated

Table 2  
(continued)  
Environmental Quality Report

AQCR: Hudson Valley (161)  
Attainment Date: May 1975

Pollutant: Total Suspended Particulates Primary 75 ug/m<sup>3</sup>  
National Ambient Air Quality Standards Secondary 60 ug/m<sup>3</sup>

Monitoring Station Location				Annual Geometric Mean (ug/m <sup>3</sup> )				
EPA ID # (State ID #)	County	Municipality	Site Description	1970	1971	1972	1973	1974
331620001F01 (1357-01)	Dutchess	LeGrange	Rural-Agricultural	41	36	39	37	32
331620002F01 (1327-02)	Dutchess	Rhinebeck	Remote	I	58	52	I	39
331620003F01	Dutchess	Fishkill	Rural-Agricultural					I
334600001F01 (5522-01)	Ulster	New Paltz	Suburban-Residential	62	70	63	57	61
336840001F01 (5566-02)	Ulster	Shawangunk Wall Kill	Rural-Agricultural	42	40	39	50	37
336840002F01 (5567-01)	Ulster	Kingston	Suburban-Residential	121	125	124	101	I*

(\* I = failed to meet average criteria

(\*\* t = station terminated

Table 2  
(continued)

Environmental Quality Report

AQCR: Hudson Valley (161)  
Attainment Date: May 1975

Pollutant: Total Suspended Particulates Primary 75 ug/m<sup>3</sup>  
National Ambient Air Quality Standards Secondary 60 ug/m<sup>3</sup>

Monitoring Station Location				Annual Geometric Mean (ug/m <sup>3</sup> )				
EPA ID # (State ID #)	County	Municipality	Site Description	1970	1971	1972	1973	1974
335620001F01 (1302-01)	Dutchess	Poughkeepsie	Suburban-Residential	48	I*			
335620002F01 (1302-04)	Dutchess	Poughkeepsie	Suburban-Residential			62	48	53
335980001F01 (5564-01)	Dutchess	Saugerties	Rural-Industrial	66	66	72	70	44
333400001F01 (1702-01)	Fulton	Johnstown	Center City-Commercial	39	38	I	40	32

\* I = failed to meet average criteria

\*\* t = station terminated

Table 2  
(continued)  
Environmental Quality Report

AQCR: Hudson Valley (161)  
Attainment Date: May 1975

Pollutant: Total Suspended Particulates Primary 75 ug/m<sup>3</sup>  
National Ambient Air Quality Standards Secondary 60 ug/m<sup>3</sup>

Monitoring Station Location				Annual Geometric Mean (ug/m <sup>3</sup> )				
EPA ID # (State ID #)	County	Municipality	Site Description	1970	1971	1972	1973	1974
330820001F01 (1921-02)	Greene	Catskill	Suburban-Residential					41
332660001F01 (1953-02)	Greene	Cementon	Rural-Industrial				I	103
330160001F01 (2801-01)	Montgomery	Amsterdam	Center City-Commercial	62	73	62	61	47

\* I = failed to meet average criteria

\*\* t = station terminated

Table 2  
(continued)  
Environmental Quality Report

AQCR: Hudson Valley (161)  
Attainment Date: May 1975

Pollutant: Total Suspended Particulates Primary 75 ug/m<sup>3</sup>  
National Ambient Air Quality Standards Secondary 60 ug/m<sup>3</sup>

Monitoring Station Location				Annual Geometric Mean (ug/m <sup>3</sup> )				
EPA ID # (State ID #)	County	Municipality	Site Description	1970	1971	1972	1973	1974
334560001F01 (3502-02)	Orange	Newburgh	Center City-Commercial	84	76	71	84	73
335140001F01 (3566-02)	Orange	Wallkill	Rural-Industrial					74
335640001F01 (3922-01)	Putnam	Brewster	Center City-Commercial			I*	I	48
335640002F01 (3922-01)	Putnam	Cold Springs	Suburban-Residential			I	36	I

\* I = failed to meet average criteria

\*\* t = station terminated

Table 2  
(continued)  
Environmental Quality Report

AQCR: Hudson Valley (161)  
Attainment Date: May 1975

Pollutant: Total Suspended Particulates Primary 75 ug/m<sup>3</sup>  
National Ambient Air Quality Standards Secondary 60 ug/m<sup>3</sup>

Monitoring Station Location				Annual Geometric Mean (ug/m <sup>3</sup> )				
EPA ID # (State ID #)	County	Municipality	Site Description	1970	1971	1972	1973	1974
333080001F01 (4120-01)	Rensselaer	Hoosick Falls	Center City-Commercial					I
335680001F01 (4101-02)	Rensselaer	Rensselaer	Suburban-Commercial	72	75	77	74	60
335700001F01 (4152-02)	Rensselaer	East Greenbush	Center City-Industrial	87	80	57	61	I
335700011F01 (4153-01)	Rensselaer	Grafton	Suburban-Residential	24	I	30	30	27
335700021F01 (4124-01)	Rensselaer	Castleton-on-Hudson	Suburban-Residential	I*	I	I	34	38

\* I = failed to meet average criteria

\*\* t = station terminated

Table 2  
(continued)  
Environmental Quality Report

AQCR: Hudson Valley (161)  
Attainment Date: May 1975

Pollutant: Total Suspended Particulates Primary 75 ug/m<sup>3</sup>  
National Ambient Air Quality Standards Secondary 60 ug/m<sup>3</sup>

Monitoring Station Location				Annual Geometric Mean (ug/m <sup>3</sup> )				
EPA ID # (State ID #)	County	Municipalities	Site Description	1970	1971	1972	1973	1974
335970003F01 (4501-03)	Saratoga	Saratoga Springs	Center City-Commercial			I	46	38
336020001F01 (4601-02)	Schenectady	Schenectady	Center City-Commercial	60	64	63	71	66
336020002F01 (4601-04)	Schenectady	Schenectady	Center City-Commercial	64	63	61	70	60
336040001F01 (4650-01)	Schenectady	Duanesburg	Remote	31	31	32	31	25
336040011F01 (4652-01)	Schenectady	Niskayuna	Suburban-Residential	48	45	43	47	39

\* I = failed to meet average criteria

\*\*t = station terminated

Table 2  
(continued)  
Environmental Quality Report

AQCR: Hudson Valley (161)  
Attainment Date: May 1975

Pollutant: Total Suspended Particulates Primary 75 ug/m<sup>3</sup>  
National Ambient Air Quality Standards Secondary 60 ug/m<sup>3</sup>

Monitoring Station Location				Annual Geometric Mean (ug/m <sup>3</sup> )				
EPA ID # (State ID #)	County	Municipality	Site Description	1970	1971	1972	1973	1974
336060002F01 (4761-01)	Schoharie	Schoharie	Rural-Agricultural	52	54	50	52	47
331860001F01 (5526-02)	Ulster	Ellenville	Suburban-Industrial	58	55	42	41	I*
333500001F01 (5501-02)	Ulster	Kingston	Center City-Commercial	71	69	64	70	I
333500002F01 (5501-04)	Ulster	Kingston	Center City-Residential			69	69	67
333500003F01 (5501-09)	Ulster	Kingston	Center City-Residential					I

\* I = failed to meet average criteria

\*\* t = station terminated

Table 3

Air Quality Status Report

AQCR: Hudson Valley (161)  
 Attainment Date: May 1975

Pollutant: TSP

Criteria	1975	1974	1973	1972	1971	1970	Comments
Sites Reporting Complete Data		34	36	28	24	26	
No. & (percent) above 75 ug/m <sup>3</sup>		3 ( 8.8)	6 (16.7)	4 (14.3)	6 (25.0)	3 (11.5)	
No. & (percent) above 60 ug/m <sup>3</sup>		12 (35.3)	16 (44.4)	14 (50.0)	15 (62.5)	14 (53.8)	
Maximum ug/m <sup>3</sup>		103	111	124	125	122	
Minimum ug/m <sup>3</sup>		25	29	30	31	24	
Combined Index		50.6	57.9	58.6	62.4	59.7	
Combined Index (normalized)		84.6	97.0	98.2	104.5	100.0	

Table 4

Sources Impacting at Federal Building Site  
SAROAD # 330040004F01 Albany, New York

Source	I.D. # on Fig. 3	Location	Approximate Stack Height	Approximate Distance from site	Direction from site	Emissions (tons/yr) 1972	Controlled	Reduction
Sheridan Avenue Power Plant	1	Albany, N.Y.	150 feet	½ mile	NW	82.0	4.0*	95%
Cargill Feed Company	2	Port of Albany, N.Y.	200 feet	1 ½ miles	S	1713.0	23.0	99%
Niagara Mohawk Power Plant	3	Bethlehem, N.Y.	4 Stacks 220 feet	4 miles	S	7604.0	688 *	92.4 %
Hotel Hampton (Boiler)	N/A	State Street Albany, N.Y.	Not Known	600 feet	SW	N/A**	N/A	N/A
TOTAL						9,399	755	92.0 %

\*Emission reduction not presently achieved

\*\*N/A = Not Applicable

Figure 3  
Sources Impacting on the Federal  
Building Monitoring Site

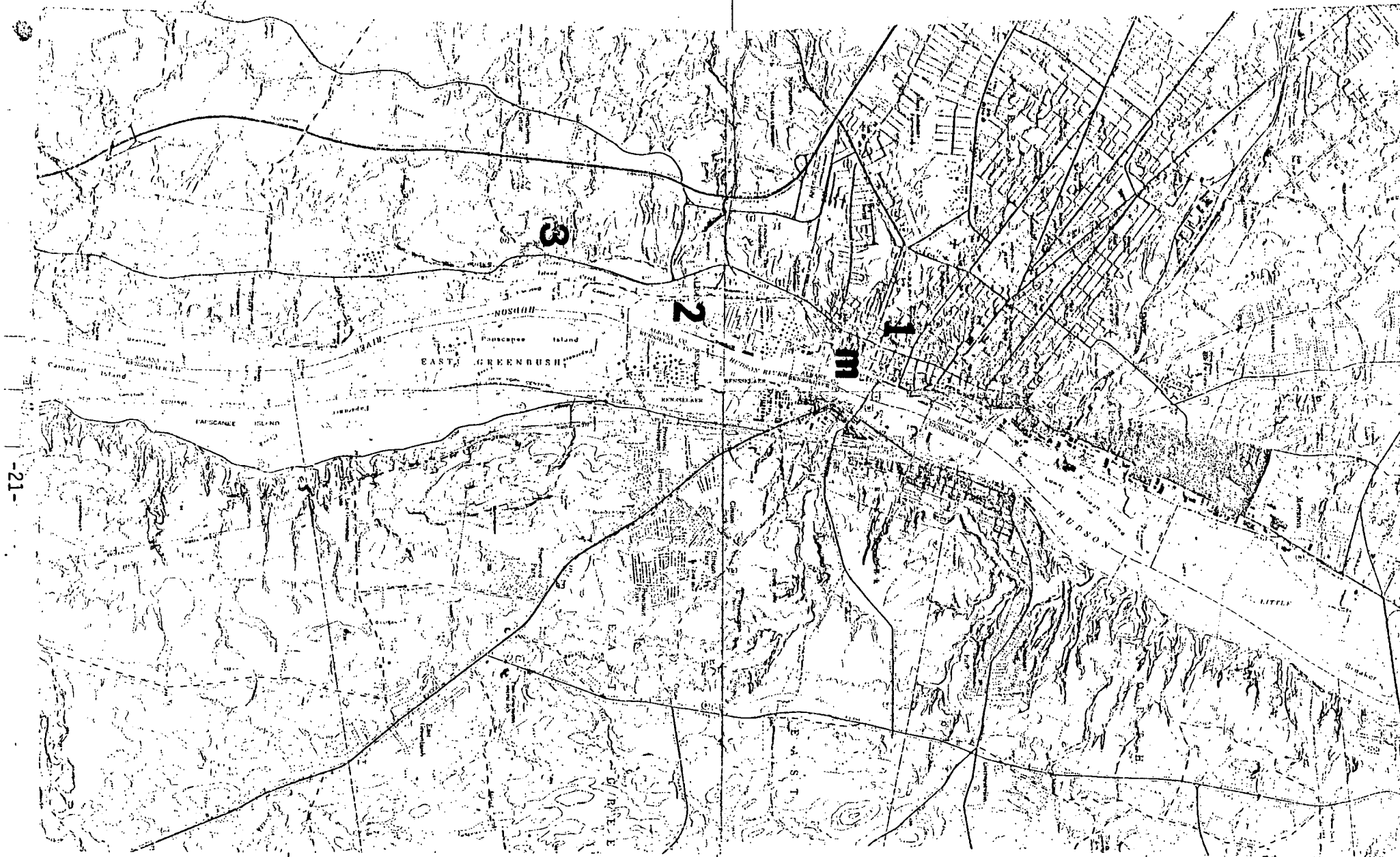
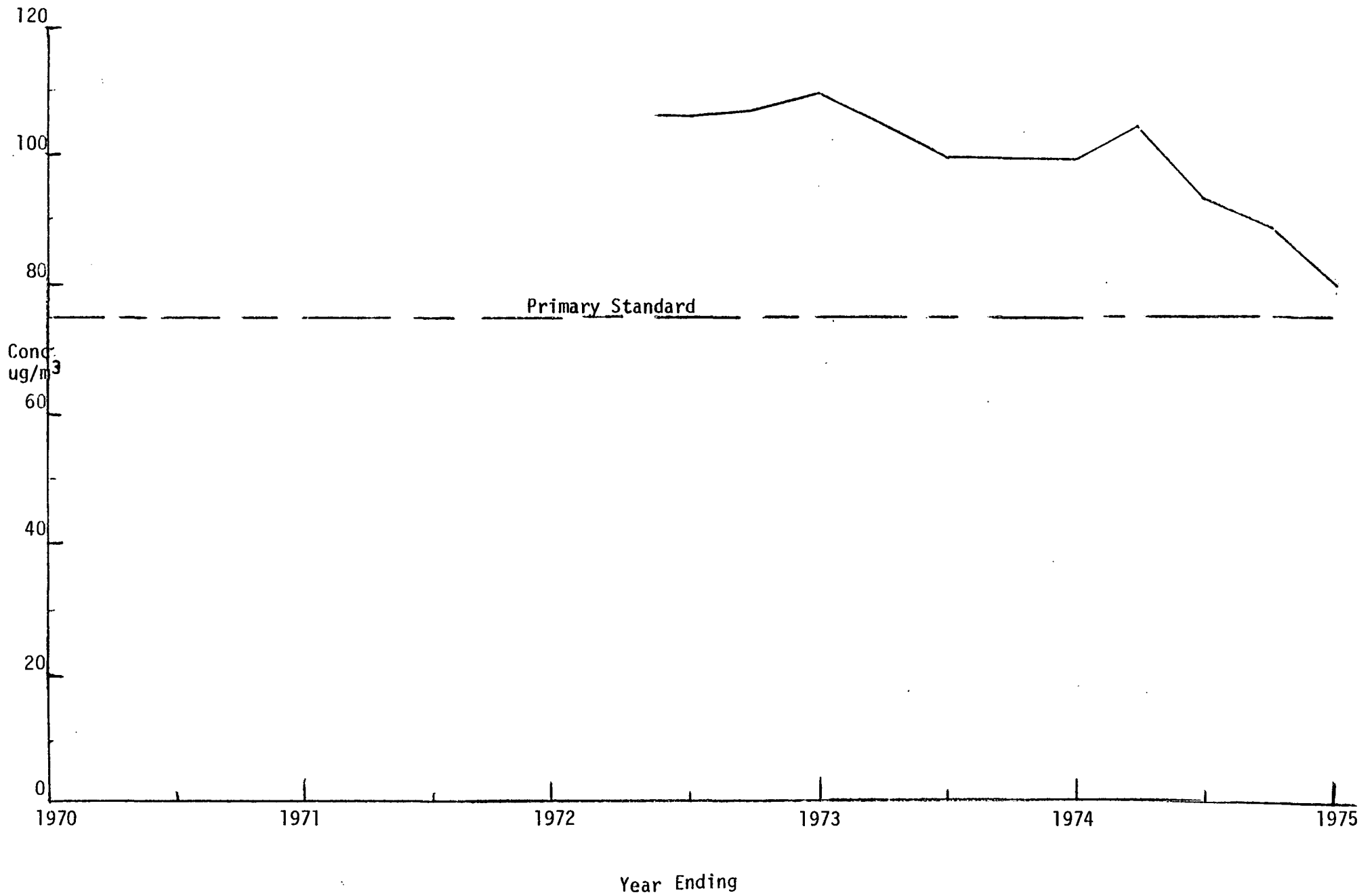


Figure 4  
Running Annual Geometric Mean for  
the Federal Building Monitoring Site



as fuel and the fossil fuel boilers will be used only for peaking purposes. The new boilers will be equipped with electrostatic precipitators having an efficiency of between 90 and 96%. Consequently, by 1976 the emissions from this source should be reduced to 4 tons/year.

## 2. Cargill Feed Company

This feed storage facility was in violation of the emission limitations of Part 212 (Process and Exhaust and/or Ventilation Systems) of the State's Air Pollution Control Code. In 1974 the particulate emissions from the source were 1,713 tons/year. A NYSDEC order required the company to install three baghouses on their grain elevators in August of 1974. After the installation of the control equipment the particulate emissions from this plant were reduced to 23 tons/year.

## 3. Niagara Mohawk Power Plant

This utility is not in compliance with Part 227 (Stationary Combustion Installations) since its four boilers presently emit 2247.0 tons/year and its allowable emissions under Part 227.3 are 688 tons/year. Part 227.3 allows the emissions of 0.1 lb. of particulate matter per million Btu rated heat input.

The plant has been ordered by the Federal Energy Administration to convert to coal. Part 227.3 would allow the emissions of 0.227 lbs of particulate matter per million Btu rated heat input for installations which use coal. However, in this case the source will be required to conform with the initial requirement of 0.1 lb of particulate matter per million Btu rated heat input. As a result, there will be no increase in particulate matter emissions from the conversion to coal.

#### B. Goodyear Warehouse Monitoring Site

The point sources which impact on the Goodyear Tire Company warehouse site in the Port of Albany are listed in Table 5. Figure 5 depicts the relative location of each source with respect to the monitoring site. The running annual geometric mean for the site is plotted in Figure 6.

##### 1. Cargill Grain Company

See discussion of this source under A of this section. This source is in close proximity of the monitoring site and appears to have the largest impact on the concentrations being recorded at the site.

##### 2. GAF Film Company

In 1973 this company had particulate emissions of 27.5 tons with the allowable emissions being 24 tons/year. The source was out of compliance with both Parts 212 and 227. Controls installed in 1974 reduced the emissions to 24 tons/year. This source is not considered a major point source and is not expected to have a measurable effect on the monitoring site.

##### 3. Niagara Mohawk Power Plant

See discussion of this source under A of this section.

#### C. Cementon Monitoring Site

The sources impacting on the site in Cementon are listed on Table 6. For the location of sources in relation to the monitoring site see Figure 7. The climate of the area is such that the monitoring site is

Table 5

Sources Impacting at Goodyear Tire Co. Warehouse Site  
SAROAD #33004003F01 Port of Albany, N.Y.

Source	I.D. # on Fig. 5	Location	Approximate Stack Height	Approximate Distance from site	Direction from site	Emissions (tons/yr) 1972	Controlled	Per Cent Reduction
Cargill Feed Co.	2	Port of Albany N.Y.	Silo Vents 200 feet	1/2 mile	S	1713.0	23.0	99%
Sterling-Winthrop Pharmaceutical Co.	N/A*	Rensselaer, N.Y.	200 feet (on Hill)	2 1/2 miles	NE	1.5	0.6	60%
GAF Film Co.	N/A	Rensselaer, N.Y.	180 feet	3/4 mile	NE	27.5	24.0	13%
N.Y.S. OGS Sewage Treatment Plant	4	Port of Albany, N.Y.	2 Stacks 100 feet	1/4 mile	NW	8.8	8.8	0%
Niagara Mohawk Power Plant	3	Bethlehem, N.Y.	4 Stacks 200 feet	3 miles	S	7604.0	688	92.0%
TOTAL						9354.9	744.4	92.0%

\* N/A = Not Applicable

Figure 5

Map of Impacting Sources at the  
Goodyear Warehouse Monitoring Site

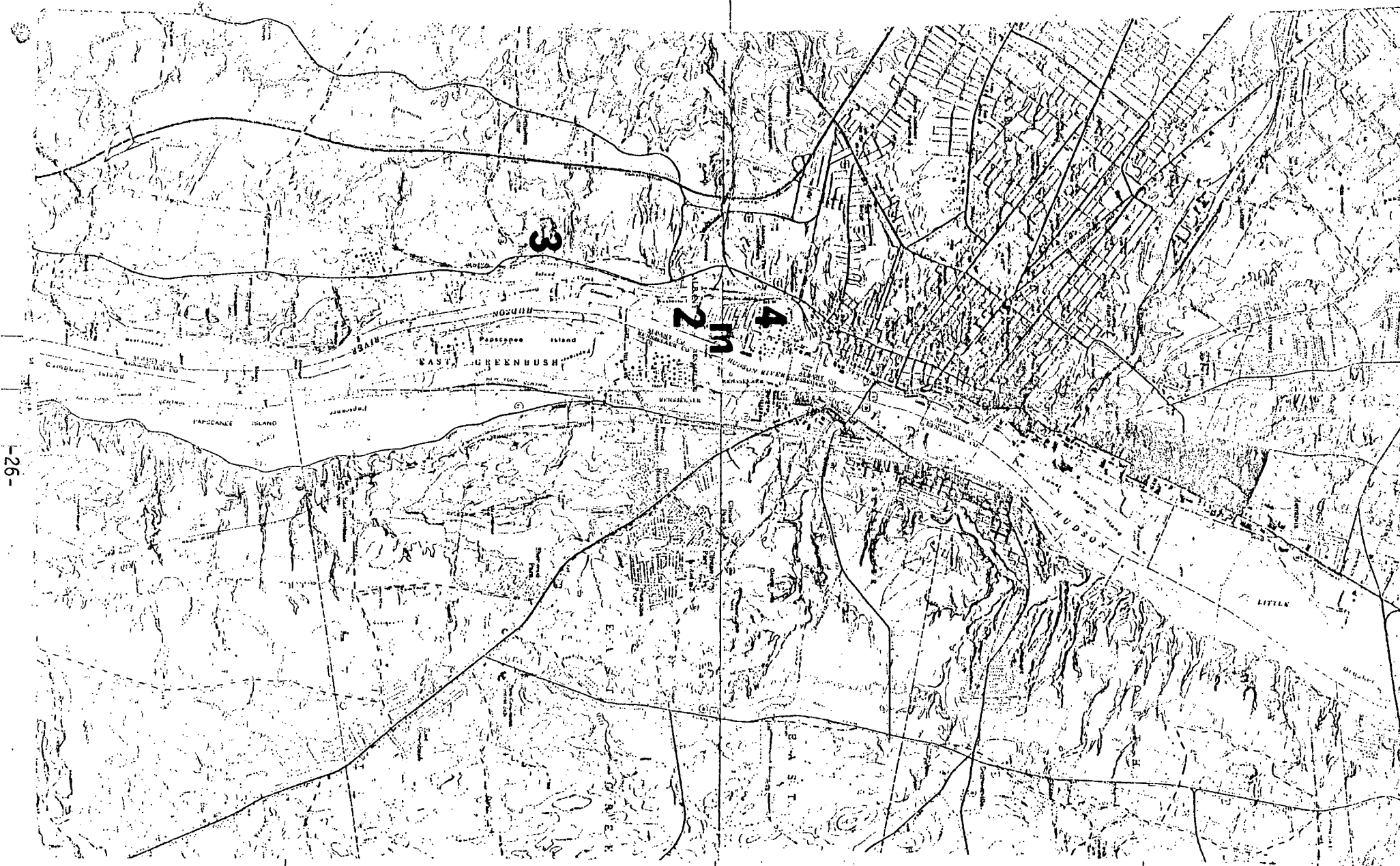


Figure 6

Running Annual Geometric Mean for  
Goodyear Warehouse Monitoring Site

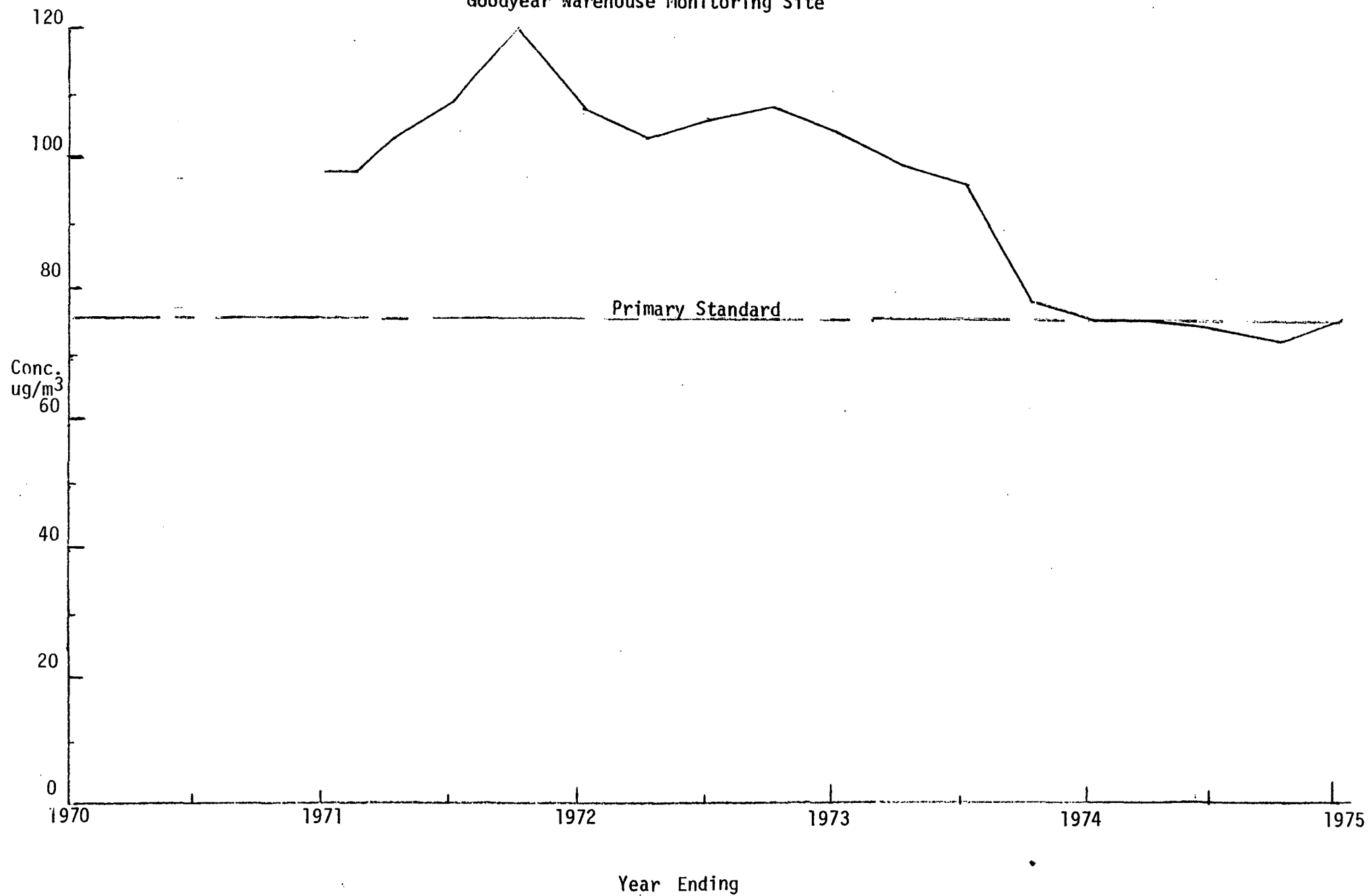


Table 6

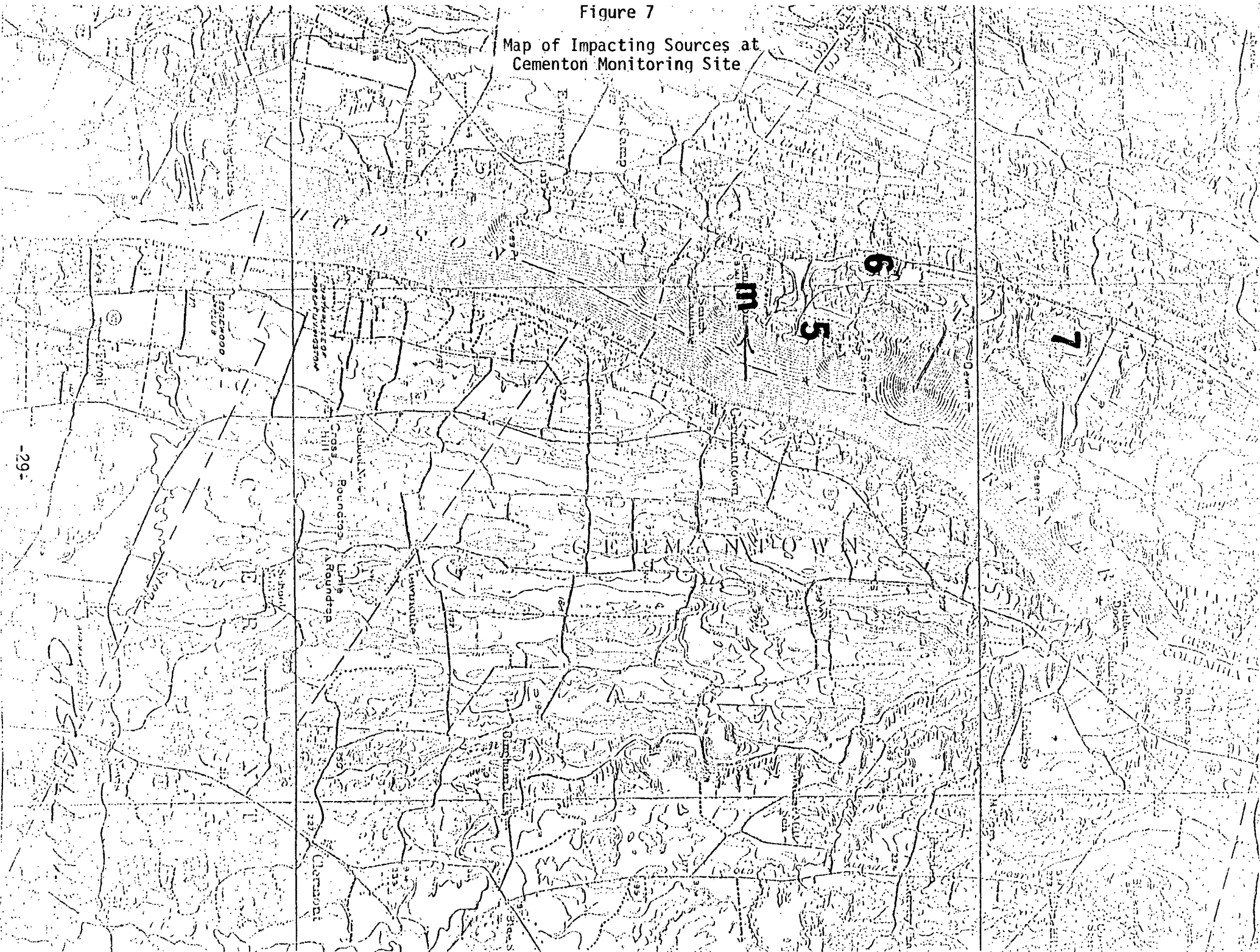
Sources Impacting at Cementon Monitoring Site  
SAROAD # 332660001F01 Cementon, New York

Source	I.D. # on Fig. 7	Location	Approximate Stack Height	Approximate Distance from site	Direction from site	Emissions (tons/yr) 1972	Controlled	Reduction
Alpha Portland Cement Plant	5	Cementon, N.Y.	150 ft. smaller stacks & silo vents	1/2 mile	N	357.5	350.0*	2%
Lehigh Portland Cement Plant	6	Cementon, N.Y.	3 stacks at 50 ft. each & smaller stacks & silo vents	1 1/2 miles	N	4035.4	1191.4*	70%
Marquette Portland Cement Plant	7	Catskill, N.Y.	Not Known	3 miles	N	1450.7	675.0*	54%
TOTAL						5843.6	2216.4	62%

\*Emission reductions not presently achieved

Figure 7

Map of Impacting Sources at  
Cementon Monitoring Site



frequently downwind of the impacting sources. The running annual geometric mean for the site is represented by the trend line presented in Figure 8.

#### 1. Alpha Portland Cement

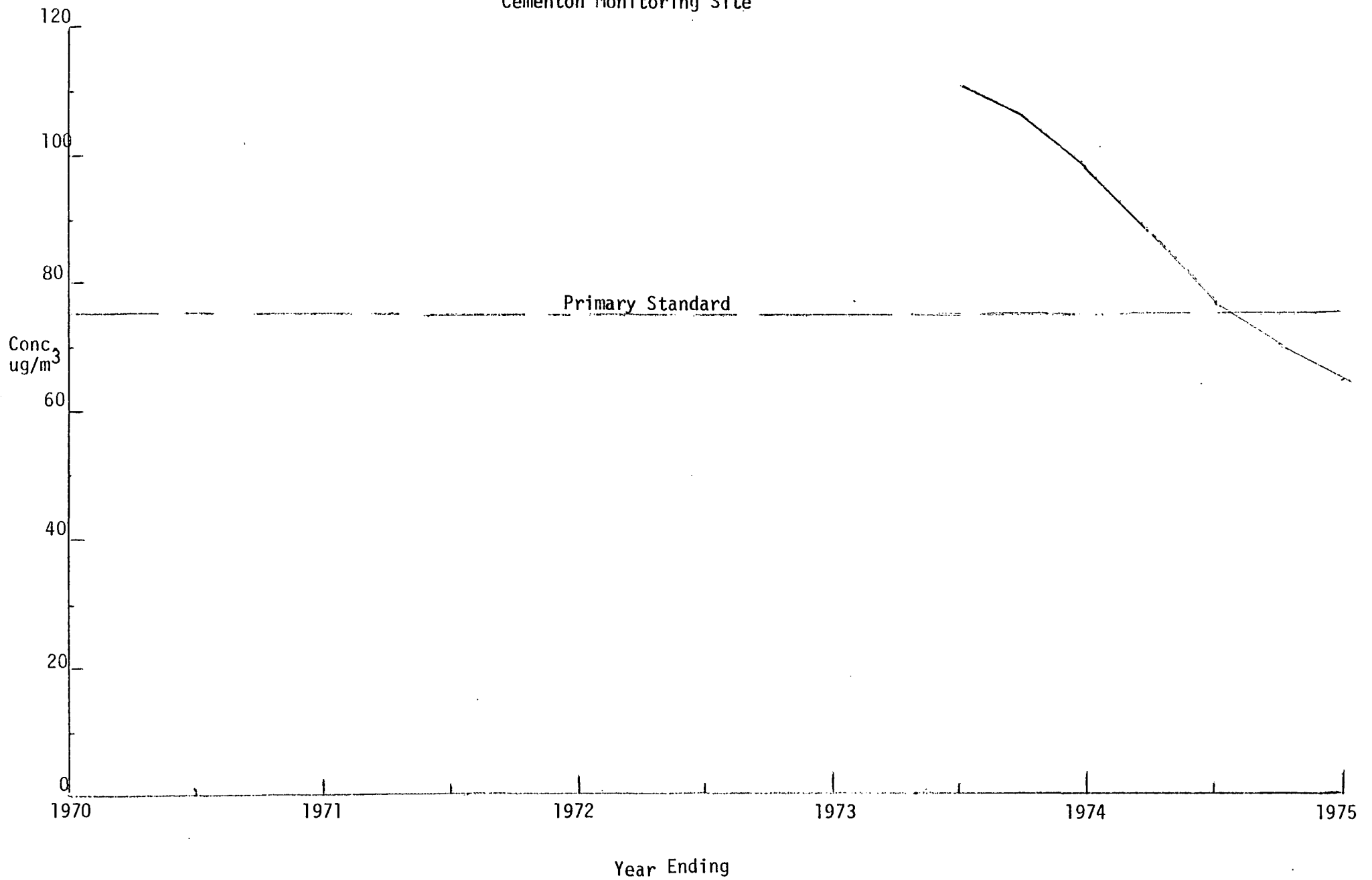
This facility is presently under two compliance schedules issued by the State. They require that the source: (1) complete on-site construction of emission control equipment relating to dust-dumping operations, and (2) modify and make additions to the clinker cooler ventilation system. The modifications to the cooler have been completed and stack tests were due September 1, 1975. This plant emitted 461.6 tons in 1970 and 357.7 tons in 1972. When fully controlled the emissions will be reduced to 350 tons/year.

NYSDEC has indicated that the Cementon monitor is located within 100 yards of the Alpha Portland Cement dumping area and will always report high concentrations due to the large fugitive dust emissions generated by the dumping and the monitor's ground level location.

The greatest contributor to the particulate matter concentrations at the Cementon site is the alkaline dust dump operated by this company. It is located approximately 100 yards north of the sampler and is approximately 1/8 mile wide, 1/4 mile long and 25 feet high. Particulate emissions from this dump have not been quantified due to problems with estimating emissions. However, the dust generated by this source has significant impact on the values recorded at the Cementon site.

Figure 8

Running Annual Geometric Mean for  
Cementon Monitoring Site



## 2. Lehigh Portland Cement

This plant is presently on a compliance schedule and is meeting its increments of progress. In 1972 the plant emitted 4,036 tons of particulate matter and was in violation of Part 212 (Process and Exhaust and/or Ventilation Systems). The company was required to be in full compliance by April 4, 1975. The order required that the facility install electrostatic precipitators on two kilns. This control equipment has reduced the particulate emissions from a total of 700 tons/year to 20 tons/year. The clinker cooler ventilation system was scheduled for baghouse construction January 1, 1976 with stack tests due January 6, 1976.

## 3. Marquette Cement Company

This plant is currently on a compliance order. The original order was to be complied with by August 21, 1974, but due to an accident at the plant it was extended. In 1973 the particulate emissions from this facility were 1,451 tons. The present order requires that a baghouse be installed on the clinker cooler system which will reduce uncontrolled particulate matter emissions by 99.5%. The allowable TSP emissions for this plant are 675 tons/year.

## V. Evaluation of Control Strategy

The control strategy selected by the State to reduce particulate matter emissions in this AQCR is the strict enforcement of the following state regulations:

1. Part 212 - Processes and Exhaust and/or Centilation Systems
2. Part 213 - Contaminant Emissions from Ferrous-Jobbing Foundaries
3. Part 215 - Open Fires

#### 4. Part 219 - Incinerators

Current evaluation of this AQCR has not been able to definitely ascertain that the control strategy will provide for attainment of the secondary standards for particulate matter. In evaluating the Goodyear Tire Company monitoring site, the primary annual geometric mean standard was attained at the end of 1975 (i.e.,  $75 \text{ ug/m}^3$ ). This suggests that the control strategy is most likely adequate to attain the primary standard. In 1974, the second highest 24-hour concentration at this site was  $253 \text{ ug/m}^3$ . In order to provide for the attainment of the secondary standard of  $150 \text{ ug/m}^3$ , a 46% reduction in emissions is required.  $[(\% \text{ reduction} = (253 - 150)/(253 - 30) \times 100 = 46\%)]$ . Because this monitoring site is so heavily impacted by the sources shown in Table 5, it is expected that the 92.0% reduction in emissions shown in Table 5 may be sufficient to attain the secondary standard for particulate matter. This is further substantiated by the fact that the source which has the greatest impact on the monitoring site, Cargill, will achieve a 99% reduction in particulate matter emissions.

At the Federal Building monitoring site, in order to provide for attainment of the primary standard of  $75 \text{ ug/m}^3$  a 36% reduction in emissions is required  $[(\% \text{ reduction required} = (100 - 75)/(100 - 30) \times 100 = 36\%)]$ . Table 4 shows that a 92.0% reduction in emissions will be achieved by January 1976. However, it is not clear to what extent the sources listed in Table 4 impact on the monitoring site. The point sources which impact on this site are located at a distance

of four to five miles from this Site and do not have as great an impact on this site as Cargill does on the Goodyear Tire Company site. In addition, this site is located in downtown Albany and can be greatly affected by area sources. NYDEC has indicated that there was construction activity at the Delaware and Hudson Building in late 1974. This activity masked out the stationary source emission reductions at this site. By spring of 1975, this construction activity was over so that it anticipates that TSP concentrations will continue to decrease. Therefore, this site will probably attain the primary standard in mid - 1976.

At Cementon, reductions of 38% and 45% in emissions are required to attain the primary and secondary standards, respectively. [(% reduction required  $(103 - 75)/(103 - 30) \times 100 = 38\%$ )] [(248 - 150)/(248 - 30)  $\times 100 = 48\%$ ]]. Table 6 indicates that a 62% reduction in particulate emissions will be achieved. However, it should be noted that the source most directly affecting the site (Alpha Portland Cement Company) produces large amounts of fugitive dust emissions. These emissions have not been quantified and their impact on the monitoring site is unknown at present.

## VI Conclusions

Based on an analysis of the Hudson Valley AQCR the following can be concluded:

1. The primary standards were attained at the Goodyear Tire Company and Cementon monitoring sites in 1975.

2. Although the primary standards were not attained at the Federal Building monitoring site in 1975, the SIP is considered to be substantially adequate. With the end of construction activity near this site in spring, 1975, it is anticipated that this site will probably attain the primary standard by mid - 1976.

3. It cannot be determined whether the secondary standards will be attained at the Goodyear, Federal Building, and Cementon monitoring sites.

## VII Recommendations

1. The development of an Air Quality Maintenance Plan should proceed as scheduled to assure continued attainment in those areas that are currently attaining standards.

2. Diffusion modeling of the downtown Albany area should be undertaken in order to identify the impact of area sources in addition to point sources on the Federal Building site.

3. An evaluation of the impact of fugitive dust emissions on the Cementon monitoring site should be undertaken to determine if the monitor is being unduly affected by fugitive dust emissions.