Annual Air Quality Summary

Connecticut Air Quality Summary 1981

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State of Connecticut
William A. O'Neill, Governor

Department of Environmental Protection
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I. INTRODUCTION

The 1981 Air Quality Summary of Ambient Air Quality in Connecticut is a compilation of all air pollutant measurements made at the Department of Environmental Protection (DEP) air monitoring network sites.

A. Overview of Air Pollutant Concentrations in Connecticut

The following section briefly describes the status of Connecticut's air quality for the year 1981. The measured concentrations of six pollutants are compared to two categories of Federal and State air quality standards. The first is the primary standard that was established to protect public health; and the secondary standard established to protect plants and animals and to prevent economic damage. A more detailed discussion of each of these pollutants is provided in subsequent sections of this Annual Air Quality Summary.

1. Total Suspended Particulates (TSP)

Measured total suspended particulates (TSP) levels did not exceed the primary annual standard of 75 ug/m^3 or the secondary annual standard of 60 ug/m^3 in Connecticut during 1981. No sites recorded measured values exceeding the primary 24-hour standard of 260 ug/m^3 in 1981, but sixteen sites exceeded the secondary 24-hour standard of 150 ug/m^3 up from five sites in 1980. Two days over the standard are required for the standard to be violated. Ansonia 003, New Haven 123. Torrington 23, Wallingford 001, Waterbury 007, and Waterbury 123 violated the secondary standard by exceeding the 150 ug/m^3 level at least two times (see Table 1).

In general, measured Total Suspended Particulate levels in Connecticut showed a significant improvement in 1981 as compared to 1980.

2. Sulfur Dioxide (SO2)

None of the air quality standards for sulfur dioxide were exceeded in Connecticut in 1981. Measured concentrations were below the 80 ug/m^3 primary annual standard, the 365 ug/m^3 primary 24-hour standard, and the 1300 ug/m^3 secondary 3-hour standard.

The continued attainment of the SO_2 standards can be primarily attributed to Connecticut's low sulfur-in-fuel regulations.

The results of sulfation rate monitoring show that sulfur dioxide levels were significantly lower in 1981 as compared to 1980. Temperature is an important factor in determining SO_2 emissions. The general decrease in measured SO_2 levels was probably due to the fact that over inland Connecticut the year 1981 was warmer than 1980. This can be shown by the number of "degree days," a measure of heating

requirement. The greater the number of degree days, the more fuel that is required to heat homes. At Bridgeport, there was a three percent increase of degree days in 1981 as compared to 1980, but Bradley Airport, Windsor Locks, had a nine percent decrease over the same period.

3. Ozone (O3)

NAAQS - On February 8, 1979, the EPA established an ambient air quality standard for ozone of 0.12 ppm for a one-hour average. That level is not to be exceeded more than once per year. Furtnermore, in order to determine compliance with the 0.12 ppm ozone standard EPA directs the states to record the number of hourly exceedances of 0.12 ppm at a given monitoring site over a consecutive 3-year period and then calculate the average number of exceedances for this interval. If the resulting average value is less than or equal to 1.0; that is, if the fourth highest hourly value in a consecutive 3-year period is less than 0.12 ppm, the ozone standard is considered attained. The definition of the pollutant was also changed along with the numerical value partly because the instruments used to measure photochemical oxidants in the air really measure only ozone. Ozone is only one of a group of chemicals which are formed photochemically in the air and are called photochemical oxidants. In the past, the two terms have often been used interchangeably. This 1981 Annual Summary uses the term "ozone" in conjunction with the new NAAQS to rerlect the changes in both the numerical value of the NAAQS and its definition.

The primary 1-hour ozone standard was exceeded at all the DEP monitoring sites in 1981 (see Table 1).

The frequency of ozone levels in excess of the 0.12 ppm ozone standard increased from 1980 to 1981. Some of this difference is attributable to the changes in meteorological factors which occur from year-to-year. An increase in average summer temperatures as well as southwesterly wind transport were important factors during 1981. High temperatures facilitate conversion of hydrocarbons and nitrogen oxides into ozone. Southwest winds transport the emissions of hydrocarbons and nitrogen oxides generated in the New York City Metropolitan Area into Connecticut. Although the Federal emission controls on motor vehicles should be bringing about a yearly reduction in ozone precursor emissions, these emission reductions have perhaps been overshadowed by meteorological factors.

4. Nitrogen Dioxide (NO2)

The method by which the DEP measures NO_2 was changed in 1981. This change was the reason for the data collected to be incomplete. The available data shows that all sites in Connecticut were well below the NAAQS for NO_2.

Since 60% of the NO_2 emissions in Connecticut come from motor vehicles, some improvement should be occurring due to the Federal emission control program for motor vehicles, as well as continued gasoline conservation. However, yearly differences of weather conditions have probably been an overriding factor in determining overall NO_2 levels.

5. Carbon Monoxide (CO)

The primary eight-hour standard of 9 ppm was exceeded at ~~three~~ two of the five carbon monoxide sites in Connecticut during 1981. These sites were New Britain 002, ~~New Haven 007~~, and Stamford 020. The primary 8-hour standard was exceeded once ~~each~~ at New Britain 002, ~~and New Haven 007~~. At Stamford 020, the standard was exceeded ~~113~~ 100 times, down from ~~241~~ 203 times in 1980 and 330 times in 1979.

No site violated the primary one-hour standard of 35 ppm. Last year the one-hour standard was exceeded twice at the Stamford 020 site.

A general decrease in carbon monoxide levels took place between 1980 and 1981.

6. Lead (Pb)

The primary and secondary ambient air quality standard for lead is 1.5 ug/m^3, maximum arithmetic mean averaged over three consecutive calendar months. As in 1980, the lead standard was not exceeded at any site in Connecticut during 1981.

A downward trend in measured concentrations of lead has been observed since 1978. This trend may be attributed to the increasing use of unleaded gasoline.

TABLE 1 Air Quality Standards Exceeded in Connecticut in 1981 Based Solely Upon Measured Concentrations

		TOTAL SUSPENDED PARTICULATES			OZONE		CARBON MONOXIDE	
		Level Exceeding Secondary Annual Standards, ug/m3	Level Exceeding Secondary 24-Hour Standards, ug/m3		Level Exceeding 1-Hour Standard		Level Exceeding 8-Hour/1-Hour Standards	
TOWN	SITE	Secondary (60 ug/m3)	Highest Observed Level (ug/m3)	Number of Times Standard Exceeded	Highest Observed Level (ppm)	Number of Days Standard Exceeded	Highest Observed Level, 8-Hour/1-Hour (ppm)	Number of Days Standard Exceeded
Ansonia	003	-	179	2	X#	X	X	X
Bridgeport	001	-	-	-	X	X	X	X
Bridgeport	004	X	X	X	X	X	-	-
Bridgeport	009	-	-	-	X	X	X	X
Bridgeport	123	-	158	1	.155	9	X	X
Bristol	001	-	-	-	X	X	X	X
Burlington	001	-	-	-	X	X	X	X
Danbury	002	-	-	-	X	X	X	X
Danbury	123	-	-	-	.274	11	X	X
East Hartford	003	X	X	X	.188	6	X	X
Greenwich	004	-	-	-	.244	13	X	X
Greenwich	008	-	-	-	X	X	X	X
Greenwich	017	X	X	X	.175	18	X	X
Groton	005	X	X	X	.235	13	X	X
Haddam	002	-	-	-	X	X	X	X
Hartford	003	-	178	1	X	X	X	X
Hartford	012	X	X	X	X	X	-	-
Hartford	013	-	-	-	X	X	X	X
Hartford	014	-	-	-	X	X	X	X
Madison	002	X	X	X	.204	12	X	X
Manchester	001	-	-	-	X	X	X	X
Meriden	002	-	163	1	X	X	X	X
Meriden	008	-	-	-	X	X	X	X
Middletown	003	-	-	-	X	X	X	X
Middletown	007	X	X	X	.200	17	X	X
Milford	002	-	-	-	X	X	X	X
Morris	001	-	-	-	X	X	X	X

TABLE 1 Air Quality Standards Exceeded in Connecticut in 1981 Based Solely Upon Measured Concentrations

TOWN	SITE	TOTAL SUSPENDED PARTICULATES: Level Exceeding Secondary Annual Standards, ug/m3	TOTAL SUSPENDED PARTICULATES: Level Exceeding Secondary 24-Hour Standards, ug/m3		OZONE: Level Exceeding 1-Hour Standard		CARBON MONOXIDE: Level Exceeding 8-Hour/1-Hour Standards	
		Secondary (60 ug/m3)	Highest Observed Level (ug/m3)	Number of Times Standard Exceeded	Highest Observed Level (ppm)	Number of Days Standard Exceeded	Highest Observed Level, 8-Hour/1-Hour (ppm)	Number of Days Standard Exceeded
Naugatuck	001	-	176	1	X	X	X	X
New Britain	002	X	X	X	X	X	X	X
New Britain	007	-	-	-	X	X	X	X
New Britain	008	-	155	1	X	X	X	X
New Britain	009	-	-	-	X	X	X	X
New Britain	010	X	X	X	.190	11	X	X
New Haven	002	-	191	1	X	X	X	X
New Haven	007	X	X	X	X	X	9.1/13.6	1/0
New Haven	123	-	207	2	.208	6	X	X
Norwalk	001	-	-	-	X	X	X	X
Norwalk	005	-	168	1	X	X	X	X
Norwalk	012	-	-	-	X	X	X	X
Norwich	001	-	-	-	X	X	X	X
Stafford	001	X	X	X	.174	8	X	X
Stamford	001	-	-	-	X	X	X	X
Stamford	007	-	-	-	X	X	X	X
Stamford	020	X	X	X	X	X	15.9/30.0	81/0
Stamford	021	-	-	-	X	X	X	X
Stratford	005	-	191	1	X	X	X	X
Stratford	007	X	X	X	.218	24	X	X
Torrington	123	-	188	2	X	X	X	X
Voluntown	001	-	-	-	X	X	X	X
Wallingford	001	-	256	3	X	X	X	X
Waterbury	005	-	-	-	X	X	X	X
Waterbury	006	-	175	1	X	X	X	X
Waterbury	007	-	222	3	X	X	X	X
Waterbury	123	-	275	7	X	X	X	X
Waterford	001	-	-	-	X	X	X	X
Willimantic	001	-	154	1	X	X	X	X

* X Pollutant Not Monitored at Site

\- No Exceedance of the Standard

B. Trends

Any attempt to assess statewide trends in air pollution levels must be able to overcome the tendency for local changes to obscure the statewide pattern. In order to reach some statistically valid conclusions concerning trends in pollutant levels in Connecticut, the DEP has applied the Wilcoxon Matched Pairs, Signed Rank Statistical Test to the annual average data for three pollutants. The Wilcoxon test has been applied to 1968-1981 Total Suspended Particulate (TSP) data, and to 1968-1981 Sulfation rate/Sulfur Dioxide (SO_2) data.

The Wilcoxon Test is a non-parametric test which can ascertain statistically significant changes (increases or decreases) in the annual average pollutant concentrations at all the monitoring sites in Connecticut. The test makes it possible to overcome the trend analyses problems which arise due to the changes in the number and location of monitoring sites from year-to-year as well as problems associated with making equitable comparisons among sites. The annual mean levels for consecutive years are compared at each site; there is no inter-site comparison. Data for two consecutive years are required and the size of the change (increase or decrease) is noted. For example, if a high proportion of sites experienced an increase and/or if the magnitude of an increase at several sites is of much greater importance than the magnitude of a decrease at other sites, the test will show if the increase was statistically significant for those two years.

The results of the Wilcoxon test for TSP and Sulfation rate/SO_2 are presented in Tables 2 and 3, respectively. These analyses were performed only on data computed for sites where the U.S. Environmental Protection Agency (EPA) minimum sampling criteria (see Table 5) were met. The years of data that were paired, the number of sites used, and the statewide ~~arithmetic mean~~ average and standard deviation of the mean pollutant concentrations at the sites are provided in the first four columns of each table. The statistical significance of any changes in the statewide pollutant averages is provided in the last three columns of each table. The significance of change is indicated, by arrows, for two confidence limits, 95% and 99%, and is also given numerically as the number of chances in 10,000 under the heading "actual significance of change". For example. the statewide annual average for TSP decreased between 1971 and 1972 from 68.4 to 61.9. The downward arrows indicate that this change was significant at the 95% and 99% confidence levels. The "actual significance of change" is given as 0.0013. Thus, there are only 13 chances in 10,000 that this measured decrease in TSP levels did not occur.

1. TSP

The results from the Wilcoxon test (see Table 2) show that TSP levels in Connecticut decreased significantly from 1968 to 1969. From 1969 through 1971 there was no significant change. Then, from 1971 to 1974 TSP levels decreased significantly again, but from 1974 to 1975 this decreasing trend was reversed and TSP levels demonstrated a significant increase. TSP concentrations remained relatively constant

from 1975 to 1977 and then decreased significantly once again between 1977 and 1978. Between 1978 and 1979 there was a significant, but not exceedingly large reduction of measured concentrations. Between 1979 and 1980 there was a significant drop in measured TSP levels. This has been attributed to the elimination of passive sampling error through the use of retractable lids on the hi-vol monitors. The lids retract when the monitor is in operation and return to a covered position when it is not in operation. This prevents any particulates from depositing on, or being removed from, the filter during non-operating hours. TSP levels again fell significantly from 1980 to 1981, the largest decrease in concentrations since 1973. (Note that these trend analyses do not account for the uncertainty associated with the individual annual means computed for each TSP site. Most TSP sampling is conducted only every-sixth-day, producing a total of 61 samples per yer. Therefore, the Wilcoxon test really compared year-to-year averages of the sampling date concentrations, not actual annual averages. However, the every-sixth-day sampling schedule is believed to be sufficient to produce representative annual averages. The every-sixth-day schedule for TSP sampling did not start until 1971. Since fewer samples were taken at each site from 1968 to 1970 than during recent years, the test results from the early years are not as conclusive as the results from the later years.)

Significant changes in annual TSP levels can also be caused simply by changes of weather, particularly the wind. Such changes probably explain most of the decrease in TSP levels observed between 1968 and 1969, the increase observed between 1974 and 1975, and the decrease from 1977 to 1979. The persistent decrease in TSP levels observed from 1971 to 1974 (amounting to 20 ug/m^3), however, can certainly be attributed to the emission controls implemented by DEP during those years.

Figure 1 shows the long-term trend of TSP concentrations in Connecticut in a more graphical form. The trend chart is based on data obtained from both high volume and low volume sampling devices. High volume sampler data are included only if there were a sufficient number of samples taken in each year to compute valid geometric means. Low volume sampler data are included for those sites where low volume samplers replaced high volume samplers in 1976.

2. SO_2

Connecticut has been measuring sulfur dioxide in the air prior to the inception of the SO_2 standards in 1971. Several monitoring methods have been employed over that time including bubblers, sulfation plates, and various types of continuous instruments. The bubblers became the EPA reference method, but unfortunately, the field data have turned out to be very unreliable. The sulfation plates have been in use for 10 years and the data are reliable, but they do not measure SO_2 directly. Continuous monitors presently yield reliable data, but this has not always been the case. The earliest monitors (conductometric and coulometric) were subject to interference from many chemicals other than SO_2 and also had difficulties with quality

control. As a result, these monitors produced unreliable data. Later generations of instruments (flame photometric and pulsed fluorescent) alleviated these problems, and there has been a corresponding increase in the reliability of the data.

In order to perform a valid trend analysis, the data for the period of interest must be reliable and from similar sampling methods. As indicated above, the only method which fits these criteria is the sulfation plate. However, the air quality standards are not written in terms of sulfation rate, but rather as SO_2 concentrations. There are several suggested conversions in the literature. In order to determine the "best" conversion to use in Connecticut, DEP undertook a study comparing SO_2 levels with sulfation rate. This study involved exposing three sulfation plates at the same location with a flame photometric or pulsed fluorescent continuous SO_2 monitor. Monthly averages were taken at 11 sites from November, 1975 through September, 1978, resulting in a data set of 245 matched pairs. The sulfation rates and SO_2 levels were compared using a least squares regression technique. The equation resulting from this is as follows:

$$SO_2 \text{ (ppm)} = 0.0056 + 0.0195 \text{ (sulfation rate)}(\text{mg}/100 \text{ cm}^2/\text{day})$$

The level of significance of this regression equation was found to be less than 0.001, and the associated sample correlation coefficient was 0.72.

Using the above equation, historical sulfation rate-data were then converted to equivalent SO_2 levels, and these levels were used as input to the Wilcoxon test previously described.

The results of the Wilcoxon test are presented in Table 3. Beginning in 1977, SO_2 levels decreased significantly through 1979. From 1979-1980 measured SO_2 levels rose significantly, but fell significantly from 1980-1981.

As with TSP, annual changes in SO_2 levels can be caused simply by changes in weather. The dramatic step-by-step drop in SO_2 levels from 1970 to 1973 corresponds exactly to the step-by-step phase-in of Connecticut's low sulfur-in-fuel regulations. As of September 1, 1971, the oil sold and burned in Connecticut was limited to a sulfur content not to exceed 1.0%. As of September 1, 1972, the sulfur content of the oil sold in Connecticut could not exceed 0.5%, and the burning of oil with a higher sulfur content than 0.5% was not allowed after April 1, 1973. (The state restructured its SO_2 control program in November, 1981 by abrogating the state secondary annual air quality standard and allowing the use of 1.0% sulfur oil. Any SO_2 trend caused by this change will be noted in the 1982 summary.) The inescapable conclusion is that the implementation of these sulfur-in-fuel regulations caused the significant reduction in SO_2 levels from 1970 to 1973, such that all SO_2 standards have been attained in Connecticut. During the winter of 1973 to 1974, certain utilities were given emergency permission to burn higher sulfur oil and coal. The temporary increase in SO_2 levels observed in 1974

could have been due in part to this relaxation of the sulfur-in-fuel limitations. The increase from 1979 to 1980 can be attributed to the fact that the winter months of 1980 were colder than 1979. In colder winter months, more oil is required for energy to heat homes.

The long-term trend of SO_2 concentrations, as determined from the sulfation rate data, is shown in graphical form in Figure 2.

3. Lead

As of May, 1982, the EPA changed the ambient air quality standard for lead from 1.5 ug/m^3 for a calendar quarter-year average to 15 ug/m^3 for a maximum arithmetic mean averaged over three consecutive calendar months. Three-month running averages have been calculated for the past three years (1979-81) and are presented in Table 27. A downward trend in measured concentrations of lead has been observed since 1978, as a result of a program by EPA to phase-out leaded gasoline. The portion of gasoline that was unleaded in 1978 was only about 35%; by 1987, about 74% of gasoline will be lead-free. Since most environmental lead comes from leaded gasoline the reduction in lead emissions by 1987 will be considerable -- about 77% from 1980 levels -- thus assuring continued maintenance of the NAAQS into the indefinite future.

The monitoring sites where the lead levels were greatest were generally in urban locations with moderate to heavy traffic. In Connecticut, the primary source of lead concentrations in the atmosphere is emission from the combustion of leaded gasoline in motor vehicles. Atmospheric concentrations of lead are continuing to decline as use of unleaded gasoline increases.

C. Air Monitoring Network

A computerized Air Monitoring Network consisting of an IBM System 7 computer and 12 telemetered monitoring sites was put into full operation in 1975. Presently, up to 12 measurement parameters from each site are transmitted via telephone lines to the System 7 unit located in the DEP Hartford office. The data are then compiled into 24-hour summaries twice daily. The telemetered network in 1981 consisted of sites located in Bridgeport, Danbury, East Hartford, Greenwich, Hartford, Milford, New Britain, New Haven, Stamford, and Waterbury. Also, due to the seasonal operation of ozone monitors, telemetered data was received from Groton, Middletown, Stafford, and Stratford.

Measured parameters include the pollutants sulfur dioxide, particulates (COH), carbon monoxide, nitrogen dioxide, and ozone. Meteorological data consists of wind speed and direction, temperature, precipitation, barometric pressure and solar radiation (insolation).

TABLE 2

TSP TREND, 1968-1981 (WILCOXON SIGNED-RANK TEST)

Paired Years	Number Of Sites	Average Of Annual Arithmetic Means*	Standard Deviation	Significance Level: Trend at 95% Level**	Significance Level: Trend at 99% Level**	Actual Significance Of Change
68	17	73.6	21.6	↓	↓	0.0075
69	17	66.9	18.6			
69	21	69.0	23.0	N.C.	N.C.	0.2891
70	21	71.7	25.5			
70	23	67.8	20.6	N.C.	N.C.	0.34585
71	23	66.2	18.2			
71	40	68.4	22.5	↓	↓	0.0013
72	40	61.9	17.3			
72	39	59.1	13.4	↓	↓	<0.00005
73	39	51.9	10.2			
73	41	51.9	11.6	↓	N.C.	0.0143
74	41	48.3	10.3			
74	40	49.9	10.7	↑	N.C.	0.0101
75	40	52.3	10.1			
75	31	52.8	9.8	N.C.	N.C.	0.7539
76	31	53.0	9.3			
76	37	54.9	10.4	N.C.	N.C.	0.7296
77	37	54.7	10.1			
77	32	55.9	10.7	↓	↓	0.0086
78	32	53.8	10.2			
78	34	52.5	12.8	↓	N.C.	0.0293
79	34	50.8	12.6			
79	34	50.7	12.7	↓	↓	<0.00005
80	34	46.4	9.4			
80	28	45.8	10.1	↓	↓	<0.00005
81	28	38.9	8.8			

* Note that as the year pairings change, the sites available also change. This explains the different averages for a given year, i.e., the averages are taken from different sets of sites.

** Key to Symbols: ↓ = Significant Downward Trend
↑ = Significant Upward Trend
N.C. = No Significant Change

→ SEE, INSTEAD, TABLE 3 IN THE 1983 AIR QUALITY SUMMARY

TABLE 3

EQUIVALENT SO2 TREND FROM SULFATION RATE, 1968-1981 (WILCOXON SIGNED-RANK TEST)

Paired Years	Number Of Sites	Average Of Annual Arithmetic Means*	Standard Deviation	Significance Level: Trend at 95% Level**	Significance Level: Trend at 99% Level**	Actual Significance Of Change
68 69	12 12	75.4 65.3	29.3 21.3	N.C.	N.C.	0.0619
69 70	22 22	56.6 64.4	18.8 20.3	↑	↑	0.0006
70 71	34 34	62.4 50.1	20.9 13.9	↓	↓	<0.00005
71 72	40 40	51.6 40.3	14.9 6.8	↓	↓	<0.00005
72 73	38 38	41.3 34.0	6.9 4.5	↓	↓	<0.00005
73 74	25 25	35.4 38.2	5.2 6.3	↑	↑	0.0004
74 75	25 25	35.9 33.2	8.2 7.8	↓	↓	0.0002
75 76	18 18	33.1 33.6	7.7 6.0	N.C.	N.C.	0.1070
76 77	29 29	35.2 34.9	4.7 4.3	N.C.	N.C.	0.8009
77 78	25 25	35.1 30.4	4.2 3.4	↓	↓	<0.00005
78 79	25 25	30.0 27.8	4.1 3.1	↓	↓	0.0001
79 80	25 25	27.8 29.2	3.1 3.4	↑	↑	0.0004
80 81	21 21	29.6 27.0	3.5 2.9	↓	↓	0.0001

* Note that as the year pairings change, the sites available also change. This explains the different averages for a given year, i.e., the averages are taken from different sets of sites.

** Key to Symbols: ↓ = Significant Downward Trend
↑ = Significant Upward Trend
N.C. = No Significant Change

TABLE 4

ASSESSMENT OF AMBIENT AIR QUALITY

POLLUTANT	SAMPLING PERIOD	DATA REDUCTION	NATIONAL AMBIENT AIR QUALITY STANDARDS: STATISTICAL BASE	PRIMARY STANDARD ug/m3	PRIMARY STANDARD ppm	SECONDARY STANDARD ug/m3	SECONDARY STANDARD ppm
Total Suspended Particulates	24-Hours Every Sixth Day[1]	24-Hour Average	Annual Geometric Means	75		60[5]	
			24-Hour Concentration[3]	260		150	
Sulfur Oxides (Measured as Sulfur Oxides)	Continuous[2]	1-Hour Average	Annual Arithmetic Mean	80	0.03	60[7]	
			24-Hour Average Concentration[3]	365	0.14	260[7]	
			3-Hour Average Concentration[3]			1300	0.50
Nitrogen Dioxide	24-Hours Every Sixth Day[1]	24-Hour Averge	Annual Arithmetic Mean	100	0.05	Same as Primary	
Ozone	Continuous[2]	1-Hour Average	1-Hour Average[4]	235	0.12	Same as Primary	
Hydrocarbons	Continuous[2]	1-Hour Average	3-Hour Average[3] (6-9 AM)	160[6]	0.24	Same as Primary	
Lead	24 Hours Every Sixth Day[1]	Quarterly Composite	Calendar Quarter Average	1.5		Same as Primary	
Carbon Monoxide	Continuous[2]	1-Hour Average	8-Hour Average[3]	10	9	Same as Primary	
			1-Hour Average[3]	40	35	Same as Primary	

1 EPA assessment criteria require at least 5 samples per calendar quarter, and, if one month has no samples, then the other two months in that quarter must have at least two samples each.
2 EPA assessment criteria require 75% of possible data to compute valid averages.
3 Not to be exceeded more than once per year.
4 Not to be exceeded more than an average of once per year in three years.
5 A guide to be used in assessing implementation plans to achieve the 24-hour standard.
6 For use as a guide in devising implementation plans to achieve the old ozone standard of 0.08 ppm.
7 Abrogated in November. 1981

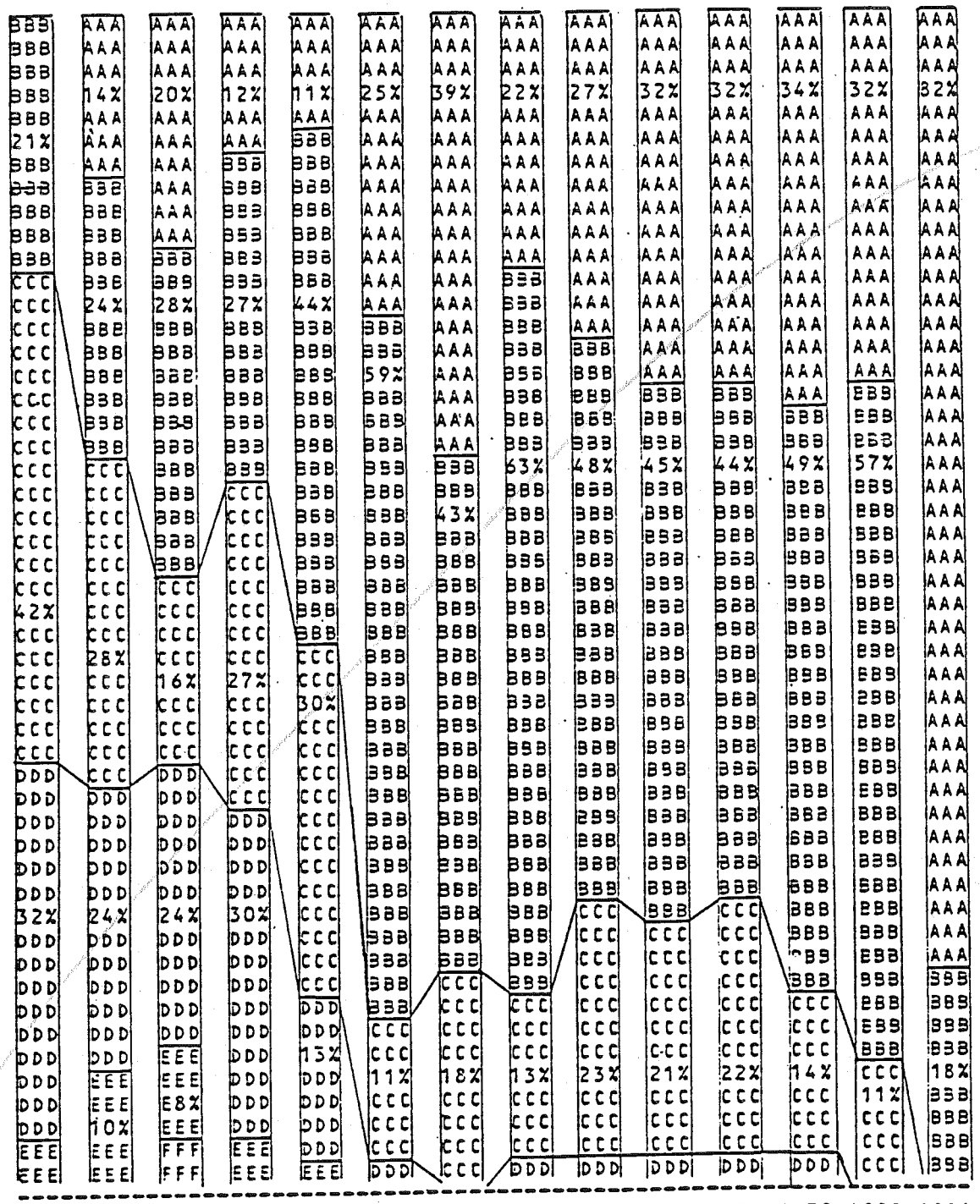
Units = ug/m^3 = Micrograms per cubic meter; mg/m^3 = Milligrams per cubic meter; ppm = Parts per million

SEE FIGURE 2 IN THE 1983 Air Quality Summary

FIGURE 1 TOTAL SUSPENDED PARTICULATE MATTER TREND

****

"PERCENT OF SITES WITHIN EACH CONCENTRATION RANGE"



LEGEND ANNUAL ARITHMETIC MEAN

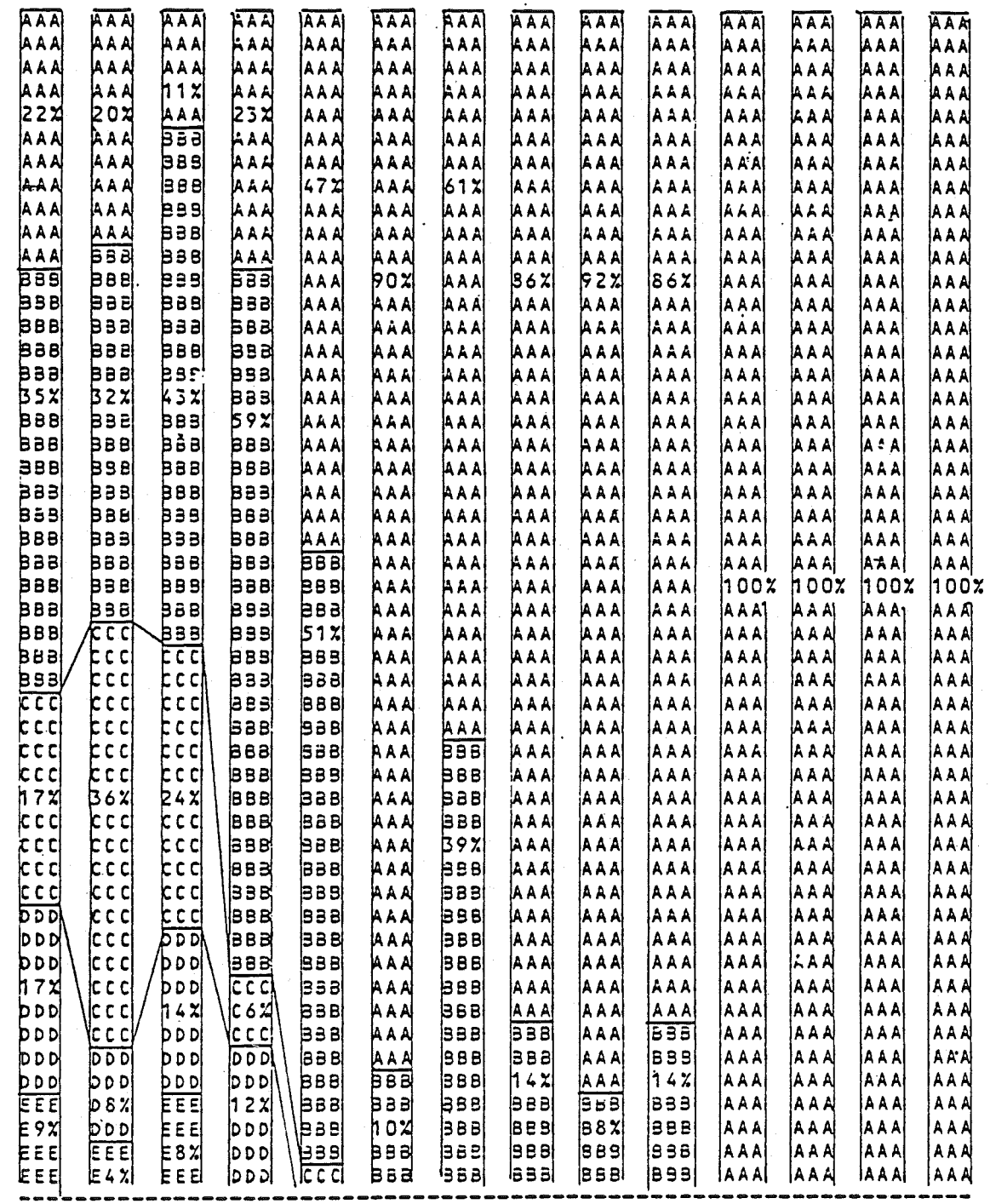
AAA = 0-45 UG/M**3 BBB = 46-60 UG/M**3 CCC = 61-75 UG/M**3

DDD = 76-100 UG/M**3 EEE = 101-125 UG/M**3 FFF = 125+ UG/M**3

FIGURE 2 SULFUR DIOXIDE TREND FROM SULFATION RATE DATA

****

"PERCENT OF SITES WITHIN EACH CONCENTRATION RANGE"



+++++ NUMBER OF SITES +++++

LEGEND ANNUAL ARITHMETIC MEAN

AAA = 0-40 UG/M**3 BBB = 41-60 UG/M**3 CCC = 61-80 UG/M**3

DDD = 81-100 UG/M**3 EEE = 101+ UG/M**3

The real-time capabilities of the System 7 telemetry network have enabled the Air Monitoring Unit to report the Pollutant Standards Index for 10 towns on a daily basis while keeping a close watch for high pollution levels which may occur during adverse weather conditions throughout the year.

The complete monitoring network used in 1981 consisted of:
43 Total Suspended Particulate and Lead (Hi-Vol) sites
2 Total Suspended Particulate (Lo-Vol) sites
9 Sulfur Dioxide sites (Continuous Monitors)
12 Ozone sites
7 Nitrogen Dioxide sites
5 Carbon Monoxide sites

A complete description of all permanent air monitoring sites in Connecticut operated by DEP in 1981 is available from the Department of Environmental Protection. Air Compliance State Office Building, Hartford, Connecticut, 06106.

D. Air Quality Standards

Table 5 lists analysis methods and National Ambient Air Quality Standards (NAAQS) for each pollutant. The NAAQS were established by the U.S. Environmental Protection Agency (EPA) and are divided into two categories: primary - established to protect the public health; and secondary - established to protect plants and animals and to prevent economic damage.

Each standard specifies a concentration and an exposure time developed from studies of the effect of various levels of the particular pollutant.

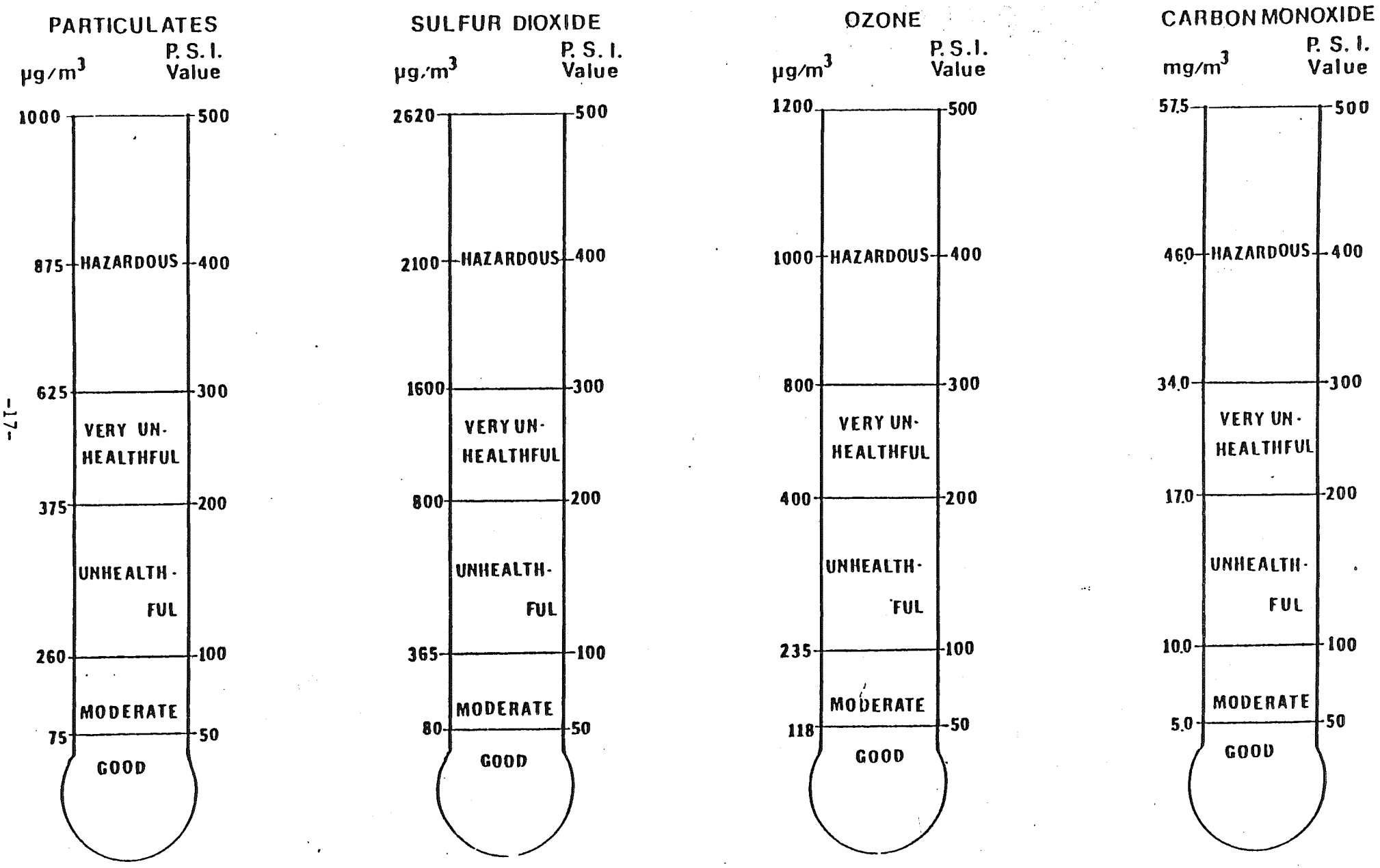
E. Pollutant Standards Index

The Pollutant Standards Index (PSI) is a daily air quality index recommended for common use in state and local agencies by the U.S. Environmental Protection Agency. Starting on November 15. 1976. Connecticut began reporting the PSI on a 7-day basis. The PSI incorporates five pollutants - carbon monoxide. sulfur dioxide. total suspended particulates, ozone, and nitrogen dioxide. The index converts each air pollutant concentration into a normalized number where the National Ambient Air Quality Standard for each pollutant corresponds to PSI = 100 and the Significant Harm Level corresponds to PSI = 500.

Figure 3 shows the breakdown of index values for the commonly reported pollutants (TSP, SO_2, CO, and O_3) in Connecticut. For the winter of 1981, Connecticut reported the PSI for the towns of Hartford, New Haven. Bridgeport. Stamford, Greenwich. Danbury. Waterbury, and New Britain. For the summer, the PSI was reported for the towns of Bridgeport. Danbury. East Hartford, Greenwich. Groton, Madison, Middletown, New Britain, New Haven, Stafford, and Stratford. Each day the pollutant with the highest PSI value of all the pollutants being monitored is reported for each town, along with the dimensionless PSI number. and a descriptor word to characterize the daily air quality.

A telephone recording of the PSI is taped each afternoon at 3 PM, seven days a week, and can be heard by dialing 566-3449. For residents outside of the Hartford telephone exchange. the PSI is now available toll-free from the DEP representative at the Governor's State Information Bureau. The number is 1-800-842-2220. This information is also available to the public weekday afternoons from the Connecticut Lung Association in East Hartford. The number there is 289-5401.

FIGURE 3
POLLUTANT STANDARDS INDEX



F. Quality Assurance

Quality Assurance requirements for State and Local Air Monitoring Stations (SLAMS) and the National Air Monitoring Stations (NAMS), which are a part of the (SLAMS) network, are specified by the code of Federal Regulations, Title 40, Part 58, Appendix A.

The regulations were enacted to provide a consistent approach to Quality Assurance activities across the country so that ambient data with a defined precision and accuracy is produced.

To this end a Quality Assurance program was initiated in Connecticut with written procedures covering, but not limited to, the following:

Equipment Procurement
Equipment Installation
Equipment Calibration
Equipment Operation
Sample Analysis
Maintenance Audits
Performance Audits
Data Handling and Assessment

Quality Assurance activities for the above activities were initiated and fully operational on January 1, 1981 for all NAMS sites.

Data precision and accuracy values are reported in the form of 95% probability limits as defined by equations found in Appendix A.

Precision

Precision is a measure of data repeatability (grouping).

a) Manual Samplers (TSP)

Duplicate samplers (colocated samplers) is the technique used to assess TSP precision and involves all parts of the total measurement process.

b) Automated Analyzers (SO_2, O_3, CO and NO_2)

Every two weeks every NAMS analyzer is challenged with a low level pollutant concentration between 0.08 and 0.10 ppm, the results of these checks are used to access sampling network precision.

Accuracy

Accuracy is an estimate of the closeness of a measured value to a known value: i.e., how close each value is to the bull's eye.

a) Manual Methods

TSP accuracy is assessed by auditing the flow measurement part of the TSP sampling method. In Connecticut this is accomplished by attaching a secondary standard calibrated orifice to the hi-vol inlet and comparing the flow rates. A minimum of 25% of the TSP network is audited each quarter.

(~~b~~) Automated Analyzers

Automated analyzer response is audited at three concentration levels and zero. The results for each concentration for a particular pollutant are used to access automated analyzer accuracy. The audit concentration levels are as follows:

SO_2, O_3, NO_2 (PPM)	CO (PPM)
0.03 to 0.08	3 to 8
0.15 to 0.20	15 to 20
0.35 to 0.45	35 to 45

The accuracy results reported as ± 95% probability are:

TSP	-10 to + 4
SO_2	- 8 to +11
O_3	-14 to +10

b) Manual Methods (Lead)

Lead accuracy is assessed by analyzing spiked audit strips and comparing the analyzed results to the known spiked values. A low-valued and high-valued spike are analyzed during lead filter processing -- approximately once per month.

II. TOTAL SUSPENDED PARTICULATES

Health Effects

Particulates are solid particles or liquid droplets small enough to remain suspended in air. They include dust, soot, and smoke -- particles that may be irritating but are usually not poisonous -- and bits of solid or liquid substances that may be highly toxic. The smaller the particles, the more likely they are to reach the innermost parts of the lungs and work their damage.

The harm may be physical: clogging the lung sacs, as in anthracosis, or coal miners' "black lung" from inhaling coal dust; asbestosis or silicosis in people exposed to asbestos fibers or dusts from sillicate rocks; and byssinosis, or textile workers' "brown lung" from inhaling cotton fibers.

The harm may also be chemical: changes in the human body caused by chemical reactions with pollution particles that pass through the lung membranes to poison the blood or be carried by the blood to other organs. This can happen with inhaled lead, cadmium, beryllium, and other metals, and with certain complex organic compounds that can cause cancer.

Many studies indicate that particulates and sulfur oxides (they often occur together) increase the incidence and severity of respiratory disease.

Conclusions:

Measured Total Suspended Particulate (TSP) levels did not exceed the primary annual standard of 75 ug/m^3 or the secondary annual standard of 60 ug/m^3. No sites had a measured value exceeding the primary 24-hour standard of 260 ug/m^3 during 1981. The 24-hour secondary standard of 150 ug/m^3 was exceeded, at least once, at 16 monitoring sites in 1981, compared to 9 sites in 1980. However, in order to violate the secondary standard, the second highest TSP level must exceed 150 ug/m^3. Only six sites violated the standard in 1981, one more than in 1980.

Overall, measured total suspended particulate (TSP) levels in Connecticut showed significant improvement in 1981 as compared to 1980 (see Table 2).

As can be seen in Table 2, the averge annual arithmetic mean for TSP sites in the state during 1981 was 38.9 ug/m^3, lower than any year since reliable data has been collected. Although TSP levels overall were down, there were more 24-hour secondary standard exceedences in 1981. Many of these are related to the weather.

More than half of the particulate emissions in Connecticut are caused by motor vehicles. One third of these emissions are due to fuel combustion. Most of the remaining two-thirds occur when road dust is stirred up by the motion of the vehicles, so road dust emissions are less

dependent upon fuel combustion and more dependent upon vehicle miles traveled (VMT's). VMT's for 1981 have increased by less than one percent over 1980 while gasoline consumption continued to decrease. In 1981 the decrease in gasoline consumption amounted to nearly 3%.

Sample Collection and Analysis:

Hi-Volume Sampler (Hi-Vol): "Hi-Vols" resemble vacuum cleaners in their operation, with an 8" x 10" piece of fiberglass filter paper replacing the vacuum bag. Retractable lids have been installed on the hi-vols in order to eliminate the passive sampling error. The samplers operate (from midnight to midnight) every sixth day at most sites and every third day at certain urban stations.

The matter collected on the filters is analyzed for weight and chemical composition. The air flow through the filter is recorded during sampling. The weight in micrograms (ug) divided by the volume of air in cubic meters (m^3) yields the pollutant concentration for the day, in micrograms per cubic meter.

The chemical composition of the suspended particulate matter is determined as follows. A standardized strip of every other hi-vol filter collected in each quarter-year is cut-out and composited into one sample. This procedure is repeated three times so that three quarterly composited samples are made for each site. One of the composited filter samples is digested in benzene. The organic materials in the sample dissolve and are extracted into the benzene. The benzene is evaporated and the organic residue is weighed. The weight of this residue represents the organic material in the sample and the result is reported as the benzene soluble fraction of the TSP, in ug/m^3. (This method of determining the benzene solubles, or organic, fraction of the particulates was used until 1977 when the analysis for benzene solubles was discontinued because of health hazards associated with the use of benzene, which is a carcinogen). Another sample is dissolved in water, re-fluxed and the resulting solution is analyzed to determine the water soluble fraction of the TSP using wet chemistry techniques. Results are reported for each individual constituent of the water soluble fraction in ug/m^3. The last composited sample is digested in acid and the resulting solution is analyzed for the different metals in the TSP using an atomic absorption spectrophotometer. Results are reported for each individual metal in ug/m^3.

Lo-Volume Sampler: The low-volume (i.e., Lo-vol) sampler is a 30-day continuous sampler. It is enclosed in a shelter similar to a hi-vol, uses the same glass fiber filter paper, but operates at an air sampling flow rate approximately one-tenth that used by a standard hi-vol (i.e., 4 cfm as opposed to 40-60 cfm). The air flow through the lo-vol is measured by a temperature compensating dry gas meter. The lo-vol measurement is essentially an arithmetic average for the 30-day sampling interval. The filters are chemically analyzed in the same manner as those from the hi-vol sampler.

Discussion of Data:

Monitoring Network - In 1981 both hi-vol and lo-vol particulate samplers were operated in Connecticut (see Figure 4). Because the Federal EPA does not recognize the lo-vol instrument as an equivalent to the reference (hi-vol) method of sampling for TSP, only hi-vol data are analyzed for compliance with NAAQS.

Annual Averages - The Federal EPA has established minimum sampling criteria (see Table 4) for use in determining compliance with either the primary or secondary annual NAAQS for TSP. Using the EPA criteria, neither the primary annual standard nor the secondary annual standard were exceeded. In 1981, of the sites that had valid annual geometric means, all hi-vol sites showed lower annual geometric means than in 1980, with nineteen of these decreases being greater than 5 ug/m^3.

Historical Data - The DEP's historical file of annual average TSP data for 1979-1981 is presented in Table 5. For data going back to 1957, see the 1980 Air Quality Summary. This table also includes an indication of whether the aforementioned EPA minimum sampling criteria were met at each site for each year. If the sampling was insufficient to meet the EPA criteria an asterisk appears next to the number of samples.

Statistical Projections - The statistical projections presented in Table 5 are prepared by a DEP computer program which analyzes data from all sites operated by DEP. Input to the program includes site location and year, the number of samples (usually a maximum of 61), the annual geometric mean and the geometric standard deviation. The program lists the input as well as producing the 95% confidence limits about the mean, and the statistical projection of the number of days in each year the primary and secondary 24-hour NAAQS would have been exceeded if sampling had been conducted every day. This analysis, like the ambient standards, is based on the assumption that the particulate data are log-normally distributed.

Because manpower and economic limitations dictate that hi-vol sampling for particulate matter cannot be conducted every day, a degree of uncertainty as to whether the air quality at a site has either met or exceeded the national standards is introduced. This uncertainty for the annual standard can be quantified by determining 95% confidence limits about each of the annual geometric means. For example (see Table 5), in New Haven at site 123 in 1979, 57 samples were taken and a geometric mean of 56.5 ug/m^3 was calculated. However, the columns labeled "95-PCT-LIMITS" show the lower and upper limits for a 95% confidence interval of 51 and 63 ug/m^3, respectively. This means that if a larger (i.e., greater than 57 samples) sample set were collected in 1980 at this site there is a 95% chance that the geometric mean would fall between these limits., Since the national secondary standard for particulates (60 $ug/^3$) is within this interval, one cannot be 95% confident that the secondary standard was met here in 1979.

In Table 6, the 1981 monitoring sites are examined for compliance with standards, using the State's hi-vol confidence limit criteria. The table shows that no sites exceeded the primary annual standard with 95% confidence. The table also shows that the DEP is 95% confident that the secondary annual standard was not exceeded at any sites during 1981, as compared to two sites in 1980.

Whether the secondary annual standard was exceeded is uncertain at one site, down from six (6) sites last year. Comparing this to the results using the actual measured levels in the discussion above, both methods show that no site exceeded the primary standard or the secondary annual standard. However, the statistical projections indicate that more frequent TSP sampling at Waterbury 123 might have resulted in measured violations of the secondary annual standard.

24-Hour Averages - Table 7 presents 1st and 2nd high 24-hour concentrations recorded at each site. Two days over the standard are required for the standard to be violated. There were no violations of the primary 24-hour standard recorded in Connecticut during 1981, though there was one exceedence at Waterbury 123. Measured violations of the secondary 24-hour standard were recorded at six sites in 1981, three less than in 1980. The 2nd high 24-hour average increased at eleven of the 26 paired sites which met the minimum EPA sampling criteria in both 1980 and 1981. Four of these increases equaled or exceeded 25 ug/m^3. The 2nd high 24-hour average decreased at fourteen of the 26 sites, and four of these decreases exceeded 25 ug/m^3. The 2nd high at one site. New Haven 123, remained the same.

Table 8 summarizes the statistical predictions from Table 6 regarding the number of days exceeding the 24-hour standards. This table shows that if sampling had been conducted every day in 1980 there would have been no sites with violations of the primary 24-hour standard, and sixteen (16) sites with violations of the secondary 24-hour standard. In 1980, no sites were predicted to have exceeded the primary 24-hour standard and fourteen (14) sites were predicted to have exceeded the secondary 24-hour standard (as compared to six sites with measured violations).

Chemical Analyses - Annual averages of fourteen components or characteristics of the particulate matter collected at each hi-vol sampling location have been computed for the year 1981 and are presented in Table 9. For concentrations dating back to 1970, see the 1978 Connecticut Air Quality Summary. The abbreviations used in the table are defined below. All values shown are annual arithmetic means, in micrograms per cubic meter, except for pH.

#S	-	Number of Samples	V	-	Vanadium
Be	-	Berylium	Zn	-	Zinc
Cd	-	Cadmium	NO3	-	Total Nitrates
Cr	-	Chromium	SO4	-	Total Sulfates
Cu	-	Copper	NH4	-	Ammonium
Fe	-	Iron	pH	-	Acidity
Pb	-	Lead	TSP*	-	Total Suspended Particulates
Mn	-	Manganese			
Ni	-	Nickel			

Lo-Vol Averages - For a number of years, the DEP has been experimenting and gathering data with the lo-vol particulate monitor. Lo-vols operate continuously for 30-day periods. The lo-vol has three advantages and one disadvantage in relation to the hi-vol. First, the lo-vol's continuous operation can provide annual averages which include every day of the year, rather than only the fractional portion of the year sampled by every-sixth (or third-) day hi-vol operation. Second, the lo-vol needs less frequent servicing (12 times/year) than the hi-vol (e.g., 61 times/year), so it is more cost-effective to operate. Third, the lo-vol has a higher collection efficiency than the hi-vol, especially for small, respirable particles. But, a disadvantage of the lo-vol is that it does not provide daily samples for direct comparison to the 24-hour TSP standards (although 24-hour averages can be obtained by statistical interpolation).

There were two lo-vol sites located at rural locations in the state during 1981. One site was located at Mansfield, the other at Putnam. The use of the low-vols made it possible to continue to obtain data on annual average particulate levels at these rural sites.

Annual averages of the chemical components from the lo-vol TSP monitors have been computed for 1981 and are presented in Table 10. The abbreviations used in Table 10 are identical to those used in Table 9 except for the column which indicates the number of samples.

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* Note that Table 9 gives the arithmetic means of the every-12th day samples that were used in the composites, whereas Table 5 gives the geometric means of all the scheduled samples.

10 High Days with Wind Data - Table 11 lists the 10 highest 24-hour average TSP readings with the dates of occurrence for each TSP hi-vol site in Connecticut during 1981. This table also shows the average wind conditions which occurred on each of these dates. The resultant wind direction (DIR, in compass degrees from north) and velocity (VEL, in mph), the average wind speed (SPD, in mph), and the ratio between the velocity and the speed are presented for each of four National Weather Service stations located in or near Connecticut. (The resultant wind direction and velocity are vector quantities and are computed from the individual wind direction and speed readings in each day.) The closer the wind speed ratio is to 1.000, the more persistent the wind. Note that the Connecticut stations have local influences which change the speed and shift the direction of the near-surface air flow (e.g., the Bradley Field air flow is channeled north-south by the Connecticut River Valley and the Bridgeport air flow is subject to frequent sea breezes).

On a statewide basis, this table shows that by far most high TSP days occur with southwesterly winds and most of those days have persistent winds. This relationship between southwest winds and high TSP levels is more predominant in southwestern Connecticut. However, many of the maximum levels at some urban sites do not occur with southwest winds, indicating that these sites are more influenced by local sources than by the transport of TSP with southwest winds. As noted above, a large scale southwesterly air flow is often diverted into a southerly flow up the Connecticut River Valley. At many sites in the Connecticut River Valley most of the highest TSP days occur when the winds at Bradley Airport are from the south.

For instance, on January 22, 1981, twenty-eight TSP sites, a full 65% of all sites in the state, recorded their first highest concentration. Also on that day, eleven of the sixteen 24-hour secondary standard exceedences were recorded. Wind directions in the state and the region were generally southwesterly throughout the day. The temperature was below or near freezing for days and there had been no precipitation. Those conditions were ideal for transport of TSP through the state on the southwest wind.

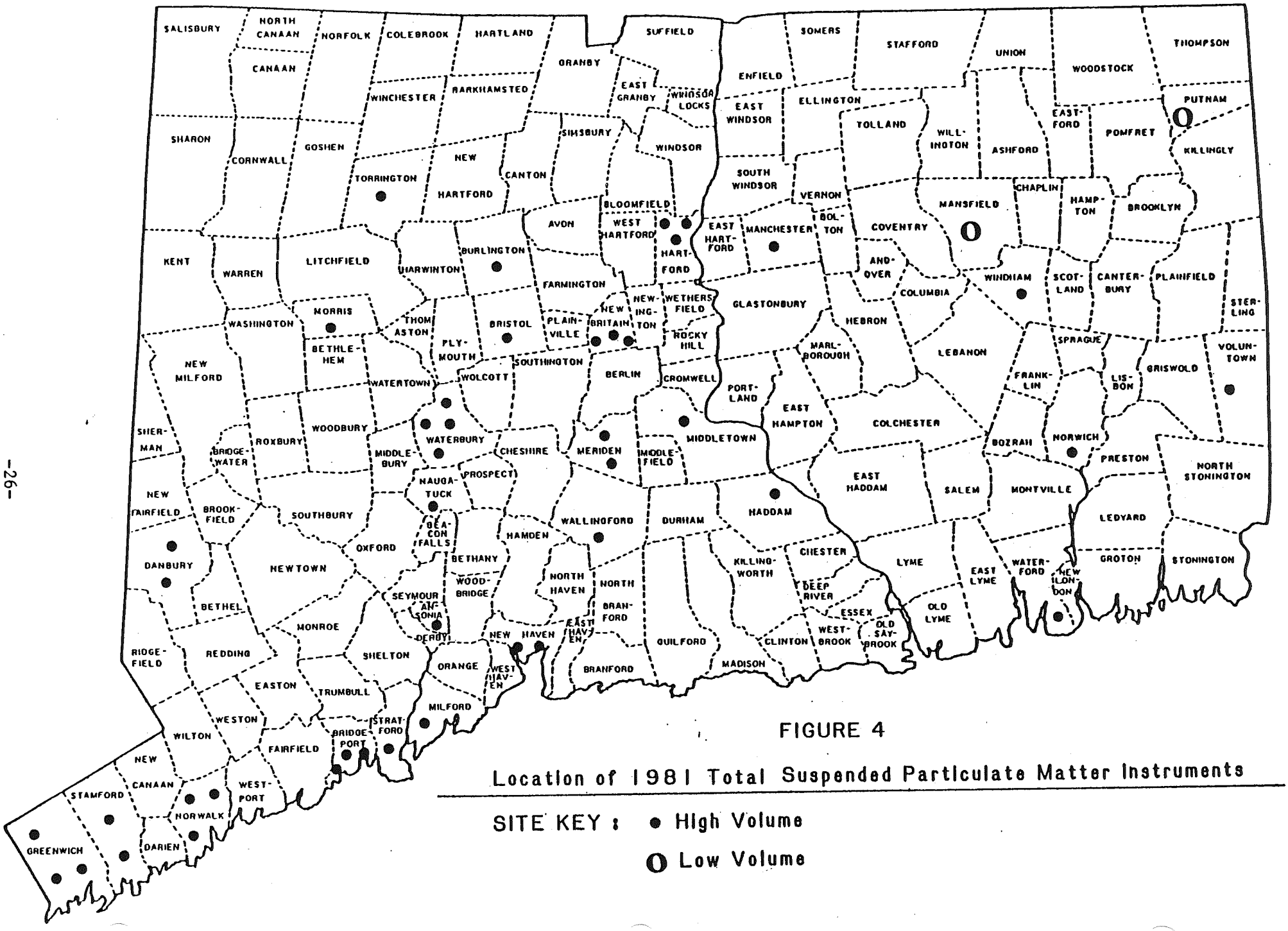


FIGURE 4

Location of 1981 Total Suspended Particulate Matter Instruments

SITE KEY : ● High Volume

O Low Volume

TABLE 5

1979-1981 TSP ANNUAL AVERAGES AND STATISTICAL PROJECTIONS

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION PAGE 1 AIR COMPLIANCE MONITORING

POLLUTANT--PARTICULATES DISTRIBUTION--LOGNORMAL

TOWN NAME	SITE	YEAR	SAMPLES	GEOM MEAN	95-PCT-LIMITS LOWER	95-PCT-LIMITS UPPER	STD GEOM DEV	PREDICTED DAYS OVER 150 UG/M3	PREDICTED DAYS OVER 260 UG/M3
ANSONIA	03	1979	115	56.6	53	60	1.527	4	
ANSONIA	03	1980	105	51.5	48	56	1.613	5	
ANSONIA	03	1981	119	43.6	40	47	1.701	4	
BERLIN	01	1979	59	30.8	27	35	1.616		
BERLIN	01	1980	56	30.3	27	34	1.601		
BRIDGEPORT	01	1979	60	51.6	46	57	1.572	3	
BRIDGEPORT	01	1980	57	47.8	43	53	1.524	1	
BRIDGEPORT	01	1981	61	39.6	36	44	1.556		
BRIDGEPORT	09	1981	58	38.6	35	43	1.507		
BRIDGEPORT	123	1979	120	64.8	61	69	1.491	7	
BRIDGEPORT	123	1980	120	64.2	60	69	1.669	16	1
BRIDGEPORT	123	1981	120	52.0	49	56	1.587	4	
BRISTOL	01	1979	58	42.1	38	47	1.573	1	
BRISTOL	01	1980	57	41.5	37	46	1.521		
BRISTOL	01	1981	58	34.4	30	39	1.722	1	
BURLINGTON	01	1979	116	24.4	22	26	1.745		
BURLINGTON	01	1980	117	25.3	23	27	1.665		
BURLINGTON	01	1981	119	21.6	20	23	1.697		
DANBURY	02	1981	57	42.3	37	48	1.664	2	
DANBURY	123	1979	56	54.7	48	62	1.649	8	
DANBURY	123	1980	58	48.9	44	55	1.595	3	
DANBURY	123	1981	56	39.9	35	46	1.741	3	
EAST HARTFORD	02	1979	57	44.7	40	50	1.558	1	
ENFIELD	123	1979	59	40.8	37	45	1.575	1	

POLLUTANT--PARTICULATES

DISTRIBUTION--LOGNORMAL

TOWN NAME	SITE	YEAR	SAMPLES	GEOM MEAN	95-PCT-LIMITS LOWER	95-PCT-LIMITS UPPER	STD GEOM DEV	PREDICTED DAYS OVER 150 UG/M3	PREDICTED DAYS OVER 260 UG/M3
ENFIELD	123	1980	59	37.3	34	41	1.514		
GREENWICH	04	1979	56	37.9	33	43	1.719	2	
GREENWICH	04	1980	60	35.7	32	40	1.647	1	
GREENWICH	04	1981	59	29.7	26	34	1.669		
GREENWICH	08	1979	60	68.9	60	80	1.858	35	7
GREENWICH	08	1980	58	51.5	46	57	1.580	4	
GREENWICH	08	1981	60	40.2	36	45	1.613	1	
GREENWICH	16	1980	9*	53.5	34	84	1.797	13	1
GROTON	123	1979	29*	32.8	27	40	1.733	1	
HADDAM	02	1979	60	32.3	29	36	1.565		
HADDAM	02	1980	60	31.4	28	35	1.609		
HADDAM	02	1981	58	27.0	24	30	1.614		
HARTFORD	03	1979	116	61.3	58	65	1.460	3	
HARTFORD	03	1980	121	53.7	51	57	1.506	2	
HARTFORD	03	1981	118	46.7	44	50	1.536	1	
HARTFORD	13	1981	61	36.7	33	41	1.591		
HARTFORD	14	1981	60	38.9	34	44	1.691	2	
HARTFORD	123	1979	59	66.5	61	73	1.453	5	
HARTFORD	123	1980	57	55.2	50	61	1.485	2	
MANCHESTER	01	1979	59	42.1	38	47	1.531		
MANCHESTER	01	1980	60	37.1	34	41	1.536		
MANCHESTER	01	1981	59	32.4	29	37	1.683	1	
MERIDEN	02	1979	59	52.7	48	58	1.525	2	
MERIDEN	02	1980	59	51.9	47	57	1.496	2	

TABLE 5, Continued

POLLUTANT--PARTICULATES DISTRIBUTION--LOGNORMAL

TOWN NAME	SITE	YEAR	SAMPLES	GEOM MEAN	95-PCT-LIMITS LOWER	95-PCT-LIMITS UPPER	STD GEOM DEV	PREDICTED DAYS OVER 150 UG/M3	PREDICTED DAYS OVER 260 UG/M3
MERIDEN	02	1981	60	40.5	35	47	1.827	5	
MERIDEN	05	1979	60	55.8	49	64	1.803	16	2
MERIDEN	05	1980	57	55.6	49	63	1.652	8	
MERIDEN	08	1981	35 *	36.0	30	43	1.677	1	
MIDDLETOWN	03	1979	59	49.8	45	55	1.555	2	
MIDDLETOWN	03	1980	59	46.8	43	51	1.468		
MIDDLETOWN	03	1981	59	38.4	34	43	1.666	1	
MILFORD	02	1979	60	52.3	47	58	1.554	3	
MILFORD	02	1980	59	45.2	41	49	1.454		
MILFORD	02	1981	60	40.4	36	45	1.589	1	
MORRIS	01	1980	111	29.6	28	32	1.567		
MORRIS	01	1981	114	24.1	22	26	1.707		
MORRIS DAM	01	1979	119	27.9	26	30	1.662		
NAUGATUCK	01	1979	60	47.0	42	52	1.576	2	
NAUGATUCK	01	1980	55	44.4	40	50	1.577	1	
NAUGATUCK	01	1981	60	40.2	35	46	1.718	3	
NEW BRITAIN	07	1981	115	36.4	34	39	1.562		
NEW BRITAIN	08	1981	59	35.2	31	40	1.674	1	
NEW BRITAIN	09	1981	59	35.0	31	39	1.634		
NEW BRITAIN	123	1979	110	47.4	44	51	1.516	1	
NEW BRITAIN	123	1980	111	42.6	40	45	1.473		
NEW HAVEN	02	1979	57	56.5	51	63	1.542	4	
NEW HAVEN	02	1980	52	54.8	49	61	1.535	3	

TABLE 5, Continued

POLLUTANT--PARTICULATES DISTRIBUTION--LOGNORMAL

TOWN NAME	SITE	YEAR	SAMPLES	GEOM MEAN	95-PCT-LIMITS LOWER	95-PCT-LIMITS UPPER	STD GEOM DEV	PREDICTED DAYS OVER 150 UG/M3	PREDICTED DAYS OVER 260 UG/M3
NEW HAVEN	02	1981	54	46.1	41	52	1.644	3	
NEW HAVEN	123	1979	119	79.2	75	84	1.454	16	
NEW HAVEN	123	1980	116	61.7	58	66	1.506	5	
NEW HAVEN	123	1981	112	50.2	47	54	1.602	4	
NORWALK	01	1981	57	41.0	36	46	1.624	1	
NORWALK	05	1979	116	57.2	54	61	1.497	3	
NORWALK	05	1980	117	53.7	50	57	1.567	4	
NORWALK	05	1981	118	48.3	45	52	1.625	4	
NORWALK	12	1981	60	39.1	35	44	1.586	1	
NORWICH	01	1979	58	44.9	41	50	1.517	1	
NORWICH	01	1980	60	44.6	41	49	1.464		
NORWICH	01	1981	61	36.0	32	41	1.671	1	
OLD SAYBROOK	01	1979	49*	51.6	46	59	1.603	4	
STAMFORD	01	1981	58	43.8	39	49	1.577	1	
STAMFORD	07	1979	58	57.0	51	64	1.584	7	
STAMFORD	07	1980	59	52.6	47	58	1.533	2	
STAMFORD	07	1981	60	41.4	38	46	1.495		
STAMFORD	21	1981	60	40.9	37	45	1.481		
STAMFORD	123	1979	60	59.3	54	66	1.536	5	
STAMFORD	123	1980	58	50.7	46	56	1.556	2	
STRATFORD	05	1979	58	56.4	51	62	1.483	2	
STRATFORD	05	1980	58	50.4	46	55	1.488	1	
STRATFORD	05	1981	56	45.6	40	52	1.643	3	

TABLE 5, Continued

POLLUTANT--PARTICULATES DISTRIBUTION--LOGNORMAL

TOWN NAME	SITE	YEAR	SAMPLES	GEOM MEAN	95-PCT-LIMITS LOWER	95-PCT-LIMITS UPPER	STD GEOM DEV	PREDICTED DAYS OVER 150 UG/M3	PREDICTED DAYS OVER 260 UG/M3
TORRINGTON	123*	1979	116	59.4	55	64	1.702	16	1 •
TORRINGTON	123*	1980	119	51.0	48	54	1.518	2	
TORRINGTON	123*	1981	117	44.9	41	49	1.731	5	
VOLUNTOWN	01	1979	117	25.7	24	28	1.599		
VOLUNTOWN	01	1980	119	26.0	24	28	1.613		
VOLUNTOWN	01	1981	115	20.8	19	22	1.652		
WALLINGFORD	01	1979	54	54.1	49	60	1.472	2	
WALLINGFORD	01	1980	55	47.1	43	52	1.513	1	
WALLINGFORD	01	1981	61	39.6	34	46	1.967	8	1
WATERBURY	02	1979	59	49.8	46	54	1.452		
WATERBURY	02	1980	59	48.8	44	55	1.603	3	
WATERBURY	05	1981	50	40.3	36	46	1.608	1	
WATERBURY	06	1981	60	39.1	34	45	1.764	3	
WATERBURY	07	1981	111	47.9	44	52	1.721	7	
WATERBURY	123*	1979	117	69.6	65	74	1.518	13	
WATERBURY	123*	1980	119	57.8	54	62	1.579	7	
WATERBURY	123*	1981	117	55.5	51	60	1.713	13	1
WATERFORD	01	1979	58	30.2	26	35	1.736	1	
WATERFORD	01	1980	57	34.1	31	38	1.563		
WATERFORD	01	1981	58	30.1	26	35	1.784	1	
WILLIMANTIC	02	1979	15*	43.2	36	52	1.424		
WILLIMANTIC	02	1980	60	42.2	38	47	1.550	1	
WILLIMANTIC	02	1981	58	38.9	35	44	1.641	1	

• SAMPLING NOT RANDOM OR OF INSUFFICIENT SIZE FOR REPRESENTATIVE ANNUAL STATISTICS.

* unsuitably located for acceptable TSP monitoring.

TABLE 5, Continued

TABLE 6

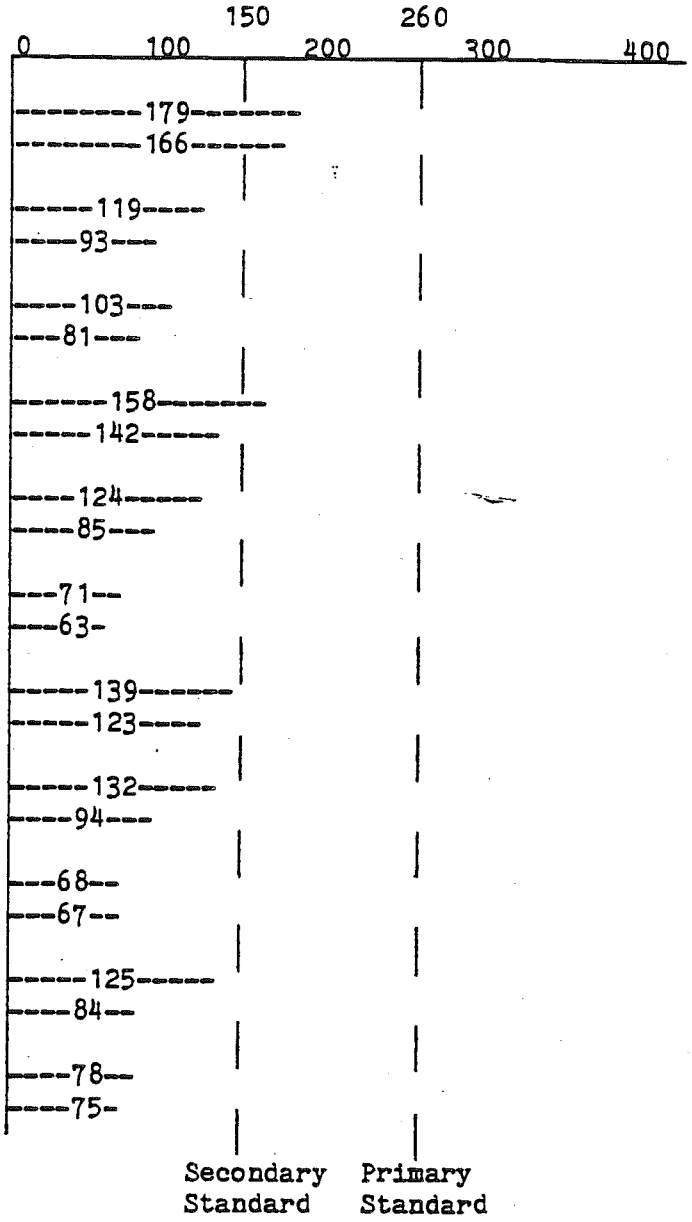
CONFIDENCE OF COMPLIANCE WITH ANNUAL TSP STANDARDS DURING 1981

PRIMARY STANDARD		SECONDARY STANDARD	
95% Confident Standard Has Been Exceeded (>75)	Uncertain Whether Standard Has Been Achieved Or Exceeded	95% Confident Standard Has Been Exceeded (>60)	Uncertain Whetner Standard Has Been Achieved Or Exceeded
NO SITES	NO SITES	NO SITES	Waterbury 123

TABLE 7

1981 MAXIMUM 24-HOUR TSP CONCENTRATIONS*

SITE	DATE 1ST HIGH	DATE 2ND HIGH	1ST HIGH	2ND HIGH
Ansonia-003	1/22	12/24	179	166
Bridgeport-01	1/22	6/9	119	93
Bridgeport-09	1/22	3/29	103	81
Bridgeport-123	2/18	1/22	158	142
Bristol-01	1/22	1/28	124	85
Burlington-01	5/25	9/19	71	63
Danbury-02	1/22	12/30	139	123
Danbury-123	1/22	12/30	132	94
Greenwich-04	5/4	4/4	68	67
Greenwich-08	1/22	2/3	125	84
Haddam-02	1/16	1/22	78	75

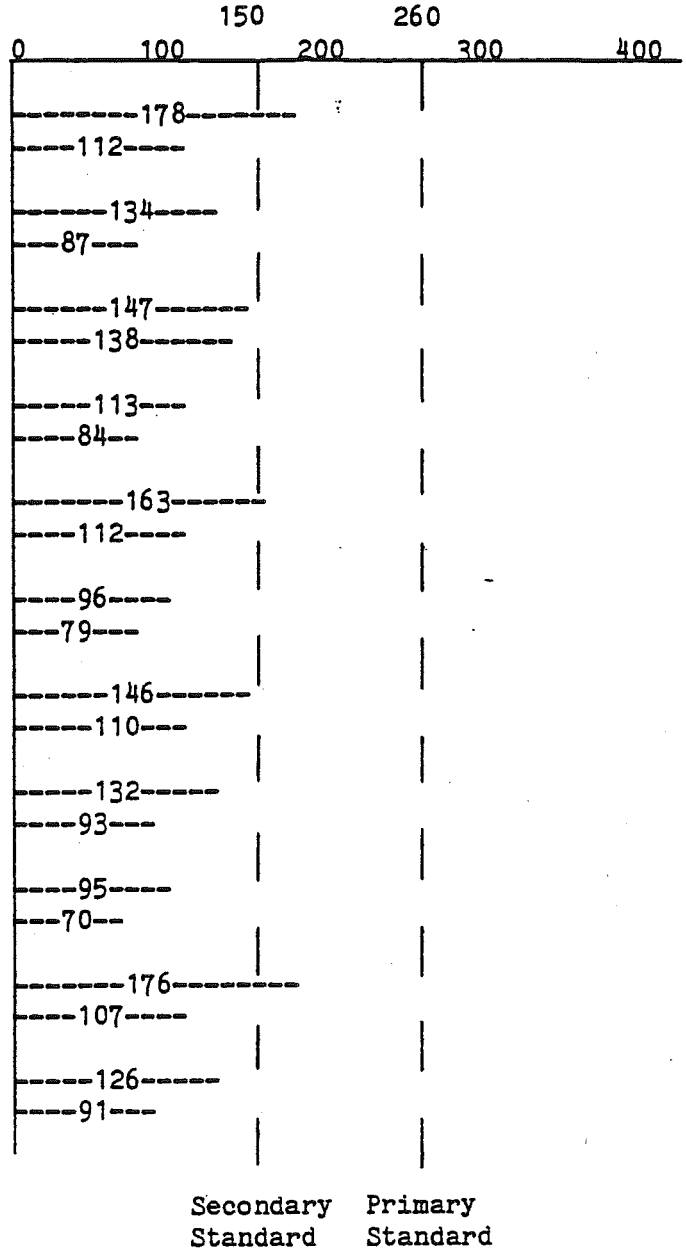


* Units in mg/m^3

TABLE 7, Continued

1981 MAXIMUM 24-HOUR TSP CONCENTRATIONS

SITE	DATE 1ST HIGH	DATE 2ND HIGH	1ST HIGH	2ND HIGH
Hartford-003	1/22	1/28	178	112
Hartford-13	1/22	1/16	134	87
Hartford-14	1/22	2/9	147	138
Manchester-01	1/22	1/16	113	84
Meriden-02	1/22	12/24	163	112
Meriden-08**	12/24	3/29	96	79
Middletown-03	1/22	1/16	146	110
Milford-02	1/22	1/28	132	93
Morris-01	12/30	5/25	95	70
Naugatuck-01	1/22	12/24	176	107
New Britain-07	1/22	2/18	126	91



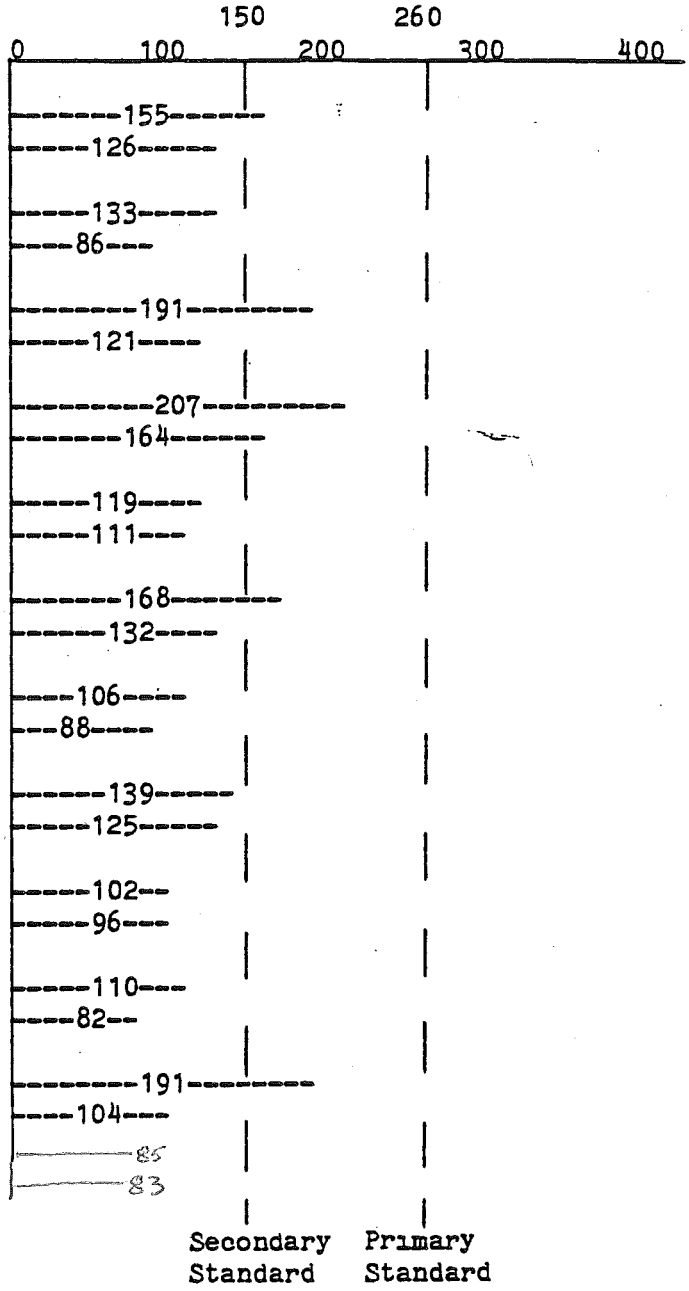
* Units in mg/m^3

** Less than 75% of data available

TABLE 7, Continued

1981 MAXIMUM 24-HOUR TSP CONCENTRATIONS

SITE	DATE 1ST HIGH	DATE 2ND HIGH	1ST HIGH	2ND HIGH
New Britain-08	1/22	12/24	155	126
New Britain-09	1/22	12/24	133	86
New Haven-02	1/22	1/16	191	121
New Haven-123	1/22	2/18	207	164
Norwalk-01	1/22	1/28	119	111
Norwalk-05	1/22	2/18	168	132
Norwalk-12	1/22	9/13	106	88
Norwich-01	1/22	1/28	139	125
Stamford-01	3/29	1/22	102	96
Stamford-07	1/22	3/29	110	82
Stratford-05	5/22	12/24	191	104
Stamford-21	7/9	3/29	85	83

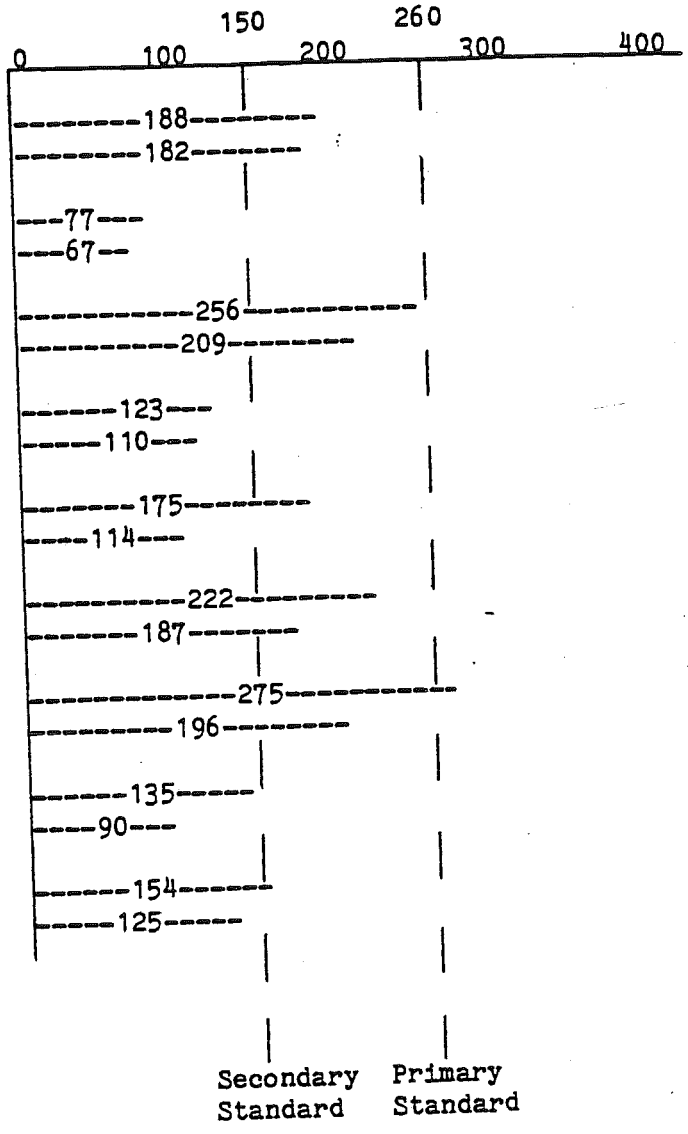


* Units in mg/m^3

TABLE 7, Continued

1981 MAXIMUM 24-HOUR TSP CONCENTRATIONS*

SITE	DATE 1ST HIGH	DATE 2ND HIGH	1ST HIGH	2ND HIGH
Torrington-123**	2/12	12/30	188	182
Voluntown-01	6/6	5/25	77	67
Wallingford-01	12/24	1/22	256	209
Waterbury-05	12/24	4/28	123	110
Waterbury-06	4/28	1/22	175	114
Waterbury-07	1/22	2/6	222	187
Waterbury-123**	1/22	1/13	275	196
Waterford-01	7/9	7/15	135	90
Willimantic-02	1/22	12/24	154	125



* Units in mg/m^3

** unsuitably located for acceptable TSP monitoring

TABLE 8 SUMMARY OF THE STATISTICALLY PREDICTED NUMBER OF SITES EXCEEDING THE 24-HOUR TSP STANDARDS

	SITES WITH ≥ 2 DAYS EXCEEDING THE SECONDARY STANDARD (150 ug/m3)		SITES WITH ≥ 2 DAYS EXCEEDING THE PRIMARY STANDARD (260 ug/m3)		TOTAL # OF HI-VOL SITES
YEAR	Number of Sites	% of Total Sites	Number of Sites	% of Total Sites	
1971	37	84%	20	45%	44
1972	43	93%	13	28%	46
1973	31	70%	11	25%	44
1974	49	79%	5	8%	62
1975	41	75%	2	4%	55
1976	36	88%	3	7%	41
1977	27	69%	1	3%	39
1978	22	61%	7	19%	36
1979	22	63%	2	6%	35
1980	14	40%	0	0%	35
1981	16	37%	0	0%	43

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983 PAGE 1
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	ANSONIA	0008	003	F	01

METALS

QUARTER	AL 12101/92[a] UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0501	0.008	0.36	1.08	0.55	0.027	0.013	0.04	0.82
SECOND		BDL	0.0109	0.005	0.33	0.62	0.30	0.016	0.011	0.02	0.38
THIRD		BDL	0.0765	0.007	0.36	0.42	0.32	0.012	0.010	0.02	0.70
FOURTH		BDL	0.0250	0.005	0.19	0.74	0.39	0.013	0.010	0.03	0.56
YEAR AVG		0.0000	0.0402	0.006	0.31	0.71	0.39	0.017	0.011	0.03	0.61
COUNT		60	60	60	60	60	60	60	60	60	60

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	3.06	7.09	0.19		7.90		75	14
SECOND	3.86	10.19	0.08		7.90		49	15
THIRD	0.86	7.16	0.18		7.10		39	15
FOURTH	2.44	8.55	0.06		8.40		42	16
YEAR AVG	2.54	8.27	0.13		7.83		51	
COUNT	60	60	60		60		60	

[a] First five digits under each element's symbol are a code for the element; Last pair of digits are a code for the method of measurement.

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983 PAGE 2
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	BRIDGEPORT	0060	001	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0041	0.003	0.10	0.80	0.46	0.022	0.014	0.04	0.10
SECOND		BDL	0.0010	0.005	0.19	0.67	0.36	0.021	0.012	0.02	0.11
THIRD		BDL	0.0029	0.005	0.23	0.48	0.33	0.013	0.009	0.03	0.07
FOURTH		BDL	0.0019	0.004	0.18	0.45	0.38	0.016	0.007	0.02	0.06
YEAR AVG		0.0000	0.0025	0.004	0.18	0.60	0.38	0.018	0.010	0.03	0.08
COUNT		61	61	61	61	61	61	61	61	61	61

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	3.82	8.03	0.22		7.50		54	15
SECOND	4.40	9.61	0.08		7.50		49	15
THIRD	1.25	7.60	0.19		6.90		40	15
FOURTH	2.25	7.99	0.06		8.60		32	16
YEAR AVG	2.92	8.30	0.14		7.64		44	
COUNT	61	61	61		61		61	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	BRIDGEPORT	0060	009	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0060	0.003	0.29	0.57	0.30	0.018	0.012	0.03	0.08
SECOND		BDL	0.0029	0.004	0.15	0.54	0.26	0.018	0.010	0.03	0.09
THIRD		BDL	0.0030	0.010	0.20	0.46	0.27	0.014	0.013	0.02	0.07
FOURTH		BDL	0.0019	0.002	0.11	0.31	0.24	0.006	0.006	0.02	0.06
YEAR AVG		0.0000	0.0035	0.005	0.19	0.47	0.27	0.014	0.010	0.02	0.07
COUNT		58	58	58	58	58	58	58	58	58	58

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	3.47	7.64	0.30		7.50		48	15
SECOND	3.55	9.34	0.09		7.20		47	13
THIRD	1.37	13.59	0.22		7.30		41	15
FOURTH	2.26	8.46	0.07		8.70		32	15
YEAR AVG	2.63	9.77	0.17		7.69		42	
COUNT	58	58	58		58		58	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	BRIDGEPORT	0060	123	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0033	0.004	0.06	1.31	0.50	0.034	0.015	0.04	0.13
SECOND		BDL	0.0024	0.007	0.06	1.21	0.41	0.033	0.016	0.03	0.11
THIRD		BDL	0.0028	0.007	0.10	0.89	0.39	0.022	0.012	0.02	0.09
FOURTH		BDL	0.0014	0.003	0.05	0.57	0.42	0.016	0.009	0.01	0.07
YEAR AVG		0.0000	0.0025	0.005	0.07	0.99	0.43	0.026	0.013	0.02	0.10
COUNT		61	61	61	61	61	61	61	61	61	61

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	4.05	8.20	0.23		7.10		72	15
SECOND	3.05	8.87	0.08		7.40		62	15
THIRD	1.09	9.18	0.17		7.20		53	15
FOURTH	1.74	7.71	0.06		8.60		35	16
YEAR AVG	2.47	8.48	0.13		7.59		55	
COUNT	61	61	61		61		61	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	BRISTOL	0070	001	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0044	0.003	0.12	0.71	0.31	0.022	0.008	0.03	0.11
SECOND		BDL	0.0023	0.002	0.19	0.49	0.22	0.015	0.006	0.01	0.10
THIRD		BDL	0.0011	0.007	0.13	0.56	0.22	0.018	0.007	0.02	0.09
FOURTH		BDL	0.0011	0.003	0.10	0.37	0.22	0.008	0.003	0.03	0.05
YEAR AVG		0.0000	0.0022	0.004	0.13	0.53	0.24	0.016	0.006	0.02	0.09
COUNT		60	60	60	60	60	60	60	60	60	60

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	3.45	9.67	0.16		8.20		51	15
SECOND	3.49	7.64	0.08		7.70		38	15
THIRD	0.46	7.90	0.20		7.30		60	15
FOURTH	2.11	7.41	0.09		8.80		32	15
YEAR AVG	2.38	8.15	0.13		8.00		45	
COUNT	60	60	60		60		60	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983 PAGE 6
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	BURLINGTON	0085	001	F	03

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0008	0.001	0.15	0.25	0.10	0.010	0.004	0.02	0.04
SECOND		BDL	0.0008	0.001	0.09	0.30	0.09	0.010	0.004	0.01	0.07
THIRD		BDL	0.0007	0.003	0.07	0.15	0.08	0.005	0.005	0.01	0.03
FOURTH		BDL	0.0005	0.002	0.03	0.11	0.06	0.002	0.003	0.01	0.03
YEAR AVG		0.0000	0.0007	0.002	0.08	0.20	0.08	0.007	0.004	0.01	0.04
COUNT		60	60	60	60	60	60	60	60	60	60

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	2.45	8.32	0.16		9.40		27	14
SECOND	1.30	6.81	0.08		7.90		34	15
THIRD	0.38	6.82	0.17		7.90		28	15
FOURTH	0.84	5.26	BDL		9.00		14	16
YEAR AVG	1.22	6.75	0.10		8.54		26	
COUNT	60	60	60		60		60	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	DANBURY	0175	002	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0011	0.002	0.18	1.10	0.35	0.027	0.008	0.03	0.07
SECOND		BDL	0.0007	0.002	0.23	0.60	0.25	0.015	0.007	0.01	0.05
THIRD		BDL	0.0008	0.003	0.19	0.43	0.25	0.010	0.004	0.01	0.04
FOURTH		BDL	0.0009	0.003	0.14	0.54	0.40	0.010	0.006	0.01	0.04
YEAR AVG		0.0000	0.0009	0.003	0.18	0.65	0.31	0.015	0.006	0.01	0.05
COUNT		58	58	58	58	58	58	58	58	58	58

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	4.30	10.44	0.30		7.60		69	13
SECOND	1.71	8.96	0.08		7.60		45	15
THIRD	2.66	7.14	0.19		7.50		41	14
FOURTH	1.73	6.82	0.07		9.00		37	16
YEAR AVG	2.54	8.29	0.15		7.94		47	
COUNT	57	57	57		57		58	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983 PAGE 8
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	DANBURY	0175	123	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0012	0.003	0.25	0.98	0.39	0.027	0.010	0.04	0.07
SECOND		BDL	0.0011	0.002	0.11	0.70	0.28	0.017	0.009	0.02	0.08
THIRD		BDL	0.0013	0.005	0.14	0.45	0.30	0.012	0.009	0.01	0.05
FOURTH		BDL	0.0008	0.002	0.08	0.45	0.34	0.009	0.005	0.01	0.03
YEAR AVG		0.0000	0.0011	0.003	0.14	0.63	0.33	0.016	0.008	0.02	0.06
COUNT		58	58	58	58	58	58	58	58	58	58

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	3.96	9.60	0.28		7.50		62	14
SECOND	2.54	8.13	0.08		7.40		47	13
THIRD	0.39	6.92	0.17		7.70		34	15
FOURTH	1.37	6.05	0.07		9.00		37	16
YEAR AVG	2.00	7.60	0.15		7.94		45	
COUNT	58	58	58		58		58	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	GREENWICH	0330	004	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0013	0.001	0.09	0.37	0.18	0.013	0.008	0.02	0.06
SECOND		BDL	0.0011	0.001	0.13	0.51	0.18	0.015	0.010	0.02	0.06
THIRD		BDL	0.0009	0.004	0.11	0.32	0.16	0.010	0.006	0.01	0.04
FOURTH		BDL	0.0008	0.003	0.08	0.20	0.12	0.005	0.005	0.01	0.02
YEAR AVG		0.0000	0.0010	0.002	0.10	0.35	0.16	0.011	0.007	0.01	0.04
COUNT		60	60	60	60	60	60	60	60	60	60

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	2.82	9.59	0.23		7.50		35	15
SECOND	1.35	8.42	0.05		7.90		41	15
THIRD	1.68	9.93	0.19		7.90		38	14
FOURTH	1.59	9.37	0.08		9.00		19	16
YEAR AVG	1.86	9.32	0.14		8.09		33	
COUNT	60	60	60		60		60	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983 PAGE 10
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	GREENWICH	0330	008	F	05

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0014	0.002	0.08	0.95	0.34	0.024	0.010	0.03	0.08
SECOND		BDL	0.0010	BDL	0.14	0.75	0.25	0.015	0.008	0.01	0.06
THIRD		BDL	0.0012	0.005	0.08	0.54	0.32	0.012	0.008	0.02	0.05
FOURTH		BDL	0.0008	0.003	0.05	0.39	0.27	0.008	0.005	0.01	0.03
YEAR AVG		0.0000	0.0011	0.003	0.09	0.65	0.30	0.015	0.008	0.02	0.05
COUNT		60	60	60	60	60	60	60	60	60	60

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	2.90	7.92	0.11		7.60		60	15
SECOND	4.04	7.84	0.01		7.70		48	14
THIRD	0.74	9.64	0.17		8.10		40	15
FOURTH	5.30	7.43	0.06		9.00		33	16
YEAR AVG	3.27	8.20	0.09		8.12		45	
COUNT	60	60	60		60		60	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	HADDAM	0380	002	F	02

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0012	0.001	0.15	0.31	0.20	0.012	0.010	0.03	0.07
SECOND		BDL	0.0005	0.001	0.17	0.24	0.10	0.010	0.006	0.01	0.04
THIRD		BDL	0.0010	0.004	0.11	0.21	0.12	0.007	0.003	0.01	0.05
FOURTH		BDL	0.0007	0.002	0.06	0.16	0.11	0.005	0.005	0.01	0.02
YEAR AVG		0.0000	0.0008	0.002	0.12	0.23	0.13	0.008	0.006	0.01	0.04
COUNT		58	58	58	58	58	58	58	58	58	58

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	TSP APPROX SAMPLE COUNT
FIRST	2.21	5.92	0.24		7.50		41	14
SECOND	2.07	6.30	0.01		7.40		31	14
THIRD	1.55	8.88	0.15		8.50		31	14
FOURTH	1.61	3.92	BDL		8.80		18	16
YEAR AVG	1.85	6.17	0.10		8.08		30	
COUNT	58	58	58		58		58	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	HARTFORD	0420	003	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0019	0.005	0.14	1.00	0.47	0.024	0.016	0.07	0.18
SECOND		BDL	0.0013	0.003	0.20	0.66	0.31	0.020	0.009	0.01	0.08
THIRD		BDL	0.0016	0.006	0.21	0.82	0.34	0.018	0.009	0.02	0.07
FOURTH		BDL	0.0011	0.005	0.08	0.59	0.42	0.012	0.010	0.03	0.05
YEAR AVG		0.0000	0.0015	0.005	0.16	0.76	0.39	0.018	0.011	0.03	0.09
COUNT		59	59	59	59	59	59	59	59	59	59

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	TSP APPROX SAMPLE COUNT
FIRST	2.96	7.55	0.25		7.60		74	14
SECOND	1.79	7.01	0.08		8.00		47	14
THIRD	1.05	10.34	0.18		8.70		53	15
FOURTH	0.86	8.63	BDL		9.10		41	16
YEAR AVG	1.63	8.42	0.13		8.38		53	
COUNT	59	59	59		59		59	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	HARTFORD	0420	013	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0031	0.009	0.08	0.70	0.44	0.021	0.016	0.06	0.18
SECOND		BDL	0.0017	0.004	0.12	0.59	0.21	0.020	0.008	0.02	0.06
THIRD		BDL	0.0029	0.006	0.08	0.47	0.28	0.012	0.010	0.02	0.06
FOURTH		BDL	0.0020	0.005	0.05	0.45	0.38	0.009	0.008	0.02	0.04
YEAR AVG		0.0000	0.0024	0.006	0.08	0.55	0.33	0.015	0.010	0.03	0.08
COUNT		61	61	61	61	61	61	61	61	61	61

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	TSP APPROX SAMPLE COUNT
FIRST	2.63	7.04	0.20		7.90		54	15
SECOND	2.47	8.96	0.08		7.90		41	15
THIRD	0.84	9.37	0.18		8.70		38	15
FOURTH	1.47	5.66	0.07		9.00		32	16
YEAR AVG	1.85	7.72	0.13		8.39		41	
COUNT	61	61	61		61		61	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	HARTFORD	0420	014	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0018	0.004	0.13	0.73	0.49	0.023	0.015	0.07	0.16
SECOND		BDL	0.0010	0.002	0.10	0.51	0.27	0.014	0.008	0.01	0.06
THIRD		BDL	0.0011	0.004	0.10	0.42	0.33	0.011	0.010	0.01	0.05
FOURTH		BDL	0.0026	0.002	0.07	0.40	0.40	0.008	0.007	0.02	0.04
YEAR AVG		0.0000	0.0017	0.003	0.10	0.51	0.37	0.014	0.010	0.03	0.08
COUNT		60	60	60	60	60	60	60	60	60	60

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	TSP APPROX SAMPLE COUNT
FIRST	3.35	9.77	0.30		8.30		69	15
SECOND	3.38	7.52	0.08		7.70		42	14
THIRD	0.49	8.58	0.17		8.60		39	15
FOURTH	1.67	7.38	BDL		9.10		31	16
YEAR AVG	2.19	8.31	0.14		8.45		45	
COUNT	60	60	60		60		60	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	LTCH CTY(MORRIS DAM)	0478	001	F	03

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0008	0.001	0.16	0.26	0.13	0.010	0.004	0.01	0.05
SECOND		BDL	0.0006	BDL	0.17	0.35	0.09	0.010	0.006	0.01	0.03
THIRD		BDL	0.0008	0.004	0.23	0.11	0.10	0.008	0.008	0.01	0.02
FOURTH		BDL	0.0014	0.001	0.11	0.11	0.08	0.003	0.003	0.01	0.01
YEAR AVG		0.0000	0.0009	0.002	0.17	0.20	0.10	0.007	0.005	0.01	0.03
COUNT		55	55	55	55	55	55	55	55	55	55

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	pH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	2.70	7.30	0.23		9.00		28	15
SECOND	1.38	8.07	0.11		8.50		32	11
THIRD	0.31	6.92	0.17		8.70		28	15
FOURTH	1.50	7.56	0.05		9.30		20	14
YEAR AVG	1.48	7.42	0.14		8.89		27	
COUNT	55	55	55		55		55	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	MANCHESTER	0510	001	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0011	0.002	0.06	0.53	0.27	0.017	0.008	0.04	0.05
SECOND		BDL	0.0007	0.002	0.05	0.35	0.16	0.010	0.007	0.01	0.04
THIRD		BDL	0.0008	0.003	0.11	0.26	0.20	0.008	0.009	0.01	0.03
FOURTH		BDL	0.0025	0.002	0.10	0.28	0.23	0.007	0.006	0.01	0.03
YEAR AVG		0.0000	0.0013	0.002	0.08	0.36	0.22	0.011	0.007	0.02	0.04
COUNT		59	59	59	59	59	59	59	59	59	59

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	TSP APPROX SAMPLE COUNT
FIRST	3.88	9.88	0.24		9.20		51	15
SECOND	1.07	6.96	0.15		8.50		38	15
THIRD	1.57	16.26	0.08		9.00		34	13
FOURTH	1.32	9.52	BDL		9.20		25	16
YEAR AVG	1.96	10.45	0.12		8.98		37	
COUNT	59	59	59		59		59	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	MERIDEN	0540	002	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0018	0.003	0.11	0.93	0.41	0.024	0.015	0.06	0.25
SECOND		BDL	0.0022	0.001	0.14	0.56	0.28	0.020	0.011	0.01	0.14
THIRD		BDL	0.0026	0.005	0.12	0.45	0.24	0.013	0.009	0.02	0.14
FOURTH		BDL	0.0030	0.004	0.05	0.52	0.38	0.012	0.008	0.02	0.37
YEAR AVG		0.0000	0.0024	0.003	0.10	0.61	0.33	0.017	0.011	0.03	0.23
COUNT		60	60	60	60	60	60	60	60	60	60

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	4.06	8.49	0.20		8.00		63	15
SECOND	1.12	7.70	0.01		8.00		48	14
THIRD	1.02	9.53	0.18		8.90		40	15
FOURTH	1.53	8.14	0.09		9.00		40	16
YEAR AVG	1.94	8.47	0.12		8.49		48	
COUNT	60	60	60		60		60	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	MERIDEN	0540	008	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0015	0.001	0.13	0.55	0.25	0.017	0.009	0.02	0.18
SECOND		BDL	0.0009	0.003	0.21	0.45	0.25	0.014	0.009	0.02	0.17
THIRD											
FOURTH		BDL	0.0030	0.003	0.10	0.37	0.39	0.009	0.007	0.01	0.12
YEAR AVG		0.0000	0.0018	0.003	0.15	0.44	0.31	0.013	0.008	0.02	0.15
COUNT		33	33	33	33	33	33	33	33	33	33

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	3.58	6.81	0.05		8.00		47	6
SECOND	1.53	8.41	0.09		8.80		43	14
THIRD							47	2
FOURTH	2.02	9.42	0.05		9.10		35	13
YEAR AVG	2.10	8.52	0.07		8.77		41	
COUNT	33	33	33		33		35	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	MIDDLETOWN	0570	003	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0020	0.003	0.18	0.72	0.43	0.026	0.013	0.05	0.12
SECOND		BDL	0.0014	0.002	0.17	0.52	0.30	0.017	0.008	0.02	0.12
THIRD		BDL	0.0011	0.004	0.17	0.36	0.27	0.013	0.006	0.01	0.06
FOURTH		BDL	0.0013	0.003	0.10	0.50	0.37	0.012	0.006	0.01	0.05
YEAR AVG		0.0000	0.0014	0.003	0.15	0.52	0.34	0.017	0.008	0.02	0.09
COUNT		59	59	59	59	59	59	59	59	59	59

WATER SOLUBLES

QUARTER	NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS
FIRST	3.23	7.15	0.19		8.30
SECOND	2.28	8.90	0.08		8.50
THIRD	1.89	6.70	0.16		9.10
FOURTH	1.63	9.72	0.06		9.20
YEAR AVG	2.24	8.19	0.12		8.78
COUNT	59	59	59		59

QUARTER	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	TSP APPROX SAMPLE COUNT
FIRST		62	14
SECOND		44	15
THIRD		35	14
FOURTH		33	16
YEAR AVG		43	
COUNT		59	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	MILFORD	0590	002	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0030	0.003	0.10	0.76	0.39	0.022	0.017	0.06	0.13
SECOND		BDL	0.0014	0.002	0.14	0.58	0.27	0.014	0.012	0.02	0.08
THIRD		BDL	0.0023	0.006	0.11	0.47	0.28	0.011	0.012	0.02	0.08
FOURTH		BDL	0.0018	0.004	0.05	0.43	0.28	0.008	0.034	0.06	0.07
YEAR AVG		0.0000	0.0021	0.004	0.10	0.55	0.30	0.014	0.019	0.04	0.09
COUNT		60	60	60	60	60	60	60	60	60	60

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	TSP APPROX SAMPLE COUNT
FIRST	5.60	11.61	0.21		8.80		61	14
SECOND	1.71	7.98	0.09		8.60		48	15
THIRD	1.19	8.56	0.13		8.80		40	15
FOURTH	1.21	9.67	0.07		9.20		37	16
YEAR AVG	2.35	9.42	0.12		8.86		46	
COUNT	60	60	60		60		60	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	NAUGATUCK	0660	001	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0018	0.004	0.22	1.02	0.56	0.032	0.010	0.04	0.15
SECOND		BDL	0.0015	0.004	0.23	0.63	0.27	0.015	0.009	0.01	0.10
THIRD		BDL	0.0027	0.004	0.28	0.61	0.34	0.015	0.005	0.02	0.08
FOURTH		BDL	0.0011	0.050	0.16	0.88	0.47	0.015	0.007	0.02	0.07
YEAR AVG		0.0000	0.0018	0.016	0.22	0.79	0.41	0.019	0.008	0.02	0.10
COUNT		60	60	60	60	60	60	60	60	60	60

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	pH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	4.75	10.53	0.20		8.90		65	15
SECOND	2.81	9.09	0.14		8.40		44	14
THIRD	1.02	11.31	0.19		9.00		39	15
FOURTH	1.82	8.99	0.09		9.20		39	16
YEAR AVG	2.58	9.98	0.15		8.89		47	
COUNT	60	60	60		60		60	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	NEW BRITAIN	0680	007	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0013	0.003	0.11	0.64	0.31	0.018	0.011	0.05	0.11
SECOND		BDL	0.0010	0.002	0.30	0.71	0.21	0.015	0.008	0.01	0.06
THIRD		BDL	0.0006	0.003	0.32	0.38	0.24	0.010	0.003	0.02	0.06
FOURTH		BDL	0.0006	0.002	0.13	0.40	0.33	0.010	0.006	0.02	0.04
YEAR AVG		0.0000	0.0009	0.003	0.21	0.53	0.27	0.013	0.007	0.03	0.07
COUNT		59	59	59	59	59	59	59	59	59	59

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	3.33	6.61	0.18		8.50		53	15
SECOND	1.43	7.28	0.14		7.20		39	14
THIRD	1.64	10.12	0.15		8.90		37	15
FOURTH	0.87	9.77	0.08		9.00		34	15
YEAR AVG	1.82	8.46	0.14		8.42		41	
COUNT	59	59	59		59		59	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	NEW BRITAIN	0680	008	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0015	0.003	0.29	0.80	0.34	0.023	0.011	0.04	0.12
SECOND		BDL	0.0012	0.003	0.35	0.45	0.22	0.013	0.009	0.01	0.06
THIRD		BDL	0.0010	0.003	0.33	0.42	0.25	0.010	0.004	0.02	0.05
FOURTH		BDL	0.0006	0.002	0.25	0.44	0.32	0.009	0.003	0.01	0.03
YEAR AVG		0.0000	0.0011	0.003	0.30	0.52	0.28	0.014	0.007	0.02	0.06
COUNT		58	58	58	58	58	58	58	58	58	58

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	3.00	3.31	0.24		8.90		57	14
SECOND	2.39	7.28	0.15		7.10		36	14
THIRD	1.27	9.80	0.15		8.70		37	15
FOURTH	BDL	10.10	0.08		9.00		33	15
YEAR AVG	1.63	7.70	0.15		8.44		41	
COUNT	58	58	58		58		58	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	NEW BRITAIN	0680	009	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0018	0.005	0.42	0.64	0.31	0.019	0.011	0.04	0.14
SECOND		BDL	0.0012	0.003	0.31	0.42	0.17	0.013	0.008	0.01	0.06
THIRD		BDL	0.0012	0.002	0.28	0.32	0.20	0.009	0.005	0.02	0.05
FOURTH		BDL	0.0008	0.002	0.20	0.39	0.32	0.009	0.003	0.02	0.05
YEAR AVG		0.0000	0.0013	0.003	0.30	0.44	0.25	0.012	0.007	0.02	0.08
COUNT		59	59	59	59	59	59	59	59	59	59

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	3.12	5.91	0.26		8.60		51	15
SECOND	1.68	7.63	0.14		7.20		40	14
THIRD	1.34	9.66	0.15		8.80		35	15
FOURTH	1.16	10.00	0.10		9.10		33	15
YEAR AVG	1.83	8.31	0.16		8.45		40	
COUNT	59	59	59		59		59	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	NEW HAVEN	0700	002	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0017	0.007	0.10	1.23	0.56	0.030	0.021	0.07	0.13
SECOND		BDL	0.0012	0.004	0.15	0.71	0.30	0.017	0.012	0.02	0.08
THIRD		BDL	0.0008	0.003	0.14	0.69	0.40	0.013	0.008	0.02	0.07
FOURTH		BDL	0.0009	0.004	0.13	0.73	0.61	0.013	0.010	0.02	0.06
YEAR AVG		0.0000	0.0012	0.005	0.13	0.84	0.48	0.018	0.013	0.03	0.08
COUNT		55	55	55	55	55	55	55	55	55	55

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	pH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	4.65	8.24	0.19		8.40		77	14
SECOND	3.62	8.36	0.19		8.30		49	13
THIRD	1.63	10.15	0.16		8.70		47	12
FOURTH	1.24	9.38	0.06		9.20		39	16
YEAR AVG	2.76	9.02	0.15		8.67		53	
COUNT	55	55	55		55		55	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	NEW HAVEN	0700	123	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0020	0.008	0.16	1.52	0.58	0.037	0.021	0.07	0.13
SECOND		BDL	0.0010	0.003	0.13	0.83	0.42	0.018	0.010	0.02	0.08
THIRD		BDL	0.0008	0.002	0.15	0.63	0.42	0.013	0.010	0.02	0.09
FOURTH		BDL	0.0022	0.003	0.10	0.57	0.60	0.012	0.011	0.05	0.07
YEAR AVG		0.0000	0.0015	0.004	0.13	0.88	0.51	0.020	0.013	0.04	0.09
COUNT		58	58	58	58	58	58	58	58	58	58

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	4.86	8.15	0.25		8.50		86	14
SECOND	3.99	8.48	0.14		8.50		50	14
THIRD	1.34	10.23	0.15		9.00		47	14
FOURTH	1.61	10.09	0.09		9.10		45	16
YEAR AVG	2.90	9.27	0.16		8.79		57	
COUNT	58	58	58		58		58	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	NORWALK	0820	001	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0016	0.003	0.34	1.13	0.36	0.030	0.013	0.04	0.12
SECOND		BDL	0.0009	0.003	0.49	0.62	0.23	0.015	0.009	0.02	0.10
THIRD		BDL	0.0004	0.002	0.14	0.36	0.26	0.010	0.008	0.01	0.10
FOURTH		BDL	0.0007	0.001	0.10	0.30	0.29	0.008	0.008	0.02	0.07
YEAR AVG		0.0000	0.0009	0.002	0.26	0.59	0.29	0.015	0.009	0.02	0.10
COUNT		57	57	57	57	57	57	57	57	57	57

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	pH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	4.36	9.20	0.29		8.60		61	14
SECOND	4.26	10.18	0.16		7.40		57	13
THIRD	1.05	9.92	0.14		9.00		38	14
FOURTH	0.12	8.81	0.08		9.10		33	16
YEAR AVG	2.33	9.49	0.16		8.56		47	
COUNT	57	57	57		57		57	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	NORWALK	0820	005	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0016	0.005	0.24	1.08	0.40	0.031	0.014	0.04	0.12
SECOND		BDL	0.0021	0.006	0.47	0.83	0.33	0.019	0.010	0.01	0.10
THIRD		BDL	0.0005	0.003	0.34	0.55	0.35	0.012	0.005	0.02	0.05
FOURTH		BDL	0.0009	0.002	0.08	0.80	0.44	0.016	0.006	0.02	0.08
YEAR AVG		0.0000	0.0013	0.004	0.28	0.82	0.38	0.020	0.009	0.02	0.08
COUNT		60	60	60	60	60	60	60	60	60	60

WATER SOLUBLES

QUARTER	NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS
FIRST	4.58	7.83	0.16		7.00
SECOND	1.31	8.82	0.15		8.30
THIRD	0.75	8.47	0.17		9.00
FOURTH	1.12	9.01	0.07		9.20
YEAR AVG	1.95	8.54	0.14		8.38
COUNT	60	60	60		60

QUARTER	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	TSP APPROX SAMPLE COUNT
FIRST		71	15
SECOND		54	15
THIRD		43	14
FOURTH		47	16
YEAR AVG		54	
COUNT		60	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	NORWALK	0820	012	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0010	0.004	0.21	0.92	0.30	0.025	0.012	0.04	0.07
SECOND		BDL	0.0011	0.007	0.20	0.83	0.28	0.020	0.009	0.01	0.07
THIRD		BDL	0.0008	0.003	0.12	0.51	0.34	0.013	0.005	0.02	0.06
FOURTH		BDL	0.0008	0.002	0.06	0.40	0.39	0.009	0.006	0.02	0.03
YEAR AVG		0.0000	0.0009	0.004	0.14	0.66	0.33	0.016	0.008	0.02	0.06
COUNT		60	60	60	60	60	60	60	60	60	60

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	TSP APPROX SAMPLE COUNT
FIRST	3.38	4.20	0.11		7.40		51	14
SECOND	2.43	8.23	0.15		8.70		47	15
THIRD	1.79	9.39	0.15		8.80		43	15
FOURTH	1.04	9.66	0.10		9.10		34	16
YEAR AVG	2.12	7.96	0.13		8.53		43	
COUNT	60	60	60		60		60	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	NORWICH	0840	001	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0010	0.003	0.06	0.94	0.30	0.019	0.010	0.05	0.05
SECOND		BDL	0.0006	0.006	0.06	0.52	0.15	0.011	0.008	0.02	0.04
THIRD		BDL	0.0006	0.002	0.06	0.30	0.23	0.007	0.005	0.01	0.03
FOURTH		BDL	0.0005	0.003	0.05	0.37	0.27	0.007	0.006	0.02	0.02
YEAR AVG		0.0000	0.0007	0.003	0.06	0.53	0.24	0.011	0.007	0.02	0.03
COUNT		61	61	61	61	61	61	61	61	61	61

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	4.87	4.85	0.19		7.40		61	15
SECOND	2.00	7.20	0.07		7.20		38	15
THIRD	1.22	9.38	0.01		9.00		34	15
FOURTH	1.16	9.41	0.10		9.10		32	16
YEAR AVG	2.29	7.74	0.09		8.19		41	
COUNT	61	61	61		61		61	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	STAMFORD	1080	001	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0017	0.005	0.14	0.76	0.32	0.021	0.014	0.04	0.08
SECOND		BDL	0.0011	0.006	0.40	0.87	0.33	0.021	0.011	0.02	0.08
THIRD		BDL	0.0005	0.002	0.21	0.66	0.32	0.015	0.008	0.02	0.06
FOURTH		BDL	0.0008	0.002	0.14	0.40	0.29	0.009	0.006	0.02	0.04
YEAR AVG		0.0000	0.0010	0.004	0.22	0.67	0.31	0.016	0.010	0.02	0.06
COUNT		58	58	58	58	58	58	58	58	58	58

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	2.95	5.71	0.23		7.40		54	14
SECOND	3.80	8.54	0.06		7.30		57	14
THIRD	1.33	10.76	0.17		9.00		50	15
FOURTH	1.75	10.11	0.12		9.00		33	15
YEAR AVG	2.43	8.84	0.14		8.20		48	
COUNT	58	58	58		58		58	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	STAMFORD	1080	007	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0036	0.004	0.21	0.75	0.30	0.028	0.014	0.05	0.20
SECOND		BDL	0.0016	0.006	0.23	0.84	0.23	0.021	0.009	0.02	0.09
THIRD		BDL	0.0013	0.003	0.17	0.47	0.23	0.013	0.008	0.02	0.10
FOURTH		BDL	0.0016	0.003	0.17	0.50	0.28	0.011	0.007	0.02	0.10
YEAR AVG		0.0000	0.0020	0.004	0.19	0.64	0.26	0.018	0.009	0.03	0.12
COUNT		60	60	60	60	60	60	60	60	60	60

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	TSP APPROX SAMPLE COUNT
FIRST	5.38	5.28	0.15		7.30		54	15
SECOND	2.50	9.38	0.08		7.20		48	15
THIRD	1.86	10.14	0.17		8.80		43	14
FOURTH	1.62	9.28	0.08		8.70		35	16
YEAR AVG	2.84	8.51	0.12		8.00		45	
COUNT	60	60	60		60		60	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	STAMFORD	1080	021	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0015	0.002	0.23	0.54	0.27	0.016	0.012	0.03	0.09
SECOND		BDL	0.0012	0.006	0.33	0.63	0.28	0.016	0.010	0.01	0.08
THIRD		BDL	0.0012	0.004	0.37	0.52	0.35	0.012	0.007	0.02	0.08
FOURTH		BDL	0.0008	0.002	0.19	0.46	0.34	0.008	0.006	0.02	0.04
YEAR AVG		0.0000	0.0012	0.003	0.28	0.54	0.31	0.013	0.009	0.02	0.07
COUNT		60	60	60	60	60	60	60	60	60	60

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	4.69	5.04	0.14		7.40		45	14
SECOND	3.00	9.28	0.05		7.40		51	15
THIRD	1.50	8.05	0.17		8.90		47	15
FOURTH	1.39	6.15	0.10		8.90		33	16
YEAR AVG	2.59	7.15	0.11		8.17		44	
COUNT	60	60	60		60		60	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	STRATFORD	1110	005	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0022	0.004	0.19	0.97	0.44	0.022	0.014	0.03	0.11
SECOND		BDL	0.0017	0.008	0.22	0.79	0.35	0.018	0.016	0.02	0.07
THIRD		BDL	0.0025	0.004	0.16	0.45	0.34	0.011	0.007	0.02	0.06
FOURTH		BDL	0.0020	0.003	0.08	0.51	0.43	0.010	0.006	0.01	0.07
YEAR AVG		0.0000	0.0021	0.005	0.16	0.66	0.39	0.015	0.010	0.02	0.08
COUNT		56	56	56	56	56	56	56	56	56	56

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	TSP APPROX SAMPLE COUNT
FIRST	3.80	4.85	0.09		7.50		68	11
SECOND	2.72	9.71	0.16		7.60		61	15
THIRD	0.18	9.45	0.18		8.70		42	14
FOURTH	1.71	7.28	0.08		9.00		40	16
YEAR AVG	2.01	8.00	0.13		8.26		52	
COUNT	56	56	56		56		56	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	TORRINGTON	1160	123	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0008	0.002	0.30	0.92	0.37	0.023	0.008	0.03	0.06
SECOND		BDL	0.0009	0.005	0.33	0.82	0.27	0.018	0.008	0.01	0.05
THIRD		BDL	0.0004	0.002	0.11	0.44	0.27	0.011	0.003	0.01	0.04
FOURTH		BDL	0.0006	0.002	0.09	0.69	0.39	0.012	0.004	0.01	0.04
YEAR AVG		0.0000	0.0007	0.003	0.20	0.71	0.33	0.016	0.006	0.01	0.05
COUNT		57	57	57	57	57	57	57	57	57	57

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	3.45	3.55	0.05		7.50		68	13
SECOND	1.04	6.96	0.03		7.40		52	13
THIRD	0.64	7.80	0.16		8.80		39	15
FOURTH	2.14	6.70	0.08		9.00		44	16
YEAR AVG	1.79	6.33	0.08		8.24		50	
COUNT	57	57	57		57		57	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	VOLUNTOWN	1205	001	F	03

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0010	0.001	0.04	0.22	0.11	0.007	0.007	0.02	0.03
SECOND		BDL	0.0010	0.003	0.15	0.21	0.04	0.006	0.007	0.01	0.01
THIRD		BDL	BDL	0.001	0.15	0.09	0.07	0.004	0.001	0.01	0.01
FOURTH		BDL	0.0003	0.001	0.09	0.08	0.06	0.001	0.002	0.01	0.02
YEAR AVG		0.0000	0.0006	0.002	0.11	0.15	0.07	0.004	0.004	0.01	0.02
COUNT		57	57	57	57	57	57	57	57	57	57

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	TSP APPROX SAMPLE COUNT
FIRST	2.89	3.13	0.08		8.10		29	13
SECOND	1.17	6.75	0.03		8.30		28	15
THIRD	0.53	7.92	0.18		9.10		27	14
FOURTH	0.82	6.91	BDL		9.20		14	15
YEAR AVG	1.31	6.25	0.07		8.69		24	
COUNT	57	57	57		57		57	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	WALLINGFORD	1210	001	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0017	0.004	0.09	1.07	0.39	0.030	0.013	0.05	0.13
SECOND		BDL	0.0008	0.004	0.05	0.53	0.27	0.013	0.010	0.01	0.05
THIRD		BDL	0.0005	0.003	0.04	0.31	0.28	0.010	0.007	0.01	0.05
FOURTH		BDL	0.0007	0.005	0.06	0.77	0.38	0.015	0.007	0.02	0.06
YEAR AVG		0.0000	0.0009	0.004	0.06	0.67	0.33	0.017	0.009	0.02	0.07
COUNT		61	61	61	61	61	61	61	61	61	61

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	4.38	3.77	0.13		7.90		73	15
SECOND	1.38	7.68	0.16		7.70		43	15
THIRD	0.65	9.44	0.18		8.90		38	15
FOURTH	1.51	6.59	0.03		9.20		47	16
YEAR AVG	1.97	6.87	0.12		8.44		50	
COUNT	61	61	61		61		61	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	WATERBURY	1240	002	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0023	0.015	0.64	1.74	0.38	0.042	0.024	0.03	0.21
SECOND		BDL	0.0061	0.018	0.85	1.84	0.31	0.043	0.026	0.01	0.23
THIRD		BDL	0.0055	0.025	0.64	2.71	0.30	0.052	0.037	0.02	0.61
FOURTH		BDL	0.0031	0.011	0.44	1.42	0.35	0.025	0.018	0.01	0.26
YEAR AVG		0.0000	0.0043	0.018	0.65	1.95	0.33	0.041	0.027	0.02	0.33
COUNT		57	57	57	57	57	57	57	57	57	57

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	3.96	5.50	0.12		7.50		76	15
SECOND	1.53	7.43	0.23		7.30		64	15
THIRD	1.22	9.67	0.05		8.20		85	15
FOURTH	1.51	5.77	0.06		8.80		55	12
YEAR AVG	2.08	7.16	0.12		7.91		71	
COUNT	57	57	57		57		57	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	WATERBURY	1240	005	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0020	0.009	0.19	0.59	0.30	0.016	0.008	0.02	0.29
SECOND		BDL	0.0021	0.012	0.21	0.57	0.28	0.015	0.009	0.01	0.26
THIRD		BDL	0.0005	0.021	0.23	0.47	0.31	0.012	0.005	0.01	0.25
FOURTH		BDL	0.0009	0.009	0.20	0.60	0.38	0.012	0.008	0.02	0.14
YEAR AVG		0.0000	0.0013	0.013	0.21	0.56	0.32	0.013	0.008	0.01	0.23
COUNT		50	50	50	50	50	50	50	50	50	50

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	4.69	5.10	0.15		7.40		47	7
SECOND	2.59	8.35	0.13		7.40		53	15
THIRD	1.77	10.56	0.19		8.60		41	13
FOURTH	2.45	7.09	0.08		8.90		40	15
YEAR AVG	2.63	8.09	0.13		8.16		45	
COUNT	50	50	50		50		50	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	WATERBURY	1240	006	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0018	0.005	0.11	0.52	0.27	0.017	0.009	0.02	0.23
SECOND		BDL	0.0017	0.011	0.18	0.47	0.24	0.014	0.010	0.01	0.23
THIRD		BDL	0.0006	0.012	0.31	0.39	0.25	0.012	0.005	0.02	0.11
FOURTH		BDL	0.0008	0.007	0.16	0.34	0.26	0.008	0.006	0.01	0.11
YEAR AVG		0.0000	0.0012	0.009	0.19	0.43	0.26	0.013	0.008	0.01	0.17
COUNT		60	60	60	60	60	60	60	60	60	60

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	5.85	6.62	0.28		7.80		54	15
SECOND	3.99	10.11	0.23		7.50		52	15
THIRD	1.38	12.72	0.20		8.60		43	14
FOURTH	1.92	6.13	0.11		8.90		34	16
YEAR AVG	3.29	8.79	0.20		8.20		46	
COUNT	60	60	60		60		60	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	WATERBURY	1240	007	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0022	0.014	0.16	1.31	0.61	0.034	0.013	0.04	0.27
SECOND		BDL	0.0041	0.011	0.31	0.73	0.38	0.019	0.010	0.01	0.25
THIRD		BDL	0.0011	0.013	0.24	0.60	0.41	0.014	0.006	0.02	0.24
FOURTH		BDL	0.0014	0.007	0.20	0.65	0.51	0.013	0.007	0.01	0.20
YEAR AVG		0.0000	0.0022	0.011	0.23	0.80	0.47	0.019	0.009	0.02	0.24
COUNT		57	57	57	57	57	57	57	57	57	57

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	APPROX SAMPLE COUNT
FIRST	5.87	6.10	0.27		8.00		85	12
SECOND	2.74	8.10	0.16		7.50		56	15
THIRD	1.16	5.79	0.09		8.30		45	15
FOURTH	2.54	7.62	0.10		8.80		44	15
YEAR AVG	2.93	6.94	0.15		8.16		56	
COUNT	57	57	57		57		57	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	WATERBURY	1240	123	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0027	0.019	0.16	1.91	0.70	0.044	0.028	0.04	0.33
SECOND		BDL	0.0039	0.013	0.11	0.90	0.50	0.021	0.010	0.01	0.25
THIRD		BDL	0.0014	0.027	0.09	0.68	0.52	0.015	0.006	0.02	0.39
FOURTH		BDL	0.0014	0.012	0.06	1.04	0.71	0.021	0.009	0.02	0.18
YEAR AVG		0.0000	0.0023	0.018	0.10	1.13	0.61	0.025	0.013	0.02	0.29
COUNT		61	61	61	61	61	61	61	61	61	61

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	TSP APPROX SAMPLE COUNT
FIRST	4.31	3.50	0.11		8.00		102	15
SECOND	2.86	7.42	0.15		7.30		59	15
THIRD	1.66	10.41	0.17		8.50		49	15
FOURTH	3.13	8.64	0.09		9.00		64	16
YEAR AVG	2.99	7.51	0.13		8.21		68	
COUNT	61	61	61		61		61	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	WATERFORD	1260	001	F	02

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0008	0.002	0.11	0.30	0.13	0.011	0.011	0.03	0.05
SECOND		BDL	0.0005	0.004	0.18	0.41	0.10	0.010	0.006	0.01	0.03
THIRD		BDL	0.0004	0.003	0.20	0.71	0.12	0.012	0.003	0.01	0.03
FOURTH		BDL	0.0006	0.001	0.08	0.18	0.10	0.004	0.005	0.02	0.02
YEAR AVG		0.0000	0.0006	0.002	0.14	0.39	0.11	0.009	0.006	0.02	0.03
COUNT		58	58	58	58	58	58	58	58	58	58

QUARTER	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	TSP APPROX SAMPLE COUNT
FIRST	3.04	5.56	0.08		8.20		37	13
SECOND	1.92	7.45	0.05		7.80		37	15
THIRD	1.06	8.35	0.09		8.70		49	14
FOURTH	1.50	3.97	0.08		9.00		20	16
YEAR AVG	1.87	6.28	0.07		8.44		35	
COUNT	58	58	58		58		58	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/21/1983
AIR COMPLIANCE MONITORING QUARTERLY COMPOSITES

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	WILLIMANTIC	1410	001	F	01

METALS

QUARTER	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
FIRST		BDL	0.0009	0.003	0.11	1.08	0.29	0.019	0.017	0.08	0.04
SECOND		BDL	0.0005	0.001	0.06	0.39	0.14	0.009	0.006	0.01	0.03
THIRD		BDL	0.0006	0.007	0.07	0.53	0.20	0.010	0.006	0.02	0.03
FOURTH		BDL	0.0008	0.002	0.04	0.35	0.25	0.008	0.013	0.03	0.02
YEAR AVG		0.0000	0.0007	0.003	0.07	0.59	0.22	0.012	0.011	0.04	0.03
COUNT		59	59	59	59	59	59	59	59	59	59

WATER SOLUBLES

QUARTER	NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS
FIRST	3.63	5.00	0.16		8.00
SECOND	1.75	6.59	0.03		8.10
THIRD	0.79	9.93	0.20		9.00
FOURTH	1.13	6.19	0.08		9.00
YEAR AVG	1.84	6.88	0.12		8.52
COUNT	59	59	59		59

QUARTER	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/91 UG/M3	TSP APPROX SAMPLE COUNT
FIRST		64	15
SECOND		34	15
THIRD		42	14
FOURTH		35	15
YEAR AVG		44	
COUNT		59	

Table 9, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/13/1983 PAGE 1
AIR COMPLIANCE MONITORING LO VOL TSP DATA EDIT

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	MANSFIELD	0520	001	F	01

METALS

MONTH	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
JANUARY		BDL	0.0007	0.003	0.01	0.60	0.13	0.011	0.004	0.04	0.04
FEBRUARY											
MARCH		BDL	0.0005	0.001	0.01	0.44	0.10	0.009	0.007	0.02	0.04
APRIL		BDL	0.0006	0.001	0.01	0.52	0.11	0.012	0.007	0.02	0.04
MAY		BDL	0.0003	0.001	BDL	0.36	0.08	0.011	0.004	0.01	0.02
JUNE		BDL	0.0004	0.002	BDL	0.31	0.09	0.008	0.006	0.02	0.02
JULY		BDL	0.0003	0.005	0.01	0.42	0.10	0.008	0.006	0.02	0.02
AUGUST		BDL	0.0004	0.003	0.01	0.26	0.09	0.006	0.006	0.02	0.02
SEPTEMBER		BDL	0.0002	0.003	0.01	0.31	0.07	0.005	0.004	0.01	0.02
OCTOBER		BDL	0.0003	0.001	BDL	0.17	0.10	0.004	0.004	0.01	0.01
NOVEMBER		BDL	0.0003	0.001	BDL	0.16	0.10	0.004	0.004	0.01	0.02
DECEMBER		BDL	0.0005	0.002	BDL	0.21	0.13	0.004	0.005	0.02	0.02
YEAR AVG		0.0000	0.0004	0.002	0.01	0.34	0.10	0.007	0.005	0.02	0.02
COUNT		11	11	11	11	11	11	11	11	11	11

MONTH	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/00 UG/M3	APPROX SAMPLE COUNT
JANUARY	1.12	5.43	0.09		7.60		36	1
FEBRUARY								
MARCH	2.52	4.08	0.13		7.60		35	1
APRIL	0.41	4.01	0.02		7.10		39	1
MAY	0.25	4.38	0.01		7.10		42	1
JUNE	0.10	4.94	0.01		7.20		31	1
JULY	0.08	7.80	BDL		9.00		26	1
AUGUST	0.81	5.75	0.15		8.80		21	1
SEPTEMBER	0.06	3.80	BDL		8.80		26	1
OCTOBER	0.99	2.86	BDL		9.00		18	1
NOVEMBER	1.62	3.07	0.07		9.00		20	1
DECEMBER	2.12	3.41	0.07		8.80		28	1
YEAR AVG	0.92	4.50	0.05		8.18		29	
COUNT	11	11	11		11		11	

TABLE 10

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/13/1983
AIR COMPLIANCE MONITORING LO VOL TSP DATA EDIT

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	PUTNAM	0900	002	F	01

METALS

MONTH	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
JANUARY		BDL	0.0008	0.005	0.01	1.03	0.27	0.020	0.015	0.05	0.04
FEBRUARY		BDL	0.0006	0.002	0.01	0.94	0.17	0.017	0.007	0.03	0.04
MARCH		BDL	0.0004	0.002	BDL	0.54	0.12	0.011	0.006	0.02	0.03
APRIL		BDL	0.0005	0.002	BDL	0.39	0.12	0.011	0.006	0.02	0.04
MAY		BDL	0.0003	0.003	BDL	0.35	0.10	0.011	0.007	0.02	0.02
JUNE		BDL	0.0003	0.002	BDL	0.27	0.10	0.008	0.009	0.02	0.02
JULY		BDL	BDL	0.004	0.01	0.29	0.11	0.007	0.007	0.02	0.02
AUGUST		BDL	0.0005	0.005	0.01	0.32	0.13	0.008	0.009	0.02	0.03
SEPTEMBER		BDL	0.0001	0.003	BDL	0.18	0.09	0.004	0.005	0.01	0.01
OCTOBER		BDL	0.0003	0.002	0.01	0.14	0.13	0.003	0.003	0.01	0.01
NOVEMBER		BDL	0.0004	0.002	BDL	0.14	0.15	0.004	0.003	0.01	0.02
DECEMBER		BDL	0.0006	0.003	0.01	0.67	0.22	0.013	0.007	0.02	0.02
YEAR AVG		0.0000	0.0004	0.003	0.01	0.44	0.14	0.010	0.007	0.02	0.02
COUNT		12	12	12	12	12	12	12	12	12	12

MONTH	NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/00 UG/M3	TSP APPROX SAMPLE COUNT
JANUARY	1.44	5.02	0.03		7.40		41	1
FEBRUARY	1.25	3.76	0.06		7.60		73	1
MARCH	1.00	3.63	0.03		7.40		41	1
APRIL	1.45	5.87	0.05		7.10		36	1
MAY	0.15	2.88	0.06		7.30		42	1
JUNE	0.22	3.29	0.03		7.00		31	1
JULY	0.08	7.80	0.18		8.70		26	1
AUGUST	0.08	9.97	0.18		8.60		31	1
SEPTEMBER	0.08	8.43	0.18		8.60		25	1
OCTOBER	1.03	3.24	BDL		9.00		19	1
NOVEMBER	1.25	4.43	0.07		8.90		23	1
DECEMBER	1.27	4.25	0.09		8.80		57	1
YEAR AVG	0.77	5.21	0.08		8.03		37	
COUNT	12	12	12		12		12	

TABLE 10, Continued

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/13/1983 PAGE 1
AIR COMPLIANCE MONITORING LO VOL TSP DATA EDIT

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	MANSFIELD	0520	001	F	01

METALS

MONTH	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
JANUARY		BDL	0.0007	0.003	0.01	0.60	0.13	0.011	0.004	0.04	0.04
FEBRUARY											
MARCH		BDL	0.0005	0.001	0.01	0.44	0.10	0.009	0.007	0.02	0.04
APRIL		BDL	0.0006	0.001	0.01	0.52	0.11	0.012	0.007	0.02	0.04
MAY		BDL	0.0003	0.001	BDL	0.36	0.08	0.011	0.004	0.01	0.02
JUNE		BDL	0.0004	0.002	BDL	0.31	0.09	0.008	0.006	0.02	0.02
JULY		BDL	0.0003	0.005	0.01	0.42	0.10	0.008	0.006	0.02	0.02
AUGUST		BDL	0.0004	0.003	0.01	0.26	0.09	0.006	0.006	0.02	0.02
SEPTEMBER		BDL	0.0002	0.003	0.01	0.31	0.07	0.005	0.004	0.01	0.02
OCTOBER		BDL	0.0003	0.001	BDL	0.17	0.10	0.004	0.004	0.01	0.01
NOVEMBER		BDL	0.0003	0.001	BDL	0.16	0.10	0.004	0.004	0.01	0.02
DECEMBER		BDL	0.0005	0.002	BDL	0.21	0.13	0.004	0.005	0.02	0.02
YEAR AVG		0.0000	0.0004	0.002	0.01	0.34	0.10	0.007	0.005	0.02	0.02
COUNT		11	11	11	11	11	11	11	11	11	11

MONTH	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/00 UG/M3	APPROX SAMPLE COUNT
JANUARY	1.12	5.43	0.09		7.60		36	1
FEBRUARY								
MARCH	2.52	4.08	0.13		7.60		35	1
APRIL	0.41	4.01	0.02		7.10		39	1
MAY	0.25	4.38	0.01		7.10		42	1
JUNE	0.10	4.94	0.01		7.20		31	1
JULY	0.08	7.80	BDL		9.00		28	1
AUGUST	0.81	5.75	0.15		8.80		21	1
SEPTEMBER	0.06	3.80	BDL		8.80		26	1
OCTOBER	0.99	2.86	BDL		9.00		18	1
NOVEMBER	1.62	3.07	0.07		9.00		20	1
DECEMBER	2.12	3.41	0.07		8.80		28	1
YEAR AVG	0.92	4.50	0.05		8.18		29	
COUNT	11	11	11		11		11	

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION 10/13/1983
AIR COMPLIANCE MONITORING LO VOL TSP DATA EDIT

YEAR	TOWN NAME	AREA	SITE	AGENCY	PROJECT
1981	PUTNAM	0900	002	F	01

METALS

MONTH	AL 12101/92 UG/M3	BE 12105/92 UG/M3	CD 12110/92 UG/M3	CR 12112/92 UG/M3	CU 12114/92 UG/M3	FE 12126/92 UG/M3	PB 12128/92 UG/M3	MN 12132/92 UG/M3	NI 12136/92 UG/M3	V 12164/92 UG/M3	ZN 12167/92 UG/M3
JANUARY		BDL	0.0008	0.005	0.01	1.03	0.27	0.020	0.015	0.05	0.04
FEBRUARY		BDL	0.0006	0.002	0.01	0.94	0.17	0.017	0.007	0.03	0.04
MARCH		BDL	0.0004	0.002	BDL	0.54	0.12	0.011	0.006	0.02	0.03
APRIL		BDL	0.0005	0.002	BDL	0.39	0.12	0.011	0.006	0.02	0.04
MAY		BDL	0.0003	0.003	BDL	0.35	0.10	0.011	0.007	0.02	0.02
JUNE		BDL	0.0003	0.002	BDL	0.27	0.10	0.008	0.009	0.02	0.02
JULY		BDL	BDL	0.004	0.01	0.29	0.11	0.007	0.007	0.02	0.02
AUGUST		BDL	0.0005	0.005	0.01	0.32	0.13	0.008	0.009	0.02	0.03
SEPTEMBER		BDL	0.0001	0.003	BDL	0.18	0.09	0.004	0.005	0.01	0.01
OCTOBER		BDL	0.0003	0.002	0.01	0.14	0.13	0.003	0.003	0.01	0.01
NOVEMBER		BDL	0.0004	0.002	BDL	0.14	0.15	0.004	0.003	0.01	0.02
DECEMBER		BDL	0.0006	0.003	0.01	0.67	0.22	0.013	0.007	0.02	0.02
YEAR AVG		0.0000	0.0004	0.003	0.01	0.44	0.14	0.010	0.007	0.02	0.02
COUNT		12	12	12	12	12	12	12	12	12	12

MONTH	WATER SOLUBLES NITRATE 12306/92 UG/M3	SULFATE 12403/92 UG/M3	AMMONIUM 12301/91 UG/M3	SODIUM 12184/92 UG/M3	PH 12602/91 PH-UNITS	BENZ SOL TOTAL 11103/91 UG/M3	TSP ARITH AV 11101/00 UG/M3	TSP APPROX SAMPLE COUNT
JANUARY	1.44	5.02	0.03		7.40		41	1
FEBRUARY	1.25	3.76	0.06		7.60		73	1
MARCH	1.00	3.63	0.03		7.40		41	1
APRIL	1.45	5.87	0.05		7.10		36	1
MAY	0.15	2.88	0.06		7.30		42	1
JUNE	0.22	3.29	0.03		7.00		31	1
JULY	0.08	7.80	0.18		8.70		26	1
AUGUST	0.08	9.97	0.18		8.60		31	1
SEPTEMBER	0.08	8.43	0.18		8.60		25	1
OCTOBER	1.03	3.24	BDL		9.00		19	1
NOVEMBER	1.25	4.43	0.07		8.90		23	1
DECEMBER	1.27	4.25	0.09		8.80		57	1
YEAR AVG	0.77	5.21	0.08		8.03		37	
COUNT	12	12	12		12		12	

TABLE 10, Continued

1981 TEN HIGHEST 24 HR AVG TSP DAYS WITH WIND DATA.

POLLUTANT--TOTAL SUSPENDED PARTICULATES

UNITS : MICROGRAMS PER CUBIC METER

TOWN NAME	SITE	SAMPLES		1	2	3	4	5	6	7	8	9	10
ANSONIA	3	119		179	166	141	114	112	112	105	103	100	97
			DATE	1/22/81	12/24/81	2/ 6/81	1/28/81	3/14/81	2/18/81	1/31/81	2/ 3/81	12/21/81	1/13/81
METEOROLOGICAL SITE			DIR (DEG)	270	260	210	240	320	210	320	270	240	300
NEWARK			VEL (MPH)	7.0	7.6	9.8	4.3	24.0	4.3	8.4	17.7	6.5	7.4
			SPD (MPH)	8.5	8.1	10.8	7.0	24.4	6.3	9.5	18.1	6.9	9.3
			RATIO	0.824	0.942	0.905	0.612	0.982	0.677	0.880	0.980	0.939	0.794
METEOROLOGICAL SITE			DIR (DEG)	210	270	210	230	320	220	340	300	200	340
BRADLEY			VEL (MPH)	3.4	3.9	6.4	0.8	17.2	4.1	4.0	7.6	5.0	2.4
			SPD (MPH)	4.6	5.5	7.0	3.6	18.0	4.9	4.6	7.9	5.9	2.7
			RATIO	0.746	0.706	0.904	0.219	0.956	0.834	0.867	0.955	0.848	0.867
METEOROLOGICAL SITE			DIR (DEG)	250	250	220	250	300	220	310	270	250	310
BRIDGEPORT			VEL (MPH)	6.1	8.2	9.4	2.7	23.0	6.8	11.8	16.0	11.5	12.9
			SPD (MPH)	7.3	8.6	10.6	6.9	23.6	7.3	12.4	16.2	12.9	13.4
			RATIO	0.833	0.954	0.884	0.396	0.974	0.930	0.953	0.988	0.886	0.967
METEOROLOGICAL SITE			DIR (DEG)	250	260	230	290	300	270	310	290	260	320
WORCESTER			VEL (MPH)	7.2	5.3	10.9	5.7	20.1	10.3	11.3	11.8	8.6	10.7
			SPD (MPH)	7.6	5.6	11.4	6.3	20.3	10.6	11.8	11.9	9.3	11.8
			RATIO	0.944	0.945	0.962	0.900	0.989	0.969	0.958	0.990	0.915	0.910
BRIDGEPORT	1	61		119	93	80	77	75	64	62	61	60	59
			DATE	1/22/81	6/ 9/81	3/29/81	4/ 4/81	1/16/81	7/ 9/81	1/10/81	12/24/81	5/22/81	3/23/81
METEOROLOGICAL SITE			DIR (DEG)	270	270	230	210	320	290	330	260	150	80
NEWARK			VEL (MPH)	7.0	13.2	16.3	16.9	1.6	11.0	16.3	7.6	4.1	3.3
			SPD (MPH)	8.5	17.4	16.8	17.1	5.8	11.2	16.5	8.1	7.6	6.5
			RATIO	0.824	0.758	0.969	0.987	0.279	0.981	0.986	0.942	0.534	0.507
METEOROLOGICAL SITE			DIR (DEG)	210	290	210	190	30	320	340	270	60	350
BRADLEY			VEL (MPH)	3.4	7.8	8.5	12.7	2.5	7.9	9.1	3.9	3.9	1.5
			SPD (MPH)	4.6	12.7	9.6	12.8	2.6	8.3	10.4	5.5	4.9	3.9
			RATIO	0.746	0.616	0.887	0.992	0.949	0.948	0.878	0.706	0.791	0.396
METEOROLOGICAL SITE			DIR (DEG)	250	270	230	200	30	260	310	250	80	70
BRIDGEPORT			VEL (MPH)	6.1	12.4	12.9	15.2	5.4	7.0	12.9	8.2	6.4	5.4
			SPD (MPH)	7.3	13.5	13.1	16.1	6.9	7.3	13.7	8.6	10.4	7.3
			RATIO	0.833	0.916	0.988	0.942	0.780	0.958	0.948	0.954	0.618	0.732
METEOROLOGICAL SITE			DIR (DEG)	250	270	250	220	60	280	310	260	60	220
WORCESTER			VEL (MPH)	7.2	13.9	11.3	12.4	3.2	13.2	11.5	5.3	6.2	0.8
			SPD (MPH)	7.6	15.1	11.6	12.5	3.9	13.4	13.5	5.6	6.6	5.2
			RATIO	0.944	0.922	0.970	0.990	0.830	0.984	0.853	0.945	0.936	0.147
BRIDGEPORT	9	58		103	81	71	66	63	62	61	61	60	59
			DATE	1/22/81	3/29/81	4/ 4/81	7/ 9/81	8/14/81	1/28/81	5/22/81	12/24/81	4/28/81	5/28/81
METEOROLOGICAL SITE			DIR (DEG)	270	230	210	290	150	240	150	260	170	130
NEWARK			VEL (MPH)	7.0	16.3	16.9	11.0	3.1	4.3	4.1	7.6	0.3	9.0
			SPD (MPH)	8.5	16.8	17.1	11.2	6.0	7.0	7.6	8.1	8.1	9.8
			RATIO	0.824	0.969	0.987	0.981	0.514	0.612	0.534	0.942	0.038	0.918
METEOROLOGICAL SITE			DIR (DEG)	210	210	190	320	180	230	60	270	320	180
BRADLEY			VEL (MPH)	3.4	8.5	12.7	7.9	1.4	0.8	3.9	3.9	1.5	8.7
			SPD (MPH)	4.6	9.6	12.8	8.3	5.8	3.6	4.9	5.5	3.3	8.9
			RATIO	0.746	0.887	[illegible]	0.948	0.252	0.219	0.791	0.706	0.469	0.978

TABLE 11

1981 TEN HIGHEST 24 HR AVG TSP DAYS WITH WIND DATA.

POLLUTANT--TOTAL SUSPENDED PARTICULATES UNITS : MICROGRAMS PER CUBIC METER

TOWN NAME	SITE	SAMPLES		1	2	3	4	5	6	7	8	9	10
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	250	230	200	260	80	250	80	250	130	110
			VEL (MPH)	6.1	12.9	15.2	7.0	5.9	2.7	6.4	8.2	3.9	8.7
			SPD (MPH)	7.3	13.1	16.1	7.3	6.9	6.9	10.4	8.6	5.0	10.5
			RATIO	0.833	0.988	0.942	0.958	0.854	0.396	0.618	0.954	0.766	0.825
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	250	250	220	280	270	290	60	260	280	210
			VEL (MPH)	7.2	11.3	12.4	13.2	1.8	5.7	6.2	5.3	5.5	5.5
			SPD (MPH)	7.6	11.6	12.5	13.4	5.2	6.3	6.6	5.6	6.3	6.0
			RATIO	0.944	0.970	0.990	0.984	0.345	0.900	0.936	0.945	0.865	0.913
BRIDGEPORT	123	120		158	142	122	117	108	107	104	103	103	97
			DATE	2/18/81	1/22/81	2/ 6/81	3/29/81	8/ 5/81	5/25/81	1/28/81	6/ 6/81	8/11/81	8/14/81
METEOROLOGICAL SITE NEWARK			DIR (DEG)	210	270	210	230	290	230	240	240	180	150
			VEL (MPH)	4.3	7.0	9.8	16.3	12.8	11.6	4.3	13.4	4.5	3.1
			SPD (MPH)	6.3	8.5	10.8	16.8	15.2	11.9	7.0	13.7	8.2	6.0
			RATIO	0.677	0.824	0.905	0.969	0.839	0.976	0.612	0.978	0.544	0.514
METEOROLOGICAL SITE BRADLEY			DIR (DEG)	220	210	210	210	10	210	230	240	200	180
			VEL (MPH)	4.1	3.4	6.4	8.5	2.2	7.1	0.8	5.0	4.6	1.4
			SPD (MPH)	4.9	4.6	7.0	9.6	4.7	7.6	3.6	6.5	4.9	5.8
			RATIO	0.834	0.746	0.904	0.887	0.472	0.928	0.219	0.769	0.940	0.252
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	220	250	220	230	250	210	250	230	170	80
			VEL (MPH)	6.8	6.1	9.4	12.9	9.2	9.9	2.7	9.6	6.1	5.9
			SPD (MPH)	7.3	7.3	10.6	13.1	10.6	12.1	6.9	9.8	6.2	6.9
			RATIO	0.930	0.833	0.884	0.988	0.867	0.820	0.396	0.985	0.986	0.854
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	270	250	230	250	270	260	290	260	220	270
			VEL (MPH)	10.3	7.2	10.9	11.3	5.8	8.5	5.7	6.8	6.1	1.8
			SPD (MPH)	10.6	7.6	11.4	11.6	6.2	8.9	6.3	8.2	6.6	5.2
			RATIO	0.969	0.944	0.962	0.970	0.938	0.950	0.900	0.827	0.927	0.345
						NW	NE		NW		NW	NW	
BRISTOL	1	~~55~~ 58		124	85	75	74	70	66	63	60	58	57
			DATE	1/22/81	1/28/81	12/30/81	1/16/81	4/ 4/81	7/ 9/81	3/29/81	2/ 9/81	12/ 6/81	2/15/81
METEOROLOGICAL SITE NEWARK			DIR (DEG)	270	240	320	320	210	290	230	290	320	100
			VEL (MPH)	7.0	4.3	8.7	1.6	16.9	11.0	16.3	14.8	26.8	3.6
			SPD (MPH)	8.5	7.0	8.8	5.8	17.1	11.2	16.8	15.5	27.0	6.9
			RATIO	0.824	0.612	0.997	0.279	0.987	0.981	0.969	0.955	0.993	0.515
METEOROLOGICAL SITE BRADLEY			DIR (DEG)	210	230	340	30	190	320	210	290	330	220
			VEL (MPH)	3.4	0.8	9.1	2.5	12.7	7.9	8.5	13.0	21.4	2.0
			SPD (MPH)	4.6	3.6	9.8	2.6	12.8	8.3	9.6	14.1	21.6	5.8
			RATIO	0.746	0.219	0.933	0.949	0.992	0.948	0.887	0.926	0.993	0.348
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	250	250	320	30	200	260	230	280	310	70
			VEL (MPH)	6.1	2.7	8.5	5.4	15.2	7.0	12.9	19.2	16.5	6.1
			SPD (MPH)	7.3	6.9	9.9	6.9	16.1	7.3	13.1	19.5	17.4	9.3
			RATIO	0.833	0.396	0.862	0.780	0.942	0.958	0.988	0.983	0.946	0.658
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	250	290	310	60	220	280	250	300	320	170
			VEL (MPH)	7.2	5.7	9.1	3.2	12.4	13.2	11.3	16.0	30.2	1.6
			SPD (MPH)	7.6	6.3	9.2	3.9	12.5	13.4	11.6	16.4	30.3	5.8
			RATIO	0.944	0.900	0.989	0.830	0.990	0.984	0.970	0.975	0.994	0.277

TABLE 11, Continued

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1981 TEN HIGHEST 24 HR AVG TSP DAYS WITH WIND DATA.

POLLUTANT--TOTAL SUSPENDED PARTICULATES

UNITS : MICROGRAMS PER CUBIC METER

TOWN NAME	SITE	SAMPLES		1	2	3	4	5	6	7	8	9	10
BURLINGTON	1	119		71	63	62	58	55	55	54	53	51	50
			DATE	5/25/81	9/19/81	4/ 4/81	6/ 6/81	6/15/81	5/28/81	5/31/81	8/11/81	3/29/81	6/21/81
METEOROLOGICAL SITE			DIR (DEG)	230	300	210	240	170	130	320	180	230	270
NEWARK			VEL (MPH)	11.6	7.5	16.9	13.4	3.8	9.0	8.7	4.5	16.3	7.9
			SPD (MPH)	11.9	12.4	17.1	13.7	6.8	9.8	11.8	8.2	16.8	10.5
			RATIO	0.976	0.604	0.987	0.978	0.557	0.918	0.738	0.544	0.969	0.756
METEOROLOGICAL SITE			DIR (DEG)	210	330	190	240	190	180	310	200	210	230
BRADLEY			VEL (MPH)	7.1	4.2	12.7	5.0	6.4	8.7	7.0	4.6	8.5	3.4
			SPD (MPH)	7.6	7.5	12.8	6.5	6.6	8.9	10.2	4.9	9.6	4.2
			RATIO	0.928	0.567	0.992	0.769	0.965	0.978	0.683	0.940	0.887	0.825
METEOROLOGICAL SITE			DIR (DEG)	210	310	200	230	160	110	300	170	230	200
BRIDGEPORT			VEL (MPH)	9.9	6.4	15.2	9.6	2.7	8.7	8.5	6.1	12.9	6.2
			SPD (MPH)	12.1	7.9	16.1	9.8	3.9	10.5	11.1	6.2	13.1	6.6
			RATIO	0.820	0.805	0.942	0.985	0.685	0.825	0.769	0.986	0.988	0.938
METEOROLOGICAL SITE			DIR (DEG)	260	340	220	260	220	210	310	220	250	260
WORCESTER			VEL (MPH)	8.5	6.3	12.4	6.8	7.3	5.5	6.9	6.1	11.3	4.5
			SPD (MPH)	8.9	9.3	12.5	8.2	7.5	6.0	8.9	6.6	11.6	5.9
			RATIO	0.950	0.675	0.990	0.827	0.981	0.913	0.769	0.927	0.970	0.758
DANBURY	2	57		139	123	96	86	83	75	74	73	66	65
			DATE	1/22/81	12/30/81	2/ 3/81	1/28/81	1/16/81	5/ 4/81	1/10/81	3/29/81	4/ 4/81	7/ 9/81
METEOROLOGICAL SITE			DIR (DEG)	270	320	270	240	320	30	330	230	210	290
NEWARK			VEL (MPH)	7.0	8.7	17.7	4.3	1.6	9.1	16.3	16.3	16.9	11.0
			SPD (MPH)	8.5	8.8	18.1	7.0	5.8	12.4	16.5	16.8	17.1	11.2
			RATIO	0.824	0.997	0.980	0.612	0.279	0.738	0.986	0.969	0.987	0.981
METEOROLOGICAL SITE			DIR (DEG)	210	340	300	230	30	40	340	210	190	320
BRADLEY			VEL (MPH)	3.4	9.1	7.6	0.8	2.5	11.2	9.1	8.5	12.7	7.9
			SPD (MPH)	4.6	9.8	7.9	3.6	2.6	12.2	10.4	9.6	12.8	8.3
			RATIO	0.746	0.933	0.955	0.219	0.949	0.913	0.878	0.887	0.992	0.948
METEOROLOGICAL SITE			DIR (DEG)	250	320	270	250	30	20	310	230	200	260
BRIDGEPORT			VEL (MPH)	6.1	8.5	16.0	2.7	5.4	16.5	12.9	12.9	15.2	7.0
			SPD (MPH)	7.3	9.9	16.2	6.9	6.9	17.3	13.7	13.1	16.1	7.3
			RATIO	0.833	0.862	0.989	0.396	0.780	0.954	0.948	0.988	0.942	0.958
METEOROLOGICAL SITE			DIR (DEG)	250	310	290	290	60	40	310	250	220	280
WORCESTER			VEL (MPH)	7.2	9.1	11.8	5.7	3.2	10.9	11.5	11.3	12.4	13.2
			SPD (MPH)	7.6	9.2	11.9	6.3	3.9	11.5	13.5	11.6	12.5	13.4
			RATIO	0.944	0.989	0.990	0.900	0.830	0.944	0.853	0.970	0.990	0.984
DANBURY	123	56		132	94	89	89	85	75	75	70	69	65
			DATE	1/22/81	12/30/81	12/24/81	1/28/81	2/ 3/81	3/29/81	1/16/81	3/11/81	7/ 9/81	5/22/81
METEOROLOGICAL SITE			DIR (DEG)	270	320	260	240	270	230	320	280	290	150
NEWARK			VEL (MPH)	7.0	8.7	7.6	4.3	17.7	16.3	1.6	7.6	11.0	4.1
			SPD (MPH)	8.5	8.8	8.1	7.0	18.1	16.8	5.8	8.2	11.2	7.6
			RATIO	0.824	0.997	0.942	0.612	0.980	0.969	0.279	0.933	0.981	0.534
METEOROLOGICAL SITE			DIR (DEG)	210	340	270	230	300	210	30	310	320	60
BRADLEY			VEL (MPH)	3.4	9.1	3.9	0.8	7.6	8.5	2.5	3.4	7.9	3.9
			SPD (MPH)	4.6	9.8	5.5	3.6	7.9	9.6	2.6	5.5	8.3	4.9
			RATIO	0.746	0.933	[illegible]	0.219	0.955	0.887	0.949	0.625	0.948	0.791

TABLE 11, Continued

1981 TEN HIGHEST 24 HR AVG TSP DAYS WITH WIND DATA.

POLLUTANT--TOTAL SUSPENDED PARTICULATES UNITS : MICROGRAMS PER CUBIC METER

TOWN NAME	SITE	SAMPLES		1	2	3	4	5	6	7	8	9	10
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	250	320	250	250	270	230	30	240	260	80
			VEL (MPH)	6.1	8.5	8.2	2.7	16.0	12.9	5.4	11.2	7.0	6.4
			SPD (MPH)	7.3	9.9	8.6	6.9	16.2	13.1	6.9	12.4	7.3	10.4
			RATIO	0.833	0.862	0.954	0.396	0.988	0.988	0.780	0.907	0.958	0.618
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	250	310	260	290	290	250	60	280	280	60
			VEL (MPH)	7.2	9.1	5.3	5.7	11.8	11.3	3.2	9.2	13.2	6.2
			SPD (MPH)	7.6	9.2	5.6	6.3	11.9	11.6	3.9	9.5	13.4	6.6
			RATIO	0.944	0.969	0.945	0.900	0.990	0.970	0.830	0.965	0.984	0.936
				NE			NW					NE	
GREENWICH	4	59		68	67	64	64	62	62	58	58	54	52
			DATE	5/ 4/81	4/ 4/81	3/29/81	7/ 9/81	1/22/81	8/14/81	9/13/81	6/21/81	1/16/81	4/28/81
METEOROLOGICAL SITE NEWARK			DIR (DEG)	30	210	230	290	270	150	280	270	320	170
			VEL (MPH)	9.1	16.9	16.3	11.0	7.0	3.1	7.4	7.9	1.6	0.3
			SPD (MPH)	12.4	17.1	16.8	11.2	8.5	6.0	9.6	10.5	5.8	8.1
			RATIO	0.738	0.987	0.969	0.981	0.824	0.514	0.771	0.756	0.279	0.038
METEOROLOGICAL SITE BRADLEY			DIR (DEG)	40	190	210	320	210	180	260	230	30	320
			VEL (MPH)	11.2	12.7	8.5	7.9	3.4	1.4	6.9	3.4	2.5	1.5
			SPD (MPH)	12.2	12.8	9.6	8.3	4.6	5.8	7.3	4.2	2.6	3.3
			RATIO	0.913	0.992	0.887	0.948	0.746	0.252	0.947	0.825	0.949	0.469
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	20	200	230	260	250	80	230	200	30	130
			VEL (MPH)	16.5	15.2	12.9	7.0	6.1	5.9	8.3	6.2	5.4	3.9
			SPD (MPH)	17.3	16.1	13.1	7.3	7.3	6.9	8.5	6.6	6.9	5.0
			RATIO	0.954	0.942	0.988	0.958	0.833	0.854	0.973	0.938	0.780	0.766
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	40	220	250	280	250	270	270	260	60	280
			VEL (MPH)	10.9	12.4	11.3	13.2	7.2	1.8	9.5	4.5	3.2	5.5
			SPD (MPH)	11.5	12.5	11.6	13.4	7.6	5.2	9.6	5.9	3.9	6.3
			RATIO	0.944	0.990	0.970	0.984	0.944	0.345	0.989	0.758	0.830	0.865
					NW		NW		NW	NE		NW	
GREENWICH	8	15		125	84	82	77	74	73	62	61	49	47
			DATE	1/22/81	2/ 3/81	3/29/81	2/ 9/81	1/28/81	1/10/81	1/16/81	2/15/81	3/11/81	3/23/81
METEOROLOGICAL SITE NEWARK			DIR (DEG)	270	270	230	290	240	330	320	100	280	80
			VEL (MPH)	7.0	17.7	16.3	14.8	4.3	16.3	1.6	3.6	7.6	3.3
			SPD (MPH)	8.5	18.1	16.8	15.5	7.0	16.5	5.8	6.9	8.2	6.5
			RATIO	0.824	0.980	0.969	0.955	0.612	0.986	0.279	0.515	0.933	0.507
METEOROLOGICAL SITE BRADLEY			DIR (DEG)	210	300	210	290	230	340	30	220	310	350
			VEL (MPH)	3.4	7.6	8.5	13.0	0.8	9.1	2.5	2.0	3.4	1.5
			SPD (MPH)	4.6	7.9	9.6	14.1	3.6	10.4	2.6	5.8	5.5	3.9
			RATIO	0.746	0.955	0.887	0.926	0.219	0.878	0.949	0.348	0.625	0.396
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	250	270	230	280	250	310	30	70	240	70
			VEL (MPH)	6.1	16.0	12.9	19.2	2.7	12.9	5.4	6.1	11.2	5.4
			SPD (MPH)	7.3	16.2	13.1	19.5	6.9	13.7	6.9	9.3	12.4	7.3
			RATIO	0.833	0.988	0.988	0.983	0.396	0.948	0.780	0.658	0.907	0.732
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	250	290	250	300	290	310	60	170	280	220
			VEL (MPH)	7.2	11.8	11.3	16.0	5.7	11.5	3.2	1.6	9.2	0.8
			SPD (MPH)	7.6	11.9	11.6	16.4	6.3	13.5	3.9	5.8	9.5	5.2
			RATIO	0.944	0.990	0.970	0.975	0.900	0.853	0.830	0.277	0.965	0.147

TABLE 11, Continued

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3

1981 TEN HIGHEST 24 HR AVG TSP DAYS WITH WIND DATA.

POLLUTANT--TOTAL SUSPENDED PARTICULATES

UNITS : MICROGRAMS PER CUBIC METER

TABLE 11, Continued

TOWN NAME	SITE	SAMPLES	1	2	3	4	5	6	7	8	9	10
			NE		NW				NE		NW	
HADDAM	2	58	78	75	59	58	52	48	47	45	43	43
		DATE	1/16/81	1/22/81	7/ 9/81	3/29/81	4/ 4/81	6/21/81	5/ 4/81	2/15/81	1/10/81	1/28/81
METEOROLOGICAL SITE NEWARK		DIR (DEG)	320	270	290	230	210	270	30	100	330	240
		VEL (MPH)	1.6	7.0	11.0	16.3	16.9	7.9	9.1	3.6	16.3	4.3
		SPD (MPH)	5.8	8.5	11.2	16.8	17.1	10.5	12.4	6.9	16.5	7.0
		RATIO	0.279	0.824	0.981	0.969	0.987	0.756	0.738	0.515	0.986	0.612
METEOROLOGICAL SITE BRADLEY		DIR (DEG)	30	210	320	210	190	230	40	220	340	230
		VEL (MPH)	2.5	3.4	7.9	8.5	12.7	3.4	11.2	2.0	9.1	0.8
		SPD (MPH)	2.6	4.6	8.3	9.6	12.8	4.2	12.2	5.8	10.4	3.6
		RATIO	0.949	0.746	0.948	0.887	0.992	0.825	0.913	0.348	0.878	0.219
METEOROLOGICAL SITE BRIDGEPORT		DIR (DEG)	30	250	260	230	200	200	20	70	310	250
		VEL (MPH)	5.4	6.1	7.0	12.9	15.2	6.2	16.5	6.1	12.9	2.7
		SPD (MPH)	6.9	7.3	7.3	13.1	16.1	6.6	17.3	9.3	13.7	6.9
		RATIO	0.780	0.833	0.958	0.988	0.942	0.938	0.954	0.658	0.948	0.396
METEOROLOGICAL SITE WORCESTER		DIR (DEG)	60	250	280	250	220	260	40	170	310	290
		VEL (MPH)	3.2	7.2	13.2	11.3	12.4	4.5	10.9	1.6	11.5	5.7
		SPD (MPH)	3.9	7.6	13.4	11.6	12.5	5.9	11.5	5.8	13.5	6.3
		RATIO	0.830	0.944	0.984	0.970	0.990	0.758	0.944	0.277	0.853	0.900
					NE	NW		NW				NW
HARTFORD	3	118	178	112	105	104	103	99	91	90	90	86
		DATE	1/22/81	1/28/81	1/16/81	2/ 9/81	2/ 6/81	7/27/81	8/11/81	12/24/81	5/25/81	1/13/81
METEOROLOGICAL SITE NEWARK		DIR (DEG)	270	240	320	290	210	330	180	260	230	300
		VEL (MPH)	7.0	4.3	1.6	14.8	9.8	7.8	4.5	7.6	11.6	7.4
		SPD (MPH)	8.5	7.0	5.8	15.5	10.8	9.1	8.2	8.1	11.9	9.3
		RATIO	0.824	0.612	0.279	0.955	0.905	0.861	0.544	0.942	0.976	0.794
METEOROLOGICAL SITE BRADLEY		DIR (DEG)	210	230	30	290	210	320	200	270	210	340
		VEL (MPH)	3.4	0.8	2.5	13.0	6.4	8.0	4.6	3.9	7.1	2.4
		SPD (MPH)	4.6	3.6	2.6	14.1	7.0	9.9	4.9	5.5	7.6	2.7
		RATIO	0.746	0.219	0.949	0.926	0.904	0.808	0.940	0.706	0.928	0.867
METEOROLOGICAL SITE BRIDGEPORT		DIR (DEG)	250	250	30	280	220	320	170	250	210	310
		VEL (MPH)	6.1	2.7	5.4	19.2	9.4	8.6	6.1	8.2	9.9	12.9
		SPD (MPH)	7.3	6.9	6.9	19.5	10.6	8.8	6.2	8.6	12.1	13.4
		RATIO	0.833	0.396	0.780	0.983	0.884	0.978	0.986	0.954	0.820	0.967
METEOROLOGICAL SITE WORCESTER		DIR (DEG)	250	290	60	300	230	310	220	260	260	320
		VEL (MPH)	7.2	5.7	3.2	16.0	10.9	6.9	6.1	5.3	8.5	10.7
		SPD (MPH)	7.6	6.3	3.9	16.4	11.4	9.9	6.6	5.6	8.9	11.8
		RATIO	0.944	0.900	0.830	0.975	0.962	0.692	0.927	0.945	0.950	0.910
				NE		NW		NW			NE	
HARTFORD	13	61	134	87	81	68	67	65	65	64	59	57
		DATE	1/22/81	1/16/81	1/28/81	7/ 9/81	3/29/81	11/24/81	6/21/81	4/ 4/81	10/13/81	3/23/81
METEOROLOGICAL SITE NEWARK		DIR (DEG)	270	320	240	290	230	360	270	210	50	80
		VEL (MPH)	7.0	1.6	4.3	11.0	16.3	5.6	7.9	16.9	4.4	3.3
		SPD (MPH)	8.5	5.8	7.0	11.2	16.8	9.1	10.5	17.1	6.9	6.5
		RATIO	0.824	0.279	0.612	0.981	0.969	0.618	0.756	0.987	0.637	0.507
METEOROLOGICAL SITE BRADLEY		DIR (DEG)	210	30	230	320	210	330	230	190	20	350
		VEL (MPH)	3.4	2.5	0.8	7.9	8.5	2.6	3.4	12.7	2.1	1.5
		SPD (MPH)	4.6	2.6	3.6	8.3	9.6	4.9	4.2	12.8	2.3	3.9
		RATIO	0.746	0.949	0.249	0.948	0.887	0.528	0.825	0.992	0.925	0.396

1981 TEN HIGHEST 24 HR AVG TSP DAYS WITH WIND DATA.

POLLUTANT--TOTAL SUSPENDED PARTICULATES UNITS : MICROGRAMS PER CUBIC METER

TOWN NAME	SITE	SAMPLES		1	2	3	4	5	6	7	8	9	10
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	250	30	250	260	230	350	200	200	50	70
			VEL (MPH)	6.1	5.4	2.7	7.0	12.9	4.8	6.2	15.2	2.3	5.4
			SPD (MPH)	7.3	6.9	6.9	7.3	13.1	4.9	6.6	16.1	5.3	7.3
			RATIO	0.833	0.780	0.396	0.958	0.988	0.985	0.938	0.942	0.440	0.732
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	250	60	290	280	250	300	260	220	360	220
			VEL (MPH)	7.2	3.2	5.7	13.2	11.3	4.6	4.5	12.4	1.3	0.8
			SPD (MPH)	7.6	3.9	6.3	13.4	11.6	5.9	5.9	12.5	4.2	5.2
			RATIO	0.944	0.830	0.900	0.984	0.970	0.780	0.758	0.990	0.312	0.147
					NW		NE		NW		NW	NE	
HARTFORD	14	60		147	138	111	105	73	70	68	62	62	60
			DATE	1/22/81	2/ 9/81	1/28/81	1/16/81	3/29/81	7/ 9/81	4/ 4/81	1/10/81	10/13/81	2/15/81
METEOROLOGICAL SITE NEWARK			DIR (DEG)	270	290	240	320	230	290	210	330	50	100
			VEL (MPH)	7.0	14.8	4.3	1.6	16.3	11.0	16.9	16.3	4.4	3.6
			SPD (MPH)	8.5	15.5	7.0	5.8	16.8	11.2	17.1	16.5	6.9	6.9
			RATIO	0.824	0.955	0.612	0.279	0.969	0.981	0.987	0.986	0.637	0.515
METEOROLOGICAL SITE BRADLEY			DIR (DEG)	210	290	230	30	210	320	190	340	20	220
			VEL (MPH)	3.4	13.0	0.8	2.5	8.5	7.9	12.7	9.1	2.1	2.0
			SPD (MPH)	4.6	14.1	3.6	2.6	9.6	8.3	12.8	10.4	2.3	5.8
			RATIO	0.746	0.926	0.219	0.949	0.887	0.948	0.992	0.878	0.925	0.348
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	250	280	250	30	230	260	200	310	50	70
			VEL (MPH)	6.1	19.2	2.7	5.4	12.9	7.0	15.2	12.9	2.3	6.1
			SPD (MPH)	7.3	19.5	6.9	6.9	13.1	7.3	16.1	13.7	5.3	9.3
			RATIO	0.833	0.983	0.396	0.780	0.988	0.958	0.942	0.948	0.440	0.658
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	250	300	290	60	250	280	220	310	360	170
			VEL (MPH)	7.2	16.0	5.7	3.2	11.3	13.2	12.4	11.5	1.3	1.6
			SPD (MPH)	7.6	16 4	6.3	3.9	11.6	13.4	12.5	13.5	4.2	5.8
			RATIO	0.944	0.9/5	0.900	0.830	0.970	0.984	0.990	0.853	0.312	0.277
				NW						NW			NW
LTCH CTY(MORRIS DAM)	1	114		95	70	66	64	60	60	54	51	50	50
			DATE	12/30/81	5/25/81	8/11/81	5/13/81	4/ 4/81	6/ 6/81	7/ 9/81	5/28/81	6/21/81	5/31/81
METEOROLOGICAL SITE NEWARK			DIR (DEG)	320	230	180	240	210	240	290	130	270	320
			VEL (MPH)	8.7	11.6	4.5	12.1	16.9	13.4	11.0	9.0	7.9	8.7
			SPD (MPH)	8.8	11.9	8.2	12.4	17.1	13.7	11.2	9.8	10.5	11.8
			RATIO	0.997	0.976	0.544	0.977	0.987	0.978	0.981	0.918	0.756	0.738
METEOROLOGICAL SITE BRADLEY			DIR (DEG)	340	210	200	290	190	240	320	180	230	310
			VEL (MPH)	9.1	7.1	4.6	'6.6	12.7	5.0	7.9	8.7	3.4	7.0
			SPD (MPH)	9.8	7.6	4.9	8.2	12.8	6.5	8.3	8.9	4.2	10.2
			RATIO	0.933	0.928	0.940	0.803	0.992	0.769	0.948	0.978	0.825	0.683
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	320	210	170	240	200	230	260	110	200	300
			VEL (MPH)	8.5	9.9	6.1	12.6	15.2	9.6	7.0	8.7	6.2	8.5
			SPD (MPH)	9.9	12.1	6.2	15.7	16.1	9.8	7.3	10.5	6.6	11.1
			RATIO	0.862	0.820	0.986	0.804	0.942	0.985	0.958	0.825	0.938	0.769
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	310	260	220	280	220	260	280	210	260	310
			VEL (MPH)	9.1	8.5	6.1	15.0	12.4	6.8	13.2	5.5	4.5	6.9
			SPD (MPH)	9.2	8.9	6.6	15.2	12.5	8.2	13.4	6.0	5.9	8.9
			RATIO	0.989	0.950	0.927	0.986	0.990	0.827	0.984	0.913	0.758	0.769

TABLE 11, Continued

1981 TEN HIGHEST 24 HR AVG TSP DAYS WITH WIND DATA.

POLLUTANT--TOTAL SUSPENDED PARTICULATES

UNITS : MICROGRAMS PER CUBIC METER

TOWN NAME	SITE	SAMPLES		1	2	3	4	5	6	7	8	9	10
					NE			NW				NW	NE
MANCHESTER	1	59		113	84	71	69	66	61	61	60	58	55
			DATE	1/22/81	1/16/81	1/28/81	3/29/81	7/ 9/81	4/ 4/81	2/15/81	5/28/81	1/10/81	5/22/81
METEOROLOGICAL SITE			DIR (DEG)	270	320	240	230	290	210	100	130	330	150
NEWARK			VEL (MPH)	7.0	1.6	4.3	16.3	11.0	16.9	3.6	9.0	16.3	4.1
			SPD (MPH)	8.5	5.8	7.0	16.8	11.2	17.1	6.9	9.8	16.5	7.6
			RATIO	0.824	0.279	0.612	0.969	0.981	0.987	0.515	0.918	0.986	0.534
METEOROLOGICAL SITE			DIR (DEG)	210	30	230	210	320	190	220	180	340	60
BRADLEY			VEL (MPH)	3.4	2.5	0.8	8.5	7.9	12.7	2.0	8.7	9.1	3.9
			SPD (MPH)	4.6	2.6	3.6	9.6	8.3	12.8	5.8	8.9	10.4	4.9
			RATIO	0.746	0.949	0.219	0.887	0.948	0.992	0.348	0.978	0.878	0.791
METEOROLOGICAL SITE			DIR (DEG)	250	30	250	230	260	200	70	110	310	80
BRIDGEPORT			VEL (MPH)	6.1	5.4	2.7	12.9	7.0	15.2	6.1	8.7	12.9	6.4
			SPD (MPH)	7.3	6.9	6.9	13.1	7.3	16.1	9.3	10.5	13.7	10.4
			RATIO	0.833	0.780	0.396	0.988	0.958	0.942	0.658	0.825	0.948	0.618
METEOROLOGICAL SITE			DIR (DEG)	250	60	290	250	280	220	170	210	310	60
WORCESTER			VEL (MPH)	7.2	3.2	5.7	11.3	13.2	12.4	1.6	5.5	11.5	6.2
			SPD (MPH)	7.6	3.9	6.3	11.6	13.4	12.5	5.8	6.0	13.5	6.6
			RATIO	0.944	0.830	0.900	0.970	0.984	0.990	0.277	0.913	0.853	0.936
						NE		NW	NE		NW	NW	NW
MERIDEN	2	60		163	112	94	90	83	77	76	75	72	71
			DATE	1/22/81	12/24/81	5/ 4/81	1/28/81	2/ 3/81	1/16/81	3/29/81	12/30/81	2/ 9/81	7/ 9/81
METEOROLOGICAL SITE			DIR (DEG)	270	260	30	240	270	320	230	320	290	290
NEWARK			VEL (MPH)	7.0	7.6	9.1	4.3	17.7	1.6	16.3	8.7	14.8	11.0
			SPD (MPH)	8.5	8.1	12.4	7.0	18.1	5.8	16.8	8.8	15.5	11.2
			RATIO	0.824	0.942	0.738	0.612	0.980	0.279	0.969	0.997	0.955	0.981
METEOROLOGICAL SITE			DIR (DEG)	210	270	40	230	300	30	210	340	290	320
BRADLEY			VEL (MPH)	3.4	3.9	11.2	0.8	7.6	2.5	8.5	9.1	13.0	7.9
			SPD (MPH)	4.6	5.5	12.2	3.6	7.9	2.6	9.6	9.8	14.1	8.3
			RATIO	0.746	0.706	0.913	0.219	0.955	0.949	0.887	0.933	0.926	0.948
METEOROLOGICAL SITE			DIR (DEG)	250	250	20	250	270	30	230	320	280	260
BRIDGEPORT			VEL (MPH)	6.1	8.2	16.5	2.7	16.0	5.4	12.9	8.5	19.2	7.0
			SPD (MPH)	7.3	8.6	17.3	6.9	16.2	6.9	13.1	9.9	19.5	7.3
			RATIO	0.833	0.954	0.954	0.396	0.988	0.780	0.988	0.862	0.983	0.958
METEOROLOGICAL SITE			DIR (DEG)	250	260	40	290	290	60	250	310	300	280
WORCESTER			VEL (MPH)	7.2	5.3	10.9	5.7	11.8	3.2	11.3	9.1	16.0	13.2
			SPD (MPH)	7.6	5.6	11.5	6.3	11.9	3.9	11.6	9.2	16.4	13.4
			RATIO	0.944	0.945	0.944	0.900	0.990	0.830	0.970	0.989	0.975	0.984
							NW	NW					NE
MERIDEN	8	35		96	79	71	68	63	62	55	52	52	52
			DATE	12/24/81	3/29/81	4/ 4/81	7/ 9/81	11/24/81	6/21/81	4/28/81	3/23/81	4/16/81	5/22/81
METEOROLOGICAL SITE			DIR (DEG)	260	230	210	290	360	270	170	80	230	150
NEWARK			VEL (MPH)	7.6	16.3	16.9	11.0	5.6	7.9	0.3	3.3	9.5	4.1
			SPD (MPH)	8.1	16.8	17.1	11.2	9.1	10.5	8.1	6.5	11.9	7.6
			RATIO	0.942	0.969	0.987	0.981	0.618	0.756	0.038	0.507	0.796	0.534
METEOROLOGICAL SITE			DIR (DEG)	270	210	190	320	330	230	320	350	230	60
BRADLEY			VEL (MPH)	3.9	8.5	12.7	7.9	2.6	3.4	1.5	1.5	10.0	3.9
			SPD (MPH)	5.5	9.6	12.8	8.3	4.9	4.2	3.3	3.9	10.9	4.9
			RATIO	0.706	0.887	0.992	0.948	0.528	0.825	0.469	0.396	0.915	0.791

TABLE 11, Continued

1981 TEN HIGHEST 24 HR AVG TSP DAYS WITH WIND DATA.

POLLUTANT--TOTAL SUSPENDED PARTICULATES UNITS : MICROGRAMS PER CUBIC METER

TOWN NAME	SITE	SAMPLES		1	2	3	4	5	6	7	8	9	10
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	250	230	200	260	350	200	130	70	220	80
			VEL (MPH)	8.2	12.9	15.2	7.0	4.8	6.2	3.9	5.4	11.7	6.4
			SPD (MPH)	8.6	13.1	16.1	7.3	4.9	6.6	5.0	7.3	13.4	10.4
			RATIO	0.954	0.988	0.942	0.958	0.985	0.938	0.766	0.732	0.878	0.618
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	260	250	220	280	300	260	280	220	240	60
			VEL (MPH)	5.3	11.3	12.4	13.2	4.6	4.5	5.5	0.8	10.2	6.2
			SPD (MPH)	5.6	11.6	12.5	13.4	5.9	5.9	6.3	5.2	10.4	6.6
			RATIO	0.945	0.970	0.990	0.984	0.780	0.758	0.865	0.147	0.983	0.938
MIDDLETOWN	3	59		146	110	100	95	82	77	72	70	65	63
			DATE	1/22/81	1/16/81	12/30/81	1/28/81	12/24/81	3/29/81	4/ 4/81	2/15/81	2/ 3/81	1/10/81
METEOROLOGICAL SITE NEWARK			DIR (DEG)	270	320	320	240	260	230	210	100	270	330
			VEL (MPH)	7.0	1.6	8.7	4.3	7.6	16.3	16.9	3.6	17.7	16.3
			SPD (MPH)	8.5	5.8	8.8	7.0	8.1	16.8	17.1	6.9	18.1	16.5
			RATIO	0.824	0.279	0.997	0.612	0.942	0.969	0.987	0.515	0.980	0.986
METEOROLOGICAL SITE BRADLEY			DIR (DEG)	210	30	340	230	270	210	190	220	300	340
			VEL (MPH)	3.4	2.5	9.1	0.8	3.9	8.5	12.7	2.0	7.6	9.1
			SPD (MPH)	4.6	2.6	9.8	3.6	5.5	9.6	12.8	5.8	7.9	10.4
			RATIO	0.746	0.949	0.933	0.219	0.706	0.887	0.992	0.348	0.955	0.878
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	250	30	320	250	250	230	200	70	270	310
			VEL (MPH)	6.1	5.4	8.5	2.7	8.2	12.9	15.2	6.1	16.0	12.9
			SPD (MPH)	7.3	6.9	9.9	6.9	8.6	13.1	16.1	9.3	16.2	13.7
			RATIO	0.833	0.780	0.862	0.396	0.954	0.988	0.942	0.658	0.988	0.948
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	250	60	310	290	260	250	220	170	290	310
			VEL (MPH)	7.2	3.2	9.1	5.7	5.3	11.3	12.4	1.6	11.8	11.5
			SPD (MPH)	7.6	3.9	9.2	6.3	5.6	11.6	12.5	5.8	11.9	13.5
			RATIO	0.944	0.830	0.989	0.900	0.945	0.970	0.990	0.277	0.990	0.853
MILFORD	2	60		132	93	88	87	74	73	71	60	57	57
			DATE	1/22/81	1/28/81	1/16/81	3/29/81	4/ 4/81	7/ 9/81	12/24/81	4/28/81	12/30/81	3/11/81
METEOROLOGICAL SITE NEWARK			DIR (DEG)	270	240	320	230	210	290	260	170	320	280
			VEL (MPH)	7.0	4.3	1.6	16.3	16.9	11.0	7.6	0.3	8.7	7.6
			SPD (MPH)	8.5	7.0	5.8	16.8	17.1	11.2	8.1	8.1	8.8	8.2
			RATIO	0.824	0.612	0.279	0.969	0.987	0.981	0.942	0.038	0.997	0.933
METEOROLOGICAL SITE BRADLEY			DIR (DEG)	210	230	30	210	190	320	270	320	340	310
			VEL (MPH)	3.4	0.8	2.5	8.5	12.7	7.9	3.9	1.5	9.1	3.4
			SPD (MPH)	4.6	3.6	2.6	9.6	12.8	8.3	5.5	3.3	9.8	5.5
			RATIO	0.746	0.219	0.949	0.887	0.992	0.948	0.706	0.469	0.933	0.625
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	250	250	30	230	200	260	250	130	320	240
			VEL (MPH)	6.1	2.7	5.4	12.9	15.2	7.0	8.2	3.9	8.5	11.2
			SPD (MPH)	7.3	6.9	6.9	13.1	16.1	7.3	8.6	5.0	9.9	12.4
			RATIO	0.833	0.396	0.780	0.988	0.942	0.958	0.954	0.766	0.862	0.907
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	250	290	60	250	220	280	260	280	310	280
			VEL (MPH)	7.2	5.7	3.2	11.3	12.4	13.2	5.3	5.5	9.1	9.2
			SPD (MPH)	7.6	6.3	3.9	11.6	12.5	13.4	5.6	6.3	9.2	9.5
			RATIO	0.944	0.900	0.830	0.970	0.990	0.984	0.945	0.865	0.989	0.965

TABLE 11, Continued

1981 TEN HIGHEST 24 HR AVG TSP DAYS WITH WIND DATA.

POLLUTANT--TOTAL SUSPENDED PARTICULATES

UNITS : MICROGRAMS PER CUBIC METER

TOWN NAME	SITE	SAMPLES		1	2	3	4	5	6	7	8	9	10
							NW	NE		NW	NW		NW
NAUGATUCK	1	60		176	107	105	99	92	77	75	72	72	71
			DATE	1/22/81	12/24/81	1/28/81	12/30/81	1/16/81	4/ 4/81	11/24/81	1/10/81	3/29/81	7/ 9/81
METEOROLOGICAL SITE			DIR (DEG)	270	260	240	320	320	210	360	330	230	290
NEWARK			VEL (MPH)	7.0	7.6	4.3	8.7	1.6	16.9	5.6	16.3	16.3	11.0
			SPD (MPH)	8.5	8.1	7.0	8.8	5.8	17.1	9.1	16.5	16.8	11.2
			RATIO	0.824	0.942	0.612	0.997	0.279	0.987	0.618	0.986	0.969	0.981
METEOROLOGICAL SITE			DIR (DEG)	210	270	230	340	30	190	330	340	210	320
BRADLEY			VEL (MPH)	3.4	3.9	0.8	9.1	2.5	12.7	2.6	9.1	8.5	7.9
			SPD (MPH)	4.6	5.5	3.6	9.8	2.6	12.8	4.9	10.4	9.6	8.3
			RATIO	0.746	0.706	0.219	0.933	0.949	0.992	0.528	0.878	0.887	0.948
METEOROLOGICAL SITE			DIR (DEG)	250	250	250	320	30	200	350	310	230	260
BRIDGEPORT			VEL (MPH)	6.1	8.2	2.7	8.5	5.4	15.2	4.8	12.9	12.9	7.0
			SPD (MPH)	7.3	8.6	6.9	9.9	6.9	16.1	4.9	13.7	13.1	7.3
			RATIO	0.833	0.954	0.396	0.862	0.780	0.942	0.985	0.948	0.988	0.958
METEOROLOGICAL SITE			DIR (DEG)	250	260	290	310	60	220	300	310	250	280
WORCESTER			VEL (MPH)	7.2	5.3	5.7	9.1	3.2	12.4	4.6	11.5	11.3	13.2
			SPD (MPH)	7.6	5.6	6.3	9.2	3.9	12.5	5.9	13.5	11.6	13.4
			RATIO	0.944	0.945	0.900	0.989	0.830	0.990	0.780	0.853	0.970	0.984
										NW	NE		NE
NEW BRITAIN	7	115		126	91	86	80	75	73	69	69	66	66
			DATE	1/22/81	2/18/81	12/24/81	5/25/81	1/28/81	8/11/81	3/14/81	1/16/81	4/ 4/81	7/ 9/81
METEOROLOGICAL SITE			DIR (DEG)	270	210	260	230	240	180	320	320	210	290
NEWARK			VEL (MPH)	7.0	4.3	7.6	11.6	4.3	4.5	24.0	1.6	16.9	11.0
			SPD (MPH)	8.5	6.3	8.1	11.9	7.0	8.2	24.4	5.8	17.1	11.2
			RATIO	0.824	0.677	0.942	0.976	0.612	0.544	0.982	0.279	0.987	0.981
METEOROLOGICAL SITE			DIR (DEG)	210	220	270	210	230	200	320	30	190	320
BRADLEY			VEL (MPH)	3.4	4 1	3.9	7.1	0.8	4.6	17.2	2.5	12.7	7.9
			SPD (MPH)	4.6	4.9	5.5	7.6	3.6	4.9	18.0	2.6	12.8	8.3
			RATIO	0.746	0.834	0.706	0.928	0.219	0.940	0.956	0.949	0.992	0.948
METEOROLOGICAL SITE			DIR (DEG)	250	220	250	210	250	170	300	30	200	260
BRIDGEPORT			VEL (MPH)	6.1	6.8	8.2	9.9	2.7	6.1	23.0	5.4	15.2	7.0
			SPD (MPH)	7.3	7.3	8.6	12.1	6.9	6.2	23.6	6.9	16.1	7.3
			RATIO	0.833	0.930	0.954	0.820	0.396	0.986	0.974	0.780	0.942	0.958
METEOROLOGICAL SITE			DIR (DEG)	250	270	260	260	290	220	300	60	220	280
WORCESTER			VEL (MPH)	7.2	10.3	5.3	8.5	5.7	6.1	20.1	3.2	12.4	13.2
			SPD (MPH)	7.6	10.6	5.6	8.9	6.3	6.6	20.3	3.9	12.5	13.4
			RATIO	0.944	0.969	0.945	0.950	0.900	0.927	0.989	0.830	0.990	0.984
							NW		NE	NW	NW		NW
NEW BRITAIN	8	59		155	126	75	69	68	66	63	63	63	57
			DATE	1/22/81	12/24/81	1/28/81	7/ 9/81	3/29/81	1/16/81	2/ 3/81	2/ 9/81	4/ 4/81	12/30/81
METEOROLOGICAL SITE			DIR (DEG)	270	260	240	290	230	320	270	290	210	320
NEWARK			VEL (MPH)	7.0	7.6	4.3	11.0	16.3	1.6	17.7	14.8	16.9	8.7
			SPD (MPH)	8.5	8.1	7.0	11.2	16.8	5.8	18.1	15.5	17.1	8.8
			RATIO	0.824	0.942	0.612	0.981	0.969	0.279	0.980	0.955	0.987	0.997
METEOROLOGICAL SITE			DIR (DEG)	210	270	230	320	210	30	300	290	190	340
BRADLEY			VEL (MPH)	3.4	3.9	0.8	7.9	8.5	2.5	7.6	13.0	12.7	9.1
			SPD (MPH)	4.6	5.5	3.6	8.3	9.6	2.6	7.9	14.1	12.8	9.8
			RATIO	0.746	0.706	0.219	0.948	0.887	0.949	0.955	0.926	0.992	0.933

TABLE 11, Continued

1981 TEN HIGHEST 24 HR AVG TSP DAYS WITH WIND DATA.

POLLUTANT--TOTAL SUSPENDED PARTICULATES UNITS : MICROGRAMS PER CUBIC METER

TOWN NAME	SITE SAMPLES		1	2	3	4	5	6	7	8	9	10
METEOROLOGICAL SITE BRIDGEPORT		DIR (DEG)	250	250	250	260	230	30	270	280	200	320
		VEL (MPH)	6.1	8.2	2.7	7.0	12.9	5.4	16.0	19.2	15.2	8.5
		SPD (MPH)	7.3	8.6	6.9	7.3	13.1	6.9	16.2	19.5	16.1	9.9
		RATIO	0.833	0.954	0.396	0.958	0.988	0.780	0.988	0.983	0.942	0.862
METEOROLOGICAL SITE WORCESTER		DIR (DEG)	250	260	290	280	250	60	290	300	220	310
		VEL (MPH)	7.2	5.3	5.7	13.2	11.3	3.2	11.8	16.0	12.4	9.1
		SPD (MPH)	7.6	5.6	6.3	13.4	11.6	3.9	11.9	16.4	12.5	9.2
		RATIO	0.944	0.945	0.900	0.984	0.970	0.830	0.990	0.975	0.990	0.989
						NE		NW		NW	NE	NW
NEW BRITAIN	9	59	133	86	77	72	63	63	61	59	55	55
		DATE	1/22/81	12/24/81	1/28/81	1/16/81	4/ 4/81	7/ 9/81	3/29/81	11/24/81	5/22/81	2/ 9/81
METEOROLOGICAL SITE NEWARK		DIR (DEG)	270	260	240	320	210	290	230	360	150	290
		VEL (MPH)	7.0	7.6	4.3	1.6	16.9	11.0	16.3	5.6	4.1	14.8
		SPD (MPH)	8.5	8.1	7.0	5.8	17.1	11.2	16.8	9.1	7.6	15.5
		RATIO	0.824	0.942	0.612	0.279	0.987	0.981	0.969	0.618	0.534	0.955
METEOROLOGICAL SITE BRADLEY		DIR (DEG)	210	270	230	30	190	320	210	330	60	290
		VEL (MPH)	3.4	3.9	0.8	2.5	12.7	7.9	8.5	2.6	3.9	13.0 5
		SPD (MPH)	4.6	5.5	3.6	2.6	12.8	8.3	9.6	4.9	4.9	14.1
		RATIO	0.746	0.706	0.219	0.949	0.992	0.948	0.887	0.528	0.791	0.926
METEOROLOGICAL SITE BRIDGEPORT		DIR (DEG)	250	250	250	30	200	260	230	350	80	280
		VEL (MPH)	6.1	8.2	2.7	5.4	15.2	7.0	12.9	4.8	6.4	19.2
		SPD (MPH)	7.3	8.6	6.9	6.9	16.1	7.3	13.1	4.9	10.4	19.5
		RATIO	0.833	0.954	0.396	0.780	0.942	0.958	0.988	0.985	0.618	0.983
METEOROLOGICAL SITE WORCESTER		DIR (DEG)	250	260	290	60	220	280	250	300	60	300
		VEL (MPH)	7.2	5.3	5.7	3.2	12.4	13.2	11.3	4.6	6.2	16.0
		SPD (MPH)	7.6	5.6	6.3	3.9	12.5	13.4	11.6	5.9	6.6	16.4
		RATIO	0.944	0.945	0.900	0.830	0.990	0.984	0.970	0.780	0.936	0.975
				NE		NW	NW				NE	NW
NEW HAVEN	2	54	191	121	90	84	80	79	79	79	71	71
		DATE	1/22/81	1/16/81	3/29/81	2/ 3/81	7/ 8/81	4/22/81	12/24/81	2/15/81	5/22/81	2/ 9/81
METEOROLOGICAL SITE NEWARK		DIR (DEG)	270	320	230	270	280	160	260	100	150	290
		VEL (MPH)	7.0	1.6	16.3	17.7	8.9	2.1	7.6	3.6	4.1	14.8
		SPD (MPH)	8.5	5.8	16.8	18.1	10.2	9.8	8.1	6.9	7.6	15.5
		RATIO	0.824	0.279	0.969	0.980	0.872	0.218	0.942	0.515	0.534	0.955
METEOROLOGICAL SITE BRADLEY		DIR (DEG)	210	30	210	300	290	290	270	220	60	290
		VEL (MPH)	3.4	2.5	8.5	7.6	8.1	3.5	3.9	2.0	3.9	13.0 3
		SPD (MPH)	4.6	2.6	9.6	7.9	8.5	5.6	5.5	5.8	4.9	14.1
		RATIO	0.746	0.949	0.887	0.955	0.951	0.627	0.706	0.348	0.791	0.926
METEOROLOGICAL SITE BRIDGEPORT		DIR (DEG)	250	30	230	270	250	240	250	70	80	280
		VEL (MPH)	6.1	5.4	12.9	16.0	8.0	8.4	8.2	6.1	6.4	19.2
		SPD (MPH)	7.3	6.9	13.1	16.2	8.8	11.5	8.6	9.3	10.4	19.5
		RATIO	0.833	0.780	0.988	0.988	0.914	0.727	0.954	0.658	0.618	0.983
METEOROLOGICAL SITE WORCESTER		DIR (DEG)	250	60	250	290	280	300	260	170	60	300
		VEL (MPH)	7.2	3.2	11.3	11.8	11.3	10.2	5.3	1.6	6.2	16.0
		SPD (MPH)	7.6	3.9	11.6	11.9	11.5	10.5	5.6	5.8	6.6	16.4
		RATIO	0.944	0.830	0.970	0.990	0.985	0.973	0.945	0.277	0.936	0.975

TABLE 11, Continued

1981 TEN HIGHEST 24 HR AVG TSP DAYS WITH WIND DATA.

POLLUTANT--TOTAL SUSPENDED PARTICULATES

UNITS : MICROGRAMS PER CUBIC METER

TOWN NAME	SITE	SAMPLES		1	2	3	4	5	6	7	8	9	10
NEW HAVEN	123	112		207	164	162	145	141	103	102	97	93	90
			DATE	1/22/81	2/18/81	2/ 6/81	1/28/81	1/16/81	3/29/81	3/14/81	5/25/81	1/31/81	12/24/81
METEOROLOGICAL SITE			DIR (DEG)	270	210	210	240	320	230	320	230	320	260
NEWARK			VEL (MPH)	7.0	4.3	9.8	4.3	1.6	16.3	24.0	11.6	8.4	7.6
			SPD (MPH)	8.5	6.3	10.8	7.0	5.8	16.8	24.4	11.9	9.5	8.1
			RATIO	0.824	0.677	0.905	0.612	0.279	0.969	0.982	0.976	0.880	0.942
METEOROLOGICAL SITE			DIR (DEG)	210	220	210	230	30	210	320	210	340	270
BRADLEY			VEL (MPH)	3.4	4.1	6.4	0.8	2.5	8.5	17.2	7.1	4.0	3.9
			SPD (MPH)	4.6	4.9	7.0	3.6	2.6	9.6	18.0	7.6	4.6	5.5
			RATIO	0.746	0.834	0.904	0.219	0.949	0.887	0.956	0.928	0.867	0.706
METEOROLOGICAL SITE			DIR (DEG)	250	220	220	250	30	230	300	210	310	250
BRIDGEPORT			VEL (MPH)	6.1	6.8	9.4	2.7	5.4	12.9	23.0	9.9	11.8	8.2
			SPD (MPH)	7.3	7.3	10.6	6.9	6.9	13.1	23.6	12.1	12.4	8.6
			RATIO	0.833	0.930	0.884	0.396	0.780	0.988	0.974	0.820	0.953	0.954
METEOROLOGICAL SITE			DIR (DEG)	250	270	230	290	60	250	300	260	310	260
WORCESTER			VEL (MPH)	7.2	10.3	10.9	5.7	3.2	11.3	20.1	8.5	11.3	5.3
			SPD (MPH)	7.6	10.6	11.4	6.3	3.9	11.6	20.3	8.9	11.8	5.6
			RATIO	0.944	0.969	0.962	0.900	0.830	0.970	0.989	0.950	0.958	0.945
NORWALK	1	57		119	111	90	83	74	73	69	68	67	65
			DATE	1/22/81	1/28/81	3/29/81	4/28/81	2/ 9/81	4/ 4/81	2/15/81	1/16/81	12/30/81	5/ 4/81
METEOROLOGICAL SITE			DIR (DEG)	270	240	230	170	290	210	100	320	320	30
NEWARK			VEL (MPH)	7.0	4.3	16.3	0.3	14.8	16.9	3.6	1.6	8.7	9.1
			SPD (MPH)	8.5	7.0	16.8	8.1	15.5	17.1	6.9	5.8	8.8	12.4
			RATIO	0.824	0.612	0.969	0.038	0.955	0.987	0.515	0.279	0.997	0.738
METEOROLOGICAL SITE			DIR (DEG)	210	230	210	320	290	190	220	30	340	40
BRADLEY			VEL (MPH)	3.4	0.8	8.5	1.5	13.0	12.7	2.0	2.5	9.1	11.2
			SPD (MPH)	4.6	3.6	9.6	3.3	14.1	12.8	5.8	2.6	9.8	12.2
			RATIO	0.746	0.219	0.887	0.469	0.926	0.992	0.348	0.949	0.933	0.913
METEOROLOGICAL SITE			DIR (DEG)	250	250	230	130	280	200	70	30	320	20
BRIDGEPORT			VEL (MPH)	6.1	2.7	12.9	3.9	19.2	15.2	6.1	5.4	8.5	16.5
			SPD (MPH)	7.3	6.9	13.1	5.0	19.5	16.1	9.3	6.9	9.9	17.3
			RATIO	0.833	0.396	0.988	0.766	0.983	0.942	0.658	0.780	0.862	0.954
METEOROLOGICAL SITE			DIR (DEG)	250	290	250	280	300	220	170	60	310	40
WORCESTER			VEL (MPH)	7.2	5.7	11.3	5.5	16.0	12.4	1.6	3.2	9.1	10.9
			SPD (MPH)	7.6	6.3	11.6	6.3	16.4	12.5	5.8	3.9	9.2	11.5
			RATIO	0.944	0.900	0.970	0.865	0.975	0.990	0.277	0.830	0.989	0.944
NORWALK	5	118		168	132	124	112	110	108	107	105	104	94
			DATE	1/22/81	2/18/81	1/13/81	11/30/81	1/28/81	2/ 3/81	12/30/81	4/28/81	1/31/81	12/24/81
METEOROLOGICAL SITE			DIR (DEG)	270	210	300	330	240	270	320	170	320	260
NEWARK			VEL (MPH)	7.0	4.3	7.4	13.6	4.3	17.7	8.7	0.3	8.4	7.6
			SPD (MPH)	8.5	6.3	9.3	13.9	7.0	18.1	8.8	8.1	9.5	8.1
			RATIO	0.824	0.677	0.794	0.976	0.612	0.980	0.997	0.038	0.880	0.942
METEOROLOGICAL SITE			DIR (DEG)	210	220	340	350	230	300	340	320	340	270
BRADLEY			VEL (MPH)	3.4	4.1	2.4	9.9	0.8	7.6	9.1	1.5	4.0	3.9
			SPD (MPH)	4.6	4.9	2.7	10.1	3.6	7.9	9.8	3.3	4.6	5.5
			RATIO	0.746	0.834	0.867	0.984	0.219	0.955	0.933	0.469	0.867	0.706

TABLE 11, Continued

1981 TEN HIGHEST 24 HR AVG TSP DAYS WITH WIND DATA.

POLLUTANT--TOTAL SUSPENDED PARTICULATES UNITS : MICROGRAMS PER CUBIC METER

TABLE 11, Continued

TOWN NAME	SITE	SAMPLES		1	2	3	4	5	6	7	8	9	10
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	250	220	310	350	250	270	320	130	310	250
			VEL (MPH)	6.1	6.8	12.9	8.6	2.7	16.0	8.5	3.9	11.8	8.2
			SPD (MPH)	7.3	7.3	13.4	8.8	6.9	16.2	9.9	5.0	12.4	8.6
			RATIO	0.833	0.930	0.967	0.982	0.396	0.988	0.862	0.766	0.953	0.954
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	250	270	320	320	290	290	310	280	310	260
			VEL (MPH)	7.2	10.3	10.7	11.8	5.7	11.8	9.1	5.5	11.3	5.3
			SPD (MPH)	7.6	10.6	11.8	11.9	6.3	11.9	9.2	6.3	11.8	5.6
			RATIO	0.944	0.969	0.910	0.987	0.900	0.990	0.989	0.865	0.958	0.945
						NW						NE	NW
NORWALK	12	60		106	88	80	80	72	71	69	68	65	64
			DATE	1/22/81	9/13/81	12/30/81	1/28/81	4/28/81	12/24/81	4/ 4/81	8/14/81	1/16/81	7/ 9/81
METEOROLOGICAL SITE NEWARK			DIR (DEG)	270	280	320	240	170	260	210	150	320	290
			VEL (MPH)	7.0	7.4	8.7	4.3	0.3	7.6	16.9	3.1	1.6	11.0
			SPD (MPH)	8.5	9.6	8.8	7.0	8.1	8.1	17.1	6.0	5.8	11.2
			RATIO	0.824	0.771	0.997	0.612	0.038	0.942	0.987	0.514	0.279	0.981
METEOROLOGICAL SITE BRADLEY			DIR (DEG)	210	260	340	230	320	270	190	180	30	320
			VEL (MPH)	3.4	6.9	9.1	0.8	1.5	3.9	12.7	1.4	2.5	7.9
			SPD (MPH)	4.6	7.3	9.8	3.6	3.3	5.5	12.8	5.8	2.6	8.3
			RATIO	0.746	0.947	0.933	0.219	0.469	0.706	0.992	0.252	0.949	0.948
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	250	230	320	250	130	250	200	80	30	260
			VEL (MPH)	6.1	8.3	8.5	2.7	3.9	8.2	15.2	5.9	5.4	7.0
			SPD (MPH)	7.3	8.5	9.9	6.9	5.0	8.6	16.1	6.9	6.9	7.3
			RATIO	0.833	0.973	0.862	0.396	0.766	0.954	0.942	0.854	0.780	0.958
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	250	270	310	290	280	260	220	270	60	280
			VEL (MPH)	7.2	9.5	9.1	5.7	5.5	5.3	12.4	1.8	3.2	13.2
			SPD (MPH)	7.6	9.6	9.2	6.3	6.3	5.6	12.5	5.2	3.9	13.4
			RATIO	0.944	0.969	0.989	0.900	0.865	0.945	0.990	0.345	0.830	0.984
						NW	NW	NW	NW				
NORWICH	1	61		139	125	81	72	72	67	67	66	65	65
			DATE	1/22/81	1/28/81	7/ 9/81	11/24/81	2/ 3/81	2/ 9/81	4/ 4/81	2/15/81	3/29/81	12/24/81
METEOROLOGICAL SITE NEWARK			DIR (DEG)	270	240	290	360	270	290	210	100	230	260
			VEL (MPH)	7.0	4.3	11.0	5.6	17.7	14.8	16.9	3.6	16.3	7.6
			SPD (MPH)	8.5	7.0	11.2	9.1	18.1	15.5	17.1	6.9	16.8	8.1
			RATIO	0.824	0.612	0.981	0.618	0.980	0.955	0.987	0.515	0.969	0.942
METEOROLOGICAL SITE BRADLEY			DIR (DEG)	210	230	320	330	300	290	190	220	210	270
			VEL (MPH)	3.4	0.8	7.9	2.6	7.6	13.0	12.7	2.0	8.5	3.9
			SPD (MPH)	4.6	3.6	8.3	4.9	7.9	14.1	12.8	5.8	9.6	5.5
			RATIO	0.746	0.219	0.948	0.528	0.955	0.926	0.992	0.348	0.887	0.706
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	250	250	260	350	270	280	200	70	230	250
			VEL (MPH)	6.1	2.7	7.0	4.8	16.0	19.2	15.2	6.1	12.9	8.2
			SPD (MPH)	7.3	6.9	7.3	4.9	16.2	19.5	16.1	9.3	13.1	8.6
			RATIO	0.833	0.396	0.958	0.985	0.988	0.983	0.942	0.658	0.988	0.954
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	250	290	280	300	290	300	220	170	250	260
			VEL (MPH)	7.2	5.7	13.2	4.6	11.8	16.0	12.4	1.6	11.3	5.3
			SPD (MPH)	7.6	6.3	13.4	5.9	11.9	16.4	12.5	5.8	11.6	5.6
			RATIO	0.944	0.900	0.984	0.780	0.990	0.975	0.990	0.277	0.970	0.945

1981 TEN HIGHEST 24 HR AVG TSP DAYS WITH WIND DATA.

POLLUTANT--TOTAL SUSPENDED PARTICULATES UNITS : MICROGRAMS PER CUBIC METER

TOWN NAME	SITE	SAMPLES		1	2	3	4	5	6	7	8	9	10
STAMFORD	1	58		102	96	88	78	75	75	70	69	69	69
			DATE	3/29/81	1/22/81	7/ 9/81	1/28/81	4/28/81	4/ 4/81	5/22/81	12/30/81	4/16/81	8/14/81
METEOROLOGICAL SITE			DIR (DEG)	230	270	290	240	170	210	150	320	230	150
NEWARK			VEL (MPH)	16.3	7.0	11.0	4.3	0.3	16.9	4.1	8.7	9.5	3.1
			SPD (MPH)	16.8	8.5	11.2	7.0	8.1	17.1	7.6	8.8	11.9	6.0
			RATIO	0.969	0.824	0.981	0.612	0.038	0.987	0.534	0.997	0.796	0.514
METEOROLOGICAL SITE			DIR (DEG)	210	210	320	230	320	190	60	340	230	180
BRADLEY			VEL (MPH)	8.5	3.4	7.9	0.8	1.5	12.7	3.9	9.1	10.0	1.4
			SPD (MPH)	9.6	4.6	8.3	3.6	3.3	12.8	4.9	9.8	10.9	5.8
			RATIO	0.887	0.746	0.948	0.219	0.469	0.992	0.791	0.933	0.915	0.252
METEOROLOGICAL SITE			DIR (DEG)	230	250	260	250	130	200	80	320	220	80
BRIDGEPORT			VEL (MPH)	12.9	6.1	7.0	2.7	3.9	15.2	6.4	8.5	11.7	5.9
			SPD (MPH)	13.1	7.3	7.3	6.9	5.0	16.1	10.4	9.9	13.4	6.9
			RATIO	0.988	0.833	0.958	0.396	0.766	0.942	0.618	0.862	0.878	0.854
METEOROLOGICAL SITE			DIR (DEG)	250	250	280	290	280	220	60	310	240	270
WORCESTER			VEL (MPH)	11.3	7.2	13.2	5.7	5.5	12.4	6.2	9.1	10.2	1.8
			SPD (MPH)	11.6	7.6	13.4	6.3	6.3	12.5	6.6	9.2	10.4	5.2
			RATIO	0.970	0.944	0.984	0.900	0.865	0.990	0.936	0.989	0.983	0.345
STAMFORD	7	60		110	82	80	73	71	68	61	59	59	58
			DATE	1/22/81	3/29/81	7/ 9/81	5/ 4/81	12/30/81	4/ 4/81	6/21/81	1/28/81	5/22/81	2/ 3/81
METEOROLOGICAL SITE			DIR (DEG)	270	230	290	30	320	210	270	240	150	270
NEWARK			VEL (MPH)	7.0	16.3	11.0	9.1	8.7	16.9	7.9	4.3	4.1	17.7
			SPD (MPH)	8.5	16.8	11.2	12.4	8.8	17.1	10.5	7.0	7.6	18.1
			RATIO	0.824	0.969	0.981	0.738	0.997	0.987	0.756	0.612	0.534	0.980
METEOROLOGICAL SITE			DIR (DEG)	210	210	320	40	340	190	230	230	60	300
BRADLEY			VEL (MPH)	3.4	8.5	7.9	11.2	9.1	12.7	3.4	0.8	3.9	7.6
			SPD (MPH)	4.6	9.6	8.3	12.2	9.8	12.8	4.2	3.6	4.9	7.9
			RATIO	0.746	0.887	0.948	0.913	0.933	0.992	0.825	0.219	0.791	0.955
METEOROLOGICAL SITE			DIR (DEG)	250	230	260	20	320	200	200	250	80	270
BRIDGEPORT			VEL (MPH)	6.1	12.9	7.0	16.5	8.5	15.2	6.2	2.7	6.4	16.0
			SPD (MPH)	7.3	13.1	7.3	17.3	9.9	16.1	6.6	6.9	10.4	16.2
			RATIO	0.833	0.988	0.958	0.954	0.862	0.942	0.938	0.396	0.618	0.988
METEOROLOGICAL SITE			DIR (DEG)	250	250	280	40	310	220	260	290	60	290
WORCESTER			VEL (MPH)	7.2	11.3	13.2	10.9	9.1	12.4	4.5	5.7	6.2	11.8
			SPD (MPH)	7.6	11.6	13.4	11.5	9.2	12.5	5.9	6.3	6.6	11.9
			RATIO	0.944	0.970	0.984	0.944	0.989	0.990	0.758	0.900	0.936	0.990
STAMFORD	21	60		85	83	82	73	71	70	67	65	61	60
			DATE	7/ 9/81	3/29/81	4/ 4/81	5/ 4/81	4/28/81	8/14/81	6/21/81	12/30/81	2/15/81	1/16/81
METEOROLOGICAL SITE			DIR (DEG)	290	230	210	30	170	150	270	320	100	320
NEWARK			VEL (MPH)	11.0	16.3	16.9	9.1	0.3	3.1	7.9	8.7	3.6	1.6
			SPD (MPH)	11.2	16.8	17.1	12.4	8.1	6.0	10.5	8.8	6.9	5.8
			RATIO	0.981	0.969	0.987	0.738	0.038	0.514	0.756	0.997	0.515	0.279

TABLE 11, Continued

1981 TEN HIGHEST 24 HR AVG TSP DAYS WITH WIND DATA.

POLLUTANT--TOTAL SUSPENDED PARTICULATES UNITS : MICROGRAMS PER CUBIC METER

TABLE 11, Continued

TOWN NAME	SITE	SAMPLES		1	2	3	4	5	6	7	8	9	10
METEOROLOGICAL SITE BRADLEY			DIR (DEG)	320	210	190	40	320	180	230	340	220	30
			VEL (MPH)	7.9	8.5	12.7	11.2	1.5	1.4	3.4	9.1	2.0	2.5
			SPD (MPH)	8.3	9.6	12.8	12.2	3.3	5.8	4.2	9.8	5.8	2.6
			RATIO	0.948	0.887	0.992	0.913	0.469	0.252	0.825	0.933	0.348	0.949
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	260	230	200	20	130	80	200	320	70	30
			VEL (MPH)	7.0	12.9	15.2	16.5	3.9	5.9	6.2	8.5	6.1	5.4
			SPD (MPH)	7.3	13.1	16.1	17.3	5.0	6.9	6.6	9.9	9.3	6.9
			RATIO	0.958	0.988	0.942	0.954	0.766	0.854	0.938	0.862	0.658	0.780
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	280	250	220	40	280	270	260	310	170	60
			VEL (MPH)	13.2	11.3	12.4	10.9	5.5	1.8	4.5	9.1	1.6	3.2
			SPD (MPH)	13.4	11.6	12.5	11.5	6.3	5.2	5.9	9.2	5.8	3.9
			RATIO	0.984 NE	0.970	0.990	0.944	0.865 NW	0.345	0.758 NW	0.989 NE	0.277	0.830 NE
STRATFORD	5	56		191	104	102	96	89	86	86	79	79	78
			DATE	5/22/81	12/24/81	1/28/81	2/15/81	12/30/81	3/29/81	2/ 3/81	5/ 4/81	4/ 4/81	1/16/81
METEOROLOGICAL SITE NEWARK			DIR (DEG)	150	260	240	100	320	230	270	30	210	320
			VEL (MPH)	4.1	7.6	4.3	3.6	8.7	16.3	17.7	9.1	16.9	1.6
			SPD (MPH)	7.6	8.1	7.0	6.9	8.8	16.8	18.1	12.4	17.1	5.8
			RATIO	0.534	0.942	0.612	0.515	0.997	0.969	0.980	0.738	0.987	0.279
METEOROLOGICAL SITE BRADLEY			DIR (DEG)	60	270	230	220	340	210	300	40	190	30
			VEL (MPH)	3.9	3.9	0.8	2.0	9.1	8.5	7.6	11.2	12.7	2.5
			SPD (MPH)	4.9	5.5	3.6	5.8	9.8	9.6	7.9	12.2	12.8	2.6
			RATIO	0.791	0.706	0.219	0.348	0.933	0.887	0.955	0.913	0.992	0.949
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	80	250	250	70	320	230	270	20	200	30
			VEL (MPH)	6.4	8.2	2.7	6.1	8.5	12.9	16.0	16.5	15.2	5.4
			SPD (MPH)	10.4	8.6	6.9	9.3	9.9	13.1	16.2	17.3	16.1	6.9
			RATIO	0.618	0.954	0.396	0.658	0.862	0.988	0.988	0.954	0.942	0.780
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	60	260	290	170	310	250	290	40	220	60
			VEL (MPH)	6.2	5.3	5.7	1.6	9.1	11.3	11.8	10.9	12.4	3.2
			SPD (MPH)	6.6	5.6	6.3	5.8	9.2	11.6	11.9	11.5	12.5	3.9
			RATIO	0.936 NW	0.945 NW	0.900	0.277 NW	0.989	0.970	0.990 NW	0.944 NW	0.990 NW	0.830
TORRINGTON	123	117		188	182	140	139	138	135	133	127	106	105
			DATE	2/12/81	12/30/81	12/21/81	3/20/81	2/18/81	1/22/81	3/14/81	1/13/81	3/11/81	1/28/81
METEOROLOGICAL SITE NEWARK			DIR (DEG)	320	320	240	290	210	270	320	300	280	240
			VEL (MPH)	17.2	8.7	6.5	6.9	4.3	7.0	24.0	7.4	7.6	4.3
			SPD (MPH)	17.8	8.8	6.9	7.9	6.3	8.5	24.4	9.3	8.2	7.0
			RATIO	0.963	0.997	0.939	0.872	0.677	0.824	0.982	0.794	0.933	0.612
METEOROLOGICAL SITE BRADLEY			DIR (DEG)	320	340	200	310	220	210	320	340	310	230
			VEL (MPH)	15.5	9.1	5.0	5.1	4.1	3.4	17.2	2.4	3.4	0.8
			SPD (MPH)	15.8	9.8	5.9	6.3	4.9	4.6	18.0	2.7	5.5	3.6
			RATIO	0.978	0.933	0.848	0.808	0.834	0.746	0.956	0.867	0.625	0.219
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	310	320	250	270	220	250	300	310	240	250
			VEL (MPH)	17.0	8.5	11.5	7.8	6.8	6.1	23.0	12.9	11.2	2.7
			SPD (MPH)	19.5	9.9	12.9	9.9	7.3	7.3	23.6	13.4	12.4	6.9
			RATIO	0.871	0.862	0.886	0.782	0.930	0.833	0.974	0.967	0.907	0.396
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	290	310	260	240	270	250	300	320	280	290
			VEL (MPH)	19.4	9.1	8.6	1.6	10.3	7.2	20.1	10.7	9.2	5.7
			SPD (MPH)	19.5	9.2	9.3	4.5	10.6	7.6	20.3	11.8	9.5	6.3
			RATIO	0.992	0.989	0.915	0.365	0.969	0.944	0.989	0.910	0.965	0.900

1981 TEN HIGHEST 24 HR AVG TSP DAYS WITH WIND DATA.

POLLUTANT--TOTAL SUSPENDED PARTICULATES UNITS : MICROGRAMS PER CUBIC METER

TOWN NAME	SITE	SAMPLES		1	2	3	4	5	6	7	8	9	10
VOLUNTOWN	1	115		77	67	63	51	50	48	47	47	46	45
			DATE	6/ 6/81	5/25/81	7/ 9/81	3/29/81	1/22/81	5/31/81	5/13/81	6/ 9/81	8/11/81	4/ 4/81
METEOROLOGICAL SITE			DIR (DEG)	240	230	290	230	270	320	240	270	180	210
NEWARK			VEL (MPH)	13.4	11.6	11.0	16.3	7.0	8.7	12.1	13.2	4.5	16.9
			SPD (MPH)	13.7	11.9	11.2	16.8	8.5	11.8	12.4	17.4	8.2	17.1
			RATIO	0.978	0.976	0.981	0.969	0.824	0.738	0.977	0.758	0.544	0.987
METEOROLOGICAL SITE			DIR (DEG)	240	210	320	210	210	310	290	290	200	190
BRADLEY			VEL (MPH)	5.0	7.1	7.9	8.5	3.4	7.0	6.6	7.8	4.6	12.7
			SPD (MPH)	6.5	7.6	8.3	9.6	4.6	10.2	8.2	12.7	4.9	12.8
			RATIO	0.769	0.928	0.948	0.887	0.746	0.683	0.803	0.616	0.940	0.992
METEOROLOGICAL SITE			DIR (DEG)	230	210	260	230	250	300	240	270	170	200
BRIDGEPORT			VEL (MPH)	9.6	9.9	7.0	12.9	6.1	8.5	12.6	12.4	6.1	15.2
			SPD (MPH)	9.8	12.1	7.3	13.1	7.3	11.1	15.7	13.5	6.2	16.1
			RATIO	0.985	0.820	0.958	0.988	0.833	0.769	0.804	0.916	0.986	0.942
METEOROLOGICAL SITE			DIR (DEG)	260	260	280	250	250	310	280	270	220	220
WORCESTER			VEL (MPH)	6.8	8.5	13.2	11.3	7.2	6.9	15.0	13.9	6.1	12.4
			SPD (MPH)	8.2	8.9	13.4	11.6	7.6	8.9	15.2	15.1	6.6	12.5
			RATIO	0.827	0.950	0.984	0.970	0.944	0.769	0.986	0.922	0.927	0.990
WALLINGFORD	1	61		256	209	159	108	95	94	79	76	69	68
			DATE	12/24/81	1/22/81	2/ 9/81	1/28/81	2/ 3/81	1/16/81	3/29/81	7/ 9/81	2/15/81	4/ 4/81
METEOROLOGICAL SITE			DIR (DEG)	260	270	290	240	270	320	230	290	100	210
NEWARK			VEL (MPH)	7.6	7.0	14.8	4.3	17.7	1.6	16.3	11.0	3.6	16.9
			SPD (MPH)	8.1	8.5	15.5	7.0	18.1	5.8	16.8	11.2	6.9	17.1
			RATIO	0.942	0.824	0.955	0.612	0.980	0.279	0.969	0.981	0.515	0.987
METEOROLOGICAL SITE			DIR (DEG)	270	210	290	230	300	30	210	320	220	190
BRADLEY			VEL (MPH)	3.9	3 4	13.0	0.8	7.6	2.5	8.5	7.9	2.0	12.7
			SPD (MPH)	5.5	4.6	14.1	3.6	7.9	2.6	9.6	8.3	5.8	12.8
			RATIO	0.706	0.746	0.926	0.219	0.955	0.949	0.887	0.948	0.348	0.992
METEOROLOGICAL SITE			DIR (DEG)	250	250	280	250	270	30	230	260	70	200
BRIDGEPORT			VEL (MPH)	8.2	6.1	19.2	2.7	16.0	5.4	12.9	7.0	6.1	15.2
			SPD (MPH)	8.6	7.3	19.5	6.9	16.2	6.9	13.1	7.3	9.3	16.1
			RATIO	0.954	0.833	0.983	0.396	0.988	0.780	0.988	0.958	0.658	0.942
METEOROLOGICAL SITE			DIR (DEG)	260	250	300	290	290	60	250	280	170	220
WORCESTER			VEL (MPH)	5.3	7.2	16.0	5.7	11.8	3.2	11.3	13.2	1.6	12.4
			SPD (MPH)	5.6	7.6	16.4	6.3	11.9	3.9	11.6	13.4	5.8	12.5
			RATIO	0.945	0.944	0.975	0.900	0.990	0.830	0.970	0.984	0.277	0.990
WATERBURY	5	50		123	110	80	74	72	70	66	64	64	63
			DATE	12/24/81	4/28/81	4/ 4/81	3/11/81	12/30/81	7/ 9/81	3/29/81	3/23/81	12/ 6/81	5/28/81
METEOROLOGICAL SITE			DIR (DEG)	260	170	210	280	320	290	230	80	320	130
NEWARK			VEL (MPH)	7.6	0.3	16.9	7.6	8.7	11.0	16.3	3.3	26.8	9.0
			SPD (MPH)	8.1	8.1	17.1	8.2	8.8	11.2	16.8	6.5	27.0	9.8
			RATIO	0.942	0.038	0.987	0.933	0.997	0.981	0.969	0.507	0.993	0.918
METEOROLOGICAL SITE			DIR (DEG)	270	320	190	310	340	320	210	350	330	180
BRADLEY			VEL (MPH)	3.9	1.5	12.7	3.4	9.1	7.9	8.5	1.5	21.4	8.7
			SPD (MPH)	5.5	3.3	12.8	5.5	9.8	8.3	9.6	3.9	21.6	8.9
			RATIO	0.706	0.469	0.992	0.625	0.933	0.948	0.887	0.396	0.993	0.978

TABLE 11, Continued

1981 TEN HIGHEST 24 HR AVG TSP DAYS WITH WIND DATA.

POLLUTANT--TOTAL SUSPENDED PARTICULATES UNITS : MICROGRAMS PER CUBIC METER

TABLE 11, Continued

TOWN NAME	SITE	SAMPLES	1	2	3	4	5	6	7	8	9	10
METEOROLOGICAL SITE BRIDGEPORT	DIR (DEG)		250	130	200	240	320	260	230	70	310	110
	VEL (MPH)		8.2	3.9	15.2	11.2	8.5	7.0	12.9	5.4	16.5	8.7
	SPD (MPH)		8.6	5.0	16.1	12.4	9.9	7.3	13.1	7.3	17.4	10.5
	RATIO		0.954	0.766	0.942	0.907	0.862	0.958	0.988	0.732	0.946	0.825
METEOROLOGICAL SITE WORCESTER	DIR (DEG)		260	280	220	280	310	280	250	220	320	210
	VEL (MPH)		5.3	5.5	12.4	9.2	9.1	13.2	11.3	0.8	30.2	5.5
	SPD (MPH)		5.6	6.3	12.5	9.5	9.2	13.4	11.6	5.2	30.3	6.0
	RATIO		0.945	0.865	0.990	0.965	0.989	0.984	0.970	0.147	0.994	0.913
											NE	NW
WATERBURY	6	55	175	114	82	78	74	71	69	69	67	67
		DATE	4/28/81	1/22/81	1/28/81	4/ 4/81	12/24/81	8/14/81	3/29/81	2/15/81	1/16/81	7/ 9/81
METEOROLOGICAL SITE NEWARK	DIR (DEG)		170	270	240	210	260	150	230	100	320	290
	VEL (MPH)		0.3	7.0	4.3	16.9	7.6	3.1	16.3	3.6	1.6	11.0
	SPD (MPH)		8.1	8.5	7.0	17.1	8.1	6.0	16.8	6.9	5.8	11.2
	RATIO		0.038	0.824	0.612	0.987	0.942	0.514	0.969	0.515	0.279	0.981
METEOROLOGICAL SITE BRADLEY	DIR (DEG)		320	210	230	190	270	180	210	220	30	320
	VEL (MPH)		1.5	3.4	0.8	12.7	3.9	1.4	8.5	2.0	2.5	7.9
	SPD (MPH)		3.3	4.6	3.6	12.8	5.5	5.8	9.6	5.8	2.6	8.3
	RATIO		0.469	0.746	0.219	0.992	0.706	0.252	0.887	0.348	0.949	0.948
METEOROLOGICAL SITE BRIDGEPORT	DIR (DEG)		130	250	250	200	250	80	230	70	30	260
	VEL (MPH)		3.9	6.1	2.7	15.2	8.2	5.9	12.9	6.1	5.4	7.0
	SPD (MPH)		5.0	7.3	6.9	16.1	8.6	6.9	13.1	9.3	6.9	7.3
	RATIO		0.766	0.833	0.396	0.942	0.954	0.854	0.988	0.658	0.780	0.958
METEOROLOGICAL SITE WORCESTER	DIR (DEG)		280	250	290	220	260	270	250	170	60	280
	VEL (MPH)		5.5	7.2	5.7	12.4	5.3	1.8	11.3	1.6	3.2	13.2
	SPD (MPH)		6.3	7.6	6.3	12.5	5.6	5.2	11.6	5.8	3.9	13.4
	RATIO		0.865	0.944	0.900	0.990	0.945	0.345	0.970	0.277	0.830	0.984
									NW	NW		
WATERBURY	7	111	222	187	158	142	130	130	115	108	104	97
		DATE	1/22/81	2/ 6/81	1/28/81	12/24/81	12/21/81	2/18/81	4/25/81	2/ 3/81	4/28/81	6/12/81
METEOROLOGICAL SITE NEWARK	DIR (DEG)		270	210	240	260	240	210	320	270	170	260
	VEL (MPH)		7.0	9.8	4.3	7.6	6.5	4.3	19.2	17.7	0.3	8.7
	SPD (MPH)		8.5	10.8	7.0	8.1	6.9	6.3	19.3	18.1	8.1	10.9
	RATIO		0.824	0.905	0.612	0.942	0.939	0.677	0.995	0.980	0.038	0.800
METEOROLOGICAL SITE BRADLEY	DIR (DEG)		210	210	230	270	200	220	320	300	320	310
	VEL (MPH)		3.4	6.4	0.8	3.9	5.0	4.1	11.0	7.6	1.5	3.4
	SPD (MPH)		4.6	7.0	3.6	5.5	5.9	4.9	11.2	7.9	3.3	5.9
	RATIO		0.746	0.904	0.219	0.706	0.848	0.834	0.983	0.955	0.469	0.579
METEOROLOGICAL SITE BRIDGEPORT	DIR (DEG)		250	220	250	250	250	220	310	270	130	210
	VEL (MPH)		6.1	9.4	2.7	8.2	11.5	6.8	14.2	16.0	3.9	7.5
	SPD (MPH)		7.3	10.6	6.9	6.6	12.9	7.3	15.0	16.2	5.0	7.8
	RATIO		0.833	0.884	0.396	0.954	0.886	0.930	0.949	0.988	0.766	0.967
METEOROLOGICAL SITE WORCESTER	DIR (DEG)		250	230	290	260	260	270	350	290	280	280
	VEL (MPH)		7.2	10.9	5.7	5.3	8.6	10.3	4.8	11.8	5.5	7.5
	SPD (MPH)		7.6	11.4	6.3	5.6	9.3	10.6	5.9	11.9	6.3	8.1
	RATIO		0.944	0.962	0.900	0.945	0.915	0.969	0.819	0.990	0.865	0.930

1981 TEN HIGHEST 24 HR AVG TSP DAYS WITH WIND DATA.

POLLUTANT--TOTAL SUSPENDED PARTICULATES

UNITS : MICROGRAMS PER CUBIC METER

TOWN NAME	SITE	SAMPLES		1	2	3	4	5	6	7	8	9	10
					NW			NW	NW			NE	
WATERBURY	123	117		275	196	186	178	175	169	165	147	141	122
			DATE	1/22/81	1/13/81	12/24/81	1/28/81	2/ 9/81	12/30/81	2/ 6/81	12/21/81	10/13/81	4/28/81
METEOROLOGICAL SITE			DIR (DEG)	270	300	260	240	290	320	210	240	50	170
		NEWARK	VEL (MPH)	7.0	7.4	7.6	4.3	14.8	8.7	9.8	6.5	4.4	0.3
			SPD (MPH)	8.5	9.3	8.1	7.0	15.5	8.8	10.8	6.9	6.9	8.1
			RATIO	0.824	0.794	0.942	0.612	0.955	0.997	0.905	0.939	0.637	0.038
METEOROLOGICAL SITE			DIR (DEG)	210	340	270	230	290	340	210	200	20	320
		BRADLEY	VEL (MPH)	3.4	2.4	3.9	0.8	13.0	9.1	6.4	5.0	2.1	1.5
			SPD (MPH)	4.6	2.7	5.5	3.6	14.1	9.8	7.0	5.9	2.3	3.3
			RATIO	0.746	0.867	0.706	0.219	0.926	0.933	0.904	0.848	0.925	0.469
METEOROLOGICAL SITE			DIR (DEG)	250	310	250	250	280	320	220	250	50	130
		BRIDGEPORT	VEL (MPH)	6.1	12.9	8.2	2.7	19.2	8.5	9.4	11.5	2.3	3.9
			SPD (MPH)	7.3	13.4	8.6	6.9	19.5	9.9	10.6	12.9	5.3	5.0
			RATIO	0.833	0.967	0.954	0.396	0.983	0.862	0.884	0.886	0.440	0.766
METEOROLOGICAL SITE			DIR (DEG)	250	320	260	290	300	310	230	250	360	280
		WORCESTER	VEL (MPH)	7.2	10.7	5.3	5.7	16.0	9.1	10.9	8.6	1.3	5.5
			SPD (MPH)	7.6	11.8	5.6	6.3	16.4	9.2	11.4	9.3	4.2	6.3
			RATIO	0.944	0.910	0.945	0.900	0.975	0.989	0.962	0.915	0.312	0.865
				NW	NW	NE				NE		NE	
WATERFORD	1	58		135	90	80	63	61	61	59	57	56	53
			DATE	7/ 9/81	7/15/81	8/20/81	3/29/81	9/13/81	1/22/81	5/22/81	4/28/81	1/16/81	4/ 4/81
METEOROLOGICAL SITE			DIR (DEG)	290	320	50	230	280	270	150	170	320	210
		NEWARK	VEL (MPH)	11.0	12.4	12.7	16.3	7.4	7.0	4.1	0.3	1.6	16.9
			SPD (MPH)	11.2	13.1	13.4	16.8	9.6	8.5	7.6	8.1	5.8	17.1
			RATIO	0.981	0.945	0.948	0.969	0.771	0.824	0.534	0.038	0.279	0.987
METEOROLOGICAL SITE			DIR (DEG)	320	330	50	210	260	210	60	320	30	190
		BRADLEY	VEL (MPH)	7.9	7.9	5.9	8.5	6.9	3.4	3.9	1.5	2.5	12.7
			SPD (MPH)	8.3	8.3	7.3	9.6	7.3	4.6	4.9	3.3	2.6	12.8
			RATIO	0.948	0.948	0.804	0.887	0.947	0.746	0.791	0.469	0.949	0.992
METEOROLOGICAL SITE			DIR (DEG)	260	310	80	230	230	250	80	130	30	200
		BRIDGEPORT	VEL (MPH)	7.0	9.7	11.4	12.9	8.3	6.1	6.4	3.9	5.4	15.2
			SPD (MPH)	7.3	10.1	12.4	13.1	8.5	7.3	10.4	5.0	6.9	16.1
			RATIO	0.958	0.964	0.921	0.988	0.973	0.833	0.618	0.766	0.780	0.942
METEOROLOGICAL SITE			DIR (DEG)	280	320	60	250	270	250	60	280	60	220
		WORCESTER	VEL (MPH)	13.2	12.3	6.2	11.3	9.5	7.2	6.2	5.5	3.2	12.4
			SPD (MPH)	13.4	12.8	6.8	11.6	9.6	7.6	6.6	6.3	3.9	12.5
			RATIO	0.984	0.964	0.912	0.970	0.989	0.944	0.936	0.865	0.830	0.990
						NW		SE	NW	NW			NW
WILLIMANTIC	2	58		154	125	116	99	95	79	76	75	62	62
			DATE	1/22/81	12/24/81	2/ 9/81	1/28/81	7/ 3/81	3/11/81	7/ 9/81	2/15/81	3/29/81	1/10/81
METEOROLOGICAL SITE			DIR (DEG)	270	260	290	240	140	280	290	100	230	330
		NEWARK	VEL (MPH)	7.0	7.6	14.8	4.3	6.7	7.6	11.0	3.6	16.3	16.3
			SPD (MPH)	8.5	8.1	15.5	7.0	6.9	8.2	11.2	6.9	16.8	16.5
			RATIO	0.824	0.942	0.955	0.612	0.967	0.933	0.981	0.515	0.969	0.986
METEOROLOGICAL SITE			DIR (DEG)	210	270	290	230	160	310	320	220	210	340
		BRADLEY	VEL (MPH)	3.4	3.9	13.0	0.8	5.6	3.4	7.9	2.0	8.5	9.1
			SPD (MPH)	4.6	5.5	14.1	3.6	6.6	5.5	8.3	5.8	9.6	10.4
			RATIO	0.746	0.706	0.926	0.219	0.841	0.625	0.948	0.348	0.887	0.878

TABLE 11, Continued

1981 TEN HIGHEST 24 HR AVG TSP DAYS WITH WIND DATA.

POLLUTANT--TOTAL SUSPENDED PARTICULATES UNITS : MICROGRAMS PER CUBIC METER

TOWN NAME	SITE SAMPLES	1	2	3	4	5	6	7	8	9	10
METEOROLOGICAL SITE BRIDGEPORT	DIR (DEG)	250	250	280	250	90	240	260	70	230	310
	VEL (MPH)	6.1	8.2	19.2	2.7	5.5	11.2	7.0	6.1	12.9	12.9
	SPD (MPH)	7.3	8.6	19.5	6.9	6.3	12.4	7.3	9.3	13.1	13.7
	RATIO	0.833	0.954	0.983	0.396	0.871	0.907	0.958	0.658	0.988	0.948
METEOROLOGICAL SITE WORCESTER	DIR (DEG)	250	260	300	290	190	280	280	170	250	310
	VEL (MPH)	7.2	5.3	16.0	5.7	4.0	9.2	13.2	1.6	11.3	11.5
	SPD (MPH)	7.6	5.6	16.4	6.3	6.0	9.5	13.4	5.8	11.6	13.5
	RATIO	0.944	0.945	0.975	0.900	0.657	0.965	0.984	0.277	0.970	0.853

TABLE 11, Continued

$SW = \frac{203}{430} = 47\%$ (47.2)

$NW = \frac{120}{430} = 27.9\%$

$NE = \frac{51}{430} = 11.9\%$

$SE = \frac{1}{430} = 0.2\%$

III. SULFUR DIOXIDE

Health Effects:

Sulfur oxides are gases that come from the burning of sulfur-containing fuel, mainly coal and oil, and also from the smelting of metals and from certain industrial processes. They have a distinctive odor. Sulfur dioxide (SO_2) comprises about 95 percent of these gases, so scientists use a test for SO_2 alone as a measure of all sulfur oxides.

As the level of sulfur oxides in air increases. there is an obstruction of breathing, a choking effect that doctors call "pulmonary flow resistance." The amount of breathing obstruction has a direct relation to the amount of sulfur compounds in the air. The effect of sulfur pollution is enhanced by the presence of other pollutants. especially particulates and oxidants. That is, the harm from two or more pollutants is more than additive. Each augments the other. and the combined effect is greater than the sum of the parts would be.

Many types of respiratory disease are associated with sulfur oxides: coughs and colds, asthma, bronchitis, and emphysema. Some researchers believe that the harm is mainly due not to the sulfur oxide gases but to other sulfur compounds that accompany the oxides: sulfur acids and sulfate salts.

Conclusions:

Sulfur dioxide concentrations. for the most part, did not approach any federal primary or secondary standards. The 60 ug/m^3 annual secondary standard and the 260 ug/m^3 24-hour secondary standard were dropped by the State of Connecticut as of November 1981. Any trend resulting from this change will be shown in next year's summary. With the exception of one day at Milford, measured concentrations were substantially below the 365 ug/m^3 primary 24-hour standard. All sulfur dioxide monitoring sites were well below the 80 ug/m^3 primary annual standard and the 1300 ug/m^3 secondary 3-hour standard.

According to the results of the Wilcoxon Test. which made use of sulfation rate data, there was a small but statistically significant decrease in SO_2 levels from 1980 to 1981 (see Table 3). The general decrease (shown by the Wilcoxon Test) of SO_2 levels was probably a result of smaller heating requirements due to slightly warmer temperatures experienced during the heating seasons of 1981 as compared to 1980. In November of 1981 fuel burning sources using residual oil were showed to burn 1.0% sulfur oil (the previous sulfur-in-fuel limit was 0.5%). Any increases in ambient SO_2 levels resulting from the use of 1.0% instead of 0.5% sulfur oil will be discussed in subsequent additions of this annual air quality report.

The continued attainment of SO_2 standards is primarily attributable to Connecticut's "low" sulfur-in-fuel regulation (i.e., 1.0% sulfur-in-fuel limit statewide as of November, 1981).

Method of Measurement:

The DEP Air Monitoring Unit used the pulsed fluorescence method (Teco instruments) to continuously measure sulfur dioxide levels at all 9 sites in 1981.

Discussion of Data:

Monitoring Network - The nine continuous SO_2 monitors (one was moved during the year) that recorded data in eight towns during 1981 were:

Bridgeport 001	Hartford 123
Bridgeport 123	Milford 002
Danbury 123	New Haven 123
Greenwich 004 (2 1/2 months)	Stamford 123
Greenwich 017 (6 months)	Waterbury 123

All of these sites telemetered the data to the central computer in Hartford on a real-time basis. Table 12 shows that sufficient data for valid annual means (at least 75% of the possible sampling hours) were recorded at eight sites. Neither of the Greenwich sites operated long enough to have a valid annual average.

Annual Averages - SO_2 levels were below the primary annual standard of 80 ug/m^3 at all sites in 1981 (see Table 12). The annual average SO_2 levels decreased at three of the eight (not including Greenwich) monitoring sites from 1980 to 1981. Hartford 123 was the only site which decreased more than 5 ug/m^3. Four monitoring sites showed increased annual averages and one (New Haven 123) site remained the same. Milford 002 increased from 32 ug/m^3 to 40 ug/m^3 and was the only site to increase more than 5 ug/m^3 from 1980 to 1981. According to the Wilcoxon test, these changes indicate a small but significant downward trend when compared to 1980.

Statistical Projections - A statistical analysis of the sulfur dioxide data is presented in Table 13. This analysis provided information to compensate for any loss of data caused by instrumentation problems. The format of Table 13 is the same as that used to present the total suspended particulate annual averages (see Table 6). However. Table 13 gives the annual arithmetic mean of the valid 24-hour SO_2 averages to allow direct comparison to the annual SO_2 standards. The 95% limits and standard deviations are also arithmetic calculations. Since the distribution of the SO_2 data tends to be lognormal. the geometric means and standard deviations were used to predict the number of days the 24-hour standard of 365 ug/m^3 would be exceeded at each site if sampling had been conducted every day.

It is important to note that these statistical tests require random data to be valid. This means that an equal number of samples must be collected in each season of the year and on each day of the week. The distribution and quantity of SO_2 data were better in 1981 than in 1980. The data indicate with reasonable assurance that there were no violations of the primary SO_2 standard in Connecticut. For example. a statistical prediction of one day exceeding the primary 24-hour standard (365 ug/m^3) at Hartford site 123 would indicate that an increase in SO_2 emissions there might jeopardize the attainment of this standard. Two days over the standard are required for the standard to be violated.

24-Hour Averages - In 1981 no sites recorded SO_2 levels in excess of the 24-hour primary standard of 365 ug/m^3. Second high running 24-hour average concentrations increased at seven of the eight SO_2 monitoring sites during 1981. The increase exceeded 50 ug/m^3 at one site, Milford 002. These increases can be explained by variations in weather conditions which will be discussed in the following 10-High Days with Wind Data Section.

The current EPA policy bases compliance with the primary 24-hour SO_2 standard on non-overlapping running averages. Running averages are averages computed for the 24-hour periods ending at every hour. Assessment of compliance is based on the value of the 2nd highest of the two highest non-overlapping 24-hour periods in the year. (Note that the highest 24-hour period in the year may overlap both of these two periods.) Thus, compliance assessment is based on the magnitude of the exposure encountered within any two distinct 24-hour periods and not on a calendar day exposure basis. However, there is some contention that compliance assessment for 24-hour SO_2 standards should be based on calendar day averages only. Table 15 contains the maximum 24-hour SO_2 readings from both the running averages and the calendar day averages for comparison. The second high (the value compared to the standard for attainment-non-attainment designations) calendar day readings in 1981 were roughly 7% lower than the second high readings from the running averages with a minimum of 15% at Stamford 123.

3-Hour Averages - Measured SO_2 concentrations were far below the secondary 3-hour standard of 1300 ug/m^3 at all DEP monitoring sites in 1981. Second high running 3-hour average concentrations increased at four monitoring sites, decreasing at three sites and one site remaining the same.

10-High Days with Wind Data - Table 17 lists the ten highest 24-hour calendar day SO_2 averages and the dates of occurrence for each SO_2 site in Connecticut during 1981. The table also shows the average wind conditions that occurred on each of these dates. (The origin and use of these wind data are described in the discussion of Table 11 in the TSP section.)

Once again, as with TSP, most of the highest SO_2 days occur during periods of southwesterly winds. Most of those days also have persistent winds. This relationship is caused, at least in part, by SO_2 transport; however, transport is somewhat limited by the chemical instability of SO_2. In the atmosphere, SO_2 reacts with other gases to produce, among other things, sulfate particulates. Previous studies conducted by the DEP have shown that during periods of southwest winds, levels of SO_2 in Connecticut decrease with distance from the New York City metropolitan area. This relationship tends to support the transport hypothesis.

Using the data in Table 17, the dates of occurrence of the ten highest 24-hour averages were noted. There are some interesting similarities among the high SO_2 days. First, all of the days on the table occurred

during the winter months. This can be attributed to more fuel being burned during the cold weather. Second, almost all of the days experienced persistent southwesterly winds. Transport from the New York City area as well as industrial centers to our west is indicated.

Most of the sites recorded their highest SO_2 levels during the month of January (it should be noted that both Greenwich sites operated for only a few months and should not be considered when analyzing the data). The month of January was extremely cold, creating an increase in fuel consumption for heating.

In summary, high levels of SO_2 in Connecticut seem to be caused by a number of related factors. First, Connecticut experiences its highest SO_2 levels during the winter months, when there is an increased amount of fuel combustion. Second, the New York City metropolitan area, a large emission source, is located to the southwest of Connecticut and in this region, southwest winds occur relatively often in comparison to other wind directions. Also, adverse meteorological conditions are often associated with southwest winds. The net effect is that during the winter months when a persistent southwesterly wind occurs, an air mass picks up increased amounts of SO_2 over the New York City metropolitan area and transports this SO_2 into Connecticut. Here, the SO_2 levels remain high because the relatively low mixing heights associated with the southwest wind will not allow much vertical mixing. The levels of transported SO_2 eventually decline with increasing distance from New York City as the SO_2 is dispersed and as it slowly reacts to produce sulfate particulates. It is the sulfate particulates that combine with water droplets to produce "acid rain," both wet and dry deposition.

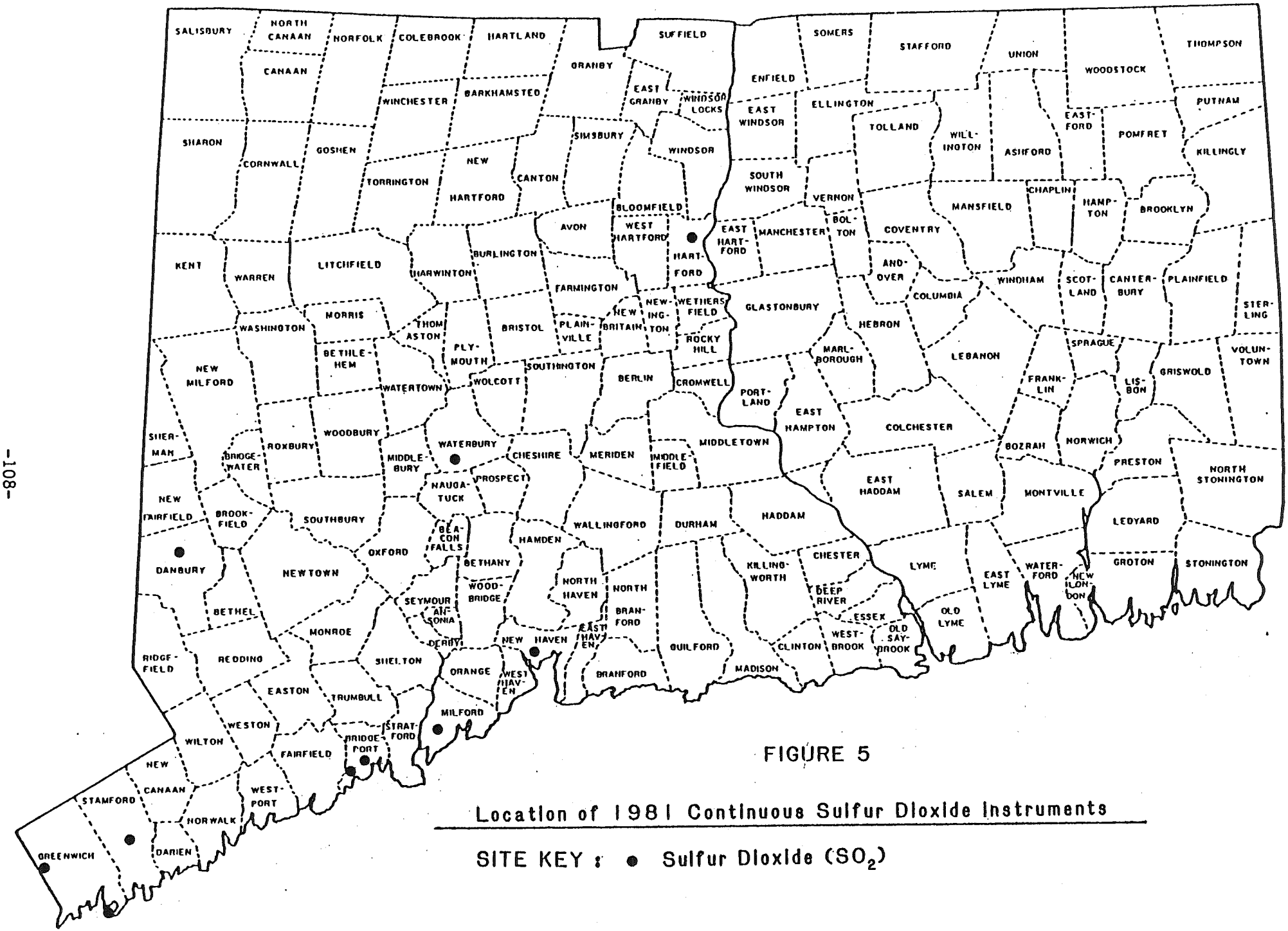


FIGURE 5

Location of 1981 Continuous Sulfur Dioxide Instruments

SITE KEY : ● Sulfur Dioxide (SO_2)

TABLE 12

1981
ANNUAL ARITHMETIC AVERAGES OF SULFUR DIOXIDE
AT SITES WITH CONTINUOUS MONITORS

PRIMARY NAAQS 80 ug/m^3

TOWN	SITE NAME	1980 ANNUAL AVERAGE
Bridgeport-001	City Hall	31
Bridgeport-123	Hallett Street	35
Danbury-123	Western Conn. State College	26
Greenwich-004*	Bruce Golf Course	33
Greenwich-017*	Greenwich Point Park	12
Hartford-123	State Office Building	30
Milford-002	Devon Community Center	40
New Haven-123	State Street	35
Stamford-123	Health Department	28
Waterbury-123	Bank Street	24

* Insufficient data for valid annual average or estimate

TABLE 13. Sulfur Dioxide, Annual Averages and Statistical Projections

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION PAGE 1 AIR COMPLIANCE MONITORING

POLLUTANT--SULFUR DIOXIDE DISTRIBUTION--LOGNORMAL

TOWN NAME	SITE	YEAR	SAMPLES	ARI. MEAN	95-PCT-LIMITS LOWER	95-PCT-LIMITS UPPER	STD DEVIATION	PREDICTED DAYS OVER UG/M3	PREDICTED DAYS OVER 365 UG/M3
BRIDGEPORT	001	1981	357	31.1	31	32	30.378		
BRIDGEPORT	123	1981	357	35.2	35	36	27.854		
DANBURY	123	1981	362	25.9	26	26	19.926		
GREENWICH	004	1981	55*	32.6	25	40	29.263		
GREENWICH	017	1981	145*	12.0	11	13	6.237		
HARTFORD	123	1981	350	30.0	29	31	28.972		
MILFORD	002	1981	340	40.0	39	41	29.053		
NEW HAVEN	123	1981	350	34.8	34	35	27.590		
STAMFORD	123	1981	364	28.0	28	28	26.750		
WATERBURY	123	1981	355	23.5	23	24	14.469		

* SAMPLING NOT RANDOM OR OF INSUFFICIENT SIZE FOR REPRESENTATIVE ANNUAL STATISTICS.

TABLE 14

1981 MAXIMUM 24-HOUR RUNNING AVERAGE
SULFUR DIOXIDE CONCENTRATIONS

SITE	DATE* 1ST HIGH	DATE* 2ND HIGH	Concentration (ug/m3) 1ST HIGH	2ND HIGH
Bridgeport-01	1/15/02	1/22/16	212	197
Bridgeport-123	1/15/07	1/9/24	199	175
Danbury-123	1/15/07	1/14/18[a]	149	131
Greenwich-004[d]	1/17/06	1/14/19	180	164
Greenwich-017[e]	12/8/20	12/4/24	77	53
Hartford-123	1/15/15	1/16/17[b]	232	201
Milford-02	12/10/04	12/9/16[c]	355	269
New Haven-123	1/15/05	1/22/18	202	178
Stamford-123	1/15/03	1/15/15[f]	210	175
Waterbury-123	1/15/09	1/15/22[g]	121	96

Primary Standard (365)

* Date is month/day/ending hour of occurrence
a Non-overlapping maximum on 1/15/18 = 131 ug/m^3
b Non-overlapping maximum on 1/15/17 = 231 ug/m^3
c Non-overlapping maximum on 12/10/16 = 273 ug/m^3
d Site operated from 1/1/83 to 3/15/83
e Site operated from 6/1/83 to 12/31/83
f non-overlapping m aximum on 1/14/03 = 279
g non-overlapping maximum on 1/14/22 = 97

TABLE 15

COMPARISONS OF 1981 FIRST AND SECOND HIGH RUNNING AND CALENDAR DAY 24-HOUR SO2 AVERAGES
units = ug/m3

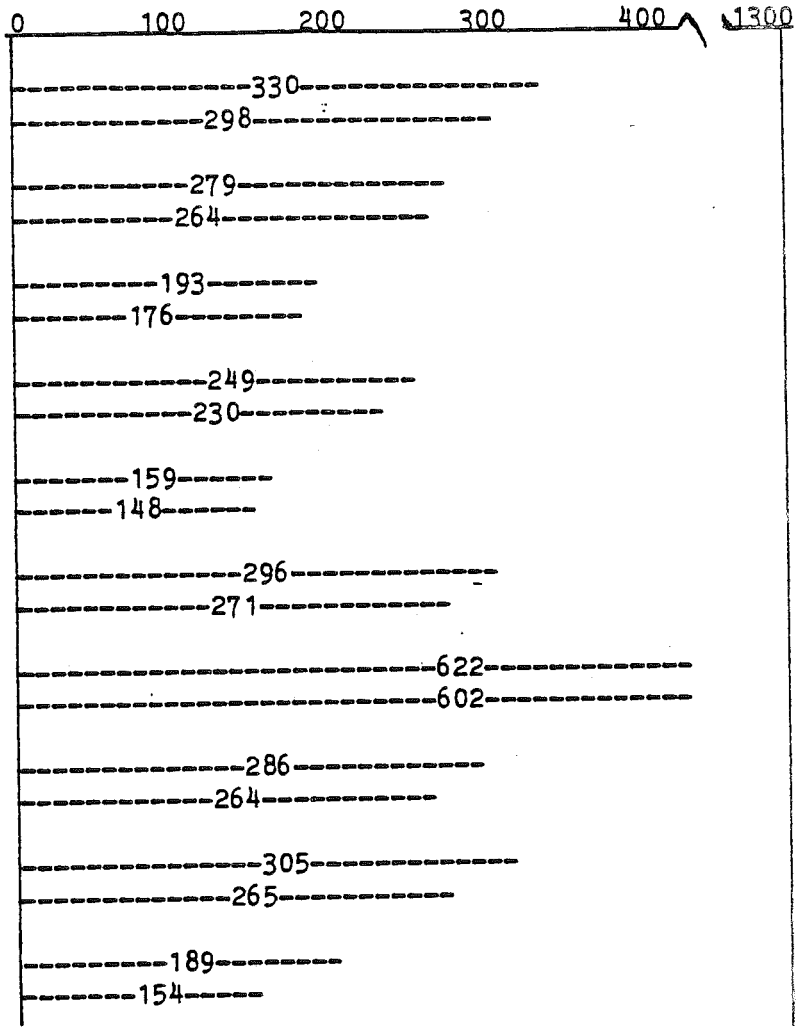
Site	1st High Running Avg.	1st High Calendar Day	2nd High Running Avg.	2nd High Calendar Day
Bridgeport-001	212	208	197	184
Bridgeport-123	199	189	175	175
Danbury-123	149	142	131	130
Greenwich-004[a]	180	122	164	99
Greenwich-017[b]	77	70	53	51
Hartford 123	232	214	201	194
Milford-002	355	354	269	249
New Haven-123	202	191	178	164
Stamford-123	210	206	175	152
Waterbury-123	121	102	96	94

a 2 1/2 months of data
b 7 months of data

TABLE 16

1981 MAXIMUM 3-HOUR SULFUR DIOXIDE CONCENTRATIONS

SITE	DATE* 1ST HIGH	DATE* 2ND HIGH	Concentration (ug/m3)
Bridgeport-01	1/9/10		330
		1/22/08	298
Bridgeport-123	1/22/08		279
		1/14/22	264
Danbury-123	1/09/09		193
		1/14/15	176
Greenwich-004[c]	1/14/12		249
		1/22/08	230
Greenwich-017[d]	6/8/13		159
		8/29/04	148
Hartford-123	1/15/11		296
		1/15/09[a]	271
Milford-02	12/09/10		622
		12/09/17	602
New Haven-123	1/09/10		286
		1/9/08[b]	264
Stamford-123	1/09/09		305
		1/22/11	265
Waterbury-123	1/22/13		189
		1/14/13	154



* Date is month/day/ending hour of occurrence
a Non-overlapping maximum on 1/15/12 = 282 ug/m^3
b Non-overlapping maximum on 1/09/11 = 280 ug/m^3
c Site operated from 1/1/83 to 3/15/83
d Site operated from 5/1/83 to 12/31/83

TABLE 17

1981 TEN HIGHEST 24 AVG SULFUR DIOXIDE DAYS WITH WIND DATA.

POLLUTANT--SULFUR DIOXIDE

UNITS : MICROGRAMS PER CUBIC METER

TOWN NAME	SITE	SAMPLES	1	2	3	4	5	6	7	8	9	10
BRIDGEPORT	1	357	208	184	178	145	137	131	127	125	123	120
		DATE	1/14/81	1/ 9/81	1/22/81	1/15/81	2/14/81	2/ 6/81	1/ 6/81	1/16/81	2/ 1/81	2/ 7/81
METEOROLOGICAL SITE NEWARK		DIR (DEG)	70	260	270	30	250	210	220	320	170	160
		VEL (MPH)	1.5	4.6	7.0	11.7	5.9	9.8	8.2	1.6	6.1	3.6
		SPD (MPH)	5.0	5.5	8.5	11.8	7.6	10.8	9.2	5.8	7.2	6.0
		RATIO	0.299	0.833	0.824	0.994	0.779	0.905	0.893	0.279	0.847	0.589
METEOROLOGICAL SITE BRADLEY		DIR (DEG)	200	210	210	20	260	210	210	30	200	220
		VEL (MPH)	2.0	3.3	3.4	5.2	3.2	6.4	5.7	2.5	6.2	5.5
		SPD (MPH)	2.7	4.2	4.6	5.2	6.2	7.0	7.2	2.6	6.3	6.5
		RATIO	0.748	0.798	0.746	0.998	0.521	0.904	0.797	0.949	0.966	0.852
METEOROLOGICAL SITE BRIDGEPORT		DIR (DEG)	50	290	250	20	240	220	230	30	180	90
		VEL (MPH)	3.7	3.4	6.1	11.0	5.0	9.4	7.5	5.4	2.6	2.7
		SPD (MPH)	3.9	5.5	7.3	12.1	6.8	10.6	8.9	6.9	7.9	7.2
		RATIO	0.954	0.626	0.833	0.912	0.735	0.884	0.844	0.780	0.327	0.380
METEOROLOGICAL SITE WORCESTER		DIR (DEG)	260	260	250	30	270	230	240	60	210	250
		VEL (MPH)	5.5	4.6	7.2	4.9	8.4	10.9	7.0	3.2	8.8	5.3
		SPD (MPH)	5.6	4.7	7.6	6.3	9.8	11.4	8.6	3.9	10.1	6.6
		RATIO	0.989	0.960	0.944	0.775	0.864	0.962	0.807	0.830	0.874	0.798
BRIDGEPORT	123	357	189	175	157	147	135	128	125	120	117	109
		DATE	1/14/81	1/ 9/81	1/22/81	1/15/81	2/14/81	2/ 6/81	1/16/81	2/18/81	1/ 6/81	2/ 7/81
METEOROLOGICAL SITE NEWARK		DIR (DEG)	70	260	270	30	250	210	320	210	220	160
		VEL (MPH)	1.5	4.6	7.0	11.7	5.9	9.8	1.6	4.3	8.2	3.6
		SPD (MPH)	5.0	5.5	8.5	11.8	7.6	10.8	5.8	6.3	9.2	6.0
		RATIO	0.299	0.833	0.824	0.994	0.779	0.905	0.279	0.677	0.833	0.589
METEOROLOGICAL SITE BRADLEY		DIR (DEG)	200	210	210	20	260	210	30	220	210	220
		VEL (MPH)	2.0	3.3	3.4	5.2	3.2	6.4	2.5	4.1	5.7	5.5
		SPD (MPH)	2.7	4.2	4.6	5.2	6.2	7.0	2.6	4.9	7.2	6.5
		RATIO	0.748	0.798	0.746	0.998	0.521	0.904	0.949	0.834	0.797	0.852
METEOROLOGICAL SITE BRIDGEPORT		DIR (DEG)	50	290	250	20	240	220	30	220	230	90
		VEL (MPH)	3.7	3.4	6.1	11.0	5.0	9.4	5.4	6.8	7.5	2.7
		SPD (MPH)	3.9	5.5	7.3	12.1	6.8	10.6	6.9	7.3	8.9	7.2
		RATIO	0.954	0.626	0.833	0.912	0.735	0.884	0.780	0.930	0.844	0.380
METEOROLOGICAL SITE WORCESTER		DIR (DEG)	260	260	250	30	270	230	60	270	240	250
		VEL (MPH)	5.5	4.6	7.2	4.9	8.4	10.9	3.2	10.3	7.0	5.3
		SPD (MPH)	5.6	4.7	7.6	6.3	9.8	11.4	3.9	10.6	8.6	6.6
		RATIO	0.989	0.960	0.944	0.775	0.864	0.962	0.830	0.969	0.807	0.798
DANBURY	123	362	142	130	121	104	102	101	99	84	81	76
		DATE	1/14/81	1/ 9/81	1/15/81	1/ 6/81	1/22/81	1/16/81	1/26/81	2/14/81	2/ 6/81	12/21/81
METEOROLOGICAL SITE NEWARK		DIR (DEG)	70	260	30	220	270	320	220	250	210	240
		VEL (MPH)	1.5	4.6	11.7	8.2	7.0	1.6	7.8	5.9	9.8	6.5
		SPD (MPH)	5.0	5.5	11.8	9.2	8.5	5.8	8.2	7.6	10.8	6.9
		RATIO	0.299	0.833	0.994	0.893	0.824	0.279	0.947	0.779	0.905	0.939
METEOROLOGICAL SITE BRADLEY		DIR (DEG)	200	210	20	210	210	30	200	260	210	200
		VEL (MPH)	2.0	3.3	5.2	5.7	3.4	2.5	8.4	3.2	6.4	5.0
		SPD (MPH)	2.7	4.2	5.2	7.2	4.6	2.6	8.8	6.2	7.0	5.9
		RATIO	0.748	0.798	0.998	0.797	0.746	0.949	0.962	0.521	0.904	0.848

1981 TEN HIGHEST 24 AVG SULFUR DIOXIDE DAYS WITH WIND DATA.

POLLUTANT--SULFUR DIOXIDE UNITS : MICROGRAMS PER CUBIC METER

TOWN NAME	SITE	SAMPLES		1	2	3	4	5	6	7	8	9	10
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	50	290	20	230	250	30	210	240	220	250
			VEL (MPH)	3.7	3.4	11.0	7.5	6.1	5.4	10.5	5.0	9.4	11.5
			SPD (MPH)	3.9	5.5	12.1	8.9	7.3	6.9	10.9	6.8	10.6	12.9
			RATIO	0.954	0.626	0.912	0.844	0.833	0.780	0.965	0.735	0.884	0.886
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	260	260	30	240	250	60	240	270	230	260
			VEL (MPH)	5.5	4.6	4.9	7.0	7.2	3.2	11.9	8.4	10.9	8.6
			SPD (MPH)	5.6	4.7	6.3	8.6	7.6	3.9	12.1	9.8	11.4	9.3
			RATIO	0.989	0.960	0.775	0.807	0.944	0.830	0.989	0.864	0.962	0.915
GREENWICH	4	55		122	106	99	93	87	80	77	75	58	53
			DATE	1/26/81	1/ 9/81	1/22/81	1/ 6/81	2/ 6/81	1/17/81	1/13/81	2/18/81	1/10/81	1/12/81
METEOROLOGICAL SITE NEWARK			DIR (DEG)	220	260	270	220	210	330	300	210	330	340
			VEL (MPH)	7.8	4.6	7.0	8.2	9.8	17.7	7.4	4.3	16.3	10.4
			SPD (MPH)	8.2	5.5	8.5	9.2	10.8	18.0	9.3	6.3	16.5	11.4
			RATIO	0.947	0.833	0.824	0.893	0.905	0.983	0.794	0.677	0.986	0.919
METEOROLOGICAL SITE BRADLEY			DIR (DEG)	200	210	210	210	210	340	340	220	340	360
			VEL (MPH)	8.4	3.3	3.4	5.7	6.4	9.3	2.4	4.1	9.1	2.1
			SPD (MPH)	8.8	4.2	4.6	7.2	7.0	9.6	2.7	4.9	10.4	5.3
			RATIO	0.962	0.798	0.746	0.797	0.904	0.963	0.867	0.834	0.878	0.398
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	210	290	250	230	220	310	310	220	310	310
			VEL (MPH)	10.5	3.4	6.1	7.5	9.4	17.1	12.9	6.8	12.9	10.4
			SPD (MPH)	10.9	5.5	7.3	8.9	10.6	17.3	13.4	7.3	13.7	10.6
			RATIO	0.965	0.626	0.833	0.844	0.884	0.989	0.967	0.930	0.948	0.980
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	240	260	250	240	230	340	320	270	310	310
			VEL (MPH)	11.9	4.6	7.2	7.0	10.9	11.0	10.7	10.3	11.5	5.9
			SPD (MPH)	12.1	4.7	7.6	8.6	11.4	11.4	11.8	10.6	13.5	7.8
			RATIO	0.989	0.960	0.944	0.807	0.962	0.965	0.910	0.969	0.853	0.763
GREENWICH	17	145		41	34	33	31	28	27	25	24	23	22
			DATE	8/29/81	8/27/81	7/10/81	6/ 8/81	8/ 3/81	9/11/81	9/ 5/81	9/10/81	9/14/81	7/13/81
METEOROLOGICAL SITE NEWARK			DIR (DEG)	120	240	330	150	230	270	130	230	240	260
			VEL (MPH)	6.6	9.8	6.3	4.5	10.4	9.7	3.9	6.6	13.0	12.6
			SPD (MPH)	7.3	10.1	9.6	7.5	10.9	10.6	6.3	10.4	13.2	13.4
			RATIO	0.901	0.971	0.658	0.607	0.949	0.910	0.611	0.640	0.981	0.945
METEOROLOGICAL SITE BRADLEY			DIR (DEG)	200	360	340	210	230	360	20	230	220	250
			VEL (MPH)	3.6	1.4	6.4	4.7	4.4	2.3	2.7	4.9	5.6	3.3
			SPD (MPH)	3.9	4.0	8.9	8.3	4.9	4.7	4.2	7.2	7.2	6.6
			RATIO	0.937	0.359	0.716	0.565	0.903	0.481	0.658	0.677	0.777	0.505
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	90	200	340	180	220	270	350	190	210	240
			VEL (MPH)	8.2	7.5	0.2	4.2	6.6	4.2	3.5	6.5	7.4	9.1
			SPD (MPH)	8.6	7.6	7.2	4.5	6.9	5.5	5.6	8.5	7.8	9.2
			RATIO	0.952	0.984	0.025	0.938	0.960	0.765	0.624	0.772	0.954	0.995
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	200	280	320	250	270	290	50	250	250	270
			VEL (MPH)	5.0	5.4	7.1	5.2	5.5	5.9	4.3	6.1	7.5	5.6
			SPD (MPH)	6.3	7.0	9.3	7.2	5.9	8.1	5.9	7.8	7.8	6.0
			RATIO	0.791	0.763	0.763	0.724	0.939	0.734	0.727	0.782	0.970	0.932

TABLE 17, Continued

1981 TEN HIGHEST 24 AVG SULFUR DIOXIDE DAYS WITH WIND DATA.

POLLUTANT--SULFUR DIOXIDE UNITS : MICROGRAMS PER CUBIC METER

TOWN NAME	SITE	SAMPLES	1	2	3	4	5	6	7	8	9	10
HARTFORD	123	350	214	194	170	162	133	117	110	109	108	101
		DATE	1/15/81	1/16/81	1/22/81	1/14/81	1/21/81	12/31/81	2/ 6/81	1/ 9/81	12/26/81	2/14/81
METEOROLOGICAL SITE		DIR (DEG)	30	320	270	70	30	110	210	260	50	250
NEWARK		VEL (MPH)	11.7	1.6	7.0	1.5	8.5	4.6	9.8	4.6	2.6	5.9
		SPD (MPH)	11.8	5.8	8.5	5.0	8.6	7.0	10.8	5.5	6.2	7.6
		RATIO	0.994	0.279	0.824	0.299	0.982	0.655	0.905	0.833	0.428	0.779
METEOROLOGICAL SITE		DIR (DEG)	20	30	210	200	20	360	210	210	360	260
BRADLEY		VEL (MPH)	5.2	2.5	3.4	2.0	2.4	1.0	6.4	3.3	2.3	3.2
		SPD (MPH)	5.2	2.6	4.6	2.7	2.6	1.6	7.0	4.2	3.2	6.2
		RATIO	0.998	0.949	0.746	0.748	0.940	0.627	0.904	0.798	0.714	0.521
METEOROLOGICAL SITE		DIR (DEG)	20	30	250	50	40	70	220	290	50	240
BRIDGEPORT		VEL (MPH)	11.0	5.4	6.1	3.7	3.3	7.0	9.4	3.4	3.7	5.0
		SPD (MPH)	12.1	6.9	7.3	3.9	6.9	10.1	10.6	5.5	5.6	6.8
		RATIO	0.912	0.780	0.833	0.954	0.480	0.693	0.884	0.626	0.654	0.735
METEOROLOGICAL SITE		DIR (DEG)	30	60	250	260	320	260	230	260	290	270
WORCESTER		VEL (MPH)	4.9	3.2	7.2	5.5	2.5	2.5	10.9	4.6	3.1	8.4
		SPD (MPH)	6.3	3.9	7.6	5.6	4.3	4.7	11.4	4.7	5.3	9.8
		RATIO	0.775	0.830	0.944	0.989	0.581	0.525	0.962	0.960	0.589	0.864
MILFORD	2	340	332	256	162	113	110	109	107	101	99	98
		DATE	12/ 9/81	12/10/81	3/ 6/81	1/ 9/81	1/17/81	1/14/81	1/15/81	1/22/81	2/14/81	12/21/81
METEOROLOGICAL SITE		DIR (DEG)	320	320	330	260	330	70	30	270	250	240
NEWARK		VEL (MPH)	19.0	18.5	17.5	4.6	17.7	1.5	11.7	7.0	5.9	6.5
		SPD (MPH)	19.1	18.7	17.8	5.5	18.0	5.0	11.8	8.5	7.6	6.9
		RATIO	0.992	0.989	0.984	0.833	0.983	0.299	0.994	0.824	0.779	0.939
METEOROLOGICAL SITE		DIR (DEG)	340	330	340	210	340	200	20	210	260	200
BRADLEY		VEL (MPH)	12.1	10.2	9.7	3.3	9.3	2.0	5.2	3.4	3.2	5.0
		SPD (MPH)	12.2	10.4	9.9	4.2	9.6	2.7	5.2	4.6	6.2	5.9
		RATIO	0.989	0.984	0.973	0.798	0.963	0.748	0.998	0.746	0.521	0.848
METEOROLOGICAL SITE		DIR (DEG)	320	320	320	290	310	50	20	250	240	250
BRIDGEPORT		VEL (MPH)	16.7	17.5	18.3	3.4	17.1	3.7	11.0	6.1	5.0	11.5
		SPD (MPH)	17.0	17.7	18.5	5.5	17.3	3.9	12.1	7.3	6.8	12.9
		RATIO	0.986	0.990	0.986	0.626	0.989	0.954	0.912	0.833	0.735	0.886
METEOROLOGICAL SITE		DIR (DEG)	320	320	320	260	340	260	30	250	270	260
WORCESTER		VEL (MPH)	16.8	15.8	13.9	4.6	11.0	5.5	4.9	7.2	8.4	8.6
		SPD (MPH)	17.0	15.8	14.2	4.7	11.4	5.6	6.3	7.6	9.8	9.3
		RATIO	0.990	1.000	0.979	0.960	0.965	0.989	0.775	0.944	0.864	0.915
NEW HAVEN	123	350	191	164	156	149	145	131	123	112	110	109
		DATE	1/14/81	1/ 9/81	1/22/81	2/14/81	1/15/81	1/16/81	2/ 6/81	12/21/81	11/ 9/81	2/ 1/81
METEOROLOGICAL SITE		DIR (DEG)	70	260	270	250	30	320	210	240	300	170
NEWARK		VEL (MPH)	1.5	4.6	7.0	5.9	11.7	1.6	9.8	6.5	5.5	6.1
		SPD (MPH)	5.0	5.5	8.5	7.6	11.8	5.8	10.8	6.9	10.9	7.2
		RATIO	0.299	0.833	0.824	0.779	0.994	0.279	0.905	0.939	0.504	0.847
METEOROLOGICAL SITE		DIR (DEG)	200	210	210	260	20	30	210	200	360	200
BRADLEY		VEL (MPH)	2.0	3.3	3.4	3.2	5.2	2.5	6.4	5.0	2.5	6.2
		SPD (MPH)	2.7	4.2	4.6	6.2	5.2	2.6	7.0	5.9	4.0	6.3
		RATIO	0.748	0.798	0.746	0.521	0.998	0.949	0.904	0.848	0.625	0.986

TABLE 17, Continued

1981 TEN HIGHEST 24 AVG SULFUR DIOXIDE DAYS WITH WIND DATA.

POLLUTANT--SULFUR DIOXIDE UNITS : MICROGRAMS PER CUBIC METER

TOWN NAME	SITE	SAMPLES		1	2	3	4	5	6	7	8	9	10
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	50	290	250	240	20	30	220	250	280	180
			VEL (MPH)	3.7	3.4	6.1	5.0	11.0	5.4	9.4	11.5	5.7	2.6
			SPD (MPH)	3.9	5.5	7.3	6.8	12.1	6.9	10.6	12.9	8.3	7.9
			RATIO	0.954	0.626	0.833	0.735	0.912	0.780	0.884	0.886	0.689	0.327
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	260	260	250	270	30	60	230	260	290	210
			VEL (MPH)	5.5	4.6	7.2	8.4	4.9	3.2	10.9	8.6	8.3	8.8
			SPD (MPH)	5.6	4.7	7.6	9.8	6.3	3.9	11.4	9.3	9.6	10.1
			RATIO	0.989	0.960	0.944	0.864	0.775	0.830	0.962	0.915	0.867	0.874
STAMFORD	123	364		206	152	146	139	137	112	110	109	108	108
			DATE	1/14/81	1/ 9/81	1/22/81	1/15/81	1/ 6/81	12/26/81	1/16/81	12/21/81	2/ 6/81	12/ 8/81
METEOROLOGICAL SITE NEWARK			DIR (DEG)	70	260	270	30	220	50	320	240	210	270
			VEL (MPH)	1.5	4.6	7.0	11.7	8.2	2.6	1.6	6.5	9.8	6.8
			SPD (MPH)	5.0	5.5	8.5	11.8	9.2	6.2	5.8	6.9	10.8	7.9
			RATIO	0.299	0.833	0.824	0.994	0.893	0.428	0.279	0.939	0.905	0.854
METEOROLOGICAL SITE BRADLEY			DIR (DEG)	200	210	210	20	210	360	30	200	210	10
			VEL (MPH)	2.0	3.3	3.4	5.2	5.7	2.3	2.5	5.0	6.4	1.6
			SPD (MPH)	2.7	4.2	4.6	5.2	7.2	3.2	2.6	5.9	7.0	2.6
			RATIO	0.748	0.798	0.746	0.998	0.797	0.714	0.949	0.848	0.904	0.608
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	50	290	250	20	230	50	30	250	220	300
			VEL (MPH)	3.7	3.4	6.1	11.0	7.5	3.7	5.4	11.5	9.4	4.8
			SPD (MPH)	3.9	5.5	7.3	12.1	8.9	5.6	6.9	12.9	10.6	6.5
			RATIO	0.954	0.626	0.833	0.912	0.844	0.654	0.780	0.886	0.884	0.740
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	260	260	250	30	240	290	60	260	230	330
			VEL (MPH)	5.5	4.6	7.2	4.9	7.0	3.1	3.2	8.6	10.9	3.9
			SPD (MPH)	5.6	4.7	7.6	6.3	8.6	5.3	3.9	9.3	11.4	4.3
			RATIO	0.989	0.960	0.944	0.775	0.807	0.589	0.830	0.915	0.962	0.911
WATERBURY	123	355		102	94	86	78	74	64	62	62	61	59
			DATE	1/14/81	1/15/81	1/22/81	1/16/81	1/ 6/81	1/26/81	2/14/81	2/ 6/81	12/14/81	2/ 7/81
METEOROLOGICAL SITE NEWARK			DIR (DEG)	70	30	270	320	220	220	250	210	30	160
			VEL (MPH)	1.5	11.7	7.0	1.6	8.2	7.8	5.9	9.8	2.1	3.6
			SPD (MPH)	5.0	11.8	8.5	5.8	9.2	8.2	7.6	10.8	4.9	6.0
			RATIO	0.299	0.994	0.824	0.279	0.893	0.947	0.779	0.905	0.429	0.589
METEOROLOGICAL SITE BRADLEY			DIR (DEG)	200	20	210	30	210	200	260	210	20	220
			VEL (MPH)	2.0	5.2	3.4	2.5	5.7	8.4	3.2	6.4	0.3	5.5
			SPD (MPH)	2.7	5.2	4.6	2.6	7.2	8.8	6.2	7.0	2.2	6.5
			RATIO	0.748	0.998	0.746	0.949	0.797	0.962	0.521	0.904	0.149	0.852
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	50	20	250	30	230	210	240	220	50	.90
			VEL (MPH)	3.7	11.0	6.1	5.4	7.5	10.5	5.0	9.4	4.8	2.7
			SPD (MPH)	3.9	12.1	7.3	6.9	8.9	10.9	6.8	10.6	5.8	7.2
			RATIO	0.954	0.912	0.833	0.780	0.844	0.965	0.735	0.884	0.837	0.380
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	260	30	250	60	240	240	270	230	270	250
			VEL (MPH)	5.5	4.9	7.2	3.2	7.0	11.9	8.4	10.9	2.1	5.3
			SPD (MPH)	5.6	6.3	7.6	3.9	8.6	12.1	9.8	11.4	4.6	6.6
			RATIO	0.989	0.775	0.944	0.830	0.807	0.989	0.864	0.962	0.458	0.798

TABLE 17, Continued

$\frac{54}{100} = 54\%$

IV. OZONE

Health Effects:

Ozone is a poisonous form of pure oxygen and the principal component of modern smog. Until recently EPA called this type of pollution "photochemical oxidants." The name was changed because ozone was the only oxidant actually measured and by far the most plentiful.

Ozone and other oxidants -- including peroxyacetal nitrates (PAN), formaldehydes, and peroxides -- are not emitted into the air directly. They are formed by chemical reactions in the air from two other pollutants, hydrocarbons and nitrogen oxides. Energy from sunlight is needed for these chemical reactions, hence the term photochemical smog, and the daily variation in ozone levels, increasing during the day and decreasing at night.

Ozone is a pungent-smelling, faintly bluish gas. It irritates the mucuous membranes of the respiratory system, causing coughing, choking and impaired lung function. It aggravates chronic respiratory diseases like asthma and bronchitis and is believed capable of hastening the death, by pneumonia, of persons in already weakened health. PAN and the other oxidants that accompany ozone are powerful eye irritants.

Conclusions:

As in past years, Connecticut experienced very high concentrations of ozone in the summer months of 1981. At each of the twelve monitored sites, levels in excess of the one-hour NAAQS of 0.12 ppm were frequently recorded, with one-hour average concentrations occasionally exceeding 0.20 ppm.

The frequency of levels in excess of 0.12 ppm dropped significantly from 61 different days in 1980 to 37 days in 1981. The magnitude of ozone levels also decreased at most of the twelve monitoring sites. This apparent improvement in air quality may be real, but only temporary, because it can mostly be attributed to year-to-year variations in regional weather conditions. Federal emission controls on motor vehicles should be bringing about a yearly reduction in ozone precursor emissions, but these emission reductions are probably not large enough to account for this year's improvement in ozone levels.

The larger portion of the peak ozone concentrations in Connecticut is caused by the transport of ozone and/or precursors (e.g., hydrocarbons and nitrogen oxides) from the New York City area and other points to the west and the southwest. The percentage of southwest winds, during the summer "ozone season," decreased from 1980 to 1981, as is shown by the wind roses from Newark (Figures 9 and 10). The wind roses from Bradley Airport (Figures 7 and 8) are not as representative since the airport is located in the Connecticut River Valley and the wind is therefore channeled up the valley. The magnitude of the high ozone levels is also associated with yearly variations in temperature. Ozone production is greatest at high temperatures and in strong sunlight. The summer season daily high

temperatures were lower in 1981 than in 1980, as exemplified by a decrease in the number of days exceeding 90°F from 19 in 1980 to 13 in 1981 at Bradley. At Sikorsky Airport, the number of days exceeding 90°F decreased from 6 in 1980 to 4 in 1981.

Method of Measurement:

The DEP Air Monitoring Unit uses chemiluminescent instruments to measure and record instantaneous concentrations of ozone continuously be means of a fluorescent technique. Properly calibrated, these instruments are shown to be remarkably reliable and stable.

Discussion of Data

Monitoring Network: In order to gather information which will furtner the understanding of ozone production and transport, as well as to provide real-time data for the daily Pollutant Standards Index, DEP operated a state-wide ozone monitoring network consisting of four types of sites in 1981 (see Figure 6):

Urban	-	Bridgeport, East Hartford, Middletown, New Britain, New Haven
Advection from Southwest	-	Danbury, Greenwich, Groton, Madison, Stratford
Rural	-	Stafford

NAAQS - On February 8, 1979 the EPA established an ambient air quality standard for ozone of 0.12 ppm for a one-hour average. Compliance with this standard is determined by the number of hourly exceedances of this standard at each monitoring site over a consecutive three-year period and then computing the average number of standard exceedances over this interval. If the resulting average value (at each site) is less than or equal to 1.0; that is, if the fourth highest hourly value in a consecutive three-year period is less than 0.12 ppm, the ozone standard is considered attained. This standard replaces the old photochemical oxidant standard of 0.08 ppm. The definition of the pollutant was changed along with the numerical value partly because the instruments used to measure photochemical oxidants in the air really measure only ozone. Ozone is only one of a group of chemicals which are formed photochemically in the air and are called photochemical oxidants. In the past, the two terms have often been used interchangeably. This 1981 Annual Summary uses the term "ozone" in conjunction with the NAAQS to reflect the changes in both the numerical value of the NAAQS and its definition.

Days Exceeding the Ozone Standard

At sites for which a comparison can be made, the number of days in 1981 in which the one-hour ozone standard was exceeded fell substantially from 1980 (see Table 18).

1-Hour Average - The 1-hour ozone standard was exceeded at all twelve DEP monitoring sites in 1981. The 1st highest 1-hour average ozone concentrations were lower in 1981 than in 1980 at five of the seven paired DEP ozone sites in Connecticut. Two of these decreases exceeded 0.08

ppm. The 1st highest hourly average increased at two sites (Danbury and Greenwich) from 1980 to 1981 with the increase at Danbury being 0.091 ppm. The monthly high ozone concentrations for the summertime "ozone season," and a tally of the number of times the hourly standard was exceeded, are presented in Table 19 for each site.

Table 20 shows the year's high and second high concentrations at each site.

10 High Days with Wind Data - Table 21 lists the ten highest 1-hour ozone averages, and dates of occurrence from the 10-highest days for each ozone site in Connecticut for 1981. The wind data associated with these high readings are also presented. (See the discussion of Table 11 in the TSP section for a description of the origin and use of these wind data.)

Nearly all of the high O_3 levels occurred on days with southwesterly winds. This fact comes as no surprise due to a couple of characteristics of a southwest wind blowing over Connecticut. One characteristic of a southwest wind is that, during the summer, it usually accompanies high temperatures and bright sunshine. Bright sunshine and high temperatures are the prime producers of ozone. The other characteristic of a southwest wind is that it will transport a lot of precursor emissions from New York City and other urban areas to the southwest of Connecticut. It is the combination of these factors that often produces unhealthful ozone levels in Connecticut.

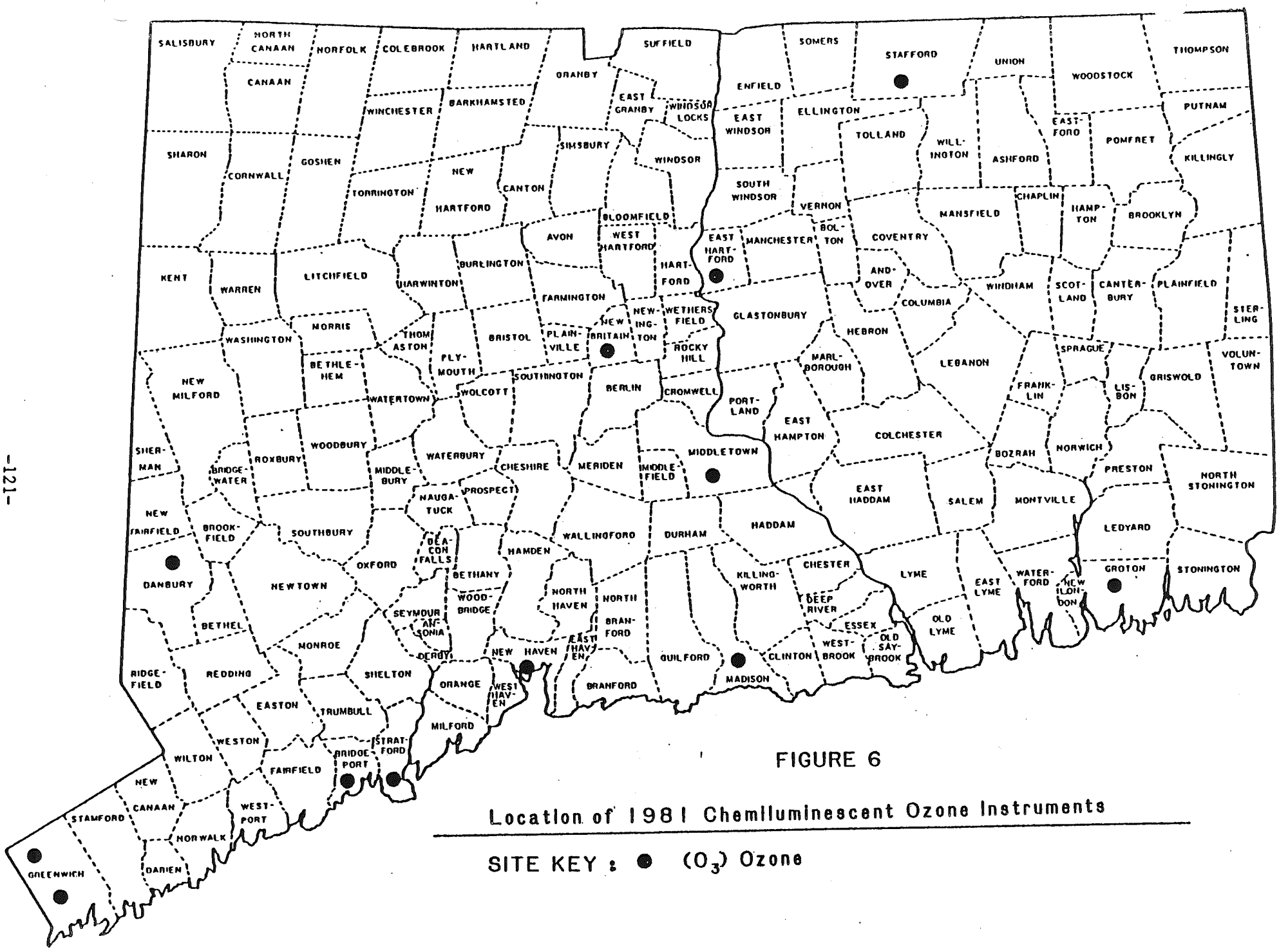


FIGURE 6

Location of 1981 Chemiluminescent Ozone Instruments

SITE KEY : ● (O_3) Ozone

TABLE 18

NUMBER OF DAYS WITH 1-HOUR WHICH EXCEEDED THE OZONE STANDARDS (>0.12 PPM)

1981

SITE	APRIL	MAY	JUNE	JULY	AUGUST	SEPT.	TOTAL	TOTAL LAST YEAR
Bridgeport-123	0	3	1	2	3	0	9	22
Danbury-123	0*	1	3	3	2	2	11	24
East Hartford-003	0	2	1	1*	2	0	6	21[a]
Greenwich-004	ND	2	4	4	2	1*	13	30
Greenwich-017	ND	3	4	5	5	1*	18	--
Groton-005	0*	2*	2	6	2	1	13	--
Madison-002	ND	ND	2	3	6	1*	12	--
Middletown-007	0	3	3	4	5	2	17	28
New Britain-010	0	2	1	2	6	0	11	--
New Haven-123	0	2	1	2	1	0	6	18
Starford-001	0	2	2*	0	4	0*	8	14
Stratford-007	0	2	5	9	7	1	24	40

* Less than 75% of Data Available
ND No Data Available

a 1980 site at Hartford

TABLE 19

1981 HIGHEST 1-HOUR OZONE VALUES BY MONTH (PPM)

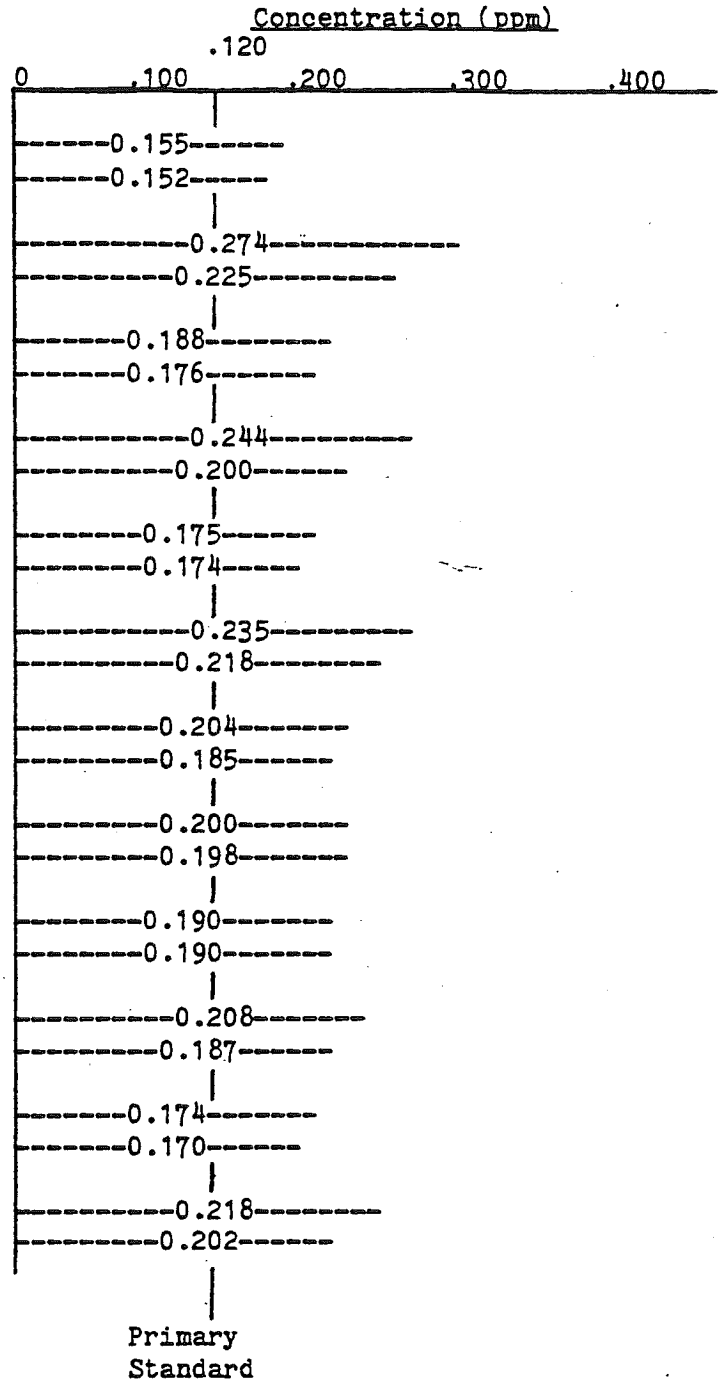
SITE	APRIL	MAY	JUNE	JULY	AUGUST	SEPT.	# OF TIMES STANDARD EXCEEDED
Bridgeport-123	.049	.155	.136	.151	.142	.100	18
Danbury-123	.062*	.185	.274	.169	.189	.133	31
East Hartford-003	.057	.188	.128	.150*	.136	.078	14
Greenwich-004	ND	.158	.244	.175	.155	.125*	40
Greenwich-017	ND	.175	.160	.174	.169	.135*	65
Groton-005	.085*	.128*	.149	.235	.148	.157	48
Madison-002	ND	ND	.138	.204	.148	.151*	33
Middletown-007	.070	.200	.148	.143	.159	.174	56
New Britain-010	.065	.190	.138	.155	.151	.111	22
New Haven-123	.050	.208	.126	.161	.132	.120	16
Stafford-001	.085	.174	.143*	.115	.143	.097*	23
Stratford-007	.082	.132	.202	.218	.169	.145	90

* < 75% of the data available
ND No Data

TABLE 20

1981 MAXIMUM 1-HOUR OZONE CONCENTRATIONS

SITE	DATE* 1ST HIGH	DATE* 2ND HIGH	Concentration (ppm)
Bridgeport-123	5/25/14		0.155
		5/25/13	0.152
Danbury-123	6/16/15		0.274
		6/16/16	0.225
East Hartford-003	5/30/17		0.188
		5/30/18	0.176
Greenwich-004	6/16/14		0.244
		6/16/13	0.200
Greenwich-017	5/30/14		0.175
		7/18/13	0.174
Groton-005	7/13/16		0.235
		7/13/15	0.218
Madison-002	7/13/14		0.204
		7/13/15	0.185
Middletown-007	5/30/16		0.200
		5/30/17	0.198
New Britain-010	5/30/16		0.190
		5/30/17	0.190
New Haven-123	5/30/16		0.208
		5/30/15	0.187
Stafford-001	5/30/18		0.174
		5/30/19	0.170
Stratford-007	7/8/13		0.218
		6/21/16	0.202



* Date is month/day/ending hour of occurrence

1981 TEN HIGHEST 1 HR AVG OZONE DAYS WITH WIND DATA.

POLLUTANT--OZONE

UNITS : PARTS PER MILLION

TOWN NAME	SITE	SAMPLES		1	2	3	4	5	6	7	8	9	10
BRIDGEPORT	123	186		0.155	0.151	0.150	0.142	0.139	0.138	0.136	0.135	0.125	0.121
			DATE	5/25/81	7/ 8/81	5/30/81	8/ 9/81	8/ 1/81	7/13/81	6/21/81	8/ 2/81	5/26/81	7/18/81
METEOROLOGICAL SITE			DIR (DEG)	230	280	210	260	210	260	270	250	240	180
NEWARK			VEL (MPH)	11.6	8.9	7.6	6.5	5.6	12.6	7.9	6.6	7.9	7.7
			SPD (MPH)	11.9	10.2	9.1	8.8	8.1	13.4	10.5	8.1	9.9	8.1
			RATIO	0.976	0.872	0.841	0.743	0.702	0.945	0.756	0.826	0.798	0.962
METEOROLOGICAL SITE			DIR (DEG)	210	2^0	210	220	210	250	230	240	240	50
BRADLEY			VEL (MPH)	7.1	8.1	5.5	2.4	3.6	3.3	3.4	3.4	5.1	0.1
			SPD (MPH)	7.6	8.5	5.9	5.3	4.2	6.6	4.2	4.5	7.0	5.6
			RATIO	0.928	0.951	0.936	0.455	0.872	0.505	0.825	0.754	0.724	0.011
METEOROLOGICAL SITE			DIR (DEG)	210	250	200	200	210	240	200	210	220	190
BRIDGEPORT			VEL (MPH)	9.9	8.0	5.7	5.1	6.1	9.1	6.2	6.2	7.0	5.4
			SPD (MPH)	12.1	8.8	7.9	5.3	6.5	9.2	6.6	6.5	7.5	5.6
			RATIO	0.820	0.914	0.725	0.953	0.937	0.995	0.938	0.962	0.931	0.964
METEOROLOGICAL SITE			DIR (DEG)	260	280	230	280	270	270	260	260	270	260
WORCESTER			VEL (MPH)	8.5	11.3	4.9	0.4	6.0	5.6	4.5	5.8	7.4	3.6
			SPD (MPH)	8.9	11.5	5.6	3.4	6.2	6.0	5.9	6.2	7.8	5.3
			RATIO	0.950	0.985	0.872	0.119	0.971	0.932	0.758	0.939	0.948	0.686
DANBURY	123	172		0.274	0.189	0.185	0.169	0.163	0.144	0.135	0.134	0.133	0.126
			DATE	6/16/81	8/ 9/81	5/30/81	7/12/81	6/21/81	8/ 1/81	7/19/81	6/15/81	9/ 6/81	7/13/81
METEOROLOGICAL SITE			DIR (DEG)	230	260	210	260	270	210	70	170	210	260
NEWARK			VEL (MPH)	10.8	6.5	7.6	2.5	7.9	5.6	1.4	3.8	4.7	12.6
			SPD (MPH)	11.6	8.8	9.1	8.6	10.5	8.1	6.3	6.8	6.2	13.4
			RATIO	0.925	0.743	0.841	0.296	0.756	0.702	0.216	0.557	0.753	0.945
METEOROLOGICAL SITE			DIR (DEG)	190	220	210	210	230	210	200	190	100	250
BRADLEY			VEL (MPH)	8.0	2.4	5.5	2.0	3.4	3.6	1.8	6.4	2.0	3.3
			SPD (MPH)	8.2	5.3	5.9	5.0	4.2	4.2	4.7	6.6	4.9	6.6
			RATIO	0.978	0.455	0.936	0.400	0.825	0.872	0.378	0.965	0.409	0.505
METEOROLOGICAL SITE			DIR (DEG)	210	200	200	180	200	210	160	160	190	240
BRIDGEPORT			VEL (MPH)	2.6	5.1	5.7	4.2	6.2	6.1	2.2	2.7	2.9	9.1
			SPD (MPH)	3.3	5.3	7.9	4.6	6.6	6.5	4.6	3.9	4.5	9.2
			RATIO	0.788	0.953	0.725	0.920	0.938	0.937	0.480	0.685	0.657	0.995
METEOROLOGICAL SITE			DIR (DEG)	240	280	230	250	260	270	70	220	40	270
WORCESTER			VEL (MPH)	6.6	0.4	4.9	2.8	4.5	6.0	0.7	7.3	2.0	5.6
			SPD (MPH)	6.9	3.4	5.6	5.5	5.9	6.2	4.6	7.5	5.9	6.0
			RATIO	0.959	0.119	0.872	0.511	0.758	0.971	0.148	0.981	0.332	0.932
EAST HARTFORD	3	254		0.188	0.150	0.136	0.133	0.128	0.125	0.124	0.118	0.115	0.111
			DATE	5/30/81	7/18/81	8/ 9/81	8/ 1/81	6/16/81	5/25/81	6/21/81	8/11/81	8/ 2/81	8/ 3/81
METEOROLOGICAL SITE			DIR (DEG)	210	180	260	210	230	230	270	180	250	230
NEWARK			VEL (MPH)	7.6	7.7	6.5	5.6	10.8	11.6	7.9	4.5	6.6	10.4
			SPD (MPH)	9.1	8.1	8.8	8.1	11.6	11.9	10.5	8.2	8.1	10.9
			RATIO	0.841	0.962	0.743	0.702	0.925	0.976	0.756	0.544	0.826	0.949
METEOROLOGICAL SITE			DIR (DEG)	210	50	220	210	190	210	230	200	240	230
BRADLEY			VEL (MPH)	5.5	0.1	2.4	3.6	8.0	7.1	3.4	4.6	3.4	4.4
			SPD (MPH)	5.9	5.6	5.3	4.2	8.2	7.6	4.2	4.9	4.5	4.9
			RATIO	0.936	0.011	0.455	0.872	0.978	0.928	0.825	0.940	0.754	0.903

TABLE 21

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1981 TEN HIGHEST 1 HR AVG OZONE DAYS WITH WIND DATA.

POLLUTANT--OZONE UNITS : PARTS PER MILLION

TOWN NAME	SITE SAMPLES		1	2	3	4	5	6	7	8	9	10
METEOROLOGICAL SITE BRIDGEPORT		DIR (DEG)	200	190	200	210	210	210	200	170	210	220
		VEL (MPH)	5.7	5.4	5.1	6.1	2.6	9.9	6.2	6.1	6.2	6.6
		SPD (MPH)	7.9	5.6	5.3	6.5	3.3	12.1	6.6	6.2	6.5	6.9
		RATIO	0.725	0.964	0.953	0.937	0.788	0.820	0.938	0.986	0.962	0.960
METEOROLOGICAL SITE WORCESTER		DIR (DEG)	230	260	280	270	240	260	260	220	260	270
		VEL (MPH)	4.9	3.6	0.4	6.0	6.6	8.5	4.5	6.1	5.8	5.5
		SPD (MPH)	5.6	5.3	3.4	6.2	6.9	8.9	5.9	6.6	6.2	5.9
		RATIO	0.872	0.686	0.119	0.971	0.959	0.950	0.758	0.927	0.939	0.939
GREENWICH	4	141	0.244	0.175	0.168	0.165	0.158	0.155	0.155	0.150	0.142	0.140
		DATE	6/16/81	7/18/81	6/15/81	7/12/81	5/30/81	8/ 1/81	6/29/81	6/21/81	8/ 9/81	5/25/81
METEOROLOGICAL SITE NEWARK		DIR (DEG)	230	180	170	260	210	210	260	270	260	230
		VEL (MPH)	10.8	7.7	3.8	2.5	7.6	5.6	4.0	7.9	6.5	11.6
		SPD (MPH)	11.6	8.1	6.8	8.6	9.1	8.1	8.1	10.5	8.8	11.9
		RATIO	0.925	0.962	0.557	0.296	0.841	0.702	0.495	0.756	0.743	0.978
METEOROLOGICAL SITE BRADLEY		DIR (DEG)	190	50	190	210	210	210	140	230	220	210
		VEL (MPH)	8.0	0.1	6.4	2.0	5.5	3.6	1.9	3.4	2.4	7.1
		SPD (MPH)	8.2	5.6	6.6	5.0	5.9	4.2	5.5	4.2	5.3	7.6
		RATIO	0.978	0.011	0.965	0.400	0.936	0.872	0.352	0.825	0.455	0.928
METEOROLOGICAL SITE BRIDGEPORT		DIR (DEG)	210	190	160	180	200	210	200	200	200	210
		VEL (MPH)	2.6	5.4	2.7	4.2	5.7	6.1	4.3	6.2	5.1	9.9
		SPD (MPH)	3.3	5.6	3.9	4.6	7.9	6.5	6.2	6.6	5.3	12.1
		RATIO	0.788	0.964	0.685	0.920	0.725	0.937	0.703	0.938	0.953	0.820
METEOROLOGICAL SITE WORCESTER		DIR (DEG)	240	260	220	250	230	270	240	260	280	260
		VEL (MPH)	6.6	3.6	7.3	2.8	4.9	6.0	2.9	4.5	0.4	8.5
		SPD (MPH)	6.9	5.3	7.5	5.5	5.6	6.2	6.0	5.9	3.4	8.9
		RATIO	0.959	0.686	0.981	0.511	0.872	0.971	0.476	0.758	0.119	0.950
GREENWICH	17	136	0.175	0.174	0.169	0.163	0.160	0.160	0.157	0.154	0.151	0.146
		DATE	5/30/81	7/18/81	8/ 9/81	8/ 4/81	6/16/81	6/21/81	5/25/81	8/ 1/81	7/19/81	5/26/81
METEOROLOGICAL SITE NEWARK		DIR (DEG)	210	180	260	270	230	270	230	210	70	240
		VEL (MPH)	7.6	7.7	6.5	8.2	10.8	7.9	11.6	5.6	1.4	7.9
		SPD (MPH)	9.1	8.1	8.8	9.2	11.6	10.5	11.9	8.1	6.3	9.9
		RATIO	0.841	0.962	0.743	0.890	0.925	0.756	0.976	0.702	0.216	0.798
METEOROLOGICAL SITE BRADLEY		DIR (DEG)	210	50	220	220	190	230	210	210	200	240
		VEL (MPH)	5.5	0.1	2.4	2.2	8.0	3.4	7.1	3.6	1.8	5.1
		SPD (MPH)	5.9	5.6	5.3	4.9	8.2	4.2	7.6	4.2	4.7	7.0
		RATIO	0.936	0.011	0.455	0.447	0.978	0.825	0.928	0.872	0.378	0.724
METEOROLOGICAL SITE BRIDGEPORT		DIR (DEG)	200	190	200	190	210	200	210	210	160	220
		VEL (MPH)	5.7	5.4	5.1	5.5	2.6	6.2	9.9	6.1	2.2	7.0
		SPD (MPH)	7.9	5.6	5.3	5.6	3.3	6.6	12.1	6.5	4.6	7.5
		RATIO	0.725	0.964	0.953	0.974	0.788	0.938	0.820	0.937	0.480	0.931
METEOROLOGICAL SITE WORCESTER		DIR (DEG)	230	260	280	270	240	260	260	270	70	270
		VEL (MPH)	4.9	3.6	0.4	4.7	6.6	4.5	8.5	6.0	0.7	7.4
		SPD (MPH)	5.6	5.3	3.4	6.0	6.9	5.9	8.9	6.2	4.6	7.8
		RATIO	0.872	0.686	0.119	0.780	0.959	0.758	0.950	0.971	0.148	0.948

TABLE 21, Continued

1981 TEN HIGHEST 1 HR AVG OZONE DAYS WITH WIND DATA.

POLLUTANT--OZONE UNITS : PARTS PER MILLION

TOWN NAME	SITE	SAMPLES		1	2	3	4	5	6	7	8	9	10
GROTON	5	144		0.235	0.174	0.167	0.157	0.152	0.149	0.148	0.140	0.132	0.130
			DATE	7/13/81	7/ 8/81	7/21/81	9/12/81	7/ 9/81	6/ 4/81	8/ 3/81	7/17/81	7/29/81	8/ 2/81
METEOROLOGICAL SITE			DIR (DEG)	260	280	240	270	290	250	230	240	290	250
NEWARK			VEL (MPH)	12.6	8.9	10.2	9.3	11.0	10.8	10.4	6.1	12.6	6.6
			SPD (MPH)	13.4	10.2	10.8	10.9	11.2	11.1	10.9	7.6	17.1	8.1
			RATIO	0.945	0.872	0.942	0.854	0.981	0.976	0.949	0.798	0.735	0.826
METEOROLOGICAL SITE			DIR (DEG)	250	290	210	300	320	250	230	250	310	240
BRADLEY			VEL (MPH)	3.3	8.1	6.3	4.8	7.9	4.4	4.4	1.3	4.4	3.4
			SPD (MPH)	6.6	8.5	9.1	6.6	8.3	7.3	4.9	3.7	9.1	4.5
			RATIO	0.505	0.951	0.694	0.724	0.948	0.599	0.903	0.356	0.487	0.754
METEOROLOGICAL SITE			DIR (DEG)	240	250	240	240	260	230	220	200	260	210
BRIDGEPORT			VEL (MPH)	9.1	8.0	9.2	5.7	7.0	8.2	6.6	4.2	9.2	6.2
			SPD (MPH)	9.2	8.8	9.3	6.6	7.3	8.3	6.9	5.8	11.2	6.5
			RATIO	0.995	0.914	0.987	0.857	0.958	0.981	0.960	0.739	0.817	0.962
METEOROLOGICAL SITE			DIR (DEG)	270	280	240	250	280	280	270	290	360	260
WORCESTER			VEL (MPH)	5.6	11.3	6.5	5.9	13.2	7.4	5.5	3.9	1.8	5.8
			SPD (MPH)	6.0	11.5	7.5	8.2	13.4	8.9	5.9	4.9	7.2	6.2
			RATIO	0.932	0.985	0.873	0.723	0.984	0.832	0.939	0.808	0.253	0.939
MADISON	2	105		0.204	0.151	0.148	0.147	0.141	0.139	0.138	0.137	0.135	0.130
			DATE	7/13/81	9/12/81	8/ 3/81	7/ 8/81	8/ 2/81	9/ 7/81	6/21/81	8/ 4/81	8/10/81	8/ 1/81
METEOROLOGICAL SITE			DIR (DEG)	260	270	230	280	250	190	270	270	260	210
NEWARK			VEL (MPH)	12.6	9.3	10.4	8.9	6.6	6.3	7.9	8.2	5.1	5.6
			SPD (MPH)	13.4	10.9	10.9	10.2	8.1	8.6	10.5	9.2	6.9	8.1
			RATIO	0.945	0.854	0.949	0.872	0.826	0.727	0.756	0.890	0.745	0.702
METEOROLOGICAL SITE			DIR (DEG)	250	300	230	290	240	180	230	220	290	210
BRADLEY			VEL (MPH)	3.3	4 8	4.4	8.1	3.4	4.2	3.4	2.2	2.6	3.6
			SPD (MPH)	6.6	6.6	4.9	8.5	4.5	4.6	4.2	4.9	3.6	4.2
			RATIO	0.505	0.724	0.903	0.951	0.754	0.903	0.825	0.447	0.723	0.872
METEOROLOGICAL SITE			DIR (DEG)	240	240	220	250	210	200	200	190	210	210
BRIDGEPORT			VEL (MPH)	9.1	5.7	6.6	8.0	6.2	6.3	6.2	5.5	5.7	6.1
			SPD (MPH)	9.2	6.6	6.9	8.8	6.5	7.6	6.6	5.6	6.2	6.5
			RATIO	0.995	0.857	0.960	0.914	0.962	0.828	0.938	0.974	0.921	0.937
METEOROLOGICAL SITE			DIR (DEG)	270	250	270	280	260	250	260	270	280	270
WORCESTER			VEL (MPH)	5.6	5.9	5.5	11.3	5.8	4.1	4.5	4.7	6.1	6.0
			SPD (MPH)	6.0	8.2	5.9	11.5	6.2	4.7	5.9	6.0	6.2	6.2
			RATIO	0.932	0.723	0.939	0.985	0.939	0.874	0.758	0.780	0.979	0.971
MIDDLETOWN	7	238		0.200	0.174	0.159	0.148	0.143	0.142	0.141	0.141	0.140	0.137
			DATE	5/30/81	9/14/81	8/ 9/81	6/21/81	7/21/81	6/16/81	9/12/81	6/ 6/81	8/ 3/81	7/18/81
METEOROLOGICAL SITE			DIR (DEG)	210	240	260	270	240	230	270	240	230	180
NEWARK			VEL (MPH)	7.6	13.0	6.5	7.9	10.2	10.8	9.3	13.4	10.4	7.7
			SPD (MPH)	9.1	13.2	8.8	10.5	10.8	11.6	10.9	13.7	10.9	8.1
			RATIO	0.841	0.981	0.743	0.756	0.942	0.925	0.854	0.978	0.949	0.962
METEOROLOGICAL SITE			DIR (DEG)	210	220	220	230	210	190	300	240	230	50
BRADLEY			VEL (MPH)	5.5	5.6	2.4	3.4	6.3	8.0	4.8	5.0	4.4	0.1
			SPD (MPH)	5.9	7.2	5.3	4.2	9.1	8.2	6.6	6.5	4.9	5.6
			RATIO	0.936	0.777	0.455	0.825	0.694	0.978	0.724	0.769	0.903	0.011

TABLE 21, Continued

1981 TEN HIGHEST 1 HR AVG OZONE DAYS WITH WIND DATA.

POLLUTANT--OZONE

UNITS : PARTS PER MILLION

TOWN NAME	SITE	SAMPLES		1	2	3	4	5	6	7	8	9	10
METEOROLOGICAL SITE			DIR (DEG)	200	210	200	200	240	210	240	230	220	190
BRIDGEPORT			VEL (MPH)	5.7	7.4	5.1	6.2	9.2	2.6	5.7	9.6	6.6	5.4
			SPD (MPH)	7.9	7.8	5.3	6.6	9.3	3.3	6.6	9.8	6.9	5.6
			RATIO	0.725	0.954	0.953	0.938	0.987	0.788	0.857	0.985	0.960	0.964
METEOROLOGICAL SITE			DIR (DEG)	230	250	280	260	240	240	250	260	270	260
WORCESTER			VEL (MPH)	4.9	7.5	0.4	4.5	6.5	6.6	5.9	6.8	5.5	3.6
			SPD (MPH)	5.6	7.9	3.4	5.9	7.5	6.9	8.2	8.2	5.9	5.3
			RATIO	0.872	0.970	0.119	0.758	0.873	0.959	0.723	0.827	0.939	0.686
NEW BRITAIN	10	176		0.190	0.162	0.155	0.151	0.148	0.138	0.136	0.136	0.135	0.127
			DATE	5/30/81	5/25/81	7/18/81	8/ 9/81	7/12/81	6/21/81	8/ 3/81	8/11/81	8/ 2/81	8/ 1/81
METEOROLOGICAL SITE			DIR (DEG)	210	230	180	260	260	270	230	180	250	210
NEWARK			VEL (MPH)	7.6	11.6	7.7	6.5	2.5	7.9	10.4	4.5	6.6	5.6
			SPD (MPH)	9.1	11.9	8.1	8.8	8.6	10.5	10.9	8.2	8.1	8.1
			RATIO	0.841	0.976	0.962	0.743	0.296	0.756	0.949	0.544	0.826	0.702
METEOROLOGICAL SITE			DIR (DEG)	210	210	50	220	210	230	230	200	240	210
BRADLEY			VEL (MPH)	5.5	7.1	0.1	2.4	2.0	3.4	4.4	4.6	3.4	3.6
			SPD (MPH)	5.9	7.6	5.6	5.3	5.0	4.2	4.9	4.9	4.5	4.2
			RATIO	0.936	0.928	0.011	0.455	0.400	0.825	0.903	0.940	0.754	0.872
METEOROLOGICAL SITE			DIR (DEG)	200	210	190	200	180	200	220	170	210	210
BRIDGEPORT			VEL (MPH)	5.7	9.9	5.4	5.1	4.2	6.2	6.6	6.1	6.2	6.1
			SPD (MPH)	7.9	12.1	5.6	5.3	4.6	6.6	6.9	6.2	6.5	6.5
			RATIO	0.725	0.820	0.964	0.953	0.920	0.938	0.960	0.986	0.962	0.937
METEOROLOGICAL SITE			DIR (DEG)	230	260	260	280	250	260	270	220	260	270
WORCESTER			VEL (MPH)	4.9	8.5	3.6	0.4	2.8	4.5	5.5	6.1	5.8	6.0
			SPD (MPH)	5.6	8.9	5.3	3.4	5.5	5.9	5.9	6.6	6.2	6.2
			RATIO	0.872	0.950	0.686	0.119	0.511	0.758	0.939	0.927	0.939	0.971
NEW HAVEN	123	278		0.208	0.161	0.136	0.134	0.132	0.126	0.122	0.122	0.120	0.116
			DATE	5/30/81	7/13/81	5/25/81	7/ 8/81	8/ 1/81	6/16/81	8/ 2/81	7/21/81	9/14/81	6/ 6/81
METEOROLOGICAL SITE			DIR (DEG)	210	260	230	280	210	230	250	240	240	240
NEWARK			VEL (MPH)	7.6	12.6	11.6	8.9	5.6	10.8	6.6	10.2	13.0	13.4
			SPD (MPH)	9.1	13.4	11.9	10.2	8.1	11.6	8.1	10.8	13.2	13.7
			RATIO	0.841	0.945	0.976	0.872	0.702	0.925	0.826	0.942	0.981	0.978
METEOROLOGICAL SITE			DIR (DEG)	210	250	210	290	210	190	240	210	220	240
BRADLEY			VEL (MPH)	5.5	3.3	7.1	8.1	3.6	8.0	3.4	6.3	5.6	5.0
			SPD (MPH)	5.9	6.6	7.6	8.5	4.2	8.2	4.5	9.1	7.2	6.5
			RATIO	0.936	0.505	0.928	0.951	0.872	0.978	0.754	0.694	0.777	0.769
METEOROLOGICAL SITE			DIR (DEG)	200	240	210	250	210	210	210	240	210	230
BRIDGEPORT			VEL (MPH)	5.7	9.1	9.9	8.0	6.1	2.6	6.2	9.2	7.4	9.6
			SPD (MPH)	7.9	9.2	12.1	8.8	6.5	3.3	6.5	9.3	7.8	9.8
			RATIO	0.725	0.995	0.820	0.914	0.937	0.788	0.962	0.987	0.954	0.985
METEOROLOGICAL SITE			DIR (DEG)	230	270	260	280	270	240	260	240	250	260
WORCESTER			VEL (MPH)	4.9	5.6	8.5	11.3	6.0	6.6	5.8	6.5	7.5	6.8
			SPD (MPH)	5.6	6.0	8.9	11.5	6.2	6.9	6.2	7.5	7.8	8.2
			RATIO	0.872	0.932	0.950	0.985	0.971	0.959	0.939	0.873	0.970	0.827

TABLE 21, Continued

1981 TEN HIGHEST 1 HR AVG OZONE DAYS WITH WIND DATA.

POLLUTANT--OZONE

UNITS : PARTS PER MILLION

TOWN NAME	SITE	SAMPLES	1	2	3	4	5	6	7	8	9	10
STAFFORD	1	169	0.174	0.151	0.143	0.143	0.139	0.133	0.130	0.127	0.115	0.115
		DATE	5/30/81	5/25/81	6/16/81	8/ 9/81	6/21/81	8/11/81	8/ 2/81	8/ 1/81	7/13/81	8/ 3/81
METEOROLOGICAL SITE NEWARK		DIR (DEG)	210	230	230	260	270	180	250	210	260	230
		VEL (MPH)	7.6	11.6	10.8	6.5	7.9	4.5	6.6	5.6	12.6	10.4
		SPD (MPH)	9.1	11.9	11.6	8.8	10.5	8.2	8.1	8.1	13.4	10.9
		RATIO	0.841	0.976	0.925	0.743	0.756	0.544	0.826	0.702	0.945	0.949
METEOROLOGICAL SITE BRADLEY		DIR (DEG)	210	210	190	220	230	200	240	210	250	230
		VEL (MPH)	5.5	7.1	8.0	2.4	3.4	4.6	3.4	3.6	3.3	4.4
		SPD (MPH)	5.9	7.6	8.2	5.3	4.2	4.9	4.5	4.2	6.6	4.9
		RATIO	0.936	0.928	0.978	0.455	0.825	0.940	0.754	0.872	0.505	0.903
METEOROLOGICAL SITE BRIDGEPORT		DIR (DEG)	200	210	210	200	200	170	210	210	240	220
		VEL (MPH)	5.7	9.9	2.6	5.1	6.2	6.1	6.2	6.1	9.1	6.6
		SPD (MPH)	7.9	12.1	3.3	5.3	6.6	6.2	6.5	6.5	9.2	6.9
		RATIO	0.725	0.820	0.788	0.953	0.938	0.986	0.962	0.937	0.995	0.960
METEOROLOGICAL SITE WORCESTER		DIR (DEG)	230	260	240	280	260	220	260	270	270	270
		VEL (MPH)	4.9	8.5	6.6	0.4	4.5	6.1	5.8	6.0	5.6	5.5
		SPD (MPH)	5.6	8.9	6.9	3.4	5.9	6.6	6.2	6.2	6.0	5.9
		RATIO	0.872	0.950	0.959	0.119	0.758	0.927	0.939	0.971	0.932	0.939
STRATFORD	7	180	0.218	0.202	0.196	0.169	0.167	0.162	0.161	0.159	0.155	0.154
		DATE	7/ 8/81	6/21/81	7/13/81	8/10/81	8/ 2/81	8/ 9/81	8/ 1/81	7/17/81	7/ 9/81	8/ 3/81
METEOROLOGICAL SITE NEWARK		DIR (DEG)	280	270	260	260	250	260	210	240	290	230
		VEL (MPH)	8.9	7.9	12.6	5.1	6.6	6.5	5.6	6.1	11.0	10.4
		SPD (MPH)	10.2	10.5	13.4	6.9	8.1	8.8	8.1	7.6	11.2	10.9
		RATIO	0.872	0.756	0.945	0.745	0.826	0.743	0.702	0.798	0.981	0.949
METEOROLOGICAL SITE BRADLEY		DIR (DEG)	290	230	250	290	240	220	210	250	320	230
		VEL (MPH)	8.1	3.4	3.3	2.6	3.4	2.4	3.6	1.3	7.9	4.4
		SPD (MPH)	8.5	4.2	6.6	3.6	4.5	5.3	4.2	3.7	8.3	4.9
		RATIO	0.951	0.825	0.505	0.723	0.754	0.455	0.872	0.356	0.948	0.903
METEOROLOGICAL SITE BRIDGEPORT		DIR (DEG)	250	200	240	210	210	200	210	200	260	220
		VEL (MPH)	8.0	6.2	9.1	5.7	6.2	5.1	6.1	4.2	7.0	6.6
		SPD (MPH)	8.8	6.6	9.2	6.2	6.5	5.3	6.5	5.8	7.3	6.9
		RATIO	0.914	0.938	0.995	0.921	0.962	0.953	0.937	0.739	0.958	0.960
METEOROLOGICAL SITE WORCESTER		DIR (DEG)	280	260	270	280	260	280	270	290	280	270
		VEL (MPH)	11.3	4.5	5.6	6.1	5.8	0.4	6.0	3.9	13.2	5.5
		SPD (MPH)	11.5	5.9	6.0	6.2	6.2	3.4	6.2	4.9	13.4	5.9
		RATIO	0.985	0.758	0.932	0.979	0.939	0.119	0.971	0.808	0.984	0.939

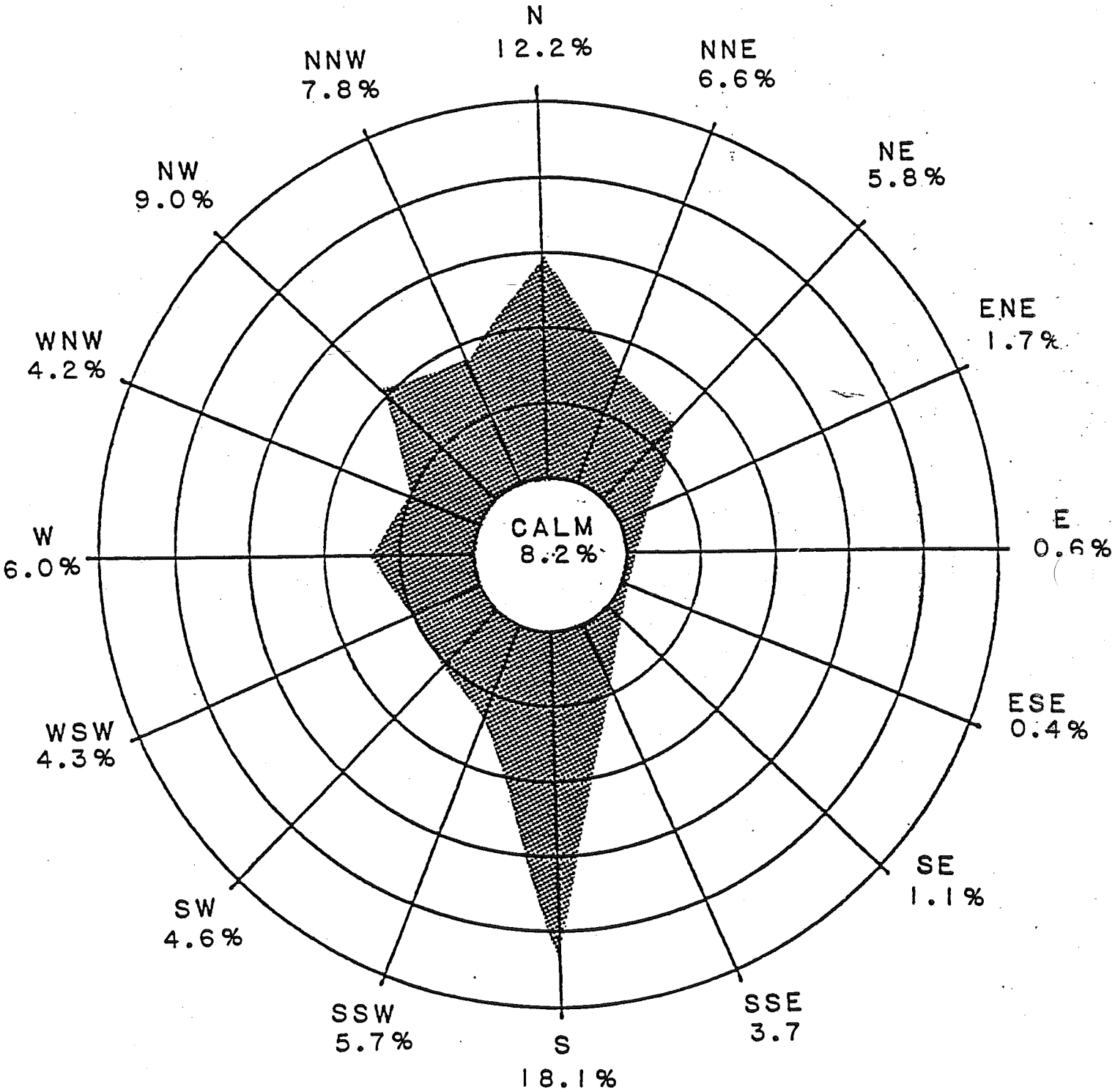
TABLE 21, Continued

10

7

$\frac{100}{120} = 83\%$

FIGURE 7

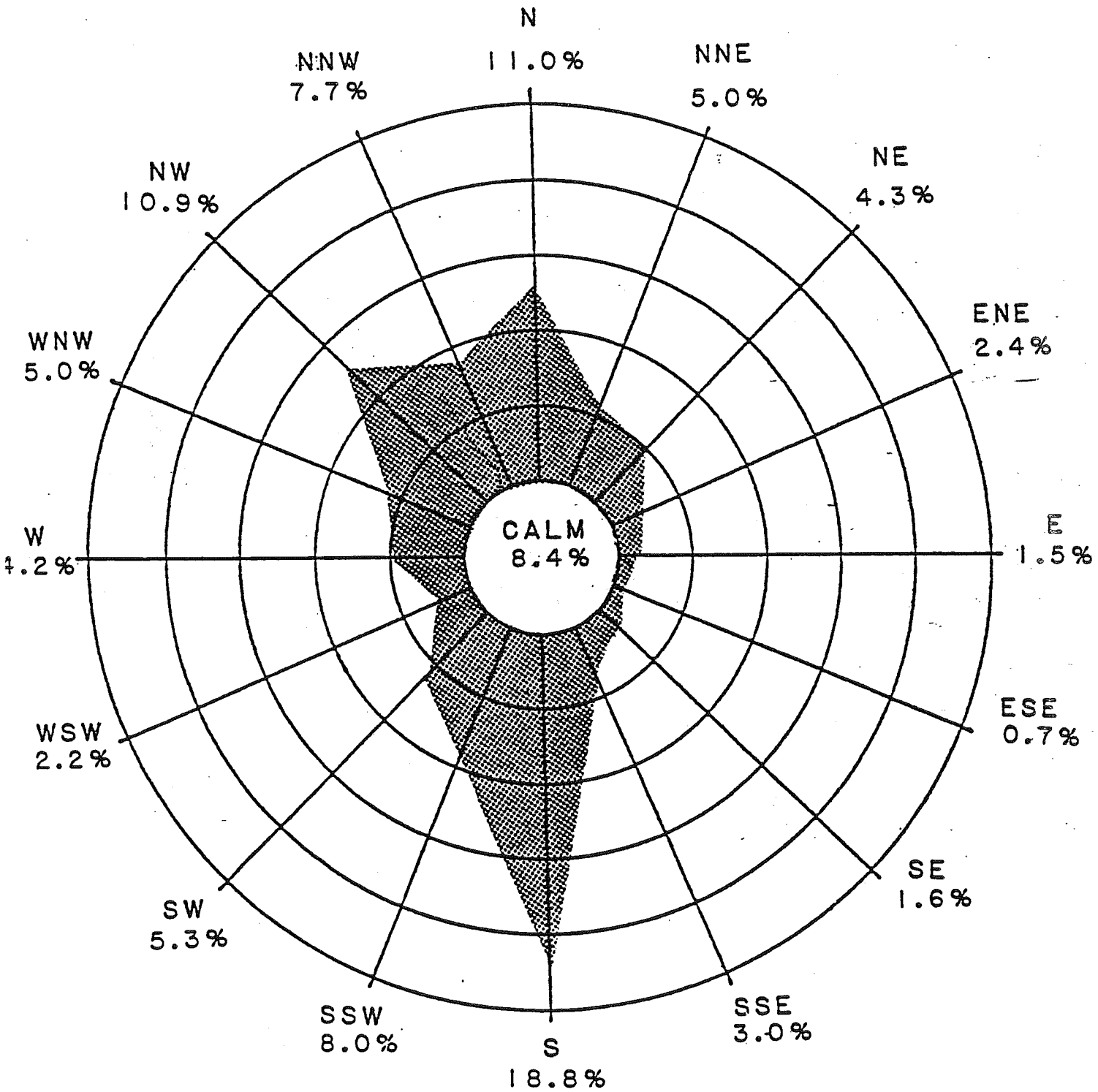


WIND ROSE FOR APR.-SEPT. 1980

BRADLEY INTERNATIONAL AIRPORT

WINDSOR LOCKS, CONNECTICUT

FIGURE 8

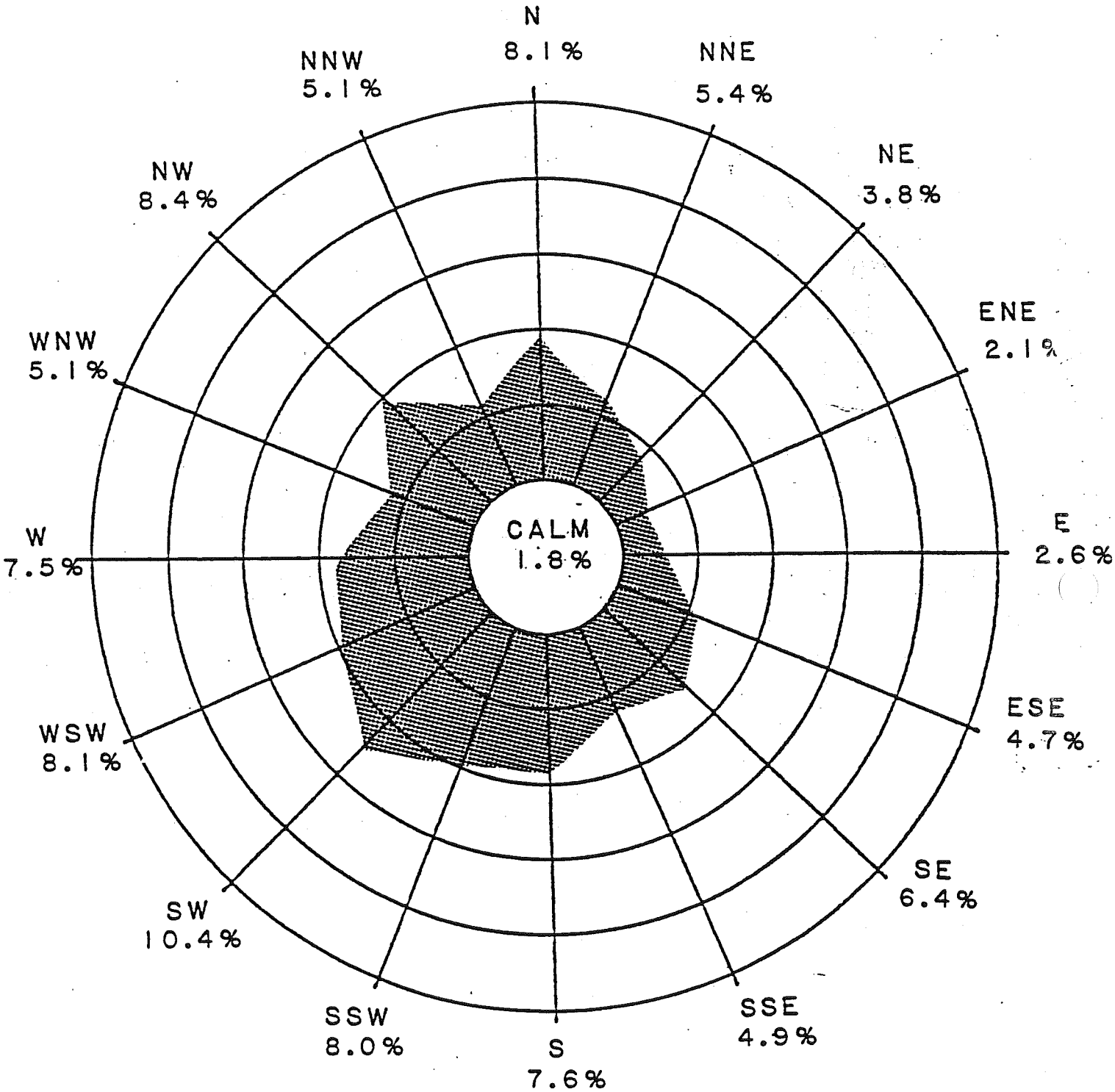


WIND ROSE FOR APR.-SEPT. 1981

BRADLEY INTERNATIONAL AIRPORT

WINDSOR LOCKS, CONNECTICUT

FIGURE 9

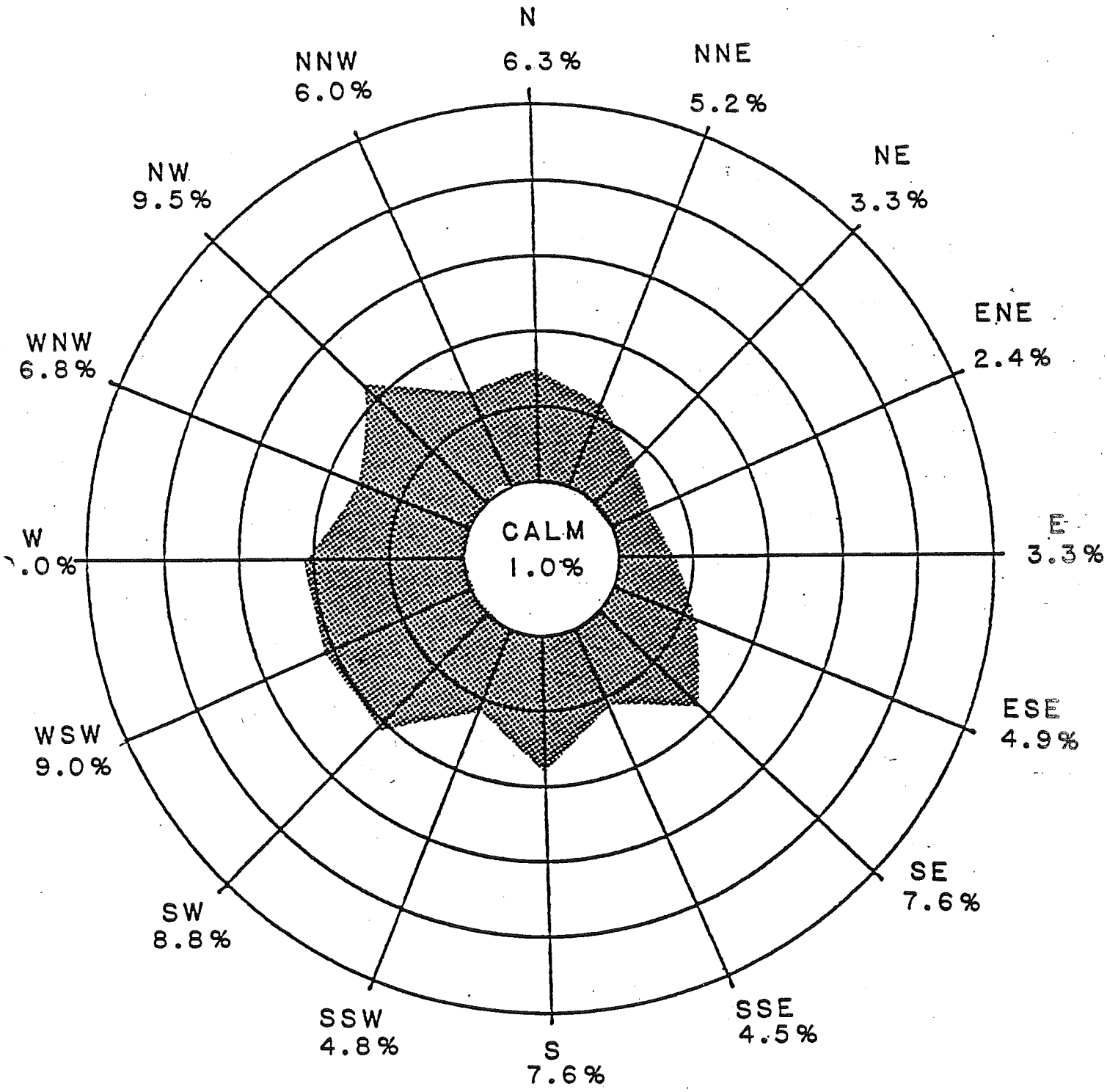


WIND ROSE FOR APR.-SEPT. 1980

NEWARK INTERNATIONAL AIRPORT

NEWARK, NEW JERSEY

FIGURE 10



WIND ROSE FOR APR.-SEPT. 1981

NEWARK INTERNATIONAL AIRPORT

NEWARK, NEW JERSEY

V. NITROGEN DIOXIDE

Conclusions:

Even though the method of measurement changed, and the amount of data collected was insufficient for a representative annual average at all but one site in 1981, the available data shows that all sites in Connecticut were well below the NAAQS for NO_2.

NO_2 trend analysis or comparisons will not be made until two full years of data ara available.

Sample Collection and Analysis:

The DEP Air Monitoring Unit changed to continuous electronic analyzers using the chemiluminescent reference method.

Discussion of Data:

Monitoring Network - There were seven nitrogen dioxide sites in 1981. The sites were distributed in a network covering three urban areas, and remained as permanent year-round sites, and three background areas to obtain data alongside ozone measurements. One site at the Hartford trailer was used for instrument familiarization by the Operations and Quality Control groups.

Historical Data - The DEP's historical file of annual average nitrogen dioxide data from gas bubblers for 1973-1980 is available in the 1980 "Connecticut Air Quality Summary."

Annual Averages - The annual average NO_2 standard was not exceeded in 1981 at any site in Connecticut. In 1981 only one site had sufficient data to compute valid arithmetic means, but no data was collected for January or February. Since this site was also in a new location it could not be compared to any previous gas bubbler data.

Statistical Projections - The format of Table 22 is the same as that used to list the Total Suspended Particulates and sulfur dioxide data. However, Table 22 gives the annual arithmetic mean of the valid 24-hour NO_2 averages to allow direct comparison to the annual NO_2 standard. This analysis provides information to compensate for the loss of data. The 95% limits and standard deviations were used to predict the number of days the levels of 100 ug/m^3 and 282 ug/m^3 would be exceeded at each site if sampling had been conducted every day.

Although there is no 24-hour NAAQS for NO_2, the 282 ug/m^3 level was selected for this presentation because at this level a 1st stage air pollution alert is to be declared according to the State of Connecticut's Administrative Regulations for Abatement of Air Pollution.

10-High Days with Wind Data - Table 23 contains the 10 highest daily NO_2 readings for each site in 1981 along with the associated wind conditions. (See the discussion of Table 11 in the TSP section for a description of the origin and use of the wind data.)

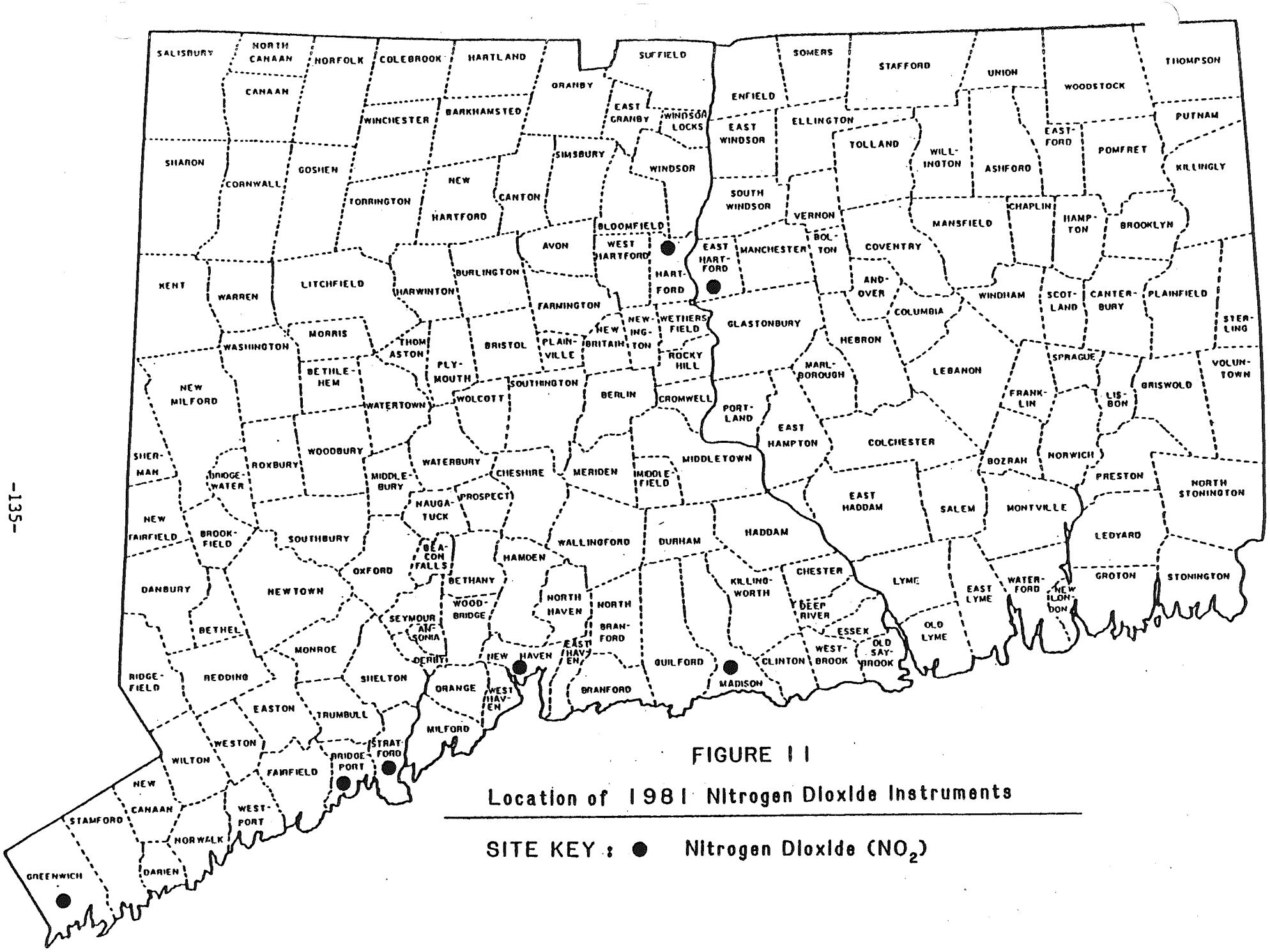


FIGURE 11

Location of 1981 Nitrogen Dioxide Instruments

SITE KEY : ● Nitrogen Dioxide (NO_2)

TABLE 22. 1981 NO2, Annual Averages and Statistical Projections

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION PAGE 1 AIR COMPLIANCE MONITORING

POLLUTANT--NITROGEN DIOXIDE DISTRIBUTION--LOGNORMAL

TOWN NAME	SITE	YEAR	SAMPLES	ARI. MEAN	95-PCT-LIMITS LOWER	95-PCT-LIMITS UPPER	STD DEVIATION	PREDICTED DAYS OVER 100 UG/M3	PREDICTED DAYS OVER 282 UG/M3
BRIDGEPORT	123	1981	199*	48.9	46	51	26.320	24	
EAST HARTFORD	003	1981	283	35.7	34	37	22.560	13	
GREENWICH	017	1981	69*	32.0	26	38	26.320	10	
HARTFORD	123	1981	64*	58.3	52	65	28.200	50	1
MADISON	002	1981	67*	26.3	21	32	24.440	5	
NEW HAVEN	123	1981	181*	48.9	47	51	22.560	24	
STRATFORD	007	1981	132*	26.3	24	29	20.680	10	

* SAMPLING NOT RANDOM OR OF INSUFFICIENT SIZE FOR REPRESENTATIVE ANNUAL STATISTICS.

→ See Table 22 in the 1983 Air Quality Summary.

1981 TEN HIGHEST 1 HR AVG NO2 DAYS WITH WIND DATA.

UNITS : PARTS PER MILLION

POLLUTANT--NITROGEN DIOXIDE

TOWN NAME	SITE	SAMPLES		1	2	3	4	5	6	7	8	9	10
BRIDGEPORT	123	208		0.103	0.097	0.092	0.085	0.083	0.083	0.080	0.079	0.078	0.078
			DATE	9/14/81	9/12/81	5/19/81	8/11/81	10/16/81	8/ 2/81	5/24/81	5/20/81	5/26/81	8/27/81
METEOROLOGICAL SITE NEWARK			DIR (DEG)	240	270	260	180	330	250	310	90	240	240
			VEL (MPH)	13.0	9.3	1.2	4.5	11.1	6.6	7.6	3.1	7.9	9.8
			SPD (MPH)	13.2	10.9	9.8	8.2	12.9	8.1	10.1	8.2	9.9	10.1
			RATIO	0.981	0.854	0.126	0.544	0.862	0.826	0.751	0.377	0.798	0.971
METEOROLOGICAL SITE BRADLEY			DIR (DEG)	220	310	310	200	340	240	350	130	240	360
			VEL (MPH)	5.6	4.8	3.0	4.6	3.9	3.4	6.0	1.9	5.1	1.4
			SPD (MPH)	7.2	6.6	6.6	4.9	6.5	4.5	7.0	4.3	7.0	4.0
			RATIO	0.777	0.724	0.452	0.940	0.609	0.754	0.856	0.432	0.724	0.359
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	210	240	230	170	330	210	310	190	220	230
			VEL (MPH)	7.4	5.7	5.9	6.1	6.0	6.2	11.8	2.0	7.0	7.5
			SPD (MPH)	7.8	6.6	8.2	6.2	6.9	6.5	13.2	8.1	7.5	7.6
			RATIO	0.954	0.857	0.717	0.986	0.871	0.962	0.891	0.252	0.931	0.984
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	250	250	280	220	340	260	330	310	270	280
			VEL (MPH)	7.5	5.9	9.2	6.1	7.7	5.8	11.4	4.2	7.4	5.4
			SPD (MPH)	7.8	8.2	9.8	6.6	8.8	6.2	11.9	5.9	7.8	7.0
			RATIO	0.970	0.723	0.938	0.927	0.877	0.939	0.958	0.711	0.948	0.763
EAST HARTFORD	3	295		0.078	0.078	0.069	0.069	0.065	0.065	0.065	0.064	0.064	0.063
			DATE	8/27/81	4/29/81	12/31/81	6/19/81	4/17/81	12/26/81	3/26/81	4/22/81	8/11/81	3/29/81
METEOROLOGICAL SITE NEWARK			DIR (DEG)	240	250	110	180	230	50	180	160	180	230
			VEL (MPH)	9.8	7.1	4.6	8.7	12.8	2.6	6.4	2.1	4.5	16.3
			SPD (MPH)	10.1	10.1	7.0	9.1	13.1	6.2	8.8	9.8	8.2	16.8
			RATIO	0.971	0.702	0.655	0.962	0.976	0.428	0.726	0.218	0.544	0.969
METEOROLOGICAL SITE BRADLEY			DIR (DEG)	360	200	360	200	200	360	200	290	200	210
			VEL (MPH)	1.4	6.8	1.0	7.5	6.5	2.3	8.4	3.5	4.6	8.5
			SPD (MPH)	4.0	7.5	1.6	7.6	7.2	3.2	9.2	5.6	4.9	9.6
			RATIO	0.359	0.909	0.627	0.980	0.909	0.714	0.915	0.627	0.940	0.887
METEOROLOGICAL SITE BRIDGEPORT			DIR (DEG)	230	190	70	190	210	50	200	240	170	230
			VEL (MPH)	7.5	2.6	7.0	5.2	9.5	3.7	8.1	8.4	6.1	12.9
			SPD (MPH)	7.6	8.1	10.1	5.8	9.9	5.6	10.4	11.5	6.2	13.1
			RATIO	0.984	0.326	0.693	0.909	0.961	0.654	0.787	0.727	0.986	0.988
METEOROLOGICAL SITE WORCESTER			DIR (DEG)	280	220	260	240	240	290	250	300	220	250
			VEL (MPH)	5.4	5.6	2.5	6.6	8.4	3.1	7.3	10.2	6.1	11.3
			SPD (MPH)	7.0	6.6	4.7	7.0	8.6	5.3	7.9	10.5	6.6	11.6
			RATIO	0.763	0.844	0.525	0.944	0.973	0.589	0.921	0.973	0.927	0.970
GREENWICH	17	70		0.095	0.093	0.079	0.075	0.071	0.070	0.069	0.065	0.061	0.060
			DATE	9/14/81	8/ 3/81	8/23/81	8/12/81	8/27/81	9/12/81	8/24/81	9/10/81	8/11/81	9/13/81
METEOROLOGICAL SITE NEWARK			DIR (DEG)	240	230	350	230	240	270	290	230	180	280
			VEL (MPH)	13.0	10.4	2.2	4.5	9.8	9.3	8.9	6.6	4.5	7.4
			SPD (MPH)	13.2	10.9	8.3	7.8	10.1	10.9	12.1	10.4	8.2	9.6
			RATIO	0.981	0.949	0.265	0.574	0.971	0.854	0.733	0.640	0.544	0.771
METEOROLOGICAL SITE BRADLEY			DIR (DEG)	220	230	250	250	360	300	350	230	200	260
			VEL (MPH)	5.6	4.4	1.7	2.5	1.4	4.8	2.0	4.9	4.6	6.9
			SPD (MPH)	7.2	4.9	3.0	3.0	4.0	6.6	2.0	7.2	4.9	7.3
			RATIO	0.777	0.903	0.569	0.814	0.359	0.724	0.989	0.677	0.940	0.947

TABLE 23

1981 TEN HIGHEST 1 HR AVG NO2 DAYS WITH WIND DATA.

POLLUTANT--NITROGEN DIOXIDE

UNITS : PARTS PER MILLION

TOWN NAME	SITE	SAMPLES		1	2	3	4	5	6	7	8	9	10
	METEOROLOGICAL SITE BRIDGEPORT		DIR (DEG)	210	220	170	210	230	240	280	190	170	230
			VEL (MPH)	7.4	6.6	3.3	3.4	7.5	5.7	6.7	6.5	6.1	8.3
			SPD (MPH)	7.8	6.9	6.2	4.5	7.6	6.6	7.6	8.5	6.2	8.5
			RATIO	0.954	0.960	0.535	0.760	0.984	0.857	0.880	0.772	0.986	0.973
	METEOROLOGICAL SITE WORCESTER		DIR (DEG)	250	270	250	280	280	250	300	250	220	270
			VEL (MPH)	7.5	5.5	3.7	7.0	5.4	5.9	8.3	6.1	6.1	9.5
			SPD (MPH)	7.8	5.9	5.5	7.2	7.0	8.2	9.3	7.8	6.6	9.6
			RATIO	0.970	0.939	0.672	0.973	0.763	0.723	0.892	0.782	0.927	0.989
HARTFORD		123	70	0.101	0.097	0.090	0.076	0.074	0.070	0.068	0.067	0.063	0.061
			DATE	1/21/81	1/22/81	2/17/81	1/14/81	2/18/81	1/15/81	1/16/81	2/ 1/81	1/31/81	2/19/81
	METEOROLOGICAL SITE NEWARK		DIR (DEG)	30	270	230	70	210	30	320	170	320	150
			VEL (MPH)	8.5	7.0	9.5	1.5	4.3	11.7	1.6	6.1	8.4	6.1
			SPD (MPH)	8.6	8.5	9.8	5.0	6.3	11.8	5.8	7.2	9.5	7.0
			RATIO	0.982	0.824	0.972	0.299	0.677	0.994	0.279	0.847	0.880	0.871
	METEOROLOGICAL SITE BRADLEY		DIR (DEG)	20	210	210	200	220	20	30	200	340	180
			VEL (MPH)	2.4	3.4	5.1	2.0	4.1	5.2	2.5	6.2	4.0	3.9
			SPD (MPH)	2.6	4.6	7.3	2.7	4.9	5.2	2.6	6.3	4.6	5.3
			RATIO	0.940	0.746	0.690	0.748	0.834	0.998	0.949	0.986	0.867	0.737
	METEOROLOGICAL SITE BRIDGEPORT		DIR (DEG)	40	250	230	50	220	20	30	180	310	70
			VEL (MPH)	3.3	6.1	9.8	3.7	6.8	11.0	5.4	2.6	11.8	9.4
			SPD (MPH)	6.9	7.3	10.2	3.9	7.3	12.1	6.9	7.9	12.4	9.5
			RATIO	0.480	0.833	0.963	0.954	0.930	0.912	0.780	0.327	0.953	0.990
	METEOROLOGICAL SITE WORCESTER		DIR (DEG)	320	250	250	260	270	30	60	210	310	210
			VEL (MPH)	2.5	7.2	8.5	5.5	10.3	4.9	3.2	8.8	11.3	5.0
			SPD (MPH)	4.3	7.6	8.6	5.6	10.6	6.3	3.9	10.1	11.8	6.2
			RATIO	0.581	0.944	0.985	0.989	0.969	0.775	0.830	0.874	0.958	0.814
MADISON		2	70	0.085	0.084	0.073	0.069	0.063	0.057	0.055	0.048	0.046	0.043
			DATE	8/20/81	8/19/81	8/18/81	8/21/81	8/12/81	8/13/81	8/14/81	8/15/81	8/17/81	7/16/81
	METEOROLOGICAL SITE NEWARK		DIR (DEG)	50	90	10	70	230	270	150	210	320	270
			VEL (MPH)	12.7	5.0	3.2	3.7	4.5	7.7	3.1	10.4	15.9	8.3
			SPD (MPH)	13.4	9.3	7.0	8.5	7.8	8.9	6.0	10.9	17.1	9.5
			RATIO	0.948	0.535	0.459	0.432	0.574	0.862	0.514	0.951	0.928	0.871
	METEOROLOGICAL SITE BRADLEY		DIR (DEG)	50	50	340	360	250	270	180	200	330	320
			VEL (MPH)	5.9	3.8	4.2	2.4	2.5	4.7	1.4	8.0	8.4	3.4
			SPD (MPH)	7.3	5.2	4.9	5.3	3.0	5.2	5.8	8.2	8.8	4.6
			RATIO	0.804	0.741	0.855	0.452	0.814	0.902	0.252	0.976	0.955	0.732
	METEOROLOGICAL SITE BRIDGEPORT		DIR (DEG)	80	100	290	110	210	230	80	190	300	210
			VEL (MPH)	11.4	4.9	2.3	1.0	3.4	6.4	5.9	7.9	10.0	6.0
			SPD (MPH)	12.4	6.6	7.3	5.3	4.5	6.6	6.9	8.5	10.5	7.6
			RATIO	0.921	0.745	0.307	0.193	0.760	0.972	0.854	0.936	0.950	0.792
	METEOROLOGICAL SITE WORCESTER		DIR (DEG)	60	50	320	20	280	280	270	210	300	290
			VEL (MPH)	6.2	4.6	10.3	2.7	7.0	8.9	1.8	9.0	15.1	6.8
			SPD (MPH)	6.8	5.8	11.2	6.2	7.2	9.1	5.2	9.5	15.4	7.2
			RATIO	0.912	0.795	0.919	0.431	0.973	0.979	0.345	0.949	0.981	0.950

TABLE 23, Continued

1981 TEN HIGHEST 1 HR AVG NO2 DAYS WITH WIND DATA.

POLLUTANT--NITROGEN DIOXIDE UNITS : PARTS PER MILLION

TOWN NAME	SITE	SAMPLES		1	2	3	4	5	6	7	8	9	10
NEW HAVEN	123	184		0.105	0.079	0.075	0.073	0.072	0.072	0.071	0.070	0.069	0.068
			DATE	7/13/81	8/ 3/81	9/14/81	12/28/81	8/27/81	11/ 5/81	9/11/81	12/21/81	8/ 4/81	10/ 1/81
METEOROLOGICAL SITE			DIR (DEG)	260	230	240	210	240	60	270	240	270	40
NEWARK			VEL (MPH)	12.6	10.4	13.0	3.4	9.8	4.6	9.7	6.5	8.2	4.6
			SPD (MPH)	13.4	10.9	13.2	6.0	10.1	6.0	10.6	6.9	9.2	7.5
			RATIO	0.945	0.949	0.981	0.556	0.971	0.756	0.910	0.939	0.890	0.616
METEOROLOGICAL SITE			DIR (DEG)	250	230	220	50	360	180	360	200	220	180
BRADLEY			VEL (MPH)	3.3	4.4	5.6	2.1	1.4	2.1	2.3	5.0	2.2	1.2
			SPD (MPH)	6.6	4.9	7.2	4.0	4.0	3.3	4.7	5.9	4.9	2.2
			RATIO	0.505	0.903	0.777	0.531	0.359	0.634	0.481	0.848	0.447	0.549
METEOROLOGICAL SITE			DIR (DEG)	240	220	210	100	230	80	270	250	190	30
BRIDGEPORT			VEL (MPH)	9.1	6.6	7.4	2.4	7.5	3.4	4.2	11.5	5.5	5.0
			SPD (MPH)	9.2	6.9	7.8	5.9	7.6	4.9	5.5	12.9	5.6	6.6
			RATIO	0.995	0.960	0.954	0.403	0.984	0.696	0.765	0.886	0.974	0.757
METEOROLOGICAL SITE			DIR (DEG)	270	270	250	330	280	200	290	260	270	260
WORCESTER			VEL (MPH)	5.6	5.5	7.5	1.8	5.4	2.5	5.9	8.6	4.7	6.1
			SPD (MPH)	6.0	5.9	7.8	3.6	7.0	5.0	8.1	9.3	6.0	8.1
			RATIO	0.932	0.939	0.970	0.498	0.763	0.501	0.734	0.915	0.780	0.758
STRATFORD	7	133		0.088	0.077	0.077	0.071	0.068	0.066	0.065	0.064	0.064	0.062
			DATE	9/14/81	8/12/81	6/ 4/81	9/11/81	5/24/81	6/10/81	5/26/81	5/30/81	5/25/81	8/ 3/81
METEOROLOGICAL SITE			DIR (DEG)	240	230	250	270	310	270	240	210	230	230
NEWARK			VEL (MPH)	13.0	4.5	10.8	9.7	7.6	8.9	7.9	7.6	11.6	10.4
			SPD (MPH)	13.2	7.8	11.1	10.6	10.1	9.6	9.9	9.1	11.9	10.9
			RATIO	0.981	0.574	0.976	0.910	0.751	0.920	0.798	0.841	0.976	0.949
METEOROLOGICAL SITE			DIR (DEG)	220	250	250	360	350	280	240	210	210	230
BRADLEY			VEL (MPH)	5.6	2.5	4.4	2.3	6.0	8.0	5.1	5.5	7.1	4.4
			SPD (MPH)	7.2	3.0	7.3	4.7	7.0	8.6	7.0	5.9	7.6	4.9
			RATIO	0.777	0.814	0.599	0.481	0.856	0.923	0.724	0.936	0.928	0.903
METEOROLOGICAL SITE			DIR (DEG)	210	210	230	270	310	220	220	200	210	220
BRIDGEPORT			VEL (MPH)	7.4	3.4	8.2	4.2	11.8	12.0	7.0	5.7	9.9	6.6
			SPD (MPH)	7.8	4.5	8.3	5.5	13.2	12.1	7.5	7.9	12.1	6.9
			RATIO	0.954	0.760	0.981	0.765	0.891	0.994	0.931	0.725	0.820	0.960
METEOROLOGICAL SITE			DIR (DEG)	250	280	280	290	330	280	270	230	260	270
WORCESTER			VEL (MPH)	7.5	7.0	7.4	5.9	11.4	9.0	7.4	4.9	8.5	5.5
			SPD (MPH)	7.8	7.2	8.9	8.1	11.9	9.3	7.8	5.6	8.9	5.9
			RATIO	0.970	0.973	0.832	0.734	0.958	0.960	0.948	0.872	0.950	0.939

TABLE 23, Continued

VI. CARBON MONOXIDE

Health Effects:

Carbon monoxide (CO) is a colorless, odorless, poison gas formed when carbon-containing fuel is not burned completely. It is by far the most plentiful air pollutant. EPA estimates that more than 102 million metric tons of CO are spewed into the air each year in the United States. (A metric ton is 1,000 kilograms, or about 2,200 pounds.)

Fortunately, this deadly gas does not persist in the atmosphere. It is apparently converted by natural processes to harmless carbon dioxide, in ways not yet understood, fast enough to prevent any general buildup. But it can reach dangerous levels in local areas, as in city-street canyons with heavy auto traffic and little wind.

Clinical experience with accidental CO poisoning has shown clearly how it affects the body. When the gas is breathed, CO replaces oxygen in the red blood cells, reducing the amount of oxygen that can reach the body cells and maintain life. Lack of oxygen affects the brain, and the first symptoms are impaired perception and thinking. Reflexes are slowed, judgement weakened, and a person becomes drowsy. An auto driver breathing high levels of CO is more likely to have an accident; an athlete's performance and skill drop suddenly. Lack of oxygen then affects the heart. Death can come from heart failure or general asphyxiation, if a person is exposed to very high levels of CO.

Conclusions:

The eight-hour National Ambient Air Quality Standard of 9 parts per million (ppm) was exceeded at ~~three~~ two of the five carbon monoxide monitoring sites in Connecticut during 1981, ~~one less than 1980~~. These sites were: New Britain 002, ~~New Haven 007~~, and Stamford 020. The number of times that the 8-hour standard was exceeded ranged from one time at the New Britain 002 site to ~~113~~ 100 times at the Stamford 020 site. No site exceeded the one-hour standard of 35 ppm.

A definite decrease in carbon monoxide levels took place between 1980 and 1981.

In order to put the monitoring data into proper perspective, it must be realized that carbon monoxide concentrations vary greatly from place-to-place. More than 95% of the CO emissions in Connecticut come from motor vehicles, so concentrations are greatest in areas of traffic congestion. The magnitude and frequency of high concentrations observed at any monitoring site are not necessarily indicative of widespread CO levels. Thus, most locations in New Britain and Stamford are probably not experiencing CO levels as high as those observed at the monitoring sites in those towns. On the other hand, there are probably locations in Bridgeport, Hartford, and New Haven where CO levels are higher than those observed in the monitoring sites in those towns. The CO standards are likely to be exceeded in any city in the state where there are areas of

traffic congestion. As Federally-mandated controls reduce emissions from new motor vehicles, and as Connecticut's SIP control strategies are implemented, especially the State's vehicle inspection and maintenance program (which began in January of 1983), there should continue to be a decrease in the number of such areas; and the remaining areas should be shrinking in territory and have levels which are less in excess of the standards.

Method of Measurement:

The DEP Air Monitoring Unit uses instruments employing a non-dispersive infrared technique to continuously measure carbon monoxide levels. The instruments are fairly insensitive to sampling line length. Concentrations vary dramatically with inlet exposure and proximity to traffic lanes.

Discussion of Data:

Monitoring Network - The network in 1981 consisted of five carbon monoxide monitors. They are all located in urban areas and are considered satellites of other stations, which in turn telemeter the data to the central computer in Hartford on a real-time basis. All sites are located west of the Connecticut River, with three of them in coastal towns (see Figure 12).

8-Hour and 1-Hour Averages - Carbon monoxide levels recorded during 1981 were lower than during 1980. However, New Britain-002, ~~New Haven-007~~, and Stamford-020 still exceeded the primary 8-hour standard with their 1st high recorded values being greater than 9 ppm. Second-high 8-hour average CO levels also fell at every site in 1981. But since the second highest value at Stamford-020 was still greater than 9 ppm, it is considered a violation. As for 1-hour averages, no site in the state recorded a value exceeding the primary 1-hour standard of 35 ppm. Only one site, New Haven-007, recorded a highest 1-hour value greater than the year before. Second high 1-hour values were also lower in 1981 at all sites except New Haven-007.

Table 25 presents monthly first highs and a tally of the number of times the standards were exceeded at each site. Seasonal variations in CO levels can be observed using this table.

10-High Days with Wind Data - Table 26 lists the maximum 1-hour CO averages with dates of occurrence, for the 10-highest days at each CO site in Connecticut for 1980. The wind data associated with these high readings are also presented. (See the discussion of Table 11 in the TSP section for a description of the origin and use of these wind data.)

At all five CO sites in Connecticut, the high CO levels tend to occur during the colder months and while we are under the influence of high pressure with southwesterly winds in the region. Low atmospheric mixing heights and other meteorological conditions are part of the reason CO levels are high on southwest wind days, but in this case another explanation also appears viable. A noteworthy feature of the high CO days is that the winds tend to be more persistent from all directions than on the high days for the other pollutants. Since 95% of the CO emissions in Connecticut come from motor vehicles, it is likely that the high CO levels

are caused when persistent winds are blowing CO emissions from the direction of nearby roads toward the monitors. Such appears to be the case especially with the Stamford 020 site, where the most heavily traveled roads are to the southwest of the monitors.

Another feature of the high CO days is that rarely does more than one site record a high level on the same day. There was only one day in 1981 in which more than one site recorded one of its three highest values. On 12/4/81 Bridgeport 004 recorded its third highest value while on that day, New Britain 002 recorded its second high for the year. This is opposite of the behavior exhibited by all the other pollutants and it demonstrates that high levels of CO are much more dependent on local effects than are the other pollutants.

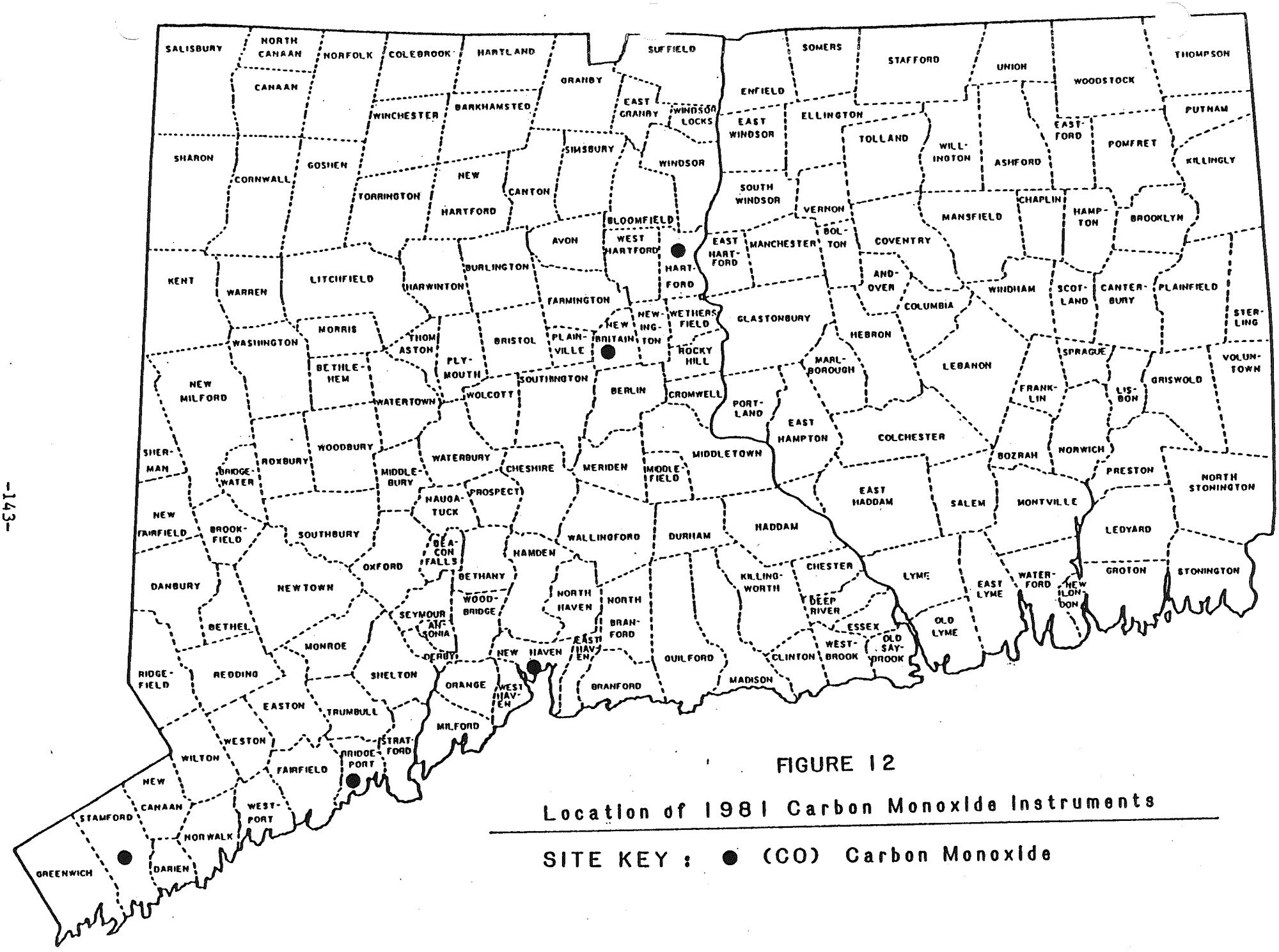


FIGURE 12

Location of 1981 Carbon Monoxide Instruments

SITE KEY : ● (CO) Carbon Monoxide

TABLE 24

1981 CARBON MONOXIDE STANDARDS ASSESSMENT
SUMMARY, UNITS = PPM

TOWN-SITE	MAXIMUM 8-HOUR RUNNING AVERAGE	TIME[1] OF MAXIMUM 8-HOUR RUNNING AVERAGE	2ND HIGH 8-HOUR[3] RUNNING AVERAGE	TIME[1] OF 2ND HIGH 8-HOUR RUNNING AVERAGE	MAXIMUM 1-HOUR AVERAGE	TIME[2] OF MAXIMUM 1-HOUR AVERAGE	2ND HIGH 1-HOUR AVERAGE	TIME[2] OF 2ND HIGH 1-HOUR AVERAGE
Bridgeport-004	7.4	7/01/16	7.2	11/04/23	14.1	1/9/09	13.3	12/23/10
Hartford-012	8.0	12/02/24	7.8	11/21/24	19.0	11/21/24	14.4	7/8/08
New Britain-002	9.7	01/15/01	8.8	12/02/18	15.2	1/27/08	13.1	12/04/08
New Haven-007	9.1	12/04/24	8.1	1/21/24	13.6	1/20/08	13.6	10/22/08
Stamford-020*	~~15.9~~ 16.5	~~1/22/16~~ 2/04/19	15.~~4~~9	~~2/04/19~~ 1/22/16	30.0	1/6/09	26.3	3/11/18

1 Time of 8-hour averages is reported as follows: month/day/hour (EST), specifying the end of the 8-hour average period

2 Time of 1-hour averages is reported as follows: month/day/hour (EST), specifying the end of the 1-hour average period

3 The second highest running 8-hour value must not overlap the first high 8-hour value, i.e., it can not be within eight hours of the first high value.

* Less than 75% of possible data

TABLE 25

1981 CARBON MONOXIDE SEASONAL FEATURES, UNITS = PPM

TOWN-SITE		JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	NUMBER OF TIMES STANDARD EXCEEDED	NUMBER OF DAYS STANDARD EXCEEDED
Bridgeport-004	Max-1 Hr.	14.1	8.1	5.5	7.3	6.8	5.8	9.0	10.3	10.3	8.3	11.4	13.3	0	0
	Max-Running 8-Hr.	7.0	5.4	3.9	4.7	4.5	4.5	7.4	4.8	6.4	5.5	7.2	6.8	0	0
Hartford-012	Max-1 Hr.	11.9	10.4	7.2	8.5	9.2	7.9	14.4	10.2	9.0	10.7	19.0	10.5	0	0
	Max-Running 8-Hr.	7.4	6.9	4.4	6.1	7.0	5.3	5.7	6.8	4.9	6.4	7.8	8.0	0	0
New Britain-002	Max-1 Hr.	15.2	8.7	10.4*	8.0	6.5	7.1	9.0	6.5	7.8	12.6	12.9	13.1	0	0
	Max-Running 8-Hr.	9.7	5.8	6.7*	6.5	4.4	4.9	8.5	5.4	5.1	7.5	8.4	8.8	1	1
New Haven-007	Max-1 Hr.	13.6	12.1	8.0	7.2	5.0	5.0	4.4	5.6	5.2	13.6	12.5	10.0	0	0
	Max-Running 8-Hr.	8.1	6.6	3.7	3.0	2.5	2.8	2.2	2.8	3.0	5.5	9.1	5.4	~~1~~ 0	~~1~~ 0
Stamford-020*	Max-1 Hr.	30.0	25.8	26.3	22.0	18.7	17.5	15.7	19.2	24.3*	---	---	---	0	0
	Max-Running 8-Hr.	15.9	~~15.4~~ 16.5	~~14.6~~ 14.9	11.4	10.9	12.6	12.3	14.3	13.5*	---	---	---	~~113~~ 100	~~18~~ 75

* <75% of data available

1981 TEN HIGHEST 1 HR AVG CO DAYS WITH WIND DATA.

POLLUTANT--CARBON MONOXIDE

UNITS : PARTS PER MILLION

TOWN NAME	SITE	SAMPLES	1	2	3	4	5	6	7	8	9	10
BRIDGEPORT	4	364	14.1	13.3	11.5	11.4	10.3	10.3	10.2	10.0	9.5	9.2
		DATE	1/ 9/81	12/23/81	12/ 4/81	11/ 4/81	9/ 1/81	8/24/81	12/ 1/81	11/ 3/81	12/28/81	1/14/81
METEOROLOGICAL SITE NEWARK		DIR (DEG)	260	250	40	260	90	290	130	320	210	70
		VEL (MPH)	4.6	4.4	5.2	5.9	6.7	8.9	1.1	7.5	3.4	1.5
		SPD (MPH)	5.5	8.2	7.2	7.3	9.6	12.1	5.6	9.1	6.0	5.0
		RATIO	0.833	0.542	0.726	0.810	0.699	0.733	0.193	0.830	0.556	0.299
METEOROLOGICAL SITE BRADLEY		DIR (DEG)	210	330	190	320	130	350	290	330	50	200
		VEL (MPH)	3.3	6.9	1.3	3.6	2.5	2.0	0.8	6.5	2.1	2.0
		SPD (MPH)	4.2	8.6	3.6	6.9	5.3	2.0	1.9	7.3	4.0	2.7
		RATIO	0.798	0.803	0.364	0.527	0.469	0.989	0.453	0.885	0.531	0.748
METEOROLOGICAL SITE BRIDGEPORT		DIR (DEG)	290	250	40	240	80	280	120	290	100	50
		VEL (MPH)	3.4	5.4	2.9	2.8	11.2	6.7	3.5	4.3	2.4	3.7
		SPD (MPH)	5.5	13.1	6.0	4.5	11.2	7.6	5.8	4.5	5.9	3.9
		RATIO	0.626	0.412	0.476	0.618	0.996	0.880	0.612	0.955	0.403	0.954
METEOROLOGICAL SITE WORCESTER		DIR (DEG)	260	280	280	300	90	300	210	300	330	260
		VEL (MPH)	4.6	6.4	4.6	6.0	3.9	8.3	0.7	10.7	1.8	5.5
		SPD (MPH)	4.7	9.9	5.6	7.6	4.5	9.3	5.5	11.4	3.6	5.8
		RATIO	0.960	0.648	0.829	0.792	0.883	0.892	0.122	0.938	0.498	0.989
HARTFORD	12	364	19.0	14.4	11.9	11.1	10.7	10.5	10.4	10.3	10.3	10.2
		DATE	11/21/81	7/ 8/81	1/21/81	11/ 6/81	10/ 6/81	12/ 2/81	2/ 6/81	1/27/81	11/23/81	12/ 4/81
METEOROLOGICAL SITE NEWARK		DIR (DEG)	260	280	30	260	210	270	210	260	290	40
		VEL (MPH)	17.0	8.9	8.5	10.0	1.5	5.8	9.8	8.6	9.9	5.2
		SPD (MPH)	17.3	10.2	8.6	13.1	6.6	7.9	10.8	9.8	10.4	7.2
		RATIO	0.984	0.872	0.982	0.762	0.232	0.740	0.905	0.882	0.954	0.726
METEOROLOGICAL SITE BRADLEY		DIR (DEG)	270	290	20	270	250	360	210	260	290	190
		VEL (MPH)	8.8	8.1	2.4	4.5	1.3	4.9	6.4	5.2	7.4	1.3
		SPD (MPH)	10.5	8.5	2.6	5.6	2.6	5.6	7.0	6.9	8.3	3.6
		RATIO	0.840	0.951	0.940	0.797	0.496	0.871	0.904	0.750	0.890	0.364
METEOROLOGICAL SITE BRIDGEPORT		DIR (DEG)	280	250	40	250	110	220	220	250	280	40
		VEL (MPH)	12.2	8.0	3.3	6.9	3.9	5.6	9.4	11.2	6.4	2.9
		SPD (MPH)	12.4	8.8	6.9	8.9	5.2	9.2	10.6	11.6	6.6	6.0
		RATIO	0.983	0.914	0.480	0.774	0.759	0.613	0.884	0.963	0.972	0.476
METEOROLOGICAL SITE WORCESTER		DIR (DEG)	260	280	320	250	240	320	230	270	280	280
		VEL (MPH)	9.8	11.3	2.5	7.6	4.2	3.7	10.9	10.9	10.2	4.6
		SPD (MPH)	10.1	11.5	4.3	10.1	7.6	7.0	11.4	11.1	10.5	5.6
		RATIO	0.969	0.985	0.581	0.756	0.549	0.519	0.962	0.983	0.972	0.829
NEW BRITAIN	2	358	15.2	13.1	12.9	12.6	12.6	12.5	12.5	12.3	12.0	11.4
		DATE	1/27/81	12/ 4/81	11/13/81	10/15/81	11/ 2/81	11/30/81	1/19/81	1/ 9/81	1/14/81	11/ 3/81
METEOROLOGICAL SITE NEWARK		DIR (DEG)	260	40	30	100	260	330	260	260	70	320
		VEL (MPH)	8.6	5.2	11.4	2.0	5.7	13.6	9.5	4.6	1.5	7.5
		SPD (MPH)	9.8	7.2	11.5	6.6	8.1	13.9	10.4	5.5	5.0	9.1
		RATIO	0.882	0.726	0.988	0.299	0.708	0.976	0.914	0.833	0.299	0.830
METEOROLOGICAL SITE BRADLEY		DIR (DEG)	260	190	10	190	310	350	310	210	200	330
		VEL (MPH)	5.2	1.3	3.4	3.4	4.3	9.9	9.7	3.3	2.0	6.5
		SPD (MPH)	6.9	3.6	4.2	3.6	5.6	10.1	10.4	4.2	2.7	7.3
		RATIO	0.750	0.3[illegible]4	0.817	0.939	0.767	0.984	0.941	0.798	0.748	0.885

TABLE 26

1981 TEN HIGHEST 1 HR AVG CO DAYS WITH WIND DATA.

POLLUTANT--CARBON MONOXIDE UNITS : PARTS PER MILLION

TOWN NAME	SITE SAMPLES		1	2	3	4	5	6	7	8	9	10
METEOROLOGICAL SITE BRIDGEPORT		DIR (DEG)	250	40	50	80	250	350	250	290	50	290
		VEL (MPH)	11.2	2.9	4.7	3.7	4.7	8.6	15.6	3.4	3.7	4.3
		SPD (MPH)	11.6	6.0	5.6	5.0	6.0	8.8	16.2	5.5	3.9	4.5
		RATIO	0.963	0.476	0.844	0.742	0.772	0.982	0.962	0.626	0.954	0.955
METEOROLOGICAL SITE WORCESTER		DIR (DEG)	270	280	20	220	280	320	280	260	260	300
		VEL (MPH)	10.9	4.6	2.3	4.0	10.8	11.8	12.1	4.6	5.5	10.7
		SPD (MPH)	11.1	5.6	2.6	6.6	11.6	11.9	12.2	4.7	5.6	11.4
		RATIO	0.983	0.829	0.905	0.611	0.925	0.987	0.986	0.960	0.989	0.938
NEW HAVEN	7	357	13.6	13.6	12.5	12.1	12.1	10.9	10.1	10.1	10.0	9.2
		DATE	1/20/81	10/22/81	11/ 4/81	11/ 3/81	2/10/81	1/14/81	1/21/81	2/18/81	12/24/81	1/22/81
METEOROLOGICAL SITE NEWARK		DIR (DEG)	320	180	260	320	150	70	30	210	260	270
		VEL (MPH)	4.2	6.1	5.9	7.5	7.8	1.5	8.5	4.3	7.6	7.0
		SPD (MPH)	8.1	7.9	7.3	9.1	10.2	5.0	8.6	6.3	8.1	8.5
		RATIO	0.524	0.766	0.810	0.830	0.761	0.299	0.982	0.677	0.942	0.824
METEOROLOGICAL SITE BRADLEY		DIR (DEG)	340	200	320	330	170	200	20	220	270	210
		VEL (MPH)	7.2	6.4	3.6	6.5	7.1	2.0	2.4	4.1	3.9	3.4
		SPD (MPH)	7.6	6.6	6.9	7.3	7.9	2.7	2.6	4.9	5.5	4.6
		RATIO	0.945	0.964	0.527	0.885	0.901	0.748	0.940	0.834	0.706	0.746
METEOROLOGICAL SITE BRIDGEPORT		DIR (DEG)	280	170	240	290	110	50	40	220	250	250
		VEL (MPH)	6.4	4.9	2.8	4.3	8.4	3.7	3.3	6.8	8.2	6.1
		SPD (MPH)	10.6	6.3	4.5	4.5	13.9	3.9	6.9	7.3	8.6	7.3
		RATIO	0.602	0.775	0.618	0.955	0.605	0.954	0.480	0.930	0.954	0.833
METEOROLOGICAL SITE WORCESTER		DIR (DEG)	320	220	300	300	230	260	320	270	260	250
		VEL (MPH)	10.1	7.8	6.0	10.7	6.3	5.5	2.5	10.3	5.3	7.2
		SPD (MPH)	10.9	8.8	7.6	11.4	8.3	5.6	4.3	10.6	5.6	7.6
		RATIO	0.922	0.802	0.792	0.938	0.756	0.989	0.581	0.969	0.945	0.944
STAMFORD	20	264	30.0	26.3	25.8	24.5	24.4	24.3	24.2	24.0	23.5	23.4
		DATE	1/ 6/81	3/11/81	2/ 4/81	1/28/81	3/ 9/81	9/11/81	9/ 9/81	1/ 9/81	1/ 8/81	2/ 5/81
METEOROLOGICAL SITE NEWARK		DIR (DEG)	220	280	270	240	320	270	300	260	300	300
		VEL (MPH)	8.2	7.6	11.2	4.3	13.2	9.7	10.0	4.6	14.7	13.9
		SPD (MPH)	9.2	8.2	12.4	7.0	13.4	10.6	11.4	5.5	16.1	15.8
		RATIO	0.893	0.933	0.906	0.612	0.987	0.910	0.883	0.833	0.915	0.882
METEOROLOGICAL SITE BRADLEY		DIR (DEG)	210	310	260	230	300	360	310	210	310	320
		VEL (MPH)	5.7	3.4	5.8	0.8	3.7	2.3	7.7	3.3	9.4	6.8
		SPD (MPH)	7.2	5.5	6.8	3.6	3.7	4.7	8.6	4.2	11.9	8.1
		RATIO	0.797	0.625	0.858	0.219	0.984	0.481	0.894	0.798	0.787	0.846
METEOROLOGICAL SITE BRIDGEPORT		DIR (DEG)	230	240	260	250	270	270	280	290	280	290
		VEL (MPH)	7.5	11.2	10.6	2.7	5.1	4.2	7.7	3.4	16.9	16.6
		SPD (MPH)	8.9	12.4	10.8	6.9	7.0	5.5	7.8	5.5	17.3	17.0
		RATIO	0.844	0.907	0.987	0.396	0.722	0.765	0.988	0.626	0.981	0.980
METEOROLOGICAL SITE WORCESTER		DIR (DEG)	240	280	250	290	290	290	300	260	280	290
		VEL (MPH)	7.0	9.2	4.4	5.7	6.6	5.9	11.4	4.6	19.3	10.0
		SPD (MPH)	8.6	9.5	5.2	6.3	7.0	8.1	11.8	4.7	19.4	10.5
		RATIO	0.807	0.965	0.849	0.900	0.935	0.734	0.968	0.960	0.992	0.957

TABLE 26, Continued

VII. LEAD

Conclusions:

The Connecticut primary and secondary ambient air quality standard for lead and its compounds, measured as elemental lead is: 1.5 ug/m^3, maximum arithmetic mean averaged over three consecutive calendar months. As in 1980, the lead standard was not exceeded at any site in Connecticut during 1981.

A downward trend in measured concentrations of lead has been observed since 1978, as a result of a program by EPA to phase-out leaded gasoline. The portion of gasoline that was unleaded in 1978 was only about 35%; by 1987, about 74% of gasoline will be lead-free. Since most environmental lead comes from leaded gasoline the reduction in lead emissions by 1987 will be considerable -- about 77% from 1980 levels -- thus assuring continued maintenance of the NAAQS into the indefinite future.

The monitoring sites where the lead levels were greatest were generally in urban locations with moderate to heavy traffic. In Connecticut, the primary source of lead concentrations in the atmosphere is emission from the combustion of leaded gasoline in motor vehicles. Atmospheric concentrations of lead are continuing to decline as use of unleaded gasoline increases.

Sample Collection and Analysis:

The Air Monitoring Unit uses hi-vol and lo-vol samplers to obtain ambient concentrations of lead. These samplers are used to collect particulate matter onto fiberglass filters. The particulate matter collected on the filters is subsequently analyzed for its chemical composition. Wet chemistry techniques are used to separate the particulate matter into various components. The lead content of the TSP is determined using an atomic spectrophotometer. (The use of these sampling devices and the chemical analysis techniques were fully described in the TSP section.)

Discussion of Data:

Monitoring Network - In 1981, both hi-vol and lo-vol samplers were operated in Connecticut (see Figure 4). Because the Federal EPA does not recognize the lo-vol instrument as an equivalent to the reference (hi-vol) method of sampling for lead, only hi-vol data are analyzed for compliance with the lead standard.

NAAQS - As of May, 1982, the EPA changed the ambient air quality standard for lead from 1.5 ug/m^3 for a calendar quarter-year average to 1.5 ug/m^3 for a maximum arithmetic mean averaged over three consecutive calendar months.

3-Month Running Averages - Three-month running average values are given in Table 27 for the period 1979-81. These values are also presented in graphical form in Figure 13.

TABLE 27

1981 3-Month Running Average Lead Concentrations (ug/m^3)*

SITE	Jan.*	Feb.*	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
S – Ansonia-003	0.66	0.55	0.52	0.42	0.39	0.31	0.23	0.28	0.31	0.34	0.37	0.43
Bridgeport-001	0.53	0.42	0.42	0.39	0.40	0.36	0.28	0.31	0.32	0.37	0.39	0.43
S – Bridgeport-009	--	--	0.30	0.28	0.31	0.26	0.22	0.24	0.26	0.31	0.28	0.29
S – Bridgeport-123	0.61	0.53	0.51	0.47	0.49	0.41	0.31	0.35	0.38	0.46	0.44	0.47
S – Bristol-001	0.39	0.33	0.29	0.22	0.23	0.22	0.18	0.22	0.23	0.29	0.28	0.26
Burlington-001	0.14	0.11	0.10	0.08	0.09	0.10	0.07	0.09	0.09	0.10	0.08	0.06
S – Danbury-002	--	--	0.34	0.27	0.26	0.25	0.22	0.25	0.25	0.33	0.35	0.40
Danbury-123	0.60	0.48	0.35	0.31	0.30	0.27	0.20	0.25	0.31	0.40	0.39	0.41
Greenwich-004	0.24	0.19	0.18	0.15	0.16	0.16	0.14	0.17	0.18	0.16	0.12	0.13
Greenwich-008	0.47	0.42	0.33	0.27	0.25	0.23	0.22	0.27	0.31	0.32	0.32	0.32
Haddam-002	0.24	0.23	0.19	0.12	0.11	0.10	0.10	0.12	0.12	0.12	0.12	0.12
Hartford-003	0.66	0.61	0.48	0.33	0.33	0.31	0.29	0.32	0.33	0.42	0.45	0.46
Hartford-013	--	--	0.41	0.27	0.24	0.20	0.21	0.24	0.27	0.34	0.40	0.41
S – Hartford-014	--	--	0.48	0.30	0.29	0.26	0.24	0.28	0.31	0.40	0.42	0.43
Litchfield-001	0.16	0.14	0.12	0.10	0.09	--	--	0.09	0.10	0.10	0.09	0.08
Manchester-001	0.38	0.34	0.27	0.20	0.19	0.17	0.16	0.18	0.22	0.26	0.25	0.24
S – Meriden-002	0.51	0.47	0.39	0.29	0.30	0.29	0.24	0.27	0.24	0.36	0.38	0.42
Meriden-008	--	--	--	--	0.26	0.25	0.21	--	--	--	--	0.35
S – Middletown-003	0.56	0.54	0.40	0.30	0.29	0.29	0.23	0.25	0.25	0.33	0.35	0.40
Milford-002	0.37	0.30	0.29	0.26	0.27	0.27	0.23	0.28	0.29	0.31	0.28	0.31
Naugatuck-001	0.63	0.55	0.51	0.36	0.36	0.26	0.22	0.24	0.32	0.39	0.47	0.51
S – New Britain-007	--	--	0.29	0.22	0.23	0.20	0.19	0.21	0.24	0.31	0.34	0.36
New Britain-008	--	--	0.32	0.25	0.24	0.22	0.18	0.24	0.25	0.33	0.33	0.35
New Britain-009	--	--	0.28	0.21	0.20	0.18	0.15	0.18	0.19	0.29	0.30	0.34
New Haven-002	0.68	0.69	0.59	0.44	0.36	0.27	0.31	0.36	0.40	0.49	0.57	0.66
S – New Haven-123	0.89	0.81	0.70	0.54	0.52	0.44	0.37	0.42	0.45	0.56	0.61	0.61
Norwalk-001	--	--	0.36	0.31	0.30	0.27	0.20	0.25	0.26	0.30	0.28	0.31
Norwalk-005	0.57	0.50	0.42	0.40	0.36	0.33	0.28	0.30	0.33	0.36	0.40	0.45
S – Norwalk-012	--	--	0.31	0.28	0.28	0.26	0.22	0.26	0.32	0.40	0.39	0.42
Norwich-001	0.35	0.33	0.32	0.21	0.17	0.12	0.13	0.16	0.20	0.21	0.26	0.28

* 3-month running average - includes data from the last 2 months of 1980

S = SLAMS

TABLE 27, Continued

1981 3-Month Running Average Lead Concentrations (ug/m^3)

	SITE	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
S –	Stamford-001	--	--	0.32	0.30	0.35	0.32	0.28	0.30	0.32	0.34	0.32	0.32
	Stamford-007	0.40	0.35	0.29	0.24	0.21	0.18	0.17	0.19	0.21	0.23	0.24	0.27
	Stamford-021	--	--	0.27	0.30	0.30	0.27	0.25	0.29	0.34	0.33	0.33	0.36
	Stratford-005	--	--	--	0.38	0.38	0.34	0.32	0.33	0.35	0.41	0.41	0.47
S –	Torrington-123	0.62	0.52	0.41	0.34	0.32	0.27	0.21	0.23	0.26	0.32	0.37	0.42
	Voluntown-001	0.10	0.10	0.11	0.07	0.06	0.05	0.04	0.06	0.06	0.07	0.06	0.06
S –	Wallingford-001	0.55	0.46	0.40	0.29	0.29	0.25	0.22	0.26	0.28	0.33	0.37	0.43
	Waterbury-002	0.54	0.48	0.40	0.31	0.32	0.26	0.21	0.27	0.31	0.36	0.37	0.37
	Waterbury-005	--	--	--	0.34	0.33	0.30	0.25	0.29	0.34	0.40	0.38	0.41
	Waterbury-006	--	--	0.28	0.24	0.24	0.22	0.18	0.23	0.26	0.31	0.27	0.27
S –	Waterbury-007	--	--	0.63	0.46	0.41	0.37	0.31	0.38	0.41	0.51	0.48	0.54
S –	Waterbury-123	0.99	0.84	0.70	0.52	0.51	0.48	0.44	0.49	0.55	0.66	0.71	0.74
	Waterford-001	0.15	0.13	0.13	0.09	0.09	0.08	0.11	0.13	0.14	0.11	0.11	0.11
	Willington-002	0.36	0.32	0.37	0.27	0.24	0.13	0.12	0.17	0.20	0.24	0.27	0.34

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= ANSONIA 003

BAR CHART OF RUNNING AVERAGES UG/M**3

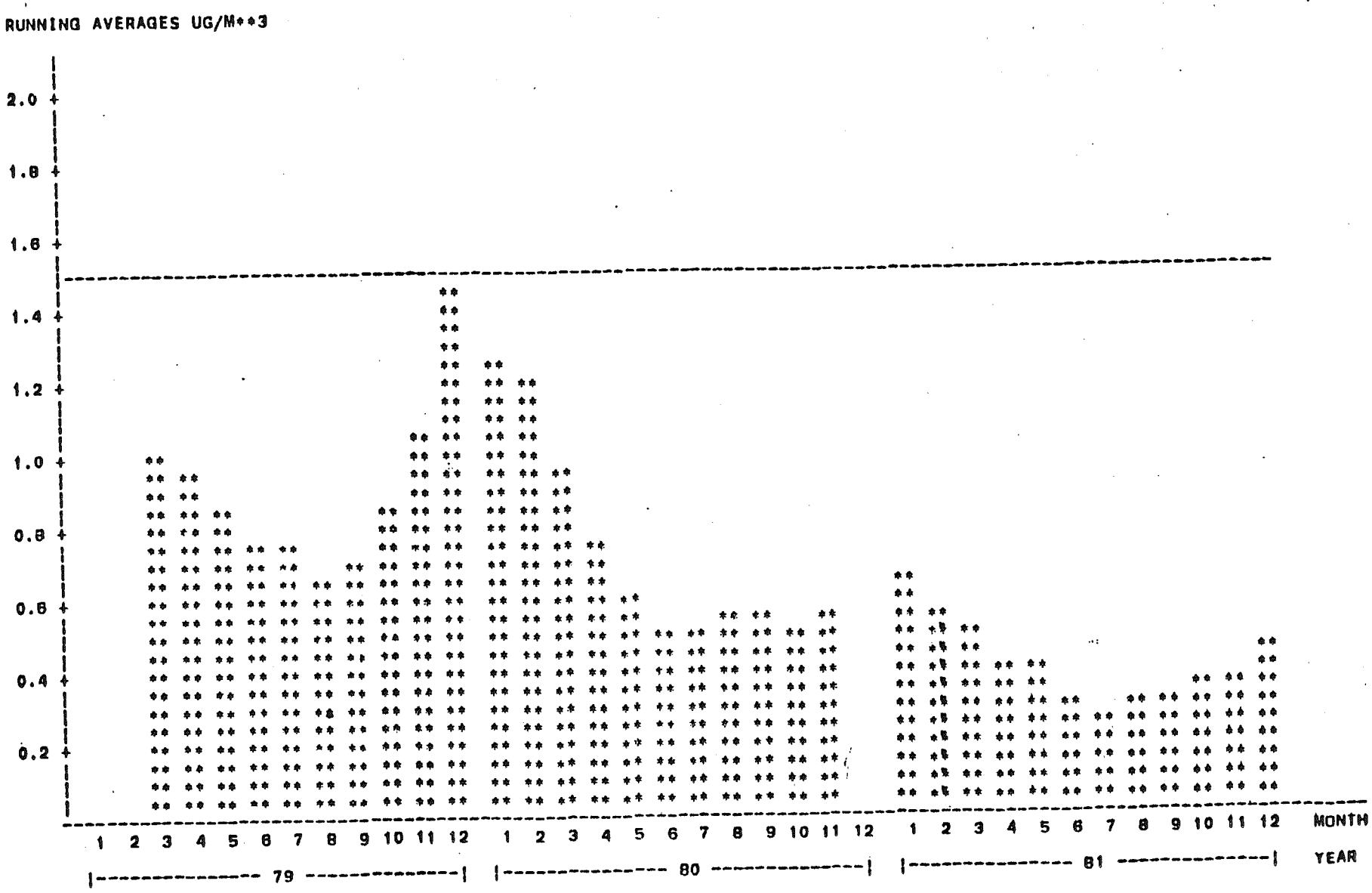


Figure 13

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= BERLIN 001

BAR CHART OF RUNNING AVERAGES UG/M**3

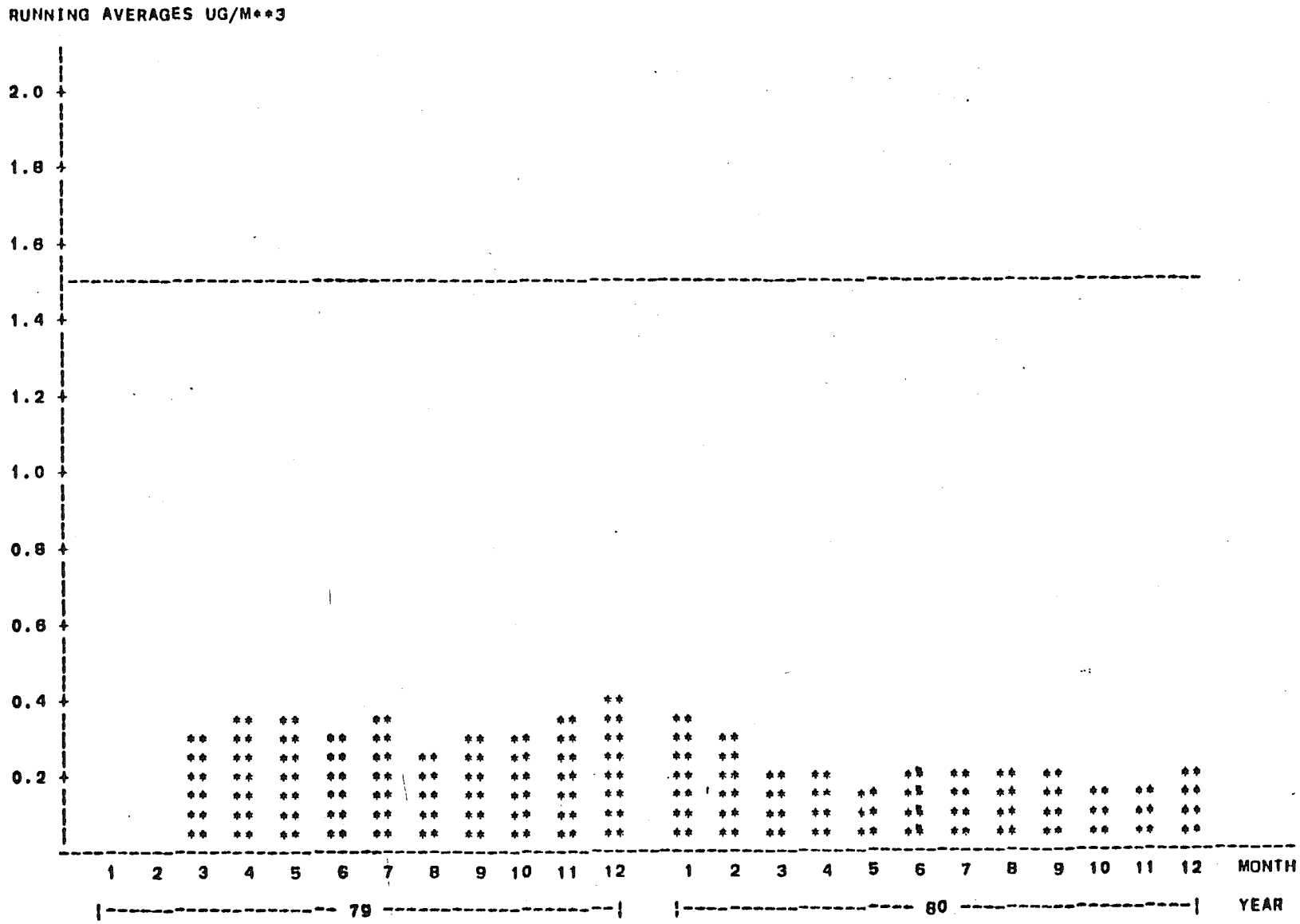
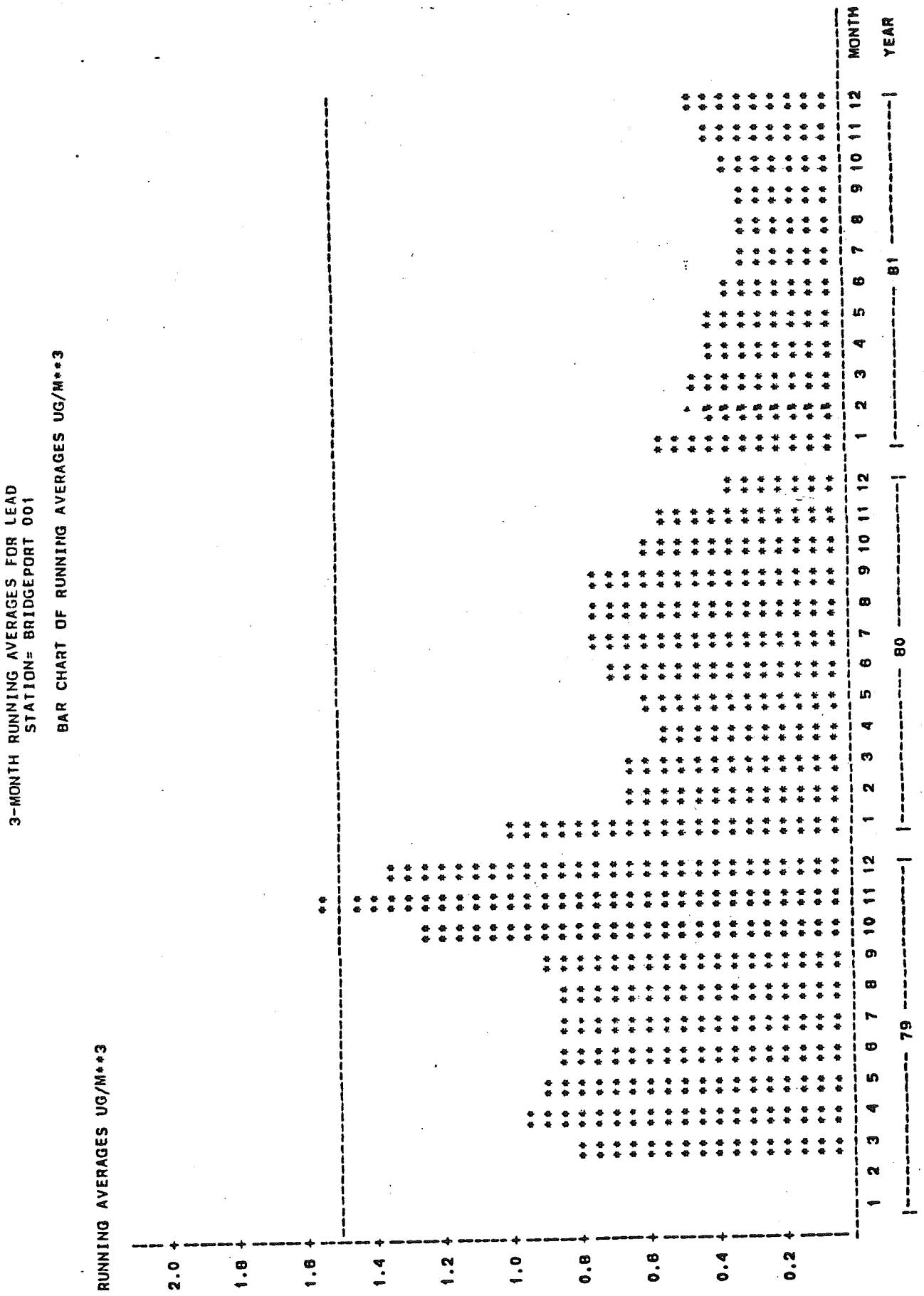


Figure 13, Continued

Figure 13, Continued



3-MONTH RUNNING AVERAGES FOR LEAD
STATION= BRIDGEPORT 009

BAR CHART OF RUNNING AVERAGES UG/M**3

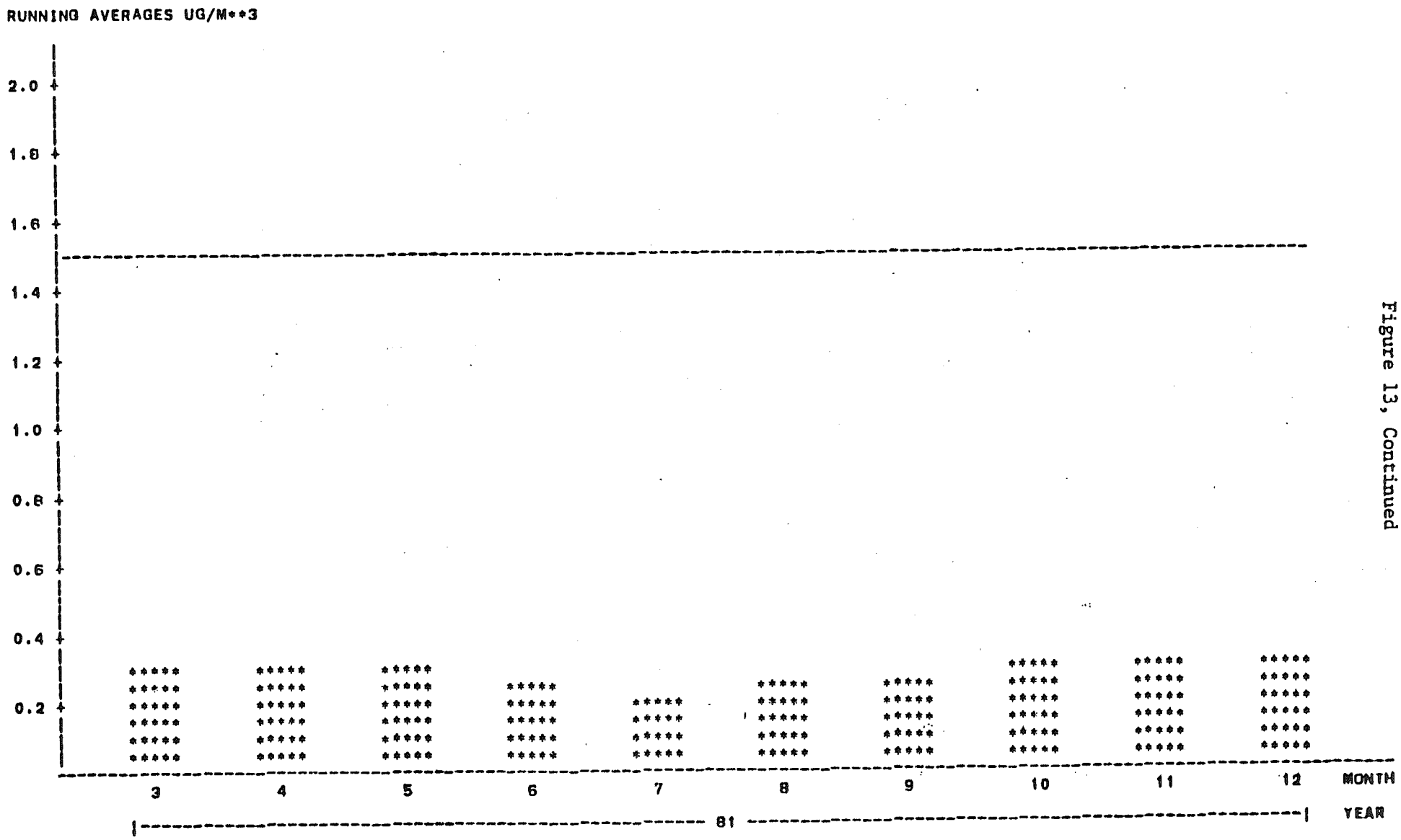
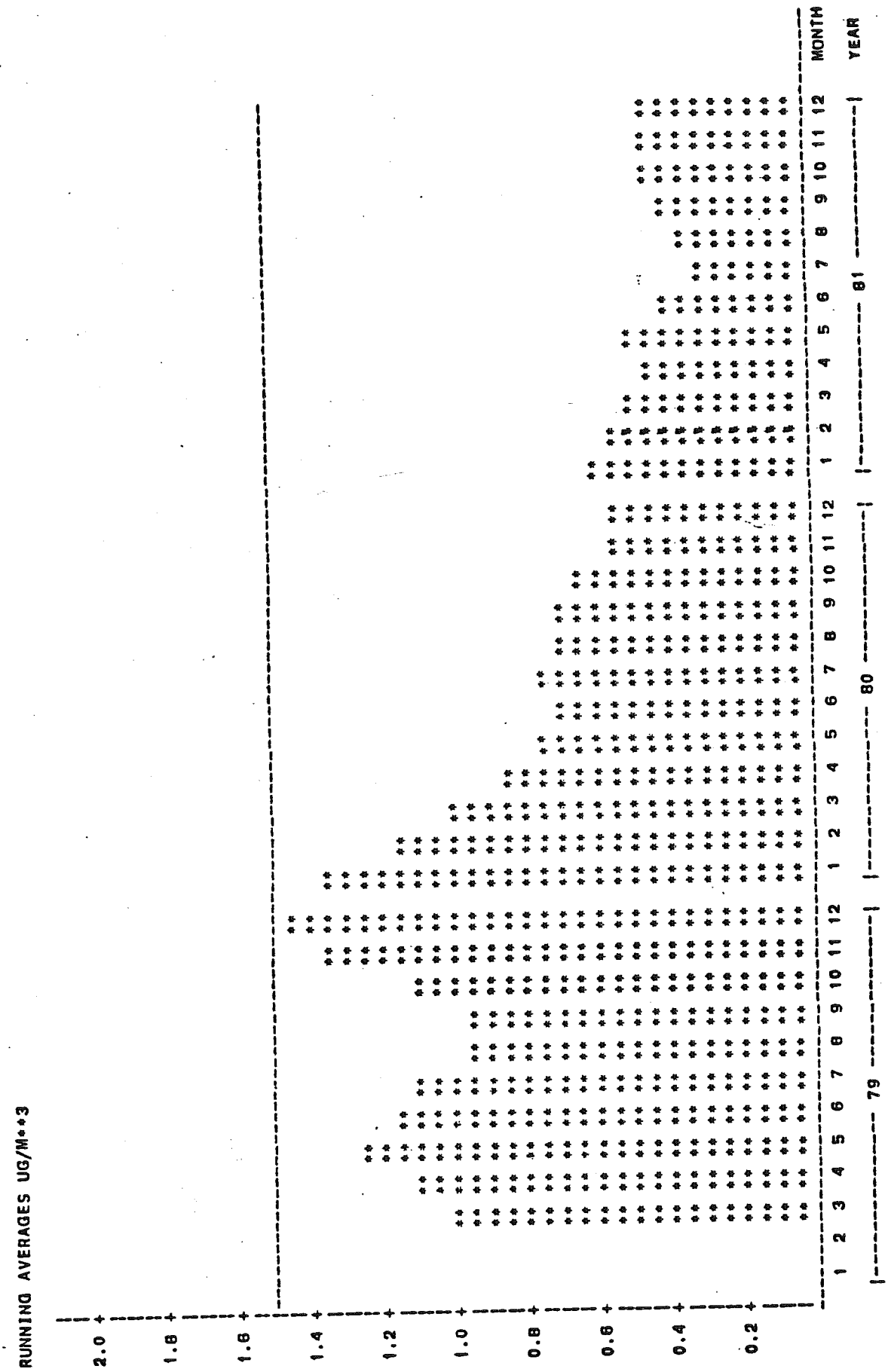


Figure 13, Continued

Figure 13, Continued



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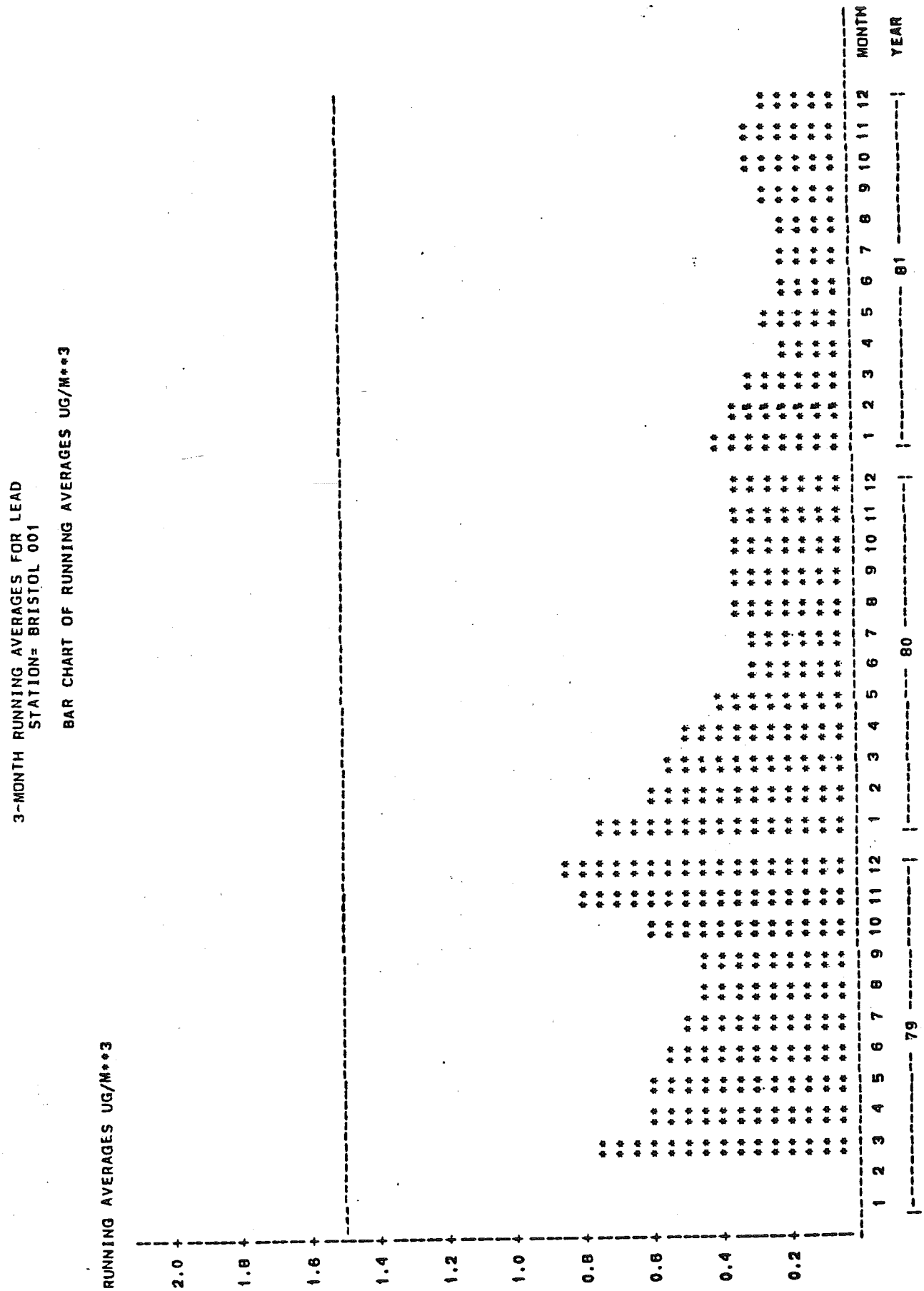


3-MONTH RUNNING AVERAGES FOR LEAD
STATION= BURLINGTON 001

BAR CHART OF RUNNING AVERAGES UG/M**3

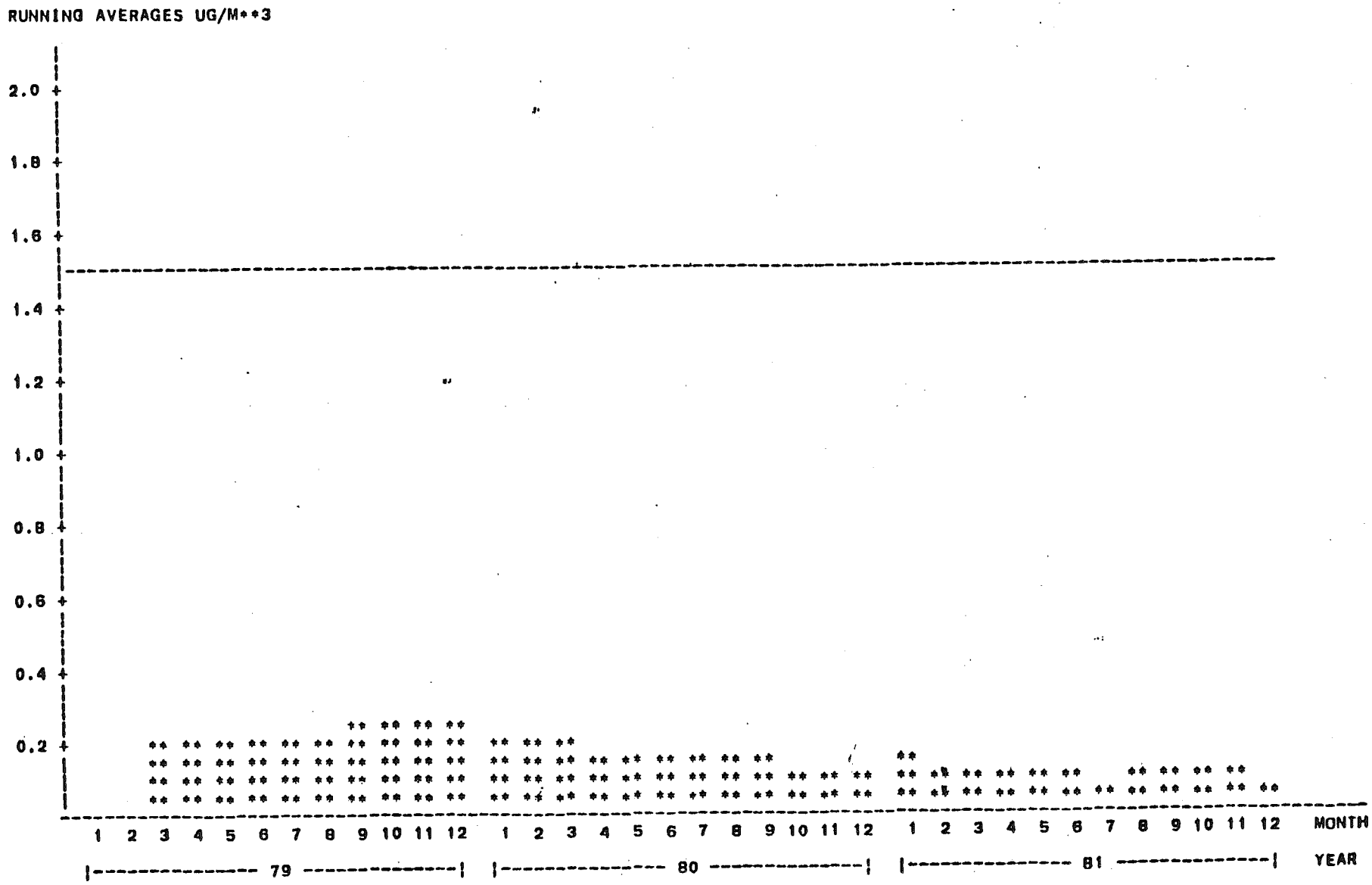


Figure 13, Continued

Figure 13, Continued

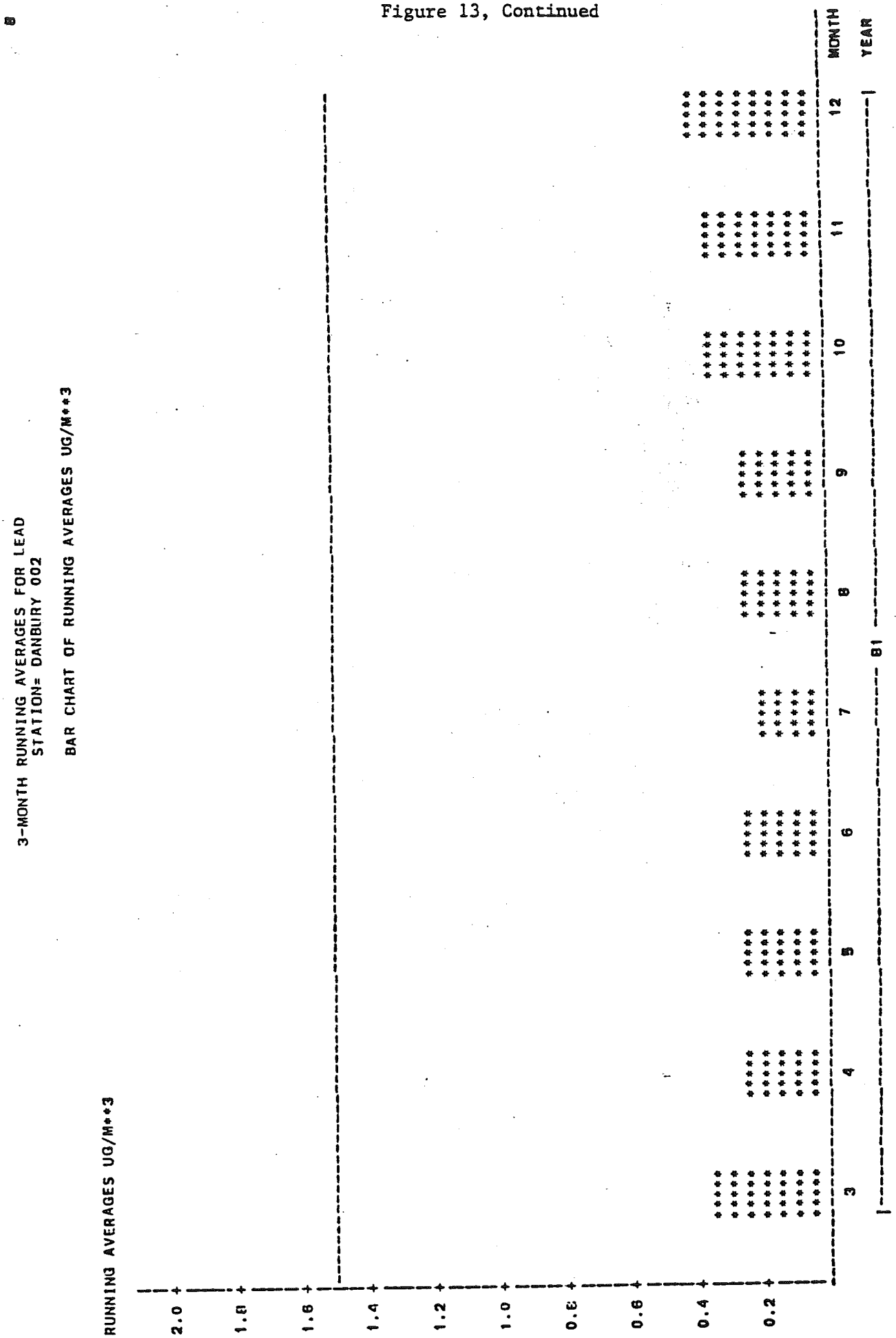
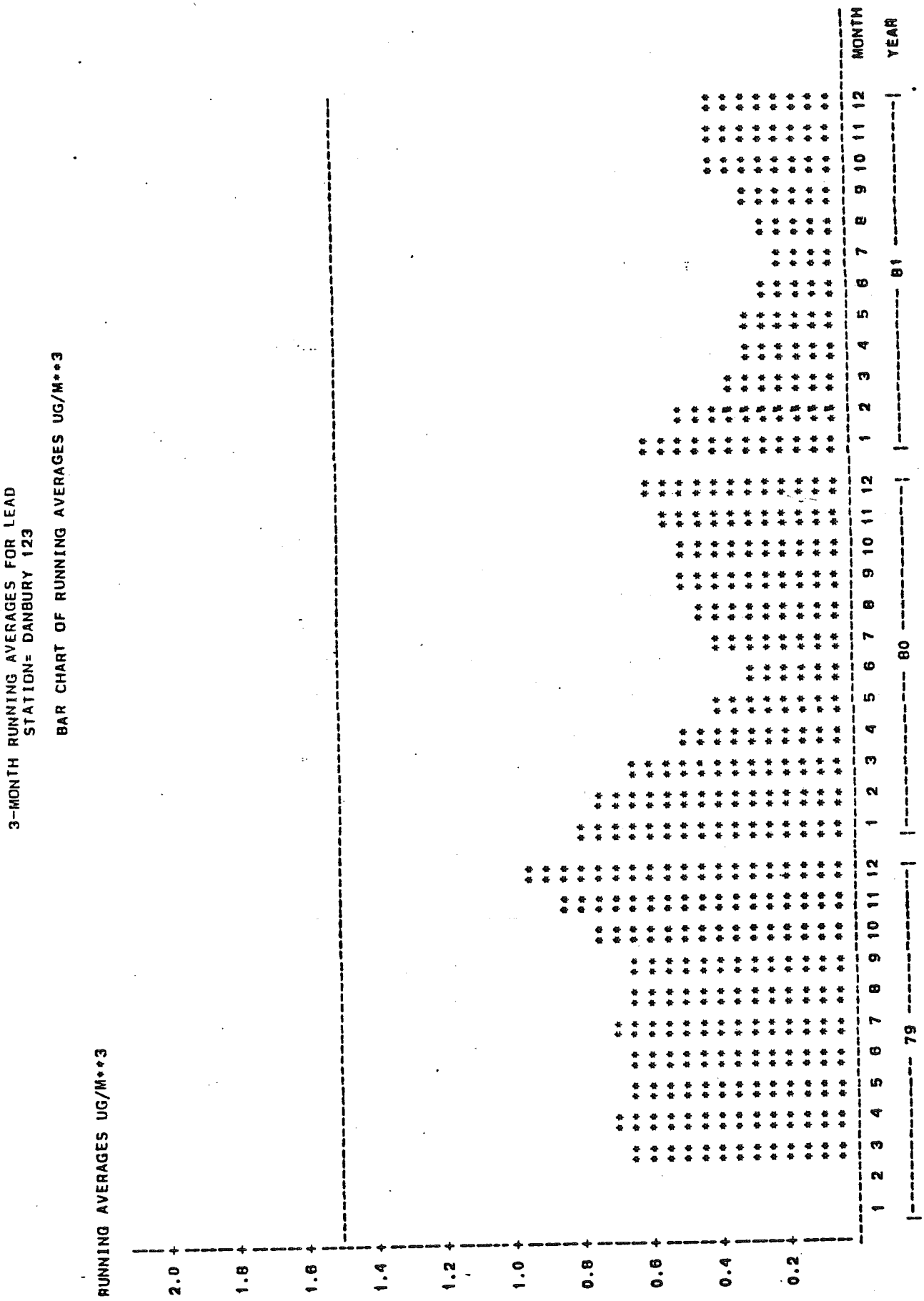


Figure 13, Continued



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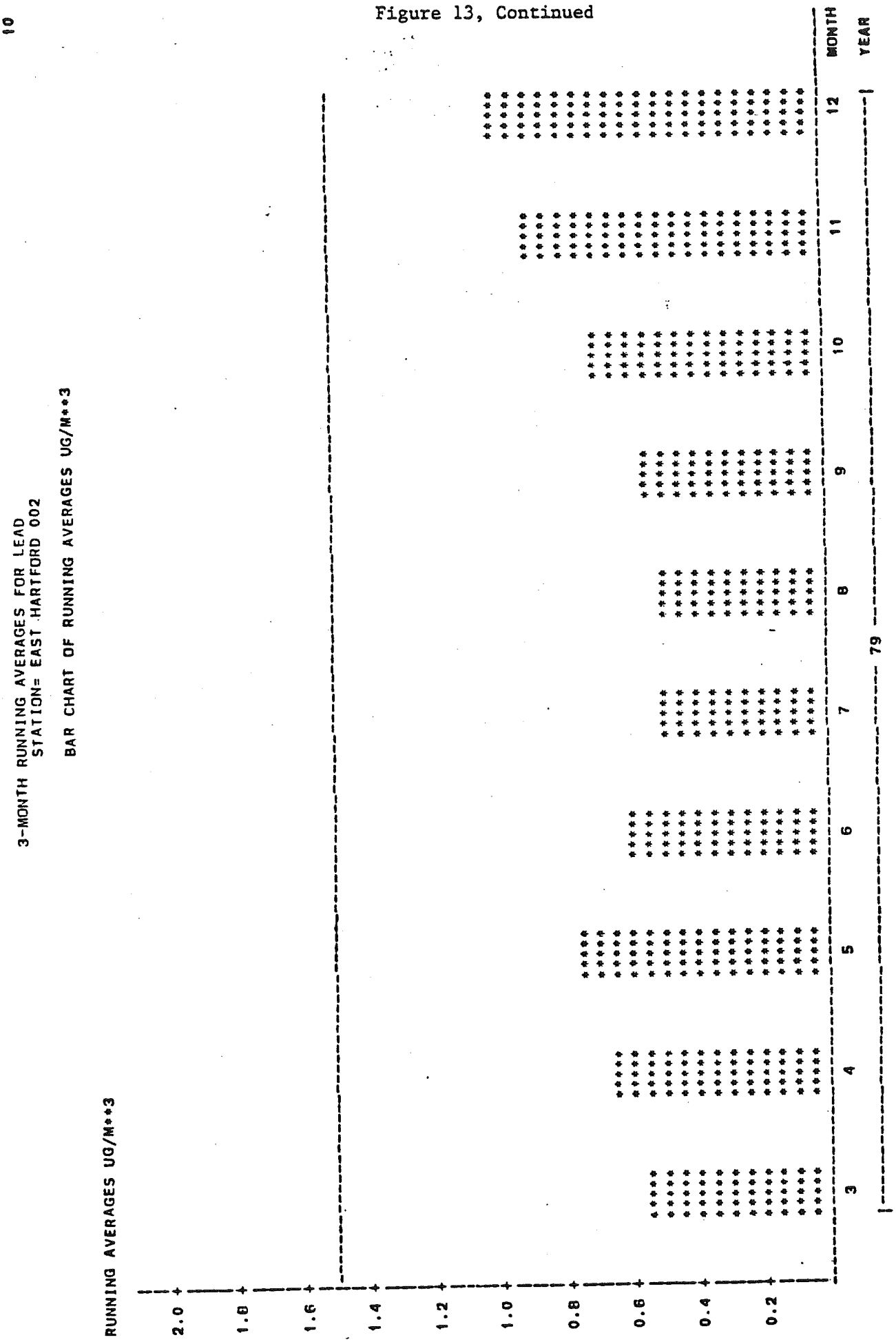

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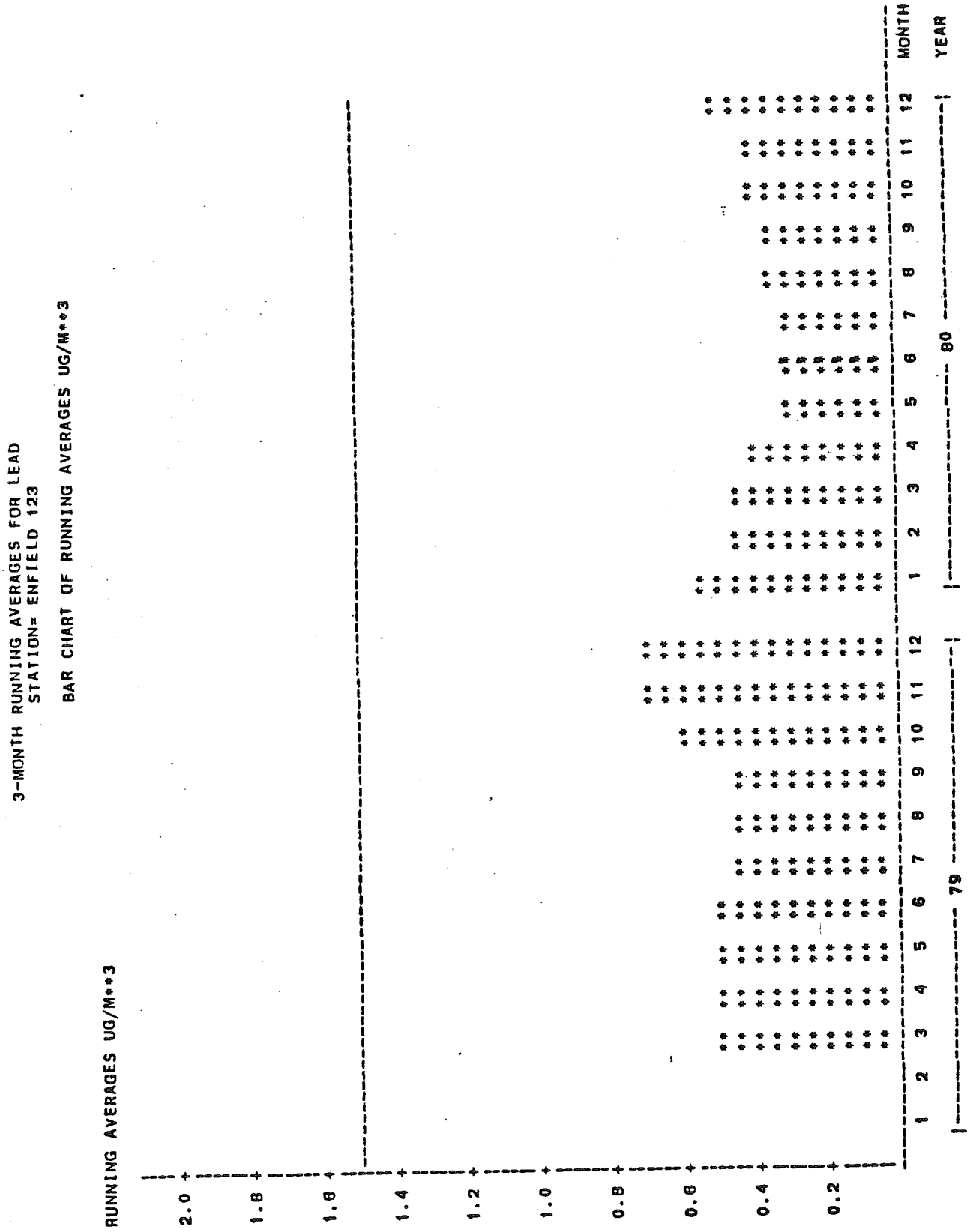


3-MONTH RUNNING AVERAGES FOR LEAD
STATION= GREENWICH 004

BAR CHART OF RUNNING AVERAGES UG/M**3

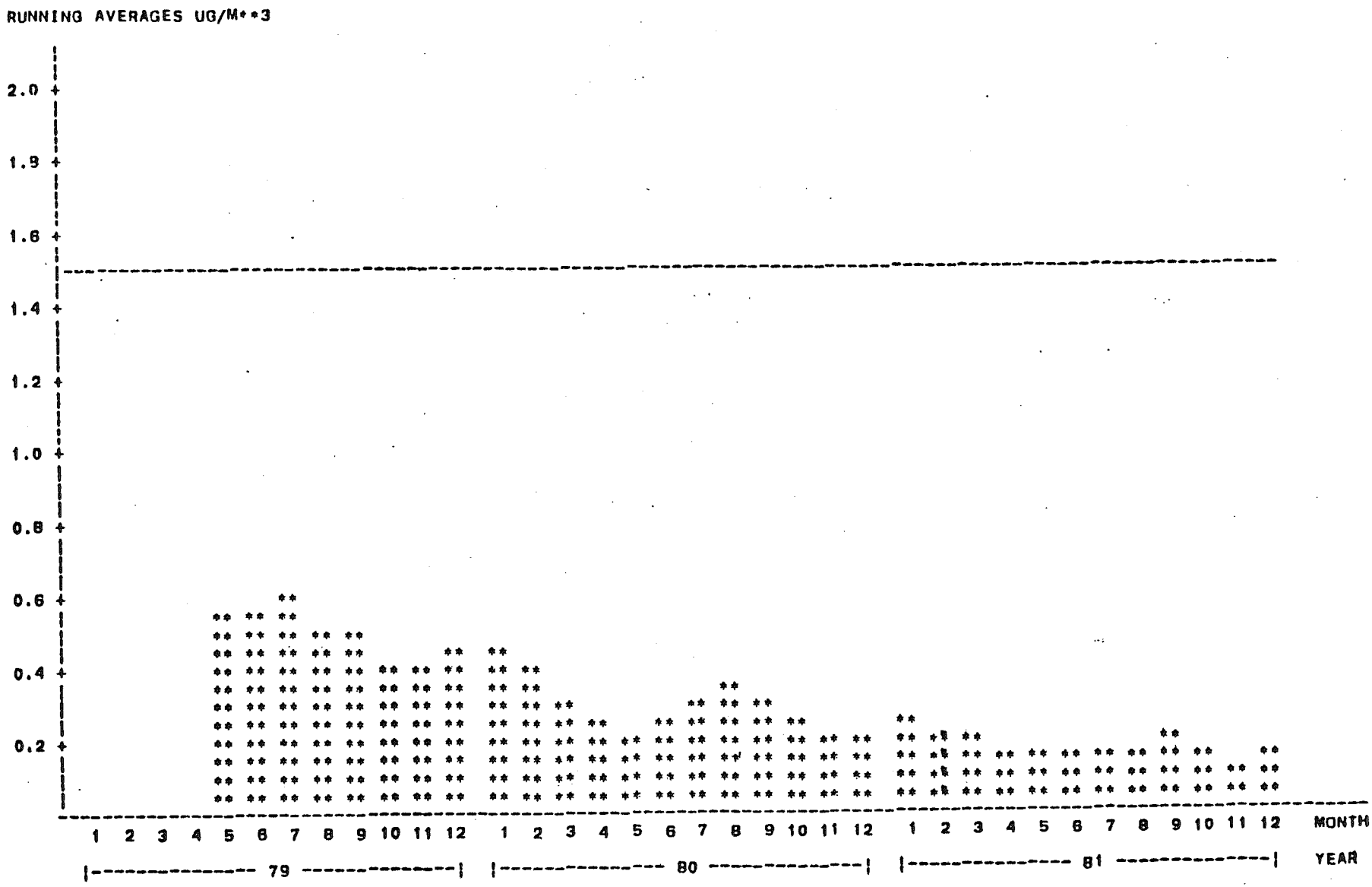


Figure 13, Continued

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= GREENWICH 008

BAR CHART OF RUNNING AVERAGES UG/M**3

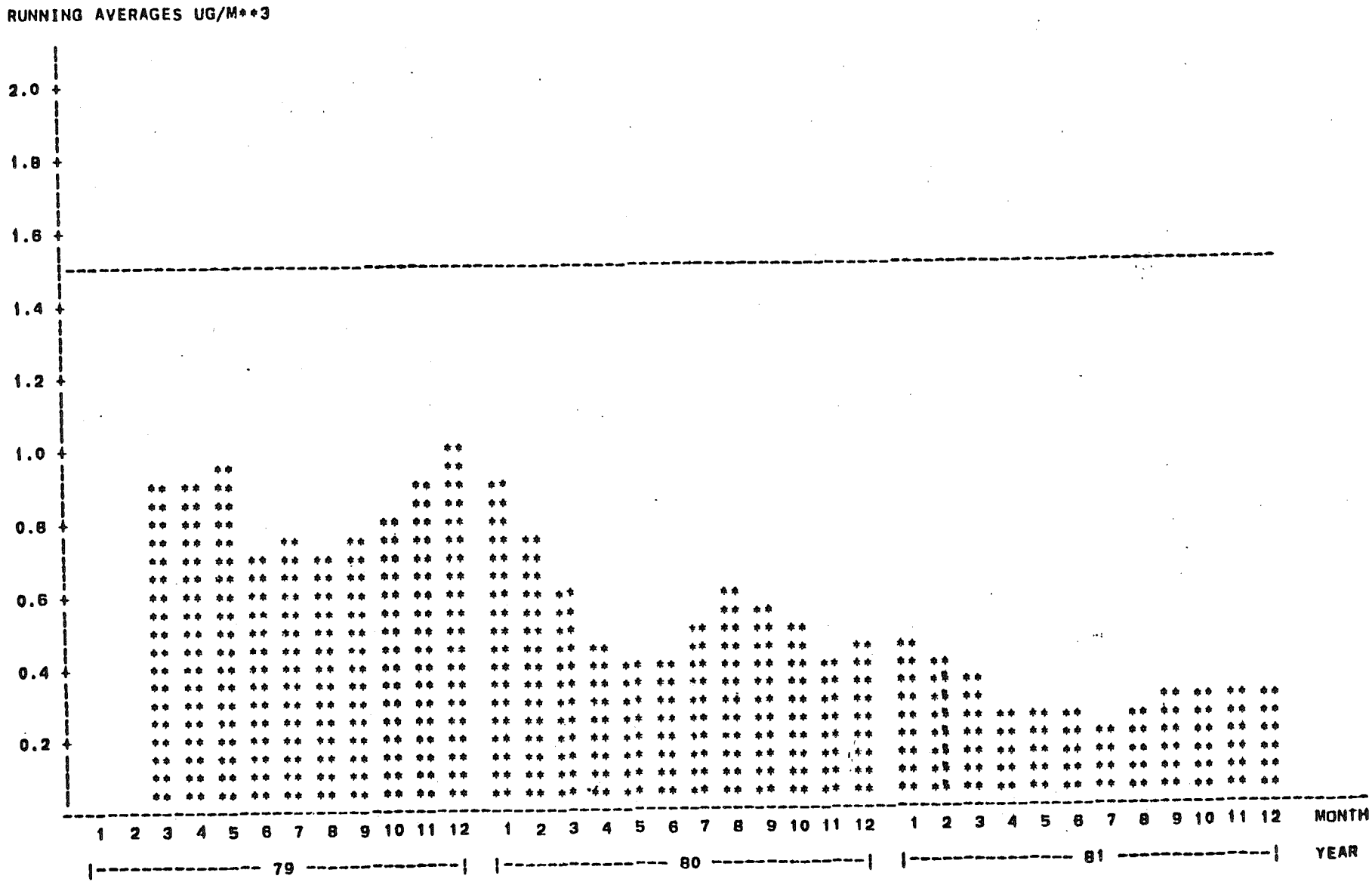
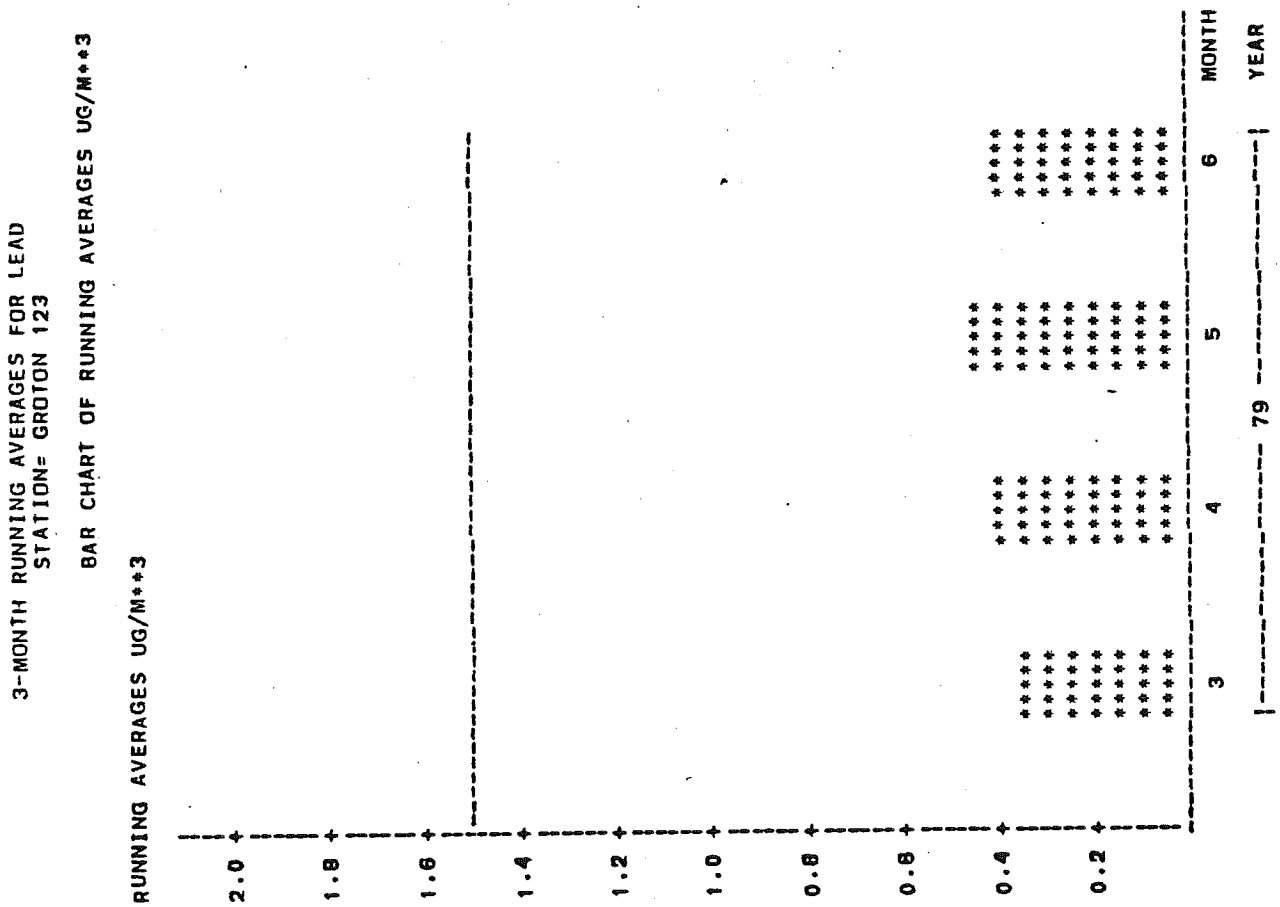


Figure 13, Continued

Figure 13, Continued



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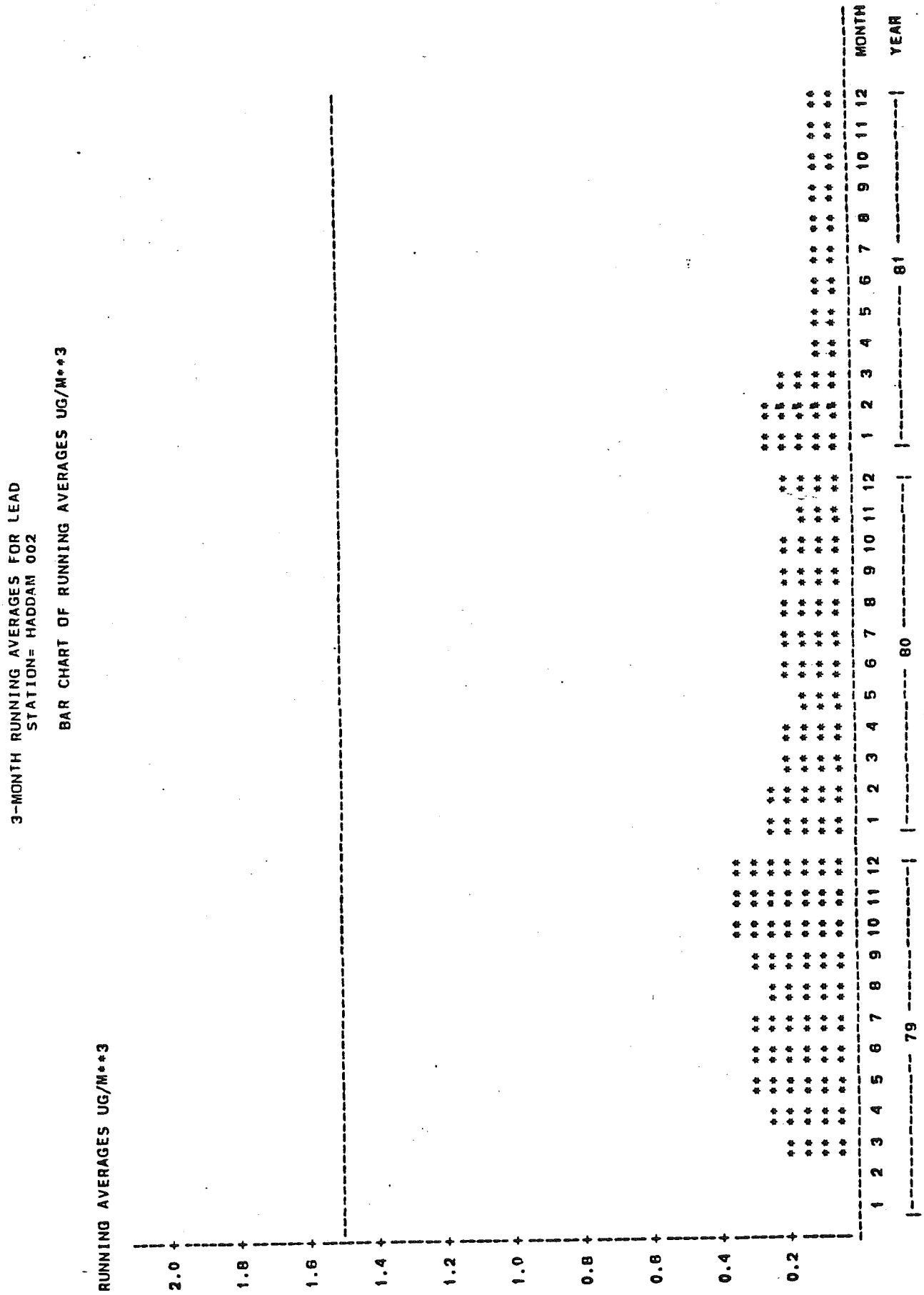


3-MONTH RUNNING AVERAGES FOR LEAD
STATION= HARTFORD 003

BAR CHART OF RUNNING AVERAGES UG/M**3

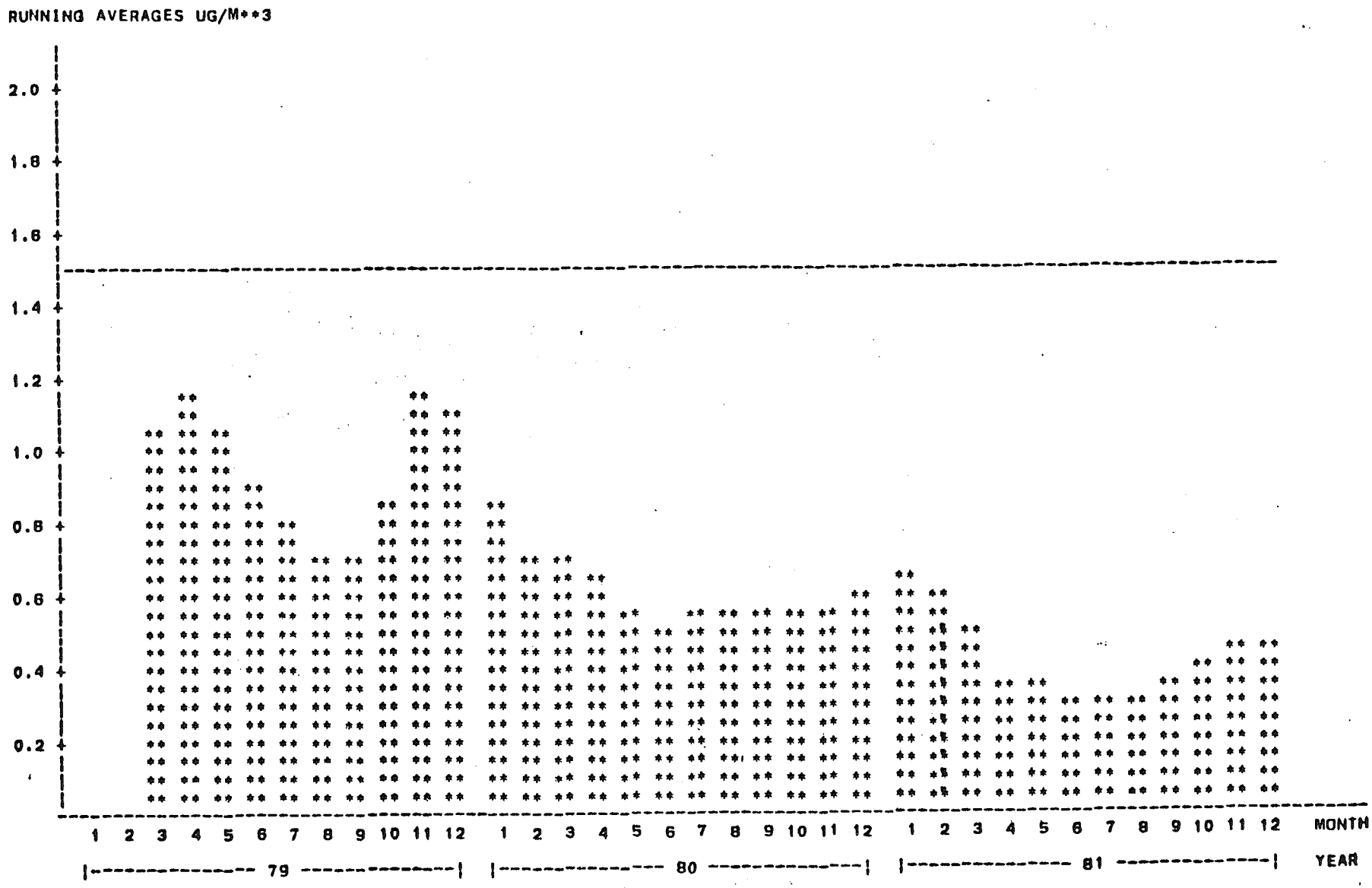


Figure 13, Continued

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= HARTFORD 013

BAR CHART OF RUNNING AVERAGES UG/M**3

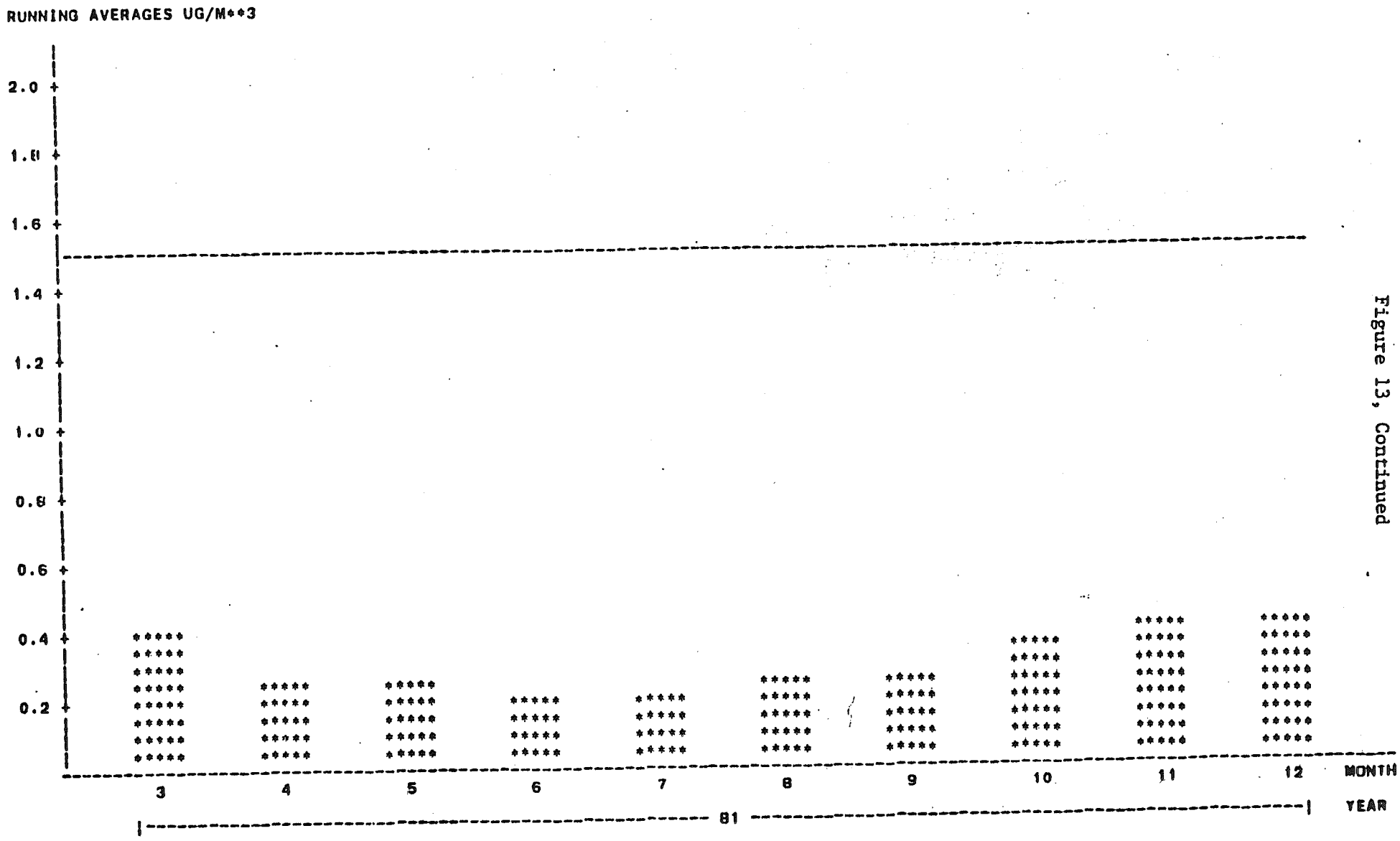


Figure 13, Continued

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= HARTFORD 014

BAR CHART OF RUNNING AVERAGES UG/M**3

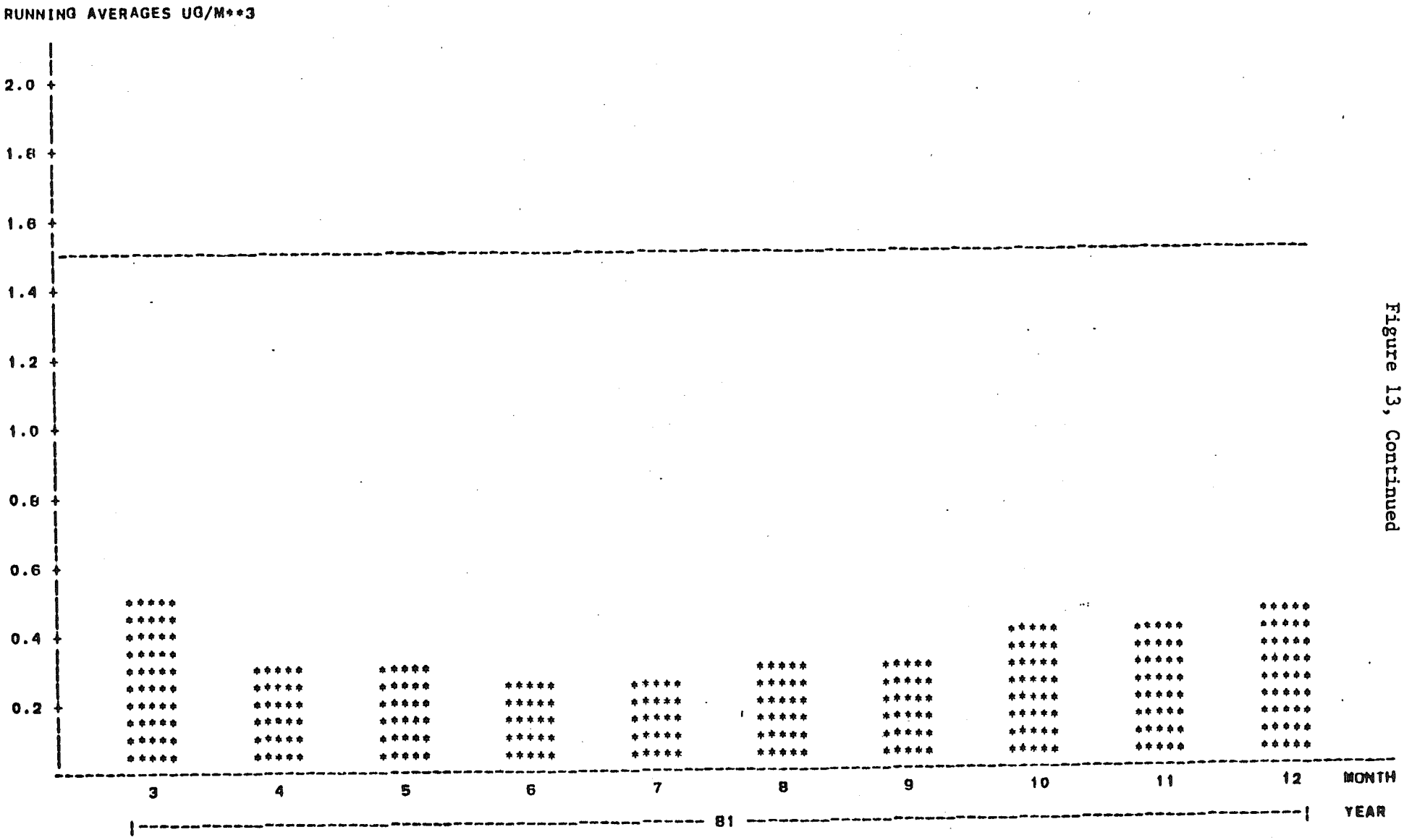


Figure 13, Continued

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= HARTFORD 123

BAR CHART OF RUNNING AVERAGES UG/M**3

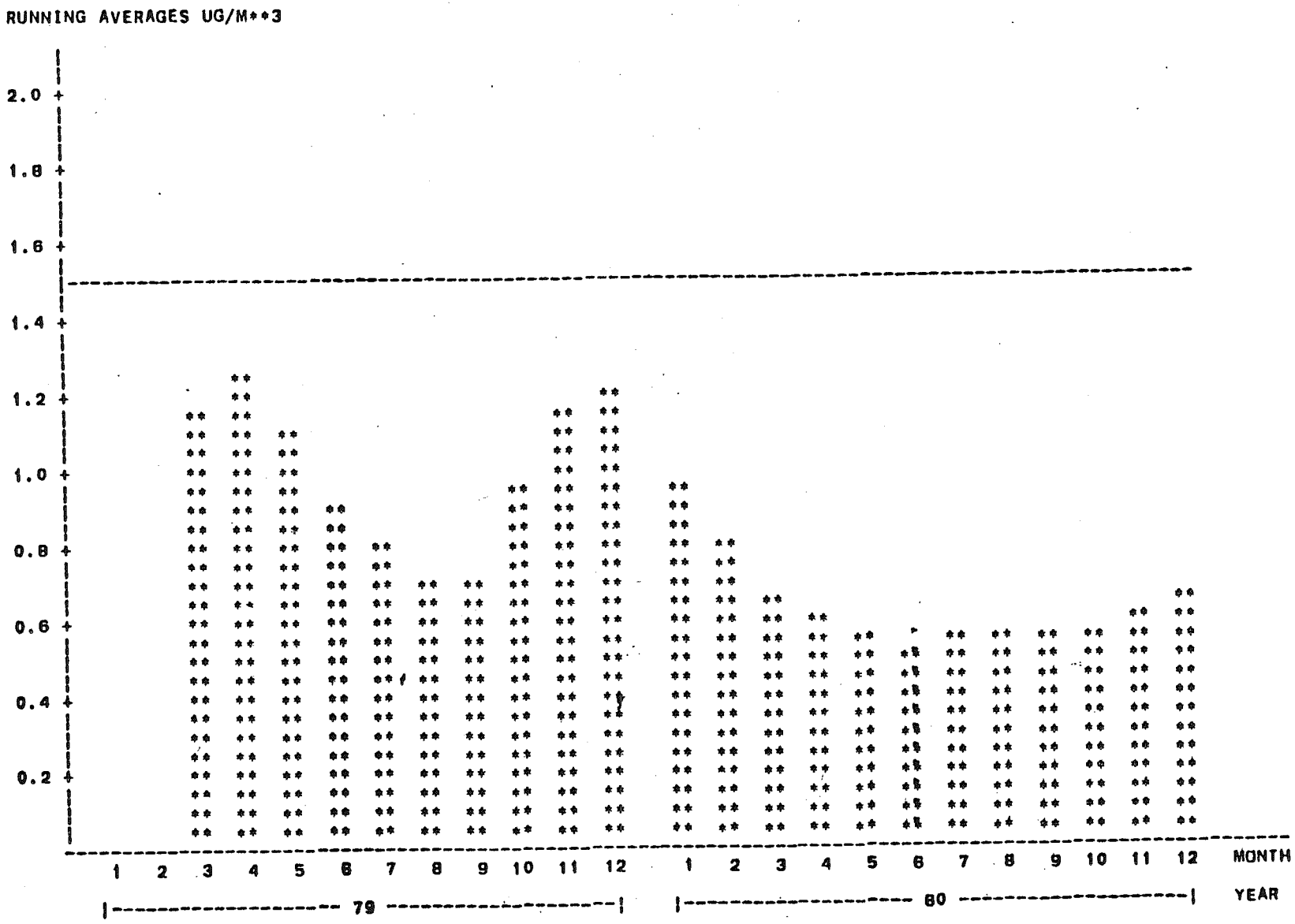


Figure 13, Continued

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= LITCFIELD 001

BAR CHART OF RUNNING AVERAGES UG/M**3

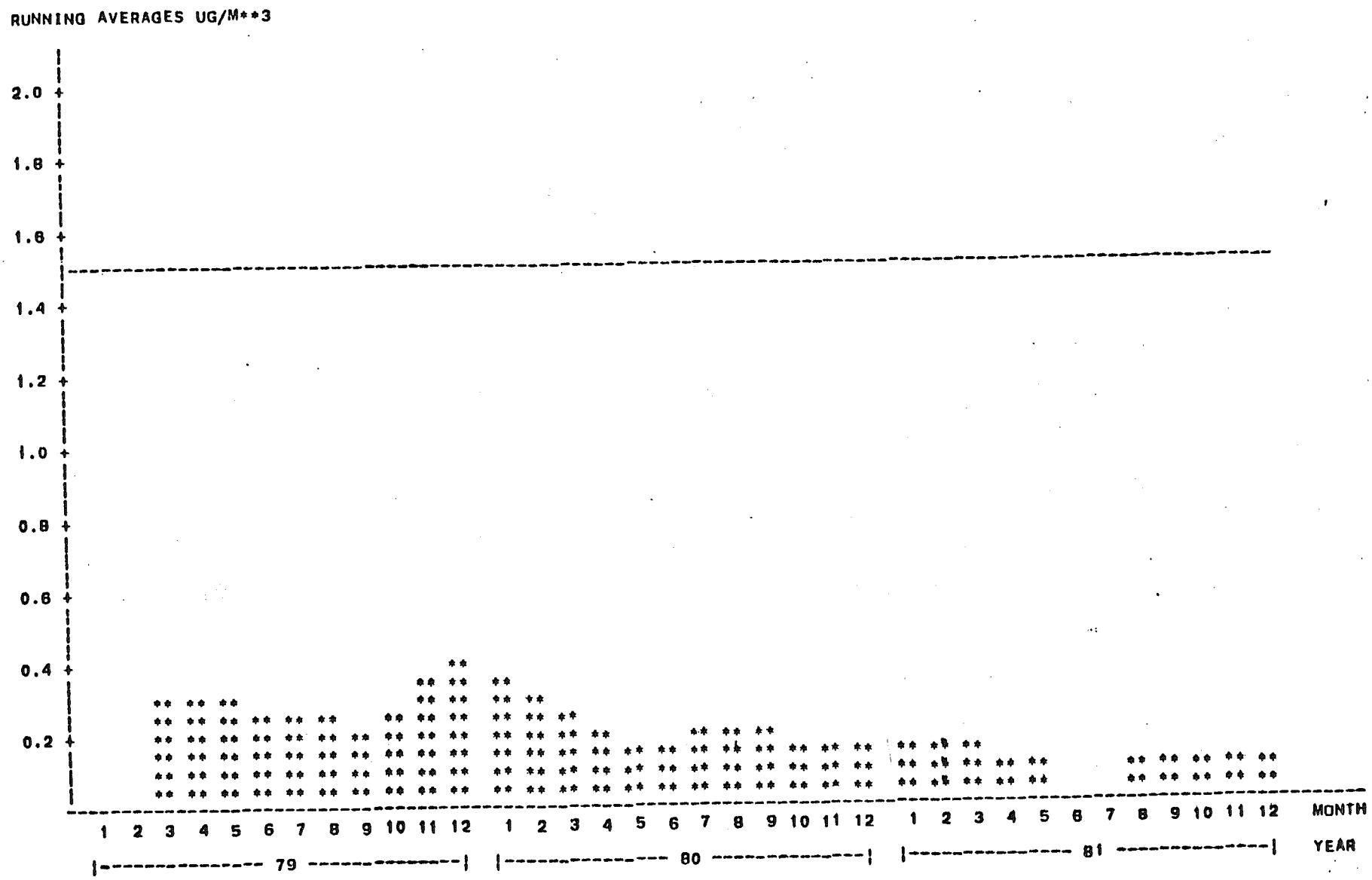
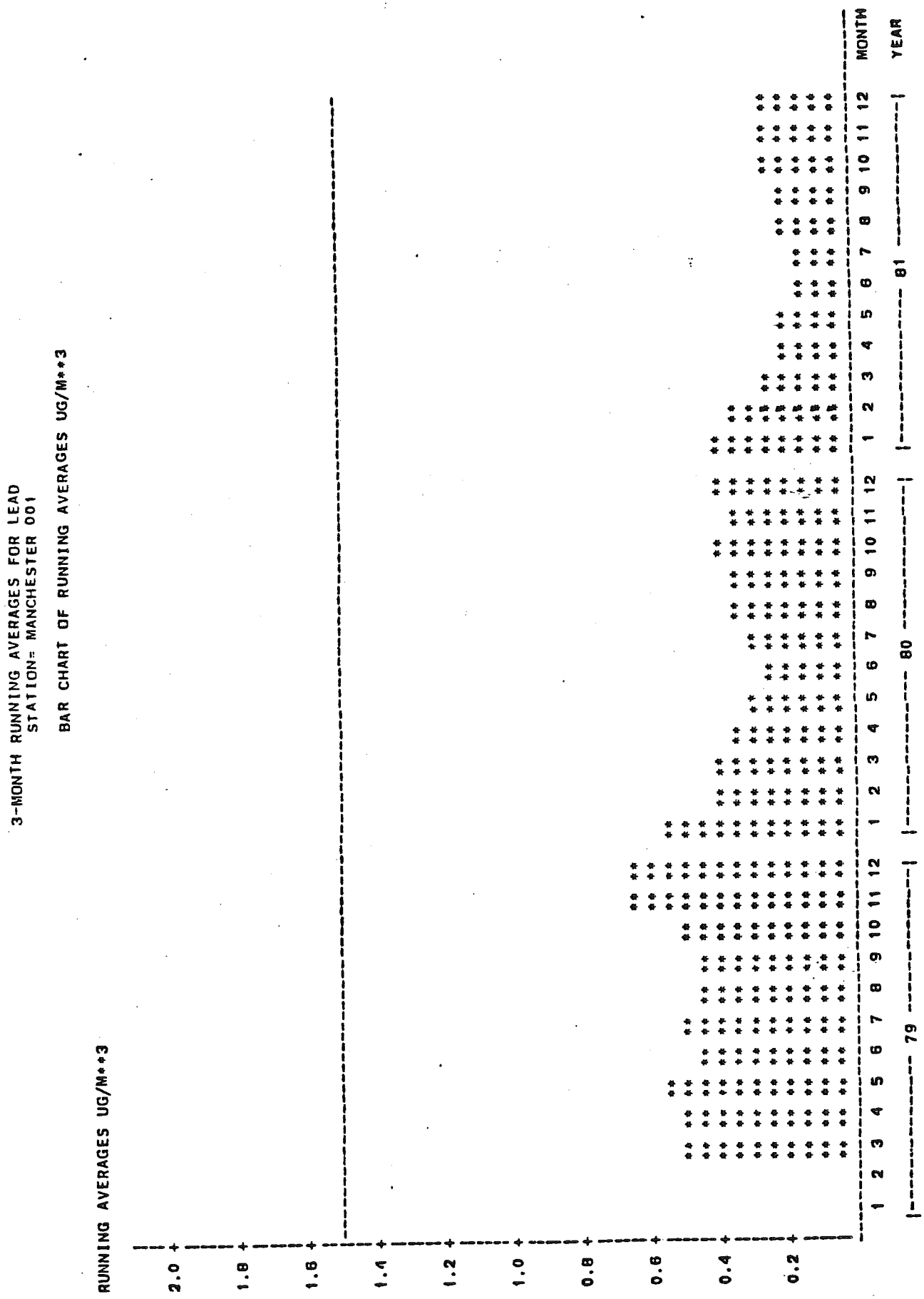


Figure 13, Continued

Figure 13, Continued



3-MONTH RUNNING AVERAGES FOR LEAD
STATION= MERIDEN 002

BAR CHART OF RUNNING AVERAGES UG/M**3

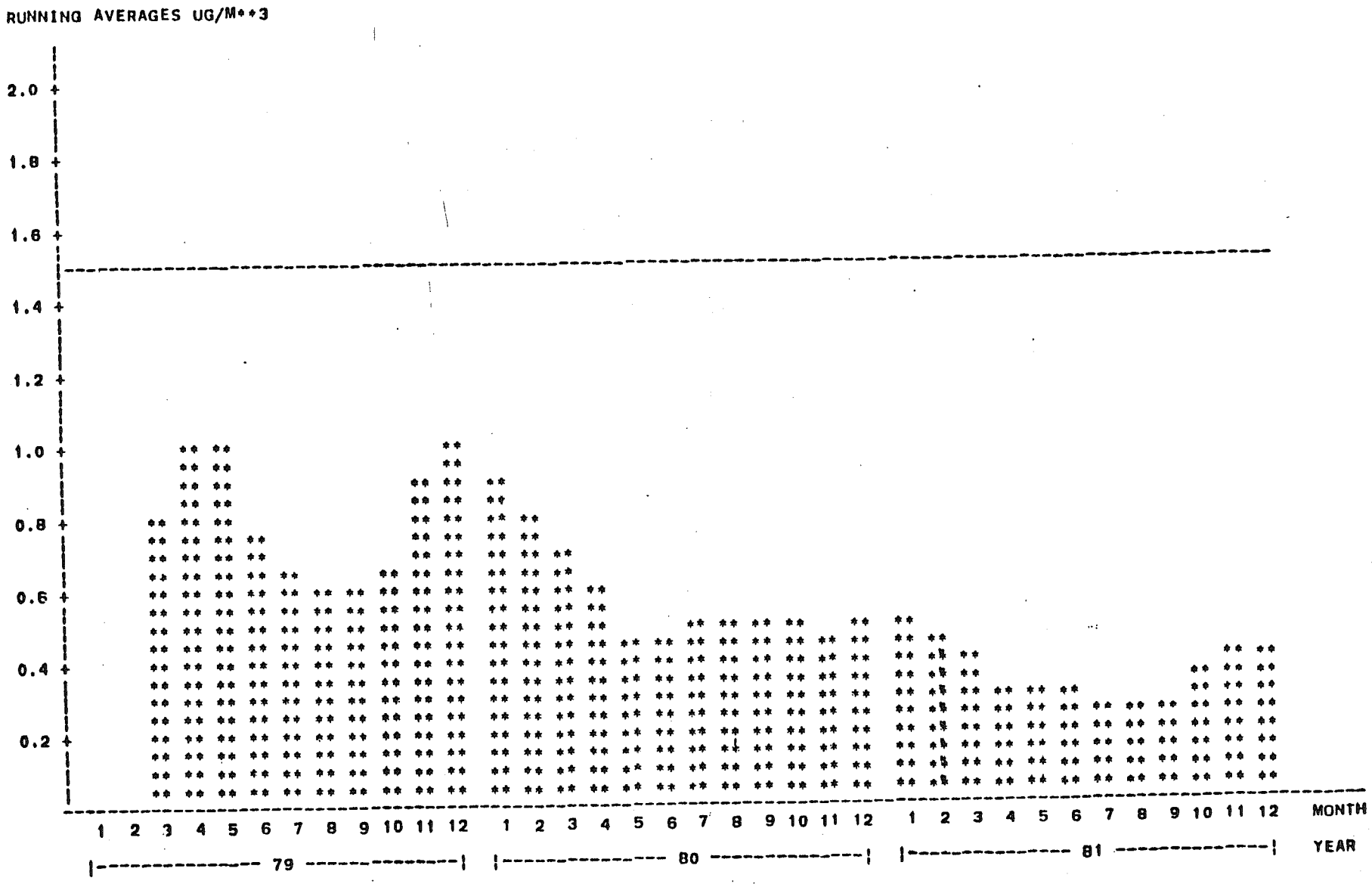


Figure 13, Continued

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= MERIDEN 005

BAR CHART OF RUNNING AVERAGES UG/M**3

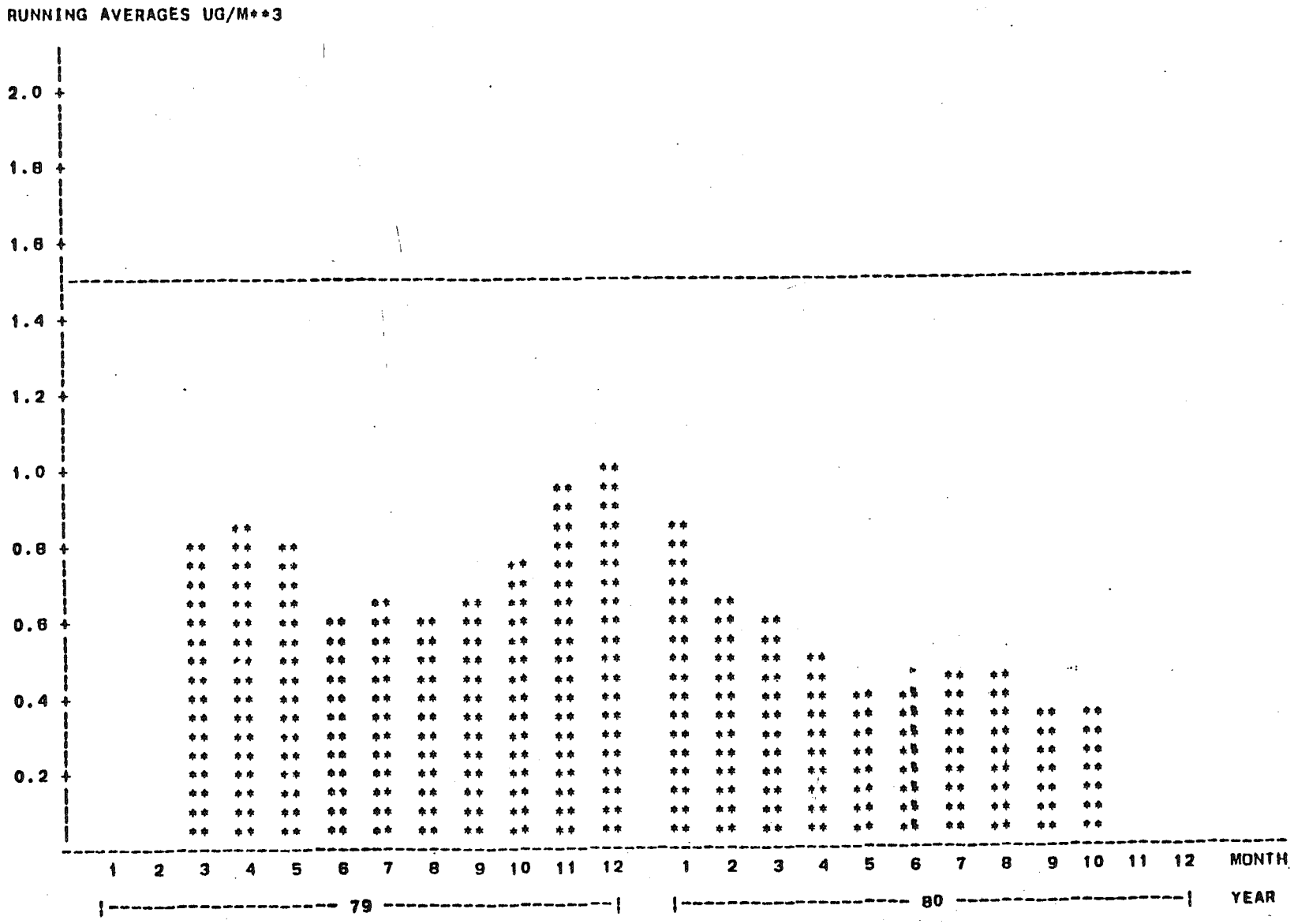
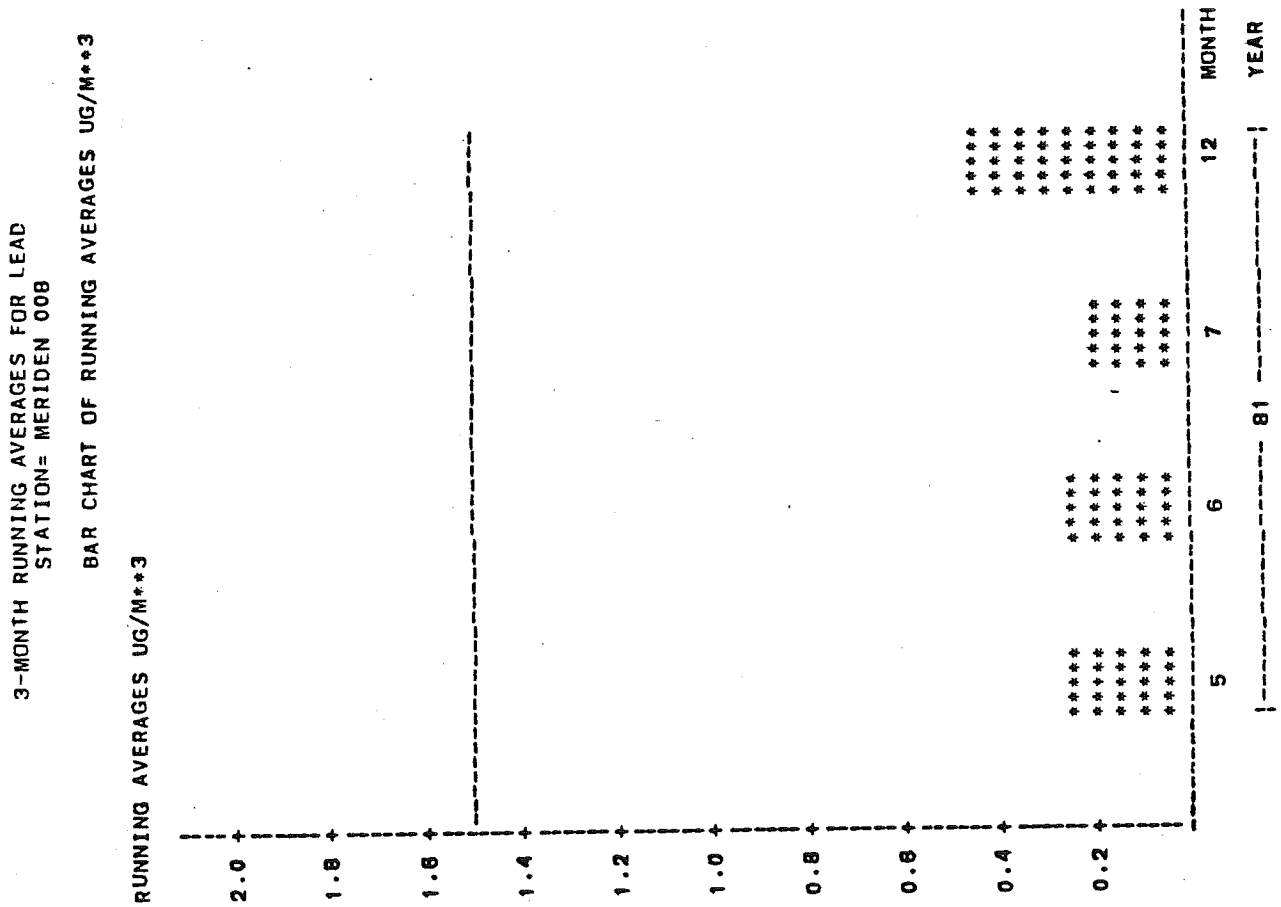


Figure 13, Continued

Figure 13, Continued



3-MONTH RUNNING AVERAGES FOR LEAD
STATION= MIDDLETOWN 003

BAR CHART OF RUNNING AVERAGES UG/M**3

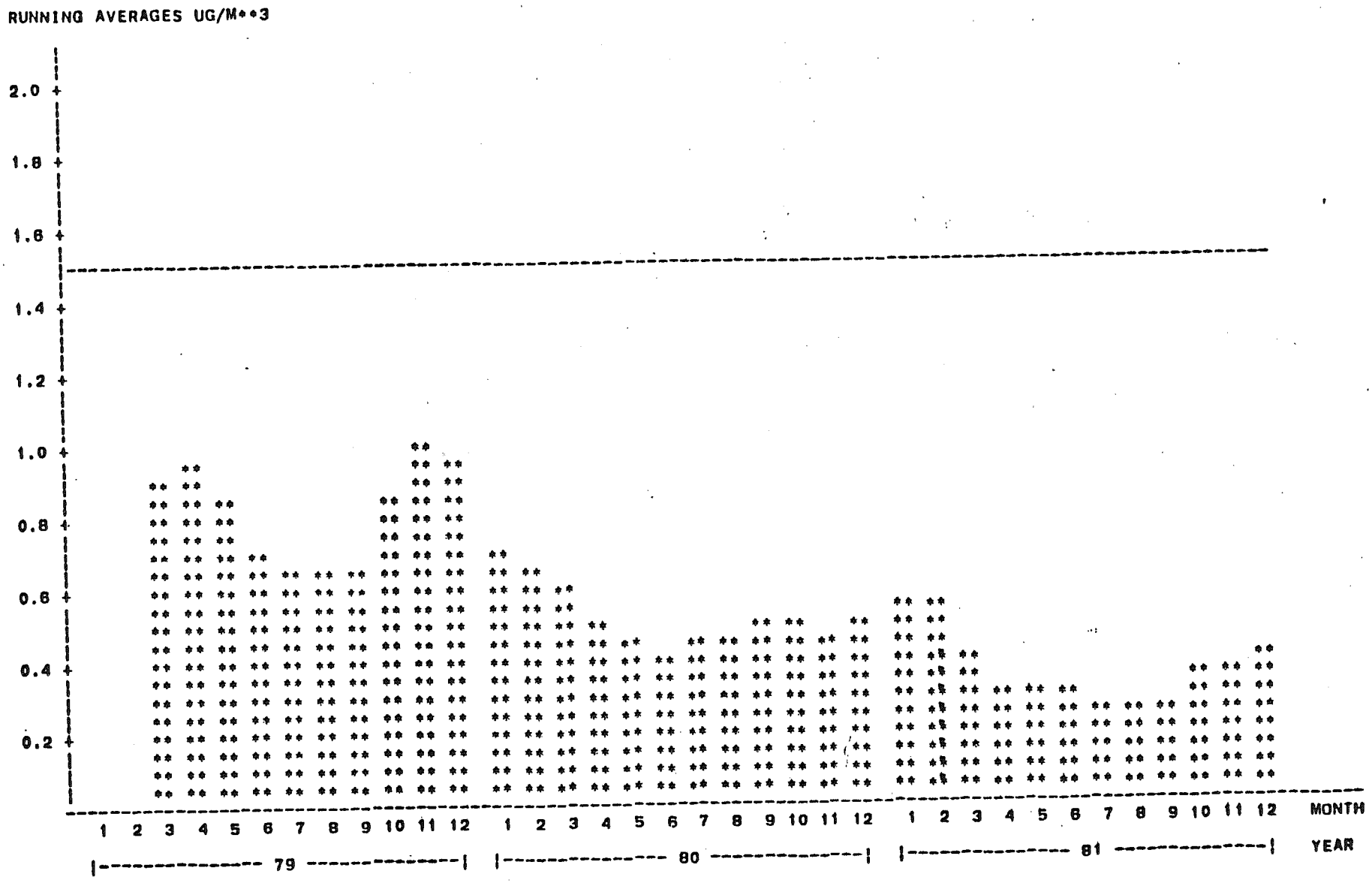


Figure 13, Continued

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= MILFORD 002

BAR CHART OF RUNNING AVERAGES UG/M**3

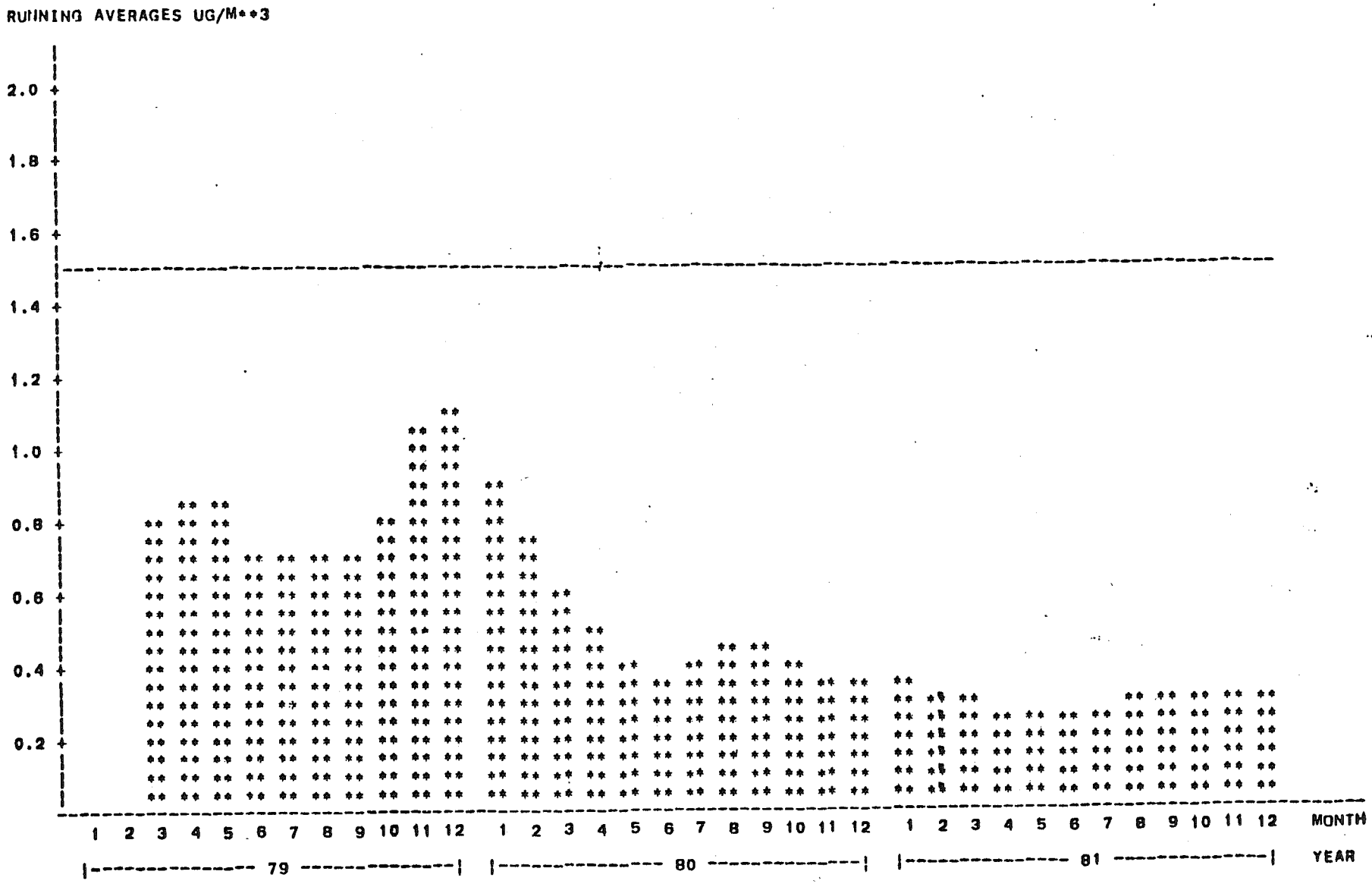


Figure 13, Continued

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= NAUGATUCK 001

BAR CHART OF RUNNING AVERAGES UG/M**3

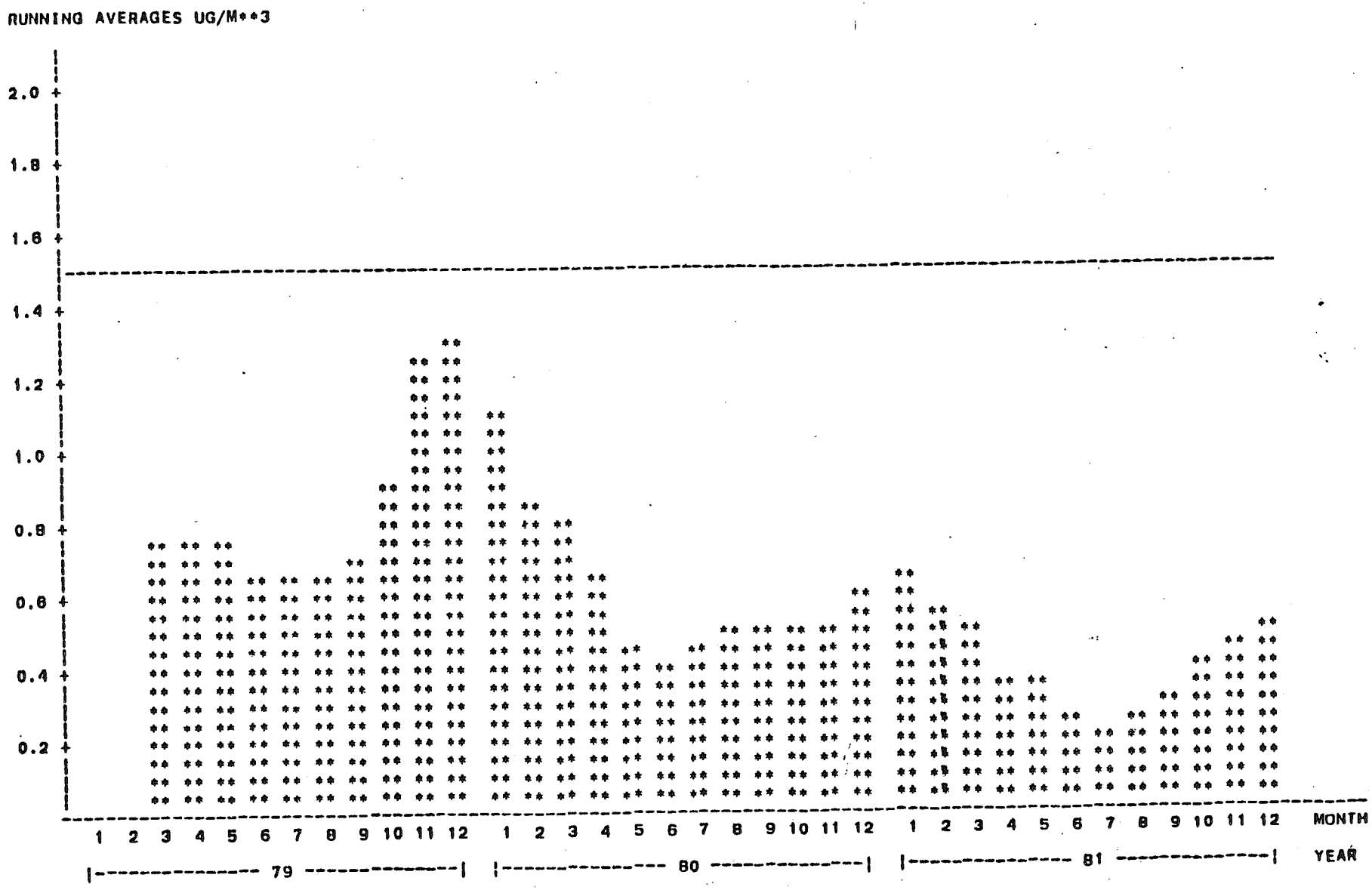


Figure 13, Continued

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= NEW BRITIAN 007

BAR CHART OF RUNNING AVERAGES UG/M**3

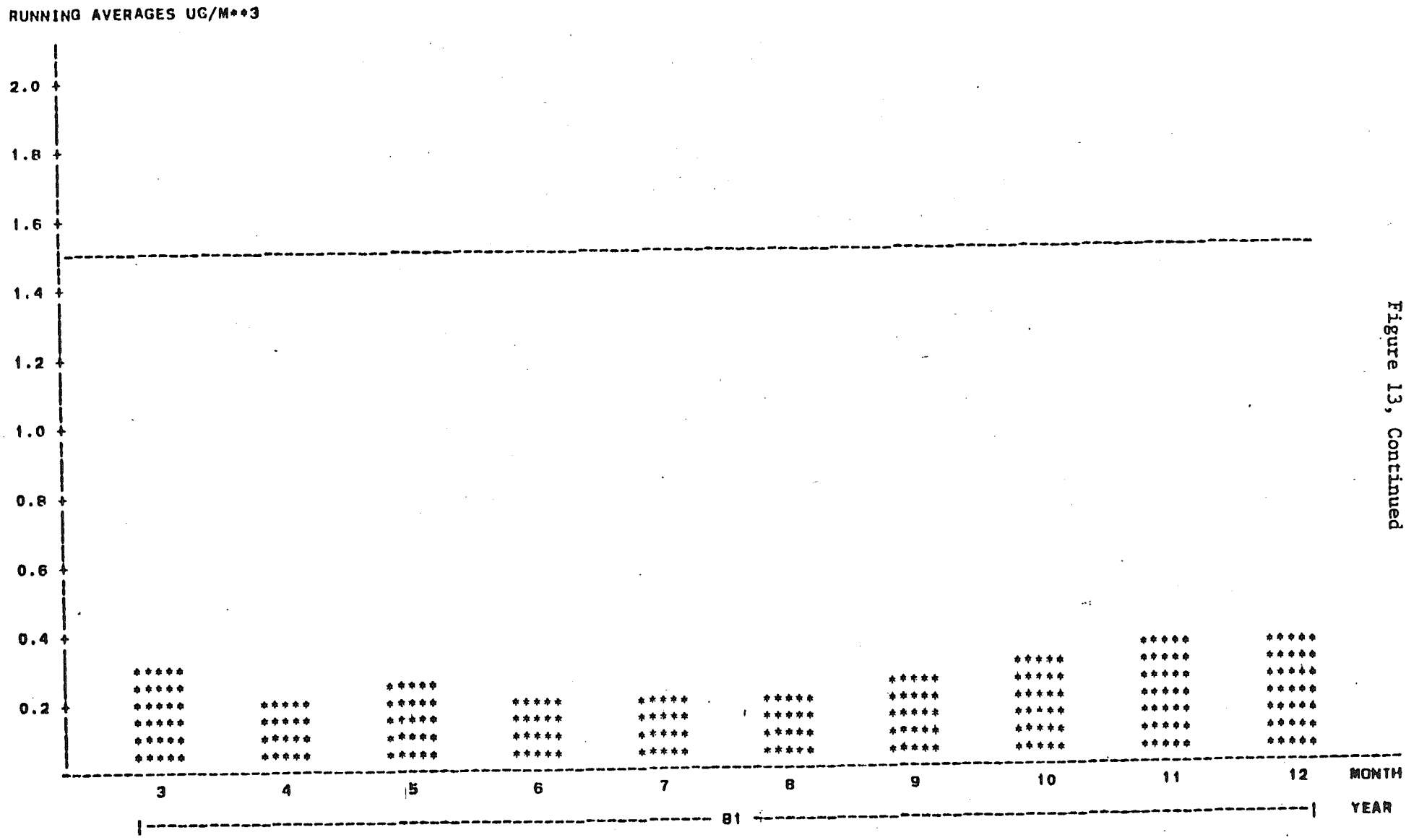


Figure 13, Continued

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= NEW BRITAIN 008

BAR CHART OF RUNNING AVERAGES UG/M**3

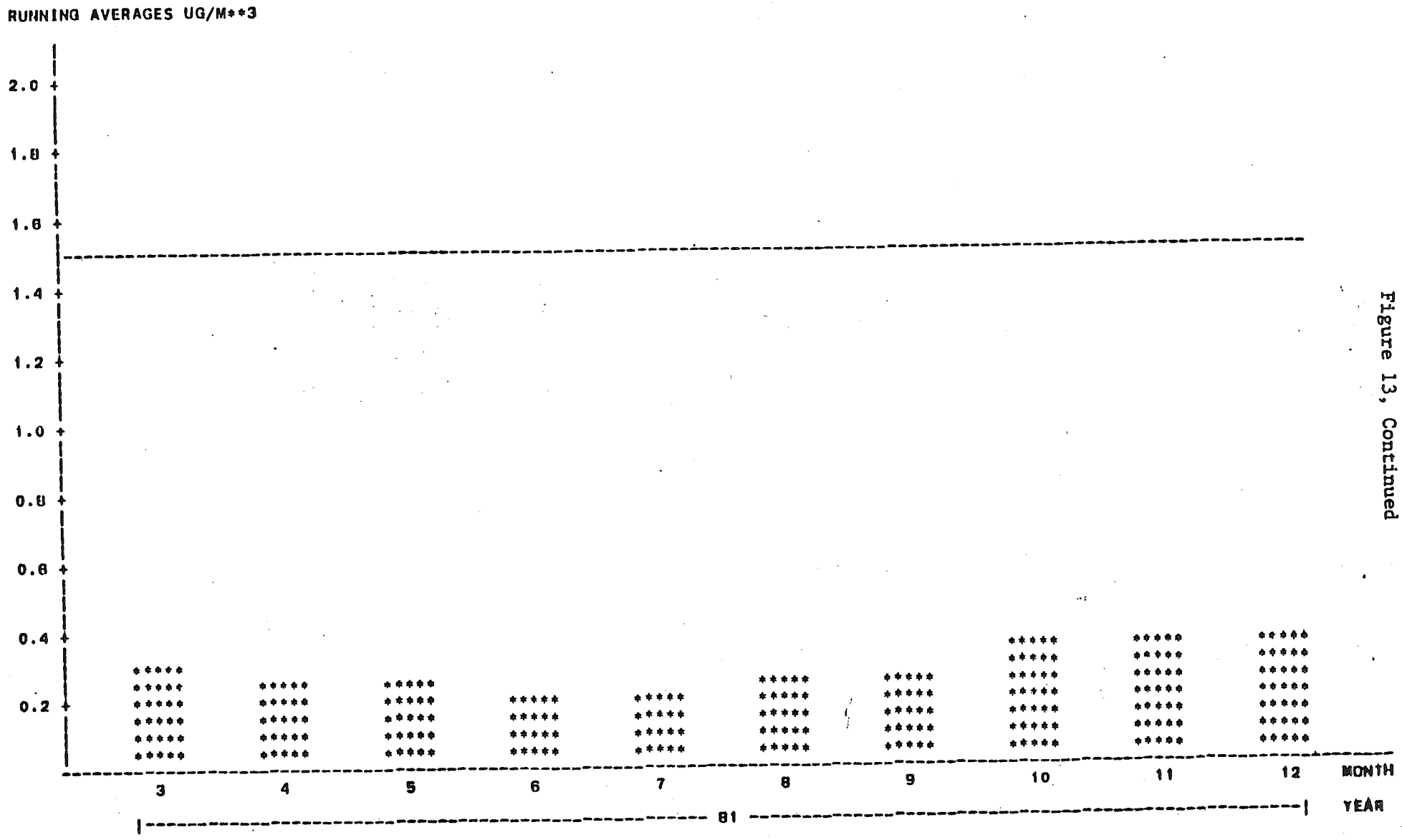


Figure 13, Continued

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= NEW BRITAIN 009

BAR CHART OF RUNNING AVERAGES UG/M**3

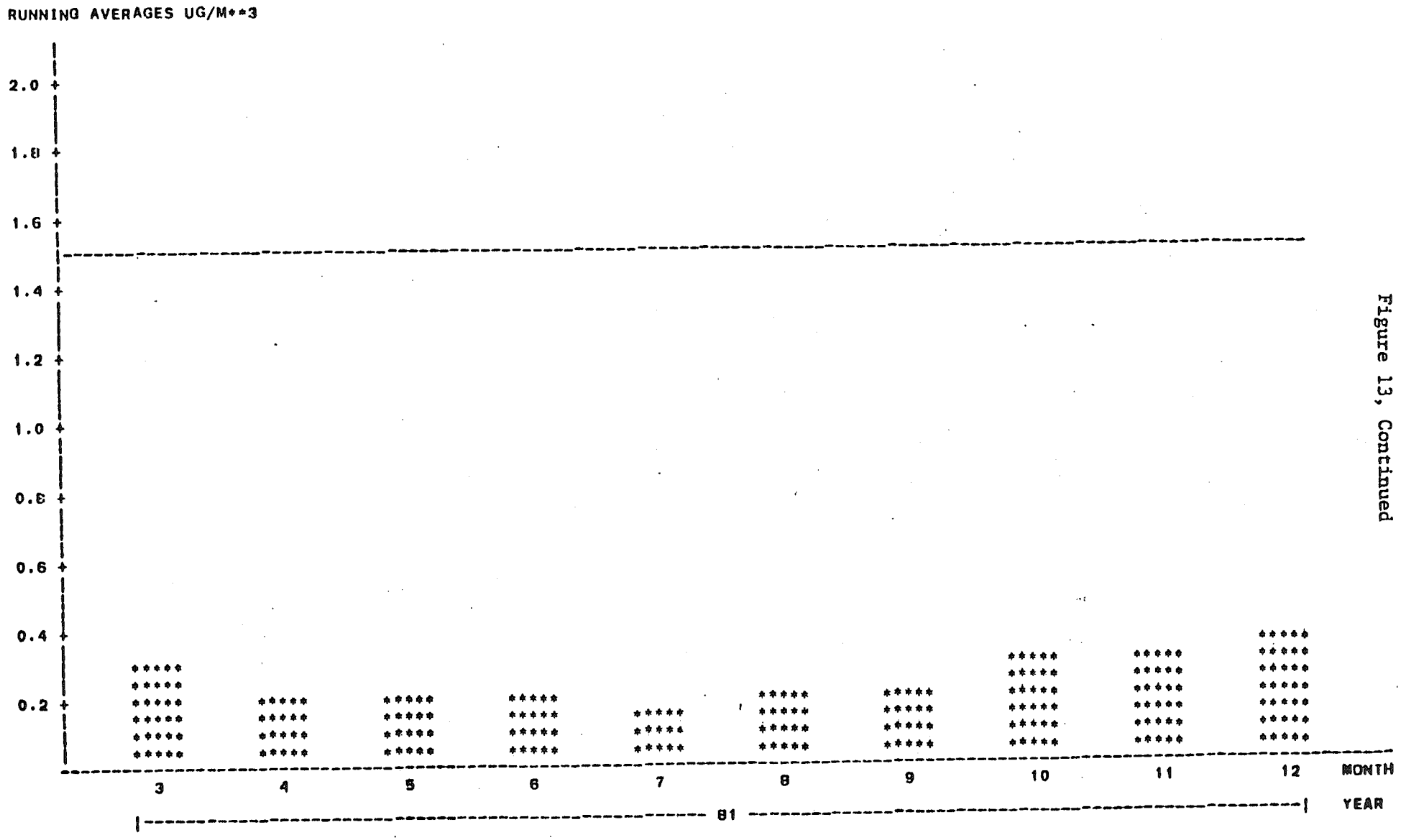


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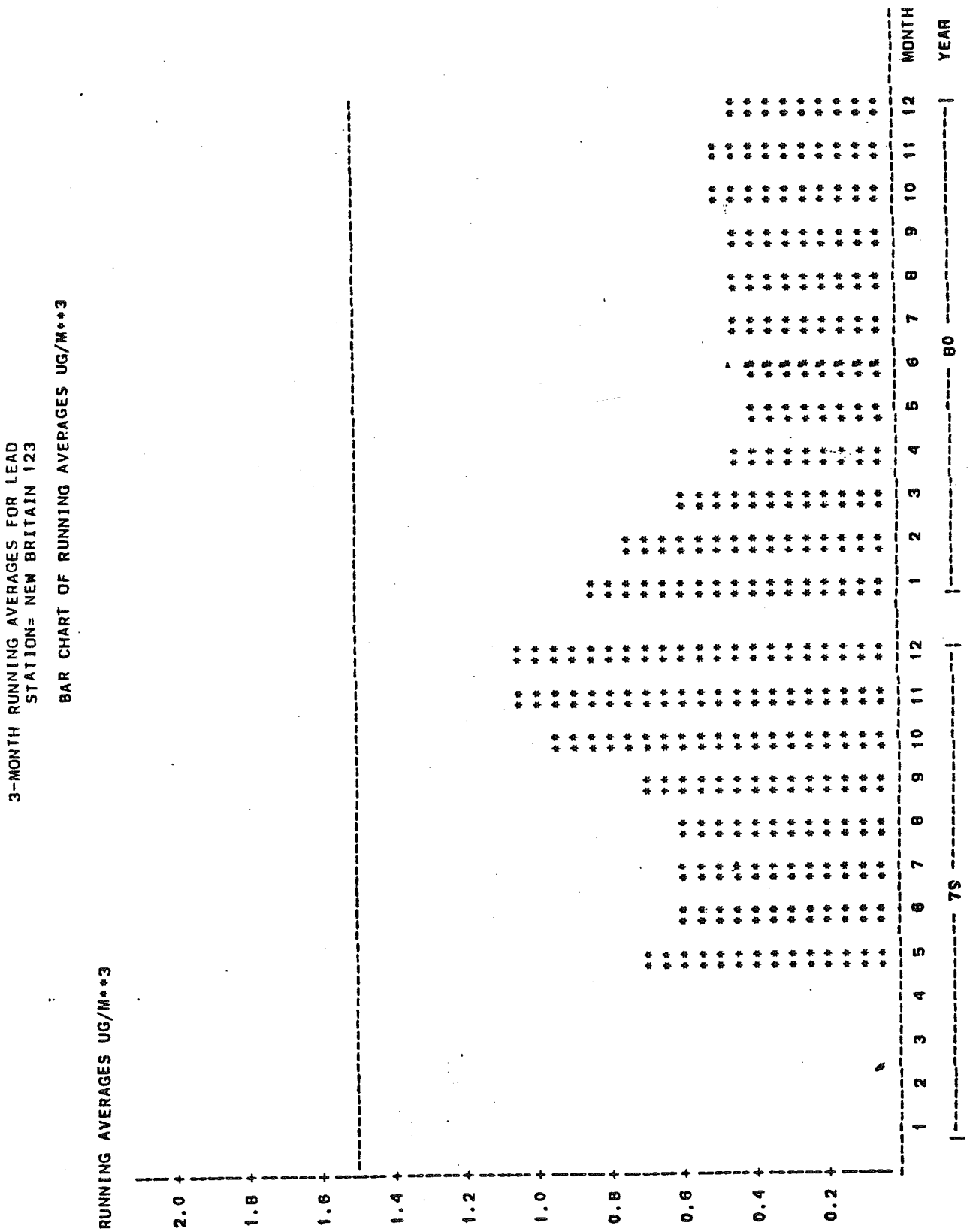
Figure 13, Continued



3-MONTH RUNNING AVERAGES FOR LEAD
STATION= NEW HAVEN 002

BAR CHART OF RUNNING AVERAGES UG/M**3

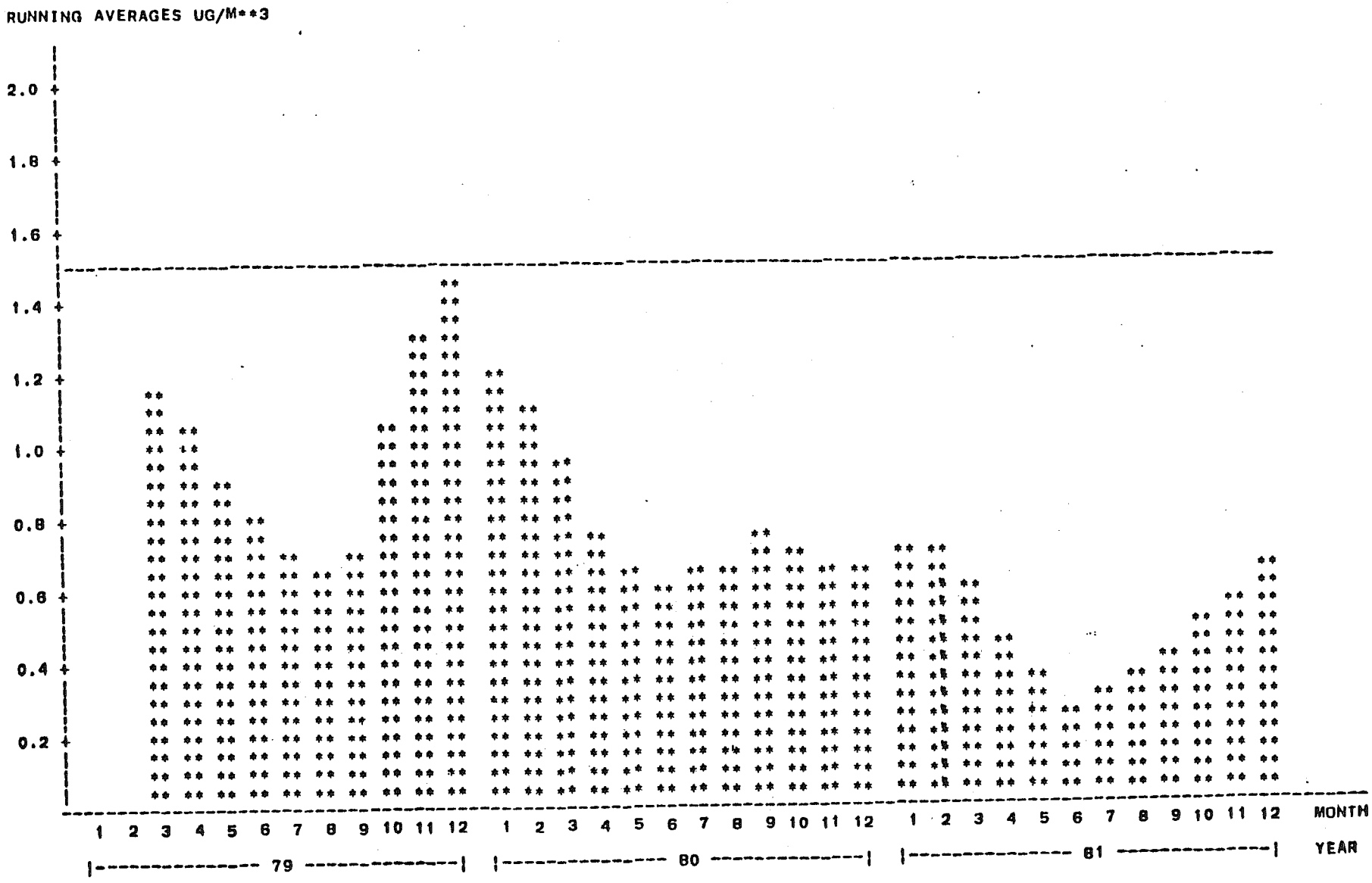


Figure 13, Continued

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= NEW HAVEN 123

BAR CHART OF RUNNING AVERAGES UG/M**3

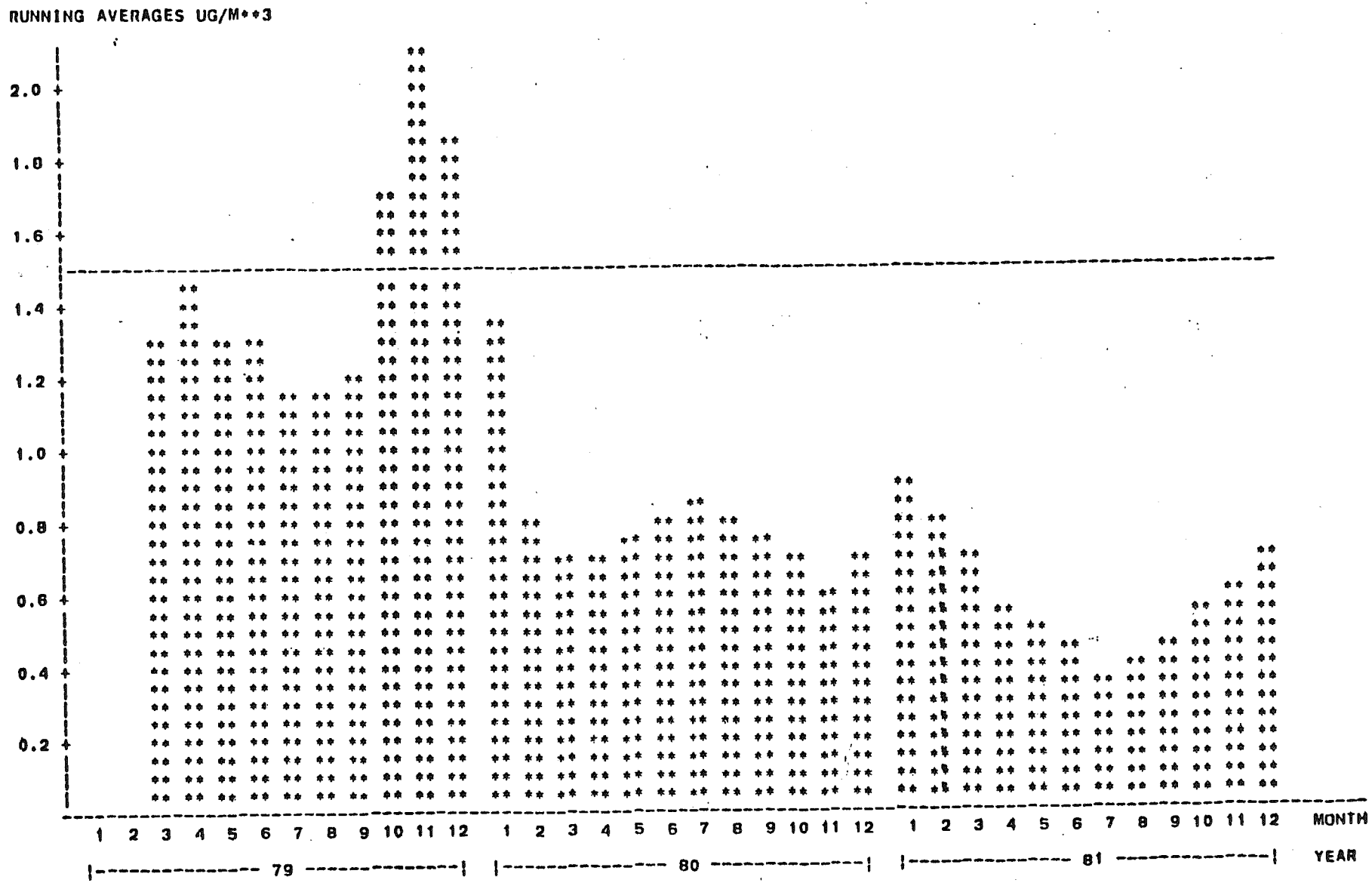


Figure 13, Continued

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= NORWALK 001

BAR CHART OF RUNNING AVERAGES UG/M**3

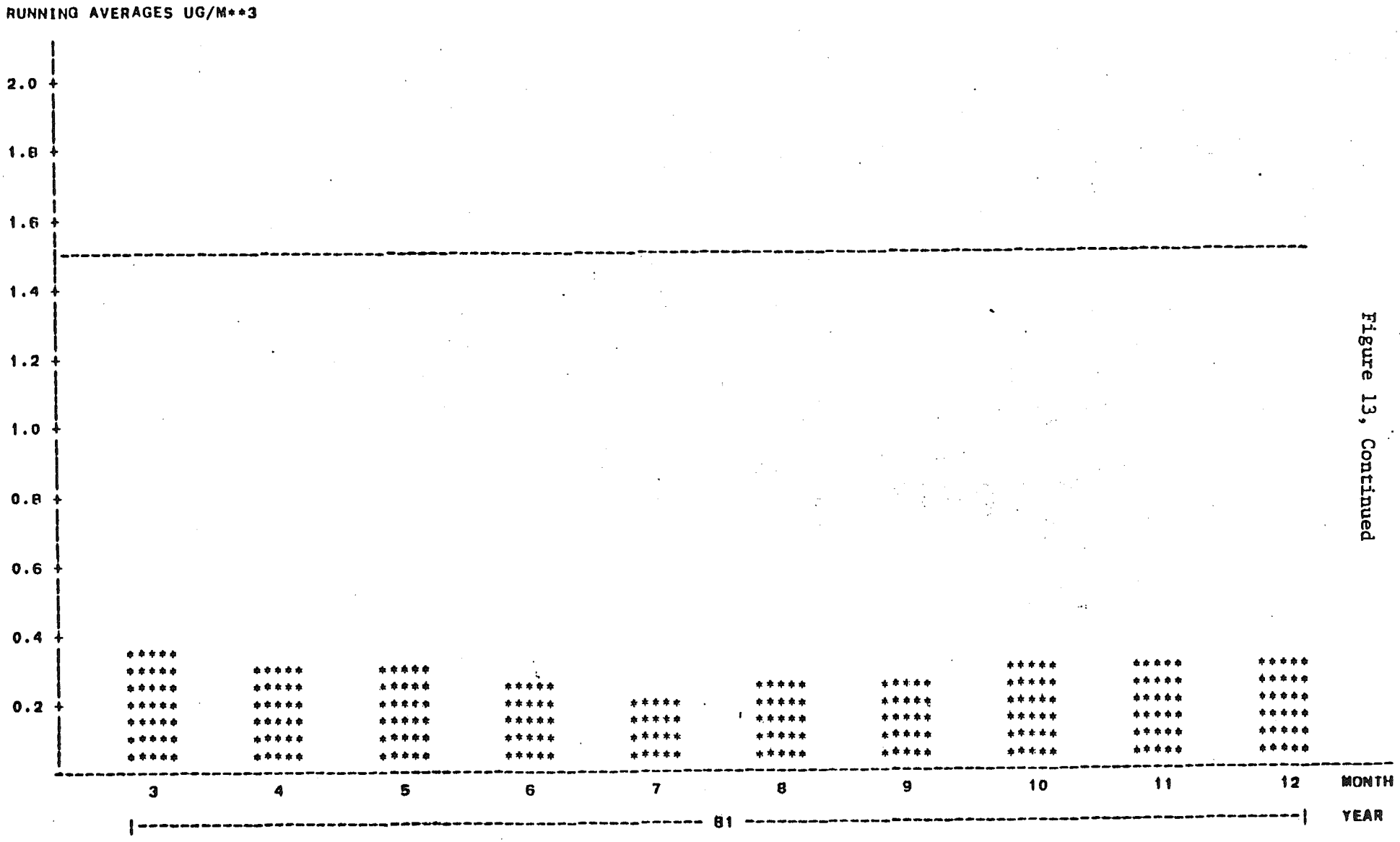


Figure 13, Continued

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= NORWALK 005

BAR CHART OF RUNNING AVERAGES UG/M**3

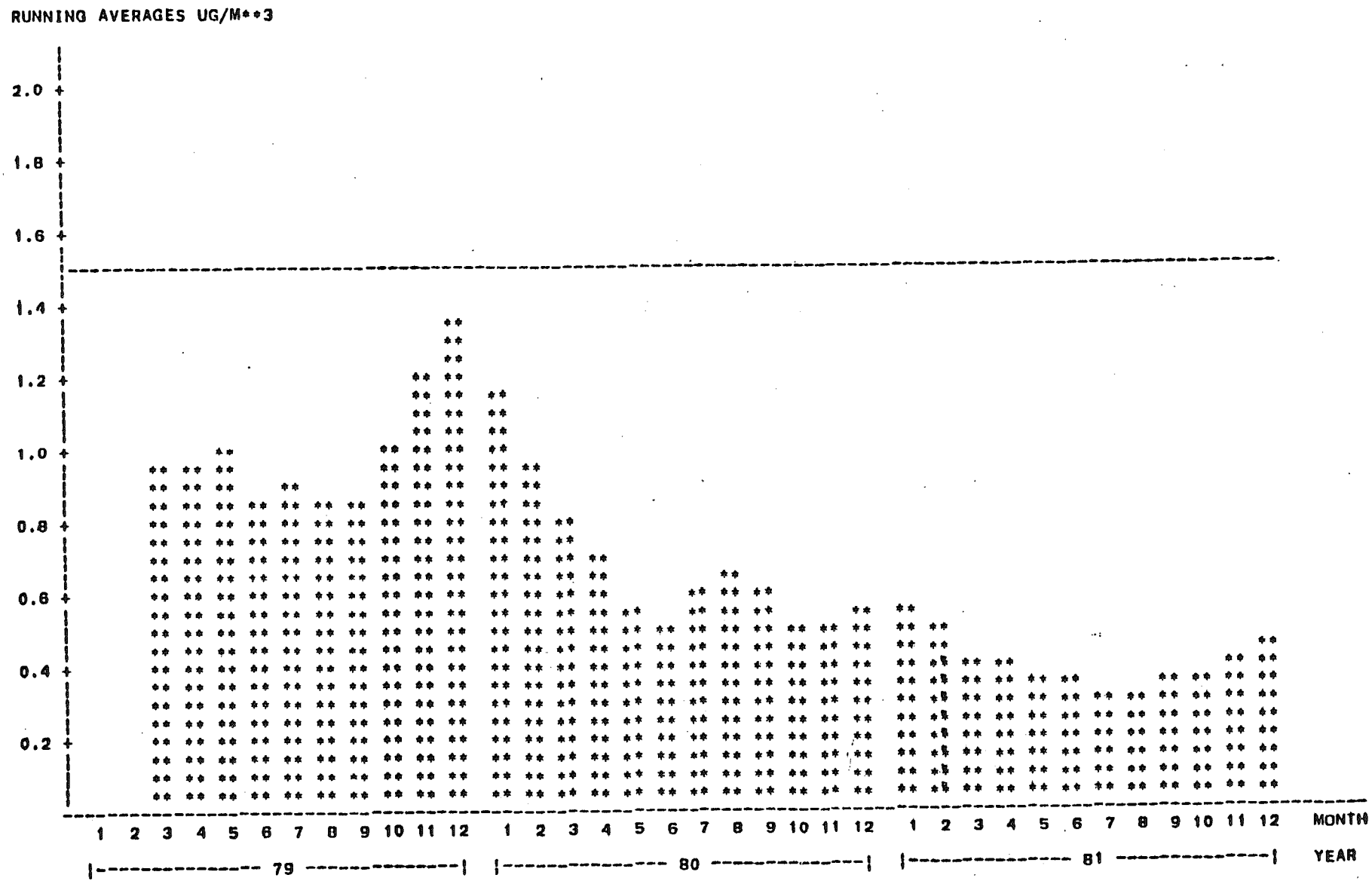


Figure 13, Continued

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= NORWALK 012

BAR CHART OF RUNNING AVERAGES UG/M**3

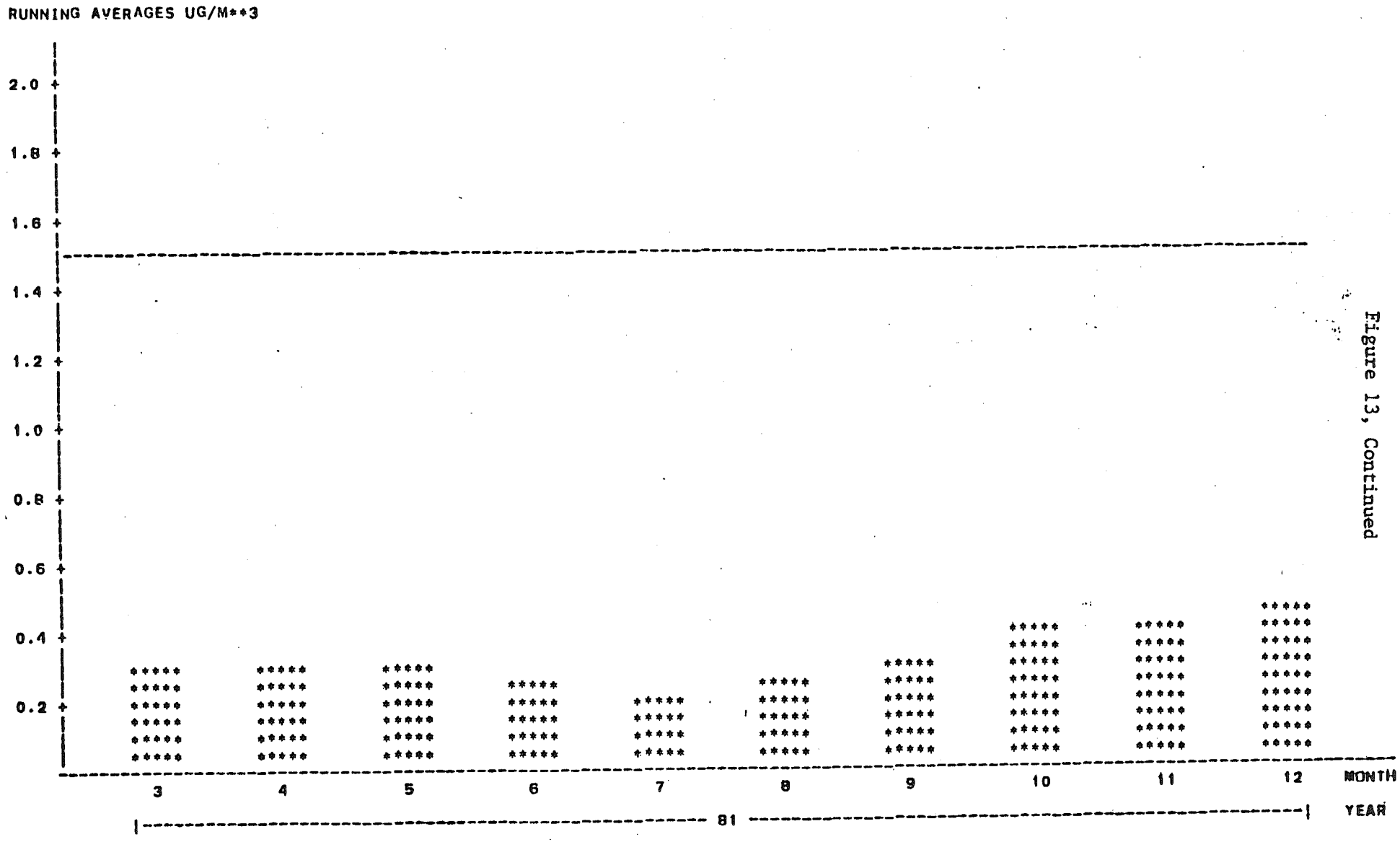


Figure 13, Continued

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= NORWICH 001

BAR CHART OF RUNNING AVERAGES UG/M**3

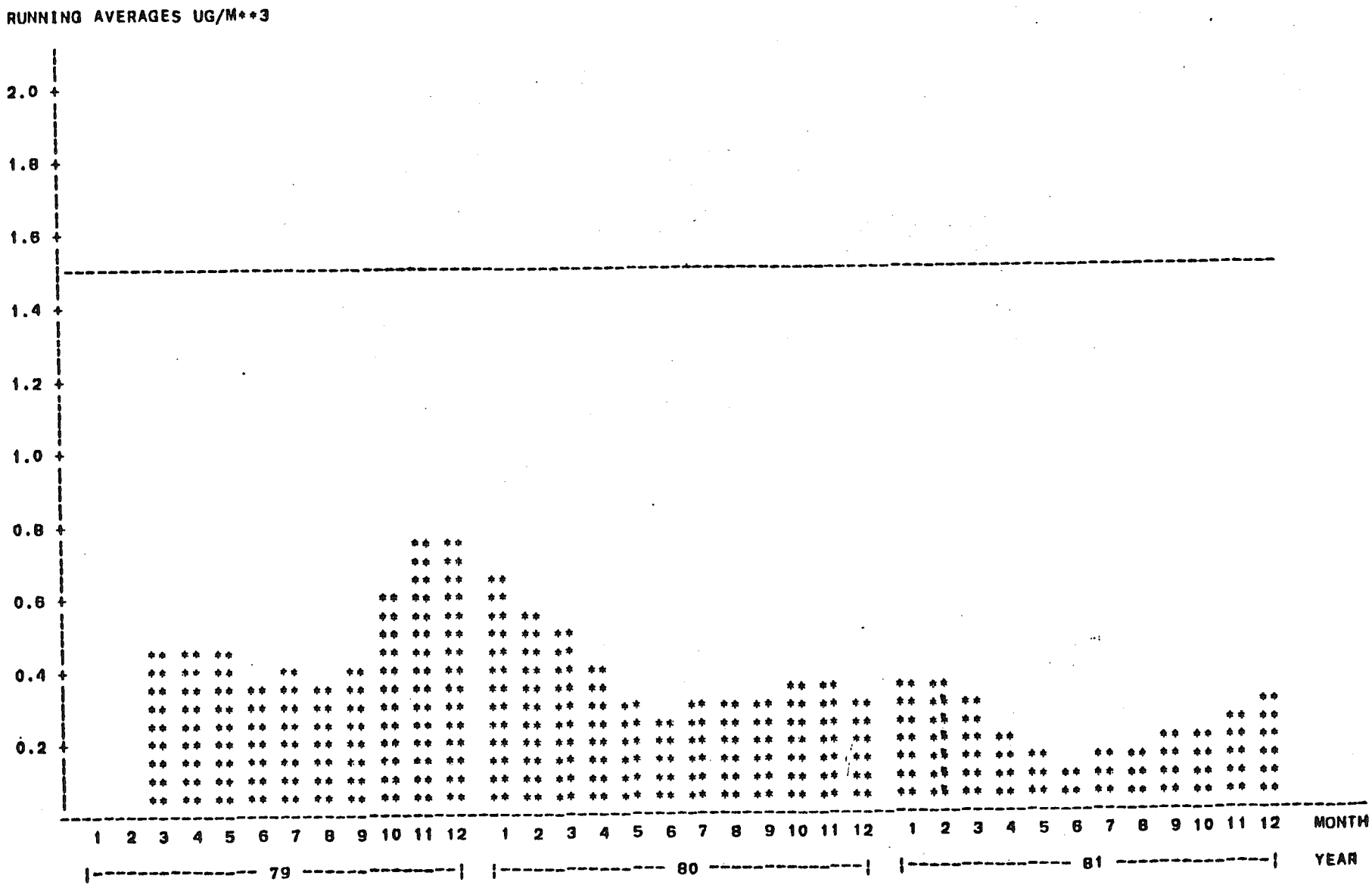
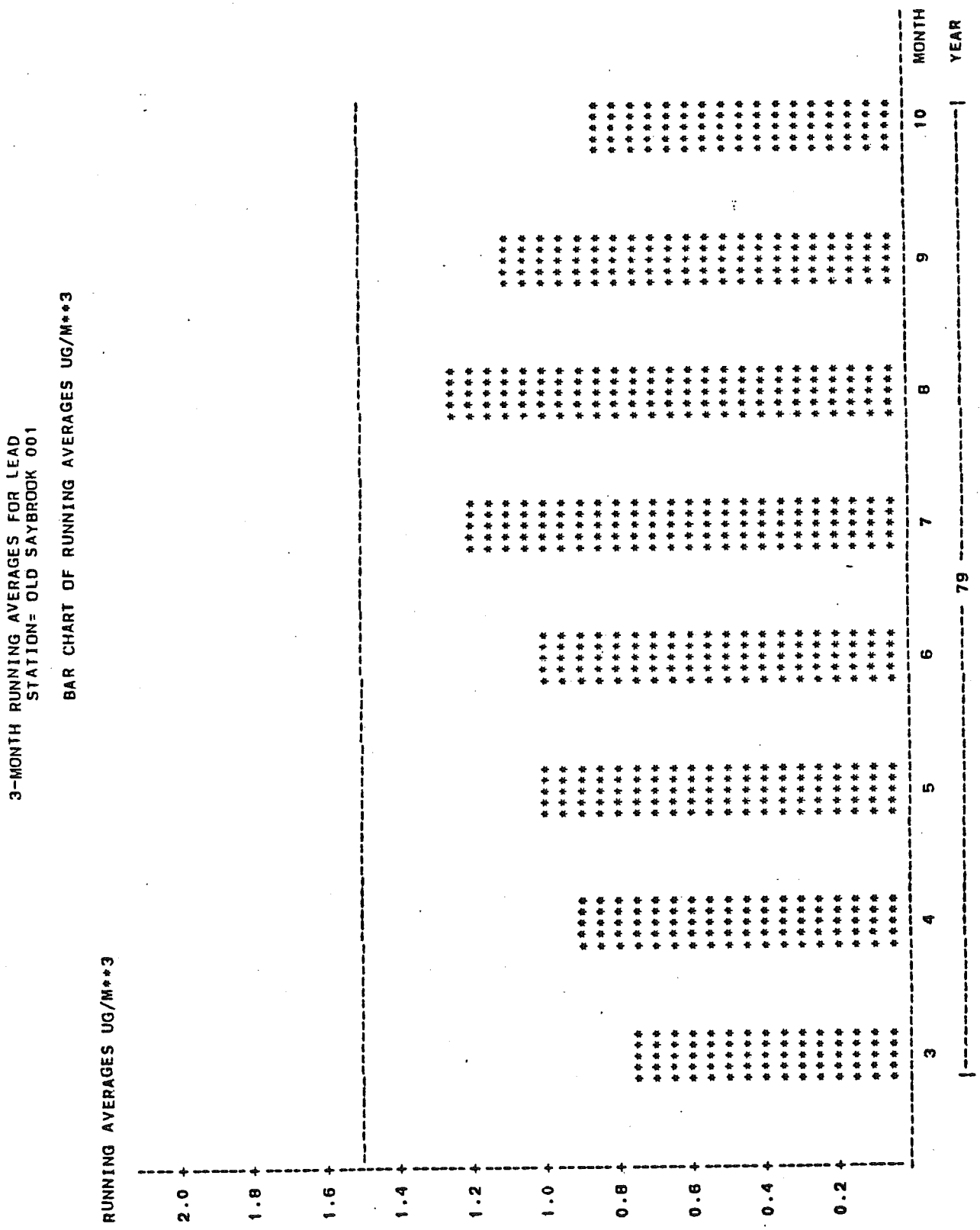


Figure 13, Continued

Figure 13, Continued



3-MONTH RUNNING AVERAGES FOR LEAD
STATION= STAMFORD 001

BAR CHART OF RUNNING AVERAGES UG/M**3

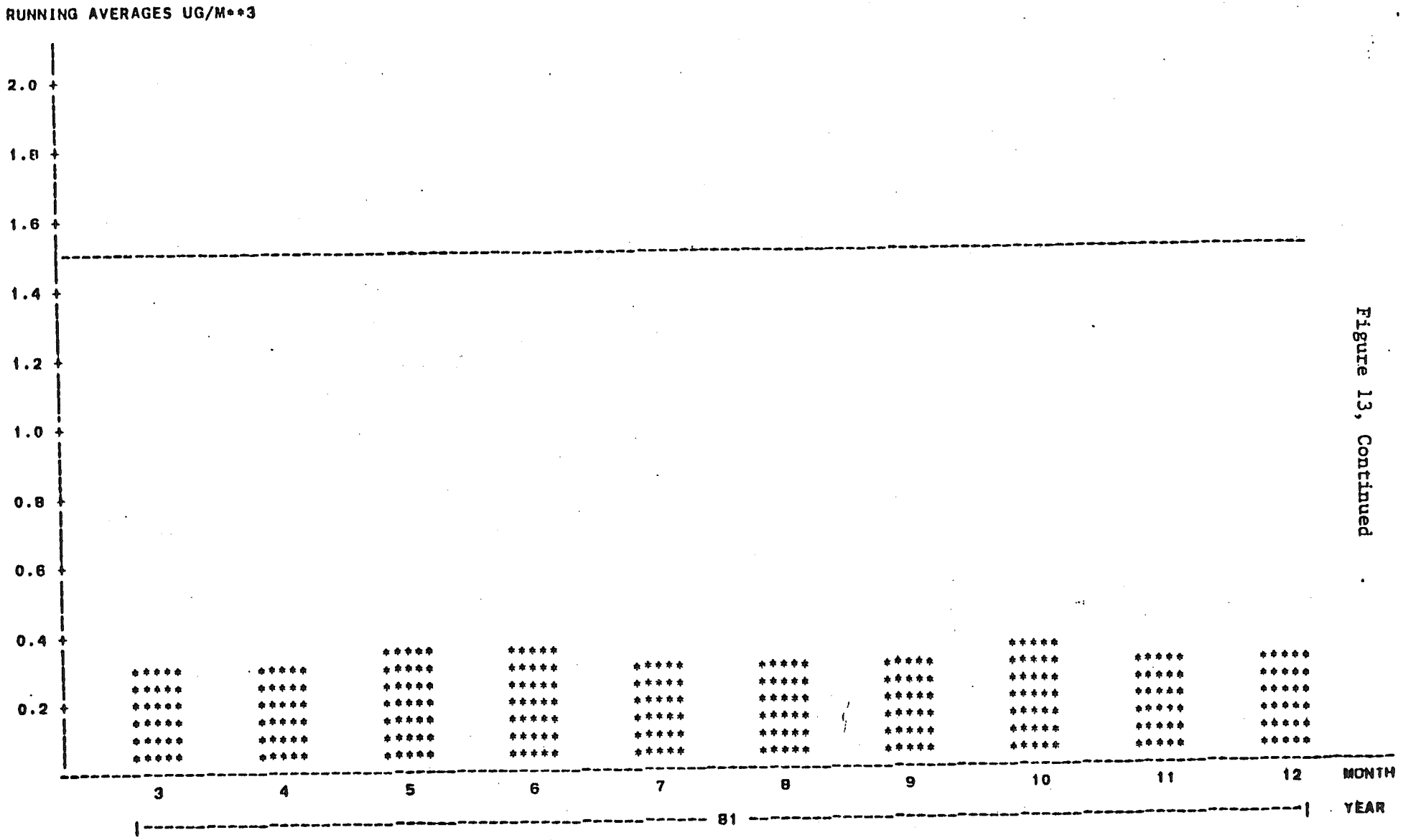
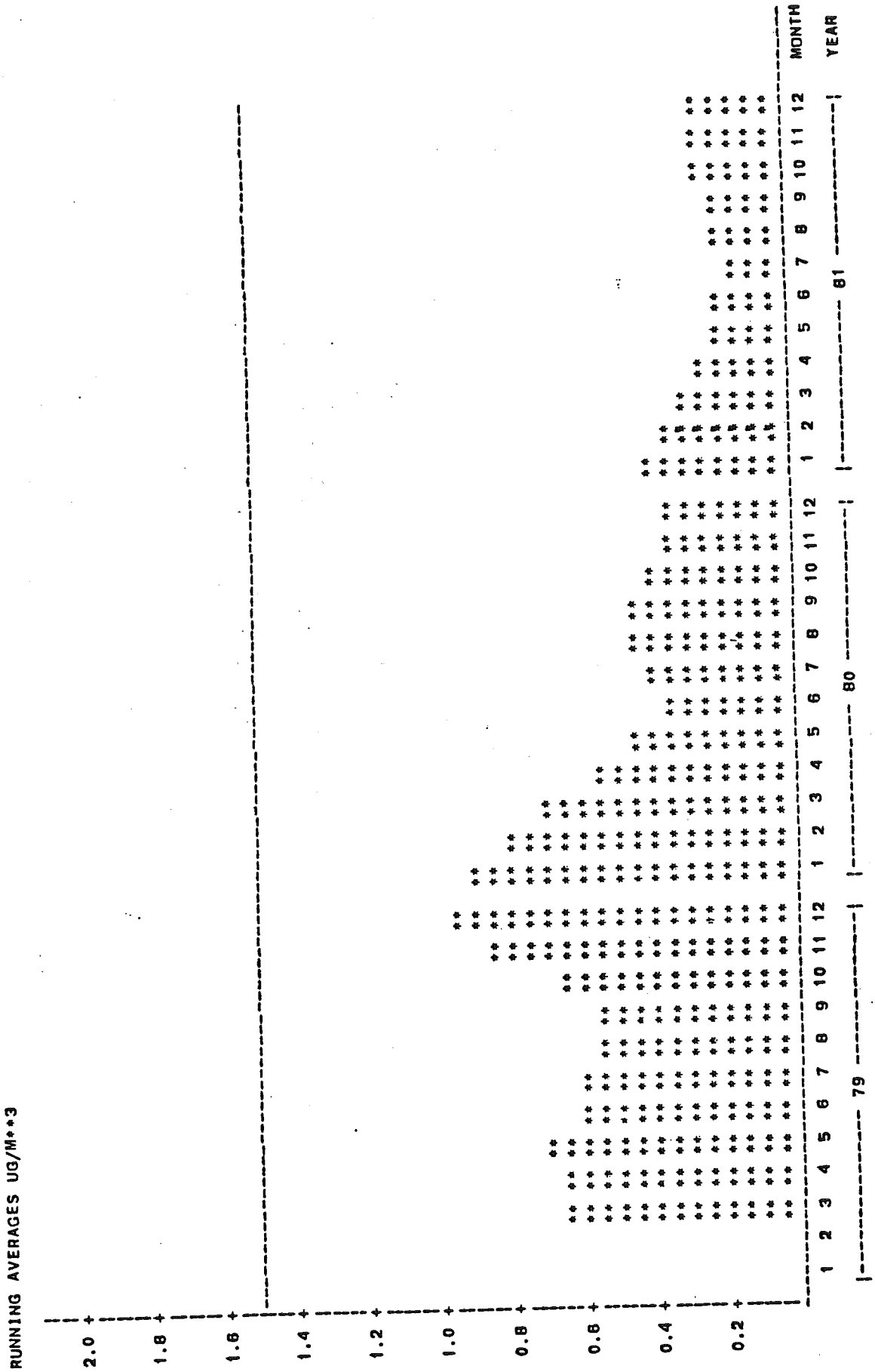


Figure 13, Continued

Figure 13, Continued



3-MONTH RUNNING AVERAGES FOR LEAD
STATION= STAMFORD 021

BAR CHART OF RUNNING AVERAGES UG/M**3

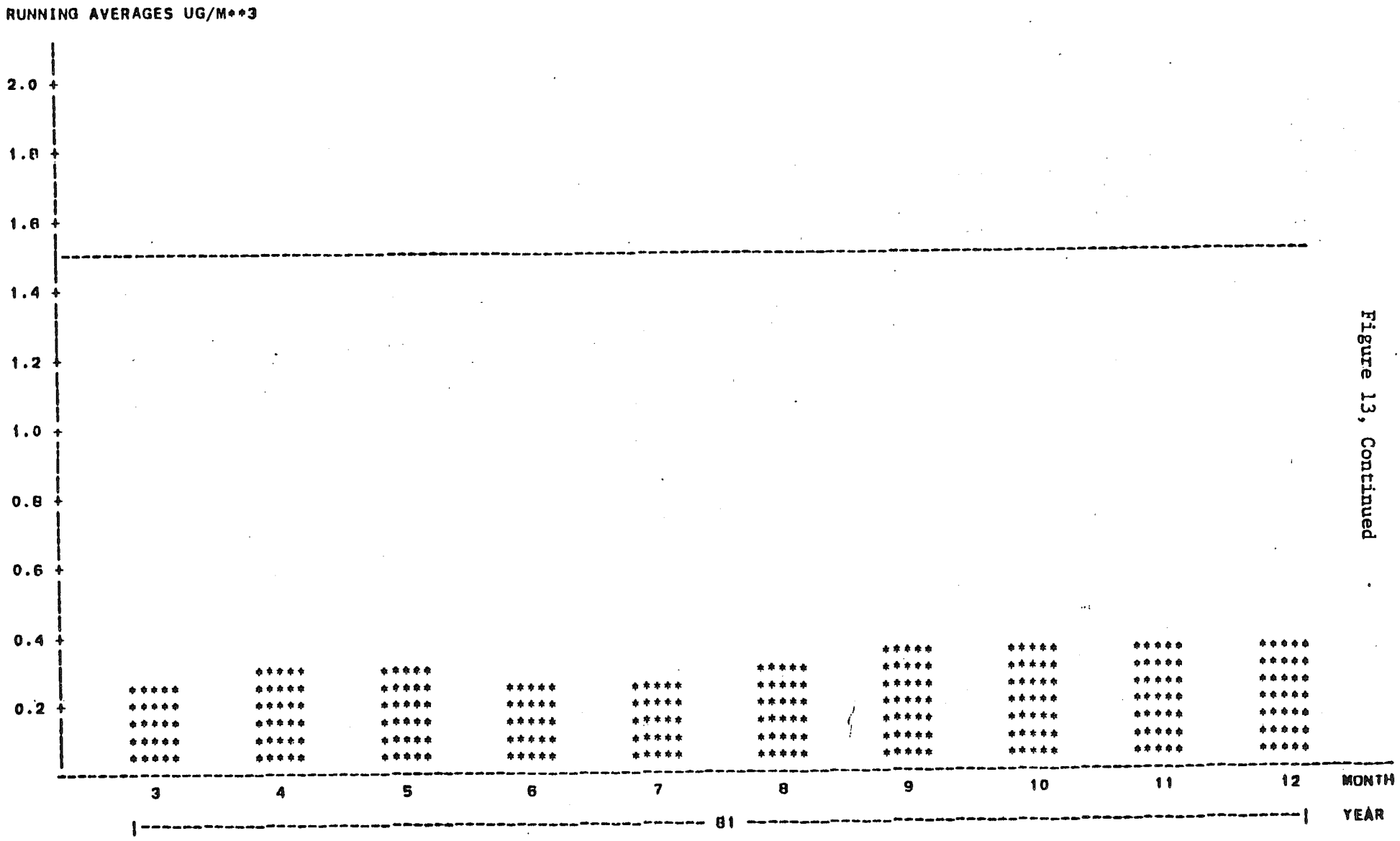


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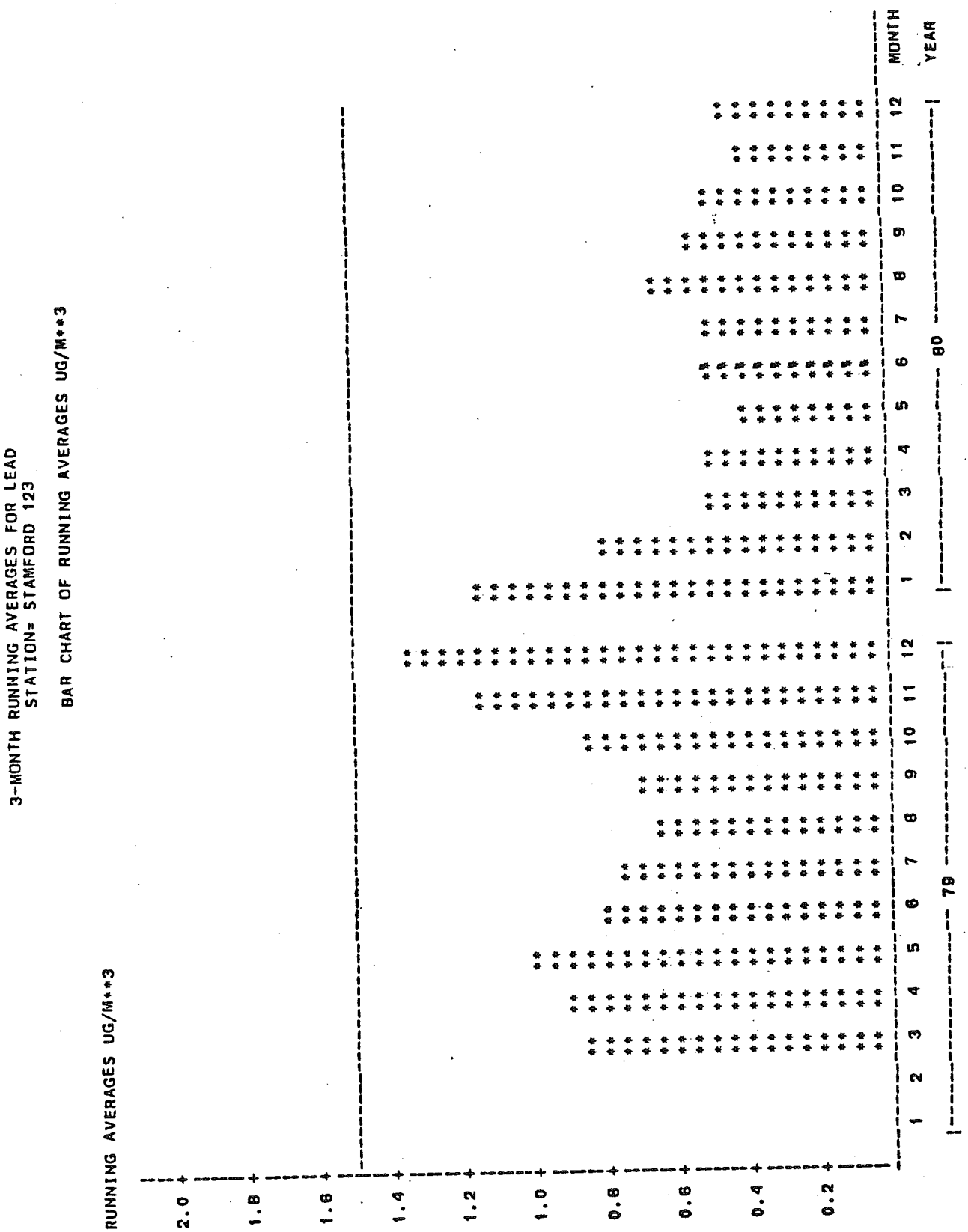
Figure 13, Continued



3-MONTH RUNNING AVERAGES FOR LEAD
STATION= STRATFORD 005

BAR CHART OF RUNNING AVERAGES UG/M**3

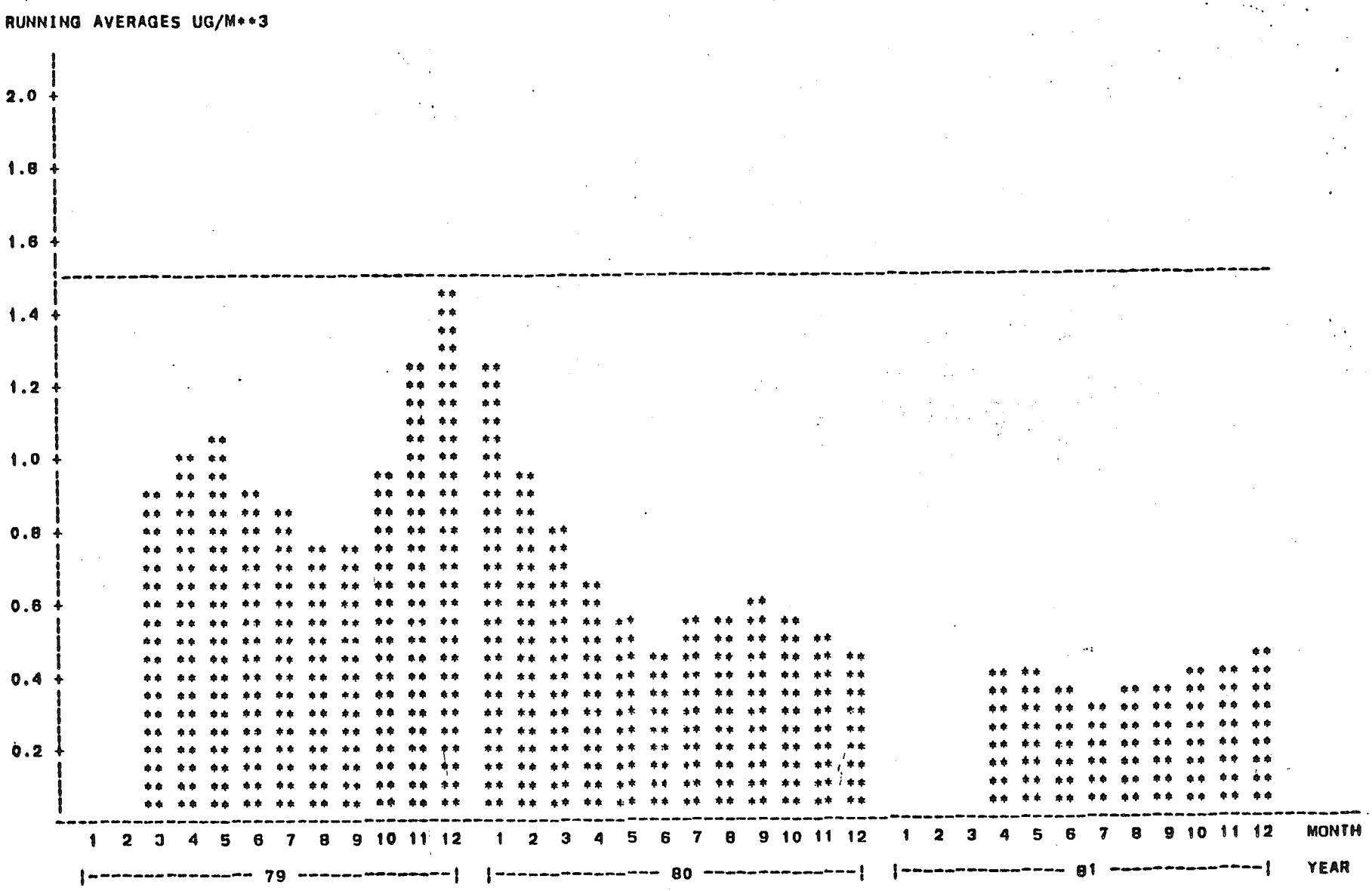


Figure 13, Continued

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= TORRINGTON 123

BAR CHART OF RUNNING AVERAGES UG/M**3

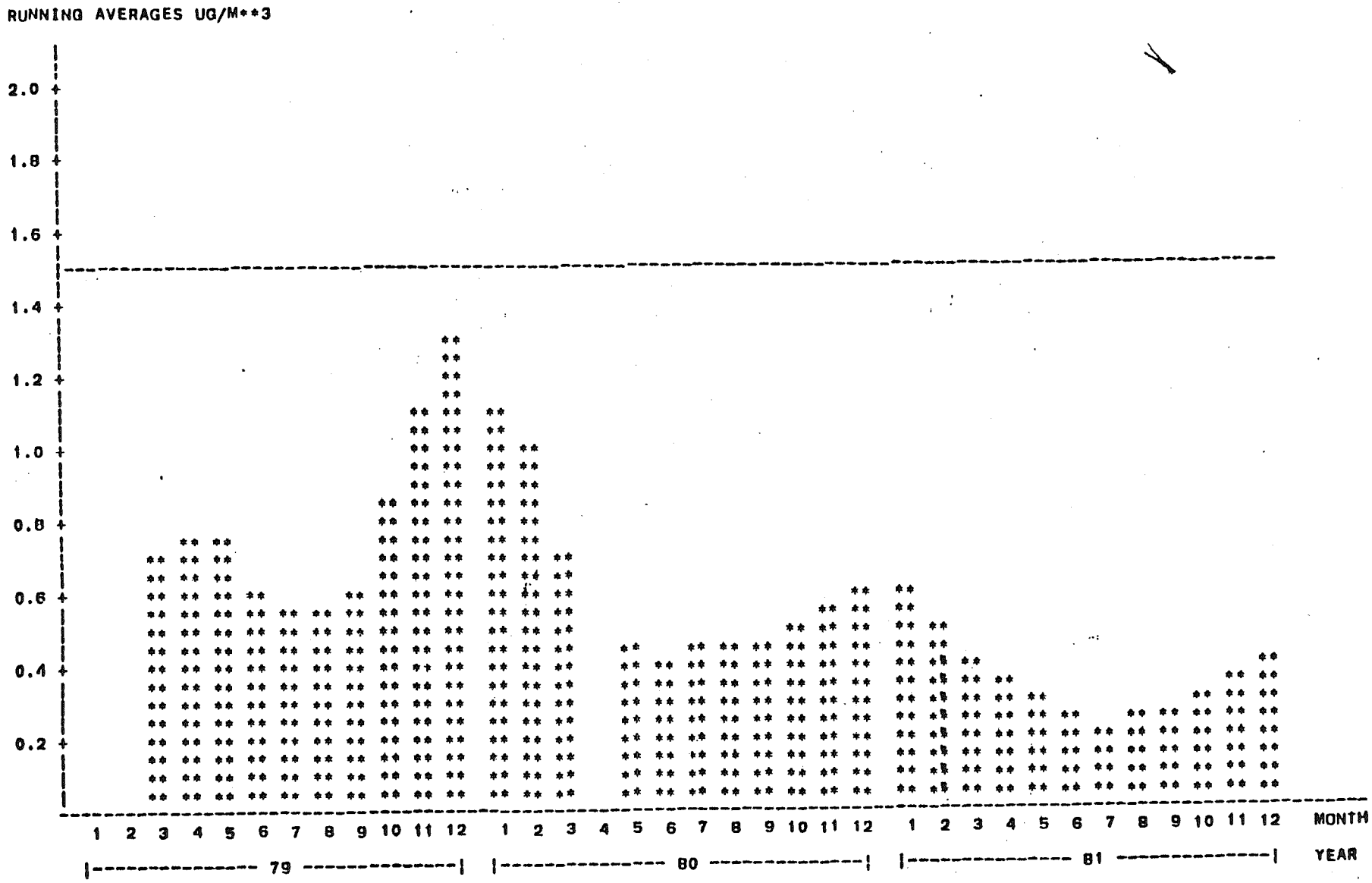


Figure 13, Continued

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= VOLUNTOWN 001

BAR CHART OF RUNNING AVERAGES UG/M**3

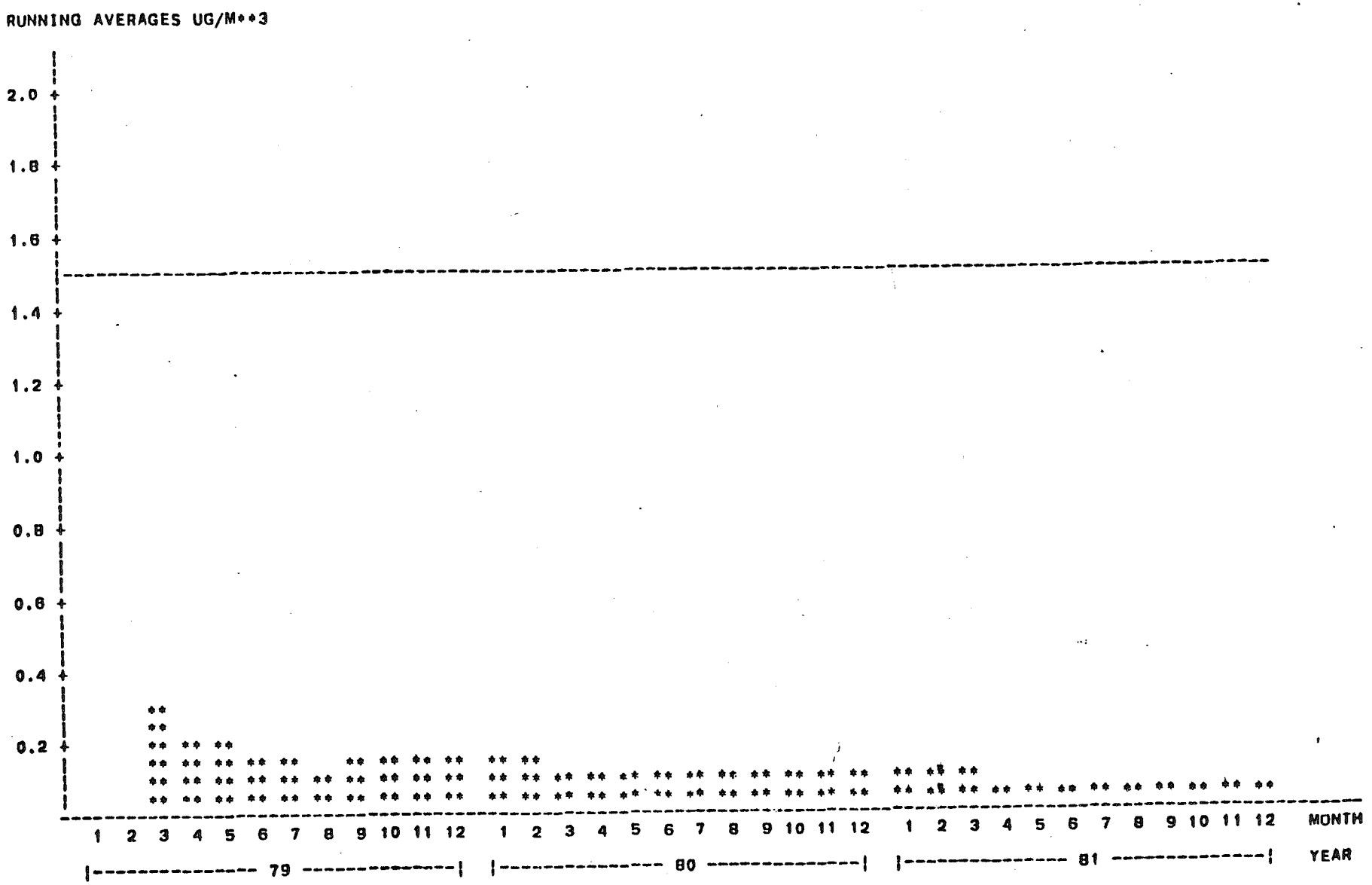


Figure 13, Continued

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= WALLINGFORD 001

BAR CHART OF RUNNING AVERAGES UG/M**3

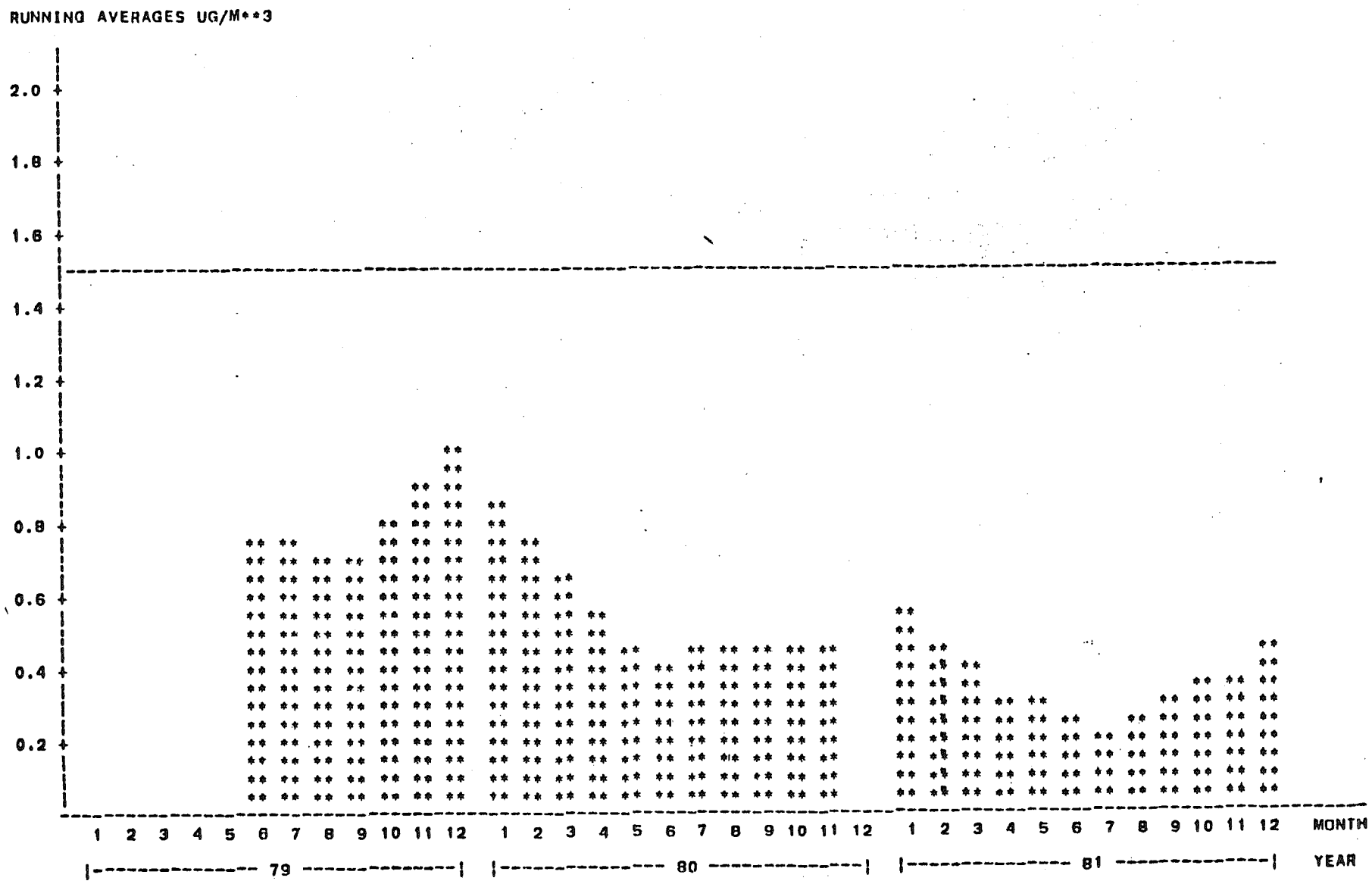


Figure 13, Continued

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= WATERBURY 002

BAR CHART OF RUNNING AVERAGES UG/M**3

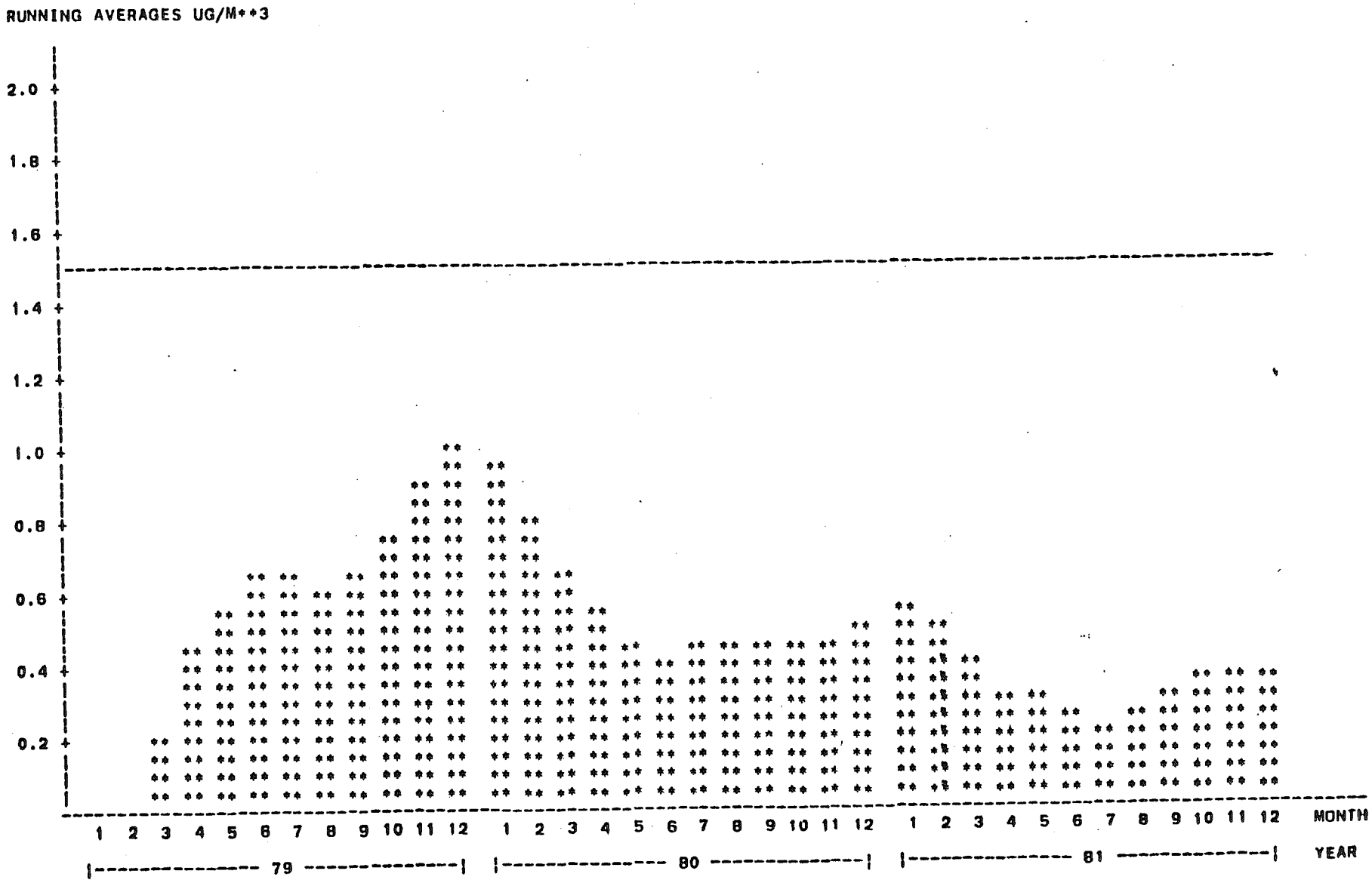
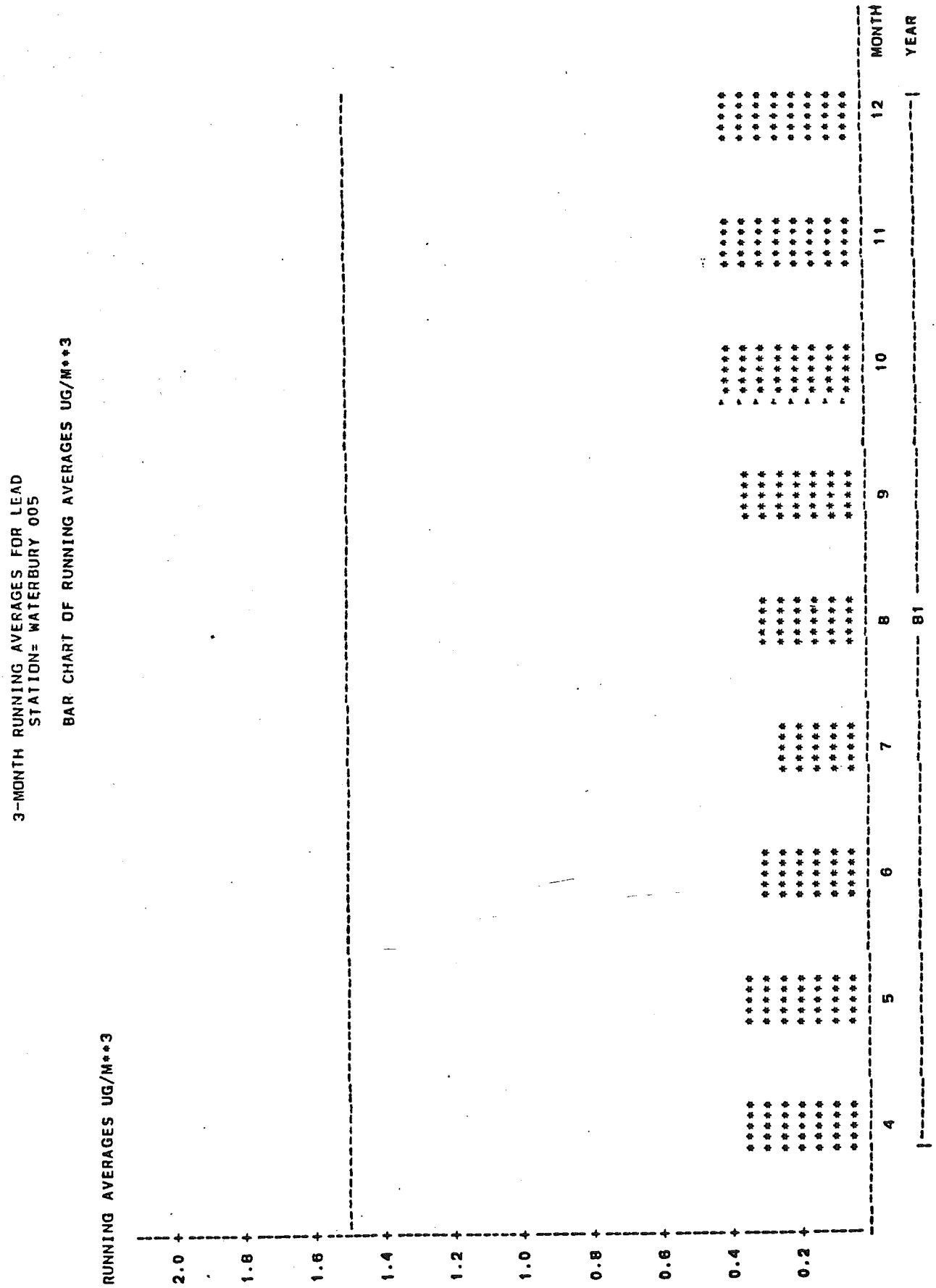


Figure 13, Continued

Figure 13, Continued



3-MONTH RUNNING AVERAGES FOR LEAD
STATION= WATERBURY 006

BAR CHART OF RUNNING AVERAGES UG/M**3

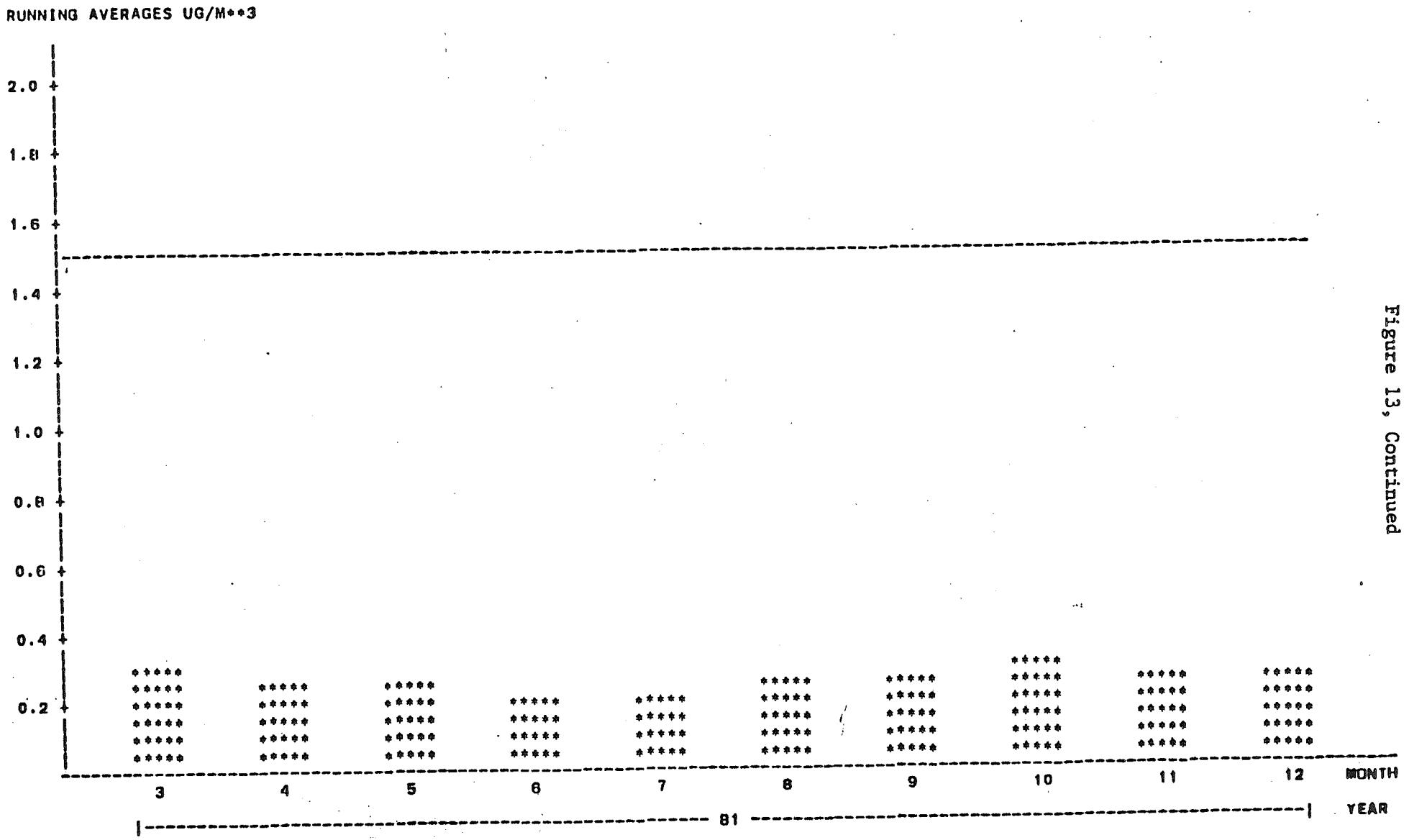


Figure 13, Continued

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= WATERBURY 007

BAR CHART OF RUNNING AVERAGES UG/M**3

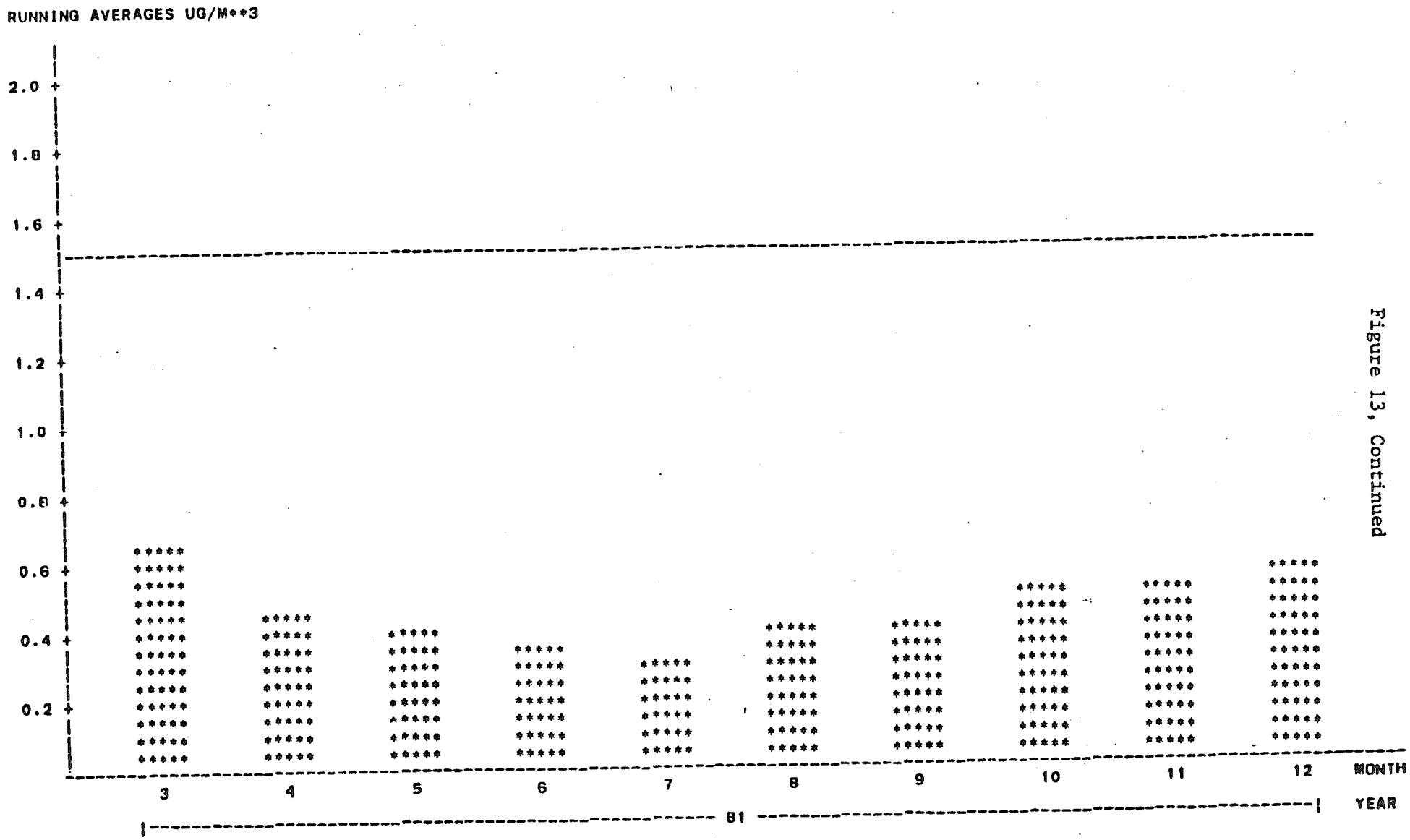


Figure 13, Continued

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= WATERBURY 123

BAR CHART OF RUNNING AVERAGES UG/M**3

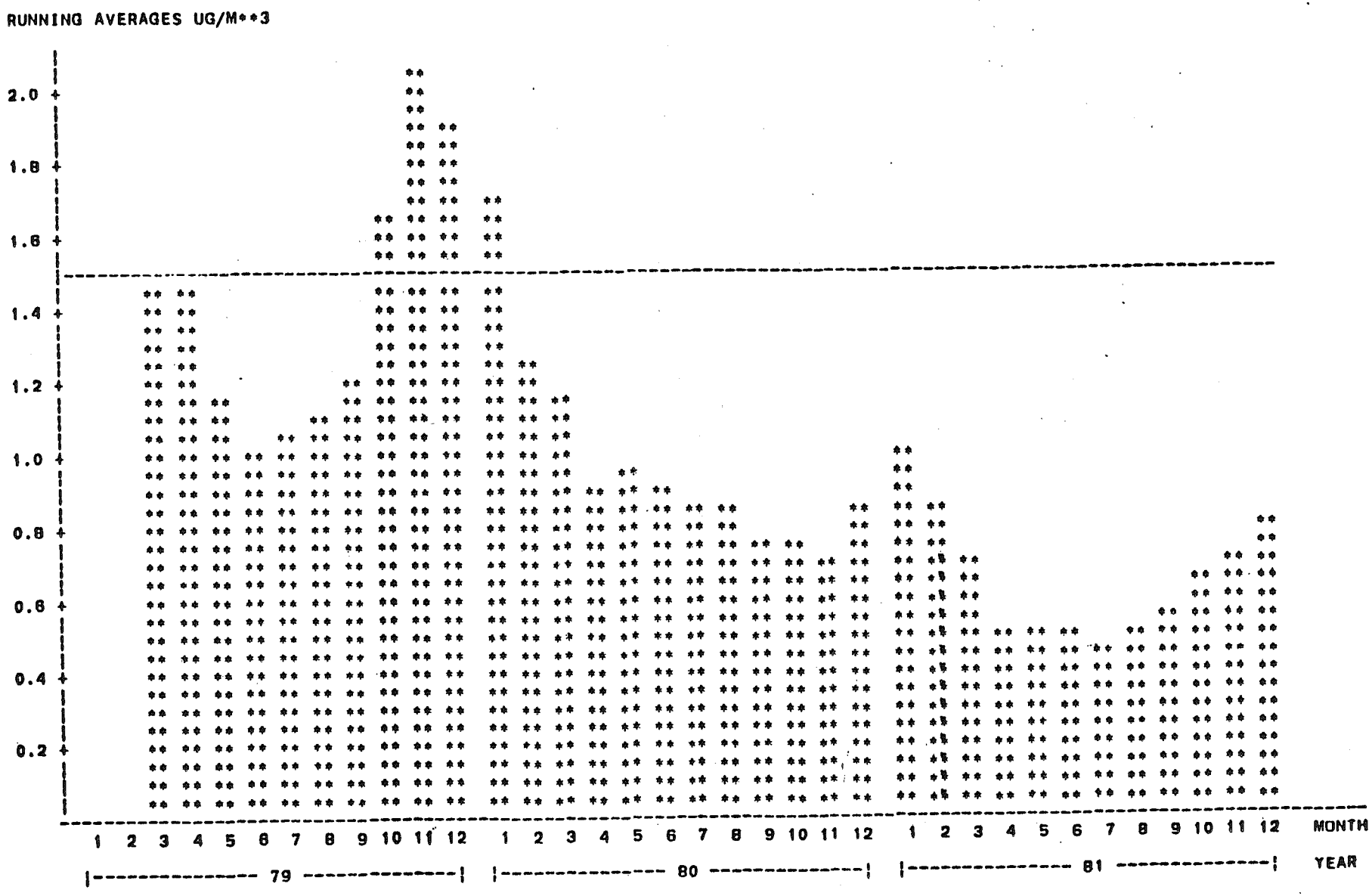


Figure 13, Continued

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= WATERFORD 001

BAR CHART OF RUNNING AVERAGES UG/M**3

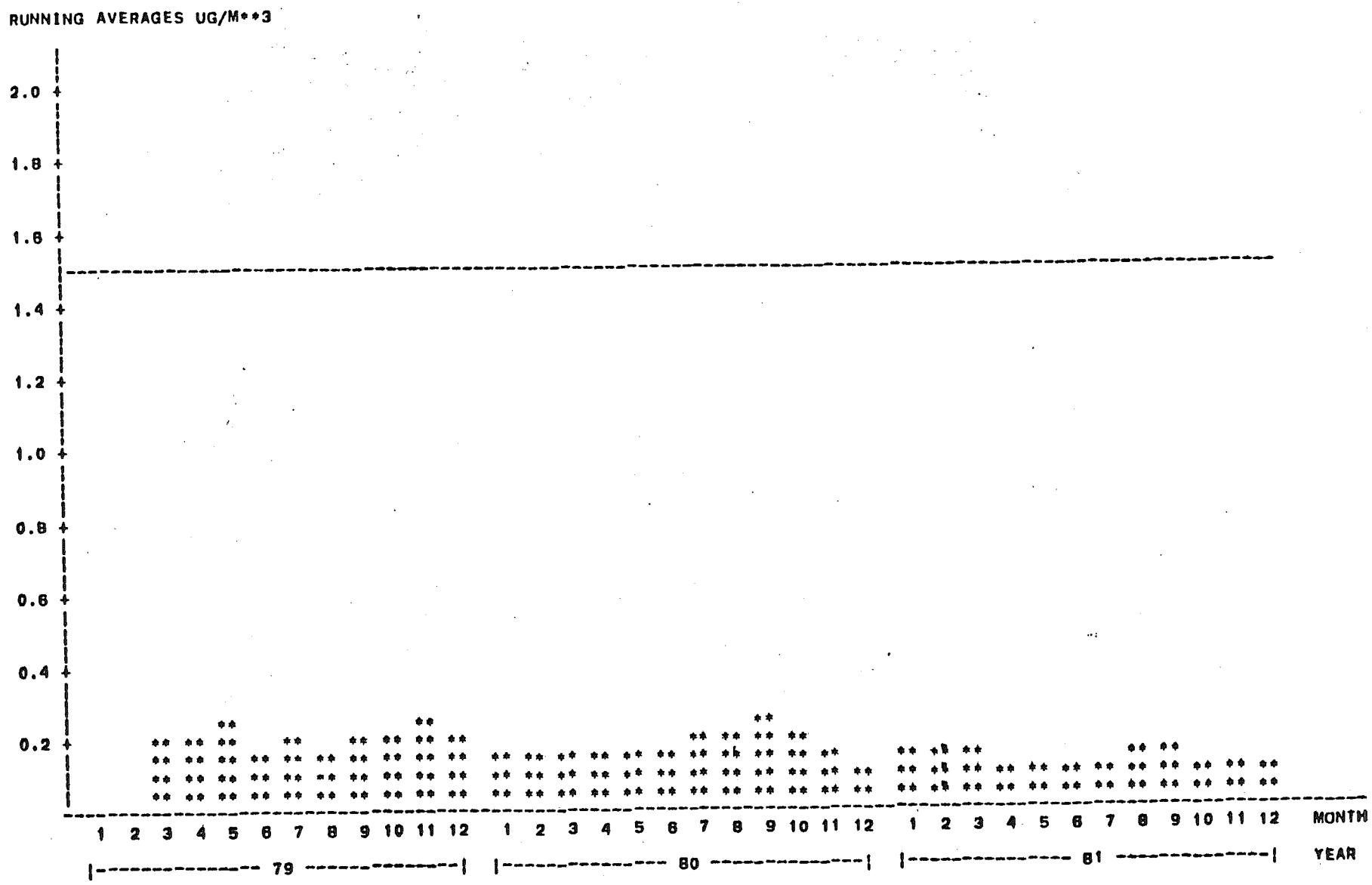


Figure 13, Continued

3-MONTH RUNNING AVERAGES FOR LEAD
STATION= WILLINGTON 002

BAR CHART OF RUNNING AVERAGES UG/M**3

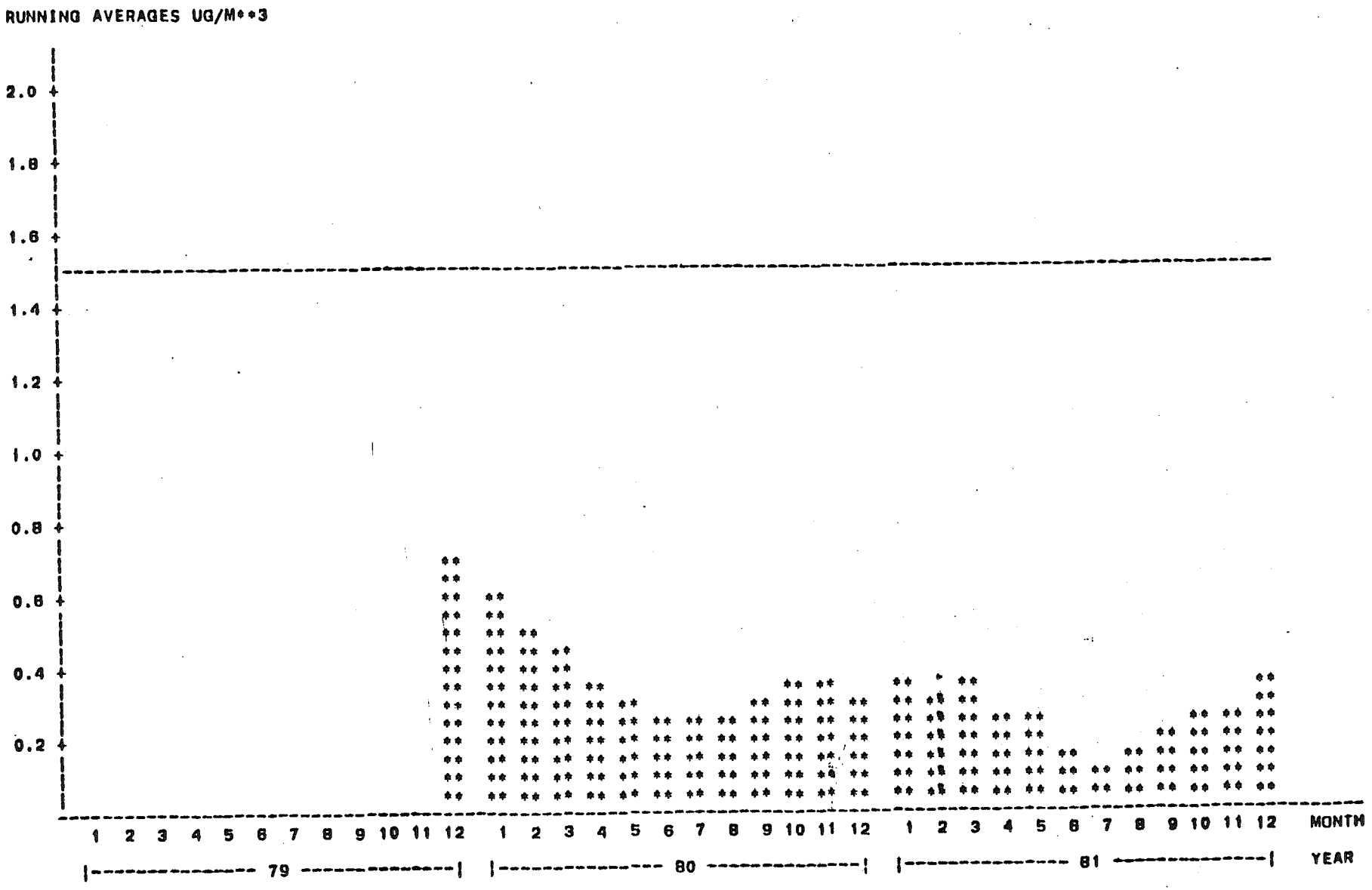


Figure 13, Continued

VIII. CLIMATOLOGICAL DATA

Weather is often the most significant factor influencing short-term changes in air quality and also has an affect on long-term trends. Shown in Table 28 is climatological information from the National Weather Service Station at Bradley International Airport in Windsor Locks for the years 1980 and 1981. Table 29 contains information from the Weather Service site located at Sikorsky Memorial Airport near Bridgeport. All data are compared to "mean" or "normal" values. Wind speeds and temperatures are shown as monthly and yearly averages. Precipitation data includes the number of days with more than 0.01 inches of precipitation as well as total water equivalent. Also shown are degree days* (heating requirement) and the number of days with temperatures exceeding 90°F.

Wind roses for Bradley Airport, Sikorsky Airport, and Newark Airport have been developed from 1981 National Weather Service surface observations and are shown in Figures 15, 17, and 19. Wind roses from these stations for 1980 are shown in Figures 14, 16, and 18. ~~The differences between 1980 and 1981 wind roses were discussed earlier in the trend analysis section.~~

* The degree day value for each day is arrived at by subtracting the low temperature of the day from 65°F. This number (65) is used as a base value because it is assumed that there is no heating requirement when the outside temperature is 65°F.

TABLE 28

1980 AND 1981 CLIMATOLOGICAL DATA
BRADLEY INTERNATIONAL AIRPORT
WINDSOR LOCKS

	AVERAGE TEMPERATURES °F			NUMBER OF DAYS ON WHICH MAX. TEMP. EXCEEDED 90°F			DEGREE DAYS			PRECIPITATION IN INCHES WATER EQUIVALENT			NUMBER OF DAYS WITH MORE THAN .01 INCHES OF PRECIPITATION			AVERAGE WIND SPEED (MPH)			
	1981	1980	Mean[a]	1981	1980	Mean[b]	1981	1980	Mean[d]	1981	1980	Mean[a]	1981	1980	Mean[c]	1981	1980	Mean[c]	
January	17.8	27.6	26.7	0	0	0	1456	1151	1246	0.38	0.72	3.53	6	3	11	7.0	9.3	9.3	Jan.
February	35.3	24.3	27.6	0	0	0	824	1174	1070	7.27	0.98	3.24	16	4	11	8.8	8.7	9.6	Feb.
March	38.1	35.2	37.1	0	0	0	828	916	911	0.27	5.87	3.74	4	17	11	8.4	10.5	10.1	March
April	52.0	49.2	48.1	0	0	*	380	466	519	2.92	5.39	3.72	10	13	11	9.7	8.2	10.3	April
May	61.6	61.0	59.1	1	1	1	149	146	226	2.17	1.65	3.52	7	9	11	7.4	8.0	9.1	May
June	69.6	66.4	68.0	1	3	4	10	68	24	1.37	3.81	3.44	11	12	11	7.3	6.8	8.3	June
July	74.8	74.2	73.2	9	6	8	0	0	0	4.21	2.65	3.54	10	10	10	6.4	6.9	7.6	July
August	70.6	73.2	71.0	2	6	5	9	0	12	0.54	1.60	3.82	9	11	10	5.1	6.8	7.3	Aug.
September	62.5	64.9	63.6	0	3	1	115	99	106	4.49	1.40	3.67	10	6	10	6.7	7.0	7.5	Sept.
October	49.3	50.3	53.1	0	0	*	481	449	384	5.19	2.58	3.15	12	9	8	6.4	6.9	7.9	Oct.
November	43.7	37.9	42.0	0	0	0	635	808	711	2.34	4.22	3.74	10	9	11	7.8	8.2	8.5	Nov.
December	31.0	24.6	30.3	0	0	0	1048	1246	1141	4.00	0.82	3.79	14	13	12	7.2	8.3	8.8	Dec.
YEAR	50.6	49.1	50.0	13	19	19	5935	6523	6350	35.15	31.69	42.90	119	116	127	7.4	8.0	8.7	YEAR

* Less than 1/2

a 1903-1981
b 1959-1981
c 1954-1981
d 1941-1970

Extracted From: Local Climatological Data Charts
U.S. Department of Commerce
National Oceanic and Atmospheric Administration
Environmental Data Service

TABLE 29

1980 AND 1981 CLIMATOLOGICAL DATA
SIKORSKY INTERNATIONAL AIRPORT
STRATFORD

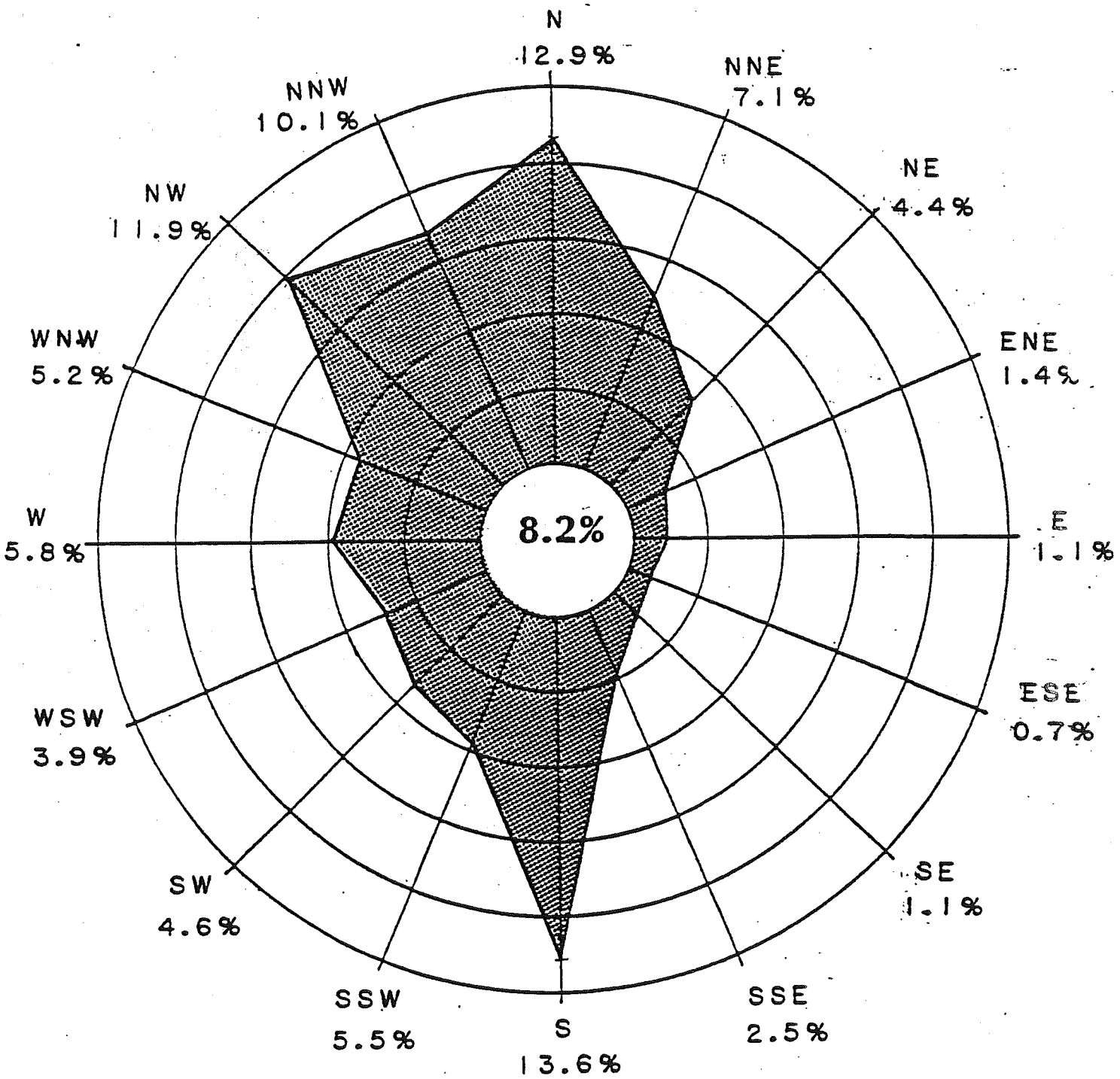
	AVERAGE TEMPERATURES °F			NUMBER OF DAYS ON WHICH MAX. TEMP. EXCEEDED 90°F			DEGREE DAYS			PRECIPITATION IN INCHES WATER EQUIVALENT			NUMBER OF DAYS WITH MORE THAN .01 INCHES OF PRECIPITATION			AVERAGE WIND SPEED (MPH)			
	1981	1980	Mean[a]	1981	1980	Mean[b]	1981	1980	Mean[c]	1981	1980	Mean[d]	1981	1980	Mean[e]	1981	1980	Mean[f]	
January	22.2	31.7	28.4	0	0	0	1320	1025	1079	0.54	1.02	3.62	5	6	11	11.4	13.9	13.2	Jan.
February	33.9	28.1	30.3	0	0	0	865	1064	955	4.66	1.07	3.32	14	3	10	14.0	13.4	13.6	Feb.
March	38.1	37.0	37.9	0	0	(	831	862	840	0.69	7.05	3.94	7	15	11	13.0	14.8	13.5	Mar.
April	49.3	48.1	48.0	0	0	0	465	499	498	3.19	7.03	3.84	12	9	11	13.5	13.5	13.0	Apr.
May	58.6	60.4	58.4	0	0	*	214	159	225	1.92	2.69	3.67	9	10	11	11.3	11.1	11.6	May
June	68.0	67.3	67.8	0	0	1	18	39	24	2.10	2.52	3.25	11	8	9	---	11.0	10.5	June
July	74.0	75.8	73.3	4	3	2	0	0	0	4.45	5.97	3.66	9	7	8	---	10.9	10.0	July
August	71.4	75.9	72.0	0	2	2	1	0	0	0.72	2.38	4.03	4	7	9	---	10.3	10.1	Aug.
September	62.8	68.4	65.2	0	1	*	102	41	42	4.50	2.39	3.58	10	5	9	---	12.3	11.2	Sept.
October	50.5	55.4	54.7	0	0	0	445	297	261	4.32	4.12	3.38	10	9	7	---	13.1	11.9	Oct.
November	44.1	43.2	44.1	0	0	0	619	646	570	1.93	3.95	3.76	8	8	10	---	15.3	12.7	Nov.
December	33.8	31.3	33.1	0	0	0	959	1038	967	3.65	0.95	3.74	12	10	11	---	13.2	13.0	Dec.
YEAR	50.6	51.9	51.1	4	6	6	5839	5670	5461	32.67	41.14	43.79	111	97	117	---	12.7	12.0	YEAR

* Less than 1/2

a 1903-1981
b 1966-1981
c 1941-1970
d 1894-1981
e 1949-1981
f 1958-~~1981~~ 1980

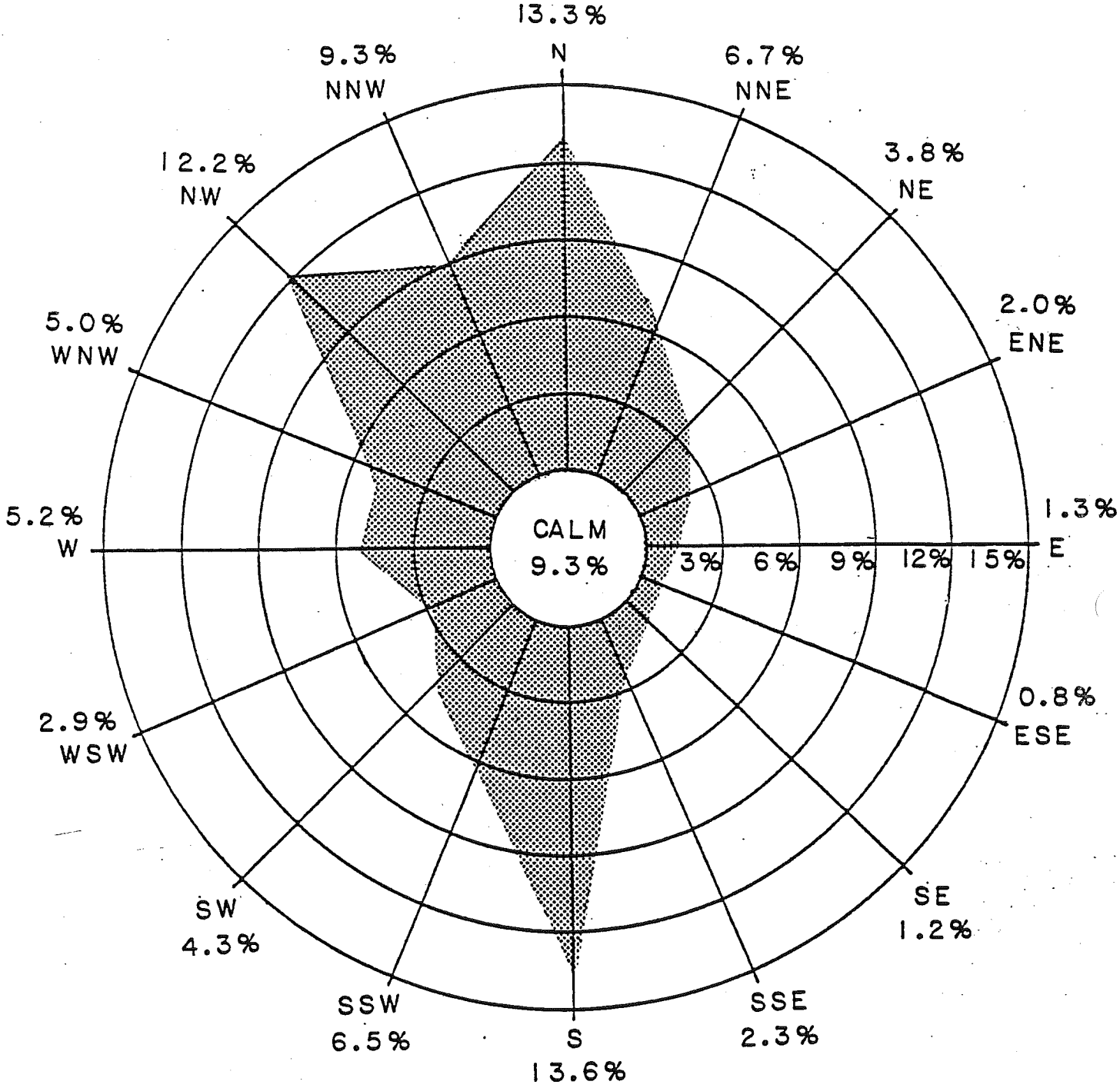
Extracted From: Local Climatological Data Charts
U.S. Department of Commerce
National Oceanic and Atmospheric Administration
Environmental Data Service

FIGURE 14



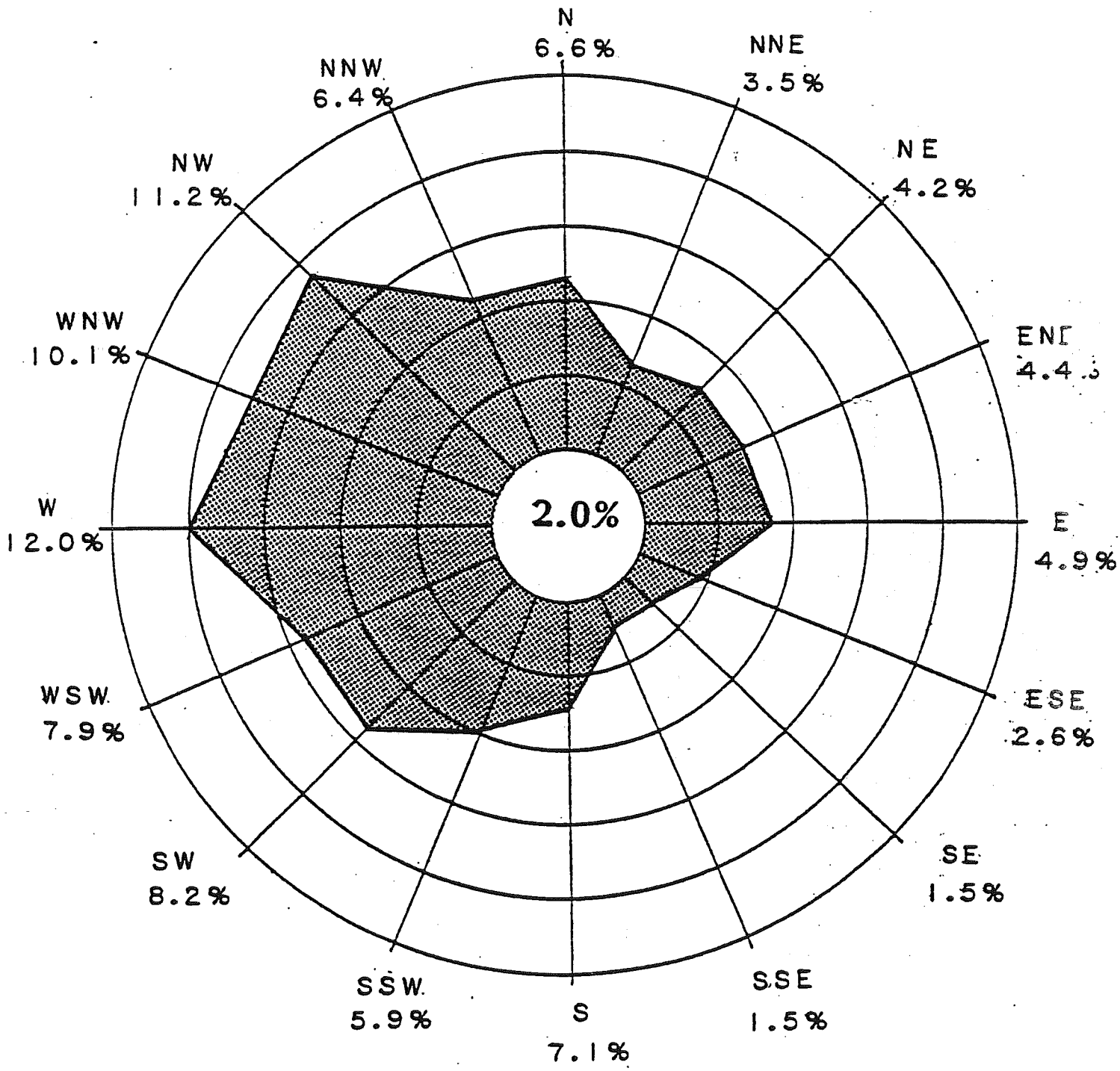
ANNUAL WIND ROSE 1980
BRADLEY INTERNATIONAL AIRPORT
WINDSOR LOCKS, CONNECTICUT.
WIND FREQUENCY APPEARS NEXT TO EACH DIRECTIONAL ABREVIATION

FIGURE 15



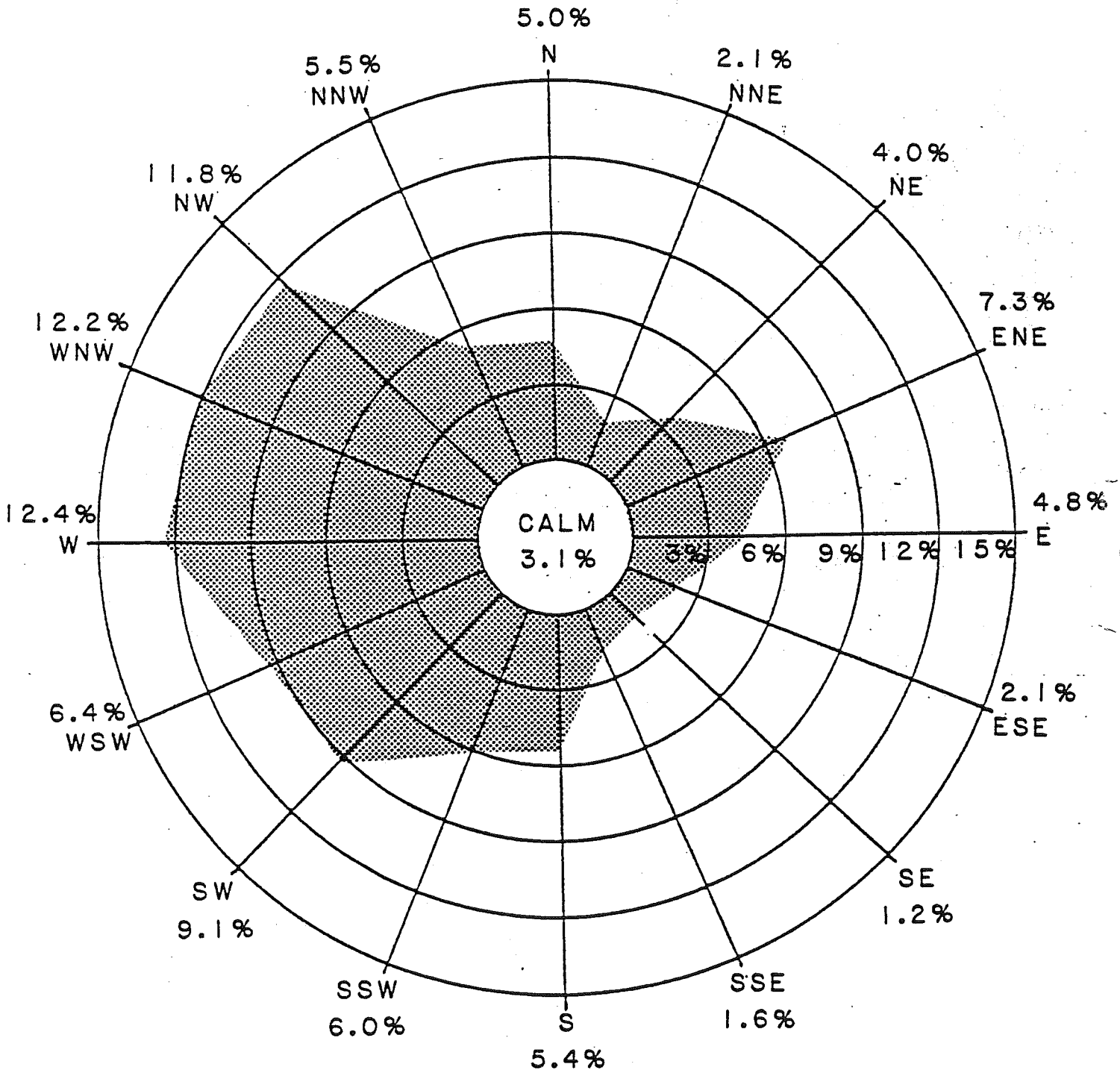
ANNUAL WIND ROSE 1981
BRADLEY INTERNATIONAL AIRPORT
WINDSOR LOCKS, CONNECTICUT
WIND FREQUENCY APPEARS NEXT TO EACH DIRECTIONAL ABBREVIATION

FIGURE 16



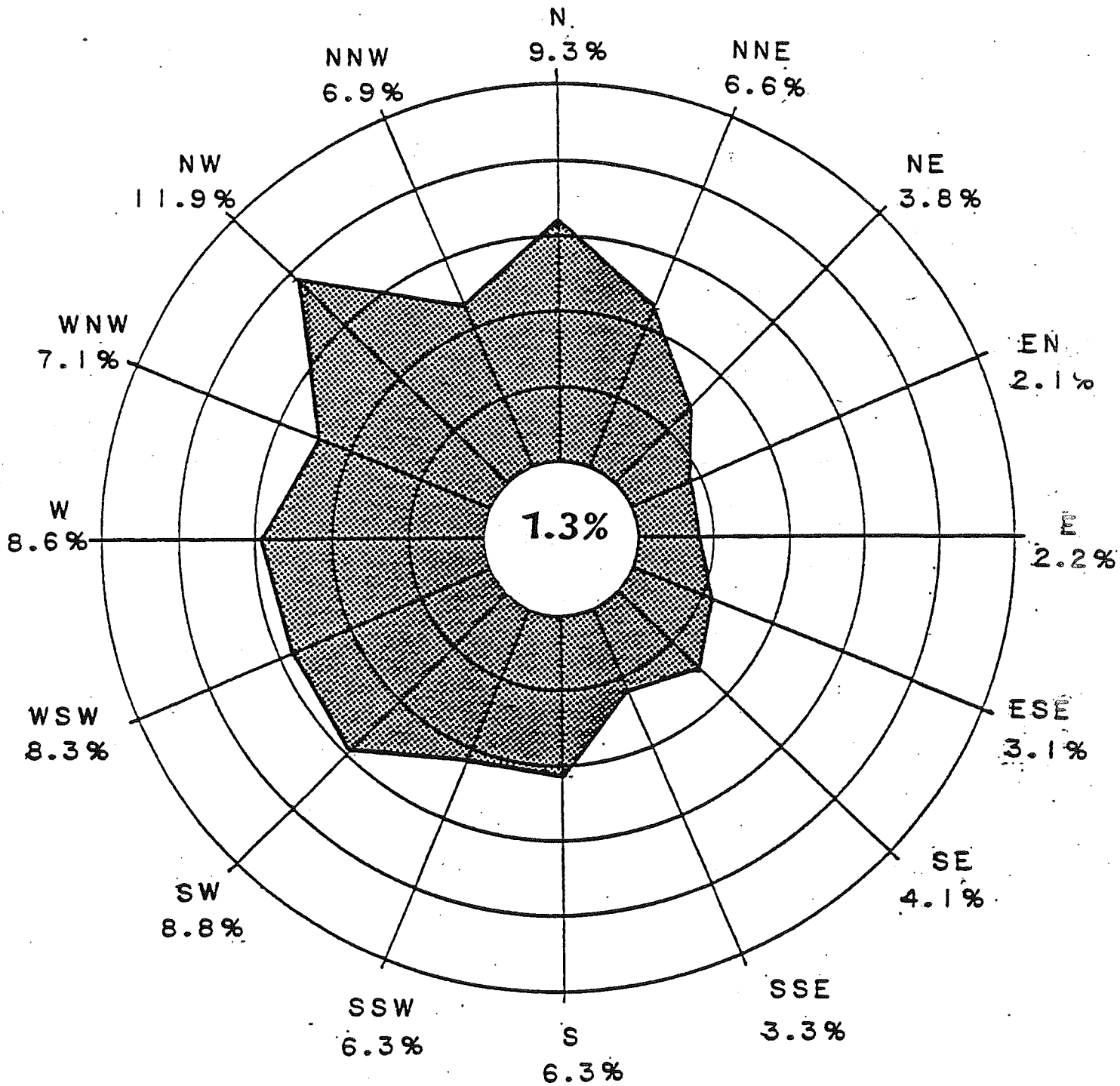
ANNUAL WIND ROSE 1980
SIKORSKY MEMORIAL AIRPORT
STRATFORD/BRIDGEPORT, CONNECTICUT
WIND FREQUENCY APPEARS NEXT TO EACH DIRECTIONAL ABREVIATION

FIGURE 17



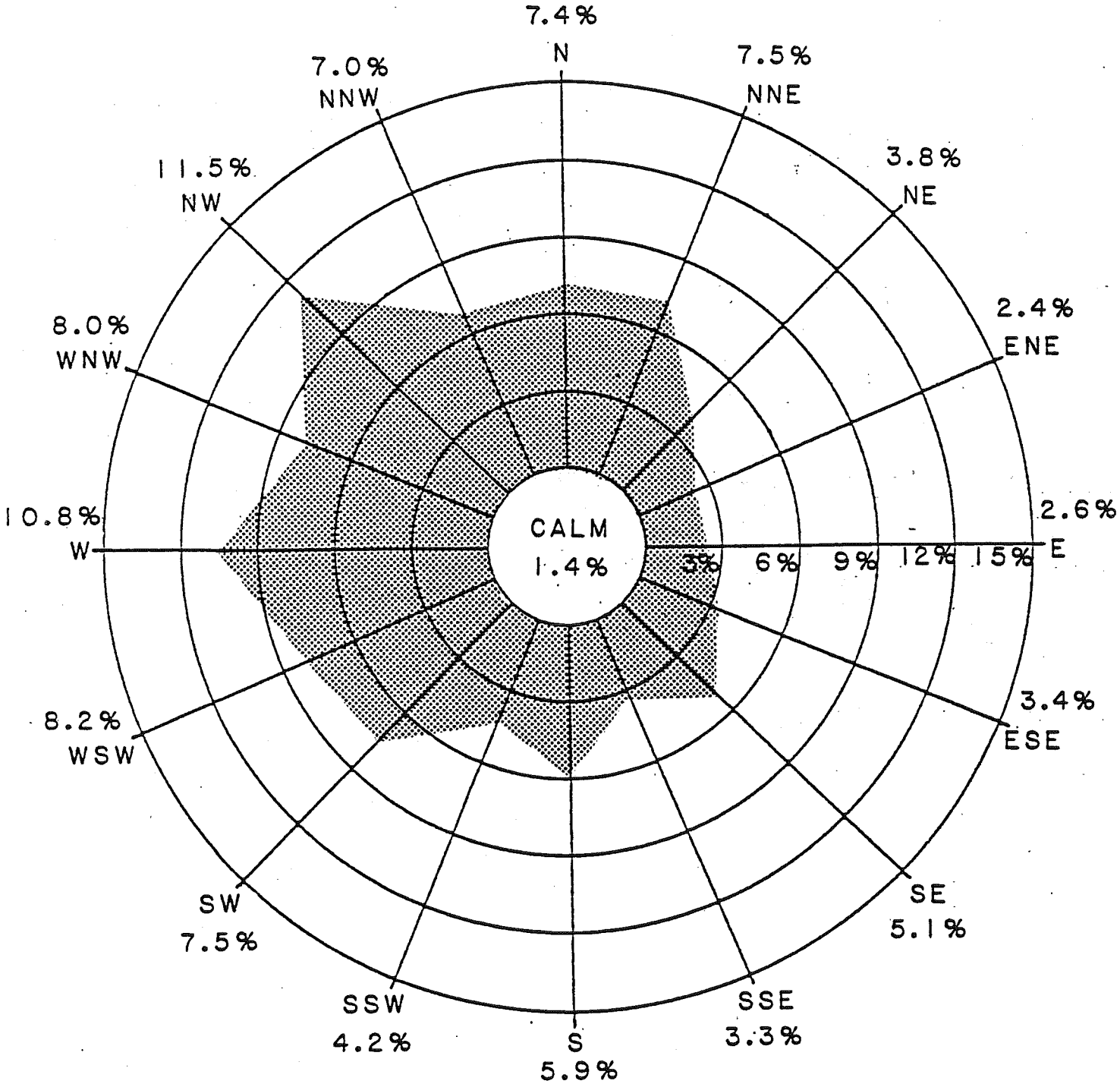
WIND ROSE 1981 (JAN-MAY ONLY)
SIKORSKY MEMORIAL AIRPORT
STRATFORD/BRIDGEPORT, CONNECTICUT
WIND FREQUENCY APPEARS NEXT TO EACH DIRECTIONAL ABBREVIATION

FIGURE 18



ANNUAL WIND ROSE 1980.
NEWARK INTERNATIONAL AIRPORT
NEWARK, NEW JERSEY
WIND FREQUENCY APPEARS NEXT TO EACH DIRECTIONAL ABREVIATION

FIGURE 19



ANNUAL WIND ROSE 1981
NEWARK INTERNATIONAL AIRPORT
NEWARK, NEW JERSEY
WIND FREQUENCY APPEARS NEXT TO EACH DIRECTIONAL ABBREVIATION

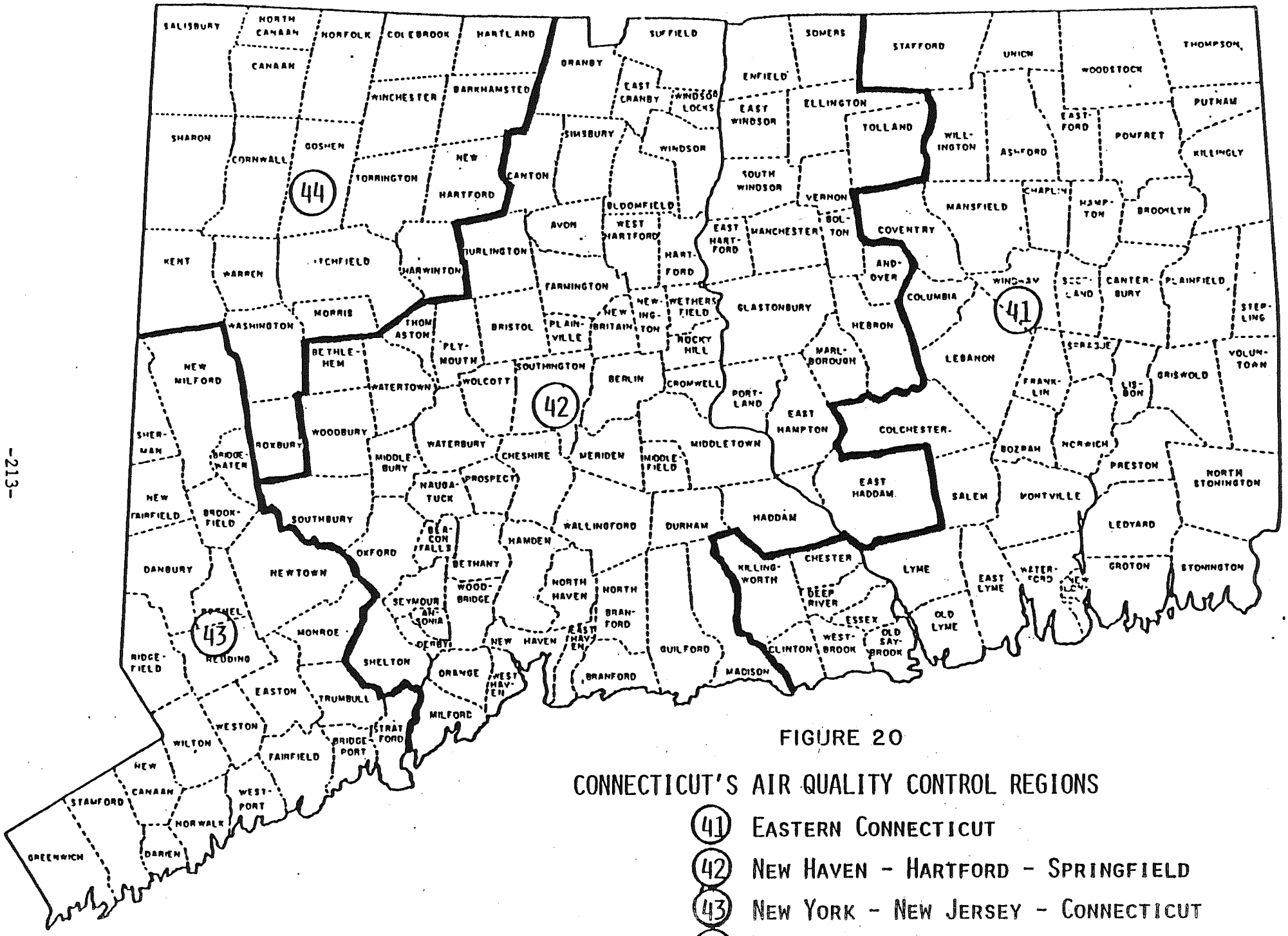


FIGURE 20

CONNECTICUT'S AIR QUALITY CONTROL REGIONS

(41) EASTERN CONNECTICUT

(42) NEW HAVEN - HARTFORD - SPRINGFIELD

(43) NEW YORK - NEW JERSEY - CONNECTICUT

(44) NORTHWESTERN CONNECTICUT

IX. ATTAINMENT AND NON-ATTAINMENT OF NAAQS IN CONNECTICUT'S AQCR'S

Connecticut's four Air Quality Control Regions (AQCR's, see Figure 15) have been analyzed for attainment status of National Ambient Air Quality Standards (NAAQS) for the following pollutants: 1) Total Suspended Particulates (TSP); 2) Sulfur Dioxide (SO_2); 3) Ozone (O_3); 4) Nitrogen Dioxide (NO_2); 5) Carbon Monoxide (CO); and 6) Lead (Pb). Table 31 shows the attainment/non-attainment status for the NAAQS's for each pollutant in each AQCR. The regions are classified as attainment, non-attainment or unclassifiable. Regions are non-attainment if the region, or any portion thereof, was in violation of any NAAQS at any time during 1978, 1979, or 1980. Unclassifiable regions are ones in which there were no monitors with which to determine attainment or non-attainment.

TABLE 30

CONNECTICUT'S COMPLIANCE WITH THE NAAQS (BY AQCR) FOR 1981

Pollutant	Primary or Secondary	NAAQS	AQCR 41	AQCR 42	AQCR 43	AQCR 44
TSP	Primary	Annual	A	A	A	A
		24-Hour	A	A	A	A
	Secondary	Annual	X	X	X	X
		24-Hour	X	X	X	X
SO2	Primary	Annual	A	A	A	A
		24-Hour	A	A	A	A
Ozone	Primary	1-Hour	X	X	X	X
	Seconary	1-Hour	X	X	X	X
NO2	Primary	Annual	A	A	A	A
	Secondary	Annual	A	A	A	A
CO	Primary	1-Hour	U	A	X	U
		8-Hour	U	X	X	U
	Secondary	1-Hour	U	A	X	U
		8-Hour	U	X	X	U
Lead		3-Month	A	X	X	X

X = Non-Attainment
U = Unclassifiable
A = Attainment

X. CONNECTICUT SLAMS AND NAMS NETWORK

On May 10, 1979, the U.S. Environmental Protection Agency made public its final rulemaking for ambient air monitoring and data reporting requirements in the "Federal Register" (Vol. 44, No. 92). The regulations are meant to ensure the acceptability of air measurement data, comparable data from all monitoring stations, cost-effective monitoring networks, and timely data submission for assessment purposes. The regulations address a number of key areas including quality assurance, monitoring methodologies, network design and probe siting for which detailed requirements and specific criteria are provided, and which will serve to form the framework for ambient air quality monitoring. These regulations apply to all parties conducting ambient air quality monitoring for the purpose of supporting or complying with environmental regulations. In particular, state/local control agencies and industrial/private concerns involved in PSD air monitoring are directly influenced by specific requirements, compliance dates and recommended guidelines.

Quality Assurance

The regulations specify the minimum quality assurance requirements for state and local agency monitoring networks (SLAMS), National Air Monitoring Station (NAMS), and for Prevention of Significant Deterioration (PSD) air monitoring. Two distinct and equally important functions make up the quality assurance program: assessment of the quality of monitoring data by estimating their precision and accuracy, and control of the quality of the data by implementation of quality control policies, procedures, and correction actions. (See Part F of Section I, Quality Assurance).

The data assessment requirements entail the determination of precision and accuracy for both continuous and manual methods. A one-point precision check must be carried out at least once every other week on each automated analyzer used to measure SO_2, NO_2, CO and O_3. Standards from which the precision check test data are derived must meet specifications detailed in the regulations. For manual methods, precision checks are to be accomplished by operating colocated duplicate samplers. In 1981, Connecticut maintained three colocated TSP monitors. They were: Bridgeport 009, Hartford 003, and Waterbury 005.

Accuracy determinations are accomplished by performing analyzer audits via special audit gases for automated analyzers, and reference flow devices for hi-vols. For SLAMS analyzers, accuracy audits are to be performed on each analyzer at least once per calendar year, while each PSD analyzer must be audited at least once each calendar quarter. All precision and accuracy data are derived through calculation methods specified by the Regulations, with the results reported quarterly on Data Assessment Report Forms. The NAMS network is actually part of the SLAMS network. The distinguishing characteristics of NAMS are: 1) only continuous instruments will be used to monitor gaseous pollutants; 2) the regulations specify a minimum number and locations for them; 3) data, in addition to being included in the annual report, will be reported quarterly to EPA.

In order to control the quality of data, the monitoring program must have operational procedures for each of the following activities:

1. Installation of equipment,
2. Selection of methods, analyzers, or samplers,
3. Zero/span checks and analyzer adjustments,
4. Calibration,
5. Control limits for zero/span and other control checks, and respective corrective actions when such limits are exceeded,
6. Control checks and their frequency,
7. Preventive and remedial maintenance,
8. Calibration and zero/span checks for multi-range analyzers,
9. Recording and validating data, and
10. Documentation of quality control information.

Monitoring Methodologies

Except as otherwise stated within the regulations, the monitoring method used must be reference or equivalent as designated by the EPA. Table 31 lists methods used in Connecticut's network in 1981 which were on the approved list as of 9/18/80. Additional updates to these approved methods are provided through the "Federal Register."

Network Design

The intent of this portion of the regulations is to describe monitoring objectives and general criteria to be applied in establishing the SLAMS networks and for choosing general locations for new monitors. Criteria are also presented for determining the location and number of monitors. These criteria will serve as the framework for all State Implementation Plan (SIP) monitoring networks that must be complete and in operation by January 1, 1983.

The SLAMS network is to be designed to meet four basic monitoring objectives: (1) to determine the highest concentration in the area; (2) to determine representative concentrations in areas of high population density; (3) to determine the ambient impact of significant sources or source categories; and (4) to determine general background concentration levels. Proper siting of a monitor requires precise specification of the monitoring objectives, which usually includes a desired spatial scale of representativeness. Within the regulations, spatial scales of representativeness to be used are detailed on a pollutant and monitoring objective basis.

Probe siting

Location and exposure of monitoring probes has been an area of confusion for a number of years because of conflicting guidelines and a lack of guidance or recommended criteria. The probe siting criteria promulgated are specific. They are also sufficiently inclusive to define the requirements for ensuring the uniform collection of compatible and comparable air quality data.

These criteria are detailed by pollutant and include vertical and horizontal probe placement, spacing from obstructions and trees, spacing from roadways, probe material and sample residence time, as well as various other considerations. A summary of the probe siting criteria is presented in Table 32. The siting criteria generally apply to all spatial scales except where noted. The most notable exceptions relate to spacing from roadways which is variable, dependent on traffic volume.

For the reactive gases SO_2, NO_2, and O_3, the regulations specify borosilicate glass, FEP teflon or their equivalent as the only acceptable probe materials. Additionally, in order to minimize the effects of particulate deposition on probe walls, sampling probes for reactive gases must have residence times of less than 20 seconds by specifications.

TABLE 31

U.S. EPA APPROVED MONITORING METHODS USED IN CONNECTICUT IN 1981

Pollutant	Manual Methods	Automated Methods	
	Reference	Reference	Equivalent
TSP	High Volume Method		
SO_2			Thermo Electron 43 (0.5)
CO		Bendix 8501-5CA (50)	
O_3		Bendix 8002 (0.5)	
NO_2		Monitor Labs 8440E (0.5) Bendix 8101-C (0.5)	

( ) approved range(s)

TABLE 32

SUMMARY OF PROBE SITING CRITERIA

Pollutant	Scale	Distance from Supporting Structure, Meters: Vertical	Distance from Supporting Structure, Meters: Horizontal[a]	Height Above Ground, Meters	Other Spacing Criteria
TSP	All		>2	2 - 15	1. Should be >20 meters from trees. 2. Distance from sampler to obstacle, such as buildings, must be at least twice the height the obstacle protrudes above the sampler.[b] 3. Must have unrestricted airflow 270 degrees around the sampler.[b4]. 4. No furnace or incineration flues should be nearby. 5. Must have minimum spacing from roads. This varies with height of monitor and spatial scale.
SO_2	All	3 - 15	>1	>1	1. Should be >20 meters from trees. 2. Distance from inlet probe to obstacle, such as buildings, must be at least twice the height the obstacle protrudes above the inlet probe.[b] 3. Must have unrestricted airflow 270 degrees around the inlet probe, or 180 degrees if probe is on the side of a building. 4. No furnace or incineration flues should be nearby.
CO	Micro	3+ - 1/2	>1	>1	1. Must be >10 meters from intersection and should be at a midblock location. 2. Must be 2-10 meters from edge of nearest traffic lane. 3. Must have unrestricted airflow 180 degrees around the inlet probe
	Middle Neighborhood	3 - 15	>1	>1	1. Must have unrestricted airflow 270 degrees around the inlet probe, or 180 degrees if probe is on the side of a building. 2. Spacing from roads varies with traffic.[d]

TABLE 32, continued

SUMMARY OF PROBE SITING CRITERIA

Pollutant	Scale	Distance from Supporting Structure, Meters: Vertical	Distance from Supporting Structure, Meters: Horizontal[a]	Height Above Ground, Meters	Other Spacing Criteria
O_3	All	>1	>1	3 - 15	1. Should be >20 meters from trees. 2. Distance from inlet probe to obstacle, such as buildings, must be at least twice the height the obstacle protrudes above the inlet probe. 3. Must have unrestricted airflow 270 degrees around the inlet robe, or 180 degrees if probe is on the side of a building. 4. Spacing from roads varies with traffic.[d]
NO_2	All	3 - 15	>1	>1	1. Should be >20 meters from trees. 2. Distance from inlet probe to obstacle, such as buildings, must be at least twice the height the obstacle protrudes above the inlet probe.[b] 3. Must have unrestricted airflow 270 degrees around the inlet probe, or 180 degrees if probe is on the side of a building. 4. Spacing from roads varies with traffic.[d]

a When probe is located on rooftop, this separation distance is in reference to walls, parapets, or penthouses located on the roof.
b Sites not meeting this criterion would be classified as middle scale.
c Distance is dependent on height of furnace or incineration flue, type of fuel or waste burned, and quality of fuel (sulfur and ash content). This is to avoid undue influences from minor pollutant sources.
d Distance is dependent upon traffic ADT, pollutant and spatial scale.

TABLE 33

1981 SLAMS AND NAMS SITES

LEAD

Town	Urban Area	Site	SLAMS or NAMS	Samp. Meth.	Analytic Method	Operating Schedule	Monitoring Objective	Spatial Scale and Representativeness
Ansonia	Bridgeport	003	S	Hi-Vol	Atomic Abs.	6-day	Population	Neighborhood
Bridgeport	Bridgeport	009	S	Hi-Vol	Atomic Abs.	6-day	Population	Neighborhood
Bridgeport	Bridgeport	123	S	Hi-Vol	Atomic Abs.	6-day	Population	Neighborhood
Bristol	Bristol	001	S	Hi-Vol	Atomic Abs.	6-day	Population	Neighborhood
Danbury	Danbury	002	S	Hi-Vol	Atomic Abs.	6-day	Population	Neighborhood
Hartford	Hartford	014	S	Hi-Vol	Atomic Abs.	6-day	Population	Neighborhood
Meriden	Meriden	002	S	Hi-Vol	Atomic Abs.	6-day	Population	Neighborhood
Middletown	~~Meriden~~ Hartford	003	S	Hi-Vol	Atomic Abs.	6-day	Population	Neighborhood
New Britain	New Britain	007	S	Hi-Vol	Atomic Abs.	6-day	Population	Neighborhood
New Haven	New Haven	123	S	Hi-Vol	Atomic Abs.	6-day	High Con.	Middle
Norwalk	Norwalk	012	S	Hi-Vol	Atomic Abs.	6-day	Population	Neighborhood
Stamford	Stamford	001	S	Hi-Vol	Atomic Abs.	6-day	Population	Neighborhood
Torrington	Torrington	123	S	Hi-Vol	Atomic Abs.	6-day	Population	Neighborhood
Wallingford	New Haven	001	S	Hi-Vol	Atomic Abs.	6-day	Population	Neighborhood
Waterbury	Waterbury	007	S	Hi-Vol	Atomic Abs.	6-day	Population	Neighborhood
Waterbury	Waterbury	123	S	Hi-Vol	Atomic Abs.	6-day	High Con.	Middle

NITROGEN OXIDES

				Sampling & Analysis Method			
Bridgeport	Bridgeport	123	S	Chemiluminescent	Contin.	~~Population~~ Hi. Conc.	Neighborhood
E. Hartford*	Hartford	003	S	Chemiluminescent	Contin.	~~Population~~ Hi. Conc.	Neighborhhod
Hartford	Hartford	123	S	Chemiluminescent	Contin.	~~Population~~ Hi. Conc.	Neighborhood
New Haven	New Haven	123	S	Chemiluminescent	Contin.	~~Population~~ Hi. Conc.	Neighborhood

* Hartford 123 replaced by East Hartford 003

TABLE 33, Continued

1981 SLAMS AND NAMS SITES

OZONE

Town	Urban Area	Site	SLAMS or NAMS	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale and Representativeness
Bridgeport	Bridgeport	123	N	Chemiluminescent	Cont.	Population	Neighborhood
Danbury	Danbury	123	S	Chemiluminescent	Cont.	Population	Urban
E. Hartford	Hartford	003	N	Chemiluminescent	Cont.	Population	Neighborhood
Greenwich*	Stamford	004	S	Chemiluminescent	Cont.	Background	Regional
Greenwich Pt.	Stamford	017	S	Chemiluminescent	Cont.	Background	Regional
Groton	New London	005	S	Chemiluminescent	Cont.	High Con.	Urban
Middletown	~~Meriden~~ Hartford	007	N	Chemiluminescent	Cont.	~~High Con.~~	Urban
New Haven	New Haven	123	N	Chemiluminescent	Cont.	~~High Con.~~ Population	Neighborhood
Stafford	~~Hartford~~ none	001	N	Chemiluminescent	Cont.	High Con.	Urban
Stratford	Bridgeport (NYC Downwind)	007	N	Chemiluminescent	Cont.	~~Population~~ Hi. Conc.	Urban

CARBON MONOXIDE

Bridgeport	Bridgeport	004	S	NDIR	Cont.	High Con.	Micro
Hartford	Hartford	012	S	NDIR	Cont.	High Con.	Micro
New Britain	New Britain	002	S	NDIR	Cont.	High Con.	Micro
New Haven	New Haven	007	S	NDIR	Cont.	High Con.	Micro
Stamford	Stamford	020	S	NDIR	Cont.	High Con.	Micro

* Greenwich 004 replaced by Greenwich 017