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In Pursuit of Clean Air: A Data Book of Problems and Strategies at the State Level

1982 Update

Volume 1: Federal Regions I, II, and III

D. B. Garvey, S. B. Moser, and D. G. Streets

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Energy and Environmental Systems Division
Integrated Assessments and Policy Evaluation Group

August 1982

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PREFACE

The Clean Air Act Amendments of 1977 reaffirmed a national commitment to clean air and set rigorous requirements to achieve and maintain the National Ambient Air Quality Standards across the nation. The solutions to air quality problems, however, must take place at the state and local levels. The strategies adopted by the states concern the U.S. Department of Energy because it must identify possible conflicts between a national energy policy of increased coal use and the pursuit of clean air.

To summarize the state strategies, a five-volume report was prepared in 1980 on air quality, nonattainment areas, and attainment strategies of each state, based in part on the revised State Implementation Plans submitted in accordance with the 1977 amendments. That report is entitled In Pursuit of Clean Air: A Data Book of Problems and Strategies at the State Level, Argonne National Laboratory Report ANL/EES-TM-90, Vols. 1-5 (February 1980). Subsequently, a supplement to the five-volume set was prepared, ANL/EES-TM-129 (August 1980).

This four-volume report is an updated second edition of the five-volume set, presenting new air quality data and maps, attainment strategies, and maps of nonattainment areas, as of December 31, 1981. State maps of Prevention of Significant Deterioration (PSD) Class I areas are included. Data on energy sources are presented, including both an update of power plant information and new material on industrial boilers. Maps and data on county-level coal production are included. Maps and data on counties and Air Quality Control Regions are also presented.

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ABSTRACT

The Clean Air Act Amendments of 1977 and U.S. Environmental Protection Agency regulations set stringent requirements for the control of emissions in areas where the National Ambient Air Quality Standards were being exceeded. This second edition of four volumes updates a previous five-volume summary of nonattainment area designations and attainment strategies of the states, bringing the information up to date as of December 31, 1981. This edition also includes state information that was presented in another report prepared as a supplement to the first edition -- information on Prevention of Significant Deterioration Class I areas and on coal quality and reserves. In addition, the volumes contain new state-level data on power plants, industrial boilers, 1979 SAROAD monitor readings, state implementation plan emission limits for SO_2 and particulate-matter sources, and maps of counties and Air Quality Control Regions.

1 INTRODUCTION

The Clean Air Act Amendments of 1977 set rigorous requirements for the cleanup of those areas of the United States where the pollutants in the ambient air exceeded the levels set by the National Ambient Air Quality Standards (NAAQS). The legislation established December 31, 1982, as a deadline for attainment of the standards, with the possibility of an extension to December 31, 1987, for two of the six criteria pollutants. To ensure that timely attainment would occur, Congress also set a deadline for the submission of state implementation plans (SIPs) to clean up nonattainment areas. These SIPs outlined additional controls for existing sources and the review procedures and emission limits for new sources. The state plans were to be submitted to the U.S. Environmental Protection Agency (EPA) by January 1, 1979, and were to be approved by EPA and in effect by July 1, 1979. The consequences of missing the deadlines were restrictions on new-source construction and the possible loss of certain federal funding. In addition, the

law required EPA to promulgate regulations if states failed to adopt adequate implementation plans.

The EPA, charged with administering the 1977 amendments, set guidelines for the designation of nonattainment areas and for the contents of approvable SIPs. The states designated areas and then submitted plans for either different pollutants, different areas, or both. The EPA reviewed the designations and the SIPs, either approving or disapproving them. As of December 31, 1981, more than half of the states had complete EPA-approved SIPs in effect for all areas that were in nonattainment of the NAAQS. A number of SIP proposals, however, were still under review by EPA, and a few were still being developed by states.

The location of nonattainment areas and the SIPs for those areas are matters that directly concern energy policy makers. For example, any proposal to reduce oil consumption by converting existing oil-burning facilities to coal must address the effect of possible increased emissions on nonattainment areas and the likely restrictions the sources would face. To make this and similar tasks easier, we compiled a data book of nonattainment areas, SIP attainment strategies, and other air-quality policy data as of February 1980. This information was published in a five-volume report covering all 48 contiguous states,[1] and was updated as of August 1980 in a supplement.[2]

The four volumes of this second edition of the data book update all the previous state-level information, including nonattainment designations, SIPs for nonattainment areas, SAROAD (Storage and Retrieval of Aerometric Data[3]) monitor data, and power plant locations and fuel use. They also contain new information on Prevention of Significant Deterioration (PSD) areas, industrial boilers, coal production and reserves, and state emission limitations for sources of sulfur dioxide and particulate matter. The four volumes are organized by Federal Region, as follows: Volume 1, Regions I, II and III; Volume 2, Regions IV and VI; Volume 3, Regions V and VII; and Volume 4, Regions VIII, IX and X. The summary material contained in Secs. 1-5 is repeated at the beginning of each of the four volumes. Section 2 summarizes EPA regulatory action; Sec. 3 provides new maps of U.S. counties containing nonattainment areas as of December 31, 1981, and discusses changes in nonattainment designations; Sec. 4 addresses the status of SIP submissions and developments in SIP attainment strategies; and Sec. 5 provides a detailed description of the data contents for each state.

2 EPA REGULATORY ACTIVITY

2.1 BACKGROUND

According to the 1977 Clean Air Act Amendments and subsequent EPA regulations, states were required to submit new state implementation plans for all nonattainment areas by January 1, 1979. The SIPs were to outline strategies and regulations necessary to attain the standards for the criteria pollutants -- sulfur dioxide (SO_2), nitrogen oxides (NO_2), total suspended particulates (TSP), carbon monoxide (CO), and ozone (O_3) -- by December 31, 1982. A five-year extension for attainment of the CO and O_3 standards to December 31, 1987, was possible if the SIP indicated that, despite the imposition of reasonably available control technology (RACT) on stationary sources of hydrocarbons (precursors of ozone), attainment could not be achieved by the earlier deadline. If a state failed to have an approved SIP in effect by July 1, 1979, EPA would impose sanctions on that state. No new major sources of a pollutant could be built in an area that was designated nonattainment for that pollutant, and federal funds for highway projects and sewage treatment plants could be restricted or withheld. EPA has ruled that the construction ban only applies to the exact nonattainment area without an approved SIP. States can request an exemption from the ban for any particular portion of a nonattainment area that has an approved SIP.[4] As of August 1981, EPA estimated that portions of 200 counties were under the construction ban.

2.2 CONDITIONAL APPROVAL

Only one state actually had an EPA-approved SIP in effect by the 1979 deadline, and only 28 states had complete EPA-approved SIPs two and a half years after the deadline. The EPA developed several administrative procedures to avoid imposing sanctions on many states. The agency accepted, reviewed, and approved submissions of partial SIPs (e.g., plans for an individual nonattainment area or plans for a particular pollutant) rather than holding up the process until states submitted SIPs for all nonattainment areas. Furthermore, EPA made possible the conditional approval of a revised SIP. If the SIP was substantially acceptable, with only minor deficiencies, approval was granted on the basis of the state's agreement to correct the deficiencies by an EPA-determined deadline. Sanctions were not imposed, and the state was given time to complete the SIP. Each conditional approval included a deadline (typically nine months from the action) for the state to submit a correction. If a state failed to correct the deficiencies by the conditional approval deadline, the EPA considered reinstating the ban on new sources. The agency has not yet taken such action for a conditionally approved SIP.

2.3 SIPS FOR SECONDARY NONATTAINMENT AREAS

States could request an 18-month extension of the deadline for submitting an SIP for the attainment of secondary standards. The extension was to be approved if the state could demonstrate that attainment would require emission reductions beyond those achievable with RACT applied to stationary sources. If an extension was granted, a revised SIP was to be submitted by July 1, 1980, and approved by January 1, 1981.

Secondary standards differing from primary standards have been set only for SO_2 and TSP. Only three states have areas with violations of the secondary SO_2 standards; secondary TSP violations are much more widespread. All of the extensions requested for secondary standards were for TSP. The states typically indicated that attainment would require control of nontraditional sources of particulates (for example, resuspended road dust, construction and demolition dust, tire particles, dust from unpaved roads). Control techniques for these nontraditional sources are not well developed and have not been covered in any EPA Control Guidance Document. The 1977 Amendments did not establish any deadline for attainment of the secondary standards other than "as expeditiously as possible." Consequently, EPA does not plan to penalize new sources if an SIP for the attainment of the secondary standards is late.[5]

2.4 SIPS WITH EXTENSIONS

States that requested extensions of the deadline for O_3 and CO attainment were to submit further SIP revisions by July 1, 1982. These revisions include strategies for attainment by December 31, 1987. Thirty-one states and the District of Columbia had requested such extension for all or part of the state (see Table 2.1).

In September 1980, EPA published a proposed policy[6] outlining the requirements and criteria for approval of SIPs with extensions. The revised SIPs were to include legally enforceable measures to impose RACT on sources, not just schedules for the adoption of measures. Full implementation of an inspection and maintenance program is to be achieved by December 31, 1982, with the July SIP to include the rules and regulations necessary for such implementation. The SIPs were also to include commitments and schedules for implementing transportation control measures, including funding and legal authority to support the commitments. As the deadline of July 1 approached, EPA formally contacted the governors of the 31 states,[7] reminding them of their responsibility to assure the submissions of the revised SIPs. The same sanctions that were imposed on states without revised SIPS by the July 1, 1979, deadline were to be imposed on any states failing to meet the July 1982 deadline.

Table 2.1 States Requesting an Extension Beyond 1982 for Attaining the Ozone and Carbon Monoxide Standards

EPA Region	Ozone	Carbon Monoxide
I	Connecticut	Connecticut
	Massachusetts	Massachusetts
		New Hampshire
	Rhode Island	
II	New Jersey	New Jersey
	New York	New York
III	Delaware	
	District of Columbia	District of Columbia
	Maryland	Maryland
	Pennsylvania	Pennsylvania
	Virginia	
IV		Georgia
	Kentucky	Kentucky
		North Carolina
	Tennessee	Tennessee
V	Illinois	Illinois
	Indiana	Indiana
	Michigan	Michigan
	Ohio	Ohio
	Wisconsin	Wisconsin
VI		New Mexico
	Texas	
VII	Missouri	Missouri
VIII	Colorado	Colorado
	Utah	Utah
IX		Arizona
	California	California
		Nevada
X		Alaska
		Idaho
	Oregon	Oregon
	Washington	Washington

2.5 SIPS PROJECTING ATTAINMENT BY DECEMBER 31, 1982

The revised SIPs submitted in response to the requirements of the 1977 Amendments were approved by EPA if the control measures indicated that attainment could be achieved by the statutory deadline of December 31, 1982. Any areas that continue to be in nonattainment of the standards after the deadline will be subject to the sanctions outlined in the amendments -- a ban on the construction of new major sources of emissions of the pollutant for which the area is in nonattainment and the possible withholding of highway and sewage treatment funds. There is considerable current controversy over EPA's discretion in imposing the ban.[8]

3 NONATTAINMENT

3.1 REDESIGNATIONS OF AREAS

Nonattainment areas for the criteria pollutants were initially designated in May 1978. Changes in designations have been proposed and some accepted and promulgated by EPA since that date. These changes are not necessarily to attainment status. In some cases, a state has successfully argued that monitoring data were inadequate or disputable and requested a redesignation to unclassified. A number of redesignations have been proposed by the states and accepted by EPA, but final promulgation is pending expiration of the required public-comment period. The maps of nonattainment areas presented in these volumes include only those redesignations listed as final rulings in the Federal Register as of December 1981.

3.2 LOCATION OF NONATTAINMENT AREAS

A series of maps are included, presenting counties containing nonattainment areas as designated December 31, 1981 (Figs. 3.1-3.5). If a county contains both a primary and a separate secondary nonattainment area, the primary violation is indicated on the map. This circumstance only occurs for TSP.

Ozone nonattainment is the most prevalent problem in the United States, with significant portions of the populated northeastern, midwestern, and Pacific coast states in violation of the standards. TSP nonattainment is the next most serious problem, with 42 states containing at least one area in violation of the primary standard. There are few SO_2 nonattainment areas in comparison to those for TSP and O_3, and they tend to be in industrialized areas of the East and Midwest. The SO_2 nonattainment areas in the western part of the United States are typically the result of emissions from nonferrous smelters. Carbon monoxide nonattainment is limited to urban areas, reflecting the fact that transportation contributes more than 80% of CO concentrations. Nitrogen oxide nonattainment is currently limited to three urban areas -- Chicago, Denver, and Los Angeles.

Table 3.1 displays the number of counties containing nonattainment areas for the primary standards, summed by Federal Region. (Figure 3.6 displays the boundaries of Federal Regions.) Region V, the industrial Midwest, has the largest number of counties containing nonattainment areas for all pollutants except carbon monoxide. Region IX has the largest percentage of its counties in nonattainment for all criteria pollutants.

The total numbers of counties containing nonattainment areas for each of the primary standards, as presented in the first five-volume report (May 1979),[1] the supplement (July 1980),[2] and this report (December 1981), are compared in Table 3.2. In general, the number of counties in nonattainment

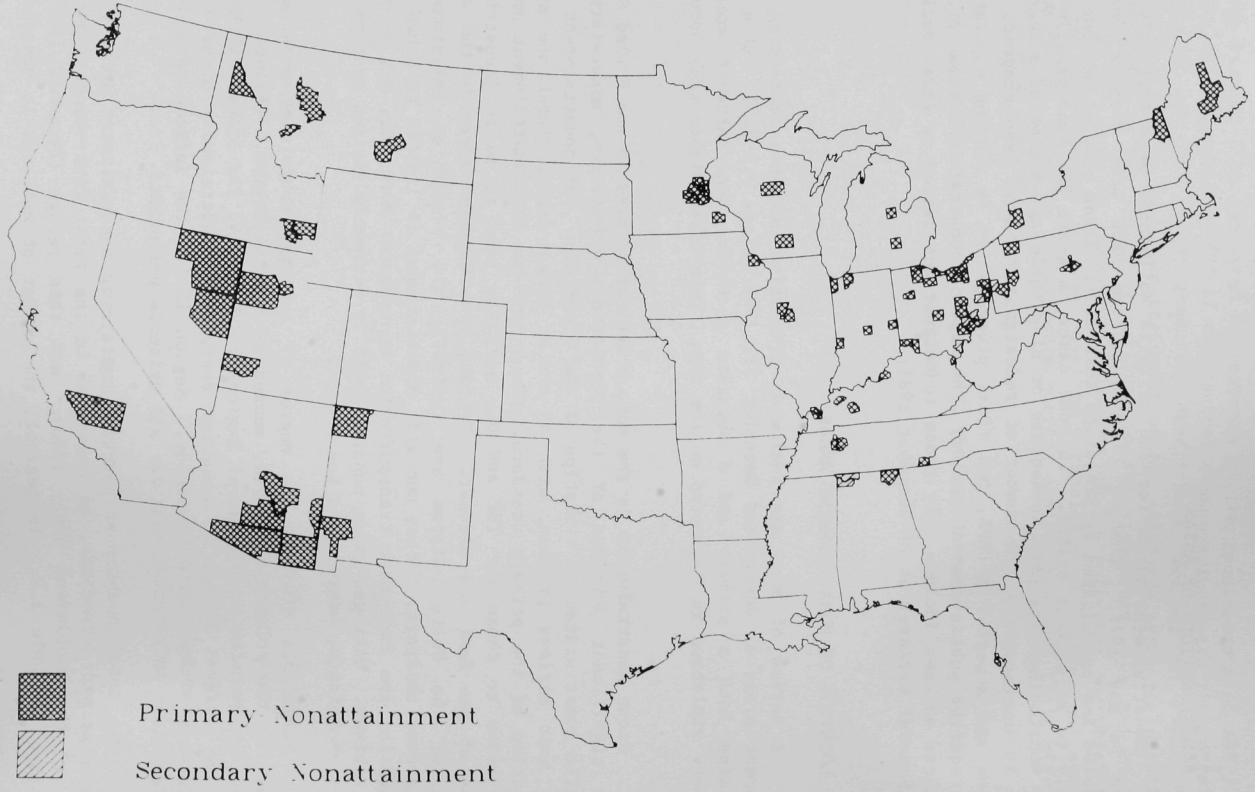


Fig. 3.1 U.S. Counties Containing Designated SO_2 Nonattainment Areas as of December 1981

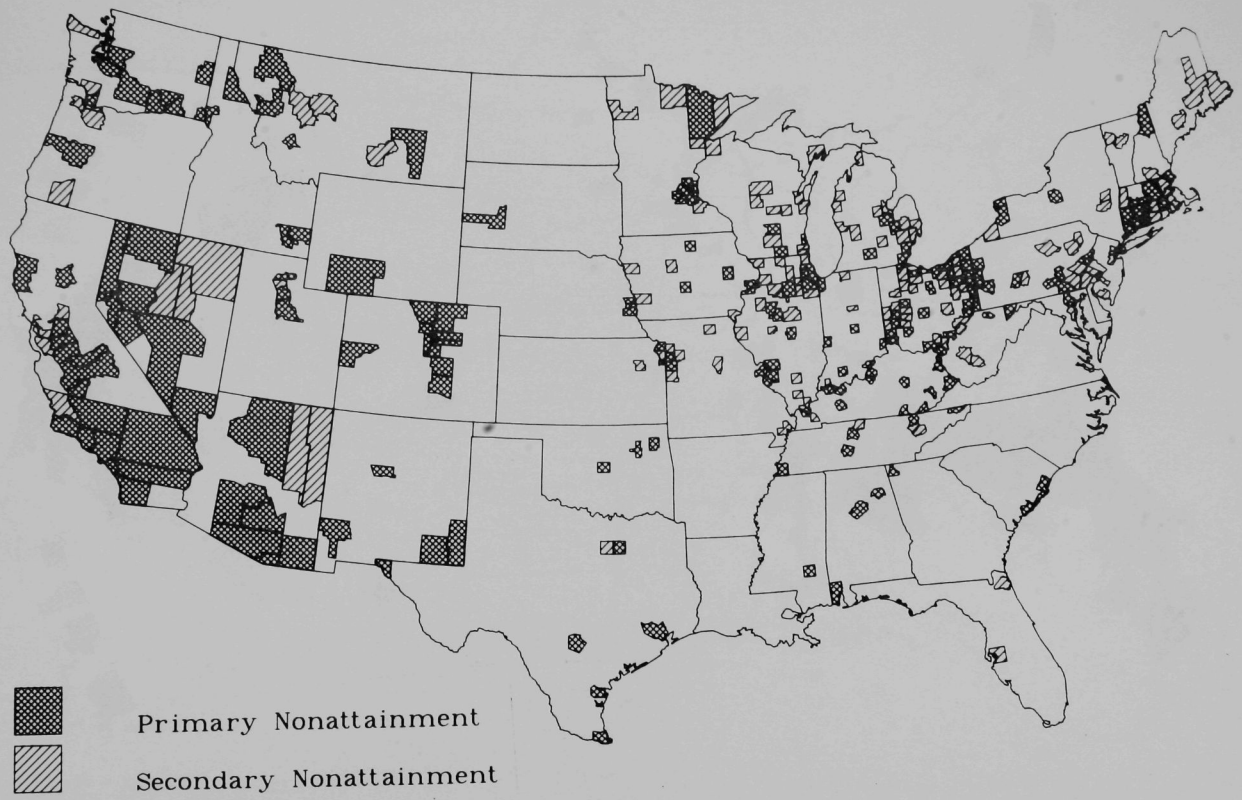


Fig. 3.2 U.S. Counties Containing Designated TSP Nonattainment Areas as of December 1981

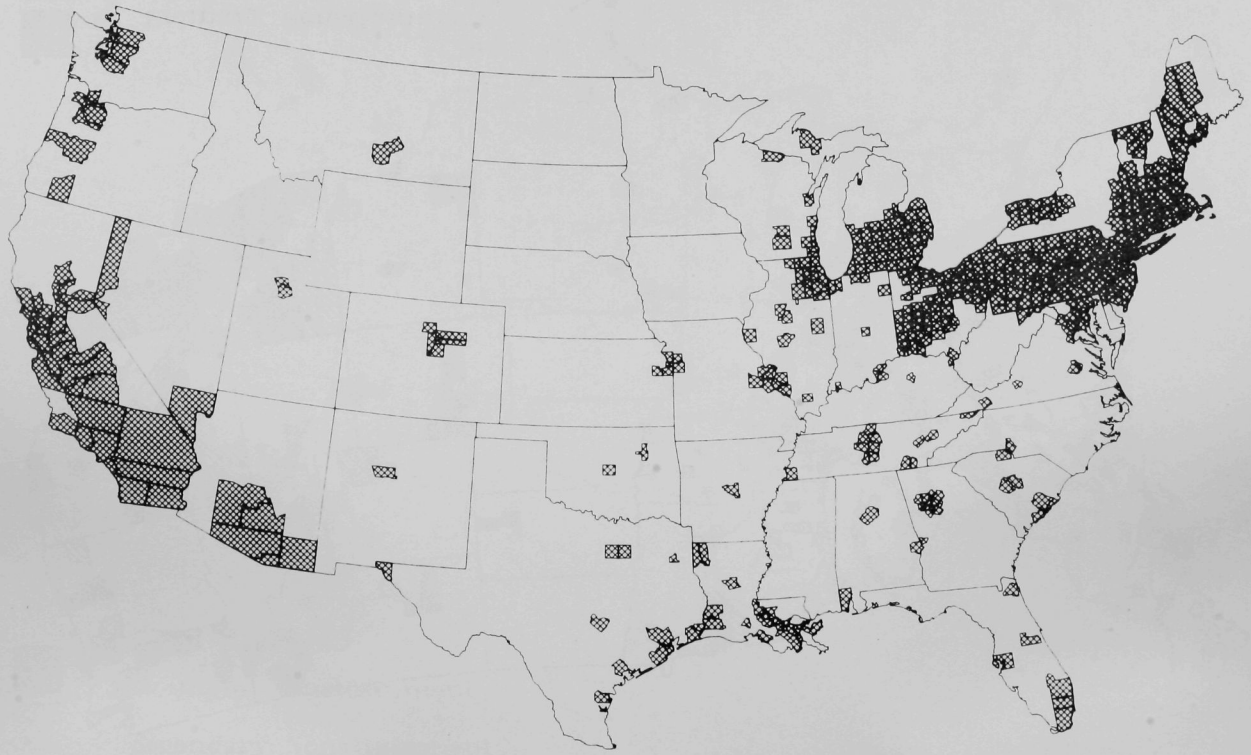


Fig. 3.3 U.S. Counties Containing Designated O_3 Nonattainment Areas as of December 1981

Fig. 3.4 U.S. Counties Containing Designated CO Nonattainment Areas as of December 1981

Fig. 3.5 U.S. Counties Containing Designated NO_2 Nonattainment Areas as of December 1981

Table 3.1 Number of Counties in Violation of Primary NAAOS as of December 31, 1981

Federal Region	Total No. of Counties	Number of Counties in Nonattainment for:				
		SO_2	TSP	CO	O_3	NO_2
I	67	2	13	17	56	0
II	83	1	3	26	54	0
III	243	7	17	8	86	0
IV	735	10	25	10	46	0
V	524	39	58	27	142	1
VI	502	2	13	4	35	0
VII	411	1	12	6	10	0
VIII	291	6	20	16	9	1
IX	88	8	30	30	42	4
X	119	3	14	11	10	0
Total	3063	79	205	155	490	6

Table 3.2 Numbers of Counties in Violation of the Primary NAAOS in Three Successive Reports

Date	SO_2	TSP	CO	O_3	NO_2
May 1979	93	248	169	571	7
July 1980	87	227	167	522	7
Dec. 1981	79	205	155	490	6

has decreased for all pollutants. However, many of the redesignations of nonattainment areas are not evident at the county level of aggregation. Approximately 60% of all redesignations were reductions in the size of nonattainment areas. These subcounty changes are reflected in the state-level maps of nonattainment areas presented in the four volumes of this data book.

Fig. 3.6 Boundaries of the Federal Regions

4 REVISED SIPS

4.1 OVERVIEW OF REVISED SIPS

Revised SIPs were to include the following data for the pollutant for which an area was designated nonattainment: an emission inventory; emission limits on existing sources; a procedure for new-source review; and a strategy for making "reasonable further progress" toward attainment of the standard by the statutory deadline. The EPA regional offices reviewed the SIPs and recommended appropriate action -- approval, disapproval, request for more information and continued review, or, if a plan was judged to comply substantially with the regulation, conditional approval. Final promulgation of the ruling was made by EPA headquarters and published in the Federal Register.

4.2 STATUS OF SIP SUBMISSIONS

As of the statutory deadline of July 1, 1979, only Wyoming had a complete, revised, EPA-approved SIP for nonattainment areas in place. By December 1981, a full two and a half years after the deadline, only 28 states had complete, revised, approved (or conditionally approved) SIPs in place. One state (North Dakota) has no nonattainment areas. Nineteen states thus had portions of the required SIPs still under EPA review or, in a few cases, still incomplete.

The majority of pending SIPs were required for areas in violation of the TSP standard. As seen in Table 4.1, SIPs for TSP in eight states were still being reviewed by EPA, and five more states had not submitted complete SIPs. States typically submitted a single SIP for CO and O_3 nonattainment areas, proposing controls on mobile sources for attainment of the standards for these two transportation-related pollutants. The table reflects this treatment by the states, with two SIPs disapproved, one incomplete, and four under review. The table is based on the "worst case" status of the SIP in each state. If, for example, all but one nonattainment area was covered by an approved SIP and the SIP for that one area was under review, the state was considered to be in the "under review" category.

Figures 4.1-4.3 provide an overview of the status of SIP submissions by state and pollutant. Plans for SO_2 nonattainment areas are incomplete in Pennsylvania, and still in the review process in Alabama, Arizona, Idaho, Iowa, and Indiana. The SO_2 plan for Utah was disapproved because EPA rejected the limits proposed for a copper smelter as inadequate for attainment. Portions of the TSP SIPs are still missing in Arizona, California, Missouri, New York, and Tennessee. Kansas is the sole state with an incomplete CO/O_3 SIP. The two states indicated as having had an SIP for CO/O_3 disapproved are Kentucky (for O_3) and Montana (for CO). In all cases, however, the summary of the SIP status at the state level is an oversimplification. An SIP for a

Table 4.1 Summary of Status of Revised SIPs for Primary Nonattainment Areas, as of December 1981

Status of SIP	Number of States with SIP for Pollutant			
	SO_2	TSP	CO/O_3	NO_2
Approved or Conditionally Approved	16	25	36	2
Incomplete	1	5	1	0
Under Review	5	8	4	1
Disapproved	1	0	2	0
Total[a]	23	38	43	3

[a]The remaining states, to a total of 48 contiguous states, are not required to submit revised SIPs.

single area may be still undergoing review. The status of a particular nonattainment area is presented in the state-level material in these volumes.

4.3 STATUS OF SANCTIONS

As of December 1981, 19 states had nonattainment areas without revised, approved SIPs. Consequently, portions of those 19 states were subject to the sanctions provided in the 1977 Clean Air Act Amendments. The ban on new-source permits would apply to any new major source of the pollutant for which the area is in nonattainment and lacks an approved SIP. States typically submitted SIPs area-by-area and pollutant-by-pollutant; EPA acted on the plans in the same area-specific fashion. The sanction could thus affect only a small area. For example, Pennsylvania's SIP for SO_2 is still incomplete. The nonattainment area is a small portion of Allegheny County surrounding a steel mill. The sanctions imposed on Pennsylvania would, in this case, be limited to proposed new major sources of SO_2 in a small subsection of Allegheny County.

Nonattainment areas for SO_2 and TSP are small, subcounty areas. (See the maps in the state-level material, for example.) Consequently, a ban on new sources of these pollutants would have limited effect. Nonattainment areas for O_3, however, are typically much larger. Therefore, a ban

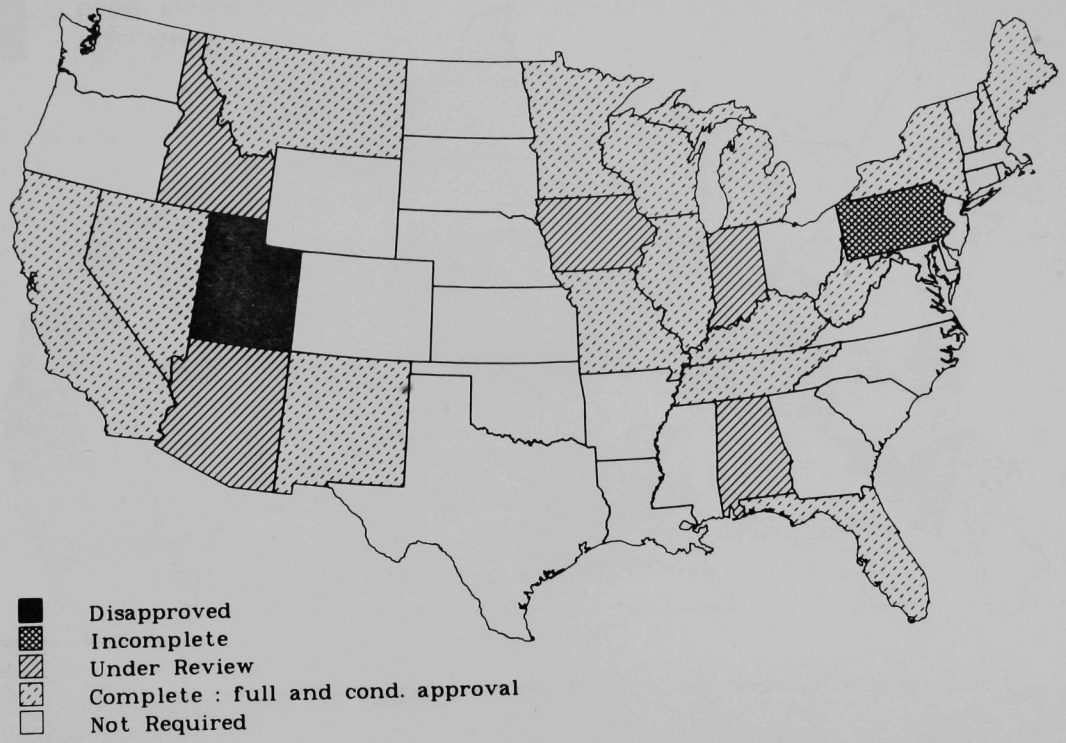


Fig. 4.1 Status of Revised SIPs for Primary SO_2 Nonattainment Areas as of December 1981

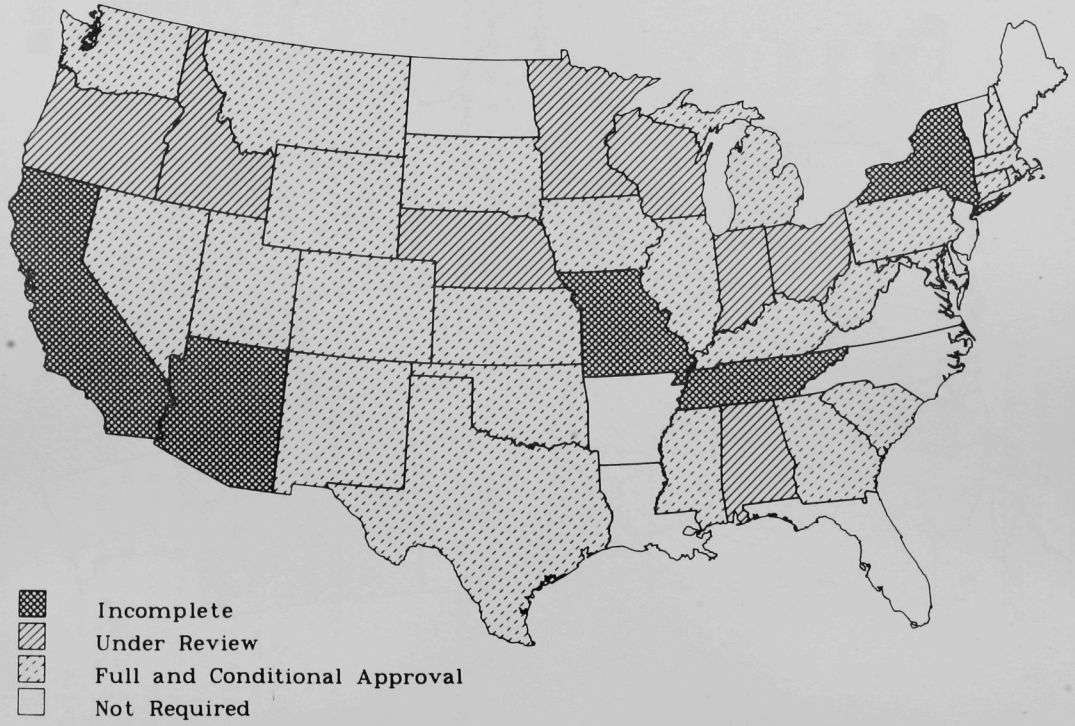


Fig. 4.2 Status of Revised SIPs for Primary TSP Nonattainment Areas as of December 1981

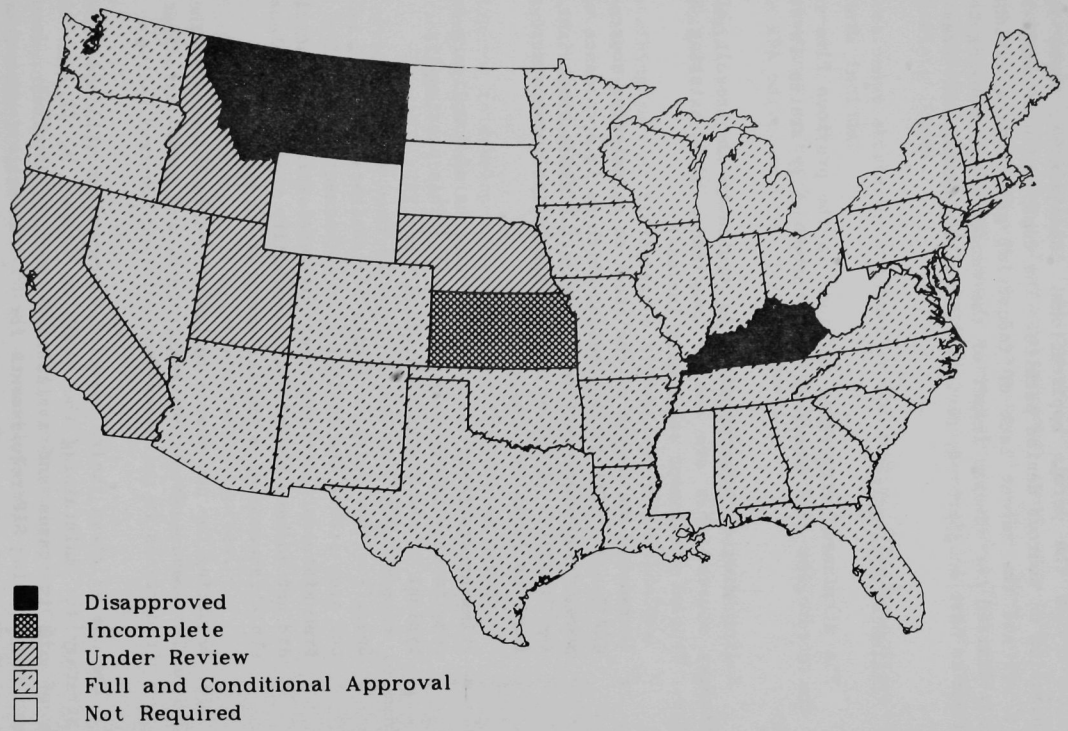


Fig. 4.3 Status of Revised SIPs for Primary O_3, CO, and NO_2 Nonattainment Areas as of December 1981

accompanying an incomplete SIP for O_3 could have a much greater effect on hydrocarbon (HC) sources. The actual impact of the statutory ban on new major sources is difficult to ascertain. State and local agencies for air pollution control review the permit applications; consequently, there is no central information on sources denied permits. The combination of small areas subject to a ban and the recent lack of industrial growth on a national level has likely limited the adverse impact of the sanction accompanying the failure of a state to have an approved, revised SIP for a nonattainment area.

4.4 ATTAINMENT STRATEGIES

The attainment strategies outlined in the previous five-volume report are the strategies that continue to be proposed by states in their revised SIPs.

Sulfur dioxide nonattainment is typically the result of individual stationary sources that are out of compliance with existing SIP emission limits. Typical attainment strategies include:

- Increasing the height of the stack on an existing source to GEP level. (GEP is that height which is in accordance with good engineering practices; usually 2.5 times the height of the facility. A taller stack disperses pollutants more and improves local air quality.)

- Bringing stationary sources that are out of compliance into compliance with SIP emission limits. This strategy is typical of the states in Regions V and VI.

- Specifying new emission limits for smelters that will bring the area around the smelter into attainment. Most SIPs from states with large nonferrous-metal smelting industries did not address the adverse air quality impact of the possible issuance of a smelter exemption order.

- Requiring the new-source review procedure outlined by the 1977 Amendments and EPA regulations, and requiring offsets (reductions in emissions from existing sources).

The use of clean fuels (especially low-sulfur oil) had been a successful strategy for maintaining the NAAQS in Regions I, II, and III. As the price of oil increases and availability becomes uncertain, however, these states are reviewing SIP requirements for SO_2 and proposing to relax stringent sulfur-in-fuel regulations. Connecticut, for example, proposed increasing the limit from 0.5% sulfur (by weight) to 1.0%.[9] Maine proposed an increase from 1.5% to 2.5%.[10] Source-specific relaxations have also been proposed. For example, New York proposed allowing a General Electric plant in Rotterdam to burn fuel with 2.8% sulfur content instead of 2.0%.[11]

In contrast to those for SO_2, nonattainment areas for particulate matter are widespread, and the causes of this air pollutant are both source-specific and area-wide. The "traditional" sources of particulates are stack and fugitive process emissions from fuel combustion, solid waste disposal, and industrial processes. In many urban nonattainment areas, controls on traditional sources will not be adequate to attain the standards (particularly the secondary ones), since "nontraditional" sources (resuspended road dust, construction and demolition dust, tire particles, etc.) are significant contributors to particulate levels.

The attainment strategies outlined in the revised SIPs for particulate-matter standards include:

- Redesignating rural areas as attainment, on the basis of the EPA policy on rural fugitive dust.
- Drawing nonattainment areas as small as possible around monitors recording violations.
- Retaining current SIP emission limitations on particulate matter from stacks.
- Requiring reasonably available control technology (RACT) on fugitive industrial emissions.
- Planning to develop control strategies (such as street sweeping and washing construction truck tires) for non-traditional sources of fugitive dust in urban areas.

For nitrogen oxide nonattainment areas, the SIPs propose to achieve attainment by:

- Relying on increased controls on motor vehicles, which are required to attain the O_3 and CO standards; and
- Studying possible controls for stationary sources.

The SIPs for ozone and carbon monoxide, both transportation-related pollutants, provided for:

- RACT on stationary sources;
- Transportation control measures that rely heavily on the reductions projected to result from the Federal Motor Vehicle Emissions Control Program; and
- Inspection and maintenance programs for motor vehicles in the states requesting extensions to 1987.

5 DATA DESCRIPTION

Each state is placed in alphabetical order in the section covering its Federal Region. For each state, the following material is presented.

5.1 STATE TITLE PAGE

A summary of the data for each state is presented to enable the reader to judge the general characteristics of a state at a glance. The air quality summary table lists the number of counties containing nonattainment (NA) areas formally designated by EPA as of December 1981. The counties are listed for each criteria pollutant and each standard. If a county contains both primary and secondary nonattainment areas, that county is counted in both totals. The status of the revised State Implementation Plan (SIP) for these nonattainment areas is categorized by the formal EPA action taken as of December 1981, as follows: approved (A); conditionally approved (C); incomplete (I); disapproved (D); submitted but still under review (R); or revised SIP not required (N), if the state does not contain any nonattainment areas for a particular pollutant. State implementation plans are also required for areas in violation of the secondary standard, but the 1977 Clean Air Act Amendments allowed an extension beyond the July 1, 1979, deadline for the submission of these plans. This situation is indicated by "E" in the summary table.

The air quality summary table also shows the total number of monitors reported in SAROAD for 1979 that gave valid readings for each criteria pollutant on each standard. (It is interesting to compare these totals with similar data compiled from the 1975 SAROAD in the first edition of "In Pursuit of Clean Air": the number of monitors reporting valid readings for SO_2 has decreased from 1975 to 1979 in all regions. For example, in Illinois, SO_2 monitors have been reduced from 108 to 42, in Massachusetts from 71 to 50, and in California from 77 to 48. According to EPA[12], this reduction is the result of an effort to standardize the air monitoring network by relocating monitors, eliminating redundant monitors, and upgrading monitoring collection techniques. In particular, monitors using the gas bubbler technique are being replaced by those using a continuous method for measuring sulfur dioxide.)

The state title page also lists the number of monitors with violations of the primary standards for each criteria pollutant, as recorded in 1979 SAROAD data. The air quality summary concludes with a tabular presentation of the status of the state's attainment areas in terms of PSD classifications. The number of mandatory Class I areas is listed, as is the number of recommended Class I areas and mandatory Class II areas, i.e., those areas that cannot be redesignated as Class III. See Sec. 5.6 for additional information.

The state title page also provides a summary of the data on energy sources and resources. Coal production in 1979 and as projected for 1985 is presented, together with an estimate of coal reserves and the range of sulfur

content of coal in the state. (See Sec. 5.13 for sources of these data.) Total fuel use by industrial boilers is listed, based on the totals in the 1974 file of major fuel-burning installations (MFBI).[13] The number of fossil-fueled power plants located in the state completes the title page.

5.2 SIP ATTAINMENT STRATEGIES

The Clean Air Act required states with nonattainment areas to submit a state implementation plan (SIP) outlining proposed strategies for attaining the NAAQS. Typically, the states prepared the plans for each pollutant and for each nonattainment area individually. In many cases the SIPs were also reviewed by EPA in this somewhat piecemeal fashion. The tabular presentation of SIP attainment strategies -- the second page of each state's section -- summarizes the plans submitted by each state, on the basis of information gathered by the authors from individual SIPs, which are available at EPA's Public Information Reference Unit, Washington, D.C. Nonattainment areas (NA) are listed as contained in the SIP -- cities, counties, or air basins. The type of violation is indicated under the heading NA as P (primary) or S (secondary). The date the final plan was formally submitted to EPA is given; the action taken by EPA is indicated according to the categories used on the state title page: A (approved), C (conditionally approved), D (disapproved), I (incomplete) or R (under review). The categories of N (not required) or E (extension) are not relevant for the attainment strategy table. It should be noted that in cases where area-specific SIPs for a pollutant have received different EPA judgments, the state title page uses the worst case (i.e., disapproved if one SIP for SO_2 was approved and another was disapproved) for the summary presentation for each pollutant.

The table of attainment strategies lists the source (or sources) of nonattainment as presented in the SIP. A "source" could be as specific as a utility or a cement plant or as general as steel mills or motor vehicles (indicated as "mobile sources"). The major source of SO_2 nonattainment is fossil-fuel combustion in utilities or industries, with the exception of the emissions from nonferrous-metal smelters in several western states. Particulate matter (PM) sources are typically fugitive emissions from stationary sources, wind-blown dust (rural fugitive dust) or a variety of area sources, such as resuspended road dust, tire particles, or dust from unpaved roads (summarized in SIPs as "urban nontraditional sources"). The sources of nonattainment for carbon monoxide (CO) and ozone (O_3) are almost exclusively described as motor vehicles in the SIPs.

Attainment strategies as presented by the SIP are summarized in the table. Sulfur dioxide problems are usually the result of emissions from individual major point sources (frequently out of compliance with existing SIP requirements), in which case attainment strategies address cleaning up those particular sources. In some cases, the attainment strategy called for a source to increase the height of the stack to meet generally accepted good

engineering practices (GEP). A taller stack decreases local ambient air concentrations of SO_2. Problems of PM pollution are more frequently blamed on fugitive dust and fugitive industrial and process emissions. The attainment strategies are often somewhat vague indications that possible controls will be examined and required, as appropriate. Most states requested the 18-month extension that was available for the submission of a plan to attain the secondary TSP standard. EPA granted the extension to states that demonstrated that reasonably available control technology (RACT) was already required for all stationary point sources and that controls on fugitive process emissions and on nontraditional sources (such as road dust) would be necessary for attainment.

The attainment strategies for CO and O_3 depend on the reduction of emissions from motor vehicles, through the projected effects of the Federal Motor Vehicle Emissions Control Program (FMVECP) combined with general estimates of vehicle turnover, i.e., rates of replacement of older vehicles. States requesting the statutory extension of the deadline for attainment to December 31, 1987, were required to include RACT on point sources [as specified in EPA's control techniques guidance for 11 stationary sources of volatile organic compounds (VOC)], transportation control measures (TCM) such as public transit, improved traffic flow (as outlined in EPA's guidelines), and an inspection and maintenance (I&M) program for motor vehicles.

An additional strategy proposed in a number of SIPs is simple redesignation of the nonattainment area to secondary nonattainment for TSP only, or to attainment or unclassified. A state could, for example, submit additional monitoring data or indicate that a monitor recording the violation was improperly sited. If EPA approved the proposed redesignation, the table indicates the action as "A". The maps of nonattainment areas may not necessarily reflect such an approval. The procedures required for redesignations are lengthy and include promulgation of a proposed rule as well as a 30 or 60-day time period for public comment before a final ruling can be promulgated in the Federal Register. The nonattainment maps include only those changes promulgated as final rules.

5.3 MAPS OF NONATTAINMENT AREAS, AS DESIGNATED

In order to determine the areas for which revised SIPs would be needed, the 1977 Amendments to the Clean Air Act required from the states a formal list of areas where the standards were being violated. The original designations were made in March 1978. Where standards were violated, the states typically designated small, subcounty areas as nonattainment, in the case of all pollutants except ozone. The usual method of displaying nonattainment areas as counties containing designated areas overstates the extent of nonattainment. For greater precision, the previous five-volume report[1] included maps of the actual subcounty areas. The supplement[2] contained new maps that updated nonattainment areas and included any redesignations that had been

promulgated in the Federal Register as of July 1, 1980. The maps in the present report are based on designations as of December 31, 1981.

The absence of a map for a pollutant indicates either that the state was in attainment, or (in the case of ozone only) that the entire state was designated as nonattainment. The title page for each state indicates pollutant data that were not mapped. The nonattainment maps and other maps that follow them are numbered sequentially through the volume; these sequential numbers are preceded by a roman numeral identifying the Federal Region a given state is in.

5.4 SAROAD DATA

Following the nonattainment maps, the SAROAD table provides a listing of all the monitors within a state, with a number for each monitor, its latitude and longitude, and its recorded pollutant concentrations (in $\mu g/m^3$, mg/m^3 for CO, or ppm for O_3) based on 1979 data from EPA's Storage and Retrieval of Aerometric Data (SAROAD) system. The monitor readings were coded as follows:

Code	Reading (% of standard limit)
1	0-75
2	76-100
3	101-125
4	>125

These codes are included in the SAROAD table in parentheses following the actual pollutant concentration recorded by each monitor. Monitors that clearly had incorrect latitudes and longitudes (i.e., falling outside the state boundaries when mapped) were not plotted; they are indicated by an asterisk. The monitors were numbered sequentially in their order in the data base, and only monitors for the criteria pollutants were printed. Missing numbers in the sequence represent monitors for noncriteria pollutants.

5.5 SAROAD DATA MAPS

A key map identifies each monitor by its unique number. Where monitors are clustered and their numbers cannot be read, the range of monitor numbers is indicated for reference to the monitor listing. Monitors that were shown in the data base as having adequate data for a particular pollutant were mapped, with a shaded circle to indicate a monitor that recorded a violation of a particular standard (reading codes 3 and 4) and an unshaded circle to indicate a monitor that did not record a violation in 1979 (reading codes 1 and 2). Maps are provided for each pollutant and each averaging period of the

NAAQS, and appear in the following order: 24-hour SO_2, annual average SO_2, 24-hour average TSP, annual average TSP, annual average NO_2, 8-hour average CO, 1-hour average O_3, and 3-month average lead (Pb). Pollutants or standard averaging periods for which a state had no valid monitor readings are not represented by monitor maps.

5.6 PREVENTION OF SIGNIFICANT DETERIORATION (PSD) AREAS

Three categories of clean-air areas are listed for each state. Mandatory Class I areas, or those deemed to require special protection from degradation of air quality, were established by the 1977 Amendments to the Clean Air Act. The table lists the name of each such area, its acreage, and a key number to identify its location on the accompanying map. Proposed Class I areas were recommended for such designation by the Department of Interior in 1979 and published by the EPA in the Federal Register in June 1980.[14] However, any action to designate these areas as Class I would have to be taken by the state or, where relevant, any Indian tribe with control over the area. In some cases, the recommended areas are extensions of the boundaries of mandatory Class I areas. The total acreage of these proposed areas is listed, as well as the acreage already designated Class I (if any). No maps are provided for these proposed areas.

A third category of PSD areas is also presented -- those areas that can only remain Class II or be redesignated as Class I, but cannot be redesignated to Class III. This category (often called mandatory Class II areas) was established by the 1977 Amendments [Section 164 (a)]; the category is of interest as a result of recent congressional debate on reauthorization of the Clean Air Act. Proposed revisions of the PSD section of the law have included the deletion of area classifications except for mandatory Class I areas and these mandatory Class II areas. The type of area (such as National Wildlife Refuge, National Seashore, etc.) is listed, with the name of the specific area, the total acreage, and any acreage that is already designated as Class I. The list is taken from an EPA inventory of attainment areas.[15] Maps are presented only for Class I areas.

In all cases, if a state does not contain any of the three categories of PSD areas, the table is still included with the entry "none."

5.7 MAPS OF PSD CLASS I AREAS

The boundaries of each mandatory PSD Class I area are presented on a state map. The location of a specific area is indicated by a number corresponding to the table. If a Class I area (e.g., Yellowstone National Park) has acreage in more than one state, it appears on each state's map.

5.8 EMISSION LIMITS FOR FUEL COMBUSTION

The general emission limits for sulfur dioxide and particulate matter emissions from fossil-fuel combustion are presented for each state. The tables list sources (new and/or existing), fuel type (coal, gas, or oil) and the limit as contained in the statutes of each state.[16]

5.9 POWER PLANT DATA

The table of power plant location data provides a list of the plants in each state on the basis of the data used in the first edition of these volumes (1975 Federal Power Commission data as contained in EPA's Energy Data System) updated by the 1980 version of the Energy Information Agency's Inventory of Power Plants in the United States.[17] Each plant is identified by a number and by the latitude and longitude of the site. Plants for which specific locations are not given in the data base are plotted at the latitude and longitude of the centroid of the county in which the plant is located. Generating capacity (MW) is totalled in two categories across all units at the site -- older units subject to SIP emission limits, and newer units operating in compliance with the 1971 New Source Performance Standards (NSPS). The generating capacity data is derived from Energy Information Administration (EIA) Form 4 data for 1980. Capacity factors have been calculated from the average net generation for 1980 provided on EIA Form 4. The NSPS SO_2 emission limits presented are the federal limits except in those states with more stringent NSPS requirements. The SIP limit is based on data from EIA Form 67, Section IV, for 1978/79. If there is more than one unit, fuel type, or emission limit at the plant, the SIP limit presented is an average, weighted by size and capacity factor.

The table of power plant fuel-use data lists the quantity and characteristics of the fuel used at each plant in 1980. The sulfur content of coal and oil and the heating value of coal, oil, and gas are based on data contained in EIA Form 423. The quantity of fuel used in 1980 is contained in EIA Form 4 data and is given in the following units -- coal: thousands of tons per year; oil: thousands of barrels of oil per year; and gas: millions of standard cubic feet per year. In cases where the sulfur content and the heating value of a fuel are entered in the table accompanied by a zero in the use column, the quantities of fuel that have been used are less than 500 barrels of oil or tons of coal, or 50,000 standard ft^3 of gas. In cases where zero appears in all columns for a fuel, the plant does not use that particular fuel.

5.10 POWER PLANT MAPS

The power plants in each state are mapped according to latitude and longitude by the identifying number; if two plants are located in close proximity, so that the numbers would overlap, only the first number is mapped.

5.11 MAJOR FUEL BURNING INSTALLATION DATA

The table of industrial boiler fuel use presents data on the consumption of coal, residual oil, distillate oil, and gas by county. The fuel use was converted to a standard unit of 10^{12} Btu, on the basis of the heat content and quantity of the fuel. Fuel consumption is presented as totals for boilers larger than 250 x 10^6 Btu per hour heat input and boilers between 100 x 10^6 and 250 x 10^6 Btu per hour heat input. In addition, state and county totals are presented for each fuel type. The information is drawn from the Major Fuel Burning Installation (MFBI) data base, which is based on a survey conducted by the Federal Energy Administration (FEA) of existing boilers with capacities greater than 100 x 10^6 Btu/hr during 1973 and 1974.[13] Although the MFBI data base does not represent the current population of industrial boilers or the current fuel use, the information is regarded as the best currently available on MFBIs. An additional survey was conducted by DOE in 1980,[18] but the project was halted by the Office of Management and Budget before the data were analyzed, and unit-level data are not available.

5.12 MFBI MAP

The fuel use by MFBIs is presented in a map with counties shaded according to total energy consumption, in units of 10^{12} Btu.

5.13 COAL PRODUCTION, QUALITY, AND RESERVES

Coal production in 1979 is mapped by county for each state; a table lists, by county, production levels in 1979, projected production levels in 1985, and estimated reserves. The 1979 production levels are based on steam coal deliveries reported on EIA Form 423. The 1985 production levels were projected from individual mine-expansion plans reported by the National Coal Association and DOE's Western Coal Development Monitoring System. Estimated coal reserves were derived from Bureau of Mines data.[19,20]

The coal quality data for each state are presented in tables that include sulfur content (expressed as lb $SO_2/10^6$ Btu), ash content, and heating value (Btu/lb), averaged for each coal-producing county. Also included are coal washability data, presented as average sulfur removal (%) and average Btu loss (%).

State maps of average sulfur content of coal, by county, are also given. These data are presented in the following five ranges, with approximate equivalent percentages:

lb $SO_2/10^6$ Btu	% S
0-1.2	0-0.75
1.2-3.2	0.75-2.0
3.2-5.6	2.0-3.5
5.6-8.0	3.5-5.0
>8.0	>5.0

Coal quality data are based on steam coal deliveries in 1979 as reported to DOE on EIA Form 423. Washability data came from characterizations of coal samples presented by the Bureau of Mines.[21]

5.14 AIR QUALITY CONTROL REGION DATA AND MAPS

A table listing the name and number of each air quality control region (AQCR) in the state is presented, with an accompanying map showing AQCR boundaries drawn on a county-outline base map. In several cases, AQCRs cross state boundaries. These interstate AQCRs are indicated by the absence of a heavy outline, and the additional states are listed in the table. In cases where AQCR boundaries do not follow county outlines, the exact boundary is drawn.

5.15 COUNTY DATA AND MAPS

Finally, for general information, a table of county-level data is included with the following entries: Federal Information Processing Standards (FIPS) code, the county name, the AQCR in which the county is located, the area of the county, the latitude and longitude of the centroid of each county, and the population from the 1980 census data. A map of each state is also presented, showing county boundaries and county names.

LIST OF ABBREVIATONS

APCD	- air pollution control district
AQCR	- air quality control region
bbl	- barrel
Btu	- British thermal unit
CAAA	- Clean Air Act Amendments
EIA	- Energy Information Administration
EPA	- Environmental Protection Agency
FGD	- flue gas desulfurization
FMVECP	- federal motor vehicle emissions control program
FPC	- Federal Power Commission
GEP	- "good engineering practice"; used in the sense of "maximum stack height consistent with GEP," which allows more dispersal of flue gases than does a shorter stack.
I&M	- inspection and maintenance program
m^3	- cubic meter
mg	- milligram (10^{-3} gram)
MW	- megawatt (10^6 watts)
μg	- microgram (10^{-6} gram)
NA	- nonattainment area
NAAQS	- national ambient air quality standards
NSPS	- new source performance standards
Pollutants	- CO = carbon monoxide HC = hydrocarbons NO_2 = nitrogen dioxide O_3 = ozone PM = particulate matter SO_2 = sulfur dioxide TSP = total suspended particulates VOC = volatile organic compounds
ppm	- parts per million
PSD	- prevention of significant deterioration
RACT	- reasonably available control technology
SAROAD	- storage and retrieval of aerometric data
SIP	- state implementation plan
TCM	- transportation control measures

REFERENCES

1. Garvey, D.B., et al., *In Pursuit of Clean Air: A Data Book of Problems and Strategies at the State Level*, ANL/EES-TM-90 (Feb. 1980).

2. Garvey, D.B. et al., *In Pursuit of Clean Air: A Data Book of Problems and Strategies at the State Level, Supplement*, ANL/EES-TM-129 (Aug. 1980).

3. SAROAD: Storage and Retrieval of Aerometric Data -- EPA's computer format for the transmittal of air data from state, local, and federal monitoring operations to the National Air Data Bank (NADB), managed by the Monitoring and Data Analysis Division of EPA.

4. 46 FR 42497 (August 17, 1981).

5. Memo from EPA Associate General Counsel for Air, Noise, and Radiation to R. Rhoads, Director of EPA's Control Program Development Division (Oct. 10, 1980).

6. 45 FR 64856 (Sept. 30, 1980).

7. Environment Reporter, *Current Developments*, June 4, 1982, p. 129, citing letter to governors from Kathleen Bennett of EPA.

8. Congressional Research Service, *Nonattainment Area Sanctions under the Clean Air Act: Selected Legal Issues* (1982).

9. 46 FR 56612 (Nov. 18, 1981).

10. 46 FR 39861 (Aug. 14, 1981).

11. 46 FR 60016 (Dec. 7, 1981).

12. 46 FR 44163 (Sept. 3, 1981).

13. MFBI: Major Fuel-Burning Installations -- A survey conducted in 1974 by the Federal Energy Administration (FEA).

14. 45 FR 43002 (June 25, 1980).

15. Memo from John Hidinger, Director, Office of Transportation and Land Use Policy, to Kathleen Bennett on Revised Inventory of Attainment Areas (Nov. 13, 1981).

16. The tables are based on information from the following sources: Bureau of National Affairs, Inc., Environment Reporter, *State Air Laws*. U.S. EPA, *Analysis of State and Federal SO_2 Emission Regulations for Combustion Sources*, OAQPS, EPA-450/2-810079, November 1981. U.S. EPA, *Analysis of State and Federal Particulate and Visible Emission Regulations for Combustion Sources*, EPA-450/2-81-080, November 1981.

17. Energy Information Administration, *Inventory of Power Plants in the United States, 1980 Annual*, DOE/EIA-0095 (1980).

18. Energy Information Administration, *Methodological Report on the 1980 Manufacturing Industries Survey of Large Combustors*, (EIA-463) DOE/EIA-0306 (March 1982).

19. *The Reserve Base of U.S. Coal by Sulfur Content, Part 1 - The Eastern States*, U.S. Bureau of Mines Report IC-8680 (1975).

20. *The Reserve Base of U.S. Coal by Sulfur Content, Part 2 - The Western States*, U.S. Bureau of Mines Report IC-8693 (1975).

21. *Sulfur Reduction Potential of the Coals of the United States*, U.S. Bureau of Mines Report RI-8118 (1976).

DATA ON STATES IN FEDERAL REGIONS I, II, AND III

FEDERAL REGION I:

CONNECTICUT
MAINE
MASSACHUSETTS
NEW HAMPSHIRE
RHODE ISLAND
VERMONT

REGION I: CONNECTICUT

AIR QUALITY SUMMARY

Attainment Status	Pollutant[a]							
	P-SO_2	S-SO_2	P-TSP	S-TSP	CO	O_3	NO_2	Pb
No. of Counties Containing NA Areas	0	0	6	4	6	8[b]	0	0
State Implementation Plan[c]	N	N	C	E	A	A	N	N
No. of SAROAD Monitors[d]	12/9[e]	-	43/34[e]	-	6	9	19	3
No. of SAROAD Monitors with Violations[d]	0/0[e]	-	1/1[e]	-	5	9	0	3

PSD Status	Class I PSD Areas	Recommended Class I	Mandatory Class II[f]
No. of Areas	0	0	0

[a]P = primary standard; S = secondary standard.
[b]Entire state nonattainment.
[c]A = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review.
[d]SAROAD data as of 1979. All other information as of December 1981.
[e]24-hour average/annual average.
[f]Areas that cannot be redesignated as Class III.

ENERGY DATA

Parameter	Data
Coal Production	
Current, 1979 (10^3 tons)[a]	0
Projected, 1985 (10^3 tons)[b]	0
Coal Reserves (10^6 tons)[c]	0
Range of Coal Quality (lb $SO_2/10^6$ Btu)[a]	0
Fuel Use by Industrial Boilers, 1974 (10^{12} Btu)[d]	19.71
No. of Fossil-Fueled Power Plants	8

[a]EIA form 423.
[b]National Coal Assn. and DOE's Western Coal Development Monitoring System.
[c]Bureau of Mines Rpt. IC 8680 and 8693.
[d]FEA, MFBI Survey, 1974.

CONNECTICUT: SIP Attainment Strategies

Area[a]	NA[b]	Plan Date	EPA Action[c]	Source(s)	Strategy[d]
	TSP:				
Greenwich	P	12/79	C	Utility	Enforce existing SIP emission limits
Waterbury	P	12/79	C	Mobile; urban non-traditional; industrial fugitive emissions	Street cleaning; controls on fugitive emissions
Rest of state	P/S	12/79	C		Redesignate to secondary NA
	CO/O_3:				
Statewide	P	12/79	A	Mobile	FMVECP; TCM; I&M; attainment by 1987

[a]Cities unless otherwise noted.

[b]Nonattainment violation indicated by pollutant and as P = primary and S = secondary.

[c]A = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

[d]See p. 30 for a listing of the abbreviations.

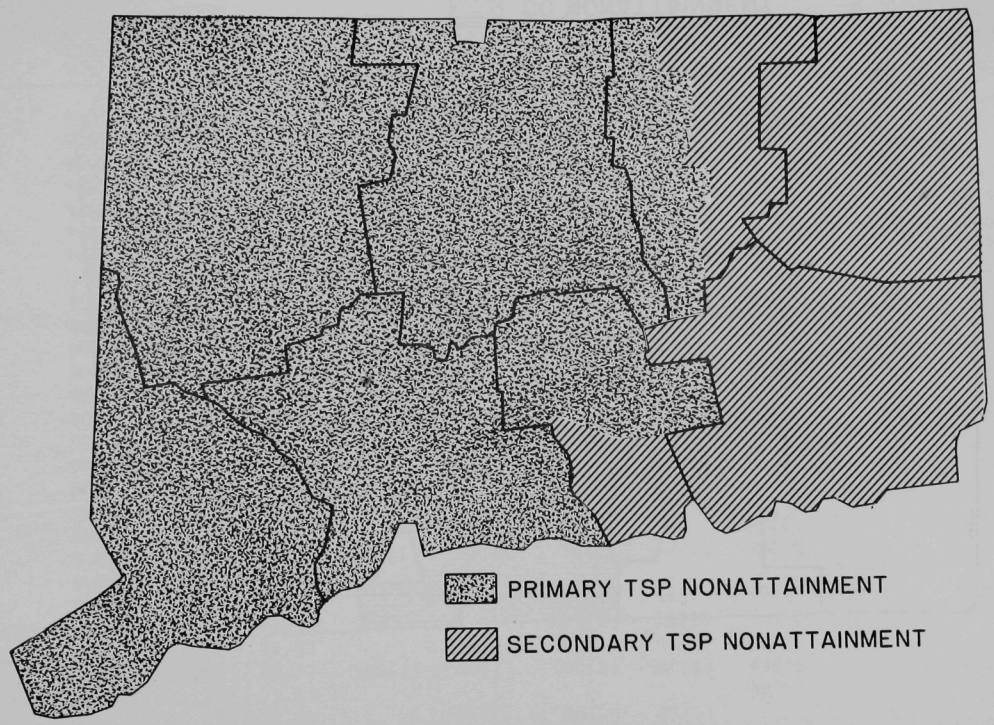


Fig. I.1 Connecticut: TSP Nonattainment Areas as Designated December 1981

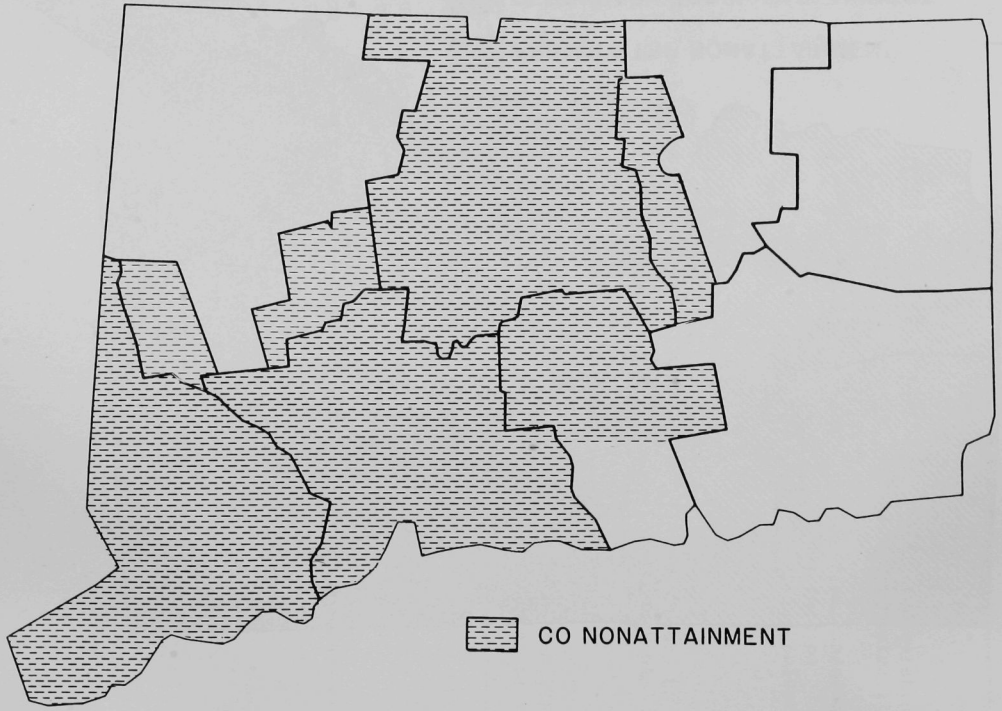


Fig. I.2. Connecticut: CO Nonattainment Areas as Designated December 1981

Table I.1 Connecticut: SAROAD Monitor Numbers and 1979 Data ($\mu g/m^3$, mg/m^3 for CO, or ppm for O_3)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
1	9001	41.18	73.19								2(3)
2	9001	41.19	73.18	156(1)	39(1)	157(1)	65(2)				
3	9001	41.18	73.19						9(2)		
5	9001	41.18	73.19	104(1)	23(1)	113(1)	52(1)	72(1)			
7	9001	41.08	73.71	103(1)	27(1)	92(1)	38(1)	55(1)		0.19(4)	
8	9001	41.40	73.44	148(1)	28(1)	118(1)	55(1)	53(1)		0.18(4)	
9	9001	41.19	73.18					74(1)		0.19(4)	
10	9001	41.20	73.13			111(1)	56(1)	72(1)			
11	9001	41.06	73.54	179(1)		124(1)	59(2)	64(1)			
12	9001	41.06	73.54						31(4)		
13	9001	41.04	73.53			113(1)	57(2)	61(1)			
14	9001	41.11	73.41			125(1)	57(2)	73(1)	11(3)		
15	9001	41.03	73.60			272(3)	69(2)				
16	9003	41.76	72.68	163(1)	37(1)	130(1)					
17	9003	41.77	72.68						12(3)		
18	9003	41.76	72.67			154(1)	61(2)	78(2)			
20	9003	41.78	72.52			98(1)	42(1)				
21	9003	41.76	72.68			60(1)					
22	9003	41.76	72.68					71(1)		0.20(4)	
23	9003	41.67	72.79	107(1)	22(1)	129(1)	47(1)	54(1)			
24	9003	41.67	72.78						11(3)		
26	9003	41.67	72.95			86(1)	42(1)	49(1)			
27	9003	41.76	72.94			79(1)	24(1)				
29	9003	41.74	72.63			100(1)	45(1)				
30	9003	42.00	72.57	108(1)	20(1)	106(1)	41(1)	49(1)		0.16(4)	
31	9003	41.74	72.63					56(1)			
32	9003	41.59	72.80			88(1)	31(1)				
33	9005	41.80	73.12			159(1)	59(2)	50(1)			
34	9005	41.67	73.14			83(1)	28(1)			0.23(4)	

Table I.1 Connecticut: (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
35	9007	41.56	72.65			107(1)	50(1)				
36	9007	41.48	72.51			69(1)	32(1)				
37	9007	41.32	72.36			126(1)					
38	9009	41.55	73.04			73(1)					
39	9009	41.45	72.82			102(1)	54(1)				
41	9009	41.52	73.04			102(1)	50(1)				
43	9009	41.55	73.04			64(1)					
44	9009	41.55	73.04			84(1)					
45	9009	41.55	73.04	111(1)	26(1)	174(1)	70(2)	73(1)			
47	9009	41.55	73.04								2(4)
48	9009	41.55	72.79			170(1)	56(1)				
49	9009	41.20	73.10			130(1)	52(1)				
50	9009	41.49	73.06			107(1)	47(1)				
51	9009	41.20	73.10	157(1)							
52	9009	41.54	72.80			125(1)	53(1)	57(1)			
53	9009	41.32	72.89			76(1)					
54	9009	41.32	72.89			128(1)	56(1)				
55	9009	41.31	72.92								3(4)
56	9009	41.31	72.92						10(3)		
57	9009	41.31	72.92	178(1)	42(1)	167(1)	79(3)	64(1)		0.18(4)	
59	9009	41.34	73.08			141(1)	57(2)				
60	9009	41.32	73.09							0.19(4)	
61	9011	41.35	72.08	74(1)		69(1)				0.17(4)	
62	9011	41.32	72.14			68(1)	30(1)				
63	9011	41.59	71.86			77(1)	26(1)				
64	9011	41.52	72.08			91(1)	45(1)	46(1)			
65	9015	41.71	72.21			75(1)					

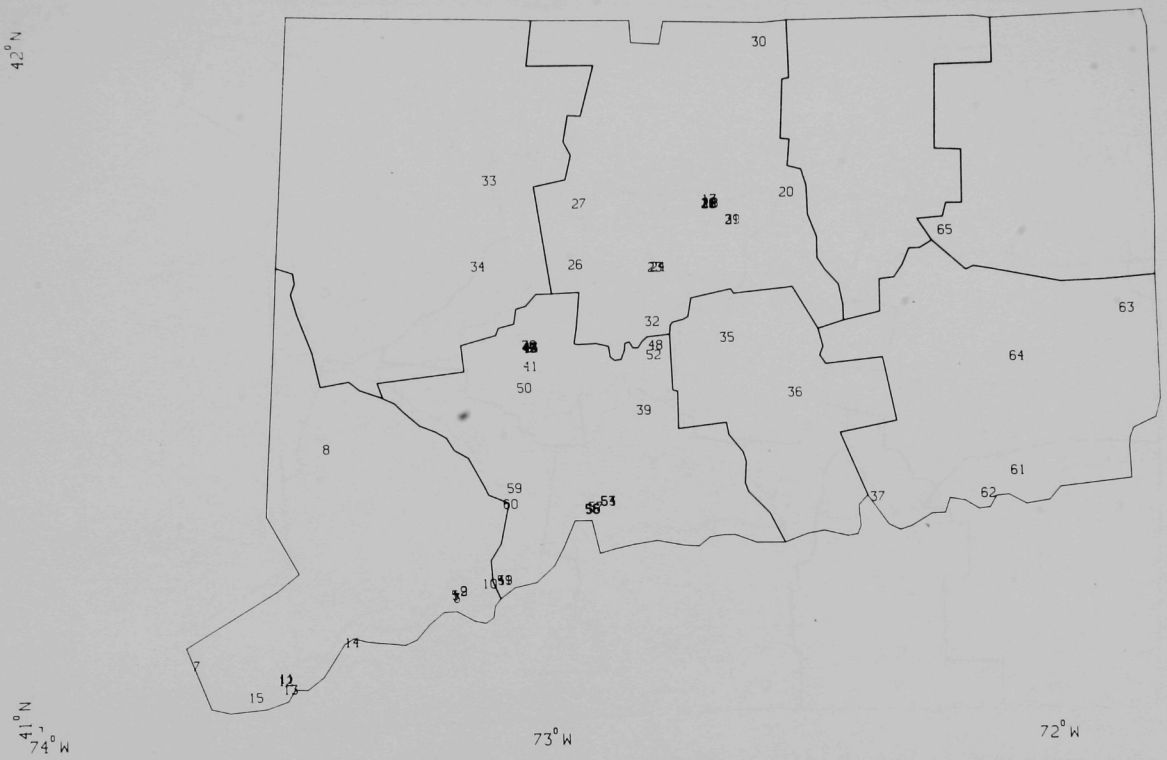


Fig. I.3 Connecticut: Locations of SAROAD Monitors (See Table I.1 for Monitor Numbers)

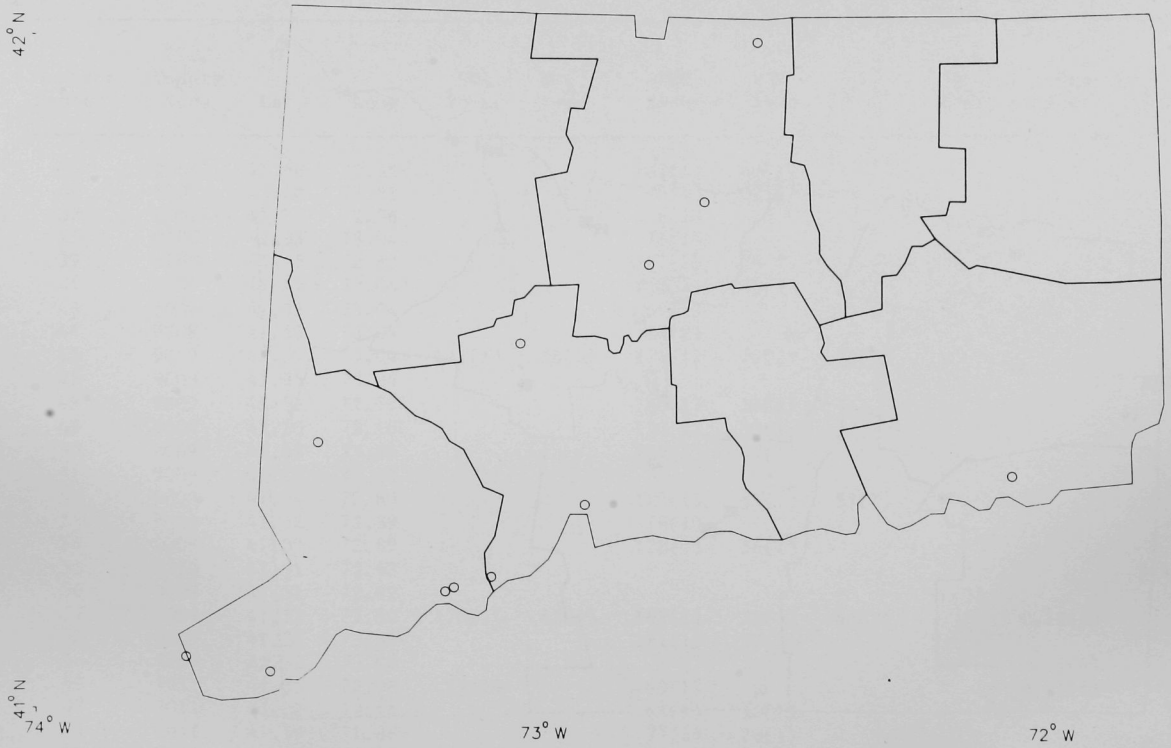


Fig. I.4 Connecticut: Monitors Reporting Adequate Data on 24-hr Average SO_2 Concentrations; No Violations

Fig. I.5 Connecticut: Monitors Reporting Adequate Data on Annual Average SO_2 Concentrations; No Violations

Fig. I.6 Connecticut: Monitors Reporting Adequate Data on 24-hr Average TSP Concentrations; Violations Shown by Shaded Circles

Fig. I.7 Connecticut: Monitors Reporting Adequate Data on Annual Average TSP Concentrations; Violations Shown by Shaded Circles

Fig. I.8 Connecticut: Monitors Reporting Adequate Data on Annual Average NO_2 Concentrations; No Violations

Fig. I.9 Connecticut: Monitors Reporting Adequate Data on 8-hr Average CO Concentrations; Violations Shown by Shaded Circles

Fig. I.10 Connecticut: Monitors Reporting Adequate Data on 1-hr Average O_3 Concentrations; Violations Shown by Shaded Circles

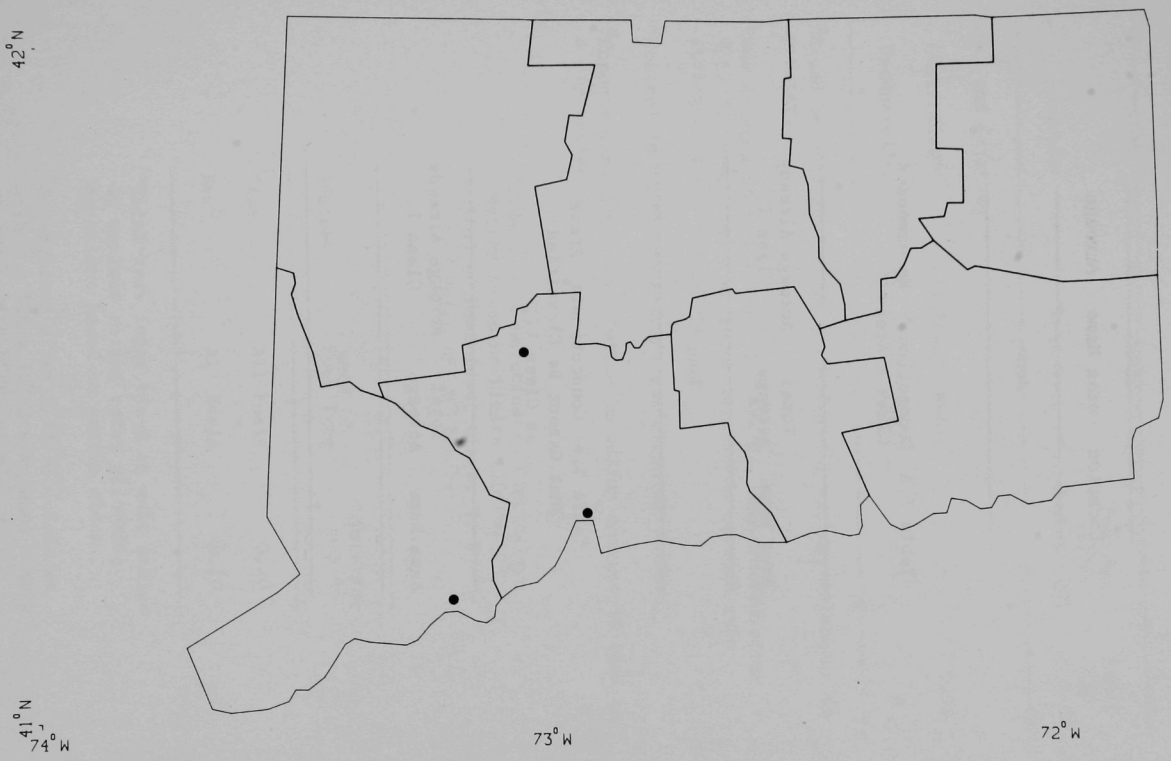


Fig. I.11 Connecticut: Monitors Reporting Adequate Data on 3-month Average Lead Concentrations; Violations Shown by Shaded Circles

Table I.2 Connecticut:
PSD Class I Areas

Location	Area Name	Acreage
None		

Table I.3 Connecticut: Recommended
Class I Areas

Area Name	Total Acreage	Acreage Already Class I
None		

Table I.4 Connecticut: Areas
That Cannot Be Classified
as Class III

Area Name	Total Acreage	Acreage Already Class I
None		

Table I.5 Connecticut: SO_2 Emission Limits (lb $SO_2/10^6$ Btu) by Heat Input Class, Q, in Units of 10^6 Btu/hr

Sources	Fuel Type	Maximum Sulfur Content (%)	Limit for Q > 0[a]
New[b] and Existing			
Controlled[c]	All Fossil Fuels	-	0.55
Uncontrolled	All Fossil Fuels	0.5	d

[a]Based on unit design or manufacturer's rating, whichever is greater.

[b]New sources with Q > 250 x 10^6 Btu/hr, constructed after 8/17/71, must comply at least with NSPS, or with more stringent state standards.

[c]Controlled units use a stack-gas cleaning process.

[d]Uncontrolled units are limited to sulfur content in fuel on a dry basis.

Table I.6 Connecticut: Particulate Matter Emission Limits (lb PM/10^6 Btu) by Heat Input Class, Q, in Units of 10^6 Btu/hr

Sources	Fuel Type	Limit for Q > 0[a]
Existing	All Fuels	0.20
New[b]	All Fuels	0.10

[a]Total heat input based on unit design or maximum firing rate; allowable emissions based on entire plant.

[b]Constructed after 5/23/72. Sources with Q > 250 x 10^6 Btu/hr must comply at least with NSPS, or with more stringent state standards.

Table I.7 Connecticut: Power Plant Location and Generating Capacity Data for 1980

Plant No.[a]	Plant Name[b]	Latitude[b]	Longitude[b]	Generating Capacity (MW), by Regulatory Class[c,d]		Capacity Factor[e] (%)	Sulfur Dioxide Limit ($lb/10^6$ Btu), by Regulatory Class[f]	
				SIP	NSPS		SIP	NSPS
1	Bridgeport Harbor	41.17	73.18	652	0	48	0.50	0.00
2	Devon	41.21	73.11	457	0	37	0.50	0.00
3	English Station	41.31	72.91	139	0	2	0.50	0.00
4	Middletown	41.56	72.58	827	0	39	0.50	0.00
5	Montville	41.43	72.10	495	0	30	0.50	0.00
6	Norwalk Harbor	41.08	73.41	336	0	64	0.50	0.00
7	South Meadow	41.75	72.65	6	0	2	0.50	0.00
8	Steel Point	41.18	73.19	167	0	1	0.50	0.00

[a]See Fig. I.12.

[b]EPA's Energy Data System (EDS), except as noted.

[c]FPC form 4, 1980.

[d]Capacity subject to emission regulations of SIP or NSPS, as indicated.

[e]Calculated from annual net generation, FPC form 4, 1980.

[f]If more than one unit, fuel type, and SIP emission limit at plant, "SIP" is average weighted by size, fuel type, and capacity.

Table I.8 Connecticut: Power Plant Fuel Use Data for 1980

Plant No.[a]	Plant Name	Coal Sulfur Content[b] (%)	Coal Heating Value[b] (Btu/lb)	Coal Use[c] (10^3 ton)	Oil Sulfur Content[b] (%)	Oil Heating Value[b] (Btu/gal)	Oil Use[c] (10^3 Bbl)	Gas Heating Value[b] (Btu/ 10^3 ft^3)	Gas Use[c] (10^6 ft^3)
1	Bridgeport Harbor	0	0	0	0.44	147,315	4,798	0	0
2	Devon	0	0	0	0.42	148,395	2,624	0	0
3	English Station	0	0	0	0.48	147,749	86	0	0
4	Middletown	0	0	0	0.47	145,791	4,961	0	0
5	Montville	0	0	0	0.39	146,205	2,485	0	0
6	Norwalk Harbor	0	0	0	0.47	146,081	3,196	0	0
7	South Meadow	0	0	0	0.02	133,098	67	0	0
8	Steel Point	0	0	0	0.44	145,598	60	0	0

[a]See Fig. I.12.

[b]FPC form 423, 1980.

[c]FPC, form 4, 1980. Note that in cases where the sulfur content and/or the heating value of a fuel is entered accompanied by 0 in the use column, the quantities of fuel that have been used are less than 0.5 x 10^3 barrels of oil or tons of coal, or 0.05 x 10^6 cubic feet of gas.

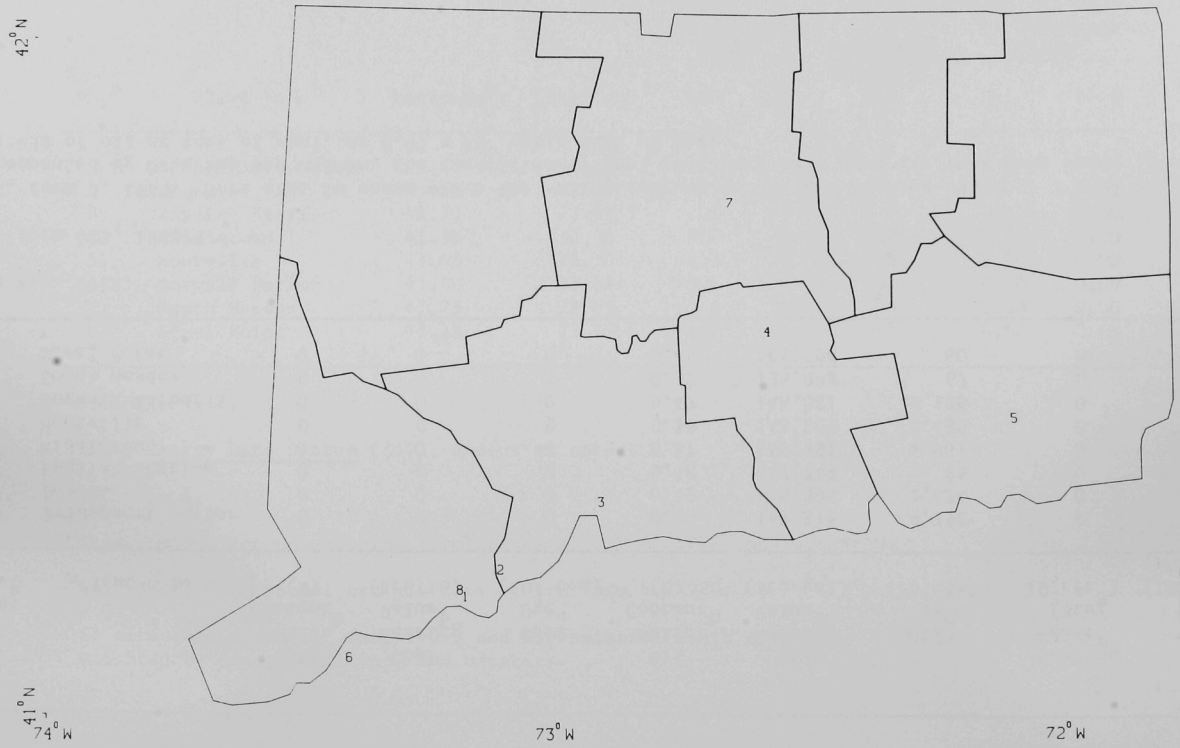


Fig. I.12 Connecticut: Key to Power Plant Locations

Table I.9 Connecticut: Large Industrial Boiler Fuel Use, 1974

County	County Fuel Consumption (10^{12}Btu) by Boiler Size and Fuel Type								
	Coal		Residual Oil		Distillate Oil		Gas		
	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	Total
Fairfield	0.00	0.00	2.76	0.00	0.00	0.00	0.00	0.00	2.76
Hartford	0.00	0.00	1.21	1.23	0.00	0.00	0.89	0.00	3.33
Middlesex	0.00	0.00	0.72	0.00	0.00	0.00	0.00	0.00	0.72
New Haven	0.00	0.00	2.86	1.37	0.01	0.00	0.00	0.00	4.23
New London	0.00	0.00	4.49	2.97	0.00	0.00	0.00	0.00	7.46
Windham	0.04	0.00	0.00	0.00	0.00	0.00	1.16	0.00	1.20
Subtotal	0.04	0.00	12.03	5.57	0.01	0.00	2.05	0.00	
Total	0.04		17.60		0.01		2.05		19.71
Percent of Total	0.22		89.31		0.06		10.40		100

[a]Boiler size (heat input, Q) in units of 10^6 Btu/hr.

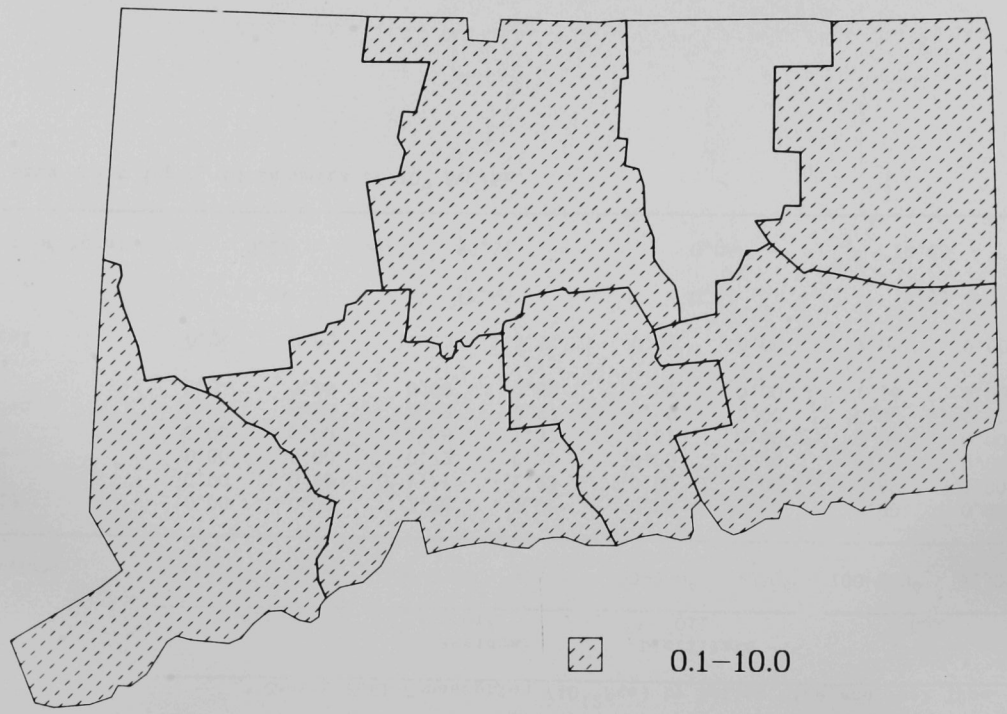


Fig. I.13 Connecticut: Fuel Use (in Units of 10^{12} Btu) in Major Fuel-Burning Installations, by County

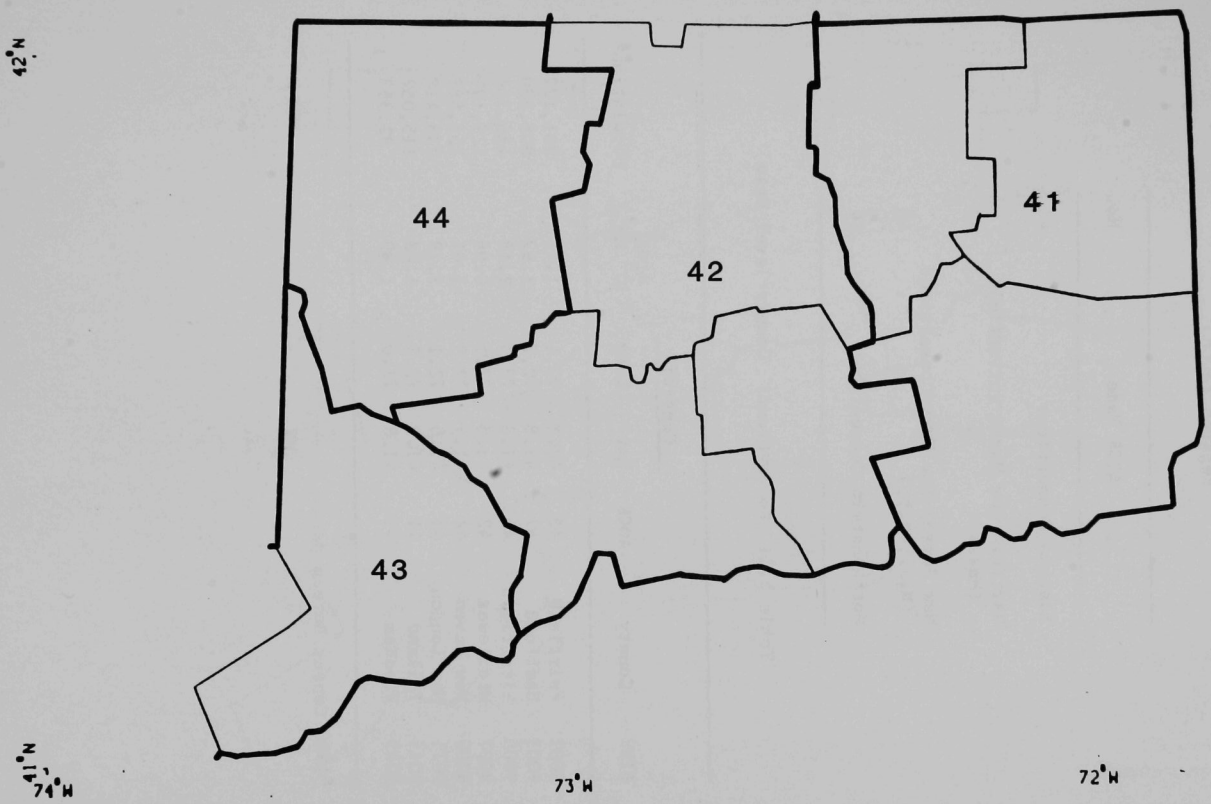


Fig. I.14 Connecticut: Air Quality Control Regions (See Table I.10)

Table I.10 Connecticut: Identification of Air Quality Control Regions (AQCR)

AQCR Name	No.
Eastern Connecticut	41
Hartford-New Haven-Springfield (Mass.)	42
New Jersey-New York-Connecticut (N.J., N.Y.)	43
Northwestern Connecticut	44

Table I.11 Connecticut: County-level Data

FIPS	County	AQCR	Centroid Lat	Centroid Long	Area (10^3 km^2)	Population[a]
9001	Fairfield	43	41.3	73.4	1.72	801,177
9003	Hartford	42	41.8	72.7	1.97	805,880
9005	Litchfield	44	41.8	73.3	2.48	156,564
9007	Middlesex	42	41.5	72.5	0.96	129,191
9009	New Haven	42	41.4	72.9	1.61	756,589
9011	New London	41	41.5	72.1	1.78	238,418
9013	Tolland	41	41.9	72.3	1.08	115,052
9015	Windham	41	41.8	72.0	1.39	92,353

[a]1980 Census Bureau data.

Fig. I.15 Connecticut: Key to Counties

REGION I: MAINE

AIR QUALITY SUMMARY

Attainment Status	Pollutant[a]							
	P-SO_2	S-SO_2	P-TSP	S-TSP	CO	O_3	NO_2	Pb
No. of Counties Containing NA Areas	1	0	0	3	2	11	0	0
State Implementation Plan[b]	C	N	A	E	A	A	N	N
No. of SAROAD Monitors[c]	51/6[d]	-	71/38[d]	-	2	7	4	14
No. of SAROAD Monitors with Violations[c]	5/0[d]	-	0/0[d]	-	1	1	0	1

PSD Status	Class I PSD Areas	Recommended Class I	Mandatory Class II[e]
No. of Areas	2	0	2

[a]P = primary standard; S = secondary standard.
[b]A = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review.
[c]SAROAD data as of 1979. All other information as of December 1981.
[d]24-hour average/annual average.
[e]Areas that cannot be redesignated as Class III.

ENERGY DATA

Parameter	Data
Coal Production	
Current, 1979 (10^3 tons)[a]	0
Projected, 1985 (10^3 tons)[b]	0
Coal Reserves (10^6 tons)[c]	0
Range of Coal Quality (lb $SO_2/10^6$ Btu)[a]	0
Fuel Use by Industrial Boilers, 1974 (10^{12} Btu)[d]	50.40
No. of Fossil-Fueled Power Plants	3

[a]EIA form 423.
[b]National Coal Assn. and DOE's Western Coal Development Monitoring System.
[c]Bureau of Mines Rpt. IC 8680 and 8693.
[d]FEA, MFBI Survey, 1974.

MAINE: SIP Attainment Strategies

Area[a]	NA[b]	Plan Date	EPA Action[c]	Source(s)	Strategy[d]
	SO_2:				
Millinocket	P	5/79	C	Boiler at pulp/paper mill	GEP stack height; modify operating hours
	TSP:				
Augusta	P	5/79	A		Redesignate to secondary NA
Brewster	S	5/79	A		Redesignate to attainment
Bangor, Rockland, Lewiston, Auburn, and Augusta	S	5/79	C	Mobile; urban non-traditional	Street paving and cleaning
	CO:				
Bangor, Brewster, Lewiston, and Auburn	P	5/79	A	Mobile	FMVECP; attainment by 1982
	O_3:				
Southern half of state	P	5/79	A	Mobile	FMVECP; TCM; attainment by 1982

[a]Cities unless otherwise noted.

[b]Nonattainment violation indicated by pollutant and as P = primary and S = secondary.

[c]A = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

[d]See p. 30 for a listing of the abbreviations.

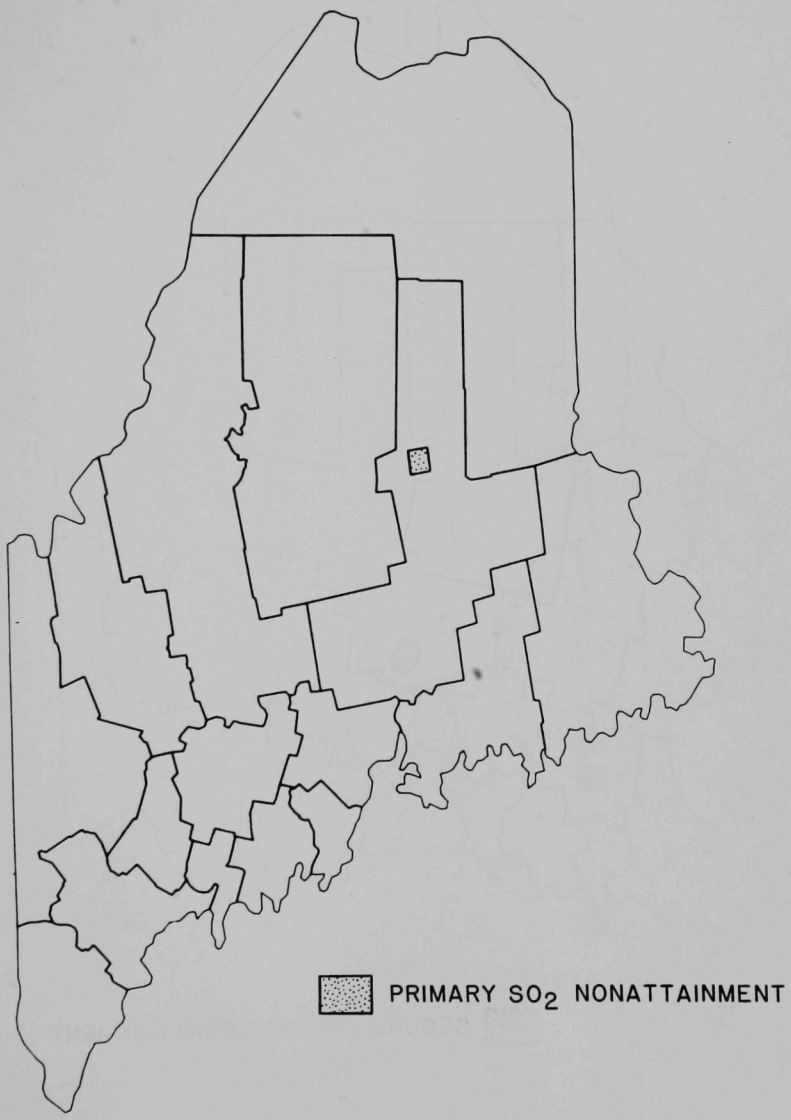


Fig. I.16 Maine: SO_2 Nonattainment Areas as Designated December 1981

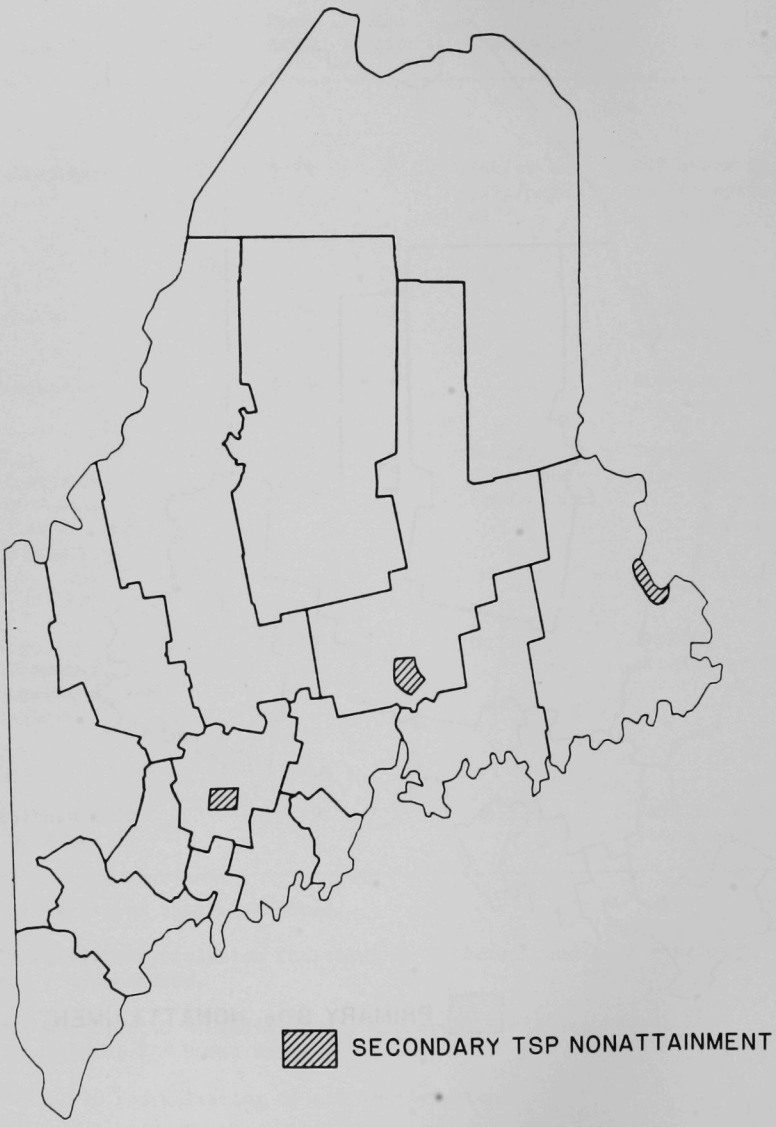


Fig. I.17 Maine: TSP Nonattainment Areas as Designated December 1981

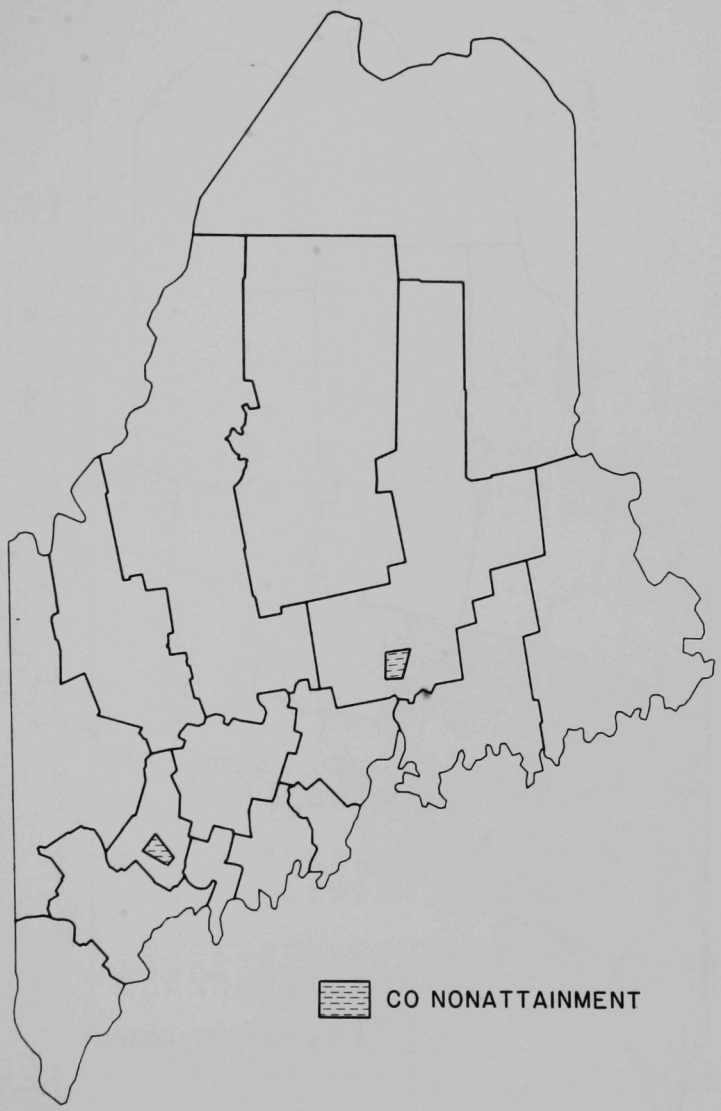


Fig. I.18 Maine: CO Nonattainment Areas as Designated December 1981

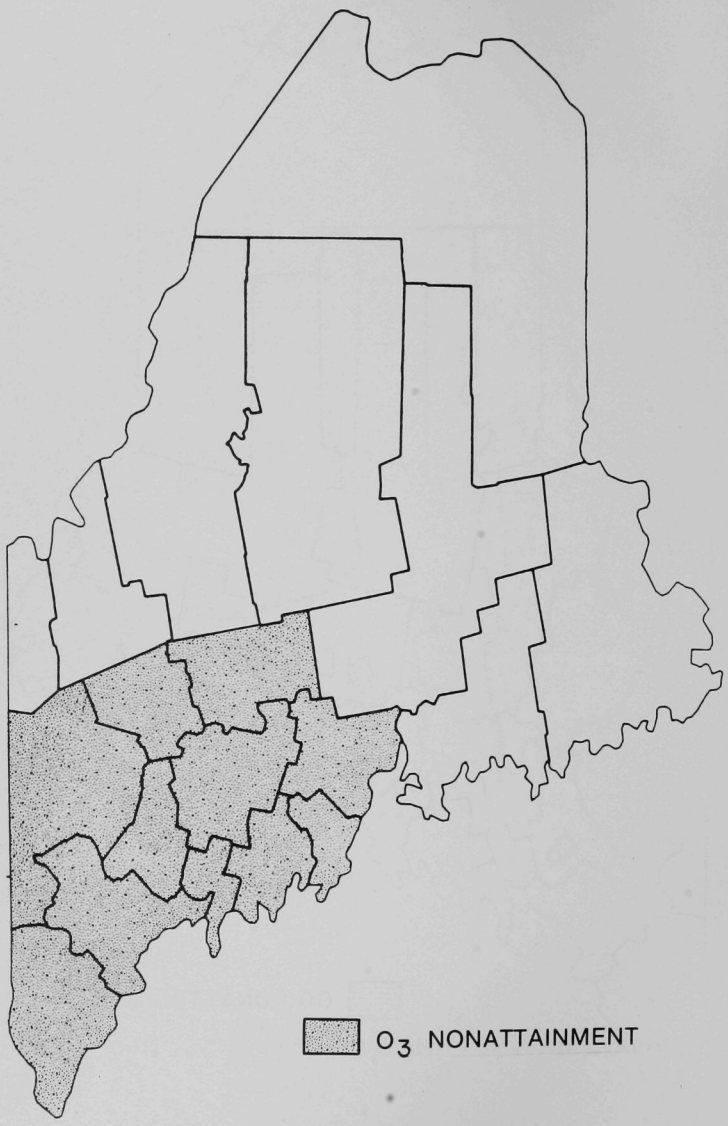


Fig. I.19 Maine: O_3 Nonattainment Areas as Designated December 1981

Table I.12 Maine: SAROAD Monitor Numbers and 1979 Data ($\mu g/m^3$, mg/m^3 for CO, or ppm for O_3)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
1	23001	44.17	70.28			75(1)					
2*	23001	-	-			161(1)	50(1)				
4	23001	44.09	70.22			137(1)	36(1)				
5	23001	44.13	70.24			49(1)					
6	23001	44.08	70.25			100(1)	33(1)				
7	23001	44.11	70.20			175(1)	41(1)				
8	23001	44.08	70.19			87(1)	33(1)				
9	23001	44.10	70.22	206(1)					13(4)		
10	23001	44.09	70.20	38(1)		93(1)	34(1)				1(1)
11	23001	44.10	70.22	109(1)		128(1)	48(1)	30(1)			1(2)
12	23003	47.35	68.31	91(1)	21(1)	124(1)	39(1)				
13	23003	47.35	68.31	181(1)		88(1)					
14	23003	47.35	68.29	237(1)							
15	23003	47.35	68.30	404(3)		31(1)					
16	23003	47.35	68.33	225(1)							
17	23003	47.35	68.30	403(3)							
19	23003	47.35	68.31	299(2)							
20	23003	47.35	68.35	63(1)							
21	23003	46.70	68.01			41(1)					
22	23003	46.68	68.01	41(1)		127(1)	40(1)				1(1)
23	23003	46.69	68.00	13(1)		251(2)	67(2)			0.06(1)	
24	23005	43.66	70.26			127(1)					2(4)
25*	23005	-	-	200(1)	51(1)						
26	23005	43.70	70.31	41(1)		66(1)	30(1)				
27	23005	43.68	70.37			92(1)					
28*	23005	-	-	87(1)		66(1)					
29	23005	43.65	70.23	71(1)		115(1)	31(1)				
30	23005	43.62	70.27	66(1)		66(1)	32(1)				
31	23005	43.67	70.34	45(1)							
32*	23005	-	-	46(1)		117(1)					0(1)

Table I.12 Maine (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
34*	23005	-	-			67(1)					
35	23005	43.68	70.37	37(1)							
36	23005	43.67	70.26	111(1)		95(1)	39(1)				
37	23005	43.66	70.26	101(1)		98(1)	49(1)				
38	23005	43.66	70.26								0(1)
39	23005	43.66	70.26	182(1)							
40	23005	43.89	70.15							0.12(2)	
41	23005	43.57	70.20							0.15(3)	
42	23005	43.92	69.97	36(1)		200(2)	66(2)				
43*	23005	-	-							0.06(1)	
44	23007	44.49	70.23			99(1)	24(1)				0(1)
47	23007	44.51	70.22			127(1)	28(1)				0(1)
48	23009	44.24	68.31	3(1)	3(1)	46(1)		8(1)			
49	23009	44.23	68.30								0(1)
50	23011	44.32	69.77			164(1)	54(1)				1(2)
52	23011	44.32	69.77	48(1)				32(1)			
54	23011	44.55	69.63	81(1)		98(1)	38(1)				
55	23013	44.10	69.15			164(1)	33(1)				
57	23013	44.08	69.15			118(1)					
58	23013	44.09	69.17			86(1)					
59	23013	44.08	69.17			68(1)	25(1)				
60	23013	44.10	69.11			93(1)					
61	23013	44.11	69.12			91(1)	27(1)				
62	23013	44.10	69.10	185(1)		114(1)					
63	23013	44.10	69.11	110(1)							
64	23013	44.10	69.11	598(4)							
65	23013	44.11	69.12	9(1)							
66	23017	44.56	70.56			107(1)					
67	23017	44.54	70.52			129(1)	43(1)				0(1)
68	23017	44.56	70.53			145(1)					

Table I.12 Maine (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
69	23017	44.63	70.53			95(1)					
70	23017	44.56	70.54			91(1)					
72	23017	44.22	70.53			184(1)	60(2)				
73	23017	44.22	70.52			172(1)	56(1)				
74	23019	45.01	68.63							0.12(2)	
75	23019	44.94	68.64			68(1)					
76	23019	44.91	68.63			100(1)					
77	23019	44.73	68.98							0.09(1)	
78	23019	44.90	68.67							0.11(2)	
79	23019	44.94	68.65			54(1)					
80	23019	44.92	68.64			34(1)					
81	23019	44.93	68.65	77(1)		136(1)	38(1)				
83	23019	45.65	68.70			96(1)					
84	23019	45.65	68.70	274(2)							
86	23019	45.66	68.69	114(1)							
87	23019	45.65	68.70			135(1)					
88	23019	45.65	68.70	585(4)	46(1)						
89	23019	45.66	68.69	37(1)							
90	23019	45.64	68.69			83(1)					
91	23019	45.64	68.69	505(4)							
92	23019	45.66	68.71			142(1)	45(1)				
94	23019	45.65	68.71	213(1)							
95	23019	45.65	68.69	179(1)							
96	23019	45.66	68.71	124(1)							
97	23019	45.37	68.51			203(2)					
98	23019	45.37	68.51			165(1)	54(1)				
99	23019	45.39	68.50			104(1)	36(1)				
100	23019	45.36	68.51			172(1)	49(1)				
101	23019	45.39	68.50	24(1)							
102	23019	44.80	68.77	80(1)		128(1)	52(1)		7(1)		1(1)

Table I.12 Maine (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
103*	23019	-	-			250(2)	68(2)				1(1)
104	23019	44.80	68.77	43(1)				49(1)			
105	23019	45.63	68.57	19(1)							
106	23019	45.62	68.58	224(1)							
107	23019	44.81	68.82			66(1)					
108	23019	44.79	68.78			171(1)	53(1)				
109	23019	44.81	68.82			81(1)					
110	23023	43.91	69.81			82(1)					
111	23025	44.66	69.64			92(1)	20(1)				
112	23025	44.75	69.63			149(1)	24(1)				
113	23025	44.66	69.64	42(1)	5(1)						
114	23025	44.75	69.63	44(1)	5(1)						
115	23029	45.15	67.40			167(1)					
117	23029	45.15	67.40	39(1)		103(1)					
118	23029	45.17	67.41			73(1)					
119	23029	45.15	67.40	121(1)		158(1)	37(1)				
120	23031	43.49	70.46	62(1)		89(1)	39(1)				1(1)

*Not Plotted.

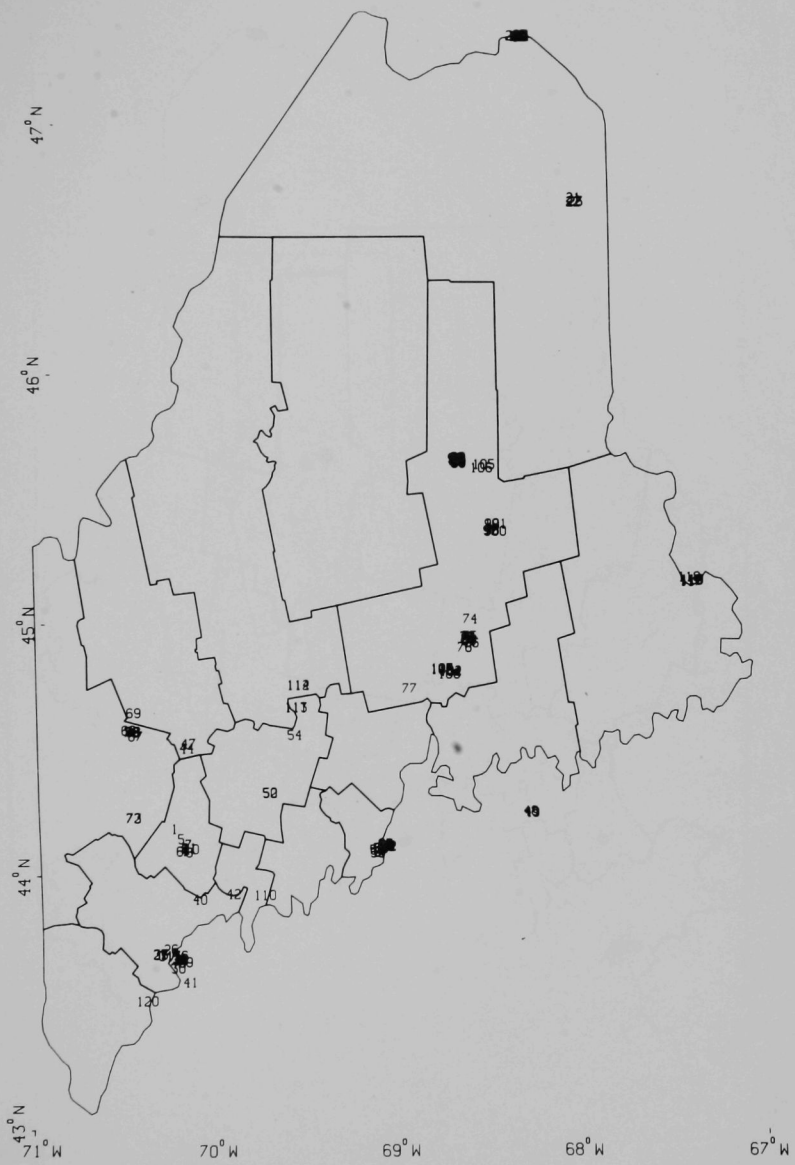


Fig. I.20 Maine: Locations of SAROAD Monitors
(See Table I.12 for Monitor Numbers)

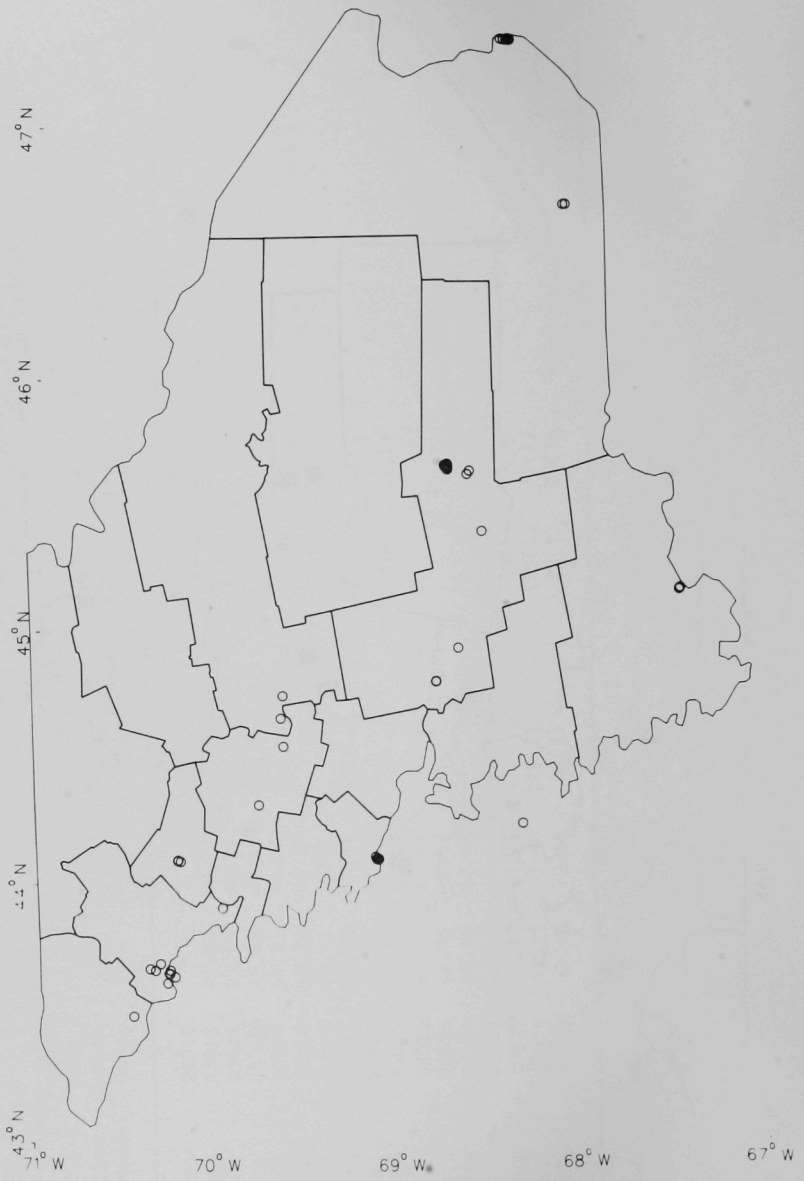


Fig. I.21 Maine: Monitors Reporting Adequate Data on 24-hr Average SO_2 Concentrations; Violations Shown by Shaded Circles

Fig. I.22 Maine: Monitors Reporting Adequate Data on Annual Average SO_2 Concentrations; No Violations

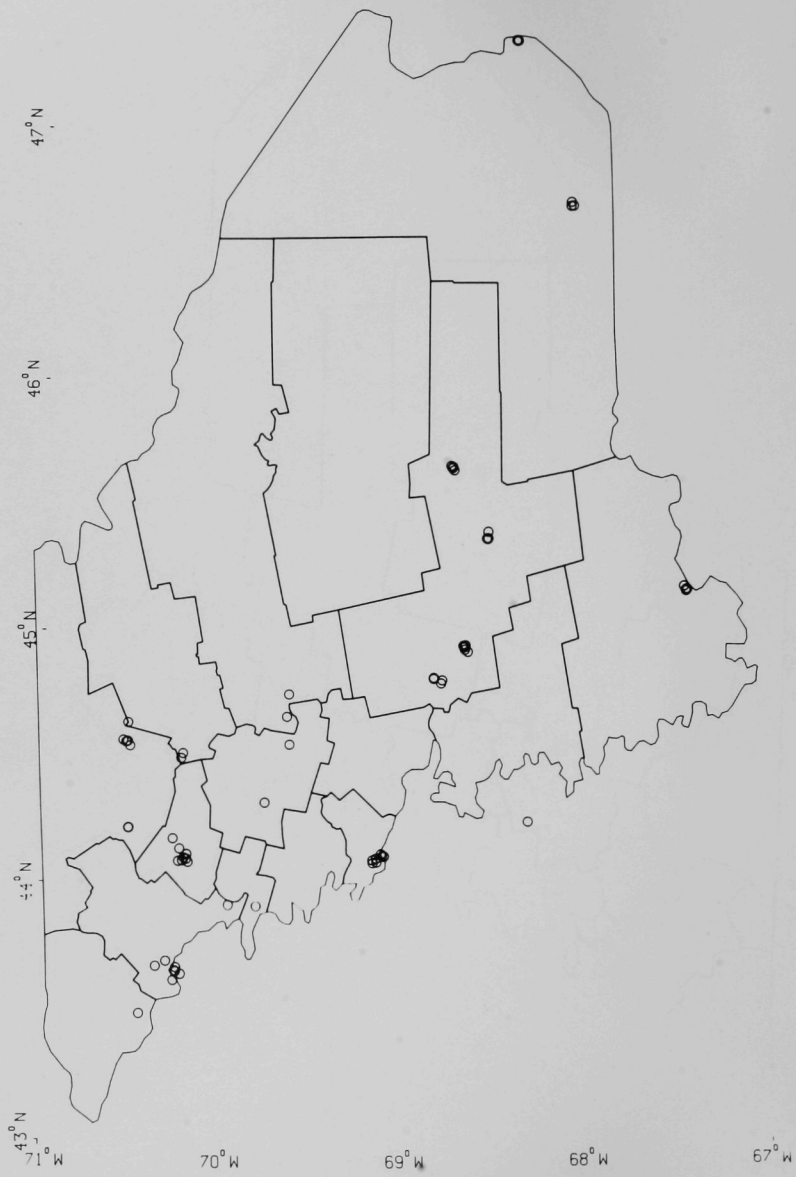


Fig. I.23 Maine: Monitors Reporting Adequate Data on 24-hr Average TSP Concentrations; No Violations

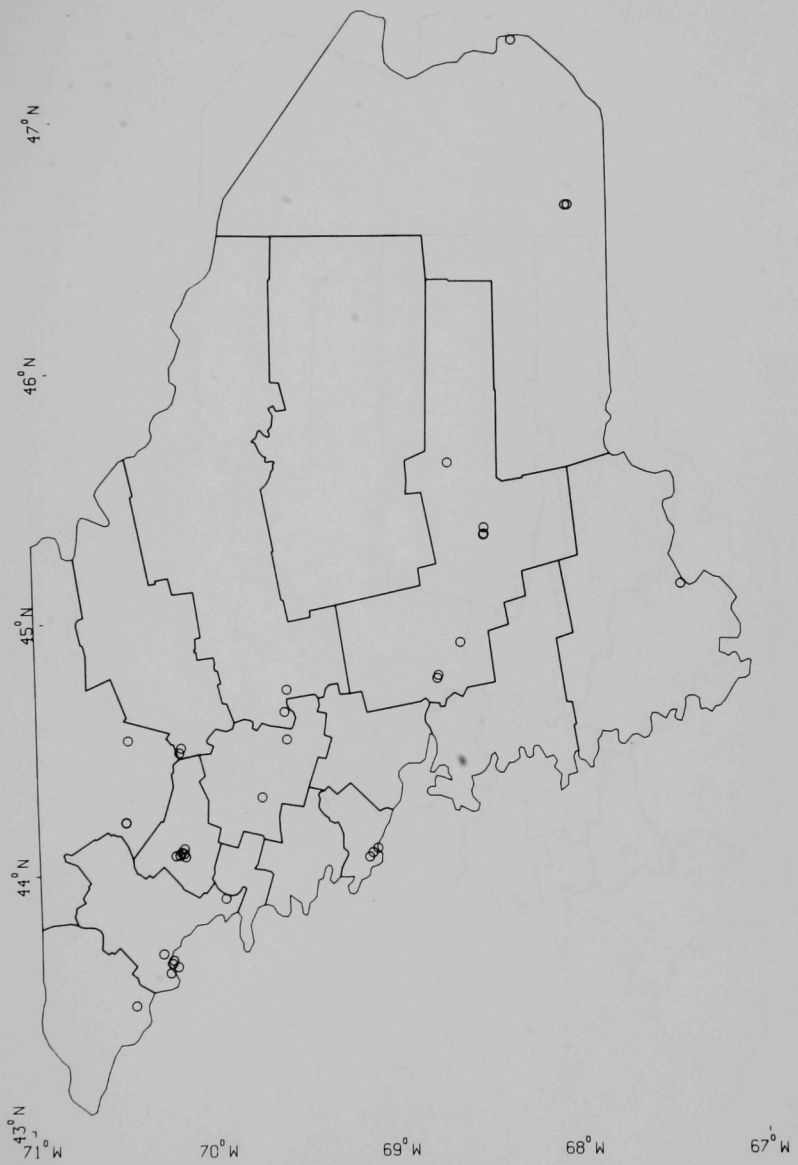


Fig. I.24 Maine: Monitors Reporting Adequate Data on Annual Average TSP Concentrations; No Violations

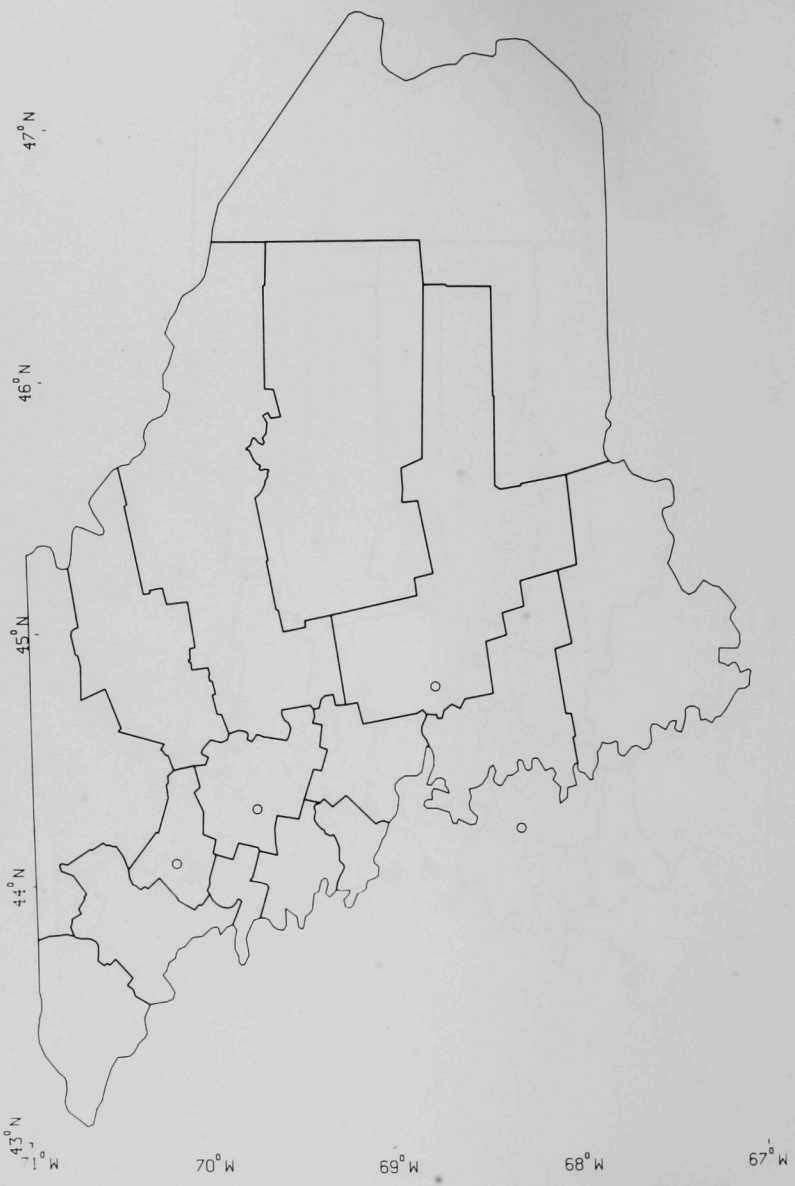


Fig. I.25 Maine: Monitors Reporting Adequate Data on Annual Average NO_2 Concentrations; No Violations

Fig. I.26 Maine: Monitors Reporting Adequate Data on 8-hr Average CO Concentrations; Violations Shown by Shaded Circles

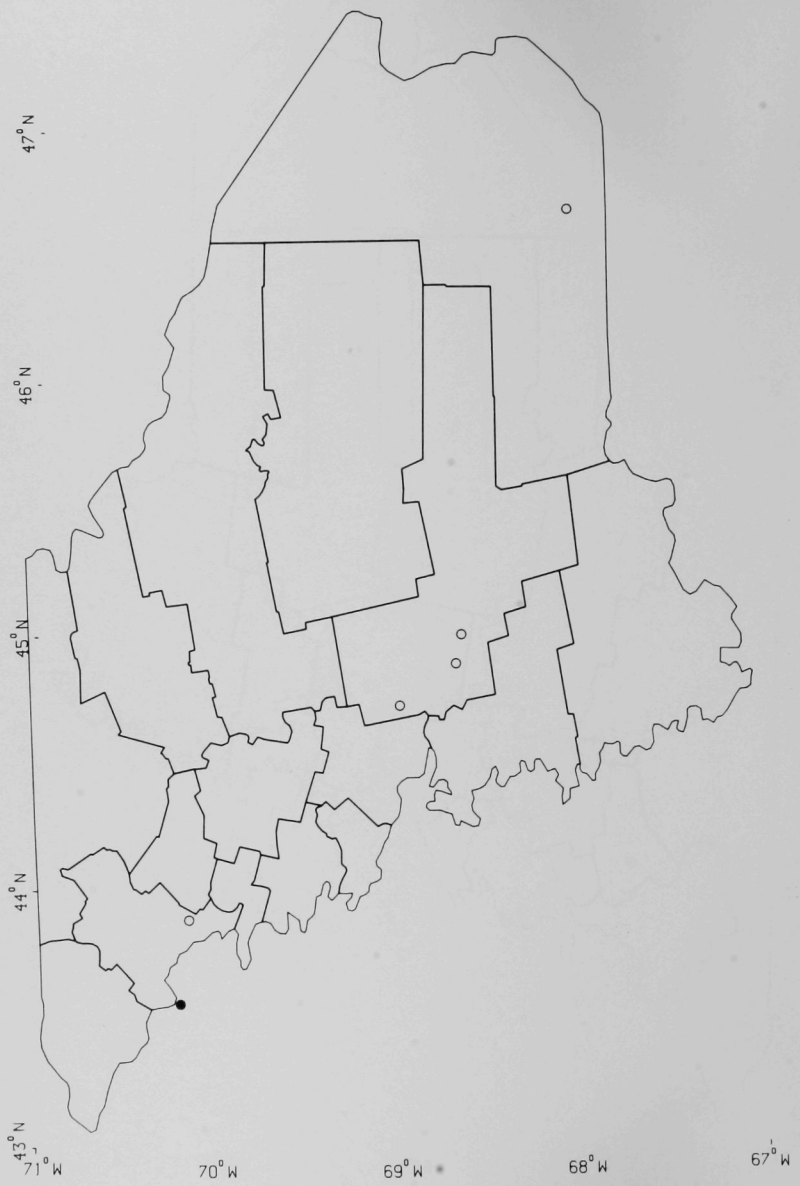


Fig. I.27 Maine: Monitors Reporting Adequate Data on 1-hr Average O_3 Concentrations; Violations Shown by Shaded Circles

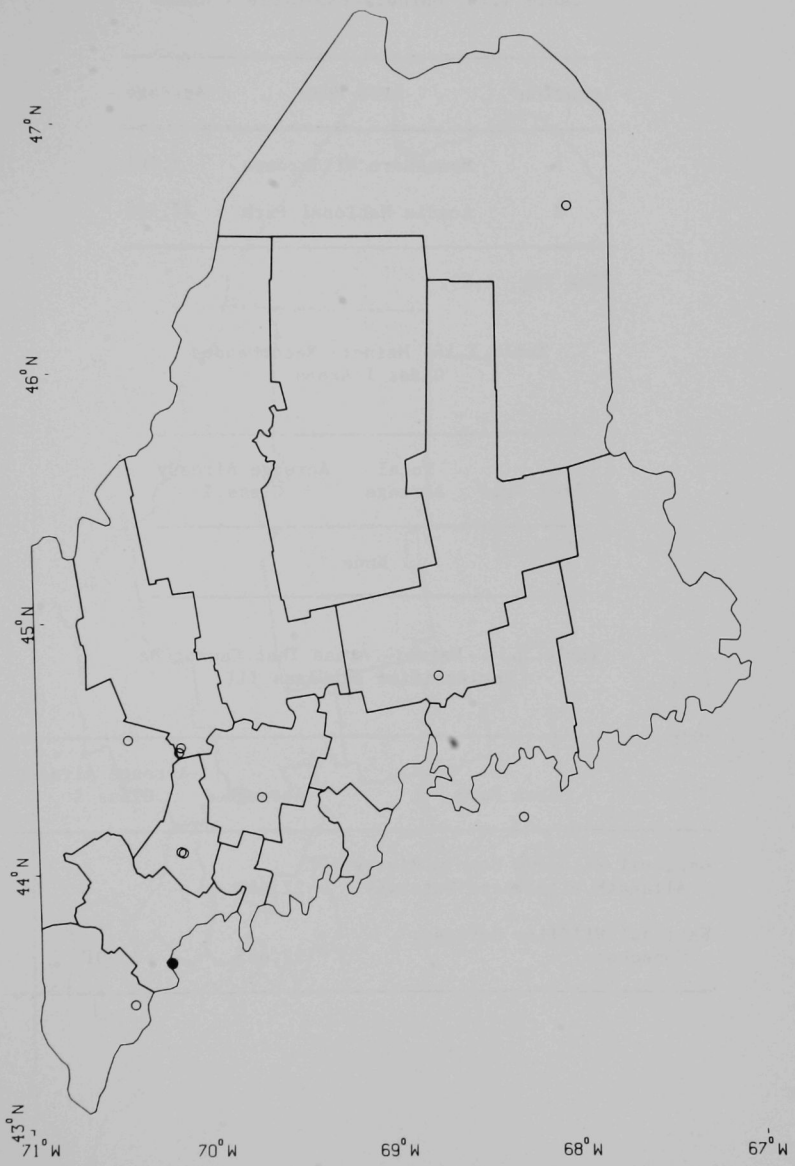


Fig. I.28 Maine: Monitors Reporting Adequate Data on 3-month Average Lead Concentrations; Violations Shown by Shaded Circles

Table I.13 Maine: PSD Class I Areas

Location[a]	Area Name	Acreage
1	Moosehorn Wilderness	7,501
2	Acadia National Park	37,503

[a]See Fig. I.29.

Table I.14 Maine: Recommended Class I Areas

Area Name	Total Acreage	Acreage Already Class I
None		

Table I.15 Maine: Areas That Cannot Be Reclassified as Class III

Area Name	Acreage	Acreage Already Class I
National Wild and Scenic Rivers:		
Allagash Wilderness Waterway	22,840	-
National Wildlife Refuges:		
Moosehorn	22,665	7,501

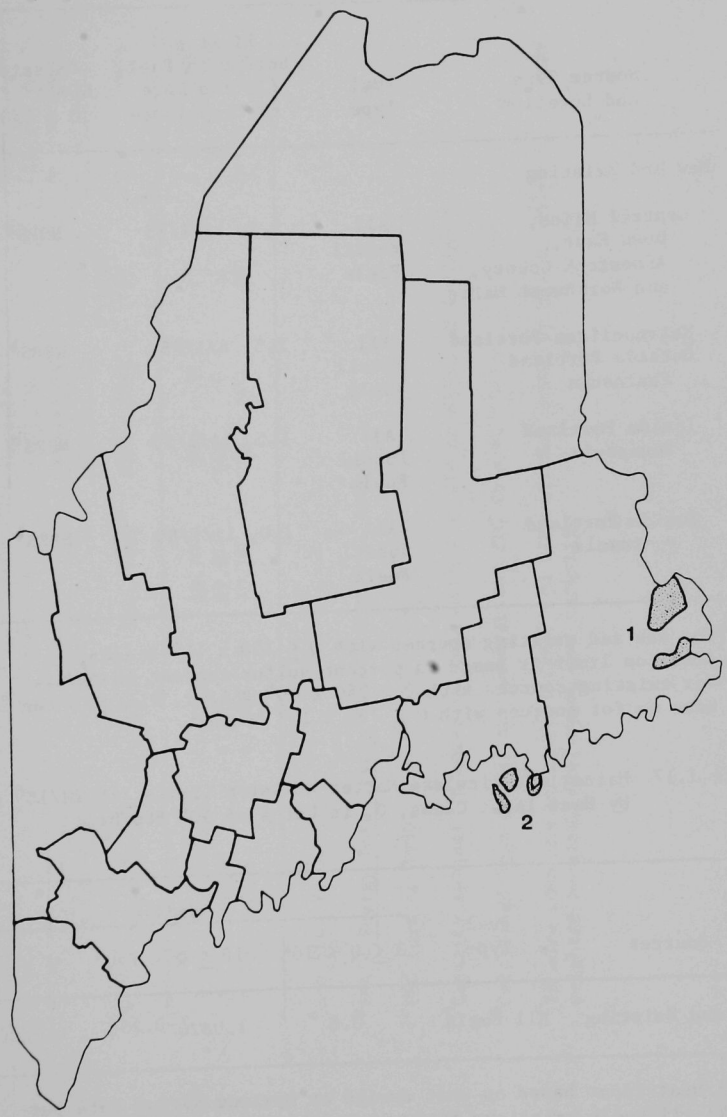


Fig. I.29 Maine: PSD Class I Areas

Table I.16 Maine: SO_2 Emission Limits (lb $SO_2/10^6$ Btu) by Heat Input Class, Q, in Units of 10^6 Btu/hr

Source Type and Location	Fuel Type	Limit on Sulfur in Fuel (%) and Date of Compliance	Emission Limit[a] for Q > 250
New and Existing			
Central Maine, Down East, Aroostook County, and Northwest Maine	All Fossil Fuels	2.5, 11/1/73	NSPS[b]
Metropolitan Portland Outside Portland Peninsula	All Fossil Fuels	2.5, 6/1/75	NSPS[b]
Inside Portland Peninsula	All Fossil Fuels	1.5, 11/1/75	NSPS[b]
Inside Portland Peninsula	All Fossil Fuels	1.0, 11/1/85	NSPS[b]

[a]For new and existing sources with $Q \leq 250 \times 10^6$ Btu/hr, emission limit is based on percent sulfur content in fuel.
[b]For existing sources with $Q > 250 \times 10^6$ Btu/hr, limit is the same as for sources with $Q \leq 250 \times 10^6$ Btu/hr.

Table I.17 Maine: Particulate Matter Emission Limits (lb $PM/10^6$ Btu) by Heat Input Class, Q, in Units of 10^6 Btu/hr

Sources	Fuel Type	Limit		
		$3 \leq Q < 10$[a]	$10 \leq Q < 150$[a]	$Q \geq 150$[a]
New[b] and Existing	All Fuels	0.6	$1.082Q^{-0.256}$	0.3

[a]Total heat input based on unit design or maximum firing rate per stack; allowable emissions based on individual stack.
[b]Sources with $Q > 250 \times 10^6$ Btu/hr must comply at least with NSPS, or with more stringent state standards.

Table I.18 Maine: Power Plant Location and Generating Capacity Data for 1980

Plant No.[a]	Plant Name[b]	Latitude[b]	Longitude[b]	Generating Capacity (MW), by Regulatory Class[c,d]		Capacity Factor[e] (%)	Sulfur Dioxide Limit ($lb/10^6$ Btu), by Regulatory Class[f]	
				SIP	NSPS		SIP	NSPS
1	Em Graham	44.82	68.70	59	0	15	2.50	0.00
2	Mason	43.99	69.67	146	0	12	2.50	0.00
3	Wyman	43.75	70.16	228	600	24	2.50	0.80

[a]See Fig. I.30.

[b]EPA's Energy Data System (EDS), except as noted.

[c]FPC form 4, 1980.

[d]Capacity subject to emission regulations of SIP or NSPS, as indicated.

[e]Calculated from annual net generation, FPC form 4, 1980.

[f]If more than one unit, fuel type, and SIP emission limit at plant, "SIP" is average weighted by size, fuel type, and capacity.

Table I.19 Maine: Power Plant Fuel Use Data for 1980

Plant No.[a]	Plant Name	Coal Sulfur Content[b] (%)	Coal Heating Value[b] (Btu/lb)	Coal Use[c] (10^3 ton)	Oil Sulfur Content[b] (%)	Oil Heating Value[b] (Btu/gal)	Oil Use[c] (10^3 Bbl)	Gas Heating Value[b] (Btu/ 10^3 ft^3)	Gas Use[c] (10^6 ft^3)
1	Em Graham	0	0	0	2.16	148,770	176	0	0
2	Mason	0	0	0	2.28	150,163	345	0	0
3	Wyman	0	0	0	1.18	148,407	3,083	0	0

[a]See Fig. I.30.

[b]FPC, form 423, 1980.

[c]FPC, form 4, 1980. Note that in cases where the sulfur content and/or the heating value of a fuel is entered accompanied by 0 in the use column, the quantities of fuel that have been used are less than 0.5×10^3 barrels of oil or tons of coal, or 0.05×10^6 cubic feet of gas.

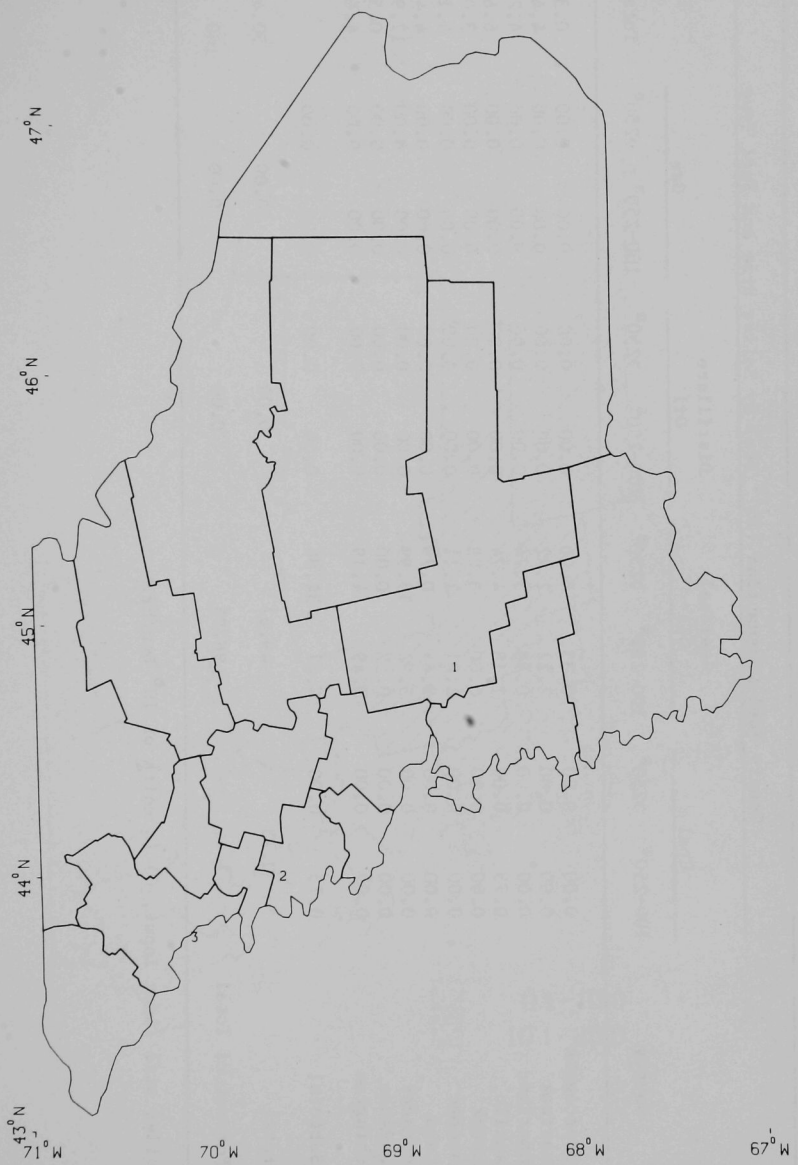


Fig. I.30 Maine: Key to Power Plant Locations

Table I.20 Maine: Large Industrial Boiler Fuel Use, 1974

County	County Fuel Consumption (10^{12} Btu) by Boiler Size and Fuel Type								
	Coal		Residual Oil		Distillate Oil		Gas		
	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	Total
Androscoggin	0.00	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.33
Aroostook	0.00	0.00	2.22	2.22	0.00	0.00	0.00	0.00	4.45
Cumberland	0.00	0.00	0.53	3.74	0.00	0.00	0.00	0.00	4.27
Franklin	0.73	0.00	1.15	4.74	0.00	0.00	0.00	0.00	6.62
Hancock	0.00	0.00	0.00	3.08	0.00	0.00	0.00	0.00	3.08
Kennebec	0.00	0.00	2.01	2.11	0.00	0.00	0.00	0.00	4.12
Oxford	0.00	0.00	3.64	0.79	0.00	0.00	0.00	0.00	4.42
Penobscot	0.00	0.00	3.92	13.99	0.00	0.00	0.00	0.00	17.91
Sagadahoc	0.00	0.00	0.52	0.00	0.00	0.00	0.00	0.00	0.52
Washington	0.00	0.00	0.49	4.19	0.00	0.00	0.00	0.00	4.68
Subtotal	0.73	0.00	14.81	34.86	0.00	0.00	0.00	0.00	
Total	0.73		49.67		0.00		0.00		50.40
Percent of Total	1.44		98.56		0.00		0.00		100

[a]Boiler size (heat input, Q) in units of 10^6 Btu/hr.

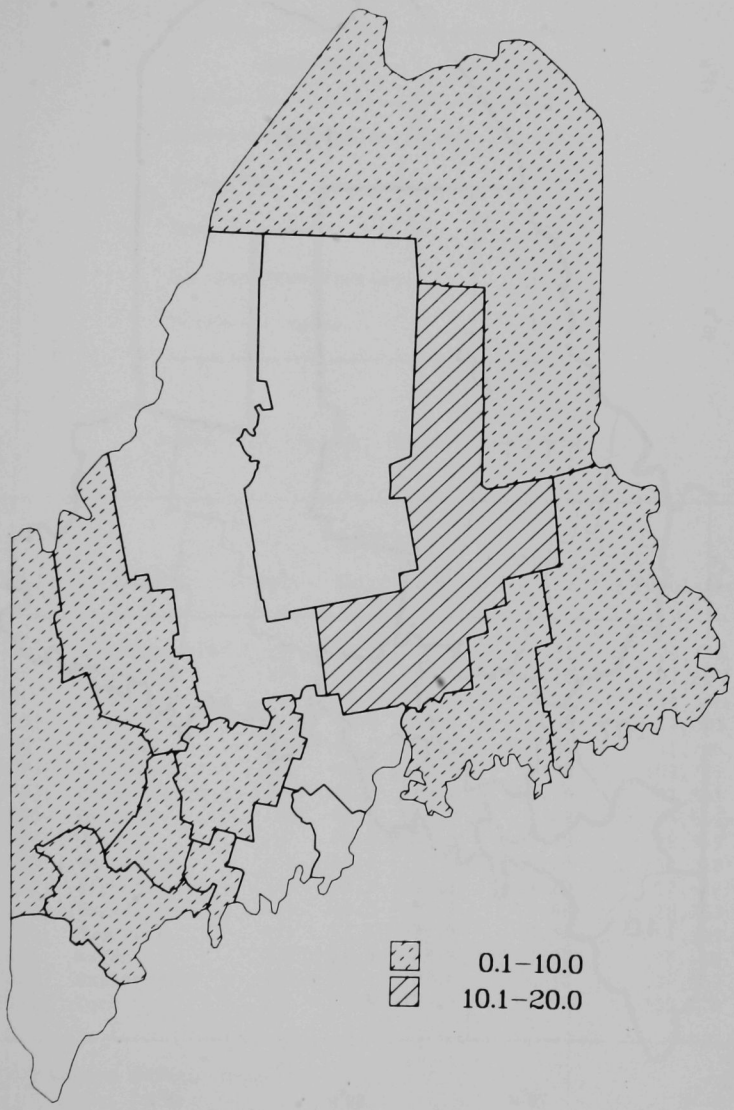


Fig. I.31 Maine: Fuel Use (in Units of 10^{12} Btu) in Major Fuel-Burning Installations, by County

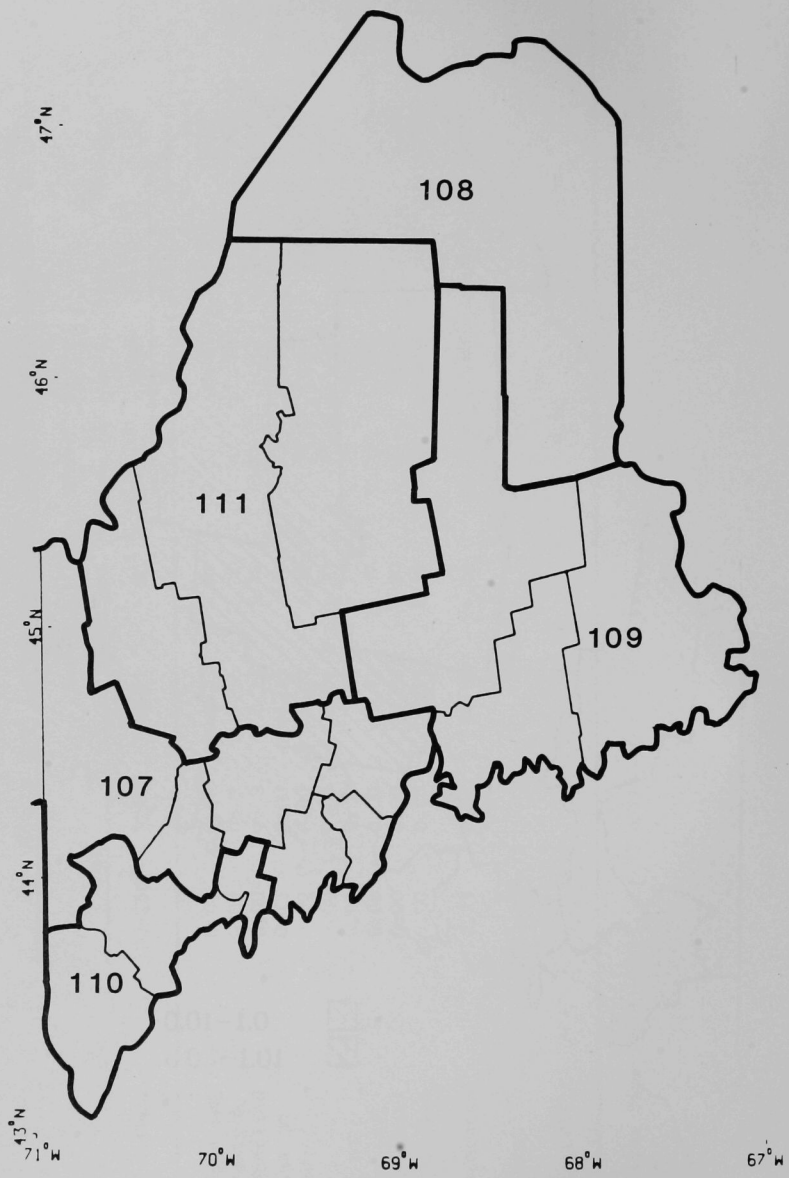


Fig. I.32 Maine: Air Quality Control Regions (See Table I.21)

Table I.21 Maine: Identification of Air Quality Control Regions (AQCR)

AQCR Name	No.
Androscoggin Valley (N.H.)	107
Aroostook	108
Down East	109
Metropolitan Portland	110
Northwest Maine	111

Table I.22 Maine: County-Level Data

FIPS	County	AQCR	Centroid Lat	Centroid Long	Area (10^3 km^2)	Population[a]
23001	Androscoggin	107	44.2	70.2	1.31	99,708
23003	Aroostook	108	46.7	68.6	18.20	91,243
23005	Cumerland	110	43.9	70.4	2.42	215,566
23007	Franklin	111	45.0	70.4	4.58	27,003
23009	Hancock	109	44.7	68.4	3.84	41,735
23011	Kennebec	107	44.4	69.8	2.38	109,721
23013	Knox	107	44.2	69.2	0.78	32,952
23015	Lincoln	107	44.1	69.5	1.29	25,600
23017	Oxford	107	44.5	70.8	5.53	48,949
23019	Penobscot	109	45.4	68.7	9.23	137,018
23021	Piscataquis	111	45.8	69.3	11.20	17,612
23023	Sagadahoc	110	44.0	69.9	0.68	28,763
23025	Somerset	111	45.5	70.0	10.50	44,989
23027	Waldo	107	44.5	69.2	1.87	28,418
23029	Washington	109	45.1	67.6	7.17	34,921
23031	York	110	43.5	70.7	2.60	139,472

[a]1980 Census Bureau data.

Fig. I.33 Maine: Key to Counties

REGION I: MASSACHUSETTS

AIR QUALITY SUMMARY

Attainment Status	Pollutant[a]							
	P-SO_2	S-SO_2	P-TSP	S-TSP	CO	O_3	NO_2	Pb
No. of Counties Containing NA Areas	0	0	4	6	4	14[b]	0	0
State Implementation Plan[c]	N	N	A	E	A	A	N	N
No. of SAROAD Monitors[d]	50/12[e]	-	64/35[e]	-	5	16	0	6
No. of SAROAD Monitors with Violations[d]	0/0[e]	-	0/0[e]	-	2	14	0	2

PSD Status	Class I PSD Areas	Recommended Class I	Mandatory Class II[f]
No. of Areas	0	0	0

[a]P = primary standard; S = secondary standard.
[b]Entire state nonattainment.
[c]A = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review.
[d]SAROAD data as of 1979. All other information as of December 1981.
[e]24-hour average/annual average.
[f]Areas that cannot be redesignated as Class III.

ENERGY DATA

Parameter	Data
Coal Production	
Current, 1979 (10^3 tons)[a]	0
Projected, 1985 (10^3 tons)[b]	0
Coal Reserves (10^6 tons)[c]	0
Range of Coal Quality (lb $SO_2/10^6$ Btu)[a]	0
Fuel Use by Industrial Boilers, 1974 (10^{12} Btu)[d]	21.21
No. of Fossil-Fueled Power Plants	16

[a]EIA form 423.
[b]National Coal Assn. and DOE's Western Coal Development Monitoring System.
[c]Bureau of Mines Rpt. IC 8680 and 8693.
[d]FEA, MFBI Survey, 1974.

MASSACHUSETTS: SIP Attainment Strategies

Area[a]	NA[b]	Plan Date	EPA Action[c]	Source(s)	Strategy[d]
	TSP:				
Boston	P	3/79	A		Redesignate to unclassified
Danvers					Redesignate to secondary NA
Springfield					Redesignate to secondary NA
Worcester				Mobile; industrial combustion	Street cleaning; reduced winter sanding; more stringent limits
	CO:				
Boston, Springfield, Worcester, and Laurell	P	6/79	A	Mobile	FMVECP; TCM; I&M; attainment by 1987
	O_3:				
Statewide	P	6/79	A	Mobile	RACT on VOC sources; FMVECP; TCM; I&M; attainment by 1987

[a]Cities unless otherwise noted.

[b]Nonattainment violation indicated by pollutant and as P = primary and S = secondary.

[c]A = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

[d]See p. 30 for a listing of the abbreviations.

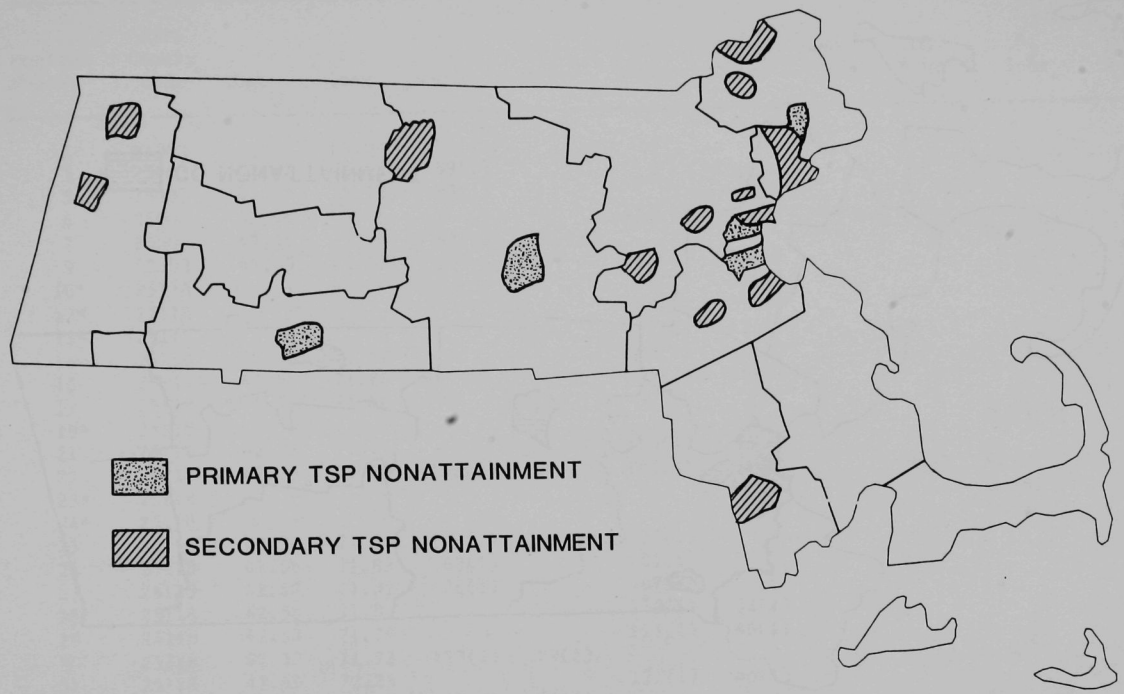


Fig. I.34 Massachusetts: TSP Nonattainment Areas as Designated December 1981

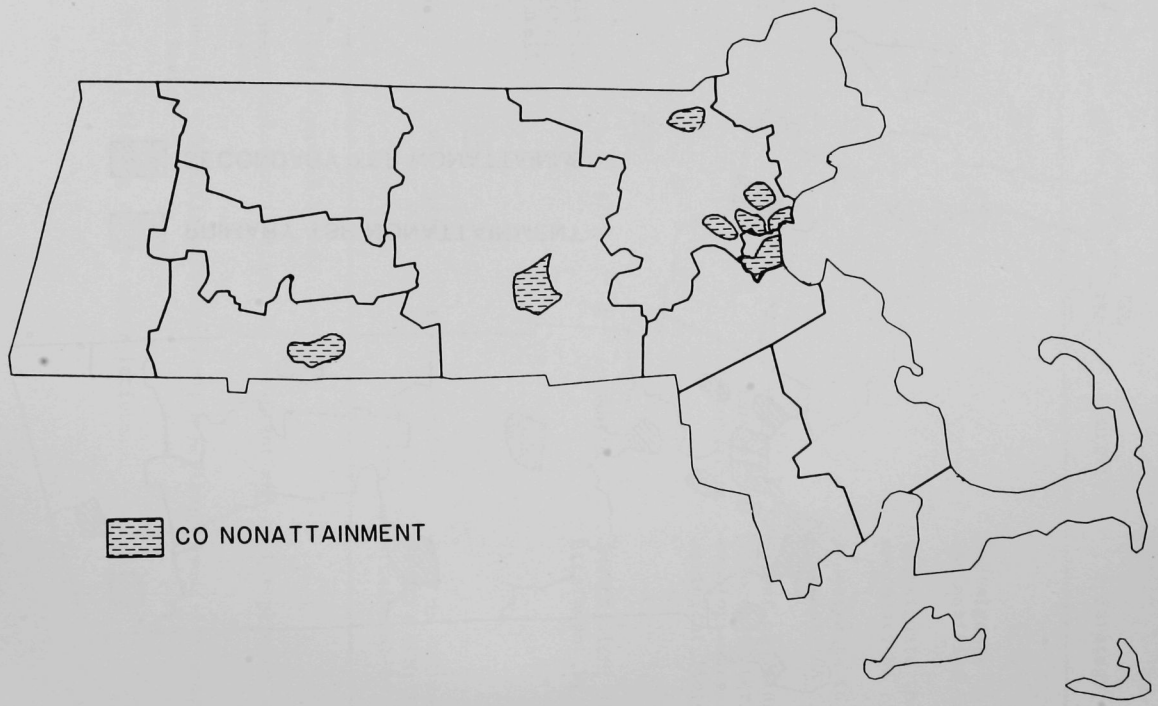


Fig. I.35 Massachusetts: CO Nonattainment Areas as Designated December 1981

Table I.23 Massachusetts: SAROAD Monitor Numbers and 1979 Data ($\mu g/m^3$, mg/m^3 for CO, or ppm for O_3)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
2	25003	42.32	73.25	331(2)							
3	25003	42.47	73.17	59(1)							
5	25003	42.47	73.18	63(1)							
6	25003	42.44	73.26			153(1)					
7	25003	42.45	73.20	94(1)	20(1)					0.12(2)	
9	25003	42.45	73.22			132(1)	50(1)				
10*	25118	-	-			79(1)	31(1)				
12*	25118	-	-			88(1)	37(1)				
13*	25118	-	-			92(1)	42(1)				
14	25118	42.25	71.82			94(1)	41(1)				
15	25118	42.26	71.80			149(1)	51(1)				
17	25118	42.26	71.80								1(2)
19*	25118	-	-							0.13(3)	
21	25118	42.27	71.76			143(1)	52(1)				
22	25118	42.26	71.80	152(1)	34(1)	182(1)	69(2)		9(2)	0.12(2)	
23*	25118	-	-							0.15(3)	
24*	25118	-	-							0.14(3)	
25	25118	42.58	71.82	110(1)		125(1)					
26	25118	42.56	71.83	63(1)		45(1)					
27	25118	42.58	71.81	76(1)		67(1)					
28	25118	42.58	71.80			139(1)	52(1)				
29	25118	42.57	71.79			111(1)	46(1)				
30	25118	42.57	71.78	123(1)	29(1)						
31	25118	42.59	72.23			127(1)	46(1)				
32*	25121	-	-	81(1)	14(1)					0.15(3)	
33	25121	42.71	71.15	143(1)							
34	25121	42.65	71.31	102(1)	25(1)				10(3)		
35	25121	42.71	71.15	155(1)		103(1)	46(1)				
36	25121	42.78	71.08			97(1)	45(1)				

Table I.23 Massachusetts (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
37	25121	42.64	71.30			117(1)	55(1)				
38	25119	42.47	70.95			113(1)					
39	25119	42.45	70.96	39(1)		75(1)					
40	25119	42.21	71.34	97(1)	16(1)	104(1)	26(1)			0.17(4)	
41	25119	42.51	70.86	123(1)							
42	25119	42.40	71.08	143(1)	32(1)	126(1)				0.13(3)	
43	25119	42.42	71.11			119(1)	55(1)				
45	25119	42.19	71.20			94(1)	44(1)				
46	25119	42.28	71.24			85(1)	37(1)				
47	25119	42.24	70.97			118(1)			9(2)		
48	25119	42.51	70.91			80(1)					
49	25119	42.40	70.99			98(1)					
50	25119	42.27	71.03			107(1)	45(1)				
51	25119	42.24	70.97	152(1)						0.15(3)	
52	25119	42.26	71.40	67(1)		39(1)					
53	25119	42.52	70.89			100(1)					
54	25119	42.51	70.91	137(1)							
55	25119	42.48	71.15			108(1)	46(1)				
56	25119	42.29	71.30	94(1)							
57	25119	42.37	71.18						6(1)		
58	25119	42.29	71.30			37(1)					
59	25119	42.37	71.18	102(1)							
60	25119	42.62	70.71							0.16(4)	
61*	25119	-	-							0.22(4)	
62*	25119	-	-							0.18(4)	
63	25119	42.29	71.41			66(1)					
64	25119	42.38	71.13			104(1)	50(1)				
66	25119	42.39	71.04			174(1)	63(2)				
67	25119	42.54	70.92			91(1)					
68	25119	42.56	70.97			86(1)					

Table I.23 Massachusetts (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
69	25119	42.54	70.92	84(1)							
70	25119	42.56	70.97	85(1)							
71	25119	42.35	71.10	151(1)	51(1)	170(1)			12(3)		
72	25119	42.56	70.85	82(1)							
73	25119	42.38	71.12								1(2)
74	25119	42.34	71.13			108(1)	43(1)				
75	25119	42.08	71.02			88(1)	41(1)				
76	25119	42.38	71.03	146(1)		103(1)					
77	25119	42.31	71.06	166(1)		74(1)					
78	25119	42.32	70.97	120(1)		63(1)					
79	25119	42.35	71.05	152(1)		112(1)					
80	25119	42.37	71.04	116(1)	27(1)						
81	25119	42.33	71.07			117(1)	67(2)				
82	25119	42.33	71.07								2(3)
84	25042	42.39	72.52							0.13(3)	
85	25042	42.04	72.64							0.17(4)	
86	25042	42.15	72.62			109(1)	60(2)				
87	25042	42.19	72.60	138(1)	31(1)						
88	25042	42.18	72.61			123(1)					
90	25042	42.57	72.60							0.15(3)	
91	25042	42.34	72.59	99(1)							
92	25042	42.30	72.58	91(1)							
94	25042	42.28	72.60	88(1)							
95	25042	42.20	72.61			153(1)	60(2)				
96	25042	42.14	72.55			108(1)					
98	25042	42.09	72.60	225(1)							
100	25042	42.25	72.59	90(1)							
101	25042	42.10	72.59			121(1)					
102	25042	42.10	72.59			147(1)	58(2)				
103	25042	42.13	72.58	133(1)							

Table I.23 Massachusetts (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
104	25042	42.09	72.58	236(1)		93(1)					
105	25042	42.09	72.59	117(1)	34(1)						
106	25042	42.10	72.58			140(1)	61(2)				
107	25042	42.10	72.58			137(1)	60(2)				
108	25042	42.11	72.60								3(4)
109	25042	42.72	72.94	54(1)							
110	25042	42.72	72.94	72(1)							
112	25042	42.70	72.45			101(1)	32(1)				
113	25042	42.32	72.63			102(1)					
114	25042	42.72	72.94	114(1)							
115	25120	41.64	70.93			65(1)	34(1)				
116	25120	41.64	70.93								1(1)
117	25120	41.75	71.20	142(1)		64(1)					
118	25120	41.91	71.09			91(1)	37(1)				
122	25120	41.74	71.12	117(1)		81(1)					
123	25120	41.69	71.18	287(2)							
124	25120	41.69	71.16	154(1)							
125	25120	41.73	71.14	90(1)		103(1)					
126	25120	41.69	71.17	162(1)							
127*	25120	-	-			113(1)	56(1)				
128*	25120	-	-								1(1)
129	25120	41.93	71.26	82(1)	13(1)					0.14(3)	
130	25120	41.93	71.28			83(1)	43(1)				

*Not Plotted.

Fig. I.36 Massachusetts: Locations of SAROAD Monitors (See Table I.23 for Monitor Numbers)

Fig. I.37 Massachusetts: Monitors Reporting Adequate Data on 24-hr Average SO_2 Concentrations; No Violations

Fig. I.38 Massachusetts: Monitors Reporting Adequate Data on Annual Average SO_2 Concentrations; No Violations

Fig. I.39 Massachusetts: Monitors Reporting Adequate Data on 24-hr Average TSP Concentrations; No Violations

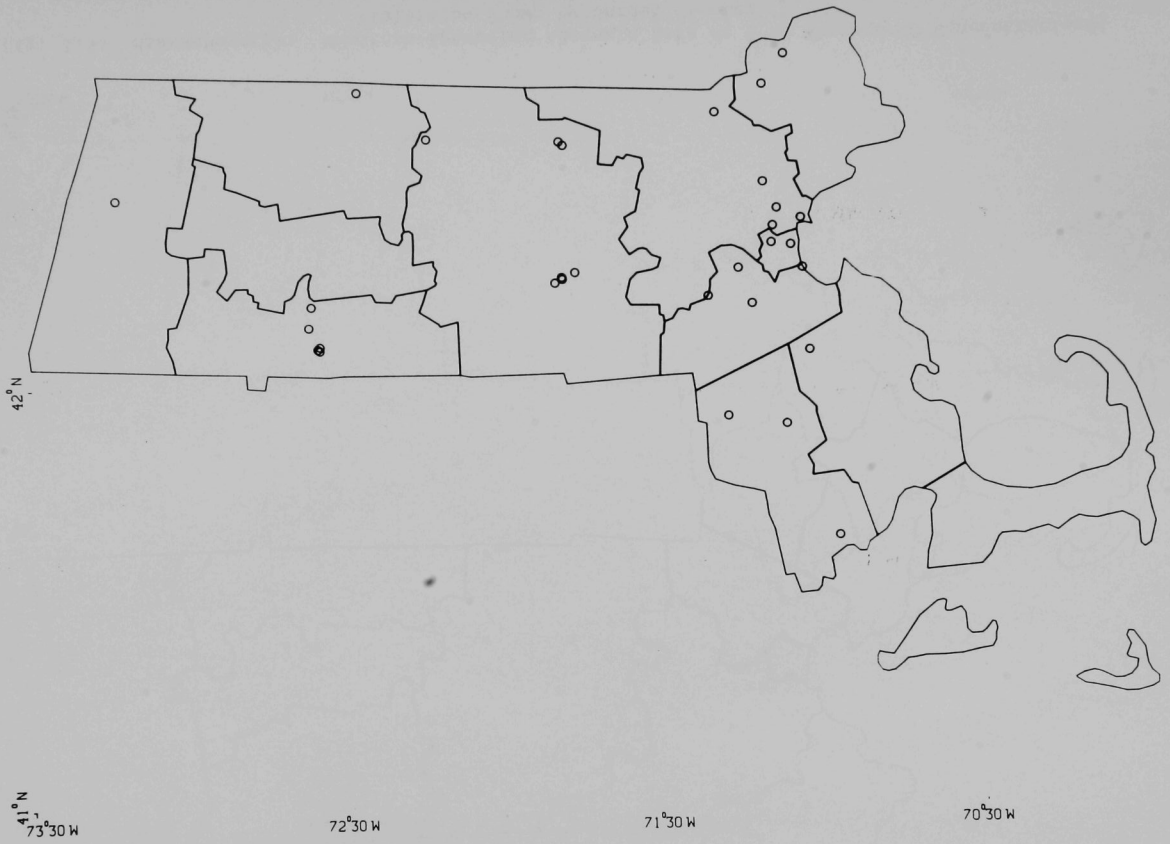


Fig. I.40 Massachusetts: Monitors Reporting Adequate Data on Annual Average TSP Concentrations; No Violations

Fig. I.41 Massachusetts: Monitors Reporting Adequate Data on 8-hr Average CO Concentrations; Violations Shown by Shaded Circles

Fig. I.42 Massachusetts: Monitors Reporting Adequate Data on 1-hr Average O_3 Concentrations; Violations Shown by Shaded Circles

Fig. I.43 Massachusetts: Monitors Reporting Adequate Data on 3-month Average Lead Concentrations; Violations Shown by Shaded Circles

Table I.24 Massachusetts: PSD Class I Areas

Location	Area Name	Acreage
	None	

Table I.25 Massachusetts: Recommended Class I Areas

Area Name	Total Acreage	Acreage Already Class I
	None	

Table I.26 Massachusetts: Areas That Cannot Be Reclassified as Class III

Area Name	Total Acreage	Acreage Already Class I
National Seashores:		
Cape Cod	44,596	-

Table I.27 Massachusetts: SO_2 Emission Limits (lb S/10^6 Btu) by Heat Input Class, Q, in Units of 10^6 Btu/hr

Source Type and Location[a]	Fuel Type	Limit for Q > Q[b]
New and Existing[c]		
Berkshire (117)	#2 Fuel Oil	0.17
	All Other Fossil Fuels	1.21
Central Massachusetts (118), Merrimack Valley (121), Metropolitan Boston (119),[d] Pioneer Valley (42), and Southeastern Massachusetts (120)	#2 Fuel Oil	0.17
	All Other Fossil Fuels	0.55
Medford, Newton, Somerville, Waltham and Watertown	#2 Fuel Oil	0.17
	All other Fossil Fuels	0.28

[a]Locations are Air Pollution Control Districts, corresponding to the Air Quality Control Regions whose numbers are shown in parentheses. See Table I.32.

[b]Maximum heat input based on unit design.

[c]New sources with Q > 250 x 10^6 Btu/hr constructed after 8/17/71 must comply at least with NSPS, or with more stringent state standards.

[d]Except Medford, Newton, Somerville, Waltham, and Watertown.

Table I.28 Massachusetts: Particulate Matter Emission Limits (lb PM/10^6 Btu) by Heat Input Class, Q, in Units of 10^6 Btu/hr

Sources	Fuel Type	Limit	
		$3 \leq Q \leq 250$[a]	$Q > 250$[a]
Existing	All Fuels	0.15	0.15
Existing in critical areas[b]	All Fuels	0.12	0.12
New[c]	All Fuels	0.10	0.05[d]

[a]Total heat input based on aggregation of all fuel burned for all units; allowable emissions based on individual stacks.

[b]A series of urban areas, such as Boston, Springfield, etc.

[c]Constructed after 8/17/71. Sources with $Q > 250 \times 10^6$ Btu/hr must comply at least with NSPS, or with more stringent state standards.

[d]Emission limit is 0.10 lb/10^6 Btu if SO_2 control device is used.

Table I.29 Massachusetts: Power Plant Location and Generating Capacity Data for 1980

Plant No.[a]	Plant Name[b]	Latitude[b]	Longitude[b]	Generating Capacity (MW), by Regulatory Class[c,d]		Capacity Factor[e] (%)	Sulfur Dioxide Limit ($lb/10^6$ Btu), by Regulatory Class[f]	
				SIP	NSPS		SIP	NSPS
1	Brayton Point	41.71	71.19	1,141	443	59	1.10	1.10
2	Canal	41.77	70.51	1,152	0	69	2.42	0.00
3	Cannon Street	41.63	70.92	76	0	14	1.10	0.00
4	Cleary	41.87	71.11	25	0	26	2.42	0.00
5	Edgar	42.24	70.96	264	0	0	1.60	0.00
6	Fitchburg	42.58	71.79	22	0	3	1.14	0.00
7	Holyoke	42.20	72.60	25	0	2	1.09	0.00
8	Kendall Square	42.36	71.08	75	0	18	0.56	0.00
9	L Street	42.34	71.04	85	0	4	1.10	0.00
10	Mount Tom	42.28	72.60	145	0	81	2.42	0.00
11	Mystic	42.39	71.06	377	591	51	1.10	1.10
12	New Boston	42.34	71.04	752	0	70	1.11	0.00
13	Riverside	42.20	72.59	4	0	12	1.08	0.00
14	Salem Harbor	42.53	70.88	774	0	47	1.10	0.00
15	Somerset	41.74	71.14	390	0	36	2.42	0.00
16	West Springfield	42.10	72.60	210	0	54	1.10	0.00

[a]See Fig. I.44.
[b]EPA's Energy Data System (EDS), except as noted.
[c]FPC form 4, 1980.
[d]Capacity subject to emission regulations of SIP or NSPS, as indicated.
[e]Calculated from annual net generation, FPC form 4, 1980.
[f]If more than one unit, fuel type, and SIP emission limit at plant, "SIP" is average weighted by size, fuel type, and capacity.

Table I.30 Massachusetts: Power Plant Fuel Use Data for 1980

Table I.30 Massachusetts: Power Plant Fuel Use Data for 1980

Plant No.[a]	Plant Name	Coal Sulfur Content[b] (%)	Coal Heating Value[b] (Btu/lb)	Coal Use[c] (10^3 ton)	Oil Sulfur Content[b] (%)	Oil Heating Value[b] (Btu/gal)	Oil Use[c] (10^3 Bbl)	Gas Heating Value[b] (Btu/ 10^3 ft^3)	Gas Use[c] (10^6 ft^3)
1	Brayton Point	1.16	13,376	672	2.05	149,531	9,995	0	0
2	Canal	0	0	0	2.14	149,728	9,883	0	0
3	Cannon Street	0	0	0	0.88	149,404	171	1,000	0
4	Cleary	0	0	0	1.78	147,636	554	0	0
5	Edgar	0	0	0	0.96	148,010	2	0	0
6	Fitchburg	0	0	0	0.24	138,354	16	0	0
7	Holyoke	0	0	0	1.00	148,542	14	1,000	0
8	Kendall Square	0	0	0	0.46	145,112	184	1,000	1.3
9	L Street	0	0	0	0.78	147,111	26	0	0
10	Mount Tom	0	0	0	2.17	149,439	1,519	0	0
11	Mystic	0	0	0	0.95	149,170	8,055	0	0
12	New Boston	0	0	0	0.90	147,927	6,729	0	0
13	Riverside	0	0	0	0	0	5	0	0
14	Salem Harbor	-	-	5	2.06	149,823	5,506	0	0
15	Somerset	0	0	0	1.99	149,303	1,822	0	0
16	West Springfield	0	0	0	1.97	149,368	1,390	1,000	3.3

[a]See Fig. I.44.

[b]FPC, form 423, 1980.

[c]FPC, form 4, 1980. Note that in cases where the sulfur content and/or the heating value of a fuel is entered accompanied by 0 in the use column, the quantities of fuel that have been used are less than 0.5×10^3 barrels of oil or tons of coal, or 0.05×10^6 cubic feet of gas.

Fig. I.44 Massachusetts: Key to Power Plant Locations

Table I.31 Massachusetts: Large Industrial Boiler Fuel Use, 1974

Table I.31 Massachusetts: Large Industrial Boiler Fuel Use, 1974

County	County Fuel Consumption (10^{12} Btu) by Boiler Size and Fuel Type								
	Coal		Residual Oil		Distillate Oil		Gas		
	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	Total
Berkshire	0.00	0.00	1.47	0.00	0.00	0.00	0.29	0.00	1.77
Essex	0.00	0.00	2.37	1.03	0.00	0.00	0.00	0.88	4.28
Hampden	0.13	0.00	2.57	0.00	0.00	0.00	0.95	0.00	3.64
Middlesex	0.00	0.00	3.03	0.00	0.00	0.00	0.60	0.00	3.63
Norfolk	0.00	0.00	1.31	0.00	0.00	0.00	0.00	0.00	1.31
Suffolk	0.00	0.00	1.11	0.00	0.00	0.00	0.43	0.00	1.54
Worcester	0.08	0.00	4.34	0.00	0.00	0.00	0.63	0.00	5.04
Subtotal	0.21	0.00	16.20	1.03	0.00	0.00	2.89	0.88	
Total	0.21		17.23		0.00		3.77		21.21
Percent of Total	0.98		81.23		0.00		17.79		100

[a]Boiler size (heat input, Q) in units of 10^6 Btu/hr.

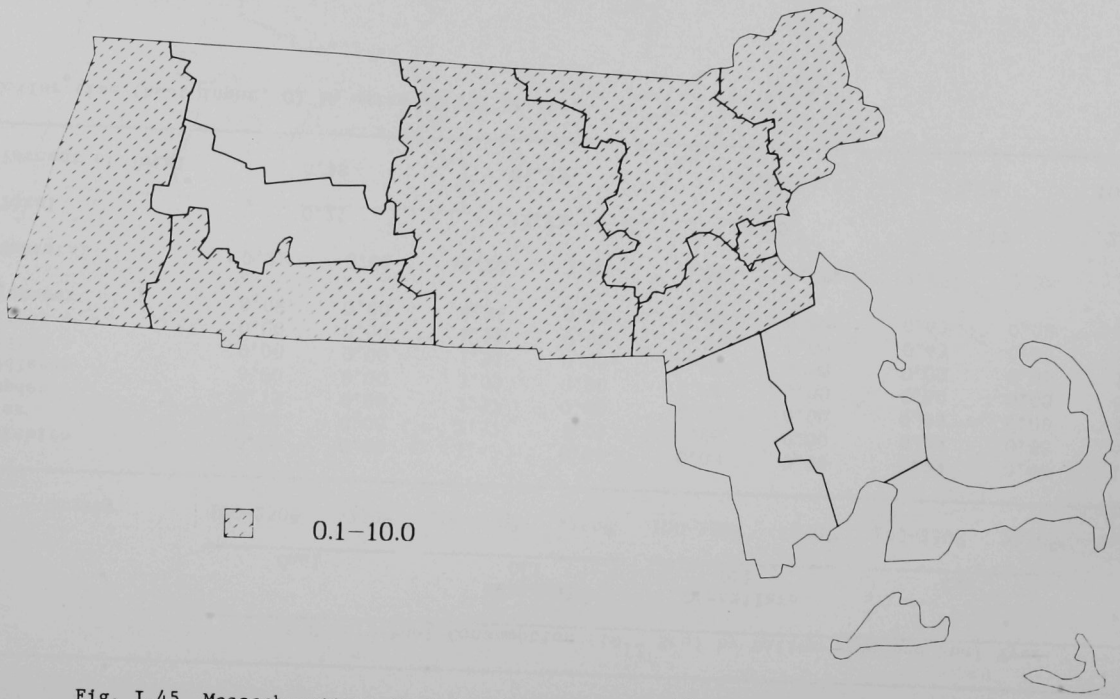


Fig. I.45 Massachusetts: Fuel Use (in Units of 10^{12} Btu) in Major Fuel-Burning Installations, by County

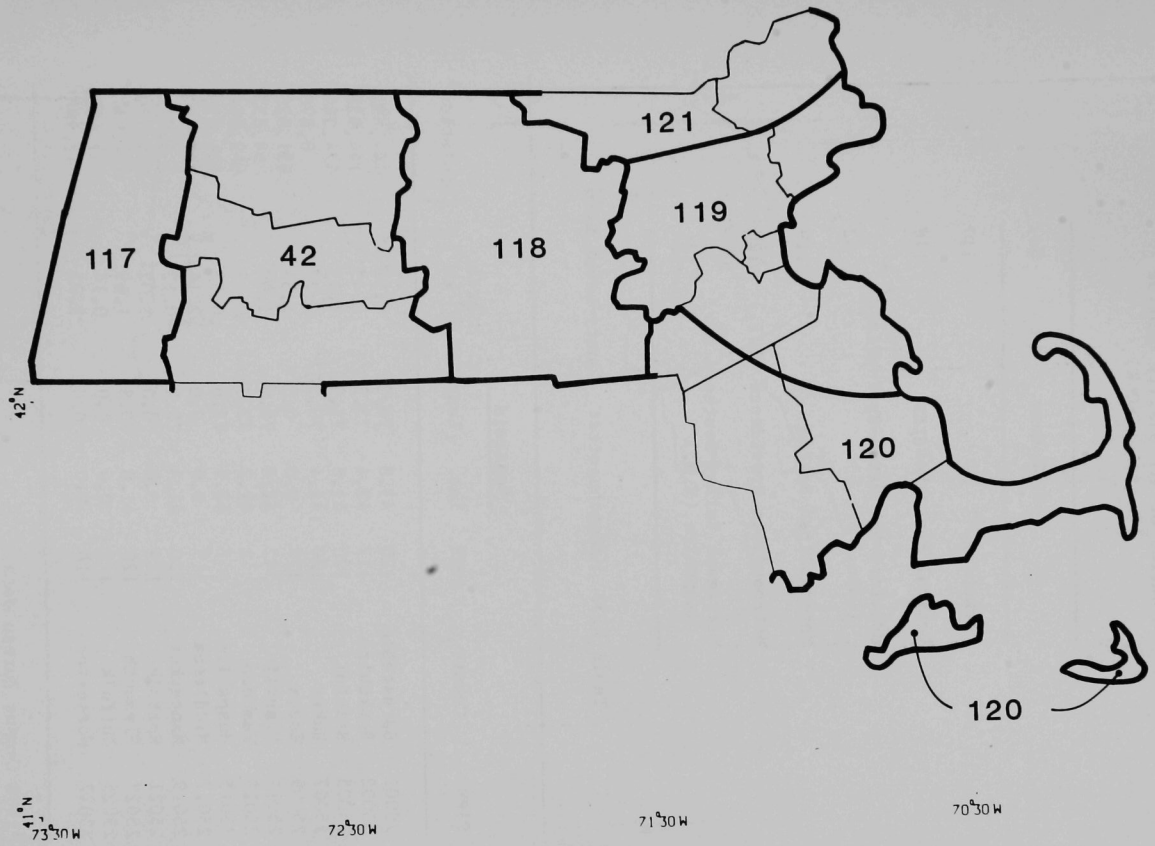


Fig. I.46 Massachusetts: Air Quality Control Regions (see Table I.32)

Table I.32 Massachusetts: Identification of Air Ouality Control Regions (AOCR)

AOCR Name	No.
Berkshire	117
Central Massachusetts	118
Hartford-New Haven-Springfield (Conn.)	42
Metropolitan Boston	119
Metropolitan Providence (R.I.)	120
Merrimack Valley-Southern New Hampshire (N.H.)	121

Table I.33 Massachusetts: County-Level Data

FIPS	County	AOCR	Centroid Lat	Centroid Long	Area (10^3 km^2)	Population[a]
25001	Barnstable	120	41.8	70.3	1.02	147,591
25003	Berkshire	117	42.4	73.2	2.45	144,928
25005	Bristol	120	41.8	71.3	1.43	474,345
25007	Dukes	120	41.4	70.7	0.27	8,878
25009	Essex	119	0.0	0.0	1.54	631,825
25011	Franklin	42	42.6	72.6	1.90	64,333
25013	Hampden	42	42.2	72.7	0.62	442,884
25015	Hampshire	42	42.4	72.6	0.53	138,630
25017	Middlesex	119	0.0	0.0	2.14	1,366,980
25019	Nantucket	120	41.3	70.2	0.12	5,072
25021	Norfolk	119	0.0	0.0	1.02	604,226
25023	Plymouth	120	41.8	70.8	1.69	404,977
25025	Suffolk	119	0.0	0.0	0.14	649,651
25027	Worcester	118	0.0	0.0	3.92	643,968

[a]1980 Census Bureau data.

Fig. I.47 Massachusetts: Key to Counties

REGION I: NEW HAMPSHIRE

AIR QUALITY SUMMARY

Attainment Status	Pollutant[a]							
	P-SO_2	S-SO_2	P-TSP	S-TSP	CO	O_3	NO_2	Pb
No. of Counties Containing NA Areas	1	0	1	1	2	7	0	0
State Implementation Plan[b]	A	N	A	E	C	C	N	N
No. of SAROAD Monitors[c]	16/2[d]	-	28/20[d]	-	5	4	0	2
No. of SAROAD Monitors with Violations[c]	1/0[d]	-	0/1[d]	-	4	0	0	0

PSD Status	Class I PSD Areas	Recommended Class I	Mandatory Class II[e]
No. of Areas	2	0	0

[a]P = primary standard; S = secondary standard.
[b]A = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review.
[c]SAROAD data as of 1979. All other information as of December 1981.
[d]24-hour average/annual average.
[e]Areas that cannot be redesignated as Class III.

ENERGY DATA

Parameter	Data
Coal Production	
Current, 1979 (10^3 tons)[a]	0
Projected, 1985 (10^3 tons)[b]	0
Coal Reserves (10^6 tons)[c]	0
Range of Coal Quality (lb $SO_2/10^6$ Btu)[a]	0
Fuel Use by Industrial Boilers, 1974 (10^{12} Btu)[d]	8.99
No. of Fossil-Fueled Power Plants	3

[a]EIA form 423.
[b]National Coal Assn. and DOE's Western Coal Development Monitoring System.
[c]Bureau of Mines Rpt. IC 8680 and 8693.
[d]FEA, MFBI Survey, 1974.

NEW HAMPSHIRE: SIP Attainment Strategies

Area[a]	NA[b]	Plan Date	EPA Action[c]	Source(s)	Strategy[d]
	SO_2:				
Berlin	P	5/79	A	Industrial boiler at paper mill	GEP stack height and new boiler
	TSP:				
Berlin	P	5/79	A	Industrial boiler at paper mill	New boiler
Keene	S	5/79	A		Redesignate to attainment
Manchester	S	5/79	A		Seek 18-month extension of attainment deadline
	CO:				
Manchester	P	2/81	C	Mobile	FMVECP; TCM; attainment by 1982
Nashua	P	5/79	C		Redesignate from unclassified to NA; plan due in 9 months
	O_3:				
Central AQCR	P	5/79	C		Redesignate to unclassified
Merrimack Valley/ Southern N.H.		5/79	C	Mobile	FMVECP; TCM

[a]Cities unless otherwise noted.

[b]Nonattainment violation indicated by pollutant and as P = primary and S = secondary.

[c]A = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

[d]See p. 30 for a listing of the abbreviations.

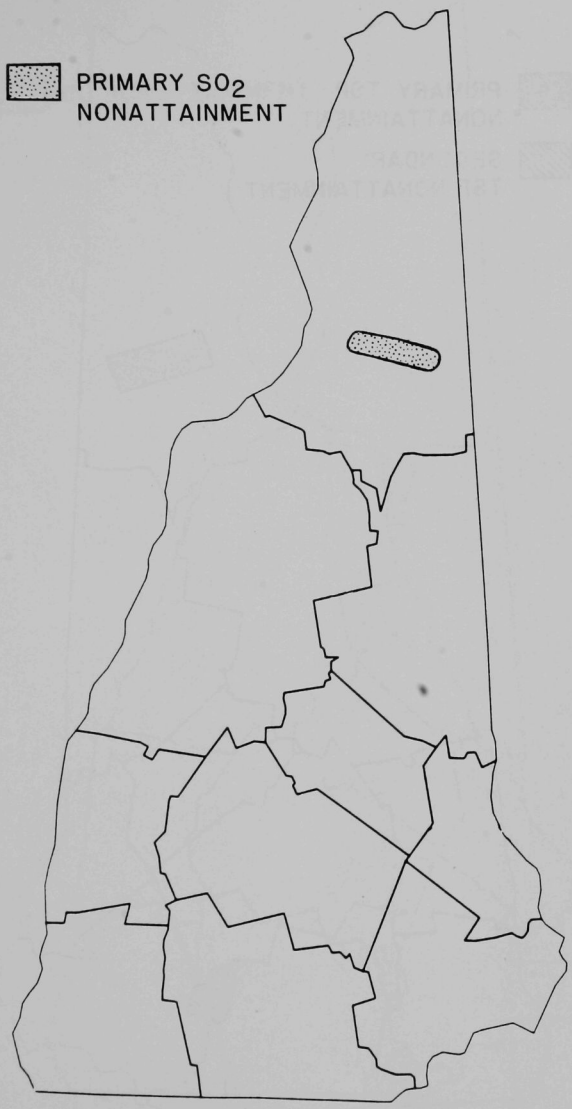


Fig. I.48 New Hampshire: SO_2 Nonattainment Areas as Designated December 1981

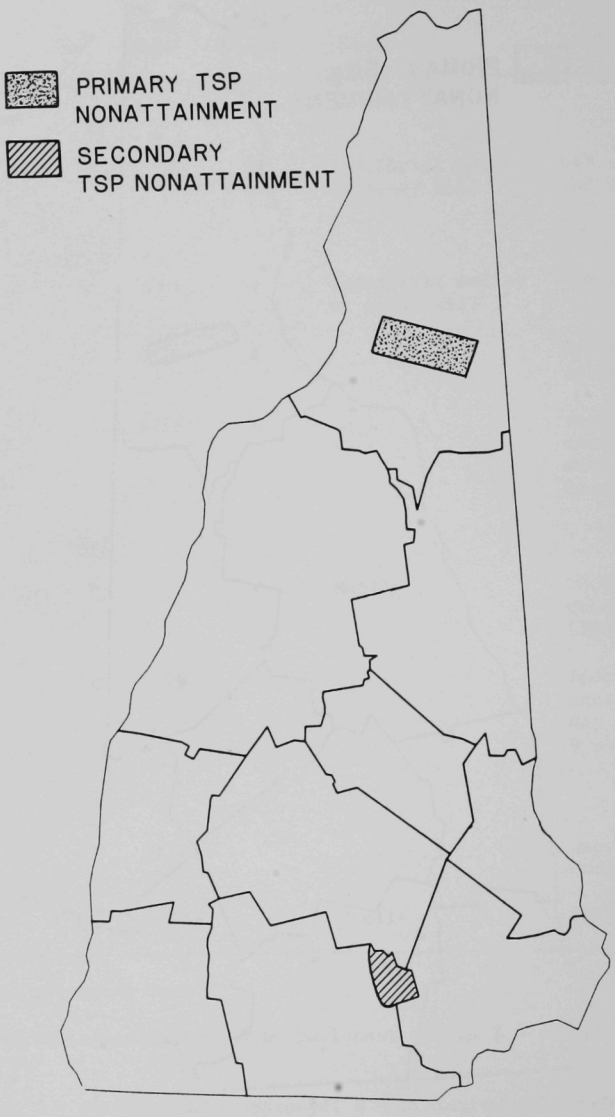


Fig. I.49 New Hampshire: TSP Nonattainment Areas as Designated December 1981

Fig. I.50 New Hampshire: CO Nonattainment Areas as Designated December 1981

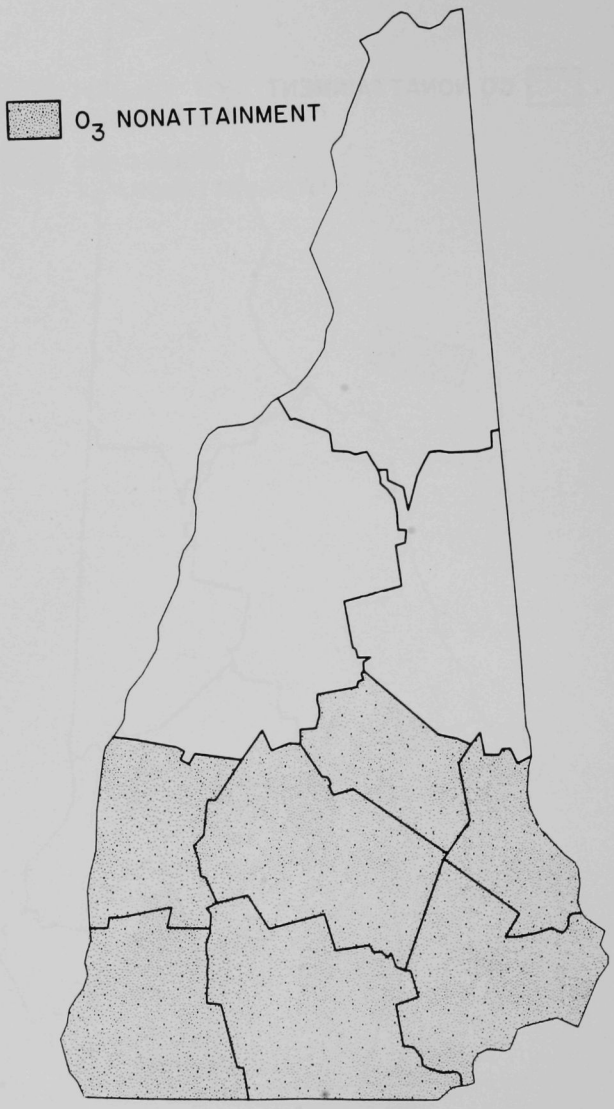


Fig. I.51 New Hampshire: O_3 Nonattainment Areas as Designated December 1981

Table I.34 New Hampshire: SAROAD Monitor Numbers and 1979 Data
($\mu g/m^3$, mg/m^3 for CO, or ppm for O_3)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
1	33001	43.66	71.50			100(1)					
2	33001	43.53	71.47			128(1)	45(1)				
3	33005	42.94	72.28	99(1)		128(1)	47(1)				
4	33005	42.91	72.32			108(1)					
5	33005	42.92	72.32	75(1)					11(3)		
6	33007	44.50	71.33	13(1)		84(1)					
7	33007	44.50	71.33								0(1)
8	33007	44.47	71.17			225(2)	80(3)				
9	33007	44.48	71.18	162(1)							
10	33007	44.46	71.18	91(1)		95(1)					
12	33007	44.47	71.18						13(4)		
13	33007	44.47	71.17	714(4)							
14	33007	44.48	71.18							0.10(2)	
15	33007	44.60	71.50	112(1)		62(1)					
16	33007	44.60	71.51			95(1)					
17	33007	44.60	71.51	33(1)		61(1)					
18	33007	44.60	71.51			217(2)	44(1)				
19	33009	43.75	71.69			80(1)	31(1)				
20	33009	43.78	71.76							0.07(1)	
21	33009	43.75	71.69	13(1)							
22*	33009	-	-			150(1)	46(1)				
23	33011	42.99	71.48			151(1)	49(1)				
24	33011	42.99	71.46			189(1)	50(1)				
25	33011	42.99	71.46						15(4)		
26	33011	42.99	71.46							0.12(2)	
27	33011	42.75	71.46	97(1)	22(1)						
28	33011	42.99	71.46	169(1)	36(1)						
29	33011	42.99	71.46			126(1)	50(1)				
30	33011	42.99	71.44			123(1)	41(1)				

Table I.34 New Hampshire (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
32	33011	42.77	71.47						18(4)		
33	33011	42.76	71.47			117(1)	55(1)				
34	33011	42.75	71.46							0.05(1)	
35	33013	43.20	71.55	13(1)		94(1)	38(1)				
36	33013	43.20	71.55								0(1)
37	33013	43.10	71.46	39(1)		134(1)	38(1)				
38	33015	42.98	70.94			93(1)	45(1)				
39	33015	43.08	70.75			94(1)	49(1)				
40	33015	43.07	70.77	13(1)		95(1)	48(1)				
41	33015	42.75	71.21	30(1)		54(1)					
42	33015	43.08	70.76						8(2)		
43	33015	43.08	70.79			77(1)	32(1)				
45	33017	43.31	70.97			104(1)	45(1)				
46	33017	43.19	70.88	36(1)		138(1)	46(1)				
47	33019	43.35	72.42			87(1)	43(1)				

*Not Plotted.

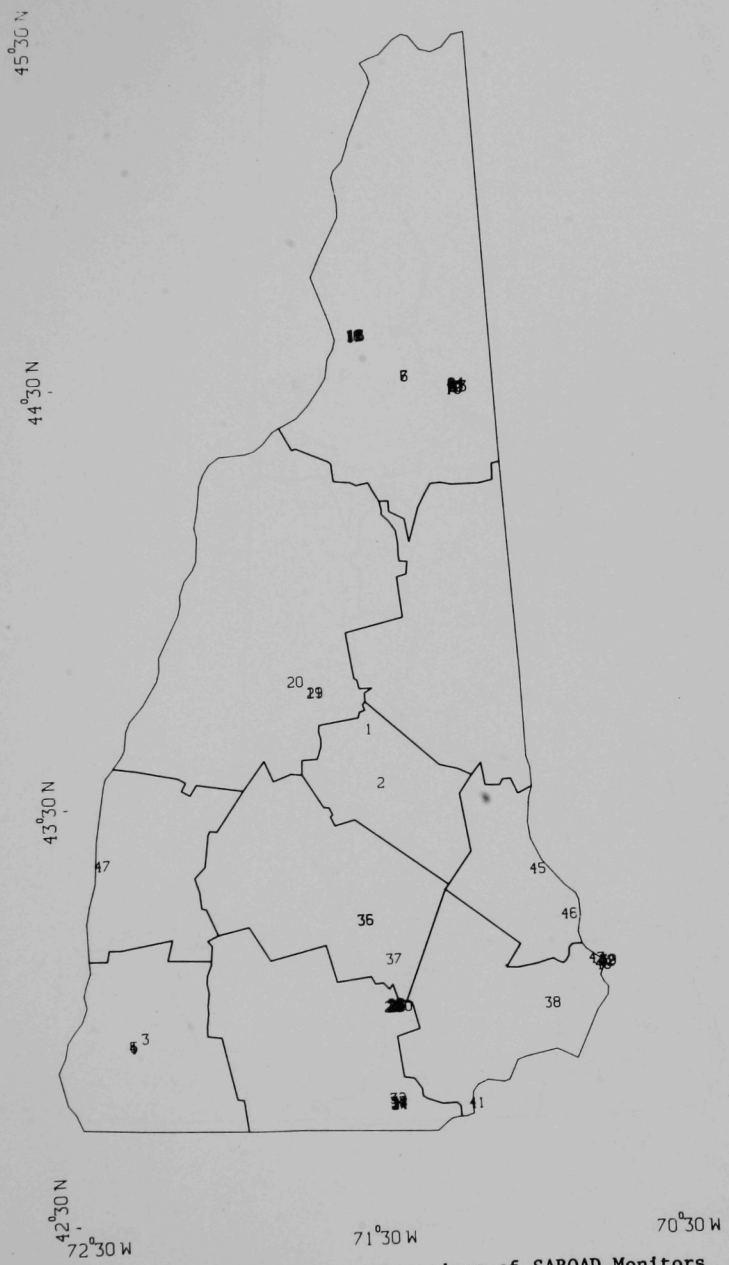


Fig. I.52 New Hampshire: Locations of SAROAD Monitors (See Table I.34 for Monitor Numbers)

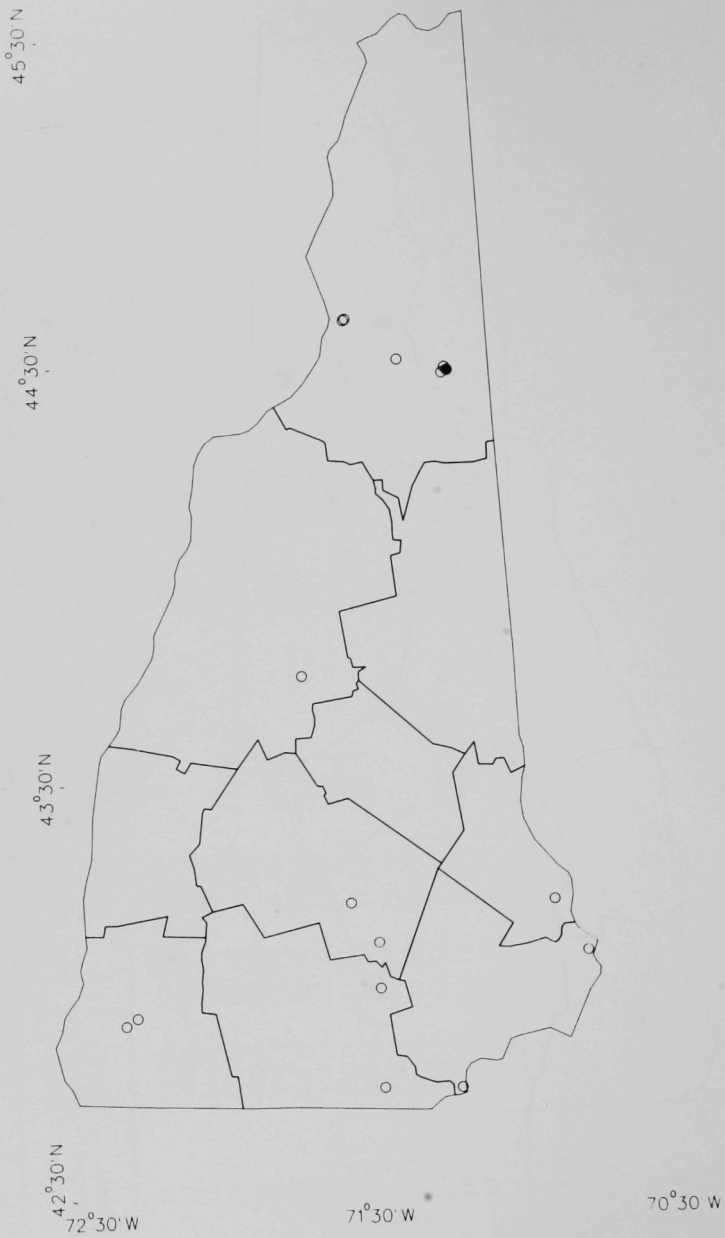


Fig. I.53 New Hampshire: Monitors Reporting Adequate Data on 24-hr Average SO_2 Concentrations; Violations Shown by Shaded Circles

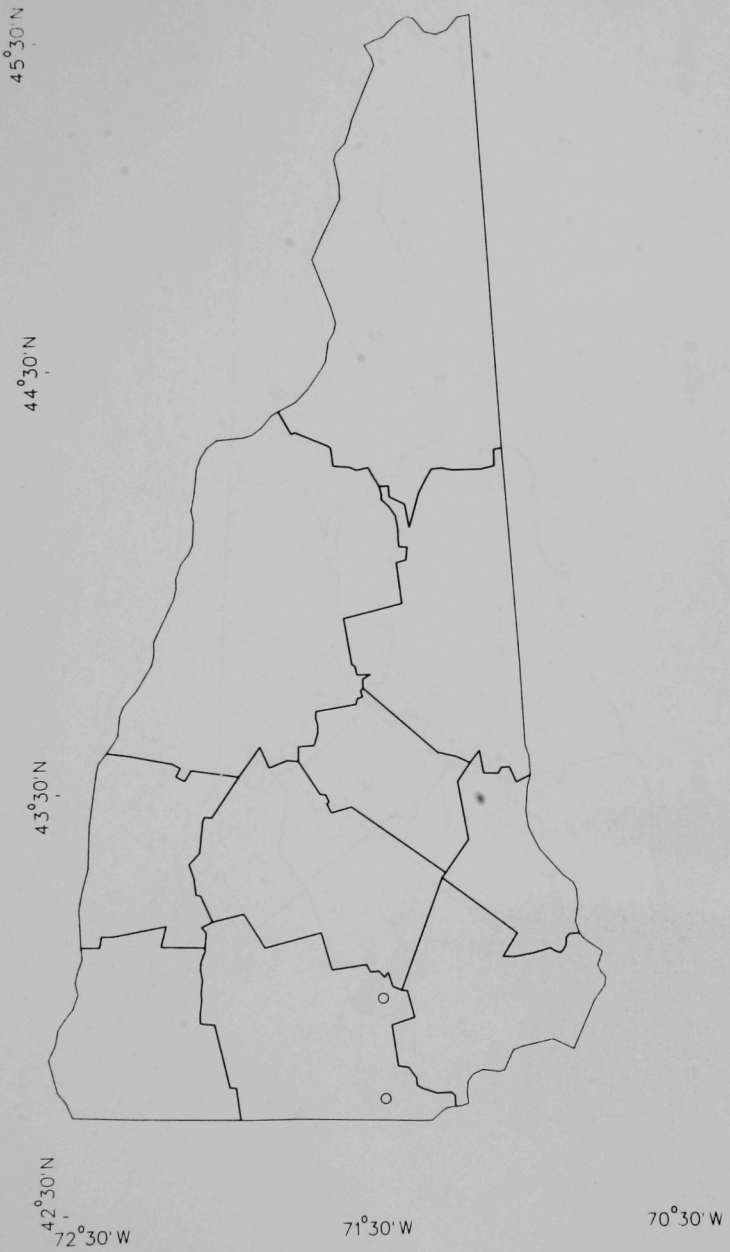


Fig. I.54 New Hampshire: Monitors Reporting Adequate Data on Annual Average SO_2 Concentrations; No Violations

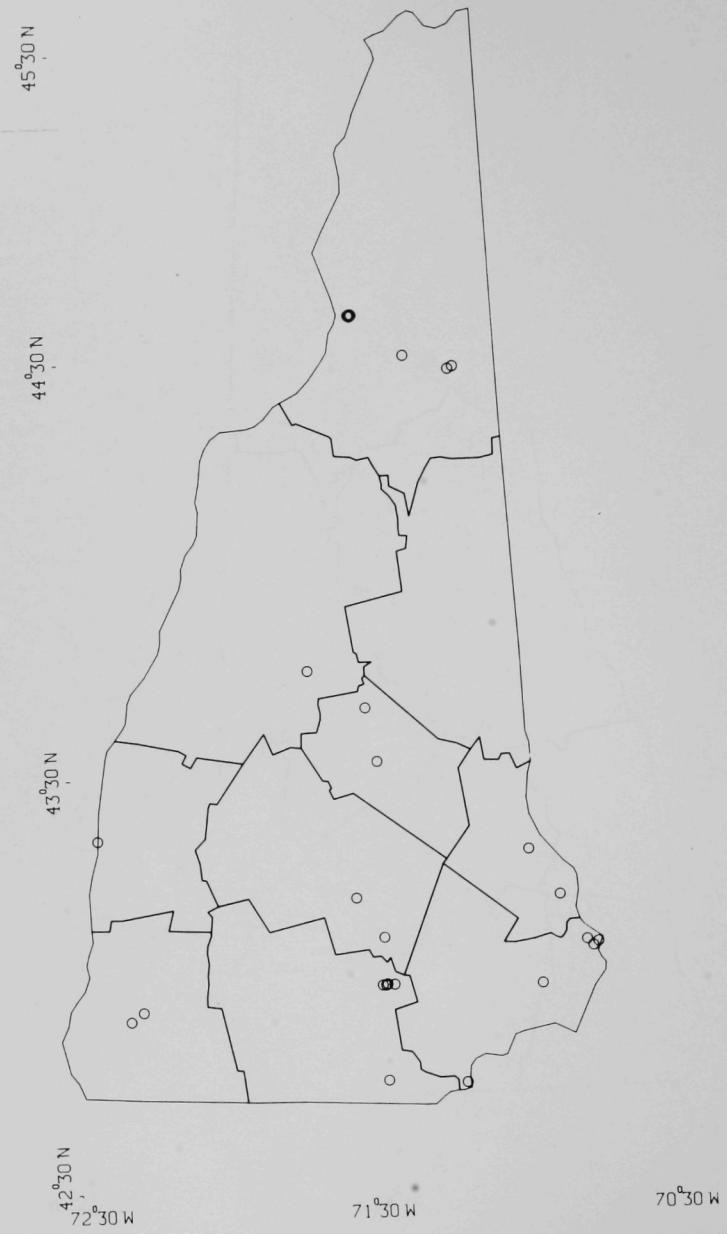


Fig. I.55 New Hampshire: Monitors Reporting Adequate Data on 24-hr Average TSP Concentrations; No Violations

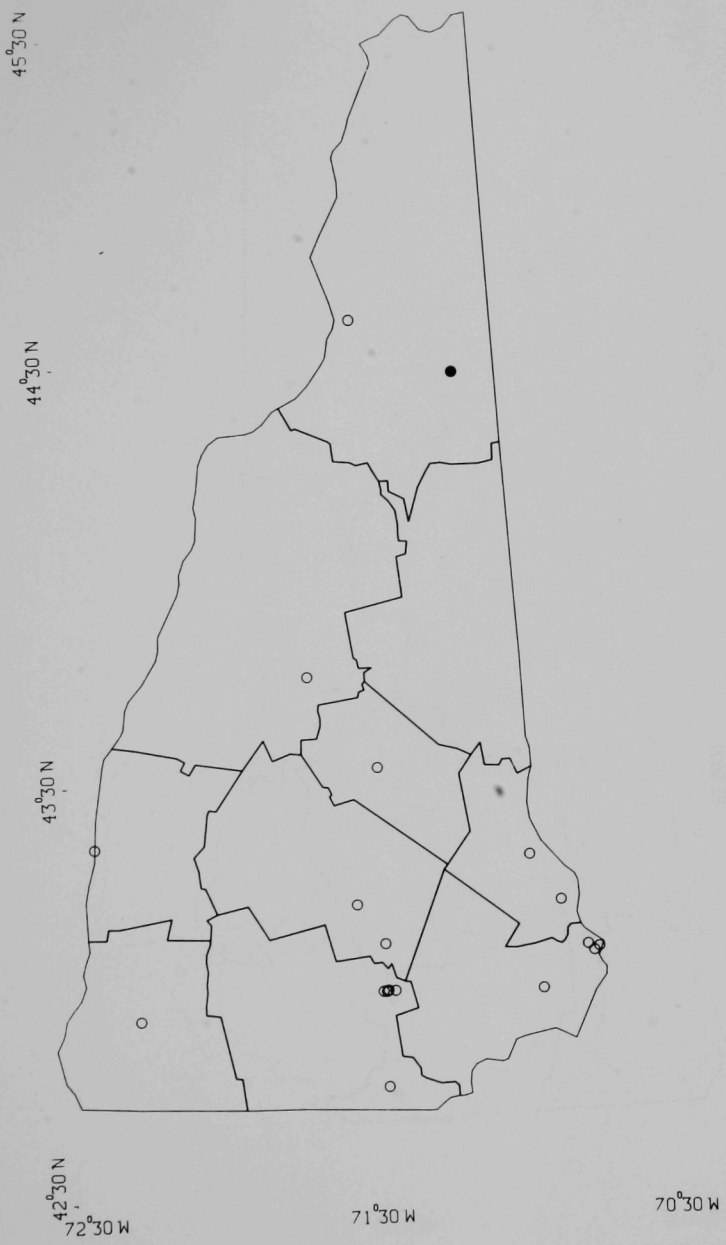


Fig. I.56 New Hampshire: Monitors Reporting Adequate Data on Annual Average TSP Concentrations; Violations Shown by Shaded Circles

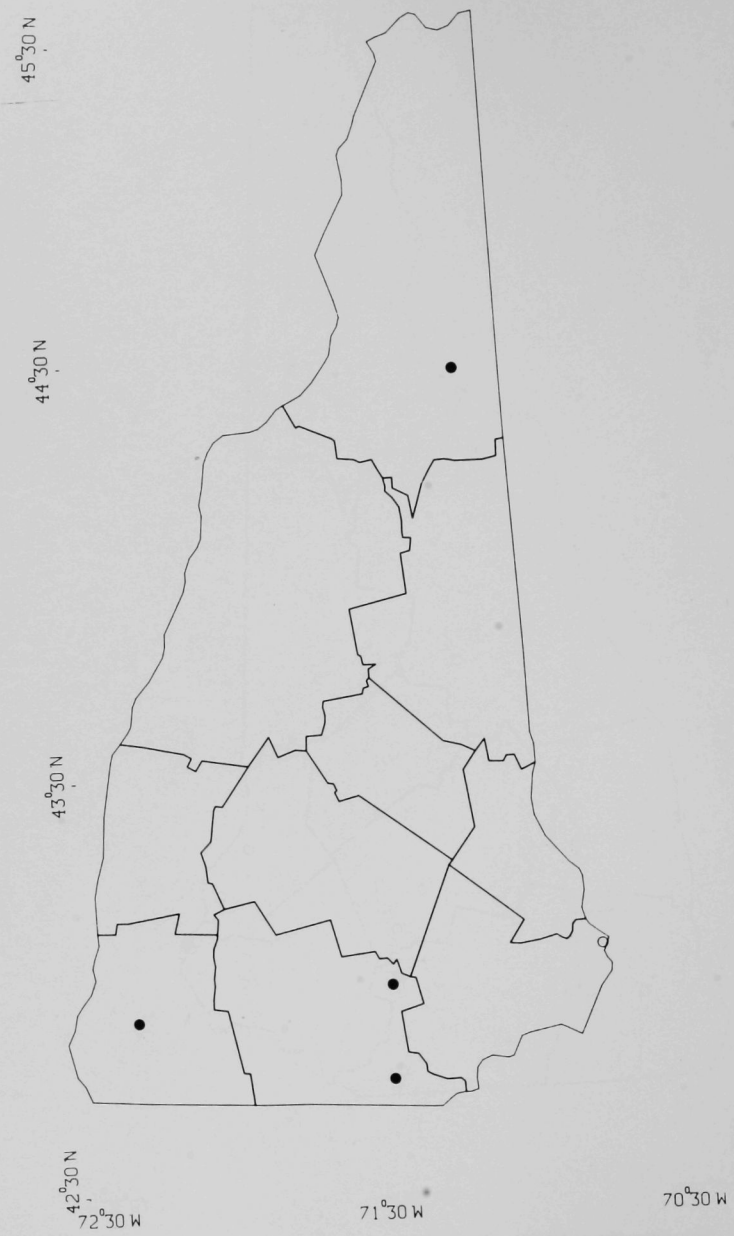


Fig. I.57 New Hampshire: Monitors Reporting Adequate Data on 8-hr Average CO Concentrations; Violations Shown by Shaded Circles

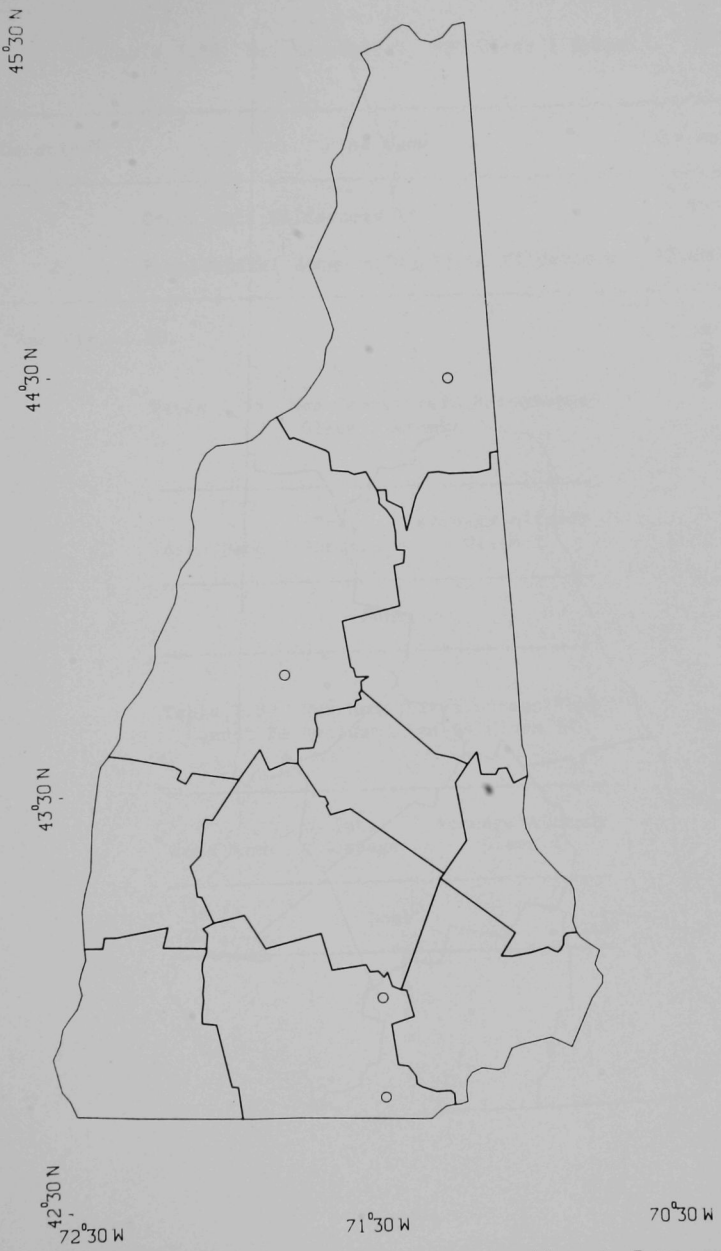


Fig. I.58 New Hampshire: Monitors Reporting Adequate Data on 1-hr Average O_3 Concentrations; No Violations

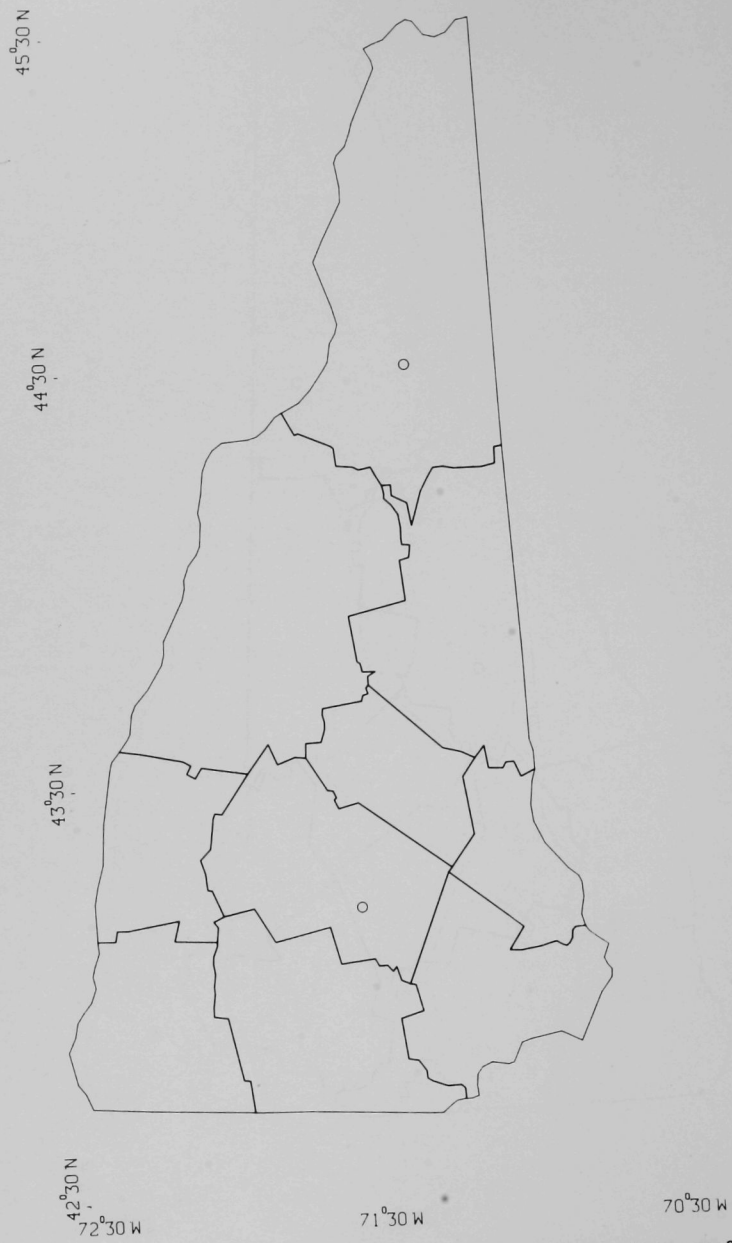


Fig. I.59 New Hampshire: Monitors Reporting Adequate Data on 3-month Average Lead Concentrations; No Violations

Table I.35 New Hampshire: PSD Class I Areas

Location[a]	Area Name	Acreage
1	Great Gulf Wilderness	5,552
2	Presidential Range - Dry River Wilderness	20,000

[a]See Fig. I.60.

Table I.36 New Hampshire: Recommended Class I Areas

Area Name	Total Acreage	Acreage Already Class I
None		

Table I.37 New Hampshire: Areas That Cannot Be Reclassified as Class II

Area Name	Total Acreage	Acreage Already Class I
None		

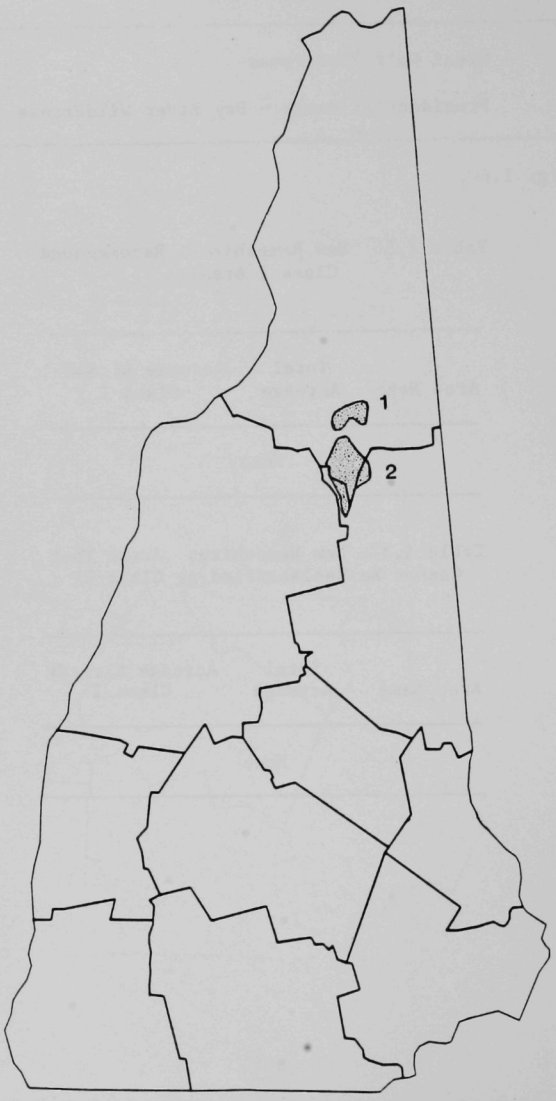


Fig. I.60 New Hampshire: Location of PSD Class I Areas

Table I.38 New Hampshire: SO_2 Emission Limits (lb S/10^6 Btu) by Heat Input Class, Q, in Units of 10^6 Btu/hr

Source Type and Location	Fuel Type	Maximum Sulfur Content (%)	Limit for Q > 0[a]
New and Existing			
New Hampshire portion of Androscoggin Valley AQCR	All Fuels	2.2	-
Remainder of State	Coal	-	2.8[b]
		-	2.0[c]
	#2 Fuel Oil	0.4	-
	#4 Fuel Oil	1.0	-
	#5 and #6 Fuel Oil	2.0	-
New[d]			
Statewide (after 4/15/80)	Coal	-	1.5[b]

[a]Basis for total heat input not specified.
[b]Refers to maximum value (lb S/10^6 Btu).
[c]Refers to 3-month average value (lb S/10^6 Btu).
[d]New sources with Q > 250 x 10^6 Btu/hr must comply at least with NSPS, or with more stringent state standards.

Table I.39 New Hampshire: Particulate Matter Emission Limits (lb PM/10^6 Btu) by Heat Input Class, Q, in Units of 10^6 Btu/hr

		Limit		
Sources	Fuel Type	$Q \leq 10^a$	$10 < Q < 10{,}000^a$	$Q \geq 10{,}000^a$
Existing	All Fuels		$0.8803Q^{-0.1665}$[c]	0.19
		$Q \leq 10^a$	$10 < Q \leq 250^a$	$Q > 250^a$
New[b]	All Fuels	0.6	$1.0286Q^{-0.2341}$[c]	0.10

[a]Total heat input based on aggregate of all fuels burned (by individual stack) and allowable emissions based on individual stack.
[b]Constructed after 2/18/72. Sources with Q > 250 x 10^6 Btu/hr must comply at least with NSPS, or with more stringent state standards.
[c]Allowable PM emissions must be evaluated on the basis of each source's particular value of Q.

Table I.40 New Hampshire: Power Plant Location and Generating Capacity Data for 1980

Plant No.[a]	Plant Name[b]	Latitude[b]	Longitude[b]	Generating Capacity (MW), by Regulatory Class[c,d]		Capacity Factor[e] (%)	Sulfur Dioxide Limit ($lb/10^6$ Btu), by Regulatory Class[f]	
				SIP	NSPS		SIP	NSPS
1	J.O. Newington 1	43.10	70.79	420	0	48	2.17	0.00
2	Merrimack	43.14	71.47	456	0	63	2.80	0.00
3	Schiller	43.09	70.78	180	0	34	2.15	0.00

[a]See Fig. I.61.

[b]EPA's Energy Data System (EDS), except as noted.

[c]FPC form 4, 1980.

[d]Capacity subject to emission regulations of SIP or NSPS, as indicated.

[e]Calculated from annual net generation, FPC form 4, 1980.

[f]If more than one unit, fuel type, and SIP emission limit at plant, "SIP" is average weighted by size, fuel type, and capacity.

Table I.41 New Hampshire: Power Plant Fuel Use Data for 1980

Plant No.[a]	Plant Name	Coal Sulfur Content[b] (%)	Coal Heating Value[b] (Btu/lb)	Coal Use[c] (10^3 ton)	Oil Sulfur Content[b] (%)	Oil Heating Value[b] (Btu/gal)	Oil Use[c] (10^3 Bbl)	Gas Heating Value[b] (Btu/ 10^3 ft^3)	Gas Use[c] (10^6 ft^3)
1	J.O. Newington 1	0	0	0	1.94	148,689	3,117	0	0
2	Merrimack	2.55	13,408	1,080	0.17	136,329	4	0	0
3	Schiller	0	0	0	1.92	148,734	1,171	0	0

[a]See Fig. I.61.

[b]FPC form 423, 1980.

[c]FPC form 4, 1980. Note that in cases where the sulfur content and/or the heating value of a fuel is entered accompanied by 0 in the use column, the quantities of fuel that have been used are less than 0.5×10^3 barrels of oil or tons of coal, or 0.05×10^6 cubic feet of gas.

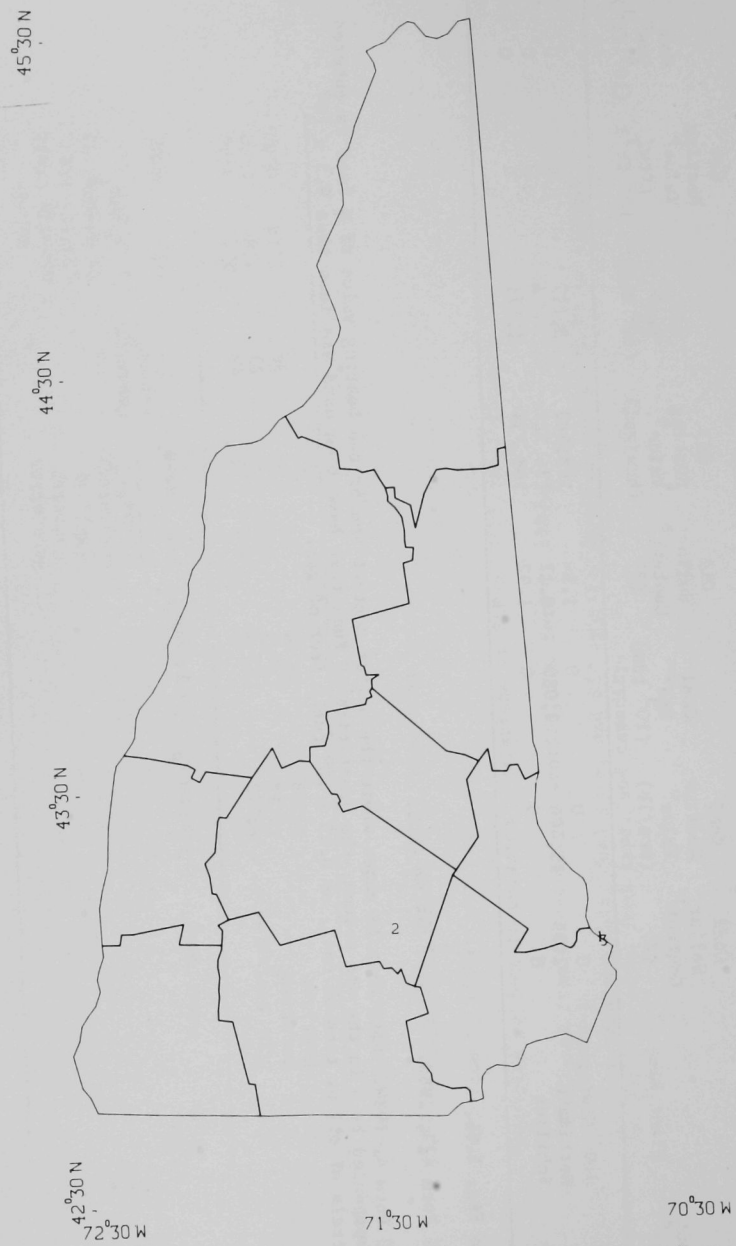


Fig. I.61 New Hampshire: Key to Power Plant Locations

Table I.42 New Hampshire: Large Industrial Boiler Fuel Use, 1974

County	County Fuel Consumption (10^{12} Btu) by Boiler Size and Fuel Type								
	Coal		Residual Oil		Distillate Oil		Gas		
	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	Total
Coos	0.00	0.00	6.61	0.00	0.00	0.00	0.00	0.00	6.61
Hillsborough	0.00	0.00	0.47	0.00	0.00	0.00	0.27	0.00	0.74
Rockingham	0.00	0.00	1.25	0.00	0.00	0.00	0.39	0.00	1.64
Subtotal	0.00	0.00	8.33	0.00	0.00	0.00	0.66	0.00	
Total	0.00		8.33		0.00		0.66		8.99
Percent of Total	0.00		92.66		0.00		7.34		100

[a]Boiler size (heat input, Q) in units of 10^6 Btu/hr.

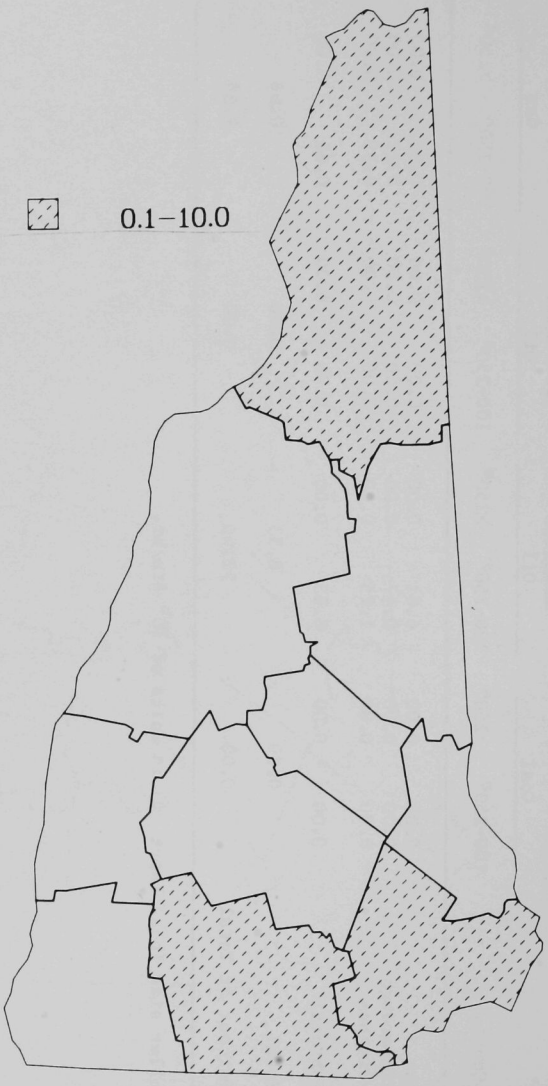


Fig. I.62 New Hampshire: Fuel Use (in Units of 10^{12} Btu) in Major Fuel-Burning Installations, by County

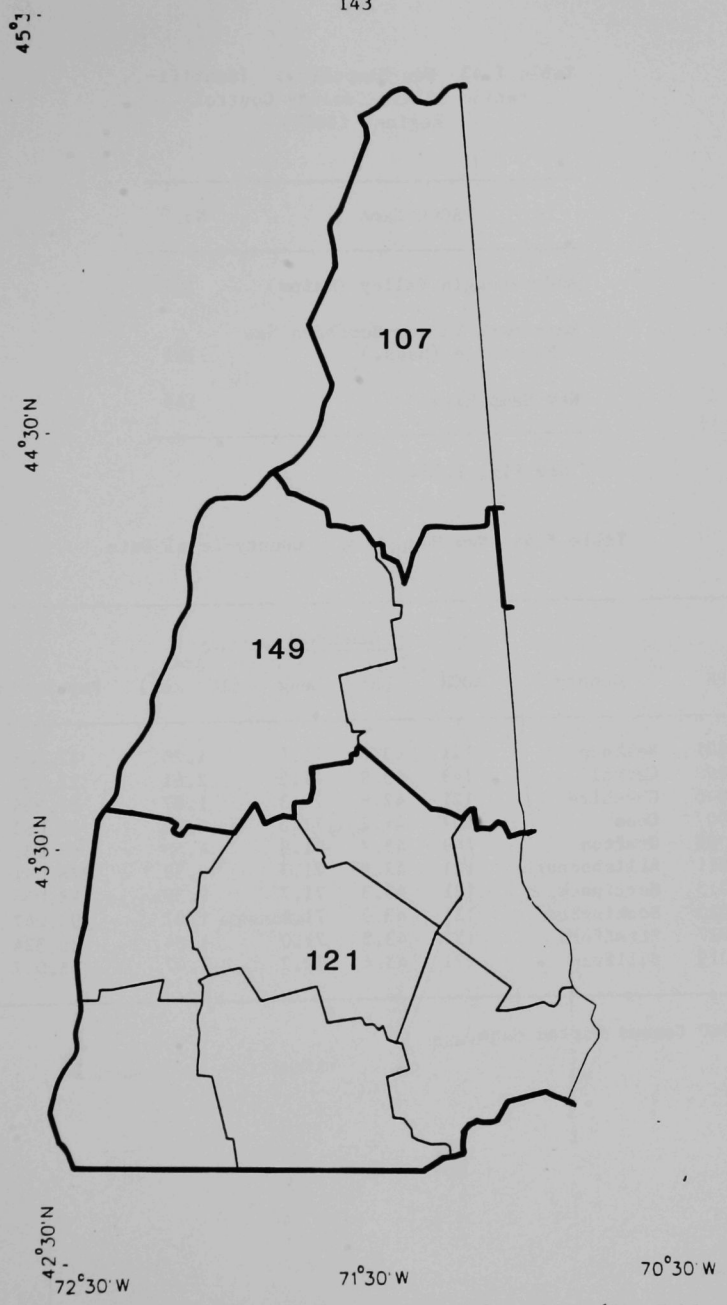


Fig. I.63 New Hampshire: Air Quality Control Regions (See Table I.43)

Table I.43 New Hampshire: Identification of Air Quality Control Regions (AQCR)

AQCR Name	No.[a]
Androscoggin Valley (Maine)	107
Merrimack Valley-Southern New Hampshire (Mass.)	121
New Hampshire	149

[a]See Fig. I.63.

Table I.44 New Hampshire: County-Level Data

FIPS	County	AQCR	Centroid Lat	Centroid Long	Area (10^3 km^2)	Population[a]
33001	Belknap	121	43.5	71.4	1.20	42,806
33003	Carroll	149	43.9	71.2	2.61	27,730
33005	Cheshire	121	42.9	72.3	1.87	61,939
33007	Coos	107	44.7	71.3	4.72	35,061
33009	Grafton	149	43.9	71.8	4.50	65,731
33011	Hillsborough	121	42.9	71.7	2.38	276,341
33013	Merrimack	121	43.3	71.7	2.39	98,038
33015	Rockingham	121	43.0	71.1	1.87	190,047
33017	Strafford	121	43.3	71.0	1.04	85,324
33019	Sullivan	121	43.4	72.2	1.47	36,097

[a]1980 Census Bureau data.

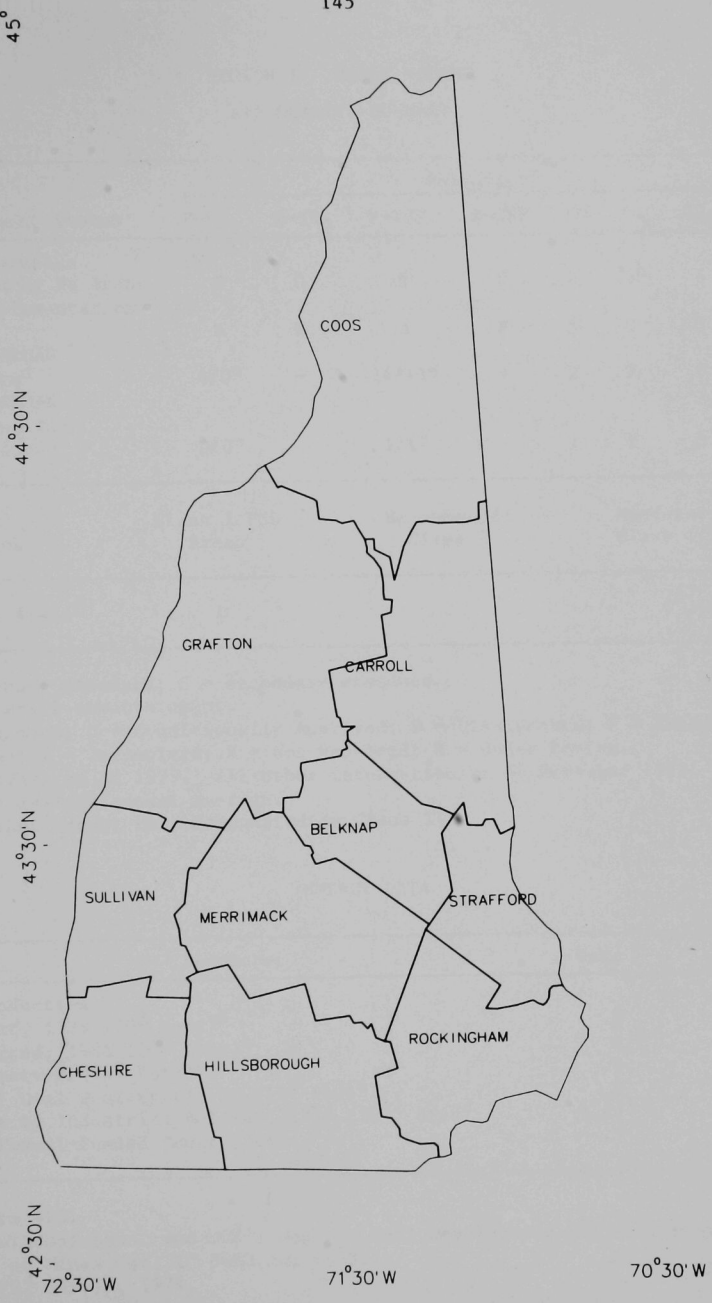


Fig. I.64 New Hampshire: Key to Counties

REGION I: RHODE ISLAND

AIR QUALITY SUMMARY

Attainment Status	Pollutant[a]							
	P-SO_2	S-SO_2	P-TSP	S-TSP	CO	O_3	NO_2	Pb
No. of Counties Containing NA Areas	0	0	2	0	2	5[b]	0	0
State Implementation Plan[c]	N	N	A	N	A	C	N	N
No. of SAROAD Monitors[d]	4/0[e]	-	14/11[e]	-	2	2	0	10
No. of SAROAD Monitors with Violations[d]	0/0[e]	-	1/1[e]	-	1	1	0	4

PSD Status	Class I PSD Areas	Recommended Class I	Mandatory Class II[f]
No. of Areas	0	0	0

[a]P = primary standard; S = secondary standard.
[b]Entire state nonattainment.
[c]A = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review.
[d]SAROAD data as of 1979. All other information as of December 1981.
[e]24-hour average/annual average.
[f]Areas that cannot be redesignated as Class III.

ENERGY DATA

Parameter	Data
Coal Production	
Current, 1979 (10^3 tons)[a]	0
Projected, 1985 (10^3 tons)[b]	0
Coal Reserves (10^6 tons)[c]	0
Range of Coal Quality (lb $SO_2/10^6$ Btu)[a]	0
Fuel Use by Industrial Boilers, 1974 (10^{12} Btu)[d]	1.79
No. of Fossil-Fueled Power Plants	2

[a]EIA form 423.
[b]National Coal Assn. and DOE's Western Coal Development Monitoring System.
[c]Bureau of Mines Rpt. IC 8680 and 8693.
[d]FEA, MFBI Survey, 1974.

RHODE ISLAND: SIP Attainment Strategies

Area[a]	NA[b]	Plan Date	EPA Action[c]	Source(s)	Strategy[d]
	TSP:				
Providence	P	2/79	A	Redesignate to attainment based on faulty monitor reading and designate as primary NA again based on new monitor; 9 months to submit new SIP	
	CO:				
Providence	P	8/79	A	Mobile	FMVECP; TCM; I&M; attainment by 1987
	O_3:				
Statewide	P	8/79	C	Mobile	RACT on VOC sources; FMECP; TCM; I&M; attainment by 1987

[a]Cities unless otherwise noted.

[b]Nonattainment violation indicated by pollutant and as P = primary and S = secondary.

[c]A = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

[d]See p. 30 for a listing of the abbreviations.

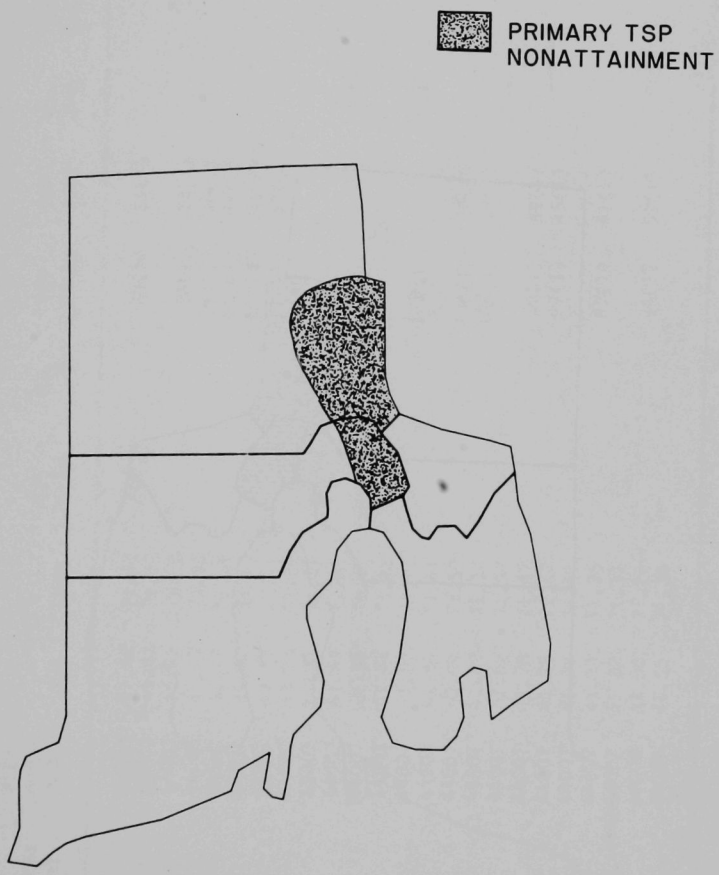


Fig. I.65 Rhode Island: TSP Nonattainment Areas as Designated December 1981

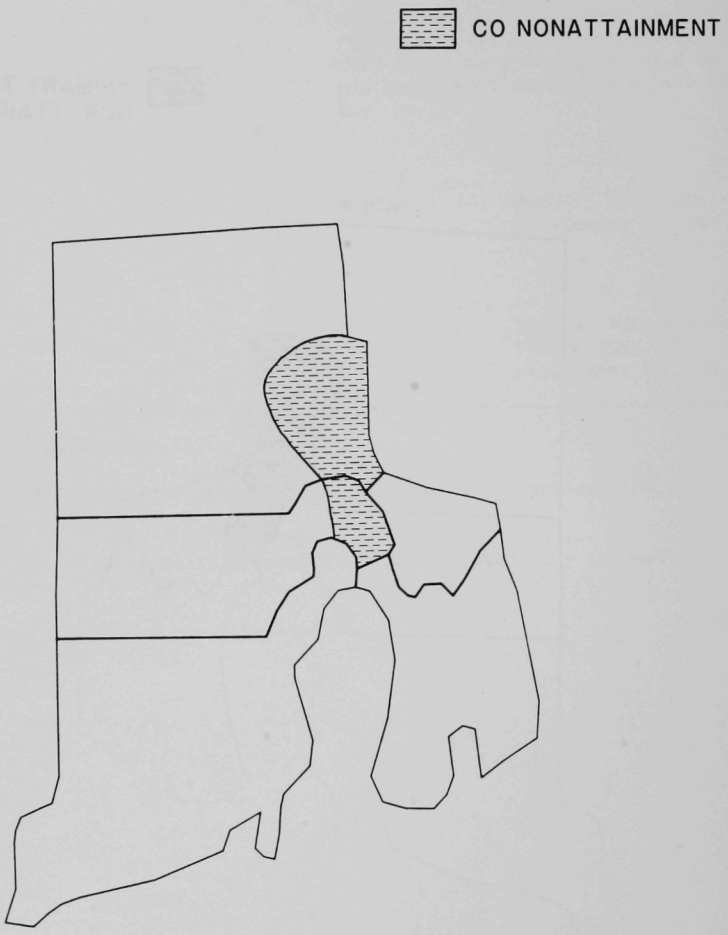


Fig. I.66 Rhode Island: CO Nonattainment Areas as Designated December 1981

Table I.45 Rhode Island: SAROAD Monitor Numbers and 1979 Data ($\mu g/m^3$, mg/m^3 for CO, or ppm for O_3)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
1	44003	41.62	71.72	71(1)		60(1)	21(1)			0.18(4)	
2	44003	41.62	71.72								0(1)
4	44003	41.62	71.72			56(1)	20(1)				0(1)
5	44005	41.49	71.31			69(1)	38(1)				
6	44007	41.88	71.38			111(1)	46(1)				
7	44007	41.82	71.41			276(3)	82(3)				3(4)
8	44007	41.82	71.41			127(1)	53(1)				2(3)
11	44007	41.83	71.41			53(1)					
13	44007	41.83	71.41	155(1)						0.12(2)	
14	44007	41.82	71.41					13(4)			
16	44007	41.82	71.41	166(1)							
17	44007	41.82	71.42	76(1)							
18	44007	41.83	71.41			116(1)		8(2)			2(4)
19	44007	41.83	71.41								0(1)
20	44007	42.00	71.50			136(1)	49(1)				
21	44007	41.82	71.37			100(1)	48(1)				
22	44007	41.82	71.37								2(4)
23	44007	41.78	71.47			59(1)	49(1)				
24	44007	41.78	71.47			97(1)	45(1)				
26	44007	41.78	71.47								1(1)
28	44007	41.84	71.36			82(1)	41(1)				
29	44007	41.82	71.37								0(1)
31	44009	41.38	71.83			95(1)	52(1)				
33	44009	41.55	71.70								0(1)

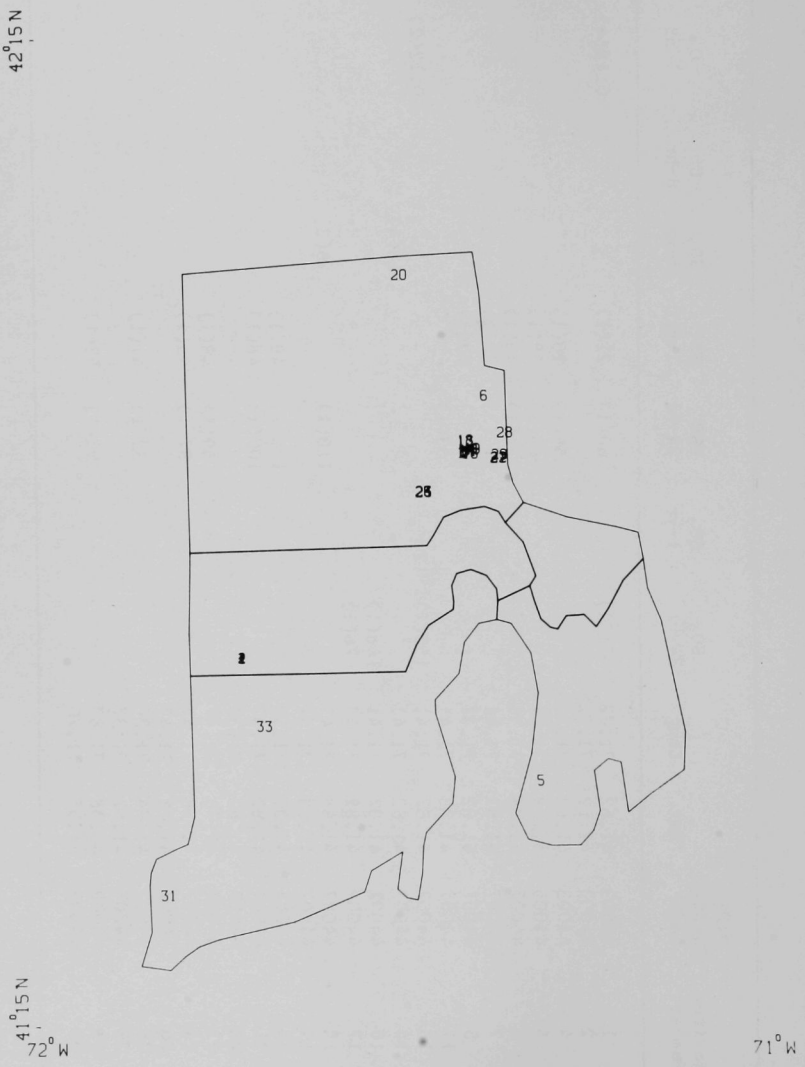


Fig. I.67 Rhode Island: Key to Monitor Locations (See Table I.45 for Monitor Numbers)

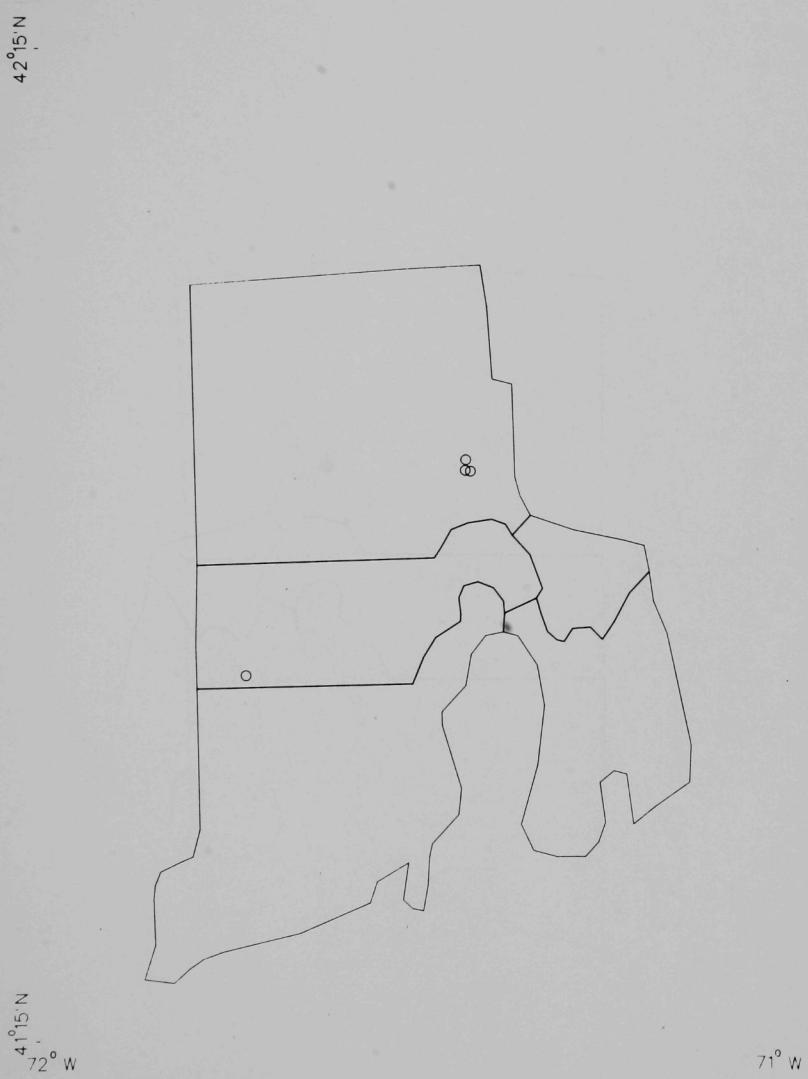


Fig. I.68 Rhode Island: Monitors Reporting Adequate Data on 24-hr Average SO_2 Concentrations; No Violations

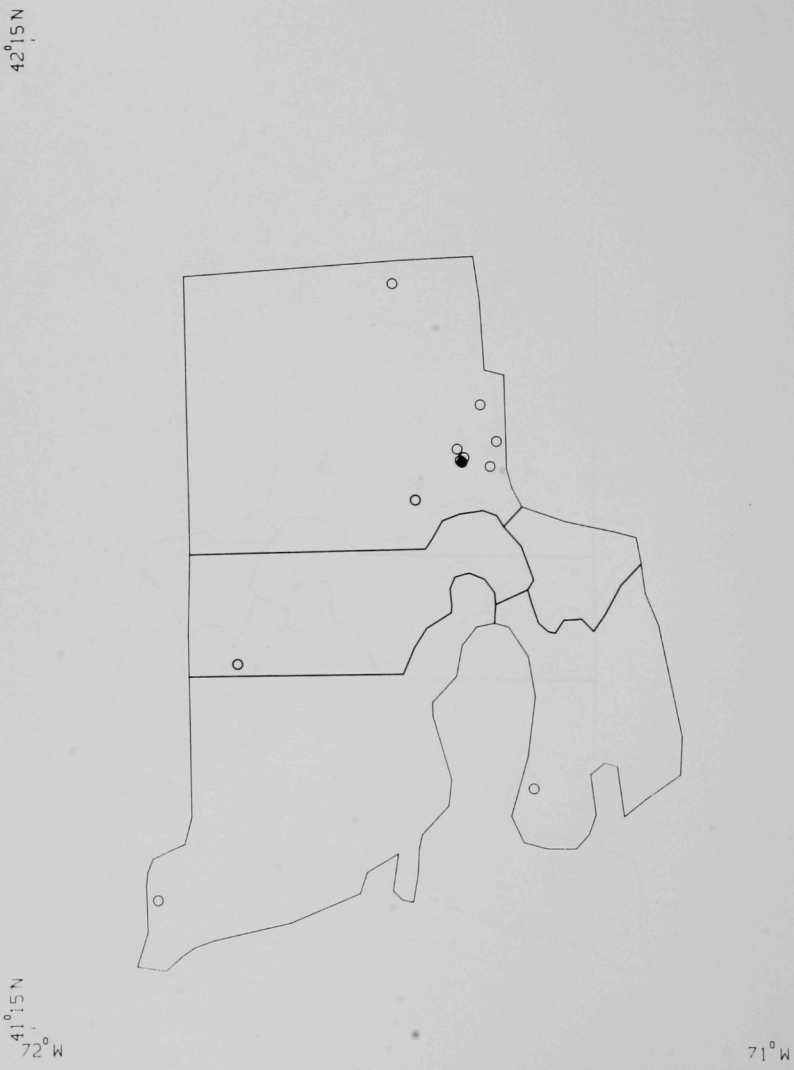


Fig. I.69 Rhode Island: Monitors Reporting Adequate Data on 24-hr Average TSP Concentrations; Violations Shown by Shaded Circles

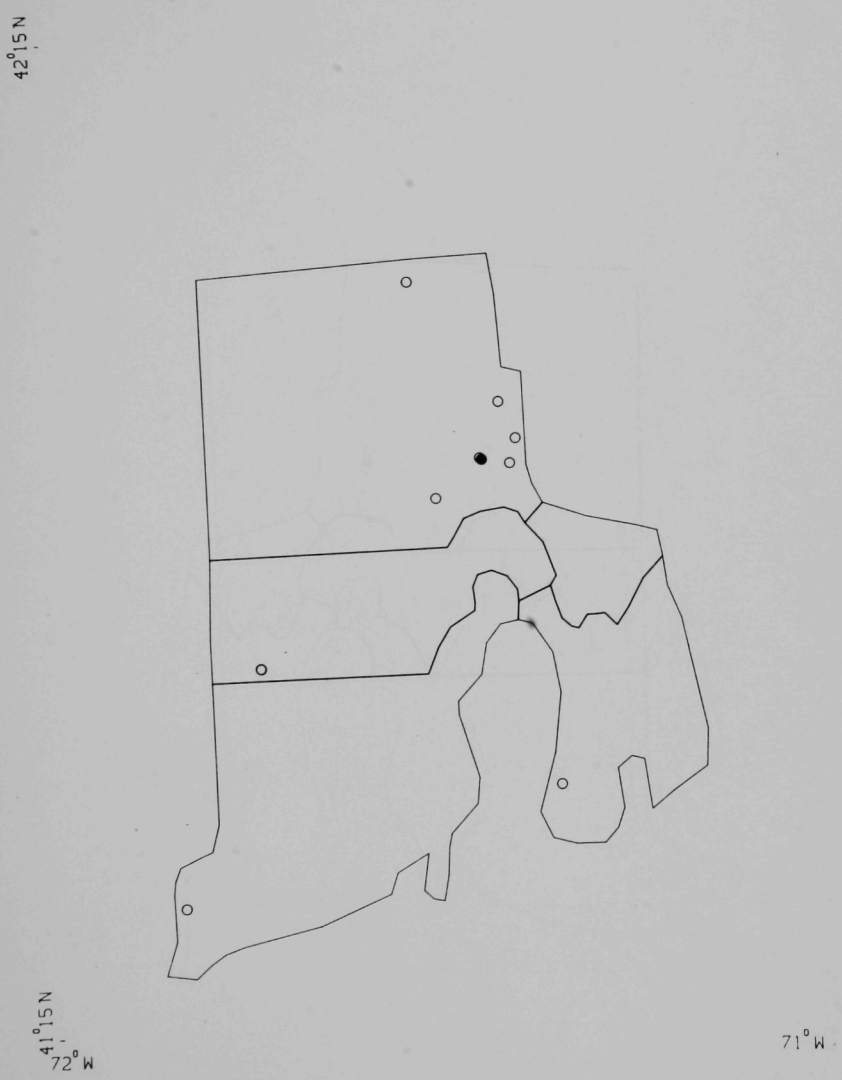


Fig. I.70 Rhode Island: Monitors Reporting Adequate Data on Annual Average TSP Concentrations; Violations Shown by Shaded Circles

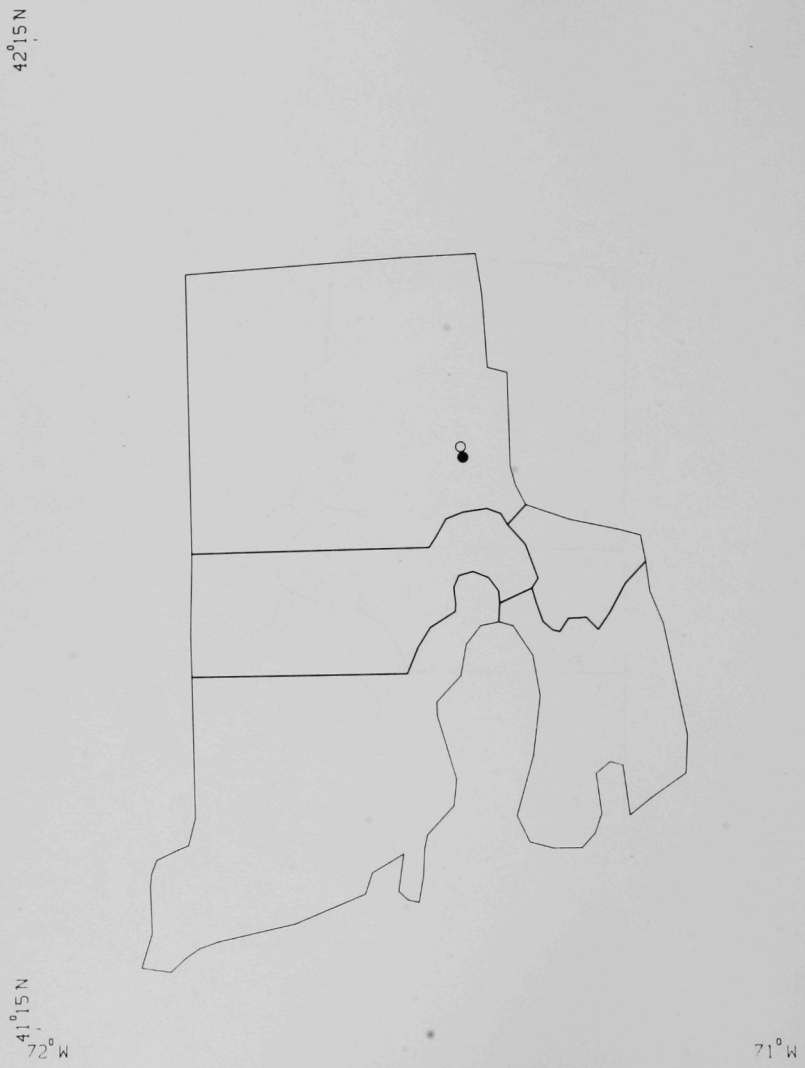


Fig. I.71 Rhode Island: Monitors Reporting Adequate Data on 8-hr Average CO Concentrations; Violations Shown by Shaded Circles

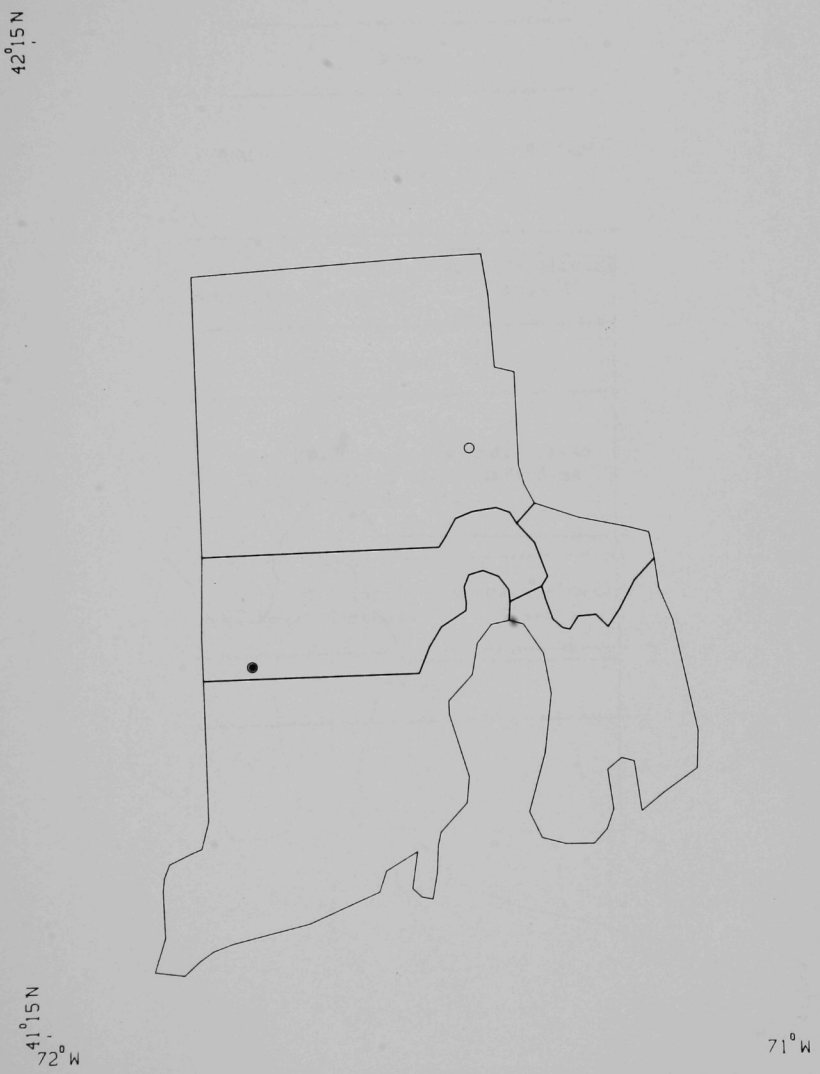


Fig. I.72 Rhode Island: Monitors Reporting Adequate Data on 1-hr Average O_3 Concentrations; Violations Shown by Shaded Circles

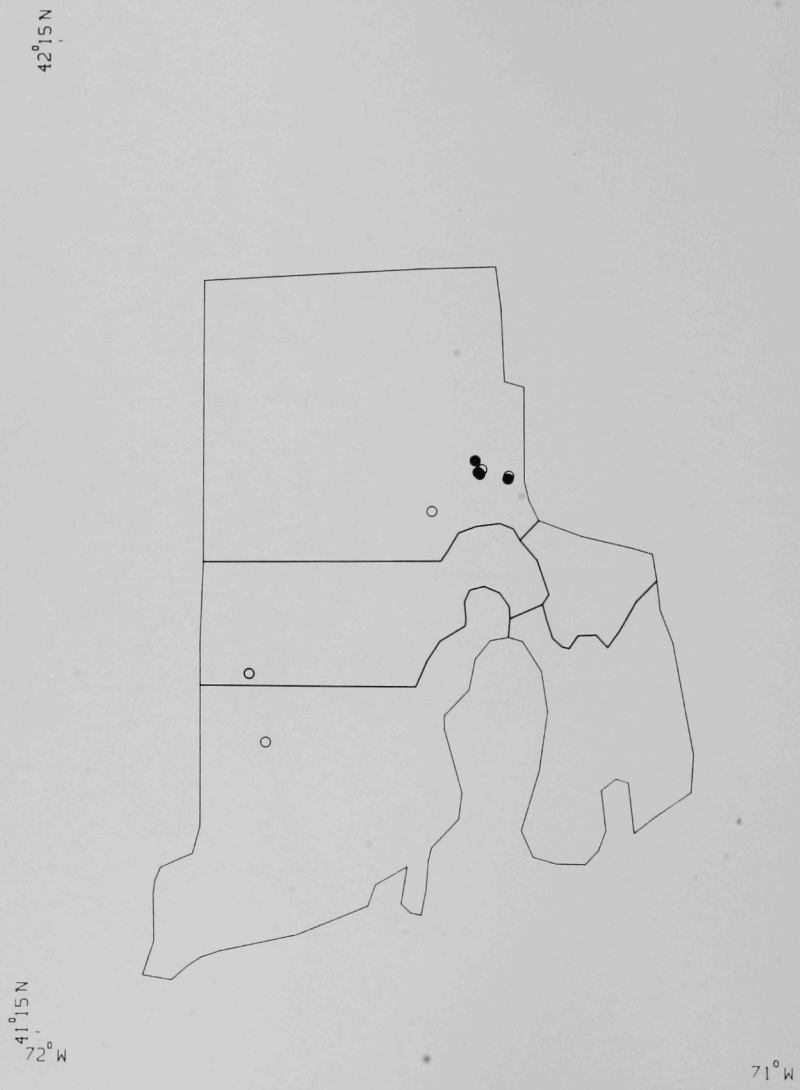


Fig. I.73 Rhode Island: Monitors Reporting Adequate Data on 3-month Average Lead Concentrations; Violations Shown by Shaded Circles

Table I.46 Rhode Island: PSD Class I Areas

Location	Area Name	Acreage
None		

Table I.47 Rhode Island: Recommended Class I Areas

Area Name	Total Acreage	Acreage Already Class I
None		

Table I.48 Rhode Island: Areas That Cannot Be Reclassified as Class III

Area Name	Total Acreage	Acreage Already Class I
None		

Table I.49 Rhode Island: SO_2 Emission Limits ($lb\ SO_2/10^6$ Btu) by Heat Input Class, Q, in Units of 10^6 Btu/hr

Sources	Fuel Type	Limit for $Q > 0$[a]
New[b] and Existing		
Uncontrolled[c]	All Fossil Fuels	1.1[d]
Controlled[e]	All Fossil Fuels	1.1

[a]Source heat input based on actual or operating capacity.
[b]Sources with $Q > 250 \times 10^6$ Btu/hr must comply at least with NSPS, or with more stringent state standards.
[c]Refers to source using no stack gas cleaning device.
[d]Requires use of fuels containing less than 0.55 lbs S per 10^6 Btu.
[e]Refers to a source using an approved stack-gas cleaning process to reduce the SO_2 emissions.

Table I.50 Rhode Island: Particulate Matter Emission Limits ($lb\ PM/10^6$ Btu) by Heat Input Class, Q, in Units of 10^6 Btu/hr

Sources	Fuel Type	Limit	
		$1 < Q < 250$[a]	$Q \geq 250$[a]
New[b] and Existing	All Fossil Fuels	0.2	0.1

[a]Total heat input based on design of all units; allowable emissions based on individual stack.

[b]Sources with $Q > 250 \times 10^6$ Btu/hr must comply at least with NSPS, or with more stringent state standards.

Table I.51 Rhode Island: Power Plant Location and Generating Capacity Data for 1980

Plant No.[a]	Plant Name[b]	Latitude[b]	Longitude[b]	Generating Capacity (MW), by Regulatory Class[c,d]		Capacity Factor[e] (%)	Sulfur Dioxide Limit ($lb/10^6$ Btu), by Regulatory Class[f]	
				SIP	NSPS		SIP	NSPS
1	Manchester Street	41.82	71.41	135	0	17	1.10	0.00
2	South Street	41.82	71.41	100	0	41	1.10	0.00

[a]See Fig. I.74.

[b]EPA's Energy Data System (EDS), except as noted.

[c]FPC form 4, 1980.

[d]Capacity subject to emission regulations of SIP or NSPS, as indicated.

[e]Calculated from annual net generation, FPC form 4, 1980.

[f]If more than one unit, fuel type, and SIP emission limit at plant, "SIP" is average weighted by size, fuel type, and capacity.

Table I.52 Rhode Island: Power Plant Fuel Use Data for 1980

Plant No.[a]	Plant Name	Coal Sulfur Content[b] (%)	Coal Heating Value[b] (Btu/lb)	Coal Use[c] (10^3 ton)	Oil Sulfur Content[b] (%)	Oil Heating Value[b] (Btu/gal)	Oil Use[c] (10^3 Bbl)	Gas Heating Valueb (Btu/ 10^3 ft^3)	Gas Use[c] (10^6 ft^3)
1	Manchester Street	0	0	0	0.93	149,635	690	0	1.7
2	South Street	0	0	0	0.97	145,841	943	0	0.0

[a]See Fig. I.74.

[b]FPC form 423, 1980.

[c]FPC form 4, 1980. Note that in cases where the sulfur content and/or the heating value of a fuel is entered accompanied by 0 in the use column, the quantities of fuel that have been used are less than 0.5×10^3 barrels of oil or tons of coal, or 0.05×10^6 cubic feet of gas.

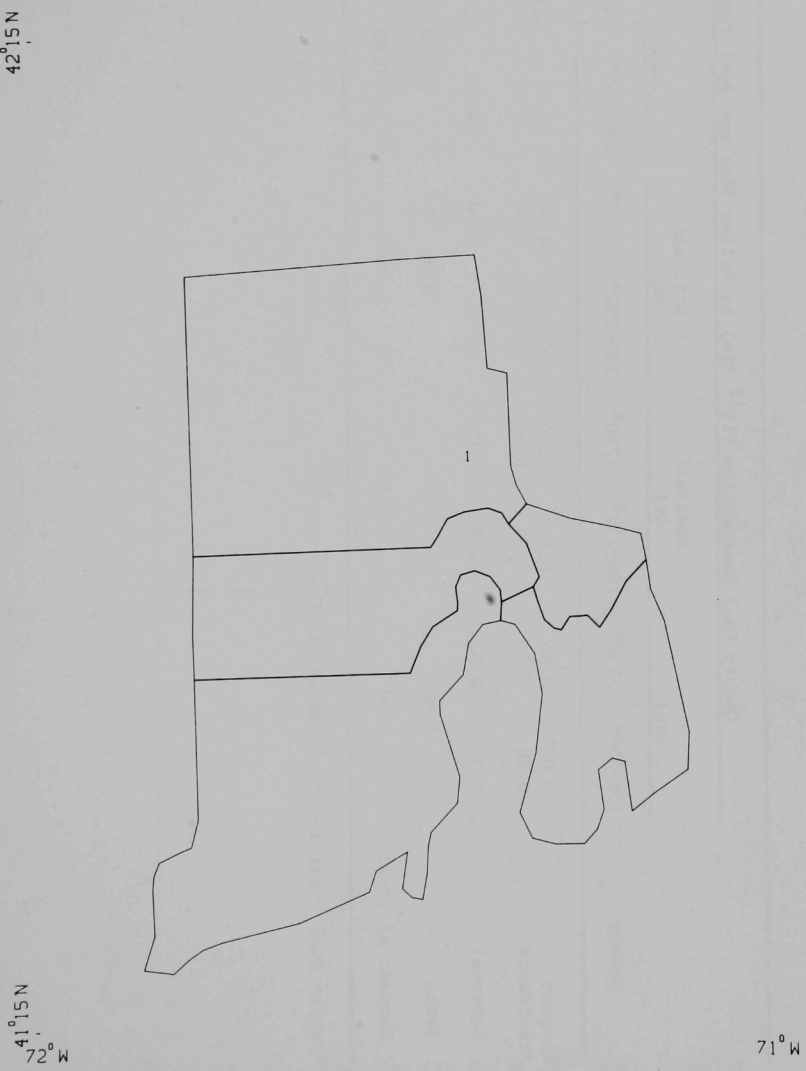


Fig. I.74 Rhode Island: Key to Power Plant Locations

Table I.53 Rhode Island: Large Industrial Boiler Fuel Use, 1974

County	County Fuel Consumption (10^{12} Btu) by Boiler Size and Fuel Type								
	Coal		Residual Oil		Distillate Oil		Gas		
	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	Total
Newport	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.16
Providence	0.00	0.00	1.64	0.00	0.00	0.00	0.00	0.00	1.64
Subtotal	0.00	0.00	1.79	0.00	0.00	0.00	0.00	0.00	
Total	0.00		1.79		0.00		0.00		1.79
Percent of Total	0.00		100.00		0.00		0.00		100

[a]Boiler size (heat input, Q) in units of 10^6 Btu/hr.

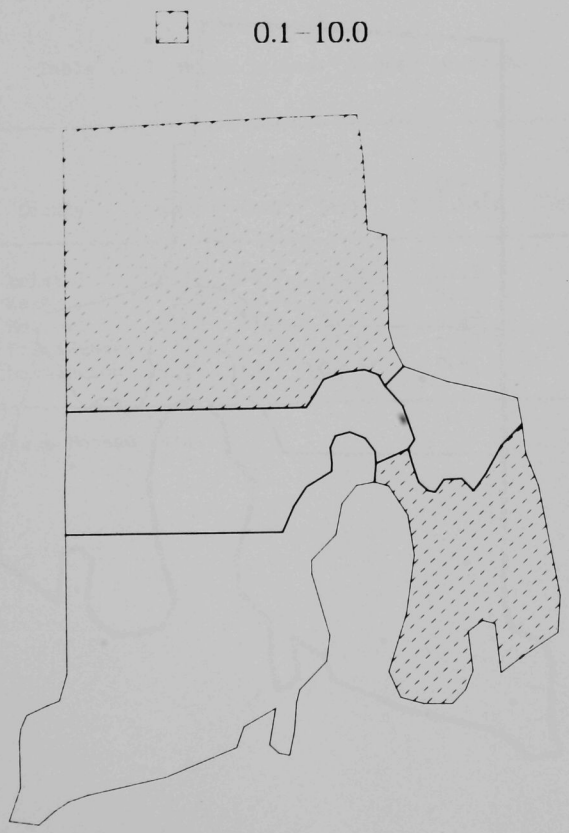


Fig. I.75 Rhode Island: Fuel Use (in Units 10^{12} Btu) in Major Fuel-Burning Installations, by County

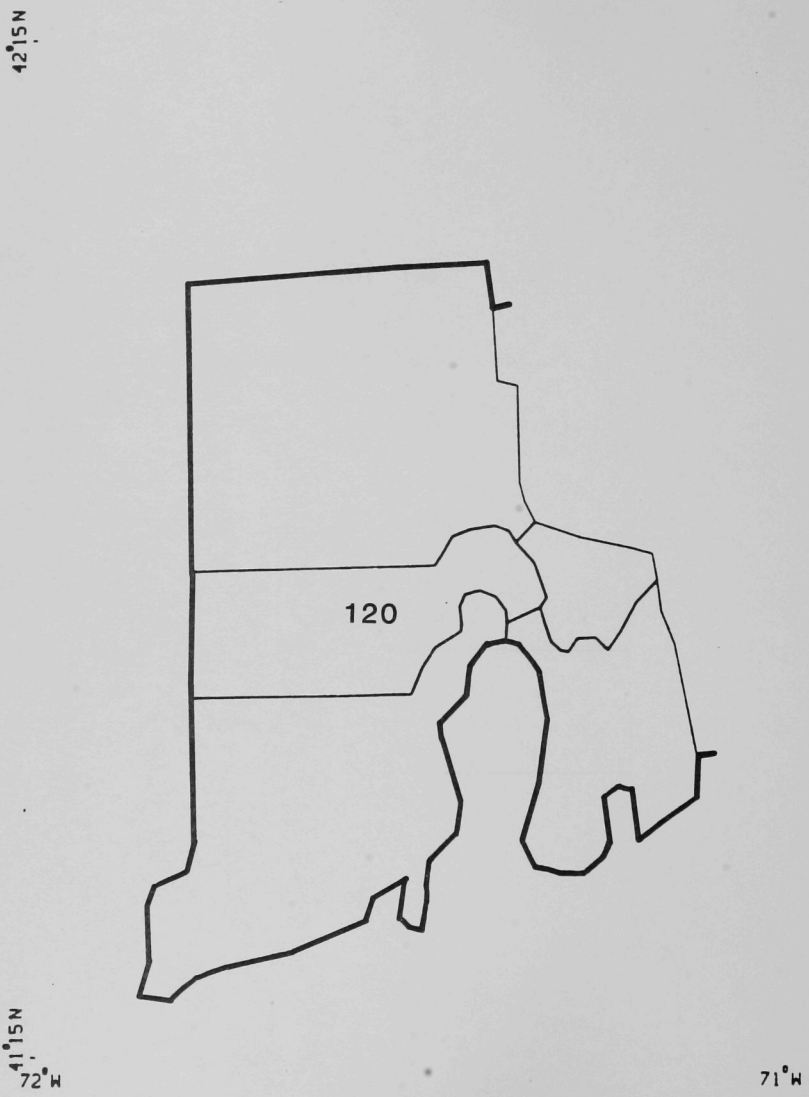


Fig. I.76 Rhode Island: Air Quality Control Regions (See Table I.54)

Table I.54 Rhode Island: Identification of Air Quality Control Regions (AQCR)

AQCR Name	No.
Metropolitan Providence[a]	120

[a]Shared with Massachusetts.

Table I.55 Rhode Island: County-Level Data

FIPS	County	AQCR	Centroid Lat	Centroid Long	Area (10^3 km^2)	Population[a]
44001	Bristol	120	41.7	71.3	0.13	46,966
44003	Kent	120	41.7	71.6	0.47	153,957
44005	Newport	120	41.6	71.2	0.39	81,371
44007	Providence	120	41.9	71.6	1.12	570,358
44009	Washington	120	41.5	71.6	0.87	93,183

[a]1980 Census Bureau data.

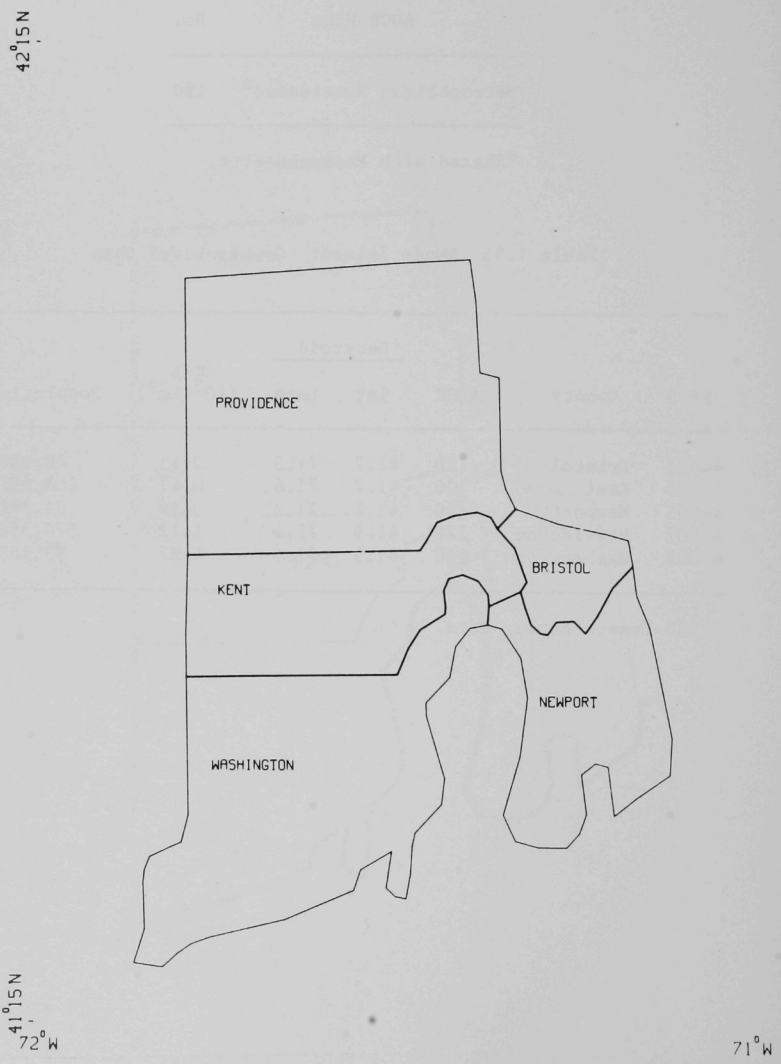


Fig. I.77 Rhode Island: Key to Counties

REGION I: VERMONT

AIR QUALITY SUMMARY

Attainment Status	Pollutant[a]							
	P-SO_2	S-SO_2	P-TSP	S-TSP	CO	O_3	NO_2	Pb
No. of Counties Containing NA Areas	0	0	0	2	1	11	0	0
State Implementation Plan[b]	N	N	N	E	A	A	N	N
No. of SAROAD Monitors[c]	4/3[d]	-	13/5[d]	-	1	3	0	0
No. of SAROAD Monitors with Violations[c]	0/0[d]	-	0/0[d]	-	0	0	0	0

PSD Status	Class I PSD Areas	Recommended Class I	Mandatory Class II[e]
No. of Areas	1	0	0

[a]P = primary standard; S = secondary standard.
[b]A = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review.
[c]SAROAD data as of 1979. All other information as of December 1981.
[d]24-hour average/annual average.
[e]Areas that cannot be redesignated as Class III.

ENERGY DATA

Parameter	Data
Coal Production	
Current, 1979 (10^3 tons)[a]	0
Projected, 1985 (10^3 tons)[b]	0
Coal Reserves (10^6 tons)[c]	0
Range of Coal Quality (lb SO_2/10^6 Btu)[a]	0
Fuel Use by Industrial Boilers, 1974 (10^{12} Btu)[d]	0
No. of Fossil-Fueled Power Plants	0

[a]EIA form 423.
[b]National Coal Assn. and DOE's Western Coal Development Monitoring System.
[c]Bureau of Mines Rpt. IC 8680 and 8693.
[d]FEA, MFBI Survey, 1974.

VERMONT: SIP Attainment Strategies

Area[a]	NA[b]	Plan Date	EPA Action[c]	Source(s)	Strategy[d]
	TSP:				
Burlington and Barre	S	1/79	A	Mobile; urban non-traditional	Street cleaning and sweeping, pave parking lots
	CO:				
Burlington	P	7/79	A	Mobile	FMVECP; attainment by 1982
	O_3:				
Addison Co.	P	12/80	A		Redesignate to attainment
Windsor and Chittenden Cos.	P	12/80	A		Redesignate to unclassified
Rest of State	P	1/79	A	Mobile	RACT on VOC sources; FMVECP; attainment by 1982

[a]Cities unless otherwise noted.

[b]Nonattainment violation indicated by pollutant and as P = primary and S = secondary.

[c]A = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

[d]See p. 30 for a listing of the abbreviations.

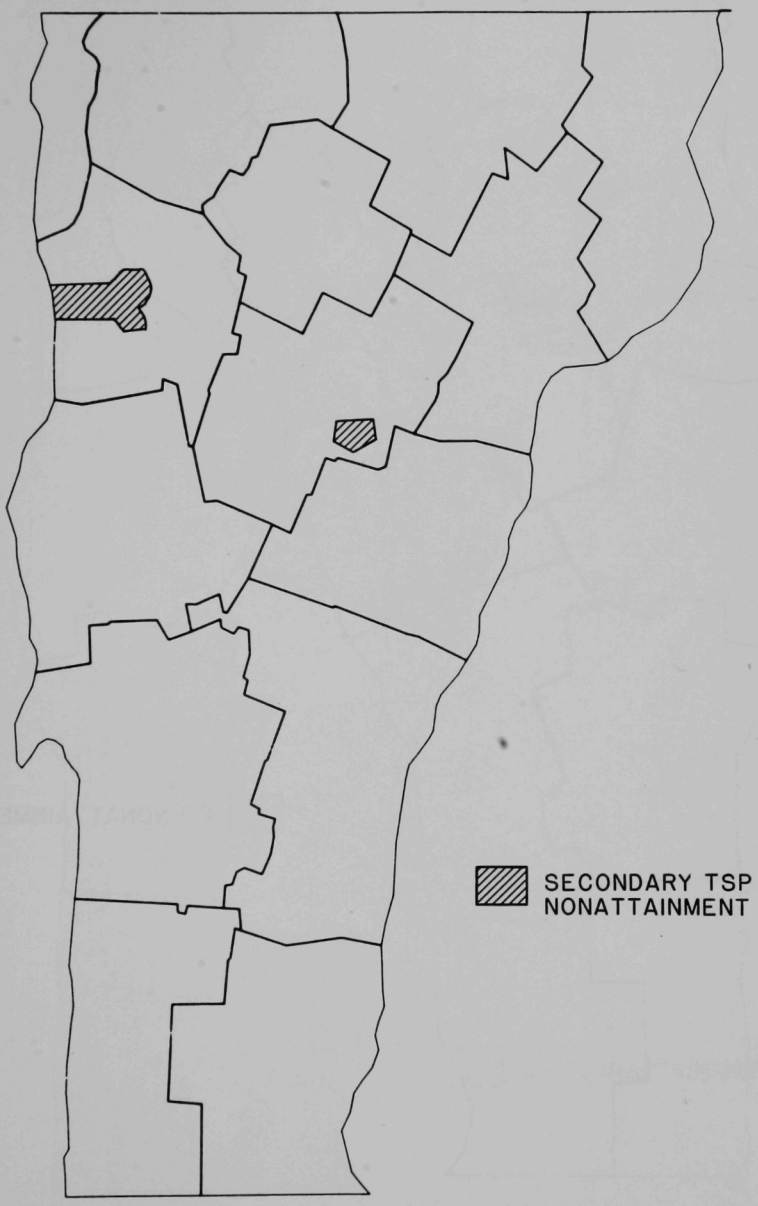


Fig. I.78 Vermont: TSP Nonattainment Areas as Designated December 1981

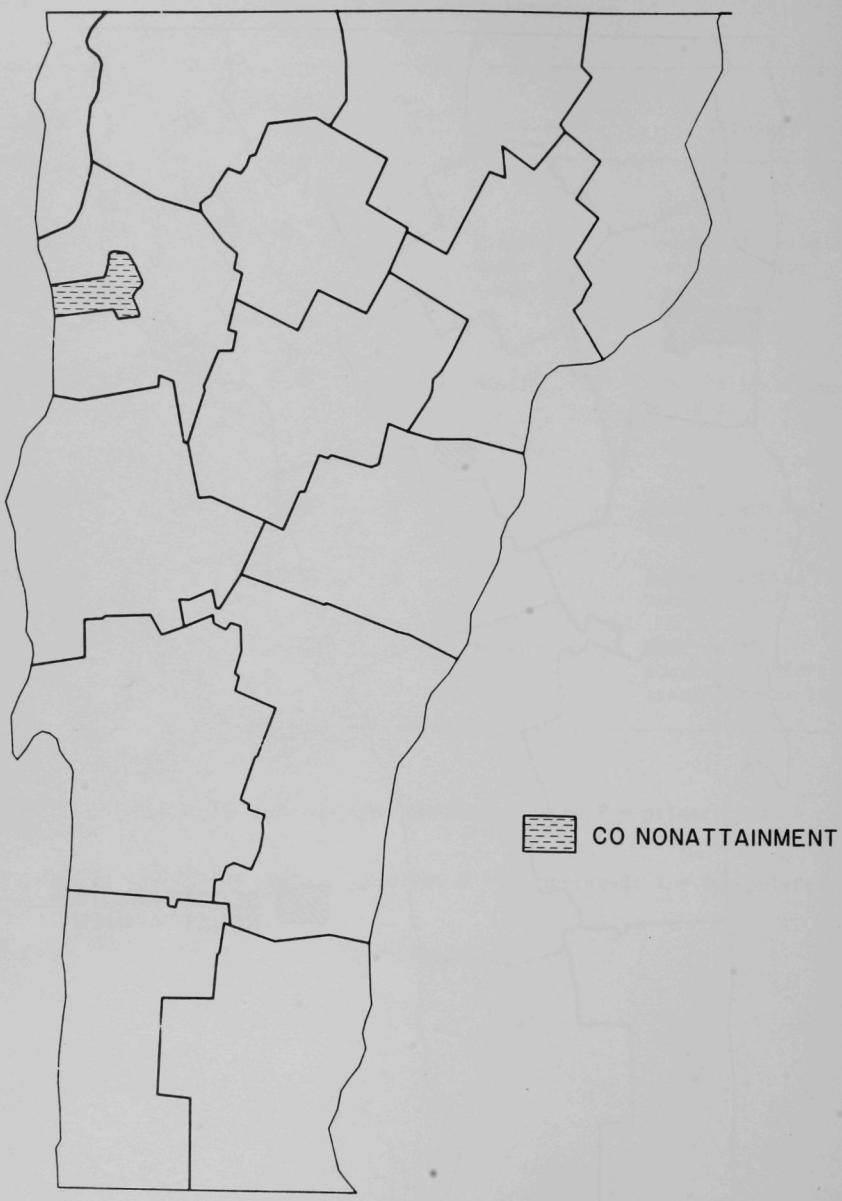


Fig. I.79 Vermont: CO Nonattainment Areas as Designated December 1981

Fig. I.80 Vermont: O_3 Nonattainment Areas as Designated December 1981

Table I.56 Vermont: SAROAD Monitor Numbers and 1979 Data ($\mu g/m^3$, mg/m^3 for CO, or ppm for O_3)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
1	50001	43.93	73.03							0.10(2)	
2	50003	42.88	73.20			60(1)					
3	50003	42.88	73.07	79(1)	17(1)	30(1)				0.08(1)	
4	50005	44.57	71.89			31(1)					
5	50005	44.53	72.02			56(1)					
6	50007	44.48	73.22			58(1)					
7	50007	44.48	73.21	124(1)	22(1)	162(1)	60(2)		6(1)	0.10(2)	
8	50017	43.94	72.60			93(1)	24(1)				
9	50017	43.94	72.60			46(1)					
10	50021	43.61	72.98	86(1)		132(1)	56(1)				
11	50021	43.61	72.98								
12	50023	44.13	72.67			55(1)					
13*	50023	-	-			57(1)					
14	50023	44.20	72.50	69(1)	16(1)	172(1)	60(2)				
15	50025	42.85	72.57			123(1)	48(1)				

*Not Plotted.

Fig. I.81 Vermont: Locations of SAROAD Monitors (See Table I.56 for Monitor Numbers)

Fig. I.82 Vermont: Monitors Reporting Adequate Data on 24-hr Average SO_2 Concentrations; No Violations

Fig. I.83 Vermont: Monitors Reporting Adequate Data on Annual Average SO_2 Concentrations; No Violations

Fig. I.84 Vermont: Monitors Reporting Adequate Data on 24-hr Average TSP Concentrations; No Violations

Fig. I.85 Vermont: Monitors Reporting Adequate Data on Annual Average TSP Concentrations; No Violations

Fig. I.86 Vermont: Monitors Reporting Adequate Data on 8-hr Average CO Concentrations; No Violations

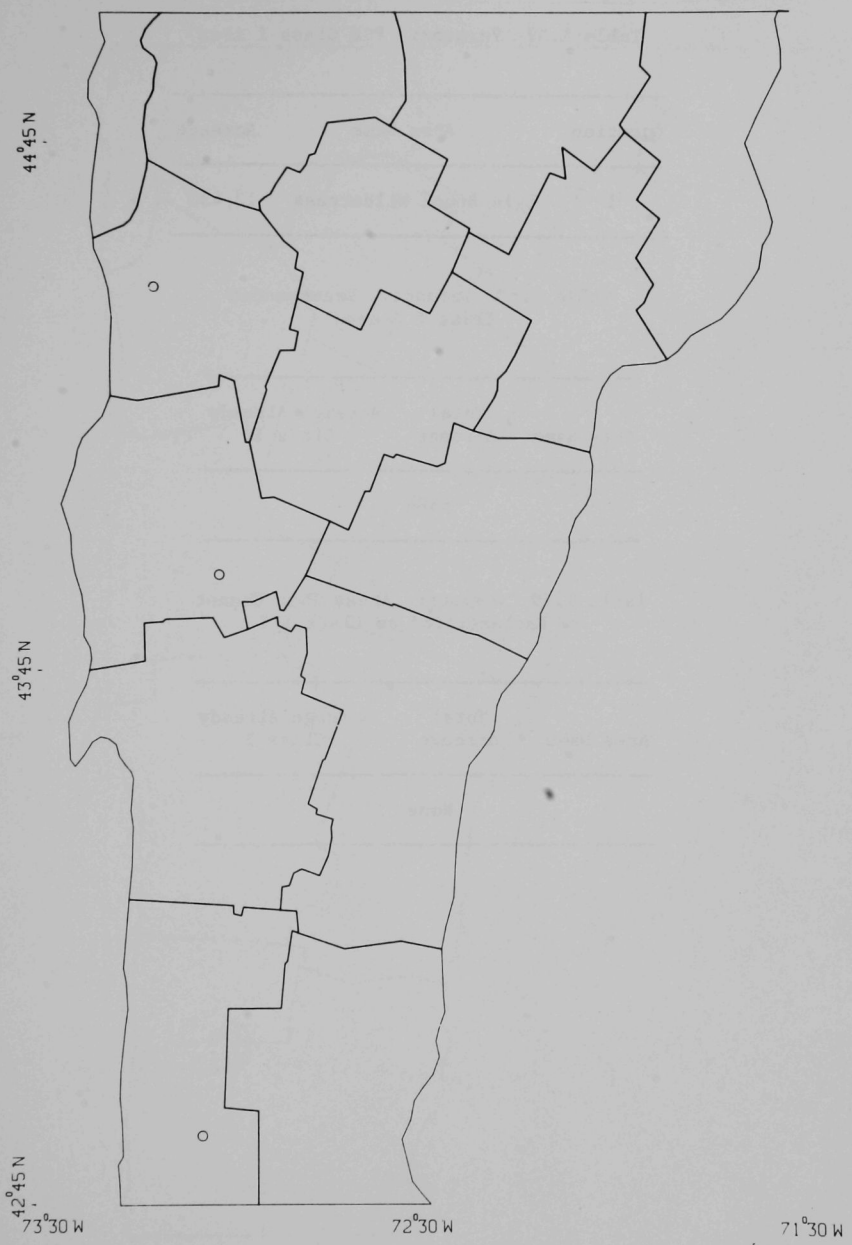


Fig. I.87 Vermont: Monitors Reporting Adequate Data on 1-hr Average O_3 Concentrations; No Violations

Table I.57 Vermont: PSD Class I Area

Location	Area Name	Acreage
1	Lyle Brook Wilderness	12,430

Table I.58 Vermont: Recommended Class I Areas

Area Name	Total Acreage	Acreage Already Class I
None		

Table I.59 Vermont: Areas That Cannot Be Reclassified as Class III

Area Name	Total Acreage	Acreage Already Class I
None		

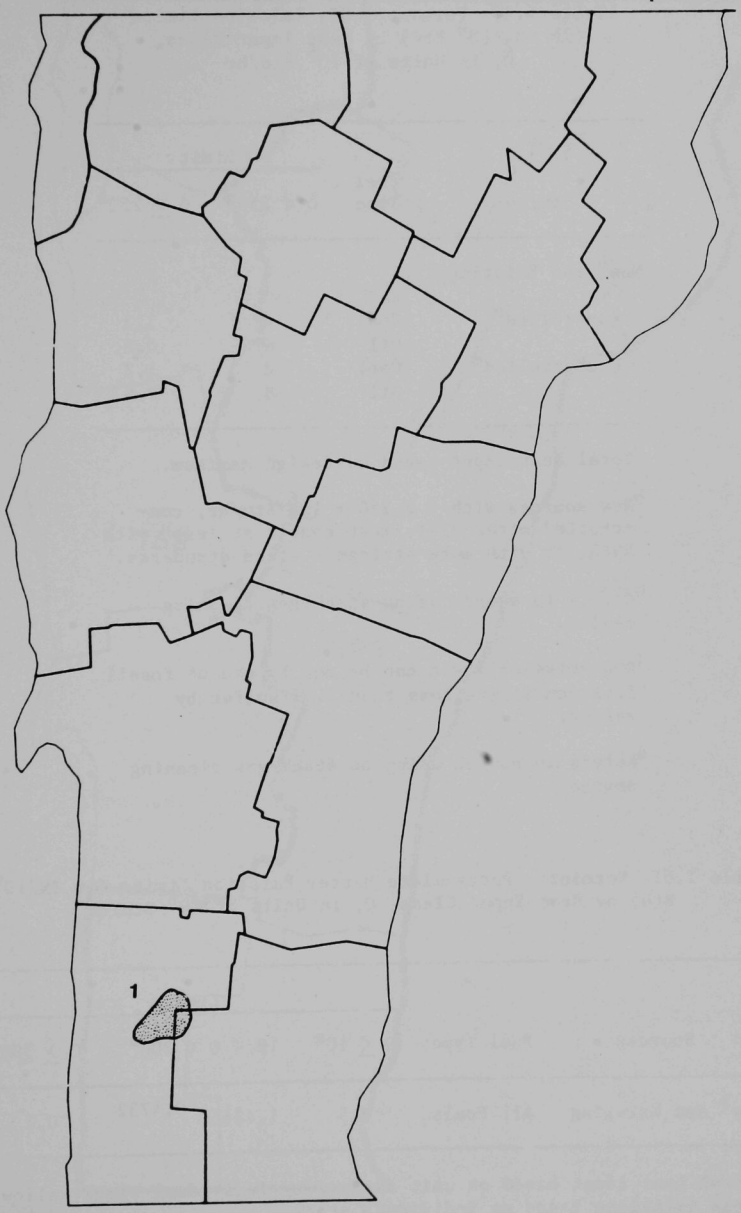


Fig. I.88 Vermont: PSD Class I Area

Table I.60 Vermont: SO_2 Emission Limits (lb $SO_2/10^6$ Btu) by Heat Input Class, Q, in Units of 10^6 Btu/hr

Sources	Fuel Type	Limit	
		$Q < 250^a$	$Q \geq 250^a$
New[b] and Existing			
Controlled[c]	Coal	d	1.2
	Oil	d	0.8
Uncontrolled[e]	Coal	d	1.2
	Oil	d	0.8

[a]Total heat input based on design maximum.

[b]New sources with $Q > 250 \times 10^6$ Btu/hr, constructed after 8/71, must comply at least with NSPS, or with more stringent state standards.

[c]Refers to source using stack-gas cleaning device.

[d]SO_2 emission limit can be met by use of fossil fuel containing less than 2.0% sulfur by weight.

[e]Refers to source using no stack-gas cleaning device.

Table I.61 Vermont: Particulate Matter Emission Limits (lb $PM/10^6$ Btu) by Heat Input Class, Q, in Units of 10^6 Btu/hr

Sources	Fuel Type	Limit		
		$Q \leq 10^a$	$10 < Q < 300^a$	$Q \geq 300^a$
New[b] and Existing	All Fuels	0.5	$1.48650^{-0.4732}$	0.1

[a]Total heat input based on unit design, by individual stack; allowable emissions based on individual stack.

[b]Sources with $Q > 250 \times 10^6$ Btu/hr must comply at least with NSPS, or with more stringent state standards.

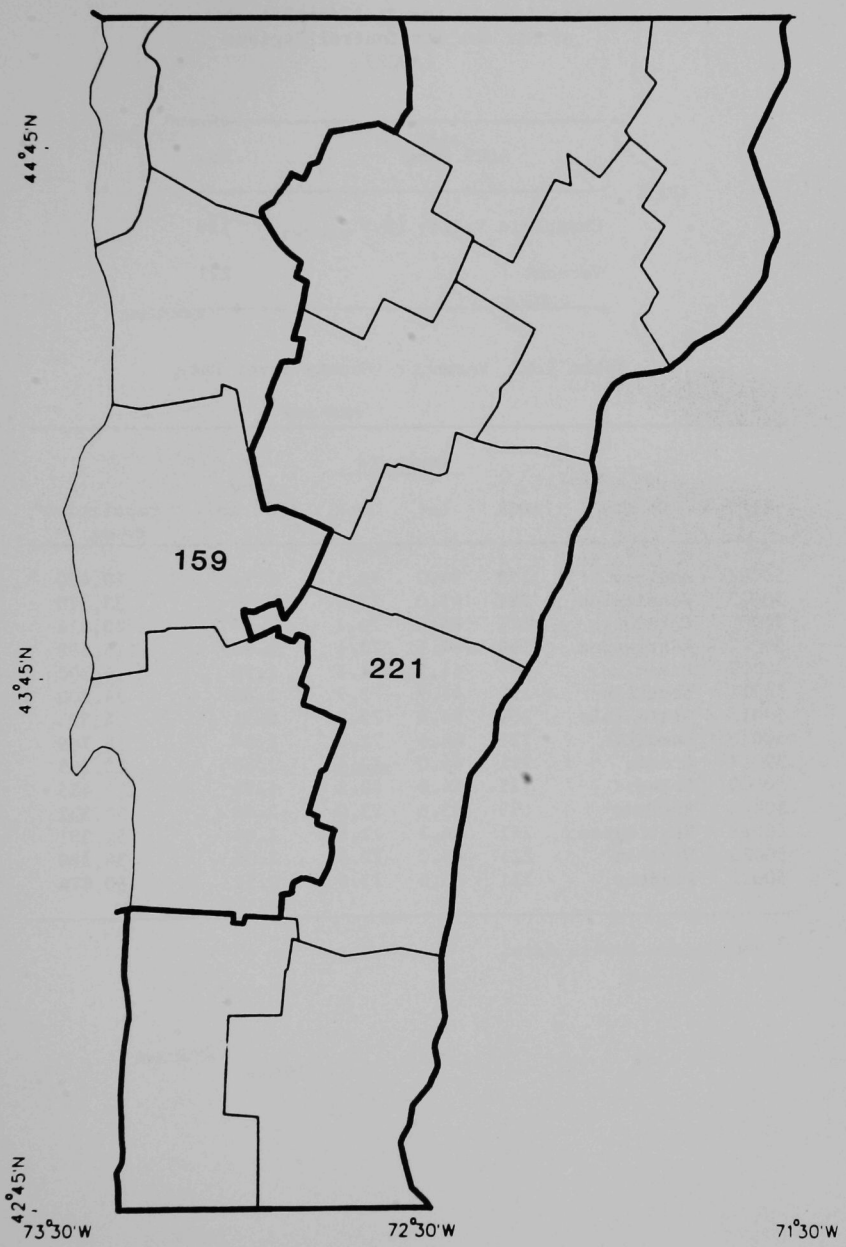


Fig. I.89 Vermont: Air Quality Control Regions (See Table I.62)

Table I.62 Vermont: Identification of Air Quality Control Regions (AQCR)

AQCR Name	No.
Champlain Valley (N.Y.)	159
Vermont	221

Table I.63 Vermont: County-Level Data

FIPS	County	AQCR	Centroid Lat	Centroid Long	Area (10^3 km^2)	Population[a]
50001	Addison	159	44.0	73.1	2.14	29,420
50003	Bennington	221	43.0	73.1	1.80	33,310
50005	Caledonia	221	44.5	72.1	1.67	25,814
50007	Chittenden	159	44.5	73.1	1.60	115,598
50009	Essex	221	44.7	71.7	1.76	6,300
50011	Franklin	159	44.9	72.9	1.80	34,800
50013	Grand Isle	159	44.8	73.3	0.51	4,593
50015	Lamoille	221	44.6	72.6	1.24	16,769
50017	Orange	221	44.0	72.4	1.80	22,763
50019	Orleans	221	44.8	72.2	1.95	23,455
50021	Rutland	159	43.6	73.0	2.48	58,332
50023	Washington	221	44.3	72.6	1.84	52,391
50025	Windham	221	43.0	72.7	2.06	36,880
50027	Windsor	221	43.6	72.6	2.52	50,874

[a]1980 Census Bureau data.

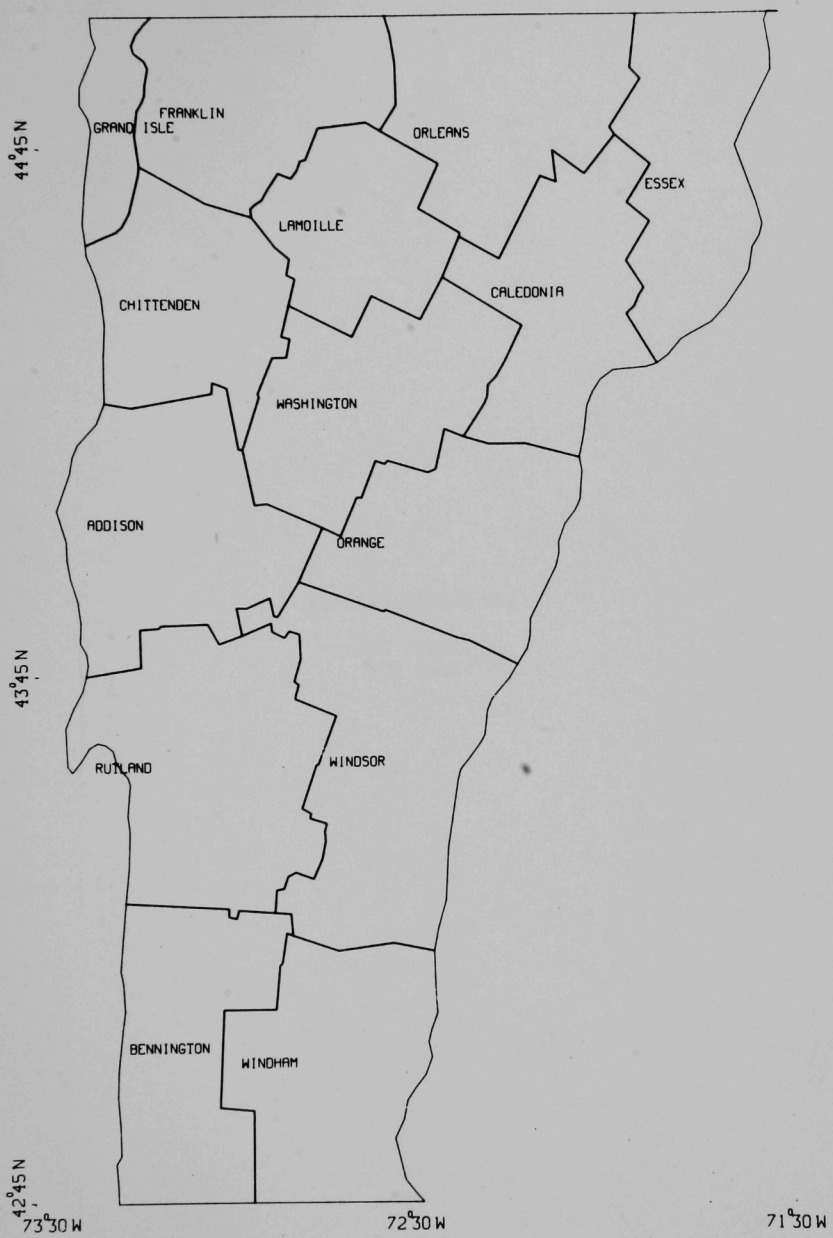


Fig. I.90 Vermont: Key to Counties

FEDERAL REGION II:

NEW JERSEY
NEW YORK

REGION II: NEW JERSEY

AIR QUALITY SUMMARY

Attainment Status	Pollutant[a]							
	P-SO_2	S-SO_2	P-TSP	S-TSP	CO	O_3	NO_2	Pb
No. of Counties Containing NA Areas	0	0	0	6	15	21[b]	0	0
State Implementation Plan[c]	N	N	N	E	A	A	N	N
No. of SAROAD Monitors[d]	31/8[e]	-	93/69[e]	-	18	14	0	11
No. of SAROAD Monitors with Violations[d]	0/0[e]	-	1/8[e]	-	3	12	0	2

PSD Status	Class I PSD Areas	# Recommended Class I	Mandatory Class II[f]
No. of Areas	1	0	2

[a]P = primary standard; S = secondary standard.
[b]Entire state nonattainment.
[c]A = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review.
[d]SAROAD data as of 1979. All other information as of December 1981.
[e]24-hour average/annual average.
[f]Areas that cannot be redesignated as Class III.

ENERGY DATA

Parameter	Data
Coal Production	
Current, 1979 (10^3 tons)[a]	0
Projected, 1985 (10^3 tons)[b]	0
Coal Reserves (10^6 tons)[c]	0
Range of Coal Quality (lb $SO_2/10^6$ Btu)[a]	0
Fuel Use by Industrial Boilers, 1974 (10^{12} Btu)[d]	85.0
No. of Fossil-Fueled Power Plants	14

[a]EIA form 423.
[b]National Coal Assn. and DOE's Western Coal Development Monitoring System.
[c]Bureau of Mines Rpt. IC 8680 and 8693.
[d]FEA, MFBI Survey, 1974.

NEW JERSEY: SIP Attainment Strategies

Area[a]	NA[b]	Plan Date	EPA Action[c]	Source(s)	Strategy[d]
	CO/O_3:				
Statewide (O_3) and urban centers (CO)	P	1/79	A	Mobile	RACT on VOC sources; FMVECP; TCM; I&M; attainment by 1987

[a]Cities unless otherwise noted.

[b]Nonattainment violation indicated by pollutant and as P = primary and S = secondary.

[c]A = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

[d]See p. 30 for a listing of the abbreviations.

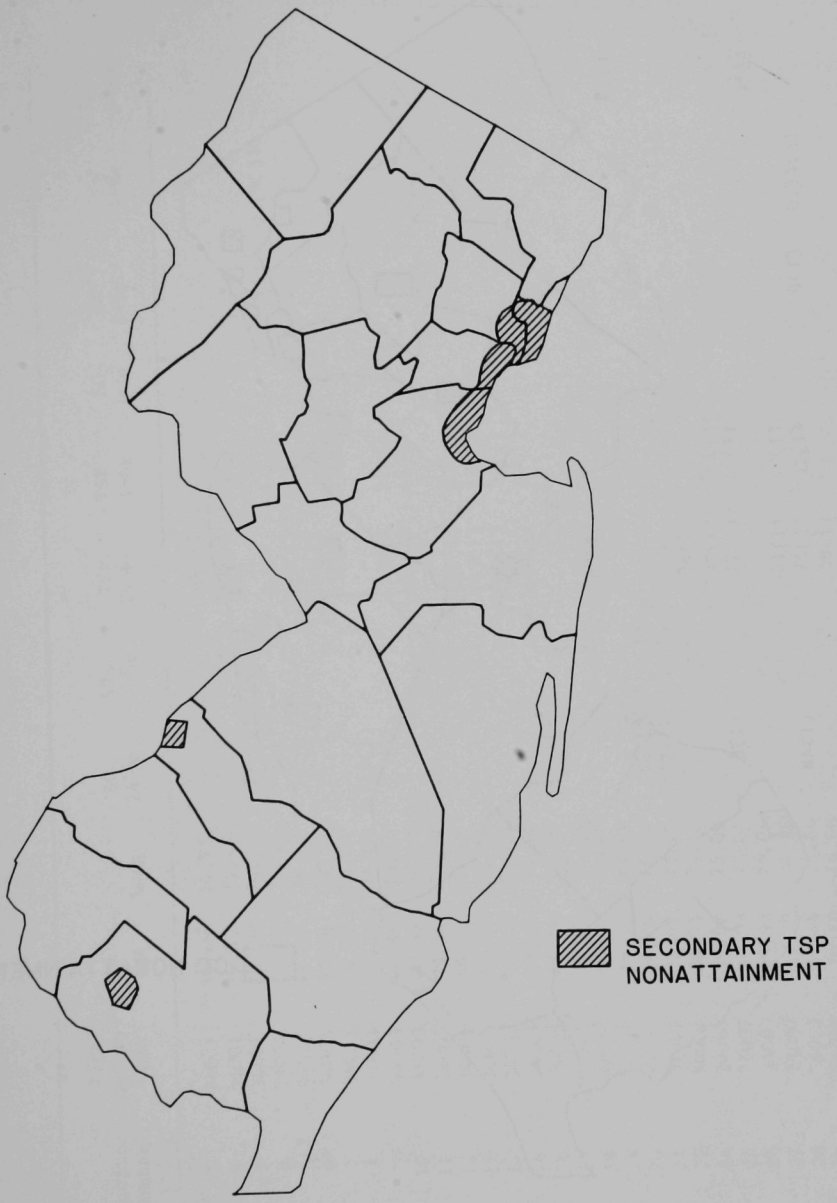


Fig. II.91 New Jersey: TSP Nonattainment Areas as Designated December 1981

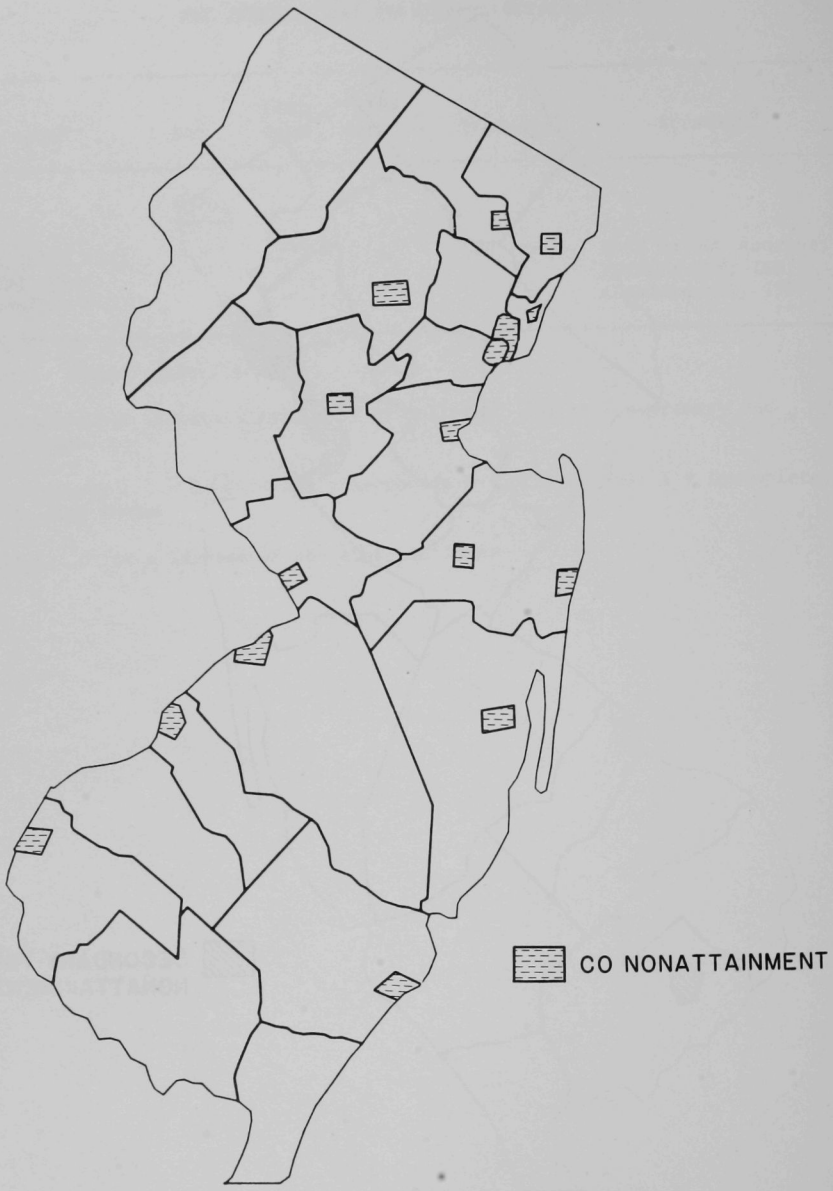


Fig. II.92 New Jersey: CO Nonattainment Areas as Designated December 1981

Table II.64 New Jersey: SAROAD Monitor Numbers and 1979 Data ($\mu g/m^3$, mg/m^3 for CO, or ppm for O_3)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-hr	TSP 24-hr	TSP 1-hr	NO_2 1-hr	CO 8-hr	O_3 1-hr	Pb 3-mo
1	34001	39.60	74.75			95(1)					
2	34001	39.35	74.46			121(1)					
3	34001	39.36	74.44	73(1)	14(1)				10(2)		
4	34001	39.55	74.46	46(1)					3(1)	0.13(3)	
5	34003	41.06	74.10			92(1)					
6*	34003	40.94	73.99			70(1)					
7	34003	40.89	74.04			136(1)	51(1)				
8	34003	40.88	74.04	145(1)							
9*	34003	40.86	73.96			113(1)	52(1)				
10	34003	40.92	74.10			107(1)	45(1)				
11	34005	39.96	74.79						2(1)	0.13(3)	
12	34005	40.04	74.69			108(1)	43(1)				
13	34005	40.06	74.83			89(1)	46(1)				
14	34005	40.12	74.64			83(1)	39(1)				
15	34005	39.90	74.83			76(1)	41(1)				
16	34005	40.08	74.86	157(1)							
17	34007	39.95	75.12								1(1)
18	34007	39.95	75.12			147(1)					
19	34007	39.95	75.12								0(1)
20	34007	39.95	75.12	140(1)	51(1)				8(2)		
21	34007	39.92	75.10	152(1)	31(1)					0.14(3)	
22	34007	39.95	75.12			74(1)					
24	34007	39.92	75.06			104(1)	53(1)				
25	34007	39.93	75.04	3(1)		77(1)	49(1)				
26	34007	39.93	75.04								1(2)
27	34007	39.79	74.94			91(1)	49(1)				
28	34007	39.68	74.86	86(1)		74(1)	35(1)		4(1)	0.14(3)	
29	34009	39.10	74.80			58(1)					
30	34009	39.27	74.73			51(1)					

Table II.64 New Jersey (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-hr	TSP 24-hr	TSP 1-hr	NO_2 1-hr	CO 8-hr	O_3 1-hr	Pb 3-mo
31	34009	39.10	74.80	3(1)							
32	34011	39.32	75.01			69(1)	32(1)				
33	34011	39.42	75.19			75(1)	38(1)				
34	34011	39.48	75.00			81(1)	39(1)		4(1)		
35	34011	39.49	75.02						8(2)		
36	34011	39.48	75.00	96(1)						0.11(2)	
37	34011	39.49	75.02	96(1)						0.13(3)	
38	34013	40.80	74.24			154(1)	59(2)				
39	34013	40.76	74.21			118(1)	59(2)				
40	34013	40.76	74.30			95(1)	42(1)				
41	34013	40.73	74.24			110(1)	53(1)				
42	34013	40.73	74.18	97(1)					10(2)		
43	34013	40.74	74.16			144(1)	71(2)				
44	34013	40.55	74.14			135(1)	74(2)				
45	34013	40.55	74.14								1(2)
46	34013	40.77	74.24			118(1)	52(1)				
47	34013	40.73	74.18	159(1)	48(1)						
48	34015	39.83	75.24	152(1)	43(1)				9(2)		
49	34015	39.76	75.29			77(1)	39(1)				
50	34015	39.71	75.12			63(1)					
51	34015	39.71	75.12								1(1)
52	34015	39.68	75.10			81(1)	39(1)				
53	34015	39.83	75.15			97(1)	51(1)				
54	34017	40.68	74.12	140(1)		162(1)	75(3)		7(1)	0.13(3)	
55	34017	40.67	74.10			123(1)					
56	34017	40.67	74.10								1(2)
57	34017	40.75	74.03			139(1)					
58	34017	40.72	74.05								1(1)
59	34017	40.72	74.04			137(1)	70(2)				
60	34017	40.73	74.09			167(1)	82(3)				

Table II.64 New Jersey (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-hr	TSP 24-hr	TSP 1-hr	NO_2 1-hr	CO 8-hr	O_3 1-hr	Pb 3-mo
61	34017	40.73	74.05			165(1)	88(3)				
62	34017	40.73	74.07	159(1)							
63	34017	40.72	74.05			129(1)	77(3)				
65	34017	40.80	74.05			146(1)					
66	34019	40.52	75.06			82(1)	29(1)				
67	34019	40.62	74.84			87(1)	37(1)				
68	34021	40.22	74.59							0.13(3)	
69	34021	40.31	74.60			78(1)	41(1)				
70	34021	40.32	74.85			82(1)	39(1)				
72	34021	40.22	74.77			122(1)	61(2)				
73	34021	40.22	74.76	101(1)	30(1)				8(2)	0.13(3)	
74	34021	40.22	74.77	47(1)		112(1)	63(2)				
75	34021	40.22	74.77								1(1)
76	34023	40.58	74.22			138(1)	62(2)				
77	34023	40.58	74.22			160(1)	75(3)				
78	34023	40.48	74.28			121(1)	57(2)				
79	34023	40.44	74.32			165(1)					
80	34023	40.51	74.27			156(1)	77(3)				
81	34023	40.51	74.27	151(1)							
82	34023	40.51	74.26			156(1)	77(3)				
83	34023	40.51	74.26			169(1)					
84	34023	40.51	74.26								2(3)
85	34023	40.48	74.44	113(1)						0.10(2)	
86	34023	40.58	74.50			115(1)	55(1)				
87	34023	40.54	74.35			110(1)	52(1)				
88	34023	40.56	74.26			166(1)	72(2)				
89	34023	40.57	74.29			126(1)	56(1)				
90	34023	40.38	74.53			86(1)	43(1)				
91	34023	40.44	74.26			87(1)	44(1)				
92	34025	40.20	74.43			82(1)					

Table II.64 New Jersey (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-hr	TSP 24-hr	TSP 1-hr	NO_2 1-hr	CO 8-hr	O_3 1-hr	Pb 3-mo
93	34025	40.26	74.27	91(1)					11(3)		
94	34025	40.34	74.07			83(1)	42(1)				
95	34025	40.22	74.01			109(1)					
96	34025	40.22	74.01	77(1)					10(3)	0.13(3)	
97	34025	40.16	74.06			71(1)	40(1)				
98	34027	40.89	74.57			119(1)	47(1)				
99	34027	40.78	74.44			88(1)	40(1)				
100	34027	40.79	74.68			77(1)	32(1)				
102	34027	40.79	74.68							0.14(3)	
103	34027	40.80	74.48	112(1)					11(3)		
104	34029	39.95	74.20						9(2)		
105	34029	39.95	74.20			83(1)	48(1)				
106	34029	39.95	74.20	94(1)							
107	34029	39.60	74.35			80(1)					
108	34029	40.14	74.27			73(1)	38(1)				
109	34029	39.85	74.09			103(1)					
110	34029	39.79	74.20			67(1)	34(1)				
111	34029	39.60	74.35	3(1)							
112	34029	40.11	74.31							0.14(3)	
113	34031	41.12	74.24			90(1)	31(1)				
114	34031	40.93	74.16	129(1)							
115	34031	40.92	74.17			134(1)	82(3)				
116	34031	40.92	74.17								1(2)
117	34031	40.91	74.19			105(1)	46(1)				
118	34031	41.01	74.28			78(1)					
119	34033	39.77	75.41			99(1)	43(1)				
120	34033	39.76	75.42			89(1)	47(1)				
121	34033	39.51	75.13			91(1)	39(1)				
122	34033	39.63	75.36			76(1)	36(1)				
123	34033	39.56	75.46			76(1)	40(1)				

Table II.64 New Jersey (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-hr	TSP 24-hr	TSP 1-hr	NO_2 1-hr	CO 8-hr	O_3 1-hr	Pb 3-mo
124	34033	39.73	75.47	219(1)	28(1)				8(2)		
125	34035	40.42	74.68			88(1)	40(1)				
126	34035	40.57	74.61	106(1)							
127	34035	40.62	74.60			82(1)	40(1)				
128	34035	40.57	74.61							0.14(3)	
129	34037	41.14	74.77			85(1)					
130	34037	41.31	74.67			77(1)					
131	34037	41.11	74.59			64(1)					
132	34039	40.64	74.21	130(1)							
133	34039	40.61	74.22			388(4)					
134	34039	40.61	74.28			124(1)	54(1)				
135	34039	40.66	74.21								2(3)
136	34039	40.64	74.21						9(2)		
137	34039	40.66	74.21	150(1)							
138	34039	40.66	74.21			109(1)	62(2)				
140	34039	40.68	74.23			114(1)	51(1)				
141	34041	41.01	75.08			140(1)					
142	34041	40.68	75.19	123(1)	19(1)						
143	34041	40.69	75.19			130(1)	58(2)				
144	34041	40.68	75.19						8(2)		
145	34041	40.84	74.84			84(1)	33(1)				

*Not Plotted.

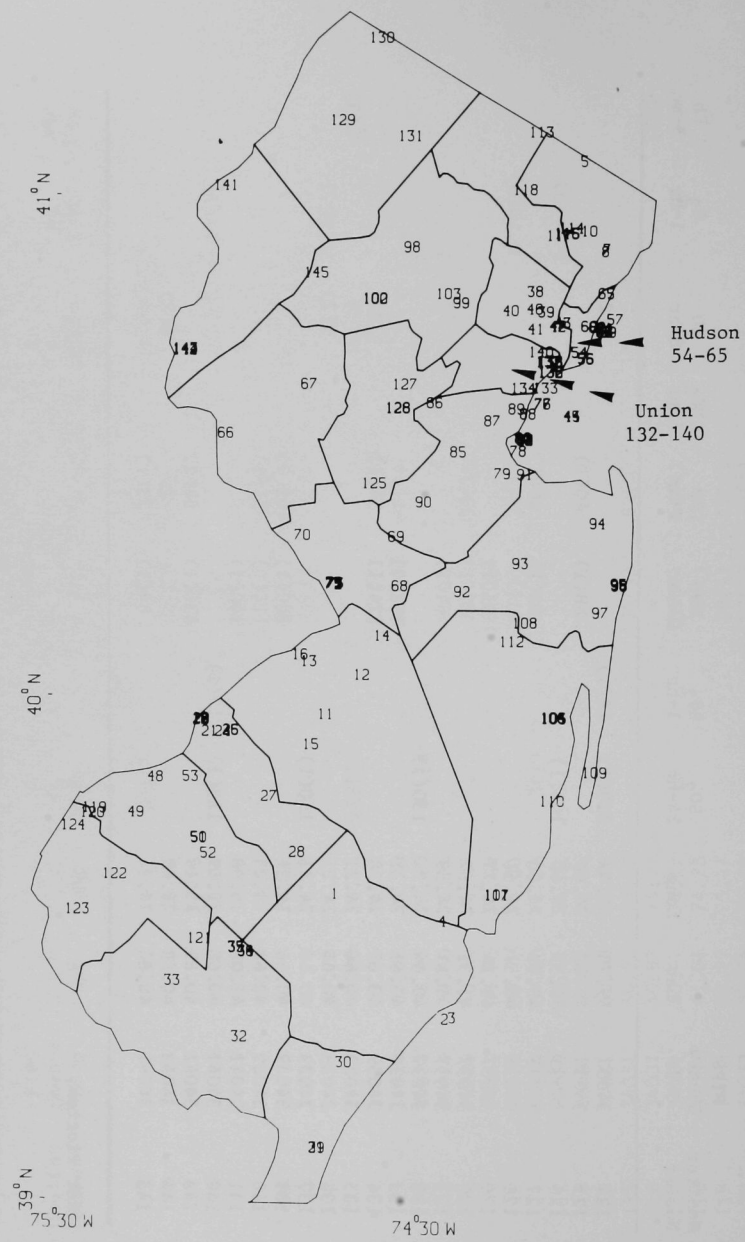


Fig. II.93 New Jersey: Locations of SAROAD Monitors (See Table II.64 for Monitor Numbers)

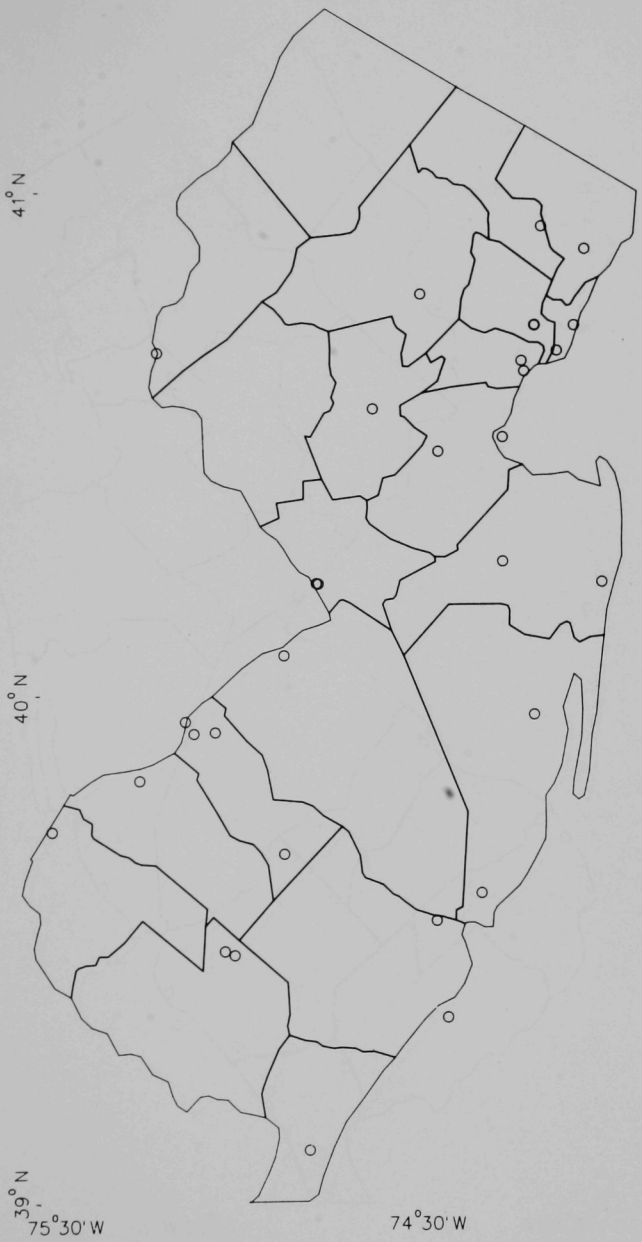


Fig. II.94 New Jersey: Monitors Reporting Adequate Data on 24-hr Average SO_2 Concentrations; No Violations

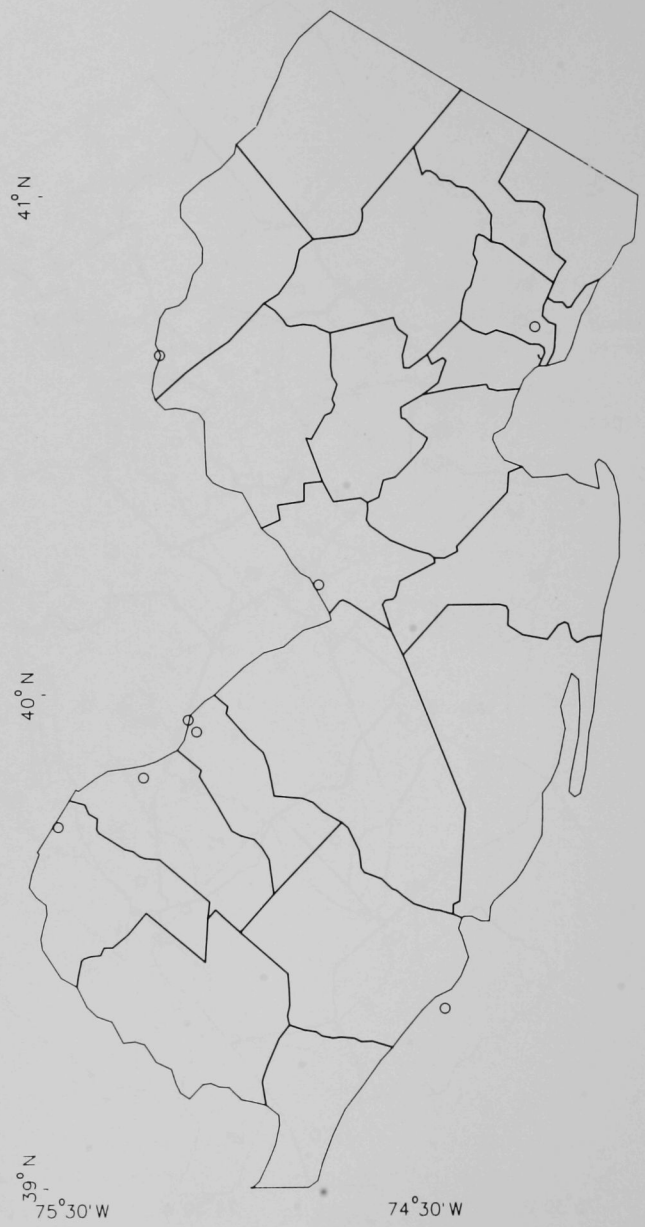


Fig. II.95 New Jersey: Monitors Reporting Adequate Data on Annual Average SO_2 Concentrations; No Violations

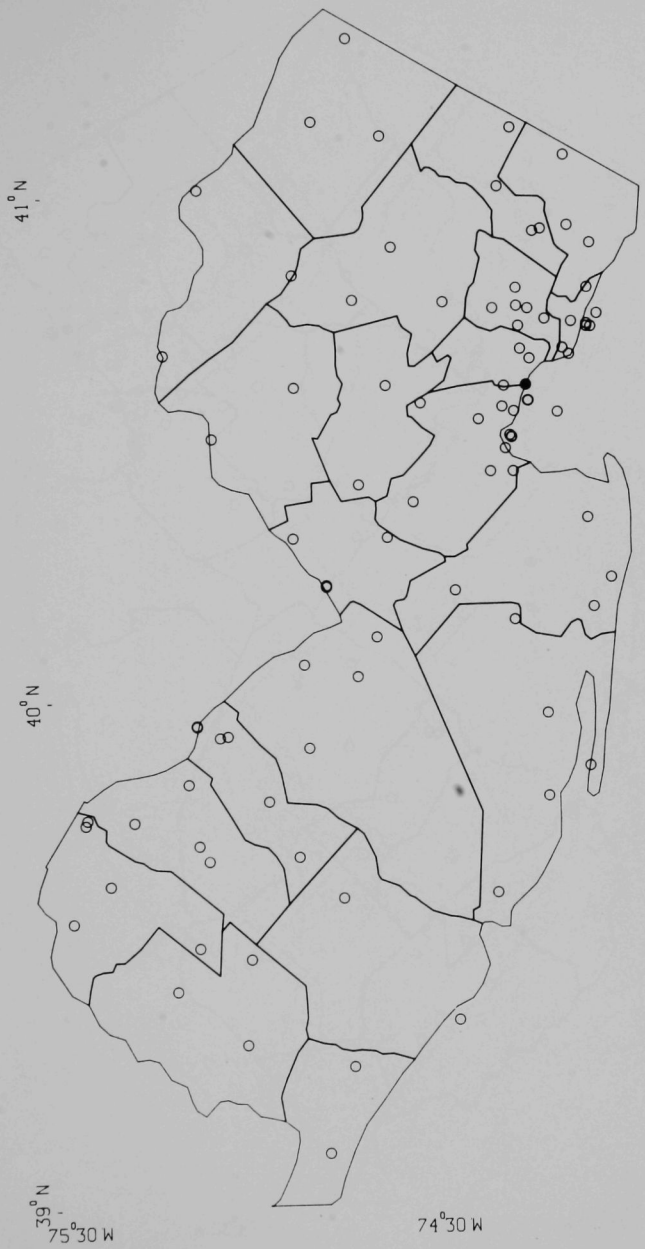


Fig. II.96 New Jersey: Monitors Reporting Adequate Data on 24-hr Average TSP Concentrations; Violations Shown by Shaded Circles

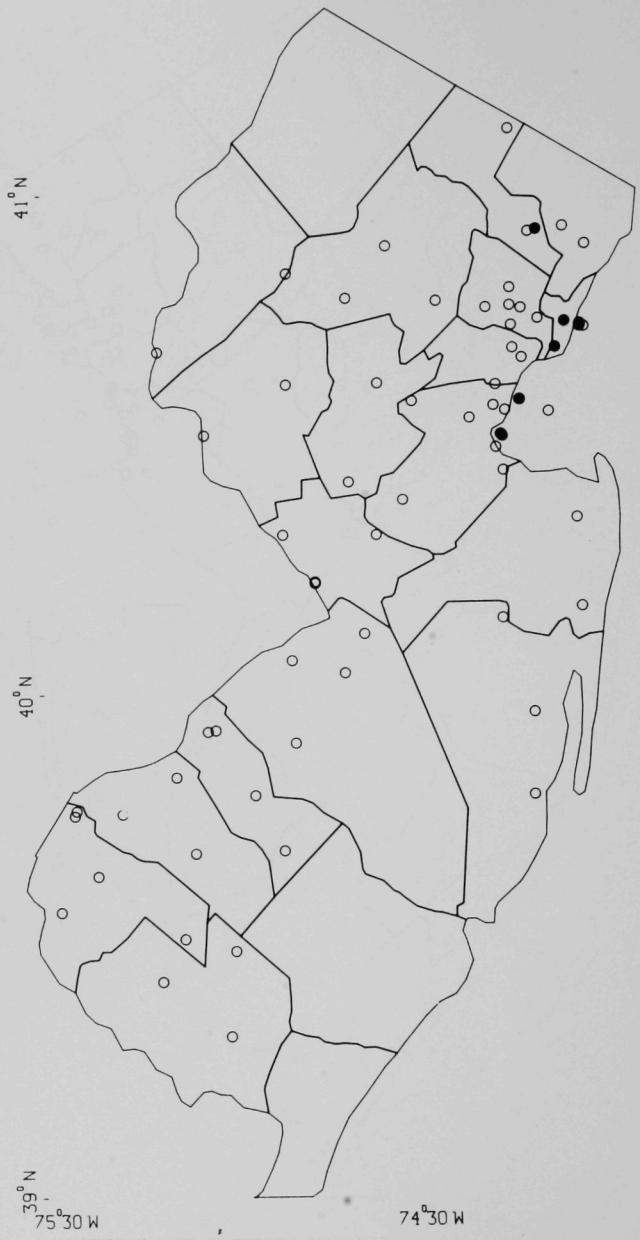


Fig. II.97 New Jersey: Monitors Reporting Adequate Data on Annual Average TSP Concentrations; Violations Shown by Shaded Circles

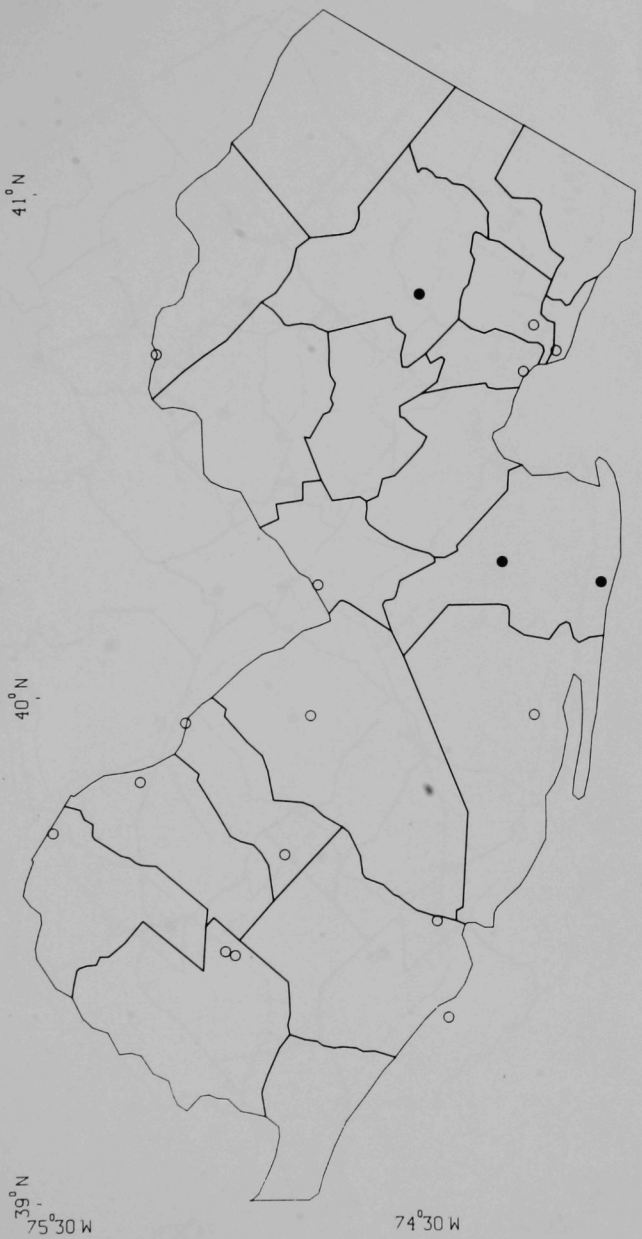


Fig. II.98 New Jersey: Monitors Reporting Adequate Data on 8-hr Average CO Concentrations; Violations Shown by Shaded Circles

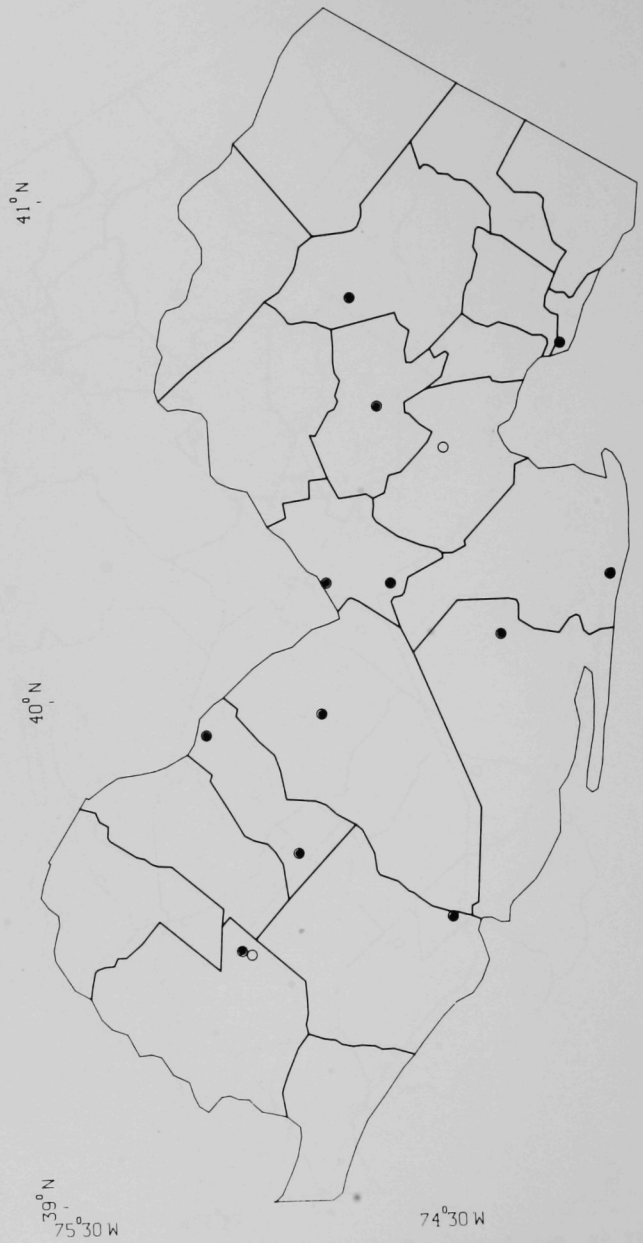


Fig. II.99 New Jersey: Monitors Reporting Adequate Data on 1-hr Average O_3 Concentrations; Violations Shown by Shaded Circles

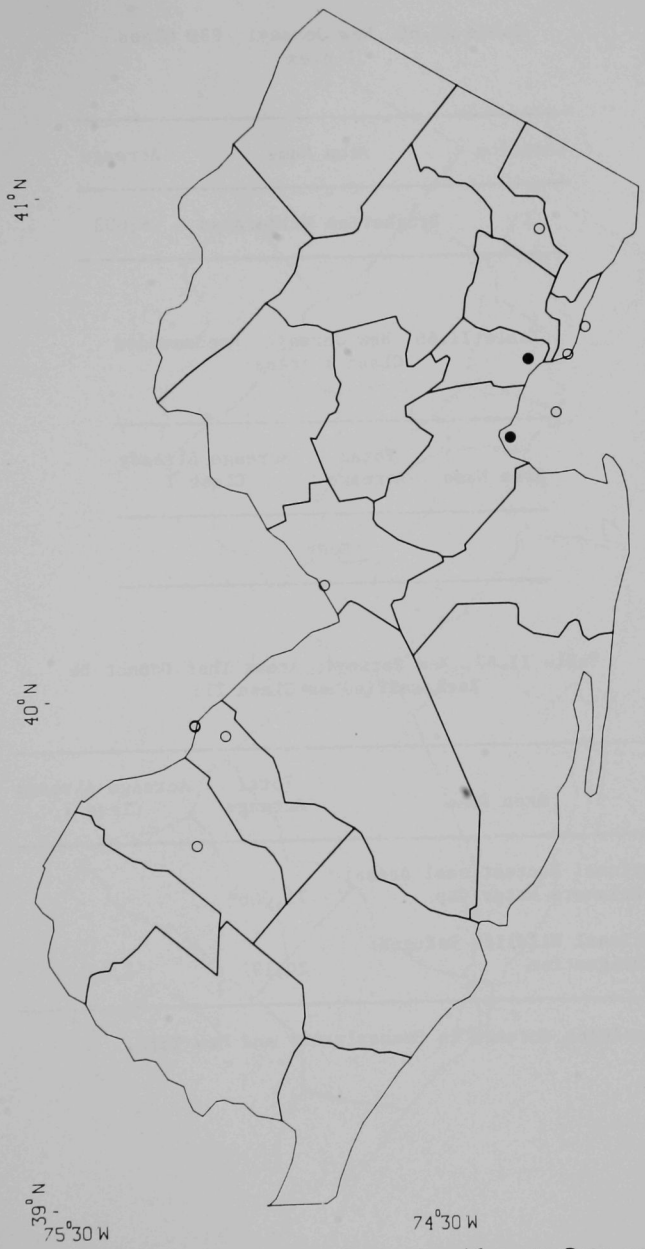


Fig. II.100 New Jersey: Monitors Reporting Adequate Data on 3-month Average Lead Concentrations; Violations Shown by Shaded Circles

Table II.65 New Jersey: PSD Class I Area

Location	Area Name	Acreage
1	Brigantine Wilderness	6,603

Table II.66 New Jersey: Recommended Class I Areas

Area Name	Total Acreage	Acreage Already Class I
None		

Table II.67 New Jersey: Areas That Cannot Be Reclassified as Class III

Area Name	Total Acreage	Acreage Already Class I
National Recreational Areas:		
Delaware Water Gap	71,000[a]	-
National Wildlife Refuges:		
Brigantine	20,197	6,603

[a]Includes acreage in Pennsylvania and New York.

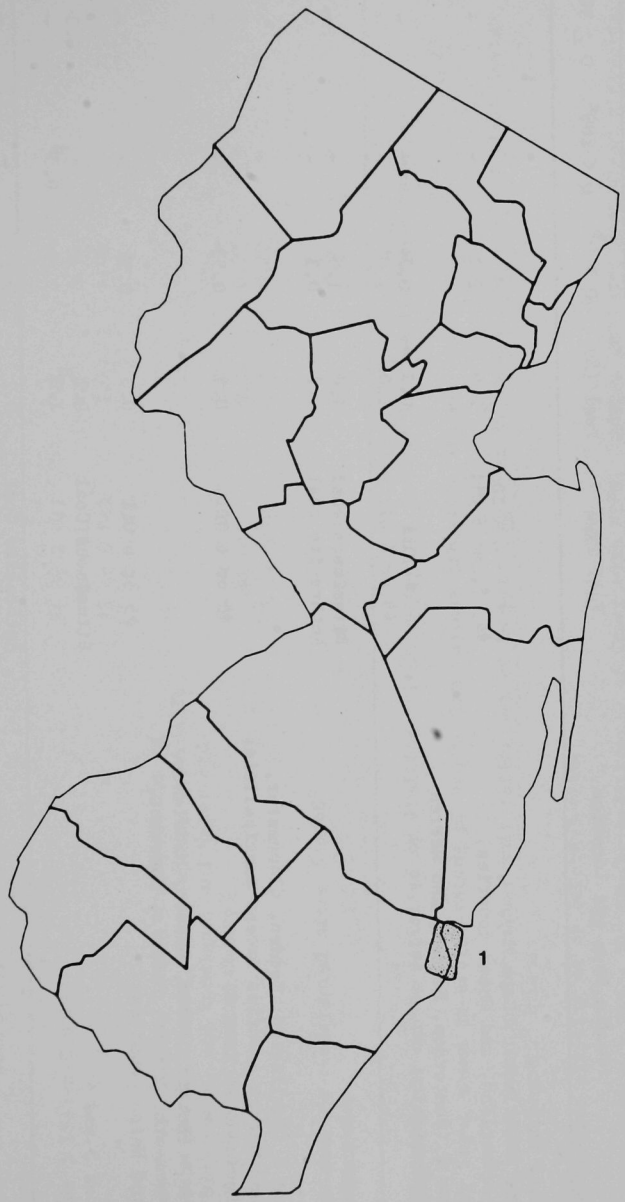


Fig. II.101 New Jersey: PSD Class I Area

Table II.68 New Jersey: SO_2 Emission Limits (lb $SO_2/10^6$ Btu) by Heat Input Class, Q, in Units of 10^6 Btu/hr

Source Type and Location	Fuel Type	Limit on Sulfur in Fuel (%)	Emission Limit[a]		
			$Q > 0$[b]	$Q < 200$[c]	$Q \geq 200$[b]
New and Existing					
Zone 1 (Atlantic, Cape May, Cumberland, and Ocean counties)	#4, 5, or 6 Oil	2.0	2.1	-	-
Zone 2 (Hunterdon, Sussex, and Warren counties)	#4 Oil	0.7	0.74	-	-
	#5 or 6 Oil	1.0	1.05	-	-
Zones 1 and 2	Bituminous coal	1.0	1.5	-	-
	Anthracite coal	0.7	0.3	-	-
Zone 3 (Burlington, Camden, Gloucester, and Mercer counties except muncipalities included in Zone 6)	#5 or 6 Oil	0.5	0.53	-	-
Zone 4 (Berger, Essex, Hudson, Middlesex, Monmouth, Morris, Passaic, Somerset, and Union counties)	#5 or 6 Oil	0.3	0.32	-	-
Zones 3 and 4	Bituminous Coal	0.2	-	-	0.3
		1.0[d]	-	0.3[d]	-
	Anthracite Coal	0.2	0.3	-	-
	#1 or 2 Oil	0.2	-	-	-
	#4 Oil	0.3	0.32	-	-

Table II.68 New Jersey (Cont'd)

Source Type and Location	Fuel Type	Limit on Sulfur in Fuel (%)	Emission Limit[a]		
			$Q > 0$[b]	$Q < 200$[c]	$Q \geq 200$[b]
Zone 5 (Salem County)	#1 or 2 Oil	0.3	-	-	-
	#4 Oil	0.7	0.74	-	-
	#5 or 6 Oil	1.0	1.05	-	-
Zone 6 (Burlington County muncipalities of Bass River, Shamong, Southampton, Tabernacle, Washington, and Woodland; and Waterford Township in Camden County)	#1 or 2 Oil	0.2	-	-	-
	#4 Oil	0.3	0.32	-	-
	#5 or 6 Oil	0.3	0.32	-	-
New sources constructed after 5/6/68[e] Statewide	All Coal Types	0.2	0.3	-	-

[a]Emission limit can be satisfied by limiting sulfur content of fuel or by cleaning stack gas.

[b]Heat input based on design rating of whole plant unless otherwise stated.

[c]Heat input based on individual unit rating for units with $Q \leq 200 \times 10^6$ Btu/hr; or on whole plant design for $Q \geq 450 \times 10^6$ Btu/hr.

[d]For sources existing on or before 5/6/68.

[e]Sources with $Q > 250 \times 10^6$ Btu/hr must comply at least with NSPS, or with more stringent state standard.

Table II.69 New Jersey: Particulate Matter Emission Limits (lb PM/hr), by Heat Input Class, Q, in Units of 10^6 Btu/hr

Sources	Fuel Type	Q[a]	Limit[b]	Q[a]	Limit[b]
New[c] and Existing	All Fuels	1	0.6	180	19.3
		10	6	200	20
		20	8	400	40
		30	9	600	60
		40	10	800	80
		50	11	1,000	100
		60	12	2,000	200
		70	13	3,000	300
		80	14	4,000	400
		90	14.5	5,000	500
		100	15	6,000	600
		120	16.5	7,000	700
		140	17.5	8,000	800
		160	18.5	10,000	1,000

[a]Total heat input based on aggregate of all fuels burned (by individual stack), allowable emissions based on individual stack.

[b]For heat input rates between any two consecutive rates shown, the maximum allowable emission rate shall be determined by interpolation.

[c]New sources with $Q > 250 \times 10^6$ Btu/hr must comply at least with NSPS, or with more stringent state standard.

Table II.70 New Jersey: Power Plant Location and Generating Capacity Data for 1980

Plant No.[a]	Plant Name[b]	Latitude[b]	Longitude[b]	Generating Capacity (MW), by Regulatory Class[c,d]		Capacity Factor[e] (%)	Sulfur Dioxide Limit ($lb/10^6$ Btu), by Regulatory Class[f]	
				SIP	NSPS		SIP	NSPS
1	Bergen	40.84	74.02	566	0	43	2.22	0.00
2	Burlington	40.08	74.88	428	0	8	0.34	0.00
3	Deepwater	39.68	75.51	318	0	40	2.20	0.00
4	England	39.29	74.63	447	0	55	4.54	0.00
5	Essex	40.74	74.12	107	0	6	0.34	0.00
6	Gilbert	40.56	75.16	118	0	12	1.60	0.00
7	Hudson	40.74	74.07	1,009	0	39	1.51	0.00
8	Kearny A&B	40.74	74.10	314	0	–[g]	–[g]	0.00
9	Linden	40.62	74.21	490	0	21	1.60	0.00
10	Mercer	40.18	74.73	613	0	42	2.26	0.00
11	Salem	39.59	75.34	22	0	–[g]	–[g]	0.00
12	Sayreville	40.48	74.36	340	0	24	0.34	0.00
13	Sewaren	40.55	74.27	787	0	28	0.33	0.00
14	Werner	40.49	74.28	116	0	10	0.34	0.00

[a]See Fig. II.102.
[b]EPA's Energy Data System (EDS), except as noted.
[c]FPC form 4, 1980.
[d]Capacity subject to emission regulations of SIP or NSPS, as indicated.
[e]Calculated from annual net generation, FPC form 4, 1980.
[f]If more than one unit, fuel type, and SIP emission limit at plant, "SIP" is average weighted by size, fuel type, and capacity.
[g]Not available.

Table II.71 New Jersey: Power Plant Fuel Use Data for 1980

Plant No.[a]	Plant Name	Coal Sulfur Content[b] (%)	Coal Heating Value[b] (Btu/lb)	Coal Use[c] (10^3 ton)	Oil Sulfur Content[b] (%)	Oil Heating Value[b] (Btu/gal)	Oil Use[c] (10^3 Bbl)	Gas Heating Value[b] (Btu/ 10^3 ft^3)	Gas Use[c] (10^6 ft^3)
1	Bergen	0	0	0	0.27	145,646	1,074	1,033	20.7
2	Burlington	0	0	0	0.37	144,987	1,243	0	0
3	Deepwater	0.75	13,409	31	0.91	147,514	857	1,035	5.0
4	England	2.91	12,783	596	1.89	148,370	1,325	0	0
5	Essex	0	0	0	0.15	136,726	233	1,033	3.7
6	Gilbert	0	0	0	0.44	144,120	675	1,030	3.6
7	Hudson	1.22	13,022	819	0.27	145,496	1,153	1,050	15.1
8	Kearny A&B	0	0	0	0.24	144,295	1,637	1,033	1.6
9	Linden	0	0	0	0.26	144,789	2,523	1,033	0.7
10	Mercer	1.22	13,363	1,005	0	0	14	1,033	1.8
11	Salem	0	0	0	0.16	136,794	6	0	0
12	Sayreville	0	0	0	0.22	142,569	1,030	1,013	8.2
13	Sewaren	0	0	0	0.27	145,853	2,480	1,033	12.6
14	Werner	0	0	0	0.22	142,541	521	0	0

[a]See Fig. II.102.

[b]FPC form 423, 1980.

[c]FPC form 4, 1980. Note that in cases where the sulfur content and/or the heating value of a fuel is entered accompanied by 0 in the use column, the quantities of fuel that have been used are less than 0.5×10^3 barrels of oil or tons of coal, or 0.05×10^6 cubic feet of gas.

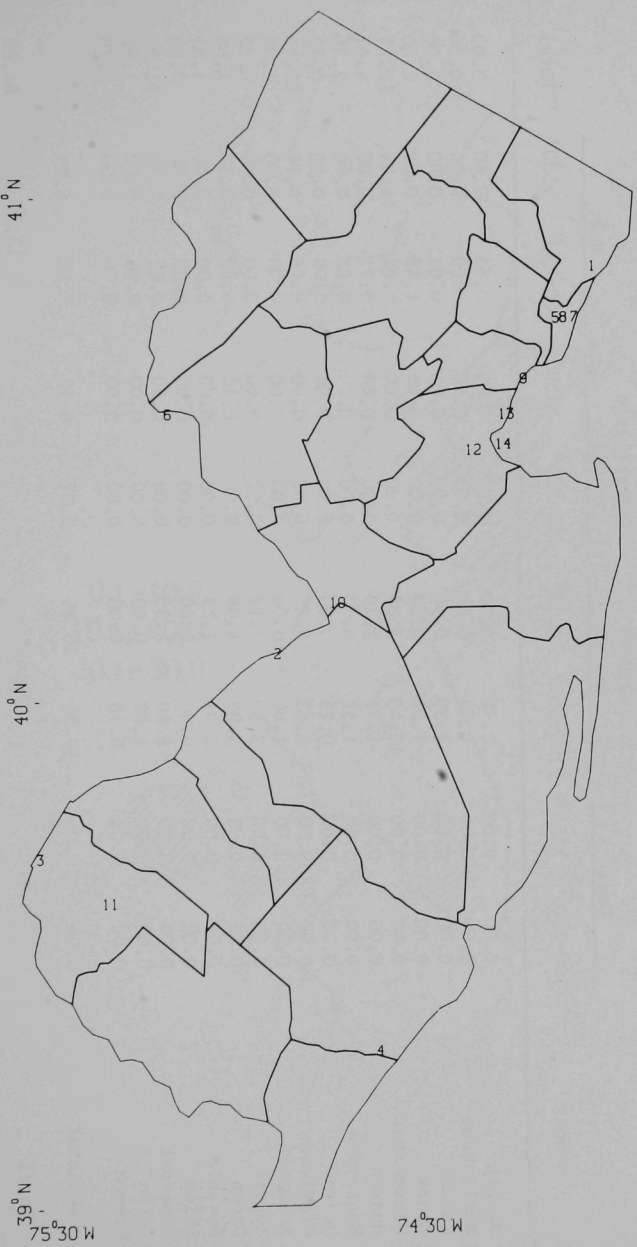


Fig. II.102 New Jersey: Key to Power Plant Locations

Table II.72 New Jersey: Large Industrial Boiler Fuel Use, 1974

County	County Fuel Consumption (10^{12} Btu) by Boiler Size and Fuel Type								
	Coal		Residual Oil		Distillate Oil		Gas		
	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	Total
Bergen	0.00	0.00	2.48	0.00	0.00	0.00	0.55	0.00	3.03
Burlington	0.00	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.56
Camden	0.00	0.00	4.99	0.00	0.00	0.00	0.01	0.00	5.00
Essex	0.00	0.00	1.36	0.00	0.00	0.00	1.45	0.00	2.80
Gloucester	0.00	0.00	14.43	5.88	0.00	0.00	1.01	4.94	26.27
Hudson	0.00	0.00	1.71	2.19	0.00	0.00	0.71	0.00	4.61
Hunterdon	0.00	0.00	1.32	0.00	0.00	0.00	0.85	0.00	2.16
Mercer	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.13
Middlesex	0.00	0.00	8.63	4.87	0.00	0.00	0.48	0.14	14.13
Monmouth	0.00	0.00	1.04	0.00	0.00	0.00	0.00	0.00	1.04
Morris	0.00	0.00	3.59	3.18	0.07	0.00	0.00	0.00	6.85
Ocean	0.06	0.06	0.00	1.08	0.00	0.12	0.00	0.37	1.68
Passaic	0.00	0.00	0.01	1.29	0.00	0.00	0.00	0.00	1.31
Salem	0.00	0.00	0.80	0.00	0.00	0.00	0.00	0.00	0.80
Somerset	0.00	0.00	6.80	2.35	0.00	0.00	0.02	2.76	11.93
Union	0.00	0.00	1.92	0.00	0.00	0.00	0.00	0.00	1.92
Warren	0.00	0.00	0.78	0.00	0.00	0.00	0.00	0.00	0.78
Subtotal	0.06	0.06	50.54	20.86	0.07	0.12	5.08	8.21	
Total	0.11		71.41		0.19		13.29		85.00
Percent of Total	0.13		84.00		0.22		15.64		100

[a]Boiler size (heat input, Q) in units of 10^6 Btu/hr.

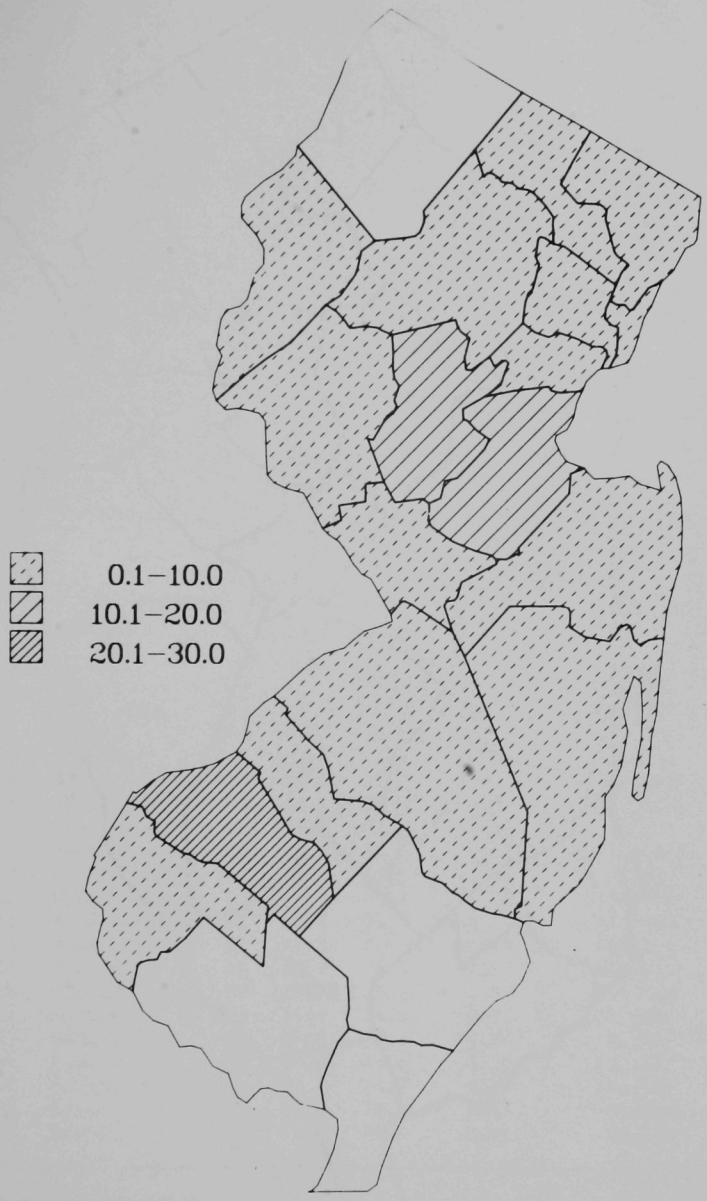


Fig. II.103 New Jersey: Fuel Use (in Units of 10^{12} Btu) in Major Fuel-Burning Installations, by County

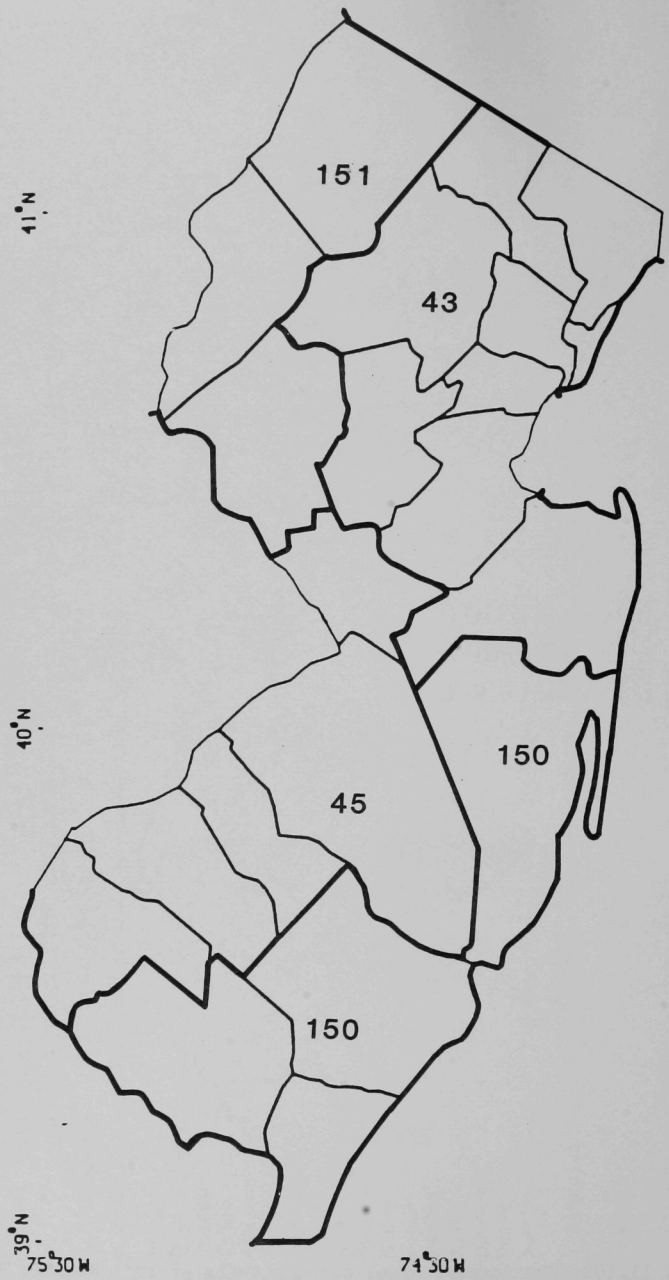


Fig. II.104 New Jersey: Air Quality Control Regions
(see Table II.73)

Table II.73 New Jersey: Identification of Air Quality Control Regions (AQCR)

AQCR Name	No.
Metropolitan Philadelphia (Del., Pa.)	45
New Jersey	150
New Jersey-New York-Connecticut (N.Y., Conn.)	43
Northeast Pennsylvania-Upper Delaware Valley (Pa.)	151

Table II.74 New Jersey: County-Level Data

FIPS	County	AQCR	Centroid Lat	Centroid Long	Area (10^3 km^2)	Population[a]
34001	Atlantic	150	39.5	74.7	1.46	189,326
34003	Bergen	43	41.0	74.1	0.61	844,741
34005	Burlington	45	39.9	74.7	2.15	360,877
34007	Camden	45	39.8	74.9	0.61	471,394
34009	Cape May	150	39.1	74.8	0.70	82,132
34011	Cumberland	150	39.4	75.1	1.32	132,278
34013	Essex	43	40.8	74.3	0.35	850,911
34015	Gloucester	45	39.7	75.1	0.88	199,378
34017	Hudson	43	40.7	74.1	0.09	555,483
34019	Hunterdon	151	40.6	74.9	1.12	87,093
34021	Mercer	45	40.3	74.7	0.60	305,678
34023	Middlesex	43	40.4	74.4	0.83	594,984
34025	Monmouth	43	40.3	74.2	1.29	469,313
34027	Morris	43	40.9	74.6	1.23	407,445
34029	Ocean	150	39.9	74.3	1.76	343,948
34031	Passaic	43	41.0	74.3	0.55	447,785
34033	Salem	45	39.6	75.3	0.88	64,579
34035	Somerset	43	40.6	74.6	0.75	202,187
34037	Sussex	151	41.1	74.7	1.37	116,140
34039	Union	43	40.7	74.3	0.27	503,057
34041	Warren	151	40.9	75.0	0.92	86,435

[a]1980 Census Bureau data.

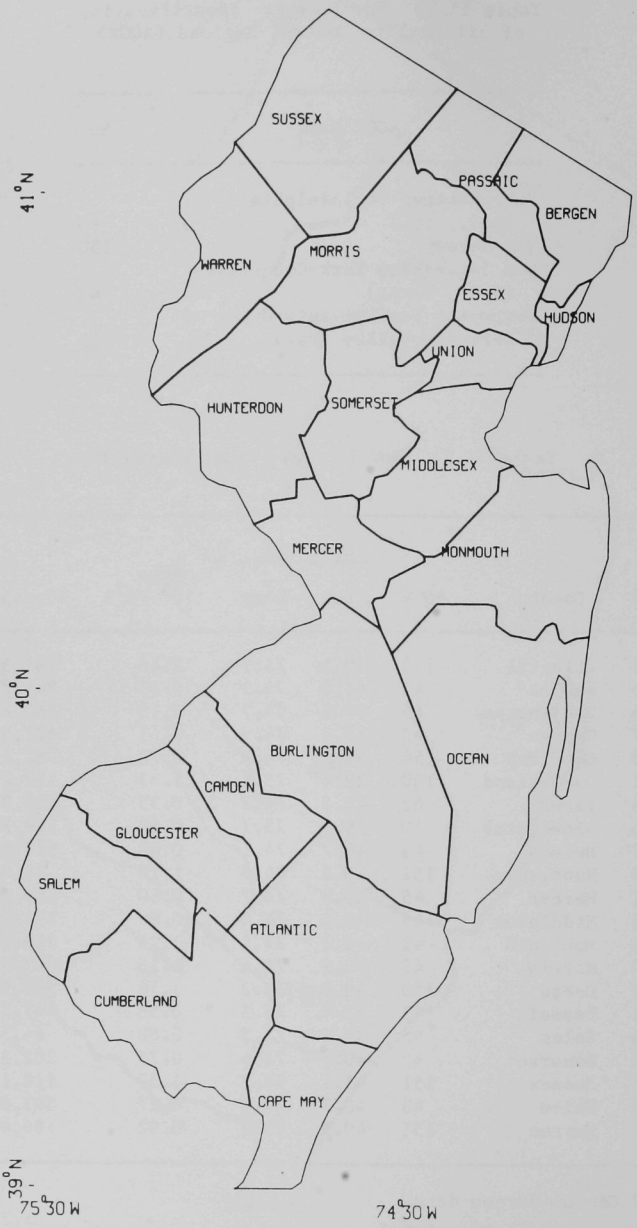


Fig. II.105 New Jersey: Key to Counties

REGION II: NEW YORK

AIR QUALITY SUMMARY

Attainment Status	Pollutant[a]							
	P-SO_2	S-SO_2	P-TSP	S-TSP	CO	O_3	NO_2	Pb
No. of Counties Containing NA Areas	1	0	3	7	10	33	0	0
State Implementation Plan[b]	C	N	R	E	C	A	N	N
No. of SAROAD Monitors[c]	74/25[d]	-	314/226[d]	-	25	26	0	7
No. of SAROAD Monitors with Violations[c]	0/1[d]	-	2/6[d]	-	5	14	0	1

PSD Status	Class I PSD Areas	Recommended Class I	Mandatory Class II[e]
No. of Areas	0	0	4

[a]P = primary standard; S = secondary standard.
[b]A = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review.
[c]SAROAD data as of 1979. All other information as of December 1981.
[d]24-hour average/annual average.
[e]Areas that cannot be redesignated as Class III.

ENERGY DATA

Parameter	Data
Coal Production	
Current, 1979 (10^3 tons)[a]	0
Projected, 1985 (10^3 tons)[b]	0
Coal Reserves (10^6 tons)[c]	0
Range of Coal Quality (lb $SO_2/10^6$ Btu)[a]	0
Fuel Use by Industrial Boilers, 1974 (10^{12} Btu)[d]	117.57
No. of Fossil-Fueled Power Plants	31

[a]EIA form 423.
[b]National Coal Assn. and DOE's Western Coal Development Monitoring System.
[c]Bureau of Mines Rpt. IC 8680 and 8693.
[d]FEA, MFBI Survey, 1974.

NEW YORK: SIP Attainment Strategies

Area[a]	NA[b]	Plan Date	EPA Action[c]	Source(s)	Strategy[d]
	SO_2:				
Niagara Frontier AQCR[e]	P	6/79	C	Steel plant	Compliance with existing SIP limits
	TSP:				
Syracuse (Onondaga Co.)	P	6/79	C	Mobile	TCM
Catskill	S	6/79	C	Grain loading	Require RACT on fugitive emissions
Albany	S	6/79	C	Cement plant	Control fugitive emissions
Niagara Frontier AQCR[e]	P		R	Industrial fugitive emissions	Incomplete plan
	CO:				
Albany, Troy, Buffalo, and Monroe Co.	P	6/79	C	-	Redesignate to attainment
	CO/O_3:				
Binghamton, Rochester, Catskill, and Utica	P	6/79	A	Mobile	FMVECP; TCM; attainment by 1982
New York City					FMVECP; TCM; I&M; attainment by 1987

[a]Cities unless otherwise noted.
[b]Nonattainment violation indicated by pollutant and as P = primary and S = secondary.
[c]A = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.
[d]See p. 30 for a listing of the abbreviations.
[e]AQCR = air quality control region; see Table II.84.

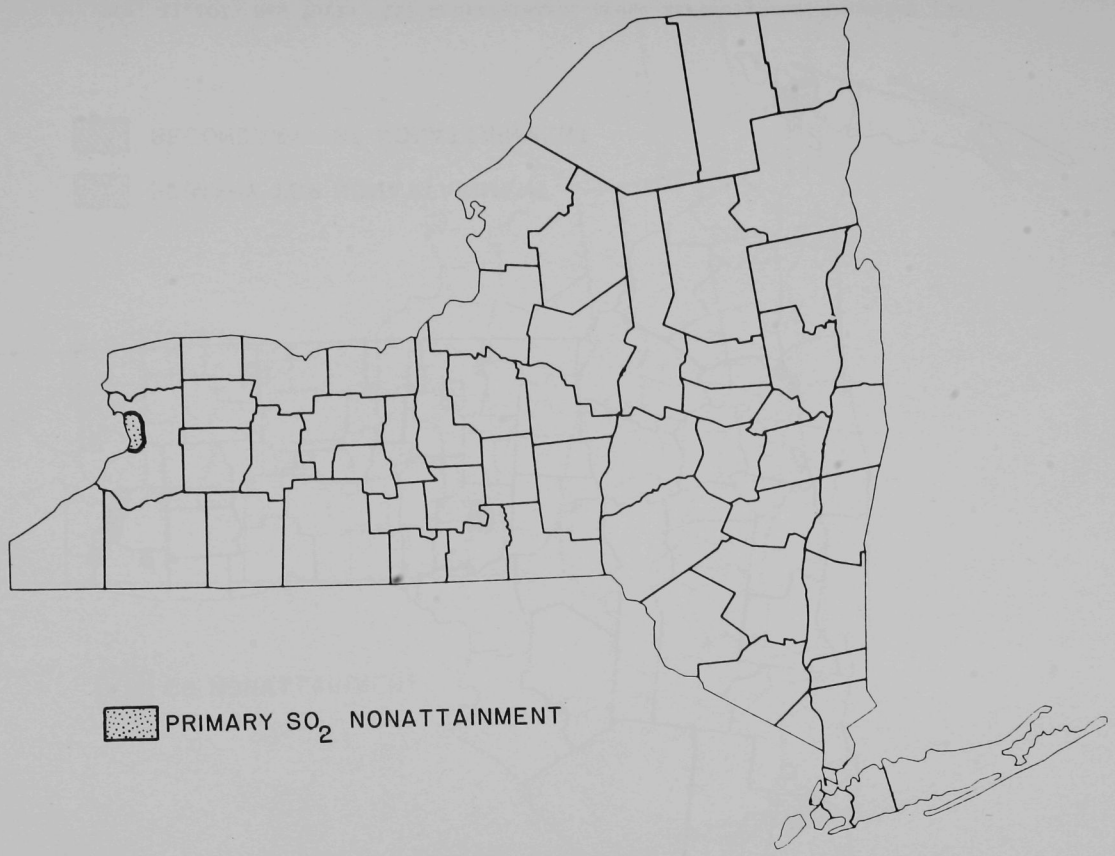


Fig. II.106 New York: SO_2 Nonattainment Areas as Designated December 1981

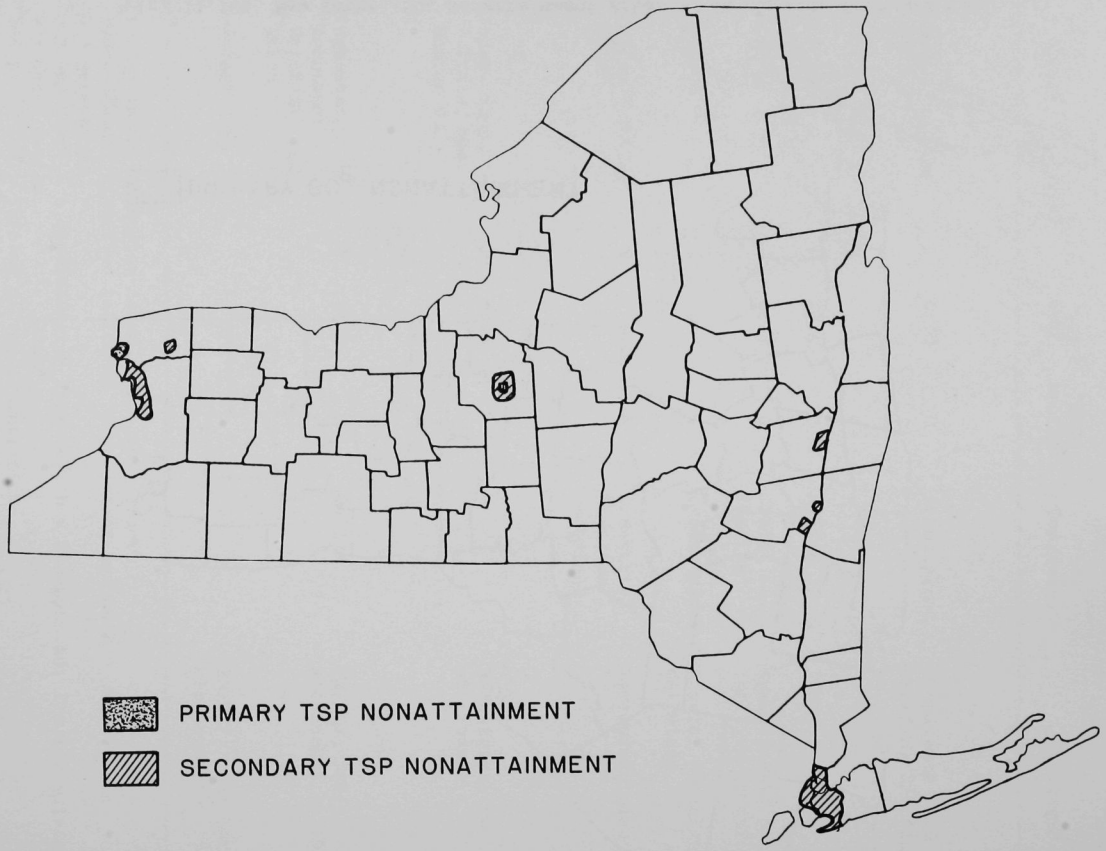


Fig. II.107 New York: TSP Nonattainment Areas as Designated December 1981

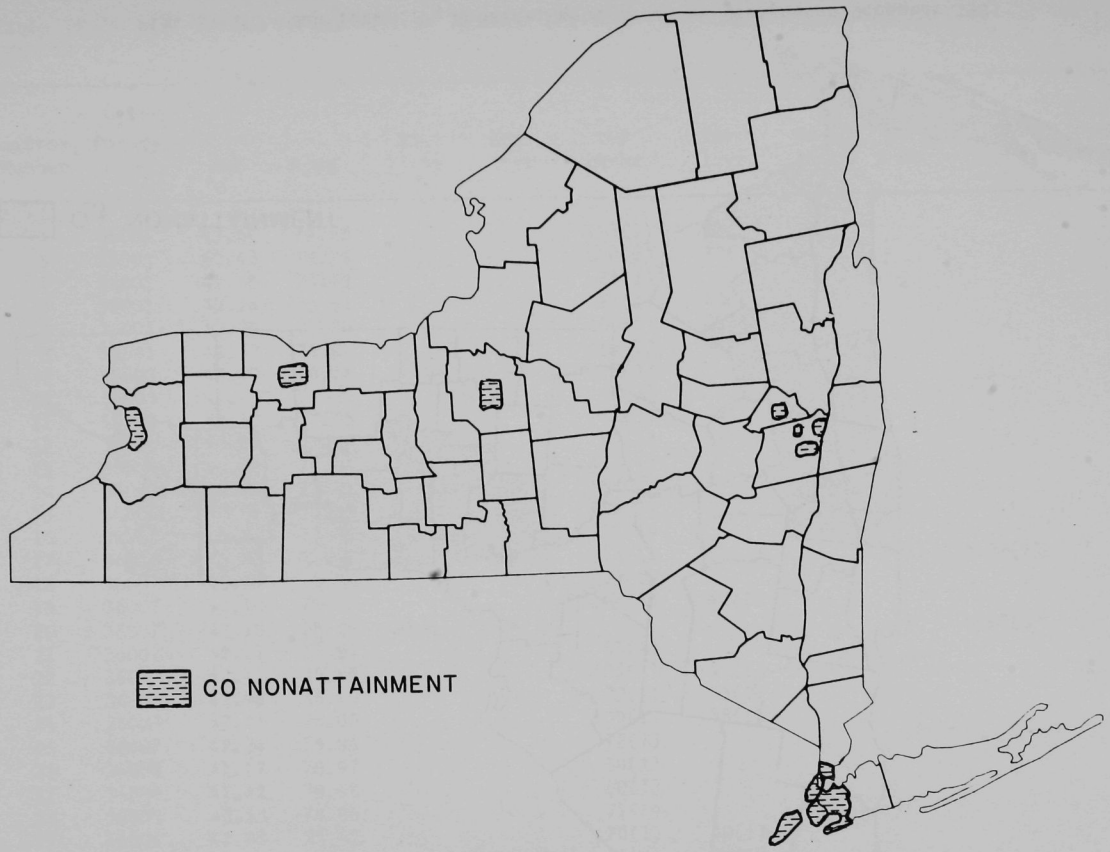


Fig. II.108 New York: CO Nonattainment Areas as Designated December 1981

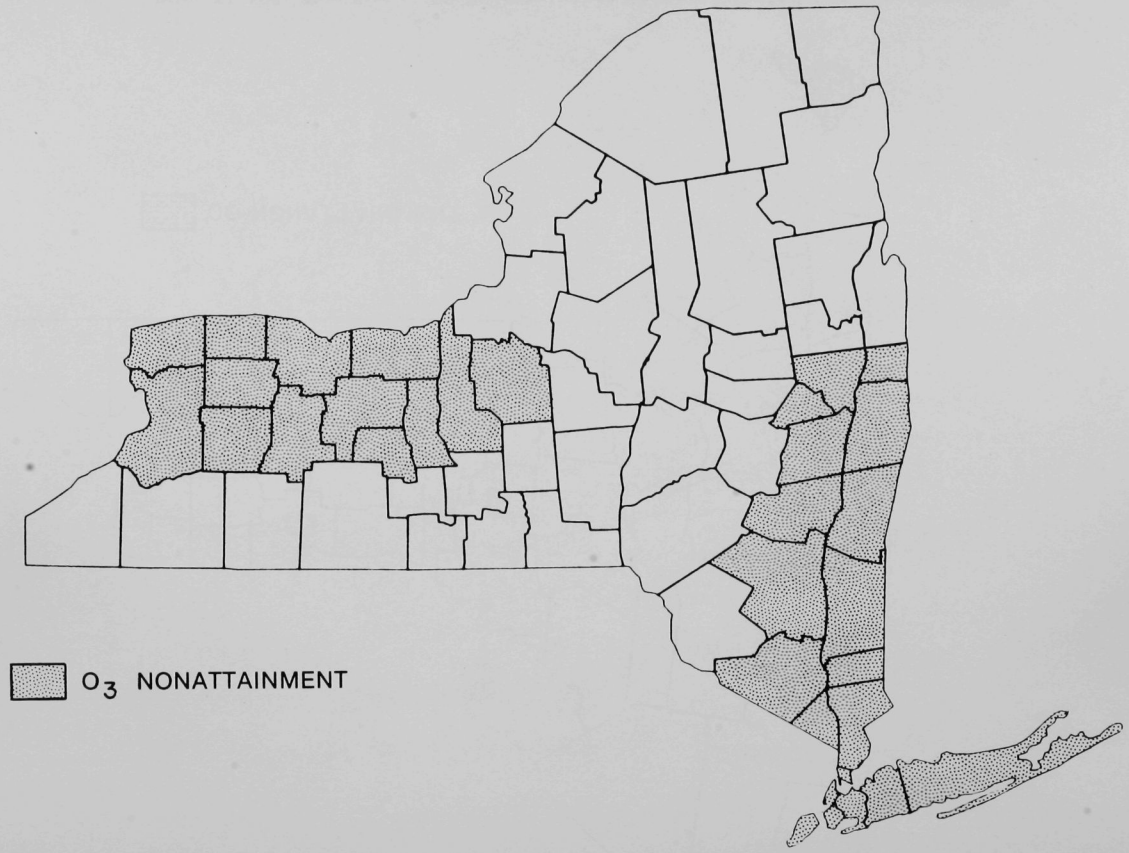


Fig. II.109 New York: O_3 Nonattainment Areas as Designated December 1981

Table II.75 New York: SAROAD Monitor Numbers and 1979 Data ($\mu g/m^3$, mg/m^3 for CO, or ppm for O_3)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
2	36001	42.64	73.75			163(1)	62(2)				
3	36001	42.63	73.76			208(2)	77(3)				
4	36001	42.65	73.78			88(1)					
6	36001	42.74	73.81			91(1)	43(1)				
7	36001	42.72	73.80			106(1)	45(1)				
8	36001	42.47	73.80			116(1)	43(1)				
9	36003	42.27	78.16			73(1)					
10	36003	42.25	77.79			48(1)					
11	36003	42.12	77.95			62(1)	24(1)				
12	36005	40.88	73.84	113(1)		98(1)	47(1)				
13	36005	40.89	73.84	71(1)		115(1)					
14	36005	40.81	73.91	121(1)		137(1)	74(2)				
15	36005	40.81	73.80	79(1)		122(1)					
16	36005	40.87	73.89	131(1)		113(1)					
17	36005	40.83	73.91	277(2)	69(2)	118(1)	63(2)		8(2)	0.09(1)	
18	36007	42.11	75.96			123(1)					
19	36007	42.10	75.92			106(1)	42(1)				
20	36007	42.10	75.89	113(1)	34(1)				4(1)	0.13(3)	
21	36007	42.11	75.94			63(1)					
22	36007	42.11	75.89			109(1)	41(1)				
23	36007	42.08	76.10			79(1)	33(1)				
24	36007	42.11	76.05			109(1)	38(1)				
25	36007	42.24	75.85			76(1)					
26	36009	42.17	78.97			59(1)					
27	36009	42.42	78.48			60(1)					
28	36009	42.33	78.86			71(1)					
29	36009	42.08	78.43			70(1)	30(1)				
30	36011	40.74	73.42			64(1)	27(1)				
31	36011	42.94	76.58			79(1)	36(1)				
32	36011	42.96	73.68			106(1)	44(1)				

Table II.75 New York (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
33	36013	42.10	79.24	187(1)							
34	36013	42.18	79.23			66(1)	29(1)				
35	36013	42.10	79.24			125(1)	54(1)				
36	36013	42.10	79.25			99(1)					
37	36013	42.09	79.29			70(1)	26(1)				
38	36013	42.49	79.32			112(1)	38(1)				
39	36013	42.48	79.33			95(1)	33(1)				
40	36013	42.54	79.17			108(1)	37(1)				
41	36015	42.11	76.80	75(1)					3(1)		
42	36015	42.09	76.80			118(1)	41(1)				
43	36015	42.13	76.83			108(1)	35(1)				
44	36015	42.08	76.81			50(1)					
45	36015	42.08	76.80			98(1)					
46	36015	42.11	76.80	57(1)						0.11(2)	
47	36015	42.15	76.93			93(1)	32(1)				
48	36015	42.16	76.82			111(1)	38(1)				
49	36017	42.32	75.77			79(1)	31(1)				
50	36017	42.53	75.53			75(1)	28(1)				
51	36019	44.70	73.45			87(1)					
52	36019	44.51	73.50			96(1)					
53	36021	42.13	73.89			97(1)	39(1)				
54	36021	42.24	73.65			60(1)	25(1)				
55	36021	42.24	73.76			75(1)	31(1)				
56	36023	42.71	76.03			89(1)	24(1)				
57	36023	42.60	76.16			78(1)	30(1)				
58	36023	42.60	76.18			87(1)	34(1)				
59	36025	42.07	75.42			80(1)	31(1)				
60	36027	42.11	73.96			88(1)					
61	36027	41.93	73.91			77(1)	30(1)				
62	36027	41.66	73.78			75(1)	30(1)				

Table II.75 New York (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
63	36027	41.54	73.95			82(1)	33(1)				
64	36027	41.72	73.94			95(1)	40(1)				
65	36027	41.70	73.93	152(1)					7(1)		
67	36027	41.70	73.93							0.10(2)	
68	36029	42.99	78.78			118(1)	53(1)		7(1)		
69	36029	43.05	78.81			219(2)	62(2)				
70	36029	42.90	78.79			139(1)	57(2)				
71	36029	43.02	78.48			92(1)	37(1)				
72	36029	42.99	78.78	152(1)						0.11(2)	
73	36029	42.80	78.83			195(2)	63(2)				
74	36029	42.92	78.70			113(1)	46(1)				
75	36029	42.58	79.02			76(1)	32(1)				
76	36029	42.64	78.54			73(1)	32(1)				
77	36029	42.97	78.63			91(1)	40(1)				
78	36029	42.90	78.75			150(1)					
79	36029	42.98	78.88			115(1)	55(1)				
80	36029	42.85	78.87			175(1)	54(1)				
81	36029	42.94	78.81			107(1)	53(1)				
82	36029	42.95	78.89			94(1)	51(1)				
83	36029	42.93	78.87	226(1)	31(1)	149(1)	67(2)		5(1)		
84	36029	42.84	78.83			175(1)	72(2)				
85	36029	42.88	78.81	289(2)					7(1)		
86	36029	42.91	78.84								1(1)
87	36029	42.88	78.81			180(1)	72(2)				
88	36029	42.87	78.83			251(2)					
89	36029	42.95	78.85			78(1)	45(1)				
90	36029	42.91	78.84			94(1)	46(1)				
92	36029	42.90	78.66			87(1)	39(1)				
93	36029	42.87	78.82			179(1)	76(3)				
94	36029	42.82	78.84			320(3)	100(4)				

Table II.75 New York (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
95	36029	42.82	78.84	190(1)							
96	36029	42.99	78.88			97(1)	50(1)				
97	36029	42.97	78.91			126(1)					
98	36029	42.98	78.90			120(1)	55(1)				
99	36029	43.00	78.83			89(1)	46(1)				
100	36029	43.00	78.90			124(1)	57(2)				
101	36029	43.00	78.90	344(2)							
102	36029	42.83	78.78			119(1)	55(1)				
103	36029	42.86	78.74			104(1)	43(1)				
105	36031	44.29	73.99			73(1)	28(1)				
106	36031	43.84	73.43			65(1)					
107	36031	44.36	73.91							0.13(3)	
108	36031	44.05	73.48			74(1)					
109	36031	44.39	73.91			47(1)	12(1)				
110	36033	44.33	74.14			132(1)	40(1)				
111	36033	44.85	74.30			37(1)					
112	36035	43.01	74.38			85(1)	31(1)				
113*	36035	-	-			76(1)	32(1)				
114	36037	43.01	78.18			67(1)	28(1)				
115	36039	42.21	73.87			77(1)	29(1)				
116	36039	42.13	73.92			151(1)					
117	36041	43.41	74.28			26(1)					
118	36043	43.03	74.98			85(1)	33(1)				
119	36043	43.04	74.86			95(1)					
120	36043	43.01	75.01			68(1)	27(1)				
121	36043	42.96	74.37			71(1)					
122	36045	44.01	76.37			53(1)					
123	36045	44.10	76.37								0(1)
124	36045	43.97	75.91			65(1)	23(1)				
125	36047	40.59	73.94	190(1)	45(1)	107(1)	48(1)			0.19(4)	

Table II.75 New York (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
126	36047	40.73	73.95	238(1)	56(1)	121(1)	61(2)			0.08(1)	
127	36047	40.67	73.97	195(1)	60(2)	104(1)	55(1)		7(1)	0.12(2)	
128	36047	40.65	74.01	102(1)		131(1)	68(2)				
129	36047	40.68	73.88	89(1)		140(1)					
130	36047	40.68	73.92	89(1)		120(1)					
131	36047	40.63	74.04			84(1)					
132	36047	40.62	73.98	139(1)		114(1)					
133	36047	40.65	73.92	157(1)		76(1)					
134	36047	40.63	74.04	89(1)							
135	36049	43.77	75.48			80(1)	29(1)				
136	36051	42.87	77.74			60(1)	23(1)				
137	36051	42.81	77.81			61(1)					
139	36053	43.08	75.75			88(1)	33(1)				
140	36053	43.09	75.66			75(1)					
141	36053	42.82	75.55			57(1)					
142	36055	43.24	77.65			78(1)					
143	36055	43.09	77.62			100(1)	43(1)				
144	36055	43.17	77.52	118(1)					10(3)		
145	36055	43.17	77.58			98(1)					
146	36055	43.14	77.66			96(1)	39(1)				
147	36055	43.17	77.52							0.11(2)	
149	36055	43.20	77.60			54(1)					
152	36055	43.21	77.43			62(1)	30(1)				
154	36055	43.20	77.58			90(1)	41(1)				
155	36055	43.12	77.84			75(1)	31(1)				
157	36055	42.95	77.59			58(1)					
158	36055	43.29	77.80			56(1)					
160	36055	43.07	77.71							0.12(2)	
163	36055	43.17	77.52			83(1)	38(1)				
166	36055	43.15	77.59			72(1)	41(1)				

Table II.75 New York (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
167	36055	43.16	77.60	212(1)							
168	36055	43.12	77.57			68(1)					
169	36055	43.16	77.60			123(1)	52(1)		8(2)		
170	36055	43.20	77.64			116(1)	47(1)				
171	36055	43.21	77.95			63(1)					
174	36055	43.11	77.41			61(1)					
175	36055	43.17	77.63			99(1)	46(1)				
177	36055	43.19	77.63			102(1)	38(1)				
178*	36057	-	-			67(1)	28(1)				
179	36057	42.93	74.18			68(1)	29(1)				
180	36059	40.64	73.62	133(1)	22(1)						
181	36059	40.64	73.64	103(1)	19(1)						
182	36059	40.66	73.65			120(1)					
183	36059	40.69	73.70			98(1)	42(1)				
185	36059	40.86	73.65	129(1)	15(1)						
186	36059	40.86	73.63			114(1)	50(1)				
187	36059	40.74	73.64			81(1)	42(1)				
188	36059	40.65	73.59			86(1)	42(1)				
190	36059	40.76	73.57			103(1)	44(1)				
191	36059	40.68	73.47			79(1)	38(1)				
192	36059	40.78	73.45			81(1)	37(1)				
193	36059	40.88	73.54			71(1)	34(1)				
194	36059	40.84	73.63	77(1)	18(1)						
195	36059	40.59	73.64	91(1)							
196	36059	40.81	73.76			94(1)	40(1)				
197	36059	40.80	73.70			90(1)	44(1)				
198	36059	40.62	73.73			56(1)					
199	36059	40.75	73.59	120(1)	24(1)				14(4)	0.14(3)	
200	36059	40.62	73.64			82(1)					
201	36059	40.75	73.59			145(1)	54(1)				

Table II.75 New York (Cont'd)

Table II.75 New York (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
202	36059	40.63	73.71			90(1)	42(1)				
205	36061	40.82	73.95	266(1)	77(2)	113(1)	58(2)				
206	36061	40.77	73.97	252(1)	72(2)	110(1)	58(2)		8(2)		
208	36061	40.74	73.99	312(2)	81(3)	112(1)	61(2)		7(1)	0.16(4)	
209	36061	40.80	73.94	92(1)		125(1)			11(3)		
210	36061	40.80	73.94								1(2)
211	36061	40.73	74.01	134(1)		111(1)					
212	36061	40.75	73.98			88(1)	40(1)				
214	36061	40.73	73.98			172(1)	77(3)				
215	36061	40.75	73.98						20(4)		
216	36061	40.72	74.00						17(4)		
217	36063	43.14	78.84			91(1)	43(1)				
218	36063	43.21	78.47			105(1)	42(1)				
220	36063	43.10	78.96			110(1)	57(2)				
221	36063	43.23	79.01			111(1)	43(1)				
222	36063	43.26	79.06			107(1)	44(1)				
223	36063	43.03	78.86			106(1)	53(1)				
224	36063	43.06	78.86			117(1)	50(1)				
225	36063	43.04	78.87			132(1)	55(1)				
226	36063	43.10	79.02			149(1)	70(2)				
227	36063	43.08	79.00			220(2)	111(4)				
228	36063	43.09	79.00	287(2)		221(2)	76(3)		6(1)	0.11(2)	
229	36063	43.13	79.04			147(1)	70(2)				
230	36063	43.10	79.06			109(1)	48(1)				
231	36063	43.10	79.06								0(1)
232	36063	43.07	78.94			99(1)	50(1)				
233	36063	43.17	78.70	83(1)		162(1)	53(1)				
234	36063	43.17	78.68			115(1)	61(2)				
235	36063	43.16	78.70			95(1)	50(1)				
236	36063	43.19	78.64			101(1)	44(1)				

Table II.75 New York (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
237	36063	43.18	78.69			157(1)	55(1)				
238	36063	43.15	79.02			138(1)	54(1)				
239	36063	43.19	78.68			94(1)	45(1)				
240	36063	43.18	78.67			103(1)	52(1)				
241	36063	43.17	79.04			106(1)	48(1)				
243	36065	43.10	75.20			92(1)			3(1)		
244	36065	43.10	75.23			99(1)	43(1)				
245	36065	43.27	75.24								1(1)
246	36065	43.10	75.20	105(1)						0.13(3)	
247	36065	43.09	75.23			148(1)					
249	36065	43.48	75.34			67(1)	26(1)				
250	36065	43.12	75.29			79(1)					
251	36065	43.22	75.46			109(1)	42(1)				
253	36067	43.05	76.13			146(1)	63(2)				
254	36067	43.05	76.15								1(2)
255	36067	43.06	76.18			137(1)	63(2)		4(1)		
256	36067	43.06	76.15			117(1)	53(1)				
257	36067	43.04	76.13			121(1)					
259	36067	43.05	76.13			139(1)	48(1)				
260	36067	43.05	76.15	125(1)	32(1)	113(1)	56(1)		4(1)	0.12(2)	
261	36067	43.07	76.15			103(1)					
262	36067	43.07	76.13			80(1)	38(1)				
263	36067	43.12	76.15			56(1)					
264	36067	43.06	76.18	142(1)						0.13(3)	
265	36067	43.07	76.08			131(1)	54(1)				
266	36067	43.09	76.25			114(1)	27(1)				
267	36067	43.23	76.14			81(1)	30(1)				
269	36067	43.10	76.15			127(1)	43(1)				
270	36067	43.09	76.10			95(1)	44(1)				
271	36067	43.04	76.08			114(1)	35(1)				

Table II.75 New York (Cont'd)

Table II.75 New York (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
272	36067	42.95	76.43			107(1)	36(1)				
273	36067	43.07	76.08			73(1)	29(1)				
274	36067	43.06	76.20			170(1)	57(2)				
275	36067	43.05	76.47			100(1)	39(1)				
276	36067	43.06	76.18	188(1)					4(1)	0.13(3)	
277	36069	42.87	76.99			66(1)	31(1)				
278	36069	42.90	74.56			69(1)	28(1)				
279	36071	41.53	74.08			89(1)	31(1)				
280	36071	41.46	74.36			109(1)	47(1)				
281	36071	41.40	74.32			97(1)	44(1)				
282	36071	41.50	74.01			104(1)	50(1)				
283	36073	43.22	78.39			70(1)					
284	36073	43.25	78.18			74(1)	30(1)				
285	36075	43.45	76.51			101(1)	33(1)				
286	36075	43.45	76.50			59(1)	24(1)				
287	36075	43.32	76.41			53(1)	24(1)				
288	36077	42.69	74.91			93(1)					
289	36077	42.45	75.06			120(1)	43(1)				
290	36079	41.37	73.66			97(1)	37(1)				
291	36079	41.37	73.97			130(1)	39(1)				
292	36081	40.73	73.75	29(1)		110(1)					
293	36081	40.70	73.90			122(1)					
294	36081	40.75	73.91	136(1)		136(1)					
295	36081	40.75	73.87	115(1)		124(1)					
296	36081	40.78	73.89	63(1)		136(1)					
297	36081	40.71	73.91	97(1)		116(1)					
298	36081	40.67	73.76	13(1)		91(1)					
299	36081	40.66	73.84	89(1)		102(1)					
300	36081	40.74	73.82	183(1)		93(1)			7(1)	0.19(4)	
301	36081	40.77	73.78	84(1)		112(1)					

Table II.75 New York (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
302	36081	40.73	73.74	89(1)		108(1)					
304	36083	42.90	73.35			122(1)	45(1)				
305	36083	42.53	73.76			108(1)	43(1)				
306	36083	42.63	73.75							0.13(3)	
307	36083	42.77	73.43			65(1)	20(1)				
308	36083	42.63	73.74			151(1)					
309	36083	42.63	73.75	180(1)		111(1)	49(1)		3(1)		
310	36083	42.63	73.75			68(1)	36(1)				
311	36085	40.60	74.12							0.18(4)	
312	36085	40.66	74.20			113(1)					
313	36085	40.60	74.12	166(1)	42(1)						
314	36085	40.66	74.20	89(1)							
315	36085	40.58	74.10	52(1)		108(1)					
316	36085	40.64	74.08	121(1)		130(1)					
317	36085	40.63	74.18	89(1)		112(1)					
318	36087	41.12	74.16			105(1)	42(1)				
319	36087	41.15	73.99			83(1)	37(1)				
320	36087	41.21	74.00			86(1)	39(1)				
321	36089	44.93	74.89			99(1)					
322	36089	44.94	74.87			336(4)	49(1)				
323	36089	44.72	75.46	32(1)							
324	36089	44.70	75.50			87(1)	29(1)				
325	36091	43.08	73.79			101(1)	44(1)				
326	36093	42.80	73.94			106(1)					
327	36093	42.81	73.94			104(1)	44(1)				
328	36093	42.81	73.89			71(1)	34(1)				
330	36093	42.83	73.93			147(1)	59(2)				
334	36093	42.80	73.94	133(1)	34(1)				8(2)		
335	36093	42.74	74.18			65(1)	28(1)				
336	36093	42.80	73.94							0.13(3)	

Table II.75 New York (Cont'd)

Table II.75 New York (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
337	36095	42.68	74.50			76(1)	25(1)				
338	36097	42.34	76.85			80(1)	32(1)				
339	36099	42.91	76.85			69(1)					
340	36099	42.91	76.80			77(1)					
341	36101	42.17	77.10			72(1)	31(1)				
342	36101	42.14	77.05			117(1)	43(1)				
343	36101	42.33	77.66			68(1)					
344	36103	40.87	73.43	96(1)	18(1)						
346	36103	40.83	73.29	90(1)	17(1)						
347	36103	40.90	73.08	82(1)	15(1)						
348*	36103	41.05	71.96			62(1)					
353	36103	40.94	73.06	129(1)	23(1)	23(1)					
354	36103	40.94	73.07			70(1)	37(1)				
355	36103	40.95	73.08			59(1)	30(1)				
356	36103	40.91	72.67			59(1)	24(1)				
357	36103	40.81	73.38	90(1)							
358	36103	40.92	73.09	91(1)							
359	36103	40.92	73.13			72(1)	30(1)				
361	36103	40.84	73.28			69(1)	36(1)				
362*	36103	-	-			43(1)					
363*	36103	-	-			50(1)					
364	36103	40.78	73.26			104(1)	38(1)				
365	36103	40.79	73.00			62(1)	30(1)				
366	36103	40.93	73.33	75(1)							
367	36103	40.74	73.41							0.18(4)	
368	36103	40.74	73.42			114(1)	46(1)				
369	36103	40.74	73.41	121(1)	25(1)						
371	36103	40.89	73.29	96(1)	19(1)						
372	36105	41.77	74.63			74(1)	20(1)				
373	36105	41.66	74.69			99(1)	32(1)				

Table II.75 New York (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
374	36107	42.10	76.27			120(1)	40(1)				
375	36109	42.45	76.50			86(1)	36(1)				
376	36111	41.94	73.99			105(1)	42(1)				
377	36111	41.93	74.02			88(1)	40(1)				
378	36111	42.29	74.08			198(2)	44(1)				
379	36111	41.61	74.12			66(1)	25(1)				
380	36111	41.72	74.39			85(1)	35(1)				
381	36113	43.31	73.65			72(1)	37(1)				
382	36113	43.32	73.62	173(1)	26(1)	133(1)	45(1)			0.12(2)	
383	36115	43.30	73.58			90(1)	40(1)				
384	36115	43.27	73.59			92(1)	36(1)				
385	36117	43.06	77.25			55(1)					
386	36117	43.06	76.98			74(1)	31(1)				
387	36117	43.03	77.11			59(1)					
388	36119	40.91	73.78			85(1)	48(1)				
389	36119	40.91	73.84			96(1)	50(1)				
390	36119	41.05	73.81			89(1)	43(1)				
391	36119	41.31	73.71			59(1)	27(1)				
392	36119	41.27	73.80			70(1)					
393	36119	41.09	73.81			84(1)	32(1)				
395	36119	41.03	73.77			97(1)	46(1)				
397	36119	40.94	73.74			109(1)	44(1)				
398	36119	40.93	73.77	139(1)	25(1)	108(1)	48(1)		9(2)	0.10(2)	
399	36119	40.93	73.90			102(1)	46(1)				
401	36119	41.16	73.86			91(1)	40(1)				
402	36119	41.08	73.86			89(1)	38(1)				
404	36119	41.05	73.76	131(1)						0.19(4)	
406	36119	41.00	73.67			87(1)	43(1)				
407	36119	41.29	73.92			136(1)	49(1)				
409	36119	40.99	73.68			110(1)	49(1)				

Table II.75 New York (Cont'd)

Table II.75 New York (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
410	36119	40.93	73.90								2(3)
411	36121	42.86	78.26			67(1)	25(1)				
412	36121	42.53	78.43			73(1)					
413	36121	42.75	78.13			73(1)	29(1)				
414	36123	42.67	77.09			64(1)					

*Not Plotted.

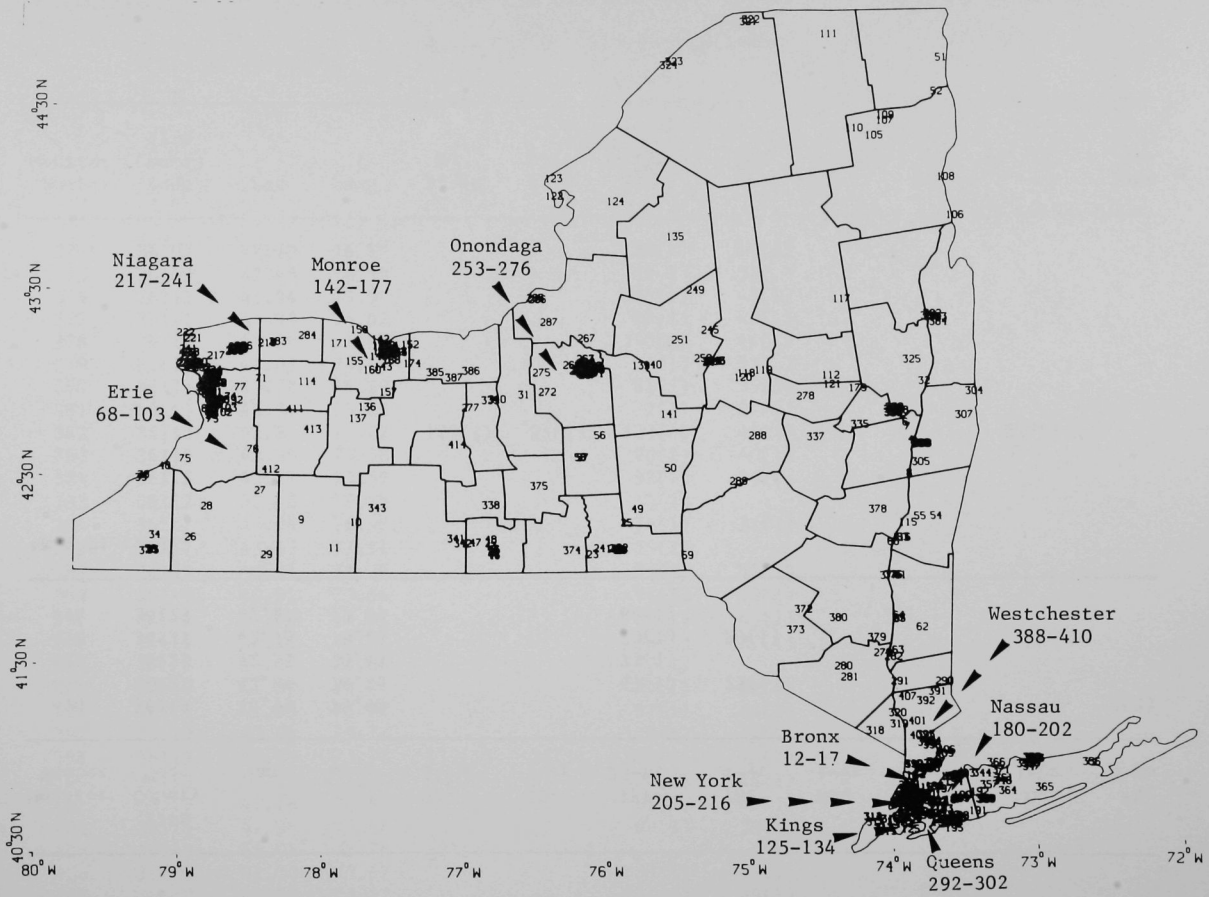


Fig. II.110 New York: Locations of SAROAD Monitors (See Table II.75 for Monitor Numbers)

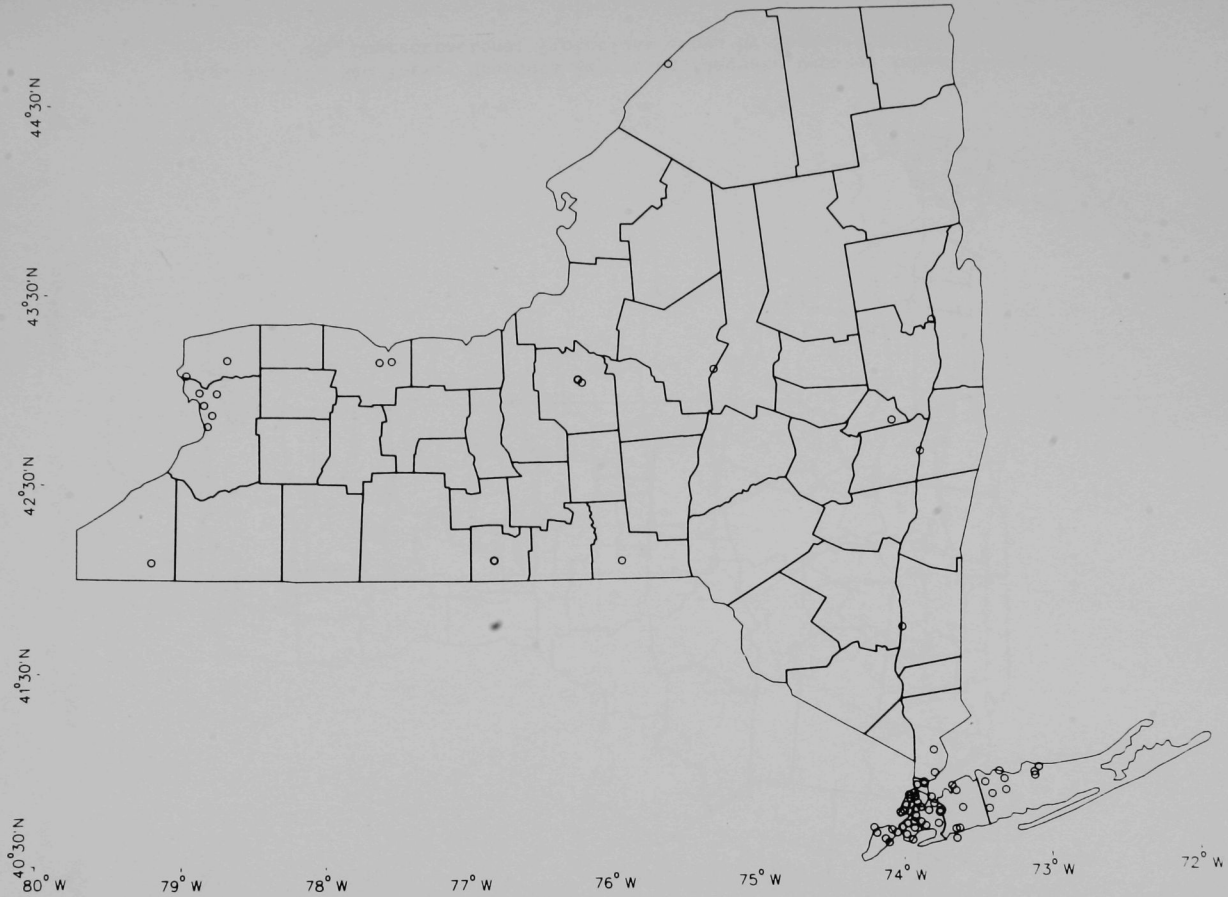


Fig. II.111 New York: Monitors Reporting Adequate Data on 24-hr Average SO_2 Concentrations; No Violations

Fig. II.112 New York: Monitors Reporting Adequate Data on Annual Average SO_2 Concentrations; Violations Shown by Shaded Circles

Fig. II.113 New York: Monitors Reporting Adequate Data on 24-hr Average TSP Concentrations; Violations Shown by Shaded Circles

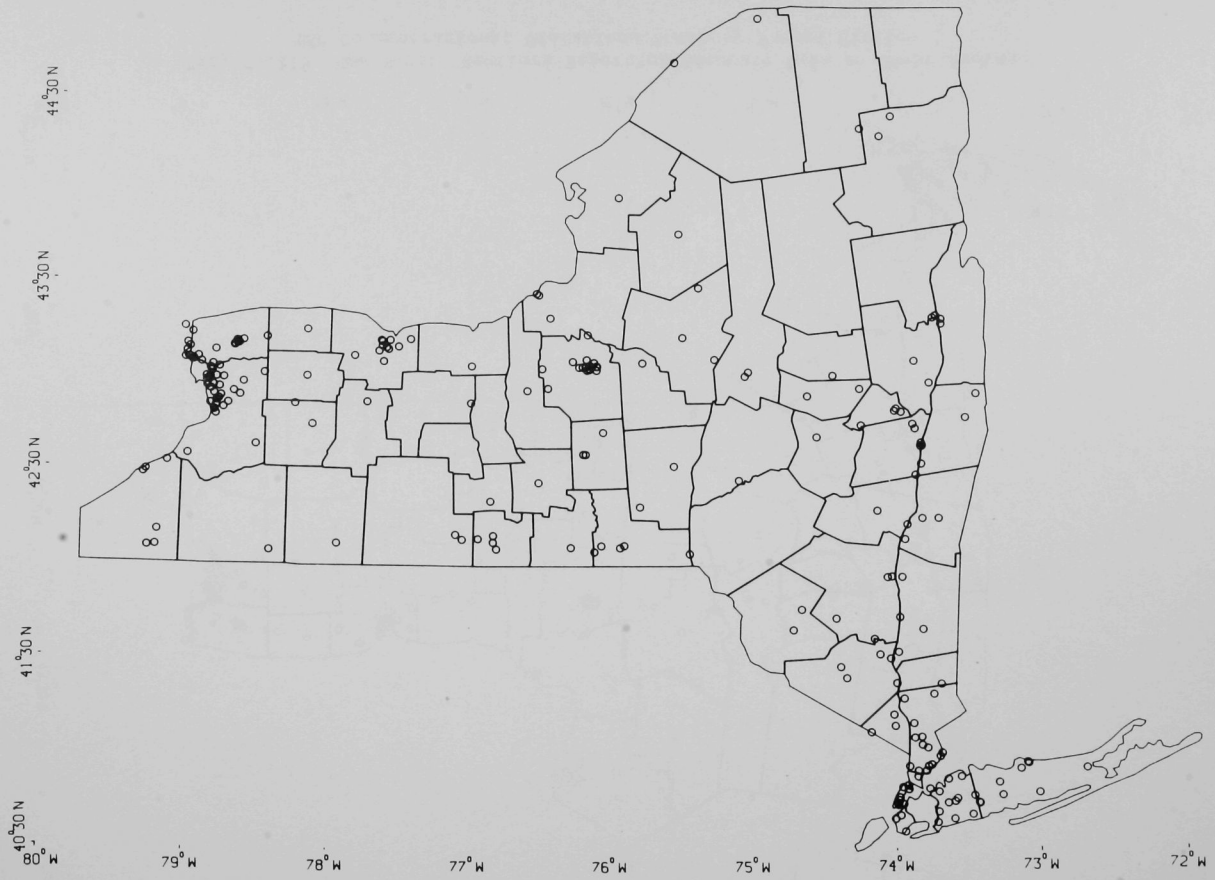


Fig. II.114 New York: Monitors Reporting Adequate Data on Annual Average TSP Concentrations; Violations Shown by Shaded Circles

Fig. II.115 New York: Monitors Reporting Adequate Data on 8-hr Average CO Concentrations; Violations Shown by Shaded Circles

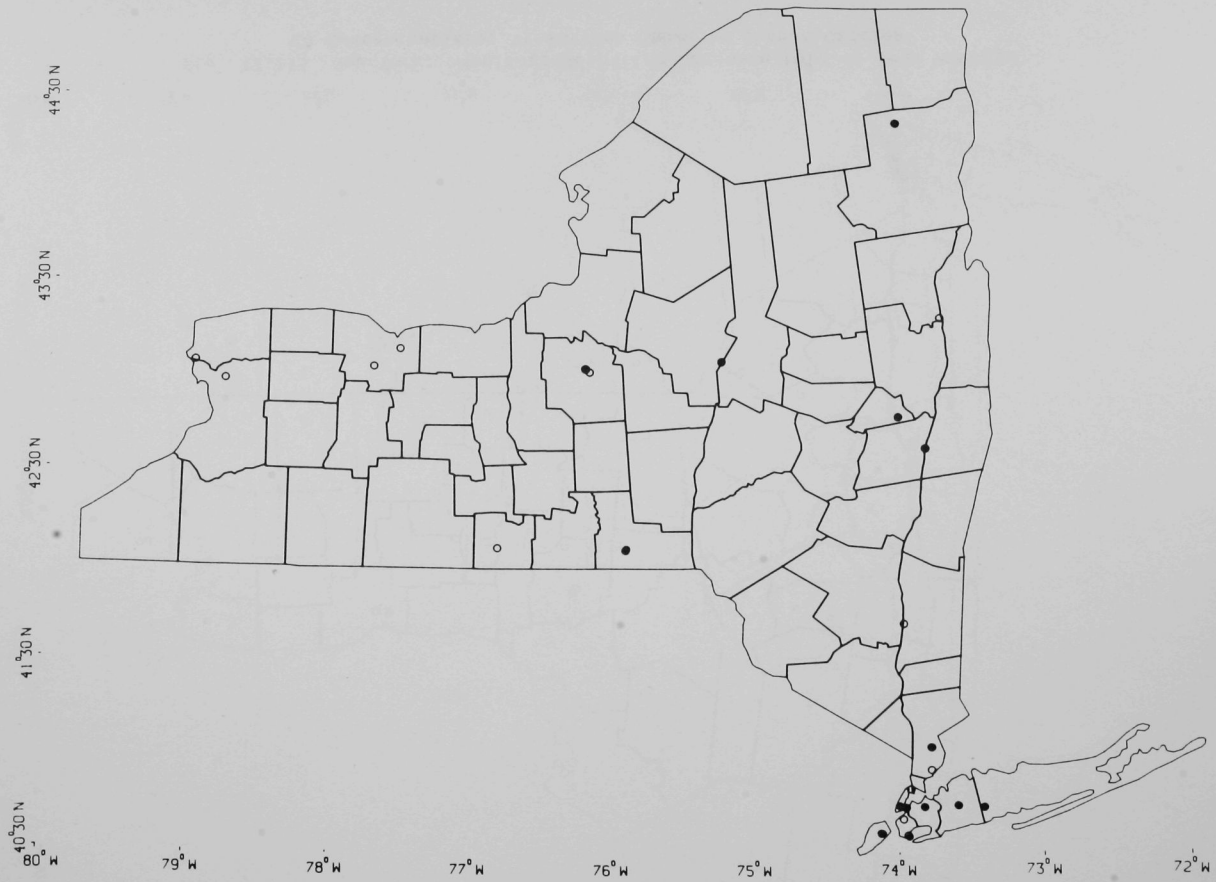


Fig. II.116 New York: Monitors Reporting Adequate Data on 1-hr Average O_3 Concentrations; Violations Shown by Shaded Circles

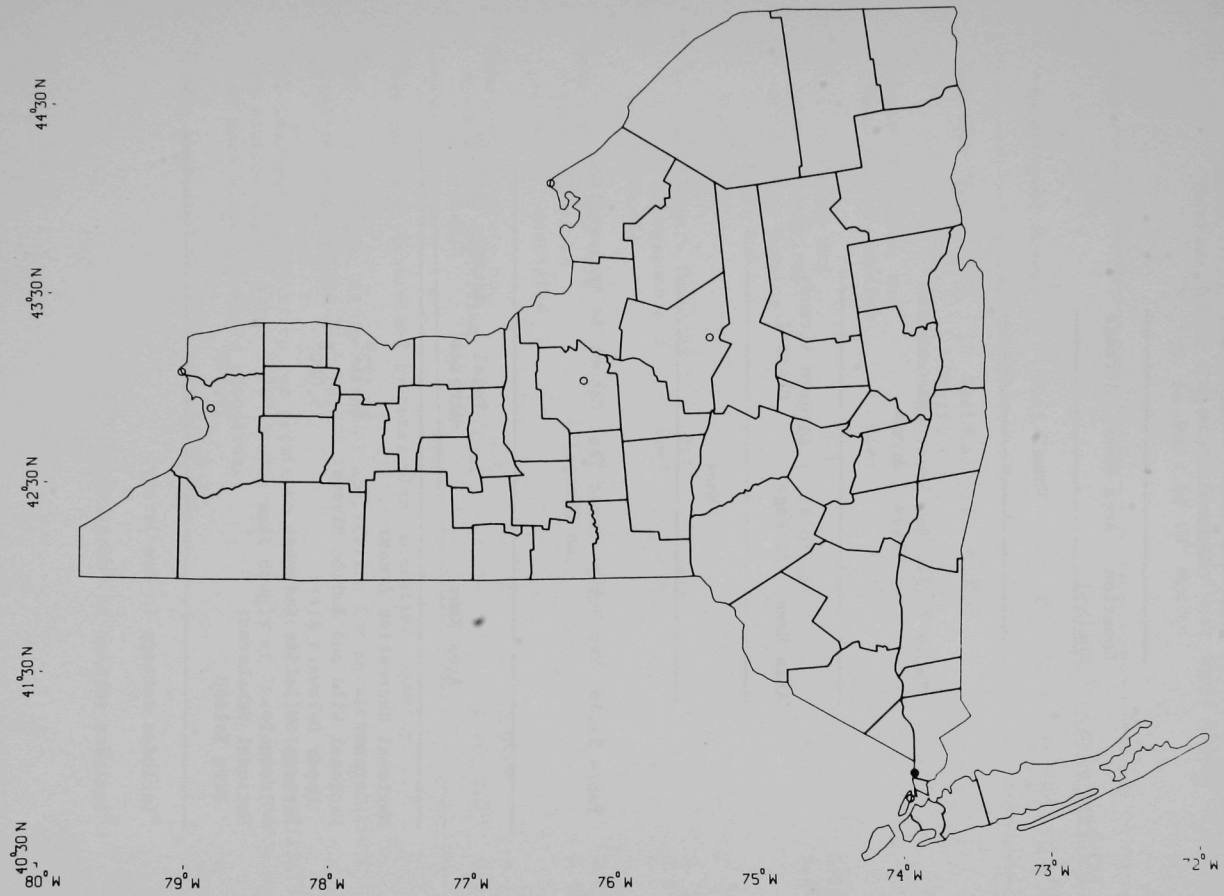


Fig. II.117 New York: Monitors Reporting Adequate Data on 3-month Average Lead Concentrations; Violations Shown by Shaded Circles

Table II.76 New York: PSD Class I Areas

Location	Area Name	Acreage
None		

Table II.77 New York: Recommended Class I Areas

Area Name	Total Acreage	Acreage Already Class I
None		

Table II.78 New York: Areas That Cannot Be Reclassified as Class III

Area Name	Total Acreage	Acreage Already Class I
National Recreation Areas:		
Gateway	26,172[a]	-
National Wild and Scenic Rivers:		
Upper Delaware River	75,000[b]	-
National Wildlife Refuges:		
Iroquois	10,818	-
National Seashores:		
Fire Island	19,579	-

[a]Includes acreage in New Jersey.

[b]Includes acreage in Pennsylvania.

Table II.79 New York: SO_2 Emission Limits, in Terms of Maximum Sulfur Content in Fuel, by Heat Input Class, Q, in Units of 10^6 Btu/hr

Location of Source	Fuel Type	Maximum Sulfur Content (%)		
		$Q \leq 10^a$	$10 < Q \leq 250^a$	$Q > 250^a$
New York City	Residual Oil	$0.3^{b,c}$	-	-
	Distillate Oil and Coal	$0.2^{b,c}$	-	-
Nassau, Rockland, and Westchester counties	Oil	$0.37^{b,c}$	-	-
	Coal	$0.2^{b,c}$	-	-
Suffolk County and towns of Babylon, Brookhaven, Huntington, Islip, and Smithtown	Oil	1.0^b	1.0^c	0.75^c
	Coal	0.6^b	0.6^c	0.6^d
Erie and Niagara Counties, City of Lackawanna and South Buffalo	Oil	1.1^b	-	0.75^c
	Coal	-	-	0.6^d
Remainder of New York City and counties previously identified	Oil	2.0^b	2.0^c	0.75^c
	Coal	1.7^b	1.7^c	0.6^d
Remainder of state not specifically identified	Oil	-	$2.0^{b,c}$	$0.75^{b,c}$
	Coal	-	1.7^b, 2.5^c	$0.6^{b,c,d}$

[a]Heat input, Q, determined by total plant operating capacity.

[b]Existing sources: in operation or application for permit to construct received on or before 3/15/73.

[c]New sources: application for permit to construct received after 3/15/73. New sources with $Q > 250 \times 10^6$ Btu/hr must comply at least with NSPS, or with more stringent state standards.

[d]Limit expressed as lb of sulfur/10^6 Btu.

Table II.80 New York: Particulate Matter Emission Limits (lb PM/10^6 Btu) by Heat Input Class, Q, in Units of 10^6 Btu/hr

Source	Fuel Type	Limit		
		$1 < Q \leq 10$[a]	$10 < Q < 10{,}000$[a]	
New[b] and Existing[c]	Oil	0.1	0.1	
New[b]	Coal	0.6	$1.02Q^{-0.219}$	
		$1 < Q \leq 100$[a]	$100 < Q \leq 300$[a]	$Q > 300$[a]
Existing[c]				
Spreader Stoker	Coal	0.6	0.6	$1.02Q^{-0.219}$
All other boilers	Coal	0.6	0.75 - (Q x 0.0015)	$1.02Q^{-0.219}$

[a]Total heat input, Q, based on aggregate of all fuels for individual stack; allowable emissions based on individual stack.

[b]Sources with $Q > 250 \times 10^6$ Btu/hr must comply at least with NSPS, or with more stringent state standards.

[c]Existing sources are those which were in operation prior to 6/1/72.

Table II.81 New York: Power Plant Location and Generating Capacity Data for 1980

Plant No.[a]	Plant Name[b]	Latitude[b]	Longitude[b]	Generating Capacity (MW), by Regulatory Class[c,d]		Capacity Factor[e] (%)	Sulfur Dioxide Limit ($lb/10^6$ Btu), by Regulatory Class[f]	
				SIP	NSPS		SIP	NSPS
1	Albany	42.59	73.76	400	0	45	2.15	0.00
2	Arthur Kill	40.59	74.20	839	0	28	0.33	0.00
3	Barrett	40.62	73.65	380	0	31	1.70	0.00
4	Bowline	41.20	73.96	602	600	34	0.66	0.66
5	Danskammer	41.57	73.96	482	0	37	1.09	0.00
6	Dunkirk	42.49	79.34	640	0	57	3.80	0.00
7	East River	40.73	73.97	432	0	30	0.33	0.00
8	Far Rockaway	40.61	73.76	114	0	3	0.33	0.00
9	Glenwood	40.83	73.65	381	0	16	0.79	0.00
10	Goudey	42.11	75.97	126	0	85	3.80	0.00
11	Greenidge	42.68	76.95	210	0	81	3.80	0.00
12	Hickling	42.12	76.99	83	0	88	3.80	0.00
13	Holbrook	40.87	72.85	567	0	-[g]	-[g]	0.00
14	Hudson Avenue	40.70	73.98	504	0	1	0.33	0.00
15	Huntley	42.97	78.93	828	0	56	2.80	0.00
16	Indian Point	41.27	73.94	60	0	-[g]	-[g]	0.00
17	Jennison	42.28	75.48	83	0	83	3.80	0.00
18	Lovett	41.26	73.98	501	0	41	0.41	0.00
19	Milliken	42.60	76.63	290	0	84	3.80	0.00
20	Northport	40.92	73.34	1,541	0	50	2.98	0.00
21	Oswego	43.48	76.53	1,026	0	34	2.75	0.00
22	Port Jefferson	40.95	73.08	490	0	46	2.61	0.00
23	Ravenswood	40.76	73.95	1,740	0	31	1.04	0.00
24	Rochester 3	43.16	77.62	193	0	33	2.88	0.00
25	Rochester 7	43.27	77.63	260	0	65	3.80	0.00
26	Rochester 8 & 9	43.16[h]	77.04[h]	30	0	-[g]	-[g]	0.00

Table II.81 New York (Cont'd)

Plant No.[a]	Plant Name[b]	Latitude[b]	Longitude[b]	Generating Capacity (MW), by Regulatory Class[c,d]		Capacity Factor[e] (%)	Sulfur Dioxide Limit ($lb/10^6$ Btu), by Regulatory Class[f]	
				SIP	NSPS		SIP	NSPS
27	Roseton 1&2	41.55	73.99	1,200	0	50	2.16	0.00
28	Shoreham	40.87	72.85	32	0	-[f]	-[f]	0.00
29	Waterside	40.75	73.97	678	0	21	0.41	0.00
30	59th Street	40.77	73.99	103	0	27	0.33	0.00
31	74th Street	40.77	73.95	196	0	7	0.33	0.00
32	Astoria	40.79	73.91	2,295	0	-[f]	-[f]	-[f]

[a]See Fig. II.118.

[b]EPA's Energy Data System (EDS), except as noted.

[c]FPC form 4, 1980.

[d]Capacity subject to emission regulations of SIP or NSPS, as indicated.

[e]Calculated from annual net generation, FPC form 4, 1980.

[f]If more than one unit, fuel type, and SIP emission limit at plant, "SIP" is average weighted by size, fuel type, and capacity.

[g]Not available.

[h]Facility latitude and longitude plotted at county centroid.

Table II.82 New York: Power Plant Fuel Use Data for 1980

Plant No.[a]	Plant Name	Coal Sulfur Content[b] (%)	Coal Heating Value[b] (Btu/lb)	Coal Use[c] (10^3 ton)	Oil Sulfur Content[b] (%)	Oil Heating Value[b] (Btu/gal)	Oil Use[c] (10^3 Bbl)	Gas Heating Valueb (Btu/ 10^3 ft^3)	Gas Use[c] (10^6 ft^3)
1	Albany	2.02	12,848	0	2.02	148,199	3,527	0	1.0
2	Arthur Kill	0	0	0	0.64	146,494	3,930	0	0
3	Barrett	0	0	0	0.32	145	537	1,035	16.3
4	Bowline	0	0	0	0.50	147,221	5,458	1,030	4.0
5	Danskammer	0	0	0	0.94	147,596	2,405	1,014	3.5
6	Dunkirk	2.15	12,753	1,270	0	0	21	0	0
7	East River	0	0	0	0.29	146,068	1,484	1,034	8.8
8	Far Rockaway	0	0	0	0.26	144,867	57	1,033	0
9	Glenwood	0	0	0	0.62	146,231	262	1,035	4.1
10	Goudey	1.97	11,687	373	0	0	6	0	0
11	Greenidge	2.09	11,971	624	0	0	19	0	0
12	Hickling	0.83	11,192	341	0	0	0	0	0
13	Holbrook (GT)	0	0	0	0.15	138,599	169	0	0
14	Hudson Avenue	0	0	0	0.30	145,754	84	0	0
15	Huntley	1.53	12,884	1,737	0	0	15	0	0
16	Indian Point	0	0	0	0.30	145,873	42	0	0
17	Jennison	0.90	11,000	296	0	0	0	0	0
18	Lovett	0	0	0	0.29	145,348	603	1,031	15.7
19	Milliken	1.85	11,816	821	0	0	3	0	0
20	Northport	0	0	0	2.09	149,875	11,133	0	0
21	Oswego	0	0	0	0.99	146,479	6,847	0	0
22	Port Jefferson	0	0	0	2.35	150,475	3,262	0	0
23	Ravenswood	0	0	0	0.59	146,414	5,664	1,034	31.4
24	Rochester 3	2.74	12,347	203	1.97	149,328	229	0	0
25	Rochester 7	2.38	12,615	613	0	0	7	0	0
26	Rochester 8&9	0	0	0	0	0	3	0	0.1
27	Roseton 1&2	0	0	0	1.81	148,578	8,670	0	0
28	Shoreham (gt)	0	0	0	0.15	138,699	9	0	0

Table II.82 New York (Cont'd)

Plant No.[a]	Plant Name	Coal Sulfur Content[b] (%)	Coal Heating Value[b] (Btu/lb)	Coal Use[c] (10^3 ton)	Oil Sulfur Content[b] (%)	Oil Heating Value[b] (Btu/gal)	Oil Use[c] (10^3 Bbl)	Gas Heating Valueb (Btu/ 10^3 ft^3)	Gas Use[c] (10^6 ft^3)
29	Waterside	0	0	0	0.29	146,073	1,373	1,045	8.5
30	59th Street	0	0	0	0.29	146,020	866	0	0
31	74th Street	0	0	0	0.29	146,004	466	0	0
32	Astoria	0	0	0	0	0	3,315	0	27.7

[a]See Fig. II.118.

[b]FPC form 423, 1980.

[c]FPC form 4, 1980. Note that in cases where the sulfur content and/or the heating value of a fuel is entered accompanied by 0 in the use column, the quantities of fuel that have been used are less than 0.5×10^3 barrels of oil or tons of coal, or 0.05×10^6 cubic feet of gas.

Fig. II.118 New York: Key to Power Plant Locations

Table II.83 New York: Large Industrial Boiler Fuel Use, 1974

County	County Fuel Consumption (10^{12} Btu) by Boiler Size and Fuel Type								
	Coal		Residual Oil		Distillate Oil		Gas		
	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	Total
Albany	0.00	0.00	4.64	0.00	0.00	0.00	0.00	0.00	4.64
Bronx	0.00	0.00	3.22	0.00	0.00	0.00	0.00	0.00	3.22
Broome	0.00	0.00	2.96	0.00	0.00	0.00	0.00	0.00	2.96
Erie	1.33	0.00	4.10	0.00	0.00	0.00	0.96	0.00	6.39
Essex	0.00	0.00	0.00	3.67	0.00	0.00	0.00	0.00	3.67
Jefferson	1.98	0.00	0.00	0.00	0.08	0.00	0.00	0.00	2.06
Kings	0.00	0.00	2.58	0.00	0.00	0.00	0.17	0.00	2.75
Lewis	0.00	0.00	1.53	0.00	0.00	0.00	0.00	0.00	1.53
Monroe	1.35	12.40	0.03	4.29	0.00	0.00	0.00	0.00	18.07
Nassau	0.00	0.00	1.72	0.00	0.00	0.00	2.13	0.00	3.85
New York	0.00	0.00	8.39	4.56	0.00	0.00	1.40	0.00	14.35
Niagara	4.55	0.00	4.09	1.44	0.02	0.00	0.00	0.00	10.10
Oneida	0.08	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.09
Onondaga	12.57	0.00	0.73	0.00	0.00	0.00	0.00	0.00	13.31
Orange	0.00	0.00	0.94	0.00	0.00	0.00	0.00	0.00	0.94
Oswego	0.22	0.00	1.04	0.00	0.00	0.00	0.00	0.00	1.26
Queens	0.00	0.00	0.00	4.02	0.00	0.00	0.00	0.00	4.02
Richmond	0.00	0.00	0.06	1.53	0.00	0.10	0.01	0.15	1.84
Rockland	0.00	0.00	0.13	0.15	0.00	0.00	1.18	0.40	1.86
St Lawrence	0.22	0.00	3.18	0.00	0.00	0.00	0.00	0.00	3.40
Saratoga	0.00	0.00	1.23	3.40	0.00	0.00	0.00	0.00	4.63
Schenectady	0.00	0.00	0.00	4.64	0.00	0.00	0.00	0.00	4.64

Table II.83 New York (Cont'd)

County	County Fuel Consumption (10^{12} Btu) by Boiler Size and Fuel Type								
	Coal		Residual Oil		Distillate Oil		Gas		
	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	Total
Washington	0.00	0.00	3.45	0.00	0.00	0.00	0.00	0.00	3.45
Westchester	0.00	0.00	1.28	0.00	0.24	0.00	1.27	0.00	2.79
Wyoming	0.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74
Subtotal	23.05	12.40	46.31	27.69	0.35	0.10	7.13	0.55	
Total	35.45		74.00		0.44		7.68		117.57
Percent of Total	30.15		62.94		0.38		6.53		100

[a]Boiler size (heat input, Q) in units of 10^6 Btu/hr.

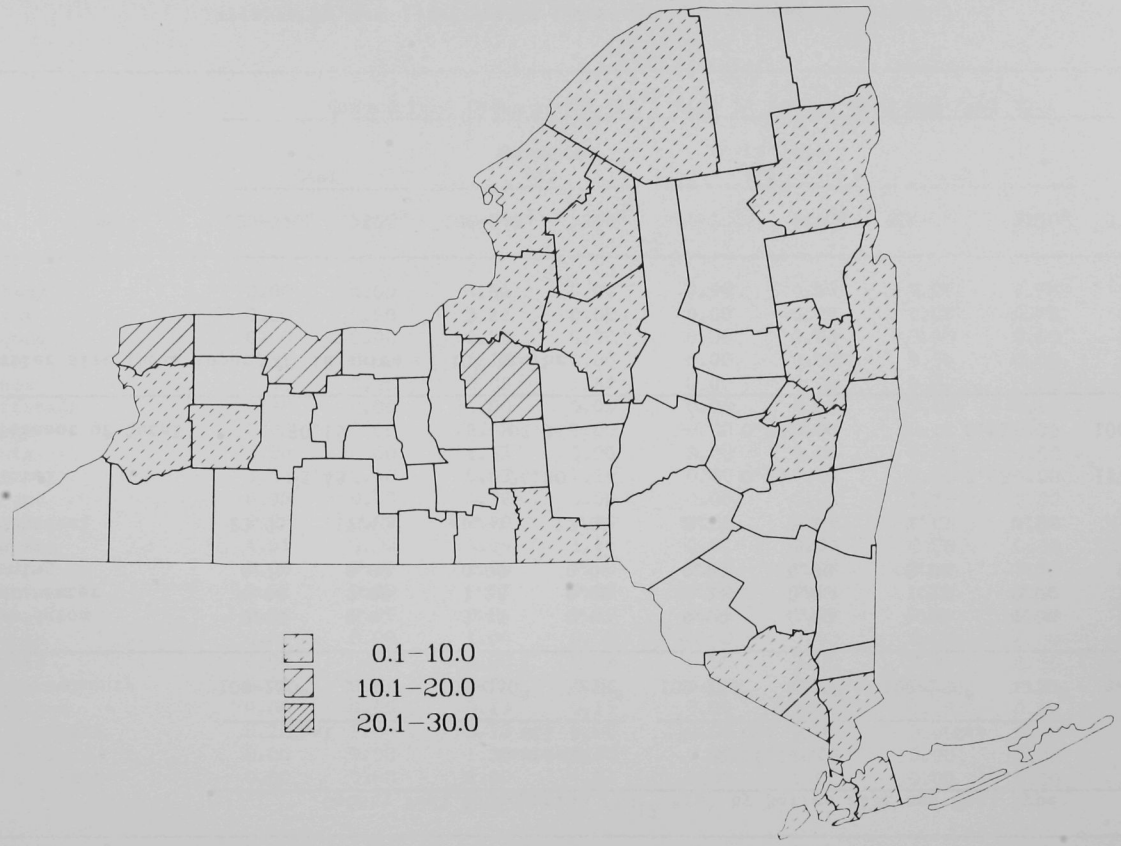


Fig. II.119 New York: Fuel Use (in Units of 10^{12} Btu) in Major Fuel-Burning Installations, by County

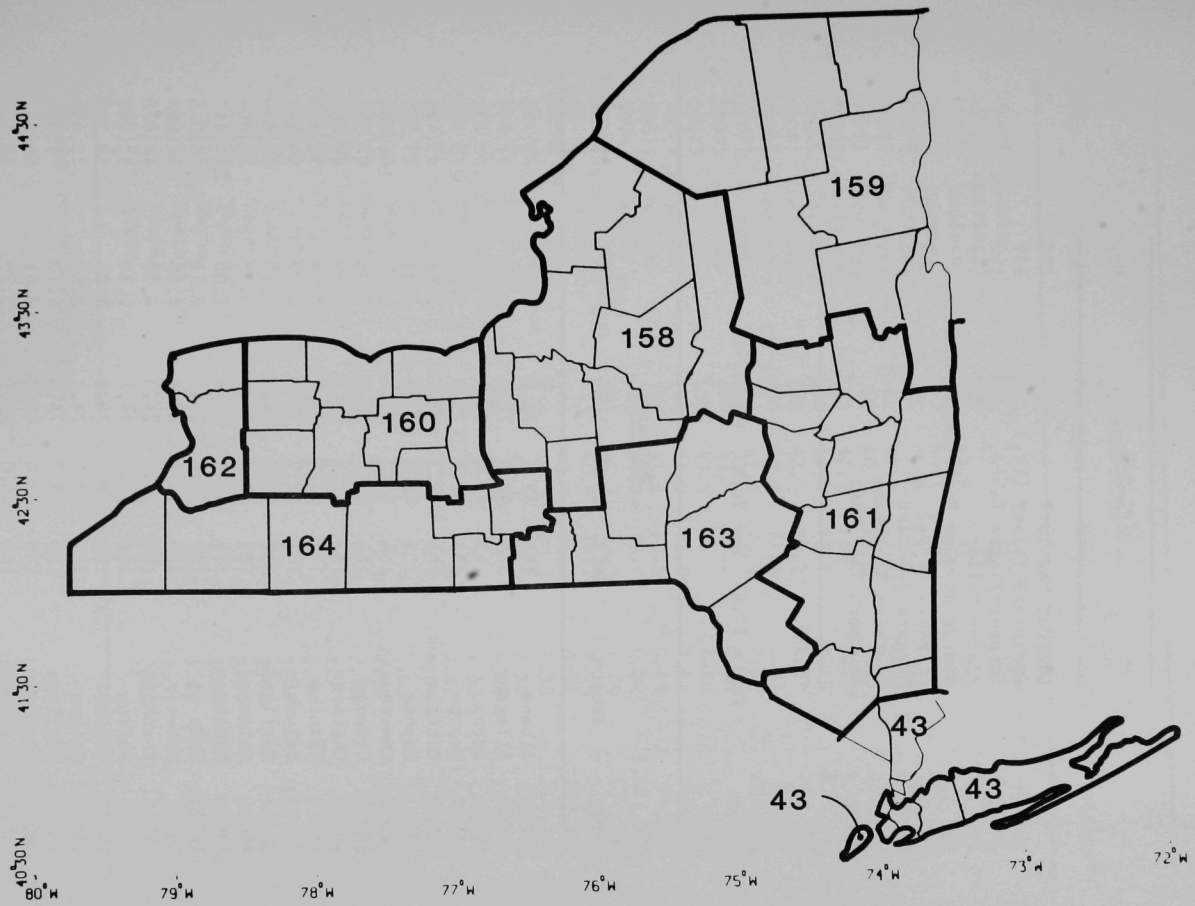


Fig. II.120 New York: Air Quality Control Regions (see Table II.84)

Table II.84 New York: Identification of Air Quality Control Regions (AQCR)

AQCR Name	No.
Central New York	158
Champlain Valley (Vt.)	159
Genesee-Finger Lakes	160
Hudson Valley	161
New Jersey-New York-Connecticut (N.J., Conn.)	43
Niagara Frontier	162
Southern Tier East	163
Southern Tier West	164

Table II.85 New York: County-Level Data

FIPS	County	AQCR	Centroid Lat	Centroid Long	Area (10^3 km^2)	Population[a]
36001	Albany	161	42.6	74.0	1.37	285,770
36003	Allegany	164	42.3	78.0	2.62	51,646
36005	Bronx	43	40.9	73.9	0.08	1,162,632
36007	Broome	163	42.2	75.8	1.83	213,346
36009	Cattaraugus	164	42.3	78.7	3.41	85,466
36011	Cayuga	158	42.9	76.6	1.91	79,194
36013	Chautauqua	164	42.2	79.4	2.77	146,600
36015	Chemung	164	42.1	76.8	1.08	97,586
36017	Chenango	163	42.5	75.6	2.30	49,309
36019	Clinton	159	44.8	73.7	2.86	50,659
36021	Columbia	161	42.3	73.6	1.72	59,267
36023	Cortland	158	42.6	76.1	1.29	48,839
36025	Delaware	163	42.2	75.0	3.78	46,807
36027	Dutchess	161	41.8	73.8	2.08	244,141
36029	Erie	162	42.8	78.7	2.73	1,014,926
36031	Essex	159	44.1	73.8	4.89	36,094
36033	Franklin	159	44.6	74.3	4.39	44,876
36035	Fulton	161	43.1	74.4	1.39	55,089
36037	Genesee	160	43.0	78.2	1.25	59,369
36039	Greene	161	42.3	74.1	1.67	40,495
36041	Hamilton	159	43.7	74.5	4.70	5,058
36043	Herkimer	158	43.4	75.0	3.81	66,432
36045	Jefferson	158	44.0	75.9	3.39	88,130
36047	Kings	43	40.6	74.0	0.11	2,218,441

Table II.85 New York (Cont'd)

FIPS	County	AQCR	Centroid Lat	Centroid Long	Area (10^3 km^2)	Population[a]
36049	Lewis	158	43.8	75.4	3.28	25,066
36051	Livingston	160	42.7	77.8	1.66	56,970
36053	Madison	158	42.9	75.7	1.66	64,983
36055	Monroe	160	43.1	77.7	1.78	701,531
36057	Montgomery	161	42.9	74.5	1.03	53,325
36059	Nassau	43	40.8	73.6	0.68	1,319,726
36061	New York	43	40.8	74.0	0.05	1,418,124
36063	Niagara	162	43.2	78.7	1.30	226,508
36065	Oneida	158	43.2	75.4	3.19	252,912
36067	Onondaga	158	43.0	76.2	2.09	463,843
36069	Ontario	160	42.8	77.3	1.73	88,505
36071	Orange	161	41.4	74.3	2.22	259,092
36073	Orleans	160	43.3	78.2	0.95	38,473
36075	Oswego	158	43.4	76.1	2.66	113,721
36077	Ostego	163	42.6	75.0	2.63	58,789
36079	Putnam	161	41.4	73.8	0.61	76,996
36081	Queens	43	40.7	73.8	0.31	1,886,550
36083	Rensselaer	161	42.7	73.5	1.74	151,699
36085	Richmond	43	40.6	74.2	0.19	349,601
36087	Rockland	43	41.1	74.0	0.51	259,576
36089	St. Lawrence	159	44.5	75.1	7.33	114,257
36091	Saratoga	161	43.1	73.9	2.20	153,735
36093	Schenectady	161	42.8	74.1	0.56	149,769
36095	Schoharie	161	42.6	74.4	1.63	29,693
36097	Schuyler	164	42.4	76.9	0.91	17,636
36099	Seneca	160	42.8	76.8	1.09	33,733
36101	Steuben	164	42.3	77.4	3.65	98,978
36103	Suffolk	43	40.9	72.8	2.58	1,284,091
36105	Sullivan	163	41.7	74.8	2.58	64,950
36107	Tioga	163	42.2	76.3	1.37	49,724
36109	Tompkins	164	42.5	76.5	1.28	87,107
36111	Ulster	161	41.9	74.3	3.04	157,494
36113	Warren	159	43.6	73.9	2.33	54,822
36115	Washington	159	43.3	73.4	2.19	54,758
36117	Wayne	160	43.2	77.0	1.60	84,456
36119	Westchester	43	41.2	73.8	1.21	864,116
36121	Wyoming	160	42.7	78.2	1.54	39,795
36123	Yates	160	42.6	77.1	0.88	21,414

[a]1980 Census Bureau data.

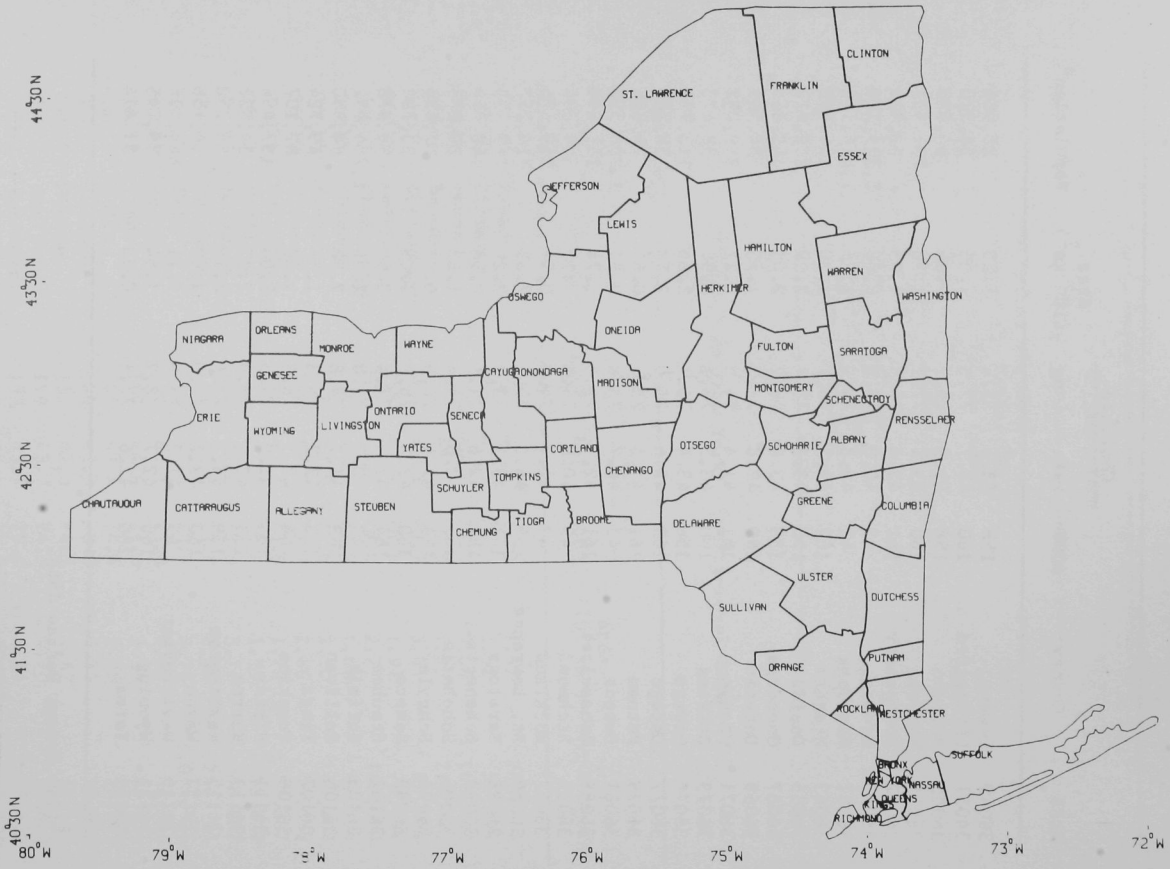


Fig. II.121 New York: Key to Counties

FEDERAL REGION III:

DELAWARE
MARYLAND
PENNSYLVANIA
VIRGINIA
WEST VIRGINIA

REGION III: DELAWARE

AIR QUALITY SUMMARY

Attainment Status	Pollutant[a]							
	P-SO_2	S-SO_2	P-TSP	S-TSP	CO	O_3	NO_2	Pb
No. of Counties Containing NA Areas	0	0	0	0	0	1	0	0
State Implementation Plan[b]	N	N	N	N	N	C	N	N
No. of SAROAD Monitors[c]	11/0[d]	-	8/8[d]	-	2	2	0	4
No. of SAROAD Monitors with Violations[c]	0/0[d]	-	0/0[d]	-	0	2	0	1

PSD Status	Class I PSD Areas	Recommended Class I	Mandatory Class II[e]
No. of Areas	0	0	2

[a]P = primary standard; S = secondary standard.
[b]A = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review.
[c]SAROAD data as of 1979. All other information as of December 1981.
[d]24-hour average/annual average.
[e]Areas that cannot be redesignated as Class III.

ENERGY DATA

Parameter	Data
Coal Production	
Current, 1979 (10^3 tons)[a]	0
Projected, 1985 (10^3 tons)[b]	0
Coal Reserves (10^6 tons)[c]	0
Range of Coal Quality (lb $SO_2/10^6$ Btu)[a]	0
Fuel Use by Industrial Boilers, 1974 (10^{12} Btu)[d]	15.38
No. of Fossil-Fueled Power Plants	4

[a]EIA form 423.
[b]National Coal Assn. and DOE's Western Coal Development Monitoring System.
[c]Bureau of Mines Rpt. IC 8680 and 8693.
[d]FEA, MFBI Survey, 1974.

DELAWARE: SIP Attainment Strategies

Area[a]	NA[b]	Plan Date	EPA Action[c]	Source(s)	Strategy[d]
	O_3:				
New Castle Co.	P	4/79	C	Mobile	FMVECP; TCM; I&M; attainment by 1987

[a]Cities unless otherwise noted.

[b]Nonattainment violation indicated by pollutant and as P = primary and S = secondary.

[c]A = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

[d]See p. 30 for a listing of the abbreviations.

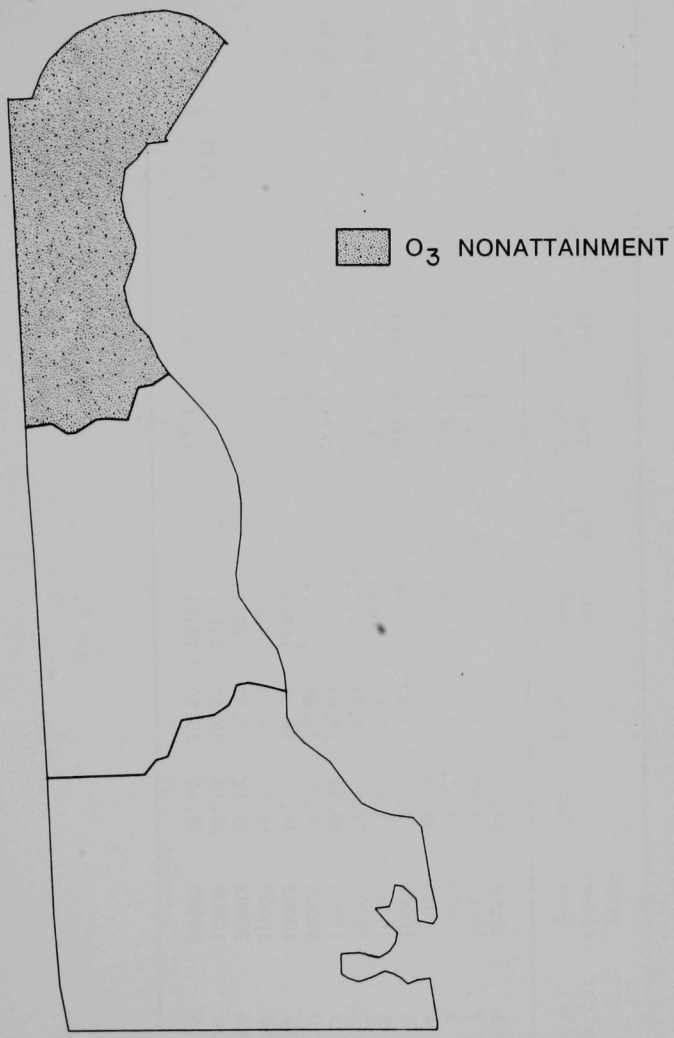


Fig. III.122 Delaware: O_3 Nonattainment Areas as Designated December 1981

Table II.86 Delaware: SAROAD Monitor Numbers and 1979 Data ($\mu g/m^3$, mg/m^3 for CO, or ppm for O_3)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
1	10001	39.15	75.50	93(1)		89(1)	45(1)				
2	10003	39.67	75.74	34(1)		119(1)	56(1)				
3	10003	39.65	75.55	55(1)		123(1)	56(1)				
4	10003	39.67	75.74	103(1)							
5	10003	39.77	75.52			102(1)	52(1)				
6	10003	39.81	75.45	168(1)		109(1)	53(1)		2(1)	0.16(4)	1(2)
7	10003	39.65	75.55	159(1)							
9	10003	39.53	75.69							0.13(3)	
10	10003	39.70	75.68			116(1)	44(1)				1(1)
11	10003	39.57	75.58	165(1)		75(1)	43(1)				
12	10003	39.77	75.52	93(1)							
13	10003	39.72	75.52	182(1)							1(1)
14	10003	39.73	75.55	141(1)					7(1)		2(4)
15	10005	38.64	75.60	104(1)		91(1)	43(1)				

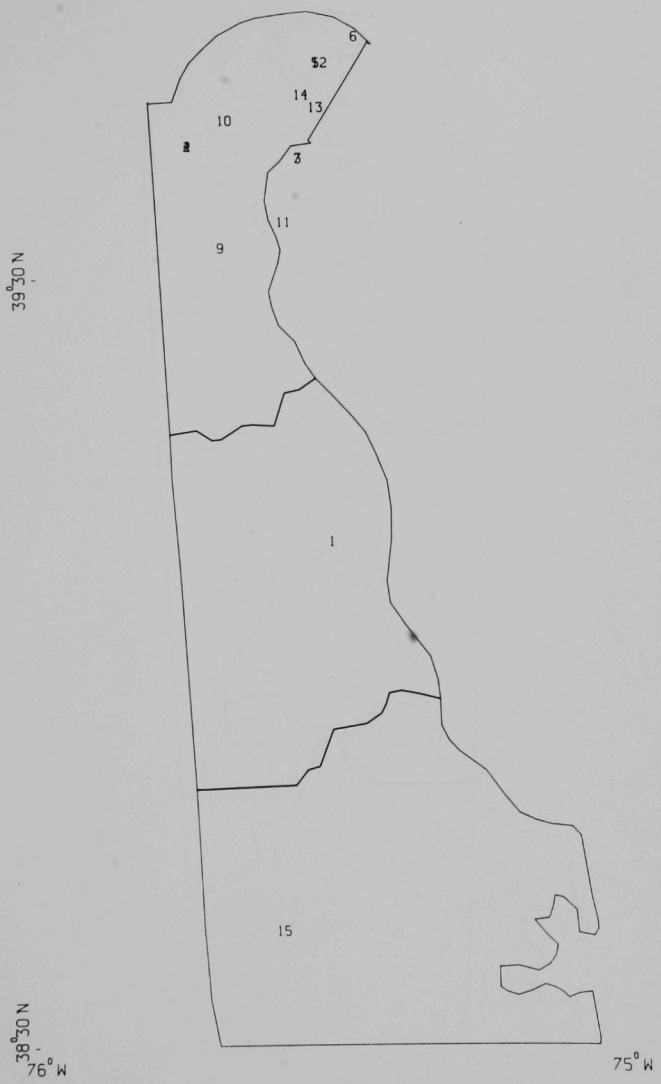


Fig. III.123 Delaware: Locations of SAROAD Monitors
(See Table III.86 for Monitor Numbers)

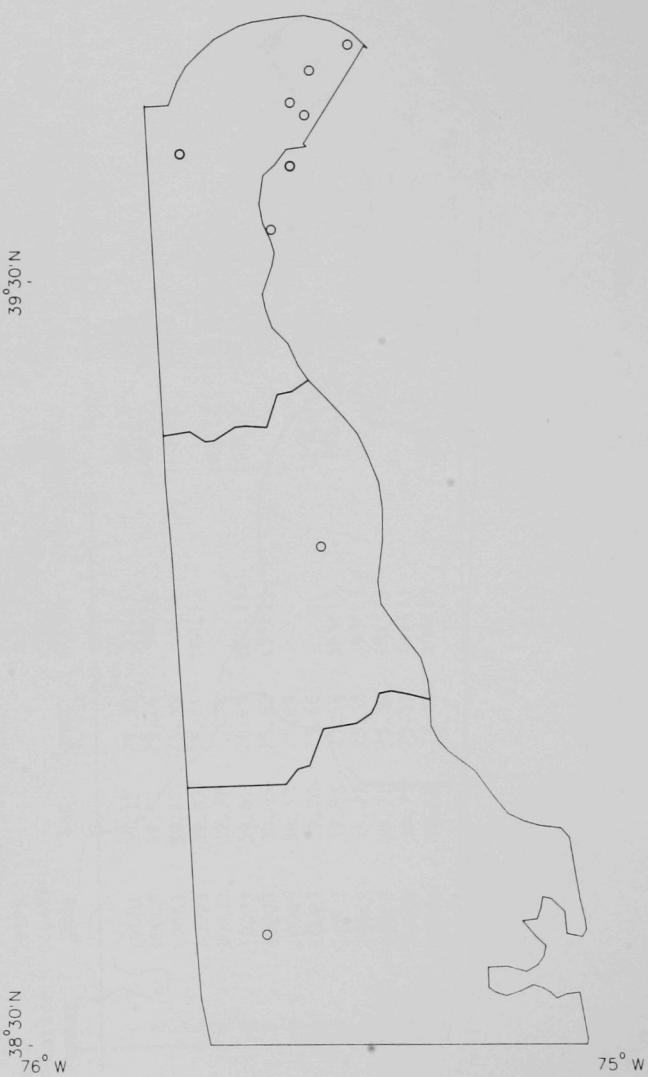


Fig. III.124 Delaware: Monitors Reporting Adequate Data on 24-hr Average SO_2 Concentrations; No Violations

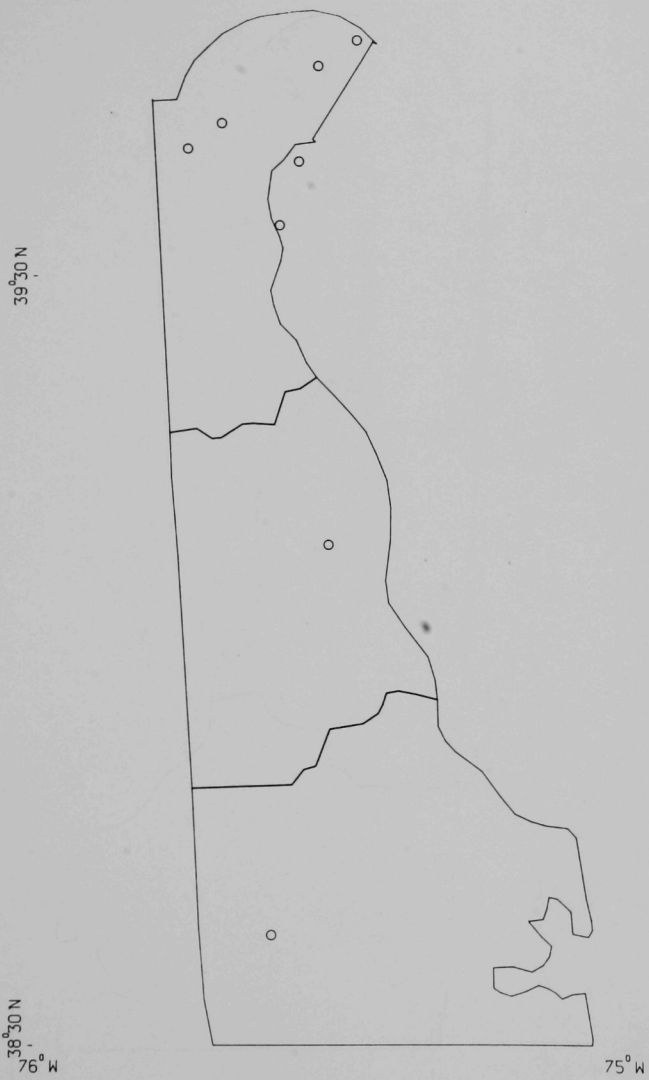


Fig. III.125 Delaware: Monitors Reporting Adequate Data on 24-hr Average TSP Concentrations; No Violations

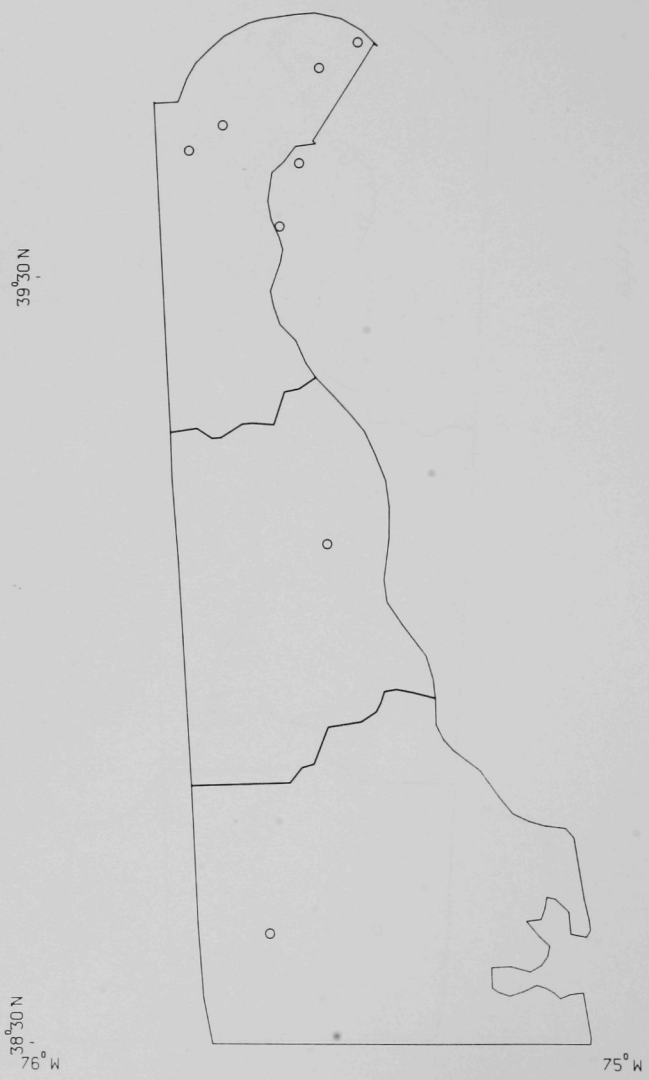


Fig. III.126 Delaware: Monitors Reporting Adequate Data on Annual Average TSP Concentrations; No Violations

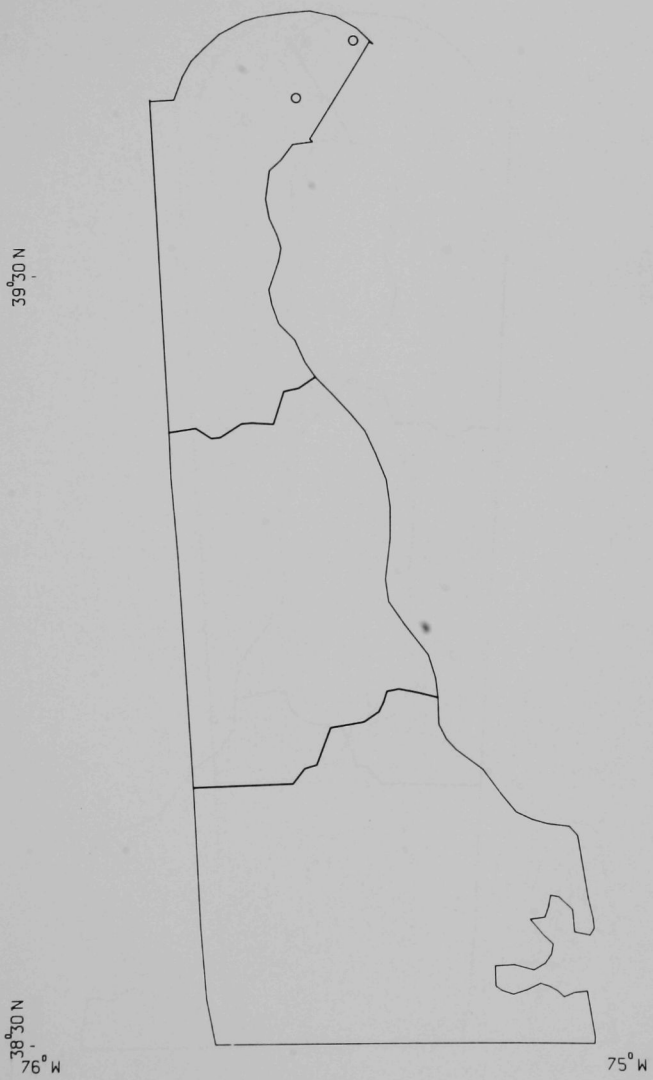


Fig. III.127 Delaware: Monitors Reporting Adequate Data on 8-hr Average CO Concentrations; No Violations

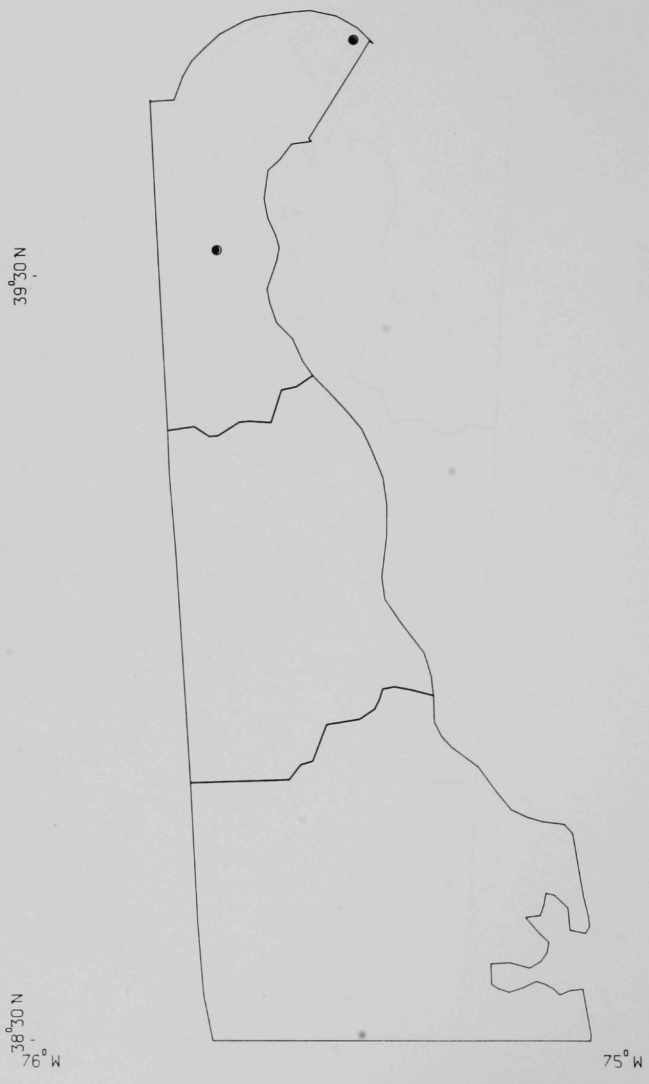


Fig. III.128 Delaware: Monitors Reporting Adequate Data on 1-hr Average O_3 Concentrations; Violations Shown by Shaded Circles

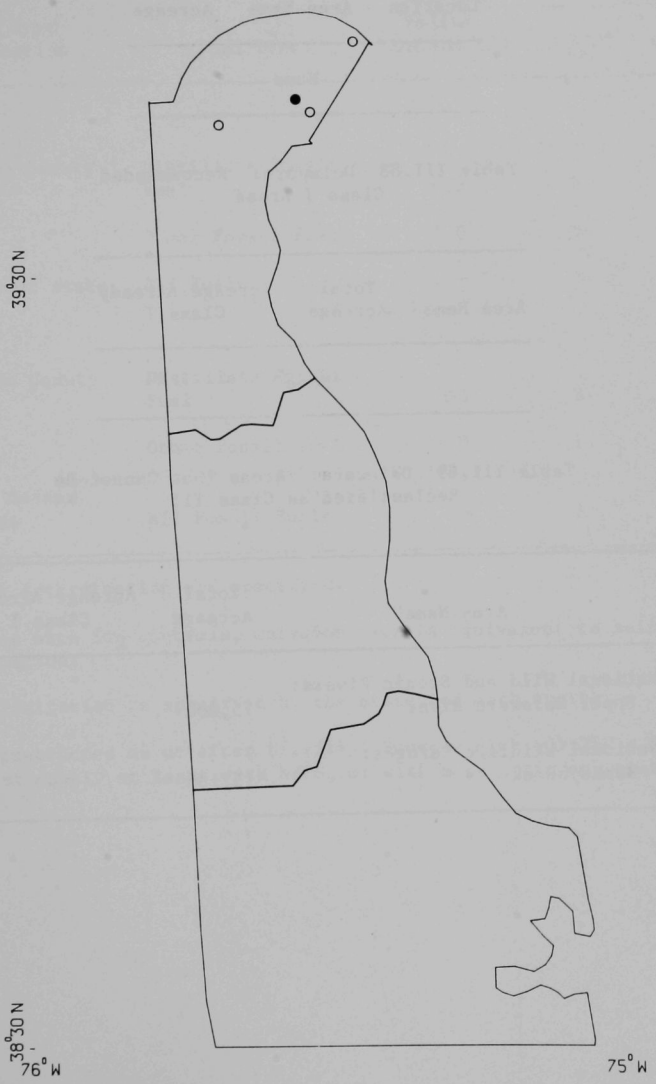


Fig. III.129 Delaware: Monitors Reporting Adequate Data on 3-month Average Lead Concentrations; Violations Shown by Shaded Circles

Table III.87 Delaware: PSD Class I Areas

Location	Area Name	Acreage
None		

Table III.88 Delaware: Recommended Class I Areas

Area Name	Total Acreage	Acreage Already Class I
None		

Table III.89 Delaware: Areas That Cannot Be Reclassified as Class III

Area Name	Total Acreage	Acreage Already Class I
National Wild and Scenic Rivers:		
Upper Delaware River	75,000	-
National Wildlife Refuges:		
Bombay Hook	15,136	-

Table III.90 Delaware: SO_2 Emission Limits (lb $SO_2/10^6$ Btu) by Heat Input Class, Q, in Units of 10^6 Btu/hr

Source Type and Location	Fuel Type	Maximum Sulfur Content (%)	Limit	
			Q > 0[a]	Q > 250[a]
Existing				
New Castle County	Distillate Fossil Fuel	0.3	b	-
	Other Fossil Fuels	1.0	b	-
Remainder of state	All Fuels	-	c	-
New[d]				
New Castle County	Distillate Fossil Fuel	0.3	b	-
	Other Fossil Fuels	1.0	b	0.8
Kent and Sussex counties	All Fossil Fuels	-	c	NSPS

[a]Heat input determination not specified.

[b]For sources with SO_2 controls, emission rate is equivalent to sulfur-in-fuel limitation.

[c]Emission limitation is specified by the state for each source.

[d]Sources constructed on or after 8/17/71. Sources with Q > 250 x 10^6 Btu/hr must comply at least with NSPS, or with more stringent state standards.

Table III.91 Delaware: Particulate Matter Emission Limits (lb PM/10^6 Btu) by Heat Input Class, Q, in Units of 10^6 Btu/hr

Sources	Fuel Type	Limit $Q > 0$[a]
New[b] and Existing	All Fuels	0.3[c]

[a]Total heat input based on manufacturer's guaranteed maximum heat input or agency's calculated heat input, whichever is larger, for individual units; allowable emissions based on individual unit.

[b]Sources with $Q > 250 \times 10^6$ Btu/hr must comply at least with NSPS, or with more stringent state standards.

[c]Emission limit based on a maximum 2-hour limit.

Table III.92 Delaware: Power Plant Location and Generating Capacity Data for 1980

Plant No.[a]	Plant Name[b]	Latitude[b]	Longitude[b]	Generating Capacity (MW), by Regulatory Class[c,d]		Capacity Factor[e] (%)	Sulfur Dioxide Limit ($lb/10^6$ Btu), by Regulatory Class[f]	
				SIP	NSPS		SIP	NSPS
1	Delaware City	39.59	75.63	93	0	40	1.15	0.00
2	Edge Moor	39.74	75.50	801	0	45	1.10	0.00
3	Indian River	38.58	75.23	343	400	71	3.30	1.20
4	McKee Run	39.17	75.54	135	0	33	6.00	0.00

[a]See Fig. III.130.

[b]EPA's Energy Data System (EDS), except as noted.

[c]FPC form 4, 1980.

[d]Capacity subject to emission regulations of SIP or NSPS, as indicated.

[e]Calculated from annual net generation, FPC form 4, 1980.

[f]If more than one unit, fuel type, and SIP emission limit at plant, "SIP" is average weighted by size, fuel type, and capacity.

Table III.93 Delaware: Power Plant Fuel Use Data for 1980

Plant No.[a]	Plant Name	Coal Sulfur Content[b] (%)	Coal Heating Value[b] (Btu/lb)	Coal Use[c] (10^3 ton)	Oil Sulfur Content[b] (%)	Oil Heating Value[b] (Btu/gal)	Oil Use[c] (10^3 Bbl)	Gas Heating Value[b] (Btu/ 10^3 ft^3)	Gas Use[c] (10^6 ft^3)
1	Delaware City	6.47	14,321	94	0.89	149,161	242	1,121	1.1
2	Edge Moor	0	0	0	0.92	149,165	4,198	1,035	4.2
3	Indian River	1.54	12,461	942	0.25	138,313	129	0	0
4	McKee Run	0	0	0	1.90	150,280	636	1,036	1.7

[a]See Fig. III.130.

[b]FPC form 423, 1980.

[c]FPC form 4, 1980. Note that in cases where the sulfur content and/or the heating value of a fuel is entered accompanied by 0 in the use column, the quantities of fuel that have been used are less than 0.5×10^3 barrels of oil or tons of coal, or 0.05×10^6 cubic feet of gas.

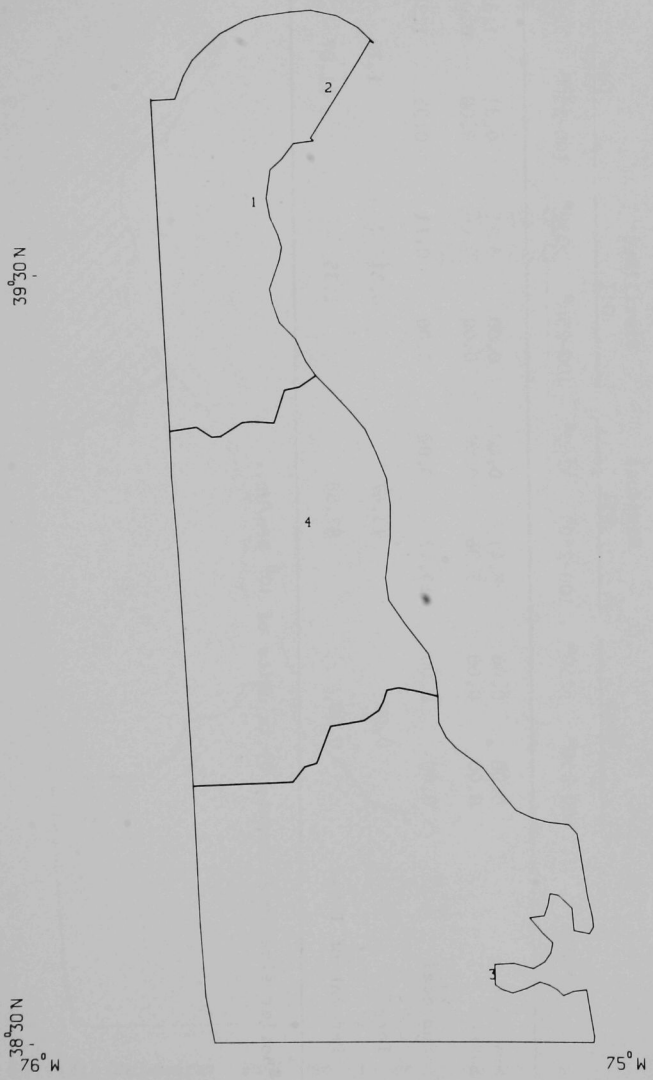


Fig. III.130 Delaware: Key to Power Plant Locations

Table III.94 Delaware: Large Industrial Boiler Fuel Use, 1974

County	County Fuel Consumption (10^{12} Btu) by Boiler Size and Fuel Type								
	Coal		Residual Oil		Distillate Oil		Gas		
	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	Total
New Castle	0.00	0.00	8.41	0.00	0.00	0.21	0.31	1.39	10.32
Sussex	0.00	0.00	5.06	0.00	0.00	0.00	0.00	0.00	5.06
Subtotal	0.00	0.00	13.47	0.00	0.00	0.21	0.31	1.39	
Total	0.00		13.47		0.21		1.70		15.38
Percent of Total	0.00		87.58		1.35		11.07		100

[a]Boiler size (heat input, Q) in units of 10^6 Btu/hr.

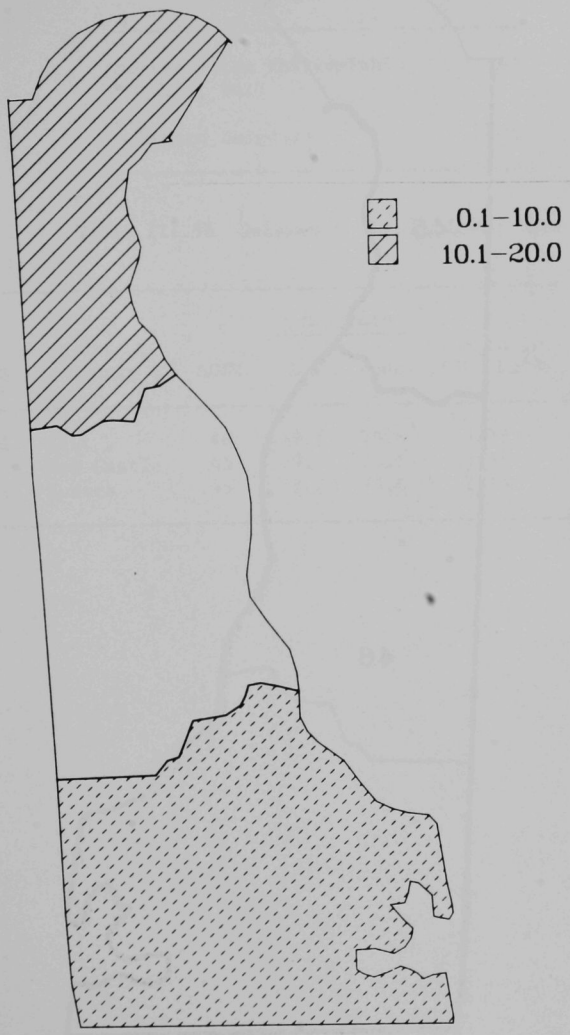


Fig. III.131 Delaware: Fuel Use (in Units of 10^{12} Btu) in Major Fuel-Burning Installations, by County

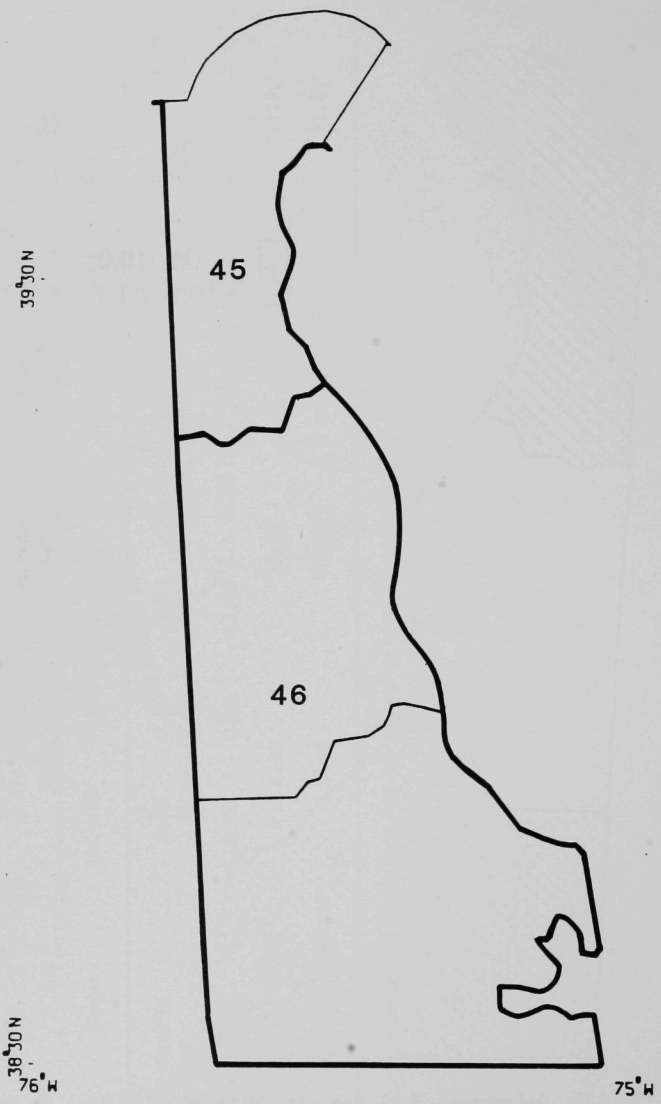


Fig. III.132 Delaware: Air Quality Control Regions (see Table III.95)

Table III.95 Delaware: Identification of Air Quality Control Regions (AQCR)

AQCR Name	No.
Metropolitan Philadelphia (N.J., Pa.)	45
Southern Delaware	46

Table III.96 Delaware: County-Level Data

FIPS	County	AQCR	Centroid Lat	Centroid Long	Area (10^3 km^2)	Population
10001	Kent	46	39.1	75.6	1.59	98,592
10003	New Castle	45	39.6	75.6	1.18	398,694
10005	Sussex	46	38.7	75.4	2.45	97,493

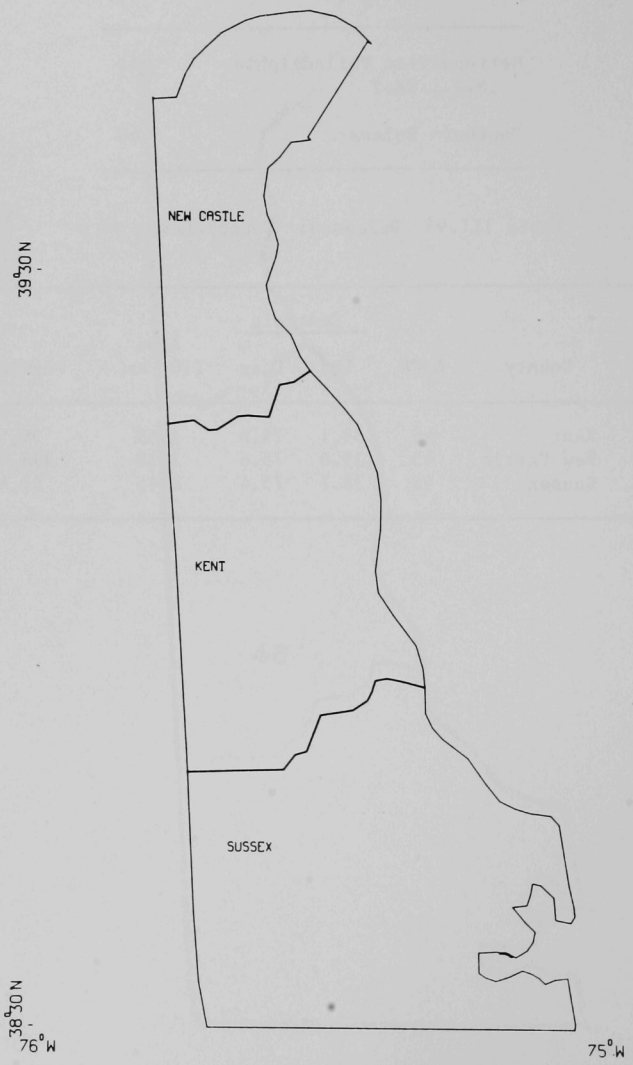


Fig. III.133 Delaware: Key to Counties

REGION III: MARYLAND

AIR QUALITY SUMMARY

Attainment Status	Pollutant[a]							
	P-SO_2	S-SO_2	P-TSP	S-TSP	CO	O_3	NO_2	Pb
No. of Counties Containing NA Areas	0	0	2	2	3	9	0	0
State Implementation Plan[b]	N	N	C	E	A	A	N	N
No. of SAROAD Monitors[c]	13/0[d]	-	55/53[d]	-	10	14	10	4
No. of SAROAD Monitors with Violations[c]	0/0[d]	-	1/5[d]	-	5	3	0	3

PSD Status	Class I PSD Areas	Recommended Class I	Mandatory Class II[e]
No. of Areas	0	0	2

[a]P = primary standard; S = secondary standard.
[b]A = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review.
[c]SAROAD data as of 1979. All other information as of December 1981.
[d]24-hour average/annual average.
[e]Areas that cannot be redesignated as Class III.

ENERGY DATA

Parameter	Data
Coal Production	
Current, 1979 (10^3 tons)[a]	1,524
Projected, 1985 (10^3 tons)[b]	2,665
Coal Reserves (10^6 tons)[c]	1,044
Range of Coal Quality (lb $SO_2/10^6$ Btu)[a]	2.13-2.68
Fuel Use by Industrial Boilers, 1974 (10^{12} Btu)[d]	29.71
No. of Fossil-Fueled Power Plants	10

[a]EIA form 423.
[b]National Coal Assn. and DOE's Western Coal Development Monitoring System.
[c]Bureau of Mines Rpt. IC 8680 and 8693.
[d]FEA, MFBI Survey, 1974.

MARYLAND: SIP Attainment Strategies

Area[a]	NA[b]	Plan Date	EPA Action[c]	Source(s)	Strategy[d]
	TSP:				
Baltimore AQCR (115)	P	1/79	C	Mobile	FMVECP; TCM; paving; cleaning streets
	CO:				
Baltimore AQCR (115) and National Capital AQCR (47)	P	1/79	A	Mobile	FMVECP; TCM; I&M; attainment by 1987
	O_3:				
Baltimore AQCR (115) and National Capital AQCR (47)	P	1/79	A	Mobile	RACT on VOC sources; FMVECP; TCM; I&M; attainment by 1987

[a]AQCR = air quality control region. See Table III.108, Fig. III.149.

[b]Nonattainment violation indicated by pollutant and as P = primary and S = secondary.

[c]A = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

[d]See p. 30 for a listing of the abbreviations.

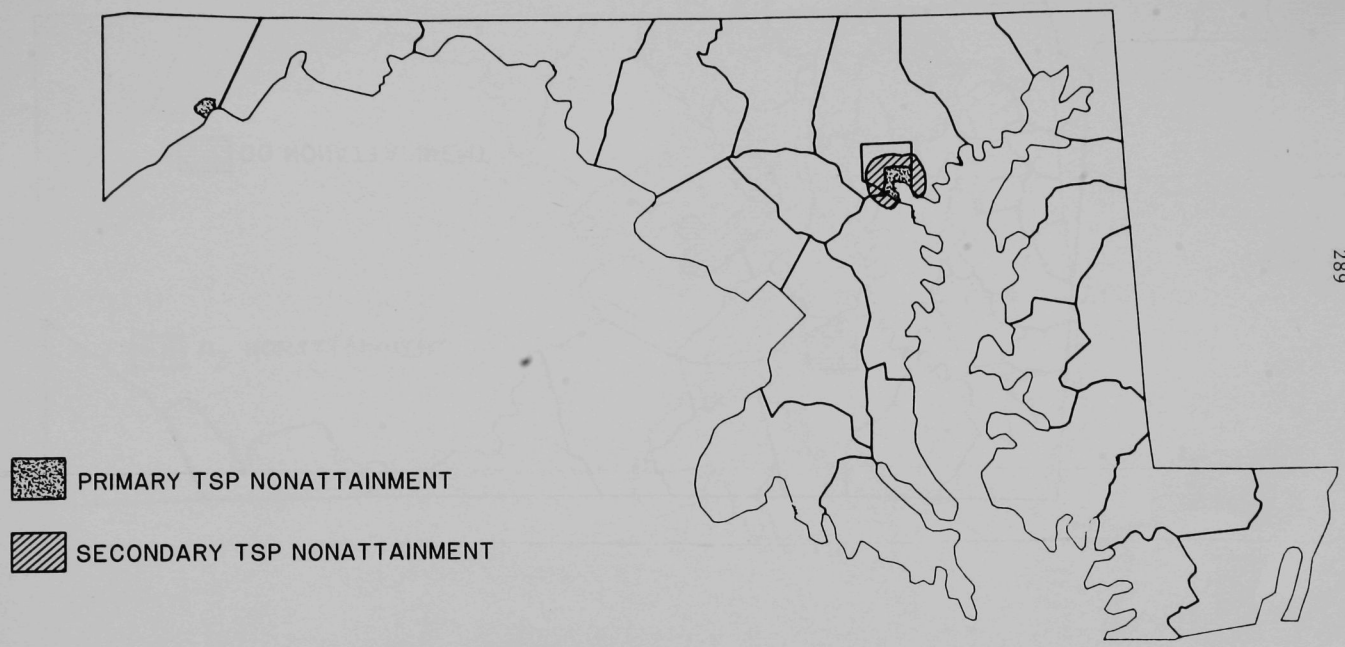


Fig. III.134 Maryland: TSP Nonattainment Areas as Designated December 1981

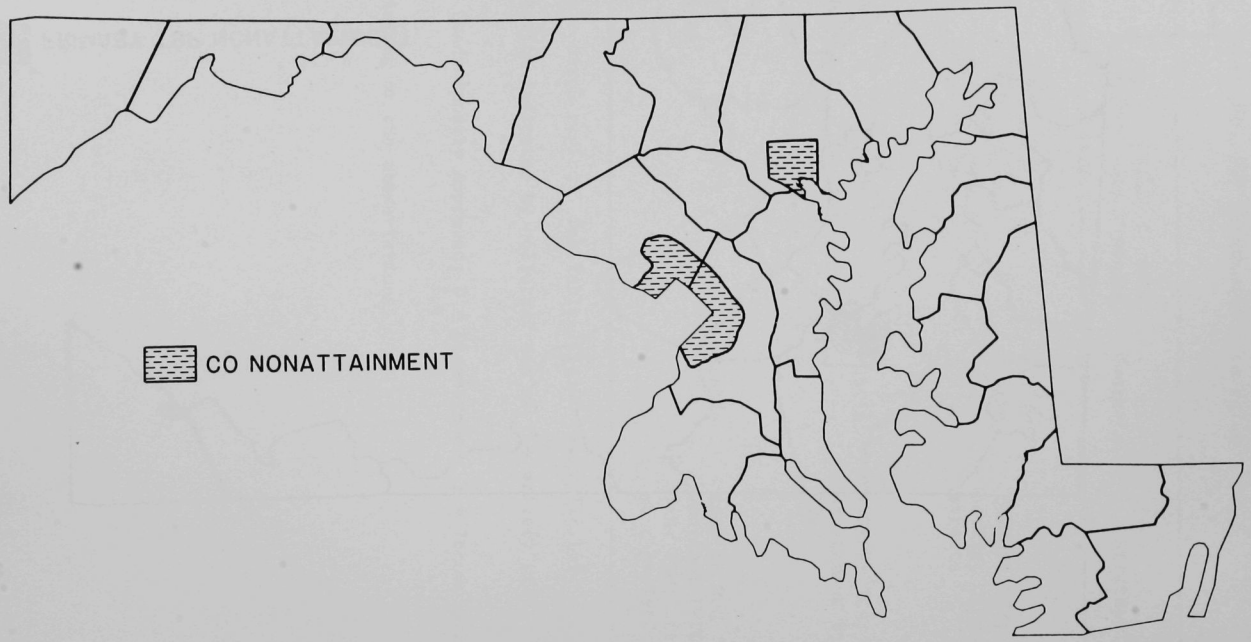


Fig. III.135 Maryland: CO Nonattainment Areas as Designated December 1981

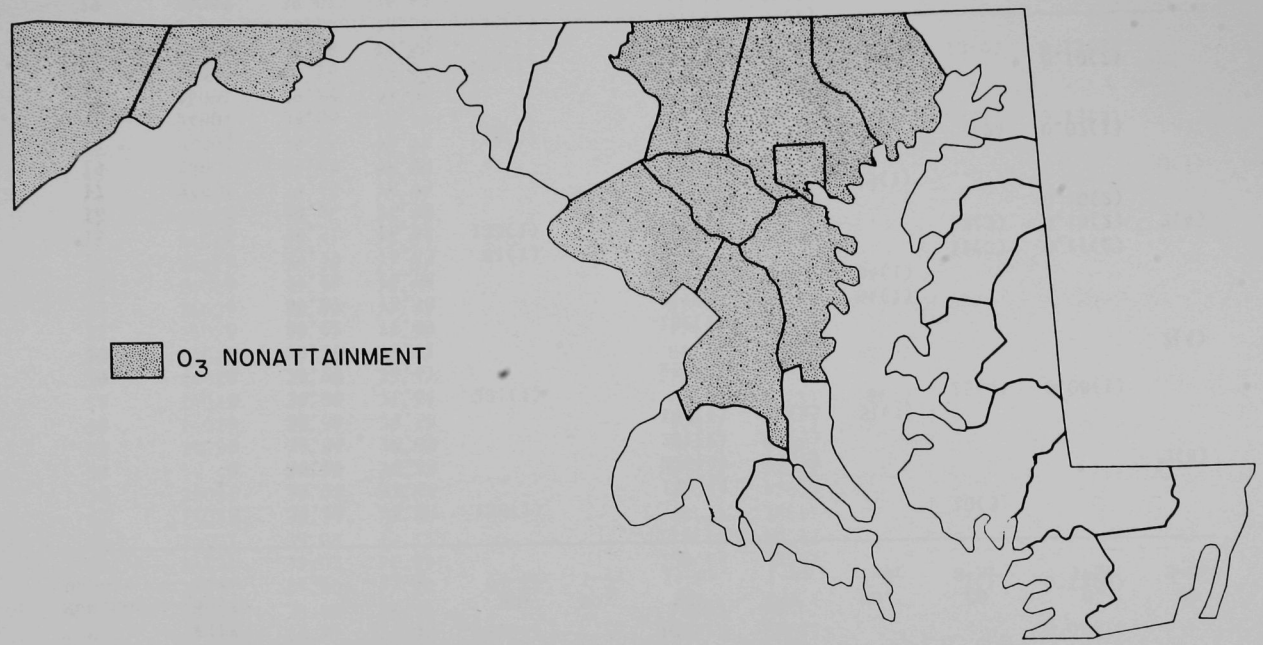


Fig. III.136 Maryland: O_3 Nonattainment Areas as Designated December 1981

Table III.97 Maryland: SAROAD Monitor Numbers and 1979 Data ($\mu g/m^3$, mg/m^3 for CO, or ppm for O_3)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
2	0	39.24	76.58	186(1)					10(3)		
3	0	39.28	76.66			148(1)					
4	0	39.29	76.55			226(2)	71(2)				3(4)
5	0	39.34	76.69			201(2)	60(2)				
6	0	39.34	76.58			103(1)	42(1)	51(1)			
8	0	39.30	76.61	201(1)					15(4)	0.08(1)	
9	0	39.29	76.61			257(2)	78(3)				
10	0	39.29	76.61								2(4)
11	0	39.22	76.59			182(1)	78(3)				
12	0	39.27	76.58			311(3)	98(4)	64(1)			
13	0	39.28	76.58			224(2)	90(3)	64(1)			
14	0	39.29	76.63	81(1)					11(3)	0.11(2)	
15	0	39.31	76.61	135(1)		118(1)			12(3)	0.10(2)	2(4)
16	0	39.24	76.58							0.10(2)	
17	24001	39.65	78.75			102(1)	48(1)	49(1)			
19	24001	39.67	78.78			89(1)	41(1)				
20	24001	39.65	78.76	112(1)					9(2)	0.07(1)	
21	24001	39.65	78.77			176(1)	64(2)				
23	24001	39.65	78.76			146(1)	67(2)				
26	24003	39.16	76.51	166(1)		106(1)	51(1)			0.10(2)	
27	24003	38.98	76.50			77(1)	40(1)	35(1)			
28	24003	39.17	76.63	135(1)		137(1)	59(2)				
29	24003	39.07	76.69			66(1)	38(1)				
30	24003	39.21	76.65			138(1)	55(1)			0.14(3)	
31	24003	38.87	76.62			93(1)	33(1)				
33	24003	39.17	76.63							0.12(2)	
34	24005	39.49	76.65			128(1)	50(1)				
35	24005	39.24	76.51			149(1)	77(3)				
36	24005	39.24	76.45			132(1)	49(1)				
37	24005	39.24	76.51					54(1)			

Table III.97 Maryland (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
38	24005	39.31	76.47	61(1)		113(1)	57(2)	61(1)	13(4)	0.12(2)	
39	24005	39.22	76.45			131(1)	57(2)				
40	24005	39.27	76.74			96(1)	47(1)				
41	24005	39.41	76.77	62(1)		94(1)	46(1)		4(1)	0.13(3)	
42	24005	39.24	76.66			132(1)	57(2)				
43	24009	38.07	76.46			63(1)	31(1)				0(1)
44	24009	38.51	76.67			74(1)	38(1)				
46	24013	39.56	76.99			98(1)	47(1)				
47	24015	39.61	75.83			88(1)	52(1)				
48	24017	38.56	77.01			54(1)	31(1)				
49	24019	38.57	76.08			140(1)	44(1)				
50	24021	39.63	77.41			87(1)	44(1)				
51	24021	39.52	77.58			77(1)	36(1)				
52	24021	39.31	77.47			86(1)	38(1)	28(1)			
54	24023	39.48	79.07			178(1)	62(2)				
55	24023	39.58	79.34			60(1)	24(1)	19(1)			
56	24025	39.54	76.35			90(1)	49(1)				
57	24027	39.19	76.88			87(1)	44(1)				
58	0	39.33	76.42			129(1)	52(1)				
59	24031	39.02	77.07			76(1)	42(1)				
60	24031	39.14	77.40			68(1)	38(1)				
61	24031	39.08	77.15			112(1)	46(1)				
62	24031	39.03	76.99			100(1)	38(1)				
63	24031	39.00	77.10	48(1)					7(1)	0.13(3)	
64	24033	38.88	76.91			79(1)	44(1)				
65	24033	38.92	76.90	69(1)		107(1)	55(1)			0.09(1)	
67	24033	38.63	76.78			82(1)	35(1)				
68	24033	38.90	76.76			79(1)	38(1)				
69	24033	38.98	76.95			94(1)	53(1)				
70	24033	38.85	76.93	105(1)					6(1)	0.11(2)	

Table III.97 Maryland (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
71	24043	39.60	77.82			87(1)	52(1)				
72	24043	39.66	77.73			98(1)	49(1)				
73	24043	39.63	77.67			101(1)	38(1)				
74	24043	39.65	77.72	41(1)		117(1)	59(2)		9(2)	0.08(1)	
75	24045	38.36	75.60			131(1)	56(1)	37(1)			

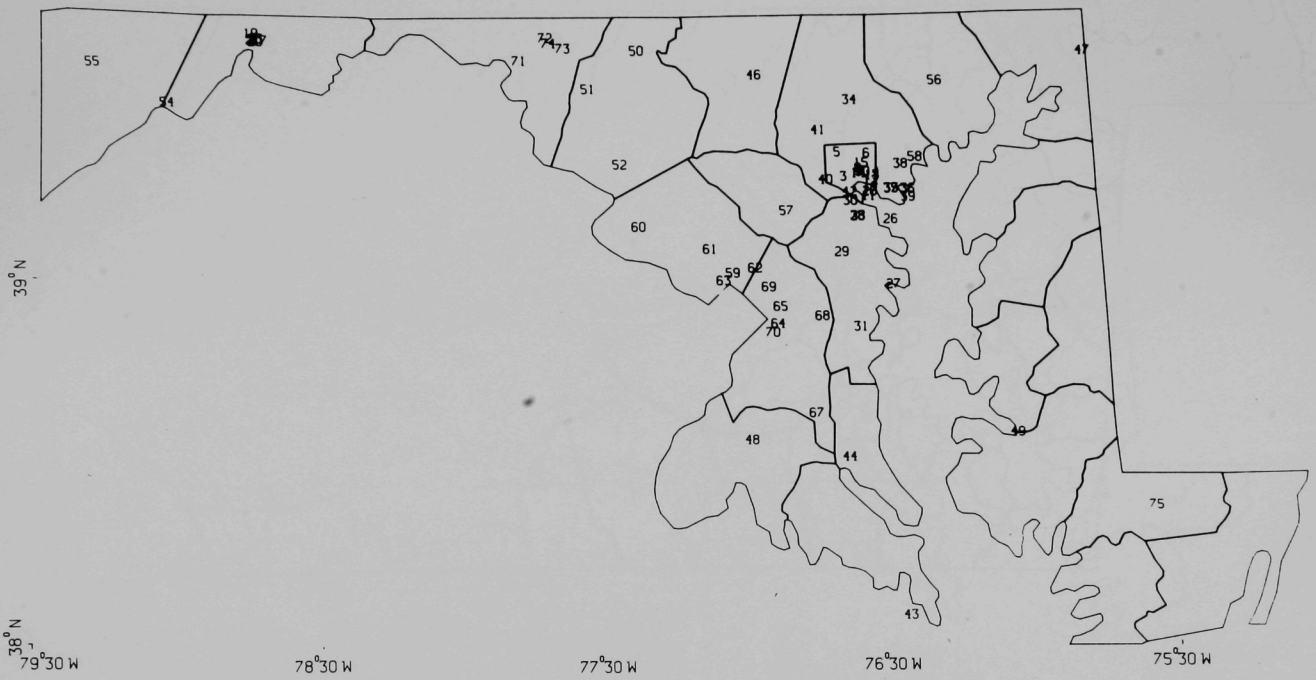


Fig. III.137 Maryland: Locations of SAROAD Monitors (See Table III.97 for Monitor Numbers)

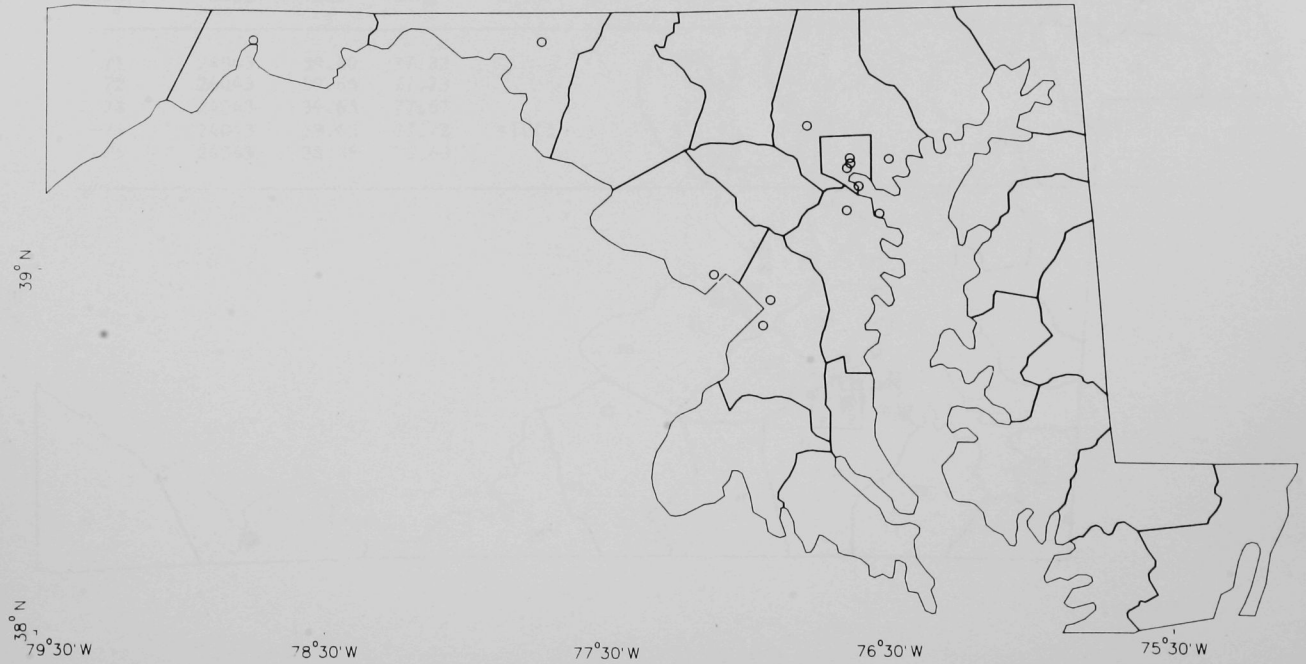


Fig. III.138 Maryland: Monitors Reporting Adequate Data on 24-hr Average SO_2 Concentrations; No Violations

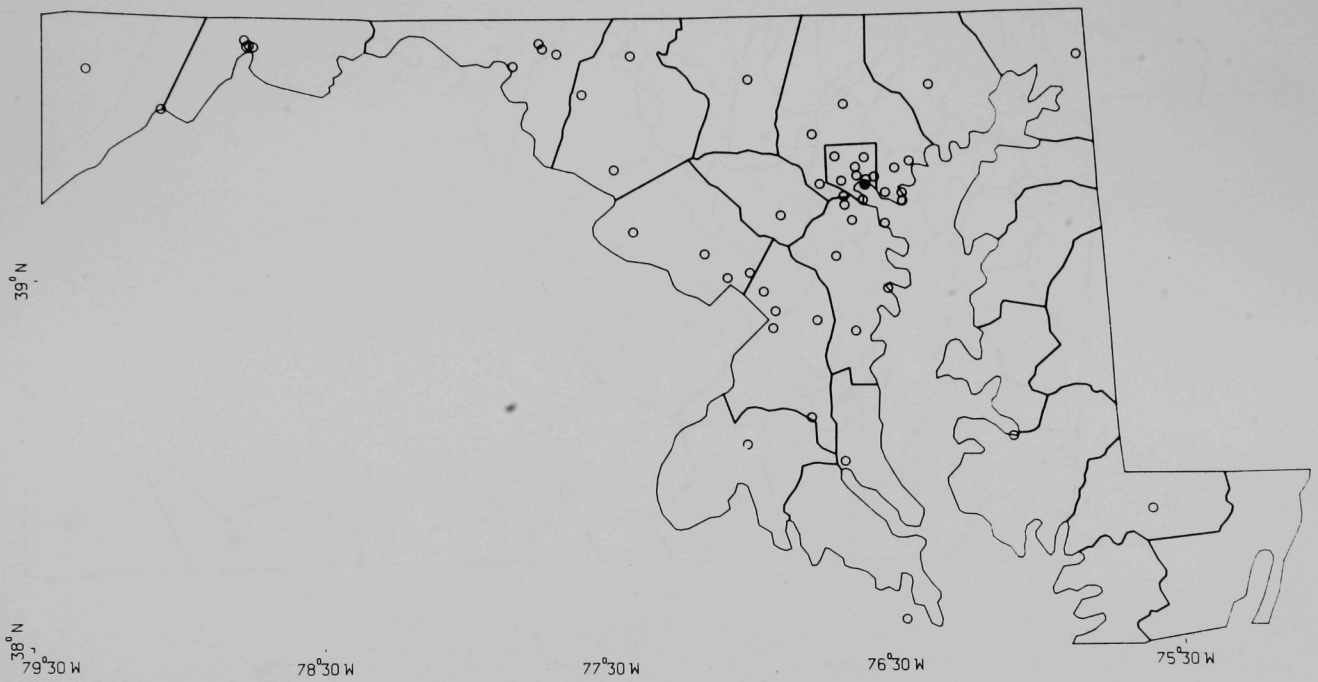


Fig. III.139 Maryland: Monitors Reporting Adequate Data on 24-hr Average TSP Concentrations; Violations Shown by Shaded Circles

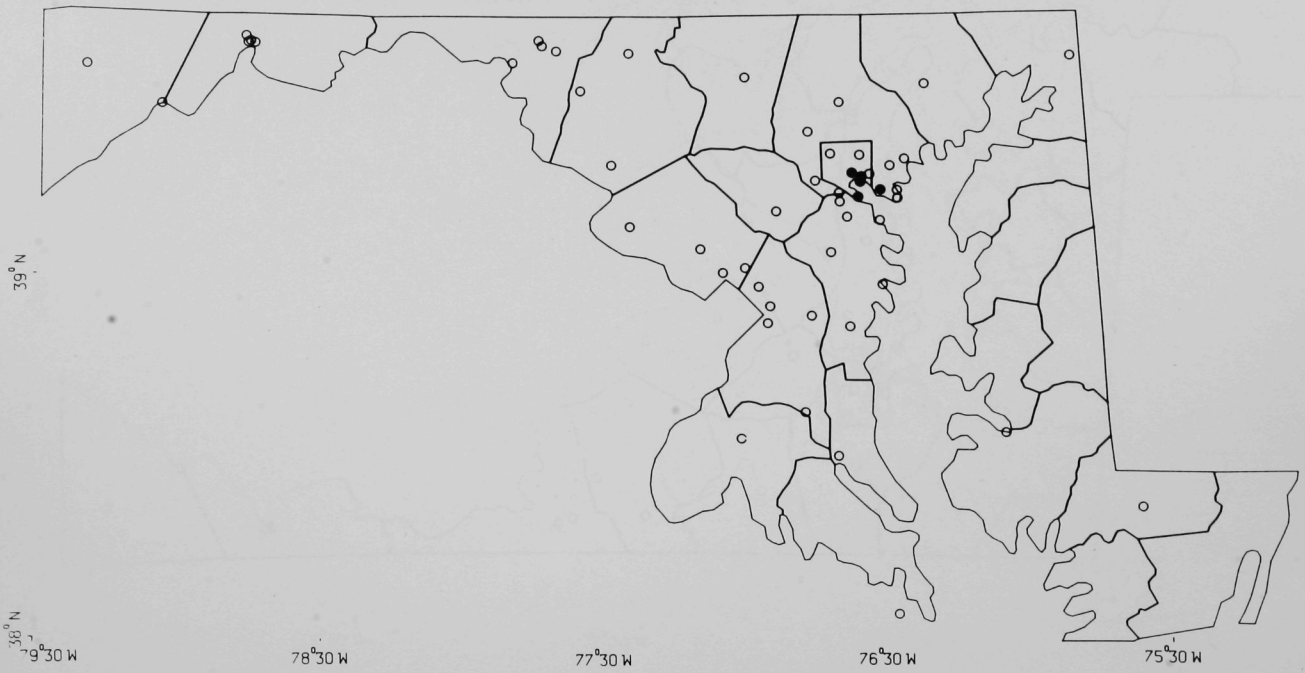


Fig. III.140 Maryland: Monitors Reporting Adequate Data on Annual Average TSP Concentrations; Violations Shown by Shaded Circles

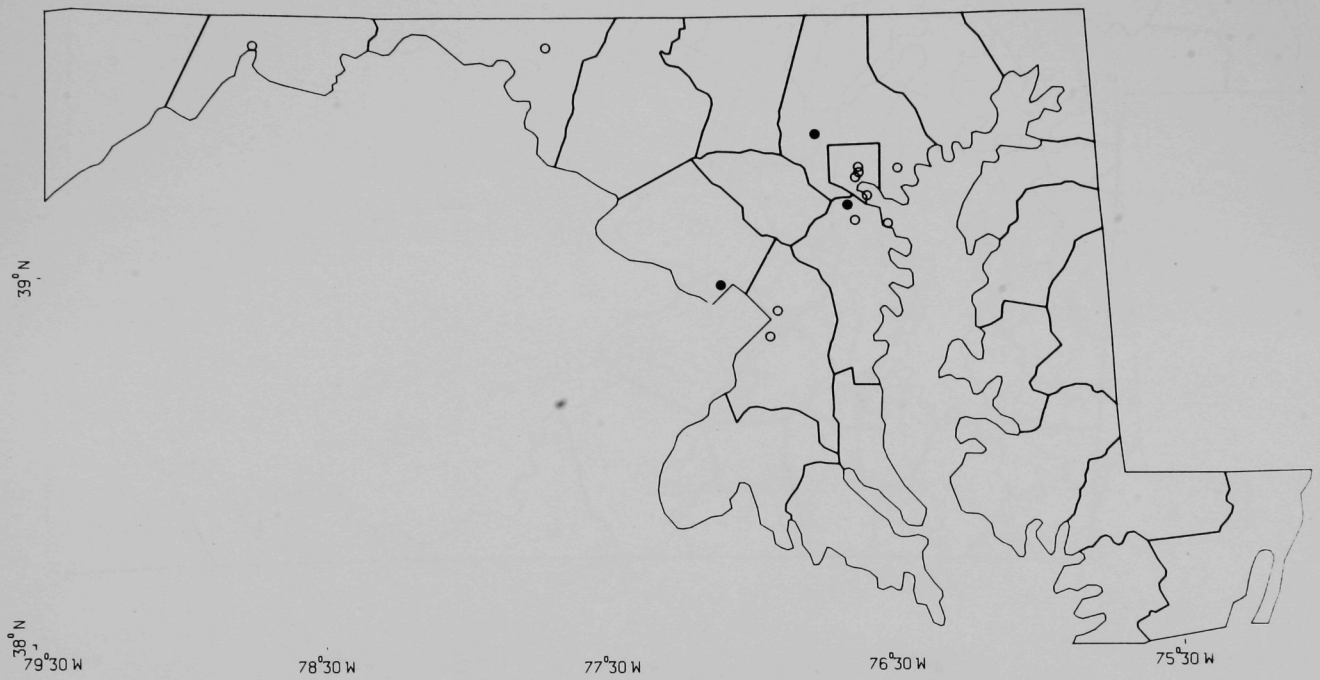


Fig. III.141 Maryland: Monitors Reporting Adequate Data on Annual Average NO_2 Concentrations; No Violations

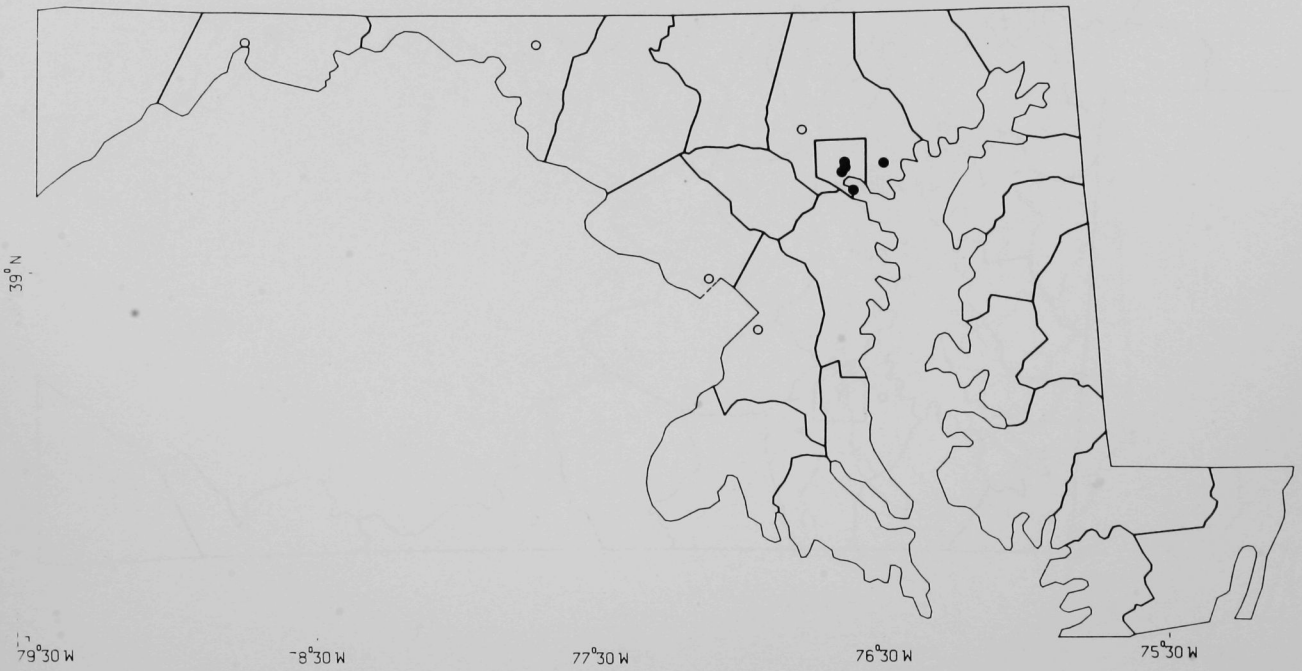


Fig. III.142 Maryland: Monitors Reporting Adequate Data on 8-hr Average CO Concentrations; Violations Shown by Shaded Circles

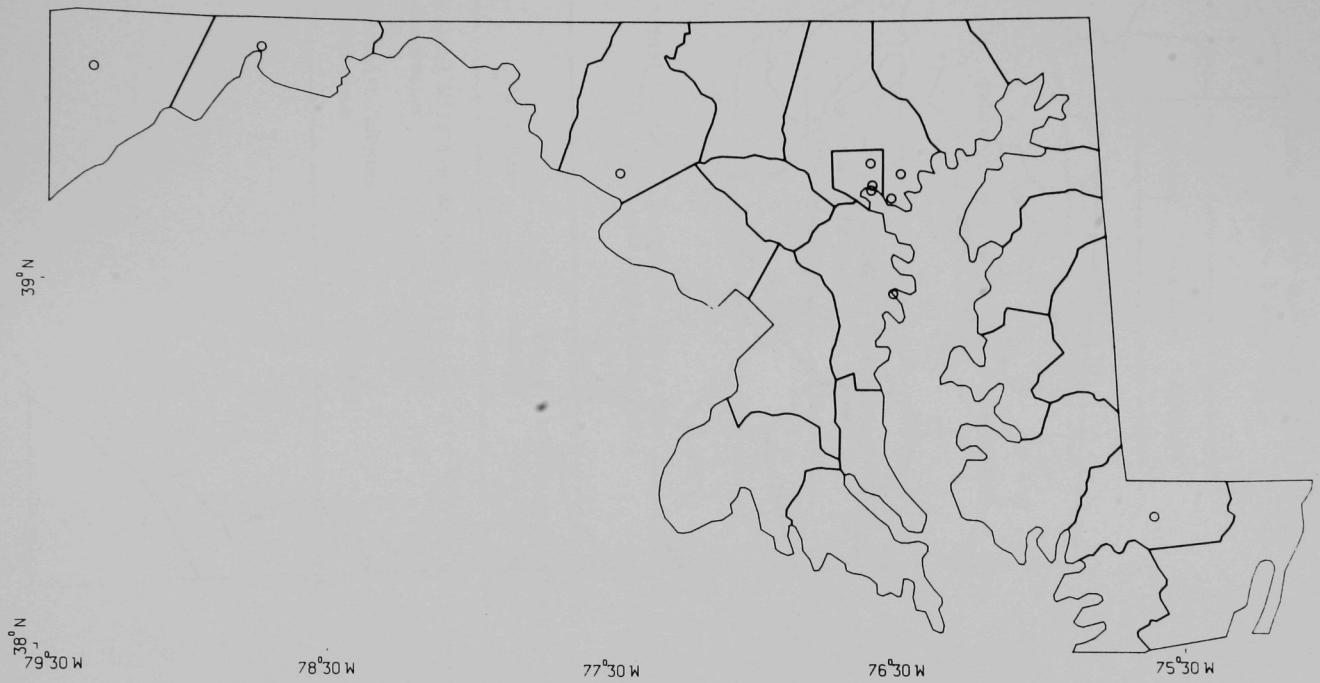


Fig. III.143 Maryland: Monitors Reporting Adequate Data on 1-hr Average O_3 Concentrations; Violations Shown by Shaded Circles

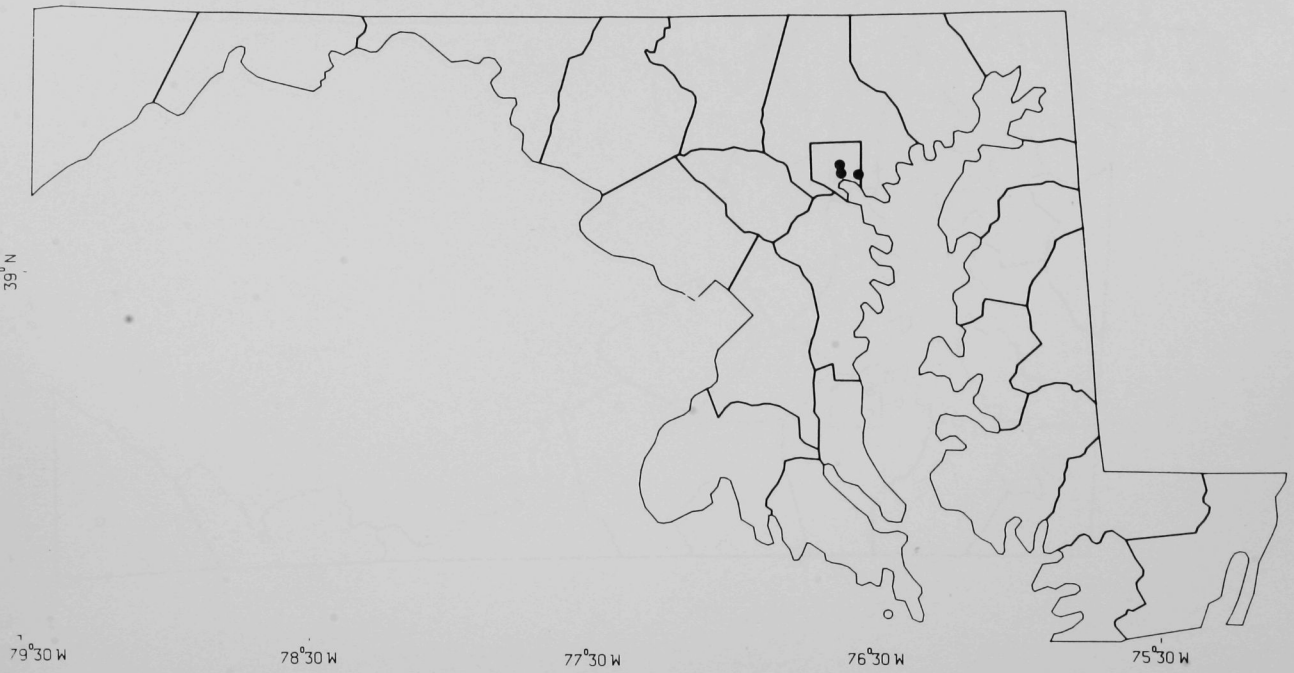


Fig. III.144 Maryland: Monitors Reporting Adequate Data on 3-month Average Lead Concentrations; Violations Shown by Shaded Circles

Table III.98 Maryland: PSD Class I Areas

Location	Area Name	Acreage
	None	

Table III.99 Maryland: Recommended Class I Areas

Area Name	Total Acreage	Acreage Already Class I
	None	

Table III.100 Maryland: Areas That Cannot Be Reclassified as Class III

Area Name	Total Acreage	Acreage Already Class I
National Wildlife Refuges:		
Blackwater	14,263	-
National Seashores:		
Assateague	39,630	-

Table III.101 Maryland: SO_2 Emission Limits (lb $SO_2/10^6$ Btu) by Heat Input Class, Q, in Units of 10^6 Btu/hr

Source Type and Location	Fuel Type	Maximum Sulfur Content (%)	Limit for $Q \geq 10$[a]
New[b] and Existing			
Areas I, II, V & VI[c]	Residual Oil	2.0	d
	Distillate Oil	0.3	d
	Coal		3.5[e,f]
Areas III, IV[c]	Residual Oil	1.0	d
	Distillate Oil	0.3	d
	Coal	1.0[g]	d,e

[a]Total heat input based on maximum input for unit design.

[b]New sources with $Q > 250 \times 10^6$ Btu/hr, constructed after 8/17/71, must comply at least with NSPS, or with more stringent state standards.

[c]Area I: Allegany, Garrett, and Washington counties
Area II: Frederick County
Area III: Baltimore City, Anne Arundel, Baltimore, Carroll, Hartford, and Howard counties
Area IV: Montgomery and Prince Georges counties
Area V: Calvert, Charles, and St. Marys counties
Area VI: Caroline, Cecil, Dorchester, Kent, Queen Annes, Somerset, Talbot, Wicomico, and Worcester counties.

[d]Emission limits based on allowed percentage of sulfur in fuel.

[e]Total heat input based on maximum actual unit firing rate.

[f]For total plant design capacity, $Q \geq 100 \times 10^6$ Btu/hr.

[g]For units with $Q \geq 250 \times 10^6$ Btu/hr.

Table III.102 Maryland: Particulate Matter Emission Limits (in units as specified) by Heat Input Class, Q, in Units of 10^6 Btu/hr

Source Type and Location	Fuel Type	Limit (lb PM/10^6 Btu)		
		$Q < 10^a$	$10 \leq Q < 10{,}000^a$	$Q \geq 10{,}000^a$
Garrett, Allegany, Washington, Frederick, Calvert, Charles, St. Marys, Caroline, Cecil, Dorchester, Kent, Somerset, Talbot, Wicomico, and Worcester counties				
Existing sources	All Fuels	0.6	$1.02Q^{-0.233}$	0.12
New sources[b]	All Fuels	0.6	0.1	0.12
		Limit (grains/dry std. ft^3 of stack gas)		
		$13 < Q < 50^a$	$50 \leq Q < 250^a$	$Q \geq 250^a$
Baltimore City, Anne Arundel, Baltimore, Carroll, Hartford, Howard, Montgomery, and Prince Georges counties				
New[b] and existing sources	Residual Oil	0.03	0.02	0.02[c]
	Solid Fuel	0.05[d]	0.05[d]	0.03

[a]Total heat input based on design maximum for individual units; allowable emissions based on individual stacks.
[b]Sources with $Q > 250 \times 10^6$ Btu/hr must comply at least with NSPS, or with more stringent state standards.
[c]For units constructed after 7/1/75, the emission limit is 0.01 grains/dry std. ft^3.
[d]For new solid fuel units with $Q \geq 35$ built after 7/1/75, the emission limit is 0.03 grains/dry std. ft^3 of stack gas.

Table III.103 Maryland: Power Plant Location and Generating Capacity Data for 1980

Plant No.[a]	Plant Name[b]	Latitude[b]	Longitude[b]	Generating Capacity (MW), by Regulatory Class[c,d]		Capacity Factor[e] (%)	Sulfur Dioxide Limit ($lb/10^6$ Btu), by Regulatory Class[f]	
				SIP	NSPS		SIP	NSPS
1	Chalk Point	38.83	76.86	1,265	600	30	2.87	0.80
2	Crane	39.32	76.37	386	0	35	1.09	0.00
3	Dickerson	39.21	77.46	548	0	55	1.80	0.00
4	Gould Street	39.26	76.59	172	0	25	1.10	0.00
5	Morgantown	38.36	76.98	1,112	0	50	3.50	0.00
6	Riverside	39.24	76.51	326	0	11	1.10	0.00
7	Smith	39.60	77.83	129	0	70	1.67	0.00
8	Vienna	38.48	75.83	227	0	20	2.18	0.00
9	Wagner	39.18	76.53	992	0	30	1.28	0.00
10	Westport	39.26	76.63	180	0	6	1.11	0.00

[a]See Fig. III.145.

[b]EPA's Energy Data System (EDS), except as noted.

[c]FPC form 4, 1980.

[d]Capacity subject to emission regulations of SIP or NSPS, as indicated.

[e]Calculated from annual net generation, FPC form 4, 1980.

[f]If more than one unit, fuel type, and SIP emission limit at plant, "SIP" is average weighted by size, fuel type, and capacity.

Table III.104 Maryland: Power Plant Fuel Use Data for 1980

Plant No.[a]	Plant Name	Coal Sulfur Content[b] (%)	Coal Heating Value[b] (Btu/lb)	Coal Use[c] (10^3 ton)	Oil Sulfur Content[b] (%)	Oil Heating Value[b] (Btu/gal)	Oil Use[c] (10^3 Bbl)	Gas Heating Value[b] (Btu/ 10^3 ft^3)	Gas Use[c] (10^6 ft^3)
1	Chalk Point	1.78	12,340	1,088	1.77	147,154	2,424	0	0
2	Crane	2.05	12,725	137	0.96	148,481	1,552	0	0
3	Dickerson	1.58	12,272	1,174	0.20	138,351	105	0	0
4	Gould Street	0	0	0	0.96	148,987	442	0	0
5	Morgantown	1.86	12,297	2,548	1.26	144,574	535	0	0
6	Riverside	0	0	0	0.95	148,548	803	1,022	1.6
7	Smith	1.02	12,312	317	0.30	139,551	3	0	0
8	Vienna	0	0	0	1.92	148,843	879	0	0
9	Wagner	0.90	12,908	645	0.96	148,067	1,878	0	0
10	Westport	0	0	0	0.97	148,775	356	1,013	0.3

[a]See Fig. III.145.

[b]FPC form 423, 1980.

[c]FPC form 4, 1980. Note that in cases where the sulfur content and/or the heating value of a fuel is entered accompanied by 0 in the use column, the quantities of fuel that have been used are less than 0.5×10^3 barrels of oil or tons of coal, or 0.05×10^6 cubic feet of gas.

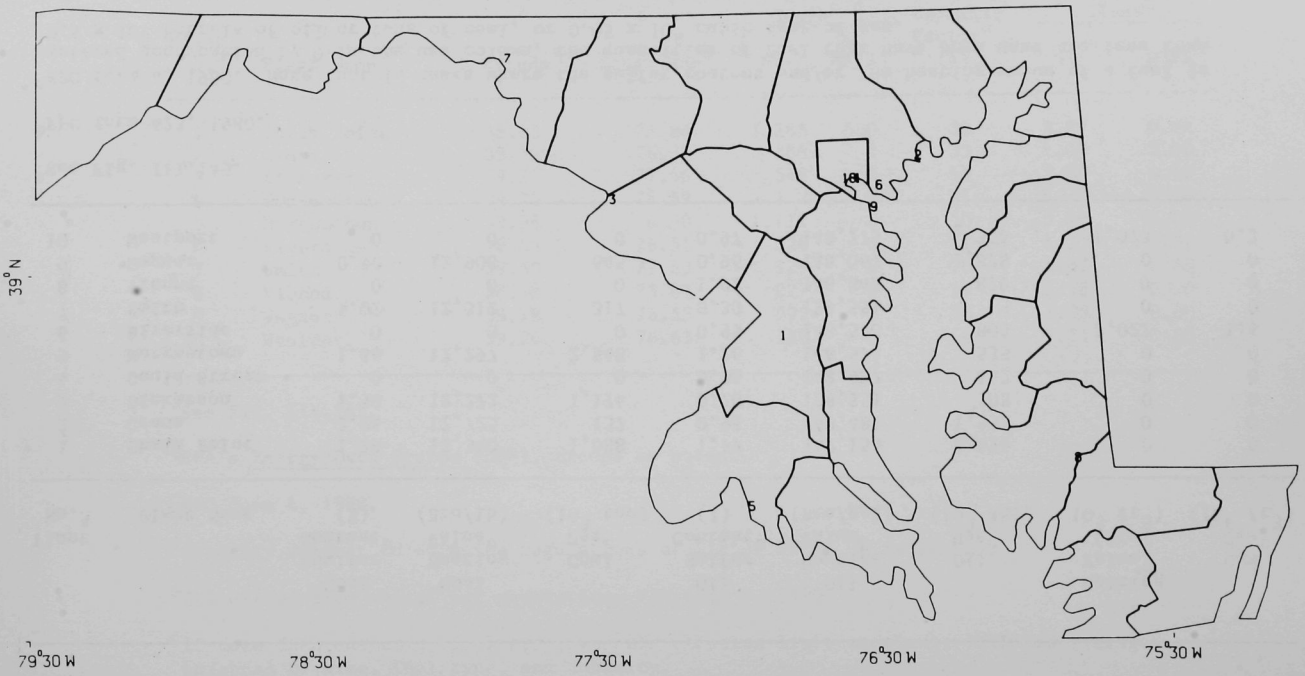


Fig. III.145 Maryland: Key to Power Plant Locations

Table III.105 Maryland: Large Industrial Boiler Fuel Use, 1974

County	County Fuel Consumption (10^{12} Btu) by Boiler Size and Fuel Type								
	Coal		Residual Oil		Distillate Oil		Gas		
	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	Total
Allegany	0.00	7.56	1.74	1.75	0.05	0.64	0.00	2.45	14.17
Charles	0.00	0.00	1.35	0.00	0.00	0.00	0.00	0.00	1.35
Frederick	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.00	0.34
Howard	0.00	0.00	0.00	0.00	0.03	0.00	0.21	0.00	0.24
Montgomery	0.00	0.00	1.02	0.00	0.00	0.00	0.00	0.00	1.02
Washington	0.00	0.00	0.43	0.00	0.00	0.00	1.54	0.00	1.98
Baltimore	0.00	0.00	2.31	0.81	1.04	0.00	6.44	0.00	10.61
Subtotal	0.00	7.56	7.19	2.56	1.11	0.64	8.20	2.45	
Total	7.56		9.76		1.75		10.65		29.71
Percent of Total	25.44		32.84		5.89		35.83		100

[a]Boiler size (heat input, Q) in units of 10^6 Btu/hr.

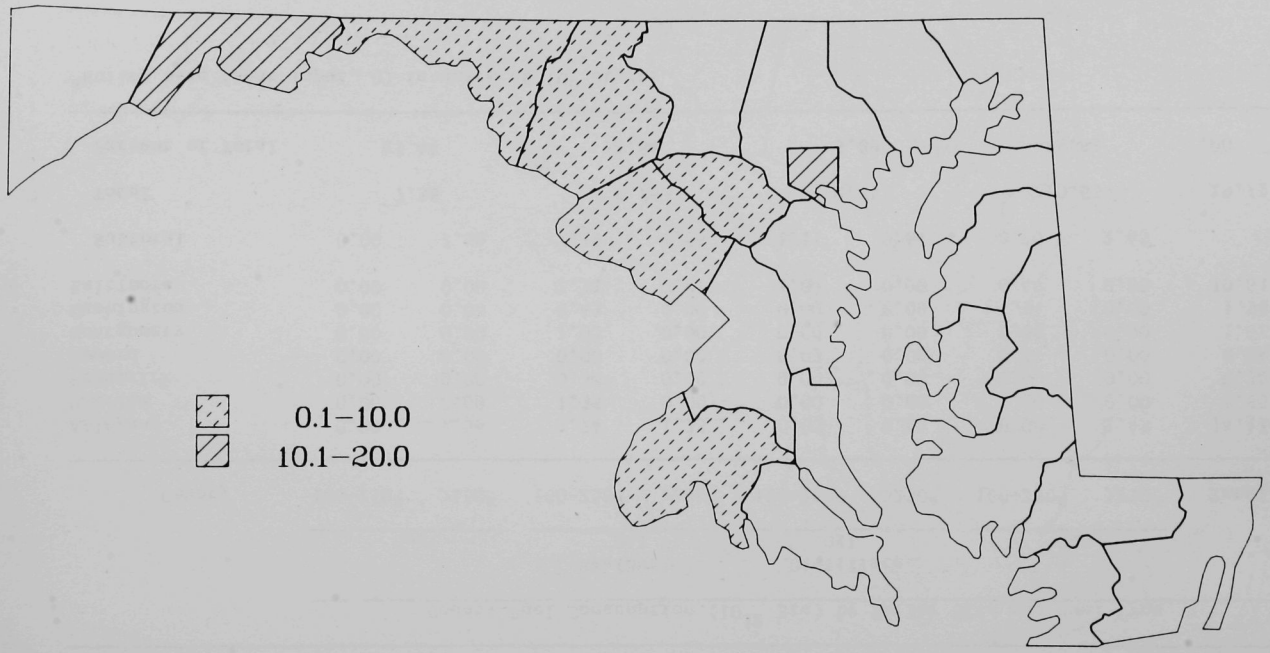


Fig. III.146 Maryland: Fuel Use (in Units of 10^{12} Btu) in Major Fuel-Burning Installations, by County

Table III.106 Maryland: Coal Production and Reserves

County Name	Current (1979) Production (10^3 tons)	Projected (1985) Production (10^3 tons)	Reserves (10^6 tons)
Allegany	188	953	413
Garrett	1,316	1,712	631
Montgomery	4	0	0
Various[a]	16	0	0
Total	1,524	2,665	1,044

[a]This figure represents data not assigned to a specific county.

Table III.107 Maryland: Coal Quality Data

County Name	Avg. SO_2 Content (lb/10^6 Btu)	Avg. Ash Content (%)	Avg. Heat Value (Btu/lb)	Washability	
				Sulfur Removal (%)	Btu Loss (%)
Allegany	2.68	14.37	11,841	29.12	11.91
Garrett	2.80	14.62	11,915	28.80	4.78
Montgomery	2.13	10.50	12,191	12.57	2.69

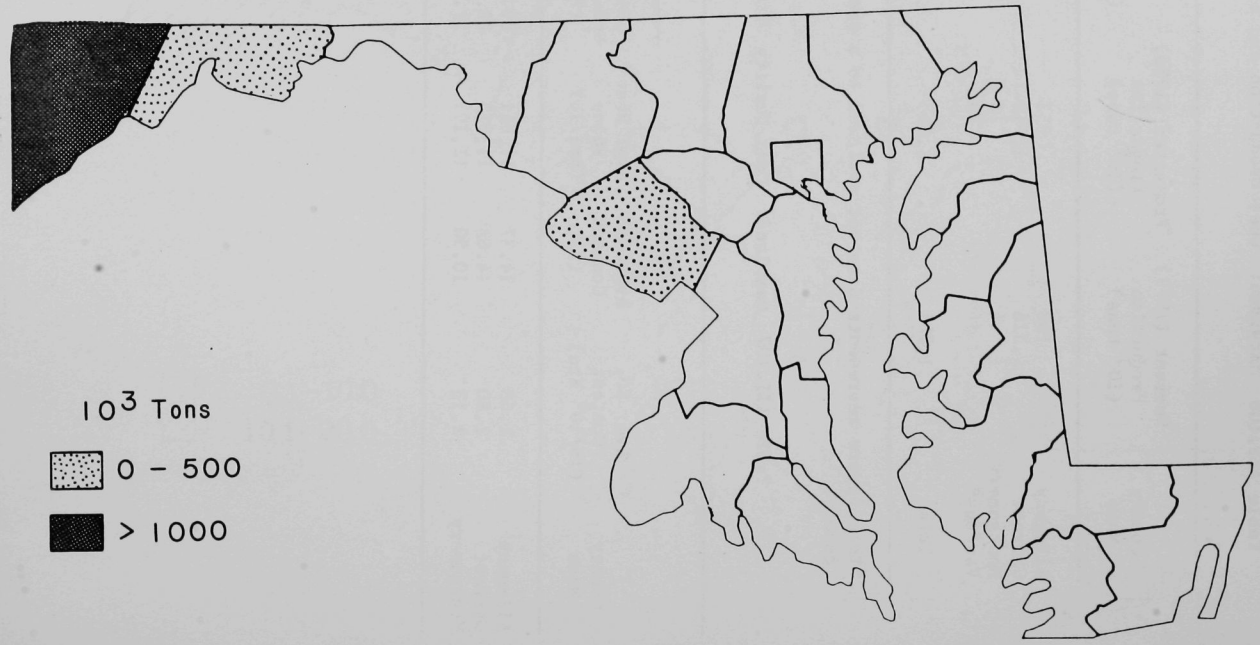


Fig. III.147 Maryland: Coal Production in 1979

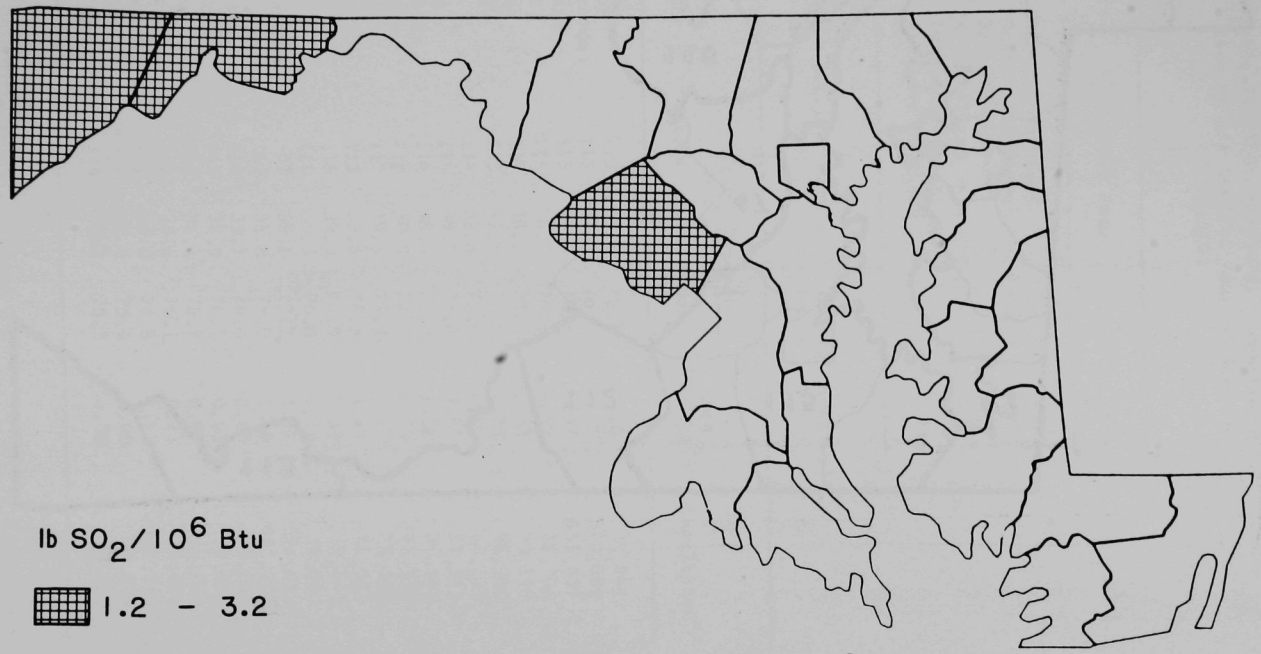


Fig. III.148 Maryland: Average Sulfur Content of Coal

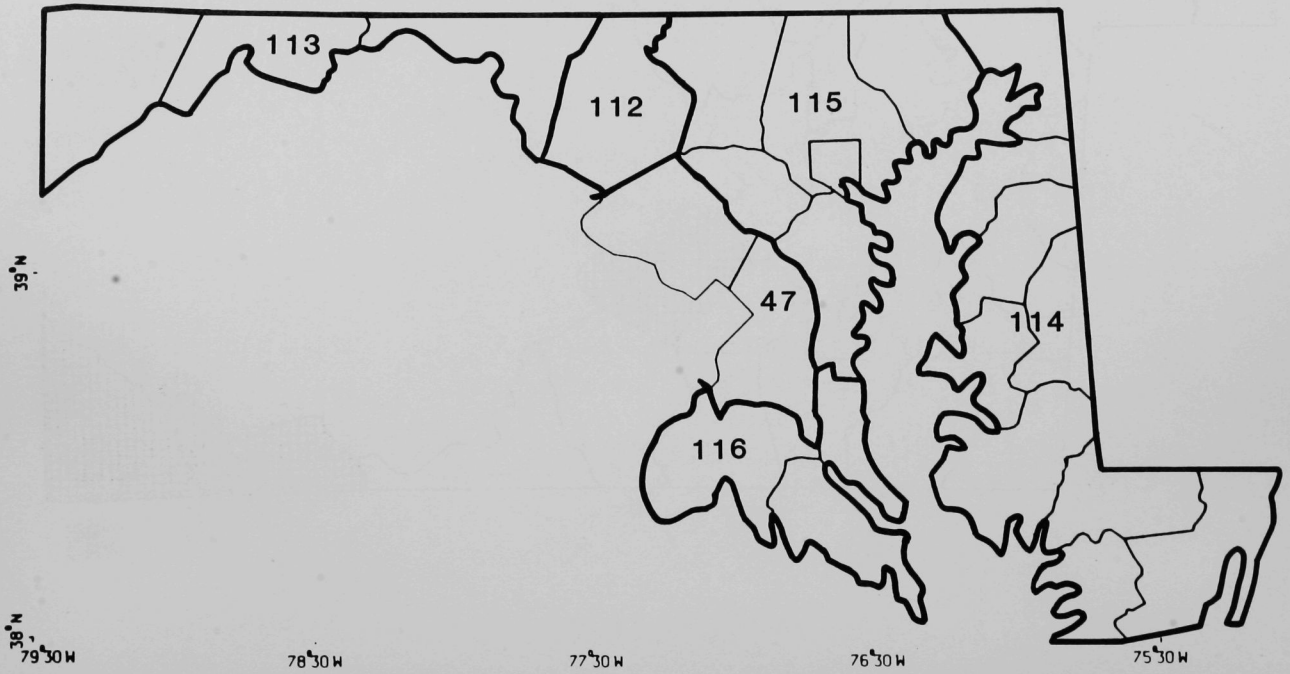


Fig. III.149 Maryland: Air Quality Control Regions (See Table III.108)

Table III.108 Maryland: Identification of Air Quality Control Regions (AQCR)

AQCR Name	No.
Central Maryland	112
Cumberland-Keyser (W. Va.)	113
Eastern Shore	114
Metropolitan Baltimore	115
National Capital (D.C.)	47
Southern Maryland	116

Table III.109 Maryland: County-Level Data

FIPS	County	AQCR	Centroid Lat	Centroid Long	Area (10^3 km^2)	Population[a]
24001	Allegany	113	39.6	78.7	1.10	80,461
24003	Anne Arundel	115	39.0	76.6	1.12	370,099
24005	Baltimore	115	39.5	76.6	1.57	651,337
24009	Calvert	116	38.6	76.6	0.57	34,308
24011	Caroline	114	38.9	75.8	0.82	23,148
24013	Carroll	115	39.6	77.0	1.23	96,080
24015	Cecil	114	39.6	75.9	0.92	60,113
24017	Charles	116	38.5	77.0	1.41	72,343
24019	Dorchester	114	38.5	76.0	1.52	30,549
24021	Frederick	112	39.5	77.4	1.70	113,557
24023	Garrett	113	39.5	79.3	1.77	26,502
24025	Hartford	115	39.6	76.3	1.19	144,340
24027	Howard	115	39.3	76.9	0.68	118,443
24029	Kent	114	39.3	76.0	0.69	16,680
24031	Montgomery	47	39.1	77.2	1.32	574,093
24033	Prince Georges	47	38.8	76.0	1.29	657,707
24035	Queen Annes	114	39.1	76.0	0.89	25,520
24037	St. Marys	116	38.3	76.6	0.95	59,799
24039	Somerset	114	38.1	75.7	0.82	19,041
24041	Talbot	114	38.8	76.1	0.73	25,496
24043	Washington	113	39.6	77.8	1.23	112,764
24045	Wicomico	114	38.4	75.6	1.00	64,974
24047	Worcester	114	38.2	75.3	1.39	30,303

[a]1980 Census Bureau data.

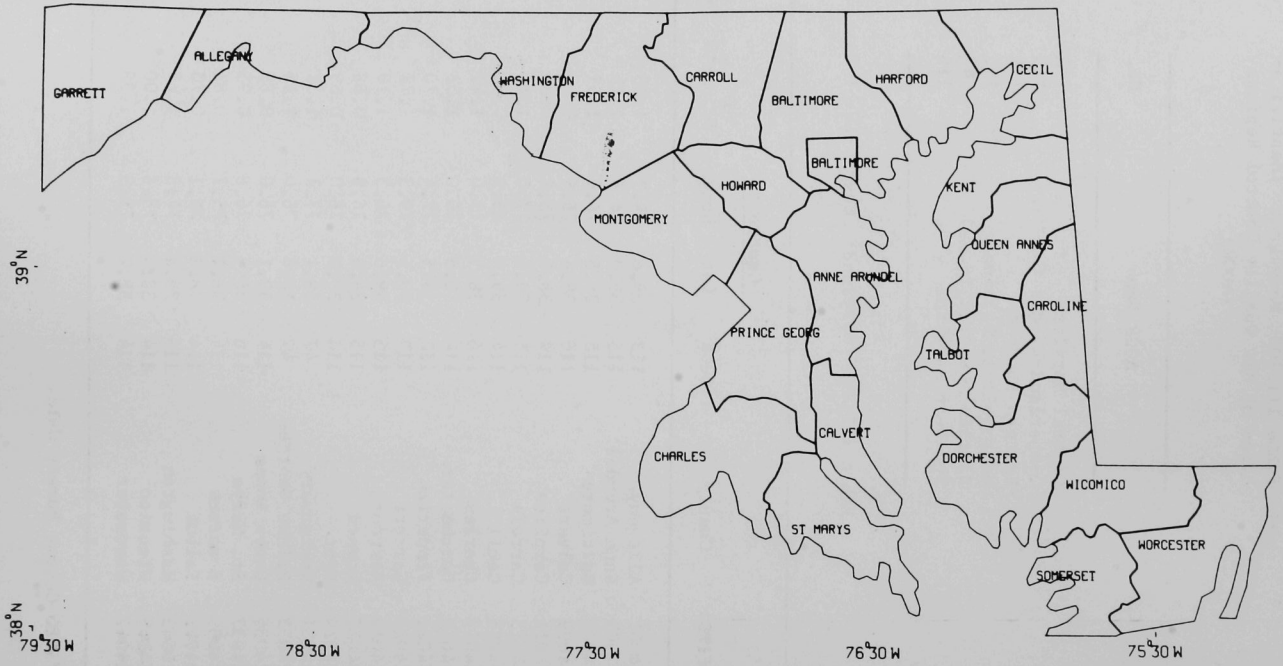


Fig. III.150 Maryland: Key to Counties

REGION III: PENNSYLVANIA*

AIR QUALITY SUMMARY

Attainment Status	Pollutant[a]							
	P-SO_2	S-SO_2	P-TSP	S-TSP	CO	O_3	NO_2	Pb
No. of Counties Containing NA Areas	6	2	10	9	2	67[b]	0	0
State Implementation Plan[c]	I	E	C	E	C	C	N	N
No. of SAROAD Monitors[d]	40/17[e]	-	130/109[e]	-	27	36	0	54
No. of SAROAD Monitors with Violations[d]	1/1[e]	-	13/34[e]	-	7	17	0	33

PSD Status	Class I PSD Areas	Recommended Class I	Mandatory Class II[f]
No. of Areas	0	0	0

[a]P = primary standard; S = secondary standard.
[b]Entire state nonattainment.
[c]A = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review.
[d]SAROAD data as of 1979. All other information as of December 1981.
[e]24-hour average/annual average.
[f]Areas that cannot be redesignated as Class III.

ENERGY DATA

Parameter	Data
Coal Production	
Current, 1979 (10^3 tons)[a]	47,421
Projected, 1985 (10^3 tons)[b]	59,987
Coal Reserves (10^6 tons)[c]	23,827
Range of Coal Quality (lb $SO_2/10^6$ Btu)[a]	1.15-7.47
Fuel Use by Industrial Boilers, 1974 (10^{12} Btu)[d]	201.47
No. of Fossil-Fueled Power Plants	35

[a]EIA form 423.
[b]National Coal Assn. and DOE's Western Coal Development Monitoring System.
[c]Bureau of Mines Rpt. IC 8680 and 8693.
[d]FEA, MFBI Survey, 1974.

*Some maps in this section are missing a small part of the extreme northwest corner of the state, due to a computer malfunction. This deficiency has been allowed to stand, where it does not affect presentation of the data.

PENNSYLVANIA: SIP Attainment Strategies

Area[a]	NA[b]	Plan Date	EPA Action[c]	Source(s)	Strategy[d]
	SO_2:				
Warren Co., Armstrong Co., and Northumberland/Snider Montour Cos.	P	4/79	C	Industrial combustion, utilities	Compliance with existing SIP limits and limits on sulfur content of fuel
Philadelphia Co.	P	4/79	C	Industrial combustion	Sulfur-in-fuel limits
Allegheny Co.	P	12/80	I	Steel mill	Redesignate to unclassified except 2-mile area in Hazelwood; there, compliance with existing SIP for steel mill
	TSP:				
Somerset/Cambria Cos. Cumberland/Dauphin Cos., Northampton/Lehigh Cos., and York Co.	P	4/79	C	Mobile, urban non-traditional	TCM; street cleaning; pave parking lots
Mercer Co.	P	4/79	C	Industrial processes	Control fugitive emissions
Allegheny Co.	P	12/80	C	Mobile	Street cleaning, TCM
Beaver/Lawrence Cos.	P	4/79	C	Mobile	Street cleaning

PENNSYLVANIA: SIP Attainment Strategies (Cont'd)

Area[a]	NA[b]	Plan Date	EPA Action[c]	Source(s)	Strategy[d]
	CO:				
Pittsburgh and Philadelphia	P	4/79	C	Mobile	FMVECP; TCM; I&M attainment by 1987
	O_3:				
Lehigh/Northampton Cos., Pittsburgh and Philadelphia	P	4/79	C	Mobile	FMVECP; TCM; I&M attainment by 1987
Harrisburg and Scranton/Wilkesbarre	P	4/79	A	Mobile	FMVECP; attainment by 1982

[a]Cities unless otherwise noted.

[b]Nonattainment violation indicated by pollutant and as P = primary and S = secondary.

[c]A = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

[d]See p. 30 for a listing of the abbreviations.

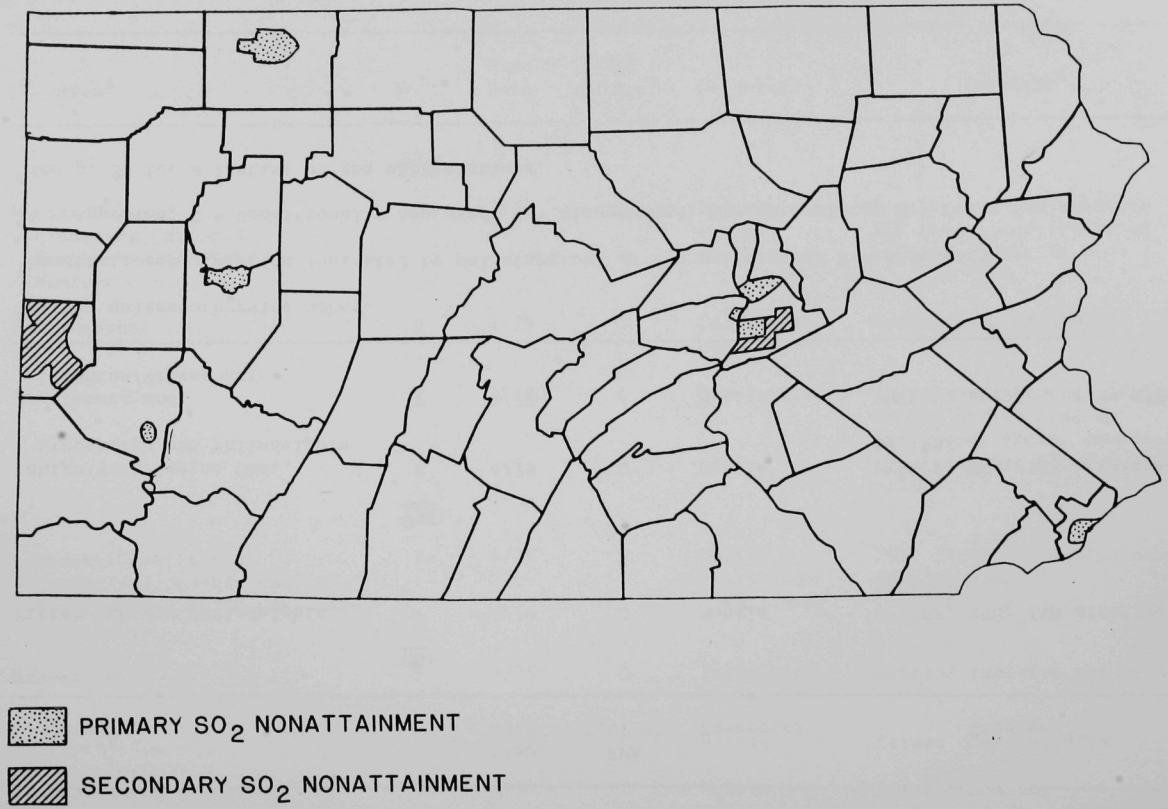


Fig. III.151 Pennsylvania: SO_2 Nonattainment Areas as Designated December 1981

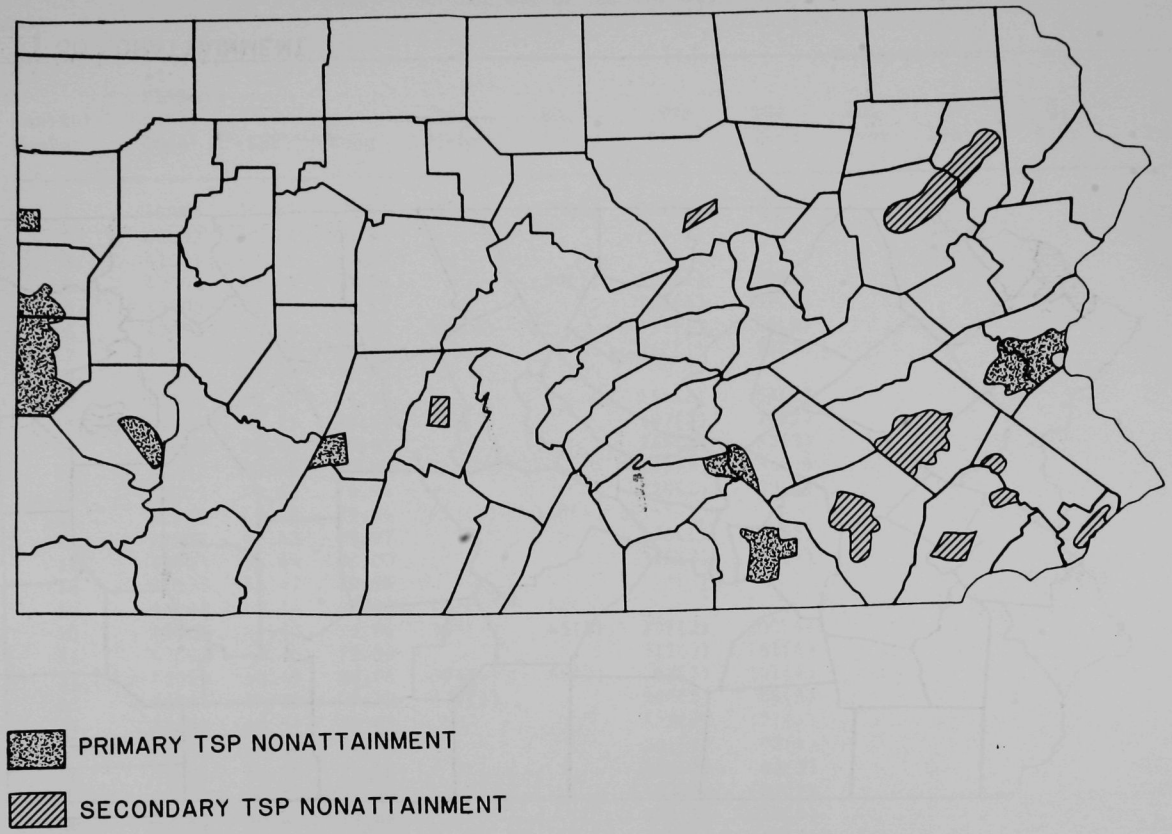
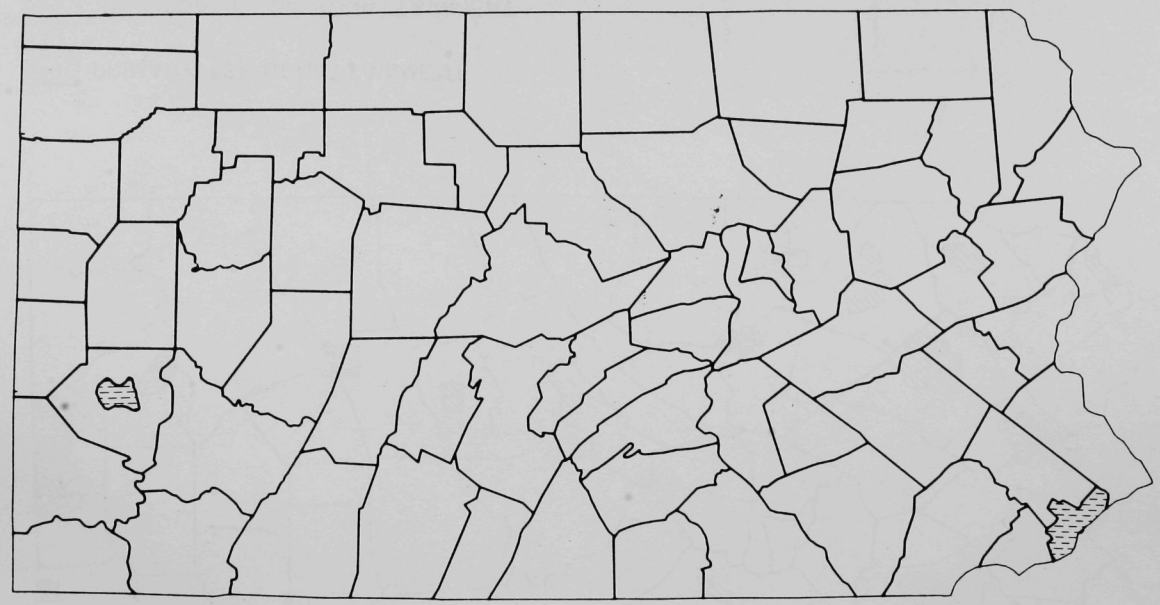


Fig. III.152 Pennsylvania: TSP Nonattainment Areas as Designated December 1981



CO NONATTAINMENT

Fig. III.153 Pennsylvania: CO Nonattainment Areas as Designated December 1981

Table III.110 Pennsylvania: SAROAD Monitor Numbers and 1979 Data ($\mu g/m^3$, mg/m^3 for CO, or ppm for O_3)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
1	42003	40.32	79.87	278(2)	70(2)	227(2)	77(3)				
2	42003	40.44	79.95						14(4)		
3	42003	40.44	80.00						20(4)		
4	42003	40.44	80.24		50(1)	122(1)	59(2)				
5	42003	40.38	80.12			125(1)	57(2)				
6	42003	40.55	79.76	188(1)		133(1)	66(2)				
7	42003	40.50	80.22			146(1)	79(3)				
9	42003	40.47	79.82							0.08(1)	
10	42003	40.40	79.79			166(1)	68(2)				
11	42003	40.32	79.86			197(2)	73(2)				
12	42003	40.43	79.93			241(2)	82(3)				
13	42003	40.44	80.00			216(2)	86(3)				
14	42003	40.41	79.94			220(2)	99(4)				
15	42003	40.41	79.94	412(3)	110(4)						
16	42003	40.42	79.97			178(1)	72(2)				
17	42003	40.44	80.00			312(3)	133(4)				
18	42003	40.47	79.96							0.17(4)	
19	42003	40.44	80.00	185(1)	48(1)				16(4)		
20	42003	40.40	79.86	246(1)	45(1)	237(2)	100(4)				
21	42003	40.40	79.86			312(3)	161(4)				
22	42003	40.49	80.06	174(1)	66(2)	262(3)	101(4)				
23	42003	40.32	79.89	177(1)		298(3)	88(3)				
24	42003	40.37	79.87			326(4)	121(4)				
25	42003	40.37	79.85			291(3)	97(4)				
26	42003	40.30	79.88			226(2)	80(3)				
27	42003	40.35	79.93			158(1)	67(2)				
28	42003	40.42	79.88			280(3)	110(4)				
29	42003	40.55	79.78			137(1)	62(2)				
30	42007	40.63	80.44			176(1)	87(3)				

Table III.110 Pennsylvania (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
31	42007	40.77	80.32			225(2)	75(3)				
32	42007	40.75	80.32	220(1)					6(1)	0.12(2)	
33	42007	40.68	80.32			182(1)	70(2)				
34*	42007	40.63	80.51			145(1)					1(1)
35	42007	40.64	80.23	254(1)					8(2)	0.12(2)	
36	42007	40.70	80.28			198(2)	80(3)				
37	42007	40.59	80.23			185(1)	79(3)				
39	42011	40.33	75.92			84(1)					
40	42011	40.33	75.92								1(2)
41	42011	40.32	75.93			113(1)	55(1)				2(4)
42	42011	40.35	75.94			121(1)	57(2)				
43	42011	40.32	75.93	182(1)					6(1)	0.17(4)	
44	42011	40.33	75.63			87(1)	46(1)				
45	42011	40.34	75.95			101(1)	53(1)				
46	42011	40.32	76.01			82(1)	39(1)				
47	42011	40.42	75.92			190(1)	70(2)				
49	42011	40.39	75.92			177(1)	70(2)				7(4)
50	42011	40.56	75.98			98(1)	41(1)				
51	42013	40.52	78.40			137(1)	64(2)				2(4)
52	42013	40.52	78.39	205(1)	28(1)	237(2)	73(2)			0.12(2)	1(2)
53	42015	41.76	76.44			112(1)	52(1)				
54	42017	40.25	75.00	132(1)		94(1)	41(1)		9(2)	0.17(4)	
55	42017	40.27	75.13			133(1)					
56	42017	40.44	75.34			30(1)					
57	42019	41.01	79.72	268(1)		129(1)	56(1)			0.05(1)	
58	42021	40.35	78.89			251(2)	103(4)				3(4)
59	42021	40.30	78.91			117(1)	59(2)				
60	42021	40.33	78.92			188(1)	79(3)				2(3)
61	42021	40.34	78.94			143(1)	66(2)				
62	42021	40.25	78.92	171(1)					7(1)	0.13(3)	

Table III.110 Pennsylvania (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
63	42025	40.80	75.61			297(3)	88(3)				
64	42027	40.79	77.86			87(1)					
65	42029	40.10	75.01			97(1)	48(1)				
66	42029	40.14	75.52			138(1)	63(2)				
67*	42029	-	-							0.15(3)	
68*	42029	-	-			208(2)					
69	42029	39.97	75.82								0(1)
71	42031	41.36	79.22			44(1)					
72	42031	41.36	79.22			25(1)					
73	42031	41.36	79.22								0(1)
74	42034	41.13	77.43			110(1)					
75	42041	40.26	76.90			123(1)	64(2)				1(2)
76	42043	40.19	76.73			161(1)	60(2)				
77	42043	40.24	76.85							0.11(2)	
78	42043	40.26	76.88			116(1)	58(2)				
81	42043	40.25	76.87								1(1)
82	42043	40.24	76.85	167(1)	31(1)	1(1)			5(1)		0(1)
83	42043	40.25	76.87			104(1)					
85	42043	40.23	76.83			146(1)	70(2)				2(4)
86	42045	39.98	75.01	175(1)		126(1)	59(2)		7(1)		
87	42045	39.89	75.28			144(1)	65(2)				
88	42045	39.89	75.28	96(1)						0.09(1)	
89	42045	39.98	75.01							0.18(4)	
90	42045	39.92	75.38			126(1)	59(2)				
91	42049	42.14	80.05						5(1)		0(1)
92	42049	42.12	79.99			102(1)	7(1)				
93	42049	41.96	80.40			73(1)					
94	42049	42.15	80.04			136(1)	62(2)				1(1)
95	42049	42.12	80.08			127(1)	61(2)				1(1)
96	42049	42.09	80.18			143(1)	44(1)				

Table III.110 Pennsylvania (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
97	42049	42.14	80.05	98(1)						0.13(3)	
98	42051	40.02	79.89			259(2)	79(3)				2(4)
99	42055	39.93	77.65			102(1)	49(1)				
100	42069	41.45	75.62			123(1)	60(2)				
101	42069	41.41	75.66			100(1)	54(1)				
103	42069	41.45	75.62								2(4)
104	42069	41.44	75.62			84(1)					0(1)
105	42069	41.37	75.74			96(1)					
106	42069	41.44	75.62	110(1)					7(1)	0.11(2)	
107	42069	41.49	75.58			119(1)	50(1)				
109	42071	40.05	76.39			122(1)	63(2)				
110	42071	40.07	76.29			113(1)	57(2)				
111	42071	40.07	76.34			213(2)	79(3)				3(4)
112	42071	40.06	76.31			135(1)	71(2)				2(4)
113	42071	40.04	76.31			135(1)	63(2)				
114	42071	40.04	76.29	85(1)					8(2)	0.13(3)	
115	42073	40.98	80.49			67(1)					
118	42073	41.00	80.35	199(1)		303(3)	86(3)		8(2)	0.10(2)	2(4)
119	42073	40.86	80.29			188(1)	74(2)				
120	42075	40.34	76.40			105(1)	52(1)				
121	42077	40.54	75.51			88(1)	46(1)				
122	42077	40.60	75.47								1(1)
123	42077	40.62	75.45	159(1)		121(1)	48(1)		7(1)	0.17(4)	
124	42077	40.60	75.47			73(1)					
126	42079	41.17	75.90	129(1)							
128	42079	41.32	75.79			100(1)	54(1)				
129	42079	41.25	75.89			174(1)	66(2)				2(3)
130	42079	41.17	75.90							0.11(2)	
131	42079	41.29	75.87			113(1)					
133	42079	41.20	75.99			65(1)					

Table III.110 Pennsylvania (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
134	42079	40.95	75.97			131(1)					
135	42081	41.25	76.99			139(1)	58(2)				2(3)
136	42081	41.25	76.99	56(1)						0.03(1)	
137	42081	41.24	77.02			160(1)	74(2)				2(3)
138*	42085	41.23	80.51			201(2)	85(3)				1(2)
139*	42085	41.21	80.50			160(1)					2(3)
140	42091	40.22	75.01			130(1)	60(2)				
141	42091	40.07	75.30	109(1)						0.08(1)	
142	42091	40.25	75.29			124(1)	61(2)				
143	42091	40.27	75.01			88(1)	44(1)				
144	42091	40.14	75.12			164(1)	55(1)				3(4)
145	42091	40.11	75.31	102(1)					5(1)	0.17(4)	
146	42091	40.25	75.63			129(1)	69(2)				2(4)
147	42095	40.69	75.49							0.07(1)	
149	42095	40.62	75.36			121(1)	57(2)		8(2)		2(4)
150	42095	40.61	75.38			53(1)					
151	42095	40.61	75.38								0(1)
152	42095	40.62	75.33			238(2)	82(3)				
153	42095	40.62	75.36	156(1)						0.16(4)	
154	42095	40.68	75.50			189(1)	75(3)				
155	42095	40.69	75.49	351(2)							
157	42095	40.74	75.31			179(1)	76(3)				
158	42095	40.69	75.22			140(1)	62(2)				2(3)
159	42099	40.46	77.17			63(1)	31(1)				
160	42101	39.94	75.17			194(1)	67(2)				
161	42101	40.01	75.10			196(2)	68(2)				3(4)
162	42101	39.94	75.17								2(4)
163	42101	39.98	75.10			309(3)	109(4)				
164	42101	40.05	75.24	159(1)	39(1)	100(1)	54(1)			0.17(4)	1(2)
165	42101	40.01	75.10	289(2)	49(1)				11(3)	0.16(4)	

Table III.110 Pennsylvania (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
166	42101	39.91	75.15	177(1)	58(1)				6(1)		1(2)
167	42101	39.92	75.19	329(2)					6(1)	0.12(2)	
168	42101	39.88	75.23	156(1)	36(1)				9(2)	0.13(3)	
169	42101	40.00	75.22	154(1)	49(1)	124(1)	61(2)				2(3)
170	42101	39.98	75.10	200(1)	47(1)				8(2)	0.06(1)	2(4)
171	42101	40.00	75.08								2(3)
172	42101	39.98	75.16								1(2)
173	42101	39.93	75.23								2(3)
174	42101	39.92	75.17								1(2)
175	42101	39.90	75.25								2(3)
176	42101	40.03	75.05								1(2)
177	42101	40.04	75.14								1(2)
178	42101	39.98	75.11								2(4)
179	42101	39.99	75.11								2(3)
180	42101	39.96	75.17	267(1)	52(1)		10(2)			0.13(3)	
181	42101	39.98	75.12			165(1)	86(3)				8(4)
182	42101	40.01	75.15	227(1)			15(4)			0.10(2)	
183	42101	39.95	75.16	239(1)	72(2)		10(3)			0.11(2)	3(4)
184	42101	40.08	75.01	193(1)	32(1)	118(1)	51(1)		12(3)	0.14(3)	
185	42101	39.91	75.15							0.12(2)	
186	42107	40.24	76.20			172(1)	61(2)				
187	42125	40.15	79.90	120(1)		149(1)	63(2)			0.13(3)	
188	42125	40.26	79.93			118(1)	49(1)				
189	42125	40.17	80.25			210(2)	71(2)				
190	42125	40.16	79.86			375(4)	90(3)				
191	42129	40.16	79.88			261(3)	99(4)				2(3)
192	42129	40.55	79.76			159(1)	73(2)				
193	42133	40.03	76.75			135(1)	46(1)				
195	42133	39.98	76.67			129(1)	64(2)				
198	42133	39.95	76.77			371(4)	139(4)				

Table III.110 Pennsylvania (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
200	42133	39.96	76.72			158(1)	67(2)				2(4)
201	42133	39.97	76.70							0.12(2)	
202	42133	39.93	76.68			90(1)	50(1)				
203	42133	39.97	76.70			206(2)	81(3)		8(2)		2(4)

*Not Plotted.

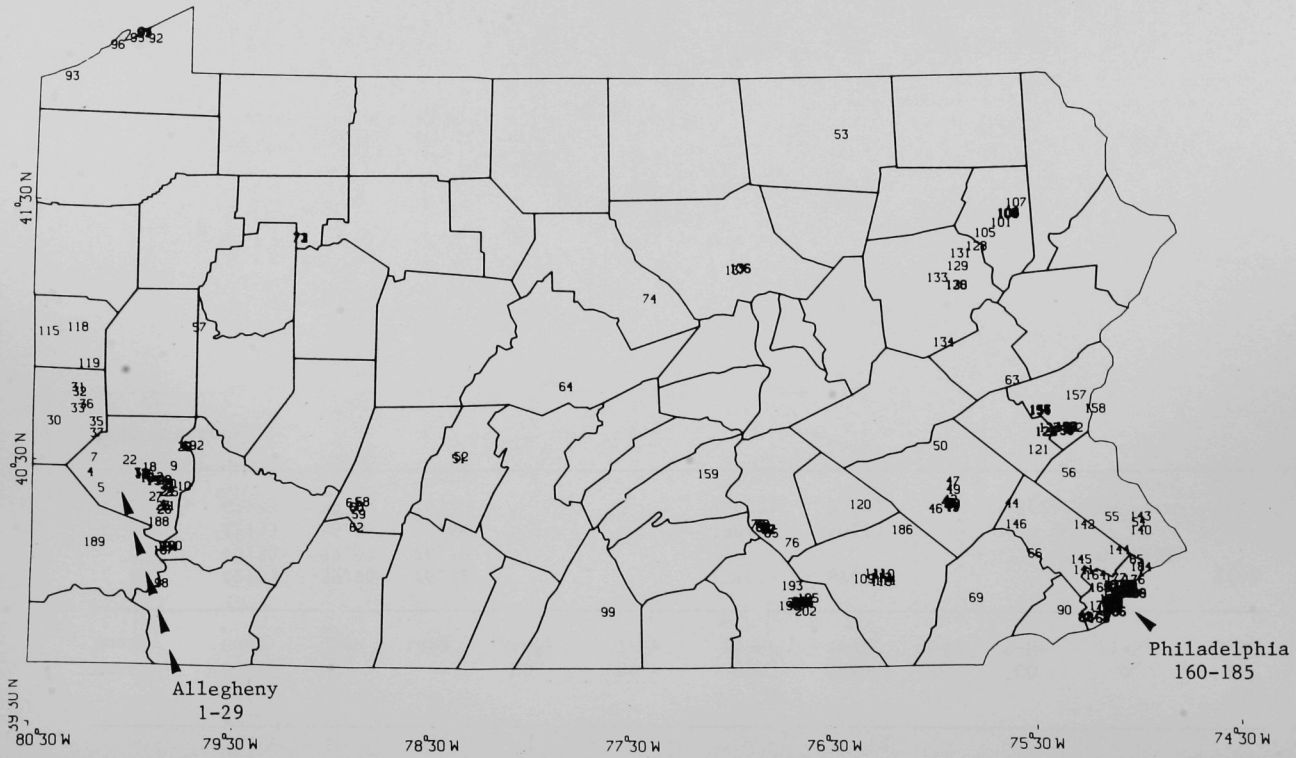


Fig. III.154 Pennsylvania: Locations of SAROAD Monitor (see Table III.110 for Monitor Numbers)

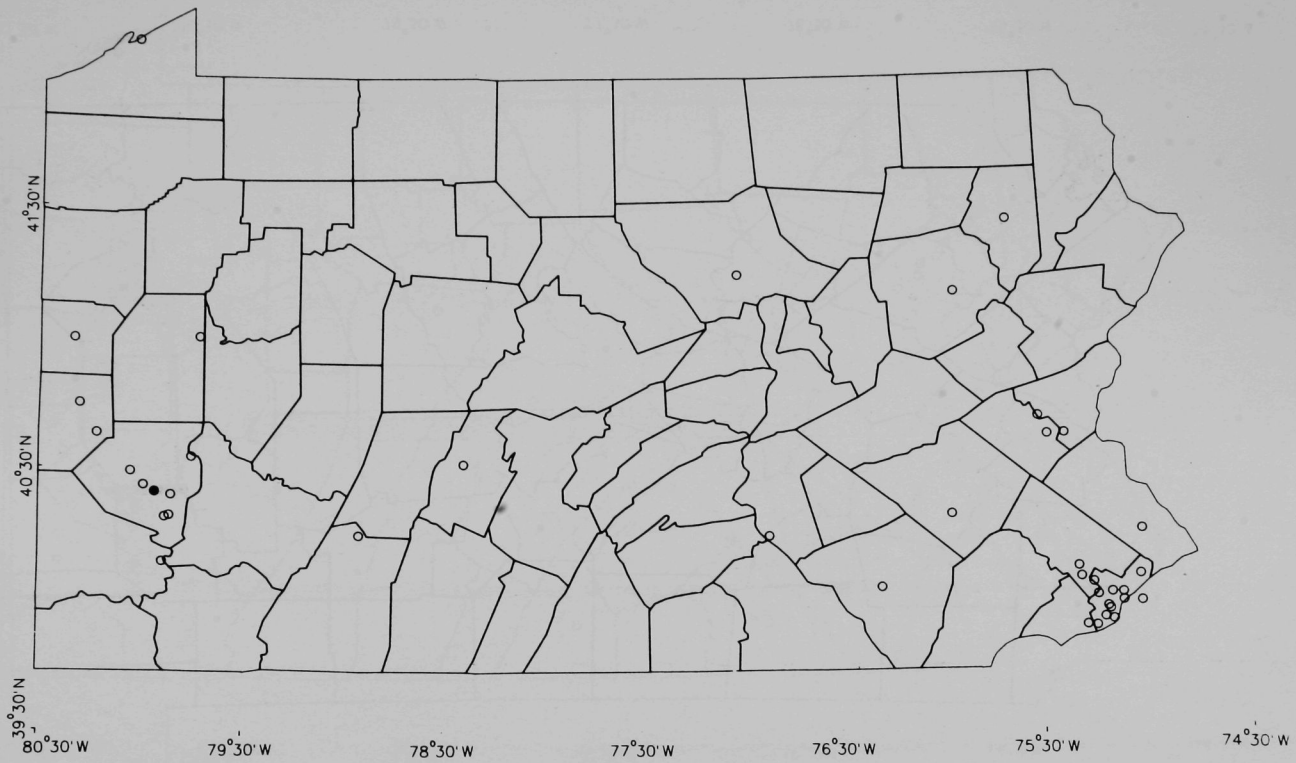


Fig. III.155 Pennsylvania: Monitors Reporting Adequate Data on 24-hr Average SO_2 Concentrations; Violations Shown by Shaded Circles

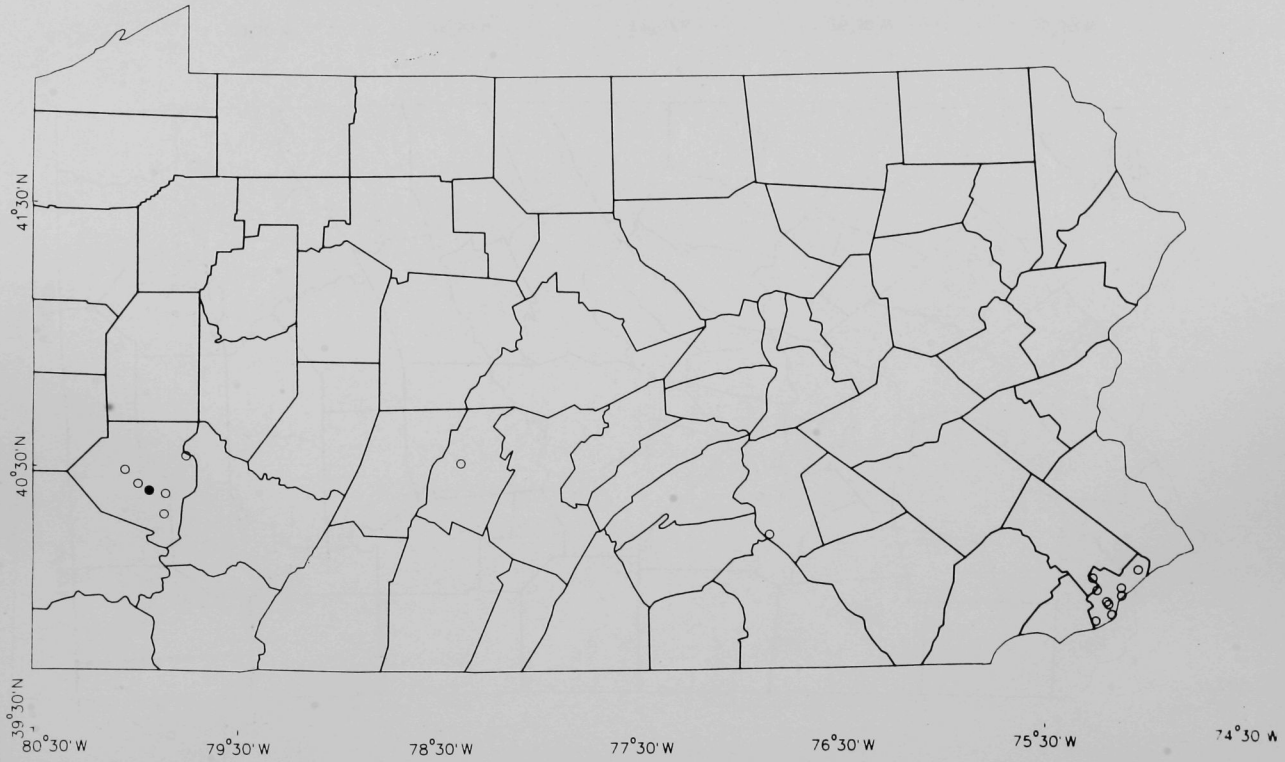


Fig. III.156 Pennsylvania: Monitors Reporting Adequate Data on Annual Average SO_2 Concentrations; Violations Shown by Shaded Circles

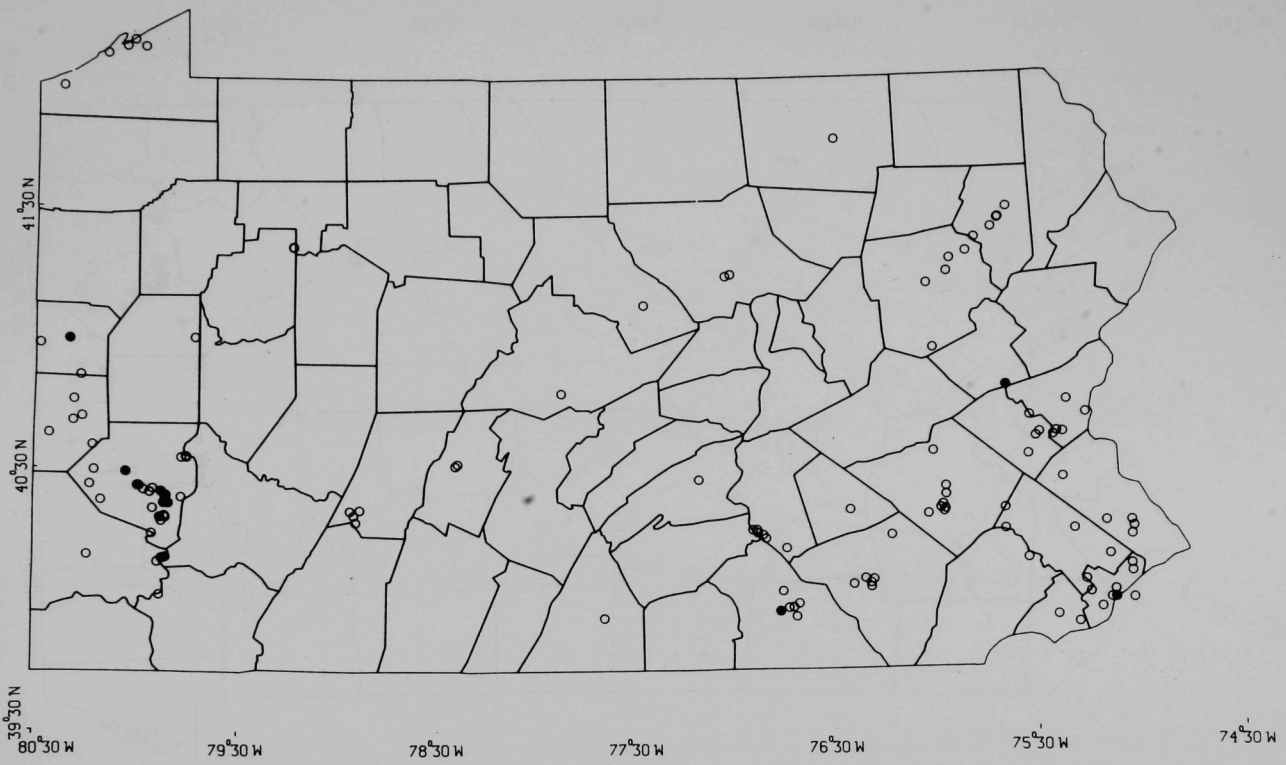


Fig. III.157 Pennsylvania: Monitors Reporting Adequate Data on 24-hr Average TSP Concentrations; Violations Shown by Shaded Circles

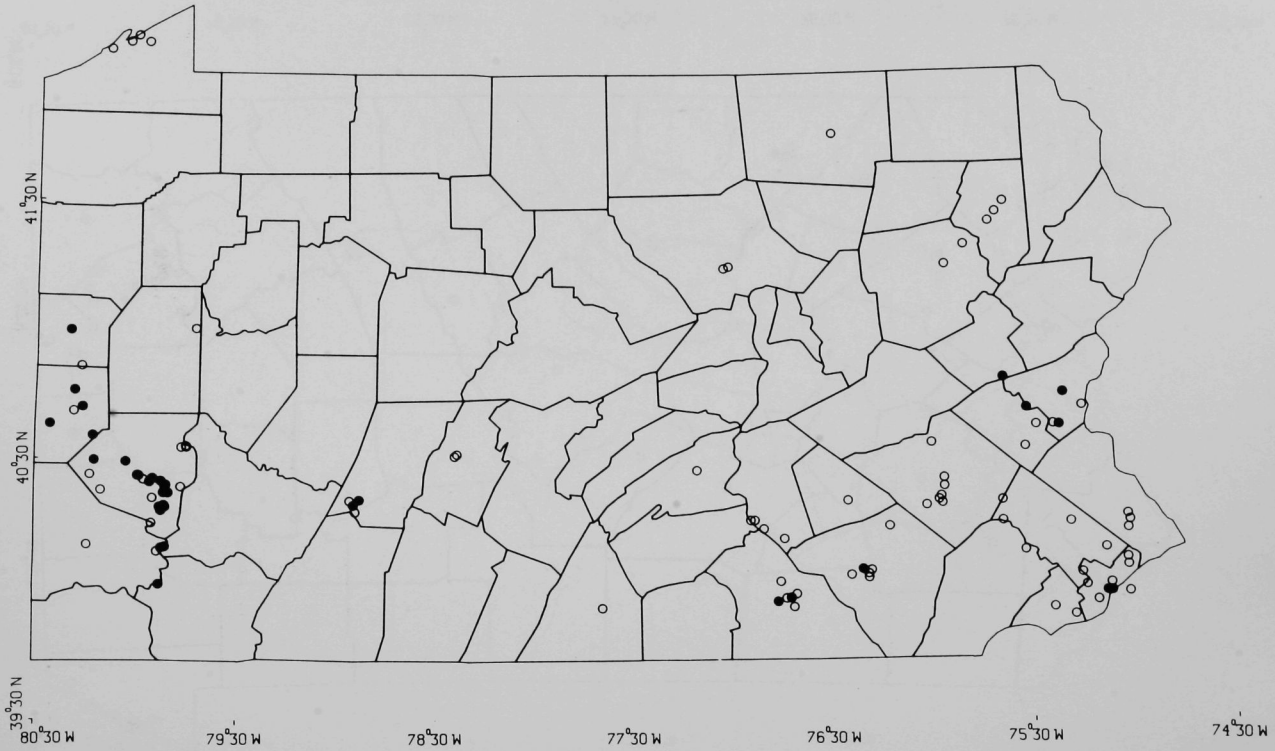


Fig. III.158 Pennsylvania: Monitors Reporting Adequate Data on Annual Average TSP Concentrations; Violations Shown by Shaded Circles

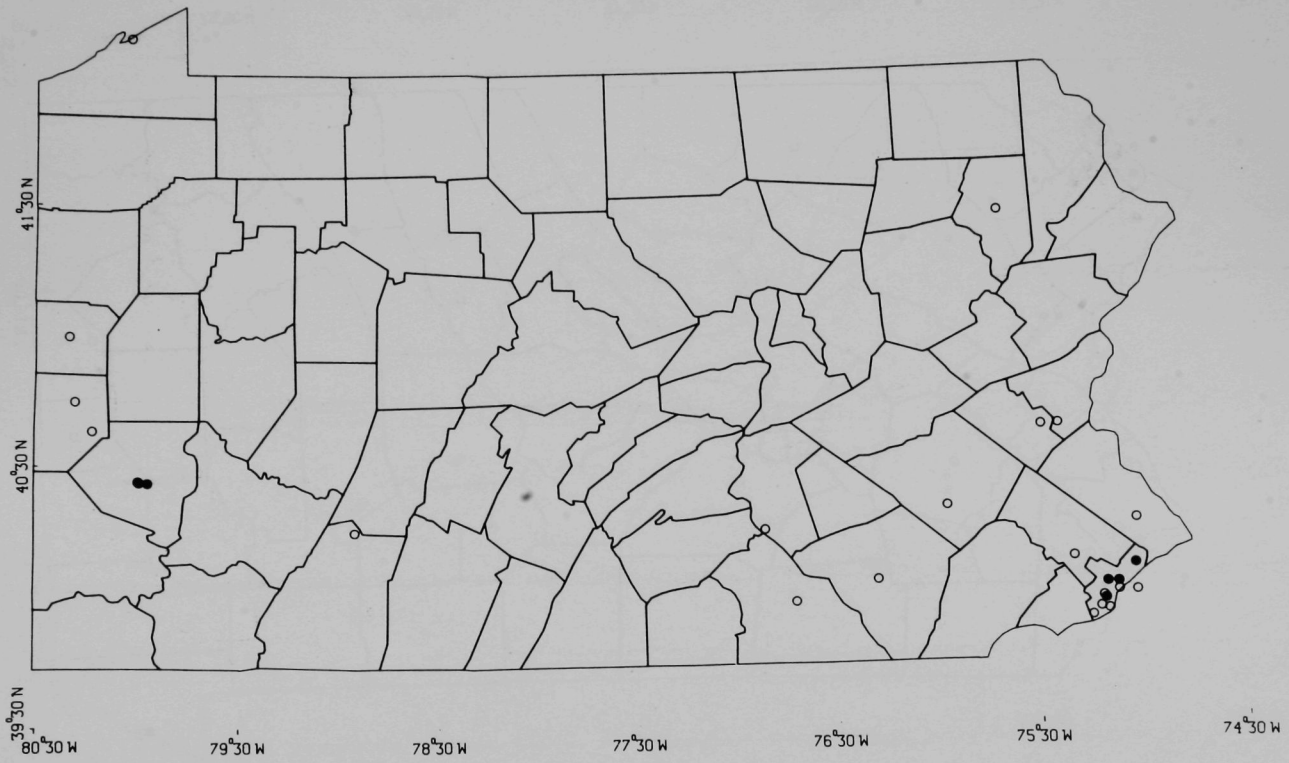


Fig. III.159 Pennsylvania: Monitors Reporting Adequate Data on 8-hr Average CO Concentrations; Violations Shown by Shaded Circles

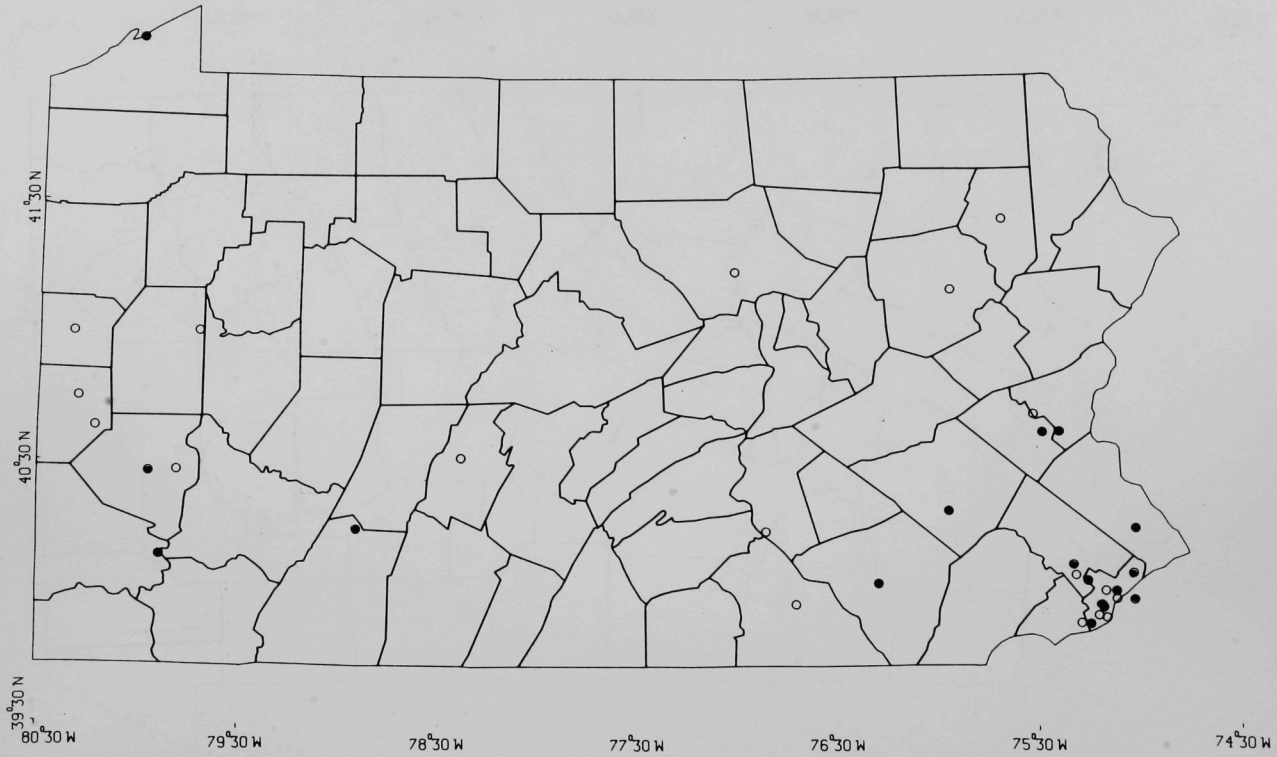


Fig. III.160 Pennsylvania: Monitors Reporting Adequate Data on 1-hr Average O_3 Concentrations; Violations Shown by Shaded Circles

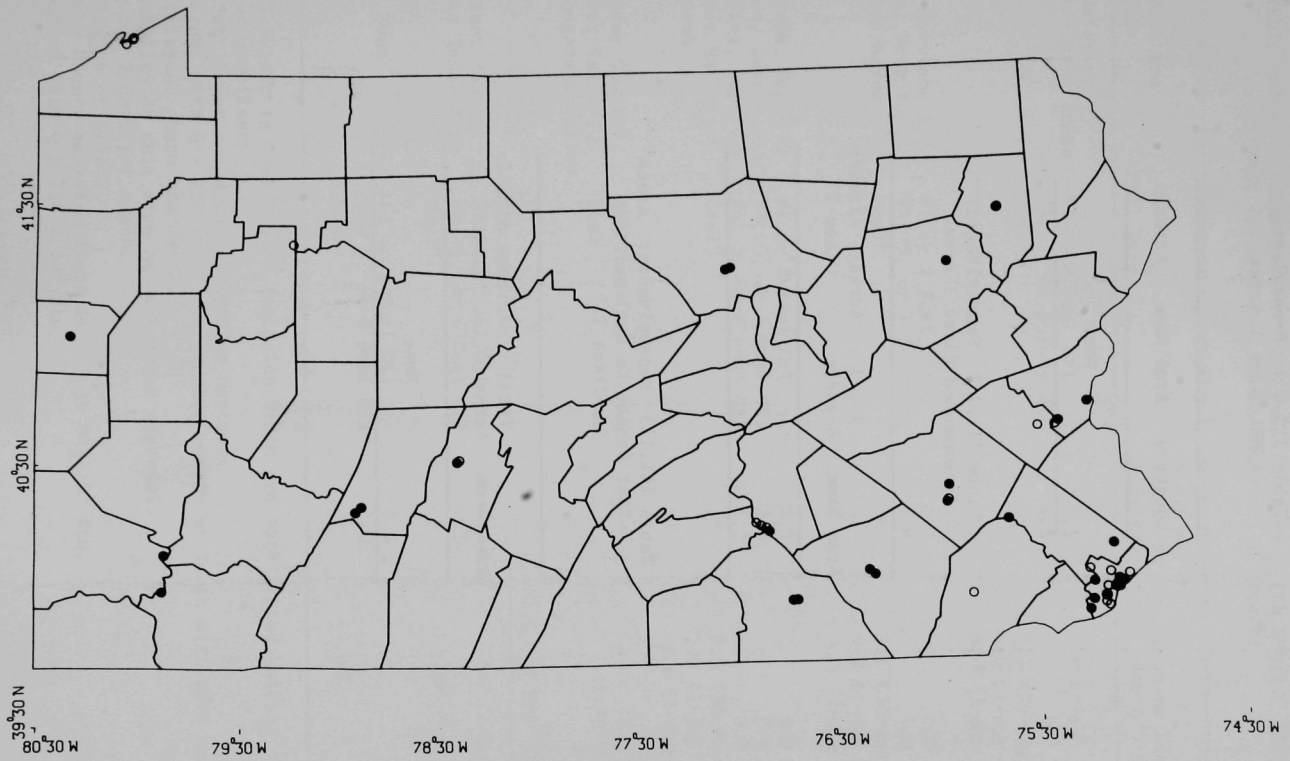


Fig. III.161 Pennsylvania: Monitors Reporting Adequate Data on 3-month Average Lead Concentrations; Violations Shown by Shaded Circles

Table III.111 Pennsylvania:
PSD Class I Areas

Location	Area Name	Acreage
None		

Table III.112 Pennsylvania:
Recommended Class I Areas

Area Name	Total Acreage	Acreage Already Class I
None		

Table III.113 Pennsylvania: Areas
That Cannot Be Reclassified
as Class III

Area Name	Total Acreage	Acreage Already Class I
None		

Table III.114 Pennsylvania: SO_2 Emission Limits (lb $SO_2/10^6$ Btu) by Heat Input Class, Q, in Units of 10^6 Btu/hr

Source Type and Location	Fuel Type	Limit on Sulfur in Fuel (%)	Emission Limit[a] for $Q > Q^b$	
New[c] & Existing Non-Air-Basin Areas	#1 or 2 Fuel Oil	0.5	4.0	
	#4, 5, or 6 Fuel Oil	2.8	4.0	
	Coal[d]	-	3.7 (30-day avg.) 4.0 (1-day avg.)[e] 4.8 (1-day max.)	
Erie, Harrisburg, York, Scranton, Wilkes-Barre	#1 or 2 Fuel Oil	0.3	4.0	
	#4, 5, or 6 Fuel Oil	2.8	4.0	
	Coal[d]	-	3.7 (30-day avg.) 4.0 (1-day avg.)[e] 4.8 (1-day max.)	
Allentown, Bethlehem, Easton, Reading, Upper Beaver Valley, Johnson	#1 or 2 Fuel Oil	0.3	3.0	
	#4, 5, or 6 Fuel Oil	2.0	3.0	
	#4, 5, or 6 Fuel Oil	1.5[f]	3.0	
	Coal[d]	-	2.8 (30-day avg.) 3.0 (1-day avg.)[e] 3.6 (1-day max.)	
Allegheny County[g], Beaver Valley, Monongahela Valley	All Fuel Oil	-	1.0[h]	
	Coal	-	$1.70^{-0.14}$	
			$0 < Q < 250^b$	$Q \geq 250^b$
Southeast Pennsylvania Inner Zone	#1 or 2 Fuel Oil	0.2	-	-
	#4, 5, or 6 Fuel Oil	0.5	-	-
	Coal[d]	-	1.0	0.6
Outer Zone	#1 or 2 Fuel Oil	0.3	-	-
	#4, 5, or 6 Fuel Oil	1.0	-	-
	Coal	-	1.2	1.2

[a]Where % sulfur in fuel and SO_2 emission limit are both listed, either can be used for compliance.
[b]Total heat input based on unit design maximum.
[c]New sources with $Q > 250 \times 10^6$ Btu/hr must comply at least with NSPS or with more stringent state standards.
[d]Applicability of unit size by department approval.
[e]Except for 2 days per month.
[f]New units as of 8/1/82.
[g]Allegheny County emission limit is 0.5 lb $SO_2/10^6$ Btu.
[h]For sources with $Q > 2.5 \times 10^6$ Btu/hr.

Table III.115 Pennsylvania: Particulate Matter Emission Limits (lb PM/10^6 Btu) by Heat Input Class, Q, in Units of 10^6 Btu/hr

Source Type and Location	Fuel Type	Limit		
		$2.5 < Q \leq 50$[a]	$50 < Q \leq 600$[a]	$Q > 600$[a]
New[b] and Existing Statewide	All Fuels	0.4	$3.6Q^{-0.56}$	0.1
		$0.2 < Q \leq 50$[a]	$50 < Q \leq 850$[a]	$Q > 850$[a]
Exceptions				
Allegheny Co.[c]	All Fuels	0.4	$3.5Q^{-0.56}$	0.08
Philadelphia Co.[d,e]	All Fuels	0.2	0.2	0.2
Philadelphia Co.[f]	All Fuels	0.1	0.1	0.1

[a]Total heat input based on aggregate of all fuels burned by individual units; allowable emissions based on individual unit.

[b]Sources with $Q > 250 \times 10^6$ Btu/hr must comply at least with NSPS or with more stringent state standards.

[c]New and existing sources.

[d]Coal conversions must meet 0.12 lb/10^6 Btu after 7/1/80 and 0.06 lb/10^6 Btu after 7/1/84.

[e]Existing units built prior to 4/10/79.

[f]New units built after 4/10/79.

Table III.116 Pennsylvania: Power Plant Location and Generating Capacity Data for 1980

Plant No.[a]	Plant Name[b]	Latitude[b]	Longitude[b]	Generating Capacity (MW), by Regulatory Class[c,d]		Capacity Factor[e] (%)	Sulfur Dioxide Limit ($lb/10^6$ Btu), by Regulatory Class[f]	
				SIP	NSPS		SIP	NSPS
1	Armstrong	40.93	79.47	355	0	76	3.30	0.00
2	Barbadoes	40.11	75.36	138	0	1	1.20	0.00
3	Bruce Mansfield[g]	40.68[h]	80.35[h]	914	914	-[i]	-[i]	-[i]
4	Brunner Island	40.10	76.70	1,425	0	68	3.30	0.00
5	Chester	39.83	75.39	126	0	2	0.60	0.00
6	Cheswick	40.54	79.79	565	0	66	0.60	0.00
7	Conemaugh	40.38	79.06	1,700	0	64	3.30	0.00
8	Cromby	40.15	75.53	358	0	44	0.64	0.00
9	Delaware	39.97	75.13	253	0	17	0.55	0.00
10	E-1 Eddystone	39.80	75.40	65	0	-[i]	-[i]	0.00
11	Eddystone	39.86	75.33	650	760	23	0.35	0.55
12	Elrama	40.25	79.92	488	0	64	0.60	0.00
13	Front Street	42.14	80.09	114	0	48	3.30	0.00
14	Hatfield	39.86	79.93	1,581	0	54	3.30	0.00
15	Holtwood	39.83	76.33	73	0	66	3.30	0.00
16	Homer City	40.51	79.19	1,200	650	59	3.30	1.20
17	Hunlock Creek	41.20	76.07	46	0	69	3.30	0.00
18	Keystone	40.66	79.34	1,690	0	64	3.30	0.00
19	Martins Creek	40.80	75.11	1,940	0	40	3.89	0.00
20	Milesburg	40.94	77.79	46	0	-[i]	3.24	0.00
21	Mitchell	40.22	79.97	461	0	50	0.66	0.00
22	Montour	41.07	76.67	1,505	0	70	3.30	0.00
23	New Castle	40.94	80.37	421	0	43	0.65	0.00
24	Phillips	40.57	80.23	381	0	53	0.73	0.00
25	Portland	40.91	75.08	403	0	46	3.30	0.00
26	Richmond	39.98	75.07	282	0	4	0.57	0.00

Table III.116 Pennsylvania (Cont'd)

Plant No.[a]	Plant Name[b]	Latitude[b]	Longitude[b]	Generating Capacity (MW), by Regulatory Class[c,d]		Capacity Factor[e] (%)	Sulfur Dioxide Limit ($lb/10^6$ Btu), by Regulatory Class[f]	
				SIP	NSPS		SIP	NSPS
27	Schuylkill	39.94	75.19	249	0	22	0.55	0.00
28	Seward	40.41	79.03	217	0	48	3.30	0.00
29	Shawville	41.07	78.38	610	0	67	3.30	0.00
30	Southwark	39.91	75.14	356	0	9	0.55	0.00
31	Springdale	40.54	79.77	222	0	1	0.60	0.00
32	Sunbury	40.84	76.82	377	0	61	3.30	0.00
33	Titus	40.31	75.91	237	0	66	2.00	0.00
34	Warren	41.84	79.19	80	0	47	3.30	0.00
35	Williamsburg	40.47	78.21	33	o	99	3.30	0.00

[a]See Fig. III.162.
[b]EAP's Energy Data System (EDS), except as noted.
[c]FPC form 4, 1980.
[d]Capacity subject to emission regulations of SIP or NSPS, as indicated.
[e]Calculated from annual net generation, FPC form 4, 1980.
[f]If more than one unit, fuel type and SIP emission limit at plant, "SIP" is average weighted by size, fuel type, and capacity.
[g]DOE/EIA, Inventory of Power Plants in the U.S., 1980.
[h]Latitude and longitude plotted at county centroid.
[i]Not available.

Table III.117 Pennsylvania: Power Plant Fuel Use Data for 1980

Plant No.[a]	Plant Name	Coal Sulfur Content[b] (%)	Coal Heating Value[b] (Btu/lb)	Coal Use[c] (10^3 ton)	Oil Sulfur Content[b] (%)	Oil Heating Value[b] (Btu/gal)	Oil Use[c] (10^3 Bbl)	Gas Heating Value[b] (Btu/ 10^3 ft^3)	Gas Use[c] (10^6 ft^3)
1	Armstrong	1.75	12,269	968	0.27	141,000	2	0	0
2	Barbadoes	0	0	0	0.10	139,062	5	0	0
3	Bruce Mansfield	-[d]	-[d]	3,909	-[d]	-[d]	102	-[d]	-[d]
4	Brunner Island	2.00	12,451	3,651	0.18	136,971	77	0	0
5	Chester	0	0	0	0.45	146,303	196	0	0
6	Cheswick	1.52	12,321	1,380	0.13	135,825	29	0	0
7	Conemaugh	2.46	12,183	4,385	0.21	138,800	66	0	0
8	Cromby	1.81	13,240	288	0.92	150,389	1,410	0	0
9	Delaware	0	0	0	0.44	146,993	1,070	0	0
10	E-1 Eddystone	-[d]	-[d]	-[d]	-[d]	-[d]	-[d]	-[d]	-[d]
11	Eddystone	1.88	13,027	800	0.46	148,379	2,441	0	0
12	Elrama	2.44	1,590	1,403	0.11	135,695	8	0	0
13	Front Street	1.99	12,151	286	0.28	138,800	10	0	0
14	Hatfield	2.56	11,959	3,518	0.27	141,000	16	0	0
15	Holtwood	2.12	9,762	291	0.18	137,863	7	0	0
16	Homer City	2.12	11,487	4,530	0.21	138,800	52	0	0
17	Hunlock Creek	0.70	8,778	232	0	0	10	0	0
18	Keystone	1.74	12,145	4,298	0.18	138,800	59	0	0
19	Martins Creek	2.10	12,369	792	0.88	146,400	9,759	0	0
20	Milesburg	0	0	0	0.26	139,530	3	0	0
21	Mitchell	1.83	13,192	702	0.45	148,521	161	1,000	0.1
22	Montour	1.52	12,439	3,787	0.14	137,401	51	0	0
23	New Castle	1.25	12,509	929	0.34	137,004	10	0	0
24	Phillips	2.30	11,871	1,053	0.49	139,654	9	0	0
25	Portland	2.15	12,612	785	0.16	136,401	37	1,026	0.9
26	Richmond	0	0	0	0.27	142,962	779	0	0
27	Schuylkill	0	0	0	0.38	146,888	1,011	0	0
28	Seward	2.36	12,419	540	0.16	138,800	44	0	0

Table III.117 Pennsylvania (Cont'd)

Plant No.[a]	Plant Name	Coal Sulfur Content[b] (%)	Coal Heating Value[b] (Btu/lb)	Coal Use[c] (10^3 ton)	Oil Sulfur Content[b] (%)	Oil Heating Value[b] (Btu/gal)	Oil Use[c] (10^3 Bbl)	Gas Heating Value[b] (Btu/ 10^3 ft^3)	Gas Use[c] (10^6 ft^3)
29	Shawville	2.08	12,161	1,632	0.28	138,467	64	0	0
30	Southwark	0	0	0	0.44	147,007	808	0	0
31	Springdale	0	0	0	0.53	146,753	62	0	0
32	Sunbury	1.57	11,168	1,329	0.15	137,330	14	0	0
33	Titus	1.44	12,736	618	0.23	136,855	32	1,017	0.5
34	Warren	2.00	12,114	299	0.29	138,800	78	0	0
35	Williamsburg	2.13	12,293	121	0	0	1	0	0

[a]See Fig. III.162.

[b]FPC form 423, 1980.

[c]FPC form 4, 1980. Note that in cases where the sulfur content and/or the heating value of a fuel is entered accompanied by 0 in the use column, the quantities of fuel that have been used are less than 0.5×10^3 barrels of oil or tons of coal, or 0.05×10^6 cubic feet of gas.

[d]Data not available.

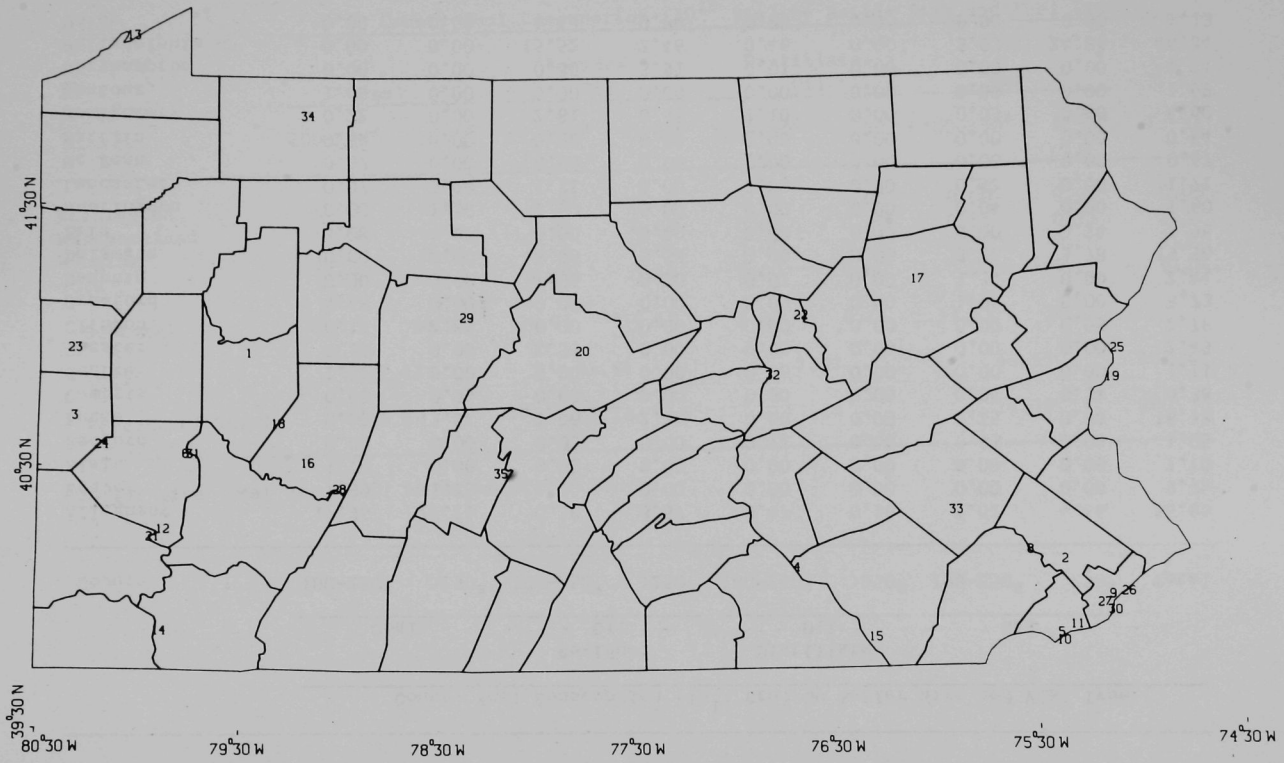


Fig. III.162 Pennsylvania: Key to Power Plant Locations

Table III.118 Pennsylvania: Large Industrial Boiler Fuel Use, 1974

County	County Fuel Consumption (10^{12} Btu) by Boiler Size and Fuel Type								
	Coal		Residual Oil		Distillate Oil		Gas		
	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	Total
Allegheny	17.96	27.25	0.38	3.57	0.47	0.16	2.01	4.86	56.66
Beaver	7.99	1.73	0.00	0.00	0.00	0.00	0.00	0.00	9.72
Blair	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10
Bedford	0.00	0.00	0.00	0.00	0.12	0.00	0.93	0.00	1.05
Bucks	0.00	13.52	2.06	2.34	0.00	0.00	0.25	0.00	18.18
Cambria	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.34	0.38
Centre	1.06	0.00	0.00	0.00	0.06	0.00	0.00	0.00	1.11
Chester	0.10	0.00	2.33	0.00	0.00	0.00	0.00	0.00	2.43
Clinton	0.12	2.66	0.00	0.00	0.00	0.00	0.00	0.00	2.78
Crawford	4.68	0.00	0.00	0.00	0.00	0.00	1.05	0.00	5.73
Dauphin	0.00	0.00	1.06	0.00	0.01	0.00	1.34	0.00	2.41
Delaware	0.00	0.00	6.98	5.58	0.00	0.00	3.22	3.78	19.56
Erie	3.08	4.07	0.00	0.00	0.08	0.00	0.00	0.74	7.96
Huntingdon	0.00	1.56	0.00	0.00	0.00	0.00	0.04	0.00	1.60
Lancaster	0.07	0.00	1.12	0.00	0.00	0.00	0.52	0.00	1.71
Mc Kean	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67
Mifflin	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64
Montgomery	0.22	0.00	2.81	0.45	1.10	0.00	0.03	0.00	4.60
Montour	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.69
Northampton	0.00	0.00	0.30	3.91	0.01	0.00	0.00	0.00	4.21
Philadelphia	0.00	0.00	15.52	2.46	0.46	0.00	3.05	24.86	46.34
Union	0.00	0.00	1.13	0.00	0.00	0.00	0.00	0.00	1.13

Table III.118 Pennsylvania (Cont'd)

County	County Fuel Consumption (10^{12} Btu) by Boiler Size and Fuel Type								
	Coal		Residual Oil		Distillate Oil		Gas		
	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	Total
Washington	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.03
Westmoreland	0.00	0.00	1.33	0.68	0.00	0.00	0.41	0.11	2.52
Wyoming	0.00	0.00	0.14	0.00	0.00	0.00	0.98	0.00	1.13
York	0.87	3.44	1.59	0.20	0.00	0.00	0.00	0.00	6.10
Subtotal	40.25	54.22	36.74	19.19	2.35	0.16	13.87	34.68	
Total	94.47		55.94		2.51		48.55		201.47
Percent of Total	46.89		27.76		1.24		24.10		100

[a]Boiler size (heat input, Q) in units of 10^6 Btu/hr.

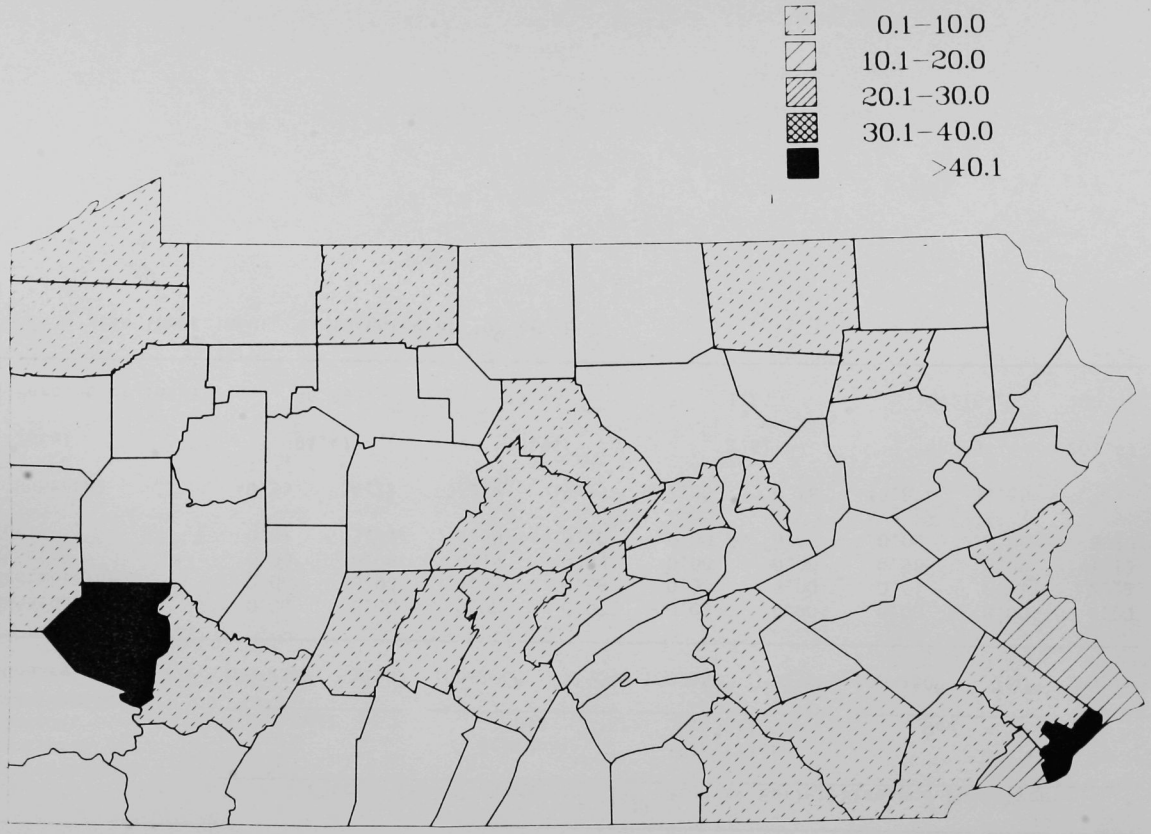


Fig. III.163 Pennsylvania: Fuel Use (in Units of 10^{12} Btu) in Major Fuel-Burning Installations, by County

Table III.119 Pennsylvania: Coal Production and Reserves

County Name	Current (1979) Production (10^3 tons)	Projected (1985) Production (10^3 tons)	Reserves (10^6 tons)
Adams	5	0	0
Allegheny	1,213	2,467	900
Armstrong	2,130	7,302	1,183
Beaver	105	188	498
Bedford	44	104	89
Berks	20	0	0
Blair	0	1	19
Bradford	131	0	12
Butler	458	1,083	1,025
Cambria	4,515	947	1,512
Cameron	0	0	25
Carbon	52	0	0
Centre	1,074	1,150	230
Clarion	2,117	4,293	760
Clearfield	8,553	8,737	1,216
Clinton	58	391	43
Columbia	9	0	0
Elk	152	674	87
Fayette	608	2,884	1,077
Fulton	3	13	10
Greene	2,521	5,377	6,597
Huntingdon	0	4	36
Indiana	13,143	11,847	1,742
Jefferson	2,030	2,478	456
Lackawanna	30	0	0
Lancaster	7	0	0
Lawrence	261	690	184
Luzerne	117	0	0
Lycoming	196	427	12
McKean	0	0	151
Mercer	54	319	165
Mifflin	6	0	0
Northampton	173	0	0
Schuylkill	737	0	0
Snyder	4	0	0
Somerset	1,197	4,034	1,294
Sullivan	2	0	0
Tioga	400	630	39
Venango	627	541	57
Washington	1,368	1,979	3,649
Westmoreland	767	1,429	760
Various[a]	2,534	0	0
Total	47,421	599,987	23,827

[a]This figure represents data not assigned to a specific county.

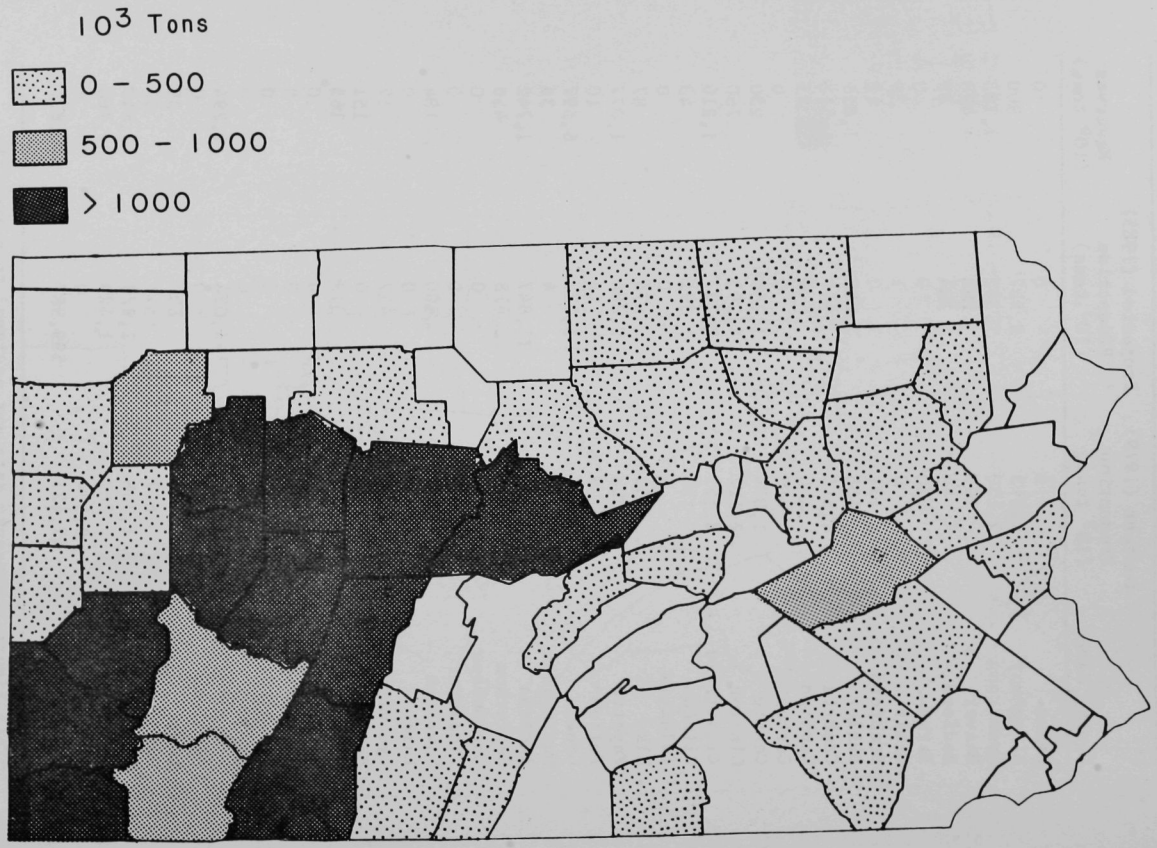


Fig. III.164 Pennsylvania: Coal Production in 1979

Table III.120 Pennsylvania: Coal Quality Data

County Name	Avg. SO_2 Content ($lb/10^6$ Btu)	Avg. Ash Content (%)	Avg. Heat Value (Btu/lb)	Washability: Sulfur Removal (%)	Washability: Btu Loss (%)
Adams	1.34	27.10	10.178	54.66	12.90
Allegheny	3.48	10.93	12,459	14.97	1.99
Armstrong	3.22	12.55	12,282	31.85	5.86
Beaver	4.80	11.90	11,836	35.61	3.20
Bedford	3.22	16.42	11,934	52.66	6.40
Berks	1.56	20.05	10,131	22.53	7.01
Bradford	1.70	23.21	10,869	38.77	12.90
Butler	4.35	11.46	12,115	24.34	7.03
Cambria	2.44	13.44	12,463	9.93	1.56
Carbon	1.25	34.74	7,206	59.54	15.48
Centre	3.39	14.36	12,378	23.79	4.76
Clarion	3.92	10.13	12,605	21.59	1.31
Clearfield	3.07	12.49	12,445	33.44	3.94
Clinton	2.00	13.06	12,364	3.10	0.56
Columbia	5.81	11.11	12,566	36.44	4.81
Elk	3.69	10.99	12,592	27.42	3.76
Fayette	3.90	13.88	11,997	20.20	8.67
Fulton	3.16	12.30	12,244	27.36	3.51
Greene	3.33	16.57	11,562	9.53	3.05
Indiana	3.56	18.57	11,858	28.09	5.01
Jefferson	2.87	10.32	12,683	18.54	2.35
Lackawanna	2.00	16.17	10,928	14.56	4.71
Lancaster	6.90	14.30	11,282	38.80	6.13
Lawrence	4.46	11.89	11,977	31.96	4.46
Luzerne	1.38	21.74	9,011	26.62	8.48
Lycoming	1.64	23.08	10,904	35.79	11.16
Mercer	2.51	10.35	12,197	13.29	1.73
Mifflin	5.98	17.50	10,995	8.77	3.77
Northampton	1.82	26.59	8,682	49.93	12.91
Northumberland	3.45	11.20	12,750	14.76	3.03
Schuylkill	1.64	24.03	9,541	41.74	10.33
Snyder	1.15	19.18	10,427	31.81	9.69
Somerset	2.26	13.42	11,977	23.07	3.80
Sullivan	1.37	26.00	10,186	21.04	9.08
Tioga	1.77	20.88	11,180	55.51	12.05
Venango	7.47	13.69	11,933	53.77	7.76
Washington	3.73	15.74	11,842	14.69	2.72
Westmoreland	2.32	13.73	12,122	22.19	5.72

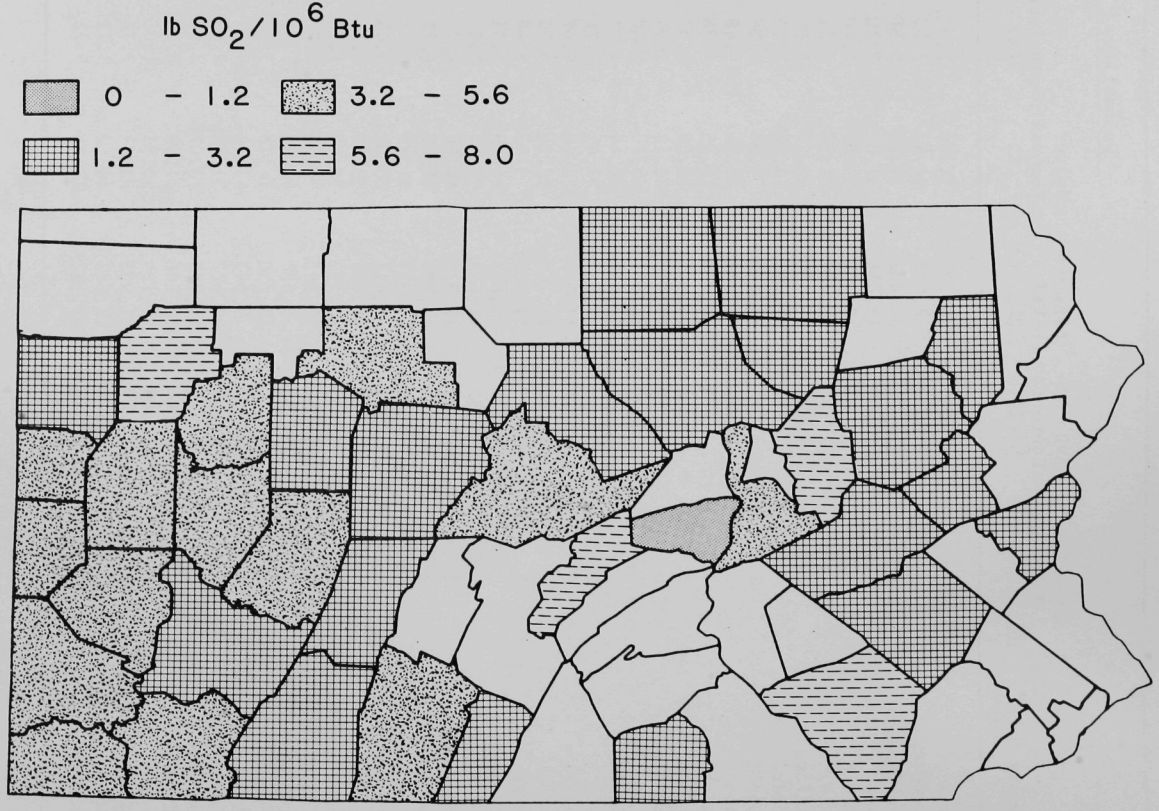


Fig. III.165 Pennsylvania: Average Sulfur Content of Coal

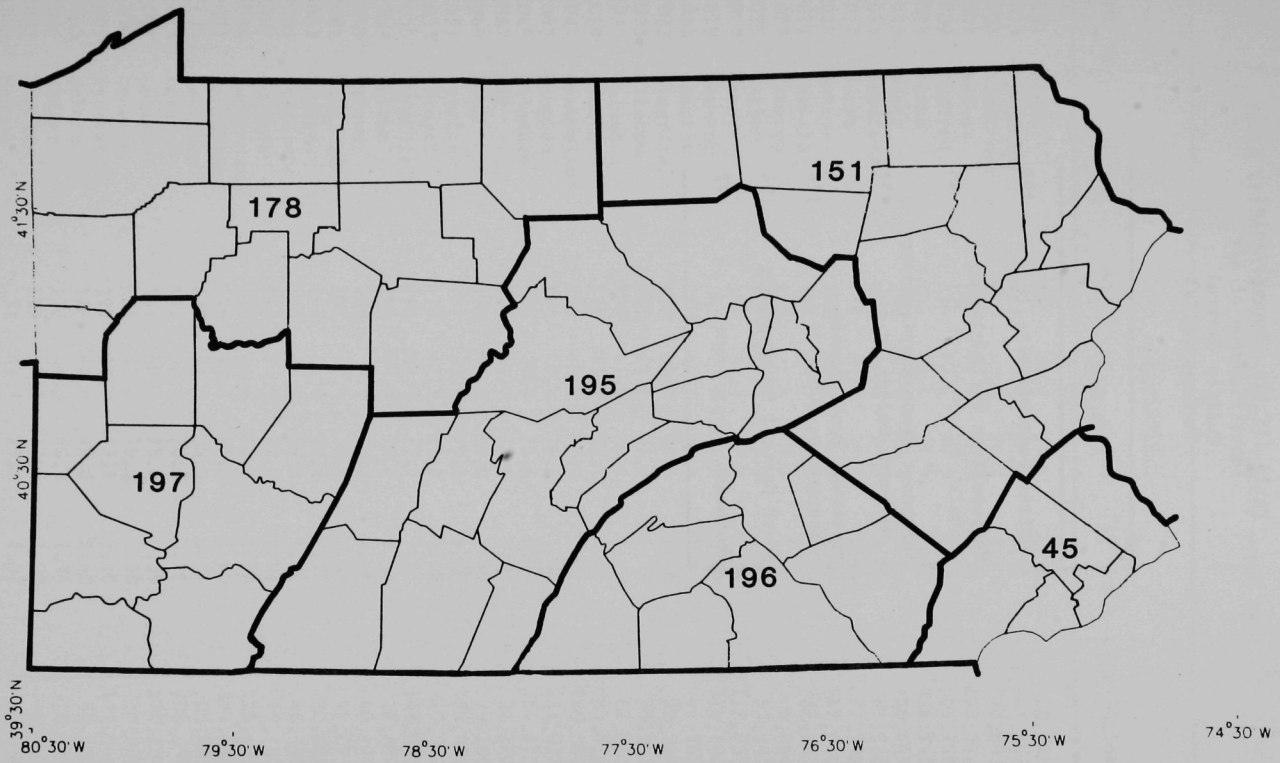


Fig. III.166 Pennsylvania: Air Quality Control Regions (see Table III.121)

Table III.121 Pennsylvania: Identification of Air Quality Control Regions (AQCR)

AQCR Name	No.
Central Pennsylvania	195
Metropolitan Philadelphia (Del., N.J.)	45
Northeast Pennsylvania-Upper Delaware Valley (N.J.)	151
Northwest Pennsylvania-Youngstown (Ohio)	178
South Central Pennsylvania	196
Southwest Pennsylvania	197

Table III.122 Pennsylvania: County-Level Data

FIPS	County	AQCR	Centroid Lat	Centroid Long	Area (10^3 km^2)	Population[a]
42001	Adams	196	39.9	77.2	1.29	68,345
42003	Allegheny	197	40.5	80.0	1.92	1,447,541
42005	Armstrong	197	40.8	79.5	1.77	77,296
42007	Beaver	197	40.7	80.3	1.14	203,559
42009	Bedford	195	40.0	78.5	2.58	46,759
42011	Berks	151	40.4	75.9	2.23	312,543
42013	Blair	195	40.5	78.3	1.36	136,447
42015	Bradford	151	41.8	76.5	3.02	62,976
42017	Bucks	45	40.3	75.1	1.61	477,798
42019	Butler	197	40.9	79.9	1.99	147,620
42021	Cambria	195	40.5	78.7	1.77	182,974
42023	Cameron	178	41.4	78.2	1.02	6,664
42025	Carbon	151	40.9	75.7	0.98	53,183
42027	Centre	195	40.9	77.8	2.91	112,935
42029	Chester	45	40.0	75.7	1.97	316,180
42031	Clarion	178	41.2	79.4	1.54	43,543
42033	Clearfield	178	41.0	78.5	2.86	83,028
42035	Clinton	195	41.2	77.6	2.31	38,945
42037	Columbia	195	41.0	76.4	1.29	62,211
42039	Crawford	178	41.7	80.1	2.70	88,412
42041	Cumberland	196	40.2	77.3	1.44	178,607
42043	Dauphin	196	40.4	76.8	1.36	231,918
42045	Delaware	45	39.9	75.4	0.49	554,473
42047	Elk	178	41.4	78.6	2.05	38,222
42049	Erie	178	42.0	80.0	2.15	279,290
42051	Fayette	197	39.9	79.6	2.02	159,022
42053	Forest	178	41.5	79.2	1.08	5,080
42055	Franklin	196	39.9	77.7	1.96	113,692
42057	Fulton	195	39.9	78.1	1.15	12,822
42059	Greene	197	9.9	80.2	1.46	40,414
42061	Huntingdon	195	40.4	78.0	2.39	42,273
42063	Indiana	197	40.6	79.1	2.13	92,084
42065	Jefferson	178	41.1	79.0	1.72	48,193
42067	Juniata	195	40.5	77.4	1.01	19,185
42069	Lackawanna	151	41.4	75.6	1.20	225,429
42071	Lancaster	196	40.1	76.3	2.55	361,998
42073	Lawrence	178	41.0	80.3	0.94	105,494
42075	Lebanon	196	40.4	76.5	0.95	108,634
42077	Lehigh	151	40.6	75.6	0.89	272,280
42079	Luzerne	151	41.2	76.0	2.30	335,889
42081	Lycoming	195	41.3	77.1	3.10	118,548
42083	McKean	178	41.8	78.6	2.60	50,633
42085	Mercer	178	41.3	80.3	1.74	128,216
42087	Mifflin	195	40.6	77.6	1.05	46,936
42089	Monroe	151	41.1	75.3	1.57	66,798

Table III.122 Pennsylvania (Cont'd)

FIPS	County	AQCR	Centroid Lat	Centroid Long	Area (10^3 km^2)	Population[a]
42091	Montgomery	45	40.2	75.4	1.26	639,721
42093	Montour	195	41.0	76.7	0.35	16,677
42095	Northampton	151	40.8	75.3	0.96	225,211
42097	Northumberland	195	40.8	76.7	1.17	100,288
42099	Perry	196	40.4	77.3	1.40	35,783
42101	Philadelphia	45	40.0	75.1	0.40	1,681,175
42103	Pike	151	41.3	75.1	1.47	17,613
42105	Potter	178	41.8	77.9	2.82	17,768
42107	Schuylkill	151	40.7	76.2	2.04	159,482
42109	Snyder	195	40.8	77.1	0.88	33,619
42111	Somerset	195	40.0	79.0	2.80	81,267
42113	Sullivan	151	41.4	76.5	1.23	6,344
42115	Susquehanna	151	41.8	75.8	2.21	37,814
42117	Tioga	151	41.8	77.3	3.02	41,005
42119	Union	195	41.0	77.1	0.84	32,839
42121	Venango	178	41.4	79.8	1.75	64,413
42123	Warren	178	41.8	79.3	2.46	47,515
42125	Washington	197	40.2	80.3	2.27	216,854
42127	Wayne	151	41.6	75.3	1.91	33,894
42129	Westmoreland	197	40.3	79.5	2.72	392,382
42131	Wyoming	151	41.5	76.0	1.06	25,208
42133	York	196	39.9	76.7	2.34	312,259

[a]1980 Census Bureau data.

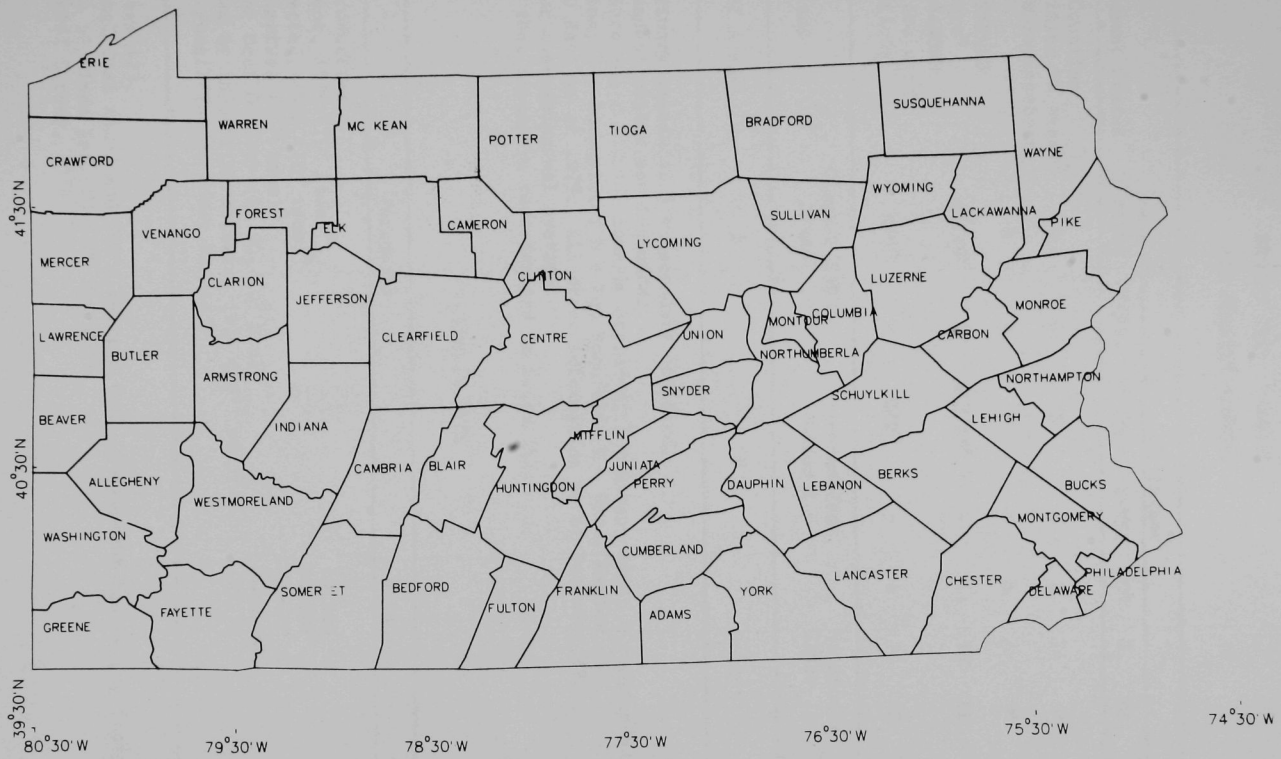


Fig. III.167 Pennsylvania: Key to Counties

REGION III: VIRGINIA

AIR QUALITY SUMMARY

Attainment Status	Pollutant[a]							
	P-SO_2	S-SO_2	P-TSP	S-TSP	CO	O_3	NO_2	Pb
No. of Counties Containing NA Areas[b]	0	0	0	0	2	14	0	0
State Implementation Plan[c]	N	N	N	N	A	A	N	N
No. of SAROAD Monitors[d]	14/10[e]	-	117/85[e]	-	11	16	11	3
No. of SAROAD Monitors with Violations[d]	0/0[e]	-	0/2[e]	-	4	7	0	0

PSD Status	Class I PSD Areas	Recommended Class I	Mandatory Class II[f]
No. of Areas	2	0	2

[a]P = primary standard; S = secondary standard.
[b]Independent cities not included.
[c]A = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review.
[d]SAROAD data as of 1979. All other information as of December 1981.
[e]24-hour average/annual average.
[f]Areas that cannot be redesignated as Class III.

ENERGY DATA

Parameter	Data
Coal Production	
Current, 1979 (10^3 tons)[a]	13,385
Projected, 1985 (10^3 tons)[b]	28,543
Coal Reserves (10^6 tons)[c]	3,636
Range of Coal Quality (lb $SO_2/10^6$ Btu)[a]	1.02-2.32
Fuel Use by Industrial Boilers, 1974 (10^{12} Btu)[d]	109.54
No. of Fossil-Fueled Power Plants	11

[a]EIA form 423.
[b]National Coal Assn. and DOE's Western Coal Development Monitoring System.
[c]Bureau of Mines Rpt. IC 8680 and 8693.
[d]FEA, MFBI Survey, 1974.

VIRGINIA: SIP Attainment Strategies

Area	NA[b]	Plan Date	EPA Action[c]	Source(s)	Strategy[d]
	CO:				
National Capital AQCR (#47)[a]	P	5/80	A	Mobile	FMVECP; TCM; I&M; attainment by 1987
	O_3:				
National Capital AQCR (#47)[a]	P	5/80	A	Mobile	RACT on VOC sources; FMVECP; TCM; I&M; attainment by 1987
Hampton Roads AQCR (#223),[a] Roanoke, Richmond, and Stafford Cos.	P	4/81	A	Mobile	RACT on VOC sources; FMVECP; TCM; attainment by 1982

[a]AQCR = Air quality control regions. See Table III.134 and Fig. III.184.

[b]Nonattainment violation indicated by pollutant and as P = primary and S = secondary.

[c]A = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

[d]See p. 30 for a listing of the abbreviations.

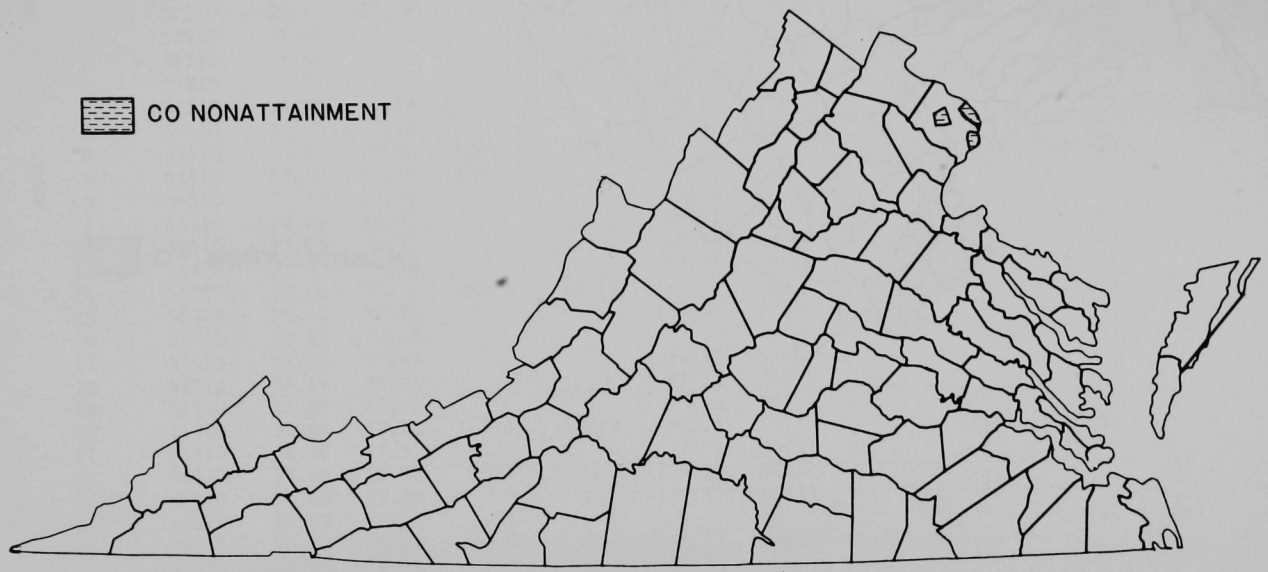


Fig. III.168 Virginia: CO Nonattainment Areas as Designated December 1981

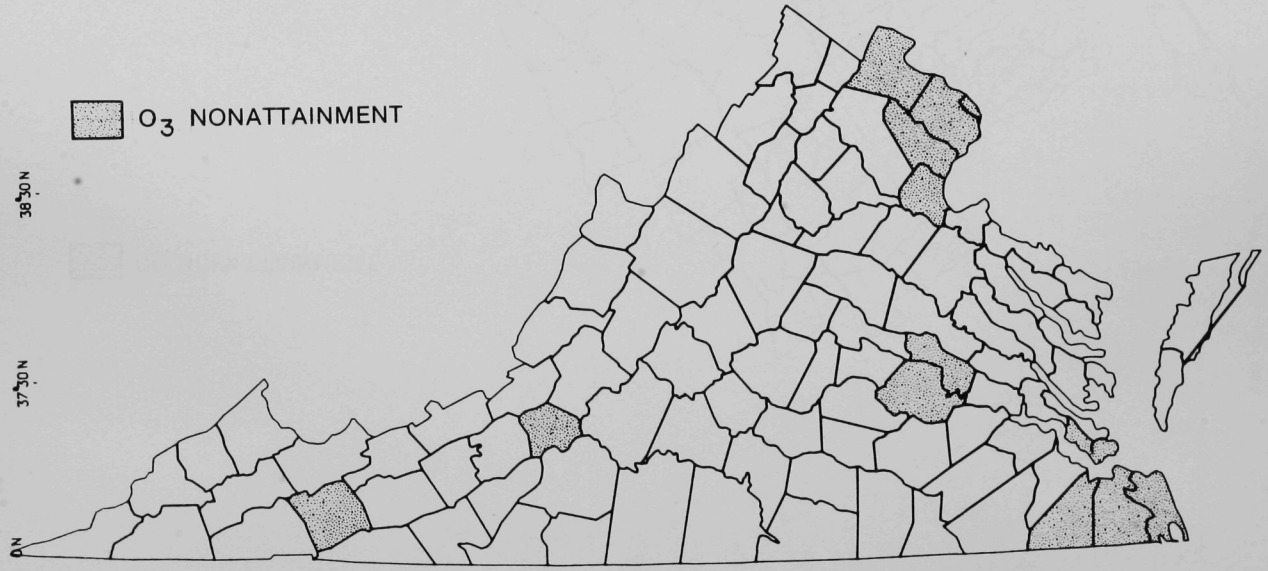


Fig. III.169 Virginia: O_3 Nonattainment Areas as Designated December 1981

Table III.123 Virginia: SAROAD Monitor Numbers and 1979 Data ($\mu g/m^3$, mg/m^3 for CO, or ppm for O_3)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
1	51510	38.81	77.04			124(1)	61(2)				
2	51510	38.81	77.09			119(1)	55(1)				
3	51510	38.81	77.12			122(1)	58(2)				
4	51510	38.84	77.06			136(1)	62(2)				
5	51510	38.77	77.06			104(1)	46(1)	43(1)			
6	51510	38.82	77.06			118(1)	54(1)				
7	51510	38.83	77.11			96(1)	48(1)				
8	51510	38.81	77.04	176(1)	53(1)				14(4)	0.13(3)	
9	51510	37.30	77.28	178(1)							
10	51510	37.30	77.28			138(1)	73(2)				
11	51510	38.45	78.85			85(1)					
12	51510	37.03	76.35			89(1)	49(1)				
13	51510	37.00	76.40			83(1)	46(1)				
14	51510	37.00	76.40	116(1)	28(1)				8(2)	0.12(2)	
15	51510	36.66	80.92			139(1)	75(3)				
16	51510	38.31	77.45							0.11(2)	
17	51510	38.29	77.47			99(1)	41(1)				
18	51510	36.69	76.94			67(1)	35(1)				
19	51510	38.88	77.17			95(1)	50(1)				
20	51510	38.84	77.31	163(1)	18(1)	96(1)	46(1)		5(1)	0.15(3)	
21	51510	38.86	77.31			97(1)	50(1)				
22	51510	36.69	77.54			109(1)	58(2)				
23	51510	36.63	79.38			110(1)	45(1)				
24	51510	36.63	79.38								1(1)
25	51510	36.57	79.41			86(1)	45(1)				
26	51510	37.81	79.99			91(1)					
27	51510	37.25	77.41			104(1)	56(1)				
28	51510	37.83	79.82			64(1)					
29	51510	36.72	76.30			47(1)					

Table III.123 Virginia (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
30	51510	36.82	76.27			140(1)					
31	51510	36.77	76.29			132(1)	67(2)				
32	51510	36.81	76.28	98(1)	32(1)	114(1)	66(2)		5(1)		
33	51510	38.03	78.48			97(1)	54(1)				
34	51510	37.73	79.36			71(1)					
35	51510	36.60	82.16			89(1)					
36	51510	36.61	82.18	109(1)	38(1)	103(1)	49(1)				
37	51510	37.33	79.52			101(1)	47(1)				
38	51510	37.27	76.71			99(1)	41(1)				
39	51510	38.08	78.88			131(1)	49(1)				
40	51510	38.07	78.89			96(1)					
41*	51510	36.85	75.98			101(1)					
42	51510	36.85	76.13			103(1)	51(1)				
43	51510	36.72	76.58			89(1)	47(1)				
44	51510	36.70	78.89			114(1)	51(1)				
45	51510	37.29	80.05	67(1)	14(1)	121(1)	51(1)	34(1)	6(1)	0.09(1)	
46	51510	37.33	79.98			87(1)					
47	51510	37.29	79.98			108(1)					
48	51510	37.48	77.46			74(1)					
49	51510	37.51	77.40			103(1)					
50	51510	37.59	77.45			75(1)					
51	51510	37.50	77.47							0.13(3)	
52	51510	37.49	77.47							0.08(1)	
53	51510	37.57	77.46	161(1)							
54	51510	37.57	77.52			48(1)					
55	51510	37.53	77.42			126(1)					
56	51510	37.57	77.46			126(1)					
57	51510	37.54	77.43	79(1)		133(1)				0.09(1)	
58	51510	37.55	77.45						12(3)		
59	51510	37.14	80.56			107(1)					

Table III.123 Virginia (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
60	51510	36.82	76.39			75(1)					
61	51510	36.83	76.34			103(1)					
62	51510	37.23	77.40			107(1)	49(1)				
63	51510	36.94	82.59			138(1)	59(2)				
64	51510	36.91	76.24			77(1)					
65	51510	36.89	76.21							0.08(1)	
66	51510	36.85	76.28	124(1)					7(1)		
67	51510	36.89	76.30			101(1)	59(2)				
68	51510	36.85	76.29			123(1)	68(2)				
69	51510	36.85	76.29								1(1)
70	51510	37.05	76.48			102(1)	50(1)				
71	51510	36.69	79.88			92(1)					
72	51510	37.45	79.21			70(1)	32(1)				
73	51510	37.79	79.43			75(1)					
74*	51001	37.84	75.48			118(1)	52(1)				
75	51009	37.60	79.06			73(1)	34(1)				
76	51011	37.35	78.83			72(1)	43(1)				
77	51013	38.84	77.05			101(1)					
78	51013	38.88	77.14			81(1)	51(1)				
79	51013	38.87	76.99			99(1)					
80	51013	38.86	77.06	181(1)	36(1)	99(1)	49(1)		10(3)	0.12(2)	
81	51015	38.14	79.05			62(1)					
82	51019	37.54	79.36			109(1)	49(1)				
83	51031	37.38	79.11			122(1)	47(1)				
84	51031	37.11	79.29			107(1)	46(1)				
85	51041	37.43	77.45			105(1)	50(1)				
86*	51047	-	-			83(1)	40(1)				
87	51057	37.93	76.86			91(1)					
88	51059	38.85	77.13			100(1)	45(1)	45(1)			
89	51059	38.73	77.10			136(1)	56(1)				

Table III.123 Virginia (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
90	51059	38.89	77.47			98(1)	35(1)	21(1)			
91	51059	38.70	77.26					37(1)			
92	51059	38.69	77.13			88(1)	41(1)	30(1)			
93	51059	38.70	77.26			133(1)	58(2)				
94	51059	38.73	77.10	129(1)	30(1)				13(4)	0.13(3)	
95	51059	38.97	77.39			120(1)	54(1)				
96	51059	38.83	77.19			87(1)	45(1)				
97	51059	38.93	77.20	152(1)	30(1)	110(1)	46(1)		10(2)	0.13(3)	
98	51059	39.00	77.31			79(1)	38(1)	26(1)			
99	51059	38.87	77.14						5(1)	0.13(3)	
100	51059	38.78	77.18			118(1)	53(1)	61(1)			
101	51059	38.91	77.26			99(1)	44(1)	42(1)			
102	51059	38.81	77.26			125(1)	56(1)	42(1)			
103*	51061	-	-			78(1)	39(1)				
104*	51065	-	-			79(1)	38(1)				
105	51067	37.01	79.88			97(1)	48(1)				
106	51069	39.26	78.08			142(1)	57(2)				
107	51071	37.33	80.73			106(1)	52(1)				
108	51073	37.25	76.50			65(1)	33(1)				
109	51087	37.58	77.40			109(1)	49(1)				
110	51087	37.60	77.56			92(2)	45(1)				
111	51087	37.59	77.50							0.11(2)	
112	51087	37.51	77.31			74(1)					
113	51087	37.59	77.42							0.13(3)	
114	51087	37.44	77.35			93(1)	42(1)				
115	51107	39.11	77.54			69(1)	41(1)				
116	51107	39.08	77.49			81(1)	40(1)				
117	51117	36.73	78.12			74(1)	41(1)				
118	51135	37.09	78.01			92(1)	45(1)				
119	51139	38.67	78.37								0(1)

Table III.123 Virginia (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
120	51139	38.67	78.37			55(1)					
122	51147	37.30	78.39			129(1)	58(2)				
123	51153	38.67	77.25			216(2)	48(1)				
124	51153	38.61	77.29			87(1)	45(1)				
125	51155	37.05	80.79			105(1)	51(1)				
126	51161	37.21	79.99			89(1)	29(1)				
127	51161	37.27	79.90			93(1)	44(1)	46(1)			
129	51171	38.87	78.52			107(1)	47(1)				
130	51173	36.85	81.55	95(1)	21(1)	110(1)	48(1)			0.08(1)	
131*	51183	-	-			106(1)	55(1)				
132	51185	37.10	81.79			142(1)	52(1)				
133	51185	37.27	81.21			138(1)	51(1)				
134	51187	38.93	78.20			141(1)	77(3)				
135	51191	36.87	81.79			123(1)					
136	51197	36.96	81.07			87(1)	36(1)				
137	-	36.98	76.43			117(1)					

*Not Plotted.

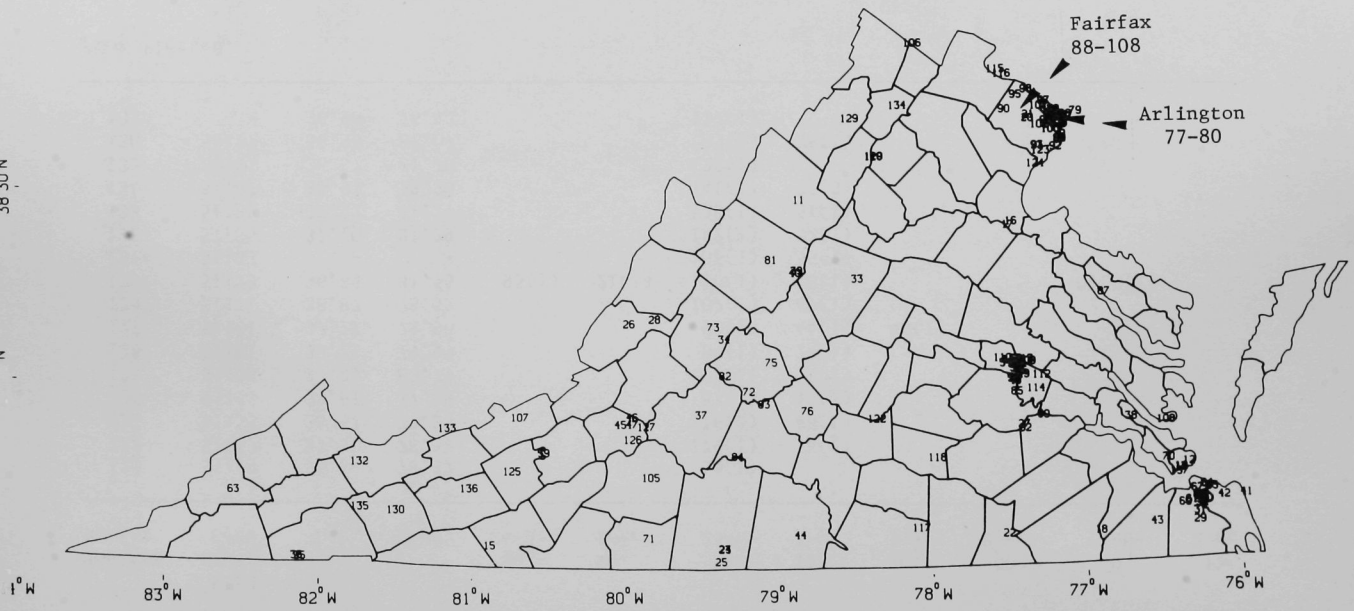


Fig. III.170 Virginia: Locations of SAROAD Monitors (See Table III.123 for Monitor Numbers)

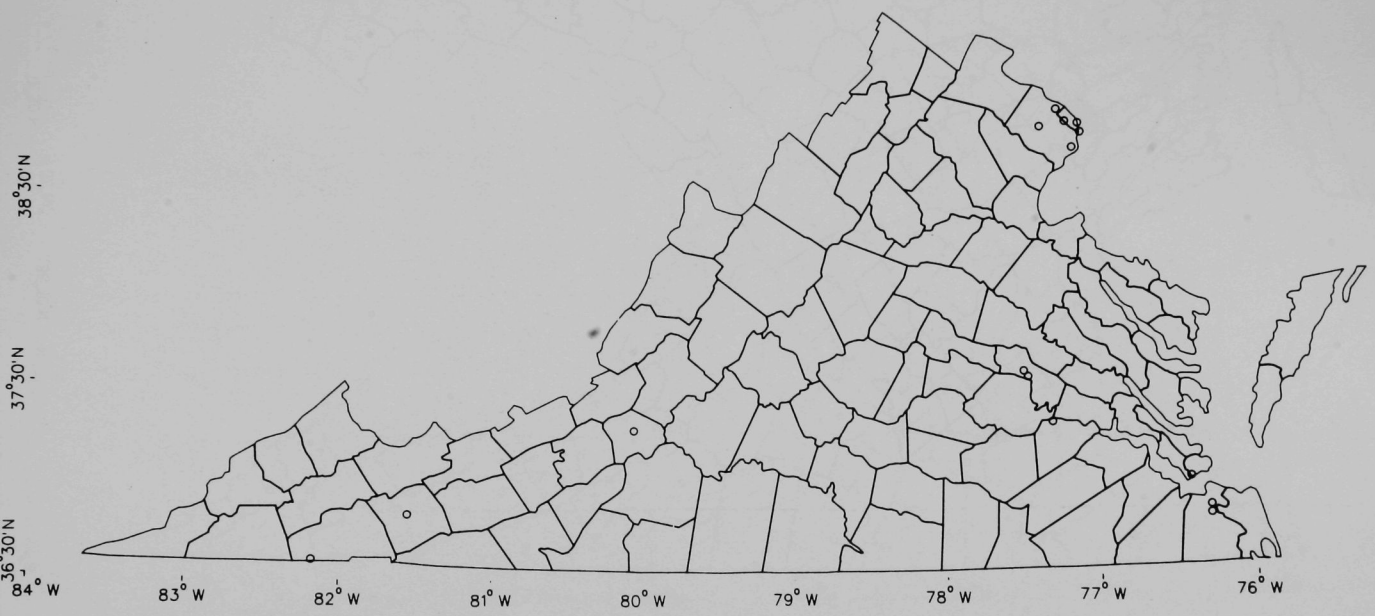


Fig. III.171 Virginia: Monitors Reporting Adequate Data on 24-hr Average SO_2 Concentrations; No Violations

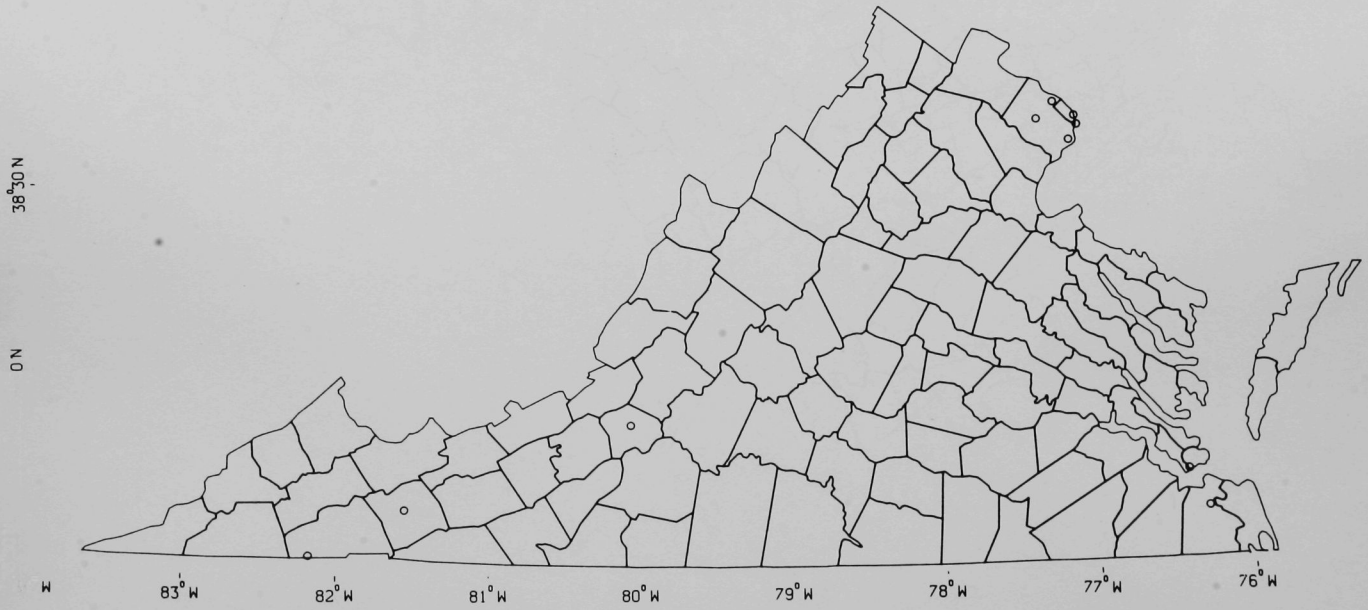


Fig. III.172 Virginia: Monitors Reporting Adequate Data on Annual Average SO_2 Concentrations; No Violations

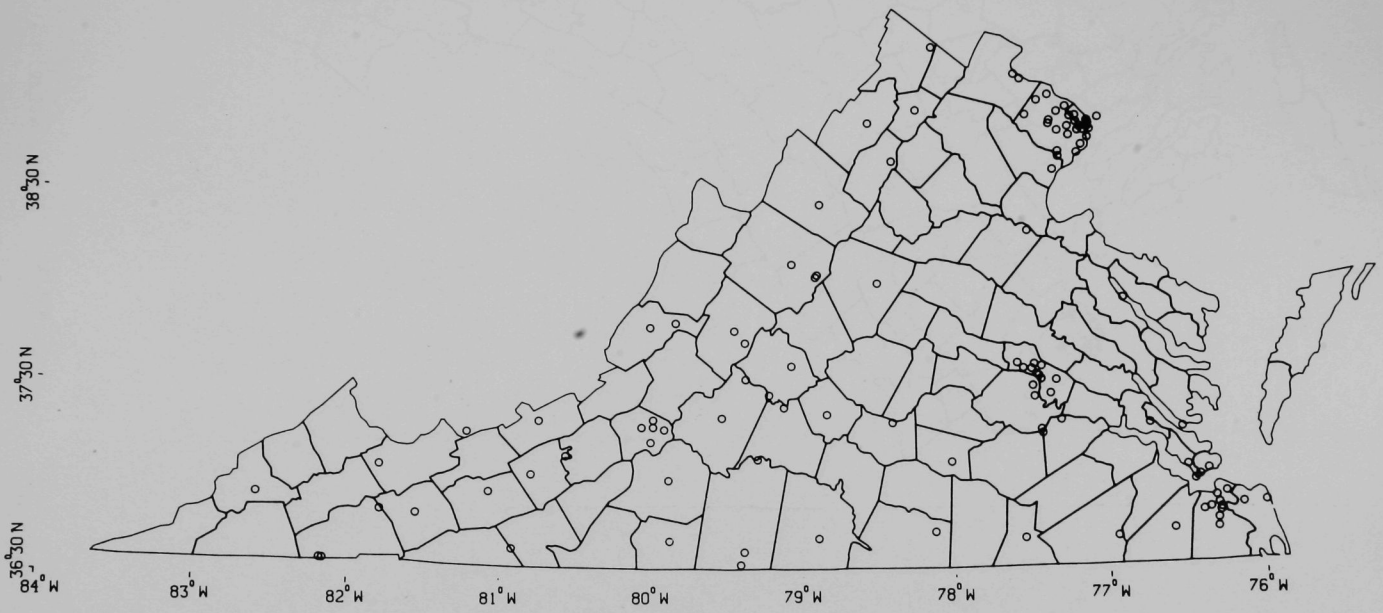


Fig. III.173 Virginia: Monitors Reporting Adequate Data on 24-hr Average TSP Concentrations; No Violations

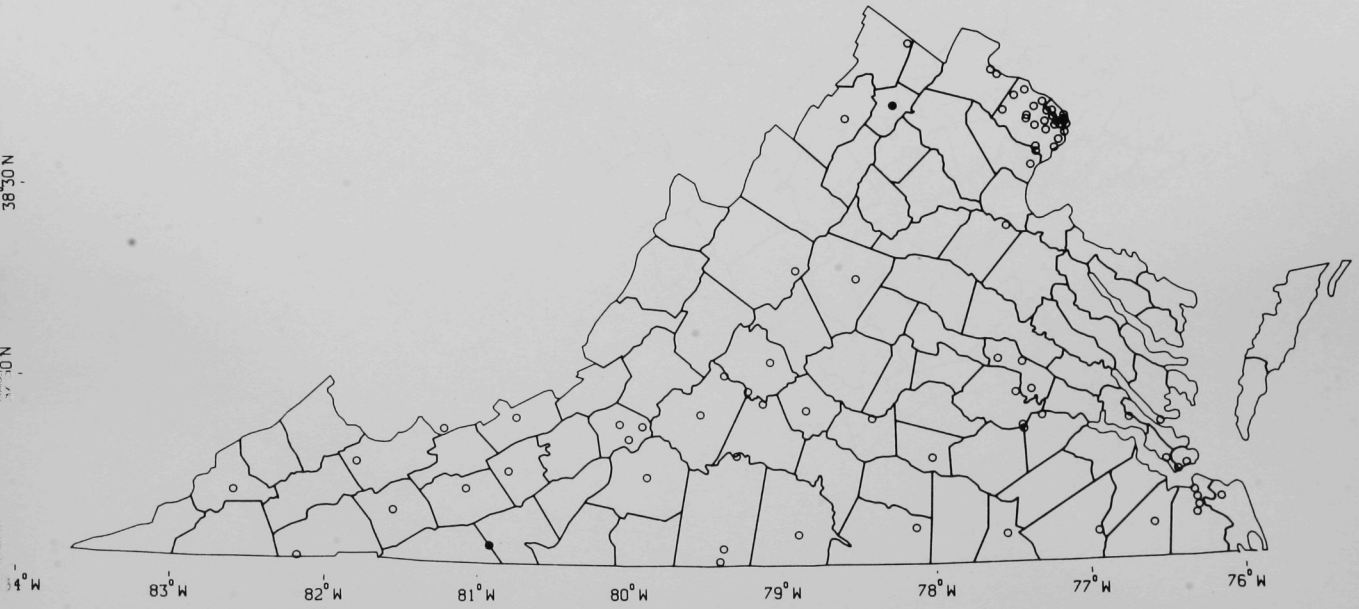


Fig. III.174 Virginia: Monitors Reporting Adequate Data on Annual Average TSP Concentrations; Violations Shown by Shaded Circles

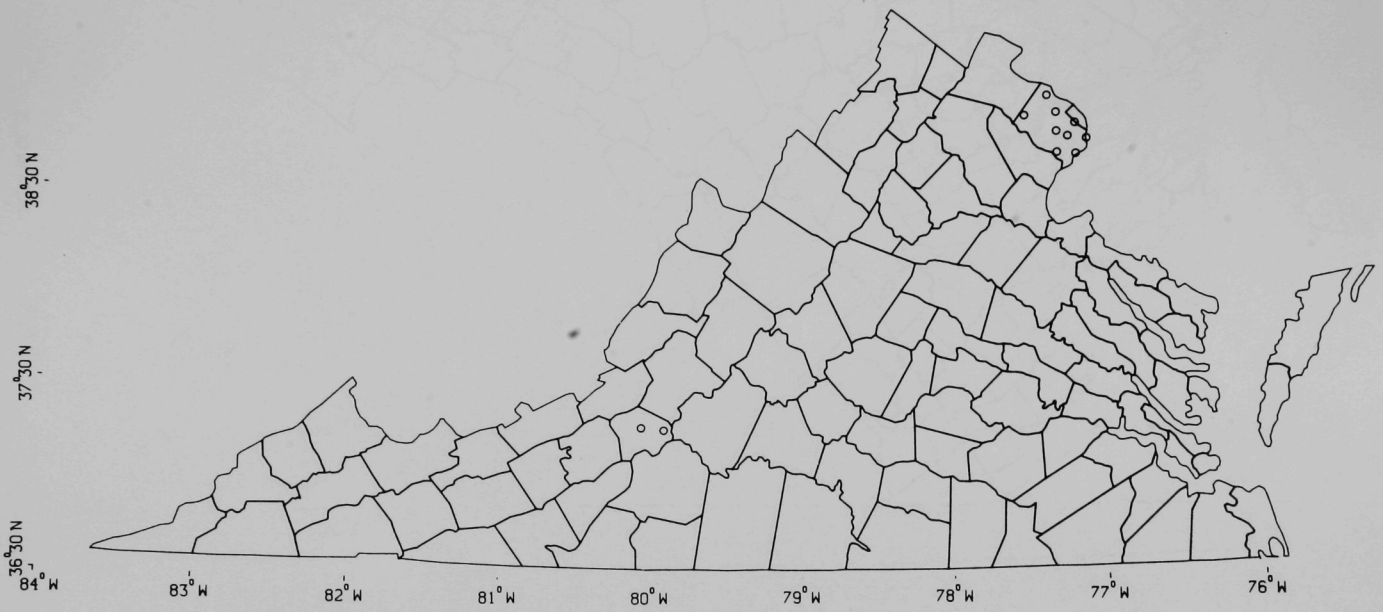


Fig. III.175 Virginia: Monitors Reporting Adequate Data on Annual Average NO_2 Concentrations; No Violations

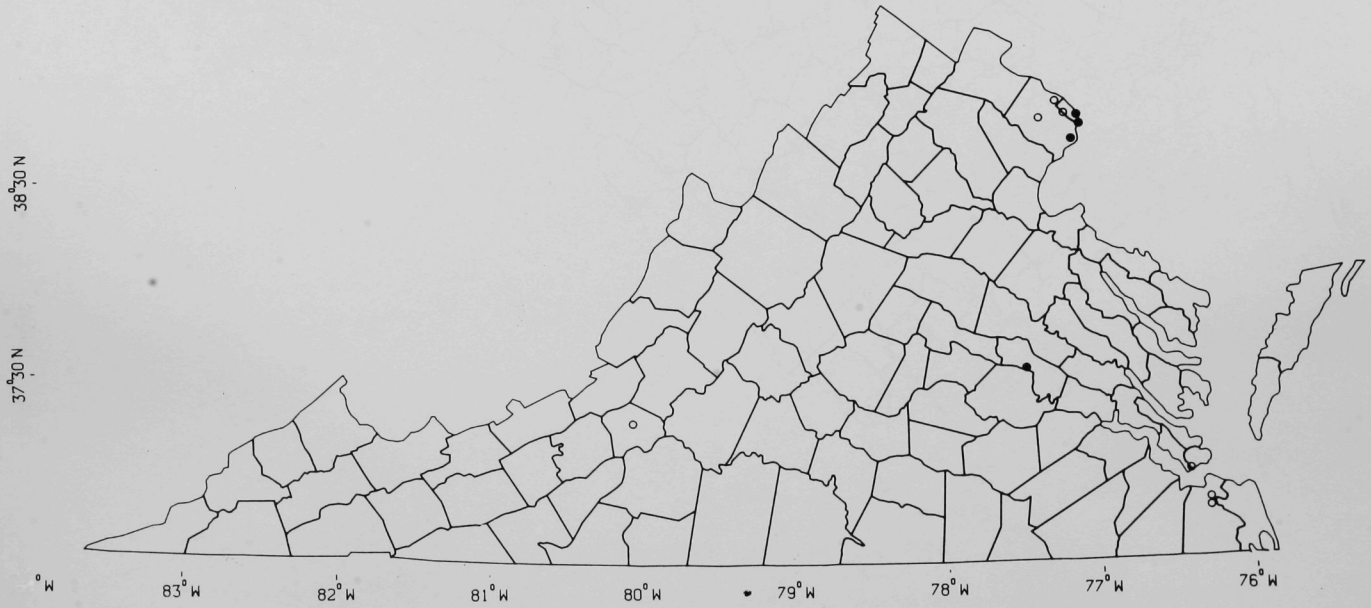


Fig. III.176 Virginia: Monitors Reporting Adequate Data on 8-hr Average CO Concentrations; Violations Shown by Shaded Circles

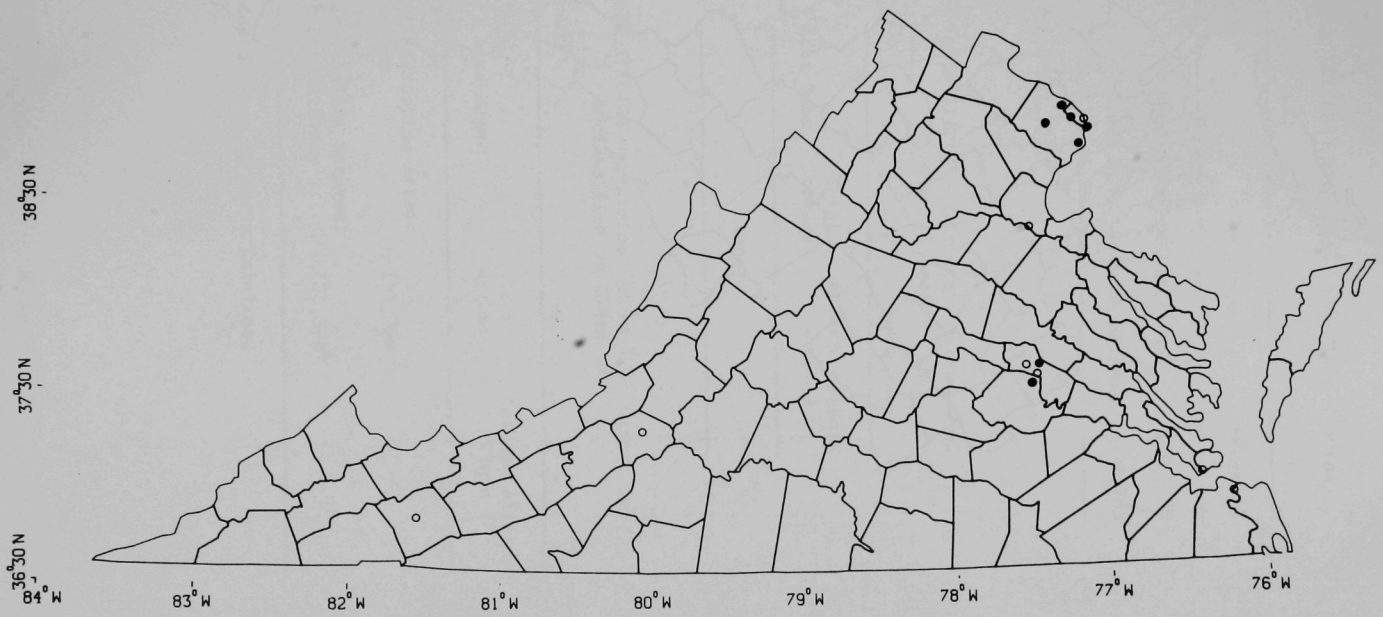


Fig. III.177 Virginia: Monitors Reporting Adequate Data on 1-hr Average O_3 Concentrations; Violations Shown by Shaded Circles

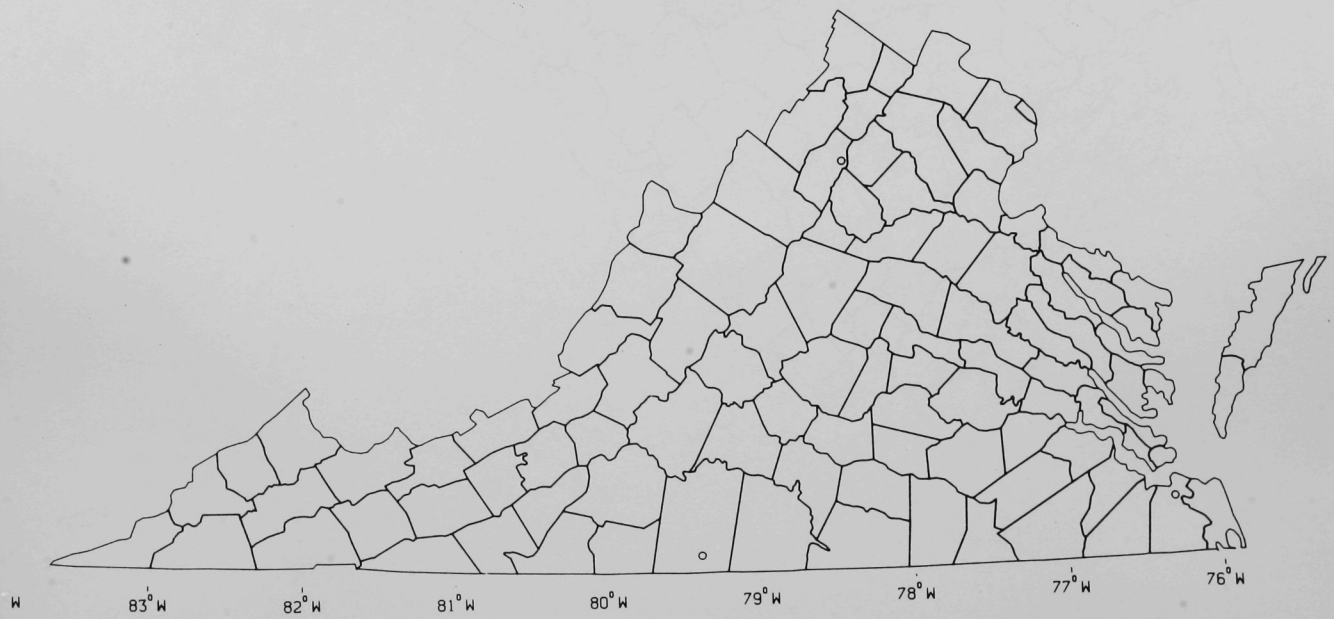


Fig. III.178 Virginia: Monitors Reporting Adequate Data on 3-month Average Lead Concentrations; No Violations

Table III.124 Virginia: PSD Class I Areas

Location[a]	Area Name	Acreage
1	Shenandoah National Park	190,535
2	James River Face Wilderness	8,703

[a]See Fig. III.179.

Table III.125 Virginia: Recommended Class I Areas

Area Name	Total Acreage	Acreage Already Class I
None		

Table III.126 Virginia: Areas That Cannot Be Reclassified as Class III

Area Name	Total Acreage	Acreage Already Class I
National Recreation Areas:		
Mt. Rogers	154,000	-
National Wildlife Refuges:		
Great Dismal Swamp	101,374[a]	-

[a]Includes acreage in North Carolina.

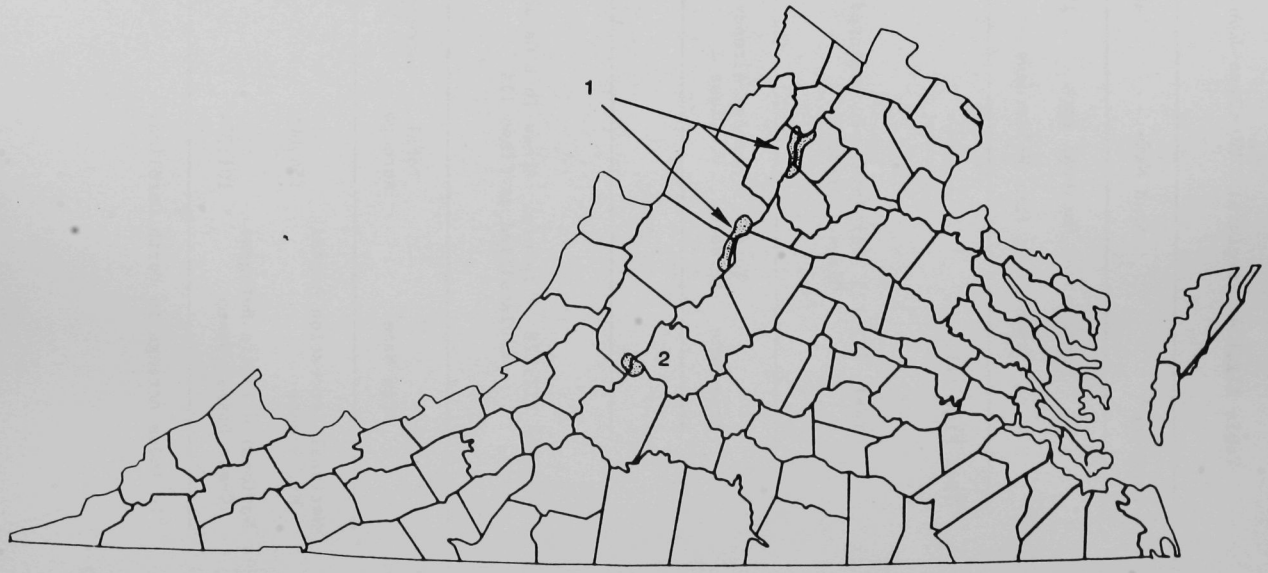


Fig. III.179 Virginia: PSD Class I Areas

Table III.127 Virginia: SO_2 Emission Limits (lb $SO_2/10^6$ Btu) by Heat Input Class, Q, in Units of 10^6 Btu/hr

Source Type and Location	Fuel Type	Emission Limit for Q > 0[a]
New[b] and Existing		
AQCRs 207, 222, 223, 224, 225, and 226[c]	All Fossil Fuels	2.64
AQCR 47[c]	Coal	1.52
	Oil	1.06
	Combined Fuels	–[d]

[a]Total heat input based on actual unit operating rate.

[b]New sources constructed after 8/17/71 and with Q > 250 x 10^6 Btu/hr must comply at least with NSPS or with more stringent state standards.

[c]AQCR = Air quality control region. See Table III.132 and Fig. III.184 for identification of these regions.

[d]Prorated SO_2 emissions = $\frac{X(1.06) + Y(1.52)}{X + Y}$

where X = % of actual heat input derived from liquid or gaseous fuel, and

Y = % of actual heat input derived from solid fuel

Table III.128 Virginia: Particulate Matter Emission Limits (lb PM/10^6 Btu) by Heat Input Class, Q, in Units of 10^6 Btu/hr

Source Type and Location	Fuel Type	Emission Limit		
		$Q < 100^a$	$100 \leq Q < 10{,}000^a$	$Q \geq 10{,}000^a$
New[b] and Existing				
AQCR 47[c]	All Fuel Types	0.3	$0.90Q^{-0.2386}$	0.1
		$Q < 10^a$	$10 \leq Q < 10{,}000^a$	$Q \geq 10{,}000^a$
Remainder of State	All Fuel Types	0.6	$1.096Q^{-0.2594}$	0.1

[a]Total heat input based on design maximum or actual firing rate, whichever is larger, for all units; allowable emissions based on individual stack.

[b]Sources with $Q > 250 \times 10^6$ Btu/hr must comply at least with NSPS or with more stringent state standards.

[c]AQCR = Air quality control region. See Table III.132 and Fig. III.184 for identification of this region.

Table III.129 Virginia: Power Plant Location and Generating Capacity Data for 1980

Plant No.[a]	Plant Name[b]	Latitude[b]	Longitude[b]	Generating Capacity (MW), by Regulatory Class[c,d]		Capacity Factor[e] (%)	Sulfur Dioxide Limit ($lb/10^6$ Btu), by Regulatory Class[f]	
				SIP	NSPS		SIP	NSPS
1	Brantly	36.59	79.39	32	0	–[g]	2.64	0.00
2	Bremo Bluff	37.71	78.29	240	0	59	2.64	0.00
3	Chesterfield	37.38	77.38	1,206	0	24	1.08	0.00
4	Clinch River	36.93	82.20	714	0	66	2.64	0.00
5	Glen Lyn	37.37	80.86	331	0	53	2.64	0.00
6	Portsmouth	36.77	76.30	606	0	27	2.64	0.00
7	Possum Point	38.53	77.29	483	813	29	1.08	1.08
8	Potomac River	38.82	77.04	459	0	61	1.06	0.00
9	Riverton	38.96	78.18	39	0	–[g]	2.64	0.00
10	Surry	37.10	76.90	49	0	–[g]	–[g]	0.00
11	York Town	37.22	76.46	1,161	0	28	2.64	0.00

[a]See Fig. III.180.
[b]EPA's Energy Data System (EDS), except as noted.
[c]FPC form 4, 1980.
[d]Capacity subject to emission regulations of SIP or NSPS, as indicated.
[e]Calculated from annual net generation, FPC form 4, 1980.
[f]If more than one unit, fuel type, and SIP emission limit at plant, "SIP" is average weighted by size, fuel type, and capacity.
[g]Not available.

Table III.130 Virginia: Power Plant Fuel Use Data for 1980

Plant No.[a]	Plant Name	Coal Sulfur Content[b] (%)	Coal Heating Value[b] (Btu/lb)	Coal Use[c] (10^3 ton)	Oil Sulfur Content[b] (%)	Oil Heating Value[b] (Btu/gal)	Oil Use[c] (10^3 Bbl)	Gas Heating Value[b] (Btu/ 10^3 ft^3)	Gas Use[c] (10^6 ft^3)
1	Brantly	0	0	0	0	0	0	1,040	0
2	Bremo Bluff	0.98	12,491	570	0.30	140,000	7	0	0
3	Chesterfield	1.29	12,772	1,114	0.85	148,589	1,351	0	0
4	Clinch River	0.77	12,157	1,587	0	0	7	0	0
5	Glen Lyn	0.88	11,813	671	0	0	26	0	0
6	Portsmouth	0.88	13,106	466	0.95	148,722	1,315	1,016	1.0
7	Possum Point	1.23	12,789	24	1.27	148,252	6,648	0	0
8	Potomac River	0.70	13,016	1,123	0.20	138,026	58	0	0
9	Riverton	0	0	0	0.22	138,700	2	0	0
10	Surry (GT)	0	0	0	0.39	140,000	15	1,017	0.2
11	York Town	0	0	0	1.64	150,490	5,182	1,220	1.0

[a]See Fig. III.180.

[b]FPC form 423, 1980.

[c]FPC form 4, 1980. Note that in cases where the sulfur content and/or the heating value of a fuel is entered accompanied by 0 in the use column, the quantities of fuel that have been used are less than 0.5×10^3 barrels of oil or tons of coal, or 0.05×10^6 cubic feet of gas.

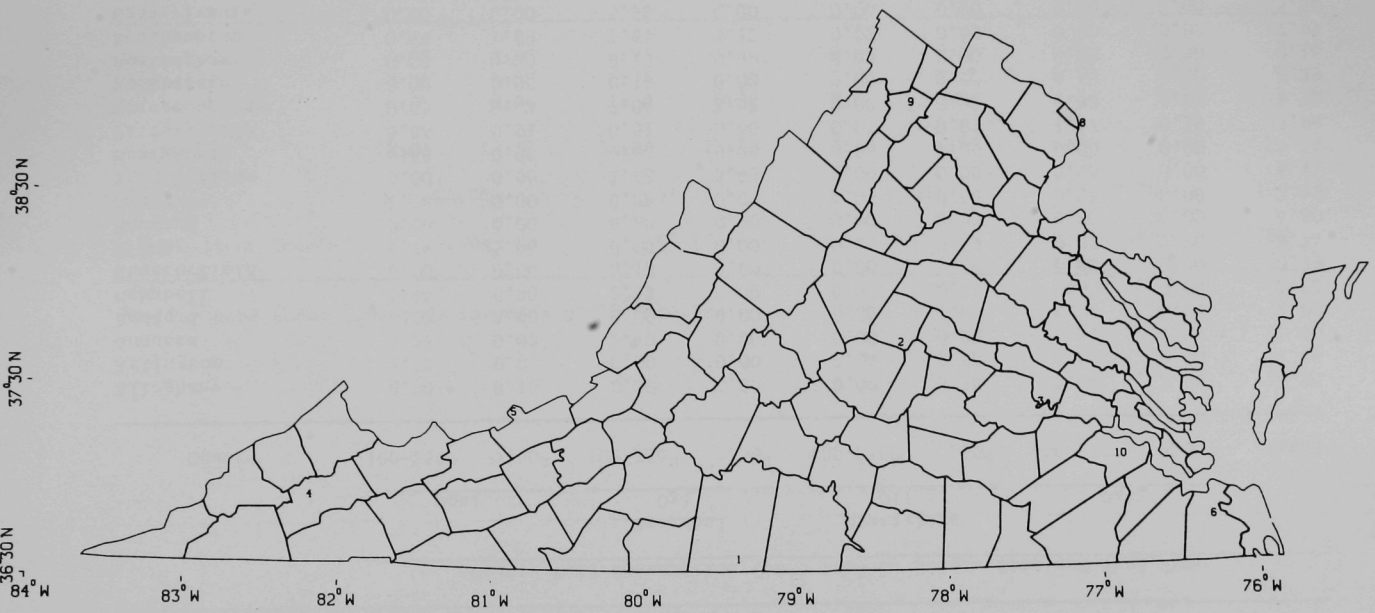


Fig. III.180 Virginia: Key to Power Plant Locations

Table III.131 Virginia: Large Industrial Boiler Fuel Use, 1974

County	County Fuel Consumption (10^{12} Btu) by Boiler Size and Fuel Type								
	Coal		Residual Oil		Distillate Oil		Gas		
	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	Total
Alleghany	0.00	8.28	0.00	0.00	0.00	0.12	0.00	2.56	10.95
Arlington	1.12	0.00	0.00	0.00	0.04	0.00	0.00	0.00	1.16
Augusta	3.38	0.00	2.40	0.00	0.00	0.00	0.21	0.00	6.00
Bedford	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00
Campbell	1.94	0.00	0.33	0.00	0.02	0.00	0.53	0.00	2.82
Chesterfield	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.19
Giles	2.74	5.86	0.00	0.00	0.15	0.00	0.00	0.00	8.74
Henrico	0.00	0.00	4.60	0.00	0.00	0.00	0.00	0.00	4.60
Henry	2.38	0.00	0.08	0.00	0.03	0.00	0.00	0.00	2.49
King William	0.00	0.00	2.68	3.43	0.00	0.00	0.00	0.00	6.11
Montgomery	4.68	0.00	0.00	0.00	0.06	0.00	0.00	0.00	4.74
Pittsylvania	0.86	0.91	0.51	0.00	0.01	0.01	1.47	0.19	3.96
Prince George	0.05	0.42	7.04	2.02	0.00	3.92	1.98	0.77	16.20
Rockbridge	0.00	0.00	0.14	0.00	0.00	0.00	0.15	0.00	0.29
Rockingham	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.16
Southampton	0.49	1.69	2.61	3.12	0.02	0.05	0.00	0.00	7.99
Spotsylvania	0.00	0.00	5.66	0.00	0.00	0.00	0.00	0.00	5.66
Stafford	0.42	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.47
Warren	0.00	7.52	0.00	6.62	0.00	0.00	0.00	0.00	14.14
York	0.00	0.00	1.98	0.00	0.00	0.00	0.74	0.00	2.72
Hampton	0.00	0.00	0.49	0.00	0.00	0.00	0.00	0.00	0.49
Hampton City	0.00	0.00	0.49	0.00	0.00	0.00	0.00	0.00	0.49

Table III.131 Virginia (Cont'd)

County	County Fuel Consumption (10^{12} Btu) by Boiler Size and Fuel Type								
	Coal		Residual Oil		Distillate Oil		Gas		
	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	Total
Newport News	0.00	0.00	1.91	0.18	0.00	0.00	0.00	0.00	2.09
Norfolk	0.00	0.00	2.78	0.00	0.00	0.00	0.00	0.00	2.78
Portsmouth	0.00	0.00	2.30	0.00	0.00	0.00	0.00	0.00	2.30
Subtotal	18.06	26.68	36.39	15.38	0.32	4.09	5.09	3.52	
Total	44.74		51.77		4.42		8.61		109.54
Percent of Total	40.84		47.27		4.03		7.86		100

[a]Boiler size (heat input, Q) in units of 10^6 Btu/hr.

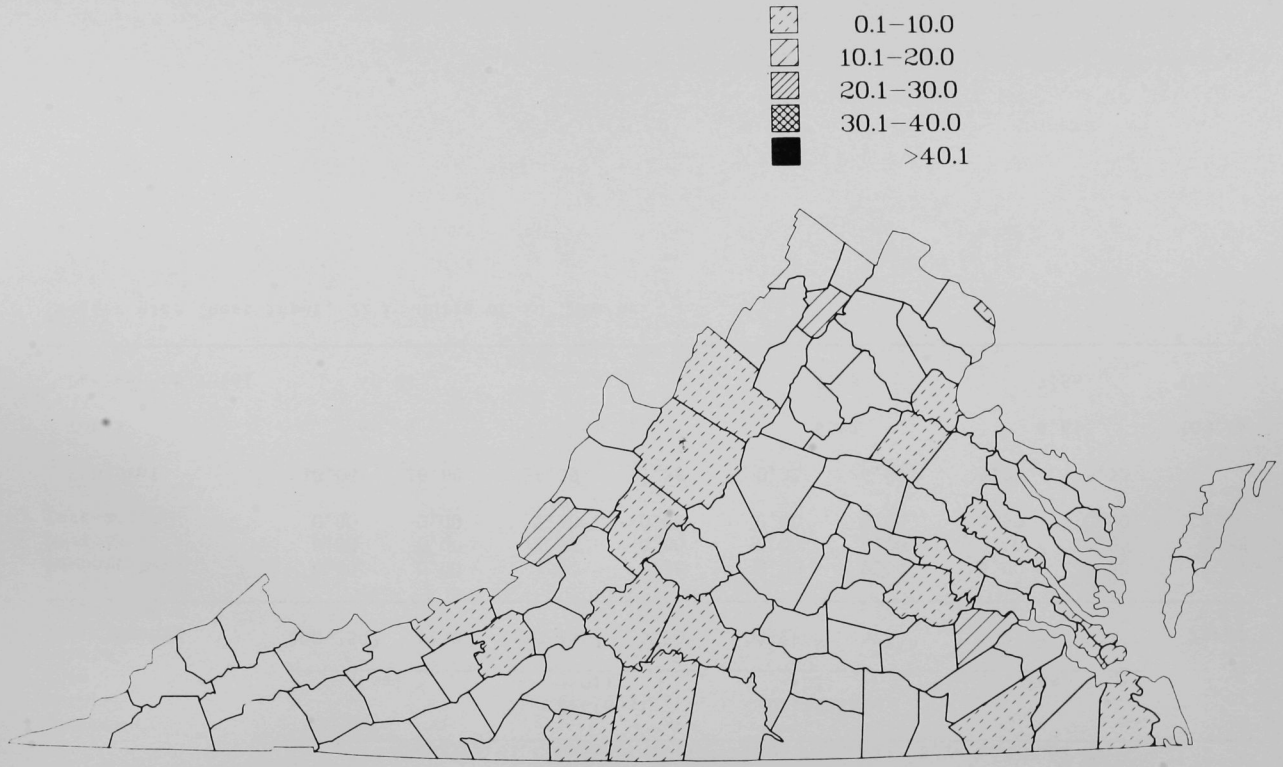


Fig. III.181 Virginia: Fuel Use (in Units of 10^{12} Btu) in Major Fuel-Burning Installations, by County

Table III.132 Virginia: Coal Production and Reserves

County Name	Current (1979) Production (10^3 tons)	Projected (1985) Production (10^3 tons)	Reserves (10^6 tons)
Alleghany	0	0	0
Buchanan	2,479	6,910	1,073
Campbell	39	0	0
Dickenson	1,450	4,270	577
Fairfax	0	0	0
Greensville	17	0	0
Lee	1,415	1,300	229
Montgomery	0	0	72
Pulaski	0	0	65
Russell	1,953	1,706	455
Scott	0	13	44
Tazewell	88	3,508	213
Wise	5,189	10,837	907
Various[a]	754	0	0
Total	13,385	28,543	3,636

[a]This figure represents data not assigned to a specific county.

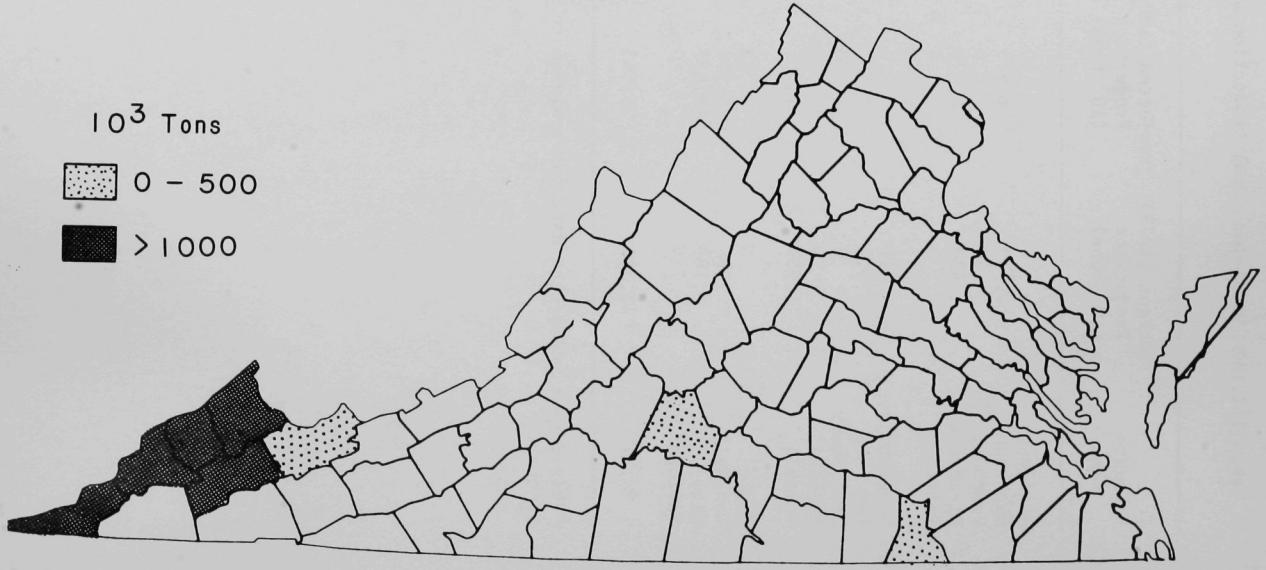


Fig. III.182 Virginia: Coal Production in 1979

Table III.133 Virginia: Coal Quality Data

County Name	Avg. SO_2 Content ($lb/10^6$ Btu)	Avg. Ash Content (%)	Avg. Heat Value (Btu/lb)	Washability	
				Sulfur Removal (%)	Btu Loss (%)
Alleghany	1.69	12.10	11,250	16.95	4.74
Bland	1.56	16.64	11,645	14.82	4.91
Buchanan	1.76	11.70	12,432	9.52	2.99
Campbell	1.02	13.50	12,560	16.41	4.69
Dickenson	2.32	13.93	12,303	17.70	5.62
Fairfax	1.67	12.00	12,000	16.66	4.66
Greensville	1.55	10.54	12,760	0.00	0.00
Lee	1.99	13.29	12,161	15.57	4.50
Russell	1.33	15.26	12,163	5.49	2.89
Tazewell	1.32	13.71	12,269	13.04	3.77
Wise	1.46	12.20	12,329	6.90	2.52

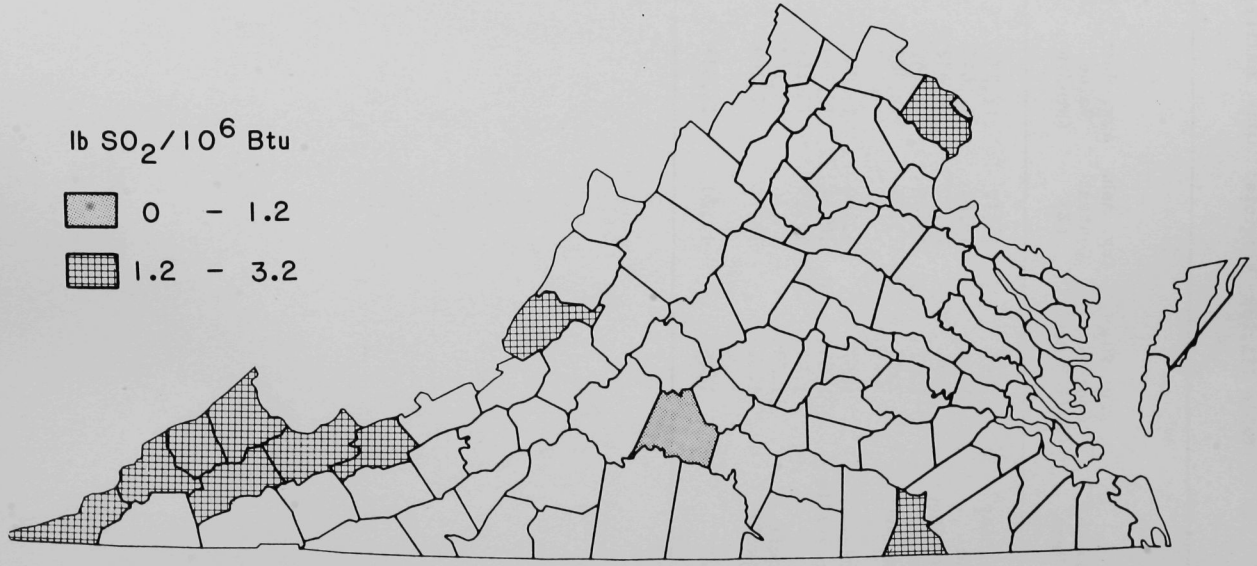


Fig. III.183 Virginia: Average Sulfur Content of Coal

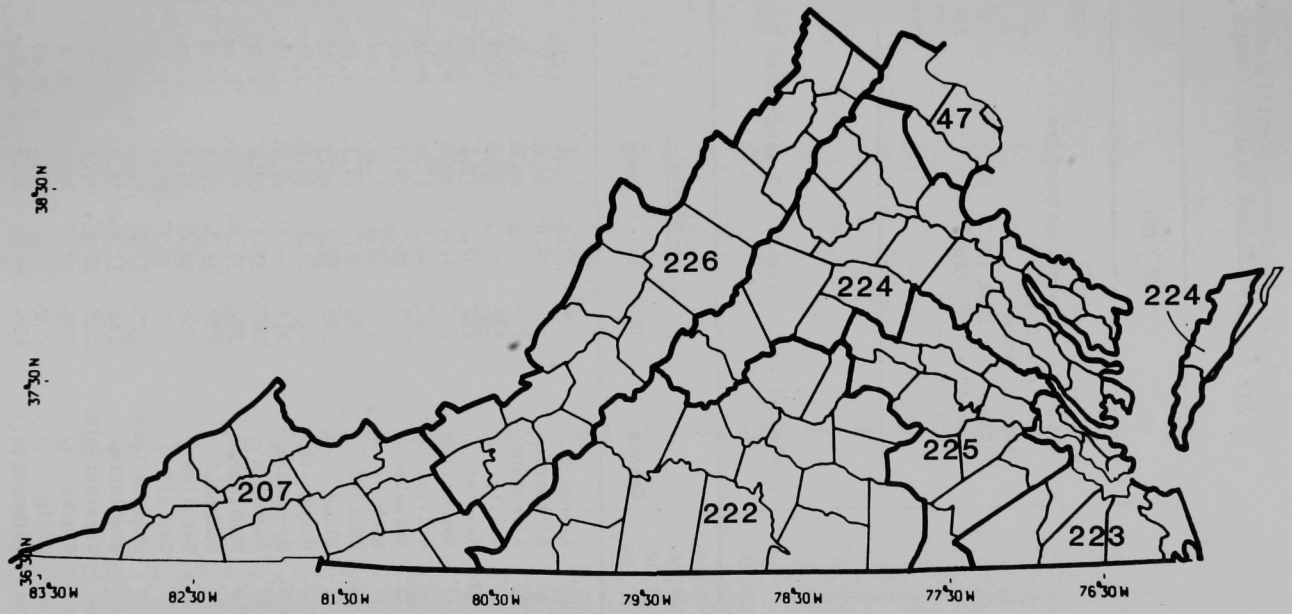


Fig. III.184 Virginia: Air Quality Control Regions (See Table III.134)

Table III.134 Virginia: Identification of Air Quality Control Regions (AQCR)

AQCR Name	No.
Central Virginia	222
Eastern Tennessee-Southwestern Virginia (Tenn.)	207
Hampton Roads	223
National Capital (D.C., Md.)	47
Northeastern Virginia	224
State Capital	225
Valley of Virginia	226

Table III.135 Virginia: County-Level Data

FIPS	County	AQCR	Centroid Lat	Centroid Long	Area (10^3 km^2)	Population[a]
51001	Accomack	224	37.8	75.6	1.29	31,147
51003	Albemarle	224	38.0	78.6	1.97	55,559
51005	Alleghany	226	37.8	80.0	1.19	14,294
51007	Amelia	222	37.3	78.0	0.99	8,344
51009	Amherst	222	37.6	79.1	1.25	29,086
51011	Appomattox	222	37.4	78.8	0.85	11,961
51013	Arlington	47	38.9	77.1	0.08	151,885
51015	Augusta	226	38.2	79.1	2.65	53,631
51017	Bath	226	38.1	79.7	1.44	5,776
51019	Bedford	222	37.3	79.5	1.98	34,814
51021	Bland	207	37.1	81.1	0.94	6,346
51023	Botetourt	226	37.6	79.8	1.44	23,314
51025	Brunswick	222	36.8	77.9	1.50	15,594
51027	Buchanan	207	37.3	82.0	1.32	37,407
51029	Buckingham	222	37.6	75.5	1.49	11,755
51031	Campbell	222	37.2	79.1	1.39	45,415
51033	Caroline	224	38.0	77.3	1.38	17,695
51035	Carroll	207	36.7	80.7	1.14	27,094
51036	Charles City	225	37.4	77.1	0.53	6,690
51037	Charlotte	222	37.0	78.7	1.21	12,187
51041	Chesterfield	225	37.4	77.6	1.19	141,132
51043	Clarke	226	39.1	78.0	0.46	9,836
51045	Craig	226	37.5	80.2	0.88	3,966
51047	Culpeper	224	38.5	77.9	0.96	22,489

Table III.135 Virginia (Cont'd)

FIPS	County	AQCR	Centroid Lat	Centroid Long	Area (10^3 km^2)	Population[a]
51049	Cumberland	222	37.5	78.3	0.72	7,786
51051	Dickenson	207	37.1	82.4	0.86	19,781
51053	Dinwiddie	225	37.1	77.6	1.34	22,324
51057	Essex	224	37.9	77.0	0.64	8,812
51059	Fairfax	47	38.8	77.3	1.08	595,638
51061	Fauquier	224	38.7	77.8	1.69	35,762
51063	Floyd	226	36.9	80.4	0.95	11,539
51065	Fluvanna	224	37.8	78.3	0.75	10,181
51067	Franklin	222	37.0	79.9	1.90	35,535
51069	Frederick	226	39.2	78.3	1.12	33,934
51071	Giles	226	37.3	80.7	0.98	17,755
51073	Gloucester	224	37.4	76.6	0.56	19,968
51075	Goochland	225	37.7	77.9	0.77	11,725
51077	Grayson	207	36.6	81.2	1.06	16,446
51079	Greene	224	38.3	78.5	0.40	7,594
51081	Greensville	225	36.7	77.6	0.82	10,934
51083	Halifax	222	36.8	78.9	2.21	30,340
51085	Hanover	225	37.8	77.5	1.20	50,265
51087	Henrico	225	37.5	77.4	0.69	180,315
51089	Henry	222	36.7	79.9	1.06	57,412
51091	Highland	226	38.4	79.6	1.06	2,957
51093	Isle of Wight	223	36.9	76.7	0.76	21,089
51095	James City	223	37.3	76.8	0.37	22,761
51097	King and Queen	224	37.7	76.9	0.84	5,964
51099	King George	224	38.3	77.2	0.43	10,305
51101	King William	224	37.7	77.1	0.75	9,343
51103	Lancaster	224	37.7	76.5	0.34	10,087
51105	Lee	207	36.7	83.1	1.08	25,885
51107	Loudoun	47	39.1	77.6	1.33	57,244
51109	Louisa	224	38.0	78.0	1.40	17,788
51111	Lunenberg	222	36.9	78.2	1.09	11,998
51113	Madison	224	38.4	78.3	0.85	10,147
51115	Mathews	224	37.4	76.3	0.19	7,917
51117	Mecklenburg	222	36.7	78.3	1.78	29,257
51119	Middlesex	224	37.6	76.6	0.32	7,628
51121	Montgomery	226	37.2	80.4	0.97	63,523
51125	Nelson	224	37.8	78.9	1.25	12,206
51127	New Kent	225	37.5	77.0	0.58	8,555
51131	Northampton	224	37.4	75.9	0.51	14,705
51133	Northumberland	224	37.9	76.4	0.51	9,836
51135	Nottoway	222	37.1	78.1	0.78	15,222
51137	Orange	224	38.3	78.0	0.93	17,978
51139	Page	226	38.6	78.5	0.83	19,168
51141	Patrick	222	36.7	80.3	1.17	17,498
51143	Pittsylvania	222	36.8	79.4	2.70	65,653

Table III.135 Virginia (Cont'd)

FIPS	County	AQCR	Centroid Lat	Centroid Long	Area (10^3 km^2)	Population[a]
51145	Powhatan	225	37.6	77.9	0.70	12,854
51147	Prince Edward	222	37.2	78.4	0.92	16,200
51149	Prince George	225	37.2	77.2	0.78	25,646
51153	Prince William	47	38.7	77.5	0.91	144,447
51155	Pulaski	226	37.1	80.7	0.90	35,108
51157	Rappahannock	224	38.7	78.2	0.73	6,028
51159	Richmond	224	37.9	76.7	0.50	219,429
51161	Roanoke	226	37.3	80.1	0.75	99,677
51163	Rockbridge	226	37.8	79.4	1.52	17,878
51165	Rockingham	226	38.5	78.9	2.27	56,522
51167	Russell	207	36.9	82.1	1.24	31,458
51169	Scott	207	36.7	82.6	1.39	24,981
51171	Shenandoah	226	38.9	78.6	1.34	27,475
51173	Smyth	207	36.8	81.5	1.19	33,053
51175	Southampton	223	36.7	77.1	1.58	18,698
51177	Spotsylvania	224	38.2	77.6	1.06	34,336
51179	Stafford	224	38.4	77.5	0.68	40,168
51181	Surry	225	37.1	76.9	0.71	5,978
51183	Sussex	225	36.9	77.3	1.27	10,967
51185	Tazewell	207	37.1	81.6	1.38	50,420
51187	Warren	226	38.9	78.2	0.55	21,035
51191	Washington	207	36.7	82.0	1.48	46,458
51193	Westmoreland	224	38.1	76.8	0.59	13,779
51195	Wise	207	37.0	82.6	1.06	42,343
51197	Wythe	207	36.9	81.1	1.23	25,499
51199	York	223	37.2	76.5	0.27	35,219

[a]1980 Census Bureau data.

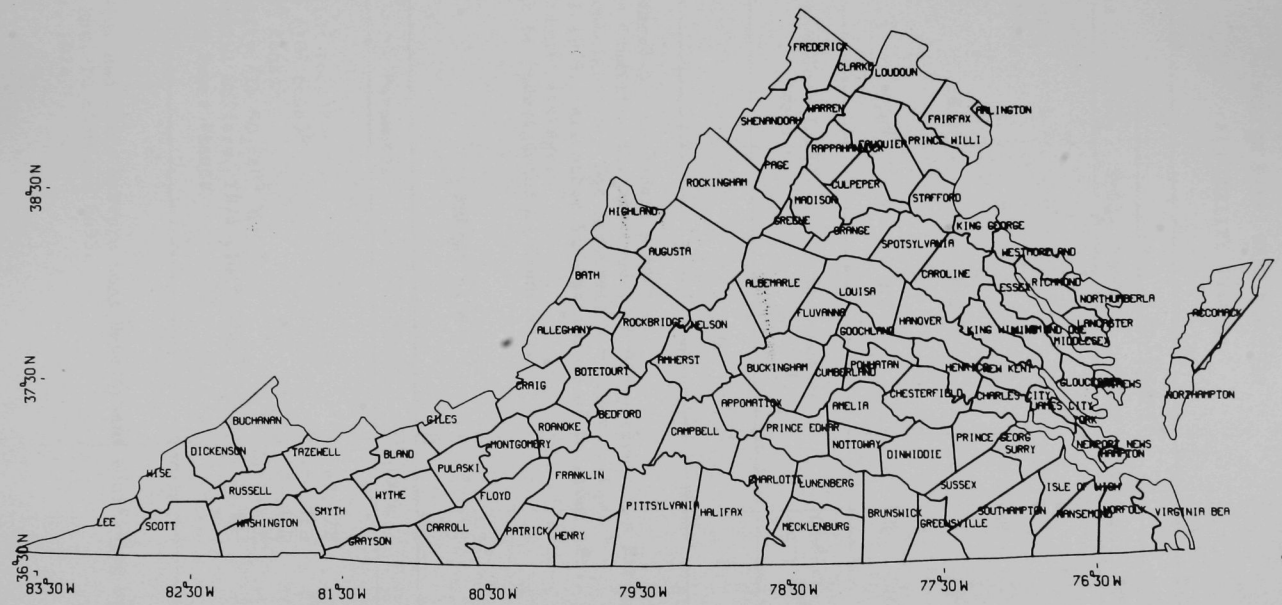


Fig. III.185 Virginia: Key to Counties

REGION III: WEST VIRGINIA

AIR QUALITY SUMMARY

Attainment Status	Pollutant[a]							
	P-SO_2	S-SO_2	P-TSP	S-TSP	CO	O_3	NO_2	Pb
No. of Counties Containing NA Areas	1	0	5	3	0	0	0	0
State Implementation Plan[b]	C	N	C	E	N	A	N	N
No. of SAROAD Monitors[c]	29/1[d]	-	39/25[d]	-	2	2	0	1
No. of SAROAD Monitors with Violations[c]	0/0[d]	-	3/6[d]	-	1	0	0	1

PSD Status	Class I PSD Areas	Recommended Class I	Mandatory Class II[e]
No. of Areas	2	0	1

[a]P = primary standard; S = secondary standard.
[b]A = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review.
[c]SAROAD data as of 1979. All other information as of December 1981.
[d]24-hour average/annual average.
[e]Areas that cannot be redesignated as Class III.

ENERGY DATA

Parameter	Data
Coal Production	
Current, 1979 (10^3 tons)[a]	48,722
Projected, 1985 (10^3 tons)[b]	74,822
Coal Reserves (10^6 tons)[c]	39,476
Range of Coal Quality (lb $SO_2/10^6$ Btu)[a]	1.26-7.22
Fuel Use by Industrial Boilers, 1974 (10^{12} Btu)[d]	98.81
No. of Fossil-Fueled Power Plants	11

[a]EIA form 423.
[b]National Coal Assn. and DOE's Western Coal Development Monitoring System.
[c]Bureau of Mines Rpt. IC 8680 and 8693.
[d]FEA, MFBI Survey, 1974.

WEST VIRGINIA: SIP Attainment Strategies

Area[a]	NA[b]	Plan Date	EPA Action[c]	Source(s)	Strategy[d]
	SO_2:				
Hancock Co.	P	6/79	C	Utility in Ohio	SIP limit in Ohio to be enforced
Wellsburg District (Brooke Co.)	P	6/79	C	Utility in Ohio	Redesignate to attainment
	TSP:				
Kanawha Co. and Fayette Co.	P	11/80	C		Redesignate to secondary NA
Union and Winfield (Marion Co.)	P	11/80	C	Steel mill	Shutdown of plant
Steubenville/Weirton AQCR (#181)[e]	P	11/80	C	Utility; industrial fugitive emissions	Existing SIP controls
Parkersburg/Tygart	P	6/79	A	Fugitive dust	Reduce speed on unpaved roads
	O_3:				
Kanawha Valley	P	11/80	A		Redesignate to attainment

[a]Cities unless otherwise noted.

[b]Nonattainment violation indicated by pollutant and as P = primary and S = secondary.

[c]A = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

[d]See p. 30 for a listing of the abbreviations.

[e]AQCR = air quality control region. See Table III.147 and Fig. III.201 for identification of this region.

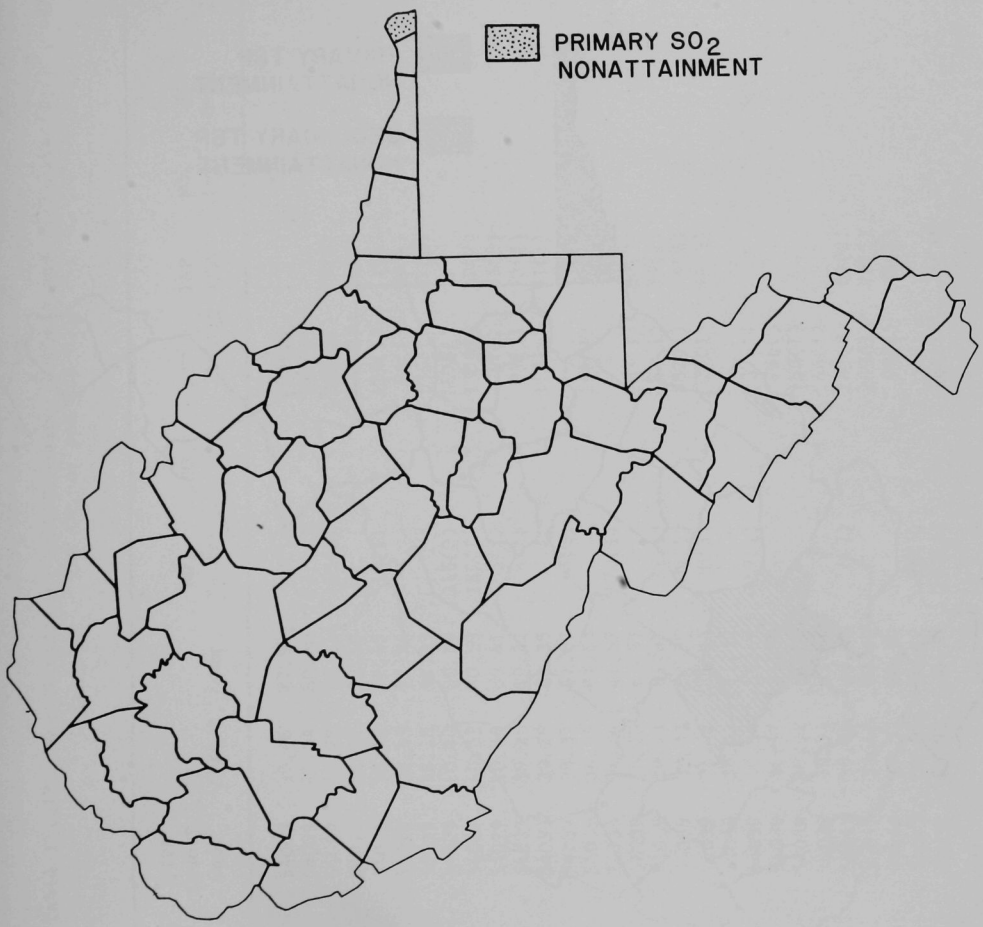


Fig. III.186 West Virginia: SO_2 Nonattainment Areas as Designated December 1981

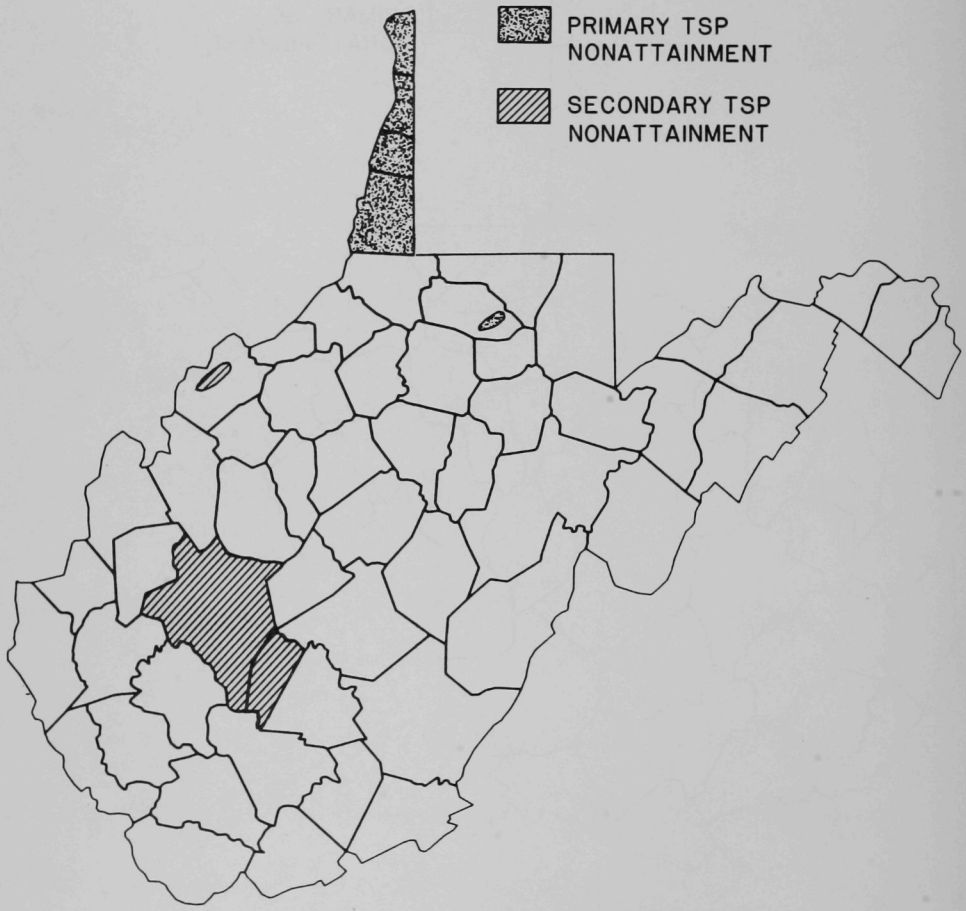


Fig. III.187 West Virginia: TSP Nonattainment Areas as Designated December 1981

Table III.136 West Virginia: SAROAD Monitor Numbers and 1979 Data ($\mu g/m^3$, mg/m^3 for CO, or ppm for O_3)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
1*	54003	39.46	77.97	3(1)		165(1)					
2	54009	40.34	80.60	177(1)		243(2)					
3	54009	40.29	80.61	163(1)		269(3)	83(3)				
4*	54011	38.37	82.56			100(1)	46(1)				
5	54011	38.42	82.45	13(1)		150(1)	71(2)				
6	54019	38.13	81.24			86(1)	38(1)				
7	54019	38.18	81.33			136(1)	62(2)				
8	54029	40.40	80.59	316(2)		167(1)					
9	54029	40.53	80.58	182(1)		135(1)	66(2)				
10	54029	40.50	80.61	155(1)		179(1)	65(2)				
11	54033	39.25	80.32	8(1)		95(1)	43(1)				
12	54033	39.29	80.35			112(1)	51(1)				
13	54039	38.37	81.67	16(1)							
14	54039	38.35	81.64			146(1)					
15	54039	38.34	81.62	170(1)						0.09(1)	
16	54039	38.25	81.57			183(1)	80(3)				
17	54039	38.44	81.68	73(1)		70(1)	38(1)				
18	54039	38.37	81.70	105(1)		182(1)	74(2)				
19	54039	38.42	81.85	20(1)		179(1)	64(2)				
20	54039	38.34	81.61								2(3)
21	54039	38.34	81.62	167(1)		127(1)			5(1)		
22	54039	38.37	81.59			75(1)					
23	54039	38.32	81.59			150(1)					
24	54039	38.34	81.61			44(1)					
26	54041	39.04	80.46	18(1)		262(3)	68(2)				
27	54049	39.48	80.12			289(3)	76(3)				
28	54049	39.50	80.14			99(1)	45(1)				
29	54049	39.48	80.12	26(1)							
30	54051	39.92	80.74	202(1)		162(1)	76(3)				

Table III.136 West Virginia (Cont'd)

Monitor Number	FIPS County Code	Lat	Long	SO_2 24-hr	SO_2 1-yr	TSP 24-hr	TSP 1-yr	NO_2 1-yr	CO 8-hr	O_3 1-hr	Pb 3-mo
31	54057	39.65	78.77	3(1)		93(1)					
32	54057	39.48	79.05	24(1)							
33	54057	39.44	78.98			115(1)					
34	54057	39.48	79.05			134(1)					
35	54057	39.48	79.05			144(1)					
36	54057	39.48	79.05	3(1)							
37	54061	39.64	79.95	31(1)		112(1)	49(1)				
38	54061	39.62	79.96	35(1)		169(1)	51(1)				
39	54069	40.06	80.72			243(2)	88(3)				
40	54069	40.12	80.70						11(3)		
41	54069	40.12	80.70							0.08(1)	
42	54069	40.07	80.72	300(2)	57(1)						
43	54069	40.04	80.66			122(1)					
44	54069	40.23	80.68	62(1)		177(1)	67(2)				
45	54069	40.04	80.73			196(2)	84(3)				
46	54069	40.06	80.72	98(1)							
47	54079	38.46	81.82	26(1)		162(1)	61(2)				
48	54081	37.78	81.19	3(1)		110(1)	42(1)				
49	54107	39.25	81.55	52(1)		197(2)	65(2)				
51	54107	39.34	81.55			113(1)					
52	54107	39.32	81.55	253(1)							

*Not Plotted.

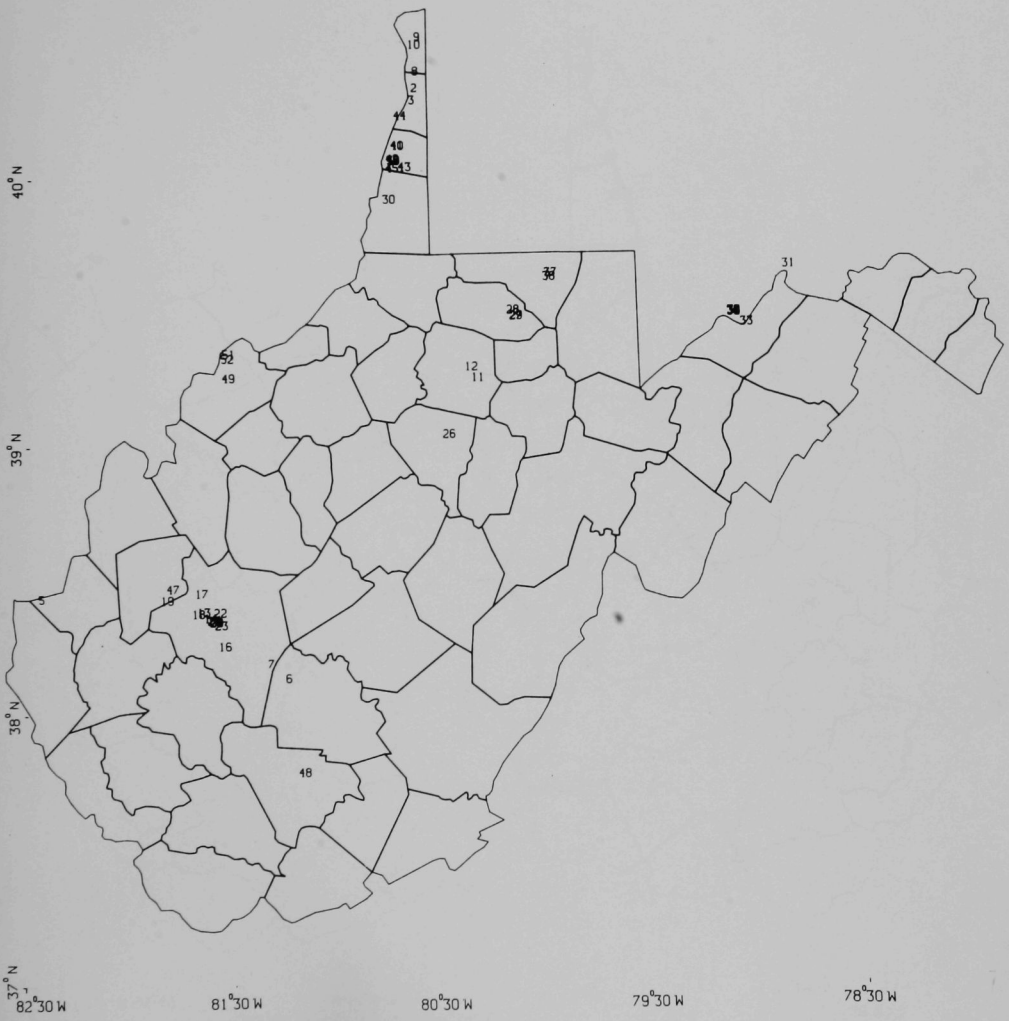


Fig. III.188 West Virginia: Locations of SAROAD Monitors
(See Table III.136 for Monitor Numbers)

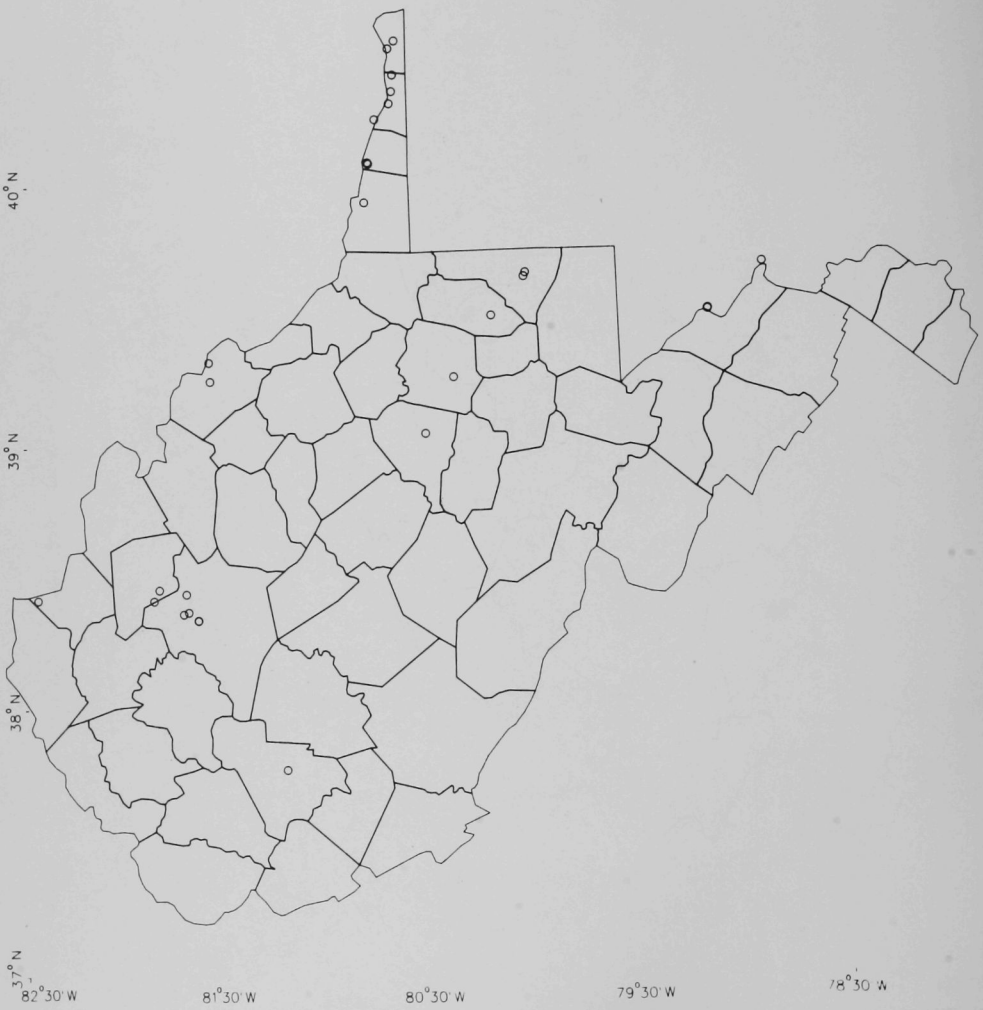


Fig. III.189 West Virginia: Monitors Reporting Adequate Data on 24-hr Average SO_2 Concentrations; No Violations

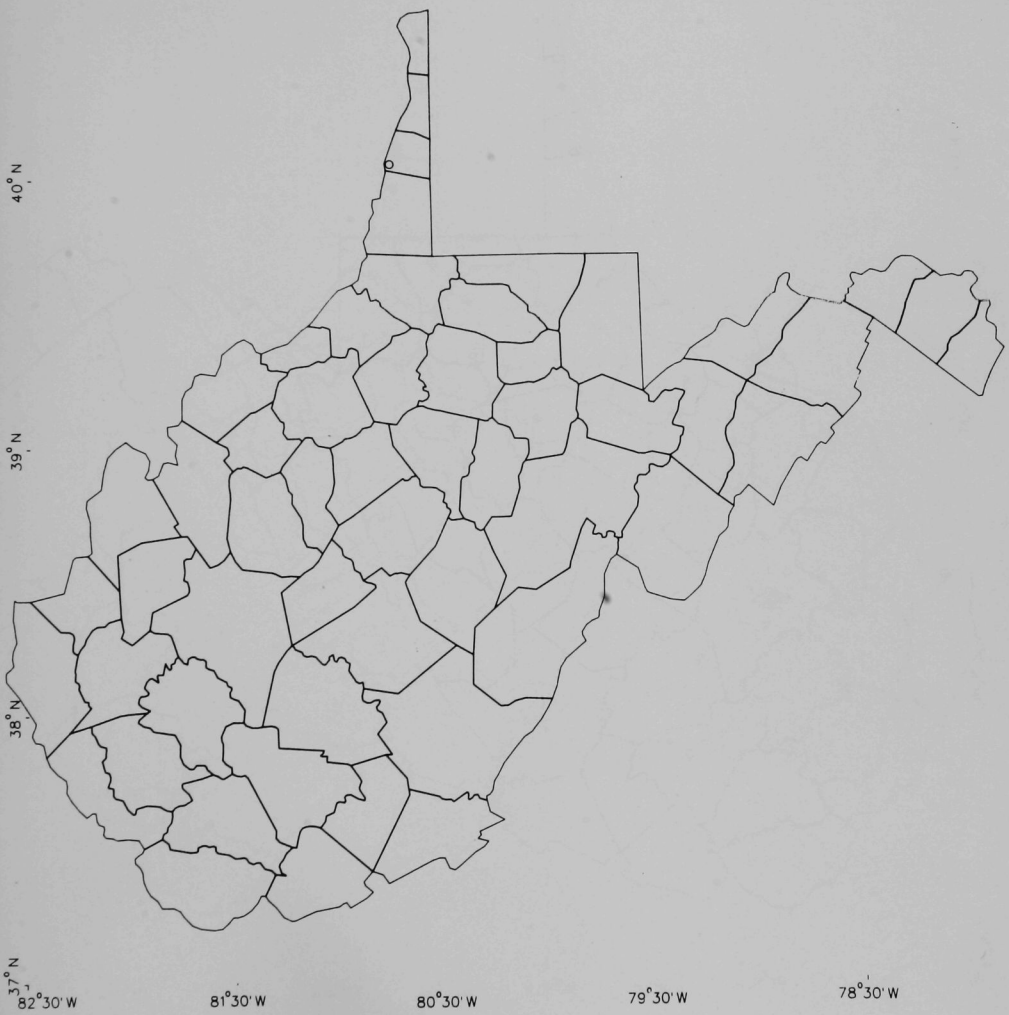


Fig. III.190 West Virginia: Monitors Reporting Adequate Data on Annual Average SO_2 Concentrations; No Violations

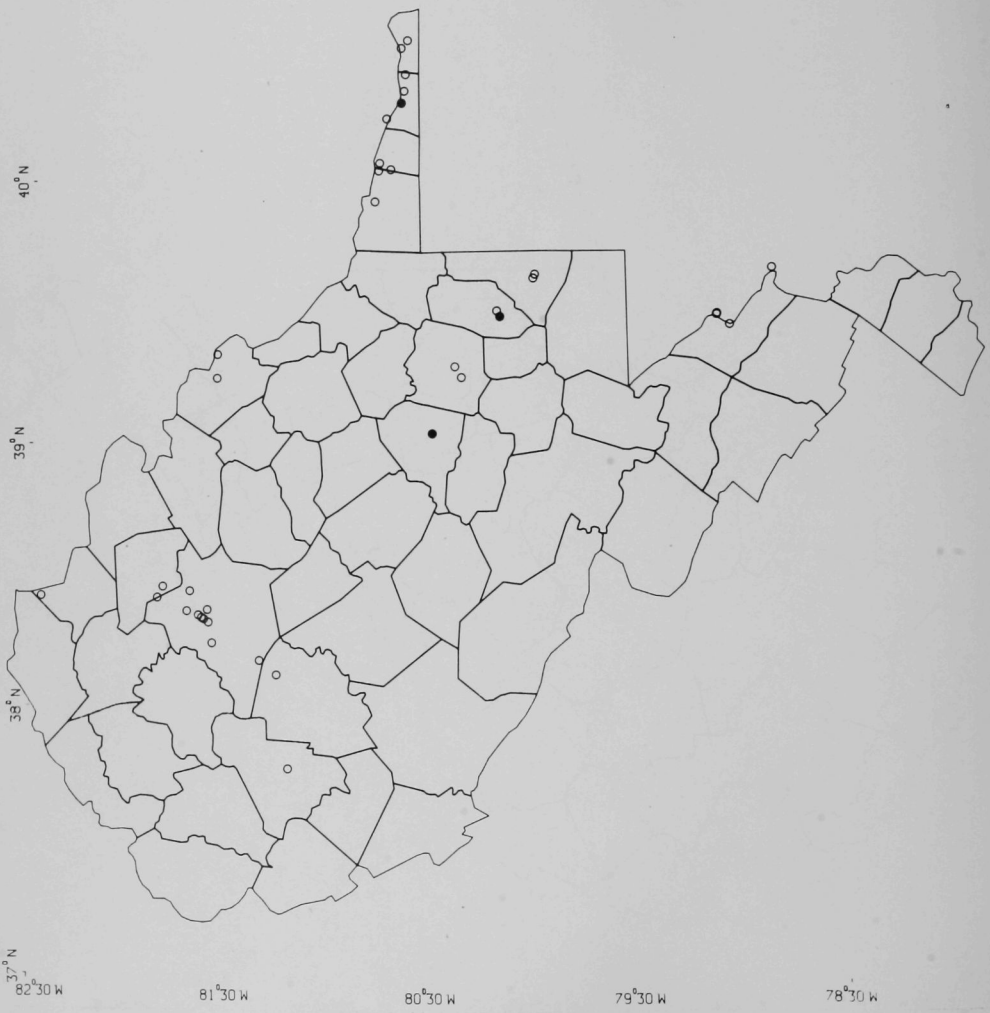


Fig. III.191 West Virginia: Monitors Reporting Adequate Data on 24-hr Average TSP Concentrations; Violations Shown by Shaded Circles

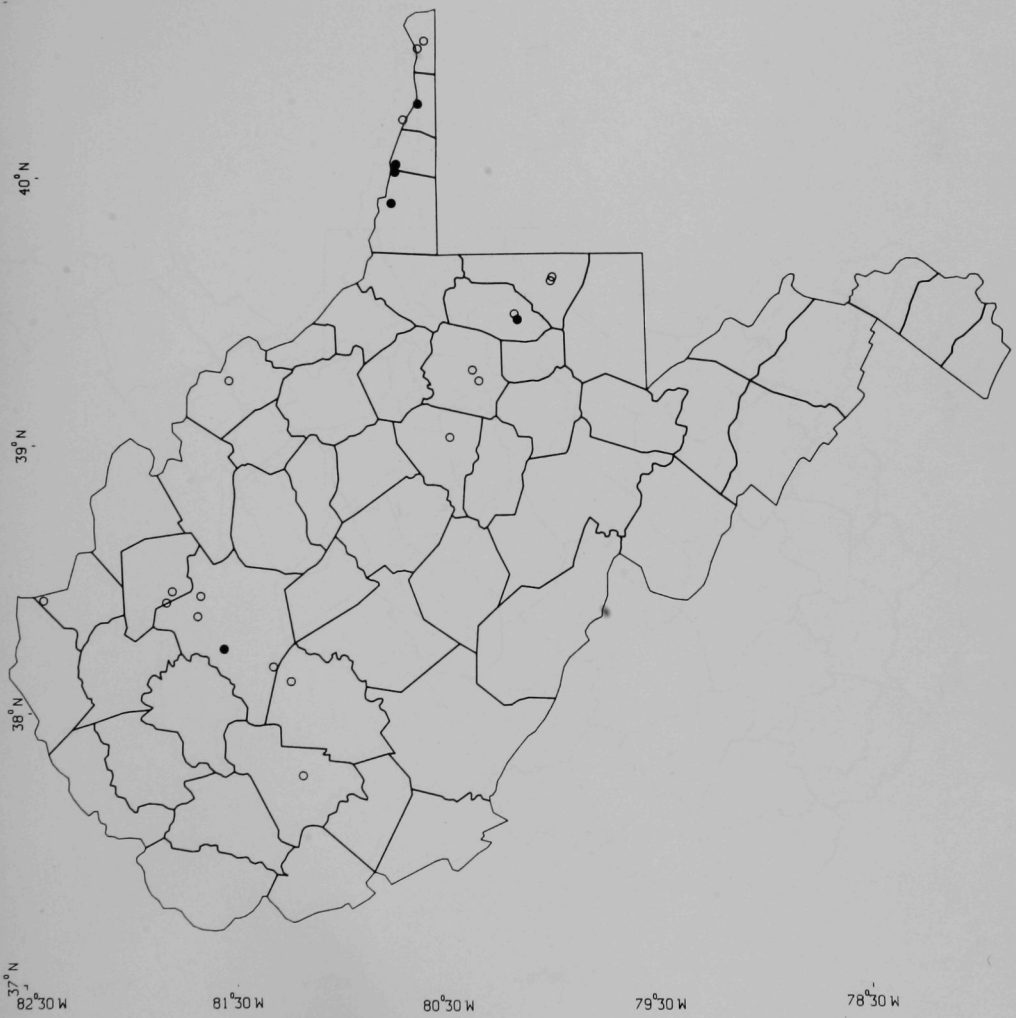


Fig. III.192 West Virginia: Monitors Reporting Adequate Data on Annual Average TSP Concentrations; Violations Shown by Shaded Circles

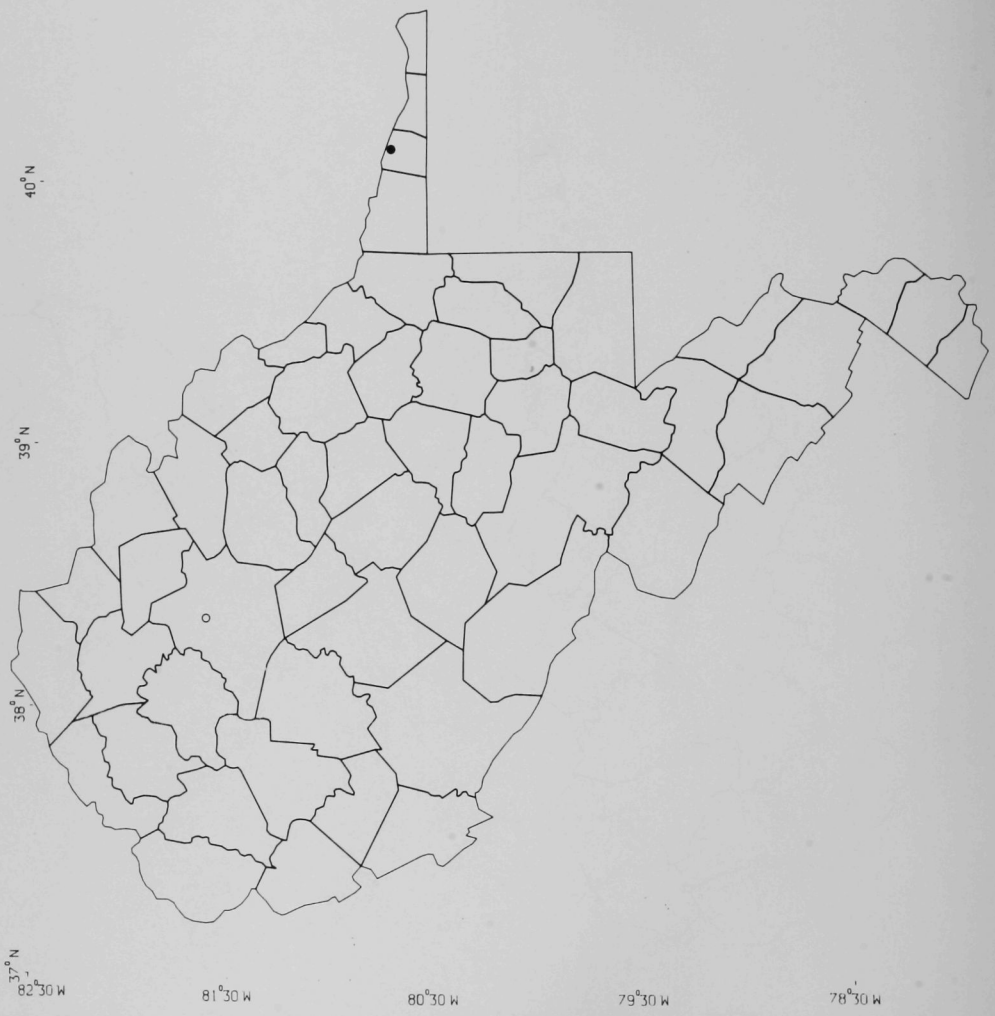


Fig. III.193 West Virginia: Monitors Reporting Adequate Data on 8-hr Average CO Concentrations; Violations Shown by Shaded Circles

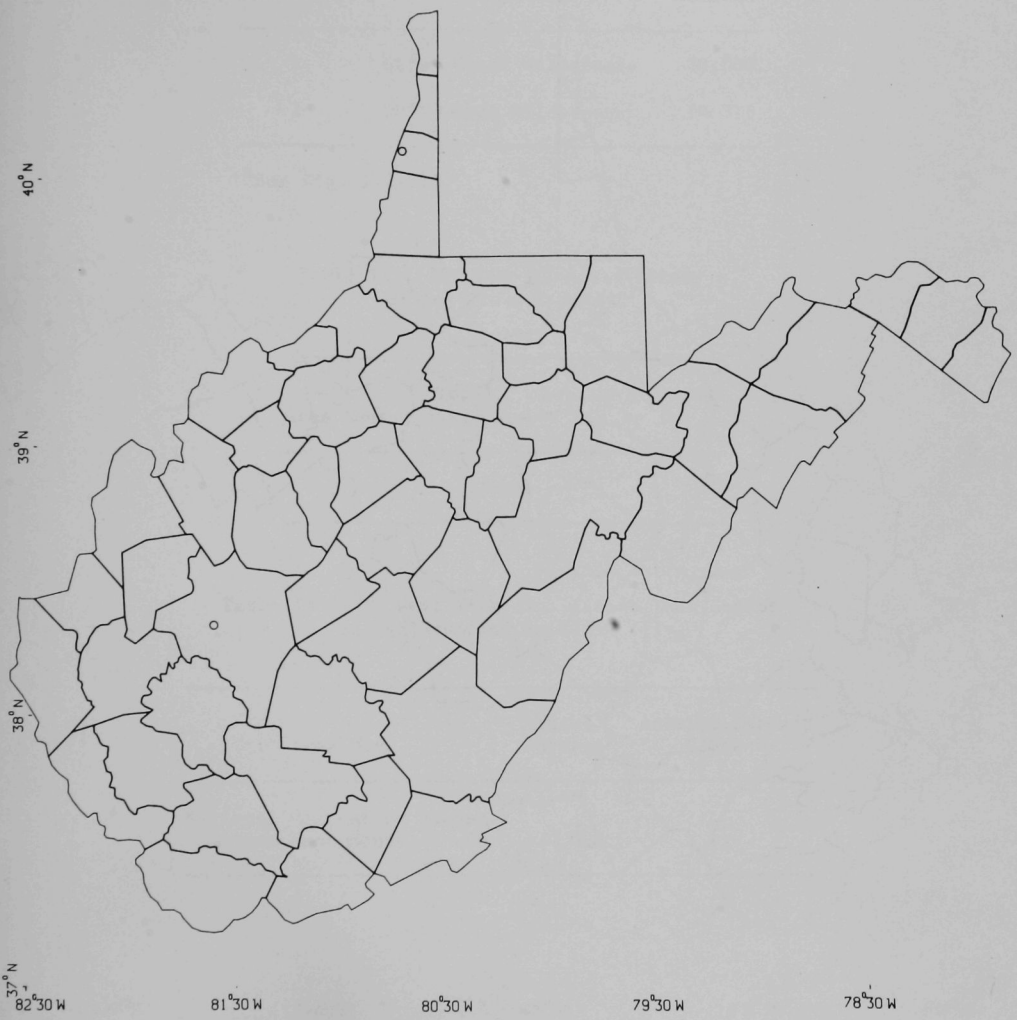


Fig. III.194 West Virginia: Monitors Reporting Adequate Data on 1-hr Average O_3 Concentrations; Violations Shown by Shaded Circles

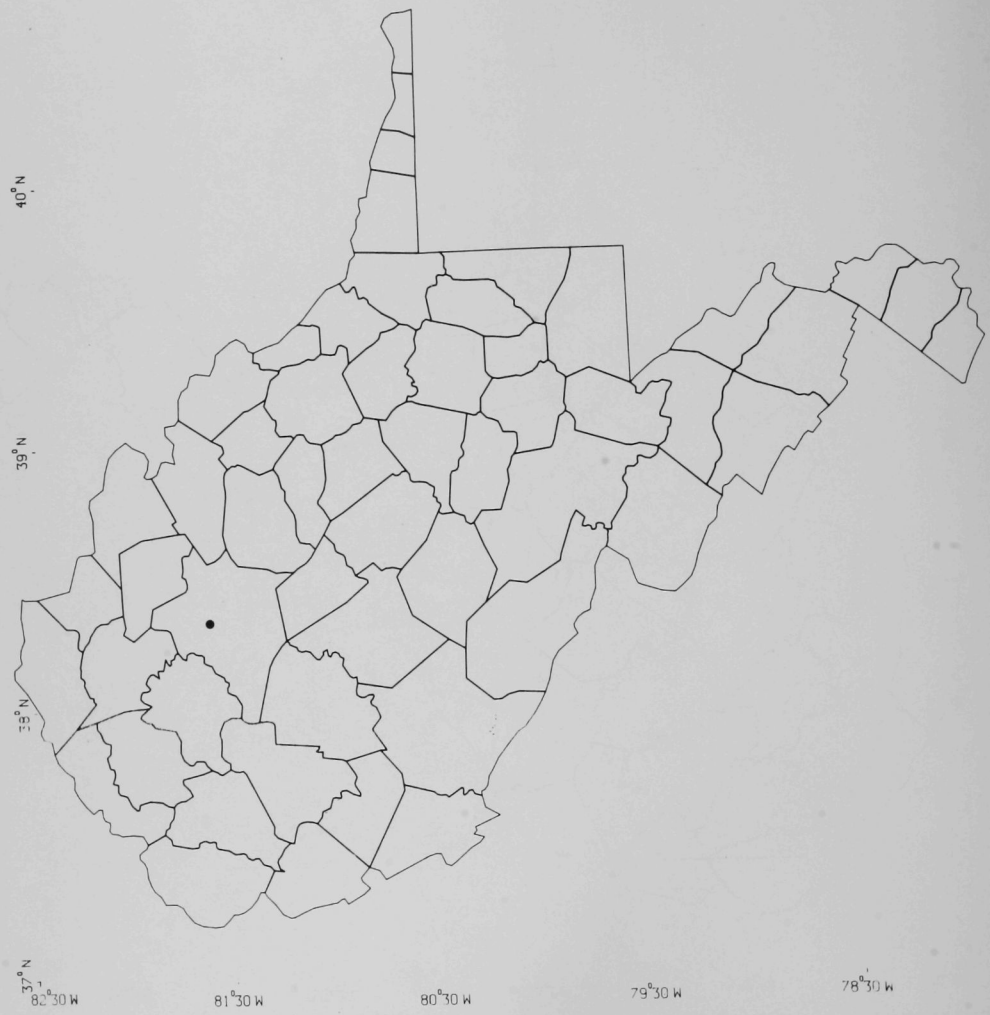


Fig. III.195 West Virginia: Monitors Reporting Adequate Data on 3-month Average Lead Concentrations; Violations Shown by Shaded Circles

Table III.137 West Virginia: PSD Class I Areas

Location[a]	Area Name	Acreage
1	Otter Creek Wilderness	20,000
2	Dolly Sods Wilderness	10,215

[a]See Fig. III.196.

Table III.138 West Virginia Recommended Class I Areas

Area Name	Total Acreage	Acreage Already Class I
None		

Table III.139 West Virginia: Areas That Cannot Be Reclassified as Class III

Area Name	Total Acreage	Acreage Already Class I
National Recreation Areas:		
Spruce Knob-Seneca Rocks	100,000	-

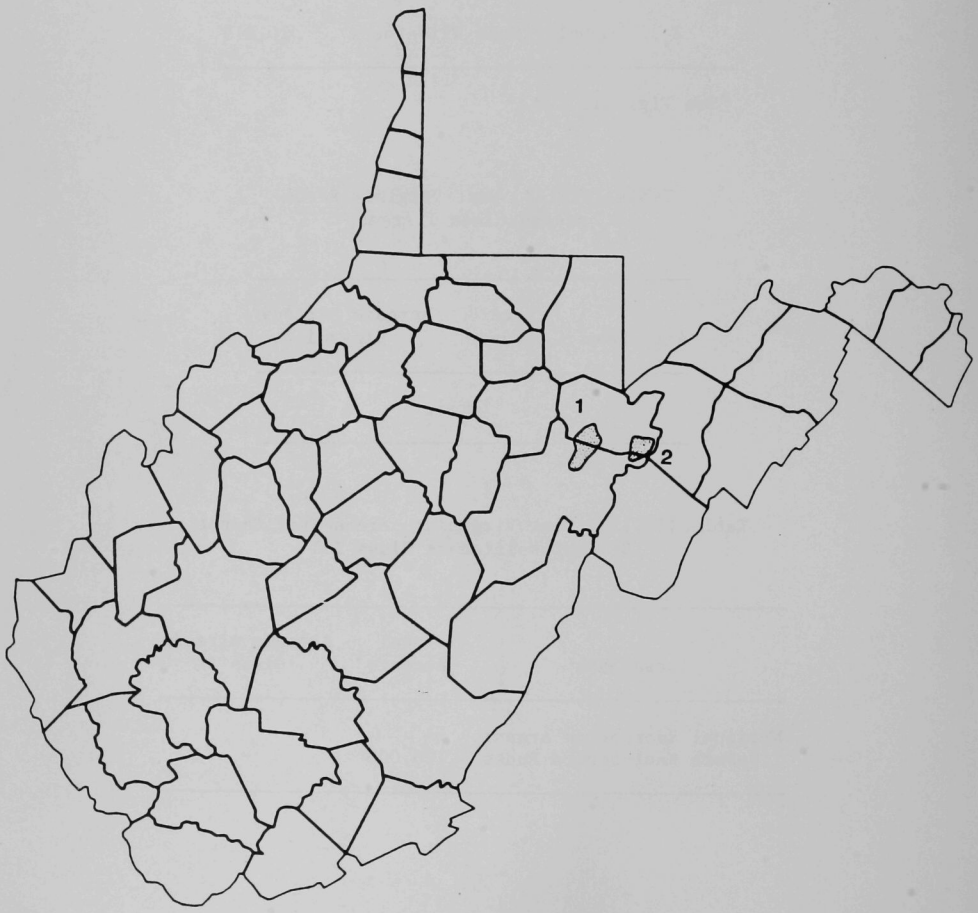


Fig. III.196 West Virginia: PSD Class I Areas

Table III.140 West Virginia: SO_2 Emission Limits (lb $SO_2/10^6$ Btu) by Heat Input Class, Q, in Units of 10^6 Btu/hr

Source Type and Location	Fuel Type	Emission Limit for $Q \geq 10$[a]
New[b] and Existing		
Brooke, Hancock, Ohio, Grant (Union district only), Mineral (Elk, Near Creek, and Piedmont districts), and Marshall counties		
Type A[c]		
Source (a)[d]	All Fossil Fuels	6.8
Source (c) + (d)[d]	All Fossil Fuels	2.7
Type B and C[c]	All Fossil Fuels	3.1
Source (b)[d]	All Fossil Fuels	7.5
Jackson, Pleasants, Tyler, Wetzel, and Woods Counties		
Type A[c]		
Source (f), (g), (i)[d]	All Fossil Fuels	3.2
Source (e)[d]	All Fossil Fuels	5.12
Source (h)[d]	All Fossil Fuels	3.1
Type B and C[c]	All Fossil Fuels	3.2
All other counties not previously listed		
Type A[c]		
Source (j) + (k)[d]	All Fossil Fuels	1.6
Type B and C[c]	All Fossil Fuels	1.6[e]

[a]Total heat input based on actual or operating rate.
[b]New sources must comply at least with NSPS or with more stringent state standards.
[c]Refers to fuel-burning equipment: Type A = units that produce electricity for sale; Type B = any unit not classified as Type A or C; Type C = any hand-fired or stoker-fired unit not classified as Type A.
[d]Refers to a specific unit or similar units in that Priority Region: (a) Kammer, (b) Mitchell, (c) Willow Island, (d) Mt. Storm, (e) Harrison, (f) Riversville, (g) Albright, (h) Fort Martin, (i) Philip Sporn, (j) John Amos, and (k) Kanawha.
[e]In addition to this limit based on heat input, no more than 5,500 lb of SO_2 per hr may be discharged from all stacks at one plant.

Table III.141 West Virginia: Particulate Matter Emission Limits (lb PM/10^6 Btu) by Heat Input Class, Q, in Units of 10^6 Btu/hr

Source	Fuel Type	Emission Limit for Q > 0[a]
Existing		
Utility steam generation	All Fuels	0.05Q[b]
Hand- or stoker-fired units	Coal	0.09Q[c]
All other types	All Fuels	d
New[e]	All Fuels	d

[a]Total heat input based on unit design maximum for all units; allowable emissions based on entire plant.

[b]Maximum of 1200 lb PM/hr.

[c]Maximum of 600 lb PM/hr.

[d]

Q (10^6 Btu/hr)	Limit (lb/hr)
10	3.4
100	16.6
3,333	300 (maximum)

[e]Sources with Q > 250 x 10^6 Btu/hr must comply at least with NSPS or with more stringent state standards.

Table III.142 West Virginia: Power Plant Location and Generating Capacity Data for 1980

Plant No.[a]	Plant Name[b]	Latitude[b]	Longitude[b]	Generating Capacity (MW), by Regulatory Class[c,d]		Capacity Factor[e] (%)	Sulfur Dioxide Limit ($lb/10^6$ Btu), by Regulatory Class[f]	
				SIP	NSPS		SIP	NSPS
1	Albright	39.49	79.64	289	0	66	3.20	0.00
2	Amos	38.34	81.52	2,900	0	70	1.60	0.00
3	Ft. Martin	39.72	79.86	1,107	0	63	3.10	0.00
4	Harrison	39.39	80.33	1,920	0	61	5.12	0.00
5	Kammer	39.85	80.82	615	0	70	6.80	0.00
6	Kanawha River	38.21	81.42	421	0	74	1.60	0.00
7	Mitchell	39.83	80.82	1,460	0	59	7.50	0.00
8	Mount Storm	39.20	79.26	1,686	0	38	2.70	0.00
9	P Sporn	38.96	81.92	1,037	0	52	3.20	0.00
10	Riversville	39.53	80.11	142	0	58	3.20	0.00
11	Willow Island	39.37	81.30	245	0	38	2.70	0.00

[a]See Fig. III.197.

[b]EPA's Energy Data System (EDS), except as noted.

[c]FPC form 4, 1980.

[d]Capacity subject to emission regulations of SIP or NSPS, as indicated.

[e]Calculated from annual net generation, FPC form 4, 1980.

[f]If more than one unit, fuel type, and SIP emission limit at plant, "SIP" is average weighted by size, fuel type, and capacity.

Table III.143 West Virginia: Power Plant Fuel Use Data for 1980

Plant No.[a]	Plant Name	Coal Sulfur Content[b] (%)	Coal Heating Value[b] (Btu/lb)	Coal Use[c] (10^3 ton)	Oil Sulfur Content[b] (%)	Oil Heating Value[b] (Btu/gal)	Oil Use[c] (10^3 Bbl)	Gas Heating Value[b] (Btu/ 10^3 ft^3)	Gas Use[c] (10^6 ft^3)
1	Albright	1.74	12,142	776	0.30	141,000	4	0	0
2	Amos	0.78	12,013	7,066	0	0	114	0	0
3	Ft. Martin	1.94	12,077	2,577	0.30	141,000	34	0	0
4	Harrison	2.81	13,194	4,026	0.30	141,000	3	1,000	0
5	Kammer	4.23	11,928	1,855	0	0	3	0	0
6	Kanawha River	0.76	11,411	1,162	0	0	4	0	0
7	Mitchell	2.57	12,055	3,502	0	0	97	0	0
8	Mount Storm	1.83	11,754	2,609	0.29	139,933	295	0	0
9	P Sporn	1.00	11,587	2,126	0	0	39	0	0
10	Riversville	1.35	12,112	302	0.30	141,000	4	0	0
11	Willow Island	1.22	12,186	333	0.30	141,000	5	0	0

[a]See Fig. III.197.

[b]FPC form 423, 1980.

[c]FPC form 4, 1980. Note that in cases where the sulfur content and/or the heating value of a fuel is entered accompanied by 0 in the use column, the quantities of fuel that have been used are less than 0.5×10^3 barrels of oil or tons of coal, or 0.05×10^6 cubic feet of gas.

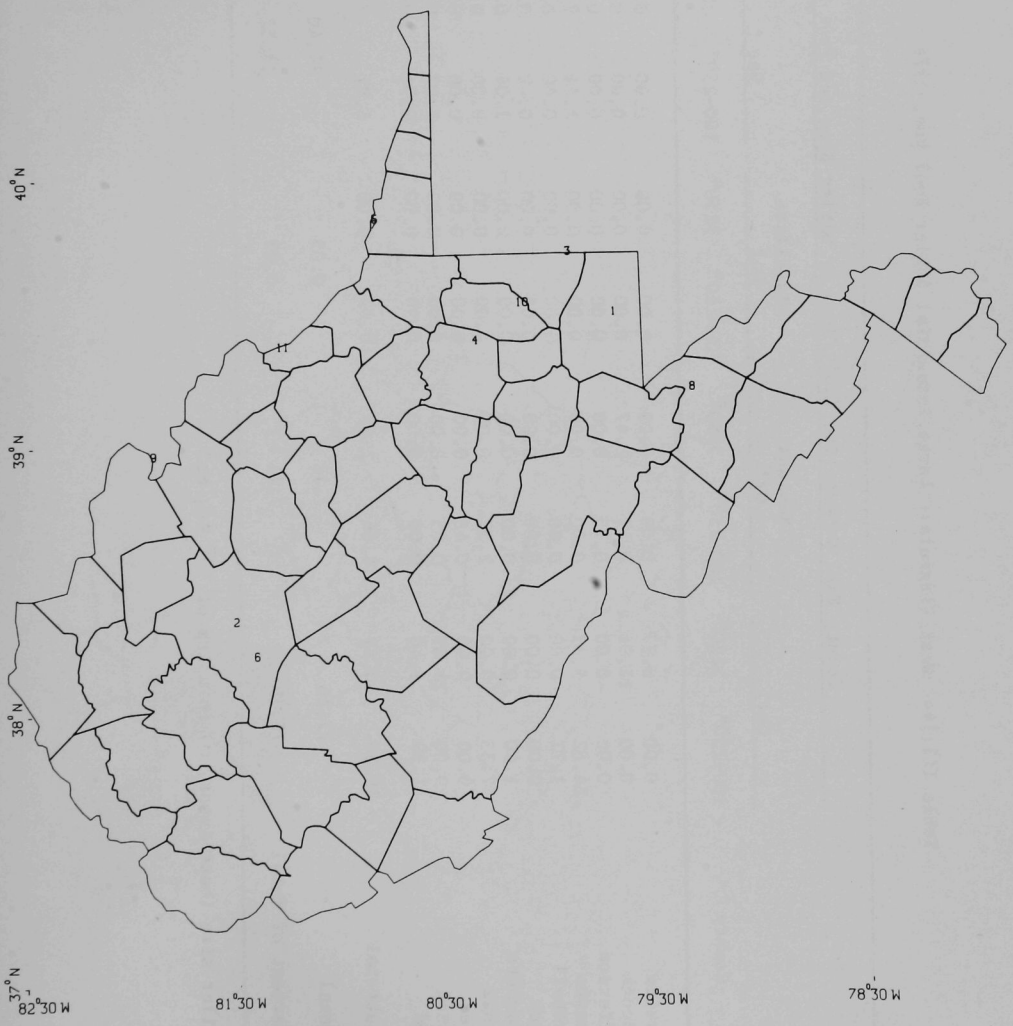


Fig. III.197 West Virginia: Key to Power Plant Locations

Table III.144 West Virginia: Large Industrial Boiler Fuel Use, 1974

County	County Fuel Consumption (10^{12} Btu) by Boiler Size and Fuel Type								
	Coal		Residual Oil		Distillate Oil		Gas		
	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	100-250[a]	>250[a]	Total
Fayette	0.00	6.77	0.00	0.00	0.00	0.00	0.00	0.16	6.93
Hancock	0.00	11.96	0.22	2.47	0.00	0.00	0.00	0.05	14.71
Jefferson	0.00	0.00	0.75	0.00	0.00	0.00	0.00	0.00	0.75
Kanawha	24.62	5.87	0.00	0.00	0.00	0.00	2.11	7.36	39.96
Marshall	1.72	0.00	0.00	0.00	0.00	0.00	0.60	0.00	2.32
Mason	0.00	0.00	0.00	0.00	0.03	0.00	0.48	0.00	0.51
Pleasants	1.40	0.00	0.00	0.00	0.00	0.00	1.04	0.00	2.45
Putnam	7.33	0.00	2.37	0.00	0.00	0.00	0.00	0.00	9.70
Tyler	0.00	0.00	0.46	0.00	0.00	0.00	0.00	0.00	0.46
Wetzel	0.00	14.89	0.85	0.00	0.00	0.00	2.07	0.00	17.82
Wood	1.30	1.40	0.00	0.00	0.00	0.00	0.51	0.00	3.21
Subtotal	36.36	40.89	4.66	2.47	0.03	0.00	6.82	7.58	
Total	77.26		7.12		0.03		14.40		98.81
Percent of Total	78.19		7.21		0.03		14.57		100

[a]Boiler size (heat input, Q) in units of 10^6 Btu/hr.

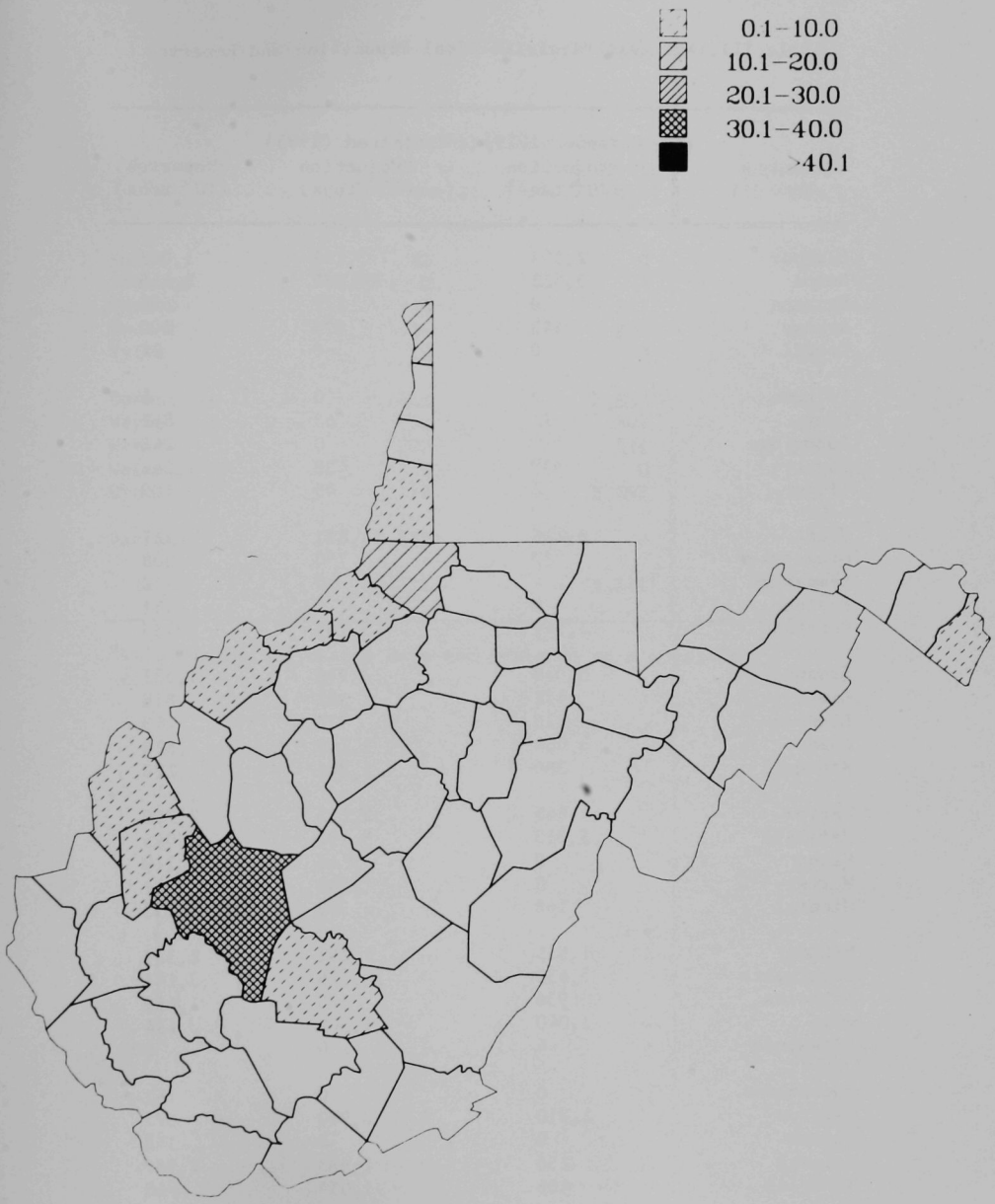


Fig. III.198 West Virginia: Fuel Use (in Units of 10^{12} Btu) in Major Fuel-Burning Installations, by County

Table III.145 West Virginia: Coal Production and Reserves

County Name	Current (1979) Production (10^3 tons)	Projected (1985) Production (10^3 tons)	Reserves (10^6 tons)
Barbour	2,301	3,126	1,076
Boone	5,522	14,885	2,445
Braxton	0	177	566
Brooke	543	875	200
Cabell	0	0	22
Calhoun	0	0	4
Clay	72	63	842
Doddridge	0	0	248
Fayette	387	438	1,066
Gilmer	2	45	169
Grant	2,226	1,891	327
Greenbrier	67	750	308
Hampshire	4	0	0
Hancock	0	0	141
Harrison	2,344	5,161	435
Kanawha	5,013	3,946	1,682
Lewis	471	382	818
Lincoln	218	972	443
Logan	3,064	1,249	3,620
McDowell	380	1,846	1,228
Marion	4,645	5,213	2,710
Marshall	5,913	5,131	3,045
Mason	0	46	119
Mercer	0	193	61
Mineral	168	359	233
Mingo	1,615	4,292	2,327
Monongalia	5,430	10,575	3,141
Nicholas	936	683	1,669
Ohio	1,040	1,502	414
Pleasants	4	0	0
Pocahontas	0	0	162
Preston	2,010	1,980	877
Putnam	0	0	148
Raleigh	256	1,983	1,987
Randolph	486	1,054	868

Table III.145 West Virginia (Cont'd)

County Name	Current (1979) Production (10^3 tons)	Projected (1985) Production (10^3 tons)	Reserves (10^6 tons)
Roane	82	0	23
Summers	0	4	9
Taylor	10	227	410
Tucker	34	233	129
Tyler	19	0	80
Upshur	462	2,588	974
Wayne	32	344	484
Webster	302	516	1,375
Wetzel	0	0	846
Wyoming	77	2,093	1,744
Various[a]	2,585	0	0
Total	48,722	74,822	39,476

[a]This figure represents data not assigned to a specific county.

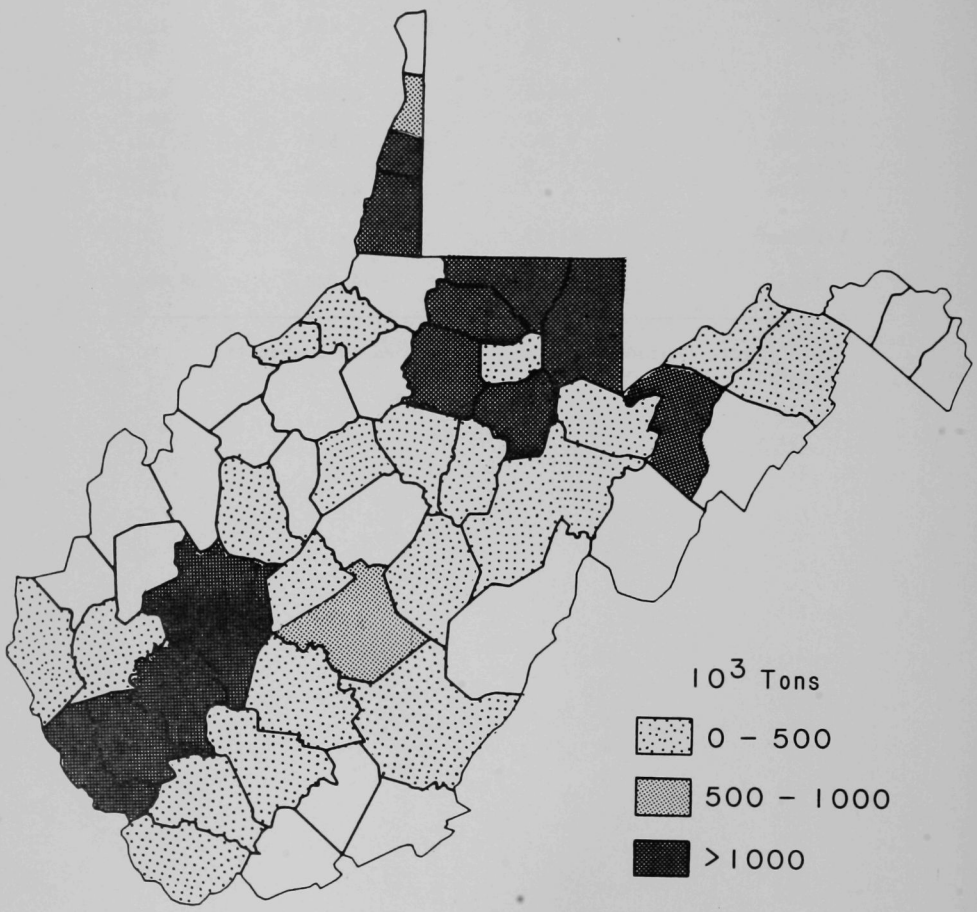


Fig. III.199 West Virginia: Coal Production in 1979

Table III.146 West Virginia: Coal Quality Data

County Name	Avg. SO_2 Content (lb/10^6 Btu)	Avg. Ash Content (%)	Avg. Heat Value (Btu/lb)	Washability: Sulfur Removal (%)	Washability: Btu Loss (%)
Barbour	3.83	11.78	12,535	30.04	8.80
Boone	1.36	12.61	12,089	9.66	2.34
Brooke	6.65	20.42	10,326	26.26	9.38
Clay	3.93	11.48	12,444	5.47	3.25
Fayette	1.96	12.57	12,108	17.66	7.30
Gilmer	3.17	13.03	11,741	35.67	4.82
Grant	3.64	18.70	11,485	21.18	5.12
Greenbrier	3.55	16.83	11,579	8.40	0.67
Hampshire	3.01	9.70	12,895	30.12	3.03
Harrison	4.61	8.47	13,036	7.12	0.64
Kanawha	1.38	15.43	11,488	4.73	1.20
Lewis	4.24	10.71	12,660	2.48	0.36
Lincoln	1.62	14.64	11,562	34.92	3.80
Logan	1.27	12.99	12,034	4.85	2.55
McDowell	1.84	17.66	11,507	45.49	3.00
Marion	3.87	10.95	12,732	18.13	2.40
Marshall	7.22	14.01	11,822	12.07	5.41
Mineral	2.59	19.49	11,093	18.49	3.03
Mingo	1.46	10.49	12,380	4.70	0.94
Monongalia	3.96	12.93	12,310	16.20	2.20
Nicholas	1.45	10.68	12,593	25.08	10.44
Ohio	4.62	10.78	12,200	12.29	3.78
Pleasants	4.91	13.19	12,156	38.94	6.46
Preston	2.89	12.74	12,236	28.46	3.08
Putnam	1.19	12.06	12,151	7.20	2.92
Raleigh	1.45	11.82	12,506	3.63	0.98
Randolph	1.48	11.76	12,580	25.80	5.96
Roane	4.30	11.92	12,212	38.37	7.35
Taylor	4.43	9.54	13,082	20.94	2.64
Tucker	3.44	9.16	13,323	8.34	0.67
Tyler	1.26	10.80	12,414	5.39	1.44
Upshur	2.31	11.59	12,580	14.69	3.02
Wayne	1.98	10.55	11,936	14.96	1.77
Webster	1.51	14.19	11,863	10.38	3.05
Wyoming	2.09	9.55	12,902	20.91	3.75

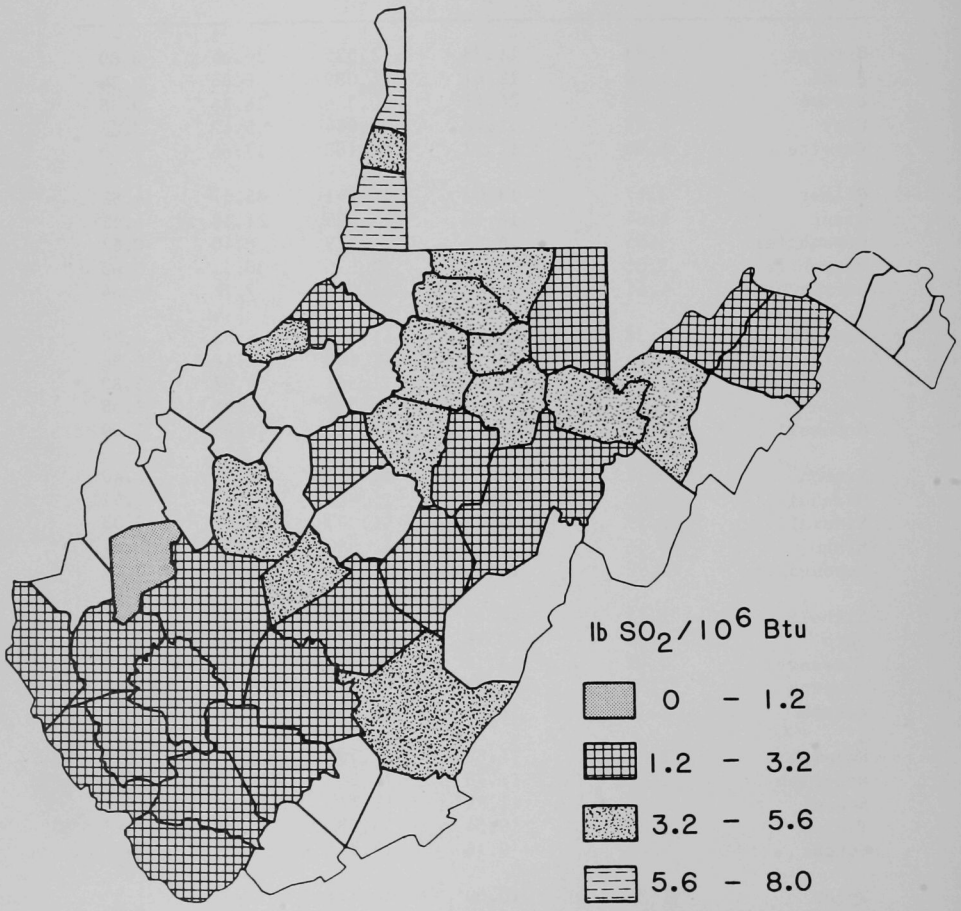


Fig. III.200 West Virginia: Average Sulfur Content of Coal

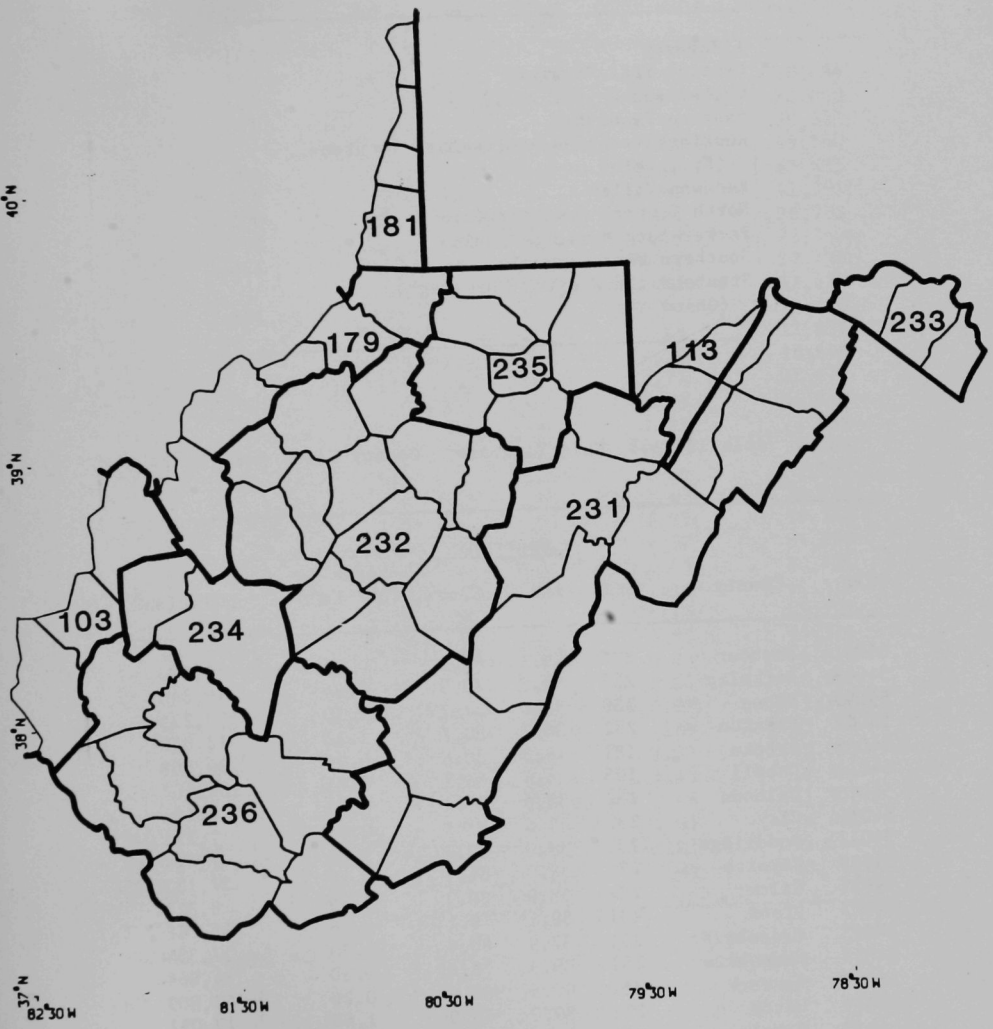


Fig. III.201 West Virginia: Air Quality Control Regions
(see Table III.147)

Table III.147 West Virginia: Identification of Air Quality Control Regions (AQCR)

AQCR Name	No.
Allegheny	231
Central West Virginia	232
Cumberland-Keyser (Md.)	113
Eastern Panhandle	233
Huntington-Ashland-Portsmouth-Ironton (Ky., Ohio)	103
Kanawha Valley	234
North Central West Virginia	235
Parkersburg-Marietta (Ohio)	179
Southern West Virginia	236
Steubenville-Wierton-Wheeling (Ohio)	181

Table III.148 West Virginia: County-Level Data

FIPS	County	AQCR	Centroid Lat	Centroid Long	Area (10^3 km^2)	Population[a]
54001	Barbour	235	39.1	80.0	0.92	16,623
54003	Berkeley	233	39.5	78.0	0.84	46,846
54005	Boone	236	38.0	81.7	1.30	30,235
54007	Braxton	232	38.7	80.7	1.32	13,880
54009	Brooke	181	40.3	80.6	0.25	30,008
54011	Cabell	103	38.4	82.2	0.75	106,407
54013	Calhoun	232	38.8	81.1	0.71	8,181
54015	Clay	232	38.5	81.1	0.85	11,221
54017	Doddridge	232	39.3	80.7	0.83	7,421
54019	Fayette	236	38.0	81.1	1.72	57,155
54021	Gilmer	232	38.9	80.9	0.89	8,321
54023	Grant	231	39.1	79.2	1.26	10,218
54025	Greenbrier	231	37.9	80.4	2.70	37,334
54027	Hampshire	231	39.3	78.6	1.58	14,864
54029	Hancock	181	40.5	80.6	0.26	40,809
54031	Hardy	231	39.0	78.9	1.48	10,051
54033	Harrison	235	39.3	80.4	1.08	77,488
54035	Jackson	179	38.8	81.7	1.24	25,597
54037	Jefferson	233	39.3	77.9	0.55	30,311
54039	Kanawha	234	38.3	81.5	2.38	223,883

Table III.148 West Virginia (Cont'd)

FIPS	County	AQCR	Centroid Lat	Centroid Long	Area (10^3 km^2)	Population[a]
54041	Lewis	232	39.0	80.5	1.02	18,894
54043	Lincoln	236	38.2	82.1	1.21	22,860
54045	Logan	236	37.8	81.9	1.19	50,511
54047	Mc Dowell	236	37.4	81.7	1.41	49,550
54049	Marion	235	39.5	80.2	0.80	65,525
54051	Marshall	181	39.9	80.7	0.83	41,391
54053	Mason	103	38.8	82.0	1.25	26,763
54055	Mercer	236	37.4	81.1	1.10	73,363
54057	Mineral	231	39.4	78.9	0.87	27,159
54059	Mingo	236	37.7	82.1	1.06	37,052
54061	Monongalia	235	39.6	80.0	0.97	75,240
54063	Monroe	231	37.6	80.6	1.19	12,857
54065	Morgan	233	39.6	78.3	0.59	10,696
54067	Nicholas	232	38.3	80.8	1.72	28,071
54069	Ohio	181	40.1	80.6	0.31	61,464
54071	Pendleton	231	38.7	79.4	1.83	7,935
54073	Pleasants	179	39.4	81.2	0.35	8,245
54075	Pocahontas	231	38.3	80.0	2.35	9,930
54077	Preston	235	39.5	79.7	1.61	30,468
54079	Putnam	234	38.5	81.9	0.93	36,754
54081	Raleigh	236	37.8	81.3	1.57	85,899
54083	Randolph	231	38.8	79.9	2.65	28,784
54085	Ritchie	232	39.2	81.1	1.16	11,415
54087	Roane	232	38.7	81.3	1.25	15,799
54089	Summers	231	37.6	80.9	0.95	15,314
54091	Taylor	235	39.3	80.1	0.46	16,616
54093	Tucker	231	39.1	79.6	1.08	8,657
54095	Tyler	179	39.5	80.9	0.72	11,306
54097	Upshur	232	38.9	80.2	0.89	23,541
54099	Wayne	103	38.1	82.4	1.34	45,095
54101	Webster	232	38.5	80.4	1.45	12,306
54103	Wetzel	179	39.6	80.6	0.96	21,908
54105	Wirt	232	39.0	81.4	0.61	4,652
54107	Wood	179	38.2	81.5	1.01	92,064
54109	Wyoming	236	37.6	81.5	1.31	35,850

[a]1980 Census Bureau data.

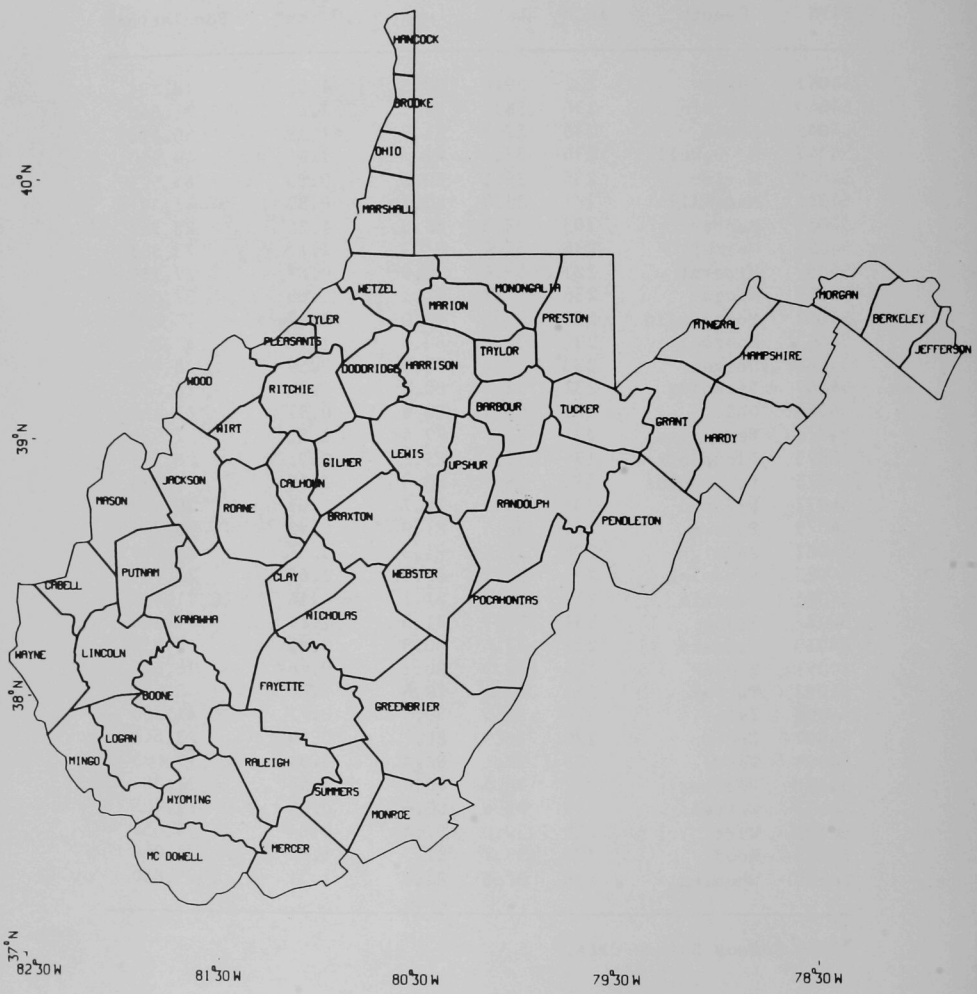


Fig. III.202 West Virginia: Key to Counties

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