COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

2007 AMBIENT AIR QUALITY MONITORING and EMISSION TRENDS REPORT

DIVISION OF AIR QUALITY MONITORING
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HARRISBURG, PA 17101

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List of Acronyms Used in this Report

AIRS	Aerometric Information Retrieval System
AEM	Automated Equivalent Method
AES	Annual Emissions Statement
AQI	Air Quality Index
AQS	Air Quality System
ATSDR	Agency for Toxic Substances and Disease Registry
BAM	Beta-Attenuation Mass (type of continuous $PM_{2.5}$ sampler)
Be	Beryllium
CBD	Central Business District
CFR	Code of Federal Regulations
CO	Carbon Monoxide
COPAMS	Commonwealth of Pennsylvania Air Monitoring System
DCNR	Department of Conservation and Natural Resources
DEP	Department of Environmental Protection
EPA	Environmental Protection Agency
FEM	Federal Equivalent Method
FRM	Federal Reference Method
HAPs	Hazardous Air Pollutants
H_2S	Hydrogen Sulfide
HF	Hydrogen Fluoride
IRIS	Integrated Risk Information System
Max	Maximum
MM/DD-HH	Month/Day - Hour
NAAQS	National Ambient Air Quality Standard
NARSTO	North American Research Strategy for Tropospheric Ozone
NO	Nitric Oxide
NO_2	Nitrogen Dioxide
NO_x	Oxides of Nitrogen
NPAP	National Performance Audit Program
O_3	Ozone
PAMS	Photochemical Assessment Monitoring Station
PAQSS	Pennsylvania Air Quality Surveillance System
Pb	Lead
$PM_{2.5}$	Particulate Matter with aerodynamic diameter less than or equal to 2.5 micrometers
PM_{10}	Particulate Matter with aerodynamic diameter less than or equal to 10 micrometers
ppb	parts per billion
ppbC	parts per billion Carbon
ppbv	parts per billion volume
ppm	parts per million
PSI	Pollutant Standards Index
PSU	Pennsylvania State University
SO_2	Sulfur Dioxide
TSP	Total Suspended Particulate
TEOM	Tapered Element Oscillating Microbalance (type of $PM_{2.5}$ and PM_{10} samplers)
$\mu g/m^3$	micrograms per cubic meter (unit of flow)
VOCs	Volatile Organic Compounds

EXECUTIVE SUMMARY

The Department of Environmental Protection (DEP) protects the right to clean air for all Pennsylvanians as provided in Article I Section 27 of the Constitution of the Commonwealth of Pennsylvania. DEP's Bureau of Air Quality fulfills this obligation by regulating emissions from thousands of air contamination sources located at facilities such as factories, refineries, landfills, and power plants. Monitoring air quality statewide, assisting companies with compliance, requiring the installation of monitoring equipment, investigating complaints, and taking enforcement action against violators are all part of DEP's powers and duties.

As DEP continues to implement the federal Clean Air Act as Amended in 1990, the study of past and present air quality data remains a crucial component of program planning and air pollution reduction strategies. This data provides a foundation, allowing the Department to develop comprehensive strategies to prevent or control the emission of certain air contaminants.

The 2007 Ambient Air Quality Monitoring and Emission Trends Report contains summaries of air quality data collected by DEP's Bureau of Air Quality Ambient Air Monitoring Program during the 2007 calendar year. Monitoring results are presented from 207 air quality monitors at 58 sites throughout the Commonwealth of Pennsylvania. Point source emission inventories are summarized from data submitted to DEP from 1999 through 2007. Multi-year trends for both types of air quality data are presented for selected pollutants.

Data collected during 2007 demonstrate that of the six criteria pollutants regulated by the Environmental Protection Agency (EPA), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO) and lead (Pb) continue to remain in concentrations well below the National Ambient Air Quality Standards (NAAQS). Statewide average concentrations for these pollutants have been consistently below one-half the level of their respective NAAQS for the past ten years. Ozone (O_3) and particulate matter (PM), however, continue to be a challenge in Pennsylvania. While the statewide average ozone concentration has declined by about 12% over the past ten years, the level remains close to the ozone 8-hour NAAQS. The highest ozone concentrations are found in southeastern Pennsylvania, where two counties, Bucks and Delaware, exceeded ozone 8-hour NAAQS concentration levels in 2007. Particulate matter concentrations are measured using two criteria – an aggregate average of all particles less than or equal to 10 microns in diameter (PM_{10}), and an average isolating fine particles, or particles with a diameter less than or equal to 2.5 microns ($PM_{2.5}$). Although statewide average PM_{10} concentrations have remained at levels less than half of the PM_{10} annual NAAQS for the past ten years, fine particle concentrations have hovered near the level of the $PM_{2.5}$ annual and 24-hour NAAQS and have demonstrated a slight increasing trend during that time. The highest $PM_{2.5}$ concentrations are predominantly found in southeastern and western Pennsylvania. Nine counties, Beaver, Berks, Chester, Dauphin, Lancaster, Northampton, Washington, Westmoreland and York exceeded the level at least one of the $PM_{2.5}$ annual or 24-hour NAAQS during 2007.

Air toxics monitoring continued in 2007. Data from the Arendtsville transport study site demonstrate an overall decline in Photochemical Assessment Monitoring Station (PAMS) hydrocarbon compounds over the past ten years.

Emission inventories data also show a decreasing trend for the most common point source pollutants in Pennsylvania. From 1999 through 2007 sulfur dioxide (SO_2) emissions have decreased 5%, nitrogen oxides (NO_x) emissions have decreased 15%, carbon monoxide (CO) emissions have decreased 14% and volatile organic compounds (VOC) emissions have decreased 40%.

CHAPTER 1. INTRODUCTION

Ambient Air Monitoring

The goals of Pennsylvania's ambient air monitoring program are to evaluate compliance with federal and state ambient air quality standards, provide real-time monitoring of air pollution episodes, develop data for trend analysis, support the development and implementation of air quality regulations, and provide information to the public on daily air quality conditions.

DEP monitors air quality in areas having high population density, high levels of expected contaminants, or a combination of both factors. The majority of the monitoring takes place in the 13 air basins of the Commonwealth. Air basins are geographic areas, usually valleys, where air tends to stagnate. Pennsylvania's air basins are defined in the Pennsylvania Code.

DEP does not generally monitor air quality in Allegheny and Philadelphia counties (an exception exists in Allegheny County, where DEP has an ambient air monitoring site as part of an exhibit at the Carnegie Science Center in Pittsburgh). Monitoring and air quality standard compliance evaluation in these areas is performed by two independent county health agencies, the Allegheny County Health Department, and the Philadelphia Department of Health Air Management Services, respectively. Data from Philadelphia or Allegheny counties can be obtained by contacting those agencies directly. Mailing addresses and telephone numbers for all three agencies are listed in Appendix A.

Regulated Air Pollutants and Toxics

DEP devotes the bulk of its ambient air monitoring program to monitoring Pennsylvania's air for pollutants for which health-based National Ambient Air Quality Standards (NAAQS) have been established and defined in the Federal Code of Regulations (CFR). These pollutants include ozone, sulfur dioxide, nitrogen dioxide, carbon monoxide, particulate matter ($PM_{2.5}$ and PM_{10}) and lead. Supplemental particulate matter monitoring results presented in this report include those for total suspended particulates (TSP), nitrates, and sulfates. In addition to NAAQS-related monitoring, DEP also monitors for two contaminants, beryllium and hydrogen sulfide, for which air quality standards have been established and defined in the Pennsylvania Code.

DEP operates one Photochemical Assessment Monitoring Station (PAMS) air monitoring station in Arendtsville, Pennsylvania. This site utilizes specialized air monitoring instruments to gather air quality information relating to volatile organic compounds (VOCs) - chemical compounds that serve as precursors for ozone formation. DEP also operates a monitor for Mercury, another toxic air pollutant, at a monitoring station in Lancaster, Pennsylvania.

DEP utilizes federally-approved sampling and analytical methods for all NAAQS-regulated pollutants. Appendix E of this document provides a breakdown of monitoring methods used by DEP and their associated EPA-approved designation.

For additional information about Pennsylvania's air quality programs, visit the DEP website http://www.depweb.state.pa.us/ (DEP Keyword: Air, Air Pollution, Air Quality, Clean Air).

Air Quality Index

As a means of reporting air quality to the general public, DEP publishes a daily Air Quality Index (AQI) for all air quality monitoring sites in Pennsylvania. The AQI was developed by the U.S. Environmental Protection Agency (EPA) to standardize air pollution ratings and reports levels of six common air contaminants – ozone, sulfur dioxide, nitrogen dioxide, carbon monoxide, and two categories of particulate matter, $PM_{2.5}$ and PM_{10}. Real time monitoring and current AQI information is available on DEP's website at http://www.depweb.state.pa.us/ (DEP Keyword: Air Quality Index, Air Index).

Quality Assurance Program

DEP's Bureau of Air Quality conducts regularly scheduled performance audits and precision checks on air monitoring equipment to assess the data accuracy of each monitoring system. Quality assurance checks for the ambient air monitoring program are scheduled in compliance with requirements outlined in the Federal Code of Regulations (CFR).

Acid Rain and Mercury in Rain

DEP, under cooperative agreement with the Pennsylvania State University, has maintained the Pennsylvania Atmospheric Deposition Monitoring Network (PADMN) since 1981. The purpose of this program is to determine the chemistry of rain falling in Pennsylvania for environmental assessment purposes. Parameters monitored include pH, sulfate, nitrate, ammonium, chloride, calcium, magnesium, potassium, sodium and specific conductance. Starting in 1997, measurements of the amount of mercury in rain were included as part of the National Atmospheric Deposition Program Mercury Deposition Network (NAPD/MDN).

Eighteen acid rain monitoring sites were in operation in Pennsylvania in 2007. Included in this network were eleven acid rain and seven mercury monitoring sites supported by the DEP. The remaining sites were National Atmospheric Deposition Program National Trends Network (NADP/NTN) sites and were supported by various federal agencies.

The Elemental Mercury Vapor Summary is included in Appendix D of this document. Reports on acid rain and mercury in rain can also be found on the web at the following address: http://www.depweb.state.pa.us/ (DEP Keyword: Acid Rain), including one report discussing the reductions in acid rain following implementation of the Clean Air Act Amendments of 1990.

Emission Inventories

The point source emissions inventory is one means used by the state to assess the level of pollutants released into the air from various sources. Each year, the Bureau of Air Quality (BAQ) processes approximately 1,200 Annual Emission Statement (AES) reports. The AES contains operating schedules, throughputs, and emission estimates to calculate air emissions from industrial sources. This report presents point source emission inventory trends for four types of air pollutants – carbon monoxide, nitrogen oxides, sulfur dioxide and volatile organic compounds.

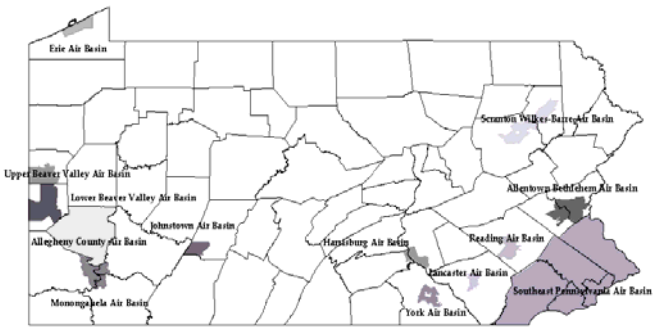
CHAPTER 2. AIR MONITORING PROGRAM

Monitoring Network Overview

The monitoring strategy of DEP places monitors in areas having high population density and/or high levels of contaminants. The majority of all monitoring efforts take place in the "air basins" of the Commonwealth. Air basins are defined in 25 Pa. Code § 121.1 and consist of thirteen geographical areas:

- Allegheny County Air Basin
- Allentown-Bethlehem-Easton Air Basin
- Erie Air Basin
- Harrisburg Air Basin
- Johnstown Air Basin
- Lancaster Air Basin
- Lower Beaver Valley Air Basin
- Monongahela Valley Air Basin
- Reading Air Basin
- Scranton, Wilkes-Barre Air Basin
- Southeast Pennsylvania Air Basin
- Upper Beaver Valley Air Basin
- York Air Basin

Figure 2-1. Map of Pennsylvania Air Basins



Air monitoring surveillance is conducted in the 13 air basins. The Allegheny County Health Department conducts the majority of the air quality monitoring in the Allegheny County Air Basin. The Philadelphia Department of Public Health, Air Management Services, which is located in the Southeast Pennsylvania Air Basin, conducts air monitoring only for the Philadelphia County portion of the air basin. In addition to the aforementioned 13 air basins, DEP conducts surveillance in several non-air basin regions. DEP also performs monitoring in Allegheny County at the Carnegie Science Center in Pittsburgh as part of an air quality exhibit. A listing of DEP air quality monitoring site locations is provided in Appendix C of this report.

DEP continued in 2007 with a cooperative agreement with Pennsylvania State University's (PSU) Department of Plant Pathology to conduct ozone monitoring in four remote areas - Adams County (near Biglerville), Centre County (near State College, Clearfield County (near Moshannon) and Tioga County (near Gleason). The university uses ozone data collected from this cooperative monitoring effort to determine the extent of detrimental effects to Pennsylvania's forests and crops, and to assess ozone transport in rural Pennsylvania.

The ambient air monitoring network design plan can be found on the Bureau of Air Quality's website at the following address: http://www.dep.state.pa.us/dep/deputate/airwaste/aq/aqm/principal.htm

COPAMS Network

DEP operates the Commonwealth of Pennsylvania Air Monitoring System (COPAMS) as its air monitoring network. The COPAMS network encompasses both continuous and discrete methods of pollutant sampling.

The continuous portion of the COPAMS network is a totally automatic, microprocessor-controlled system that consisted of 49 remote stations throughout the Commonwealth. Continuous methods employ specialized instruments designed to continuously sample and analyze ambient air *in situ*. The output of these devices is hourly pollutant concentrations. These concentrations are the raw data used to calculate the various pollutant averages needed for NAAQS comparisons. A centralized computer system operated by the Bureau of Air Quality collects the raw data on an hourly basis, enabling real-time monitoring. DEP utilizes continuous methods for the following pollutants: ozone, sulfur dioxide, nitrogen dioxide, oxides of nitrogen, carbon monoxide, hydrogen sulfide, $PM_{2.5}$ and PM_{10}.Various meteorological data from many of the COPAMS stations aree

measured using continuous methods as well, including wind speed, wind direction (vector averaged and sigma theta), ambient temperature, and solar radiation.

The non-continuous portion of the COPAMS network utilizes discrete sampling methods, with analysis of the sample performed off-site. A discrete method is generally a "manual" method of sampling, most commonly using an air filter to trap air pollutants from ambient air for a defined or "discrete" period of time. The filter is then removed from the collection site and analyzed in a DEP-accredited laboratory. The discrete portion of the COPAMS network includes analysis methods for particulate matter 2.5 microns or less in size ($PM_{2.5}$), particulate matter 10 microns or less in size (PM_{10}), total suspended particulate (TSP), lead, sulfates and nitrates.

Pollutants and Standards

Data collected by DEP can generally be divided into two groups: gaseous pollutants and particulate matter. An overview for both types follows.

Gaseous Pollutants

Ground-Level Ozone

Ground-level ozone, or photochemical smog, is a secondary pollutant. Ozone is generally not emitted directly into the atmosphere as ozone, but rather is formed by chemical reactions between other air pollutants. The primary pollutants involved in these reactions -- volatile organic compounds (VOCs) and oxides of nitrogen (NO_x) -- form ozone in the presence of sunlight and warm temperatures. Thus, sources that emit these ozone precursors are sources of ozone. Nitrogen oxides result from fossil fuel combustion and sources commonly include power plants, industrial boilers, and motor vehicles. VOCs are emitted from a variety of sources, including motor vehicles, chemical plants, refineries and even natural (biogenic) sources. Ozone and the precursor pollutants that cause ozone also can be transported into an area from pollution sources located hundreds of miles away. Because the formation of ozone is boosted by increasing sunlight and temperatures, changing weather patterns contribute to yearly differences in ozone concentrations, with peak concentrations occurring during the summer months.

Ground-level ozone is a strong irritant to the eyes and upper respiratory system and can hamper breathing. It also damages vegetation, including forest and agricultural crops, and man-made materials such as monuments and statues.

Sulfur Dioxide

Sulfur dioxide is a gaseous pollutant that is emitted primarily by industrial furnaces or power plants burning sulfur-containing coal or oil.

The major health effects associated with high exposures to sulfur dioxide include effects on breathing and respiratory illness symptoms. The population most sensitive to sulfur dioxide includes asthmatics and individuals with chronic lung disease or cardiovascular disease. Sulfur dioxide damages vegetation, including forests and agricultural crops, and acts as a precursor to acid rain. Finally, sulfur dioxide can accelerate the corrosion of natural and man-made materials that are used in buildings and monuments, as well as paper, iron-containing metals, zinc, and other protective coatings.

Oxides of Nitrogen

Oxides of nitrogen (NO_x), or nitrogen oxides, are a class of pollutants containing compounds of oxidized nitrogen atoms chemically bonded to oxygen atoms. Nitrogen oxides are formed when fuel is burned at a very high temperature (above 1200° F), such as in automobiles and power plants. For air pollution purposes, the nitrogen oxides of concern are primarily nitric oxide (NO) and nitrogen dioxide (NO_2). Although there is no air quality standard for NO_x in general, the level of this pollutant is of concern due to its role in the formation of ground-level ozone in the atmosphere through a complex series of reactions with volatile organic compounds (VOCs). Nitrogen oxides also contribute to deposition of nitrogen in soil and water through acid rain.

Nitrogen Dioxide

Nitrogen dioxide is a highly toxic, reddish brown gas that is created primarily from fuel combustion in industrial sources and vehicles. It creates an odorous brown haze that causes eye and sinus irritation, blocks natural sunlight and reduces visibility. It can severely irritate the respiratory system and has been associated with acute effects in individuals diagnosed with respiratory disease. Nitrogen dioxide contributes to the creation of acid rain and plays a key role in nitrogen loading, adversely impacting forests and other ecosystems.

Carbon Monoxide

Carbon monoxide is a byproduct of the incomplete burning of fuels. Industrial processes contribute to carbon monoxide pollution levels, but the largest man-made source of carbon monoxide is motor vehicle emissions. This pollutant is a health concern in areas of high traffic density or near industrial sources. Peak carbon monoxide concentrations typically occur during the colder months of the year when automotive emissions are greater and nighttime inversion (a weather-related phenomenon) conditions are more frequent.

Carbon monoxide (CO) is a colorless, odorless, poisonous gas that has an affinity for hemoglobin, 210 times that of oxygen. By combining with the hemoglobin in the blood, it inhibits the delivery of oxygen to the body's tissue, thereby causing or shortness of breath, asphyxia and eventually death. The health threat from carbon monoxide is most serious for those who suffer from cardiovascular disease. At much higher levels of exposure, healthy individuals are also affected.

Particulate Matter

Particulate matter (PM) is solid or liquid matter formed by smoke, dust, fly ash, or condensing vapors that can be suspended in the air for long periods of time. PM may be emitted directly by a source or formed in the atmosphere. Particulate emissions come from coal-burning power plants, industrial processes, mining operations, municipal waste incinerators and fuel combustion. They also are produced by natural sources such as forest fires and volcanoes. Particulates less than or equal to 10 micrometers in diameter (PM_{10}) are called "coarse" particles, while particulates less than or equal to 2.5 micrometers in diameter ($PM_{2.5}$) are called "fine" particles. The smaller of these particles are breathed into the lungs, where they can aggravate tissues, cause respiratory ailments, and carry other pollutants into the lungs. Particulate matter also can cause adverse impacts to the environment.

$PM_{2.5}$

Fine particulate emissions result primarily from industrial processes and fuel combustion - including motor vehicles, residential wood burning and forest or agricultural fires.

Fine particles can accumulate in the respiratory system and are associated with numerous adverse health effects including decreased lung function and increased respiratory symptoms and disease. Sensitive groups that appear to be at greatest risk include the elderly, individuals with cardiopulmonary disease such as asthma, and children. $PM_{2.5}$ is the major cause of reduced visibility in parts of the United States. Other environmental impacts occur when particles deposit onto soil, plants, water, or man-made materials such as monuments or statues.

PM_{10}

PM_{10} (including $PM_{2.5}$) appears to represent essentially all of the particulate emissions from transportation sources and most of the emissions in the other traditional categories (coal-burning power plants, steel mills, mining operations, etc). Although $PM_{2.5}$ is technically included in the definition of PM_{10}, the terms "PM_{10}" or "coarse" particles are commonly used to refer to particles greater than $PM_{2.5}$, but less than 10 micrometers in diameter.

Sources of coarse particles any include dust-producing process, such as crushing or grinding operations, as well as dust stirred up by vehicles traveling on roads. While they are not as much of a health concern as are fine particles, they can aggravate respiratory conditions and irritate the linings of the eyes, nose, throat and lungs. In the environment, PM_{10} contributes to reduced visibility and degradation of man-made materials.

Total Suspended Particulate

Total suspended particulates (TSP) refers to particle sizes 45 micrometers or less in diameter. Although $PM_{2.5}$ and PM_{10} are technically included in the definition of TSP, the term "TSP" is commonly used to refer to particles greater than 10 micrometers in diameter. TSP was used historically as the basis for particulate matter NAAQS, however studies have shown that these larger particles do not penetrate into the lungs and have very little effect on health. Over the years, EPA has emphasized the importance and effects of smaller particles on human health by revising particulate matter pollution standards to apply to smaller and smaller particles, first PM_{10} in 1987, then $PM_{2.5}$ in 1997. Currently, EPA does not regulate TSP levels in ambient air.

Lead

Lead is emitted to the atmosphere by vehicles burning leaded fuel and from certain industrial processes, primarily battery manufacturers and lead smelters. As a result of the reduction in lead in gasoline, metal processing is now the major source of lead emissions.

Lead is a highly toxic metal when ingested or inhaled. It is a suspected carcinogen of the lungs and kidneys and has adverse effects on the cardiovascular, nervous, and renal systems.

Sulfates

The atmosphere contains two types of sulfates: primary and secondary. Primary sulfates are emitted directly into the atmosphere from industrial processes. Secondary sulfates are formed in the atmosphere from other sulfur-containing compounds under mechanisms that involve photochemical processes. Sulfate concentrations peak during the summer due to secondary sulfate formation in the presence of sunlight.

Studies have shown significant correlation between high sulfate levels and illness. Sulfates also reduce visibility and contribute to acid rain. There are currently no federal or state air quality standards for sulfates.

Nitrates

Nitrates are secondary compounds that form in the atmosphere from the oxidation of nitrogen gases emitted from fuel combustion sources. They represent a significant portion of the finer particulates that can be inhaled into the lungs and which affect visibility. As with sulfates, nitrates are contributors to acid rain and acid deposition. There are currently no federal or state air quality standards for nitrates.

Air Quality Standards

Pennsylvania has adopted and incorporated by reference all of the National Ambient Air Quality Standards (NAAQS), as well as state ambient air quality standards. These standards, designed to protect the public health and environmental welfare, are shown in Tables 2-1 and 2-2 on the following page.

There are two types of NAAQS standards: primary and secondary. Primary standards protect against adverse health effects, while secondary standards protect against environmental welfare effects such as damage to crops, vegetation and buildings, and decreased visibility.

Table 2-1. National Ambient Air Quality Standards (NAAQS).

Pollutant	Primary (Health Related)		Secondary (Environmental Welfare Related)	
	Type of Average	Standard Level Concentration	Type of Average	Standard Level Concentration
Carbon Monoxide	8-hour Running Mean (not to be exceeded more than once per year)	9 ppm	No Secondary Standard	
	1-hour (not to be exceeded more than once per year)	35 ppm	No Secondary Standard	
Lead	Maximum Quarterly Average	1.5 $\mu g/m^3$	Same as Primary Standard	
Nitrogen Dioxide	Annual Arithmetic Mean	0.053 ppm	Same as Primary Standard	
Ozone	Maximum Daily 1-hour Average[1]	0.12 ppm	Same as Primary Standard	
	Fourth-Highest Daily Maximum 8-hour Running Mean (based on 3- year average)	0.08 ppm	Same as Primary Standard	
Particulate Matter PM_{10}	24-hour (not to be exceeded more than once per year, based on 3- year average)	150 $\mu g/m^3$	Same as Primary Standard	
Particulate Matter $PM_{2.5}$	Annual Arithmetic Mean (based on 3- year average)	15.0 $\mu g/m^3$	Same as Primary Standard	
	24-hour (based on 3 year average of 98th percentile)	35 $\mu g/m^3$	Same as Primary Standard	
Sulfur Dioxide	Annual Arithmetic Mean	0.030 ppm	3-hour Block Average (not to be exceeded more than once per year)	0.5 ppm
	24-hour Block Average (not to be exceeded more than once per year)	0.14 ppm		

[1] This standard was generally revoked June 15, 2005, and remains in effect only in limited, 8-hour non-attainment areas, as determined by the EPA.

Table 2-2. Pennsylvania Ambient Air Quality Standards.

Pollutant	Type of Average	Standard Level Concentration
Beryllium	30-day	0.01 $\mu g/m^3$
Fluorides (total soluble, as HF)	24-hour	5 $\mu g/m^3$
Hydrogen Sulfide	24-hour	0.005 ppm
	1-hour	0.1 ppm
Settled Particulate (Total)	30-day	1.5 mg/cm^2/month
	1-year	0.8 mg/cm^2/month

CHAPTER 3. AIR QUALITY RESULTS AND TRENDS – CONTIUOUS GASEOUS SAMPLING

Ground-Level Ozone

The ozone- monitoring season in Pennsylvania begins each year on April 1 and ends October 31. Although ground-level ozone levels can fluctuate depending on meteorological conditions, they are consistently higher during the summer months, when increased sunlight and warm temperatures amplify ozone formation.

In July 1997, EPA promulgated a new 8-hour primary ozone standard to protect against longer exposure periods that are of concern for both human health and environmental welfare. The secondary standard (welfare-based) was set identical to the primary standard. The current primary and secondary nation ambient air quality standard (NAAQS) for ozone is 0.08 part per million (ppm) based on a maximum daily 8-hour running average. The 8-hour average used for comparison to the NAAQS is a three year average of the fourth highest daily 8-hour maximums per year. The 1-hour standard was generally revoked by EPA effective June 15, 2005, remaining applicable only in specific areas designated by EPA. No areas in the DEP ozone network currently fall under this special designation.

The 2007 DEP ozone (O_3) monitoring network consisted of 41 sites. Individual site locations, including county and air basin designations, and parameters monitored are listed in Appendix C of this report. In addition to the established NAAQS-related monitoring sites, DEP continued monitoring begun by the North American Research Strategy for Tropospheric Ozone (NARSTO). The Holbrook site (Greene County) is primarily designed to study ozone transport in the Northeast.

As a way of focusing on the secondary standard, DEP continued in 2007 with a cooperative agreement with Pennsylvania State University's Department of Plant Pathology to monitor ozone four rural sites near Biglerville, State College, Moshannon and Gleason, PA. The university uses this data as part of its study of the concerns associated with ozone effects on vegetation.

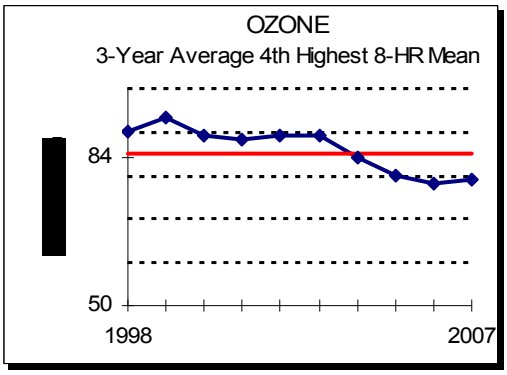
Ozone data for 2007 for all DEP ozone monitoring sites are summarized in Appendix B, Tables B-1 and B-2. Table B-1 contains 8-hour data, while Table B-2 contains 1-hour data. Nineteen sites in the DEP ozone monitoring network registered at least one 8-hour daily maximum exceeding the level of the 8-hour standard in 2007. The total number of 8-hour exceedance days was 17. Three sites in the DEP ozone monitoring network registered 1-hour averages exceeding the level of the former 1-hour standard in 2007, with a total of three 1-hour exceedance days.

Figures 3-1 and 3-2 (on following pages) qualify the fourth highest daily maximum running 8-hour O_3 concentrations and the second highest daily maximum 1-hour O_3 concentrations, respectively, by county, for all DEP ozone monitoring sites in 2007. Two counties in the Southeast PA air basin, Bucks and Delaware County, contained sites with fourth daily maximum 8-hour concentrations exceeding the level of the 8-hour O_3 NAAQS. Bucks County also contained a site exceeding the former 1-hour O_3 NAAQS.

Appendix B, Tables B-3 and B-4 summarize 8-hour and 1-hour data ozone over the last three years. These tables include monitoring sites operated by DEP, the Allegheny County Health Department and Philadelphia Department of Public Health, Air Management Services. Two DEP sites in the Southeast PA air basin, Bristol and Chester, had 3-year averages of fourth highest 8-hour concentrations greater than the level of the 8-hour standard. One DEP site in the Southeast PA air basin, Bristol, had a 3-year average of second highest 1-hour concentrations greater than the level of the former 1-hour standard.

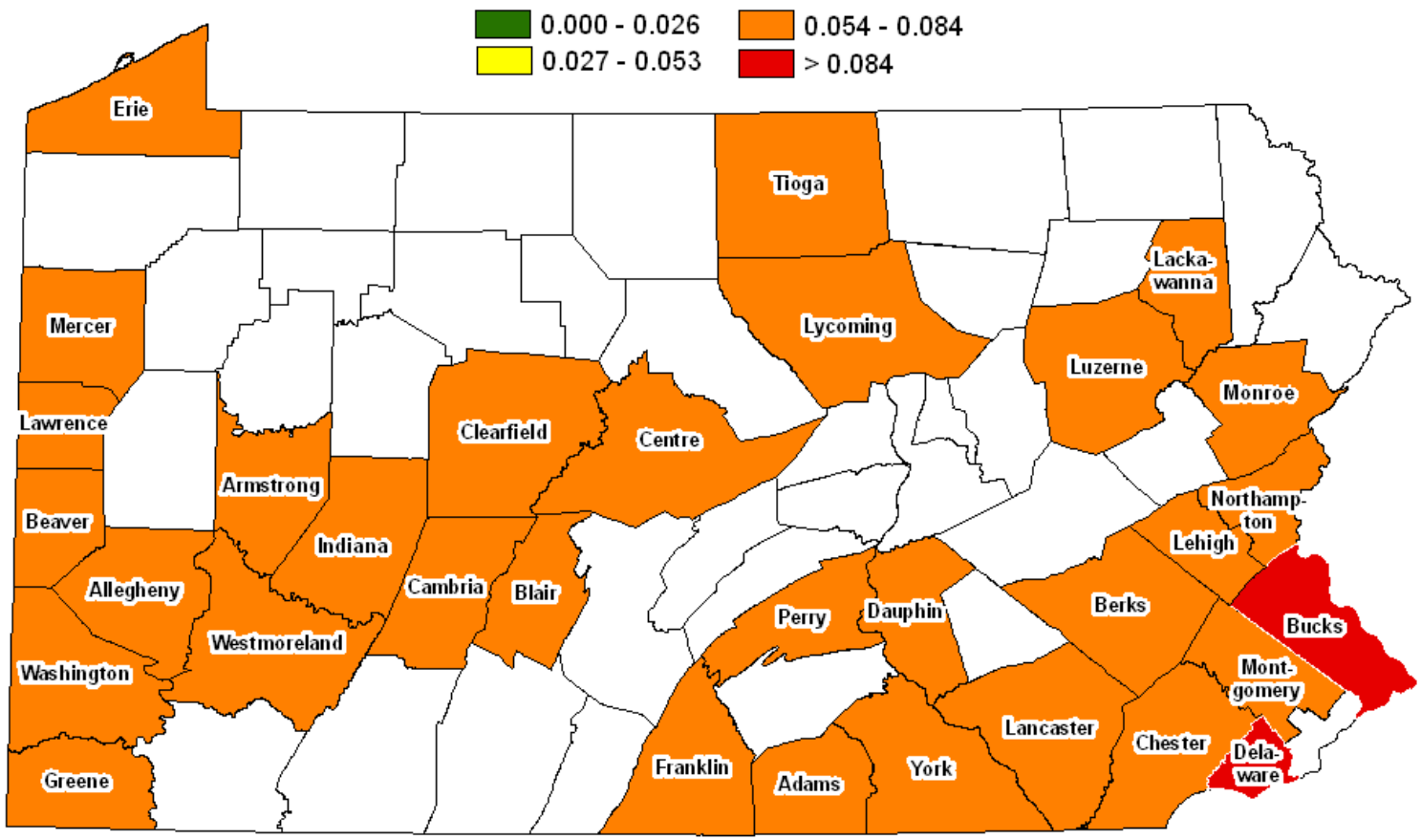
Figure 3-3 displays a 10-year trend of the statewide (DEP sites only) 3-year average of fourth daily maximum 8-hour ozone concentrations. Data points on or above the solid line represent an exceedance of the 8-hour NAAQS standard. As the graph indicates, there has been a continuing reduction overall during this period, about a 12% improvement. The overall improvements that have been seen in ozone concentrations can be attributed in part to controls on VOCs and gasoline volatility.

Figure 3-3. Trend in 3-Year Average of Fourth Daily Maximum 8-Hour Ozone Concentrations, Statewide, 1998-2007.



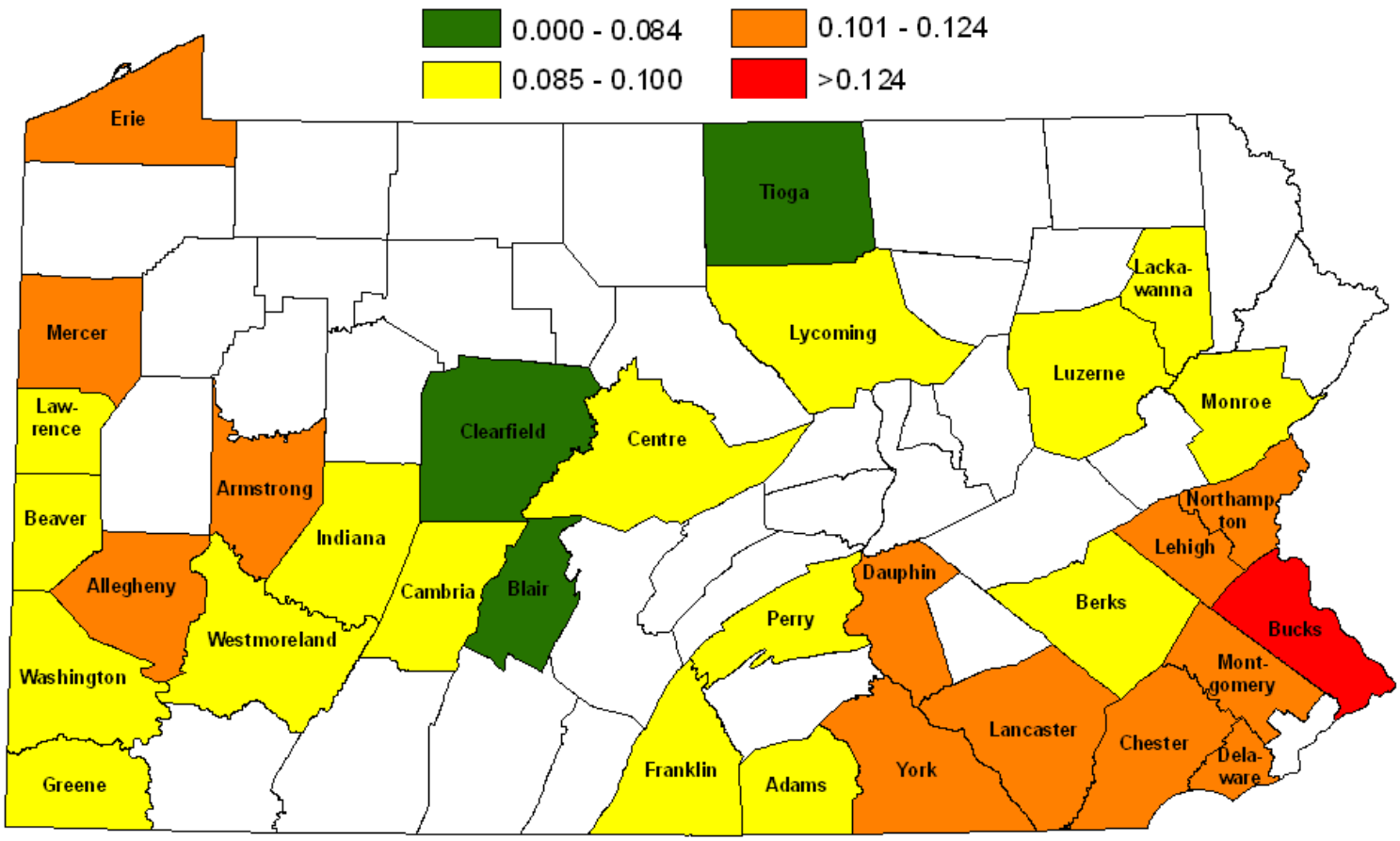
Historical trends for individual air basin and non-air basin regions are shown in Figures 3-4 and 3-5. Figure 3-4 displays 10-year trends of the 3-year average of the fourth daily maximum 8-hour O_3 concentrations, while Figure 3-5 displays 10-year trends of the average second daily maximum 1-hour mean. Data points on or above the solid line represent an exceedance of the current 8-hour and former 1-hour NAAQS concentration level, respectively. All regions have followed the overall statewide trend of declining concentrations over the 10 year period for both types of averages. Current 3-year averages for all regions remain close to the 8-hour standard of 0.08 parts per million (ppm). Historical 1-hour and 8-hour data for ozone from 1998 to 2007 are given in Appendix B, Table B-5 for DEP sites that operated during the 10-year period.

Figure 3-1. 2007 Ozone Concentrations by County, Fourth-Highest Daily 8-Hour Maximums, in Parts per Million.



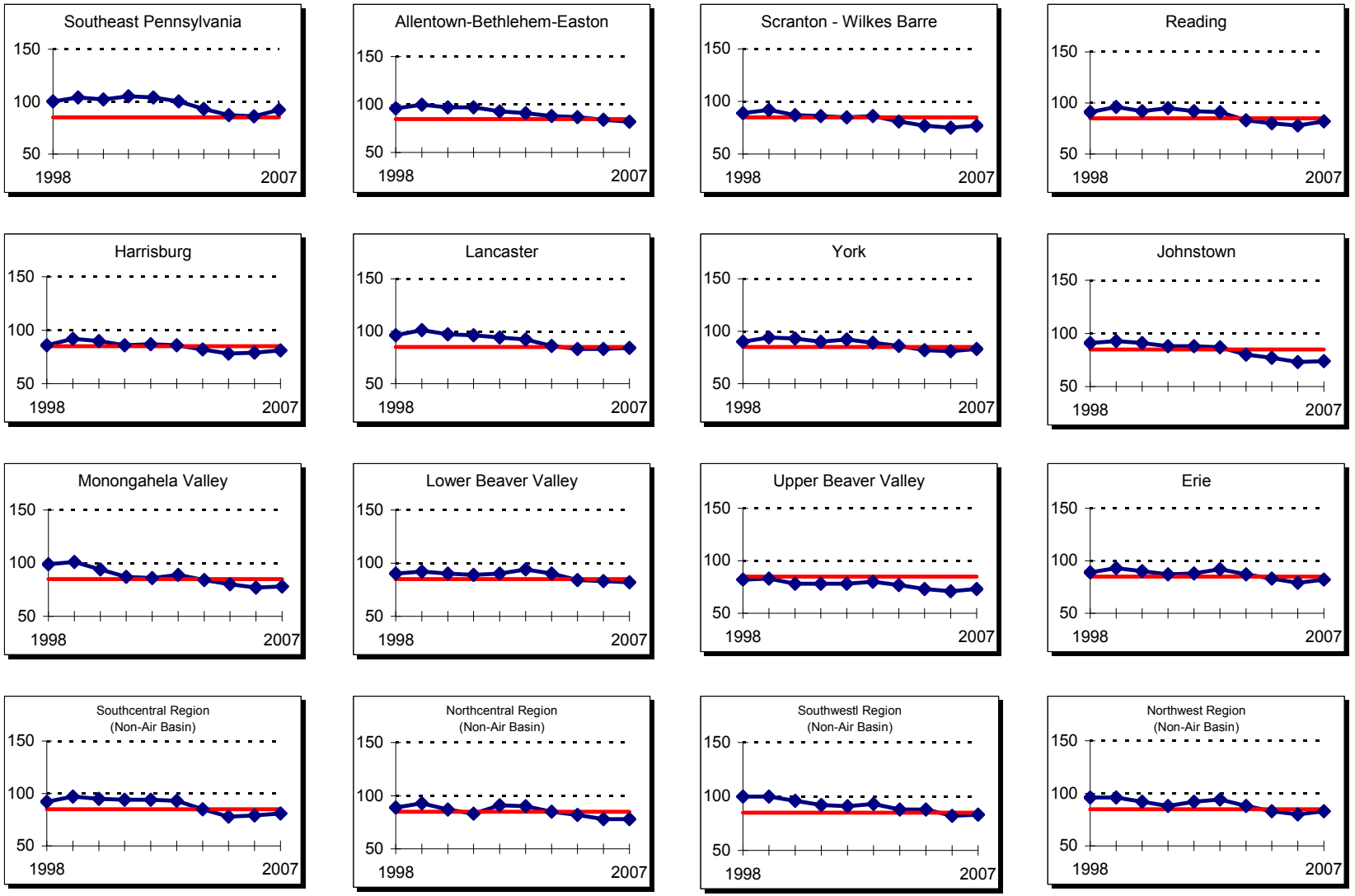
Primary and Secondary National Ambient Air Quality Standard for Ozone
Fourth-highest daily maximum 8-hour average = 0.08 parts per million
(Data are displayed for single calendar year, but standard is based on a 3-year average)

Figure 3-2. 2007 Ozone Concentrations by County, Second-Highest Daily 1-Hour Maximums, in Parts per Million.



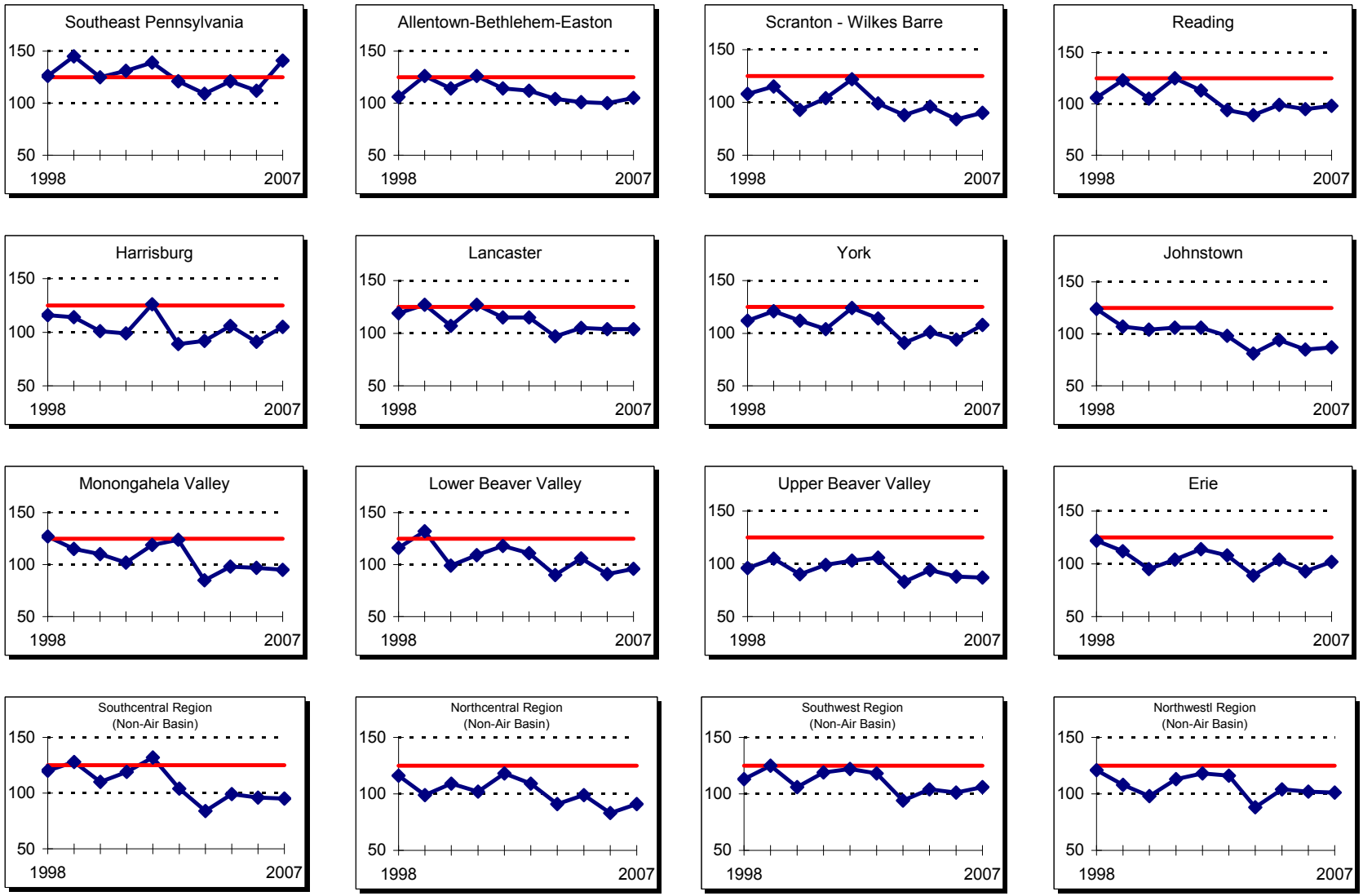
Primary and Secondary National Ambient Air Quality Standard for Ozone
Former Maximum Daily 1-Hour Average = 0.12 parts per million (not to be exceeded more than once per year)

Figure 3-4. Ozone Trends in Pennsylvania 1998 to 2007, 3-Year Average of Fourth Daily Maximum 8-Hour Averages, in Parts per Billion.



The 8-hour Ozone National Ambient Air Quality Standard is 0.08 parts per million (or 84 ppb), based on a 3-year average of 4th highest maximum 8-hour running averages.

Figure 3-5. Year Ozone Trends in Pennsylvania 1998 to 2007, Second Daily Maximum 1-Hour Average, in Parts per Billion.



The former 1-hour Ozone National Ambient Air Quality Standard is 0.12 parts per million, maximum hourly average.

Sulfur Dioxide

EPA last reviewed the NAAQS for SO_2 in 1996. At that time EPA decided that the levels of the SO_2 standards remained sufficient to protect human health and environmental welfare, and adopted only minor technical changes to the standard. The current national ambient air quality standards (NAAQS) for sulfur dioxide (SO_2) consist of two primary standards (human health-based) and one secondary standard (environmental welfare-based). The primary standards are 0.030 part per million (ppm) for an annual mean, and 0.14 ppm based on a 24-hour block average. The secondary standard is 0.5 ppm based on a 3-hour block average. The 24-hour primary and secondary standards may not be exceeded more than once per year.

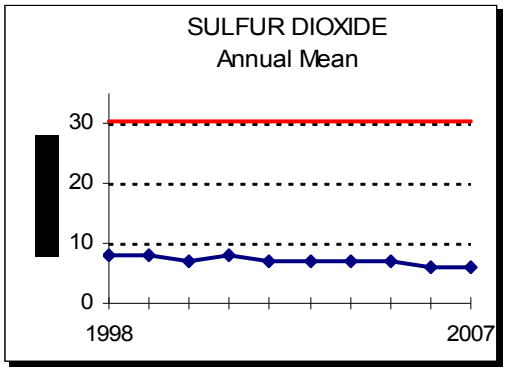
The 2007 DEP sulfur dioxide (SO_2) monitoring network consisted of 33 sites. Individual site locations, including county and air basin designations, and parameters monitored are listed in Appendix C of this report. All sites met the NAAQS for sulfur dioxide in 2007.

Sulfur dioxide data for 2007 for all SO_2 monitoring sites are summarized in Appendix B, Table B-6. No site in exceeded the level of the NAAQS in 2007, rather all sites yielded concentration averages less than half the level of all three NAAQS for SO_2.

Figures 3-6 and 3-7 (on following pages) qualify the annual mean and second highest daily maximum 24-hour sulfur dioxide concentration, respectively, by county in 2007. No monitored county contained sites exceeding the levels of the current SO_2 air quality standards.

Figure 3-8 displays the statewide composite average of sulfur dioxide annual mean concentration from 1998 to 2007. Data points on or above the solid line represent an exceedance of the annual NAAQS for sulfur dioxide. In general, sulfur dioxide levels have remained relatively steady over the past 10 years, registering a slight improvement during that time

Figure 3-8. Trend in Annual Mean SO_2 Concentrations, Statewide, 1998-2007.



Annual mean historical trends for individual air basin and non-air basin regions are shown in Figure 3-9. Data points on or above the solid line represent an exceedance of the annual NAAQS for sulfur dioxide. The trend graphs demonstrate that all regions have consistently remained well under the annual mean NAAQS for SO_2. Sulfur dioxide historical data from 1998 to 2007 are given in Appendix B, Table B-7 for DEP sites that operated during the 10-year period.

Figure 3-6. 2007 Sulfur Dioxide Concentrations by County, Annual Means, in Parts per Million.

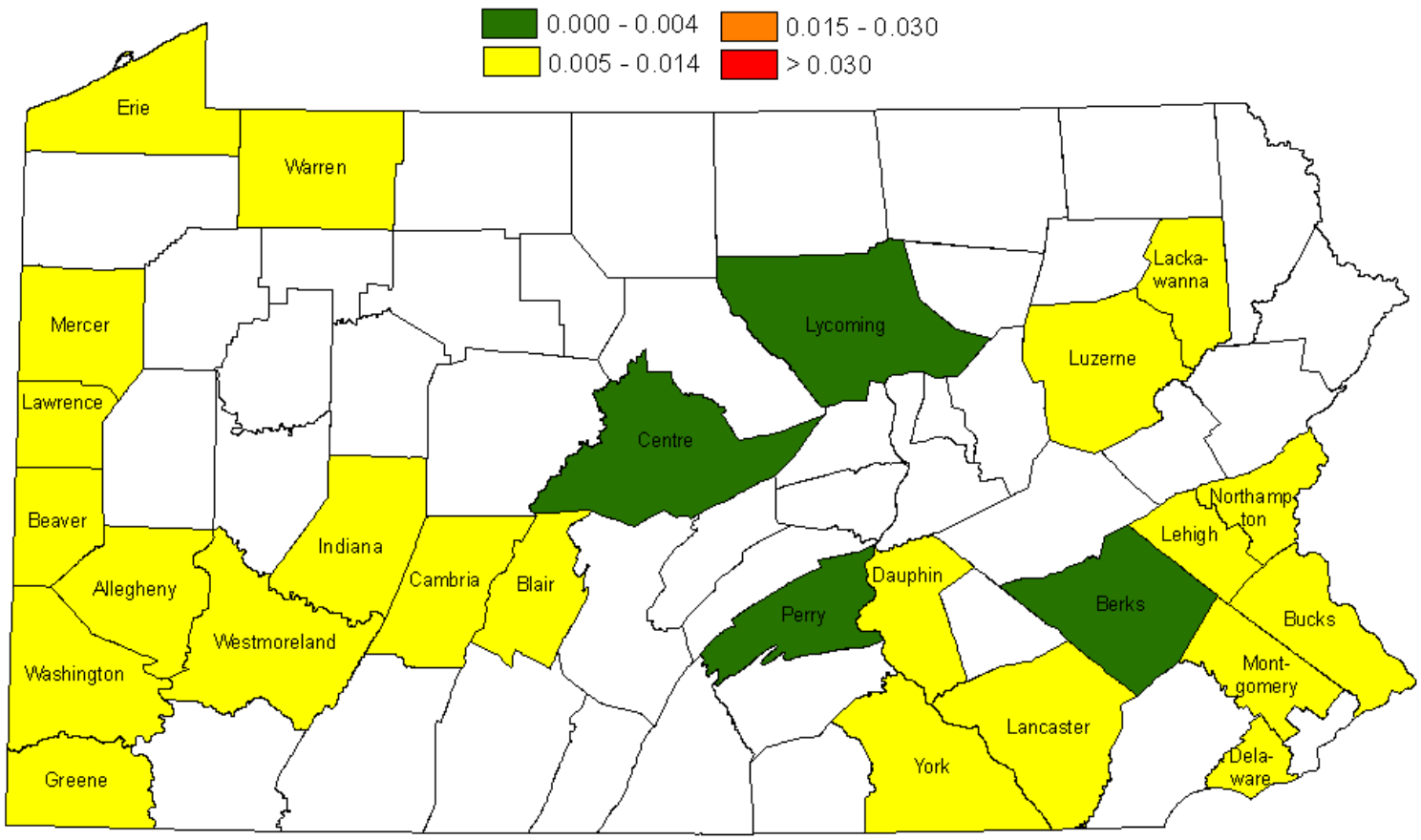


Figure 3-7. 2007 Sulfur Dioxide Concentrations by County, Second-Highest 24-Hour Means, in Parts per Million.

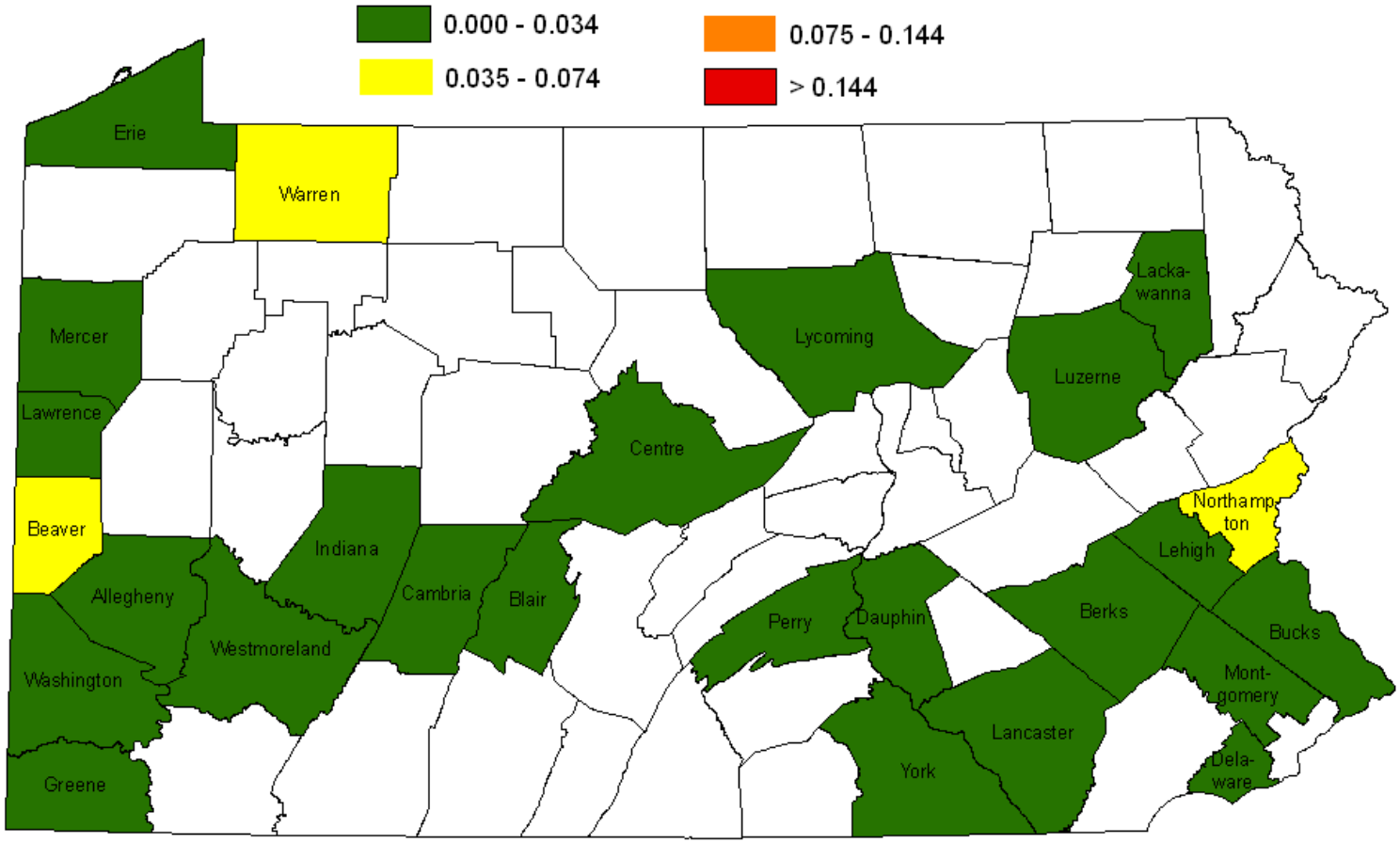
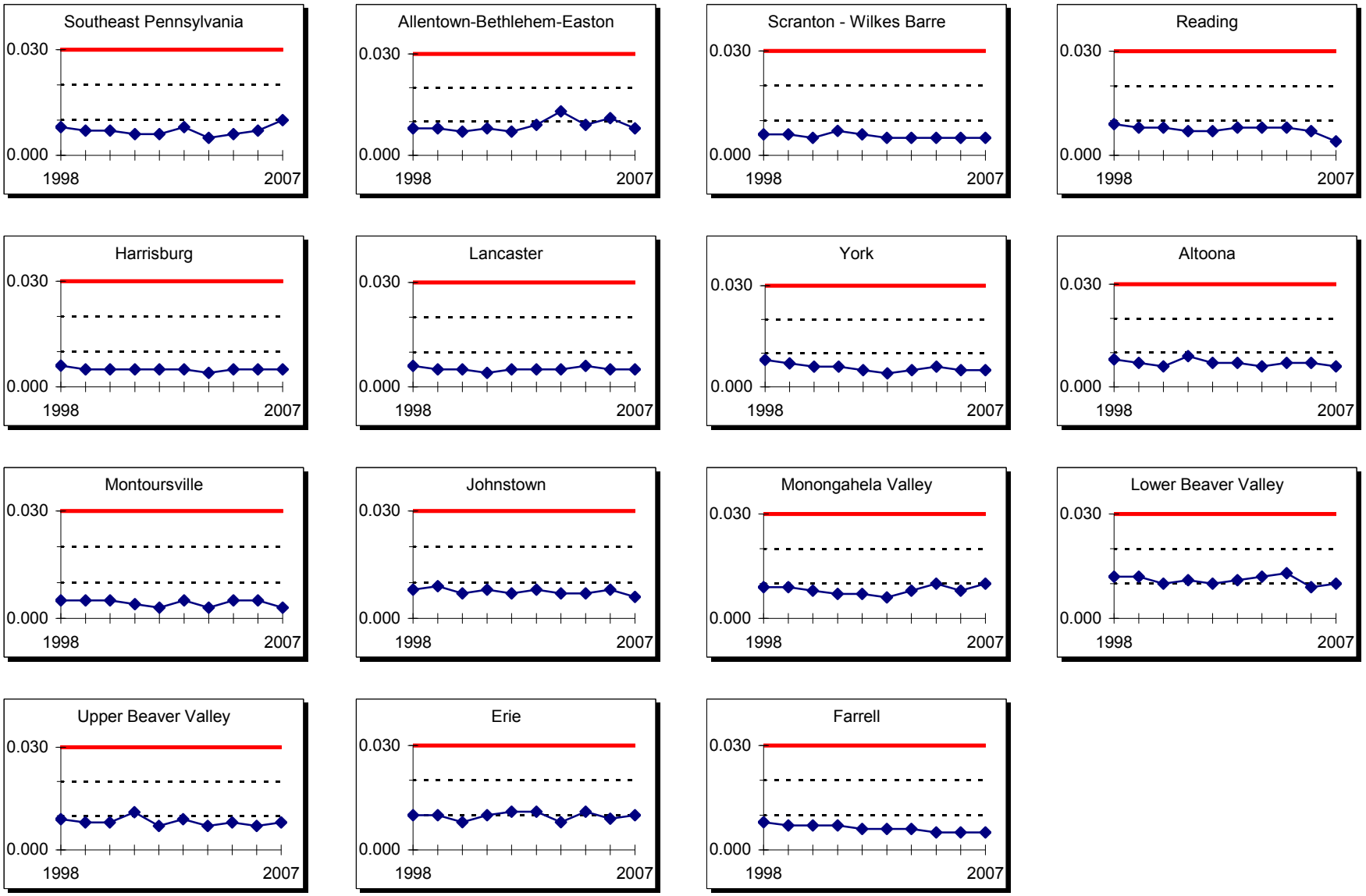


Figure 3-9. Sulfur Dioxide Trends in Pennsylvania 1998 to 2007, Annual Arithmetic Means, in Parts per Million.



The SO2 Annual National Ambient Air Quality Standard is 0.030 parts per million.

Nitrogen Dioxide / Oxides of Nitrogen

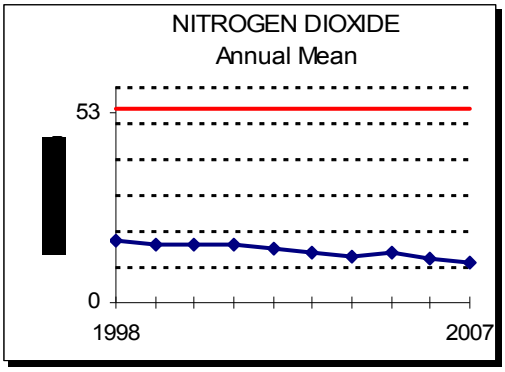
Nitrogen dioxide, a specific nitrogen oxide, is regulated by the EPA. The national ambient air quality standard for nitrogen dioxide (NO2) is set at 0.053 parts per million (ppm) as both a primary (human health-based) and secondary (environmental impact-based) standard. EPA last reviewed this standard in 1985.

The 2007 DEP nitrogen dioxide (NO_2) monitoring network consisted of 25 sites. Individual site locations, including county and air basin designations, and parameters monitored are listed in Appendix C of this report. All sites met the NAAQS for nitrogen dioxide in 2007.

Nitrogen dioxide and nitrogen oxide data for 2007 for all NO_2/NO_x monitoring sites are summarized in Appendix B, Tables B-8 and B-9, respectively. No site in exceeded the level of the NAAQS in 2007, rather all sites yielded concentration averages less than one half the level of the NAAQS for NO_2.

Figure 3-10 displays the statewide composite average of nitrogen dioxide annual mean concentration for 1998 to 2007. Data points on or above the solid line represent an exceedance of the annual NAAQS for nitrogen dioxide. The graph demonstrates that concentrations levels have decreased by about a one third and have remained consistently well below the annual NAAQS for nitrogen dioxide during the 10-year period.

Figure 3-10. Annual Mean NO_2 Concentrations, Statewide, 1998-2007.



Annual mean historical trends for individual air basin and non-air basin regions for nitrogen dioxide are shown in Figure 3-11 (on the following page). Data points on or above the solid line represent an exceedance of the annual NAAQS for nitrogen dioxide. All regions have followed the statewide trend, remaining consistently below the NO_2 NAAQS. Historical data for nitrogen dioxide from 1998 to 2007 are given in Appendix B, Table B-10 for DEP sites that operated during the 10-year period.

Figure 3-12 represents the annual mean statewide trend of oxides of nitrogen (NO_x) over the last 10 years. Measured NO_x concentrations represent the combined total of NO_2 and nitric oxide (NO) concentrations. There is no federal or state air quality standard for NO_x. Since 1998, average NO_x concentrations have declined by about 42 percent.

Figure 3-12. Trend in Annual Mean NO_x Concentrations, Statewide, 1998-2007.

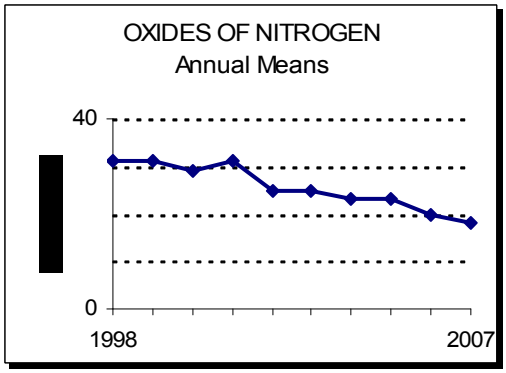
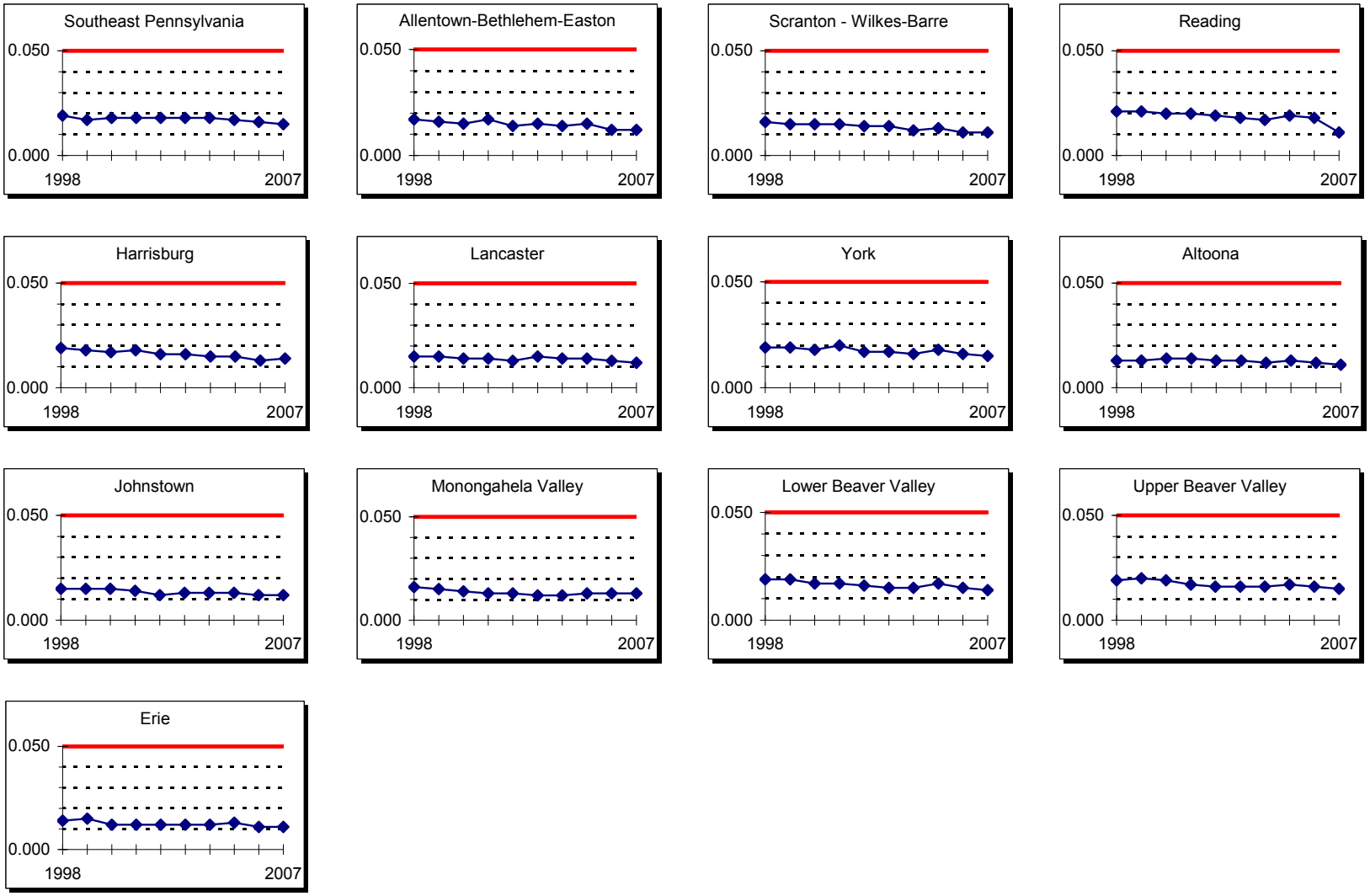


Figure 3-11. Nitrogen Dioxide Trends in Pennsylvania 1998 to 2007, Annual Arithmetic Means, in Parts per Million.



The Nitrogen Dioxide Annual National Ambient Air Quality Standard is 0.053 ppm.

Carbon Monoxide

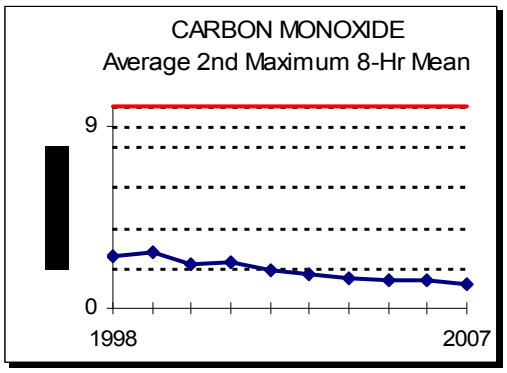
The national ambient air quality standard (NAAQS) for carbon monoxide (CO) consisted of two primary (human health-based) standards. In September 1985, EPA revoked the previous secondary (environmental welfare-based) standards, citing studies that showed no environmental welfare effects could be expected at levels found in ambient air at the time of review. EPA did not revise the primary standard at that time, and they are currently applicable at 9 parts per million (ppm) based on an 8-hour maximum, and 35 ppm based on a 1-hour maximum. To meet the standard, neither criterion may be exceeded more than once per year.

The 2007 DEP carbon monoxide (CO) monitoring network consisted of 20 sites. Individual site locations, including county and air basin designations, and parameters monitored are listed in Appendix C of this report. All sites met the NAAQS for carbon monoxide in 2007.

Carbon monoxide data for 2007 for CO monitoring sites are summarized in Appendix B, Table B-11. No site in exceeded the level of the NAAQS in 2007, rather all sites yielded concentration averages less than one half the level of the NAAQS for CO, for both 8-hour and 1-hour averages.

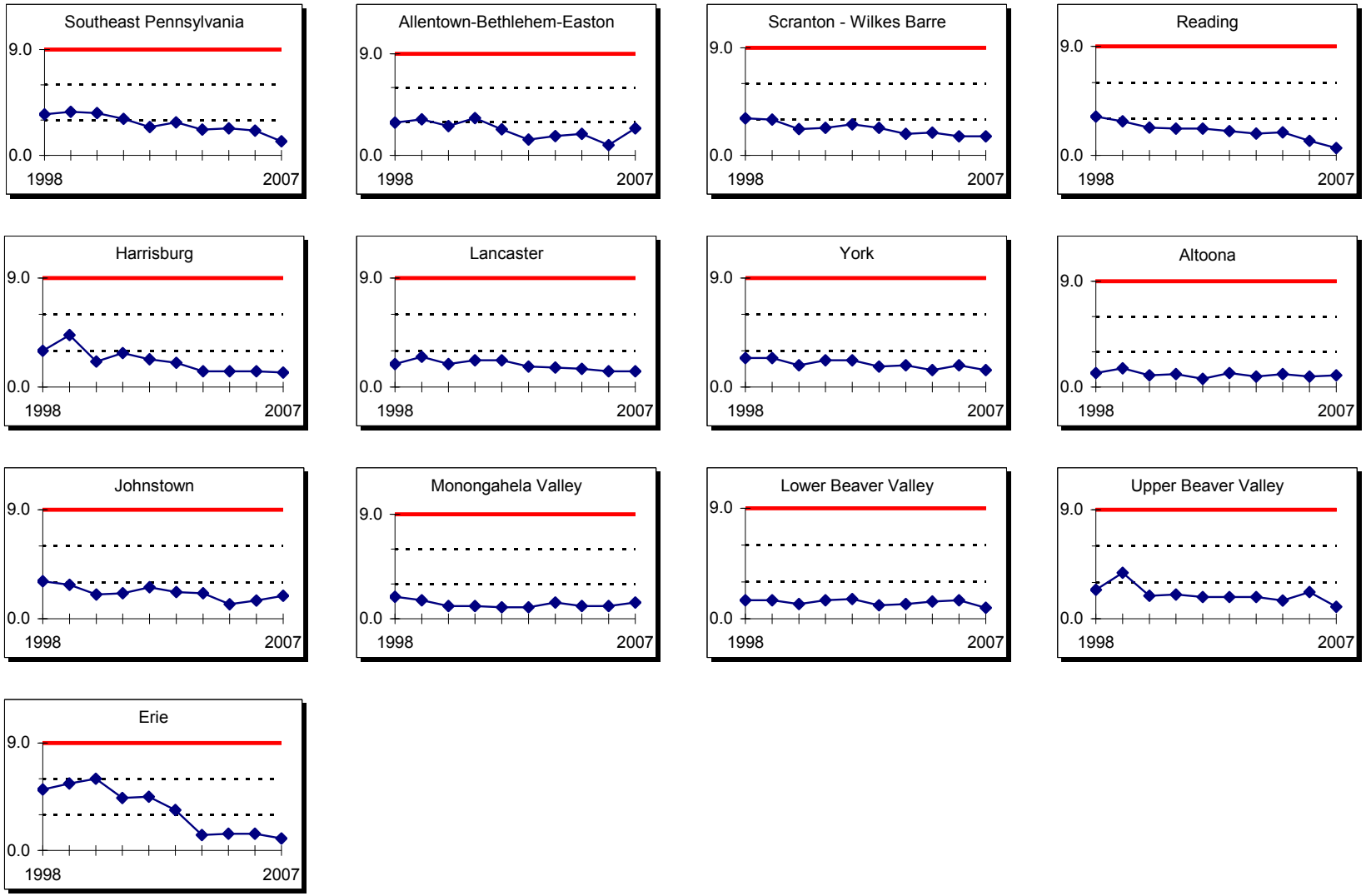
Figure 3-13 displays a 10-year trend of the statewide second daily maximum 8-hour CO concentration. Data points on or above the solid line represent an exceedance of the NAAQS. Carbon monoxide levels have seen a long-term improvement of over 50% percent from levels in 1998, and have remained well below one half the CO NAAQS during the past 10 years.

Figure 3-13. Trend in Second Maximum 8-hour Average CO Concentrations, Statewide, 1998-2007.



Annual mean historical trends for individual air basin and non-air basin regions for carbon monoxide are shown in Figure 3-14. Data points on or above the solid line represent an exceedance of the annual NAAQS for carbon monoxide. All regions have followed the statewide trend, remaining consistently below the CO NAAQS. Historical data for carbon monoxide from 1998 to 2007 are given in Appendix B, Table B-12 for DEP sites that operated during the 10-year period.

Figure 3-14. Ten–Year Carbon Monoxide Trend in Pennsylvania 1998 to 2007, Second Maximum 8-Hour Running Mean, in Parts per Million.



The Carbon Monoxide 8-Hour National Ambient Air Quality Standard is 9 ppm based on an 8-hour maximum average (not to be exceeded more than once per year).

CHAPTER 4. AIR QUALITY RESULTS AND TRENDS – PARTICULATE SAMPLING

$PM_{2.5}$ Particulate Matter

Citing current scientific evidence pointing strongly to significant adverse effects on human health, EPA tightened the primary (human health-based) $PM_{2.5}$ standard on December 18, 2006. The national ambient air quality standard (NAAQS) for the 24 hour level was lowered from 65 to 35 micrograms per cubic meter. The 24-hour standard is based on the 98th percentile value (the concentration below which 98 percent of 24-hour averages fall) of all 24-hour values over a calendar year. The annual mean standard of 15 micrograms per cubic meter was not adjusted. Secondary (environmental welfare-based) standard levels are identical to the primary standards.

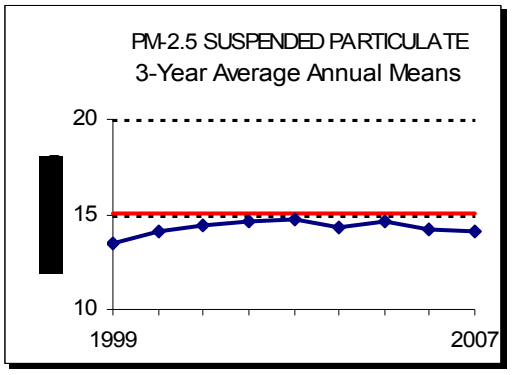
The 2007 $PM_{2.5}$ monitoring network consisted of 22 discrete monitoring sites along with 13 supplemental continuous monitoring sites. Additionally, $PM_{2.5}$ samples were collected for constituent analysis from 14 speciation sites (detailed next section). Individual site locations, including county and air basin designations, and parameters monitored are listed in Appendix C of this report.

$PM_{2.5}$ data for 2007 for all $PM_{2.5}$ FRM and continuous monitoring sites are summarized in Appendix B, Tables B-13 and B-14, respectively. Six FRM sites exceeded the level of the annual mean NAAQS for $PM_{2.5}$ in 2007, while all sites registered at least one 24-hour maximum exceeding the level of the 24-hour NAAQS.

Figures 4-1 and 4-2 (on the following pages) qualify the $PM_{2.5}$ annual mean and 24-hour maximum 98th percentile, respectively, by county in 2007. Only FRM sites were considered in the creation of these representations. Six counties – Beaver, Berks, Lancaster, Washington, Westmoreland and York - contained sites with annual means exceeding the level of the annual mean $PM_{2.5}$ NAAQS. The affected air basins include the Lancaster, Lower Beaver Valley, Monongahela Valley, Reading and York air basins. The site in Westmoreland County is located in the Southwest (non-air basin) region. Nine counties contained sites with 24-hour maximum 98th percentiles exceeding the level of the 24-hour $PM_{2.5}$ NAAQS. Those counties include the previously mentioned six counties, as well as Chester, Dauphin and Northampton County, representing the Southeast PA, Harrisburg and Allentown-Bethlehem-Easton air basins.

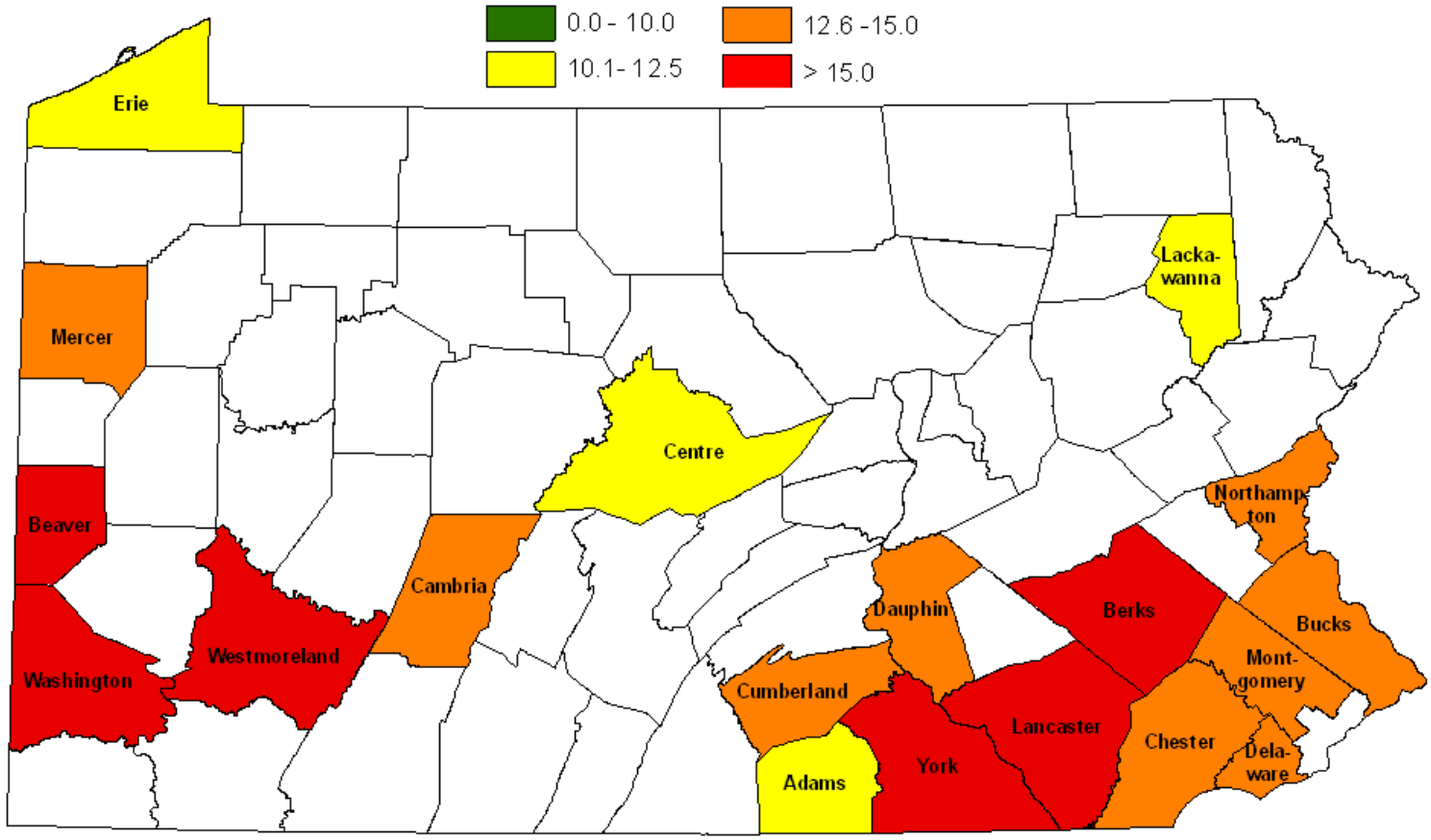
Figure 4-3 displays the statewide composite average of $PM_{2.5}$ 3-year average annual mean concentration from the implementation of DEP's $PM_{2.5}$ network in 1999 to 2007. Data points on or above the solid line represent an exceedance of the annual NAAQS for $PM_{2.5}$. The graph demonstrates that average concentrations levels have slightly increased over the 9-year period by about 4%, and have remained close to, but under the NAAQS level during that time period.

Figure 4-3. Trend in Annual Mean $PM_{2.5}$ Concentrations, Statewide, 1999-2007.



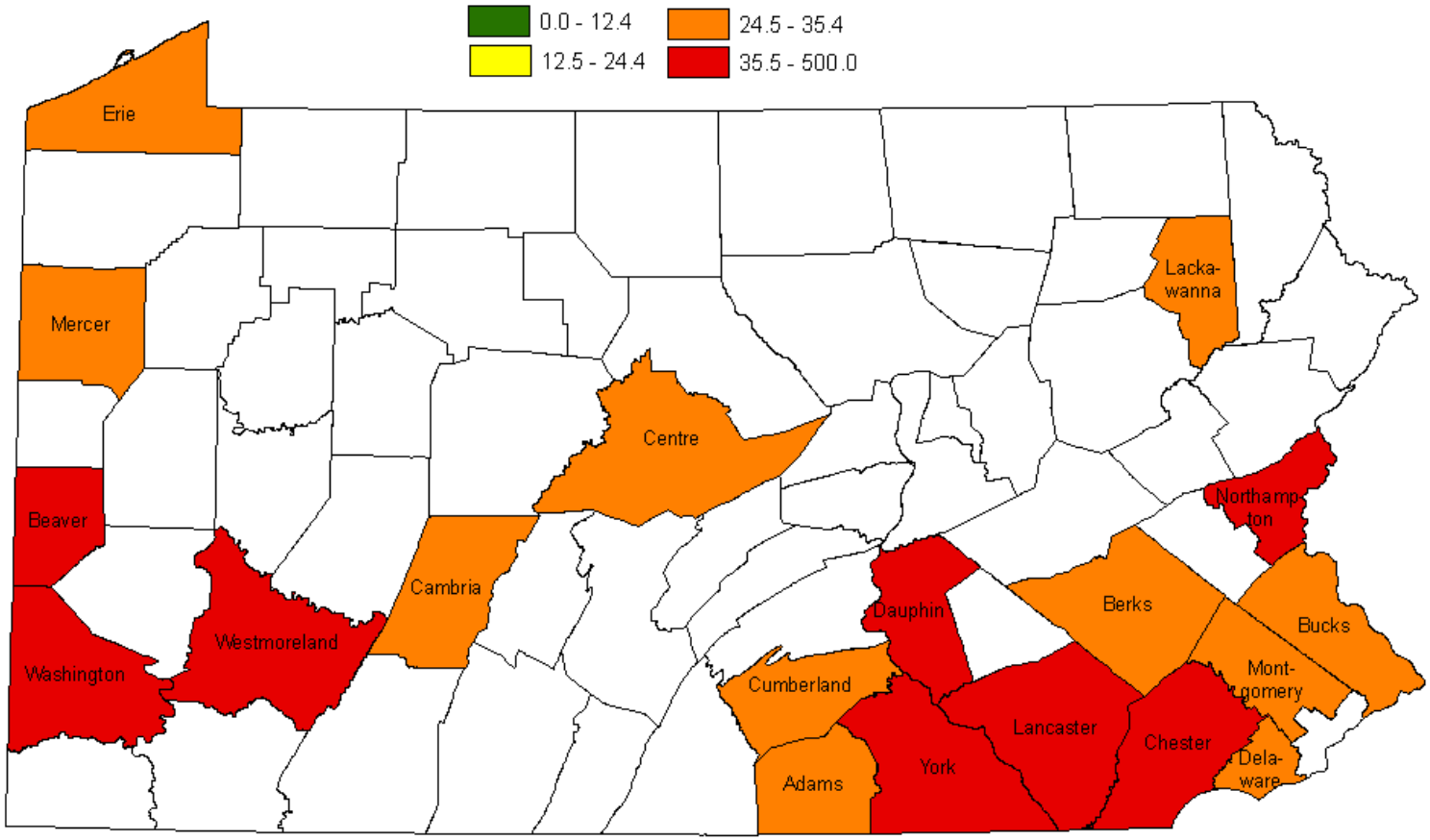
Historical trends for individual air basin and non-air basin regions for $PM_{2.5}$ are shown in Figures 4-4 and 4-5. Figure 4-4 displays 9-year trends of the annual mean $PM_{2.5}$ concentrations, while Figure 4-5 displays 9-year trends of the 24-hour maximum 98th percentile. Data points on or above the solid line represent an exceedance of the annual mean and 24-hour NAAQS concentration level, respectively. These graphs show that the three-year annual mean averages have hovered around the level of the annual mean NAAQS during this time. The 24-hour data illustrates an overall decrease of about 10 percent from 1999 levels. Historical trend data from 1999 to 2007 for $PM_{2.5}$ FRM and continuous methods are given in Appendix B, Tables B-15 and B-16 for DEP sites that operated during the 9-year period.

Figure 4-1. 2007 $PM_{2.5}$ Concentrations by County, Annual means, in Micrograms per Cubic Meter.



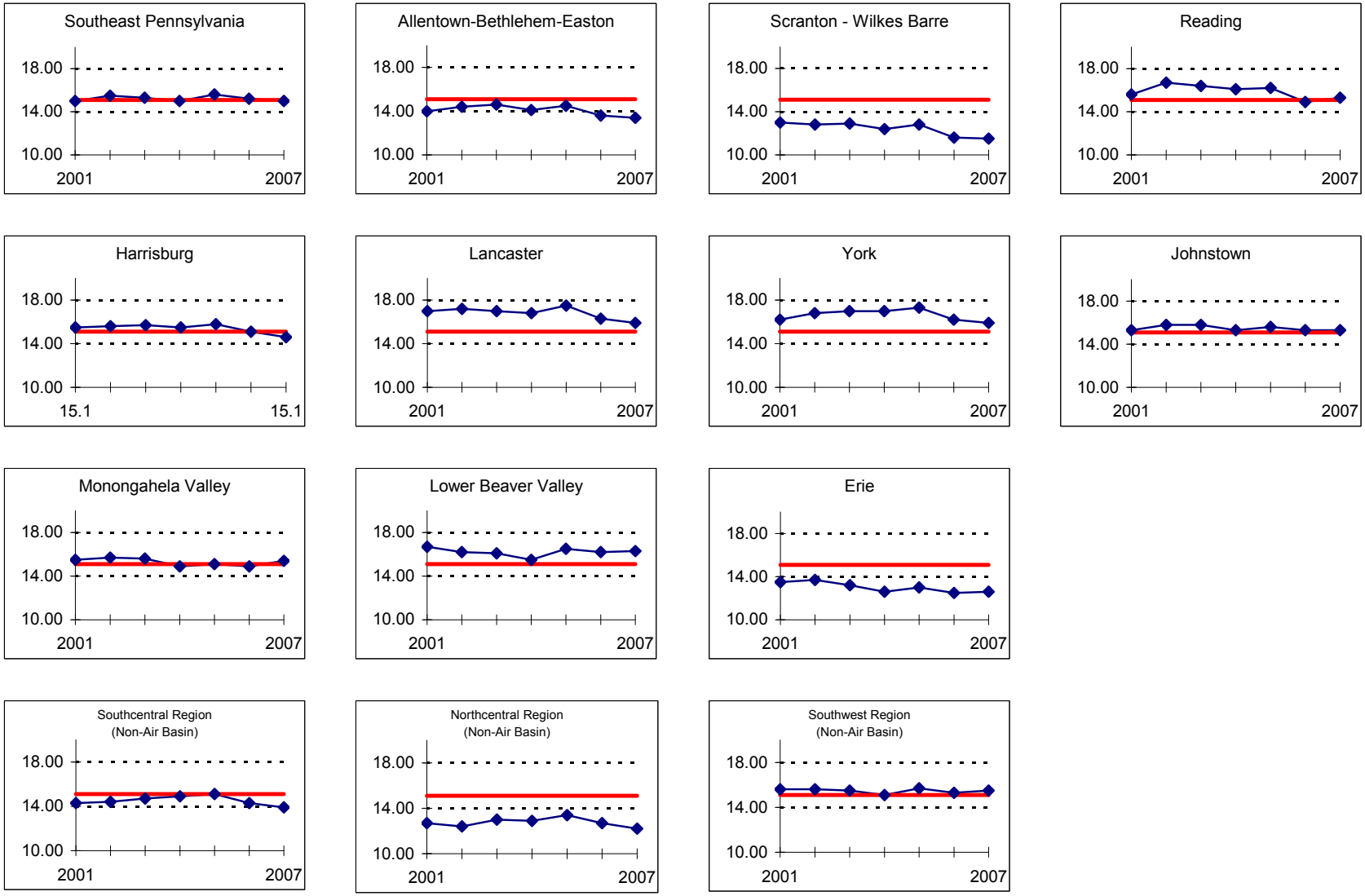
Primary and Secondary National Ambient Air Quality Standard for PM-2.5
Annual Mean = 15.0 micrograms per cubic meter
(Data are displayed for single calendar year, but the standard is based on a 3-year average)

Figure 4-2. 2007 $PM_{2.5}$ Concentrations by County, 98th percentiles of 24-Hour Means, in Micrograms per Cubic Meter.



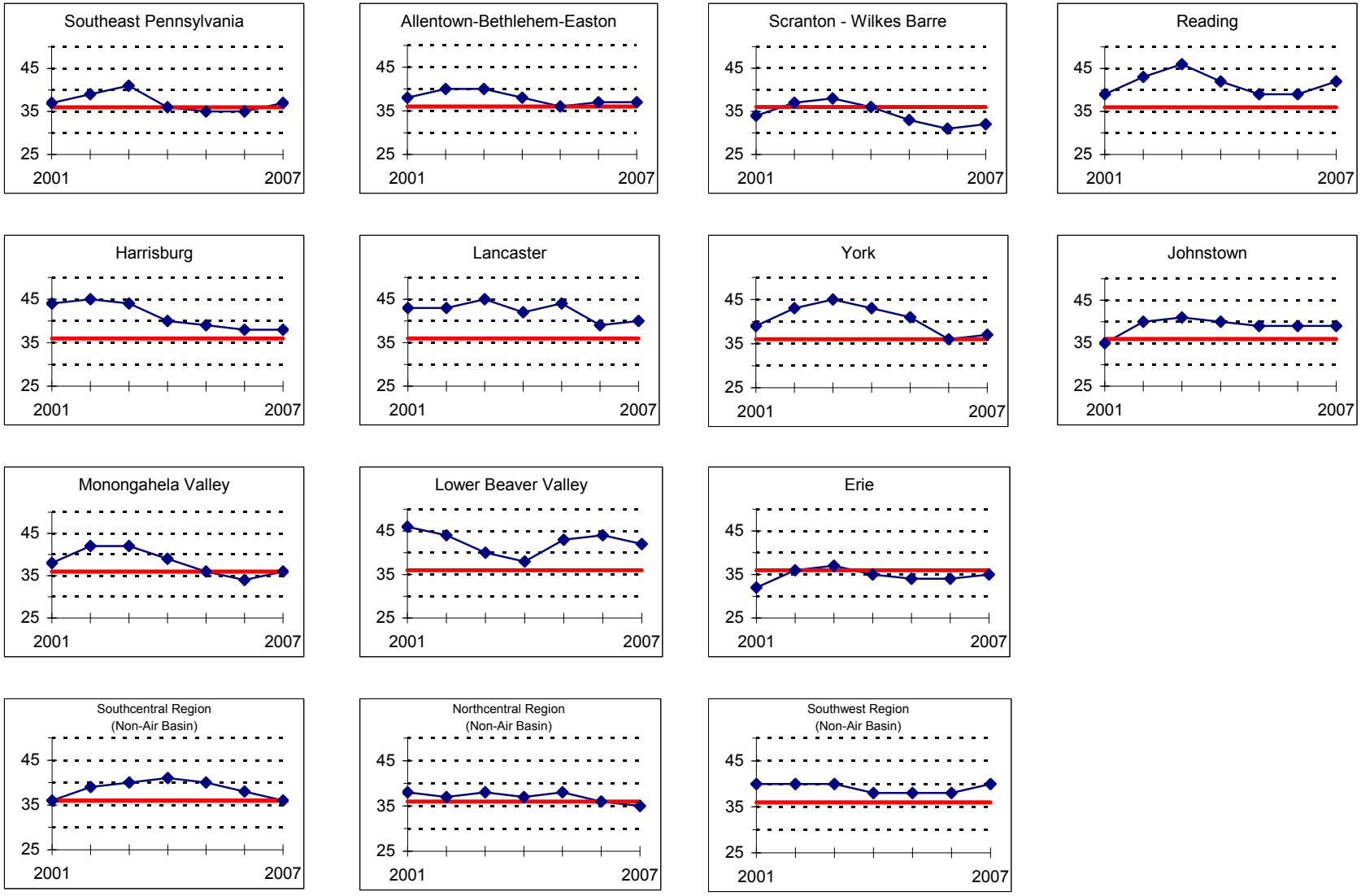
Primary and Secondary National Ambient Air Quality Standard for PM-2.5
98th Percentile 24-Hour Mean = 35 micrograms per cubic meter
(Data are displayed for a single calendar year, but standard is based on a 3-year average)

Figure 4-4. $PM_{-2.5}$ Trends in Pennsylvania 2001 to 2007, 3-Year Average of Annual Means, in Micrograms per Cubic Meter.



The Annual $PM_{2.5}$ National Ambient Air Quality Standard is 15.0 micrograms/cubic meter, based on a 3-year average.

Figure 4-5. $PM_{-2.5}$ Trends in Pennsylvania 2001 to 2007, 3-Year Average of 98th Percentile Concentration Micrograms per Cubic Meter.



The 24-hour $PM_{2.5}$ National Ambient Air Quality Standard is 35 micrograms/cubic meter, based on a 3-year average of 98th percentile 24-hour averages..

Chemical Speciation of $PM_{2.5}$ Particulate Matter

As part of an effort started in 2002, DEP continued in 2007 with constituent analysis (speciation) of $PM_{2.5}$ particulate matter. $PM_{2.5}$ Speciation is a physical or chemical analysis of the captured particles that provide a first order characterization of the metals, ions, and carbon constituents of $PM_{2.5}$.

Physical and chemical speciation data can be used to support several areas of study such as:

- Inputs to air quality modeling analyses used to implement the $PM_{2.5}$ standard;
- Indicators to track the progress of air pollution controls;
- Aids to interpret studies linking health effects to $PM_{2.5}$ constituents;
- Aids to understand the effects of atmospheric constituents on visibility impairment; and
- Aids in designing and siting monitoring networks.

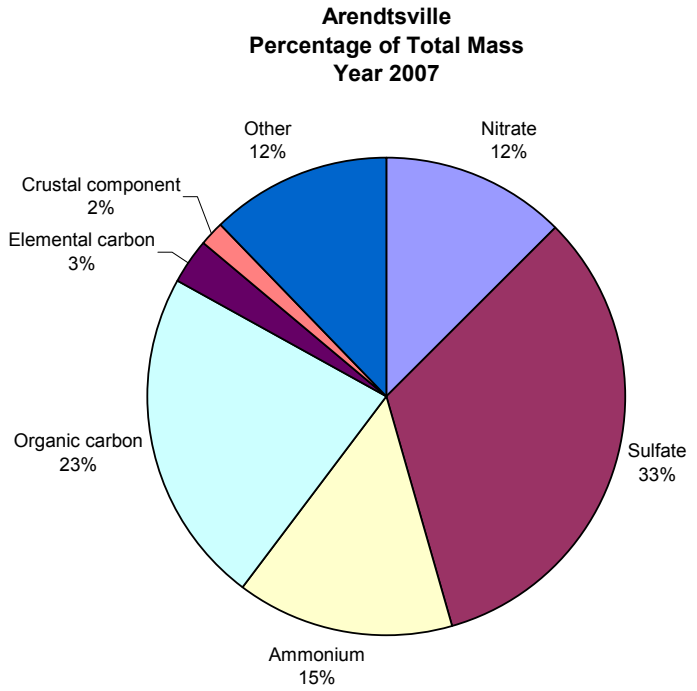
$PM_{2.5}$ is composed of a mixture of primary and secondary particles, both having long lifetimes in the atmosphere (days to weeks), traveling long distances (hundreds to thousands of kilometers) and hence, not easily traced back to their individual sources. Primary particles include soil-related particles such as road dust, construction and agriculture and combustion-related particles. Combustion-related particles come from a variety of sources such as diesel and gasoline vehicles, open burning operations, and utility and commercial boilers. The principle types of secondary aerosols are organics, sulfates and nitrates. Sulfur dioxide, nitrogen oxides and ammonia (ammonium sulfate, ammonium bisulfate, ammonium nitrate) are important precursors to secondary particles.

Knowing the chemical composition of the $PM_{2.5}$ mix is also important for determining sources of pollution. By developing seasonal and annual chemical characterizations of ambient particulates across the nation, this speciation data can be used to perform source attribution analyses, evaluate emission inventories and air quality models, and support health related research studies and regional haze assessments.

The 2007 $PM_{2.5}$ speciation network consisted of 14 sampling sites. Individual site locations, including county and air basin designations, and parameters monitored are listed in Appendix C of this report.

The pie charts on the following pages, Figures 4-6 to 4-12 provide a breakdown for each site and quantify the major $PM_{2.5}$ constituents -nitrates, sulfates, ammonium, organic carbon, elemental carbon and other trace elements – percentage-wise on average from data collected during 2007.

Figure 4-6. $PM_{2.5}$ Speciation Pie Charts for Arendtsville and Chester.



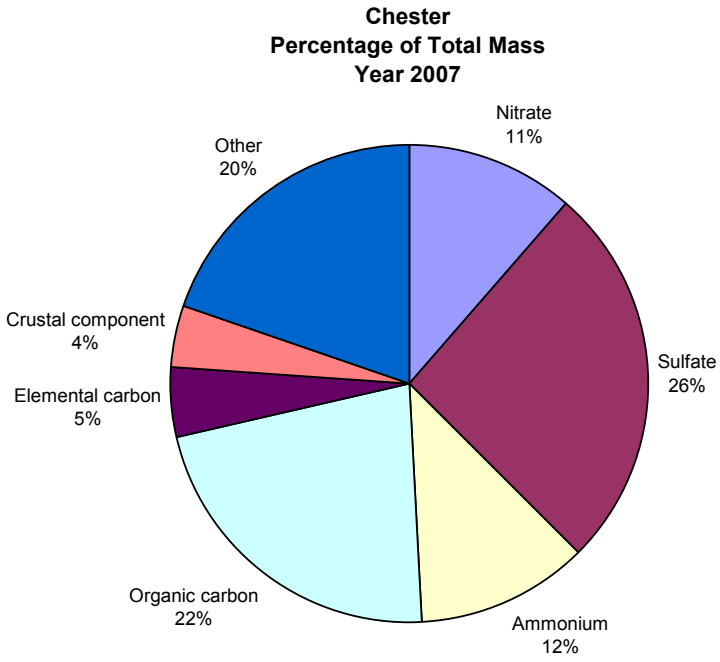
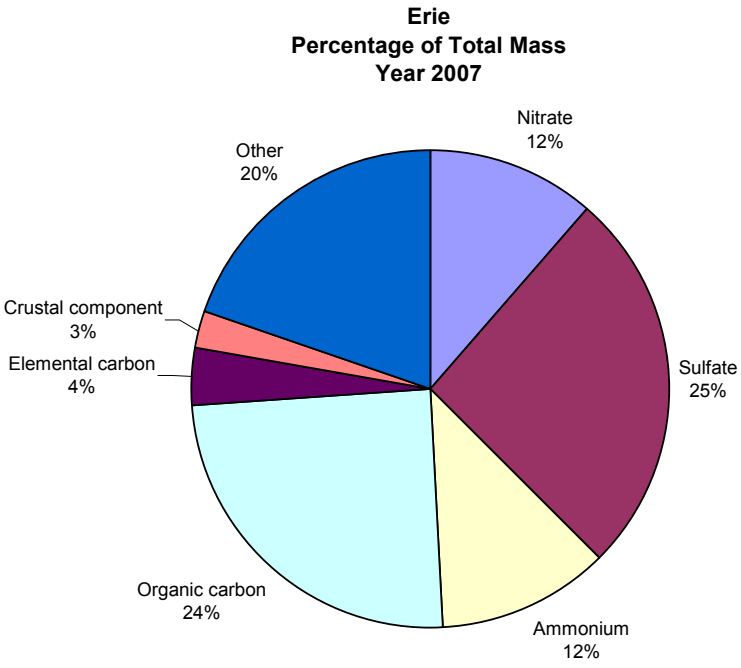


Figure 4-7. $PM_{2.5}$ Speciation Pie Charts for Erie and Florence.



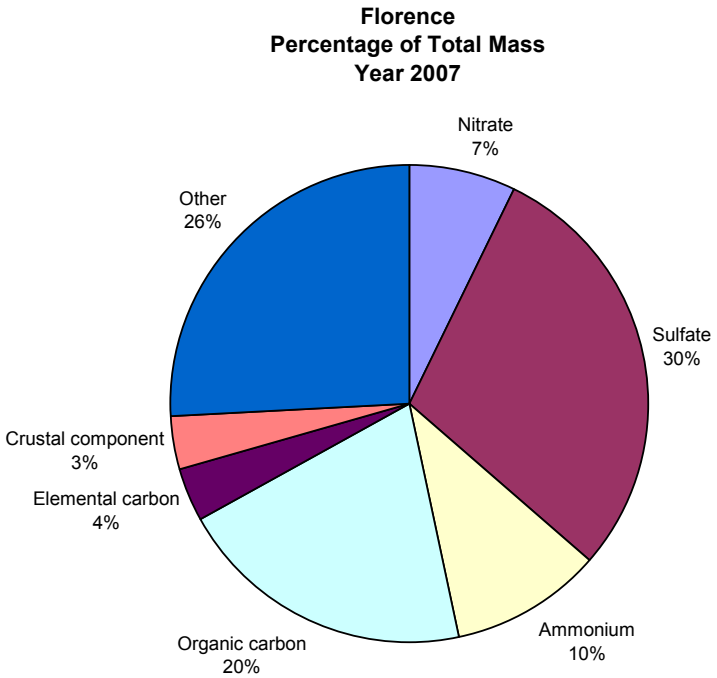
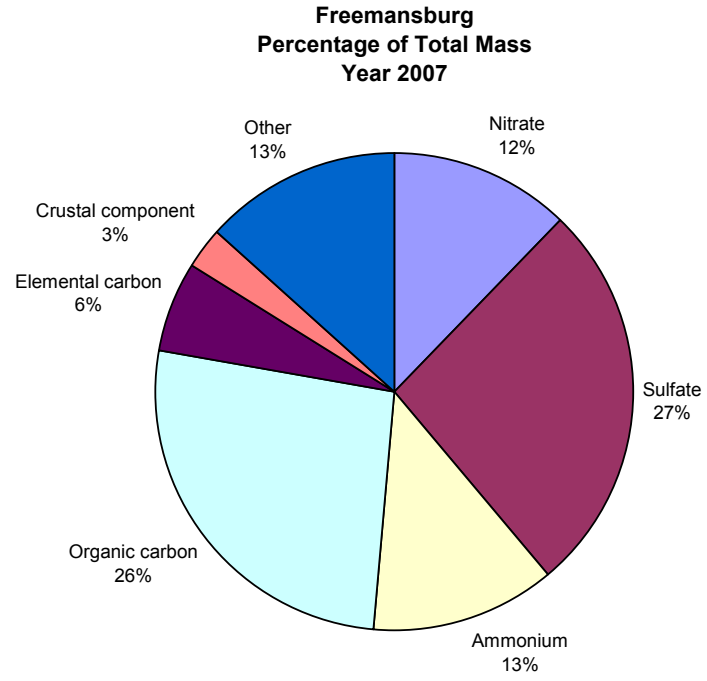


Figure 4-8. $PM_{2.5}$ Speciation Pie Charts for Freemansburg and Greensburg.



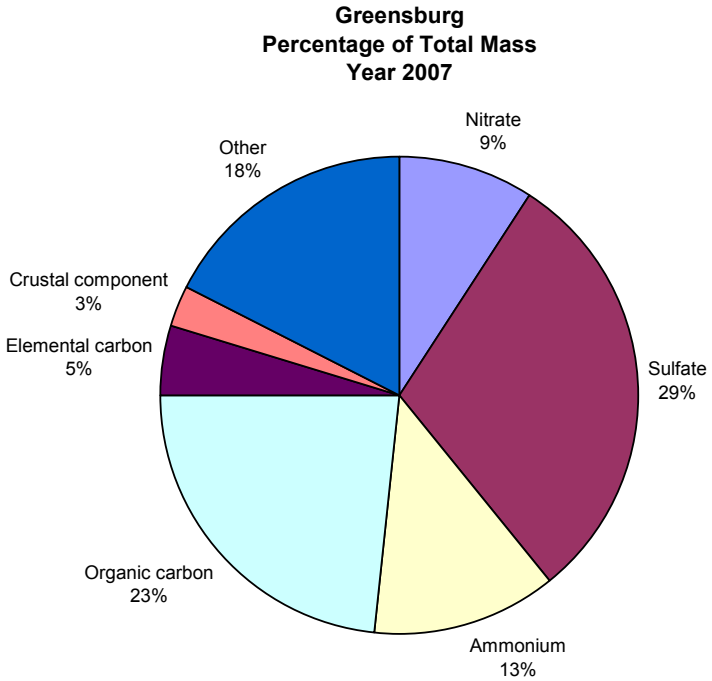
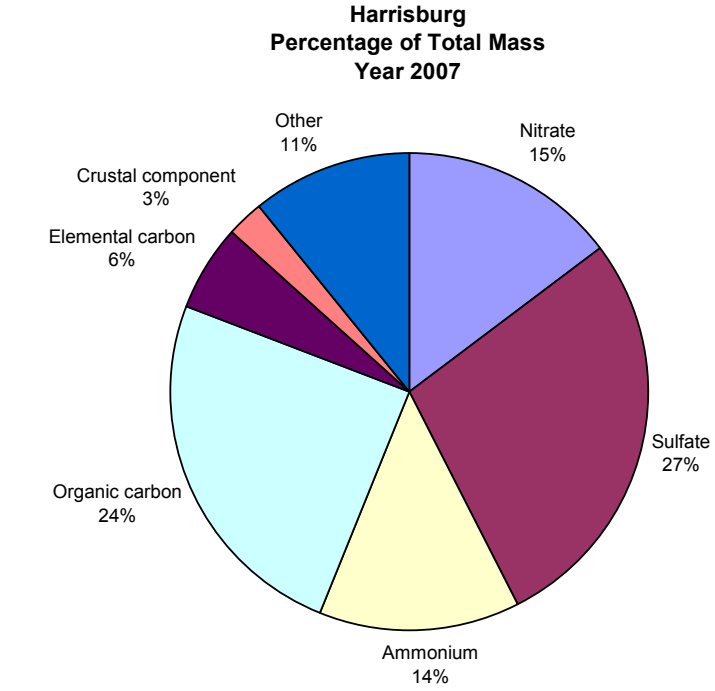


Figure 4-9. $PM_{2.5}$ Speciation Pie Charts for Harrisburg and Lancaster.



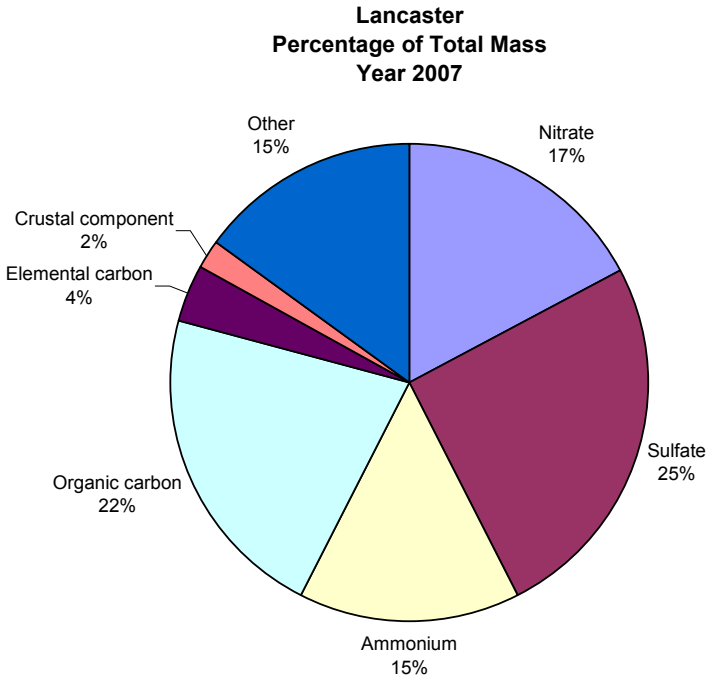
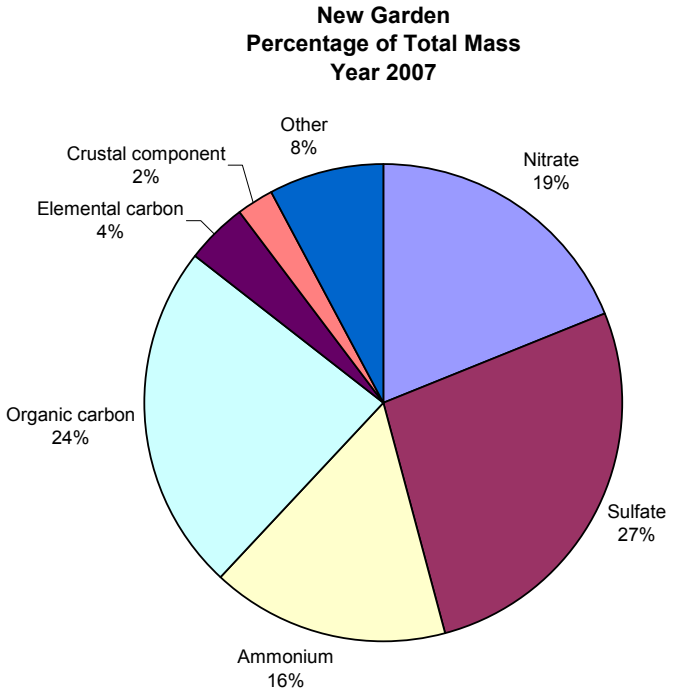


Figure 4-10. $PM_{2.5}$ Speciation Pie Charts for New Garden and Reading (Temporary).



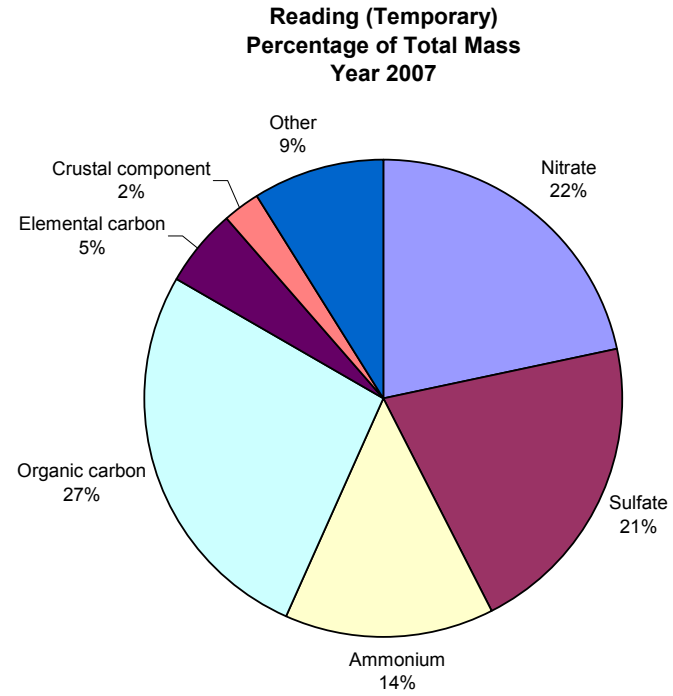
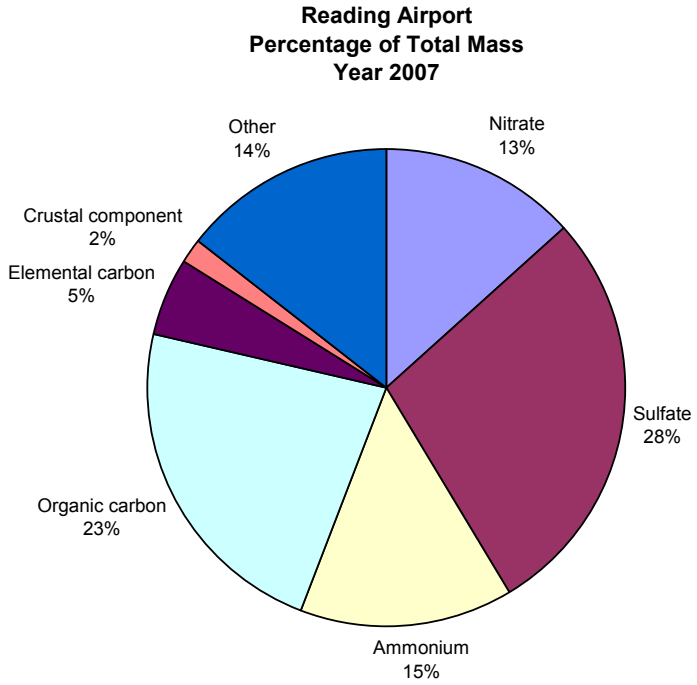


Figure 4-11. $PM_{2.5}$ Speciation Pie Charts for Reading Airport and Scranton.



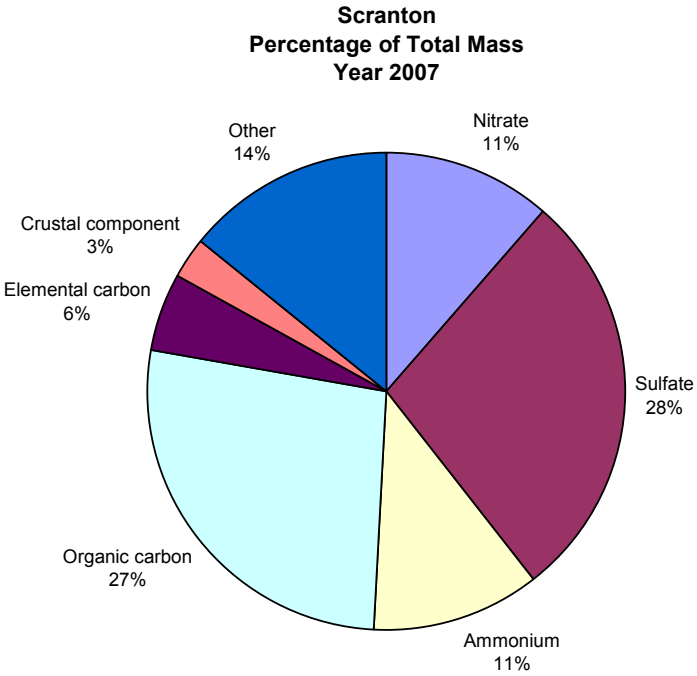
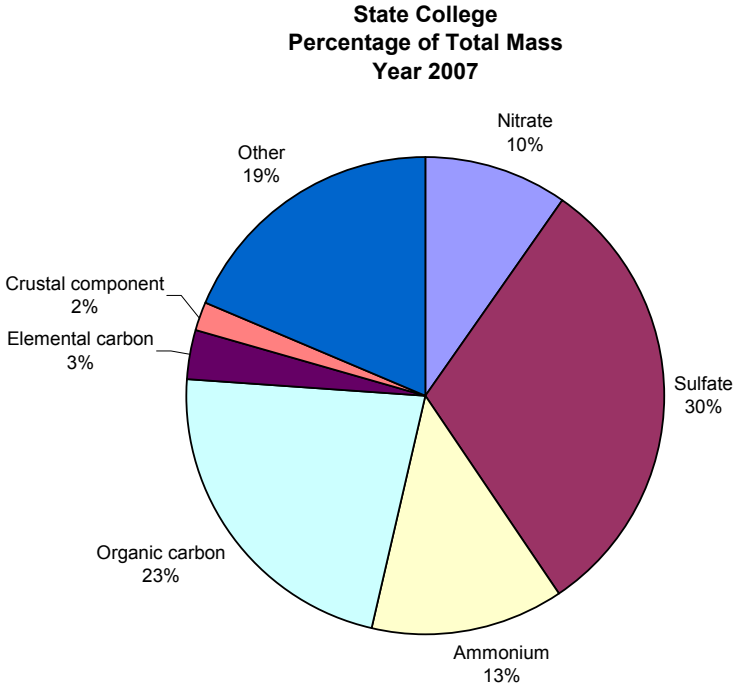
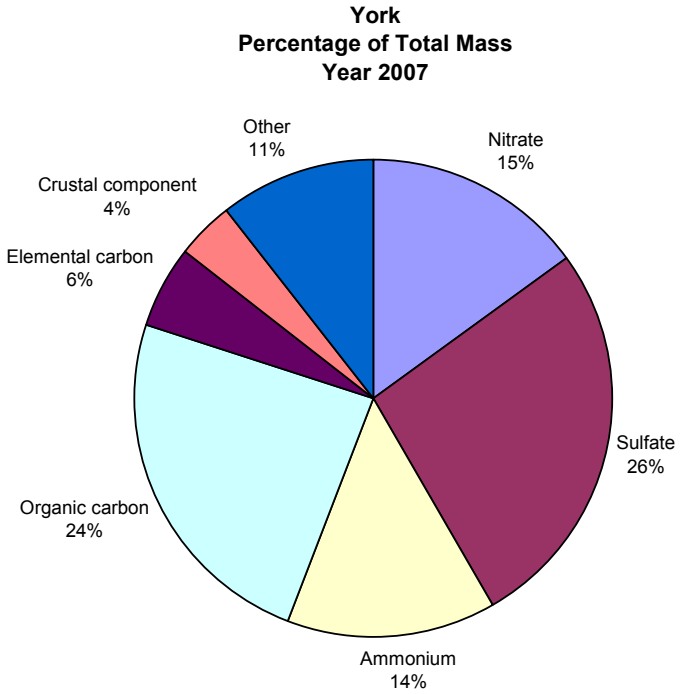


Figure 4-12. $PM_{2.5}$ Speciation Pie Charts for State College and York.





PM_{10} Particulate Matter

On December 18, 2006, EPA revised the national ambient air quality standard (NAAQS) for particulate matter less than or equal to 10 micrometers in diameter (PM_{10}). Citing the lack of evidence linking health problems and long-term exposure to inhalable coarse particle pollution, EPA revoked the annual PM_{10} primary (human health-based) and secondary (environmental welfare-based) standard, while implementing a tightened fine particulate ($PM_{2.5}$) standard. The 24-hour PM_{10} air quality standard was not changed and remains at 150 micrograms per cubic meter, not to be exceeded more than once per year, as both a primary and secondary standard.

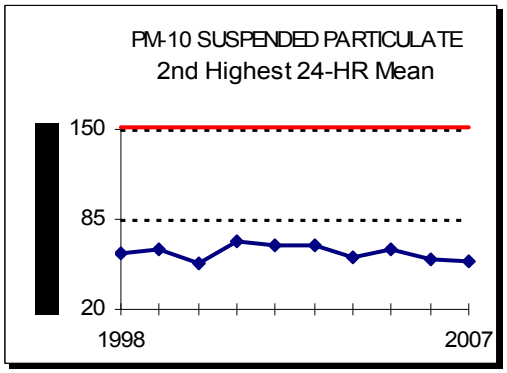
The 2007 DEP PM_{10} monitoring network consisted of 23 sites. Individual site locations, including county and air basin designations, and parameters monitored are listed in Appendix C of this report. All sites met the NAAQS for PM_{10} in 2007.

PM_{10} data for 2007 for all DEP monitoring sites are summarized in Appendix B, Table B-17. No site exceeded the level of the current 24-hour or former annual mean PM_{10} air quality standard during 2007. All sites yielded second highest 24-hour maximum concentration averages well under two thirds the level of the NAAQS for PM_{10}.

Figures 4-13 and 4-14 (on the following pages) qualify the second highest daily PM_{10} 24-hour maximums and annual means, respectively, by county in 2007. No monitored county contained sites exceeding the level of the current or former PM_{10} NAAQS.

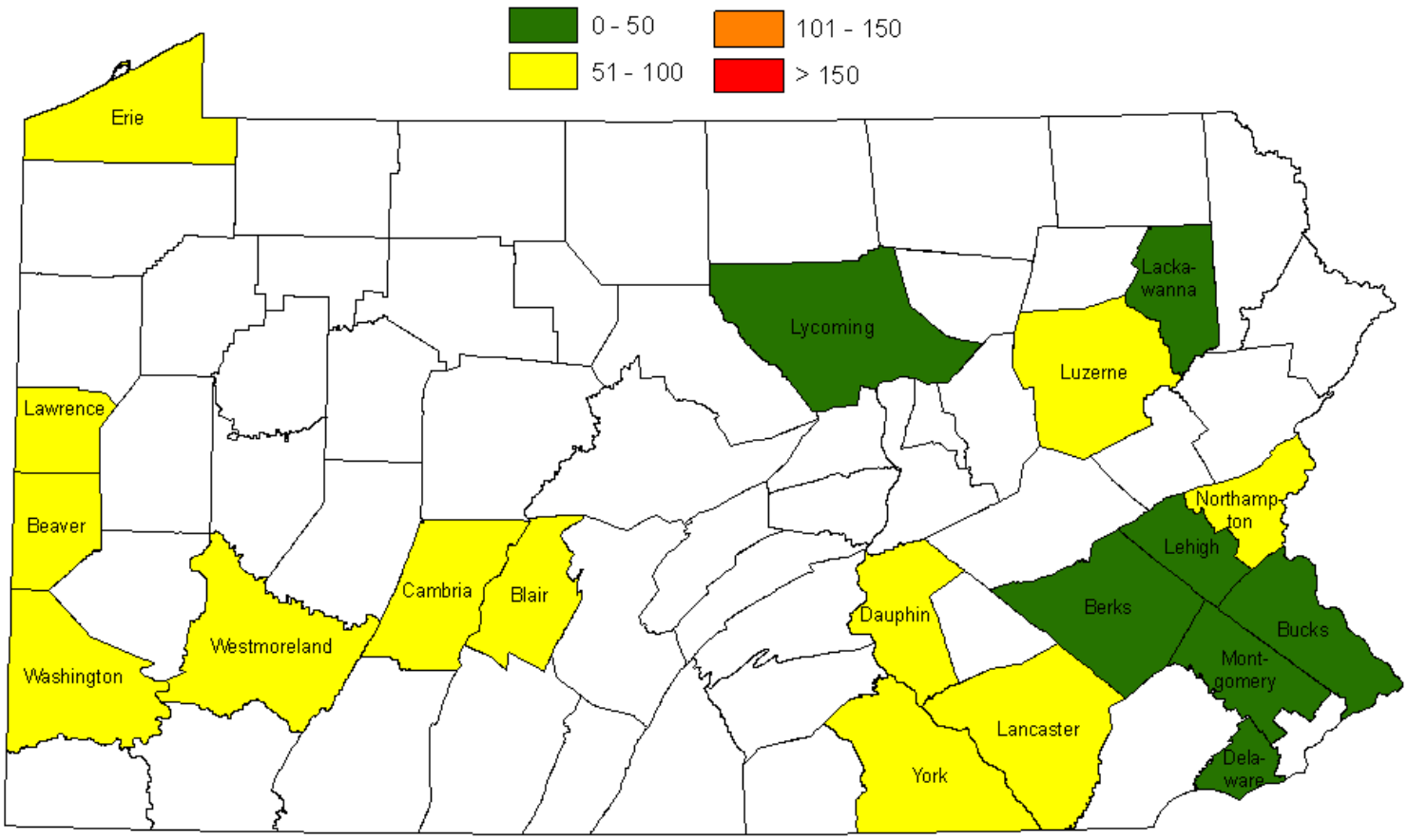
Figure 4-15 displays a 10-year trend of the statewide second daily maximum 8-hour PM_{10} concentration. (Note: Because of an EPA policy change, data prior to 1998-99 is reported in units corrected to standard conditions while data since 1998-99 is corrected to local conditions.) Data points on or above the solid line represent an exceedance of the NAAQS. During the past 10 years, PM_{10} levels have consistently remained at or less than one half the PM_{10} NAAQS, improving approximately 10% overall.

Figure 4-15. Trend in Second Maximum 24-hour Average PM_{10} Concentrations, Statewide, 1998-2007.



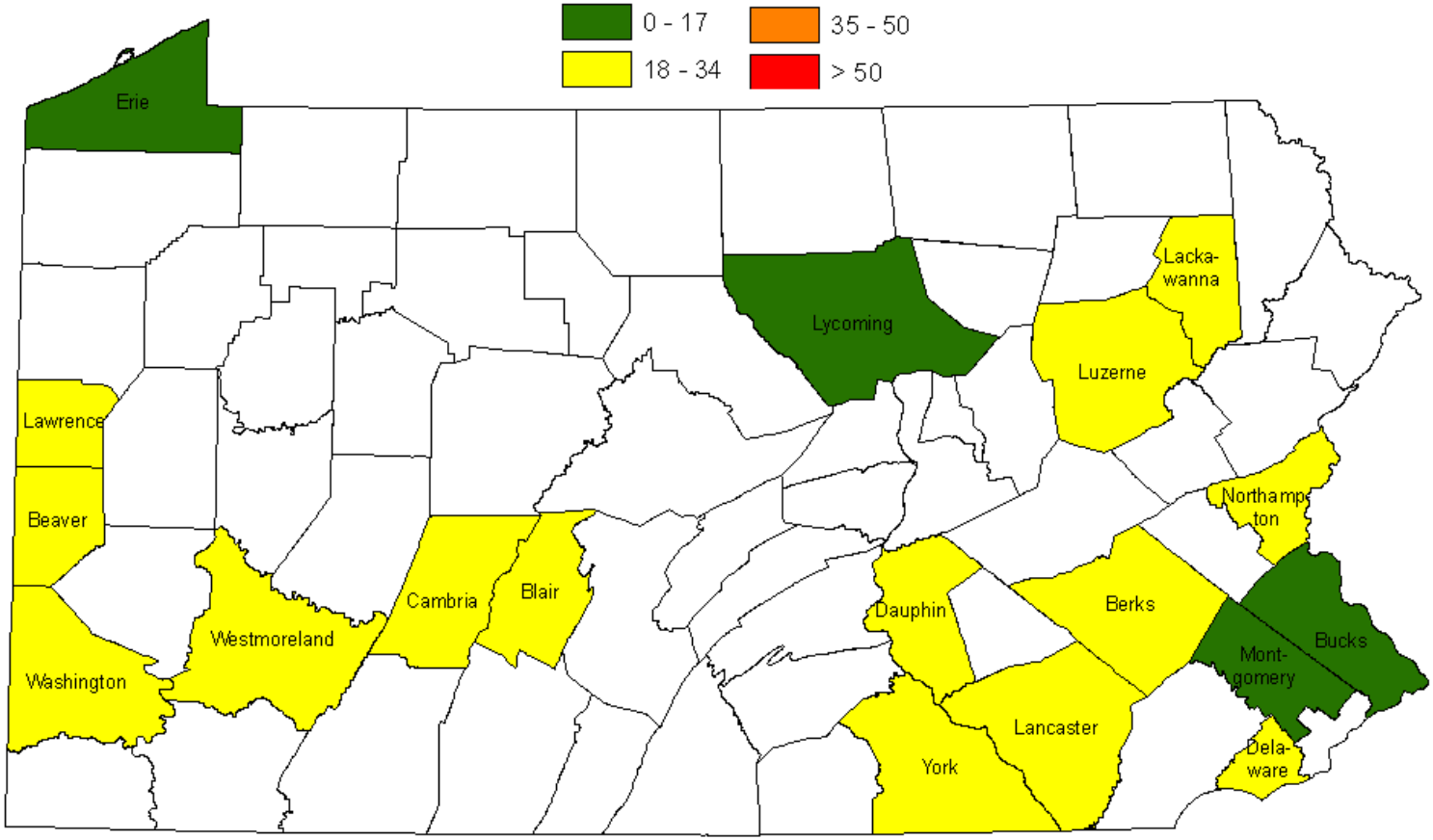
Annual mean historical trends for individual air basin and non-air basin regions are shown in Figure 4-16. Data points on or above the solid line represent an exceedance of the annual NAAQS for sulfur dioxide. The trend graphs demonstrate that all regions have remained under the 24-hour NAAQS for PM_{10}. PM_{10} historical data from 1998 to 2007 are given in Appendix B, Table B-18 for DEP sites that operated during the 10-year period.

Figure 4-13. 2007 PM_{10} Concentrations by County, Second-Highest 24-Hour Means, in Micrograms per Cubic Meter.



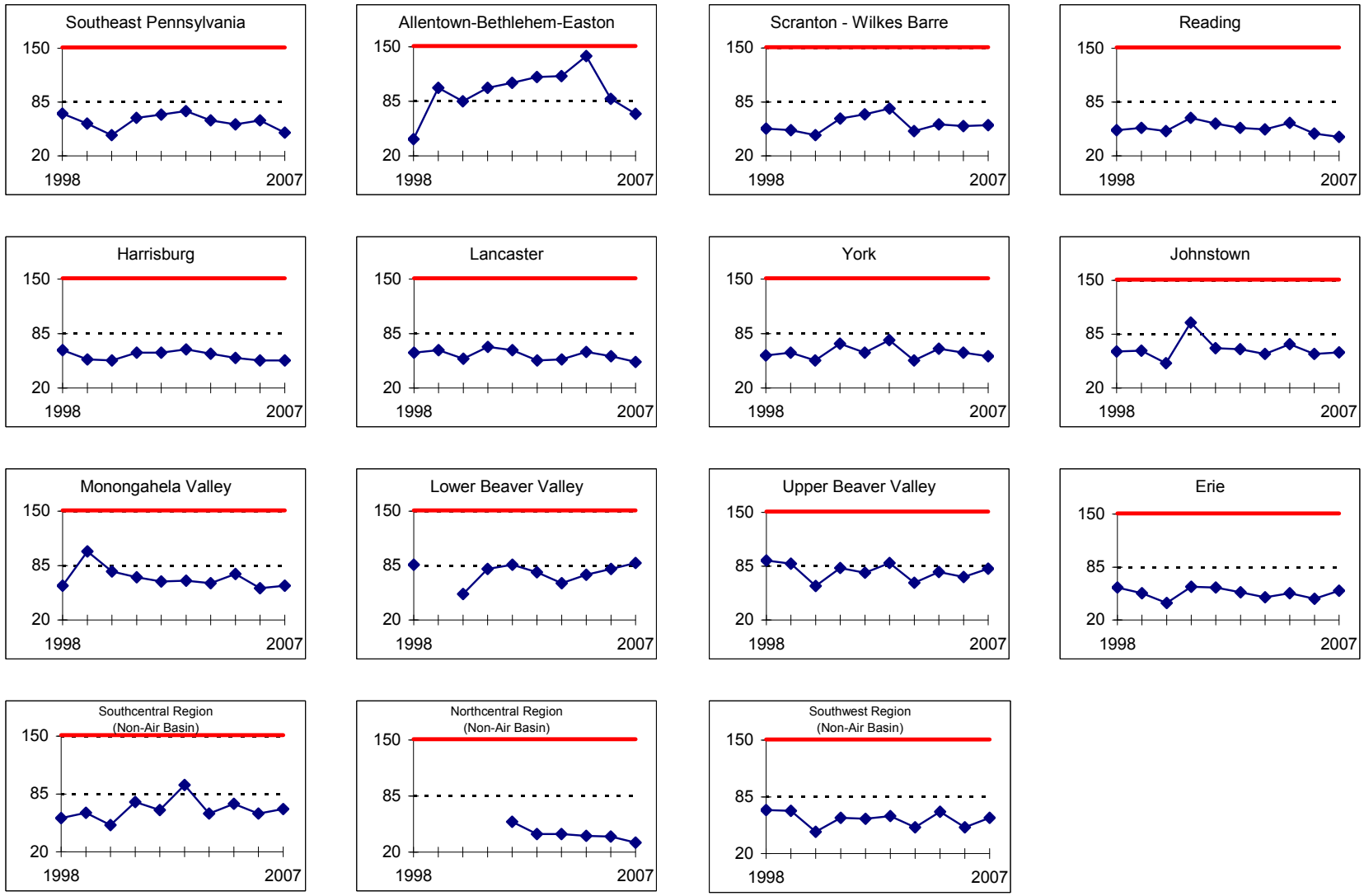
Primary and Secondary National Ambient Air Quality Standard for PM-10
24-Hour Mean = 150 micrograms per cubic meter (not to be exceeded more than once per year)

Figure 4-14. 2007 PM_{10} Concentrations by County, Annual Means, in Micrograms per Cubic Meter.



Primary and Secondary National Ambient Air Quality Standard for PM-10
Former Annual Mean = 50 micrograms per cubic meter
(Data are displayed for single calendar year, but the standard is based on a 3-year average)

Figure 4-16. PM_{10} Trends in Pennsylvania 1998 to 2007, Second 24-Hour Maximums, in Micrograms per Cubic Meter.



PM_{10} 24-Hour Mean National Ambient Air Quality Standard is 150 micrograms per cubic meter (not to be exceeded more than once per year), based on a 3-year average.

Lead

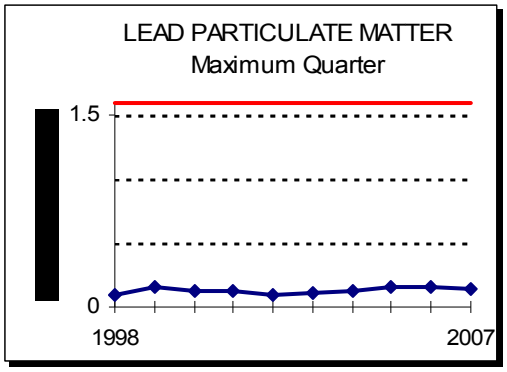
The national ambient air quality standard for lead is a 1.5 micrograms per cubic meter maximum, based on a calendar quarterly average.

Lead levels in the Commonwealth have remained well below the federal standards for at least the past 10 years. Lead levels improved dramatically once lead was removed from gasoline in the mid-seventies, and now relatively few improvements are seen.

The DEP 2007 lead monitoring network consisted of seven discrete monitoring sites. All sites met the level of the lead NAAQS. Individual site locations, including county and air basin designations, and parameters monitored are listed in Appendix C of this report. All sites met the NAAQS for lead in 2007.

Figure 4-17 displays the statewide composite average of the maximum quarterly average concentration from 1998 to 2007. Data points on or above the solid line represent an exceedance of the annual NAAQS for lead. In general, lead levels have remained relatively steady over the past 10 years.

Figure 4-17. Trend in Maximum Quarterly Average Lead Concentrations, Statewide, 1998-2007.



Lead data for 2007 for all DEP monitoring sites are summarized in Appendix B, Tables B-19. No site exceeded the level of the lead air quality standard during 2007. Higher lead levels recorded at sites located in Laureldale (Reading Air basin) and Lyons are due to the influence of lead point sources close to the monitoring sites, although these sites are well below the air quality standard.

Lead historical data from 1998 to 2007 are given in Appendix B, Table B-20 for DEP sites that operated during the 10-year period.

Analyses for total suspended particulates (TSP), sulfates and nitrates are also performed on the same sample collection filters that are analyzed for lead. For reference purposes, TSP, sulfate and nitrate data are given in Appendix B, Tables 22-24. Currently, there are no standards for these pollutants.

Air Toxics

Hazardous air pollutants (HAPs), commonly referred to as air toxics, are pollutants known to cause or are suspected of causing cancer or other serious human health effects or ecosystem damage. Some air toxics are released from natural sources such as volcanic eruptions and forest fires. Most air toxics originate from mobile sources (cars, trucks, buses) and stationary sources (factories, refineries, power plants). Examples of some of the 188 toxic air pollutants include heavy metals such as mercury and chromium; benzene, found in gasoline; perchloroethylene, emitted from some dry cleaning facilities; and methylene chloride, used as a solvent and paint stripper by a number of industries.

DEP performs ambient air monitoring of several air toxics at a Photochemical Assessment Monitoring Station (PAMS) site in Arendtsville, Adams County. This site studies the transport of ozone precursors from urban to rural areas. The volatile organic compounds (VOCs) routinely measured include several VOC species considered to be air toxics, such as benzene, hexane, toluene, and styrene. This station was not sited to represent the highest concentrations over a wide area, but it can be useful to study trends in ambient air toxics transported over long distances. DEP operates the Arendtsville site from May to October. Figure 4-18 on the following page displays the average concentration trend of selected air toxics from 1998 until 2007. Units in Figure 4-18 are expressed in parts per billion Carbon (ppbC).

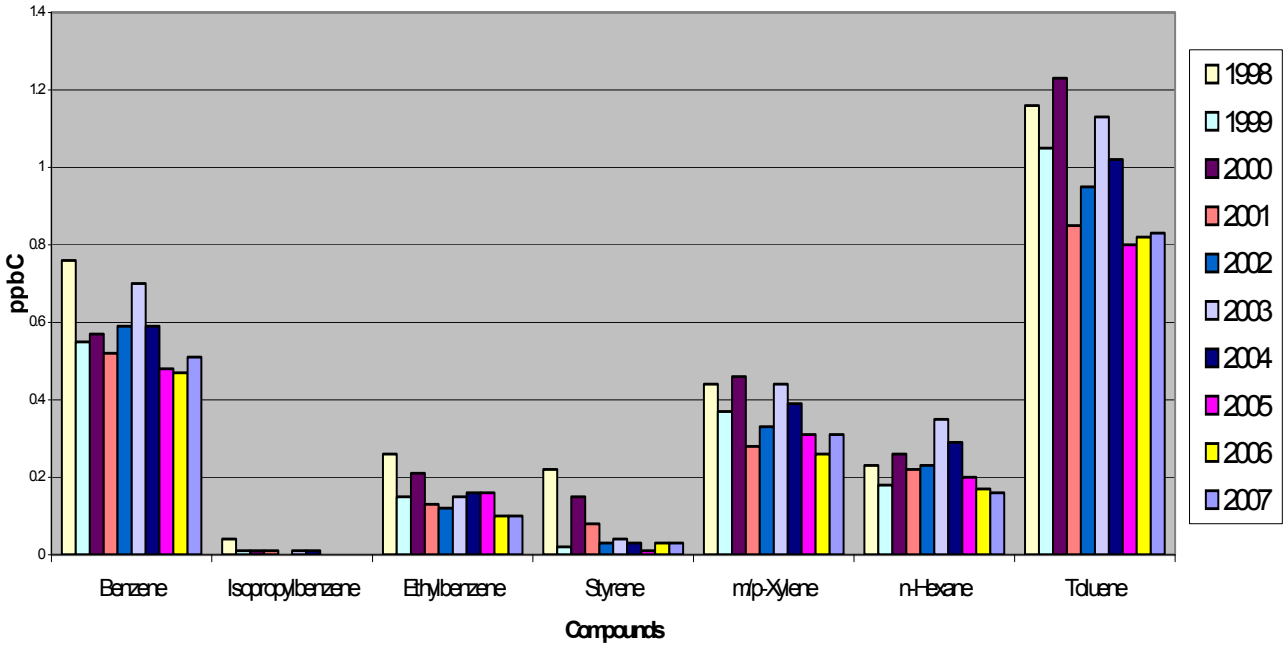
The 2007 data from the Arendtsville site has been summarized in Appendix B, Table B-25. There are no federal or state air quality standards for the monitored compounds.

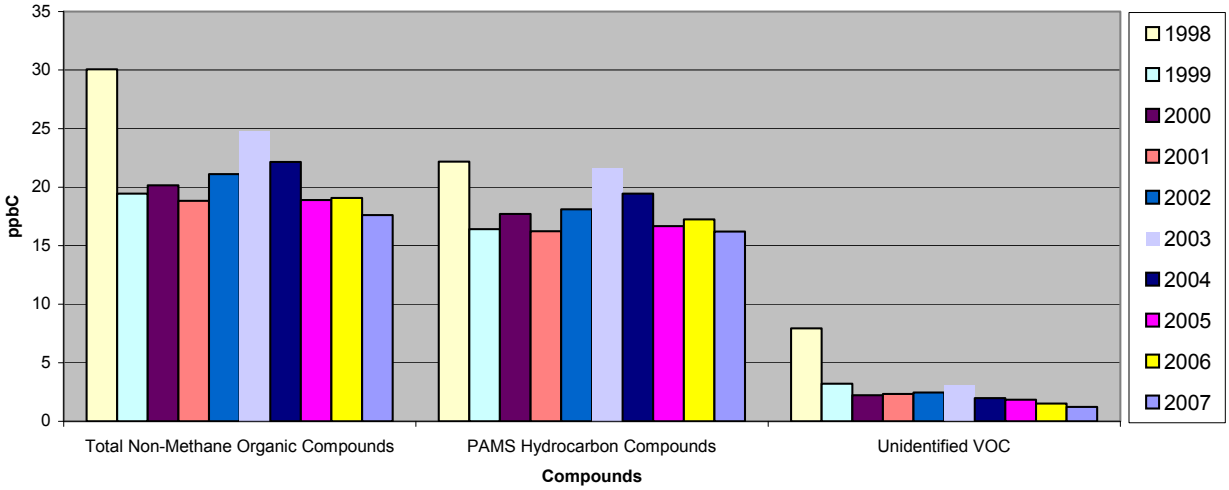
DEP performs air toxics monitoring for mercury at a site near Lancaster. This site is designed to comply with EPA's expanded national toxic monitoring program. Data supplied from this monitoring site, and the expanded national network, assists in rulemaking and model validation. EPA uses these computer models to estimate lifetime chemical exposures and subsequent health-effect risks. The risk to human health from direct exposure by inhalation to elemental mercury vapor in ambient air is believed to be well below any level of concern. However, mercury deposited to surface waters is concentrated in the food chain and may reach levels in fish that are unsafe for consumption. There are no federal or state ambient air quality standards for mercury.

Data from the Lancaster site for 2007, as well as multi-year trend data, are summarized in the 2007 Elemental Mercury Vapor Summary, Appendix D of this document.

For more information on PA's Air Toxics monitoring, visit us through the Department's website at http://www.depweb.state.pa.us (DEP Keyword: toxics).

Figure 4-18. Air Toxics Trends at the Arendtsville Monitoring Site (1998-2007), Annual Means, in Parts per Billion Carbon (ppbC).





CHAPTER 5. AIR QUALITY INDEX

The Air Quality Index (AQI) is the primary tool used by numerous state and local agencies, including DEP, for measuring and reporting health effects of six primary air pollutants – ozone (O_3), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), suspended particulate matter 10 microns or less in size (PM_{10}) and 2.5 microns or less ($PM_{2.5}$). The AQI is also used widely for public air quality forecasting purposes.

The AQI has been in use since October 1999, when EPA established the index to replace the former Pollutant Standards Index (PSI). The AQI reflected updated health information considered in the 1997 EPA revisions of the air quality standards for ground-level ozone (smog) and fine particulate matter. The revised index ensures consistency between current science on the health effects of all of these air pollutants and the reporting of this air quality and health information to the public.

The AQI added an additional air quality category to the former PSI categories just above the level of the standard, for each pollutant. The AQI index established a category from 101 -150 characterized as "unhealthy for sensitive groups" and a category of 151 - 200 as "unhealthy". The AQI also included modifications to the ozone sub-index (an 8-hour sub-index) and a sub-index for fine particulate matter.

The AQI is used extensively by DEP and is published on DEP's web site with hourly updates (DEP Keyword: Air Quality Index, Air Index). The breakpoints for the AQI in terms of pollutant concentrations are shown in Table 3.

Table 5-1. Breakpoints for the Air Quality Index (AQI).

O_3 (ppm) 8 - hour	O_3 (ppm) 1 – hour([1])	$PM_{2.5}$ ($\mu g/m^3$)	PM_{10} ($\mu g/m^3$)	CO (ppm)	SO_2 (ppm) 1-hour	NO_2 (ppm)	AQI	Category
0.000 – 0.064	-	0.0 – 15.4	0 – 54	0.0 – 4.4	0.000 – 0.034	([2])	0 - 50	Good
0.065 – 0.084	-	15.5 – 40.4	55 – 154	4.5 – 9.4	0.035 – 0.144	([2])	51 - 100	Moderate
0.085 – 0.104	0.125 – 0.164	40.5 – 65.4	155 - 254	9.5 – 12.4	0.145 – 0.224	([2])	101 - 150	Unhealthy for sensitive groups
0.105 – 0.124	1.65 – 0.204	65.5 – 150.4	255 – 354	12.5 – 15.4	0.225 – 0.304	([2])	151 - 200	Unhealthy
0.125 – 0.374	0.205 – 0.404	150.5 – 250.4	355 – 424	15.5 – 30.4	0.305 – 0.604	0.65 – 1.24	201 - 300	Very unhealthy
([3])	0.405 – 0.504	250.5 – 350.4	425 – 504	30.5 – 40.4	0.605 – 0.804	1.25 – 1.64	301 - 400	Hazardous
([3])	0.505 – 0.604	350.5 – 500.4	505 - 604	40.5 – 50.4	0.805 – 1.004	1.65 – 2.04	401 - 500	Hazardous

[1] Agencies are generally required to report the AQI based on 8-hour ozone values. However, there are a small number of areas where an AQI based on 1-hour ozone values would be more precautionary. In these cases, in addition to calculating the 8-hour ozone index value, the 1-hour ozone index value may be calculated and the maximum of the two values is reported.
[2] NO_2 has no short-term NAAQS and can generate an AQI only above a AQI value of 200.
[3] When 8-hour Ozone concentrations exceed 0.374 ppm, AQI values of 301 or higher must be calculated with 1-hour concentrations.

CHAPTER 6. PRECISION AND ACCURACY

DEP conducts regularly scheduled performance audits and precision checks on all air monitoring equipment. Performance audits are conducted quarterly for the purpose of assessing data accuracy on carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3), total suspended particulate (TSP), suspended particulate matter 10 microns or less in size (PM_{10}), and lead (Pb) monitoring equipment. Precision checks are performed every two weeks on CO, SO_2, NO_2, and O_3 and every sampling day (once every sixth day) for selected TSP, $PM_{2.5,}$ PM_{10}, and lead.

Data obtained from the performance audits and precision checks are converted to 95 percent upper and lower probability limits using standard statistical methods.

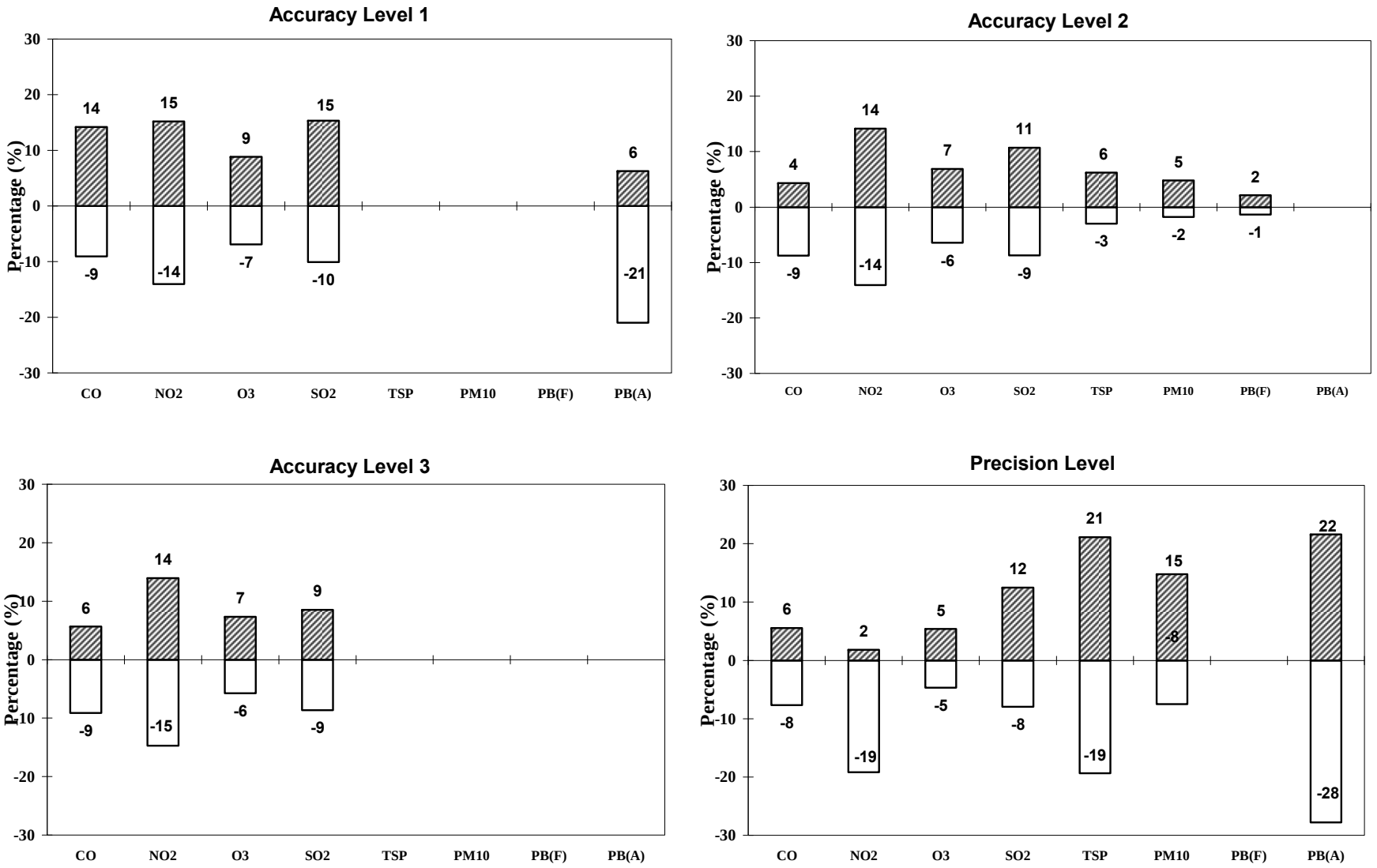
Figure 6-1 on the following page summarizes the 95 percent probability limits from all four quarterly reporting periods within the calendar year. The values presented were calculated from weighted arithmetic averages for each quarter's probability limits.

For precision, only one probability level is calculated for each parameter. Acceptable 95 percent probability limits for precision are met when the instrument response is within 15 percent for all parameters. For continuous analyzers, every two weeks the equipment is challenged by a low level gas of known concentration; and for discrete particulate parameters (TSP, PM_{10}, and lead), filters from pairs of collocated samplers that run on a one-in-six-day schedule are analyzed and compared. This Precision Level data is shown in Figure 6-1.

For accuracy, acceptable 95 percent probability limits are met when the instrument response is within 20 percent for continuous gaseous parameters and within 15 percent for discrete particulate parameters (TSP, PM_{10} and lead). Challenging the equipment quarterly with 3 known concentration levels of audit gas, which are shown as Accuracy Levels 1, 2, and 3 (Figure 6-1), respectively, determines accuracy for continuous analyzers. For discrete particulate parameters (TSP, PM_{10}, and lead), an annual audit of the flow rate determines accuracy. These data are shown on the Accuracy Level 2 graph (Figure 6-1).

Note that there are two different types of accuracy checks for lead: the normal flow check, which is indicated by PB(F) and a quarterly analytical check, which is indicated by PB(A), on the legends of each graph. This analytical check is part of the EPA sponsored National Performance Audit Program (NPAP) in which spiked lead strips are sent to state laboratories to verify laboratory analysis accuracy.

Figure 6-1. 2007 Annual Accuracy and Precision Probability Limits, 95% Lower/Upper Limits.



CHAPTER 7. EMISSION INVENTORIES

Point Sources

An emission inventory is a compilation of data describing emissions from different sources of air pollution. The source may be a utility, refinery, automobile, train, etc. Each type of source can be placed into a point, area or mobile source category. A point source is a stationary source that can best be described as a manufacturing plant or a similar entity having one or more emissions units discharging air emissions into the atmosphere, and located at one specific geographic area.

Emissions from point sources are reported for 65 of the Commonwealth's 67 counties. Point source emissions from sources located in Allegheny County are reported directly to EPA by the Allegheny County Health Department. Point source emissions from sources located in Philadelphia Counties are reported directly by the Philadelphia County Health Department, Air Management Services.

There are many other purposes and uses of an emission inventory but in general it is the primary tool to identify where the State currently stands in terms of air pollution and what needs to be done in the future to reduce emissions. An inventory serves as a starting point, or a baseline, which allows the Commonwealth to develop goals and how best to meet them.

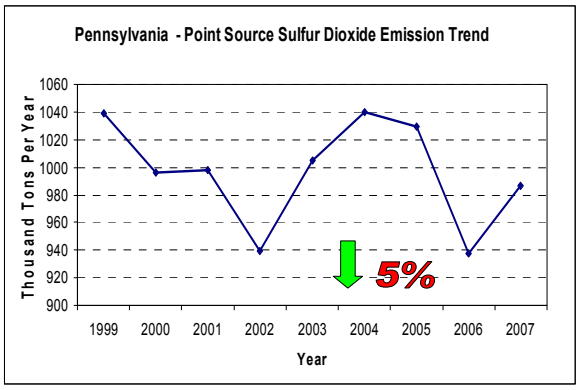
Applications for the use of emission inventory data are numerous. In addition to use as a building block in developing air quality control strategies and maintenance strategies, other specific uses of this data include:

- State oversight of point sources
- Public requests and web sites
- Use in the EPA National Annual Trends Report
- Emission trading
- Compliance demonstrations
- Emission fee programs
- To develop new methodologies and techniques to estimate emissions (emission factors)
- Document regulatory impact assessments
- Permitting
- Air Quality assessments
- Human exposure modeling

Statewide trends for the most common point source pollutants are shown below. These trends do not include data from Allegheny or Philadelphia County.

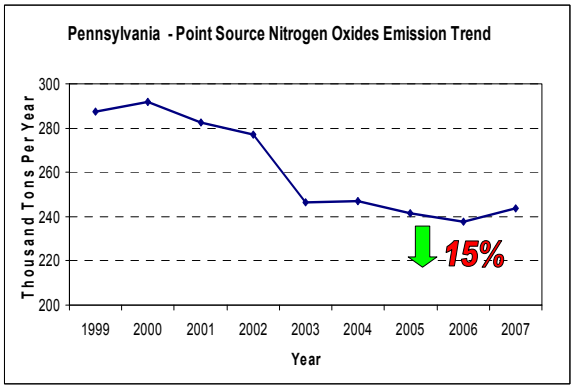
The statewide trend for point source sulfur dioxide emissions for 1999 to 2007 is shown in Figure 7-1.

Figure 7-1. Trend in Sulfur Dioxide Point Source Emissions, 1999-2007.



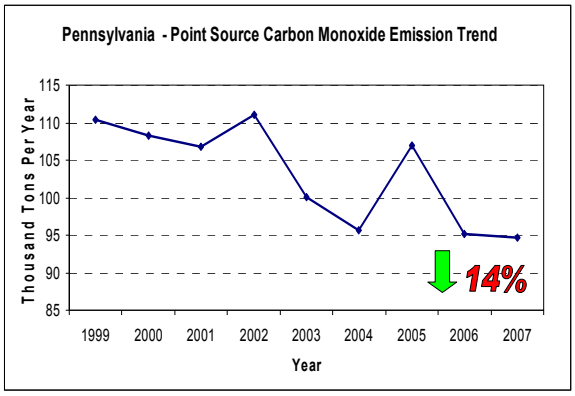
The statewide trend for point source nitrogen oxide emissions for 1999 to 2007 is shown in Figure 7-2.

Figure 7-2. Trend in Nitrogen Oxide Point Source Emissions, 1999-2007.



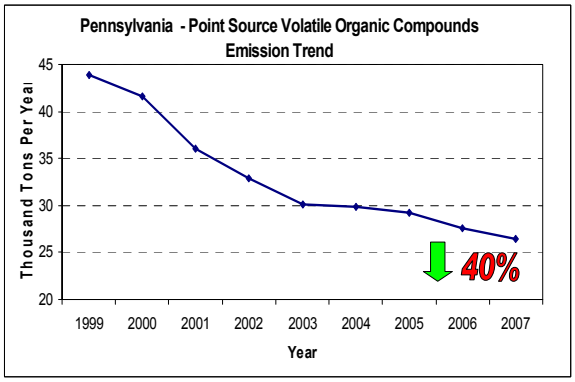
The statewide trend for point source carbon monoxide emissions for 1999 to 2007 is shown in Figure 7-3.

Figure 7-3. Trend in Carbon Monoxide Point Source Emissions, 1999-2007.



The statewide trend for point source volatile organic compounds (VOCs) emissions for 1999 to 2007 is shown in Figure 7-4.

Figure 7-4. Trend in Volatile Organic Compound Point Source Emissions, 1999-2007.



Historical data for each of these pollutants is listed by county in Appendix B, Tables B-26-29.

APPENDIX A. AIR POLLUTION CONTROL AGENCIES IN PENNSYLVANIA

Allegheny County Health Department
39th Street and Penn Avenue
Pittsburgh, PA 15201
(412) 578-8104

City of Philadelphia
Department of Public Health
Air Management Services
321 University Avenue
Philadelphia, PA 19104
(215) 685-7584

Commonwealth of Pennsylvania
Department of Environmental Protection
Bureau of Air Quality
Division of Air Quality Monitoring
Rachel Carson State Office Building 12th Floor
400 Market Street
P.O. Box 8468
Harrisburg, PA 17105-8468
(717) 787-6548

Related environmental information is available electronically via the Internet. Access the DEP website at http://www.depweb.state.pa.us/ (DEP Keyword: Air, Air Pollution, Air Quality, Clean Air

APPENDIX B. DATA TABLES

Table B-1. Ozone Summary (8-Hour).

Year: 2007 (April – October)

(Units: parts per million)

Site Name	PA Site Code	Number of Valid Days	Percent Valid Data	1st Daily Max 8-hour Mean	1st Daily Max Date MM/DD	2nd Daily Max 8-hour Mean	2nd Daily Max Date MM/DD	3rd Daily Max 8-hour Mean	3rd Daily Max Date MM/DD	4th Daily Max 8-hour Mean	4th Daily Max Date MM/DD
Southeast Pennsylvania Air Basin											
Bristol	P01	172	80	0.121	07/09	0.119	06/26	0.109	05/31	0.102	06/08
Chester	P11	210	99	0.107	07/09	0.089	06/26	0.086	05/31	0.086	07/17
Norristown	P21	209	98	0.091	08/02	0.088	05/27	0.086	07/09	0.084	05/31
New Garden	P30	200	93	0.116	07/09	0.087	05/25	0.085	05/31	0.081	08/02
Allentown-Bethlehem-Easton Air Basin											
Allentown	A19	212	100	0.091	06/19	0.087	07/09	0.082	05/15	0.081	08/21
Easton	A20	208	97	0.088	06/19	0.082	07/09	0.082	08/02	0.078	06/26
Freemansburg	A25	214	100	0.093	06/19	0.089	07/09	0.084	05/15	0.083	05/25
Scranton-Wilkes-Barre Air Basin											
Scranton	S01	201	94	0.081	07/10	0.080	09/25	0.078	05/23	0.078	06/19
Nanticoke	S26	199	93	0.079	06/19	0.069	09/25	0.066	09/07	0.063	05/23
Wilkes-Barre	S28	208	97	0.080	06/19	0.079	09/25	0.078	07/10	0.077	05/23
Peckville	S29	213	100	0.072	06/19	0.072	09/07	0.072	09/25	0.071	05/23
Northeast Region Non- Air Basin											
Swiftwater	230	206	96	0.086	06/19	0.078	05/15	0.075	04/23	0.075	07/09
Reading Air Basin											
Reading Temp	R02	49	79	0.078	05/15	0.067	04/23	0.064	05/05	0.063	04/22
Reading Airport	R03	123	100	0.090	07/09	0.085	08/03	0.083	09/25	0.082	08/02
Harrisburg Air Basin											
Harrisburg	H11	211	99	0.086	06/19	0.083	05/25	0.082	07/10	0.082	08/03
Lancaster Air Basin											
Lancaster	L01	213	100	0.092	06/18	0.085	05/25	0.083	05/31	0.083	09/25
York Air Basin											
York	Y01	214	100	0.091	06/19	0.088	06/26	0.086	07/09	0.084	05/31
Southcentral Region Non-Air Basin											
Perry County	305	214	100	0.077	05/15	0.076	08/04	0.073	04/23	0.073	05/23
Hershey	306	200	93	0.080	05/25	0.080	06/07	0.079	07/10	0.079	08/03
Altoona	308	214	100	0.077	08/03	0.074	07/10	0.073	08/04	0.071	07/09
Methodist Hill	313	212	99	0.079	09/05	0.077	05/25	0.077	05/26	0.077	05/30
Biglerville	D14	214	100	0.083	06/19	0.083	07/09	0.081	05/30	0.081	09/25
Northcentral Region Non-Air Basin											
State College	409	214	100	0.082	08/03	0.079	07/10	0.077	05/15	0.074	08/04
Montoursville	410	210	98	0.083	07/10	0.078	05/15	0.078	05/23	0.077	07/25
Moshannon	D09	202	94	0.078	05/15	0.076	08/03	0.074	07/09	0.072	07/10
Tioga County	D13	206	96	0.078	07/10	0.077	05/15	0.075	05/23	0.074	09/25

Primary and Secondary 8-hour National Ambient Air Quality Standard

0.08 parts per million for 4th daily maximum 8-hour mean, averaged over 3 years

? does not satisfy summary criteria

Table B-1. Ozone Summary (8-Hour).

Year: 2007 (April – October)

(Units: parts per million)

Site Name	PA Site Code	Number of Valid Days	Percent Valid Data	1st Daily Max 8-hour Mean	1st Daily Max Date MM/DD	2nd Daily Max 8-hour Mean	2nd Daily Max Date MM/DD	3rd Daily Max 8-hour Mean	3rd Daily Max Date MM/DD	4th Daily Max 8-hour Mean	4th Daily Max Date MM/DD
Johnstown Air Basin											
Johnstown	J01	214	100	0.079	07/09	0.077	08/04	0.075	05/15	0.072	05/31
Monongahela Valley Air Basin											
Charleroi	M01	211	99	0.084	05/31	0.083	08/01	0.083	08/04	0.077	05/15
Lower Beaver Valley Air Basin											
Beaver Falls	B11	213	100	0.079	06/02	0.079	08/02	0.079	08/29	0.077	08/28
Hookstown	B23	205	96	0.093	08/29	0.087	05/30	0.080	07/10	0.080	08/28
Brighton Township	B27	212	99	0.084	08/29	0.079	05/30	0.077	08/01	0.072	08/02
Allegheny County Air Basin											
Pittsburgh	D12	213	100	0.086	05/31	0.083	08/29	0.082	08/04	0.081	06/02
Southwest Region Non-Air Basin											
Florence	504	213	100	0.077	08/29	0.076	05/30	0.076	06/17	0.075	05/31
Washington	508	214	100	0.078	05/31	0.077	08/04	0.076	05/30	0.073	07/09
Murrysville	510	214	100	0.088	05/31	0.082	08/04	0.081	08/02	0.079	06/02
Kittanning	512	213	100	0.100	08/02	0.091	06/01	0.090	07/10	0.083	09/06
Greensburg	513	212	99	0.085	05/31	0.082	08/04	0.078	08/29	0.077	06/01
Holbrook	514	213	100	0.080	07/09	0.079	09/06	0.079	09/20	0.078	05/15
Strongstown	515	212	99	0.082	05/15	0.081	06/02	0.081	06/18	0.079	08/29
Upper Beaver Valley Air Basin											
New Castle	B21	208	97	0.076	06/17	0.076	06/25	0.076	08/04	0.075	05/23
Erie Air Basin											
Erie	E10	212	99	0.098	05/24	0.087	08/02	0.084	05/30	0.084	07/10
Northwest Region Non-Air Basin											
Farrell	606	211	99	0.086	05/30	0.085	08/29	0.084	09/06	0.083	08/03

Primary and Secondary 8-hour National Ambient Air Quality Standard

0.08 parts per million for 4th daily maximum 8-hour mean, averaged over 3 years

? does not satisfy summary criteria

Table B-2. Ozone Summary (1- Hour).

(Units: parts per million)

Year: 2007 (April – October)

Site Name	PA Site Code	Number of Valid Days	Percent Valid Data	1st Daily Max 1-hour Mean	1st Daily Max Date MM/DD	2nd Daily Max 1-hour Mean	2nd Daily Max Date MM/DD	3rd Daily Max 1-hour Mean	3rd Daily Max Date MM/DD	4th Daily Max 1-hour Mean	4th Daily Max Date MM/DD
Southeast Pennsylvania Air Basin											
Bristol	P01	173	81	0.142	07/09	0.141	06/26	0.140	06/08	0.123	05/31
Chester	P11	211	99	0.128	07/09	0.102	06/26	0.101	07/17	0.101	08/02
Norristown	P21	209	98	0.107	08/02	0.103	05/27	0.101	09/21	0.100	07/10
New Garden	P30	202	95	0.141	07/09	0.102	05/25	0.094	06/18	0.094	08/15
Allentown-Bethlehem-Easton Air Basin											
Allentown	A19	213	99	0.104	07/09	0.102	06/19	0.090	06/01	0.090	09/21
Easton	A20	209	98	0.105	06/19	0.095	08/02	0.094	07/09	0.088	05/31
Freemansburg	A25	214	100	0.105	06/19	0.105	07/09	0.093	08/02	0.091	05/31
Scranton-Wilkes-Barre Air Basin											
Scranton	S01	205	96	0.092	08/03	0.090	09/25	0.089	09/20	0.087	06/19
Nanticoke	S26	200	94	0.088	06/19	0.087	09/25	0.079	09/07	0.077	09/21
Wilkes-Barre	S28	210	97	0.089	06/19	0.089	07/10	0.088	09/25	0.085	09/20
Peckville	S29	213	100	0.092	07/10	0.085	08/03	0.083	09/20	0.083	09/25
Northeast Region Non- Air Basin											
Swiftwater	230	207	96	0.092	06/19	0.090	07/10	0.086	09/21	0.085	05/15
Reading Air Basin											
Reading Temp	R02	50	84	0.082	05/15	0.077	04/23	0.069	04/22	0.068	05/05
Reading Airport	R03	123	100	0.102	07/10	0.098	07/09	0.094	08/03	0.092	09/21
Harrisburg Air Basin											
Harrisburg	H11	213	99	0.105	06/19	0.105	07/10	0.097	08/03	0.096	05/31
Lancaster Air Basin											
Lancaster	L01	214	100	0.107	08/03	0.104	09/08	0.102	06/08	0.099	06/18
York Air Basin											
York	Y01	214	100	0.121	06/19	0.108	05/31	0.105	08/02	0.100	07/10
Southcentral Region Non-Air Basin											
Perry County	305	214	100	0.089	06/19	0.088	09/25	0.083	06/07	0.082	05/15
Hershey	306	203	97	0.102	07/10	0.095	08/03	0.092	05/25	0.092	08/02
Altoona	308	214	100	0.085	07/10	0.081	08/30	0.080	06/17	0.080	07/09
Methodist Hill	313	213	99	0.090	07/17	0.089	05/31	0.089	09/05	0.086	08/02
Biglerville	D14	214	100	0.101	06/19	0.091	07/09	0.090	09/05	0.088	08/02
Northcentral Region Non-Air Basin											
State College	409	214	100	0.090	08/03	0.087	08/30	0.086	07/10	0.082	05/15
Montoursville	410	210	98	0.091	07/10	0.091	09/25	0.087	09/21	0.085	07/25
Moshannon	D09	203	95	0.088	08/03	0.083	09/06	0.081	05/15	0.080	07/09
Tioga County	D13	206	97	0.085	07/10	0.084	05/15	0.081	09/25	0.080	05/23

Former Primary and Secondary Daily 1-hour National Ambient Air Quality Standard is 0.12 parts per million

(not to be exceeded more than once per year).

? does not satisfy summary criteria

Table B-2. Ozone Summary (1- Hour).

(Units: parts per million)

Year: 2007 (April – October)

Site Name	PA Site Code	Number of Valid Days	Percent Valid Data	1st Daily Max 1-hour Mean	1st Daily Max Date MM/DD	2nd Daily Max 1-hour Mean	2nd Daily Max Date MM/DD	3rd Daily Max 1-hour Mean	3rd Daily Max Date MM/DD	4th Daily Max 1-hour Mean	4th Daily Max Date MM/DD
Johnstown Air Basin											
Johnstown	J01	214	99	0.096	07/09	0.087	06/01	0.086	05/31	0.085	08/04
Monongahela Valley Air Basin											
Charleroi	M01	211	99	0.099	08/01	0.095	05/31	0.089	08/04	0.087	09/06
Lower Beaver Valley Air Basin											
Beaver Falls	B11	213	100	0.097	08/29	0.092	06/02	0.089	06/01	0.088	05/31
Hookstown	B23	206	97	0.099	08/29	0.096	08/28	0.092	05/30	0.091	09/06
Brighton Township	B27	213	99	0.096	08/29	0.087	05/31	0.084	06/02	0.084	08/01
Allegheny County Air Basin											
Pittsburgh	D12	213	100	0.113	05/31	0.104	08/29	0.097	07/09	0.092	08/02
Southwest Region Non-Air Basin											
Florence	504	213	99	0.096	08/29	0.094	09/06	0.087	06/01	0.086	08/28
Washington	508	214	100	0.090	05/31	0.084	07/09	0.081	08/04	0.081	09/06
Murrysville	510	214	100	0.098	05/31	0.098	08/28	0.092	06/01	0.091	08/04
Kittanning	512	213	100	0.117	08/02	0.106	07/10	0.102	06/01	0.098	08/29
Greensburg	513	212	99	0.093	05/31	0.088	08/04	0.088	08/29	0.087	06/01
Holbrook	514	214	100	0.090	07/09	0.090	09/06	0.087	09/05	0.085	06/18
Strongstown	515	213	99	0.089	06/02	0.088	08/29	0.086	05/15	0.086	06/18
Upper Beaver Valley Air Basin											
New Castle	B21	208	97	0.087	06/17	0.087	08/04	0.087	09/06	0.086	06/25
Erie Air Basin											
Erie	E10	212	99	0.107	05/24	0.102	09/06	0.100	05/30	0.100	08/02
Northwest Region Non-Air Basin											
Farrell	606	211	99	0.103	09/06	0.101	08/29	0.095	05/30	0.094	08/03

Former Primary and Secondary Daily 1-hour National Ambient Air Quality Standard is 0.12 parts per million

(not to be exceeded more than once per year).

? does not satisfy summary criteria

Table B-3. Eight-Hour Ozone Days Greater than 84 ppb and Maximums Summary (2005 – 2007).

(Units: parts per billion)

Station	Design Value	2005 Maximum Values Days > 84	1st 8-Hr	2nd 8-Hr	3rd 8-Hr	4th 8-Hr	2006 Maximum Values Days > 84	1st 8-Hr	2nd 8-Hr	3rd 8-Hr	4th 8-Hr	2007 Maximum Values Days > 84	1st 8-Hr	2nd 8-Hr	3rd 8-Hr	4th 8-Hr
Bristol	**92**	7	98	93	91	89	7	103	93	88	87	9	121	119	109	102
Chester	**85**	4	90	90	89	87	3	92	90	87	82	5	107	89	86	86
Norristown	**86**	8	93	92	90	90	3	89	87	86	84	3	91	88	86	84
New Garden (Airport)	**85**	8	103	93	93	92	3	100	89	86	83	3	116	87	85	81
Northwest (Rox)	80	3	95	89	86	83	1	85	81	76	76	1	87	84	81	81
Northeast (Airport)	**91**	8	104	100	95	94	4	96	87	86	85	8	106	104	97	95
Southwest (Elm)	77	0	78	72	69	68	2	86	85	83	81	3	110	95	89	82
Frankford (Lab)	68	0	81	74	72	66	0	72	69	68	66	1	94	82	79	73
Allentown	82	6	92	91	89	86	3	92	89	89	80	2	91	87	82	81
Freemansburg	82	5	89	88	87	86	3	96	89	87	78	2	93	89	84	83
Easton	78	1	87	83	83	80	2	99	88	79	78	1	88	82	82	78
Reading Airport	82											2	90	85	83	82
Scranton	76	1	89	83	81	80	0	80	73	72	70	0	81	80	78	78
Peckville	74	2	89	86	84	80	0	78	77	75	71	0	72	72	72	71
Nanticoke	67	0	83	78	75	74	0	69	68	68	64	0	79	69	66	63
Wilkes-Barre	77	1	90	83	83	81	0	82	80	75	73	0	80	79	78	77
Swiftwater	76						0	82	82	77	77	1	86	78	75	75
Harrisburg	81	3	95	94	86	84	1	87	83	78	77	1	86	83	82	82
Hershey	81	4	90	89	88	85	2	88	85	82	81	0	80	80	79	79
Perry County	77	1	88	84	82	82	0	83	81	77	77	0	77	76	73	73
Lancaster	84	6	96	90	90	85	4	93	88	86	85	2	92	85	83	83
York	83	6	97	93	90	89	0	84	83	79	77	3	91	88	86	84
Methodist Hill	72	0	76	75	74	74	0	71	69	66	66	0	79	77	77	77
Biglerville (PSU)	78	1	90	83	82	80	0	77	76	76	74	0	83	83	81	81
Montoursville	77	3	88	87	85	82	0	80	79	74	73	0	83	78	78	77
Tioga County (PSU)	75	0	83	81	80	80	0	75	74	74	73	0	78	77	75	74
State College (PSU)	78	1	90	83	83	83	0	78	78	78	78	0	82	79	77	74
Altoona	73	1	85	81	80	77	0	80	77	71	71	0	77	74	73	71
Johnstown	74	1	86	81	79	77	0	75	75	75	73	0	79	77	75	72
Moshannon (PSU)	76	4	90	88	86	86	0	81	73	72	72	0	78	76	74	72
Strongstown	80	5	94	91	91	88	2	87	85	77	73	0	82	81	81	79
Greensburg	78	2	89	89	84	83	2	86	85	79	76	1	85	82	78	77
Murrysville	79	4	97	90	89	87	0	76	73	72	71	1	88	82	81	79
Kittanning	83	4	109	94	88	86	2	101	89	84	80	3	100	91	90	83
Brighton Twp	78	4	97	88	86	86	1	88	84	77	77	0	84	79	77	72
Beaver Falls	75	2	103	86	84	80	0	83	81	74	69	0	79	79	79	77
Hookstown	82	5	100	100	89	86	1	85	82	82	82	2	93	87	80	80
Florence	78	4	92	91	89	85	1	85	78	77	76	0	77	76	76	75
Charleroi	78	2	89	85	83	80	1	85	80	79	79	0	84	83	83	77
Washington	76	4	88	88	86	85	0	76	75	70	70	0	78	77	76	73
Holbrook	80	5	94	87	85	85	1	85	81	78	77	0	80	79	79	78
Pittsburgh (Carnegie SC)	83	4	98	96	92	92	0	83	81	79	78	1	86	83	82	81
Harrison Twp	**87**	6	107	98	88	87	4	93	91	88	88	4	99	89	87	86
Lawrenceville	80	1	85	82	81	81	2	86	85	80	78	3	92	91	85	83
South Fayette	80	4	103	95	94	85	1	87	81	81	80	1	87	78	78	77
New Castle	73	1	87	82	82	75	0	79	77	74	70	0	76	76	76	75
Farrell	83	4	96	90	90	87	3	93	86	86	79	2	86	85	84	83
Erie	82	4	103	96	90	86	1	90	83	77	77	2	98	87	84	84

Table B-4. One-hour Ozone Days Greater than 124 ppb and Maximums Summary (2005 – 2007).

(Units: parts per billion)

Station	Design Value	2005 Maximum Values Days > 124	1st 1-Hr	2nd 1-Hr	3rd 1-Hr	4th 1-Hr	2006 Maximum Values Days > 124	1st 1-Hr	2nd 1-Hr	3rd 1-Hr	4th 1-Hr	2007 Maximum Values Days > 124	1st 1-Hr	2nd 1-Hr	3rd 1-Hr	4th 1-Hr
Bristol	**127**	1	127	121	106	105	0	116	112	109	98	3	142	141	140	123
Chester	109	1	128	119	109	98	0	103	102	102	96	1	128	102	101	101
Norristown	105	0	114	107	105	104	0	96	96	95	95	0	107	103	101	100
New Garden (Airport)	109	1	130	109	109	108	0	115	107	104	102	1	141	102	94	94
Northwest (Rox)	101	0	118	115	106	101	0	98	98	96	89	0	98	96	95	94
Northeast (Airport)	**126**	2	130	128	110	109	0	108	106	104	96	2	135	126	118	115
Southwest (Elm)	96	0	90	77	76	75	0	94	93	93	92	1	136	113	104	96
Frankford (Lab)	100	0	108	96	85	80	0	80	77	77	76	0	107	104	100	94
Allentown	102	0	107	101	101	96	0	115	100	98	94	0	104	102	90	90
Freemansburg	102	0	102	100	99	97	0	111	100	94	91	0	105	105	93	91
Easton	96	0	99	96	92	91	0	118	95	93	93	0	105	95	94	88
Reading Airport	92											0	102	98	94	92
Scranton	92	0	96	96	95	92	0	90	82	79	78	0	92	90	89	87
Peckville	92	0	93	93	93	92	0	82	81	80	80	0	92	85	83	83
Nanticoke	87	0	91	90	87	84	0	74	73	72	71	0	88	87	79	77
Wilkes-Barre	94	0	97	95	94	92	0	94	84	80	77	0	89	89	88	85
Swiftwater	88						0	119	88	87	86	0	92	90	86	85
Harrisburg	105	0	109	106	96	96	0	96	91	91	85	0	105	105	97	96
Hershey	98	0	105	99	98	96	0	97	96	96	96	0	102	95	92	92
Perry County	99	0	103	99	99	99	0	101	94	94	88	0	89	88	83	82
Lancaster	105	0	109	105	102	99	0	106	104	100	100	0	107	104	102	99
York	105	0	110	101	100	98	0	95	94	89	87	0	121	108	105	100
Methodist Hill	86	0	85	82	80	80	0	79	78	76	71	0	90	89	89	86
Biglerville (PSU)	91	0	96	91	89	89	0	86	84	82	80	0	101	91	90	88
Montoursville	95	0	99	99	96	95	0	89	83	81	81	0	91	91	87	85
Tioga County (PSU)	86	0	91	86	86	86	0	86	80	77	75	0	85	84	81	80
State College (PSU)	91	0	98	91	91	91	0	84	83	82	81	0	90	87	86	82
Altoona	89	0	93	90	89	87	0	95	82	80	78	0	85	81	80	80
Johnstown	90	0	94	94	90	90	0	89	85	83	82	0	96	87	86	85
Moshannon (PSU)	93	0	98	96	94	93	0	92	79	78	77	0	88	83	81	80
Strongstown	95	0	106	97	95	94	0	106	93	87	84	0	89	88	86	86
Greensburg	95	0	101	98	97	93	0	95	95	91	91	0	93	88	88	87
Murrysville	100	0	107	102	102	100	0	82	81	81	80	0	98	98	92	91
Kittanning	106	0	123	104	101	97	0	118	101	101	96	0	117	106	102	98
Brighton Twp	94	0	107	95	94	93	0	92	90	87	87	0	96	87	84	84
Beaver Falls	94	0	112	99	94	94	0	91	90	84	84	0	97	92	89	88
Hookstown	97	0	115	106	97	96	0	95	91	88	87	0	99	96	92	91
Florence	96	0	109	101	96	95	0	93	91	87	86	0	96	94	87	86
Charleroi	98	0	99	98	95	95	0	100	97	92	88	0	99	95	89	87
Washington	94	0	101	96	96	94	0	91	89	81	80	0	90	84	81	81
Holbrook	94	0	115	103	98	93	0	94	92	88	87	0	90	90	87	85
Pittsburgh (Carnegie SC)	104	0	119	105	103	101	0	94	92	91	91	0	113	104	97	92
Harrison Twp	106	0	121	106	103	101	0	118	103	100	96	0	111	106	103	99
Lawrenceville	97	0	97	94	92	90	0	96	95	91	90	0	118	114	97	94
South Fayette	97	0	107	106	105	95	0	94	92	88	88	0	97	89	87	85
New Castle	88	0	97	94	94	85	0	88	88	86	79	0	87	87	87	86
Farrell	103	0	107	104	99	97	0	107	102	92	90	0	103	101	95	94
Erie	102	0	109	104	100	99	0	100	93	93	91	0	107	102	100	100

Former Primary and Secondary Daily 1-hour National Ambient Air Quality Standard is 0.12 parts per million

(not to be exceeded more than once per year)

Table B-5. Ozone Historical Trend.

(Units: parts per million)

Station / Site Code	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Southeast Pennsylvania Air Basin											
Bristol	0.115	0.145	0.121	0.131	0.135	0.121	0.098	0.121	0.112	0.141	2nd Max Daily 1-hour Average
P01	0	6	1	2	4	0	0	1	0	3	Number Days 1-hour ≥0.125 ppm
	0.096	0.112	0.099	0.104	0.111	0.087	0.082	0.089	0.087	0.102	4th Max Daily 8-hour Average
	17	24	14	16	17	9	2	7	7	9	Number Days 8-hour ≥0.085 ppm
Chester	0.125	0.130	0.117	0.108	0.125	0.118	0.109	0.119	0.102	0.102	2nd Max Daily 1-hour Average
P11	2	3	0	1	2	0	0	1	0	1	Number Days 1-hour ≥0.125 ppm
	0.099	0.100	0.091	0.093	0.103	0.080	0.081	0.087	0.082	0.086	4th Max Daily 8-hour Average
	17	19	7	12	16	3	2	4	3	5	Number Days 8-hour ≥0.085 ppm
Norristown	0.126	0.126	0.125	0.120	0.122	0.111	0.094	0.107	0.096	0.103	2nd Max Daily 1-hour Average
P21	2	2	2	1	1	0	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.103	0.104	0.100	0.096	0.096	0.085	0.083	0.090	0.084	0.084	4th Max Daily 8-hour Average
	17	20	11	18	12	4	1	8	3	3	Number Days 8-hour ≥0.085 ppm
New Garden	***	***	0.095	0.122	0.139	0.115	0.102	0.109	0.107	0.102	2nd Max Daily 1-hour Average
P30	***	***	0	0	2	0	0	1	0	1	Number Days 1-hour ≥0.125 ppm
	***	***	0.077	0.105	0.104	0.085	0.085	0.092	0.083	0.081	4th Max Daily 8-hour Average
	***	***	1	17	23	4	5	8	3	3	Number Days 8-hour ≥0.085 ppm
West Chester	***	***	***	0.117	0.113	0.110	***	***	***	***	2nd Max Daily 1-hour Average
P32	***	***	***	0	1	0	***	***	***	***	Number Days 1-hour ≥0.125 ppm
	***	***	***	0.103	0.097	0.085	***	***	***	***	4th Max Daily 8-hour Average
	***	***	***	20	19	4	***	***	***	***	Number Days 8-hour ≥0.085 ppm
Allentown-Bethlehem-Easton Air Basin											
Allentown	0.106	0.125	0.112	0.126	0.114	0.109	0.101	0.101	0.100	0.102	2nd Max Daily 1-hour Average
A19	0	2	0	2	0	0	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.095	0.105	0.091	0.094	0.094	0.087	0.083	0.086	0.080	0.081	4th Max Daily 8-hour Average
	18	19	5	9	16	4	3	6	3	2	Number Days 8-hour ≥0.085 ppm
Easton	***	***	0.100	0.113	0.113	0.107	0.104	0.096	0.095	0.095	2nd Max Daily 1-hour Average
A20	***	***	0	0	0	0	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	***	***	0.083	0.092	0.092	0.083	0.083	0.080	0.078	0.078	4th Max Daily 8-hour Average
	***	***	2	11	13	3	1	1	2	1	Number Days 8-hour ≥0.085 ppm
Freemansburg	0.104	0.126	0.114	0.113	0.112	0.112	0.104	0.100	0.100	0.105	2nd Max Daily 1-hour Average
A25	0	2	1	0	0	0	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.087	0.107	0.092	0.094	0.090	0.087	0.088	0.086	0.078	0.083	4th Max Daily 8-hour Average
	5	22	6	14	12	4	6	5	3	2	Number Days 8-hour ≥0.085 ppm
Scranton-Wilkes-Barre Air Basin											
Scranton	0.108	0.107	0.082	0.097	0.122	0.099	0.088	0.096	0.082	0.090	2nd Max Daily 1-hour Average
S01	0	0	0	0	1	0	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.088	0.093	0.073	0.088	0.089	0.075	0.073	0.080	0.070	0.078	4th Max Daily 8-hour Average
	5	11	1	5	8	2	0	1	0	0	Number Days 8-hour ≥0.085 ppm

Primary and Secondary 8-hour National Ambient Air Quality Standards

8-Hour Mean = 0.08 parts per million for 4th daily maximum 8-hour mean, averaged over 3 years

Former 1-hour = 0.12 parts per million, not to be exceeded more than once per year

? does not satisfy summary criteria

***** less than 50 percent valid data for year**

Table B-5. Ozone Historical Trend.

(Units: parts per million)

Station / Site Code	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Nanticoke	0.098	0.102	0.093	0.104	0.112	0.097	0.079	0.090	0.073	0.087	2nd Max Daily 1-hour Average
S26	0	0	0	0	0	0	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.081	0.086	0.076	0.086	0.089	0.077	0.068	0.074	0.064	0.063	4th Max Daily 8-hour Average
	2	4	1	5	6	3	0	0	0	0	Number Days 8-hour ≥0.085 ppm
Wilkes-Barre	0.102	0.111	0.086	0.100	0.119	0.098	0.088	0.095	0.084	0.089	2nd Max Daily 1-hour Average
S28	0	0	0	0	0	0	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.088	0.093	0.073	0.088	0.092	0.078	0.073	0.081	0.073	0.077	4th Max Daily 8-hour Average
	7	9	1	7	7	2	0	1	0	0	Number Days 8-hour ≥0.085 ppm
Peckville	0.105	0.115	0.090	0.099	0.122	0.097	0.085	0.093	0.081	0.085	2nd Max Daily 1-hour Average
S29	0	0	0	0	1	0	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.089	0.096	0.077	0.086	0.094	0.075	0.071	0.080	0.071	0.071	4th Max Daily 8-hour Average
	5	11	1	5	14	2	0	2	0	0	Number Days 8-hour ≥0.085 ppm
Northeast Region Non-Air Basin											
Swiftwater	***	***	***	***	***	***	***	***	0.088	0.090	2nd Max Daily 1-hour Average
230	***	***	***	***	***	***	***	***	0	0	Number Days 1-hour ≥0.125 ppm
	***	***	***	***	***	***	***	***	0.077	0.075	4th Max Daily 8-hour Average
	***	***	***	***	***	***	***	***	0	1	Number Days 8-hour ≥0.085 ppm
Reading Air Basin											
Reading	0.106	0.123	0.105	0.125	0.113	0.094	0.089	0.099	***	***	2nd Max Daily 1-hour Average
R01	0	1	0	2	0	1	0	0	***	***	Number Days 1-hour > 0.124 ppm
	0.092	0.102	0.084	0.099	0.095	0.080	0.076	0.085	***	***	4th Max Daily 8-hour Average
	16	14	3	8	13	3	1	4	***	***	Number Days 8-hour > 0.084 ppm
Reading (Temporary)	***	***	***	***	***	***	***	***	0.095?	0.077	2nd Max Daily 1-hour Average
R02	***	***	***	***	***	***	***	***	0	0	Number Days 1-hour > 0.124 ppm
	***	***	***	***	***	***	***	***	0.078?	0.063	4th Max Daily 8-hour Average
	***	***	***	***	***	***	***	***	1	0	Number Days 8-hour > 0.084 ppm
Reading Airport	***	***	***	***	***	***	***	***	***	0.098	2nd Max Daily 1-hour Average
R03	***	***	***	***	***	***	***	***	***	0	Number Days 1-hour > 0.124 ppm
	***	***	***	***	***	***	***	***	***	0.082	4th Max Daily 8-hour Average
	***	***	***	***	***	***	***	***	***	2	Number Days 8-hour > 0.084 ppm
Harrisburg Air Basin											
Harrisburg	0.116	0.114	0.101	0.099	0.126	0.089	0.092	0.106	0.091	0.105	2nd Max Daily 1-hour Average
H11	0	0	0	0	2	0	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.097	0.095	0.079	0.086	0.098	0.074	0.076	0.084	0.077	0.082	4th Max Daily 8-hour Average
	22	15	3	7	11	2	1	3	1	1	Number Days 8-hour ≥0.085 ppm
Lancaster Air Basin											
Lancaster	0.119	0.127	0.107	0.127	0.115	0.115	0.097	0.105	0.104	0.104	2nd Max Daily 1-hour Average
L01	0	2	0	2	0	1	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.101	0.102	0.090	0.097	0.096	0.083	0.081	0.085	0.085	0.083	4th Max Daily 8-hour Average
	27	18	5	15	18	3	1	6	4	2	Number Days 8-hour ≥0.085 ppm

Primary and Secondary 8-hour National Ambient Air Quality Standards

8-Hour Mean = 0.08 parts per million for 4th daily maximum 8-hour mean, averaged over 3 years

Former 1-hour = 0.12 parts per million, not to be exceeded more than once per year

? does not satisfy summary criteria

***** less than 50 percent valid data for year**

Table B-5. Ozone Historical Trend.

(Units: parts per million)

Station / Site Code	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
York Air Basin											
York	0.112	0.121	0.112	0.104	0.124	0.114	0.091	0.101	0.094	0.108	2nd Max Daily 1-hour Average
Y01	0	1	0	0	1	0	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.095	0.094	0.090	0.087	0.101	0.081	0.077	0.089	0.077	0.084	4th Max Daily 8-hour Average
	18	10	6	8	12	3	1	6	0	3	Number Days 8-hour ≥0.085 ppm
Southcentral Region Non-Air Basin											
Perry County	0.110	0.106	0.099	0.102	0.110	0.095	0.081	0.099	0.094	0.088	2nd Max Daily 1-hour Average
305	0	0	0	0	0	0	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.092	0.090	0.073	0.089	0.088	0.084	0.069	0.082	0.077	0.073	4th Max Daily 8-hour Average
	8	13	2	10	7	3	0	1	0	0	Number Days 8-hour ≥0.085 ppm
Hershey	0.111	0.126	0.110	0.105	0.132	0.099	0.084	0.099	0.096	0.095	2nd Max Daily 1-hour Average
306	0	2	0	0	2	0	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.088	0.104	0.088	0.091	0.094	0.079	0.072	0.085	0.081	0.079	4th Max Daily 8-hour Average
	9	15	5	12	13	2	0	4	2	0	Number Days 8-hour ≥0.085 ppm
Altoona	0.114	0.111	0.104	0.107	0.102	0.104	0.083	0.090	0.082	0.081	2nd Max Daily 1-hour Average
308	0	0	0	0	0	1	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.098	0.091	0.080	0.083	0.089	0.083	0.073	0.077	0.071	0.071	4th Max Daily 8-hour Average
	17	6	2	3	9	3	0	1	0	0	Number Days 8-hour ≥0.085 ppm
Kutztown	0.104	0.128	0.101	0.119	0.106	0.084	***	***	***	***	2nd Max Daily 1-hour Average
310	0	2	0	0	0	0	***	***	***	***	Number Days 1-hour ≥0.125 ppm
	0.090	0.099	0.080	0.091	0.091	0.072	***	***	***	***	4th Max Daily 8-hour Average
	14	12	2	7	11	1	***	***	***	***	Number Days 8-hour ≥0.085 ppm
Methodist Hill	0.120	0.115	0.100	0.104	0.115	0.085	0.078	0.082	0.078	0.089	2nd Max Daily 1-hour Average
313	0	0	0	0	0	0	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.104	0.098	0.085	0.095	0.104	0.080	0.071	0.074	0.066	0.077	4th Max Daily 8-hour Average
	22	20	4	15	27	3	0	0	0	0	Number Days 8-hour ≥0.085 ppm
Biglerville	***	***	***	0.096	0.104	0.102	0.079	0.091	0.084	0.091	2nd Max Daily 1-hour Average
D14	***	***	***	0	0	0	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	***	***	***	0.088	0.093	0.076	0.072	0.080	0.074	0.081	4th Max Daily 8-hour Average
	***	***	***	7	7	2	0	1	0	0	Number Days 8-hour ≥0.085 ppm
Northcentral Region Non-Air Basin											
State College	***	***	0.101	0.097	0.108	0.100	0.081	0.091	0.083	0.087	2nd Max Daily 1-hour Average
409	***	***	0	0	0	0	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	***	***	0.079	0.086	0.090	0.082	0.074	0.083	0.078	0.074	4th Max Daily 8-hour Average
	***	***	2	5	8	3	0	1	0	0	Number Days 8-hour ≥0.085 ppm
Montoursville	***	***	***	***	0.112	0.102	0.091	0.099	0.083	0.091	2nd Max Daily 1-hour Average
410	***	***	***	***	0	0	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	***	***	***	***	0.091	0.083	0.074	0.082	0.073	0.077	4th Max Daily 8-hour Average
	***	***	***	***	7	3	0	3	0	0	Number Days 8-hour ≥0.085 ppm

Primary and Secondary 8-hour National Ambient Air Quality Standards

8-Hour Mean = 0.08 parts per million for 4th daily maximum 8-hour mean, averaged over 3 years

Former 1-hour = 0.12 parts per million, not to be exceeded more than once per year

? does not satisfy summary criteria

***** less than 50 percent valid data for year**

Table B-5. Ozone Historical Trend.

(Units: parts per million)

Station / Site Code	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Moshannon (Elliott State Park)	0.116	0.092	0.105	0.102	0.106	0.103	0.082	0.096	0.079	0.083	2nd Max Daily 1-hour Average
D09	1	0	0	0	0	0	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.101	0.081	0.079	0.089	0.095	0.087	0.074	0.086	0.072	0.072	4th Max Daily 8-hour Average
	16	1	2	8	13	4	0	4	0	0	Number Days 8-hour ≥0.085 ppm
Tiadaghton	0.099	0.091	0.092	0.089	0.101	0.094	0.080	***	***	***	2nd Max Daily 1-hour Average
D10	0	0	0	0	0	0	0	***	***	***	Number Days 1-hour ≥0.125 ppm
	0.084	0.076	0.073	0.080	0.084	0.076	0.073	***	***	***	4th Max Daily 8-hour Average
	3	0	1	1	3	2	0	***	***	***	Number Days 8-hour ≥0.085 ppm
Penn Nursery	0.113	0.099	0.109	0.091	0.113	0.109	0.078	***	***	***	2nd Max Daily 1-hour Average
D11	0	0	0	0	0	0	0	***	***	***	Number Days 1-hour ≥0.125 ppm
	0.092	0.085	0.075	0.082	0.091	0.093	0.069	***	***	***	4th Max Daily 8-hour Average
	8	4	2	1	12	4	0	***	***	***	Number Days 8-hour ≥0.085 ppm
Tioga County	***	0.093?	0.103	0.094	0.118	0.102	0.085	0.086	0.080	0.084	2nd Max Daily 1-hour Average
D13	***	0	0	0	0	0	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	***	0.082?	0.078	0.083	0.093	0.084	0.079	0.080	0.073	0.074	4th Max Daily 8-hour Average
	***	2	2	3	8	3	0	0	0	0	Number Days 8-hour ≥0.085 ppm
Johnstown Air Basin											
Johnstown	0.124	0.107	0.104	0.106	0.106	0.098	0.081	0.094	0.085	0.087	2nd Max Daily 1-hour Average
J01	1	0	0	0	0	0	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.098	0.090	0.086	0.090	0.088	0.083	0.071	0.077	0.073	0.072	4th Max Daily 8-hour Average
	5	5	6	6	2	2	0	1	0	0	Number Days 8-hour ≥0.085 ppm
Monongahela Valley Air Basin											
Charleroi	0.127	0.115	0.110	0.102	0.119	0.124	0.085	0.098	0.097	0.095	2nd Max Daily 1-hour Average
M01	3	0	0	0	1	1	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.108	0.096	0.080	0.087	0.093	0.088	0.072	0.080	0.079	0.077	4th Max Daily 8-hour Average
	34	11	3	7	14	4	0	2	1	0	Number Days 8-hour ≥0.085 ppm
Lower Beaver Valley Air Basin											
Beaver Falls	0.116	0.131	0.099	0.109	0.112	0.107	0.085	0.099	0.090	0.092	2nd Max Daily 1-hour Average
B11	0	2	0	0	0	1	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.098	0.087	0.084	0.086	0.096	0.078	0.069	0.080	0.069	0.077	4th Max Daily 8-hour Average
	6	3	14	4	9	3	0	2	0	0	Number Days 8-hour ≥0.085 ppm
Hookstown	0.113	0.116	0.095	0.101	0.115	0.111	0.090	0.106	0.091	0.096	2nd Max Daily 1-hour Average
B23	0	0	0	0	0	1	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.095	0.095	0.077	0.092	0.103	0.087	0.081	0.086	0.082	0.080	4th Max Daily 8-hour Average
	11	9	1	9	19	6	0	5	1	2	Number Days 8-hour ≥0.085 ppm
Brighton Township	0.113	0.132	0.096	0.103	0.118	0.107	0.085	0.095	0.090	0.087	2nd Max Daily 1-hour Average
B27	0	2	0	0	0	1	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.092	0.101	0.077	0.089	0.104	0.083	0.074	0.086	0.077	0.072	4th Max Daily 8-hour Average
	15	11	1	8	23	3	0	4	1	0	Number Days 8-hour ≥0.085 ppm

Primary and Secondary 8-hour National Ambient Air Quality Standards

8-Hour Mean = 0.08 parts per million for 4th daily maximum 8-hour mean, averaged over 3 years

Former 1-hour = 0.12 parts per million, not to be exceeded more than once per year

? does not satisfy summary criteria

***** less than 50 percent valid data for year**

Table B-5. Ozone Historical Trend.

(Units: parts per million)

Station / Site Code	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Allegheny County Air Basin											
Pittsburgh	0.105	0.120	0.111	0.112	0.119	0.110	0.094	0.105	0.092	0.104	2nd Max Daily 1-hour Average
D12	0	1	0	0	0	1	0	0	0	0	Number Days 1-hour > 0.124 ppm
	0.089	0.099	0.086	0.093	0.100	0.088	0.072	0.092	0.078	0.081	4th Max Daily 8-hour Average
	6	16	4	9	25	5	0	4	0	1	Number Days 8-hour > 0.084 ppm
Southwest Region Non-Air Basin											
Florence	0.109	0.110	0.098	0.106	0.114	0.107	0.083	0.101	0.091	0.094	2nd Max Daily 1-hour Average
504	0	0	0	0	0	1	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.094	0.096	0.080	0.089	0.096	0.078	0.073	0.085	0.076	0.075	4th Max Daily 8-hour Average
	11	9	2	7	17	3	0	4	1	0	Number Days 8-hour ≥0.085 ppm
Washington	0.112	0.106	0.105	0.109	0.112	0.118	0.086	0.096	0.089	0.084	2nd Max Daily 1-hour Average
508	0	0	0	0	1	0	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.095	0.090	0.080	0.090	0.088	0.088	0.071	0.085	0.070	0.073	4th Max Daily 8-hour Average
	15	11	3	6	9	5	0	4	0	0	Number Days 8-hour ≥0.085 ppm
Murrysville	0.101	0.115	0.103	0.097	0.110	0.100	0.092	0.102	0.081	0.098	2nd Max Daily 1-hour Average
510	0	1	0	0	0	1	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.082	0.087	0.076	0.078	0.091	0.083	0.070	0.087	0.071	0.079	4th Max Daily 8-hour Average
	3	5	2	1	9	2	0	4	0	1	Number Days 8-hour ≥0.085 ppm
Kittanning	0.113	0.121	0.103	0.119	0.122	0.109	0.093	0.104	0.101	0.106	2nd Max Daily 1-hour Average
512	0	1	0	1	0	0	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.100	0.100	0.079	0.098	0.097	0.086	0.082	0.086	0.080	0.083	4th Max Daily 8-hour Average
	21	18	2	16	15	5	1	4	2	3	Number Days 8-hour ≥0.085 ppm
Greensburg	***	0.125	0.097	0.100	0.119	0.115	0.094	0.098	0.095	0.088	2nd Max Daily 1-hour Average
513	***	2	0	0	0	1	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	***	0.099	0.076	0.084	0.098	0.091	0.073	0.083	0.076	0.077	4th Max Daily 8-hour Average
	***	16	3	3	10	4	0	2	2	1	Number Days 8-hour ≥0.085 ppm
Holbrook	0.110?	0.116	0.106	0.099	0.113	0.106	0.082	0.103	0.092	0.090	2nd Max Daily 1-hour Average
514	0	0	0	0	0	0	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.100?	0.101	0.087	0.090	0.094	0.083	0.075	0.085	0.077	0.078	4th Max Daily 8-hour Average
	16	21	6	12	9	3	0	5	1	0	Number Days 8-hour ≥0.085 ppm
Strongstown	***	***	***	***	***	***	***	0.097	0.093	0.088	2nd Max Daily 1-hour Average
515	***	***	***	***	***	***	***	0	0	0	Number Days 1-hour ≥0.125 ppm
	***	***	***	***	***	***	***	0.088	0.073	0.079	4th Max Daily 8-hour Average
	***	***	***	***	***	***	***	5	2	0	Number Days 8-hour ≥0.085 ppm
Upper Beaver Valley Air Basin											
New Castle	0.096	0.105	0.090	0.099	0.103	0.106	0.083	0.094	0.088	0.087	2nd Max Daily 1-hour Average
B21	0	1	0	0	0	1	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.077	0.088	0.069	0.078	0.087	0.077	0.068	0.075	0.070	0.075	4th Max Daily 8-hour Average
	2	5	0	1	6	2	0	1	0	0	Number Days 8-hour ≥0.085 ppm

Primary and Secondary 8-hour National Ambient Air Quality Standards

8-Hour Mean = 0.08 parts per million for 4th daily maximum 8-hour mean, averaged over 3 years

Former 1-hour = 0.12 parts per million, not to be exceeded more than once per year

? does not satisfy summary criteria

***** less than 50 percent valid data for year**

Table B-5. Ozone Historical Trend.

(Units: parts per million)

Station / Site Code	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Erie Air Basin											
Erie	0.122	0.112	0.095	0.104	0.114	0.108	0.089	0.104	0.093	0.102	2nd Max Daily 1-hour Average
E10	1	0	0	0	0	0	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.098	0.096	0.078	0.089	0.098	0.091	0.074	0.086	0.077	0.084	4th Max Daily 8-hour Average
	12	13	2	4	17	4	0	4	1	2	Number Days 8-hour ≥0.085 ppm
Northwest Region Non-Air Basin											
Farrell	0.121	0.108	0.098	0.113	0.118	0.116	0.088	0.104	0.102	0.101	2nd Max Daily 1-hour Average
606	1	0	0	0	0	0	0	0	0	0	Number Days 1-hour ≥0.125 ppm
	0.106	0.091	0.081	0.094	0.103	0.087	0.076	0.087	0.079	0.083	4th Max Daily 8-hour Average
	24	8	2	15	20	6	1	4	3	2	Number Days 8-hour ≥0.085 ppm

Primary and Secondary 8-hour National Ambient Air Quality Standards

8-Hour Mean = 0.08 parts per million for 4th daily maximum 8-hour mean, averaged over 3 years

Former 1-hour = 0.12 parts per million, not to be exceeded more than once per year

? does not satisfy summary criteria

***** less than 50 percent valid data for year**

Table B-6. Sulfur Dioxide Summary.

(Units: parts per million)

Year: 2007

Site Name	PA Site Code	Percent Valid Data	Annual Mean	Maximum Daily (Block) Averages 1st Maximum 24HR Mean	Date MM/DD	2nd Maximum 24HR Mean	Date MM/DD	3-Hour Block Averages 1st Maximum 3HR Mean	Date MM/DD	2nd Maximum 3HR Mean	Date MM/DD	1-Hour Average Maximum 1-HR Mean	Date MM/DD
Southeast Pennsylvania Air Basin													
Bristol	P01	96	0.006	0.022	01/23	0.021	01/22	0.033	08/28	0.032	01/22	0.050	08/28
Chester	P11	89	0.010	0.023	03/14	0.022	01/27	0.048	06/02	0.042	09/21	0.072	10/04
Norristown	P21	100	0.005	0.015	02/12	0.014	03/13	0.024	08/30	0.023	01/22	0.035	08/30
Allentown-Bethlehem-Easton Air Basin													
Allentown	A19	100	0.005	0.029	02/26	0.019	11/18	0.054	02/26	0.043	02/26	0.057	02/26
Easton	A20	99	0.008	0.070	04/18	0.063	03/28	0.155	03/31	0.140	03/28	0.265	03/27
Freemansburg	A25	99	0.004	0.017	02/26	0.015	02/12	0.039	02/26	0.037	07/16	0.064	01/14
Scranton-Wilkes-Barre Air Basin													
Scranton	S01	98	0.005	0.020	02/17	0.018	02/20	0.032	02/17	0.031	12/18	0.042	12/18
Wilkes-Barre	S28	99	0.005	0.017	12/18	0.016	02/17	0.039	12/18	0.032	02/17	0.048	12/18
Northeast Region Non-Air Basin													
Shenandoah	211	99	0.006	0.021	12/26	0.020	02/12	0.052	12/10	0.036	02/17	0.072	06/26
Reading Air Basin													
Reading Airport	R03	99	0.004	0.017	07/25	0.014	09/14	0.060	07/18	0.034	07/25	0.074	07/18
Harrisburg Air Basin													
Harrisburg	H11	98	0.005	0.016	02/02	0.015	04/11	0.048	04/11	0.042	02/02	0.081	06/03
Lancaster Air Basin													
Lancaster	L01	99	0.005	0.021	02/12	0.018	02/11	0.052	02/12	0.051	02/11	0.086	08/06
York Air Basin													
York	Y01	99	0.005	0.025	08/31	0.023	04/20	0.123	08/31	0.122	04/21	0.189	08/31
Southcentral Region Non-Air Basin													
Perry County	305	98	0.003	0.011	01/24	0.011	02/12	0.024	06/18	0.022	02/13	0.047	06/18
Altoona	308	100	0.006	0.032	02/12	0.022	01/24	0.052	12/10	0.044	02/12	0.076	12/10
Northcentral Region Non-Air Basin													
State College	409	96	0.002	0.011	02/12	0.011	12/18	0.027	11/30	0.023	11/25	0.041	11/30
Montoursville	410	98	0.003	0.017	02/02	0.015	02/17	0.057	10/16	0.052	03/25	0.112	10/16
Johnstown Air Basin													
Johnstown	J01	99	0.006	0.027	02/12	0.026	02/24	0.074	11/03	0.049	05/21	0.113	11/03
Monongahela Valley Air Basin													
Charleroi	M01	97	0.010	0.035	11/19	0.025	11/11	0.102	11/19	0.099	11/19	0.141	11/24

Primary National Ambient Air Quality Standards: Annual Mean = 0.030 parts per million;

24-hour Mean (Daily Block Average) = 0.14 parts per million, not to be exceeded more than once per year

Secondary National Ambient Air Quality Standard: 3-hour Mean (Block Average) = 0.5 parts per million, not to be exceeded more than once per year

? does not satisfy summary criteria

Table B-6. Sulfur Dioxide Summary.

(Units: parts per million)

Year: 2007

Site Name	PA Site Code	Percent Valid Data	Annual Mean	Maximum Daily (Block) Averages 1st Maximum 24HR Mean	1st Maximum Date MM/DD	2nd Maximum 24HR Mean	2nd Maximum Date MM/DD	3-Hour Block Averages 1st Maximum 3HR Mean	1st Maximum Date MM/DD	2nd Maximum 3HR Mean	2nd Maximum Date MM/DD	1-Hour Average Maximum 1-HR Mean	1-Hour Average Maximum Date MM/DD
Lower Beaver Valley Air Basin													
Beaver Falls	B11	95	0.008	0.030	02/01	0.023	01/18	0.054	08/24	0.053	05/09	0.081	01/21
Hookstown	B23	98	0.009	0.044	08/28	0.036	08/29	0.170	09/24	0.124	05/08	0.237	05/08
Brighton Township	B27	88	0.010	0.052	10/22	0.044	09/24	0.144	09/24	0.128	10/22	0.295	09/24
Allegheny County Air Basin													
Pittsburgh	D12	97	0.006	0.028	02/12	0.021	11/24	0.059	11/24	0.054	11/24	0.089	02/24
Southwest Region Non-Air Basin													
Florence	504	99	0.006	0.052	02/21	0.025	01/04	0.128	02/21	0.113	02/21	0.184	02/21
Washington	508	100	0.008	0.033	02/12	0.020	10/15	0.080	11/28	0.053	02/12	0.105	11/28
Greensburg	513	98	0.005	0.028	02/12	0.023	12/18	0.052	05/22	0.049	02/24	0.072	02/24
Holbrook	514	58	0.006?	0.022	10/15	0.018	09/05	0.077	08/02	0.064	09/05	0.184	08/02
Strongstown	515	96	0.007	0.041	02/12	0.029	02/16	0.119	05/26	0.081	08/14	0.163	05/26
Upper Beaver Valley Air Basin													
New Castle	B21	97	0.008	0.032	02/01	0.027	08/28	0.102	09/24	0.083	08/28	0.158	09/24
Erie Air Basin													
Erie	E10	96	0.010	0.022	12/19	0.021	02/01	0.035	09/24	0.034	06/16	0.039	06/16
Northwest Region Non-Air Basin													
Farrell	606	92	0.005	0.016	01/11	0.015	02/12	0.041	01/07	0.040	10/30	0.077	01/07
Warren (High	611	98	0.004	0.051	02/15	0.037	02/17	0.113	02/15	0.063	02/15	0.140	02/15
Warren (Overlook)	612	98	0.009	0.060	05/09	0.049	09/25	0.143	05/09	0.129	04/22	0.196	05/08

Primary National Ambient Air Quality Standards: Annual Mean = 0.030 parts per million;

24-hour Mean (Daily Block Average) = 0.14 parts per million, not to be exceeded more than once per year

Secondary National Ambient Air Quality Standard: 3-hour Mean (Block Average) = 0.5 parts per million, not to be exceeded more than once per year

? does not satisfy summary criteria

Table B-7. Sulfur Dioxide Historical Trend.

(Units: parts per million)

Site Name / Site Code	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Southeast Pennsylvania Air Basin											
Bristol	0.008	0.005	0.007	0.006	0.008	0.008	0.004	0.006	0.005	0.006	Annual Mean
P01	0.024	0.020	0.027	0.029	0.028	0.029	0.023	0.023	0.022	0.021	2nd Max 24-hour Mean
	0.043	0.035	0.044	0.041	0.041	0.042	0.035	0.034	0.033	0.032	2nd Max 3-hour Mean
Chester	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.006	0.005	0.010	Annual Mean
P11	0.027	0.025	0.026	0.023	0.022	0.028	0.019	0.016	0.017	0.022	2nd Max 24-hour Mean
	0.048	0.057	0.048	0.045	0.044	0.049	0.038	0.043	0.043	0.042	2nd Max 3-hour Mean
Norristown	0.006	0.006	0.004	0.004	0.005	0.005	0.004	0.006	0.007	0.005	Annual Mean
P21	0.022	0.020	0.022	0.019	0.019	0.023	0.018	0.018	0.019	0.014	2nd Max 24-hour Mean
	0.030	0.042	0.032	0.041	0.031	0.036	0.027	0.031	0.033	0.023	2nd Max 3-hour Mean
Allentown-Bethlehem-Easton Air Basin											
Allentown	0.008	0.006	0.007	0.007	0.008	0.009	0.007	0.008	0.006	0.005	Annual Mean
A19	0.030	0.030	0.027	0.028	0.028	0.038	0.045	0.032	0.032	0.019	2nd Max 24-hour Mean
	0.047	0.058	0.053	0.044	0.041	0.058	0.068	0.072	0.042	0.043	2nd Max 3-hour Mean
Easton	***	***	0.008	0.014	0.006	0.008	0.013	0.009	0.011	0.008	Annual Mean
A20	***	***	0.023	0.030	0.024	0.037	0.044	0.034	0.147	0.063	2nd Max 24-hour Mean
	***	***	0.069	0.055	0.046	0.054	0.096	0.080	0.256	0.140	2nd Max 3-hour Mean
Freemansburg	0.006	0.009	0.006	0.004	0.006	0.004	0.005	0.007	0.005	0.004	Annual Mean
A25	0.027	0.021	0.020	0.019	0.020	0.018	0.023	0.021	0.019	0.015	2nd Max 24-hour Mean
	0.040	0.047	0.034	0.028	0.046	0.036	0.036	0.058	0.038	0.037	2nd Max 3-hour Mean
Scranton-Wilkes-Barre Air Basin											
Scranton	0.005	0.005	0.004	0.005	0.004	0.005	0.005	0.005	0.004	0.005	Annual Mean
S01	0.026	0.021	0.021	0.026	0.023	0.020	0.016	0.025	0.016	0.018	2nd Max 24-hour Mean
	0.044	0.033	0.038	0.044	0.036	0.034	0.030	0.035	0.040	0.031	2nd Max 3-hour Mean
Wilkes-Barre	0.006	0.007	0.006	0.008	0.008	0.005	0.005	0.005	0.005	0.005	Annual Mean
S28	0.022	0.023	0.026	0.031	0.024	0.021	0.019	0.019	0.017	0.016	2nd Max 24-hour Mean
	0.041	0.039	0.052	0.048	0.044	0.035	0.035	0.034	0.039	0.032	2nd Max 3-hour Mean
Northeast Region Non-Air Basin											
Shenandoah	0.007	0.006	0.006	0.007	0.006	0.006	0.007	0.006	0.005	0.006	Annual Mean
211	0.026	0.038	0.025	0.035	0.026	0.023	0.027	0.027	0.021	0.020	2nd Max 24-hour Mean
	0.059	0.074	0.053	0.052	0.140	0.045	0.058	0.044	0.067	0.036	2nd Max 3-hour Mean
Reading Air Basin											
Reading	0.009	0.008	0.008	0.007	0.007	0.008	0.008	0.008	0.007?	***	Annual Mean
R01	0.022	0.027	0.028	0.025	0.019	0.023	0.020	0.023	0.016	***	2nd Max 24-hour Mean
	0.096	0.094	0.075	0.091	0.083	0.087	0.068	0.075	0.041	***	2nd Max 3-hour Mean
Reading Airport	***	***	***	***	***	***	***	***	***	0.004	Annual Mean
R03	***	***	***	***	***	***	***	***	***	0.014	2nd Max 24-hour Mean
	***	***	***	***	***	***	***	***	***	0.034	2nd Max 3-hour Mean

Primary National Ambient Air Quality Standards: Annual Mean = 0.030 parts per million;

24-hour Mean (Daily Block Average) = 0.14 parts per million, not to be exceeded more than once per year

Secondary National Ambient Air Quality Standard: 3-hour Mean (Block Average) = 0.5 parts per million, not to be exceeded more than once per year

? does not satisfy summary criteria

***** less than 50 percent valid data for year**

Table B-7. Sulfur Dioxide Historical Trend.

(Units: parts per million)

Site Name / Site Code	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Harrisburg Air Basin											
Harrisburg	0.005	0.005	0.005	0.005	0.005	0.005	0.004	0.005	0.005	0.005	Annual Mean
H11	0.021	0.024	0.015	0.013	0.017	0.017	0.018	0.020	0.014	0.015	2nd Max 24-hour Mean
	0.047	0.050	0.026	0.056	0.048	0.048	0.061	0.054	0.045	0.042	2nd Max 3-hour Mean
Lancaster Air Basin											
Lancaster	0.006	0.005	0.005	0.004	0.005	0.005	0.005	0.006	0.005	0.005	Annual Mean
L01	0.020	0.021	0.024	0.018	0.014	0.018	0.017	0.022	0.018	0.018	2nd Max 24-hour Mean
	0.047	0.045	0.048	0.036	0.034	0.032	0.049	0.050	0.044	0.051	2nd Max 3-hour Mean
York Air Basin											
York	0.008	0.007	0.006	0.006	0.005	0.004	0.005	0.006	0.005	0.005	Annual Mean
Y01	0.023	0.019	0.020	0.019	0.014	0.012	0.020	0.030	0.021	0.023	2nd Max 24-hour Mean
	0.063	0.058	0.059	0.043	0.036	0.039	0.070	0.099	0.075	0.122	2nd Max 3-hour Mean
Southcentral Region Non-Air Basin											
Perry County	0.003	0.003	0.003	0.002	0.003	0.005	0.003	0.003	0.002	0.003	Annual Mean
305	0.012	0.012	0.015	0.010	0.008	0.017	0.013	0.010	0.014	0.011	2nd Max 24-hour Mean
	0.028	0.034	0.034	0.036	0.026	0.033	0.030	0.028	0.030	0.022	2nd Max 3-hour Mean
Altoona	0.008	0.007	0.006	0.009	0.007	0.007	0.006	0.007	0.007	0.006	Annual Mean
308	0.032	0.030	0.045	0.042	0.032	0.030	0.030	0.036	0.024	0.022	2nd Max 24-hour Mean
	0.060	0.058	0.071	0.066	0.051	0.060	0.065	0.066	0.049	0.044	2nd Max 3-hour Mean
Northcentral Region Non-Air Basin											
State College	***	***	***	***	0.004	0.006	0.004	0.005	0.002	0.002	Annual Mean
409	***	***	***	***	0.023	0.019	0.019	0.018	0.011	0.011	2nd Max 24-hour Mean
	***	***	***	***	0.044	0.031	0.028	0.036	0.024	0.023	2nd Max 3-hour Mean
Montoursville	***	***	***	***	0.003	0.005	0.003	0.005	0.005	0.003	Annual Mean
410	***	***	***	***	0.015	0.017	0.015	0.018	0.027	0.015	2nd Max 24-hour Mean
	***	***	***	***	0.027	0.070	0.032	0.044	0.047	0.052	2nd Max 3-hour Mean
Johnstown Air Basin											
Johnstown	0.008	0.009	0.007	0.008	0.007	0.008	0.007	0.007	0.008	0.006	Annual Mean
J01	0.027	0.025	0.026	0.031	0.025	0.028	0.037	0.037	0.024	0.026	2nd Max 24-hour Mean
	0.080	0.069	0.065	0.078	0.074	0.074	0.115	0.097	0.072	0.049	2nd Max 3-hour Mean
Monongahela Valley Air Basin											
Charleroi	0.009	0.009	0.008	0.007	0.007	0.006	0.008	0.010	0.008	0.010	Annual Mean
M01	0.025	0.023	0.031	0.022	0.023	0.029	0.021	0.030	0.021	0.025	2nd Max 24-hour Mean
	0.056	0.059	0.059	0.107	0.070	0.079	0.051	0.064	0.063	0.099	2nd Max 3-hour Mean
Lower Beaver Valley Air Basin											
Beaver Falls	0.006	0.009	0.007	0.008	0.007	0.007	0.007	0.007	0.007	0.008	Annual Mean
B11	0.035	0.028	0.036	0.032	0.030	0.031	0.026	0.032	0.023	0.023	2nd Max 24-hour Mean
	0.079	0.070	0.070	0.076	0.064	0.082	0.064	0.065	0.053	0.053	2nd Max 3-hour Mean

Primary National Ambient Air Quality Standards: Annual Mean = 0.030 parts per million;

24-hour Mean (Daily Block Average) = 0.14 parts per million, not to be exceeded more than once per year

Secondary National Ambient Air Quality Standard: 3-hour Mean (Block Average) = 0.5 parts per million, not to be exceeded more than once per year

? does not satisfy summary criteria

***** less than 50 percent valid data for year**

Table B-7. Sulfur Dioxide Historical Trend.

(Units: parts per million)

Site Name / Site Code	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Hookstown	0.013	0.010	0.011	0.011	0.010	0.010	0.009	0.009	0.009	0.009	Annual Mean
B23	0.046	0.044	0.039	0.037	0.038	0.045	0.048	0.034	0.036	0.036	2nd Max 24-hour Mean
	0.129	0.145	0.126	0.108	0.115	0.118	0.126	0.096	0.084	0.124	2nd Max 3-hour Mean
Brighton Twp.	0.016	0.015	0.012	0.014	0.014	0.011	0.012	0.013	0.009	0.010	Annual Mean
B27	0.094	0.070	0.086	0.072	0.075	0.083	0.046	0.050	0.054	0.044	2nd Max 24-hour Mean
	0.207	0.215	0.247	0.249	0.319	0.174	0.150	0.202	0.231	0.128	2nd Max 3-hour Mean
Allegheny County Air Basin											
Pittsburgh	0.005	0.006	0.010	0.009	0.010	0.010	0.007	0.008	0.007	0.006	Annual Mean
D12	0.014	0.019	0.037	0.033	0.024	0.028	0.024	0.022	0.020	0.021	2nd Max 24-hour Mean
	0.047	0.042	0.078	0.077	0.075	0.066	0.057	0.061	0.068	0.054	2nd Max 3-hour Mean
Southwest Region Non-Air Basin											
Florence	0.013	0.010	0.009	0.009	0.010	0.010	0.009	0.010	0.006	0.006	Annual Mean
504	0.043	0.036	0.031	0.039	0.037	0.033	0.034	0.047	0.029	0.025	2nd Max 24-hour Mean
	0.102	0.099	0.100	0.102	0.092	0.100	0.081	0.080	0.062	0.113	2nd Max 3-hour Mean
Washington	0.010	0.009	0.009	0.010	0.009	0.009	0.009	0.009	0.009	0.008	Annual Mean
508	0.040	0.030	0.027	0.038	0.032	0.028	0.026	0.027	0.024	0.020	2nd Max 24-hour Mean
	0.072	0.062	0.059	0.069	0.080	0.078	0.067	0.078	0.063	0.053	2nd Max 3-hour Mean
Greensburg	0.008	0.011	0.010	0.009	0.006	0.008	0.006	0.006	0.005	0.005	Annual Mean
513	0.039	0.037	0.029	0.027	0.024	0.029	0.023	0.030	0.021	0.023	2nd Max 24-hour Mean
	0.065	0.100	0.071	0.053	0.048	0.070	0.058	0.083	0.068	0.049	2nd Max 3-hour Mean
Holbrook	0.010?	0.009?	0.007?	0.006?	0.007?	0.006?	0.006?	0.006?	0.006?	0.006?	Annual Mean
514	0.021	0.022	0.022	0.023	0.022	0.029	0.028	0.021	0.017	0.018	2nd Max 24-hour Mean
	0.038	0.050	0.062	0.070	0.055	0.077	0.062	0.059	0.046	0.064	2nd Max 3-hour Mean
Strongstown	***	***	***	***	***	***	***	0.008	0.008	0.007	Annual Mean
515	***	***	***	***	***	***	***	0.032	0.028	0.029	2nd Max 24-hour Mean
	***	***	***	***	***	***	***	0.112	0.108	0.081	2nd Max 3-hour Mean
Upper Beaver Valley Air Basin											
New Castle	0.009	0.008	0.008	0.011	0.007	0.009	0.007	0.008	0.007	0.008	Annual Mean
B21	0.032	0.035	0.031	0.041	0.033	0.028	0.035	0.037	0.024	0.027	2nd Max 24-hour Mean
	0.117	0.086	0.079	0.120	0.082	0.076	0.072	0.089	0.065	0.083	2nd Max 3-hour Mean
Erie Air Basin											
Erie	0.010	0.010	0.008	0.010	0.011	0.011	0.008	0.011	0.009	0.010	Annual Mean
E10	0.068	0.043	0.041	0.043	0.037	0.038	0.029	0.041	0.023	0.021	2nd Max 24-hour Mean
	0.152	0.152	0.076	0.098	0.070	0.078	0.077	0.071	0.040	0.034	2nd Max 3-hour Mean
Northwest Region Non-Air Basin											
Farrell	0.007	0.007?	0.007	0.007	0.006	0.006	0.006	0.005	0.005	0.005	Annual Mean
606	0.029	0.039	0.024	0.033	0.024	0.025	0.019	0.022	0.019	0.015	2nd Max 24-hour Mean
	0.063	0.060	0.052	0.071	0.067	0.067	0.044	0.045	0.035	0.040	2nd Max 3-hour Mean

Primary National Ambient Air Quality Standards: Annual Mean = 0.030 parts per million;

24-hour Mean (Daily Block Average) = 0.14 parts per million, not to be exceeded more than once per year

Secondary National Ambient Air Quality Standard: 3-hour Mean (Block Average) = 0.5 parts per million, not to be exceeded more than once per year

? does not satisfy summary criteria

***** less than 50 percent valid data for year**

Table B-7. Sulfur Dioxide Historical Trend.

(Units: parts per million)

Site Name / Site Code	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Warren (High School)	0.008	0.008	0.006	0.007	0.006	0.006	0.004	0.004	0.004	0.004	Annual Mean
611	0.028	0.031	0.024	0.027	0.023	0.028	0.019	0.018	0.017	0.037	2nd Max 24-hour Mean
	0.103	0.072	0.070	0.075	0.066	0.067	0.037	0.050	0.047	0.063	2nd Max 3-hour Mean
Warren (Overlook)	0.016	0.015	0.013	0.016	0.014	0.014	0.010	0.015	0.011	0.009	Annual Mean
612	0.098	0.094	0.092	0.087	0.100	0.103	0.061	0.075	0.086	0.049	2nd Max 24-hour Mean
	0.252	0.227	0.214	0.209	0.273	0.249	0.212	0.235	0.200	0.129	2nd Max 3-hour Mean

Primary National Ambient Air Quality Standards: Annual Mean = 0.030 parts per million;

24-hour Mean (Daily Block Average) = 0.14 parts per million, not to be exceeded more than once per year

Secondary National Ambient Air Quality Standard: 3-hour Mean (Block Average) = 0.5 parts per million, not to be exceeded more than once per year

? does not satisfy summary criteria

***** less than 50 percent valid data for year**

Table B-8. Nitrogen Dioxide Summary.

(Units: parts per million)

Year: 2007

Site Name	PA Site Code	Percent Valid Data	Annual Mean	Maximums 1st Max 1-HR Mean	1st Max Date MM/DD	2nd Max 1-HR Mean	2nd Max Date MM/DD	3rd Max 1-HR Mean	3rd Max Date MM/DD	4th Max 1-HR Mean	4th Max Date MM/DD
Southeast Pennsylvania Air Basin											
Bristol	P01	97	0.013	0.047	04/23	0.046	10/04	0.045	02/22	0.045	04/21
Chester	P11	93	0.015	0.057	02/21	0.056	02/21	0.054	06/03	0.053	03/27
Norristown	P21	98	0.014	0.064	02/22	0.062	10/31	0.060	09/21	0.059	02/22
Allentown-Bethlehem-Easton Air Basin											
Allentown	A19	98	0.012	0.052	02/22	0.051	02/20	0.050	02/20	0.049	02/20
Freemansburg	A25	99	0.012	0.056	05/21	0.053	02/20	0.051	02/20	0.051	03/14
Scranton-Wilkes-Barre Air Basin											
Scranton	S01	97	0.011	0.055	05/31	0.051	03/13	0.049	02/20	0.049	08/02
Wilkes-Barre	S28	99	0.011	0.060	02/22	0.058	02/22	0.058	02/22	0.056	02/22
Reading Air Basin											
Reading Airport	R03	99	0.011	0.034	07/09	0.034	10/17	0.034	10/17	0.033	07/09
Harrisburg Air Basin											
Harrisburg	H11	99	0.014	0.069	02/22	0.067	02/20	0.065	02/21	0.065	02/21
Lancaster Air Basin											
Lancaster	L01	98	0.012	0.054	02/20	0.053	02/20	0.052	02/21	0.049	02/21
York Air Basin											
York	Y01	97	0.015	0.062	04/23	0.059	03/20	0.058	01/04	0.057	02/22
Southcentral Region Non-Air Basin											
Perry County	305	95	0.004	0.028	11/21	0.026	01/27	0.026	01/27	0.026	02/02
Altoona	308	99	0.011	0.062	01/31	0.060	12/18	0.057	12/18	0.056	02/08
Arendtsville	314	62	0.004?	0.022	10/26	0.021	10/26	0.021	10/26	0.019	10/26
Northcentral Region Non-Air Basin											
State College	409	95	0.007	0.041	03/19	0.040	12/18	0.039	02/21	0.039	12/18
Johnstown Air Basin											
Johnstown	J01	99	0.012	0.049	02/19	0.049	02/19	0.049	02/19	0.049	03/08
Monongahela Valley Air Basin											
Charleroi	M01	99	0.013	0.055	01/25	0.050	03/14	0.046	01/25	0.045	12/27
Lower Beaver Valley Air Basin											
Beaver Falls	B11	99	0.014	0.053	02/19	0.053	03/26	0.052	02/19	0.052	02/19
Allegheny County Air Basin											
Pittsburgh	D12	92	0.019	0.070	10/04	0.067	10/04	0.067	10/22	0.066	10/22

Primary and Secondary National Ambient Air Quality Standard

Annual Mean 0.053 parts per million

? does not satisfy summary criteria

Table B-8. Nitrogen Dioxide Summary.

(Units: parts per million)

Year: 2007

Site Name	PA Site Code	Percent Valid Data	Annual Mean	Maximums 1st Max 1-HR Mean	1st Max Date MM/DD	2nd Max 1-HR Mean	2nd Max Date MM/DD	3rd Max 1-HR Mean	3rd Max Date MM/DD	4th Max 1-HR Mean	4th Max Date MM/DD
Southwest Region Non-Air Basin											
Florence	504	98	0.006	0.044	02/21	0.044	02/21	0.040	02/21	0.040	02/21
Washington	508	100	0.013	0.059	04/22	0.050	03/30	0.049	03/30	0.047	03/09
Greensburg	513	98	0.011	0.048	05/08	0.047	04/03	0.044	03/13	0.044	04/03
Strongstown	515	98	0.006	0.040	10/21	0.033	03/14	0.033	09/05	0.032	02/21
Upper Beaver Valley Air Basin											
New Castle	B21	98	0.015	0.064	08/24	0.054	02/19	0.052	02/21	0.052	03/13
Erie Air Basin											
Erie	E10	96	0.011	0.068	05/08	0.064	04/22	0.056	05/08	0.055	05/09

Primary and Secondary National Ambient Air Quality Standard

Annual Mean 0.053 parts per million

? does not satisfy summary criteria

Table B-9. Oxides of Nitrogen Summary.

(Units: parts per million)

Year: 2007

Site Name	PA Site Code	Percent Valid Data	Annual Mean	Maximums 1st Max 1-HR Mean	1st Max Date MM/DD	2nd Max 1-HR Mean	2nd Max Date MM/DD	3rd Max 1-HR Mean	3rd Max Date MM/DD	4th Max 1-HR Mean	4th Max Date MM/DD
Southeast Pennsylvania Air Basin											
Bristol	P01	97	0.024	0.386	02/22	0.374	02/22	0.364	02/22	0.339	02/22
Chester	P11	93	0.024	0.284	12/28	0.274	1/04	0.258	03/12	0.253	03/01
Norristown	P21	98	0.021	0.427	10/31	0.402	10/31	0.382	01/03	0.363	02/22
Allentown-Bethlehem-Easton Air Basin											
Allentown	A19	100	0.016	0.237	03/13	0.215	11/14	0.213	03/13	0.208	11/09
Freemansburg	A25	99	0.020	0.263	01/04	0.258	01/04	0.237	03/14	0.236	03/14
Scranton-Wilkes-Barre Air Basin											
Scranton	S01	97	0.015	0.217	12/19	0.197	01/04	0.184	12/19	0.178	01/03
Wilkes-Barre	S28	99	0.018	0.235	02/22	0.220	02/22	0.209	12/19	0.199	01/04
Reading Air Basin											
Reading Airport	R03	99	0.017	0.137	11/05	0.122	11/08	0.113	09/18	0.113	12/18
Harrisburg Air Basin											
Harrisburg	H11	99	0.024	0.374	02/22	0.331	02/21	0.320	02/22	0.273	02/20
Lancaster Air Basin											
Lancaster	L01	98	0.019	0.311	02/20	0.281	02/20	0.275	01/04	0.241	01/04
York Air Basin											
York	Y01	97	0.026	0.421	01/04	0.380	01/04	0.377	01/04	0.350	01/03
Southcentral Region Non-Air Basin											
Perry County	305	95	0.005	0.060	03/01	0.059	01/13	0.053	12/21	0.050	01/13
Altoona	308	99	0.018	0.202	01/03	0.198	01/04	0.189	01/03	0.182	01/04
Arendtsville	314	62	0.004	0.023	10/26	0.023	10/26	0.023	10/26	0.023	10/31
Northcentral Region Non-Air Basin											
State College	409	95	0.009	0.125	01/04	0.105	12/18	0.104	03/19	0.096	11/02
Johnstown Air Basin											
Johnstown	J01	99	0.018	0.288	01/05	0.247	01/05	0.246	11/14	0.212	01/05
Monongahela Valley Air Basin											
Charleroi	M01	97	0.019	0.248	12/27	0.247	03/14	0.232	03/14	0.195	03/13
Lower Beaver Valley Air Basin											
Beaver Falls	B11	99	0.026	0.277	01/04	0.273	01/04	0.272	01/04	0.270	03/27
Allegheny County Air Basin											
Pittsburgh	D12	93	0.032	0.306	03/13	0.276	10/30	0.270	12/27	0.259	10/31

No Primary or Secondary Air Quality Standards

? does not satisfy summary criteria

Table B-9. Oxides of Nitrogen Summary.

(Units: parts per million)

Year: 2007

Site Name	PA Site Code	Percent Valid Data	Annual Mean	Maximums 1st Max 1-HR Mean	1st Max Date MM/DD	2nd Max 1-HR Mean	2nd Max Date MM/DD	3rd Max 1-HR Mean	3rd Max Date MM/DD	4th Max 1-HR Mean	4th Max Date MM/DD
Southwest Region Non-Air Basin											
Florence	504	98	0.006	0.078	02/21	0.077	02/21	0.074	02/21	0.074	02/21
Washington	508	100	0.022	0.245	03/30	0.221	12/06	0.212	12/06	0.212	12/07
Greensburg	513	98	0.017	0.187	04/03	0.187	10/30	0.184	01/18	0.153	10/31
Strongstown	515	98	0.007	0.100	10/21	0.080	09/05	0.070	10/21	0.064	10/30
Upper Beaver Valley Air Basin											
New Castle	B21	98	0.024	0.211	01/11	0.205	12/11	0.197	02/19	0.196	03/14
Erie Air Basin											
Erie	E10	96	0.015	0.235	04/20	0.179	04/20	0.170	02/21	0.153	02/21

No Primary or Secondary Air Quality Standards

? does not satisfy summary criteria

Table B-10. Nitrogen Dioxide Historical Trend.

Annual Means

(Units: parts per million)

Site Name	PA Site Code	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Southeast Pennsylvania Air Basin											
Bristol	P01	0.018	0.018	0.017	0.018	0.016	0.016	0.016	0.017	0.015	0.013
Chester	P11	0.019	0.017	0.019	0.019	0.018	0.018	0.018	0.017	0.016	0.015
Norristown	P21	0.019	0.016	0.018	0.017	0.015	0.017	0.014	0.016	0.014	0.014
Allentown-Bethlehem-Easton Air Basin											
Allentown	A19	0.016	0.015	0.013	0.017	0.014	0.015	0.013	0.014	0.012	0.012
Freemansburg	A25	0.017	0.017	0.017	0.016	0.013	0.013	0.014	0.015	0.012	0.012
Scranton-Wilkes-Barre Air Basin											
Scranton	S01	0.016	0.014	0.015	0.015	0.014	0.014	0.012	0.013	0.011	0.011
Wilkes-Barre	S28	0.015	0.015	0.014	0.014	0.013	0.013	0.012	0.013	0.011	0.011
Reading Air Basin											
Reading	R01	0.021	0.021	0.020	0.020	0.019	0.018	0.017	0.019	0.018	0.011
Harrisburg Air Basin											
Harrisburg	H11	0.019	0.018	0.017	0.018	0.016	0.016	0.015	0.015	0.013	0.014
Lancaster Air Basin											
Lancaster	L01	0.015	0.015	0.014	0.014	0.013	0.015	0.014	0.014	0.013	0.012
York Air Basin											
York	Y01	0.019	0.019	0.018	0.020	0.017	0.017	0.016	0.018	0.016	0.015
Southcentral Region Non-Air Basin											
Perry County	305	0.006	0.006	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004
Altoona	308	0.013	0.013	0.014	0.014	0.013	0.013	0.012	0.013	0.012	0.011
Arendtsville	314	***	***	0.004?	0.004?	0.004?	0.004?	0.004?	0.004?	0.004?	0.004?
Northcentral Region Non-Air Basin											
State College	409	***	***	***	***	0.008	0.008	0.009	0.009	0.008	0.007
Johnstown Air Basin											
Johnstown	J01	0.015	0.015	0.015	0.014	0.012	0.013	0.013	0.013	0.012	0.012
Monongahela Valley Air Basin											
Charleroi	M01	0.016	0.015	0.014	0.013	0.013	0.012	0.012	0.013	0.013	0.013
Lower Beaver Valley Air Basin											
Beaver Falls	B11	0.019	0.019	0.017	0.017	0.016	0.015	0.015	0.017	0.015	0.014
Allegheny County Air Basin											
Pittsburgh	D12	0.021	0.023	0.022	0.021	0.020	0.021	0.021	0.022	0.018	0.019

Primary and Secondary National Ambient Air Quality Standard

Annual Mean 0.053 parts per million

? does not satisfy summary criteria

***** less than 50 percent valid data for year**

Table B-10. Nitrogen Dioxide Historical Trend.

Annual Means

(Units: parts per million)

Site Name	PA Site Code	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Southwest Region Non-Air Basin											
Florence	504	***	0.008	0.008	0.008	0.006	0.013	0.006	0.007	0.005	0.006
Washington	508	0.017	0.016	0.015	0.015	0.012	0.012	0.013	0.014	0.012	0.013
Greensburg	513	0.018	0.018	0.017	0.017	0.016	0.015	0.013	0.013	0.011	0.011
Strongstown	515	***	***	***	***	***	***	***	0.006	0.006	0.006
Upper Beaver Valley Air Basin											
New Castle	B21	0.019	0.020	0.019	0.017	0.016	0.016	0.016	0.017	0.016	0.015
Erie Air Basin											
Erie	E10	0.014	0.015	0.012	0.012	0.012	0.012	0.012	0.013	0.011	0.011

Primary and Secondary National Ambient Air Quality Standard

Annual Mean 0.053 parts per million

? does not satisfy summary criteria

***** less than 50 percent valid data for year**

Table B-11. Carbon Monoxide Summary.

(Units: parts per million)

Year: 2007

Site Name	PA Site Code	Percent Valid Data	Maximums 1st Max 1-HR Mean	1st Max 1-HR Date MM/DD	2nd Max 1-HR Mean	2nd Max 1-HR Date MM/DD	1st Max 8-HR Mean	1st Max 8-HR Date MM/DD	2nd Max 8-HR Mean	2nd Max 8-HR Date MM/DD
Southeast Pennsylvania Air Basin										
Bristol	P01	96	2.1	02/27	2.1	03/03	1.6	03/03	1.2	01/05
Norristown	P21	100	1.7	11/04	1.4	04/18	1.1	04/18	1.1	04/20
Allentown-Bethlehem-Easton Air Basin										
Freemansburg	A25	99	4.2	11/21	4.0	11/22	2.8	11/22	2.4	11/22
Scranton-Wilkes-Barre Air Basin										
Scranton	S01	80	2.9	03/14	2.2	03/14	1.8	03/14	1.5	03/14
Wilkes-Barre	S28	100	2.7	03/19	2.4	02/08	1.7	01/04	1.6	02/20
Northeast Region Non-Air Basin										
Shenandoah	211	99	2.0	10/22	1.9	04/30	1.5	04/30	1.4	04/30
Reading Air Basin										
Reading Airport	R03	96	0.8	12/18	0.8	12/18	0.7	12/19	0.6	12/09
Harrisburg Air Basin										
Harrisburg	H11	100	2.0	02/21	1.6	02/21	1.5	02/22	1.2	01/05
Lancaster Air Basin										
Lancaster	L01	99	1.8	11/13	1.7	01/04	1.4	12/09	1.3	11/14
York Air Basin										
York	Y01	100	2.5	01/04	2.5	03/20	1.7	01/04	1.4	01/03
Southcentral Region Non-Air Basin										
Altoona	308	100	1.6	01/04	1.6	02/27	1.0	01/04	1.0	03/14
Arendtsville	314	56	0.9	07/11	0.9	07/11	0.6	07/10	0.6	07/11
Johnstown Air Basin										
Johnstown	J01	100	3.1	01/05	3.1	01/05	2.1	01/05	1.9	01/05
Monongahela Valley Air Basin										
Charleroi	M01	93	1.6	10/31	1.6	10/31	1.6	11/01	1.4	10/31
Lower Beaver Valley Air Basin										
Beaver Falls	B11	100	1.8	10/29	1.8	10/29	1.5	10/29	0.9	10/13
Allegheny County Air Basin										
Pittsburgh	D12	99	2.2	10/04	2.0	03/12	1.4	10/04	1.3	05/31

Primary National Ambient Air Quality Standards

1-hour Mean = 35 parts per million

8-hour Running Mean = 9 parts per million, not to be exceeded more than once per year

? does not satisfy summary criteria

Table B-11. Carbon Monoxide Summary.

(Units: parts per million)

Year: 2007

Site Name	PA Site Code	Percent Valid Data	Maximums 1st Max 1-HR Mean	1st Max Date MM/DD	2nd Max 1-HR Mean	2nd Max Date MM/DD	1st Max 8-HR Mean	1st Max Date MM/DD	2nd Max 8-HR Mean	2nd Max Date MM/DD
Southwest Region Non-Air Basin										
Greensburg	513	99	2.0	09/05	1.5	09/05	1.0	09/05	0.9	12/19
Holbrook	514	57	1.2	05/11	1.0	04/21	0.7	04/25	0.6	04/25
Upper Beaver Valley Air Basin										
New Castle	B21	98	1.9	10/31	1.6	02/21	1.2	02/22	1.0	01/02
Erie Air Basin										
Erie	E10	98	1.9	04/20	1.4	02/21	1.0	03/12	1.0	04/20

Primary National Ambient Air Quality Standards

1-hour Mean = 35 parts per million

8-hour Running Mean = 9 parts per million, not to be exceeded more than once per year

? does not satisfy summary criteria

Table B-12. Carbon Monoxide Historical Trend.

(Units: parts per million)

Station / Site Code	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Southeast Pennsylvania Air Basin											
Bristol	5.2	6.6	4.3	4.0	4.3	4.5	3.2	3.8	2.8	2.1	2nd Maximum 1-hour Mean
P01	3.5	3.7	3.6	3.1	2.4	2.8	2.2	2.3	2.1	1.2	2nd Maximum 8-hour Mean
Norristown	2.9	3.1	2.8	2.5	2.7	2.4	1.9	1.7	2.0	1.4	2nd Maximum 1-hour Mean
P21	1.8	1.9	1.7	1.7	2.3	1.8	1.4	1.2	1.4	1.1	2nd Maximum 8-hour Mean
Allentown-Bethlehem-Easton Air Basin											
Freemansburg	3.4	4.4	5.5	3.1	2.3	2.3	2.4	2.5	1.3	4.0	2nd Maximum 1-hour Mean
A25	2.4	3.0	2.4	2.4	1.8	1.4	1.7	1.9	0.9	2.4	2nd Maximum 8-hour Mean
Allentown (CBD)	5.0	5.5	4.1	4.0	4.4	***	***	***	***	***	2nd Maximum 1-hour Mean
A51	2.9	3.2	2.6	3.3	2.3	***	***	***	***	***	2nd Maximum 8-hour Mean
Scranton-Wilkes-Barre Air Basin											
Scranton	3.4	3.5	4.4	2.9	2.7	2.4	2.9	2.6	2.3	2.2	2nd Maximum 1-hour Mean
S01	1.9	1.7	2.1	1.8	1.6	1.5	1.8	1.5	1.4	1.5	2nd Maximum 8-hour Mean
Wilkes-Barre (CBD)	7.0	4.2	3.8	2.8	5.1	3.2	2.4	2.4	2.3	***	2nd Maximum 1-hour Mean
S27	3.1	3.0	2.2	2.3	2.6	2.3	1.8	1.9	1.6	***	2nd Maximum 8-hour Mean
Wilkes Barre	***	***	***	***	***	***	***	***	2.5	2.4	2nd Maximum 1-hour Mean
S28	***	***	***	***	***	***	***	***	1.6	1.6	2nd Maximum 8-hour Mean
Northeast Region Non-Air Basin											
Shenandoah	3.7	2.9	2.6	2.0	2.3	2.8	1.5	2.6	2.1	1.9	2nd Maximum 1-hour Mean
211	1.4	1.6	1.3	0.9	1.2	1.4	0.8	1.4	1.3	1.4	2nd Maximum 8-hour Mean
Reading Air Basin											
Reading	4.7	4.6	3.8	3.8	4.1	3.2	2.5	2.4	1.8	***	2nd Maximum 1-hour Mean
R01	3.2	2.8	2.3	2.2	2.2	2.0	1.8	1.9	1.2	***	2nd Maximum 8-hour Mean
Reading Airport	***	***	***	***	***	***	***	***	***	0.8	
R03	***	***	***	***	***	***	***	***	***	0.6	
Harrisburg Air Basin											
Harrisburg	***	***	***	***	***	***	***	***	1.7	1.6	2nd Maximum 1-hour Mean
H11	***	***	***	***	***	***	***	***	1.3	1.2	2nd Maximum 8-hour Mean
Harrisburg (CBD)	4.1	4.9	3.5	4.4	3.6	3.0	2.3	2.0	1.8	***	2nd Maximum 1-hour Mean
H16	3.0	4.3	2.1	2.8	2.3	2.0	1.3	1.3	1.2	***	2nd Maximum 8-hour Mean
Lancaster Air Basin											
Lancaster	3.4	3.1	3.0	2.9	3.0	2.7	3.2	2.5	2.2	1.7	2nd Maximum 1-hour Mean
L01	1.9	2.5	1.9	2.2	2.2	1.7	1.6	1.5	1.3	1.3	2nd Maximum 8-hour Mean

Primary National Ambient Air Quality Standards

1-hour Mean = 35 parts per million

8-hour Running Mean = 9 parts per million, not to be exceeded more than once per year

? does not satisfy summary criteria

***** less than 50 percent valid data for year**

Table B-12. Carbon Monoxide Historical Trend.

(Units: parts per million)

Station / Site Code	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
York Air Basin											
York	5.0	5.3	3.7	3.8	4.3	2.6	2.8	2.5	3.3	2.5	2nd Maximum 1-hour Mean
Y01	2.4	2.4	1.8	2.2	2.2	1.7	1.8	1.4	1.8	1.4	2nd Maximum 8-hour Mean
Southcentral Region Non-Air Basin											
Altoona	2.0	2.6	1.7	2.4	1.5	1.6	2.3	1.9	1.9	1.6	2nd Maximum 1-hour Mean
308	1.2	1.6	1.0	1.1	0.7	1.2	0.9	1.1	0.9	1.0	2nd Maximum 8-hour Mean
Arendtsville	0.7	1.2	1.4	1.4	1.0	0.7	1.7	0.3	1.3	0.9	2nd Maximum 1-hour Mean
314	0.6	1.1	1.2	1.2	0.6	0.4	1.6	0.3	1.2	0.6	2nd Maximum 8-hour Mean
Johnstown Air Basin											
Johnstown	4.2	4.4	2.8	2.8	3.9	3.0	2.0	1.7	2.1	3.1	2nd Maximum 1-hour Mean
J01	3.1	2.8	2.0	2.1	2.6	2.2	2.1	1.2	1.5	1.9	2nd Maximum 8-hour Mean
Monongahela Valley Air Basin											
Charleroi	3.0	2.0	1.8	1.4	1.7	1.6	1.8	1.6	3.2	1.6	2nd Maximum 1-hour Mean
M01	1.9	1.6	1.1	1.1	1.0	1.0	1.4	1.1	1.1	1.4	2nd Maximum 8-hour Mean
Lower Beaver Valley Air Basin											
Beaver Falls	2.2	2.5	1.7	2.4	2.1	1.6	1.7	1.6	2.0	1.8	2nd Maximum 1-hour Mean
B11	1.5	1.5	1.2	1.5	1.6	1.1	1.2	1.4	1.5	0.9	2nd Maximum 8-hour Mean
Allegheny County Air Basin											
Pittsburgh	3.5	3.3	3.2	3.0	2.5	2.4	2.0	1.9	1.5	2.0	2nd Maximum 1-hour Mean
D12	2.7	2.5	2.4	2.5	2.0	2.0	1.7	1.5	1.4	1.3	2nd Maximum 8-hour Mean
Southwest Region Non-Air Basin											
Greensburg	3.3	3.2	2.6	3.0	2.1	3.1	2.1	1.3	1.6	1.5	2nd Maximum 1-hour Mean
513	2.3	2.4	1.8	1.8	1.2	2.1	1.4	0.9	0.9	0.9	2nd Maximum 8-hour Mean
Holbrook	***	1.7	0.6	1.3	0.3	0.6	0.6	0.7	1.9	1.0	2nd Maximum 1-hour Mean
514	***	1.5	0.3	1.1	0.3	0.3	0.3	0.7	1.3	0.6	2nd Maximum 8-hour Mean
Upper Beaver Valley Air Basin											
New Castle	7.2	5.5	3.5	3.0	4.1	3.3	2.8	2.4	2.7	1.6	2nd Maximum 1-hour Mean
B21	2.4	3.8	1.9	2.0	1.8	1.8	1.8	1.5	2.2	1.0	2nd Maximum 8-hour Mean
Erie Air Basin											
Erie	***	***	***	***	***	***	***	3.1	2.3	1.4	2nd Maximum 1-hour Mean
E10	***	***	***	***	***	***	***	1.4	1.4	1.0	2nd Maximum 8-hour Mean
Erie (CBD)	9.5	10.6	11.9	7.2	7.5	7.6	1.8	***	***	***	2nd Maximum 1-hour Mean
E12	5.1	5.6	6.0	4.4	4.5	3.4	1.3	***	***	***	2nd Maximum 8-hour Mean

Primary National Ambient Air Quality Standards

1-hour Mean = 35 parts per million

8-hour Running Mean = 9 parts per million, not to be exceeded more than once per year

? does not satisfy summary criteria

***** less than 50 percent valid data for year**

Table B-13. $PM_{2.5}$ Particulate Matter Summary, Federal Reference Method (FRM) Monitors

(Units: micrograms per cubic meter / local conditions)

Year: 2007

	PA Site Code	Arithmetic Annual Mean	Number 24HR Means	Maximum 24-hour Means: 1st Maximum 24HR Mean	1st Maximum Date MM/DD	2nd Maximum 24HR Mean	2nd Maximum Date MM/DD	3rd Maximum 24HR Mean	3rd Maximum Date MM/DD	4th Maximum 24HR Mean	4th Maximum Date MM/DD	98th PCTL 24HR Mean
Southeast Pennsylvania Air Basin												
Bristol	P01	13.02?	103	37.3	08/07	35.9	06/26	35.0	06/02	30.5	12/08	35.0
Chester	P11	14.45	96	37.4	08/07	34.5	02/02	34.0	06/26	33.6	05/27	34.5
Norristown	P21	13.09	112	39.7	06/26	35.7	08/07	30.1	02/02	28.2	06/08	30.1
New Garden	P30	14.07?	92	42.2	08/07	38.1	06/26	32.9	02/02	30.6	08/25	38.1
Allentown-Bethlehem-Easton Air Basin												
Freemansburg	A25	13.31	347	46.2	06/26	42.7	06/27	40.4	07/09	39.9	07/10	37.9
Scranton-Wilkes-Barre Air Basin												
Scranton	S01	11.28	334	44.4	06/02	40.4	07/10	36.6	08/25	35.6	06/27	32.0
Reading Air Basin												
Reading Temp	R02	13.26?	47	43.6	02/20	36.2	02/02	28.1	03/10	26.5	01/27	43.6
Reading Airport	R03	15.28?	60	36.5	08/25	33.9	12/08	33.7	08/07	28.1	08/16	33.9
Harrisburg Air Basin												
Harrisburg	H11	14.28	335	41.6	08/07	39.9	01/22	37.9	07/10	37.1	06/01	35.6
Lancaster Air Basin												
Lancaster	L01	15.40	117	42.9	08/07	41.3	06/26	39.6	02/26	37.2	02/02	39.6
York Air Basin												
York	Y01	15.68	119	45.4	08/07	37.9	06/26	37.0	02/02	36.5	02/26	37.0
Southcentral Region Non-Air Basin												
Arendtsville	314	12.31	330	43.1	08/07	39.7	08/06	38.3	07/10	32.6	08/03	30.7
Carlisle	316	13.70	329	43.5	08/07	37.7	08/06	36.8	01/22	36.5	08/03	35.3
Northcentral Region Non-Air Basin												
State College	409	11.93	358	44.2	07/10	41.2	06/26	36.3	08/07	36.2	06/02	33.1
Johnstown Air Basin												
Johnstown	J01	14.42?	108	36.3	08/04	34.7	06/26	34.6	07/29	33.5	05/27	34.6
Monongahela Valley Air Basin												
Charleroi	M01	15.51	114	48.2	06/02	45.0	09/06	40.9	08/28	40.1	08/04	40.9
Lower Beaver Valley Air Basin												
Beaver Falls	B11	15.72?	99	38.9	06/02	38.2	05/24	37.6	06/26	36.4	05/30	38.2
Southwest Region Non-Air Basin												
Florence	504	13.79	343	64.1	08/30	60.2	11/19	44.6	08/29	42.2	09/05	41.2
Washington	508	14.83	118	43.9	06/02	39.7	09/06	37.9	08/28	36.1	08/04	37.9

Primary and Secondary National Ambient Air Quality Standards

Annual Mean (3-year average) = 15 micrograms per cubic meter

24-hour Mean (3-year average of 98th Percentile) = 35 micrograms per cubic meter

? does not satisfy summary criteria

Table B-13. $PM_{2.5}$ Particulate Matter Summary, Federal Reference Method (FRM) Monitors

(Units: micrograms per cubic meter / local conditions)

Year: 2007

	PA Site Code	Arithmetic Annual Mean	Number 24HR Means	Maximum 24-hour Means: 1st Maximum 24HR Mean	1st Maximum Date MM/DD	2nd Maximum 24HR Mean	2nd Maximum Date MM/DD	3rd Maximum 24HR Mean	3rd Maximum Date MM/DD	4th Maximum 24HR Mean	4th Maximum Date MM/DD	98th PCTL 24HR Mean
Greensburg	513	15.26	115	45.1	06/02	43.2	09/06	38.2	08/07	37.1	08/04	38.2
Erie Air Basin												
Erie	E10	12.06	316	41.1	05/24	40.2	09/06	39.8	05/31	38.1	08/03	35.1
Northwest Region Non-Air Basin												
Farrell	606	13.16	335	42.0	05/31	41.8	08/03	40.9	09/06	36.8	08/02	34.9

Primary and Secondary National Ambient Air Quality Standards

Annual Mean (3-year average) = 15 micrograms per cubic meter

24-hour Mean (3-year average of 98th Percentile) = 35 micrograms per cubic meter

? does not satisfy summary criteria

Table B-14. $PM_{2.5}$ Particulate Matter Summary, Continuous Method Monitors.

(Units: micrograms per cubic meter / local conditions)

Year: 2007

	PA Site Code	Arithmetic Annual Mean	Number 24HR Means	Maximum 24-hour Means: 1st Maximum 24HR Mean	1st Maximum Date MM/DD	2nd Maximum 24HR Mean	2nd Maximum Date MM/DD	3rd Maximum 24HR Mean	3rd Maximum Date MM/DD	4th Maximum 24HR Mean	4th Maximum Date MM/DD	98th PCTL 24HR Mean
Southeast Pennsylvania Air Basin												
Chester (BAM)	P11	15.15	360	47.2	08/08	46.1	07/09	43.3	08/07	42.4	06/26	36.8
Norristown (TEOM)	P21	21.41	351	54.6	06/08	54.5	08/07	53.8	07/10	53.7	07/09	45.0
Allentown-Bethlehem-Easton Air Basin												
Freemansburg (TEOM)	A25	14.24	337	47.3	06/26	43.2	06/27	42.9	08/07	41.2	07/10	35.5
Reading Air Basin												
Reading Temp (TEOM)	R02	15.08	140	44.9	02/20	40.1	02/02	36.9	01/22	36.6	03/14	36.9
Reading Airport (TEOM)	R03	16.72	167	49.0	07/10	44.9	08/25	42.1	08/07	41.2	07/09	41.2
Harrisburg Air Basin												
Harrisburg (BAM)	H11	14.75	356	51.0	08/07	43.8	02/02	42.6	06/26	42.2	07/10	36.4
Lancaster Air Basin												
Lancaster (TEOM)	L01	20.45	364	55.7	06/26	53.5	08/07	49.0	08/08	48.7	07/10	46.6
York Air Basin												
York (TEOM)	Y01	16.68	335	52.6	08/07	47.7	07/10	46.5	06/26	45.2	08/06	43.3
Southcentral Region Non-Air Basin												
Arendtsville (TEOM)	314	14.23	359	47.1	08/07	43.6	06/19	41.5	07/10	39.3	08/03	34.3
Johnstown Air Basin												
Johnstown (BAM)	J01	16.04	360	55.2	07/10	52.7	07/28	51.5	05/31	47.9	08/30	42.8
Monongahela Valley Air Basin												
Charleroi (BAM)	M01	14.10	363	50.3	06/02	47.5	09/06	46.6	07/10	44.9	08/30	40.9
Lower Beaver Valley Air Basin												
Beaver Falls (TEOM)	B11	16.19	359	58.1	08/29	55.7	08/02	52.8	08/03	52.1	09/06	44.0
Southwest Region Non-Air Basin												
Kittanning (TEOM)	512	13.58	358	48.7	07/10	47.0	08/03	46.4	09/06	45.3	06/01	36.0

Primary and Secondary National Ambient Air Quality Standards

Annual Mean (3-year average) = 15 micrograms per cubic meter

24-hour Mean (3-year average of 98th Percentile) = 35 micrograms per cubic meter

? does not satisfy summary criteria

Table B-15. $PM_{2.5}$ Particulate Matter Historical Trend, Federal Reference (FRM) Monitors.

(Units: micrograms per cubic meter / local conditions)

Site Name / Site Code	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Southeast Pennsylvania Air Basin										
Bristol	12.0?	13.8?	14.6	14.2	14.4	13.0?	14.3	12.2?	13.02?	Annual Mean
P01	32.8	38.4	38.5	37.2	39.6	29.9	35.4	34.2	35.0	98th Percentile 24-hour Mean
Chester	13.1?	15.9	16.0	14.6	15.3	15.0	16.5	14.0?	14.45	Annual Mean
P11	35.9	36.2	39.5	31.9	37.8	30.5	37.0	36.7	34.5	98th Percentile 24-hour Mean
Norristown	13.0?	13.6?	15.1?	13.7	13.9	12.0?	12.5?	12.1	13.09	Annual Mean
P21	31.3	37.5	47.6	36.8	37.5	28.8	32.8	36.4	30.1	98th Percentile 24-hour Mean
New Garden	***	***	***	14.7	15.6	14.3?	15.9?	12.6?	14.07?	Annual Mean
P30	***	***	***	33.7	38.5	32.7	33.7	38.3	38.1	98th Percentile 24-hour Mean
Allentown-Bethlehem-Easton Air Basin										
Allentown	11.9?	14.3	15.3?	13.1?	15.0?	14.0	14.5	***	***	Annual Mean
A19	31.5	38.2	44.5	38.9	36.6	35.9	36.7	***	***	98th Percentile 24-hour Mean
Freemansburg	12.9?	13.6?	15.5	14.1	14.3	13.7	14.2	12.8	13.31	Annual Mean
A25	31.3	37.3	42.9	40.9	37.8	35.2	39.1	38.3	37.9	98th Percentile 24-hour Mean
Scranton-Wilkes-Barre Air Basin										
Scranton	11.0?	11.7	12.9	12.4	12.5	11.6	12.5	10.6	11.28	Annual Mean
S01	29.7	31.5	36.7	42.7	33.8	31.2	32.8	28.7	32.0	98th Percentile 24-hour Mean
Wilkes-Barre	12.5?	12.7	13.8	12.0?	13.1	12.2	13.0	***	***	Annual Mean
S28	32.8	32.9	37.4	28.2	35.1	30.8	31.5	***	***	98th Percentile 24-hour Mean
Reading Air Basin										
Reading	13.5?	16.9	16.5	16.7?	16.1	15.6	16.8	12.2?	***	Annual Mean
R01	35.7	37.5	43.0	48.5	45.0	33.1	39.4	36.9	***	98th Percentile 24-hour Mean
Reading Temp	***	***	***	***	***	***	***	14.9?	13.26?	Annual Mean
R02	***	***	***	***	***	***	***	39.4	43.6	98th Percentile 24-hour Mean
Reading Airport	***	***	***	***	***	***	***	***	15.28?	Annual Mean
R03	***	***	***	***	***	***	***	***	33.9	98th Percentile 24-hour Mean
Harrisburg Air Basin										
Harrisburg	14.4?	15.4?	16.6	14.5	16.2	15.7	15.5	14.0	14.28	Annual Mean
H11	39.7	45.6	47.7	42.7	41.5	35.5	40.1	37.0	35.6	98th Percentile 24-hour Mean
Lancaster Air Basin										
Lancaster	15.6?	17.8	17.3	16.2	17.6	16.6	18.2	14.1	15.40	Annual Mean
L01	38.2	47.0	42.1	40.2	51.5	35.5	45.2	34.9	39.6	98th Percentile 24-hour Mean

Primary and Secondary National Ambient Air Quality Standards

Annual Mean (3-year average) = 15 micrograms per cubic meter

24-hour Mean (3-year average of 98th Percentile) = 35 micrograms per cubic meter

? does not satisfy summary criteria

***** less than 11 valid samples per quarter**

Table B-15. $PM_{2.5}$ Particulate Matter Historical Trend, Federal Reference (FRM) Monitors.

(Units: micrograms per cubic meter / local conditions)

Site Name / Site Code	1999	2000	2001	2002	2003	2004	2005	2006	2007	
York Air Basin										
York	15.4?	16.7	16.9	17.1	17.4	16.5	18.1	14.0	15.68	Annual Mean
Y01	34.9	41.1	41.3	47.3	47.0	39.0	39.4	33.2	37.0	98th Percentile 24-hour Mean
Southcentral Region Non-Air Basin										
Perry County	***	12.2	12.6	13.3	13.1?	12.2	13.1	***	***	Annual Mean
305	***	30.2	33.7	36.9	34.5	27.9	29.0	***	***	98th Percentile 24-hour Mean
Arendtsville	13.1?	13.1?	14.1	12.6	13.6	13.7	13.6	11.8	12.31	Annual Mean
314	34.0	36.5	36.0	38.9	36.5	36.3	35.8	33.6	30.7	98th Percentile 24-hour Mean
Carlisle	***	***	15.6	14.4	15.3	15.1	14.9	13.0	13.70	Annual Mean
316	***	***	45.0	41.5	41.6	39.1	40.1	33.3	35.3	98th Percentile 24-hour Mean
Northcentral Region Non-Air Basin										
State College	***	***	13.9?	11.9?	13.6	13.3	13.4	11.4	11.93	Annual Mean
409	***	***	45.0	36.9	35.4	37.8	39.7	31.7	33.1	98th Percentile 24-hour Mean
Johnstown Air Basin										
Johnstown	14.8?	16.1?	15.5?	16.1	15.5	14.4	16.8	14.8	14.42?	Annual Mean
J01	31.0	35.4	42.1	46.6	36.8	36.2	43.2	39.0	34.6	98th Percentile 24-hour Mean
Monongahela Valley Air Basin										
Charleroi	15.4?	15.5?	15.7	15.2	14.9	14.0	16.4	14.4	15.51	Annual Mean
M01	33.2	36.0	44.4	43.3	35.6	35.4	36.4	31.6	40.9	98th Percentile 24-hour Mean
Lower Beaver Valley Air Basin										
Beaver Falls	***	15.9?	16.5	15.3	15.7	15.4	18.3	14.9	15.72?	Annual Mean
B11	***	43.6	42.4	37.7	33.8	43.0	51.8	37.0	38.2	98th Percentile 24-hour Mean
Southwest Region Non-Air Basin										
Florence	13.0?	13.3	14.3?	13.6?	13.4	13.2	14.2	11.9?	13.79	Annual Mean
504	38.1	30.5	35.5	36.7	33.9	36.0	39.2	39.3	41.2	98th Percentile 24-hour Mean
Washington	14.6?	15.1	15.8?	14.7	14.7	14.1	15.9	13.1?	14.83	Annual Mean
508	42.4	33.3	36.6	37.2	33.4	34.0	33.1	33.0	37.9	98th Percentile 24-hour Mean
Greensburg	14.9?	16.0?	15.9	14.9?	15.3	14.9	16.8	14.3	15.26	Annual Mean
513	37.5	37.2	36.0	40.0	34.8	39.0	38.7	33.5	38.2	98th Percentile 24-hour Mean
Erie Air Basin										
Erie	12.6?	13.8?	13.8?	13.3?	12.6?	11.9	14.4	11.3?	12.06	Annual Mean
E10	30.5	28.2	37.5	42.9	29.7	32.5	40.7	30.2	35.1	98th Percentile 24-hour Mean
Northwest Region Non-Air Basin										
Farrell	***	***	14.9?	14.0	13.8	13.4	14.1	11.8?	13.16	Annual Mean
606	***	***	43.0	36.6	35.4	34.5	39.0	30.7	34.9	98th Percentile 24-hour Mean

Primary and Secondary National Ambient Air Quality Standards

Annual Mean (3-year average) = 15 micrograms per cubic meter

24-hour Mean (3-year average of 98th Percentile) = 35 micrograms per cubic meter

? does not satisfy summary criteria

***** less than 11 valid samples per quarter**

Table B-16. $PM_{2.5}$ Particulate Matter Historical Trend, Continuous Method Monitors.

(Units: micrograms per cubic meter / local conditions)

Site Name / Site Code	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Southeast Pennsylvania Air Basin										
Chester (BAM)	***	***	***	***	***	***	***	11.6?	15.15	Annual Mean
P11	***	***	***	***	***	***	***	27.4	36.8	98th Percentile 24-hour Mean
Norristown (TEOM)	***	***	***	***	***	17.6	18.6	17.8	21.41	Annual Mean
P21	***	***	***	***	***	40.4	42.3	44.5	45.0	98th Percentile 24-hour Mean
Allentown-Bethlehem-Easton Air Basin										
Easton (TEOM)	***	12.2	14.9	14.8	14.5	13.6?	***	***	***	Annual Mean
A20	***	33.0	40.0	43.5	37.7	32.1	***	***	***	98th Percentile 24-hour Mean
Freemansburg (TEOM)	***	***	***	***	***	15.7?	14.6	12.8	14.24	Annual Mean
A25	***	***	***	***	***	37.9	36.9	35.5	35.5	98th Percentile 24-hour Mean
Reading Air Basin										
Reading (TEOM)	***	***	***	***	***	15.3?	18.1?	13.6?	***	Annual Mean
R01	***	***	***	***	***	35.3	42.4	36.1	***	98th Percentile 24-hour Mean
Reading Temp (TEOM)	***	***	***	***	***	***	***	18.0?	15.08	Annual Mean
R02	***	***	***	***	***	***	***	45.4	36.9	98th Percentile 24-hour Mean
Reading Airport (TEOM)	***	***	***	***	***	***	***	***	16.72	Annual Mean
R03	***	***	***	***	***	***	***	***	41.2	98th Percentile 24-hour Mean
Harrisburg Air Basin										
Harrisburg (BAM)	***	***	***	***	***	21.2?	18.6	15.7	14.75	Annual Mean
H11	***	***	***	***	***	43.4	48.9	43.8	36.4	98th Percentile 24-hour Mean
Lancaster Air Basin										
Lancaster (TEOM)	***	***	***	***	***	18.7	18.0	18.7	20.45	Annual Mean
L01	***	***	***	***	***	46.1	44.7	46.9	46.6	98th Percentile 24-hour Mean
York Air Basin										
York (TEOM)	***	***	***	***	***	17.7?	16.8	16.9	16.68	Annual Mean
Y01	***	***	***	***	***	38.8	44.3	42.5	43.3	98th Percentile 24-hour Mean
Southcentral Region Non-Air Basin										
Arendtsville (TEOM)	***	***	13.8	13.4	13.3	12.3	11.4	13.6	14.23	Annual Mean
314	***	***	38.0	39.3	33.4	32.4	34.1	34.2	34.3	98th Percentile 24-hour Mean
Johnstown Air Basin										
Johnstown (BAM)	***	***	***	***	***	16.1?	16.9	15.8	16.04	Annual Mean
J01	***	***	***	***	***	40.4	45.8	40.9	42.8	98th Percentile 24-hour Mean

Primary and Secondary National Ambient Air Quality Standards

Annual Mean (3-year average) = 15 micrograms per cubic meter

24-hour Mean (3-year average of 98th Percentile) = 35 micrograms per cubic meter

? does not satisfy summary criteria

***** less than 50 percent valid data for year**

Table B-16. $PM_{2.5}$ Particulate Matter Historical Trend, Continuous Method Monitors.

(Units: micrograms per cubic meter / local conditions)

Site Name / Site Code	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Monongahela Valley Air Basin										
Charleroi (BAM)	***	***	***	***	***	***	***	10.0?	14.10	Annual Mean
M01	***	***	***	***	***	***	***	18.9	40.9	98th Percentile 24-hour Mean
Lower Beaver Valley Air Basin										
Beaver Falls (TEOM)	***	***	***	***	***	17.9?	17.1	15.4	16.19	Annual Mean
B11	***	***	***	***	***	45.7	48.1	39.8	44.0	98th Percentile 24-hour Mean
Southwest Region Non-Air Basin										
Kittanning (TEOM)	***	12.2	14.9	14.3?	12.4	14.3	14.6	13.3	13.58	Annual Mean
512	***	29.0	42.0	48.3	28.8	37.8	41.2	37.3	36.0	98th Percentile 24-hour Mean

Primary and Secondary National Ambient Air Quality Standards

Annual Mean (3-year average) = 15 micrograms per cubic meter

24-hour Mean (3-year average of 98th Percentile) = 35 micrograms per cubic meter

? does not satisfy summary criteria

***** less than 50 percent valid data for year**

Table B-17. PM_{10} Particulate Matter Summary.

(Units: micrograms per cubic meter / standard conditions)

Year: 2007

	PA Site Code	Arithmetic Annual Mean	Number 24HR Means	Maximum 24-hour Means: 1st Maximum 24HR Mean	1st Maximum Date MM/DD	2nd Maximum 24HR Mean	2nd Maximum Date MM/DD	3rd Maximum 24HR Mean	3rd Maximum Date MM/DD	4th Maximum 24HR Mean	4th Maximum Date MM/DD
Southeast Pennsylvania Air Basin											
Bristol (TEOM)	P01	16.6	339	52	07/09	48	08/07	43	06/08	43	06/26
Chester (TEOM)	P11	18.8	362	46	07/09	46	08/08	43	07/19	43	08/07
Norristown (TEOM)	P21	16.4	358	48	03/14	48	07/09	48	07/10	44	06/26
Allentown-Bethlehem-Easton Air Basin											
Allentown (TEOM)	A19	14.5	362	48	08/07	45	08/30	44	09/26	42	07/18
Freemansburg (TEOM)	A25	18.0	341	55	06/26	54	06/27	51	07/09	49	05/25
Nazareth (TEOM)	A26	20.6	347	71	07/10	70	06/27	68	06/26	63	08/06
Scranton-Wilkes-Barre Air Basin											
Scranton (TEOM)	S01	17.4	360	53	07/09	49	06/26	48	06/02	48	07/10
Wilkes-Barre (TEOM)	S28	18.5	363	58	07/04	57	05/26	57	06/02	55	06/26
Reading Air Basin											
Reading Airport (TEOM)	R03	14.1*	179	41	07/10	38	07/09	35	08/25	34	08/07
Reading (Central)	R15	21.5*	53	45	07/29	43	11/14	35	08/16	35	10/09
Harrisburg Air Basin											
Harrisburg (TEOM)	H11	19.9	359	59	08/07	53	03/14	50	08/24	48	07/10
Lancaster Air Basin											
Lancaster (TEOM)	L01	19.2	365	55	08/07	51	06/26	50	06/18	50	10/09
York Air Basin											
York (TEOM)	Y01	21.9	365	61	03/14	58	08/07	55	07/10	52	06/27
Southcentral Region Non-Air Basin											
Altoona (TEOM)	308	18.0	361	70	08/03	68	04/23	60	07/10	58	05/15
Northcentral Region Non-Air Basin											
Montoursville	410	16.7*	45	36	09/21	31	12/08	31	12/26	29	07/05
Johnstown Air Basin											
Johnstown (TEOM)	J01	20.9	363	71	05/15	63	07/10	59	05/31	52	03/14

Primary and Secondary National Ambient Air Quality Standards

24-hour Mean = 150 micrograms per cubic meter (3-year average, not to be exceeded more than once per year)

Former Annual Mean = 50 micrograms per cubic meter (3-year average)

? does not satisfy summary criteria

Table B-17. PM_{10} Particulate Matter Summary.

(Units: micrograms per cubic meter / standard conditions)

Year: 2007

	PA Site Code	Arithmetic Annual Mean	Number 24HR Means	Maximum 24-hour Means: 1st Maximum 24HR Mean	1st Maximum Date MM/DD	2nd Maximum 24HR Mean	2nd Maximum Date MM/DD	3rd Maximum 24HR Mean	3rd Maximum Date MM/DD	4th Maximum 24HR Mean	4th Maximum Date MM/DD
Monongahela Valley Air Basin											
Charleroi (TEOM)	M01	21.4	362	63	06/02	61	10/08	55	09/24	54	09/20
Monessen	M16	27.4	59	61	08/04	55	08/28	54	05/12	47	05/30
Lower Beaver Valley Air Basin											
Beaver Falls (TEOM)	B11	26.4	333	89	08/02	88	08/29	83	08/03	80	05/15
Southwest Region Non-Air Basin											
Florence	504	21.0*	54	53	09/21	49	08/28	46	05/24	46	08/04
Greensburg (TEOM)	513	20.6	365	62	08/30	61	09/06	59	05/31	58	08/29
Upper Beaver Valley Air Basin											
New Castle (TEOM)	B21	26.6	343	87	04/23	82	05/15	77	03/13	72	03/26
Erie Air Basin											
Erie (TEOM)	E10	16.1	363	59	05/24	56	05/31	54	04/23	53	08/29

Primary and Secondary National Ambient Air Quality Standards

24-hour Mean = 150 micrograms per cubic meter (3-year average, not to be exceeded more than once per year)

Former Annual Mean = 50 micrograms per cubic meter (3-year average)

? does not satisfy summary criteria

Table B-18. PM_{10} Particulate Matter Historical Trend.

(Units: micrograms per cubic meter)

Site Name/PA Site ID	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Southeast Pennsylvania Air Basin											
Bristol (TEOM)	57	59	39	59	64	74	59	56	52	48	2nd Max 24-hour Average
P01	23	17	18	21	18	19	18	18	17	16.6	Annual Mean
Chester (TEOM)	71	57	45	66	111	74	63	58	63	46	2nd Max 24-hour Average
P11	25	21	22	23	20	21	23	21	20	18.8	Annual Mean
Norristown (TEOM)	53	50	41	58	72	55	52	58	55	48	2nd Max 24-hour Average
P21	21	18	19	20	16	19	17	19	17	16.4	Annual Mean
Allentown-Bethlehem-Easton Air Basin											
Allentown (TEOM)	40	38	78	78	90	49	45	54	52	45	2nd Max 24-hour Average
A19	17	11	29	21	18	18	15	18	17	14.5	Annual Mean
Freemansburg (TEOM)	36	101	85	64	90	68	59	55	50	54	2nd Max 24-hour Average
A25	26?	38	35	20	20	19	19	19	18	18.0	Annual Mean
Nazareth (TEOM)	***	***	76	101	107	114	115	139	88	70	2nd Max 24-hour Average
A26	***	***	28	30	29	33	32	38	28	20.6	Annual Mean
Scranton-Wilkes-Barre Air Basin											
Scranton (TEOM)	53	51	40	60	74	66	43	55	52	49	2nd Max 24-hour Average
S01	21	12?	16	20	18	17	16	17	17	17.4	Annual Mean
Wilkes-Barre (TEOM	52	46	45	65	69	77	50	58	56	57	2nd Max 24-hour Average
S28	24	***	18	20	19	21	17	20	18	18.5	Annual Mean
Reading Air Basin											
Reading (TEOM)	51	54	44	66	82	54	52	60	34	***	2nd Max 24-hour Average
R01	21	21	20	22	20	19	20	21	13?	***	Annual Mean
Reading Airport (TEOM)	***	***	***	***	***	***	***	***	***	38	2nd Max 24-hour Average
R03	***	***	***	***	***	***	***	***	***	14.1?	Annual Mean
Reading (Central)	***	51	50	57	59	50	45	58	47	43	2nd Max 24-hour Average
R15	27	29	27	24	25	25	20	24?	21	21.5?	Annual Mean
Harrisburg Air Basin											
Harrisburg (TEOM)	65	54	53	62	72	66	61	56	53	53	2nd Max 24-hour Average
H11	23	21	21	22	20	21	21	21	20	19.9	Annual Mean
Lancaster Air Basin											
Lancaster (TEOM)	62	62	55	69	107	53	54	63	58	51	2nd Max 24-hour Average
L01	24	24	21	23	21	20	20	20	19	19.2	Annual Mean
York Air Basin											
York (TEOM)	59	62	53	73	85	77	53	67	62	58	2nd Max 24-hour Average
Y01	26	23	22	24	21	24	22	24	23	21.9	Annual Mean

Primary and Secondary National Ambient Air Quality Standards

24-hour Mean = 150 micrograms per cubic meter (3-year average, not to be exceeded more than once per year)

Former Annual Mean = 50 micrograms per cubic meter (3-year average)

? does not satisfy summary criteria

***** less than 30 valid samples(discrete) or less than 50 percent valid data (TEOM) for year**

Table B-18. PM_{10} Particulate Matter Historical Trend.

(Units: micrograms per cubic meter)

Site Name/PA Site ID	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Southcentral Region Non-Air Basin											
Altoona (TEOM)	58	64	50	76	67	95	63	74	63	68	2nd Max 24-hour Average
308	22	19	20	24	22	20	20	21	19	18.0	Annual Mean
Northcentral Region Non-Air Basin											
Montoursville	***	***	***	***	55	41	41	39	38	31	2nd Max 24-hour Average
410	***	***	***	***	20	20	18?	20	17	16.7?	Annual Mean
Johnstown Air Basin											
Johnstown (TEOM)	64	65	50	99	68	67	61	73	61	63	2nd Max 24-hour Average
J01	26	24	21	24	24	22	22	24	23	20.9	Annual Mean
Monongahela Valley Air Basin											
Charleroi (TEOM)	61	102	78	71	62	67	64	75	58	61	2nd Max 24-hour Average
M01	26	27	21	25	21	19	20	23	21	21.4	Annual Mean
Monessen	63	71	57	58	66	56	60	53	49	55	2nd Max 24-hour Average
M16	34	38	31	31	30	29	25	30	25	27.4	Annual Mean
Lower Beaver Valley Air Basin											
Beaver Falls (TEOM)	86	77	51	81	86	77	64	74	81	88	2nd Max 24-hour Average
B11	28	***	22	26	25	22	23	26	26	26.4	Annual Mean
Southwest Region Non-Air Basin											
Florence	***	60	39	46	59	42	46	47	48	49	2nd Max 24-hour Average
504	***	27	22	20	21	20	16	21	17	21.0?	Annual Mean
Greensburg (TEOM)	70	69	45	61	60	63	50	68	50	61	2nd Max 24-hour Average
513	***	20	19	23	22	22	20?	23	20	20.6	Annual Mean
Upper Beaver Valley Air Basin											
New Castle (TEOM)	92	88	61	83	77	89	65	78	72	82	2nd Max 24-hour Average
B21	33	28	28	32	29	26	26	26	27	26.6	Annual Mean
Erie Air Basin											
Erie (TEOM)	60	53	41	61	60	54	48	53	46	56	2nd Max 24-hour Average
E10	21	18	18	19	19	16	14?	16	15	16.1	Annual Mean

Primary and Secondary National Ambient Air Quality Standards

24-hour Mean = 150 micrograms per cubic meter (3-year average, not to be exceeded more than once per year)

Former Annual Mean = 50 micrograms per cubic meter (3-year average)

? does not satisfy summary criteria

***** less than 30 valid samples(discrete) or less than 50 percent valid data (TEOM) for year**

Table B-19. Lead Suspended Particulate Matter Summary.

(Units: micrograms per cubic meter)

Year: 2007

Site Name	PA Site Code	Quarterly Averages 1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Number of Samples 1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Southeast Pennsylvania Air Basin									
Chester	P11	0.04?	0.04	0.04	0.04	10	15	13	15
Reading Air Basin									
Laureldale	R10	0.16	0.34	0.24	0.15	15	14	13	14
Southcentral Region Non-Air Basin									
Lyons East	301	0.11	0.10	0.09	0.10	13	12	13	13
Lyons South	375	0.05	0.06	0.05	0.05	14	15	14	15
Johnstown Air Basin									
East Conemaugh	J08	0.04	0.07	0.04	0.04	15	15	14	15
Monongahela Valley Air Basin									
Monessen	M16	0.04	0.04	0.04	0.04	15	15	14	15
Lower Beaver Valley Air Basin									
Vanport	B05	0.08	0.07	0.12	0.10	13	12	15	13

Primary and Secondary Quarterly National Ambient Air Quality Standard is 1.5 micrograms per cubic meter

? does not satisfy summary criteria

Table B-20. Lead Suspended Particulate Matter Historical Trend.

Maximum Quarterly Means

(Units: micrograms per cubic meter)

Site Name	PA Site Code	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Southeast Pennsylvania Air Basin											
Chester	P11	0.04	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.04
Northeast Region Non-Air Basin											
Palmerton	205	0.11	0.07	0.11	0.07	0.09	0.10	0.12	0.25	***	***
Reading Air Basin											
Laureldale	R10	0.31	0.29	0.33	0.27	0.22	0.39	0.40	0.39	0.38	0.34
Southcentral Region Non-Air Basin											
Lyons East	301	0.22	***	0.22	0.23	0.16	0.12	0.18	0.17	0.14	0.11
Lyons South	375	***	***	***	***	0.09	0.08	0.09	0.09	0.10	0.06
Johnstown Air Basin											
East Conemaugh	J08	0.04	0.09	0.05	0.04	0.03	0.04	0.05	0.06	0.05	0.07
Monongahela Valley Air Basin											
Monessen	M16	0.04	0.04	0.04	0.04	0.03	0.04	0.04	0.04	0.04	0.04
Lower Beaver Valley Air Basin											
Vanport	B05	0.06	0.08	0.07	0.06	0.11	0.09	0.09	0.15	0.18	0.12

Primary and Secondary Quarterly National Ambient Air Quality Standard is 1.5 micrograms per cubic meter

? does not satisfy summary criteria

***** less than 30 samples collected during year**

Table B-21. Total Suspended Particulate Matter Summary.

(Units: micrograms per cubic meter)

Year: 2007

Site Name	PA Site Code	Geometric Annual Mean	Geometric Standard Deviation	Arithmetic Annual Mean	Number 24-hour Samples	Maximums 1st Maximum 24-hour Mean	1st Maximum Date MM/DD	2nd Maximum 24-hour Mean	2nd Maximum Date MM/DD	Minimum 24-hour Mean	Minimum Date MM/DD
Southeast Pennsylvania Air Basin											
Chester	P11	32	1.46	34	53	93	5/18	75	03/07	13	12/26
Reading Air Basin											
Laureldale	R10	32	1.73	37	60	85	3/13	83	5/24	10	10/27
Southcentral Region Non-Air Basin											
Lyons East	301	26	1.69	29	53	59	05/24	53	10/29	3	04/12
Lyons South	375	21	1.57	23	58	45	05/24	44	05/12	8	11/26
Johnstown Air Basin											
East Conemaugh	J08	27	1.56	30	58	76	8/28	64	03/13	11	04/12
Monongahela Valley Air Basin											
Monessen	M16	37	1.72	42	60	101	5/12	87	05/30	6	01/06
Lower Beaver Valley Air Basin											
Vanport	B05	29	1.76	33	53	82	12/20	73	11/14	7	09/15

No Primary or Secondary Air Quality Standards

? does not satisfy summary criteria

Table B-22. Total Suspended Particulate Matter Historical Trend.

Annual Geometric Means

(Units: micrograms per cubic meter)

Site Name	PA Site Code	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Southeast Pennsylvania Air Basin											
Chester	P11	40	35	39	36	33	35	34	37	28	32
Northeast Region Non-Air Basin											
Palmerton	205	29	27	28	27	28	30	25	29	***	***
Reading Air Basin											
Laureldale	R10	51	44	44	39	40	39	34	39	31	32
Southcentral Region Non-Air Basin											
Lyons East	301	30	***	39	30	28	42	25	27	26	26
Lyons South	375	***	***	***	***	26	23	21	22	19	21
Johnstown Air Basin											
East Conemaugh	J08	41	42	42	30	28	30	26	30	26	27
Monongahela Valley Air Basin											
Monessen	M16	44	44	42	46	39	38	37	43	40	37
Lower Beaver Valley Air Basin											
Vanport	B05	33	34	35	30	17?	9	8	14	23	29

No Primary or Secondary Air Quality Standards

? does not satisfy summary criteria

*** less than 30 samples collected during year

Table B-23. Sulfate Suspended Particulate Matter Summary.

(Units: micrograms per cubic meter)

Year: 2007

Site Name	PA Site Code	Annual Mean	Number 24-hour Samples	Number 30 Day > 10	1st Max 30 Day Mean	1st Max 30 Day MM	2nd Max 30 Day Mean	2nd Max 30 Day MM	Number 24-hour > 30	1st Max 24-hour Mean	1st Max 24-hour MM/DD	2nd Max 24-hour Mean	2nd Max 24-hour MM/DD
Reading Air Basin													
Laureldale	R10	8.7	51	2	11.5	9	11.1	7	0	15.5	10/09	15.3	07/11
Johnstown Air Basin													
East Conemaugh	J08	10.1	51	4	12.6	7	11.3	6	0	17.0	07/29	15.5	10/09
Monongahela Valley Air Basin													
Monessen	M16	11.3	51	7	14.7	7	14.2	9	0	19.1	05/24	19.1	09/21

No Primary or Secondary Air Quality Standards

? does not satisfy summary criteria

Table B-24. Nitrate Suspended Particulate Matter Summary.

(Units: micrograms per cubic meter)

Year: 2007

Site Name	PA Site Code	Annual Mean	Number 24-hour Samples	1st Max 24-hour Mean	1st Max 24-hour MM/DD	2nd Max 24-hour Mean	2nd Max 24-hour MM/DD	3rd Max 24-hour Mean	3rd Max 24-hour MM/DD	Minimum 24-hour Mean
Reading Air Basin										
Laureldale	R10	3.97	51	9.7	12/08	8.0	02/11	7.8	09/21	1.01
Johnstown Air Basin										
East Conemaugh	J08	2.59	51	6.7	02/11	6.2	12/20	4.9	01/30	0.79
Monongahela Valley Air Basin										
Monessen	M16	3.31	51	8.2	12/20	7.1	02/11	5.7	03/07	1.20

No Primary or Secondary Air Quality Standards

? does not satisfy summary criteria

Table B-25. Photochemical Assessment Monitoring Station (PAMS) Compounds Summary

Arendtsville, PA

Units: parts per billion Carbon (ppbC)

[The concentration in ppbC for a compound can be divided by the number of carbon atoms for that target compound to estimate the concentration in parts per billion Volume (ppbv).]

Year 2007 (May to October)

Compound	1 Hour Max	Date/Time of Max	Mean
Acetylene	4.96	8/1/2007 7:00	0.46
Ethylene	8.34	5/11/2007 7:00	0.47
Ethane	42.39	7/5/2007 15:00	3.68
Propylene	2.44	5/2/2007 0:00	0.33
Propane	13.77	7/5/2007 15:00	2.47
Isobutane	3.87	6/18/2007 6:00	0.48
Butene-1	1.2	6/7/2007 3:00	0.11
n-Butane	8.89	6/13/2007 23:00	1.01
t-Butene-2	0.74	6/13/2007 23:00	0.04
c-Butene-2	0.61	6/13/2007 23:00	0
Isopentane	14.79	8/15/2007 8:00	0.88
Pentene-1	2.06	6/17/2007 14:00	0.02
n-Pentane	5.86	8/15/2007 8:00	0.57
Isoprene	38.39	7/9/2007 19:00	1.45
trans-2-Pentene	3.93	6/13/2007 15:00	0.01
c-2-Pentene	1.14	6/24/2007 2:00	0
2,2-Dimethylbutane	2.68	6/6/2007 20:00	0.04
yclopentane	1.43	6/2/2007 19:00	0.04
2,3-Dimethylbutane	1.88	10/31/2007 8:00	0.20
2-Methylpentane	2.38	9/6/2007 6:00	0.26
3-Methylpentane	1.45	9/6/2007 6:00	0.15
n-Hexane	2.15	8/16/2007 7:00	0.16
Methylcyclopentane	1.09	8/16/2007 7:00	0.06
2,4-Dimethylpentane	1.00	5/31/2007 19:00	0
Benzene	3.96	5/11/2007 7:00	0.51
Cyclohexane	1.19	8/16/2007 7:00	0.02
2-Methylhexane	1.83	8/16/2007 7:00	0.05
2,3-Dimethylpentane	0.66	5/21/2007 23:00	0.01
3-Methylhexane	1.96	8/16/2007 7:00	0.09
2,2,4-Trimethylpentane	1.52	5/31/2007 6:00	0.14
n-Heptane	5.13	8/16/2007 7:00	0.11
Methylcyclohexane	3.89	8/16/2007 7:00	0.07
2,3,4-Trimethylpentane	0.93	5/13/2007 0:00	0.02
Toluene	4.28	9/6/2007 6:00	0.83
2-Methylheptane	1.23	8/18/2007 22:00	0.01
3-Methylheptane	1.34	8/19/2007 2:00	0.01

***Total Nonmethane Organic Compounds**

****PAMS Hydrocarbons**

VOCs refer to gaseous aliphatic and aromatic nonmethane organic compounds that have a vapor pressure greater than 0.14 mmHg at 25C and generally have a carbon number in the range of C-2–C-12.

Table B-25. Photochemical Assessment Monitoring Station (PAMS) Compounds Summary

Arendtsville, PA

Units: parts per billion Carbon (ppbC)

[The concentration in ppbC for a compound can be divided by the number of carbon atoms for that target compound to estimate the concentration in parts per billion Volume (ppbv).]

Year 2007 (May to October)

Compound	1 Hour Max	Date/Time of Max	Mean
n-Octane	3.41	8/19/2007 2:00	0.05
Ethylbenzene	1.12	5/10/2007 2:00	0.10
m/p-Xylene	2.37	9/6/2007 6:00	0.31
Styrene	1.95	5/12/2007 15:00	0.03
o-Xylene	0.92	9/6/2007 6:00	0.09
n-Nonane	1.13	8/19/2007 2:00	0.02
Isopropylbenzene	1.31	5/10/2007 19:00	0
n-Propylbenzene	1.12	5/25/2007 17:00	0.01
1,3,5-Trimethylbenzene	1.09	9/18/2007 14:00	0
1,2,4-Trimethylbenzene	2.74	9/18/2007 14:00	0.27
o-Ethyltoluene	1.43	5/23/2007 0:00	0.01
m-Ethyltoluene	1.94	9/18/2007 14:00	0.04
p-Ethyltoluene	1.28	6/29/2007 22:00	0.08
m-Diethylbenzene	2.06	5/16/2007 20:00	0.01
p-Diethylbenzene	6.33	9/19/2007 8:00	0.01
1,2,3-Trimethylbenzene	2.16	9/19/2007 8:00	0.23
n-Decane	1.18	5/22/2007 8:00	0.03
Undecane	1.44	5/12/2007 2:00	0.01
tnmoc*	84.14	9/19/2007 8:00	17.62
pamshc**	75.34	9/6/2007 6:00	16.22
Unidentified VOC	37.01	9/19/2007 8:00	1.24

***Total Nonmethane Organic Compounds**

****PAMS Hydrocarbons**

VOCs refer to gaseous aliphatic and aromatic nonmethane organic compounds that have a vapor pressure greater than 0.14 mmHg at 25C and generally have a carbon number in the range of C-2–C-12.

Table B-26. Carbon Monoxide Point Source Historical Trend.

(Units: Tons Per Year)

County	1999	2000	2001	2002	2003	2004	2005	2006	2007	Change Since 1999
Adams	66	41	34	99	227	201	354	243	333	+405%
Armstrong	1783	1709	1694	1597	1783	1647	1796	1651	1595	-11%
Beaver	32617	31342	39938	33731	23484	22394	27297	26482	28769	-12%
Bedford	119	125	101	126	147	114	85	77	83	-30%
Berks	1573	1508	1368	1534	1729	1758	1583	1606	1648	+5%
Blair	1054	1048	1131	1011	1079	835	796	662	628	-40%
Bradford	264	266	290	305	438	498	473	482	434	+64%
Bucks	356	344	369	342	352	521	327	415	491	+38%
Butler	1938	2137	1974	2005	1961	2146	2154	2184	2253	+16%
Cambria	5934	3639	1252	1214	1196	1324	1306	1258	1294	-78%
Cameron	2	0	1	1	1	1	0	0	1	-50%
Carbon	8657	9420	9301	9450	9414	9626	9450	9340	9564	+10%
Centre	1392	1340	1267	1249	1311	1200	1111	1205	942	-32%
Chester	8577	7483	6147	6226	6120	7180	7123	7906	6529	-24%
Clarion	314	173	244	440	328	318	460	508	402	+28%
Clearfield	384	390	360	358	385	361	461	474	458	+19%
Clinton	730	766	647	410	426	439	445	488	478	-35%
Columbia	19	30	29	31	24	27	36	32	40	+111%
Crawford	29	88	68	59	60	55	59	62	49	+69%
Cumberland	109	103	169	174	131	123	127	123	130	+19%
Dauphin	464	533	383	339	419	516	504	685	656	+41%
Delaware	6862	6590	3471	3410	3249	3470	3822	3688	3575	-48%
Elk	1843	2584	1281	912	729	1615	2207	2365	2348	+27%
Erie	3977	3526	2832	852	566	568	643	602	664	-83%
Fayette	81	156	174	87	116	101	82	61	53	-35%
Forest	236	216	257	248	272	239	225	227	220	-7%
Franklin	49	53	63	88	86	132	271	154	216	+341%
Fulton	2	2	1	4	4	6	7	6	6	+200%
Greene	1773	1986	1705	1543	1312	1163	1263	1426	1689	-5%
Huntingdon	83	73	74	73	76	72	77	69	70	-16%
Indiana	2471	2312	3224	3102	3394	4117	5191	5367	5400	+119%
Jefferson	204	283	203	220	214	257	213	219	220	+8%
Juniata	19	43	24	22	28	17	20	23	29	+53%
Lackawanna	606	380	415	406	500	533	524	507	493	-19%
Lancaster	1389	1392	1364	1370	1310	1206	1146	1162	1151	-17%
Lawrence	1985	2069	1863	1796	1781	1978	1961	1902	1652	-17%
Lebanon	1863	2318	2208	1811	1489	515	448	504	502	-73%
Lehigh	587	536	550	473	419	458	469	501	360	-39%
Luzerne	316	325	299	293	320	354	367	252	260	-18%
Lycoming	748	830	656	654	704	722	906	828	733	-2%

*** none reported
** percentage change n/a

Table B-26. Carbon Monoxide Point Source Historical Trend.

(Units: Tons Per Year)

County	1999	2000	2001	2002	2003	2004	2005	2006	2007	Change Since 1999
McKean	229	360	271	254	251	252	275	292	261	+14%
Mercer	175	193	232	338	349	383	376	389	343	+96%
Mifflin	259	243	193	188	217	250	273	244	236	-9%
Monroe	47	122	94	150	147	132	117	152	180	+283%
Montgomery	1020	1021	1114	1150	1183	1250	1200	1133	1102	+8%
Montour	776	832	813	843	898	863	950	966	868	+12%
Northampton	5100	4993	4933	18771	17920	14131	18189	6650	5156	+1%
Northumberland	476	510	555	471	561	552	567	515	505	+6%
Perry	35	18	5	12	13	8	8	2	5	-86%
Pike	0	1	1	0	2	4	0	1	0	**
Potter	1037	1081	1143	1264	1153	767	831	1146	1084	+5%
Schuylkill	913	910	933	1150	1310	1305	1347	1380	1410	+54%
Snyder	352	354	432	415	376	366	378	343	394	+12%
Somerset	302	522	478	520	760	671	666	673	715	+137%
Sullivan	***	***	***	***	***	***	***	***	***	***
Susquehanna	3	3	2	7	2	3	2	2	3	0%
Tioga	655	854	775	715	840	267	217	195	189	-71%
Union	168	156	148	126	122	127	109	103	80	-52%
Venango	305	342	295	292	342	336	310	300	292	-4%
Warren	577	535	535	540	494	500	520	440	571	-1%
Washington	1344	1317	672	602	600	272	432	504	456	-66%
Wayne	3	3	2	2	3	2	2	2	0	-100%
Westmoreland	1763	2494	2889	2254	1839	1304	1309	1176	1239	-30%
Wyoming	638	395	453	398	460	461	534	553	462	-28%
York	2838	2811	2335	2582	2638	2661	2513	2313	2739	-3%
Statewide	110490	108229	106734	111109	100064	95674	106914	95220	94708	-14%

*** none reported
** percentage change n/a

Table B-27. Oxides of Nitrogen Point Source Historical Trend.

(Units: Tons Per Year)

County	1999	2000	2001	2002	2003	2004	2005	2006	2007	Change Since 1999
Adams	317	187	192	270	774	451	469	182	268	-15%
Armstrong	24603	23354	23990	23342	16441	18430	18348	16545	16709	-32%
Beaver	30521	34047	30038	35427	28508	28684	27895	30361	29848	-2%
Bedford	520	432	336	460	401	385	209	238	282	-46%
Berks	5666	5957	4941	5566	5962	5912	5811	5178	5917	+4%
Blair	959	1059	966	779	868	843	911	898	928	-3%
Bradford	370	458	392	464	494	468	514	453	375	+1%
Bucks	1694	1380	1313	1502	1248	1337	1446	1357	1334	-21%
Butler	2278	2422	2268	1937	1841	1672	1809	1634	1823	-20%
Cambria	2670	2664	2665	2396	1836	2388	2253	2231	2591	-3%
Cameron	14	1	1	1	1	1	1	1	1	-93%
Carbon	699	732	685	702	737	711	688	717	693	-1%
Centre	3469	3426	3134	2172	1727	1420	1452	1469	1401	-60%
Chester	3062	3442	3555	2554	2833	3123	3413	2893	3155	+3%
Clarion	1040	912	761	805	645	641	801	874	922	-11%
Clearfield	7610	7281	6797	6681	7315	6966	6940	7490	7423	-2%
Clinton	1886	1954	1665	725	589	554	547	532	556	-71%
Columbia	205	207	151	158	182	184	197	156	181	-12%
Crawford	3589	4031	3748	2930	2052	1876	1719	829	865	-76%
Cumberland	3646	3442	4531	4423	4386	3027	4213	4997	3448	-5%
Dauphin	1137	1008	776	771	784	694	629	629	769	-32%
Delaware	10952	11663	13210	11654	12115	11674	13225	11506	11321	+3%
Elk	2169	1724	2026	1619	1526	1359	1363	1325	1255	-42%
Erie	5313	3333	2499	1500	1239	1183	916	706	661	-88%
Fayette	429	440	507	540	611	579	166	128	167	-61%
Forest	433	378	461	451	446	349	351	369	358	-17%
Franklin	83	91	83	136	148	232	399	254	324	+290%
Fulton	8	8	5	4	4	7	9	8	8	0%
Greene	21169	24336	28455	23809	18585	19969	18091	20792	24616	+16%
Huntingdon	92	110	88	76	78	77	78	70	75	-18%
Indiana	50453	49041	48638	46949	44918	41115	39945	40804	39837	-21%
Jefferson	1345	1573	514	589	635	672	699	573	566	-58%
Juniata	284	235	224	200	270	230	213	201	324	+14%
Lackawanna	425	379	385	367	358	374	387	304	276	-35%
Lancaster	3311	1528	1463	1368	1413	1465	1424	1188	1202	-64%
Lawrence	7853	6622	6628	7027	5877	6980	5705	5976	6870	-13%
Lebanon	665	650	705	854	702	845	695	707	677	+2%
Lehigh	1258	1484	1268	1371	1061	1167	994	1024	929	-26%
Luzerne	1843	1898	2617	2041	1718	1374	896	887	1013	-45%
Lycoming	324	399	369	416	431	426	430	396	446	+38%

*** none reported
** percentage change n/a

Table B-27. Oxides of Nitrogen Point Source Historical Trend.

(Units: Tons Per Year)

County	1999	2000	2001	2002	2003	2004	2005	2006	2007	Change Since 1999
McKean	1880	1758	1612	1819	1624	1734	1652	1539	1500	-20%
Mercer	1403	1469	1296	1124	1196	911	833	995	1009	-28%
Mifflin	122	117	90	88	82	79	85	79	74	-39%
Monroe	150	190	70	67	82	63	60	63	70	-53%
Montgomery	1902	1957	1847	1857	1894	1878	1881	1660	1650	-13%
Montour	15980	16344	12423	12391	11547	11685	12932	13704	13443	-16%
Northampton	14179	14844	15579	15431	15868	16339	16560	11954	12874	-9%
Northumberland	546	573	605	522	611	605	653	600	595	+9%
Perry	120	147	74	118	164	148	105	79	167	+39%
Pike	2	3	3	1	5	15	0	0	0	-100%
Potter	1238	1338	1317	1209	1386	1110	1193	1105	1145	-8%
Schuylkill	1479	1399	1498	1513	1324	1343	1554	1392	1281	-13%
Snyder	7320	6563	7588	5479	3644	2998	2995	2800	3871	-47%
Somerset	133	218	216	234	286	260	257	250	252	+89%
Sullivan	***	***	***	***	***	***	***	***	***	***
Susquehanna	13	29	22	37	22	22	26	32	37	+185%
Tioga	442	526	393	476	623	568	463	447	453	+2%
Union	114	100	105	124	134	120	101	107	102	-11%
Venango	1381	997	906	700	644	678	609	764	860	-38%
Warren	1797	1581	1642	1336	961	843	963	867	797	-56%
Washington	9104	11617	11669	10941	8752	7957	7771	9645	8098	-11%
Wayne	38	41	34	36	43	31	33	31	33	-13%
Westmoreland	3008	3030	2801	2874	2872	2833	2820	2281	2180	-28%
Wyoming	781	700	696	742	697	852	826	672	637	-18%
York	20031	21767	17172	22912	20492	23874	20833	19617	22195	+11%
Statewide	287524	291596	282708	277067	246712	246790	241456	237565	243737	-15%

*** none reported
** percentage change n/a

Table B-28. Sulfur Dioxide Point Source Historical Trend.

(Units: Tons Per Year)

County	1999	2000	2001	2002	2003	2004	2005	2006	2007	Change Since 1999
Adams	16	6	19	16	21	28	19	13	20	+25%
Armstrong	190523	187915	190639	183156	197675	204299	209456	191494	202608	+6%
Beaver	38644	40560	35711	40840	39763	44981	41338	32523	27807	-28%
Bedford	3	3	3	3	3	3	3	3	4	+33%
Berks	14159	16820	11612	14828	16953	14732	16307	14213	15280	+8%
Blair	3249	3347	3078	1168	1650	2940	2280	3426	3021	-7%
Bradford	65	53	162	33	132	145	173	83	52	-20%
Bucks	435	371	365	388	397	413	440	463	359	-17%
Butler	3381	2607	2820	2265	2177	2162	1424	1334	1365	-60%
Cambria	6552	5856	5911	5842	5620	6924	7168	7363	7691	+17%
Cameron	0	0	0	0	0	0	0	0	0	0%
Carbon	727	795	762	774	806	768	747	768	752	+3%
Centre	4370	4223	4182	4360	4316	4319	4527	4541	4279	-2%
Chester	3998	4874	5203	3127	4204	6153	5532	4057	3719	-7%
Clarion	1262	1177	1176	1214	1249	1080	1245	1321	1460	+16%
Clearfield	51822	48298	42057	38283	43411	44362	47015	47348	49117	-5%
Clinton	6702	6232	4159	1355	8	12	12	5	5	-100%
Columbia	484	495	379	207	263	336	240	193	179	-63%
Crawford	545	505	259	356	383	452	434	480	370	-32%
Cumberland	709	806	764	708	1064	1180	1065	1171	1126	+59%
Dauphin	677	764	789	403	808	508	711	460	488	-28%
Delaware	15405	15398	16184	14539	17370	15964	17050	12638	12295	-20%
Elk	4911	4887	5120	4792	3748	560	642	596	551	-89%
Erie	14837	10163	8471	4125	3433	2317	2040	807	272	-98%
Fayette	259	263	259	261	264	263	25	25	34	-87%
Forest	0	0	0	0	0	0	0	0	0	0%
Franklin	72	79	79	78	51	43	44	33	48	-33%
Fulton	2	1	0	0	0	0	0	0	0	-100%
Greene	142473	166238	186131	159506	140295	149220	146147	135586	145477	+2%
Huntingdon	277	178	189	155	223	220	207	277	225	-19%
Indiana	181032	149281	157438	122466	168248	160744	146835	122172	135657	-25%
Jefferson	552	550	287	364	395	486	543	537	583	+6%
Juniata	0	1	2	2	2	2	2	2	2	**
Lackawanna	259	87	97	91	73	89	145	140	143	-45%
Lancaster	5175	670	847	498	721	483	385	181	107	-98%
Lawrence	27250	28699	32378	28809	24135	26060	21237	15411	19932	-27%
Lebanon	753	815	767	764	670	252	227	247	250	-67%
Lehigh	2129	2048	1964	1626	1360	1620	1150	1146	898	-58%
Luzerne	4167	3552	4313	3788	3472	3875	4699	4558	3702	-11%
Lycoming	64	77	83	86	80	71	77	104	102	+59%

*** none reported
** percentage change n/a

Table B-28. Sulfur Dioxide Point Source Historical Trend.

(Units: Tons Per Year)

County	1999	2000	2001	2002	2003	2004	2005	2006	2007	Change Since 1999
McKean	2723	3151	4051	3575	3361	3449	3304	3625	3083	+13%
Mercer	47	45	100	92	121	113	115	108	73	+55%
Mifflin	5	9	11	4	6	8	8	7	7	+40%
Monroe	286	194	76	58	85	38	35	30	36	-87%
Montgomery	822	825	835	712	726	787	821	635	548	-33%
Montour	113824	107989	111541	111489	124819	127031	127654	129407	127858	+12%
Northampton	54620	54854	51910	56808	61817	62833	58589	53819	53318	-2%
Northumberland	464	545	571	347	498	524	546	516	531	+14%
Perry	0	0	1	1	2	1	1	1	2	**
Pike	0	0	0	0	0	0	0	0	0	0%
Potter	60	64	50	41	50	53	84	78	78	+30%
Schuylkill	5254	4894	5095	5186	4920	4993	4852	5089	4738	-10%
Snyder	32916	28213	28914	25335	28377	27928	27921	24033	29957	-9%
Somerset	138	219	205	183	242	253	243	247	265	+92%
Sullivan	***	***	***	***	***	***	***	***	***	***
Susquehanna	0	0	0	0	0	0	0	0	0	0%
Tioga	82	85	79	84	67	88	52	54	51	-38%
Union	40	23	11	9	68	11	9	23	19	-53%
Venango	2961	1860	1260	1623	1589	1547	1465	1811	1813	-39%
Warren	6948	5214	5981	4896	3204	2858	2977	2949	2628	-62%
Washington	4977	6034	6572	6612	5133	5086	4935	5963	5122	+3%
Wayne	165	176	74	157	106	83	92	136	142	-14%
Westmoreland	1229	1143	1581	621	515	674	424	471	456	-63%
Wyoming	426	54	611	72	110	456	653	138	84	-80%
York	83034	71715	53600	80408	83545	102770	113352	102710	115905	+40%
Statewide	1038961	996000	997788	939589	1004804	1039650	1029723	937569	986694	-5%

*** none reported
** percentage change n/a

Table B-29. Volatile Organic Compounds (VOC) Point Source Historical Trend.

(Units: Tons Per Year)

County	1999	2000	2001	2002	2003	2004	2005	2006	2007	Change Since 1999
Adams	211	210	223	179	175	208	202	197	210	0%
Armstrong	350	309	161	169	167	168	183	188	174	-50%
Beaver	924	920	888	826	770	814	648	669	621	-33%
Bedford	469	455	324	336	303	259	215	229	207	-56%
Berks	1959	1925	1757	1740	1609	1728	1595	1433	1294	-34%
Blair	581	556	532	442	402	439	439	439	395	-32%
Bradford	457	520	527	562	626	654	681	690	646	+41%
Bucks	1961	1858	1320	792	783	759	728	734	664	-66%
Butler	884	985	828	908	885	785	782	678	691	-22%
Cambria	370	262	163	127	139	146	107	104	105	-72%
Cameron	31	28	22	14	8	10	15	9	4	-87%
Carbon	275	321	205	242	288	344	347	359	304	+11%
Centre	85	34	35	45	83	32	38	37	27	-68%
Chester	2302	2337	1816	1424	1338	1466	1433	1304	1058	-54%
Clarion	266	250	210	277	247	226	334	309	260	-2%
Clearfield	109	114	100	109	88	89	78	83	71	-35%
Clinton	258	281	253	202	191	181	212	187	199	-23%
Columbia	149	150	126	119	142	158	153	132	100	-33%
Crawford	234	263	208	173	171	219	207	199	173	-26%
Cumberland	479	401	321	351	367	372	349	299	293	-39%
Dauphin	379	428	381	343	293	324	358	404	366	-3%
Delaware	2332	2298	2017	2074	1894	1712	1766	1658	1704	-27%
Elk	392	316	234	271	189	276	276	281	332	-15%
Erie	1764	1463	1271	512	538	619	610	611	614	-65%
Fayette	86	90	45	48	43	55	38	37	53	-38%
Forest	60	54	46	50	66	65	61	64	66	+10%
Franklin	374	330	246	271	230	281	281	301	351	-6%
Fulton	65	73	40	40	36	63	91	109	88	+35%
Greene	672	726	781	711	642	708	629	593	622	-7%
Huntingdon	149	142	129	95	88	95	113	119	121	-19%
Indiana	432	420	377	344	361	351	357	341	382	-12%
Jefferson	152	211	141	151	161	162	122	107	101	-34%
Juniata	207	201	259	251	213	235	233	238	233	+13%
Lackawanna	418	410	347	360	334	303	296	267	282	-33%
Lancaster	3369	3341	2907	3259	3244	3088	3159	3090	2796	-17%
Lawrence	461	348	292	399	433	347	309	290	219	-52%
Lebanon	1127	1025	922	435	208	221	220	227	225	-80%
Lehigh	1098	1036	1073	875	786	857	895	858	838	-24%
Luzerne	943	1059	1001	1015	933	736	788	771	826	-12%
Lycoming	678	636	498	430	356	325	352	345	342	-50%

*** none reported
** percentage change n/a

Table B-29. Volatile Organic Compounds (VOC) Point Source Historical Trend.

(Units: Tons Per Year)

County	1999	2000	2001	2002	2003	2004	2005	2006	2007	Change Since 1999
McKean	883	922	842	788	677	776	772	899	833	-6%
Mercer	1039	967	679	688	545	533	480	515	485	-53%
Mifflin	137	156	138	131	152	142	152	170	163	+19%
Monroe	102	95	45	46	80	75	72	74	65	-36%
Montgomery	1850	1692	1469	1333	1233	1141	1002	935	883	-52%
Montour	58	114	37	35	38	35	42	43	34	-41%
Northampton	512	511	551	845	838	1108	1184	487	374	-27%
Northumberland	1155	1096	910	847	719	716	664	741	682	-41%
Perry	0	33	0	0	1	2	3	5	2	**
Pike	0	0	0	0	0	1	0	0	0	0%
Potter	147	141	146	135	136	170	202	221	240	+63%
Schuylkill	557	551	407	438	317	407	427	324	498	-11$
Snyder	538	511	534	530	467	415	395	439	376	-30%
Somerset	116	98	86	75	77	58	89	80	75	-35%
Sullivan	***	***	***	***	***	***	***	***	***	***
Susquehanna	1	1	0	1	0	0	0	0	0	-100%
Tioga	274	277	230	192	215	152	146	124	143	-48%
Union	1026	768	672	579	557	562	397	325	196	-81%
Venango	1034	686	483	247	273	155	88	89	104	-90%
Warren	1820	1180	693	580	602	590	542	557	584	-68%
Washington	236	235	175	201	184	158	172	162	152	-36%
Wayne	8	1	0	1	0	0	0	0	1	-88%
Westmoreland	1011	986	1313	844	795	828	888	776	736	-27%
Wyoming	175	299	290	354	351	318	340	351	348	+99%
York	3612	3509	3316	2994	1953	1564	1422	1321	1353	-63%
Statewide	43803	41615	36042	32855	30040	29786	29179	27628	26384	-40%

*** none reported
** percentage change n/a

APPENDIX C. MONITORING SITES, PARAMETERS AND ADDRESSES

Figure C-1. Commonwealth of Pennsylvania Active Air Monitoring Sites.

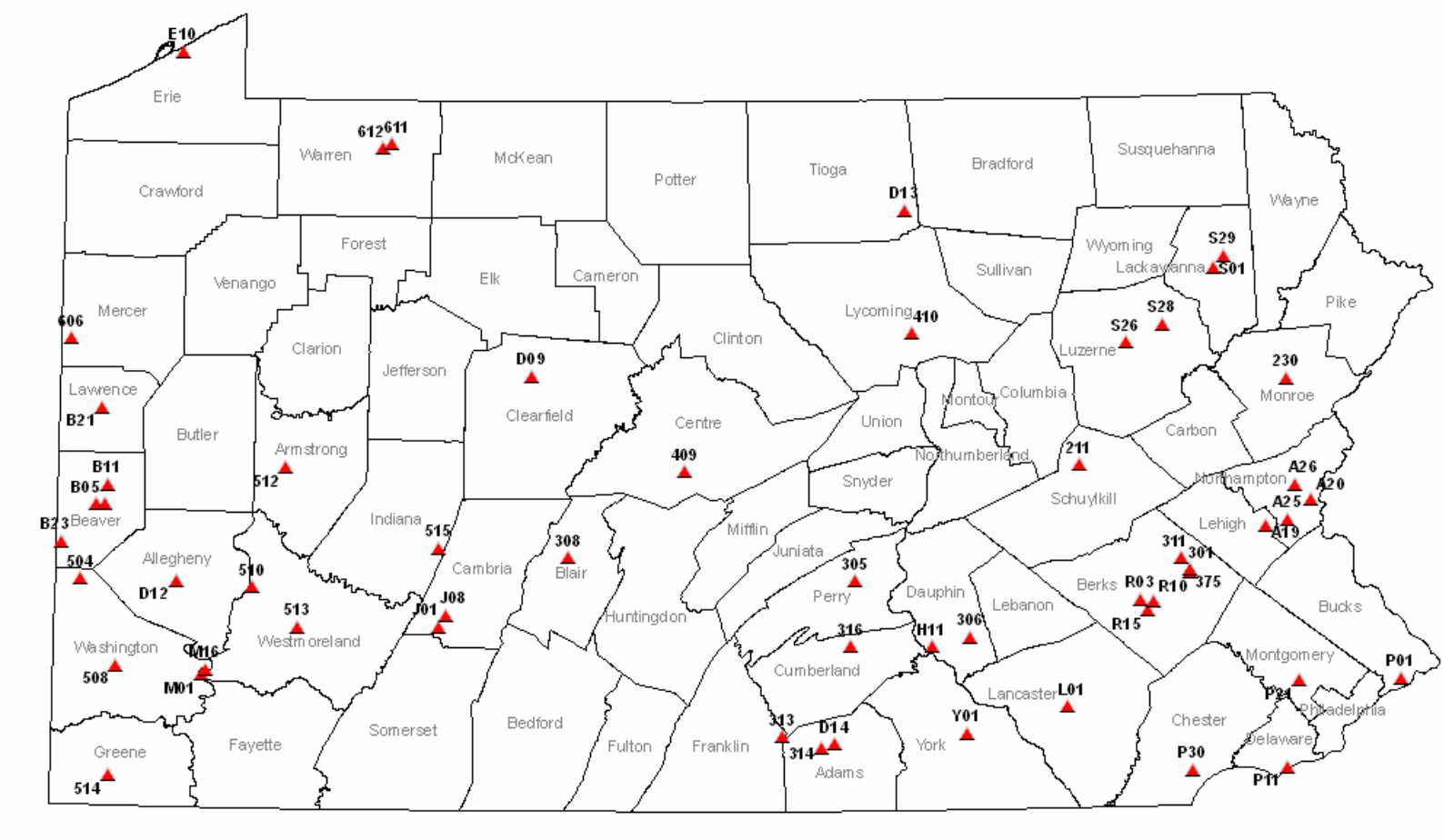


Table C-1. Southeast Region Air Basin Site Locations and Parameters Monitored.

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE	OZONE	SULFUR DIOXIDE	NITROGEN DIOXIDE	CARBON MONOXIDE	$PM_{2.5}$	$PM_{2.5}$ SPEC	PM_{10}	TSP	LEAD	SULFATES	NITRATES
P01	BRISTOL	42-017-0012	BUCKS	Roosevelt Junior High School Rockview Ln	40 06 27 N 74 52 57 W	X	X	X	X	$X_{D2.5}$		X_{C10}				
P11	CHESTER	42-045-0002	DELAWARE	Front & Norris Sts	39 50 08 N 75 22 22 W	X	X	X		$X_{D2.5}$ $X_{C2.5B}$	X	X_{C10}	X	X		
P21	NORRISTOWN	42-091-0013	MONTGOMERY	State Armory 1046 Belvoir Rd	40 06 45 N 75 18 34 W	X	X	X	X	$X_{D2.5}$ $X_{C2.5T}$		X_{C10}				
P30	NEW GARDEN AIRPORT	42-029-0100	CHESTER	1235 Newark Rd New Garden Arpt	39 50 04 N 75 46 05 W	X				$X_{D2.5}$	X					
P32 DSD	WEST CHESTER	42-029-0050	CHESTER	S Campus Rd West Chester University	39 56 09 N 75 36 16 W	DSD										

Southeast Region. Bucks, Chester, Delaware, Montgomery and Philadelphia Counties

Table C-2. Allentown-Bethlehem-Easton Air Basin Site Locations and Parameters Monitored.

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE	OZONE	SULFUR DIOXIDE	NITROGEN DIOXIDE	CARBON MONOXIDE	$PM_{2.5}$	$PM_{2.5}$ SPEC	PM_{10}	TSP	LEAD	SULFATES	NITRATES
A19	ALLENTOWN	42-077-0004	LEHIGH	Allentown State Hospital, Rear 1600 Hanover Ave	40 36 43 N 75 25 58 W	X	X	X		$X_{D2.5}$		X_{C10}				
A20	EASTON	42-095-8000	NORTHAMPTON	Spring Garden	40 41 32 N 75 14 14 W	X	X			$X_{C2.5T}$						
A25	FREEMANSBURG	42-095-0025	NORTHAMPTON	Washington & Cambria Sts	40 37 41 N 75 20 28 W	X	X	X	X	$X_{D2.5}$ $X_{C2.5T}$	X	X_{C10}				
A26	NAZARETH	42-095-1000	NORTHAMPTON	S Green & Delaware	40 44 04 N 75 18 46 W							X_{C10}				
A51 DSD	ALLENTOWN CBD	42-077-0100	LEHIGH	2 N Ninth St, Hamilton St Side	40 35 57 N 75 28 28 W				DSD							

Northeast Region. Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne and Wyoming Counties

X Parameter monitored at the site
$X_{D2.5}$ Discrete $PM2_{2.5}$ Sampler, Federal Reference Method (FRM)
$X_{C2.5T}$ Continuous $PM_{2.5}$ Sampler (TEOM)
$X_{C2.5B}$ Continuous $PM_{2.5}$ Sampler (BAM)
X_{D10} Discrete PM_{10} Sampler, Federal Reference Method (FRM)
X_{C10} Continuous PM_{10} Sampler, Federal Equivalent Method (FEM)
DSD Discontinued, listed for reference purposes

Table C-3. Scranton-Wilkes-Barre Air Basin Site Locations and Parameters Monitored.

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE	OZONE	SULFUR DIOXIDE	NITROGEN DIOXIDE	CARBON MONOXIDE	$PM_{2.5}$	$PM_{2.5}$ SPEC	PM_{10}	TSP	SULFATES	LEAD	NITRATES
S01	SCRANTON	42-069-2006	LACKAWANNA	Behind Penn State Campus George St	41 26 34 N 75 37 23 W	X	X	X	X	$X_{D2.5}$	X	X_{C10}				
S26	NANTICOKE	42-079-1100	LUZERNE	255 Lwr Broadway	41 12 33 N 76 00 13 W	X										
S27 DSD	WILKES-BARRE CBD	42-079-2100	LUZERNE	North River St	41 15 01 N 75 52 49 W				DSD							
S28	WILKES-BARRE	42-079-1101	LUZERNE	Chilwick & Washington Sts	41 15 58 N 75 50 47 W	X	X	X	X	$X_{D2.5}$		X_{C10}				
S29	PECKVILLE	42-069-0101	LACKAWANNA	Pleasant Ave & Erie St, Wilson Fire Company No. 1	41 28 45 N 75 34 41 W	X										

Northeast Region. Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne and Wyoming Counties

Table C-4. Northeast Region Non-Air Basin Site Locations and Parameters Monitored.

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE	OZONE	SULFUR DIOXIDE	NITROGEN DIOXIDE	CARBON MONOXIDE	$PM_{2.5}$	$PM_{2.5}$ SPEC	PM_{10}	TSP	SULFATES	LEAD	NITRATES
205 DSD	PALMERTON	42-025-0105	CARBON	New Jersey Zinc Research Bldg. Fourth St & Franklin Ave	40 48 12 N 75 36 31 W								DSD		DSD	
211	SHENANDOAH	42-107-0003	SCHUYLKILL	Coal & Stadium Streets	40 49 14 N 76 12 44 W		X		X							
230	SWIFTWATER	42-089-0002	MONROE	DEP/DCNR Pocono District Office	41 04 59 N 75 19 24 W	X										

Northeast Region. Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne and Wyoming Counties

X Parameter monitored at the site
$X_{D2.5}$ Discrete $PM2_{2.5}$ Sampler, Federal Reference Method (FRM)
$X_{C2.5T}$ Continuous $PM_{2.5}$ Sampler (TEOM)
$X_{C2.5B}$ Continuous $PM_{2.5}$ Sampler (BAM)
X_{D10} Discrete PM_{10} Sampler, Federal Reference Method (FRM)
X_{C10} Continuous PM_{10} Sampler, Federal Equivalent Method (FEM)
DSD Discontinued, listed for reference purposes

Table C-5. Reading Air Basin Site Locations and Parameters Monitored.

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE	OZONE	SULFUR DIOXIDE	NITROGEN DIOXIDE	CARBON MONOXIDE	$PM_{2.5}$	$PM_{2.5}$ SPEC	PM_{10}	TSP	SULFATES	LEAD	NITRATES
R01 DSD	READING	42-011-0009	BERKS	UGI Property 234 Morgantown Rd	40 19 14 N 75 55 37 W	DSD	DSD	DSD	DSD	DSD DSD		DSD				
R02	READING TEMP	42-011-0010	BERKS	503 North 6th St	40 23 33 N 75 55 30 W	X				$X_{D2.5}$ $X_{C2.5T}$	X					
RO3	READING AIRPORT	42-011-0011	BERKS	1059 Arnold Rd	40 23 01 N 75 58 07 W	X	X	X	X	$X_{D2.5}$ $X_{C2.5T}$	X	X_{C10}				
R10	LAURELDALE	42-011-1717	BERKS	Muhlenberg Township Authority, Spring Valley Rd Substation	40 22 38 N 75 54 53 W								X	X	X	X
R15	READING CENTRAL	42-011-0015	BERKS	Northwest Junior High School, N Front & W Spring Sts	40 21 04 N 75 56 08 W							X_{D10}				

Southcentral Region. Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry and York Counties

Table C-6. Harrisburg Air Basin Site Locations and Parameters Monitored.

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE	OZONE	SULFUR DIOXIDE	NITROGEN DIOXIDE	CARBON MONOXIDE	$PM_{2.5}$	$PM_{2.5}$ SPEC	PM_{10}	TSP	SULFATES	LEAD	NITRATES
H11	HARRISBURG	42-043-0401	DAUPHIN	1833 UPS Dr	40 14 42 N 76 50 41 W	X	X	X	X	$X_{D2.5}$ $X_{C2.5B}$	X	X_{C10}				
H16 DSD	HARRISBURG CBD	42-043-0102	DAUPHIN	Pa Dep. of Agriculture Parking Lot, 2301 N Cameron St	40 17 09 N 76 52 53 W				DSD							

Southcentral Region. Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry and York Counties

X Parameter monitored at the site
$X_{D2.5}$ Discrete $PM2_{2.5}$ Sampler, Federal Reference Method (FRM)
$X_{C2.5T}$ Continuous $PM_{2.5}$ Sampler (TEOM)
$X_{C2.5B}$ Continuous $PM_{2.5}$ Sampler (BAM)
X_{D10} Discrete PM_{10} Sampler, Federal Reference Method (FRM)
X_{C10} Continuous PM_{10} Sampler, Federal Equivalent Method (FEM)
DSD Discontinued, listed for reference purposes

Table C-7. Lancaster Air Basin Site Locations and Parameters Monitored.

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE	OZONE	SULFUR DIOXIDE	NITROGEN DIOXIDE	CARBON MONOXIDE	$PM_{2.5}$	$PM_{2.5}$ SPEC	PM_{10}	TSP	SULFATES	LEAD	NITRATES
L01	LANCASTER	42-071-0007	LANCASTER	Lincoln Junior High School	40 02 49 N 76 17 00 W	X	X	X	X	$X_{D2.5}$ $X_{C2.5T}$	X	X_{C10}				

Southcentral Region. Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry and York Counties

Table C-8. York Air Basin Site Locations and Parameters Monitored.

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE	OZONE	SULFUR DIOXIDE	NITROGEN DIOXIDE	CARBON MONOXIDE	$PM_{2.5}$	$PM_{2.5}$ SPEC	PM_{10}	TSP	SULFATES	LEAD	NITRATES
Y01	YORK	42-133-0008	YORK	Davis Junior High School, Hill St	39 57 56 N 76 41 59 W	X	X	X	X	$X_{D2.5}$ $X_{C2.5T}$	X	X_{C10}				

Southcentral Region. Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry and York Counties

X Parameter monitored at the site
$X_{D2.5}$ Discrete $PM2_{2.5}$ Sampler, Federal Reference Method (FRM)
$X_{C2.5T}$ Continuous $PM_{2.5}$ Sampler (TEOM)
$X_{C2.5B}$ Continuous $PM_{2.5}$ Sampler (BAM)
X_{D10} Discrete PM_{10} Sampler, Federal Reference Method (FRM)
X_{C10} Continuous PM_{10} Sampler, Federal Equivalent Method (FEM)
DSD Discontinued, listed for reference purposes

Table C-9. Southcentral Region Non-Air Basin Site Locations and Parameters Monitored.

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE	OZONE	SULFUR DIOXIDE	NITROGEN DIOXIDE	CARBON MONOXIDE	$PM_{2.5}$	$PM_{2.5}$ SPEC	PM_{10}	TSP	SULFATES	LEAD	NITRATES
301	LYONS EAST	42-011-0717	BERKS	Near State & Kemp Sts	40 28 36 N 75 45 33 W								X		X	
305	PERRY COUNTY	42-099-0301	PERRY	Little Buffalo State Park	40 27 26 N 77 09 57 W	X	X	X		DSD	DSD					
306	HERSHEY	42-043-1100	DAUPHIN	Hershey Foods Technical Centr Sipe Ave & Mae St	40 16 21 N 76 40 53 W	X										
308	ALTOONA	42-013-0801	BLAIR	Ward Trucking Corporation Second Ave & Seventh St	40 32 07 N 78 22 15 W	X	X	X	X			X_{C10}				
310 DSD	KUTZTOWN	42-011-0001	BERKS	Kutztown State College, Grim Science Bldg	40 30 40 N 75 47 11 W	DSD										
313	METHODIST HILL	42-055-0001	FRANKLIN	Forest Rd (High Elevation Site)	39 57 40 N 77 28 31 W	X										
314	ARENDTSVILLE	42-001-0001	ADAMS	Penn State Research Orchard	39 55 25 N 77 18 29 W			X	X	$X_{D2.5}$ $X_{C2.5T}$	X					
316	CARLISLE	42-041-0101	CUMBERLAND	Imperial Court	40 14 48 N 77 11 12 W					$X_{D2.5}$						
375	LYONS SOUTH	42-011-0005	BERKS	Heffner & Dryville Rds	40 27 59 N 75 45 32 W								X		X	
D14	BIGLERVILLE	42-001-0002	ADAMS	Penn State Research Orchard, University Drive	39 56 06 N 77 15 10 W	X										

Southcentral Region. Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry and York Counties

X Parameter monitored at the site
$X_{D2.5}$ Discrete $PM2_{2.5}$ Sampler, Federal Reference Method (FRM)
$X_{C2.5T}$ Continuous $PM_{2.5}$ Sampler (TEOM)
$X_{C2.5B}$ Continuous $PM_{2.5}$ Sampler (BAM)
X_{D10} Discrete PM_{10} Sampler, Federal Reference Method (FRM)
X_{C10} Continuous PM_{10} Sampler, Federal Equivalent Method (FEM)
DSD Discontinued, listed for reference purposes

Table C-10. Northcentral Region Non-Air Basin Site Locations and Parameters Monitored.

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE	OZONE	SULFUR DIOXIDE	NITROGEN DIOXIDE	CARBON MONOXIDE	$PM_{2.5}$	$PM_{2.5}$ SPEC	PM_{10}	TSP	SULFATES	LEAD	NITRATES
409	STATE COLLEGE	42-027-0100	CENTRE	Pennsylvania State University West of Big Hollow Rd State College	40 48 40 N 77 52 38 W	X	X	X		$X_{D2.5}$	X					
410	MONTOURSVILLE	42-081-0100	LYCOMING	PA State Police Rear Parking Lot, 899 Cherry St	41 15 01 N 76 54 51 W	X	X		X_{D10}			X_{D10}				
D09	MOSHANNON	42-033-4000	CLEARFIELD	Moshannon State Forest Elliott State Park North of Cessna	41 07 03 N 78 31 34 W	X										
D10 DSD	TIADAGHTON	42-081-4000	LYCOMING	Tiadaghton Sportmans Club Northeast of Haneyville	41 20 03 N 77 26 56 W	DSD										
D11 DSD	PENN NURSERY	42-027-4000	CENTRE	Pa DCNR, Penn Nursery Facility South of Potters Mills	40 46 28 N 77 37 19 W	DSD										
D13	TIOGA COUNTY	42-117-4000	TIOGA	North of Gleason	41 38 44 N 76 56 17 W	X										

Northcentral Region. Bradford, Cameron, Centre, Clearfield, Clinton, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga and Union Counties

Table C-11. Johnstown-Air Basin Site Locations and Parameters Monitored.

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE	OZONE	SULFUR DIOXIDE	NITROGEN DIOXIDE	CARBON MONOXIDE	$PM_{2.5}$	$PM_{2.5}$ SPEC	PM_{10}	TSP	SULFATES	LEAD	NITRATES
J01	JOHNSTOWN	42-021-0011	CAMBRIA	Miller Auto Body Crafts Shop One Messenger St	40 18 35 N 78 54 54 W	X	X	X	X	$X_{D2.5}$ $X_{C2.5B}$		X_{C10}				
J08	EAST CONEMAUGH	42-021-0808	CAMBRIA	Recreation Field Citron Alley & First St	40 20 53 N 78 52 58 W								X	X	X	X

Southwest Region. Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington and Westmoreland Counties

X Parameter monitored at the site
$X_{D2.5}$ Discrete $PM2_{2.5}$ Sampler, Federal Reference Method (FRM)
$X_{C2.5T}$ Continuous $PM_{2.5}$ Sampler (TEOM)
$X_{C2.5B}$ Continuous $PM_{2.5}$ Sampler (BAM)
X_{D10} Discrete PM_{10} Sampler, Federal Reference Method (FRM)
X_{C10} Continuous PM_{10} Sampler, Federal Equivalent Method (FEM)
DSD Discontinued, listed for reference purposes

Table C-12. Monongahela Valley-Air Basin Site Locations and Parameters Monitored.

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE	OZONE	SULFUR DIOXIDE	NITROGEN DIOXIDE	CARBON MONOXIDE	$PM_{2.5}$	$PM_{2.5}$ SPEC	PM_{10}	TSP	SULFATES	LEAD	NITRATES
M01	CHARLEROI	42-125-0005	WASHINGTON	Borough Waste Treatment Plant Front St	40 08 48 N 79 54 08 W	X	X	X	X	$X_{D2.5}$ $X_{C2.5B}$						
M16	MONESSEN	42-129-0007	WESTMORELAND	Monessen Community Centr, 435 Donner Ave	40 10 00 N 79 52 30 W							X_{D10}	X	X	X	X

Southwest Region. Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington and Westmoreland Counties

Table C-13. Lower Beaver Valley-Air Basin Site Locations and Parameters Monitored.

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE	OZONE	SULFUR DIOXIDE	NITROGEN DIOXIDE	CARBON MONOXIDE	$PM_{2.5}$	$PM_{2.5}$ SPEC	PM_{10}	TSP	SULFATES	LEAD	NITRATES
B05	VANPORT	42-007-0505	BEAVER	Vanport Water Works Tamaqui Dr	40 41 05 N 80 19 30 W								X		X	
B11	BEAVER FALLS	42-007-0014	BEAVER	Eighth St & River Alley	40 44 52 N 80 19 00 W	X	X	X	X	$X_{D2.5}$ $X_{C2.5T}$		X_{C10}				
B23	HOOKSTOWN	42-007-0002	BEAVER	FAA Microwave Relay Tower	40 33 47 N 80 30 16 W	X	X									
B27	BRIGHTON TOWNSHIP	42-007-0005	BEAVER	1015 Sebring Rd	40 41 05 N 80 21 35 W	X	X									

Southwest Region. Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington and Westmoreland Counties

Table C-14. Allegheny County Air Basin Site Locations and Parameters Monitored.

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE	OZONE	SULFUR DIOXIDE	NITROGEN DIOXIDE	CARBON MONOXIDE	$PM_{2.5}$	$PM_{2.5}$ SPEC	PM_{10}	TSP	SULFATES	LEAD	NITRATES
D12	PITTSBURGH	42-003-0010	ALLEGHENY	Carnegie Science Center	40 26 44 N 80 00 59 W	X	X	X	X							

Southwest Region. Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington and Westmoreland Counties

X Parameter monitored at the site
$X_{D2.5}$ Discrete $PM2_{2.5}$ Sampler, Federal Reference Method (FRM)
$X_{C2.5T}$ Continuous $PM_{2.5}$ Sampler (TEOM)
$X_{C2.5B}$ Continuous $PM_{2.5}$ Sampler (BAM)
X_{D10} Discrete PM_{10} Sampler, Federal Reference Method (FRM)
X_{C10} Continuous PM_{10} Sampler, Federal Equivalent Method (FEM)
DSD Discontinued, listed for reference purposes

Table C-15. Southwest Region Non-Air Basin Site Locations and Parameters Monitored.

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE	OZONE	SULFUR DIOXIDE	NITROGEN DIOXIDE	CARBON MONOXIDE	$PM_{2.5}$	$PM_{2.5}$ SPEC	PM_{10}	TSP	SULFATES	LEAD	NITRATES
504	FLORENCE	42-125-5001	WASHINGTON	Hillman State Park	40 26 44 N 80 25 16 W	X	X	X		$X_{D2.5}$	X	X_{D10}				
508	WASHINGTON	42-125-0200	WASHINGTON	McCarrell & Fayette Sts	40 10 14 N 80 15 42 W	X	X	X		$X_{D2.5}$						
510	MURRYSVILLE	42-129-0006	WESTMORELAND	Murrysville Volun. Fire Co. Old William Penn Hwy & Sardis Ave.	40 25 41 N 79 41 35 W	X										
512	KITTANNING	42-005-0001	ARMSTRONG	PA State Police Barracks, Glade Dr & Nolte Rd	40 48 51 N 79 33 54 W	X				$X_{C2.5T}$						
513	GREENSBURG	42-129-0008	WESTMORELAND	PA Dept. of Transportation Bldg, Donohue Rd	40 18 17 N 79 30 20 W	X	X	X	X	$X_{D2.5}$	X	X_{C10}				
514	HOLBROOK	42-059-0002	GREENE	Field 5 km southeast of Holbrook	39 48 58 N 80 17 06 W	X	X		X							
515	STRONGSTOWN	42-063-0004	INDIANA	PA Dept. of Transportation Bldg, Rte. 403	40 33 48 N 78 55 12 W	X	X	X								

Southwest Region. Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington and Westmoreland Counties

Table C-16. Upper Beaver Valley-Air Basin Site Locations and Parameters Monitored.

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE	OZONE	SULFUR DIOXIDE	NITROGEN DIOXIDE	CARBON MONOXIDE	$PM_{2.5}$	$PM_{2.5}$ SPEC	PM_{10}	TSP	SULFATES	LEAD	NITRATES
B21	NEW CASTLE	42-073-0015	LAWRENCE	Croton Ave & Jefferson St	40 59 45 N 80 20 48 W	X	X	X	X			X_{C10}				

Northwest Region. Butler, Clarion, Crawford, Elk, Erie, Forest, Jefferson, Lawrence, McKean, Mercer, Venango and Warren Counties

X Parameter monitored at the site
$X_{D2.5}$ Discrete $PM2_{2.5}$ Sampler, Federal Reference Method (FRM)
$X_{C2.5T}$ Continuous $PM_{2.5}$ Sampler (TEOM)
$X_{C2.5B}$ Continuous $PM_{2.5}$ Sampler (BAM)
X_{D10} Discrete PM_{10} Sampler, Federal Reference Method (FRM)
X_{C10} Continuous PM_{10} Sampler, Federal Equivalent Method (FEM)
DSD Discontinued, listed for reference purposes

Table C-17. Erie-Air Basin Site Locations and Parameters Monitored.

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE	OZONE	SULFUR DIOXIDE	NITROGEN DIOXIDE	CARBON MONOXIDE	$PM_{2.5}$	$PM_{2.5}$ SPEC	PM_{10}	TSP	SULFATES	LEAD	NITRATES
E10	ERIE	42-049-0003	ERIE	East 10th & Marne Sts	42 08 30 N 80 02 19 W	X	X	X	X	$X_{D2.5}$	X	X_{C10}				
E12 DSD	ERIE CBD	42-049-0101	ERIE	West 12th & Myrtle Sts	42 07 14 N 80 05 21 W				DSD							

Northwest Region. Butler, Clarion, Crawford, Elk, Erie, Forest, Jefferson, Lawrence, McKean, Mercer, Venango and Warren Counties

Table C-18. Northwest Region Non-Air Basin Site Locations and Parameters Monitored.

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE	OZONE	SULFUR DIOXIDE	NITROGEN DIOXIDE	CARBON MONOXIDE	$PM_{2.5}$	$PM_{2.5}$ SPEC	PM_{10}	TSP	SULFATES	LEAD	NITRATES
606	FARRELL	42-085-0100	MERCER	Farrell High School Field, New Castle Rd & Mercer Ave	41 12 52 N 80 28 59 W	X	X			$X_{D2.5}$						
611	WARREN HIGH SCHOOL	42-123-0003	WARREN	School District Building, 345 E 5th Ave	41 51 26 N 79 08 15 W		X									
612	WARREN OVERLOOK	42-123-0004	WARREN	Overlook Site near Stone Hill Rd	41 50 41 N 79 10 11 W		X									

Northwest Region. Butler, Clarion, Crawford, Elk, Erie, Forest, Jefferson, Lawrence, McKean, Mercer, Venango and Warren Counties

X Parameter monitored at the site
$X_{D2.5}$ Discrete $PM2_{2.5}$ Sampler, Federal Reference Method (FRM)
$X_{C2.5T}$ Continuous $PM_{2.5}$ Sampler (TEOM)
$X_{C2.5B}$ Continuous $PM_{2.5}$ Sampler (BAM)
X_{D10} Discrete PM_{10} Sampler, Federal Reference Method (FRM)
X_{C10} Continuous PM_{10} Sampler, Federal Equivalent Method (FEM)
DSD Discontinued, listed for reference purposes

APPENDIX D. 2007 ELEMENTAL MERCURY VAPOR SUMMARY

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Air Quality

2007 ELEMENTAL MERCURY VAPOR SUMMARY

Instrumental Method: Tekran 2537A Analyzer (Cold Vapor Atomic Fluorescence Spectrometry)

Site Location: Lancaster, Lincoln Junior High School

Monitoring for Mercury Vapor Started June 21, 1999

Valid Hours: 7679 (87.7% Data Availability)

Units: nanograms per cubic meter (ng/m^3)

Annual Average (Mean)		
1st Maximum Hour Average	21.3	01/03/2007 04:00
2nd Maximum Hour Average	18.9	01/14/2007 00:00
3rd Maximum Hour Average	18.6	01/13/2007 22:00
Maximum 5-minute Sample	32.6	01/03/2007 02:30

Number of 1-Hour Average Values in Ranges

0 to 1	1 to 2	2 to 4	4 to 6	6 or more
2.19%	85.92%	9.66%	1.19%	1.04%

Mercury Vapor Historical Trend

	1999*	2000	2001	2002	2003	2004	2005	2006	2007
Annual Mean	1.8	1.8	1.8	1.8	1.8	1.7	1.6	2.1	1.6
1st Maximum Hour Average	7.9	37.2	7.4	16.7	6.95	26.0	9.09	122.1	21.5
2nd Maximum Hour Average	7.6	32.3	7.3	14.5	5.78	12.4	7.27	84.5	18.9

* June 21, 1999 through December 31, 1999

An episode of higher than normal mercury vapor concentrations started on December 6, 2006, and continued for several weeks with concentrations gradually decreasing. The Department investigated but did not locate the source of mercury emissions. By March 2007, the ambient mercury concentrations had dropped to levels measured historically at this site.

There are no national or Pennsylvania Ambient Air Quality Standards
Other Standards or guidelines:
Agency for Toxic Substances and Disease Registry of the U. S. Dept. of Health and Human Services (ATSDR) Minimal Risk Level for Hazardous Substances, Inhalation Chronic 0.0002 mg/m3 (200 ng/m^3)
Neurol. Final 03/99 007439-97-6

EPA Integrated Risk Information System (IRIS) Reference Concentration: 0.0003 mg/m^3 (300 ng/m^3)

APPENDIX E. MONITORING METHODS

EPA mandates specific methods of sampling and analysis for all pollutants regulated by national ambient air quality standards (NAAQS). These regulations are published in the Code of Federal Regulations (CFR), and are adhered to by DEP. EPA generally approves one analysis method for each pollutant known as the Federal Reference Method (FRM). If a different method can be shown to provide adequate analysis, it may be submitted and approved by the EPA as a Federal Equivalent Method (FEM) or Automated Equivalent Method (AEM) and used in place of the FRM. DEP uses only FRM or FEM methods for all NAAQS-regulated pollutant monitoring.

EPA-approved methods include both continuous and discrete methods.

Continuous methods are automated methods that analyze continuous samples of ambient air for the specified pollutant *in situ*. The output of these specialized air monitoring instruments are hourly pollutant concentrations, which are electronically transmitted to and stored in a data logging device (datalogger). The data is transferred from the datalogger to central operations via DEP's telecommunication network, where real-time measurements can be accessed.

Discrete methods are "manual" methods that require physical removal of a sample (usually a filter through which ambient air as been passed) from its collection site. For this reason, the pollutant concentrations obtained are for a defined or "discrete" period of time; air is not sampled continuously by the instrument.

Table E-1 provides details on the methods and instrumentation utilized by the Bureau of Air Quality, Air Quality Monitoring Division.

Table E-1. Ambient Air Monitoring Equipment and Methods.

PARAMETER	MANUFACTURER/INSTRUMENT/MODEL	EPA METHOD DESIGNATION
Continuous Gaseous Sampling		
O_3	Teledyne Advanced Pollution Instrumentation Model 400 Photometric Ozone Analyzer http://www.teledyne-api.com/products/400e.asp	Automated Equivalent Method: EQOA-0992-087 57 FR 44565, 9/28/92 63 FR 31992, 6/11/98 67 FR 57811, 9/12/02
SO_2	Teledyne Advanced Pollution Instrumentation Model 100A UV Fluorescence SO_2 Analyzer http://www.teledyne-api.com/products/100e.asp	Automated Equivalent Method: EQSA-0990-077 55 FR 38149, 9/17/90
NO/ NO_2 /NO_x	Teledyne Advanced Pollution Instrumentation Model 200A Chemiluminescence Nitrogen Oxides Analyzer for Ambient Concentrations http://www.teledyne-api.com/products/200e.asp	Automated Reference Method: RFNA-0691-082 56 FR 27014, 6/12/91
CO	Teledyne Advanced Pollution Instrumentation Model 300 CO Gas Filter Correlation Analyzer http://www.teledyne-api.com/products/300e.asp	Automated Reference Method: RFCA-1093-093 58 FR 58166, 10/29/93
Particulate Sampling		
$PM_{2.5}$		
Discrete	R&P Partisol-Plus Model 2025 Sequential Air Sampler http://www.rpco.com/products/ambprod/amb2025/index.htm	Manual Reference Method: RFPS-0498-118 63 FR 18911, 4/16/98
Continuous	R&P TEOM Series 8500a Filter Dynamics Measurement System (FDMS) and TEOM Series 1400ab http://www.rpco.com/products/ambprod/amb8500/index.htm	
	Met One Instruments Beta-Attenuation Mass (BAM) Model 1020 http://www.metone.com/documents/BAM1020Particulate.pdf	
$PM_{2.5}$ Speciation	Met One Instruments SASS $PM_{2.5}$ Ambient Chemical Speciation Air Sampler http://www.metone.com/documents/SASS0301Particulate.pdf	

PARAMETER	MANUFACTURER/INSTRUMENT/MODEL	EPA METHOD DESIGNATION
PM_{10}		
Discrete	Thermo GMW PM_{10} High-Volume Air Sampler - Volumetric http://www.thermo.com/com/cda/product/detail/1,1055,23297,00.html	Manual Reference Method: RFPS-1287-063 52 FR 45684, 12/01/87 53FR 1062, 1/15/88
Continuous	Rupprecht & Patashnick (R&P) Tapered Element Oscillating Microbalance (TEOM) Series 1400 Ambient Particulate Monitor http://www.rpco.com/products/ambprod/amb1400/index.htm	Automated Equivalent Method: EQPM-1090-079 55 FR 43406, 10/29/90
TSP	Thermo GMW TSP High Volume Air Sampler – Mass Flow http://www.thermo.com/com/cda/product/detail/1,1055,23329,00.html and Thermo GMW TSP High Volume Air Sampler – Volumetric http://www.thermo.com/com/cda/product/detail/1,1055,23328,00.html	Manual Reference Method 40 CFR Part 50, Appendix B 47 FR 54912, 12/6/82 48 FR 17355, 4/22/83
Pb	Laboratory analysis of TSP filters by Inductively Coupled Argon Plasma-Optical Emission Spectrometry	Manual Equivalent Method EQL-0592-086 57 FR 20823, 5/15/92
SO_4, NO_3	Laboratory analysis of TSP filters by Ion Chromatography	EPA Method 300.0

This and related environmental information are available electronically via the Internet. For more information, visit us through the DEP web site at http://www.depweb.state.pa.us/(DEP Keyword **:** Air, Air Pollution, Air Quality, Clean Air)

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