



pennsylvania
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

Commonwealth of Pennsylvania
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2015 Annual Ambient Air Monitoring
Network Plan

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Commonwealth of Pennsylvania

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List of Acronyms

APCA	Air Pollution Control Act
AQS	Air Quality System
BAM	Beta Attenuation Monitor
CAA	Clean Air Act
CBSA	Core based statistical area
CFR	Code of Federal Regulations
CSA	Combined Statistical Area
CSN	Chemical Speciation Network
CO	Carbon Monoxide
COPAMS	Commonwealth of Pennsylvania's Air Monitoring System
EPA	U. S. Environmental Protection Agency
FDMS	Filter Dynamics Measurement System
FEM	Federal Equivalent Method
FID	Flame Ionization Detector
FRM	Federal Reference Method
GC	Gas Chromatograph
IR	Infrared (radiation)
H ₂ S	Hydrogen Sulfide
MSA	Metropolitan Statistical Area
NAAQS	National Ambient Air Quality Standards
NCore	National Core multipollutant monitoring stations
NO	The gaseous pollutant Nitrogen Oxide
NO ₂	The gaseous pollutant Nitrogen Dioxide
NO _x	Oxides of Nitrogen
O ₃	The gaseous pollutant Ozone
PA DEP	Pennsylvania Department of Environmental Protection
PAMS	Photochemical Assessment Monitoring Station
Pb	Lead
PM _{2.5}	Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers
PM ₁₀	Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PM _{10-2.5}	Particulate matter with an aerodynamic diameter between 10 and 2.5 micrometers
PWEI	Population Weighted Emissions Index
QA/QC	Quality Assurance/Quality Control
SIP	State Implementation Plan
SLAMS	State or Local Air Monitoring Stations
SO ₂	The gaseous pollutant Sulfur Dioxide
SPM	Special Purpose Monitor
TSP	Total Suspended Particulate
TEOM	Tapered Element Oscillating Microbalance
UV	Ultraviolet
VOC	Volatile Organic Compounds

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Introduction

In 1970, Congress enacted the Clean Air Act (CAA) authorizing the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) for pollutants shown to threaten human health and welfare. Primary NAAQS were promulgated by EPA according to criteria designed to protect public health, including an adequate margin of safety to protect sensitive populations including children, asthmatics and the elderly. The secondary NAAQS were promulgated by EPA according to criteria designed to protect public welfare (decreased visibility, damage to crops, vegetation, and buildings, etc.).

The EPA has promulgated NAAQS for the following pollutants: ozone (O₃), carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), particulate matter less than 10 microns (PM₁₀), particulate matter less than 2.5 microns (PM_{2.5}), and lead (Pb). These pollutants are commonly called the “criteria” pollutants. In accordance with Section 107 of the CAA, 42 U.S.C. section 7407, after EPA establishes or revises a primary and/or secondary NAAQS, EPA designates areas as “attainment,” “nonattainment”, or “unclassifiable” areas upon review of certified and quality assured ambient air monitoring data collected by state, local and tribal governments. For areas with nonattainment designations, the state and local agencies must develop and submit to EPA revisions to State Implementation Plans (SIPs) outlining how areas will attain and maintain the standards by reducing air pollutant emissions. Table 1 below lists all of the NAAQS for the criteria pollutants and is available at <http://www.epa.gov/air/criteria.html>.

Table 1. National Ambient Air Quality Standards (NAAQS)

Pollutant [final rule cite]	Primary/ Secondary	Averaging Time	Level	Form	
Carbon Monoxide [76 FR 54294, Aug 31, 2011]	Primary	8-hour 1-hour	9 ppm 35 ppm	Not to be exceeded more than once per year	
Lead [73 FR 66964, Nov 12, 2008]	Primary and Secondary	Rolling 3 month average	0.15 µg/m ³ (1)	Not to be exceeded	
Nitrogen Dioxide [75 FR 6474, Feb 9, 2010] [61 FR 52852, Oct 8, 1996]	Primary	1-hour	100 ppb	98th percentile, averaged over 3 years	
	Primary and Secondary	Annual	53 ppb (2)	Annual Mean	
Ozone [73 FR 16436, Mar 27, 2008]	Primary and Secondary	8-hour	0.075 ppm (3)	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years	
Particle Pollution Dec 14, 2012 [78 FR 3086, Jan 15, 2013]	PM _{2.5}	Primary	Annual	12 µg/m ³	annual mean, averaged over 3 years
		Secondary	Annual	15 µg/m ³	annual mean, averaged over 3 years
		Primary and Secondary	24-hour	35 µg/m ³	98th percentile, averaged over 3 years
	PM ₁₀	Primary and Secondary	24-hour	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide [75 FR 35520, Jun 22, 2010] [38 FR 25678, Sept 14, 1973]	primary	1-hour	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years	
	secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year	

(1) Final rule signed October 15, 2008. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remained in effect until one year after an area was designated for the 2008 standard, except that in areas designated nonattainment for the 1978, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

(2) The official level of the annual NO₂ standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard.

(3) Final rule signed March 12, 2008. The 1997 ozone standard (0.08 ppm, annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years) and related implementation rules remain in place. In 1997, EPA revoked the 1-hour ozone standard (0.12 ppm, not to be exceeded more than once per year) in all areas, although some areas have continued obligations under that standard (“anti-backsliding”). The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is less than or equal to 1.

(4) Final rule signed June 2, 2010. The 1971 annual and 24-hour SO₂ standards were revoked in that same rulemaking. However, these standards remained in effect until one year after an area was designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.

Ambient Air Monitoring Program History

The Air Pollution Control Act of 1955 was the first federal legislation involving air pollution. This Act provided funds for federal research in air pollution. The Clean Air Act of 1963 was the first federal legislation regarding air pollution *control*. It established a federal program within the U.S. Public Health Service and authorized research into techniques for monitoring and controlling air pollution. In 1967, the Air Quality Act was enacted in order to expand federal government activities. In accordance with this law, enforcement proceedings were initiated in areas subject to interstate air pollution transport. As part of these proceedings, the federal government for the first time conducted extensive ambient monitoring studies and stationary source inspections.¹

The federal Clean Air Act Amendments of 1970 included provisions which established criteria pollutants, authorized EPA to set national ambient air quality standards, and required states to develop SIPs, which include enforceable requirements and control measures to attain and maintain the standards.

The Pennsylvania Air Pollution Control Act (APCA), enacted originally on January 8, 1960, 35 P.S. Section 4001 et seq., established the framework for the Commonwealth's Air Pollution Control Program. The Declaration of Policy set forth in Section 2 of the APCA, 35 P.S. Section 4002, provides as set forth below.

It is hereby declared to be the policy of the Commonwealth of Pennsylvania to protect the air resources of the Commonwealth to the degree necessary for the (i) protection of public health, safety and well-being of its citizens; (ii) prevention of injury to plant and animal life and to property; (iii) protection of the comfort and convenience of the public and the protection of the recreational resources of the Commonwealth; (iv) development, attraction and expansion of industry, commerce and agriculture; and (v) implementation of the provisions of the Clean Air Act in the Commonwealth.

Section 4 of the APCA empowers the Department of Environmental Protection (formerly the Department of Environmental Resources and hereafter referred to as the PA DEP or Department) to implement the provisions of the Clean Air Act in the Commonwealth. 35 P.S. Section 4004(1).

When established in 1971, the Department implemented air pollution control programs to protect the air resources of the Commonwealth that, with a great deal of success, have largely addressed major public health and welfare air quality concerns. Significant changes have occurred over the years with the program, notably with the passage of the Clean Air Act Amendments in 1990 as well as the adoption and implementation of PM_{2.5} NAAQS requirements in 1997. Currently, PA DEP has an extensive air quality monitoring program that not only monitors for criteria pollutants, but also for air toxics and volatile organic compounds (VOCs).

¹ http://www.epa.gov/air/caa/caa_history.html

General Descriptions of Criteria Pollutants

Carbon Monoxide (CO)

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 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.

Carbon monoxide is measured by infrared absorption photometry. A continuous flow of air is drawn through a sample cell where infrared light passes through it. The carbon monoxide molecules absorb a portion of the infrared light. This reduces the amount of light getting to the sensor. The light is then converted into an electrical signal related to the concentration of carbon monoxide in the sample cell.

Fine Particulate Matter (PM_{2.5})

Fine particulate matter 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_{2.5} is sampled by drawing air through a specially designed inlet that excludes particles larger than 2.5 microns in diameter. For the manual Federal Reference Method (FRM) sampler, the particles are collected on a Teflon™ Microfiber filter that is weighed to determine the particulate mass. The normal sampling schedule is for a 24-hour sample to be taken daily. In addition, PA DEP utilizes Federal Equivalent Method (FEM) Met One Model 1020 and Thermo-Fisher TEOM-FDMS monitors.

Lead (Pb)

Lead is emitted to the atmosphere primarily from certain industrial processes, such as battery manufacturers and lead smelters. A portion of the private aviation sector is an additional source of lead emissions. 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.

The amount of lead in ambient air is measured by laboratory analysis of TSP filters using Inductively Coupled Plasma - Mass Spectrometry.

Nitrogen Dioxide (NO₂)

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.

Nitrogen oxides are measured using the chemiluminescence reaction of nitric oxide (NO) with ozone (O₃). Air is drawn into a reaction chamber where it is mixed with a high concentration of ozone from an internal ozone generator. Any nitric oxide mixes with ozone to produce NO₂. Light from this reaction is detected with a photomultiplier tube and converted to an electrical signal proportional to the nitric oxide concentration. Total nitrogen oxides (NO_x) are measured by passing the air through a converter where any NO₂ in the air is reduced to nitric oxide before the air is passed to the reaction chamber. By alternately passing the air directly to the reaction chamber and through the converter before the reaction chamber, the analyzer alternately measures nitric oxide and NO_x. Nitrogen dioxide (NO₂) is measured indirectly by a subtraction of the NO from the NO_x concentrations.

Ozone (O₃)

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.

Ozone is measured by ultraviolet absorption photometry. Air is drawn through a sample cell where ultraviolet light (254 nm wavelength) passes through it. Any light that is not absorbed by the ozone is then converted into an electrical signal proportional to the ozone concentration.

Particulate Matter (PM₁₀)

PM₁₀ 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 PM₁₀, the terms “PM₁₀” 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 may 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, PM₁₀ contributes to reduced visibility and degradation of man-made materials.

PM₁₀ is sampled continuously using a tapered element oscillating microbalance (TEOM). Air is drawn through a specially designed inlet that excludes particles larger than 10 microns in diameter. Particle accumulation causes changes in the microbalance oscillation that are recorded by the instrument.

Sulfur Dioxide (SO₂)

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.

Sulfur dioxide is measured with an ultraviolet fluorescence analyzer. Air is drawn through a sample cell where it is then subjected to high intensity ultraviolet light. This causes the sulfur dioxide molecules in the air to fluoresce and release light. The fluorescence is detected with a photomultiplier tube and converted to an electrical signal proportional to the SO₂ concentration.

Ambient Air Monitoring Network Requirements

On October 17, 2006, the EPA promulgated a final rule entitled “Revisions to Ambient Air Monitoring Regulations” for criteria pollutants. EPA stated in the Preamble that “[t]he purpose of the amendments is to enhance ambient air quality monitoring to better serve current and future air quality” (71 FR 61236). The October 2006 rule also includes provisions concerning state and local agency ambient air monitoring networks. In addition to establishing limited air quality monitoring requirements for thoracic coarse particles in the size range of PM_{10-2.5}, EPA also modified the general monitoring network work design requirements for ambient air monitoring networks operated and maintained by state and local agencies. The minimum requirements for the number of monitors for PM_{2.5} and ozone monitoring networks were also amended. Pursuant to Sections 58.10(a) and 58.10(b), network plans must include the following for existing and proposed monitoring sites:

- A statement of purpose for each monitor
- Evidence that siting and operation of each monitor meets the requirements of 40 CFR Part 58, Appendices A, C, D, and E where applicable
- The Air Quality System (AQS) site identification number
- The location, including street address and geographical coordinates
- The sampling and analysis method(s) for each measured parameter
- The operating schedules for each monitor
- Any proposals to remove or move a monitoring station within a period of 18 months following plan submittal
- The monitoring objective and spatial scale of representativeness for each monitor
- The identification of any sites that are suitable and sites that are not suitable for comparison against the annual PM_{2.5} NAAQS, as described in 40 CFR § 58.30
- The Metropolitan Statistical Area (MSA), Core Based Statistical Area (CBSA), Combined Statistical Area (CSA), or other area represented by the monitor

Description of PA DEP's Ambient Air Monitoring Network

Ambient air quality monitoring in Pennsylvania is performed by the PA DEP and local air pollution control agencies in Philadelphia and Allegheny Counties. The Pennsylvania Department of Environmental Protection is primarily responsible for air monitoring in the Commonwealth of Pennsylvania. PA DEP has approved local monitoring agencies to perform monitoring independently in the two most populous counties in the Commonwealth. The Allegheny County Health Department (ACHD) performs ambient air monitoring in Allegheny County, while the City of Philadelphia Health Department's Air Management Services (AMS) performs ambient air monitoring in Philadelphia County. In addition to monitoring performed in the Commonwealth by PA DEP, ACHD and AMS, EPA's Clean Air Markets Division operates ozone monitors at five locations in Pennsylvania, as part of the Clean Air Status and Trends Network (CASTNET) program. Contact information for all three ambient air monitoring agencies in Pennsylvania, as well as the CASTNET program, is listed in Table 2.

Table 2. Ambient Air Monitoring Agencies in Pennsylvania

Organization	Address and Phone	Internet
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	http://www.depweb.state.pa.us/ (Choose "Air" from the left-hand menu)
Allegheny County Health Department	39th Street and Penn Ave Pittsburgh, PA 15201 (412) 578-8104	http://www.achd.net/air/index.html
City of Philadelphia Department of Public Health Air Management Services	321 University Avenue Philadelphia, PA 19104 (215) 685-7584	http://www.phila.gov/health/airmanagement/
CASTNET	US EPA Clean Air Markets Division 1200 Pennsylvania Avenue, NW Mail Code 6204M Washington, DC 20460 (202) 343-9790	http://epa.gov/castnet/javaweb/index.html

The PA DEP Air Monitoring Network consists of 72 air monitoring stations, located in 39 of the 67 counties in Pennsylvania. Criteria pollutant monitoring is performed at 63 of the 72 monitoring stations; air toxics monitoring is performed at 20 of the 72 monitoring stations.

The Department operates the Commonwealth of Pennsylvania Air Monitoring System (COPAMS) as its air monitoring network for criteria pollutants. The COPAMS network consists of 63 stations, located in 35 Pennsylvania counties, and encompasses both continuous and discrete methods of pollutant sampling. The continuous portion of the COPAMS network utilizes a totally automatic, microprocessor-controlled system of 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. PA DEP utilizes continuous methods for the following pollutants: ozone, sulfur dioxide, nitrogen dioxide, oxides of nitrogen, carbon monoxide, hydrogen sulfide, PM_{2.5}, and PM₁₀. Various meteorological data from many of the COPAMS stations are 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 at the PA DEP Bureau of Laboratories. A discrete method is generally defined as a “manual” method of sampling, most commonly using an air filter to trap air pollutants from ambient air on a filter substrate for a defined or “discrete” period of time. The filter is then removed from the collection site and analyzed by the PA DEP Bureau of Laboratories in Harrisburg, PA. 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 (PM₁₀) and lead. In addition, PA DEP conducts PM_{2.5} speciation monitoring at selected sites. Speciation analysis provides a breakdown of PM_{2.5} constituent compounds. Speciation analysis is performed at the Research Triangle Institute (RTI) laboratory in Research Triangle Park, NC.

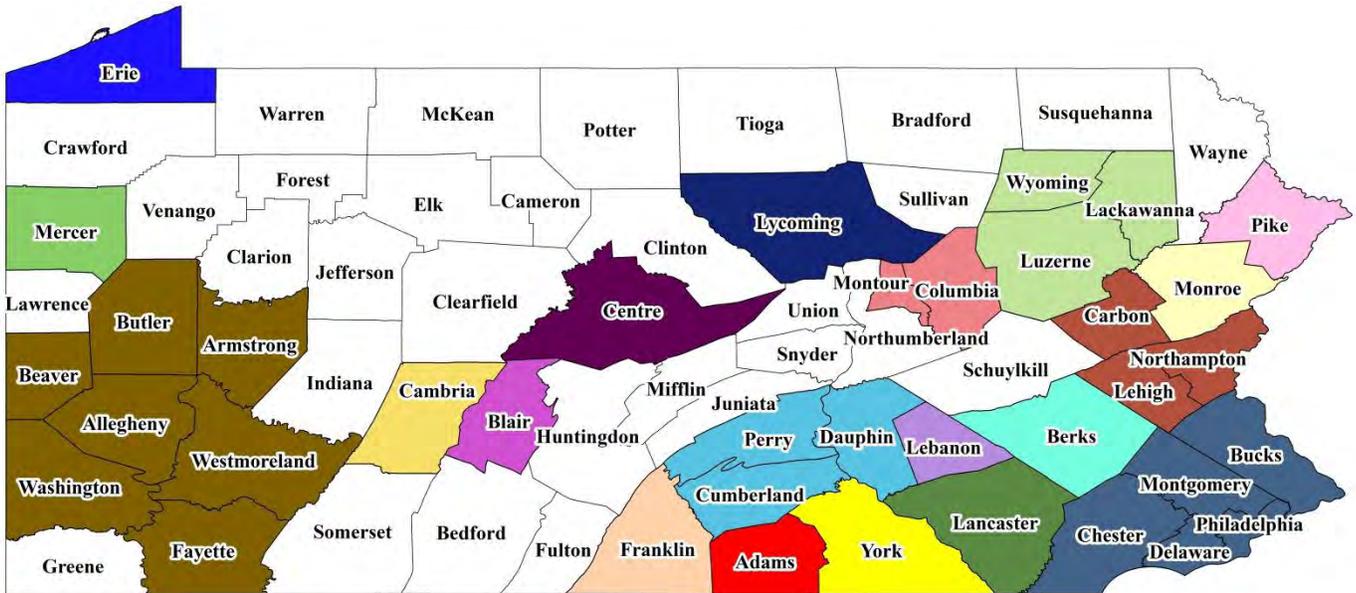
The Air Toxics component of the PA DEP Air Monitoring Network utilizes various continuous and discrete sampling methods to monitor for selected toxic air pollutants, including heavy metals such as mercury and chromium; and VOCs such as benzene, trichloroethylene, and methylene chloride. Although there are no national concentration standards for these pollutants, PA DEP uses approved EPA analytical methods to determine ambient concentrations. PA DEP conducts air toxics monitoring at 20 stations, located in 15 Pennsylvania counties.

This document does not provide detailed descriptions of the monitoring networks operated and maintained by the PA DEP- approved local air pollution control programs in Philadelphia and Allegheny Counties. ACHD operates a network of seventeen ambient air monitoring stations, including one multi-pollutant NCore site, throughout Allegheny County. Philadelphia AMS operates a network of twelve air monitoring sites, including one multi-pollutant NCore site and two community-based monitoring sites, located throughout Philadelphia County. In addition to criteria pollutant monitoring, these agencies also conduct monitoring for air toxics and chemical speciation of PM_{2.5} at selected sites. Detailed descriptions of local networks and plans are submitted to EPA by the local agencies, and may be obtained directly from the agencies, using the contact information listed in Table 2 of this document.

Overview of Pennsylvania's Ambient Air Monitoring Network

The Department's monitoring strategy requires the installation of monitors in areas under PA DEP's jurisdiction having high population density and/or high levels of contaminants, based on EPA guidance and population information from the U.S. Office of Management and Budget (OMB). The OMB defines urbanized areas of concentrated population of 50,000 or greater as Metropolitan Statistical Areas (MSA). The Commonwealth of Pennsylvania encompasses twenty MSAs, either wholly or in part. Figure 1 displays the geographical boundaries of MSA regions and population estimates for 2014 available at <http://www.census.gov>. Note that several MSA include populations outside the Commonwealth, as indicated by the inclusion of one or more state abbreviations in the MSA name. The Code of Federal Regulations (CFR) sets forth minimum monitoring requirements based at least in part on population statistics for ozone, sulfur dioxide, nitrogen dioxide and particulate matter (PM) monitoring networks. PA DEP conducts air monitoring surveillance in both MSA and non-MSA regions. Appendix A of this document contains maps of PA DEP monitoring sites, for each MSA and non-MSA region.

Figure 1. Map of Metropolitan Statistical Areas (MSA) in Pennsylvania

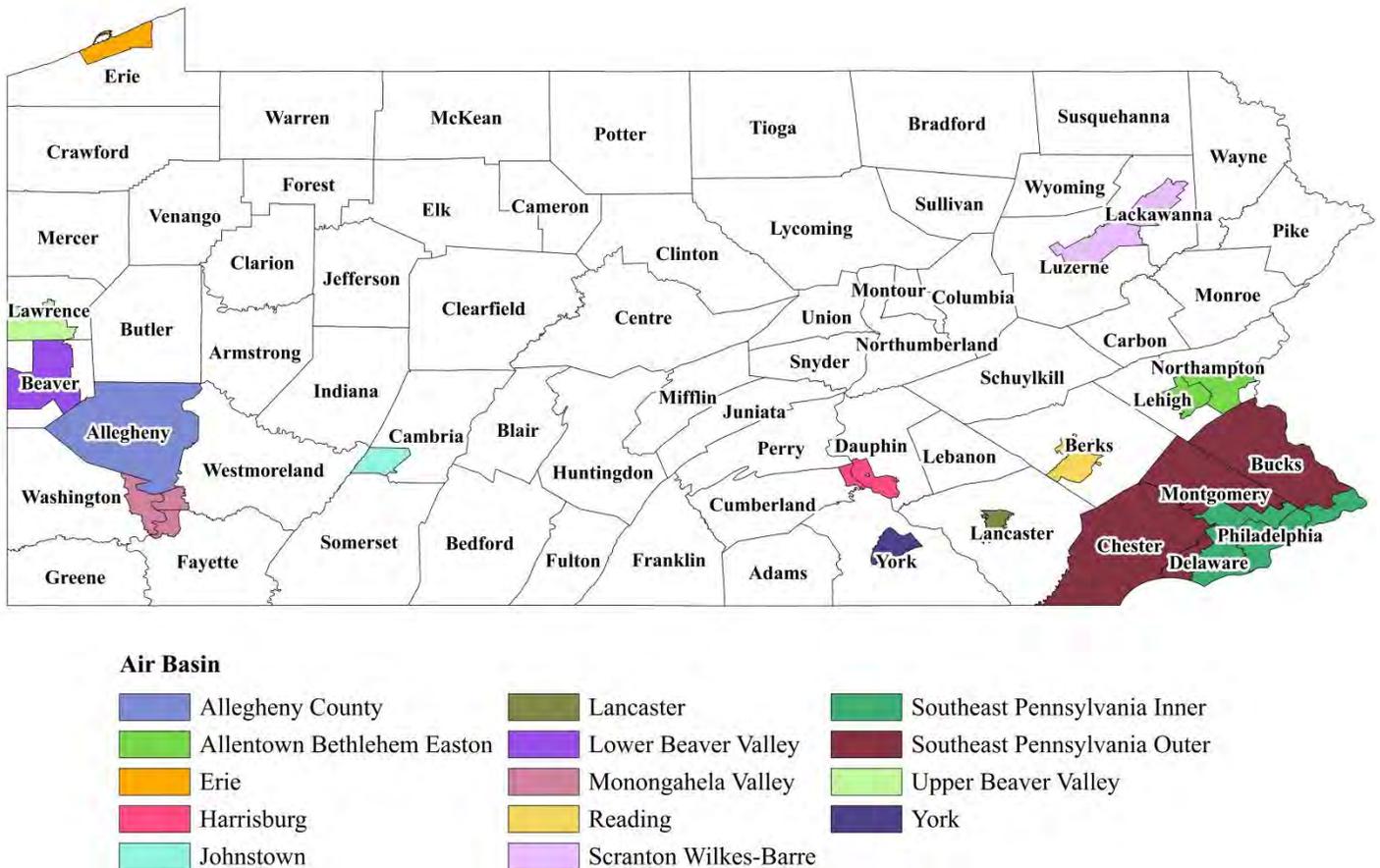


LEGEND:

MSA	Population	MSA	Population
Allentown-Bethlehem-Easton, PA-NJ	829,835	New York-Newark-Jersey City, NY-NJ-PA	20,092,88
Altoona, PA	125,955	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	6,051,170
Bloomsburg-Berwick, PA	85,763	Pittsburgh, PA	2,355,968
Chambersburg-Waynesboro, PA	152,892	Reading, PA	413,691
East Stroudsburg, PA	166,314	Scranton--Wilkes-Barre--Hazleton, PA	559,679
Erie, PA	278,443	State College, PA	158,742
Gettysburg, PA	101,714	Williamsport, PA	116,508
Harrisburg-Carlisle, PA	560,849	York-Hanover, PA	440,755
Johnstown, PA	137,732	Youngstown-Warren-Boardman, OH-PA	553,263
Lancaster, PA	533,320	Non-MSA Regions	
Lebanon, PA	136,359		

In addition to conducting monitoring in the federally defined MSA, almost half of the PA DEP air monitoring stations are located in the “air basins” of the Commonwealth. Air basins as defined in 25 Pa. Code § 121.1 (relating to definitions) consist of thirteen geographical areas shown below in Figure 2 (relating to the map of Pennsylvania Air Basins). Figure 2 displays the geographical boundaries of these areas. PA DEP conducts air monitoring surveillance in both air basin and non-air basin regions.

Figure 2. Map of Pennsylvania Air Basins

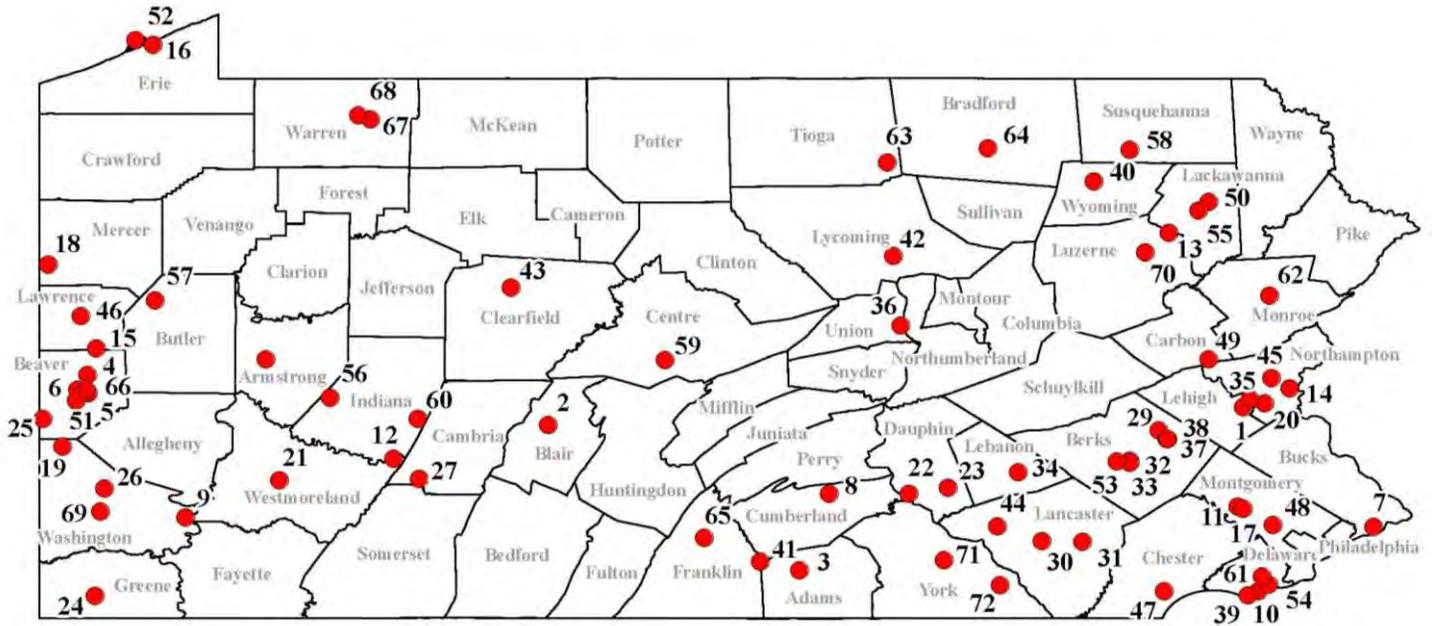


PA DEP maintains a cooperative agreement with Pennsylvania State University’s (PSU) Department of Plant Pathology for ozone monitoring in following areas of the Commonwealth: in State College, Centre County (on the grounds of the PSU arboretum), in the Moshannon State Forrest, Clearfield County, and Gleason, Tioga County. PSU uses ozone data collected from this cooperative monitoring effort to determine detrimental effects to Pennsylvania’s forests and crops, and to assess ozone transport in rural Pennsylvania. Under the same cooperative agreement, PSU also operates ozone and NO₂ monitors near Towanda, Bradford County to assess air quality downwind of Marcellus shale gas extraction drilling sites and gas compression facilities.

Commonwealth of Pennsylvania's Air Monitoring Network Sites

The map shown below in Figure 3 (relating to the map of PA DEP air monitoring network) displays the site locations of all ambient air monitoring stations in the Commonwealth's Ambient Air Monitoring Network. Table 3 (relating to PA DEP Air Monitoring Network Sites and Parameters Monitored) provides a listing of the parameters monitored at each location.

Figure 3. Map of PA DEP Air Monitoring Network



Legend:

MAP ID	SITE NAME	MAP ID	SITE NAME	MAP ID	SITE NAME	MAP ID	SITE NAME
1	ALLENTOWN	19	FLORENCE	37	LYONS BORO	55	SCRANTON
2	ALTOONA	20	FREEMANSBURG	38	LYONS PARK	56	SHELOCTA
3	ARENDTSTVILLE	21	GREENSBURG	39	MARCUS HOOK	57	SLIPPERY ROCK
4	BEAVER FALLS	22	HARRISBURG	40	MEHOOPANY	58	SPRINGVILLE
5	BEAVER VALLEY	23	HERSHEY	41	METHODIST HILL	59	STATE COLLEGE
6	BRIGHTON TWP	24	HOLBROOK	42	MONTOURSVILLE	60	STRONGSTOWN
7	BRISTOL	25	HOOKSTOWN	43	MOSHANNON	61	SWARTHMORE
8	CARLISLE	26	HOUSTON	44	MT JOY	62	SWIFTWATER
9	CHARLEROI	27	JOHNSTOWN	45	NAZARETH	63	TIOGA COUNTY
10	CHESTER	28	KITTANNING	46	NEW CASTLE	64	TOWANDA
11	COLLEGEVILLE	29	KUTZTOWN	47	NEW GARDEN	65	UPPER STRASBURG
12	CONEMAUGH	30	LANCASTER	48	NORRISTOWN	66	VANPORT
13	DURYEA	31	LANCASTER DOWNWIND	49	PALMERTON	67	WARREN EAST
14	EASTON	32	LAURELDALE NORTH	50	PECKVILLE	68	WARREN OVERLOOK
15	ELLWOOD CITY	33	LAURELDALE SOUTH	51	POTTER TOWNSHIP	69	WASHINGTON
16	ERIE	34	LEBANON	52	PRESQUE ISLE	70	WILKES BARRE
17	EVANSBURG UNITED METHODIST	35	LEHIGH VALLEY	53	READING AIRPORT	71	YORK
18	FARRELL	36	LEWISBURG	54	RIDLEY PARK	72	YORK DOWNWIND

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

Table 3. PA DEP Air Monitoring Network Sites and Parameters Monitored

Site Name	Criteria Pollutants								Air Toxics				
	Ozone	Sulfur Dioxide	Nitrogen Dioxide	Carbon Monoxide	PM _{2.5}	PM _{2.5} Speciation	PM ₁₀	Lead	VOC	Carbonyls	TSP/ Metals	Mercury	Hydrogen Sulfide
ALLENTOWN	X						X						
ALTOONA	X	X			X		X						
ARENDTSMILLE	X	X	X	X	X				X	X			
BEAVER FALLS	X		X		X		X		X				
BEAVER VALLEY								X			X		
BRIGHTON TWP	X	X											
BRISTOL	X	X	X		X								
CARLISLE					X								
CHARLEROI	X	X	X	X	X		X		X				
CHESTER	X	X	X		X	X	X	X	X		X		
COLLEGEVILLE									X				
CONEMAUGH								X					
DURVEA								X					
EASTON	X	X											X
ELLWOOD CITY								X					
ERIE	X	X	X	X	X	X	X						
EVANSBURG UNITED METHODIST									X				
FARRELL	X				X								
FLORENCE	X	X			X	X							
FREEMANSBURG	X		X		X	X			X				
GREENSBURG	X				X	X			X				
HARRISBURG	X				X								
HERSHEY	X						X						
HOLBROOK	X	X											
HOOKSTOWN	X	X											
HOUSTON			X						X	X			
JOHNSTOWN	X	X	X	X	X	X	X						
KITTANNING	X				X								
KUTZTOWN	X												
LANCASTER	X		X		X	X	X		X	X	X	X	
LANCASTER DOWNWIND	X				X								
LAURELDALE NORTH								X					
LAURELDALE SOUTH								X					
LEBANON	X				X								
LEHIGH VALLEY					X								
LEWISBURG									X	X	X		
LYONS BORO								X					
LYONS PARK								X					
MARCUS HOOK					X	X			X				
MEHOOPANY									X				
METHODIST HILL	X												
MONTOURSVILLE	X						X						
MOSHANNON	X												
MT JOY								X					
NAZARETH								X					
NEW CASTLE	X	X					X						
NEW GARDEN	X				X	X							
NORRISTOWN	X	X			X								
PALMERTON								X					
PECKVILLE	X												
POTTER TOWNSHIP								X					
PRESQUE ISLE									X		X		
READING AIRPORT	X	X	X		X				X		X		
RIDLEY PARK								X					
SCRANTON	X		X	X	X								
SHELOCTA								X					
SLIPPERY ROCK									X		X		
SPRINGVILLE									X				
STATE COLLEGE	X	X	X		X								
STRONGTOWN	X	X											
SWARTHMORE									X		X		
SWIFTWATER	X				X								
TIOGA COUNTY	X		X		X								
TOWANDA	X		X										
UPPER STRASBURG								X					
VANPORT								X					
WARREN EAST		X											X
WARREN OVERLOOK		X											
WASHINGTON	X				X								
WILKES BARRE	X	X					X						
YORK	X	X	X	X	X		X		X				
YORK DOWNWIND	X												
TOTALS	42	21	16	6	29	9	14	16	19	4	8	1	2

Changes to Monitoring Sites and Monitors in 2014-2015

The Department has completed several modifications to its air monitoring network in the 2014-2015 time period. Those changes are briefly described below in Table 4 (relating to a Summary of Changes to the PA DEP Air Monitoring Network in 2014-2015).

Table 4. Summary of Changes to the PA DEP Air Monitoring Network in 2014-2015

Site Terminations
<ol style="list-style-type: none"> 1) Discontinued Perry County site (Ozone, SO₂ and NO₂) 2) Discontinued Nanticoke (Luzerne County) site – Ozone 3) Discontinued Murrysville site – Ozone
Site Relocations
<ol style="list-style-type: none"> 1) Moved Beaver Valley (Beaver County) monitoring site from location in Beaver Valley Mall to location offsite 2) Moved Scranton (Lackawanna County) monitoring site from location on PSU-Worthington campus to Marywood University and Updated spatial scale for the PM_{2.5} monitor from “urban” to “neighborhood”
Modifications to the Ozone Network
<ol style="list-style-type: none"> 1) Installed ozone monitor at Arendtsville (Adams County) monitoring site. 2) Discontinued ozone monitoring at the Nanticoke (Luzerne County), Murrysville (Westmoreland County) and Perry County sites, due to the termination of monitoring activities at those sites.
Modifications to the SO₂ Network
<ol style="list-style-type: none"> 1) Installed SO₂ monitor at Arendtsville (Adams County) regional background site 2) Discontinued SO₂ monitoring at the Perry County monitoring site due to site termination
Modifications to the NO₂ Network
<ol style="list-style-type: none"> 1) Designated NO₂ monitor at Houston (Washington County) monitoring site as a SLAMS monitor 2) Discontinued NO₂ monitoring at Perry County due to the termination of monitoring activities
Modifications to the CO Network
<ol style="list-style-type: none"> 1) Discontinued CO monitoring at Bristol (Bucks County), Freemansburg (Northampton County), Houston (Washington County), New Castle (Lawrence County) and Reading (Berks County) sites
Modifications to the PM_{2.5} Network
<ol style="list-style-type: none"> 1) Installed PM_{2.5} monitor at the Tioga County monitoring site 2) Installed PM_{2.5} and PM_{2.5} speciation monitors at the Marcus Hook (Delaware County) site 3) Installed PM_{2.5} speciation monitor at Chester (Delaware County) site 4) Due to loss of EPA funding, discontinued speciation monitoring at Erie (Erie County), Harrisburg (Dauphin County), Reading Airport (Berks County), Scranton (Lackawanna County), State College (Centre County) and York (York County)
Modifications to the PM₁₀ Network
<ol style="list-style-type: none"> 1) Discontinued PM₁₀ monitoring at Harrisburg (Dauphin County) and Reading (Berks County) sites
Modifications to the Air Toxics Network
<ol style="list-style-type: none"> 1) Completed Washington County Marcellus shale monitoring study data collection at end of 2013. 2) Keep the primary Washington County Marcellus study site as a permanent site and renamed as “Houston” 3) Discontinued Ozone, CO, PM_{2.5}, H₂S and Methane/Nonmethane SPM monitoring at Houston site

Site Terminations:

Following EPA approvals, PA DEP discontinued three State and Local Air Monitoring Station (SLAMS) sites in 2014 – Nanticoke (Luzerne County), Murrysville (Westmoreland County) and Perry County. Pollutant concentrations measured at these sites were well below the relevant NAAQS, and not required to support NAAQS compliance, air quality modeling or air quality forecasting activities. Monitors discontinued as a result of the termination were as follows:

- Ozone – Murrysville, Nanticoke and Perry County
- SO₂ – Perry County
- NO₂ – Perry County

PA DEP removed the Murrysville and Nanticoke sites in July 2014. The Perry County monitoring station was removed at the end of October, following the completion of the ozone monitoring season (April – October). Detailed rationales for these site terminations were included in PA DEP's 2014 Annual Air Monitoring Network Plan.

Monitoring Station Relocations:

Following EPA approvals, the PA DEP moved two site locations in 2014 – Beaver Valley (Beaver County) and Scranton (Lackawanna County), due to changes in property lease holders and/or lease agreements. In October, the Beaver Valley monitoring station was relocated to property owned by the Center Township Water Authority, approximately 1/4 mile southeast of its original location at the Beaver Valley Mall.

In July, the Scranton monitoring station was moved to property owned by Marywood University, approximately 1/3 mile west of its original location at the Penn State Worthington campus. PA DEP also updated the spatial scale designation for the Scranton PM_{2.5} monitor to “neighborhood.” Considering the monitoring location's proximity to I-81, PA DEP has determined that the neighborhood scale is more appropriate in terms of the location of the monitor and the monitoring objectives (trend and compliance with federal standards), than the former designation as “urban”.

For both monitoring station relocations, EPA approved the retention of existing site identification codes in its AQS system. Detailed rationales for these relocations were included in PA DEP's 2014 Annual Air Monitoring Network Plan.

Modifications to the Ozone Network:

In November 2014, the PA DEP installed an ozone monitor at the Arendtsville (Adams County) site, to enhance the site's role as a regional background monitoring site. Additionally by siting this sensor it will provide the Department the ability to correlate reading with the CASTNET ozone monitor located at the adjacent CASTNET Arendtsville site.

In addition, PA DEP discontinued three ozone monitoring stations at the following locations in 2014: Nanticoke (Luzerne County), Murrysville (Westmoreland County) and Perry County. Detailed rationales for these terminations were included in PA DEP's 2014 Annual Air Monitoring Network Plan.

Modifications to the SO₂ Network:

In October 2014, PA DEP installed an SO₂ ozone monitor at the Arendtsville (Adams County) site, to enhance the site's role as a regional background monitoring site.

Also in October 2014, PA DEP discontinued the Perry County SO₂ monitoring station. Detailed rationale for the termination of the Perry County site was included in PA DEP's 2014 Annual Air Monitoring Network Plan.

PA DEP has updated the spatial scale of representativeness for both the SO₂ and H₂S monitors located at the Warren East (Warren County) monitoring site. As detailed in PA DEP's 2014 Annual Air Monitoring Network Plan, the micro scale designation more accurately represents the size of the air quality impact from a nearby SO₂ source at the point of monitoring, than does the original designation of neighborhood scale. The spatical scale designation has been updated in EPA's AQS database.

Modifications to the NO₂ Network:

Beginning July 1, 2014, PA DEP included the NO₂ monitor at the Houston (Washington County) site, as part of its permanent NO₂ monitoring network. This monitor has been designated as a SLAMS monitor in EPA's AQS database.

In July 2014, PA DEP discontinued the Perry County NO₂ monitoring site. Detailed rationale for the Perry County site termination was included in PA DEP's 2014 Annual Air Monitoring Network Plan.

Modifications to the CO Network:

Following EPA approvals, PA DEP discontinued CO monitoring at four SLAMS sites - Bristol (Bucks County), Freemansburg (Northampton County), New Castle (Lawrence) and Reading Airport (Berks County). PA also discontinued the CO Special Purpose Monitor (SPM) monitor at the Houston (Washington County) site. Pollutant concentrations measured at these sites were well below the relevant NAAQS, and not required to support NAAQS compliance, air quality modeling or air quality forecasting activities. PA DEP removed these monitors in July 2014. Detailed rationales for these monitor removals were included in PA DEP's 2014 Annual Air Monitoring Network Plan.

Modifications to PM_{2.5} Network:

In response to previous public comments regarding the adequacy of monitoring in the Northern Tier region, as well as the diversity of the pollutants monitored, the PA DEP installed a PM_{2.5} BAM monitor at the Tioga County site to monitor for air quality impacts of shale gas activities on regional fine particulate concentrations.

In 2014, EPA's Office of Air Quality Planning and Standards (OAQPS) conducted an assessment of the Chemical Speciation Network (CSN) to identify optimum practices and monitoring locations to create a more financially sustainable and streamlined network. As a result of this assessment, EPA preliminarily identified seven supplemental PM_{2.5} speciation sites in Pennsylvania for defunding – Arendtsville (Adams County), Erie (Erie County), Harrisburg (Dauphin County), Reading Airport (Berks County), Scranton (Lackawanna County), State

College (Centre County) and York (York County). Details regarding EPA's CSN assessment can be found at the following website: <http://www.epa.gov/ncer/events/news/2014/05-01-14-calendar.html>. PA DEP was able to work with EPA to retain funding for the Arendtsville monitor, to allow for the characterization of background PM_{2.5} constituent compounds. However, as a result of the loss of EPA funding, PA DEP discontinued the remaining six PM_{2.5} speciation monitors between November 2014 and January 2015. EPA had not reached its final funding decisions (as to which monitors would have their funding revoked) prior to the publication of PA DEP's 2014 Annual Air Monitoring Network Plan in May 2014. Therefore, the complete impacts of EPA's funding reductions on PA DEP's PM_{2.5} speciation network were not available for public comment, prior to the discontinuation of these monitors.

In December 2014, PA DEP installed a PM_{2.5} speciation monitor at the Chester (Delaware County) PM_{2.5} monitoring site. PA DEP also installed SPM PM_{2.5} BAM and PM_{2.5} speciation monitors at the Marcus Hook (Delaware County) Air Toxics monitoring site. PA DEP will analyze the data from these monitors to evaluate elevated PM_{2.5} concentrations measured by the PM_{2.5} BAM monitor at the Chester site. PA DEP previously determined that elevated PM_{2.5} concentrations measured at the Chester site are likely attributable to abnormally high silicon concentrations. Speciation data from the Chester and Marcus Hook monitoring sites will be used to assess whether or not the elevated PM_{2.5} concentrations at the Chester site are source-impacted by sodium silicate production and processing activities associated with two nearby facilities - Evonik Degussa Corporation and PQ Corporation. Detailed rationales for the installation of these monitors were included in PA DEP's 2014 Annual Air Monitoring Network Plan.

Modifications to PM₁₀ Network:

In June 2014, PA DEP discontinued the PM₁₀ monitor at the Harrisburg (Dauphin County) site. In September, PA DEP discontinued the PM₁₀ monitor at the Reading Airport (Berks County), site. Pollutant concentrations measured at these sites were well below the relevant NAAQS, and not required to support NAAQS compliance, air quality modeling or air quality forecasting activities. Detailed rationales for the removal of these monitors were included in PA DEP's 2014 Annual Air Monitoring Network Plan.

Modifications to the Air Toxics Network:

In July 2012, PA DEP initiated a year-long air sampling study to continue its assessment of air quality impacts and any potential chronic risk from natural gas operations in Pennsylvania. Although data collection for this study concluded at the end of 2013, PA DEP has retained the main study site located on Meddings Rd in Houston, Washington County. This site will be used to support criteria pollutant and air toxics monitoring in the region. The Houston site utilizes EPA-approved monitoring methods for NO₂/NO_x monitoring, and meets the siting requirements for SLAMS monitors set forth in 40 CFR Part 58. Therefore, the NO₂ monitor has been redesignated as a SLAMS monitor (formerly an SPM monitor), and is now included in PA DEP's NO₂ monitoring network. Monitoring for VOC and Carbonyls will continue as part of PA DEP's Air Toxics monitoring network. Monitors for CO, H₂S and PM_{2.5} were removed from this site in July 2014. The ozone monitor was removed in March 2015, allowing for the completion of the 2014 ozone monitoring season. Although not originally planned, PA DEP removed the methane/non-methane hydrocarbon sampler at the Houston site at the end of 2013, due to technical difficulties with the sampler.

PA DEP intended to relocate the VOC canister sampler located at the Springville site in Susquehanna County (established in March of 2013) to a location in Wyoming County that is also undergoing Marcellus shale gas well pad development, extraction, gathering and transmission. However, PA DEP decided to continue monitoring at Springville for at least one additional year to more fully develop a VOC profile for the area.

Site and Monitoring Activity Anticipated within the Next 18 Months

PA DEP is making numerous changes to its air monitoring network over the next eighteen months. These changes are summarized below in Table 5.

Table 5. Summary of Changes to the PA DEP Air Monitoring Network 2015-2016

Changes Relating to Natural Gas Extraction and Processing Activities in Marcellus Shale Regions
<ol style="list-style-type: none"> 1) Add carbonyl samplers to Mehoopany and Springville 2) Establish new SLAMS monitoring site in Fayette County – Ozone, NO_x and PM_{2.5}
Changes Relating to the Implementation of Near-Road NO₂ Monitoring
<ol style="list-style-type: none"> 1) Install Harrisburg (Dauphin County), Allentown (Lehigh County), Scranton (Lackawanna County) and Lancaster (Lancaster County) prior to Jun. 2016 2) Install Tentative equipment configuration – NO₂/NO_x, CO, PM_{2.5}, BC/Aethalometer, Meteorology and possibly traffic count
Changes Relating to the Annual Assessment of the Ambient Air Quality Monitoring Network
New Sites and Monitors
<ol style="list-style-type: none"> 1) Ozone – Establish ozone monitoring sites in Gettysburg (Adams County) and Chambersburg (Franklin County)
Monitor Relocation
<ol style="list-style-type: none"> 1) PM_{2.5} – Relocate PM_{2.5} monitor from Lehigh Valley (Northampton County) to existing Allentown (Lehigh County) site
Site and Monitor Modifications
<ol style="list-style-type: none"> 1) NO₂ – Discontinue NO₂ monitoring at Bristol (Bucks County), Lancaster (Lancaster County) and Reading Airport (Berks County) 2) CO – Discontinue CO monitoring at Charleroi (Washington County) 3) PM_{2.5} – Discontinue PM_{2.5} monitoring at Bristol (Bucks County) and Norristown (Montgomery County) 4) PM₁₀ – Discontinue PM₁₀ monitoring at Charleroi (Washington County), Chester (Delaware County), Nazareth (Northampton County), New Castle (Lawrence County), and York (York County) 5) Air Toxics – Discontinue carbonyl sampler at Lewisburg (Union County); Install PM₁₀ monitor at Ellwood City (Lawrence County) for metals sampling
Changes Currently Being Evaluated by PA DEP
Site Relocations
<ol style="list-style-type: none"> 1) Ozone – Moshannon (Clearfield County) – To a location more representative of Marcellus Shale activity? 2) Ozone – York Downwind (York County) – To a location actually downwind of York City? 3) PM_{2.5} – Lancaster Downwind (Lancaster County) – To a location not influenced by local sources?

Modifications to Air Monitoring Network: Marcellus Shale Development

- 1) Addition of carbonyl samplers at Mehoopany and Springville:
- 2) Establishment of new Site in Fayette County

Add Carbonyl Samplers at Mehoopany (Wyoming County) and Springville (Susquehanna County)

PA DEP appreciates the concerns raised regarding shale gas activities and their effect on local air quality. To this end, PA DEP continues to increase its ambient air monitoring in regions of growing natural gas extraction and production related to the Marcellus Shale formation, which transects the Commonwealth from northeast to southwestern Pennsylvania.

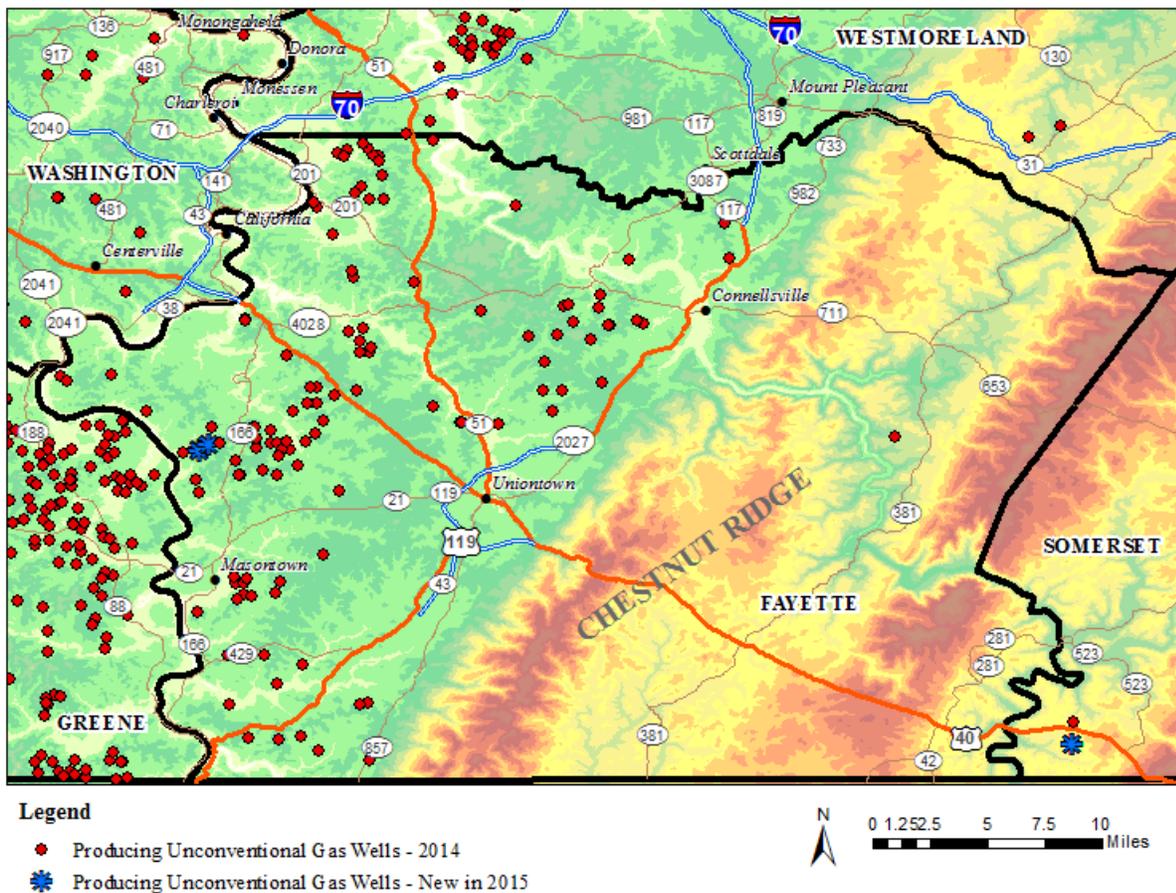
In late February 2013, the Department installed a toxic monitoring site in Susquehanna County to begin collection of ambient air hazardous air pollutant (HAP) concentration data. The purpose of the new site is to enhance the Department's understanding of ambient air toxics pollutants monitoring in the regions of Northeast Pennsylvania in the midst of Marcellus shale development and to monitor the potential for increased toxic emissions from unconventional shale extraction activities. While PADEP originally intended to relocate the Springville sampler to another location in Wyoming County after one year, the Department decided to continue monitoring at Springville for at least one additional year and to establish a new monitoring site in Wyoming County. In March 2014, PA DEP established an additional (new) monitoring site for HAP compounds in the Borough of Mehoopany in Wyoming County. Sampling at this location continued through 2014.

In 2015/2016, the Department will continue to monitor HAP compounds at both the Springville and Mehoopany sites. Additional monitoring will commence for toxic carbonyl compounds at both sites and will continue through 2015. This data can then be compared to other historical data collected at select Department ambient air toxic monitoring stations.

Establish New Monitoring Site in Fayette County

PA DEP received several public comments on its 2014 Annual Ambient Air Monitoring Network Plan expressing concern over short term exposure to pollutants in relation to shale gas activities and the effect on susceptible populations including children, or those with respiratory difficulties. Therefore, considering the growing development of Marcellus shale gas activities within the county, the PA DEP will establish a new ambient air monitoring site in Fayette County, in southwestern Pennsylvania. Figure 4 below displays unconventional gas development in Fayette County between January 2014 and February 2015².

Figure 4. Unconventional Gas Wells in Fayette County, 2014-2015



² Oil and Gas location information is available from Pennsylvania Spatial Data Access (PASDA) at <http://www.pasda.psu.edu/default.asp>, under the Pennsylvania Department of Environmental Protection Quick Link

PA DEP will locate the new monitoring site west of Uniontown, PA. This location west of the elevated terrain of the Chestnut Ridge bifurcation should allow for the capture of air quality impacts originating from the western portion of Fayette County, where gas production is concentrated. The current planned equipment configuration includes monitors for ozone, NO₂, PM_{2.5}, carbonyls and VOC.

Near-road NO₂ Site Installation Plan

On February 9, 2010, the EPA strengthened the National Ambient Air Quality Standards for nitrogen dioxide by establishing a new one- hour NO₂ NAAQS of 100 ppb based on the 3-year average of the 98th percentile of yearly maximum concentration (75 FR 6474). In addition to making the NAAQS more stringent, the 2010 NO₂ NAAQS requires NO₂ monitors to be installed in regions containing high populations and/or heavily-traveled roads or highways.³ To meet minimum monitoring requirements, area-wide NO₂ monitoring is required for MSA with populations exceeding one million persons. Near-road NO₂ monitoring is required in MSA with populations exceeding 500,000. MSA with populations greater than 2,500,000 persons, or with populations greater than 500,000 and containing a road segment with an Average Annual Daily Traffic (AADT) count of 250,000 or greater, are required to have more than one near-road NO₂ monitor. The Commonwealth of Pennsylvania contains seven MSAs, either wholly or in part, with populations greater than 500,000 persons (Figure 1). For the Pennsylvania portions of these MSAs, NO₂ near-road monitoring responsibilities are shared by PA DEP and the local air pollution control agencies – Allegheny County Health Department and Philadelphia Air Management Services. Near-road NO₂ monitoring network sites for the Pennsylvania portion of the Philadelphia-Camden-Wilmington and Pittsburgh MSAs are described in the annual air monitoring network plans of these county agencies. Based on minimum monitoring requirements, PA DEP will be installing near-road NO₂ monitors in four MSA – Allentown-Bethlehem-Easton, Harrisburg-Carlisle, Lancaster and Scranton-Wilkes-Barre-Hazleton. Table 6 below displays the population and maximum AADT for these four MSAs.

Table 6. Near-road NO₂ Minimum Monitoring Requirements

MSA	2014 Population Estimate	2014 Max AADT Estimate	No. of Required Monitors
Allentown-Bethlehem-Easton, PA-NJ	829,835	89,000	1
Harrisburg-Carlisle, PA	560,849	123,000	1
Lancaster, PA	533,320	109,000	1
Scranton-Wilkes-Barre-Hazleton, PA	559,679	75,000	1

MSAs with populations between 500,000 and 1 million persons were to have near-road monitors installed by January 1, 2013. Due to funding concerns amongst state and local agencies, EPA postponed the installation deadline for MSAs in the 500,000 to 1 million persons range until January 1, 2017. EPA’s final rule concerning the revised dates for installation of the NO₂ near-road monitors was issued March 14, 2013 (78 FR 16184). While the Department continues to be eventually committed to the installation of the four near road monitors at the locations listed in the table above, funding sources have not yet been identified from EPA for MSA’s of between 500,000 and 1 million persons. In the meantime, data which has come in from sites in MSA’s over 1 million persons will continue to be analyzed and evaluated. These data evaluations will then play into EPA’s current review of the NO₂ NAAQS. This review will determine whether the NAAQS should be changed or if other monitoring network changes are needed. When the sites are installed, they tentatively will be configured with NO_x, CO, PM_{2.5}, BC/Aethalometer and

³ 40 CFR Part 58, Appendix D §4.3

Meteorology. The Department is also investigating traffic count technology for possible inclusion at these sites.

The Harrisburg NO₂ near-road monitor will be sited along the I-81 corridor between the I-83 split and the US 322 interchange, somewhere close to the Progress Ave exit, on the north side of the highway (Figures 26 and 27). The Allentown NO₂ near-road monitor will be placed at property near the US 222 Exit (Hamilton Blvd) (Figures 28 and 29). The Lancaster NO₂ near-road monitor will be installed at property near the US Route 30 and PA 283 interchange approximately 2.5 miles north of Lancaster. Finally, the Scranton-Wilkes-Barre NO₂ near-road monitor will be placed at the end of Plane Street close to the northbound lanes of Interstate 81. These site locations were chosen according to guidelines found in EPA's Near Road NO₂ Monitoring Technical Assistance Document, published in June 2012, and according to siting criteria specified in 40 CFR Part 58, Appendix E.

Figure 5. Location of the Harrisburg NO₂ Near-Road Site

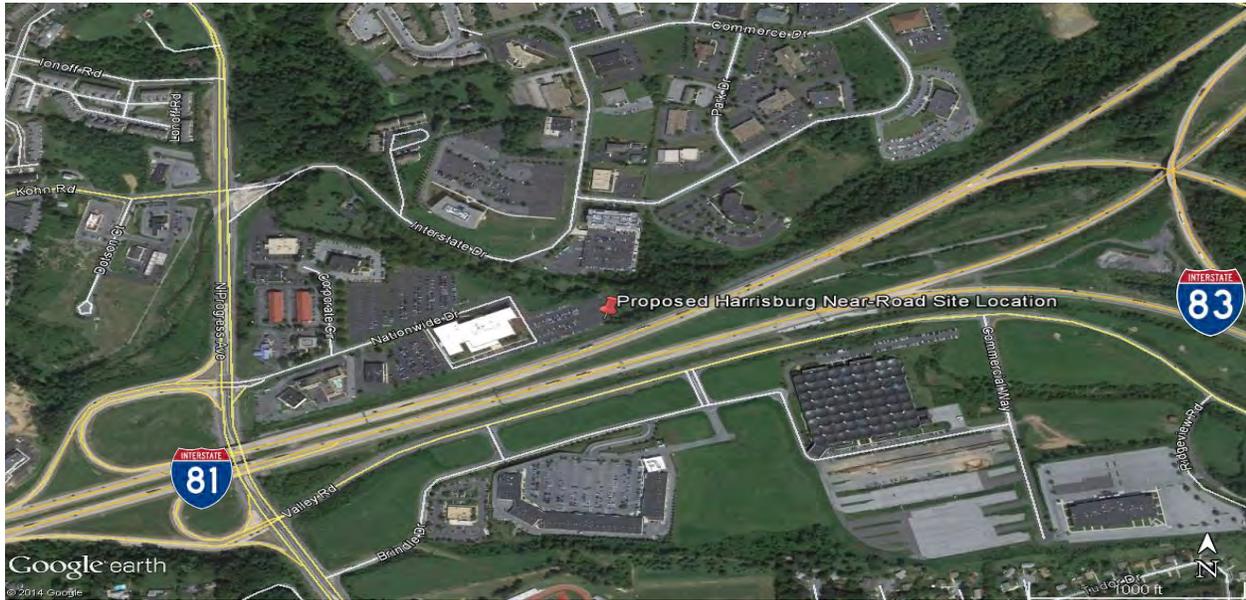


Figure 6. Location across Interstate 81 from the Expected Location of Harrisburg NO₂ Near-Road Site - Looking West



Figure 7. Location for the Allentown NO₂ Near-Road Site



Figure 8. Location of the Allentown NO₂ Near-Road Site – Looking East



Figure 9. Location for the Lancaster NO₂ Near-Road Site



Figure 10. Location of the Lancaster NO₂ Near-Road Site – Looking North



Figure 11. Location for the Scranton NO₂ Near-Road Site



Figure 12. Location of the Scranton NO₂ Near-Road Site – Looking West

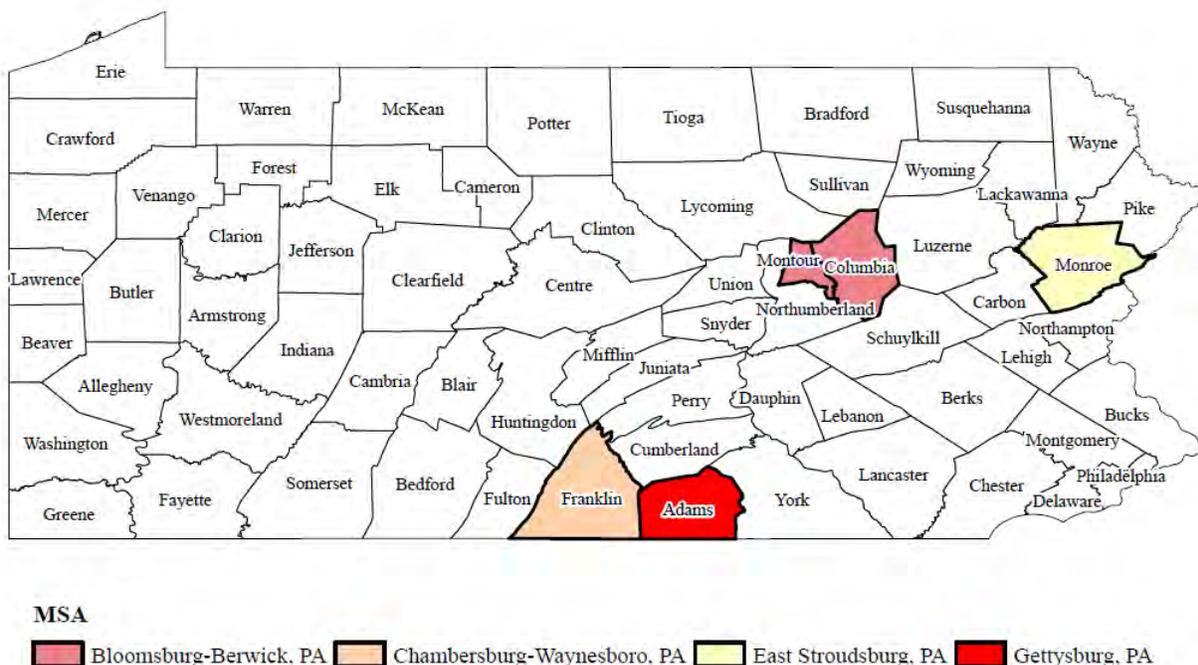


New Air Monitoring Sites for Ozone Monitoring:

- 1) Establishment of new ozone monitoring site in the Chambersburg MSA
- 2) Establishment of new ozone monitoring site in the Gettysburg MSA

On March 14, 2013, the Census Bureau released the “Revised Delineations of Metropolitan Statistical Areas, Micropolitan Statistical Areas, and Combined Statistical Areas” document, which defines Metropolitan Statistical Areas (MSA) and their boundaries. In the 2013 revision, four new MSAs were created in Pennsylvania – two in northeastern PA and two in southcentral PA. The four new MSAs are highlighted in Figure 13 below

Figure 13. Four New Pennsylvania MSA in 2013



The minimum number of ozone monitors required by 40 CFR Part 58, Appendix D is based on a combination of population and existing monitoring data, where available. Table 7 below displays the minimum monitoring requirements for the four new MSA regions, using the most currently available data.

Table 7. Four New Pennsylvania MSAs in 2013

MSA	2014 Estimate Population	2014 Maximum Design Value	No. of Monitors Required	No. of SLAMS Monitors
Bloomsburg-Berwick MSA	85,763	#N/A	0	0
Chambersburg-Waynesboro MSA	152,892	67	1	1
East Stroudsburg MSA	166,314	63	0	1
Gettysburg MSA	101,714	67	1	2*

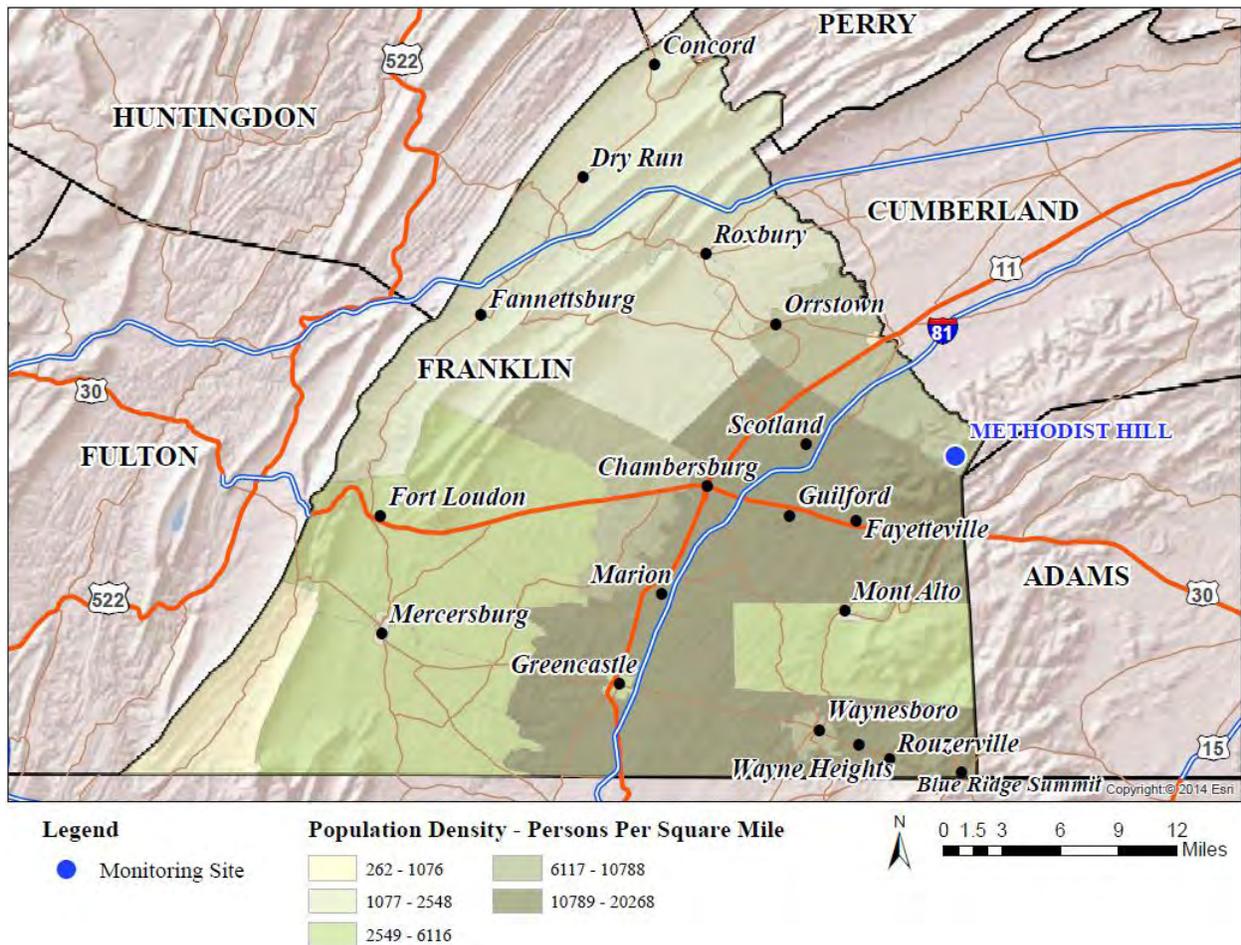
* Includes EPA CASTNET site at Arendtsville, PA. In January 2013, EPA provided notice that all ozone monitors at CASTNET sites were upgraded to comply with 40 CFR Part 58, and that data collected from these monitors will be used for NAAQS purposes, beginning with the 2011-2013 ozone monitoring season

As shown in Table 7 (relating to four new Pennsylvania MSAs in 2013), the current ozone monitoring network meets the minimum monitoring requirements in these MSA. However, with the categorization of these areas as MSAs, PA DEP will add one additional ozone monitor in both the Chambersburg and Gettysburg MSAs.

Establish New Site in the Chambersburg MSA

PA DEP currently operates the Methodist Hill (Franklin County) in the Chambersburg MSA. This monitor is sited to be representative of transport concentrations and is sited on elevated terrain. In addition, the sample inlet probe is sited at the top end of the 2-15 meter range required by 40 CFR Part 58, Appendix E for SLAMS monitoring. With the creation of the Chambersburg-Waynesboro MSA, PA DEP will establish an additional monitoring site to be more representative of population exposure in Franklin County. Figure 14 displays the population density in Franklin County.

Figure 14. Population Density in Franklin County, PA

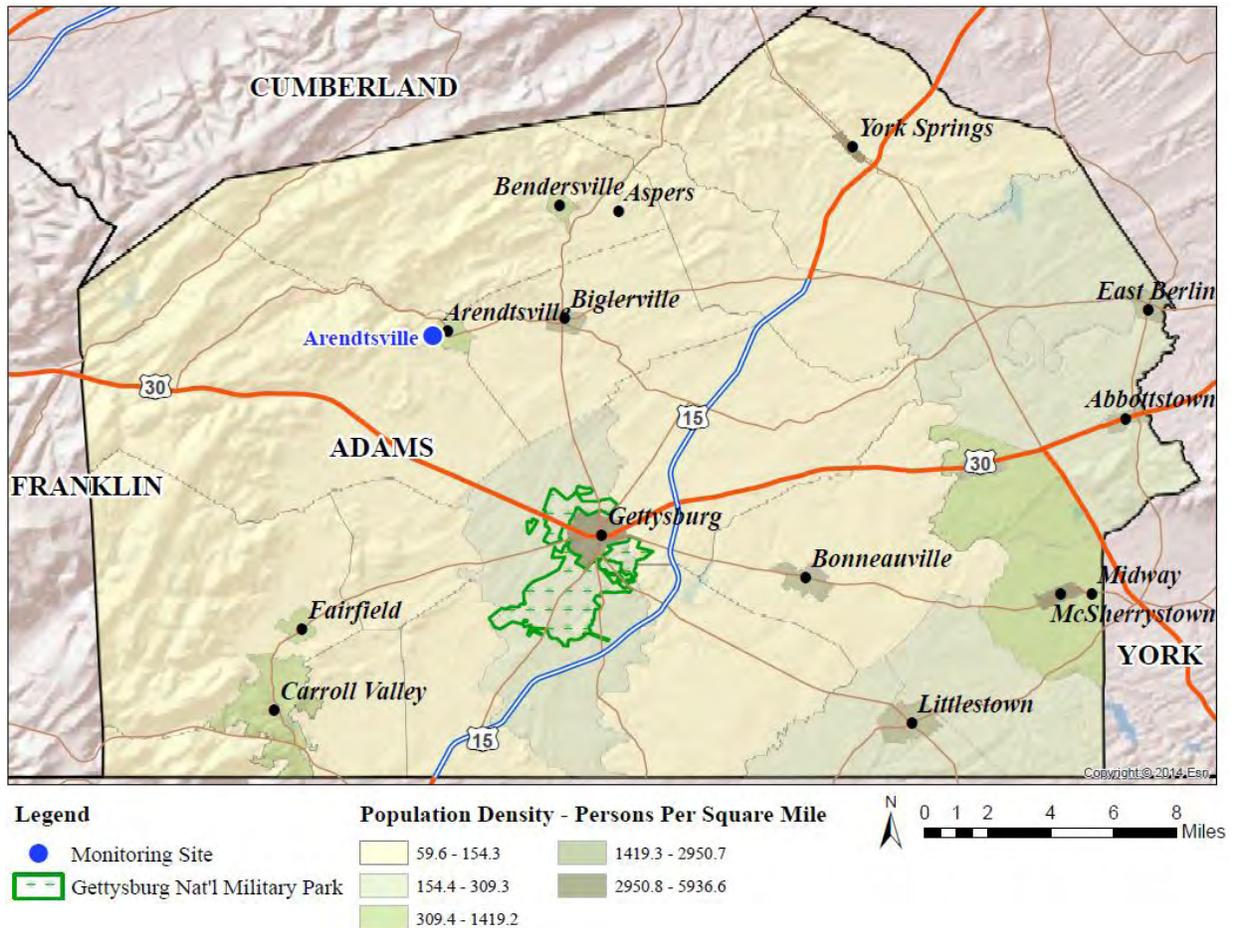


With more than 20,000 persons per square mile,⁴ the Borough of Chambersburg is the most densely populated region in Franklin County. PA DEP will establish a monitoring site near this region.

Establish New Site in the Gettysburg MSA

In November 2014, the PA DEP installed an ozone monitor at the Arendtsville (Adams County) site. This monitor was installed to enhance the site’s role as a regional background monitoring site, and to allow PA DEP to correlate measurements with the adjacent CASTNET Arendtsville site, maintained by EPA and the National Park Service. The CASTNET program was designed to provide long-term monitoring of air quality in rural area, to determine trends in regional atmospheric pollutant concentrations. Figure 15 displays the Arendtsville monitoring site, in relation to population distribution in Adams County. With the establishment of the Gettysburg MSA, PA DEP will establish an additional ozone monitoring site near Gettysburg, PA to be more representative of population exposure in the MSA.

Figure 15. Population Density in Adams County, PA



⁴ 2010 Census; Population density statistics are available from American Factfinder at <http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>.

At approximately 5,900⁵ persons per square mile, the McSherrystown Borough, located in southeastern Adams County, has the highest population per land area in the county. The next most densely populated area is the borough of Gettysburg, located in the central portion of the county, at approximately 4,600⁵ persons per square mile. However, Adams County receives over 3.75 million visitors each year, and the most popular destination for these visitors is the Gettysburg National Military Park, surrounding the borough of Gettysburg. The height of the tourist season occurs in June – October, corresponding to the ozone monitoring season (April – October). The large influx of motor vehicles during these summer months increases the concentrations of ozone precursors, NOx and VOC, available for ozone formation. By locating a monitoring station downwind of this region, PA DEP should be able to capture the impact of this region on ambient ozone concentrations.

⁵ 2010 Census; Population density statistics are available from American Factfinder at <http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>.

Modifications to the NO₂ Network:

- 1) Discontinue NO₂ monitoring at the Bristol (Bucks County) site;
- 2) Discontinue NO₂ monitoring at the Lancaster (Lancaster County) site; and
- 3) Discontinue NO₂ monitoring at the Reading Airport (Berks County).

In 2010, EPA revised the minimum NO₂ monitoring requirements codified in 40 CFR Part 58, Appendix D. Revised minimum monitoring requirements include requirements for near-road, area-wide and EPA Regional Administrator Required monitoring. As detailed in a previous section, PA DEP will install four near-road NO₂ monitoring sites to meet the near-road monitoring requirements.

Area-wide NO₂ monitoring is required in any CBSA with populations of 1,000,000 persons or greater. Pennsylvania contains three MSA with populations greater than 1,000,000 - New York-Newark-Jersey City MSA, Philadelphia-Camden-Wilmington MSA and the Pittsburgh MSA. Monitoring networks for these MSA are operated and maintained by the New Jersey Department of Environmental Protection and New York Department of Environmental Conservation, Philadelphia County Air Management Services and the Allegheny County Health Department, respectively. No additional area-wide NO₂ monitoring is required in Pennsylvania under the minimum monitoring requirements set forth in Appendix D.

Minimum monitoring requirements promulgated by EPA include a provision for the selection of forty additional NO₂ monitoring sites nationwide, to be chosen at the discretion of the EPA Regional Administrators (RA-40). EPA Region 3 has informed PA DEP that the Chester (Delaware County) and Erie (Erie County) NO₂ monitors operated by PA DEP will be designated as RA-40 monitors.

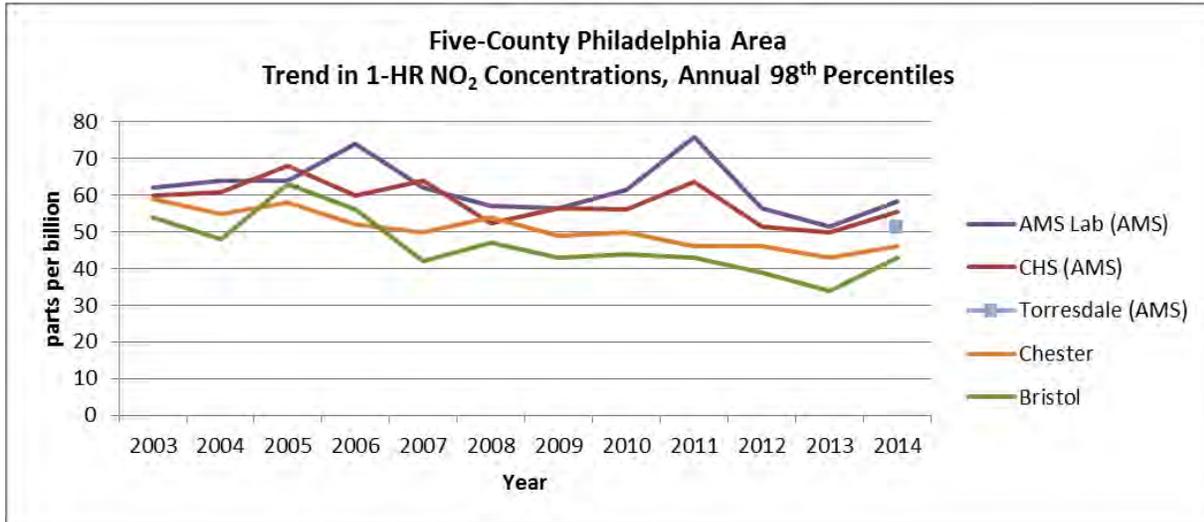
In addition to satisfying the three categories of minimum monitoring requirements described above, PA DEP maintains NO₂ monitoring sites for use in Air Quality Index (AQI) reporting and forecasting. Ambient NO₂ concentrations are used in ambient air modeling and forecasting as a surrogate for ozone formation and to characterize the strength of meteorological inversions.

As part of the re-alignment of its monitoring network, PA DEP will discontinue NO₂ monitoring at Bristol (Bucks County), Lancaster (Lancaster County) and Reading Airport (Berks County). Monitoring data from these sites are no longer needed to support NAAQS compliance, air quality modeling or air quality forecasting activities. All current NO₂ monitoring sites have measured NO₂ values below the NAAQS for several decades. In fact, no current NO₂ monitoring site has recorded an annual 1-hour 98th percentile value above the level of the NAAQS (100 ppb) since 1984. In addition, the characterization of air quality for AQI reporting and forecasting is based on the maximum values measured in an area. As shown in the graphs above, the Bristol, Lancaster and Reading Airport monitors predominately measure the lowest NO₂ values in their respective partnership areas in the Commonwealth. Therefore, PA DEP will retain the ability to adequately characterize air quality with respect to NO₂ in these areas, upon the removal of these three monitors.

Discontinue NO₂ Monitoring at Bristol (Bucks County)

The Bristol monitoring site (Bucks County) is located in the five-county Philadelphia Area. Figure 16 displays the 98th percentiles of daily maximum 1-hour NO₂ concentrations active monitors the five-county Philadelphia area during the past twelve years.

Figure 16. Trend of NO₂ Concentrations in the Five-County Philadelphia Area

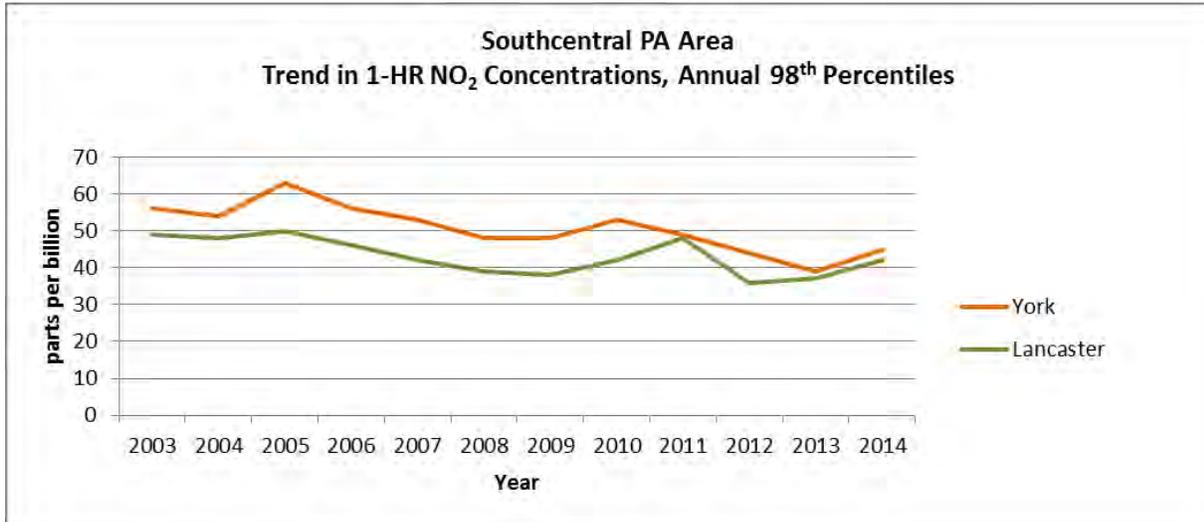


As shown in the graph, the Bristol monitor measures lower NO₂ values than the other sites in the area. As such, the Bristol monitor is not needed for air quality forecasting or modeling purposes.

Discontinue NO₂ Monitoring at Lancaster (Lancaster County)

The Lancaster monitoring site is located in the southcentral PA area. Figure 17 displays the 98th percentiles of daily maximum 1-hour NO₂ concentrations active monitors the southcentral PA area during the past twelve years.

Figure 17. Trend of NO₂ Concentrations in the Southcentral PA Area

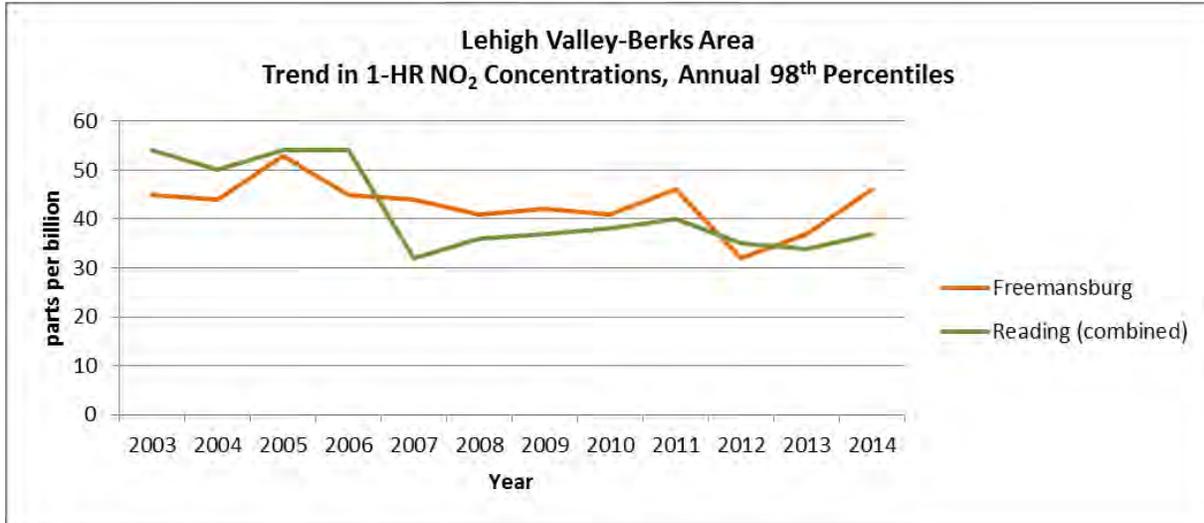


As shown in the graph, the Lancaster monitor measures lower NO₂ values than the other site in the area, the York monitor. As such, the Lancaster monitor is not needed for air quality forecasting or modeling purposes.

Discontinue NO₂ Monitoring at Reading Airport (Berks County)

The Reading Airport monitoring site is located in the southcentral PA area. Figure 18 displays the 98th percentiles of daily maximum 1-hour NO₂ concentrations active monitors the Lehigh Valley-Berks area during the past twelve years. Note that the current location of the Reading monitor (Reading Airport) was established in May 2007. The chart below reflects monitoring data from the current Reading Airport site since installation, as well as data from the previous Reading site for dates prior to May 2007.

Figure 18. Trend of NO₂ Concentrations in the Lehigh Valley-Berks Area



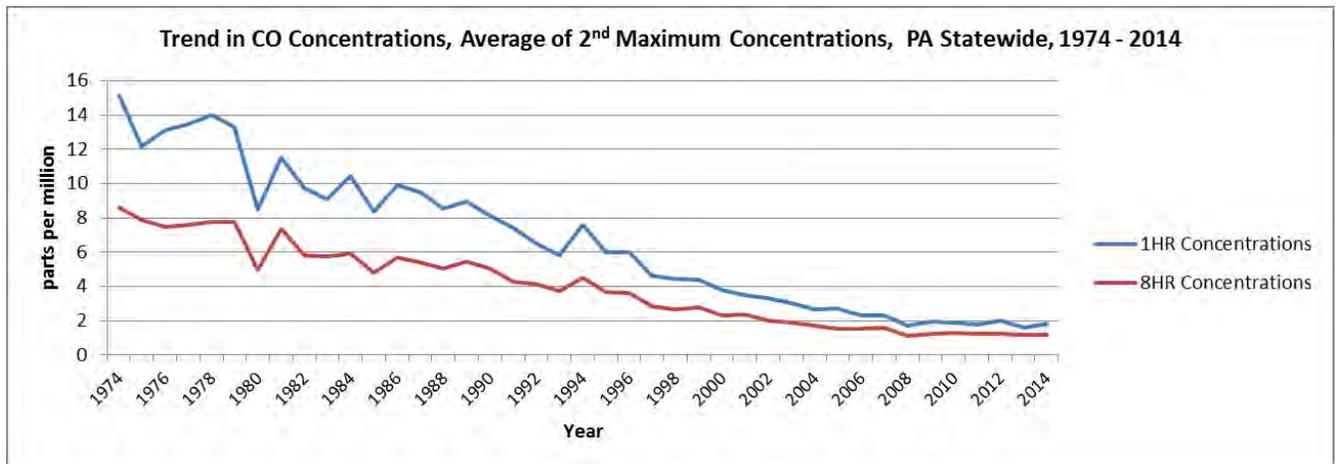
As shown in the graph, the Reading Airport monitor measures lower NO₂ values than the other site in the area, the Freemansburg monitor. As such, the Reading Airport monitor is not needed for air quality forecasting or modeling purposes.

Modifications to the CO Network:

- 1) Discontinue CO monitoring at the Charleroi (Washington County) site
- 2) Install CO monitors at future near-road NO₂ monitoring sites in Allentown (Lehigh County), Harrisburg (Dauphin County), Lancaster (Lancaster County) and Scranton (Lackawanna County)

Ambient concentrations of CO have decreased greatly over the past several decades, on both a national and regional scale. The significant downward trend in CO concentrations can be attributed to the reduction of CO emissions from mobile sources through increased emission standards and pollutant controls, reformulations of fuel, and technological advancements in combustion efficiency. Ambient CO concentrations in Pennsylvania have mirrored the national decreasing trend.

Figure 19. Trend of CO Concentrations in Pennsylvania



In 2011, EPA revised the minimum monitoring requirements in 40 CFR Part 58, Appendix D to require that one CO monitor be collocated with near-road NO₂ monitors in urban areas having populations of 1,000,000 or more, or located as specifically required by the EPA Regional Administrator on a case-by-case basis. The Commonwealth of Pennsylvania contains three MSAs, either wholly or in part, with populations greater than 1,000,000 persons – New York-Newark-Jersey City (NY-NJ-PA), Philadelphia-Camden-Wilmington (PA-NJ-DE-MD) and Pittsburgh (PA). Air quality monitoring for the New York-Newark-Jersey City MSA is performed by the New York State Department of Environmental Conservation and New Jersey Department of Environmental Protection. Air Quality Monitoring for the Philadelphia-Camden-Wilmington MSA is shared between the Delaware Department of Natural Resources and Environmental Control, Maryland Department of the Environment, New Jersey Department of Environmental Protection, Philadelphia Air Management Services (Philadelphia County, PA) and PA DEP (remaining PA portion). Air quality monitoring for the Pittsburgh MSA is shared between the Allegheny County Health Department (Allegheny County) and PA DEP. For the Pennsylvania portions of these three MSAs, the NO₂ near-road monitoring requirements, and thus the CO monitoring requirements, are being met by the two aforementioned Pennsylvania county agencies. As such, the Department is not required to maintain additional CO monitors outside the Philadelphia and Allegheny County networks, for NAAQS compliance purposes.

Discontinue CO Monitoring at Charleroi (Washington County)

As part of the re-alignment of its monitoring network, PA DEP will discontinue the CO monitor at the Charleroi (Washington County) monitoring site, as it is no longer needed to support NAAQS compliance, air quality modeling or air quality forecasting activities. The Charleroi monitoring site has not measured an exceedance of either CO NAAQS in its history, nor does the measurement and trend data indicate a probability of an exceedance.

Figures 20-21 below display the trends in CO monitoring at the Charleroi monitoring station.

Figure 20. Trend of 2nd Maximum 1-Hour CO Concentrations at the Charleroi Monitoring Site

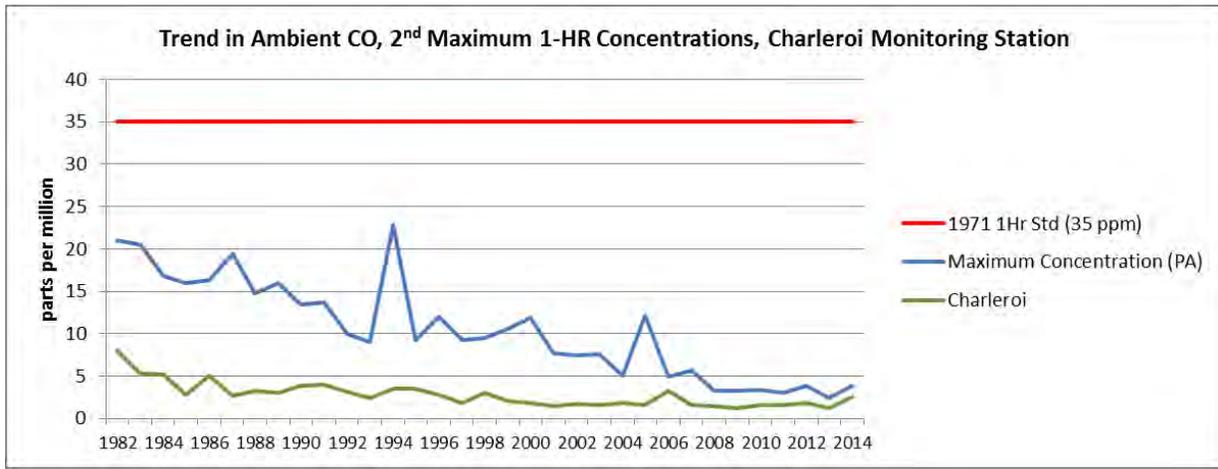
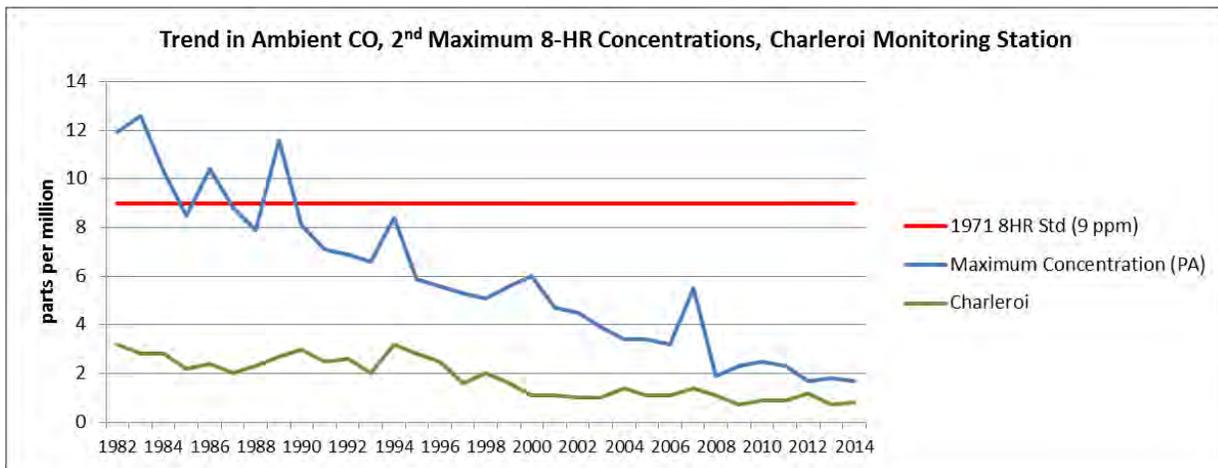


Figure 21. Trend of 2nd Maximum 1-Hour CO Concentrations at the Charleroi Monitoring Site



PA DEP will retain CO monitoring at Arendtsville (Adams County), Erie (Erie County), Johnstown (Cambria County), Scranton (Lackawanna County) and York (York County). Measurement data from these sites will provide background ambient CO concentrations, to be utilized in Prevention of Significant Deterioration (PSD) modeling applications.

Install CO Monitors at Future Near-Road NO₂ Monitoring Sites in Allentown (Lehigh County), Harrisburg (Dauphin County), Lancaster (Lancaster County) and Scranton (Lackawanna County)

In addition, although not required, PA DEP will install CO monitors at all four future near-road NO₂ sites. In the 1970s and 1980s, CO monitoring was conducted in urban areas where there were high amounts of vehicular traffic in a confined area. However, since the early 1990s, enhancements in motor vehicle emission controls have resulted in significant reductions of CO ambient concentrations. Installing CO monitors at the near road NO₂ sites will enhance the Department's understanding of CO concentrations in high traffic areas, outside of the urban core, throughout the Commonwealth.

Modifications to the PM_{2.5} Network:

- 1) Discontinue PM_{2.5} monitoring at the Bristol (Bucks County) and Norristown (Montgomery County) sites; and
- 2) Relocate the PM_{2.5} monitor at Lehigh Valley (Northampton County) to the Allentown (Lehigh County) site.

Discontinue PM_{2.5} Monitoring at Bristol (Bucks County) and Norristown (Montgomery County)

Based on design values consistently below the PM_{2.5} NAAQS, long term trend data showing continued decreases in PM_{2.5} values, and adequate monitoring elsewhere in the Philadelphia-Camden-Wilmington MSA, PA DEP will discontinue two Southeast PA PM_{2.5} monitors – Bristol (Bucks County) and Norristown (Montgomery County). PM_{2.5} monitoring has been ongoing at both of these sites since early 1999, almost since the inception of the program. In December 2012, EPA reduced the annual PM_{2.5} NAAQS from 15 µg/m³ to 12 µg/m³. As of 2014, only the Chester (Delaware County) has a calculated design value exceeding the annual PM_{2.5} NAAQS.

Figure 22. Trend of PM_{2.5} 24-HR Design Values in the Philadelphia-Camden-Wilmington MSA

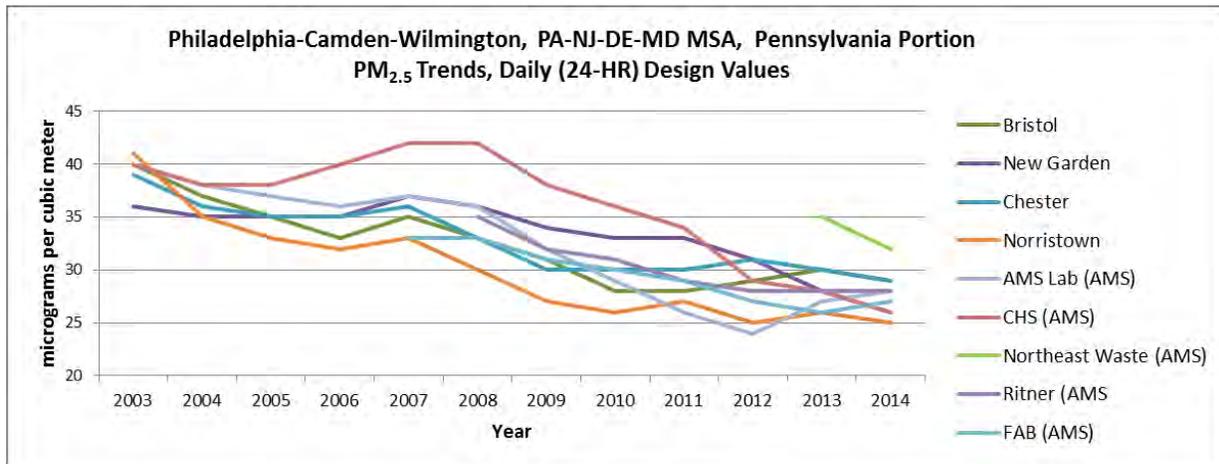
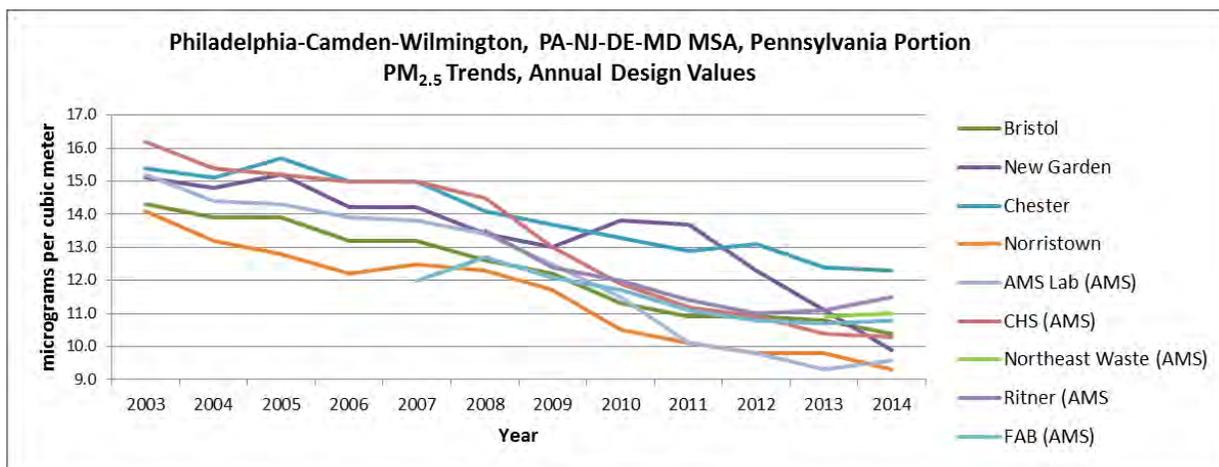


Figure 23. Trend of PM_{2.5} Annual Design Values in the Philadelphia-Camden-Wilmington MSA



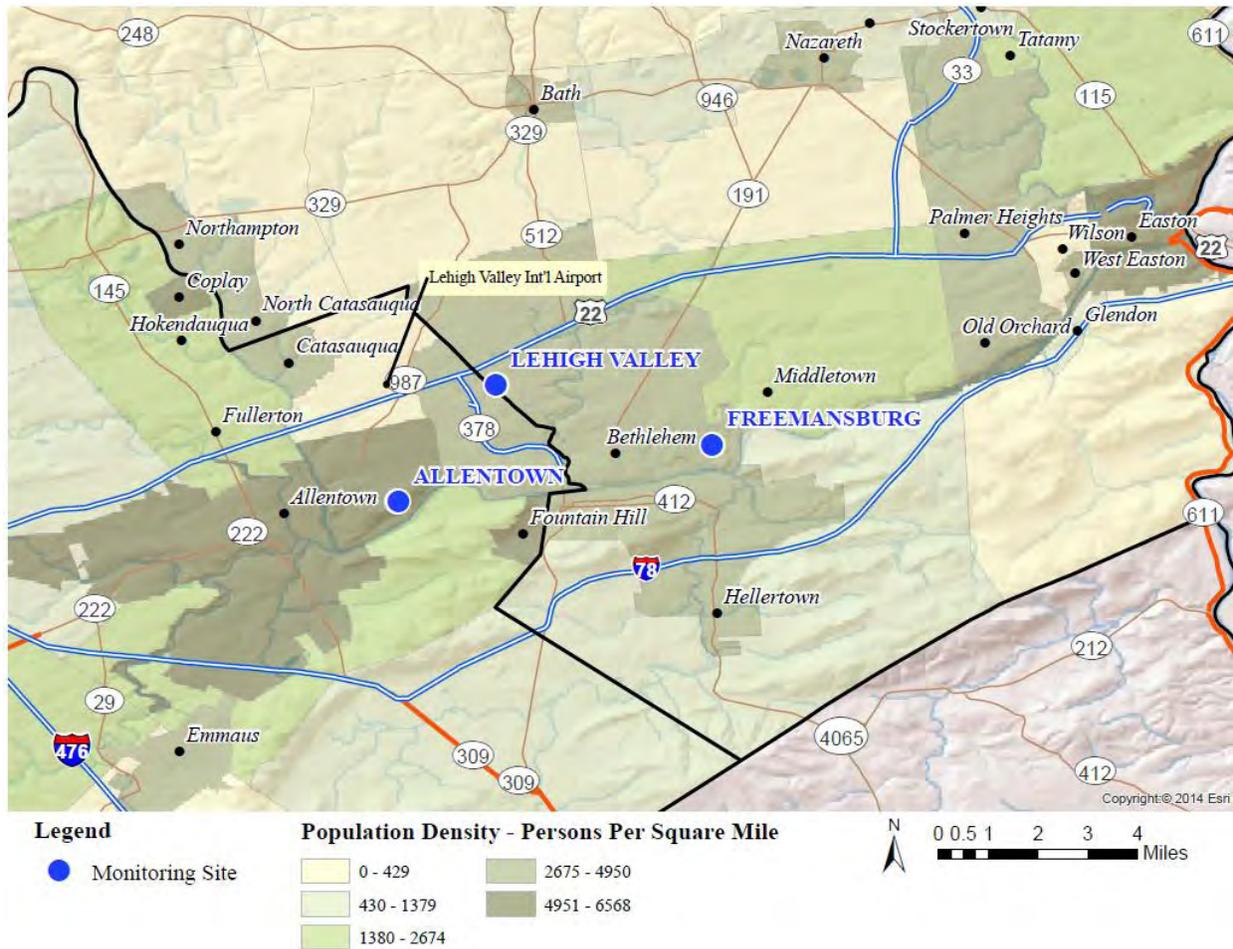
According to 40 CFR Part 58, Appendix D, Section 4.7, three PM_{2.5} monitors are required in the Philadelphia-Camden-Wilmington MSA, based on population and historical concentration data. Presently, PA DEP maintains four PM_{2.5} monitors in the MSA, while Philadelphia Air Management Services maintains six, New Jersey operates three, and Delaware operates five, for a total of nineteen monitors. With the termination of the Bristol and Norristown monitors, there will be seventeen monitors remaining in the MSA, including two operated by the PA DEP at the Chester and New Garden (Chester County) sites. In PA DEP's judgment, the coverage of the Philadelphia-Camden-Wilmington MSA will remain adequate.

Relocate PM_{2.5} Monitor at Lehigh Valley (Northampton County) to Allentown (Lehigh County)

The PM_{2.5} FRM sampler at the Lehigh valley site has been operational since January 1, 2010. This monitor was installed to meet federal monitoring requirements for the Allentown-Bethlehem-Easton MSA. According the monitoring requirements set forth in 40 CFR Part 58, Appendix D, two PM_{2.5} monitors are required in the MSA, based on concentration values and population. The Allentown-Bethlehem-Easton MSA consists of Carbon, Lehigh and Northampton Counties in Pennsylvania, as well as Warren County, New Jersey. Because Pennsylvania encompasses the majority of the MSA, both in population and land area, PA DEP relies upon monitors contained in its COPAMS network to fulfil minimum monitoring requirements in this MSA. PA DEP operates two PM_{2.5} monitors in the MSA – Lehigh Valley and Freemansburg, both in Northampton County.

PM_{2.5} monitoring regulations state that where more than one monitor is required in an MSA, one of the monitors must be placed in an area of poor air quality. The Lehigh Valley site was originally set up to monitor PM_{2.5} from mobile sources (US Route 22 and PA Route 378), as well as the Lehigh Valley International Airport, located approximately miles northeast of the site. This site was also placed upwind of a major populated area. PM_{2.5} is the only pollutant monitored at this site. Figure 24 on the following page shows the location of the Lehigh Valley and nearby sites, as well as the population densities in these regions.

Figure 24. Population Density Map for the Lehigh Valley Area



Since its installation in 2010, the Lehigh Valley monitor has consistently measured PM_{2.5} concentrations below the level of the PM_{2.5} NAAQS. Table 8 displays 24-hour 98th percentile values and weighed annual means recorded at the Lehigh Valley Site. Calculations for these NAAQS-related summary data are found in 40 CFR Part 50, Appendix N.

Table 8. PM_{2.5} Concentrations at the Lehigh Valley Monitoring Site, in Micrograms per Cubic Meter

Year	98 th Percentile of 24-HR Averages (µg/m ³)	Weighed Annual Means (µg/m ³)
2010	28	9.8
2011	30	11.2
2012	26	10.9
2013	34	9.9
2014	27	9.5

The other PA DEP PM_{2.5} monitoring site in the MSA is the Freemansburg site, located approximately 3.5 miles southeast of the Lehigh Valley site. Trend data show that although the Lehigh Valley monitor measured higher 98th percentile values in 2013 and 2014, since the installation of the Lehigh Valley site, the Freemansburg site has measured higher PM_{2.5} values overall, based on annual mean calculations. Figure 25 and Figure 26 display PM_{2.5} trend data for the Lehigh Valley and Freemansburg monitors.

Figure 25. Trend of PM_{2.5} 24-HR 98th Percentile Concentrations in the Allentown-Bethlehem-Easton MSA, 2010-2014

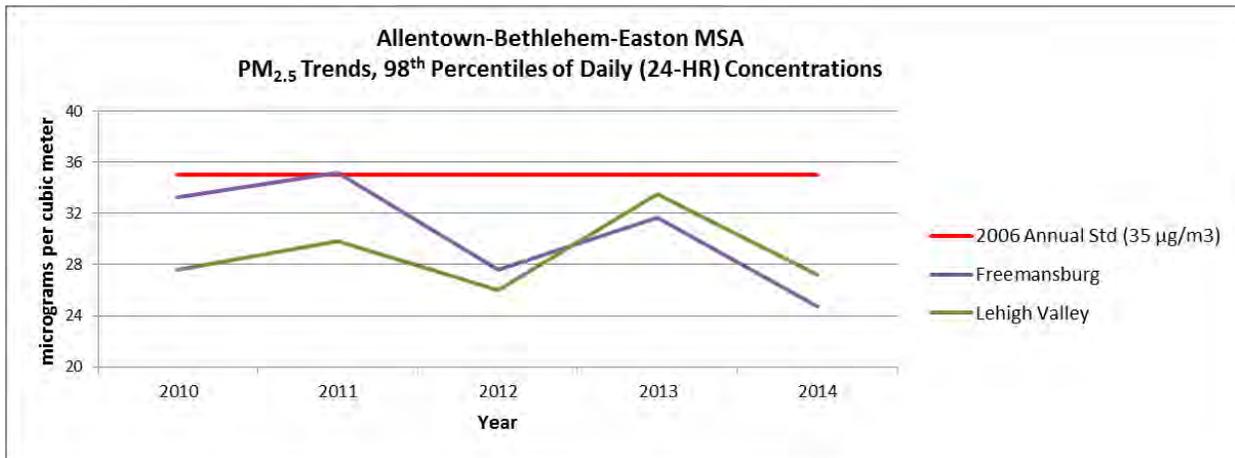
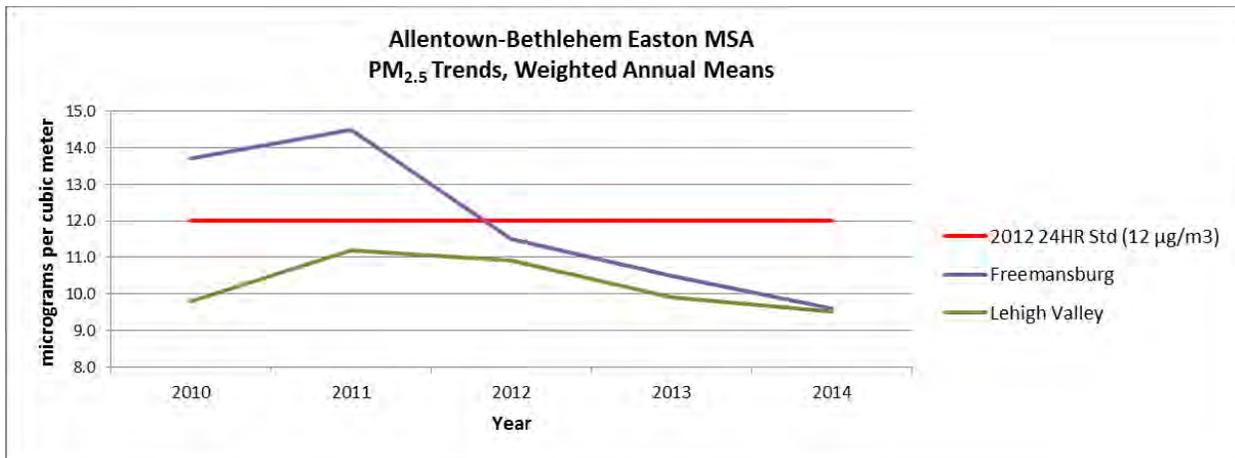


Figure 26. Trend of PM_{2.5} Weighted Annual Means in the Allentown-Bethlehem-Easton MSA, 2010-2014



On November 13, 2009, EPA promulgated air quality designations based on the 2006 PM_{2.5} NAAQS. At that time, EPA designated Lehigh and Northampton Counties as the Allentown, PA PM_{2.5} nonattainment area, based on a 2006-2008 24-hour design value of 36 µg/m³, measured at the Freemansburg site. Because of the lower values at the Lehigh valley site, a longer sampling history at Freemansburg, the steady long-term decline in PM_{2.5} concentrations throughout the MSA, and in the interest of consolidating resources, the Department will relocate the PM_{2.5} monitor at Lehigh Valley to the existing Allentown site.

The Allentown monitoring site is located on the grounds of the Allentown State Hospital, roughly 2.7 miles to the south-southwest of the Lehigh Valley site. At the present time, PM₁₀ and ozone are monitored at Allentown. PM_{2.5} was previously monitored at Allentown from 1999 to

2005 but was terminated due to federal funding cuts. In recent years, the Lehigh Valley has undergone significant development in manufacturing, processing and warehousing, including center city Allentown and regions west. With the move of a PM_{2.5} sampler back to Allentown, PM_{2.5} NAAQS compliance in the MSA would not be negatively impacted, as the total number of monitors in the MSA will remain unchanged and coverage would remain adequate. Furthermore, the Department will be able to characterize PM_{2.5} impacts from growing development in and points west of the city of Allentown.

Modifications to the PM₁₀ Network:

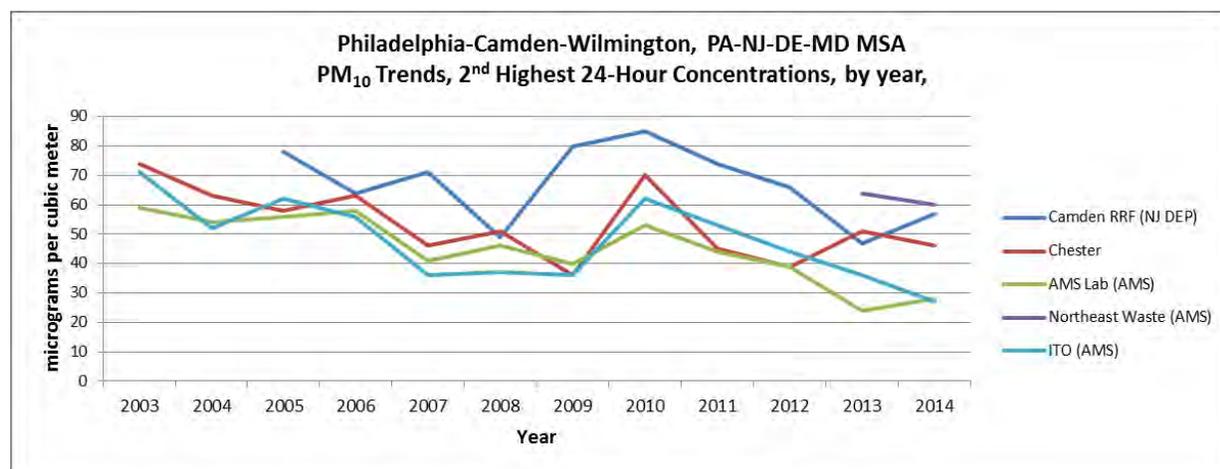
- 1) Discontinue PM₁₀ monitoring at the Chester (Delaware County) site;
- 2) Discontinue PM₁₀ monitoring at Charleroi (Washington County) and New Castle (Lawrence County) sites; and
- 3) Discontinue PM₁₀ monitoring at Nazareth (Northampton County).

The Department will terminate PM₁₀ monitoring at three sites—Chester (Delaware County), Charleroi (Washington County), and New Castle (Lawrence County). Monitoring data from these sites are no longer needed to support NAAQS compliance, air quality modeling or air quality forecasting activities.

Discontinue PM₁₀ Monitoring at Chester (Delaware County).

Automated PM₁₀ monitoring will be terminated at the Chester (Delaware County) site because the site has consistently measured low PM₁₀ concentrations, and is redundant to three sites operated by the Philadelphia Air Management Services (AMS) for NAAQS compliance purposes. The minimum monitoring requirements set forth in 40 CFR Part 58, Appendix D require a minimum of between two and four PM₁₀ monitors in the Philadelphia-Camden-Wilmington MSA, based on population and historical PM₁₀ concentration measurements in the MSA. With the monitors in the Philadelphia AMS as well as one monitor in Camden, NJ measuring similar PM₁₀ concentrations over the past year (Figure 27), and with overall concentrations continuing to decline, the PM₁₀ monitor will be discontinued at Chester.

Figure 27. Trend of 2nd Maximum 24-HR PM₁₀ Concentrations in the Philadelphia-Camden-Wilmington MSA

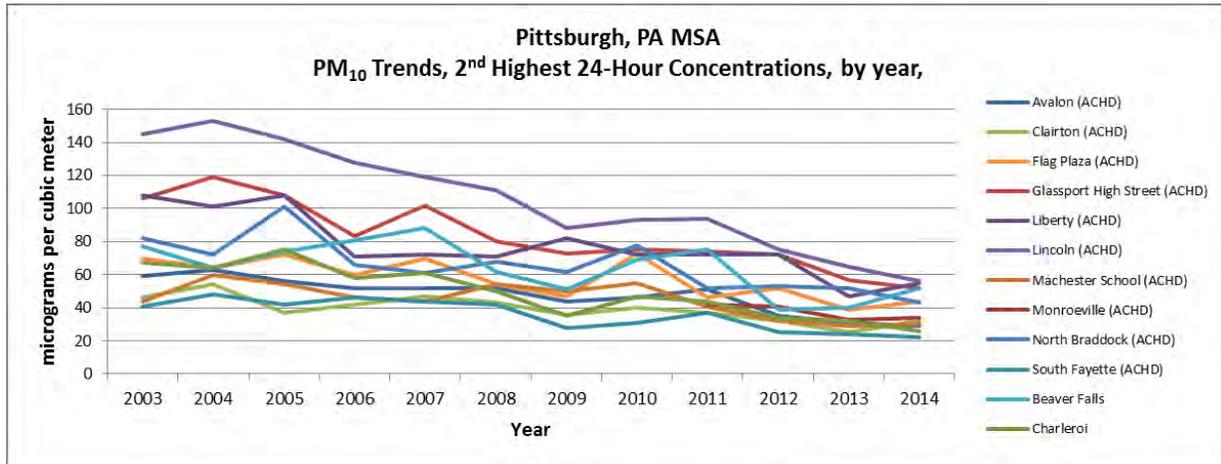


Discontinue PM₁₀ Monitoring at Charleroi (Washington County)

The PM₁₀ monitor at Charleroi (Washington County) will be terminated due to historically low concentrations which have been well below the 24-hour NAAQS. 10 year trend data from 2003- to 2014 demonstrate that PM₁₀ concentrations at the Charleroi site continues to decline, and do not indicate a future exceedance of the 24-hour NAAQS. Charleroi is located in the Pittsburgh MSA. Based on trend data and population, two to four PM₁₀ monitoring sites are required to be

located in the Pittsburgh MSA, according to minimum monitoring requirements set forth in 40 CFR Part 58, Appendix D. Currently, ACHD operates ten PM₁₀ monitoring sites in Allegheny County. PA DEP operates one PM₁₀ monitoring site in the Pittsburgh MSA in Beaver Falls (Beaver County). Figure 28 displays the annual 2nd maximum 24-hour PM₁₀ concentrations for the Pittsburgh MSA since 2003.

Figure 28. Trend of 2nd Maximum 24-HR PM₁₀ Concentrations in the Pittsburgh MSA

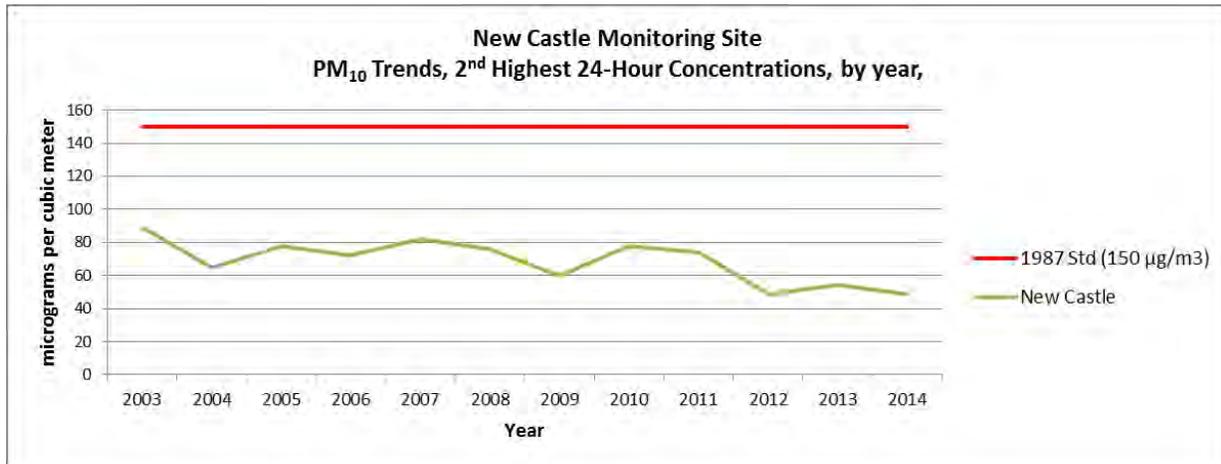


As shown in the graph, the Charleroi monitor consistently measures PM₁₀ values among the lowest in the MSA. The extensive coverage afforded by PM₁₀ monitors operated elsewhere in the MSA is adequate to characterize the Pittsburgh MSA; therefore the Charleroi monitor is not needed to support NAAQS compliance, air quality modeling or air quality forecasting activities.

Discontinue PM₁₀ Monitoring at New Castle (Lawrence County).

The minimum monitoring requirements set forth in 40 CFR Part 58, Appendix D do not require the Department to maintain PM₁₀ monitoring in areas outside of defined MSA. The PM₁₀ monitor at New Castle has consistently measured declining PM₁₀ for the last twelve years (Figure 29)

Figure 29. Trend of 2nd Maximum 24-HR PM₁₀ Concentrations in Lawrence County



PA DEP will discontinue the PM₁₀ monitor at New Castle, as PM₁₀ monitoring data from this site is not needed to support NAAQS compliance, air quality modeling or air quality forecasting activities.

Discontinue PM₁₀ Monitoring at Nazareth (Northampton County)

PA DEP will terminate PM₁₀ monitoring site in Nazareth, PA (Northampton County). This site was originally established in August 2000, in response to public health concerns. Previous to 2000, PA DEP maintained a PM₁₀ monitoring site in Nazareth, at the Lloyd R Shafer Elementary School (AQS Code 42-095-0022). This monitor was discontinued in 1997 due to roof construction. Although no exceedance was recorded in the 10 year time period that the monitor was active, citizens voiced concerns regarding particulate pollution, in light of several active cement plants in the regions, upon its removal. Therefore, in August 2000, a new special purpose PM₁₀ monitoring site was established in Nazareth (AQS Code 42-095-1000). At the time of installation, PA DEP intended to collect data from the Nazareth site for a three year period. Upon review of the data, PA DEP intended to discontinue the monitor at the end of the three year period.

The PM₁₀ monitor at Nazareth has not measured an exceedance of the PM₁₀ NAAQS, since its installation in 2000. In addition, PM₁₀ emissions in Northampton County have greatly declined since the installation of the Nazareth monitor. Figure 30 displays the Nazareth site in relation to the nearby ESSROC cement plant emissions impacting the Nazareth site.

Figure 30. Nazareth Monitoring Site and Nearby PM₁₀ Sources

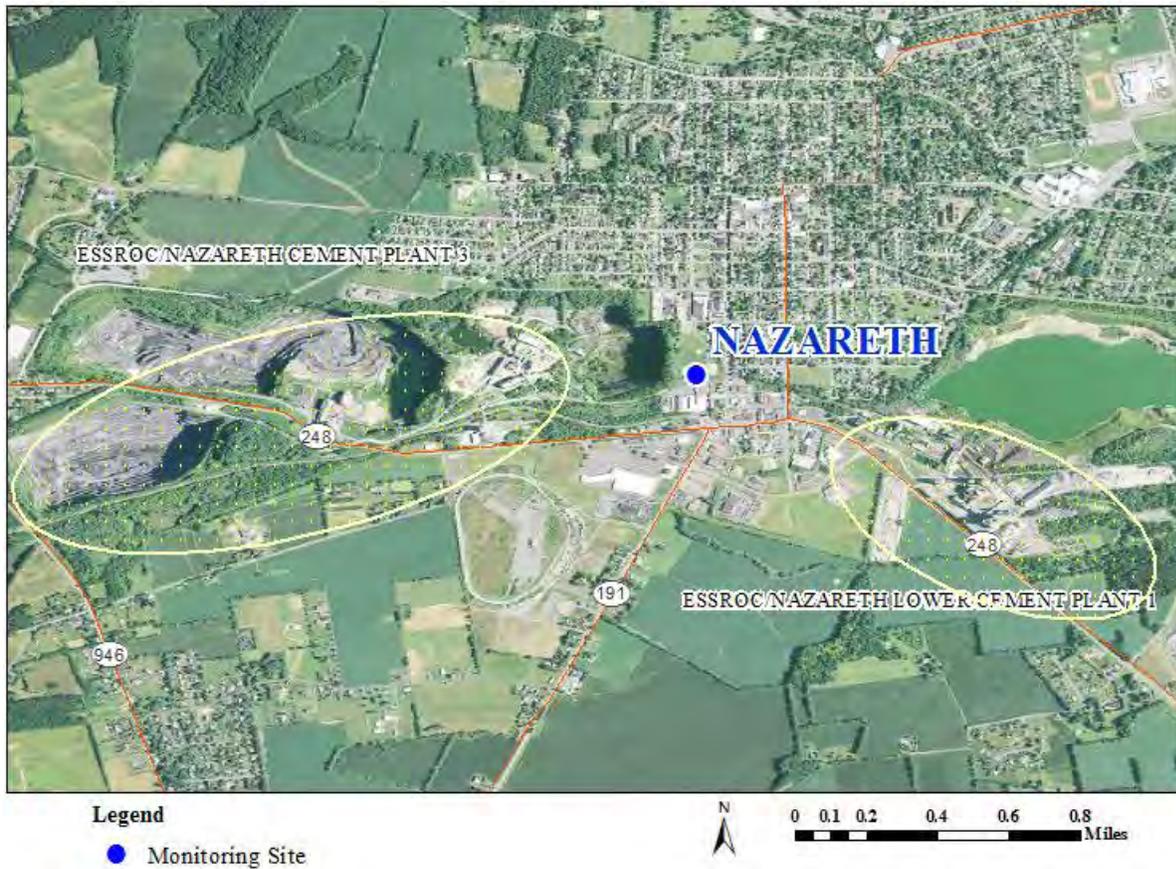
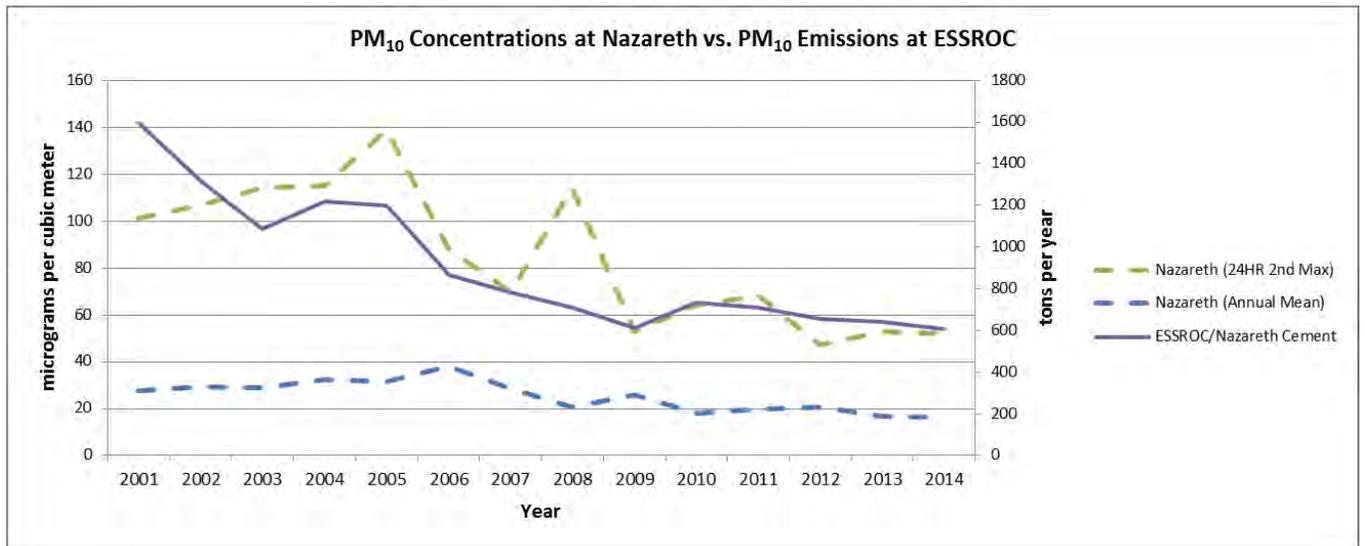


Figure 31 displays PM₁₀ concentrations measured at the Nazareth site, alongside the trend in PM₁₀ emissions from ESSROC. Reductions in PM₁₀ emissions can be attributed in part to the addition of pollution control technologies at the nearby source facilities.

Figure 31. Trend of PM₁₀ Concentrations at the Nazareth Monitoring Site and Nearby Facility Emissions



The minimum monitoring requirements set forth in 40 CFR Part 58, Appendix D require the Department to maintain a minimum of one PM₁₀ monitor in the Allentown-Bethlehem-Easton MSA, based on population and historical PM₁₀ concentration measurements in the MSA. PA DEP will retain the PM₁₀ at Allentown (Lehigh County) to fulfil the minimum monitoring requirements in the Allentown-Bethlehem-Easton MSA.

Modifications to the Air Toxics Network:

- 1) Termination of the carbonyl sampler at (Lewisburg (Union County))
- 2) Addition of PM₁₀ for Ellwood City (Beaver County)

Discontinue Carbonyl Sampling at the Lewisburg Monitoring Site (Union County)

In 2015, the PA DEP will discontinue monitoring for carbonyl compounds at the Lewisburg air toxics monitoring site at Bucknell University. While monitoring at that site has been continuous for many years, the Department believes that continued carbonyl monitoring at that location is unnecessary as observed ambient concentrations of carbonyl compounds were consistently low and not indicative of being dominated by a single source. Additionally, the carbonyl sampling resources from this site will be redirected towards carbonyl monitoring in unconventional natural gas extraction areas of Northeast Pennsylvania at the Springville and Mehoopany toxics monitoring sites.

Add PM₁₀-Based Metals Sampling at Ellwood City (Beaver County)

Based on the screening-type sampling method employed at Ellwood City, PA DEP has determined that additional screening level monitoring is needed using more refined toxics metals collection and analysis techniques. While the initial screening did not indicate a gross impact on chronic health due to the lifetime inhalation of screened toxic metals, some individual samples showed concentrations of cadmium that warrant some additional investigation using more precise monitoring tools.

PA DEP will conduct additional metals sampling in 2015 using the more analytically-precise quartz filters and PM₁₀ samplers. The PM₁₀ samplers collect smaller-sized particles (less than 10 microns in diameter) and better represent the respirable size fraction that more directly impacts human health. Using quartz filters allows the Department to receive results from the lab that have a lower limit of quantification and reporting than the TSP samplers and glass filters used for the screening. The Department may also relocate the sampler to better characterize emissions for the purpose of developing more accurate screening values to support further decisions on inhalation risk and hazard.

Actions Needing Further Consideration:

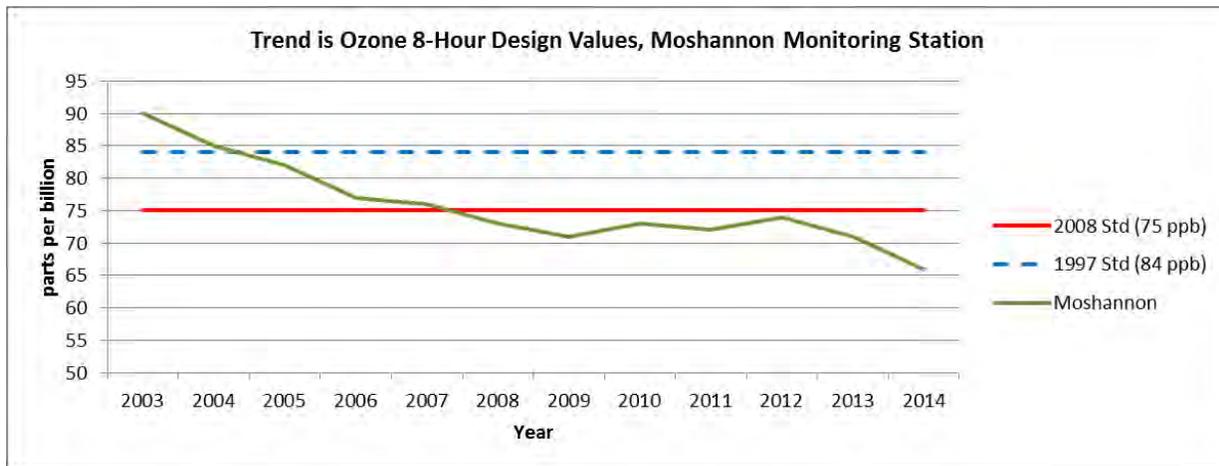
- 1) Relocation of Moshannon Ozone Monitor to Another Location in Clearfield County
- 2) Relocation of York Downwind Ozone Monitor to Another Location in York County
- 3) Relocation of Lancaster Downwind PM_{2.5} Monitor to Another Location in Lancaster County

Relocation of Moshannon Ozone Monitor to Another Location in Clearfield County

DEP sought comment on the relocation of the Moshannon ozone monitor to a location more representative of the impact of the increasing Marcellus Shale activity in Clearfield County.

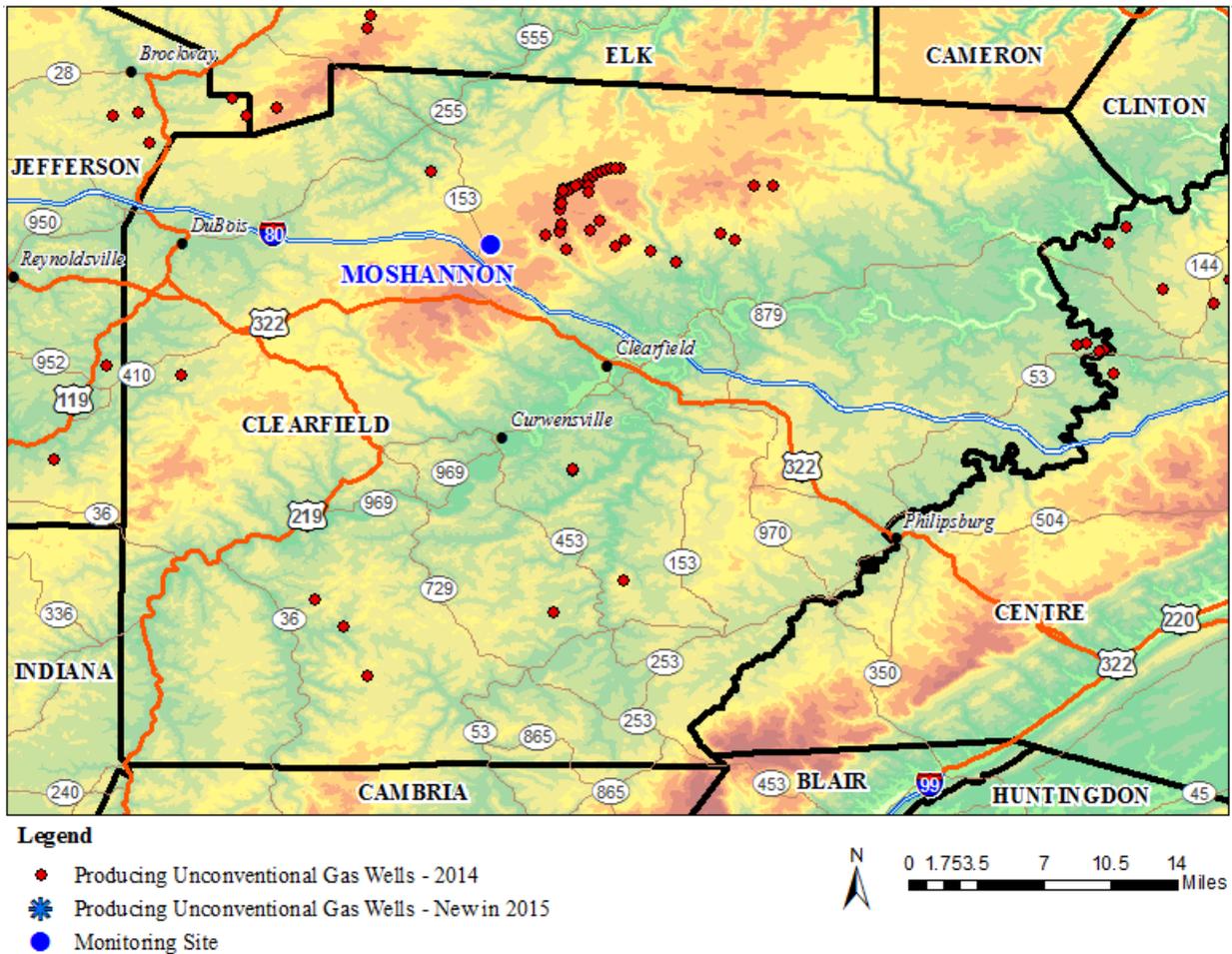
The ozone sampler at the Moshannon monitoring site was originally established in 1996 as part of a Cooperative Agreement with Pennsylvania State University to study the impact of ozone on vegetation in the Moshannon State Forest. Ever since the NO_x SIP Call was implemented during the 2003 ozone season, ozone concentrations have been on the decline at the Moshannon monitor. Clearfield County was designated as nonattainment for ozone on April 15, 2004 with regard to the 1997 ozone standard (which established an 8-hour ozone standard of 0.08 parts per million). On April 20, 2009, Clearfield County was redesignated to attainment for the 1997 ozone standard (74 FR 11674). Figure 32 illustrates the trend in 8-hour ozone design values at the Moshannon site since 2003.

Figure 32. Trend of Ozone Design Value at the Moshannon Monitoring Site



Since the late 2000s, Marcellus Shale related activity has been on the increase across Pennsylvania. Marcellus Shale development has occurred in Clearfield County as well. Figure 33 is a map illustrating the most recent Marcellus Shale activity in Clearfield County.

Figure 33. Map of Moshannon Monitor With Respect to 2014 Marcellus Shale Activity



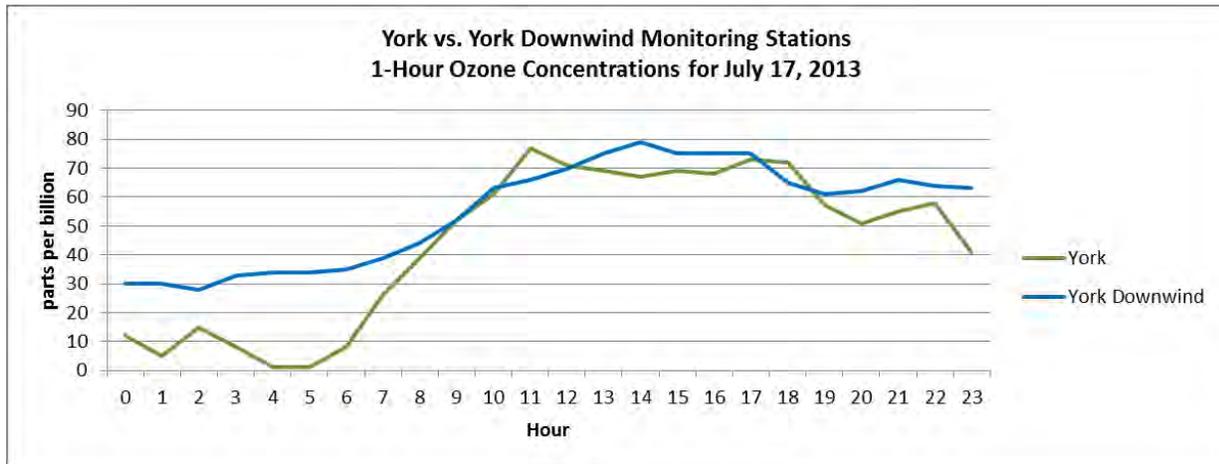
The current location of the ozone sampler at the Moshannon monitoring site is not located in an area downwind of the major area of Marcellus Shale activity in Clearfield County. In order to understand the impact of Marcellus Shale activity on ozone formation in different parts of the Commonwealth, the DEP is recommended that the location of the Moshannon monitor, which has served its original purpose of understanding ozone's impact on vegetation in the Moshannon State Forest, be reexamined. As no comments were received regarding this change, DEP will evaluate relocating the Moshannon monitor as indicated.

Relocation of York Downwind Ozone Monitor to Another Location in York County

DEP sought comment on the relocation of the York Downwind ozone monitor to a location more representative of the area of York County that is actually downwind of emissions from York City.

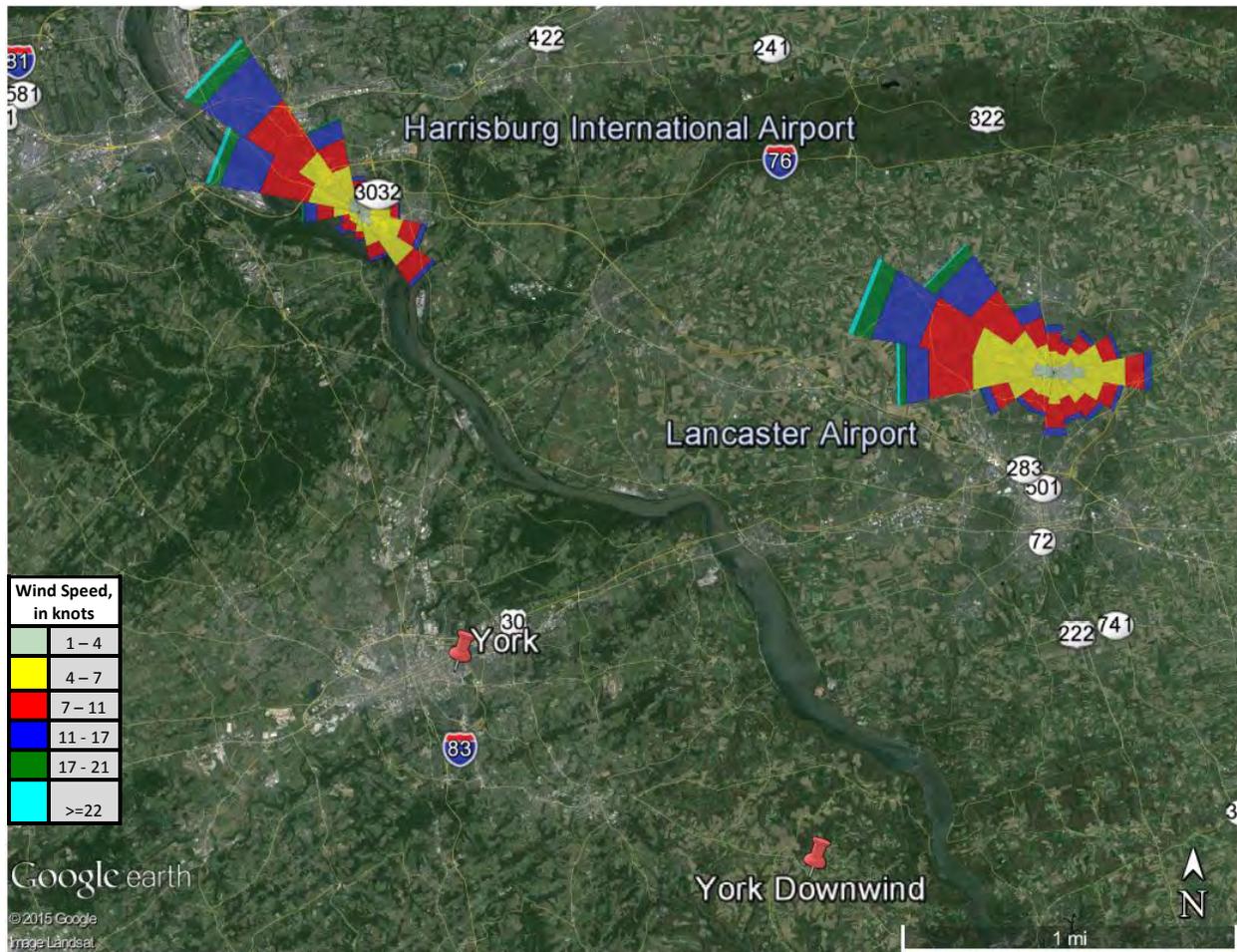
The York Downwind monitor was originally sited in 2008 at the request of EPA Region III. The original purpose was to understand ozone impacts of areas downwind of the York metropolitan area. In order to determine the area downwind of the York metropolitan area, meteorological data from the Harrisburg International Airport (KMDT) was utilized. As the monitor began operation, the DEP began to notice significant differences in the way ozone was characterized at the York Downwind monitor as compared to the York monitor. A typical July day is outlined in Figure 34 below. In Figure 34, the York Downwind monitor’s and the York monitor’s hourly concentration for July 17, 2013 is plotted.

Figure 34. Hourly Ozone Concentrations for York and York Downwind, July 17, 2013



The York Downwind’s ozone concentrations remain elevated in the early morning hours since it is sited in a rural part of York County. York’s ozone, on the other hand, drops closer to zero because of NOx titration in the more urbanized area. DEP has questioned whether the current York Downwind location is properly assessing concentrations downwind of the York metropolitan area. DEP has re-examined the original use of the KMDT data that was utilized in determining the location of the current York Downwind site. As stated on the National Climate Data Center (NCDC) website (<http://www1.ncdc.noaa.gov/pub/data/stations/photos/20016665/20016665a-info.txt>), KMDT’s Automated Surface Observing System (ASOS) equipment was situated near a “levee protecting the airport from the occasional Susquehanna River flood.” Figure 35 is a map illustrating the locations of the York and York Downwind sites with respect to one another. Wind roses were generated for a 5-year period (from 2009 to 2013) from Harrisburg International Airport and Lancaster Airport (KLNS) and then overlaid on the map.

Figure 35. York and York Downwind Monitor Locations and Wind Profiles Across the Region



Due to the orientation of the Susquehanna River (in the north to south direction) and after analyzing the wind rose for KMDT, it has been determined that the levee is likely influencing the wind direction measurements of the ASOS. The DEP feels that the ASOS located at KLNS would have provided a more representative wind profile to use to site the York Downwind location. The KLNS meteorological data illustrates a much stronger westerly influence as opposed to KMDT. Therefore, DEP recommended that the York Downwind site be moved to a location due east of the York metropolitan area (near Wrightsville, PA). As no comments were received regarding this change, DEP will evaluate relocating the York Downwind monitor as indicated.

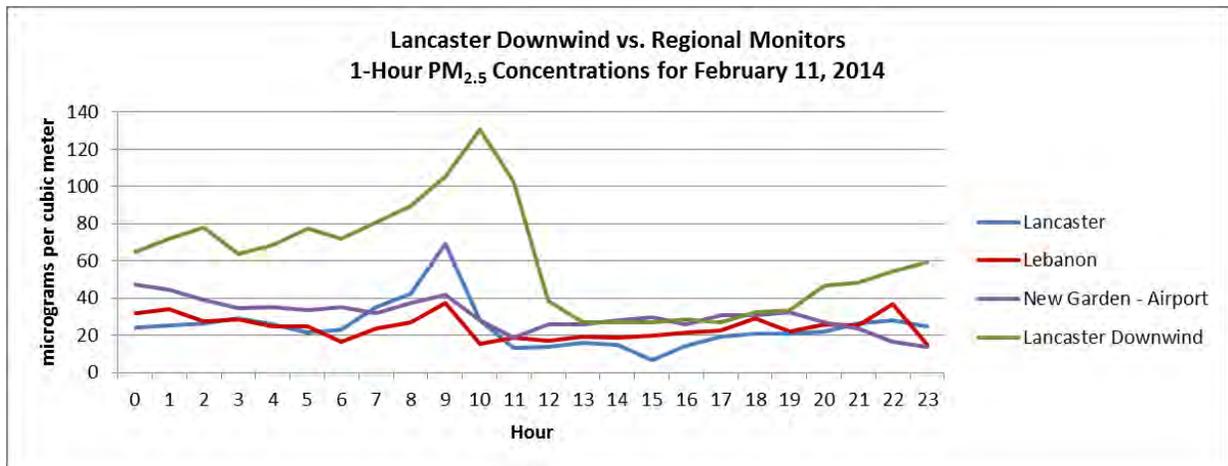
Relocation of Lancaster Downwind PM_{2.5} Monitor to Another Location in Lancaster County

DEP sought comment on the relocation of the Lancaster Downwind PM_{2.5} monitor to a location that is more representative of the population centers of Lancaster County.

The Lancaster Downwind monitoring site was originally sited in 2008 as an ozone monitoring site, at the request of EPA Region III. The original purpose was to understand ozone impacts of areas downwind of the Lancaster metropolitan area. However, based on data collected during the 2010 US Census campaign, the population for the Lancaster MSA rose above 500,000 people. Due to the increased population in the Lancaster MSA, and the PM_{2.5} concentrations measured at the Lancaster site, the minimum monitoring requirements set for in 40 CFR, Appendix D required PA DEP to install an additional PM_{2.5} monitor in the Lancaster MSA. Due to logistical reasons, DEP determined that the Lancaster Downwind monitor's location would be place to site the new PM_{2.5} monitor.

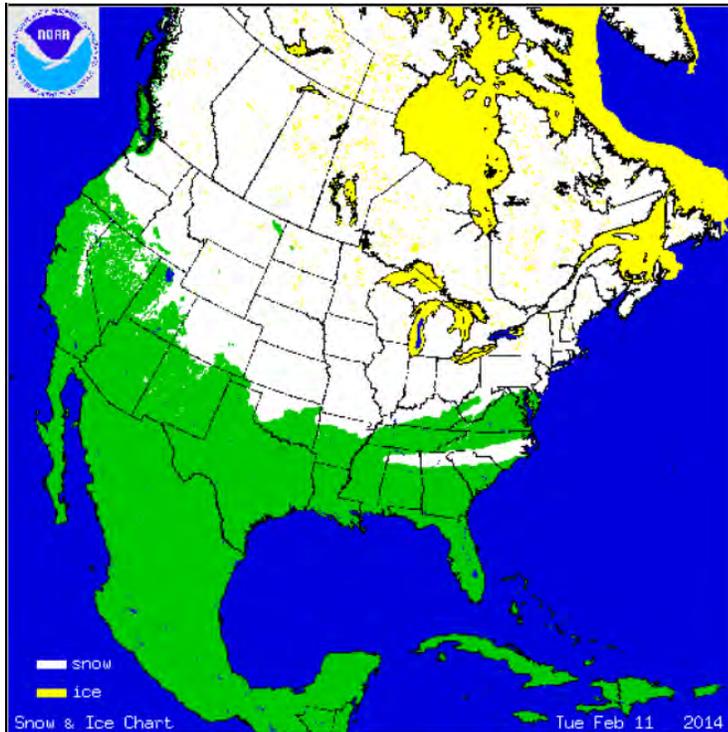
During the first year of operation (2014) for the new Lancaster Downwind PM_{2.5} monitor, PA DEP noticed very high readings of PM_{2.5} at the Lancaster Downwind monitor as opposed to other regional monitors. For example, on February 11, 2014, Lancaster Downwind's hourly PM_{2.5} concentration peaked at 130.8 µg/m³. Figure 36 illustrates the hourly PM_{2.5} concentrations at the Lancaster Downwind monitor as opposed to other regional monitors. Note that one additional regional monitor, Reading Airport (Berks County), is not included in the figure, as it did not report values on February 11, 2014.

Figure 36. Lancaster Downwind vs. Other Regional Monitors' Hourly PM_{2.5} Concentrations – February 11, 2014



As illustrated above in Figure 36, during the first thirteen hours on February 11, 2014, Lancaster Downwind PM_{2.5} concentrations were, on average, 45 µg/m³ higher than any of the regional monitors' PM_{2.5} concentrations. In addition, on February 11, 2014, snow covered much of Pennsylvania, as shown in Figure 37 on the following page.

Figure 37. US Snow Cover Map for February 11, 2014



Source: <http://www.ncdc.noaa.gov/snow-and-ice/snow-cover/us/20140211>

This snow pack combined with clear skies to create a strong inversion over much of eastern PA during the morning of February 11, 2014. The early morning PM_{2.5} concentrations at the Lancaster Downwind monitor are indicative of low-level emission sources becoming trapped within the inversion. During the early afternoon, PM_{2.5} levels collapsed at the Lancaster Downwind monitor to levels more consistent of PM_{2.5} concentrations at the regional monitor locations.

To further illustrate this point, 2014's quarterly PM_{2.5} concentrations were analyzed to assess the magnitude of Lancaster Downwind's PM_{2.5} concentrations with respect to other regional monitors' PM_{2.5} concentrations. Table 9 on the following page illustrates the 2014 quarterly averages for the Lancaster Downwind and how it compares with other regional PM_{2.5} monitors.

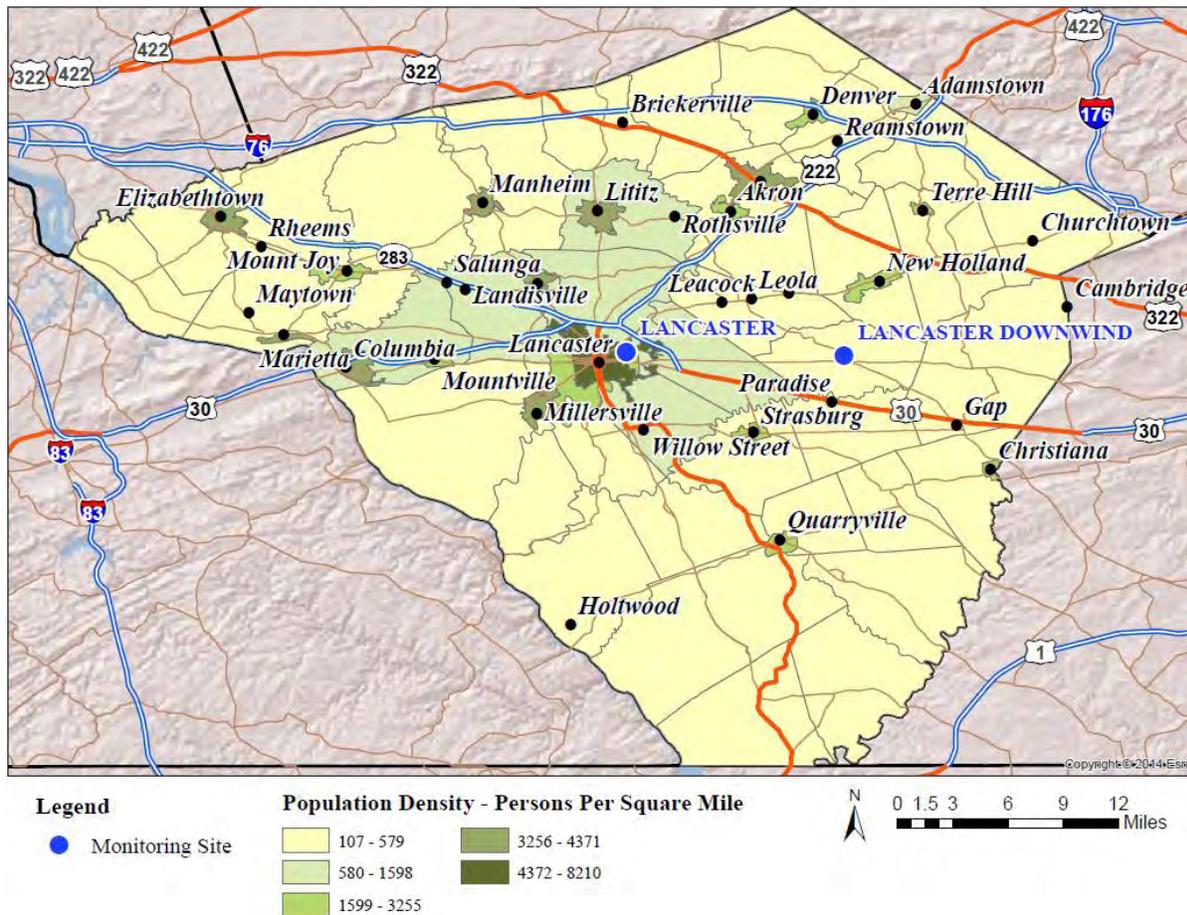
During the 1st quarter, Lancaster Downwind's quarterly average was 3.7 µg/m³ higher than the next closest monitor, Lebanon (Lebanon County). This trend continued in the 2nd and 4th quarters. DEP has reason to believe that the Lancaster Downwind PM_{2.5} monitor is being influenced by local source(s) of emissions. After analyzing the 2010 Census data to determine the most populous areas in Lancaster County (see Figure 38 on the following page for details), DEP recommended moving the Lancaster Downwind monitor to a portion of Lancaster County that is a) more representative of the ambient air in the high population areas of Lancaster County and b) an area that is not influenced by local sources. As no comments were received regarding this change, DEP will evaluate relocating the Lancaster Downwind monitor as indicated.

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Table 9. 2014 Quarterly PM_{2.5} Concentration Averages for Lancaster Downwind and Other Regional Monitors

Site Name	Site ID	Quarterly PM _{2.5} Concentrations, in micrograms per cubic meter			
		1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter
Lancaster Downwind	420710012	20.9	15.2	13.6	13.9
Lancaster	420710007	15.4	9.5	9.3	10.0
Lebanon	420750100	17.2	11.0	13.4	9.3
Reading	420110011	14.8	8.0	8.5	8.2
New Garden	420290100	13.3	8.2	8.6	9.5

Figure 38. Lancaster and Lancaster Downwind Monitor Locations With Respect to the Highest Population Density Areas in Lancaster County



Appendix A — PA DEP Ambient Air Monitoring Sites, by MSA

Description of Appendix A

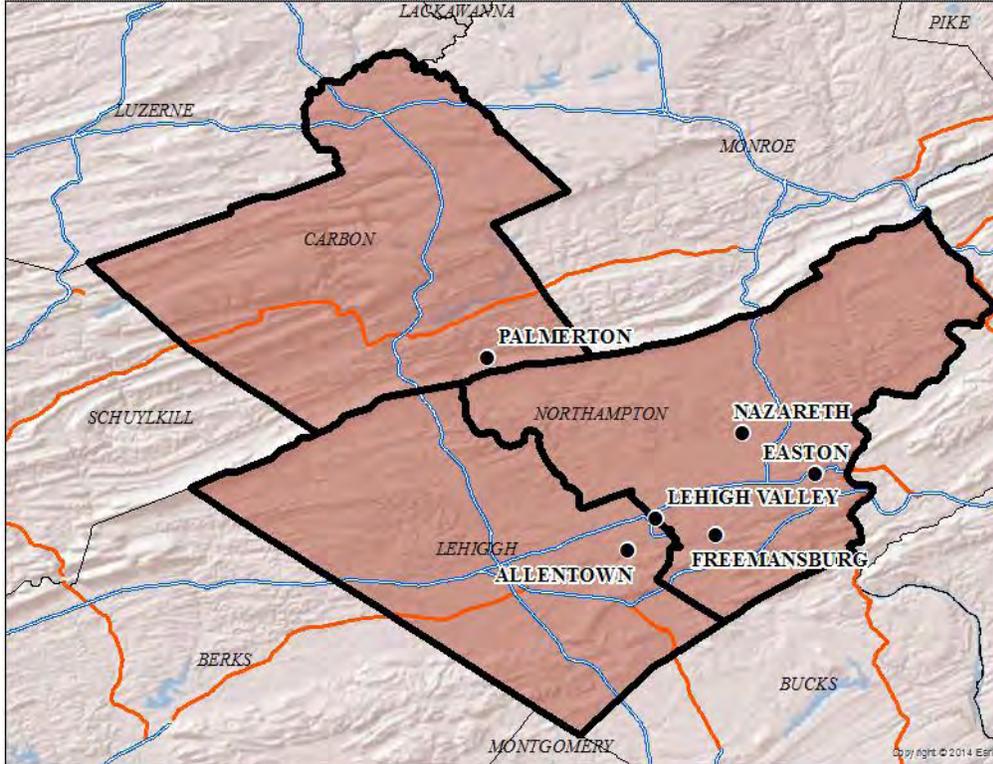
The 2015 Pennsylvania Air Monitoring Network consists of the sites and monitors listed in Appendix B, “Pennsylvania Monitoring Network Site Details.” This appendix displays maps of monitoring network sites organized by Metropolitan Statistical Area (MSA) regions. MSA regions are listed first, followed by non-MSA regions. The non-MSA regions are based on PA DEP Regions 1 – 6, defined on PA DEP’s website under “Regional Resources” at http://www.portal.state.pa.us/portal/server.pt/community/regional_resources/13769. An overview map of MSA regions in Pennsylvania is given in Figure 1 of the “2015 Annual Ambient Air Monitoring Network Plan”. For convenience, Table A-1 below lists the MSA and populations, and is the legend to Figure 1 found on page 9 of the plan. Areas listed in the table below, but not included in the following maps, do not contain monitoring sites operated by PA DEP.

Table A-1. Metropolitan Statistical Areas and Populations

MSA	Population
Allentown-Bethlehem-Easton, PA-NJ	829,835
Altoona, PA	125,955
Bloomsburg-Berwick, PA	85,763
Chambersburg-Waynesboro, PA	152,892
East Stroudsburg, PA	166,314
Erie, PA	278,443
Gettysburg, PA	101,714
Harrisburg-Carlisle, PA	560,849
Johnstown, PA	137,732
Lancaster, PA	533,320
Lebanon, PA	136,359
New York-Newark-Jersey City, NY-NJ-PA	20,092,883
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	6,051,170
Pittsburgh, PA	2,355,968
Reading, PA	413,691
Scranton--Wilkes-Barre--Hazleton, PA	559,679
State College, PA	158,742
Williamsport, PA	116,508
York-Hanover, PA	440,755
Youngstown-Warren-Boardman, OH-PA	553,263
Non-MSA Regions	

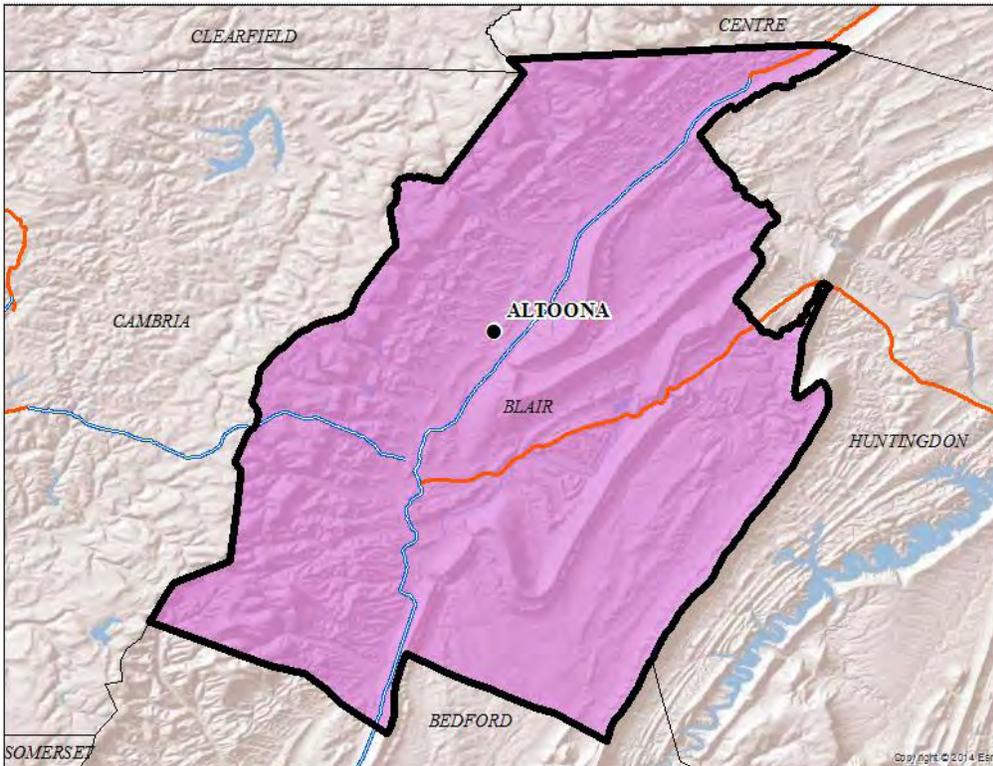
Allentown-Bethlehem-Easton, PA-NJ MSA (Pennsylvania portion)

Counties: Carbon, Lehigh, Northampton

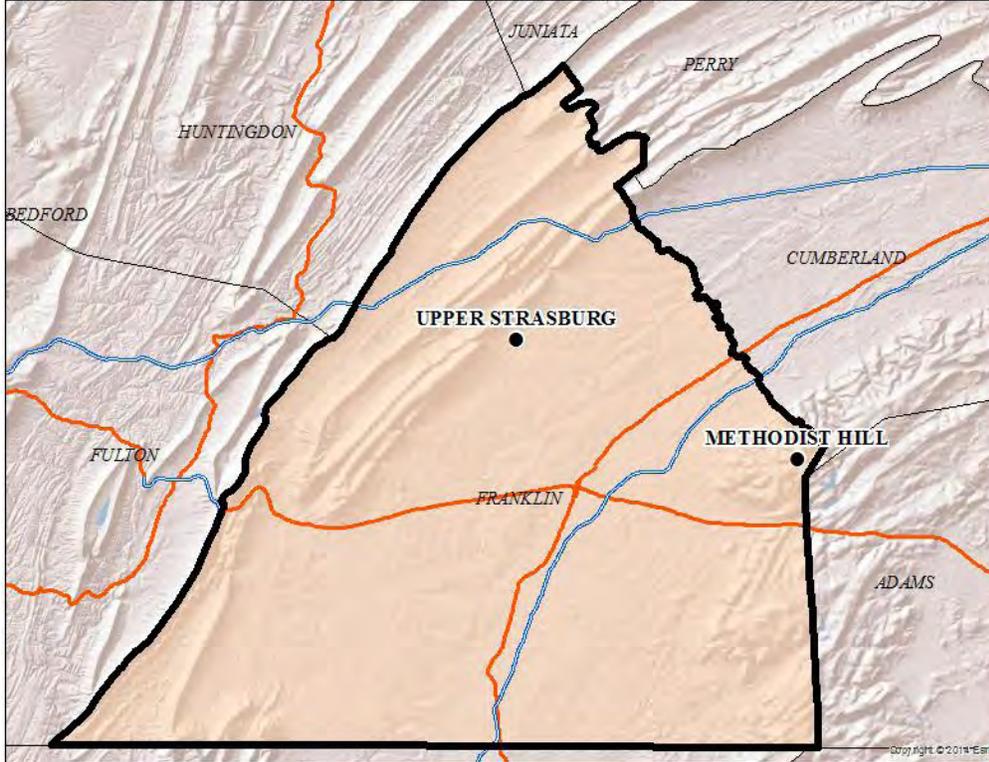


Altoona, PA MSA

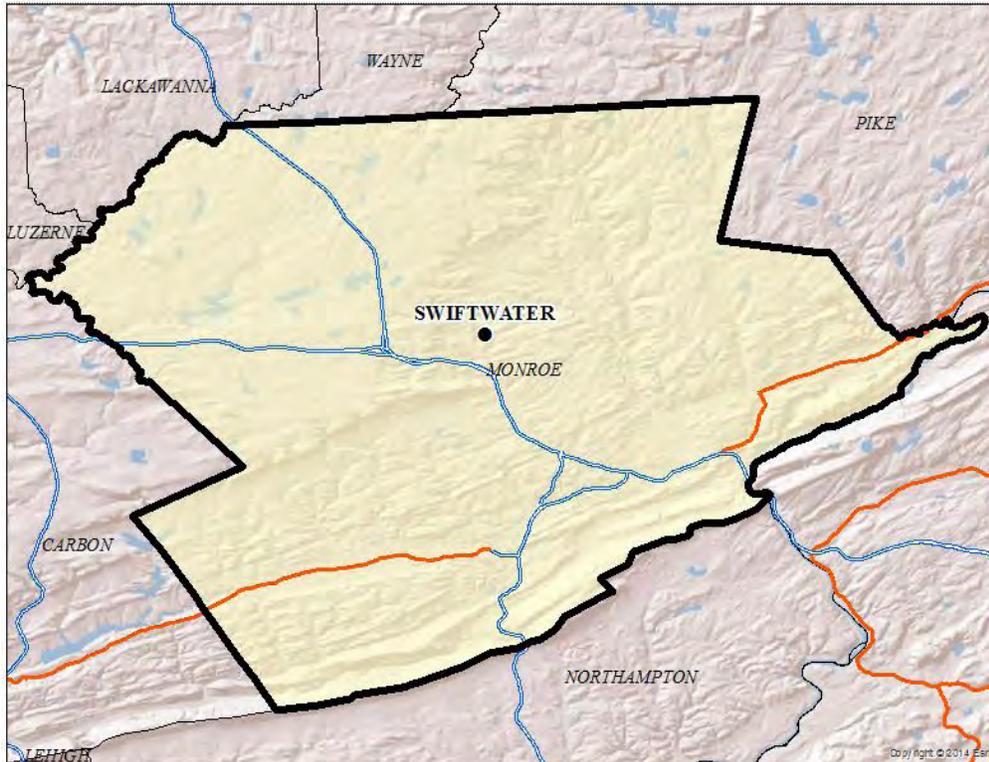
Counties: Blair



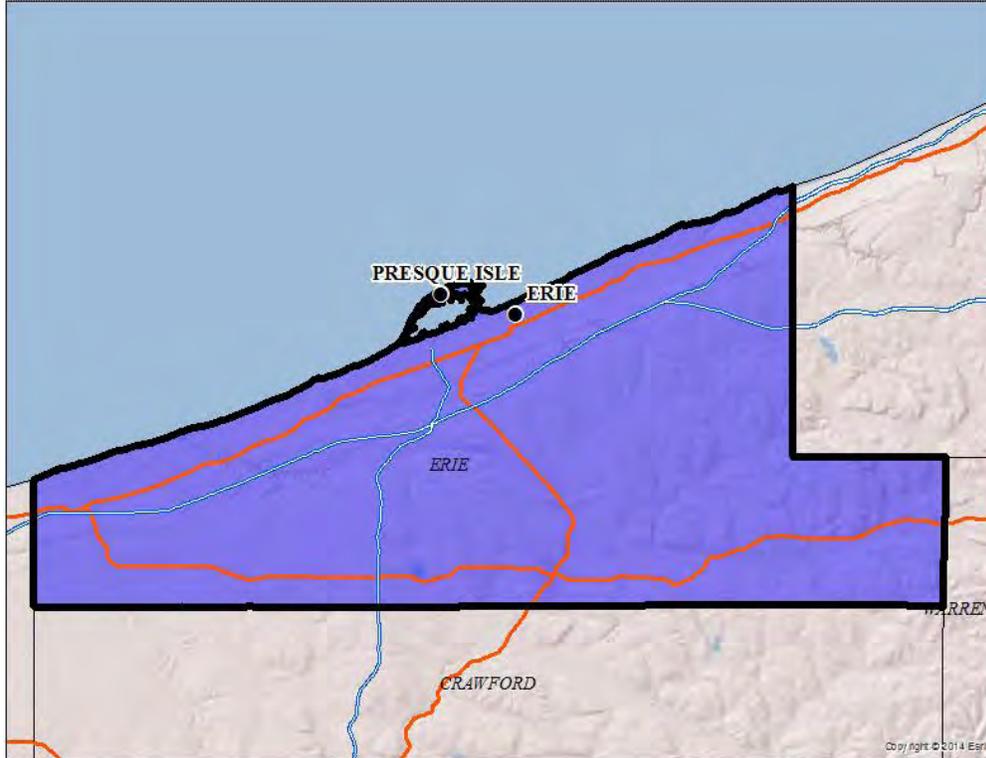
Chambersburg-Waynesboro, PA MSA
Counties: Franklin



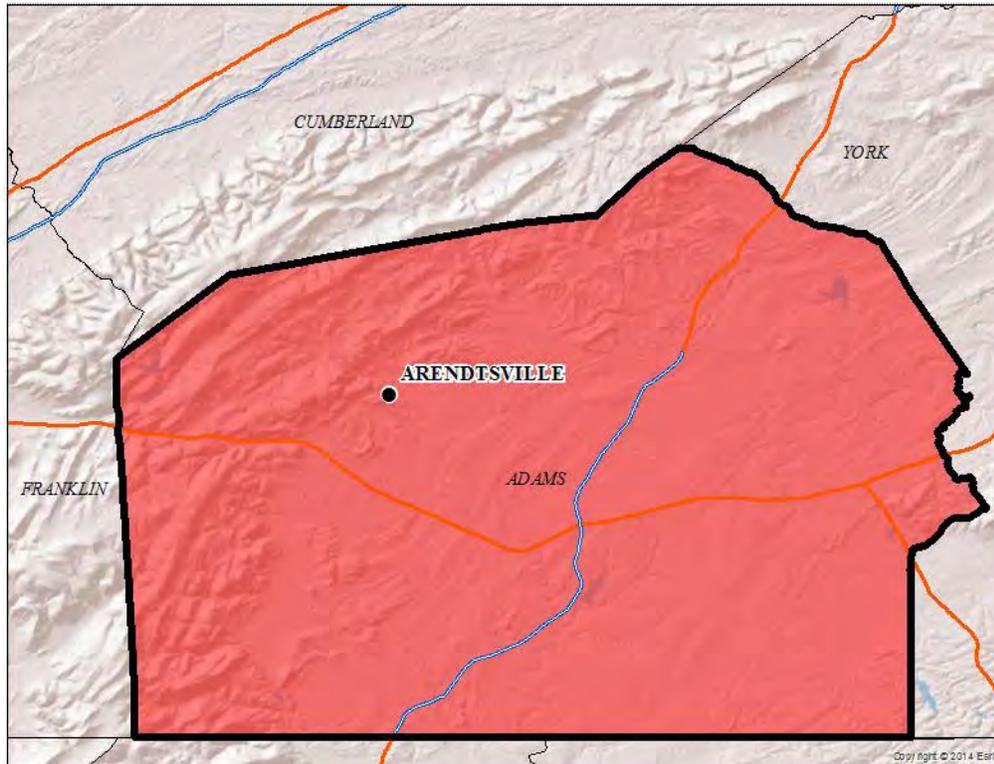
East Stroudsburg, PA MSA
Counties: Monroe



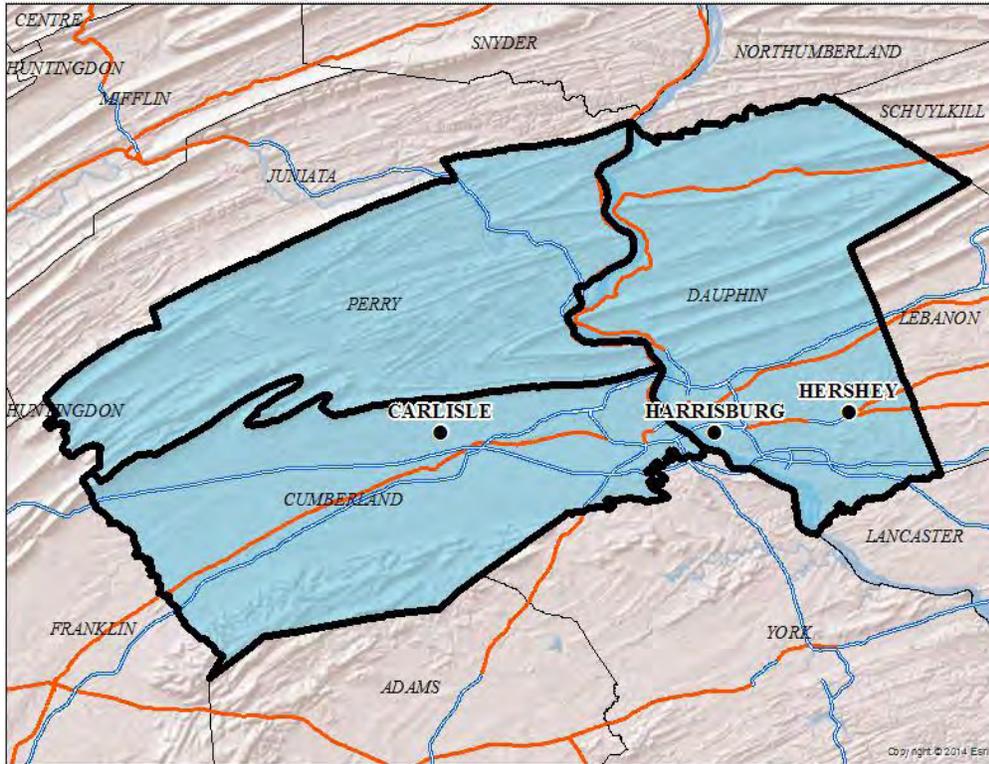
Erie, PA MSA
Counties: Erie



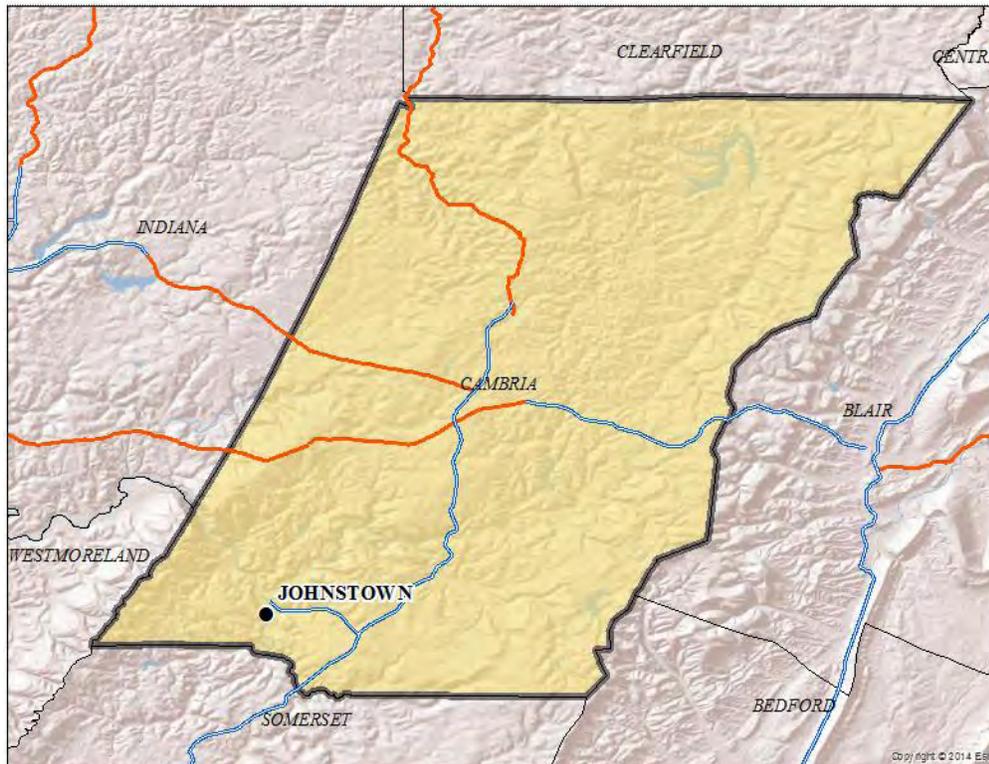
Gettysburg, PA MSA
Counties: Adams



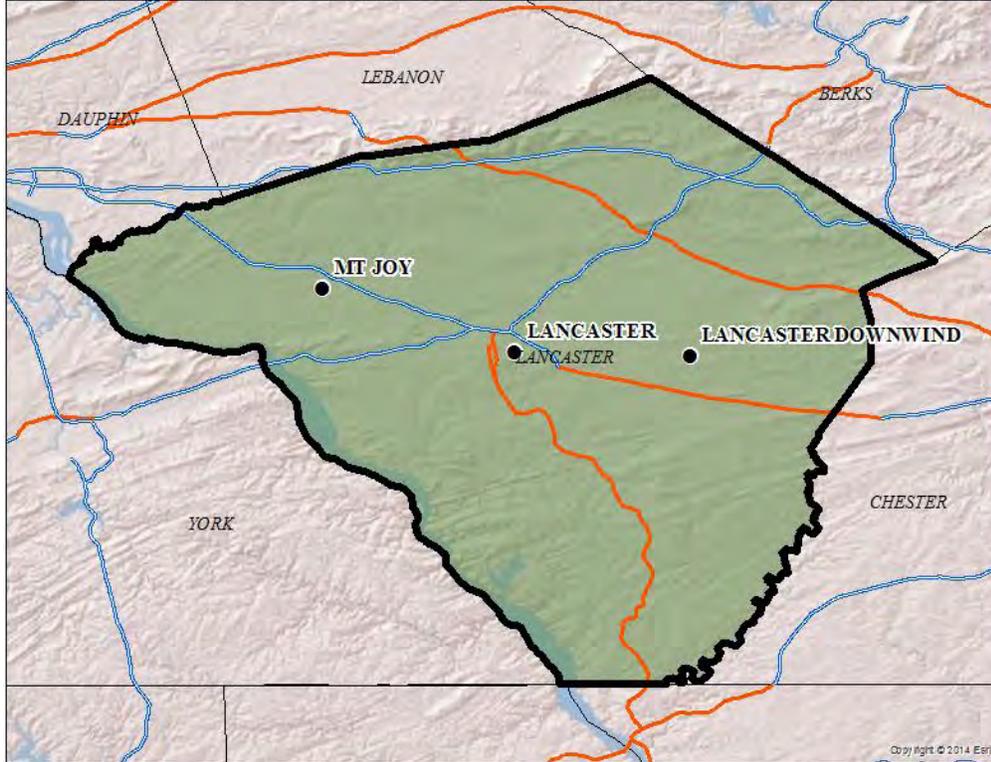
Harrisburg-Carlisle, PA MSA
Counties: Cumberland, Dauphin, Perry



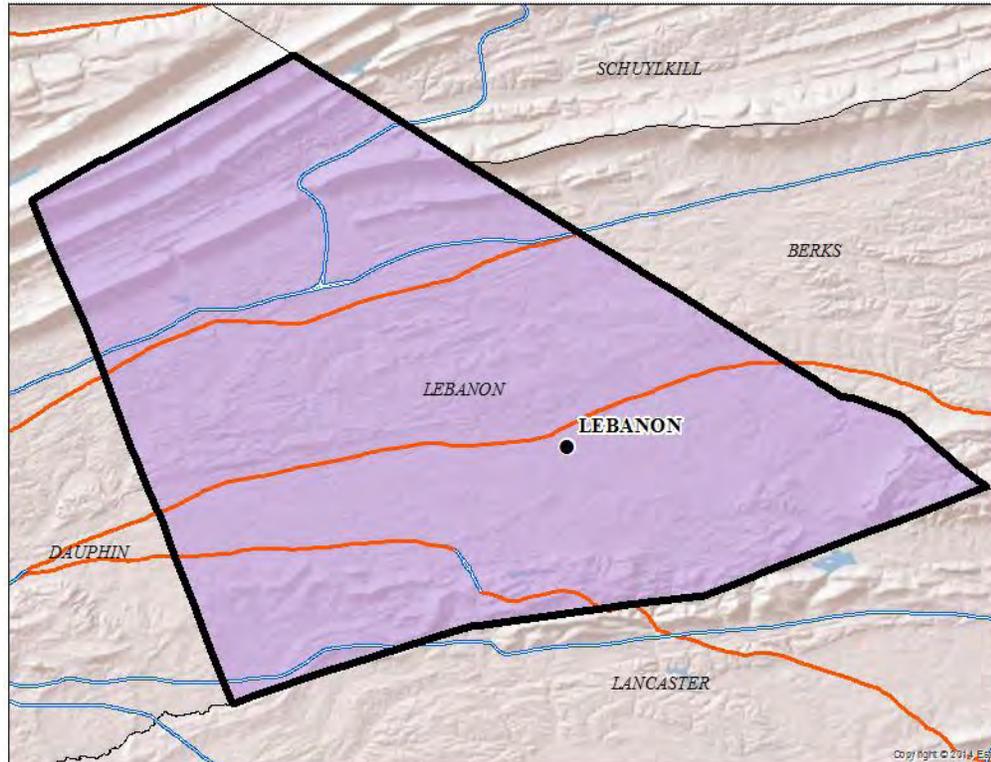
Johnstown, PA MSA
Counties: Cambria



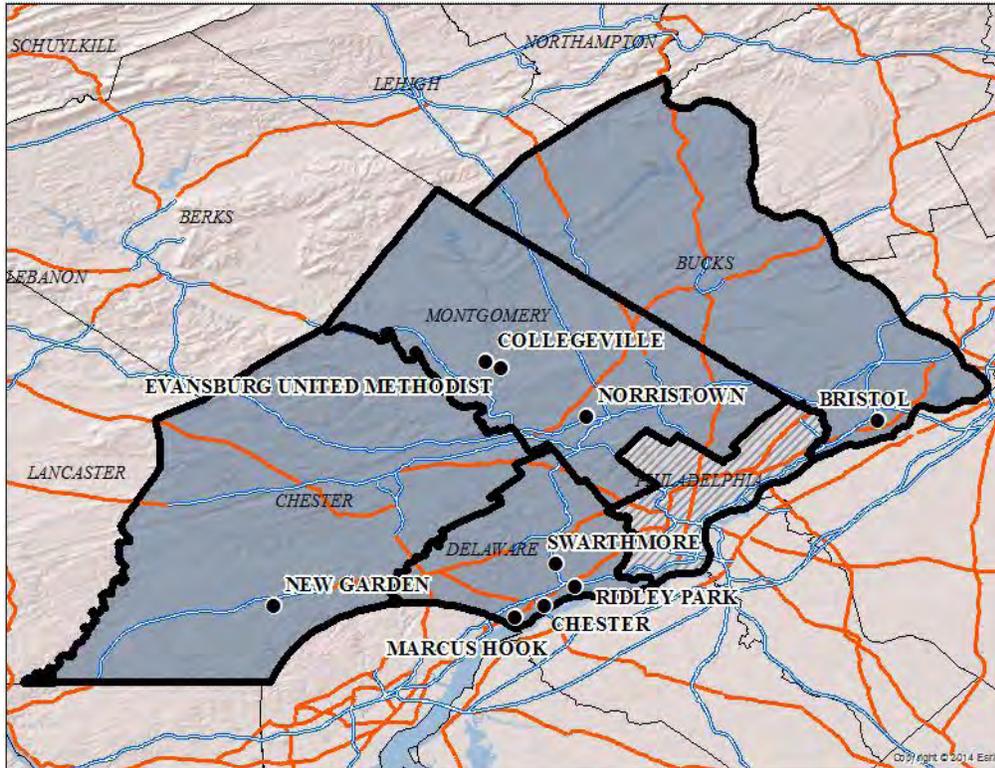
Lancaster, PA MSA
Counties: Lancaster



Lebanon, PA MSA
Counties: Lebanon

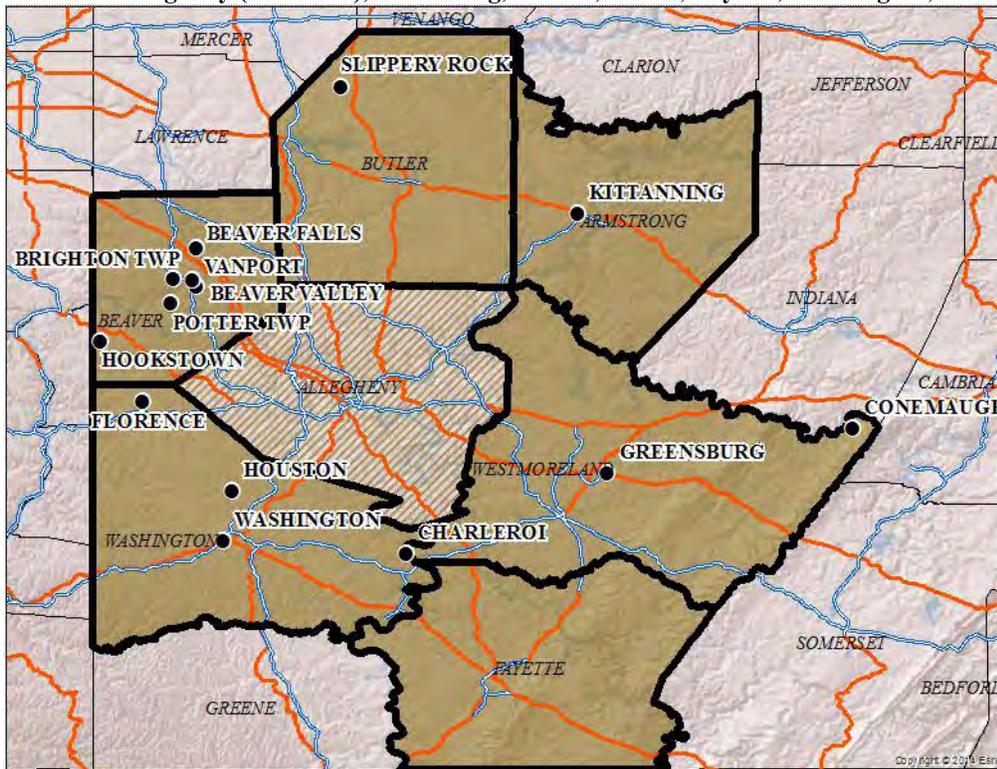


Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA (Pennsylvania portion)
Counties: Bucks, Chester, Delaware, Montgomery Philadelphia (Excluded)



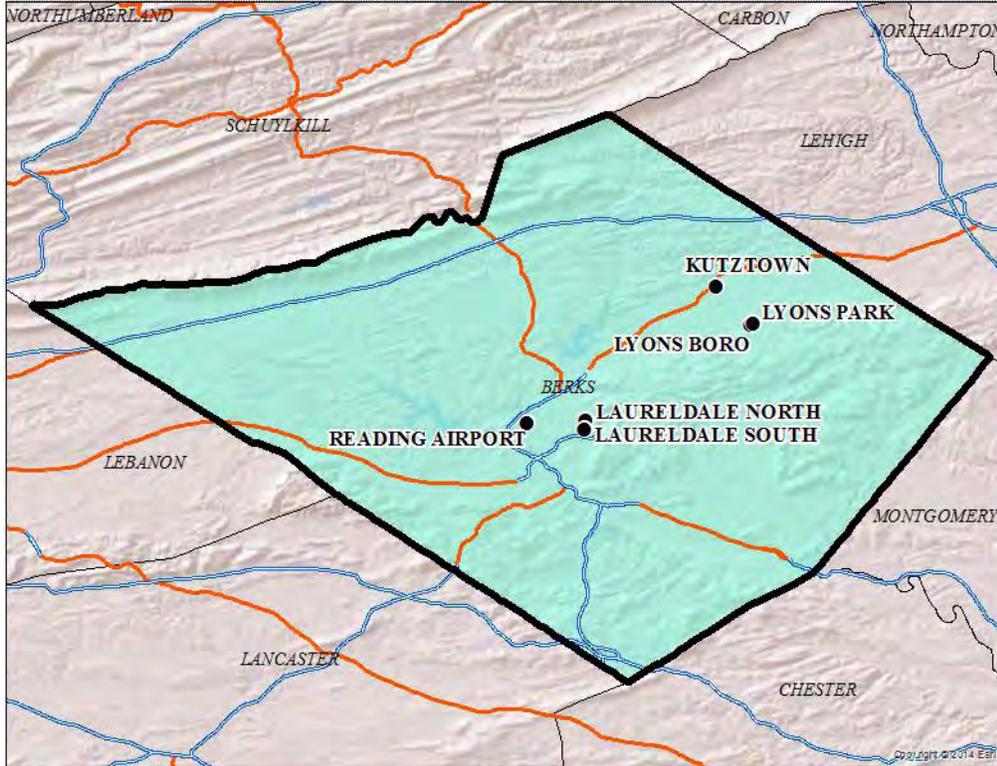
Pittsburgh, PA MSA

Counties: Allegheny (Excluded), Armstrong, Beaver, Butler, Fayette, Washington, Westmoreland



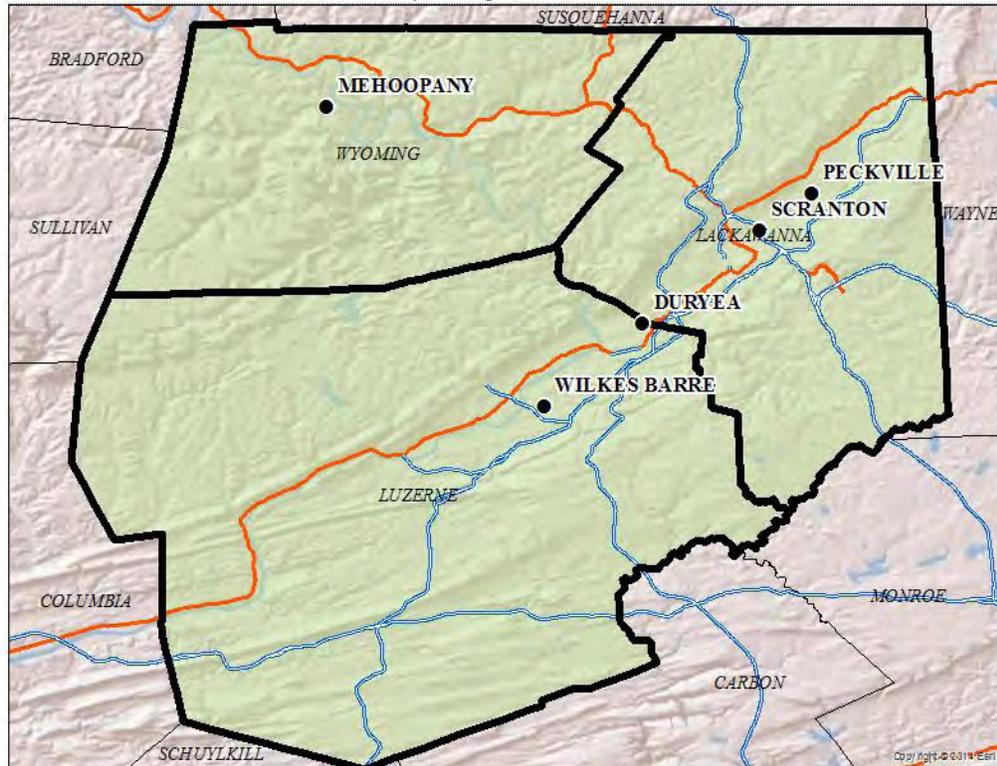
Reading, PA MSA

Counties: Berks



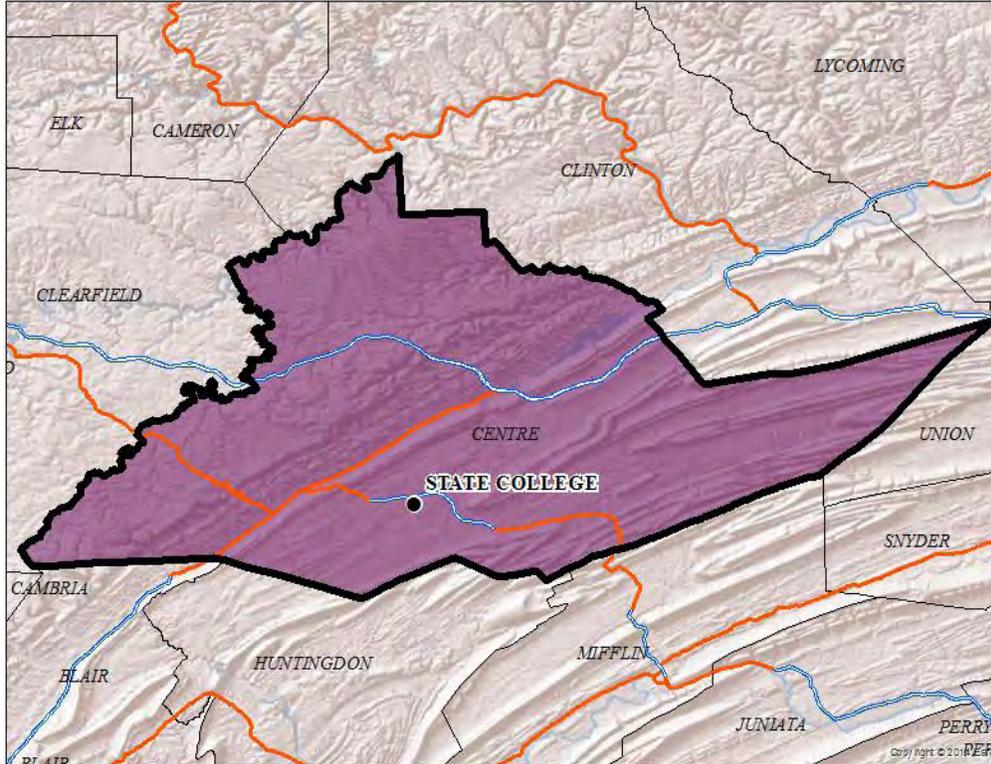
Scranton-Wilkes-Barre-Hazleton, PA MSA

Counties: Lackawanna, Luzerne, Wyoming



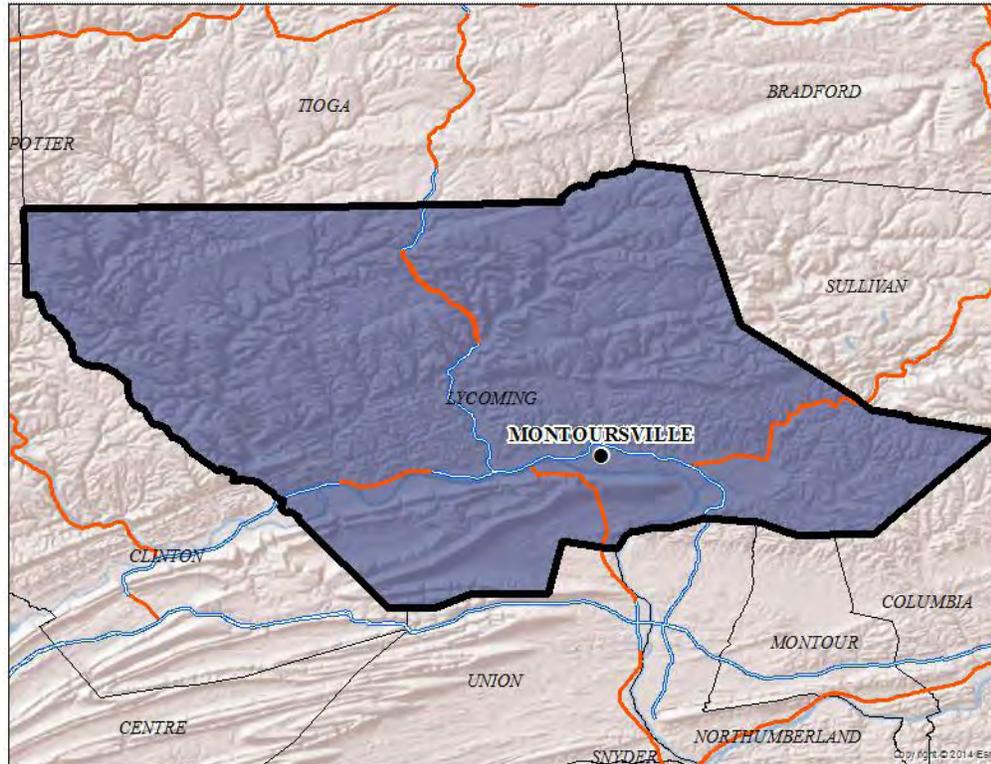
State College, PA MSA

Counties: Centre

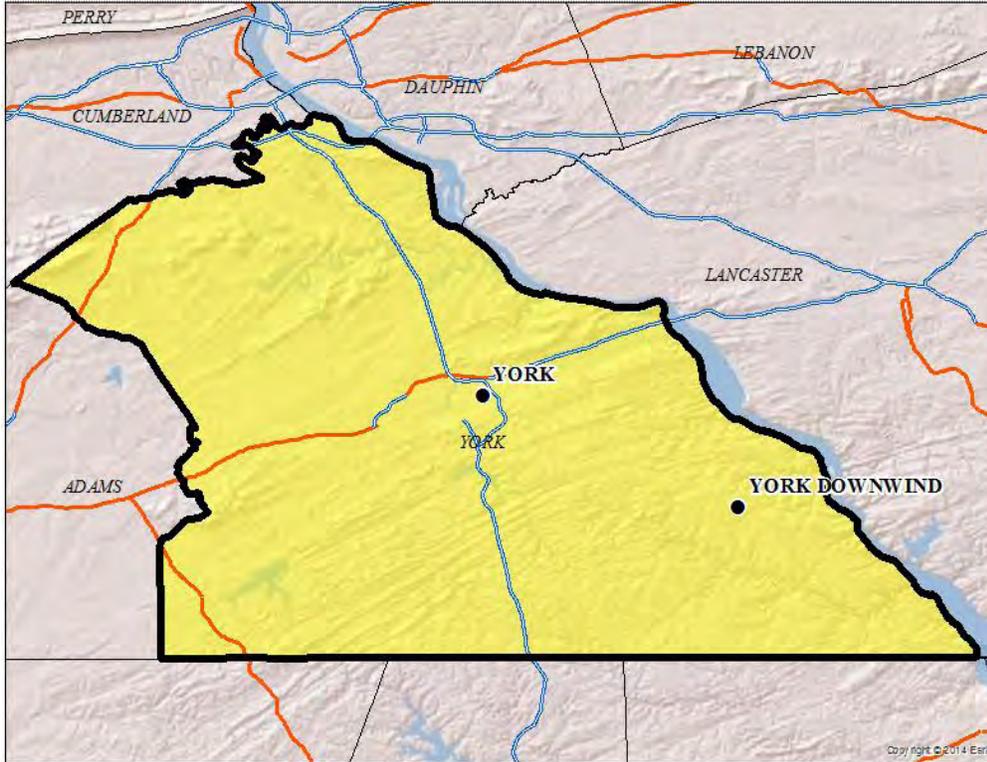


Williamsport, PA MSA

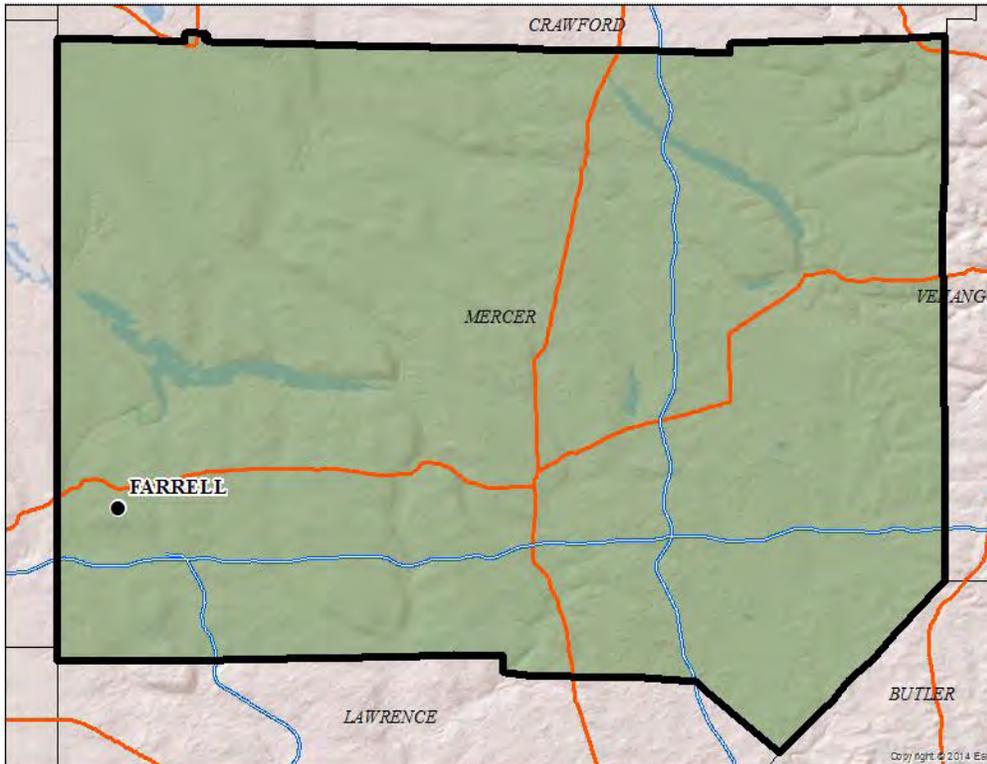
Counties: Lycoming



York-Hanover, PA MSA
Counties: York

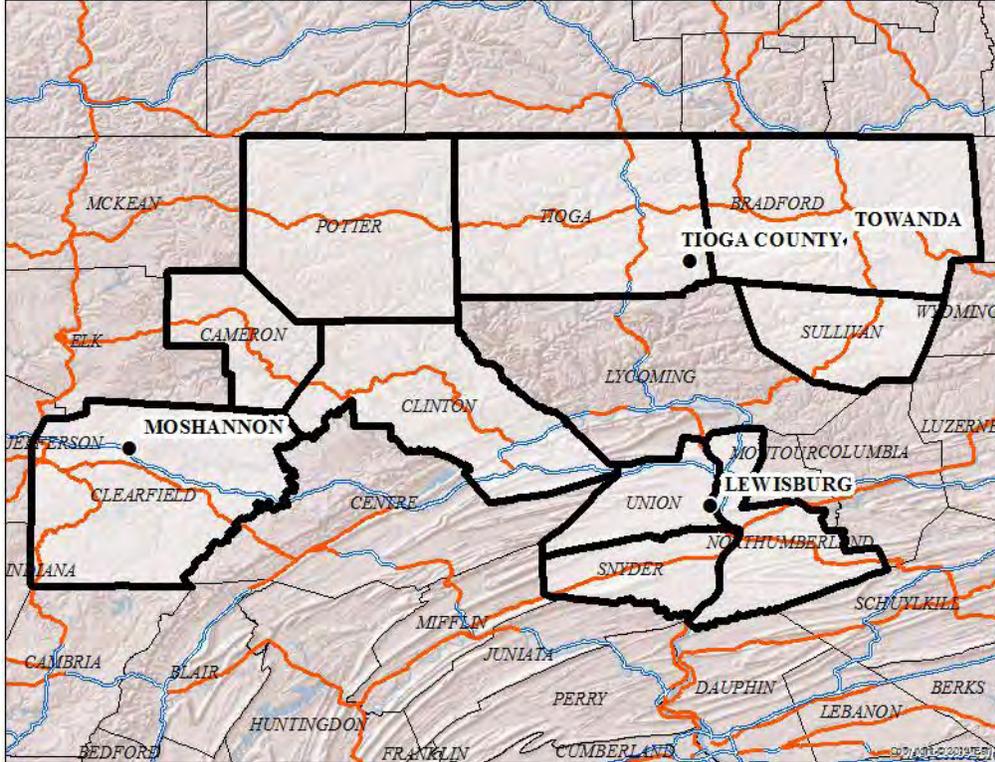


Youngstown-Warren-Boardman, OH-PA MSA (Pennsylvania portion)
Counties: Mercer



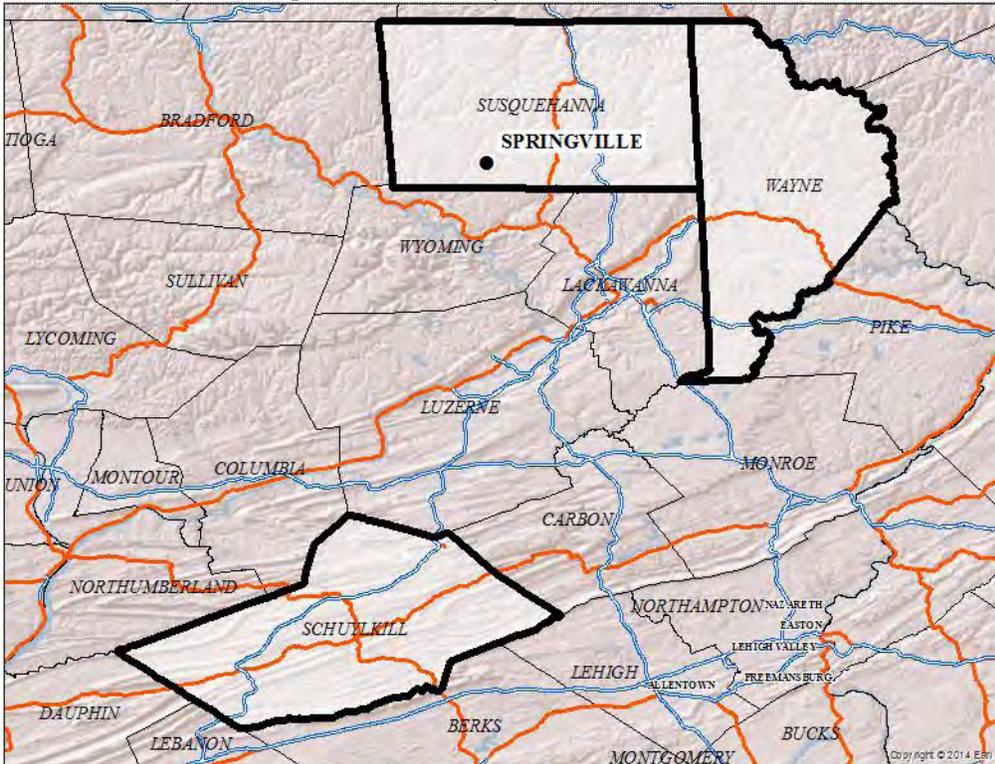
Northcentral PA – Non-MSA Region

Counties: Bradford, Cameron, Clinton, Clearfield, Northumberland, Potter, Snyder, Sullivan, Tioga, Union



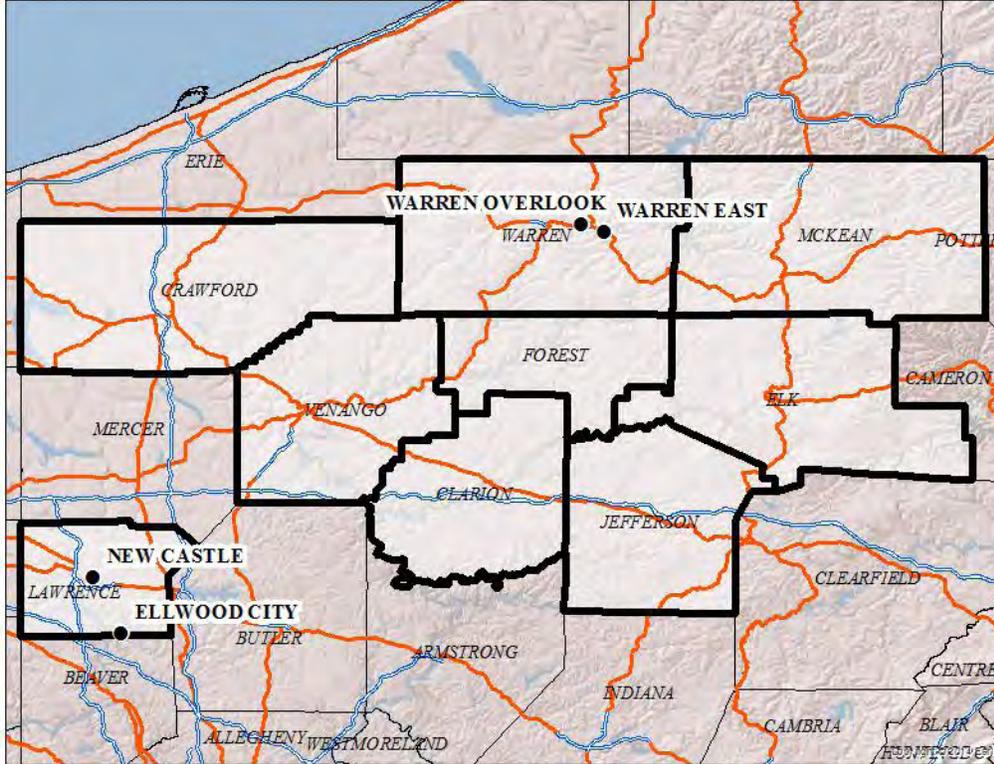
Northeast PA – Non-MSA Region

Counties: Schuylkill, Susquehanna and Wayne



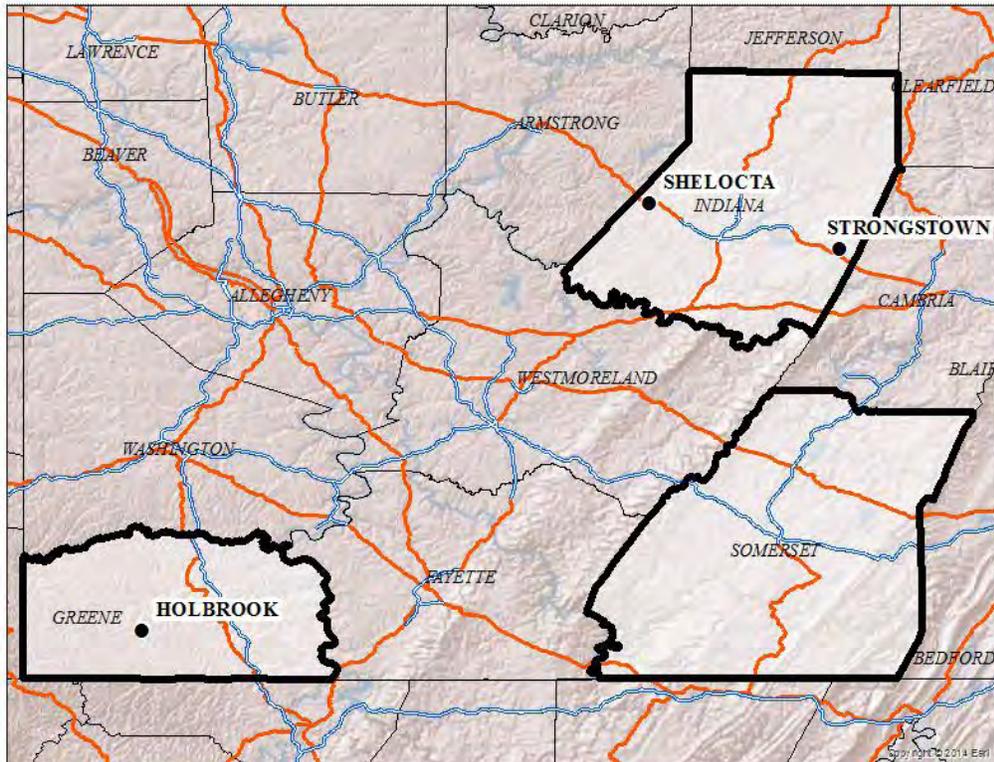
Northwest PA – Non-MSA Region

Counties: Clarion, Crawford, Elk, Forest, Jefferson, Lawrence, McKean, Venango, Warren



Southwest PA – Non-MSA Region

Counties: Greene, Indiana, Somerset



Appendix B — Pennsylvania Monitoring Network Site Details

Description of Appendix B

Appendix B of the document provides a detailed description of the existing monitoring network sites. This appendix includes information related to the location of the site, monitoring parameters at the site, and details about the monitors themselves in order to meet the requirements of § 58.10 (a) and (b). Unless otherwise indicated, all sites and monitors meet siting requirements set forth in of 40 CFR Part 58, Appendices A, C, D, and E.

Table B-1 below provides details on the methods and instrumentation utilized by the Department's Air Quality Monitoring Division for all criteria and toxic pollutant monitoring. PA DEP utilizes Federal Reference Methods (FRM) and Federal Equivalent Methods in its monitoring network, where applicable.

Table B-1. Ambient Air Monitoring Equipment and Methods

PARAMETER	MANUFACTURER/INSTRUMENT/MODEL	EPA METHOD DESIGNATION
Continuous Gaseous Sampling		
OZONE	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
SO₂	Teledyne Advanced Pollution Instrumentation Model 100A UV Fluorescence SO ₂ Analyzer http://www.teledyne-api.com/products/100e.asp	Automated Equivalent Method: EQSA-0495-100 60 FR 17061, 4/4/95
NO/NO₂/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-1194-099 59 FR 61892, 12/2/94
CO	Teledyne Advanced Pollution Instrumentation Model 300 CO Gas Filter Correlation Analyzer http://www.teledyne-api.com/products/300e.asp	Automated Reference Method: RFGA-1093-093 58 FR 58166, 10/29/93
Particulate Sampling		
LEAD	Tisch TE-5170 VFC+ http://tisch-env.com/products/9-High-Volume-TSP-Total-Suspended-Particulate-Samplers/61-TE-5170/default.asp Inductively Coupled Plasma - Mass Spectrometry	Manual Equivalent Method EQL-0710-192 75 FR 45627, 8/3/10
PM_{2.5}		
<i>Discrete</i>	R&P Partisol-Plus Model 2025 Sequential Air Sampler w/WINS and R&P Partisol-Plus Model 2025 Sequential Air Sampler w/VSCC http://www.thermoscientific.com/wps/portal/ts/products/detail?navigationId=L10405&categoryId=89579&productId=11960559.htm	Manual Reference Method: RFPS-0498-118 63 FR 18911, 4/16/98 67 FR 15567, 4/2/02 (EQPM-0202-145 redesignated as manual reference method 12/18/06)
<i>Continuous</i>	Met One Instruments Beta-Attenuation Mass (BAM) Model 1020 http://www.metone.com/documents/BAM-1020_6-08.pdf	Automated Equivalent Method EQPM-0308-170 73 FR 13224, 3/12/08 73 FR 22362, 4/25/08
	R&P TEOM Series 8500a Filter Dynamics Measurement System (FDMS) and TEOM Series 1400ab http://www.thermoscientific.com/wps/portal/ts/products/detail?productId=11960562&groupType=PRODUCT&searchType=0	Automated Equivalent Method EQPM-0609-181 74 FR 28697, 6/17/2009

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PARAMETER	MANUFACTURER/INSTRUMENT/MODEL	EPA METHOD DESIGNATION
PM_{2.5} SPECIATION	Met One Instruments SASS PM _{2.5} Ambient Chemical Speciation Air Sampler http://www.metone.com/documents/SASS0301Particulate.pdf URG Corporation 3000N Sequential Particulate Speciation System http://www.urgcorp.com/index.php/systems/manual-sampling-systems/urg-3000n-carbon-sampler	None
PM₁₀		
<i>Discrete</i>	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
<i>Continuous</i>	Rupprecht & Patashnick (R&P) Tapered Element Oscillating Microbalance (TEOM) Series 1400 Ambient Particulate Monitor http://www.thermoscientific.com/wps/portal/ts/products/detail?navigationId=L10405&catId=89579&productId=11960558	Automated Equivalent Method: EQPM-1090-079 55 FR 43406, 10/29/90
LEAD	Tisch TE-5170 VFC+ http://tisch-env.com/products/9-High-Volume-TSP-Total-Suspended-Particulate-Samplers/61-TE-5170/default.asp Inductively Coupled Plasma - Mass Spectrometry	Manual Equivalent Method EQL-0710-192 75 FR 45627, 8/3/10
Toxic Sampling		
VOC	ATEC Model 2200-12 ATEC Model 2200-102 http://www.atec-online.com/canister.htm Entech CS1200ES4 http://www.entechinst.com/media/pdfs/cs1200e_cat.pdf	EPA Compendium Method TO-15
Carbonyl	Xontech Model 925 Automated Carbonyl Sampler ATEC Model 2200-102 http://www.atec-online.com/products.htm	EPA Compendium Method TO-11A
MERCURY	Tekran Mercury Vapor Analyzer Model 2537A Cold Vapor Atomic Fluorescence Spectrometer (CVAFS) http://www.tekran.com/products/ambient-air/tekran-model-2537-cvafs-automated-mercury-analyzer/	EPA Compendium Method IO-5
TSP/Metals	Thermo GMW TSP High-Volume Air Sampler - Volumetric Flow Controlled http://www.thermoscientific.com/ecom/servlet/productsdetail_11152_L11350_89579_11960634_-1 Inductively Coupled Plasma - Mass Spectrometry (Metals)	Manual Reference Method Method Code 802 47 FR 54912, 12/6/82 48 FR 17355 4/22/83 EPA Compendium Method IO-3.5

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SITE NAME: ALLENTOWN
AQS ID: 420770004
MSA: Allentown-Bethlehem-Easton MSA
COUNTY: LEHIGH
MUNICIPALITY: CITY OF ALLENTOWN
LATITUDE: 40.61194445
LONGITUDE: -75.43261111
ADDRESS: STATE HOSPITAL REAR 1600 HANOVER AVE
COMMENTS: Meets federal monitoring requirements in the Allentown-Bethlehem-Easton MSA



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O₃	SLAMS	1/1/1984	Cont.	UV Absorption	Neighborhood	Regulatory Compliance	Population Exposure
PM₁₀	SLAMS	5/16/1996	Cont.	TEOM Gravimetric	Neighborhood	Regulatory Compliance	Population Exposure

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SITE NAME: ALTOONA
AQS ID: 420130801
MSA: Altoona MSA
COUNTY: BLAIR
MUNICIPALITY: LOGAN TWP
LATITUDE: 40.53563889
LONGITUDE: -78.37036111
ADDRESS: 2ND AVE & 7TH ST
COMMENTS: Monitor for NAAQS compliance for criteria pollutants in Altoona MSA



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	5/1/1978	Cont.	UV Absorption	Urban Scale	Regulatory Compliance	Population Exposure
SO ₂	SLAMS	5/1/1978	Cont.	UV Fluorescence	Urban Scale	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	6/1/2010	Cont.	Beta Attenuation	Urban Scale	Regulatory Compliance	Population Exposure
PM ₁₀	SLAMS	5/17/1995	Cont.	TEOM Gravimetric	Urban Scale	Regulatory Compliance	Population Exposure

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: ARENDSVILLE
AQS ID: 420010001
MSA: Gettysburg MSA
COUNTY: ADAMS
MUNICIPALITY: FRANKLIN TWP
LATITUDE: 39.92330556
LONGITUDE: -77.30816667
ADDRESS: WINDING ROAD, BIGLERVILLE
COMMENTS: Monitors regional transport of pollutants into eastern PA



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	11/1/2014	Cont.	UV Absorption	Regional Scale	Regulatory Compliance	Regional Transport
SO ₂	SLAMS	10/6/2014	Cont.	UV Fluorescence	Regional Scale	Regulatory Compliance	Regional Transport
NO ₂	SLAMS	6/24/1997	Cont.	Chemiluminescence	Urban Scale	Specific Location Characterization	General/Background
CO	SLAMS	6/24/1997	Cont.	Non-dispersive Infrared	Urban Scale	Specific Location Characterization	General/Background
PM _{2.5}	SLAMS	7/1/2009	Cont.	Beta Attenuation	Urban Scale	Population Exposure	General/Background
VOC	Other	6/2/1997	1 in 6	Canister		Air Toxics	
CAR	Other	6/2/1997	1 in 6	DNPH - Coated Cartridges		Air Toxics	

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: BEAVER FALLS
AQS ID: 420070014
MSA: Pittsburgh MSA
COUNTY: BEAVER
MUNICIPALITY: CITY OF BEAVER FALLS
LATITUDE: 40.74780556
LONGITUDE: -80.31575
ADDRESS: EIGHTH STREET AND RIVER ALLEY
COMMENTS: Monitor for NAAQS compliance for criteria pollutants



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	1/1/1974	Cont.	UV Absorption	Urban Scale	Regulatory Compliance	Population Exposure
NO ₂	SLAMS	1/1/1974	Cont.	Chemiluminescence	Urban Scale	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	12/1/1999	Daily	Gravimetric	Urban Scale	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	7/16/2004	Cont.	FDMS Gravimetric	Urban Scale	Population Exposure	Population Exposure
PM ₁₀	SLAMS	9/20/1995	Cont.	TEOM Gravimetric	Urban Scale	Regulatory Compliance	Population Exposure
VOC	Other	1/2/2010	1 in 6	Canister		Air Toxics	

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: BEAVER VALLEY
AQS ID: 420070007
MSA: Pittsburgh MSA
COUNTY: BEAVER
MUNICIPALITY: CENTER TWP
LATITUDE: 40.671394
LONGITUDE: -80.314264
ADDRESS: 200 FAIRVIEW DRIVE
COMMENTS: Monitors lead concentrations from nearby source



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
Pb	SLAMS	1/1/2010	1 in 6	ICP-MS	Middle Scale	Regulatory Compliance	Source Oriented
TSP	Other	2/20/2011	1 in 6	HiVol - Quartz filter		Air Toxics	

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: BRIGHTON TWP
AQS ID: 420070005
MSA: Pittsburgh MSA
COUNTY: BEAVER
MUNICIPALITY: BRIGHTON TWP
LATITUDE: 40.68547222
LONGITUDE: -80.3605
ADDRESS: 1015 SEBRING ROAD
COMMENTS: Monitors ozone and SO₂ concentrations within the Ohio River valley



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	4/20/1994	Cont.	UV Absorption	Neighborhood	Regulatory Compliance	Population Exposure
SO ₂	SLAMS	4/20/1994	Cont.	UV Fluorescence	Neighborhood	Regulatory Compliance	Population Exposure

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: BRISTOL
AQS ID: 420170012
MSA: Philadelphia-Camden-Wilmington MSA
COUNTY: BUCKS
MUNICIPALITY: BRISTOL TWP
LATITUDE: 40.10738889
LONGITUDE: -74.88247222
ADDRESS: ROCKVIEW DRIVE
COMMENTS: Monitors downwind concentration of ozone from mobile sources in the Philadelphia metro area



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	1/1/1974	Cont.	UV Absorption	Neighborhood	Regulatory Compliance	Population Exposure
SO ₂	SLAMS	1/1/1974	Cont.	UV Fluorescence	Neighborhood	Regulatory Compliance	Population Exposure
NO ₂	SLAMS	1/1/1974	Cont.	Chemiluminescence	Neighborhood	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	1/1/1999	Daily	Gravimetric	Neighborhood	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	6/1/2010	Cont.	Beta Attenuation	Neighborhood	Regulatory Compliance	Population Exposure

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: CARLISLE
AQS ID: 420410101
MSA: Harrisburg-Carlisle MSA
COUNTY: CUMBERLAND
MUNICIPALITY: NORTH MIDDLETON TWP
LATITUDE: 40.24661111
LONGITUDE: -77.18372222
ADDRESS: IMPERIAL COURT
COMMENTS: Monitor fine particulate matter to meet federal monitoring requirements in the Harrisburg MSA



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
PM _{2.5}	SLAMS	3/29/2001	Daily	Gravimetric	Urban Scale	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	1/1/2009	Cont.	Beta Attenuation	Urban Scale	Population Exposure	Population Exposure

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: CHARLEROI
AQS ID: 421250005
MSA: Pittsburgh MSA
COUNTY: WASHINGTON
MUNICIPALITY: CHARLEROI BORO
LATITUDE: 40.14658333
LONGITUDE: -79.90222222
ADDRESS: CHARLER01 WASTE TREATMENT PLANT
COMMENTS: Monitors for criteria pollutants to meet federal requirements as well as NAAQS compliance in the Pittsburgh MSA



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	1/1/1974	Cont.	UV Absorption	Neighborhood	Regulatory Compliance	Population Exposure
SO ₂	SLAMS	1/1/1974	Cont.	UV Fluorescence	Neighborhood	Regulatory Compliance	Population Exposure
NO ₂	SLAMS	1/1/1974	Cont.	Chemiluminescence	Neighborhood	Population Exposure	Population Exposure
CO	SLAMS	1/1/1982	Cont.	Non-dispersive Infrared	Neighborhood	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	4/1/2009	Cont.	Beta Attenuation	Neighborhood	Population Exposure	Population Exposure
PM ₁₀	SLAMS	6/21/1995	1 in 6	Gravimetric	Middle Scale	Regulatory Compliance	Source Oriented
VOC	Other	5/31/2009	1 in 6	Canister		Air Toxics	

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: CHESTER
AQS ID: 420450002
MSA: Philadelphia-Camden-Wilmington MSA
COUNTY: DELAWARE
MUNICIPALITY: CITY OF CHESTER
LATITUDE: 39.83519445
LONGITUDE: -75.37211111
ADDRESS: FRONT ST & NORRIS ST
COMMENTS: Monitoring of criteria pollutants for NAAQS compliance in the Philadelphia-Camden-Wilmington MSA



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	1/1/1974	Cont.	UV Absorption	Urban Scale	Regulatory Compliance	Population Exposure
SO ₂	SLAMS	4/1/1974	Cont.	UV Fluorescence	Urban Scale	Regulatory Compliance	Population Exposure
NO ₂	SLAMS	1/1/1974	Cont.	Chemiluminescence	Urban Scale	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	4/1/2009	Cont.	Beta Attenuation	Urban Scale	Population Exposure	Population Exposure
SP	CSN	12/1/2014	1 in 6	Gravimetric	Neighborhood	Research/Scientific Monitoring	Population Exposure
PM ₁₀	SLAMS	3/3/1995	Cont.	TEOM Gravimetric	Urban Scale	Regulatory Compliance	Population Exposure
Pb	SLAMS	2/1/1994	1 in 6	ICP-MS	Neighborhood	Regulatory Compliance	Population Exposure
VOC	Other	1/10/1995	1 in 6	Canister		Air Toxics	
TSP	Other	1/10/1995	1 in 6	HiVol - Quartz filter		Air Toxics	

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: COLLEGEVILLE
AQS ID: 420910005
MSA: Philadelphia-Camden-Wilmington MSA
COUNTY: MONTGOMERY
MUNICIPALITY: COLLEGEVILLE BORO
LATITUDE: 40.1925
LONGITUDE: -75.4575
ADDRESS: URSINUS COLLEGE
COMMENTS: Monitors for VOC's near source

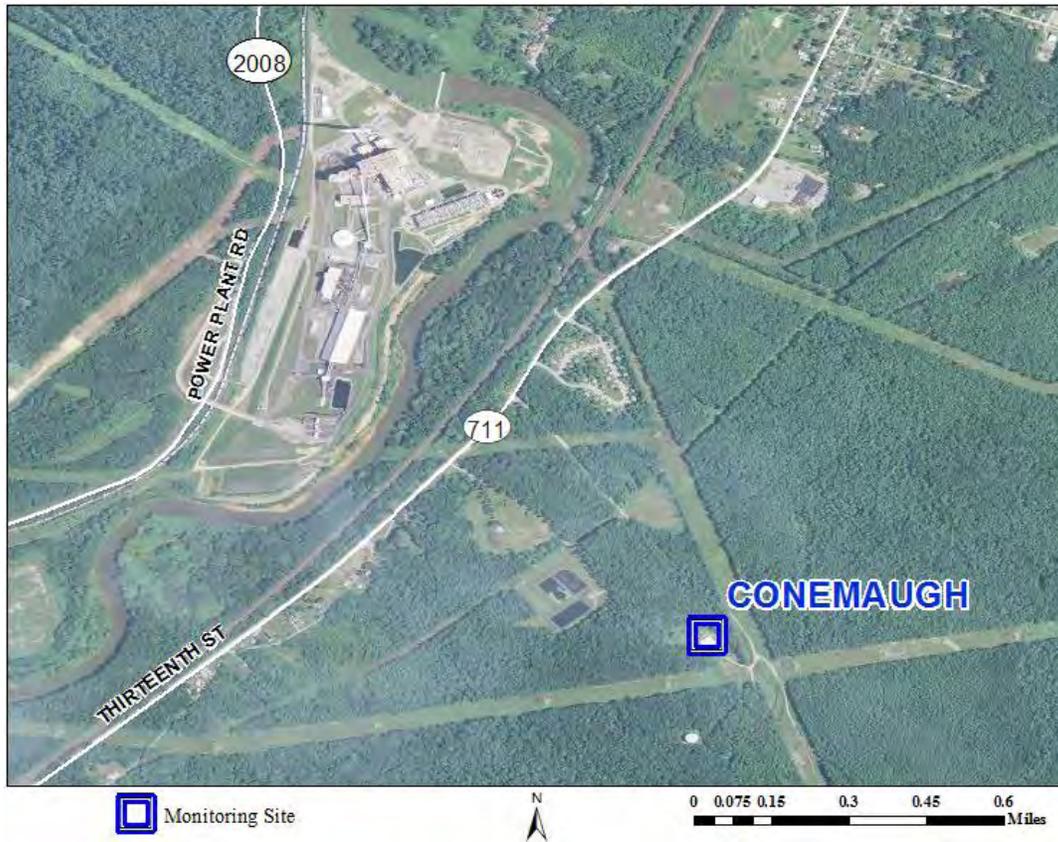


Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
VOC	Other	5/18/2007	1 in 6	Canister		Air Toxics	

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: CONEMAUGH
AQS ID: 421290009
MSA: Pittsburgh MSA
COUNTY: WESTMORELAND
MUNICIPALITY: ST CLAIR TWP
LATITUDE: 40.39292
LONGITUDE: -79.02446
ADDRESS: SUGAR RUN - RT 711
COMMENTS: Monitors lead concentrations from nearby source

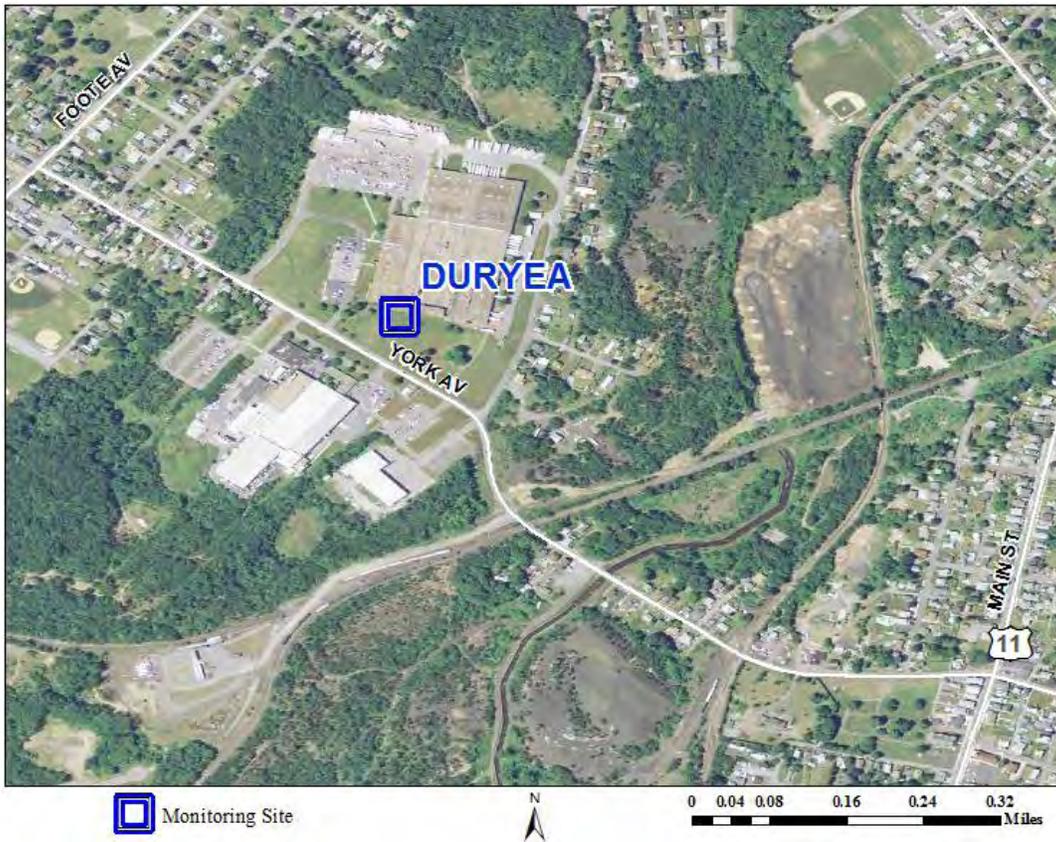


Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
Pb	SLAMS	1/1/2010	1 in 6	ICP-MS	Middle Scale	Regulatory Compliance	Source Oriented

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: DURYEA
AQS ID: 420790036
MSA: Scranton-Wilkes-Barre-Hazleton MSA
COUNTY: LUZERNE
MUNICIPALITY: DURYEA BORO
LATITUDE: 41.348869
LONGITUDE: -75.747322
ADDRESS: 401 YORK AVE
COMMENTS: Monitor lead concentrations close to a source region



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
Pb	SLAMS	1/1/2010	1 in 6	ICP-MS	Middle Scale	Regulatory Compliance	Source Oriented

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: EASTON
AQS ID: 420958000
MSA: Allentown-Bethlehem-Easton MSA
COUNTY: NORTHAMPTON
MUNICIPALITY: WILSON BORO
LATITUDE: 40.69230556
LONGITUDE: -75.23711111
ADDRESS: 17TH AND SPRING GARDEN STREETS
COMMENTS: Monitors SO₂ concentrations in the Allentown-Bethlehem-Easton MSA



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	10/20/1999	Cont.	UV Absorption	Urban Scale	Regulatory Compliance	Max Ozone Concentration
SO ₂	SLAMS	10/20/1999	Cont.	UV Fluorescence	Urban Scale	Regulatory Compliance	Population Exposure
H ₂ S	SPM	1/1/1986	Cont.	UV Fluorescence	Neighborhood	Specific Location Characterization	Population Exposure

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: ELLWOOD CITY
AQS ID: 420730011
MSA: Northwest Region - Non-MSA
COUNTY: LAWRENCE
MUNICIPALITY: ELLWOOD CITY BORO
LATITUDE: 40.860031
LONGITUDE: -80.279092
ADDRESS: CLYDE STREET
COMMENTS: Monitor lead concentrations from nearby source



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
Pb	SLAMS	1/1/2010	1 in 6	ICP-MS	Middle Scale	Regulatory Compliance	Source Oriented

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: ERIE
AQS ID: 420490003
MSA: Erie MSA
COUNTY: ERIE
MUNICIPALITY: CITY OF ERIE
LATITUDE: 42.14197222
LONGITUDE: -80.03869444
ADDRESS: 10TH AND MARNE STREETS
COMMENTS: Monitors for NAAQS compliance in the Erie MSA.



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	5/18/1988	Cont.	UV Absorption	Neighborhood	Regulatory Compliance	Population Exposure
SO ₂	SLAMS	5/18/1988	Cont.	UV Fluorescence	Neighborhood	Regulatory Compliance	Population Exposure
NO ₂	SLAMS	5/18/1988	Cont.	Chemiluminescence	Neighborhood	Regulatory Compliance	Population Exposure
CO	SLAMS	11/1/2004	Cont.	Non-dispersive Infrared	Neighborhood	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	7/1/2009	Cont.	Beta Attenuation	Neighborhood	Regulatory Compliance	Population Exposure
SP	CSN	1/1/2002	1 in 6	Gravimetric	Neighborhood	Research/Scientific Monitoring	Population Exposure
PM ₁₀	SLAMS	8/10/1995	Cont.	TEOM Gravimetric	Neighborhood	Regulatory Compliance	Population Exposure

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: EVANSBURG UNITED METHODIST
AQS ID: 420910016
MSA: Philadelphia-Camden-Wilmington MSA
COUNTY: MONTGOMERY
MUNICIPALITY: LOWER PROVIDENCE TWP
LATITUDE: 40.183056
LONGITUDE: -75.434167
ADDRESS: 3871 GERMANTOWN PIKE
COMMENTS: Monitors for VOC's near source

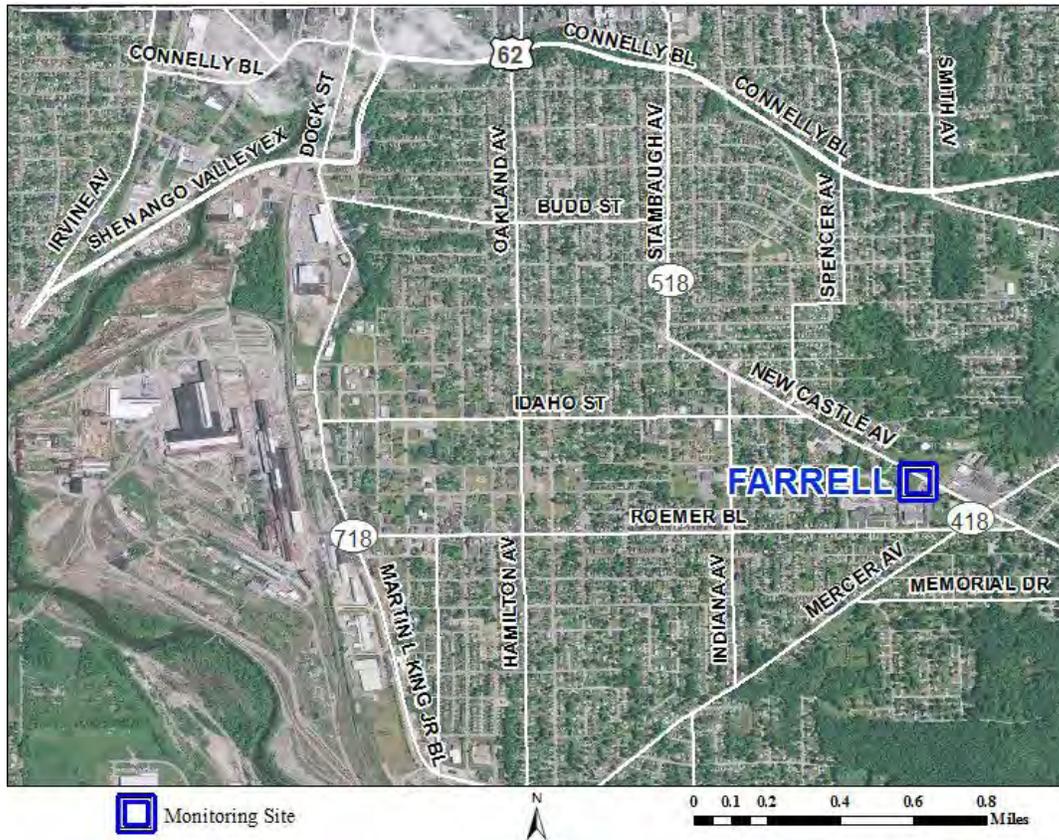


Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
VOC	Other	2/18/2009	1 in 6	Canister		Air Toxics	

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: FARRELL
AQS ID: 420850100
MSA: Youngstown-Warren-Boardman MSA
COUNTY: MERCER
MUNICIPALITY: CITY OF FARRELL
LATITUDE: 41.21405556
LONGITUDE: -80.48347222
ADDRESS: PA518 (NEW CASTLE ROAD) & PA418
COMMENTS: Meets federal monitoring requirements in the PA part of the Youngstown-Warren-Boardman MSA

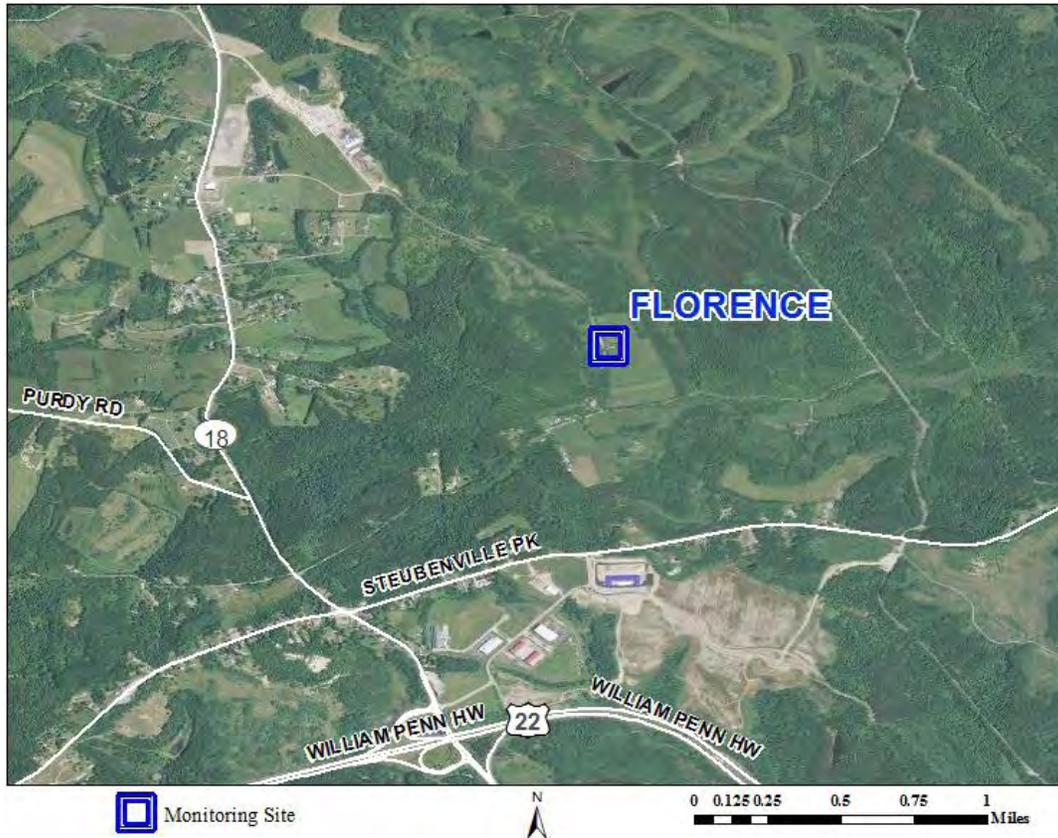


Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	9/1/1980	Cont.	UV Absorption	Urban Scale	Regulatory Compliance	Highest Concentration
PM _{2.5}	SLAMS	2/1/2000	Daily	Gravimetric	Urban Scale	Regulatory Compliance	Highest Concentration
PM _{2.5}	SLAMS	11/3/2010	Cont.	Beta Attenuation	Urban Scale	Regulatory Compliance	Highest Concentration

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: FLORENCE
AQS ID: 421255001
MSA: Pittsburgh MSA
COUNTY: WASHINGTON
MUNICIPALITY: HANOVER TWP
LATITUDE: 40.44547222
LONGITUDE: -80.42122222
ADDRESS: HILLMAN STATE PARK - KINGS CREEK ROAD
COMMENTS: Monitor transport of pollutants into PA from Ohio and West Virginia



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	6/8/1995	Cont.	UV Absorption	Regional Scale	Specific Location Characterization	Regional Transport
SO ₂	SLAMS	1/1/1982	Cont.	UV Fluorescence	Regional Scale	Specific Location Characterization	Regional Transport
PM _{2.5}	SLAMS	6/11/2012	Daily	Gravimetric	Regional Scale	Regulatory Compliance	Regional Transport
PM _{2.5}	SLAMS	7/1/2009	Cont.	Beta Attenuation	Regional Scale	Regulatory Compliance	Regional Transport
SP	CSN	1/1/2002	1 in 6	Gravimetric	Regional Scale	Research/Scientific Monitoring	Regional Transport

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: FREEMANSBURG
AQS ID: 420950025
MSA: Allentown-Bethlehem-Easton MSA
COUNTY: NORTHAMPTON
MUNICIPALITY: FREEMANSBURG BORO
LATITUDE: 40.62847222
LONGITUDE: -75.34158333
ADDRESS: WASHINGTON & CAMBRIA STS.
 FREEMANSBURG
COMMENTS: Meets federal monitoring requirements in the Allentown-Bethlehem-Easton MSA

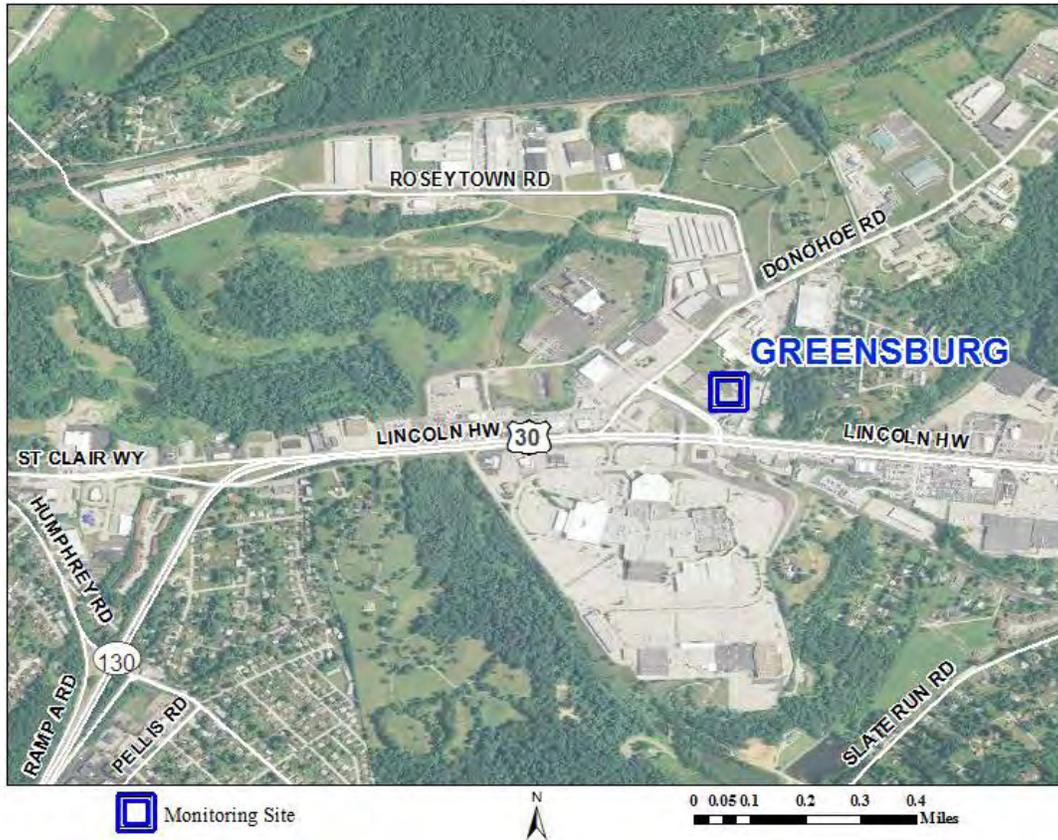


Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	8/20/1997	Cont.	UV Absorption	Neighborhood	Regulatory Compliance	Population Exposure
NO ₂	SLAMS	8/20/1997	Cont.	Chemiluminescence	Neighborhood	Population Exposure	Population Exposure
PM _{2.5}	SLAMS	2/27/2012	Daily	Gravimetric	Neighborhood	Population Exposure	Population Exposure
PM _{2.5}	SLAMS	7/1/2009	Cont.	Beta Attenuation	Neighborhood	Population Exposure	Population Exposure
SP	CSN	1/1/2002	1 in 6	Gravimetric	Neighborhood	Research/Scientific Monitoring	Population Exposure
VOC	Other	1/8/2010	1 in 6	Canister		Air Toxics	

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: GREENSBURG
AQS ID: 421290008
MSA: Pittsburgh MSA
COUNTY: WESTMORELAND
MUNICIPALITY: HEMPFIELD TWP
LATITUDE: 40.30438889
LONGITUDE: -79.50605556
ADDRESS: DONOHOE ROAD - PENN DOT MAINT DIST BLDG
COMMENTS: Meets federal monitoring requirements in the Pittsburgh MSA and for NAAQS compliance

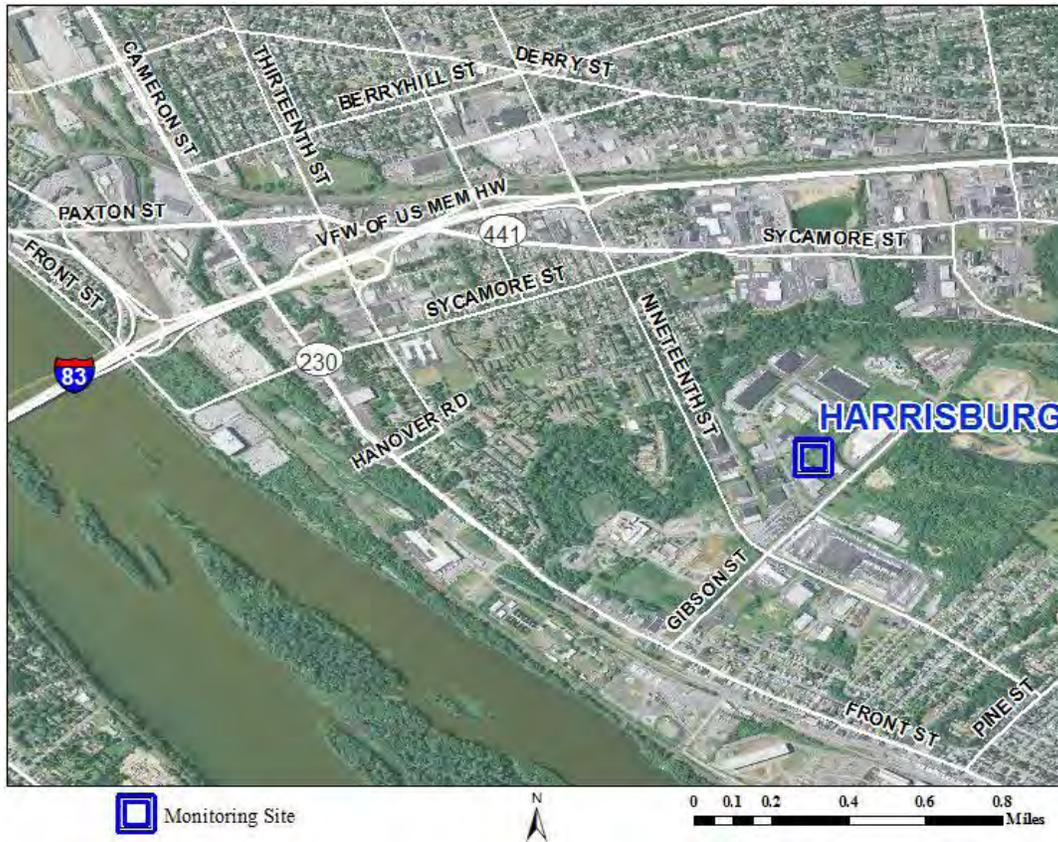


Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	10/1/1997	Cont.	UV Absorption	Urban Scale	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	9/5/2012	Daily	Gravimetric	Urban Scale	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	7/1/2009	Cont.	Beta Attenuation	Urban Scale	Regulatory Compliance	Population Exposure
SP	CSN	1/1/2002	1 in 6	Gravimetric	Urban Scale	Research/Scientific Monitoring	Population Exposure
VOC	Other	1/2/2010	1 in 6	Canister		Air Toxics	

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: HARRISBURG
AQS ID: 420430401
MSA: Harrisburg-Carlisle MSA
COUNTY: DAUPHIN
MUNICIPALITY: SWATARA TWP
LATITUDE: 40.246992
LONGITUDE: -76.846988
ADDRESS: 651 Gibson Blvd
COMMENTS: Monitoring of criteria pollutants for NAAQS compliance in the Harrisburg MSA



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	4/1/2013	Cont.	UV Absorption	Neighborhood	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	4/1/2013	Daily	Gravimetric	Neighborhood	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	4/1/2013	Cont.	Beta Attenuation	Neighborhood	Regulatory Compliance	Population Exposure

PA DEP’s 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: HERSHEY
AQS ID: 420431100
MSA: Harrisburg-Carlisle MSA
COUNTY: DAUPHIN
MUNICIPALITY: DERRY TWP
LATITUDE: 40.27241667
LONGITUDE: -76.68141667
ADDRESS: SIPE AVE & MAE STREET
COMMENTS: Monitoring of criteria pollutants for NAAQS compliance in the Harrisburg MSA; also represents concentrations downwind of the Harrisburg Metro Area



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	8/1/1981	Cont.	UV Absorption	Urban Scale	Regulatory Compliance	Max Ozone Concentration
PM ₁₀	SLAMS	1/19/2012	Cont.	TEOM Gravimetric	Neighborhood	Regulatory Compliance	Population Exposure

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: HOLBROOK
AQS ID: 420590002
MSA: Southwest Region - Non-MSA
COUNTY: GREENE
MUNICIPALITY: CENTER TWP
LATITUDE: 39.81602778
LONGITUDE: -80.28480556
ADDRESS: 4.8 KM SE OF HOLBROOK
COMMENTS: Monitors transport of pollutants into PA from WV and OH

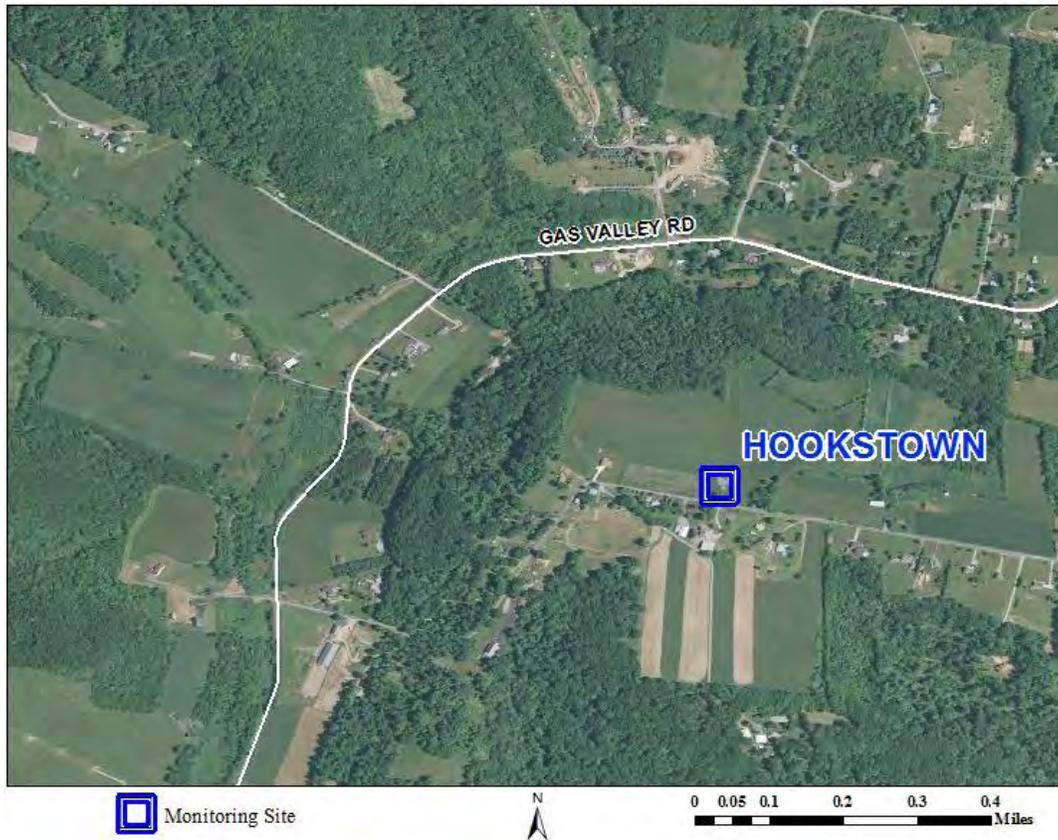


Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	1/1/1997	Cont.	UV Absorption	Regional Scale	Regulatory Compliance	Regional Transport
SO ₂	SLAMS	1/1/1997	Cont.	UV Fluorescence	Regional Scale	Specific Location Characterization	Regional Transport

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: HOOKSTOWN
AQS ID: 420070002
MSA: Pittsburgh MSA
COUNTY: BEAVER
MUNICIPALITY: GREENE TWP
LATITUDE: 40.56305556
LONGITUDE: -80.50444445
ADDRESS: ROUTE 168 & TOMLINSON ROAD
COMMENTS: Monitors transport of pollutants into PA from WV and OH

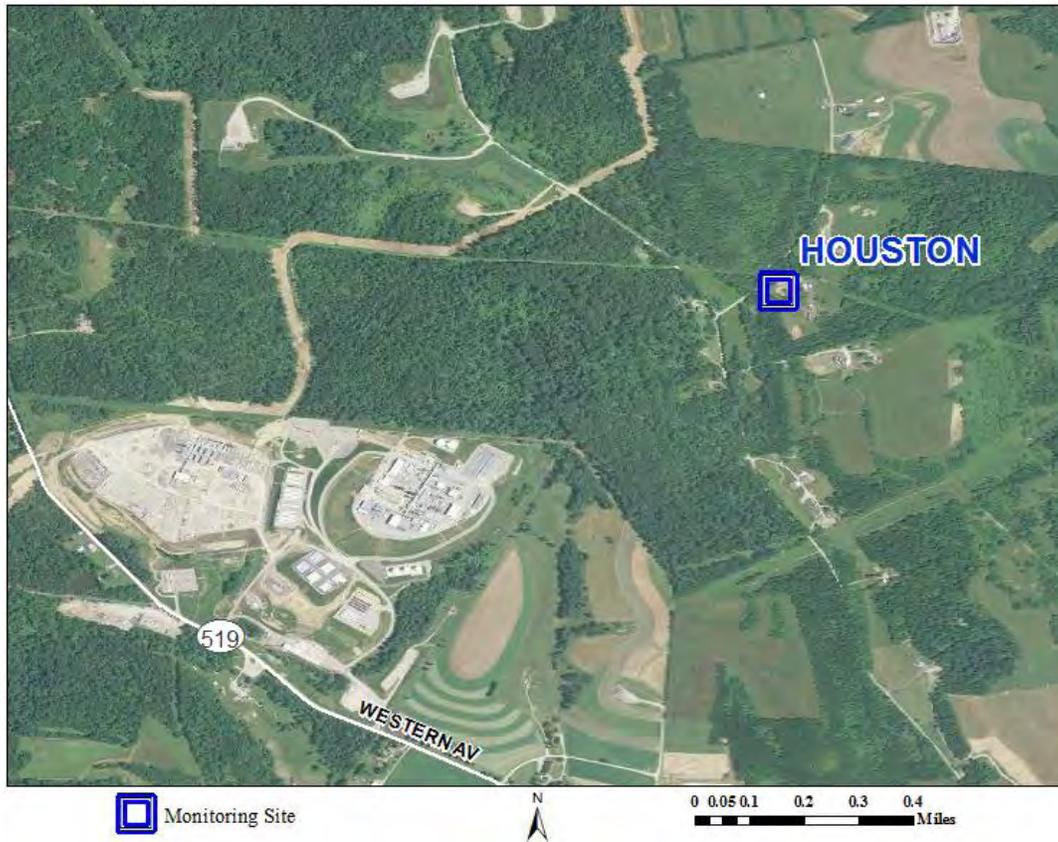


Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	6/8/1995	Cont.	UV Absorption	Regional Scale	Specific Location Characterization	Regional Transport
SO ₂	SLAMS	1/1/1983	Cont.	UV Fluorescence	Regional Scale	Specific Location Characterization	Regional Transport

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: HOUSTON
AQS ID: 421255200
MSA: Pittsburgh MSA
COUNTY: WASHINGTON
MUNICIPALITY: CHARTIERS TWP
LATITUDE: 40.268963
LONGITUDE: -80.243995
ADDRESS: 220 MEDDINGS RD
COMMENTS: Monitor criteria pollutants and VOC's downwind of natural gas processing facility



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
NO ₂	SLAMS	7/23/2012	Cont.	Chemiluminescence	Neighborhood	Regulatory Compliance	Source Oriented
VOC	Other	7/23/2012	1 in 6	Canister		Air Toxics	
CAR	Other	7/23/2012	1 in 6	DNPH - Coated Cartridges		Air Toxics	

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: JOHNSTOWN
AQS ID: 420210011
MSA: Johnstown MSA
COUNTY: CAMBRIA
MUNICIPALITY: CITY OF JOHNSTOWN
LATITUDE: 40.30994445
LONGITUDE: -78.91544445
ADDRESS: MILLER AUTO SHOP 1 MESSENGER ST
COMMENTS: Monitor for NAAQS compliance of criteria pollutants in the Johnstown MSA



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O₃	SLAMS	1/1/1974	Cont.	UV Absorption	Neighborhood	Regulatory Compliance	Population Exposure
SO₂	SLAMS	1/1/1974	Cont.	UV Fluorescence	Neighborhood	Regulatory Compliance	Population Exposure
NO₂	SLAMS	1/1/1974	Cont.	Chemiluminescence	Neighborhood	Regulatory Compliance	Population Exposure
CO	SLAMS	1/1/1978	Cont.	Non-dispersive Infrared	Neighborhood	Regulatory Compliance	Population Exposure
PM_{2.5}	SLAMS	4/1/2009	Cont.	Beta Attenuation	Neighborhood	Population Exposure	Population Exposure
SP	CSN	1/26/2009	1 in 6	Gravimetric	Neighborhood	Research/Scientific Monitoring	Population Exposure
PM₁₀	SLAMS	4/18/1996	Cont.	TEOM Gravimetric	Neighborhood	Regulatory Compliance	Population Exposure

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: KITTANNING
AQS ID: 420050001
MSA: Pittsburgh MSA
COUNTY: ARMSTRONG
MUNICIPALITY: EAST FRANKLIN TWP
LATITUDE: 40.814
LONGITUDE: -79.56469445
ADDRESS: GLADE DR. & NOLTE RD. KITTANNING
COMMENTS: Downwind PM_{2.5} and ozone monitoring



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O₃	SLAMS	8/14/1997	Cont.	UV Absorption	Urban Scale	Regulatory Compliance	Extreme Downwind
PM_{2.5}	SLAMS	7/1/2009	Cont.	Beta Attenuation	Urban Scale	Population Exposure	Extreme Downwind

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: KUTZTOWN
AQS ID: 420110006
MSA: Reading MSA
COUNTY: BERKS
MUNICIPALITY: MAXATAWNY TWP
LATITUDE: 40.51408
LONGITUDE: -75.78972
ADDRESS: KUTZTOWN UNIVERSITY CAMPUS
COMMENTS: Measures downwind ozone concentrations of the Reading metro area



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	9/27/2007	Cont.	UV Absorption	Urban Scale	Regulatory Compliance	Extreme Downwind

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: LANCASTER
AQS ID: 420710007
MSA: Lancaster MSA
COUNTY: LANCASTER
MUNICIPALITY: CITY OF LANCASTER
LATITUDE: 40.04686111
LONGITUDE: -76.28341667
ADDRESS: ABRAHAM LINCOLN JR HIGH GROFFTOWN RD
COMMENTS: Monitor for NAAQS compliance for criteria pollutants in the Lancaster MSA



Monitor Summary

Monitor	Network	Start Date	Sample Frequency	Method Description	Monitoring Scale	Sensor Purpose Designation	Appendix D Objectives
O ₃	SLAMS	1/1/1974	Cont.	UV Absorption	Neighborhood	Regulatory Compliance	Population Exposure
NO ₂	SLAMS	1/1/1974	Cont.	Chemiluminescence	Neighborhood	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	1/1/1999	Daily	Gravimetric	Neighborhood	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	11/1/2003	Cont.	FDMS Gravimetric	Neighborhood	Population Exposure	Population Exposure
SP	CSN	1/1/2002	1 in 6	Gravimetric	Neighborhood	Research/Scientific Monitoring	Population Exposure
PM ₁₀	SLAMS	3/22/1995	Cont.	TEOM Gravimetric	Neighborhood	Regulatory Compliance	Population Exposure
VOC	Other	5/24/1999	1 in 6	Canister		Air Toxics	
CAR	Other	5/24/1999	1 in 6	DNPH - Coated Cartridges		Air Toxics	
TSP	Other	5/24/1999	1 in 6	HiVol - Quartz filter		Air Toxics	
Hg	Other	5/24/1999	Cont.	Tekran Vapor Analyzer		Air Toxics	

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: LANCASTER DOWNWIND
AQS ID: 420710012
MSA: Lancaster MSA
COUNTY: LANCASTER
MUNICIPALITY: LEACOCK TWP
LATITUDE: 40.043833
LONGITUDE: -76.1124
ADDRESS: 3445 W. NEWPORT ROAD
COMMENTS: Measures downwind ozone concentrations of the Lancaster metro area



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	4/1/2008	Cont.	UV Absorption	Urban Scale	Regulatory Compliance	Extreme Downwind
PM _{2.5}	SLAMS	1/1/2014	Cont.	Beta Attenuation	Urban Scale	Regulatory Compliance	Population Exposure

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: LAURELDALE NORTH
AQS ID: 420110020
MSA: Reading MSA
COUNTY: BERKS
MUNICIPALITY: MUHLENBERG TWP
LATITUDE: 40.385981
LONGITUDE: -75.912856
ADDRESS: 3139 KUTZTOWN ROAD
COMMENTS: Monitors lead concentrations from nearby sources



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
Pb	SLAMS	1/1/2010	1 in 6	ICP-MS	Middle Scale	Regulatory Compliance	Source Oriented

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: LAURELDALE SOUTH
AQS ID: 420111717
MSA: Reading MSA
COUNTY: BERKS
MUNICIPALITY: MUHLENBERG TWP
LATITUDE: 40.37730556
LONGITUDE: -75.91458333
ADDRESS: SPRING VALLEY ROAD
COMMENTS: To monitor lead concentrations from nearby sources – legacy site



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
Pb	SLAMS	1/1/1976	1 in 6	ICP-MS	Neighborhood	Regulatory Compliance	Population Exposure

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: LEBANON
AQS ID: 420750100
MSA: Lebanon MSA
COUNTY: LEBANON
MUNICIPALITY: SOUTH LEBANON TWP
LATITUDE: 40.337328
LONGITUDE: -76.383447
ADDRESS: 1275 BIRCH RD
COMMENTS: Meets federal monitoring requirements in the Lebanon MSA



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	2/25/2011	Cont.	UV Absorption	Urban Scale	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	2/25/2011	Cont.	Beta Attenuation	Urban Scale	Regulatory Compliance	Population Exposure

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: LEHIGH VALLEY
AQS ID: 420950027
MSA: Allentown-Bethlehem-Easton MSA
COUNTY: NORTHAMPTON
MUNICIPALITY: HANOVER TWP
LATITUDE: 40.645864
LONGITUDE: -75.404356
ADDRESS: 2604 Schoenersville Road
COMMENTS: Meets federal monitoring requirements for PM_{2.5} in the Allentown-Bethlehem-Easton MSA



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
PM _{2.5}	SLAMS	1/1/2010	Daily	Gravimetric	Neighborhood	Regulatory Compliance	Population Exposure

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: LEWISBURG
AQS ID: 421190001
MSA: Northcentral Region - Non-MSA
COUNTY: UNION
MUNICIPALITY: EAST BUFFALO TWP
LATITUDE: 40.9552
LONGITUDE: -76.8819
ADDRESS: 701 MOORE AVE
COMMENTS: To monitor VOC concentrations near source region



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
VOC	Other	8/1/2003	1 in 6	Canister		Air Toxics	
CAR	Other	8/1/2003	1 in 6	DNPH - Coated Cartridges		Air Toxics	
TSP	Other	8/1/2003	1 in 6	HiVol - Quartz filter		Air Toxics	

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: LYONS BORO
AQS ID: 420110021
MSA: Reading MSA
COUNTY: BERKS
MUNICIPALITY: LYONS BORO
LATITUDE: 40.477075
LONGITUDE: -75.756919
ADDRESS: KEMP ST.
COMMENTS: Monitors lead concentrations from nearby sources



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
Pb	SLAMS	1/1/2010	1 in 6	ICP-MS	Middle Scale	Regulatory Compliance	Source Oriented

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: LYONS PARK
AQS ID: 420110022
MSA: Reading MSA
COUNTY: BERKS
MUNICIPALITY: LYONS BORO
LATITUDE: 40.478319
LONGITUDE: -75.753947
ADDRESS: PARK AVE.
COMMENTS: Monitors lead concentrations from nearby sources



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
Pb	SLAMS	1/1/2010	1 in 6	ICP-MS	Middle Scale	Regulatory Compliance	Source Oriented

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: MARCUS HOOK
AQS ID: 420450109
MSA: Philadelphia-Camden-Wilmington MSA
COUNTY: DELAWARE
MUNICIPALITY: MARCUS HOOK BORO
LATITUDE: 39.8178
LONGITUDE: -75.4142
ADDRESS: EAST 8TH AVE & CHURCH ST.
COMMENTS: Monitoring of criteria pollutants and VOC near oil refineries

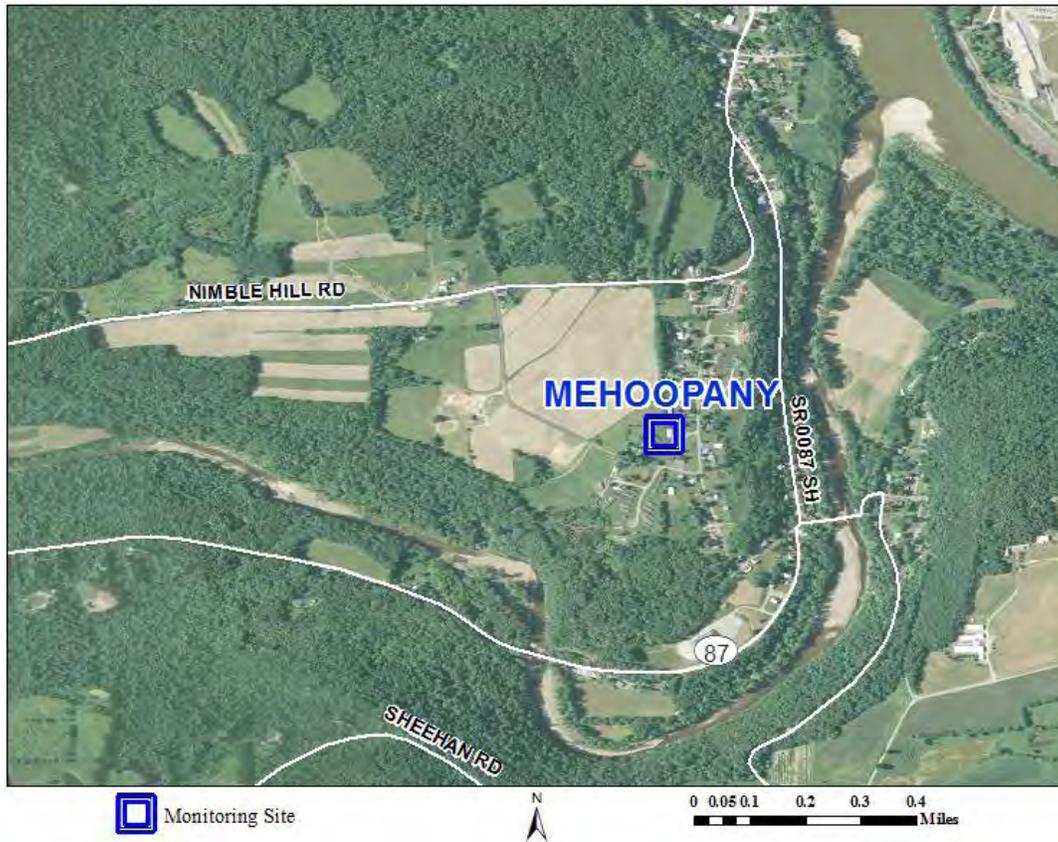


Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
PM _{2.5}	SPM	12/1/2014	Cont.	Beta Attenuation	Neighborhood	Specific Location Characterization	Population Exposure
SP	CSN	12/1/2014	1 in 6	Gravimetric	Neighborhood	Research/Scientific Monitoring	Population Exposure
VOC	Other	4/2/1995	1 in 6	Canister		Air Toxics	

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: MEHOOPANY
AQS ID: 421310001
MSA: Scranton-Wilkes-Barre-Hazleton MSA
COUNTY: WYOMING
MUNICIPALITY: MEHOOPANY TWP
LATITUDE: 41.56583611
LONGITUDE: -76.06434722
ADDRESS: SCHOOLHOUSE RD & PEARL RD
COMMENTS: Monitors for VOC's downwind of natural gas production and processing facilities



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
VOC	Other	3/16/2014	1 in 6	Canister		Air Toxics	

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: METHODIST HILL
AQS ID: 420550001
MSA: Chambersburg-Waynesboro MSA
COUNTY: FRANKLIN
MUNICIPALITY: SOUTHAMPTON TWP
LATITUDE: 39.96072222
LONGITUDE: -77.47552778
ADDRESS: FOREST ROAD - METHODIST HILL
COMMENTS: To monitor regional transport of ozone into areas east of the Appalachians



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	6/26/1996	Cont.	UV Absorption	Regional Scale	Regulatory Compliance	Regional Transport

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: MONTOURSVILLE
AQS ID: 420810100
MSA: Williamsport MSA
COUNTY: LYCOMING
MUNICIPALITY: MONTOURSVILLE BORO
LATITUDE: 41.25019445
LONGITUDE: -76.91344445
ADDRESS: 899 CHERRY STREET
COMMENTS: Meets ozone monitoring requirements in the Williamsport MSA

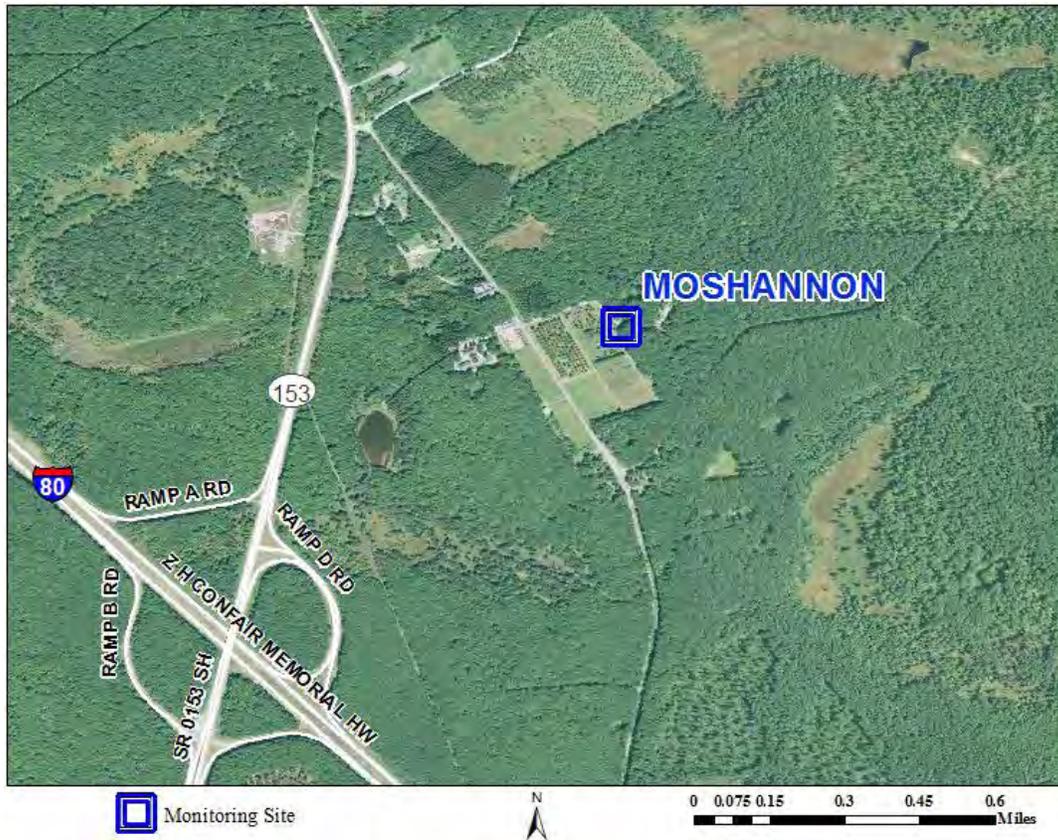


Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	11/20/2001	Cont.	UV Absorption	Urban Scale	Regulatory Compliance	Max Ozone Concentration
PM ₁₀	SLAMS	12/3/2001	1 in 6	Gravimetric	Urban Scale	Regulatory Compliance	Population Exposure

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: MOSHANNON
AQS ID: 420334000
MSA: Northcentral Region - Non-MSA
COUNTY: CLEARFIELD
MUNICIPALITY: PINE TWP
LATITUDE: 41.1175
LONGITUDE: -78.52619445
ADDRESS: LOCATED NEAR S.B. ELLIOTT STATE PARK
COMMENTS: Monitor the effects of ozone on vegetation as per a research contract with Penn State University

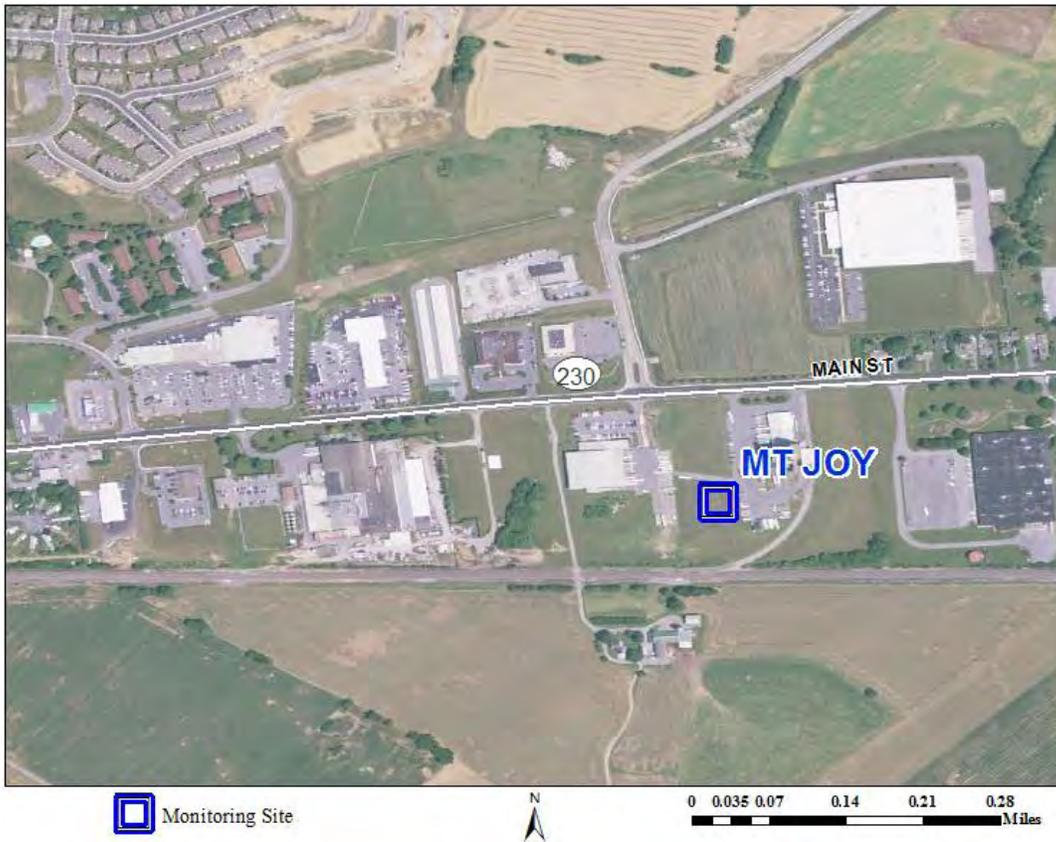


Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	4/1/1996	Cont.	UV Absorption	Regional Scale	Specific Location Characterization	General/Background

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: MT JOY
AQS ID: 420710009
MSA: Lancaster MSA
COUNTY: LANCASTER
MUNICIPALITY: RAPHO TWP
LATITUDE: 40.108944
LONGITUDE: -76.472235
ADDRESS: 1088 EAST MAIN STREET
COMMENTS: Monitors lead concentrations downwind nearby source

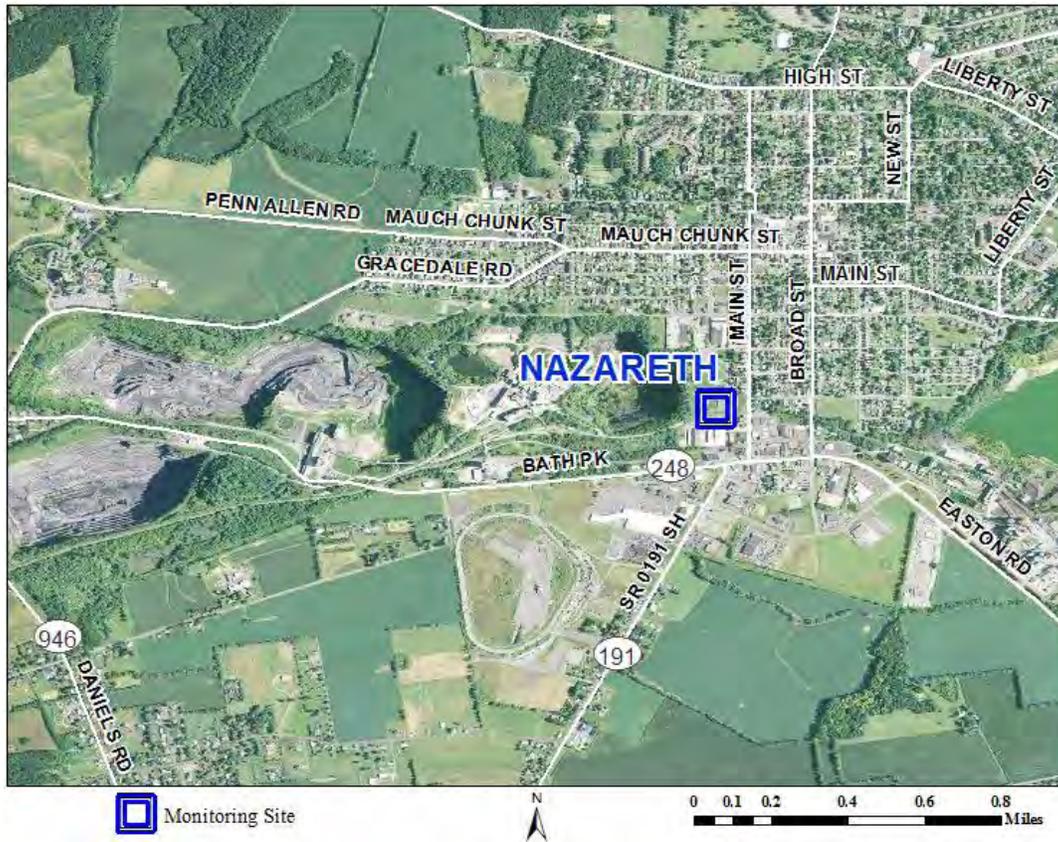


Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
Pb	SLAMS	1/1/2012	1 in 6	ICP-MS	Middle Scale	Regulatory Compliance	Source Oriented

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: NAZARETH
AQS ID: 420951000
MSA: Allentown-Bethlehem-Easton MSA
COUNTY: NORTHAMPTON
MUNICIPALITY: NAZARETH BORO
LATITUDE: 40.734731
LONGITUDE: -75.313175
ADDRESS: SOUTH GREEN & DELAWARE
COMMENTS: To monitor PM₁₀ concentrations close to source



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
PM ₁₀	SLAMS	8/1/2000	Cont.	TEOM Gravimetric	Neighborhood	Specific Location Characterization	Source Oriented

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: NEW CASTLE
AQS ID: 420730015
MSA: Northwest Region - Non-MSA
COUNTY: LAWRENCE
MUNICIPALITY: CITY OF NEW CASTLE
LATITUDE: 40.99605556
LONGITUDE: -80.34652778
ADDRESS: S CROTON AVE & JEFFERSON ST.
COMMENTS: Monitors criteria pollutants downwind of source regions.



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	1/1/1974	Cont.	UV Absorption	Urban Scale	Regulatory Compliance	Population Exposure
SO ₂	SLAMS	1/1/1974	Cont.	UV Fluorescence	Urban Scale	Regulatory Compliance	Population Exposure
PM ₁₀	SLAMS	10/18/1995	Cont.	TEOM Gravimetric	Urban Scale	Regulatory Compliance	Population Exposure

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: NEW GARDEN
AQS ID: 420290100
MSA: Philadelphia-Camden-Wilmington MSA
COUNTY: CHESTER
MUNICIPALITY: NEW GARDEN TWP
LATITUDE: 39.83458333
LONGITUDE: -75.76805556
ADDRESS: NEW GARDEN AIRPORT - TOUGHKENAMON
COMMENTS: Meets federal monitoring requirements in the Philadelphia-Camden-Wilmington MSA



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	6/29/2000	Cont.	UV Absorption	Regional Scale	Regulatory Compliance	Regional Transport
PM _{2.5}	SLAMS	8/31/2012	Daily	Gravimetric	Regional Scale	Regulatory Compliance	Regional Transport
PM _{2.5}	SLAMS	7/1/2009	Cont.	Beta Attenuation	Regional Scale	Regulatory Compliance	Regional Transport
SP	CSN	1/1/2002	1 in 6	Gravimetric	Regional Scale	Research/Scientific Monitoring	Regional Transport

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: NORRISTOWN
AQS ID: 420910013
MSA: Philadelphia-Camden-Wilmington MSA
COUNTY: MONTGOMERY
MUNICIPALITY: PLYMOUTH TWP
LATITUDE: 40.11327778
LONGITUDE: -75.30869445
ADDRESS: STATE ARMORY - 1046 BELVOIR RD
COMMENTS: Meets federal monitoring requirements in the PA part of the Philadelphia-Camden-Wilmington MSA



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	1/1/1974	Cont.	UV Absorption	Neighborhood	Regulatory Compliance	Population Exposure
SO ₂	SLAMS	1/1/1974	Cont.	UV Fluorescence	Neighborhood	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	2/14/1999	Daily	Gravimetric	Neighborhood	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	10/30/2003	Cont.	FDMS Gravimetric	Neighborhood	Population Exposure	Population Exposure

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: PALMERTON
AQS ID: 420250214
MSA: Allentown-Bethlehem-Easton MSA
COUNTY: CARBON
MUNICIPALITY: LOWER TOWAMENSING TWP
LATITUDE: 40.814204
LONGITUDE: -75.580448
ADDRESS: 620 LITTLE GAP RD
COMMENTS: Monitors lead concentrations from nearby source

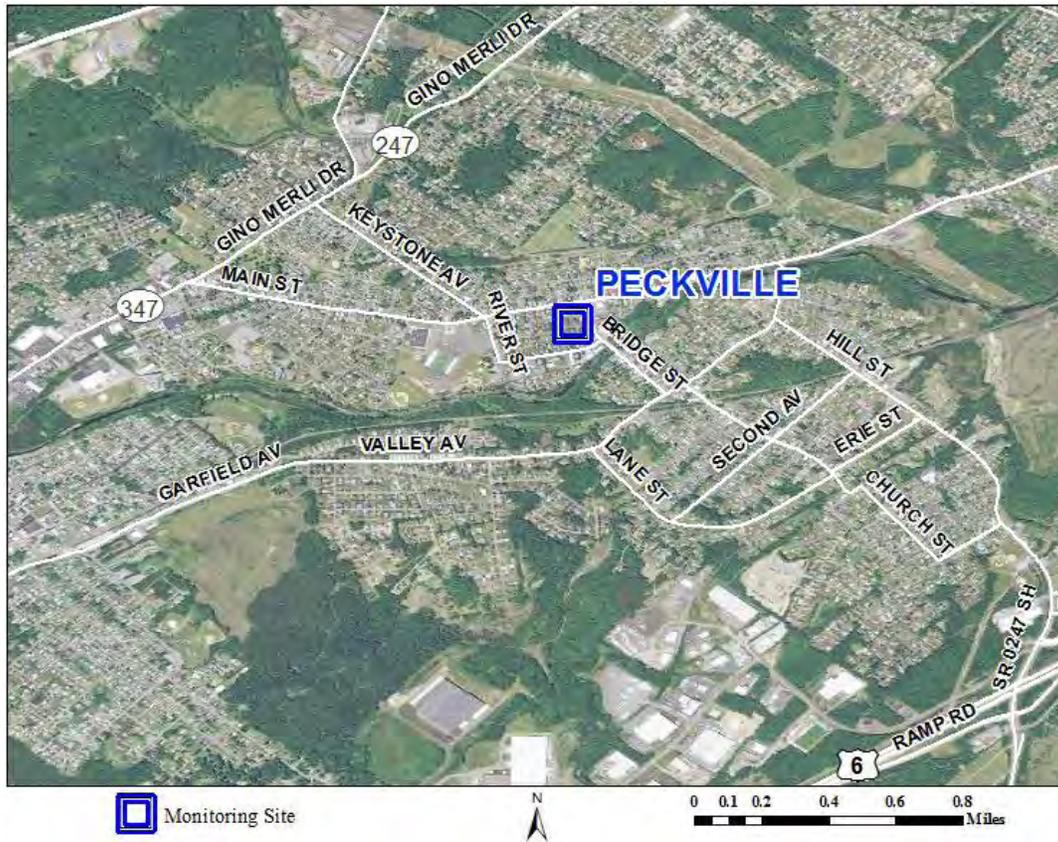


Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
Pb	SLAMS	5/9/2012	1 in 6	ICP-MS	Middle Scale	Regulatory Compliance	Source Oriented

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: PECKVILLE
AQS ID: 420690101
MSA: Scranton-Wilkes-Barre-Hazleton MSA
COUNTY: LACKAWANNA
MUNICIPALITY: BLAKELY BORO
LATITUDE: 41.47908333
LONGITUDE: -75.57819445
ADDRESS: WILSON FIRE CO. ERIE & PLEASANT
COMMENTS: Monitor ozone concentrations to meet federal requirements in the Scranton-Wilkes-Barre MSA

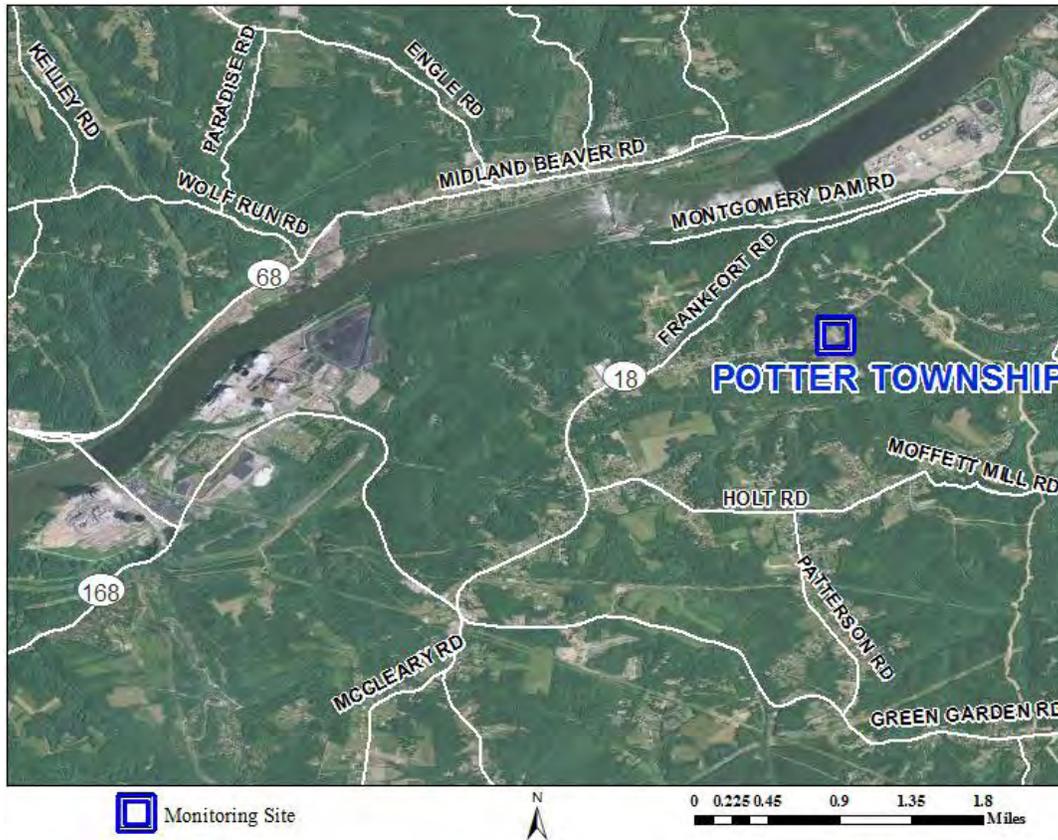


Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	4/1/1991	Cont.	UV Absorption	Urban Scale	Regulatory Compliance	Max Ozone Concentration

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: POTTER TOWNSHIP
AQS ID: 420070006
MSA: Pittsburgh MSA
COUNTY: BEAVER
MUNICIPALITY: POTTER TWP
LATITUDE: 40.638936
LONGITUDE: -80.365653
ADDRESS: 206 MOWRY RD
COMMENTS: Monitors lead concentrations from nearby source



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
Pb	SLAMS	1/1/2010	1 in 6	ICP-MS	Middle Scale	Regulatory Compliance	Source Oriented

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: PRESQUE ISLE
AQS ID: 420490004
MSA: Erie MSA
COUNTY: ERIE
MUNICIPALITY: MILLCREEK TWP
LATITUDE: 42.162
LONGITUDE: -80.1133
ADDRESS: EAST FISHER DR.
COMMENTS: Monitor VOC's and metals near source regions.



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
VOC	Other	6/8/2000	1 in 6	Canister		Air Toxics	
TSP	Other	6/8/2000	1 in 6	HiVol - Quartz filter		Air Toxics	

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: READING AIRPORT
AQS ID: 420110011
MSA: Reading MSA
COUNTY: BERKS
MUNICIPALITY: BERN TWP
LATITUDE: 40.38335
LONGITUDE: -75.9686
ADDRESS: 1059 ARNOLD ROAD
COMMENTS: Monitors for NAAQS compliance for criteria pollutants in Reading MSA



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	7/1/2007	Cont.	UV Absorption	Neighborhood	Regulatory Compliance	Population Exposure
SO ₂	SLAMS	7/1/2007	Cont.	UV Fluorescence	Neighborhood	Population Exposure	Population Exposure
NO ₂	SLAMS	7/1/2007	Cont.	Chemiluminescence	Neighborhood	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	7/1/2007	Daily	Gravimetric	Neighborhood	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	7/1/2007	Cont.	FDMS Gravimetric	Neighborhood	Population Exposure	Population Exposure
VOC	Other	6/17/2007	1 in 6	Canister		Air Toxics	
TSP	Other	6/17/2007	1 in 6	HiVol - Quartz filter		Air Toxics	

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: RIDLEY PARK
AQS ID: 420450004
MSA: Philadelphia-Camden-Wilmington MSA
COUNTY: DELAWARE
MUNICIPALITY: EDDYSTONE BORO
LATITUDE: 39.862928
LONGITUDE: -75.325689
ADDRESS: INDUSTRIAL HIGHWAY (RT291)
COMMENTS: Monitoring of lead concentrations near source region



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
Pb	SLAMS	1/1/2010	1 in 6	ICP-MS	Middle Scale	Regulatory Compliance	Source Oriented

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: SCRANTON
AQS ID: 420692006
MSA: Scranton-Wilkes-Barre-Hazleton MSA
COUNTY: LACKAWANNA
MUNICIPALITY: CITY OF SCRANTON
LATITUDE: 41.442146
LONGITUDE: -75.630139
ADDRESS: GEORGE ST TROOP AND CITY OF SCRANTON
COMMENTS: Monitor for NAAQS compliance for criteria pollutants in the Scranton-Wilkes-Barre MSA

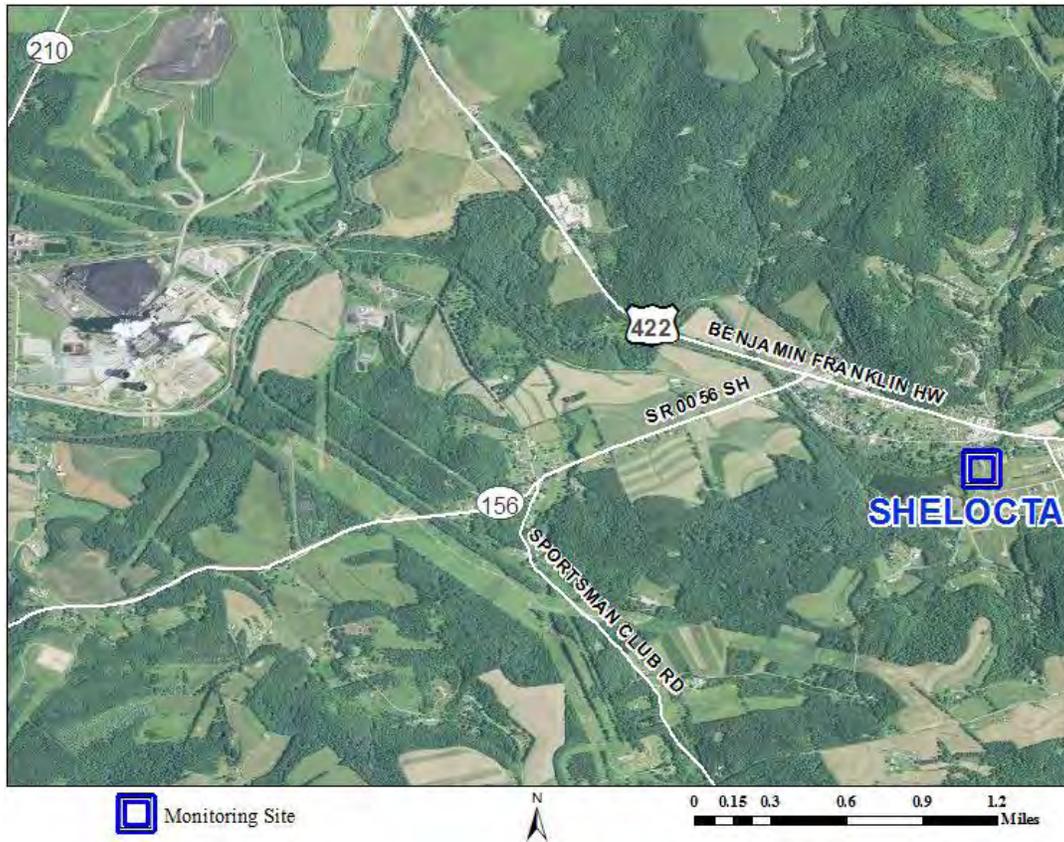


Monitor Summary

Monitor	Network	Start Date	Sample Frequency	Method Description	Monitoring Scale	Sensor Purpose Designation	Appendix D Objectives
O ₃	SLAMS	1/14/1974	Cont.	UV Absorption	Neighborhood	Regulatory Compliance	Population Exposure
NO ₂	SLAMS	1/1/1974	Cont.	Chemiluminescence	Neighborhood	Regulatory Compliance	Population Exposure
CO	SLAMS	1/1/1978	Cont.	Non-dispersive Infrared	Neighborhood	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	7/1/2009	Cont.	Beta Attenuation	Urban Scale	Population Exposure	Population Exposure

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: SHELOCTA
AQS ID: 420630005
MSA: Southwest Region - Non-MSA
COUNTY: INDIANA
MUNICIPALITY: ARMSTRONG TWP
LATITUDE: 40.652511
LONGITUDE: -79.292769
ADDRESS: 182 SOUTH RIDGE RD
COMMENTS: Monitor lead concentrations from source area



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
Pb	SLAMS	1/1/2010	1 in 6	ICP-MS	Middle Scale	Regulatory Compliance	Source Oriented

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: SLIPPERY ROCK
AQS ID: 420190020
MSA: Pittsburgh MSA
COUNTY: BUTLER
MUNICIPALITY: SLIPPERY ROCK TWP
LATITUDE: 41.063056
LONGITUDE: -80.030833
ADDRESS: 1 MORROW WAY
COMMENTS: Monitor VOC's from nearby source

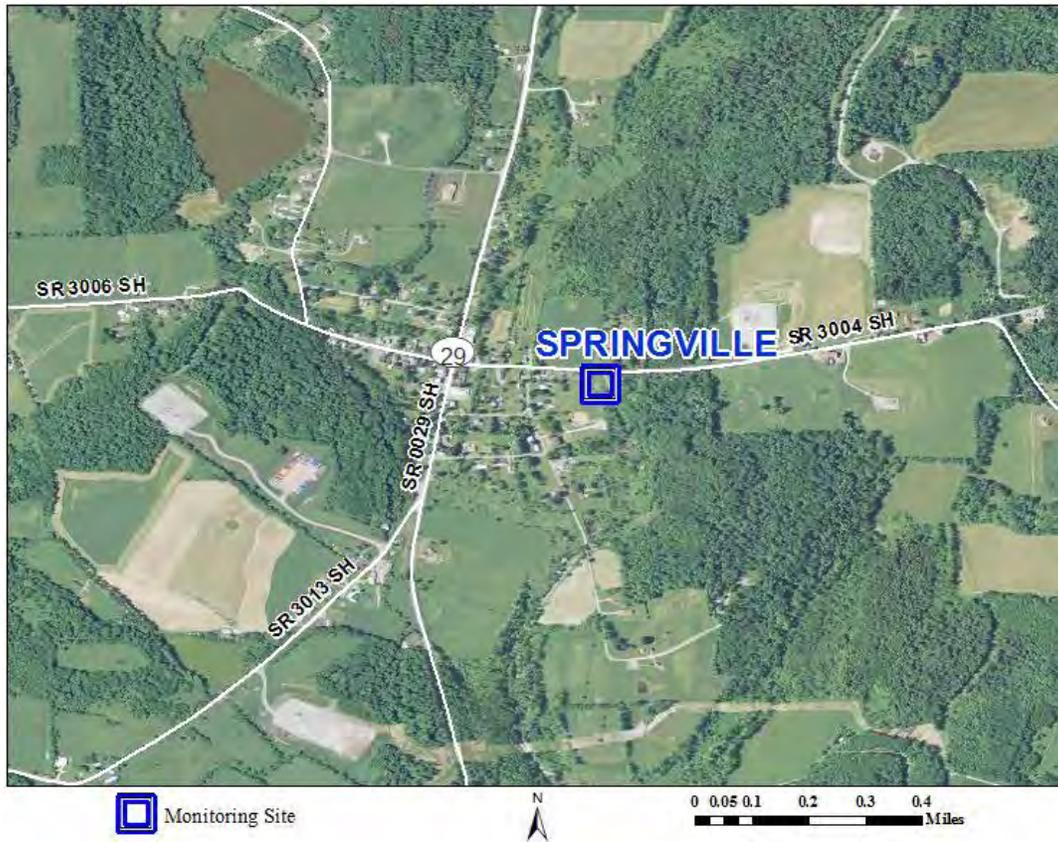


Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
VOC	Other	8/29/2009	1 in 6	Canister		Air Toxics	
TSP	Other	8/29/2009	1 in 6	HiVol - Quartz filter		Air Toxics	

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: SPRINGVILLE
AQS ID: 421150001
MSA: Northeast Region - Non-MSA
COUNTY: SUSQUEHANNA
MUNICIPALITY: SPRINGVILLE TWP
LATITUDE: 41.6972
LONGITUDE: -75.9145
ADDRESS: TWP PROPERTY SR3004
COMMENTS: Monitors downwind concentrations of VOC's downwind of natural gas production facilities



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
VOC	Other	2/27/2013	1 in 6	Canister		Air Toxics	

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: STATE COLLEGE
AQS ID: 420270100
MSA: State College MSA
COUNTY: CENTRE
MUNICIPALITY: COLLEGE TWP
LATITUDE: 40.81116667
LONGITUDE: -77.87722222
ADDRESS: PENN STATE UNIVERSITY - ARBORETUM SITE
COMMENTS: Meets federal monitoring requirements in the State College MSA

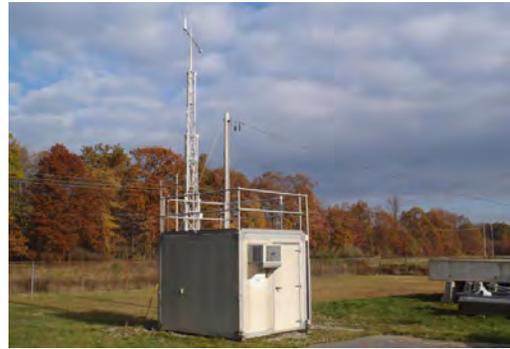


Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	4/1/2000	Cont.	UV Absorption	Neighborhood	Regulatory Compliance	Population Exposure
SO ₂	SLAMS	3/8/2002	Cont.	UV Fluorescence	Neighborhood	Regulatory Compliance	Population Exposure
NO ₂	SLAMS	3/8/2002	Cont.	Chemiluminescence	Neighborhood	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	2/1/2000	Daily	Gravimetric	Neighborhood	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	9/1/2010	Cont.	Beta Attenuation	Neighborhood	Regulatory Compliance	Population Exposure

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: STRONGSTOWN
AQS ID: 420630004
MSA: Southwest Region - Non-MSA
COUNTY: INDIANA
MUNICIPALITY: PINE TWP
LATITUDE: 40.5633
LONGITUDE: -78.91997
ADDRESS: PA. DEPT. OF TRANSPORTATION - RT.403
COMMENTS: Monitors SO₂ concentrations in Indiana-Cambria County nonattainment area



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	11/1/2004	Cont.	UV Absorption	Regional Scale	Regulatory Compliance	Population Exposure
SO ₂	SLAMS	11/1/2004	Cont.	UV Fluorescence	Regional Scale	Regulatory Compliance	Population Exposure

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: SWARTHMORE
AQS ID: 420450003
MSA: Philadelphia-Camden-Wilmington MSA
COUNTY: DELAWARE
MUNICIPALITY: SWARTHMORE BORO
LATITUDE: 39.8969
LONGITUDE: -75.3539
ADDRESS: 500 COLLEGE AVE.
COMMENTS: Monitoring of VOC's near source region



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
VOC	Other	1/22/1997	1 in 6	Canister		Air Toxics	
TSP	Other	1/22/1997	1 in 6	HiVol - Quartz filter		Air Toxics	

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: SWIFTWATER
AQS ID: 420890002
MSA: East Stroudsburg MSA
COUNTY: MONROE
MUNICIPALITY: POCONO TWP
LATITUDE: 41.08306
LONGITUDE: -75.32328
ADDRESS: DEP/DCNR Pocono District Office
COMMENTS: To meet federal monitoring requirements in the PA part of the Stroudsburg MSA

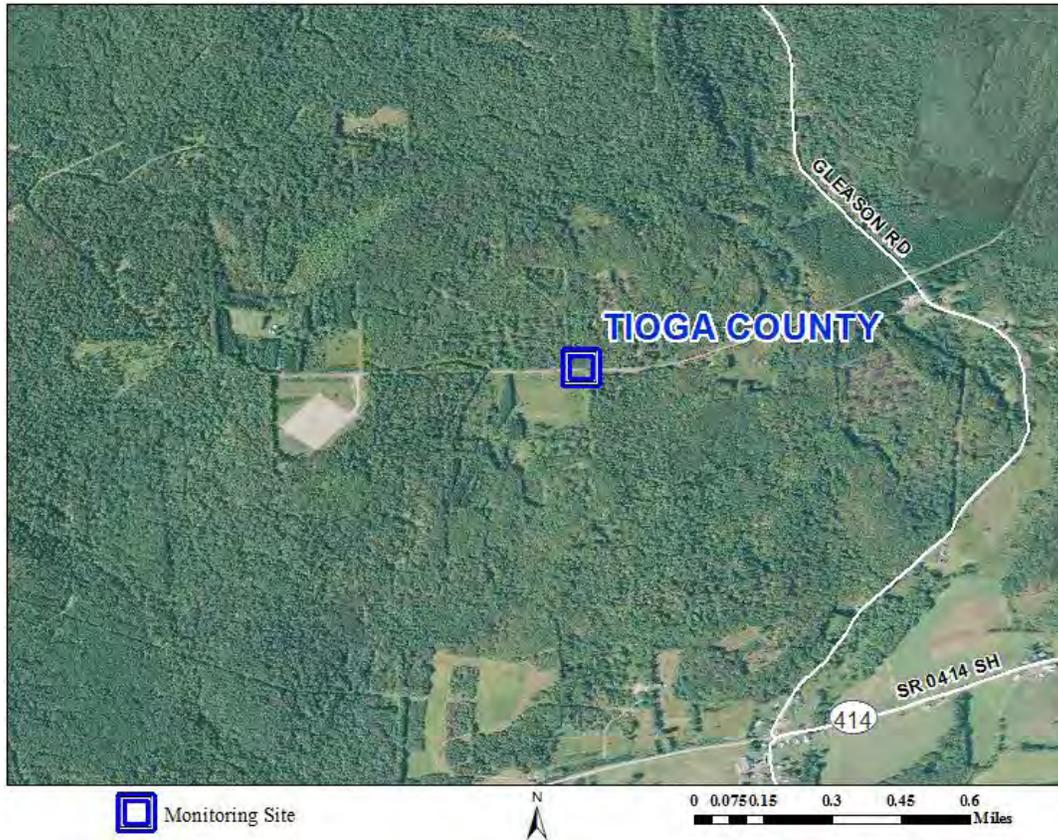


Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	4/1/2006	Cont.	UV Absorption	Urban Scale	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	6/1/2010	Cont.	Beta Attenuation	Neighborhood	Regulatory Compliance	Population Exposure

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: TIOGA COUNTY
AQS ID: 421174000
MSA: Northcentral Region - Non-MSA
COUNTY: TIOGA
MUNICIPALITY: UNION TWP
LATITUDE: 41.64558333
LONGITUDE: -76.93797222
ADDRESS: TIOGA
COMMENTS: Monitors for criteria pollutants near natural gas production facilities as well as an ozone monitoring contract with Penn State University

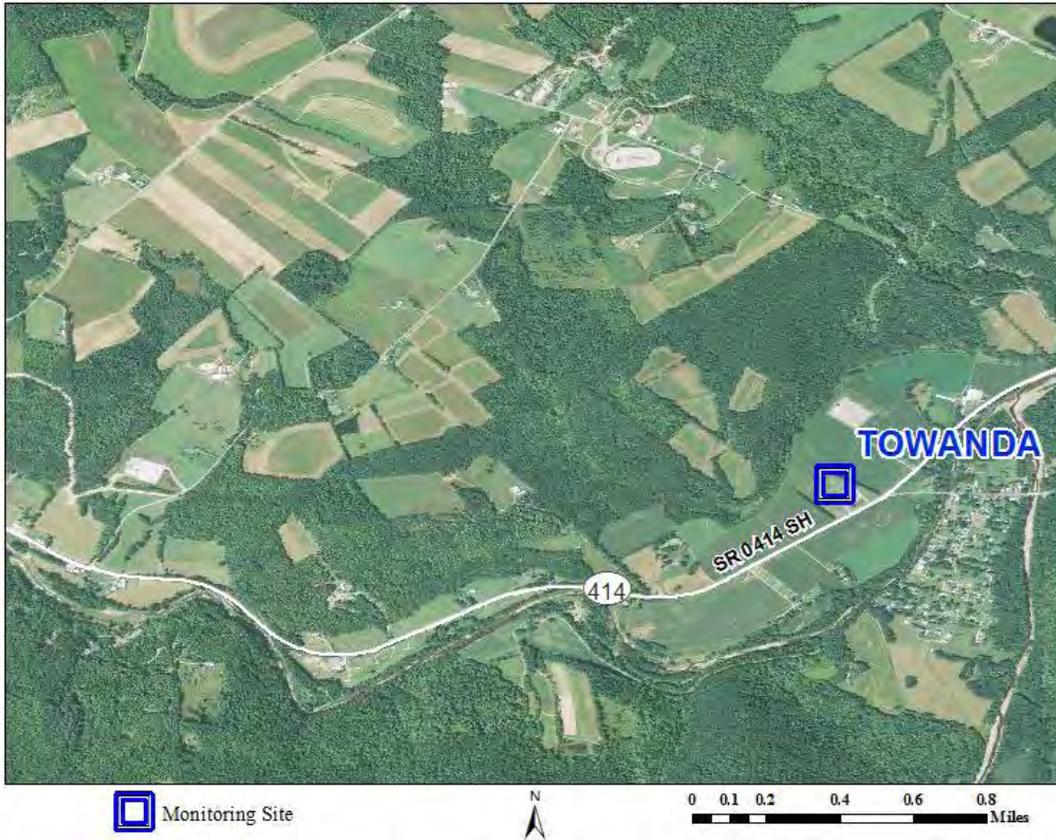


Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	6/1/1999	Cont.	UV Absorption	Regional Scale	Specific Location Characterization	General/Background
NO ₂	SLAMS	5/9/2012	Cont.	Chemiluminescence	Regional Scale	Specific Location Characterization	General/Background
PM _{2.5}	SLAMS	10/1/2014	Cont.	Beta Attenuation	Urban Scale	Population Exposure	Population Exposure

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: TOWANDA
AQS ID: 420150011
MSA: Northcentral Region - Non-MSA
COUNTY: BRADFORD
MUNICIPALITY: MONROE TWP
LATITUDE: 41.70539
LONGITUDE: -76.512876
ADDRESS: Rt. 414 & MAIN ST
COMMENTS: Monitor downwind concentration of pollutants from natural gas production facilities



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	2/27/2014	Cont.	UV Absorption	Neighborhood	Population Exposure	Source Oriented
NO ₂	SLAMS	3/1/2013	Cont.	Chemiluminescence	Neighborhood	Population Exposure	Source Oriented

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: UPPER STRASBURG
AQS ID: 420550002
MSA: Chambersburg-Waynesboro MSA
COUNTY: FRANKLIN
MUNICIPALITY: LETTERKENNY TWP
LATITUDE: 40.059828
LONGITUDE: -77.710608
ADDRESS: 9716 UPPER STRASBURG RD
COMMENTS: Monitor lead concentrations from source area



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
Pb	SLAMS	1/1/2010	1 in 6	ICP-MS	Middle Scale	Regulatory Compliance	Source Oriented

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: VANPORT
AQS ID: 420070505
MSA: Pittsburgh MSA
COUNTY: BEAVER
MUNICIPALITY: VANPORT TWP
LATITUDE: 40.68486111
LONGITUDE: -80.32291667
ADDRESS: TAMAQUI DR
COMMENTS: Monitor lead concentrations from source area – legacy site



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
Pb	SLAMS	3/1/1971	1 in 6	ICP-MS	Neighborhood	Regulatory Compliance	Population Exposure

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: WARREN EAST
AQS ID: 421230005
MSA: Northwest Region - Non-MSA
COUNTY: WARREN
MUNICIPALITY: CITY OF WARREN
LATITUDE: 41.825708
LONGITUDE: -79.119952
ADDRESS: 2044 PENNSYLVANIA AVE EAST
COMMENTS: Monitor hydrogen sulfide levels near source



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
SO ₂	SLAMS	1/1/2012	Cont.	UV Fluorescence	Micro Scale	Regulatory Compliance	Highest Concentration
H ₂ S	SPM	1/1/2012	Cont.	UV Fluorescence	Micro Scale	Specific Location Characterization	Source Oriented

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: WARREN OVERLOOK
AQS ID: 421230004
MSA: Northwest Region - Non-MSA
COUNTY: WARREN
MUNICIPALITY: CONEWANGO TWP
LATITUDE: 41.84372222
LONGITUDE: -79.17288889
ADDRESS: OVERLOOK SITE - NEAR STONE HILL ROAD
COMMENTS: To monitor SO₂ concentrations in the Warren nonattainment area



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
SO ₂	SLAMS	11/25/1996	Cont.	UV Fluorescence	Neighborhood	Regulatory Compliance	Highest Concentration

PA DEP’s 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: WASHINGTON
AQS ID: 421250200
MSA: Pittsburgh MSA
COUNTY: WASHINGTON
MUNICIPALITY: CITY OF WASHINGTON
LATITUDE: 40.17063889
LONGITUDE: -80.26172222
ADDRESS: MCCARRELL AND FAYETTE STS
COMMENTS: Monitor for criteria pollutants so federal monitoring requirements may be met as well as NAAQS compliance.



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O₃	SLAMS	1/1/1984	Cont.	UV Absorption	Neighborhood	Regulatory Compliance	Population Exposure
PM_{2.5}	SLAMS	1/1/1999	Daily	Gravimetric	Neighborhood	Regulatory Compliance	Population Exposure
PM_{2.5}	SLAMS	11/10/2010	Cont.	Beta Attenuation	Neighborhood	Regulatory Compliance	Population Exposure

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: WILKES-BARRE
AQS ID: 420791101
MSA: Scranton-Wilkes-Barre-Hazleton MSA
COUNTY: LUZERNE
MUNICIPALITY: CITY OF WILKES-BARRE
LATITUDE: 41.26597222
LONGITUDE: -75.84636111
ADDRESS: CHILWICK & WASHINGTON STS
COMMENTS: Meets federal monitoring requirements in the Scranton-Wilkes-Barre MSA



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	5/28/1982	Cont.	UV Absorption	Neighborhood	Regulatory Compliance	Population Exposure
SO ₂	SLAMS	5/28/1982	Cont.	UV Fluorescence	Neighborhood	Regulatory Compliance	Population Exposure
PM ₁₀	SLAMS	10/20/1994	Cont.	TEOM Gravimetric	Neighborhood	Regulatory Compliance	Population Exposure

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: YORK
AQS ID: 421330008
MSA: York-Hanover MSA
COUNTY: YORK
MUNICIPALITY: SPRING GARDEN TWP
LATITUDE: 39.9652778
LONGITUDE: -76.69958333
ADDRESS: HILL ST.
COMMENTS: Monitors for NAAQS compliance and to meet federal monitoring requirements in the York-Hanover MSA



Monitor Summary

Monitor	Network	Start Date	Sample Frequency	Method Description	Monitoring Scale	Sensor Purpose Designation	Appendix D Objectives
O ₃	SLAMS	1/1/1974	Cont.	UV Absorption	Urban Scale	Regulatory Compliance	Population Exposure
SO ₂	SLAMS	4/1/1974	Cont.	UV Fluorescence	Urban Scale	Regulatory Compliance	Population Exposure
NO ₂	SLAMS	1/1/1974	Cont.	Chemiluminescence	Urban Scale	Regulatory Compliance	Population Exposure
CO	SLAMS	1/1/1982	Cont.	Non-dispersive Infrared	Urban Scale	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	1/1/1999	Daily	Gravimetric	Urban Scale	Regulatory Compliance	Population Exposure
PM _{2.5}	SLAMS	8/19/2004	Cont.	FDMS Gravimetric	Urban Scale	Population Exposure	Population Exposure
PM ₁₀	SLAMS	7/17/1996	Cont.	TEOM Gravimetric	Urban Scale	Regulatory Compliance	Population Exposure
VOC	Other	1/15/2011	1 in 6	Canister		Air Toxics	

PA DEP's 2015 ANNUAL AMBIENT AIR MONITORING NETWORK PLAN

SITE NAME: YORK DOWNWIND
AQS ID: 421330011
MSA: York-Hanover MSA
COUNTY: YORK
MUNICIPALITY: CHANCEFORD TWP
LATITUDE: 39.860972
LONGITUDE: -76.462055
ADDRESS: 2632 DELTA ROAD
COMMENTS: Measures downwind ozone concentrations of the York metro area



Monitor Summary

<i>Monitor</i>	<i>Network</i>	<i>Start Date</i>	<i>Sample Frequency</i>	<i>Method Description</i>	<i>Monitoring Scale</i>	<i>Sensor Purpose Designation</i>	<i>Appendix D Objectives</i>
O ₃	SLAMS	4/22/2008	Cont.	UV Absorption	Urban Scale	Regulatory Compliance	Extreme Downwind