Ohio Environmental Protection Agency

2016-2017 Ohio Air Monitoring Network Plan

Division of Air Pollution Control
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Ohio 2016-2017 Air Monitoring Network

Introduction and Requirements

As required by 40 CFR 58.10, Ohio EPA provided the annual 2016-2017 Air Monitoring Network Plan to US EPA Region V by July 1, 2016. Ohio EPA is now providing a revision to this plan for a 30-day public review and comment period. No revisions are being incorporated into Appendices B, C, E or F of this document at this time. These appendices remain as they were submitted by the July 1, 2016 deadline although they are being provided during the review period for clarity. This document, along with Appendices A, D and G are being updated to provide additional details regarding Ohio's plan for fulfilling the requirements of Appendices A, C, D, and E of 40 CFR Part 58. This document addresses the Ohio air monitoring network, as it existed as of July 1, 2016, and as it is expected to be updated through June 30, 2017. Further, Ohio's air monitoring network plan contained within meets all the requirements of Appendices A, C, D, and E of 40 CFR Part 58.

Ohio EPA will submit the revised plan, and all appendices, with any comments received, to the US EPA Region V Regional Administrator. All comments received in the original and revised monitoring network plan can be found in Appendix H.

Guidance and Priorities

Ohio EPA follows the federal general guidance and requirements for air monitoring according to 40 CFR 58, Appendix D, including monitoring 1) areas of expected high concentrations, 2) areas of high population density, 3) areas with significant sources, 4) general background concentration sites and 5) areas of regional transport of a pollutant. Not all air pollutants need to have sites for all of these categories.

In addition to the above, the Air Directors in the Region 5 states of Ohio, Michigan, Indiana, Illinois, Wisconsin and Minnesota have adopted the following air monitoring objectives:

1) Areas of high concentration and high population, provide timely air quality data to the public, support compliance with the National Ambient Air Quality Standards (NAAQS) and control strategy development and support air pollution research studies
2) Multi-pollutant monitoring such as the NCore sites
3) Source-oriented monitoring such as required monitoring for lead, nitrogen dioxide and sulfur dioxide
4) Rural monitoring and medium size city monitoring
5) Environmental justice monitoring
6) School air toxics monitoring

A fundamental consideration for all air monitoring projects and sites is that the monitoring locations meet US EPA requirements and that the state and local air agencies are available to operate and maintain the sites and equipment, to provide sample analyses, and are available for data collection and reporting.

Network Changes

The plan for Ohio's Air Monitoring Network for 2016-2017 is to make changes as required, or necessary, for the air monitoring network. A quick-view of Ohio's current monitoring network for each of the criteria pollutants can be found in Appendix A. Network maps for

each of the US EPA criteria pollutants, critical summary statistics for 2015 monitoring data, and three year averages of 2013-2015 monitoring data are presented in Appendix E.

All planned, proposed and potential network changes for each local and district office monitoring network are tabulated in two summary tables below. A larger detailed table provided at the end of this document contains a listing of Ohio's complete air monitoring network, also with proposed changes noted.

Unplanned site changes occur to the network each year. Changes or temporary interruptions of sampling may occur because of events such as building or roof maintenance, construction, change of ownership of the site, or other changes at the site that require moving the instruments. Some changes that may not be planned could include adding sites for complaint areas or for a new or proposed facility. Other changes that are planned may not be implemented due to unforeseen circumstances, such as the inability to secure a new site or because of other constraints.

All site and parameter changes are made in consultation with, and approval of, the US EPA Region V air monitoring staff. Ohio EPA retains the right to install and operate ambient air quality monitors that go beyond federal minimum requirements without federal approval.

$PM_{2.5}$ FRM Filter Based and $PM_{2.5}$ Continuous Network

For sites that monitor very fine particulate matter ($PM_{2.5}$), Ohio EPA expects to continue with monitoring or sampling using the $PM_{2.5}$ Federal Reference Method (FRM) at the majority of the sites as they existed at the beginning of 2016. Ohio's 2016-2017 $PM_{2.5}$ monitoring network can be seen in Appendix A. Maps depicting locations of each site are presented in Appendix E.

Appendix D of this document includes an analysis showing Ohio meets the minimum siting requirements in 40 CFR Part 58, Appendix D for both $PM_{2.5}$ FRM monitoring and $PM_{2.5}$ continuous monitoring in Metropolitan Statistical Areas (MSA). 40 CFR Part 58, Appendix D, Section 4.7.2 requires continuous $PM_{2.5}$ analyzers in the same MSAs equal to at least one-half (round up) of the minimum required FRM monitoring sites listed in the 40 CFR Part 58, Appendix D, Table D-5 (below).

Table D-5 Appendix D to Part 58
SLAMS Minimum $PM_{2.5}$ Monitoring Requirements

MSA population[1,2]	Most recent 3-yr design Value >=of any $PM_{2.5}$ NAAQS[3]	Most recent 3-yr design Value >=of any $PM_{2.5}$ NAAQS[3,4]
>1,000,0000……	3	2
500,000-1,000,000	2	1
50,000<500,000	1	0

[1] Minimum monitoring requirements apply to the Metropolitan statistical area (MSA).

[2] Population based on latest available census figures.

[3] The $PM_{2.5}$ NAAQS levels and form are defined in 40 CFR Part 58, Appendix D

4 These minimum monitoring requirements apply in the absence of a design value

5 MSA must contain an urbanized area of 50,000 or more population

Appendix D of this document provides two tables comparing the minimum number of required sites versus the number of FRM $PM_{2.5}$ and continuous $PM_{2.5}$ sites that exist at this time, and considering known network changes outlined in this document, in each of Ohio's

major MSAs. Design values to compare to the NAAQS can be found in Appendix E of this document.

There are a number of continuous monitors that use a Federal Equivalent Method (FEM) monitor but are not operated as such. These include the Cleveland GT Craig site 39-035-0060, Steubenville site 39-081-0017, New Albany site 39-049-0029, and the Chippewa site 39-103-0004. These sites operate the Met One BAM which is a US EPA designated FEM instrument. Ohio EPA has received approval from US EPA for these sites to be designated in the US EPA Air Quality System (AQS) database as excluded from comparison to the NAAQS.

State monitoring agencies have the option of not operating a $PM_{2.5}$ instrument as an FEM. In addition, US EPA's data comparability statistical assessments tool that compares the data from hourly instruments with the co-located filter based instrument, which includes the most recent monitoring data from 2016, shows poor statistical results and would not meet the statistical criteria required for comparison to the NAAQS. Ohio has not proposed any of our continuous $PM_{2.5}$ monitors to be designated by US EPA as approved regional methods because these monitors failed to meet all the statistical criteria for such a designation. Appendix G of this document identifies the results from Ohio EPA's analysis using the US EPA data comparability statistical assessment tool.

The Southwest Ohio Air Quality Agency is conducting a special purpose two-year data comparability assessment of an FEM hourly monitor and corresponding FRM monitor at the Sycamore site 39-061-0006 in Cincinnati. The results of this assessment may not only affect the Sycamore site 39-061-0006 but also the Taft site 39-061-0040 in Cincinnati. Both sites operate a Thermo Sharps 5030i FEM continuous instrument. If the outcome of this assessment is favorable, the FRM monitors at the Sycamore and Taft sites will reduce their sample collection frequency to every sixth day. The $PM_{2.5}$ hourly FEM monitors at both sites will then become comparable to the NAAQS. Details of this project are given in Appendix C of this document.

In addition to the above minimum siting requirements, 40 CFR Part 58, Appendix D requires at least one continuous site that monitors regional transport. Ohio's NCore site 39-135-1001 located in Preble County at the Indiana and Ohio border meets this requirement. Furthermore, there must be at least one continuous site that monitors regional background. Ohio's Allen County Lima Bath site 39-003-0009 in Northwest Ohio meets this requirement.

Two of the most significant network changes that will occur in 2016-2017 involve deploying $PM_{2.5}$ monitors at two near-road sites in the Columbus and Cleveland areas. Both sites will employ a Partisol 2025i filter-based FRM monitor. Ohio EPA previously anticipated the use of an hourly monitor at the Columbus area near-road site; however operational problems with the hourly instruments has yet to be resolved. Both monitors are scheduled to be operational by January 1, 2017.

Nearly all of Ohio's continuous $PM_{2.5}$ monitors are used for Air Quality Index (AQI) purposes.

All other planned and proposed changes to Ohio's $PM_{2.5}$ network are discussed below and shown in the large table of Ohio's air monitoring network changes at the end of this document.

Ozone Network

Minimal changes will be made to the ozone monitoring network in 2016-2017. However, as required by 40 CFR Part 58, Appendix D, Ohio's 2017 ozone monitoring season will now begin on March 1. Ohio's 2016-2017 ozone monitoring network can be seen in Appendix A of this document. Maps depicting locations of our sites are presented in Appendix E of this document.

Appendix D of this document includes an analysis showing Ohio meets the minimum siting requirements in 40 CFR Part 58, Appendix D for ozone monitors that exist at this time in each MSA, and considering known network changes outlined in this document. Design values to compare to the NAAQS can be found in Appendix E of this document. 40 CFR Part 58, Appendix D, Table D-2 (below) identifies the minimum requirements.

Table D-2 Appendix D to Part 58-
SLAMS Minimum O_3 Monitoring Requirements

MSA population[1,2]	Most recent 3-yr design Value >=of any Ozone NAAQS[3]	Most recent 3-yr design Value >=of any Ozone NAAQS[3,4]
>10 million……	4	2
4-10 million……	3	1
350,000<4 million	2	1
50-000<350,000	1	0

[1] Minimum monitoring requirements apply to the Metropolitan statistical area (MSA).

[2] Population based on latest available census figures.

[3] The Ozone NAAQS levels and form are defined later in this document

4 These minimum monitoring requirements apply in the absence of a design value

5 MSA must contain an urbanized area of 50,000 or more population

PM_{10} Network

PM_{10} monitors sample particulates that are less than 10 microns in diameter. The particle size collected in the instruments contrast the much smaller particle size collected in $PM_{2.5}$ instruments. Minimal changes will be made to the PM_{10} monitoring network in 2016-2017.

Ohio's 2016-2017 PM_{10} monitoring network can be seen in Appendix A of this document. Maps depicting locations of Ohio's sites are presented in Appendix E of this document.

Appendix D of this document includes an analysis showing how Ohio's 2016-2017 PM_{10} monitoring network compares to the minimum siting requirements in 40 CFR Part 58, Appendix D for PM_{10} monitors that exist at this time in each MSA, and considering known network changes outlined in this document. Design values to compare to the NAAQS can be found in Appendix E of this document. 40 CFR Part 58, Appendix D, Table D-4 (below) identifies the minimum requirements.

Table D-4 Appendix D to Part 58-
SLAMS Minimum PM_{10} Monitoring Requirements

MSA population[1,2]	High concentration[2]	Medium Concentration[3]	Low Concentration[3]
>1,000,0000……	6-10	4-8	2-4
500,000-1,000,000	4-8	2-4	1-2
250,000<500,000	3-4	1-2	0-1
100,000<250,000	1-2	0-1	0

As identified in Appendix D, the number of monitoring sites in three MSAs are less than those required under 40 CFR Part 58, Appendix D. The Columbus, Akron, and Toledo MSAs would all require additional monitoring.

However, modifications from these PM_{10} monitoring requirements are allowed provided they are approved by the Regional Administrator (US EPA Region V). Historically, Ohio EPA, under the guidance and approval of US EPA, reduced our monitoring network at sites where air quality was determined to be significantly below the PM_{10} NAAQS. At that time, the emphasis of national monitoring strategies was to re-allocate limited monitoring resources. Because PM_{10} concentrations had been very low at many sites nationwide, including Ohio, US EPA Region V approved discontinuation of a number of PM_{10} sites. This reduction of PM_{10} sites in Ohio involved removing one site in Columbus, Akron and Toledo. However, Columbus maintains an existing PM_{10} site located at the Ohio State Fairgrounds (39-049-0024).

SO_2 Network

PWEI

40 CFR Part 58, Appendix D, Section 4.4, requires that each state calculate the population weighted emissions index (PWEI) for each core based statistical area (CBSA) within the state, or shared with another state, for use in the implementation of or adjustment to a state's sulfur dioxide (SO_2) monitoring network. This new requirement was implemented with the promulgation of the revised 2010 SO_2 NAAQS.

The PWEI is to be calculated by multiplying the most recent census data or estimates of population within a CBSA by the total amount of SO_2 in tons per year emitted with the CBSA area. The resulting product is to be divided by one million, which then provides a PWEI value, the units of which are million person-tons per year. The number of monitoring sites within a CBSA would be required as follows:

- For any CBSA where the PWEI is equal to or greater than 1,000,000; three SO_2 sites are required within that CBSA.
- For any CBSA where the PWEI is equal to or greater than 100,000 but less than 1,000,000; two SO_2 sites are required within that CBSA.
- For any CBSA where the PWEI is equal to or greater than 5,000 but less than 100,000; one SO_2 site is required within that CBSA.

The minimum PWEI monitoring requirements can be satisfied by an existing or new SO_2 site that is sited with the boundaries of the parent CBSA provided the site is one of the following types: population exposure, highest concentration, source impacts, general background, or regional transport. In addition, SO_2 monitors at NCore stations can be counted towards satisfying the minimum monitoring requirements if that monitor is located within a CBSA. Lastly, any monitor that is sited outside of a CBSA to assess the highest concentration

resulting from the impact of significant sources or source categories existing within that CBSA shall be allowed to count towards minimum monitoring requirements for that CBSA.

Appendix D of this document includes an analysis showing Ohio meets the minimum siting requirements in 40 CFR Part 58, Appendix D, Section 4.4 for SO_2 monitors that exist at this time in each MSA, and considering known network changes outlined in this document.

SO_2 Data Requirement Rule

On August 21, 2015, US EPA promulgated the Data Requirement Rule (DRR) (80 FR 51052). Under the DRR, states are required to characterize concentrations of SO_2 across the state through either ambient air quality monitoring or air quality modeling analysis where sources of SO_2 emissions have annual actual SO_2 emissions of 2,000 tons or more. These monitoring and modeling data may be used in future determinations of attainment status. Ohio EPA is electing to use ambient air quality monitoring to characterize air quality around two sources that meet this criteria: the American Electric Power's (AEP) General James M. Gavin power plant and the Ohio Valley Electric Corporation (OVEC) Kyger Creek power plant. This network will be comprised of three new sites that will be operated by OVEC and their contractor, Shell Engineering, along with a fourth site operated by Ohio EPA that will include a relocation of the recently terminated Pomeroy site 39-105-0003. All four sites will be in operation by January 1, 2017. Ohio EPA is submitting a separate monitoring plan with the details of this network.

AEP Cardinal Power Plant SO_2 Network

Since January 2011, AEP has operated a network of four SO_2 monitoring sites near the Cardinal Power Plant in and around the town of Brilliant, Ohio in Jefferson County. One of these sites is located on the West Virginia side of the Ohio River. The State of West Virginia granted Ohio the AQS data rights to the ambient and quality assurance data collected from the West Virginia site. This special purpose monitoring is a result of permit requirements and data is not comparable to the NAAQS.

AEP's consultant, Shell Engineering, operates the network and is responsible for all the quality assurance requirements. AEP and Shell Engineering maintain a Quality Assurance Project Plan (QAPP) in accordance with the permit requirements and Ohio EPA is scheduled to perform a yearly monitoring audit of the network operations and quality assurance activities. The network monitoring data is being submitted quarterly to Ohio EPA. Beginning with data collected in the fourth quarter of calendar year 2016, the high 5-minute value for each hour will be reported to the AQS.

Nitrogen Dioxide Network

Nitrogen dioxide (NO_2) sampling sites in Ohio will remain at the current number of sites. Ohio's 2016-2017 NO_2 monitoring network can be seen in Appendix A of this document. Maps depicting locations of our sites are presented in Appendix E of this document. In

40 CFR Part 58, Appendix D, Section 4.3 requires each CBSA with a population of 2,500,000 persons or more to contain a near-road monitor. In addition, each CBSA with a population of 1,000,000 or more persons must contain an area-wide monitor. Appendix D of this document includes two tables showing an analysis that Ohio meets the minimum siting requirements in 40 CFR Part 58, Appendix D for NO_2 near-road and area-wide monitors that exist at this time in each CBSA.

Carbon Monoxide Network

Carbon monoxide (CO) sampling sites in Ohio will remain at the current number of sites. Ohio's 2016-2017 CO monitoring network can be seen in Appendix A of this document. Maps depicting locations of our sites are presented in Appendix E of this document.

40 CFR Part 58, Appendix D, Section 4.2.1 requires one CO monitor to be collocated with any required NO_2 near-road monitor in CBSAs having a population of 1,000,0000 or more persons. Appendix D of this document includes an analysis showing Ohio meets the minimum siting requirements in 40 CFR Part 58, Appendix D for CO monitors that exist at this time in each MSA.

Lead (Pb) Network

In 2008, US EPA revised the NAAQS for lead (Pb). The Pb standard was strengthened from a 1.5ug/m^3 quarterly average to 0.15 ug/m^3 based on the highest 3-month rolling average over a three-year period.

In the 2008 rulemaking (referred to as "first round"), US EPA set minimum monitoring requirements for source oriented and population oriented sampling. Beginning in 2010, facilities with actual emissions of Pb greater than one ton per year were required to be monitored. Facilities with actual emissions of Pb greater than 0.7 ton per year were required to be modeled to determine if they impact 50% of the new Pb standard. States could also request a waiver for monitoring sources over one ton per year if it was shown through modeling there was less than a 50% impact of the new Pb standard. Once a source was determined to require monitoring, Ohio EPA used dispersion modeling to determine the appropriate location for siting. In addition, population oriented monitoring was required for CBSAs with greater than 500,000 persons.

With respect to source oriented monitoring for the first round of Pb monitoring, Ohio EPA reviewed current emissions inventories and found several sources with actual emissions greater than one ton per year. The following sources were modeled for monitor placement and monitoring commenced in 2010: American Spring Wire in Cuyahoga County (39-035-0072), Ellwood Engineering Castings in Trumbull County (39-155-0012[1]), Nucor Marion Steel in Marion County (39-101-0003[2]), and Timkin in Stark County (39-151-0017[3]). Two sources were identified with actual emissions of Pb greater than 0.7 ton per year but less than one ton per year. These sources, American Electric Power-Gavin Power Plant in Gallia County and Bunting Bearings in Fulton County, were modeled and their impacts were less than 50% of the NAAQS. However, Bunting Bearings was already a monitored source with exceedances of the revised Pb NAAQS and therefore, monitoring continued at this site (39-051-0001) although not required by the Pb monitoring rule.

Subsequently, in December 2010, US EPA strengthened the Pb monitoring rule ("round two") to require source-oriented monitors for sources greater than 0.5 ton per year. Again,

[1] Due to low monitoring concentrations this site was approved by US EPA for discontinuance as part of Ohio's 2014-2015 Monitoring Network Plan.
[2] Site 39-101-0004 also monitors lead at Nucor; however, this monitor is not a required monitor for the 2008 Pb NAAQS.
[3] Due to low monitoring concentrations this site was approved by US EPA for discontinuance as part of Ohio's 2014-2015 Monitoring Network Plan.

states could also request a waiver for monitoring sources over 0.5 ton per year if it was shown through modeling there was less than a 50% impact of the new Pb standard. For this round two of Pb monitoring, Ohio EPA reviewed current emissions inventories and found the following three facilities with Pb emissions exceeding 0.5 ton per year, not currently being monitored: American Electric Power- Gavin Power Plant in Gallia County, Severstal Warren in Jefferson County, and I. Schumann in Cuyahoga County. All three facilities were determined to have less than a 50% impact of the new Pb standard and waivers were requested, and granted, for each facility in Ohio's 2011-2012 Annual Monitoring Network Plan.

Ohio EPA has the following plans for the 2016-2017 Pb monitoring network:

- Termination of Pb monitoring at American Spring Wire in Cuyahoga County (39-035-0072). Monitoring data analysis shows Pb concentrations well below the NAAQS. Ohio EPA has consulted with US EPA Region V whom is concurring with the request to terminate.
- Ohio EPA is evaluating the termination of monitoring at Daido in Logan County (39-091-0006). Monitoring data analysis shows Pb concentrations well below the NAAQS and this facility permanently shutdown a number of years ago. This monitor existed prior to the 2008 revision of the Pb NAAQS and had shown exceedances of the NAAQS prior to the facility permanently shutting down. Ohio EPA will be consulting with US EPA Region V.
- Addition of Pb monitoring near the AGMET facility in Cuyahoga County. This special purpose monitor is being added to address complaint issues and will be operated short-term.
- Potentially adding Pb monitoring near Republic Steel in Stark County. This special purpose monitoring would be initiated to address an expansion and be required by permit.
- Ohio EPA will be removing Pb monitoring from our NCore sites.

The December 2010 rulemaking also required population oriented monitoring at NCore sites rather than CBSAs with greater than 500,000 persons. However, in March 2016, US EPA eliminated this requirement due to finding pollutant concentrations were well below the NAAQS nationwide at NCore sites.

The following table depicts Ohio's Pb monitoring network for 2016-2017. This table explicitly identifies those monitors required as a part of the 2008 Pb NAAQS source-oriented monitoring requirements. Red text indicates changes expected to occur as identified in this plan.

2016-2017 Lead/Metals Monitoring Network Plan

AQS #	Monitoring Objective Notes	City	County	Address
39-017-0015	Population Exposure, neighborhood discontinued end of 2015	Middletown	Butler	3901 Lefferson Rd.
39-029-0019	Near WTI incinerator; Population Exposure, neighborhood	E. Liverpool	Columbiana	1250 St. George St.
39-029-0020	Near WTI incinerator; Source-oriented, neighborhood	E. Liverpool	Columbiana	2220 Michigan Ave.

AQS #	Monitoring Objective Notes	City	County	Address
39-029-022 became -0023	Near WTI incinerator; collocated Source-oriented, middle-scale Location moved 100 meters,	E. Liverpool	Columbiana	500 Maryland Ave.
39-035-0038	Population Exposure, neighborhood	Cleveland	Cuyahoga	2547 Tikhon Ave.
39-035-0042	Population Exposure, middle scale Collocated	Cleveland	Cuyahoga	3136 Lorain Ave.
39-035-0049	Source oriented (Ferro), middle scale Collocated	Cleveland	Cuyahoga	4150 East 56th St.
39-035-0060	NCore monitor; ended 8/28/16 Population Exposure, neighborhood	Cleveland	Cuyahoga	2650 East 14th Ave.
39-035-0061	Near permanently shutdown facility (Master Metals) source oriented, neighborhood scale	Cleveland	Cuyahoga	West 3rd. St.
39-035-0072	Ended 8/28/16; Required under 2008 Pb NAAQS (American Spring Wire); requesting termination Source-oriented, middle-scale	Cleveland	Cuyahoga	26565 Miles Rd.
39-035-xxxx	New short-term site to be added in 2017. Special purpose only.	Cleveland	Cuyahoga	Near AGMET
39-049-0039	Highest conc., neighborhood	Columbus	Franklin	580 E. Woodrow Ave.
39-051-0001	Source oriented (Bunting Bearing), middle scale	Delta	Fulton	200 Van Buren St.
39-061-0040	NCore monitor ended lead 12/31/15	Cincinnati	Hamilton	250 Taft Rd.
39-101-0003	Source oriented; Required under 2008 Pb NAAQS (Nucor), middle scale	Marion	Marion	Hawthorne Ave.
39-101-0004	Source oriented; Nucor, Population Exposure, middle scale	Marion	Marion	640 Bellefontaine
39-113-7001	Alternate NCore site monitor, to end 12/31/16 Population Exposure, neighborhood	Moraine	Montgomery	2728 Viking Lane
39-091-0006	Near permanently shutdown facility (Daido) Source oriented, neighborhood, considering termination	Bellefontaine	Logan	320 Richard Ave.
39-167-0008	Dominant source-point Population Exposure, neighborhood	Marietta	Washington	Lancaster Rd.
39-151-xxxx	Potential new special purpose, source oriented (Republic Steel)	Canton	Stark	Near Republic Steel

Annual Pb Emissions Review

On an annual basis, Ohio EPA works with US EPA in reviewing the latest emissions inventories to determine if additional sources warrant monitoring in accordance with the 2008 Pb NAAQS source-oriented monitoring requirements. These inventories include the most recent versions of the National Emissions Inventory (NEI), Toxics Release Inventory (TRI) and Ohio's annual emissions reporting system. Ohio EPA reviewed current emissions inventories and determined no new sources exceeded the 0.5 ton per year threshold and therefore, no new Pb monitoring is required.

Pb Monitoring Waiver Review

As noted above, Ohio EPA was granted waivers from monitoring for three facilities as a part of Ohio's 2011-2012 Annual Monitoring Network Plan. These facilities include: American Electric Power- Gavin Power Plant in Gallia County, Severstal Warren in Jefferson County, and I. Schumann in Cuyahoga County. States with sources granted waivers are required to review the waiver request every five years to determine if the waiver is still warranted.

These waivers were granted based upon modeling of actual emissions. Ohio EPA reviewed actual emissions from the TRI, Ohio's annual emission reporting system, and the NEI for years 2005 to 2009 when performing the original modeling. The highest reported emissions from that period for each facility was used in the waiver modeling in order to be conservative. The following presents the actual emissions which produced the following modeling results to compare to half of the Pb NAAQS (0.075 ug/m3):

- Gavin –modeled 0.8 tons per year (TPY) of Pb emissions and obtained a result of 0.00742 ug/m3 inclusive of background.
- I.Schumann - modeled 0.79 TPY of Pb emissions and obtained a result of 0.0270 ug/m3 inclusive of background.
- Severstal Warren - modeled 0.58 TPY of Pb emissions and obtained a result of 0.0676 ug/m3 inclusive of background.

As a part of this five-year review of the approved waivers, Ohio EPA analyzed reported emissions from 2010 to 2015 to determine if additional modeling would be necessary to continue the waiver process. Note that Severstal Warren has been sold and the last owners, BDM Inc., have dismantled the facility and it is currently listed as inactive. The last year of reported emissions is 2012 for this facility. The following is the highest emissions reported between 2010 and 2015 for each facility:

- Gavin – 0.40 TPY
- I.Schumann – 0.75 TPY
- Severstal Warren/BDM – 0.40 TPY

Therefore, emissions levels have remained below those thresholds already modeled for the waiver requests and updates to those requests are not warranted. Ohio EPA requests the waivers remain approved.

SEDO Community Scale Grant Project

Ohio EPA has received funding from US EPA to conduct a Community-Scale Air Toxics monitoring project near Hopedale in Harrison County. The purpose of the project is to characterize near-source concentrations of criteria and toxic pollutants from Ohio's oil and gas industry. This will allow Ohio EPA to assess the need for emission reduction measures and to characterize risk for the most highly impacted populations.

The oil and gas industry has been rapidly expanding in the Utica formation in eastern Ohio. The natural gas here is a "wet gas," meaning it contains natural gas liquids (NGL) along with the natural gas itself. The NGLs are higher chain hydrocarbons that provide additional british thermal unit (BTU) value to the gas, but cannot be transported or shipped in natural gas lines for long distances because the NGL would condense and cause both operational issues and potential safety issues to the end users. In order to clean up the raw gas and

produce pipeline quality natural gas, "midstream" facilities are constructed between the well and pipeline to clean the gas and recover the NGL. The NGL is a high BTU commodity that has economic value. It is, however, a liquid hydrocarbon mixture that has the potential for air emissions from several different source operations. Although these facilities are not categorized as major sources, Ohio EPA is finding that these midstream facilities can be sources of volatile organic compounds (VOC) due to leaks, undersized equipment and equipment malfunctions. A typical midstream facility in Ohio is shown here.

Both ambient pollutant and meteorological monitoring will be conducted for approximately two and half years. The monitoring program consists of $PM_{2.5}$, PM_{10}, operating a gas chromatograph for collection of hydrocarbons, hydrogen sulfide, and fielding stainless steel canisters for sampling various organics such as hydrocarbons. All monitoring data will be uploaded into AQS.

NCore Monitoring Network

NCore is a multi-pollutant approach to monitoring. NCore sites are intended to support multiple objectives with a greater emphasis on assessment, research support, and accountability than the traditional State and Local Air Monitoring Site (SLAMS) networks.

NCore provides an opportunity to address new directions in monitoring and fills measurement and technological gaps that have accumulated in the networks. Ohio was required to establish and operate one NCore site in Cleveland and Cincinnati and one NCore site as a regional transport site in Preble County near the Ohio and Indiana border. These sites are required under 40 CFR Part 58, Appendix D to measure $PM_{2.5}$, speciated $PM_{2.5}$, ozone, SO_2, CO, Nitrogen Oxides (NO/NO_2), Total Reactive Nitrogen Oxides (NO_y), and meteorology. Ohio meets all these requirements and NCore sites began operating in 2011. Pb monitoring at all three Ohio NCore sites[4] has ended or will be terminated by the end of 2016, as discussed above.

[4] The lead monitor required at the Preble County site was located at the Moraine site near downtown Dayton because of the remote location of Preble county station.

Summary of Network Changes by MSA

As of the time of this publication, below is a list of major monitoring network changes that have occurred in the second half of 2015, thus far in 2016, or are proposed for the remaining portion of 2016 and 2017.

Canton-Massillon MSA

Canton LAA

- One new $PM_{2.5}$ TEOM Sharp 5030i replaced former continuous $PM_{2.5}$ monitor at the Canton City Health Department site 39-151-0020 in May 2016.
- Ozone site 39-151-4005 in Canton may be discontinued and relocated to Alliance before 2017.
- Potential new Pb site to be located near Republic Steel in Stark County as a permit requirement. This will be a special purpose monitor starting in early 2017.

Columbus MSA

CDO

- Either one $PM_{2.5}$ hourly or FRM monitor and one black carbon monitor will be added to the Columbus near road site 39-049-0038 by 2017.

Cleveland-Elyria, MSA

Cleveland, NEDO

- TSP/Pb/metals site 39-035-0072 to discontinue at American Spring Wire before 2017. Monitoring has been ongoing for over three years and concentrations are well within the 2008 Pb NAAQS. This site was required based on the 2008 Pb NAAQS source-oriented monitoring threshold.
- Lo-Vol/Pb site discontinued at Cleveland's NCore site 39-035-0060 on 8/26/16.
- The PM_{10}, $PM_{2.5}$ FRM, hourly and speciation site 39-093-3002 in Lorain County may be discontinued and relocated before 2017.
- The Lorain County ozone site 39-093-0018 may be relocated before the 2017 ozone season to the same location where PM_{10}, $PM_{2.5}$ FRM, hourly and speciation site 39-093-3002 is relocated.
- A TSP/Pb/metals sites to be added for short-term source monitoring near the AGMET facility in Cleveland in 2017. This will be a special purpose monitor.
- A $PM_{2.5}$ FRM monitor to be deployed and operating at the near-road NO_2 site 39-035-0073 by 1/1/17.

Columbiana MSA

NEDO

- The PM_{10}, TSP/metals Columbiana County site 39-029-0022 in East Liverpool was moved from the roof of a school building onto a nearby ground-level monitoring platform at the same location on 1/31/16 . The school is abandoned and not maintained. The new AQS site number and name is 39-029-0023, WTI Eastside School.

Cincinnati, OH-KY-IN MSA

Cincinnati (SWOAQA)

- The Lefferson site 39-017-0015 and Verity School site 39-017-0003 were combined and moved to a ground-level location on the Lefferson site 39-017-0015 property beginning April 1, 2016 due to the Verity School site 39-017-0003 being scheduled

for demolition. $PM_{2.5}$ and low-volume PM_{10} samplers were installed. VOC sampling at Verity School site 39-017-0003 and hi-volume PM_{10} and TSP (Pb and metals) monitors were discontinued at Lefferson site 39-017-0015 after December 31, 2015 (as noted in Ohio's 2015-2016 network plan), and there was a net reduction from two to one PM_{10} monitors between these two sites.

- The PM2.5 Sycamore site 39-061-0006 sample frequency will change from 1/3 to 1/6 in January 2017. FEM will become primary at site and FRM will change to quality assurance collocated.
- The $PM_{2.5}$ collocated sampler at Carthage site 39-061-0014 will be removed in January 2017. The required collocated monitors are met for this method code at other existing sites in the SWOAQA. The primary $PM_{2.5}$ sampler will change from an Anderson method (155) to a BGI method (142) beginning 1/1/17.
- True NO2 and aethalometer black carbon sampling will be added to the Taft NCore site 39-061-0040 by January 2017.
- The PM10 low-vol Pb monitoring at Taft NCore site 39-061-0040 was discontinued 12/31/15.
- The $PM_{2.5}$ BPG Yankee Road site 39-017-0022 may be discontinued by 2017. Ohio EPA provided justification to US EPA in an October 31, 2016 letter requesting discontinuance.
- The ozone Hamilton site 39-017-0004 will be moved before the 2017 ozone season.
- The VOC monitor at Kibby Lane site 39-061-0047 will have a sample frequency change from 1/6 to 1/12, likely in 2017. This monitor was required under a US EPA consent decree with a nearby facility. The consent decree is expiring and all parties are in agreement to continue sampling, however, at a reduced frequency.
- A $PM_{2.5}$ continuous monitor is being added to the Cincinnati near-road site 39-061-0048 by 1/1/17.

Dayton-Springfield MSA

RAPCA, Dayton-Springfield

- Pb/Metals sampling at the Moraine alternate NCore site 39-113-7001 (alternate for the purpose of Pb monitoring only) will be discontinued before 2017.

Meigs County, Pomeroy

SEDO

- SO_2 site 39-105-0003 in Pomeroy was discontinued and will be relocated nearby before 2017. The new site will be part of the Gavin/Kyger SO_2 monitoring network to meet requirements of the SO_2 Data Requirements Rule.

Harrison County

SEDO

- $PM_{2.5}$, $PM_{10,}$ CO, gas chromatograph for hydrocarbons, VOC canister, and hydrogen sulfide to be added in early 2017 near a mid-steam natural gas processing facility in Harrison County near Hopedale. This is a US EPA grant funded community scale air toxics monitoring project to operate two to three years.

Point Pleasant Micropolitan Statistical Area

SEDO-Gallia County

- As part of the SO_2 Data Requirements Rule, an SO_2 monitoring network comprising four sites will be established around the Gavin and Kyger Creek power plants near Cheshire, Ohio. The network will start operating by 1/1/17. A separate monitoring plan will fully address this network.

Bellefontaine Micropolitan Statistical Area

SWDO

- Possible termination of 1 Pb monitor at Daido in Logan County (39-091-0006). Monitoring data analysis shows Pb concentrations well below the NAAQS and this facility permanently shutdown a number of years ago. This monitor existed prior to the 2008 revision of the Pb NAAQS and had shown exceedances of the NAAQS prior to the facility permanently shutting down. Ohio EPA will be consulting with US EPA Region V.

Youngstown-Warren-Boardman, OH-PA MSA

MTAPCA

- The $PM_{2.5}$ and PM_{10} Warren site 39-155-0005 discontinued 5/31/15. This site was relocated on the same property and given a new AQS number of 39-155-0014. Sampling resumed 1/1/16.

Toledo MSA

Toledo

- The Toledo Lo Serv. ozone site 39-095-0034 was discontinued after the 2016 ozone season due to building renovations and security concerns from the facility. The Cooley Canal site 39-095-0035, approximately a half mile to the southeast of site 39-095-0034, will replace this site as the new official NAAQS monitor for the area. Cooley Canal site 39-095-0035 started operating in August 2016. Ohio EPA performed a comparative study between the two sites and found it to be an acceptable replacement. US EPA Region V was consulted and is in agreement with this change. The site data will be combined for comparison to the NAAQS.

Wheeling, VA-OH MSA

- SO_2, NO_2, CO, $PM_{2.5}$, and two PM_{10} monitors started operation 7/1/15 at Shadyside site 39-013-0006. This monitoring is required under a permit and is considered a special purpose monitor.

Cleveland 's NCore site

Tabular Summary of Proposed Monitoring Changes by Reporting Organization

Supporting Agency	AQS Site No.	Site Name or Address	Action Change	When
Canton	39-151-4005	Alliance	Ozone site may be relocated	By 2017
	39-151-xxxx	Republic Steel	Potential special purpose Pb monitor, permit required	Early 2017
Cleveland	39-035-0060	G.T. Craig, NCore site	To end lead/metals monitoring	Ended 8/26/16
	39-035-0072	Century_ Miles Rd	To end Pb/metals site	By 2017
	39-035-0073	Near Rd site, Warrensville	$PM_{2.5}$ FRM to be deployed	By 1/1/17
	39-035-xxxx	Cleveland area Pb source	1 new short-term, special purpose Pb site to be added AGMET, Oakwood Village	In 2017
SWOAQO	39-017-0003	Middletown, Verity HS	1 PM_{10} Lo-Vol. 1 $PM_{2.5,}$ VOC discontinued	3/31/16
(Cincinnati)	39-017-0004	Hamilton	Ozone to be relocated	By 2017 ozone season
	39-017-0015	Middletown, Lefferson	Pb/metals sampling ended	12/31/15
	39-017-0015	Middletown, Lefferson	1 PM_{10}, 1 $PM_{2.5}$	Started 4/1/16
	39-017-0022	BPG	May discontinue $PM_{2.5}$	By 2017
	39-061-0006	Sycamore	$PM_{2.5}$ FEM becomes primary, FRM changes to collocated and sample frequency change from 1/3 to 1/6	January 2017
	39-061-0014	Carthage	$PM_{2.5}$ method change from 155 to 142, remove collocated monitor	By 1/1/17
	39-061-0040	TAFT, Cincinnati	Add true NO_2 and aethalometer	January 2017
	39-061-0040	TAFT, Cincinnati	Discontinued Pb	12/31/15
	39-061-0048	Cincinnati Near Rd.	$PM_{2.5}$ continuous instr. to be added	By January 2017

Supporting Agency	AQS Site No.	Site Name or Address	Action Change	When
RAPCA (Dayton)	39-113-7001	Moraine Fire Station	Pb/metals sampling to end	By January 2017
M-TAPCA	39-155-0005	Laird Ave., Warren	Site ended and relocated on same property with new AQS number 39-155-0014	5/31/15
	39-155-0014	Laird Ave., Warren	Replaced former site 39-155-0005	Started 1/1/16
Toledo	39-095-0034	Lo. Serv., Curtice	Ozone site discontinued	End of ozone season 2016
	39-095-0035	Cooley Canal, Curtice	Ozone site replaced 39-095-0034	Augsut 2016
Ohio CDO	39-049-0038	Columbus Near Rd Site	1 $PM_{2.5}$ FRM monitor added	By 1/1/17
Ohio, NEDO	39-029-0022	WTI, Eastside School	1 PM_{10}, Pb/metals relocated at same site and given new AQS number 39-029-0023	Ended 1/31/16
	39-029-0023	WTI, Eastside School	1 PM_{10}, Pb/metals relocated at same site, was 39-029-0022	Started 2/1/16
	39-093-3002	Barr School	1 PM_{10}, $PM_{2.5}$ col., $PM_{2.5}$ CSpec may be relocated	By 2017
	39-093-0018	4706 Detroit Rd.	Sheffield ozone site may be relocated to same site where 39-093-3002 is relocated	By ozone season 2017
Ohio, SEDO	39-013-0006	Shadyside special purpose	1 SO_2, NO_2, CO, PM_{10}, $PM_{2.5}$	Started 7/1/15
	39-105-0003	Meigs Cty, Pomeroy	1 SO_2 being relocated nearby	By 2017
	39-053-xxxx,39-053-xxxx, and 54-xxx-xxxx	Gavin/Kyger area	3 SO_2 sites	By 2017
	39-067-xxxx	Community Scale project Hopedale, Harrison Cty.	1 $PM_{2.5}$, PM_{10}, CO, Hydrocarbons, Hydrogen Sulfide, Met. Station	In 2017

Akron $PM_{2.5}$ & SO_2 Site

Dayton's Preble Cty. Ncore Site

Tabular Summary of Proposed Changes by Pollutant

Pollutant/ Location	AQS Site No.	Site Name or Address	Action Change	When
Ozone				
Canton	39-151-4005	Alliance	Ozone site may be relocated	By 2017
Hamilton	39-017-0004	Hamilton	Ozone to be relocated	By 2017 ozone season
Toledo	39-095-0034	Lo Ser, Curtice	Ozone site discontinued	End of ozone season 2016

Pollutant/ Location	AQS Site No.	Site Name or Address	Action Change	When
Toledo	39-095-0035	Cooley Canal, Curtice	Ozone site replaced 39-095-0034	August 2016
Sheffield/Lorain Co.	39-093-0018	4706 Detroit Rd.	Sheffield ozone site may be relocated to same site where 39-093-3002 is relocated	By ozone season 2017
$PM_{2.5}$				
Cleveland	39-035-0073	Emory Rd., Warrensville	$FRM_{2.5}$ to be deployed to near-road site	By 1/1/17
Cincinnati	39-061-0006	Sycamore	$PM_{2.5}$ FEM becomes primary, FRM changes to collocated and sample frequency changes from 1/3 to 1/6	January 2017
Cincinnati	39-061-0014	Carthage	$PM_{2.5}$ method change from 155 to 142, remove collocated monitor	By 1/1/17
Cincinnati	39-061-0048	Cincinnati Near Rd.	$PM_{2.5}$ continuous instr. to be added	By January 2017
Middletown	39-017-0003	Middletown, Verity HS	1 $PM_{2.5}$ discontinued	3/31/16
Middletown	39-017-0015	Middletown, Lefferson	1 $PM_{2.5,}$	Started 4/1/16
Middletown	39-017-0022	BPG	May discontinue $PM_{2.5}$	By 2017
Columbus	39-049-0038	Columbus Near Rd Site	1 $PM_{2.5}$ FRM monitor	By 1/1/17
Sheffield/Lorain Co.	39-093-3002	Barr School	$PM_{2.5}$ col., $PM_{2.5}$ Cont, $PM_{2.5}$ CSpec may be relocated	By 2017
Belmont Cty.	39-013-0006	Shadyside special purpose	$PM_{2.5}$	Started 7/1/15
Warren	39-155-0005	Laird Ave.	1 $PM_{2.5}$ FRM, 1 $PM_{2.5}$ Cont. Site relocated on same property with new AQS number 39-155-0014	Ended 5/31/15
Warren	39-155-0014	Laird Ave., Warren	1 $PM_{2.5}$ FRM, 1 $PM_{2.5}$ Cont. Replaced former site 39-155-0005.	Started 1/1/16
Harrison Cty	39-067-xxxx	Community Scale project Hopedale	1 PM2.5	In 2017
PM_{10}				
Middletown	39-017-0003	Middletown, Verity HS	1 PM_{10} discontinued	3/31/16
Middletown	39-017-0015	Middletown, Lefferson	PM_{10} Lo-Vol.	Started 4/1/16
Warren	39-155-0005	Laird Ave.	1 PM_{10} FRM, Site relocated on same property with new AQS number 39-155-0014	Ended 5/31/15
Warren	39-155-0014	Laird Ave., Warren	1 PM_{10} colo FRM. Replaced former site 39-155-0005	Started 1/1/16
Sheffield/Lorain Co	39-093-3002	Barr School	1 PM_{10} may be relocated	By 2017
East Liverpool	39-029-0022	WTI, Eastside School	1 PM_{10}, Pb/metals relocated at same site and given new AQS number 39-029-0023	Ended, 1/31/16
East Liverpool	39-029-0023	WTI, Eastside School	1 PM_{10}, lead/metals relocated at same site, was39-029-0022	Started 2/1/16
Belmont Cty.	39-013-0006	Shadyside special purpose	PM_{10} Lo-Vol. colo.	Started 7/1/15
Harrison Cty	39-067-xxxx	Community Scale project Hopedale	1 PM10	In 2017
SO_2				
Belmont Cty.	39-013-0006	Shadyside special purpose	1 SO_2	Started 7/1/15

Pollutant/ Location	AQS Site No.	Site Name or Address	Action Change	When
Pomeroy	39-105-0003	Meigs Cty, Pomeroy	1 SO_2 being relocated	By 2017
Cheshire/Gallia Cty.	39-053-xxxx,39-053- xxxx, and 54-xxx-xxxx	Gavin/Kyger area	3 SO_2 sites added	By 2017
NO_2/CO				
Belmont Cty.	39-013-0006	Shadyside special purpose	NO_2, CO	Started 7/1/15
Cincinnati	39-061-0040	TAFT	Add true NO_2 and aethalometer	January 2017
Harrison Cty	39-067-xxxx	Community Scale project Hopedale	1 CO	In 2017
Pb/Metals/VOCs				
Cleveland	39-035-0060	G.T. Craig, NCore site	Ended Pb/metals monitoring	8/26/16
Cleveland	39-035-0072	Century_ Miles Rd	To end Pb/metals site	By 2017
Cleveland	39-035-xxxx	Cleveland area PB source	1 new short-term, special purpose Pb sites to be added AGMET, Oakwood Village	In 2017
Middletown	39-017-0003	Middletown, Verity HS	VOC discontinued	3/31/16
Middletown	39-017-0015	Middletown, Lefferson	Pb/metals sampling ended	12/31/15
Middletown	39-017-0015	Middletown, Lefferson	VOC	Started 4/1/16
Cincinnati	39-061-0040	TAFT	Pb sampling ended	12/31/15
Dayton	39-113-7001	Moraine Fire Station	Pb/metals sampling to end	By January 2017
Canton	39-151-xxxx	Republic Steel	Potential special purpose lead monitor, permit required	Early 2017
Harrison Cty	39-067-xxxx	Community Scale project Hopedale	VOC/Hydrocarbons	In 2017

Ohio's Primary Quality Assurance Organization Changes (PQAO)

In early 2016, the Ohio EPA proposed to consolidate the number of PQAOs in Ohio for site and monitor auditing purposes. These changes were approved by US EPA and were made retroactive to January 1, 2015. Previously, there was one PQAO associated with each of Ohio's nine Local Air Agencies (LAA) and five District Offices (DO). Each of these LAAs and DOs were operating as independent entities for quality assurance monitoring purposes which created an unnecessary burden in site QA costs over the years. Therefore, it was proposed to US EPA to streamline Ohio's quality assurance operations by consolidating these 14 PQAOs into three PQAOs. This consolidation of PQAO's meets the guidelines and requirements of 40 CFR Part 58, Appendix D and in no way compromises the integrity and quality of ambient air monitoring data collected in Ohio.

The new realignment of Ohio's PQAOs is as follows:

Northeast Primary Quality Assurance Organization (NEPQAO) consist of these monitoring organizations. AQS PQAO code; 1454

- Akron Regional Air Quality Management District
- Canton City Health Dept., Air Pollution Control Division
- Cleveland Dept. of Public Health & Welfare, Division of Air Quality

- Lake County General Health District, Air Pollution Control
- Mahoning-Trumbull Air Pollution Control Agency (M-TAPCA)
- Ohio Northeast District Office (NEDO)

Central Primary Quality Assurance Organization (CPQAO) consist of these monitoring organizations. AQS PQAO code; 1453

- Ohio EPA, Northwest District Office (NWDO)
- Ohio EPA, Central District Office (CDO)
- Ohio EPA, Southeast District Office (SEDO)
- City of Toledo, Division of Environmental Services

Southwest Primary Quality Assurance Organization SWPQAO) consist of these monitoring organizations. AQS PQAO code; 1455

- Ohio EPA, Southwest District Office (SWDO)
- Dept. of Environmental Services, Southwest Ohio Air Quality Agency (SWOAQA)
- Montgomery Cty. Health Dept., Regional Air Pollution Control Agency (RAPCA)
- Portsmouth City Health Dept., Air Pollution Unit

A larger detailed table provided at the end of this document contains a listing of Ohio's complete air monitoring network, by the organizations identified above, detailing the 2016-2017 ambient air monitoring sites located within these monitoring organizations.

Columbus $PM_{2.5}$ & Ozone Site

Complete Network Plan Description

Per 40 CFR Part 58.10, an annual monitoring network plan is required to be submitted by all states to US EPA.

Specifically, 40 CFR 58.10(a) requires for each existing and proposed site:

1. A statement of purpose for each monitor.
2. Evidence that siting and operation of each monitor meets the requirements of Appendices A, C, D, and E of 40 CR Part 58, where applicable.
3. Proposals for any State and Local Air Monitoring Station (SLAMS) network modifications.

The following tables presents Ohio's 2016-2017 Proposed Air Monitoring Network, as required under 40 CFR 58.10 (b). Each monitoring site within the Local Air Agencies and District Offices in Ohio are listed. For each site, the following information is presented:

- Monitoring Agency, AQS Site ID
- Site Address
- Site coordinates, latitude and longitude in decimal degrees
- Pollutants/parameters monitored and collocation indicated
- Sampling method/analysis
- Sampling schedule, i.e. how frequent data is monitored
- Monitoring objective
- Spatial measurement scale
- Site/monitor comments include AQS method code, AQI (Air Quality Index) indicated, any proposed change to site or monitor(s) (proposed changes are in red).

Lastly, as required under 40 CFR 58.10(c), If a $PM_{2.5}$ FRM monitoring site were lost due to circumstances beyond the Ohio EPA's control, a replacement site would be established if the lost site exceeded the NAAQS or if it is the "design value site" for a particular MSA. In this case, all possible efforts would be made to find a new site that is physically close to the lost site and has a similar scale and monitoring objective.

Youngstown PM_{10} & $PM_{2.5}$ Site

2016-2017 Ohio Air Monitoring Network

AQS ID # Air Agency	County/ Address	Latitude	Longitude	Parameter/ Method	Analysis	Schedule	Monitoring Objective	Spatial Scale	Method Code/ Comments
Akron	**Medina Co.**								
39-103-0004	Chippewa, Ballash Rd.	41.0604	-81.9239	Ozone	U.V. Photometric	Continuous	Upwind backgrd	Urban	(087)/API 400 E
				$PM_{2.5}$- FRM Seq.	Gravimetric	1 in 3 days	Population	Neighborhood	(145) Partisol2025VSCC
				$PM_{2.5}$ Met One BAM	Beta attenuation	Continuous	Upwind backgrd	Regional	(170) AQI
	Portage. Co.								
39-133-0002	531 Washington Ave. Ravenna	41.1644	-81.2352	$PM_{2.5}$ Seq. FRM	Gravimetric	1 in 3 days	Population	Neighborhood	(145)/Partisol 2025 Plus
39-133-1001	1570 Ravenna Rd., Kent	41.182466	-81.330486	Ozone	U.V. Photometric	Continuous	Max. ozone conc.	Urban	(087)/ API 1400E
	Summit Co.								
39-153-0017	East High Sch., Akron	41.063526	-81.468956	$PM_{2.5}$ FRM Seq/Colo	Gravimetric	1 in 3 days	Population	Neighborhood	(145) Partisol2025VSCC
				$PM_{2.5}$ BAM	Beta attenuation	Continuous	Population	Neighborhood	(170), AQI, Met One
				Sulfur dioxide	U.V. Fluorescence	Continuous	Highest conc.	Neighborhood	(100) API 100
39-153-0020	800 Patterson Ave, Akron	41.106486	-81.503547	Ozone	U.V. Photometric	Continuous	Population	Urban	(087) /API 400
				Carbon monoxide	Infrared	Continuous	Population	Neighborhood	(093) API 300
39-153-0023	660 W. Exchange St., Akron	41.087956	-81.541611	$PM_{2.5}$ Seq. FRM	Gravimetric	1 in 3 days	Population	Neighborhood	(145) Partisol2025VSCC
				Chemical speciation	Ion Chromatograph	1 in 6 days	SIP information	Neighborhood	(810) Met One BAM
				URG-3000	Carbon speciation	1 in 6 days	SIP information	Neighborhood	
39-153-0025	199 S. Broadway, Akron	40.07914	-81.51627	Carbon monoxide	Infrared	Continuous	Population	Microscale	(093) API 300
				Sulfur dioxide	U.V. Fluorescence	Continuous	Population	Neighborhood	(100) API 100
				Wind speed/wind dir.					.
Canton	**Stark Co.**								
39-151-0016	515 25th St., Malone University	40.828052	-81.37833	Ozone	U.V. Photometric	Continuous	Population	Neighborhood	(047) Thermo 49
39-151-0017	1330 Dueber Ave., Fire Station	40.78689	-81.39419	$PM_{2.5}$ BGI FRM/Col	Gravimetric	1 in 3 days	Highest conc.	Neighborhood	(142) BGI PQ200 VSCC
				Chemical speciation	Ion Chromatograph	1 in 6 days	SIP information	Neighborhood	(810) Met One SASS
				URG-3000	Carbon speciation	1 in 6 days	SIP information	Neighborhood	
39-151-0020	420 Market Ave. Canton			Carbon monoxide	Infrared	Continuous	Population	Middle	(054) Thermo 48i
				$PM_{2.5}$ Thermo Sharp	Beta attenuation	Continuous	Population	Neighborhood	AQI (753)
				$PM_{2.5}$ BGI FRM/Col	Gravimetric	1 in 3 days	Population	Neighborhood	(142) BGI PQ200 VSCC
									The new $PM_{2.5}$ Sharp 5030i started May 2016

AQS ID # Air Agency	County/ Address	Latitude	Longitude	Parameter/ Method	Analysis	Schedule	Monitoring Objective	Spatial Scale	Method Code/ Comments
									replacing the TEOM (701)
39-151-0022	45 S. Wabash Ave., Brewster	40.712778	-81.5983	Ozone	U.V. Photometric	Continuous	Upwind Backgr	Urban	(047) Thermo 49
39-151-4005	1175 W. Vine St., Alliance	40.93139	-81.123544	Ozone	U.V. Photometric	Continuous	Max. ozone conc.	Urban	(047) Thermo 49.
									May be relocated by 2017
39-151-xxxx	2633 Eight St. NE			TSP-Pb	Hi-Vol/ICP MS	1 in 6 days	Source-oriented	Middle?	Republic Steel-permit
	Permit required site, special purpose								Potential new site to start in early 2017
Toledo	**Lucas Co.**								
39-095-0008	3040 York St., Toledo	41.663405	-83.47596	Sulfur dioxide	U.V. fluorescent	Continuous	Population	Highest conc.	(100) API 100
39-095-0024	348 Erie St., Toledo	41.644067	-83.54625	$PM_{2.5}$ TEOM	Oscillating crystal	Continuous	Highest conc.	Neighborhood	AQI\701 R&P TEOM
				$PM_{2.5}$ FRM Seq/Colo	Gravimetric	1 in 3 days	Highest conc.	Neighborhood	(145) Partisol2025VSCC
				Ozone	U.V. Photometric	Continuous	Population	Neighborhood	(047) Thermo 49
				Wind speed/wind dir.	Propeller/vane				
39-095-0026	2550 Airport Highway	41.620633	-83.64225	$PM_{2.5}$ FRM Seq.	Gravimetric	1 in 3 days	Highest conc.	Neighborhood	(145) Partisol2025VSCC
39-095-0027	200 S. River Road, Waterville	41.494167	-83.718944	Ozone	U.V. Photometric	Continuous	Population	Neighborhood	(047) Thermo 49
39-095-0028	3040 York St., Toledo	41.66225	-83.4783	$PM_{2.5}$ FRM Seq.	Gravimetric	1 in 3 days	Highest conc.	Neighborhood	(145) Partisol2025VSCC
39-095-0034	1002 N. Yondota, Low Service	41.675213	-83.30693	Ozone	U.V. Photometric	Continuous	Max. ozone conc.	Urban	(047) Thermo 49
									Discontinued end of ozone season 2016
39-095-0035	10739 Corduroy Rd.	41.669001	-83.28717	Ozone	U.V. Photometric	Continuous	Max. ozone conc.	Urban	(047) Thermo 49
									New site began August 2016. Replaced 39-095-0034 in 2017
39-095-0081	2930 131st St., Toledo	41.719483	-83.47515	Wind speed/wind dir.	Propeller/vane	Continuous	Population	Neighborhood	
SWOAQA	**Butler Co.**								
39-017-0003	Verity HS, Bonita & St. John	39.49369	-84.3543	PM_{10}	Gravimetric	1 in 6 days	Population	Neighborhood	
	Middletown			$PM_{2.5}$ BGI FRM (2)	Gravimetric	1 in 3 days	Population	Neighborhood	POCs 1,4 (142) BGI
				VOCs	GC MS	1 in 12days	Population	Neighborhood	6L-Canister

AQS ID # Air Agency	County/ Address	Latitude	Longitude	Parameter/ Method	Analysis	Schedule	Monitoring Objective	Spatial Scale	Method Code/ Comments
									Site ended 4/1/16
39-017-0004	Hamilton Fire House	39.38338	84.5443	Ozone	U.V. Photometric	Continuous	Max. ozone conc.	Urban	(087) API 400
	Schuler & Bender Ave, Hamilt.								To be relocated by 2017 ozone season
39-017-0015	3901 Lefferson, Middletown	39.49014	-84.3642	PM_{10} Lo-Vol	Gravimetric	1 in 6 days	Population	Neighborhood	(125) BGI Original PM10 ended 12/31/15, this PM10 restarted 4/1/16 due to Verity site 39-017-0003 closure
				TSP lead-metals Colo	ICP MS	1 in 6 day	Population	Neighborhood	Ended 12/31/15
				$PM_{2.5}$ Lo-Vol BGI FRM (2)	Gravimetric	1 in 3 days	Population	Neighborhood	(142) POC 1,4. Started 4/1/16, moved from to Verity site 39-017-0003
									Restart of this site includes moving monitors to ground level location
39-017-0016	Sacred Heart School	39.33841	-84.5666	$PM_{2.5}$ BGI FRM (2)	Gravimetric	1 in 3 days	Population	Urban	(142) BGI PQ200VSCC
	400 Niles Rd., Fairfield								POCs 1,4
39-017-0018	Hook Field Airport, Middletown	39.529444	-84.393453	Ozone	U.V. Photometric	Continuous	Population	Urban	(087) API 400
39-017-0019	Amanda School	39.478849	-84.407675	PM_{10} –Low Vol.	Gravimetric	1 in 6 days	Source oriented	Neighborhood	(125) BGI PQ200
	1300 Oxford Rd., Middletown			$PM_{2.5}$ FRM BGI (2)	Gravimetric	1 in 3 days	Source oriented	Neighborhood	POCs 1,4 (142) PQ200
				$PM_{2.5}$ Thermo Sharp	Beta attenuation	Continuous	Source oriented	Neighborhood	AQI\753 Thermo 5030
				Sulfur dioxide	U.V. Florescence	Continuous	Source oriented	Neighborhood	100\API 100
				VOC	GC/MS	1 in 12days	Source oriented	Neighborhood	6L-Canister
39-017-0020	3350 Yankee Rd., Middletown	39.472436	-84.394952	PM_{10}-Low Vol.	Gravimetric	1 in 6 days	Source oriented	Neighborhood	(125) BGI PQ200
				$PM_{2.5}$ BGI FRM (2)	Gravimetric	1 in 3 days	Source oriented	Middle Scale	POC 1,4 (142) PQ200
				$PM_{2.5}$ Thermo Sharp	Beta attenuation	Continuous	Source oriented	Neighborhood	AQI\753 Thermo 5030
				Sulfur dioxide	Pulsed Florescence	Continuous	Source oriented	Neighborhood	100\API 100
				VOC	GC/MS	1 in 12days	Source oriented	Neighborhood	6L-Canister
39-017-0021	1491 Made Industrial Dr.	39.464718	-84.4037	Sulfur dioxide	U.V. Florescence	Continuous	Source oriented	Neighborhood	100\API 100
	Middletown								
39-017-0022	3214 Yankee Rd., Middletown	39.47869	-84.3971	$PM_{2.5}$ BGI FRM SPM	Gravimetric	1 in 6 days	Source oriented	Neighborhood	(142) BGI PQ200 VSCC

AQS ID # Air Agency	County/ Address	Latitude	Longitude	Parameter/ Method	Analysis	Schedule	Monitoring Objective	Spatial Scale	Method Code/ Comments
									May discontinue by 2017
	Clermont Co.								
39-025-0022	2400 Clermont Drive, Batavia	39.0828	-84.1441	$PM_{2.5}$ TEOM FDMS	Oscillating crystal	Continuous	Highest conc.	Neighborhood	AQI\(761) R & P FDMS
				Ozone	U.V. Photometric	Continuous	Max. Ozone conc	Urban	(087) API 400
	Hamilton Co.								
39-061-0006	11590 Grooms Rd., Sycamore	39.2787	-84.366192	$PM_{2.5}$ BGI FRM	Gravimetric	1 in 3 days	Population	Neighborhood	(142) PQ200 VSCC
				$PM_{2.5}$ Thermo Sharp	Beta Attenuation	Continuous	Population	Neighborhood	(184) Thermo 5030i
				Ozone	U.V. Photometric	Continuous	Highest conc.	Urban	(087) API 400
									By January 2017 FRM changes to 1/6 from 1/3 and $PM_{2.5}$ cont. FEM to become primary monitor.
39-061-0010	Colerain, 6950 Ripple Rd.	39.21487	-84.69086	Sulfur dioxide	U.V. Fluorescence	Continuous	Population	Neighborhood	(100) API 100
	Cleves			Ozone	U.V. Photometric	Continuous	Population	Urban	(087) API 400
				$PM_{2.5}$ Met One BAM	Beta Attenuation	Continuous	Population	Urban	AQI (733), BAM VSCC
				$PM_{2.5}$ BGI FRM (2)	Gravimetric	1 in 3 days	Population	Urban	POCs 1,4 (142) PQ200
39-061-0014	Carthage Fire House	39.19433	-84.47898	PM_{10} Hi-Vol	Gravimetric	1 in 6 days	Highest conc.	Middle	(063) GMW 1200
	Seymour &Vine, Cincinnati			$PM_{2.5}$ FRM Seq/Colo	Gravimetric	1 in 3 days	Population	Neighborhood	(155) RASS2.5 w/VSCC
									(155) started 4/1/16. On 1/1/17 will start (142) and remove collocated monitor
				VOCs	GC MS	1 in 12days	Urban	Neighborhood	6L-Canister
39-061-0040	250 Taft Rd. Cincinnati	39.123841	-84.504011	PM_{10} lo-vol Pb colo	Gravimetric	1 in 6 days	Population	Neighborhood	Ended 12/31/15
N-Core site				PM_{10} lo-vol/colo	Gravimetric	1 in 3 days	Population	Neighborhood	(125) BGI PQ200
				PM_{10} TEOM FDMS	Oscillating crystal	Continuous	Population	Neighborhood	AQI, (079) R&P 1400
				$PM_{2.5}$ FRM/Colo.	Gravimetric	1 in 3 days	Population	Neighborhood	(142) BGI PQ200
				$PM_{10\text{-}2.5}$ FRM/Colo.	Gravimetric	1 in 3 days	Population	Neighborhood	(173) BGI PQ200
				$PM_{2.5}$ SHARP	Beta Attenuation	Continuous	Population	Neighborhood	AQI, (184) Thermo Sharp 5030i
				Chemical Speciation	Ion Chromatograph	1 in 3 days	SIP info	Neighborhood	(810) Met One SASS
				URG-3000	Carbon speciation	1 in 3 days	SIP info	Neighborhood	
				Ozone	U.V. Photometric	Continuous	Population	Neighborhood	(087) API 400
				NO, NO_2 & NOx	Chemiluminescence	Continuous	Population	Neighborhood	(099) API 200
				True NO_2	Chemiluminescence	Continuous	Population	Neighborhood	API T500U. To be added in January 2017
				Sulfur dioxide-trace	Ultravio fluorescence	Continuous	Population	Urban	(592) EC 9850
				CO-trace	Gas filter correlation	Continuous	Population	Urban	(588) EC 9830
				NOy Trace	Chemiluminescence	Continuous	Population	Urban	(691)

AQS ID # Air Agency	County/ Address	Latitude	Longitude	Parameter/ Method	Analysis	Schedule	Monitoring Objective	Spatial Scale	Method Code/ Comments
				WS/WD Met	Sonic	Continuous			(127)
				Black Carbon	Aethalometer	Continuous	Population	Urban	To be added by January 2017
				NO trace	Chemiluminescence	Continuous	Population	Urban	(691) EcoTech 9843
39-061-0042	Lower Price Hill, 8th St. Cinti	39.10492	-84.55117	$PM_{2.5}$ FRM BGI (2)	Gravimetric	1 in 3 days	Population	Neighborhood	POCs 1,4 (142) PQ200
39-061-0047	Kibby Lane	39.131635	-84.707205	VOC	GCMS	1 in 6 days	Population	Neighborhood	6L-Canister
									Sample frequency changing from 1/6 to 1/12 likely in 2017.
39-061-0048	Near-road NO2 site	39.146025	-84.538375	NO_2	Chemiluminescence	Continuous	High Conc.	Microscale	(099) API 200
				CO trace	Infrared	Continuous	High Conc.	Microscale	(593) API 300EU
									Spatial scale has not been determined by Region V.
				Black Carbon	Optical absorption	Continuous	High Conc.	Microscale	(894) TAPI M633
				$PM_{2.5}$ Thermo Sharp	Beta Attenuation	Continuous	Highest Conc.	Microscale	(184) to start by 1/1/17
39-061-5001	Wyoming & Cooper, Lockland	39.226729	-84.453978	PM_{10} Hi-Vol./Colo.	Gravimetric	1 in 6 days	Population	Neighborhood	(063) GMW 1200
	Warren Co.								
39-165-0007	416 Southeast St., Lebanon	39.42693	-84.2006	$PM_{2.5}$ BAM	Beta attenuation	Continuous	Population	Neighborhood	AQI\(731) BAM SCC
				Ozone	U.V. Photometric	Continuous	Max. Ozone Concentration	Urban	(087) API 400
Cleveland	**Cuyahoga Co.**								
39-035-0034	891 E. 152 St.	41.55523	-81.575256	$PM_{2.5}$ FRM Seq.	Gravimetric	1 in 3 days	Population	Urban	(145) Partisol2025VSCC
	Cleveland			Ozone	U.V. Photometric	Continuous	Population	Neighborhood	(087) API400
39-035-0038	St. Theodosius, St. Tikon St.	41.477011	-81.682383	PM_{10} Hi-Vol. (5) unit	Gravimetric	1 in 1 day	Highest conc.	Neighborhood	(063) POCs 1,4,6,7,8
	Cleveland			$PM_{2.5}$ FRM SeqColo	Gravimetric	1 in 3 days	Highest conc.	Neighborhood	(145) Partisol2025VSCC
				TSP lead-metals	Hi-Vol/ICP MS	1 in 6 days	Highest conc.	Neighborhood	(108) (192)
				Sulfur dioxide	Pulsed Fluorescence	Continuous	Highest conc.	Neighborhood	(060) Thermo 43b
				Chemical Speciation	Ion Chromatograph	1 in 6 days	SIP info		(810) Met One SASS
				VOCs	GC MS	1 in 12days	Population	Neighborhood	6L-canister
39-035-0042	Fire Station 4, 3136 Lorain	41.4823	-81.708906	TSP Pb\Metals Colo.	Hi-Vol/ICP MS	1 in 6 days	Population	Middle	

AQS ID # Air Agency	County/ Address	Latitude	Longitude	Parameter/ Method	Analysis	Schedule	Monitoring Objective	Spatial Scale	Method Code/ Comments
39-035-0045	FS 13, 4950 Broadway Ave.	41.471782	-81.656792	PM_{10} Hi-Vol./Colo.	Gravimetric	1 in 6 days	Population	Neighborhood	(063) GMW 1200
	Cleveland			$PM_{2.5}$ FRM Seq.	Gravimetric	1 in 3 days	Population	Neighborhood	(145) Partisol2025VSCC
				Sulfur dioxide	Pulsed Fluorescence	Continuous	Population	Neighborhood	(060) Thermo 43c
39-035-0049	Ferro Corp. E. 56th St.	41.446342	-81.6507	TSP-Pb/Metals Colo.	Hi-Vol/ICP MS	1 in 6 days	Source-oriented	Neighborhood	(108) (192)
	Cleveland								
39-035-0051	Galleria, E. Ninth & St. Clair	41.504661	-81.690186	Carbon monoxide	Infrared	Continuous	Highest conc.	Microscale	(054) Thermo 48c
39-035-0060	GT Craig, E. 14th & Orange	41.492117	-81.678449	PM_{10} Hi-Vol.	Gravimetric	1 in 6 days	Population	Neighborhood	(063) GMW 1200
N-Core site	Cleveland			PM_{10} TEOM	Oscillating crystal	Continuous	Population	Neighborhood	(079) R&P 1400
				$PM_{2.5}$ FRM Seq.	Gravimetric	1 in 3 days	Population	Neighborhood	(179) Partisol Dicot2025i
				$PM_{2.5}$ MetOne BAM	Beta attenuation	Continuous	Population	Neighborhood	AQI (170) MetOne BAM
				$PM_{2.5}$ Spec. Colo.	Ion Chromatograph	1 in 3 days	SIP information		(810) Met One SASS
				URG-3000	Carbon speciation	1 in 6 days	SIP information		
				TSP lead-metals	Hi-Vol/ICP MS	1 in 6 days	Highest conc.	Neighborhood	(108) (192) Ended 8/26/16
				Ozone	U.V. Photometric	Continuous	Population	Neighborhood	(087) API400
				NO_2	Chemiluminescence	Continuous	Population	Neighborhood	(074) Thermo 42i
				Sulfur dioxide	Pulsed Fluorescence	Continuous	Population	Neighborhood	(060) Thermo 43a
				Sulfur dioxide-trace	Pulsed Fluorescence	Continuous	Population	Neighborhood	(560) Thermo 43C-TLE
				NOy	Chemiluminescence	Continuous	Population	Neighborhood	(674)
				CO-trace	Carbon monoxide	Infrared	Population	Neighborhood	(554) Thermo 48i-TLE
				PM_{10} local	Gravimetric	1 in 3 days	Population	Neighborhood	(127) Partisol 2025i
				$PM_{10\text{-}2.5}$ Seq.	Gravimetric	1 in 3 days	Population	Neighborhood	(176) Partisol Plus 2025
				PM_{10}Local Seq.	Gravimetric	1 in 6 days	Population	Neighborhood	(127) Partisol Plus 2025
				WS/WD Met					
39-035-0061	South side W. 3rd St. Cleveland	41.473092	-81.676596	TSP-lead-metals	Hi-Vol/ICP MS	1 in 6 days	Highest conc.	Middle	(108) (192)
39-035-0064	390 Fair St. Berea BOE	41.36189	-81.864608	Ozone	U.V. Photometric	Continuous	Upwind backgrd.	Neighborhood	(087) API400
39-035-0065	4600 Harvard Ave., Newburgh	41.446682	-81.662419	PM_{10} Hi-Vol.	Gravimetric	1 in 6 days	Highest conc.	Neighborhood	(063) GMW 1200
				$PM_{2.5}$ FRM Seq.	Gravimetric	1 in 3 days	Population	Neighborhood	(145) Partisol2025VSCC
				Sulfur dioxide	U.V. Fluorescence	Continuous	Highest conc.	Neighborhood	(100) API 100

AQS ID # Air Agency	County/ Address	Latitude	Longitude	Parameter/ Method	Analysis	Schedule	Monitoring Objective	Spatial Scale	Method Code/ Comments
39-035-0072	26565 Miles Rd., Warrensville	41.42585	-81.49078	TSP-Lead	Hi-Vol/ICP MS	1 in 6 days	Source oriented	Middle	Proposing discontinue by 2017
39-035-0073	25609 Emory Rd.	41.4409	-81.4949	NO_2	Chemiluminescence	Continuous	High conc.	Microscale	(099)
	Warrensville Hts.			Carbon monoxide	Infrared	Continuous	High. conc.	Microscale	(093) PI 300
	Cleveland's Near Rd. NO_2 Site			WS\WD	Sonic	Continuous			
									$PM_{2.5}$ FRM to be deployed by 1/1/17
39-035-1002	16900 Holland Road	41.39629	-81.818667	PM_{10} Hi-Vol.	Gravimetric	1 in 6 days	Population	Neighborhood	(063) GMW 1200
	Brookpark			$PM_{2.5}$ FRM Seq.	Gravimetric	1 in 3 days	Population	Neighborhood	(145) Partisol2025VSCC
				VOCs	GC MS	1 in 12days	Population	Neighborhood	6L-Canister
39-035-5002	6116 Wilson Road, Mayfield	41.537344	-81.458834	Ozone	U.V. Photometric	Continuous	Max. ozone conc.	Urban	(019) Dasibi1003RS
39-035-xxxx	7800 Medusa St.	Oakwood	Village	TSP-Lead					New site in 2017 near AGMET
	Short-term/special purpose site								
RAPCA	**Clark Co.**								
39-023-0001	5171 Urbana Rd., Springfield	40.00103	-83.80456	Ozone	U.V. Photometric	Continuous	High conc.	Urban	(047) Thermo 49
39-023-0003	5400 Spangler Rd., Enon	39.85567	-83.99773	Ozone	U.V. Photometric	Continuous	Population	Urban	(047) Thermo 49
				Sulfur dioxide	Pulsed Fluorescence	Continuous	Population	Neighborhood	(060) Thermo 43i
39-023-0005	350 N. Fountain Rd.,	39.928820	-83.80949	$PM_{2.5}$ Thermo Sharp	Beta attenuation	Continuous	Population	Neighborhood	(750) Thermo Sharp5030
	Springfield			$PM_{2.5}$ BGI FRM (2)	Gravimetric	1 in 3 days	Population	Neighborhood	POCs 1,4 (142) BGI
	Greene Co.								
39-057-0005	100 Dayton Rd.,	39.80834	-83.88705	PM_{10} Hi-vol.	Gravimetric	1 in 6 days	Population	Neighborhood	(062) Wedding
	Yellow Springs			$PM_{2.5}$ BGI FRM Colo. (2)	Gravimetric	1in 3 days	Population	Neighborhood	POCs 1,4 (142) BGI
				$PM_{2.5}$ Thermo Sharp	Beta attenuation	Continuous	Population	Neighborhood	(750) Thermo Sharp5030
39-057-0006	541 Ledbetter Rd., Xenia	39.66575	-83.94285	Ozone	U.V. Photometric	Continuous	Max. ozone conc.	Urban	(047) Thermo 49
	Miami Co.								
39-109-0005	3825 N. Rt. 589, Castown	40.08455	-84.11412	Ozone	U.V. Photometric	Continuous	Max. ozone conc.	Urban	(047) Thermo 49
	Montgomery Co								

AQS ID # Air Agency	County/ Address	Latitude	Longitude	Parameter/ Method	Analysis	Schedule	Monitoring Objective	Spatial Scale	Method Code/ Comments
39-113-0034	117 S. Main St., Dayton	39.757837	-84.191667	Carbon monoxide	Infrared	Continuous	Highest conc.	Microscale	(054) Thermo 48i
39-113-0037	1401Harshman Rd., Dayton	39.7863	-84.1337	Ozone	U.V. Photometric	Continuous	Population	Urban	(047) Thermo 49
39-113-0038	Sinclair Community College	39.7560	-84.1987	$PM_{2.5}$ FRM Seq/Colo	Gravimetric	1 in 3 days	Highest Conc.	Neighborhood	(145)/Partisol 2025
	444 W. Third St., Dayton			$PM_{2.5}$ Thermo Sharp	Beta attenuation	Continuous	Highest Conc.	Neighborhood	(750) Thermo Sharp5030
				Chemical Speciation	Ion Chromatograph	1 in 6 days	SIP information	Neighborhood	(810) Met One SASS
				URG-3000	Carbon speciation	1 in 6 days	SIP information	Neighborhood	
39-113-7001	2728 Viking Lane, Moraine	39.71451	-84.21798	PM_{10} Hi-Vol./Colo.	Gravimetric	1 in 6 days	Highest conc.	Neighborhood	(063) GMW 1200
				TSP-Pb/Metals-Colo.	ICP	1 in 6 days	Population	Neighborhood	(192) Mass Spectrometry
									Lead/metals sampling to end by January 2017.
	Preble Co.								
39-135-1001	National Trail School	39.8362	-84.72049	$PM_{2.5}$ FRM Seq.	Gravimetric	1 in 3 days	Upwind backgd.	Regional	(145) Partisol2025VSCC
N-Core site	6940 Oxford Gettysburg Rd.			$PM_{2.5}$ Thermo Sharp	Beta attenuation	Continuous	Upwind backgd.	Regional	(750) Thermo Sharp5030
	St. Rt. 40, New Paris			Ozone	U.V. Photometric	Continuous	Upwind backgd.	Regional	(047) Thermo 49
				Sulfur dioxide- trace	Pulsed Fluorescence	Continuous	Upwind backgd.	Regional	(560) Eco Tech 9850
				Carbon monoxide	Infrared	Continuous	Upwind backgd.	Regional	(554) Thermo48i-TLE
				NOy	Chemiluminescence	Continuous	Upwind backgd.	Regional	(674)
				NO-trace	Chemiluminescence	Continuous	Upwind backgd.	Regional	(574) Eco Tech 9841?
				$PM_{10\text{-}2.5}$ Coarse	Gravimetric	1 in 3 days	Upwind backgd.	Regional	(176) Partisol Plus 2025
				PM_{10} – LC-colo	Gravimetric	1 in 3 days	Upwind backgd.	Regional	(127) Partisol Plus 2025
				URG-3000	Carbon speciation	1 in 6 days	Upwind backgd.	Regional	
				Chemical Speciation	Ion Chromatograph	1 in 6 days	Upwind backgd.	Regional	(810) Met One SASS
				WSpd/WDir/MET	Sonic	Continuous			(022) Resultant WS/WD
MTAPCA	**Mahoning Co.**								
39-099-0005	Elm & Madison, FS #7	41.111111	-80.645278	PM_{10} Hi-vol.	Gravimetric	1 in 6 days	Population	Neighborhood	(063) GMW 1200
				$PM_{2.5}$ FRM BGIColo	Gravimetric	1 in 6 days	Highest Conc.	Neighborhood	(142) BGI PQ200 VSCC
39-099-0006	Superior & Oakland, Fire St. 5	41.116667	-80.669722	PM_{10} Hi-Vol./Colo.	Gravimetric	1 in 6 days	Population	Neighborhood	(063) GMW 1200
39-099-0013	345 Oakhill Ave. Youngstown	41.096142	-80.65852	Sulfur dioxide	Pulsed Fluorescence	Continuous	Population	Neighborhood	(061) Dasibi4108
				Ozone	U.V. Photometric	Continuous	Population	Neighborhood	(087) API 400
39-099-0014	345 Oakhill Ave. Youngstown	41.095938	-80.658467	$PM_{2.5}$ BGI FRM (2)	Gravimetric	1 in 3 days	Population	Neighborhood	POC 1,4 (142) PQ200
				$PM_{2.5}$ TEOM	Oscillating crystal	Continuous	Population	Neighborhood	AQI\(701) TEOM SCC

AQS ID # Air Agency	County/ Address	Latitude	Longitude	Parameter/ Method	Analysis	Schedule	Monitoring Objective	Spatial Scale	Method Code/ Comments
	Trumbull Co.								
39-155-0005	540 Laird Ave., Warren	41.231167	-80.801914	PM_{10}-Colo	Gravimetric	1 in 6 days	Population	Neighborhood	
				$PM_{2.5}$ BGI FRM (2)	Gravimetric	1 in 3 days	Population	Neighborhood	POCs 1,4 (142) PQ200
				$PM_{2.5}$ TEOM	Oscillating crystal	Continuous	Population	Neighborhood	AQI
									Discontinued 5/31/15 and relocated to 39-155-0014
39-155-0006	Warren Water Treatment Plant	41.202237	-80.810644	PM_{10} Hi-vol.	Gravimetric	1 in 6 days	Source-oriented	Neighborhood	(062) Wedding
39-155-0011	St. Rt. 193, Vienna, TCSEG	41.240456	-80.662759	Ozone	U.V. Photometric	Continuous	Max. Ozone Con.	Urban	(087) API 400
39-155-0013	6380 SR 87, Kinsman Twnshp	41.454546	-80.58805	Ozone	U.V. Photometric	Continuous	Reg. transport	Urban	(087) API 400
	Maintenance Bldg., Kinsman								
39-155-0014	540 Laird Ave., Warren	41.231167	-80.801914	PM_{10} Hi-vol./Colo.	Gravimetric	1 in 6 days	Population	Neighborhood	(062) Wedding
				$PM_{2.5}$ BGI FRM (2)	Gravimetric	1 in 3 days	Population	Neighborhood	POCs 1,4
				$PM_{2.5}$ TEOM	Oscillating crystal	Continuous	Population	Neighborhood	AQI (701) TEOM SCC
									Started 1/1/16 to replace site 39-155-0005
Lake LAA	**Geauga Co.**								
39-055-0004	Notre Dame School, Munson	41.51551	-81.249906	Ozone	U.V. Photometric	Continuous	Max. Ozone Con.	Urban	(087) API 400
	Lake Co.								
39-085-0003	Jefferson School, Eastlake	41.673006	-81.422455	Sulfur dioxide	Pulsed Fluorescence	Continuous	Source-oriented	Neighborhood	(100)/API 100
				Ozone	U.V. Photometric	Continuous	Max. Ozone Con.	Neighborhood	(087) API 400
39-085-0006	8443 Mentor Ave., Mentor	41.666886	-81.338781	Carbon monoxide	Infrared	Continuous	Highest conc.	Microscale	(051) Dasibi3003
39-085-0007	177 Main St., Painesville	41.726811	-81.242156	$PM_{2.5}$ FRM Seq/Colo	Gravimetric	1 in 3 days	Highest conc.	Urban	(120) RASS2.5-300
				$PM_{2.5}$ TEOM FDMS	Oscillating crystal	Continuous	Highest conc.	Urban	AQI (760) R&P TEOM
				Sulfur dioxide	Pulsed Fluorescence	Continuous	Source-oriented	Middle	(100)/API 100
				Ozone	U.V. Photometric	Continuous	Max. Ozone Con.	Urban	(087) API 400
39-085-1001	Fairport High School, Fairport	41.75489	-81.273076	PM_{10} Hi-vol./Colo.	Gravimetric	1 in 6 days	Population	Neighborhood	(063) GMW 1200
Portsmouth	**Adams Co.**								
39-001-0001	Adams County Hospital	38.794667	-83.533988	$PM_{2.5}$ TA-BAM	Beta attenuation	Continuous	Population	Neighborhood	AQI\(753) BAM VSCC
	210 N. Wilson Dr., West Union			Sulfur dioxide	Pulsed Fluorescence	Continuous	Population	Neighborhood	(060) Thermo 43c

AQS ID # Air Agency	County/ Address	Latitude	Longitude	Parameter/ Method	Analysis	Schedule	Monitoring Objective	Spatial Scale	Method Code/ Comments
	Lawrence Co.								
39-087-0011	St. Rt. 141, Wilgus	38.62901	-82.45896	Ozone	U.V. Photometric	Continuous	Max. Ozone Con.	Urban	(047) Thermo 49
39-087-0012	ODOT Garage, Commerce Dr.	38.5081	-82.65924	PM_{10} Hi-vol	Gravimetric	1 in 6 days	Population	Neighborhood	(062) Wedding
				$PM_{2.5}$ FRM Seq.	Gravimetric	1 in 3 days	Population	Neighborhood	(118) Partisol2025WINS
				$PM_{2.5}$ TA-BAM	Beta attenuation	Continuous	Population	Neighborhood	AQI\(753) BAM VSCC
				Sulfur dioxide	Pulsed Fluorescence	Continuous	Population	Neighborhood	(060) Thermo 43c
				Ozone	U.V. Photometric	Continuous	Population	Neighborhood	(047) Thermo 49
	Scioto Co.								
39-145-0013	Portsmouth Water Treat. Ports.	38.754595	-82.917	PM_{10} Hi-Vol./Colo.	Gravimetric	1 in 6 days	Highest conc.	Middle	(062) Wedding
				$PM_{2.5}$ FRM Seq.Colo	Gravimetric	1 in 3 days	Highest conc.	Middle	(118) Partisol2025WINS
				Sulfur dioxide	Pulsed Fluorescence	Continuous	Population	Neighborhood	(060) Thermo 43c
39-145-0019	Portsmouth City Annex, Ports.	38.735056	-82.998726	PM_{10} Hi-vol	Gravimetric	1 in 6 days	Population	Neighborhood	(062) Wedding
39-145-0020	2840 Back Rd.,	38.609338	-82.822512	PM_{10} TEOM	Oscillating crystal	Continuous	Source-oriented	Neighborhood	(150) TA FH62 C14
	Franklin Furnace			Sulfur dioxide	Pulsed Fluorescence	Continuous	Source-oriented	Neighborhood	(060) Thermo 43c
	Permit required site, special purpose								
39-145-0021	2446 Gallia Pike,	38.600611	-82.829782	PM_{10} TEOM	Oscillating crystal	Continuous	Source-oriented	Middle	(150) TA FH62 C14
	Franklin Furnace			MET					
	Permit required site, special purpose								
39-145-0022	1740 Gallia Pike,	38.588034	-82.834973	PM_{10} TEOM	Oscillating crystal	Continuous	Source-oriented	Neighborhood	(150) TA FH62 C14
	Franklin Furnace			Sulfur dioxide	Pulsed Fluorescence	Continuous	Source-oriented	Neighborhood	(060) Thermo 43c
	Permit required site, special purpose								
CDO	**Delaware Co.**								
39-041-0002	359 Main Rd., Delaware	40.356694	-83.063971	Ozone	U.V. Photometric	Continuous	Max. Ozone Con.	Urban	(047) Thermo 49
	Franklin Co.								
39-049-0005	1585 Morse Rd., Columbus	40.060124	-82.976857	Carbon monoxide	Infrared	Continuous	Highest conc.	Micro-scale	(093) API 300
39-049-0024	State Fairgrounds	39.99875	-82.99344	PM_{10} Hi-Vol./Colo.	Gravimetric	1 in 6 days	Highest conc.	Neighborhood	(063) GMW 1200
	Columbus			$PM_{2.5}$ FRM Seq.	Gravimetric	1 in 3 days	Population	Neighborhood	(145) Partisol2025VSCC

AQS ID # Air Agency	County/ Address	Latitude	Longitude	Parameter/ Method	Analysis	Schedule	Monitoring Objective	Spatial Scale	Method Code/ Comments
39-049-0029	New Albany HS, New Albany	40.0845	-82.81552	$PM_{2.5}$ BAM	Oscillating crystal	Continuous	Population	Neighborhood	AQI (170) MetOne BAM
				Ozone	U.V. Photometric	Continuous	Population	Urban	(047) Thermo 49
39-049-0034	State Fairgrounds	40.002734	-82.994404	$PM_{2.5}$ TEOM	Oscillating crystal	Continuous	Population	Neighborhood	AQI (701) R&P TEOM
	Korbel Ave., Columbus			VOCs	GC MS	1 in 12days	Population	Neighborhood	6L-Canister
				Sulfur dioxide	Pulsed Fluorescence	Continuous	Population	Neighborhood	PWEI (060) Thermo 43
39-049-0037	Franklin Park, Broad St., Col.	39.96523	-82.95549	Ozone	U.V. Photometric	Continuous	Population	Neighborhood	(047) Thermo 49
				NO_2	Chemiluminescence	Continuous	Population	Neighborhood	(099) API 200
39-049-0038	Columbus Near Rd. NO_2 site	40.1111	-83.06545	NO_2	Chemiluminescence	Continuous	Highest conc.	Microscale	(099)
	7560 Smoky Row Rd.			Carbon monoxide	Infrared	Continuous	Highest conc.	Microscale	(093) API 300E
				$PM_{2.5}$ Thermo Sharp	Beta attenuation	Continuous	Highest conc.	Microscale	Starting by 2017
				Black Carbon		Continuous	Highest conc.	Microscale	Starting by 2017
				WS/WD	Sonic	Continuous			(130)
39-049-0039	Barack Recreation Center	39.92853	-82.98011	$PM_{2.5}$ FRM Seq/Colo	Gravimetric	1 in 3 days	Highest conc.	Neighborhood	(145) Partisol2025VSCC
	580 E. Woodrow, Columbus			TSP-lead-metals	Hi-Vol/ICP MS	1 in 6 days	Highest conc.	Neighborhood	(108) (192)
39-049-0081	Fire Station, Maple Canyon	40.0877	-82.959773	Ozone	U.V. Photometric	Continuous	Population	Urban	(047) Thermo 49
	Columbus			$PM_{2.5}$ FRM Seq.	Gravimetric	1 in 3 days	Population	Neighborhood	(145) Partisol2025VSCC
	Knox Co.								
39-083-0002	Water Plant, Centerburg	40.310025	-82.691724	Ozone	U.V. Photometric	Continuous	Max. Ozone Con.	Urban	(047) Thermo 49
	Licking Co.								
39-089-0005	Heath School, Heath	40.026037	-82.433	Ozone	U.V. Photometric	Continuous	Max. Ozone Con.	Urban	(047) Thermo 49
	Madison Co.								
39-097-0007	Madison High School, London	39.78819	-83.47606	Ozone	U.V. Photometric	Continuous	Max. Ozone Con.	Urban	(047) Thermo 49
							Upwind Backgrd.		
NEDO	**Ashtabula Co.**								
39-007-1001	Conneaut Water Plt., Conneaut	41.959695	-80.572808	Sulfur dioxide	Pulsed Fluorescence	Continuous	Population	Neighborhood	(060) Thermo 43C
				Ozone	U.V. Photometric	Continuous	Population	Regional	(047) Thermo 49
	Columbiana Co.								
39-029-0019	Columbiana Port Authority,	40.631545	-80.547181	TSP-lead-metals	Hi-Vol/ICP MS	1 in 6 days	Population	Neighborhood	(108) (192)
	East Liverpool			Sulfur dioxide	Pulsed Fluorescence	Continuous	Population	Neighborhood	(060) Thermo 43C

AQS ID # Air Agency	County/ Address	Latitude	Longitude	Parameter/ Method	Analysis	Schedule	Monitoring Objective	Spatial Scale	Method Code/ Comments
39-029-0020	Water Treat. Plant,	40.639595	-80.524019	TSP-lead-metals	Hi-Vol/ICP MS	1 in 6 days	Population	Neighborhood	(108) (192)
	East Liverpool			PM_{10} Hi-Vol	Gravimetric	1 in 6 days	Population	Neighborhood	(062) Wedding
39-029-0022	500 Maryland Ave.,	40.635275	-80.546642	TSP-Pb/metals/Colo.	Hi-Vol/ICP MS	1 in 6 days	Population	Middle scale	(108) (192).
				PM_{10} Hi- Vol./Colo.	Gravimetric	1 in 6 days	Population	Middle scale	(062) Wedding
									Discontinued 1/31/16 and relocated at same site, given new AQS no. 39-029-0023
39-029-0023	East Liverpool	40.6349	-80.5457	TSP-Pb/metals/Colo.	Hi-Vol/ICP MS	1 in 6 days	Population	Middle scale	(108) (192).
				PM_{10} Hi- Vol./Colo.	Gravimetric	1 in 6 days	Population	Middle scale	(062) Wedding
									Relocated at same site, was 39-029-0022, started 2/1/16
	Lorain Co.								
39-093-0018	Fire Station, Sheffield	41.420882	-82.095729	Ozone	U.V. Photometric	Continuous	Population	Neighborhood	(047) Thermo 49
									May be relocated to same site where 39-093-3002 is relocated by ozone season 2017
39-093-3002	Barr School, Sheffield	41.463071	-82.114261	PM_{10} Hi-vol.	Gravimetric	1 in 6 days	Source-oriented	Neighborhood	(062) Wedding
				$PM_{2.5}$ FRM Seq.Colo	Gravimetric	1 in 3 days	Source-oriented	Neighborhood	(120) RASS25-300
				$PM_{2.5}$ TEOM	Oscillating crystal	Continuous	Source-oriented	Neighborhood	AQI\(701) TEOM- SCC
				Chemical Speciation	Ion Chromatograph	1 in 12days	Source-oriented	Neighborhood	(810) Met One SASS
				URG-3000	Carbon speciation	1 in 6 days	Source-oriented	Neighborhood	
NWDO	**Allen Co.**								May be relocated by 2017
39-003-0009	Bath High School, Lima	40.770944	-84.0539	Sulfur dioxide	Pulsed Fluorescence	Continuous	Population	Neighborhood	(100) API 100
				Ozone	U.V. Photometric	Continuous	Population	Neighborhood	(047) Thermo 49
				$PM_{2.5}$ FRM BGI/colo	Gravimetric	1 in 6 days	Population	Neighborhood	(142) BGI PQ200 VSCC
				$PM_{2.5}$ TEOM	Oscillating crystal	Continuous	Population	Neighborhood	AQI (701) TEOM- SCC
	Fulton Co.								
39-051-0001	200 Van Buren St., Delta	41.57588	-83.9959	TSP-PB\metals Colo.	Hi-Vol/ICP MS	1 in 6 days	Source-oriented	Middle	(108) (192)
	Marion Co.								

AQS ID # Air Agency	County/ Address	Latitude	Longitude	Parameter/ Method	Analysis	Schedule	Monitoring Objective	Spatial Scale	Method Code/ Comments
39-101-0003	Nucor Steel, Hawthorne Ave.	42.57141	-83.13556	TSP-lead	Hi-Vol/ICP MS	1 in 6 days	Population	Middle	Marion (108) (192)
39-101-0004	640 Bellefontaine Ave.	40.57666	-83.14024	TSP-lead-metals	Hi-Vol/ICP MS	1 in 6 days	Population	Middle	Marion (108) (192)
	Ottawa Co.								
39-123-0006	Materion, Elmore	41.494722	-83.214444	TSP – beryllium	Hi-Vol/ICP MS	7daysample	Source-oriented	Middle	Brush-Wellman (9 sites)
to 123-0014									operated by BW.
	Wood Co.								
39-173-0003	NWDO Office, Bowling Green	41.377685	-83.611104	Ozone	U.V. Photometric	Continuous	Upwind Backgd	Urban	(047) Thermo 49
SEDO	**Athens Co.**								
39-009-0003	St. Rt. 377, Gifford Forest	39.442165	-81.908827	$PM_{2.5}$ FRM BGI/colo	Gravimetric	1 in 6 days	Background	Regional	(142) BGI PQ200 VSCC
	Belmont Co.								
39-013-0006	Ballpark Rd.	39.9678	-80.7476	Sulfur dioxide	U.V. Fluorescence	Continuous	General Backgd.	Neighborhood	(100) API 100
				PM_{10} Lo-Vol/Colo.	Gravimetric	1 in 6 days	General Backgd.	Neighborhood	(125) Partisol 2025i
	Permit required site			NO_2	Chemiluminescence	Continuous	General Backgd.	Neighborhood	(099) API 200
	Special purpose			Carbon Monoxide	Infrared	Continuous	General Backgd.	Neighborhood	(093) API 300
				$PM_{2.5}$ FRM Seq.	Gravimetric	1 in 3 days	General Backgd.	Neighborhood	(145) Partisol2025VSCC
				Meteorological	Sonic	Continuous		Neighborhood	(063) Climatronics
									Site started 7/1/15
	Harrison Co.								
39-067-xxxx	Community Scale project Hopedale			PM2.5					New site in 2017
				PM10					
				VOC					
				MET					
	Gallia Co.								
39-053-xxxx				Sulfur dioxide	Pulsed Fluorescence	Continuous	Source-oriented	Neighborhood	(060) Thermo 43C
									Relocation of 39-105-0003
	Jefferson Co.								
39-081-0001	1004 3rd St., Brilliant	40.26157	-80.6335	PM_{10} Hi-vol	Gravimetric	1 in 6 days	Population	Neighborhood	(063) GMW 1200
39-081-0017	618 Logan St., Steubenville	40.36644	-80.6158	Sulfur dioxide	U.V. Fluorescence	Continuous	Population	Neighborhood	(100) API 100
				PM_{10} Hi- Vol./Colo.	Gravimetric	1 in 6 days	Highest conc.	Neighborhood	(063) GMW 1200

AQS ID # Air Agency	County/ Address	Latitude	Longitude	Parameter/ Method	Analysis	Schedule	Monitoring Objective	Spatial Scale	Method Code/ Comments
				$PM_{2.5}$ FRM Seq/Colo	Gravimetric	1 in 3 days	Population	Neighborhood	(145) Partisol2025VSCC
				$PM_{2.5}$ BAM	Beta attenuation	Continuous	Population	Neighborhood	(170) MET ONE BAM
				Ozone	U.V. Photometric	Continuous	Population	Neighborhood	(047) Thermo 49
				URG-3000	Carbon speciation	1 in 6 days	SIP information	Neighborhood	(AQI)
				Chemical Speciation	Ion Chromatograph	1 in 6 days	SIP info	Neighborhood	(810) Met One SASS
				VOCs	GC MS	1 in 6 days	Population	Neighborhood	6l-Canister
39-081-0021	110 Steuben St Mingo Junction	39.31951	-81.688	$PM_{2.5}$ FRM BGI	Gravimetric	1 in 3 days	Population	Neighborhood	(142) PQ200 POC 1
									POC 4 ended 7/14/15
39-081-0018	3487 Cnty Rd. 19, Brilliant	40.272	-80.62962	Sulfur dioxide	Pulsed Fluorescence	Continuous	Source-Oriented	Neighborhood	(060) Thermo 43A
	Permit required site, special purpose								AEP Cardinal Power Plt.
39-081-0019	Landfill Access Rd., Brilliant	40.26786	-80.64986	Wind Speed/Dir.	Sonic	Continuous	Source-Oriented	Neighborhood	AEP Cardinal Power Plt.
	Permit required site, special purpose								
39-081-0020	1469 Third St., Brilliant	40.259475	-80.639987	Wind Speed/Dir.	Sonic	Continuous	Source-Oriented		AEP Cardinal Power Plt.
	Permit required site, special purpose			Sulfur dioxide	Pulsed Fluorescence	Continuous		Neighborhood	(060) Thermo 43A
	Meigs Co.								
39-105-0003	117 Memorial Dr., Pomeroy	39.03849	-82.0459	Sulfur dioxide	Pulsed Fluorescence	Continuous	Source-oriented	Neighborhood	(060) Thermo 43C
									Site discontinued in 2016 and to be relocated to Gavin/Kyger network by 2017
	Morgan Co.								
39-115-0004	St. Rt. 83, Hackney	39.63223	-81.67005	Sulfur dioxide	U. V. Fluorescence	Continuous	Population	Neighborhood	(100) API 100
									Musk.River power plant
									shutdown 10/2015
	Washington Co.								
39-167-0004	2000 4th St. Marietta WTP	39.432117	-81.460443	Ozone	U.V. Photometric	Continuous	Population	Neighborhood	(047) Thermo 49
39-167-0008	SR 676Washington Car. Ctr.	39.43147	-81.50131	TSP-lead/colo/metals	Hi-Vol/ICP MS	I in 6 days	Population	Neighborhood	(108) (192)
West Virginia	**Wood County**								
54-009-0003	SR 2, Beech Bottom WVA	40.29167	-80.60917	Wind Speed/Dir.	Sonic	Continuous			AEP Cardinal Power Plt
	Permit required site, special purpose			Sulfur dioxide	Pulsed Fluorescence	Continuous	Source-Oriented	Middle-Scale	(060) Thermo 43A

AQS ID # Air Agency	County/ Address	Latitude	Longitude	Parameter/ Method	Analysis	Schedule	Monitoring Objective	Spatial Scale	Method Code/ Comments
SWDO	**Clinton Co.**								
39-027-1002	Laurel Oaks Sch., Wilmington	39.430000	-83.788611	Ozone	U.V. Photometric	Continuous	Highest conc.	Urban	(047) Thermo 49
	Logan Co.								
39-091-0006	320Richard Ave., Bellefontaine	40.341467	-83.7585	TSP-lead-metals	Hi-Vol/ICP MS	1 in 6 days	Population	Neighborhood	(108) (192) Possibly discontinue in 2017, low lead concentrations

Notes/Explanations:

AQS is the Air Quality System maintained by US EPA for air quality data. In the AQS ID #, the first 2 digits refers to the state (39 is Ohio). The next 3 digits are the county within Ohio. The last 4 digits designate a specific site within the county.

All $PM_{2.5}$ Sequential FRM sites and single-event FRM sites are comparable to the $PM_{2.5}$ NAAQS. No continuous $PM_{2.5}$ monitors are to be comparable to the $PM_{2.5}$ NAAQS.

All ozone, sulfur dioxide, carbon monoxide and nitrogen dioxide sites are comparable to the NAAQS, unless they are designated for special purposes.

PM is particulate matter. PM_{10} means particulate matter of 10 microns in diameter or smaller. A micron is one millionth of a meter.
$PM_{2.5}$ is particulate matter 2.5 millionths of a meter in diameter or smaller. PM_{10} is fine particulate matter and $PM_{2.5}$ is very fine particulate matter.

Monitoring instruments used for comparing to the National Ambient Air Quality Standards are designated as Federal Reference Methods (FRM) or Federal Equivalent Methods (FEM).

$PM_{2.5}$ Seq. FRM samplers test for $PM_{2.5}$ and can hold multiple samples for sequential sampling.

Collocated or colo indicates a site with duplicate samplers for quality assurance purposes. Data is statistically compared from the two samplers for the same days. Duplicate samplers may sample at a 1in 6 days schedule or possibly at a 1 in 12 days schedule.

Chem. Speciation sites are sites and samplers that collect $PM_{2.5}$ samples that are analyzed for the chemical speciation make-up of the $PM_{2.5}$ particulate matter.

U.V. Photometric indicates ultra-violet photometric, a method of detection for ozone concentrations.

U.V. fluorescence indicates ultra-violet fluorescence, a method of detection for sulfur dioxide concentrations.

VOCs are volatile organic compounds. The method of collecting and analyzing whole air samples for VOCs in Ohio is TO-15. The collection utilizes a stainless steel canister for air sample collection in the field followed by analysis by gas chromatograph -mass spectrometer in a laboratory. There are approximately 72 compounds scanned for in the analysis.

TSP – metals is the method of collecting total suspended particulate (TSP) by drawing an air sample through a filter media that is analyzed at a laboratory for airborne metals including lead, arsenic, cadmium, chromium, nickel, zinc, manganese and beryllium and sometimes particulate mercury. Analysis is by ICP or Inductively Coupled Plasma Emission Spectroscopy or Graphic Furnace Atomic Absorption.

BAM indicates a Beta Attenuation Monitor, a method of detection for fine particulates.

TEOM indicates a Tapered Element Oscillating Microbalance, a method of detection for fine particulates.

SIP is State Implementation Plan that details how the state will implement controls that will bring the area into attainment status for a particular National Ambient Air Quality Standard.

Ohio Air Monitoring Agencies

Akron Regional Air Quality Management District Fairway Center 1867 W. Market St. Akron, Ohio 44308 (330) 375-2480 Medina, Portage, Summit counties	City of Toledo Division of Environmental Services 348 South Erie St. Toledo, Ohio 43604 (419) 936-3015 Lucas County
Air Pollution Control Division Canton City Health Department 420 Market Ave. North Canton, Ohio 44702-1544 (330) 489-3385 Stark County	Mahoning-Trumbull APC Agency 345 Oak Hill Ave. Youngstown, Ohio 44502 (330) 743-3333 Mahoning, Trumbull Counties
Dept. of Environmental Services Southwest Ohio Air Quality Agency 250 William Howard Taft Road Cincinnati, Ohio 45219-2660 (513) 946-7777 Hamilton, Butler, Warren, Clermont counties	Regional Air Pollution Control Agency Montgomery County Health Department 117 South Main St., P.O. Box 972 Dayton, Ohio 45422-1280 (937) 225-4435 Montgomery, Preble, Drake, Miami, Clark, Greene
Cleveland Department of Public Health & Welfare Division of Air Quality 75 Erieview Plaza Cleveland, Ohio 44114 (216) 664-2297 Cuyahoga County	Lake County General Health District Air Pollution Control 33 Mill St. Painesville, Ohio 44077 (440) 350-2543 Lake, Geauga counties
Air Pollution Unit Portsmouth City Health Department 605 Washington Street Portsmouth, Ohio 45662 (740) 353-5156 Brown, Adams, Scioto, Lawrence	Ohio EPA Central District Office 50 West Town St. Columbus, Ohio 43215 (614) 728-3778
Ohio EPA Northeast District Office 2110 Aurora Rd. Twinsburg, Ohio 44087 (330) 425-9171	Ohio EPA Northwest District Office 347 North Dunbridge Rd. Bowling Green, Ohio 43402 (419) 352-8461
Ohio EPA Southeast District Office 2195 Front St. Logan, Ohio 43138 (740) 385-8501	Ohio EPA Southwest District Office 401 East Fifth St. Dayton, Ohio 45402-2911 (937) 285-6357

Public Review and Comment

The annual monitoring network plan must be made available for public inspection for thirty days prior to submission to US EPA. For the July 1, 2016 submittal, this document was placed on Ohio EPA's website on May 1, 2016 to begin the 30-day public review period. Ohio EPA received one comment (see Appendix H of this document). The commenter claimed that one of the WTI sites in East Liverpool should be located near an electric power substation. Ohio EPA verified that the siting criteria and found that some minor adjustments were necessary. These adjustments are currently underway.

For the November 2016 revision of the annual monitoring network plan, Ohio EPA placed the plan on Ohio EPA's website on _____ to begin the 30-day review period. Ohio EPA received _____.

This document can be accessed at the following link:

http://epa.ohio.gov/dapc/ams/amsmain.aspx#126983982-air-monitoring-plan

For questions about the Ohio Air Monitoring Network please contact:
Dave Ambrose at 614-644-3620

Comments about this Ohio Air Monitoring Network Plan may be emailed to:
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