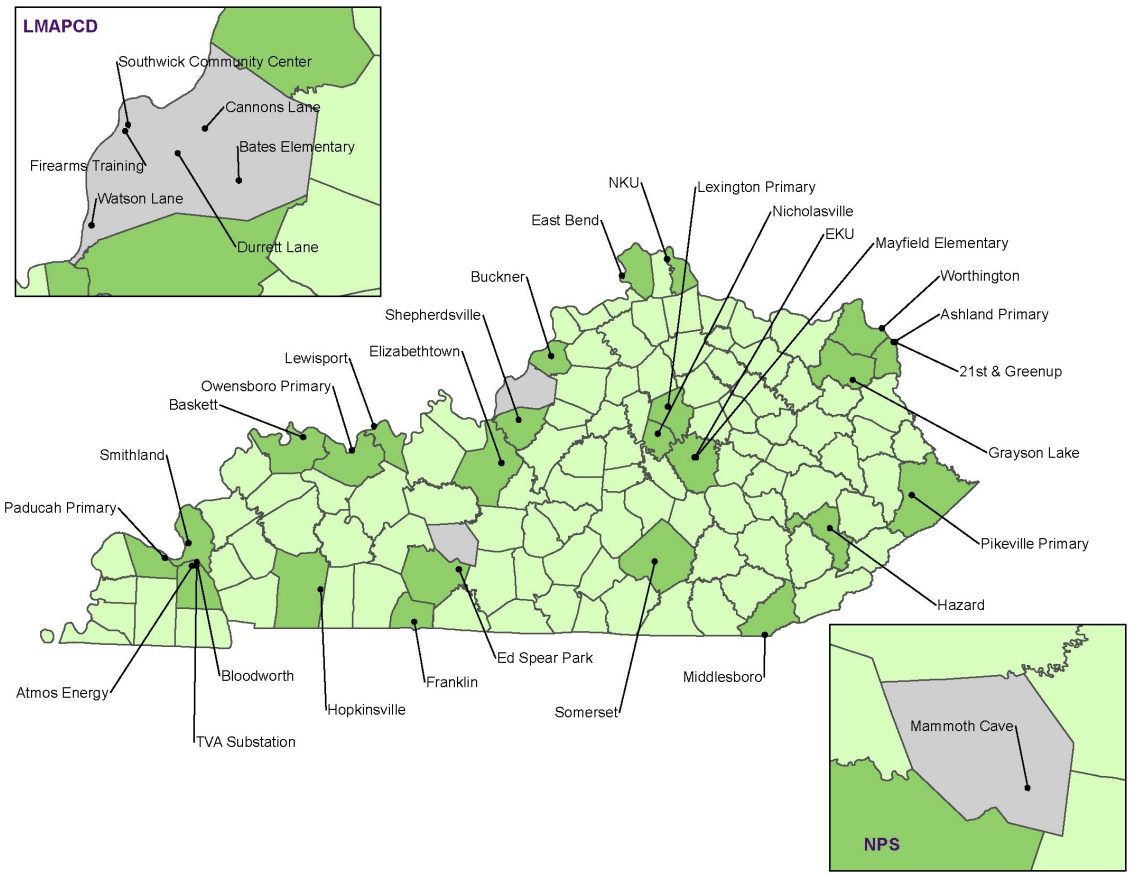
Kentucky
Annual Ambient Air Monitoring Network Plan 2015



Commonwealth of Kentucky Energy & Environment Cabinet
Department for Environmental Protection
Division for Air Quality
200 Fair Oaks Lane, 1st Floor,
Frankfort, Kentucky 40601

CERTIFICATION

By the signatures below, the Kentucky Division for Air Quality certifies that the information contained in this Surveillance Network document for sampling year 2015 is complete and accurate at the time of submittal to EPA Region 4. However, due to circumstances that may arise during the sampling year, some network information may change. A notification of change and a request for approval will be submitted to EPA Region 4 at that time.

Print Name: Jennifer F. Miller — Environmental Scientist IV
Signature: Jennifer F. Miller Date: 6/30/15

Print Name: John E. Gowins — Technical Services Branch Manager
Signature: John E. Gowins Date: 06/30/15

Print Name: Sean O. Alteri — Division Director
Signature: Sean O. Alteri Date: 6/30/15

PUBLIC NOTIFICATION AND COMMENT PERIOD

In accordance with 40 C.F.R. 58.10(a)(1), the Kentucky Energy and Environment Cabinet shall make the annual monitoring network plan available for public inspection for at least 30 days prior to submission to the US EPA. The annual monitoring network plan details the operation and location of ambient air monitors operated by the Kentucky Division for Air Quality (KDAQ), Louisville Metro Air Pollution Control District (LMAPCD), and the National Park Service (NPS).

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ACRONYMS

AEM – Automated Equivalent Method

AQI – Air Quality Index

AQS – Air Quality System

ARM – Automated Reference Method

BAM – Beta Attenuation Monitor

CBSA – Core-Based Statistical Area

CSA – Combined Statistical Area

CO – Carbon Monoxide

FAM – Federal Alternate Method

FEM – Federal Equivalent Method

FRM – Federal Reference Method

KDAQ – Kentucky Division for Air Quality

LMAPCD – Louisville Metro Air Pollution Control District

MSA – Metropolitan Statistical Area

NAAQS – National Ambient Air Quality Standards

NAMS – National Air Monitoring Stations

NAREL– National Air and Radiation Environmental Laboratory

NATTS – National Air Toxics Trends Stations

NIST– National Institute of Standards and Technology

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NO_2 – Nitrogen Dioxide

NPS – National Park Service

O_3 – Ozone

PAH – Polycyclic Aromatic Hydrocarbons

Pb – Lead

PM – Particulate Matter

PWEI – Population Weighted Emissions Index

RA-40 – Regional Administrator 40

SAMWG – Standing Air Monitoring Working Group

SLAMS – State and Local Air Monitoring Stations

SO_2 – Sulfur Dioxide

SPM – Special Purpose Monitors

TBD – To Be Determined

TEOM – Tapered Elemental Oscillating Microbalance

U.S. EPA – United States Environmental Protection Agency

VOC – Volatile Organic

INTRODUCTION

INTRODUCTION

The Kentucky Division for Air Quality (KDAQ) has operated an air quality monitoring network in the Commonwealth since July 1967. The Louisville Metro Air Pollution Control District (LMAPCD), a local agency, has maintained a sub-network in its area of jurisdiction since January 1956. Since that time, the networks have been expanded in accordance with United States Environmental Protection Agency's (US EPA) regulations.

In October 1975, the US EPA established a work group to critically review and evaluate current air monitoring activities at that time. This group was named the Standing Air Monitoring Working Group (SAMWG). The review by the SAMWG indicated several areas where deficiencies existed which needed correction. The principal areas needing correction were: an excess of monitoring sites in some areas to assess air quality; existing regulations did not allow for flexibility to conduct special purpose monitoring studies; data reporting was untimely and incomplete, caused by a lack of uniformity in station location and probe siting, sampling methodology, quality assurance practices, and data handling procedures.

In August 1978, recommendations developed by SAMWG, to remedy the deficiencies in the existing monitoring activities, were combined with the new requirements of Section 319 of the Clean Air Act. Section 319 provided for the development of uniform air quality monitoring criteria and methodology; reporting of a uniform air quality index in major urban areas; and the establishment of an air quality monitoring system nationwide which utilized uniform monitoring criteria and provides for monitoring stations in major urban areas that supplement State monitoring. The combination of the recommendations and requirements were included in a proposed revision to the air monitoring regulations.

In May 1979, air monitoring regulations were finalized by the US EPA requiring certain modifications and additions to be included in the State Implementation Plan for air quality surveillance. These regulations require each state to operate a network of monitoring stations designated as State and Local Air Monitoring Stations (SLAMS) that measure ambient concentrations of air pollutants for which standards have been established. The SLAMS designation contains provisions concerning the conformity to specific siting and monitoring criteria not previously required. The regulations also provide for an annual review of the monitoring network to insure objectives are being met and to identify needed modification.

The current overall network consists of 34 air monitoring stations, operated by KDAQ, LMAPCD, and the National Park Service (NPS). The Commonwealth's SLAMS air monitoring network monitors criteria pollutants for which the National Ambient Air Quality Standards (NAAQS) have been issued. In addition to a SLAMS network, KDAQ's air monitoring network includes special purpose monitors (SPM) for air toxics and meteorological data.

The annual monitoring network description, as provided for in 40 CFR Part 58.10, *Annual monitoring network plan and periodic network assessment*, must contain the following information for each monitoring station in the network:

1. The Air Quality System (AQS) site identification number for existing stations.

2. The location, including the street address and geographical coordinates, for each monitoring station.

3. The sampling and analysis method used for each measured parameter.

4. The operating schedule for each monitor.

5. Any proposal to remove or move a monitoring station within a period of eighteen months following the plan submittal.

6. The monitoring objective and spatial scale of representativeness for each monitor.

7. The identification of any site that is suitable for comparison against the $PM_{2.5}$ NAAQS.

8. The Metropolitan Statistical Area (MSA), Core-Based Statistical Area (CBSA), Combined Statistical Area (CSA), or other area represented by the monitor.

The following document constitutes the Kentucky ambient air monitoring network description and is organized into main parts:

1. Station Description Format: An outline of the designations, parameters, monitoring methods, and the basis for site selection.

2. Network Summaries: Presenting the total number of sites and monitors in each region and for the state. Also included is a listing of all proposed changes to the current network.

3. Air Monitoring Station Description: Each air monitor station is described in detail as per the outline in (1) above.

4. Appendices: Additional information relating to the ambient air monitoring network.

Modification to the network as determined by an annual review process will be made each year to maintain a current network description document.

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AIR MONITORING NETWORK SUMMARY

SUMMARY OF KDAQ NETWORK CHANGES 2015

During the 2015-2016 monitoring year, KDAQ will operate 98 instruments, including 11 meteorological stations, located at 27 ambient air monitoring sites in 24 Kentucky counties. LMAPCD will operate an additional 32 instruments, including 5 meteorological stations, in Jefferson County. When combined with the air monitoring site operated by the NPS at Mammoth Cave National Park, the total ambient air monitoring network will consist of 136 instruments, including 17 meteorological stations, located at 34 sites across 26 counties of the Commonwealth.

The Kentucky Division for Air Quality proposes to make the following changes to the ambient air monitoring network:

Louisville-Jefferson County, KY-IN MSA:

- Shepherdsville (21-029-0006):
  - Discontinue the meteorological station at the Shepherdsville air monitoring station.

- Buckner (21-185-0004):
  - Establish a meteorological station at the Buckner air monitoring station, which is downwind of the Louisville metropolitan area.

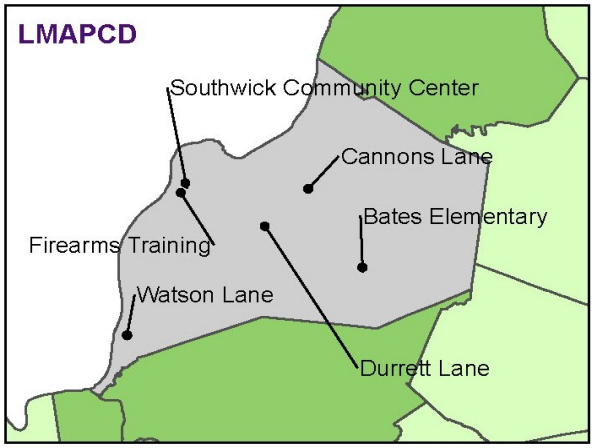
Proposed changes related to the ambient air monitoring network operated by LMAPCD are summarized in Appendix E of this document.

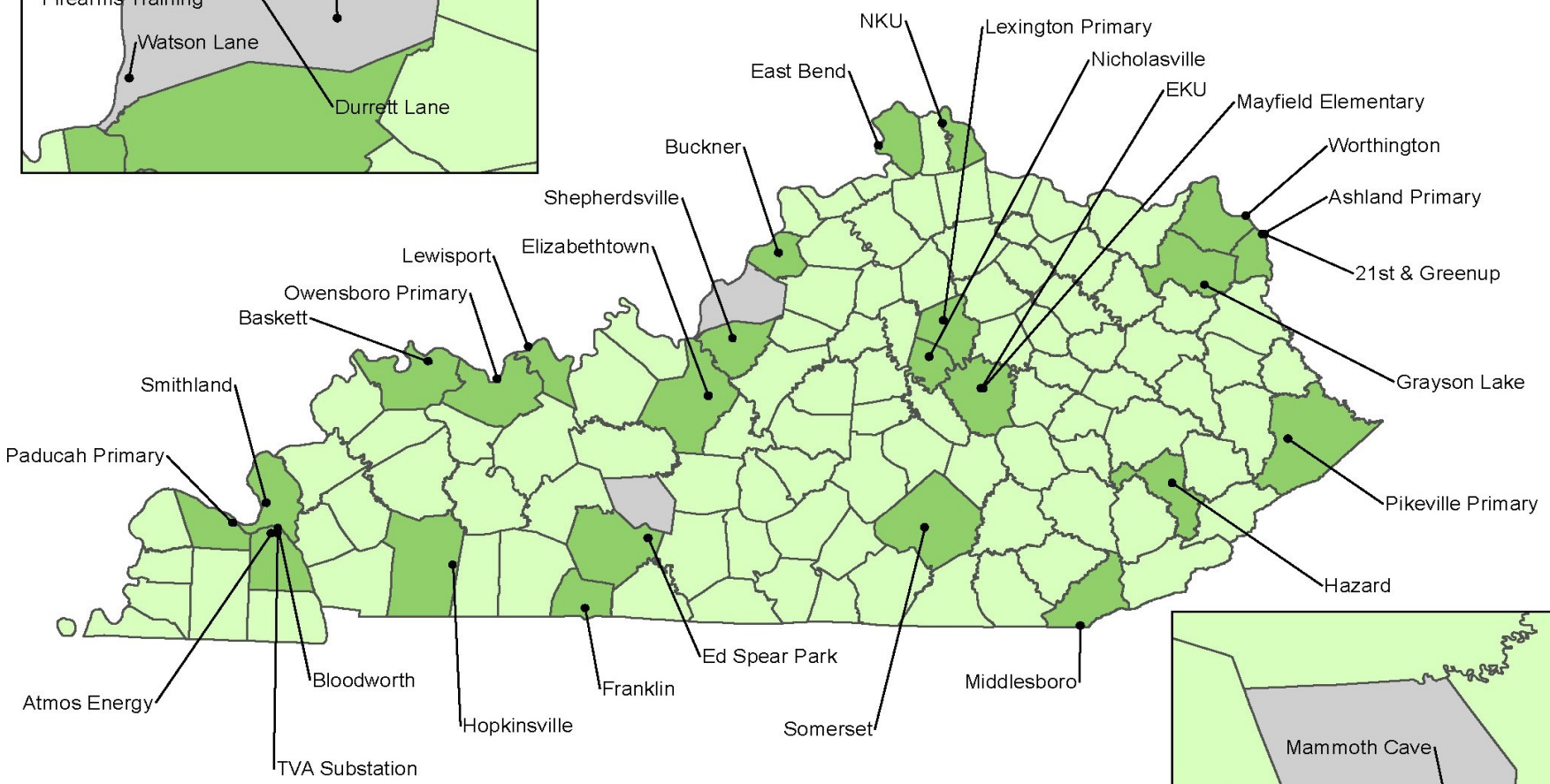
AIR MONITORING STATIONS SUMMARY

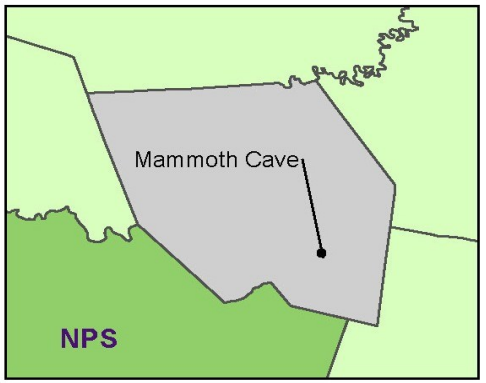
Metropolitan Statistical Area	Site Count	PM2.5	Continuous PM2.5	PM10	Continuous PM10	SO2	NO2	NOy	CO	O3	Pb	VOC	Carbonyl	PAH	PM2.5 Speciation	Carbon Speciation	RadNet	Met
Bowling Green, KY	2	2^{C}	2^{i}			1		1	1	2^{i}								1
Cincinnati-Middletown, OH -KY-IN (AQI)	2	1	1^{i}			$1^{P,i}$	1^{i}			2^{i}								1
Clarksville, TN-KY	1	1^{X}								1								1
Elizabethtown, KY	1	2^{C}	1							1								
Evansville, IN-KY	1	1	1	1^{m}		1^{P}				1								
Huntington-Ashland, WV-KY-OH (AQI)	3	1	1^{i}	$2^{C,m}$		2^{i}	1^{i}			2^{i}		1						1
Lexington-Fayette, KY (AQI)	2	1	1^{i}	1^{m}		$2^{P,i}$	$1^{r40,i}$			2^{i}		1					1	1
Louisville-Jefferson County, KY-IN (AQI)	8	$5^{n,C}$	$4^{i,B,*}$	1^{Lead}	$3^{i,,B}$	$3^{P,i}$	$2^{n,i}$	1	2^{ni}	5^{i}					1^{U}	1^{U}	1	6^{n}
Owensboro, KY	2	1	1^{i}			1^{i}	1^{i}			2^{i}								1
Micropolitan Statistical Area																		
Paducah, KY-IL	2	1	1^{i}	2^{m}		$1^{P,i}$	1^{i}			2^{i}		1					1	1
Somerset, KY	1	1								1								
Middlesboro, KY	1	1								1								1
Richmond-Berea, KY	2	1									3							
Not in a CBSA																		
Carter County	1	1^{X}		$2^{C,m}$						1		2^{D}	2^{D}	1				1
Marshall County	2											3^{C}						
Perry County	1	1	1							1								1
Pike County	1	2^{C}	1^{i}							1^{i}								
Simpson County	1									1								1
KDAQ Totals	27	18	10	8	0	8	5	0	0	22	3	8	2	1	0	0	2	11
LMAPCD Totals	6	5	4	1	3	3	2	1	2	3	0	0	0	0	1	1	1	5
NPS Totals	1	0	1	0	0	1	0	1	1	1	0	0	0	0	0	0	0	1
Total 2015 Network	**34**	**23**	**15**	**9**	**3**	**12**	**7**	**2**	**3**	**26**	**3**	**8**	**2**	**1**	**1**	**1**	**3**	**17**

Tallies are equal to the actual number of monitors present. Superscripts represent additional information about the network. P=PWEI Monitor; r40=RA-40 Monitor; n=Near-Road Monitor; X= Regional PM2.5 Transport or Background Monitor; B=Continuous BAM; *=BAM Eligible for NAAQS Comparisons; AQI=AQI Monitors Required in CBSA; i=AQI Reported; m= PM10 Filter Analyzed for Metals; Lead=PM10 Filter Analyzed for Lead; C=Collocated Monitors ; D= Duplicate Channels; U= Additional Monitor Used for Weekend and Holiday Sampling

2015
Ambient Air Monitoring Network







STATION DESCRIPTION FORMAT

STATION DESCRIPTION FORMAT

AQS Site Identification Information

Pertinent, specific siting information for each site and monitor is stored in the US EPA's AQS data system. This information includes the exact location of the site, local and regional population, description of the site location, monitor types, and monitoring objectives. This site and monitor information is routinely updated whenever there is a change in site characteristics or pollutants monitored.

Network Station Description

The network station descriptions contained in this document include the following information:

1. Site Description

Specific information is provided to show the location of the monitoring equipment at the site, the CBSA in which the site is located, the AQS identification number, the GPS coordinates, and the conformance of monitors and monitor-probes to siting criteria.

2. Date Established

The date that each existing monitoring station was established is shown in the description. For proposed air monitoring stations, the date that the station is expected be in operation is included in the annual Summary of Network Changes.

3. Site Approval Status

Each monitoring station in the existing network has been reviewed with the purpose of determining whether it meets all design criteria for inclusion in the SLAMS network. Stations that do not meet the criteria will either be relocated in the immediate area or, when possible, re-sited at the present location. KDAQ may also seek an exemption from certain criteria from the US EPA.

4. Monitoring Objectives

The monitoring network was designed to provide information to be used as a basis for the following actions:

(a) To determine compliance with ambient air quality standards and to plan measures to attain these standards.

(b) To activate emergency control procedures in the event of an impending air pollution episode.

(c) To observe pollution trends throughout a region including rural areas and report progress made toward meeting ambient air quality standards.

(d) To provide a database for the evaluation of the effects of air quality on population, land use, and transportation planning; to provide a database for the development and evaluation of air dispersion models.

5. Monitoring Station Designations and Network Affiliations

The Annual Network Surveillance document must describe the types of monitors that are used to collect ambient data. Most monitors described in the air quality surveillance network are designated as SLAMS, but some monitors fulfill other requirements. Additionally, monitors may be associated with additional networks beyond the state air program.

State and Local Air Monitoring Stations (SLAMS): Requirements for air quality surveillance systems provide for the establishment of a network of monitoring stations designated as SLAMS that measure ambient concentrations of pollutants for which standards have been established. These stations must meet requirements that relate to four major areas: quality assurance, monitoring methodology, sampling interval, and siting of instruments.

Population Weighted Emissions Index (PWEI): On June 22, 2010, the US EPA released a new SO_2 Final Rule and a new set of monitoring requirements. The new requirements use a Population Weighted Emissions Index (PWEI) that is calculated for each Core Based Statistical Area (CBSA). The PWEI is calculated by multiplying the population of each CBSA and the total amount of SO_2, in tons per year, that is emitted within the CBSA based upon county level data from the National Emissions Inventory (NEI). The result is then divided by one million to provide the PWEI value, which is expressed in a unit of million persons-tons per year. PWEI SO_2 monitors are designated as SLAMS monitors foremost.

Regional Administrator 40 (RA-40): On February 9, 2010, the US EPA released a new NO_2 Final Rule and a new set of monitoring requirements. Under the new monitoring regulations, the EPA Regional Administrator must collaborate with agencies to establish or designate 40 NO_2 monitoring locations, with a primary focus on protecting susceptible and vulnerable populations. RA-40 NO_2 monitors are SLAMS monitors foremost.

Emergency Episode Monitoring (Episode): Regulations provide for the operation of at least one continuous SLAMS monitor for each major pollutant in designated locations for emergency episode monitoring. These monitors are placed in areas of worst air quality and provide continual surveillance during episode conditions.

Air Quality Index (AQI): The AQI is a method of reporting that converts pollutant concentrations to a simple number scale of 0-500. Intervals on the AQI scale are related to potential health effects of the daily measured concentrations of major pollutants. AQI reporting is required for all metropolitan statistical areas with a population exceeding 350,000. However, KDAQ provides this service to the general public for multiple areas within the state. KDAQ prepares the index twice daily for release to the public from the pollutant data reported from the Field Offices. The ambient air data establishing the AQI is subject to quality assurance procedures and is not considered official.

Special Purpose (SPM and SPM-Other): Not all monitors and monitoring stations in the air quality surveillance network are included in the SLAMS network. In order to allow the capability of providing monitoring for complaint studies, modeling verification and compliance status, certain monitors are reserved for short-term studies and are designated as either Special Purpose Monitors (SPM) or Other Special Purpose Monitors (SPM-Other). These monitors are not committed to any one location or for any specified time period. They may be located as separate monitoring stations or be included at SLAMS locations. Monitoring data may be reported, provided that the monitors and stations conform to all requirements of the SLAMS network.

NCore: NCore is a multi pollutant network that integrates several advanced measurement systems for particulates, pollutant gases and meteorology.

Non-EPA Federal: Monitors operated by Federal agencies outside of the US EPA (such as the National Park Service) are designated as Non-EPA Federal monitors. These monitors are typically used for special studies and are not included in the minimum number of monitors required by CFR.

6. Monitoring Methods

All sampling and analytical procedures used in the air-monitoring network conform to Federal reference (FRM), alternate (FAM), or equivalent (FEM) methods. In case there is no federal method, procedures are described in the Kentucky Air Quality Monitoring and Quality Assurance Manuals.

(a) Particulate Matter 10 Microns in Size (PM_{10})

All PM_{10} samplers operated by KDAQ are certified as either FRM or FEM samplers and are operated according to the requirements set forth in 40 CFR 50 and 40 CFR 53. Intermittent samplers typically collect a 24-hour sample every sixth day on 46.2 mm PTFE filters. However, certain sites may collect samples more frequently to address local air quality concerns. Filters are weighed before and after a sample run. The gain in weight in relation to the volume of air sampled is calculated in micrograms per cubic meter (ug/m^3). The PTFE filters are to be equilibrated before each weighing for a minimum of 24 hours at a 20-23 degrees C mean temperature and a 30-40% mean relative humidity.

Continuous PM_{10} samplers provide 24-hour samples daily for SLAMS reporting. During sampling, ambient air passes through an inlet designed to pass only particles smaller than 10 microns in diameter. In PM_{10} TEOMs, the sample stream passes through a Teflon-coated glass fiber filter. This filter is weighed every two seconds. The difference between the current filter weight and the initial or installed weight gives the total mass of the collected particulate. The data is transmitted by telemetry for entry into an automated central data acquisition system.

LMAPCD also operates PM_{10} BAMs, which measure PM_{10} through beta ray attenuation. After passing through an inlet designed to limit the size of particulate matter to 10 microns or less, the sample stream passes through filter tape, which is then placed in between a beta source and a scintillation detector causing an attenuation of the beta particle signal. The data is transmitted by telemetry for entry into an automated central data acquisition system.

(b) Particulate Matter 2.5 Microns in Size ($PM_{2.5}$)

The Division currently operates continuous TEOM monitors and manual intermittent samplers for monitoring particulate matter 2.5 microns in size ($PM_{2.5}$). With the exception of continuous TEOM monitors, all $PM_{2.5}$ samplers operated by the Division for Air Quality are certified as either FRM or FEM samplers. All FRM and FEM manual intermittent samplers are operated per the requirements set forth in 40 CFR 50, Appendix L. Samples are collected on 46.2 mm PTFE filters over a 24-hour sampling period, with airflow maintained at 16.7 liters per minute. The flow rate must not vary more than +/-5% for five minutes over a 24-hour sample period at actual ambient temperature and pressure. Samples must be retrieved within 177 hours of the end of the sample run and must be kept cool (4 degrees C or cooler) during transit to meet the thirty-day limit for re-weighing. The PTFE filters are to be equilibrated before each weighing for a minimum of 24 hours at a controlled atmosphere of 20-23 degrees C mean temperature and 30-

40% mean relative humidity. Filters must be used within thirty days of initial weighing. Filters must be re-weighed within thirty days of the end of the sample run and must be kept at 4 degrees C or cooler. The gain in weight in relation to the volume of air sampled is calculated in micrograms per cubic meter (ug/m^3).

Continuous $PM_{2.5}$ TEOM monitors also provide 24-hour samples daily for AQI reporting. During sampling, ambient air passes through an inlet and very sharp cut cyclone designed to pass only particles smaller than 2.5 microns in diameter. After exiting the inlet, the sample stream is sent to a mass transducer. Inside the transducer the sample stream passes through a Teflon-coated glass fiber filter. This filter is weighed every two seconds. The difference between the current filter weight and the initial or installed weight gives the total mass of the collected particulate. The mass concentration is computed by dividing the total mass by the flow rate. Data is transmitted by telemetry for entry into the automated central data acquisition system. While usable for the AQI, $PM_{2.5}$ TEOMs are not classified as either FRM or FEM monitors; and thus, are not eligible for comparison to the NAAQS.

LMAPCD also operates continuous $PM_{2.5}$ BAM monitors, which measure $PM_{2.5}$ through beta ray attenuation. During sampling, ambient air passes through an inlet and a cyclone designed to pass only particles smaller than 2.5 microns in diameter. The sample is collected on filter tape as the air passes through the tape. The filter tape is then placed in between a beta source and a scintillation detector causing an attenuation of the beta particle signal. Data is transmitted by telemetry for entry into the automated central data acquisition system.

Continuous $PM_{2.5}$ BAMs provide 24-hour daily reporting for the AQI. The data obtained from $PM_{2.5}$ BAMs may or may not be used for comparison to the NAAQS. $PM_{2.5}$ BAMS that are operated as FEM_S, and demonstrate comparability to the data obtained from manual FRM samplers, are eligible for comparisons to the NAAQS. A statement on the use of continuous FEM $PM_{2.5}$ monitors is included in Appendix F.

(c) **$PM_{2.5}$ Speciation and Carbon Speciation Sampling and Analysis**

In addition to operating $PM_{2.5}$ samplers that determine only $PM_{2.5}$ mass values, LMAPCD also operates $PM_{2.5}$ speciation samplers that collect samples that are analyzed to determine the chemical makeup of $PM_{2.5}$. Samples are collected on a set of two filters, one comprised of Teflon and a one comprised of nylon, over a 24-hour sampling period. The filters are composed of either Teflon or nylon in order to collect specific types of toxic pollutants.

A second instrument collects a sample on a quartz filter over a 24-hour sampling period. The quartz filter is used to collect a speciated carbon sample.

After collection, the samples are shipped in ice chests to an EPA contract laboratory for analysis. At the laboratory, the samples are analyzed using optical and electron microscopy, thermal-optical analysis, ion chromatography, and x-ray fluorescence to determine the presence and level of specific toxic compounds. Sample results are entered in the AQS data system.

(d) **Sulfur Dioxide (SO_2)**

Instruments used to continuously monitor sulfur dioxide levels in the atmosphere employ the UV fluorescence method. The continuous data output from the instrument is transmitted by telemetry for entry into an automated central data system.

Calibration of these instruments is done dynamically using certified gas mixtures containing a known concentration of sulfur dioxide gas. This gas is then diluted in a specially designed apparatus to give varying known concentrations of sulfur dioxide. These known concentrations are supplied to the instruments, which are adjusted so that instrument output corresponds with the specific concentrations. Calibration curves are prepared for each instrument and each data point is automatically compared to this curve before entry into the data acquisition system.

(e) **Carbon Monoxide (CO)**

Continuous monitoring for carbon monoxide is performed by use of the non-dispersive infrared correlation method. Data is transmitted by telemetry for entry in an automated central data acquisition system.

Calibration of the instrument is performed periodically by using nitrogen or zero air to establish the zero baseline and NIST or NIST traceable gas mixtures of carbon monoxide in air. The span is checked daily using a certified mixture of compressed gas containing approximately 45 parts per million carbon monoxide.

(f) **Ozone (O_3)**

Ozone is monitored using the UV photometry methods. The continuous data output from the instrument is transmitted by telemetry for entry into an automated central data acquisition system.

Monitors are calibrated routinely using an ozone generator, which is calibrated using the ultra violet photometry reference method. Calibration curves are prepared for each instrument and each data point is automatically compared to this curve before entry into the data acquisition system.

(g) **Nitrogen Dioxide (NO_2)**

KDAQ uses the chemiluminescence method for monitoring the nitrogen dioxide level in the ambient air. The continuous data output from the instrument is transmitted by telemetry for entry into an automated central data acquisition system.

LMAPCD utilizes the photolysis method at its near-road site. In this method, an ambient sample stream passes through a cell and is exposed to light from an LED array at a specific wavelength. The process causes nitrogen dioxide to be converted to nitrogen oxide.

Calibration of these instruments is done dynamically using NIST certified gas mixtures of nitric oxide. Through the use of dilution apparatus, varying concentrations are produced and supplied to the monitors, thus producing a specific calibration curve for each instrument. Each data point is automatically compared to this curve before entry into the data acquisition system.

(h) **Lead (Pb)**

To determine lead concentrations, KDAQ uses high volume particulate samplers, which collect samples of suspended particulates onto 8x10 glass fiber filters. The samplers use a brushless motor and a critical flow orifice in order to achieve a sampling flow rate between 1.10 and 1.70 cubic meters per minute (m^3/min) over the course of 24 hours. Upon collection, the filters are sent to an US EPA certified laboratory for analysis. The sample filters are cut into strips, acid

digested according to 40 CFR Part 50, Appendix G, and analyzed by Inductively Coupled Plasma with Mass Spectroscopy Detection (ICP-MS).

LMAPCD sends 46.2 mm PTFE filters, collected via the FRM/FEM intermittent PM_{10} low volume methodology, to an US EPA certified laboratory for analysis. Filters are analyzed via x -ray fluorescence to determine lead concentrations.

(i) **Air Toxics**

Air toxics samples are classified into four categories: metals, volatile organic compounds (VOC), polycyclic aromatic hydrocarbons (PAH), and carbonyls.

Metal samples are collected on 46.2 mm PTFE filter over a 24-hour period from the PM_{10} monitoring method. The filter is weighed before and after the sample run. The gain in weight in relation to the volume of air sampled is used to calculate the concentration in micrograms per cubic meter (ug/m^3). The PTFE filter is to be equilibrated before each weighing for a minimum of 24 hours at a 20-23 degrees C mean temperature and a 30-40% mean relative humidity. The filter is then delivered to an US EPA contract laboratory for analysis by inductively coupled plasma/mass spectrometer analysis.

VOC samples are collected in a passivated vacuum canister. Ambient air is pulled into the canister over a 24-hour sampling period. The sample is shipped to an US EPA contract laboratory for analysis via gas chromatography.

PAH samples are collected by a hi-volume air sampler over a 24-hour period. The sample is collected on a polyurethane foam filter cartridge. After sampling, the filter cartridge is packed on ice and shipped to an US EPA contract laboratory for analysis via gas chromatography/mass spectrometry.

Carbonyl samples are collected on a DPNH cartridge. An ambient air stream flows through the cartridge at a one-liter per minute flow rate for a 24-hour sampling period. The cartridge is packed on ice and shipped to an US EPA contract laboratory for high-pressure liquid chromatography analysis.

(j) **RadNet**

The US EPA RadNet fixed air station consists of a high-volume sampler that pulls ambient air through a 4-inch diameter filter at a rate of 1,000 liters per minute. Filters are collected twice each week. The instrument also consists of two radiation detectors that continuously measure gamma and beta radiation from particulates collected on the air filter. Data is recorded to the monitor's CPU and is sent hourly to the National Air and Radiation Environmental Laboratory (NAREL) for evaluation.

The RadNet network, which has stations in each State, has been used to track environmental releases of radioactivity from nuclear weapons tests and nuclear accidents. RadNet also documents the status and trends of environmental radioactivity. In general, data generated from RadNet provides the information base for making decisions necessary to ensure the protection of public health. The system helps the EPA determine whether additional sampling or other actions are needed in response to particular releases of radioactivity to the environment. RadNet can also provide supplementary information on population exposure, radiation trends, and other aspects of releases. Data is published by NAREL in a quarterly report entitled

Environmental Radiation Data. While the Division operates the monitors, all other aspects, including maintenance and data responsibility, are handled by the US EPA. For more information, please visit the US EPA's RadNet website: http://www.epa.gov/narel/radnet/.

7. Quality Assurance Status

The Division for Air Quality has an extensive quality assurance program to ensure that all air monitoring data collected is accurate and precise. Staff members audit air monitors on a scheduled basis, including those operated by the Louisville Metro Air Pollution Control District and the National Park Service, to ensure that each instrument is calibrated and operating properly. Agencies audit their data monthly and verify that the data reported by each instrument is recorded accurately in the computerized database.

8. Scale of Representativeness

Each station in the monitoring network must be described in terms of the physical dimensions of the air parcel nearest the monitoring station throughout which actual pollutant concentrations are reasonably similar. Area dimensions or scales of representativeness used in the network description are:

(a) Microscale - defines the concentration in air volumes associated with area dimensions ranging from several meters up to about 100 meters.

(b) Middle scale - defines the concentration typical of areas up to several city blocks in size with dimensions ranging from about 100 meters to 0.5 kilometers.

(c) Neighborhood scale - defines the concentrations within an extended area of a city that has relatively uniform land use with dimensions in the 0.5 to 4.0 kilometers.

(d) Urban scale - defines an overall citywide condition with dimensions on the order of 4 to 50 kilometers.

(e) Regional Scale - defines air quality levels over areas having dimensions of 50 to hundreds of kilometers.

The scale of representativeness is closely related to the type of air monitoring site and the objectives of that site. There are six basics types of sites supported by the ambient air monitoring network:

(a) To determine the highest concentrations expected to occur in the area covered by the network.

(b) To determine representative concentrations in areas of high population density.

(c) To determine the impact on ambient pollution levels of significant sources or source categories.

(d) To determine the extent of regional transport of pollutants.

(e) To determine general background concentration levels.

(f) To determine impacts on visibility, vegetation damage, or other welfare-based concerns.

The design intent in siting stations is to correctly match the area dimensions represented by the sample of monitored air with the area dimensions most appropriate for the monitoring objective of the station.

Data Processing and Reporting

All ambient air quality data are stored in a centralized server located at the 14th floor of the Capital Plaza Tower, the Energy and Environment Cabinet (EEC) headquarters in Frankfort, Kentucky. The server is backed up on tape nightly, weekly, and monthly. The backup tape of the server is stored off site of the EEC headquarters and is cycled through use on a monthly schedule. After each month of data has passed all quality assurance checks, the data is transmitted via telemetry to the US EPA's national data storage system known as AQS. Statistical data summaries are generated from this database and compiled to produce the Ambient Air Quality Annual Report. This report may be accessed at the KDAQ website: http://air.ky.gov. The report is located under Resources.

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AIR MONITORING STATION DESCRIPTIONS

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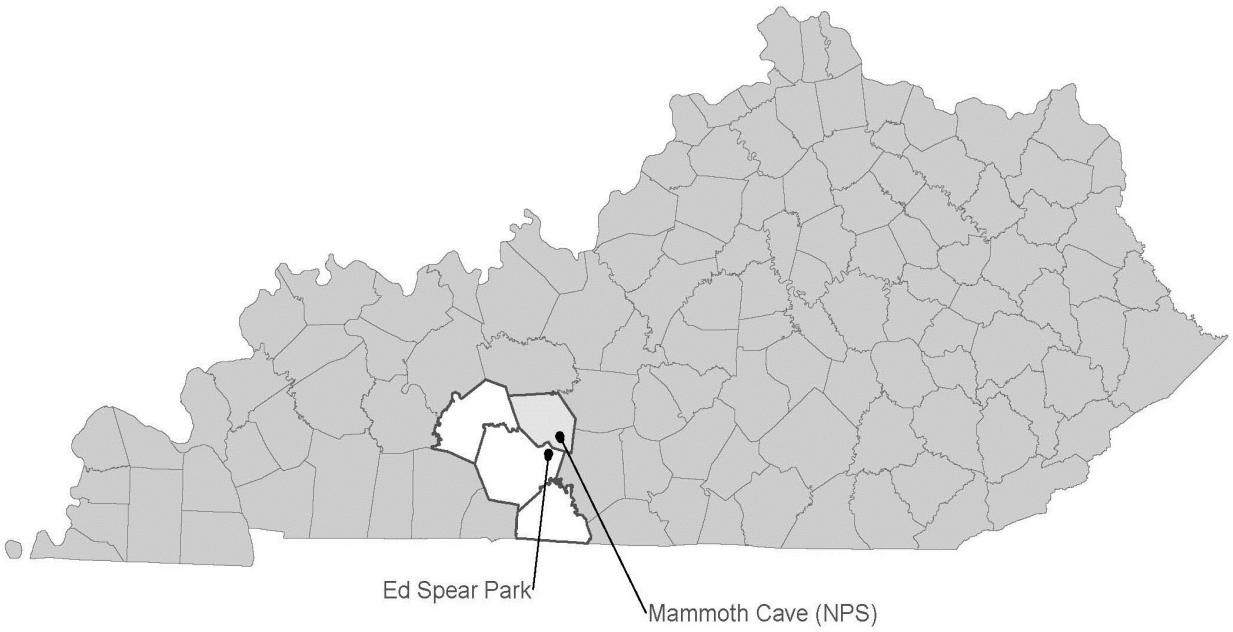
Bowling Green, KY



AQS ID / County	Site Address	PM2.5	Cont. PM2.5	PM10	Cont. PM10	SO2	NO2	NOy	CO	O3	Pb	VOC	Carbonyl	PAH	PM2.5 Spec.	Carbon Spec.	RadNet	Met
21-061-0501 Edmonson	Alfred Cook Road Mammoth Cave (NPS)		1^{tF}			1^{F}		1^{F}	1^{F}	1^{F}								1^{F}
21-227-0009 Warren	226 Sunset Street Smiths Grove	2^{C}	1^{ti}							1^{i}								
Totals	**2**	**2**	**2**			**1**		**1**	**1**	**2**								**1**

Tallies are equal to the actual number of monitors present. Superscripts represent additional information about the network.

F =Non-EPA Federal Monitor

C =Collocated

t =Continuous TEOM Monitor

i =AQI Reported

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CSA/MSA: Bowling Green-Glasgow, KY CSA; Bowling Green, KY MSA
401 KAR 50:020 Air Quality Region: South Central Kentucky Intrastate (105)
Site Name: Mammoth Cave National Park, Houchin Meadow
AQS Site ID: 21-061-0501
Location: Alfred Cook Road, Park City, KY 42160
County: Edmonson
GPS Coordinates: 37.131944, -86.14778 (NAD83)
Date Established: August 1, 1997
Inspection Date: December 10, 2014
Inspection By: Jennifer F. Miller & John Gowins

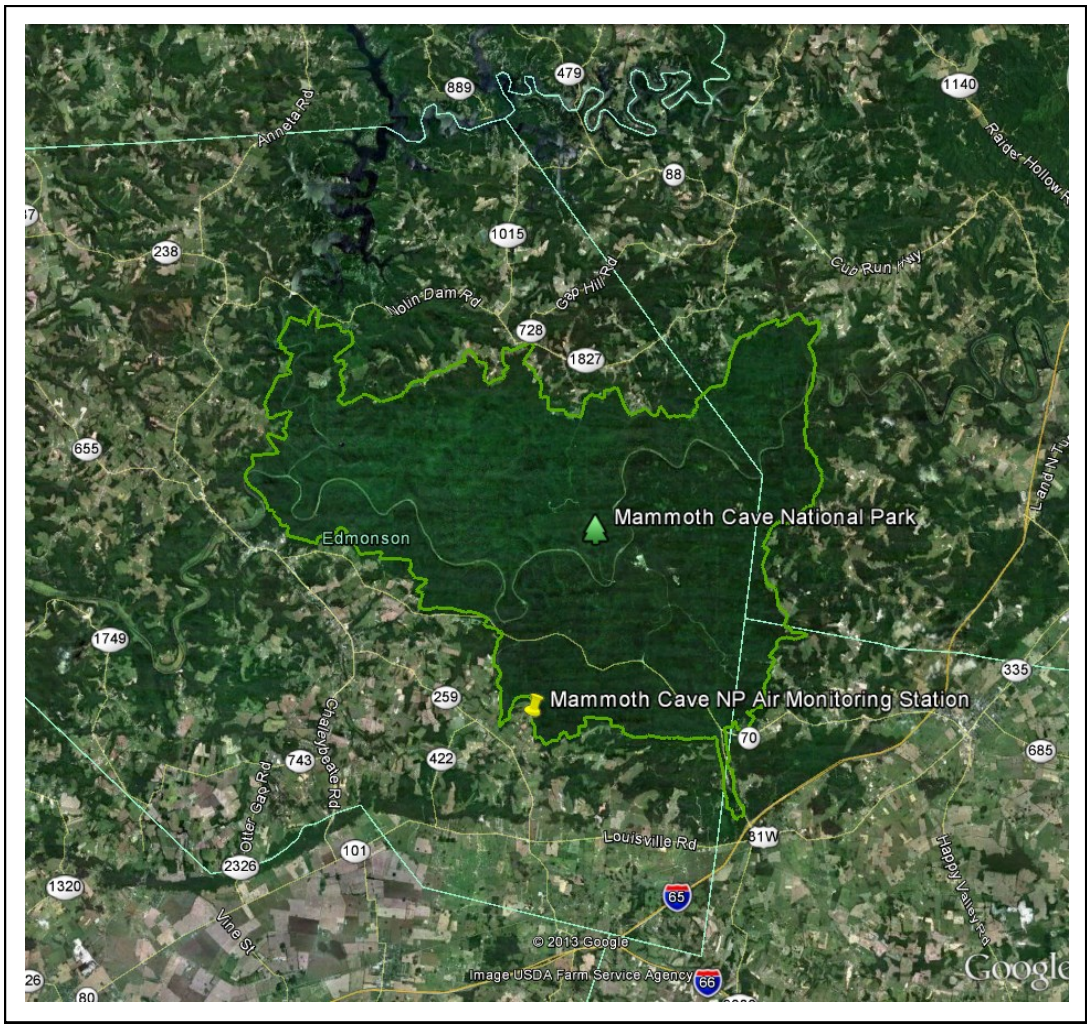
Mammoth Cave National Park was established as one of 156 mandatory Federal Class I Areas nationwide under the Clean Air Act Amendments of 1977. Class I Areas are imparted with the highest level of air quality protections, especially regarding visibility degradation (haze). The Division maintains a cooperative relationship with Mammoth Cave National Park and frequently includes the site's data in air quality analyses; however, the Division does not operate the site nor certify the annual data. While the park conducts a variety of air quality studies, only certain data is reported to the EPA's AQS database.

Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	11.0	CASTNET Non-EPA Federal	Automated Equivalent Method utilizing UV photometry analysis	Continuously
Sulfur Dioxide	10.0	Non-EPA Federal	Automated Equivalent Method utilizing trace level UV fluorescence analysis	Continuously
Total Reactive Nitrogen (NO/NO_Y)	10.0	Non-EPA Federal	Automated method utilizing trace level chemiluminescence analysis	Continuously
Carbon Monoxide	10.0	Non-EPA Federal	Automated Reference Method utilizing trace level non-dispersive infrared analysis	Continuously

Monitors (Continued):

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
$PM_{2.5}$ TEOM	2.5	Non-EPA Federal	Tapered element oscillating microbalance, gravimetric.	Continuously
Meteorological	15.0	Non-EPA Federal	AQM grade instruments for wind speed, wind direction, solar radiation, precipitation, humidity, barometric pressure, and temperature	Continuously



CSA/MSA: Bowling Green-Glasgow, KY CSA; Bowling Green, KY MSA
401 KAR 50:020 Air Quality Region: South Central Kentucky Intrastate (105)
Site Name: Ed Spear Park
AQS Site ID: 21-227-0009
Location: 226 Sunset Street, Smiths Grove, KY 42171
County: Warren
GPS Coordinates: 37.04926, -86. 21487 (NAD83)
Date Established: May 3, 2012
Inspection Date: December 10, 2014
Inspection By: Jennifer F. Miller & John Gowins
Site Approval Status: Siting and monitor design has been approved by the EPA.

This monitoring site was established as a replacement for the Oakland (Warren County) air monitoring station (21-227-0008). In October 2010, the Oakland site was found to be sitting within the doline of a sinkhole and was discontinued. Monitoring was established at the new Ed Spear Park site in May 2012. Inspections found the sample lines and equipment to be in good condition. The sample inlets are 42 meters from the nearest road. The site meets the requirements of 40 CFR 58, Appendices A, C, D and E.

Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards. While not required for the CBSA, the site also provides levels of ozone and particulate matter for daily index reporting.

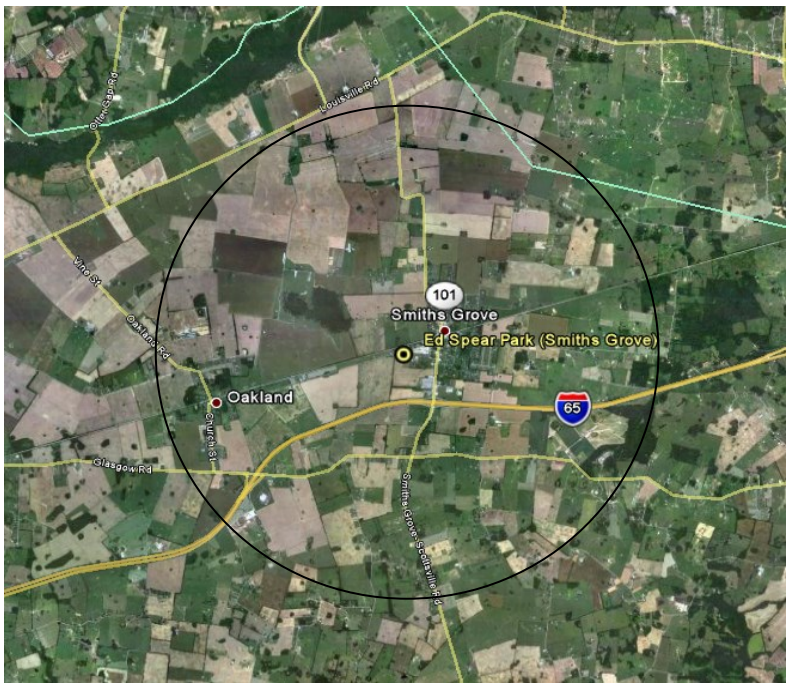
Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	4.5	SLAMS AQI	UV photometry	Continuously March 1 – October 31
$PM_{2.5}$ TEOM	4.6	SPM AQI	Tapered element oscillating microbalance, gravimetric	Continuously
FEM $PM_{2.5}$	2.4	SLAMS	Gravimetric	24-hours every third day
Collocated FRM $PM_{2.5}$	2.4	SLAMS	Gravimetric	24-hours every sixth day

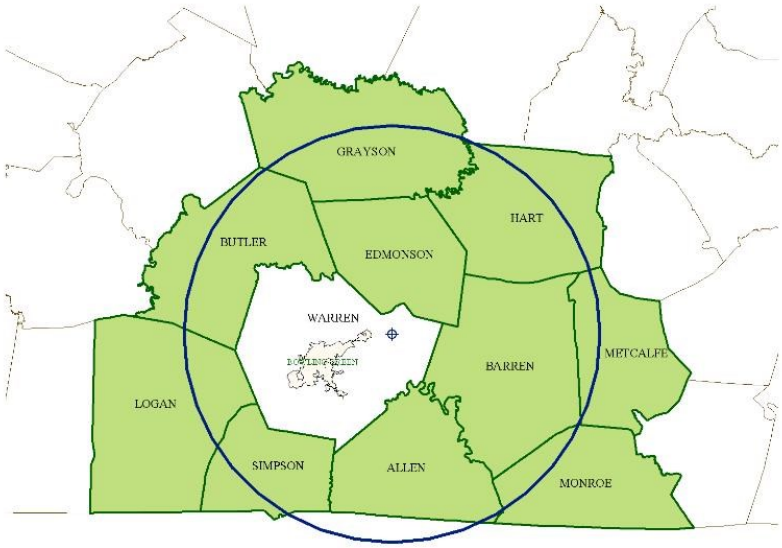
Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
This site represents population exposure on a neighborhood scale for particulates. This site also represents maximum concentrations on an urban scale for ozone.

Neighborhood Scale: Particulates



Urban Scale: Ozone



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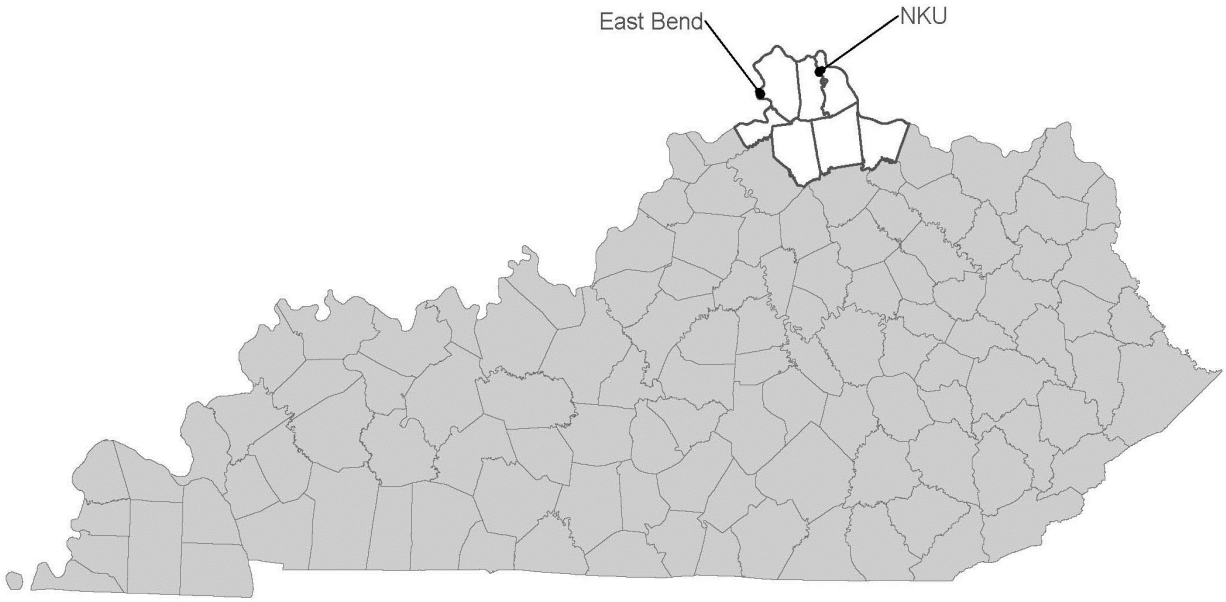
Cincinnati, OH-KY-IN



AQS ID / County	Site Address	PM2.5	Cont. PM2.5	PM10	Cont. PM10	SO2	NO2	NOy	CO	O3	Pb	VOC	Carbonyl	PAH	PM2.5 Spec.	Carbon Spec.	RadNet	Met
21-015-0003 Boone	KY338 & Lower River Union									1								1
21-037-3002 Campbell	524A John's Hill Rd Highland Heights	1	1^{ti}			1^{Pi}	1^{i}			1^{ei}								
Totals	**2**	**1**	**1**			**1**	**1**			**2**								**1**

Tallies are equal to the actual number of monitors present. Superscripts represent additional information about the network.

i =AQI Reported
P =PWEI Monitor
e =Emergency Episode Monitor
t =Continuous TEOM Monitor

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CSA/MSA: Cincinnati-Wilmington-Maysville, OH-KY-IN CSA; Cincinnati, OH-KY-IN MSA
401 KAR 50:020 Air Quality Region: Metropolitan Cincinnati (Ohio) Interstate (079)
Site Name: East Bend
AQS Site ID: 21-015-0003
Location: KY 338 and Lower River Road, Union, KY 41091
County: Boone
GPS Coordinates: 38.918330, -84.852637 (NAD 83)
Date Established: July 1, 1977
Inspection Date: September 10, 2014
Inspection By: Ashley Bedel
Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

The monitoring site is a stationary equipment shelter located at the intersection of KY 338 and Lower River Road near East Bend, Kentucky. The sample inlet is 15 meters from the nearest road. Upon inspection, the sample line and monitor were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices C, D and E.

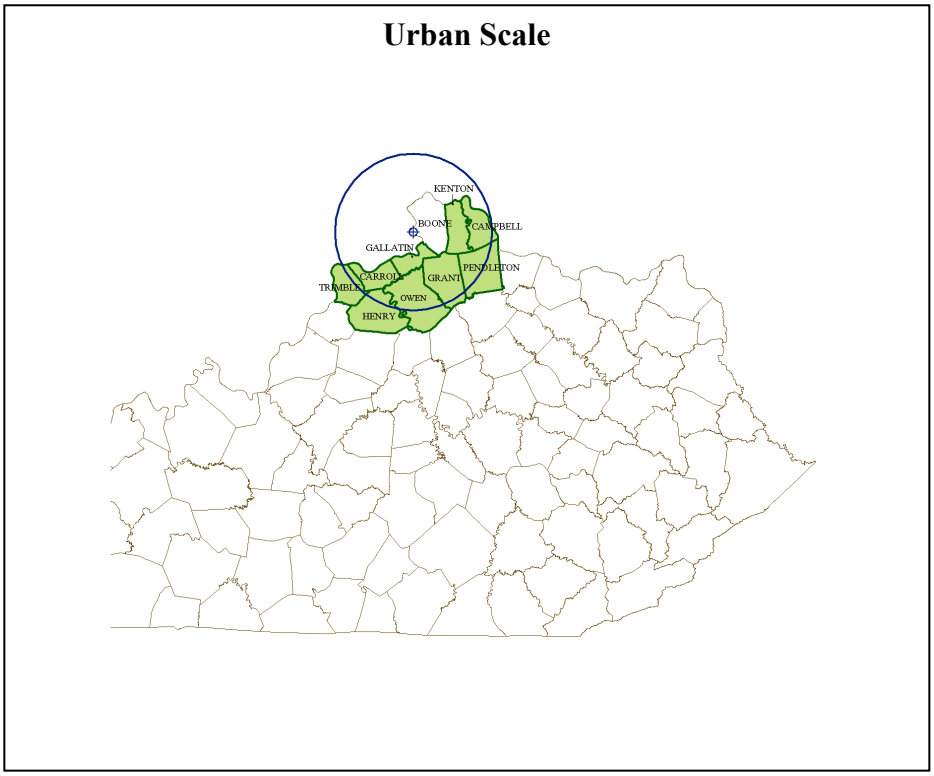
Monitoring Objective:
The monitoring objective is to determine compliance with National Ambient Air Quality Standards.

Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.5	SLAMS	UV photometry	Continuously March 1 – October 31
Meteorological	7.1	SPM-Other	AQM grade instruments for wind speed, wind direction, humidity, barometric pressure and temperature	Continuously

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
This site represents the upwind background levels on an urban scale for ozone.



CSA/MSA: Cincinnati-Wilmington-Maysville, OH-KY-IN CSA; Cincinnati, OH-KY-IN MSA
401 KAR 50:020 Air Quality Region: Metropolitan Cincinnati (Ohio) Interstate (079)
Site Name: Northern Kentucky University (NKU)
AQS Site ID: 21-037-3002
Location: 524A John's Hill Road, Highland Heights, KY 41076
County: Campbell
GPS Coordinates: 39.02181, -84.47445 (NAD 83)
Date Established: August 1, 2007
Inspection Date: September 10, 2014
Inspection By: Ashley Bedel
Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

The monitoring site is a stationary equipment shelter located on farmland owned by Northern Kentucky University in Highland Heights, Kentucky. The sample inlets are 23 meters from the nearest road, which is a gravel service-drive for a radio tower. Upon inspection, the sample lines and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices A, C, D, E and G.

Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards; to provide ozone, particulate, nitrogen dioxide, and sulfur dioxide levels for daily index reporting; and to detect elevated pollutant levels for activation of emergency control procedures for ozone.

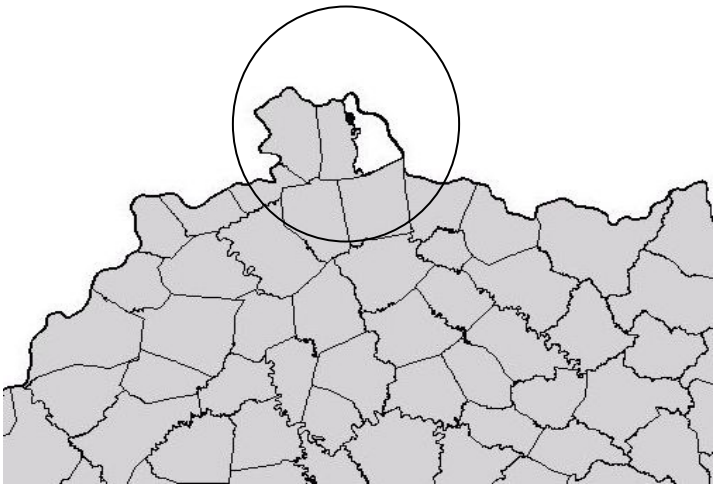
Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Nitrogen Dioxide	3.8	SLAMS AQI	Chemiluminescence	Continuously
AEM Ozone	3.8	SLAMS AQI EPISODE	UV photometry	Continuously March 1 – October 31
FRM $PM_{2.5}$	4.6	SLAMS	Gravimetric	24-hours every third day
$PM_{2.5}$ TEOM	4.6	SPM AQI	Tapered element oscillating microbalance, gravimetric	Continuously
AEM Sulfur Dioxide	3.9	SLAMS (PWEI) AQI	UV fluorescence	Continuously

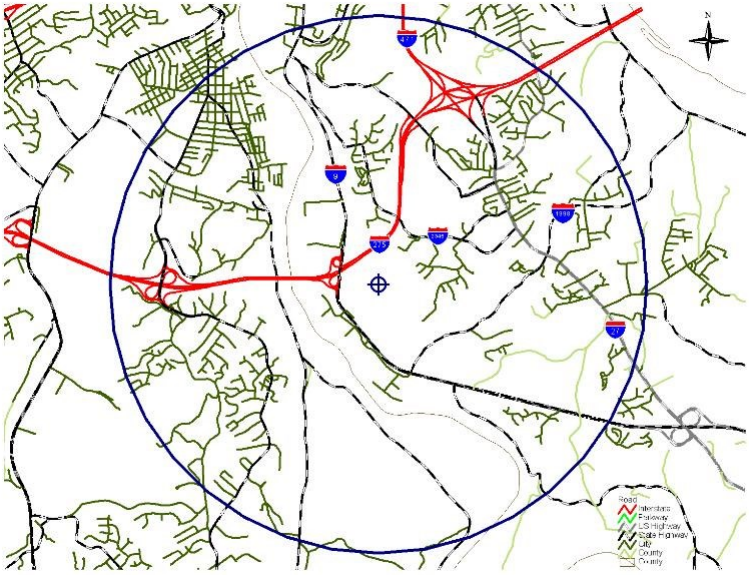
Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
This site represents population exposure for nitrogen dioxide, ozone, and sulfur dioxide on an urban scale. This site also represents population exposure on a neighborhood scale for particulate matter.

Urban Scale: Nitrogen Dioxide, Ozone, Sulfur Dioxide



Neighborhood Scale: Particulates



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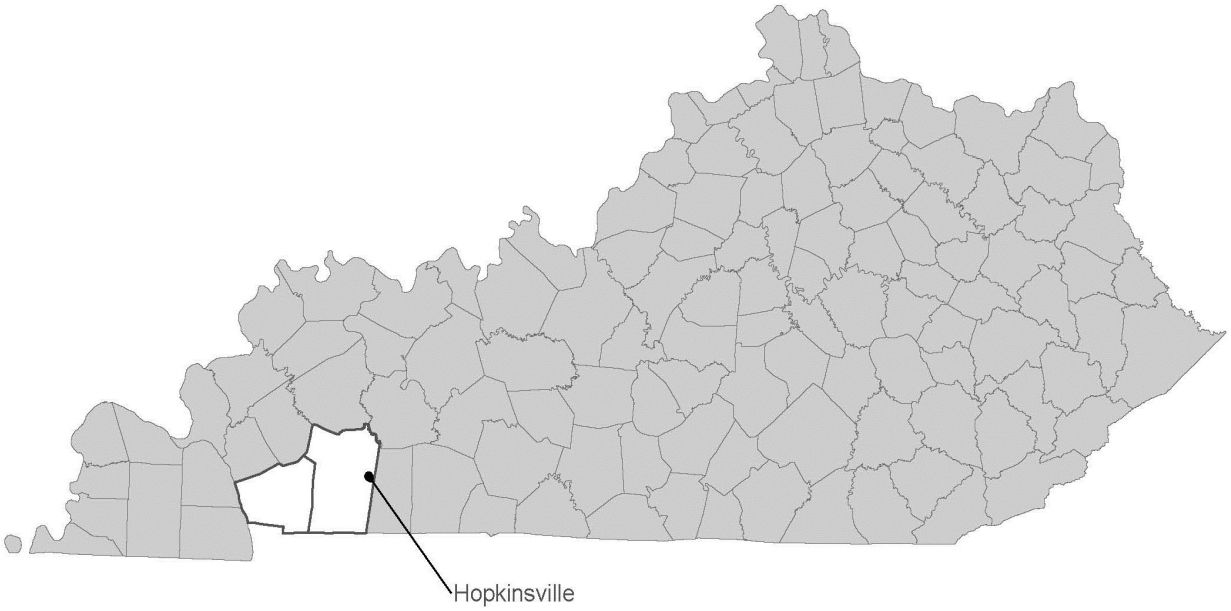
Clarksville, TN-KY



AQS ID / County	Site Address	PM2.5	Cont. PM2.5	PM10	Cont. PM10	SO2	NO2	NOy	CO	O3	Pb	VOC	Carbonyl	PAH	PM2.5 Spec.	Carbon Spec.	RadNet	Met
21-047-0006	10800 Pilot Rock Rd	1[X]								1								1
Christian	Hopkinsville																	
Totals	**1**	**1**								**1**								**1**

Tallies are equal to the actual number of monitors present. Superscripts represent additional information about the network.

X =Regional Transport PM2.5 Monitor

Rev. 4/20/15

CSA/MSA: Clarksville, TN- KY MSA
401 KAR 50:020 Air Quality Region: Paducah - Cairo Interstate (072)
Site Name: Hopkinsville
AQS Site ID: 21-047-0006
Location: 10800 Pilot Rock Road, Hopkinsville, KY 42240
County: Christian
GPS Coordinates: 36.91171, -87.32337 (NAD 83)
Date Established: January 1, 1999
Inspection Date: October 7, 2014
Inspection By: Jennifer F. Miller
Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

The monitoring site consists of a $PM_{2.5}$ monitoring platform and an adjacent stationary equipment shelter. The site is located in a field on the property of a private residence, located at 10800 Pilot Rock Road in Hopkinsville, Kentucky. The sample inlets are 108 meters from the nearest road. Upon inspection, the sample inlets and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices C, D and E.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards and to determine levels of interstate regional transport of fine particulate matter and ozone.

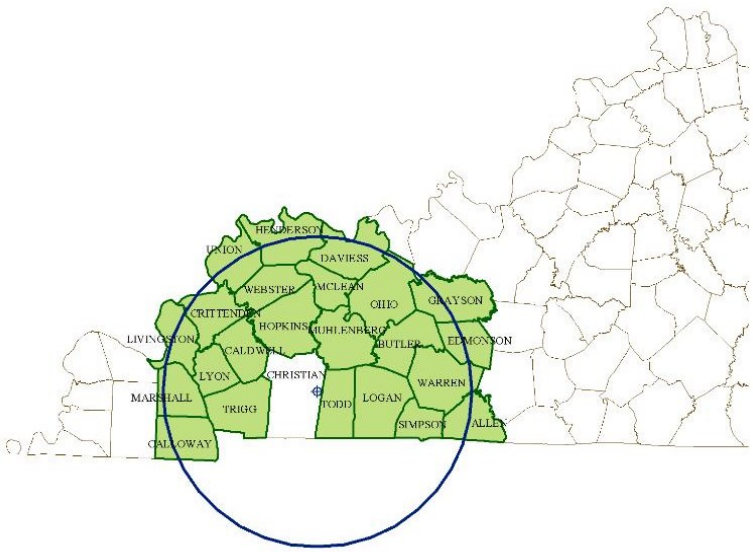
Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.4	SLAMS	UV photometry	Continuously March 1 – October 31
FEM $PM_{2.5}$	3.3	SLAMS	Gravimetric	24-hours every third day
Meteorological	TBD	SPM-Other	AQM grade instruments for wind speed, wind direction, relative humidity, barometric pressure, and temperature	Continuously

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
This site represents population exposure on a regional scale for ozone and $PM_{2.5}$.

Regional Scale: Ozone, Particulates



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Elizabethtown-Fort Knox, KY

AQS ID / County	Site Address	PM2.5	Cont. PM2.5	PM10	Cont. PM10	SO2	NO2	NOy	CO	O3	Pb	VOC	Carbonyl	PAH	PM2.5 Spec.	Carbon Spec.	RadNet	Met
21-093-0006 Hardin	801 North Miles St. Elizabethtown	2^{C}	1^{t}							1								
Totals	**1**	**2**	**1**							**1**								

Tallies are equal to the actual number of monitors present. Superscripts represent additional information about the network.

C =Collocated

t =Continuous TEOM Monitor

Rev. 4/20/15

CSA/MSA: Louisville/Jefferson County-Elizabethtown-Madison, KY-IN CSA; Elizabethtown-Fort Knox, KY MSA
401 KAR 50:020 Air Quality Region: North Central Kentucky Intrastate (104)
Site Name: Elizabethtown
AQS Site ID: 21-093-0006
Location: American Legion Park, 801 North Miles Street, Elizabethtown, KY 42701
County: Hardin
GPS Coordinates: 37.705612, -85.2629 (NAD 83)
Date Established: February 24, 2000
Inspection Date: October 1, 2014
Inspection By: Ashley Bedel
Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

The monitoring site is a stationary equipment shelter located near the tennis courts on the grounds of the American Legion Park in Elizabethtown, Kentucky. In 2012, the site was moved approximately 23 meters due to potential expansion of a nearby park building. From the new location, the sample inlets are approximately 35 meters from the nearest road. Upon inspection, the sample lines and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices A, C, D, E and G.

Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards.

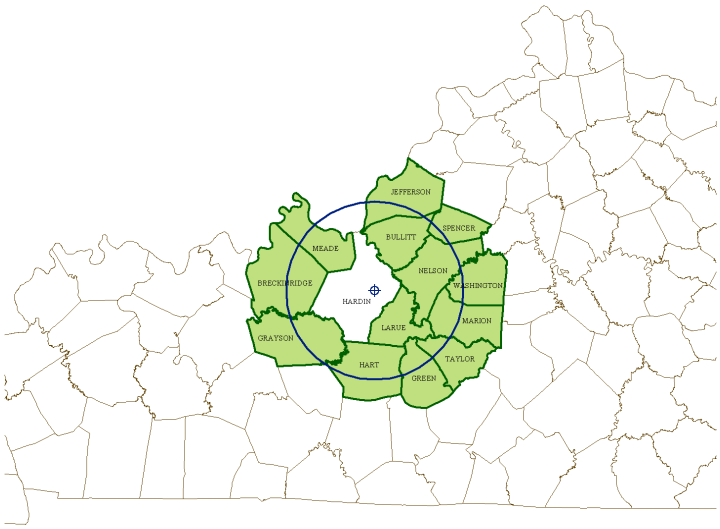
Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.4	SLAMS	UV photometry	Continuously March 1 – October 31
FEM $PM_{2.5}$	4.6	SLAMS	Gravimetric	24-hours every third day
Collocated FEM $PM_{2.5}$	4.6	SLAMS	Gravimetric	24-hours every sixth day
$PM_{2.5}$ TEOM	4.4	SPM	Tapered elemental oscillating microbalance, gravimetric	Continuously

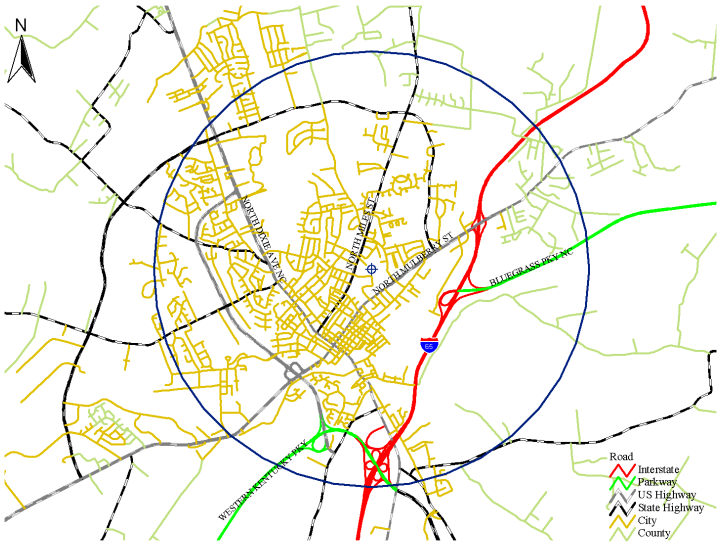
Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
This site represents population exposure on a neighborhood scale for particulates and population exposure on an urban scale for ozone.

Urban Scale: Ozone



Neighborhood Scale: Particulates



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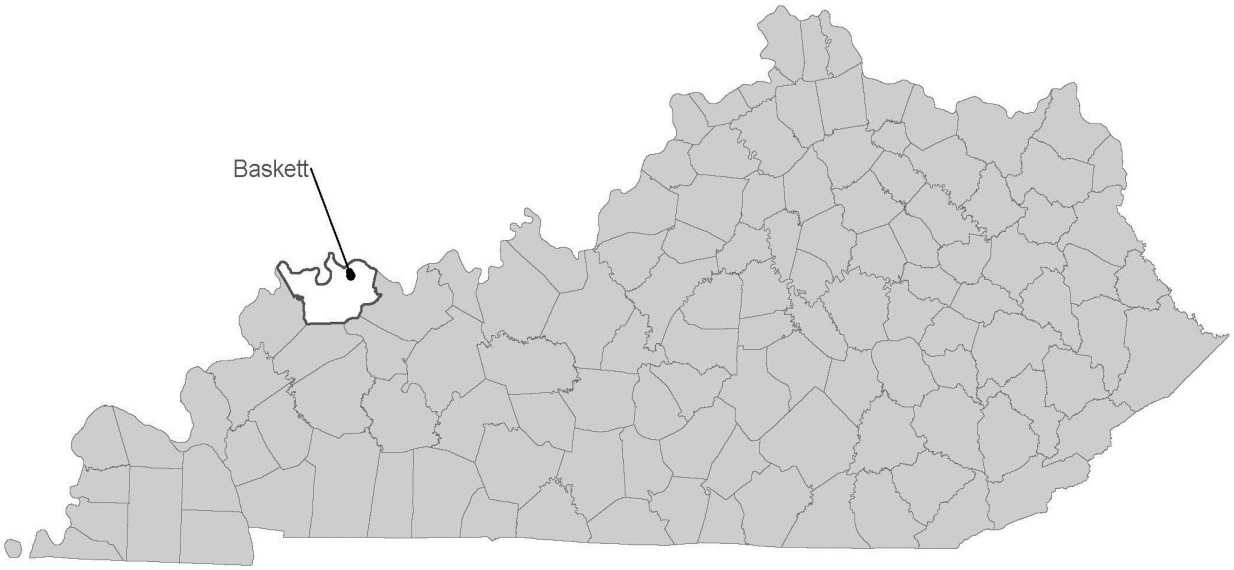
Evansville, IN-KY



AQS ID / County	Site Address	PM2.5	Cont. PM2.5	PM10	Cont. PM10	SO2	NO2	NOy	CO	O3	Pb	VOC	Carbonyl	PAH	PM2.5 Spec.	Carbon Spec.	RadNet	Met
21-101-0014	7492 Dr. Hodge Rd.	1	1^{t}	1^{m}		1^{P}				1								
Henderson	Baskett																	
Totals	**1**	**1**	**1**	**1**		**1**				**1**								

Tallies are equal to the actual number of monitors present. Superscripts represent additional information about the network.

P =PWEI Monitor

t =Continuous TEOM Monitor

m =PM10 Filter Analyzed for Metals

Rev. 4/20/15

CSA/MSA: Evansville, IN-KY MSA
401 KAR 50:020 Air Quality Region: Evansville-Owensboro-Henderson Interstate (077)
Site Name: Baskett
AQS Site ID: 21-101-0014
Location: Baskett Fire Department, 7492 Dr. Hodge Road, Henderson, KY 42420
County: Henderson
GPS Coordinates: 37.87120, -87.46375 (NAD 83)
Date Established: February 27, 1992
Inspection Date: November 25, 2014
Inspection By: Jennifer F. Miller
Site Approval Status: Site and monitors meet design criteria for the monitoring network.

The monitoring site is a stationary equipment shelter located on the grounds of the Baskett Fire Department in Baskett, Kentucky. Upon inspection, the sample lines and monitors were found to be in good condition. The sample inlets are 6.5 meters from the nearest road, which is closer than the allowable-distances stated by CFR. Due to the small traffic count of the street and the unlikely influence of vehicles on data, KDAQ has received EPA-approval for a waiver from the required road-distances stated by 40 CFR 58, Appendix E. Otherwise, the site meets the requirements of 40 CFR 58, Appendices C, D, E and G.

Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards.

Monitors:

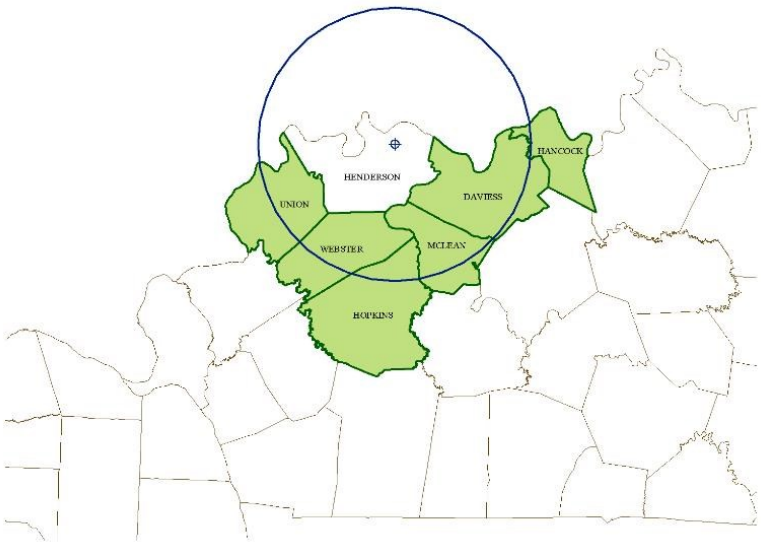
Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.9	SPM	UV photometry	Continuously March 1 – October 31
FEM $PM_{2.5}$	4.7	SLAMS	Gravimetric	24-hours every third day
$PM_{2.5}$ TEOM	4.5	SPM	Tapered element oscillating microbalance, gravimetric	Continuously
FRM PM_{10}	4.5	SLAMS	Gravimetric	24-hours every sixth day
- PM_{10} Metals		SPM-Other	Determined from the PM_{10} sample using EPA method IO 3.5	Same as PM_{10}
AEM Sulfur Dioxide	3.5	SLAMS (PWEI)	UV fluorescence	Continuously

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
This site represents maximum concentrations on an urban scale for ozone. This site also represents population exposure on a neighborhood scale for particulates and sulfur dioxide.

Neighborhood Scale: Particulates, Sulfur Dioxide

Urban Scale: Ozone



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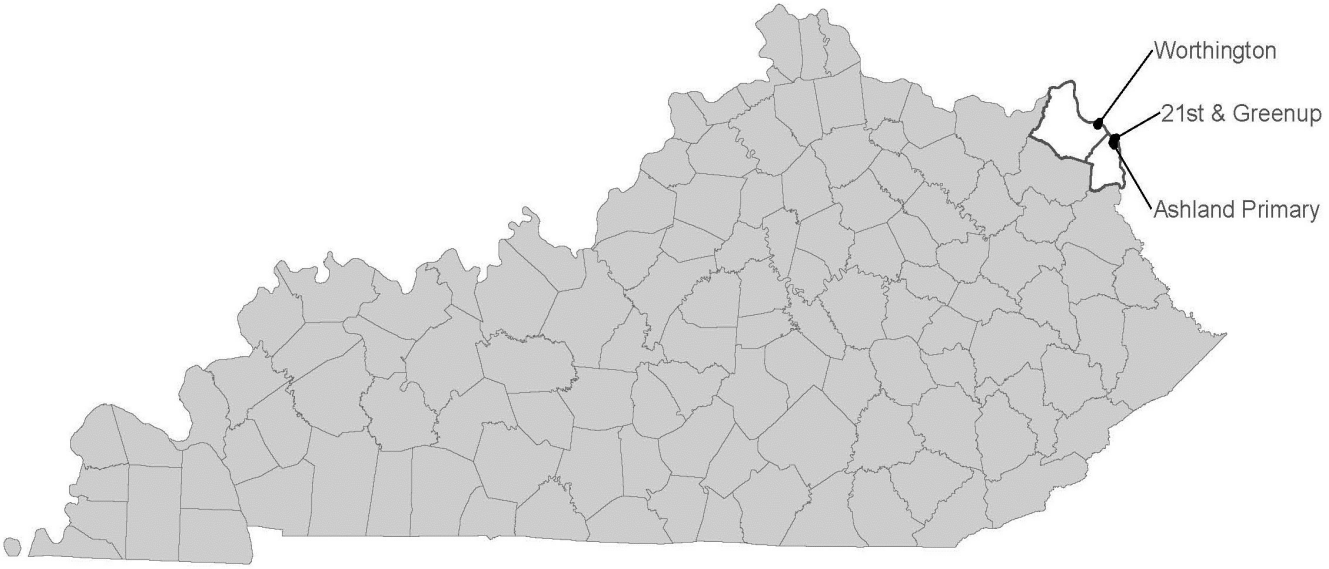
Huntington-Ashland, WV-KY-OH



AQS ID / County	Site Address	PM2.5	Cont. PM2.5	PM10	Cont. PM10	SO2	NO2	NOy	CO	O3	Pb	VOC	Carbonyl	PAH	PM2.5 Spec.	Carbon Spec.	RadNet	Met
21-019-0002	122 22nd Street			2^{Cm}														
Boyd	Ashland																	
21-019-0017	2924 Holt Street	1	1^{ti}			1^{ei}	1^{ei}			1^{ei}		1						1
Boyd	Ashland																	
21-089-0007	Scott St. & Center Ave.					1^{e}				1^{e}								
Greenup	Worthington																	
Totals	**3**	**1**	**1**	**2**		**2**	**1**			**2**		**1**						**1**

Tallies are equal to the actual number of monitors present. Superscripts represent additional information about the network.

i =AQI Reported
C =Collocated
t =Continuous TEOM Monitor
m =PM10 Filter Analyzed for Metals
e =Emergency Episode Monitor

Rev. 4/20/15

CSA/MSA: Charleston-Huntington-Ashland, WV-OH-KY CSA; Huntington-Ashland, WV-KY-OH MSA
401 KAR 50:020 Air Quality Region: Huntington (WV)-Ashland (KY)-Portsmouth-Ironton (OH) Interstate (103)
Site Name: 21st and Greenup
AQS Site ID: 21-019-0002
Location: 122 22nd Street, Ashland, KY 41101
County: Boyd
GPS Coordinates: 38.47676, -82.63137 (NAD 83)
Date Established: April 2, 1978
Inspection Date: November 21, 2014
Inspection By: Jennifer F. Miller
Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

The monitoring site is located on the west end of the roof of the Valvoline Oil complex building in Ashland, Kentucky. The building is one story tall. The sample inlets are 71.3 meters from the nearest road. Upon inspection, the sample inlets and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices A, C, D and E.

Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards and to measure concentrations of a sub-group of air toxics.

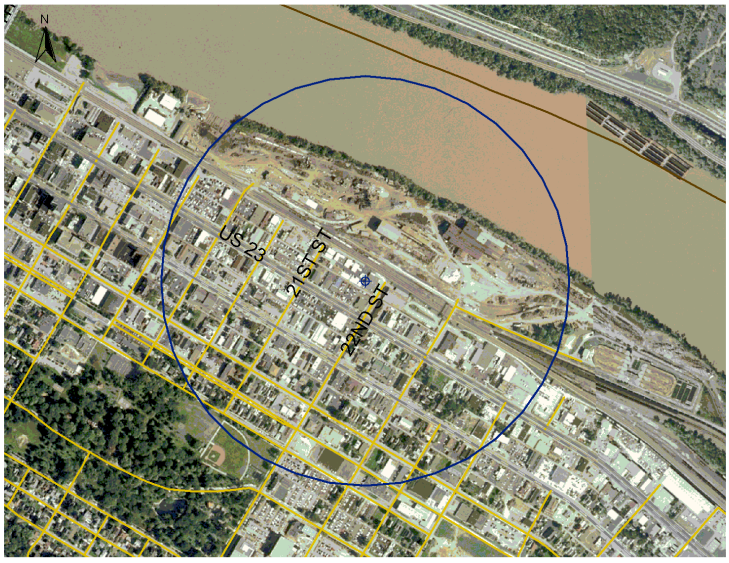
Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
FEM PM_{10}	7.7	SLAMS	Gravimetric	24-hours every sixth day
- Metals PM_{10}		SPM-Other	Determined from the PM_{10} sample using EPA method IO 3.5	Same as PM_{10}
Collocated FEM PM_{10}	7.6	SLAMS	Gravimetric	24-hours every twelfth day
- Collocated Metals PM_{10}		SPM-Other	Determined from the PM_{10} sample using EPA method IO 3.5	24-hours; six samples per year

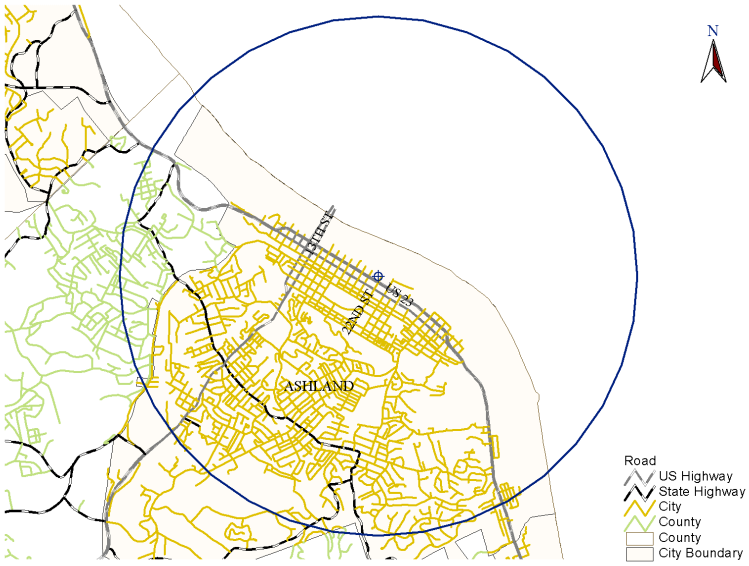
Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
The site represents maximum concentrations on a middle scale for particulates. This site also represents population exposure on a neighborhood scale for air toxics.

Middle Scale: Particulates



Neighborhood Scale: Air Toxics



CSA/MSA: Charleston-Huntington-Ashland, WV-OH-KY CSA; Huntington-Ashland, WV-KY-OH MSA
401 KAR 50:020 Air Quality Region: Huntington (WV)-Ashland (KY)-Portsmouth-Ironton (OH) Interstate (103)
Site Name: Ashland Primary (FIVCO)
AQS Site ID: 21-019-0017
Location: FIVCO Health Department, 2924 Holt Street, Ashland, KY 41101
County: Boyd
GPS Coordinates: 38.45934, -82.64041 (NAD 83)
Date Established: January 1, 1999
Inspection Date: November 20, 2014
Inspection By: Jennifer F. Miller

The monitoring site is a stationary equipment shelter located on the grounds of the health department building in Ashland, Kentucky. The sample inlets are 70 meters from the nearest road. Upon inspection, the sample lines and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices A, C, D, E and G.

Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards; to detect elevated pollutant levels for activation of emergency control procedures for nitrogen dioxide, ozone, and sulfur dioxide; and to provide pollutant levels for daily air quality index reporting.

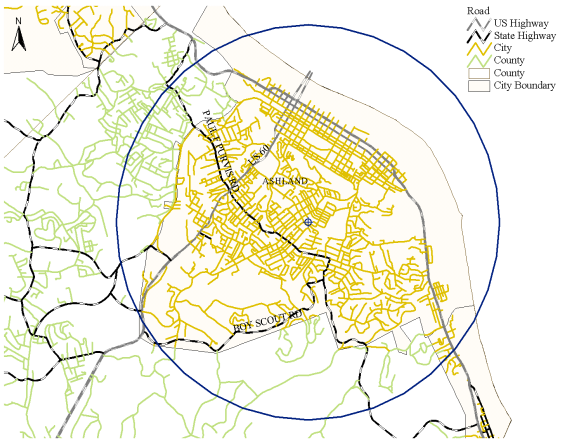
Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Nitrogen Dioxide	4.3	SLAMS AQI EPISODE	Chemiluminescence	Continuously
AEM Sulfur Dioxide	4.3	SLAMS AQI EPISODE	UV fluorescence	Continuously
AEM Ozone	4.3	SLAMS AQI EPISODE	UV photometry	Continuously March 1 – October 31
FRM $PM_{2.5}$	4.8	SLAMS	Gravimetric	24-hours every third day
$PM_{2.5}$ TEOM	4.7	SPM AQI	Tapered element oscillating microbalance, gravimetric	Continuously
Volatile Organic Compounds	3.8	SPM-Other	EPA method TO-15	24-hours every sixth day
Meteorological	5.9	SPM-Other	AQM grade instruments for wind speed, wind direction, humidity, barometric pressure, and temperature	Continuously

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

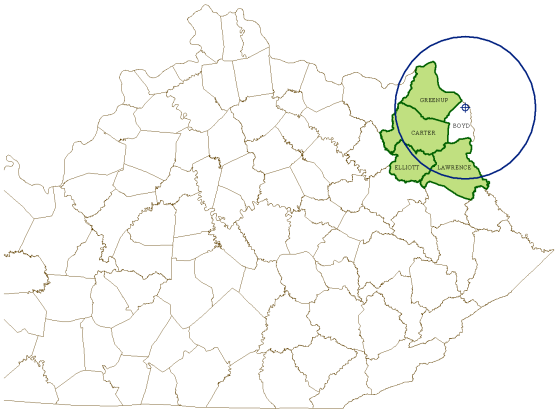
Area Representativeness:
This site represents population exposure on a neighborhood scale for air toxics, ozone, and sulfur dioxide. This site also represents maximum concentrations on a middle scale for particulates, as well as an urban scale for nitrogen dioxide.

Neighborhood Scale: Air Toxics, Ozone, Sulfur Dioxide



Middle Scale: Particulates

Urban Scale: Nitrogen Dioxide



CSA/MSA: Charleston-Huntington-Ashland, WV-OH-KY CSA; Huntington-Ashland, WV-KY-OH MSA
401 KAR 50:020 Air Quality Region: Huntington (WV)-Ashland (KY)-Portsmouth-Ironton (OH) Interstate (103)
Site Name: Worthington
AQS Site ID: 21-089-0007
Location: Scott Street & Center Avenue, Worthington, KY 41183
County: Greenup
GPS Coordinates: 38.548136, -82.731163 (NAD 83)
Date Established: October 12, 1980
Inspection Date: November 11, 2014
Inspection By: Jennifer F. Miller
Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

The monitoring site is a stationary equipment shelter located on the grounds of a water tower near the intersection of Scott Street and Center Avenue in Worthington, Kentucky. The sample inlets are 18 meters from the nearest road. Upon inspection, the sample lines and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices C, D, E and G.

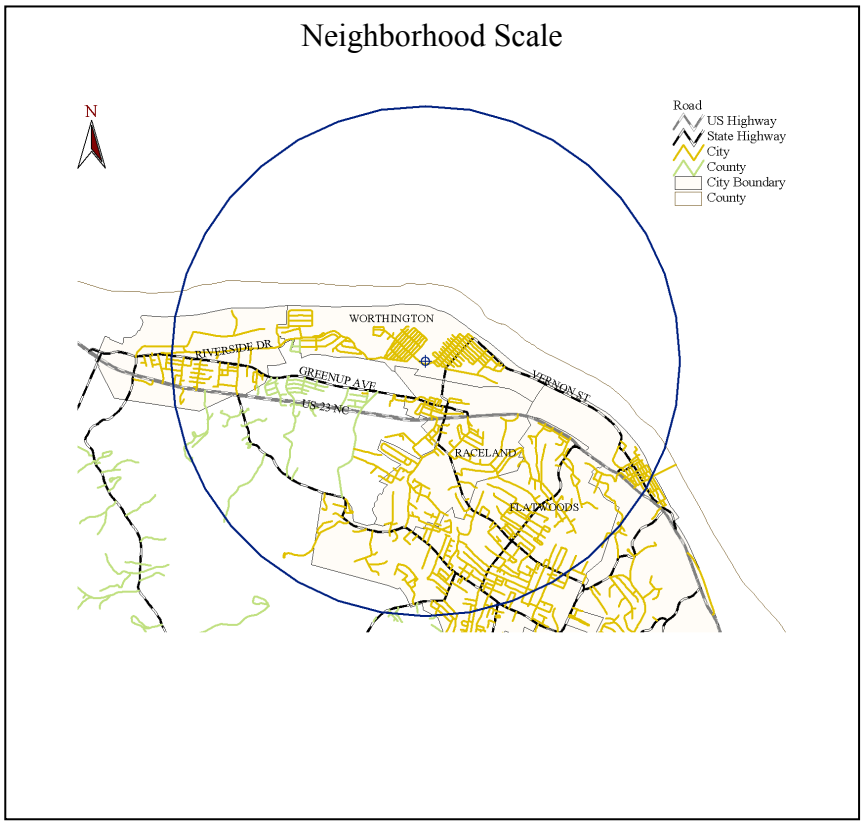
Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards; to detect elevated pollutant levels for activation of emergency control procedures for ozone and sulfur dioxide.

Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	4.2	SLAMS EPISODE	UV photometry	Continuously March 1 – October 31
AEM Sulfur Dioxide	4.2	SPM EPISODE	UV fluorescence	Continuously

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
This site represents population exposure on a neighborhood scale for ozone and sulfur dioxide.



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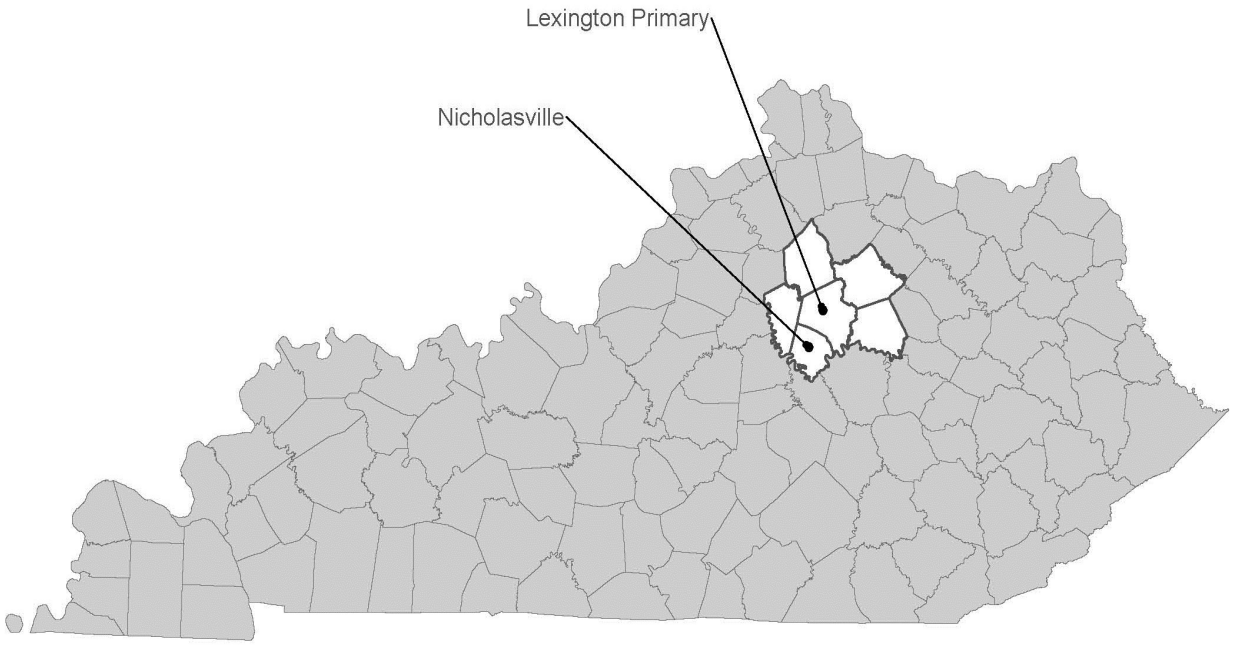
Lexington-Fayette, KY



AQS ID / County	Site Address	PM2.5	Cont. PM2.5	PM10	Cont. PM10	SO2	NO2	NOy	CO	O3	Pb	VOC	Carbonyl	PAH	PM2.5 Spec.	Carbon Spec.	RadNet	Met
21-067-0012	650 Newtown Pike	1	1^{ti}	1^{m}		1^{ieP}	1^{ier}			1^{ie}		1					1	
Fayette	Lexington																	
21-113-0001	260 Wilson Drive					1				1								1
Jessamine	Nicholasville																	
Totals	**2**	**1**	**1**	**1**		**2**	**1**			**2**		**1**					**1**	**1**

Tallies are equal to the actual number of monitors present. Superscripts represent additional information about the network.

i =AQI
r =RA-40 Monitor
t =Continuous TEOM Monitor
m =PM10 Filter Analyzed for Metals
P =PWEI Monitor
e =Emergency Episode Monitor

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CSA/MSA: Lexington-Fayette-Richmond-Frankfort, KY CSA; Lexington-Fayette, KY MSA
401 KAR 50:020 Air Quality Region: Bluegrass Intrastate (102)
Site Name: Lexington Primary
AQS Site ID: 21-067-0012
Location: Fayette County Health Department, 650 Newtown Pike, Lexington, KY 40508
County: Fayette
GPS Coordinates: 38.06503, -84.49761 (NAD 83)
Date Established: November 8, 1979
Inspection Date: September 24, 2014
Inspection By: Jennifer F. Miller
Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

The monitoring site is a stationary equipment shelter located on the grounds of the Fayette County Health Department building in Lexington, Kentucky. The sample inlets are 122 meters from the nearest road. Upon inspection, the sample lines and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices A, C, D, E and G.

Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards; to detect elevated pollutant levels for activation of emergency control procedures for nitrogen dioxide, ozone, particulates, and sulfur dioxide; and to provide pollutant levels for daily air quality index reporting.

Additionally, the nitrogen dioxide monitor has been approved as a RA-40 monitor. According to CFR, each EPA Regional Administrator is required to collaborate with agencies to establish or designate 40 NO_2 monitoring locations, with a primary focus on protecting susceptible and vulnerable populations.

Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
ARM Nitrogen Dioxide	4.1	SLAMS (RA-40) AQI EPISODE	Chemiluminescence	Continuously
AEM Ozone	3.8	SLAMS AQI EPISODE	UV photometry	Continuously March 1 – October 31
FEM $PM_{2.5}$	4.7	SLAMS	Gravimetric	24-hours every third day
PM_{10}	4.5	SLAMS	Gravimetric	24-hours every sixth day
- PM_{10} Metals		SPM-Other	Determined from the PM_{10} sample using EPA method IO 3.5	Same as PM_{10}
$PM_{2.5}$ Speciation	2.1	SPM	Ion chromatography and X-ray fluorescence	24-hours every sixth day*

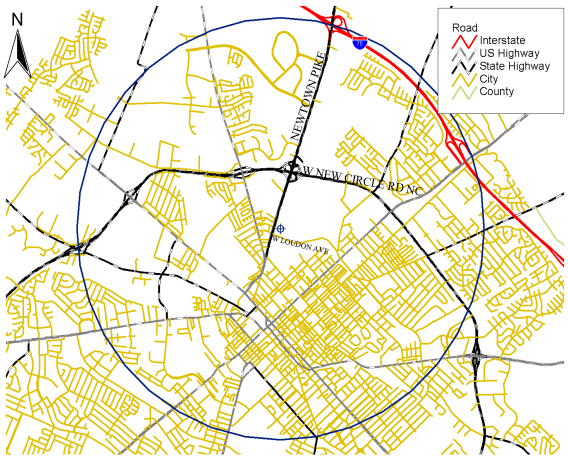
Carbon Speciation	2.4	SPM	Thermal-optical	24-hours every sixth day*
AEM Sulfur Dioxide	3.6	SLAMS (PWEI) AQI EPISODE	UV fluorescence	Continuously
$PM_{2.5}$ TEOM	4.6	SPM AQI	Tapered element oscillating microbalance, gravimetric	Continuously
Volatile Organics Compound	3.4	SPM-Other	EPA method TO-15	24-hours every sixth day
Radiation	2.0	RadNet	RadNet fixed stationary monitor, manual and automated methods	Continuously & 2 weekly filters

* ***Sampling contingent upon continued availability of EPA funding.***

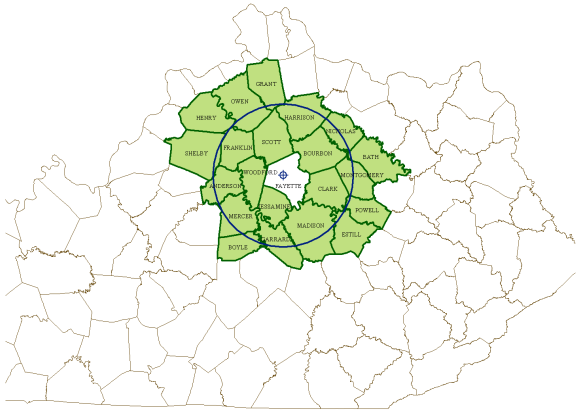
Quality Assurance Status:
All quality assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
This site represents population exposure on a neighborhood scale for particulates, sulfur dioxide and ozone. This site also represents population exposure on an urban scale for nitrogen dioxide and air toxics.

Neighborhood Scale: Particulates, Sulfur Dioxide, Ozone



Urban Scale: Nitrogen Dioxide, Air Toxics



CSA/MSA: Lexington-Fayette-Richmond-Frankfort, KY CSA; Lexington-Fayette, KY MSA
401 KAR 50:020 Air Quality Region: Bluegrass Intrastate (102)
Site Name: Nicholasville
AQS Site ID: 21-113-0001
Location: KYTC Maintenance Garage, 260 Wilson Drive, Nicholasville, KY 40356
County: Jessamine
GPS Coordinates: 37.89147, -84.58825 (NAD 83)
Date Established: August 1, 1991
Inspection Date: September 22, 2014
Inspection By: Jennifer F. Miller
Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

The monitoring site is a stationary equipment shelter located on the grounds of the Kentucky Transportation Cabinet garage in Nicholasville, Kentucky. The sample inlets are 110 meters from the nearest road. Upon inspection, the sample inlets and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices C, D, E and G.

Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards and to provide ozone data upwind of the Lexington area.

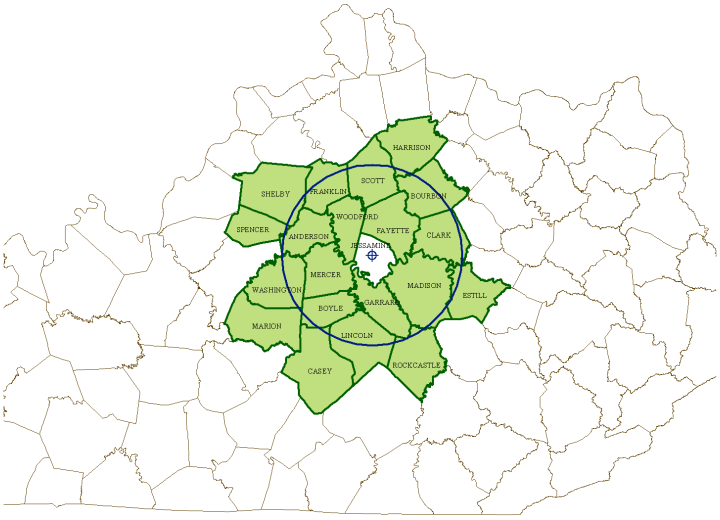
Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.9	SLAMS	UV photometry	Continuously March 1 – October 31
AEM Sulfur Dioxide	3.9	SPM	UV fluorescence	Continuously
Meteorological	5.9	SPM-Other	AQM grade instruments for wind speed, wind direction, temperature, and barometric pressure	Continuously

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
This site represents population exposure on an urban scale.

Urban Scale: Ozone and Sulfur Dioxide



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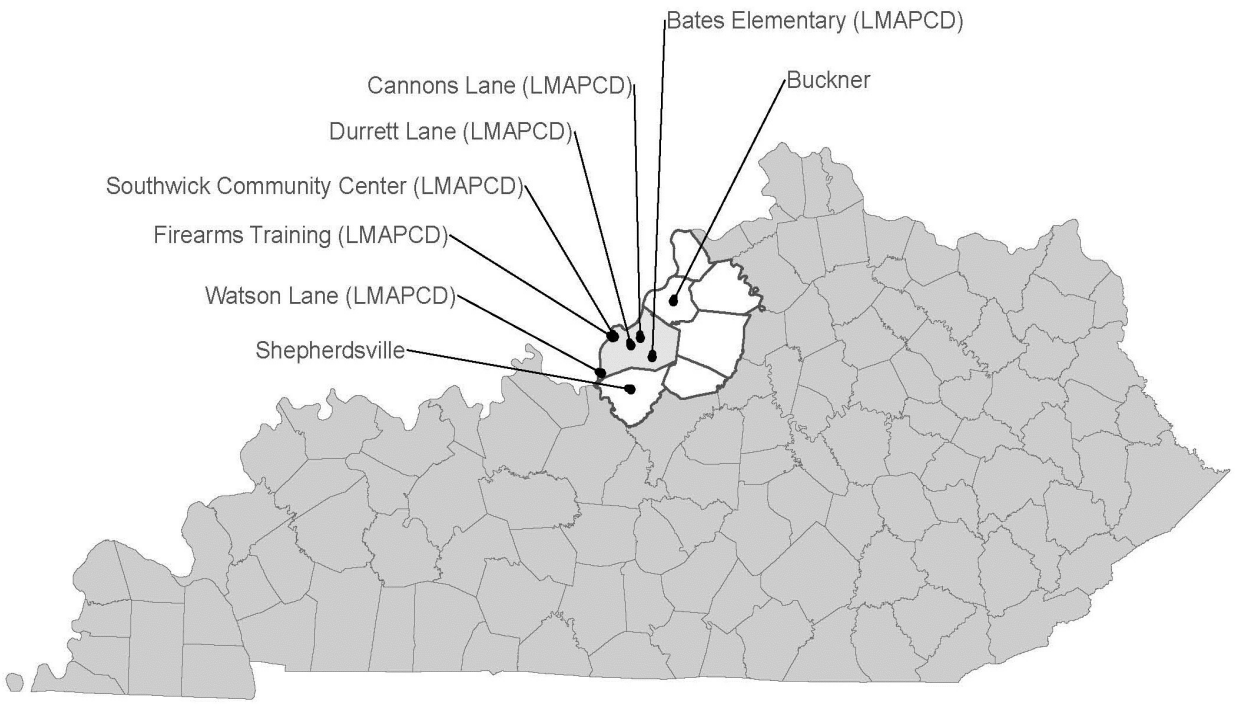
Louisville/Jefferson County, KY-IN



AQS ID / County	Site Address	PM2.5	Cont. PM2.5	PM10	Cont. PM10	SO2	NO2	NOy	CO	O3	Pb	VOC	Carbonyl	PAH	PM2.5 Spec.	Carbon Spec.	RadNet	Met
21-029-0006	2nd & Carpenter St									1								
Bullitt	Shepherdsville																	
21-185-0004	1601 South Hwy 393									1								1
Oldham	LaGrange																	
21-111-0027	7601 Bardstown Rd		1 iB							1 i								1
Jefferson	Louisville (LMAPCD)																	
21-111-0043	3621 Southern Ave	2 C	1 iB*		1 iB													1
Jefferson	Louisville (LMAPCD)																	
21-111-0051	7201 Watson Ln	1	1 iB*		1 iB	1 Pi				1 i								1
Jefferson	Louisville (LMAPCD)																	
21-111-0067	2730 Cannons Ln	1	1 iB*	1 L	1 iB	1 iP	1 i	1	1 i	1 i					1 U	1 U	1	1
Jefferson	Louisville (LMAPCD)																	
21-111-0075	1517 Durrett Ln	1 n					1 n		1 n									1 n
Jefferson	Louisville (LMAPCD)																	
21-111-1041	4201 Algonquin Pkwy					1 e												
Jefferson	Louisville (LMAPCD)																	
Totals	**8**	**5**	**4**	**1**	**3**	**3**	**2**	**1**	**2**	**5**					**1**	**1**	**1**	**6**

Tallies are equal to the actual number of monitors present. Superscripts represent additional information about the network.

C =Collocated
L =PM10 Filter Analyzed for Lead
U =Auxiliary Monitor On Site
P =PWEI Monitor
i =AQI Reported
n =Near-Road Monitor
B =Continuous BAM Monitor
e =Emergency Episode Monitor
* =BAM Eligible for PM2.5 NAAQS Comparisons
U =Auxiliary Monitor On Site

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CSA/MSA: Louisville/Jefferson County-Elizabethtown-Madison, KY-IN CSA; Louisville/Jefferson County, KY-IN MSA
401 KAR 50:020 Air Quality Region: North Central Kentucky Intrastate (104)
Site Name: Shepherdsville
AQS Site ID: 21-029-0006
Location: Second & Carpenter Streets, Shepherdsville, KY 40165
County: Bullitt
GPS Coordinates: 37.98629, -85.71192 (NAD 83)
Date Established: January 30, 1992
Inspection Date: October 1, 2014
Inspection By: Ashley Bedel
Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

The monitoring site is a stationary equipment shelter located in a fenced-in area near the intersection of Second and Carpenter Streets in Shepherdsville, Kentucky. The sample inlets are 56 meters from the nearest road. Upon inspection, the sample lines and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices C, D, E and G.

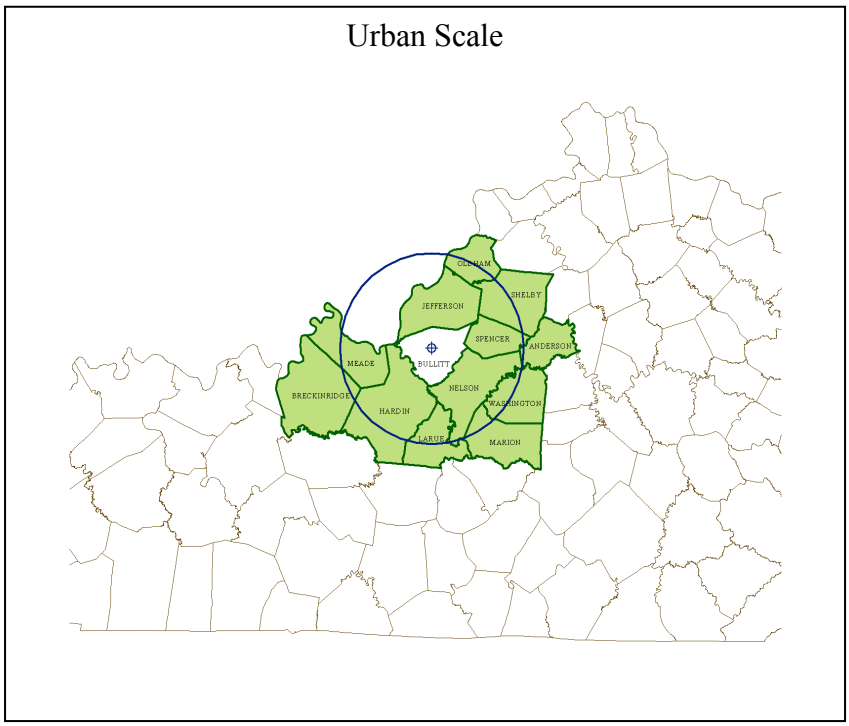
Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards.

Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	4.0	SLAMS	UV photometry	Continuously March 1 – October 31

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
This site represents population exposure on an urban scale for ozone.



CSA/MSA: Louisville/Jefferson County-Elizabethtown-Madison, KY-IN CSA; Louisville/Jefferson County, KY-IN MSA
401 KAR 50:020 Air Quality Region: North Central Kentucky Intrastate (104)
Site Name: Buckner
AQS Site ID: 21-185-0004
Location: KYTC Maintenance Facility, 1601 South Hwy 393, LaGrange, KY 40031
County: Oldham
GPS Coordinates: 38.40020, -85.44428 (NAD 83)
Date Established: May 1, 1981
Inspection Date: October 1, 2014
Inspection By: Ashley Bedel
Site Approval Status: Site and monitor meet all design criteria for the monitoring network.

The monitoring site is a stationary equipment shelter located on the grounds of the Kentucky DOT Highway Garage in Buckner, Kentucky. The sample inlet is 51 meters from the nearest road. Upon inspection, the sample line and monitor were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices C, D, E and G.

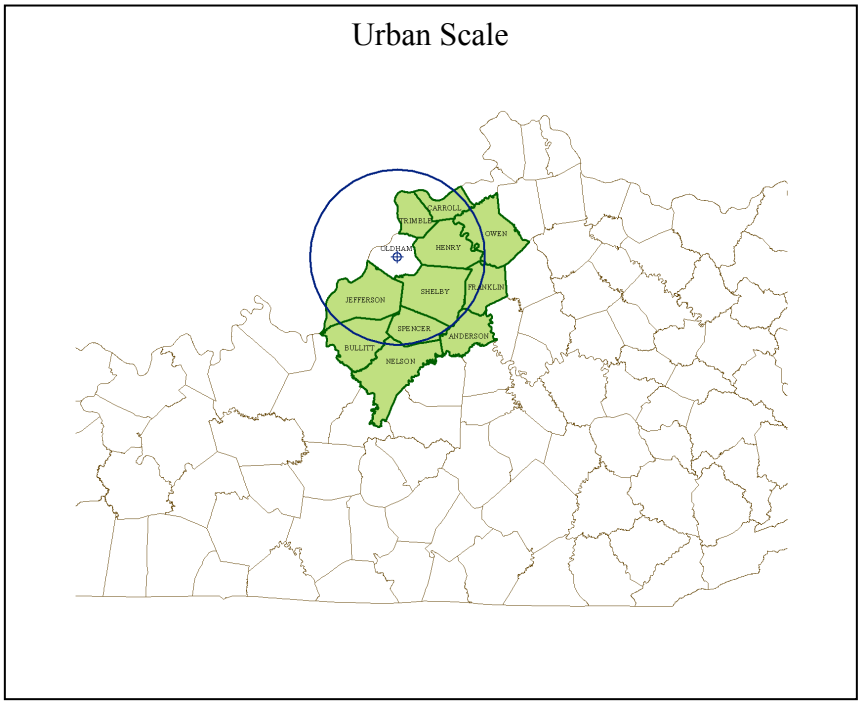
Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards.

Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.8	SLAMS	UV photometry	Continuously March 1 – October 31
Meteorological	TBD	Other	AQM grad instruments for wind speed, wind direction, humidity, barometric pressure, and temperature	Continuously

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
This site represents maximum concentrations on an urban scale.



CSA/MSA: Louisville/Jefferson County-Elizabethtown-Madison, KY-IN CSA; Louisville/Jefferson County, KY-IN MSA
401 KAR 50:020 Air Quality Region: Louisville Interstate (078)
Site Name: Bates Elementary
AQS Site ID: 21-111-0027
Location: 7601 Bardstown Road, Louisville, KY 40291
County: Jefferson
GPS Coordinates: 38.13784, -85.57648 (NAD 83)
Date Established: January 4, 1973
Inspection Date: December 17, 2014
Inspection By: Jennifer F. Miller
Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

The monitoring site is a stationary equipment shelter located on the grounds of the Bates Elementary School in Louisville, Kentucky. The sample inlets are 4.0 meters above ground level and 115 meters from the nearest road. Upon inspection, the sample inlets and monitors were found to be in good condition. The air monitoring site meets the criteria established in 40 CFR Part 58, Appendices C, D, E and G.

Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards and to provide pollution levels for daily index reporting.

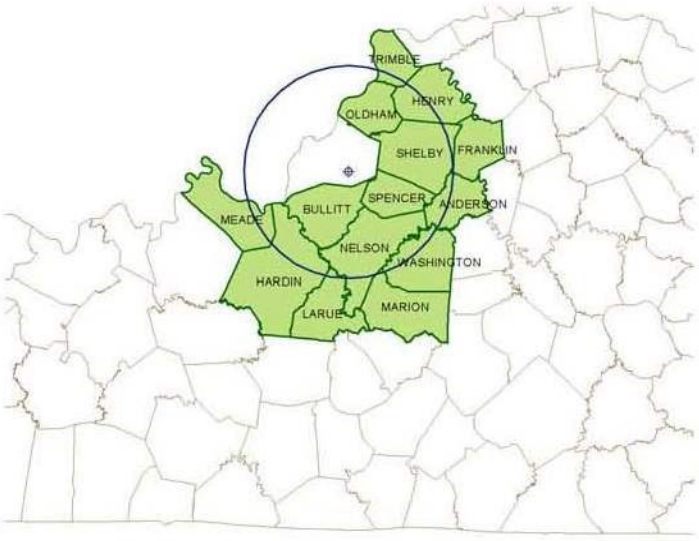
Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	4.0	SLAMS AQI	UV photometry	Continuously March 1 – October 31
$PM_{2.5}$ BAM	5.6	SPM AQI	Automated non-equivalent Beta Attenuation method.	Continuously
Meteorological	6.5	Other	AQM grade instruments for wind speed and wind direction. Not reported to AQS; thus, there is no designation.	Continuously

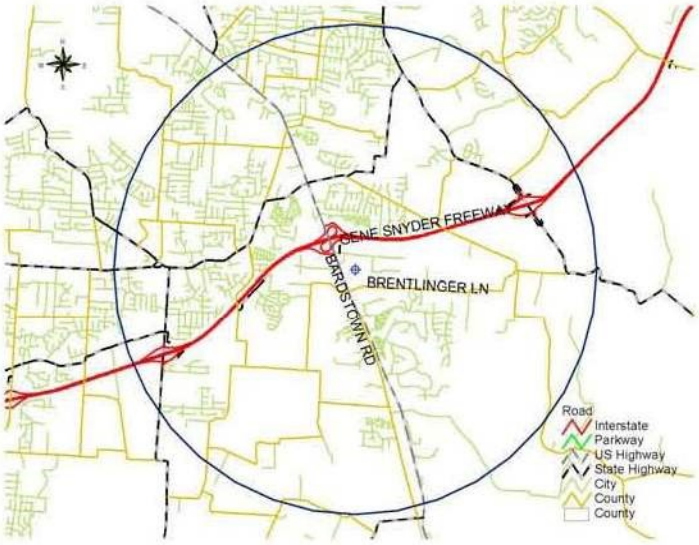
Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
This site represents population exposure on an urban scale for ozone. This site also represents population exposure on a neighborhood scale for fine particulates.

Urban Scale: Ozone



Neighborhood Scale: Particulates



CSA/MSA: Louisville/Jefferson County-Elizabethtown-Madison, KY-IN CSA; Louisville/Jefferson County, KY-IN MSA
401 KAR 50:020 Air Quality Region: Louisville Interstate (078)
Site Name: Southwick Community Center
AQS Site ID: 21-111-0043
Location: 3621 Southern Avenue, Louisville, KY 40211
County: Jefferson
GPS Coordinates: 38.23319, -85.81566 (NAD 83)
Date Established: July 1, 1983
Inspection Date: December 17, 2014
Inspection By: Jennifer F. Miller
Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

The monitoring site is located on the roof of the Southwick Community Center in Louisville, Kentucky. The sample inlets are 6 meters above ground level and 45 meters from the nearest road. Upon inspection, the sample inlets and monitors were found to be in good condition. The air monitoring site meets the criteria established in 40 CFR Part 58, Appendices A, C, D, E and G.

Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards and to provide pollution levels for daily index reporting.

Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
PM_{10} BAM	5.9	SLAMS AQI	Automated Equivalent Method utilizing Beta Attenuation.	Continuously
FRM $PM_{2.5}$	6.0	SLAMS	Gravimetric	24-hours every third day
Collocated FRM $PM_{2.5}$	6.0	SLAMS	Gravimetric	24-hours every sixth day
$PM_{2.5}$ BAM	6.0	SLAMS AQI	Automated Equivalent Method utilizing Beta Attenuation.	Continuously
Meteorological	11.4	Other	AQM grade instruments for wind speed, wind direction, humidity, barometric pressure, and temperature	Continuously
-Rain Gauge	5.0	Other	AQM grade instrument for precipitation.	Continuously

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
This site represents population exposure on a neighborhood scale for particulates.

CSA/MSA: Louisville/Jefferson County-Elizabethtown-Madison, KY-IN CSA; Louisville/Jefferson County, KY-IN MSA
401 KAR 50:020 Air Quality Region: Louisville Interstate (078)
Site Name: Watson Lane
AQS Site ID: 21-111-0051
Location: 7201 Watson Lane, Louisville, KY 40272
County: Jefferson
GPS Coordinates: 38.06091, -85.89804 (NAD 83)
Date Established: July 16, 1992
Inspection Date: December 17, 2014
Inspection By: Jennifer F. Miller
Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

The monitoring site is a stationary equipment shelter located on the grounds of the Watson Lane Elementary School in Louisville, Kentucky. The sample inlets are 4 meters above ground level and 34 meters from the nearest road. Upon inspection, the sample lines and monitors were found to be in good condition. The air monitoring site meets the criteria established by 40 CFR Part 58, Appendices C, D, E and G.

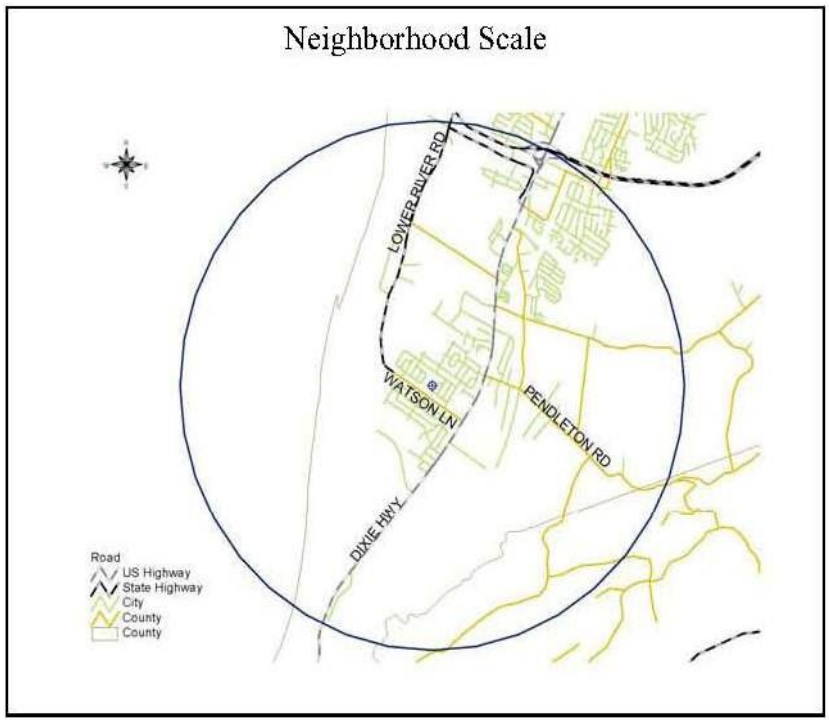
Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards and to provide pollution levels for daily index reporting.

Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	4.3	SLAMS AQI	UV photometry	Continuously March 1 – October 31
FRM $PM_{2.5}$	4.8	SLAMS	Gravimetric	24-hours every third day
$PM_{2.5}$ BAM	4.6	SLAMS AQI	Automated Equivalent Method utilizing Beta Attenuation.	Continuously
PM_{10} BAM	4.6	SPM AQI	Automated Equivalent Method utilizing Beta Attenuation.	Continuously
AEM Sulfur Dioxide	4.3	SLAMS (PWEI)	UV fluorescence	Continuously
Meteorological	6.0	Other	AQM grade instruments for wind speed and wind direction. Not reported to AQS.	Continuously

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
This site represents population exposure on a neighborhood scale for ozone and particulates. This site also represents maximum concentrations on a neighborhood scale for SO_2.



CSA/MSA: Louisville/Jefferson County-Elizabethtown-Madison, KY-IN CSA; Louisville/Jefferson County, KY-IN MSA
401 KAR 50:020 Air Quality Region: Louisville Interstate (078)
Site Name: Cannons Lane
AQS Site ID: 21-111-0067
Location: Bowman Field, 2730 Cannons Lane, Louisville, KY 40204
County: Jefferson
GPS Coordinates: 38.2288760, -85.654520 (NAD 83)
Date Established: July 1, 2008
Inspection Date: December 17, 2014
Inspection By: Jennifer F. Miller
Site Approval Status: EPA SLAMS approval on December 22, 2008; EPA NCore approval on October 30, 2009.

The station is located on property leased by LMAPCD. The site is located in the NE quadrant of Jefferson County and is approximately 9 km from the urban core of Metro Louisville. The site was originally established as a SLAMS site in 2008 and became a NCore site in 2009. In December 2010, a solar electric array designed to produce approximately 6,336 kWh per year was installed. The array provides over 50% of the power used by the air monitoring station. Upon inspection, the sample lines and monitors were found to be in good condition. The air monitoring site meets the criteria of 40 CFR Part 58, Appendices A, C, D, E and G.

Monitoring Objective:

The NCore Network addresses the following monitoring objectives:

- timely reporting of data to the public through AIRNow, air quality forecasting, and other public reporting mechanisms
- support development of emission strategies through air quality model evaluation and other observational methods
- accountability of emission strategy progress through tracking long-term trends of criteria and non-criteria pollutants and their precursors
- support long-term health assessments that contribute to ongoing reviews of the National Ambient Air Quality Standards (NAAQS)
- compliance through establishing nonattainment/attainment areas by comparison with the NAAQS
- support multiple disciplines of scientific research, including public health, atmospheric, and ecological.

Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
Carbon Monoxide	4.6	NCore SLAMS AQI	Automated Reference Method utilizing trace level non-dispersive infrared analysis.	Continuously
Nitrogen Oxide	4.6	NCore SLAMS AQI	Automated Reference Method utilizing chemiluminescence analysis.	Continuously
Nitrogen Dioxide	4.6	NCore SLAMS AQI	Automated Reference Method utilizing chemiluminescence analysis	Continuously
Total Reactive Nitrogen (NO/NO_y)	8.8	NCore	Automated method utilizing trace level chemiluminescence analysis.	Continuously
Ozone	4.6	NCore SLAMS AQI	Automated Equivalent Method utilizing UV photometry analysis.	Continuously
Sulfur Dioxide	4.6	NCore SLAMS (PWEI) AQI	Automated Equivalent Method utilizing trace level UV fluorescence analysis.	Continuously
$PM_{2.5}$ BAM	4.6	NCore SLAMS AQI	Automated Equivalent Method utilizing Beta Attenuation.	Continuously
PM_{10} BAM - PM_{Coarse} (PM_{10}-$PM_{2.5}$) BAM	4.6	NCore SPM AQI	Automated Equivalent Method utilizing Beta Attenuation. Differential Automated Equivalent Method utilizing Beta Attenuation.	Continuously Continuously
$PM_{2.5}$ Speciation	2.2	NCore SLAMS	Multi-Species manual collection method utilizing thermal optical ion chromatography, gravimetric, and X-ray fluorescence.	1/3 days
-Auxiliary $PM_{2.5}$ Speciation	2.2	NCore SLAMS	Multi-Species manual collection method utilizing thermal optical ion chromatography, gravimetric, and X-ray fluorescence. Data is reported to POC2, but is not used for precision. Sampler provides 1/3 day sampling coverage for weekends and holidays.	Supplements the primary monitor's 1/3 sampling schedule on weekends and holidays
$PM_{2.5}$ Carbon Speciation	2.4	NCore SLAMS	Multi-species manual collection method utilizing thermal optical and gravimetric analyses.	1/3 days
-Auxiliary $PM_{2.5}$ Carbon Speciation	2.4	NCore SLAMS	Multi-species manual collection method utilizing thermal optical and gravimetric analyses. Data is reported to POC2, but is not used for precision. Sampler provides 1/3 day sampling coverage for weekends and holidays.	Supplements the primary monitor's 1/3 sampling schedule on weekends and holidays

Monitors (Continued):

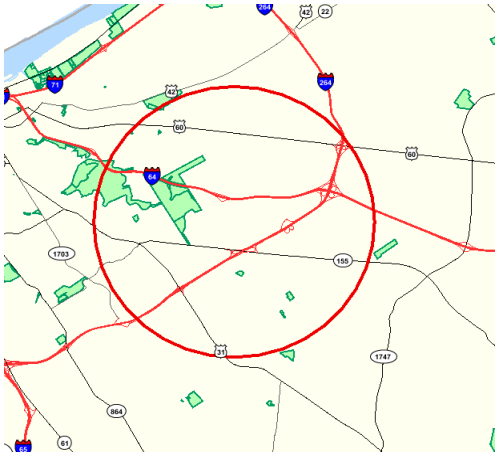
Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
FRM $PM_{2.5}$	2.4	NCore SLAMS	Manual reference method utilizing differential gravimetric analysis	1/3 days
PM_{10C} Filter	2.4	NCore SLAMS	Manual reference method PM_{10c} utilizing differential gravimetric analysis.	1/3 days
- Lead	2.4	NCore SLAMS	Every other PM_{10c} Manual reference method filter analyzed via X-ray fluorescence.	1/6 days
Meteorological	9.3	NCore Other	Air Quality Measurements approved instrumentation for wind speed, wind direction, humidity, and temperature	Continuously
-Solar Radiation	5.0	NCore Other	Air Quality Measurements approved instrumentation for solar radiation	Continuously
-Rain Gauge	1.8	NCore Other	Air Quality Measurements approved instrumentation for precipitation	Continuously
Radiation	1.5	RadNet Other	RadNet fixed station air monitor, manual and automated methods	Continuously + 2 weekly filters

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A. The District's current Quality Assurance Project Plan covers trace-level O_3, NO_x, SO_2, and CO, as well as $PM_{2.5}$ speciation, lead, and meteorological measurements. Standard operating procedures for trace-level CO, NO_x, NO_y, SO_2, O_3, $PM_{2.5}$ BAM, and meteorological measurements have been developed. Additional standard operating procedures manuals will be adopted or developed for new instrumentation.

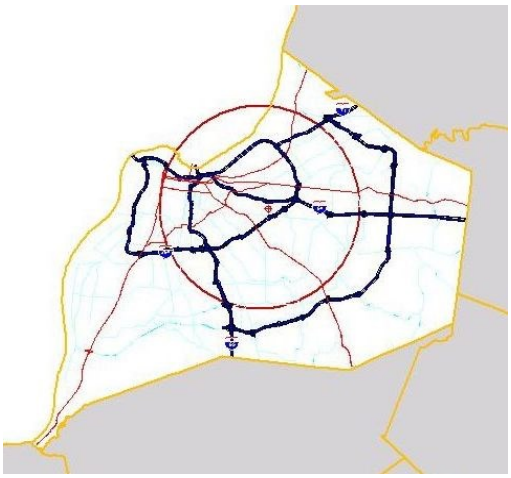
Area Representativeness:
The air monitoring equipment at the Cannon's Lane NCore station is specifically located at the urban and neighborhood scales. These scales are generally the most representative of the expected population exposures that occur throughout metropolitan areas.

Pollutant	Spatial Scale	Comments
Ozone	Neighborhood and Urban Scale	10 km radius
NO_x /NO_y	Neighborhood and Urban Scale	10 km radius
Carbon Monoxide	Neighborhood Scale	There is no urban scale for CO
SO_2	Neighborhood Scale	There is no urban scale for SO_2
Particulates	Urban	
Radiation	Urban	

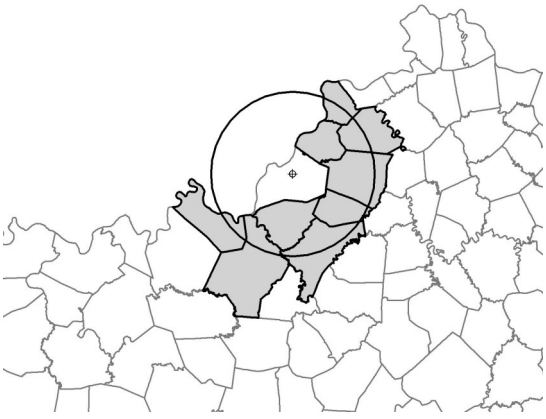
Neighborhood Scale (4 km): Carbon Monoxide, Sulfur Dioxide, and VOCs



Neighborhood and Urban Scales (10 km): Nitrogen Oxides and Ozone



Urban Scale (50 km): Particulates and Radiation



CSA/MSA: Louisville/Jefferson County-Elizabethtown-Madison, KY-IN CSA; Louisville/Jefferson County, KY-IN MSA
401 KAR 50:020 Air Quality Region: Louisville Interstate (078)
Site Name: Durrett Lane (Near-Road Site)
AQS Site ID: 21-111-0075
Location: 1517 Durrett Lane, Louisville, KY 40213
County: Jefferson
GPS Coordinates: 38.1936, -85.7112 (NAD 83)
Date Established: January 1, 2014
Inspection Date: December 17, 2014
Inspection By: Jennifer F. Miller
Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

On February 9, 2010, the EPA released a new NO_2 Final Rule and a new set of monitoring requirements. Under the new monitoring requirements, State and Local agencies are required to establish near-road monitoring stations based upon core based statistical area (CBSA) populations and traffic metrics. The Louisville/Jefferson County, KY-IN MSA is required to establish not only a near-road nitrogen dioxide monitor, but also near-road $PM_{2.5}$ and carbon monoxide monitors. In response, LMAPCD has established a multi-pollutant near-road site that includes instrumentation to measure nitrogen dioxide, $PM_{2.5}$, carbon monoxide, and meteorology. The specific site was chosen following the development of a formal site proposal and a 30-day comment public period in April 2013 (see Appendix D). Data collection at the site began in January 2014.

Monitoring Objective:
The monitoring objective will be to determine compliance with National Ambient Air Quality Standards for nitrogen dioxide, carbon monoxide, and particulate matter.

Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
Nitrogen Dioxide	4.6	SLAMS	Automated Equivalent Method utilizing photolysis	Continuously
Carbon Monoxide	4.6	SLAMS	Automated Reference Method utilizing non-dispersive infrared analysis	Continuously
FRM $PM_{2.5}$	4.7	SLAMS	Manual Reference Method utilizing differential gravimetric analysis	One sample every third day
Meteorological	10.0	Other	AQM grade instruments for wind speed, wind direction, humidity, barometric pressure, and temperature	Continuously

Quality Assurance Status:
All Quality Assurance procedures will be implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
The site represents maximum concentrations on a neighborhood scale.

Neighborhood Scale

CSA/MSA: Louisville/Jefferson County-Elizabethtown-Madison, KY-IN CSA; Louisville/Jefferson County, KY-IN MSA
401 KAR 50:020 Air Quality Region: Louisville Interstate (078)
Site Name: Firearms Training
AQS Site ID: 21-111-1041
Location: 4201 Algonquin Parkway, Louisville, KY 40211
County: Jefferson
GPS Coordinates: 38.23158, -85.82675 (NAD 83)
Date Established: April 13, 1978
Inspection Date: December 17, 2014
Inspection By: Jennifer F. Miller
Site Approval Status: Site and monitor meet all design criteria for the monitoring network.

The monitoring site is a stationary equipment shelter located on the grounds of the Firearms Training Center in Louisville, Kentucky. The sample inlet is 4.5 meters above ground level and 52 meters from the nearest road. Upon inspection, the sample lines and monitors were found to be in good condition. The air monitoring site meets the criteria established by 40 CFR Part 58, Appendices C, D, E and G.

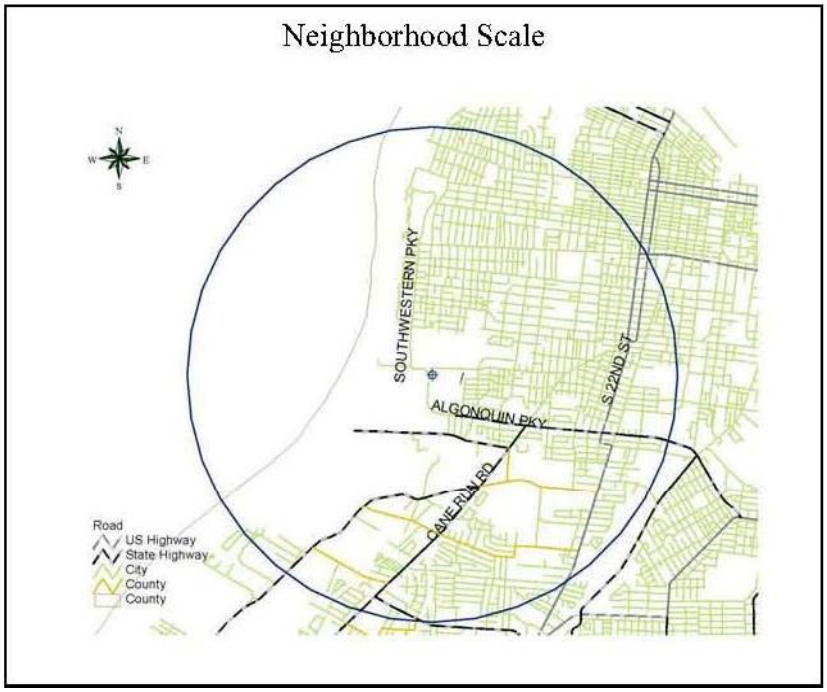
Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards and to detect episode levels for the activation of emergency control procedures.

Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Sulfur Dioxide	4.5	SLAMS EPISODE	UV fluorescence	Continuously

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
This site represents population exposure on a neighborhood scale.



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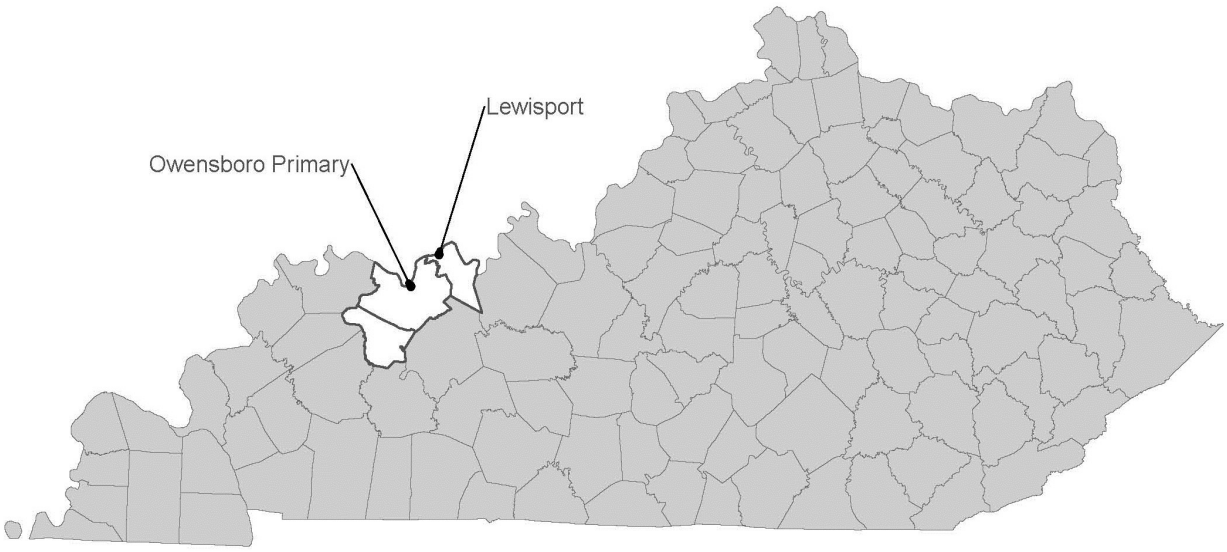
Owensboro, KY



AQS ID / County	Site Address	PM2.5	Cont. PM2.5	PM10	Cont. PM10	SO2	NO2	NOy	CO	O3	Pb	VOC	Carbonyl	PAH	PM2.5 Spec.	Carbon Spec.	RadNet	Met
21-059-0005 Daviess	716 Pleasant Valley Rd. Owensboro	1	1[tei]			1[ei]	1[ei]			1[ei]								1
21-091-0012 Hancock	Second & Caroline St. Lewisport									1								
Totals	**2**	**1**	**1**			**1**	**1**			**2**								**1**

Tallies are equal to the actual number of monitors present. Superscripts represent additional information about the network.

e =Emergency Episode Monitor

t =Continuous TEOM Monitor

i =AQI Reported

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CSA/MSA: Owensboro, KY MSA
401 KAR 50:020 Air Quality Region: Evansville-Owensboro-Henderson Interstate (077)
Site Name: Owensboro Primary
AQS Site ID: 21-059-0005
Location: 716 Pleasant Valley Road, Owensboro, KY 42303
County: Daviess
GPS Coordinates: 37.780776, -87.075307 (NAD 83)
Date Established: December 1, 1970
Inspection Date: November 25, 2014
Inspection By: Jennifer F. Miller
Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

The monitoring site is a stationary equipment shelter located on the grounds behind the Wyndall's Shopping Center in Owensboro, Kentucky. The sample inlets are 48 meters from the nearest road. Upon inspection, the sample lines and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices C, D, E and G.

Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards; to detect emergency pollution levels of criteria pollutants for activation of emergency control procedures. While not required for the CBSA, the site also provide levels of pollutants for daily index reporting.

Monitors:

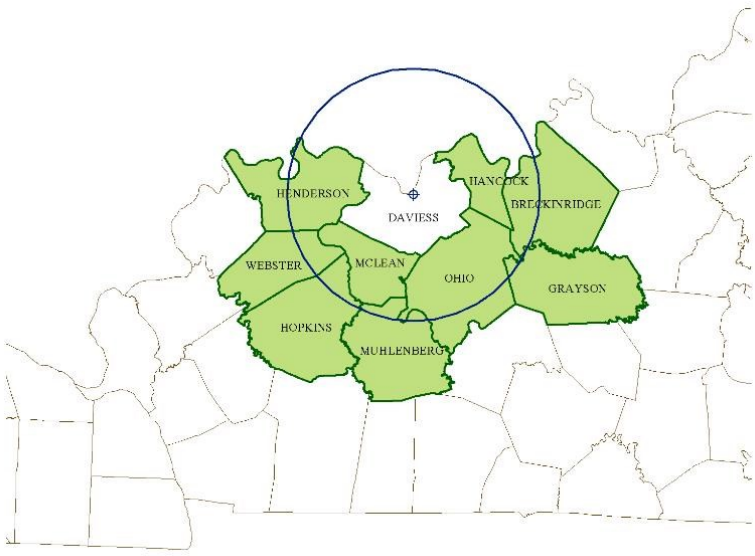
Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Nitrogen Dioxide	3.5	SLAMS EPISODE AQI	Chemiluminescence	Continuously
AEM Ozone	3.5	SLAMS EPISODE AQI	UV photometry	Continuously March 1 – October 31
FEM $PM_{2.5}$	2.2	SLAMS	Gravimetric	24-hours every third day
$PM_{2.5}$ TEOM	4.6	SPM EPISODE AQI	Tapered element oscillating microbalance, gravimetric	Continuously
AEM Sulfur Dioxide	3.5	SLAMS EPISODE AQI	UV fluorescence	Continuously
Meteorological	7.5	SPM-Other	AQM grade instruments for wind speed, wind direction, humidity, barometric pressure and temperature	Continuously

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
This site represents population exposure on a neighborhood scale for particulates, ozone, and sulfur dioxide. This site also represents population exposure on an urban scale for nitrogen dioxide.

Neighborhood Scale: Ozone, Sulfur Dioxide, Particulates

Urban Scale: Nitrogen Dioxide



CSA/MSA: Owensboro, KY MSA
401 KAR 50:020 Air Quality Region: Evansville-Owensboro-Henderson Interstate (077)
Site Name: Lewisport
AQS Site ID: 21-091-0012
Location: Second & Caroline Streets, Lewisport, KY 42351
County: Hancock
GPS Coordinates: 37.93829, -86.89719 (NAD 83)
Date Established: September 5, 1980
Inspection Date: November 25, 2014
Inspection By: Jennifer F. Miller
Site Approval Status: Site and monitor meet all design criteria for the monitoring network.

The monitoring site is a stationary equipment shelter located on the grounds of the former Lewisport Elementary School in Lewisport, Kentucky. The sample inlet is 57 meters from the nearest road. Upon inspection, the sample line and monitor were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices C, D, E and G.

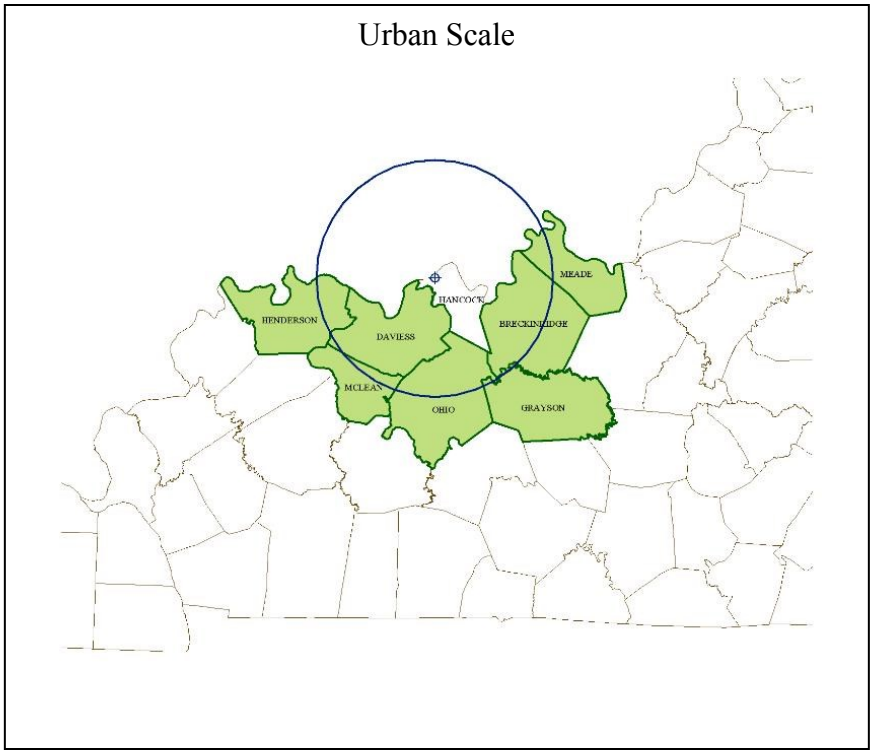
Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards.

Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.5	SLAMS	UV photometry	Continuously March 1 – October 31

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
This site represents maximum concentration on an urban scale.



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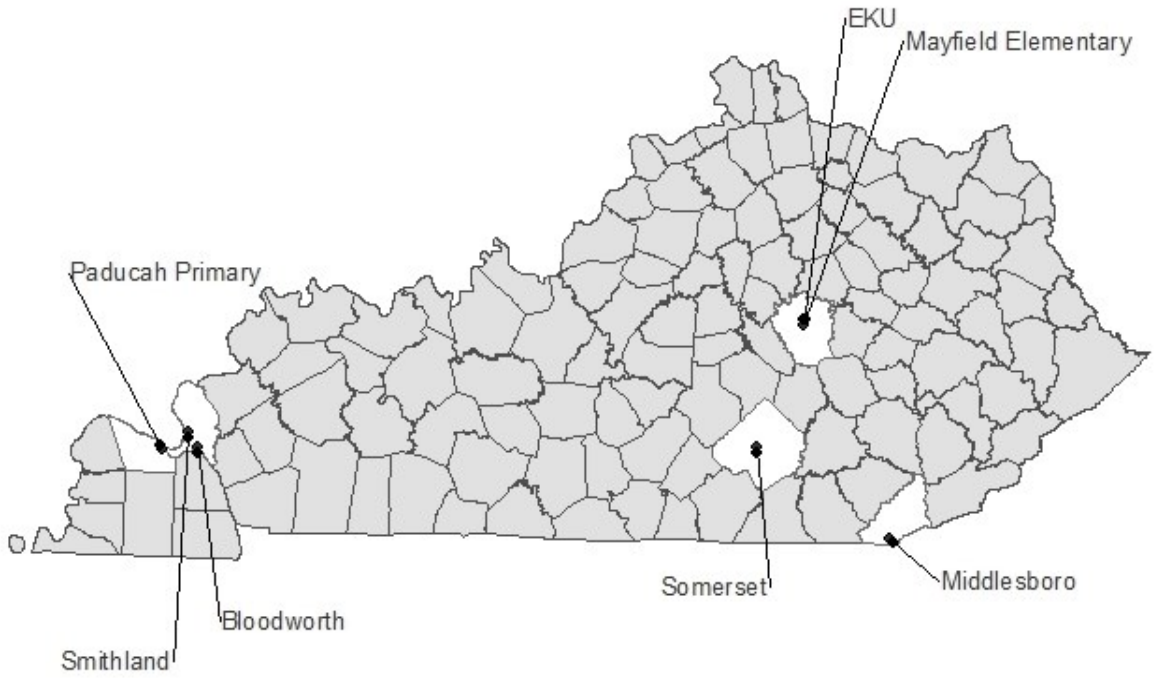
Micropolitan Statistical Areas



AQS ID / County	Site Address	PM2.5	Cont. PM2.5	PM10	Cont. PM10	SO2	NO2	NOy	CO	O3	Pb	VOC	Carbonyl	PAH	PM2.5 Spec.	Carbon Spec.	RadNet	Met
21-013-0002 Bell	1420 Dorchester Ave. Middlesboro	1								1								1
21-139-0003 Livingston	706 State Drive Smithland									1							1	
21-139-0004 Livingston	763 Bloodworth Road Smithland			1[m]								1						1
21-145-1024 McCracken	2901 Powell Street Paducah	1	1[ti]	1		1[Pei]	1[ei]			1[ei]								
21-151-0003 Madison	300 Bond Street Richmond	1									1							
21-151-0005 Madison	Van Hoose Drive Richmond										2[C]							
21-199-0003 Pulaski	305 Clifty Street Somerset	1								1								
Totals	**7**	**4**	**1**	**2**		**1**	**1**			**4**	**3**	**1**					**1**	**2**

Tallies are equal to the actual number of monitors present. Superscripts represent additional information about the network.

C =Collocated
P =PWEI Monitor
t =Continuous TEOM Monitor
m =PM10 Filter Analyzed for Metals
e =Emergency Episode Monitor
i =AQI Reported

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CSA/MSA: Middlesborough, KY Micropolitan Statistical Area
401 KAR 50:020 Air Quality Region: Appalachian Intrastate (101)
Site Name: Middlesboro
AQS Site ID: 21-013-0002
Location: Middlesboro Airport, 1420 Dorchester Avenue, Middlesboro, KY 40965
County: Bell
GPS Coordinates: 36.60843, -83.73694 (NAD 83)
Date Established: February 14, 1992
Inspection Date: November 19, 2014
Inspection By: Ashley Bedel
Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

The monitoring site is a stationary equipment shelter located on the grounds of the Middlesboro Airport in Middlesboro, Kentucky. The sample inlets are 92 meters from the nearest road. Upon inspection the sample lines and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices C, D, E and G.

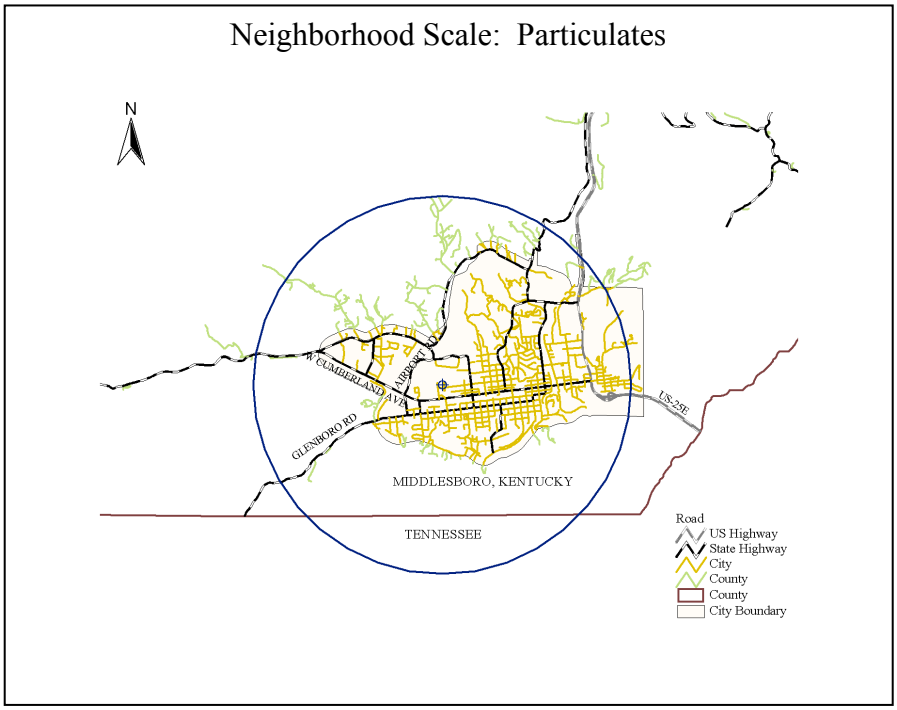
Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards and to provide information on the transport of ozone into the region.

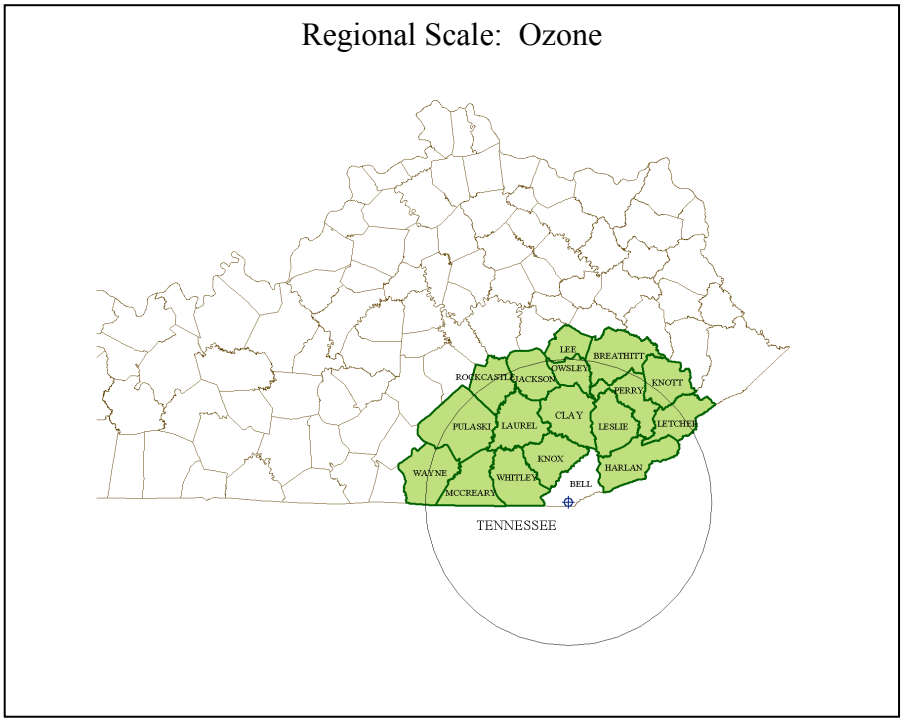
Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	4.1	SPM	UV photometry	Continuously March 1 – October 31
FRM $PM_{2.5}$	4.6	SPM	Gravimetric	24-hours every sixth day
Meteorological	5.7	SPM-Other	AQM grade instruments for wind speed, wind direction, humidity, barometric pressure and temperature	Continuously

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
The site represents population exposure on a neighborhood scale for particulates. This site also represents transport on a regional scale for ozone.





CSA/MSA: Paducah-Mayfield, KY-IL CSA; Paducah, KY-IL Micropolitan Statistical Area
401 KAR 50:020 Air Quality Region: Paducah-Cairo Interstate (072)
Site Name: Smithland
AQS Site ID: 21-139-0003
Location: Livingston County Road Dept., 730 State Drive, Smithland, KY 42081
County: Livingston
GPS Coordinates: 37.155392, -88.394024 (NAD 83)
Date Established: April 1, 1988
Inspection Date: October 7, 2014
Inspection By: Ashley Bedel
Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

The monitoring site is a stationary equipment shelter located on the grounds of the Livingston County Road Dept. facility in Smithland, Kentucky. The sample inlets are 139 meters from the nearest road. Upon inspection, the sample lines and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices C, D, E and G.

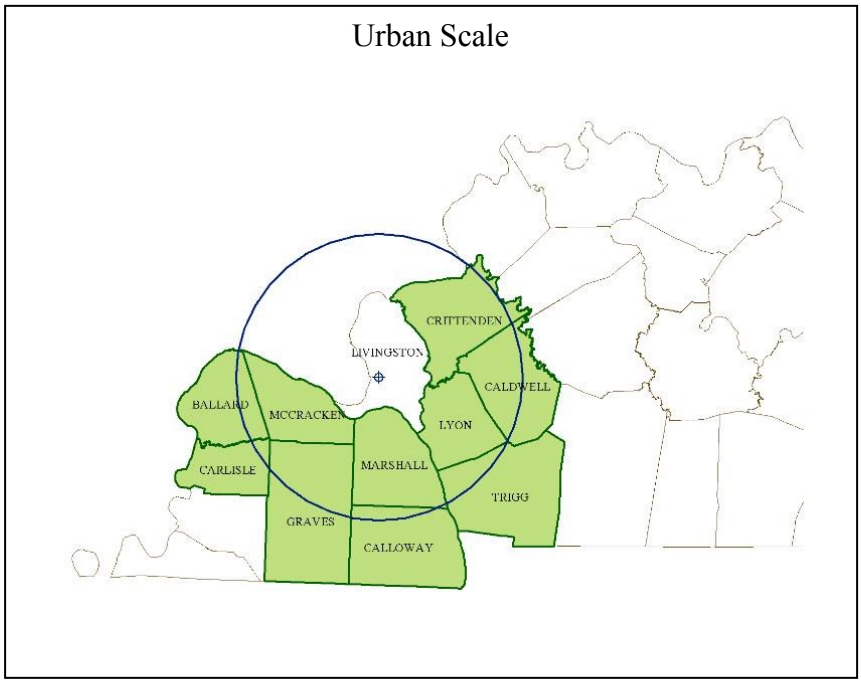
Monitoring Objective:
The monitoring objective is to determine compliance with National Ambient Air Quality Standards.

Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.3	SLAMS	UV photometry	Continuously
Radiation	2.0	RadNet	RadNet fixed stationary monitor, manual and automated methods	Continuously & 2 weekly filters

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
This site represents maximum concentration on an urban scale.



CSA/MSA: Paducah-Mayfield, KY-IL CSA; Paducah, KY-IL Micropolitan Statistical Area
401 KAR 50:020 Air Quality Region: Paducah-Cairo Interstate (072)
Site Name: Bloodworth
AQS Site ID: 21-139-0004
Location: 763 Bloodworth Road, Smithland, KY 42081
County: Livingston
GPS Coordinates: 37.07151, -88.33389 (NAD 83)
Date Established: September 15, 1986
Inspection Date: October 6, 2014
Inspection By: Jennifer F. Miller
Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

The monitoring site is a stationary equipment shelter located at the residence of 763 Bloodworth Road in Livingston County, Kentucky. The sample inlets are 8 meters from the nearest road, which is an access road for a residence. Upon inspection, the inlet and sampler were found to be in good condition.

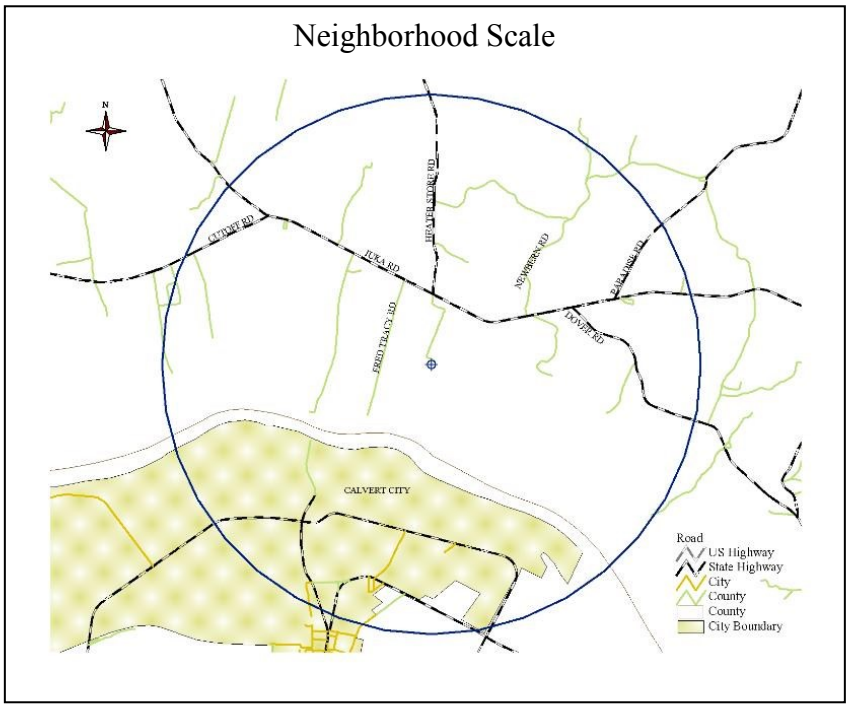
Monitoring Objective:
The monitoring objective is to detect and quantify air toxics in ambient air and to provide meteorological data for data analysis.

Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
Volatile Organic Compounds	4.6	SPM-Other	EPA method TO-15	24-hours every sixth day
FRM PM_{10}	TBD	SPM	Gravimetric	24-hours every sixth day
- Metals PM_{10}		SPM-Other	Determined from the PM_{10} sample using EPA method IO 3.5	Same as PM_{10}
Meteorological	7.5	SPM-Other	AQM grade instruments for wind speed, wind direction, humidity, barometric pressure and temperature	Continuously

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
The site represents source impacts on a neighborhood scale.



CSA/MSA: Paducah-Mayfield, KY-IL CSA; Paducah, KY-IL Micropolitan Statistical Area
401 KAR 50:020 Air Quality Region: Paducah-Cairo Interstate (072)
Site Name: Jackson Purchase-Paducah Primary
AQS Site ID: 21-145-1024
Location: Jackson Purchase RECC, 2901 Powell Street, Paducah, KY 42003
County: McCracken
GPS Coordinates: 37.05822, -88.57251 (NAD 83)
Date Established: August 15, 1980
Inspection Date: October 6, 2014
Inspection By: Jennifer F. Miller
Site Approval Status: Site and monitors meet design criteria for the monitoring network.

The monitoring site is a stationary equipment shelter located on the grounds of the Jackson Purchase RECC in Paducah, Kentucky. While the site meets most of the requirements established by 40 CFR 58, Appendices C, D, E and G, the sample inlets are only 9 meters from the nearest road, which is closer than the distances allowed by 40 CFR 58, Appendix E. Due to the small traffic count of the street and the unlikely influence of vehicle-exhaust on data, KDAQ has received EPA-approval for a waiver from the minimum allowable road-distances for all monitors at the site.

Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards and to detect elevated pollutant levels for activation of emergency control procedures for nitrogen dioxide, ozone, and sulfur dioxide. While not required for the CBSA, the site also provides pollutant levels for daily air quality index reporting.

Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Nitrogen Dioxide	3.7	SLAMS EPISODE AQI	Chemiluminescence	Continuously
AEM Sulfur Dioxide	3.7	SLAMS (PWEI) AQI EPISODE	UV fluorescence	Continuously
AEM Ozone	3.7	SLAMS AQI EPISODE	UV photometry	Continuously March 1 – October 31

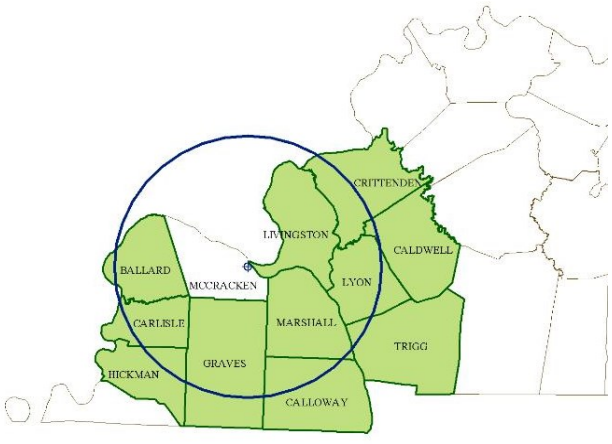
$PM_{2.5}$ TEOM	4.8	SPM AQI	Tapered element oscillating microbalance, gravimetric	Continuously
FEM $PM_{2.5}$	4.7	SLAMS	Gravimetric	24-hours every third day
FEM PM_{10}	4.6	SLAMS	Gravimetric	24-hours every sixth day

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
This site represents population exposure on a neighborhood scale for ozone, particulates, and sulfur dioxide. This site also represents population exposure on an urban scale for nitrogen dioxide.

Neighborhood Scale: Ozone, Particulates, Sulfur Dioxide

Urban Scale: Nitrogen Dioxide



CSA/MSA: Lexington-Fayette-Richmond-Frankfort KY CSA; Richmond-Berea, KY Micropolitan Statistical Area
401 KAR 50:020 Air Quality Region: Bluegrass Intrastate (102)
Site Name: Mayfield Elementary
AQS Site ID: 21-151-0003
Location: Madison Kindergarten Academy at Mayfield, 300 Bond Street, Richmond, KY 40475
County: Madison
GPS Coordinates: 37.738458, -84.284952 (NAD 83)
Date Established: January 1, 1999
Inspection Date: September 24, 2014
Inspection By: Jennifer F. Miller
Site Approval Status: Site and $PM_{2.5}$ monitors meet all design criteria for the monitoring network. Siting criteria for the lead samplers has not been approved by the EPA.

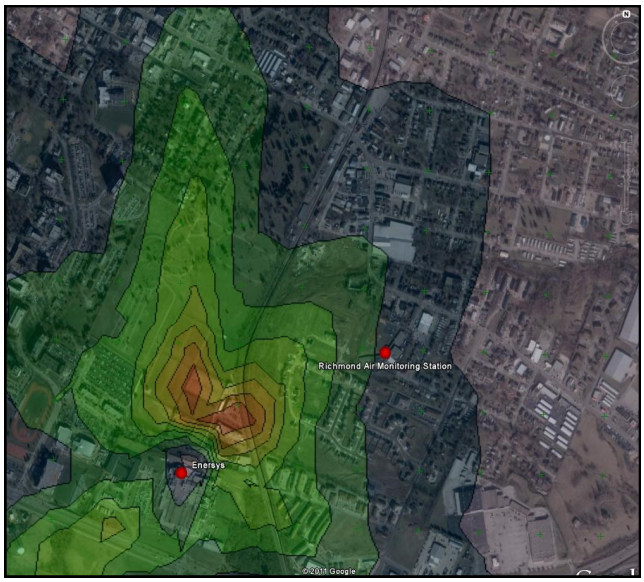
The monitoring site is located on the roof of the Mayfield Elementary School in Richmond, Kentucky. The sample inlets are 65 meters from the nearest road. Upon inspection, the sample inlet and monitor were found to be in good condition. The lead sampler is not located within the expected area of maximum deposition, as is required by 40 CFR 58, Appendix D. Otherwise, the site meets the requirements of 40 CFR 58, Appendices A, C, D and E.

Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards.

Monitors:

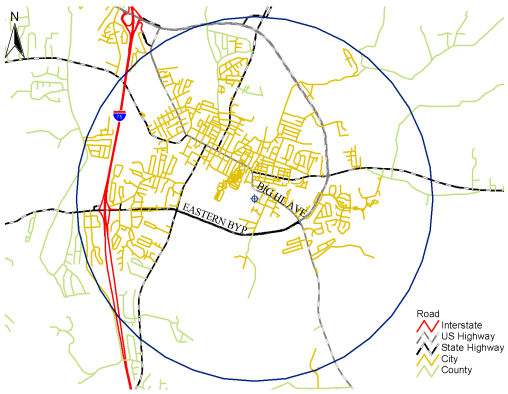
Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
FRM $PM_{2.5}$	5.5	SLAMS	Gravimetric	24-hours every third day
FRM Lead	4.5	SLAMS	High volume air sampler. Analysis via ICP-MS.	24-hours every sixth day

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.



Area Representativeness:
This site represents population exposure on a neighborhood scale for particulates. This site also represents source impacts on a neighborhood scale for lead.

Neighborhood Scale: Particulates



Neighborhood Scale: Lead (1 km)

CSA/MSA: Lexington-Fayette-Richmond-Frankfort KY CSA; Richmond-Berea, KY Micropolitan Statistical Area
401 KAR 50:020 Air Quality Region: Bluegrass Intrastate (102)
Site Name: EKU
AQS Site ID: 21-151-0005
Location: Eastern Kentucky University, Van Hoose Drive, Richmond, KY 40475
County: Madison
GPS Coordinates: 37.73635, -84.29169 (NAD 83)
Date Established: March 10, 2012
Inspection Date: September 24, 2014
Inspection By: Jennifer F. Miller
Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

The EKU site was originally established as a temporary lead monitoring location to evaluate the adequacy of the Mayfield Elementary (21-151-0003) lead site, which is 0.64 km away. Modeling had demonstrated that the EKU site was located within the expected area of maximum concentration, while Mayfield Elementary was not within the area of maximum concentration. Sample results obtained from both sites have confirmed the modeling; thus, KDAQ plans to establish permanent lead monitoring at the EKU site. A collocated lead monitor will also be permanently established.

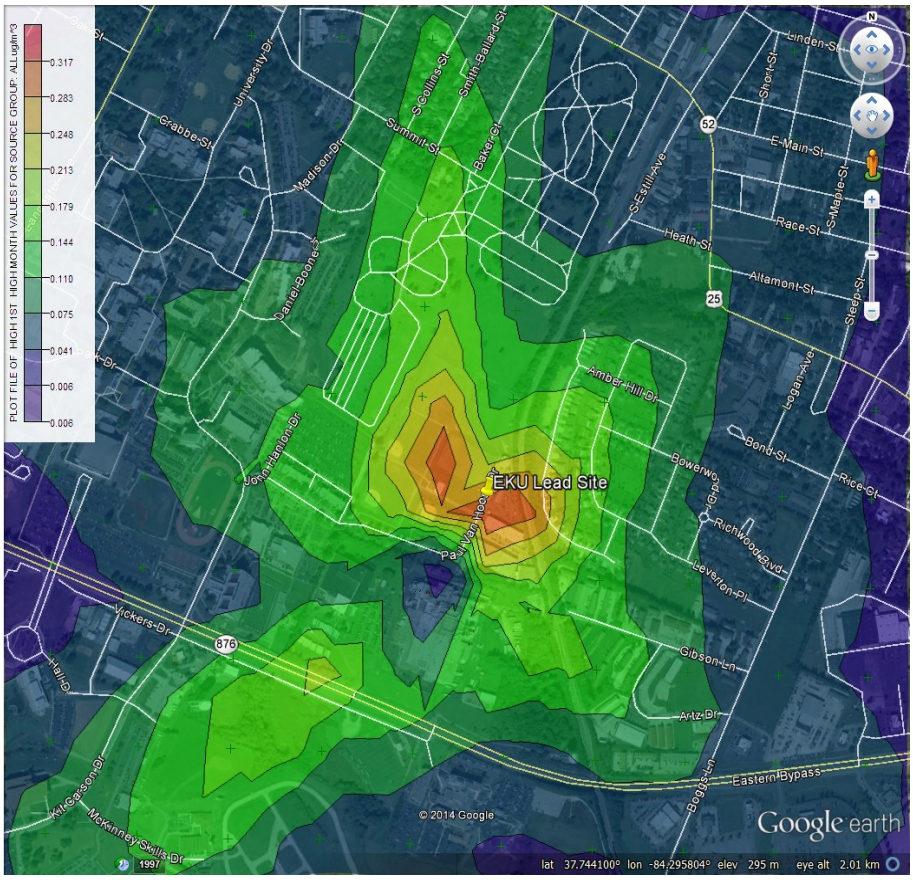
The site is located behind the Gentry Facilities Services building and is adjacent to Eastern Kentucky University's athletic fields. The sample inlets are 4.5 meters from the nearest road. Upon inspection, the sample inlet and monitor were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices A, C, D and E.

Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards.

Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
FRM Lead	2.3	SLAMS	High volume air sampler. Analysis via ICP-MS.	24-hours every sixth day
Collocated FRM Lead	TBD	SLAMS	High volume air sampler. Analysis via ICP-MS.	24-hours every twelfth day

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.



Area Representativeness:
This site represents source impacts on a micro scale for lead.

Micro Scale: Lead (100 m)

CSA/MSA: Somerset, KY Micropolitan Statistical Area
401 KAR 50:020 Air Quality Control Region: South Central Kentucky Intrastate (105)
Site Name: Somerset
AQS Site ID: 21-199-0003
Location: Somerset Gas Company Warehouse, 305 Clifty Street, Somerset, KY 42501
County: Pulaski
GPS Coordinates: 37.09798, -84.61152 (NAD 83)
Date Established: February 14, 1992
Inspection Date: November 19, 2014
Inspection By: Ashley Bedel
Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

The monitoring site is a stationary equipment shelter located on the grounds of the Somerset Gas Company Warehouse on Clifty Street in Somerset, KY. The sample inlets are 10 meters from the nearest road, which is a dead-end street with little traffic. Upon inspection the sample line and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices C, D, and E.

Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards.

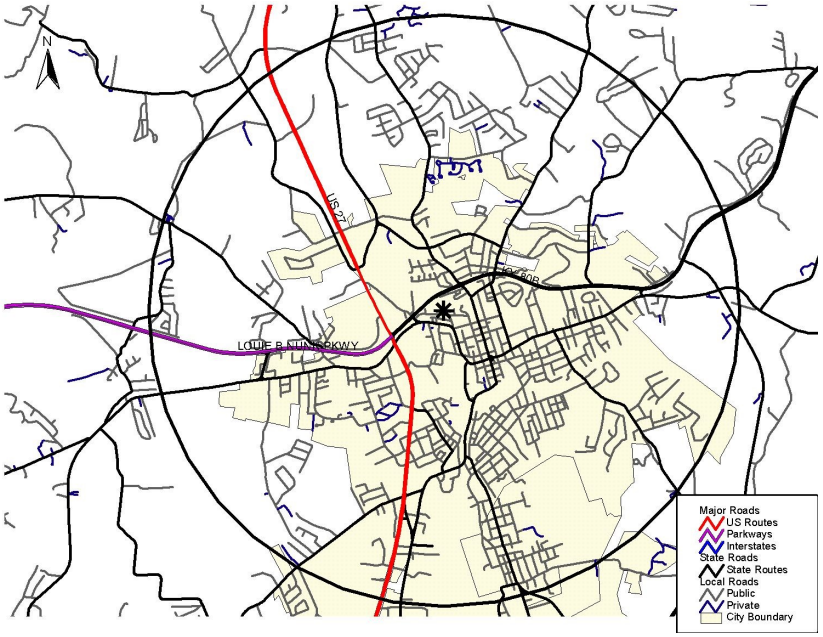
Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	4.4	SPM	UV photometry	Continuously March 1 – October 31
FEM $PM_{2.5}$	4.6	SPM	Gravimetric	24-hours every third day

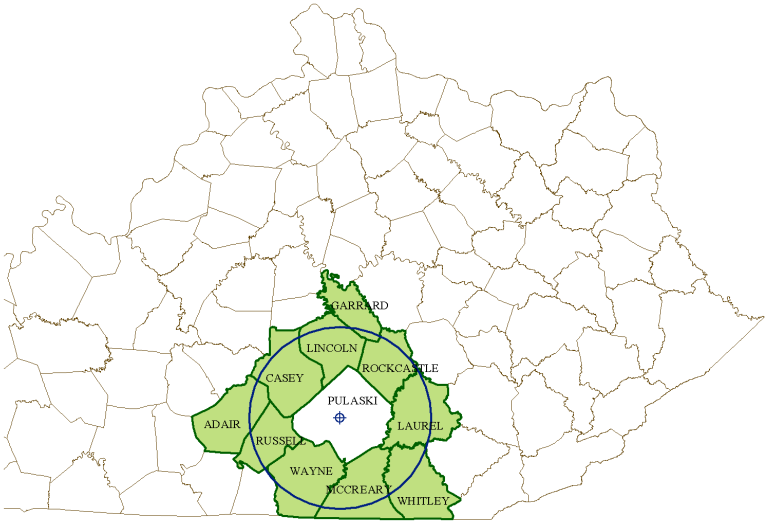
Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
The site represents population exposure on an urban scale for ozone. This site also represents population exposure on a neighborhood scale for particulates.

Neighborhood Scale: Particulates



Urban Scale: Ozone



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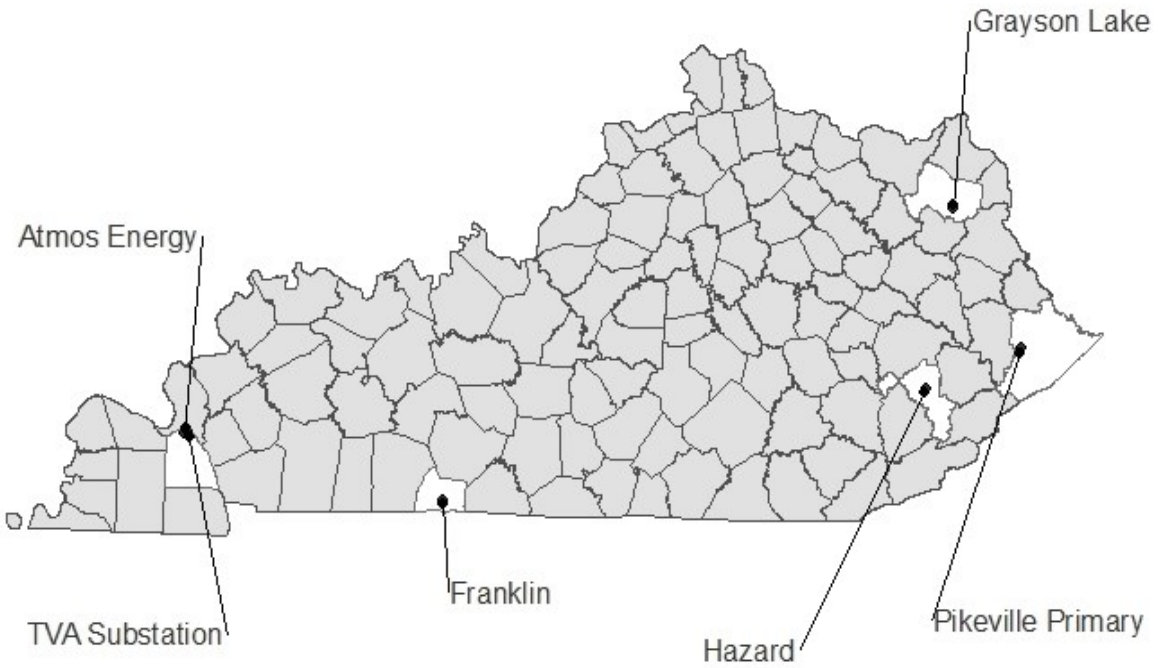
Not in a Metropolitan or Micropolitan Statistical Area



AQS ID / County	Site Address	PM2.5	Cont. PM2.5	PM10	Cont. PM10	SO2	NO2	NOy	CO	O3	Pb	VOC	Carbonyl	PAH	PM2.5 Spec.	Carbon Spec.	RadNet	Met
21-043-0500 Carter	1486 Camp Webb Road Grayson	1^{X}		2^{Cm}						1		2^{D}	2^{D}	1				1
21-157-0014 Marshall	Industrial Parkway Calvert City											2^{C}						
21-157-0016 Marshall	KY95 & Alabama Street Calvert City											1						
21-193-0003 Perry	354 Perry Park Road Hazard	1	1^{t}							1^{e}								1
21-195-0002 Pike	109 Loraine Street Pikeville	2^{C}	1^{ti}							1^{i}								
21-213-0004 Simpson	573 Harding Road Franklin									1								1
Totals	**6**	**4**	**2**	**2**						**4**		**5**	**2**	**1**				**3**

Tallies are equal to the actual number of monitors present. Superscripts represent additional information about the network.

D = Duplicate
C = Collocated
t = Continuous TEOM Monitor
m = PM10 Filter Analyzed for Metals
i = AQI Reported
X = Regional Background PM2.5 Monitor

Rev. 4/20/15

CSA/MSA: Not in a MSA - Rural
401 KAR 50:020 Air Quality Region: Huntington (WV)-Ashland (KY)-Portsmouth-Ironton (OH) Interstate (103)
Site Name: Grayson Lake
AQS Site ID: 21-043-0500
Location: Camp Robert Webb, 1486 Camp Webb Road, Grayson Lake, KY 41143
County: Carter
GPS Coordinates: 38.23887, -82.98810 (NAD 83)
Date Established: May 13, 1981
Inspection Date: November 20, 2014
Inspection By: Jennifer F. Miller
Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

The monitoring site is a stationary equipment shelter in a fenced area located in a remote section of Camp Webb in Grayson, Kentucky. The nearest road is a service road to the site and is 98 meters from the site. Upon inspection, the sample lines and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices A, C, D, and E.

Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards; to determine background levels of $PM_{2.5}$ and PM_{10}; to provide ozone data upwind of the Ashland area; and to measure rural concentrations of a sub-group of air toxics for use in a national air toxics assessment.

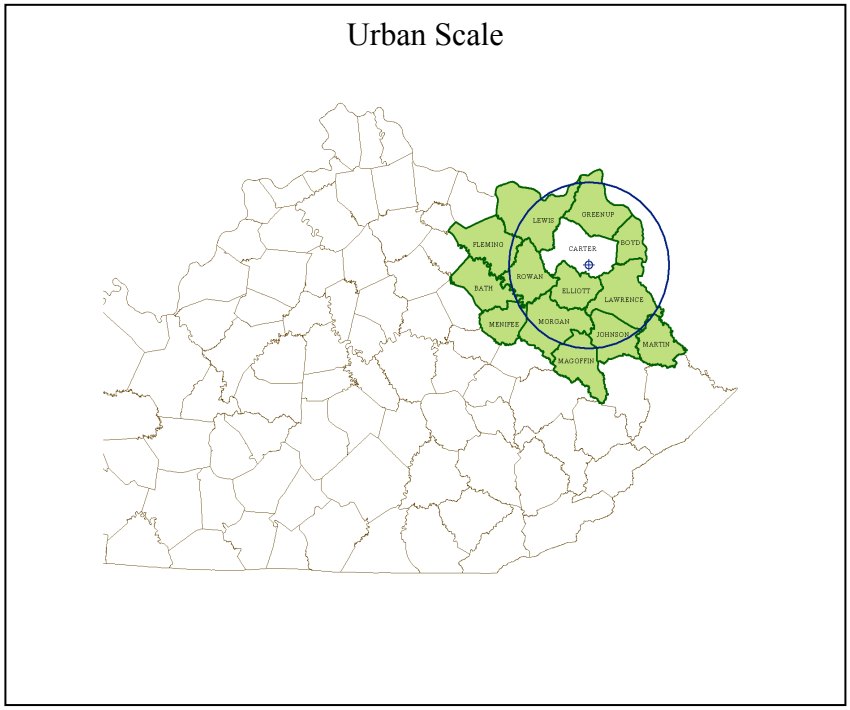
Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	4.0	SPM	UV photometry	Continuously March 1 – October 31
FEM $PM_{2.5}$	2.3	SLAMS	Gravimetric	24-hours every third day
FRM PM_{10}	2.2	SLAMS	Gravimetric	24-hours every sixth day
- Metals PM_{10}		NATTS SPM	Determined from the PM_{10} samples using EPA method IO 3.5	Same as PM_{10}
Collocated PM_{10}	2.2	SLAMS	Gravimetric	24-hours every twelfth day
- Collocated metals PM_{10}		NATTS SPM	Determined from the PM_{10} samples using EPA method IO 3.5	24-hours; six samples per year

Volatile Organic Compounds	4.2	NATTS SPM	EPA method TO-15.	24-hours every sixth day
- Duplicate Volatile Organic Compounds		NATTS SPM	EPA method TO-15. Collected via same sampling system as primary VOCs.	24-hours; six samples per year
Polycyclic Aromatic Hydrocarbons	2.1	NATTS SPM	EPA method TO-13A	24-hours every sixth day
Carbonyls	3.9	NATTS SPM	EPA method TO-11A	24-hours every sixth day
- Duplicate Carbonyls		NATTS SPM	EPA method TO-11A. Collected via same sampling system as primary carbonyls.	24-hours; six samples per year
Meteorological	13.5 4.7	SPM-Other	AQM grade instruments for wind speed, wind direction, relative humidity, and temperature Solar Radiation	Continuously

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
The site represents background levels on an urban scale for particulates and air toxics. This site also represents upwind/background levels on an urban scale for ozone.



CSA/MSA: Not in a MSA - Rural
401 KAR 50:020 Air Quality Control Region: Paducah – Cairo Interstate (072)
Site Name: TVA Substation
AQS Site ID: 21-157-0014
Location: Plant Cutoff Road & Industrial Parkway, Calvert City, KY 42029
County: Marshall
GPS Coordinates: 37.04520, -88.33087 (NAD 83)
Date Established: January 1, 2005
Inspection Date: October 7, 2014
Inspection By: Ashley Bedel
Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

The monitoring site is an air toxics monitor location off Ballpark Road in Calvert City, Kentucky. The inlets are approximately 230 meters from the nearest road. Upon inspection, the sample inlets and monitors were found to be in good condition.

Due to plans to expand the compound of the TVA electrical substation, the samplers were relocated in June 2013. The new location is approximately 20 meters northwest from the original location and is still along the fence-line of the compound.

Monitoring Objective:
The monitoring objectives are to detect and quantify air toxic pollutants.

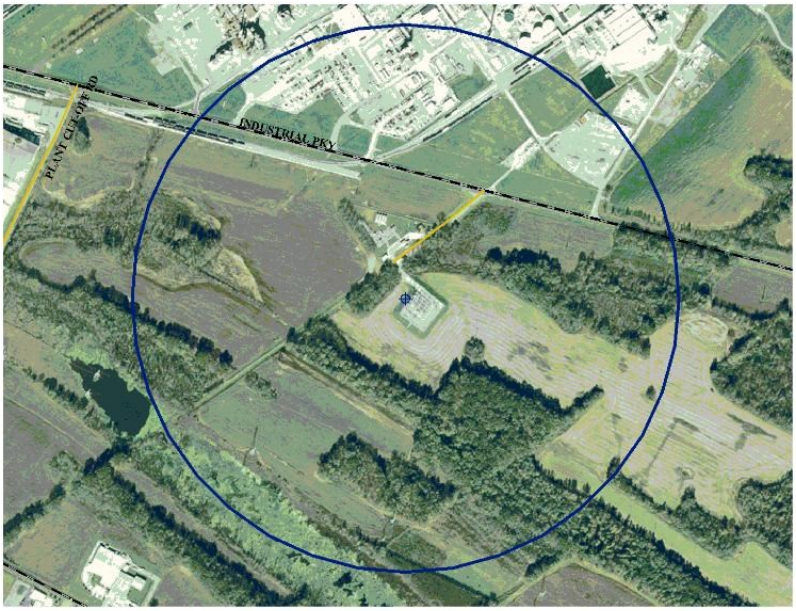
Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
Volatile Organic Compounds	2.1	SPM-Other	EPA method TO-15	24-hours every sixth day
Collocated Volatile Organic Compounds	2.0	SPM-Other	EPA method TO-15	24-hours every twelfth day

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
This site represents source oriented exposure on a middle scale.

Middle Scale



CSA/MSA: Not in a MSA - Rural
401 KAR 50:020 Air Quality Control Region: Paducah – Cairo Interstate (072)
Site Name: Atmos Energy
AQS Site ID: 21-157-0016
Location: KY95 & Alabama Street, Calvert City, KY 42029
County: Marshall
GPS Coordinates: 37.04176, -88.35407 (NAD 83)
Date Established: January 1, 2005
Inspection Date: October 7, 2014
Inspection By: Jennifer F. Miller
Site Approval Status: Site and monitor meet all design criteria for the monitoring network.

The monitoring site is an air toxics monitor location near the corner of Alabama Street and KY95 in Calvert City, Kentucky. The sample inlet is 2 meters above ground level and 43 meters from the nearest road. Upon inspection, the sample inlet and monitor were found to be in good condition.

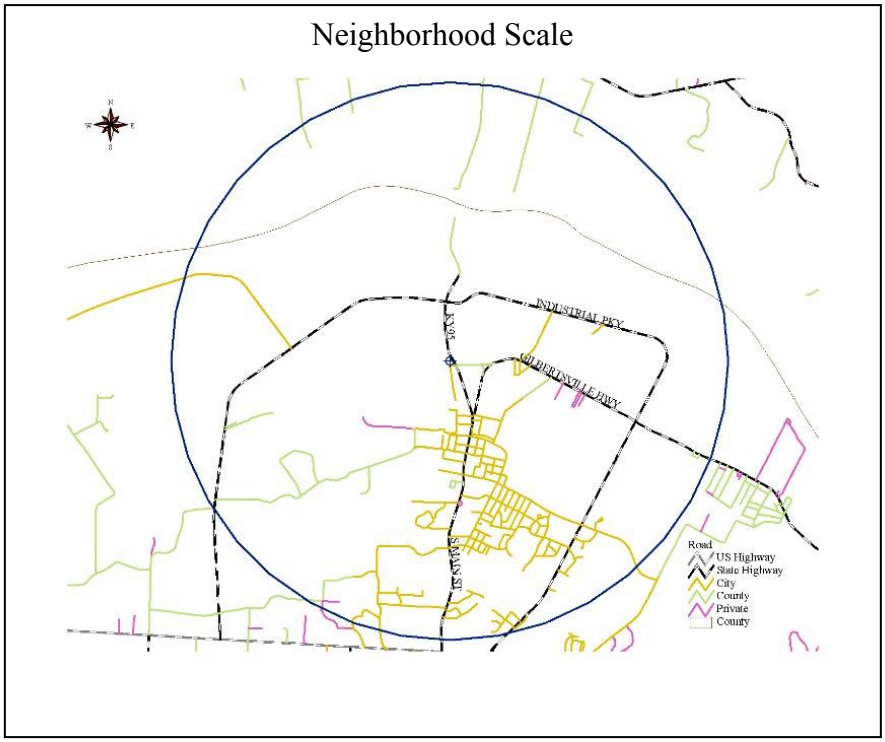
Monitoring Objective:
The monitoring objectives are to detect and quantify air toxic pollutants.

Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
Volatile Organic Compounds	1.9	SPM-Other	EPA method TO-15	24-hours every sixth day

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
This site represents source oriented exposure on a neighborhood scale.



CSA/MSA: Not in a MSA - Rural
401 KAR 50:020 Air Quality Control Region: Appalachian Intrastate (101)
Site Name: Hazard
AQS Site ID: 21-193-0003
Location: Perry County Horse Park, 354 Perry Park Road, Hazard, KY 41701
County: Perry
GPS Coordinates: 37.28329, -83.20932 (NAD 83)
Date Established: April 1, 2000
Inspection Date: September 11, 2014
Inspection By: Jennifer F. Miller
Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

The monitoring site is a stationary equipment shelter located on the grounds of the Perry County Horse Park in Hazard, Kentucky. The sample inlets 33 meters from the nearest road. Upon inspection the sample lines and monitors were found to be in good condition. This site meets the requirements of 40 CFR 58, Appendices C, D, E and G.

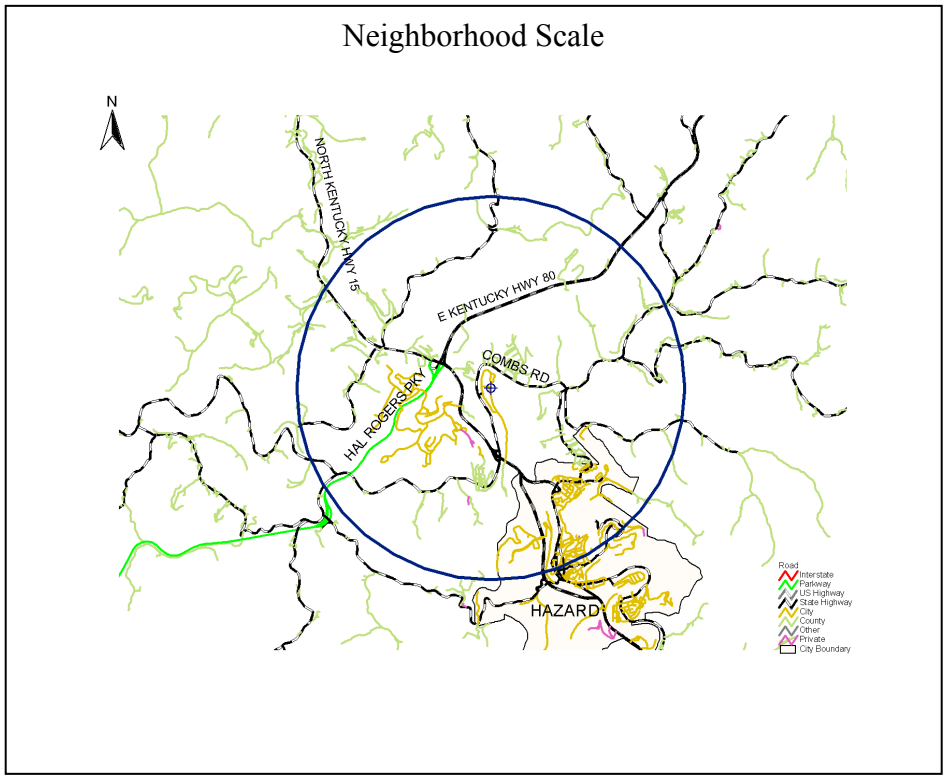
Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards and to detect elevated pollutant levels for activation of emergency control procedures for ozone.

Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	4.6	SPM EPISODE	UV photometry	Continuously March 1 – October 31
FRM $PM_{2.5}$	3.2	SPM	Gravimetric	24-hours every sixth day
$PM_{2.5}$ TEOM	5.3	SPM	Tapered element oscillating microbalance, gravimetric	Continuously
Meteorological	13.0	SPM-Other	AQM grade instruments for wind speed, wind direction, relative humidity, barometric pressure, and temperature	Continuously

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
The site represents population exposure on a neighborhood scale.



CSA/MSA: Not in a MSA - Rural
401 KAR 50:020 Air Quality Control Region: Appalachian Intrastate (101)
Site Name: Pikeville Primary
AQS Site ID: 21-195-0002
Location: KYTC District Office, 109 Loraine Street, Pikeville, KY 41501
County: Pike
GPS Coordinates: 37.48260, -82.53532 (NAD 83)
Date Established: May 1, 1994
Inspection Date: September 11, 2014
Inspection By: Jennifer F. Miller
Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

The monitoring site is a stationary equipment shelter located behind the KYTC District Office building in Pikeville, KY. The sample inlets are 88 meters from the nearest road. Upon inspection the sample lines and monitors were found to be in good condition. This site meets the requirements of 40 CFR 58, Appendices A, C, D, E and G.

Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards. While not required, the site also provides pollutant levels for daily air quality index reporting.

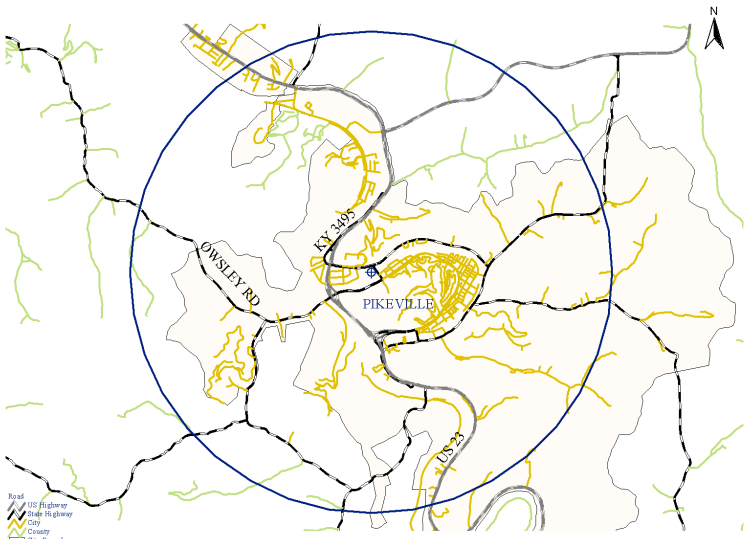
Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.7	SPM AQI	UV photometry	Continuously March 1 – October 31
FRM $PM_{2.5}$	4.7	SLAMS	Gravimetric	24-hours every third day
Collocated FRM $PM_{2.5}$	4.7	SLAMS	Gravimetric	24-hours every sixth day
$PM_{2.5}$ TEOM	TBD	SPM AQI	Tapered elemental oscillating microbalance, gravimetric	Continuously

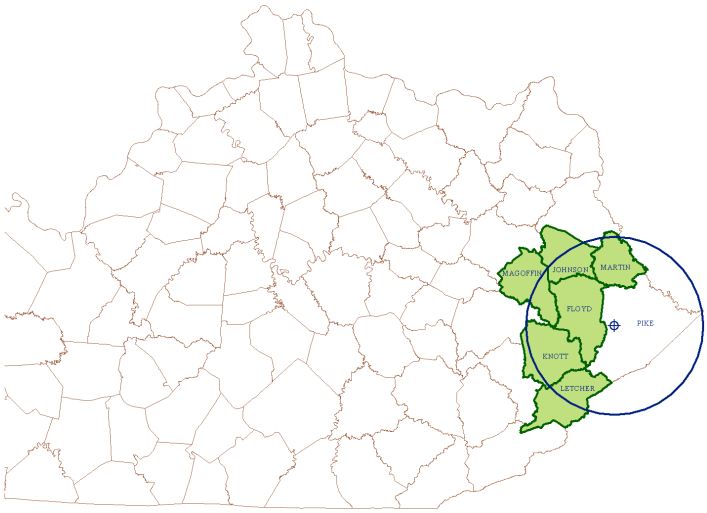
Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
The site represents population exposure on a neighborhood scale for particulates. This site also represents population exposure on an urban scale for ozone.

Neighborhood Scale: Particulates



Urban Scale: Ozone



CSA/MSA: Not in a MSA - Rural
401 KAR 50:020 Air Quality Control Region: South Central Kentucky Intrastate (105)
Site Name: Franklin
AQS Site ID: 21-213-0004
Location: KYTC Maintenance Facility, 573 Harding Road (KY1008), Franklin, KY 42134
County: Simpson
GPS Coordinates: 36.708607, -86.566284 (NAD 83)
Date Established: June 19, 1991
Inspection Date: December 10, 2014
Inspection By: Jennifer F. Miller & John Gowins
Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

The monitoring site is a stationary equipment shelter located on the grounds of the KYTC Garage on Harding Road (KY1008) in Franklin, Kentucky. The sample inlet is 39 meters from the nearest road. Upon inspection, the sample line and monitor were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices C, D, E and G.

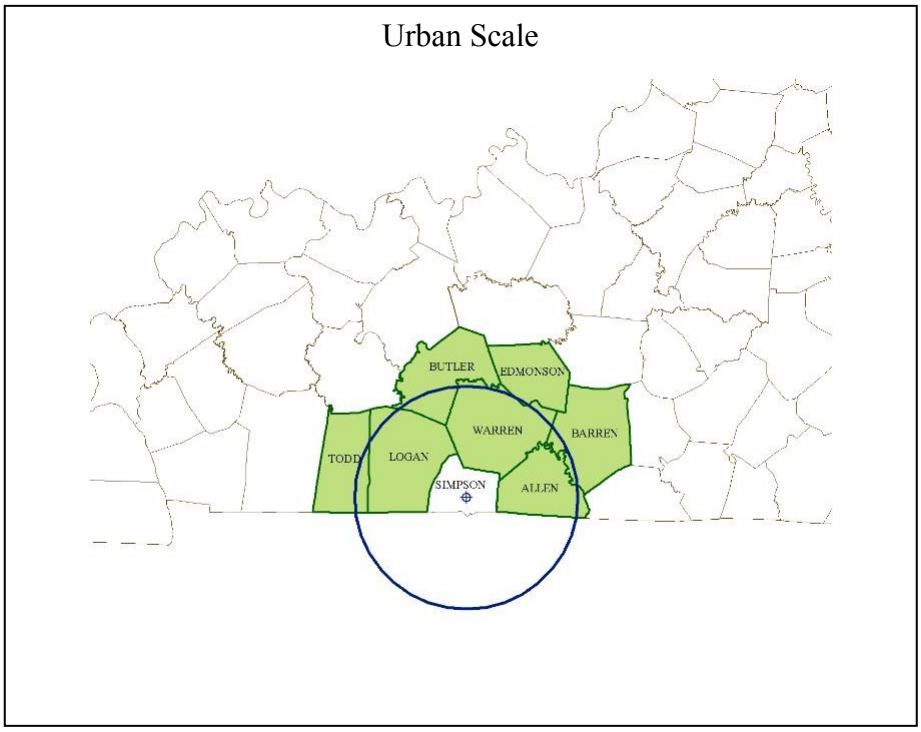
Monitoring Objective:
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards; to measure ozone levels upwind of Bowling Green; and to provide data on interstate ozone transport.

Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	4.3	SPM	UV photometry	Continuously March 1 – October 31
Meteorological	7.5	SPM-Other	AQM grade instruments for wind speed, wind direction, relative humidity, barometric pressure, and temperature	Continuously

Quality Assurance Status:
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:
The site represents population exposure on an urban scale.



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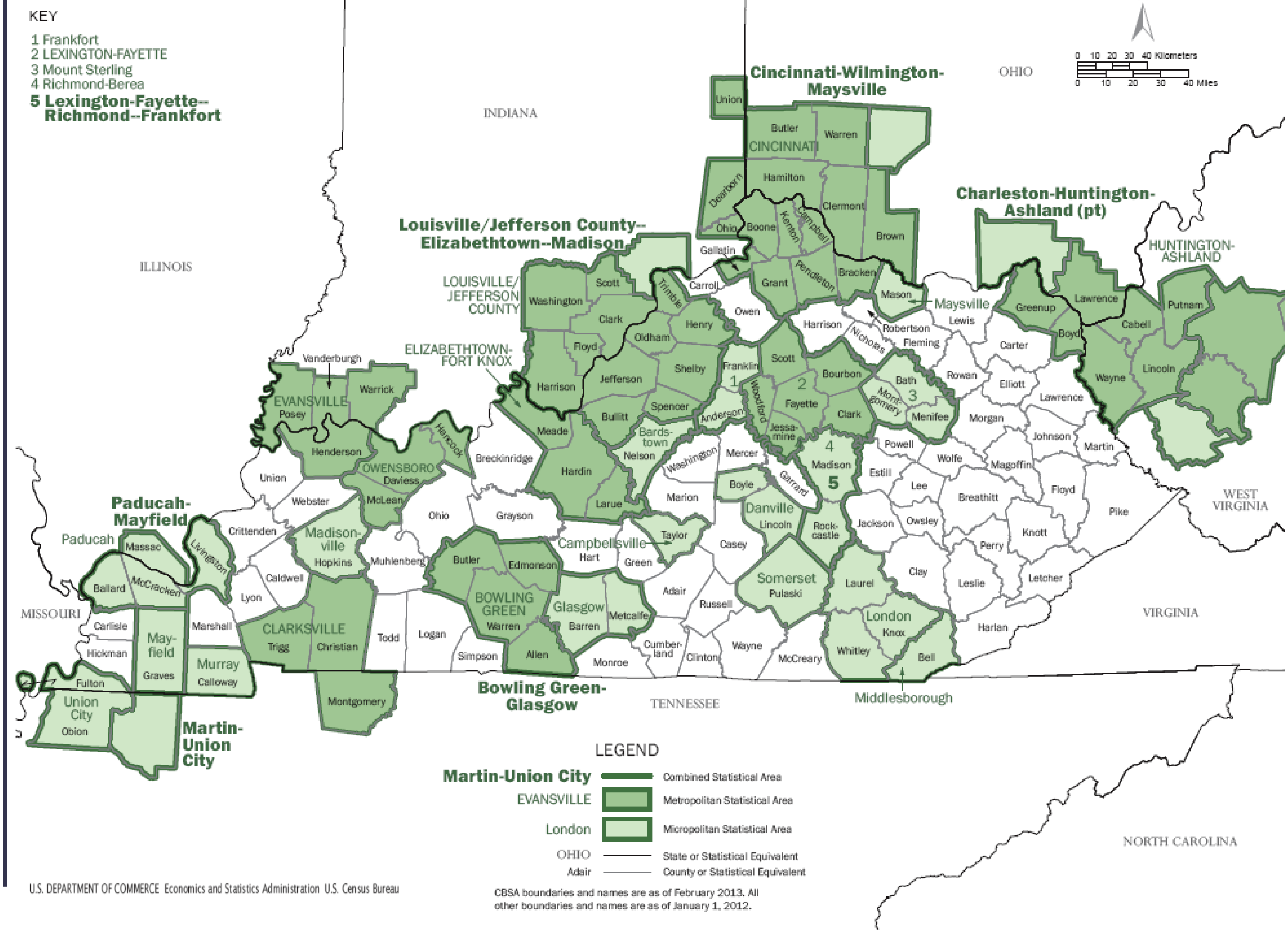
APPENDIX A

KENTUCKY CORE-BASED STATISTICAL AREAS AND COUNTIES MAP

Kentucky - Core Based Statistical Areas (CBSAs) and Counties



APPENDIX B

MEMORANDUM OF AGREEMENT
CINCINNATI, OH-KY-IN MSA

MEMORANDUM OF AGREEMENT
ON AIR QUALITY MONITORING FOR CRITERIA POLLUTANTS FOR
THE CINCINNATI OH-KY-IN
METROPOLITAN STATISTICAL AREA (MSA)

Participating Agencies:

Kentucky Department for Environmental Protection (KDEP)
Division for Air Quality (DAQ)

Hamilton County Department of Environmental Services (HCDOES)

Indiana Department of Environmental Management (IDEM)
Office of Air Quality (OAQ)

PURPOSE/OBJECTIVES/GOALS

The purpose of this Memorandum of Agreement (MOA) is to establish the Cincinnati OH-KY-IN Metropolitan Statistical Area (MSA) Criteria Pollutant Air Quality Monitoring Agreement among KDEP, IDEM, and HCDOES to collectively meet United States Environmental Protection Agency (EPA) minimum monitoring requirements for particles of an aerodynamic diameter of 10 micrometers and less (PM10), particles of an aerodynamic diameter of 2.5 micrometers and less (PM2.5), and ozone; as well as other criteria pollutant air quality monitoring deemed necessary to meet the needs of the MSA as determined reasonable by all parties. According to 40 CFR Part 58, Appendix D, the Cincinnati OH-KY-IN MSA minimum monitoring requirements (based on a population of 2,172,000) are (2) ozone monitors, (2-4) PM-10 monitors, (3) FRM PM-2.5 monitors, and (2) collocated continuous PM-2.5 monitors with the FRM PM-2.5 monitors. This MOA will formalize and reaffirm the collective agreement in order to provide adequate criteria pollutant monitoring for the Cincinnati OH-KY-IN MSA as required by 40 CFR 58 Appendix D, Section 2(e).

PM2.5 MSA monitoring network includes:

County	Federal Reference Method PM2.5	Continuous PM2.5	Speciation PM2.5	Collocated PM2.5
Campbell County, KY KDEP	1	1	0	0
Boone County, KY KDEP	0	0	0	0
Hamilton County, OH **HCDOES**	4	2	1	1
Butler County, OH **HCDOES**	2	0	0	1
Clermont County, OH **HCDOES**	1	1	0	0
Warren County, OH **HCDOES**	1	1	0	0
Franklin County, IN **IDEM**	0	0	0	0
Dearborn County, IN **IDEM**	0	0	0	0
Ohio County, IN **IDEM**	0	0	0	0

Criteria Air Pollutant MSA monitoring network includes:

County	PM10	O_3	NO_x/NO/NO_2	CO	SO_2
Campbell County, KY **KDEP**	0	1	1	0	1
Boone County, KY **KDEP**	0	1	0	0	0
Hamilton County, OH **HCDOES**	3	3	1	1	1
Butler County, OH **HCDOES**	2	2	0	0	0
Clermont County, OH **HCDOES**	0	1	0	0	0
Warren County, OH **HCDOES**	0	1	0	0	0
Franklin County, IN **IDEM**	0	0	0	0	0
Dearborn County, IN **IDEM**	0	0	0	0	0
Ohio County, IN **IDEM**	0	0	0	0	0

RESPONSIBLITIES/ACTIONS

Each of the parties to this Agreement is responsible for ensuring that its obligations under the MOA are met. As conditions warrant, the affected agencies may conduct telephone conference calls, meetings, or other communications to discuss monitoring activities for the MSA. Each affected agency shall inform the other affected agencies via telephone or email of any monitoring changes occurring within its jurisdiction of the MSA at its earliest convenience, after learning of the need for the change or making the changes. Such unforeseen changes may include evictions from monitoring sites, destruction of monitoring sites due to natural disasters, or any occurrences that result in an extended (greater than one quarter) or permanent change in the monitoring network.

LIMITATIONS

- All commitments made in this MOA are subject to the availability of appropriated funds and each agency's budget priorities. Nothing in this MOA obligates KDEP, IDEM, or HCDOES to expend appropriations or to enter into any contract, assistance agreement, interagency agreement or other financial obligation.

- This MOA is neither a fiscal nor a funds obligation document. Any endeavor involving reimbursement or contribution of funds between parties to this agreement will be handled in accordance with applicable laws, regulations, and procedures, and will be subject to separate agreements that will be affected in writing by representatives of the parties.

- This MOA does not create any right or benefit enforceable by law or equity against KDEP, IDEM, or HCDOES, their officers or employees, or any other person. This MOA does not apply to any entity outside KDEP, IDEM, or HCDOES.

- No proprietary information or intellectual property is anticipated to arise out of this MOA.

TERMINATION

This Memorandum of Agreement may be revised upon the mutual consent of KDEP, IDEM, and HCDOES. Each party reserves the right to terminate this MOA. A thirty (30) day written notice must be given prior to the date of termination.

APPROVALS

We agree with the provisions outlined in this Memorandum of Agreement and commit our agencies to implement them in a spirit of cooperation and mutual support.

Kentucky Department for Environmental Protection
Division for Air Quality

BY: John Lyons John S. Lyons

TITLE: Director, Division for Air Quality

DATE: 5/13/10

Hamilton County Department of Environmental Services

BY: Cory Chadwick Cory R. Chadwick

TITLE: Director

DATE: 5/13/10

Indiana Department of Environmental Management
Office of Air Quality

BY: Keith Baugues Keith Baugues

TITLE: Assistant Commissioner, Office of Air Quality

DATE: 5/14/10

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APPENDIX C

MEMORANDUM OF AGREEMENT
EVANSVILLE, IN-KY MSA

MEMORANDUM OF AGREEMENT
ON AIR QUALITY MONITORING FOR CRITERIA POLLUTANTS FOR
THE EVANSVILLE, IN-HENDERSON, KY
METROPOLITAN STATISTICAL AREA (MSA)

Participating Agencies:

Kentucky Department for Environmental Protection (KDEP)
Division for Air Quality (DAQ)

Indiana Department of Environmental Management (IDEM)
Office of Air Quality (OAQ)

PURPOSE/OBJECTIVES/GOALS

The purpose of this Memorandum of Agreement (MOA) is to establish the Evansville, IN-Henderson, KY Metropolitan Statistical Area (MSA) Criteria Pollutant Air Quality Monitoring Agreement among KDEP and IDEM to collectively meet United States Environmental Protection Agency (EPA) minimum monitoring requirements for particles of an aerodynamic diameter of 10 micrometers and less (PM 10), particles of an aerodynamic diameter of 2.5 micrometers and less (PM2.5), and ozone; as well as other criteria pollutant air quality monitoring deemed necessary to meet the needs of the MSA as determined reasonable by all parties. According to 40 CFR Part 58, Appendix D, the Evansville, IN-Henderson, KY MSA minimum monitoring requirements (based on a population of 350,000) are (2) ozone monitors, (0-1) PM-10 monitors, (1) FRM PM-2.5 monitor, and (1) collocated continuous PM-2.5 monitor with the FRM pm-2.5 monitor. This MOA will formalize and reaffirm the collective agreement in order to provide adequate criteria pollutant monitoring for the Evansville, IN-Henderson, KY MSA as required by 40 CFR *58* Appendix D, Section 2, (e).

PM *2.5* MSA monitoring network includes:

County	Federal Reference Method PM2.5	Continuous PM2.5	Speciation PM2.5	Collocated PM2.5
Henderson County, KY **KDEP**	1	1	0	0
Vanderburgh County, IN **IDEM**	3	1	1	1

Criteria Air Pollutant MSA monitoring network includes:

County	PM10	O_3	NO_x/NO/NO_2	CO	SO_2
Henderson County, KY **KDEP**	1	1	0	0	1
Vanderburgh County, IN **IDEM**	1	2	1	1	1

RESPONSIBLITIES/ACTIONS

Each of the parties to this Agreement is responsible for ensuring that its obligations under the MOA are met. As conditions warrant, the affected agencies may conduct telephone conference calls, meetings, or other communications to discuss monitoring activities for the MSA. Each affected agency shall inform the other affected agencies via telephone or email of any monitoring changes occurring within its jurisdiction of the MSA at its earliest convenience, after learning of the need for the change or making the changes. Such unforeseen changes may include evictions from monitoring sites, destruction of monitoring sites due to natural disasters, or any occurrences that result in an extended (greater than one quarter) or permanent change in the monitoring network.

LIMITATIONS

- All commitments made in this MOA are subject to the availability of appropriated funds and each agency's budget priorities. Nothing in this MOA obligates KDEP or IODEM to expend appropriations or to enter into any contract, assistance agreement, interagency agreement or other financial obligation.

- This MOA is neither a fiscal nor a funds obligation document. Any endeavor involving reimbursement or contribution of funds between parties to this agreement will be handled in accordance with applicable laws, regulations, and procedures, and will be subject to separate agreements that will be affected in writing by representatives of the parties.

- This MOA does not create any right or benefit enforceable by law or equity against KDEP or IDEM, their officers or employees, or any other person. This MOA does not apply to any entity outside KDEP or IDEM.

- No proprietary information or intellectual property is anticipated to arise out of this MOA.

TERMINATION

This Memorandum of Agreement may be revised upon the mutual consent of KDEP and IDEM. Each party reserves the right to terminate this MOA. A thirty (30) day written notice must be given prior to the date of termination.

APPROVALS

We agree with the provisions outlined in this Memorandum of Agreement and commit our agencies to implement them in a spirit of cooperation and mutual support.

Kentucky Department for Environmental Protection
Division for Air Quality

BY: John. S. Lyons John S. Lyons

TITLE: Director, Division for Air Quality

DATE: 5/14/10

Indiana Department of Environmental Management
Office of Air Quality

BY: Keith Baugues Keith Baugues

TITLE: Assistant Commissioner, Office of Air Quality

DATE: 5/24/10

APPENDIX D

MEMORANDA OF AGREEMENT
CLARKSVILLE, TN-KY MSA

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

Division of Air Pollution Control
William R. Snodgrass TN Tower
312 Rosa L. Parks Ave., 15th Floor
Nashville, Tennessee 37243

July 1, 2014

Sean Alteri, Director
Kentucky Division for Air Quality
Kentucky Department for Environmental Protection
200 Fair Oaks Lane
Frankfort, KY 40601

Dear Mr. Alteri:

The United States Environmental Protection Agency (EPA) revised monitoring regulations found in 40 CFR Part 58, Appendix D states in part: "The EPA recognizes that there may be situations where the EPA Regional Administrator and the affected State or local agencies may need to augment or to divide the overall MSA/CSA monitoring responsibilities and requirements among these various agencies to achieve an effective network design. Full monitoring requirements apply separately to each affected State or local agency in the absence of an agreement between the affected agencies and the EPA Regional Administrator." This revision of the CFR also describes the minimum monitoring requirements for the NAAQS pollutants, including continuous PM 2.5 as it applies to MSA areas where the population is sufficient to warrant monitoring for that pollutant. Tennessee and Kentucky share the Clarksville, TN-KY MSA, which is comprised of Trigg and Christian counties in Kentucky and Montgomery county in Tennessee. The US Census Bureau lists this area as containing a population in excess of 260,000.

CBSA Code	Geographic area	Legal/statistical Area description	July 1, 2013 Estimate	2010 Census
17300	Clarksville, TN-KY	Metropolitan Statistical Area	272,579	260,625

The Tennessee Division of Air Pollution Control (TDAPC) currently operates one (1) PM 2.5 FRM monitor and one (1) continuous PM 2.5 monitor in this area. The TDAPC believes the operation of the existing PM 2.5 monitors; (FRM and continuous), are sufficient to properly characterize the particulate air quality in the entire Clarksville, TN-KY MSA and comply with the requirements for both population and concentration based monitoring identified in the revised monitoring regulations as found at 40 CFR58,AppD. The TDAPC would like to invite the

Kentucky Division for Air Quality to participate in Tennessee's annual ambient air monitoring network review. Tennessee commits to sharing with Kentucky any and all quality assured ambient air monitoring data collected in the Tennessee portion of the Clarksville, TN-KY MSA. Tennessee also will notify Kentucky in advance of the intent to relocate or shutdown any of the PM 2.5 monitors referenced above so that adequate monitoring arrangements can be made to meet the entire MSA monitoring requirements for PM 2.5.

Sincerely,

Barry R. Stephens, PE
Director, Air Pollution Control Division

BRS/lb
Cc: Heather McTeer-Toney, US EPA Region IV

Steven L. Beshear
Governor

Leonard K. Peters
Secretary

Energy and Environment Cabinet
Department for Environmental Protection
Division for Air Quality
200 Fair Oaks Lane, 1st Floor
Frankfort, Kentucky 40601-1403
Web site: air.ky.gov

May 15, 2015

Mr. Barry R. Stephens, PE
Director
Tennessee Division of Air Pollution Control
312 Rosa L. Parks Avenue, 15th Floor
Nashville, TN 37243

Dear Mr. Stephens:

In a letter from your office dated July 1, 2014, the Tennessee Division of Air Pollution Control (TDAPC) agreed to operate a continuous $PM_{2.5}$ monitor and an intermittent FRM $PM_{2.5}$ sampler, to meet the minimum network design requirements stated in 40 CFR 58, Appendix D for the Clarksville, TN-KY metropolitan statistical area (MSA). The Kentucky Division for Air Quality (Division) appreciates TDAPC's cooperation and looks forward to participating in TDAPC's annual air monitoring network review.

The Division currently operates one (1) intermittent FRM $PM_{2.5}$ sampler and one (1) continuous ozone monitor at the Hopkinsville site (21-047-0006) in Christian County. In accordance with Table D-2 of 40 CFR 58, Appendix D, one (1) ozone monitor is required to be operated in the Clarksville, TN-KY MSA, based upon the most current population estimates from the US Census Bureau, as well as 2012-2014 ozone design values.

Geographic Area	Area Description	2014 USCB Population Estimate	2014 Three-Year Ozone DV (ppm)
Christian County, KY	County	74,250	0.067
Trigg County, KY	County	14,142	0.069 (CASTNET)
Montgomery County, TN	County	189,961	N/A
Clarksville, TN-KY	**MSA**	**278,353**	**0.069**

To satisfy the regulatory requirement, the Division agrees to operate one ozone monitor at the Hopkinsville site. Also, the Division agrees to notify TDAPC in the event that shutdown or relocation of the ozone monitor is necessary.

Despite the fact that 2012-2014 design values show that no FRM $PM_{2.5}$ samplers are required in the Clarksville MSA, the Division will continue to operate the $PM_{2.5}$ sampler at

Hopkinsville. The Division also agrees to notify TDAPC in the event that the Hopkinsville FRM $PM_{2.5}$ sampler must be shutdown or relocated, as it is the design value monitor for the MSA.

The Division commits to sharing with TDAPC any and all quality-assured ambient monitoring data collected in the Kentucky portion of the Clarksville, TN-KY MSA. The Division also welcomes TDAPC participation in Kentucky's annual network review process. If you have any questions or concerns, please contact me at 502-564-3999.

Sincerely,

Sean Alteri,
Director

SA/jfm
c: -Heather McTeer Toney, USEPA Region IV
-Daniel Garver, USEPA Region IV

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APPENDIX E

SUMMARY OF LMAPCD NETWORK CHANGES 2015

Appendix E
Summary of LMAPCD Network Changes 2015

Louisville Metro Air Pollution Control District (LMAPCD) intends to make the following changes to the ambient air monitoring network operated in Jefferson County, KY. The proposed changes provide for the replacement of aging equipment, while allowing for uniformity across the agency's particulate matter network.

Louisville-Jefferson County, KY-IN MSA

- Bates Elementary (21-111-0027):
  - Replace the $PM_{2.5}$ continuous TEOM with a non-FEM continuous $PM_{2.5}$ BAM for reporting of the AQI.

- Southwick Community Center (21-111-0043):
  - Replace the primary PM_{10} TEOM with a continuous FEM PM_{10} BAM.
  - Discontinue operation of the collocated continuous PM_{10} TEOM, which is not needed for network completeness.

- Watson Lane (21-111-0051):
  - Replace the continuous PM_{10} TEOM with a continuous FEM PM_{10} BAM.

APPENDIX F

INTENDED USE OF CONTINUOUS $PM_{2.5}$ FEMs

Appendix F
Intended Use of Continuous $PM_{2.5}$ FEMs

Historically, continuous $PM_{2.5}$ monitors that are designated as Federal Equivalent Methods (FEMs) have been excluded from comparisons to the $PM_{2.5}$ NAAQS, as long as these monitors were specified as special-purpose monitors (SPMs). Data from these monitors was used for reporting of the AQI. Monitors could remain designated as SPMs for a period of two years of operation at each site. However, after that two-year period, the data was eligible for comparison to the NAAQS, regardless of monitor-type designation.

In December 2012, a new PM NAAQS and set of monitoring rules were finalized. These new monitoring rules amended the previous requirement to compare all data from FEMs collected after a period of two-years to the NAAQS. Instead, agencies could operate a continuous $PM_{2.5}$ FEM for longer than two years and could elect to exclude the data from NAAQS-comparisons, provided that the monitor did not meet certain performance specifications. Data from monitors established for less than two years and designated as SPM remain ineligible for attainment decisions. Specifically, the final rule allows certain continuous $PM_{2.5}$ FEM data to be excluded if:

- the monitor does not meet performance criteria when compared to the data collected from collocated Federal Reference Methods (FRMs);
- the monitoring agency requests exclusion of data; and,
- the EPA Regional Office approves exclusion of the data.

Regardless of whether an exclusion is sought, each agency must address the use of all continuous $PM_{2.5}$ FEMs in the network. Additionally, each monitor must be properly referenced by a set of parameter codes, primary monitor designations, and monitor-types. Data from non-FEM continuous $PM_{2.5}$ monitors are not used for NAAQS comparisons and are only eligible for reporting of the AQI; as such, non-FEM monitors are not included in this statement.

KDAQ does not intent to operate any continuous FEM $PM_{2.5}$ monitors during the upcoming year. However, LMAPCD will operate three Met-One BAM 1020 continuous $PM_{2.5}$ FEMs, located at the Southwick Community Center (21-111-0043), Watson Lane (21-111-0051), and Cannons Lane (21-111-0067) sites. The EPA has determined that the data from the continuous $PM_{2.5}$ FEMs located at these three sites are comparable to the data collected by collocated FRMs; as such, those monitors are also designated as SLAMs monitors and are eligible for NAAQS comparisons.

The monitor designations for Met-One BAM 1020 continuous $PM_{2.5}$ FEMs operated by LMAPCD are summarized in the chart below.

Cannons Lane (21-111-0067), Southwick Community Center (21-111-0043), Watson Lane (21-111-0051)								
Scenario	**Parameter Name**	**Parameter Code**	**Pollution Occurrence Code (POC)**	**Monitor Type**	**Primary Monitor (Collocation)**	**Used for substitutions of missing primary data?**	**Used for NAAQS Comparisons?**	**Eligible for AQI?**
$PM_{2.5}$ Continuous FEM is eligible for NAAQS comparisons.	PM2.5 Local Conditions	88101	3	SLAMS	FRM	Yes	Yes	Yes

APPENDIX G

NEAR-ROAD MONITORING

Appendix G
Part A-Near-Road Monitoring

On February 9, 2010, the EPA released a new NO_2 Final Rule and a new set of monitoring requirements. Under the new monitoring requirements, State and Local agencies are required to establish NO_2 near-road monitoring stations based upon core based statistical area (CBSA) populations and traffic metrics.

Specifically, the final rule requires:

- 1 near-road monitor in CBSAs with populations greater than or equal to 500,000; and
- 2 near-road monitors in CBSAs with populations greater than or equal to 2,500,000.

Additionally, the final rule requires:

- 2 near-road monitors for any road segment that has an annual average daily traffic (AADT) count of 250,000 or more.

Based upon population estimates and AADT counts, near-road monitors are required in the following CBSAs:

CBSA Name (500,000 or more people)	2012 CBSA Population Estimate*	Highest Road Segment 2-Way AADT for CBSA**	Number of Monitors Required in CBSA
Cincinnati-Middletown, OH-KY-IN	2,128,603	163,000	1
Louisville-Jefferson County, KY-IN	1,251,351	171,000	1

*Source: US Census Bureau, 2012 Population Estimates (Last accessed: March 5, 2014)

**Sources: Ohio-Kentucky-Indiana Regional Council of Governments; Kentuckiana Regional Planning Development Agency (Analysis originally performed in 2012.)

In March 2013, the EPA finalized the use of a "phased" approach for establishing NO_2 near-road monitoring sites across the Nation. The phased approach necessitates:

- One required near-road monitor in CBSAs with a population of 1,000,000 or more must be established by January 1, 2014.
- Any second required near-road monitor in CBSAs that have a population greater than 2,500,000, or have a population of 500,000 or greater and have a traffic segment with an AADT of 250,000 or more, must be established by January 1, 2015.
- Required sites in remaining CBSAs with populations of 500,000 or more must be established by January 1, 2017.

Similarly, the EPA revised the $PM_{2.5}$ NAAQS and monitoring rule on December 14, 2012, and the CO monitoring rule on August 31, 2011. Together, these rules require CO and $PM_{2.5}$ monitoring to be established at near-road sites for any CBSA with a population of one-million or greater. Ultimately, near-road sites are intended to be multi-pollutant sites. These sites are used to characterize the impacts vehicle exhaust and traffic patterns on public health.

The determination of the final locations of near-road monitoring locations was a cooperative effort between multiple State and Local Agencies. Potential near-road sites were evaluated using the following additional criteria:

- Fleet mix
- Roadway design
- Traffic congestion patterns
- Local topography
- Meteorology
- Population exposure
- Employee and public safety
- Site logistics

The requirement for a near-road site in the Cincinnati, OH-KY-IN MSA is fulfilled by a Memorandum of Agreement (MOA). The site is located in Ohio and is operated by the Southwest Ohio Air Quality Agency.

The near-road site in the Louisville-Jefferson County, KY-IN MSA has been established and is operated by the Louisville Metro Air Pollution Control District (LMAPCD). LMAPCD submitted their proposed site location for a 30-day public comment period on March 8, 2013, which was later updated in August 2013. This proposal is included in Part B of this Appendix. Details regarding the established site are located on page 61 of the Annual Network Plan.

Appendix G
Part B-LMAPCD Near-Road Proposal

Proposal for a New Ambient Air Monitoring Station for the Near-Road Environment Louisville, Kentucky

Louisville Metro Air Pollution Control District
Air Monitoring Unit
850 Barret Avenue
Louisville Kentucky 40204

August 27, 2013

Near-road Multi-pollutant Ambient Air Monitoring Station

On February 9, 2010, EPA promulgated new minimum monitoring requirements for the nitrogen dioxide (NO_2) monitoring network in support of a newly revised 1-hour NO_2 National Ambient Air Quality Standards (NAAQS) and the retained annual NAAQS. In the new monitoring requirements, state and local air monitoring agencies are required to install near-road NO_2 monitoring stations at locations where peak hourly NO_2 concentrations are expected to occur within the near-road environment in larger urban areas. State and local air agencies are required to consider traffic volumes, fleet mix, roadway design, traffic congestion patterns, local terrain or topography, and meteorology in determining where a required near-road NO_2 monitor should be placed. In addition to those required considerations listed above, there are other factors that impact the selection and implementation of a near-road monitoring station including satisfying siting criteria, site logistics (e.g., gaining access to property and safety), and population exposure. The establishment of near-road NO_2 monitoring stations will create an infrastructure that will likely be capable of housing other ambient air monitoring equipment. Considering placement of the near-road NO_2 monitoring stations for multi-pollutant monitoring, even though it may not be required, matches with the Environmental Protection Agency's multi-pollutant paradigm, presented in the *Ambient Air Monitoring Strategy for State, Local, and Tribal Air Agencies* http://www.epa.gov/ttnamti1/files/ambient/monitorstrat/AAMS%20for%20SLTs%20%20-%20FINAL%20Dec%202008.pdfd published in 2008, and has been noted within documents associated with the NO_2 NAAQS revision of 2010 and the carbon monoxide (CO) NAAQS review of 2011. The intent of the multi-pollutant paradigm is to encourage the integration of multiple individual pollutant monitoring networks to broaden the understanding of air quality conditions and pollutant interactions, furthering the ability to evaluate air quality models, develop emissions control strategies, and support long-term scientific studies (including health studies).

Site Selection Process:

The Louisville Metro Air Pollution Control District (LMAPCD) created comparison matrices for many potential locations for a near-road monitoring station based on the Near-Road NO_2 Monitoring Technical Assistance Document from the United States Environmental Protection Agency (EPA). Many locations were discarded due to unsafe conditions, obstructions, or inadequate infrastructure. Two ideal locations were selected and toured by EPA Region 4 and EPA Science and Ecosystems Support Division representatives. LMAPCD was denied permission to place the site at one these locations and thus has determined that a property currently owned by the Kentucky Department of Transportation (KYTC) is the most ideal placement of the near-road site. The property is part of the electrical maintenance facility operated by KYTC at 1517 Durrett Lane, Louisville, Kentucky 40213. This area is located directly along the north side of Interstate 264 at latitude 38.1936 and longitude -85.7119 (Images 1 & 2). The proposed location is a small frontage area between the electrical maintenance facility and Durrett Lane. Durrett Lane as well as the proposed site location is part of the federal right of way

of the interstate. LMAPCD has obtained a permit for site implementation. Also attached is the proposed work plan for site implementation. LMAPCD requests EPA approval to implement the near-road multi-pollutant ambient air monitoring station for Louisville, KY at this location.

Image 1: Aerial photo of proposed site location – 1517 Durrett Lane, 0.90 miles north of the I-264/I-65 interchange.

Image 2: Zoomed aerial photo of proposed site location.

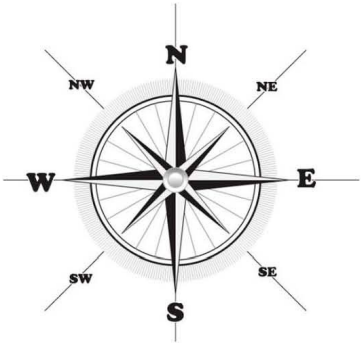
Near-Road Air Monitoring Station Site

- **Siting** - The site for this air monitoring station allows for conformity with siting requirements for ambient air monitors listed in 40 CFR Part 58 Appendix E including the following criteria listed as key to the Near-Road application:

Near-Road NO_2 Siting Criteria (per 40 CFR Part 58, Appendix E)	
Horizontal spacing	According to 40 CFR Part 58 Appendix E: "As near as practicable to the outside nearest edge of the traffic lanes of the target road segment; but shall not be located at a distance greater than 50 meters, in the horizontal, from the outside nearest edge of the traffic lanes of the target road segment." **This TAD recommends that the target distance for near-road NO_2 monitor probes be within 20 meters of the target road whenever possible.**
Vertical spacing	Microscale near-road NO_2 monitoring sites are required to have sampler inlets between 2 and 7 meters above ground level.
Spacing from supporting structures	The probe must be at least 1 meter vertically or horizontally away from any supporting structure, walls, parapets, penthouses, etc., and away from dusty or dirty areas.
Spacing from obstructions	For near-road NO_2 monitoring stations, the monitor probe shall have an unobstructed air flow between the monitor probe and the outside nearest edge of the traffic lanes of the target road segment, where no obstacles exist at or above the height of the monitor probe.

LMAPCD estimates that horizontal distance from the probes to the nearest edge of the target road segment to be 25 to 28 meters.

- **Proposed AQS Site ID**: 21-111-0075.
- **Street Address and Coordinates**: 1517 Durrett Lane, Louisville, KY. Latitude 38.1936 and Longitude -85.7119.
- **Target Road Segment**: Interstate 265 - from Interstate 65 to Poplar Level Rd.
- **Site Photos:**


N
NW
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S

- **Distance from probe to edge of target road**: Approximately 28 meters.

- **Property Description**: Property owned by the Kentucky Department of Transportation. Proposed site location is a small flat grass lot in front of the KYTC electrical maintenance facility. Area would provide easy access and operator safety. Site implementation has been approved by KYTC.

Image 3: View of the potential site plot.

- **Roadway Design**: Interstate 265 runs east/west. The proposed site location is on the north side of the interstate.

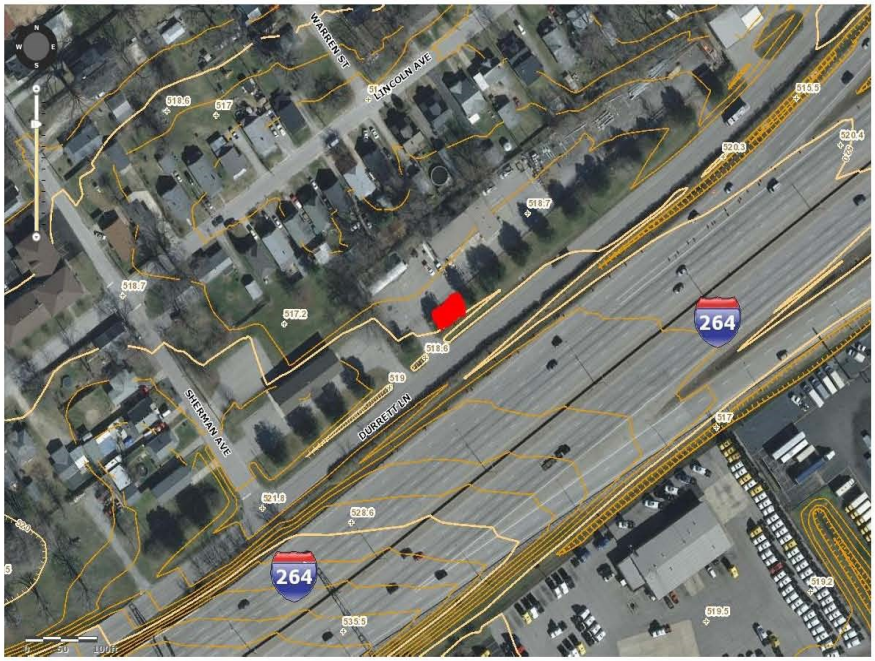

Image 4: Terrain and elevation of the roadway. The area shaded red is the proposed location.

- **Presence of roadside structures:** There are three small trees on the area where the site is proposed. These trees would be removed. Also, between the site location and the Interstate is a wire fence approximately 10 feet tall. Along this fence a hedge is growing to shield headlights from Durrett Lane. KYTC has given initial permission to trim and maintain this hedgerow at the height of the fence. Probe placement would be above the level of this hedgerow.

- **Windrose:**

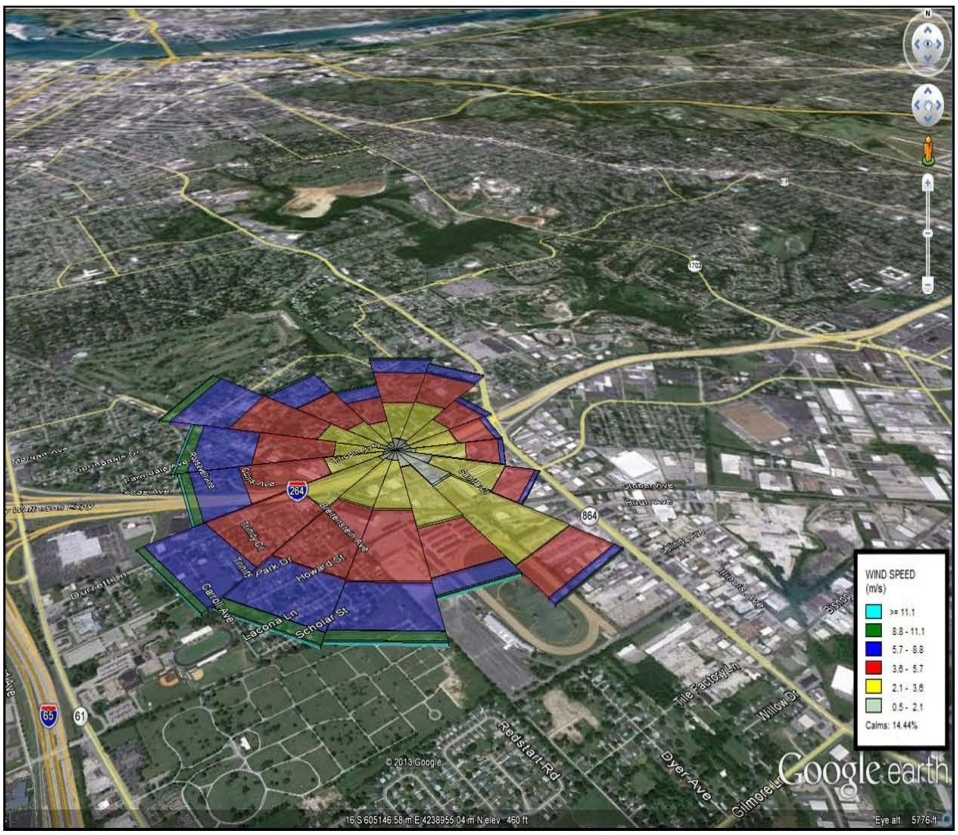

Image 5: Windrose is centered directly on proposed site location (38.1935, -85.7121). Surface wind data from Louisville International Airport 2007-2011.

- **Traffic Data/Ranking**:

TRAFFIC VOLUME / CHARACTERISTICS									
Roadway	From	To	AADT	AADT Rank	HDV AADT	HDV AADT Rank	FE-AADT	FE-AADT Rank	LOS
I-65	Grade Lane area	I-264	171000	1	25,000	1	396,000	1	F
I-65	KY 1631 (Fern Valley)	Grade Lane area	157000	4	22,126	3	356,134	2	D
I-65	KY 1065 (Outer Loop)	KY 1631 (Fern Valley)	149000	8	22,600	2	352,400	3	E
I-65	I-265	KY 1065 (Outer Loop)	129000	15	18,900	4	299,100	4	C
I-65	Eastern Parkway	Broadway overpass	130055	13	18,000	6	292,055	5	F
I-65	I- 64	Indiana State Line	121000	16	18,750	5	289,750	6	D
I-65	I-264	Eastern Parkway	130000	14	15,808	7	272,272	7	D
I-264	I- 65 / KY 61 (Preston Hwy)	KY 864 (Poplar Level Rd)	163,000	2	9,400	19	247,600	8	D
I-64	I-65	I-71	144,000	11	11,300	14	245,700	9	F
I-264	KY 864 (Poplar Level Rd)	KY 1703 (Newburg Rd)	158,000	3	9,200	20	240,800	10	E
I-65	Indiana State Line	10th Street	99700	20	15,450	8	238,750	11	D
I-264	KY 1703 (Newburg Rd)	US 31E / US 150 (Bardstown Rd)	155,069	5	9,190	21	237,779	12	D
I-264	KY 1932 (Breckenridge Ln)	I- 64	148,000	9	9,600	18	234,400	13	D
I-264	US 31E / US 150 (Bardstown Rd	KY 155 (Taylorsville Rd)	152,000	6	9,100	22	233,900	14	D
I-64	I-264	Hurstbourne Pkwy.	152,000	7	8,870	24	231,830	15	E
I-264	KY 1631 (Crittenden Dr)	I- 65 / KY 61 (Preston Hwy)	133,000	12	10,906	16	231,154	16	F
I-65	Bullitt Co. / Jefferson Co. Line	I-265	98100	22	14,450	9	228,150	17	C

Image 6: Traffic Data obtained from the Kentuckiana Regional Planning & Development Agency in 2012.

- **Sampling and Analysis Methods**:

  Nitrogen Dioxide - Teledyne - Advanced Pollution Instrumentation, Inc. Model 200EUP (Automated Equivalent Method: EQNA-0512-200) or equivalent.

  Carbon Monoxide - Teledyne Advanced Pollution Instrumentation, Inc. Model T300U (Automated Reference Method: RFCA-1093-093) or equivalent.

  Meteorological Measurements – Wind direction and speed, temperature, humidity.

- **Operating Schedules** - All instrumentation initially installed at the Near Road Site will run continuously and produce hourly averages.

- **Monitoring Objective and Spatial Scale** - The monitoring objective for near-road monitoring is maximum concentration and representative of the neighborhood scale.

- **Area Represented** – The area represented by this near-road monitoring site would be the Louisville/Jefferson County, KY-IN Metropolitan Statistical Area.

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APPENDIX H

WEST JEFFERSON COUNTY AIR TOXICS MONITORING STATIONS

Appendix H
West Jefferson County Air Toxics Monitoring Stations

West Jefferson County Air Toxics Monitoring Stations
Volatile Organic Compounds (Method TO-15)

Site ID	Established	Location	Purpose	Frequency of Sampling
21-111-1041	1999	4201 Algonquin Parkway	Maximum Impact	24-hrs every twelfth day
21-111-0054	1999	4211 Campground Road	Maximum Impact	24-hrs every twelfth day
21-111-0058	1999	Farnsley Middle School, 3400 Lees Lane	Neighborhood Exposure	24-hrs every twelfth day
21-111-0060	1999	Chickasaw Park	Neighborhood Exposure	24-hrs every twelfth day
21-111-0062	1999	Cane Run Elementary	Neighborhood Exposure	24-hrs every twelfth day
21-111-0067	2009	Cannons Lane	Neighborhood Exposure	24-hrs every twelfth day

APPENDIX I

PUBLIC COMMENT

KENTUCKY DIVISION FOR AIR QUALITY
AMBIENT AIR MONITORING NETWORK
Comments Received 6/17/2015

Energy and Environment Cabinet
Department for Environmental Protection
Division for Air Quality

(1) A public comment period on the KENTUCKY DIVISION FOR AIR QUALITY AMBIENT AIR MONITORING NETWORK PLAN 2015 was held from May 18, 2015, through June 17, 2015.

(2) No comments were received during the public comment period.

INDEX

KDAQ AIR MONITORING STATIONS
BY
REGIONAL OFFICE

KDAQ MONITORING STATIONS BY REGIONAL OFFICE

AQS ID	SITE NAME	COUNTY	PAGE NUMBER
Region 1 - Hazard Regional Office			
21-193-0003	Hazard	Perry	108
21-195-0002	Pikeville Primary	Pike	110
Region 2 - Frankfort Regional Office (Bluegrass Area)			
21-067-0012	Lexington Primary	Fayette	54
21-113-0001	Nicholasville	Jessamine	56
21-151-0003	Mayfield Elementary	Madison	94
21-151-0005	EKU	Madison	96
Region 3 - Florence Regional Office			
21-015-0003	East Bend	Boone	28
21-037-3002	NKU	Campbell	30
Region 4 - Owensboro Regional Office			
21-059-0005	Owensboro Primary	Daviess	80
21-091-0012	Lewisport	Hancock	82
21-101-0014	Baskett	Henderson	42
Region 5 - Ashland Regional Office			
21-019-0017	Ashland Primary (FIVCO)	Boyd	48
21-019-0002	21st & Greenup	Boyd	46
21-043-0500	Grayson Lake	Carter	102
21-089-0007	Worthington	Greenup	50
Region 7 - Frankfort Regional Office (North Central Area)			
21-029-0006	Shepherdsville	Bullitt	60
21-093-0006	Elizabethtown	Hardin	38
21-185-0004	Buckner	Oldham	62
Region 8 - Paducah Regional Office			
21-047-0006	Hopkinsville	Christian	34
21-139-0003	Smithland	Livingston	88
21-139-0004	Bloodworth	Livingston	90
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