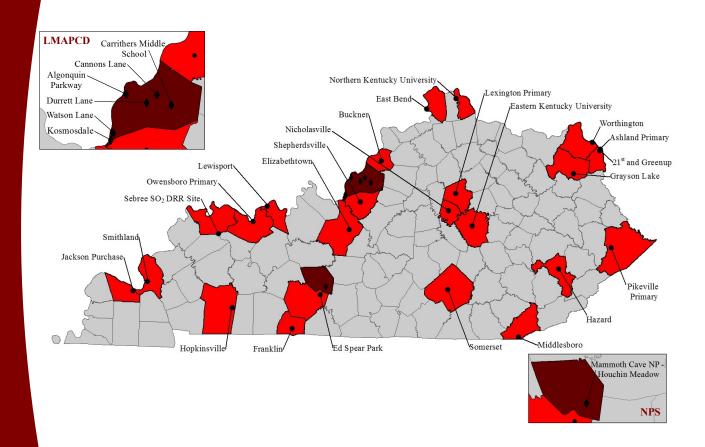
Kentucky Annual Ambient Air Monitoring Network Plan 2020







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CERTIFICATION

By the signatures below, the Kentucky Division for Air Quality certifies that the information contained in this Surveillance Network document for sampling year 2020 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, following a 30-day public comment period.

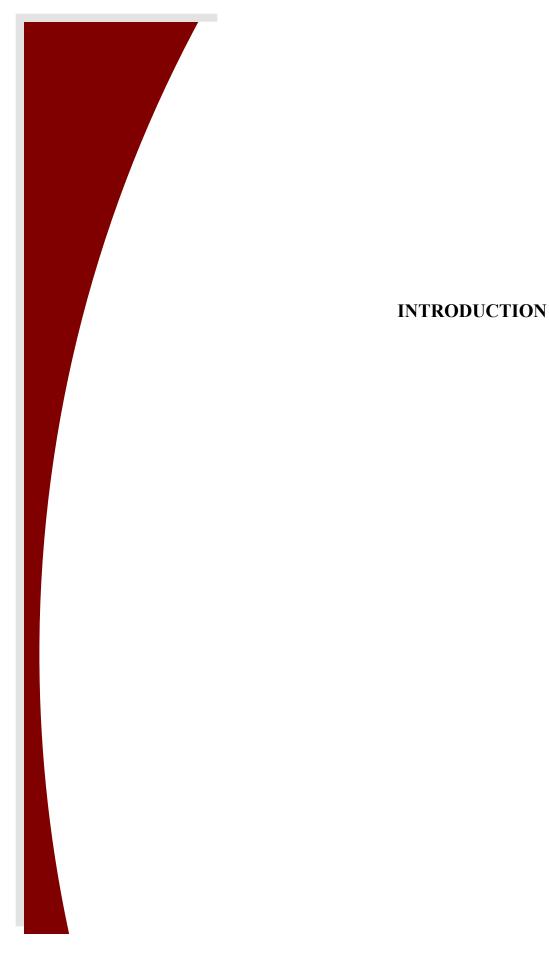
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PUBLIC NOTIFICATION AND COMMENT PERIOD

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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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 that did not allow for flexibility to conduct special purpose monitoring studies; and data reporting that was untimely and incomplete. These deficiencies were primarily caused by a lack of uniformity in station locations 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 provided 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 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 30 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:

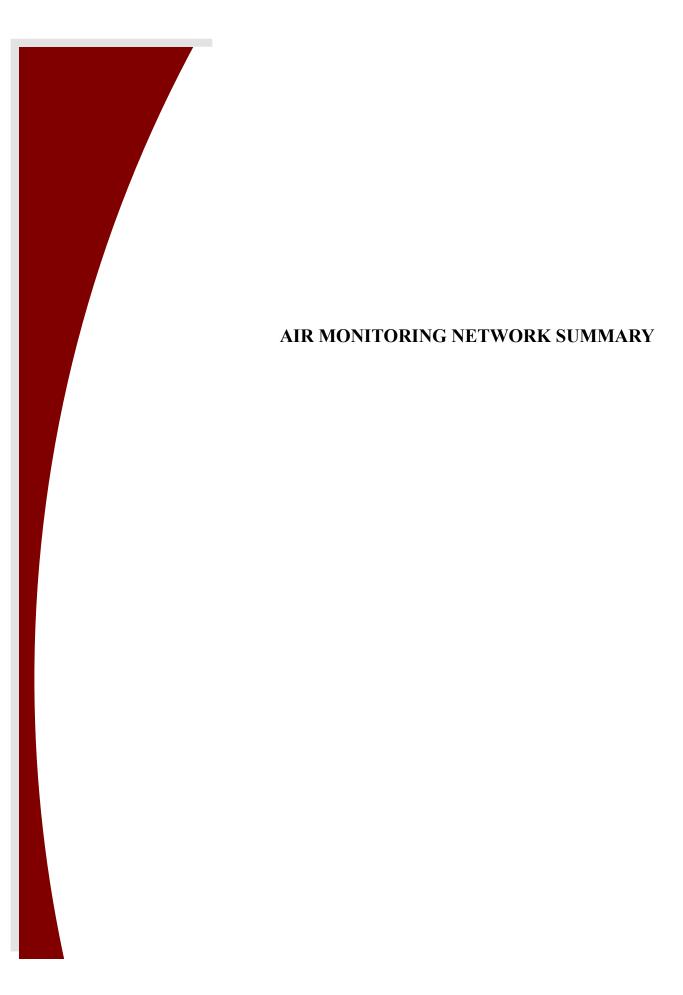
- 1. The Air Quality System (AQS) site identification number for existing stations.
- 2. The location, including the street address and geographical coordinates, for each monitoring station.
- 3. The sampling and analysis method used for each measured parameter.
- 4. The operating schedule for each monitor.
- 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.



SUMMARY OF KDAQ NETWORK CHANGES 2020

During the 2020-2021 monitoring year, KDAQ will operate 76 instruments, including 10 meteorological stations, located at 24 ambient air monitoring sites in 23 Kentucky counties. LMAPCD will operate an additional 32 instruments, including 6 meteorological stations, in Jefferson County. When combined with the air monitoring site operated by the National Park Service NPS at Mammoth Cave National Park, the total ambient air monitoring network will consist of 113 instruments, including 17 meteorological stations, located at 31 sites across 25 counties of the Commonwealth.

KDAQ proposes to make the changes below to the ambient air monitoring network. Changes to the LMAPCD network are detailed in Appendix E.

METROPOLITAN STATISTICAL AREAS

Bowling Green, KY

- The intermittent FRM PM_{2.5} primary and collocated samplers at Ed Spear Park (21-227-0009) will be shutdown, effective 12/31/2020.
- The two continuous FEM PM_{2.5} monitors at Ed Spear Park (21-227-0009) will designated as SLAMS monitors eligible for comparison against the NAAQS, effective 1/1/2021. Monitors will be collocated in AQS fulfilling FEM-FEM collocation requirements for the network.

Clarksville, TN-KY

- The intermittent FRM PM_{2.5} sampler at Hopkinsville (21-047-0006) will be shutdown, effective 12/31/2020.
- A continuous FEM PM_{2.5} monitor will be installed at Hopkinsville (21-047-0006), effective 1/1/2021. The monitor will be designated as SLAMS monitor and will be eligible for comparisons against the NAAQS.

Elizabethtown-Fort Knox, KY

- The primary intermittent FRM $PM_{2.5}$ sampler at Elizabethtown (21-093-0006) will be shutdown, effective 12/31/2020. The collocated intermittent FRM $PM_{2.5}$ sampler will remain at the site.
- The continuous FEM PM_{2.5} monitor at Elizabethtown (21-093-0006) will be re-designated as the primary PM_{2.5} monitor for the site and will be collocated in AQS with the remaining intermittent FRM, fulfilling FEM-FRM collocation requirements. The continuous FEM will be designated as SLAMS and will be eligible for NAAQS determinations. Changes are effective 1/1/2021.

Lexington-Fayette, KY

- The intermittent FRM PM_{2.5} sampler at Lexington (21-067-0012) will be shutdown, effective 12/31/2020.
- The continuous FEM PM_{2.5} sampler at Lexington (21-067-0012) will be designated as a SLAMS monitor and will be eligible for NAAQS-comparisons, effective 1/1/2021.

MICROPOLITAN STATISTICAL AREAS

Middlesborough, KY

• The intermittent FRM PM_{2.5} sampler at Middlesboro (21-013-0002) will be shutdown, effective 12/31/2020.

SUMMARY OF KDAQ NETWORK CHANGES 2020

• A continuous FEM PM_{2.5} monitor will be installed at Middlesboro (21-013-0002), replacing the intermittent FRM PM_{2.5} sampler, effective 1/1/2021. The FEM monitor will be designated as SLAMS and will be eligible for NAAQS-comparisons.

Paducah-Mayfield, KY-IN

• The Bloodworth site (21-139-0004) will be shutdown, effective 9/30/2020. The site is equipped with an intermittent FEM PM10 sampler and a meteorological station. While not currently operational, the site has historically also been equipped with a VOC sampler. While there are no plans to re-locate the site, KDAQ is working with EPA to establish a special-purpose VOC monitoring study in Calvert City, KY (see Appendix G).

Somerset, KY

- The intermittent FRM PM_{2.5} sampler at Somerset (21-199-0003) will be shutdown, effective 12/31/2020.
- A continuous FEM PM_{2.5} monitor will be installed at Somerset (21-199-0003), effective 1/1/2021. The FEM monitor will be designated as SLAMS and will be eligible for NAAQScomparisons.

NOT IN A MSA

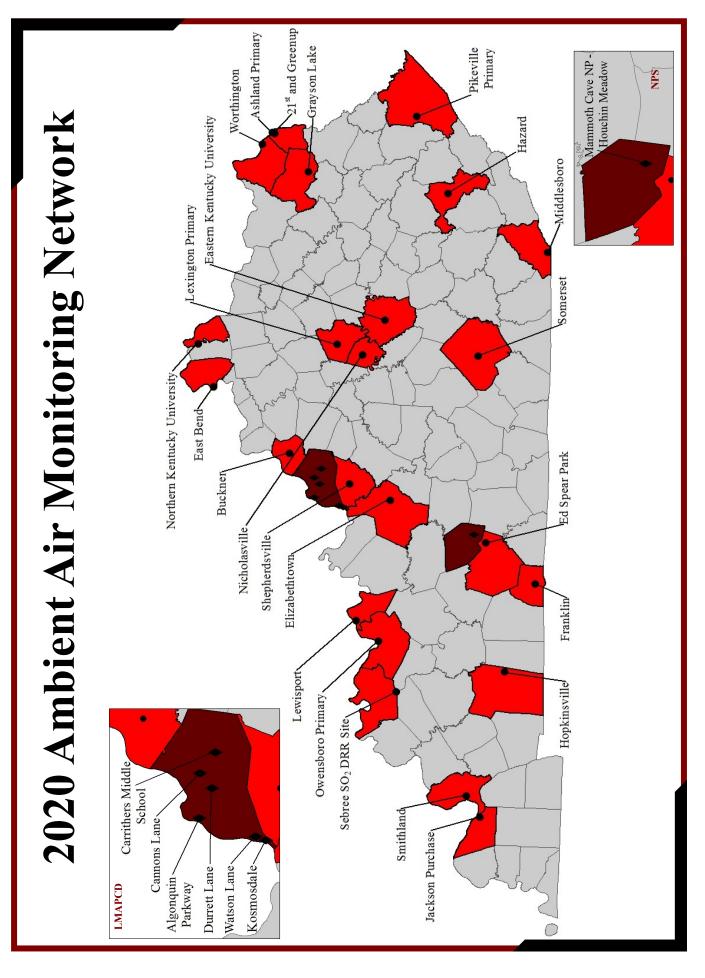
Hazard, KY

- The intermittent FRM PM_{2.5} sampler at Hazard (21-193-0003) will be shutdown, effective 12/31/2020.
- The continuous FEM PM_{2.5} monitor at Hazard (21-193-0003) will be designated as a SLAMS monitor and will be eligible for NAAQS-comparisons, effective 1/1/2021.

2020 AIR MONITORING STATIONS SUMMARY

	Site Based Count PM _{2.5}	Continu- ous PM _{2.5}	PM_{10}	Continuous PM ₁₀ /PM coarse	SO_2	NO ₂	NO _y	 0	O ₃ Pb	NOC C	Carbonyl	PAH	PM _{2.5} Speciation	Carbon Specia- tion	Black Carbon	RadNet	Met
		2 ^{8,C,i}			1		-	1 2	2 ^{i,Max}								
OH-KY-IN (AQI) (PWEI) 2		1 ⁱ ,S			. <u>1</u>	. _I T			2 ⁱ								-
Clarksville, TN-KY		li, ^x							1 _i								1
Elizabethtown, KY	1 _C	1 i,S						1	1 i,Max								
Evansville, IN-KY (PWEI) 1					1 ^{DRR}												
Huntington-Ashland, WV-KY-OH (AQI) (PWEI)	1 _x	1,5	4 ^{C,m}		2 ⁱ	1 _i			3і,Мах	2 ^D	2 ^D	1					2
Lexington-Fayette,		l _i	1 m		2 _i	1 ^{r40,i}		2	2 ^{i,Max}							1	1
Louisville-Jefferson County, KY-IN (AQI) (PWEI)	2 ^{n,C}	S ^{i,S}		1 i,E	.i4	2 ^{n,i}	1	2 ^{n,i} 5	5і,Мах	2 ^G			1	1	1	1	7 ⁿ
Owensboro, KY		1,5			1^{i}	1^{i}		2	2 ^{i,Max}								1
Micropolitan Statistical Area																	
Paducah, KY-IL (PWEI) 2		1 i,S	1 m		l ⁱ	1^{i}			2 ⁱ							1	
Somerset, KY		1 i,S							1 ⁱ								
Middlesboro, KY		1,5							1^{i}								1
Richmond-Berea, KY									2 ^c	0							
Not in a CBSA																	
Perry County		1 i,S							1^{i}								1
Pike County		1 i,S							1^{i}								
Simpson County 1									1^{i}								1
KDAQ Totals 24	4	13	9	0	8	5	0	0	21 2	2	2	1	0	0	0	2	10
LMAPCD Totals 5	2	5	0	1	4	7	1	2	3 0	2	0	0	1	1			9
NPS Totals	0	0	0	0	1	0	1	1	1 0	0	0	0	0	0	0	0	1
Total Network 30	9	18	9	1	13	7	2	3	25 2	4	2	1	1	1	1	3	17

Tallies are equal to the actual number of monitors in operation. Superscripts represent additional information about the network. PWEI= PWEI SO2 Monitoring Required in MSA; 740=RA-40 Monitor; for; Max= Maximum O; Concentration Site; n=Near-Road Monitor; X= Regional PM_{2.5} Transport or Background Monitor; S=Continuous PM T640; AQI=AQI Monitoring Required in CBSA; i=AQI Reported; m= PM10 Filter Analyzed for Metals; G=Continuous Auto-GC; C=Collocated Monitors; D= Duplicate Channels; DRR= SO2 Data Requirements Rule Monitor; E= Continuous PM2.5-PM10 T640x-Coarse; (T640x samples for PM₁₀, PM_{2.5} and PM coarse with a single monitor)





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 to 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, resited 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 in order 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, Monitor Types, 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 or may be used to fulfill multiple network design requirements.

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.

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).

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

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 selected sites in locations across Kentucky. The ambient air data establishing the AQI is subject to quality assurance procedures and is not considered official.

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.

EPA: Monitor operated by the EPA or an EPA contractor. Monitors may be eligible for comparisons against the NAAQS and are typically a part of the CASTNET network.

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, but the data may also be eligible for comparisons against the NAAQS.

Population Weighted Emissions Index (PWEI): On June 22, 2010, the US EPA released a new SO₂ Final Rule and a set of monitoring requirements. The 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 SO₂, 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 requirements technically apply to the MSA and are not monitor specific. Any SO₂ used to fulfill MSA PWEI requirements must first and foremost be designated as SLAMS.

Regional Administrator 40 (RA-40): On February 9, 2010, the US EPA released a new NO₂ 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 NO₂ monitoring locations, with a primary focus on protecting susceptible and vulnerable populations. RA-40 NO₂ monitors are SLAMS monitors foremost.

Maximum Ozone Concentration: Each Metropolitan Statistical Area (MSA) must have at least one ozone monitor designated to record maximum expected ozone concentrations. These monitors are first and foremost SLAMS (or SLAMS-like) monitors.

6. Monitoring Methods

All sampling and analytical procedures used for NAAQS compliance 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 (PM₁₀)

All PM₁₀ 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 sent to a contract laboratory, where they 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/m³). 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.

For continuous PM₁₀ monitoring, LMAPCD uses Teledyne API T640x for PM₁₀ NAAQS compliance and PM_{coarse} monitoring. TAPI T640x monitors collect PM_{2.5}, PM10, and PM_{10-2.5} (coarse) data continuously via the principle of broadband particle-scattering spectroscopy. During sampling, ambient air is pulled into an inlet at a rate of 16.7 lpm and through a sample conditioner, prior to being introduced to a particle sensor equipped with a polychromatic (broadband) LED. Particles in the sample reflect light from the LED, which is measured by the analyzer and used to calculate the particle-mass of the sample.

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

The Division currently operates continuous Teledyne-API (TAPI) T640 continuous PM_{2.5} spectroscopy monitors and manual intermittent samplers for monitoring particulate matter 2.5 microns in size (PM_{2.5}). All PM_{2.5} samplers and monitors operated by KDAQ are certified as either reference or equivalent methods. All FRM 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. Filters are sent to a contract laboratory, where they 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/m³). Samples must be retrieved within 177 hours of the end of the sample run and are kept cool (4 degrees C or cooler) during transit to the contract laboratory. 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.

TAPI T640 monitors collect PM_{2.5} data continuously via the principle of broadband particle-scattering spectroscopy. The TAPI T640 is designated as a FEM for PM_{2.5}. During sampling, ambient air is pulled into an inlet at a rate of 5.0 lpm and through a sample conditioner, prior to being introduced to a particle sensor equipped with a polychromatic (broadband) LED. Particles in the sample reflect light from the LED, which is measured by the analyzer and used to calculate the particle-mass of the sample.

LMAPCD uses Teledyne API T640 and T640x for NAAQS compliance monitoring. Continuous PM_{2.5} T640s are used to provide 24-hour daily reporting for the AQI. The data obtained from continuous FEMs may or may not be used for comparison to the NAAQS. A statement on the use of continuous FEM PM_{2.5} monitors is included in the appendices of this document.

(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 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 (NO₂)

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 Cavity-Attenuated Phase-Shift (CAPS) spectroscopy method as well as chemiluminescence to measure nitrogen dioxide and total reactive nitrogen (NO/NOy) respectively.

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 8 x 10 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 (m³/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).

(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 filters over a 24-hour period from the PM_{10} monitoring method. The filter is weighed before and after the sample run by a contract laboratory. The gain in weight in relation to the volume of air sampled is used to calculate the concentration in micrograms per cubic meter (ug/m³). The filter is then delivered to a separate 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. Additionally, LMAPCD operates a continuous automatic gas chromatographs, which continuously monitor for various VOCs and hazardous air pollutants.

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 a US EPA contract laboratory for analysis via gas chromatography/mass spectrometry.

Carbonyl samples are collected on a DNPH 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) Black Carbon

LMAPCD plans to incorporate a black carbon monitor at the Durrett Lane (Near-Road) site to better characterize particulate carbon species. The analysis is performed at 7 optical wavelengths spanning the range from the near-infrared (950 nm) to the near-ultraviolet (370 nm). The sequencing of illumination and analysis is performed on a 1-Hz time base, yielding the complete spectrum of aerosol optical absorption with one data line every second.

The optical performance of the monitor is validated by a 'Neutral Density Optical Filter Kit', consisting of four precision optical elements whose absorbance is traceable to fundamental standards. Software routines measure the optical intensities at all wavelengths and compare the analysis at the instant with the original reference values.

(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 KDAQ and LMAPCD operate 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 and LMAPCD both have an extensive quality assurance program to ensure that all air monitoring data collected is accurate and precise. KDAQ 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 city-sized 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. The following relationship of these six basic site type and the scale of representativeness are appropriate when siting monitoring stations:

Monitoring Site Type
Highest Concentration
Population Oriented
Source Impact
Regional Transport & General Background
Welfare-based Impacts

Scale of Representativeness
Micro, Middle, Neighborhood
Neighborhood, Urban
Micro, Middle, Neighborhood
Neighborhood, Regional
Urban, Regional

Data Processing and Reporting

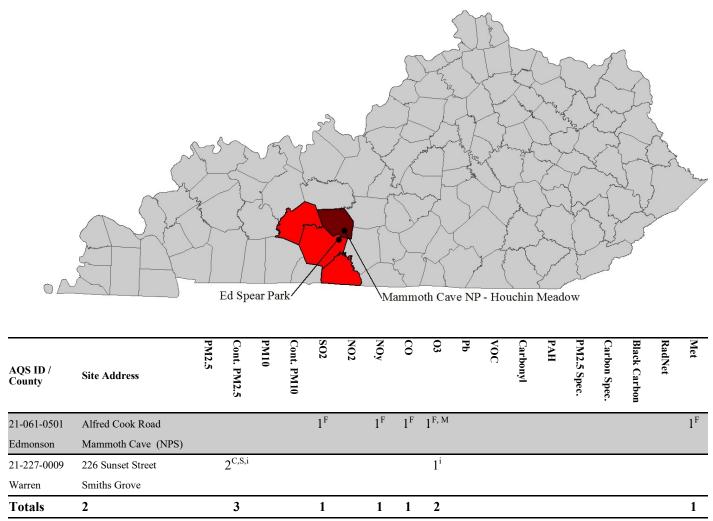
All ambient air quality data collected by KDAQ are stored on a server located at the main office building of Commonwealth Office of Technology at 101 Cold Harbor Drive, Frankfort, Kentucky. The server runs a full database back up every night and keeps an hourly transaction log. After each month of data has passed all quality assurance checks, the data is transmitted via telemetry to the US EPA's national data storage system known as AQS.

All ambient air quality and meteorological data collected by LMAPCD are stored on a server maintained by Louisville Metro's Department of Information Technology (DoIT) located at 410 South 5th Street in Louisville, KY. The server runs a full database back up every night and those data are stored at an offsite facility for disaster recovery purposes.

-	<u>.</u>	<u></u>	KDAQ websit	

AIR MONITORING STATION DESCRIPTIONS

Bowling Green, KY



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

F=Non-EPA Federal Monitor

S=Continuous T640 Monitor

C = Collocated

i=AQI Reported

M=Maximum Ozone Concentration Site for MSA

CSA/MSA: <u>Bowling Green-Glasgow, KY</u> CSA; <u>Bowling Green, KY</u> 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: 37.13182, -86.147944 (NAD83)

Date Established: August 1, 1997 **Inspection Date:** September 5, 2019 **Inspection By:** Jenna Nall and Allison Hall



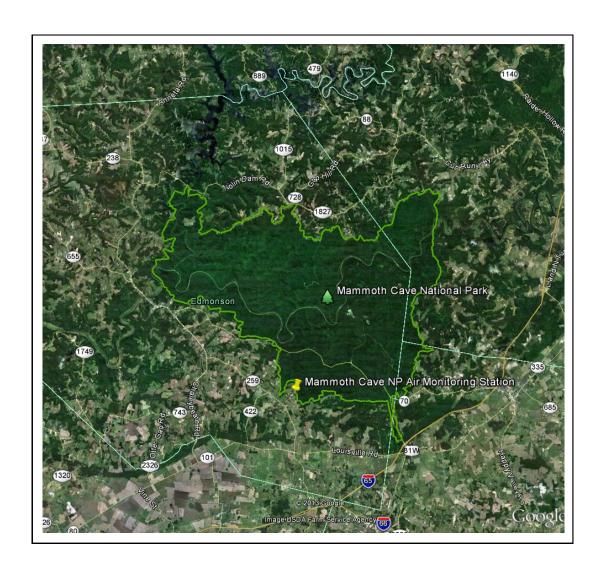
Mammoth Cave National Park was established as one of 156 mandatory Federal Class I Areas nationwide under the Clean Air Act Amendments of 1977. Class I Areas are imparted with the highest level of air quality protections, especially regarding visibility degradation (haze). The Division maintains a cooperative relationship with Mammoth Cave National Park and frequently includes the site's data in air quality analyses. Additionally, the ozone monitor is designated as the "Maximum Ozone Concentration" monitor for the Bowling Green, KY MSA. However, KDAQ 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	9.1	CASTNET Maximum O ₃ Non-EPA Federal	Automated Equivalent Method utilizing UV photometry analysis	Continuously
Sulfur Dioxide	8.8	Non-EPA Federal	Automated Equivalent Method utilizing trace level UV fluorescence analysis	Continuously
Total Reactive Nitrogen (NO/NO _Y)	8.8	Non-EPA Federal	Automated method utilizing trace level chemiluminescence analysis	Continuously
Carbon Monoxide	8.8	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
Meteorological	-	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 (Smiths Grove)

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:** September 5, 2019

Inspection By: Jenna Nall and Allison Hall

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 35.9 meters from the nearest road. 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. While not required for the CBSA, the site also provides levels of ozone and particulate matter for daily index reporting.

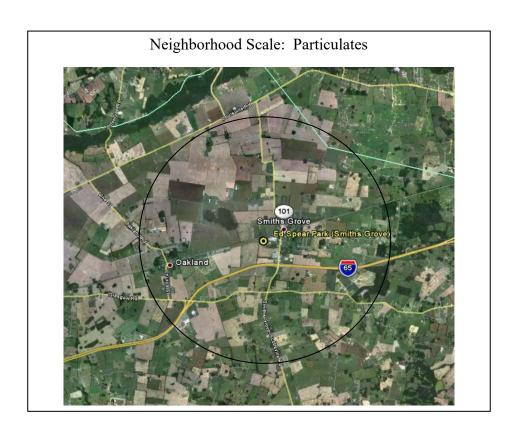
Monitors:

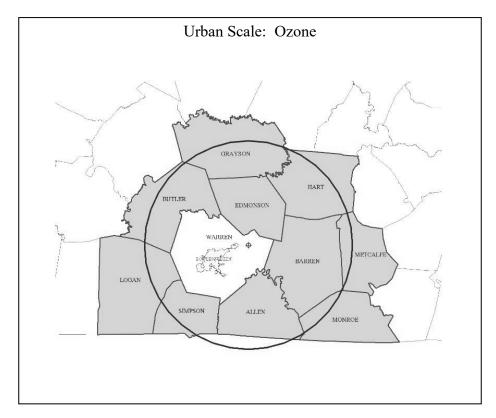
Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	4.1	SLAMS AQI	UV photometry	Continuously March 1 – October 31
FEM PM _{2.5} Continuous	4.7	SLAMS	Broadband Spectroscopy	Continuously
Collocated FEM PM _{2.5} Continuous	4.7	SLAMS	Broadband Spectroscopy	Continuously

Quality Assurance Status:

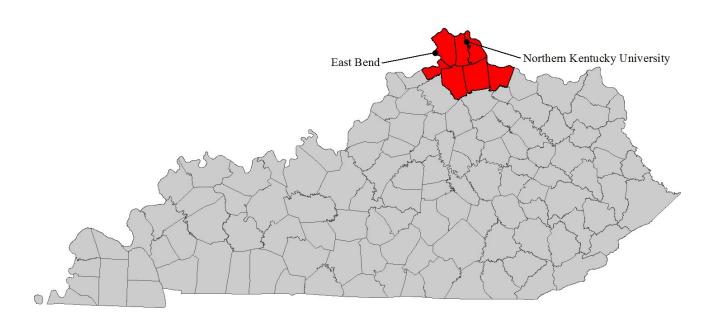
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

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





Cincinnati, OH-KY-IN



AQS ID / County	Site Address	PM2.5	Cont. PM2.5	PM10	Cont. PM10	SO2	NO2	NOy	СО	03	Pb	VOC	Carbonyl	PAH	PM2.5 Spec.	Carbon Spec.	Black Carbon	RadNet	Met
21-015-0003	KY338 & Lower River									1 i									1
Boone	Union																		
21-037-3002	524A John's Hill Rd	2^{C}	1 ^{S,i}			1 ^{i,P}	1 i			1 ^{e,i}									
Campbell	Highland Heights																		
Totals	2	2	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

e=Emergency Episode Monitor

P=PWEI Monitor

S=Continuous T640 Monitor

C=Collocated Monitors

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:** October 23, 2019

Inspection By: Jennifer Miller and Lisa Hicks

Site Approval Status: Site and monitors meet all design criteria with the exception that

instrumentation is partially obstructed by trees.



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 all the requirements of 40 CFR 58, Appendices A,C, D and E, with the exception that the site is partially obstructed by trees. The ozone monitor and meteorological instrumentation violate the siting criteria in 40 CFR 58, Appendix E, which requires that each inlet have at least a 270° of unobstructed airflow and include the predominant wind direction. The obstruction was identified as a cluster of trees located on private property. KDAQ is currently in the process of rectifying this issue.

Monitoring Objective:

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

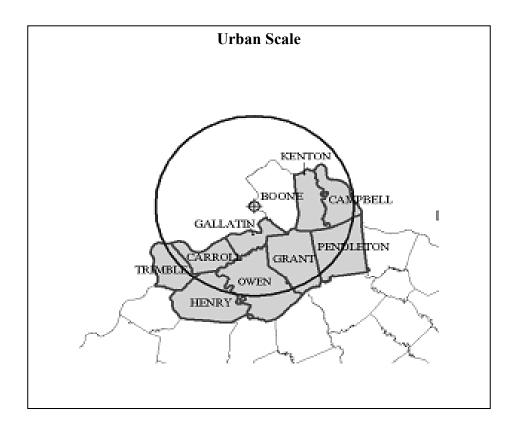
Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.5	SLAMS AQI	UV photometry	Continuously March 1 – October 31
Meteorological	5.0		AQM grade instruments for wind speed, wind direction, and temperature	Continuously

Ouality 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: <u>Cincinnati-Wilmington-Maysville, OH-KY-IN</u> CSA; <u>Cincinnati, OH-KY-IN</u> 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:** December 12, 2019 **Inspection By:** Jenna Nall and Allison Hall

Site Approval Status: Site and monitors meet all design criteria for the monitoring network.



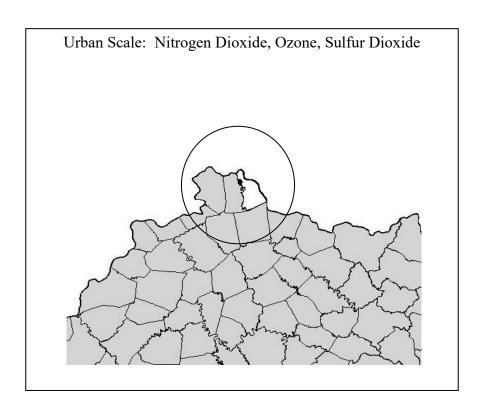
The monitoring site is a stationary equipment shelter located on farmland owned by Northern Kentucky University in Highland Heights, Kentucky. The sample inlets are 451 meters from the nearest road, which is Interstate 275. Upon inspection, the sample lines and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices A, C, D, E and G.

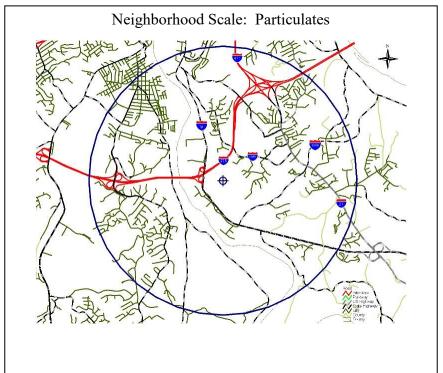
Monitoring Objective:

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.

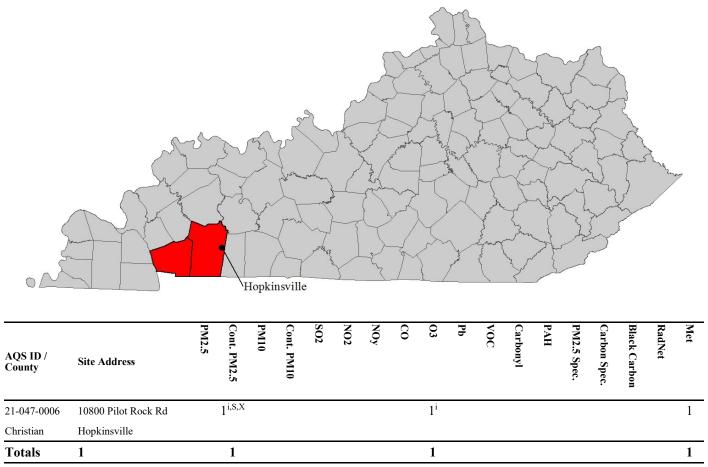
Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Nitrogen Dioxide (NO ₂ , NO, NO _x)	3.83	SLAMS AQI	Chemiluminescence	Continuously
AEM Ozone	3.82	SLAMS AQI EPISODE	UV photometry	Continuously March 1 – October 31
FRM PM _{2.5}	4.66	SLAMS	Gravimetric	24-hours every third day
Collocated FRM PM _{2.5}	4.67	SLAMS	Gravimetric	24-hours every sixth day
FEM PM _{2.5} Continuous	4.63	SLAMS AQI	Broadband Spectroscopy	Continuously
AEM Sulfur Dioxide	3.81	SLAMS AQI PWEI	UV fluorescence	Continuously

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.





Clarksville, TN-KY



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

X = Regional Transport PM2.5 Monitor

i=AQI Reported

S=Continuous T640 Monitor

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: 36.911678, -87.323322 (NAD 83)

Date Established: January 1, 1999 **Inspection Date:** August 20, 2019

Inspection By: Jenna Nall and Allison Hall

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 116 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:

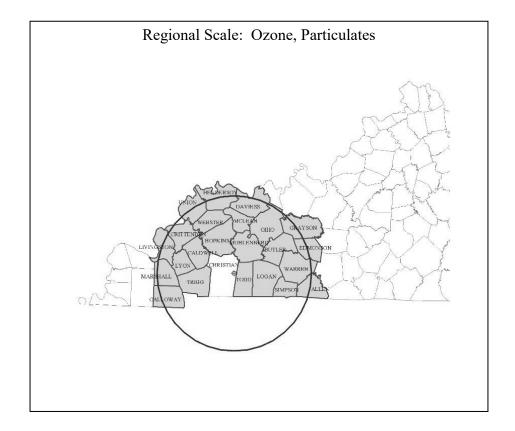
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards and to determine levels of interstate regional transport of fine particulate matter and ozone.

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.8	SLAMS AQI	UV photometry	Continuously March 1 – October 31
FEM PM _{2.5} Continuous	TBD (Install 2020)	SLAMS AQI	Broadband Spectroscopy	Continuously
Meteorological	5.7		AQM grade instruments for wind speed, wind direction, 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 $PM_{2.5}$.



Elizabethtown-Fort Knox, KY



AQS ID / County	Site Address	PM2.5	Cont. PM2.5	PM10	Cont. PM10	SO2	NO2	NOy	СО	03	Pb	VOC	Carbonyl	PAH	PM2.5 Spec.	Carbon Spec.	Black Carbon	RadNet	Met
21-093-0006	801 North Miles St.	1 ^C	1 ^{S,i}							$1^{M,i}$									
Hardin	Elizabethtown																		
Totals	1	1	1							1									

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

C=Collocated

M=Maximum Ozone Concentration Site for MSA

S=Continuous T640 Monitor

i=AQI Reported

CSA/MSA: Louisville/Jefferson County--Elizabethtown-Bardstown, KY-IN CSA; Elizabethtown-

Fort Knox, KY MSA

401 KAR 50:020 Air Quality Region: North Central Kentucky Intrastate (104)

Site Name: Elizabethtown (E-town)

AQS Site ID: 21-093-0006

Location: American Legion Park, 801 North Miles Street, Elizabethtown, KY 42701

County: Hardin

GPS Coordinates: 37.70564, -85.85269 (NAD 83)

Date Established: February 24, 2000 **Inspection Date:** November 6, 2019

Inspection By: Jenna Nall and Allison Hall

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 40 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, and E.

Monitoring Objective:

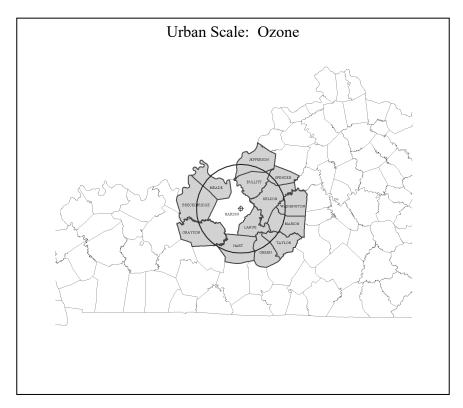
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards.

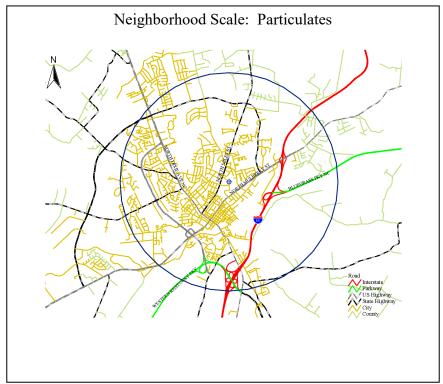
Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone		SLAMS AQI Maximum O ₃	•	Continuously March 1 – October 31
FEM PM _{2.5} Continuous	4.62	SLAMS AQI	Broadband Spectroscopy	Continuously
Collocated FRM PM _{2.5}	4.63	SLAMS	Gravimetric	24-hours every sixth day

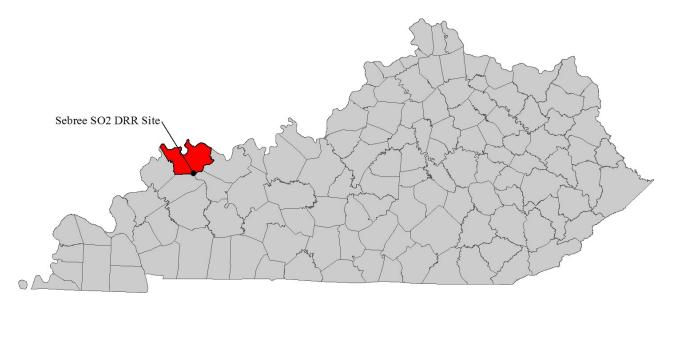
Quality Assurance Status:

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





Evansville, IN-KY



AQS ID / County	Site Address	PM2.5	Cont. PM2.5	PM10	Cont. PM10	SO2	NO2	NOy	СО	03	Pb	VOC	Carbonyl	PAH	PM2.5 Spec.	Carbon Spec.	Black Carbon	RadNet	Met
21-101-1011	Alcan Aluminum Rd.					1^{DRR}													
	Robards, KY 42452																		
Totals	1					1													

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

DRR = SO2 Data Requirements Rule Monitor

Rev. 5/11/2020

CSA/MSA: Evansville, IN-KY MSA

401 KAR 50:020 Air Quality Region: Evansville-Owensboro-Henderson Interstate (077)

Site Name: Sebree SO₂ DRR Site

AQS Site ID: 21-101-1011

Location: Alcan Aluminum Road

County: Henderson

GPS Coordinates: 37.654391, -87.511424

Date Established: January 1, 2017 **Inspection Date:** October 15, 2019

Inspection By: Jenna Nall and Allison Hall

Site Approval Status: Site and monitor meet design criteria for the monitoring network.



On August 10, 2015, the EPA finalized requirements in 40 CFR 51, Subpart BB requiring air pollution control agencies to monitor ambient sulfur dioxide (SO₂) concentrations in areas with large sources of sulfur dioxide emissions in order to assist in the implementation for the one-hour SO₂ National Ambient Air Quality Standard (NAAQS). Known as the "Data Requirements Rule (DRR)," this action established that, at a minimum, agencies must characterize air quality around sources that emit 2,000 tons per year (tpy) or more of sulfur dioxide. The site meets the requirements of 40 CFR 58, Appendices A, C, D, and E.

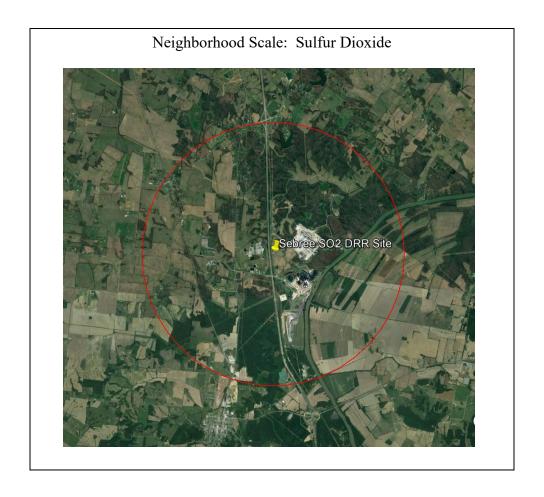
As allowed by the DRR, an ambient air monitoring site has been established near Sebree, Kentucky, to characterize maximum hourly sulfur dioxide concentrations in the immediate vicinity of the Big Rivers Electric Corporation and Century Aluminum Sebree, LLC facilities. The site is located at the intersection of Alcan Aluminum Road and a facility coal-truck access road, approximately 1/2 mile south of State Route 2678.

Monitoring Objective:

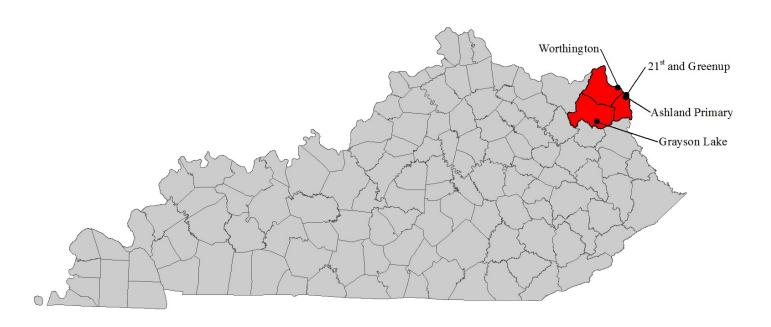
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards.

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Sulfur Dioxide	3.91	SLAMS	UV fluorescence	Continuously

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



Huntington-Ashland, WV-KY-OH



AQS ID / County	Site Address	PM2.5	Cont. PM2.5	PM10	Cont. PM10	SO2	NO2	NOy	СО	03	Pb	VOC	Carbonyl	PAH	PM2.5 Spec.	Carbon Spec.	Black Carbon	RadNet	Met
21-019-0002	122 22nd Street			$2^{C,m}$															
Boyd	Ashland																		
21-019-0017	2924 Holt Street		$1^{S,i}$			$1^{e,i,P}$	1 ^{e,i}			$1^{e,i,M}$									1
Boyd	Ashland																		
21-043-0500	1486 Camp Webb Road	1 ^X		2^{Cm}						1 i		2 ^D	2 ^D	1					1
Carter	Grayson																		
21-089-0007	Scott St. & Center Ave.					1 e				1 e,i									
Greenup	Worthington																		
Totals	4	1	1	4		2	1			2		2	2	1					2

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

i =AQI Reported

m=PM10 Filter Analyzed for Metals

C=Collocated

e =Emergency Episode Monitor

S=Continuous T640 Monitor

P = PWEI Monitor

M=Maximum Ozone Concentration Site for MSA

D=Duplicate

X=Regional Background PM2.5 Monitor

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:** October 17, 2019

Inspection By: Jenna Nall and Allison Hall

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 76.6 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:

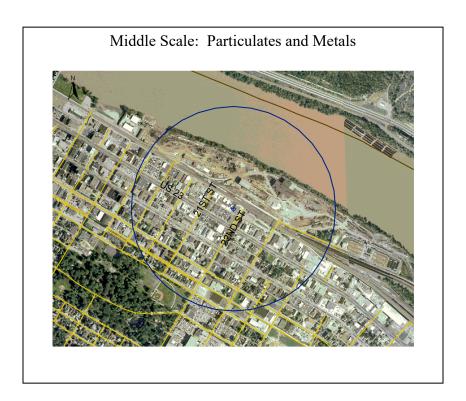
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards and to measure concentrations of a sub-group of air toxics.

Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
FRM PM ₁₀	5.5	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 FRM PM ₁₀	5.5	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:

Area Representativeness: The site represents maximum concentration on a middle scale for particulates and metals.



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: 38.459347, -82.640386 (NAD 83)

Date Established: January 1, 1999 **Inspection Date:** October 17, 2019

Inspection By: Jenna Nall and Allison Hall

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 health department building in Ashland, Kentucky. The sample inlets are 70.7 meters from the nearest road. Upon inspection, the sample lines and monitors were found to be in good condition.

Previously, airflow at the site was partially obstructed by tall trees. However, KDAQ and the FIVCO Health Department invested in significant tree removal in November 2016, alleviating siting criteria concerns. The site is operated in accordance with all criteria required by 40 CFR 58, Appendices A, C, D, E, and G.

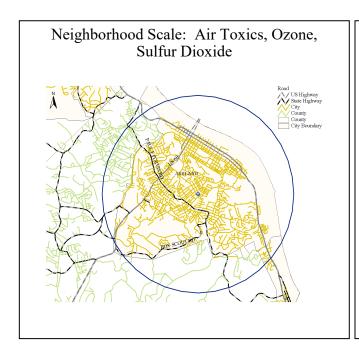
Monitoring Objective:

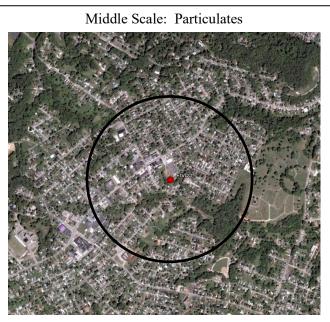
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards; to detect elevated pollutant levels for activation of emergency control procedures for nitrogen dioxide, ozone, and sulfur dioxide; and to provide pollutant levels for daily air quality index reporting.

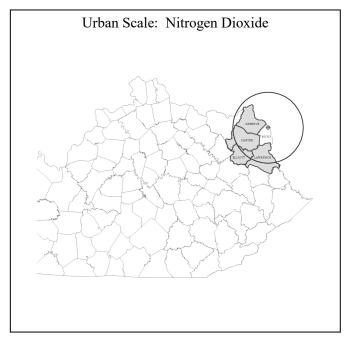
Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Nitrogen Dioxide (NO ₂ , NO, NO _x)	3.8	SLAMS AQI EPISODE	Chemiluminescence	Continuously
AEM Sulfur Dioxide	3.8	SLAMS AQI EPISODE PWEI	UV fluorescence	Continuously
AEM Ozone	3.8	SLAMS AQI EPISODE Maximum O ³	UV photometry	Continuously March 1 – October 31
FEM PM _{2.5} Continuous	4.7	SLAMS AQI	Broadband spectroscopy	Continuously
Meteorological	5.8	Other	AQM grade instruments for wind speed, wind direction, humidity, barometric pressure, and temperature	Continuously

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.







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: 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, 1983 **Inspection Date:** October 17, 2019

Inspection By: Jenna Nall and Allison Hall

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 106 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 PM₁₀; 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.

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.7	SPM	UV photometry	Continuously
		AQI		March 1 – October 31
FRM PM ₁₀	2.1	SLAMS	Gravimetric	24-hours every sixth day
- Metals PM ₁₀		NATTS SPM-Other	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-Other	Determined from the PM ₁₀ samples using EPA method IO 3.5	24-hours; six samples per year

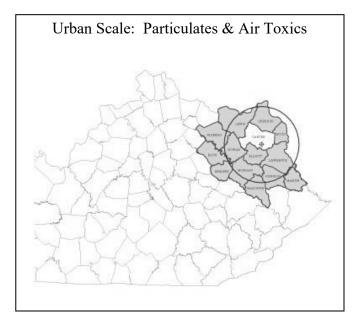
FRM PM _{2.5}	2.2	SLAMS	Gravimetric	24-hours every third day
Volatile Organic Compounds	3.9	NATTS SPM-Other	EPA method TO-15.	24-hours every sixth day
- Duplicate Volatile Organic Compounds		NATTS SPM-Other	EPA method TO-15. Collected via same sampling system as primary VOCs.	24-hours; six samples per year
Polycyclic Aromatic Hydrocarbons	2.1	NATTS SPM-Other	EPA method TO-13A	24-hours every sixth day
Carbonyls	4.0	NATTS SPM-Other	EPA method TO-11A	24-hours every sixth day
- Duplicate Carbonyls		NATTS SPM-Other	EPA method TO-11A. Collected via same sampling system as primary carbonyls.	24-hours; six samples per year
Meteorological	12.4	Other	AQM grade instruments for wind speed, wind direction, and temperature	Continuously

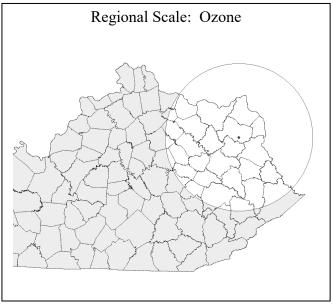
Quality Assurance Status:

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

Area Representativeness:

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





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: 38.548156, -82.731156 (NAD 83)

Date Established: October 12, 1980 **Inspection Date:** October 17, 2019

Inspection By: Jenna Nall and Allison Hall

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 16.6 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, and E.

Monitoring Objective:

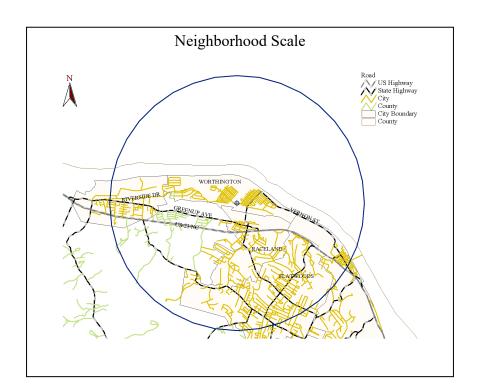
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards; to detect elevated pollutant levels for activation of emergency control procedures for ozone and sulfur

Monitors:

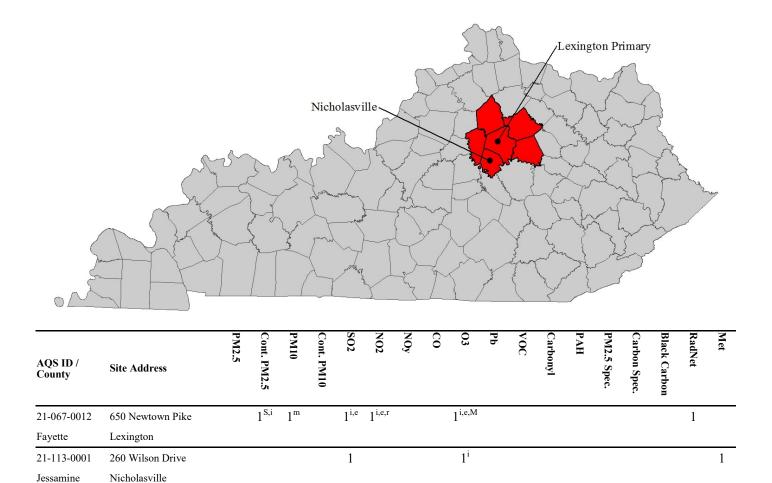
Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	4.2	SLAMS EPISODE AQI	UV photometry	Continuously March 1 – October 31
AEM Sulfur Dioxide	4.2	SPM EPISODE	UV fluorescence	Continuously

Quality Assurance Status:

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



Lexington-Fayette, KY



Tallies are equal to the actual number of monitors present. Superscripts represent additional information about the network. $PWEI SO_2$ monitor required in CBSA.

1

2

1

2

i = AQI

r=RA-40 Monitor

1

S=Continuous T640 Monitor

M=Maximum Ozone Concentration Site for MSA

m=PM10 Filter Analyzed for Metals

1

1

e =Emergency Episode Monitor

Totals

2

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 (Newtown)

AQS Site ID: 21-067-0012

Location: Fayette County Health Department, 650 Newtown Pike, Lexington, KY 40508

County: Fayette

GPS Coordinates: 38.065056, -84.497556 (NAD 83)

Date Established: November 8, 1979 **Inspection Date:** August 15, 2019

Inspection By: Jenna Nall and Allison Hall

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 119 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 NO₂ monitoring locations, with a primary focus on protecting susceptible and vulnerable populations.

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.8	SLAMS AQI	UV photometry	Continuously
		EPISODE Maximum O ³		March 1 – October 31
AEM Nitrogen Dioxide (NO ₂ , NO, NO _x)	4.0	SLAMS (RA-40) AQI EPISODE	Chemiluminescence	Continuously
AEM Sulfur Dioxide	3.6	SLAMS AQI EPISODE	UV fluorescence	Continuously
FEM PM _{2.5} Continuous	4.5	SLAMS AQI	Broadband Spectroscopy	Continuously

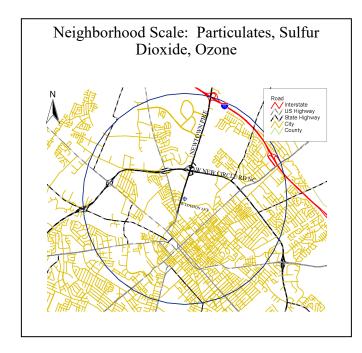
PM_{10}	2.2	SLAMS	Gravimetric	24-hours every sixth day
- PM ₁₀ Metals		SPM-Other	Determined from the PM ₁₀ sample using EPA method IO 3.5	Same as PM ₁₀
Radiation	1.3	RadNet	RadNet fixed stationary monitor, manual and automated methods	Continuously & 2 weekly filters

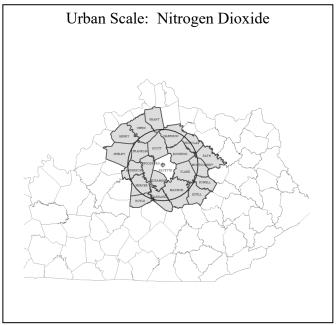
Quality Assurance Status:

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

Area Representativeness:

This site represents 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.





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:** August 29, 2019

Inspection By: Jenna Nall and Allison Hall

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 113 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:

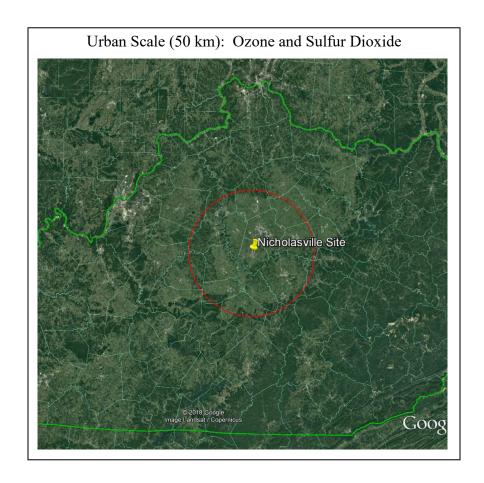
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards and to provide ozone data upwind of the Lexington area.

Monitors:

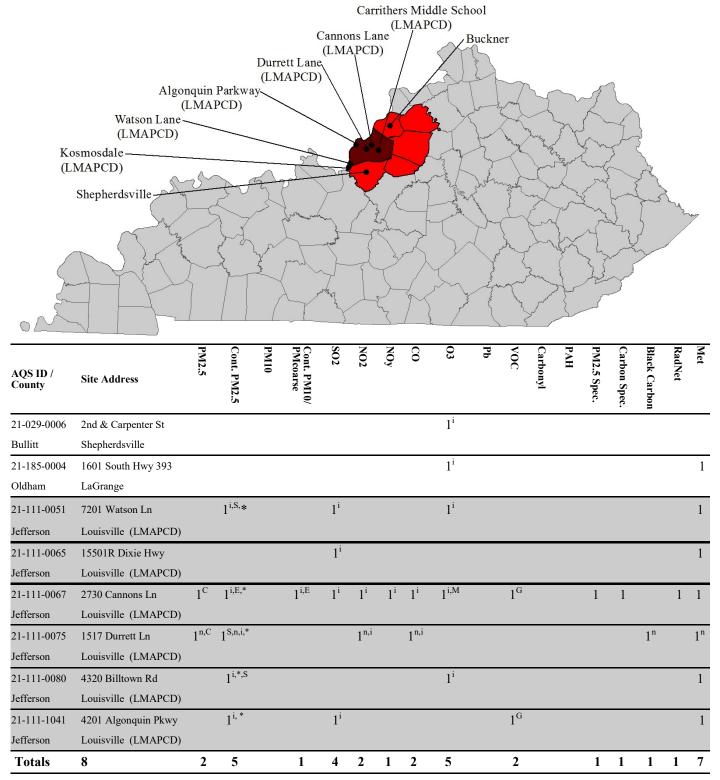
Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone			UV photometry	Continuously
		AQI		March 1 – October 31
AEM Sulfur Dioxide	3.9	SPM	UV fluorescence	Continuously
Meteorological	5.7	Other	AQM grade instruments for wind speed, wind direction, and temperature.	Continuously

Quality Assurance Status:

Area Representativeness: The site represents population exposure on an urban scale for ozone and sulfur dioxide.



Louisville/Jefferson County, KY-IN



Tallies are equal to the actual number of parameters currently monitored. Superscripts represent additional information about the network.

*=Eligible for PM2.5 NAAQS Comparisons n=Near-Road Monitor

M=Maximum Ozone Concentration Site for MSA

 $E = Continuous\ PM2.5 - PM10\ T640x - Coarse;\ (T640x\ samples\ for\ PM_{10},\ PM_{2.5},\ and\ PM_{coarse}\ with\ a\ single\ monitor)$

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CSA/MSA: Louisville/Jefferson County-Elizabethtown-Bardstown, 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: East Joe B. Hall Avenue & Carpenter Streets, Shepherdsville, KY 40165

County: Bullitt

GPS Coordinates: 37.986275, -85.711899 (NAD 83)

Date Established: January 30, 1992 **Inspection Date:** November 6, 2019 **Inspection By:** Jenna Nall and Allison Hall

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 66.4 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, and E.

Monitoring Objective:

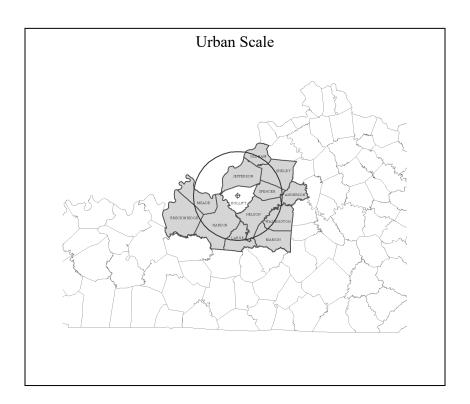
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards.

Monitors:

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

Quality Assurance Status:

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



CSA/MSA: Louisville/Jefferson County-Elizabethtown-Bardstown, 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: 38.4001911, -85.444291 (NAD 83)

Date Established: May 1, 1981 **Inspection Date:** November 6, 2019

Inspection By: Jenna Nall and Allison Hall

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 Transportation Cabinet 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, and E.

Monitoring Objective:

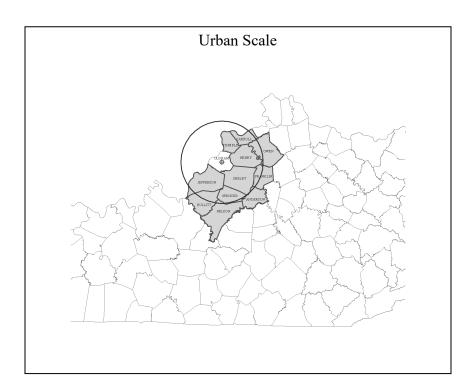
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards.

Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.82	SLAMS AQI		Continuously March 1 – October 31
Meteorological	5.78		AQM grade instruments for wind speed, wind direction, and temperature	Continuously

Quality Assurance Status:

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



CSA/MSA: Louisville/Jefferson County-Elizabethtown-Bardstown, 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:** October 8, 2019

Inspection By: Starlet Raj and Colette McConville

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 73.7 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.

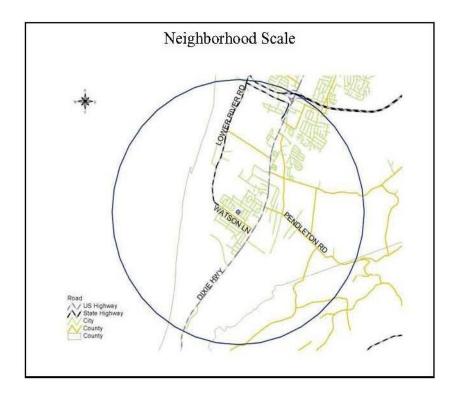
Monitoring Objective:

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

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	4.0	SLAMS AQI	UV photometry	Continuously
				March 1 – October 31
FEM PM _{2.5} Continuous	4.8	SLAMS AQI	Continuously	
AEM Sulfur Dioxide	4.0	SLAMS AQI	UV fluorescence	Continuously
Meteorological 7.6		Other	AQM grade instruments for wind speed and wind direction. Not reported to AQS.	Continuously

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 SO₂.



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: Kosmosdale AQS Site ID: 21-111-0065

Location: 15501R Dixie Highway, Louisville, KY 40272

County: Jefferson

GPS Coordinates: 38.0296139, -85.911389 (NAD 83)

Date Established: TBD **Inspection Date:** TBD **Inspection By:** TBD

Site Approval Status: TBD



Due to the need for additional characterization of ambient air quality in southwestern Jefferson County, a new site was to be established to measure ambient concentrations of SO₂ at a location approved by EPA on February 1, 2018. The site was to begin operation in 2020. However, on February 19, 2020, LMAPCD and the permitted facility revised a previous Board Order that required installation and operation of the Kosmosdale site to allow for construction of a new stack as an alternative to monitoring. On March 16, 2020, the permitted facility notified LMAPCD in accordance with the revised Board Order that it would construct a new stack consistent with the parameters evaluated by LMAPCD, EPA and DAQ during Fall 2019. As a result, LMAPCD will submit a proposal to discontinue the Kosmosdale site. The site is included in this network plan as a formality.

Monitoring Objective:

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

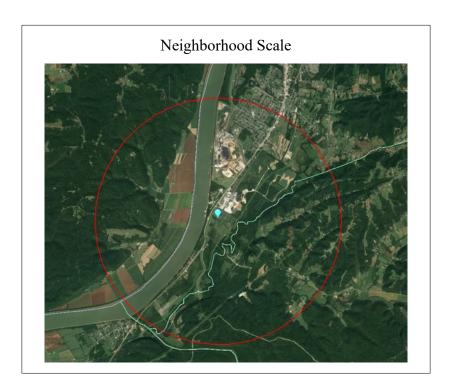
Monitors:

Monitor Type	Inlet Height (meters)	Designation	Designation Analysis Method Frequenc				
AEM Sulfur Dioxide	TBD	SLAMS	UV fluorescence	Continuously			
Meteorological	TBD		AQM grade instruments for wind speed, wind direction, temperature, and humidity. Not reported to AQS; thus, there is no designation.	Continuously			

Quality Assurance Status:

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

Area Representativeness: This site will represent population exposure on a neighborhood scale for sulfur dioxide.



CSA/MSA: Louisville/Jefferson County-Elizabethtown-Bardstown. KY-IN CSA; Louisville/

Jefferson County, KY-IN MSA

401 KAR 50:020 Air Quality Region: Louisville Interstate (078)

Site Name: Cannons Lane (CLAMS)

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:** October 8, 2019

Inspection By: Colette McConville and Starlet Raj

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.

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling		
Carbon Monoxide	4.2	NCore SLAMS AQI	Automated Reference Method utilizing trace level non-dispersive infrared analysis.	Continuously		
Nitrogen Dioxide (NO ₂)	4.2	NCore PAMS SLAMS AQI	Cavity Attenuated Phase Shift Spectrometry	Continuously		
Total Reactive Nitrogen (NO/NO _y)	8.0	NCore PAMS	Automated method utilizing trace level chemiluminescence analysis.	Continuously		
Ozone	4.2	NCore PAMS SLAMS AQI	Automated Equivalent Method utilizing UV photometry analysis.	Continuously		
Sulfur Dioxide	4.2	NCore SLAMS AQI	Automated Equivalent Method utilizing trace level UV fluorescence analysis.	Continuously		
FEM PM _{2.5} and PM ₁₀ Continuous - PM _{Coarse} (PM ₁₀ -PM _{2.5})	4.9	NCore SLAMS AQI	Broadband Spectroscopy	Continuously		
PM _{2.5} Speciation	2.1	NCore SLAMS	Multi-Species manual collection method utilizing thermal optical ion chromatography, gravimetric, and X-ray fluorescence.	24-hours every third day		
PM _{2.5} Carbon Speciation	2.3	NCore SLAMS	Multi-species manual collection method utilizing thermal optical and gravimetric analyses.	24-hours every third day		
FRM PM _{2.5} Collocated	5.0	NCore SLAMS QA Collocated	Manual reference method utilizing gravimetric analysis	24-hours every third day		
Volatile Organic Compounds	TBD (Install 2020)	PAMS	Automatic gas chromatograph with flame ionization detection	Continuously		

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
Meteorological	10.0	NCore PAMS	Air Quality Measurements approved instrumentation for wind speed, wind direction, humidity, and temperature	Continuously
-Ceilometer	TBD (Install 2020)	PAMS	Pulsed diode laser light detection and ranging (LIDAR)	Continuously
-Solar Radiation	5.0	NCore PAMS	Air Quality Measurements approved instrumentation for solar radiation	Continuously
-Rain Gauge	1.5	NCore PAMS	Air Quality Measurements approved instrumentation for precipitation	Continuously
Radiation	3.9	RadNet	RadNet fixed station air monitor, manual and automated methods	Continuously + 2 weekly filters

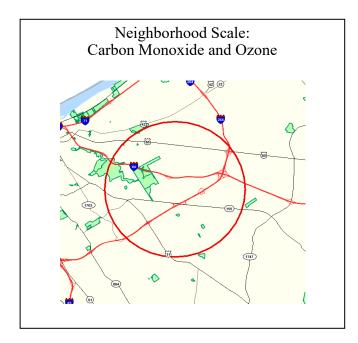
Quality Assurance Status:

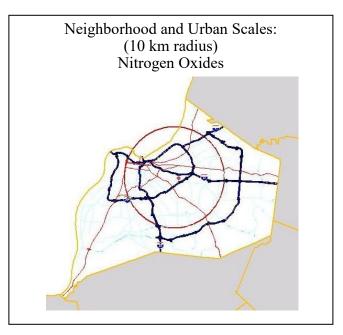
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

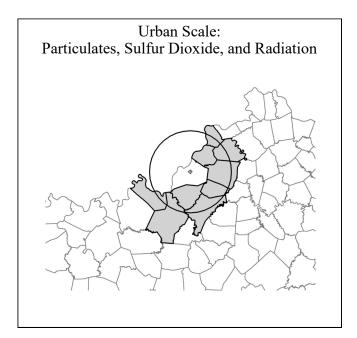
Area Representativeness:

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	4 km radius
NO _x /NO _y	Neighborhood and Urban Scale	10 km radius
Carbon Monoxide	Neighborhood Scale	4 km radius
SO_2	Urban Scale	50 km radius
Particulates	Urban	50 km radius
Radiation	Urban	50 km radius







CSA/MSA: Louisville/Jefferson County-Elizabethtown-Bardstown, 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)

AQS Site ID: 21-111-0075

Location: 1517 Durrett Lane, Louisville, KY 40213

County: Jefferson

GPS Coordinates: 38.193632, -85.711950 (NAD 83)

Date Established: January 1, 2014 **Inspection Date:** October 8, 2019

Inspection By: Colette McConville and Starlet Raj

Site Approval Status: Site and monitors meet all design criteria for the monitoring network.



On February 9, 2010, the EPA released a new NO₂ 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 The specific site was chosen monoxide, and meteorology. following the development of a formal site proposal and a 30-day comment public period in April 2013. Data collection at the site began in January 2014. More information regarding near-road monitoring can be found in the appendices of this Annual Network Plan.

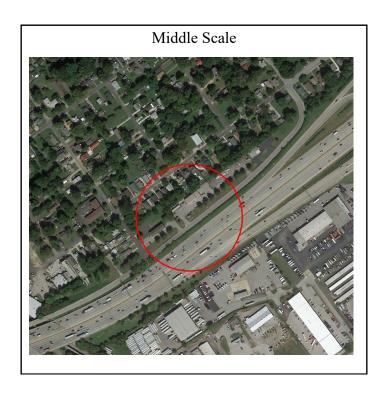
Monitoring Objective:

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

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling	
AEM Nitrogen Dioxide (NO ₂)	4.22	SLAMS AQI	Cavity Attenuated Phase Shift Spectroscopy	Continuously	
Carbon Monoxide	4.22	SLAMS AQI	Automated Reference Method utilizing trace-level non-dispersive infrared analysis	Continuously	
FRM PM _{2.5} Collocated	4.66	SLAMS	Manual Reference Method utilizing gravimetric analysis	One sample every third day	
Meteorological	10.2	Other	AQM grade instruments for wind speed, wind direction, humidity, and temperature	Continuously	
FEM PM _{2.5} Continuous	4.47	SLAMS AQI	Broadband Spectroscopy	Continuously	
Black Carbon	TBD (Install 2020)	SPM	Wavelength Dual Spot Optical Absorption	Continuously	

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

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



CSA/MSA: Louisville/Jefferson County-Elizabethtown-Bardstown, KY-IN CSA; Louisville/

Jefferson County, KY-IN MSA

401 KAR 50:020 Air Quality Region: Louisville Interstate (078)

Site Name: Carrithers Middle School

AQS Site ID: 21-111-0080

Location: 4320 Billtown Road, Louisville, KY 40291

County: Jefferson

GPS Coordinates: 38.182511, -85.574167 (NAD 83)

Date Established: January 9, 2018 **Inspection Date:** October 8, 2019

Inspection By: Starlet Raj and Colette McConville

Site Approval Status: Site and monitors meet all design criteria for the monitoring network.



Due to Jefferson County Public School's plan for significant modification to the Bates Elementary property, the Bates site was retired in early 2018. A new site was established on the grounds of Carrithers Middle School, which is located three miles to the north of the Bates Elementary School site. The instrumentation from Bates was transferred to Carrithers and the new site became operational on 1/9/2018.

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	3.75	SLAMS AQI	UV photometry	Continuously March 1 – October 31
FEM PM _{2.5} Continuous	4.5	SLAMS AQI	Broadband Spectroscopy	Continuously
Meteorological	5.9		AQM grade instruments for wind speed, wind direction, temperature, and humidity. 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 a neighborhood scale for ozone and fine particulates.

Neighborhood Scale: Particulates and Ozone

CSA/MSA: Louisville/Jefferson County-Elizabethtown-Bardstown, KY-IN CSA; Louisville/

Jefferson County, KY-IN MSA

401 KAR 50:020 Air Quality Region: Louisville Interstate (078)

Site Name: Algonquin Parkway (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:** October 8, 2019

Inspection By: Starlet Raj and Colette McConville

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 53.5 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.

LMAPCD replaced the existing shelter with a new, larger shelter in September, 2017 to house a continuous Toxics Monitor (Auto GC) and to accommodate additional particulate instruments. Particulate instruments were installed by January 1, 2018 (transferred from Southwick Community Center site). The name of this site was changed from Firearms Training to Algonquin Parkway in 2020.

Monitoring Objective:

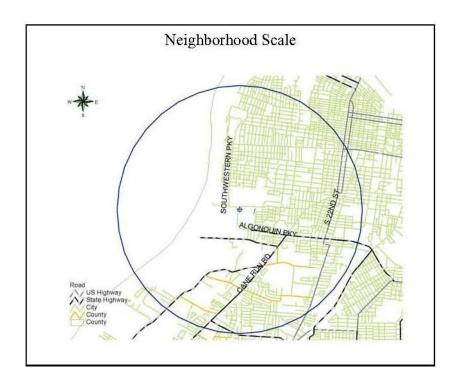
The monitoring objectives are to determine compliance with National Ambient Air Quality Standards, to provide pollution levels for daily index reporting, and to characterize VOC concentrations.

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
FEM PM _{2.5} and PM ₁₀ Continuous	4.5	SLAMS AQI	Broadband Spectroscopy	Continuously
AEM Sulfur Dioxide	4.0	SLAMS AQI	UV Fluorescence	Continuously
Volatile Organic Carbon	3.9	SPM	Automatic gas chromatograph with flame ionization detection	Continuously
Meteorological	9.1	Other	AQM grade instruments for wind speed, wind direction, temperature, and humidity.	Continuously

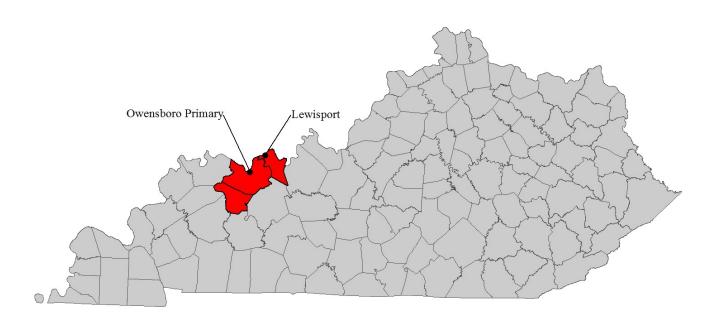
Quality Assurance Status:

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.



Owensboro, KY



AQS ID / County	Site Address	PM2.5	Cont. PM2.5	PM10	Cont. PM10	SO2	NO2	NOy	СО	03	Pb	VOC	Carbonyl	PAH	PM2.5 Spec.	Carbon Spec.	Black Carbon	RadNet	Met
21-059-0005	716 Pleasant Valley Rd.		1 ^{S,e,i}			1 ^{e,i}	1 ^{e,i}			1 ^{e,I}									1
Daviess	Owensboro																		
21-091-0012	Second & Caroline St.									$1^{i,M}$									
Hancock	Lewisport																		
Totals	2		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

S=Continuous T640 Monitor

i=AQI Reported

M=Maximum Ozone Concentration Site for MSA

Rev. 5/11/2020

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: 37.780794, -87.0753583 (NAD 83)

Date Established: December 1, 1970 **Inspection Date:** October 15, 2019

Inspection By: Jenna Nall and Allison Hall

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 45.8 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 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.

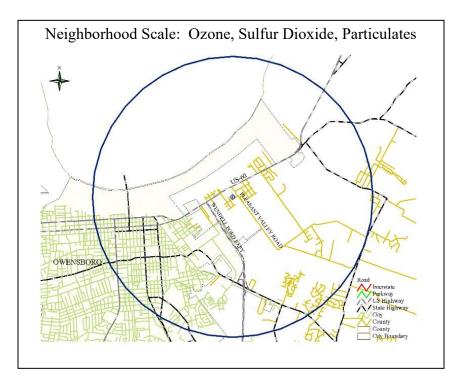
Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling		
AEM Nitrogen Dioxide (NO ₂ , NO, NO _x)	4.52	SLAMS EPISODE AQI	Chemiluminescence	Continuously		
AEM Ozone	3.78	SLAMS EPISODE AQI	UV photometry	Continuously March 1 – October 31		
FEM PM _{2.5} Continuous	4.72	SLAMS EPISODE AQI	Broadband Spectroscopy	Continuously		
AEM Sulfur Dioxide	4.52	SLAMS PWEI EPISODE AQI	UV fluorescence	Continuously		
Meteorological	5.71	Other	AQM grade instruments for wind speed, wind direction, and temperature	Continuously		

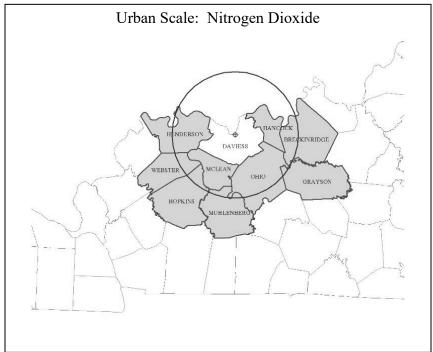
Quality Assurance Status:

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.





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: Community Center Drive & First Street, Lewisport, KY 42351

County: Hancock

GPS Coordinates: 37.938316, -86.897194 (NAD 83)

Date Established: September 5, 1980 **Inspection Date:** October 15, 2019

Inspection By: Jenna Nall and Allison Hall

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 athletic fields of the former Lewisport Consolidated Elementary School in Lewisport, Kentucky. The sample inlet is 54.8 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 A, C, D, and E.

Monitoring Objective:

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

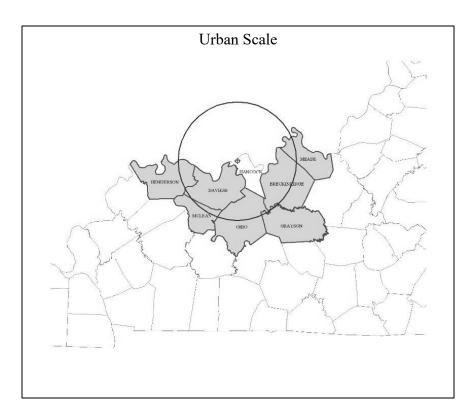
Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling			
AEM Ozone	3.67	SLAMS	UV photometry	Continuously			
		Maximum O ₃ AQI		March 1 – October 31			

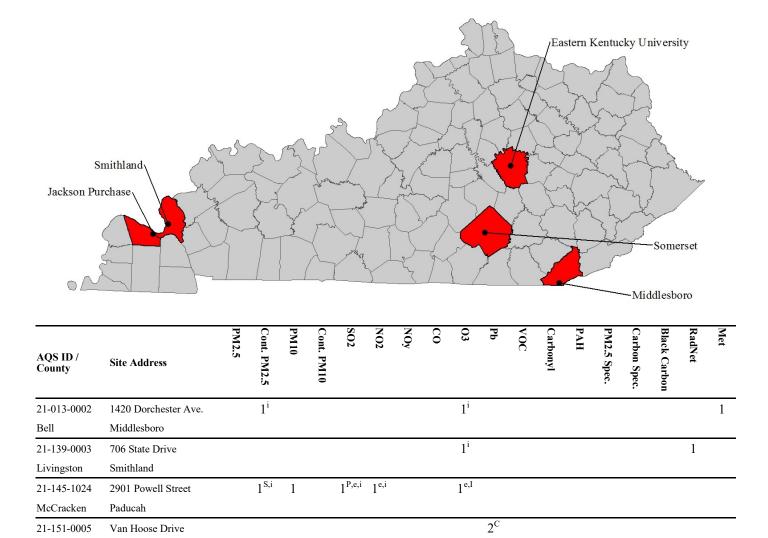
Quality Assurance Status:

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

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



Micropolitan Statistical Areas



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

1

1

P= PWEI SO2 monitor required in CBSA.

Richmond

Somerset 5

305 Clifty Street

C=Collocated

m=PM10 Filter Analyzed for Metals

1

1

P=PWEI Monitor

3

e =Emergency Episode Monitor

S=Continuous T640 Monitor

i=AQI Reported

 1^{i}

4

2

Rev. 5/11/2020

Madison

Pulaski

Totals

21-199-0003

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: 36.608475, -83.736939 (NAD 83)

Date Established: February 14, 1992 Inspection Date: November 19, 2019

Inspection By: Jenna Nall and Allison Hall

Site Approval Status: Site and monitors meet all design criteria for the monitoring network.



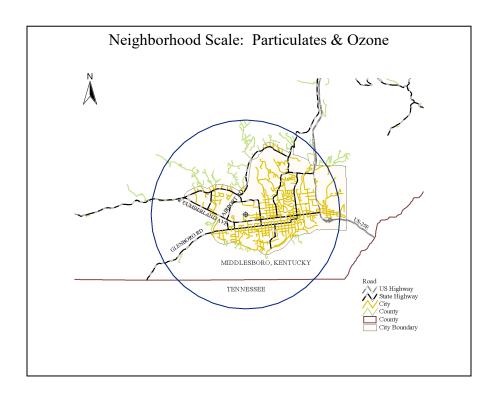
The monitoring site is a stationary equipment shelter located on the grounds of the Middlesboro Airport in Middlesboro, Kentucky. The sample inlets are 94.2 meters from the nearest road. Upon inspection the sample lines and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices A, C, D, and E.

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.

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling		
AEM Ozone	4.1	SPM AQI	UV photometry	Continuously March 1 – October 31		
FEM PM _{2.5} Continuous	TBD (Install 2020)	SLAMS AQI	Broadband Spectroscopy	Continuously		
Meteorological	6.2		AQM grade instruments for wind speed, wind direction, and temperature	Continuously		

Area Representativeness: The site represents population exposure on a neighborhood scale for particulates and 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: 37.155417, -88.393972 (NAD 83)

Date Established: April 1, 1988 **Inspection Date:** August 22, 2019

Inspection By: Jenna Nall and Allison Hall

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 138.7 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, and E

Monitoring Objective:

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

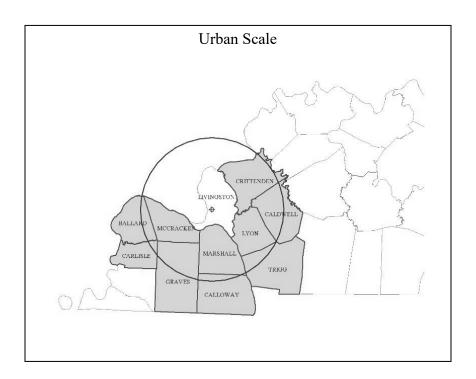
Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling					
AEM Ozone	4.0	SLAMS AQI	UV photometry	Continuously					
Radiation	1.3		RadNet fixed stationary monitor, manual and automated methods	Continuously & 2 weekly filters					

Ouality 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: 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) (JPRECC)

AOS Site ID: 21-145-1024

Location: Jackson Purchase RECC, 2901 Powell Street, Paducah, KY 42003

County: McCracken

GPS Coordinates: 37.058083, -88.57250 (NAD 83)

Date Established: August 15, 1980 **Inspection Date:** August 21, 2019

Inspection By: Jenna Nall and Allison Hall

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. The site meets the requirements established by 40 CFR 58, Appendices C, D, E and G. Due to a new shelter installation in 2018, the sample inlets are now 20.7 meters from the nearest road.

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.

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling			
AEM Nitrogen Dioxide (NO ₂ , NO, NO _x)	4.1	SLAMS EPISODE AQI	Chemiluminescence	Continuously			
AEM Sulfur Dioxide	4.1	SLAMS AQI EPISODE	UV fluorescence	Continuously			
AEM Ozone	3.9	SLAMS AQI EPISODE	UV photometry	Continuously March 1 – October 31			

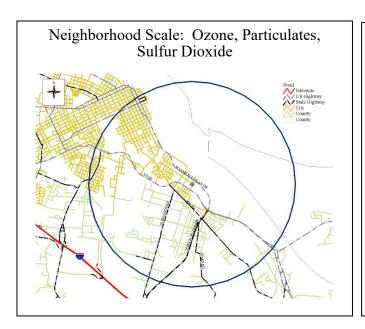
FEM PM _{2.5} Continuous	4.6	SLAMS AQI	Broadband Spectroscopy	Continuously
FRM PM ₁₀	4.5	SLAMS	Gravimetric	24-hours every sixth day

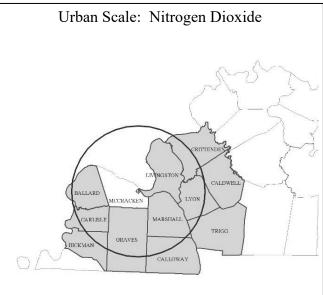
Quality Assurance Status:

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.





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: Eastern Kentucky University (EKU)

AQS Site ID: 21-151-0005

Location: Eastern Kentucky University, Van Hoose Drive, Richmond, KY 40475

County: Madison

GPS Coordinates: 37.73636, -84.29167 (NAD 83)

Date Established: March 10, 2012 **Inspection Date:** August 29, 2019

Inspection By: Jenna Nall and Allison Hall

Site Approval Status: Site and monitors meet all design criteria for the monitoring network.

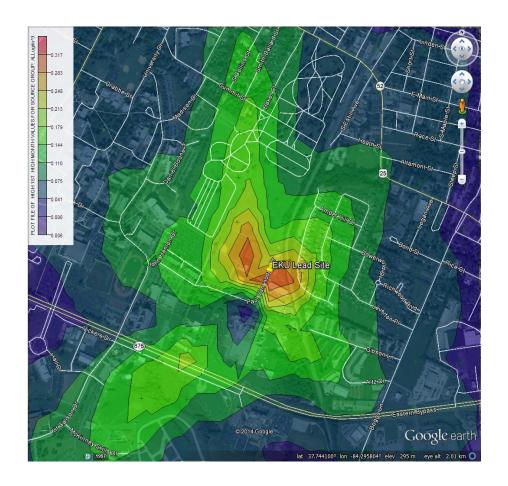


The site is located behind the Gentry Facilities Services building and is adjacent to Eastern Kentucky University's athletic fields. The sample inlets are 3.0 meters from the nearest road. Upon inspection, the sample inlet and monitor were found to be in good condition. The site meets the requirements 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.

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
FRM Lead	2.2	SLAMS	High volume air sampler. Analysis via ICP-MS.	24-hours every sixth day
Collocated FRM Lead	2.2	SLAMS	High volume air sampler. Analysis via ICP-MS.	24-hours every twelfth day



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



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: 37.097952, -84.611534 (NAD 83)

Date Established: February 14, 1992 **Inspection Date:** November 19, 2019 **Inspection By:** Jenna Nall and Allison Hall

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 A, C, D, and E.

Monitoring Objective:

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

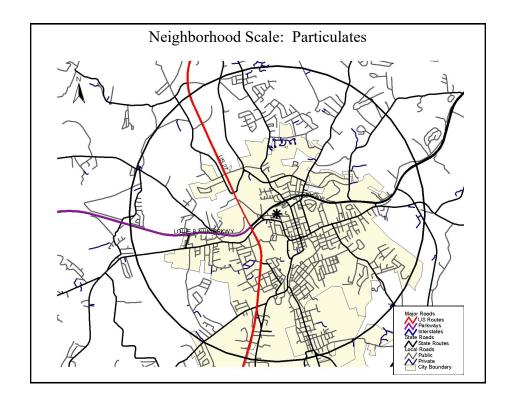
Monitors:

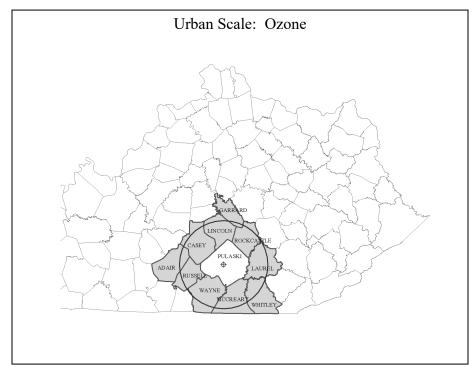
Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	4.38	SPM AQI	UV photometry	Continuously March 1 – October 31
FEM PM _{2.5} Continuous		SLAMS AQI	Broadband Spectroscopy	Continuously

Quality Assurance Status:

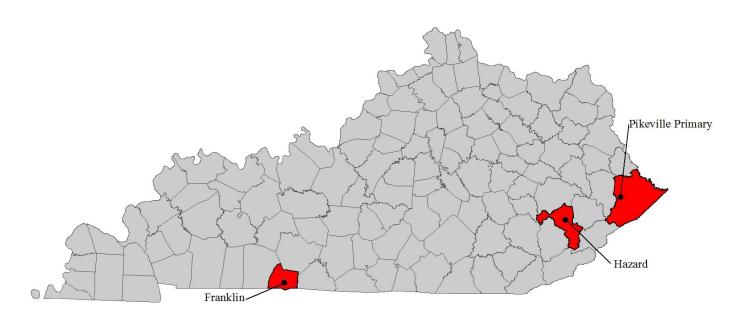
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

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





Not in a Metropolitan or Micropolitan Statistical Area



AQS ID / County	Site Address	PM2.5	Cont. PM2.5	PM10	Cont. PM10	SO2	NO2	NOy	СО	03	Pb	VOC	Carbonyl	PAH	PM2.5 Spec.	Carbon Spec.	Black Carbon	RadNet	Met
21-193-0003	354 Perry Park Road		1 S,i							1 ^{i,e}									1
Perry	Hazard																		
21-195-0002	109 Loraine Street		1 ^{S,i}							1 i									
Pike	Pikeville																		
21-213-0004	573 Harding Road									1 i									1
Simpson	Franklin																		
Totals	3		2							3									2

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

S=Continuous PM T640

i=AQI Reported

e=Emergency Episode Monitor

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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:** September 5, 2019

Inspection By: Jenna Nall and Allison Hall

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 42.5 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 A, C, D, and E.

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.

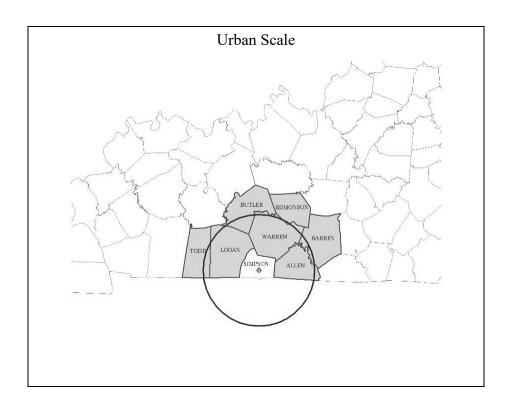
Monitors:

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling					
AEM Ozone		SPM AQI	UV photometry	Continuously March 1 – October 31					
Meteorological	6.0		AQM grade instruments for wind speed, wind direction, 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.



CSA/MSA: Not in a MSA - Rural

401 KAR 50:020 Air Quality Control Region: Appalachian Intrastate (101)

Site Name: Hazard

AOS Site ID: 21-193-0003

Location: Perry County Horse Park, 354 Perry Park Road, Hazard, KY 41701

County: Perry

GPS Coordinates: 37.283247, -83.209311 (NAD 83)

Date Established: April 1, 2000 Inspection Date: November 20, 2019

Inspection By: Jenna Nall and Allison Hall

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 29.2 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, and E.

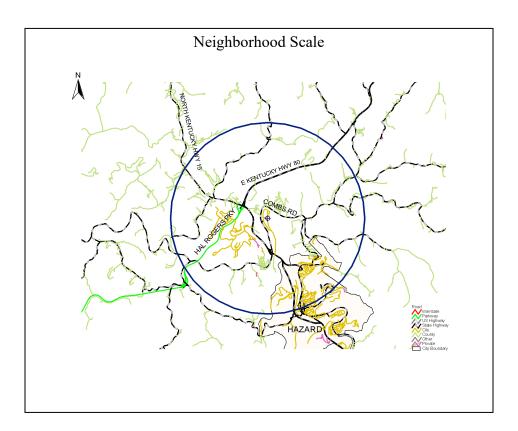
Monitoring Objective:

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		SPM AQI EPISODE	UV photometry	Continuously March 1 – October 31
FEM PM _{2.5} Continuous	4.6	SLAMS AQI	Broadband Spectroscopy	Continuously
Meteorological	5.7	Other	AQM grade instruments for wind speed, wind direction, and temperature	Continuously

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: 37.482575, -82.535319 (NAD 83)

Date Established: May 1, 1994 Inspection Date: November 20, 2019

Inspection By: Jenna Nall and Allison Hall

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 91.9 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:

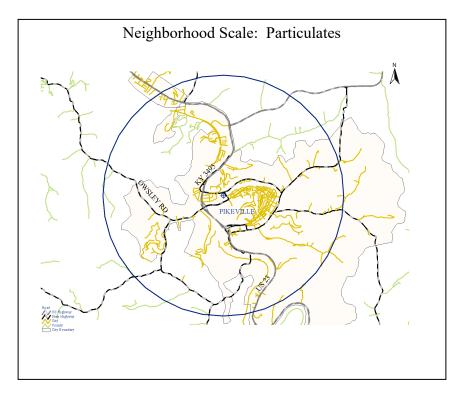
Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone		SPM AQI		Continuously March 1 – October 31
FEM PM _{2.5} Continuous	4.7	SLAMS AQI	Broadband Spectroscopy	Continuously

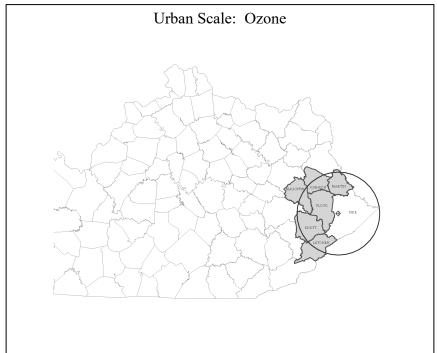
Quality Assurance Status:

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

Area Representativeness:

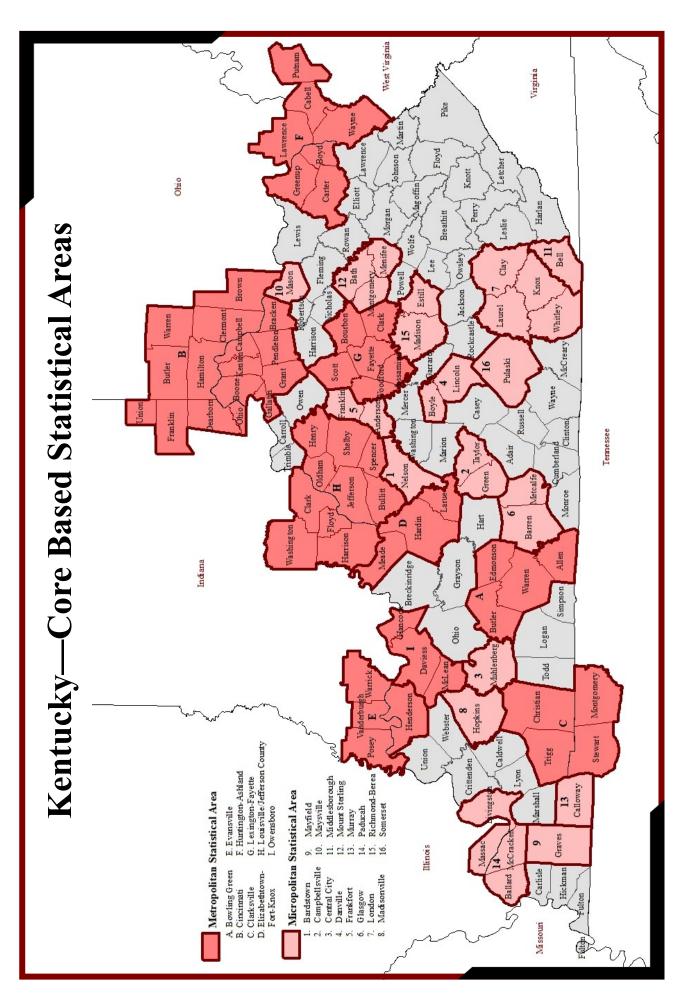
The site represents population exposure on a neighborhood scale for particulates. This site also represents population exposure on an urban scale for ozone.





APPENDIX A

KENTUCKY CORE-BASED STATISTICAL AREAS MAP AND CBSA TABLES



CBSAs - Metropolitan Statistical Areas								
CBSA Title	CBSA	County	State	State	County	County	CBSA	
CD5A Title	Code	3		Code	Code	Population	Population	
		Allen County	Kentucky	21	003	21,315	179,240	
Bowling Green, KY	14540	Butler County	Kentucky	21	031	12,879	179,240	
		Edmonson County	Kentucky	21	061	12,150		
		Warren County	Kentucky	21	227	132,896		
		Dearborn County	Indiana	18	029	49,458		
		Franklin County	Indiana	18	047	22,758		
		Ohio County	Indiana	18	115	5,875		
		Union County	Indiana	18	161	7,054		
		Boone County	Kentucky	21	015	133,581		
		Bracken County	Kentucky	21	023	8,303		
		Campbell County	Kentucky	21	037	93,584		
Cincinnati, OH-KY-IN	17140	Gallatin County	Kentucky	21	077	8,869	2,221,208	
		Grant County	Kentucky	21	081	25,069		
		Kenton County	Kentucky	21	117	166,998		
		Pendleton County	Kentucky	21	191	14,590		
		Brown County	Ohio	39	015	43,432		
		Butler County	Ohio	39	017	383,134		
		Clermont County	Ohio	39	025	206,428		
		Hamilton County	Ohio	39	061	817,473		
		Warren County	Ohio	39	165	234,602		
		Christian County	Kentucky	21	047	70,461		
Clarksville, TN-KY	17300	Trigg County	Kentucky	21	221	14,651	307,820	
		Montgomery County	Tennessee	47	125	208,993		
		Stewart County	Tennessee	47	161	13,715		
Elizabethtown-Fort Knox,	• • • • • •	Hardin County	Kentucky	21	093	110,958		
KY	21060	Larue County	Kentucky	21	123	14,398	153,928	
		Meade County	Kentucky	21	163	28,572		
		Posey County	Indiana	18	129	25,427		
Evansville, IN-KY	21780	Vanderburgh County	Indiana	18	163	181,451	315,086	
,		Warrick County	Indiana	18	173	62,998		
		Henderson County	Kentucky	21	101	45,210		
		Boyd County	Kentucky	21	019	46,718		
		Carter County	Kentucky	21	043	26,797		
Huntington-Ashland, WV-	26500	Greenup County	Kentucky	21	089	35,098	255.072	
KY-OH	26580	Lawrence County	Ohio	39	087	59,463	355,873	
		Cabell County	West Virginia	54	011	91,945		
		Putnam County	West Virginia	54	079	56,450		
		Wayne County	West Virginia	54	099	39,402		
		Bourbon County	Kentucky	21	017	19,788		
		Clark County	Kentucky	21	049	36,263		
Lexington-Fayette, KY	30460	Fayette County	Kentucky	21	067	323,152	517,056	
		Jessamine County	Kentucky	21	113	54,115		
		Scott County	Kentucky	21	209	57,004		
		Woodford County	Kentucky	21	239	26,734		
		Clark County	Indiana	18	019	118,302		
		Floyd County	Indiana	18	043	78,522		
		Harrison County	Indiana	18	061	40,515		
Louisville/Jefferson		Washington County	Indiana	18	175	28,036		
	31140	Bullitt County	Kentucky	21	029	81,676	1,265,108	
County, KY-IN		Henry County	Kentucky	21	103	16,126		
		Jefferson County	Kentucky	21	111	766,757		
		Oldham County	Kentucky	21	185	66,799		
		Shelby County	Kentucky	21	211	49,024		
		Spencer County	Kentucky	21	215	19,351		
O 1 1737	26000	Daviess County	Kentucky	21	059	101,511	110 440	
Owensboro, KY	36980	Hancock County	Kentucky	21	091	8,722	119,440	
		McLean County	Kentucky	21	149	9,207		

	CBSAs - Micropolitan Statistical Areas							
CBSA Title	CBSA Code	County	State	State Code	County Code	County Population	CBSA Population	
Bardstown, KY	12680	Nelson County	Kentucky	21	179	46,233	46,233	
Campbellsville, KY	15820	Green County	Kentucky	21	087	10,941	36,710	
Campoensvine, K1	13620	Taylor County	Kentucky	21	217	25,769	30,710	
Central City, KY	16420	Muhlenberg County	Kentucky	21	177	30,622	30,622	
Danville, KY	19220	Boyle County	Kentucky	21	021	30,060	54,609	
Danvine, K i	19220	Lincoln County	Kentucky	21	137	24,549	34,009	
Enoulefont VV	23180	Anderson County	Kentucky	21	005	22,747	72 729	
Frankfort, KY	23180	Franklin County	Kentucky	21	073	50,991	73,738	
Classes VV	23980	Barren County	Kentucky	21	009	44,249	54.220	
Glasgow, KY	23980	Metcalfe County	Kentucky	21	169	10,071	54,320	
		Clay County	Kentucky	21	051	19,901		
1 1 1/3/	30940	Knox County	Kentucky	21	121	31,145	148,123	
London, KY		Laurel County	Kentucky	21	125	60,813		
		Whitley County	Kentucky	21	235	36,264		
Madisonville, KY	31580	Hopkins County	Kentucky	21	107	44,686	44,686	
Mayfield, KY	32460	Graves County	Kentucky	21	083	37,266	37,266	
Maysville, KY	32500	Mason County	Kentucky	21	161	17,070	17,070	
Middlesborough, KY	33180	Bell County	Kentucky	21	013	26,032	26,032	
		Bath County	Kentucky	21	011	12,500		
Mount Sterling, KY	34460	Menifee County	Kentucky	21	165	6,489	47,146	
		Montgomery County	Kentucky	21	173	28,157		
Murray, KY	34660	Calloway County	Kentucky	21	035	39,001	39,001	
		Massac County	Illinois	17	127	13,772		
D 1 1 1237 H	27140	Ballard County	Kentucky	21	007	7,888	06.272	
Paducah, KY-IL	37140	Livingston County	Kentucky	21	139	9,194	96,272	
		McCracken County	Kentucky	21	145	65,418		
Dishmond David VV	40000	Estill County	Kentucky	21	065	14,106	107.002	
Richmond-Berea, KY	40080	Madison County	Kentucky	21	151	92,987	107,093	
Somerset, KY	43700	Pulaski County	Kentucky	21	199	64,979	64,979	

CBSA 2019 population estimate data obtained from the US Census Bureau. Annual Resident Population Estimates and Estimated Components of Resident Population Change for Metropolitan and Micropolitan Statistical Areas and Their Geographic Components: April 1, 2010 to July 1, 2019 (cbsa-est2019-alldata). Accessed 4/7/2020.

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	Ò	0	0
Ohio County, IN IDEM	0	0	0	0

Criteria Air Pollutant MSA monitoring network includes:

County	PMIO	O ₄	NO./NO/NO2	CO	SO ₂
Campbell County, KY	0	1	I	0	1
KDEP					
Boone County, KY	0	1	0	0	0
KDEP					
Hamilton County, OH	3	3	1	1	1
HCDOES					
Butler County, OH	2	2	0	0	0
HCDOES					
Clermont County, OH	0	1	0.	0	0
HCDOES					
Warren County, OH	0	1	0 .	0	0
HCDOES					
Franklin County, IN	0	0	0	0	0
IDEM .					
Dearborn County, IN	0	-0	0	0	0
IDEM			<u> </u>		
Ohio County, IN	0	0	0	0	0
IDEM					

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 A. Lyons
TITLE: Director, Division for Air Quality
DATE: 5/13/10
V
Hamilton County Department of Environmental Services
BY: Cory Chadwick Cary R. Church Just
TITLE: Director
DATE: 5/13/10
/
Indiana Department of Environmental Management Office of Air Quality
BY: Keith Baugues Kirth Baugues
TITLE: Assistant Commissioner, Office of Air Quality
DATE: _ 5/14/10

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:

Gounty	Federal Reference Medical PV25	Continuous PM25	La constante de la constante d	
Henderson County,	1	1	0	0
KDEP				
Vanderburgh County,	3	. 1	1	1
IDEM				

Criteria Air Pollutant MSA monitoring network includes:

Gounty -	PM10	O ₅ s	ENTERVANIOUSTOP	co	SO ₂
	1	1	0	0	1
Henderson County,					
KY					
KDEP					
Vanderburgh County,	1 .	2 ·	1	1	1
IN					
IDEM				÷	

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 The Land
TITLE: Director, Division for Air Quality
DATE: 5/14/10
Indiana Department of Environmental Management Office of Air Quality
BY: Keith Baugues Kerth Baugus
TITLE: Assistant Commissioner, Office of Air Quality
DATE: 5/24/20

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

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

Sean Alteri July 2, 2014 Page 2

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

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Mr. Barry Stephens May 15, 2015 Page 2

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

APPENDIX E

LMAPCD AMBIENT AIR MONITORING NETWORK 2020

LMAPCD Proposed Network Changes



Louisville Metro Air Pollution Control District's Proposed Changes to the Ambient Air Quality Monitoring Network

April, 2020

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LMAPCD Proposed Network Changes - Overview

The Louisville Metro Air Pollution Control District (LMAPCD) is proposing some minor changes to the ambient monitoring network during the 2020 Network Planning period (July 2020 through June 2021). Most of the changes presented in this document serve to clarify proposed changes mentioned in prior network plans as implementation of prior proposed changes have changed from the original proposals or have been delayed. Additional details concerning LMAPCD monitoring proposed changes and clarifications on various aspects of the monitoring network are presented below.

Particulate Matter Network Update & Clarifications

Per discussion in prior network plans, LMAPCD has fully completed implementation of new monitoring technologies for PM2.5. The transition from BAM1020s to API Teledyne T640/T640x analyzers was completed in 2019, along with transitioning PM2.5 primary monitors to continuous analyzers for all sites. This is discussed in more detail below.

LMAPCD Intended Use of Continuous PM_{2.5} Monitors

APCD has completed implementation of several changes in the PM monitoring network. In general, the continuous PM monitoring method was modified in late 2018 and early 2019 as Met One BAM 1020s were replaced with Teledyne APIT640 / T640x instruments. Additionally, some changes were made to the FRM PM2.5 network to reduce the number of FRM PM2.5 samplers needed in the network and transition the objective of the FRM samplers to QA collocation. *In general, all APCD monitoring sites now contain a continuous PM2.5 FEM monitor (APIT640 or APIT640x), and these continuous PM2.5 analyzers serve as the primary monitors for those sites and are intended to assess compliance with the PM2.5 NAAQS.* Table 1 serves to clarify the intended use of PM_{2.5} data for calendar year 2020 and beyond. Given some of the changes that have occurred to the PM_{2.5} monitoring network over the last couple years, Table 2 provides a summary of the changes that have occurred, as well as some clarifications to the monitoring objectives of PM monitors.

		PM _{2.5} Monit	tors Ope	erated by L	MAPCD – Cui	rent		
Site Name	AQS ID	Parameter	POC	Monitor	Method	Primary	Compare to	Eligible
		Code		Туре		Monitor?	NAAQS?	for AQI?
Watson Lane	21-111-0051	88101	3	SLAMS	API T640	Yes	Yes	Yes
Cannons Lane	21-111-0067	88101	3	SLAMS	API T640x	Yes	Yes	Yes
Cannons Lane	21-111-0067	88101	1	Colloc	FRM	No	Yes	NA
Carrithers	21-111-0080	88101	3	SLAMS	API T640	Yes	Yes	Yes
Middle School								
Durrett Lane	21-111-0075	88101	3	SLAMS	API T640	Yes	Yes	Yes
Durrett Lane	21-111-0075	88101	1	Colloc	FRM	No	Yes	NA
Firearms	21-111-1041	88101	3	SLAMS	API T640x	Yes	Yes	Yes
Training								

Table 1 - List of LMAPCD PM_{2.5} monitors that are currently in place and will remain in place for the foreseeable future.

	Clarifications on PM _{2.5} Monitor Objectives Operated by LMAPCD
Watson Lane 21-111-0051	PM2.5 FRM sampling was terminated in December, 2017. The continuous PM2.5 BAM served as primary monitor starting January, 2018, then transitioned to the T640 method in January, 2019. It should also be noted that PM10 NAAQS compliance monitoring was terminated at this site in December, 2018. The NAAQS compliance responsibility was transferred to Cannons Lane for 2019 and beyond.
Cannons Lane 21-111-0067	The continuous PM2.5 BAM served as the primary monitor starting January, 2018, with FRM sampling serving as a collocated monitor for the continuous method. Initial FRM collocation sampling did not meet the required collocation distance, but this was resolved in March, 2019 when the FRM sampler was moved to the roof of the shelter. The T640x analyzer replaced the BAM instruments in late January, 2019. It should also be noted that upon installation of the T640x in January, 2019, this site served as a NAAQS compliance monitor for PM10 as well.
Carrithers Middle School 21-111-0080	This site was established in early 2018 and served as a replacement site for Bates Elementary (AQI ID 21-111-0027). The initial objective of the PM2.5 monitoring served as a special purpose monitor for AQI determination. However, with a change from BAM1020 method to API Teledyne T640 method in early 2019, the monitoring objective changed to NAAQS Compliance. As such, the parameter changed from 88501 to 88101.
Durrett Lane 21-111-0075	Initial PM2.5 monitoring at this Near Road site was performed using filter-based FRM samplers. In early 2019, a Teledyne API T640 instrument was installed and served as the primary PM2.5 monitor for the purpose of NAAQS compliance. The FRM sampler remains at the site and operates as a QA collocated monitor (as of 1/1/2019).
Firearms Training 21-111-1041	PM2.5 monitoring began at Firearms Training in early 2018 when the Southwick Community Center site (AQS ID 21-111-0043) shut down and much of the monitoring equipment was moved to Firearms Training (PM and Meteorology). Initial PM monitoring at Firearms Training included FRM sampling (two FRM samplers for collocation) in addition to the BAM1020 method for both PM2.5 and PM10. In 2019, the continuous PM2.5 method became the primary monitor and the FRMs were phased out with all FRM sampling at this site terminated by July, 2019. The T640x instrument was installed in March, 2019. This site also represents a NAAQS compliance monitoring site for PM10 starting in 2018.

 ${\sf Table\,2-List\,of\,LMAPCD\,PM_{2.5}\,monitoring\,sites\,and\,clarifications\,on\,the\,intended\,use\,of\,those\,monitors.}$

Photochemical Assessment Monitoring Station (PAMS)

Based on updated monitoring regulations in 40 CFR Part 58, Appendix D, state and local air monitoring agencies are now required to begin making PAMS measurement at their NCore location by June 1, 2021. APCD has been planning for PAMS implementation for some time and continues preparing to implement the program as funding and personnel resources allow with the goal of full implementation on or before June 1, 2021.

In order to accommodate the new instrumentation for PAMS, an additional shelter will be needed at the Cannons Lane site. Acquisition of the monitoring shelter, the Auto GC, and the Ceilometer is currently underway. While APCD anticipated having the PAMS Auto GC system up and running for the 2020 PAMS season, delays have occurred due to site leasing issues at the Cannons Lane NCore site. Due to these delays, the PAMS shelter and Auto GC system are not expected to be installed in time for the 2020 PAMS season. The lease negotiations are still underway and the PAMS equipment will be installed if and when these leasing issues are resolved. Table 3 provides a listing of all required PAMS parameters and their status at APCD's Cannons Lane NCore site.

Stat	us of PAMS Para	meters at APCD's Cannons Lane NCore S	ite
Required PAMS	Status	Current / Expected Instrumentation	Operational Date /
Measurement			Estimated Date
Hourly VOCs	Acquiring	CAS / Chromatotec Auto GC	9/1/2020
Carbonyls	Evaluating	TBD	6/1/2021
Hourly Ozone	Operational	Teledyne API T400 ¹	2/27/2016
True NO2	Operational	Teledyne API T500U	6/15/2017
NOy	Operational	Teledyne API T200U NOy ¹	6/12/2018
Ambient Temp	Operational	Vaisala HMW93D Temp/RH Probe	1/1/2010
Wind	Operational	RM Young 85000 Ultrasonic	1/19/2010
Ambient Pressure	Operational	RM Young 61302V	10/8/2018
Precipitation	Operational	Met One 370 Tipping Bucket ¹	6/23/2016
Hourly Mixing Height	Acquiring	Vaisala Ceilometer CL51	9/1/2020
Solar Radiation	Operational	Eppley PS Pyranometer	3/1/2009
UV Radiation	Acquired	Eppley TUVR Radiometer	9/1/2020

Table 3 - List of PAMS parameters required by 40 CFR Part 58 Appendix D and the status of those parameters at APCD's Cannons Lane NCore site.

LMAPCD will work as diligently as possible to install and operate the new PAMS instrumentation so that meaningful, valid data can be collected and reported to EPA's AQS database. Due to some delays and uncertainties in PAMS funding, some delays in technical guidance and resources may occur. As such, LMAPCD does not plan to report these PAMS data to EPA's database until there is adequate confidence in the data being collected.

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¹ Operational date listed is for this specific method. Parameter has been collected for several years prior to the operational date listed using different instrumentation / method.

Air Toxics Monitoring

LMAPCD also performs Air Toxics monitoring at the Firearms Training site using similar technology to that of Consolidated Analytical System's (CAS) Chromatotec Auto GC that will be used for PAMS monitoring of hourly VOCs. The Auto GC at Firearms Training has undergone numerous upgrades over the last two years and significant effort has been put forth to improve the system and sync it with LMAPCD's central data collection system and database. While the Auto GC system is still being evaluated and assessed for numerous compounds to determine if the data quality is sufficient for reporting and analysis, a smaller subset of compounds have been determined to be of adequate quality. As such, some limited reporting of those compounds began in early 2019. While the Auto GC system will have some continued limitations in assessing all compounds of interest, the Auto GC data from Firearms Training will continue to be evaluated to see if additional compounds are determined to be of acceptable data quality.

Update on Characterization of Ambient SO₂ Concentrations in Vicinity of Kosmosdale in Southwestern Jefferson County

On February 19, 2020, LMAPCD and the permitted facility revised a previous Board Order that required installation and operation of the Kosmosdale site to allow for construction of a new stack as an alternative to monitoring. On March 16, 2020, the permitted facility notified LMAPCD in accordance with the revised Board Order that it would construct a new stack consistent with the parameters evaluated by LMAPCD, EPA and DAQ during Fall 2019. As a result, LMAPCD will submit a proposal to the EPA to discontinue the Kosmosdale site (proposed ID 21-111-0065) in the Summer of 2020.

Firearms Training Site Name Change – Algonquin Parkway

LMAPCD has made an official decision to change the name of the Firearms Training site (AQS ID 21-111-1041) to be more reflective and representative of the geographic area where the monitoring site is located. This site is an important site that represents air quality conditions in West Louisville near an industrial complex locally referred to as Rubbertown. As such, the site located at 4201 Algonquin Parkway will be named 'Algonquin Parkway' after the relatively well known street that runs predominantly East / West through West Louisville. Effort will be needed to ensure that the name change does not create any unforeseen conflicts for internal air monitoring applications. As such, while transitioning the name from Firearms Training to Algonquin Parkway, the site may be referred to as either in various documents. The local site name will be updated in the AQS database to reflect the new name, but the AQS ID will remain the same.

Black Carbon Monitoring at Durrett Lane Near Road Site

LMAPCD plans to install a Magee Scientific AE33 Aethalometer at the Durrett Lane Near Road site to better characterize particulate carbon species. The site's proximity to heavy traffic congestion on the nearby I-264 Watterson Expressway & I-65 interchange makes the Durrett Lane Near Road site a good candidate site for carbon monitoring. Additionally, intermittent localized peaks of $PM_{2.5}$ concentrations from suspected residential wood burning or other biomass burning may allow for a mix of carbon species to be monitored and assessed. With the full spectrum 7-wavelength analysis capability, the

AE33 Aethalometer has the ability to measure a mix of carbon species. LMAPCD plans to install the AE33 Aethalometer at the Durrett Lane site by Fall, 2020 so that it is in place before the suspected wintertime maximum in carbon particulate species.

Conclusion

The majority of the changes being proposed for the Network Planning period (July 2020 – June 2021) do not alter LMAPCD's criteria pollutant network. Most of the changes are metadata changes that are intended to clarify the objective and purpose of the PM monitors within APCD's monitoring network. The most substantial change to LMAPCD's network will be the installation of several pieces of equipment at the Cannons Lane NCore station to meet PAMS requirements. The PAMS instrumentation is new to most state, local, and tribal agencies, and as such, additional effort will likely be needed to make sure that the instrumentation is producing meaningful, valid data. In an effort to ensure that the Louisville Metropolitan Statistical Area (MSA) continues to meet minimum monitoring requirements, Table 4 provides a summary of the number of ambient air quality monitoring sites in operation for each pollutant group within the Louisville MSA. Some changes were made to update the numbers based on expected or recent changes to other monitoring networks within the MSA². The following changes are noted between the current and proposed changes:

- Increase of one PAMS site is result of proposed addition of PAMS instrumentation at Cannons
- Increase of one Black Carbon monitor with the planned addition of the AE33 Aethalometer at the Durrett Lane Near Road site

As can be seen in Table 4, the Louisville MSA continues to meet the EPA minimum monitoring requirements through the collective efforts of the Indiana Department of Environmental Management (IDEM), KDAQ, and the LMAPCD. It should also be noted that the operation of ambient air quality monitors by the LMAPCD alone meets the EPA minimum monitoring requirements for the Louisville MSA.

		Louisvil	le / Jeff	erson C	ounty N	/ISA Mo	nitorin	g Requi	irement	ts	
	O ₃	PM _{2.5}	PM ₁₀	PM_c	PM _{BC}	CSN	SO ₂	NO ₂	СО	Toxics	PAMS
# Sites Required by CFR	2	3	2-4	1	0	0	1	2	2	0	1
# Current Sites	7 (3)	7 (5)	3 (2)	1 (1)	1 (0)	2 (1)	4 (3)	2 (2)	2 (2)	2 (1)	0 (0)
# Sites After proposed Changes	7 (3)	7 (5)	3 (2)	1 (1)	2 (1)	2 (1)	4 (3)	2 (2)	2 (2)	2 (1)	1 (1)

Table 4 - Summary of monitoring requirements in Louisville / Jefferson County MSA compared to number of monitors / sites before and after proposed network changes. Numbers in parenthesis represents number of sites that APCD operates (versus total number in MSA).

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² See IDEM network plan for more details.

Appendix E - Part B LMAPCD Equipment Inventory

ocation	ř	Manufacturer	Model	Carial Number	Condition	Ctature
Callon	msu ament i ype	Mailuidetulei	IADOIAL	lagilini ipilac	CONDINON	SUIPIC
Carrithers	Anemometer	RM Young	05103VM	WM47808	Fair	In Use
Carrithers	Calibrator	API	T703	255	Good	In Use
Carrithers	Datalogger	ESC Agilaire LLC	8832	4411	Fair	In Use
Carrithers	O3 Analyzer	API	T400	1468	Good	In Use
Carrithers	PM	API	T640	457	Good	In Use
Carrithers	RH/Temp Probe	RM Young	41382	n/a	Good	In Use
Carrithers	RH/Temp Sensor	Vaisala	HMW93D	N1540018	Good	In Use
Carrithers	Site Shelter	EKTO Mfg.	81012	4234-1	Fair	In Use
CLAMS	Anemometer	RM Young	5305AQ	135267	Good	In Use
CLAMS	Anemometer	RM Young	85000	UB1390	Good	In Use
CLAMS	Baro Pressure	RM Young	61302V	BPA1240	Good	In Use
CLAMS	Calibrator	API	T700U	457	Good	In Use
CLAMS	CO Analyzer	API	T300U	281	Good	In Use
CLAMS	Datalogger	ESC Agilaire LLC	8832	4410	Good	In Use
CLAMS	Meteorology Tower	Aluma Tower	Т-35Н	AP-29071-U-4	Good	In Use
CLAMS	NO2 Analyzer	API	T500U	169	Good	In Use
CLAMS	Noy Analyzer	API	T200U	316	Good	In Use
CLAMS	03 Analyzer	API	T400	5405	Good	In Use
CLAMS	PM	API	T640x	591	Good	In Use
CLAMS	PM	Met One	Super SASS	1046	Good	In Use
CLAMS	PM	Thermo	2025i	21317	Good	Spare
CLAMS	PM	Thermo	2025i	21318	Good	In Use
CLAMS	PM	URG	3000N	BN-251	Fair	In Use
CLAMS	PM	URG	3000N	BN-933	Fair	In Use
CLAMS	Pyranometer	Eppley	PSP	34257F3	Good	In Use
CLAMS	RadNet	H-Q	HVP-4004BRL-S	17603	Fair	In Use
CLAMS	Rain	Met One	370	U10772	Good	In Use
CLAMS	RH/Temp Probe	RM Young	41382	021011	Good	In Use
CLAMS	RH/Temp Sensor	Vaisala	HMW93D	H05200002	Good	In Use
CLAMS	Site Shelter	Modular Connections	MCP-296	MC2519	Good	In Use
CLAMS	SO2 Analyzer	API	110011	37.6	6000	201 1

LMAPCD Equipment Inventory (Continued)

	Louisville Air Pollution C	Control District Ambient M	r Pollution Control District Ambient Monitoring Group Instrument & Equipment Inventory - April, 2020	& Equipment Inventory - A	April, 2020	
Location	Instrument Type	Manufacturer	Model	Serial Number	Condition	Status
CLAMS	TEOM shelter	EKTO Mfg.	432-SP	3535-6	Good	In Use
CLAMS	Zero Air	API	Т701Н	604	Good	In Use
FireArms	Anemometer	RM Young	85000	UB3773	Good	In Use
FireArms	Auto GC C2-C6	Chromatotec	airmoVOC A21022	56410717	Good	In Use
FireArms	Auto GC C6-C12	Chromatotec	airmoVOC C6-C12 A21022	26400717	Good	In Use
FireArms	Auto GC Calibrator	Chromatotec	airmoCal	56440717	Good	In Use
FireArms	Auto GC H2 Generator	Chromatotec	Hydroxychrom	56420717	Good	In Use
FireArms	Auto GC Zero Air	Chromatotec	airmoPure D	56430717	Good	In Use
FireArms	Calibrator	API	T700	289	Good	In Use
FireArms	Datalogger	ESC Agilaire LLC	8832	4294	Fair	In Use
FireArms	PM	API	T640	151	Good	In Use
FireArms	PM	API	T640x	592	Good	In Use
FireArms	PM	Thermo	2025i	20612	Good	Spare
FireArms	PM	Thermo	2025i	20614	Good	Spare
FireArms	RH/Temp Probe	RM Young	41372VC	Y490092	Fair	In Use
FireArms	RH/Temp Sensor	Vaisala	HMW93D	H052001	Good	In Use
FireArms	Site Shelter	EKTO Mfg.	8812	4222-5641017	Good	In Use
FireArms	SO2 Analyzer	API	T100U	081	Fair	In Use
FireArms	Zero Air	API	T701M	647	Good	In Use
Near Road	Anemometer	RM Young	05305V	128356	Fair	In Use
Near Road	Anemometer	RM Young	85000	4675	Fair	In Use
Near Road	Calibrator	API	T700U	106	Good	In Use
Near Road	CO Analyzer	API	T300U	155	Fair	In Use
Near Road	Datalogger	ESC Agilaire LLC	8832	4293	Fair	In Use
Near Road	Meteorology Tower	Aluma Tower	T-135	AT-213072-Y-6-1	Good	In Use
Near Road	NO2 Analyzer	API	T500U	168	Good	In Use
Near Road	PM	API	T640	458	Good	In Use
Near Road	PM	Thermo	2025i	20608	Good	In Use
Near Road	RH/Temp Probe	RM Young	41382	25029	Fair	In Use
Near Road	RH/Temp Sensor	Vaisala	HMW93D	H052004	Good	In Use
Near Road	Site Shelter	CAS	CAS	3200-7	Good	In Use

LMAPCD Equipment Inventory (Continued)

ocation	Instrument Type	Manufacturer	Model	Serial Number	Condition	Status
Near Road	Zero Air	API	Т701Н	839	Good	In Use
Southwick	BAM shelter	Met One	BAM Shelter	n/a	Good	Spare
Southwick	Meteorology Tower	Unknown/Misc	Meteorology Tower	fixed tower/unknown	Good	In Use
Southwick	PM	Met One	BAM	T18983	Good	Spare
Southwick	PM	Thermo	2025B	20450	Fair	Spare
Southwick	PM	Thermo	2025B	21665	Fair	Spare
Southwick	Rain	Met One	370	E2009	Fair	In Use
Southwick	TEOM shelter	EKTO Mfg.	432-SP	3408-6	Good	Spare
Southwick	TEOM shelter	EKTO Mfg.	432-SP	3408-7	Good	Spare
Watson	Anemometer	RM Young	85000	002568	Good	In Use
Watson	Calibrator	API	1700	1620	Good	In Use
Watson	Datalogger	ESC Agilaire LLC	8832	4291	Fair	In Use
Watson	O3 Analyzer	API	1400	1467	Good	In Use
Watson	PM	API	T640	456	Good	In Use
Watson	RH/Temp Sensor	Vaisala	HMW93D	H0520003	Good	In Use
Watson	Site Shelter	EKTO Mfg.	8812	3728-1	Good	In Use
Watson	SO2 Analyzer	API	T100	1321	Good	In Use
Watson	Zero Air	API	T701M	648	Good	In Use
Shop	Air Toxics Sampler	Thermo	Miran Saphire	79545411	Fair	Spare
Shop	Anemometer	Met One	50.5	B-1031	Poor	Spare
Shop	Anemometer	Met One	50.5	Y3338	Good	Spare
Shop	Anemometer	RM Young	05103VM	WM101749	Fair	Spare
Shop	Anemometer	RM Young	05103VM-42	118039	Good	Spare
Shop	Anemometer	RM Young	05305V	WM00101749	Fair	Spare
Shop	Anemometer	RM Young	5305AQ	VW101749	Good	Spare
Shop	Anemometer	RM Young	82000	n/a	Good	Spare
Shop	Anemometer	RM Young	85000	UB-1309	Good	Spare
Shop	Anemometer	RM Young	86000	UD00003877	Good	Spare
Shop	Calibrator	API	1700	1619	Good	Spare
Shop	Calibrator	API	1700	290	Good	Spare
Shop	Calibrator	API	T700E	1038	Poor	Spare

ocation.	Instrument Type	Manufacturer	Model	Serial Number	Condition	Status
Shop	Calibrator	API	T700U	107	Good	In Use
Shop	Calibrator	API	T700U	174	Good	In Use
Shop	Calibrator	API	T703	731	Good	In Use
Shop	Calibrator	API	T750	054	Good	In Use
Shop	CO Analyzer	Thermo	48i-TLE	0814429-062	Fair	Spare
Shop	Datalogger	ESC Agilaire LLC	8832	2713K	Fair	In Use
Shop	Datalogger	ESC Agilaire LLC	8832	4691K	Fair	In Use
Shop	Datalogger	ESC Agilaire LLC	8872	0731	Good	Spare
Shop	Flow Standard	AliCat	FP-25BT	148162	Good	In Use
Shop	Flow Standard	AliCat	FP-25BT	212953	Good	In Use
Shop	Flow Standard	AliCat	FP-25BT	212954	Good	In Use
Shop	Flow Standard	AliCat	FP-25BT	212955	Good	In Use
Shop	Flow Standard	AliCat	FP-25BT	212956	Good	In Use
Shop	Flow Standard	AliCat	FP-25BT	212957	Good	In Use
Shop	Flow Standard	AliCat	FP-25BT	212957	Good	Spare
Shop	Flow Standard	AliCat	MWB-2SLPM-D	189496	Good	In Use
Shop	Flow Standard	AliCat	MWB-2SLPM-D	228258	Good	In Use
Shop	Flow Standard	AliCat	MWB-500SCCM-D	228259	Good	In Use
Shop	Flow Standard	Chinook	SLP	HL041007	Fair	Spare
Shop	Flow Standard	Chinook	SLP	HL170606	Good	Spare
Shop	Flow Standard	Chinook	SLP	HL170607	Good	Spare
Shop	Flow Standard	Chinook	SLP	HM041005	Poor	Spare
Shop	Flow Standard	Chinook	SLP	HM041006	Fair	Spare
Shop	Flow Standard	Chinook	SLP	HM070204	Fair	Spare
Shop	Flow Standard	Fluke	Fluke	2213	Good	In Use
Shop	Flow Standard	MesaLab	Bios Dry Cal	105393	Fair	Spare
Shop	Flow Standard	MesaLab	Delta Cal	465	Fair	Spare
Shop	Flow Standard	MesaLab	Delta Cal	466	Fair	Spare
Shop	Lab Fridge	Thermo	REL1204A	155472601160526	Good	In Use
Shop	Met Station	Met One	Portable	5876	Fair	Spare
Shop	Met Station	Met One	Portable	E5678	Poor	Spare

ocation -	Instrument Type	Manufacturer	Model	Serial Number	Condition	Status
Shop	NO2 Analyzer	API	T500U	170	Соод	In Use
Shop	O3 Analyzer	API	1400	315	Good	Spare
Shop	O3 Analyzer	API	T400	316	Good	Spare
Shop	O3 Analyzer	Thermo	49iPS	617817-229	Good	In Use
Shop	Photometer Calibrator	Thermo	49CPS	70020-364	Good	In Use
Shop	PM	API	T640	459	Good	Spare
Shop	PM	Met One	SASS	0809	Fair	Spare
Shop	PM	Thermo	2025B	22560	Fair	Parts
Shop	PM	Thermo	2025i	20607	Good	Spare
Shop	PM	URG	3000N	1045	Fair	Spare
Shop	Pump	Rocker	Rocker	8001	Fair	Spare
Shop	Pump	Rocker	Rocker	B002	Fair	Spare
Shop	Pump	Rocker	Rocker	C031	Fair	Spare
Shop	Pump	Rocker	Rocker	H005	Fair	Spare
Shop	Pyranometer	Eppley	PSP	33927F3	Fair	Spare
Shop	Rain	RM Young	52202	TB03206	Fair	Spare
Shop	RH/Temp Probe	RM Young	41382	126462	Good	Spare
Shop	RH/Temp Sensor	Vaisala	HMW93D	N1540017	Fair	Spare
Shop	RH/Temp Standard	Vaisala	HM75	R2830602	Good	In Use
Shop	RH/Temp Standard	Vaisala	HPM	J0871073	Fair	Spare
Shop	RH/Temp Standard	Vaisala	HPM	x3810013	Fair	In Use
Shop	RH/Temp Transmitter	Vaisala	HMW71Y	W3650008	Fair	Spare
Shop	RH/Temp Transmitter	Vaisala	HMW71Y	X0840020	Fair	Spare
Shop	SO2 Analyzer	API	T100	1322	Good	Spare
Shop	SO2 Analyzer	Thermo	43i-TLE	814428-732	Fair	Spare
Shop	Temp Probe	RM Young	41342VF	41376A	Fair	Spare
Shop	Temp Probe	RM Young	41342VF	41376A	Fair	Spare
Shop	Temp Probe	RM Young	41342VF	TS05123	Good	Spare
Shop	UV Radiometer	Eppley	TUVR	38938	Good	Spare
Shop	Vehicle	Ford	Escape	3700	Fair	In Use
Shon	Vobiolo	17		OCCE	-	La I la

	Louisville Air Pollution	Control District Ambient	Louisville Air Pollution Control District Ambient Monitoring Group Instrument & Equipment Inventory - April, 2020	nt & Equipment Inventory	- April, 2020	
Location	Instrument Type	Manufacturer	Model	Serial Number	Condition	Status
Shop	Vehicle	Ford	Escape	4221	Good	In Use
Shop	Vehicle	Ford	Escape	4237	Good	In Use
Shop	Vehicle	Ford	F250 (big truck)	1268	Good	In Use
Shop	Vehicle	Ford	F350 (big van)	2966	Poor	In Use
Shop	Vehicle	Ford	Ranger	3114	Poor	In Use
Shop	Vehicle	Ford	Transit	2116	Good	In Use
Shop	Zero Air	API	Т701Н	773	Fair	In Use
Shop	Zero Air	API	Т701Н	801	Good	Spare
Shop	Zero Air	API	Т701Н	802	Good	In Use
Shop	Zero Air	API	Т751Н	62	Good	In Use
Warehouse	Air Toxics FTIR	IMACC	M-ZSE12-180	M0015	Fair	Not In Use
Warehouse	Air Toxics UV	IMACC	Air Toxics UV	Air Toxics UV	Fair	Not In Use
Warehouse	Analyzer	EcoTech	300	1586	Poor	Not In Use
Warehouse	BAM shelter	Met One	BAM Shelter	n/a	Good	Not In Use
Warehouse	Calibrator	EcoTech	6100	4012	Poor	Not In Use
Warehouse	Calibrator	Thermo	146C	0417007-062	Poor	Not In Use
Warehouse	Calibrator	Thermo	146C	382	Poor	Not In Use
Warehouse	Calibrator	Thermo	146C	70386-365	Poor	Not In Use
Warehouse	Calibrator	Thermo	146i	0814428-735	Fair	Not In Use
Warehouse	CO Analyzer	Thermo	48C	351	Poor	Not In Use
Warehouse	CO Analyzer	Thermo	48C	417007-060	Poor	Not In Use
Warehouse	CO Analyzer	Thermo	48C	67474-356	Poor	Not In Use
Warehouse	CO Analyzer	Thermo	48C	68840-361	Poor	Not In Use
Warehouse	CO Analyzer	Thermo	48i-TLE	617817-228	Fair	Not In Use
Warehouse	Datalogger	ESC Agilaire LLC	8816	1917	Fair	Not In Use
Warehouse	Datalogger	ESC Agilaire LLC	8816	1971	Fair	Not In Use
Warehouse	Datalogger	ESC Agilaire LLC	8816	1972	Fair	Not In Use
Warehouse	Datalogger	ESC Agilaire LLC	8816	1973	Fair	Not In Use
Warehouse	Datalogger	ESC Agilaire LLC	8816	2423	Fair	Not In Use
Warehouse	Datalogger	ESC Agilaire LLC	8816	2764	Fair	Not In Use
Warehouse	Datalogger	ESC Agilaire LLC	8816	3303	Poor	Not In Use

	Louisville Air Pollution Control District Ambient Monitoring Group Instrument & Equipment Inventory - April, 2020	Control District Ambieni	Summer death Summer death and the summer death and			
Location	Instrument Type	Manufacturer	Model	Serial Number	Condition	Status
Warehouse	Datalogger	ESC Agilaire LLC	8816	3304	Poor	Not In Use
Warehouse	Datalogger	ESC Agilaire LLC	8816	3305	Poor	Not In Use
Warehouse	Datalogger	ESC Agilaire LLC	8816	3306	Fair	Not In Use
Warehouse	Datalogger	ESC Agilaire LLC	8816	3307	Fair	Not In Use
Warehouse	Datalogger	ESC Agilaire LLC	8816	3308	Fair	Not In Use
Warehouse	Datalogger	ESC Agilaire LLC	8816	3801	Good	Not In Use
Warehouse	Datalogger	ESC Agilaire LLC	8816	4422	Fair	Not In Use
Warehouse	Datalogger	ESC Agilaire LLC	8816	4423	Fair	Not In Use
Warehouse	Datalogger	ESC Agilaire LLC	8816	4424	Fair	Not In Use
Warehouse	Datalogger	ESC Agilaire LLC	8832	4291	Fair	Not In Use
Warehouse	Datalogger	ESC Agilaire LLC	8832	5058	Poor	Not In Use
Warehouse	Datalogger	ESC Agilaire LLC	8832	A1014	Good	Not In Use
Warehouse	Meteorology Tower	Unknown/Misc	Meteorology Tower	n/a	Good	Not In Use
Warehouse	NO2 Analyzer	API	1200	341	Fair	Not In Use
Warehouse	NO2 Analyzer	API	T200UP	085	Good	Not In Use
Warehouse	NO2 Analyzer	EcoTech	Ecotech Serinus	40-10-51	Poor	Not In Use
Warehouse	NO2 Analyzer	Thermo	42C	070415-365	Poor	Not In Use
Warehouse	NO2 Analyzer	Thermo	42C	70979-367	Poor	Not In Use
Warehouse	Noy Analyzer	Thermo	42i-Y	0814428-734	Poor	Not In Use
Warehouse	O3 Analyzer	Thermo	49C	413906-381	Poor	Not In Use
Warehouse	O3 Analyzer	Thermo	49C	417007-061	Poor	Not In Use
Warehouse	O3 Analyzer	Thermo	49C	43374-269	Poor	Not In Use
Warehouse	O3 Analyzer	Thermo	49C	47646-280	Poor	Not In Use
Warehouse	O3 Analyzer	Thermo	49C	64282-342	Poor	Not In Use
Warehouse	O3 Analyzer	Thermo	49C	74462-376	Poor	Not In Use
Warehouse	O3 Analyzer	Thermo	49i	617817-230	Fair	Not In Use
Warehouse	PM	Met One	BAM	H1710	Fair	Not In Use
Warehouse	PM	Met One	BAM	K19862	Fair	Not In Use
Warehouse	PM	Met One	BAM	K19863	Fair	Not In Use
Warehouse	PM	Met One	BAM	N2946	Fair	Not In Use
Warehouse	PM	Met One	BAM	N3593	Fair	Not In Use

Location	Instrument Type	Manufacturer	Model	Serial Number	Condition	Status
Warehouse	PM	Met One	BAM	N3596	Fair	Not In Use
Warehouse	PM	Met One	BAM	T18977	Good	Not In Use
Warehouse	PM	Met One	BAM	T18981	Good	Not In Use
Warehouse	PM	Met One	BAM	T18984	Good	Not In Use
Warehouse	PM	Met One	SASS	3565	Fair	Not In Use
Warehouse	PM	Met One	SASS	3567	Fair	Not In Use
Warehouse	PM	Met One	SASS	6209	Fair	Not In Use
Warehouse	PM	Thermo	2025B	21310	Fair	Not In Use
Warehouse	PM	Thermo	2025B	21656	Fair	Not In Use
Warehouse	PM	Thermo	2025B	21666	Fair	Not In Use
Warehouse	Shelter (mobile)	Mobile Structures	Mobile Trailer	5WJVN14238L000673	Fair	Not In Use
Warehouse	Site Shelter	EKTO Mfg.	8812	3876-1	Fair	Not In Use
Warehouse	SO2 Analyzer	Thermo	43C	436610-205	Poor	Not In Use
Warehouse	SO2 Analyzer	Thermo	43C	518612-095	Poor	Not In Use
Warehouse	SO2 Analyzer	Thermo	43C	69873-364	Poor	Not In Use
Warehouse	TEOM	R&P	1400a	230750005	Poor	Not In Use
Warehouse	TEOM	R&P	1400a	23746	Poor	Not In Use
Warehouse	TEOM	R&P	1400a	23748	Poor	Not In Use
Warehouse	TEOM	R&P	1400a	24601	Poor	Not In Use
Warehouse	TEOM	R&P	1400ab	24059	Poor	Not In Use
Warehouse	TEOM	R&P	1400ab	24097	Poor	Not In Use
Warehouse	TEOM	R&P	1400ab	24885	Poor	Not In Use
Warehouse	TEOM	R&P	1400ab	24926	Poor	Not In Use
Warehouse	TEOM shelter	EKTO Mfg.	432-SP	3200-7	Poor	Not In Use
Warehouse	TEOM shelter	EKTO Mfg.	432-SP	3278-10	Good	Not In Use
Warehouse	TEOM shelter	EKTO Mfg.	432-SP	3278-9	Good	Not In Use
Warehouse	Zero Air	API	T701M	835	Poor	Not In Use
Warehouse	Zero Air	API	T701M	837	Poor	Not In Use

APPENDIX F

Appendix F KDAQ 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 NAAQS, as long as these monitors were specified as special-purpose monitors (SPMs). Data from these monitors were 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 were 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. Each monitor must be properly referenced by a set of parameter codes, primary monitor designations, and monitor-types.

KDAQ currently operates ten FEM PM_{2.5} continuous T640 monitors in the field; of which, six are eligible for NAAQS comparisons. Those eligible monitors are located at the following sites:

- Elizabethtown
- Northern Kentucky University
- Ashland Primary
- Owensboro Primary
- Jackson Purchase RECC
- Pikeville

Four T640s (located at three sites) are currently not eligible for NAAQS comparisons, but are recommended for NAAQS comparisons starting 1/1/2021. Filter-based FRM samplers will be operated at those sites until 12/31/2020. Those four FEM monitors are listed below:

- Smiths Grove
- Smiths Grove Collocated
- Lexington Primary
- Hazard

KDAQ plans to install T640s at an additional three sites starting 1/1/2021, with filter-based FRMs operating until 12/31/2020. Those three FEM monitors, which will be immediately usable for NAAQS comparisons, will be located at:

- Middlesboro
- Hopkinsville
- Somerset

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

A such, KDAQ will operate a total of 13 FEM PM_{2.5} continuous T640 monitors in the field during the 2020-2021 monitoring year, all of which, will be usable for NAAQS determinations no later than January 1, 2021. All NAAQS-eligible monitors are designated as SLAMS. The tables that follow provide a summary of KDAQ's use of the T640 continuous PM_{2.5} FEMs, collocation scenarios, and dates of operation.

<u>Scenario</u> :	: Continuous	s PM2.5 F	Northern F EM is eligible	Kentucky Uni for NAAQS on sit	comparisons	ĺ	l filter-b	ased FRMs	are located
FEM Parameter	FEM Pollution Occurrence Code (POC)	FEM Monitor Type	Primary Monitor	Collocated Monitor	FEM used for substitutions of missing primary data?	FEM used for NAAQS compari- sons?	FEM eligible for AQI?	Date FEM Installed at Site	Date FEM Eligible for NAAQS Comparisons
PM2.5 Local Conditions (88101)	POC 3	SLAMS	Filter-Based FRM (POC 1)	Filter-Based FRM (POC 2)	Yes	Yes	Yes	2/12/2018	2/13/2020

<u>Scenario</u> :	Continuous	PM2.5 FI	Eliz EM is eligible	zabethtown (2	ĺ		cated wi	th a filter-ba	ased FRM.
FEM Parameter	FEM Pollution Occurrence Code (POC)	FEM Monitor Type	Primary Monitor	Collocated Monitor	FEM used for substitutions of missing primary data?	FEM used for NAAQS compari- sons?	FEM eligible for AQI?	Date FEM Installed at Site	Date FEM Eligible for NAAQS Comparisons
PM2.5 Local Conditions (88101)	POC 3	SLAMS	Continuous FEM (POC 3)	Filter-Based FRM (POC 2)	Yes	Yes	Yes	4/1/2019	4/1/2019

Scenario:	Continuous		hs Grove and		be eligible f	`		sons during	monitoring
FEM Parameter	FEM Pollution Occurrence Code (POC)	FEM Monitor Type	Primary Monitor	Collocated Monitor	FEM used for substitutions of missing primary data?	FEM used for NAAQS compari- sons?	FEM eligible for AQI?	Date FEM Installed at Site	Date FEM Eligible for NAAQS Comparisons
PM2.5 Local Conditions (88101)	POC 3 (Primary) POC 4 (Collocated)	SLAMS	Continuous FEM (POC 3)	Continuous FEM (POC 4)	Yes	Yes	Yes	Primary: 2/17/2019 Collocated: 10/29/2019	Primary: 1/1/2021 Collocated: 1/1/2021

$\frac{Appendix\;F}{KDAQ\;Intended\;Use\;of\;Continuous\;PM_{2.5}\;FEMs}$

Scenario	o: Continuou	s PM2.5 F	EMs will be e	Multiple	AAQS comp	arisons duri	ng monit	toring year.	No other
FEM Parameter	FEM Pollution Occurrence Code (POC)	FEM Monitor Type	PM2 Primary Monitor	.5 monitors l Collocated Monitor	FEM used for substitutions of missing primary data?	FEM used for NAAQS compari- sons?	FEM eligible for AQI?	Date FEM Installed at Site	Date FEM Eligible for NAAQS Comparisons
									lesboro 3-0002)
								1/1/2021	1/1/2021
								Ashland (21-01	l Primary 9-0017)
								7/26/2017	7/27/2019
									insville 7-0006)
								1/1/2021	1/1/2021
									ro Primary 9-0005)
			Continuous FEM (POC 3)					10/19/2017	10/20/2019
PM2.5 Local	POC 3 SL.	SLAMS FEM		n/a	n/a	Yes	Yes	Lexingto (21-06	n Primary 7-0012)
Conditions (88101)								12/4/2018	1/1/2021
									rchase RECC 5-1024)
								8/17/2017	8/18/2019
									zard 3-0003)
								2/28/2019	1/1/2021
									eville 5-0002)
								2/8/2018	2/9/2020
									nerset 9-0003)
								1/1/2021	1/1/2021

APPENDIX G

CALVERT CITY SPECIAL-PURPOSE MONITORING

Appendix G Calvert City Special-Purpose Monitoring

With the cooperation of EPA, KDAQ is currently working to establish a special-purpose monitoring study of volatile organic compounds (VOCs) near Calvert City, KY. The measurement goal of the study is to estimate the 24-hour concentrations of VOCs in ambient air, over the course of one-year of sampling, with a focus on five pollutants of interest:

- Ethylene Dichloride
- Vinyl Chloride
- 1,3-Butadiene
- Acrylonitrile
- Benzene

Twenty-four hour samples will be collected in 6-liter stainless steel canisters (sub-atmospheric) on a predetermined sampling frequency. Samples will be analyzed for the full-suite of Tier I and Tier II VOCs by EPA's national contract laboratory, Eastern Research Group. Monitoring and analysis of samples will be conducted in-accordance with EPA Method TO-15. Ultimately, the data collected will be used to conduct a health-risk assessment by EPA.

To determine the best potential locations for ambient monitoring sites near the Calvert City Industrial Complex, KDAQ and US EPA utilized air dispersion modeling conducted by EPA Region 4. The modeling was performed with KDAQ emissions data from 2013-2017 for ethylene dichloride and vinyl chloride. Ultimately, it was determined, that the study would necessitate that three sites be established in the vicinity of Calvert City.

- Site #1: Characterization of maximum vinyl chloride concentrations
- Site #2: Characterization of maximum ethylene dichloride concentrations
- Site #3: Characterization of air quality in a more heavily populated area

Additionally, EPA and KDAQ agreed that the study would incorporate meteorological instrumentation at one site and collocated VOC sampling for precision estimates at another. At the time of publication of this network plan, KDAQ had identified three candidate sites, but had only secured a lease-agreement for locating a sampler at the Calvert City Elementary School. Study-sites are summarized below:

Study Site	Monitor Type	Designation	Analysis Method	Frequency of Sampling
Maximum Expected	Volatile Organic Compounds	SPM-Other	EPA method TO-15	24-hours every sixth day
Vinyl Chloride Site (Site #1)	Collocated Volatile Organic Compounds	SPM-Other	EPA method TO-15	24-hours every twelfth day
Maximum Expected	Volatile Organic Compounds	SPM-Other	EPA method TO-15	24-hours every sixth day
Ethylene Dichloride Site (Site #2)	Meteorological	eorological Other Anemometer & Wind Vane (wind speed & direction)		Continuously
Calvert City Elementary— Population Exposure Site (Site #3)	Volatile Organic Compounds	SPM-Other	EPA method TO-15	24-hours every sixth day

As a result of the COVID-19 pandemic, KDAQ and EPA are expecting decreases in area-wide emissions, as many sources have reduced operations. Since the study is short-term, with the sampling phase lasting one year, KDAQ and EPA have agreed to delay the start of sampling until emissions return to a more representative level. The commencement of monitoring will be determined jointly by KDAQ and EPA, based upon economic conditions, staff safety, the procurement of access-agreements for the remaining two monitoring sites, and finalization of the study's Quality Assurance Project Plan.

APPENDIX H

NEAR-ROAD MONITORING

Appendix H Near-Road Monitoring

On February 9, 2010, the EPA released a new NO₂ Final Rule and a new set of monitoring requirements. Under the new monitoring requirements, State and Local agencies are required to establish NO₂ near-road monitoring stations based upon core based statistical area (CBSA) populations and traffic metrics.

Specifically, the final rule required:

- 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 required:

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

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.

In March 2013, the EPA finalized the use of a "phased" approach for establishing NO₂ near-road monitoring sites across the Nation. The phased approach necessitates:

- Phase 1: One required near-road monitor in CBSAs with a population of 1,000,000 or more must be established by January 1, 2014.
- Phase 2: 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.
- Phase 3: Required sites in remaining CBSAs with populations of 500,000 or more were to be established by January 1, 2017. However, Phase 3 monitoring requirements were revoked on January 19, 2017.

Based upon population estimates and AADT counts, near-road monitors were required to be established in the following CBSAs during the implementation of Phase 1. No Phase 2 monitors are required in Kentucky.

CBSA Name (500,000 or more people)	2015 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	193,399	1
Louisville-Jefferson County, KY-IN	1,251,351	166,432	1

^{*}Source: US Census Bureau, 2015 Population Estimates (Last accessed: April 5, 2016)

^{**}Source: KYTC Traffic Database. http://datamart.business.transportation.ky.gov/EDSB SOLUTIONS/CTS/. Last accessed: June 2015

Appendix H Near-Road Monitoring (continued)

The determination of the final locations of near-road monitoring locations within these CBSAs was a cooperative effort between multiple State and Local Agencies. The exact location of each site was determined using the following 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). Specifics regarding this site are included in the site detail pages of this Annual Network Plan.

APPENDIX I

KENTUCKY SO₂ PWEI VALUES

Appendix I Kentucky SO₂ PWEI Values

40 CFR 58, Appendix D, requires that a minimum number of SO₂ monitors be operated based upon a Population Weighted Emissions Index (PWEI) values. This index, which is calculated for each Core Based Statistical Area (CBSA), is calculated by multiplying the population of each CBSA and the total amount of SO₂, in tons per year, that is emitted within the CBSA, based upon aggregated county level emissions 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.

The minimum number of monitors required are:

- 3 monitors in CBSAs with index values of 1,000,000 or more;
- 2 monitors in CBSAs with index values less than 1,000,000 but greater than 100,000; and
- 1 monitor in CBSAs with index values greater than 5,000.

Additionally, the EPA Regional Administrator may, at their discretion, require additional monitors beyond the minimum required by PWEI calculations. However, Kentucky currently does not have any Regional Administrator required SO₂ monitors.

Based upon Kentucky's calculated PWEI values, the following CBSAs require SO₂ monitors:

Kentucky CBSAs	2015 PWEI* (million persons-tons per year)	Number of SO ₂ Monitors Required	Number of SO ₂ Monitors Present	Kentucky Site Name	Kentucky AQS ID
Cincinnati, OH-KY-IN	380,617	2	6**	NKU	21-037-3002
Evansville, IN-KY	7,771	1	1**	N/A	N/A
Huntington-Ashland, WV-KY-	4,553	1	2	Ashland Primary	21-019-0017
ОН	т,333	1	2	Worthington	21-089-0007
Lavington Favotto VV	2 522	1	2	Lexington Primary	21-067-0012
Lexington-Fayette, KY	3,522	1	2	Nicholasville	21-113-0001
				Watson Lane	21-111-0051
Louisville-Jefferson County, KY-IN	60,030	1	3***	Cannons Lane	21-111-0067
K 1 -11V				Firearms Training	21-111-1041
Paducah, KY-IL	5,514	1	1	Jackson Purchase	21-145-1024

^{* 2015} PWEI calculated from 2013 USCB Population Estimates and 2011 NEI.

^{**} Additional monitors operated by SWOAQA in Ohio.

^{***}Monitors operated by the Louisville Metro Air Pollution Control District

^{* *}Requirement fulfilled by MOA-Indiana Department of Environmental Management

APPENDIX J

EPA CASTNET STATIONS IN KENTUCKY

Appendix J EPA CASTNET Stations in Kentucky

The Clean Air Status and Trends Network (CASTNET) is a nation-wide, long-term monitoring network designed to measure acidic pollutants and ambient ozone concentrations in rural areas. CASTNET is managed collaboratively by the Environmental Protection Agency – Clean Air Markets Division (EPA), the National Park Service – Air Resources Division (NPS), and the Bureau of Land Management – Wyoming State Office (BLM-WSO). In addition to EPA, NPS, and BLM-WSO, numerous other participants provide network support including tribes, other federal agencies, States, private land owners, and universities. More information about CAST-NET can be found at: https://www.epa.gov/castnet

KDAQ does not operate nor serve as the Primary Quality Assurance Organization for any site in the CASTNET network. However, KDAQ does maintain a cooperative relationship with the staff of Mammoth Cave National Park. At the request of KDAQ, the NPS has designated the ozone monitor as the "Maximum O₃ Concentration" site for the Bowling Green, KY MSA. More information about the Mammoth Cave site can be found in the site detail pages of the Annual Network Plan.

KDAQ requested that EPA designate the CASTNET ozone monitor at the Cadiz site (21-221-9991) as the "Maximum O₃ Concentration" site for the Clarksville, TN-KY MSA. EPA agreed to the change and has since updated the metadata for the monitor in AQS.

Clean Air Status & Trends Network (CASTNET)

Kentucky Ozone Monitors

Monitor ID		County/ Metropolitan Statistical Area	Designation	Monitoring Scale
21-061-0501	Mammoth Cave National Park	Edmonson/ Bowling Green, KY MSA	CASTNET Non-EPA Federal Maximum O ₃ Concentration*	Regional
21-175-9991	Crockett	Morgan/ Not in a MSA	CASTNET EPA	Regional
21-221-9991		Trigg/ Clarksville, TN-KY MSA	CASTNET EPA Maximum O ₃ Concentration**	Regional
21-229-9991	Mackville (POC 1)	Washington/ Not in a MSA	CASTNET EPA	Regional
21-229-9991	Mackville Collocated (POC 2)	Washington/ Not in a MSA	CASTNET- QA Collocated*** EPA	Regional

^{*} Maximum Ozone Concentration Site for the Bowling Green, KY MSA

^{**} Maximum Ozone Concentration site for the Clarksville, TN-KY MSA

^{***}Not usable for NAAQS comparisons

APPENDIX K

KDAQ EQUIPMENT INVENTORY

Appendix K KDAQ Equipment Inventory

Site Name	Item Description	Item Model	Condition*	Status
21st & Greenup	PM2.5 Sampler (PM10)	Partisol Plus 2025 Sequential	F	In-Use
21st & Greenup	PM2.5 Sampler (PM10)	Partisol Plus 2025 Sequential	F	In-Use
Ashland Primary-FIVCO		Teledyne-API T700	G	In-Use
Ashland Primary-FIVCO		Agilaire 8872	G	In-Use
Ashland Primary-FIVCO		RM Young Met (wind/temp)	F	In-Use
Ashland Primary-FIVCO	ŭ	Teledyne-API T200	G	In-Use
Ashland Primary-FIVCO	-	Teledyne-API T400	G	In-Use
Ashland Primary-FIVCO		Teledyne-API T640	G	In-Use
Ashland Primary-FIVCO		Teledyne-API T100	G	In-Use
Ashland Primary-FIVCO	·	Teledyne-API 701	G	In-Use
Ashland Regional Office		Sierra MFM	G	In-Use
ÿ		Partisol Plus 2025 Sequential	F	Spare
Bloodworth Farm	PM2.5 Sampler	ESC 8832	G	-
Bloodworth Farm	Datalogger (met)		F	In-Use
	Meteorological	RM Young Met (wind/temp)		In-Use
Bloodworth Farm	PM10 Sampler	Partisol 2000i	G	In-Use
Buckner	Datalogger (met)	ESC 8832	G	In-Use
Buckner	Datalogger-Digital	Agilaire 8872	G	In-Use
Buckner	Meteorological	RM Young Met (wind/temp)	G	In-Use
Buckner	O3 Analyzer	Teledyne-API T400	G	In-Use
Buckner	Ozone Photometer	Teledyne-API T703	G	In-Use
Buckner	Zero Air Unit	Teledyne-API 701	G	In-Use
East Bend	Datalogger (met)	ESC 8832	G	In-Use
East Bend	Datalogger-Digital	Agilaire 8872	G	In-Use
East Bend	Meteorological	RM Young Met (wind/temp)	F	In-Use
East Bend	O3 Analyzer	Teledyne-API T400	G	In-Use
East Bend	Ozone Photometer	Teledyne-API T703	G	In-Use
East Bend	Zero Air Unit	Teledyne-API 701	G	In-Use
EKU	Lead Sampler	Tisch Model TE-5170DV-BL TSP	G	In-Use
EKU	Lead Sampler	Tisch Model TE-5170DV-BL TSP	G	In-Use
EKU	PM10 Sampler (met)	Partisol 2000	P	In-Use
E-town	Datalogger-Digital	Agilaire 8872	G	In-Use
E-town	O3 Analyzer	Teledyne-API T400	G	In-Use
E-town	Ozone Photometer	Teledyne-API T703	G	In-Use
E-town	PM2.5 Continuous FEM	Teledyne-API T640	G	In-Use
E-town	PM2.5 Sampler	Partisol Plus 2025 Sequential	F	In-Use
E-town	PM2.5 Sampler	Partisol Plus 2025 Sequential	F	In-Use
E-town	Zero Air Unit	Teledyne-API 701	G	In-Use
Franklin	Datalogger (met)	ESC 8832	G	In-Use
Franklin	Datalogger-Digital	Agilaire 8872	G	In-Use
Franklin	Meteorological	RM Young Met (wind/temp)	F	In-Use
Franklin	O3 Analyzer	Teledyne-API T400	G	In-Use
Franklin	Ozone Photometer	Teledyne-API T703	G	In-Use
Franklin	Zero Air Unit	Teledyne-API 701	G	In-Use
Grayson Lake	Datalogger (met)	ESC 8832	G	In-Use
Grayson Lake	Datalogger-Digital	Agilaire 8872	G	In-Use
Grayson Lake	Meteorological	RM Young Met (wind/temp/RH/	G	In-Use
Grayson Lake	O3 Analyzer	Teledyne-API T400	G	In-Use
Grayson Lake	Ozone Photometer	Teledyne-API T703	G	In-Use
Grayson Lake	PM10 Sampler	Partisol 2000i	G	In-Use
Grayson Lake	PM10 Sampler	Partisol 2000i	G	In-Use
	11 1V1 137 (30111111111111111111111111111111111111	H ALLISOT 40001	i U	m-03C

C'. I	- 1 1	The No. 1.1	O 1171 +	C
Site Name	Item Description	Item Model	Condition*	
Grayson Lake	PM2.5 Sampler	Partisol Plus 2025i Sequential	G	In-Use
Grayson Lake	PUF-PAH Sampler	Tisch TE-1000	G	In-Use
Grayson lake	VOC/Carbonyls Sampler		G	In-Use
Hazard	Datalogger-Digital	Agilaire 8872	G	In-Use
Hazard	Meteorological	RM Young Met (wind/temp)	F	In-Use
Hazard	O3 Analyzer	Teledyne-API T400	G	In-Use
Hazard	Ozone Photometer	Teledyne-API T703	G	In-Use
Hazard		Teledyne-API T640	G	In-Use
Hazard	PM2.5 Sampler	Partisol Plus 2025i Sequential	G	In-Use
Hazard	Zero Air Unit	Teledyne-API 701	G	In-Use
Hopkinsville	PM2.5 Sampler	Partisol Plus 2025i Sequential	G	In-Use
Hopkinsville	Datalogger (met)	ESC 8832	G	In-Use
Hopkinsville	Datalogger-Digital	Agilaire 8872	G	In-Use
Hopkinsville	Meteorological	RM Young Met (wind/temp)	F	In-Use
Hopkinsville	O3 Analyzer	Teledyne-API T400	G	In-Use
Hopkinsville	Ozone Photometer	Teledyne-API T703	G	In-Use
Hopkinsville	Zero Air Unit	Teledyne-API 701	G	In-Use
Jackson Purchase RECC	Calibrator	Teledyne-API T700	G	In-Use
Jackson Purchase RECC	Datalogger- Digital	Agilaire 8872	G	In-Use
Jackson Purchase RECC	NOx Analyzer	Teledyne-API T200	G	In-Use
Jackson Purchase RECC	O3 Analyzer	Teledyne-API T400	G	In-Use
Jackson Purchase RECC	PM10 Sampler	Partisol 2000	F	In-Use
Jackson Purchase RECC		Teledyne-API T640	G	In-Use
Jackson Purchase RECC	SO2 Analyzer	Teledyne-API T100	G	In-Use
Lewisport	Datalogger-Digital	Agilaire 8872	G	In-Use
Lewisport	O3 Analyzer	Teledyne-API T400	G	In-Use
Lewisport	Ozone Photometer	Teledyne-API T703	G	In-Use
Lewisport	Zero Air Unit	Teledyne-API 701	G	In-Use
Lexington Health	Datalogger-Digital	Agilaire 8872	G	In-Use
Lexington Health	NOx Analyzer	Teledyne-API T200	G	In-Use
Lexington Health	O3 Analyzer	Teledyne-API T400	G	In-Use
Lexington Health	PM10 Sampler	Partisol 2000	F	In-Use
Lexington Health		Teledyne-API T640	G	In-Use
Lexington Health	PM2.5 Sampler	Partisol Plus 2025 Sequential	F	In-Use
Lexington Health	SO2 Analyzer	Teledyne-API T100	G	In-Use
Lexington Health	Zero Air Unit	Teledyne-API 701	G	In-Use
Mammoth Cave	PM2.5 Continuous	Thermo 1405 TEOM (idle)	G	Idle
Middlesboro	Datalogger (met)	ESC 8832	G	In-Use
Middlesboro	Datalogger- Digital	Agilaire 8872	G	In-Use
Middlesboro	Meteorological	RM Young Met (wind/temp)	F	In-Use
Middlesboro	O3 Analyzer	Teledyne-API T400	G	In-Use
Middlesboro	Ozone Photometer	Teledyne-API T703	G	In-Use
Middlesboro	PM2.5 Sampler	Partisol Plus 2025i Sequential	G	In-Use
	*	*	G	
Middlesboro Nichologyillo	Zero Air Unit	Teledyne-API 701	G	In-Use
Nicholasville	Calibrator Datalogger Digital	Teledyne-API T700	G	In-Use
Nicholasville	Datalogger-Digital	Agilaire 8872	F	In-Use
Nicholasville	Meteorological	RM Young Met (wind/temp)		In-Use
Nicholasville	O3 Analyzer	Teledyne-API T400	G	In-Use
Nicholasville	SO2 Analyzer	Teledyne-API T100	G	In-Use
Nicholasville	Zero Air Unit	Teledyne-API 701	G	In-Use
* G= Good, F= Fair, P= Poor				

Appendix K		
KDAQ Equipment Inventory	y ((Continued)

KDAQ Equipment Inventory (Continuea)					
Site Name	Item Description	Item Model	Condition*		
NKU	Auto-GC	CAS-Chromatotech Auto-GC	F	Idle	
NKU	Calibrator	Teledyne-API T700	G	In-Use	
NKU	Datalogger-Digital	Agilaire 8872	G	In-Use	
NKU	Datalogger-Digital (GC)	Agilaire 8872	G	In-Use	
NKU	NOx Analyzer	Teledyne-API T200	G	In-Use	
NKU	O3 Analyzer	Teledyne-API T400	G	In-Use	
NKU	PM2.5 Continuous FEM	Teledyne-API T640	G	In-Use	
NKU	PM2.5 Sampler	Partisol Plus 2025 Sequential	F	In-Use	
NKU	PM2.5 Sampler	Partisol Plus 2025 Sequential	F	In-Use	
NKU	SO2 Analyzer	Teledyne-API T100	G	In-Use	
NKU	Zero Air Unit	Teledyne-API 701	G	In-Use	
Owensboro	Calibrator	Teledyne-API T700	G	In-Use	
Owensboro	Datalogger-Digital	Agilaire 8872	G	In-Use	
Owensboro	Meteorological	RM Young Met (wind/temp)	F	In-Use	
Owensboro	NOx Analyzer	Teledyne-API T200	G	In-Use	
Owensboro	O3 Analyzer	Teledyne-API T400	G	In-Use	
Owensboro	PM2.5 Continuous FEM	Teledyne-API T640	G	In-Use	
Owensboro	SO2 Analyzer	Teledyne-API T100	G	In-Use	
Owensboro	Zero Air Unit	Teledyne-API 701	G	In-Use	
Pikeville	Datalogger-Digital	Agilaire 8872	G	In-Use	
Pikeville	O3 Analyzer	Teledyne-API T400	G	In-Use	
Pikeville	Ozone Photometer	Teledyne-API T703	G	In-Use	
Pikeville	PM2.5 Continuous FEM	Teledyne-API T640	G	In-Use	
Pikeville	Zero Air Unit	Teledyne-API 701	G	In-Use	
Sebree	Datalogger	ESC 8832	G	In-Use	
Sebree	SO2 Analyzer	Teledyne-API T100	G	In-Use	
Sebree	Calibrator	Teledyne-API T700	G	In-Use	
Sebree	Zero Air Unit	Teledyne-API 701	G	In-Use	
Shepherdsville	Datalogger-Digital	Agilaire 8872	G	In-Use	
Shepherdsville	O3 Analyzer	Teledyne-API T400	G	In-Use	
Shepherdsville	Ozone Photometer	Teledyne-API T703	G	In-Use	
Shepherdsville	Zero Air Unit	Teledyne-API 701	G	In-Use	
Smithland	Datalogger- Digital	Agilaire 8872	G	In-Use	
Smithland	Zero Air Unit	Teledyne-API 701	G	In-Use	
Smithland	O3 Analyzer	Teledyne-API T400	G	In-Use	
Smithland	Ozone Photometer	Teledyne-API T703	G	In-Use	
Smiths Grove-Ed Spear Park	Datalogger-Digital	Agilaire 8872	G	In-Use	
1		Teledyne-API T400	G		
Smiths Grove-Ed Spear Park	O3 Analyzer		G	In-Use	
Smiths Grove-Ed Spear Park	Ozone Photometer	Teledyne-API T703	G	In-Use	
Smiths Grove-Ed Spear Park	PM2.5 Continuous FEM	Teledyne-API T640		In-Use	
Smiths Grove-Ed Spear Park	PM2.5 Continuous FEM	Teledyne-API T640	G	In-Use	
Smiths Grove-Ed Spear Park	PM2.5 Sampler	Partisol Plus 2025i Sequential	G	In-Use	
Smiths Grove-Ed Spear Park	PM2.5 Sampler	Partisol Plus 2025i Sequential	G	In-Use	
Smiths Grove-Ed Spear Park	Zero Air Unit	Teledyne-API 701	G	In-Use	
Somerset	Datalogger-Digital	Agilaire 8872	G	In-Use	
Somerset	O3 Analyzer	Teledyne-API T400	G	In-Use	
Somerset	Ozone Photometer	Teledyne-API T703	G	In-Use	
Somerset	PM2.5 Sampler	Partisol Plus 2025i Sequential	G	In-Use	
Somerset	Zero Air Unit	Teledyne-API 701	G	In-Use	
Worthington	Calibrator	Teledyne-API T700	G	In-Use	

* G= Good, F= Fair, P= Poor

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Site Name	Item Description	Item Model	Condition*	
Worthington	Datalogger-Digital	Agilaire 8872	G	In-Use
Worthington	O3 Analyzer	Teledyne-API T400	G	In-Use
Worthington	SO2 Analyzer	Teledyne-API T100	G G	In-Use
Worthington	Zero Air Unit	Teledyne-API 701	F	In-Use
x-QA	Calibrator	Environics 6100 Portable	G F	Spare
x-QA	Calibrator	Environics 6100 Portable	F	In-Use
x-QA	Calibrator	Environics 6103 Portable	F	Spare
x-QA	Calibrator	Environics 6103 Portable		Spare
x-QA	Calibrator	Environics 6103 Portable	G	In-Use
x-QA	Calibrator	Environics 6103 Portable	G	In-Use
x-QA	Calibrator	Environics 6103 Portable	G	In-Use
x-QA	Flowmeter	Bios Defender 530 HF	G	In-Use
x-QA	Flowmeter	Bios Defender 530 LF	G	In-Use
x-QA	Flowmeter	Hastings MiniFlow L	G	In-Use
x-QA	Flowmeter	Sierra 821 MFM	G	In-Use
x-QA	Flowmeter	Sierra 821 MFM	G	In-Use
x-QA	Flowmeter	Sierra Digital Blue Box	F	In-Use
x-QA	Flowmeter	Sierra Digital Blue Box	F	In-Use
x-QA	Flowmeter	Streamline Pro 0.9-19 LPM	G	In-Use
x-QA	Flowmeter	Streamline Pro 0.9-19 LPM	G	In-Use
x-QA	Flowmeter	Streamline Pro 0.9-19 LPM	G	In-Use
x-QA	Flowmeter	Streamline Pro 0.9-19 LPM	G	In-Use
x-QA	Flowmeter	Streamline Pro 2-25 LPM	G	In-Use
x-QA	Flowmeter	Streamline Pro Model M	G	In-Use
x-QA	Ozone Photometer	Thermo 49C	G	In-Use
x-QA	Ozone Photometer	Thermo 49C	G	In-Use
x-QA	Ozone Photometer	Thermo 49C	P	Spare
x-QA	Ozone Photometer	Thermo 49C	P	Spare
x-QA	Zero Air Unit	Environics 7000 Series	F	In-Use
x-QA	Zero Air Unit	Environics 7000 Series	F	In-Use
x-QA	Zero Air Unit	Teledyne-API Portable 751H	F	In-Use
x-QA	Zero Air Unit	Teledyne-API Portable 751H	F	In-Use
x-QA	Zero Air Unit	Teledyne-API Portable 751H	G	In-Use
x-QA	Zero Air Unit	Teledyne-API Portable 751H	G	In-Use
x-Shop	Calibrator	Teledyne-API 700E	F	Spare
x-Shop	Calibrator	Teledyne-API 700E	F	Spare
x-Shop	Calibrator	Teledyne-API 700E	F	Spare
x-Shop	Calibrator	Teledyne-API 700E	F	Spare
x-Shop	Calibrator	Teledyne-API 700E	F	Spare
x-Shop	Calibrator	Teledyne-API 700E	F	Spare
x-Shop	Calibrator	Teledyne-API 700E	F	Spare
x-Shop	Calibrator	Teledyne-API 700E	F	Spare
x-Shop	Calibrator	Teledyne-API 700E	F	Spare
x-Shop	Calibrator	Teledyne-API 700E	F	Spare
x-Shop	Calibrator	Teledyne-API 700E	G	Spare
x-Shop	Calibrator	Teledyne-API 700E	G	Spare
x-Shop	Calibrator	Teledyne-API T700	G	Spare
x-Shop	Calibrator	Teledyne-API T700	G	Spare
x-Shop	Calibrator	Teledyne-API T700	G	Spare
x-Shop	Calibrator	Teledyne-API T700	G	Spare
* G= Good, F= Fair, P= P	oor	•		

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Site Name	Item Description	Item Model	Condition	
x-Shop	Calibrator	Teledyne-API T700	G	Spare
x-Shop	Calibrator	Teledyne-API T700	G	Spare
x-Shop	Calibrator	Teledyne-API T700	G	Spare
x-Shop	CO Monitor	Monitor Labs 9830B	F	Surplus
x-Shop	Datalogger	ESC 8832	F	Surplus
x-Shop	Datalogger	ESC 8832	F	Surplus
x-Shop	Datalogger	ESC 8832	F	Surplus
x-Shop	Datalogger	ESC 8832	F	Surplus
x-Shop	Datalogger	ESC 8832	F	Surplus
x-Shop	Datalogger	ESC 8832	F	Surplus
x-Shop	Datalogger	ESC 8832	F	Surplus
x-Shop	Datalogger	ESC 8832	F	Surplus
x-Shop	Datalogger	ESC 8832	F	Surplus
x-Shop	Datalogger	ESC 8832	F	Surplus
x-Shop	Datalogger	ESC 8832	F	Surplus
x-Shop	Datalogger	ESC 8832	F	Surplus
x-Shop	Datalogger	ESC 8832	F	Surplus
x-Shop	Datalogger	ESC 8832	F	Surplus
x-Shop	Datalogger	ESC 8832	G	Spare
x-Shop	Datalogger	ESC 8832	G	Spare
x-Shop	Datalogger	ESC 8832	G	Spare
x-Shop	Datalogger	ESC 8832	G	Spare
x-Shop	Datalogger	ESC 8832	G	Spare
x-Shop	Datalogger	ESC 8832	G	Spare
x-Shop	Datalogger	ESC 8832	G	Spare
x-Shop	Datalogger	ESC 8832	G	Spare
x-Shop	Datalogger	ESC 8832	G	Spare
x-Shop	Datalogger	ESC 8832	G	Spare
x-Shop	Datalogger	ESC 8832	G	Spare
x-Shop	Datalogger	ESC 8832	G	Spare
x-Shop	Datalogger	ESC 8832	G	Spare
x-Shop	Datalogger	ESC 8832	G	Spare
x-Shop	Datalogger	ESC 8832	G	Spare
x-Shop	Datalogger	ESC 8832	G	Spare
x-Shop	Datalogger	ESC 8832	G	Spare
x-Shop	Datalogger	ESC 8832	G	Spare
x-Shop	Datalogger	ESC 8832	G	Spare
x-Shop	Datalogger	ESC 8832	G	Spare
x-Shop	Datalogger	ESC 8832	G	Spare
x-Shop	Datalogger	ESC 8832	G	Spare
x-Shop	Datalogger-Digital	Agilaire 8872	G	Spare
x-Shop	Datalogger-Digital	Agilaire 8872	G	Spare
x-Shop	Datalogger-Digital	Agilaire 8872	G	Spare
x-Shop	Datalogger-Digital	Agilaire 8872	G	Spare
x-Shop	Datalogger-Digital	Agilaire 8872	G	Spare
x-Shop	Datalogger-Digital	Agilaire 8872	G	Spare
x-Shop	Datalogger-Digital	Agilaire 8872	G	_
x-Shop	Datalogger-Digital Datalogger-Digital	Agilaire 8872	G	Spare
	Datalogger-Digital	Agilaire 8872	G	Spare
x-Shop	<u> </u>		G	Spare
x-Shop	Datalogger-Digital	Agilaire 8872	U	Spare
* G= Good, F= Fair, P= Po	oor			

	KDAQ Equipment Inventory (Continued)						
Site Name	Item Description	Item Model	Condition*				
x-Shop	Datalogger-Digital	Agilaire 8872	G	Spare			
x-Shop	Datalogger-Digital	Agilaire 8872	G	Spare			
x-Shop	Lead Sampler	Tisch Model TE-5170DV-BL TSP	F	Spare			
x-Shop	Lead Sampler	Tisch Model TE-5170DV-BL TSP	F	Spare			
x-Shop	Lead Sampler	Tisch Model TE-5170DV-BL TSP	F	Spare			
x-Shop	Lead Sampler	Tisch Model TE-5170DV-BL TSP	G	Spare			
x-Shop	Lead Sampler	Tisch Model TE-5170DV-BL TSP	G	Spare			
x-Shop	Meteorological	Solar Radiation Sensor- CMP4	F	Spare			
x-Shop	Microbalance	Mettler XP6 Microbalance	F	Surplus			
x-Shop	NOx Analyzer	Teledyne-API 200E	F	Spare			
x-Shop	NOx Analyzer	Teledyne-API 200E	F	Spare			
x-Shop	NOx Analyzer	Teledyne-API 200E	F	Spare			
x-Shop	NOx Analyzer	Teledyne-API 200E	F	Spare			
x-Shop	NOx Analyzer	Teledyne-API 200E	F	Spare			
x-Shop	NOx Analyzer	Teledyne-API 200E	F	Spare			
x-Shop	NOx Analyzer	Teledyne-API 200E	G	Spare			
x-Shop	NOx Analyzer	Teledyne-API 200E	P	Surplus			
x-Shop	NOx Analyzer	Teledyne-API 200E	P	Surplus			
x-Shop	NOx Analyzer	Teledyne-API 200E	P	Surplus			
x-Shop	NOx Analyzer	Teledyne-API 200E	P	Surplus			
x-Shop	NOx Analyzer	Teledyne-API T200	G	Spare			
x-Shop	NOx Analyzer	Teledyne-API T200	G	Spare			
x-Shop	NOx Analyzer NOx Analyzer	Teledyne-API T200	G	Spare			
x-Shop	NOx Analyzer NOx Analyzer	Teledyne-API T200P	P	Surplus			
x-Shop	NOx Analyzer NOx Analyzer	Teledyne-API T200P	P	Surplus			
x-Shop	NOx Analyzer NOx Analyzer	Teledyne-API T200P	P	Surplus			
x-Shop	O3 Analyzer	Teledyne-API 400E	F	Spare			
x-Shop	O3 Analyzer O3 Analyzer	Teledyne-API 400E	F	Spare			
x-Shop	O3 Analyzer O3 Analyzer	Teledyne-API 400E	F	Spare			
x-Shop	O3 Analyzer O3 Analyzer	Teledyne-API 400E	F	Spare			
x-Shop	O3 Analyzer	Teledyne-API 400E Teledyne-API 400E	F	Spare			
-	O3 Analyzer O3 Analyzer	Teledyne-API 400E Teledyne-API 400E	F	Spare			
x-Shop	-		F	-			
x-Shop x-Shop	O3 Analyzer O3 Analyzer	Teledyne-API 400E Teledyne-API 400E	F	Spare			
x-Shop	Ž	y .	F	Spare			
_	O3 Analyzer	Teledyne-API 400E	F	Spare			
x-Shop	O3 Analyzer	Teledyne-API T400		Spare			
x-Shop	O3 Analyzer	Teledyne-API T400	G	Spare			
x-Shop	O3 Analyzer	Teledyne-API T400	G	Spare			
x-Shop	O3 Analyzer	Teledyne-API T400	G	Spare			
x-Shop	O3 Analyzer	Teledyne-API T400	G	Spare			
x-Shop	O3 Analyzer	Teledyne-API T400	G	Spare			
x-Shop	O3 Analyzer	Teledyne-API T400	G	Spare			
x-Shop	O3 Analyzer	Teledyne-API T400	G	Spare			
x-Shop	O3 Analyzer	Teledyne-API T400	G	Spare			
x-Shop	O3 Analyzer	Teledyne-API T400	G	Spare			
x-Shop	O3 Analyzer	Teledyne-API T400	G	Spare			
x-Shop	O3 Analyzer	Teledyne-API T400	G	Spare			
x-Shop	O3 Analyzer	Teledyne-API T400	G	Spare			
x-Shop	O3 Analyzer	Teledyne-API T400	G	Spare			
x-Shop	O3 Analyzer	Teledyne-API T400	G	Spare			
* G= Good, F= Fair, P= Po	oor						

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Site Name	Item Description	Item Model		n* Status
x-Shop	O3 Analyzer	Teledyne-API T400	G	Spare
x-Shop	Ozone Photometer	Teledyne-API 703E	G	Spare
x-Shop	Ozone Photometer	Teledyne-API 703E	G	Spare
x-Shop	Ozone Photometer	Teledyne-API 703E	G	Spare
x-Shop	Ozone Photometer	Teledyne-API 703E	G	Spare
x-Shop	Ozone Photometer	Teledyne-API 703E	G	Spare
x-Shop	Ozone Photometer	Teledyne-API 703E	G	Spare
x-Shop	Ozone Photometer	Teledyne-API 703E	G	Spare
x-Shop	Ozone Photometer	Teledyne-API 703E	G	Spare
x-Shop	Ozone Photometer	Teledyne-API 703E	G	Spare
x-Shop	Ozone Photometer	Teledyne-API 703E	G	Spare
x-Shop	Ozone Photometer	Teledyne-API 703E	G	Spare
x-Shop	Ozone Photometer	Teledyne-API 703E	G	Spare
x-Shop	Ozone Photometer	Teledyne-API T703	G	Spare
x-Shop	Ozone Photometer	Teledyne-API T703	G	Spare
x-Shop	Ozone Photometer	Teledyne-API T703	G	Spare
x-Shop	Ozone Photometer	Teledyne-API T703	G	Spare
x-Shop	Ozone Photometer	Teledyne-API T703	G	Spare
x-Shop	Ozone Photometer	Teledyne-API T703	G	Spare
x-Shop	PM10 Sampler	Partisol 2000	F	Spare
x-Shop	PM10 Sampler	Partisol 2000	F	Spare
x-Shop	PM10 Sampler	Partisol 2000	F	Spare
x-Shop	PM10 Sampler	Partisol 2000	F	Spare
x-Shop	PM10 Sampler	Partisol 2000	F	Spare
x-Shop	PM10 Sampler	Partisol 2000	F	Spare
x-Shop	PM10 Sampler	Partisol 2000	F	Spare
x-Shop	PM10 Sampler	Partisol 2000	F	Spare
x-Shop	PM10 Sampler	Partisol 2000	P	Surplus
x-Shop	PM10 Sampler	Partisol 2000	P	Surplus
x-Shop	PM10 Sampler	Thermo Partisol 2000i	G	Spare
x-Shop	PM10 Sampler	Thermo Partisol 2000i	G	Spare
x-Shop	PM2.5 Continuous	Thermo 1400A TEOM	F	Surplus
x-Shop	PM2.5 Continuous	Thermo 1400A TEOM	F	Surplus
x-Shop	PM2.5 Continuous	Thermo 1400A TEOM	G	Surplus
x-Shop	PM2.5 Continuous	Thermo 1400A TEOM	G	Surplus
x-Shop	PM2.5 Continuous	Thermo 1405 TEOM	G	Spare
x-Shop	PM2.5 Continuous	Thermo 1405 TEOM	G	Spare
x-Shop	PM2.5 Continuous	Thermo 1405 TEOM	G	Spare
x-Shop	PM2.5 Continuous	Thermo 1405 TEOM	G	Spare
x-Shop	PM2.5 Continuous	Thermo 1405 TEOM	G	Spare
x-Shop	PM2.5 Continuous	Thermo 1405 TEOM	G	Spare
x-Shop	PM2.5 Continuous	Thermo 1405 TEOM	G	Spare
x-Shop	PM2.5 Continuous	Thermo 1405 TEOM	G	Spare
x-Shop	PM2.5 Continuous	Thermo 1405 TEOM	G	Spare
x-Shop	PM2.5 Continuous	Thermo 1405 TEOM	G	Spare
x-Shop	PM2.5 Continuous	Thermo 1405 TEOM	G	Spare
x-Shop	PM2.5 Continuous	Thermo 1405 TEOM	G	Spare
x-Shop	PM2.5 Continuous	Thermo 1405 TEOM	G	Spare
x-Shop	PM2.5 Continuous PM2.5 Continuous	Thermo 1405 TEOM Thermo 1405 TEOM	G	*
x-Shop	PM2.5 Continuous FE		G	Spare
•	T.	wi preiedyne-Ari 1 1040	U	Spare
* G= Good, F= Fair, P= P	oor			

Appendix K	
KDAQ Equipment Inventory (Continued)	KDAQ

KDAQ Equipment Inventory (Continued)					
Site Name	Item Description	Item Model	Condition*		
x-Shop	PM2.5 Continuous FEM		G	Spare	
x-Shop	PM2.5 Continuous FEM	Teledyne-API T640	G	Spare	
x-Shop	PM2.5 Continuous FEM	Teledyne-API T640	G	Spare	
x-Shop	PM2.5 Continuous FEM	Teledyne-API T640	G	Spare	
x-Shop	PM2.5 Continuous FEM	Teledyne-API T640	G	Spare	
x-Shop	PM2.5 Continuous FEM	Teledyne-API T640	G	Spare	
x-Shop	PM2.5 Continuous FEM	Teledyne-API T640	G	Spare	
x-Shop	PM2.5 Continuous FEM	Teledyne-API T640	G	Spare	
x-Shop	PM2.5 Sampler	Partisol Plus 2025 Sequential	F	Spare	
x-Shop	PM2.5 Sampler	Partisol Plus 2025 Sequential	F	Spare	
x-Shop	PM2.5 Sampler	Partisol Plus 2025 Sequential	F	Spare	
x-Shop	PM2.5 Sampler	Partisol Plus 2025 Sequential	F	Spare	
x-Shop	PM2.5 Sampler	Partisol Plus 2025 Sequential	F	Spare	
x-Shop	PM2.5 Sampler	Partisol Plus 2025 Sequential	F	Spare	
x-Shop	PM2.5 Sampler	Partisol Plus 2025 Sequential	F	Spare	
x-Shop	PM2.5 Sampler	Partisol Plus 2025 Sequential	F	Spare	
x-Shop	PM2.5 Sampler	Partisol Plus 2025 Sequential	F	Spare	
x-Shop	PM2.5 Sampler	Partisol Plus 2025 Sequential	F	Spare	
x-Shop	PM2.5 Sampler	Partisol Plus 2025 Sequential	F	Spare	
x-Shop	PM2.5 Sampler	Partisol Plus 2025 Sequential	F	Spare	
x-Shop	PM2.5 Sampler	Partisol Plus 2025i Sequential	G	Spare	
x-Shop	PM2.5 Sampler	Partisol Plus 2025i Sequential	G	Spare	
x-Shop	PM2.5 Sampler	Partisol Plus 2025i Sequential	G	Spare	
x-Shop	PM2.5 Sampler	Partisol Plus 2025i Sequential	G	Spare	
x-Shop	PM2.5 Sampler	Partisol Plus 2025i Sequential	G	Spare	
x-Shop	PM2.5 Sampler	Partisol Plus 2025i Sequential	G	Spare	
x-Shop	PM2.5 Sampler	Partisol Plus 2025i Sequential	G	Spare	
x-Shop	SO2 Analyzer	Teledyne-API 100E	P	Surplus	
x-Shop	SO2 Analyzer	Teledyne-API 100E	P	Surplus	
x-Shop	SO2 Analyzer	Teledyne-API 100E	P	Surplus	
x-Shop	SO2 Analyzer	Teledyne-API 100E	P	Surplus	
x-Shop	SO2 Analyzer	Teledyne-API 100E	P	Surplus	
x-Shop	SO2 Analyzer	Teledyne-API 100E	P	Surplus	
x-Shop	SO2 Analyzer	Teledyne-API 100E	P	Surplus	
x-Shop	SO2 Analyzer	Teledyne-API T100	G	Spare	
x-Shop	SO2 Analyzer	Teledyne-API T100	G	Spare	
x-Shop	SO2 Analyzer	Teledyne-API T100	G	Spare	
x-Shop	SO2 Analyzer	Teledyne-API T100	G	Spare	
x-Shop	SO2 Analyzer	Teledyne-API T100	G	Spare	
x-Shop	SO2 Analyzer	Teledyne-API T100	G	Spare	
x-Shop	SO2 Analyzer	Teledyne-API T100	G	Spare	
x-Shop	SO2 Analyzer	Teledyne-API T100	G		
x-Shop	•	Teledyne-API T100	G	Spare	
	SO2 Analyzer	· ·	G	Spare	
x-Shop	SO2 Analyzer	Teledyne-API T100	G	Spare	
x-Shop	SO2 Analyzer	Teledyne-API T100	G	Spare	
x-Shop	VOC Sampler	Xonteck 911A		Spare	
x-Shop	VOC Sampler	Xonteck 911A	G	Spare	
x-Shop	VOC Sampler	Xonteck 911A	G	Spare	
x-Shop	VOC Sampler	Xonteck 911A	G	Spare	
x-Shop	VOC Sampler	Xonteck 911A	G	Spare	
* G= Good, F= Fair, P= P	oor				

Site Name	Item Description	Item Model	Condition*	Status
x-Shop	VOC Sampler	Xonteck 911A	G	Spare
x-Shop	VOC Sampler	Xonteck 911A	P	Spare
x-Shop	VOC Sampler	Xonteck 911A	P	Spare
x-Shop	VOC Sampler	Xonteck 911A	P	Spare
x-Shop	VOC Sampler	Xonteck 911A	P	Spare
x-Shop	VOC Sampler	Xonteck 911A	P	Spare
x-Shop	VOC/Carbonyls Sampler	ATEC 2200	F	Spare
x-Shop	VOC/Carbonyls Sampler		G	Spare
x-Shop	VOC/Carbonyls Sampler	ATEC 2200	P	Spare
x-Shop	VOC/Carbonyls Sampler	ATEC 2200	P	Spare
x-Shop	VOC/Carbonyls Sampler	ATEC 2200	P	Spare
x-Shop	Zero Air Unit	Teledyne-API 701	F	Spare
x-Shop	Zero Air Unit	Teledyne-API 701	F	Spare
x-Shop	Zero Air Unit	Teledyne-API 701	F	Spare
x-Shop	Zero Air Unit	Teledyne-API 701	G	Spare
x-Shop	Zero Air Unit	Teledyne-API 701	G	Spare
x-Shop	Zero Air Unit	Teledyne-API 701	G	Spare
x-Shop	Zero Air Unit	Teledyne-API 701	G	Spare
x-Shop	Zero Air Unit	Teledyne-API 701	G	Spare
x-Shop	Zero Air Unit	Teledyne-API 701	P	Surplus
x-Shop	Zero Air Unit	Teledyne-API T701	G	Spare
x-Shop	Zero Air Unit	Teledyne-API T701	G	Spare
x-Shop	Zero Air Unit	Teledyne-API T701	G	Spare
x-Shop	Zero Air Unit	Teledyne-API T701	G	Spare
x-Shop	Zero Air Unit	Teledyne-API T701	G	Spare
x-Shop	Zero Air Unit	Teledyne-API T701	G	Spare

APPENDIX L

PUBLIC COMMENTS

AMBIENT AIR MONITORING NETWORK Comments Received 6/14/2020

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

A public comment period on the KENTUCKY DIVISION FOR AIR QUALITY AMBIENT AIR MONITORING NETWORK PLAN 2020 was held from May 15, 2020, through June 14, 2020.

A. The following group submitted comments regarding the Louisville Metro Air Pollution Control District (LMAPCD) network during the public comment period:

Name

US Environmental Protection Agency (EPA)

LMAPCD's complete plan is located in Appendix E of this plan. LMAPCD's response to the comments received from the EPA are included here.

Summary of Comments

Comment: Because of the LMAPCD request that the Kosmosdale monitor be removed (1) from the Kentucky Network Plan and states that the Kosmos Cement facility is in the process of increasing its stack height, EPA states the following: Since this monitor was previously included in the Network Plan and approved by EPA to operate as part of the SLAMS network, any proposal to remove this monitor from the approved monitoring network must be included in the network changes section in a Network Plan or addendum and approved by EPA Region 4, as required by 40 CFR § 58.10(a)(2). A proposal to discontinue the monitor must be made available for public inspection and comment for at least 30 days prior to submission to EPA for approval, as required by 40 CFR § 58.10(a)(2). In the 2020 Network Plan, please continue to include the previously approved Kosmosdale SO₂ site as part of the SLAMS network in the Air Monitoring Station Description section until the monitor is proposed for removal from the plan and approved by the EPA. Please also provide an update on the status of the Agreed Board Order (ABO) and the proposed stack height increase at Kosmos Cement, and an updated timeline for completing this project or installing the Kosmosdale monitor.

Response: Although the Kosmosdale SO₂ monitor has never been in operation, LMAPCD will prepare a proposal to EPA for discontinuation of the monitor and make this proposal available for public inspection as outlined in 40 CFR § 58.10(a)(2). As part of that proposal, LMAPCD will provide an update on the status of the ABO and the proposed stack height increase at Kosmos Cement, and an updated timeline for completing this project or installing the Kosmosdale monitor. The Kosmosdale SO₂ site will be reinserted as part of the SLAMS network in the Air Monitoring Station Description section.

B. The following groups submitted comments regarding the Kentucky Division of Air Quality (KDAQ) network during the public comment period:

Name:

Kentucky Chamber of Commerce (Chamber)
Calvert City Environmental Consortium (Consortium)

The comments received from the Chamber and the Consortium were identical and were related to

the Calvert City Special Study described in Appendix G of the plan; as such, only one set of responses was drafted. KDAQ's responses to those received comments are listed below. KDAQ's comments are based upon a draft version of the study's Quality Assurance Project Plan (QAPP), which is subject to change prior to finalization. All public comments are published in this network plan document and are maintained at the division's headquarters in Frankfort, Kentucky.

Summary of Comments

(1) Comment: The Kentucky Division for Air Quality (KDAQ) states it plans a one-year study with a focus on "six pollutants of interest". However, only five chemicals are listed. Please provide the name of the sixth pollutant of interest.

Response: The draft network plan contains an error. The network plan should state that the one-year study will focus on five pollutants of interest.

(2) Comment: How did KDAQ and EPA select the five or six pollutants of interest on which to focus? Please provide the rationale for selecting each "pollutant of interest".

Response: US EPA conducted a risk screening analysis on VOC data previously collected by KDAQ near the Calvert City Industrial Complex. The data was obtained from the EPA's AQS database and encompassed screening-level VOC monitoring data conducted in 2011-2017. The analysis indicated potentially elevated cancer risks and non-cancer hazards due to a recurring set of chemicals. The screening results predicted a total maximum cancer risk of 6.0 x 10-3, or a maximum of 6 additional cancers per one thousand persons with exposure at chronic levels for a lifetime at the maximum screened site. The screening analysis also indicated elevated cancer risk at all five previous monitoring locations where VOC samples were collected in Calvert City and the surrounding area. The majority of the elevated cancer risk screening results were due to elevated levels of ethylene dichloride and vinyl chloride. The screening results also indicated elevated cancer risk from 1,3-butadiene, acrylonitrile, and benzene. Based on the screening analysis, EPA and KDAQ selected those five pollutants as the focus of this study.

(3) Comment: KDAQ states that samples will be analyzed for the full-suite of Tier I and Tier II volatile organic compounds (VOCs). The Consortium/Chamber requests that KDAQ provide the list of specific chemicals in the Tier I and Tier II VOC list.

Response: KDAQ is providing the full list of Tier I and Tier II VOCs. Tier I and Tier II Hazardous Air Pollutants (HAPs) are established in EPA's Technical Assistance Document for the National Air Toxics Trends Program, Revision 3 (October 2016). The document can be accessed at:

https://www3.epa.gov/ttnamti1//files/ambient/airtox/NATTS%20TAD%20Revision%203 FINAL%20October%202016.pdf

НАР	TIER I or TIER II	НАР	TIER I or TIER II
acrolein	I	trans-1,3-dichloropropene	П
tetrachloroethylene	I	ethyl acrylate	II
benzene	1	ethyl benzene	П
carbon tetrachloride	1	hexachloro-1,3-butadiene	II
chloroform	1	methyl ethyl ketone	II
trichloroethylene	I	methyl isobutyl ketone II	
1,3-butadiene	Ī	methyl methacrylate	II

vinyl chloride	I	methyl tert-butyl ether II	
ethylene oxide *	I	methylene chloride II	
acetonitrile	II	styrene II	
acrylonitrile	II	1,1,2,2-tetrachloroethane	II
bromoform	II	toluene	II
carbon disulfide	II.	1,1,2-trichloroethane	II
chlorobenzene	II	1,2,4-trichlorobenzene	II
chloroprene	II	m&p-xylenes	II
p-dichlorobenzene	II.	o-xylene	II
cis-1,3-dichloropropene	II	* Ethylene oxide added as a Tier I pollutant in 2019.	

(4) Comment: If the focus is on six pollutants of interest, how and why were ethylene dichloride and vinyl chloride chosen to be the chemicals by which to locate the monitoring stations?

Response: The focus is on five pollutants of interest. While EPA's risk screening analysis indicated elevated cancer risks from all five pollutants of interest, the majority of the elevated cancer risks were due to elevated levels of ethylene dichloride and vinyl chloride. As such, site selection was based upon air dispersion modeling, conducted by the EPA, for these two pollutants.

(5) Comment: Please also provide the reasoning used to determine that three study sites were needed

Response: Air dispersion modeling conducted by EPA indicated that the study would necessitate that one site be established in the modeled area of maximum vinyl chloride concentrations and that a second site be established in the modeled area maximum ethylene dichloride concentrations. KDAQ and EPA agreed that a third site should be established to characterize ambient air concentrations of VOCs in areas with the potential for sustained population exposures.

(6) Comment: The Chamber/Consortium requests that KDAQ provide the expected physical locations of Sites 1 and 2.

Response: As a part of KDAQ's preliminary Quality Assurance Project Plan, KDAQ does not intend to release the locations of Sites 1 and 2 in order to reduce the potential for introduction of bias into the study.

(7) Comment: How was Calvert City Elementary School chosen to be the "population exposure site", Site #3? Please provide the basis for selecting this site.

Response: KDAQ and EPA agreed to establish a site in order to characterize ambient air concentrations of VOCs in areas with the potential for sustained population exposures. Examples of areas with the potential for sustained population exposure include residential areas, schools, parks, and commercial areas. Calvert City Elementary site was selected as it meets several important criteria. First, as a school, it meets as an area with the potential for sustained population exposure. Secondly, children are more susceptible to the effects of air pollution. Third, the school is surrounded by athletic parks, residential areas, and commercial areas, which adds to the value as a monitoring location. Finally, KDAQ previously operated a VOC monitor at the school; thus, the site has a historical monitoring record.

(8) Comment: The Chamber/Consortium requests KDAQ provide the specific data quality objectives for the "Special-Purpose Monitoring" plan.

Response: The primary objective for this project is to collect information on ambient air concentrations for the Chemicals of Potential Concern in Calvert City over the monitoring period. This monitoring information will be used to assist in identifying: whether a monitoring location is impacted by nearby industrial or urban sources and what actions to reduce ambient concentrations are needed; whether a monitoring location does not indicate impacts of potential concern and no further monitoring is needed; and whether additional information is needed to more fully characterize ambient concentrations and potential source-influences in the area.

(9) Comment: Please provide the decisions (i.e., data quality objectives) to be made with the health-risk assessment that EPA will conduct using the study data.

Response: EPA Region 4 will conduct a health risk assessment at the conclusion of collecting and quality assuring one year of sampling data. If the measured concentrations are determined to pose an unacceptable health risk, then KDAQ and EPA will work together to develop a strategy to reduce ambient concentrations and the additional actions warranted.

(10) Comment: The Chamber/Consortium also requests that KDAQ provide the Quality Assurance/Quality Control Plan for the Special-Purpose Monitoring study.

Response: The Quality Assurance Project Plan (QAPP) has not yet been finalized and approved by EPA. Once the QAPP has EPA approval, KDAQ can provide the document to the Chamber and the Consortium.

- (11) Appendix G states that "As a result of the COVID-19 pandemic, KDAQ and EPA are expecting decreases in area-wide emissions, as many sources have reduced operations. Since the study is short-term, with the sampling phase lasting one year, KDAQ and EPA have agreed to delay the start of sampling until emissions return to a more representative level. The commencement of monitoring will be determined jointly by KDAQ and EPA, based upon economic conditions and the procurement of access-agreements for the remaining two monitoring sites."
 - (11a) Comment: The Chamber/Consortium requests that KDAQ notify its members prior to the sampling phase start date.

Response: As a part of KDAQ's preliminary Quality Assurance Project Plan, KDAQ does not intend to notify the public or facilities upon the commencement of sampling in order to reduce the potential for introduction of bias into the study.

(11b) Comment: The Chamber/Consortium also requests clarification regarding what KDAQ means by a "more representative level" of emissions. For example, will a specific calendar year be chosen as a "representative level" emissions year? Or, is there an average emissions level at which the sampling phase will start when emissions fall within a certain +/- percent boundary?

Response: When developing this Annual Network Plan, KDAQ did not evaluate specific decreases in emissions within the Calvert City Industrial Complex, but rather relied upon general knowledge of current economic conditions. The

commencement of sampling will be jointly determined by KDAQ and EPA and will be based upon finalization of the Quality Assurance Project Plan, procurement and establishment of the necessary monitoring sites, staff safety and well-being, as well as general economic conditions.

(11c) Comment: Lastly, once emissions reach the "representative level", how soon will KDAQ begin the sampling phase? The Chamber/Consortium requests that KDAQ provide this information in Appendix G.

Response: See response to Comment (11b) regarding the start of sampling.

The information provided in Appendix G of the Annual Network Plan will be updated to include language regarding the consideration of staff-safety and finalization of the Quality Assurance Project plan as additional factors on commencement of the sampling phase of this special study.

U.S. Environmental Protection Agency Region 4

Comments on the Draft 2020 Kentucky Ambient Air Monitoring Network Plan

June 12, 2020

The EPA Region 4 submits the following comments on the Draft 2020 Kentucky Annual Ambient Air Monitoring Network Plan:

On February 1, 2018, the EPA approved the installation of a state and local air monitoring station (SLAMS) sulfur dioxide (SO₂) monitor to represent maximum concentrations in the southwestern portion of Jefferson County near the Kosmos Cement Company facility. This site was also required to be established as part of an Agreed Board Order (ABO) between the Louisville Metro Air Pollution Control District (LMAPCD) and Kosmos Cement Company. In the 2019 Network Plan, the LMAPCD stated that the monitor was planned to begin operation by January 1, 2020.

In response to the 2019 Network Plan, the EPA noted that the LMAPCD had indicated since submission of the Network Plan that Kosmos intends to resolve any potential SO₂ NAAQS concerns in the area by moving forward with proposals to raise the height of their emissions stack in lieu of the proposed monitoring at the Kosmosdale site. The EPA stated in its 2019 response that it will review any proposals submitted by Kosmos to ensure that any potential NAAQS compliance issues are adequately resolved and determine whether monitoring is required. If no such proposals are deemed satisfactory, the LMAPCD had expressed its commitment to adhere to the ABO with Kosmos and move forward with the Kosmosdale SO₂ monitor by January 1, 2020.

The only discussion of the Kosmosdale SO_2 monitor in the Draft 2020 Network Plan is in Appendix E on page 132. In this Appendix, LMAPCD requests that the monitor be removed from the Kentucky Network Plan and states that the Kosmos Cement facility is in the process of increasing its stack height. Since this monitor was previously included in the Network Plan and approved by EPA to operate as part of the SLAMS network, any proposal to remove this monitor from the approved monitoring network must be included in the network changes section in a Network Plan or addendum and approved by EPA Region 4, as required by 40 CFR § 58.10(a)(2). A proposal to discontinue the monitor must be made available for public inspection and comment for at least 30 days prior to submission to EPA for approval, as required by 40 CFR § 58.10(a)(2).

Based on conversations with LMAPCD, the EPA understands that the Kosmosdale monitor was not installed by January 1, 2020 and is not currently operating. The EPA also understands that the LMAPCD has entered into a revised ABO with Kosmos Cement. In the 2020 Network Plan, please continue to include the previously approved Kosmosdale SO_2 site as part of the SLAMS network in the Air Monitoring Station Description section until the monitor is proposed for removal from the plan and approved by the EPA. Please also provide an update on the status of ABO and the proposed stack height increase at Kosmos Cement, and an updated timeline for completing this project or installing the Kosmosdale monitor.



June 11, 2020

Kentucky Division for Air Quality Ms. Jenna Nall 300 Sower Boulevard Frankfort, KY 40601

Email: jenna.nall@ky.gov

Re: Comments on Kentucky Annual Ambient Air Monitoring Network Plan 2020

Dear Ms. Nall:

The Kentucky Chamber of Commerce is the major catalyst, consensus builder, and advocate for a thriving economic climate in the Commonwealth of Kentucky. The Kentucky Chamber of Commerce supports a prosperous business climate in the state and works to advance Kentucky through advocacy, information, program management, and customer service to promote business retention and recruitment. Representing the interests more than 68,000 employers across the commonwealth and a membership base with more than 470,000 employees, the Kentucky Chamber advocates for growth-oriented policies, infrastructure investment, workforce solutions, and sensible regulations to spur economic growth and opportunity in Kentucky.

The Kentucky Chamber of Commerce appreciates the opportunity to submit comments and questions on the Kentucky Annual Ambient Air Monitoring Network Plan 2020.

Appendix G, Calvert City Special-Purpose Monitoring

- The Kentucky Division for Air Quality (KDAQ) states it plans a one-year study with a focus on "six
 pollutants of interest". However, only five chemicals are listed. Please provide the name of the
 sixth pollutant of interest.
- How did KDAQ and EPA select the five or six pollutants of interest on which to focus? Please provide the rationale for selecting each "pollutant of interest".
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 Please provide the basis for selecting this site.
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- Please also provide the rationale for conducting a health-risk assessment at this time. That is, what led EPA and KDAQ to believe a health-risk assessment is needed.
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 - Lastly, once emissions reach the "representative level", how soon will KDAQ begin the sampling phase? The Chamber requests that KDAQ provide this information in Appendix

Again, thank you for the opportunity to comment on this plan.

Sincerely,

Kate Shanks

Kate Shanks

June 11, 2020

Kentucky Division for Air Quality Ms. Jenna Nall 300 Sower Boulevard Frankfort, KY 40601 Email: jenna.nall@ky.gov

Re: Comments on Kentucky Annual Ambient Air Monitoring Network Plan 2020

Dear Ms. Nall:

The Calvert City Environmental Consortium (the Consortium) is comprised of individuals and organizations that represent the regulated community in the Calvert City, KY area. The Consortium includes representatives from Arkema, Inc.; Ashland, Inc.; Calvert City Metals and Alloys; Carbide Industries LLC; City of Calvert City; Cymetech Corporation; Estron Chemical, Inc.; Evonik Corporation; Ingevity; Lubrizol Advanced Materials, Inc.; Phoenix Paper Wickliffe LLC; Sekisui SC; Vanderbilt Chemicals, LLC; Wacker Chemical Corporation; Waste Path Sanitary Landfill; and Westlake Vinyls, Inc.

Thank you for the opportunity to submit comments and questions on the Kentucky Annual Ambient Air Monitoring Network Plan 2020.

Appendix G, Calvert City Special-Purpose Monitoring

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 - Lastly, once emissions reach the "representative level", how soon will KDAQ begin the sampling phase? The Consortium requests that KDAQ provide this information in Appendix G.

The Calvert City Environmental Consortium appreciates the opportunity to submit these comments. Please contact me with questions at tdarnall@westlake.com or 270.395.3344.

Sincerely,

Toni G. Darnall

Chair, Calvert City Environmental Consortium

cc: Environmental Consortium members

Joni J. Damall

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KDAQ AIR MONITORING STATIONS BY REGIONAL OFFICE

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