

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

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

**Site Name:** Cannons Lane

**AQS Site ID:** 21-111-0067

**Location:** Bowman Field, 2730 Cannons Lane, Louisville, KY 40204

**County:** Jefferson

**GPS Coordinates:** 38.2288760, -85.654520 (NAD 83)

**Date Established:** July 1, 2008

**Inspection Date:** November 26, 2013

**Inspection By:** Jennifer F. Miller

**Site Approval Status:** EPA SLAMS approval on December 22, 2008; EPA NCore approval on October 30, 2009.



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

### **Monitoring Objective:**

The NCore Network addresses the following monitoring objectives:

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

**Monitors:**

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

**Monitors (Continued):**

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

**Quality Assurance Status:**

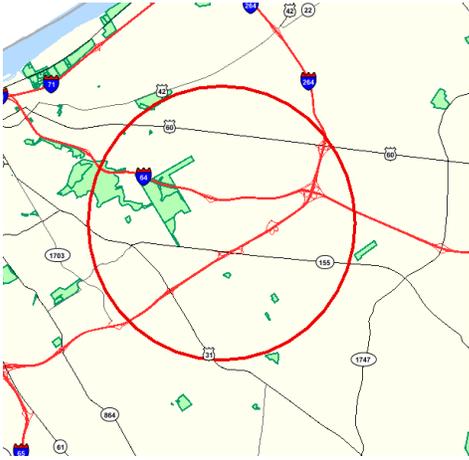
All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A. The District’s current Quality Assurance Project Plan covers trace-level O<sub>3</sub>, NO<sub>x</sub>, SO<sub>2</sub>, and CO, as well as PM<sub>2.5</sub> speciation, lead, and meteorological measurements. Standard operating procedures for trace-level CO, NO<sub>x</sub>, NO<sub>y</sub>, SO<sub>2</sub>, O<sub>3</sub>, PM<sub>2.5</sub> BAM, and meteorological measurements have been developed. Additional standard operating procedures manuals will be adopted or developed for new instrumentation.

**Area Representativeness:**

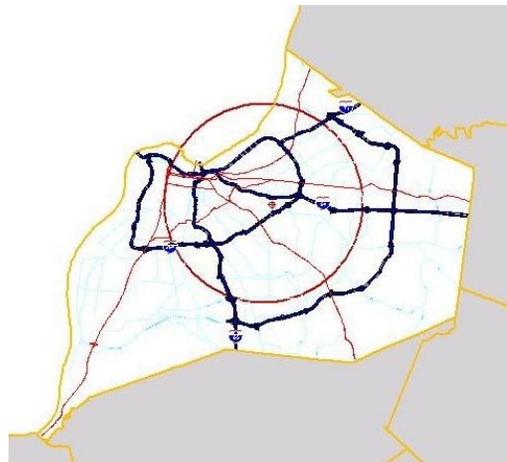
The air monitoring equipment at the Cannon’s Lane NCore station is specifically located at the urban and neighborhood scales. These scales are generally the most representative of the expected population exposures that occur throughout metropolitan areas.

Pollutant	Spatial Scale	Comments
Ozone	Neighborhood and Urban Scale	10 km radius
NO <sub>x</sub> /NO <sub>y</sub>	Neighborhood and Urban Scale	10 km radius
Carbon Monoxide	Neighborhood Scale	There is no urban scale for CO
SO <sub>2</sub>	Neighborhood Scale	There is no urban scale for SO <sub>2</sub>
Particulates	Urban	
Radiation	Urban	

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



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



Urban Scale (50 km): Particulates and Radiation

