



REGION 4

ATLANTA, GA 30303

November 6, 2024

Rhonda B. Thompson, PE
Chief, Bureau of Air Quality Control
South Carolina Department
of Health and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

Dear Ms. Thompson:

Thank you for submitting the 2024 Annual Ambient Air Monitoring Network Plan (Network Plan) dated July 7, 2024, for the South Carolina Department of Environmental Services (SC DES). The Network Plan is required by 40 Code of Federal Regulations (CFR) §58.10. The U.S. Environmental Protection Agency Region 4 understands that the SC DES provided the public with a 30-day review period for the draft Network Plan and that no comments were received other than comments from the EPA on the draft Network Plan. The EPA approves the proposed monitoring network changes and all components of South Carolina's Network Plan.

On July 21, 2023, the Office of Management and Budget (OMB) updated the core based statistical areas for the nation. Due to these updates, the increase in population in the Spartanburg metropolitan statistical area (MSA) and the Myrtle Beach-Conway-North Myrtle Beach MSA have triggered the requirement to add a second ozone monitor. The SC DES has begun the process of finding second ozone monitor locations in both MSAs.

The SC DES has requested a waiver of a specific siting requirement of 270 degrees continuous unobstructed air flow for the Greenville ESC site (AQS ID: 45-045-0015) in Appendix G of the Network Plan. This site met siting requirements under the previous rules, which required 270 degrees of unobstructed airflow, but does not meet the updated requirements of having at least 270 continuous degrees of unobstructed air flow. Appendix G references "Tree D" as the obstruction causing the lack of continuous airflow. The EPA has determined that this request meets waiver provisions in 40 CFR 58 Appendix E Section 4 and approves the requested waiver of the word "continuous" in the 40 CFR 58 Appendix E Section 2.3 (b) requirement.

The EPA recommends SC DES continue to seek permission to remove "Tree D". If the tree cannot be removed, SC DEC should reassess and again request this waiver in the 2025 Network Plan along with the next 5-year network assessment. All other siting criteria must continue to be met at the Greenville ESC site.

Thank you for working with the EPA to monitor air pollution and safeguard the air quality in South Carolina. If you have any questions or concerns, please contact Darren Palmer at (404) 562-9052 or Katherine Beck at (404) 562-8166.

Sincerely,

Denise D. Diaz
Director
Air and Radiation Division

Enclosure

cc: Micheal Mattocks, Assistant Bureau Chief, BEHS
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2024 State of South Carolina Ambient Air Monitoring Network Plan U.S. EPA Region 4 Comments and Recommendations

This document contains the U.S. Environmental Protection Agency’s comments and recommendations on the state of South Carolina’s 2024 Ambient Air Monitoring Network Plan (Network Plan). Ambient air monitoring rules, which include regulatory requirements that address network plans, data certification, and minimum monitoring requirements, among other requirements, are found in 40 CFR Part 58. Minimum monitoring requirements for criteria pollutants are listed in 40 CFR Part 58, Appendix D. Minimum monitoring requirements are listed for ozone (O₃), particulate matter less than 2.5 microns (PM_{2.5}), particulate matter less than 10 microns (PM₁₀), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), carbon monoxide (CO), and lead (Pb).

The minimum monitoring requirements are based on core based statistical area (CBSA) boundaries as defined by the U.S. Office of Management and Budget (OMB), July 1, 2023, population estimates from the U.S. Census Bureau, and historical ambient air monitoring data. Minimum monitoring requirements for O₃, PM_{2.5}, and PM₁₀ only apply to metropolitan statistical areas (MSAs), which are a subset of CBSAs. OMB currently defines 10 MSAs in the state of South Carolina. The July 1, 2023, population estimates from the U.S. Census Bureau for each MSA in South Carolina and the total population estimates of MSAs shared with North Carolina and Georgia are shown in Table 1.

Table 1: Metropolitan Statistical Areas and July 1, 2023, Population Estimates

MSA Name	Population
Charlotte-Concord-Gastonia, NC-SC	2,805,115
Greenville-Anderson-Greer, SC	975,480
Columbia, SC	858,302
Charleston-North Charleston, SC	849,417
Augusta-Richmond County, GA-SC	629,429
Myrtle Beach-Conway-North Myrtle Beach, SC	397,478
Spartanburg, SC	383,327
Hilton Head Island-Bluffton-Port Royal, SC	232,523
Florence, SC	199,630
Sumter, SC	104,165

The estimated 2022 census numbers indicated that the population of the Myrtle Beach-Conway-North Myrtle Beach, SC-NC MSA was over 500,000 people, however with the redefined MSA boundary the 2023 estimated population is now less than 500,000 and will not trigger the anticipated additional PM₁₀ monitoring requirements.

Proposed Monitoring Network Changes

The EPA has approval authority for changes to regulatorily required state or local air monitoring stations (SLAMS). SLAMS include the ambient air quality monitoring sites and monitors required by 40 CFR Part 58, Appendix D and are needed to meet the monitoring objectives of Appendix D, including national ambient air quality standards (NAAQS) comparisons, and may also serve other data purposes. The EPA is not required to approve changes made to special purpose monitors (SPMs). SPMs are

monitors designated by the monitoring agency as special purpose and do not count towards minimum monitoring requirements of 40 CFR Part 58. SPMs are required to be identified in the Network Plan for public and the EPA review.

The South Carolina Department of Environmental Services (SC DES) proposed changes to its monitoring network for 2024 through 2025 Table 2 summarizes the requested monitor discontinuations and relocations. Information related to each proposed change as well as the EPA’s decision and rationale for approval/disapproval of each proposed change are contained in the following pollutant sections.

Table 2: Proposed Monitoring Changes

AQS ID	CBSA	Site Name	Pollutant	Type	Comments
45-019-0048	Charleston-North Charleston, SC MSA	Cape Romain Monitoring Site	NO ₂	SPM	On January 3, 2024, the SPM NO ₂ monitor was discontinued. Acknowledged.
45-091-0008	Charlotte-Concord-Gastonia, NC-SC MSA	York Landfill	SO ₂	SPM	On January 2, 2024, the York Landfill monitoring site began operating a rotating SPM SO ₂ monitor. Acknowledged.
45-037-0001	August-Richmond County, GA-SC MSA	Trenton	SO ₂	SPM	On January 3, 2024, the rotational SPM SO ₂ monitor was discontinued. Acknowledged.
45-045-0015	Greenville-Anderson-Greer, SC MSA	Greenville ESC	PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂	SLAMS	The EPA approves the waiver request submitted with the 2024 Network Plan. More information is found in the “Waivers of Requirements” section.

Network Plan Public Comments

40 CFR § 58.10(a)(1)

The requirement for a public comment period and response from the agency in the final Network Plan is found in 40 CFR 58.10(a)(1):

“The annual monitoring network plan must be made available for public inspection and comment for at least 30 days prior to submission to the EPA and the submitted plan shall also include and address, as appropriate, any received comments.”

The proposed 2024 Network Plan was available for public review and comment from April 26, 2024, through May 28, 2024. The Network Plan meets the public comment requirements of 40 CFR 58.10.

Among other things, Executive Order 14096: *Revitalizing Our Nation’s Commitment to Environmental Justice for All*¹ directs federal agencies to seek out and encourage the involvement of persons and communities potentially affected by providing timely opportunities for members of the public to share information or concerns and participate in decision-making processes, ensuring that agencies offer or provide information in a manner that provides meaningful access to individuals with limited English

¹ <https://www.whitehouse.gov/briefing-room/presidential-actions/2023/04/21/executive-order-on-revitalizing-our-nations-commitment-to-environmental-justice-for-all/>

proficiency, individuals with disabilities, and communities or groups of people who are potentially affected and who are not regular participants in Federal decision-making. While the EO does not impose new requirements on states, the EPA encourages states to adopt public comment and engagement practices that are sufficiently inclusive to inform all potentially impacted communities.

Operating Schedules

40 CFR § 58.12

The operating schedules proposed by the SC DES in its Network Plan meet the requirements for continuous analyzers and all manual Pb, PM₁₀, PM_{2.5}, and PM_{2.5} Speciation Trends Network (STN) monitors.

Air Quality Index (AQI) Reporting

40 CFR § 58.50

AQI reporting is required in MSAs with populations over 350,000. Six MSAs in the state of South Carolina have populations over 350,000 (see Table 3). The SC DES reports AQI values for these MSAs and one additional MSA. The Mecklenburg County Air Quality reports AQI values for the Charlotte-Concord-Gastonia, NC-SC MSA. Both the Georgia Environmental Protection Division (GA EPD) and the SC DES report AQI values for the Augusta-Richmond County GA-SC MSA.

Table 3: AQI Reporting

MSAs Reporting
Greenville-Anderson-Greer, SC
Columbia, SC
Charleston-North Charleston, SC
Augusta-Richmond County, GA-SC
Myrtle Beach-Conway-North Myrtle Beach, SC
Florence, SC
Charlotte-Concord-Gastonia, NC-SC

The South Carolina monitoring network satisfies the minimum AQI reporting requirements in 40 CFR Part 58.

National Core (NCore) Monitoring Network

40 CFR Part 58, Appendix D, Section 3.0

A requirement that each state operate at least one NCore site is found in 40 CFR Part 58, Appendix D, Section 3. The NCore site must measure, at a minimum, PM_{2.5} particulate mass using continuous and integrated/filter-based samplers, speciated PM_{2.5}, PM_{10-2.5} particle mass, O₃, SO₂, CO, NO/NO_y, wind speed, wind direction, relative humidity, and ambient temperature. This section requires each state to operate at least one NCore site. The SC DES meets the NCore requirement by operating the Parklane site in Columbia.

Table 4: NCore Monitoring Sites

AQS ID	Site Name	CBSA	Requirement Met (Y/N)
45-079-0007	Parklane	Columbia, SC	Y

The NCore monitoring network described in the Network Plan and listed in Table 4 meets all design criteria of 40 CFR Part 58.

O₃ Monitoring Requirements

40 CFR Part 58, Appendix D, Section 4.1 and Table D-2

Ambient air monitoring network design criteria for O₃ are found in 40 CFR Part 58, Appendix D, Section 4.1. This section requires state agencies to operate O₃ sites for various locations depending upon area size and typical peak concentrations.

Table 5: Ozone Design Criteria – Minimum Required SLAMS Monitors

CBSA	Minimum Required SLAMS	Number of SLAMS	Number of SPMs or Other Regulatory Monitors	Site Names (AQS IDs) of SLAMS	Requirement Met (Y/N)
Augusta-Richmond County, GA-SC	2	4	0	Jackson Middle School (AQS ID: 45-003-0003) Trenton (AQS ID: 45-037-0001) Evans (AQS ID 13-073-0001) ¹ Augusta (AQS ID 13-245-0091) ¹	Y
Charleston-North Charleston, SC	2	2	0	Moncks Corner National Guard (AQS ID: 45-015-1002) Cape Romain (AQS ID: 45-019-0046)	Y
Charlotte-Concord-Gastonia, NC-SC	2	4	3	York Landfill (AQS ID: 45-091-0008) Crouse (AQS ID: 37-109-0004) ² Garinger (AQS ID: 37-119-0041) ³ University Meadows (AQS ID: 37-119-0046) ³ Rockwell (AQS ID: 37-159-0021) ¹	Y
Columbia, SC	2	2	1	Parklane (AQS ID: 45-079-0007) Sandhill (AQS ID: 45-079-1001)	Y
Florence, SC	1	1	0	Pee Dee Exp. Station (AQS ID: 45-031-0003)	Y
Greenville-Anderson-Greer, SC	2	2	0	Garrison Arena (AQS ID: 45-007-0006) Hillcrest (AQS ID: 45-045-0016)	Y
Myrtle Beach-Conway-North Myrtle Beach, SC	2	1	0	Coastal Carolina (AQS ID: 45-051-0008)	N
Spartanburg, SC	2	1	0	North Spartanburg Fire Station #2 (AQS ID: 45-083-0009)	N

¹Evans and Augusta sites are operated by the Georgia Environmental Protection Division

²Crouse and Rockwell sites are operated by the North Carolina Department of Air Quality

³Garinger and University Meadows sites are operated by Mecklenburg County Air Quality

The Coastal Carolina site (AQS ID 45-051-0008) is operated by the SC DES. 40 CFR Part 58, Appendix D, Section 4.1 states that if the most recent 3-year ozone design value exceeds 85 percent of the ozone NAAQS (which is 0.070 ppm), then another ozone monitor must be added in the MSA. In 2023, the 3-year ozone design value exceeded 85 percent of the ozone NAAQS. The EPA supports SC DES searching for a new site and will be happy to collaborate with SC DES. The EPA requests that the location of the new ozone site be included in the Network Plan due July 1, 2025, with a proposed startup date of March 1, 2026.

When OMB added Union County to the Spartanburg MSA, it triggered a second ozone monitor requirement due to the increase in population. The Department is investigating possible locations for the new site. The EPA supports SC DES searching for a new site and will be happy to collaborate with SCDES. The EPA requests that the location of the new ozone site be included in the Network Plan due July 1, 2025, with a proposed start-up date of March 1, 2026.

More information about O₃ site selection can be found in the EPA’s Guideline on Ozone Monitoring Site Selection, which can be found at: <https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=2000D45M.TXT>.

Except for the two MSAs where there are new requirements, the O₃ monitoring network outlined in the Network Plan and Table 5 meets the minimum monitoring requirements found in 40 CFR Part 58, Appendix D, Table D-2 for all MSAs in South Carolina.

CO Monitoring Requirements
40 CFR Part 58, Appendix D, Section 4.2

Ambient air monitoring network design criteria for CO are found in 40 CFR Part 58, Appendix D, Section 4.2. CBSAs with populations over one million are required to operate one CO monitor collocated with a near-road NO₂ site. There is one CBSA in South Carolina with a population over 1,000,000, the Charlotte-Concord-Gastonia, NC-SC CBSA. The CO requirement for this area is met by the Mecklenburg County Air Quality (MCAQ) operating a CO monitor at its Remount near-road site.

Table 6: CO Design Criteria – Minimum Required SLAMS Near-road Monitors

CBSA	Minimum Required Near-road CO Monitors	Number of Near-road CO Monitors	Site Names (AQS IDs) of Existing Near-road CO Monitors	Requirement Met (Y/N)
Charlotte-Concord-Gastonia, NC-SC	1	1	Remount (37-119-0045) ¹	Y

¹Remount site is operated by the MCAQ.

The Regional Administrator monitoring requirements for CO are found in 40 CFR Part 58, Appendix D 4.2.2. The section states, “The Regional Administrators, in collaboration with states, may require additional CO monitors above the minimum number of monitors required in 4.2.1.” The Regional Administrator is not requiring the SC DES to operate an additional CO monitor at this time.

Table 7: CO Design Criteria – Minimum Required SLAMS RA-Required Monitors

CBSA	Minimum RA-required CO Monitors	Number of RA-required CO Monitors	Site Names (AQS IDs) of Existing RA-required CO Monitors	Requirement Met (Y/N)
None	0	0	None	Y

The CO monitoring network described in the Network Plan meets the design criteria of 40 CFR Part 58 for both near-road and RA-required monitors as identified in Tables 6 and 7 above.

NO₂ Monitoring Requirements

40 CFR Part 58, Appendix D, Section 4.3

Ambient air monitoring network design criteria for NO₂ are found in 40 CFR Part 58, Appendix D, Section 4.3. Three types of NO₂ monitoring are required: near-road, area-wide, and Regional Administrator. These types of NO₂ monitoring are described in Sections 4.3.2, 4.3.3, and 4.3.4, respectively.

Ambient air monitoring design criteria for near-road NO₂ monitoring sites are found in 40 CFR Part 58, Appendix D, Section 4.3.2.

In the Charlotte-Gastonia-Concord, NC-SC CBSA, the MCAQ operates one near-road monitoring site at the Remount site (AQS ID: 37-119-0045). When the initial near-road monitoring network was funded by the EPA and established, the Charlotte area was below the 2.5 million population threshold for a second near-road NO₂ monitoring site. However, the recent census population estimate for the Charlotte-Concord-Gastonia, NC-SC CBSA is over 2.5 million people. The MCAQ has identified a suitable location for the additional near-road NO₂ monitoring site and was preparing to install and operate the new near-road site in 2023. However, due to delays outside the control of the MCAQ, the site began operation in early 2024.

Table 8: NO₂ Design Criteria – Minimum Required SLAMS Near-road Monitors

CBSA	Minimum Required Near-road NO ₂	Number of Near-road NO ₂	Site Names (AQS IDs) of Existing NO ₂ Near-Road	Requirement Met (Y/N)
Charlotte-Concord-Gastonia, NC-SC	2	2	Remount (AQS ID: 37-119-0045) ¹ Equipment Drive (AQS ID 37-119-0050) ¹	Y

¹The Remount and Equipment Drive sites are operated by the MCAQ.

Ambient air monitoring network design criteria for area wide NO₂ sites are found in Section 4.3.3 of Appendix D to 40 CFR Part 58. The MCAQ operates a NO₂ monitor at its Garinger site to meet the minimum requirement for the Charlotte-Gastonia-Concord, NC-SC CBSA.

Table 9: NO₂ Design Criteria – Minimum Required SLAMS Area-Wide Monitors

CBSA	Minimum Required Area-Wide NO ₂	Number of Area-Wide NO ₂	Site Names (AQS IDs) of Existing NO ₂ Area-Wide Sites	Requirement Met (Y/N)
Charlotte-Gastonia-Concord, NC-SC	1	1	Garinger (AQS ID: 37-119-0041) ¹	Y

¹The Garinger site is operated by the MCAQ.

Ambient air monitoring network design criteria for Regional Administrator-required NO₂ monitoring, often referred to as RA-40 monitoring, are found in 40 CFR Part 58, Appendix D, Section 4.3.4. Under these provisions, Regional Administrators must require a minimum of 40 additional NO₂ monitoring stations nationwide, with a primary focus on siting these monitors in locations to protect susceptible and vulnerable populations. The full list of NO₂ monitors identified by the EPA’s Regional Administrators can be found on the EPA’s website at <https://www.epa.gov/amtic/no2-monitoring-susceptible-and-vulnerable-populations>. The SC DES operates one RA-40 monitor at its Greenville ESC site in the Greenville-Anderson-Greer, SC CBSA.

Table 10: NO₂ Design Criteria – Minimum Required SLAMS RA-40 Monitors

CBSA	Minimum Required RA-40 Monitors	Number of RA-40 Monitors	Site Names (AQS IDs) of Existing RA-40 Sites	Requirement Met (Y/N)
Greenville-Anderson-Greer, SC	1	1	Greenville ESC (AQS ID: 45-045-0015)	Y

The NO₂ monitoring network described by the Network Plan meets all design criteria of 40 CFR Part 58.

SO₂ Monitoring Requirements

40 CFR Part 58, Appendix D, Section 4.4

Ambient air monitoring network design criteria for SO₂ are found in 40 CFR Part 58, Appendix D, Section 4.4. This section requires that the population weighted emissions index (PWEI) be calculated by states for each CBSA. As a result, the SO₂ monitoring site(s) required in each CBSA will satisfy minimum monitoring requirements if the monitor(s) is sited within the boundaries of the parent CBSA and is one of the following site types: population exposure, maximum concentration, source-oriented, general background, or regional transport. A SO₂ monitor at an NCore station may satisfy minimum monitoring requirements if that monitor is located within a CBSA with minimally required monitors consistent with Appendix D, Section 4.4

Based upon PWEIs calculated using 2023 population estimates and 2020 emission inventory data, the minimum numbers of monitors required for the CBSAs in South Carolina are summarized in Table 11.

Table 11: SO₂ Design Criteria – Minimum Required SLAMS PWEI Monitors

CBSA	2023 Population Estimate	2020 NEI Emissions (Tons per year)	PWEI	Number of Minimum Required PWEI SO ₂ Monitors	Number of SO ₂ SLAMS	Site Names (AQS IDs) of Existing SO ₂ monitors	Requirement Met (Y/N)
Charlotte-Concord-Gastonia, NC-SC	2,805,115	3527	9894	1	1	Garinger (AQS ID:37-119-0041) ¹	Y
Columbia, SC	858,302	2292	1967	0	1	Parklane (AQS ID: 45-079-0007)	Y
Charleston-North Charleston, SC	849,417	6914	5873	1	1	Jenkins Ave. (AQS ID: 45-019-003)	Y
Greenville-Anderson-Greer, SC	975,480	169	165	0	0	Greenville ESC (AQS ID: 45-045-0015)	Y

¹The Garinger site is operated by Mecklenburg County Air Quality.

The SO₂ monitoring network outlined in the Network Plan meets the SO₂ PWEI requirements specified in 40 CFR Part 58, Appendix D, Section 4.4.

The EPA finalized the SO₂ Data Requirements Rule (DRR) on August 10, 2015 (40 CFR Part 51, Subpart BB). This rule requires air quality near sources with SO₂ emissions of 2,000 tons per year (tpy) or greater be characterized using ambient air monitoring or modeling. On January 15, 2016, the SC DES submitted to the EPA a list of eight sources in the state around which SO₂ air quality must be characterized. These eight sources were characterized using modeling and/or took federally enforceable emissions limits. The SC DES does not operate any SO₂ monitoring sites to meet the DRR requirements.

Table 12: SO₂ Design Criteria – Data Requirement Rule Monitors

CBSA	Minimum Required DRR Monitors	Number of DRR Monitors	Site Names (AQS IDs) of Existing DRR Sites	Requirement Met (Y/N)
None	0	0	None	Y

The DRR also requires annual emissions reporting for sources that used modeling to show attainment with the standard under the rule. Forty (40) CFR § 51.1205 (b) requires that:

“For any area where modeling of actual SO₂ emissions serve as the basis for designating such area as attainment for the 2010 SO₂ NAAQS, the air agency shall submit an annual report to the EPA Regional Administrator by July 1 of each year, either as a stand-alone document made available for public inspection, or as an appendix to its Annual Monitoring Network Plan (also due on July 1 each year under 40 CFR §58.10), that documents the annual SO₂ emissions of each applicable source in each such area and provides an assessment of the cause of any emissions increase from the previous year.”

The SC DES submitted its 2023 annual emission report with its 2024 Network Plan to meet this requirement. The report applies to areas designated attainment/unclassifiable based on modeling of

actual SO₂ emissions for Santee Cooper Cross Generating Station, New-Indy Catawba (formerly Resolute Industries), Sylvamo Eastover Mill (formerly International Paper – Eastover), and Dominion Wateree Station (formerly SCE&G Wateree Station).

For the DRR portion found in Appendix I of the Network Plan. The EPA will respond in a separate correspondence. The next annual SO₂ emissions report for these facilities is due July 1, 2025.

The Regional Administrator may require additional SO₂ monitoring stations above the minimum number of monitors required in 40 CFR Part 58, Appendix D, Section 4.4.2, where the minimum monitoring requirements are not sufficient to meet monitoring objectives. The SC DES is not required by the Regional Administrator to operate an SO₂ monitor at this time.

Table 13: SO₂ Design Criteria – Minimum Required SLAMS RA Monitors

CBSA	Minimum Required RA-40 Monitors	Number of RA-40 Monitors	Site Names (AQS IDs) of Existing RA-40 Sites	Requirement Met (Y/N)
None	0	0	None	Y

The SC DES operates an additional SO₂ monitoring network to provide background concentration data. Two years of data are collected every four years at two monitoring sites. These are SPMs and do not require approval from the EPA for startup or shutdown. For the data to be useable to support the SC DES’s prevention of significant deterioration (PSD) modeling and permitting activities, the rotating SO₂ monitoring network must meet the requirements in Appendix B to 40 CFR Part 58. Section 8.3 of Appendix W to 40 CFR Part 51 discusses using air monitoring data for background concentrations and Appendix B to 40 CFR Part 58 discusses quality assurance requirements for PSD air monitoring procedures that must be followed for the data to be useable for PSD and permitting purposes.

Table 14 lists the two monitors that the SC DES includes in its SO₂ rotating background network and that are currently operating. The SC DES has updated the monitoring objective for the Trenton SO₂ site from source oriented to upwind background. The EPA believes this better represents the monitoring objectives of the site.

Table 14: SO₂ Rotating Background Monitoring

CBSA	Site Name (AQS ID)	Frequency of Operation	Next Expected Years of Operation	Monitoring Objective in Network Plan
Charlotte-Concord CSA	York Landfill (45-091-0008)	Every other 2 years	2024-2025	Upwind Background
August-Richmond County, GA-SC	Trenton (AQS ID: 45-037-0001)	Every other 2 years	2026-2027	Upwind Background

The South Carolina SO₂ monitoring network meets the monitoring requirements in 40 CFR Part 58.

Pb Monitoring Requirements
40 CFR Part 58, Appendix D, Section 4.5

The monitoring requirements for Pb found at 40 CFR Part 58, Appendix D, Section 4.5 require that, at a minimum, there must be one source-oriented SLAMS site located to measure the maximum Pb concentration in ambient air resulting from each non-airport Pb source which emits 0.5 or more tons per year and from each airport which emits 1.0 or more tons per year.

Although South Carolina has no sources that exceed the emissions thresholds for Pb monitoring, the SC DES and Clarios, LLC (formerly Johnson Controls Battery Group) conducted source oriented ambient Pb monitoring at three sites around the Florence Recycling Center in Florence, South Carolina. The resulting air monitoring data are comparable to the 2008 lead NAAQS. The company and the SC DES conducted this monitoring under terms of a settlement agreement reached with several petitioners who commented on the construction permit for the facility. The locations of the monitoring sites were selected based upon an agreement between the company and stakeholders. As of March 22, 2021, Clarios ceased production at the recycling center. The SC DES discontinued two of three sites as of November 6, 2021, near the Clarios facility – JCI Entrance site (AQS ID: 45-041-8002) and JCI Railroad site (AQS ID: 45-041-8001).

The EPA requested that the SC DES continue to monitor for Pb near the Clarios facility at one site – the JCI Woods site (AQS ID: 45-041-8003). Pb monitoring should continue if there is a possibility of Pb emissions or re-entrainment of Pb dust. Pb monitoring should continue until meets the requirements for discontinuation under 40 CFR 58.14(c)(1) and the following occurs:

- The permit is revoked, so that operations cannot restart, and
- A cleanup plan that addresses dust suppression and/or monitoring of potentially Pb-containing dust should be put in place.

The EPA recommends that the SC DES provide documentation of the permit being revoked and of a cleanup plan that addresses minimizing the re-entrainment of Pb containing dust.

Table 15: Pb Design Criteria – Minimum Required Source-Oriented Monitors

Source	CBSA	Minimum Required Source-Oriented Pb Sites	Number of Source-Oriented Pb Sites	Site Names (AQS IDs) of Existing Source-Oriented Sites	Requirement Met (Y/N)
Clarios ¹	Florence, SC	0	1	JCI Woods (AQS ID: 45-041-8003)	Y

¹This monitoring is not required by the EPA rules but is part of a settlement agreement between the SC DES, the facility, and community groups. The SC DES operates this sampler as a SPM to evaluate Pb NAAQS compliance.

The Pb monitoring collocation requirements are found in 40 CFR Part 58, Appendix A, 3.4.4. These requirements include that: 15 percent of the primary monitors are collocated and have at least one collocated quality control monitor (if the total number of monitors is less than three). These collocation requirements are assessed at the PQAQO level. The SC DES is required to operate one collocated Pb monitor, and it operates it at the JCI Woods site (AQS ID: 45-041-8003) (see Table 16).

Table 16: Pb Design Criteria – Minimum Required Collocated Monitors

PQAO	Minimum Required Collocated Monitors	Number of Collocated Monitors	Site Names (AQS IDs) of Existing Collocated Sites	Requirement Met (Y/N)
SC DES	1	1	JCI Woods (AQS ID: 45-041-8003)	Y

The Pb monitoring network described in the Network Plan meets all design criteria of 40 CFR Part 58.

PM₁₀ Monitoring Requirements

40 CFR Part 58, Appendix A, Section 3.3

40 CFR Part 58, Appendix D, Section 4.6 and Table D-4

Ambient air monitoring network design criteria for PM₁₀ are found in 40 CFR Part 58, Appendix D, Section 4.6. Table D-4, in this section, indicates the approximate number of PM₁₀ stations required in MSAs with populations exceeding 100,000 to characterize national and regional PM₁₀ air quality trends and geographical patterns. The SC DES, the GA EPD and the MCAQ are required to operate six PM₁₀ monitors at five sites in CBSAs in or abutting the state (see Table 18).

Table 17: PM₁₀ Design Criteria – Minimum Required SLAMS Monitors

CBSA	Minimum Required SLAMS	Number of SLAMS	Number of SPMs or Other Regulatory Monitors	Site Names (AQS IDs) of SLAMS	Requirement Met (Y/N)
Augusta-Richmond County, GA-SC	1	1	0	Augusta (AQS ID: 13-245-0091) ¹	Y
Charleston-North Charleston, SC	1	1	0	Jenkins Ave. Fire Station (AQS ID: 45-019-0003)	Y
Charlotte-Concord-Gastonia, NC-SC	2	2	0	Garinger (AQS ID: 37-119-0041) ² Ramblewood Park (AQS ID: 37-119-0047) ²	Y
Columbia, SC	1	1	1	Cayce City Hall (AQS ID: 45-063-0010)	Y
Greenville-Anderson-Greer, SC	1	1	0	Greenville ESC (AQS ID: 45-045-0015)	Y

¹The Augusta site is operated by the GA EPD.

²The Garinger and Ramblewood Park sites are operated by the MCAQ.

The PM₁₀ collocation requirements for manual methods are found in 40 CFR Part 58, Appendix A, 3.3.4. Those requirements include that: 15 percent of each network of manual PM₁₀ methods (at least one site) must be collocated and the sites with collocated monitors should be among those measuring annual mean concentrations in the highest 25 percent of the network. These collocation requirements are assessed at the PQAO level. The SC DES is not required to operate any PM₁₀ collocated monitors.

Table 18: PM₁₀ Design Criteria – Minimum Required Collocated Monitors

PQAO	Sites with Manual PM ₁₀ Method	Minimum Required Collocated Monitors	Number of Collocated PM ₁₀ Monitors	Site Names (AQS IDs) of Collocated Sites	Requirement Met (Y/N)
SC DES	0	0	0	None	Y

The proposed PM₁₀ monitoring network described in the Network Plan meets all design criteria of 40 CFR Part 58.

PM_{2.5} Monitoring Requirements

40 CFR Part 58, Appendix A, Section 3.2

40 CFR Part 58, Appendix D, Section 4.7 and Table D-5

Ambient air monitoring network design criteria for PM_{2.5} are found in 40 CFR Part 58, Appendix D, Section 4.7. This section requires that state and, where applicable, local agencies operate the minimum number of required PM_{2.5} SLAMS sites listed in Appendix D, Table D-5. The SC DES, GA EPD and MCAQ operate PM_{2.5} SLAMS monitors at 15 sites in CBSAs in or abutting the state (see Table 19).

Table 19: PM_{2.5} Design Criteria – Minimum Required SLAMS Monitors

CBSA	Minimum Required SLAMS	Number of SLAMS Sites	Number of SPMs or Other Regulatory Monitoring Sites	Site Names (AQS IDs) of SLAMS	Requirement Met (Y/N)
Augusta-Richmond County, GA-SC	2	2	0	Augusta (AQS ID: 13-245-0091) ¹ Trenton (AQS ID 45-037-0001)	Y
Charleston-North Charleston, SC	1	2	1	NCFS (AQS ID: 45-019-0020) Cape Romain (AQS ID: 45-019-0046)	Y
Charlotte-Concord-Gastonia, NC-SC	2	3	2	Garinger (AQS ID: 37-119-0041) ² Remount (AQS ID: 37-119-0045) ² Friendship Park (AQS ID: 37-119-0048) ²	Y
Columbia, SC	1	2	0	Irmo DJJ (AQS ID: 45-079-0022) Parklane (AQS ID: 45-079-0007)	Y
Greenville-Anderson-Greer, SC	2	2	0	Greenville ESC (AQS ID: 45-045-0015) Hillcrest (AQS ID: 45-045-0016)	Y
Florence, SC	1	1	0	Williams Middle School (AQS ID: 45-041-0003)	Y
Spartanburg, SC	1	1	0	T.K. Gregg (AQS ID: 45-083-0011)	Y
Myrtle Beach-Conway-North Myrtle Beach SC	1	1	0	Coastal Carolina (AQS ID 45-051-0008) ³	Y
None	0	1	1	Chesterfield (AQS ID: 45-025-0001)	Y

¹The Augusta site is operated by the GA EPD.

²The Garinger, Remount, and Friendship Park sites are operated by the MCAQ.

³PM_{2.5} monitoring at the Coastal Carolina Site began in 2023.

PM_{2.5} Collocation Requirements
40 CFR Part 58, Appendix A, Section 3.2

Forty (40) CFR Part 58, Appendix A, Section 3.2.3 states that 15 percent of each network of manual PM_{2.5} methods (at least one site) must be collocated. Section 3.2.3.1 states that for each distinct monitoring method designation (FRM or FEM) a PQAO is using for a primary monitor, the PQAO must have 15 percent of the primary monitors of each method designation collocated and have at least one collocated quality control monitor. The first collocated monitor must be a designated a FRM monitor.

Section 3.2.3.2 states that for each primary monitor designated as an FEM used by the PQAO, 50 percent of the monitors designated for collocation (or the first if only one collocation is necessary) shall be collocated with a FRM quality control monitor and 50 percent of the monitors shall be collocated with a monitor having the same method designation as the FEM primary monitor.

The SC DES is transitioning its PM_{2.5} network to include more continuous FEM equipment and reduce the number of filter based FRM equipment. Specifically, the SC DES will operate more Teledyne T640 and T640x monitors (AQS method codes 636 and 638 respectively). The EPA staff recently had a discussion with SC DES staff on plans to continue to meet regulatory collocation requirements in 2024. The EPA believes that the SC DES has a good plan for maintaining compliance with PM_{2.5} collocation requirements.

Table 20: PM_{2.5} Design Criteria – Minimum Required Collocated Monitors

PQAO	Method	AQS Method Code	Number of Primary Monitors	Minimum Required Collocated Monitors	Number of Collocated Monitors	Site Names (AQS IDs) of Collocated Sites	Requirements Met (Y/N)
SC DES	FRM Gravimetric w/ VSCC	145	8	1	3	Hillcrest (AQS ID: 45-045-0016) Parklane (AQS ID: 45-079-0007) NCFS (AQS ID 45-019-0020)	Y
SC DES	Teledyne T640X at 16.67 LPM	638	0	0	0	Greenville ESC (AQS ID: 45-045-0015)	Y
SC DES	Teledyne T640 at 5.0 LPM	636	3	1	1	Chesterfield (AQS ID: 45-025-0001)	Y

The PM_{2.5} monitoring network meets all design criteria of 40 CFR Part 58.

PM_{2.5} Near-Road Monitoring Requirements
40 CFR Part 58, Appendix D, Section 4.7.1(b)(2)

Regulatory requirements in 40 CFR Part 58, Appendix D, Section 4.1.1(b)(2) require that “CBSAs with a population of 1,000,000 or more persons, at least one PM_{2.5} monitor is to be collocated at a near-road NO₂ station.” One CBSA with a population of 1,000,000 or more persons is partially in the State of

South Carolina, the Charlotte-Gastonia-Concord, NC-SC CBSA, and the MCAQ operates the required PM_{2.5} near-road monitor at the Remount site.

Table 21: PM_{2.5} Design Criteria – Minimum Required SLAMS Near-Road Monitors

CBSA	Minimum Required Near-road PM _{2.5}	Number of Near-road PM _{2.5}	Site Names (AQS IDs) of Existing PM _{2.5} Near-Road	Requirement Met (Y/N)
Charlotte-Concord-Gastonia, NC-SC	1	1	Remount (AQS ID: 37-119-0045) ¹	Y

¹The Remount site is operated by the MCAQ.

The near-road PM_{2.5} monitoring network described in the Network Plan meets the design criteria of 40 CFR Part 58.

**PM_{2.5} Continuous Monitoring Requirements
40 CFR Part 58, Appendix D, Section 4.7.2**

Regulatory requirements for continuous PM_{2.5} monitoring require that “...State, or where appropriate, local agencies must operate continuous PM_{2.5} analyzers equal to at least one-half (round up) the minimum required sites listed in Table D-5 of this appendix.

At least one required continuous analyzer in each MSA must be collocated with one of the required FRM/FEM/ARM (federal reference method/federal equivalent method/approved regional method) monitors, unless at least one of the required FRM/FEM/ARM monitors is itself a continuous FEM or ARM monitor in which case no collocation requirement applies.”

Six MSAs listed in Table 23, below, are required to have continuous monitors. Eight MSAs in or partially in South Carolina have continuous PM_{2.5} monitors as does one site not in an MSA. The requirements are met in all areas in the state.

Table 22: PM_{2.5} Design Criteria – Continuous Monitors

MSA	Minimum Required Continuous PM _{2.5}	Number of Continuous PM _{2.5} Monitors	Site Names (AQS IDs) of Existing PM _{2.5} Monitors	Requirement Met (Y/N)
Augusta-Richmond County, GA-SC	1	1	Trenton (AQS ID: 45-037-0001)	Y
Charleston-North Charleston, SC	1	2	Cape Romain (AQS ID: 45-019-0046) NCFS (AQS ID: 45-019-0020)	Y
Charlotte-Concord-Gastonia, NC-SC	1	5	Garinger (AQS ID: 37-119-0041) ¹ Friendship Park (AQS ID: 37-119-0048) ¹ Remount (AQS ID: 37-119-0045) ¹ Rockwell (AQS ID: 37-159-0021) ² Catawba Longhouse (AQS ID: 45-091-8801) ³	Y
Columbia, SC	1	2	Irmo DJJ (AQS ID: 45-079-0022) Parklane (AQS ID: 45-079-0007)	Y
Florence, SC	0	1	Williams Middle School (AQS ID: 45-041-0003)	Y

Greenville-Anderson-Greer, SC	1	1	Greenville ESC (AQS ID: 45-045-0015)	Y
Myrtle Beach-Conway-North Myrtle Beach SC-NC	1	1	Coastal Carolina (AQS ID 45-051-0008) ⁴	
Spartanburg, SC	0	1	T.K. Gregg (AQS ID: 45-083-0011)	Y
Remainder of State	0	1	Chesterfield (AQS ID: 45-025-0001)	Y

¹The Garinger, Friendship Park, and Remount sites are operated by the MCAQ.

²The Rockwell site is operated by the North Carolina Department of Air Quality.

³The Catawba Longhouse site is operated by the Catawba Nation (CN).

PM_{2.5} Continuous Federal Equivalent Methods

40 CFR § 58.11(e)

The EPA regulations contain provisions for handling data collected using continuous PM_{2.5} FEMs. These procedures are found at 40 CFR §58.11(e). If an agency can demonstrate that the FEM data are not of sufficient comparability to a collocated FRM, then the monitoring agency may request that the FEM data not be used in comparison to the NAAQS.

As long as there is a collocated FRM at a site meeting sample frequency requirements, a NAAQS exclusion may be applied to the PM_{2.5} data from a T640/x for up to two years via the SPM provision in §58.20. In the Network Plan to be submitted in 2025, agencies operating either the T640 or the T640x FEMs must include information on when the firmware upgrade occurred, and when the data alignment function was enabled for each monitor. Also, each agency must include whether the evaluation period caused the FEM to no longer be the primary monitor at the site. If any monitors are proposed to change from a SLAMS to an SPM, then this change must be submitted in an addendum to the Network Plan for the EPA approval.

The SC DES has requested NAAQS exclusion under 40 CFR §58.11(e) for 7 PM_{2.5} continuous FEMs in the Network Plan. Table 23 lists the PM_{2.5} FEM monitors that have been requested by the SC DES to be approved as not comparable to the NAAQS.

Table 23: Continuous PM_{2.5} Monitors Collecting Data Not Comparable to the NAAQS

CBSA	Site Name (AQS ID)	FEM Method Description	FEM Method Code	Comments
Charleston-North Charleston, SC	North Charleston Fire Station(AQS ID: 45-019-0020)	FEM Broadband Spectroscopy	638	NAAQS exclusion for 07/25/22 - 09/05/23 while the monitor did NOT have the data alignment enabled; NAAQS exclusion starting 09/06/23 because this is the first day with the data alignment enabled, resulting in a new method code.
Augusta-Richmond County, GA-SC	Trenton (AQS ID: 45-037-0001)	FEM Broadband Spectroscopy	636	NAAQS exclusion for 06/07/22 - 09/05/23 while the monitor did NOT have the data

				alignment enabled; NAAQS exclusion starting 09/06/23 because this is the first day with the data alignment enabled, resulting in a new method code.
Florence, SC	Williams (AQS ID: 45-041-0003)	FEM Broadband Spectroscopy	636	NAAQS exclusion for 05/11/22 - 09/05/23 while the monitor did NOT have the data alignment enabled; NAAQS exclusion starting 09/06/23 because this is the first day with the data alignment enabled, resulting in a new method code.
Greeville-Anderson-Greer, SC	Greenville ESC (AQS ID: 45-045-0015)	FEM Broadband Spectroscopy	638	NAAQS exclusion starting 09/06/23 because this is the first day with the data alignment enabled, resulting in a new method code.
Columbia, SC	Parklane (AQS ID: 45-079-0007)	FEM Broadband Spectroscopy	638	NAAQS exclusion for 03/18/22 - 09/05/23 while the monitor did NOT have the data alignment enabled; NAAQS exclusion starting 09/06/23 because this is the first day with the data alignment enabled, resulting in a new method code.
Columbia, SC	Irmo DJJ (AQS ID: 45-079-0022)	FEM Broadband Spectroscopy	636	NAAQS exclusion for 01/20/23 - 09/05/23 while the monitor did NOT have the data alignment enabled; NAAQS exclusion starting 09/06/23 because this is the first day with the data alignment enabled, resulting in a new method code.
Spartanburg, SC	TK Gregg (AQS ID: 45-083-0011)	FEM Broadband Spectroscopy	636	NAAQS exclusion for 05/11/22 - 09/05/23 while the monitor did NOT have the data alignment enabled; NAAQS exclusion starting 09/06/23 because this is the first day with the data alignment enabled, resulting in a new method code.

The (Agency) has applied the updated data alignment for all T640s across the South Carolina network and enabled it on September 6, 2023. The EPA appreciates SC DES's cooperation in updating the firmware and enabling it so quickly. The state may evaluate the methods at each site for up to two years with a regionally concurred NAAQS exclusion. Once the evaluation period is over, the state must provide a PM_{2.5} Comparability Assessment for each site to assess the performance and bias statistics to

ensure the data are suitable for comparison to the PM_{2.5} NAAQs. These assessments can be generated here: <https://www.epa.gov/outdoor-air-quality-data/pm25-continuous-monitor-comparability-assessments>.

PM_{2.5} Background and Transport Sites
40 CFR Part 58, Appendix D, Section 4.7.3

Monitoring requirements in 40 CFR Part 58, Appendix D, Section 4.7.3 require that each state install and operate at least one PM_{2.5} site to monitor for regional background concentrations and at least one PM_{2.5} site to monitor for regional transport.

Table 24: PM_{2.5} Regional Background and Transport Monitors

Requirement	Minimum Required	Number of Monitors	Site Names (AQS IDs) of SLAMS	Requirement Met (Y/N)
Background	1	1	Cape Romain (AQS ID: 45-019-0046)	Y
Transport	1	1	Chesterfield (AQS ID: 45-025-0001)	Y

On April 10, 2020, the SC DES temporarily replaced the Chesterfield site (AQS ID: 45-025-0001) continuous PM_{2.5} TEOM sampler with a T640 and redesignated the monitor as an SPM in AQS. Use of the TEOM sampler resumed on April 23, 2021, but the monitor was not returned to a SLAMS designation. The EPA requests that the SC DES update the monitor’s designation in AQS to reflect what is represented in the Network Plan.

As identified in Table 24, the SC DES meets the requirements of 40 CFR Part 58 by operating one background site and one transport site.

PM_{2.5} Chemical Speciation Network (CSN)
40 CFR Part 58, Appendix D, Section 4.7.4

Monitoring rules in 40 CFR Part 58, Appendix D, Section 4.7.4 require that each state conduct chemical speciation monitoring and analyses at sites designated to be part of the PM_{2.5} Speciation Trends Network (STN). The selection and modification of these STN sites must be approved by the Administrator. The PM_{2.5} CSN includes STN stations and supplemental speciation stations that provide chemical species data of fine particulate. The EPA funds one STN monitor in South Carolina at the Parklane site (see Table 25).

Table 25: PM_{2.5} Chemical Speciation Network – Non-SLAMS Monitors

CBSA	Site Name (AQS ID) of CSN Monitor
Columbia, SC	Parklane (AQS ID: 45-079-0007)

Photochemical Assessment Monitoring Stations (PAMS)
40 CFR Part 58, Appendix D, Section 5.0

With the promulgation of a new O₃ NAAQS on October 1, 2015, the EPA finalized changes to the PAMS requirements. On December 20, 2019, the EPA revised the start date for the updated stations. The

revision was published in the *Federal Register* on January 8, 2020, and extends the date by which the stations were to begin operating from June 1, 2019, to June 1, 2021. Since the state does not have a CBSA with a population of one million or more, it is not required to meet the PAMS requirement.

Air Toxics Monitoring Network

As part of the National Air Toxics Trends Station (NATTS) network, the SC DES samples for metals, semi-volatile organic compounds, carbonyls, and volatile organic compounds (SVOCs) at the Chesterfield monitoring site (AQS ID: 45-025-0001). The SC DES added ethylene oxide (EtO) sampling as part of the Tier 1 target analytes at Chesterfield in November 2020 and contracted with Eastern Research Group (ERG) to analyze EtO samples. All other NATTS analytes are analyzed by the SC DES. The collection and analysis of NATTS samples at the Chesterfield site is conducted in accordance with an EPA-approved quality assurance project plan (QAPP).

The SC DES was awarded a community-scale Air Toxics Monitoring Grant to collect air samples for a one-year period at three locations in several North Charleston area environmental justice communities and at one high traffic location. The sampling started on May 11, 2022, and the samples will be analyzed for EtO. The sites are Irving site (AQS ID: 45-019-0021), Rosemont site (AQS ID: 45-019-0009), and Gethsemane site (AQS ID: 45-019-0022), and FAA site (45-019-0048) (high traffic site). The results will be uploaded to AQS. The EPA appreciates the SC DES’s efforts on this study and for the operation of the NATTS program.

The SC DES also collects samples for SVOCs in the Columbia, SC MSA at the Parklane site(AQS ID: 45-079-0020) site. Air toxics sampling at Parklane is conducted at the SC DES’s discretion, and according to SC DES, it is not collected using the EPA or state-match funds. The EPA recommends that the SC DES develop and approve a QAPP for air toxics sampling to ensure that the data is of sufficient quality for SC DES's intended use, such as a risk screening analysis and/or sharing with the public.

Non-SLAMS Monitoring

The Network Plan also includes the following non-SLAMS monitors summarized in Table 26. These monitors include criteria pollutant monitoring comparable to the NAAQS, continuous PM_{2.5} monitoring used for the AQI, air toxics monitoring, and/or tribal air monitoring.

Table 26: Non-SLAMS Monitors

CBSA	Pollutant(s)	Site Name (AQS ID) of Non-SLAMS Monitor	Monitor Type	NAAQS Comparable
Augusta-Richmond County, GA-SC	SO ₂	Trenton (AQS ID: 45-037-0001)	SPM – 2yr rotating	Y - but only operating for 2 years
Charleston-North Charleston, SC	NO ₂	Jenkins Ave. Fire Station (AQS ID: 45-019-0003)	SPM	Y
Charleston-North Charleston, SC	NO ₂	Cape Romain (AQS ID: 45-019-0046)	SPM	Y
Charleston-North Charleston, SC	PM _{2.5} Cont.	NCFS (AQS ID: 45-019-0020)	SPM	Y

Charleston-North Charleston, SC	SO ₂	York Landfill (AQS ID: 45-091-0008)	SPM – 2yr rotating	Y - but only operating for 2 years
Charlotte-Concord-Gastonia, NC-SC	PM _{2.5} Cont., O ₃	Catawba Longhouse (AQS ID: 45-091-8801) ¹	Tribal	Y
Columbia, SC	PM _{2.5} Cont.	DJJ (AQS ID: 45-079-0022)	SPM	Y
Columbia, SC	SVOC, Precipitation, PM ₁₀ , Chemicals	Parklane (AQS ID: 45-079-0007)	SPM	Y – only for PM ₁₀
Columbia, SC	O ₃	Congaree Bluff (AQS ID: 45-079-0021)	SPM	Y for Congaree National Park Only
Columbia, SC	NO ₂	Sandhill Experimental Station (AQS ID: 45-079-1001)	SPM	Y
Florence, SC	Pb	JCI Entrance (AQS ID: 45-041-8002) JCI Woods (AQS ID: 45-041-8003)	SPM	Y
Greenville-Anderson, SC	PM _{2.5} Cont.	Greenville ESC (AQS ID: 45-045-0015)	SPM	Y
Spartanburg, SC	PM _{2.5} Cont.	T.K. Gregg (AQS ID: 45-083-0011)	SPM	Y
Not in an MSA	O ₃ , Metals, Carbonyls, SVOCs, VOCs, Precipitation	Chesterfield (AQS ID: 45-025-0001)	SPM	Y for O ₃ , N/A for all else

¹The Catawba Longhouse site is operated by the CN

Memoranda of Agreement (MOA) with Neighboring State and Local Air Monitoring Agencies 40 CFR Part 58, Appendix D, 2(e)

Section 2(e) of Appendix D to 40 CFR Part 58 states:

“The EPA recognizes that State or local agencies must consider MSA/CSA boundaries and their own political boundaries and geographical characteristics in designing their air monitoring networks. 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.”

The SC DES maintains MOAs to address minimum monitoring requirements with the GA EPD, the NC DAQ, and the MCAQ. These MOAs are summarized in Table 27.

Table 27: MOAs to Meet Monitoring Requirements for CBSAs Crossing Jurisdictional Boundaries

CBSA	Agencies on the MOA	Pollutants	Date of Agreement	Expiration
Augusta-Richmond County, GA-SC	SC DES, GA EPD	PM ₁₀ , PM _{2.5} , O ₃ , and other criteria pollutants as necessary	January 2017	Every 10 years
Charlotte-Concord-Gastonia, NC-SC	SC DES, NC DAQ, MCAQ	Criteria pollutant monitoring required by 40 CFR 58, Appendix D	July 1, 2016	Every 10 years
Myrtle Beach-Conway-North Myrtle Beach, SC MSA	SC DES, NC DAQ	O ₃ and other criteria pollutants as necessary	July 1, 2015	Every 10 years

The EPA approves of the SC DES agreements to share regulatory monitoring requirements for the Charlotte, Myrtle Beach, and Augusta areas.

Monitoring Siting Criteria and Site Assessments

40 CFR Part 58, Appendix E

In reference to the Network Plan, 40 CFR § 58.10(a)(1) states:

“The plan shall include a statement of whether the operation of each monitor meets the requirements of appendices A, B, C, D, and E of this part, where applicable. The Regional Administrator may require additional information in support of this statement.”

The Network Plan includes assessment information for all monitoring sites. The EPA appreciates the inclusion of this information and the work that the SC DES has done to evaluate siting criteria at all its monitoring sites. The EPA understands that the SC DES is still working to resolve siting criteria issues identified by its own assessments and in recent EPA audits and appreciates the SC DES’s continued progress in resolving these issues.

Areas with Environmental Justice Concerns

The EPA recognizes that the Network Plan submitted in 2024 meets the federal regulatory requirements outlined at 40 CFR § 58.10 and Appendices A through E, including consideration of areas with susceptible and vulnerable populations. Executive Order 14096: Revitalizing Our Nation’s Commitment to Environmental Justice for All defines environmental justice as:

“The just treatment and meaningful involvement of all people, regardless of income, race, color, national origin, Tribal affiliation, or disability, in agency decision-making and other Federal activities that affect human health and the environment so that people:

- (i) are fully protected from disproportionate and adverse human health and environmental effects (including risks) and hazards, including those related to climate change, the cumulative impacts of environmental and other burdens, and the legacy of racism or other structural or systemic barriers; and

(ii) have equitable access to a healthy, sustainable, and resilient environment in which to live, play, work, learn, grow, worship, and engage in cultural and subsistence practices.”

For future plans, including next year’s plan, we encourage the SC DES to continue to evaluate areas with environmental justice concerns related to ambient air monitoring. When proposing future changes to the air monitoring network (such as relocating existing air monitoring sites or proposing new sites) and in the upcoming five-year Network Assessment due in 2025 as required by 40 CFR § 58.10(d), the EPA recommends that SC DES describe which factors it relied on in its air monitoring network design decisions and how weight was apportioned to each. Where possible, SC DES should include additional detail about the environmental justice considerations taken into account related to the ambient air quality network. This would support transparency in the decision-making process and provide the impacted communities and their representatives with the information needed to meaningfully participate.

American Rescue Plan

The SC DES and the CN received funding in 2022 under the American Rescue Plan (ARP) to upgrade the existing ambient air monitoring network. As a recipient of this ARP direct award grants, the SC DES and the CN initiated procurement requests for equipment purchases and began installation of equipment once received. The remaining equipment will be purchased before the end of the grant period unless an extension is received. The Table 28 below indicates for the SC DES the receipt and installation status of equipment funded under the ARP and Table 29 below indicates the planned equipment upgrades for the CN. Quarterly reports must be submitted as well as a final progress report that is due within 120 days of the project end date. Prior to collecting environmental information, the SCDES and the CN must submit to the EPA a QAPP for all new pollutants to be monitored and methods to be used for approval 180 days prior to collection of environmental data.

Table 28. SC DES ARP Monitoring Equipment Upgrades

AQS Site ID (Location)	Equipment Description	Date Received
45-037-0001	T640 Monitor	5/2023
45-037-0001	2025i Sampler	4/2024
45-041-0003	T640 and Enclosure	5/2023
45-045-0016	T640 and Enclosure	5/2023
45-079-0007	T640X	5/2023
45-063-0010	T640X Enclosure	5/2023
45-083-0011	T640 and Enclosure	5/2023
45-051-0008	T640 and Enclosure	5/2023
45-025-0001	T640 and Enclosure	5/2023

45-045-0015	T640X	5/2023
45-063-0010	T640 and Enclosure	5/2023
45-019-0046	T640	5/2023
Multiple	4 x Agilair 8864	5/2023
Multiple	2 x Teledyne T703U	12/2023

Table 29: Catawba Nation ARP Equipment Upgrades

PQAO	Equipment Description
Catawba Nation (CN)	Ozone Analyzer – 1 Wind Speed and Direction Sensor – 1 FEM PM _{2.5} monitor – 1 Flow calibrator - 1 Flow meter – 1 Zero Air Generator - 1

Inflation Reduction Act – Clean Air Act (CAA) Section 103 Direct Award

The SCDES will receive funding in 2023 under Section 60105(f) of the Inflation Reduction Act, which provides for “grants and other activities authorized under subsections (a) through (c) of section 103 and section 105 of the Clean Air Act.” The CAA Section 103 statutory authority for this action specifically authorizes “the coordination and acceleration of, research, investigations, experiments, demonstrations, surveys, and studies relating to the causes, effects (including health and welfare effects), extent, prevention, and control of air pollution.” As recipients of IRA CAA grants, these agencies will prepare and initiate procurement requests for equipment purchases and/or contract support service, and plan for timely set-up and installation of equipment. Remaining equipment will be purchased before the end of the grant period unless an extension is approved. The table below indicates the air monitoring equipment funded under these IRA CAA grants. Since some agencies are using these funds for activities other than air monitoring, not all agencies receiving grants are listed below. Quarterly reports will be submitted as well as a final progress report within 120 days of the applicable project end date. Prior to the collection of environmental information, including air monitoring data, agencies must have a QAPP in place that has been approved by the EPA. The QAPP, which should cover all pollutants and monitoring methods not already covered in an approved QAPP, to be submitted to the EPA for approval 180 days prior to the planned collection of environmental information.

Table 30. IRA CAA Monitoring Equipment Upgrades

Location	Equipment Description
TBD between Chesterfield and Parklane	Large shelter Upgrade
TBD between Chesterfield and Parklane	Small Shelter Upgrade
NA	Laptop with Docking Shelter and Bag
NA	Laptop with Docking Shelter and Bag with Air Modeling Enhancement
NA	EtO NATTS Sampling Analysis (65 per year x 3 years)

Waivers of Requirements

The EPA’s air monitoring regulations allow for the waiver of requirements in specific instances. The EPA requires ongoing waivers to be renewed every five years as part of the network assessment.

SC DES requests in the Network Plan a waiver of a specific 40 CFR Part 58, Appendix E siting requirement at the Greenville ESC site (AQS ID: 45-045-0015). Specifically, a waiver of the word “continuous” in the requirement for at least 270 degrees of continuous unobstructed airflow in 40 CFR Part 58 Appendix E, Section 2.3 (b).

Forty CFR Part 58, Appendix E Section 2.3 “Spacing From Obstructions” subpart (b) states that

A probe inlet located near or along a vertical wall is undesirable because air moving along the wall may be subject to removal mechanisms. A probe inlet must have unrestricted airflow with no obstructions (as defined in paragraph (a) of this section – see [https://www.ecfr.gov/current/title-40/appendix-Appendix%20E%20to%20Part%2058#p-Appendix-E-to-Part-58\(a\)](https://www.ecfr.gov/current/title-40/appendix-Appendix%20E%20to%20Part%2058#p-Appendix-E-to-Part-58(a))) in a continuous arc of at least 270 degrees. An unobstructed continuous arc of 180 degrees is allowable when the applicable network design criteria specified in appendix D of this part (see <https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-58/appendix-Appendix%20D%20to%20Part%2058>) require monitoring in street canyons and the probe is located on the side of a building. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, there must be a minimum of 2.0 meters of horizontal separation from walls, parapets, and structures for rooftop site placement.

In 40 CFR Part 58, Appendix E Section 4 “Waiver Provisions”, section 4.2 states that “For an existing site, a waiver may be granted if either the criterion in section 4.1.1 or the criterion in 4.1.2 of this appendix is met.”:

4.1.1 The site can be demonstrated to be as representative of the monitoring area as it would be if the siting criteria were being met.

4.1.2 The monitor or probe cannot reasonably be located so as to meet the siting criteria because of physical constraints (e.g., inability to locate the required type of site the necessary distance from roadways or obstructions).

The Greenville ESC site (AQS ID: 45-045-0015) has two obstructions: Tree C and Tree D, as referenced in Appendix G of the Network Plan, that prevent at least 270 degrees of continuous unobstructed air flow. This site met previous siting requirements for at least 270 degrees of non-continuous unobstructed airflow until requirements were updated with the 2024 PM_{2.5} NAAQS update. The EPA recognizes that due to underground utilities SC DES is unable to remove either tree to meet the new siting requirements. After reviewing the waiver request, the EPA believes that the airflow arc being noncontinuous at this site will not impact the representativeness of the measurements as if siting criteria were being met.

The EPA approves the waiver of the word “continuous” in the 40 CFR 58 Appendix E Section 2.3 (b) requirement that “...a probe inlet must have unrestricted airflow with no obstructions (as defined in paragraph (a) of this section) in a continuous arc of at least 270 degrees”. This waiver does not waive any other siting requirements for the Greenville Site, including the requirement for at least 270 degrees of total unobstructed airflow.

All other siting criteria must continue to be met at this site. The EPA recommends SC DES continue to seek permission to remove “Tree D” as referenced in Appendix G to the Network Plan. If the tree cannot be removed, SC DES should reassess and re-request this this waiver in the 2025 Network Plan along with the next Network Assessment.

Table 31: Summary of EPA Approved Waivers of Requirements

CBSA	Monitoring Site(s) Affected	Pollutant(s)	CFR Requirement Waived	EPA Waiver Authority/Rationale	Year Waiver First Granted	Waiver Expiration Date	Comments
Columbia, SC	Congaree Bluff (AQS ID: 45-079-0021)	O ₃ , SO ₂	40 CFR Part 58, Appendix E, Section 2.3(b) & 2.4(a) ¹	40 CFR Part 58, Appendix E, Section 4.1.2 ²	2016	2025	Approval of spacing from trees requirements
Florence, SC	JCI Woods (AQS ID: 45-041-8003)	Pb	40 CFR Part 58, Appendix E, Section 2.3(b) ¹	40 CFR Part 58, Appendix E, Section 4.1.1 ³	2020	2025	Approval of spacing from obstructions
Greenville-Anderson-Greer, SC	Greenville ESC (45-045-0015)	SO ₂ , NO ₂ , PM _{2.5} , PM ₁₀	“continuous” aspect of 40 CFR Part 58 Appendix E Section 2.3(b)	40 CFR Part 58, Appendix E, Section 4.1.1	2024	2025	Approval of Non-continuous 270 degree unrestricted airflow arc

¹These waivers were granted prior to the rule update. These are the citations to the current requirements.

² This waiver was requested under the previous rule and the waiver provision was located under 40 CFR Part 58 Appendix E, Section 10.1.2

³ This waiver was requested under the previous rule and the waiver provision was located under 40 CFR Part 58 Appendix E, Section 10.1.1