



REGION 4

ATLANTA, GA 30303

October 30, 2023

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 state of South Carolina's 2023 Annual Ambient Air Monitoring Network Plan (Network Plan) dated July 7, 2023. The Network Plan is required by 40 Code of Federal Regulations (CFR) §58.10. The U.S. Environmental Protection Agency (EPA) Region 4 understands that the South Carolina Department of Health and Environmental Control (SC DHEC) 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 SC DHEC is in the process of increasing the number of continuous Federal Equivalent Method (FEM) monitors, specifically Teledyne T640 and T640x monitors, in its fine particulate matter (PM_{2.5}) network and reducing the number of filter-based, Federal Reference Method (FRM) monitors. The EPA supports this effort, and this transition will save resources as well as provide higher time resolution PM_{2.5} measurements in more areas of the state. The EPA staff recently discussed with SC DHEC staff the state's plans to continue to meet regulatory PM_{2.5} collocation requirements in 2023 during this transition. Based on this discussion, the EPA believes that the SC DHEC has a good plan for maintaining compliance with PM_{2.5} collocation requirements.

Please note that on July 21, 2023, the Office of Management and Budget released revised delineations of core based statistical areas and guidance on uses of the delineations of these areas (<https://www.whitehouse.gov/wp-content/uploads/2023/07/OMB-Bulletin-23-01.pdf>). We encourage all agencies to review and consider these delineations in preparation for developing the Network Plan due by July 1, 2024, including any proposed changes that may need to be implemented in calendar year 2025.

The EPA approves the proposed monitoring network changes and all components of South Carolina's Network Plan. 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 Katy Lusky at (404) 562-9130 or Katherine Beck at (404) 562-8061.

Sincerely,

Anthony G. Toney
Acting Director

Enclosure

cc: Micheal Mattocks, Assistant Bureau Chief, BEHS
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2023 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 2023 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 6, 2021, 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, 2022, 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, 2022, Population Estimates

MSA Name	Population
Charlotte-Gastonia-Concord NC-SC	2,756,069
Greenville-Anderson, SC	958,958
Columbia, SC	847,686
Charleston-North Charleston-Summerville, SC	830,529
Augusta-Richmond County, GA-SC	624,083
Myrtle Beach-Conway-North Myrtle Beach, SC-NC	536,165
Spartanburg, SC	345,831
Hilton Head Island-Bluffton, SC	228,410
Florence, SC	199,119
Sumter, SC	134,925

The estimated 2022 census numbers indicate that the population of the Myrtle Beach-Conway-North Myrtle Beach, SC-NC MSA is now over 500,000 people. The Myrtle Beach area is now subject to additional minimum monitoring requirements that are discussed in the pollutant sections below.

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 Health and Environmental Control (SC DHEC) proposed changes to its monitoring network for 2023 through 2024. 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: Monitors Proposed for Relocation or Discontinuation

AQS ID	CBSA	Site Name	Pollutant	Type	Comments
45-019-0048	Charleston-North Charleston, SC	FAA Beacon Irving Street	PM _{2.5}	SPM	On January 5, 2023, the PM _{2.5} monitor was shut down.
45-019-0003	Charleston-North Charleston, SC	Jenkins Ave	PM ₁₀	SLAMS	The SLAMS PM ₁₀ monitor at the Jenkins Ave. site was shut down on February 2, 2023, and relocated to the North Charleston Fire Station monitoring site.
45-019-0020	Charleston-North Charleston, SC	North Charleston Fire Station	PM ₁₀	SLAMS	On February 2, 2023, the PM ₁₀ monitor was relocated from the Jenkins Ave. Fire Station monitoring site to the North Charleston Fire Station site.
45-091-0008	Charlotte-Concord-Gastonia, NC-SC	York Landfill	SO ₂	SPM	A special purpose rotating SO ₂ monitor was operated at the York Landfill site from 2020 to 2022. The SO ₂ monitor was then shut down on January 13, 2023, and will resume operation in 2024.
45-079-0021	Columbia, SC	Cayce City Hall	PM ₁₀	SPM	Approval to relocate the PM ₁₀ monitor at the Cayce City Hall site to the Parklane site was granted by EPA on February 22, 2023. The Cayce City Hall site was shut down on May 30, 2023.
45-079-0007	Columbia, SC	Parklane	SVOC	SPM	SVOC monitoring was discontinued on January 30, 2023. Acknowledged.
45-063-0008	Columbia, SC	Irmo	PM _{2.5} cont.	SPM?	The Irmo DJJ site began continuous monitoring of PM _{2.5} on January 20, 2023. It replaced the Irmo site after the landowner requested the site relocation. The replacement site was approved by the EPA on October 26, 2021. The continuous PM _{2.5} monitor at Irmo site was discontinued on January 20, 2023. The Irmo site and its remaining PM _{2.5} FRM sampler were shut down on June 2, 2023.
45-079-0022	Columbia, SC	Irmo DJJ	PM _{2.5}	SPM	The Irmo DJJ site was established on January 20, 2023, as a replacement for the Irmo monitoring site. The replacement site was approved by EPA on October 26, 2021. The state began operating the PM _{2.5} monitor on January 20, 2023.

45-041-0003	Florence, SC	Williams Middle School	PM _{2.5}	SPM	On June 13th, 2023, Teledyne released a T640 and T640X data alignment firmware update which is meant to better align data collected on these monitors to FRM samplers. To evaluate the comparability of the data to the FRM samplers in the network, the T640 monitor at this site will be designated a SPM.
45-051-0008	Myrtle Beach, SC	Coastal Carolina	PM _{2.5}	SPM	According to the U.S. Census 2022 data, the population in the MSA is above the minimum threshold for PM ₁₀ and PM _{2.5} , requiring one PM ₁₀ monitor and one PM _{2.5} monitor. The Coastal Carolina site was approved by the EPA on December 20, 2022, as a location for monitoring the expected maximum concentrations for PM _{2.5} and PM ₁₀ in the MSA. One Teledyne T640 monitor began monitoring for continuous PM _{2.5} at the Coastal Carolina monitoring site on February 23, 2023.
45-019-0046, (45-025-0001)	multiple	Chesterfield	NATTS	Other	Collocated ethylene oxide sampling at the Chesterfield site was discontinued on December 19, 2022. Acknowledged.

Table 3 summarizes requested monitor startups, as well as the EPA’s decision and rationale for approval/disapproval/acknowledgement of each proposed startup.

Table 3: Proposed Changes in Monitoring

AQS ID	CBSA	Site Name	Pollutant	Type	Comments
45-019-0020	Charleston-North Charleston, SC	NCFS	PM _{2.5}	SLAMS	February 2, 2023, the continuous PM _{2.5} monitor was replaced with a Teledyne T640X, which also monitors PM ₁₀ .
45-037-0001	Augusta-Richmond County, GA-SC	Trenton	PM _{2.5}	SLAMS	Approved. SPM was converted to SLAMS to meet the new minimum monitor requirement for the Augusta area.
45-051-0008	Myrtle Beach-Conway-North Myrtle Beach, SC-NC	Coastal Carolina	PM ₁₀ , PM _{2.5}	SLAMS	Approved. Start-up of a Federal Equivalent Method (FEM) monitor that measures both PM _{2.5} and PM ₁₀ (Teledyne T640x) and a PM _{2.5} Federal Reference Method (FRM) sampler to meet new minimum monitoring requirements triggered by population increase in Myrtle Beach. Expected operation in 2023.

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 2023 Network Plan was available for public review and comment from April 28, 2023, through May 30, 2023. The Network Plan meets the public comment requirements of 40 CFR 58.10.

Operating Schedules

40 CFR § 58.12

The operating schedules proposed by the SC DHEC 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 4). The SC DHEC 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 DHEC report AQI values for the Augusta-Richmond County GA-SC MSA.

Table 4: AQI Reporting

MSAs Reporting
Greenville-Anderson, SC
Columbia, SC
Charleston-North Charleston, SC
Augusta-Richmond County, GA-SC
Myrtle Beach-Conway-North Myrtle Beach, SC-NC
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 DHEC meets the NCore requirement by operating the Parklane site in Columbia.

Table 5: 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 5 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 6: 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(NCore)	2	2	1	Parklane (AQS ID: 45-079-0007) Sandhill (AQS ID: 45-079-1001)	Y
Florence, SC	0	1	0	Pee Dee Exp. Station (AQS ID: 45-031-0003)	Y

Greenville-Anderson, 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-NC	1	1	0	Coastal Carolina (AQS ID: 45-051-0008)	Y
Spartanburg, SC	1	1	0	North Spartanburg Fire Station #2 (AQS ID: 45-083-0009)	Y

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 DHEC. The 2020-2022 O₃ design value (DV) for that site was 0.058 parts per million, which is less than 85.0% of the NAAQS. According to Table D-2 of Appendix D to 40 CFR Part 58, the Myrtle Beach-Conway-North Myrtle Beach SC-NC MSA, with a population over 350,000 and a DV less than 85% of the NAAQS, is not required to have a second O₃ monitor. However, if the 2021-2023 DV is valid and above 85% of the NAAQS, the EPA requests that the SC DHEC and the NC DAQ collaborate to characterize the area of highest O₃ concentration in the MSA, and to present the results of this investigation in their respective Network Plans due July 1, 2025. The results of this investigation could indicate that the expected maximum concentration is in an area other than the area near the Coastal Carolina site. The EPA is willing to also participate in the discussions and help with this analysis. The characterization of O₃ concentrations in the MSA would be used to propose a new O₃ monitoring site in the MSA.

O₃ monitors located 5-10 miles downwind from concentrated NO_x emission sources are often representative of expected O₃ maximum concentrations in the Southeast. The characterization of the Myrtle Beach area could consider current population trends, traffic, and frequent afternoon wind directions during O₃ season. 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>.

The O₃ monitoring network outlined in the Network Plan and Table 6 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 7: 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 DHEC to operate an additional CO monitor at this time.

Table 8: 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 7 and 8 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 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 is not expected to begin operation until early 2024.

Table 9: 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-Gastonia-Concord, 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 10: 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 EPA’s website at <http://www.epa.gov/ttnamti1/svpop.html>. The SC DHEC operates one RA-40 monitor at its Greenville ESC site in the Greenville-Anderson, SC CBSA.

Table 11: 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, 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 2022 population estimates and 2017 emission inventory data, the minimum numbers of monitors required for the CBSAs in South Carolina are summarized in Table 12.

Table 12: SO₂ Design Criteria – Minimum Required SLAMS PWEI Monitors

CBSA	2022 Population Estimate	2017 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	2,756,069	5,648	8,801	1	1	Garinger (AQS ID:37-119-0041) ¹	Y
Columbia, SC	847,686	3,709	2,111	0	1	Parklane (AQS ID: 45-079-0007)	Y
Charleston-North Charleston, SC	830,529	8,173	6,231	1	1	Jenkins Ave. (AQS ID: 45-019-003)	Y
Greenville, SC	958,958	728	579	0	1	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 DHEC 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 DHEC does not operate any SO₂ monitoring sites to meet the DRR requirements.

Table 13: 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 DHEC submitted its 2022 annual emission report with its 2023 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 responded in a separate correspondence dated September 20, 2023. The next annual SO₂ emissions report for these facilities is due July 1, 2024.

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 DHEC is not required by the Regional Administrator to operate an SO₂ monitor at this time.

Table 14: 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 DHEC 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 DHEC’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 15 lists the two monitors that the SC DHEC includes in its SO₂ rotating background network and that are currently operating. The SC DHEC 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 15: SO₂ Rotating Background Monitoring

CBSA	Site Name (AQS ID)	Frequency of Operation	Next Expected Years of Operation	Monitoring Objective in Network Plan
Columbia, SC	Congaree Bluff (AQS ID: 45-079-0021)	Every other 2 years	2022-2023	General Background
August-Richmond County, GA-SC	Trenton (AQS ID: 45-037-0001)	Every other 2 years	2022-2023	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 DHEC and Clarios, LLC (formerly Johnson Controls Battery Group) conduct 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 NAAQS. The company and the SC DHEC conduct 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 DHEC discontinued two of three sites near the Clarios facility – JCI Entrance (AQS ID: 45-041-8002) and JCI Railroad (AQS ID: 45-041-8001).

The EPA requested that the SC DHEC continue to monitor for Pb near the Clarios facility at one site – the JCI Woods site (AQS ID: 45-041-8001). Pb monitoring should continue if there is a possibility of Pb emissions or re-entrainment of Pb dust. Pb monitoring should continue until the following occurs:

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

The EPA requires that the SC DHEC provide documentation of the permit being revoked and of a cleanup plan that addresses minimizing the re-entrainment of Pb containing dust. The EPA will consider the monitor shutdown request once the SC DHEC provides sufficient information to support a conclusion that ambient Pb concentrations are not expected to exceed the NAAQS given the current and future disposition of the site.

Table 16: 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 EPA rules but is part of a settlement agreement between the SC DHEC, the facility, and community groups. The SC DHEC 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 PQAQ level. The SC DHEC is required to operate one collocated Pb monitor, and it operates it at the JCI Woods site (AQS ID: 45-041-8003) (see Table 17).

Table 17: 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 DHEC	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 DHEC, 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 18: 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 (NCore)	1	1	1	Cayce City Hall (AQS ID: 45-063-0010)	Y
Greenville-Anderson, SC	1	1	0	Greenville ESC (AQS ID: 45-045-0015)	Y
Myrtle Beach-Conway-North Myrtle Beach SC-NC	1	1	0	Coastal Carolina (AQS ID 45-051-0008) ³	Y

¹The Augusta site is operated by the GA EPD

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

³The Coastal Carolina PM₁₀ monitoring is expected to start by the end of 2023

The estimated 2022 census numbers indicate that the population of the Myrtle Beach-Conway-North Myrtle Beach, SC-NC MSA is now over 500,000 people. As a result, the Myrtle Beach area is now required to operate one PM₁₀ monitor, per 40 CFR Part 58, Appendix D, Table D-4.

The Network Plan Addendum, received on October 26, 2022, proposed to meet this requirement by operating a T640x monitor, which measures both PM₁₀ and PM_{2.5}, at the existing Coastal Carolina site (AQS ID 45-051-0008). The EPA’s evaluation of this startup was based primarily on analysis of PM_{2.5} in the Myrtle Beach area. This evaluation is discussed in the PM_{2.5} section and supports the conclusion that the PM₁₀ and PM_{2.5} monitoring requirements are being met by this site. The PM₁₀ levels are typically not near the NAAQS and having one site to measure both PM₁₀ and PM_{2.5} will save the SC DHEC resources. Thus, the EPA approves the startup of PM₁₀ monitoring at the Coastal Carolina site to meet the new PM₁₀ minimum requirement.

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 DHEC is not required to operate any PM₁₀ collocated monitors.

Table 19: 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 DHEC	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 DHEC, GA EPD and MCAQ operate PM_{2.5} SLAMS monitors at 15 sites in CBSAs in or abutting the state (see Table 20).

Table 20: 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(NCore)	1	2	0	Irmo (AQS ID: 45-063-0008) ³ Irmo DJJ (AQS ID: 45-079-0022) ³ Parklane (AQS ID: 45-079-0007)	Y
Greenville-Anderson, SC	1	2	0	Greenville ESC (AQS ID: 45-045-0015) Hillcrest (AQS ID: 45-045-0016)	Y
Florence, SC	0	1	0	Williams Middle School (AQS ID: 45-041-0003)	Y
Spartanburg, SC	0	1	0	T.K. Gregg (AQS ID: 45-083-0011)	Y
Myrtle Beach-Conway-North Myrtle Beach SC-NC	1	1	0	Coastal Carolina (AQS ID 45-051-0008) ⁴	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

³The SC DHEC will relocate the Irmo Site monitors to the Irmo DJJ Site due to access issues.

⁴PM_{2.5} monitoring at the Coastal Carolina Site is expected to start in 2023

The SC DHEC previously proposed relocating the Irmo site (AQS ID: 45-063-0008) to the Irmo Department of Juvenile Justice (DJJ) site (AQS ID: 45-079-0022). In 2019, the owners of the property where the Irmo site is located requested the monitoring site be removed from their property. After working with EPA, the SC DHEC was able locate a suitable site 2.4 miles northeast from the Irmo site. The demographics and location of the Irmo DJJ site are similar to the original Irmo site, and meet the requirements of 40 CFR Part 58, Appendix E. As such, the EPA previously approved relocating the Irmo monitors to the Irmo DJJ PM_{2.5} site. The monitors were installed and operating by January 20, 2023.

The estimated 2022 census numbers indicate that the population of the Myrtle Beach-Conway-North Myrtle Beach, SC-NC MSA is now over 500,000 people. The Myrtle Beach area is now required to install one PM_{2.5} monitor to meet the minimum monitoring requirements of 40 CFR Part 58, Appendix D, Table D-5. In February 2023, the SC DHEC installed and began operating a T640 at the Coastal Carolina site to measure PM_{2.5} and is planning to install a T640x to monitor PM₁₀ by the end of the year. The EPA approves the SC DHEC's plans for the PM_{2.5} monitoring at the Coastal Carolina site, as well as the PM₁₀ monitoring required to begin by December 31, 2023.

The level of the PM_{2.5} annual NAAQS is 12.0 micrograms per cubic meter (µg/m³) and the DV is calculated by taking the annual arithmetic mean, averaged over 3 years. The 2020 DV at the Augusta site is 10.3 µg/m³, which is greater than 85% of the NAAQS. According to 40 CFR Part 58, Appendix D, Table D-5, two PM_{2.5} monitors are required in the Augusta-Richmond County MSA, based on the 2020 DV and the MSA’s estimated 2019 population of 608,980. The SC DHEC operates one required SLAMS (FRM) monitor, as well as and one continuous FEM monitor, at the Trenton monitoring site. The second required SLAMS monitor is located at the Augusta monitoring site in Georgia, operated by the Georgia Environmental Protection Division.

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 DHEC 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 DHEC will operate more Teledyne T640 and T640x monitors (AQS method codes 636 and 638 respectively). The EPA staff recently had a discussion with SC DHEC staff on plans to continue to meet regulatory collocation requirements in 2023 as FEM methods are started up and fewer FRM samplers are operated. The EPA believes that the SC DHEC has a good plan for maintaining compliance with PM_{2.5} collocation requirement.

Table 21: 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 DHEC	FRM Gravimetric w/ VSCC	145	8	1	3	Hillcrest (AQS ID: 45-045-0016) Parklane (AQS ID: 45-079-0007) NCF5 (AQS ID 45-019-0020)	Y
SC DHEC	Teledyne T640X at 16.67 LPM	638	0	0	0	Greenville ESC (AQS ID: 45-045-0015)	Y
SC DHEC	Teledyne T640 at 5.0 LPM	636	3	1	1	Chesterfield (AQS ID: 45-025-0001)	Y

¹The EPA has approved relocating the Irmo site to the Irmo DJJ site due to site access issues.

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 22: 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 (AQSIIDs) of Existing PM _{2.5} Near-Road	Requirement Met (Y/N)
Charlotte-Gastonia-Concord, NC-SC	1	1	Remount (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.”

The Teledyne API T640 is an approved FEM for PM_{2.5}, and the T640x is an approved FEM for PM_{2.5}, PM₁₀, and PM_{10-2.5}. These methods were first approved in 2016 and have grown in use around the country. They have become popular due to multiple valued attributes to the method (i.e., one monitor for multiple PM metrics and less maintenance and consumables); however, data assessments have indicated both methods have a positive bias of ~20% relative to state, local, and tribal (SLT) operated PM_{2.5} FRMs. During the most recent PM NAAQS review, the desire for improved FEM/FRM comparability was a key recommendation of the Clean Air Scientific Advisory Committee (CASAC) to the EPA in its review of the PM policy assessment.

Teledyne API worked with the EPA's Office of Research and Development (ORD) on modifications to these methods to address the bias. The EPA ORD’s Reference and Equivalency Program accepts and evaluates applications for new and modified methods and approves new designations and updates if

they meet performance criteria and related requirements defined in 40 CFR Part 53. The EPA recently approved a modification to the firmware of the Teledyne T640 and T640x PM FEMs that includes a “network data alignment” feature to better align data from these methods with STL FRMs. Teledyne API customers can begin applying the upgrades through firmware available from Teledyne. The EPA anticipates this upgrade will lead to greater confidence in the comparability of Teledyne FEMs to collocated FRMs. The Reference and Equivalency Program maintains and publishes a list of all designated and modified FRMs and FEMs that are currently in effect. This list can be found on the web at: <https://www.epa.gov/amtic/air-monitoring-methods-criteria-pollutants>.

For agencies which have previously received NAAQS exclusions for the Teledyne T640/x monitors for PM_{2.5} due to an evaluation period showing unfavorable comparability and performance statistics, we recommend that they apply this upgrade as soon as possible and go back through the evaluation process. 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 2024, 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 EPA approval.

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 23: 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 (NCore)	1	2	Irmo (AQS ID: 45-063-0008) ⁴ Irmo DJJ ⁴ (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, 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) ⁵	

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 Indian Nation (CIN)

⁴SC DHEC will relocate the Irmo continuous monitor to the Irmo DJJ site.

⁵The Coastal Carolina PM_{2.5} monitoring is expected to start in 2023

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 DHEC temporarily replaced the Chesterfield (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 DHEC update the monitor's designation in AQS to reflect what is represented in the Network Plan.

As identified in Table 24, the SC DHEC 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 DHEC 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 DHEC 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 DHEC. 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 DHEC 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 (45-019-0021), Rosemont (45-019-0009), and Gethsemane (45-019-0022), and FAA (45-019-0048) (high traffic site). The results will be uploaded to AQS. The EPA appreciates the SC DHEC's efforts on this study and for the operation of the NATTS program.

The SC DHEC also collects samples for SVOCs in the Columbia, SC MSA at the Parklane (AQS ID: 45-079-0020) site. Air toxics sampling at Parklane is conducted at the SC DHEC's discretion and according to SC DHEC, it is not collected using the EPA or state-match funds. The EPA recommends that the SC DHEC develop and approve a QAPP for air toxics sampling to ensure that the data is of sufficient quality for SC DHEC'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 (AQ5 ID) of Non-SLAMS Monitor	Monitor Type	NAAQS Comparable
Augusta-Richmond County, GA-SC	SO ₂	Trenton (AQ5 ID: 45-037-0001)	SPM – 2yr rotating	Y - but only operating for 2 years
Charleston-North Charleston, SC	NO ₂	Jenkins Ave. Fire Station (AQ5 ID: 45-019-0003)	SPM	Y
Charleston-North Charleston, SC	NO ₂	Cape Romain (AQ5 ID: 45-019-0046)	SPM	Y
Charleston-North Charleston, SC	PM _{2.5} Cont.	NCFS (AQ5 ID: 45-019-0020)	SPM	Y
Charleston-North Charleston, SC	SO ₂	York Landfill (45-091-0008)	SPM – 2yr rotating	Y - but only operated for 2 years
Charlotte-Concord-Gastonia, NC-SC	PM _{2.5} Cont., O ₃	Catawba Longhouse (AQ5 ID: 45-091-8801) ¹	Tribal	Y
Columbia, SC	PM _{2.5} Cont.	DJJ (AQ5 ID: 45-079-0022)	SPM	Y
Columbia, SC	SVOC, Precipitation, PM ₁₀ , Chemicals	Parklane (AQ5 ID: 45-079-0007)	SPM	Y – only for PM ₁₀
Columbia, SC	O ₃	Congaree Bluff (AQ5 ID: 45-079-0021)	SPM	Y for Congaree National Park Only
Columbia, SC	NO ₂	Sandhill Experimental Station (AQ5 ID: 45-079-1001)	SPM	Y
Florence, SC	Pb	JCI Entrance (AQ5 ID: 45-041-8002) JCI Woods (AQ5 ID: 45-041-8003)	SPM	Y
Greenville-Anderson, SC	PM _{2.5} Cont.	Greenville ESC (AQ5 ID: 45-045-0015)	SPM	Y
Spartanburg, SC	PM _{2.5} Cont.	T.K. Gregg (AQ5 ID: 45-083-0011)	SPM	Y
Not in an MSA	O ₃ , Metals, Carbonyls, SVOCs, VOCs, Precipitation	Chesterfield (AQ5 ID: 45-025-0001)	SPM	Y for O ₃ , N/A for all else

¹The Catawba Longhouse site is operated by the CIN

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 DHEC 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 DHEC, 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 DHEC, 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 DHEC, NC DAQ	O ₃ and other criteria pollutants as necessary	July 1, 2015	Every 10 years

The EPA approves of the SC DHEC 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 DHEC has done to evaluate siting criteria at all its monitoring sites. The EPA understands that the SC DHEC is still working to resolve siting criteria issues identified by its own assessments and in recent EPA audits and appreciates the SC DHEC’s continued progress in resolving these issues.

Areas with Environmental Justice Concerns

The EPA recognizes that the Network Plan submitted in 2023 meets the federal regulatory requirements outlined at 40 CFR §58.10 and Appendices A through E (with the exceptions noted in above sections), including consideration of areas with susceptible and vulnerable populations. For future plans, including next year’s plan, we encourage the SC DHEC to continue to evaluate areas with environmental justice concerns¹ related to ambient air monitoring. Where possible, please add detail to the discussion of environmental justice considerations taken into account and related to the ambient air quality network.

¹ Executive Order 14008, January 27, 2021. Federal Register / vol. 86, No. 19, February 1, 2021, p. 7619. Securing Environmental Justice and Spurring Economic Opportunity. Section 219. Policy.

American Rescue Plan

The SC DHEC and the CIN 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 DHEC and the CIN 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 DHEC the receipt and installation status of equipment funded under the ARP and Table 29 below indicates the planned equipment upgrades for the CIN. 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 SCDHEC and the CIN 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 DHEC ARP Monitoring Equipment Upgrades

AQS Site ID (Location)	Equipment Description	Date Received
45-037-0001	T640 Monitor	5/2023
45-037-0001	2025i Sampler	Not received
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	3 x Teledyne T703U	Not received

Table 29: CIN ARP Equipment Upgrades

PQAO	Equipment Description
Catawba Indian Nation (CIN)	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
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Inflation Reduction Act – Clean Air Act (CAA) Section 103 Direct Award

The SCDHEC 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 these IRA CAA grants, agencies will prepare and initiate procurement requests for equipment purchases and/or contract support services, and plan for timely set-up and installation of equipment. The table below indicates the equipment funded under these IRA CAA grants. Quarterly reports must be submitted as well as a final progress report that is due within 120 days of the applicable project end date. Prior to the collection of environmental information, including air monitoring data, agencies must have an EPA-approved QAPP. The QAPP, which should cover all pollutants and monitoring methods not already covered in an approved QAPP, needs 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. EPA granted a renewal of the waiver for the tree obstruction requirement at the Congaree Bluff site in an addendum to the 2020 Network Plan.

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 4 & 11	40 CFR Part 58, Appendix E, Section 10.1.2	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 4	40 CFR Part 58, Appendix E, Section 10.1.1	2020	2025	Approval of spacing from obstacles