



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

NOV 19 2015

Ms. Myra Reece
Chief
Bureau of Air Quality Control
South Carolina Department of Health and
Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

Dear Ms. Reece:

Thank you for submitting the state of South Carolina's 2015 annual ambient air monitoring network plan (Network Plan) dated July 20, 2015. 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 South Carolina Department of Health and Environmental Control (SC DHEC) provided the public a 30-day review period for its draft Network Plan. Comments on the draft plan were submitted by three stakeholders and the final Network Plan includes the SC DHEC response to these comments.

With this letter, the EPA Region 4 is approving the Network Plan with the following exceptions:

1. The EPA does not approve the proposed discontinuation of the ozone (O₃) monitor at the Clemson site (AQS ID 45-072-0002) in the Greenville-Anderson-Mauldin Metropolitan Statistical Area (MSA). At this time the information provided does not adequately support that the Clemson monitor is duplicative. In its Network Plan, SC DHEC indicated that additional information on its shutdown request would be provided in its monitoring network assessment document; however the assessment has not yet been submitted. When it is submitted, the EPA will reconsider its position on the request and discuss it with SC DHEC staff. The monitoring network assessment is required by 40 CFR 58.10(d). We look forward to receiving the additional information for further review and consideration. Please note that the EPA is willing to consider the discontinuation of a different, lower value ozone monitoring site(s) in this MSA.
2. An O₃ monitoring site must be established and approved by the EPA in the Myrtle Beach-Conway-North Myrtle Beach, SC-NC MSA by the beginning of the 2016 O₃ monitoring season. The 2015 Network Plan identifies a site name (Coastal Carolina), location, and AQS ID (45-051-0008) for this site; however, insufficient information was provided for the EPA to approve this location. The EPA requests that SC DHEC submit a Network Plan addendum with a complete site proposal containing, at minimum, the information required by 40 CFR §58.10(b). In addition to the information on the new site, this addendum may also include a formal proposal to relocate the York (AQS ID 45-091-0006) ozone monitor. By this letter, the EPA is approving a temporary shutdown for this monitor in 2016 while SC DHEC relocates the monitoring site. As a

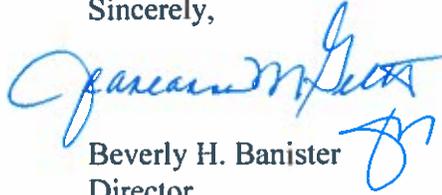
reminder, every addendum to the Network Plan must undergo a public inspection process before being submitted to the EPA.

3. Monitor siting criteria, as described in 40 CFR Part 58, Appendix E must be evaluated and met at each site operating a regulatory monitor. Ideally, each site in the monitoring network should be evaluated annually for compliance with Appendix E siting criteria. The EPA Science and Ecosystem Support Division found SC DHEC monitoring sites which were not meeting regulatory monitor siting criteria in its July 2015 technical systems audit of the SC DHEC air monitoring program. The EPA requests that SC DHEC submit documentation of monitor siting evaluations, determinations, and corrective actions for all of its regulatory monitoring sites in the next annual Network Plan.

Details regarding the EPA's review of the Network Plan are provided in the enclosed comments.

Thank you for working with us to monitor air pollution and promote healthy air quality in South Carolina. If you have any questions or concerns, please contact Gregg Worley at (404) 562-9141 or Ryan Brown at (404) 562-9147.

Sincerely,



Beverly H. Banister
Director

Air, Pesticides and Toxics Management Division

Enclosure

cc: Mr. Robert Brown
Division Director, Air Planning Development and Outreach, SC DHEC

Mr. Scott Reynolds
Director, Division of Air Quality Analysis, SC DHEC

Mr. Thomas Flynn
Manager, Air Data Analysis and Support Section, SC DHEC

The Honorable William Harris
Chief of the Catawba Indian Nation

Mr. Darin Steen
Director, Environmental Services, Catawba Indian Nation

CY 2015 State of South Carolina Ambient Air Monitoring Network Plan The U.S. EPA Region 4 Comments and Recommendations

This document contains the U.S. EPA Region 4 comments and recommendations regarding the state of South Carolina's 2015 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, 2014, 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. These MSAs and the respective July 1, 2014, population estimates from the U.S. Census Bureau are shown in Table 1.

Table 1: Metropolitan Statistical Areas and Populations

MSA Name	Population
Charlotte-Gastonia-Concord NC-SC	2,380,314
Greenville-Anderson-Mauldin, SC	850,965
Columbia, SC	800,495
Charleston-North Charleston-Summerville, SC	727,689
Augusta-Richmond County, GA-SC	583,632
Myrtle Beach-Conway-North Myrtle Beach, SC-NC	417,668
Spartanburg, SC	321,418
Florence, SC	207,030
Hilton Head Island-Bluffton-Beaufort, SC	203,022
Sumter, SC	107,919

Proposed Monitoring Network Changes

The EPA's rationale for approval or disapproval of specific network changes can be found below in the pollutant sections of this document. Monitors proposed for discontinuation and the EPA's determination are summarized in Table 2.

Table 2: Monitors Proposed for Discontinuation

AQS ID	Site Name	Pollutant	Type	Comments
45-072-0002	Clemson	O ₃	SLAMS	Not Approved
45-091-0006	York CMS	O ₃	SLAMS	Temporary shutdown approved for 2016, will be relocated in 2017
45-045-0015	Greenville ESC	PM _{2.5} speciation	SPM	Shutdown. No longer funded by the EPA

The Network Plan also mentioned relocation or possible relocation of the monitors summarized in Table 3. For EPA to approve any of these relocations, SC DHEC must submit these requests in a future Network Plan or as part of a Network Plan addendum with all the requisite information required by 40 CFR §58.10(b).

Table 3: Monitors Proposed for Relocation or Possible Relocation

AQS ID	Site Name	Pollutant	Type	Comments
45-091-0006	York	O ₃	SLAMS	Will be relocated in 2017. SC DEHC must submit a site relocation request as part of the next Network Plan or a Network Plan addendum.
45-015-0002	Bushy Park Pump Station	O ₃	SLAMS	Possible relocation – tree encroachment
45-063-0008	Irmo	PM _{2.5} /other	SLAMS/other	Possible relocation – possible changes in property use by land owner

Operating Schedules
40 CFR § 58.12

The monitoring network proposed in the Network Plan meets the required operating schedules for all continuous analyzers and all manual Pb, PM₁₀, PM_{2.5}, and PM_{2.5} Speciation Trends Network (STN) monitors. SC DHEC has not proposed any changes to its operating schedules in the Network Plan.

Air Quality Index (AQI) Reporting
40 CFR §58.50

AQI reporting is required in MSAs with populations over 350,000. There are four MSAs in the state of South Carolina required to report an AQI: Greenville-Anderson-Mauldin, Columbia, Charleston-North Charleston, and Myrtle Beach-Conway-North Myrtle Beach, SC-NC MSAs. The Network Plan indicates that the daily AQI for all of these areas except the Myrtle Beach-Conway-North Myrtle Beach, SC-NC MSA is available on the EPA’s AIRNow web site. Once an O₃ monitoring site is approved and operating in this MSA in order to satisfy the minimum requirements in 40 CFR Part 58, AQI reporting should also be provided for the Myrtle Beach-Conway-North Myrtle Beach, SC-NC MSA.

National Core (NCore) Monitoring Network
40 CFR Part 58, Appendix D, 3

A requirement that each state operate at least one NCore site is found in 40 CFR Part 58, Appendix D, 3. The state’s approved NCore site is located in Columbia at the Parklane site (AQS ID 45-079-00047) and the SC DHEC has not proposed any changes for the site in its Network Plan.

O₃ Monitoring Requirements
40 CFR Part 58, Appendix D, Table D-2

The Network Plan includes a proposal to discontinue O₃ monitoring at the Clemson site (AQS ID 45-072-0002). The EPA does not approve this proposal at this time. The Network Plan stated that the Clemson site is duplicative, but no information justifying that position was included. The SC DHEC indicated in the Network Plan that additional rationale for discontinuing this site would be contained in the SC DHEC monitoring network assessment document. However, the SC DHEC has not yet submitted

the assessment to the EPA. Thus, the information provided to EPA does not adequately support the position that the Clemson monitor is duplicative.

The available data show that peak and average O₃ concentrations are consistently higher at the Clemson site than they are at other sites in the Greenville area. Forty CFR Part 58, Appendix D, 4.1(b) requires that "Within an O₃ network, at least one O₃ site for each MSA, or CSA if multiple MSAs are involved, must be designed to record the maximum concentration for that particular metropolitan area." Based on EPA's analysis of the data, the Clemson site is required as the maximum concentration site in the MSA. Also, the Clemson site is representative of a more densely populated area than other sites in the Greenville area. We look forward to receiving the additional information for further review and consideration. Please note that, the SC DHEC is currently operating five O₃ monitors in this MSA where two are required at a minimum. The EPA is willing to consider a request to shut down other site(s) in the MSA that are of lower value than the Clemson site.

Due to changes that OMB made to MSA boundaries in February of 2013, Brunswick County, North Carolina has been added to the Myrtle Beach-Conway-North Myrtle Beach, SC-NC MSA. This change triggered the requirement for an O₃ monitor in the MSA based on the population in the new MSA. The 2015 Network Plan identifies a site name (Coastal Carolina), location, and AQS ID (45-051-0008) for this monitor, however insufficient information was provided for the EPA to approve this location. The EPA requests that SC DHEC submit a Network Plan addendum with a complete site proposal with all the requisite information required by 40 CFR §58.10(b). This addendum must undergo a public inspection process before being submitted to the EPA.

The Network Plan also includes a proposal to temporarily discontinue O₃ monitoring at the York CMS site (AQS ID 45-091-0006) for the 2016 O₃ season and that this site will be relocated to a nearby location. The York monitor is an upwind site for the Charlotte-Concord-Gastonia NC-SC MSA and typically reads lower than the other O₃ monitors in the MSA. The EPA approves the temporary shutdown of the York monitor for 2016. Once SC DHEC has identified a suitable replacement site for the York monitor, the EPA requests that SC DHEC submit a Network Plan addendum with a complete site proposal including all the requisite information required by 40 CFR §58.10(b). This addendum must undergo a public inspection process before being submitted to the EPA.

With the exception of the Myrtle Beach-Conway-North Myrtle Beach, SC-NC MSA, the EPA has determined that the O₃ monitoring network outlined in the Network Plan meets the minimum requirements found in 40 CFR Part 58, Appendix D, Table D-2 for the other MSAs in South Carolina.

SO₂ Monitoring Requirements 40 CFR Part 58, Appendix D, 4.4

Ambient air monitoring network design criteria for SO₂ are found in Section 4.4 of 40 CFR Part 58, Appendix D. This section requires that "The population weighted emissions index (PWEI) shall be calculated by states for each core-based statistical area (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 of the following site types: population exposure, maximum concentration, source-oriented, general background, or regional transport. An 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 the latest population estimates and emission inventory data, the minimum number of monitors required for the CBSAs in South Carolina is summarized in Table 4.

Table 4: SO₂ Monitoring System Status

CBSA Name	SLAMS Required	SLAMS Present
Augusta-Richmond County, GA-SC	1	1
Charleston-North Charleston-Summerville, SC	1	1
Charlotte-Gastonia-Concord NC-SC	1	1
Columbia, SC	1	1
Greenville-Anderson-Mauldin, SC	1	1

Based upon the information summarized in Table 4, 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) (see 80 *Federal Register*, No. 162) on August 21, 2015. This rule will require characterization of the air quality near sources with SO₂ emissions greater than 2,000 tons per year by conducting ambient air monitoring or modeling. We encourage SC DHEC to begin having conversations with affected sources in the state to determine an agreed upon approach for meeting the DRR requirements. By January 15, 2016, SC DHEC must submit a final list to the EPA Region 4 identifying the sources around which SO₂ air pollution must be characterized. For sources that SC DHEC decides to evaluate using ambient air monitoring, new site proposals must be included in the 2016 Network Plan. The location of these monitoring sites should be selected using the process outlined in the SO₂ NAAQS Designations Source-Oriented Monitoring Technical Assistance Document¹.

NO₂ Monitoring Requirements
40 CFR Part 58, Appendix D, 4.3

Ambient air monitoring network design criteria for NO₂ are found in 40 CFR Part 58, Appendix D, 4.3. There are three types of required NO₂ monitoring: near-road, area-wide, and Regional Administrator required. 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, 4.3.2. The requirement for near-road monitoring in the Charlotte-Gastonia-Concord NC-SC CBSA will be met using the Remount site (AQ5 ID 37-119-0045) operated by Mecklenburg County’s Land Use and Environmental Services Agency (MCLUESA) in Charlotte, North Carolina. No other CBSA in South Carolina is currently required to have near-road NO₂ monitoring. By January 1, 2017, South Carolina CBSA’s with populations over 500,000 will be required to operate near-road NO₂ monitoring. South Carolina has four CBSAs in this range: Greenville-Anderson-Mauldin, SC; Columbia, SC; Charleston-North Charleston-Summerville, SC, and Augusta-Richmond County, GA-SC. As a result of the 5-year NAAQS review cycle, the NO₂ monitoring requirements may be modified in 2016. The NO₂ near-road monitoring requirements may change for CBSAs with populations between 500,000 and 1,000,000 people, such as the South Carolina CBSAs listed above.

¹ SO₂ NAAQS Designations Source-Oriented Monitoring Technical Assistance Document. U.S. EPA Office of Air Quality Planning and Standards Air Quality Assessment Division, Draft December 2013.
<http://www3.epa.gov/airquality/sulfurdioxide/pdfs/SO2MonitoringTAD.pdf>

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 Garinger High School (AQS ID 37-119-0041) currently operated by MCLUESA will be used for fulfilling the area-wide NO₂ monitoring requirement for the Charlotte-Gastonia-Concord NC-SC CBSA. No other CBSA in South Carolina is required to have area-wide NO₂ monitoring.

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, 4.3.4. Under these provisions, Regional Administrators must require a minimum of forty additional NO₂ monitoring stations nationwide, with a primary focus on siting these monitors in locations to protect susceptible and vulnerable populations. Previously, Region 4 selected the Greenville ESC site (AQS ID 450-045-0015) as a location for an RA-40 NO₂ monitoring site. The full list of NO₂ monitors identified by EPA's Regional Administrators can be found on EPA's website at <http://www.epa.gov/ttnamti1/svpop.html>.

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

40 CFR Part 58, Appendix D, 4.5 requires that "At a minimum, there must be one source-oriented SLAMS [State and Local Air Monitoring Station] site located to measure the maximum Pb concentration in ambient air resulting from each non-airport Pb source which emits 0.50 or more tons per year and from each airport which emits 1.0 or more tons per year..."

Although SC DEC has no sources that exceed the thresholds for Pb monitoring, the Johnson Control Battery Group conducts source-based ambient Pb monitoring at three sites around the Florence Recycling Center in Florence, South Carolina. The company is conducting this monitoring under terms of a settlement agreement reached with several petitioners who commented on the construction permit for the facility. Locations for the monitoring sites were selected based upon an agreement between the company and the stakeholders.

Forty CFR Part 58, Appendix D, 3(b) requires that "NCORE sites in CBSAs with a population of 500,000 people (as determined in the latest Census) or greater shall also measure Pb either as Pb-TSP or Pb-PM₁₀." The Network Plan indicates that a Pb sampler is located at the Parklane NCore site (AQS ID 45-079-0007). The Pb monitoring network described in the Network Plan meets all of the design criteria of 40 CFR Part 58.

PM₁₀ Monitoring Requirements **40 CFR Part 58, Appendix A, 3.3.1** **40 CFR Part 58, Appendix D, Table D-4**

Region 4 has determined that the PM₁₀ monitoring network outlined in the Network Plan meets or exceeds the minimum requirements found in 40 CFR Part 58, Appendix D, Table D-4 for all MSAs. Also, all manual PM₁₀ collocation requirements are met.

PM_{2.5} Monitoring Requirements
40 CFR Part 58, Appendix A, 3.2.5
40 CFR Part 58, Appendix D, Table D-5

The EPA has determined that the PM_{2.5} monitoring network outlined in the Network Plan meets or exceeds the minimum requirements found in 40 CFR Part 58, Appendix D, Table D-5 for all MSAs. Also, all PM_{2.5} collocation requirements are met.

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

Regulatory provisions for continuous PM_{2.5} monitoring require that “The State, or where appropriate, local agencies must operate continuous PM_{2.5} analyzers equal to at least one-half (round up) of 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.” After review of the Network Plan, the EPA has determined that the proposed PM_{2.5} continuous monitoring network meets or exceeds the minimum requirements in all of the MSAs in the state. Also, the continuous PM_{2.5} collocation requirements are met in all MSAs.

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

Forty CFR Part 58, Appendix D, 4.7.3 requires that “Each State shall install and operate at least one PM_{2.5} site to monitor for regional background levels and at least one PM_{2.5} site to monitor for regional transport.” The Network Plan identifies Ashton (AQS ID 45-029-0002) in Colleton County as a regional background site and Chesterfield (AQS ID 45-025-0001) in Chesterfield County as a regional transport site. Therefore, the SC DHEC has satisfied the requirements of 40 CFR Part 58 for regional background and transport sites.

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

The EPA conducted an assessment of the CSN in an effort to optimize the network and create a network that is sustainable going forward. As a result of this assessment, the EPA defunded a number of monitoring sites, eliminated the CSN PM_{2.5} mass measurement, reduced the frequency of carbon blanks, reduced sample frequency at monitoring sites, and reduced the number of icepacks in shipments during the cooler months of the year.

The EPA defunded two CSN monitors at sites in South Carolina: Chesterfield (AQS ID 45-025-0001) and Greenville ESC (AQS ID 45-045-0015). The Network Plan indicates that the Chesterfield CSN monitor has been discontinued due to lack of EPA funding and the Greenville ESC speciation monitor will continue to operate with state funding.

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

With the recent passage of a new ozone NAAQS on October 1, 2015, the EPA also finalized changes to PAMS. By June 1, 2019, the NCore site in Columbia will be required to implement PAMS monitoring. The EPA realizes there are several implementation challenges to work through and is committed to working closely with SC DHEC to identify efficiencies and minimize the burden of implementing this new monitoring program. However, at this time the PAMS requirement is being met by the state.

Monitoring Siting Criteria
40 CFR Part 58, Appendix E

Monitor siting criteria, as described in 40 CFR Part 58, Appendix E, must be met and continually evaluated at each site operating a regulatory monitor. Ideally, each site in the monitoring network should be evaluated annually for compliance with regulatory siting criteria. The EPA Science and Ecosystem Support Division (SESD) found many of the SC DHEC monitoring sites were not meeting regulatory monitor siting criteria in the July 2015 technical systems audit (TSA) of the SC DHEC air monitoring program. The final TSA report, dated November 17, 2015, describes this audit finding in greater detail. The SC DHEC was provided an opportunity to comment on the draft TSA report. The EPA requests that the SC DHEC submit documentation of monitor siting evaluations, determinations, and corrective actions for all of its regulatory monitoring sites in the next annual Network Plan.

