



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

THE ADMINISTRATOR

December 21, 2020

The Honorable Eric Holcomb
Governor of Indiana
200 West Washington Street
Room 206
Indianapolis, Indiana 46204

Dear Governor Holcomb:

I am writing to inform you that the U.S. Environmental Protection Agency (EPA) has completed additional area designations for the 2010 1-hour sulfur dioxide (SO₂) primary national ambient air quality standard (NAAQS). The enclosed table summarizes the areas that EPA is designating at this time. A detailed explanation of the EPA's rationale for these designations is available on EPA's SO₂ designations website at <https://www.epa.gov/sulfur-dioxide-designations> and in Docket No. EPA-HQ-OAR-2020-0037 at <https://www.regulations.gov>. Additionally, an action finalizing these designations will be published in the *Federal Register*. This action completes all area designations for the 2010 SO₂ NAAQS in the United States.

Improving air quality to protect public health is a shared goal. Through local, state, tribal, and national programs, we have made considerable progress to reduce SO₂ levels throughout the country. Nationwide, monitored levels of SO₂ have dropped 90 percent since 1990. I appreciate the work you have done and the partnership we have developed to achieve this impressive reduction.

Thank you for Indiana's efforts to provide cleaner air for the citizens in your state. If you have questions or concerns, please contact me or your staff may contact Joseph Brazauskas, Associate Administrator for the Office of Congressional and Intergovernmental Relations, at brazauskas.joseph@epa.gov or at (202) 564-5189.

Sincerely,

A handwritten signature in dark ink, appearing to read "Andrew R. Wheeler", is written over a light blue horizontal line.

Andrew R. Wheeler

Enclosure

Enclosure

EPA's Final Area Designations for the 2010 Sulfur Dioxide (SO₂) Primary National Ambient Air Quality Standard (NAAQS) – Round 4

State	County/Parish	SO ₂ Emissions Source(s)	EPA's Final Area	EPA's Final Designation
AL	Shelby	Lhoist North America of Alabama - Montevallo Plant	Shelby County (partial)*	Attainment/Unclassifiable
GA	Floyd	International Paper – Rome (Formerly Temple Inland)	Floyd County	Attainment/Unclassifiable
HI	Honolulu	AES Hawaii LLC Cogeneration Plant Hawaiian Electric Company (HECO) Kahe Generating Station Kalaeloa Cogeneration Plant	Honolulu County	Attainment/Unclassifiable
HI	Honolulu	Hawaiian Electric Company (HECO) Waiau Generating Station	Honolulu County	Attainment/Unclassifiable
IL	Macon	Archer Daniels Midland Company Tate & Lyle Ingredients Americas LLC	Macon County	Attainment/Unclassifiable
IN	Porter	ArcelorMittal Burns Harbor LLC	Porter County	Attainment/Unclassifiable
KY	Henderson	Century Aluminum Sebree LLC Robert Reid Station/HMP&L Station 2 Robert D. Green Station	Henderson County (partial)** Webster County (partial)**	Nonattainment
LA	East Baton Rouge	Oxbow Calcining LLC - Baton Rouge Calcined Coke Plant	East Baton Rouge Parish	Attainment/Unclassifiable
LA	St. Charles	Rain CII Carbon LLC - Norco Coke Plant	St. Charles Parish	Attainment/Unclassifiable
LA	St. James	Rain CII Carbon LLC - Gramercy Coke Plant	St. James Parish	Attainment/Unclassifiable
LA	West Baton Rouge	Tokai Carbon CB - Addis Facility	West Baton Rouge Parish	Attainment/Unclassifiable

State	County/Parish	SO ₂ Emissions Source(s)	EPA's Final Area	EPA's Final Designation
MD/WV	Allegany (MD) Mineral (WV)	Luke Paper Mill	Allegany County, MD Mineral County, WV	Attainment/Unclassifiable
MO	Iron	Doe Run Buick Resource Recycling	Iron County	Attainment/Unclassifiable
MO	New Madrid	Magnitude 7 Metals AECI New Madrid	New Madrid County (partial)**	Nonattainment
NE	Douglas	OPPD - North Omaha Power	Douglas County	Attainment/Unclassifiable
NY	Cayuga Seneca Tompkins	Cayuga Generating Station	Cayuga County Seneca County Tompkins County	Attainment/Unclassifiable
NY	St. Lawrence	Alcoa Massena	St. Lawrence County (partial)**	Nonattainment
NC	Buncombe	Asheville Steam Electric Plant - Duke Energy Progress, Inc.	Limestone Township – Buncombe County	Attainment/Unclassifiable
NC	Haywood	Blue Ridge Paper Products - Canton Mill	Beaverdam Township – Haywood County	Attainment/Unclassifiable
NC	Person	Roxboro Steam Electric Plant - Duke Energy Progress, LLC	Cunningham Township – Person County	Attainment/Unclassifiable
ND	Williams	Amerada Hess - Tioga Gas Plant	Williams County	Attainment/Unclassifiable
OK	Garfield	Oxbow Calcining - Kremlin	Garfield County	Attainment/Unclassifiable
OK	Mayes	GRDA - Chouteau Coal Fired Complex	Mayes County	Attainment/Unclassifiable
OK	Muskogee	Georgia Pacific - Muskogee Mill OG&E - Muskogee Generating Station	Muskogee County	Attainment/Unclassifiable
PA	York	Magnesita Refractories Pixelle Specialty Solutions LLC Spring Grove	York County	Attainment/Unclassifiable
PA	York	Brunner Island Steam Electric Station	York County	Attainment/Unclassifiable

State	County/Parish	SO ₂ Emissions Source(s)	EPA's Final Area	EPA's Final Designation
TX	Bexar	City Public Service - Calaveras Plant	Bexar County	Attainment/Unclassifiable
TX	Harrison	Southwestern Electric Power Co. - AEP Pirkey Power Plant	Harrison County	Unclassifiable
TX	Howard	Tokai Carbon CB LTD Big Spring Carbon Black Plant	Howard County (partial)**	Nonattainment
TX	Hutchinson	Orion Carbon Black Tokai Carbon Black	Hutchinson County (partial)**	Nonattainment
TX	Jefferson	Oxbow Calcining LLC - Oxbow Calcining	Jefferson County	Attainment/Unclassifiable
TX	Navarro	Arcosa LWS LLC Streetman Plant	Navarro County (partial)**	Nonattainment
TX	Orange	Orion Engineered Carbons LLC - Echo Carbon Black	Orange County	Unclassifiable
TX	Robertson	Oak Grove MGMT Company LLC - Oak Grove Steam Electric Station	Robertson County	Attainment/Unclassifiable
TX	Titus	Southwestern Electric Power Co. - Welsh Power Plant	Titus County (partial)*	Attainment/Unclassifiable
VA	Alleghany	Westrock's Covington Mill (Meadwestvaco Packaging Resource Group)	City of Covington – Alleghany County	Attainment/Unclassifiable
VA	Botetourt	Roanoke Cement Company	Botetourt County	Attainment/Unclassifiable
VA	Giles	Lhoist Kimballton Plant	Giles County (partial)**	Nonattainment
WA	Chelan Douglas	Alcoa Primary Metals Wenatchee Works	Chelan County Douglas County	Attainment/Unclassifiable
WA	Whatcom	Alcoa Intalco	Whatcom County (partial)**	Nonattainment
WI	Outagamie	Ahlstrom-Munksjö NA Specialty Solutions LLC – Kaukauna	Outagamie County (partial)**	Nonattainment
WY	Carbon	Sinclair Wyoming - Sinclair Refinery	Carbon County	Attainment/Unclassifiable

State	County/Parish	SO ₂ Emissions Source(s)	EPA's Final Area	EPA's Final Designation
WY	Fremont	Burlington Resources - Lost Cabin Gas Plant	Fremont County (partial)*	Attainment/Unclassifiable
WY	Converse	PacifiCorp - Dave Johnston	Converse County	Attainment/Unclassifiable
WY	Sweetwater	Solvay Chemicals - Solvay Green River TATA Chemicals - Green River Works Tronox Alkali - Granger Tronox - Westvaco	Sweetwater County (partial)*	Attainment/Unclassifiable

* The other portion of the area was designated previously.

** EPA is designating the remaining undesignated portion of the area (*i.e.*, the remaining portion of the county outside of EPA's final nonattainment area boundary) as attainment/unclassifiable in this round of designations.

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Technical Support Document:

Final Round 4 Area Designations
for the 2010 1-Hour SO₂ Primary
National Ambient Air Quality Standard

December 2020

U.S. Environmental Protection Agency
Office of Air and Radiation
Office of Air Quality Planning and Standards

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Technical Support Document:

Chapter 1

Background and History of the Final Round 4 Area Designations for the 2010 1-Hour SO₂ Primary National Ambient Air Quality Standard

1. Overview

Pursuant to section 107(d) of the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA, we, or us) must designate areas as either “nonattainment,” “attainment,” or “unclassifiable” for the 2010 1-hour sulfur dioxide (SO₂) primary national ambient air quality standard (NAAQS) (2010 SO₂ NAAQS). The CAA defines a nonattainment area as an area that does not meet the NAAQS or that contributes to a nearby area that does not meet the NAAQS. An attainment area is defined by the CAA as any area that meets the NAAQS and does not contribute to a nearby area that does not meet the NAAQS. Unclassifiable areas are defined by the CAA as those that cannot be classified on the basis of available information as meeting or not meeting the NAAQS. See CAA section 107(d)(1)(A)(i)-(iii).

In this action, EPA defines a nonattainment area as an area that, based on available information including (but not limited to) monitoring data and/or appropriate modeling analyses, EPA has determined either: (1) does not meet the 2010 SO₂ NAAQS, or (2) contributes to ambient air quality in a nearby area that does not meet the NAAQS. An attainment/unclassifiable area is defined as an area that, based on available information including (but not limited to) appropriate monitoring data and/or modeling analyses, EPA has determined meets the NAAQS and does not likely contribute to ambient air quality in a nearby area that does not meet the NAAQS.^{1,2} An unclassifiable area is defined as an area for which the available information does not allow EPA to determine whether the area meets the definition of a nonattainment area or the definition of an attainment/unclassifiable area.

EPA is under a December 31, 2020, deadline to designate all remaining undesignated areas as required by the U.S. District Court for the Northern District of California.³ This deadline is the final of three deadlines established by the court for EPA to complete area designations for the 2010 SO₂ NAAQS. The remaining undesignated areas are: 1) those areas which, under the court order, did not meet the criteria that required designation in Round 2 and also were not required to

¹ Historically, EPA has designated most areas that do not meet the definition of nonattainment as “unclassifiable/attainment.” EPA has reversed the order of the label to be “attainment/unclassifiable” to better convey the definition of the designation category and so that the category is more easily distinguished from the separate unclassifiable category. See 83 FR 1098 (January 9, 2018) and 83 FR 25776 (June 4, 2018).

² The term “designated attainment area” is not used in this document because the EPA uses that term only to refer to a previous nonattainment area that has been redesignated to attainment as a result of the EPA’s approval of a state-submitted maintenance plan.

³ *Sierra Club v. McCarthy*, No. 3-13-cv-3953 (SI) (N.D. Cal. Mar. 2, 2015).

be designated in Round 3 due to installation and operation of a new SO₂ monitoring network by January 2017 in the area meeting EPA's specifications referenced in EPA's SO₂ Data Requirements Rule (DRR)⁴, and 2) those areas which EPA has not otherwise previously designated for the 2010 SO₂ NAAQS.

In previous final actions, as explained in the next section, EPA has issued designations for the 2010 SO₂ NAAQS for most areas of the country.⁵ We are referring to the set of designations being finalized by the deadline of December 31, 2020, as "Round 4" or the final round of the designations process for the 2010 SO₂ NAAQS. After these Round 4 designations are completed, there will be no remaining undesignated areas for the 2010 SO₂ NAAQS.

This technical support document (TSD) addresses designations for all of the remaining undesignated areas in the United States for the 2010 SO₂ NAAQS. This chapter, Chapter 1 of the TSD, includes background information and definitions that apply to all the areas in our intended designations. Chapter 2 of the TSD addresses areas that have no violating SO₂ monitors which EPA is designating either attainment/unclassifiable or unclassifiable. Finally, Chapters 3 through 12 of the TSD address areas that EPA is designating nonattainment, except where otherwise noted.⁶

2. Background and History

The Administrator signed a final rule revising the primary SO₂ NAAQS on June 2, 2010. The rule was published in the *Federal Register* on June 22, 2010 (75 FR 35520) and became effective on August 23, 2010. Based on the Administrator's review of the air quality criteria for oxides of sulfur (SO_x) and the primary NAAQS for SO_x as measured by the indicator compound SO₂, EPA revised the primary SO₂ NAAQS to provide requisite protection of public health with an adequate margin of safety. Specifically, EPA established a new 1-hour SO₂ standard at a level of 75 parts per billion (ppb), which is met at an ambient air quality monitoring site when the 3-year average of the annual 99th percentile of daily maximum 1-hour average concentrations is less than or equal to 75 ppb, as determined in accordance with Appendix T of 40 CFR part 50. 40 CFR 50.17(a) and (b). The EPA also established provisions to revoke both the existing 24-hour and annual primary SO₂ standards, subject to certain conditions. *See* 40 CFR 50.4(e).

Current scientific evidence links short-term exposures to SO₂, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects including bronchoconstriction and increased asthma symptoms. These effects are particularly important for asthmatics at elevated ventilation rates (e.g., while exercising or playing). Studies also show a connection between short-term

⁴ *See* 80 FR 51052 (August 21, 2015), codified at 40 CFR part 51 subpart BB.

⁵ Most areas of the U.S. were previously designated in actions published on August 5, 2013 (78 FR 47191), July 12, 2016 (81 FR 45039), December 13, 2016 (81 FR 89870), January 9, 2018 (83 FR 1098) and April 5, 2018 (83 FR 14597). EPA is not reopening these previous designation actions in this current Round 4 of designations under the 2010 SO₂ NAAQS.

⁶ In the state-specific chapters, the term "this TSD" is sometimes used to refer to that particular state-specific chapter rather than the entire TSD.

exposure and increased visits to emergency departments and hospital admissions for respiratory illnesses, particularly in at-risk populations including children, the elderly, and asthmatics. EPA's NAAQS for SO₂ is designed to protect against exposure to the entire group of SO_x. SO₂ is the component of greatest concern and is used as the indicator for the larger group of gaseous SO_x. Other gaseous SO_x (e.g., SO₃) are found in the atmosphere at concentrations much lower than SO₂.

Emissions that lead to high concentrations of SO₂ generally also lead to the formation of other SO_x. Control measures that reduce SO₂ can generally be expected to reduce people's exposures to all gaseous SO_x. This is expected to have the important co-benefit of reducing the formation of fine sulfate particles, which pose significant public health threats. SO_x can react with other compounds in the atmosphere to form small particles. These particles penetrate deeply into sensitive parts of the lungs and can cause or worsen respiratory disease, such as emphysema and bronchitis, and can aggravate existing heart disease, leading to increased hospital admissions and premature death.⁷ EPA's NAAQS for particulate matter are designed to provide protection against these health effects.

In the notice of proposed rulemaking for the revised SO₂ NAAQS (74 FR 64810; December 8, 2009), EPA issued proposed guidance on our approach to implementing the standard, including our approach to initial area designations. EPA solicited comment on that guidance and, in the notice of final rulemaking (75 FR 35520; June 22, 2010), provided further guidance concerning implementation of the standard and how to identify nonattainment areas and boundaries for the SO₂ NAAQS. Subsequently, on March 24, 2011, EPA provided additional designations guidance to assist states with making their recommendations for area designations and boundaries.⁸ That guidance recommended, among other things, that monitoring data from the most recent 3 consecutive years be used to identify a violation of the SO₂ NAAQS. This is appropriate because the form of the SO₂ NAAQS is calculated as a 3-year average of the 99th percentile of the yearly distribution of daily maximum 1-hour average SO₂ concentrations (specifically the most recent 3 consecutive calendar years).

In the March 24, 2011 guidance, EPA stated that the perimeter of a county containing a violating monitor would be the initial presumptive boundary for nonattainment areas, but also stated that the state, tribe, and/or EPA could conduct additional area-specific analyses that could justify establishing either a larger or smaller area. EPA indicated that the following factors should be considered in an analysis of whether to exclude portions of a county and whether to include additional nearby areas outside the county as part of the designated nonattainment area: 1) air quality data; 2) emissions-related data; 3) meteorology; 4) geography/topography; and 5) jurisdictional boundaries, as well as other available data. The EPA indicated that states and tribes may identify and evaluate other relevant factors or circumstances specific to a particular area.

⁷ See Fact Sheet titled, "Revisions to the Primary National Ambient Air Quality Standard, Monitoring Network, and Data Reporting Requirements for Sulfur Dioxide" at https://www.epa.gov/sites/production/files/2016-05/documents/final_primary_naaqs_factsheet.pdf.

⁸ See, "Area Designations for the 2010 Revised Primary Sulfur Dioxide National Ambient Air Quality Standards," memorandum to Regional Air Division Directors, Regions I-X, from Stephen D. Page, dated March 24, 2011, available at https://www3.epa.gov/ttn/naaqs/aqmguide/collection/cp2/20110324_page_so2_designations_guidance.pdf.

After EPA promulgates a new or revised NAAQS, EPA is required to designate all areas of the country as either “nonattainment,” “attainment,” or “unclassifiable,” for that NAAQS pursuant to section 107(d)(1)-(2) of the CAA. The process for designating areas following promulgation of a new or revised NAAQS is contained in section 107(d) of the CAA. The CAA requires EPA to complete the initial designations process within 2 years of promulgating a new or revised standard. If the Administrator has insufficient information to make these designations by that deadline, the EPA has the authority to extend the deadline for completing designations by up to 1 year. On July 27, 2012, EPA announced that we had insufficient information to complete the designations for the 1-hour SO₂ standard within 2 years and extended the designations deadline to June 3, 2013 (77 FR 46295; August 3, 2012).

For the 2010 SO₂ NAAQS, states’ designation recommendations were due to EPA by June 3, 2011. Designation recommendations and supporting documentation were submitted by 49 states, the District of Columbia, four territories, and five tribes to EPA by that date. After receiving these recommendations, and after reviewing and evaluating each recommendation, EPA provided responses to the states and tribes regarding certain areas on February 7, 2013. The state and tribal letters, including the initial recommendations, EPA’s February 2013 responses to those letters, any modifications, and the subsequent state comment letters, are in the separate docket for that first round of SO₂ designations, at Docket ID NO. EPA-HQ-OAR-2012-0233.⁹

Although not required by section 107(d) of the CAA, EPA also provided an opportunity for members of the public to comment on the EPA’s February 2013 response letters. EPA completed the first round of SO₂ designations on July 25, 2013, designating 29 areas in 16 states as nonattainment (78 FR 47191; August 5, 2013). EPA based this first round of final SO₂ designations on monitored SO₂ concentrations from Federal Reference Method and Federal Equivalent Method monitors that are sited and operated in accordance with 40 CFR parts 50 and 58. In the preamble to that action, EPA stated that in separate future actions, we intended to address designations for all other areas for which EPA was not yet prepared to issue designations and that were consequently not addressed in that final rule. With input from a diverse group of stakeholders, EPA developed a comprehensive implementation strategy for the future SO₂ designations actions that focuses resources on identifying and addressing unhealthy levels of SO₂ in areas where people are most likely to be exposed to violations of the standard.

Following the initial August 5, 2013, designations, three lawsuits were filed against EPA in different U.S. District Courts, alleging the agency had failed to perform a nondiscretionary duty under the CAA by not designating all portions of the country by the June 2, 2013, deadline. In an effort intended to resolve the litigation in one of those cases, EPA and the plaintiffs, Sierra Club and the Natural Resources Defense Council, filed a proposed consent decree with the U.S. District Court for the Northern District of California. On March 2, 2015, the court entered the consent decree and issued an enforceable order for EPA to complete the area designations by three specific deadlines according to the court-ordered schedule.

On August 21, 2015 (80 FR 51052), EPA separately promulgated a rule requiring states to undertake air quality characterization for areas with SO₂ sources meeting certain criteria, called

⁹ Many documents related to EPA’s 2010 SO₂ NAAQS designations are also available on the SO₂ designations Web site at <https://www.epa.gov/sulfur-dioxide-designations>.

the Data Requirements Rule (DRR). The DRR required state air agencies to provide additional monitoring or modeling information to characterize air quality in areas associated with sources meeting certain criteria or that have otherwise been listed under the DRR by EPA or state air agencies, or to instead impose federally enforceable emission limitations on those sources restricting their annual SO₂ emissions to less than 2,000 tons per year (tpy), or provide documentation that the sources have been shut down, by specified dates. The information generated by implementation of the DRR can help inform the designations addressed in this TSD and subsequent actions.

EPA issued two updated designations guidance documents on March 20, 2015, and July 22, 2016 to inform the second and third rounds of designations.¹⁰ These memoranda superseded earlier designation guidance for the 2010 SO₂ NAAQS, issued on March 24, 2011, and identify factors that EPA intended to evaluate in determining in those rounds whether areas are in violation of the 2010 SO₂ NAAQS or contribute to air quality in nearby areas that are in violation of the 2010 SO₂ NAAQS. The guidance also contained the factors EPA intended to evaluate in determining the boundaries for all remaining areas in the country, consistent with the court's order and schedule. These factors include: 1) air quality characterization via ambient monitoring or dispersion modeling results; 2) emissions-related data; 3) meteorology; 4) geography and topography; and 5) jurisdictional boundaries. This guidance was supplemented by two non-binding technical assistance documents intended to assist states and other interested parties in their efforts to characterize air quality around SO₂ sources through air dispersion modeling or ambient air quality monitoring for sources that emit SO₂. Notably, EPA's documents titled, "SO₂ NAAQS Designations Modeling Technical Assistance Document" (SO₂ NAAQS Designations Modeling TAD) and "SO₂ NAAQS Designations Source-Oriented Monitoring Technical Assistance Document" (SO₂ NAAQS Designations Monitoring TAD), were first made available as drafts to states and other interested parties in spring of 2013. Both of these documents were updated in February 2016. The SO₂ NAAQS Designations Modeling TAD was updated again in August 2016.¹¹ On March 8, 2017, the EPA issued a memo to clarify what version of the American Meteorological Society/Environmental Protection Agency Regulatory Mode (AERMOD) modeling system code is the most appropriate for consideration by the Agency in the SO₂ designations process.¹²

According to the court-ordered schedule, EPA was required to complete a second round of SO₂ designations by no later than July 2, 2016. The court order specified that in the second round, the

¹⁰ See "Updated Guidance for Area Designations for the 2010 Primary Sulfur Dioxide National Ambient Air Quality Standard," memorandum to Regional Air Division Directors, Regions 1-10, from Stephen D. Page, dated March 20, 2015, available at <https://www.epa.gov/sites/production/files/2016-04/documents/20150320so2designations.pdf>, and "Area Designations for the 2010 Primary Sulfur Dioxide National Ambient Air Quality Standard – Round 3," memorandum to Regional Air Division Directors, Regions 1-10, dated July 22, 2016, available at <https://www.epa.gov/sites/production/files/2016-07/documents/areadesign.pdf>.

¹¹ See SO₂ NAAQS Designations Source-Oriented Monitoring Technical Assistance Document (February 2016), available at <https://www.epa.gov/sites/production/files/2016-06/documents/so2monitoringtad.pdf>, and SO₂ NAAQS Designations Modeling Technical Assistance Document (August 2016), available at <https://www.epa.gov/sites/production/files/2016-06/documents/so2modelingtad.pdf>.

¹² Clarification on the AERMOD Modeling System Version for Use in SO₂ Implementation Efforts and Other Regulatory Actions, Richard A. Wayland to EPA Regional Air Division Directors. This memo is available at https://www3.epa.gov/ttn/scram/guidance/clarification/SO2_DRR_Designation_Modeling_Clarification_Memo-03082017.pdf.

EPA must designate two groups of areas: (1) areas that have newly monitored violations of the 2010 SO₂ NAAQS and (2) areas that contain any stationary sources that had not been announced as of March 2, 2015, for retirement and that, according to EPA's Air Markets Database, emitted in 2012 either (i) more than 16,000 tons of SO₂, or (ii) more than 2,600 tons of SO₂ with an annual average emission rate of at least 0.45 pounds of SO₂ per one million British thermal units. Specifically, a stationary source with a coal-fired electric generating unit that, as of January 1, 2010, had a capacity of over 5 megawatts and otherwise met the emissions criteria, was excluded from the July 2, 2016, deadline if it had announced through a company public announcement, public utilities commission filing, consent decree, public legal settlement, final state or federal permit filing, or other similar means of communication, by March 2, 2015, that it will cease burning coal at that unit.

On July 12, 2016, and on December 13, 2016, (81 FR 45039 and 81 FR 89870, respectively), EPA published *Federal Register* notices completing the Round 2 air quality designations for 65 areas in 24 states for the 2010 SO₂ NAAQS including 7 nonattainment areas, 41 unclassifiable/attainment areas, and 17 unclassifiable areas. EPA and state documents and public comments related to these two actions are in the docket for the second round of SO₂ designations at Docket ID NO. EPA-HQ-OAR-2014-0464.

According to the court-ordered schedule, EPA was required to complete the third round of SO₂ designations by no later than December 31, 2017. The court order specified that in the third round, EPA designate all remaining undesignated areas in which, by January 1, 2017, states have not installed and begun operating a new SO₂ monitoring network meeting EPA specifications referenced in the EPA's DRR. Essentially, this included: (1) areas associated with sources meeting DRR emissions criteria that states have chosen to characterize using air dispersion modeling, (2) the areas associated with sources for which states imposed emissions limitations on DRR-listed sources to restrict their SO₂ emissions to less than 2,000 tpy, (3) the areas associated with sources for which states provided documentation of a permanent shut down of a DRR-listed source, (4) areas where previously existing SO₂ monitoring networks were appropriately sited to characterize DRR source areas, and (5) other areas not specifically required to be characterized under the DRR.

On January 9, 2018 and April 5, 2018, (83 FR 1098 and 83 FR 14597, respectively) EPA published *Federal Register* notices completing the designations for the Round 3 areas subject to the December 31, 2017 deadline, designating 6 areas nonattainment, 22 areas unclassifiable, and the remaining areas of the United States as attainment/unclassifiable that were not, pursuant to the DRR, operating a new EPA-approved monitoring network. EPA and state documents and public comments related to these two actions are in the docket for the third round of SO₂ designations at Docket ID NO. EPA-HQ-OAR-2017-0003.

In Round 4, EPA is designating all remaining undesignated areas by the court-ordered December 31, 2020 deadline through an assessment and characterization of air quality based primarily on ambient monitoring data, including data from existing and new EPA-approved monitors that have collected data from January 2017 forward, pursuant to the DRR; however, other available evidence and supporting information, such as air dispersion modeling in certain situations, has also been considered.

For Round 4, an updated designations guidance document was issued by EPA through a September 5, 2019, memorandum from Peter Tsirigotis, Director, U.S. EPA, Office of Air Quality Planning and Standards, to Regional Air Division Directors, U.S. EPA Regions 1-10.¹³ To better reflect the Round 4 designations process, this memorandum supplements, where necessary, prior designations guidance documents on area designations for the 2010 primary SO₂ NAAQS issued on March 24, 2011, March 20, 2015, and July 22, 2016. This memorandum identifies factors that EPA has evaluated in determining whether remaining undesignated areas are in violation of the 2010 1-hour SO₂ NAAQS. The document also contains the factors that EPA evaluated in determining the boundaries for all remaining areas in the country. These factors include: 1) air quality characterization via ambient monitoring and/or dispersion modeling results; 2) emissions-related data; 3) meteorology; 4) geography and topography; and 5) jurisdictional boundaries.

In EPA's September 2019, memorandum, we noted that Round 4 area designations would be based primarily on ambient monitoring data, including data from existing and new EPA-approved monitors that have collected data at least from January 2017 forward, pursuant to the DRR. In addition, EPA has evaluated air dispersion modeling submitted by state air agencies for two specific circumstances. First, states have submitted air dispersion modeling to support the geographic extent of a nonattainment boundary. Second, states have submitted air dispersion modeling to demonstrate that new permanent and federally enforceable SO₂ emissions limits provide for attainment of the NAAQS and represent a more accurate characterization of current air quality at the time of designation than does monitoring of past air quality.

The following are definitions of important terms used in this TSD for all states in our Round 4 final designations:

- 1) 2010 SO₂ NAAQS – The primary NAAQS for SO₂ promulgated in 2010. This NAAQS is 75 ppb, based on the 3-year average of the 99th percentile of the annual distribution of daily maximum 1-hour average concentrations. See 40 CFR 50.17.
- 2) Design Value - a statistic computed according to the data handling procedures of the NAAQS (in 40 CFR part 50 Appendix T) that, by comparison to the level of the NAAQS, indicates whether the area is violating the 2010 SO₂ NAAQS.
- 3) Final designated nonattainment area – an area that, based on available information including (but not limited to) monitoring data and/or appropriate modeling analyses, EPA has determined either: (1) does not meet the 2010 SO₂ NAAQS, or (2) contributes to ambient air quality in a nearby area that does not meet the NAAQS.
- 4) Final designated attainment/unclassifiable area – an area that, based on available information including (but not limited to) appropriate monitoring data and/or appropriate modeling analyses, EPA has determined meets the 2010 SO₂ NAAQS and does not likely contribute to ambient air quality in a nearby area that does not meet the NAAQS.
- 5) Final designated unclassifiable area – an area for which the available information does not allow EPA to determine whether the area meets the definition of a nonattainment area or the definition of an attainment/unclassifiable area.

¹³ https://www.epa.gov/sites/production/files/2019-09/documents/round_4_so2_designations_memo_09-05-2019_final.pdf

- 6) Modeled violation – a modeled design value impact above the 2010 SO₂ NAAQS demonstrated by air dispersion modeling.
- 7) Recommended attainment area – an area that a state, territory, or tribe has recommended that EPA designate as attainment.
- 8) Recommended nonattainment area – an area that a state, territory, or tribe has recommended that EPA designate as nonattainment.
- 9) Recommended unclassifiable area – an area that a state, territory, or tribe has recommended that EPA designate as unclassifiable.
- 10) Recommended attainment/unclassifiable (or unclassifiable/attainment) area – an area that a state, territory, or tribe has recommended that EPA designate as attainment/unclassifiable (or unclassifiable/attainment).
- 11) Violating monitor – an ambient air monitor meeting 40 CFR parts 50, 53, and 58 requirements whose valid design value exceeds 75 ppb, based on data analysis conducted in accordance with Appendix T of 40 CFR part 50.
- 12) We, our, and us – these refer to EPA.

Technical Support Document:

Chapter 2

Final Round 4 Area Designations for the 2010 1-Hour SO₂ Primary National Ambient Air Quality Standard for Areas without Violating Monitors

1. Introduction

Pursuant to section 107(d) of the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA, we, or us) must designate areas as either “nonattainment,” “attainment,” or “unclassifiable” for the 2010 1-hour sulfur dioxide (SO₂) primary national ambient air quality standard (NAAQS) (2010 SO₂ NAAQS). On or about August 13, 2020, EPA sent states our responses to certain designation recommendations for the 2010 SO₂ NAAQS. On August 21, 2020, EPA published a notice of availability (NOA) in the *Federal Register* (see 85 FR 51694), initiating a 30-day public comment period. The NOA and the technical support document (TSD) for EPA’s intended designations provided background on the relevant CAA definitions and the history of the designations for this NAAQS.

EPA received several public comments regarding the intended designations of areas with SO₂ monitors that were attaining the 2010 SO₂ NAAQS based on the 2017-2019 design value. These comments are addressed in the Response to Comments document associated with this final action or in the EPA’s final designations TSD. Except for the designation of Harrison County, Texas, EPA is finalizing the designations for areas in Table 1 that we described in our 120-day letters and the TSD for our intended Round 4 designations. This TSD does not repeat information contained in the TSD for EPA’s intended designations. Table 1 identifies EPA’s final Round 4 designations and the areas to which they apply, and Chapter 1 of this TSD for the final designations explains the definitions that EPA is applying in the final designations process.

Table 1. EPA's Final Designations for Areas with Monitors Attaining the 2010 SO₂ NAAQS or Areas with Monitors Having Invalid Design Values

State	County/Area	Recommendation Date	State Recommended Area	State Recommended Designation	EPA's Intended Designation	EPA's Final Area Definition	EPA's Final Designation
AL	Shelby	05/25/2011	Shelby County	Attainment	Attainment/ Unclassifiable	Shelby (partial)*	Attainment/ Unclassifiable
GA	Floyd	05/31/2011	Floyd County	Attainment/ Unclassifiable	Attainment/ Unclassifiable	Floyd County	Attainment/ Unclassifiable
HI	Honolulu	05/19/2011	Honolulu County	Unclassifiable	Attainment/ Unclassifiable	Honolulu County	Attainment/ Unclassifiable
IL	Macon	04/28/2020	Macon County	Attainment/ Unclassifiable	Attainment/ Unclassifiable	Macon County	Attainment/ Unclassifiable
IN	Porter	04/16/2020	Porter County	Attainment/ Unclassifiable	Attainment/ Unclassifiable	Porter County	Attainment/ Unclassifiable
LA	East Baton Rouge	04/23/2020	East Baton Rouge Parish	Attainment/ Unclassifiable	Attainment/ Unclassifiable	East Baton Rouge Parish	Attainment/ Unclassifiable
LA	St. Charles	04/23/2020	St. Charles Parish	Attainment/ Unclassifiable	Attainment/ Unclassifiable	St. Charles Parish	Attainment/ Unclassifiable
LA	St. James	04/23/2020	St. James Parish	Attainment/ Unclassifiable	Attainment/ Unclassifiable	St. James Parish	Attainment/ Unclassifiable
LA	West Baton Rouge	04/23/2020	West Baton Rouge Parish	Attainment/ Unclassifiable	Attainment/ Unclassifiable	West Baton Rouge Parish	Attainment/ Unclassifiable
MO	Iron	04/30/2020	Iron County	Attainment/ Unclassifiable	Attainment/ Unclassifiable	Iron County	Attainment/ Unclassifiable
NE	Douglas	05/6/2020	Douglas County	Attainment/ Unclassifiable	Attainment/ Unclassifiable	Douglas County	Attainment/ Unclassifiable
NY	Cayuga Seneca Tompkins	04/30/2020	Cayuga County Seneca County Tompkins County	Attainment	Attainment/ Unclassifiable	Cayuga County Seneca County Tompkins County	Attainment/ Unclassifiable
NC	Buncombe	04/29/2020	Limestone Township – Buncombe County	Attainment	Attainment/ Unclassifiable	Limestone Township – Buncombe County	Attainment/ Unclassifiable

State	County/Area	Recommendation Date	State Recommended Area	State Recommended Designation	EPA's Intended Designation	EPA's Final Area Definition	EPA's Final Designation
NC	Person	04/29/2020	Cunningham Township – Person County	Attainment	Attainment/Unclassifiable	Cunningham Township – Person County	Attainment/Unclassifiable
ND	Williams	04/23/2020	Williams County	Attainment/Unclassifiable	Attainment/Unclassifiable	Williams County	Attainment/Unclassifiable
OK	Garfield	04/22/2020	Garfield County	Attainment/Unclassifiable	Attainment/Unclassifiable	Garfield County	Attainment/Unclassifiable
OK	Mayes	04/22/2020	Mayes County	Attainment/Unclassifiable	Attainment/Unclassifiable	Mayes County	Attainment/Unclassifiable
OK	Muskogee	04/22/2020	Muskogee County	Attainment/Unclassifiable	Attainment/Unclassifiable	Muskogee County	Attainment/Unclassifiable
PA	York	06/23/2011	York County	Unclassifiable	Attainment/Unclassifiable	York County	Attainment/Unclassifiable
TX	Bexar	09/18/2015	Bexar County	Unclassifiable/Attainment	Attainment/Unclassifiable	Bexar County	Attainment/Unclassifiable
TX	Harrison	09/18/2015	Harrison County	Unclassifiable/Attainment	Attainment/Unclassifiable	Harrison County	Unclassifiable
TX	Jefferson	09/18/2015	Jefferson County	Attainment	Attainment/Unclassifiable	Jefferson County	Attainment/Unclassifiable
TX	Orange	05/11/2020	Orange County	Attainment/Unclassifiable	Unclassifiable	Orange County	Unclassifiable
TX	Robertson	09/18/2015	Robertson County	Unclassifiable/Attainment	Attainment/Unclassifiable	Robertson County	Attainment/Unclassifiable
TX	Titus	09/18/2015	Titus County (partial)	Unclassifiable/Attainment	Attainment/Unclassifiable	Titus County (partial)*	Attainment/Unclassifiable
VA	Alleghany	04/24/2020	City of Covington – Alleghany County	Attainment/Unclassifiable	Attainment/Unclassifiable	City of Covington – Alleghany County	Attainment/Unclassifiable
VA	Botetourt	04/24/2020	Botetourt County	Attainment/Unclassifiable	Attainment/Unclassifiable	Botetourt County	Attainment/Unclassifiable

State	County/Area	Recommendation Date	State Recommended Area	State Recommended Designation	EPA's Intended Designation	EPA's Final Area Definition	EPA's Final Designation
WA	Chelan Douglas	06/15/2020	Chelan County Douglas County	Attainment	Attainment/Unclassifiable	Chelan County Douglas County	Attainment/Unclassifiable
WY	Carbon	05/01/2020	Carbon County	Attainment	Attainment/Unclassifiable	Carbon County	Attainment/Unclassifiable
WY	Fremont	05/01/2020	Fremont County (partial)	Attainment	Attainment/Unclassifiable	Fremont County (partial)*	Attainment/Unclassifiable
WY	Converse	05/01/2020	Converse County	Attainment	Attainment/Unclassifiable	Converse County	Attainment/Unclassifiable
WY	Sweetwater	05/01/2020	Sweetwater County (partial)	Attainment	Attainment/Unclassifiable	Sweetwater County (partial)*	Attainment/Unclassifiable

* The other portion of the area was designated previously.