

Draft Technical Support Document

**WISCONSIN
Area Designations for the
2010 SO₂ Primary National Ambient Air Quality Standard**

Summary

Pursuant to section 107(d) of the Clean Air Act, EPA must initially designate areas as either “unclassifiable”, “attainment”, or “nonattainment” for the 2010 one-hour sulfur dioxide (SO₂) primary national ambient air quality standard (NAAQS). The Clean Air Act defines a nonattainment area as one that does not meet the NAAQS or that contributes to a violation in a nearby area.

Wisconsin submitted recommendations on May 26, 2011. Table 1 below lists Wisconsin’s recommendations and identifies the counties or portions of counties in Wisconsin that EPA intends to designate “nonattainment” based on monitored violations.

Table 1. Nonattainment Area Designation for Wisconsin

Area	Wisconsin’s Recommended Designation of Areas/Counties	EPA’s Intended Designated Nonattainment Areas/Counties
Rhineland, WI Oneida County (partial) City of Rhineland and the Towns of Crescent, Newbold, Pine Lake and Pelican	Nonattainment	Nonattainment

Background

On June 3, 2010, EPA revised the primary SO₂ NAAQS (75 FR 35520, published on June 22, 2010). EPA revised the primary SO₂ standard by establishing a new one-hour standard at a level of 75 parts per billion (ppb) which is attained when the three-year average of the 99th percentile of one-hour daily maximum concentrations does not exceed 75 ppb. EPA has determined that this is the level necessary to provide protection of public health with an adequate margin of safety, especially for children, the elderly and those with asthma. These groups are particularly susceptible to the health effects associated with breathing SO₂. EPA is revoking the two prior primary standards of 140 ppb evaluated over 24 hours, and 30 ppb evaluated over an entire year because they will not add additional public health protection given a one-hour standard at 75 ppb. Accordingly, EPA is not designating areas in this process on the basis of either of these two primary standards. Similarly, the secondary standard for SO₂ has not been revised, so EPA is not designating areas in this process on the basis of the secondary standard.

EPA's SO₂ Designation Approach

Section 107(d) of the Clean Air Act requires that not later than one year after promulgation of a new or revised NAAQS, state Governors must submit their recommendations for designations and boundaries to EPA by June 2011. Section 107(d) also requires EPA to provide notification to states no less than 120-days prior to promulgating an initial area designation that is a modification of a state's recommendation. EPA was to promulgate initial area designations within two years of promulgation of the revised primary standard, although EPA has extended this deadline for one additional year due to having insufficient information to promulgate the designations. If a state did not submit designation recommendations, EPA will promulgate the designations that it deems appropriate. If a state or tribe disagrees with EPA's intended designations, they have an opportunity to demonstrate why any proposed modification is inappropriate.

Designations guidance was issued by EPA through a March 24, 2011, memorandum from Stephen D. Page, Director, U.S. EPA, Office of Air Quality Planning and Standards, to Air Division Directors, U.S. EPA Regions I-X. This memorandum identifies factors EPA intends to evaluate in determining boundaries for areas designated nonattainment. These five factors include: 1) air quality data; 2) emissions and emissions-related data (location of sources and potential contribution to ambient SO₂ concentrations); 3) meteorology (weather/transport patterns); 4) geography/topography (mountain ranges or other air basin boundaries); and 5) jurisdictional boundaries (e.g., counties, air districts, pre-existing nonattainment areas, reservations, metropolitan planning organization), among any other criteria deemed to be relevant to establishing appropriate area designations and boundaries for the one-hour SO₂ NAAQS.

The March 24, 2011, memo recommended that area boundaries default to the county boundary unless information provided by the state or tribe justifies a larger or smaller boundary than that of the county. EPA believes it is appropriate to evaluate each potential area on a case-by-case basis, and to recognize that area-specific analyses conducted by states, tribes and/or EPA may support a differing boundary than a county boundary.

In this technical support document, EPA discusses its review and technical analysis of the recommendations regarding areas with monitored violations submitted by Wisconsin for designations for the one-hour SO₂ standard and any modifications from these recommendations.

Definition of important terms used in this document:

1) **Designated nonattainment area** – an area which EPA has determined, based on a state recommendation and/or on the technical analysis included in this document, has violated the 2010 SO₂ NAAQS, based on the most recent three years of air quality monitoring data, or contributes to a violation in a nearby area.

2) **Recommended nonattainment area** – an area a state or tribe has recommended that EPA designate as nonattainment.

3) **Violating monitor** – an ambient air monitor meeting all methods, quality assurance and siting criteria and requirements whose valid design value exceeds 75 ppb, as described in Appendix T of 40 CFR part 50.

4) **2010 SO₂ NAAQS** – The NAAQS for SO₂ promulgated in 2010. This NAAQS is 75 ppb, based on the three year average of the 99th percentile of the annual distribution of daily maximum one-hour average concentrations. See 40 CFR Part 50.17.

5) **Design Value** - a statistic computed according to the data handling procedures of the NAAQS (in 40 CFR 50 Appendix T) that, by comparison to the level of the NAAQS, indicates whether the area is violating the NAAQS.

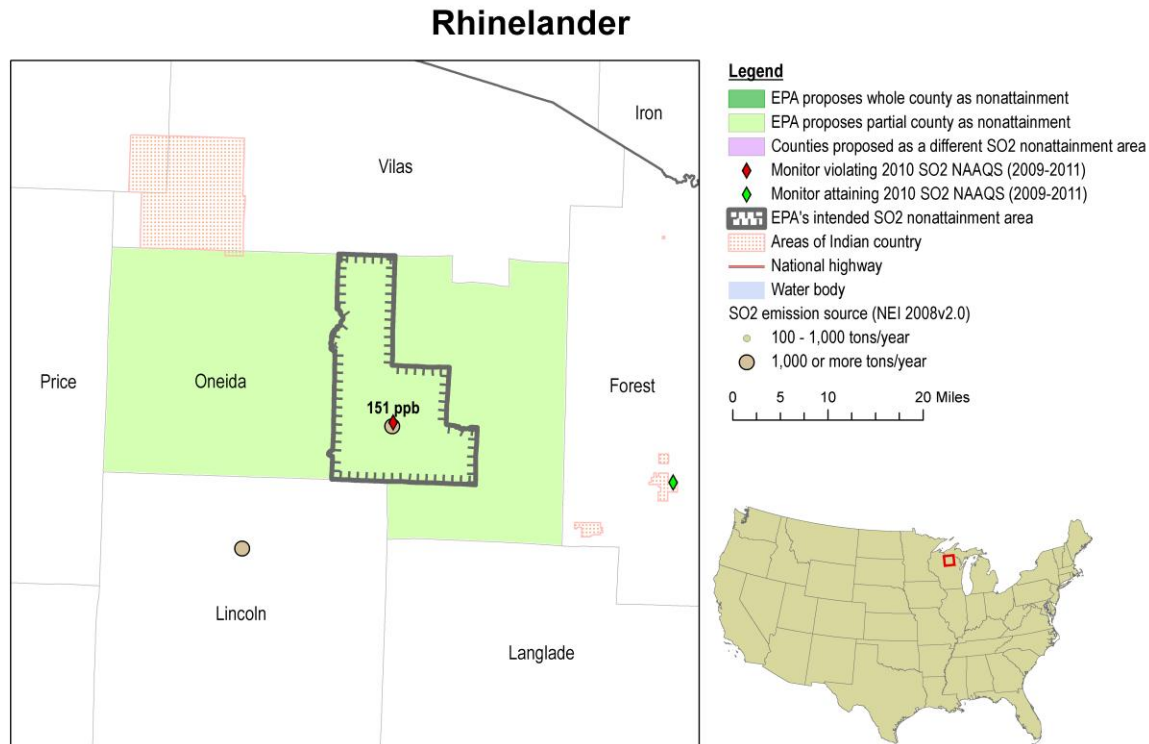
Technical analysis for the Rhinelander, WI Area

Introduction

This technical analysis for the Rhinelander Area identifies Oneida County with a monitor that violates the 2010 SO₂ NAAQS, and evaluates nearby counties for contributions to SO₂ concentrations in the area. EPA has evaluated this county and nearby counties based on the evidence for the factors recommended in the March 24, 2011 EPA guidance.

Figure 1 is a map of the area showing the locations and design values of air quality monitors in the area, and the counties surrounding any violating air quality monitors.

Figure 1. Map of sources and monitors in the Rhinelander, WI area and the intended Rhinelander nonattainment area



For the Rhinelander, WI Area, Wisconsin recommended that part of Oneida County containing the City of Rhinelander and the Towns of Crescent, Newbold, Pine Lake, and Pelican be designated as nonattainment for the 2010 SO₂ NAAQS. Based on EPA's technical analysis described below, EPA agrees with the State's recommendation and intends to designate this area also listed in Table 1 as nonattainment for the 2010 SO₂ NAAQS.

Detailed Assessment

Air Quality Data

Wisconsin's recommendation was based on data indicating nonattainment at an SO₂ monitor located in Rhinelander, Oneida County. The SO₂ NAAQS design value representative of the Rhinelander area is shown in Table 2. The Oneida County monitor shows a violation of the 2010 SO₂ NAAQS for 2009-2011. Therefore, at least a portion of this county must be designated nonattainment.

Table 2. Air Quality Data for Nonattainment Designations in Wisconsin

County	State Recommended Nonattainment?	Monitor Air Quality System ID	Monitor Location	SO ₂ Design Value, 2009-2011 (ppb)
Oneida	Yes	55-085-0996	Rhinelanders Water Tower	151

Emissions and Emissions-Related Data

Evidence of SO₂ emissions sources in the vicinity of a violating monitor is an important factor for determining whether a nearby area is contributing to a monitored violation. For this factor, EPA evaluated county level emission data for SO₂. Table 3 shows total emissions of SO₂ (given in tons per year) for violating and potentially contributing counties in and around the Rhinelanders area and sources emitting (or anticipated to contribute) greater than 100 tons per year of SO₂. The county that contains the Rhinelanders nonattainment area for the 2010 SO₂ NAAQS is shown in **bold**. Wisconsin believes Wausau Paper Mills, LLC (Wausau Paper), is likely to be the primary cause of this NAAQS violation. This facility is less than one kilometer from the air quality monitor. There are very few other SO₂ sources in Oneida County. The nearest source over 100 tons per year is located 33 kilometers from the Rhinelanders air quality monitor, in Lincoln County. It emits only slightly more SO₂ than Wausau Paper does, and its distance from the monitor indicates that it is unlikely to have a significant impact on the monitored violation of the SO₂ NAAQS. Therefore, EPA finds that this source may be judged not to contribute to the monitored violation.

Table 3. SO₂ Emissions

County	Facility Located in State-Recommended Nonattainment Area?	Facility Name – Total SO ₂ Air Emissions [NEI08V2] (tons per year)	Facility Location/ Distance from Monitor (km)	Total County SO ₂ Emissions (tons per year)
Oneida County	Yes	Wausau Paper Mills, LLC –3071	Rhinelanders/ 0.7	3128
	Yes	Red Arrow Foods –8	Rhinelanders/ 4.5	
Lincoln County	No	Packaging Corp. of America –4641	Tomahawk/ 33.	4690

Emission Controls

The emissions data provided in Table 3 represent emissions levels taking into account any control strategies implemented on stationary sources in the Rhinelanders area up to and including 2008. EPA does not have any additional information on actual emissions reductions resulting from controls put into place after 2008. Wisconsin is currently working with Wausau Paper to reduce its SO₂ emissions.

Geography/Topography (mountain ranges or other air basin boundaries)

Oneida County does not have any geographical or topographical barriers significantly limiting air pollution transport within its airshed. Therefore, this factor did not play a significant role in determining the nonattainment boundary.

Meteorology (weather/transport patterns)

For this area, winds can be from any direction. Therefore, sources in all directions can have some potential contribution. Given that the dominant SO₂ source is less than one kilometer from the air quality monitor, meteorology is not considered to be a significant factor in defining this nonattainment area.

Tribal Recommendations

On May 10, 2011, the Forest County Potawatomi Community (FCPC) submitted its SO₂ designation recommendations to EPA. The FCPC has jurisdiction over parcels of land in several Wisconsin counties, including Oneida County. The Oneida County land parcel which belongs to the FCPC is located about 16 miles (26 kilometers) east of Wausau Paper. The FCPC recommended that its Oneida County land parcel be designated “unclassifiable” for the 2010 SO₂ NAAQS, which is compatible with Wisconsin’s recommendation that that portion of the county be designated attainment. However, EPA at present is only designating the portion of Oneida County that is to be designated nonattainment and is not designating the portion of the county to which FCPC’s recommendations apply.

Conclusion

The air quality monitor in Oneida County shows a violation of the 2010 SO₂ NAAQS, based on 2009-2011 air quality data. Source proximity suggests that Wausau Paper in Rhinelander, Wisconsin is likely the dominant contributor to SO₂ NAAQS violations at the Rhinelander SO₂ monitor. After considering the factors described above, EPA intends to designate the portion of Oneida County containing the City of Rhinelander and the Towns of Crescent, Newbold, Pine Lake, and Pelican, as the Rhinelander, WI nonattainment area for the 2010 SO₂ NAAQS, as recommended by Wisconsin.