

SCOTT WALKER
OFFICE OF THE GOVERNOR
STATE OF WISCONSIN

P.O. Box 7863
MADISON, WI 53707

May 26, 2011

Ms. Susan Hedman
U.S. Environmental Protection Agency (EPA) Region 5 Administrator
77 West Jackson Boulevard
Mail Code: R-19J
Chicago, IL 60604-3507

Subject: Wisconsin Designation Recommendations for the 1-Hour Sulfur Dioxide (SO₂)
National Ambient Air Quality Standard (NAAQS)

Dear Ms. Hedman,

I am pleased to send this letter in compliance with Section 107(d)(1)(A) of the Clean Air Act. The state of Wisconsin recommends the following designations for the 1-hour SO₂ NAAQS:

- Nonattainment for a portion of Oneida County, including the City of Rhinelander and the Towns of Crescent, Newbold, Pine Lake and Pelican, attainment for the remainder of Oneida County and unclassifiable for all other Wisconsin Counties.

The technical dispersion modeling analysis supporting a smaller nonattainment area, rather than the U.S. EPA default county boundary designation, is enclosed for your review.

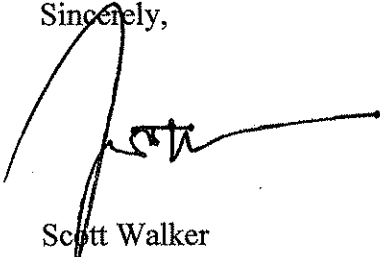
It should be noted that only one monitor in the current Wisconsin SO₂ monitoring network reports concentrations above the 1-hour SO₂ NAAQS. Wisconsin anticipates that SO₂ monitoring data will continue to demonstrate attainment in the future as new federal regulations are implemented.

The Wisconsin Department of Natural Resources (WDNR) is currently working collaboratively with a facility in Rhinelander, Wisconsin to reduce the high SO₂ concentrations being monitored. The State of Wisconsin may revise these designation recommendations contained herein pending the results of this ongoing effort.

The State of Wisconsin also strongly recommends that the U.S. EPA issue implementation guidance for the new 1-hour SO₂ NAAQS as expeditiously as practicable. In addition, the U.S. EPA should issue implementation guidance concurrently with the promulgation of any new or revised air quality standards in the future.

Thank you for the opportunity to submit the State of Wisconsin's recommendation for this important air quality matter. If you have any questions or require additional information, please feel free to contact John H. Melby, Jr., WDNR Air Management Bureau Director, at (608) 264-8884 or John.MelbyJr@wisconsin.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "S.W.", is written over a large, stylized, handwritten letter "W".

Scott Walker
Governor

cc: Cathy Stepp – DNR Secretary

Attach: (1) Wausau Paper Mills, LLC Geographic Modeling Analysis

DATE: February 7, 2011

TO: Joseph Hoch – AM/7
Neal Baudhuin – NOR (Rhineland)

FROM: John Roth – AM/7

SUBJECT: Air Dispersion Analysis for Wausau Paper Mills – Rhineland (Oneida County)

FILE REF: 4530
FID: 744008100

A. INTRODUCTION

A dispersion modeling analysis was completed on February 5, 2011 to assess the impact to ambient air of sulfur dioxide (SO₂) emissions from Wausau Paper Mills in Rhineland (Oneida County). This analysis was performed in support of the technical support document for Oneida County SO₂ nonattainment.

B. MODELING ANALYSIS

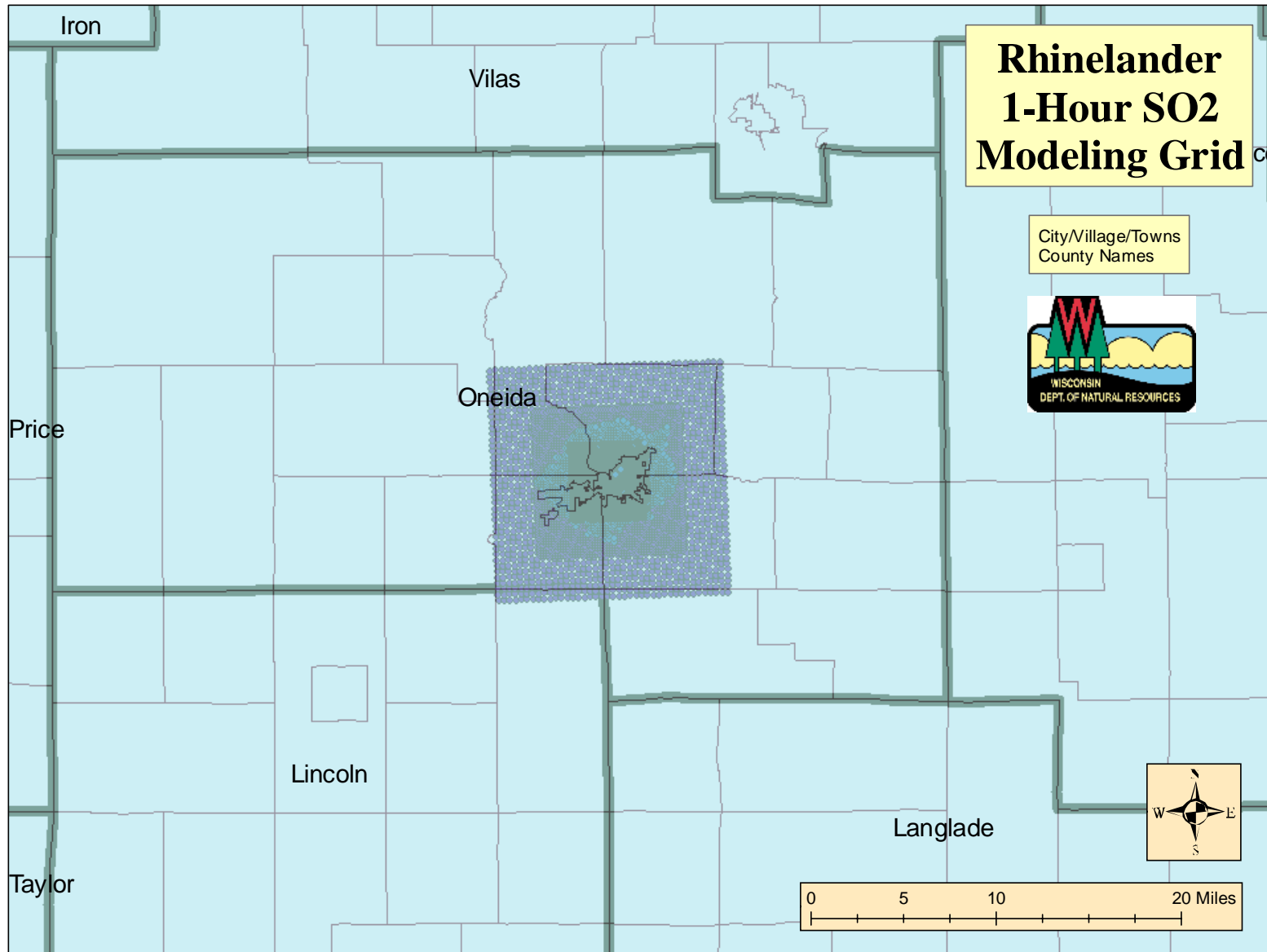
- Stack parameters used in this analysis were derived from historical dispersion modeling analyses combined with permit allowable emission rates. Building dimensions were determined using BPIP-PRIME with measurements taken on plot plans provided by Wausau Paper Mills – Rhineland (WPMR). Please refer to the source parameter table for modeled values.
- The results from the preliminary modeling analysis were lower than the measured design value from the Rhineland monitor. Since no other sources of SO₂ exist in the immediate area, the result from the modeling of WPMR should match the measured design value. Further sensitivity tests with other, distant sources, and with other meteorological data sets also had modeled impacts less than those monitored. Without having in-stack emission parameter monitoring, it is uncertain what stack conditions led to the high monitor values. Therefore, for this analysis the exit gas temperature and exit gas velocity were adjusted downward until the modeled concentration at the receptor nearest the Rhineland monitor matched the measured design value.
- Five years (1998-2002) of preprocessed meteorological data was used in this analysis. The surface data was collected in Rhineland (RHI), and the upper air meteorological data originated in Green Bay.
- The AERMIC (AMS/EPA Regulatory Model Improvement Committee) Model (AERMOD) was also used in the analysis. The model used rural dispersion coefficients with the regulatory default options. These allow for calm wind and missing data correction, buoyancy induced dispersion, and building downwash including recirculation cavity effects.
- USEPA guidance specifies that the highest hourly measured SO₂ value be used for regional background. The monitoring data in Wisconsin from 1998-2009 was collected and examined to determine if any sites could serve as regional background for Rhineland. SO₂ has generally been monitored near industrial facilities and most of the maximum hourly values are very high. Therefore, in this analysis all nearby sources of SO₂ will be explicitly modeled and a background value from a non-industrial monitoring location will be used. The Forest County Potawatomi Community operates a monitor that is ~45km from any major source of SO₂, and the maximum hourly value from 2007-2009 (39.2 µg/m³) will serve as the hourly regional background concentration. Additional emissions of SO₂ will then be input to the model from Red Arrow Foods in Rhineland and Packaging Corporation of America in Tomahawk.

C. MODEL RESULTS

The overall goal of this analysis is to examine the geographic extent of the high SO₂ concentrations. While there may be some long-distance (greater than 100 km) transport of SO₂, it is expected that individual facilities are the primary culpable sources. Because of this, the area that experiences concentrations above the standard may be much less than the presumed county-wide nonattainment. The results from this dispersion modeling analysis were post-processed to produce the five-year average of the 99th percentile of the daily maximum concentration. This data was entered into a geographic information service (GIS) program to produce the images on the following pages. The results shown include the modeled impact plus the estimate of regional background concentration.

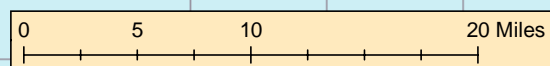
Note that the areal extent shown is defined by the maximum modeled design value concentration at each receptor. For any particular hour only a small subset of points is affected, and the locations of the affected points vary throughout the day and throughout the year.

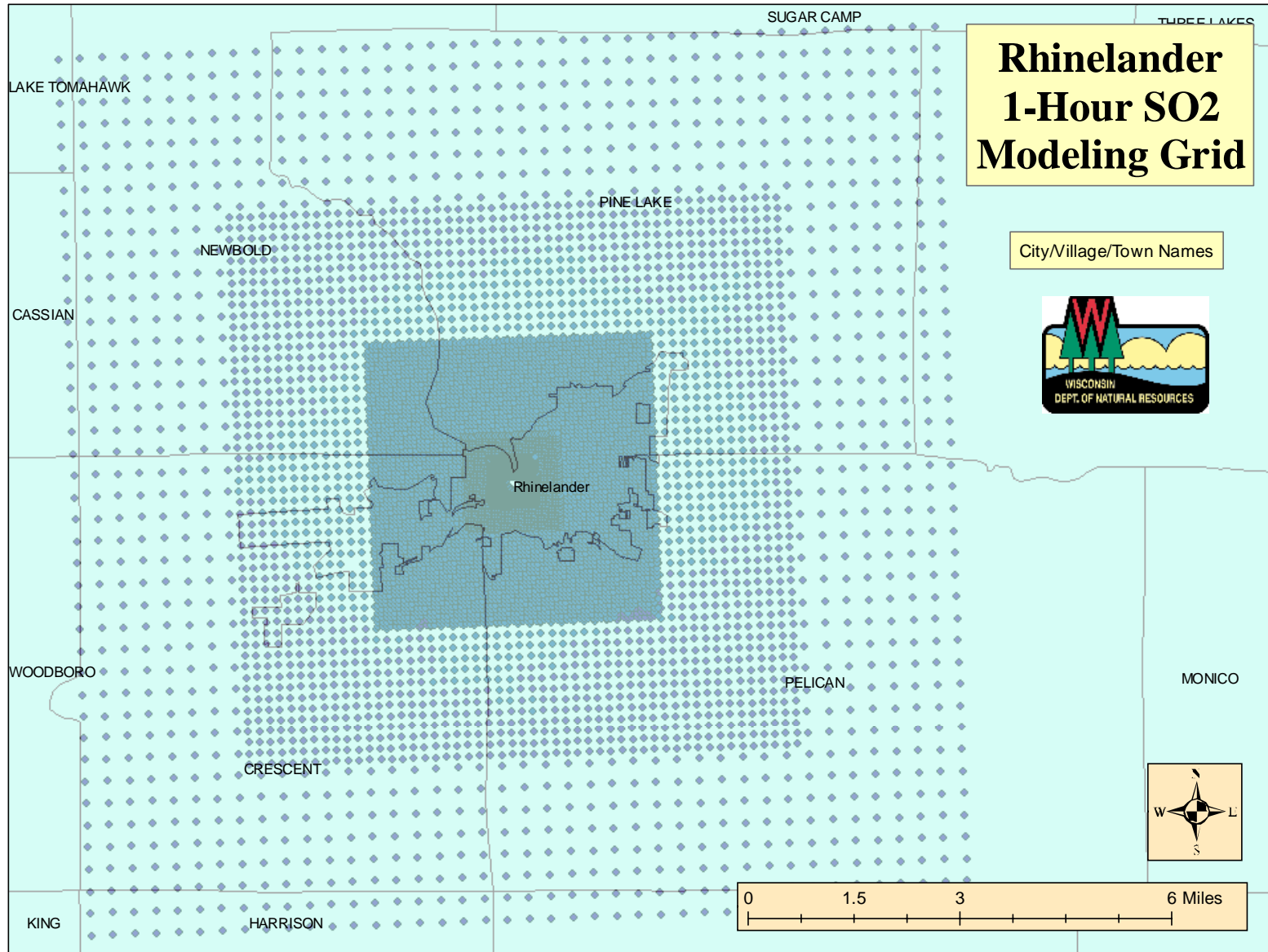
WAUSAU PAPER MILLS - RHINELANDER Emission Rates & Stack Parameters						
Stack ID	LOCATION (UTM83)	HEIGHT (M)	DIAM (M)	VELOCITY (M/S)	TEMP (K)	SO ₂ #/HR
S08	311338, 5056922	35.66	1.68	20.08	439.0	15.23
S09	311349, 5056895	63.09	2.13	5.00	345.0	1050.0
S11	311384, 5056829	60.96	3.35	3.00	400.0	471.5
Red Arrow Foods Rhinelander Sources						
S07	307577, 5055183	12.56	1.01	14.40	444.3	3.23
S10	307604, 5055176	15.54	1.07	13.20	366.5	3.23
PCA Tomahawk Sources						
S14	285952, 5036176	46.60	1.37	4.64	470.4	140.3
S15	285952, 5036203	60.70	3.23	16.50	468.0	2563.0

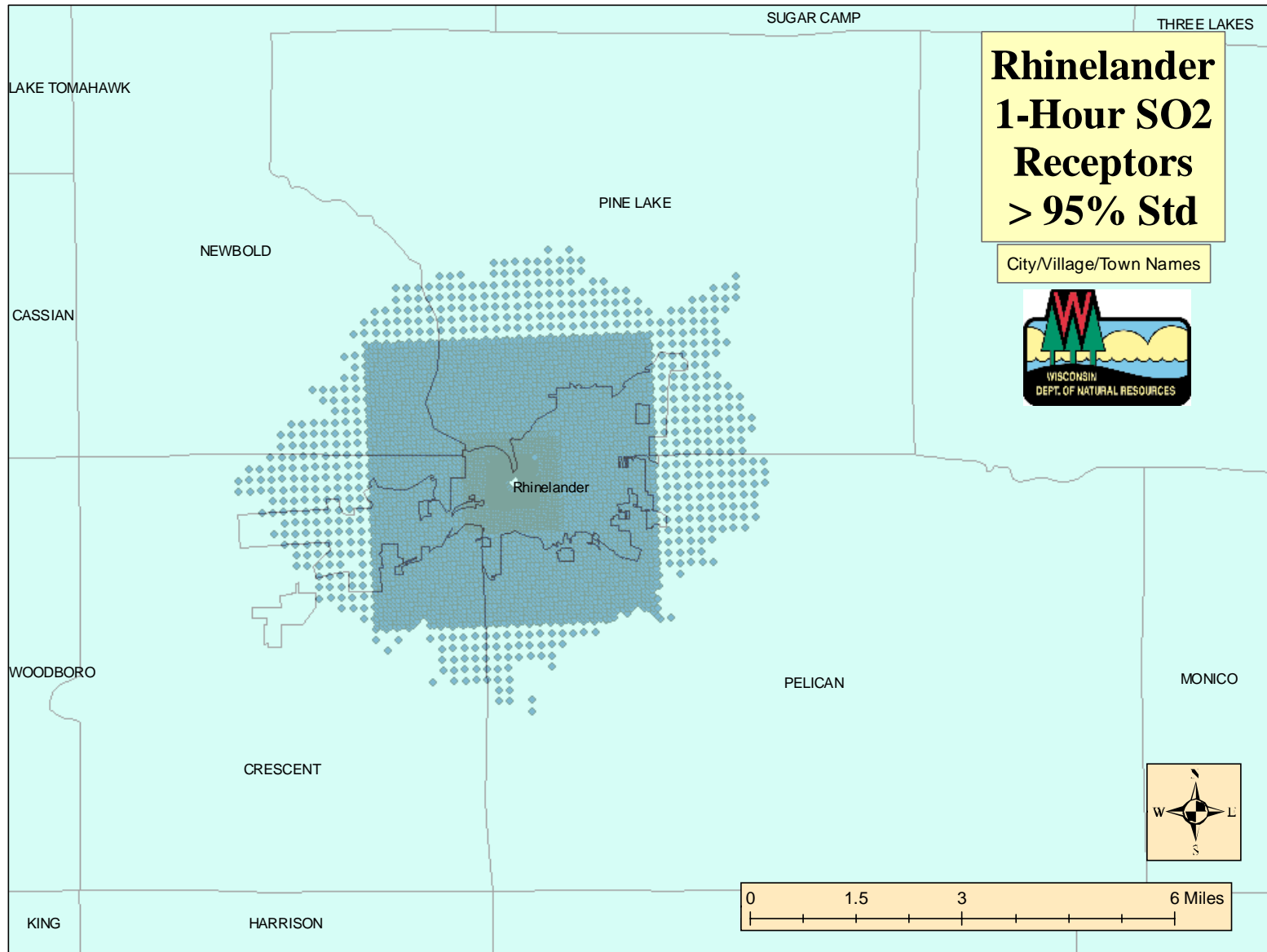


Rhinelander 1-Hour SO₂ Modeling Grid

City/Village/Towns
County Names







**Rhinelanders
1-Hour SO₂
Receptors
> 95% Std**

