Blue Ridge Environmental Defense League

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e-mailed 7/17/06

Ms. Sheila Holman
Division of Air Quality
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Re: Proposed exemption of sources from further BART determination requirements, 15A NCAC 2D .0543 Best Available Retrofit Technology

Dear Ms. Holman:

On behalf of the Blue Ridge Environmental Defense League, I write to comment on the proposed exemption of eight major sources from best available retrofit requirements for the following facilities in North Carolina: Weyerhaeuser–Plymouth, International Paper–Roanoke Rapids, International Paper–Riegelwood, Elementis Chromium, DAK Americas–Cape Fear, DAK Americas–Cedar Creek, Invista and ALCOA–Badin. I believe that the Division of Air Quality must reassess these proposals because they may not qualify for exemptions envisioned under 40 CFR Part 51.

As you know, the Best Available Retrofit Technology rule applies to major sources of pollution with the potential to emit 250 tons of sulfur dioxide (SO_2), nitrogen oxides (NO_x) or fine particulate matter (PM-2.5). These pollutants, in addition to being harmful to the environment and human health, are considered to have a negative impact on visibility, or haze, and are the focus of the BART guidelines. The US EPA proposed the Regional Haze Rule on July 1, 1999 which said, "all states contain sources whose emissions are reasonably anticipated to contribute to regional haze in a Class area." (64 FR 35720 – 35722). However, on January 20, 2001, the newly-elected President issued a "Regulatory Review Plan," and the EPA to withdrew its *Proposed Guidelines for Best Available Retrofit Technology Determinations Under the Regional Haze Regulations*. Subsequently, on May 24, 2002, the U.S. Court of Appeals for the D.C. Circuit issued a ruling striking down the Regional Haze Rule in part and upholding it in part (American Corn Growers et. al. v. EPA, 291 F. 3d 1). The final Regional Haze Rule and BART guidelines were issued on July 6, 2005 (40 CFR Part 51, Appendix Y) for certain major sources that emit "any air pollutant which may reasonably be anticipated to cause or contribute to any impairment of visibility" in any of the 156 national parks and wilderness areas which are designated "Class I" pristine areas by the Clean Air Act.

Weyerhaeuser–Plymouth Exemption Request

The exemption request for Weyerhaeuser is based on the modeling analysis done by its consultant, URS, which also submitted analyses for International Paper in Riegelwood and

Roanoke Rapids, and Elementis Chromium. All four suffer from the same shortcomings. The URS analysis states:

> After reviewing many ground level plume footprint plots from CALPUFF for a point source near a Class I area it has been verified that a plume is not widely dispersed under most "worst-case" meteorological conditions. Therefore using one "worst-case" receptor location to determine if a "just noticeable change" in regional haze is occurring does not properly represent an individual facility's impact on the change in deciview based on the formulation of the deciview metric. [a]

URS states that a "just noticeable change" in hazy conditions might not indicate an impact on visibility. This is as astounding an assertion it is unsubstantiated. What ground level plume footprints were reviewed, who verified them and why would they not represent a change in the metric?

> Therefore in order to properly apply the 0.5 deciview threshold for BART modeling, URS has conducted an example modeling analysis using the meteorological conditions for the "worstcase" day to illustrate the relative impacts using current modeling procedures and the more refined modeling approach. Currently the process for doing LOS modeling in CALPUFF is rather slow and cumbersome for the analyst since many of the steps are not automated. However, coding changes could be made to CALPUFF/CALPOST to greatly improve the processing time. LOS modeling is based on averaging the predicted change in deciviews along a line of receptors extending from a worst-case receptor location within the Class I area extending to a distance equal to the visual range for that day. [b]

URS has developed an innovative method of determining worst-case visibility impacts via computer modeling. Coding changes in the line-of-sight parameters appear to have been designed to reduce processing time, not to increase accuracy.

DAK Americas–Cape Fear

DAK Americas operates the former DuPont plant on the Northeast Cape Fear River. The plant processes polyethylene terephthalate (PET) for plastic fiber and bottle resin. Rather than calculating the plant-wide impacts, their BACT exemption request is predicated on a limited number of pollution sources within the facility.

> Hereafter, the "BART-eligible source" is taken to mean the collection of sources at a facility in existence during the relevant time period within one or more BART source categories that has potential emissions of one or more visibility-affecting pollutants in excess of 250 tpy. The BART-eligible source may include multiple emission units, but need not include the entire facility. [c]

Although speciated emissions data are poor, the request nonetheless states that its analysis is conservative. Moreover, the report does not represent test results for the Cape Fear plant.

> While few data are available to estimate speciated emissions, DAK has reviewed what data are available to arrive at a conservative, yet reasonable estimate of speciated emissions. However, it should be noted that the data quality on PM speciation is inadequate for setting regulatory emission limits and are provided here solely as the best estimated data for a scientific applicability report of potential impacts on visibility impairment at Class I areas using CALPUFF modeling. The following applicability report does not represent source test results for specific sources at the Cape Fear facility. [d]

These and the other six requests for exemption fall short of what might could be done if DAQ followed the example of regional planning organizations and require pollution reductions to limit known negative impacts on visibility.

Midwest Regional Planning Organization

The Midwest Regional Planning Organization published a modeling protocol (June 9, 2004 and updated October 21, 2005) which asks critical questions which DAQ and the permittees failed to ask. These questions include: What are the uncertainties in emissions estimates for PM, ozone and haze precursors? What are the major uncertainties in modeling analyses? Are there additional model improvements that we should pursue at this time? To what extent do we employ the single atmosphere concept in modeling? [e]

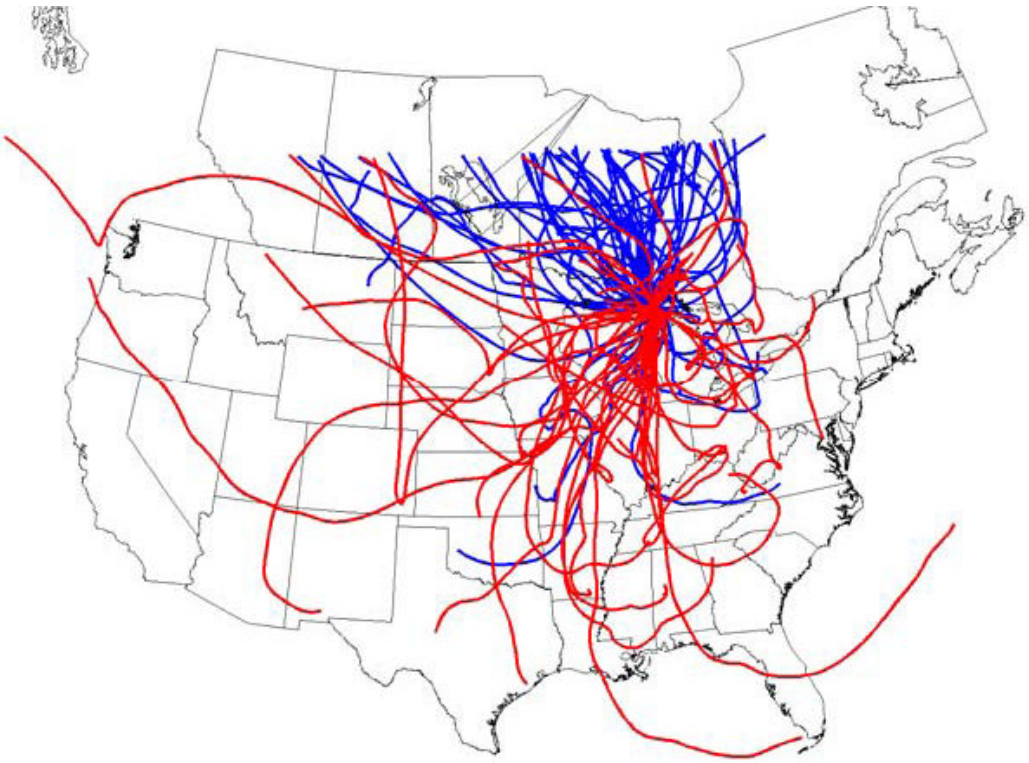
The Lake Michigan Air Directors Consortium's (LADCO) approach to modeling regional haze includes: grid-based modeling, receptor modeling, back-trajectories, and indicator species analyses. The grid-based analysis utilizes episodic models for days with poorest visibility (e.g., STEM-III) and long-term models (e.g. REMSAD). Receptor analyses utilize models which account for both primary and secondary, inorganic and organic PM, and hybrid models for back trajectories (e.g. HYSPLIT). Modeling is performed for overall emissions impacts, biogenic emissions and mobile sources (SMOKE, BEIS3 and MOBILE6). Indicator species analyses measure sulfates, oxidants and nitrates. Information gathering includes emissions of SO2, VOC, PM-2.5 and NH3; meteorological information, PM measurements in Class I areas and upwind, non-urban areas; and deposition data.

The US EPA's Regional Haze Regulations require an assessment of regional haze impacts across state boundaries, a "contributions assessment" (required under 40 CFR Part 51, Subpart P, section 51.308(c)(1)(ii)); the U.S. District Court of Appeals for the D.C. Circuit ruling on May 24, 2002 did not vacate this requirement.

The Midwest Regional Planning Organization's assessment of visibility impairment to its Class 1 areas by emission sources outside of its five-state area indicates that North Carolina's air pollution certainly contributes to regional haze in local and regional Class I areas. Their analysis indicates that air pollution sources in Illinois, Indiana, Ohio, Wisconsin, Missouri, New York and Ontario may affect visibility in Michigan. Further, pollution from most of the states in the eastern United States affects one or more Class 1 areas. The Midwest Regional Planning Organization (RPO) states:

> These results indicate that emissions from IL (BWCA and Seney), IN (Mammoth and Seney), MI (Voyageurs and Lye Brook), OH (Mammoth, Seney, and Lye Brook), and WI (Voyageurs, BWCA, and Seney) may contribute to visibility impairment in a Class I area in another state and that emissions from other states (IL, IN, OH, WI, MO, NY, and Ontario) may contribute to visibility impairment in the Class I areas in MI. Furthermore, the results show that most states in the four eastern RPOs may contribute to visibility impairment in at least one of the ten Class I areas considered here. [f]

The following map illustrates the MRPO's 48-hour back trajectory plot for Seney NWR in northern Michigan. [g]



Back trajectories for 20% best (blue) and 20% worst (red) visibility days for Seney NWR (period 2000 – 2001)

The following table is the MRPO's impact assessment of 35 states and one Canadian province on eleven Class 1 areas. North Carolina pollution sources are shown to impact five areas.

Possible "Outside" States Impacting Class I Areas in the Eastern U.S. (based on subjective analysis of trajectory plots) [h]

State	Voyageurs	BWCA	IsleRoyale	Seney	Mammoth	D. Sods	Shenand.	LyeBrook	G. Gulf	Acadia	Brigantine
IL		X		X							
IN				X	X						
MI	X							X			
OH				X	X			X			X
WI	X	X		X							
MN											
IA	X	X		X							
MO	X	X		X							
AR											
LA											
ND											
SD	X										
NE											
KS											
CT								X	X	X	
DE								X	X	X	X
MA								X	X	X	
MD							X	X	X	X	X
ME											
NH									X	X	
NJ								X	X	X	
NY				X				X	X	X	
PA							X	X	X	X	X
RI									X	X	
VT										X	
AL					X						
FL											
GA					X						
KY						X	X				
MS											
NC					X	X	X	X			X
SC						X	X				
TN					X	X	X				X
VA					X	X		X		X	X
WV					X		X	X			X
Ontario				X				X	X		

Multi-state trajectory plots indicate that North Carolina's impacts on Class 1 areas are substantial.

North Carolina's Negative Impact on Visibility [i]

Class 1 area	State	NC percentage of negative visibility impact
Dolly Sods Wilderness Area	West Virginia	3.06%
Shenandoah National Park	Virginia	5.00%
Brigantine Wilderness Area	New Jersey	4.22%

The MRPO's Contribution Assessment Summary states:

> Based on consideration of back trajectories and source apportionment analyses, it can be concluded that emissions from IL, IN, OH, and WI likely contribute to visibility impairment in a Class I area in other states and that emissions from other states likely contribute to visibility

> impairment in the Class I areas in MI. This showing meets the statutory requirements of the contribution assessment (section 51.308(c)(1)(ii)) and provides information to support State Implementation Plan development. Additionally, it demonstrates the importance of interstate transport and the need for a regional approach in developing effective control programs for regional haze in the eastern U.S.[j]

If NC air emissions are having a negative impact on wilderness areas in West Virginia and New Jersey, the exemptions under consideration would only add to the problem of poor air quality in those states and here at home. The DAQ should not approve the exemptions for Weyerhaeuser–Plymouth, International Paper–Roanoke Rapids, International Paper–Riegelwood, Elementis Chromium, DAK Americas–Cape Fear, DAK Americas–Cedar Creek, Invista and ALCOA–Badin.

Respectfully submitted,

Louis Zeller

References

a. Exemption Modeling Analysis in Support of the Best Available Retrofit Technology (BART) Regulations - 40 CFR 51.300 and Appendix Y, prepared for Weyerhaeuser by URS, April 24, 2006, page 19
b. Exemption Modeling Analysis in Support of the Best Available Retrofit Technology (BART) Regulations - 40 CFR 51.300 and Appendix Y, prepared for Weyerhaeuser by URS, April 24, 2006, page 20
c. Best Available Retrofit Technology Applicability Analysis, DAK Americas, LLC, Cape Fear Facility, Section 1.1, prepared by Trinity Consultants, April 2006
d. Best Available Retrofit Technology Applicability Analysis, DAK Americas, LLC, Cape Fear Facility, Section 2.2, prepared by Trinity Consultants, April 2006
e. Midwest Regional Planning Organization, MODELING PROTOCOL, updated October 21, 2005, http://www.ladco.org/reports/rpo/RPOModelingProtocol_kbedit.pdf
f. Midwest Regional Planning Organization, Contribution Assessment, May 15, 2003, page 5
g. Midwest Regional Planning Organization, Contribution Assessment, May 15, 2003, Figure 2, http://www.ladco.org/reports/rpo/contributionassessment2x_sm.pdf
h. Midwest Regional Planning Organization, Contribution Assessment, May 15, 2003, Table 1
i. Data from Midwest Regional Planning Organization, Contribution Assessment, May 15, 2003, Table 2
j. Midwest Regional Planning Organization, Contribution Assessment, May 15, 2003, Summary