



IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE

Air Resources Division

P.O. Box 25287

Denver, CO 80225



TAKE PRIDE
IN AMERICA

June 11, 2010

N3615 (2350)

Ted Sturdevant, Director
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Dear Mr. Sturdevant:

On April 1, 2010, we received Washington's draft regional haze implementation plan for review. We appreciate the opportunity to work with the State through the development and review of this plan to make progress toward achieving natural visibility conditions at our National Parks and Wilderness Areas.

This letter acknowledges that the U.S. Department of the Interior, National Park Service, in consultation with the U.S. Fish and Wildlife Service, has received and conducted a substantive review of the Washington draft Regional Haze Rule implementation plan in fulfillment of your requirements under the federal regulations 40 CFR 51.308(i)(2). Please note, however, that only the U.S. Environmental Protection Agency (EPA) can make a final determination regarding the document's completeness and, therefore, ability to receive federal approval from EPA.

Our review focused on eight key content areas that were outlined in a letter dated August 1, 2006, that we sent to each State. The content areas reflect priorities for the Federal Land Manager agencies, and our enclosed comments address these priorities. As we have discussed with your staff, we are concerned that the draft implementation plan as written does not meet all the regulatory requirements of the Regional Haze Rule. Washington has proposed reasonable progress goals without conducting the required four factor analysis of possible emission controls. The proposed reasonable progress goals do not reflect substantive improvement in visibility, and in the case of North Cascades National Park and Glacier Peak Wilderness Area, actually project a degradation in visibility by 2018 compared to the 2000-2004 baseline. We also have concerns with the determinations of Best Available Retrofit Technology (BART). Our BART comments supplement those that we provided on November 20, 2009.

We had a constructive discussion with your staff on May 18, 2010, and have offered our assistance in addressing our technical concerns. We look forward to continued dialog as you revise the implementation plan and respond to our comments per section 40 CFR 51.308(i)(3). For further information regarding our comments, please contact Pat Brewer of my staff, at (303) 969-2153.

Again, we appreciate the opportunity to work closely with the State of Washington to improve visibility in our Class I national parks and wilderness areas.

Sincerely,



for Christine L. Shaver
Chief, Air Resources Division

Enclosure

cc: Mahbubul Islam
Manager, State and Tribal Air Programs Unit
U.S. EPA Region 10
1200 Sixth Avenue
Seattle, WA 98101

Stuart Clark
Manager, Air Quality Program
Department of Ecology
P.B. Box 47600
Olympia, Washington 98504-7600

National Park Service Comments
Washington Draft State Implementation Plan for Regional Haze
June 11, 2010

General Comments

Washington Department of Ecology (Ecology) has provided a clearly written draft regional haze State Implementation Plan (SIP). The draft plan contains several, but not all, of the key policy elements that we outlined in our August 2006 letter to the States. Ecology has demonstrated using the IMPROVE monitoring data and technical analyses provided by the Western Regional Air Partnership (WRAP) that Washington understands the causes of visibility impairment at the Class I areas in Washington.

The draft SIP is missing the required analysis of the four statutory factors to set reasonable progress goals and lacks a substantive long-term strategy for improving visibility in Class I areas in Washington. Ecology is taking few actions beyond reporting existing federal or previous state actions. Ecology needs to do more to demonstrate its commitment to improving visibility.

Ecology's Best Available Retrofit Technology (BART) determinations addressed some of our procedural concerns, but made no changes in control requirements from the draft BART determinations.

We provide more detailed comments on these concerns below. We also agree with comments provided by the Forest Service. We are willing and would welcome the opportunity to assist Ecology to implement the recommended analyses prior to submitting the final SIP to EPA.

Specific Comments

Chapter 5 Baseline and Natural Conditions

It would be helpful to look at daily time series data for each IMPROVE monitor for each year to better understand the frequency of contributions from fire (e.g., few major events vs multiple smaller events) and to better characterize the seasonal variation in contributions from nitrate and sulfate. Daily time series plots can be generated from the VIEWS website (<http://views.cira.colostate.edu/web/>).

Chapter 6 Emissions Inventory

WRAP provided several inventories to the western states to support regional planning. Ecology has chosen to discuss only two of the available WRAP inventory versions, 2002 Plan d (Plan02d) and 2018 Projected Reasonable Progress version a (PRP18a). It would be helpful to report that a 2002 actual inventory was used for model performance evaluation for the 2002 base year and to clarify how those emissions differed from the 2000-2004 average emissions used in Plan 02d.

Ecology should provide more discussion of the basis for differences between the 2002 Plan02d and the 2018 PRP18a inventory. Please identify the specific On the Books controls that account for the reduction in point source sulfur dioxide (SO₂). Please define whether the PRP18a inventory includes all the controls determined to be BART for sources subject to BART in Washington.

Please discuss the basis for increases between 2002 and 2018 in emissions of SO₂ from area sources and increases in emissions of nitrogen oxides (NO_x), volatile organic compounds (VOC), primary organic carbon (OC), and elemental carbon (EC) from point and area sources. It is difficult to claim progress in improving visibility when Washington emissions are increasing rather than decreasing.

Please clarify why Ecology chose to use the earlier 2018 PRP18a inventory rather than the more recent 2018 PRP18b inventory. We recommend that Ecology use the PRP18b inventory and modeling results. At a minimum, Ecology should explain the significant differences between the PRP18a and PRP18b inventories and define which inventory is more accurate. For example, total projected SO₂ emissions from Washington point sources were 12,262 tons lower in the PRP18b inventory than in the PRP18a inventory. Total NO_x emissions from point sources were 5,250 tons lower in PRP18b than PRP18a. Are these differences due to emissions controls or changes in inventory methods? Did Ecology or WRAP generate these inventory changes?

Chapter 7 WRAP Modeling

Section 7.3 on model performance provides very little information to judge the confidence to place in the modeling results reported over the next 50 pages. It is preferable for Ecology to include model performance charts for sulfate, nitrate, and organic carbon. At a minimum, Ecology should discuss how well the regional models represent meteorology and air quality at the IMPROVE monitors in Washington.

The last sentence in section 7.3 is incomplete.

Section 7.4 accurately discusses the Particulate Source Apportionment Technology (PSAT) modeling and the Weighted Emissions Potential analyses (WEP). In Section 7.4.3 it is important for Ecology to clarify the significant differences between the inventory versions reported in Section 6 (WRAP 2002 Plan02d and 2018 PRP18a), the earlier inventories used for the PSAT modeling (2002 Plan02c and 2018 base b) and the later 2018 inventory used in the WEP analyses (2002 Plan02d and 2018 PRP18b).

Please correct the figure title for Figure 7-3 which refers to WEP results not PSAT results. The last two sentences in Section 7.4.3 appear contradictory.

Chapter 8 Source Apportionment

WRAP's PSAT results for sulfate and nitrate source apportionment and the WRAP WEP analyses are accurately reported. Residence time analyses can assist in defining source areas that

most frequently impact Class I areas. In addition to the residence time plots available on the WRAP Technical Support System (TSS) under the WEP analyses, residence time plots are also provided under the Causes of Haze technical archive:

http://www.coha.dri.edu/images/backtraj/wa_w20_0500m_backtraj_northcascades.gif.

Chapter 9 Reasonable Progress Goals

Ecology has not met the requirements of the regional haze rule Section § 51.308 (d) (1):

“The reasonable Progress goals must provide for an improvement in visibility for the most impaired days...

- (i) In establishing a reasonable progress goal for any mandatory Class I Federal area within the State, the State must:
 - (A) Consider the costs of compliance, the time necessary for compliance, the energy and non-air quality environmental impacts of compliance, and the remaining useful life of any potentially affected sources, and include a demonstration showing how these factors were taken into consideration in selecting the goal.”

Ecology set reasonable progress goals for the Class I areas in Washington the same as the WRAP PRP18a modeling results. DOE did not consider the four statutory factors. Modeled visibility in 2018 does not meet the uniform rate of progress for 2018. At North Cascades National Park and Glacier Peak Wilderness Area, visibility is projected to degrade by 2018. Both sulfate and organic carbon are projected to increase at North Cascades National Park in 2018 compared to 2002. This result does not comply with Section § 51.308 (d) (1). Ecology needs to explain the basis for these results.

It is difficult to see how Ecology can conclude that the existing controls are sufficient to demonstrate reasonable progress, especially when point and area source emissions in Washington are projected to increase by 2018.

Tesoro Refining and Marketing Company originally proposed to install and operate low NOx burners or ultra low NOx burners on process heaters by 2018 as part of their Best Available Retrofit Technology (BART) proposal. Ecology found the proposed controls to be technically and economically feasible. Since Tesoro proposed to install controls on two heaters during a regularly scheduled maintenance outage in 2017, these controls were determined to be too late to meet BART requirements and not required in Tesoro’s permit. We ask Ecology to require by permit that these controls be operational by 2018 as part of the current reasonable progress demonstration.

The regional haze rule Section § 51.308 (d) (1) (vi) instructs:

“The State may not adopt a reasonable progress goal that represents less visibility improvement than is expected to result from implementation of other requirements of the CAA during the applicable planning period.”

Ecology is using the WRAP PRP18a inventory for reasonable progress goals, yet the more recent WRAP PRP18b inventory has lower emissions and the PRP18b modeling results project slightly better visibility at the Class I areas than the PRP18a modeling results. If the PRP18b inventory and modeling results provide a more accurate representation of visibility benefits from expected controls by 2018, then Ecology should cite the PRP18b modeling results.

For the reasonable progress analysis, Ecology should identify the major sources in Washington that may contribute to visibility impairment in Class I areas and potential future controls.

Using the WRAP Emissions Data Management System (EDMS), in the attached table we identified 37 individual units in Washington that have projected 2018 emissions greater than 350 tons per year of either SO₂ or NO_x in the WRAP PRP18a inventory. (Facility name is listed more than once if there are multiple processes at one facility.)

Ecology could use data available through the WRAP EDMS and WRAP WEP to qualitatively rank the potential contributions of Washington point sources to Class I areas. Emissions, distance from the source to the Class I area, and residence time of the grid cell where the source is located can be used to rank the relative importance of specific point sources for consideration in a reasonable progress analysis. Such an analysis is advisable to prioritize DOE's intended control analysis under the long-term strategy. We are available to assist in such an analysis.

Chapter 10 Long Term Strategy

The long-term strategy should include a discussion of the BART controls. Even if exempted from BART, industrial sources may still need to reduce emissions to make reasonable progress toward improving visibility.

Ecology indicates that Washington's silvicultural Smoke Management Plan was included in the 1999 SIP for Reasonably Attributable Visibility Impairment (RAVI). Please clarify if the Smoke Management Plan has been updated since 1999. Please provide additional discussion of the state's control requirements for agricultural burning. More discussion is needed to demonstrate how these smoke management programs restrict emissions.

Ecology discusses that Washington has already implemented a program to address residential wood combustion but does not discuss that the inventory provided by WRAP for this sector is increasing, not decreasing. Please clarify whether the WRAP PRP18a inventory accounts for Washington's residential wood control programs.

Chapter 11 Best Available Retrofit Technology (BART)

Ecology has not fully addressed our previous comments (November 20, 2009).

BART sources in Washington impact several Class I areas. Cumulative visibility impacts need to be considered when determining the appropriate level of control for BART. Ecology's response that there is no single clearly defined method to consider cumulative impacts does not

address our concern. The visibility benefits of controlling a source that impacts 12 Class I areas are greater than the benefits of controlling a source that impacts 1 Class I area, and Ecology's BART analyses should consider cumulative, multi-park impacts. We are willing to assist you in calculating cumulative impacts and multi-park benefits of control scenarios.

Our detailed comments on the proposed BART determinations are provided in the attached analyses and summarized below.

Alcoa Wenatchee: We strongly disagree with using an ultra fine modeling grid to exempt Alcoa Wenatchee from BART eligibility. Control options for this source should have been evaluated.

Centralia:

- We believe that Selective Catalytic Reduction (SCR) is both technically feasible and cost effective to reduce visibility impacts and should be determined to be BART for Centralia.
- TransAlta assumes that due to space constraints, SCR would have to be located on top of the electrostatic precipitator (ESP). TransAlta did not consider the feasibility of a downstream location. Ecology should not have eliminated low-dust and tail-end SCR with resized ductwork as feasible options.
- Ecology has underestimated the ability of SCR to reduce emissions. Ecology assumes that SCR can achieve an annual emissions limit of 0.07 lb/mmBtu or 70% NOx reduction. EPA's Clean Air Markets data base demonstrates that 19 units are achieving an annual emissions rate of 0.05 lb/mmBtu or 90% NOx removal. By underestimating SCR efficiency, cost effectiveness is underestimated.
- Costs of SCR installation are overestimated. The EPA Control Cost manual should have been used as recommended by EPA in the BART guidelines. Several cost items were included in the analysis that are not allowed in the Cost Manual.
- With higher removal efficiency and lower total costs, NPS estimated a reasonable cost effectiveness at \$5622/ton, compared to \$9091/ton estimated by TransAlta's consultant.
- TransAlta underestimated the visibility benefits of SCR. TransAlta has lowered sulfur dioxide emissions by burning low sulfur coal from Powder River Basin in Wyoming (called FlexFuel project). TransAlta evaluated the visibility benefits of Selective Noncatalytic Reduction (SNCR) with FlexFuel but evaluated SCR without the benefit of FlexFuel. Thus the benefits of SCR are underrepresented.
- We have previously asked Ecology to consider the cumulative visibility impacts of TransAlta on the 12 Class I areas that are within 300 km of the facility, and the potential visibility improvements in those areas from the various control alternatives.

Tesoro:

- Ecology found that NOx emissions controls originally proposed as BART by Tesoro are appropriate and cost effective to implement in the 2017-2018 timeframe. Because these controls cannot be installed by 2015, Ecology determined that they did not meet the BART requirements. Ecology should require these controls to be installed by 2018 as part of reasonable progress.

Port Townsend:

- Ecology must evaluate all technically-feasible and proposed options against the proposed BART limits if these are higher than current emissions limits.
- Ecology must evaluate the visibility impacts of switching to lower sulfur fuels.
- Ecology should have evaluated upgrades to existing control equipment.
- We believe a wet Electrostatic Precipitator for Power Boiler #10 is cost effective and represents BART.

Intalco:

- Costs of Limestone Slurry Forced Oxidation were overestimated.
- Intalco and Ecology should better explain why seawater scrubbing and sodium-based scrubbing were rejected for potline SO₂ emissions.

Conclusions

We would like to see Ecology make a more substantive effort to reduce emissions to improve visibility. We are willing to assist Ecology to address the concerns raised in this review.

Washington Point Source 2018 Emissions SO2 or NOx Greater than 350 Tons/Year
 (from Western Regional Air Partnership; plant name is listed more than once if there are multiple units and/or processes at one facility)

Source Category	Source Category	Plant Name	2018 SO2 tons/yr	2018 NOx tons/yr
Primary Metal Production	Aluminum Ore (Electro-reduction)	Aluminum Co Of America Wenatchee Works	3,026	56
		Goldendale Aluminum	433	63
		Intalco Aluminum Corp Ferndale	4,734	29
Pulp and Paper and Wood Products	Sulfate (Kraft) Pulping	Boise Cascade	3,873	609
		Fort James Camas Llc	12	589
		Longview Fibre	125	815
		Pt Townsend Paper	448	374
		Simpson Tacoma Kraft	557	543
		Weyerhaeuser Co	67	839
	Sulfite Pulping	Fort James Camas Llc	8	480
	Weyerhaeuser Co.	284	572	
Petroleum Industry	Process Heaters	Bp Cherry Point Refinery	904	1,684
		Conoco Phillips	744	640
		Puget Sound Refining Company	16	577
		Tesoro Northwest Company	1,100	761
	Flares	Puget Sound Refining Company	665	29
	Catalytic Cracking Units	Puget Sound Refining Company	1,571	
	Petroleum Coke Calcining	Bp Cherry Point Refinery	245	843
Blowdown Systems	Conoco Phillips	559	393	
Mineral Products	Cement Manufacturing (Wet Process)	Lafarge North America Inc	1,209	3,528
	Cement Manufacturing (Dry Process)	Ash Grove Cement Co, E Marginal	312	1,597
	Glass Manufacture	Cardinal FG	72	830
		Saint-Gobain Containers Inc	193	669
	Lime Manufacture	Graymont Western Us Inc Total	151	394
Chemical Manufacturing	Nitric Acid	Agrium Us Inc	0	415

Source Category	Source Category	Plant Name	2018 SO2 tons/yr	2018 NOx tons/yr
Electric Generation	Bituminous/ Subbituminous Coal	Transalta Centralia Generation	2,491	14,477
	Wood/Bark Waste	Avista	9	660
	Residual Oil	Daishowa America	412	71
Industrial Combustion Boilers	Process Gas	Conoco Phillips	1,223	103
		Longview Fibre	1,898	27
		Puget Sound Refining Company	4	629
		Tesoro Northwest Company	3,775	1,650
	Wood/Bark Waste	Kimberly-Clark Corporation	499	571
		Weyerhaeuser Co	821	1,666
	Residual Oil	Tesoro Northwest Company	707	117
Natural Gas	Longview Fibre	1	499	
Solid Waste Disposal - Government	Municipal Incineration	Waste To Energy	15	451