

# **APPENDIX F**

## **Federal Land Management Agency Letters and California's Response**

**Appendix F**  
**California Regional Haze Plan Response to Comments**

**January 14, 2009 comment letter from the United States Department of the Interior National Parks Service (DOI-NPS) letter**

1. **Comment: Elaborate within the body of the Plan narrative the rationale for groupings of Class 1 Areas chosen and how the geographic source regions were defined.**

Response: Chapter 2, section 2.3 introduces the four sub-regions. As explained in this section, the primary reason for looking at Class 1 Areas data by sub-region is that the main “drivers” of haze on worst days are the same one or two species for each site in the sub-region. Sources for the driving species are the same in each sub-region. This results from the position of the monitors in the landscape and the prevalent weather patterns to which they are exposed. In addition, California has long-established air basins that reflect these relationships between sources and receptors. For the purpose of analyzing visibility, the four sub-regional groupings are closely related to combinations of the air basin descriptions.

2. **Comment: Similar to the nitrate portion assessment for reasonable progress, include assessments for sulfate and organic aerosols.**

Response: The Plan includes Tables 6-3 and 6-4, which specify the modeled visibility progress for sulfate and organic carbon due to California’s strategy for all of the Class 1 Areas.

3. **Comment: In Chapter 2, the Class 1 Areas could be grouped in a different manner and this should be further explored with examining strategies for reasonable progress.**

Response: As stated in Chapter 2, the Class 1 Areas were grouped due to the main drivers of haze on the worst days. In addition, the sub-regional groupings of Class 1 Areas introduced in Chapter 2 correlate with meteorological patterns, regulatory jurisdictions, and also with their federal and State non-attainment status. California determined that these groupings were appropriate for examining strategies for reasonable progress. Independent evaluation of each Class 1 Area, or looking at different groupings, would not result in a different control strategy than what currently exists as described in the Plan.

4. **Comment: Include summarized emission changes by regions which affect the geographic sub-regions of Class 1 Areas noted in Chapter 2.**

Response: Appendix I contains summarized baseline emission inventories for each sub-region, which highlight the key source categories affecting each site in the sub-region. The baseline emission inventories are adequate for examining the sources currently contributing to Class 1 Areas on a sub-regional basis. California constantly updates growth and control factors and will evaluate changes to the inventory in the mid-course review.

5. **Comment: In 4.3, the description of the new source review program could be expanded to show which districts require “offsets” and which have a more traditional new source review program.**

Response: Figure 4-4 illustrates the current extent of federal non-attainment in California for ozone and particulate matter based on the 1997 federal standards. Relatively few Class 1 Areas in California are actually in attainment areas with “traditional” prevention of significant deterioration (PSD) requirements associated with new source review. All air districts in the federal non-attainment areas require offsets through their new source permit programs although, the offset ratios will vary depending on the severity of the ozone problem. Most of the Class 1 Areas in California are within or immediately downwind of federal non-attainment areas and benefit when these offsets are applied. Even when areas attain federal standards, they keep existing offset rules in their maintenance plans to prevent backsliding to their former non-attainment status.

Figure 4-4 does not include new non-attainment areas for the recent ozone and PM standards since the designations were not finalized prior to approval of the Plan by the California Air Resources Board (ARB.) However, due to these stricter standards ARB anticipates that the total number of air districts that already require offsets, or will soon require them for new major sources, will be 25 of the 35 districts Statewide.

6. **Comment: It would be good to mention the NSR/PSD requirement for FLM consultation on major new permits in section 4.3.**

Response: As explained in section 4.4, U.S. EPA is currently reviewing the PSD/NSR programs of all of California’s 35 air districts. While ARB does not administer the program, we agree that the

NSR/PSD requirement for FLM consultation on major new permits is an important mechanism to ensure continued visibility protection.

7. **Comment: A table or map of districts or areas that are likely to be undergoing control strategy development for attainment of ambient standards, if implementation occurs within the timeframe for regional haze, would support the conclusion in Section 4.4 that programs underway are reasonable for visibility protection purposes.**

Response: Existing controls reducing emissions already apply throughout California in non-attainment areas, as depicted in Figures 4-4 through 4-6, in order to attain federal and State standards. As discussed in response to comment 5, upcoming federal non-attainment designations mean additional controls will be developed prior to 2018 to reduce haze precursors to attain new ozone 8-hour and PM2.5 standards. This comprehensive response to reducing ozone and PM throughout the State, in every air district, means that haze pollutants will be reduced to improve visibility. As further noted in the response to comment 5, designations for the revised PM2.5 and 8-hour ozone standards were not finalized at the time the Plan was released. However, U.S. EPA's recommended PM2.5 non-attainment areas can be found at:

[www.epa.gov/pmdesignations](http://www.epa.gov/pmdesignations)

and ARB staff recommendations for 8-hour ozone non-attainment areas can be found at:

[www.arb.ca.gov/desig/8-houroz/8-houroz.htm](http://www.arb.ca.gov/desig/8-houroz/8-houroz.htm).

8. **Comment: Nevada has a significant impact on several California Class 1 Areas, so the SIP should note that those areas rely on Nevada sufficiently addressing their contribution in order to achieve reasonable progress.**

Response: California does not characterize Nevada's impacts on total light extinction at California's Class 1 Areas as significant. ARB examined the SOx and NOx tracer studies which show that concentrations of nitrates and sulfates attributable to Nevada sources are generally less than 10 percent of the total concentrations of nitrates and sulfates in each of the California sub-regions. However, when these concentrations are converted to percent contribution to total light extinction for the worst days annual average, their impact drops to barely 1 percent of total light extinction.

California's Reasonable Progress Goals are based on measures in effect through 2004 but with implementation dates in the future. While California recognizes that Nevada controls for specific BART sources have recently been finalized, the information was not available for regional modeling to quantify the beneficial impact in 2018 prior to release of this Regional Haze Plan. Therefore, California will evaluate the benefits to be achieved by the Nevada controls in the mid-course review.

9. **Comment: The Bay Area Air Quality Management District (BAAQMD) asserts that additional control of NO<sub>x</sub> from the CO boilers by SCR is not feasible due to the high concentration of sulfur in the stream. Please compare SO<sub>2</sub> in CO boiler exhaust to those of a typical coal-fired boiler with SCR or provide statement from SCR vender supporting BAAQMD assertion.**

Response: Prior to the Board hearing, BAAQMD submitted a comment letter clarifying that existing NO<sub>x</sub> and PM controls for all the BART-eligible units feeding into the Main Stack, as verified by the current permit conditions, meet the BART requirement and further controls were not cost-effective to improve visibility. The current NSCR does protect visibility by removing NO<sub>x</sub> in a manner that is cost-effective and energy efficient. This clarification is reflected in Table 5.4 of the Plan, as approved by the Board. While further control of NO<sub>x</sub> from the CO boilers at the facility may occur in the future, under California's more stringent State requirements for protecting public health, the existing level of NO<sub>x</sub> control meets the national BART requirement.

In addition, it should be noted that the operating conditions (input/output gas concentrations, temperature, and pressure) through each step of the linked process stream at the Valero refinery are not comparable to the configuration and functional operation of a coal-fired boiler. The CO boilers at the Valero refinery are configured as control equipment to collect and combust waste gases containing high levels of sulfur and carbon monoxide (CO) from a Fluid Catalytic Cracker Unit (FCCU) and a Fluid Coking Unit (coker), which produces more sulfur than the FCCU. Heat from the CO boilers is used to produce steam for other refinery processes, thereby reducing energy consumption. The coker, FCCU, and the CO boilers' functional and structural configuration are unique to this refinery.

- 10. Comment: DOI would like cost information on the SO<sub>2</sub> control for the main stack as requested in a previous email.**

Response: The BAAQMD calculations in Appendix D for the total annual cost for installation and operation of the scrubbers used the same principal parameters recommended in the OAQPS Control Cost Manual. The \$80 million annualized cost is based on 15 years at 10 percent which is the rate suggested by the Manual.

- 11. Comment: BAAQMD should provide additional justification for the 25 ppm limit and the vendor guarantee that it cites as limiting SO<sub>2</sub> removal to 25 ppm. DOI determined that a similar refinery process unit had a 20 ppm annual SO<sub>2</sub> limit.**

Response: The consent decree specifies that scrubbers meet an SO<sub>2</sub> emission limit attributable to the Benicia Fluid Coker of no greater than 25 ppmvd, measured as a 365-day rolling average and 50 ppmvd, measured as a 7-day rolling average, both at 0% O<sub>2</sub>. These emission limits are the same as U.S. EPA's limits in Section 60.104a (b)(3) of the Standards of Performance for Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced after May 14, 2007. The facility referenced by DOI achieved the limit for FCCU exhaust only. At Valero, both coker and FCCU exhaust are run through the CO boilers. Pressure, temperature, and siting constraints control where the scrubbers can be placed which presents a different situation to be evaluated once the system is installed and tested. The 25 ppm limit for the Main Stack is appropriate for a retrofit situation, especially given the unique configuration of the Valero facility.

- 12. Comment: BAAQMD commented that additional reduction of all the remaining SO<sub>2</sub> from the main stack scrubber would result in an imperceptible improvement at the Class 1 Area. Please note that reductions do not have to be perceptible to represent BART.**

Response: It is understood that a one deciview (dv) change is "perceptible" to the human eye and that one source "contributes to" but does not "cause" visibility impairment if less than a one deciview change is attributable to that source, even though the change is "imperceptible." The Regional Haze Rule specifies that the cost of controls must be considered in light of several factors, one of which is visibility improvement. The marginal improvement in visibility, if there were an additional 7% reduction in SO<sub>2</sub>, is estimated at 0.03dv. Taking into account cost, technical feasibility, and the relative additional visibility improvement in this particular situation, further controls were not considered cost-effective for regional haze purposes.

13. **Comment: BAAQMD stated that the combined NOx emissions from the three Turbine/Boiler sets are about 341 tpy. However, our calculations estimate that the current potential emissions are 503 tpy.**

Response: The combined NOx emissions per year are 341 tons under normal practice, i.e. reported actual emissions versus potential to emit under permit. As required, modeling was based upon the 24-hour maximum actual emissions during the baseline years, which would be equivalent to 503 tons per year if the units were permitted to operate at that daily rate continuously for the entire year. Each set operates intermittently in practice.

14. **Comment: BAAQMD should provide a justification on their conclusion that \$5000 to \$7000/ton for NOx reductions by adding SCR to three boiler-turbine sets was above reasonable cost-effectiveness levels for regional haze.**

Response: BAAQMD based their cost-effectiveness analysis on the change between SCR control level and current actual emissions for the three turbine/boiler sets controlled for NOx by water injection. BAAQMD reasoned that the real visibility improvement would be improvement measured from actual conditions, rather than from theoretical potential emissions. Section 3 of Appendix D explains why NSCR and low NOx burners were not feasible for retrofit at these three turbine/boiler sets. On balance, the cost per ton for achievable SCR levels for these three turbine/boiler sets was not deemed cost effective for the amount of improvement in visibility (0.03 dv per unit). The determination that SCR for the three boiler-turbine sets is not cost-effective for the relative improvement in visibility does not preclude future retrofit or replacement to BACT levels, if necessary to attain federal standards for public health protection.

15. **Comment: BAAQMD should provide cost supporting that lowering the limit to 5 ppmv@15% O2 would have a higher cost per ton and be less cost-effective.**

Response: The level of control achieved by new turbines that burn natural gas is 3-5 ppmv. The turbine/boiler sets evaluated run on refinery fuel gas, not commercial utility natural gas. The boilers are not standard duct burners, but old stand-alone boilers with their own air supply. The District considers 10 ppmv a feasible level of control if SCR were applied as retrofit to these unique older units. Lowering NOx limits to 5 ppmv would require more catalyst and ammonia, increasing cost.

The BART determination reports that the current units have the potential to operate at a rule limit of 55 ppmv @ 15% O<sub>2</sub> and at an actual rate of 40 ppmv @ 15% O<sub>2</sub>. If it were technically feasible to lower the limits with SCR to 5 ppmv @ 15% O<sub>2</sub>, and if that is actually equivalent to an additional 12.5 per cent of the 0.091 dv reduction in the visibility improvement modeled for the turbine/boiler sets alone, then the incremental additional visibility improvement is estimated at 0.011 dv for all three turbine/boiler sets (or 0.0038 dv per unit.) On balance, these mathematically calculated increments are still not cost-effective per deciview for the additional 55 tons per year of NO<sub>x</sub> reduced.

16. **Comment: CARB modeled a hypothetical reduction of 268 tpy NO<sub>x</sub> at the turbines to 73 tpy. However, DOI estimates the reduction would be 430 tpy.**

Response: CalPuff modeling for BART determinations specifies using the 24-hour maximum emissions for the three year modeling period, 2000-2002 in this case. Therefore, ARB modeled a change of about 440 tons per year for replacing the three turbine/boiler sets with SCR control level of 10 ppmv @ 15% O<sub>2</sub> from their actual operating levels of 40 ppmv @ 15% O<sub>2</sub>. The BAAQMD reference to a “hypothetical reduction of 268 tons of NO<sub>x</sub>” in the discussion on p. D-9 of their BART determination refers to the actual annual emissions that would be reduced in practice, since the turbine-boiler sets do not operate continuously at the modeled rate.

17. **Comment: BAAQMD states that a 0.091 deciview reduction is insignificant. However, visibility improvements do not have to be perceptible to represent BART and the amount of emission reduction and the corresponding visibility improvement may have been understated.**

Response: Please see responses to comments 12 through 16. We agree that visibility improvements do not have to be perceptible to the human eye (less than one deciview) to represent BART. BAAQMD determined that on balance with the other factors spelled out in the Regional Haze Rule and considered in the BART determination, the incremental modeled visibility improvement resulting from installation of SCR for the three turbine/boiler sets is not cost-effective. ARB concurs, especially considering the significant visibility improvement that can be achieved by controlling SO<sub>x</sub>.

- 18. Comment: The modeling and results reported do not include final BART determinations or other actions taken after the WRAP modeling.**

Response: Currently, regional modeling results including BART determinations are unavailable. California will evaluate the updated results of new modeling that includes BART determinations during the mid-course review.

- 19. Comment: If new modeling is not completed by the time California submits their SIP, the goals will need to be revised based on the final model runs no later than the mid-term review.**

Response: If new modeling results become available, California plans to evaluate the results in our mid-course review.

**January 21, 2009 comment letter from the United States Department of the Agriculture Forest Service (DOA) letter**

- 1. Comment: DOA would like to emphasize their support and the importance of continued investigation of wildfire emissions in the natural conditions target.**

Response: ARB agrees that an improved understanding of the link between wildfires and natural condition targets is needed. As stated in the Regional Haze Plan, we plan to evaluate this in our Plan updates.

- 2. Comment: DOA would like to see the plan commit to more specific interstate coordination in smoke management.**

Response: In Chapter 8, section 8.4, of the Plan, ARB discusses the two existing vehicles for moving forward the discussion of interstate coordination in smoke management at both the technical (Interagency Air and Smoke Council) and the policy (Air and Land Managers) level. Currently, impacts to populated areas on either side of the state borders are considered when ARB makes the daily burn/no burn day assessments calls for each California air basin. In the Lake Tahoe Basin, shared by California and Nevada, further coordination is handled either by the local air districts or by the burners themselves. For federal prescribed burns in national forests that extend over the California/ Nevada and California/Oregon border, the federal land managers consider impacts when preparing their burn plans and prescriptions. Although not stated in the Plan, ARB's Prescribed Fire Incident Reporting System (PFIRS) coordinator is in contact with the coordinator for the WRAP's Fire Emissions Tracking System (FETS). Additional initiatives for interstate coordination can best be developed through IASC and the ALM. Progress can be reported in the mid-course review.

- 3. Comment: DOA suggests that the plan acknowledge the point source contribution of nitrates from Nevada to the Desolation, Mokelumne, and Hoover Wilderness Areas on the 20% worst days.**

Response: Please refer to the response to DOI's comment 8. In Chapter 4 of the Plan, current out-of-state influences were evaluated for all source categories at Class 1 Areas on worst days. Despite modeling which shows elevated nitrate concentrations attributable to Nevada point sources on a few days each year, the actual contribution to total light extinction is less than one percent of the annual worst days average. Future impacts from Nevada could be more or less of the nitrate light extinction share, depending on the reductions of

California mobile source nitrates in comparison with anticipated BART reductions from Nevada point sources. As noted in response to DOI's comments 18 and 19, the modeled impact of these future reductions will be evaluated during the mid-course review.



IN REPLY REFER TO:

# United States Department of the Interior

NATIONAL PARK SERVICE

Air Resources Division

P.O. Box 25287

Denver, CO 80225



January 14, 2009

N3615 (2350)

Lynn Terry, Deputy Executive Officer  
California Air Resources Board  
1001 I Street  
P.O. Box 2815  
Sacramento, California 95812-2815

Dear Ms. Terry:

On May 5, 2008, the State of California sent to us a draft implementation plan describing your proposal to improve air quality regional haze impacts at mandatory Class I areas across your region. We provided informal comments to the Air Resources Board staff on May 21, 2008. After evaluating our draft comments and reviewing internal priorities, your agency delayed final SIP action to incorporate, among other items, a full Best Available Retrofit Technology assessment.

On November 13, 2008, we received a revised draft implementation plan for review. Many of the issues we raised in our preliminary comments had been addressed, but we have some follow-up comments. We appreciate the opportunity to work closely with the State through the initial evaluation, development, and, now, subsequent review of this plan. Cooperative efforts such as these ensure that, together, we will continue to make progress toward the Clean Air Act's goal of natural visibility conditions at all of our most pristine National Parks and Wilderness Areas for future generations.

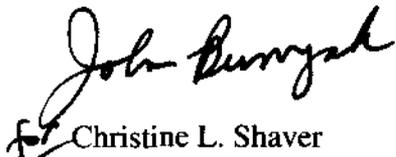
This letter acknowledges that the U.S. Department of the Interior, U.S. Fish and Wildlife Service (FWS), and National Park Service (NPS) have received and conducted a substantive review of your revised proposed Regional Haze Rule implementation plan in fulfillment of your requirements under the federal 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.

As outlined in a letter to each State dated August 1, 2006, our review focused on eight basic content areas. The content areas reflect priorities for the Federal Land Manager agencies, and we have enclosed comments associated with these priorities. We look

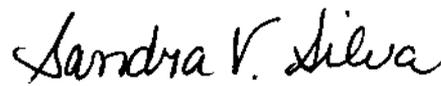
forward to your response, as per section 40 CFR 51.308(i)(3). For further information, please contact Bruce Polkowsky (NPS Air Resources Division) at (303) 987-6944, or Tim Allen of the FWS Branch of Air Quality at (303) 914-3802.

Again, we appreciate the opportunity to work closely with the State of California and compliment you on your hard work and dedication to significant improvement in our nation's air quality values and visibility.

Sincerely,

  
for Christine L. Shaver  
Chief, Air Resources Division  
National Park Service

Sincerely,

  
Sandra V. Silva  
Branch of Air Quality  
U.S. Fish & Wildlife Service

Enclosure

cc:

Christine M. Suarez-Murias  
Air Pollution Specialist  
California Air Resources Board  
1001 I Street  
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## **General Comments on California's Draft Regional Haze State Implementation Plan**

California has done an excellent job in compiling a draft State Implementation Plan (SIP) that examines the current visibility conditions at its mandatory Federal Class I (Class I) areas. Appendix B is well thought out and communicates the causes of current visibility conditions, as well as projected natural conditions, in a clear, understandable manner. This effort creates a good foundation for this and future SIP efforts.

### **Long-Term Strategy and Resulting Reasonable Progress Goals**

In our preliminary comments we noted that California's decision to adopt ongoing air quality control programs plus some non-quantified future programs as the basis for a Long-Term Strategy for regional haze addresses key statutory and regulatory requirements. However, the conclusion that no additional control measures for visibility improvement are "reasonable" needed better support based on the statutory and regulatory factors. We are pleased to find that the assessment of the statutory factors was added to the revised draft. Given the large number of Class I areas in California we understand the reason for conducting the reasonable progress assessment based on groups of Class I areas and the geographic areas associated with transport of visibility impairing pollutants for each grouping. While Appendix B establishes the basic causes of visibility impairment for each of the Class I Areas, we would encourage some elaboration within the body of the SIP narrative on the rationale for groupings of Class I areas chosen and how the geographic source regions were defined. Addressing the selection of geographic areas, and therefore all major sources of emissions within those areas, ensures that the State reviewed the statutory factors for possible reasonable progress measures for impacts that could result at any Class I area in the group.

We do support the inclusion of a review of the nitrate portion of "reasonable progress" and suggest that similar assessments for sulfate and organic aerosols be provided, especially for those Class I areas where those pollutants cause the majority of current impairment.

We appreciate the State linking its new source review requirements to the protection of the clearest days at the Class I areas under the regional haze rule in the revised SIP. We feel it is important to note that current new source review programs will be used to assure that no Class I area sees degradation from expansion or growth of a single new source or regional development.

### **Best Available Retrofit Technology (BART)**

The BART chapter was significantly improved from the initial draft. We agree with California's conclusion that only one source, the Valero refinery, is subject to full BART review. We appreciate the additional information provided by the Bay Area Air Quality Management District (BAAQMD) at our request. At this time we have a few outstanding issues regarding the BART determination that we are requesting the

BAAQMD or State address prior to submitting the plan to EPA. The specific items are stated in the specific comments on Chapter 5 below.

### **Specific Comments**

#### **Chapter 2**

Chapter 2 does an excellent job summarizing visibility conditions at the Class I areas. We particularly compliment the approach of setting geographic sub-regions. As noted, we agree that a few of the Class I areas could be grouped in a slightly different manner, and this should be further explored with examining strategies for reasonable progress.

#### **Chapter 3**

Chapter 3 summarizes current emissions and emissions projections for 2018. While overall emissions trend downward there are exceptions (sulfur dioxide for point sources) which are not very well explained. We request the State to summarize emissions changes by the regions which affect the geographic sub-regions of Class I areas noted in Chapter 2. This would help the reader understand what is likely to influence the visibility conditions in 2018 and whether there is any rationale to explore additional strategies beyond the WRAP modeled case for a given Class I area or sub-region.

#### **Chapter 4**

Chapter 4 does an excellent job presenting California's history of aggressive control of air pollution. In 4.3, the description of the new source review program could be expanded to show which districts require "offsets" and which districts have a more traditional new source review program. It would be good to mention the NSR / PSD requirement for FLM consultation on major new permits in this section as well. This would address the general comment above, regarding a link between new source review and the regional haze rule strategy.

Section 4.3 mentions that the largest source for sulfur oxides is located in a district that will likely be designated PM2.5 nonattainment, resulting in likely examination of control measures. A table or map of districts or areas that are likely to be undergoing control strategy develop for attainment of ambient standards, if implementation occurs within the time frame of the regional haze SIP, would support the conclusion in Section 4.4 that programs underway are "reasonable" for haze protection purposes. Again, listing or mapping those affected areas in a way that related to effects on the sub regions of Class I areas would be helpful.

Section 4.5 reviews the cost factor for assessing reasonable progress. We appreciate the SIP noting that California is a significant contributor to worst day impairment at Class I areas in Nevada, Arizona or Oregon and the revised discussion regarding the adequacy of the State Plan for addressing that contribution. Conversely, the sources in the State of Nevada has a significant impact on several California Class I areas, so your SIP should

note that those areas rely on Nevada sufficiently addressing their contribution in order to achieve reasonable progress. This is particularly true regarding nitrate impacts on the worst twenty percent days.

## Chapter 5

We generally agree with the SIP conclusion that most sources meet BART requirements through current conditions or limited impact on visibility. For the Valero refinery, the one source found subject to BART, we request the following items be addressed prior to submission of the SIP to EPA.

### Main Stack

- The Bay Area Air Quality Management District (BAAQMD) states that additional control of NO<sub>x</sub> from the CO boilers by SCR is not feasible because the stream contains a high concentration of sulfur at the point where the SCR will be installed. Considering that SCR is commonly used on boilers burning eastern high-sulfur coals, please compare the SO<sub>2</sub> concentrations in the CO boiler exhaust to that of a typical coal-fired boiler with SCR. (Or provide a statement from the SCR vendor supporting the BAAQMD assertion.)
- The costs for SO<sub>2</sub> control of the main stack were provided by Valero. The capital cost for the scrubbers is estimated to be \$413 million, and the annual operating costs will be \$7 million, for a total annual cost of \$80 million. In a previous e-mail we attached a sample Excel workbook (based upon the OAQPS Control Cost Manual) and requested that the pertinent information on the first "Given/Assume" page be supplied. We again ask that this information be provided to us.
- Our initial reaction to the SO<sub>2</sub> scrubbing proposal was that 93% control seemed low for an amine scrubber. Our review of the RACT/BACT/LAER Clearinghouse (RBLC) found that all but one similar refinery process had limits of at least 25 ppm, as proposed by BAAQMD. However, the PSD permit issued by TX to Marathon Ashland petroleum (RBLC ID #TX-0532) contains a 20 ppm annual SO<sub>2</sub> limit for the Fluidized Catalytic Cracking Unit. If Valero were to achieve the same 20 ppm limit as Marathon-Ashland, then this largest source of SO<sub>2</sub> emissions would be reduced by an additional 20% or 83 tpy. BAAQMD should also provide additional justification for the 25 ppm limit and the vendor guarantee that it cites as limiting SO<sub>2</sub> removal to 25 ppm.
- BAAQMD states, "An additional reduction of all of the remaining SO<sub>2</sub> (7% more) would result in an imperceptible improvement at the Class I area." Please note that reductions do not have to be perceptible to represent BART.

## Turbine/Boiler Sets

- BAAQMD states that the combined NO<sub>x</sub> emissions of the remaining three sets are about 341 tpy. However, our calculations estimate that the current potential emissions are 503 tpy.
- The District determined that the cost/ton for controlling from 40 ppmv to 10 ppmv @ 15% O<sub>2</sub> was \$5,000 to \$7,000/ton, and that this cost was above reasonable cost-effectiveness levels for regional haze. BAAQMD should provide a clear explanation of its cost-effectiveness calculations and justify its conclusions.
- Regarding application of SCR to the turbine/boiler sets, BAAQMD states, "If the limit were lowered to 5 ppmv @ 15% O<sub>2</sub>, it is expected that the cost/ton would be even higher and therefore even less cost-effective." It is more likely that, if a given control technology is more fully utilized, the cost/ton will decrease. BAAQMD should provide cost data to support its assertion.
- CARB modeled a hypothetical reduction of 268 tpy NO<sub>x</sub> at the turbines to 73 tpy NO<sub>x</sub>, which is equivalent to a 10 ppmv NO<sub>x</sub> concentration achievable by SCR. However, our calculations estimate that the reduction would be 430 tpy.
- The modeling result for the hypothetical reduction was 0.091 deciview, which BAAQMD says is an insignificant improvement. However, visibility improvements do not have to be perceptible to represent BART, and the amount of emission reduction and the corresponding improvement in visibility may have been understated.

## Chapter 6

Chapter 6 presents the source apportionment and modeling results. These results reflect the work of the WRAP regional modeling center. We note that Section 6.3.4 addresses any issues related to neighboring States contributing to impairment at California Class I areas.

The modeling and results reported do not include final BART determinations, or other actions taken after the WRAP modeling.

## Chapter 7

Table 7-2 establishes the reasonable progress goals for the worst and best days in 2018 based on WRAP modeling which does not include all measures. If new modeling is not completed by the time California submits the SIP to EPA, then the established goals will need to be revised based on final model runs. This should be completed as soon as possible, but in no case later than the mid-term review. This revised modeling could also incorporate any additional measure beyond BART that may be quantified or may result

from analysis of strategies needed to reach uniform rate of progress as noted above. While we understand, given California's aggressive record of pollution control and recent approval of a program to address climate change, there are not likely to be large changes from the current reasonable progress projections for most Class I areas, there may be significant additional progress made in one or two Class I areas.



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**File Code:** 2580-2

**Date:** January 21, 2009

Lynn Terry  
Deputy Executive Officer  
California Air Resources Board  
1001 I Street  
P.O. Box 2815  
Sacramento, CA 95812-2815

Dear Ms. Terry:

On November 12, 2008, the State of California submitted a draft implementation plan describing your proposal to improve air quality regional haze impacts at mandatory Class I areas across the state. We have appreciated the opportunity to work closely with the state of California through the initial evaluation, development, and now, subsequent review of the plan. Cooperative efforts such as these ensure that, together, we will continue to make progress toward the Clean Air Act's goal of natural visibility conditions at our Class I Wilderness Areas.

This letter acknowledges that the U.S. Department of Agriculture, U.S. Forest Service has received and conducted a substantive review of your proposed Regional Haze Plan in fulfillment of the requirements under 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 about the document's completeness, and therefore, only the EPA has the ability to approve the document. The Forest Service's participation in the State of California's administrative process does not waive any legal defenses or sovereignty rights it may have under the laws of the United States, including the Clean Air Act and its implementing regulations.

As outlined in a letter to you dated October 18, 2006, our review focused on eight basic content areas. The content areas reflect priorities for the U.S. Forest Service, and we have attached a few minor comments to this letter associated with these priorities. We look forward to your response required by 40 CFR 51.308(i)(3). For further information please contact Trent Procter at 559-784-1500, x1114 or Scott Copeland at (307) 332-9737.



Again, we appreciate the opportunity to work closely with the State of California. We particularly want to compliment your extremely talented and dedicated staff for their technical analyses and collaboration. We feel very confident that the final plan presents strategies that will protect these very special Class I Wilderness Areas.

Sincerely,

*/s/ Richard J. Cook (for)*  
RANDY MOORE  
Regional Forester

Enclosure

## Attachment

1. **We would like to emphasize our support and the importance of continued investigation of wildfire emissions in the natural conditions target.** The plan (Section 9.4) suggests that the magnitude of wildfire emissions is not appropriately considered as a part of the natural conditions goal. We agree that long term wildfire tracking will provide a solid foundation for improving the estimate of these emissions in the natural conditions estimate. We are committed to working with California and our Federal Land Manager partners in this effort.
2. **We would like to see the plan commit to more specific interstate coordination in smoke management.** We understand that the Western Regional Air Partnership (WRAP) provides a mechanism for coordination in a general way, but we are interested in seeing a commitment to participate and assist in facilitating some of the informal land management and air pollution control district working groups that are currently struggling with effective coordination near the border with Oregon and Nevada. Occasionally, conflicting forecasts and separate tracking systems between states are posing a challenge to efficient smoke management. Consider the development of an Oregon / California integrated smoke management area.
3. **We also suggest that the plan acknowledge point source contribution of NO<sub>3</sub> from Nevada to the Desolation, Mokelumne, and Hoover Wilderness Areas on the worst 20% visibility days.** This appears to be a winter phenomenon and is displayed in the WRAP TSS data.

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