



Shasta County

DEPARTMENT OF RESOURCE MANAGEMENT
1855 Placer Street, Redding, CA 96001

Russ Mull, R.E.H.S., A.I.C.P.
Director

Richard W. Simon,
Assistant Director

January 28, 2009

Gayle Sweigert
Staff Air Pollution Specialist
CARB/PTSD/Air Quality Analysis
California Air Resources Board
P.O. Box 2815
Sacramento, CA 95812

Dear Ms. Sweigert:

FEDERAL 8-HOUR OZONE EXCEEDANCES DUE TO EXCEPTIONAL EVENTS

Ambient air quality within the Shasta County Air Quality Management District (District) was greatly impacted by severe wildfires during the months of June and July 2008. While all of the District's particulate monitoring values were impacted throughout the summer, ozone monitoring also showed the impacts from these massive wildfires. Recent work published by the American Geophysical Union in October 2008, clearly demonstrates the increase in ambient ozone caused by wildfires.

The District has worked with your office to flag the appropriate data in the U.S. Environmental Protection Agency's (U.S. EPA) Air Quality System. Data has been flagged on the following days: June 14, 15, 24, 25, 28, 29, 30, and July 2, 13, 17, 18, 19, 23, 24, 25, and 26. The first two days flagged (June 14 and 15) were the result of the impacts of the Humboldt Fire in Butte County and the Paskenta Fire in Tehama County. The impacts that occurred for the remaining days were due to the various lightning-complex fires in and around Shasta County.

Enclosed with this letter are materials, to help your office, present to the U.S. EPA the impacts of these wildfires as exceptional events involving the District's air quality and ultimately our ozone attainment status. The data package attachments include:

Attachment

1. Satellite photos taken during the wildfires.
2. Graphs of Shasta County's Ozone and PM 2.5 data with wind speed and temperature.
3. Air Quality Advisories Issued by the Shasta County AQMD and other agencies.
4. Humboldt Fire information including Governor's State of Emergency Proclamation.
5. Paskenta Whiskey Fire information.
6. Area wildfire news information sampling in June and July.
7. Daily maximum ozone and particulate at Anderson.

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The causal relationship of these fires, to the ozone values obtained at the Shasta County monitors located in Redding, Anderson, and Lassen Volcanic National Park, are seen in the satellite photos included with Attachment 1.

The Humboldt Fire and the Paskenta Whiskey Fire sent smoke into Shasta County on June 14, 2008. This caused elevated ozone on the day of June 14 and this ozone remained in the area on June 15 as evidenced by the very early ozone readings at the 0800 and 0900 hours, especially at Lassen Volcanic National Park. This is shown in the graphs included with Attachment 2.

The later June and July elevated-ozone readings were caused by the massive lightning-complex fires encircling Shasta County. The smoke from these fires is shown in the satellite photos included in Attachment 1.

The hourly-time series plots, on the flagged days, in Attachment 2 show that each ozone exceedance occurred either during a period of high particulate, or within a few hours after the particulate spike. This would indicate that the smoke (particulate) was present with ozone precursors or ozone.

The Health advisories and news stories included in Attachments 3 through 6 also serve to show the causal relationship of the fires to the elevated ozone levels.

Attachment 7 shows the daily maximum ozone and daily maximum particulate matter at 2.5 microns at the Anderson monitoring site for June and July, 2008. These two parameter graphs show that the increase in ozone that occurred during these months was always preceded by PM2.5 increases. These concentrations are clearly related based on daily maximums. Additionally, the increase in ozone that occurred in the presence of the smoke was typically 10 parts per billion. This is precisely the amount of ozone increase that was observed in the Geophysical Research paper attributed to high-fire impact.

If you have any questions or require additional information regarding these exceptional events, please contact Ross Bell, Air Quality District Manager at (530) 225-5674.

Sincerely,



Russ Mull
Air Pollution Control Officer

rm/mb

enclosures

c: Alan Abbs, A.P.C.O., Tehama County APCD, PO Box 8069, Red Bluff, CA 96080 (with enclosures)