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7.2.03 Conference call notes on SJC Photochemical Modeling

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Ralph Morris, ENVIRON
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Episode Selection: Technical memorandum was sent out this morning. Started with e-mail questions:

- 1.) Once the model is “calibrated”, should we test the model under conditions different than those in 2000-2002? *Ideally would like to test the model under many different conditions, but this is resource-intensive. EPA requires that we study the most recent years of data. There would be value in modeling previous years, but the databases needed to do that aren’t available. Costs of this kind of study are enormous. Within the context of the EAC, this just can’t be done and meet the schedules. This model has been used around the country successfully in thousands of evaluations for a wide range of meteorological conditions. Model isn’t “calibrated” for any specific ozone event, but is evaluated or tested against the conditions of a certain day to determine how well the model performs.*
- 2.) What about fires during 2002? Should these periods be excluded from the episodes?
Virtually all of the days in the episodes appear not to be significantly affected by fires. See Tom’s technical analyses. For a significant period of time, there is no impact from fires in San Juan County.
- 3.) If accuracy of model is 10-15% and the area is very near to exceeding the standard, how can the model be used to determine whether or not the area will be in compliance?
EPA recognizes the uncertainty of the models and has built a process of weight of evidence into their guidance. The model is not the absolute determinant of attainment. The model is used in a relative sense, not absolute. See EPA’s guidance for more details.
- 4.) Would ozone data/met data from SUIT be of assistance?

- This data would be useful, particularly if we can access the past 3 years of ozone data. It could help to evaluate model performance, verify met fields and the conceptual model.*
- 5.) High ozone levels in this area have historically occurred during low wind conditions. Are any of these episodes representative of this?
Stagnation episodes occur under light, variable winds when local emissions are concentrated in the area and ozone is formed from these local emissions. In San Juan County, we are interested in local emissions and any transport of emissions. There are very few days when there is elevated ozone in the county. Alpine and ENVIRON looked at all “high-ozone” days and analyzed weather patterns. There are several days within the episode that are representative of “stagnation” conditions, these days would emphasize the role of local sources. Using CAMx, we can also use source apportionment to determine which source regions or categories are responsible and in what amount for ozone concentrations in San Juan County.
 - 6.) How is emissions inventory for oil and gas being compiled?
NMOGA is compiling data on “unpermitted” oil and gas sources in the region. This should be completed soon. Brittany Benko has been working on this with Bruce Gantner.
 - 7.) Are vertical layers proposed sufficient for the area?
Highest vertical layer is 6500 meters above ground level; this will include the daytime convective boundary layer.
 - 8.) Is Blackadar scheme preferable?
In Denver and San Juan County, the Blackadar scheme seems more appropriate for dry conditions. In tests, this scheme gives reliable results. Tom will send out the report on this.
 - 9.) Are Colorado data available for use in this study?
Colorado data is in the public domain. Results of Denver EAC are public.

Next meeting: July 16, 2003 3-5 pm at the Farmington Civic Center