

**Summary Minutes of the  
U.S. Environmental Protection Agency  
Clean Air Scientific Advisory Committee (CASAC)  
Ambient Air Monitoring and Methods Subcommittee (AAMMS)  
Public Meeting  
September 29-30, 2010**

CASAC AAMMS

members attending:

Dr. Armistead (Ted) Russell  
Mr. George Allen  
Dr. Judith Chow  
Mr. Bart Croes (by phone)  
Dr. Kenneth Demerjian  
Dr. Delbert Eatough  
Mr. Eric Edgerton  
Mr. Dirk Felton  
Dr. Philip Hopke  
Dr. Kazuhiko Ito  
Dr. Peter McMurry  
Mr. Rich Poirot  
Dr. Jay Turner  
Dr. Warren White  
Dr. Yousheng Zeng

Purpose: To respond to charge questions on *Near-Road Monitoring to Support Measurement of Multiple NAAQS Pollutants*

Designated Federal Officer: Dr. Holly Stallworth, Designated Federal Officer

Other EPA Staff: Lewis Weinstock, Nealson Watkins, Rich Baldauf, Tom Long, Oingy Meng, Jen Richmond-Bryant

Public: Tim Morphy (Teledyne), Hilary Hafner (Sonoma Technology), Will Ollison (American Petroleum Institute), Paul Roberts (Sonoma Technology), Bridge DiCosmo (by phone, Inside EPA), Jenette Kwong (by phone, California Air Resources Board), Carlton Blakley, North Carolina Division of Air Quality, Richard Valentmeti (State of Vermont), Bob Yuhnke (Sierra Club), Karen Perrit (by phone, Federal Highway Administration)

Meeting Materials and Meeting Webpage:

The materials listed below may be found on the meeting webpage at:

<http://yosemite.epa.gov/sab/sabproduct.nsf/bf498bd32a1c7fdf85257242006dd6cb/283bd0c803b1b9468525775e0060236f!OpenDocument&Date=2010-09-29>

- Agenda
- Federal Register Notice
- Near-Road Guidance Document Outline
- Near-road Monitoring Pilot Study Objectives & Approach
- Charge Questions for AAMM Subcommittee
- EPA Presentation: Introduction and Background on Near Road Monitoring to Support Measurement of Multiple NAAQS Pollutants, Sept. 29, 2010
- Charge Questions on Near Road Monitoring for Multiple NAAQS Pollutants
- Draft Responses to Charge Questions 12 – 14, September 30, 2010
- Draft Responses to Charge Questions for Deliberation at AAMMS Meeting, September 30, 2010
- Dr. Warren White's Presentation on Near-road NO<sub>2</sub> Concentrations
- Preliminary AAMMS Comments, Updated 9-27-10
- Spreadsheet for Calculating Near-Road NO<sub>2</sub> by Dr. Warren White
- Updated Individual Comments from AAMMS Members, 10-5-10
- Presentation from Will Ollison, on behalf of the American Petroleum Institute, 9-29-10
- Comments from Alan R. Leston on behalf of the American Petroleum Institute
- Comments from Robert E. Yuhnke for the Sierra Club, Natural Resources Defense Council and Institute for Transportation Development Policy.

### Meeting Summary

The discussion followed the plan presented in the meeting agenda.

### **WEDNESDAY, SEPTEMBER 29, 2010**

Dr. Stallworth convened the meeting and explained that CASAC AAMMS operates under the Federal Advisory Committee Act. Dr. Russell, AAMMS Chair, asked panelists to introduce themselves.

Mr. Lewis Weinstock and Mr. Nealson Watkins gave a presentation shown in “Introduction and Background on Near Road Monitoring to Support Measurement of Multiple NAAQS Pollutants” posted at the meeting webpage. Members questioned these EPA representatives about the resources available for the project.

During the public comment period, Mr. Will Ollison, on behalf of the American Petroleum Institute, gave a presentation (posted at the meeting webpage) showing that the bulk of NO<sub>x</sub> emissions came from the dirtiest 10% of the fleet. Mr. Ollison encouraged EPA to include assessment of the fleet mix of high emitting vehicles in its guidance on near-road monitoring. Mr. Bob Yuhnke, on behalf of the Sierra Club, then presented

slides (also posted at the meeting webpage) emphasizing the health effects of diesel aerosols and encouraging EPA to apply near-road monitoring criteria for PM<sub>2.5</sub>.

Following the public comment period, Dr. Warren White presented an analysis (also posted at the meeting webpage) showing how near-road NO<sub>2</sub> concentrations can be inferred from NO<sub>x</sub> concentrations, the NO<sub>2</sub>/NO<sub>x</sub> fraction in exhaust, UV, and background oxidant levels. Panelists discussed issues such as the gradient of concentrations from the roadway, the geographic units to be used for non-attainment designations and the problems associated with not measuring NO<sub>2</sub> directly.

Addressing the charge questions on near-road monitoring guidance, one panelist urged EPA to specify its objectives more clearly while another asked EPA to consider developing a conceptual model that relates the various pollutants to their sources as well as atmospheric chemistry. Panelists discussed their priorities for which pollutants should be included in the multi-pollutant monitoring. The factors to be used in identifying candidate near-road sites for monitoring were discussed, including Annual Average Daily Traffic, fleet mix, roadway design, congestion patterns, terrain and meteorology. Panelists discussed the pros and cons of various modeling tools, while the suggestion was made that the choice of model might depend on the expertise available to the state or local agency. Panelists emphasized that emissions and air quality models could be used to develop screening tools or screening criteria that incorporate many of the factors already discussed for siting monitor locations. Mobile units were debated as was non-FEM methods and the use of passive samplers to do saturation monitoring.

With respect to the CO monitoring network, panelists discussed the feasibility of combining near-road CO monitoring with near-road NO<sub>2</sub> monitoring given the expected difference between the location of the 1 hour maximum NO<sub>2</sub> and 1 hour maximum CO. Panelists suggested light duty cold start and congestion factors could be prioritized relative to AADT, fleet mix, roadway design, terrain and meteorology using line source models.

In reference to siting monitors for peak NO<sub>2</sub> vis-à-vis PM<sub>2.5</sub>, panelists said the near road environment would not represent the areas of highest PM<sub>2.5</sub> concentration but there would be some value in monitoring ultrafine PM and other PM-related measurements such as black carbon and the black carbon/organic carbon ratio. Panelists favored having the sampling criteria for CO match the criteria used for near-road NO<sub>2</sub>. Panelists said they did not have enough information to say whether urban street canyon CO sites should be retained. One panelist offered a list of factors that would help define an urban street canyon.

Before adjourning for the day, Dr. Russell asked lead discussants to summarize their draft text on charge questions 1 – 14. At 4:30pm, lead discussants worked with subgroup members to write and edit their responses.

**THURSDAY, SEPTEMBER 30, 2010**

Beginning at 8:30am, panelists took up the charge questions on EPA's near-road monitoring pilot study. In general, panelists were concerned about the resources available for the pilot as well as the time allowed. Panelists commented on the potential criteria for consideration in selecting where fixed, permanent monitoring stations should be located. Much of the discussion centered around the practicality of using state and local agencies that have resources and monitors already in place. One panelist stressed the importance of siting near a freeway with high truck volumes. Panelists expressed mixed views as to whether saturation studies were more preferable than 2 – 3 pilot sites.

Panelists discussed the equipment that should be employed in each pilot study location as well as the pollutants that should be monitored. The need to improve the Federal Reference Method (FRM) for NO<sub>x</sub> was emphasized. Panelists voiced support for the deployment of at least two pilot study sites with a minimum measurement suite of NO<sub>2</sub>/NO/NO<sub>x</sub>, black carbon, CO, meteorological parameters, and traffic counts. A wide range of views were expressed on the feasibility and usefulness of including a saturation monitoring component in the proposed pilot study.

Dr. Russell asked lead discussants to summarize their responses for charge questions 12 – 14.

Dr. Russell then led the Panel through a discussion of a draft letter and responses to charge questions (1 – 14) that had been circulated earlier in the morning. Panelists made suggestions for edits to the draft letter and charge questions responses. Dr. Stallworth pledged to send out a revised draft for panelists to comment on by October 7, 2010.

The meeting was adjourned around 12:00pm, Eastern time.

On Behalf of the Committee,  
Respectfully Submitted,

Holly Stallworth, Ph.D. /s/  
Designated Federal Officer

Certified as True:

Armistead (Ted) Russell, Ph.D. /s/  
Chair, Ambient Air Monitoring and Methods Subcommittee

NOTE AND DISCLAIMER: The minutes of this public meeting reflect diverse ideas and suggestions offered by committee members during the course of deliberations within the meeting. Such ideas, suggestions, and deliberations do not necessarily reflect definitive consensus advice from the panel members. The reader is cautioned to not rely on the minutes represent final, approved, consensus advice and recommendations offered to the Agency. Such advice and recommendations may be found in the final advisories, commentaries, letters, or reports prepared and transmitted to the EPA Administrator following the public meetings.