U.S. Environmental Protection Agency
Clean Air Scientific Advisory Committee (CASAC)

Summary Meeting Minutes of CASAC Public Advisory Teleconference Meeting

Thursday, November 3, 2005 – 1:00 to 4:00 pm Eastern Time

EPA Science Advisory Board (SAB) Staff Office
1025 F. Street, N.W., Washington, DC 20004

Advisory Meeting for CASAC's Review and Approval of the Report of the CASAC Ambient Air Monitoring & Methods (AAMM) Subcommittee re: Peer Review of $PM_{10-2.5}$ Federal Reference Method (FRM)

Panel Members: See CASAC Roster – Appendix A

Agenda: See Meeting Agenda – Appendix B

Purpose: The purpose of this public teleconference meeting was for the statutory (chartered) Clean Air Scientific Advisory Committee (CASAC or Committee) to review and approve the draft report from the CASAC Ambient Air Monitoring & Methods (AAMM) Subcommittee's September 21–22, 2005 peer review of the Agency's proposed Federal Reference Method (FRM) for coarse particulate matter ($PM_{10-2.5}$).

Attendees:

Chair:	Dr. Rogene Henderson
CASAC Members:	Dr. Ellis Cowling Dr. James Crapo Dr. Frederick J, Miller Mr. Richard Poirot Dr. Barbara Zielinska
AAMMS Members:	Mr. George Allen Dr. Judith Chow Mr. Bart Croes Dr. Kenneth Demerjian Mr. Eric Edgerton Mr. Henry (Dirk) Felton
EPA SAB Staff:	Mr. Fred Butterfield, Designated Federal Officer (DFO), CASAC
Other EPA Staff:	Mr. Tim Hanley, OAR, OAQPS Mr. Mike Papp, OAR, OAQPS Dr. Robert Vanderpool, ORD, NERL Mr. Lewis Weinstock, OAR, OAQPS

Meeting Summary

The discussion followed the sequence as presented in the meeting agenda (Appendix B).

Convene Meeting, Call Attendance, Introduction and Administration

Mr. Fred Butterfield, Designated Federal Officer (DFO) for the Clean Air Scientific Advisory Committee, opened the teleconference meeting, called attendance, and welcomed all attendees. He noted the CASAC is a Federal Advisory Committee chartered under the Federal Advisory Committee Act (FACA) to provide advice and recommendations to the EPA Administrator. Consistent with FACA regulations, the deliberations of CASAC are held as public meetings and teleconferences for which advance notice is given in the *Federal Register*. The DFO is present at all such meetings to assure compliance with FACA requirements. He mentioned that there were no individuals who had registered with him in advance to provide oral public comments during today's teleconference. Mr. Butterfield said a transcript of this teleconference is not being taken. However, summary meeting minutes were taken (by the DFO) for this teleconference. These minutes will be certified by the CASAC Chair, Dr. Rogene Henderson, and posted on the SAB Web Site (http://www.epa.gov/casac) after this meeting. Mr. Butterfield noted that all CASAC members had submitted documentation with respect to possible financial conflicts-of-interest or appearances of a lack of impartiality, which was reviewed by the SAB staff prior to the meeting and found to be satisfactory.

Purpose of Meeting and Welcome

Dr. Henderson, Chair of the CASAC, welcomed her fellow Committee members and briefly stated the purpose of the meeting (see above).

Overview of Draft Report from CASAC AAMM Subcommittee Concerning its Peer Review of the Draft FRM for Thoracic Coarse Particulate Matter ($PM_{10-2.5}$)

Mr. Rich Poirot and Dr. Barbara Zielinska, Chairs of the CASAC AAMM Subcommittee for Monitoring and Methods, respectively, gave a brief overview of the draft report from the Subcommittee's September 21–22, 2005 peer review of EPA's proposed FRM for coarse particulate matter ($PM_{10-2.5}$).

In response to questions from two members of CASAC, Mr. Tim Hanley of OAQPS' Ambient Air Monitoring Group discussed the differences between continuous and "difference" ambient air monitoring methods. In addition, he noted that the Agency is proposing the use of a filter-based method as its FRM and using equivalency criteria as the performance approach for approving continuous methods, in anticipation of an eventual deployment of continuous monitors. Subcommittee members briefly engaged Mr. Hanley with questions at this time.

Public Comment Period

(There were no public commenters during this teleconference.)

Summary of the CASAC's Discussion on AAMM Subcommittee's Draft Report

Dr. Henderson led the CASAC through a discussion of the AAMM Subcommittee's draft report on its peer review of the Agency's FRM for $PM_{10-2.5}$. (During this portion of the teleconference, those CASAC Members who are also AAMM Subcommittee Members effectively recused themselves from the substantive deliberations concerning the Subcommittee's report.) Significant points that were raised during the CASAC members' deliberations included:

- CASAC members were pleased with the Agency's continuing high quality of technical work evident in the $PM_{10-2.5}$ methods evaluation field studies. Committee members agreed that no single sampling method can meet all of the multiple, disparate objectives that have been laid-out for a Federal Reference Method, noting that a critical function of the FRM will be to provide a precise, repeatable definition of coarse PM which can be used to evaluate the performance of and assure the quality of various Federal Equivalent Method (FEM) samplers to be deployed in a national monitoring network. One CASAC member requested that a paragraph be inserted into the draft letter explaining the differences between an FRM and an FEM, and particularly how these are certified and deployed for use.

- CASAC and AAMM Subcommittee members noted several important scientific or operational strengths of the proposed difference method $PM_{10-2.5}$ FRM, including: the direct gravimetric measurement of mass using proven and available technology; the use of existing FRM equipment that will minimize equipment and training costs; and the ability to make measurements that can be highly precise, even when mass concentrations are low.

- Nevertheless, members of the CASAC and the Subcommittee also noted several weaknesses of the proposed method, including: the accuracy of the proposed filter difference method is unknown and difficult to establish under relevant field conditions (albeit something that is also true for the $PM_{2.5}$ and PM_{10} FRM); the suitability for speciation analysis (by subtraction) has not yet been established, especially for species not predominantly in the coarse mode; there may be possible sampling artifacts from losses of volatile material (such as nitrate or organic compounds) during sampling, which may in turn lead to inaccuracies that cannot be quantified with this method; and the fact that expensive, labor-intensive, manual sample collection and laboratory analysis will be required for all aspects of this method's operation.

- Despite these weaknesses, CASAC and Subcommittee members noted that no other superior, currently-available candidate FRM method has been identified. CASAC members endorsed the majority view of the AAMM Subcommittee that the demonstrated data quality of the $PM_{10-2.5}$ difference method and its documented value in correlations with health effects data support its use as the FRM for coarse PM. However, members of the statutory CASAC also agreed with the Subcommittee's recommendation that, in addition to the proposed coarse PM difference method, the Agency also develop a monitoring method that actually provides a coarse particle sample should be proposed as a second FRM, noting that the only such sampler currently available is the dichotomous sampler.

- In turn, members of CASAC agreed that, with both FRMs, there should be a clear understanding that these manual filter-based samplers are not intended for extensive field de-

ployment as the basic component of the compliance network; rather, they would be employed primarily as a benchmark for evaluating performance of continuous or dichotomous FEM instruments. Committee members agreed that the dichotomous sampler would have the additional benefit of providing coarse particle samples for chemical speciation — and also concurred that there is clearly a need for the Agency to not only develop more direct coarse-particle-only sampling methods but also to devote more resources to support the necessary research and development in this important air quality monitoring area.

Dr. Henderson then asked if members of the statutory Committee had any objections to the CASAC approving this draft letter/report to the Administrator pursuant to the CASAC AAMM Subcommittee's September 2005 peer review of the draft FRM for $PM_{10-2.5}$. CASAC members voiced no objections, and the CASAC Chair noted that the Committee approved the draft letter/report.

Summary and Next Steps

Dr. Henderson thanked the members of the CASAC and the Subcommittee for their participation on this teleconference. Mr. Butterfield also thanked the members, as well as Agency staff, after which the DFO adjourned the meeting at approximately 2:55 p.m.

Respectfully Submitted:

/s/

Fred A. Butterfield, III

Fred A. Butterfield, III
CASAC DFO

Certified as True:

/s/

Rogene F. Henderson, Ph.D.

Rogene F. Henderson, Ph.D.
CASAC Chair

Appendix A – Roster of the Clean Air Scientific Advisory Committee

U.S. Environmental Protection Agency
Science Advisory Board (SAB) Staff Office
Clean Air Scientific Advisory Committee (CASAC)

CHAIR

Dr. Rogene Henderson, Scientist Emeritus, Lovelace Respiratory Research Institute, Albuquerque, NM

MEMBERS

Dr. Ellis Cowling, University Distinguished Professor-at-Large, North Carolina State University, Colleges of Natural Resources and Agriculture and Life Sciences, North Carolina State University, Raleigh, NC

Dr. James D. Crapo, Professor, Department of Medicine, Biomedical Research and Patient Care, National Jewish Medical and Research Center, Denver, CO

Dr. Frederick J. Miller, Consultant, Cary, NC

Mr. Richard L. Poirot, Environmental Analyst, Air Pollution Control Division, Department of Environmental Conservation, Vermont Agency of Natural Resources, Waterbury, VT

Dr. Frank Speizer, Edward Kass Professor of Medicine, Channing Laboratory, Harvard Medical School, Boston, MA

Dr. Barbara Zielinska, Research Professor, Division of Atmospheric Science, Desert Research Institute, Reno, NV

SCIENCE ADVISORY BOARD STAFF

Mr. Fred Butterfield, CASAC Designated Federal Officer, 1200 Pennsylvania Avenue, N.W., Washington, DC, 20460, Phone: 202-343-9994, Fax: 202-233-0643 (butterfield.fred@epa.gov) (Physical/Courier/FedEx Address: Fred A. Butterfield, III, EPA Science Advisory Board Staff Office (Mail Code 1400F), Woodies Building, 1025 F Street, N.W., Room 3604, Washington, DC 20004, Telephone: 202-343-9994)

Appendix B – Meeting Agenda

U.S. Environmental Protection Agency
Clean Air Scientific Advisory Committee (CASAC)

Public Teleconference
Thursday, November 3, 2005 – 1:00 to 4:00 pm Eastern Time

EPA Science Advisory Board (SAB) Staff Office
1025 F. Street, N.W., Washington, DC 20004

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Final Meeting Agenda

Thursday, November 3, 2005

1:00 pm	**Convene Teleconference; Call Attendance; Introductions and Administration**	Mr. Fred Butterfield, CASAC DFO
1:10 pm	**Purpose of Meeting**	Dr. Rogene Henderson, Chair
1:15 pm	**Overview and Summary of CASAC AAMM Subcommittee Report**	Dr. Barbara Zielinska, Subcommittee Co-Chair, Methods; and Mr. Rich Poirot, Co-Chair, Monitoring
1:30 pm	**Public Comment Period**	Mr. Butterfield (Facilitator)
1:45 pm	**Members' Discussion and Deliberation**	CASAC Members*
3:55 pm	**Summary and Next Steps**	Dr. Henderson and Mr. Butterfield
4:00 pm	**Adjourn Meeting**	Mr. Butterfield

* This portion of the teleconference will be chaired by Dr. Henderson, and those CASAC Members who are also AAMM Subcommittee Members will recuse themselves from the substantive deliberations concerning the Subcommittee's report.