

**U.S. Environmental Protection Agency  
EPA Science Advisory Board (SAB) Staff Office  
Clean Air Scientific Advisory Committee (CASAC)  
CASAC Ozone Review Panel**

**Summary Meeting Minutes of the CASAC's Public Advisory Teleconference**

**Monday, March 5, 2007 – 1:00 to 5:00 p.m. Eastern Time**

**SAB Staff Office, Washington DC**

**CASAC Review of EPA's Final Ozone Staff Paper**

Panel Members: See CASAC Ozone Review Panel Roster – Appendix A

Agenda: See Meeting Agenda – Appendix B

Public Speakers: See List of Public Speakers – Appendix C

Purpose: The purpose of this public teleconference meeting was for the CASAC Ozone Review Panel to review EPA's *Final Review of the National Ambient Air Quality Standards (NAAQS) for Ozone: Policy Assessment of Scientific and Technical Information* (Final Ozone Staff Paper, January 2007), focusing on Chapter 6 (Primary O<sub>3</sub> NAAQS) and Chapter 8 (Secondary O<sub>3</sub> NAAQS)

Attendees: Chair: Dr. Rogene Henderson

CASAC Members: Dr. Ellis Cowling  
Dr. James Crapo  
Dr. Douglas Crawford-Brown  
Mr. Richard Poirot  
Dr. Armistead (Ted) Russell  
Dr. Frank Speizer

Panel Members: Dr. John Balmes  
Dr. William (Jim) Gauderman  
Dr. Henry Gong  
Dr. Paul Hanson  
Dr. Jack Harkema  
Dr. Philip Hopke  
Dr. Michael Kleinman  
Dr. Allan Legge  
Dr. Morton Lippmann  
Dr. Frederick Miller  
Dr. Elizabeth (Lianne) Sheppard  
Dr. James Ultman  
Dr. Sverre Vedal  
Dr. James Zidek  
Dr. Barbara Zielinska

EPA SAB Staff: Mr. Fred Butterfield, CASAC Designated Federal Officer (DFO)  
Dr. Vanessa Vu, SAB Staff Office Director

Other EPA Staff: Dr. Tim Benner, ORD, OSP  
Dr. Stephen Graham, OAR, OAQPS  
Mr. Jeffrey Herrick, OAR, OAQPS  
Dr. John Langstaff, OAR, OAQPS  
Dr. Karen Martin, OAR, OAQPS  
Dr. Dave McKee, OAR, OAQPS  
Mr. Harvey Richmond, OAR, OAQPS  
Ms. Vicki Sandiford, OAR, OAQPS  
Ms. Susan Stone, OAR, OAQPS  
Ms. Lydia Wegman, OAR, OAQPS

### Meeting Summary

The discussion followed the issues and general timing 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 ten individuals would be making public comments today. Mr. Butterfield said a transcript of this teleconference is not being taken. However, summary minutes were taken (by the DFO) for this teleconference meeting. These minutes will be certified by the CASAC (and Ozone Review Panel) Chair and posted on the SAB Web Site (<http://www.epa.gov/sab/>) within 90 days after the meeting. Mr. Butterfield noted that all panelists had earlier 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 teleconference meeting and found to be satisfactory.

### Purpose of Meeting and Welcome

Dr. Rogene Henderson, CASAC and Ozone Review Panel Chair, welcomed Panel members and briefly stated the purpose of the meeting (see above). She then introduced Dr. Karen Martin of EPA's Office of Air Quality Planning and Standards (OAQPS) for some brief introductory remarks.

### Remarks from OAQPS concerning EPA's final Draft Staff Paper

Dr. Karen Martin, OAQPS, thanked the members of the Ozone Panel, and then thanked her entire Agency "team" for their work on the Final Ozone Staff Paper. She noted that there was a

small error in the exposure analysis relating to a slight consistent overestimation of ozone exposures, stating that OAQPS staff would re-run this analysis and provide it to the CASAC by the end of the month. Dr. Martin reiterated the schedule found in the consent decree that the U.S. District Court for the District of Columbia has entered-into with respect to the litigation between the plaintiffs (American Lung Association *et al.*) and the defendants (collectively, the U.S. EPA) that the Agency issue the notice of proposed rulemaking for ozone no later than June 20, 2007, and a final rulemaking notice by March 12, 2008.

### Public Comment Period

Ten speakers gave three-minute oral statements during the public comment period (see Appendix C). The statements from these public commenters are posted on the CASAC Ozone Review Panel's page on the SAB Web site at URL: <http://www.epa.gov/sab/panels/casacorpanel.html>, and are also found in hard-copy in the associated FACA file for this teleconference. Ozone Panel members asked follow-up questions of several of the public commenters after they had finished delivering their oral public statement.

### Summary of the CASAC Discussion on the Primary O<sub>3</sub> NAAQS found in Chapter 6 of the Final Ozone Staff Paper

Ozone Panel members were generally complimentary toward EPA staff on the revisions to the portion of the Final Ozone Staff Paper relating to the primary O<sub>3</sub> NAAQS. Specific conclusions and other key points raised during this discussion include the following:

- The CASAC's unanimous recommendation for the primary Ozone NAAQS was that it should remain the same, *i.e.*, not to exceed 0.070 ppm. Merely reducing the primary standard from 0.08 ppm (which, due to rounding, is effectively 0.085 ppm) to 0.080 ppm is not adequate to address the associated public health concerns.
- Several members were perplexed by, or otherwise took exception to, the recommendation in the Final Ozone Staff Paper that "consideration be given to a standard level within the range of *somewhat below* 0.080 ppm to 0.060 ppm."
- The issue of "margin of safety" as specifically mandated in the Clean Air Act is not addressed in the Final Ozone Staff Paper and should be emphasized.
- Substantial populations are affected outside of the twelve urban "Metropolitan Statistical Areas" (MSAs). While the exposure calculations pertaining to these 12 MSAs are fine, the Final Ozone Staff Paper seriously underestimates the affected population outside of these areas.
- The Agency needs to give additional consideration to the adverse health effects of other photochemical oxidants — *i.e.*, the oxidant *mixture* — rather than simply pure ozone.
- Further research recommendations are needed with respect to *susceptibility* from the genetic, nutritional and environmental perspectives. In addition, other recommendations for research should be explicitly highlighted, *e.g.*, adverse health impacts of low levels of ambient ozone and other photochemical oxidants (*i.e.*, the oxidant mixture) exposure on

susceptible populations, including elderly with preexisting medical conditions. Another member commented that the Agency needs to significantly-strengthen its overall ozone research efforts.

- The tables in the Final Ozone Staff Paper do not emphasize the adverse human health effects, including the impact on lung development, associated with various levels and multiple occurrences of ozone exposure.

#### Summary of the CASAC Discussion on the Secondary O<sub>3</sub> NAAQS found in Chapter 8 of the Final Ozone Staff Paper

With respect to the discussion of the secondary Ozone NAAQS in the Final Ozone Staff Paper, Ozone Panel members included the following conclusions and other key points:

- The CASAC was unanimous in its support for the recommendation in the Final Ozone Staff Paper that the protection of both crops and ecosystems requires a secondary Ozone NAAQS that is substantially different from the primary ozone standard in averaging time, level and form.
- Ozone is a regional — rather than simply a local — pollutant. Panelists also reiterated that adverse environmental effects result from a mixture of photochemical oxidants and not merely ozone.
- The Ozone Panel would prefer the sigmoidally-weighted W126 index rather than the SUM06 metric, and that the version of W126 to be used should be equivalent to a SUM06 level of 10–20 ppm-hours. In addition, the Ozone Panel members discussed the summer “growing season.”

#### Summary and Next Steps

Dr. Henderson reiterated that the CASAC’s letter to the EPA Administrator on this subject would not change the Final Ozone Staff Paper but was intended to inform the Agency’s thinking as it prepared to issue the notice of proposed rulemaking for ozone. The Chair requested that Ozone Panel members send any inputs into the draft CASAC letter to the Administrator to her as soon as possible, and also asked that Panelists send any initial or updated individual review comments on the Final Ozone Staff Paper both to Dr. Henderson and to Mr. Butterfield no later than March 12. The Chair thanked everyone on the call for their participation.

The DFO adjourned the meeting at approximately 4:00 p.m. on March 5, 2007.

**[Update:** The CASAC’s final letter/report (EPA-CASAC-07-002, dated March 26, 2007) from the CASAC Ozone Review Panel’s March 5, 2007 teleconference meeting was transmitted to the Administrator on March 27, 2007, and was posted the next day on the SAB Web site at the following URL: <http://www.epa.gov/sab/pdf/casac-07-002.pdf>.]

Respectfully Submitted:

Certified as True:

/s/

/s/

*Fred A. Butterfield, III*

*Rogene Henderson, Ph.D.*

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Fred A. Butterfield, III  
CASAC DFO

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Rogene Henderson, Ph.D.  
CASAC Chair

Date: April 17, 2007

## Appendix A – Roster of the CASAC Ozone Review Panel

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

#### CHAIR

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

#### MEMBERS

**Dr. John Balmes**, Professor, Department of Medicine, University of California San Francisco, University of California – San Francisco, San Francisco, California

**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, National Jewish Medical and Research Center, Denver, CO

**Dr. Douglas Crawford-Brown\***, Director, Carolina Environmental Program; Professor, Environmental Sciences and Engineering; and Professor, Public Policy, Department of Environmental Sciences and Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC

**Dr. William (Jim) Gauderman**, Associate Professor, Preventive Medicine, Medicine, University of Southern California, Los Angeles, CA

**Dr. Henry Gong**, Professor of Medicine and Preventive Medicine, Medicine and Preventive Medicine, Keck School of Medicine, University of Southern California, Downey, CA

**Dr. Paul J. Hanson**, Senior Research and Development Scientist, Environmental Sciences Division, Oak Ridge National Laboratory (ORNL), Oak Ridge, TN

**Dr. Jack Harkema**, Professor, Department of Pathobiology, College of Veterinary Medicine, Michigan State University, East Lansing, MI

**Dr. Philip Hopke**, Bayard D. Clarkson Distinguished Professor, Department of Chemical Engineering, Clarkson University, Potsdam, NY

**Dr. Michael T. Kleinman**, Professor, Department of Community & Environmental Medicine, University of California – Irvine, Irvine, CA

**Dr. Allan Legge**, President, Biosphere Solutions, Calgary, Alberta, Canada

**Dr. Morton Lippmann**, Professor, Nelson Institute of Environmental Medicine, New York University School of Medicine, Tuxedo, NY

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

**Dr. Maria Morandi**, Assistant Professor of Environmental Science & Occupational Health, Department of Environmental Sciences, School of Public Health, University of Texas – Houston Health Science Center, Houston, TX

**Dr. Charles Plopper**, Professor, Department of Anatomy, Physiology and Cell Biology, School of Veterinary Medicine, University of California – Davis, Davis, California

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

**Dr. Armistead (Ted) Russell\***, Georgia Power Distinguished Professor of Environmental Engineering, Environmental Engineering Group, School of Civil and Environmental Engineering, Georgia Institute of Technology, Atlanta, GA

**Dr. Elizabeth A. (Lianne) Sheppard**, Research Professor, Biostatistics and Environmental & Occupational Health Sciences, Public Health and Community Medicine, University of Washington, Seattle, WA

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

**Dr. James Ultman**, Professor, Chemical Engineering, Bioengineering Program, Pennsylvania State University, University Park, PA

**Dr. Sverre Vedal**, Professor of Medicine, Department of Environmental and Occupational Health Sciences, School of Public Health and Community Medicine, University of Washington, Seattle, WA

**Dr. James (Jim) Zidek**, Professor, Statistics, Science, University of British Columbia, Vancouver, BC, Canada

**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](mailto:butterfield.fred@epa.gov))

\* Members of the statutory Clean Air Scientific Advisory Committee (CASAC) appointed by the EPA Administrator

## Appendix B – Meeting Agenda

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**U.S. Environmental Protection Agency  
EPA Science Advisory Board (SAB) Staff Office  
Clean Air Scientific Advisory Committee (CASAC)  
CASAC Ozone Review Panel**

### Public Teleconference Meeting

**Monday, March 5, 2007 – 1:00 to 5:00 p.m. Eastern Time**

### Advisory Meeting to Review EPA’s Final Ozone Staff Paper

#### Meeting Agenda

1:00 p.m.	<b>Convene Teleconference; Call Attendance; Introductions and Administration</b>	Mr. Fred Butterfield, CASAC DFO
1:10 p.m.	<b>Purpose of Meeting</b>	Dr. Rogene Henderson, Chair
1:15 p.m.	<b>Remarks from EPA’s Office of Air Quality Planning and Standards</b>	Dr. Karen Martin, OAQPS
1:30 p.m.	<b>Public Comment Period</b>	Mr. Butterfield (Facilitator)
2:00 p.m.	<b>Members’ Discussion and Deliberation</b>	CASAC Ozone Review Panel Members
	<b><u>Discussion Topic</u></b>	<b><u>Lead Discussant(s)</u></b>
	<ul style="list-style-type: none"> <li>• Chapter 6 (Staff Conclusions and Recommendations on the Primary O<sub>3</sub> NAAQS)</li> </ul>	Dr. James Crapo, Dr. Frank Speizer, Dr. Fred Miller
	<ul style="list-style-type: none"> <li>• Chapter 8 (Staff Conclusions and Recommendations on the Secondary O<sub>3</sub> NAAQS)</li> </ul>	Dr. Ellis Cowling, Mr. Rich Poirot
	<ul style="list-style-type: none"> <li>• Other discussion items</li> </ul>	—
4:45 p.m.	<b>Summary and Next Steps</b>	Dr. Henderson
5:00 p.m.	<b>Adjourn Meeting</b>	Mr. Butterfield

## Appendix C – List of Public Speakers

**U.S. Environmental Protection Agency  
EPA Science Advisory Board (SAB) Staff Office  
Clean Air Scientific Advisory Committee (CASAC)  
CASAC Ozone Review Panel**

**Public Teleconference Meeting**

**Monday, March 5, 2007 – 1:00 to 5:00 p.m. Eastern Time**

**Advisory Meeting to Review EPA’s Final Ozone Staff Paper**

#	Speaker’s Name	Organizational Affiliation(s)	Organization(s) Represented (i.e., comments offered on behalf of)
1	Dr. Allen Lefohn	A.S.L. & Associates	same
2	Mr. Frank Losey	International Paint, Ltd.	same
3	Mr. Bryan Brendle	The National Association of Manufacturers (NAM)	same
4	Ms. Deborah Shprentz	Consultant	American Lung Association (ALA)
5	Mr. Jon Heuss	Air Improvement Resource, Inc. (AIR)	Alliance of Automobile Manufacturers (AAM)
6	Dr. William C. Adams	University of California, Davis	self
7	Dr. Richard L. Smith	University of North Carolina (UNC), Chapel Hill	self
8	Dr. Will Ollison	American Petroleum Institute (API)	same
9	Dr. John Balbus [M.D.]	Environmental Defense	same
10	Mr. Nick Goldstein	American Road & Transportation Builders Association (ARTBA)	same