

**Summary Minutes of the United States Environmental Protection Agency (U.S. EPA)
Science Advisory Board (SAB) Quality Review Teleconference
July 19, 2011**

Meeting of the Chartered SAB and SAB Liaisons¹

Date and Time: July 19, 2011, 12:00 p.m. – 300 p.m. Eastern Time

Location: By Teleconference

Purpose: to conduct a quality review of a SAB Drinking Water Committee draft report entitled *SAB Evaluation of the Effectiveness of Partial Lead Service Line Replacements (June 1, 2011 Draft)*.²

SAB Members and Liaison Participants:

SAB Members

Dr. Deborah Swackhamer, Chair
Dr. Ingrid Burke
Dr. George Daston
Dr. David Dzombak
Dr. Elaine Faustman
Dr. Jeffrey Griffiths
Dr. James Hammitt

Dr. Cecil Lue-Hing
Dr. Lee D. McMullen
Dr. Eileen Murphy
Dr. Stephen Roberts
Dr. Amanda Rodewald
Dr. James Sanders
Dr. John Vena

SAB Staff Office Participants

Dr. Angela Nugent, Designated Federal Officer (DFO)
Dr. Vanessa Vu, Director
Mr. Aaron Yeow, DFO for the Drinking Water Committee

Teleconference Summary:

The teleconference was announced in the Federal Register³ and discussion generally followed the issues and timing as presented in the agenda.⁴

Convene the meeting

Dr. Angela Nugent, SAB DFO, convened the advisory meeting and welcomed the group. She noted that the meeting had been announced in the Federal Register, which provided the public with an opportunity to provide oral and written comments. She noted that no individuals had requested an opportunity to provide oral public comments and that no written comments had been received. She asked members of the public participating by teleconference to contact her so that their names could be listed in the minutes (Attachment A).

Purpose of meeting and review of the agenda

Dr. Deborah Swackhamer, the SAB Chair, welcomed SAB members and reviewed the purpose of the meeting, to conduct a quality review of a draft SAB report entitled *SAB Evaluation of the Effectiveness of Partial Lead Service Line Replacements (June 1, 2011 Draft)*.

Overview of draft report

Dr. Jeffrey Griffiths, Chair of the SAB Drinking Water Committee, introduced the draft report, which provided consensus panel responses to five charge questions. He emphasized that EPA had provided the Drinking Water Committee, augmented with additional experts for this review, with available literature related to the effectiveness of partial lead service line replacements and that the panel found the available evidence to be “very scanty.”

Among other findings, the panel determined, based on available data from the Centers for Disease Control, that lead in tap water becomes elevated after partial lead service line replacements and then decreases over time. Blood lead levels may increase, rather than decrease. There is no evidence to show that partial lead service line replacements have been shown to decrease blood lead levels.

Chartered SAB Discussion

Dr. Swackhamer introduced the lead reviewers to begin the SAB discussion by summarizing their significant comments. She noted that members’ comments had been compiled and provided on the SAB website.⁵

Drs. Cecil Lue-Hing, the first lead reviewer, commended the panel for a well-written, comprehensive report on an important topic. The panel peer reviewed the literature identified by EPA plus other information identified by panel members. In addressing all the charge questions, the panel found that the combined mass of studies was not sufficient to fully address the five charge questions. There were limitations to study designs inadequate and insufficient data, and sample size limitations.

He provided some editorial suggestions in his written comments to make the letter to the Administrator more clear and direct. He suggested that the report should recommend more clearly that EPA support research to fill the gaps needed to determine more conclusively the health impacts of partial lead line replacement.

Dr. Nancy Kim, the second lead reviewer, congratulated the panel for its hard work. She asked whether the panel could characterize its conclusions and findings more clearly, because a clearer scientific judgment about the efficacy of partial lead service line replacements had great practical importance. Such replacements are undertaken for a wide variety of water system management reasons. She asked whether the Brown study might be reanalyzed so that the panel could reach a more pointed conclusion that could be mentioned in the letter to the EPA Administrator.

The SAB Chair then interrupted the teleconference to note that a tornado emergency warning had been broadcast at her location and that building occupants were being asked to vacate the

building for their safety. Dr. David Dzombak agreed to chair the quality review while Dr. Swackhamer stepped away from the teleconference.

Dr. L.D. McMullen, the third lead reviewer, described his experience with lead service line replacements at the Des Moines Water Works, when he encountered pipe failures and main replacements. Partial lead line replacements were often needed when there were infrastructure failures. He confirmed that limited literature was available concerning the efficacy of such partial lead line replacements. He referred the chartered SAB to his written comments and made additional mention of the need for research on the impact of electric current on corrosion and increased blood lead levels.

Dr. John Vena, the fourth lead reviewer, also complimented the panel for its careful review. He asked if it were possible for the panel to make more definitive statements about where and when partial lead line replacements should be done. Even if there is uncertainty about recommendations, any tentative recommendations for management actions under different conditions would be helpful. He suggested that the report could be enhanced by inclusion of a section listing specific recommendations and key committee comments.

At this point in the teleconference, Dr. Swackhamer returned to the teleconference. She invited Dr. Griffiths, the panel chair, to respond to lead reviewer comments. Dr. Griffiths thanked the lead reviewers for their suggested editorial changes to increase the clarity of the report and agreed that the report would be strengthened by including a summary that listed the panel's major findings and recommendations.

In response to several suggestions that the report make more pointed recommendations regarding the use of partial lead service line replacements, he emphasized that the panel had exhaustively discussed the limitations of the data and could not reach consensus on any additional recommendations. The published literature has "nothing remotely approaching a national sampling," but the scanty existing literature clearly documents elevated levels and shows that "half the population" has some exposure to partial lead service line replacements. All the available studies point in one direction, that partial lead service line replacements will increase blood lead levels for weeks or months, with no end point identified. The panel has "fine tuned" its language as far as it could.

He also noted that ninety percent of partial lead service line replacements were triggered not by elevated lead levels but by the need for emergency water system repairs. The panel does not know the magnitude of the problem. The panel neither wanted to understate the potential importance nor raise unnecessary alarm. He noted that partial lead service line replacements should not be banned until some alternate methodology is in place and that the report could make that point more clearly. In his view, this "fast track report" should validate concern about partial lead line replacement and point out data gaps. The panel has been "honest about the limitations of data, how consistent study data are, and how biologically plausible" the study data were. He also noted that the panel did determine that decreasing galvanic corrosion decreases blood lead levels and that this point could be made more clearly in the report.

In response to a question, he noted that the panel closely questioned a representative of the Centers for Disease Control. There is a possibility for the Centers for Disease Control to

reanalyze the data to determine the timing of the partial lead line replacement and the timing of onset of elevated blood lead levels. There are study limitations that need to be better understood if the data were to be mined.

Several members agreed that the report could more clearly state the need for additional research on this topic. Dr. Kim committed to provide a sentence for possible inclusion in the letter to the Administrator regarding the potential implications of reanalysis of the Brown study to make it clearer that a reanalysis might shed light on increases in children’s blood lead level.

Members of the committee discussed whether the report should make a stronger statement that utilities should use caution in implementing partial lead service line replacements until more research is done and should take other precautions, such as flushing, to reduce risks. Dr. Griffiths emphasized that the panel could not reach consensus on this point, because water system emergencies at times currently require partial lead service line replacements. Dr. Swackhamer asked the panel to provide more detail about the panel’s deliberations on this point to make the nature of their concerns and rationale for lack of consensus for making stronger recommendations more transparent.

Other chartered SAB members provided oral comment. One member suggested that the body of the report make increased reference to valuable material in the appendix to the report. She also provided language in her written comments calling for increased monitoring. Another committee member emphasized the importance of respecting the expertise of the panel and their sense of the limitations of the data made available for the panel to consider.

After the discussion had concluded, Dr. Swackhamer asked for a motion to dispose of the report. Dr. Dzombak moved that the report be approved subject to the report being revised in light of written comments and review by the SAB Chair. Dr. James Sanders seconded the motion. There was no discussion of the motion. The motion was seconded and was approved unanimously with one member abstaining (Dr. Griffiths). After the vote a member noted that the report was exemplary of the high quality work that the SAB can do in a tight timeframe. Dr. Swackhamer concluded the teleconference by congratulating the panel chair and thanking SAB members for their contributions to the quality review.

The Designated Federal Officer adjourned the meeting at 12:55 p.m.

Respectfully Submitted:

Certified as True:

/Signed.

/Signed/

Dr. Angela Nugent
SAB DFO

Dr. Deborah L. Swackhamer
SAB Chair

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.

Attachment A
Members of the Public Requesting Call-in Information for SAB Teleconference, July 19, 2011

Jamie Harris, EPA

John.Hroncich, United Water

Erica Martinson, Inside EPA's Water Policy Report

Deirdre Mueller, American Water Works Association

Sarah Neiderer, District of Columbia Water and Sewer Authority

Douglas Pasternak, U.S. House of Representatives, Committee on Science, Space & Technology

George S. Rizzo, EPA

Amena H. Saiyid, Daily Environment Report

Steve Via, American Water Works Association

Linda M. Wilson, NYS Office of the Attorney General

Materials Cited

The following meeting materials are available on the SAB website,
<http://www.epa.gov/sab>, at the following address:
<http://yosemite.epa.gov/sab/sabproduct.nsf/a84bfee16cc358ad85256ccd006b0b4b/ba5faa5d82fd8321852578ab00650046!OpenDocument&Date=2011-07-19>

¹ Roster, Chartered SAB Members and Liaisons

² Draft SAB report entitled *SAB Evaluation of the Effectiveness of Partial Lead Service Line Replacements (June 1, 2011 Draft)*.

³ Federal Register Notice Announcing the Meeting

⁴ Agenda

⁵ Compilation of comments from members of the chartered SAB as of 5 p.m., July 18, 2011.