



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON D.C. 20460

OFFICE OF THE ADMINISTRATOR  
SCIENCE ADVISORY BOARD

January 26, 2011

**MEMORANDUM**

**SUBJECT:** Addendum to the January 12, 2011 Memorandum: Formation of Science Advisory Board Panel for Review of Hydraulic Fracturing Study Plan

**FROM:** Edward Hanlon */Signed/*  
Designated Federal Officer (DFO)  
EPA Science Advisory Board Staff Office (1400R)

**THRU:** Wanda Bright */Signed/*  
SAB Ethics Officer  
EPA Science Advisory Board Staff Office (1400R)

**TO:** Vanessa Vu, Ph.D.  
Director  
EPA Science Advisory Board Staff Office (1400R)

On January 12, 2011, the Science Advisory Board (SAB) Staff Office Director signed a memorandum that announced to the public the members of the SAB's Hydraulic Fracturing Study Plan Review Panel. The memorandum provided a set of determinations that were necessary for forming the SAB Panel, and described all relevant information considered in forming the Panel, including a review of the confidential financial disclosure forms and evaluation of an appearance of a lack of impartiality. Since January 12, 2011, the SAB Staff Office has received additional information regarding membership of the Hydraulic Fracturing Study Plan Review Panel. Based on review of this additional information, the members of the EPA's Hydraulic Fracturing Study Plan Review Panel are as follows:





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EPA's Office of Research and Development (ORD) is initiating a study plan on the potential environmental and human health implications of hydraulic fracturing with special emphasis on the relationship between hydraulic fracturing and drinking water resources. ORD has asked the Science Advisory Board (SAB) to review the draft Hydraulic Fracturing Study Plan and comment on the technical soundness of the approaches and analyses being considered within the draft Plan.

This memorandum addresses the set of determinations that were necessary for forming the SAB Panel, including:

- (A) The type of review body that will be used to conduct the review, and the nature of the review;
- (B) The list of candidates to be considered for the panel;
- (C) Financial conflict of interest considerations, including identification of parties who are potentially interested in or may be affected by the topic to be reviewed;

(D) How regulations concerning “appearance of a lack of impartiality,” pursuant to 5 C.F.R. § 2635.502, apply to members of the Panel; and

(E) The selection of Panel members.

**DETERMINATIONS:**

(A) The type of review body that will be used to conduct the review, and the nature of this review.

An *ad hoc* panel, composed of subject matter experts, will be formed under the auspices of the Science Advisory Board to provide advice and recommendations to EPA on the draft Hydraulic Fracturing Study Plan.

(B) The lists of candidates considered for the Panel.

The SAB Staff Office announced to the public through a *Federal Register* notice published on July 20, 2010 (Volume 75, Number 138, Pages 42087-42088) that it was forming an *ad hoc* Panel under the auspices of the SAB to provide independent expert advice on EPA’s draft Hydraulic Fracturing Study Plan to investigate the potential public health and environmental protection research issues that may be associated with hydraulic fracturing. To form the Panel, the SAB Staff Office sought public nominations of nationally recognized and qualified experts in the following areas: petroleum (including natural gas) engineering and petroleum geology, particularly with experience in hydraulic fracturing and well testing / mechanical integrity; hydrology and hydrogeology; geophysics; water quality; chemistry and geochemistry, particularly with experience in chemical fate and transport, oxidation-reduction reactions, gas-liquid exchange, and solubility; analytical chemistry, particularly regarding trace organics and environmental monitoring; statistics, particularly regarding experimental design of field studies; human health effects and risk assessment; civil and environmental engineering; chemical engineering; drinking water treatment systems; wastewater treatment systems; and social, behavioral, and decision sciences.

On September 10, 2010, the SAB Staff Office posted a list of eighty-four Nominated Candidates. Public comments on this List of Candidates were requested to be received by October 1, 2010. On November 1, 2010, the SAB Staff Office posted an additional List of Candidates (four SAB members) to be considered for this SAB Panel. Public comments on this additional List of Candidates were requested to be received by November 21, 2010.

The SAB Staff Office received comments on the candidate lists from the following members of the public:

- Geri Chapman Aird, Perrysburg, New York
- Jeremy Alderson, Finger Lakes, New York
- Louis W. Allstadt
- Dan Arthur, ALL Consulting

- Michelle Bamberger, Vet Behavior Consults
- Don Barber, Caroline Town Supervisor, New York
- T. Rae Barrett, Denver, Colorado
- Honorable Dan Boren, Member of Congress of the United States, United States House of Representatives, and 23 other Members of the United States House of Representatives
- Kenneth S. Bromfield, Dow Hydrocarbons and Resources LLC
- Michele Brown, Cornell University
- Angie Burckhalter, Vice President - Regulatory Affairs, Oklahoma Independent Petroleum Association
- Joseph M. Campbell, Finger Lakes, New York
- Tom Campbell, Oneida County, New York
- William Carr
- Skip Chamberlain, Senior Program Manager, U.S. Department of Energy Office of Environmental Management
- Phil Cianciotto, President, Seneca Lake Pure Waters Association
- Steve Coffman, Committee to Preserve the Finger Lakes, Dundee, New York
- Nancy S. Cole, Hammondsport, New York
- Robert W. Compton, Jr., State University of New York, College at Oneonta
- Barbara Cook, Finger Lakes, New York
- Chris Cook, Schuyler County, New York
- Brad Copithorne, Environmental Defense Fund
- Peter John Davies, Cornell University
- Karen Davis, Warren, Pennsylvania
- Gail Dubas, Metropolitan State College of Denver
- R. Frank Eadie, New York
- Bob Eklund, Chairman, Butternut Valley Alliance
- Honorable Jo Ann Emerson, Member of Congress of the United States, United States House of Representatives
- Elisa Evett
- Jessica Evett-Miller, Tompkins County, New York
- Linda Fazzary, Finger Lakes, New York
- Nancy Feinstein, Finger Lakes, New York
- Maureen Ferrell and Scott Breese, Elmira, New York
- Doug Flanders, Director of Policy, Colorado Oil & Gas Association
- Jeanne F. Fudala, Alpine, New York
- Gay Garrison
- Suzannah Glidden, Director, Croton Watershed Clean Water Coalition
- Heidi Gogins, Catskill Citizens for Safe Energy
- David Gould, New York New York
- Dave Grodsky and Paddy Lane
- Ralph Grove, Chair, Shenandoah (VA) Group of the Sierra Club
- Paul Hagin, Rock Mechanics Team, Chevron Energy Technology CompaNew York

- Katherine Halton, Danby Town Board, Tompkins County Council of Governments member, New York
- Julie L. Hansen
- Ellen Z. Harrison, Ithaca, New York
- Jennifer Hause, West Virginia University
- Paul Heckbert, Edgewood, Pennsylvania
- Terry Helser, Oneonta, New York
- Peter Hennings, Manager Structure and Geomechanics, ConocoPhillips Upstream Technology
- Gretchen Herrmann, Cortland, New York
- Harley Hopkins, Falls Church, Virginia
- Dusty Horwitt, Senior Counsel, Environmental Working Group
- Honorable James M. Inhofe, Member of Congress of the United States, United States Senate, and Honorable Dan Boren, Member of Congress of the United States, United States House of Representatives
- John Kesich, Millerton, Pennsylvania
- Hugh Kimball, Baldwinsville, New York
- Wil Kirchner, Marathon Oil
- Dave Knutson, Paonia, Colorado
- Edward C. Kokkelenberg and Jennifer Sarah Tiffany, Cornell University
- Jennifer Krill, Executive Director, EARTHWORKS: Protecting Communities and the Environment
- Adrian Kuzminski, Moderator, Sustainable Otsego
- Gwen Lachelt, Director, EARTHWORKS
- Linda Lavine
- Mitchell Lavine
- Gwyneth Leech, New York, New York
- Harry Levine, President, Advocates for Springfield, Springfield New York
- Karen Margulis London and Eric London, Smallwood, New York
- Stephanie Low, Sierra Club Atlantic Chapter - Watershed Committee, Gas Drilling Task Force, Hydrofracking Task Force; New York H<sub>2</sub>O - Chair, Legislative/Political Committee, New York, New York
- Amy Mall, Natural Resources Defense Council
- Hank Masterson, Delta, Colorado
- John May, Pittsford, New York
- Margaret McCasland, Ithaca New York
- Judy McDade
- Sandra K. McDaniel
- Stephanie R. Meadows, American Petroleum Institute
- Ana Maria Mendez
- Steve Milloy, Publisher, JunkScience.com
- David Moryc, Senior Director of River Protection, American Rivers
- James Northrup, Cooperstown, New York
- Lunt Nuttle, Tompkins County, New York

- Paul Stephen Osborne, Denver, Colorado
- Mary Ott, Trumansburg, New York
- Lili Packer
- Kathleen A. Patnode, U.S. Fish and Wildlife Service, Wheeling, WV
- Duncan T. Patten, Bozeman, MT
- Taylor Peck, Alpine, New York
- Stephen Penningroth, Executive Director, Community Science Institute, Ithaca, New York
- Scott W. Petersen, Technology Lead, CH2M HILL Plateau Remediation Company, New York
- Bill Podulka, Cornell University
- Barry Russell, President and CEO of the Independent Petroleum Association of America (IPAA) (email from Shannon Brushe)
- J. Barton Seitz, Baker Botts LLP, Representing Halliburton Energy Services, Inc.
- Honorable Joe Sestak, Member of Congress of the United States, United States House of Representatives
- Ed Seus, Yates County, New York
- Kathleen M. Sgamma, Director of Government Affairs, Western Energy Alliance (formerly IPAMS), Denver, Colorado
- Don Siegel, Syracuse University
- William Simons, State University of New York College at Oneonta
- Jeffrey B. Smith
- Linda F. Smith and Walter P. Blackburn, Keuka Lake, New York
- Mary Smith, Elmira, New York
- Sue Smith-Heavenrich, Society of Environmental Journalists, Candor New York
- Risa Sokolsky, Newfield, New York
- Yvonne Taylor, Finger Lakes, New York
- Jessie Thomas-Blate, Most Endangered Rivers Coordinator, American Rivers
- Trudy E. Thomas-Smith, State University of New York College at Oneonta
- Jennifer Sarah Tiffany, Cornell University
- Keith R. Toasperm
- Cyrus Umrigar
- Francis M. Vanek, Cornell University
- Eleanore Vollweiler, Delaware County, New York
- Steven P. Von Rhedey, Finger Lakes, New York
- Bonnie Lane Webber, New York, New York
- Robert W. Williams, The Joint Landowners Coalition of New York
- Weston W. Wilson, Denver, Colorado
- Mary Worth

(C) Financial conflict of interest considerations, including identification of parties who are potentially interested in or may be affected by the topic to be reviewed.

(a) Identification of parties who are potentially interested in or may be affected by the topic to be reviewed: The principal interested and affected parties for this topic are: (1) federal, state, and local government agencies, elected officials, and non-government organizations involved in the development or implementation of policies or regulations related to hydraulic fracturing; (2) the water pollution research community; (3) energy production and transmission industries, including the oil and gas industry; and (4) those involved with the interests of private or public organizations that may be affected by policies or regulations developed on the basis of EPA's draft Hydraulic Fracturing Study Plan.

(b) Conflict of interest considerations: For Financial Conflict of Interest (COI) issues, the basic 18 U.S.C. § 208 provision states that: "An employee is prohibited from participating *personally or substantially* in an official capacity in any *particular matter* in which he, to his knowledge, or any person whose interests are imputed to him under this statute has a *financial interest*, if the particular matter will have a direct and predictable effect on that interest [emphasis added]." For a conflict of interest to be present, all elements in the above provision must be present. If an element is missing the issue does not involve a formal conflict of interest; however, the general provisions in the appearance of impartiality guidelines must still apply and need to be considered.

(i) Does the general charge to the SAB Hydraulic Fracturing Study Plan Review Panel involve a particular matter? A "particular matter" refers to matters that "...will involve deliberation, decision, or action that is focused upon the interest of specific people, or a discrete and identifiable class of people." It does not refer to "...consideration or adoption of broad policy options directed to the interests of a large and diverse group of people." [5 C.F.R. § 2640.103 (a)(1)]. A particular matter of general applicability means a particular matter that is focused on the interests of a discrete and identifiable class of persons, but does not involve specific parties [5 C.F.R. § 2640.102(m)].

The activity of the SAB Panel in addressing the charge for peer review of EPA's draft Hydraulic Fracturing Study Plan will qualify as a *particular matter of general applicability* because the resulting advice will be part of a deliberation, and under certain circumstances the advice could involve the interests of a discrete and identifiable class of people but does not involve specific parties. That class of people constitutes those who are involved with private or public organizations facing regulatory decisions related to hydraulic fracturing, and those who are associated or involved with the potentially interested or affected parties, as identified in Section (C)(a) above.

(ii) Will there be personal and substantial participation on the part of the Panel members? Participating personally means direct participation in this review. Participating substantially refers to involvement that is of significance to the matter under consideration. [5 C.F.R. § 2640.103(a)(2)]. For this review, the SAB Staff Office has determined that the *SAB Panel members will be participating personally in the matter.*

Panel members will be providing the Agency with advice and recommendations on development of EPA's Hydraulic Fracturing Study Plan, and such advice is expected to directly influence the Agency's approach for assessing key research questions regarding the potential public health and environmental protection issues that may be associated with hydraulic fracturing. *Therefore, participation in this review also will be substantial.*

(iii) Will there be a direct and predictable effect on a Panel member's financial interest?

A direct effect on a participant's financial interest exists if "...a close causal link exists between any decision or action to be taken in the matter and any expected effect of the matter on the financial interest. ...A particular matter does not have a direct effect ...if the chain of causation is attenuated or is contingent upon the occurrence of events that are speculative or that are independent of, and unrelated to, the matter. A particular matter that has an effect on a financial interest only as a consequence of its effects on the general economy is not considered to have a direct effect." [5 C.F.R. § 2640.103(a)(i)] A predictable effect exists if, "...there is an actual, as opposed to speculative, possibility that the matter will affect the financial interest." [[5 C.F.R. § 2640.103(a)(ii)]

Prospective candidates were evaluated against the requirements of 5 C.F.R. § 2640.101(a), based on the candidate's submission of their confidential financial disclosure forms (EPA Form 3110-48), to determine whether the work of the Panel will have a direct and predictable effect on his or her financial interests.

(D) How regulations concerning "appearance of a lack of impartiality," pursuant to 5 C.F.R. § 2635.502, apply to members of the Panel

The Code of Federal Regulations at 5 C.F.R. § 2635.502(a) states that: "Where an employee knows that a particular matter involving specific parties is likely to have a direct and predictable effect on the financial interest of a member of his household, or knows that a person with whom he has a covered relationship is or represents a party to such matter, and where the person determines that the circumstances would cause a reasonable person with knowledge of the relevant facts to question his impartiality in the matter, the employee should not participate in the matter unless he has informed the agency designee of the appearance problem and has received authorization from the agency designee." Further, § 2635.502(a)(2) states that, "An employee who is concerned that circumstances other than those specifically described in this section would raise a question regarding his impartiality should use the process described in this section to determine whether he should or should not participate in a particular matter."

Prospective candidates were evaluated against the 5 C.F.R. 2635(a)(2) general requirements for considering an appearance of a lack of impartiality. Information used in this evaluation has come from information provided by the candidates (including, but not limited to, EPA 3110-48 confidential financial disclosure forms) and public comment as well as their responses to the following supplemental questions (included on the EPA 3110-48 confidential financial disclosure form):

1. Do you know of any reason that you might be unable to provide impartial advice on the matter to come before the panel or any reason that your impartiality in the matter might be questioned?
2. Have you had any previous involvement with the review document(s) under consideration including authorship, collaboration with the authors, or previous peer review functions? If so, please identify and describe that involvement.
3. Have you served on previous advisory panels, committees or subcommittees that have addressed the topic under consideration? If so, please identify those activities.
4. Have you made any public statements (written or oral) on the issue that would indicate to an observer that you have taken a position on the issue under consideration? If so, please identify those statements.

(E) The selection of Panel members

The SAB Staff Office Director makes the final decision about who serves on the SAB Hydraulic Fracturing Study Plan Review Panel, based on all relevant information. This includes a review of the confidential financial disclosure forms (EPA Form 3110-48) and information gathered by staff, evaluation of an appearance of a lack of impartiality, and consideration of public comments and panel formation criteria.

For the SAB Staff Office, a balanced committee or panel is characterized by inclusion of candidates who possess the necessary domains of knowledge, the relevant scientific perspectives (which, among other factors, can be influenced by work history and affiliation), and the collective breadth of experience to adequately address the general charge. Specific criteria used in evaluating an individual panel member include: (a) scientific and/or technical expertise, knowledge, and experience (primary factors); (b) availability and willingness to serve; (c) absence of financial conflicts of interest; (d) absence of an appearance of a lack of impartiality; (e) skills working in committees, subcommittees and advisory panels; and, for the panel as a whole, (f) diversity of scientific expertise, and viewpoints.

The SAB Staff Office has determined that there are no conflicts of interest or appearances of a lack of impartiality for the members of this Panel. The members of the EPA's Hydraulic Fracturing Study Plan Review Panel are as follows:

