

Congress of the United States

House of Representatives

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

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MEMORANDUM

TO: Committee on Science, Space, and Technology Members and Staff
FROM: Science, Space, and Technology Committee Staff
DATE: August 1, 2013
RE: Committee on Science, Space, and Technology Business Meeting

The Committee on Science, Space, and Technology will meet on **Thursday, August 1st, at 10:00 a.m.** in Room 2318 of the Rayburn House Office Building to consider the following:

- **Markup of H.R. ____, the “EPA Hydraulic Fracturing Study Improvement Act”**
- **Authorize the Issuance of Subpoenas**

H.R. ____, the “EPA Hydraulic Fracturing Study Improvement Act”

Background and Need

Pursuant to Congressional direction, the EPA is undertaking a multi-year *Study of the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources*. The study results are widely anticipated to have significant public policy implications. Committee correspondence and discussion at hearings since the inception of the report have emphasized the importance of assuring the study be conducted in the most scientifically sound manner possible, adhere to all appropriate EPA peer review requirements, and present its conclusions in relevant context.

The ongoing study is being conducted by EPA’s Office of Research and Development (ORD). The Fiscal Year 2010 Department of the Interior, Environment, and Related Agencies Appropriations Act (P.L. 111-88) directed EPA to carry out the study in accordance with the following report language:

“Hydraulic Fracturing Study.--The conferees urge the Agency to carry out a study on the relationship between hydraulic fracturing and drinking water, using a credible approach that relies on the best available science, as well as independent sources of information. The conferees expect the study to be conducted through a transparent, peer-reviewed process that will ensure the validity and accuracy of the data. The Agency shall consult with other Federal agencies as well as appropriate State and interstate regulatory agencies in carrying out the study, which should be prepared in accordance with the Agency's quality assurance principles.”

In February of 2011, EPA released a draft study plan for public comment and review by its Science Advisory Board (SAB), and a final study plan was released in November 2011.¹ The purpose of the study, as outlined in the final study plan, is to “elucidate the relationship, if any, between hydraulic fracturing and drinking water resources” and “assess the potential impacts of hydraulic fracturing on drinking water resources and to identify the driving factors that affect the severity and frequency of any impacts.”²

The study plan identified the following fundamental research areas and questions:

- *Water Acquisition: What are the potential impacts of large volume water withdrawals from ground and surface waters on drinking water resources?*
- *Chemical Mixing: What are the possible impacts of surface spills on or near well pads of hydraulic fracturing fluids on drinking water resources?*
- *Well Injection: What are the possible impacts of the injection and fracturing process on drinking water resources?*
- *Flowback and Produced Water: What are the possible impacts of surface spills on or near well pads of flowback and produced water on drinking water resources?*
- *Wastewater Treatment and Waste Disposal: What are the possible impacts of inadequate treatment of hydraulic fracturing wastewaters on drinking water resources?*

On December 21, 2012, EPA released a “Progress Report” to this ongoing study which provided information on current work being done by the Agency, including the status of research projects that are anticipated to inform the final study.³ The progress report did not include conclusions regarding the relationship between hydraulic fracturing and drinking water resources. The final report, which has been classified by the Agency as a Highly Influential Scientific Assessment, is anticipated to be released in draft form in late 2014 for peer review and public comment.⁴ However, recent testimony before the Committee indicated the peer review process will continue into 2015, suggesting that a final report will not be released until that year or later.⁵

Prior to the release of the Progress Report, the EPA Office of Research and Development requested the Scientific Advisory Board to conduct a “consultation” review of the research that

¹ Environmental Protection Agency, *Plan to Study the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources*, November 2011. Accessible at: http://www2.epa.gov/sites/production/files/documents/hf_study_plan_110211_final_508.pdf

² Ibid.

³ News Release, Environmental Protection Agency, *EPA Releases Update on Ongoing Hydraulic Fracturing Study*, December 21, 2012. Accessible at: <http://yosemite.epa.gov/opa/admpress.nsf/d0cf6618525a9efb85257359003fb69d/4af0024955d936ef85257adb0058aa29!OpenDocument>

⁴ Environmental Protection Agency, *Stakeholder Engagement Roadmap and Peer Review Overview for EPA’s Study on the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources*. Accessible at: <http://www2.epa.gov/hfstudy/stakeholder-engagement-roadmap-and-peer-review-overview-epas-study-potential-impacts>

⁵ Testimony of Davd A. Dzombak before the Subcommittee on Environment and the Subcommittee on Energy, *Lessons Learned: EPA’s Investigations of Hydraulic Fracturing*, July 24, 2012. Accessible at: http://science.house.gov/sites/republicans.science.house.gov/files/documents/HHRG-113-SY18-WState-DDzombak-20130724_0.pdf

would be found in that report. To this end, the ad hoc SAB panel, known as the Hydraulic Fracturing Research Advisory Board Panel⁶ participated in a consultation with the full SAB in May of this year. In this meeting, the ad hoc SAB panel responded to charge questions from the Agency and provided input and comments on the Progress Report. The written comments submitted by the panelists were compiled into a report, which was released on June 25.⁷

Throughout this process stakeholders have expressed concerns that the study had the potential to produce results that lacked context and were based on what were possible outcomes rather than likely or probable outcomes, as well as concerns with the peer review process. Several issues with the report were identified in an independent review of the EPA's study plan conducted by Battelle, which included recommendations for strengthening the study. Other issues and questions have been raised by the SAB or addressed in recommendations it has provided to the Administrator.

In its 2011 review of the draft study plan, the Science Advisory Board recommended to the Administrator that "EPA consider the four steps of the risk assessment paradigm (i.e. hazard identification, exposure assessment, dose-response assessment, and risk characterization) to assess and prioritize research activities".⁸ In the more recent consultation conducted by the SAB Hydraulic Fracturing Research Advisory Panel on the Progress Report, several reviewers also commented on the absence of a risk assessment. One reviewer noted "There is no quantitative risk assessment included in EPA's research effort. Thus, the reader has no sense of how risky any operations may be in ultimately impacting drinking water. This is also a significant limitation of the work."⁹ Another reviewer noted that "To simply discount the regulatory network in place and model "what if" and "worse case" scenarios will not produce realistic results."¹⁰

Another concern expressed by stakeholders was EPA's past failure to designate the study as a Highly Influential Scientific Assessment, or HISA. According to a review of the study plan conducted by Battelle, "Such designation triggers more rigorous standards for peer review, and thus study design, data quality, and transparency."¹¹ Battelle also noted that "Even in the absence of such a formal designation, there is no direct evidence documented in the study plan or in

⁶ Members of Hydraulic Fracturing Research Advisory Panel. Accessible at: <http://yosemite.epa.gov/sab/sabpeople.nsf/WebExternalSubCommitteeRosters?OpenView&committee=BOARD&subcommittee=Hydraulic%20Fracturing%20Research%20Advisory%20Panel>

⁷ EPA Science Advisory Board Consultation on EPA Office of Research and Development Report, *Progress Report: Potential Impacts of Hydraulic Fracturing on Drinking Water Resources—December 2012*. June 25, 2013. Accessible at:

[http://yosemite.epa.gov/sab/sabproduct.nsf/5F72227CF643BF8785257B9500764E6B/\\$File/Individual+Comments+from+Members+of+Science+Advisory+Board+Hydraulic+Fracturing+Research+Advisory+Panel+on+EPA.pdf](http://yosemite.epa.gov/sab/sabproduct.nsf/5F72227CF643BF8785257B9500764E6B/$File/Individual+Comments+from+Members+of+Science+Advisory+Board+Hydraulic+Fracturing+Research+Advisory+Panel+on+EPA.pdf)

⁸ EPA Science Advisory Board to EPA Administrator, *SAB Review of EPA's Draft Hydraulic Fracturing Study Plan*, August 4, 2011.P. ii. Accessible at:

[http://yosemite.epa.gov/sab/sabproduct.nsf/0/2BC3CD632FCC0E99852578E2006DF890/\\$File/EPA-SAB-11-012-unsigned.pdf](http://yosemite.epa.gov/sab/sabproduct.nsf/0/2BC3CD632FCC0E99852578E2006DF890/$File/EPA-SAB-11-012-unsigned.pdf)

⁹ Consultation, p. 60.

¹⁰ Consultation, p. 99.

¹¹ Battelle, *Review of EPA Hydraulic Fracturing Study Plan*, November 2011. P. 5. Accessible at:

http://anga.us/media/press/CA5CEA92-0C88-CC29-EAADA8AD4F447B5E/files/final_epa_study_plan_review_061112.pdf

associated documents that EPA followed its quality policy in framing the study objectives and developing the study design...¹² While EPA has since designated the final study as a HISA, there is still a need to ensure that the requisite policies and procedures governing such scientific undertakings are followed.

Committee concerns with EPA's overall study design and implementation, as well as specific aforementioned issues such as risk assessment and peer review were detailed in numerous letters to the agency in 2011 and 2012.¹³

Major Provisions

- Codify HISA Designation: The bill codifies EPA's designation of the final report as a Highly Influential Scientific Assessment (HISA) by directing the Administrator of the Office of Research and Development, prior to the issuance and dissemination of any final or interim report, to consider such reports HISAs.
- Peer Review and Information Quality. The bill requires the Administrator to ensure peer review of the report is conducted in compliance with the guidelines that govern HISAs. This includes EPA's Peer Review Handbook, which lays out the Agency's policies and procedures governing peer review; the EPA's Scientific Integrity Policy, which establishes the Agency's framework to promote scientific integrity throughout the agency and promote standards, including those governing information quality, communication with the public, and the use of peer review and advisory committees; and the OMB's Final Information Quality Bulletin for Peer Review, which establishes government-wide guidance aimed at enhancing the practice of peer review of government-wide science documents.
- Dissemination and Information Quality: The Administrator is also required to follow the guidelines for dissemination of influential scientific information as outlined in the Agency's *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by the Environmental Protection Agency*. These guidelines outline EPA's policy and procedural guidance for ensuring information quality
- Likelihood and Consequence of Potential Impacts. The bill adds a requirement to the EPA study requiring the Administrator provide objective estimates of the probability, uncertainty, and consequence of any possible impacts of hydraulic fracturing on drinking water identified throughout the study. Language further specifies that such estimates shall be as quantitative as possible and take into account the current risk management practices of states and industry.

¹² *Ibid.*

¹³ October 26, 2011 letter from Reps. Ralph Hall, Andy Harris, and Paul Broun. Accessible at <http://science.house.gov/sites/republicans.science.house.gov/files/documents/Letters/10-26-2011%20Letter%20to%20Jackson.pdf>; June 7, 2012 letter from Rep. Andy Harris. Accessible at http://science.house.gov/sites/republicans.science.house.gov/files/documents/Letters/060712_%20Harris%20to%20Lisa%20Jackson.pdf; and October 16, 2012 letter from Reps. Hall, Harris, and Dana Rohrabacher. Accessible at: http://science.house.gov/sites/republicans.science.house.gov/files/documents/10-16-2012%20Science%20Committee%20to%20Lisa%20Jackson_0.pdf

Legislative History

The Committee held several hearings in the 112th Congress examining EPA's hydraulic fracturing research. On February 1, 2012, the subcommittee on Energy & Environment held a hearing entitled, *EPA Fractured Science—Examining EPA's Approach to Ground Water Research: The Pavillion Analysis*. The purpose of the hearing was to examine EPA's approach to ground water research in Pavillion, Wyoming, and the subcommittee received testimony from the Regional Administrator for EPA Region 8. On May 11, 2011, the Full Committee held a hearing to review the technology and practices of hydraulic fracturing for energy production, entitled *Review of Hydraulic Fracturing Technology and Practices*. In addition to hearing from state officials and industry experts, the Subcommittee heard from the Administrator of the Office of Research and Development at EPA, who discussed the ongoing EPA study. In addition to these hearings focused specifically on hydraulic fracturing, the Committee held three additional hearings in the 112th Congress with EPA witnesses in which the ongoing study received significant attention and discussion: a March 10, 2011 full committee hearing on *An Overview of the Fiscal Year 2012 Research and Development Budget Proposals at the National Oceanic and Atmospheric Administration and the Environmental Protection Agency*; a November 17, 2011, Energy and Environment Subcommittee hearing on *Fostering Quality Science at EPA: The Need for Common Sense Reform*; and a March 6, 2012, hearing on *An Overview of NOAA & EPA FY13 Budget*.

In the 113th Congress, the Subcommittee on Environment and the Subcommittee on Energy held a hearing entitled *Lessons Learned: EPA's Investigations of Hydraulic Fracturing*. The Subcommittees received testimony from the EPA regarding the status of the ongoing study, as well as from the Chair of the SAB's Hydraulic Fracturing Research Advisory Panel regarding the status of the review process and role of the review panel. The Subcommittees also received testimony from a state regulator in which he outlined the regulatory structure states such as Utah already have in place to regulate hydraulic fracturing specifically, and oil and gas drilling generally, including casing and cementing requirements, chemical disclosure requirements, and recycling and disposal rules. Additionally, the Subcommittee on Energy and the Subcommittee on Environment held a hearing April 26, 2013, entitled *A Review of Federal Hydraulic Fracturing Research Activities*, which examined the research being undertaken by EPA, DOE, and USGS pursuant to an interagency Memorandum of Understanding signed by the three agencies. At that hearing the EPA's Senior Science Adviser at the Office of Research and Development provided testimony on the ongoing drinking water study as well.

Resolution Authorizing the Chairman to Issue Subpoenas

Background and Need

The resolution authorizes the Chairman of the Committee to issue subpoenas *duces tecum* to the Environmental Protection Agency and other custodians to obtain data, information, documents, and other records relating to the Harvard Six Cities Study, the Cancer Prevention Study II, and analyses and re-analyses of the data from either study.

Data from these two studies has been repeatedly cited by EPA, and provides the basis for many of EPA's claims of a cause-and-effect relationship between air pollutants (namely particulate matter and ozone) and premature mortality. The data are used to substantiate virtually all major Clean Air Act regulations under this Administration, including: National Ambient Air Quality Standards for ozone¹⁴ and particulate matter;¹⁵ Maximum Achievable Control Technology standards for coal-fired power plants,¹⁶ industrial boilers,¹⁷ and Portland cement kilns;¹⁸ upcoming "Tier 3" standards for transportation fuel;¹⁹ and the Cross-State Air Pollution Rule.²⁰

Data from these two studies are used to justify the setting of EPA regulatory standards under the Clean Air Act and are used as the primary scientific backing for the Agency's benefits calculations in its cost-benefit analyses to justify these rules.²¹ Indeed, based almost entirely on the data from these two studies, EPA has claimed benefits from its Clean Air Act regulations that run into the trillions of dollars.²² But even EPA concedes that these regulations also come with substantial costs.²³

Because of the large costs and claimed benefits of the regulations and proposed regulations based upon this data, there is a substantial public interest in the data being made available for independent re-analysis and verification. Transparency of the rationale for regulations is fundamental to good government; and reproducibility is fundamental to the scientific method. Until the data is made available for independent re-analysis, public and scientific confidence in EPA's claims about the data are undermined.

In addition, EPA should turn over this underlying information because it is critical to validate and re-analyze taxpayer-funded studies that form the basis of these regulations. The

¹⁴ 75 FR 2938-3052.

¹⁵ 77 FR 3096-3287.

¹⁶ 77 FR 9304-9513.

¹⁷ 78 FR 7488; 78 FR 7138; 76 FR 28662.

¹⁸ 78 FR 10006-10054.

¹⁹ 78 FR 29816-30191.

²⁰ <http://www.epa.gov/airtransport/CSAPR/index.html>.

²¹ See Congressional Research Service, *Benefits of Clean Air Act Regulations*, Memorandum from James E. McCarthy to House Committee on Science, Space, and Technology (Oct. 5, 2011), available at <http://science.house.gov/sites/republicans.science.house.gov/files/documents/hearings/Sunstein%20Letter.pdf> (at pages 12-17).

²² EPA, *The Benefits and Costs of the Clean Air Act from 1990 to 2020*, March 2011, <http://www.epa.gov/oar/sect812/feb11/fullreport.pdf>, 7-3 to 7-5.

²³ See, e.g. http://www.epa.gov/ttnecas1/regdata/RIAs/s1-supplemental_analysis_full.pdf.

Harvard Six Cities Study, the Cancer Prevention Study II, and many analyses and re-analyses of their data were paid for by EPA.

The need for independent re-analysis is particularly acute because the studies are based upon decades-old health information that has not been updated. For this reason, the National Academy of Sciences has stated that they are of “little use for decisionmaking.”²⁴ President Obama’s own Office of Management and Budget acknowledged that “significant uncertainty remains” about EPA’s use of these studies to show an association between particulate matter and claimed harms, arguing that they “may be misleading” and should be treated with caution.²⁵

Despite all of the questions raised about the reliability of data from these studies, EPA has persisted in relying upon them in its regulations—and in refusing to make the data available for independent analysis.

The Chairman’s request for authority to issue subpoenas comes only after a long and diligent process of trying to obtain the data from EPA. On September 15, 2011, then-Assistant Administrator of EPA’s Office of Air and Radiation Gina McCarthy promised to give the data to the Science Committee. Despite multiple requests since that time, EPA has failed to follow through on that commitment. Specifically, since the initial McCarthy commitment to provide the data nearly two years ago, the Committee has made the following efforts to obtain the data:

- September 22, 2011, letter from Andy Harris, Chairman, Energy and Environment Subcommittee, to Gina McCarthy, Assistant Administrator, Office of Air and Radiation, Environmental Protection Agency;
- November 15, 2011, letter from Andy Harris, Chairman, Energy and Environment Subcommittee, and Paul Broun, Chairman Investigations and Oversight Subcommittee, to Cass Sunstein, Administrator, Office of Information and Regulatory Affairs, Office of Management and Budget;
- December 12, 2011, letter from Ralph Hall, Chairman, Committee on Science, Space, and Technology, Andy Harris, Chairman, Energy and Environment Subcommittee, and Paul Broun, Chairman Investigations and Oversight Subcommittee, to Cass Sunstein, Administrator, Office of Information and Regulatory Affairs, Office of Management and Budget;
- Obtained commitments, in hearings held on February 17, 2012, and June 20, 2012, John Holdren, Director, Office of Science and Technology Policy, to help gain access to data;

²⁴ National Academy of Sciences, Committee on Research Priorities for Airborne Particulate Matter, *Research Priorities for Airborne Particulate Matter: IV. Continuing Research Progress* (2004), http://www.nap.edu/catalog.php?record_id=10957, pg. 135.

²⁵ Office of Management and Budget, Office of Information and Regulatory Affairs, 2013 DRAFT REPORT TO CONGRESS ON THE BENEFITS AND COSTS OF FEDERAL REGULATIONS AND AGENCY COMPLIANCE WITH THE UNFUNDED MANDATES REFORM ACT, April 2013, http://www.whitehouse.gov/sites/default/files/omb/inforeg/2013_cb/draft_2013_cost_benefit_report.pdf.

- December 13, 2012, letter from Ralph Hall, Chairman, Committee on Science, Space, and Technology, Lamar Smith, Committee member, and Andy Harris, Chairman, Energy and Environment Subcommittee, to Lisa Jackson, Administrator, Environmental Protection Agency, John Holdren, Director, Office of Science and Technology Policy, and Boris Bershteyn, Acting Administrator, Office of Information and Regulatory Affairs, Office of Management and Budget;
- March 4, 2013, letter from David Vitter, Ranking Member, Senate Committee on Environment and Public Works, and Lamar Smith, Chairman, Committee on Science, Space, and Technology, to Gina McCarthy, Assistant Administrator, Office of Air and Radiation, Environmental Protection Agency;
- June 12, 2013, letter from Lamar Smith, Chairman, Committee on Science, Space, and Technology, and Chris Stewart, Chairman, Environment Subcommittee, to Bob Perciasepe, Acting Administrator, Environmental Protection Agency;
- July 22, 2013, letter from Lamar Smith, Chairman, Committee on Science, Space, and Technology, and Chris Stewart, Chairman, Environment Subcommittee, to Gina McCarthy, Administrator, Environmental Protection Agency.

Despite all of these efforts to obtain the data from EPA voluntarily, EPA has failed to make the data available in a form adequate for re-analysis. Accordingly, the Chairman seeks the Committee's authorization to issue subpoenas.