

**U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY
SUBCOMMITTEE ON ENVIRONMENT
SUBCOMMITTEE ON ENERGY**

HEARING CHARTER

Lessons Learned: EPA's Investigations of Hydraulic Fracturing

Wednesday, July 24, 2013
10:00 a.m. – 12:00 p.m.
2318 Rayburn House Office Building

PURPOSE

The Subcommittee on Environment and the Subcommittee on Energy will hold a joint hearing entitled *Lessons Learned: EPA's Investigations of Hydraulic Fracturing* on Wednesday, July 24th, at 10:00 a.m. in Room 2318 of the Rayburn House Office Building. The purpose of the hearing is to examine the EPA's conduct of its investigation into the relationship between hydraulic fracturing and groundwater, with an emphasis on adherence to protocols, procedures, and other policies governing these research activities. A particular focus of the hearing will be to examine the EPA's investigations in Parker County, Texas; Pavillion, Wyoming; and Dimock, Pennsylvania, and ascertain any lessons that might be learned from these experiences and used to inform and improve the EPA's ongoing study of the potential impacts of hydraulic fracturing on drinking water resources.

WITNESS LIST

- **Dr. Fred Hauchman**, Director, Office of Science Policy, Office of Research and Development, Environmental Protection Agency
- **Dr. David A. Dzombak**, Chair, Environmental Protection Agency Science Advisory Board, Hydraulic Fracturing Research Advisory Panel
- **Mr. John Rogers**, Associate Director, Oil and Gas, Division of Oil, Gas, and Mining, Utah Department of Natural Resources
- **Dr. Brian Rahm**, Post-Doctoral Associate, New York State Water Resources Institute, Cornell University

BACKGROUND

The Environmental Protection Agency (EPA) is involved in several research efforts focused on hydraulic fracturing, including an ongoing study to determine the relationship, if any, between hydraulic fracturing and drinking water resources being conducted by the Office of Research and Development (ORD). Additionally, the Agency is part of a research initiative

intended to address the “highest priority challenges” related to unconventional oil and gas production, as outlined in an April 2012 Memorandum of Agreement (MOA) between the EPA, the Department of Energy (DOE), and the Department of Interior (DOI).¹ According to the MOA, this research effort is intended to “improve our understanding of the impacts of developing our Nation’s unconventional oil and gas resources,” and in doing so, will focus each Agency on its area of core competency. Accordingly, the EPA portion of this research initiative will focus on air monitoring, environment and human health risk, and water quality.²

In addition to these ongoing efforts, the EPA has conducted investigations into individual cases involving hydraulic fracturing, ostensibly to determine the impact, if any, that the practice had on groundwater resources in the area. The EPA examined specific cases of hydraulic fracturing in Parker County, Texas; Pavillion, Wyoming; and Dimock, Pennsylvania.

EPA Ongoing Activities: Hydraulic Fracturing Research

The Fiscal Year 2010 Department of the Interior, Environment, and Related Agencies Appropriations Act (P.L. 111-88) directed EPA to carry out a study on hydraulic fracturing, 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.”

The study, entitled *Study of Hydraulic Fracturing and Its Potential Impact on Drinking Water Resources*, is ongoing and its scope includes the full lifespan of water in hydraulic fracturing. 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 2011.³ 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.”⁴

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?*

¹ Memorandum, Multi-Agency Collaboration on Unconventional Oil and Gas Research, April 13, 2012. Accessible at: <http://www.doi.gov/news/pressreleases/loader.cfm?csModule=security/getfile&pageid=289759>

² Ibid.

³ 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

⁴ Ibid.

- *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.⁵ 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 late 2014 for peer review and public comment.⁶

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 would be found in that report. A consultation is a mechanism whereby the SAB panelists may provide their individual expert comments to the Agency for consideration, but does not require consensus among committee members nor result in preparation of a detailed report. To this end, the ad hoc SAB panel, known as the Hydraulic Fracturing Research Advisory Board Panel⁷ 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 25.⁸

In addition to the ongoing hydraulic fracturing study, the EPA is also involved in a multi-agency research initiative with the DOE and DOI intended to address the “highest priority

⁵ 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/4af0024955d936ef85257adb0058a29!OpenDocument>

⁶ 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>

⁷ 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>

⁸ 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)

challenges” related to unconventional oil and gas development as established in an MOA.⁹ In May 2012, the agencies established a Steering Committee to lead this effort and publish a research plan by January 2013. This research plan has yet to be released. The goal of this effort is to focus on “policy relevant science” directed toward research topics where collaboration among the three Agencies can produce results and technologies that “support sound policy decisions by state and Federal agencies”.

EPA Site Specific Activities: Hydraulic Fracturing

Parker County, Texas:

In December 2010, the EPA issued an Emergency Administrative Order to Range Resources, an operator in the Barnett Shale in Northeast Texas, alleging that natural gas found in nearby water wells was likely from the same source as the gas produced by Range and accusing the company of groundwater contamination.¹⁰ In response to these allegations, the Texas Railroad Commission conducted a staff investigation¹¹ and held a hearing to examine the situation. The Commission found evidence that demonstrated the gas found in the water wells in question came from the shallow Strawn gas field, located about 200 to 400 feet below the surface. The gas being produced by Range, on the other hand, was from the Barnett Shale field, some 5,000 feet below the surface. Thus, the Commission concluded, the gas being produced by Range was not connected to the gas discovered in the water wells. Additionally, the Railroad Commission concluded that the wells produced by Range were mechanically sound and without leaks.

The Railroad Commission, finding no evidence to suggest that Range was responsible for the alleged contamination, ruled in March 2011 that the company be allowed to continue to produce from the wells in question.¹² In March 2012, the EPA vacated its emergency order against Range.¹³ Additionally, in July 2012 the EPA Office of Inspector General notified the Acting Regional Administrator for Region 6 that a review of the enforcement actions against Range would be conducted.¹⁴

Pavillion, Wyoming:

⁹ Memorandum of Agreement on Multi-Agency Collaboration on Unconventional Oil and Gas Research, DOE, DOI, EPA, April 13, 2012. Accessible at:

<http://www.doi.gov/news/pressreleases/loader.cfm?csModule=security/getfile&pageid=289759>

¹⁰ Press Release, U.S. Environmental Protection Agency, *EPA Issues an Imminent and Substantial Endangerment Order to Protect Drinking Water in Southern Parker County*, December 7, 2012. Accessible at:

<http://yosemite.epa.gov/opa/admpress.nsf/d0cf6618525a9efb85257359003fb69d/713f73b4bdceb126852577f3002cb6fb!OpenDocument>

¹¹ Railroad Commission of Texas, Revised Examiners’ Report and Proposal for Decision, March 11, 2011.

Accessible at: <http://www.rrc.state.tx.us/meetings/ogpfd/RangePFD-03-11-11.pdf>

¹² Railroad Commission of Texas, Final Order, March 22, 2011. Accessible at:

<http://www.rrc.state.tx.us/meetings/ogpfd/RangePFD-SignedOrder.pdf>

¹³ Press Release, Railroad Commission of Texas, *Railroad Commissioners: “EPA’s Vacate Order in Range Case Confirms Railroad Commission Findings Based on Scientific Evidence,”* March 30, 2012. Accessible at:

¹⁴ Memorandum, U.S. Environmental Protection Agency, New Project Notification. Accessible at:

http://www.epa.gov/oig/reports/notificationMemos/newStarts_07-17-12_Region_6_Range_Resources.pdf

On December 8, 2011, EPA released a draft report summarizing the Agency's findings pursuant to its groundwater investigation in Pavillion, Wyoming.¹⁵ The Agency initiated this inquiry in September of 2008 in response to complaints made by some private well-owners regarding taste and odor concerns. Numerous concerns with the draft report were quickly identified, including the absence of peer review prior to the report's release, a lack of data transparency, failure to adhere to information quality guidelines, and poor sampling and monitoring techniques that called into question the validity of the results.

In September 2012, the USGS released a technical report summarizing its findings in the Pavillion case.¹⁶ Specifically, the report described the results of their attempts to reproduce EPA's results from its monitoring wells. Ultimately, the USGS samples did not yield the same results: materials were found at lower concentrations than EPA findings, the USGS did not find the presence of key chemicals of interest found by EPA, and the USGS was unable to produce a representative groundwater sample from one of EPA's deep monitoring wells.

In response to significant public concerns, the EPA twice extended the public comment period for its draft report on Pavillion. The second extension was for an additional nine months and was scheduled to close in September of this year. However, on June 20th, the EPA terminated activity on the report, stating that the draft report would not be finalized nor would the Agency seek peer review. Additionally, EPA indicated it would leave any future action regarding the investigation to the State of Wyoming.¹⁷

Dimock, Pennsylvania:

In 2008, residents of Dimock, Pennsylvania notified the Department of Environmental Protection (DEP) of issues with their private water wells, including water clarity and odor. These allegations led state officials to shut down wells owned by Cabot Oil & Gas and resulted in negotiations between the company, the landowners, and the Pennsylvania Department of Environmental Protection (DEP), which included water sampling and testing.

The EPA announced in January 2012 that it would ensure temporary delivery of water supplies to some residents of Dimock and conduct tests of water wells in the area.¹⁸ Between January and June 2012, EPA sampled private drinking water wells in 64 homes. On July 25, 2012, the EPA announced that it had completed its sampling and declared there were "not levels

¹⁵ EPA Region 8, Pavillion, Groundwater Investigation: <http://www2.epa.gov/region8/pavillion>

¹⁶ Press Release, U.S. Geological Survey, *USGS Releases Reports on Groundwater-Quality Sampling Near Pavillion, Wyo.*, September 26, 2012. Accessible at: http://www.usgs.gov/newsroom/article.asp?ID=3410&from=rss_home

¹⁷ Press Release, U.S. Environmental Protection Agency, *Wyoming to Lead Further Investigation of Water Quality Concerns Outside of Pavillion with Support of EPA*, June 20, 2013. Accessible at: <http://yosemite.epa.gov/opa/admpress.nsf/20ed1dfa1751192c8525735900400c30/dc7dcd471dcfe1785257b90007377bf!OpenDocument>

¹⁸ Press Release, U.S. Environmental Protection Agency, *EPA to Begin Sampling Water at Some Residences in Dimock, Pa.*, January 19, 2012. Accessible at: <http://yosemite.epa.gov/opa/admpress.nsf/79c090e81f0578738525781f0043619b/8eb78248ce13d9dc8525798a0070f991!opendocument>

of contaminants present that would require additional action by the Agency” and that the water in Dimock was safe to drink.¹⁹

Additional Reading:

- Hearing Charter, House Science, Space, and Technology, Subcommittee on Energy and Environment Hearing entitled, *Fractured Science—Examining EPA’s Approach to Ground Water Research: The Pavillion Analysis*, February 1, 2012. Available at: <http://science.house.gov/sites/republicans.science.house.gov/files/documents/hearings/HHRG-112-SY20-20120201-SD001.pdf>
- Railroad Commission of Texas, Revised Examiners’ Report and Proposal For Decision Statement of the Case, March 11, 2011. Available at: <http://www.rrc.state.tx.us/meetings/ogpfd/RangePFD-03-11-11.pdf>
- Letter, Pennsylvania Department of Environmental Protection to EPA Regional Administrator, January 5, 2012. Accessible at: <http://s3.documentcloud.org/documents/282670/stateimpact-pa-krancer-dimock-letter.pdf>

¹⁹ Press Release, U.S. Environmental Protection Agency, *EPA Completes Drinking Water Sampling in Dimock, Pa.*, July 25, 2012. Accessible at: <http://yosemite.epa.gov/opa/admpress.nsf/0/1A6E49D193E1007585257A46005B61AD>