
Public Comments on Hydraulic Fracturing

Written Public Comments on
Hydraulic Fracturing Received
by the Secretary of Energy
Advisory Board
Subcommittee on Natural Gas

Department of Energy

Secretary of Energy Advisory Board
Subcommittee on Natural Gas

Public Comments on Hydraulic Fracturing

Summary of Written Public Comments on Hydraulic
Fracturing Received as of July 15, 2011

Department of Energy
7/21/2011

WRITTEN PUBLIC COMMENTS RECEIVED BY THE SEAB SUBCOMMITTEE ON NATURAL GAS

BACKGROUND

On March 30, 2011, President Obama announced a plan for U.S. energy security, in which he instructed the Secretary of Energy to work with others to improve the safety of shale gas development. He asked Secretary of Energy Steven Chu to establish a subcommittee to examine issues related to hydraulic fracturing.

On May 5, 2011, Secretary Chu charged the Secretary of Energy Advisory Board (SEAB) Subcommittee on Natural Gas, established January of 2011, to begin work on this assignment. As part of the process, Secretary Chu instructed the Subcommittee to seek input from industry, state and federal regulators, environmental groups, and other stakeholders.

He instructed the Department of Energy's Office of Fossil Energy to create a website to describe the initiative and to solicit public input on the subject. He also invited the Subcommittee to hold public meetings for the purpose of gathering input from stakeholders.

Four public meetings were held: June 1-2, June 13, June 28, and July 13, 2011. The Subcommittee received both oral and written comments at these meetings. Written comments were also received via other delivery methods.

All four public meetings were recorded, and the video of all oral discussions and public comments presented at each meeting can be viewed at www.ShaleGas.energy.gov.

Written comments were received via the online form at www.ShaleGas.energy.gov, and via email at ShaleGas@hq.doe.gov. Hardcopy comments were accepted on behalf of the Subcommittee's Designated Federal Officer at each of the public meetings held by the Subcommittee. Written comments were also delivered to the Designated Federal Officer via the U.S. Postal Service.

All written comments were captured in a database that can be found at www.ShaleGas.energy.gov.

This report summarizes only the written comments.

NUMBERS OF COMMENTS

As of July 15, 2011, over 25,000 written comments were received. Over 10,000 of these comments were received via the website online form, and about 15,000 were received via email and hard copy. Of comments received via email, about 14,000 were very similar indicating that a form letter was used. Just over 200 individual comments, not form letters, were delivered via hard copy or via email.

BRIEF SUMMARY OF COMMENTS

WEBSITE COMMENTS

The Subcommittee website online comment form at www.ShaleGas.energy.gov was structured to funnel comments into 14 topics. About 70 percent of the website comments received addressed:

- disclosure of hydraulic fracturing chemicals,
- composition of these chemicals, and
- operational approaches related to drilling and hydraulic fracturing.

Another nine percent were distributed among the topics:

- mechanisms to assess performance on safety/public health/the environment,
- waste water, and
- risk management approaches.

About 20 percent of the comments were in the category of *General Comments* and most of those were focused on disclosure of chemicals, as indicated above, plus support for the FRAC Act. Other common themes included:

- protection of clean water,
- more regulation on the petroleum industry, and
- repeal of the industry's exemption from the Clean Air and Safe Drinking Water regulations.

FORM LETTER

About 14,000 email letters received contained almost exact language indicating the use of a form letter. The main comment presented in these form letters was that hydraulic fracturing is harmful, and that the DOE SEAB will issue a report before the Environmental Protection Agency has completed its environmental review of hydraulic fracturing.

Another key comment in this form letter was that the membership of the panel is biased toward the oil and gas industry. A small number of the letters were multiple letters from one person.

HARD COPY AND EMAIL COMMENTS

Almost 70 percent of the 223 comments received via hardcopy and email do not support hydraulic fracturing. Ninety of these comments also offer conditions under which hydraulic fracturing might be acceptable, such as, if regulation were increased. Sixty-five comments argue that the benefits of natural gas do not outweigh its environmental impacts.

DETAILED RECOMMENDATIONS RECEIVED FROM ORGANIZATIONS AND INDIVIDUALS

Twelve comments received communicate extensive recommendations and ideas, and many represent the point of view held by a representative organization. These organizations were:

- University of Pittsburgh Center for Healthy Environments and Communities
- Pennsylvania Council of Professional Geologists
- Westmoreland Marcellus Citizens Group
- Gastem USA
- Oklahoma Independent Petroleum Association
- American Rivers
- Buffalo Creek (PA) Watershed Association
- Rachel Carson Institute
- Food and Water Watch
- Roy Dudman
- Buffalo Township Planning Commission
- Mountain Watershed Association, Inc.

DETAILED SUMMARY OF COMMENTS SENT TO THE SEAB SUBCOMMITTEE ON NATURAL GAS

OVERVIEW

As of July 15, 2011, over 10,000 comments, including a relatively small number of duplicate submissions, were received via the comment form on www.shalegas.energy.gov. In addition, about 15,000 comments were received via the e-mail box shalegas@hq.doe.gov, including 14,242 submissions that reproduce a form letter. Thirty-six comments were provided as hard-copy to DOE staff at various Subcommittee meetings. Because of the difficulty of merging these different formats, the input received from the comment form on the Subcommittee website is analyzed separately from the other input.

SUMMARY OF SUBMISSIONS TO THE SUBCOMMITTEE WEBSITE VIA WWW.SHALEGAS.ENERGY.GOV PUBLIC INPUT FORM

Over 10,000 comments, including a few hundred duplicates, were received via the Subcommittee web site public input form. Comments were received from all 50 states, plus the District of Columbia, America Samoa, Australia, United Kingdom, and the Virgin Islands.

Each respondent selected one of fourteen subject areas, which mirror the topics that the Secretary of Energy charged the Subcommittee to consider, or submitted a general comment. The 14 subject areas were:

- Protocols for transparent public disclosure of hydraulic fracturing chemicals [3500 comments]
- Environmentally sound composition of hydraulic fracturing chemicals [2000 comments]
- Operational approaches related to drilling and hydraulic fracturing [1500 comments]
- Mechanisms to assess performance on safety, public health, and the environment [450 comments]
- Waste water reuse and disposal, water quality impacts, and storm water runoff [300 comments]
- Risk management approaches [150 comments]
- Well Design, siting , construction, and completion [44 comments]
- Reduction of water consumption and waste [23 comments]
- Reduction of greenhouse gases [15 comments]
- Controls for field scale development [7 comments]
- Emergency management and response systems [7 comments]
- Well sealing and closure [6 comments]
- Surface operations [4 comments]
- General comments [2000 comments]

The vast majority of comments received recommended full disclosure of the chemicals used in hydraulic fracturing, with the assumption that those chemicals are toxic. Many expressed concern that natural gas operations would negatively impact their health, safety, or quality of life. Other common themes called for a ban on all hydraulic fracturing, repeal of the 2005 exemption of oil and gas operations from the Clean Air and Safe Drinking Water laws, increase regulatory oversight, and increase use of renewable energy.

The following discussion summarizes the comments received within each of the 14 subject areas and the general comment area.

PROTOCOLS FOR TRANSPARENT PUBLIC DISCLOSURE OF HYDRAULIC FRACTURING CHEMICALS

Essentially all of the approximately 3,500 comments received either recommend mandatory disclosure of all chemicals used in hydraulic fracturing, or state their support for the FRAC Act. The majority of these use the word toxic to describe chemicals in hydraulic fracturing fluids. Many of those who elaborate on their recommendation state their distrust of the petroleum industry. Many others cite media reports or family experience of health problems in areas with a large natural gas industry.

A small percentage of stakeholders qualify their recommendation for disclosure by noting that natural gas development is important to the country. Many comments state the importance of clean water and the potential for it becoming polluted as the basis for their concern about hydraulic fracturing chemicals. A few comments recommend that no hydraulic fracturing be allowed.

ENVIRONMENTALLY SOUND COMPOSITION OF HYDRAULIC FRACTURING CHEMICALS

About 2,000 comments were received. The undertone of essentially all the comments is that oil and gas companies cannot be trusted, chemicals used in hydraulic fracturing are harmful, and shale gas operations are endangering the public. Over 90 percent of the comments ask for full disclosure of the chemicals used in hydraulic fracturing in order to protect public health and water quality. Of these, many call for passage of the FRAC Act. A small percentage of the comments call for stronger regulation, even an end to hydraulic fracturing. Several dozen comments recommend repeal of the petroleum industry exemptions from the Clean Air and Safe Drinking Water laws.

OPERATIONAL APPROACHES RELATED TO DRILLING AND HYDRAULIC FRACTURING

About 1,500 comments were received. The majority call for full disclosure of chemicals used in hydraulic fracturing or recommend passage of the FRAC Act. Many call for stopping hydraulic fracturing or stopping it until it is proven safe. Many recommend increased regulation of natural gas operations including requiring best practices, testing well discharges, monitoring air quality, and base-line water-quality tests. Some comments recommend the country switch from fossil fuels to renewable energy. A few comments ask for greater transparency in the operations of the Subcommittee.

MECHANISMS TO ASSESS PERFORMANCE ON SAFETY, PUBLIC HEALTH, AND THE ENVIRONMENT

About 450 comments were received. About 90 percent of these emphasize the need for industry to disclose the chemicals used in hydraulic fracturing. A few comments call for greater regulation of the shale gas industry, and a few cite negative economic and health impacts of natural gas operations.

WASTE WATER REUSE AND DISPOSAL, WATER QUALITY IMPACTS, AND STORM WATER RUNOFF

About half of the approximately 300 comments emphasize the importance of clean drinking water supplies, often tying hydraulic fracturing to the potential degradation of water supplies. About half of the comments recommend full disclosure of hydraulic fracturing fluid chemicals and flow-back or produced water. One comment recommends establishing requirements for reclamation of hydraulic fracturing flow-back fluids. One comment recommends the implementation of a system of electronic monitoring of waste-water transport vehicles and their contents that is used in Texas to assure that waste fluids not be illegally dumped near water bodies. A few comments call for the end of hydraulic fracturing or a switch from natural gas to renewable energy.

RISK MANAGEMENT APPROACHES

About 150 comments were received. Comments recommend various actions to improve public safety, including base line tests of drinking water sources before drilling, expanded West Virginia regulatory oversight, and plugging abandoned/orphan wells in New York. Almost all the comments recommend that hydraulic fracturing fluid composition be disclosed as the first step to assuring public safety. Many others recommend that all fracturing be stopped until it can be demonstrated to

be safe; a few recommend banning all hydraulic fracturing. One comment complains that the Subcommittee membership is biased toward industry.

WELL DESIGN, SITING, CONSTRUCTION AND COMPLETION

Forty-four comments were received. The majority recommend full disclosure of the chemicals in hydraulic fracturing fluids or passage of the FRAC Act. Many others call for increased regulation of natural gas operations and protection of water supplies. One comment recommends that required distance from natural gas operations and homes be increased from 250 feet. Another comment asks that the Wild and Scenic River Act be enforced to protect the Delaware River valley.

REDUCTION OF WATER CONSUMPTION AND WASTE

Twenty-three comments stressed the importance of clean water for citizens. Several comments stress the potential damage of water shortages.

REDUCTION OF GREENHOUSE GASES

Fifteen comments ask that the government prevent CO₂ emissions and recommend that the natural gas industry be required to follow Natural Gas Star best practices.

CONTROLS FOR FIELD SCALE DEVELOPMENT

Seven comments were received. These call for increased regulation of natural gas wells, including required restoration of surface damage and disclosure of chemicals in hydraulic fracturing fluids. One comment states that water is more important than natural gas.

EMERGENCY MANAGEMENT AND RESPONSE SYSTEMS

Seven comments express concern about the danger of hydraulic fracturing and other natural gas operations and recommend ending all hydraulic fracturing to protect water quality.

WELL SEALING AND CLOSURE

Six comments were received. Comments recommend that Pennsylvania bond for wells be increased and other actions taken to assure that companies pay to mitigate damage. One comment recommends repeal of the 2005 law exempting oil and natural gas companies from Clean Air and Safe Drinking Water regulations. One comment recommends that the Subcommittee read the reports by Drs. Marc Durant and Michel Boufadel regarding the environmental risk of hydraulic fracturing. Several comments recommend full disclosure of hydraulic fracturing fluid composition.

SURFACE OPERATIONS

One of the four comments repeats Jan Milburn's remarks summarized below. One comment recommends that Pennsylvania increase protections of surface owners in split estate land, specifically: increase the distance from homes to greater than the 200' currently required, require greater well spacing to reduce total drill sites, and require operators to restore vegetation on drill sites. Two comments recommend an end to all hydraulic fracturing.

GENERAL COMMENTS

About 2,000 comments were received; about 70 percent of these recommend that industry fully disclose all chemicals used in hydraulic fracturing, or state support for the FRAC Act. About 15 percent of the comments emphasize the importance of clean water, often stating that clean water is more important than natural gas.

About 10 percent of comments recommend that the petroleum industry and hydraulic fracturing, in particular, be more heavily regulated. Many of these comments recommend repeal of the oil and gas industry exemption to the Clean Air and Safe Drinking Water regulations, which were provided by the Energy policy Act of 2005.

A small percentage of the comments recommend that hydraulic fracturing be permanently banned. A few comments urge the use of renewable energy in place of all fossil fuels. A few comments recommend that the Subcommittee include additional areas of expertise, such as public health and environmental sciences, and be more transparent in its deliberations.

A small number of lengthy comments duplicate those summarized in the section on comments sent to shalegas@hq.doe.gov.

FORM LETTER

With only slight variations, these letters state that hydraulic fracturing is harmful, and object to DOE rushing to issue a report before the Environmental Protection Agency completed its environmental review of hydraulic fracturing.

A key message of the letter is that the Subcommittee is biased by its members' close affiliation with the natural gas industry. Specifically, it states that Chairman John Deutch is affiliated with the Massachusetts Institute of Technology Energy Initiative, and that the Initiative is supported by large energy corporations. The letter adds that the association of five other Subcommittee members with the natural gas industry confirms that the Subcommittee is biased in favor of the natural gas industry's perspective.

The form letters come from people located throughout the United States. A small percentage of the letters are multiple submissions from one person.

COMMENTS TO SHALEGAS@HQ.DOE.GOV AND HARDCOPIES

The 223 comments received by the Subcommittee via email and hard copy are summarized below.

1. Ninety comments want hydraulic fracturing disallowed unless there is increased regulation, including increased buffer zones between natural gas facilities and homes, a requirement for industry to provide baseline drinking water testing, and requirements for disclosure of hydraulic fracturing fluid and flow-back water composition. Justifications for these recommendations include concerns for contamination by radioactive isotopes, freshwater depletion, health problems, air pollution, and loss of property value near natural gas operations.
2. Sixty-five comments want all hydraulic fracturing of natural gas wells stopped. These messages argue that the benefits of natural gas production do not outweigh the environmental impacts. Some of the emails oppose all fossil fuel use or encourage greater research and use of renewable energy sources.
3. Seventeen comments believe that the offer of transportation and lodging by Mr. Shepstone of Energy In Depth unfairly favored participation of pro-industry individuals at the Washington, PA, Subcommittee hearing.
4. Fifteen comments describe their hardships related to specific natural gas operations in the vicinity of their homes, including excessive noise and truck traffic, inadequate regulatory oversight by state agencies, water well contamination, medical conditions, and unfair leasing agreements or failure of companies to uphold natural gas leasing agreements.
5. Thirteen comments believe the members of Subcommittee are biased toward the petroleum industry.
6. Ten comments favor continued shale gas development because of the economic benefits of domestic gas production and lack of significant health and environmental damage. Some of these comments specifically ask that the Subcommittee not be overly swayed by undocumented opinions and emotional statements.
7. Nine comments recommend that the Subcommittee review information from other sources, such as Cornell University, Duke University, U.S. Representative Tim Murphy, the movie Gasland, the Texas Oil and Gas Accountability Report, and Dr. Robert Howarth.

8. Two comments recommend the addition of public health professions to the Subcommittee.
9. Two comments recommend the addition of affected citizens to the Subcommittee.

DETAILED RECOMMENDATIONS BY ORGANIZATIONS AND INDIVIDUALS

1. University of Pittsburgh Center for Healthy Environments and Communities (CHEC) recommends that:
 - a. Pennsylvania capabilities for health assessments and air and water monitoring should be expanded and workforce safety rules should be fully enforced for natural gas operations.
 - b. For the purposes of environmental regulation, all Marcellus Shale operations should be merged as a single pollution source.
 - c. Natural gas operations offset from homes should be increased from 200 feet.
2. Pennsylvania Council of Professional Geologists (PCPG) observes that shale gas production has economic and air quality benefits for Pennsylvania and the U.S. and properly designed wells should not impact ground water. PCPG recommends that:
 - a. Marcellus shale natural gas operations be treated the same as other industries, including being subjected to the use of best practices and appropriate regulation.
 - b. Pennsylvania regulatory agencies need sufficient resources to enforce regulations.
 - c. Because effluent management is a significant concern, industry needs to reduce or eliminate hazardous components and transparently report fluid chemical composition. Additional research and technology development to reduce hazardous components in hydraulic fracturing fluids is also needed.
 - d. Media reports of the impacts of shale gas operations should be carefully scrutinized to avoid use of erroneous information.
3. Jan Milburn, Westmoreland Marcellus Citizens Group, recommends that:
 - a. Pennsylvania require best practices for shale gas operations, including Natural Gas Star completions, closed loop fluid systems, recycling of flow-back fluids, and use of electric motors on compressors. Pennsylvania should also increase its inspections of shale gas operations.
 - b. Industry should pay for baseline water well tests and continuous air quality monitoring.

- c. Define drill cuttings as hazardous.
 - d. Cumulative emissions of all natural gas operations should be regulated as a single source.
- 4. Uni Blake, technical consultant to Gastem USA, notes that many studies by regulators and university scientists found no widespread contamination that would impact health or water quality from Marcellus operations, and recommends that:
 - a. Industry use fluid handling include closed-loop systems, fluid recycling, multiple casing strings, air drilling through aquifers, air and water quality monitoring, spill prevention programs, and Headworks Analysis (see NY permit 002 5984) for waste water management.
 - b. Setbacks and physical barriers to prevent sediment transportation should be required.
 - c. Impacts of truck traffic should be minimized by rerouting and timing truck travel.
- 5. Oklahoma Independent Petroleum Association (OIPA) notes that 60 years of hydraulic fracturing in Oklahoma have provided economic benefits and there have been no documented cases of groundwater or drinking water contamination, and recommends that:
 - a. States rather than Federal agencies regulate oil and natural gas drilling because they are better informed on local conditions. The 1999 Oklahoma state review of oil and natural gas regulations - STRONGER - found that Oklahoma regulation was well managed and effective.
 - b. Operators use the online registry of hydraulic fracturing fluids developed by the Ground Water Protection Council (GWPC) and the Interstate Oil and Gas Conservation Commission (IOGCC) – FracFocus.
- 6. American Rivers recommends that natural gas development be allowed, with protections, and recommends that:
 - a. An analysis of the cumulative environmental impacts of all natural gas operations be conducted.
 - b. Industry should provide base-line water quality analysis before starting operations.
 - c. Industry be required to use best practices.
 - d. A database of fracturing fluids and water quality be developed.
 - e. Community representatives should be added to the Subcommittee on shale gas of SEAB.
 - f. The government should invest in renewable energy technologies.

7. Buffalo Creek (PA) Watershed Association recommends that:
 - a. Preliminary scientific and evidence-based processes be in place prior to permitting of major invasive and potentially hazardous activities.
 - b. Revenue sources be designated for: 1) the systematic monitoring and protection of public and environmental health; 2) research on the projected short and long-term effects of energy production activities on the economy, environment, and public health; and, 3) the mitigation of adverse public health and environmental effects.
 - c. Responsible legislation and regulation be put in place to minimize the cumulative effects of natural resource degradation from all sources through the provision of: transparency, effective oversight and regulation, a system for reporting violations and accidents, equal distribution of environmental protections to all jurisdictions of the state, equal distribution of energy production and transportation sites per jurisdiction, requirement for environmental impact assessments for all projects and practices with the potential to degrade public health and/or natural resources, and a system to track water withdrawal and water disposal.
 - d. Restriction on the leasing and permitting of publically owned natural areas.
 - e. The state adequately fund a plan for preemptive and ongoing monitoring of water, biological indicators, and ambient air quality.

8. Patricia DeMarco, Rachel Carson Institute, Chatham University recommended that:
 - a. The 2005 exemption of the petroleum industry from the Safe Drinking Water and Clean air acts should be revoked.
 - b. Natural gas wells should be subject to the setback and pollution control laws required of other industries.
 - c. The natural gas industry should be required to establish an escrow account to pay for cleanup.
 - d. Wells should not be allowed to drill through groundwater.
 - e. All wells should be required to use closed-loop fluid handling systems.

9. Food and Water Watch recommends that shale gas fracturing be banned and renewable energy be better funded. The organization also recommends closing loopholes that exempt the oil and gas industry from compliance with Federal air and water regulations.

10. Roy Dudman recommends that the International Association of Drilling Contractors (IADC) recommendations for Bottom Hole Assemblies (BHA) be required because this helps assure that wellbores are more likely to be properly cased and cemented through aquifers and shallow gas zones.
11. Bruce Leavitt, member Buffalo Township Planning Commission recommends that all abandoned and orphaned wells be identified and properly plugged before shale gas drilling starts in an area. This would reduce the chances that an unplugged wellbore could be a conduit for hydraulic fracturing fluids.
12. Mountain Watershed Association, Inc. recommends that industry be required to use best management practices and that there be a moratorium on new drilling permits until an assessment of the cumulative impacts of shale gas operations is completed. The organization provides specific suggestions based on Pennsylvania observations:
 - a. Require increased set back of natural gas operations from homes and streams.
 - b. Increase required Pennsylvania bond from \$2500 per well to an amount adequate to plug an orphaned well.
 - c. Require sediment control at sites.
 - d. Increase emergency response capabilities.
 - e. Provide user-friendly online access to permit applications and hydraulic fracture fluid composition.
 - f. Develop a system to track the fate of flow-back water.