INFORMATION, MEDIA AND OTHER ACCOUNTS ON THE U.S. ENVIRONMENTAL PROTECTION AGENCY'S FOUR PUBLIC MEETING PROCESSES, JULY TO SEPTEMBER, 2010

(Retrieved and Organized by Will Koop, B.C. Tap Water Alliance, September 7, 2010)



Public Meeting Schedule

Dated	Location	Time	Materials
July 8, 2010	Hilton Fort Worth	6:00 - 10:00	Agenda
	815 Main Street	pm *	
	Fort Worth, TX 76102		
July 13, 2010	Marriott Tech Center	6:00 - 10:00	Agenda
	4900 South Syracuse Street	pm *	
	Denver, CO 80237		
July 22, 2010	Hilton Garden Inn,	6:00 - 11:00	Agenda
	Pittsburgh/Southpointe	pm *	
	1000 Corporate Drive		
	Canonsburg, PA 15317		
September 13,	Broome County Forum Theater	Two sessions	
2010	236 Washington St	per day	
and September 15,	Binghamton, NY 13901	12:00 - 4:00	
2010	Media Advisory	pm *	
		6:00 - 10:00	
		pm *	

1. EPA Website: Outreach - Stakeholder Involvement Strategy

(http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/wells_hydroout.cf m#meetings)

Stakeholder Involvement Strategy

Stakeholder involvement refers to the full range of activities that EPA uses to engage the American people in the Agency's decision-making process. Stakeholders include individual citizens, communities, tribes, state and federal partners, industry, trade associations, and environmental organizations that have a strong interest in the Agency's work and policies.

EPA has developed a stakeholder strategy for the hydraulic fracturing study to engage stakeholders in dialogue and provide opportunities for input on the study scope and study locations, and to provide a means to exchange information with experts on technical issues.

EPA will engage the public in several ways:

- **Facilitated public meetings** promote discussion of the public engagement process, scope of the study, perspectives on risks, public data that may inform the study, and identification of data gaps. Public meetings will be held July—August 2010 in Binghamton, New York; Canonsburg, Pennsylvania; Fort Worth, Texas; and Denver, Colorado.
- State and federal partner consultations promote discussion of study scope, identification of data gaps, data sharing, opportunities for joint studies, current policies and practices of protecting drinking water.
 - State Partners Webinar held May 27, 2010: <u>Meeting Summary</u> PDF (3pp, 30k) | <u>Presentation</u> PPT (34pp, 2M)
 - Federal Partners Webinar held June 7, 2010: <u>Meeting Summary</u> PDF (4pp, 32k) | <u>Presentation</u> PDF (34pp, 3M, <u>About PDF</u>)
- Sector-specific meetings promote discussion of the public engagement process, scope of the study, coordination of data sharing, and other key issues with each interested stakeholder sector.
 - Industry Webinar held June 21, 2010 with recast on June 30, 2010 due to technical difficulties: <u>Presentation</u> PDF (34pp, 3M, <u>About PDF</u>)
 - Environmental Organizations Webinar held June 23, 2010: <u>Presentation</u> PDF (34pp, 3M, <u>About PDF</u>)

How to Provide EPA with Comments on the Hydraulic Fracturing Study Deadline for comments is September 28, 2010

Persons wishing to contribute comments to EPA regarding the proposed Hydraulic Fracturing Research Study may:

1. present oral comments at the informational meetings;

- 2. submit written comments at the informational meeting;
- 3. submit electronic comments to EPA at hydraulic.fracturing@epa.gov; or
- 4. send written comments to EPA at the following address: Jill Dean, 1200 Pennsylvania Ave. NW, Mailcode 4606M, Washington, DC 20460.

Informational Public Meetings

EPA announced four public information meetings for the hydraulic fracturing study in the Federal Register (75 FR 35023) on June 21, 2010. EPA seeks stakeholder and public input into developing its proposed plan to study the relationship between hydraulic fracturing and drinking water. Stakeholders are requested to pre-register for the meetings at least 72 hours before each meeting at the following website: http://hfmeeting.cadmusweb.com. Stakeholders may also register using the toll-free number 1-866-477-3635.

The informational public meetings are scheduled for July and September 2010 in four locations around the United States.

September Public Meeting

Registration begins 9:00 am, September 3, 2010 and closes 5:00 pm, September 10, 2010

The U.S. Environmental Protection Agency has announced the last of the Hydraulic Fracturing Study Public Meetings for September 13 and 15, 2010, at the Broome County Forum Theater in Binghamton, New York. EPA has added an additional meeting session and four meeting sessions will be held over September 13 and 15 (see table below for specific information). All individuals who pre-registered for the August 12 meetings will retain their registration for the September 13 and 15 meetings. Because the timing of the sessions has changed from a one-day event to a two-day event and EPA has added another meeting session, EPA needs pre-registered individuals to specify the session they would like to attend.

1. Pre-registered speakers for the August 12 session will be sent an e-mail from the Cadmus Group requesting they select one preferred session in which to provide verbal comment. The email notification will provide instructions on how to choose a session. Speakers who pre-registered using the telephone registration will be contacted by Cadmus by phone to confirm their preferred session.

2. Pre-registered attendees (those who opted not to give verbal comment) will be asked to indicate the session they would like to attend via the registration website. The registration website is located at http://hfmeeting.cadmusweb.com and will open beginning at 9:00 am on Friday, September 3, 2010. Online and telephone registration will remain open through 5:00 pm, September 10, 2010.

EPA is expecting room-capacity crowds at the Binghamton meeting sessions. Pre-registering to attend the meetings will help EPA plan the meeting logistics and decreases the time one would wait to enter the meeting compared to one who registers onsite. Pre-registering for a meeting session does not reserve an individual's place at the session unless one is a pre-registered speaker. Some wait time for entrance into meeting sessions may occur if the room capacity is met. Those who do not pre-register may still register to attend or provide verbal comment on

the day of the meeting. Verbal comments from individuals registered on-site will be accommodated as time allows.

EPA would appreciate public comment on the following documents: The deadline for public comments is September 28, 2010.

- <u>Proposed Selection Criteria for Case Study Considered for EPA's Hydraulic</u> <u>Fracturing Study PDF (4 pp, 128 K, About PDF)</u>
- <u>Proposed Conceptual Model for EPA's Hydraulic Fracturing Study PDF</u> (4 pp, 160 K, <u>About PDF</u>)

Other information EPA provides at the public meetings:

- EPA presentation
- <u>Water Lifecycle in the Hydraulic Fracturing Process Poster</u>
- Proposed Criteria for Case Study Site Selection Poster

2. EPA Meeting Agendas

2.a. First Meeting - Fort Worth, Texas, July 8, 2010

6:00 pm	Introductory Remarks
-	Al Armendariz, EPA Regional Administrator, Region 6
6:05 pm	Review of Meeting Agenda and Logistics
_	Adam R. Saslow, Facilitator, Plexus Logistics, LLC
6:10 pm	Why are We Studying Hydraulic Fracturing?
-	Dr. Fred Hauchman, Director, Office of Science Policy
	EPA's Office of Research and Development
6:15 pm	How will the Study be Conducted?
•	Dr. Robert Puls, Agency Technical Lead, Hydraulic Fracturing
	Study, EPA's Office of Research and Development
6:30 pm	How can Stakeholders Become Involved?
	Ann Codrington, Acting Director, Drinking Water Protection
	Division, EPA's Office of Ground Water & Drinking Water
6:35 pm	Review of Procedures for Public Commenting
-	Adam R. Saslow, Facilitator, Plexus Logistics, LLC
6:40 - 10:00	pm Public Comments

2.b. Second Meeting - Denver, Colorado, July 13, 2010

6:00 pm	Introductory Remarks	
	Steve Tuber, Assistant Regional Administrator, Region 8	
	EPA's Office of Partnerships & Regulatory Assistance	
6:05 pm	Review of Meeting Agenda and Logistics	
	Adam R. Saslow, Facilitator, Plexus Logistics, LLC	
6:10 pm	Why are We Studying Hydraulic Fracturing?	
-	Jeanne Briskin, Hydraulic Fracturing Research Task Force Leader	
	EPA's Office of Research and Development	
6:15 pm	How will the Study be Conducted?	
_	Dr. Robert Puls, Agency Technical Lead, Hydraulic Fracturing	
	Study, EPA's Office of Research and Development	
6:30 pm	How can Stakeholders Become Involved?	
_	Ann Codrington, Acting Director, Drinking Water Protection	
	Division, EPA's Office of Ground Water & Drinking Water	
6:35 pm	Review of Procedures for Public Commenting	
	Adam R. Saslow, Facilitator, Plexus Logistics, LLC	
6:40 – 10:00 pm Public Comments		

2.c. Third Meeting - Canonsburg, Pennsylvania, July 22, 2010

6:00 pm	Introductory Remarks	
	Shawn Garvin, EPA Regional Administrator	
6:05 pm	Review of Meeting Agenda and Logistics	
	Adam R. Saslow, Facilitator, Plexus Logistics, LLC	
6:10 pm	Why are We Studying Hydraulic Fracturing?	
	Dr. Fred Hauchman, Director, Office of Science Policy	
	EPA's Office of Research and Development	
6:15 pm	How will the Study be Conducted?	
	Dr. Robert Puls, Agency Technical Lead, Hydraulic Fracturing	
	Study, EPA's Office of Research and Development	
6:30 pm	How can Stakeholders Become Involved?	
	Ann Codrington, Acting Director, Drinking Water Protection	
	Division, EPA's Office of Ground Water & Drinking Water	
6:35 pm	Review of Procedures for Public Commenting	
	Adam R. Saslow, Facilitator, Plexus Logistics, LLC	
6:40 – 11:00 pm Public Comments		

2.d. Fourth Meeting - Binghamton, New York, September 13 & 15, 2010

(No Agenda available as of yet)

3. CITIZEN'S GUIDE TO THE EPA HYDROFRACKING & DRINKING WATER HEARINGS

(Posted by the Wilderness Society)

Citizen's Guide to the EPA Hydrofracking & Drinking Water Hearings How to be Effective in Two Minutes

The EPA's Science Advisory Board is doing a study of the effects of hydraulic fracturing (HF), or hydrofracking, on drinking water. The study is in its early stages as the EPA works out the bounds of their work. Over the next two months the EPA will hold a series of public hearings around the country to gather public input. Two documents (four pages each) provide guidance on the kind of information the EPA is seeking from the public. They are available here: http://www.epa.gov/safewater/uic/wells_hydroout.html#meetings, and may have been attached with this guide if you received it via email.

This guide attempts to prepare you, the potential attendee, to be most effective in testifying before the EPA. These meetings are being run as hearings. This means that a court reporter is usually hired to record your every word. This is good as you don't have to worry about someone trying to capture the gist of what you said and potentially getting it wrong. The downside is that there's not usually a chance during the meeting to talk with the EPA staff. You can expect a short presentation at the beginning, and then hours of testimony from citizens like yourself, organizations and industry.

According to the EPA, each person testifying will be limited to two minutes to talk. Two minutes is a very short time. The average commercial break when you're watching TV is actually longer than two minutes. But that doesn't mean that you can't be effective or that you shouldn't bother to attend. Keep the following in mind to be most effective:

* The EPA is studying the effects of hydraulic fracturing on drinking water. They are not studying air quality effects, the number of trucks needed to drill, develop and close a well site or anything else not associated with effects on drinking water. Stick to the topic at hand so they consider and can use what you've said.

* The EPA does want to know about a number of items. They include:

- Comments on their criteria for selecting case studies. For more details on the criteria, check here: http://www.epa.gov/safewater/uic/pdfs/hydrofrac_casestudies.pdf (This is a link to one of the documents referenced above.)
- Specific questions the EPA would like the public to address include:
 - Are the proposed criteria appropriate?
 - Would you suggest revised or additional criteria?

- Are there other research questions that a case study approach would be able to address?

- Another question the EPA wants the public to address has to do with the fact that they intend to get out and study specific cases in the field. Nominated sites will likely fall into three categories:
 - Sites where hydraulic fracturing (HF) is being planned
 - Sites where HF is in progress
 - Sites where HF has already been completed
 - If you know of a site you think they should study, you should discuss it and the reasons why in your testimony.

- See page 4, Table 1 from the EPA detailing the kind of information they're looking for by following the link above.

- One of the criteria is the potential to leverage their work with other partners, including NGOs, industry, states, etc. If you belong to an organization that can offer assistance, you should cover this in your testimony.
- Another set of questions the EPA wants addressed comes from the second document referenced above and available here:

http://www.epa.gov/safewater/uic/pdfs/hydrofrac_landscapemodel.pdf The EPA will be studying effects to water quantity and water quality. They would like you to address:

- Can you suggest additional pathways of exposure that could impact drinking water resources from the hydrofracking process?
- What are the most important processes and pathways of exposure that would adversely impact drinking water resources?

- What current practices in your region do you think pose the most threat to drinking water resources from hydrofracking?

- Can you provide data, studies, reports or other information to help the EPA assess the relative importance of these potential impacts?

* You're limited in the time you can talk, so:

- Pick one or at most two items to discuss
- If you have time, write out what you want to say and practice saying it in two minutes or less. Write or type it out double spaced so you can easily read it standing at a podium. It's harder to hear what someone is saying if they have to hold a paper up to their face to read. Avoid being that person.
- Try to avoid talking really fast. If you have to talk fast to get through what you want to say, then you should consider dropping some portion of it. The only thing people remember when someone talks really fast is that they talked really fast.

Any of the questions above provides a lot to cover in two minutes. In addition to speaking at the hearing, you may have an opportunity to leave written materials with the EPA officials. You can also email written comments to hydraulic.fracturing@epa.gov or mail them to Jill Dean, 1200 Pennsylvania Avenue NW, Mail Code 4606M, Washington, DC 20460. Remember, as with what you say in oral testimony, to provide written materials that are on topic.

Finally, most people will likely stay for at least part of the time to hear what others have to say. Take advantage of the opportunity to introduce yourself to others. These days, many of us only know each other through conference calls and email lists. Many others may be getting involved for the first time. These meetings provide a chance to put faces to names and get more people actively involved. Take advantage of this opportunity!

4. PRESS, WEBSITE ARTICLES ON EPA MEETINGS

EPA meeting in Colorado takes up controversial hydraulic fracturing in natural gas drilling

Free Speech Radio News July 14, 2010

Radio newscast, five hours, 43 minutes, from following website: http://www.fsrn.org/audio/epa-meeting-colorado-takes-controversial-hydraulic-fracturing-natural-gas-drilling/7107

As the world watches the effects of deep oil drilling in the Gulf, the EPA is hosting a series of public meetings to take a closer look at hydraulic fracturing for natural gas – including one last night in Colorado. As inland gas drilling increases, concern is growing about water supply contamination as a result of the toxic chemicals injected into the deep wells. In the water-challenged West, the issue has pitted environmentalists and Democrats against conservative leaders, like Colorado Lieutenant Governor and Republican senate candidate Jane Nortan – a strong advocate of oil and gas drilling. From Denver, Nikki Kayser reports:

TRANSCRIPT:

Six years ago, EPA scientist Wes Wilson sought whistleblower protection when he disputed the findings of a government report on hydraulic fracturing.

WILSON: In 2004, I complained to Congress and the EPA Inspector General that the report was invalid. In fact, the report said that the EPA was aware that many of the fracking fluids were toxic, and a great deal of the fluid wasn't returned to the surface, but it concluded there was no risk and no need for further study. It was where they went underground that the EPA did not study.

After a growing chorus of people questioned the study's methodology and impartiality, Congress directed the EPA to take another look at the issue, and ordered the agency to conduct a focused, peer-reviewed study. WILSON: They'll take a broader look at the fracking process itself, including this air pathway- volatilizing hydraulic fracking fluids in a reserve pit and then people breathing it. That's a systemic problem. That's ubiquitous in the industry.

Part of the \$1.9 million research study includes hearings to gather stakeholder input. At Tuesday's hearing in Denver, industry representatives recommended a limited scope of the study. The industry doesn't want researchers to look at surface water pollution and air quality.

Tisha Conoly-Schuller is with the Colorado Oil & Gas Association:

"Hydraulic fracturing is a proven technology. It is very effective in releasing the energy source that we need. In order to minimize the environmental risks, I think we need to focus on ensuring that the walls are encased properly, and preventing surface spills."

FSRN: What do you hope this EPA study will cover that the former one did not?

CONOLY-SCHULLER: I hope this study leans credibility to a practice that has been around for 60 years.

FSRN: What are some of the recent incidents, for example?

CONOLY-SCHULLER: Well, I'd rather not put more energy and attention on incidences that are anecdotal, because they really do capture people's imagination. And, that we not get wrapped up in stories that are catchy.

ROSS: These are real events happening to people. It devastates people's lives. I can attest to that.

Gopa Ross is Oil & Gas Issues chair of the Rocky Mt. Chapter of the Sierra Club. She said the evidence of contaminated water is more than anecdotal:

" This is on the Western Slope. This is going on in the southern part of Colorado-Walsenberg River Ridge. This is going on in Weld County. This is going on in Garfield County. This is going on all over the state.

Gopa says she was personally affected after her own water well was blown out by Pioneer Natural Resources in 2006, during initial coal bed methane gas drilling.

ROSS: My well never recovered. They say it is some other event. It really couldn't be them. And I just don't believe them anymore, because I had background chemicals showing up in my water.

Gopa says she's not necessarily against drilling, but sees no harm in investigating the chemicals being used to ensure safety of the community and environment. Several

ranchers from Pavillion, Wyoming testified that water contamination has been verified in their private wells.

Deborah Thomas said there are many different chemicals and mixtures of fluids in each drill used in the process, making it difficult to document:

THOMAS: These are the chemical constituents: there are acrylemins, bennals, diesels, solvents, acids, sulfanates, metals-heavy metals, chlorides, sulphates, silicates"

There are several highly toxic and controversial chemicals used during fracking. 2 BE, or buto-xyethenol, and H2S, or hydrogen sulphide, are among them. John Fenton is another Wyoming resident:

FENTON: H2S is deadly, extremely deadly. It is also highly corrosive. In Denver, it is so thick it eats the metal off of the barb-wire fence post. It eats the wiring out of their house. It eats the hinges off the doors.

State, rather than federal enforcement, was another common recommendation of mining companies at the hearing. But with new proprietary fluids continually showing up, the government is currently hard-put to keep up.

THOMAS: They are fracking without permits. I have photo documentation. The state didn't even know they were fracking! So, yeah. How does the state get a handle on that? They don't have any handle.

Fracking is legal, with an exemption to the Clean Water Act. Current federal legislation to close the so-called "Halliburton loophole" is sponsored by two Colorado representatives, with a twin bill in the Senate.

In the meantime, Genesis Gas & Oil has agreed with the city of Grand Junction to use supposedly "green fluids", reveal their chemical makeup, and inject a trace along with the fluids so contamination could quickly be found.

There are two more public hearings on the franking study, one JULY 22 in Canonsburg, Pennsylvania and the other August 12 in Binghampton, New York. The EPA is expected to issue a final report in 2012.

Nikki Kayser, FSRN, Denver.

Residents Speak Out on Natural Gas Fracking

Sarah Hodgdon, Sierra Club July 15, 2010

Image credit: <u>Wyoming: Upper</u> <u>Green River Valley</u>/Flickr

Natural gas "fracking" has become a contentious issue in the U.S., and now residents in four regions are getting the opportunity to talk about their concerns with the practice.



The U.S. Environmental Protection Agency (EPA) is <u>holding four public information</u> <u>meetings</u> (two have already happened) on "the proposed study of the relationship between hydraulic fracturing and its potential impacts on drinking water."

"In some ways it was the first time many of the gas drilling activists got to voice their opinions to someone in power who might actually do something to regulate the environmental impacts of hydro-fracking," said Dewayne Quertermous, a Sierra Club volunteer, who attended the first public meeting in Ft. Worth, Texas, last week.

If you're unfamiliar with what's known as "fracking" for natural gas, <u>here's how EPA</u> <u>defines it</u>:

Hydraulic fracturing is a process that helps production of natural gas or oil from shale and other geological formations. By pumping fracturing fluids (water and chemical additives) and sand or other similar materials into rock formations, fractures are created that allow natural gas or oil to flow from the rock through the fractures to a production well for extraction.

Problem is, there are cases of gas drilling sites where the <u>nearby water wells become</u> <u>contaminated</u>. EPA says as much in its announcement: "(S)erious concerns have been raised about hydraulic fracturing's potential impact on drinking water, human health and the environment. To address these concerns, EPA announced in March that it will study the potential adverse impact that hydraulic fracturing may have on drinking water."

Quertermous joined <u>nearly 600 people testifying on fracking</u> at last week's Fort Worth public meeting. He said it went well and he's glad the community was able to voice their concerns.

"The state regulators are extremely pro-industry and local politicians have generally given the industry whatever they wanted," said Quertermous.

"Until recently, advocating for effective regulation of gas drilling here has been an uphill battle with little hope of any positive outcomes - but a shift in public opinion coupled with EPA studies and hearings provides hope that some sane regulations might be coming down the road."

Also dealing with natural gas in Texas - yesterday the news came down that natural gas drilling company <u>Range Resources would voluntarily disclose the fracking chemicals</u> it uses in Pennsylvania, but not in Texas.

"While we are glad to see the company announce this first step, it's only through full, nationwide disclosure and tough regulation of fracking chemicals that we can protect water and communities," said Jen Powis, Sierra Club's Senior Regional Representative in Texas.

Meanwhile, the <u>second EPA public meeting was held Tuesday night in Denver</u>. <u>Colorado</u>, where hundreds more gathered to make their concerns heard. The industry was also out in force at these hearings to defend the status quo.

"Sierra Club welcomes the EPA hydraulic fracturing study because Colorado residents have had severe impacts to their water wells from oil and gas operations, and the whole situation needs to be investigated, " said Gopa Ross, Sierra Club Rocky Mountain Chapter Oil and Gas Chair, who attended the Denver hearing.

Ross is right on. Natural gas will be part of the transition from far dirtier energy sources - particularly coal - to a clean-energy future. For the Sierra Club, the responsible use of natural gas can help the nation address the complex problem of climate change, but only if we do it right.

Among the types of drilling projects the Club opposes are those in which the contents of fracking fluids are not disclosed to the public or contain an unacceptable toxic risk, and those that fail to protect drinking and surface water or violate air-quality standards. We also oppose drilling in protected areas and areas such as New York City's drinking water supply area.

Grassroots advocacy across the U.S. on this issue is so important. EPA must hear this from those who are already or may be affected. The natural industry must be regulated so that it does not adversely impact air, water, local communities and wild places.

So get involved now: The next <u>holding four public information meetings">public</u> <u>meetings on the EPA study on water quality and fracking</u> are July 22nd in Canonsburg, Pa., and August 12th in Binghamton, N.Y. There will also be EPA public meetings on the air quality impacts of onshore oil and gas operations in Arlington, Texas, on August 2nd and Denver, Colo. August 3rd. Read more about fracking: Jargon Watch: Fracking The Folly of Fracking Fracking Is Finally Getting Some Attention and Regulation ProPublica on Fracking, the Marcellus Shale and Natural Gas

Huge Turnout for E.P.A. Fracking Hearing

New York Times, Tom Zellner Jr., July 22, 2010

The Environmental Protection Agency will probably be getting an earful at a public meeting in southwestern Pennsylvania, part of its <u>recently opened re-examination</u> of hydraulic fracturing.

Many Green readers will already know that gas drillers rely heavily on <u>the practice</u>, often called "fracking," which involves the high-pressure injection of a mixture of water, sand and chemicals designed to create fractures in rock formations deep underground so that gas can be released.

Environmentalists have long complained — often in vain — that the industry in general and fracking in particular are too loosely regulated and that all manner of environmental and health impacts could be at stake. Groundwater contamination ranks high on their list of concerns.

The industry, meanwhile, has maintained that its drilling and fracking practices are safe, and that there is little hard evidence to the contrary — although this, critics say, is only for want of careful study.

The E.P.A. gave a clean bill of health to fracking in a <u>study</u> published in 2004, concluding that it posed "little or no threat" to drinking water. But that finding was called into question almost immediately — not least after an agency employee, invoking whistle-blower protections, essentially <u>called the study</u> "unsupportable."

With gas prospectors now eyeing a <u>potentially mammoth new gas play</u> stretching from West Virginia and Pennsylvania to the southern tier of New York — and a public newly sensitized by the gulf oil disaster to the potential ravages of under-regulated oil and gas exploration — scrutiny of the industry is at an all-time high.

A ballroom set up for some 800 stakeholders at the Hilton Garden Inn in Canonsburg, Pa., about 30 miles south of Pittsburgh, quickly overflowed, and a blooming garden of colorful signs and homemade placards — from "No Fracking" on one end of the spectrum, to "Fracking is our Future" on the other — were already hinting at the fault lines in this debate even before the 6 p.m. meeting got under way.

At the opening of the meeting this evening — which the agency emphasized was aimed at soliciting input from stakeholders on the framing and design of its new study, and was not a debate on the merits of fracking — Shawn Garvin, the E.P.A.'s regional administrator, said that the agency was taking the concern over the impact of the practice seriously. "We look forward to working with all of you," he said.

The official study period is to begin in early 2011, with preliminary results expected in 2012.

E.P.A. Considers Risks of Gas Extraction

New York Times, Tom Zellner Jr., July 23, 2010

CANONSBURG, Pa.

— The streams of people came to the public meeting here armed with stories of yellowed and foulsmelling well water, deformed livestock, poisoned fish and itchy skin. One resident invoked the 1968 zombie thriller



"Night of the Living Dead," which, as it happens, was filmed just an hour away from this southwestern corner of Pennsylvania.

The culprit, these people argued, was hydraulic fracturing, a method of extracting natural gas that involves blasting underground rock with a cocktail of water, sand and chemicals.

Gas companies countered that the horror stories described in Pennsylvania and at other meetings held recently in Texas and Colorado are either fictions or not the companies' fault. More regulation, the industry warned, would kill jobs and stifle production of gas, which the companies consider a clean-burning fuel the nation desperately needs.

Just as the Gulf of Mexico is the battleground for the future of offshore oil drilling, Pennsylvania is at the center of the battle over hydraulic fracturing, or fracking, which promises to open up huge swaths of land for natural gas extraction, but whose environmental risks are still uncertain. Natural gas accounts for roughly a quarter of all energy used in the United States, and that fraction is expected to grow as the nation weans itself from dirtier sources like coal and oil.

The Environmental Protection Agency has been on a listening tour, soliciting advice from all sides on how to shape a forthcoming \$1.9 million study of hydraulic fracturing's effect on groundwater.

With the steep environmental costs of fossil fuel extraction apparent on beaches from Texas to Florida —and revelations that industry shortcuts and regulatory negligence may have contributed to the BP catastrophe in the gulf —gas prospectors are finding a cold reception for their assertions that their drilling practices are safe.

"The industry has argued there are no documented cases of hydraulic fracturing contaminating groundwater,"said Dencil Backus, a resident of nearby Mt. Pleasant Township, at Thursday night's hearing. "Our experience in southwestern Pennsylvania suggests that this cannot possibly be true."

Matt Pitzarella, a spokesman for Range Resources, a Texas-based natural gas producer, acknowledged that the gulf spill had increased public concern about any sort of drilling activity. "However, when people can review the facts, void of the strong emotions the gulf elicits, they can see the stark contrast between high-risk, deep offshore oil drilling and much safer, much lower risk onshore natural gas development,"he said by e-mail.

In this part of the country, the potentially enormous natural gas play of the Marcellus Shale has many residents lining up to lease their land to gas prospectors. Estimates vary on the precise size of the Marcellus Shale, which stretches from West Virginia across much of Pennsylvania and eastern Ohio and into the Southern Tier of New York. But by any estimate, the gas deposit is huge —perhaps as much as 500 trillion cubic feet. (New York State uses a little over 1.1 trillion cubic feet of natural gas each year.)

An industry-financed study published this week suggested that as much as \$6 billion in government revenue and up to 280,000 jobs could be at stake in the Marcellus Shale region.

Fracking has been around for decades, and it is an increasingly prominent tool in the effort to unlock previously unreachable gas reserves. The oil and gas industry estimates that 90 percent of the more than 450,000 operating gas wells in the United States rely on hydraulic fracturing.

Roughly 99.5 percent of the fluids typically used in fracking, the industry says, are just water and sand, with trace amounts of chemical thickeners, lubricants and other compounds added to help the process along. The cocktail is injected thousands of feet

below the water table and, the industry argues, can't possibly be responsible for growing complaints of spoiled streams and wells. But critics say that the relationship between fracking fluids and groundwater contamination has never been thoroughly studied —and that proving a link has been made more difficult by oil and gas companies that have jealously guarded as trade secrets the exact chemical ingredients used at each well.



Several other concerns linger over fracking, as well as other aspects of gas drilling — including the design and integrity of well casings and the transport and potential spilling of chemicals and the millions of gallons of water required for just one fracking job.

The recent string of accidents in the oil and gas industries —including the gulf spill and a blowout last month at a gas field in Clearfield County, Pa., that spewed gas and wastewater for 16 hours —has unnerved residents and regulators.

"There is extraordinary economic potential associated with the development of Marcellus Shale resources,"said Representative Joe Sestak, Democrat of Pennsylvania, in a statement Friday announcing \$1 million for a federal study of water use impacts in the Delaware Water Basin. However, "there is also great risk."He said, "One way to ensure proper development is to understand the potential impacts."

Amy Mall, a senior policy analyst with the Natural Resources Defense Council, said the scrutiny was long overdue. "I think it's all helping to shine a spotlight on this entire industry,"she said. "Corners are sometimes cut, and regulations simply aren't strong enough."

Fears of fracking's impact on water supplies prompted regulators overseeing the Delaware Water Basin to curtail gas exploration until the effects could be more closely studied. New York State lawmakers are contemplating a moratorium.

At the national level, in addition to the E.P.A. study, a Congressional investigation of gas drilling and fracturing, led by House Energy and Commerce Committee, intensified last week with demands sent to several companies for details on their operations — particularly how they handled the slurry of water and chemicals that flowed back from deep within a well.

A renewed, if unlikely, push is also under way to pass federal legislation that would undo an exemption introduced under the Bush administration that critics say freed hydraulic fracturing from regulation under the Safe Drinking Water Act.

Last month, Wyoming introduced some of the nation's toughest rules governing fracturing, including provisions that require companies to disclose the ingredients in their fracturing fluids to state regulators —though specifically not to the public.

Gas drillers, responding to the increased scrutiny and eyeing the expansive and lucrative new gas plays in Appalachia, are redoubling their efforts to stave off federal oversight, in some cases by softening their rigid positions on fracking-fluid disclosure. Last week, Range Resources went so far as to announce its intent to disclose the contents of its fracking fluids to Pennsylvania regulators and to publish them on the company's Web site.

"We should have done this a long time ago,"said Mr. Pitzarella, the Range spokesman. "There are probably no health risks with the concentrations that we're utilizing. But if someone has that concern, then it's real and you have to address it."

Environmental groups welcomed that, but said that clear and broad federal jurisdiction would still be needed.

"Any one accident might not be on the scale of the Deepwater Horizon disaster," said Ms. Mall. "But accidents are happening all the time, and there's no regime in place that broadly protects the health of communities and the surrounding environment where drilling is being done."

That was a common theme at the meeting Thursday night.

"I can take you right now to my neighbors who have lost their water supplies," Mr. Backus said to the handful of E.P.A. regulators on hand. "I can take you also to places where spills have killed fish and other aquatic life."

"Corporations have no conscience," he added. "The E.P.A. must give them that conscience."

1,200 Hear Marcellus Shale debate: EPA hearing in Southpointe one of four nationwide

Friday, July 23, 2010 By Don Hopey, Pittsburgh Post-Gazette

Sandra McDaniel of the Clearville Citizens for Sustainability speaks during a public listening session hosted by the U.S. Environmental Protection Agency on the agency's proposed study of the environmental impact of hydraulic fracturing at the Hilton Garden Inn in Canonsburg on Thursday.



Concerns about the risk of water contamination and public health problems from Marcellus Shale drilling dominated a sometimes loud U.S. Environmental Protection Agency hearing in Southpointe attended by 1,200 people Thursday night.

Although EPA officials told those in attendance the meeting was not about drilling policy, most of the more than 100 speakers let it be known that they oppose Marcellus Shale drilling in the state, and many shared personal stories of contaminated wells, dead farm animals and damaged health. They attributed the problems to water contamination caused by the deep gas drilling operations that are increasing quickly through much of the state.

Several urged that a moratorium on Marcellus Shale drilling be enacted until the EPA finishes its study scheduled for the end of 2012.

Erica Staff, of PennEnvironment, a statewide environmental group, was joined by many speakers in requesting that the EPA broaden its study of the hydraulic fracturing process, known in the industry as "fracking."

"I urge EPA to expand the scope of the study to include the entire life cycle of gas extraction," Ms. Staff said.

Myron Arnowitt, state director for Clean Water Action, said the EPA needs to look at industry practices that have caused the state Department of Environmental Protection to issue 565 violations at 207 of the 1,458 wells drilled into the Marcellus Shale in Pennsylvania since 2005.

"Eighty of the violations are for illegal disposal of wastewater, and 115 of them were for frack pit violations, and those are serious and need to be investigated by the EPA," Mr. Arnowitt said.

The hearing was the third of four meetings scheduled around the country by the EPA to provide information and gather comments about its proposed \$1.9 million study of the risks to surface and ground water from fracking, a high-pressure, water intensive, procedure used in deep natural gas well drilling to free the gas from dense rock layers a mile or more underground. The EPA held hearings in Fort Worth, Texas, and Denver earlier this month, and next month will hold the last hearing in Binghamton, N.Y.

The drilling technique, used in deep shale and coal beds from Texas to Colorado to Pennsylvania, pumps up to 8 million gallons water and chemical additives -- some of them toxic -- mixed with sand or similar materials down a well under high pressure. The "fracking fluid" causes the shale or coal to crack and the sand props the rock layers apart, allowing the gas trapped there to escape up the well. Some of the contaminated water also returns to the surface and must be collected and disposed of or reused in other wells.

The drilling industry, which emphasizes the economic benefits of tapping into one of the largest unconventional gas fields in the world, says fracking has been used successfully and safely for more than 50 years in many shallow gas wells in Pennsylvania.

"Fracking is neither a new nor controversial process," said Lou D'Amico, president and executive director of the Pennsylvania Independent Oil and Gas Association. "Any controversy is based on hysteria, not facts. It's had no negative impact on groundwater anywhere it's been used."

James Erb, who spoke as a representative of the American Petroleum Institute, said his members know that fracking is a public concern and support the EPA's review of the technology.

"We intend to be active in the study plan developments and its implementation," Mr. Erb said. "We are confident it will show no risk to human health, water resources or the environment."

But environmentalists say the use of fracking in the Marcellus Shale bed that underlies three-fourths of Pennsylvania expands its impact on water supplies and quality.

Terry Greenwood, a Washington County farmer, said he lost 10 calves, eight of them stillborn and another born with a cleft palate, after Marcellus gas wells were drilled near his property.

"My water went bad, but the DEP said it was just farmers' bad luck," he said. "But since I fenced off my pond in 2009, I haven't had any problems. I think clean water is more important than gas."

In its announcement of public hearings for its study in June, the EPA noted that "serious concerns have been raised about hydraulic fracturing's potential impact on drinking water, human health and the environment."

In a statement released Wednesday, the EPA said that while natural gas "plays a key role in our nation's clean energy future and the process known as hydraulic fracturing is one way of accessing that vital resource ... there are serious questions about whether the process of hydraulic fracturing impacts drinking water, human health and the environment and further study is warranted."

The agency said the public hearings are part of the process of launching that study and promised to utilize the best available science and consider public input.

"We see an opportunity, too, for more case studies," said Robert Puls, of the EPA's National Risk Management Laboratory. "We'll also look at vulnerable water resources, both in terms of their distance from a drill site and the intensity of well development. Because of that, the risk could be greater both in terms of water quality and quantity."

As if to emphasize the high stakes of the gas drilling in the Marcellus Shale, industry and environmental groups staged competing news conferences immediately prior to Thursday evening's hearing.

A 2004 EPA review of earlier hydraulic fracturing studies identified health risks associated with some of the lubricating chemicals in the fracking fluid, and noted that the fracturing process could create pathways through which methane can contaminate drinking water wells, but concluded that it found no link between "fracking" and contamination of drinking water supplies. That review, which was used to exempt hydrologic fracturing from regulation by the EPA under the federal Safe Drinking Water Act, has been widely criticized by scientists and environmental organizations for failing to take into account case studies of existing contamination.

The new EPA fracking study proposal was prompted by last year's introduction of legislation -- H.B. 2766, also known as the "FRAC Act" -- that would remove the hydraulic fracturing exemptions that were granted in 2005. The industry is opposed to EPA regulation of the fracking process and has lobbied against passage of the bill.

Thursday night's hearing capped an active week on the Marcellus Shale issue. On Tuesday, Pittsburgh passed a resolution demanding that the state impose a one-year moratorium -- similar to that already in place in New York -- on drilling into the 450million-year-old Devonian formation, the hottest natural gas "play," or deposit, in the nation. Wednesday evening a standing-room-only crowd of more than 200 attended an Allegheny County Council hearing that focused on Marcellus well drilling in Allegheny County an its potential impacts on the environment and the health of residents and also its economic benefits. The Marcellus Shale Coalition issued a statement calling the city's moratorium resolution "unfortunate, unnecessary and, frankly, ill-advised" while citing industry job growth and downplaying environmental risks. PennEnvironment commended the city for recognizing that "the gas drilling industry's track record of spills and violations demonstrates a need for additional rules and laws that protect our rivers, drinking water, open spaces, clean air, and public health."

Also this week, the state Department of Environmental Protection ordered Cabot Oil & Gas Corp. within 60 days to fix permanently the water supplies in 14 homes in Dimock, Susquehanna County, that were contaminated by the company's gas well drilling operations. The DEP said it would lift a ban on reviewing new gas well applications by Cabot after the company permanently plugged three of the wells.

An industry study, released Wednesday and paid for by the American Petroleum Institute, said Marcellus Shale gas production could create 280,000 new jobs region-wide, and add \$6 billion in new tax revenue to local state and federal governments over the next decade. The study, authored by Timothy Consindine of Natural Resource Economics, a Wyoming consulting firm that does work for the industry, said about 100,000 of those jobs could be created in Pennsylvania and West Virginia. When he worked for Penn State University, Mr. Consindine was also the author of a 2009 report that predicted Marcellus Shale drilling would have a multi-billion dollar impact and create 175,000 jobs in Pennsylvania by 2020. The report was criticized because it did not disclose that it was funded by the Macellus Shale Coalition, a pro-industry advocacy organization.

The state Environmental Quality Board also held a hearing Thursday night in Pittsburgh on proposed state regulatory changes to improve the safety of oil and gas wells and protect the Pennsylvania's water supplies from contamination. The tighter well construction standards are intended to prevent natural gas from migrating from a well to adjacent, shallow ground water where it contaminate the water supply and cause dangerous concentrations to accumulate in homes and structures.

Because of the conflict with the EPA hearing, the EQB will hold a repeat hearing at 7 p.m. Monday in the state Department of Environmental Protection's Waterfront Conference room A and B, 400 Waterfront Drive, Washington's Landing.

EPA Hears From Over 150 Stakeholders, Including Youth, on Natural Gas Fracking

Published by <u>sashassc</u>, July 23rd, 2010

Pittsburgh Student Environmental Coalition gets front row seating at EPA hearing in Canonsburg, PA.



On Thursday, July 22, over 1200 people

attended an Environmenal Protection Agency hearing in Canonsburg, Pennsylvania on the relationship between Hydrualic Fracturing and water; it was the most well attended event of the EPA's nationwide meetings thus far. The EPA was gathering feedback regarding a peer reviewed study slated to begin in early 2011 that would detail the effects of Fracking on the quality and qauntity of drinking water. Over 150+ registered speakers provided feedback and comments. Landowners spoke about existing water quality issues they connected to fracking, professionals pointed out the precedent in analyzing dangerous compounds used in fracking fluid, and a handful of industry representatives urged the agency to conduct "scientific" studies "not based on emotion".

The urgency and anger communicated by residents was met by supportive applause, high fives, and ultimately a downright feeling of solidarity. Jessica McPherson, a landowner and herbalist from Pittsburgh, offered testimony that accurately summarized the meeting, "It's as if all the Romans have gathered to ask if Rome is on fire, as it is burning." Indeed, the presentation of the study was welcomed by those in attendance — but many are hoping it is not too little too late for those already suffering from contaminated water wells.



EPA panel at hearing in Canonsburg, PA.

Fracking is a process where water, sand and chemicals are injected into the earth at high pressure. The aim of hydrofracturing is to fracture rock formations deep underground to access natural gas that would otherwise be inaccessible. Fracking is radically different from traditional gas extraction because the resource is trapped in small fissures in the rock layer, instead of lying in shallow reservoirs. Accessing this fossil fuel is framed as part of gaining "energy independence" and boosting local economies with thousands of new jobs at

entry and professional levels. Sentiment at the hearing condemned the Pennsylvania Department of Environmental Protection for poor regulation of the industry, and invitationed the EPA to use multiple locations in southwestern Pennsylvania as part of their case study component.

Further reporting on the hearing and EPA study can be found at following links: <u>http://wduqnews.blogspot.com/2010/07/packed-house-for-epa-marcellus-hearing.html</u> <u>http://www.post-gazette.com/pg/10204/1074773-113.stm</u> <u>http://www.epa.gov/safewater/uic/wells_hydrofrac.html</u>



Following is the testimony given by Angela Wiley on behalf of the Pittsburgh Student Environmental Coalition. Many thanks to her and to those who heeded the call to action given at Monday's rally by writing letters and showing support at this week's Allegheny County Council, EPA, and PA DEP hearings!

My name is Angela Wiley. I am a rising sophomore at Chatham University, and work with the Pittsburgh Student Environmental

Coalition, which supports a moratorium on drilling until this EPA study is conducted and federal exemptions are lifted.

Natural gas drilling in the Marcellus shale region has pinned me with a sense of urgency – and I see it when I look around rooms like this full of homeowners, citizens, families, humans. We all have a stake in this as those who drink water and depend on fragile ecosystems for survival. It frightens and angers me that this industry is moving forward, exempt from federal regulations like the Clean Water Act and Safe Drinking Water Act, and without the completion of this EPA study. I do not want to dream of starting a career or family in a place with depleted, poisoned water and with hopeless dependency on nonrenewable resources. I feel shame and disappointment when I look to the flat mountain tops of West Virginia and central Appalachia – and I do not want to feel the same sentiment toward this lush portion of Panappalachia in a few years or sooner. Please do your job, EPA, before it's too late for us.

With the understanding that youth have the power and responsibility to forge and protect a sustainable Earth, the Pittsburgh Student Environmental Coalition seeks to unite and empower the young people of Pittsburgh to influence positive change in our community's natural environment through action, education, and the sharing of resources.

I came to be interested in environmental issues after growing up in West Virginia and becoming educated about mountain top removal coal mining. Mountain top removal witnesses environmental, economic and social justice issues; I am seeing these realms at work as hydraulic fracturing gears up in the Marcellus Shale region. This spring, I have been part of active learning in Pittsburgh about the fracking process and my connection to it, and have witnessed rising concern among residents of Pittsburgh and southwestern Pennsylvania as the issue becomes more relevant. As an activist and environmentalist, I stand in solidarity with those opposed to hydraulic fracturing because of its disruption to natural ecosystems, connection to larger oil and gas industries that finance foreign oil and fossil fuels, and because of blatant disrespect for human rights that is omnipresent with extractive industries.

Despite my personal stance, I do have some feedback for the documents the EPA has put forth regarding stakeholder input. With respect to the study's proposed criteria, I want to urge special vigilance with respect to "Management of wastewater and residuals" in table 1 of the document addressing selection of case studies. To my knowledge, there are no underground injection control wells in the state of Pennsylvania, so they are currently not an option for wastewater storage. How will this water be properly stored between uses, and will it be possible to dilute it to a safe consistency once it has been exhausted? On that note, I would like to see part of the study dedicated to the effect recycling has on frac water - if more chemicals are added to the fluid each time a well is drilled, the water must become increasingly concentrated with chemicals like benzene and formaldehyde. I am aware that recycling makes sense on a practical level, but I am skeptical about public health issues associated with the life cycle of the water. These concerns all fall under this section of Table 1, and I would appreciate if they are addressed as the study criteria is revised. I also recommend that case study sites are selected in the vicinity of abandoned underground coal mines, as these areas may be particularly sensitive to the high pressure and stress involved in fracking.

EPA hears from gas drillers, angry Pa. residents

July 23, 2010 By Marc Levy, Associated Press Writer

(AP) -- Federal researchers studying a natural gas drilling technique that involves blasting chemical-laced water into the ground got an earful from residents who say it's poisoning them and killing their animals and from industry experts who say it's being unfairly demonized.

People who make a living from the industry and others who believe hydraulic fracturing, or fracking, has polluted their well <u>water</u> packed into a hotel ballroom in southwestern Pennsylvania on Thursday night to make an impression on the U.S. <u>Environmental Protection Agency</u> panel.

The speakers, each taking two minutes at a microphone, alternately told the EPA to expand its study and push tough new regulations or to limit the study and leave regulations to state agencies already doing the job. The hearing was part of a new look by the EPA at fracking as gas drillers swarm to the lucrative Marcellus Shale region primarily beneath Pennsylvania, New York, West Virginia and Ohio and blast into other shale reserves around the country.

A petroleum geologist, Greg Wrightstone, said anti-capitalist demonization and misinformation should not drown out a solid foundation of data from thousands of wells

drilled in Pennsylvania over decades that proves <u>water contamination</u> from fracking is highly unlikely.

"I'll ask the commissioners to use reason not hyperbole, facts not fiction, data and not unfounded hysteria in making decisions affecting shale development in the United States," Wrightstone said. "Fears of environmental disaster are overblown and have little relation to actual technology."

The vast majority of speakers raised concerns about the process.

In fracking, drilling crews pump millions of gallons of sand- and chemical-laced water deep into the earth to break up dense rock to free the natural gas. Some of that water returns as a briny, chemical- and metal-laden brew and is usually stored in open pits until it's trucked to <u>treatment plants</u> or underground injection wells.

Residents of Hickory, about 15 miles southwest of Pittsburgh, called for intensive study of fracking and said their <u>well water</u> turned foul after drilling began nearby in the last few years.

Darrell Smitsky said five of his goats died mysteriously and, even though state regulators told him the water was safe, his own test showed sky-high levels of manganese and iron. When he blamed the drilling company, he said, it responded, "Can you prove it?"

Stephanie Hallowitch said her family's well water is no longer safe to even allow her children to run through the sprinklers.

"I urge the EPA to help my family and other <u>families</u> living near drilling to get answers to their questions," she said. The research, she continued, must be done "to protect other <u>families</u> before it is too late and they are in our situation."

The fracking process is currently exempt from federal regulation, and instead states apply their own rules to it.

The oil and gas industry steadfastly defends it as having been proven safe over many years and says it is a crucial tool if the country is going to harvest its gas reserves at a time when natural gas is emerging as a greener energy alternative to coal or oil.

Advancements in horizontal drilling and <u>hydraulic fracturing</u> technology over the past decade have significantly increased the yield and economic viability of shale gas wells. The combination also is demanding larger amounts of water used in each well. Shale drilling is viewed as so lucrative that international exploration companies are investing billions of dollars in the pursuit.

James Erb, of the American Petroleum Institute, which represents major oil and gas producers, told the EPA that the sound application of fracking causes no significant risk to human health, drinking water sources or the environment. Lou D'Amico, president of the Pennsylvania Independent Oil & Gas Association, made up of hundreds of businesses, said that no example exists of fracking having polluted ground water and that the EPA study should include a review of complaints lodged to state-level agencies and how they were investigated.

"The controversy is one based on media-generated public hysteria and perception, not science, fact or evidence," he said.

Canonsburg is at the heart of hundreds of Marcellus Shale wells that began to be drilled in earnest in 2008. Some geologists say the vast Marcellus Shale region could become the nation's largest <u>natural gas</u> field.

Already, about 1,500 Marcellus Shale wells have been drilled in Pennsylvania in barely two years, and thousands more are expected, transforming areas of the state. Numerous landowners are getting paid to lease their land for drilling or are receiving royalty checks from producing wells. Meanwhile, many industries such as steel pipe makers and haulers are seeing huge new demand from drilling companies.

But many landowners are coming forward to tell stories about spoiled well water.

The EPA's \$1.9 million study is expected to yield preliminary results by the end of 2012, Fred Hauchman, director of the EPA's Office of Science Policy, told attendees at the outset.

Hauchman promised to reach out to experts and study a wide variety of water sources, and he said an advisory board of scientists has told the agency to focus on the impact on water quality and quantity.

EPA takes new look at hydraulic fracturing

By Marc Levy & Mary Esch, Associated Press July 23, 2010

Workers operate a natural gas drilling operation for Chesapeake Energy Corp. in Bradford County, Pa., in April. Companies are spending billions to dislodge natural gas from a band of shale-sedimentary rock called the Marcellus Shale. DANIEL ACKER/Bloomberg



HARRISBURG, Pa. — So vast is the wealth of natural gas locked into dense rock deep beneath Pennsylvania, New York, West Virginia and Ohio that some geologists estimate it's enough to supply the entire East Coast for 50 years.

But freeing it requires a powerful drilling process called hydraulic fracturing, or "fracking," using millions of gallons of water brewed with toxic chemicals, which some fear could pollute water above and below ground and deplete aquifers.

As gas drillers swarm to this lucrative Marcellus Shale region and blast into other shale reserves around the country, the U.S. Environmental Protection Agency is taking a new look at the controversial fracking technique, currently exempt from federal regulation. The \$1.9 million study comes as the nation reels from the Deepwater Horizon environmental and economic disaster playing out in the Gulf of Mexico.

Hydraulic fracturing, first used commercially in 1949 by petroleum services giant Halliburton Co. of Houston, was developed to eke gas and oil from impermeable rock. Water mixed with chemicals and sand is injected at high pressure to fracture shale, the sand holding fractures open so gas can flow up the well.

Each frack job uses an average of 4 million gallons of water, delivered to a well site by hundreds of tanker trucks. Some of the "produced" wastewater remains in the well — estimates range from 20 percent to 90 percent. What comes back up the well — briny, chemical-laden and possibly radioactive from exposure to naturally existing radon underground — is usually stored in open pits until it's trucked to treatment plants or underground injection wells.

The oil and gas industry steadfastly defends the process as having been proven safe over many years as well as necessary to keep the nation on a path to energy independence. Studies have "consistently shown that the risks are managed, it's safe, it's a technology that's essential ... it's also a technology that's well-regulated," said Lee Fuller, director of the industry coalition Energy In Depth.

But because of the oil spill, conservation groups say the drilling industry has lost its credibility and the rapid expansion of shale drilling needs to be scrutinized.

"People no longer trust the oil and gas industry to say, 'Trust us, we're not cutting corners,'" said Cathy Carlson, a policy adviser for Earthworks, which supports federal regulation and a moratorium on fracking in the Marcellus Shale.

Just six years ago, an EPA study declared the fracking process posed "little or no threat to underground sources of drinking water" and with that blessing, Congress a year later exempted hydraulic fracturing from federal regulation.

Now the agency, prodded by Congress even before the gulf disaster and stung by criticism that its 2004 study was scientifically flawed and maybe politically tainted, is holding public hearings about the issues.

An EPA hearing Thursday night in Canonsburg, Pa., drew hundreds of people as it focused on the land lease rush in the Marcellus Shale; another is scheduled Aug. 12 in Binghamton, N.Y.

Similar hearings earlier this month in Fort Worth and Denver looked at issues including gas drilling in the Barnett Shale of Texas, and in Colorado and Wyoming. Natural gas is also being recovered from the Haynesville Shale in north Louisiana, the Fayetteville Shale in northern Arkansas and Woodford Shale in southern Oklahoma.

In Texas, where drillers have sunk more than 13,000 wells into the Barnett Shale in the past decade, fear of the cancer-causing chemical benzene in the air above gas fields from processing plants and equipment has spurred tests by environmental regulators and criticism of the state's safeguards. In Colorado, numerous residents contend gas drilling has spoiled their water wells.

Original Print Headline: EPA looks for drilling link to groundwater pollution

Stakeholders Speak Out to USEPA on Hydraulic Fracturing

July 23, 2010 this post was written by <u>Nicolle Snyder Bagnell</u> and <u>Ariel Nieland</u> Reed Smith Law Firm (Environmental Law Resource)

Reed Smith joined an audience of 1,200 attendees at last night's "Opportunity for Stakeholder Input on Criteria for Selecting Case Studies for Consideration in USEPA's Hydraulic Fracturing Research Study" meeting in Southpointe, PA, just outside of Pittsburgh. The standing-room only event marked the largest turnout yet in this <u>series of</u> <u>public hearings sponsored by the U.S. Environmental Protection Agency (USEPA)</u>. Approximately 600 people attended the first hearing in Fort Worth, Texas on July 8, while nearly 350 attended in Denver, CO on July 13. The last hearing in the series of four will take place in Binghamton, NY on August 12.

USEPA has explained that the purpose of the hearings is to solicit input from community and industry stakeholders on the design of USEPA's upcoming study of the potential impact of hydraulic fracturing ("hydro-fracking")—which involves pumping large volumes of water mixed with frac fluid and sand into geologic formations to extract natural gas—on groundwater and drinking water. To facilitate this goal, USEPA welcomed members of the community to register for two-minute slots of speaking time during which they could address their thoughts on the scope and design of the study, as well as on the potential costs and benefits posed by Marcellus Shale natural gas production in Pennsylvania.

It became clear from the comments of the 130 or so speakers that public concern over the potential adverse environmental and health impacts of hydro-fracking has reached fever pitch. Some concerned community members advocated for a moratorium to be placed on all Pennsylvania natural gas drilling, similar to the one currently in effect in New York state, until USEPA completes its hydro-fracking study (expected sometime in late 2012). Industry supporters expressed fears that over-regulation could chill the significant increases in job opportunities and government revenue expected in Pennsylvania as a result of Marcellus Shale natural gas development and production.

According to USEPA, the study is scheduled to begin in early 2011, with preliminary study results expected in 2012. In addition to conducting the series of four public hearings, USEPA is also soliciting comments from the public via email at hydraulic.fracturing@epa.gov on the following inquiries: (1) where should USEPA prioritize its efforts?; (2) where are gaps in current knowledge?; (3) is there data and information already in existence that USEPA should be aware of?; and (4) are there potential candidate sites or case studies that would be useful for the study?

SEN. CASEY ISSUES STATEMENT FOR EPA FIELD HEARING ON FRACKING

US Fed News July 23, 2010

WASHINGTON, July 22 -- The office of Sen. Bob Casey, D-Pa., has issued the following statement:

U.S. Senator Bob Casey (D-PA) today released the following statement to be read at tonight's U.S. Environmental Protection Agency public listening session in Canonsburg about the proposed study of hydraulic fracturing and potential impacts on drinking water:

"Natural gas drilling in the Marcellus Shale region is a major issue for many towns and communities throughout Pennsylvania. If done in the proper way, natural gas development has the potential to create Pennsylvania jobs, strengthen our State's economy, and reduce our dependence on foreign energy. However, despite its potential benefits, natural gas drilling presents a concern for the people living near these drilling sites.

"We already bear the burden of some environmental legacies, most created in previous generations when Federal regulations that promoted responsible development did not exist. We have old natural gas wells that were not capped and leaked methane into homes in our State. We have acid mine drainage that we spend millions of dollars every year to remediate. There are lessons contained in these examples from which we need to learn.

"Natural gas has played and will continue to play an important role in our energy portfolio as we transition to a new energy future, and we are fortunate to have domestic resources to help meet our growing needs. But I believe it is important to protect the health and safety of Pennsylvanians as we further develop the Marcellus Shale. For this reason, I introduced the Fracturing Responsibility and Awareness of Chemicals (FRAC) Act, S. 1215, that would require that hydraulic fracturing be regulated under the Safe Drinking Water Act. This would ensure that a consistent set of Federally enforceable regulatory requirements are applied to the development of our natural gas resources. The FRAC Act would also require that the natural gas industry provide complete disclosure of the chemical composition of its hydraulic fracturing materials to ensure that if drinking water supplies, surface waters, or human health are compromised, the public and first responders will know exactly with what they are dealing. I view this as a simple matter of citizens having a right to know about any risks in their community.

"Hydraulic fracturing (fracking) involves the use of sometimes toxic chemicals that are injected underground, often in close proximity to underground sources of drinking water. It is the highly variable and unpredictable nature of the process that can lead to the contamination of ground water and drinking water that is of great concern to me.

"Incidents of drinking water contamination where hydraulic fracturing is considered as a suspected cause have not been sufficiently investigated. Some cases where groundwater was contaminated during fracking operations have been attributed to other causes, such as faulty well structure, even if a well failed during the fracking process.

"Every day I hear from Pennsylvanians who worry about their future access to safe drinking water. The protection of underground water sources is especially important to Pennsylvania because we have the second highest number of private drinking water wells in the Nation; three million Pennsylvanians are dependent on private wells to provide safe drinking water to their homes.

"I wholeheartedly commend EPA for undertaking this study on hydraulic fracturing and its effects on drinking water. The reasons for my supporting the Congressional request for this study are many. Recent incidents in the State raise the question of whether the necessary steps have been taken to protect Pennsylvania families and communities against the detrimental side effects of drilling.

"For example, in September 2009, there was a surface water contamination incident in Susquehanna County, Pennsylvania. According to the Pennsylvania Department of Environmental Protection (DEP), between 6,000 and 8,000 gallons of hydraulic fracturing fluid leaked from a pipe at a drill site and contaminated the surrounding area and a wetland in Susquehanna County. There were two separate spills on the same day. The first spill in the afternoon leaked 25 to 50 barrels of hydraulic fracturing fluid and the second spill in the evening leaked 140 barrels.

"In addition to incidents in Susquehanna County, there have been other contamination events across Pennsylvania. Water wells in Washington County, and other counties, have tested positive for chemicals above EPA's screening levels. A gas well in Clearfield County blew out post-fracturing, sending thousands of gallons of flowback water into the environment.

"I know that Pennsylvania has been permitting and managing natural gas development with the paramount goal of protecting the environment and public health. I commend the State DEP for taking steps to strengthen its regulations regarding drilling, and adding additional DEP staff to assist with the increased interest in gas drilling in the state.

"However, it is important for EPA to continue to investigate and respond to water contamination in order to protect human health and the environment. Given the numerous reported cases of groundwater contamination potentially related to hydraulic fracturing, a robust analysis of the impact is warranted. We need to know to what our citizens are being exposed, and the risk that hydraulic fracturing poses to our water. Drinking water is a critical resource, and we cannot afford to take unnecessary risks with human and environmental health."

For any query with respect to this article or any other content requirement, please contact Editor at <u>htsyndication@hindustantimes.com</u>

Over 1,000 Attend EPA Hearing on Hydraulic Fracturing Study

July 26, 2010 by <u>cpedler</u> Allegheny Forest Watch http://www.alleghenydefense.org/

July 22nd the U.S. Environmental Protection Agency (EPA) held one of four public hearings for a study on <u>Hydraulic Fracturing</u> that will look for potential relationships between the process and drinking water resources. The EPA held the meeting in a Hotel in the the Southpointe Industrial Park near Canonsburg, Pennsylvania, which



also happens to be the base for Chesapeake Energy, Columbia Gas Of Maryland Inc., CONSOL Energy Inc., EOG Resources Inc., Halliburton, Range Resources, and Reliant Energy. Over 1,000 attended the event according to the <u>Pittsburgh Post Gazette</u>. The majority of the citizen speakers spoke out against the drilling practice and many called for a moratorium. Industry supporters described the outcry against the drilling process as <u>"...anti-capitalist demonization and misinformation...</u>"



Cecil Township Police were present at the event, including two K9 vehicles. Two officers were stationed at the public comment podiums so that they could, according to the night's moderator from *The Cadmus Group, Inc.*, escort those giving public comment back to their seats if they did not stop speaking immediately after their allotted 2 minutes expired. One hundred and thirty speakers gave their input to the EPA.

Bill Belitskus, Walt Atwood, and I attended the event along with many others concerned about the the oil and gas industry's use of Hydraulic Fracturing in Pennsylvania. Myron Arnowitt of Clean Water Action, Peter Wray and Claudia Kirkpatrick of the Allegheny Group of the Sierra Club, Nadia Steinzor of the Earthworks Oil and Gas Accountability Project, and the Green Party's Mel Packer to name a few. Although Police and the



the Hilton Garden Inn manager had no problem with an oil and gas industry demonstration on the sidewalk at the front entrance to the hotel, Police and the Hotel management chased an environmental coalition's press conference around their grounds attempting to interfere with the press event (<u>See Video</u>). Clean Water Action's Myron Arnowitt, who organized the event, eventually persuaded the Police to allow the group to speak with reporters.

Inside, we lined up with the others who wished to speak to get yellow bracelets with numbers showing the order in which we would share our comments with the EPA. Our numbers were keyed to our names and affiliations so that the moderator and the Police escorts could keep track of us as we stood in line waiting for our chance to speak. AP's Marc Levy reported on some of those giving comments,



Darrell Smitsky said five of his goats died mysteriously and, even though state regulators told him the water was safe, his own test showed sky-high levels of manganese and iron. When he blamed the drilling company, he said, it responded, "Can you prove it?"

EPA swaps drilling hearing to Syracuse from Binghamton

BY LAURA LEGERE (STAFF WRITER) Citizen's Voice (Luzeme County)

August 10, 2010

A regional hearing to be held Thursday on a landmark Environmental Protection Agency study of hydraulic fracturing has been moved from Binghamton to Syracuse, N.Y., the agency announced Monday.

The hearings on the controversial natural gas drilling process, which are expected to draw as many as 8,000 participants and protestors including many from Northeast Pennsylvania, will be held in the Exhibit Hall of the Oncenter Complex Convention Center in Syracuse, after the EPA and Binghamton University, the initial host site, disagreed on a venue.

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The three, four-hour information sessions and hearings will be held at the same time they were originally scheduled: 8 a.m., 1 p.m., and 6 p.m. The 300 speaking slots at the event are full, but the agency expects slots will open up because of the venue change.

It will open registration for those slots by phone and online beginning at 10 a.m. Wednesday.

People who preregistered to speak at or attend the event remain registered, according to the EPA, and others who would still like to preregister can do so by Wednesday morning. Walk-in attendees will also be welcome.

The venue was changed after the anticipated crowd size - and the cost of hosting the event - swelled.

Binghamton University released a statement Monday saying that the event is expected to involve 1,200 registered participants, but might have drawn 8,000 people to the campus. The university developed a price based on the expected crowd size "to ensure that the campus would remain cost neutral," it said.

Judith Enck, the administrator of EPA Region 2, criticized that price in a statement, saying it was "more than 500 percent higher than the University's original estimate" and "unacceptable." An EPA official familiar with the situation said the price increased from \$6,000 to \$40,000.

The venue was moved to Syracuse when an alternate location in Binghamton could not be found, she said.

The EPA announced in March that it will conduct a multiyear, \$1.9 million study of the potential for hydraulic fracturing - the process of breaking apart gas-bearing rock with chemically treated water and sand - to harm water quality and public health.

The Syracuse sessions are the largest of four such events that have been held across the country this summer in Colorado, Texas and southwestern Pennsylvania to gather comment about the study's design.

For additional information or to register for the meeting, visit hfmeeting.cadmusweb.com/#Syracuse.

EPA News Release

EPA POSTPONES SYRACUSE MEETING ON HYDRAULIC FRACTURING STUDY, NEW DATES COMING SOON

August 10, 2010

(NEW YORK, NY) After months of work organizing the New York Hydraulic Fracturing public meetings, the U.S. Environmental Protection Agency today announced that the Syracuse meeting, originally scheduled for this Thursday, August 12th at the Oncenter Complex Convention Center, has been cancelled. The Agency now intends to hold a new public meeting on the study in upstate New York in September and will announce the location as soon as it is confirmed.

EPA was forced to cancel this meeting following a conversation this morning with the Onondaga County Executive's office, during which they expressed concerns about the ability to complete preparations for the meeting on such short notice. The last minute change to Syracuse was caused by Binghamton University taking several actions to dissuade EPA from holding the meetings at their campus including increasing the cost from \$6,000 to almost \$40,000. The Agency also reached out to Broome County officials in Binghamton to hold the meeting at the Arena and they pulled out of negotiations with EPA. The Agency searched a 40 mile radius from Corning to Ithaca to Cortland to Oneonta but no options were available for Thursday. Onondaga County officials did not feel they could arrange the necessary security for the potential protests and rallies outside the meeting itself, and EPA respects and understands their decision.

From the beginning, EPA has been committed to ensuring that the public has an opportunity to express their opinions on the study. There are serious concerns about whether the process of hydraulic fracturing impacts drinking water, human health and the environment. To address those concerns and strengthen our clean energy future, EPA announced in March that it will study the potential adverse impact that hydraulic fracturing may have on drinking water and would be seeking input from people across the country. EPA has held had three successful meetings in Fort Worth, Texas, Denver, Colorado and Canonsburg, Pennsylvania, where more than 1,200 participants attended, and the Agency is committed to holding a similar meeting in upstate New York.

EPA delays final hearing on hydraulic fracturing

By Sarah Hoye, CNN August 13, 2010

Switzer is among 15 residents who filed suit, saying Cabot Oil & Gas Corp. contaminated their water.

Philadelphia, Pennsylvania (CNN) --

The U.S. Environmental Protection Agency is on the hunt for a new location



to hold its final public hearing on a planned study of hydraulic fracturing, the controversial process used to extract natural gas from underground, agency officials say.

"We wanted a central location and wanted to keep it in the area where the drilling has been proposed. We're leaving no stone unturned," said agency spokeswoman Betsaida Alcantara. "We are pushing to make an announcement as swiftly as possible."

In July, public hearings were held in Fort Worth, Texas; Denver, Colorado; and Canonsburg, Pennsylvania, to help determine how the EPA will conduct the study.

A final public hearing was slated for Thursday at Binghamton, New York, but on Monday it was rescheduled for Saturday in Syracuse, New York, and on Tuesday it was postponed indefinitely, agency officials said. About 1,800 people had registered to speak for two minutes each, Alcantara said.

Both of the proposed venues, Binghamton University and Syracuse's Oncenter Complex, expressed concern about hosting an event estimated to attract 8,000 people.

"The last-minute change to Syracuse was caused by Binghamton University taking several actions to dissuade the EPA from holding the meetings at its campus, including increasing the cost from \$6,000 to almost \$40,000," the EPA said in a statement Tuesday.

I've worked for EPA for a long time, I was here in the early '80s, this is a case that is unusual. --Jeanne Briskin, EPA liaison on hydraulic fracturing The university issued a statement putting the cost at \$32,000, which it said included "all of the estimated operational costs that the university believed it would incur in order to ensure that activities associated with these meetings would be carried out in a safe and orderly manner."

The EPA now is planning to hold the meeting in September at a location in upstate New York that will be announced as soon as it is confirmed, Alcantara said. The meeting is open to industry stakeholders and the general public. Victoria Switzer, who registered to speak at Thursday's hearing, is among 15 residents of the northeastern Pennsylvania township of Dimock who filed suit in November 2009 against Cabot Oil & Gas Corp., alleging it contaminated their well water. Cabot solicited Switzer for a gas lease in 2006, according to court records.

Changing the location and then postponing the meeting was upsetting but did not come as a total surprise, Switzer said.

"I had a feeling it was going to be big, but it's absurd," she said.

"Who's leading this pack?" asked Switzer, a former schoolteacher. "I am against drilling as it's going now. They need to step back, call a moratorium and do some serious geological studying."

Julie Sautner of Dimock planned to attend the EPA meeting with her husband, Craig, a cable splicer, and 17-year-old daughter Kelly. They also are a part of the lawsuit.

"We might seem small, but we're here, too, and we're fighting the industry not to pollute, and were fighting for the future generations," said Sautner, who added she has been unable to use her well water for nearly two years. "We're not mad at anybody but we're stuck here."

The EPA announced in March that it would study the potential adverse impact that hydraulic fracturing may have on drinking water, human health and the environment, agency officials said.

"People have raised important concerns that require our attention," said Jeanne Briskin, EPA liaison on hydraulic fracturing from the agency's the Office of Research and Development. "I've worked for EPA for a long time, I was here in the early '80s, this is a case that is unusual."

Hydraulic fracturing is used by gas producers to stimulate wells and recover natural gas from sources including coalbeds and shale gas formations, said Briskin. The process requires the injection of fluids -- generally water and chemical additives.

"We need to have a baseline to get an idea of what the effects of that are, and if you're doing monitoring you have to know what to look for," she said. "At the federal level there is no requirement that companies have to tell us what they use and what concentrations." The EPA plans to complete the study design by September 2010, begin the study in January 2011 and release initial results by late 2012, she said.

"This is an expedited process; it usually takes longer," Briskin said of the timeline. "As we get results, we're going to be reporting them."

EPA defers hearing on hydraulic fracturing

By Jerry Mazza Online Journal Associate Editor

Aug 16, 2010

<u>The New York Times</u> and <u>Catskill Mountainkeeper</u> have reported that the EPA's last hearing on fracking, held in Canonsburg, Pa., in July drew over 1,200 people without a hitch. Unfortunately, the follow-up, all-day hearing that had been scheduled for last Thursday at the Oncenter Complex Convention Center in Syracuse, NY, was cancelled last Tuesday.

This was after Onondaga Country officials expressed "concern" that they were not given enough time to ready security in anticipation of "rallies" and "protests" at the event.

This is in spite of the fact that successful meetings have been held around the country on the impact of "fracking," the nickname for the eco-unfriendly natural gas drilling method known as hydraulic fracturing. The Environmental Protection Agency (famous for okaying the 911 Ground Zero site for first responder workers to work in -- the workers who are now suffering fatal illnesses), this same EPA is now claiming it needs an "acceptable" site for a hearing and for the "passionate" crowds that will show up for it.

Of course, many people are passionately against fracking. It poisons water used in the process with chemicals. It poisons water supplies, the land it is used on, the air near it, and helps to destroy landscapes. All this so natural gas drillers can continue to profit from the desecration of the environment, and entire communities can suffer illnesses from "drinking the waters" fouled by fracking. One wonders whose side the EPA is on, the profiteers, those doing the "fracking," or the people in communities across America suffering from its effects?

The drillers are passionate, too - passionate about making money at untold costs to others in the community. Thus, the hearing had been moved to Syracuse after the original venue Binghamton University, raised its prices for the alternate site from \$6,000 to \$32,000, causing the university to back off to supposedly protect its solvency.

Judith Enck, the EPA's regional administrator in New York, claimed that Binghamton University had been agreed on as a site last month but all of a sudden decided to change the meeting's location to a room, a room mind you, with no air conditioning, in the height of August's dog days, for conceivably thousands of people.

Enck, with a flair for understatement said, "It is regretful that Binghamton University has put the EPA, and more importantly, thousands of people on both sides of the issue who had planned to attend this meeting, in this inconvenient and difficult position . . . Universities are places where civic participation should flourish, especially on a major environmental topic like hydraulic fracturing's potential impact on drinking water." For sure!

The university officials claimed that they had raised the price to cover security and logistical costs, that is after consulting with local law enforcement officials, special interest groups and others that claimed as many as 8,000 people could show up for the hearing, far more than the peaceful 1,200 participants that the EPA had pre-registered for the event. In the estimation of this writer, these are pure scare tactics designed to have this meeting put off until September, and to have passage of the final bill delayed.

Our very own Governor Paterson has vanished from the issue as usual, and has no alternatives to offer. The EPA is supposedly hunting for a new site "and hopes," "hopes" mind you, to hold the "hearing," not the final passage of a permanent bill against "fracking" in September.

As you may or may not now, hydraulic fracturing is a form of natural gas drilling that includes injecting millions of gallons of chemically treated water deep into the ground to release the natural gas. In doing so, the water becomes poisoned with the various chemicals, and can contain so much natural gas in it that it will burn if a match or cigarette lighter is put to it. That is the kind of hazard we are talking about.

The cancellation of this new meeting disappointed many of the people whose planned attendance had supposedly stirred some concern for the host venues. Roger Downs, the Sierra Club's senior staff member in New York said that environmental and grassroots groups had planned to bus in people from around the state to the hearing to hold a rally. Isn't this a constitutional right, to rally?

Downs said the rally was intended to signal concern over drilling but also support for the EPA, which is "soliciting testimony" for a study on the potential impact of hydraulic fracturing on drinking water. The fact is, the impact is awful, as witnessed from more than one million wells worldwide as the drillers create fractures extending from a wellbore into targeted rock formations.

Hydraulic fracturing was in fact "exempted by the Bush-Cheney Energy Policy Act of 2005 from the United States" basic environmental regulations, including the Safe Drinking Water Act and Clear Air Act," as reported in the HBO documentary *Gasland*, by filmmaker Josh Fox, who also estimates that some 450,000 wells in the U.S., using some 40 trillion gallons of chemically infused water, have been contaminated by the drilling, with much of this water left seeping or injected into the ground.

This has been accomplished by thousands of rigs in some 34 states, drilling into huge shale fields, tight sands or coal bed seams containing gas deposits trapped in the rock. Each well calls for the use of fracking flue -- chemical cocktails consisting of 596 chemicals, including carcinogens and neurotoxins, as well as one to 7 million gallons of water, which are now infused with the chemicals.

This could lead to the poisoning of the Delaware River near the area containing the payload of natural gas in the tri-state area, called the Saudi Arabia of natural gas. An offer of \$100,000 was made to Josh Fox for his swath of land, which he turned down to

go across the country and more closely examine this ecological hazard. Every American should be aware of this potential ecological disaster, and the political machinations now being attempted to forestall discussion and passage of a no-fracking bill.

Jerry Mazza is a freelance writer and life-long resident of New York City. Reach him at <u>gvmaz@verizon.net</u>. His new book, "State Of Shock: Poems from 9/11 on" is available at <u>www.jerrymazza.com</u>, <u>Amazon</u> or <u>Barnesandnoble.com</u>. He has also written hundreds of articles on American and world politics as an Associate Editor of Online Journal.