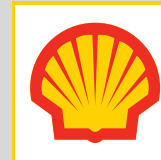


THE FRACKING DEBATE

NAME _____



As the United States prepares to meet the energy demands ahead, we must consider the sources and technologies that can best increase our domestic energy supply with the least negative impact on our environment. Like many energy technologies, hydraulic fracturing (also known as fracking), which is part of the process for obtaining natural gas, has environmental, economic, and even political benefits and trade-offs. The article below illustrates both the benefits and trade-offs of fracking in a small Western Maryland town. Read the article. Then complete the questions and chart that follow.

Part 1: THE BENEFITS AND TRADE-OFFS OF FRACKING

Masters, Greg (November 28, 2011) Capital News Service, The Star Democrat. "Fracking debate hits home in Western Md." Retrieved from:

http://www.stardem.com/news/state_news/article_f00cb389-2599-5ec1-990f-1181b7c039b7.html

GARRETT COUNTY Garrett County resident Dana Shimrock was relieved when Maryland put the brakes on drilling in the natural gas-rich Marcellus Shale before a single well could be drilled.

"They had just completed a well not far from me across the border in Pennsylvania," Shimrock said. "I knew they were ready to roll over here into Maryland, and I really felt that we weren't ready for that."

Shimrock is one of many Western Maryland residents concerned about the controversial gas extraction process known as hydraulic fracturing, or "fracking," which some say threatens the environment and public health.

But many others in Maryland, including Del. Wendell Beitzel, R-Garrett and Allegany, believe the potential economic benefits of Marcellus Shale drilling outweigh the environmental risks.

Landowners will get "huge sums of money" from leases and gas royalties, drilling will bring jobs and Garrett County will benefit from a severance tax on the gas that is produced, Beitzel said.

"Now we have an opportunity to lift this area up, as we are witnessing in some of our neighbor states," he said.

The public debate over fracking has swept across Pennsylvania, New York, Texas, Colorado and Wyoming, where reserves of natural gas lie deep underground, trapped bubble-like in shale formations, as well as North Dakota and Montana, home to the oil-bearing Bakken Formation.

Energy companies have made shale oil and gas deposits profitable to explore by drilling horizontally into the shale layer and injecting a pressurized mix of water, sand and chemicals to crack open the rock, releasing trapped oil or gas.

(cont.)

This “fracking” process has led to a boom in shale gas, which has increased as a share of domestic natural gas production from 4 percent before 2005 to more than 30 percent through October, according to the Energy Information Administration.

But the boom has been accompanied by claims of drinking water contamination and other environmental concerns.

The Marcellus Shale spans 95,000 square miles from Tennessee to New York and underlies a portion of Western Maryland including all of Garrett County and part of Allegany County at depths of up to 7,000 feet.

Residents of western Maryland, where permits for Marcellus Shale drilling have not been approved or denied by the state, can see fracking close-up by looking across the border into Pennsylvania or West Virginia.

Shimrock, who is the library director at Garrett College, said a Pennsylvania friend’s water well overflowed with sludge when fracking took place nearby. Another friend told her that his family had been promised 30 years’ worth of gas royalties from the well on their land, but after three years the royalties have decreased drastically.

“Unfortunately, I haven’t seen a lot of positive, and much negative, in the way of the impact that this has had on communities and on individuals who have agreed to this kind of procedure on their properties,” said Shimrock, who now regrets leasing gas rights to her 50-acre farm in 2006.

In June, Gov. Martin O’Malley issued an executive order calling for a study of Marcellus Shale drilling by August 2014 and creating a 14-member advisory commission to develop recommendations.

The study period makes it unlikely that Maryland will allow energy companies to drill in the Marcellus Shale any time soon.

“The whole process set up by the executive order and the commission was more one to delay this activity,” said Drew Cobbs, executive director of the Maryland Petroleum Council. *“The length is way longer than it needs to be.”*

A poll commissioned by Cobbs’ organization and conducted by Gonzales Research and Marketing Strategies in September found 74 percent of Maryland voters and 70 percent of Western Maryland voters favored the development of natural gas resources in western Maryland.

But whether Maryland will allow drilling is a “very open question,” said Del. Heather Mizeur, D-Montgomery, who is on the governor’s commission.

“Personally, I come at it probably leaning more towards the side of I would rather there not be any drilling,” she said.

Mizeur was the lead sponsor of a bill in the last legislative session that would have imposed a moratorium on fracking until completion of a two-year study. The bill stalled in the state Senate after passing the House of Delegates.

Beitzel, who opposed Mizeur’s bill, worries the delay will make Maryland less competitive than neighboring states with much larger shares of the Marcellus Shale.

“The oil companies will be reaching their production levels that are necessary in the market in order to meet the demand. And if they do that, they’re just going to bypass Maryland,” he said.

(cont.)

SAFETY AND ENVIRONMENTAL IMPACTS WEIGHED

Fracking is an unconventional gas extraction method that carries risks, such as well blowouts, fracking fluid spills and unsafe disposal of flowback the toxic, briny wastewater that rises to the surface. The Environmental Protection Agency recently announced it will start developing standards for the disposal of fracking wastewater.

While claims of drinking water contamination are common near fracking sites, industry officials counter that fracking takes place thousands of feet below water sources.

"We take our operations seriously, and in doing so require that our wells are constructed in such a manner that the aquifer is fully protected, as well as ensuring that everything inside the pipe stays inside the pipe," said George Stark, director of external affairs for Cabot Oil and Gas, which has active wells in Pennsylvania.

Proponents argue that natural gas is a cleaner form of energy than coal or oil and will help the United States achieve energy independence.

"We need to cut down on our reliance for foreign oil," Beitzel said. *"And if you consider natural gas, when you burn natural gas, it produces 60 percent or thereabouts less (carbon dioxide) emissions than gasoline or oil-based fuel."*

But the diesel-powered trucks, diesel generators and compressor stations associated with fracking can cause significant air pollution, said Carnegie Mellon University professor Allen Robinson.

"The concerns are, what are the emissions associated with the production of the gas, which I think is often not factored in when people are giving the short sound bite, 'It's a cleaner-burning fuel than coal,'" Robinson said.

In Wyoming, for example, smog associated with shale oil and gas production has become a serious problem, he said.

The greenhouse gas footprint of fracking has attracted the attention of scientists and environmentalists. Natural gas consists mostly of methane, a potent greenhouse gas, and some methane escapes during shale gas production.

"Best practices" to address some of these concerns will be included in recommendations O'Malley's commission is scheduled to complete by next summer.

Drillers in Maryland may be required to "flare" leaked methane, turning it into carbon dioxide, a less potent greenhouse gas, said David Vanko, a Towson University professor and chair of the commission.

"There are practices that you can undertake at the well head to basically minimize and even eliminate that leakage," Vanko said.

Wait and see for landowners

The Maryland Department of the Environment has received eight Marcellus Shale drilling permit applications, most in Garrett County.

In recent years, energy companies have also sent "landmen" to talk with landowners in western Maryland about leasing their property for Marcellus Shale gas production. About 127,000 acres of land in Garrett County almost a third of the county have been leased since 2007.

(cont.)

Many of those who signed the first leases in 2006 and 2007 now believe they did not have enough information and were undercompensated, said Paul Roberts, a small business owner in Garrett County and a member of O'Malley's commission.

"Because it was so difficult to get information about how these things worked, people didn't know," Roberts said. "And so hundreds of people signed and agreed to leases that paid them \$5 or \$7 an acre at a time when, in Pennsylvania, a typical price was \$3,000 an acre."

Shimrock was among those who agreed to receive \$5 an acre per year when she signed her five-year lease, she said.

"The people who live in my community feel that we were really, I'll say ripped off," she said. "Also feel a little bit chagrined that we really should have known better."

Shimrock joined an organization called Citizen Shale to warn other landowners to educate themselves about fracking before signing a lease.

Garrett County resident E. Marshall Stacy said during an October Marcellus Shale advisory commission meeting that landowners should consult with lawyers and the local farm bureau to negotiate leases with fair compensation and environmentally protective provisions.

Stacy favors drilling he would use the lease money and gas royalties to help his children start a summer camp on his farm and said the potential benefits outweigh the risks.

"If the guys come and are drilling at my place, I'm going to be right there watching them, and making sure they're not spilling something or the trucks are not leaking as they come and go," Stacy said.

1. What is hydraulic fracturing (or fracking)? _____

2. Why and how is this technology used? _____

3. Where is this technology most often used? _____

4. Based on the article (and/or additional research you've done), list the economic, environmental, and political benefits and trade-offs of fracking. _____

	Benefits	Trade-offs
Economic		
Environmental		
Political		

(cont.)

5. If you lived in this Western Maryland town, would you be in favor of or against fracking? Justify your response. _____

Part 2: TOWN MEETINGS

6. Imagine that you and your group represent one of the stakeholders from the list below in the Western Maryland debate. You have been invited to testify in front of the 14-member advisory commission referenced in the article to share your views and opinions on fracking in your community. Your assignment includes the following:

- a. Prepare a three- to five-minute speech that outlines your opinions on fracking, as you believe the stakeholder would.
- b. Include statistics, facts, and evidence to support your position. Consider environmental, economic, and political benefits and trade-offs, as appropriate to your stakeholder's opinion.
- c. Include at least one visual that supports your testimony. The visual could be a poster, graph, PowerPoint presentation, simulation, model, photograph, etc.
- d. Select one group member to present the actual testimony to the commission.

Stakeholder 1: You are a farmer with natural gas reserves on your property. The recession has hit you hard and you are eager to earn money/royalties for the use of your land. However you want to make sure that the process is safe and that there is no water contamination.

Stakeholder 2: You are a representative from one of the energy companies that has expertise in fracking and have been hired to unlock natural gas in Garrett County if the plan moves forward. You know that natural gas is plentiful, accessible, and cleaner-burning, and you are eager to begin drilling. You know that your company uses extensive safety measures in drilling, producing, and transporting natural gas. You are willing to share all of the chemicals and processes your company uses and to detail your processes to the committee.

Stakeholder 3: You are the mother of four young children who lives near a fracking site. You are very concerned about the possible contamination of water that you have read about in other areas where fracking has taken place.

Stakeholder 4: You are a local government official who knows that proceeds from fracking can help to lift the area out of a deep recession and will help the country achieve energy independence by unlocking huge reserves of natural gas.

Stakeholder 5: You are a representative of a local environmental organization and are concerned about the possible environmental effects of fracking. You have read about possible water contamination and earthquakes. You would like the advisory commission to recommend a period of study to determine the impact of fracking before moving ahead.