

OIL & GAS JOURNAL[®]

[Close](#)

Pennsylvania Marcellus rules protect environment, official says

Nick Snow

OGJ Washington Editor

WASHINGTON, DC, Oct. 11 -- The Marcellus shale represents an amazing opportunity for Pennsylvania, and the state's government has responded by enacting what probably are the nation's toughest regulations covering well casing and cement, hydraulic fracturing fluid ingredient disclosures, and pressure tests before any well is drilled, a state environmental official said on Oct. 7.

"We have expanded our oil and gas staff, not only in the three regions where the Marcellus is located, but also to handle air emissions, particularly from compressors, waste inspectors, and water quality inspectors," George Jugovic Jr., regional director of the Pennsylvania Department of Environmental Protection's southwest regional office in Pittsburgh, said during a shale gas discussion at the US Energy Association's annual energy supply forum.

"We have about 5,000 Marcellus wells drilled already," he continued. "We have not had one incident where frac waters were transported directly to groundwater aquifers. There have been some cases of transportation through old wells and some incidents of naturally occurring methane. While those have been problems, they have been easily corrected once the source was identified and the flow cut off."

More states with significant shale gas deposits will need to address water matters aggressively, suggested F. Robert McGregor, a water engineer at AMEC Inc. in Denver. "In the Marcellus, this involves a part of the United States which is not as familiar with the oil and gas industry as the Midcontinent, Gulf Coast, and Rocky Mountains, and is much more populated," he said.

"The industry has long understood that it needs to serve communities where it operates," McGregor continued. "Recently, it has started to recognize that it needs to be much more visible in doing it. It has to manage risks and do it very publicly. Needs must be considered more comprehensively than one well pad at a time. Everyone needs to look at where accidents may happen and try to prevent them."

Series of responses

Jugovic said Pennsylvania's DEP has water biologists who assure that no more than 10% of a stream's flow during drought conditions will be removed for a fracing operation. Producers also have responded with aggressive recycling because water treatment is so expensive, he indicated, adding that air emissions remain a major issue.

“The well pad’s impacts are fairly limited,” he said. “Getting gas from there to the marketplace poses a bigger problem. We have a fairly large proliferation of compressor stations, some of which are hooked directly into processing plants. Nitrogen oxide emissions at each of these compressor stations can be fairly significant—about 500 tons/year. Multiply that with the number of stations which will be needed, and we face a challenge not to backslide from the progress we’ve made cleaning up our coal-burning steel plants.”

Producers have been working hard on their shale gas production practices, not only in cementing and well casing but also in water management, reported Lee O. Fuller, vice-president of government relations at the Independent Petroleum Association of America. “The industry has become more attuned to the possibility that private water wells can have problems, especially if they’re drilled into supplies with naturally occurring methane which can take years to make its presence known,” he said.

Fuller explained that shale gas producers’ fracturing fluid primarily uses water, sand, and a combination of chemicals which help the fluid work during the often complex and changing fracturing process down a horizontal well bore thousands of feet deep and along a horizontal bore several hundred feet farther. Environmental opponents first seized on miniscule amounts of diesel fuel in the mixture as hazardous in the 1990s when a US Environmental Protection Agency scientist erroneously characterized it as a methyl tertiary butyl ether threat to drinking water supplies, he said.

Frac fluid suppliers often regard information about their product’s ingredients as proprietary, Fuller said. “As producers, we don’t have the right to disclose that information,” he said.

IOGCC-GWPC agreement

Fuller noted that the Interstate Oil & Gas Compact Commission, which represents governors in 38 producing states, and the Ground Water Protection Council, which is made up of states’ water regulatory agencies, signed a memorandum of understanding on Sept. 29 to jointly address problems. GWPC’s directors also unanimously adopted a resolution calling for complete disclosure of chemicals used in shale gas well fracturing.

Fuller conceded that with about 970,000 oil and gas wells operating domestically, “problems can arise.” He added, “When they do, producers need to recognize whether they are responsible, and solve them.” He pointed out that the US Environmental Protection Agency conducted a fairly straightforward study of fracturing in 2004 which was attacked as inadequate and consequently is being fairly cautious in its current review.

Dusty Horwitt, senior counsel with the Environmental Working Group in Washington, said he hopes EPA at least includes on-the-ground water tests this time, which have not been a part of any fracturing study so far. “Our concern is with the entire oil and gas operation, not just fracturing,” he said. “There are risks across the process. We believe there shouldn’t be drilling near water supplies. There have been too many incidents.”

Horwitt added, “Places like Pennsylvania have old oil and gas wells which could serve as conduits for fracturing fluids to migrate. We’d like to see better testing of water near production sites before drilling begins.”

McGregor agreed that problems have occurred. “The ones I’m familiar with have involved privately owned drinking water wells,” he said, adding that one solution would be to more fully analyze area water supplies. “The oil and gas industry has a wealth of information in its testing and production logs which it could provide,” he said. Technology already exists to keep frac fluid from migrating through formations’ cracks and fissures, he added.

Contact Nick Snow at nicks@pennwell.com.

To access this Article, go to:

<http://www.ogj.com/ogj/en-us/index/article-tools-template.articles.oil-gas-journal.drilling-production-2.2010.10.pennsylvania-marcellus.html>