

# Can Fracking Pollute Water? Study Tries to Answer

KEVIN BEGOS, Associated Press

PITTSBURGH (AP) — A new study being done by the Department of Energy may provide some of the first solid answers to a controversial question: Can gas drilling fluids migrate and pose a threat to drinking water?

A drilling company in southwestern Pennsylvania is giving researchers access to a commercial drilling site, said Richard Hammack, a spokesman for the National Energy Technology Laboratory in Pittsburgh.

The firm let scientists conduct baseline tests, allowed tracing elements to be added to hydraulic fracturing fluids and agreed to allow follow-up monitoring. That should let scientists see whether the drilling fluids move upwards or sideways from the Marcellus Shale, which is 8,100 feet deep at that spot.

"It's like the perfect laboratory," Hammack said.

Hammack said he believes this is the first time such research has been done on a commercial gas well.

"Conceptually, it sounds like a really great idea," said P. Lee Ferguson, a Duke University civil and environmental engineering professor who is not involved with the project. "I have wondered about this since I started thinking about fracking. Which compounds are mobile and which aren't?"

The Marcellus Shale is a gas-rich rock formation thousands of feet under large parts of Pennsylvania, New York, Ohio and West Virginia. Over the past five years, advances in drilling technology made the gas accessible, leading to a boom in production, jobs, and profits — and concerns about pollution.

The gas is pulled from the ground through a process called hydraulic fracturing, or fracking, in which large volumes of water, plus sand and chemicals, are injected deep underground to break shale apart and free the gas.

Environmentalists have claimed the fluids associated with drilling could rise and pollute shallow drinking water aquifers. The industry and many government officials say the practice is safe when done properly, but there have also been cases where faulty wells did cause pollution.

Ferguson cautioned that no single study will answer all questions about fracking and the potential for pollution.

"The complicating factor is some of the compounds don't act in the same way

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underground," he said of fracking fluids, as well as the fact that there are substantial differences in geology throughout the Marcellus region.

Hammack said the study is designed to see whether the fracking fluids or naturally occurring salty brine from deep underground reach a testing area located at about 4,000 feet.

"We're just looking for any indication of communication between the two zones," he said.

If the fluids do rise, more research will be needed, he said. If they don't reach the 4,000-foot level, there will be no need to test drinking water aquifers, which are closer to the surface.

Other researchers have asked the same question, but have done so using computer simulations or testing not involving commercial wells. Both methods mean there's considerable uncertainty about the accuracy of the projections.

For example, a study released by other Duke researchers this week suggested that deep, salty brine fluids could migrate upwards through natural pathways, but made no estimate of whether that might take years, decades or centuries.

Hammack said the new project took off after he told someone in the industry about research DOE hoped to conduct.

"They said, 'We have that exact situation,'" Hammock said of the response from the firm, which he didn't identify.

Hammack said the monitoring will go on for at least a year, but that the department will release information earlier if there's proof the fluids migrate to the upper testing level. Some background data from the research is also expected to be available later this year.

Patrick Creighton, a spokesman for the industry's Marcellus Shale Coalition, said in a statement that the industry supports partnering with universities, government agencies and others to protect the environment.

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