

# E.P.A. Links Tainted Water in Wyoming to Hydraulic Fracturing for Natural Gas

By KIRK JOHNSON  
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DENVER — Chemicals used to hydraulically fracture rocks in drilling for [natural gas](#) in a remote valley in central Wyoming are the likely cause of contaminated local water supplies, federal regulators said Thursday.



The New York Times

The draft report, after a three-year study by the [Environmental Protection Agency](#), represents a new scientific and political skirmish line over whether fracking, as it is more commonly known, poses a threat in the dozens of places around the nation where it is now being used to extract previously unreachable energy resources locked within rock.

The study, which was prompted by complaints from local residents about the smell and taste of their water, stressed that local conditions were unusual at the site, called the Pavillion field, in that the gas wells were far shallower than in many other drilling areas around the country. The shallow depth means that natural gas itself can seep upward naturally through the rock, and perhaps into aquifers.

But the suite of chemicals found in two test wells drilled at the site, the report said, could not be explained entirely by natural processes. The agency's analysis of samples taken from deep monitoring wells in the aquifer indicated the presence of synthetic chemicals, like glycols and alcohols consistent with gas production and hydraulic fracturing fluids, benzene concentrations well above standards in the Federal Safe Drinking Water Act standards, and high methane levels.

Also complicating the inquiry is the Pavillion field's long history. The oldest wells there were drilled 40 years ago or more, and chemicals that might have been used were not required to be listed or reported to anyone.

The energy industry has long stressed that [fracking](#) and water contamination have never been definitively linked.

"When considered together with other lines of evidence, the data indicates likely impact to ground water that can be explained by hydraulic fracturing," the draft study said. And perhaps just as crucially, the evidence also suggested that seepage of natural gas itself had increased around the drilling sites. Natural gas is often mixed with other elements, including methane, which can taint water supplies.

"Data suggest that enhanced migration of gas has occurred within ground water at depths used for domestic water supply," said the draft study, which will now be sent for scientific peer review and public comment.

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A spokesman for Encana Oil & Gas (USA), which bought the Pavillion field in 2004 and drilled some of the approximately 169 wells there, said the E.P.A.'s science was inconclusive. Encana's parent company is based in Calgary.

"What we have here is not a conclusion, but a probability — and based on the facts, not a good probability," said Doug Hock, the company's spokesman. He said that enhanced migration of gas as a result of drilling was unlikely in the Pavillion field, since drilling had reduced pressure in the underlying rock, thus reducing forces that can lead to gas seepage. And finding methane and benzene in two deep test wells drilled for the study, he said, is what you would expect in a gas-rich zone.

"Encana didn't put those there, nature did," he said.

The governor of Wyoming, Matt Mead, also said in a statement that the E.P.A.'s conclusions were "scientifically questionable" and not based on enough data. Mr. Mead, a Republican, called for more testing by the E.P.A., in conjunction with a state group of residents, state and federal agencies, and Indian tribes already at work looking into questions about Pavillion's water supply.

Wyoming, which is dependent on oil and gas drilling, along with coal mining, as anchors of its economy, will also be among the peer reviewers of the E.P.A.'s draft, the governor's statement said. The chairman of a local Pavillion residents' group — about 200 people, mostly involved in farming and ranching, who live in proximity to the drilling sites — expressed gratitude to the E.P.A., and perhaps a bit of veiled doubt about the zeal of local and state regulators.

"This investigation proves the importance of having a federal agency that can protect people and the environment," said John Fenton, the chairman of Pavillion Area Concerned Citizens. "Those of us who suffer the impacts from the unchecked development in our community are extremely happy the contamination source is being identified."

Gas drilling, using both hydraulic fracturing to release gas and horizontal drilling techniques that can snake underground far from the actual bore holes, is now moving into closer proximity to American population centers than in the past.

From the suburbs of Denver to Pennsylvania and Oklahoma, natural gas reserves, known about but previously unreachable for economic and technological reasons, are being tapped, and anxieties about the hydraulic injection process and its consequences are growing. Wyoming, in 2010, became one of the first states to require petroleum companies or their contractors to disclose the ingredients in their specially formulated fracking fluids. The E.P.A. has also begun a national study on the potential impacts of hydraulic fracturing on drinking water resources.

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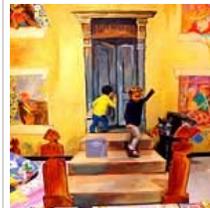
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