

# Study: Leaky wells, not fracking, taint water

Seth Borenstein, Associated Press 6:31 p.m. EDT September 16, 2014

*Study authors says findings are good news because leaks are easier to fix and can be prevented.*



(Photo: ASSOCIATED PRESS)

WASHINGTON – The drilling procedure called fracking didn't cause much-publicized cases of tainted groundwater in areas of the states of Pennsylvania and Texas, a new study finds. Instead, it blames the contamination on problems in pipes and seals in natural gas wells.

After looking at dozens of cases of suspected contamination, the scientists focused on eight hydraulically fractured wells in those states, where they chemically linked the tainted water to the gas wells. They then used chemical analysis to figure out when in the process of gas extraction methane leaked into groundwater.

"We found the evidence suggested that fracking was not to blame, that it was actually a well integrity issue," said Ohio State University geochemist Thomas Darrah, lead author of the study. He said those results are good news because that type of contamination problem is easier to fix and is more preventable.

The work was released Monday by The Proceedings of the National Academy of Sciences.

In fracking, highly pressurized chemicals and water are pumped deep underground to break shale and release natural gas for harvesting.

The fracking process has become highly charged. It started a boom of natural gas drilling and with it, an initial surge of reports of water contamination nearby. People started pointing fingers at the fracking process, thinking that the fracturing allowed methane to travel up, outside the pipes, into water supplies.

In at least two cases around one well in Texas, scientists saw people's homes have their water supplies go from clean to contaminated during the year of study, with methane levels jumping ten-fold, said Stanford University environmental sciences professor Rob Jackson, co-author of the study. Methane while not particularly toxic is explosive and a potent greenhouse gas.

"I don't think homeowners care what step in the process the water contamination comes," Jackson said. "They just care that their lives have changed because drilling has moved next door."

The scientists reached their conclusions by chemically analyzing methane and other chemicals in the groundwater. That let them link the contamination to particular wells, and then to discover what part of the drilling process was responsible. For example, they studied the precise proportions of methane, helium, neon and argon. Those proportions pointed to leaky pipes and seals, because the results would have been different if the contamination had come from fracking.

Since the fracking boom started in Pennsylvania in 2008, the state has identified 243 cases of private water supply contamination "impacted by oil and gas activities." That is out of more than 20,000 wells drilled there.

Jackson and colleagues have been studying water contamination around natural gas wells for years and for this study they didn't chose a random sample, but aimed at areas that seemed to have most complaints of contamination. And even in those areas, it was only in a minority of dozens of sites that they could they connect the contamination to the natural gas wells, he said. In some cases, the contamination was natural and had no connection to gas wells, Jackson said.

Terry Engelder, a professor of geosciences at Pennsylvania State University who wasn't part of the study, praised it, saying "focusing on frack fluids at depth is not the real problem."

The problem of leaky wells is one the gas industry has known about for decades, Darrah said. That includes the pipes the gas flow through and the cement that encases the pipes, keeping it from escaping.

It is possible the high pressure of fracking or the bends in unconventional wells could lead to problems with the well's piping, but there's no evidence yet proving that, Jackson said. Another issue could be the hurry drillers are in during a boom, leading to poor quality wells, he said.

Cindy Dunn, president of the environmental group PennFuture, said it isn't surprising that the methane leaks problem is more due to poor pipes and cement seals, calling for states to update regulations covering that topic.

## Study: Leaky wells, not fracking, taint water

Dave Spigelmyer, president of the Marcellus Shale Coalition of drillers, said his industry is working with state officials "to modernize and dramatically strengthen shale development-related regulations."

Cornell University engineering professor Anthony Ingraffea, who wasn't part of the study, praised it, adding that he's worried because "it's impossible to drill and cement a well that will never leak."

"There's still serious and significant harm from what's coming before fracking and what's coming after fracking," Ingraffea said.

*Copyright 2014 The Associated Press. All rights reserved. This material may not be published, broadcast, rewritten or redistributed.*

Read or Share this story: <http://stargaz.tt/1tY2o7F>