

New report looks at fracking amid drought

Billions of gallons of water used in drilling process

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Hydraulic fracturing of natural gas and oil wells threatens America's water supplies in drought-stricken areas, according to a report released Tuesday by the Environmental Working Group.

The report, titled "Monster Wells," discovered that more than 3.3 billion gallons of water was used between April 2010 and December 2013 to frack 261 "monster wells" across the nation, many of them in Colorado, Pennsylvania and Texas.

The Environmental Protection Agency claims the average amount of water used in the hydraulic fracturing process of a well is between 50,000 and 5 million gallons. Fracking involves high-pressure pumping of sand, water and chemicals to extract oil and natural gas from shale thousands of feet below the ground.

"We're hoping that [the report] would put more pressure on the [oil and gas] industry to put human needs first," said co-author Bill Walker, a consultant for Environmental Working Group, a nonprofit research and advocacy group.

Walker and co-author Soren Rundquist, a landscape and remote sensing analyst for the Environmental Working Group, analyzed data provided by the oil and gas industry to FracFocus, a national hydraulic fracturing chemical registry managed by the Ground Water Protection Council and Interstate Oil and Gas Compact Commission, two organizations whose missions include conservation and environmental protection.

The authors then matched that data to the drought status of the 261 well locations at the time each one was drilled, according to the report.

In Texas, a majority of these "monster wells," Walker explained, were found in the Eagle Ford Shale region in South Texas, while one, M.T. Cole 501H, was found in Denton County, in the Barnett Shale.

In July, the authors contacted the operators of each well by email and phone to verify the data and received 99 replies, one of which was from Encana, the oil and gas company that drilled M.T. Cole 501H. The company verified that the nearly 12 million gallons reported for that well was correct, according to the authors.

Further investigation by the *Denton Record-Chronicle* found that Encana drilled four wells with the Cole surname in Denton County, consuming more than 45 million gallons total in 2011, when North Texas was under exceptional drought conditions.

A majority of the wells drilled in Denton County use groundwater for fracking, even though the new groundwater availability model being developed by the North Texas Groundwater Conservation District claims a drawdown of available groundwater in the Trinity Aquifer has been occurring since long before 1980.

Doug Hock, the media relations manager at Encana, said the company sold M.T. Cole 501H to EnerVest, a Houston-based company, in November 2011, two months after the well was drilled, and no records were available to determine why so much water was needed to frack the well.

EnerVest couldn't be reached for comment.

John Tintera is the president of the Texas Water Recycling Association and a former executive at the Texas Railroad Commission, which regulates the oil and gas industry, and he pointed out that fracking technology has improved dramatically over the years.

The oil and gas industry is using one pad site on location to drill multiple wells, which requires larger extensive laterals, more fracturing steps and more water.

"Having a smaller footprint [on a landowner's property] is very helpful to local communities," Tintera said.

The water needed to frack multiple wells from one location in Denton County requires the industry to build

massive frack lakes filled with groundwater from the Trinity Aquifer.

According to the Environmental Working Group report, Texas had more “monster wells” than any other state, a total of 149 that used more than 1.85 billion gallons of groundwater. A majority of those wells were in the Eagle Ford Shale, an area devastated by the drought.

The company to use the most water to frack its monster wells was Encana, with 35 wells totaling more than 545 million gallons of water, while Texas-based EOG Resources came in second with 39 wells using more than 476 million gallons of water.

On Encana’s website, the company reports that the water needed to frack one of its wells averages between 200 and 120,000 cubic meters of water, or between 52,000 and 31.7 million gallons of water, an amount much higher than the EPA’s average.

“The water used to frack a single monster well could meet the water needs of a drought-stricken county in Texas twice over,” said Walker.

Recycling

Many of the oil and gas companies told Walker and Rundquist that they were implementing recycling techniques to reuse the water from hydraulic fracturing.

In Texas, the amount of recycled water was a sliver compared to the total amount of water used for fracking.

In the Barnett Shale region, only 5 percent of the water used in hydraulic fracturing was recycled, while in the Eagle Ford Shale, none of the water was recycled, according to the most recent figures provided by the Bureau of Economic Geology at the University of Texas School of Geosciences.

In 2011, the oil and gas industry used more than 21 billion gallons of fresh water for hydraulic fracturing, according to the Environmental Working Group report.

The oil and gas industry continues to point toward the massive use of water by agriculture, the biggest water consumer in the Lone Star State, followed by municipalities.

But Roel Lopez, director of Texas A&M University Institute of Renewable Natural Resources, warns that this is a faulty analogy.

“It varies by region,” Lopez said. “It’s a question of scale.”

Lopez said that on a statewide scale, it is true that agricultural irrigation consumes more water than the oil and gas industry — but on a countywide or municipal scale, that isn’t necessarily so, especially in areas with no irrigation taking place. Or if the municipality is small, like Ponder, and using surface water instead of groundwater.

“So when you say that, it’s not necessarily true,” Lopez said. “You need to look in your backyard.”

Recommendations

The Environmental Working Group report recommends that the FracFocus website be replaced with a database overseen by the EPA to provide more transparency of oil and gas industry practices.

State and local authorities, the authors wrote, should require oil and gas companies to obtain water-use permits for every well that they drill.

“It is unreasonable for private companies to profit from the use of a finite public resource while cities, communities and farms may be forced to cut back when supplies run low,” the report says.

It’s a nice idea.

But in Texas, the “rule of capture” allows landowners to control the groundwater, not cities or counties.

“The fact is, groundwater is private property,” said Tintera. “Private property is important in Texas, and it’s something that brings a swift response [if threatened].”

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