

Drilling grows in areas with stressed supplies, rising populations – report

Gayathri Vaidyanathan, Environment & Energy Publishing, 2-6-14

Oil and gas companies are doing hydraulic fracturing in areas that are extremely drought-prone, which is further stressing local supplies, a new report by Ceres found.

The report looked at 39,294 wells drilled between 2011 and 2013 on eight major plays and examined the water usage by county. Overall, 97 billion gallons was used for fracking over this period. The data were derived from FracFocus.org.

The report found that half these wells were in regions of high or extreme water stress, where industries and local users were already consuming at least 80 percent of the available supplies. Most of these regions are experiencing between 20 and 50 percent population growth, suggesting needs are not going to lessen over time.

About 36 percent of the drilled wells were in regions already experiencing groundwater depletion.

Anadarko Petroleum Corp. was the most exposed to water risk since 70 percent of its wells were in regions of high water stress. It was closely followed by Apache Corp., Encana Corp. and Pioneer Natural Resources Co.

The well service companies Schlumberger Ltd. and Baker Hughes Inc. used half the water needed for fracking.

The report found that water stress was the worst in Texas, where two-thirds of the state continues to experience drought. Almost all the wells in the Eagle Ford and the Permian basins occurred in regions with high or extremely high water stress, the report found.

North Dakota, Colorado and California were also regions of concern, said Monika Freyman, author of the report and senior manager at Ceres' water program.

Of the plays, the Eagle Ford, Marcellus, Permian, Barnett and Haynesville accounted for 70 percent of the water used for fracking.

Freyman stressed that the problem with fracking water usage is that its impact is felt disproportionately at the local level. That is because companies often concentrate their drilling in one or two counties of a state where reserves are highest.

For instance, in Texas, fracking is expected to consume just 1.3 percent of the state's total demand annually, which appears sustainable. But the consumption may not be as sustainable when examined at the county level.

"Hydraulic fracturing is concentrated, and you have to look at it on the local level, and water at all levels is local," said Amanda Brock, CEO of Water Standard, a global water treatment specialist firm. "Groundwater levels are depleting rapidly and have been depleting rapidly."

Dimmit County, Texas, saw the largest amount of water consumption for fracking, at 4 billion gallons between 2011 and 2013. Karnes County in Texas and Weld and Garfield counties in Colorado used more than 2 billion gallons of water for fracking over the years. These counties are already among the most water stressed.

The problem could worsen in the future since precipitation patterns are expected to become more uneven with climate change. Extremes such as floods and droughts are already occurring more frequently and intensely, said Jay Famiglietti, hydrologist and a professor of earth system science at the University of California, Irvine.

Satellite imagery has shown that the midlatitude regions of the world are drying out, which has huge implications for places like California, Texas and Colorado, he said. These regions already rely on groundwater supplies.

"It points to the increasing competition for water and for the need for groundwater management and the need to balance the allocation of water amongst those competing environmental, ecological, energy, food, domestic and urban uses," he said. "We have a very complicated picture lying ahead of us."