NATURAL RESOURCES

Methane Found in Well Water Near Fracking Sites

In a study of 68 private drinking water wells in northeastern Pennsylvania and New York, methane contamination rose sharply with proximity to natural gas drilling and hydraulic fracturing ("fracking") sites.[1] The average methane concentration in shallow groundwater in active drilling areas fell within the defined action level (>10 mg/L but <28 mg/L) for hazard mitigation recommended by the U.S. Department of the Interior, and the maximum (64 mg/L) was well beyond that threshold, according to the report. However, the researchers found no evidence of fracturing fluids. Principal investigator Robert B. Jackson of Duke University says fracking has been conducted in the sampled region since about 2008. The team sampled the water supplies in 2010.

The researchers measured concentrations of gases and certain isotopes of carbon in methane and other hydrocarbons to distinguish the ancient thermogenic gas stores sought in drilling operations from methane generated by microbial degradation of organic matter. The closer the well was to an active drilling site, the more likely it was the methane detected was thermogenic.

Flammable levels of natural gas are common in water supplies, and explosions—even reports of flammable drinking water—have occurred near fracking sites, says Abrahm Lustgarten, a reporter for Propublica who has investigated gas drilling across the United States. But no peer-reviewed studies have investigated health effects of chronic ingestion of small amounts of methane, Jackson says.[2]

John Hanger, a former head of the Pennsylvania Department of Environmental Protection (DEP), blames poor gas well construction or design, not fracking, for methane contamination noted to date. He says repairs or plugging of gas wells eliminated contamination in 14 of 19 previously contaminated water wells tested in 2010 by the DEP. But Jackson maintains fracking cannot be ruled out as a cause, given the high pressures used in the practice.

Just how likely are leaks? Based on a non-peer-reviewed survey of the five states that systematically report incidents at wells where fracking occurs and where complaints have spurred inspections, Ronald E. Bishop, a lecturer in chemistry and biochemistry at the State University of New York, Oneonta, estimates nearly 2% of such gas wells may end up contaminating groundwater with fracking fluids.[3] Bishop says 50% of new natural gas wells recently inspected in Quebec leaked methane.[4]

Hanger says Pennsylvania has enacted strict standards for design, construction, and materials used in gas wells, which became effective in February 2011.[5] The state also requires testing, monitoring, and disclosure of chemicals used in fracking. But Amy Mall, a senior policy analyst with the Natural Resources Defense Council, says state fracking regulations vary widely, and a federal law passed in 2005 exempts fracking from the Safe Drinking Water Act and companies from disclosing chemicals used during the process.

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Study to Assess Health Effects of Railyard

In June 2011 California's South Coast Air Quality Management District announced the launch of a two-year study on the Burlington Northern Santa Fe railyard in San Bernardino, a major transportation hub for the Los Angeles–Long Beach port complex. The study, to be conducted by Loma Linda University, will examine respiratory diseases and cancer among 1,200 children and adults in communities surrounding the railyard. A 2008 California Air Resources Board health risk assessment suggested the San Bernardino facility had the worst health impact on surrounding communities of any railyard in California.[6]

Several projects in California seek to reduce the community health impacts of railyards.

AP Photo/Damian Dovarganes

Elders Volunteer for Fukushima Daiichi Plant Cleanup

Retired engineer Yasuteru Yamada received more than 300 responses when he solicited elderly colleagues to volunteer to help stabilize and clean up the Fukushima Daiichi nuclear plant damaged by the 11 March 2011 Tohoku earthquake and tsunami.[7] Yamada, a cancer survivor, says elders should lead these efforts because of their accumulated experience and because their advanced age means the adverse effects of radiation exposure will have less time to manifest. Yamada's Skilled Veterans Corps is expected to receive governmental approval to help at the damaged plant.

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