

Fracking shale for gas brings wealth, concerns

Michael Rubinkam and David B. Caruso, Associated Press, 4-12-11

Hydraulic fracturing is a drilling process that blasts millions of gallons of water for each well deep into the earth to fracture dense shale and allow natural gas to escape.

The water is mixed with sand and chemicals _ some of them toxic, some carcinogenic. The fracking liquid gushes back with natural underground brine, a brew now intensely salty and containing barium, strontium and radium from the earth.

In Texas and other states, the liquids are disposed of in deep injection wells; Pennsylvania is the only major gas-producing state that routinely allows fracking wastewater to be partially treated and dumped into rivers and streams from which communities get their drinking water.

Researchers don't know if the discharges are dangerous to humans or wildlife; several studies on possible environmental effects are under way. Drilling companies are exempt from disclosing their chemical formulas.

At least 269 million gallons of wastewater went to treatment plants in Pennsylvania for river discharge in the 18 months ending Dec. 31, according to an Associated Press review of reports filed with the state's Department of Environmental Protection. Millions more gallons of wastewater went unaccounted for because of weaknesses in the state's tracking system.

DEP records also show some public water utilities downstream from plants treating wastewater have struggled with potentially dangerous levels of trihalomethanes, carcinogens that can be linked indirectly to drilling waste.

Most of Pennsylvania's largest drillers say their river discharges are safely diluted but are taking steps nonetheless to reuse the waste liquids and end the partial treatment and river discharges. Numerous smaller drilling operations continue hauling the waste to treatment plants, often miles from drilling sites.

The Environmental Protection Agency, citing the potential danger to human health and aquatic life, asked last month that Pennsylvania regulators begin water sampling for radium and other contaminants. The agency plans a major national study looking at how fracking in the Marcellus, Barnett and other shale regions may already have impacted drinking water _ and at potential impacts.

Pennsylvania announced last week that it will expand the scope of water tests to screen for radioactive pollutants and other contaminants, but state officials insisted they aren't doing it because federal regulators prodded them.

The drilling industry insists that fracking water blasted deep underground cannot contaminate underground water aquifers that are separated by thousands of feet of rock. Drilling may have polluted several aquifers another way: by methane gas seeping through shoddy cement jobs in drilled wells in Pennsylvania, Texas, and other states, then migrating into drinking water wells.

In Pennsylvania alone, drilling companies tallied more than 1,400 violations of state laws between January 2008 and June 2010, according to The Pennsylvania Land Trust Association, an environmental group. Two-thirds of the violations caused or had the potential to cause environmental damage, from chemical spills to improperly lined sludge pits, the group said.

Texas regulators do not separate gas drilling violations from those for oil drilling, making an accurate comparison with Pennsylvania impossible.

Fracking, along with horizontal drilling, allows recovery of natural gas from huge and lucrative shale reserves. In recent years, that has set off a gold rush of leasing and drilling activity, leaving regulators in Pennsylvania scrambling to keep up.

President Barack Obama, visiting Pennsylvania last week said "science" must be done to ensure that natural gas is extracted safely.

"We've got to make sure that as we're extracting it from the ground, that the chemicals that are being used don't leach into the water," he said. "Nobody is an environmentalist until you get sick."