

## **The Groundwater Debate**

By Andrew Nikiforuk in *The Calgary Herald*

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This month members of the Alberta Environment and the Energy and Utility Board tried to reassure rural Albertans that massive coal bed methane projects involving up to 50,000 wells over a 20-year period pose no threat to groundwater. Or to 600,000 Albertans dependent on country water wells.

Now much of the province's groundwater, a critical yet unseen resource, often travels along shallow and deep coal seams where more than 6,000 CBM wells have been drilled to date. And that's why rural Albertans have some legitimate questions about coal bed methane activity in their backyards. A polluted or emptied water well, afterall, means thirsty livestock and worthless land.

Now, government types told audiences in Strathmore and elsewhere that the province's groundwater is in good shape. But here's the truth. Budget cuts put an end to groundwater mapping and research in the province in the 1990s and for the last three years Alberta Environment hasn't even entered digital data on more than 20,000 new water wells. Alberta now knows less about the state of its groundwater than it does about gas and oil reserves. Manitoba, which has no oil patch, maintains 600 monitoring groundwater station; Alberta operates a paltry 200. (Yet the government called this number "comprehensive.") Mexico, which maintains 15,000 groundwater inspection wells, has better monitoring than either Canada or Alberta combined. In short Ralph Klein has ignored our real buried treasure: groundwater.

Then the government guys said that the contamination of water wells by leaking CBM wells was a nonevent. "Don't worry," they said. But methane from conventional wells and pipelines is already leaking into groundwater throughout the province. A 1993 study by Husky Oil found that 40% of 1300 wellbores were leaking gas. A 1996 study by the Canadian Association of Petroleum Producers reported that methane leaked more in areas where the density of exploration drilling increased. A 2002 groundwater study by the Canadian Council of Environmental Ministers, a pretty status quo group, concluded that the threat to groundwater from existing oil patch operations "represents a major challenge to governments and industry." Last year Alberta Environment even asked local hydrogeologist Kathleen Rich to investigate groundwater contamination. But her "Study of the Migration of Natural Gas Into Ground Water From Leaking Oil and Gas Wells" hasn't been highlighted any of the meetings.

At their dog and pony shows the government boys didn't talk much about hydraulic fracturing either. Yet coal bed methane requires five to 10 times more fracturing than conventional gas. Fracturing involves blasting chemicals into a coal formation to loosen it up so itty-bitty volumes of gas can flow out. The US Environmental Protection Agency notes that fracturing fluids often include acids, diesel fuel, nitrogen, biocides, foamed gels, sand, and methanol: most haven't been studied for their environmental implications. Given that 40% of the fluids are never retrieved, they represent a formidable threat to groundwater for decades. (Alberta doesn't

regulate fracing fluids but Alabama does.) To date no CBM company has disclosed the chemical contents of its fracing fluids.

Although the government talked proudly about its groundwater testing program, it remains a substandard effort. For starters it's not mandatory--landowners have to ask for it. It uses an inaccurate and unreliable test (volume of gas per flow instead measuring dissolved methane). And the data cannot be used to build a reliable database.

The province's investigation process would appall fans of the TV show CSI. There is no real written protocol; the process can take a year and in the end an underfunded and understaffed government must ask the same companies that probably caused the problem to ultimately do the water testing. In Strathmore a country veterinarian correctly called the process "unprofessional."

A government interested in protecting our groundwater and our grandchildren would insist on the following corrections: a reduction in CBM activity to ensure proper and complete baseline data collection; world class monitoring; mandatory fingerprinting of gas in every CBM formation for leak investigations; and an independent public inquiry into groundwater contamination and fracing in the Horseshoe Canyon play.

Jessica Ernst, a well respected oil patch consultant who lost her water supply after CBM activity in her neighborhood, poses four good questions:

- Why has the regulator allowed companies to risk Alberta's groundwater without proper safeguards as recommended by the Canadian Council of Environmental Ministers in 2002?
- Why has CBM activity been allowed to escalate at the expense of public health and safety?
- What are the fracing chemicals?
- And how do we bring the mandate of the regulator back into balance for all of Albertans?

The government still hasn't come up with answers yet.