

Potential Impacts on Groundwater: "Some of the water used in hydraulic fracturing is recovered at the surface as flowback or later production brine. However, the water left in place, called residual treatment water, 'slips beyond the control of engineers.' According to Engelder and Cathles" (from a 2014 article titled, "The fate of residual treatment water in gas shale" in the Journal of Unconventional Oil and Gas Resources). Imagining that this toxic waste-water will never find its way out of the ground is highly optimistic.

Potential Impacts on Surface Water: "In Pavillion, Wyoming residents were informed by EPA in 2009 that many drinking water wells were contaminated by toxics often used in hydraulic fracturing fluids. For nearly a decade Pavillion residents had complained about miscarriages, rare cancers, and central nervous system disorders including seizures. EPA confirmed the presence of 2-butoxyethanol, a known constituent in HF fluid, in three wells (Earthworks, 2009)." (from a 2011 article titled "Regulating hydraulic fracturing in shale gas plays: The case of Texas" by Dianne Rahm).

Impacts on Land: "...several of the largest earthquakes in the U.S. midcontinent in 2011 and 2012 may have been triggered by nearby disposal wells. The largest of these was a magnitude 5.6 event in central Oklahoma that destroyed 14 homes and injured two people. The mechanism responsible for inducing these events appears to be the well-understood process of weakening a preexisting fault by elevating the fluid pressure." (from a 2013 article titled "Injection-Induced Earthquakes" by William L. Ellsworth)

Waste Management: See "impacts on surface water", above. Even if the fracking liquids are cleaned of toxins, it still results in brine which could end up polluting surface water reservoirs and killing fish and other animals.

Management of Additives: My understanding of fracking chemicals is that they are a tightly guarded trade secret, and disclosure of chemicals used is--at best--done on a voluntary basis (which means zero accountability). The U.S. has such a registry at <http://fracfocus.org/>.

Wellbore Integrity: Is it ever possible to guarantee perfect integrity of a drillhole hundreds of meters into bedrock? My guess would be "no".

Seismicity and Geological Risks: See "impacts on land", above. In a province with few seismic events within recorded history, one stands out as being worth some attention: the 1929 Grand Banks earthquake and resulting tidal waves. Is it possible to guarantee that fracking efforts would not lead to similar events?

Regulatory Oversight and Responsibility: If government cannot even compel a corporation to reveal the chemicals and processes being used in the fracking process, what hope is there of meaningful oversight or regulation? Corporations should not be allowed to use patents and copyright as a shield to protect their work from government oversight.

Site Restoration: I would hope that corporations would be forced to return an abandoned worksite to

pristine conditions, though a casual inspection of similar sites in this province will show that that hope is unlikely to achieve reality.

Financial Security and Insurance: I am not certain what, specifically, this refers to.

Air Emissions: Methane is a greenhouse gas. Methane is released by the fracking process. "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." (from a 2011 article titled "Methane Found in Well Water Near Fracking Sites" by David C. Holzman). Methane getting into surface water will naturally find its way into the atmosphere, exasperating the existing greenhouse gas crisis.

Public Safety and Emergency Planning: I would hope that this, at least, might be something that the government would have the resources and ability to manage.

Community Engagement: I am a member of the community. This is me getting engaged.

Socio-Economic Impacts: I am certain that fracking produces (a few) jobs, and would thus bring some more natural resource money into the province. Most of the money will leave the province through the accounts of the foreign corporations exploiting the resources, of course. Is the remainder enough incentive to allow corporations to fracture the literal bedrock of our province? My vote is "no".