

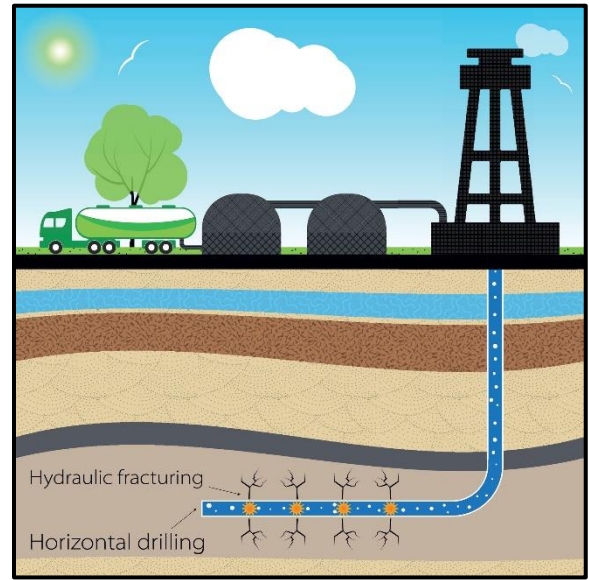
FRACKING FACTSHEET

What is Fracking?

Fracking, otherwise known as hydraulic fracturing, is a process for extracting methane (also called “natural gas”) or oil from the ground.

This process involves drilling a hole several kilometres down into rock and then drilling horizontally for several more kilometres. Large amounts of water, sand and chemicals are injected under high pressure into mainly shale rock. Many of the injected chemicals are known to be quite toxic.

This causes “fracturing” of the rock, releasing the trapped methane gas, which flows back up a pipe and is subsequently collected and stored. In BC, the gas will be transported by pipeline to the coast, then cooled and liquefied (Liquefied Natural Gas or LNG) in a processing facility and shipped around the world via tanker.



BC plans to dramatically increase drilling for natural gas, and at its peak would be drilling over 800 new wells per year.¹ Almost all fracking in this province takes place in northeastern BC. Many of these fracking wells are located on Treaty 8 territory and many are near First Nations residences and sources of livelihood.

LNG is not a clean fuel

The fracking process results in the release of a vast amount of methane gas, much of which goes into the atmosphere. Methane has been calculated to be 34 times as potent as carbon dioxide as a greenhouse gas.² A 2014 report concluded that *fracking natural gas is actually worse for global warming than oil or coal.*³

Fracking wastes and contaminates water

Each fracking procedure uses more than 10,000,000 litres of clean water.⁴ In parts of the U.S., drinking water wells have dried up due to withdrawals for fracking. Fracking also produces large amounts of contaminated water underground and on the surface in ponds that are much like tailings ponds from mining. This water is contaminated with carcinogenic,⁵ hormone-disrupting,⁶ and radioactive chemicals. One study showed radium levels in fracked water 200 times greater than background levels.⁷

Atmospheric pollution

Fracking releases large amounts of polluting and carcinogenic chemicals into the atmosphere.⁸ Studies have shown an increase in asthma⁹ and other respiratory diseases in people who live close to a fracking operation. Increases in sinus problems, migraines,¹⁰ and fatigue have also been described.

Other serious harms to health

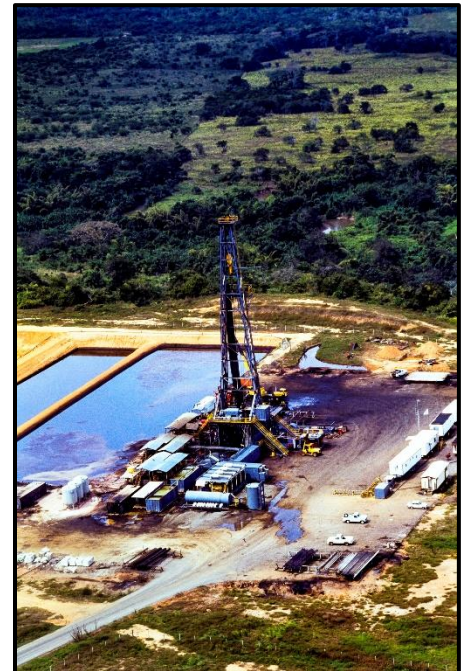
Fracking has been associated with an increase in the incidence of birth defects and congenital heart disease in people who live close to fracking sites.¹¹ Veterinarians have noted an increased rate of stillbirth and calf mortality linked to hydrogen sulfide released during and after natural gas extraction.¹²

Earthquakes

Earthquakes associated with fracking operations have been noted for several decades. In August 2014, a magnitude 4.4 earthquake was felt in northern BC and was directly attributed to fracking. These earthquakes can damage underground gas, oil, water, and sewer lines and possibly affect the integrity of hydroelectric dams.

Failure to meet BC and Canada climate targets

BC has legislated targets to reduce greenhouse gas emissions: 33% below 2007 levels by 2020, and 80% below 2007 levels by 2050.¹³ BC will fail to meet its projected climate control targets if the LNG industry continues to expand. In fact, most experts now agree that the majority of existing untapped reserves of oil, coal, and methane must be left in the ground if we are to achieve our designated targets.



Increased disease and disruption because of climate change

In Canada, Lyme disease is spreading more widely because of global warming.¹⁴ Worldwide, there could be large increases in dengue fever, malaria, and many other tropical diseases as the habitat of the mosquito vectors that carry these diseases greatly expand.² Fires, floods, droughts, and heat waves—which are intensified by climate change—are expected to cause large increases in morbidity and mortality.²

Our Future

The World Health Organization calls climate change the “greatest threat to global health of the 21st century.”¹⁵ Many jurisdictions have banned fracking due to health and environmental concerns. These include New Brunswick, Maryland, New York, Vermont, Scotland, Wales, Northern Ireland, Bulgaria, France, and Germany.

Is this the future we want for our children?

References

- 1) Horne M. [Pacific Northwest LNG Implications: Analysis of environmental impacts and the project development agreement](#). Pembina Institute. 2015 July 10.
- 2) [Fifth Assessment Report \(AR5\)](#). Intergovernmental Panel on Climate Change (IPCC). 2014.
- 3) Howarth RW. [A bridge to nowhere: Methane emissions and the greenhouse gas footprint of natural gas](#). *Energy Science & Engineering*. 2014; 2(2), 47-60.
- 4) [Natural Gas and Water: What you need to know about hydraulic fracturing in BC](#). Pembina Institute.
- 5) [Health effects of chemicals used in fracking](#). Physicians for Social Responsibility (PSR). 2013 August 12.
- 6) Kassotis CD, Tillitt DE, Davis JW, Hormann AM, Nagel SC. [Estrogen and androgen receptor activities of hydraulic fracturing chemicals and surface and ground water in a drilling-dense region](#). *Endocrinology*. 2014 Mar; 155(3): 897-907.
- 7) Warner NR, Christie CA, Jackson RB, Vengosh A. [Impacts of Shale Gas Wastewater Disposal on Water Quality in Western Pennsylvania](#). *Environ. Sci. Technol.* 2013; 47(20): 11849-11857.
- 8) Macey GP, Breech R, Chernaik M, Cox C, Larson D, Thomas D, Carpenter DO. [Air concentrations of volatile compounds near oil and gas production: a community-based exploratory study](#). *Environmental Health*. 2014; 13:82.
- 9) Rasmussen SG, Ogburn EL, McCormack M, Casey JA, Bandeen-Roche K, Mercer DG, Schwartz BS. [Association Between Unconventional Natural Gas Development in the Marcellus Shale and Asthma Exacerbations](#). *JAMA Intern Med*. 2016 Sep 1; 176(9), 1334-43.
- 10) Bakalar N. [Living near a fracking site is linked to migraines, fatigue](#). NY Times. 2016 Aug 25.
- 11) McKenzie LM, Guo R, Witter RZ, Savitz DA, Newman LS, Adgate JL. [Birth Outcomes and Maternal Residential Proximity to Natural Gas Development in Rural Colorado](#). *Environ Health Perspect*. 2014 Apr; 122(4): 412-417.
- 12) Waldner CL, Ribble CS, Janzen ED, Campbell JR. [Associations Between Oil-and Gas-Well Sites, Processing Facilities, Flaring, and Beef Cattle Reproduction and Calf Mortality in Western Canada](#). *Preventive Veterinary Medicine*. 2001 July 19; 50(1-2): 1-17.
- 13) [Climate Action Legislation: Greenhouse Gas Reduction Targets Act](#). Government of British Columbia.
- 14) Tuite AR, Greer AL, Fisman DN. [Effect of latitude on the rate of change in incidence of Lyme Disease in the United States](#). *CMAJ Open*. 2013 Apr 16; 1(1): E43-7.
- 15) [WHO calls for urgent action to protect health from climate change – Sign the call](#). World Health Organization (WHO): Climate change and human health. 2015.