



FREE
REPORT

**STOP
FRACKING
NOW!**



GAS INDUSTRY THREATENS NORTHERN ROCKIES



PROTECT CANADA'S WATER, KEEP OUR ROCKIES WILD



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Canada's Rocky Mountains are a national treasure. The breathtaking beauty of their alpine passes, rushing rivers and abundant wildlife draws tourists from all over the world. And while many know the Rockies from our beloved National Parks like Banff, Jasper and Yoho, there are vast parts of the mountain range and its wild surroundings that remain unprotected.

The Northern Rockies region in British Columbia is one of these areas left largely unprotected. Known for its stunning beauty and abundant wildlife, such as caribou and lynx, it is also a hotbed of industrial development. Decades of resource extraction – like mining, hydro mega dams, and oil and gas wells – have fragmented vast areas of this once pristine wilderness.

Today, energy companies are running out of the 'low hanging fruit'. New and dangerous methods of fossil fuel extraction are pushing development into untouched expanses of wild lands in northeastern BC. Using a new technique called hydraulic fracturing, or 'fracking', large deposits of gas trapped in shale bedrock are being exploited in areas that had previously been spared the brunt of industrialization.

Fracking injects thousands of gallons of water – mixed with sand and laced with hazardous chemicals like benzene – into small drilled wells at high pressures in order to fracture hard shale rock formations and release trapped gas (see infographic on page 2). Wherever it has been introduced, fracking has brought with it dangerous environmental impacts including water contamination, which poses a serious threat to human health.

Fracking has now come to BC in a big way. This means big threats to our water, wild lands and our health.

There are huge reserves of shale gas in BC, in the industry-dubbed Montney Shale Play, the Liard Basin, the Cordova Embayment and in the Horn River Basin. These areas are currently undergoing rampant development, with little regulation and even less public consultation.

Behind closed doors, the BC government has granted permission for a company called Talisman Energy Inc. to pump 10,000 cubic meters of fresh water out of the Williston Reservoir every day for the next 20 years.¹ This is just one of the many applications for freshwater licenses. Disposal of toxic

wastewater poses a profound risk to ground and surface water purity, as well as the health of the region's fish, wildlife and people.

Local residents get the short end of the stick when these projects move into their communities, including the possibility of the contamination of drinking water, water restrictions in drought years and a constant fear of exposure to 'sour gas' which can cause headaches, nausea and even miscarriages and death.²

Though natural gas has been touted as a clean burning alternative to dirty coal and oil, there is a high cost associated with the fracking process. In fact, research shows that hydraulic fracking actually results in greater total emissions than coal or oil.³ To make matters worse, gas extracted in the Northern Rockies is piped to Alberta where it is used in large quantities to extract tar sands oil.

In other words, the development of shale gas is helping fuel the expansion of the tar sands, one of the planet's biggest sources of climate change causing greenhouse gas emissions.

All of this devastation is occurring in a place where the natural beauty rivals that of any region in Canada. From boreal forests to rare grasslands, lush valley bottoms to alpine tundras: this region's many ecosystems support a unique variety of plants, birds and animals. Populations of grizzly bears, woodland caribou, bison, mountain goats, stone sheep, wolves, moose, elk, wolverines and lynx make this area the "largest predator-prey system in North America".⁴

If fracking continues, the Northern Rockies' remaining wilderness areas will be fragmented by clear cuts, road access, pipelines and transmission lines, impacting wildlife corridors, critical habitat and degrading overall ecosystem integrity.

The menace of natural gas fracking in northern BC is one of the biggest environmental issues facing Canada today. It is high time that we take decisive steps to protect the Northern Rockies. It is high time to stop fracking.

Photo top: **Wilderness areas, like the Muskwa-Kechika, are increasingly threatened by shale gas development** (John E. Marriott), Photo top left: **Fracking wells can leak poisonous and deadly sour gas or H2S** (Will Koop), Photo top right: **Grizzly Bears are one of the many species impacted by development** (John E. Marriott), **Flaming tap water** (Creative Commons).



Photo: **Aerial view of a fracking site in the Horn River Basin** (Will Koop)

FRACKING 101

Hydraulic fracturing, or 'fracking,' involves the injection of millions of litres of pressurized water, sand and chemicals down and across horizontally drilled wells as far as 3 kilometres below the earth's surface.

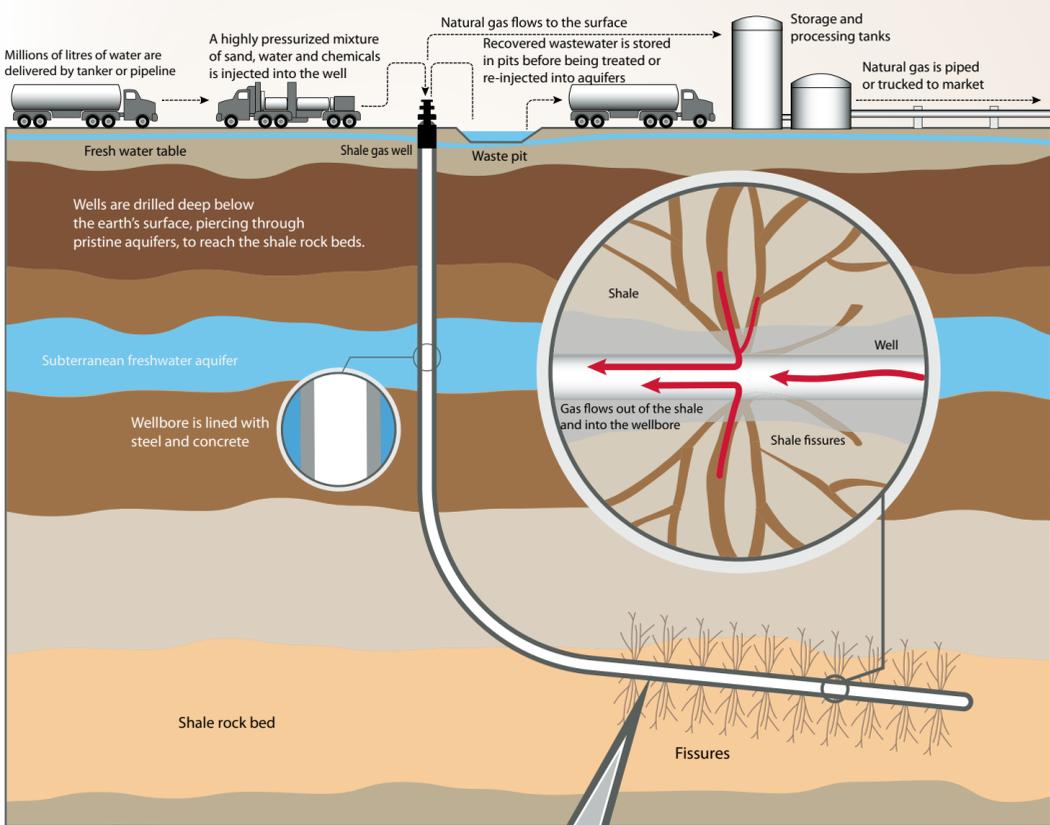
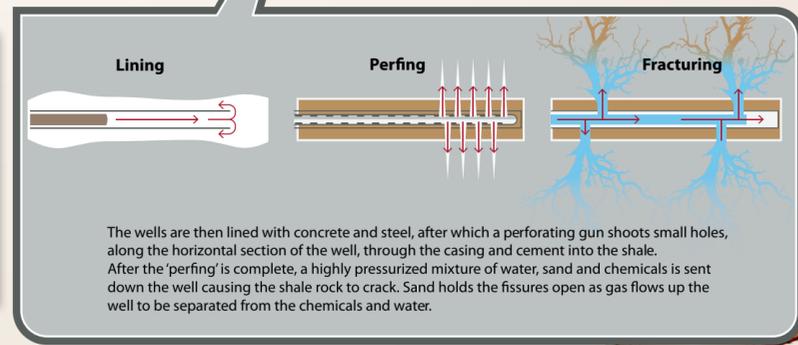


Photo: Trucks line up to transport thousands of cubic meters of water to fracking sites (Will Koop).



The wells are then lined with concrete and steel, after which a perforating gun shoots small holes, along the horizontal section of the well, through the casing and cement into the shale. After the 'perforating' is complete, a highly pressurized mixture of water, sand and chemicals is sent down the well causing the shale rock to crack. Sand holds the fissures open as gas flows up the well to be separated from the chemicals and water.

DEFENDING OUR WATER

Fracking is one of the biggest consumers of our diminishing freshwater reserves. Every year gas companies like Talisman and Encana withdraw 78 million cubic metres of freshwater from Canada's streams, rivers and lakes to use in the fracking process. That is the equivalent of permanently draining over 31,000 Olympic sized swimming pools from our watersheds to support a highly toxic fossil fuel extraction process.⁹ Despite this staggering volume, there is still little to no public consultation or regulation when it comes to issuing water licenses for the natural gas industry.

As mentioned, the province of BC has approved a proposal by Talisman to build a massive water pipeline out



of the Williston Reservoir - the same reservoir that powers the WAC Bennett and Peace Canyon Dams and generates almost half of the province's electricity. For the next 20 years, Talisman can pump up to 10,000 cubic meters of water each and every day⁶ - water which would otherwise generate electricity to power homes.

Almost 550 rivers, lakes and streams have been staked by shale gas companies. These companies have the right to extract up to 274,956 cubic metres of freshwater each day, which is over double the amount of water used by all the residents of Victoria in the same amount of time.⁷

BAD NEIGHBOURS

Communities living next to fracking activities face a constant threat to their drinking water. While the oil and gas companies run off with the profits, communities are being left behind with permanent water contamination.

The waste water from fracking is full of hazardous chemicals, heavy metals and has been found to be radioactive.⁸ If this substance enters the freshwater system it can have disastrous consequences.

There are well documented incidents of drinking water and surface water poisoned by cancer-causing benzene.⁸ In fact, in town after town there are the same stories: children getting nauseous and dizzy from drinking poisoned water, and water wells polluted to the point of families needing to truck their water supply in

from private companies.

Throughout North America, there have been many reported cases of people being able to light their tap water on fire because of nearby fracking operations. This happens when "migrating" methane gas has leaked into groundwater, polluting wells so much that the water can literally be set on fire.¹⁰ Not exactly refreshing, is it? These little 'tap fires' should be setting alarm bells ringing with all responsible public officials in jurisdictions where fracking is taking place.

Photo's top to bottom:
Tailing ponds are used to store radioactive wastewater before disposal (Will Koop).
Wood bison are a rare species found in the Northern Rockies (Roberta Olenick).
Mountain goats and fracking development don't mix (John E. Marriott).
Sour gas (Will Koop).
Wild Columbine - beautiful flower at risk (Gambo Images).
The Williston Reservoir is drained by massive pipelines to feed fracking (Will Koop).



A TOXIC PROCESS: INDUSTRY SECRETS CAN KILL



Over 2,500 different products are used in the fracking process, including 750 chemicals, the majority of which are carcinogenic or hazardous air pollutants, and some of which are known radioactive substances.¹¹

What's more, millions of litres of chemical ingredients which are considered 'trade secrets' continue to be pumped into our pristine groundwater aquifers, without our knowledge or permission. Frighteningly, the current regulatory bodies - the BC Oil and Gas Commission, the Alberta Energy Resource Conservation Board and the National Energy Board - do not

require companies to publicly disclose the chemicals and products they use in the fracking process.¹² Industry continues to share nothing more than elusive terms such as "friction reducer, scale inhibitor, iron control agent, corrosion inhibitor, biocide and acid", asserting that the chemical compounds are 'industry secrets'.¹³

A report released by the U.S. Committee on Energy and Commerce identified the presence of lead, petroleum distillates, methanol, benzene, toluene, xylene and millions of litres of diesel in these chemical cocktails.¹⁴ These toxins are being used without transparency and accountability, and this is unacceptable.

SOUR GAS: NOTHING NATURAL ABOUT IT

Exposure to sour gas emissions is a daily reality for people living next to natural gas extraction. You never know what you are breathing in, or if your water has been contaminated. At any time you might be evacuated from your home because of an accident or a gas leak.

Many natural gas deposits in BC are made up of sour gas, which means that they contain hydrogen sulfide (H2S). H2S is what makes natural gas smell like rotten eggs, and it is in fact quite toxic.¹⁵ In small volumes it can cause headaches, irritated eyes and even miscarriages. Exposure in larger volumes can cause death for humans and livestock.¹⁶

Over 30 workers in BC and Alberta have died from H2S exposure in the last thirty years. Gas leaks from failed pipelines and faulty well sites have resulted in over 70 potentially sour gas leaks in the region during the past five years.¹⁷

In northeastern BC, concerned residents have formed the Peace Environment and Safety Trustees Society (PESTS) to advocate for a public inquiry into the health impacts of fracking and sour gas developments.¹⁸ Last May, Energy Minister Rich Coleman responded and committed to conducting a study.¹⁹ As of press time, no details of any study have yet been released.

Fragmenting the wilderness

The landscape in northeastern BC has been devastated: the region's once plentiful caribou herds and grizzly bears are dwindling. As the fracking industry grows, it threatens new ecosystems. The Wilderness Committee is calling for a series of protected areas which will forever protect key habitat from the onslaught of oil and gas development.

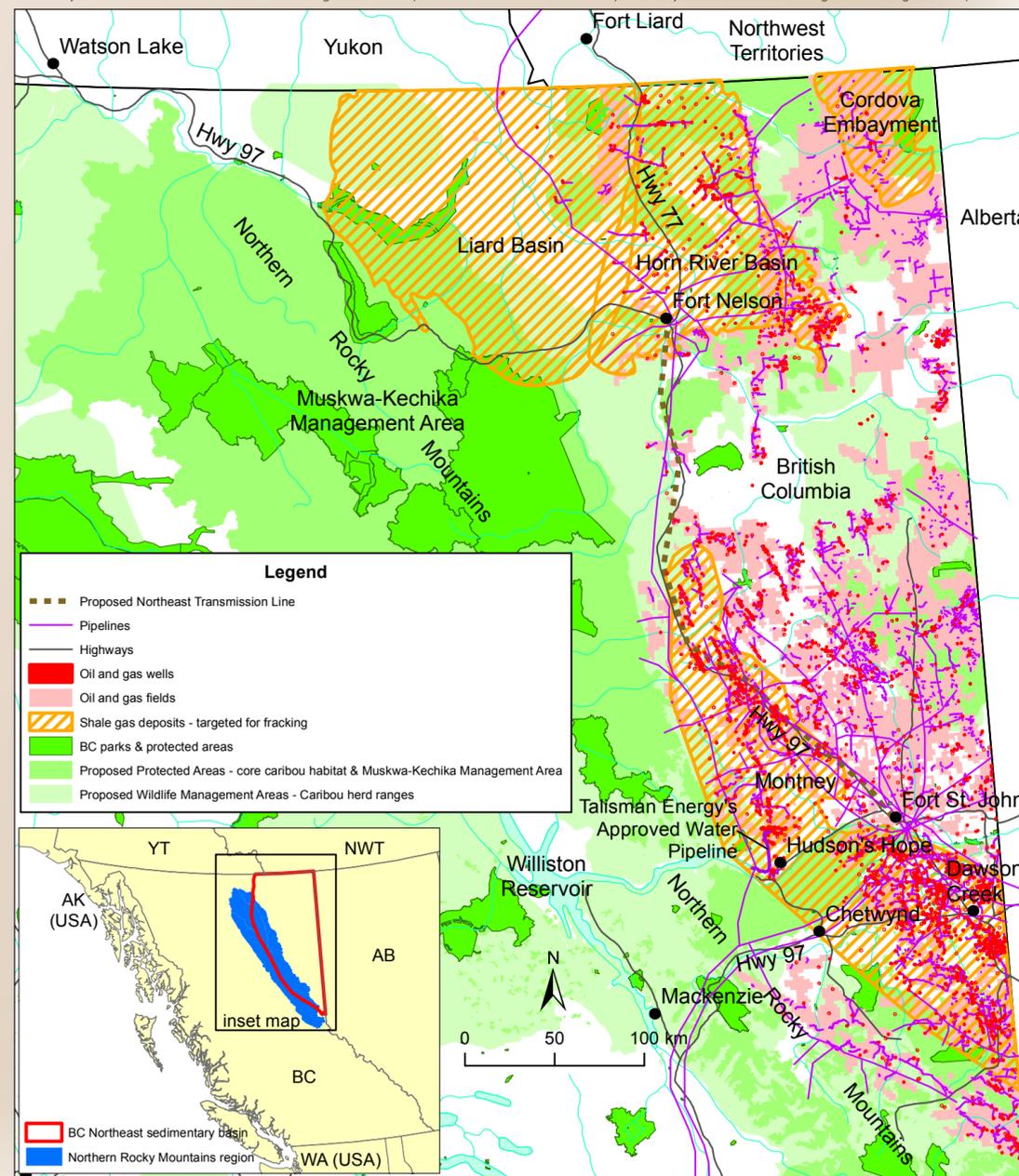




Photo: **Fracking rally** (Creative Commons).



Photo: **Wolverine** (Grambo Images).

FRACKING BANS AROUND THE WORLD: WHY IS BC SO FAR BEHIND?

It's shocking that while BC and some other provinces in Canada are gearing up for a reckless expansion of the fracking industry, jurisdictions around the world are saying 'No' to this dangerous practice. They are saying no to the health risks, no to the drains on limited fresh water resources, and no to the climate impacts and wildlife habitat fragmentation.

France passed legislation in June 2011 that banned industry from using fracking techniques to extract natural gas.²³ The province of Quebec has gone as far as to introduce a temporary moratorium (until 2013)

on fracking until the provincial Environmental Assessment Office has conducted further research into the impacts of the process.²⁴ Both US states of New York and New Jersey have instituted temporary statewide bans on the practice,²⁵ as has the Australian state of New South Wales.²⁶ Even Texas is considering taking action.²⁷

It is time for BC and every province and territory in Canada to step up to the plate and say 'No' as well. British Columbia needs to institute a province-wide ban on fracking.

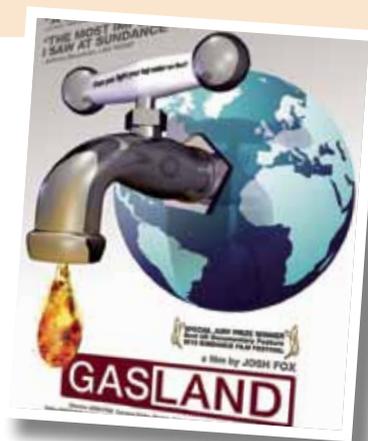
SHALE GAS: WORSE FOR THE CLIMATE THAN OIL AND COAL

As global opposition to climate change causing mega-projects such as the tar sands continues to grow, the oil and gas industry continues to present natural gas as a 'clean and green' source for energy.

Natural gas companies have spent millions of dollars on advertising and lobby campaigns pitching natural gas as a climate friendly alternative to coal and gas. But recent reports have shown that shale gas has a far greater climate impact than originally understood. In fact the total lifetime emissions of gas extracted by fracking is much higher than either coal or oil.²⁰ As the battle for public opinion goes on, gas companies like Talisman have gone to great lengths to make the fracking industry look

harmless. Talisman's latest attempt was a children's colouring book featuring "Talisman Terry, the friendly Frackosaurus", which earned them the ridicule of funny man Stephen Colbert.²¹

The total climate impact of fracking in BC is far greater than many people realize. This is because an important market for our natural gas is the tar sands. The processing of tar sands crude, or bitumen, requires a huge expenditure of energy which is currently generated by burning natural gas. In 2007, almost 29 million cubic metres of natural gas was used per day to fuel the tar sands.²² As operations in the tar sands expand, so will the amount of natural gas that this mega-project consumes.



The Oscar-nominated documentary Gasland examines the impact of fracking gaslandthemovie.com



Photo: **Fracking rally** (Creative Commons).

TAKE ACTION

Quebec has done it, France has done it, New Jersey has done it. If we do not take immediate action we will be falling behind the world when it comes to protecting our citizens and our ecosystems from fracking.

Please write Premier Clark and Adrian Dix, the Leader of the Official Opposition, and tell them it is time for a comprehensive ban on fracking in BC. Furthermore, tell them we need a series of protected areas that will ensure that Canada's Northern Rockies are protected forever.

► Premier Christy Clark

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WildernessCommittee.org • 1-800-661-WILD (9453)

Yes! I want to help stop fracking!



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And return to the:
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The Wilderness Committee is Canada's largest membership-based wilderness preservation organization.

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