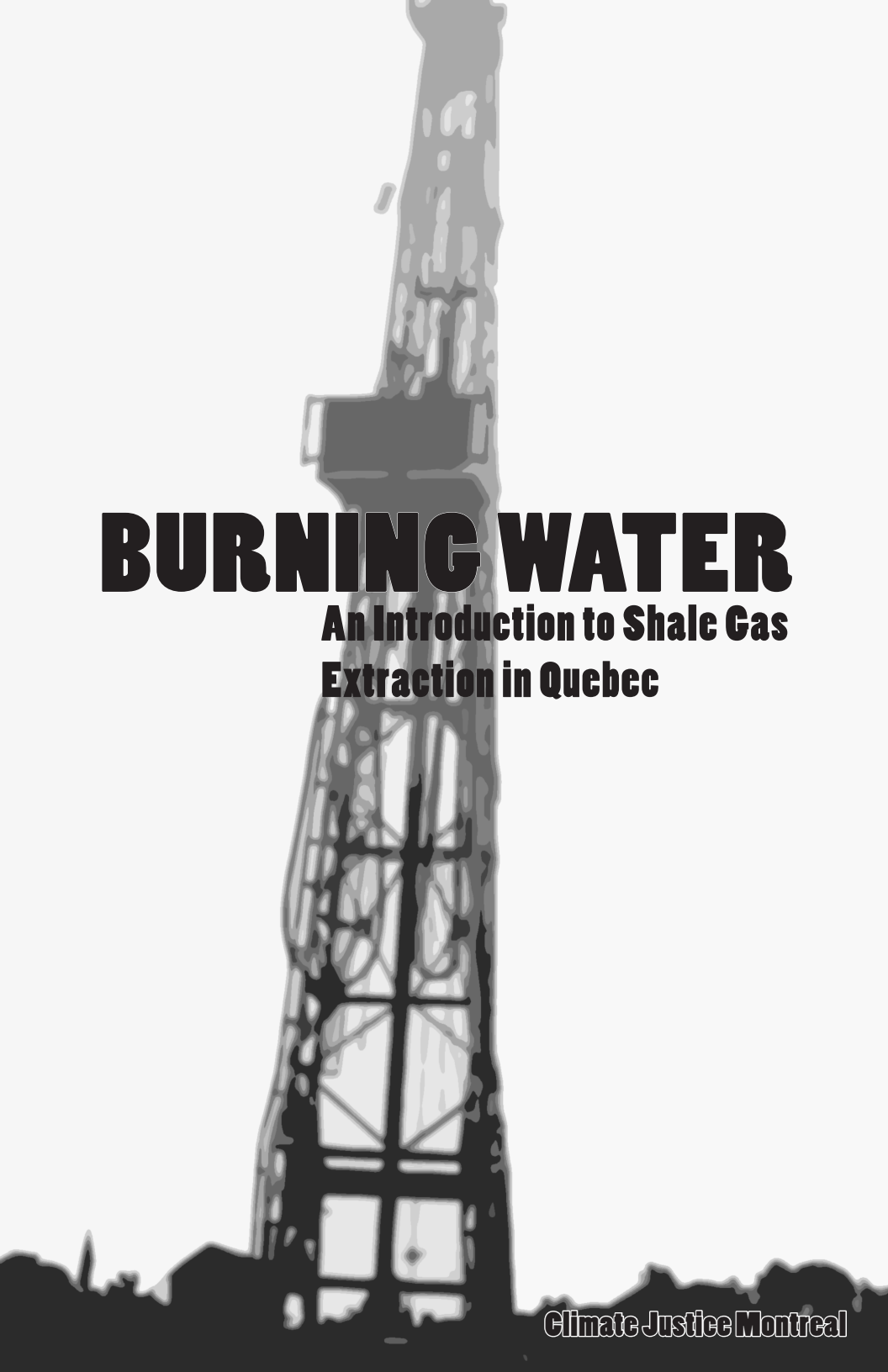


# BURNING WATER

## An Introduction to Shale Gas Extraction in Quebec

Climate Justice Montreal

# the STAKES

You might not know it, but Quebec sits on top of a massive field of natural gas shale, millions of years in the making. It's called the Utica Shale. Today, corporations from around the world are hungrily eying the unconventional gas buried in the shale. Fully exploited, it will quickly become a multi-billion dollar industry. But at what cost?

The Utica Shale covers over 3,000 square kilometers of Quebec just south of Montreal. The lands that fall in the potential extraction zones are crossed by numerous rivers and creeks, from the Yamaska to the St.Lawrence. It's considered some of the most pristine and valuable agricultural land in the province.

To extract the liquified natural gas from shale located nearly 3 kilometers below the ground, corporations are planning a process called hydraulic fracturing. Hydraulic fracturing – commonly known as "fracking" – pumps thousands of litres of water mixed with a cocktail of chemicals into the earth to force cracks in the shale rock. Pockets of methane can then escape into a collection well.


Everywhere fracking is happening, the accompanying toxic brew has been polluting and poisoning lands and waters. And it releases staggering amounts of greenhouse gases, accelerating the climate crisis.

Recently, a Leger Marketing poll revealed that 76% of Quebecers want "suspension all shale gas exploration until impact studies are complete".

So what is more important: The air, water and land we depend upon for life? Or the short term profits of a fossil fuel boom?

Just look to Alberta – a province that has oscillated between boom and bust for nearly a century – for a window into Quebec's potential future.

We need to move beyond shale gas, and make plans to transition away from dirty fossil fuels. We can live in a world that is fair, just and doesn't sacrifice our planet for profit. The choice is ours.

# the PLAYERS

The Utica Shale play lies within 400 miles of the New York City market and that most of the extraction would probably be for export. The exploitation cost of a well in Quebec could reach 15million in comparison to 5million in other places, such as Alberta. To make up for this, the Quebec government is offering large low-cost land base to extraction companies in the form of exploration tax credits, 10-15 year leases, royalty holidays on new discoveries and overall very low royalty schemes (10% to 12.5%). So far, the government has issued a total of 600 drilling permits to the 29 companies involved. Below is a brief overview of some of the major corporate players:

**Forest Oil:** This Denver-based producer was one of the first company to do extensive shale testing and drilling at the Utica Shale Formation, starting in 2007, it is still active today, partnering with Junex for farm-ins.

**Questerre & Talisman Energy:** Calgary-based companies, are leading developers in Quebec., they operate two wells between Québec and Trois-Rivières that are ready to be fractured, and at least another 6 pilot wells. Together, they have secured access about 1.8 million acres in the Utica Shale gas formation.

**Canbriam:** Headquartered in Calgary, they operate in both Quebec and BC. It currently holds 173,118 gross acres of land in the St. Lawrence Lowlands and has 2 farm-in arrangements, one of which with Gastem. In 2009 it had drilled three horizontal gas wells in Quebec.

**Gastem:** This Montreal-based oil and gas exploration and development company is involved with partners in several shale-gas drilling operations in Quebec. It holds exploration and storage rights to over 1.1 million acres of land across Quebec. Their subsidiary, Gastem USA, holds exploration licenses to approximately 34,400 acres in New York State and 1,200 acres in Virginia. Just in St-Hyacinthe they have drilled four wells so far.

**Epsilon Energy Ltd.** This company, engaged in the exploration and production of oil and natural gas reserves in North America and Africa, have an elective participating interest of up to 25% in a portion of Gastem. They went non-consent on the first two exploratory wells drilled within the Yamaska project but have since decided to participate in the next well.

**Canadian Quantum Energy Corp.** With it's partners, Talisman Energy and Questerre Energy, they participated in the recent Gentilly discovery well and are participating in the drilling of the Gentilly #2HZ well. They also have a 50% partnership and joint operations with Junex on the 54,600 acre Nicolet Permit.

**9220-5558 Quebec inc**. On March 23rd, 2010, this company bought the exploration and exploitation rights to most of the island of Montreal for $0.10 per hectar. Quebec inc. is A Mac Oil subsidiar (Rome, Italy), itself a subsidiary of Petrocorp, NY, whose main shareholder is a Swiss citizen.

**Junex:** This Quebec-based enterprise holds half of the exploration permits (representing over 4million acres of land) issued by the Government of Quebec for shale gas, and has drilled at least 5 wells. Portrayed as a mom & pops business in the papers, this company is worth 77.73M on the stock market.

**Gaz Metro:** A major gas distributor in Quebec that has much to gain from the development of this industry. Going up owner chain it can be found that the company Enbridge, well known for it's environmentally devastating exploitation in the tar sands, owns over 30% of Gaz metro.

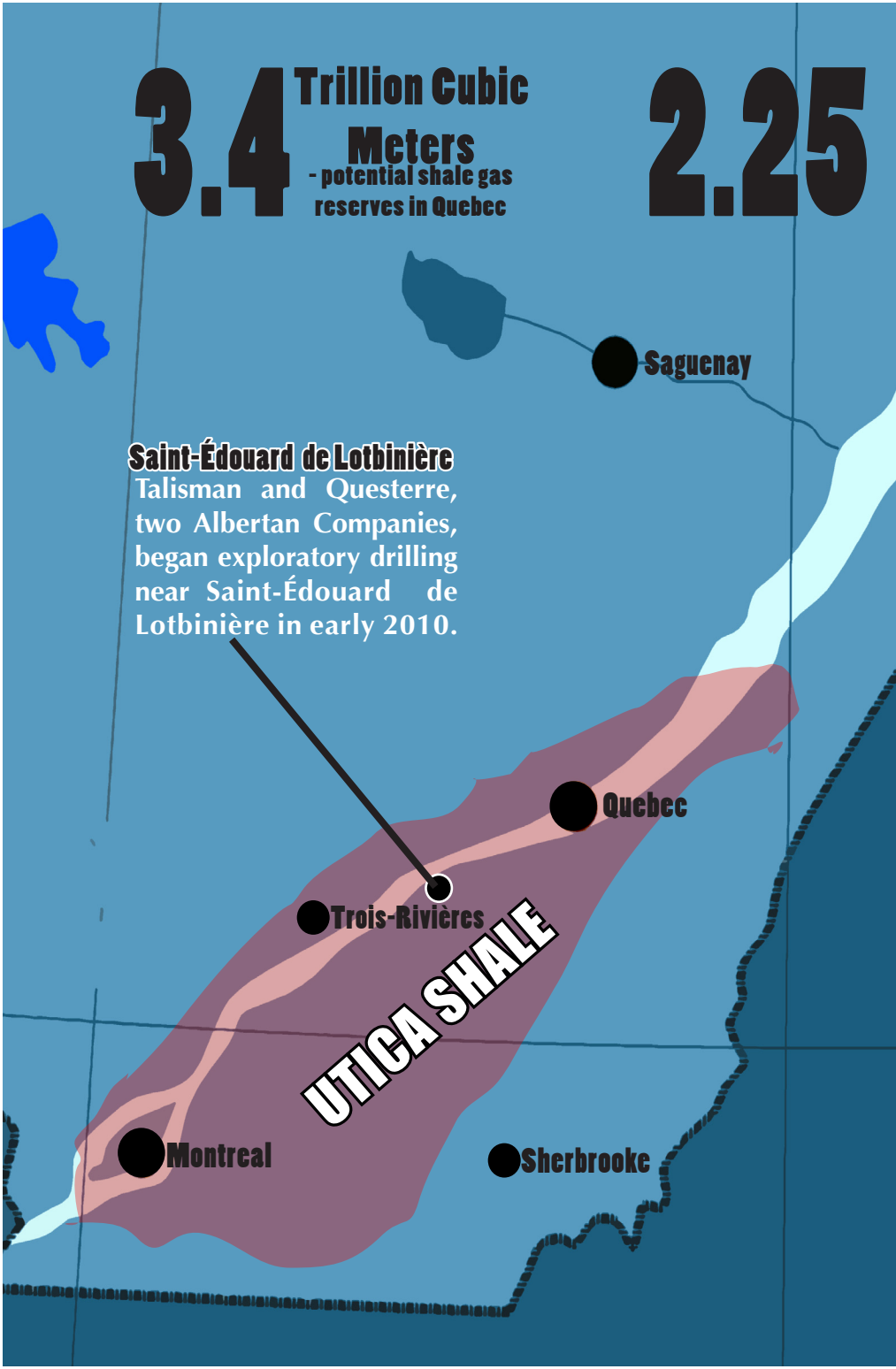
**GreenCastle:** In 2008 this Toronto-based company applied for an oil and gas exploration permit covering approximately 6,000 hectares in the Longueil area. The Quebec Government granted them permission to explore in this urban area.

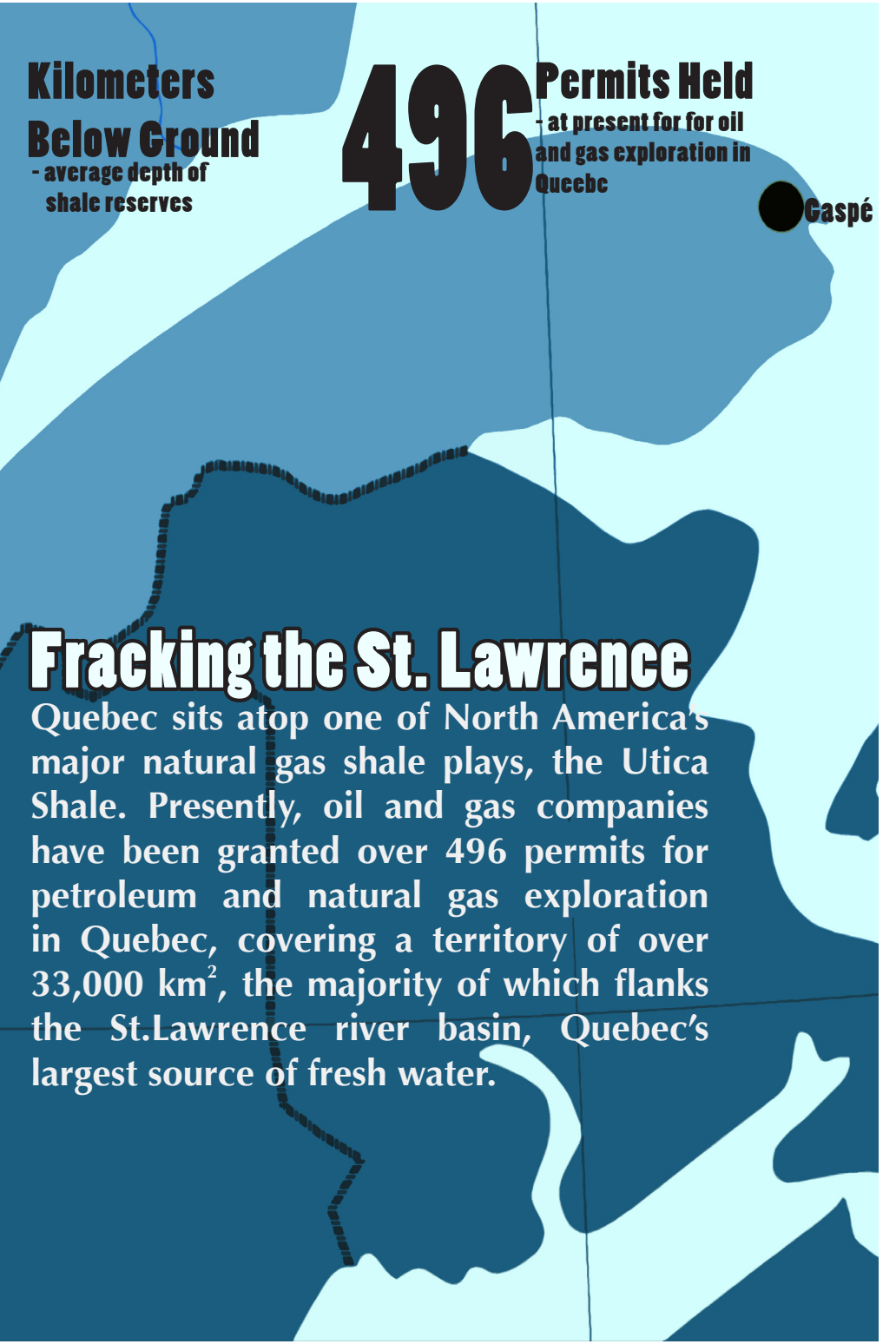
**Altai Resources:** An exploitation and production company that holds seven permits amounting to 282,544 acres in the lower St-Lawrence. Altai intends to drill, frac and test at least two wells very soon. This company also exploits gold and sulfur in the Philipines.

**Molopo Energy:** controls 2.2 million acres of shale gas exploration acreage in Quebec. Their application to drill in St. marc sur Richelieu, 20km northeast of Montreal has not been approved (so far). This company is involved in coalbed methane (CBM) and other on-shore petroleum products in Australia, South African, India and the US.

**Petrolympic Ltd.** In April 2006, the Quebec government granted this oil and gas company three exploration permits covering 139 856 acres directly south of the City of Valleyfield, less than 30km southwest of Montreal. Through a joint venture with Ressource & Energie Squatex Inc. they also have a 30% interest in 673,021 acres in the St. Lawrence Lowlands.

**X-Terra Resources Co.** This exploration and exploitation company holds a total of 643,264 acres in Quebec. Their sectors of activity are natural gas in Rimouski, Shawi and Trois-Pistole, gold and uranium in Northwestern Quebec, and lead/zinc in Rimouski.

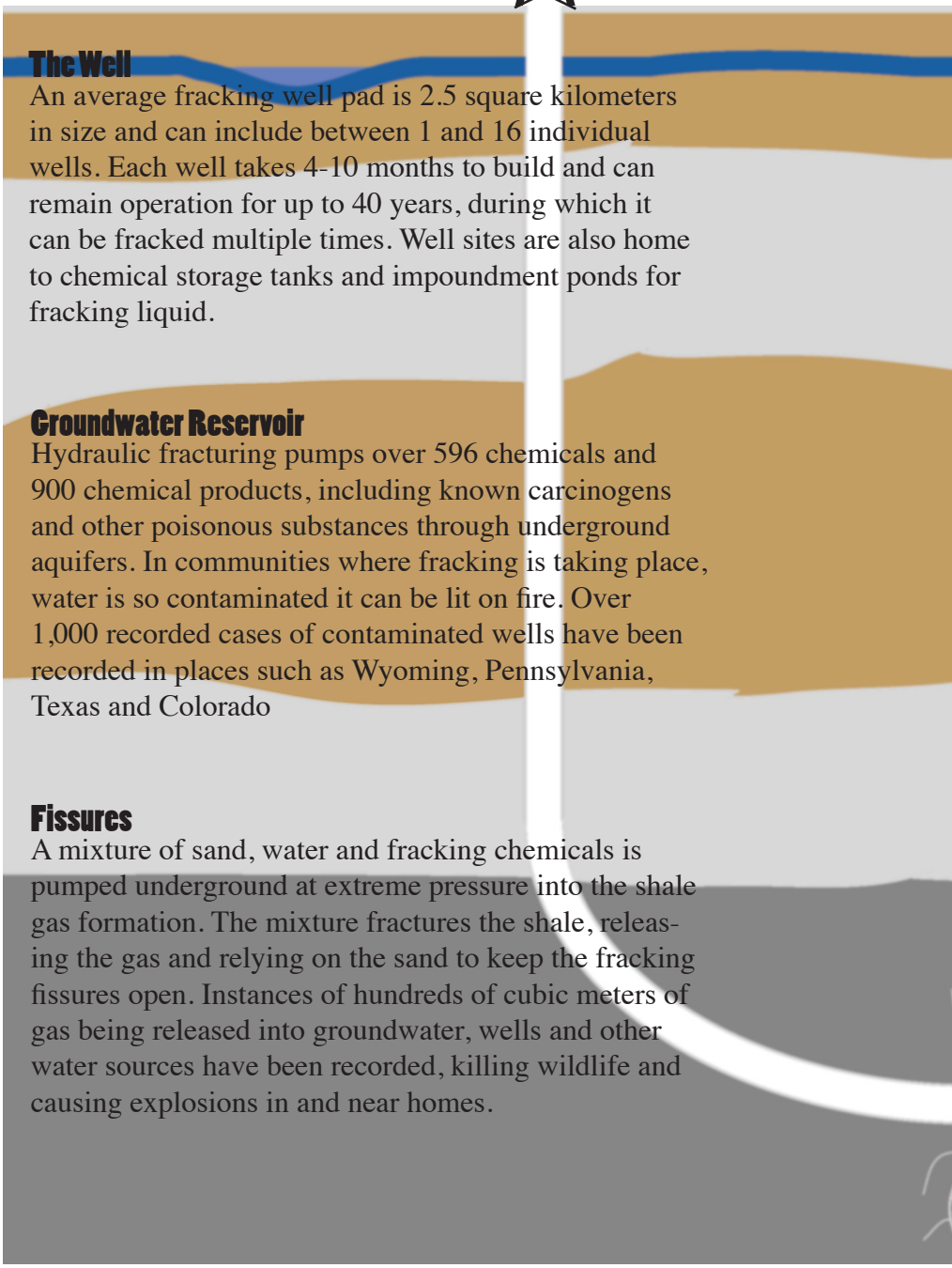

3.4 Trillion Cubic Meters
- potential shale gas reserves in Quebec
2.25
Saguenay
Saint-Édouard de Lotbinière
Talisman and Questerre, two Albertan Companies, began exploratory drilling near Saint-Édouard de Lotbinière in early 2010.
Quebec
Trois-Rivières
UTICA SHALE
Montreal
Sherbrooke




# Fracking the St. Lawrence

Quebec sits atop one of North America's major natural gas shale plays, the Utica Shale. Presently, oil and gas companies have been granted over 496 permits for petroleum and natural gas exploration in Quebec, covering a territory of over 33,000 $km^2$, the majority of which flanks the St.Lawrence river basin, Quebec's largest source of fresh water.

# Anatomy of a Gas Well



## The Well

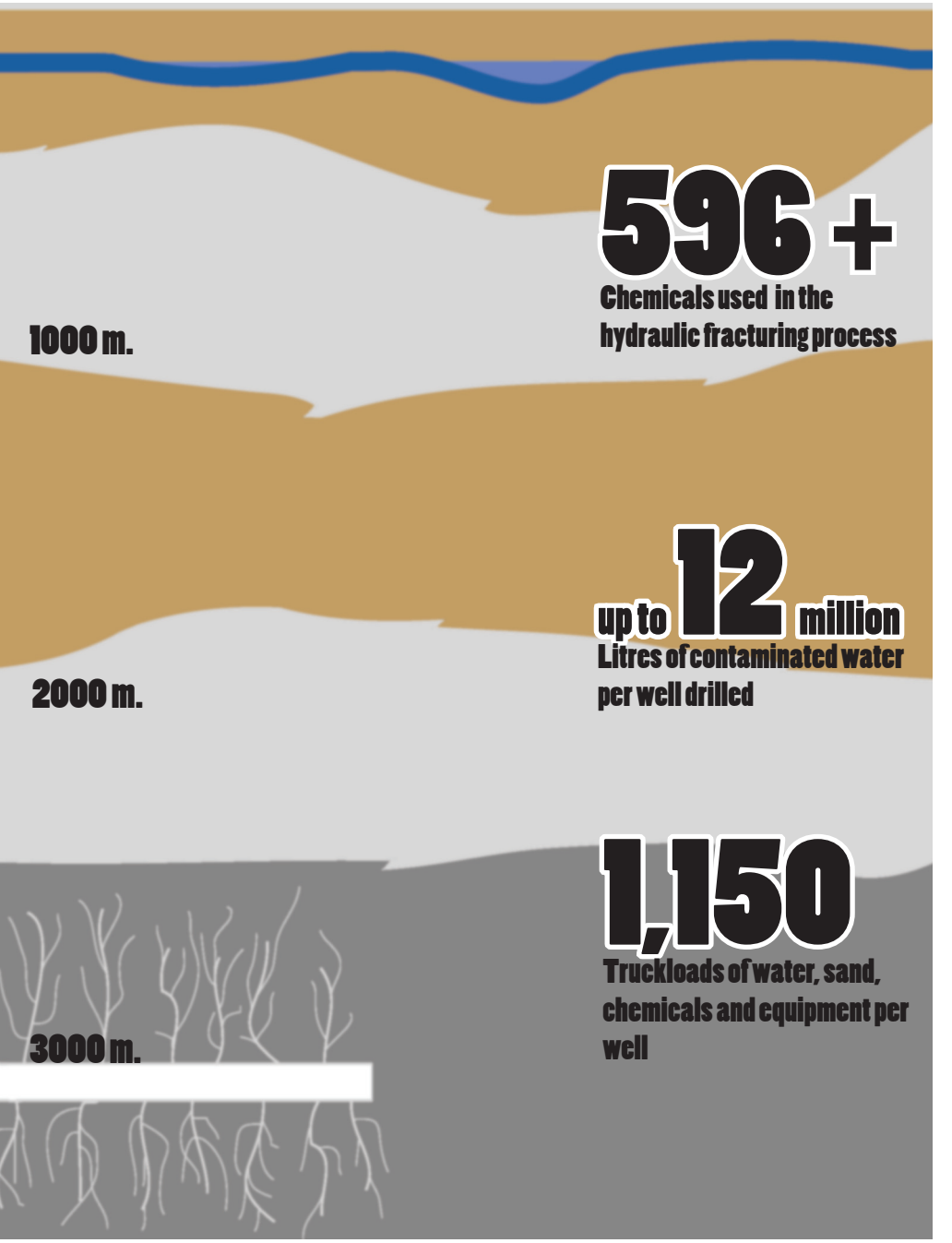
An average fracking well pad is 2.5 square kilometers in size and can include between 1 and 16 individual wells. Each well takes 4-10 months to build and can remain operation for up to 40 years, during which it can be fracked multiple times. Well sites are also home to chemical storage tanks and impoundment ponds for fracking liquid.

## Groundwater Reservoir

Hydraulic fracturing pumps over 596 chemicals and 900 chemical products, including known carcinogens and other poisonous substances through underground aquifers. In communities where fracking is taking place, water is so contaminated it can be lit on fire. Over 1,000 recorded cases of contaminated wells have been recorded in places such as Wyoming, Pennsylvania, Texas and Colorado

## Fissures

A mixture of sand, water and fracking chemicals is pumped underground at extreme pressure into the shale gas formation. The mixture fractures the shale, releasing the gas and relying on the sand to keep the fracking fissures open. Instances of hundreds of cubic meters of gas being released into groundwater, wells and other water sources have been recorded, killing wildlife and causing explosions in and near homes.


596 +
Chemicals used in the hydraulic fracturing process
1000 m.
up to 12 million
Litres of contaminated water per well drilled
2000 m.
1,150
Truckloads of water, sand, chemicals and equipment per well
3000 m.

# What you can do.

**Adequately worried?**

So are we, and so are more and more people every day. Here are a few ways to help prevent fracking from becoming a scary reality in Quebec.

**Spread the word**
Pass this booklet along and get in touch with us at climateactionmtl@gmail.com to order more to give to all your friends, classmates, coworkers, to pass out at your next community meeting or leave on a resource table at a local community center.

Climate Justice Montreal also facilitates workshops on Fracking, the Tar Sands and the ins and outs of Climate Justice in Quebec, email cam@climatejusticecoop.org for more info or to request a workshop.

**Help improve this booklet**
Knowledge is power, and every fact, figure and detail helps us in the fight to shut down fracking. If you know something that isn't covered here, or can help to shed some light on the many still unknown facts about fracking in Quebec, let us know.

**Join the campaign**
Climate Justice Montreal is an open organization, and anyone can join in and help out. Come out to an meeting and find out more about how to get involved.

**Donate**
Like this booklet? Check out our website or email us to find out how you can help fund our work.

**Direct Action**
Climate Justice Montreal is dedicated to taking creative, non-violent action to confront the root causes of climate change (which includes Fracking). Non-violent Direct Action has historically been one of the most effective tools for creating powerful social change, and can it also be fun. Drop us a line, and find out about our next action training.

**Get involved and raise your voice.**
Hydraulic fracturing poses a massive danger to the land, air and water of Quebec, but it is also part of a much larger system of short term, corporate controlled fossil fuel extraction that is fueling climate chaos and endangering all life on this planet. In order to stop this, we need to build broad based, inclusive social movements that can take build political power and forge community based solutions. Join in!

## CLIMATE JUSTICE NOW

Climate Justice Montreal is part of the founding committee to create a Climate Justice Co-operative, an organization that works to amplify community based resistance and expand the Climate Justice Movement. Find out more at www.climatejusticecoop.org