

Pipeline 9 Overview

World demand for oil is ever increasing even with massive developments and implementation of greener fuel sources such as solar, wind, geothermal etc. Most of the accessible cheap crude oil has been exhausted as the planet pumps its way past peak oil. Peak oil is the point where demand has outstripped conventional supply and production leading to eventual shortages unless new sources are found. Tar Sands, also called 'oil sands', is a large source of non-conventional crude oil. This oil is locked in soil either on the surface and also is contained underground. The solid that contains the crude oil is referred to as bitumen. High oil prices in addition to government subsidies, free environmental services and low royalty payments from production have all supported the development of the tar sands. The vast majority of bitumen is located in Alberta.

In short, Canada has been courting investment and world markets for this dirty and inefficient oil. The Canadian government partnered with Alberta wish to see this crude flow by pipelines both directly to markets in the US for refinement, eastern Canada and to BC ports to be shipped via tanker to world markets. Opposition has been large to say the least due to the real environmental threats, climate change and because it continues our dependence of fossil fuels.

Thank you to Wellington Water Watcher volunteer, Semini Pathberiya, for writing the following summary:

Pipelines. Air. Water. Land. Animals. All of these topics have been widely discussed in the media, debated over and protested about. Recently one specific pipeline, known as Line 9 has become a hotbed of attention and controversy. Line 9 is a part of the Canadian Mainline, stretching from Edmonton, Alberta to Montreal, Quebec, and is divided into two sections. Pipeline 9a starts from Sarnia, ON ending at North Westover and Pipeline 9b completes the rest of the way until Montreal. Line 9 is a 38-year-old pipeline and has recently generated interest because the owner and Canada's largest crude oil transporter, Enbridge, wants to ship oil sands (tar sands) from Alberta to refineries in Montreal and expand the barrels per day (bpd) capacity.

In November, 2013, the proposal to reverse the direction of oil in Line 9a was approved, and Line 9b was approved in March, 2014 by the National Energy Board. Pipeline 9 reversal would enable the line to carry both light crude and heavy crude such as bitumen¹. However, all this took place amidst the disapproving voices of many concerned citizens and environmentalists, activists and oil opponents. The lack

¹ <https://www.enbridge.com/ECRAI/Line9BReversalProject.aspx>

of adequate regulations, combined with streamlined environmental assessments and minimal information available to the public, have been some of the issues voiced.

Canada, a nation extremely rich in oil sands, claims a spot on the podium as owning the third largest undeveloped non-conventional oil reserve in the world. This accounts for a combination of 142,200 km² in Peace River, Athabasca and Cold Lake regions². While this contributes to economic growth, it brings destructive consequence to the environment and eliminates vast areas of natural habitat. Human health issues in places such as Fort Chipewyan have been linked to this industry. Tar sands are extracted using open pit mining, and acres are clear cut and wetlands dredged in order to provide oil. In fact, by December 31st 2012, 767km² of land was clear cut in Alberta to extract tar sands³. This activity not only destroys the environment, but also strips the natural carbon sinks off the earth. The Government of Alberta states that the "oil sands operators are legally obligated to reclaim all disturbed land to a productive state" but has so far planted only about 12 million seedlings⁴. Additionally, the total area the seedlings cover is not stated.

Sierra Club Canada estimates that to produce one barrel of oil, 4 tonnes of materials get mined, 2-5 barrels of water get used and enough natural gas to heat 1.5 homes are consumed⁵. Enbridge alone transports 2.2 million barrels per day and uses over 25,420km of crude oil pipelines⁶. Furthermore, Enbridge wants to expand their production using Light Oil Market Access, Eastern Access and Western Gulf Coast Access up to 1.7 million barrels per day (bpd) of crude oil by 2016⁷.

Extracting, processing and storing residue of tar sands is extremely energy intensive. About two tons of tar sands are used to produce one barrel of crude oil⁸. The increasing use of fresh water to separate the viscous bitumen from tar sands is another concern (in 2011, tar sands industry used approximately 370 million cubic meters of water from Athabasca River)⁹. Water extraction cost them 0 dollars as companies have licenses from the government of Alberta¹⁰. On the flip side, the residual wastewater left over from processing is stored in tailings ponds. This water contains fine clay particles and residues of bitumen as well as salt, naphthenic acids, polycyclic aromatic hydrocarbons (PAHs) (which are both carcinogenic and

² <http://ostseis.anl.gov/guide/tarsands/>

³ <http://www.energy.alberta.ca/OilSands/pdfs/AlbertasOilSandsFactsJan14.pdf>

⁴ <http://www.energy.alberta.ca/OilSands/pdfs/AlbertasOilSandsFactsJan14.pdf>

⁵ <http://www.sierraclub.ca/en/tar-sands/publications/tar-sands-and-global-warming>

⁶ <http://www.enbridge.com/DeliveringEnergy/OurPipelines.aspx>

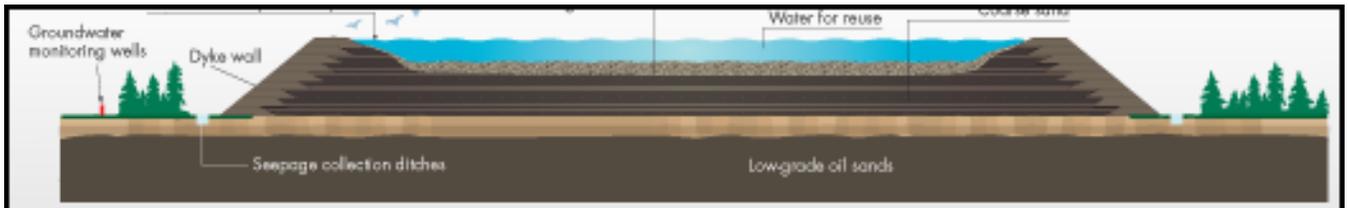
⁷ <http://www.enbridge.com/DeliveringEnergy/OurPipelines.aspx>

⁸ <http://ostseis.anl.gov/guide/tarsands/>

⁹ http://e360.yale.edu/feature/with_tar_sands_development_growing_concern_on_water_use/2672/

¹⁰ http://e360.yale.edu/feature/with_tar_sands_development_growing_concern_on_water_use/2672/

mutagenic), heavy metals, cyanide, benzene and other pollutants¹¹. As oil sand mining has a zero discharge policy (due to toxins that get mixed in water¹²) only the top 3 metres of water from tailings ponds get recycled¹³. The bottom layer, known as fine tailings, can take up to 30 years to settle and solidify, and has a texture similar to yoghurt.¹⁴



Tailings pond structure

Source: <http://www.oilsandstoday.ca/topics/Tailings/Pages/default.aspx>

Line 9 reversal and the development of tar sands have a bigger impact than anticipated when considering the cumulative effects. 45 of Canada's 616 Aboriginal groups (First Nations, Métis and Inuit) are residing in Alberta and account for approximately 23,000 people living in the vicinity of oil sands¹⁵. In addition to air and water pollution, oil sands mining have encroached upon much of the traditional territories (about 80% of land belonging to both the Mikisew Cree and Athabasca Chipewyan First Nations).¹⁶ A study released in July 2014 by the University of Manitoba states that most flora and fauna (a major part of Aboriginal people's traditional diet) in the Mikisew Cree First Nation and Athabasca Chipewyan First Nation territories are contaminated with contaminants including heavy metals and polycyclic aromatic hydrocarbons (PAHs)¹⁷. Environmental degradation in Alberta is a warning sign of impending disasters in other regions.

¹¹ http://www.greenpeace.org/canada/Global/canada/report/2010/4/Watershed_FS_footnote_rev_5.pdf

¹² <http://www.pembina.org/oil-sands/os101/water>

¹³ <http://www.oilsandstoday.ca/topics/Tailings/Pages/default.aspx>

¹⁴ <http://www.oilsandstoday.ca/topics/Tailings/Pages/default.aspx>

¹⁵ <http://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/energy/pdf/eneene/pubpub/pdf/12-0655-OS-Aboriginal-eng.pdf>

¹⁶ <http://tarsandssolutions.org/tar-sands/human-rights>

¹⁷ <http://news.umanitoba.ca/study-finds-oil-sands-creating-perfect-storm-of-danger-to-flora-fauna-and-people/>

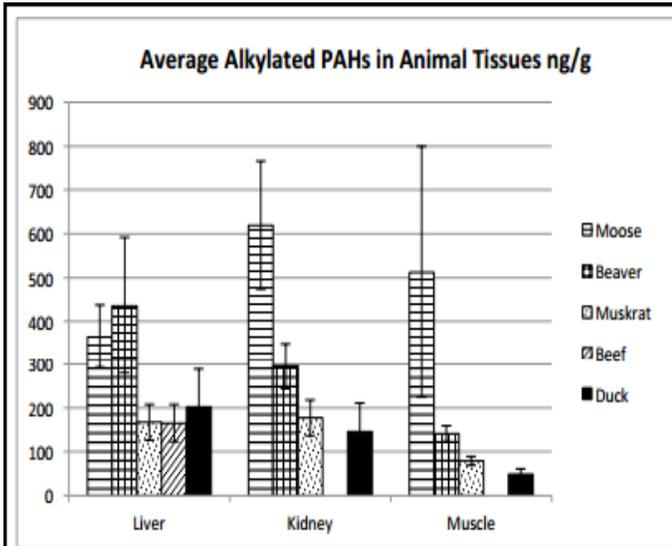


FIG 7.2. Average of alkylated PAHs in ng/g in liver, kidney and meat (muscle) of moose, beaver, muskrat, Co-op beef, and duck. SE bar indicated for each mean.

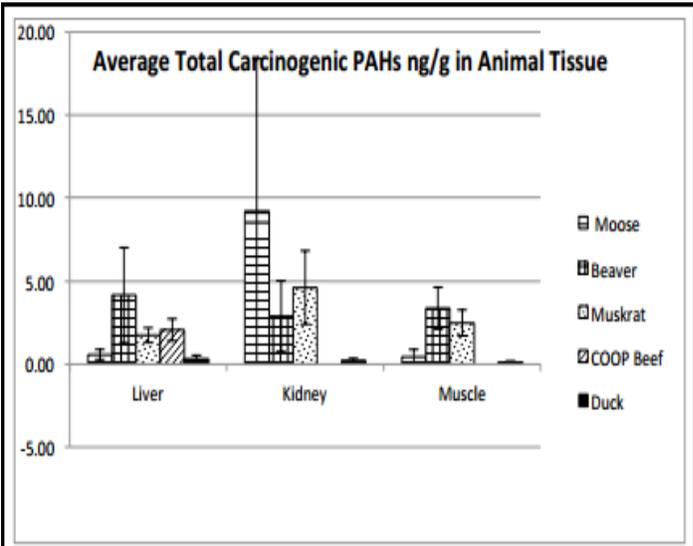


FIG 7.3. Average carcinogenic PAHs in ng/g in liver, kidney and meat (muscle) of moose, beaver, muskrat and Co-op beef. SE bar indicated for each mean value.

Source: Environment and Human Health Implications of the Athabasca Oil Sands for the Mikisew Cree First Nation and Athabasca Chipewyan First Nation in Northern Alberta
 Accessed via: <http://onerivernews.ca/health-study-press-release-2014/>

Developing oil sand is a national and international threat. Enbridge is widely known for having multiple spills a year and is responsible for the Kalamazoo spill that happened in 2010¹⁸, where an estimated 843,000 gallons (3,191,199 litres) entered the Kalamazoo River¹⁹.

¹⁸ <http://www.epa.gov/enbridgespill/>

¹⁹ <http://www.epa.gov/enbridgespill/>

Enbridge's spill record

Year	Number of Spills	Number of barrels spilled
1999	54	28,760
2000	48	7,513
2001	34	25,980
2002	48	14,683
2003	62	6,410
2004	69	3,252
2005	70	9,825
2006	68	5,734
2007	65	13,777
2008	92	2,842
2009	103	8,441
2010	91	34,258

Table 1: Total Spills on Enbridge Pipelines (U.S and Canada)
Sources: Out on the Tar Sands Mainline (2012)²⁰

However, that Enbridge is only obligated to notify spills that are only 1,500 litres or more²¹ and that there is a difference between spills that occur along the route and spills that occur inside facilities²². The data in the table above only shows the spills along the routes.

The Tar sands industry is the fastest growing green house gas (GHG) sector in Canada²³. As is, Canada is already one of the top ten GHG emitters in the world and

²⁰ <http://www.energybc.ca/cache/oil2/www.tarsandswatch.org/files/Updated%20Enbridge%20Profile.pdf>

²¹ Interview with Wolf Chapko

²² <http://www.ctvnews.ca/w5/enbridge-record-questioned-company-vows-to-do-better-as-line-9-pipeline-decision-nears-1.1698491>

²³

http://www.greenpeace.org/canada/Global/canada/report/2010/4/ClimateChange_FS_Footnotes_rev_4.pdf

one of the highest per capita emitters. If the oil sands production increases as expected, the emissions are expected to quadruple from 27 to 126 million tonnes by 2015 and proceed to increase up to 142 million tonnes by 2020²⁴. "Expanding the tar sands makes it impossible for Canada to meet its 2020 Copenhagen target," said Danielle Droitsch, Canada Project Director, at the Natural Resources Defense Council²⁵. In order to meet the Copenhagen target, Canada needs to reduce the total GHG emission by 17% compared to 2005 levels²⁶. If the oil sands are expanded within the upcoming few years and GHG gas emissions quadruple, the Copenhagen commitment would experience the same fate as the Kyoto Protocol.

Why does this matter to Guelph and Wellington County?

While these have been major concerns to some Canadians, there are many consequences that may impact the residents of Guelph, Ontario and to our beloved water system following this reversal. An interview with Wolf Chrapko, a local activist, helps peel away the layers of dollars and uncover a bit of truth about the profit driven decisions that leads to citizen actions and to understand the urgency to voice our opinions.

Concerned citizens from across Canada have started to show their dissatisfaction for the lack of adequate regulations, disregard for the environment and lack of emergency preparedness infrastructure (in case of a spill). Activist Wolf Chrapko, who is highly engaged regarding the Line 9 in Guelph, joined Wellington Water Watches to share her perspective.

Wolf is active regarding Line 9 because of concerns about the development of tar sands due to: the consequences on the environment in the event of a spill, its large contribution to amplifying climate change and how it creates and even more fossil fuel based Canadian economy. At a local scale, she is concerned about the Guelph-Amabel Aquifer, of which 80-90% of Guelphites depend on for their drinking water²⁷. Even though Line 9 doesn't directly run underneath Guelph, it crosses the Grand River in Cambridge²⁸. Guelph, Kitchener and Cambridge are all a part of the Grand River Watershed and these communities (along with many others) will be affected by a potential spill²⁹. The Grand River basin is also home to 80 species at risk, including the Great Egret. This poses a tremendous threat to our local flora and fauna.

²⁴

http://www.greenpeace.org/canada/Global/canada/report/2010/4/ClimateChange_FS_Footnotes_rev_4.pdf

²⁵ <http://www.desmog.ca/2013/08/14/canada-can-t-meet-its-carbon-emission-targets-analysis-shows>

²⁶ <http://www.desmog.ca/2013/08/14/canada-can-t-meet-its-carbon-emission-targets-analysis-shows>

²⁷ <http://ontario.sierraclub.ca/en/blog/denna-berg/bottle-shock>

²⁸ environmentaldefence.ca/sites/default/.../ED_enb_factsheet_FINAL.PDF

²⁹ <http://www.grandriver.ca/Grca/GrandRiverWatershedMap.pdf>

A spill into the Grand River would make downstream water unusable, in turn putting immense pressure on other water sources such as the Guelph-Amabel Aquifer assuming the unlikely scenario that ground water supplies were not contaminated by such a spill. As seen by the Kalamazoo river spill cleaning up an oil spill can take years and can have drastic impacts the environment. Unfortunately, structurally, both the Pipeline 6b (in Kalamazoo) and Pipeline 9b are similar³⁰. Pipeline safety expert Richard Kuprewicz stated that as Line 9 is not built to carry heavy crude, there is a 90% chance of a spill happening within the first few years³¹, which puts our drinking water in jeopardy.

However, there are many other groups and organizations as well in Guelph and surrounding areas speaking out about Pipeline 9. These groups include:

1. Guelph Anti-Pipeline Action Group (GAP)
2. Transition Guelph
3. Ontario Public Interest Research Group (OPIRG)
4. Fossil Free Guelph
5. Guelph 350
6. Council of Canadians
7. No Line 9
8. Environmental Defense
9. Dam Line 9
10. Waterloo Region Against Line 9

How You Can Get Involved

There are many ways to get involved and make your voice be heard, however big or small. Wolf outlines a few steps anyone can take:

1. Educate yourself and others to understand the issues and the implications surrounding Line 9.
2. Get actively involved and connect with the network of individuals and groups involved in Line 9 issues.

There are also numerous ways to support the Line 9 oppositions without directly getting involved. Anyone can donate money (which contributes to legal fees, pamphlets, organizing events, etc), join list serves, disseminate information, strike up conversations and distribute pamphlets. There are also online resources such as

³⁰ http://www.brucetwp.org/news/docs/Line_6B_Gateway_Comparison_9_10_12_FINAL.pdf

³¹ <http://canadians.org/blog/ontario-must-stop-risky-pipeline-projects>

Reclaim Turtle Island, Rising Tides, The Indignants and Earth First that are accessible via the internet.

The urgency and the necessity of making our voices as citizens heard is more important now than ever. Many decision makers support the pipeline due to mere one-dimensional economic justifications. It is critical that we all come together and to demonstrate that we care about more than just a corporate value placed on resources. Unbridled development has large external costs to the environment and our health. In the words of Wolf Chrapko "We need to not only challenge dangerous projects like Line 9, we need to challenge ourselves to shift the way we think about energy. We need to end our addiction to fossil fuels, because it's killing ourselves, and more importantly, killing all the living things with the smallest carbon foot prints."