



# Fact Sheet: A Brief on Condensate and Diluents

*Condensate is considered a “dangerous good”, and is classified as a highly toxic substance by the federal government. It is highly flammable, and under certain conditions, explosive. It is toxic in its liquid form, and vapours are extremely toxic also.*

- Enbridge and Pembina Pipelines have both proposed to transport condensate through pipelines crossing Northern British Columbia.
- The pipelines would cross hundreds of fish-bearing streams and rivers, wetlands, wildlife habitat, and berry and medicine gathering grounds.
- While environmental impacts of oil spills are fairly well documented, less is known about condensate.
- The proposed Pembina pipeline would transport condensate to the Alberta oil sands to help thin heavy oil.

## **Definition - *CONDENSATE***

As natural gas comes to the surface, pressure is released and temperatures are lowered, and some of the gas content naturally condenses into a light oil called condensate.

This naturally occurring hydrocarbon primarily consists of pentane, hexane, heptane, octane, as well as more complex impurities, including benzene, toluene, xylene, ethylbenzene and hydrogen sulfide.

This condensate is sometimes referred to as naphtha (incorrectly) or “natural gasoline”.

## Diluents and How They Are Used

Diluents are fluids used to reduce the viscosity (thickness) of heavy oils, such as bitumen based crude oil from the tar sands, in order to thin them enough to transport through pipelines.

Condensate is the most often used diluent in transporting crude oil in western Canada. Other diluents include byproducts of the refining process, as well as upgraded synthetic crude from the tar sands which is sometimes mixed with bitumen based crude oils to thin them.



Condensate is used to thin heavy oil so that it can easily pass through pipelines.



Pembina and Enbridge would transport condensate to the Alberta oil sands, seen here.

### Did You Know?

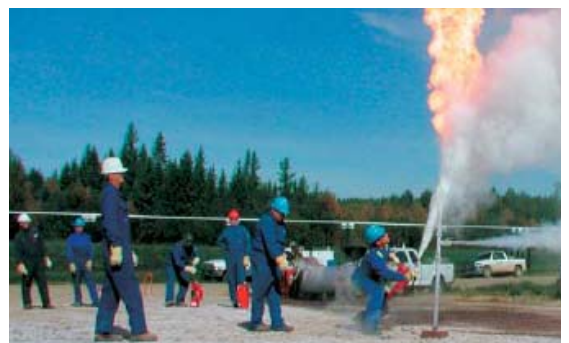
- A family of compounds called polycyclic aromatic hydrocarbons (PAHs) are the primary contaminant of concern after a spill. They are a major contributor to food-tainting, they can adversely affect the health of contaminated organisms and some PAHs are carcinogenic to humans.
- The benzene component of condensate is a known human carcinogen that may cause aplastic anemia and leukemia. Leukemia is cancer of the bone marrow.
- Condensate spill research is lacking. Effects are likely similar to crude oil, but condensate may be more difficult to contain or clean up because it is lighter in nature, making spill recovery techniques such as containment booms ineffective.

## The Role of Diluents in Oil Sands Expansion

The expansion of the tar sands production from current levels in excess of one million barrels a day, to projected levels of up to 3.5 million barrels a day, would require a huge increase in the supply of condensate or other diluents.

Future condensate requirements are forecasted at up to 500,000 barrels a day. Condensate is key to proposed oil sands expansion. The oil sands are the single greatest new source of greenhouse gas emissions in Canada.

Currently about 25,000 barrels a day of condensate is being shipped through Northern BC by CN Rail. This condensate is offloaded from tankers at Kitimat, into the old Methanex storage facilities. These condensate trains traverse the headwaters of both the Skeena and Fraser Rivers.



Condensate is extremely flammable. Vapours are heavier than air and may travel considerable distances to a source of ignition and flash back.

*Prepared by Headwaters Initiative & Carrier Sekani Tribal Council.*