

9. Environmental Protection and Regulations

The federal and provincial governments have strong legislation and regulations to protect the environment in the production and transportation of natural gas. The provincial government’s regulator is the BC Oil and Gas Commission.

The Commission is responsible for overseeing all natural gas operations in British Columbia. This includes exploration and development, pipeline transportation, and well reclamation (returning an exploration site to its original state). The Commission can (and regularly does) toughen industry rules and guidelines to ensure natural gas activities are safe.

Protecting drinking water

- Provincial laws outline how the natural gas industry must protect water at all times.
- All laws are rigorously enforced by the provincial government and its agencies, including the Commission.
- All water use is tracked.
- Natural gas companies must apply for and receive a water use permit or licence.

- Each application for water use is treated as a new request, and thoroughly reviewed on its own merits.
- Natural gas companies must report how much water they actually use. Historically, companies use only a fraction of the water they have been allocated. In 2013 approximately 15% of the total amount allocated was actually used.
- In 2013, actual water used was less than one half of 1% of the annual runoff (water flowing into lakes and rivers over the year) in northeastern B.C. rivers and basins.

Protecting the environment

- Natural gas companies are required to monitor and inspect pipelines regularly to ensure they are safe and will not leak.
- Companies must report the details of their monitoring actions to government regulators.
- Provincial laws outline how industry must protect wildlife. This is carefully considered before any pipeline or facility permits are granted. Permits regularly contain additional requirements to lessen the effect on wildlife during all phases of operation, from construction to decommissioning.

Points to consider:

- Were you aware of the environmental regulations currently in place?
- What would be the most effective way for people to learn and understand the details about environmental protection?

Dig a little deeper:

Natural gas activities in northeastern B.C. use only 2.28% of the land base. This includes all types of activities, including roads and trails that are also used by others. It includes all land used over time, including areas that have been restored.

	Area used for oil and gas activities (hectares)	Per cent of northeastern B.C. (hectares)
Wells	30,226	0.17
Roads	83,492	0.48
Facilities	1,543	0.01
Pipelines	43,893	0.25
Other oil and gas infrastructures	12,672	0.07
Geophysical exploration (seismic lines)	227,815	1.30
Total area used for oil and gas activities	399,641	2.28

9. Environmental Protection and Regulations, *continued*

Earthquakes and natural gas activity

The BC Oil and Gas Commission has strong measures in place for reporting seismic events associated with industry activities.

- A Commission investigation found hydraulic fracturing can be connected to very small, barely detectable movements underground, which have resulted in no surface damage.
- Infrastructure, such as wells and pipelines, is built to withstand the effects of an earthquake or seismic disturbance.
- B.C. has tightened requirements to monitor, report and address seismic disturbances.
- To ensure data is monitored constantly, six additional seismograph stations have been installed across northeastern B.C. to measure underground activity.

Land reclamation

Regulations and legal requirements cover the restoration of natural gas sites that are no longer operating.

- Planning to reclaim a natural gas well starts at the beginning of the project, long before the well reaches the end of production.
- For example, companies must minimize the disturbance to nearby land before and during a drilling operation. This decreases the amount of work necessary to return the area to its original state after the well is no longer producing natural gas.
- It generally takes a year or more to reclaim a well site – from the time the well is capped and equipment removed, to cleaning up any contaminants, replacing soil and replanting native vegetation.

Protecting communities and the environment from fires and explosions

- Operators must prepare and maintain emergency response plans.
- Each company must have a corporate program area that is responsible for emergency management.
- The Commission has procedures in place to monitor pipeline conditions and respond to emergencies 24 hours a day.

Protecting the ocean from spills

LNG carriers are built to rigorous international standards.

- Construction is supervised by third-party inspectors, and all ships must have international certification to carry liquefied natural gas.
- All LNG-certified ships have double hulls.
- Cargo tanks are separated from the hull structure by thick insulation.
- Carriers and tanks are specifically designed to contain LNG and prevent natural gas from leaking.
- They are inspected once a year, with a full dry dock inspection every five years.

In the unlikely case of a leak, there is a low risk of environmental damage.

- Liquefied natural gas is colourless, odourless, non-toxic and non-corrosive.
- The natural condition of LNG is gas. As LNG warms up from -160°C, it will evaporate and return to a gaseous state, dispersing into the atmosphere.
- LNG tanks are not pressurized, and they contain no oxygen. Under these conditions, LNG is not explosive.