

Stronger requirements for oil and natural gas exploration

Introduction

On June 23, 2011, the Government of New Brunswick announced stronger requirements to strengthen the regulatory framework for oil and natural gas exploration, development and production in the province.

These requirements will better protect and inform New Brunswickers as the province plans for the possible expansion of the oil and natural gas industry.

Under these requirements, oil and natural gas companies that wish to engage in exploration, development and production in New Brunswick must:

- conduct baseline testing on all potable water wells located within a minimum distance of 200 metres of seismic testing and 500 metres of drilling for oil or natural gas before these operations can begin. These are minimum distance requirements that must be met prior to commencement of operations and may be increased depending upon the situation;
- provide full disclosure of all proposed, and actual, contents of any fluids, chemicals and additives used in the hydraulic fracturing (fracing) process; and
- establish a security bond to protect property owners and taxpayers from the impact of industrial accidents, including the loss of, or contamination of, drinking water. The burden of proof in the event of such an accident will rest with the operator.

In addition to these three requirements, the provincial government also committed to develop a formula so landowners with production facilities on their properties and nearby communities can share in the financial benefits of the oil and natural gas industry.

The following provides details of each of these requirements.

Minimum distances for baseline water testing

Companies exploring for natural gas and oil in New Brunswick will be required to test all potable water sources located within 200 metres of seismic testing. This is a minimum distance and formalizes the requirement for baseline testing of drinking water sources prior to seismic testing.

Baseline testing of wells is conducted to document the quality of water supplies in the vicinity of seismic surveys and drilling operations for oil and natural gas prior to these activities taking place.

Third-party consulting firms collect water samples and information about the age and construction of the well from homes where the owner has given permission. Water samples will be sent to an accredited laboratory for chemical analysis and the results will be sent to the homeowner and kept on file at the Department of Health and the Department of Environment.

Seismic testing is used to create maps that show potential crude oil and natural gas reservoirs far beneath the earth's surface. This is done through the use of sound waves that are generated using truck-mounted vibrators or small explosive charges that are buried in the ground.

In the case of truck-mounted vibrators, the underlying vibrating plate is placed on the ground and activated, producing downward signals that are reflected off subsurface rock formations and recorded at the surface.

Seismic imaging is also generated and collected using a small explosive charge that is placed in a hole drilled six to 15 metres (6.5 to 16.4 yards) below the surface and tamped into place with clay and gravel. Sound waves generated by the explosive charge also produce downward signals that reflect off subsurface rock formations and are collected for analysis.

Oil and natural gas companies drilling exploratory or production wells will be required to conduct baseline testing on water collected from potable water sources within 500 metres of drilling activity. This is the minimum distance requirement and has increased from the previous minimum distance of 300 metres.

Disclosure of all ingredients used in the hydraulic fracturing process

Government will require companies to provide full disclosure of all proposed, and actual, contents of any fluids, additives and chemicals used in the hydraulic fracturing (fracing) process.

The hydraulic fracturing process was developed commercially in the 1940s and has been used extensively throughout the United States and western Canada during the past two decades to recover oil and gas from unconventional sources. Well over one million oil and natural gas wells have been hydraulically fractured in North America since the commercial application of the process.

Hydraulic fracturing typically utilizes a mixture of water, sand and additives that is injected into a well at high pressures to create fractures within a "tight" rock formation, such as shale or sandstone. These fractures allow oil or natural gas to flow into the wellbore and back to the surface.

Water and sand typically comprise 98 to 99 per cent of a fracturing fluid mixture, with the remaining components consisting of various chemical additives used to control the properties of the fracing fluid during various phases of the fracturing process.

Many of the additives used in this process are found in common household products. They include:

- **biocides** to control growth of bacteria. Biocides are used in disinfectants and for medical equipment sterilization;
- **corrosion inhibiters** to protect the well casing from corrosion. Corrosion inhibiters are used in pharmaceuticals and plastics;
- **friction reducers** to make the fluid more "slippery." Friction reducers are used in water treatment and soil conditioners;
- acids and scale inhibitors to keep metal oxides and other solids from forming in the drill casing and impeding the flow of hydrocarbons from the well. Acids and scale inhibitors are used in food additives, swimming pool cleaners, automobile antifreeze and household cleaners.

Companies will have to provide a list of all fluids, chemicals and additives to be used for hydraulic fracturing.

Security bonds

Government will require companies involved in the exploration, development and production of natural gas and oil to post a security bond that will protect property owners in the event of an industrial accident, including the loss of, or contamination of, drinking water.

Having a security bond in place will ensure compensation is available and can be accessed quickly in the event of an industrial accident. This will also benefit taxpayers by ensuring the operator pays the cost of any damage for which it is responsible.

It is government's intention that the burden of proof in the event of such an incident will rest with the oil or natural gas company, meaning the company would have to prove it was not the responsible party.

Establishing a formula for revenue sharing

This is general revenue that is used to help provide essential public services and programs to all New Brunswickers and this is the normal practice across Canada as all provinces are the owners of the majority of mineral rights.

The Province of New Brunswick now collects a royalty equal to 10 per cent of the wellhead value of natural gas and up to 12 per cent for oil, based on the volume of production. Some processing and transportation allowances are permitted in determining the value of natural gas and oil at the wellhead, but no costs – including exploration and production costs -- are deducted in the calculation of the royalty owed to the province.

While royalty collection will remain with the Province of New Brunswick, government has committed to developing a formula so landowners with production facilities on their properties and nearby communities will share in the financial benefits associated with production of natural gas industry if and when commercial production takes place.

The province is currently investigating options, including looking at revenue-sharing in other jurisdictions, to determine what system and what formula will work best in New Brunswick. This system will benefit those most directly affected by oil and natural gas production while recognizing that royalty revenues are vital to paying for programs such as health care, senior care and education which benefit all New Brunswickers.

It is government's intention that revenue sharing will apply to all production of natural gas and oil.

Part of government's natural gas action plan

The stronger requirements for oil and gas exploration, development and production strengthen the existing regulatory framework that has been used for decades to regulate oil and natural gas activity in New Brunswick.

Government's goal is to continue to develop a model regulatory framework, with the necessary monitoring and enforcement mechanisms to protect the environment and residents of New Brunswick.

This framework, including the stronger requirements, will become part of the natural gas action plan being developed under the direction of government's Natural Gas Steering Committee. The steering committee is made up of the Ministers and Deputy Ministers of the provincial Departments of Environment, Energy and Natural Resources as well as other high-level government officials.

It is government's intention that the natural gas action plan will be completed by no later than March 2012.