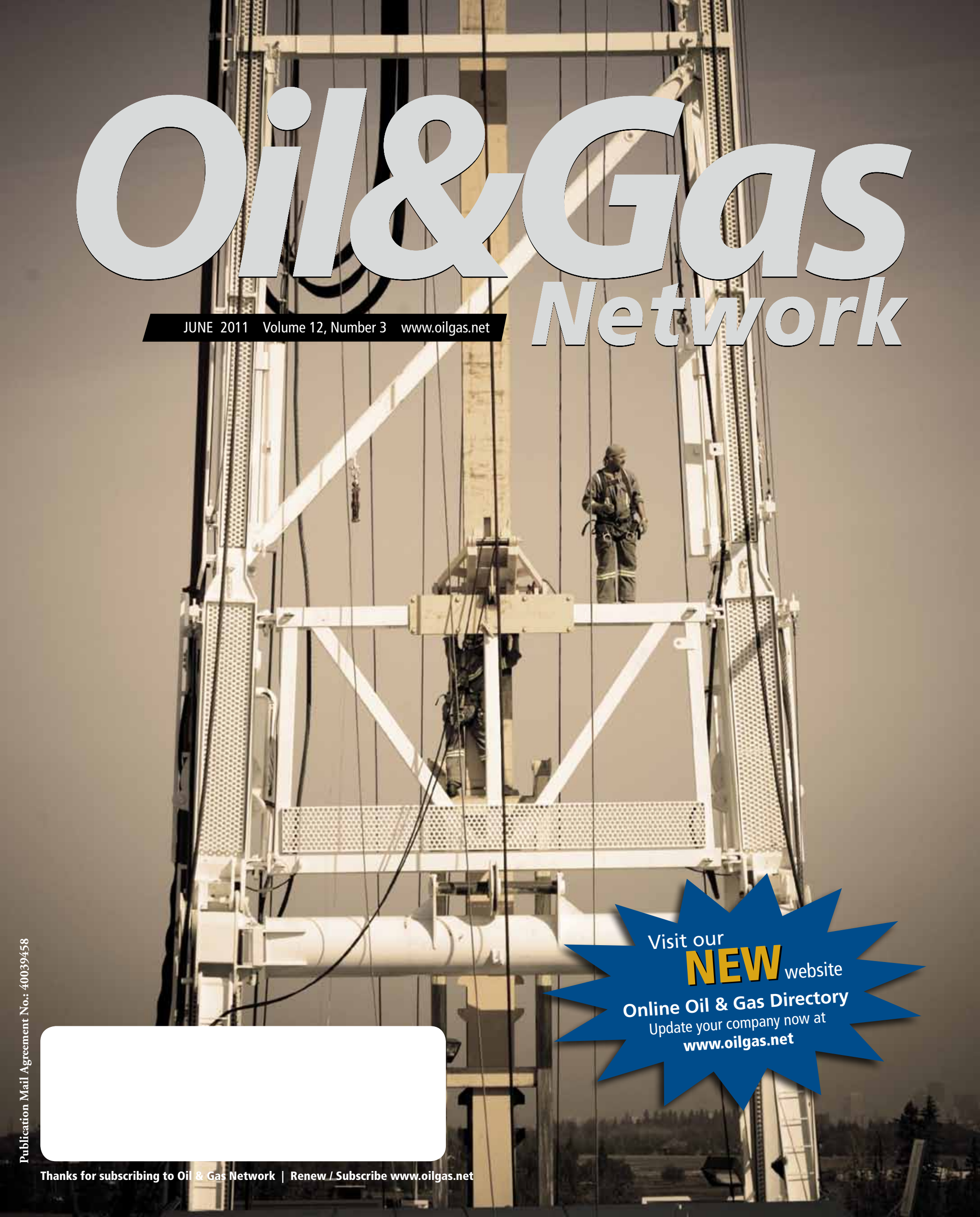
# Oil&Gas Network

JUNE 2011 Volume 12, Number 3 www.oilgas.net





Publication Mail Agreement No.: 40039458

# Hydraulic Fracturing – A Balancing of Interests

EARLIER THIS YEAR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA) submitted a draft study plan on the "Potential Impacts of Hydraulic Fracturing on Drinking Water Resources" to the agency's Science Advisory Board (SAB), a group of independent scientists. Hydraulic fracturing is the process whereby large volumes of water, sand and chemicals are injected at high pressures to extract oil and natural gas from underground rock formations. The use of hydraulic fracturing for natural gas extraction has increased in recent years, and now impacts a wide range of geographic regions and geologic formations. While a number of adverse impacts can be associated with hydraulic fracturing (including increased surface disturbances and noise pollution, air quality, aquatic and terrestrial ecosystem impacts, and increased seismic activity), the key concern that has emerged is water. In particular the large scale use of fresh water during fracturing operations, the potential for groundwater contamination as a result of fracturing activities, and water contamination resulting from the tremendous volumes of wastewater or "flow-back" water produced during the operations. The intention of the EPA is to make an unbiased, informed assessment of the environmental and human health consequences of hydraulic fracturing using the best available science, comprehensive stakeholder consultation, independent sources of information, and a transparent, peer-reviewed process. The scope of the proposed research includes the full lifespan of water in hydraulic fracturing, from acquisition of the water, through the mixing of chemicals and actual fracturing, to the post-fracturing stage, including the management of flow-back and produced water and its ultimate treatment and disposal. Initial research results and study findings are expected to be made public by the end of 2012, with the goal of an additional report following further research in 2014.

If the EPA is so concerned about the potential environmental and human health impacts of hydraulic fracturing in the United States, the question that follows for Canadians is why their federal government appears content to delegate regulation of hydraulic fracturing to the various provincial governments and their regulatory agencies. Certain jurisdictions, such as Quebec, are proceeding with an abundance of caution in respect of hydraulic fracturing, seemingly hesitant to put their freshwater resources at risk for the fleeting benefits of natural gas development while Alberta and British Columbia openly court and encourage investment in the unconventional resources that require these techniques. As with any large scale, industrial activity, the recovery of oil & natural gas has associated with it a number of adverse consequences for those living, working or recreating in close proximity. In allowing and regulating these activities elected officials and the agencies responsible for regulatory oversight must balance the benefits of energy security, increased economic activity, and provincial revenue in the form of rents and royalties against any potential environmental and health impacts. The reality is that, insofar as we remain consumers of hydrocarbons, having a domestic oil & gas industry is a necessity for Canada, and every region has a responsibility to contribute where possible to the energy input equation, to recognize what constitutes actual versus perceived environmental and health risk, and to establish acceptable tolerance levels for environmental disturbances in the context of available and economic competing energy sources. Recent catastrophic events in the Gulf of Mexico and in Japan, and the continuing debate surrounding carbon intensity, tailing ponds and species at risk associated with oil sands development in Alberta, illustrate that every energy source capable of meeting North America's appetite has inherent environmental and health risks that must be balanced against the benefits to Canada and to Canadians. Key to establishing the acceptable tolerance levels for environmental disturbance is the familiarity and experience level of the public, local non-governmental organizations and the media. The oil & gas industry and the regulatory agencies charged with their oversight have a responsibility to educate those impacted, and there exists a parallel responsibility on all stakeholders and the media to educate themselves in respect of complex scientific and physical processes.

Industry too must recognize that the chorus of "continental energy security" and "green energy solution" that is so often tied to the increased use of natural gas must also be subjected to increased scrutiny. While organizations like the Center for American Progress and the Energy Future Coalition promote natural gas as a "bridge fuel" to a low-carbon, sustainable energy future and claim that it is by far the cleanest burning fossil fuel, other experts, academics and government agencies claim otherwise. The EPA has reported that methane, the main component of natural gas, is more than 20 times as effective as carbon dioxide at trapping heat in the atmosphere and in 2009 natural gas systems were the largest anthropogenic source category of methane emissions in the United States, increasing 4% from 2008 to 2009 due to an increase in natural gas production. Robert Howarth, a professor of ecology and environmental biology

"The reality is that, insofar as we remain consumers of hydrocarbons, having a domestic oil & gas industry is a necessity for Canada"

at Cornell University, argues that while it is true that less carbon dioxide is emitted from burning natural gas than from burning coal per unit of energy generated, the combustion emissions are only part of story and that a complete consideration of all emissions from using natural gas seems likely to make natural gas far less attractive than oil and not significantly better than coal in terms of the consequences for global warming. Total greenhouse gas emissions from natural gas obtained from hydraulic fracturing operations must, in addition to the emissions from the combustion of the natural gas, include the additional emissions of greenhouse gases that occur during the drilling, fracturing, extraction, processing, compression, and transmission of natural gas (due to the use of fossil fuels to build pipelines, truck water, drill wells, make the compounds used in drilling and fracturing, and treat wastes, methane leakage, and the loss of carbon-trapping forests).

While some commentators such as the University of Toronto's Ben Parfitt are calling for a national debate about regulatory reforms before the "shale gas revolution affects more of the nation's watersheds", leading oil & gas and environmental lawyers argue that the regulatory agencies in mature producing provinces like Alberta and British Columbia have the experience, technical sophistication, funding and proactive legislative mandate to effectively balance industry activity and environmental and health concerns, and have been doing so for decades. Given the relative infancy of the oil & gas industry in Quebec, it is perhaps understandable that in March of this year Quebec's natural resources minister announced that the province would not authorize hydraulic fracturing operations until further studies had been carried out. It does not follow, however, that the Government of Canada should use this as an excuse to interfere with those areas of clear provincial responsibility under the Canadian Constitution, namely oil & gas development and water resources. John Olynyk, an expert in environmental law with Lawson Lundell LLP in Calgary, says that it is well settled that the regulation of resource recovery in Canada is under provincial jurisdiction. "While the federal government has responsibilities related to fisheries and fish habitat, the provinces have primary jurisdiction over development and management natural resources, including water. Particularly in Alberta and British Columbia, the provincial Legislatures have used this jurisdiction to create integrated regimes for management of water-related aspects of oil and gas development activities."

In stark contrast to Quebec, Alberta's Energy Resources Conservation Board (ERCB) regulates, based on 2006 figures, 159,500 operating natural gas and oil wells, 33,700 oil and gas batteries, plants and other facilities and 392,000 km of pipelines. As William M. Laurin, an oil & gas solicitor also with Lawson Lundell in Calgary, explains, the ERCB is structured as an independent, quasi-judicial agency of the Alberta Government that regulates the safe, responsible, and efficient development of Alberta's energy resources – its mission is to "ensure that the discovery, development and delivery of Alberta's energy resources takes place in a manner that is fair, responsible and in the public interest". The ERCB's vision is "to be the best non-conventional regulator in the world by 2013" – it readily admits that much of the ERCB's current regulatory regime was designed for conventional oil & gas development and did not fully contemplate the unique nature of unconventional gas. As producers shift investment towards unconventional gas development, the ERCB is proactively putting effective regulation in place to address its development. In Laurin's view, from a technical and scientific perspective, there is no more qualified independent panel to understand the environmental impacts of hydraulic fracturing and water use, and to regulate the development of shale gas than, the ERCB in Alberta and its counterpart in British Columbia, the Oil & Gas Commission (O&GC). British Columbia's new Oil and Gas Activities Act reflects that technological advances, interest in unconventional gas, and increased social and environmental expectations are the realities that industry and its regulators must live within. In response, the province developed a new regulatory framework through a process that started with extensive consultations with communities, landowners, First Nations, environmental groups and industry. The process resulted in streamlined, enhanced legislation reflecting the needs of the people, environment, industry and government.

Public perception of whether shale gas development should be governed by the "environmental regulators" or the "oil & gas regulators" has historically become distorted in many jurisdictions as each has come to be viewed as an advocate of a position in respect of project development – either as proponent or as an objector – and not as an independent "balancer of interests". In Alberta and British Columbia the vast majority of oil & gas activity occurs on provincially owned mineral rights, and the empowering legislation of the ERCB and the O&GC emphasizes the independence of the regulator, and the key role that each plays in the balancing of interests. Laurin points out that the relevant Alberta legislation already obligates the ERCB to ensure that drilling and production operations are conducted in a safe, efficient and pollution-free manner. Similarly, British Columbia's new Oil and Gas Activities Act requires the O&GC to regulate oil & gas activities in British Columbia in a manner that "provides for the sound development of the oil and gas sector, by fostering a healthy environment, a sound economy and social well-being", ensure that safe and efficient practices are used, and that the only applications that are approved are those that are in the public interest having regard to environmental, economic and social effects. Regulation of hydraulic fracturing does not require additional oversight, particularly at the federal level – in Alberta and British Columbia it is simply a matter of adequately funding and empowering the existing regulatory agencies.

*William M. Laurin | Oil & Gas Solicitor – Lawson Lundell LLP (Calgary office) 403.218.7534 william.laurin@lawsonlundell.com*