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## ► Columns

### Eye on Business

by M. Gagné

#### **The Quebec Utica Shale gas play — recent developments**

Parts of Quebec have long been known as having geological features indicative of potential hydrocarbon reserves. Efforts to better identify and explore this potential have been ongoing for many years. Interesting developments are now coming out of these endeavours, including those involving the Gaspé Peninsula and Anticosti Island. The St. Lawrence Gulf and Estuary<sup>1</sup> also have strong potential.



*Martin R. Gagné*

The following general overview (as of mid-July) focuses on the St. Lawrence Lowlands play which, according to many, may lead to Quebec joining the ranks of producing jurisdictions within a relatively short time frame.

#### **The St. Lawrence Lowlands**

The St. Lawrence Lowlands are an area of Quebec located mainly along the St. Lawrence River's shores (more extensively the south) between Montreal (to the west) and Quebec City (to the east). The Quebec Minister of Natural Resources and Wildlife, under the applicable provisions of the Quebec Mining Act, has issued 186 petroleum, gas and underground reservoir exploration licences to 17 holders covering a large part of the lowlands.

In terms of exploration and development needs, the lowlands are easily accessible, with all infrastructures in place and close by, including the two main Quebec East-West highways and Gaz Métro's gas distribution system. A large part of the surface is privately owned, fairly developed and occupied with a variety of land uses, including many farms, cities and towns.

#### **The Utica Shale Formation**

The extensive geological formations — Trenton Black River (HTD), Lorraine Shale and Utica Shale — are favourable to the presence of hydrocarbons and, as such, explain the interest in this play. Horizontal drilling and fracture stimulation technology and its use have, in recent years, evolved and successfully and profitably produced substantial quantities of gas from shale plays (for example, Barnett in Texas and Marcellus in Pennsylvania and New York). These, plus the fact that production from such formations may help North-America become more independent in its long-term energy needs, have heightened the attractiveness of shale plays such as Utica.

Licence holders, sometimes in conjunction with other exploration companies, are involved in programs throughout the lowlands, several of which include completed or ongoing horizontal well drilling and fracture stimulation of the Utica Shale.

Recent announcements in this regard include some by Junex, a Quebec-based junior exploration company that holds extensive exploration licences (on approximately 4,000 square kilometres) in the lowlands (some in conjunction with Forest Oil Corporation). For example, in November 2009, Junex announced the completion of a successful propane fracture stimulation of the Utica Shale (a first for the formation and for eastern Canada) from a well located in a town close to Quebec City; initial production testing yielded some light crude oil and natural gas. More recently, based on reports it commissioned from an independent engineering firm, Junex also announced the best estimates for a large part of its licences as being 48.34 trillion cubic feet (TcF) of undiscovered original gas in place and 3.7 TcF, at an effective 10 per cent recovery factor (low: 1.23 TcF, 4 per cent; high: 10.98 TcF, 25 per cent), of potentially recoverable gas (gross unrisks prospective resource).

Other announcements came from Questerre Energy/Talisman Energy regarding their ongoing exploration program on lands in the central part of the play and its five horizontal wells with fracture stimulations, some already drilled and completed. A production rate of approximately five million cubic feet per day of natural gas has been announced further to the initial production testing of a completed well and fracture stimulation in Saint-Édouard, a town southwest of Quebec City. The completion of a long-term production test of this well was announced in early July, with results (some still being analyzed) said to have at least met expectations. Questerre is also reviewing pipeline options that would allow it to connect the well to the Gaz Métro distribution system.

Plans for the construction of this connecting pipeline, which now may also involve a second well located in nearby Leclercville, are said to be fairly advanced. The connection, representing an investment in the order of \$22 million, is expected to be in place by mid-2011 with initial volumes flowing by the end of summer 2011 (a year earlier than anticipated) and more important quantities some time in 2014.

Other exploration programs, some with drilling of horizontal wells and fracture stimulation (either ongoing or planned), in other parts of the play have also been announced recently. This includes programs by Canbriam Energy and Quebec-based Gastem on licences in the vicinity of Saint-Hyacinthe in the western part of the play.

### **What the future holds**

Estimates of recoverable natural gas from the Utica Shale are now said to range from 10 to 25 TcF. These estimates do not include the hydrocarbon potential of the other formations (such as Lorraine and Trenton Black River) of the lowlands and possible increased recovery rates as technology improves.

Although it is still early, ongoing exploration work and announcements show that those involved are making good progress, and the necessary knowledge base on accessing and extracting gas from the Utica is growing (by October 2010, there should be 12 announced completed horizontal wells and fracture stimulations in the Utica). At the very least, there are strong indications that Questerre/Talisman are getting closer to

the production stage.

The Quebec government seems to be solidly behind this new activity, given its anticipated large and long-term economic development and employment opportunities (7,500 estimated direct jobs) as well as the government's expectation that recoverable natural gas from the Utica could mean long-term self-sufficiency for Quebec's gas needs (presently, gas supplied from Alberta at an annual cost of about \$2 billion).

Financing, risk reduction and limited availability of the specialized equipment required for more horizontal drilling and fracture stimulation are among the challenges to moving forward with this play.

Locally, the industry and shale gas production methods and their implications are not well known or understood by Quebec's population; issues such as environmental impact, social acceptability, other land uses, in particular agricultural, and land owner rights need to be better addressed. Both the industry and government are intensifying their efforts to better inform the population and address such issues.

With this in mind, the Minister of Natural Resources and Wildlife has announced that new legislation specific to the oil and gas industry should be introduced this fall; the government's stated objective is the modernization of the legislative framework in a sustainable development context (which includes long-term environmental and community consultation considerations). In proposing such legislation, the government will take into account not only the representations, concerns and proposals of industry representatives, but also those of interest groups (environmental, citizens and others), municipal or regional authorities, and the citizens themselves and their elected representatives. The government will also take into account the experiences of other shale plays and the way certain aspects (including environmental) of some of these plays have recently been reported on in Quebec. Given the various points of view, it will be interesting to see the extent of the proposed changes and the solutions the government will propose in order to arrive at a balanced legislative framework, which will certainly be compared by the industry to that of other relevant jurisdictions.

That being said, recent developments, along with the Quebec government's current position and interest, the growing importance major players are giving to North America's shale plays, and the involvement of certain larger exploration companies (for example, Talisman) in the Utica play indicate that Quebec's potential for becoming a producing jurisdiction, at least for natural gas from the St. Lawrence Lowlands, seems to be progressing towards realization. Expectations are that production could begin in as early as five years; some say perhaps even sooner.

#### ***About the Author***

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