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Excelsior Plans To Pilot Test Proprietary Bitumen Technology

After investigating various bitumen recovery mechanisms that could potentially reduce the large requirements for capital, fuel gas and process water, **Excelsior Energy Limited** now plans deploy a proprietary in situ combustion bitumen-recovery process called Combustion Overhead Gravity Drainage at its Hangingstone oilsands property.

Excelsior has developed the COGD process in cooperation with **Hot-Tec Energy Inc.**, a private company affiliated with members of the **In-situ Combustion Research Group** from the Department of Chemical and Petroleum Engineering at the Schulich School of Engineering, **University of Calgary**. The In-situ Combustion Research Group is a global leader in the application of in situ combustion recovery processes.

The company said it expects that the application of the COGD recovery process could result in significantly improved bitumen economics through both enhanced recovery gains and substantial reductions in the amount of required water, fuel gas and diluent.

As a result, the company will be focussing its resources towards an experimental in situ COGD pilot project. A project application will be submitted in the second quarter of 2009 with anticipated regulatory approval in approximately one year for the subsequent implementation and commissioning of the pilot in the first quarter of 2011.

"We are excited by the potential opportunity to test COGD in a field-level experimental project," said **Robert Bailey**, Excelsior's chief operating officer. "COGD is a proprietary recovery process designed by Excelsior and its advisors to address the key economic, environmental and investment issues confronting the development of the Athabasca oilsands. A successful pilot project would transform the thermal recovery of bitumen and position Excelsior as a leader in the successful development and application of in situ combustion bitumen recovery."

The COGD process is expected to bring a significant reduction in water usage for steam generation by up to 80% compared to a similar sized SAGD process. It is expected to yield a significant reduction in fuel gas consumption for steam generation by up to 80% compared to a similar sized SAGD process, as COGD uses the in situ energy of the bitumen which would otherwise be unrecoverable.

It also involves a reduction in diluent demand as a result of potential in situ bitumen upgrading and a reduced environmental impact through decreased water draw and water recycling, decreased fuel gas and diluent demand.

All of these should significantly improve project economics as COGD recoveries are estimated to be as much as 50% greater than SAGD recoveries, and capital and operating costs are estimated to be considerably lower than comparable SAGD projects.

COGD employs an array of vertical air injector ignition wells above a horizontal production well located at the base of the bitumen pay zone. A short initial period of steaming prepares the cold bitumen for ignition and develops enhanced bitumen mobility in the reservoir. Upon ignition a combustion chamber develops above and along the length of the horizontal well with combustion gases segregated in the upper part of the reservoir and hot bitumen flowing by gravity into the horizontal production well.

Excelsior is in the final stages of preparing an application to the Alberta **Energy Resources Conservation Board** and Alberta Environment for an experimental pilot project. The experimental project will seek approval to operate three COGD well arrays with a production target of up to 1,000 bbls of bitumen per day. Excelsior will also seek confidential status from the ERCB for the experimental pilot operating results.

Through its bitumen-core drilling program this winter Excelsior said it has obtained all the necessary information to support an experimental pilot application. Upon a successful pilot project, an application would then be made for a commercial-scale 10,000 bbl per day development project.

As a result of the redirected strategy the Hangingstone 10,000 bbl per day SAGD demonstration project application has been suspended given the more attractive economic potential of a successful COGD bitumen recovery pilot.

Excelsior has also applied for Innovative Energy Technology Program funding for its proprietary COGD technology. If successful the funding will be in the form of a royalty credit to be used against future production. Opportunities to attract federal funding targeting energy research and sustainable development are also under review.

The company said it is currently funded to complete the pilot project application and sustain project development efforts through 2010.