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GEOCHEMICAL ASSESSMENT OF THE RESOURCE POTENTIAL OF THE ALBERT FORMATION (FREDERIC BROOK SHALE MEMBER), MARITIMES BASIN, NEW BRUNSWICK, CANADA

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The Maritimes Basin, a Carboniferous-age basin in Eastern Canada, is comprised of a series of pull-apart basins in a wrench-fault, transpressional tectonic setting. The regionally extensive source interval in the area, the Albert Formation (Horton Group), is a rich lacustrine, oil and gas prone source rock. The Albert Formation can attain a thickness of 330 meters and contain up to 20% total organic carbon. Existing oil and gas production from the Moncton Subbasin and numerous oil and gas shows across the region indicate the existence of a viable hydrocarbon system.

The geochemical analysis of these source rocks was an integral part of the work done by Southwestern Energy's (SWN) initial assessment of the potential of the Albert Formation's Frederick Brook Member. Organic geochemical data was obtained from the literature and the New Brunswick Department of Natural Resources - Geological Surveys Division. The data was analyzed for source rock richness, maturity, and extent in the region. Results of the analysis were integrated with an airborne magnetic depth to basement interpretation showed a potentially extensive resource play could exist in New Brunswick.

In March, 2010 SWN won the bid to explore in 32 license blocks covering 2.5 million acres in central New Brunswick. SWN committed to a $49 million dollar (Canadian) work program to evaluate this acreage. To date, SWN has conducted high-resolution magnetics, airborne gravity, and surface geochemical surveys. The surface geochemical survey was conducted as a series of regional transects across the SWM license blocks to detect thermogenic hydrocarbon from these new basins. Extensive statistical analysis of the data and integration with oil and oil extract geochemical analysis is being conducted to develop a rigorous method to aid in the evaluation of the region.

In 2011, additional geochemical data analysis and sampling, hydrocarbon extract analysis, additional surface geochemical and 2-D seismic surveys will be conducted to confirm the presence and extent of these subbasins. Drilling, planned for 2012, will provide additional geochemical data from cores and cuttings.