

The Lower Cretaceous Dina Formation Oil Sands of Northwestern Saskatchewan

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Summary

The first interest in northwestern Saskatchewan's Oil sands took place from 1974 to 1976. During this time, Shell Canada and Gulf Canada drilled several prospective exploration wells but deemed the resource uneconomic due to technological limitations. Renewed interest in Saskatchewan oil sands north of the Clearwater River began again in the winter of 2005-2006, when Oilsands Quest Inc. commenced drilling exploration wells targeting the potential bitumen reservoir identified by the 1970's drilling activity. As of November 2007, 221 wells have been drilled with 115 cores submitted to the Saskatchewan Government and an independent review and evaluation of Oilsands Quest's discovered resources estimates as much as 1.5 billion barrels of bitumen.

Preliminary research shows the oil sands in northwestern Saskatchewan occur within fluvial sandstones of the lower Cretaceous Dina Formation (McMurray equivalent). Cores of the oil sands commonly displays fining upward sequences of very coarse to medium grained quartz sandstone which exhibits high angle planar cross-bedding and low angle trough cross-bedding. The sandstones are typically characterized by very high porosities, often exceeding 35 %, and by high bitumen saturation.

Detailed mapping of the oil sands deposits in northwestern Saskatchewan is currently underway through correlation of cores and geophysical well logs to produce a stratigraphic framework for the area. This work will eventually be correlated with previous efforts in northeastern Alberta's Fire-bag-Sunrise area to delineate further areas of oil sands exploration.