Intermontane Basins of British Columbia

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ABSTRACT
The large Intermontane basins of British Columbia represent one of the last unexplored hydrocarbon provinces in western Canada. Lack of baseline petroleum-related surface and subsurface geological information, together with poor access, essentially classifies these regions as frontier basins.

Nechako, Bowser/Sustut, Whitehorse and Quesnel are the largest basins and contain Jurassic and younger clastics. Nechako and Bowser/Sustut, are substantial, covering areas in excess of 75,000 km^2 and 65,000 km^2, respectively.

Bowser Basin contains well over 5000 metres of deltaic to submarine fan assemblages of Middle to Late Jurassic age, succeeded by Early Cretaceous fluvial and alluvial fan deposits, in the north, and deltaic sedimentary rocks in the south. The Late Cretaceous Sustut Basin represents 2000 m of nonmarine foreland deposition derived in part from Bowser strata in the evolving Skeena Fold Belt.

Nechako Basin is less understood due to a thick cover of Tertiary volcanics and glacial deposits. Over 1000 metres of Middle to Late Jurassic marine clastic rocks may underlie the basin. These are followed by over 4000 metres of dominantly non-marine clastics and minor volcanics.

Limited thermal maturation analyses in the Nechako Basin together with oil and gas shows in some of the 12 exploratory wells suggest conditions favourable for the generation and preservation of hydrocarbons. Until recently, the Bowser Basin was believed to be dominantly overmature. New thermal maturation data,

coupled with the discovery of oil suggests that large areas of this basin are in the oil and gas window and that early resources estimates are too low.