

The Nechako Basin – Frontier Potential Close To Home

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Some of Canada's most interesting and prospective frontier basins lie within the Intermontane Belt of British Columbia and the Yukon. The Nechako Basin, in central British Columbia, has seen very limited hydrocarbon exploration, and offers intriguing potential immediately adjacent to a major gas pipeline.

Up to 5000 metres of Permian through Tertiary sedimentary and volcanic strata overlie igneous and metasedimentary basement in the Nechako Basin. Potential reservoirs occur in Jurassic and Cretaceous coarse-grained clastics, including numerous conglomerate intervals. Source rock analyses indicate low to moderate TOC values, with a dominance of Type III (gas-prone) kerogen, and much of the section is sufficiently mature to have generated hydrocarbons. The basin is structurally complex, and numerous potential structural traps have been mapped. However, thick Tertiary volcanic cover obscures much of the sedimentary column and structural detail.

Modern-day exploration of the Nechako Basin began with the drilling of two wells in 1960. One more well was drilled in 1972, before Canadian Hunter undertook geophysical work and drilled six wells between 1980 and 1986. Sample cuttings and mud logs have yielded numerous gas and oil shows, but to date, operators have not succeeded in flowing hydrocarbons.

The Geological Survey of Canada has recognized gas potential of 9.6 TCF and oil potential of 5.1 billion barrels (in place) for the Nechako Basin and adjacent regions. They identified four conceptual play types, with more than 90% of the hydrocarbon potential occurring in Skeena (Lower Cretaceous) structural plays.

A detailed re-examination of hydrocarbon prospectivity in the Nechako Basin suggests that it deserves renewed attention as an accessible and reliable source of gas and oil for the North American market.