

Delineation of Oil Bearing Intervals in Unconventional Reservoirs, examples from Alberta Light Oil Plays

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Abstract

Given the recent attention to oil bearing shale intervals within western Canada and the problematic identification of hydrocarbon bearing 'unconventional' intervals using conventional techniques, new techniques and applications of existing technologies must be applied in order to explore and develop these resources.

The first example examines the Second White Specks shale of the Cretaceous Colorado Group of Alberta and reveals up to 60 metres of oil saturated rock. The reservoir and subsequent light oil production proved to be non-identifiable using current petrophysical logs associated with this wellbore.

The second example highlights the oil bearing intervals within the 'regional' stratigraphy of the Cardium Formation in the Pembina area of Alberta. Unconventional formation evaluation techniques allow the determination of effective porosity and oil-saturation through casing, ultimately proving light oil production.