

The Notikewin - A tough “Not” to crack!

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Summary

The Albian Notikewin Member of the Spirit River Formation has traditionally been exploited in Alberta's Deep Basin (e.g. Elsworth) within the predominantly deltaic/nearshore paleoenvironments where reservoir is better developed. Recent advancements in completion technologies, drilling and seismic mapping have allowed the play to progress in a southerly direction toward the tighter fluvial paleoenvironments providing an arguably larger play fairway extending from Edson-Kaybob to south of Pembina. The liquids-rich gas is providing economic results for various operators.

The Notikewin Member of the Spirit River Formation is one of several transgressive-regressive cycles within the Lower Cretaceous Fort St. John Group (Upper Mannville Group). The prograding clastic wedge passes from predominantly fluvial sediments in the south (Pembina/Willesden Green) to deltaic (Kaybob/Edson) and eventually marine sediments in the north (Leckie, 1985). Within the subject area, the Notikewin is conformably underlain by the transgressive-regressive cycles of the Falher Formation and conformably overlain by the Cretaceous Peace River Formation (Harmon/Cadotte members). Most technical studies have concentrated on the deltaic (Leckie, 1985; Schmidt and Pemberton, 2004) and marine paleoenvironments (Leckie, 1985), whereas there is a dearth of published studies within the fluvial paleoenvironments.

Recent exploration activity has been concentrated in two areas (Pembina-Willesden Green and Edson-Kaybob) both within the Deep Basin and the fluvial paleoenvironments. Activity in the south is dominated by major ConocoPhillips and intermediates Bellatrix Exploration and Peyto Exploration & Development whereas, in the north, junior Vero Energy is the predominant player.

Traditionally, success in this play necessitates the coordination of modern geophysical mapping methods with predictive facies models. The integration of elements such as geomechanics and rock physics may provide additional information needed for economic success.

References

Leckie, D.A., 1985. The Lower Cretaceous Notikewin Member (Fort St. John Group), northeastern British Columbia; a progradational barrier island system. *Bulletin of Canadian Petroleum Geology*, v. 33, p. 39-51.

Schmidt, G. A. and Pemberton, S. G., 2004. Stratigraphy and paleogeography of a conglomeratic shoreline: the Notikewin Member of the Spirit River Formation in the Wapiti area of west-central Alberta. In: *Marine Conglomerate Reservoirs: Cretaceous of Western Canada and Modern Analogues*, T. F. Moslow and J.-P. Zonneveld (eds.), two-part special issue of *Bulletin of Canadian Petroleum Geology*, v. 52, no 1, p. 57-76.