

Ceramah Teknik (Technical Talk)

The effects of sealevel fluctuations on prograding shorelines and estuarine valley-fill sequences in the Upper Mannville Sediments, Southern Alberta

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Laporan (Report)

The talk by Dr. Farshori (Visiting Lecturer, Universiti Kebangsaan Malaysia) on "The effects of sealevel fluctuations on prograding shorelines and estuarine valley-fill sequences in the Upper Mannville Sediments, Southern Alberta" was given on 22 February 1993 at the Department of Geology, Universiti Kebangsaan Malaysia, Bangi. The ~25-strong audience comprised students and staff of UKM only, with NONE from outside UKM. This was unfortunate, as the talk was based on many years of good work done by the speaker in Canada, with very high quality slides and illustrations as typical of professionals from the petroleum industry.

Abstrak (Abstract)

A detailed sedimentological study of the Upper Mannville Sandstone, Lower Cretaceous in southern Alberta was conducted in order to understand depositional history, the geometry, and production performance. Six distinct transgression/regression succession can be correlated across the study area.

The Upper Mannville Sandstones occur as thin sheets and ribbons sandwiched between regimes of coal and underlying Ostracod Beds or Glauconite sandstone in Southern Alberta. Six thin coarsening upward sedimentary cycles occur and each is overlain by either a thin coal or soil zone. A typical cycle begins with a scoured base overlain by transgressive lag and/or black shale that grades upward into bioturbated siltstone, then overlain by fine to medium grained kaolinic sandstone. The Upper Mannville Sandstone consists of stacked cycles of lenticular sand bodies deposited on beaches, tidal flats and lagoons. These cycles are also separated by incised tidal channels representing breaks in sedimentation.

These regressive cycle sand bodies result from the interplay of sedimentation, tectonics, climate variation and sea-level fluctuations. They contain zones of low porosity (10–15%) and low permeability (0.1–10 md) due to presence of kaolinite and calcite cement.

These sands are classified as heterogeneous feldspatic litharenite. As a result, fracturing of the sand bodies is generally required to enhance gas production. The gas bearing reservoir sandstones are widely distributed and roughly cover an area of about 5000 km² in the study area.



Footnote: For the benefit of many who missed the talk, in particular those who are working in the petroleum industry, the Society is planning to hold a second technical talk by Dr. Farshori sometime in July '93. So, look out for the announcement, and be sure to be present for another highly illuminating talk by Dr. Farshori!

Tan Boon Kong