By the end of the Oligocene mature deep sediments occupied nearly a third of the Permit's area representing a vast volume of generative and explusing source rock. Some rocks were overmature by this age but most were still in the oil and gas preservation window.

At Late Miocene time two thirds T/25Ps area had deep sediments mature for hydrocarbon generation split half between oil and gas maturity. An increased amount of the deepest sediments had moved into the overmature window.

At the present day the deepest sediments in T/25P are mostly gas generative or overmature. Significantly, perhaps eighty percent of the Permit has sediments in the 1900-2600m depth range which representing the oil generation/preservation window. Good source potential exists at most levels so it appears that a vast area of T/25P is very prospective provided that robust traps and good reservoir quality can be established.

10.13 Summary

The source rock and maturation study indicates high TOC values are pervasive throughout the Eastern View Coal Measures within the Pelican Trough. A summary of the results is presented in Figure 10.27. The study indicates that the upper EVCM (*N.asperus* - upper *M.diversus*) is in general not mature for hydrocarbon generation. Thus potential reservoirs are likely to have been sourced from deeper within the trough (Palaeocene-Cretaceous sediments).

Hydrocarbon generation from late Cretaceous-Palaeocene sediments is believed to have developed shortly after the end of EVCM deposition, thus making it favourable for migration into structures developed during the Cretaceous and middle *M.diversus* rifting phases. Late Cretaceous-Palaeocene source rocks are presently oil-prone and oil mature.

The advanced maturity of the Cretaceous sediments preclude an accurate estimation of their original oil-source potential. In general, Cretaceous sediments are now post-oil generation and contain only residual gas-prone Type III kerogen.