

facies trends. For example, the extensive lacustrine units of the Cormorant Trough may pass into prospective undrilled lake shoreline sequences towards the margins of the trough.

Baillie and Bacon (1989) examined the sedimentology of the Eocene part of the EVCM. This study involved an integrated sedimentological study utilising core analysis, log analysis, palynology, coal maceral, and geochemical studies. Baillie and Bacon (1989) favour a tide-dominated deltaic environment of deposition for the upper EVCM, consisting of a complex mixture of distributary channels, strandline sandbars, peat swamps and shallow lagoons.

Baillie *et al* (1991) addressed the sedimentological and diagenetic controls on reservoir quality of the lower EVCM (defined in their paper as below the top of the lower *M.diversus* palynological zone). The conclusions of this study were:

- 1) Thick, permeable reservoir sands, with good deliverability characteristics, are developed in the Bass Basin and occur as often stacked, shoreline facies. These sands probably have significant lateral continuity and are best developed in the northern part of the basin.
- 2) Other regions with good potential for thicker development of reservoir sands are in the southern sector of the basin where upper delta plain stacked point-bar sequences could be expected to occur.
- 3) Due to the combined effects of deposition and diagenesis, most of the fine-grained sandstones and siltstones examined have poor reservoir characteristics, with much of their porosity occurring as micro-porosity.
- 4) Petrological analysis indicates that the cleaner quartzose sands with good reservoir characteristics are still preserved in deeper parts of the basin, closer to oil-mature source rocks.
- 5) Finding clean sand bodies of suitable size and geometry at depth is the major challenge for future explorers.