

## RESERVOIR

Failure of many of the Bass Basin wells particularly those in the Pelican and Cormorant Troughs has been attributed to the lack of good quality (high permeability and porosity) reservoir sandstones within the EVCM.

In an endeavour to predict areas of better reservoir development in the EVCM, detailed facies and petrophysical studies of core material have been completed. The results of this work show that EVCM sandstones were deposited in a wide variety of sedimentary environments including shallow marine, beach, deltaic, lacustrine and fluvial. In general, EVCM sandstones are mineralogically immature and have suffered porosity and permeability reduction due to a range of diagenetic processes. The major processes resulting in porosity and permeability reduction are compaction of ductile grains, alteration of labile volcanic rock fragments, kaolinite cementation, and localised carbonate cementation.

Nevertheless, good quality reservoirs have been encountered in several wells drilled to date, and a number of areas and intervals of better reservoir quality have been delineated. Studies of the upper EVCM immediately below the Demon's Bluff Formation have resulted in the identification of good reservoir development. Unfortunately closures in T91-2 at this level drilled have apparently not received a hydrocarbon charge. Outside T91-2, the Yolla 1 well demonstrated that the upper EVCM reservoirs can have moderate deliverability.

Other good quality sandstones are predicted to occur updip of the *M.diversus* fluvial sandstones encountered by Pelican wells. At Pelican 5 these sandstones have poor to moderate deliverability. The best sands produced gas at 5.6 MMCFD with an associated condensate flow of 441 BCPD. However, on the shallower margins of the Pelican half graben where diagenesis may be less advanced, such as at the Pipipa Deep Prospect and at other leads on trend, improved reservoir can be expected. Further factors which may lead to improved reservoir quality away from Pelican towards the basin margin may be attributable to differences in provenance, and an increase in sediment reworking.