

The lowermost sequence of EVCM sediments is largely unexplored because of its depth of burial. It extends between the major unconformity at the base of the EVCM (usually top Otway Group) to the basal *T. longus* unconformity. The basal *T. longus* unconformity is associated with a period of major tectonic movement including extensional tilted block faulting and subsequent erosion. This sequence has only been partially penetrated within T91-2 by Pelican 5.

The middle sequence of EVCM sediments is bounded by the basal *T. longus* unconformity at its base and an unconformity at the base of the upper *M. diversus* zone. Deposition during the *T. longus* and *L. balmei* zones appears to have been controlled by tectonic subsidence. The unconformity at the base of the upper *M. diversus* zone is difficult to define on seismic data particularly in the centre of the Pelican Trough because limited fault block reactivation has resulted in only a minor angular unconformity. This middle sequence of sediments has been penetrated by all wells in T91-2 with the exception of Pipipa 1, and is considered to contain the most prospective reservoirs for gas and gas/condensate. Known accumulations in this sequence occur in Yolla to the north and in the Pelican Field.

The uppermost sequence of EVCM sediments lies between the base of the upper *M. diversus* unconformity and the top of the formation. Basin sag was the dominant tectonic control on deposition. No oil, gas or condensate recoveries have been made from reservoirs in this sequence in T91-2, but a small oil and gas accumulation has been recorded in Yolla 1 in T/RL1 to the north and significant oil and gas shows were obtained in Cormorant 1 in T/18P.

Conformably overlying the EVCM is the Late Eocene Demon's Bluff Formation. Lithologically this unit consists of a sequence of fine grained carbonaceous shales and sands deposited in a marine environment. The unit has an average thickness over the basin of approximately 120m, but thins towards the basin margins. The Demon's Bluff Formation provides regional top seal to hydrocarbons reservoired in the uppermost sandstones of the EVCM, in Yolla 1.

The Demon's Bluff Formation is overlain by the Oligocene to Pliocene age Torquay Group which consists of a basal sequence of marls and calcareous shales which grade upwards into a sequence of bioclastic limestones. The Torquay Group ranges in thickness from approximately 450m around the basin margins to about 1700m in the Pelican area.