

from the density log) ranging from 23 to 26% in the upper and lowermost part of the sequence to well over 30% in the 650 foot middle section.

3. The 72 foot Waarre section at the base of the Upper Cretaceous is a prospective formation in the main Otway Basin. Here, however, porosities of this section generally calculate to be between 10 and 16% with only few very thin sandstone stringers (less than 10 feet thick) ranging from 17 to 20%.

8. Contributions to Geological Concepts Resulting from Drilling

Clam-1 proved the presence of a sedimentary section of almost 5000 feet thick in the southeasternmost portion of the Otway Basin. Thereby it significantly extended the stratigraphic control into a new and heretofore unexplored area. The results of drilling Clam-1 are shown graphically on the Cross-sections (figure 1).

Below the Oligocene marine deposits, 2900 feet of Tertiary and Upper Cretaceous age sediments conformed lithologically and structurally to predictions. The section is composed mainly of porous sandstones with little interbedding of siltstone and shales. Palynological evidence, however, indicates that the large unconformity, occurring between the top of the Upper Cretaceous and lowermost Tertiary as observed in the central and western portion of the Otway Basin, occurs within the Upper Cretaceous in the eastern extremity of the basin.

Below the Upper Cretaceous, instead of the anticipated mudstones, siltstones and greywackes of the Lower Cretaceous, "red beds" were encountered which were hitherto unknown in the region. Various authorities have inspected this material (see Appendix 2), and it is believed that it is Paleozoic in age, probably late Devonian.

Petrographical studies and potassium-argon age determinations were made on the basement material. It was identified as belonging to the Rocky Cape Group recognized on shore Tasmania and is of Upper Pre-Cambrian age.

The Upper Cretaceous basal conglomerate which exhibited structural closure on seismic records lacked an overlying seal. The lowermost Upper Cretaceous Waarre Formation which is a highly prospective porous sandstone unit in the Otway Basin is observed to have become very silty in Clam-1. Although the anticipated overlying seal (Belfast Formation) is present, the Waarre here lacks reservoir capability.