

SUMMARY

Fifty five samples (cuttings and sidewall cores) over the interval 1440-3126 meters were analysed for age, depositional environments and additional control on thermal maturity. The section examined apparently represent continuous deposition from Campanian (T. lillei Zone) to Late Eocene (middle N. asperus Zone). Marine influence is strongest towards the top of the Demons Bluff Formation.

The thermal maturity data (spore colour indices) indicate that sediments from within the T. longus Zone to tota depth are mature for oil generation.

INTRODUCTION

Fifty five samples were studied overall, comprising thirty seven cuttings samples and eighteen sidewall cores.

Palynomorph occurrence data are shown on Appendix I and form the basis for the assignment of the samples to ten spore-pollen units of Late Eocene to Campanian age. The zonation is that of Stover and Evans (1973) and Stover and Partridge (1973) set up in the Gippsland Basin, and modified for the Bass Basin by Partridge (1973). Minor modification of the late Cretaceous zones is in Helby, Morgan and Partridge (in press).

Maturity data was generated in the form of Spore Colour Index, and is plotted on Figure 1 Maturity Profile of Amoco Koorkah-1.

PALYNOSTRATIGRAPHYA. 1440-1609m (cutts): middle N. asperus Zone

Assignment to the middle Nothofagidites asperus Zone is indicated at the top by the youngest occurrences of Beaupreadites elegansiformis (1440-50m cutts), Proteacidites crassus, P. incurvatus and Triorites magnificus (1470-80m cutts), and the dinoflagellate data. The youngest occurrences of Anacolosidites luteoides, Beaupreadites verrucosus (1530-40m cutts) and Proteacidites leightonii (1560-70m cutts) support the assignment. The Zone base is defined by the oldest occurrence of Triorites magnificus (1590-1600m cutts) and Riccia boxatus (1530-40m cutts). The oldest occurrence of Aglaoreidia qualumis at 1470-80m (cutts) indicates a point near the top of the zone. No sidewall cores are available in this interval, but the zone base is probably accurate, as caving appears to be minor at this level.

Age significant dinoflagellates include Alisocysta ornata in the interval 1440-1510m, indicating assignment to the upper part of the middle N. asperus Zone. Other significant forms include Deflandrea phosphoritica, Systematophora placacantha, Aerosphaeridium arcuatum and Phthanoperidinium comatum, all of which indicate a lower N. asperus Zone assignment or younger.