

Summary

Following the drilling of the Tasmanian Devil #1 exploratory well, August 27th to September 3rd, 1984, the whole of Exploration Permit T-16-P area has been remapped at several stratigraphic levels. This was part of a major seismic mapping effort which covered both of Weaver's Exploration Permits T-15-P and T-16-P area. All the seismic maps so far generated in this effort are enclosed in this report. So are the representative seismic lines which illustrate each of the prospective structures. For purposes of regional consideration and completeness, the two permit areas are treated as a whole in this report.

The results of a regional seismic data acquisition program carried in the Bass Basin by the Bureau of Mineral Resources has been integrated with the well data and the more recent seismic data acquired by the current permit holders. These results have been presented in the form of maps, representative seismic lines, models, etc. at the Bureau of Mineral Resources, Bass Basin Symposium, held in Canberra last November. The models and concepts generated by the Bureau of Mineral Resources studies are very much in line with our own evaluation of the remaining untested hydrocarbon potential of the Bass Basin.

A new exploration concept for the Paleocene/Cretaceous objective section is presented, illustrated and discussed. This concept was generated by the Bureau of Mineral Resources scientists.

The stratigraphic section found in the Durroon #1 well is described. The sandstone porosity and permeability determinations from whole core and plug samples are listed. The reservoir potential of the objective sandstone section is described. The porosity and permeability measurements are taken as a whole and plotted against depth, or broken down by palynologic zone and plotted against depth. Reservoir deterioration does not seem to be controlled to any significant extent by increasing depth of burial. The main controlling factor appears to be the nature and amount of the matrix component and to a lesser extent the amount of the cement component. These are not so much related to depth of burial as they are to the environment at time of deposition where low energy levels did not promote the removal of the fine fraction or where differential settling of the fine fraction takes place and chokes the pore throats of the sandstone. The analysed core intervals indicate that substantial thicknesses of excellent reservoir quality sandstone are present in the Paleocene, and in the Upper Cretaceous section down to the mid-Cretaceous unconformity recognized in the Durroon #1 well at a depth of 5910 feet, or so.