

There is a strong angular unconformity at the top of Lower Cretaceous from Flaxmans to south of Pecten. This unconformity becomes impossible to see towards Nautilus, which suggests there may be Upper Cretaceous faulting down to the basin, south of Pecten. The Base of Tertiary is a gentle unconformity. Paleocene and Eocene deposition to Top of Mepunga is a series of prograding clastics which thin to the south over clinoform slopes. Esso Nautilus A-1 is testing a unique fan shaped lower Oligocene wedge which may contain interbedded sandstones and shales not seen elsewhere in the Otway Basin. Later Oligocene and Miocene transgressive seas deposited the marls and shales of the Gellibrand formation.

Shell Pecten was drilled on an attractive Tertiary structure and recorded a gas show of 90 MCF per day from the Waarre sands.

4) Section D-D' - Plate 5 - South King Island Sub-Basin

This section crosses the South King Island Sub-Basin. High Basement probably sills the Sub-Basin for most of Pre-Tertiary deposition, and if there is Cretaceous deposition, source was probably the surrounding highlands. The Sub-Basin continued during Tertiary, but the sea was open to the southwest. Prograding Paleocene and Eocene clastic deposition is envisaged which is covered by Oligocene shales and marls.

The section shows a closed structure on the Base of Tertiary in an area of thick Cretaceous which may be a potential drilling prospect.

E) MAPPED HORIZONS

All of the contour maps enclosed with this report are on a scale of 1:250,000. At this scale three base maps cover the entire survey area. Structure contour maps and one isopach are enclosed as follows:

- 1) Oligocene - Plates 6a, 6b
- 2) Eocene-Paleocene - Plates 7a, 7b, 7c
- 3) Base of Tertiary - Plates 8a, 8b, 8c
- 4) Senonian Marker - Plate 9
- 5) Pretty Hills Unconformity - Plate 10
- 6) Senonian Isopach - Plate 11

In addition a Water Depth Map, Plates 12a, 12b and 12c and a Shot Point Map, Plates 13a, 13b and 13c, are included.

For structure maps, datum is sea level, values are in two way time and a static correction has been applied for increased travel time through the water. Figure 3 is a graph that shows the correction for water depth. To convert the time structure maps to depth, time-depth curves that have been statically corrected for water travel are included for Esso Crayfish A-1, Shell Voluta 1-A and Esso Prawn A-1 and Shell Nerita 1-A are shown on Figure 4; also included is the curve used to construct the Senonian isopach.

A discussion of the significant map features follows:

1) Oligocene - Plates 6a and 6b

The reflection ties to a Lower Gellibrand marker in the main Otway Basin and in the Anglesea Sub-Basin it ties close to the base of Jan Juc. This horizon shows very little structure. It marks the approximate top of the fan shaped wedge that Esso Nautilus A-1 is testing, and in the Nautilus area the Oligocene is cut by later Miocene or Pliocene filled submarine canyons. There is a small anticlinal closure south of Esso Prawn A-1.