

The energy level on the seismic recordings drops markedly below the basement reflection which helps to isolate the sedimentary section. The structural map on Basement is presented by Plate IV.

The mid-Eocene unconformity is generally distinguished by truncations of the lower Eocene reflections. The lower Eocene reflections are low frequency pulses with normal amplitude. These discontinuous erratic reflections are characteristic of continental sediments. Structure on the mid-Eocene unconformity is presented by Plate III.

The top of the Eocene is a good continuous reflection which correlates well throughout most of the basin. The upper Eocene basal sand unit as seen in Bass-1 and Bass-2 has good porosity and is considered a major objective for Bass hydrocarbon exploration. Structure on top of the Eocene is presented by Plate II and the top of the Eocene to the mid-Eocene unconformity isopach is presented by Plate VI.

The top of the Oligocene is a high amplitude reflection often exhibiting erratic dips. The Oligocene is easily mapped because the overlying Miocene is normally a low amplitude reflection interval. Many volcanic build-ups are apparent at the top of the Oligocene and these erratic dips are considered to be evidence of local volcanic deposition. Plate I is the structure at the top of the Oligocene and Plate V is the isopach of the Oligocene interval.

Structural Anomalies - Structural anomalies are not well developed in the Bass Basin. To date only three anticlinal structures large enough to be considered as potential prospects have been delineated. One of those features was tested by Esso Bass-2 but was found to be dry and the hole was abandoned.

Five structural leads found by previous reconnaissance seismic surveys were detailed with 600% CDP control by the Eastern Bass Strait survey. None of these leads developed into a prospect.

Esso Bass-3 will test the anticlinal anomaly located at the intersections of lines B-3 and EK-34. This feature originated as a high basement fault block and remained a positive area through lower Miocene.

The remaining untested anticlinal feature is located at the intersection of lines B-21 and B-2. This anomaly appears to be on Oligocene structure and was possibly formed contemporaneously with the interpreted stock immediately to the north. Regionally the Eocene is thickest in the vicinity of this structure. This anomaly is considered less prospective than the Bass-3 feature due to its younger age.

Several small structural leads on the western flank of the basin will merit investigations should Bass-3 prove productive. On trend with the Bass-3 feature is a reversal on line ES-40. Additional data would be necessary on this feature. Two shallow low relief reversals are evident on the King Island-Mornington Peninsula trend. Evidence for these structures is weak but the local relief on the large regional feature is worth noting.

Stratigraphic Anomalies - The entire lower and middle Tertiary section of the Bass Basin may be considered a tongue of sediments wedging out to the east. This tongue lies on basement and is capped by the marls and calcarenite beds of the middle and upper Miocene. Within this wedge are interbedded sands and shales which should form numerous pinch out stratigraphic traps. The quality of the seismic data and the geometry of the Bass Basin should permit good geophysical stratigraphic prospecting.

The interval map between the top of the Eocene and the mid-Eocene unconformity (Plate VI) is characteristic of most of the Tertiary section in the Bass Basin. This map shows 1500 + feet of upper Eocene in the thickest part of the unit pinching out to zero to the northeast and south.