(2) Summary of Regional Geology

Aroo-1 was drilled in the north western part of the Bass Basin on a structure which lies over a basement structural high of regional significance. This ridge runs north east to south west generally 2,000 to 10,000 feet below the top of the main coal sequence of the Eastern View Coal Measures. The deep basin proper lies to the south east of the ridge and there are a series of distinct, more isolated depressions in basement to the north west, on the other side, of the ridge. These depressions are elongated parallel to the ridge and are up to 9,000 feet deep. Data from the Flinders Seismic Survey suggests that the basement high may consist of Palaeozoic rocks and has been an important structural and topographic feature of the Bass Basin since the beginning of the Upper Cretaceous when the north western depocentres were established. These sub basins appear to be faulted on their southern margins and reflect structural growth of the ridge throughout the Upper Cretaceous. Subsequent growth, mainly in Paleocene and Eocene times, was relatively minor. However, preferential growth of the deep basin relative to the northern basinal area continued through the Tertiary. This growth may be demonstrated seismically and is reflected in the fact that the top of the Eastern View Coal Measures is about 2000 feet lower in Pelican-1 than in Cormorant-1. Aroo has no closure at this level. The highest mapped closure at Aroo being the Red horizon within the P. asperopolus or N. asperus zones (late Eocene) in this part of the basin. Closure at Aroo is also mapped at the Orange (M. diversus zone or younger) (Encl. 7) and Brown (L. balmei zone) horizons (Enc. 8).

In the Aroo area, the M. diversus zone is between 500 and 800 feet thick whereas it is more than two thousand feet thick to the north in Cormorant and to the south in Pelican where gas shows occurred in this interval in the Pelican-1 and-2 wells.

Basement of possible Palaeozoic age is thought to lie at approximately 17,000 feet at Aroo.

A major NW-SE fault to the east of the Aroo structure cuts through to the Red horizon. Thickening of the section on the downthrown (north east) side of the fault is interpreted to be of the order of 2000 feet of interbedded sediments. The orientation of the fault and several smaller ones in the Aroo area is parallel to the main basin-forming tensional faults which are believed to have developed during early stages of the Antarctic-Australia pull apart.