

ABSTRACT

A reconnaissance seismic sparker and magnetic survey was conducted by Teledyne Exploration for Magellan Petroleum Southern Pty. Ltd. in Exploration Permits T/2P and T/10P offshore Northwestern Tasmania, during September, 1969.

Results showed that approximately 175 sq. miles of the Permits lie within the 100 fathom line and the sea bed makes a steep western plunge from that line to depths of approximately 7,500 ft. Magnetic Basement was successfully located over most of the southern two-thirds of the area, and base of Tertiary over all of it. Events between these two horizons lie in water deeper than 3,000 ft. and could be followed only over limited areas.

Within the 100 fathom line approximately 3,000 ft. of Tertiary rocks lie close above basement. Potential hydrocarbon accumulation in this area would be in situations where these Tertiary rocks form drape structures over, or stratigraphic traps against Basement anticlinal features, however only one basement anticline has been traced into this shallow water area. The Tertiary rocks thin from north to south and east to west; approximate thicknesses in the North are: east side, 5,000 ft. to west side, 3,000 ft. and in the South: east side, 3,000 ft. to west side, 1,000 ft.

Westward from the 100 fathom line to approximately 6,000 ft. depth of Basement (roughly coincident with the 600 fathom line) in the southern half of the Permits the sedimentary section increases to approximately 4,000 ft. the increase being taken up by pre-Tertiary rocks. West of the 600 fathom line these pre-Tertiary rocks increase rapidly in thickness and diversity to in excess of 10,000 ft. in the north, thinning to approximately 6,000 ft. in the south, and provide a potential source of hydrocarbon accumulations.

Further exploration will require refined methods employing multiple coverage and digital processing; re-evaluation of data from adjoining permits would be necessary. Established leads are confined to the one basement anticline traceable under the shallow water area at SP 05 Line M-28-0.