SECTION IV

INTERPRETATION

A. SOUTH SYDNEY BASIN AREA

1. Method

Approximately 630 miles of reconnaissance sparker profiles and towed magnetic data were studied. Fifty miles of multi-coverage digital air-gun data were taken on one line (M32S) to clarify preliminary results from the sparker survey. Thirty miles of the common-depth-point (CDP) data of M32S were digitally processed and these results interpreted.

Spot determinations of depth to magnetic basement were made using the rough approximation that the horizontal distance covered during the recording of the maximum linear gradient on a positive magnetic anomaly is equal to the depth of the anomalies' source. These depth estimates are shown on the Basement map outlined in a box with point of location indicated by an arrow (See Plate 1).

A water depth map was constructed from fathometer records for shallow depths (less than 600 feet) and from the water bottom reflection on sparker profiles for deeper water. This is presented as Plate 2.

Water replacement statics were applied to Basement reflection times on the basis of .007 seconds per hundred feet. This correction essentially replaces water travel time at 5,000 feet per second by an estimated sub-water travel time at 6,000 feet per second.

Most surveyed lines were under Shoran radio positioning control. Shotpoint locations for these lines