

A2.7 Thermal History

Five washed and air-dried samples were sent via ANALABS to Professor Alan Cook for vitrinite reflectance measurement and coal maceral description. The results, combined with the data from geochemical analysis, indicated that the sediments from the surface to 2000m are immature and at the pre-oil generative stage. The sediments from 2000m to 2709m are marginally mature and may be at the initial hydrocarbon generative stage. Details of the vitrinite reflectance measurements may be seen in the ANALABS report included in this Well Completion Report as Appendix 2. A summary of the ranges of the vitrinite reflectance measurements is given here.

<u>Depth</u>	<u>Ro(mean)</u>	<u>Range</u>	<u>No. of readings</u>
1740	0.38	0.27 - 0.48	22
2056	0.52	0.42 - 0.61	27
2454	0.48	0.38 - 0.59	33
2550	0.52	0.43 - 0.65	28
2709	0.57	0.49 - 0.65	30

Geothermal Gradient

The geothermal gradient was determined from temperatures obtained from two log runs only. The figure obtained is therefore not as reliable as it may be but it does compare with gradients from other wells in the basin. The geothermal gradient suggested by the available data is 31.7 deg. C. The gradient was obtained using the following data from logging suite number 2.

<u>Depth(m)</u>	<u>Log</u>	<u>Time since</u>	<u>Temp.</u>	<u>T/(T + dt)</u>
3107.0	DIL	8.00	98.9	0.833
3107.0	LDL	16.25	104.4	0.910

The results of the formula:

$$T/(T + dt)$$

where:

T = the time since the last circulation.

dt = the circulation time, taken as 96 minutes in both cases,

were plotted on a logarithmic scale against temperature readings on a linear scale and the resulting line between them was extrapolated to find the corrected bottom hole temperature (see accompanying graph - Figure No. 4). The corrected bottom hole temperature was then used in the formula: