can be analysed with simple statistics. As shown on Table 5.2 the gradient has a mean of $38.4^{\circ}C/km$ and a standard deviation of $3.4^{\circ}C/km$. No well has a temperature gradient which is in excess of 2 standard deviations from the mean. This latter value is a rule of thumb for detecting possibly anomalous values within a normal population. Although no anomalous values are found this does not mean that there is no real spatial variation in the gradient within the Bass Basin. However the above results, when taken in conjunction with the low quality of the original data, imply that any interpretations of contoured data should be treated with a high degree of caution. Results have been contoured as standardised normal values, Zi, and the contouring interval is in units of standard deviations from the mean value (see Figures 5.4 & 5.6).

In summary, the results are consistent with a linear gradient throughout the basin, up to a maximum $43.74^{\circ}C/$ km, at least within the post Otway Group sediments.

(iv) Interpretation of Results

It is possible to provide at least three conceptual models to account for the spatial variations of the temperature gradients:

1) The first model is that of Kantsler and others (1978) which shows that gradients in the Bass Basin tend to be relatively lower in the deeper parts of the basin and higher on the flanks, the northeast flank being higher than the southwest flank. It is noted here that the proposed cooler gradient