2.1.2 PORTAL SYNCLINE

Data relating to the portal syncline is mainly derived from measuring structure along the Hellyer haul road cutting. This tends to follow close to the apparent closure of the syncline and therefore the data is somewhat biased toward measurements near the orientation of the axis. Results from the plotting of this data do generally support the current interpretation of the fold orientation in plan. It does appear, however, that the syncline axis trends toward the east and shallows in plunge away from the Hellyer anticline. The approximate plunge of the axis through the area of the haul road is 63°>078°. This steepens to approx. 72°>050° adjacent to the Hellyer Anticline. This shift in plunge and trend of the fold axis can be attributed almost entirely to the effect of the NW limb of the syncline, which is common to the Hellyer Anticline. Bedding in the NW limb usually strikes NNE and has a moderate dip. This orientation appears to be transposed into a N striking, steeply E dipping high strain zone, thus affecting the geometry of the Portal syncline accordingly. It is difficult to illustrate this process of transposition but the plot of contoured poles to bedding in Figure ?? shows the unusual nature of bedding orientations along the haul road with respect to all other areas.

2.1.3 HELLYER ANTICLINE

Geometry of the Hellyer Anticline is a composite of the west limb of the Portal syncline and the east limb of the TDS. As expected from this the anticline has characteristics common to both the other structures but all are sufficiently different that they cannot be considered as products of the same deformation event.

Assuming the TDS and the Portal Syncline are normal fold structures, and may have originated from the same event, it is probable the Hellyer Anticline was originally a consistent anticlinal fold. To attain its present geometry it appears there has been considerable attenuation of the eastern limb, to the extent of some overturning. The high strain related to this attenuation is well indicated by the 1:10,000 scale interpretive geology, showing the faulting of the east limb in the Hellyer area and the continuation of