

## **EXHUMATION OF SHEAR ZONES IN SOUTHERN ADELAIDE FOLD-THRUST BELTS; EVIDENCES FROM FLUID INCLUSIONS AND MICROPROB DATA**

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Exhumation of shear zones in the external portion of the Southern Adelaide Fold-Thrust belt is discussed based on integration studies of fluid inclusions in quartz veins and microprobe data. The calculation of average pressure of peak metamorphism from the assemblage of biotite, muscovite, chlorite, and feldspar using electron probe data has shown an average pressure of 2.5-3.0 kbar assuming average temperature of 400. Analysis of primary fluid inclusions in deformed quartz veins also show that average temperature were in excess of 360 while estimated average pressure were 3.1 kbar which is compatible with the estimated pressure of peak metamorphism. Modified secondary inclusions, however, show trapping pressure with a lower average of 2.8 kbar. It is proposed that these modified inclusions were developed from the same fluid as primary inclusions but were then modified to lower densities when the shear zones were exhumed to higher crustal levels. Evidence of negative crystal forms and decrystallization of these modified inclusions indicates that they have suffered overpressuring during the exhumation of the shear zones. Calculation of overpressuring of fluid inclusions across the shear zones demonstrate that the amount of exhumation of the shear zones decreases towards the foreland.