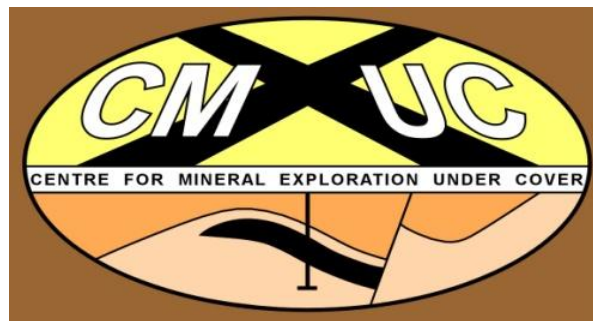


The Depositional and Clast Provenance Age of the Coodnambana Metaconglomerate, Mount Woods Inlier

Sean O'Sullivan

Supervisors: Caroline Forbes & David Giles



**Government
of South Australia**

Primary Industries
and Resources SA



November 2010

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ABSTRACT

Laser Ablation Inductively Coupled Plasma-Mass Spectrometry U-Pb zircon and monazite geochronology for the Coodnambana Metaconglomerate has been used to constrain detrital ages and the provenance of the interpreted youngest sequence in the Mount Woods Inlier. U-Pb zircon and monazite ages include data from the quartzite underlying the Coodnambana Metaconglomerate, the quartz-magnetite metapsammitic clast and conglomerate matrix. These ages are 1725, 1808 and 1558 Ma respectively. These data indicate that the clasts were not sourced from the Skylark Metasediments and does not directly imply the presence of an unconformity at the base of the Coodnambana Metaconglomerate. The provenance of these clasts is currently unknown. We propose an alternate single stage depositional and tectonothermal model for the Mount Woods Inlier, in which sedimentation occurred from ca. 1750 Ma to ca. 1630 Ma and possibly up to 1590 Ma. At ca. 1590 sedimentation ceased with the onset of metamorphism and deformation. Metamorphic conditions reach ~4.7kbar and 750°C. Following metamorphism the Mount Woods Inlier experience a hydrothermal event at ca. 1558 Ma.