RARE EARTH ELEMENT (REE) GEOCHEMISTRY, MINERALOGY, AND MOBILITY IN THE COBAR BASIN

FROM POTENTIAL PRIMARY GRANITE SOURCES TO THE SURFACE ENVIRONMENT

MINEX CRC PROGRAM 3

National Drilling Initiative

PHD PROJECT

University of New South Wales

PRIMARY SUPERVISOR

Assoc. Prof. Ian Graham
e: i.graham@unsw.edu.au
t: +61 2 9385 8720

CO-SUPERVISORS

Indrani Mukherjee and David French (University of New South Wales)
Brenainn Simpson and Chris Folkes (Geological Survey of New South Wales)

PARTICIPATING ORGANISATIONS

UNSW SYDNEY

NSW GOVERNMENT

RESEARCH PROJECT

This project will be studying prospective rare earth element (REE) deposits within the Cobar Basin of central NSW, which is within one of the MinEx CRC NDI case study areas. This project will be focusing upon REE deposits associated with alkaline igneous rocks. In particular, the varying granite suites found throughout the Cobar Basin. Three different deposit types will be considered for this project, the Doradilla skarn-hosted polymetallic-REE deposit in the north Cobar Basin, the Wonowinta MVT deposit in the south Cobar Basin, and the Hera Au-Pb-Zn-Ag deposit on the eastern margin of the Cobar Basin.

Other less significant deposits within the Cobar Basin may be investigated depending upon time and access factors. A particular focus will be placed upon the Doradilla deposit due to its recent discovery of significant REE mineralisation. This deposit represents an excellent model for understanding the source of the REE (the Midway Granite – its evolution and emplacement), and the transport, deposition, and enrichment of REE within the skarn and secondary environments. The Wonowinta and Hera deposits are also of great importance to this project as comparisons to Doradilla.