

OMITIOMIRE COPPER DEPOSIT, NAMIBIA: A CASE HISTORY

Ken Maiden¹, Karl Hartmann², Ken Hart²

- 1. International Base Metals Limited, Sydney ('IBML')**
- 2. Craton Mining and Exploration (Pty) Ltd, Windhoek ('Craton')**

ABSTRACT

Omitiomire is a stratabound copper deposit hosted in an 1100 Ma basement dome. The dome is bounded by thrusts related to the Pan-African (Cambrian) collision of the Congo and Kalahari Cratons and is flanked by strata of the Neoproterozoic Damara Sequence.

Previous drilling showed thick but low grade mineralisation and defined a modest resource. Craton acquired the project in mid-2007 and commenced a grid drilling programme which has defined a shallow east-dipping tabular deposit, 10 – 80m thick. The deposit extends over 2,500m strike and has been drilled down to around 300m depth. A resource of 117 million tonnes at 0.5% Cu (20% Indicated, 80% Inferred) at a cut-off grade of 0.25% Cu has been defined. The deposit remains "open" at depth to the east.

A thrust juxtaposes barren hanging wall felsic gneiss against mineralised amphibolite and biotite-amphibole schist. The highest copper grades occur immediately below this contact, tailing off with depth. Recumbent folds repeat the ore zones above one another at depth. Coarse chalcocite overprints two foliations and is associated with post-cleavage biotite and chrome-rich epidote as well as some sphene and possible fuchsite. This indicates either emplacement or remobilisation of copper late in the Damaran (Pan-African) Orogeny.

The sulphide mineralogy is dominated by chalcocite. There is minor bornite, rare chalcopyrite and no pyrite. The deposit is oxidised to 20m depth and partly oxidised to 40m depth, with the development of malachite and subordinate chrysocolla. Minor covellite and native copper occur in a poorly-developed supergene zone.

The deposit is banded on a scale of centimetres to metres in thickness. Copper occurs almost entirely in mafic schist bands, which are soft and heavy; the intervening barren felsic gneiss bands are hard and light. This characteristic allows cheap and effective pre-concentration of copper by dense medium separation. A pre-feasibility study (PFS), carried out in 2010, showed that this process can double the grade of mill feed to ~ 1% Cu.

Metallurgical testwork indicates the likelihood of 90% sulphide copper recovery and 63% oxide copper recovery by flotation. The sulphide concentrate will consist almost entirely of chalcocite so will have a high grade of +50% Cu, with no deleterious elements. The PFS showed the likelihood of a robust project at a modest copper price of US\$2.50 /lb.

There is excellent potential to expand the resource at depth. In addition, extensive soil geochemical surveys have shown widespread anomalies within the Ekuja Dome and beyond. Craton has commenced a drilling programme aimed at expanding the resource to + 1 million tonnes contained copper.