PROTEROZOIC SEDIMENT-HOSTED CU-PB-ZN DEPOSITS OF WESTERN GONDWANA: INTRA- AND INTER-CONTINENTAL CORRELATION

1 S. S. IYER, 2 A.F. KAMONA, 3A. MISI, 4J. CAILTEUX and 5A B KAMPUNZU 1University of Calgary, Canada, 2University of Namibia, Namibia 3Universidade Federal da Bahia, Brazil4GFI-EGMF/Lubumbashi5University of Botswana, Botswana

Recent studies on Proterozoic Cu-Pb-Zn deposits on either side of the Atlantic indicate many common sedimentological, structural, geochemical and isotopic characteristics probably arising from the common geological evolution of the Mesoproterozoic Rodinia and Neoproterozoic Gondwana Supercontinents. Yet the Katangan metallogenic province in Congo and Zambia is the only major Neoproterozoic sediment-hosted Cu-Co province, Barring the Katangan province, the Namaqualand Metamorphic Complex, and the Lomagundi metallogenic province, no large base metal deposits have yet been discovered else where, particularly lacking in the vast Proterozoic sedimentary basins of South America. No satisfactory explanations have been offered for this enigma. Thus there is a strong need to prepare a comprehensive database in one readily available form and a mineral deposit map of Western Gondwana. The map and the database should help (I) raise the awareness of the mineral potentials of Gondwana sequences, (ii) intra- and intercontinental correlations and (iii) develop more reliable metallogenic models. We are embarking on a project on “Sediment hosted base metal deposits of Western Gondwana”. We discuss the following aspects of the investigation: (1) Age of the host rocks; (2) Evolution of host sedimentary basins; (3) Structural controls; (4) Timing of mineralization; (5) Sources of metal and sulfur; (6) Nature of ore forming fluids and (7) Temperatures of ore depositionIt is expected that the metallogenic models developed during the course of the study will assist in developing appropriate exploration strategies for new sediment-hosted base metal deposits in Western Gondwana.