

METAMORPHIC HISTORY OF LATE NEOPROTEROZOIC DOKHAN-TYPE VOLCANICS IN THE MEKNAS AREA, SE SINAI, EGYPT

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The mineralogical and metamorphic features of the Neoproterozoic Meknas volcanics in south-eastern Sinai, Egypt, have been studied. These volcanics developed during the late stage of the Pan-African event and occur as successive sheets ranging in composition from andesite to rhyolite. Their mineral assemblages and mineral chemistry indicate these rocks underwent two metamorphic phases. The first is an early contact phase, which is characterized by the assemblage

actinolitic hornblende + hornblende + biotite + oligoclase + quartz suggesting amphibolite facies metamorphism, with P-T conditions at $550\pm 50^{\circ}\text{C}$ and $<2-3$ kbar. This metamorphism was followed by a late hydrothermal phase under greenschist and subgreenschist facies conditions as evidenced by formation of actinolite + chlorite + albite in andesite and dacite and chlorite + muscovite in rhyodacite and rhyolite.