

Karakteristik Batuan Ultramafik pada Endapan Nikel Laterit di Wilayah Ganda-Ganda, Kabupaten Morowali Utara, Provinsi Sulawesi Tengah: Implikasi terhadap Tektonik = The Characteristics of Ultramafic Rocks on Laterite Nickel Deposits in Ganda-Ganda, North Morowali Regency, Central Sulawesi Province: Implications for Tectonics

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Abstrak

Daerah Ganda-Ganda, Morowali Utara merupakan salah satu daerah penghasil bijih nikel di Indonesia dari endapan laterit. Endapan laterit tersebut dihasilkan dari pelapukan batuan ultramafik (batuan asal). Pada area penelitian terdapat pada Komplek Ultramafik dari Jalur Ophiolit Sulawesi. Penelitian ini bertujuan untuk mengetahui komposisi endapan laterit, karakteristik batuan ultramafik, dan asosiasinya terhadap tektonik dari sampel batuan asal daerah penelitian. Metode yang digunakan yakni analisis petrografi, X-Ray diffraction (XRD), dan energy dispersive X-Ray fluorescence (EDXRF). Profil terdiri atas limonit dan saprolit hingga rocky saprolite. Komposisi mineral profil limonit didominasi goetit dan gibbsit. Saprolit didominasi antigorit, talk, lizardit, dan nakrit. Batuan asal didominasi mineral silikat. Jenis batuan ultramafiknya meliputi lherzolit terserpentinisasi, harzburgit terserpentinisasi, olivin websterit terserpentinisasi, dan serpentinite. Secara geokimia semua batuan ultramafik berkomposisi lherzolit. Semua batuan hadir mikrotekstur mesh. Banyak mineral olivin dan piroksen di batuan asal telah berubah menjadi mineral serpentin. Mikrotekstur serpentinite mencakup tekstur mesh pada lizardit, tekstur relict pada olivin, tekstur veinlet mineral krisotil, dan tekstur decussate mineral antigorit. Komposisi batuan asal dominan tersusun atas mineral olivin, lizardit, dan piroksen. Batuan ultramafik daerah penelitian berasosiasi dengan tektonik supra-subduction zone (SSZ) yang dominan hingga mid-oceanic ridge basalt (MORB) dengan seri magma tholeiite.

.....The Ganda-Ganda area, North Morowali is one of the nickel ore producing areas in Indonesia from laterite deposits. Laterite deposits are produced from the weathering of ultramafic rocks (source rocks). The research area is in the Ultramafic Complex of the Sulawesi Ophiolite Belt. This research aims to determine the composition of laterite deposits, the characteristics of ultramafic rocks, and their association with tectonics from the source rock samples from the research area. The methods used are petrographic analysis, X-ray diffraction (XRD), and energy-dispersive X-ray fluorescence (EDXRF). The profile consists of limonite and saprolite to rocky saprolite. The mineral composition of the limonite profile is dominated by goethite and gibbsite. Saprolite is dominated by antigorite, talc, lizardite, and nacrite. The source rocks are dominated by silicate minerals. Ultramafic rock types include serpentinized lherzolite, serpentinized harzburgite, serpentinized olivine websterite, and serpentinite. Geochemically, all ultramafic rocks fall in the lherzolite composition. All rocks have mesh microtexture. Many of the olivine and pyroxene minerals of the source rock have been altered into serpentine minerals. Serpentinite microtextures include the mesh texture of lizardite, the relict texture of olivine, the veinlet texture of chrysotile, and the decussate texture antigorite. The dominant composition of the source rocks consists of olivine, lizardite and pyroxene minerals. Ultramafic rocks in the study area are dominantly associated with supra-subduction zone (SSZ) tectonics to mid-oceanic ridge basalt (MORB) with a tholeiite magma series.