

ABSTRACT

The Research has been done in the concession area of PT Gane Permai Sentosa at block Loji and PT Trimegah Bangun Persada at block Kawasi in Obi Island, South Halmahera Regency. The purpose of this research is to know the characteristic of the laterite nickel geochemistry in those both area. The research method is done by literature study, field observations, amount of 25 drillholes essay analysis, amount of 14 samples petrographic analysis, amount of 10 samples X-Ray Deffraction analysis and 12 samples geochemical analysis (major element based on X-Ray Fluorescence method).

Based on result of secondary analysis on bore samples from XRF analysis, there were differnce basicity between Kawasi block and Loji block, and between ultramafics rock harzburgite with serpentinite, which on Loji block lower basicity than Kawasi block, and on harzburgite rock lower basicity than serpentinite rock. The difference of those basicity was caused of many structure of joints or silica veins in Loji block than Kawasi block, and the Harzburgite rock was many got in Loji block. Except those, the nickel grade in Loji block was higher than Kawasi block.

Based on geochemistry analysis in research location to nickel laterites elements and basicity, there are two way suggested for processing ore nickel, namely pyrometalurgy and hidrometalurgy process.

Keywords: Nickel laterite, geochemistry, basicity

SARI

Daerah penelitian berlokasi di area pertambangan dibawah PT Gane Permai Sentosa dan PT Trimegah Bangun Persada yang berada di blok Kawasi dan blok Loji di pulau Obi, Kabupaten Halmahera Selatan, Provinsi Maluku Utara. Penelitian ini bertujuan untuk mengetahui Karakteristik geokimia Nikel laterit yang ada di kedua blok penelitian tersebut. Penelitian dilakukan dengan metode studi literature, pengambilan data sekunder hasil analisis di masing-masing 25 titik bor dari kedua blok penelitian, observasi di lapangan, dan analisa laboratorium terhadap 14 sampel petrografis, 12 sampel analisa geokimia (XRF), 6 sampel untuk analisa XRD.

Berdasarkan analisa XRF dan petrografis, adanya perbedaan rerata basisitas yang ada di kedua blok dan juga antara pada batuan ultramafic harzburgite dengan serpentinite. Pada blok Loji basisitas lebih kecil dibandingkan blok Kawasi, dan pada batuan ultramafik harzburgit basisitas lebih kecil dibandingkan pada batuan serpentinite. Sedangkan rerata kandungan Ni di blok Loji justru lebih besar dibandingkan di blok Kawasi.

Perbedaan kadar kandungan Ni maupun basisitas tersebut diduga karena di blok Loji banyak dijumpai urat-urat silika (kuarsa) dibandingkan di blok Kawasi yang jarang dijumpai. Adanya kekar-kekar dengan sebagian terdapat urat-urat kuarsa yang mengandung silika tersebut menjadi indikasi adanya intensitas pengayaan unsur-unsur pada nikel laterit (*rich supergen*). Berdasarkan hasil data geokimia bijih Ni laterit yang telah dilakukan di daerah penelitian, maka proses pengolahan nikel laterit di blok Kawasi dan blok Loji bisa dilakukan dengan proses pirometalurgi dan hidrometalurgi.*

Kata kunci: Nikel laterit, geokimia, basisitas