

ABSTRAK

PENGARUH BATUAN DASAR TERHADAP KUALITAS BIJIH BAUKSIT DI DAERAH SANDAI, KETAPANG, KALIMANTAN BARAT

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Bauksit merupakan komoditas utama penghasil aluminium yang tersusun atas mineral aluminium oksida dan hidroksida. Pada tahun 2016, Kalimantan Barat memiliki potensi cadangan bauksit sebesar 0,84 milyar ton. Kualitas bijih bauksit dipengaruhi oleh berbagai faktor, salah satunya karakteristik batuan dasar. Oleh karena itu, penelitian ini dilakukan untuk mengkaji pengaruh batuan dasar terhadap kualitas bijih bauksit di daerah Sandai, Kabupaten Ketapang, Kalimantan Barat, guna mendukung efisiensi eksplorasi melalui penentuan zonasi bijih berkualitas tinggi. Data yang digunakan untuk penelitian, terdiri atas data primer berupa pedeskripsian litologi dan geomorfologi, pengukuran struktur geologi, dan pengambilan sampel serta data sekunder yang diperoleh dari analisis XRF kegiatan eksplorasi perusahaan. Metode penelitian meliputi analisis geomorfologi, struktur geologi, petrografi, dan analisis data geokimia menggunakan *software* Microsoft Excel. Analisis geomorfologi menunjukkan bahwa satuan bentuk lahan di daerah penelitian meliputi bentuk asal denudasional dan fluvial. Berdasarkan analisis petrografi, stratigrafi daerah penelitian terdiri atas satuan metabatupasir Komplek Ketapang, satuan intrusi andesit, satuan intrusi latit porfiri, satuan intrusi latit kuarsa, satuan intrusi trasit, satuan intrusi monzodiorit kuarsa, satuan intrusi monzonit, satuan intrusi monzonit kuarsa, dan satuan intrusi syenit k-feldspar. Hasil analisis struktur geologi, ditemukan kekar gerus dengan tegasan utama tenggara-barat laut. Sedangkan, analisis data geokimia menggunakan kadar senyawa Al_2O_3 sebagai parameter kualitas bijih. Data tersebut dianalisis secara runtut untuk mengetahui hubungan antara batuan dasar dan kualitas bauksit. Hasil menunjukkan bahwa kualitas bijih bauksit dipengaruhi oleh kandungan Al_2O_3 pada batuan dasar. Berdasarkan *enrichment ratio* Al_2O_3 pada setiap batuan dasar berkisar antara 2,44–3,21. Andesit memiliki *enrichment ratio* tertinggi di daerah penelitian sebesar 3,21. Sehingga, andesit diinterpretasikan sebagai batuan dasar yang paling prospek terhadap pembentukan bauksit di daerah penelitian.

Kata kunci: aluminium, bauksit, batuan dasar, kualitas bijih

ABSTRACT

THE INFLUENCE OF BEDROCK ON THE QUALITY OF BAUXITE ORE IN THE SANDAI AREA, KETAPANG, WEST KALIMANTAN

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Bauxite is the primary raw material for aluminum production, consisting of aluminum oxide and hydroxide minerals. In 2016, West Kalimantan had estimated bauxite reserves of 0.84 billion tons. The quality of bauxite ore is influenced by various factors, one of which is the characteristics of the host rock. Therefore, this study was conducted to examine the influence of host rock on bauxite ore quality in the Sandai area, Ketapang Regency, West Kalimantan, to support exploration efficiency through the identification of high-quality ore zones. The data used for this study consisted of primary data in the form of lithological and geomorphological descriptions, geological structure measurements, and sampling, as well as secondary data obtained from XRF analysis of the company's exploration activities. The research methods included geomorphological analysis, geological structural analysis, petrographic analysis, and geochemical data analysis using Microsoft Excel software. Geomorphological analysis showed that the landform units in the study area comprised denudational and fluvial landforms. Based on petrographic analysis, the stratigraphy of the study area consists of the Ketapang Complex metabasalt unit, andesite intrusion unit, porfiri latite intrusion unit, quartz latite intrusion unit, trachyte intrusion unit, quartz monzodiorite intrusion unit, monzonite intrusion unit, quartz monzonite intrusion unit, and K-feldspar syenite intrusion unit. Geological structural analysis revealed jointing with a dominant southeast-northwest trend. Meanwhile, geochemical data analysis used Al_2O_3 content as a parameter for ore quality. The data were analyzed sequentially to determine the relationship between the host rock and bauxite quality. The results show that the quality of bauxite ore is influenced by the Al_2O_3 content of the host rock. Based on the Al_2O_3 enrichment ratio, the values for each host rock range from 2.44 to 3.21. Andesite has the highest enrichment ratio in the study area, at 3.21. Therefore, andesite is interpreted as the most promising host rock for bauxite formation in the study area.

Keywords: aluminium, bauxite, bed rock, ore quality