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GEOLOGI DAN KARAKTERISTIK MINERAL PIROPILIT DAERAH SUMBERMANJING WETAN, MALANG

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Abstrak. Penelitian dilakukan di Daerah Ringinkembar dan Sekitarnya, Sumbermanjing Wetan, Malang. Berdasarkan Peta Geologi Regional Lembar Turen, batuan penyusun daerah penelitian masuk dalam Formasi Mandalika dengan umur Oligosen Akhir hingga Miosen Awal. Formasi Mandalika terusun oleh satuan batuan vulkanik antara lain andesit, dasit dan tuff, dan batuan tersebut telah banyak mengalami ubahan (alterasi). Salah satu hasil mineral ubahannya adalah mineral pirolopilit, yang dominan terdapat pada zona alterasi argilik lanjut. Mineral piropilit yang ada di daerah Sumbermanjing Wetan, Malang sudah banyak yang ditambang, salah satunya digunakan untuk bahan baku campuran keramik, atau bahan baku industri lainnya. Penelitian ini bertujuan untuk mengetahui kondisi geologi dan kararteristik mineral piropilit di daerah penelitian berdasarkan sifat fisik dan kandungan kimia mineral piropilit. Metode yang digunakan adalah pemetaan geologi permukaan dan analisis sampel batuan *X-Ray Difracttion* (XRD) di laboratorium. Berdasarkan pemetaan geologi permukaan, geomorfologi di daerah penelitian tersusun satuan perbukitan struktural bergelombang sedang hingga kuat struktural yang berhubungan dengan kekar dan patahan. Litologi penyusunnya dari tua ke muda satuan andesit, satuan tuff, satuan batupasir, dan satuan batugamping. Struktur geologi berupa kekar yang memiliki arah N 10^o E. Zona alterasi daerah penelitian terdapat zona alterasi propilitik dan zona argilik lanjut. Berdasarkan analisis sampel batuan, mineral piropilit dilihat dari kandungan alumina dan kuarsa terdapat 4 tipe mineral piropilit di daerah penelitian. Tipe A piropilit alumina tinggi, Tipe B piropilit silika rendah, Tipe C piropilit silika tinggi dengan diaspore, dan Tipe D piropilit dengan alkali rendah.
Kata Kunci: alterasi; geologi; mineral propolit

Abstract. *This research was conducted in Ringinkembar Village and its surroundings, Sumbermanjing Wetan, Malang, East Java. According to the Regional Geological Map of the Turen Sheet, the rocks in the study area are part of the Mandalika Formation, which dates back to the Late Oligocene to Early Miocene. The Mandalika Formation is composed of volcanic rock units such as andesite, dacite, and tuff, which have undergone significant alteration. One of the alteration minerals produced is pyrophyllite, which is predominantly found in the advanced argillic alteration zone. The pyrophyllite minerals in the Sumbermanjing Wetan area, Malang, have been extensively mined, with some being used as raw materials for ceramic mixtures or other industrial purposes. This study aims to determine the geological conditions and characteristics of the pyrophyllite minerals in the study area based on the physical properties and chemical composition of the pyrophyllite minerals. The methods used include surface geological mapping and X-Ray Diffraction (XRD) analysis of rock samples in the laboratory. Based on surface geological mapping, the geomorphology of the study area consists of moderately to strongly undulating structural hill units associated with joints and faults. The lithology, from oldest to youngest, comprises andesite units, tuff units, sandstone units, and limestone units. The geological structure includes joints with a N 10° E orientation. The alteration zones in the study area include propylitic and advanced argillic zones. Based on rock sample analysis, there are four types of pyrophyllite minerals in the study area, categorized by alumina and quartz content: Type A high-alumina pyrophyllite, Type B low-silica pyrophyllite, Type C high-silica pyrophyllite with diaspore, and Type D low-alkali pyrophyllite.*
Keywords: *geology; alteration; pyrophyllite*