

**GEOLOGI DAN STUDI PROVENAN BATUPASIR FORMASI
KEREK DAERAH BAKALREJO DAN SEKITARNYA,
KECAMATAN SIMO, KABUPATEN BOYOLALI,
JAWA TENGAH**

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Lokasi penelitian secara administratif terletak di Daerah Bakalrejo dan sekitarnya, Kecamatan Simo, Kabupaten Boyolali, Provinsi Jawa Tengah.. Lokasi penelitian memiliki luasan daerah sekitar 25 km² dan secara geografis terletak pada koordinat UTM 456000 – 461000 mE dan 9178000 – 9183000 mN.

Secara fisiografi daerah penelitian termasuk kedalam Zona Kendeng. Pola pengaliran yang terdapat yaitu Subparalel dengan 1 satuan geomorfik yang terbagi menjadi 5 subsatuan, terdiri dari Perbukitan Homoklin I (S1), Lembah Sinklin (S2), Perbukitan Homoklin II (S3), Perbukitan Antiklin (S4) dan Punggungan Antiklin (S5).

Terdapat 5 satuan batuan yang menyusun daerah penelitian dari tua ke muda, terdiri dari satuan batupasir – tuffan Kerek (Miosen Tengah – Miosen Akhir, N14 – N15), satuan batupasir – karbonatan Kerek (Miosen Akhir, N15 – N16), satuan breksi vulkanik (Plistosen), satuan endapan undak (Holosen) dan satuan endapan alluvial (Holosen).

Struktur Geologi yang berkembang yaitu Kekar dan Lipatan berupa Antiklin Pentur dan Sinklin Bakalrejo. Potensi Geologi yang ada yaitu soil batupasir yang dapat digunakan sebagai pembuatan batubata serta keterdapatan mata air di beberapa tempat.

Hasil analisa provenan didapatkan iklim daerah sumber termasuk *semiarid* dengan sumber batuan ialah batuan beku vulkanik pada setting tektonik *magmatic arc* subprovenan *undissected arc*.

Potensi geologi positif yang terdapat pada daerah penelitian ialah soil batupasir yang dapat dijadikan sebagai bahan baku pembuatan batubata serta terdapat beberapa mata air pada wilayah penelitian. Potensi negatifnya ialah daerah penelitian rawan mengalami tanah longsor.

Kata kunci : Kerek, provenan, *semiarid*, *magmatic arc*, *undissected arc*.

**GEOLOGY AND PROVENANCE STUDY OF SANDSTONE
OF KEREK'S FORMATION, BAKALREJO AREA,
SIMO, BOYOLALI,
MIDDLE JAVA**

ABSTRACT

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Research area located in Bakalrejo, Simo, Boyolali, Middle Java. Research area has 25 kilometres per square and as geographically located in UTM coordinat of 456000 – 461000 mE and 9178000 – 9183000 mN.

As fisiography, research area located in Kendeng Zone. It has a Subparalel drainage pattern with 1 geomorphic landform which is struktural landform that divided in 5 subgeomorphic, consists of Homocline Hills I (S1), Sincline Valley (S2), Homocline Hills II (S3), Anticline Hills (S4) and Sincline Ridge (S5).

It has 5 litostratigraphy group from older to younger, which consists of Kerek's tuffan – sandstone (Middle Miocene – Late Miocene, N14 – N15), Kerek's carbonaceous – sandstone (Late Miocene, N15 – N16), volcanic breccia (Plistocene), undak sediment (Holocene) and alluvial (Holocene).

Geological structure that was found in research area were shear joints and fold which consists of Pentur Anticline and Bakalrejo Sincline. The geological potency of research area is the soil from sandstone can be used to make bricks and there are some spring water around the research area.

The results of provenance analysis was the paleoclimate of source area was semiarid, the source of Kerek's sandstone was from volcanik rocks and the tectonics from the source area was magmatic arc with the subprovenance of undissected arc.

The positive geological potential in research area is that the soil from sandstone can be made as bricks and also there are some of water springs at different location. The negative geological potential in research area is landslide.

Keywords : Kerek, provenance, semiarid, magmatic arc, undissected arc.