Identification of Northern Part of Opak Fault Line in Klaten Regency Using Geomagnetic Method

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ABSTRACT

This research was aimed to identify the northern part of Opak Fault line located in Klaten Regency using geomagnetic method. Identification process was done by Earth's magnetic field measurement and analysis of the measurement data to obtain the subsurface structure of the research area. The research area was located in Klaten Regency area, i.e. Manisrenggo Subdistrict, Prambanan Subdistrict, Gantiwarno Subdistrict, Jogonalan Subdistrict, Wedi Subdistrict and Prambanan Subdistrict of Sleman Regency.

The research was started by collecting supporting data and conducting preliminary survey. Then survey design was created to locate the measurement points consisted of 104 points with 1 km interval for each point. Based on the survey design, Earth's magnetic field was measured for each point. The measurement data then were analyzed through IGRF and daily variational correction to get the geomagnetic anomaly in the research area. Then the data were transformed using Reduce to Pole and Upward Continuation. Based on the geomagnetic field anomaly contour, then 2D model of the subsurface structure in the research area were created to identify the fault existence.

Based on the results, it can be concluded that geomagnetic method still cannot identify the fault existence in the form of rupture in the rock block or susceptibility contrast between rock blocks.

Kata Kunci: *Opak Fault, Geomagnetic method, Klaten Regency*