

INTISARI

ESTIMASI SEBARAN LAVA BASALT BERSTRUKTUR BANTAL DI DAERAH WATUADEG KECAMATAN BERBAH KABUPATEN SLEMAN D.I. YOGYAKARTA MENGGUNAKAN METODE VLF (*VERY LOW FREQUENCY*) DAN METODE RESITIVITAS

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Penelitian tentang estimasi sebaran lava basalt berstruktur bantal telah dilakukan di daerah Watuadeg Kecamatan Berbah Kabupaten Sleman D.I. Yogyakarta dengan menggunakan metode VLF (*Very Low Frequency*) dan metode resistivitas untuk mengetahui variasi nilai rapat arus ekuivalen dan resistivitas bawah permukaan, serta arah penyebaran lava bantal. Pengukuran metode VLF sebanyak 5 lintasan yang berarah Barat – Timur dan 3 lintasan berarah Utara – Selatan. Pengukuran metode resistivitas sebanyak 9 titik dengan setengah panjang bentangan ($AB/2$) adalah 200 meter dalam area pengukuran 2 km^2 .

Hasil pengolahan data resistivitas menunjukkan nilai variasi resistivitas bawah permukaan adalah $10,9 - 109 \Omega\text{m}$ yang diidentifikasi sebagai resistivitas *soil*, $32,3 - 122 \Omega\text{m}$ diindikasikan sebagai resistivitas *tuf*, $286 - 888 \Omega\text{m}$ diidentifikasi sebagai resistivitas lava bantal, $112 - 167 \Omega\text{m}$ diidentifikasi sebagai resistivitas aglomerat dan $2,72 - 36,2 \Omega\text{m}$ diindikasikan sebagai resistivitas lempung. Nilai rapat arus ekuivalen (RAE) di daerah Watuadeg bervariasi antara 60 - 240%. Berdasarkan hasil korelasi antar penampang RAE dengan penampang korelasi resistivitas diperkirakan bahwa sebaran lava basalt berstruktur bantal di daerah Watuadeg bersumber dari bukit yang terletak di sebelah Barat kali Opak dengan arah sebarannya menerus ke arah Selatan.

Kata kunci: lava basalt berstruktur bantal, *very low frequency*, NA-MEMD, resistivitas

ABSTRACT

ESTIMATION OF PILLOW LAVA DISTRIBUTION IN WATUADEG AREA BERBAH SLEMAN D.I. YOGYAKARTA USING VERY LOW FREQUENCY AND RESISTIVITY METHODS

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Research on estimation of pillow lava distribution has been conducted in Watuadeg area, Berbah, Sleman, D.I. Yogyakarta using very low frequency and resistivity methods to determine variations of subsurface equivalent current density and resistivity values, and also pillow lava distribution direction. There are 5 lines VLF measurement with West - East direction and 3 lines with North - South direction. Resistivity measurement are 9 points with half-current electrode separation ($AB/2$) are 200 meters in 2 km^2 measuring area.

Resistivity data processing results showed that the subsurface resistivity value variations were $10.9 - 109 \Omega\text{m}$ identified as soil resistivity, $32.3 - 122 \Omega\text{m}$ indicated as tuf resistivity, $286 - 888 \Omega\text{m}$ identified as pillow lava, $112 - 167 \Omega\text{m}$ identified as agglomerates resistivity and $2.72 - 36.2 \Omega\text{m}$ indicated as clay resistivity. Equivalent current density (RAE) in Watuadeg area about $60 - 240\%$. Based on the cross-correlations result between equivalent current density section with resistivity section was estimated that the pillow lava distribution in Watuadeg area sourced from the hill which located on the West Opak river with distribution direction continuous South towards.

Keyword: pillow lava, very low frequency, NA-MEMD, resistivity