

**KAJIAN GEOLOGI DAN KARAKTERISTIK AIR PAYAU
MENGUNAKAN METODE GEOLISTRIK SERTA UJI KUALITAS AIR
TANAH DI KECAMATAN KARANGDOWO DAN SEKITARNYA,
KABUPATEN KLATEN, PROVINSI JAWA TENGAH**

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Intisari

Penelitian dilakukan di Kecamatan Karangdowo dan sekitarnya yang berada di Kabupaten Klaten Provinsi Jawa Tengah yang terletak pada koordinat $7^{\circ}41'30''\text{S} - 7^{\circ}45'30''\text{S}$ dan $110^{\circ}42'0''\text{E} - 110^{\circ}46'0''\text{E}$, waktu tempuh ke lokasi penelitian kurang lebih 1-2 jam. Telah dilakukan wawancara secara lisan dan melihat secara langsung kondisi air sumur di daerah penelitian warga dan hasilnya sebagian besar daerah Karangdowo mempunyai kualitas air bersih yang berada dibawah standar kelayakan, karena air sumur yang dijumpai air di beberapa sumur yang berasa payau dan juga keruh

Berdasarkan latar belakang diatas maka dilakukan uji kualitas airtanah dengan tujuan untuk mengetahui apakah airtanah tersebut layak untuk di konsumsi dan memenuhi standar baku mutu air minum yang telah ditetapkan. Penelitian dilakukan menggunakan metode geolistrik konfigurasi *Schlumberger* dengan pengambilan data secara acak dan juga analisis sampel air sumur di laboratorium

Hasil penelitian menunjukkan bahwa beberapa desa di bagian selatan memiliki airtanah yang payau. Hal ini dibuktikan dengan hasil pemodelan grafik Ip2win yang menunjukkan nilai resistivitas yang kecil (0-5 ohm meter) selain itu juga hasil uji laboratorium menunjukkan bahwa nilai DHL (daya hantar listrik), TDS (*total dissolved solid*), salinitas, klorida, magnesium dan unsur lain mempunyai nilai lebih besar dari standar bakumutu yang telah ditentukan, maka dapat dikatakan bahwa tidak semua airtanah di daerah telitian layak dikonsumsi untuk air minum

Kata kunci : airtanah, kualitas airtanah,geolistrik, resistivitas

**GEOLOGICAL STUDY AND CHARACTERISTICS
OF BRACKISH WATER GEOELECTRIC METHOD AND STUDY OF
GROUNDWATER QUALITY IN KARANGDOWO AND AREA AROUND
IT, KLATEN DISTRICT, PROVINCE OF CENTRAL JAVA**

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Abstract

The research was conducted in Karangdowo and surrounding sub-districts located in Klaten Regency, Central Java Province, which is located at coordinates 7o41'30 "S - 7 o 45'30" S and 110o42'0 "E - 110o 46'0" E, travel time to the research location approximately 1-2 hours. Oral interviews have been conducted and see firsthand the condition of well water in the residents' research area and as a result most of the Karangdowo area has clean water quality that is below the standard of feasibility, because well water found in several wells that are brackish and also muddy.

Based on the background above, groundwater quality testing is carried out with the aim of knowing whether the groundwater is suitable for consumption and meets the established drinking water quality standards. The study was conducted using the Schlumberger configuration geoelectric method with random data collection and analysis of samples of well water in the laboratory

The results of the study show that some villages in the south have brackish groundwater. This is evidenced by the results of the Ip2win graph modeling which shows a small resistivity value (0-5 ohm meters) besides that the results of laboratory tests show that the value of DHL (electrical conductivity), TDS (total dissolved solid), salinity, chloride, magnesium and other elements have a value greater than the standard that has been determined, it can be said that not all groundwater in the area is considered suitable for drinking water

Keywords : groundwater, groundwater quality, geoelectrical, resistivity,