

ABSTRAK

Pendugaan pola intrusi air laut di Pesisir Binangun Timur Kecamatan Binangun Kabupaten Cilacap telah dilakukan menggunakan metode geolistrik tahanan jenis konfigurasi *Wenner* dan uji sampel Daya Hantar Listrik (DHL). Akuisisi data geolistrik dilakukan pada bulan Januari-Juli 2018. Tujuan penelitian ini adalah untuk menginvestigasi struktur lapisan batuan bawah permukaan berdasarkan nilai resistivitas batuan dengan pemodelan 2D dan menentukan letak serta model zona *interface* intrusi air laut. Akuisisi data resistivitas dilakukan sebanyak empat lintasan yang terdiri dari LT-1, LT-2, LT-3 dan LT-4. Berdasarkan hasil pemodelan, diperoleh resistivitas batuan LT-1 sebesar 2,75-59,5 Ωm , LT-2 sebesar 4,31-52,5 Ωm , LT-3 sebesar 6,77-61,4 Ωm , dan LT-4 sebesar 5,32-79,6 Ωm . Setelah diinterpretasi, diperoleh model lapisan yang terdiri dari pasir besi berseling dengan lempung, pasir, kerikil, dan kerakal (akuifer dangkal), pasir lempungan (lapisan semi akuifer), lempung pasir (lapisan semi kedap), dan pasir (akuifer yang diestimasi terintrusi air laut). Data pendukung berupa nilai Daya Hantar Listrik (DHL) pada enam sampel air sumur yang diuji belum menunjukkan adanya intrusi air laut. Nilai konduktivitas rata-rata sebesar 491,78 $\mu\text{S/cm}$ yang tergolong sebagai air tawar dengan kedalaman sumur di daerah penelitian sebesar ± 8 meter sedangkan dugaan adanya intrusi air laut terdapat pada kedalaman $>24,9$ meter.

Kata Kunci: intrusi air laut, geolistrik, konfigurasi *Wenner*, resistivitas, daya hantar listrik.

ABSTRACT

Identification of seawater intrusion in Eastern Binangun Coastal Binangun District of Cilacap Regency has been conducted using geoelectric resistivity Wenner configuration and sample tested of Electrical Conductivity (EC). Geoelectric acquisition has been done in January to July 2018. The purpose of this research are investigate the subsurface structure of rocks based on the resistivity with 2D modelling and investigate the location and model of the interface zone of seawater intrusion. Resistivity data acquisition is conducted as many as four line consisting of LT-1, LT-2, LT-3, and LT-4. Based on modelling results, obtained resistivity of rock consisting of LT-1 by 2.75 to 59.5 Ωm ; LT-2 by 4.31 to 52.5 Ωm ; LT-3 by 6.77 to 61.4 Ωm ; and LT-4 by 5.32 to 79.6 Ωm . Once interpreted, the lithology model is obtained consisting of iron sand inserted with clay, sand, and gravel (sallow aquifer); clayey sand (semi-aquifer layer); sandy clay (semi-impermeable layer); and sand (aquifer that thought to be intruded by sea water). The supporting data in the form of value Electrical Conductivity (EC), which has been investigated has not shown seawater intrusion with values conductivity levels mean is 491,78 $\mu\text{S}/\text{cm}$ on six-point samples tested. The average depth of the wells in the research area is ± 8 meters. While the depth of allegations of sea water intrusion is $> 24,9$ meters.

Keywords: Seawater intrusion, geoelectric, Wenner configuration, resistivity, electrical conductivity.

