

NERACA DAN NILAI KEKRITISAN AIRTANAH UNTUK MEMENUHI KEBUTUHAN DOMESTIK DESA GEDAREN DAN DESA KAYUMAS, KECAMATAN JATINOM, KABUPATEN KLATEN, JAWA TENGAH

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INTISARI

Desa Gedaren dan Desa Kayumas yang terletak di Kecamatan Jatinom, Kabupaten Klaten, Propinsi Jawa Tengah secara morfologi terletak pada Lereng Kaki Gunungapi Merapi dan Dataran Kaki Gunungapi Merapi. Ketersediaan airtanah di daerah penelitian ini berkaitan erat dengan kondisi morfologinya. Tujuan penelitian ini mengidentifikasi dengan membandingkan nilai ketersediaan serta kebutuhan airtanah di Desa Kayumas dan Desa Gedaren dan mengidentifikasi dengan membandingkan nilai kekritisan airtanah di Desa Kayumas dan Desa Gedaren.

Metode penelitian yang digunakan adalah metode survey lapangan dan metode sampling random. Survey lapangan digunakan untuk menentukan daerah penelitian. Data diperoleh dengan menggunakan metode sampling, yaitu systematic random sampling untuk memperoleh data fluktuasi muka airtanah dan untuk memperoleh data penggunaan airtanah untuk domestik dengan cara wawancara langsung kepada penduduk Desa Gedaren dan Desa Kayumas.

Hasil penelitian menunjukkan ada dua tipe akuifer yang terdapat di Desa Gedaren dan Desa Kayumas yaitu akuifer tertekandan akuifer tidak tertekan atau sering disebut akuifer bebas. Pemanfaatan airtanah untuk kebutuhan domestik di Desa Gedaren sebesar 175.624,18 m³/tahun dan pemanfaatan airtanah untuk kebutuhan domestik di Desa Kayumas sebesar 98.575,816 m³/tahun, apabila dibandingkan dengan ketersediaan airtanah dikedua desa, Desa Gedaren sebesar 495.921,64 m³ dan Desa Kayumas sebesar 374.120,75 m³, secara kuantitas airtanah di Desa Gedaren dan Desa Kayumas masih dapat mencukupi kebutuhan tersebut. Desa Gedaren memiliki nilai kekritisan airtanah sebesar 0,35%, sedangkan Desa Kayumas memiliki nilai kekritisan airtanah sebesar 0,25%. Nilai kekritisan air di Kedua desa belum bisa dikatakan kritis, karena belum mencapai angka 75%, sehingga masih aman digunakan untuk memenuhi kebutuhan domestik.

Kata Kunci: Ketersediaan airtanah, penggunaan untuk kebutuhan domestik, kekritisan airtanah

WATER BALANCE AND GROUNDWATER CRITICALITY VALUE TO DOMESTIC NEEDS GEDAREN VILLAGE AND KAYUMAS VILLAGE, JATINOM DISTRICT, KLATEN REGENCY, CENTRAL JAVA

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ABSTRACT

Gedaren village and Kayumas village is located in Jatinom district, Klaten regency, Central Java province which is morphologically located on the footslope of the Merapi Volcano and the flatland of the Merapi Volcano. The availability of groundwater in this research area is closely related to the morphological condition. The purpose of this study is to identify, using comparison, the availability and the needs of groundwater in Kayumas village and Gedaren village and to identify, using comparison, the criticality value of the groundwater in Kayumas village and Gedaren village.

The research method used was the field survey method and the random sampling method. Field survey was used to determine the research location. Data was collected using the sampling method, which was systemic random sampling, to obtain data of surface fluctuation of groundwater and to obtain data of groundwater usage for domestic purposes by means of interviewing directly the residents of Gedaren village and Kayumas village.

The result of the research showed two types of aquifer within the Gedaren village and Kayumas village which was the saturated aquifer and unsaturated aquifer or often called as the 'free' aquifer. The usage of groundwater for domestic needs in Gedaren village is as large as 175,624.18 m³/th and the usage of groundwater for domestic needs in Kayumas village is as large as 98,575,816 m³/th, if compared to the availability of groundwater in both villages, Gedaren village has as large as 495,921.64 m³ and Kayumas village has as large as 374,120.75 m³, quantitatively the groundwater in Gedaren village and Kayumas village is still sufficient in fulfilling said needs. Gedaren village has a groundwater criticality value of 0.35%, while Kayumas village has a groundwater criticality value of 0.25%. The criticality value of water in both villages cannot be classified as critical, because it hasn't reached the value of 75%, thus still safe to be used to fulfill domestic needs.

Keywords: Availability of groundwater, usage for domestic needs, criticality of groundwater