

KAJIAN POTENSI AIRTANAH BEBAS UNTUK KEBUTUHAN DOMESTIK DI KECAMATAN BANTUL, KABUPATEN BANTUL, DAERAH ISTIMEWA YOGYAKARTA

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INTISARI

Kecamatan Bantul merupakan ibu kota Kabupaten Bantul yang memiliki banyak fasilitas pendukung sebagai pengembangan perkotaan seperti terdapat pusat alun-alun kota dan pusat pemerintahan Kabupaten Bantul. Fenomena tersebut dapat memicu pertambahan jumlah penduduk di daerah penelitian yang dapat mempengaruhi kebutuhan dan ketersediaan airtanah. Oleh karena itu perlu adanya kajian potensi airtanah secara kuantitas dan kualitas untuk memenuhi kebutuhan domestik. Tujuan dari penelitian ini yaitu (1) mengetahui ketersediaan airtanah bebas di daerah penelitian, (2) mengetahui kualitas airtanah bebas di daerah penelitian, (3) mengetahui kebutuhan airtanah domestik di daerah penelitian, (4) menganalisis potensi airtanah bebas untuk memenuhi kebutuhan domestik di daerah penelitian.

Metode penelitian yang digunakan yaitu survei lapangan dan analisis data sekunder. Ketersediaan airtanah diperoleh melalui analisis data bor. Penentuan jumlah kebutuhan air di daerah penelitian dapat diketahui dengan melakukan wawancara terstruktur di lapangan secara *purposive sampling*. Pengambilan data kualitas airtanah dilakukan secara *systematic random sampling* (grid) dengan data DHL pada mulanya dan selanjutnya diambil sampel secara *stratified random sampling* untuk diuji di laboratorium. Potensi airtanah diketahui dengan analisis data sekunder maupun dari hasil lapangan. Teknik analisis yang dilakukan yaitu deskriptif dan keruangan.

Hasil penelitian menunjukkan bahwa ketersediaan airtanah bebas di daerah penelitian yaitu 211.140.954 m³/tahun. Kualitas airtanah yang diuji yaitu parameter TDS, Klorida, Nitrat, Sulfat, pH serta fecal coli. Parameter yang melebihi baku mutu air kelas 1 sesuai PP No 82 tahun 2001 yaitu Nitrat dan Fecal coli pada beberapa sampel. Kebutuhan airtanah total di daerah penelitian yaitu 2.997.626 m³/tahun. Jumlah kebutuhan air domestik di Kecamatan Bantul lebih rendah daripada hasil amannya. Hasil aman di daerah penelitian yaitu 7.453.223 m³/tahun. Potensi airtanah dalam mencukupi kebutuhan domestik dapat dilihat dari segi kuantitas maupun kualitas airtanah. Potensi airtanah secara kuantitas (ketersediaan) masih mampu mencukupi kebutuhan domestik hingga tahun 2030 sejumlah 3.273.475 m³/tahun. Kualitas airtanah terdiri dari 80% kualitas bersih dan 20 % sisanya tercemar ringan yang tersebar di desa Palbapang dan Ringinharjo. Meskipun demikian airtanah tersebut masih mampu memenuhi kebutuhan domestik melalui pengolahan terlebih dahulu.

Kata Kunci: Airtanah, potensi airtanah, kualitas air, kebutuhan air domestik

**A STUDY OF UNCONFINED GROUNDWATER POTENTIAL FOR
DOMESTIC NEEDS IN BANTUL SUBDISTRICT, BANTUL DISTRICT,
SPECIAL REGION OF YOGYAKARTA**

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ABSTRACT

Bantul district is the capital city of Bantul regency which has a lot of supporting facilities like town square and central government of Kabupaten Bantul as urban development. This condition could trigger the population growth in this research area which may affect the needs and availabilities of groundwater. Therefore, a study of quality and quantity of ground water potential is necessary to meet domestic needs. The aims of this research are to (1) find out the availability of unconfined groundwater in research area, (2) find out the quality of the water, (3) find out the domestic water needs, and (4) analyze the potential of unconfined groundwater to meet domestic needs in research area.

The research methods the writer uses are field survey and secondary data analysis. Furthermore, the boring logs analysis was used to determine the availability of groundwater. The amount of water needs is determined using field structured interview by purposive sampling. Groundwater quality data are taken by systematic random sampling (grid) using initial Electrical Conductivity data and then using stratified random sampling the sample was taken to laboratory for further test measure. Secondary data analysis and the field result are used to find out the potential of the groundwater. Moreover, the analysis techniques that the writer uses are descriptive and spatial analysis.

The results of this research show that the availability of groundwater in research area is 211.140.954 m³/year. The quality of groundwater tested are the parameters of TDS (Total Dissolved Solid), chloride, nitrate, sulphate, pH, and fecal Coli shows that there are parameters that exceed Class 1 water quality standard according to PP No. 82 in 2001 (Government Regulation) which are nitrate and Coli Bacteria in several samples. Total amount of water needs in research area are 2.997.626 m³/year. The amount of domestic water needs in Bantul Subdistric is lower than the safe parameter result. In addition, the safe parameter result of the research area is 7.453.223 m³/year. Furthermore, the potential of the groundwater to meet the domestic needs can be seen from the quantity and the quality of the water. From the availability or quantity, the water is considered sufficient enough to meet the domestic needs up to 2030 with total 3.273.475 m³/year. The result also shows that the water quality consists of 80% clean water and 20% of lightly contaminated water in which spread over the village of Palbapang and Ringinharjo. However, this water still considered sufficient to meet the domestic needs through several processing first.

Keywords : groundwater, groundwater potential, water quality, domestic water needs