

KAJIAN KUALITAS AIRTANAH UNTUK PEMENUHAN KEBUTUHAN AIR MASYARAKAT DI KECAMATAN SRANDAKAN, KABUPATEN BANTUL

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INTISARI

Airtanah merupakan sumber air utama yang digunakan oleh masyarakat Kecamatan Srandakan, Bantul. Pertumbuhan penduduk dan adanya pembangunan Jalan Jalur Lingkar Selatan menyebabkan peningkatan kebutuhan air dan perubahan kualitas air. Penelitian ini bertujuan untuk mengetahui kualitas airtanah dan sebarannya, faktor-faktor yang mempengaruhi kualitas airtanah, serta dampak kualitas airtanah terhadap pemenuhan kebutuhan air di Kecamatan Srandakan.

Parameter yang digunakan dalam penelitian ini antara lain parameter fisik berupa suhu, bau, rasa, warna, padatan terlarut, dan daya hantar listrik, parameter kimia berupa pH, nitrat, nitrit, fosfat, dan detergen, serta parameter biologi berupa total bakteri *coliform*. Pengambilan sampel dilakukan dengan metode *systematic random sampling* sebanyak 13 sampel.

Hasil penelitian menunjukkan bahwa kadar fosfat di seluruh titik sampel sudah melebihi baku mutu Kelas I dan II. Kadar nitrit juga melebihi baku mutu sebesar 0,06 mg/L di wilayah selatan. Kadar Nitrat cukup besar di wilayah utara Kecamatan Srandakan, dengan nilai tertinggi mencapai 18,13 mg/L. Nilai parameter suhu, warna, padatan terlarut, pH, dan detergen masih sesuai dengan baku mutu. Keberadaan pencemar fosfat, nitrat, dan nitrit berasal dari kegiatan peternakan dan pertanian, serta sanitasi di sekitar sumur yang kurang. Berdasarkan peta *flownet* yang telah dibuat, arah pergerakan zat-zat pencemar bergerak mengikuti arah aliran airtanah ke arah selatan. Kualitas airtanah di Kecamatan Srandakan sesuai untuk pemanfaatan non-konsumsi seperti kegiatan peternakan, perikanan, dan pertanian. Perlu dilakukan pengolahan terlebih dahulu agar kualitas airtanah sesuai untuk baku mutu air konsumsi.

Kata kunci: Kualitas airtanah, parameter fisik, parameter kimia, parameter biologi, baku mutu, Kecamatan Srandakan

A STUDY OF GROUNDWATER QUALITY FOR WATER USAGE SUITABILITY IN SRANDAKAN, BANTUL REGENCY

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ABSTRACT

Groundwater is a primary source of water for rural community in Srandakan, Bantul Regency. Increasing population and the construction of Jalur Lingkar Selatan provincial road leads to increase of groundwater consumption and water quality change. This research aims to analyzing groundwater quality and its distribution, factors that affect groundwater quality, and the suitability usage of groundwater based on its quality.

Parameters which measured are temperatures, odors, tastes, colors, water conductivity, and total dissolved solid from physical properties; Acidity (pH), nitrate, nitrite, phosphate, and detergent from chemical properties, and total coliform bacteria from biological properties. A total of 13 samples were collected by systematic random sampling.

Results from the study shows the concentration of phosphate in all samples have exceed Class I and Class II water quality limits. High concentration of nitrate was reported on the north area, with 18.13 mg/L as the highest value. Nitrite was accumulated on the southern region exceeding 0.06 mg/L as desirable limit. All samples have exceeded numbers of coliform bacteria. Groundwater temperature, total dissolved solids, pH, and detergent were still on desirable values. Sources of nitrate, nitrite, and phosphate contamination in groundwater are from agricultural lands, farms, and also poor sanitation around dug wells. Flow net mapping shows the pollutants move with groundwater to the South. Based on its quality, Srandakan groundwater is suitable for agricultural, fishery, and farming usage. Groundwater treatment is needed to get a safe drinking-water.

Keywords: *Groundwater quality, physical parameter, chemical parameter, biological parameter, water-quality standard, Srandakan sub-district*