



FASIES HIDROKIMIA AIRTANAH DAN SUMBER NITRAT DI KECAMATAN KRATON, KOTA YOGYAKARTA

Oleh

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INTISARI

Kecamatan Kraton merupakan salah satu kecamatan yang berada di Kota Yogyakarta sehingga kegiatan pariwisata dan aktivitas domestik masyarakat di sini cukup tinggi. Masyarakat di Kecamatan Kraton masih memanfaatkan airtanah untuk kebutuhan sehari – hari termasuk konsumsi air minum. Sehingga dalam pemanfaatannya perlu diperhatikan faktor kualitas airtanah selain faktor kuantitas. Penelitian ini bertujuan untuk menentukan fasies hidrokimia airtanah yang ada di daerah penelitian berdasarkan analisis geokimia kandungan ion mayor dan mengidentifikasi sumber utama kontaminasi Nitrat dalam airtanah di daerah penelitian. Metode penelitian yang digunakan untuk menentukan fasies hidrokimia airtanah di daerah penelitian yakni metode kurlov, diagram piper, dan diagram stiff. Kemudian analisis rasio Cl/Br dan perbandingan kadar Nitrat dengan Klorida digunakan untuk menentukan sumber Nitrat yang terkandung di daerah penelitian. Hasil penelitian menunjukkan secara umum airtanah di daerah penelitian memiliki fasies hidrokimia Kalsium - Alkali – Bikarbonat berdasarkan klasifikasi kurlov. Berdasarkan analisis diagram piper airtanah pada daerah penelitian dibagi menjadi dua kelompok yakni *Alkaline earth water with higher alkaline content*, *Predominantly hydrogencarbonate* dan *Alkaline earth water with higher alkaline content*, *Predominantly sulphate*. Kemudian analisis diagram stiff menunjukkan terdapat perubahan komposisi kimia airtanah terutama kadar Sulfat yang meningkat di bagian Utara dari Kelurahan Panembahan. Sedangkan untuk kondisi kadar Nitrat di Kecamatan Kraton secara umum melebihi batas maksimum yang telah ditetapkan oleh WHO (50 mg/L) untuk air minum dengan rata – rata kadar Nitrat daerah penelitian 75 mg/L. Kemungkinan sumber utama kontaminasi Nitrat airtanah di Kecamatan Kraton berasal dari fekal (kotoran makhluk hidup) berdasarkan diagram perbandingan kadar Nitrat dan Klorida dan analisis rasio Cl/Br.

Kata kunci : Kecamatan Kraton, Geokimia Ion Mayor, Fasies Hidrokimia, Sumber Nitrat



HYDROCHEMICAL FACIES OF GROUNDWATER AND NITRATE SOURCES IN KECAMATAN KRATON, YOGYAKARTA CITY

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ABSTRACT

Kraton Sub-District is one of the sub-districts in Yogyakarta City, so that the historical tourism center of Yogyakarta City and domestic activities are also concentrated in Kraton Sub-District. The people in Kraton Sub-District still use groundwater for their daily needs, including drinking water. So that in its utilization, groundwater quality factors need to be considered in addition to the quantity factor. This study aims to determine the hydrochemical facies of groundwater in the study area based on geochemical analysis of major ion content and to identify the main source of Nitrate contamination in groundwater in the study area. The research method used the Kurlov method, piper diagrams, and stiff diagrams to determine the hydrochemical facies and analysis of groundwater sources in the study area. Then the Cl / Br ratio analysis was used to determine the source of Nitrate contained in the study area. The results showed that in general groundwater in the study area had a hydrochemical facies based on the Kurlov classification, namely Calcium - Alkali - Bicarbonate. Based on the analysis piper diagram in the study area, groundwater in study area is divided into two groups, namely alkaline earth water with higher alkaline content, predominantly hydrogencarbonate and alkaline earth water with higher alkaline content, predominantly sulphate. Then the stiff diagram analysis shows that there is a change in the chemical composition of the groundwater, especially the increased Sulfate content in the northern part of Panembahan Village. Meanwhile, the condition of Nitrate levels in Kraton District generally exceeds the maximum limit set by WHO (50 mg / L) for drinking water with an average Nitrate level in the study area of 75 mg / L. The main possible source of groundwater Nitrate contamination in Kraton District comes from faecal (living things) based on comparison diagrams of Nitrate and Chloride levels and analysis of the Cl / Br ratio.

Keywords: Kraton District, Major Ion Geochemistry, Hydrochemical Facies, Nitrate Sources