

ANALISIS KUALITAS AIR WADUK ROWO JOMBOR, KABUPATEN KLATEN

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INTISARI

Waduk Rowo Jombor berlokasi di Desa Krakitan, Kecamatan Bayat, Kabupaten Klaten. Pemanfaatan waduk yang berlebihan menimbulkan limbah yang dapat menurunkan kualitas air. Adanya program revitalisasi bertujuan untuk mengembalikan fungsi utama waduk. Tujuan dari penelitian ini adalah untuk menganalisis kondisi kualitas air di Waduk Rowo Jombor, dan menganalisis kelayakan air sesuai baku mutu air kelas II di Waduk Rowo Jombor.

Data yang digunakan adalah hasil ukur lapangan dan uji laboratorium dengan parameter fisika dan kimia berupa suhu, pH, DO, fosfat, dan nitrat. Pengambilan sampel air dilakukan di 9 titik pada permukaan dan dasar perairan yang ditentukan secara *simple random sampling*. Hasil pengukuran kualitas air dianalisis menggunakan analisis regresi linear dan analisis komponen utama, kemudian dianalisis lagi dengan standar baku mutu air kelas II menurut PP Nomor 22 Tahun 2021.

Berdasarkan hasil penelitian menunjukkan bahwa nilai parameter kualitas air di permukaan lebih tinggi dibandingkan di dasar waduk. Kondisi kualitas air menunjukkan bahwa suhu air memenuhi standar deviasi 3 dengan pH bersifat basa dan DO tergolong baik. Waduk Rowo Jombor tergolong dalam perairan eutrofik karena memiliki kadar fosfat lebih dari 0,1 mg/L dan perairan oligotrofik karena kadar nitrat berada pada nilai 0 - 1 mg/L. Selain itu, hasil pengukuran memenuhi standar baku mutu kelas II menurut PP Nomor 22 Tahun 2021, kecuali titik 6 di permukaan pada parameter DO, semua titik sampel pada parameter fosfat, dan titik 6 serta titik 9 di dasar pada parameter nitrat.

Kata Kunci : Kualitas Air, Regresi Linear, Analisis Komponen Utama, Waduk

WATER QUALITY ANALYSIS OF ROWO JOMBOR RESERVOIR, KLATEN DISTRICT

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ABSTRACT

Rowo Jombor Reservoir is located in Krakitan Village, Bayat District, Klaten Regency. Over-utilization of the reservoir creates waste that can reduce water quality. The revitalization program aims to restore the main function of the reservoir. The purpose of this study was to analyze the condition of water quality in Rowo Jombor Reservoir, and analyze the feasibility of water according to class II water quality standards in Rowo Jombor Reservoir.

The data used are the results of field measurements and laboratory tests with physical and chemical parameters such as temperature, pH, DO, phosphate, and nitrate. Water sampling was carried out at 9 points on the surface and bottom of the waters determined by simple random sampling. The results of water quality measurements were analyzed using linear regression analysis and principal component analysis, then analyzed again with class II water quality standards according to PP No. 22 of 2021.

Based on the results of the study, it shows that the value of water quality parameters at the surface is higher than at the bottom of the reservoir. Water quality conditions show that water temperature meets the standard deviation 3 with alkaline pH and DO classified as good. Rowo Jombor Reservoir is classified as eutrophic waters because it has phosphate levels of more than 0.1 mg/L and oligotrophic waters because nitrate levels are at a value of 0 - 1 mg/L. In addition, the measurement results meet the quality standards of class II according to PP No. 22 of 2021, except point 6 on the surface on the DO parameter, all sample points on the phosphate parameter, and point 6 and point 9 at the bottom on the nitrate parameter.

Keywords : *Water Quality, Linear Regression, Principal Component Analysis, Reservoir*