PENENTUAN STATUS MUTU AIR SUNGAI WINONGO KOTA YOGYAKARTA BERDASARKAN NILAI INDEKS PENCEMARAN

Intisari

Sungai Winongo merupakan salah satu sungai yang melewati Kota Yogyakarta. Lingkungan di sekitar Sungai Winongo telah banyak yang berkembang menjadi permukiman warga, hal ini berdampak pada kualitas air di sungai ini. Salah satu cara untuk menentukan kondisi kualitas air di suatu perairan adalah dengan metode Indeks Pencemaran. Penelitian ini bertujuan untuk mengetahui status mutu air Sungai Winongo di Kota Yogyakarta berdasarkan nilai Indeks Pencemaran. Penelitian ini dilaksanakan selama bulan Maret hingga Mei 2021 dengan melakukan pengambilan sampel di 6 titik stasiun yang tersebar di sepanjang Sungai Winongo di kota Yogyakarta. Parameter yang diamati meliputi suhu air, total padatan tersuspensi (TSS), derajat keasaman (pH), oksigen terlarut (DO), *biological oxygen demand* (BOD), Fosfat (PO_4), Nitrat (NO_3-), Ammonia (NH_3). Hasil pengamatan yang telah dilakukan selama penelitian kemudian diukur menggunakan metode indeks pencemaran sesuai dengan Keputusan Menteri Negara Lingkungan Hidup Nomor 115 Tahun 2003. Pengukuran parameter-parameter ini menunjukkan suhu air di Sungai Winongo berkisar antara 26,4-27,3 ℃, TSS sebesar 220-268 mg/L, kadar pH sebesar 7,5-7,89, DO sebesar 4,92-6,82 mg/L, BOD sebesar 2,01-3,34 mg/L, fosfat sebesar 0,208-0,407 mg/L, nitrat sebesar 2,01-3,55 mg/L, dan ammonia sebesar 0,0009-0,0519 mg/L. Berdasarkan hasil pengukuran parameter, nilai Indeks Pencemaran yang didapatkan berkisar antara 9,13-9,48 dan menunjukkan bahwa Sungai Winongo berada pada kategori tercemar sedang. Kadar TSS, BOD, dan fosfat merupakan parameter yang memiliki nilai tertinggi dibandingkan dengan parameter lainnya.

Kata kunci : BOD, fosfat, indeks pencemaran, status mutu air, Sungai Winongo, TSS

DETERMINATION OF WINONGO RIVER'S WATER QUALITY STATUS IN YOGYAKARTA BASED ON POLLUTION INDEX VALUE

Abstract

Winongo river is one of the rivers that pass through Yogyakarta. The environment around the Winongo river has been transformed into a residential area and has an impact on the quality of the water in this river. One way to determine the condition of water quality in this river is the Pollution Index (PI) method. This study aims to determine the status of the water quality of Winongo River in Yogyakarta baesd on the Pollution Index value. This research was carried out during March until May 2021 by taking samples at 6 station points spread along the Winongo River in Yogyakarta. Parameters that observed in this study include water temperature, total suspended solids (TSS), acidity (pH), dissolved oxygen (DO), biological oxygen demand (BOD), phosphate (PO_4), nitrate (NO_3-), ammonia (NH_3). The results that have been made during the study were then measured using the Pollution Index method in accordance with the Indonesian Decree of the State Minister of the Environment Number 115 of 2003. The measurement of these parameters shows that the water temperature in the Winongo River ranges from 26.4-27.3 ℃, TSS 220-268 mg/L, pH 7.5-7.89, DO 4.92-6.82 mg/L, BOD 2.01-3.34 mg/L, phosphate 0.208-0.407 mg/L, nitrate at 2.01-3.55 mg/L, and ammonia at 0.0009-0.0519 mg/L. Based on the results of the measurement of these parameters, the Pollution Index value obtained ranged from 9.13 to 9.48 and it means that the Winongo River is in the moderately polluted category at six stations and the levels of TSS, BOD, and phosphate are each parameter that has the highest value compared to other parameters.

Keywords : BOD, phosphate, Pollution Index, TSS, water quality standards, Winongo River