ABSTRAK

Sungai Gelis merupakan sungai utama yang menghubungkan desa Rahtawu, Kecamatan Gebog Kabupaten Kudus sampai menuju hilir desa Jati Wetan Kecamatan Jati. DAS Gelis memiliki luas 140,94 km^2 dan panjang sungai utamanya 32 km. Banyaknya jumlah penduduk dan bermacam-macam aktivitas penduduk di sekitar DAS Gelis dapat menyebabkan banyak perubahan kualitas air sungai akibat masuknya cemaran limbah dometik, pertanian, industri. Dalam penelitian ini Sungai Gelis dibagi menjadi 4 segmen yang terdiri dari 5 titik pengambilan sampling. Penelitian ini bertujuan untuk menghitung besarnya daya tampung beban pencemaran Nitrit (NO_2) dan Nitrat (NO_3) Sungai Gelis dengan menggunakan program QUAL2E. Hasil penelitian menunjukkan daya tampung beban pencemaran Nitrit (NO_2) pada Sungai Gelis pada sepanjang semua segmen tidak ada yang memenuhi baku mutu kelas I, II, III dan IV dengan beban pencemaran tertinggi yaitu 2545,37 kg/hari saat debit maksimum dan 0,41 kg/hari saat debit minimum. Sedangkan daya tampung beban pencemaran Nitrat (NO_3) secara keseluruhan memenuhi baku mutu kelas I, II, III dan IV. Beban pencemaran tertinggi mencapai 1969,74 kg/hari saat debit maksimum dan 2,51 kg/hari saat debit minimum.

Kata kunci : *beban pencemaran, daya tampung beban pencemaran, QUAL2E, Nitrit (NO_2),Nitrat (NO_3).*

ABSTRACT

Gelis river is the main river that form the village Rahtawu, Sub-District Gebog District Kudus until the downstream village of Jati Wetan. Gelis river basin has an area of 140.94 km^2 and its main river length of 32 km. A large number of residents and an assortment of people's activities around the watershed Gelis can cause many changes in water quality due to the influx of sewage contamination dometic, agriculture, industry. In this study Gelis river is divided into four segments consisting of five sampling points. This study aimed to quantify the pollution load capacity of nitrite (NO_2) and nitrate (NO_3) Gelis river using QUAL2E program. The results showed pollution load capacity Nitrite (NO2) in the river throughout all segments Gelis at no meet quality standards of class I, II, III and IV with the highest pollution load reaching 2545.37 kg / day maximum discharge current and 0.41 kg / day when a minimum flow. While the pollution load capacity of nitrate (NO_3) as a whole meets the quality standards of class I, II, III and IV. The highest pollution load reaching 1969.74 kg / day maximum discharge current and 2.51 kg / day at minimum flow.

Keywords: *pollution load, pollution load capacity, QUAL2E, nitrite (NO_2), nitrate (NO_3)*