ANALIS KUALITAS AIR SUNGAI AKIBAT LIMBAH PABRIK GULA MADUKISMO
Studi Kasus: Sungai Bedog, Kabupaten BAntul

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ABSTRAK

Penurunan kualitas air sungai dapat disebabkan oleh peningkatan aktivitas manusia seperti pertanian, industri, perikanan dan permukiman, sehingga kondisi kualitas air sungai menurun dan tidak dapat dimanfaatkan secara optimal. Banyak sungai yg mengalir di Yogyakarta, salah satunya adalah Sungai Bedog. Pesatnya perkembangaan industri di Indonesia menyebabkan banyak pencemaran lingkungan akibat limbah industri, limbah yang dihasilkan dapat memberikan dampak negatif terhadap kualitas fisik air sungai apabila tanpa dilakukan pengelolaan terlebih dahulu. Alam sebenarnya memiliki kemampuan untuk mengatasi masalah pencemaran yang terjadi, mekanisme ini disebut *self purification.* Hal ini juga harus didukung oleh daya tampung dari lingkungan sekitar, pemulihan akan berlangsung jika beban pencemaran yang masuk masih dibawah daya tampung lingkungan. Penelitian ini perlu dilakukan untuk mengetahui kualitas dan status mutu air, serta titik terjadinya proses penjernihan kembali *(self purification)*. Pengambilan sampel dilakukan pada 5 titik sungai, dengan parameter yang dianalisis Suhu, pH, BOD, COD, TSS dan DO. Hasil penelitian menunjukan bahwa konsentrasi suhu pada 5 titik tersebut tidak memenuhi baku mutu kelas II. Parameter TSS dan pH pada semua titik memenuhi baku mutu air kelas II. Parameter BOD yang melebihi baku mutu air kelas II pada titik 2 dan 4 karena masuknya beban pencemar dari limbah Pabrik Gula Madukismo yang mengandung banyak zat organik. Parameter COD yang melebihi baku mutu air kelas 2 yaitu titik 2 dan titik 3. Pada titik 2 dan titik 4 kadar DO paling rendah yaitu 0,3 mg/L. Kemudian didapatkan status mutu air pada titik 1, titik 3 dan titik 5 dalam kondisi baik, sedangkan pada titik 2 dan titik 4 dalam kondisi tercemar ringan. Sehingga dalam penelitian tersebut dapat diketahui bahwa proses penjernihan kembali *(self purification)* air Sungai Bedog yang tercemar dapat berlangsung. Ditandai dengan turunnya kadar ph, TSS BOD, COD dan naiknya kadar DO pada titik 5, serta dapat dilihat secara fisik air lebih jernih dan adanya tanda-tanda kehidupan biota didalam air.

Kata Kunci: Sungai Bedog, Status Mutu Air, Penjernihan Kembali.

ANALYSIS OF RIVER WATER QUALITY DUE TO WASTE MADUKISMO SUGAR FACTORY
Case Study: Bedog River, Bantul Regency

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ABSTRACT

The decline in river water quality can be caused by increased human activities such as agriculture, industry, fisheries and settlements, so that it cannot be utilized optimally. Many rivers flow in Yogyakarta, one of which is the Bedog River. The rapid development of industry in Indonesia has caused a lot of environmental pollution due to industrial waste. The resulting waste can have a negative impact on the physical quality of river water if it is not managed first. Nature actually has the ability to overcome pollution problems that occur, and this mechanism is called self-purification. This must also be supported by the carrying capacity of the surrounding environment, and recovery will take place if the incoming pollution load is still below the environmental carrying capacity. This research was conducted to determine the quality and status of water quality, as well as the point at which the self-purification process occurs. Sampling was carried out at 5 river points, with the parameters analyzed including temperature, pH, BOD, COD, TSS and DO. The research results show that the temperature concentration at these 5 points does not meet class II quality standards. TSS and pH parameters at all points meet class II water quality standards. BOD parameters exceed class II water quality standards at points 2 and 4 due to the entry of pollutant loads from Madukismo Sugar Factory waste which contains a lot of organic substances. COD parameters that exceed class 2 water quality standards are point 2 and point 3. At point 2 and point 4 the DO level is the lowest, namely 0.3 mg/L. Then the water quality status at point 1, point 3 and point 5 was found to be in good condition, while at point 2 and point 4 it was in a lightly polluted condition. From this research, it can be seen that the process of self-purification of polluted Bedog River water can take place. It is marked by a decrease in pH levels, TSS BOD, COD and an increase in DO levels at point 5, and physically the water can be seen as clearer and there are signs of biota life in the water.

Keywords: Bedog River, Water Quality Status, Self purification