PERENCANAAN PENGOLAHAN LIMBAH CAIR BATIK DI DESA KEBON, KECAMATAN BAYAT, KABUPATEN KLATEN PROVINSI JAWA TENGAH

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INTISARI

Daerah penelitian merupakan daerah yang terkenal dengan industri batik rumah tangga. Terdapat tiga industri batik rumah tangga kelas menengah ke atas. Limbah cair batik dari industri batik rumah tangga di lokasi penelitian rata-rata belum diolah terlebih dahulu sebelum dibuang ke saluran air. Tujuan penelitian ini adalah menganalisis kualitas air di saluran perairan dan tingkat pencemaran lingkungan yang dihasilkan oleh limbah cair industri batik; menganalisis status mutu limbah cair dan saluran perairan di lokasi penelitian menggunakan metode indeks pencemaran; serta memberikan arahan pengolahan limbah cair batik berupa unit IPAL.

Metode yang digunakan dalam penelitian ini adalah metode survei dan pemetaan dengan menggunakan metode *purposive sampling*; metode analisis laboratorium; serta metode evaluasi. Metode yang digunakan dalam perancangan IPAL yaitu metode fisika dan kimia. Metode fisika berupa flokulasi. Sedangkan metode kimia berupa metode koagulasi dengan koagulan berupa *Aluminium Sulfat* (tawas), serta metode adsorpsi dengan adsorben karbon aktif. Parameter yang diuji pada penelitian ini yaitu Fenol, Krom Total, COD dan BOD.

Hasil analisis laboratorium menunjukkan bahwa kualitas limbah cair batik adalah Fenol 1,3813 mg/L; Krom Total 0,2262 mg/L; COD 9.138,996 mg/L; dan BOD 5.693,5945 mg/L. Tingkat pencemaran limbah cair batik pada parameter yang melebihi baku mutu yaitu Fenol, COD dan BOD. Status mutu air di lokasi penelitian tergolong tercemar ringan hingga tercemar sedang. Arahan pengolahan berupa pembuatan dua unit IPAL dengan perbandingan skala lapangan 2:1, yang direncanakan ada di 2 (dua) titik industri batik rumah tangga yang ada di Desa Kebon, Kecamatan Bayat, Kabupaten Klaten.

Kata kunci: Limbah Cair Batik, IPAL, Koagulasi, Adsorpsi

BATIK LIQUID WASTE PROCESSING PLANNING IN KEBON VILLAGE, BAYAT DISTRICT, KLATEN DISTRICT PROVINCE OF CENTRAL JAVA

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ABSTRACT

The research area is an area that is famous for its home batik industri. There are three upper middle class household batik industries. On average, liquid batik waste from household batik industries in the research location has not been processed before being discharged into waterways. The aim of this research is to analyze the level of batik liquid waste pollution; analyze the quality status of liquid waste and water channels at the research location using the pollution index method; as well as providing directions for processing batik liquid waste in the form of an WWTP unit.

The method used in this research is a survey and mapping method using a purposive sampling method; laboratory analysis methods; as well as evaluation methods. The method used in designing the WWTP utilizes the coagulation-flocculation and adsorption methods. Coagulation and flocculation method with a coagulant in the form of Aluminium Sulfate (alum). Meanwhile, the adsorption method uses activated carbon adsorbent. The parameters tested in this study were Phenol, Total Chromium, COD and BOD.

The results of laboratory analysis show that the quality of batik liquid waste is phenol 1.3813 mg/L; Total Chromium 0.2262 mg/L; COD 9,138.996 mg/L; and BOD 5,693.5945 mg/L. The level of batik liquid waste pollution is in parameters that exceed quality standards, namely Phenol, COD and BOD. The water quality status at the research location is classified as lightly polluted to moderately polluted. The processing direction is to create two IPAL units with a field scale ratio of 2:1, which are planned to be located at 2 (two) household batik industry points in Kebon Village, Bayat District, Klaten Regency.

Key words: Batik Liquid Waste, WWTP, Coagulation, Adsorption