

ANALISIS EFEKTIVITAS INSTALASI PENGOLAHAN AIR LIMBAH (IPAL) PADA RUMAH SAKIT (Studi Kasus : RSI Hidayatullah)

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ABSTRAK

Penelitian ini bertujuan untuk mengetahui kualitas dan kelayakan air limbah cair yang berpedoman pada persyaratan Peraturan Daerah D.I. Yogyakarta Nomor 7 Tahun 2016 Tentang Baku Mutu Air Limbah. Metode penelitian menggunakan deskripsif kuantitatif, dengan pengujian secara *insitu* di lapangan dan uji laboratorium di Balai Besar Balai Besar Teknik Kesehatan Lingkungan dan Pengendalian Penyakit (BBTKLPP) Yogyakarta. Teknologi yang digunakan pada IPAL RSI Hidayatullah memberikan pengaruh yang berbeda pula terhadap kadar parameter Suhu, pH, TDS, BOD, COD, TSS, Amonia Bebas, MBAS, *Phenol*, dan bakteri *Coliform* di tampungan inlet dan outlet. Penurunan efektivitas kadar parameter Suhu, pH, TDS, BOD, COD, TSS, Amonia Bebas, MBAS, *Phenol*, dan bakteri *Coliform* dihitung dengan menggunakan rumus analisis efektivitas. Hasil analisis efektivitas kadar parameter untuk suhu sebesar 17,884 %, *Power of hydrogen* (pH) sebesar 16,129 %, *Total dissolved solid* (TDS) sebesar 85,092 %, *Biological Oxygen Demand* (BOD) sebesar 92,357 %, *Chemical Oxygen Demand* (COD) sebesar 84,151 %, *Total Suspended solid* (TSS) sebesar 89,632 %, Amonia Bebas sebesar 89,855 %, Methylene Blue Active Substances (MBAS) sebesar 71,951 %, *phenol* sebesar 7,843 %, dan Bakteri *Coliform* sebesar 67,860 %. Efektivitas Biofilter *anaerob-aerob* dihitung berdasarkan nilai pada inlet dengan outlet.

Kata kunci: Air limbah, Kualitas Air limbah, Kelayakan Air limbah, IPAL, Biofilter *Anaerob-aerob*

ANALYSIS OF THE EFFECTIVENESS OF WASTEWATER TREATMENT INSTALLATIONS (IPAL) IN HOSPITALS

(Case Study: RSI Hidayatullah)

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ABSTRACT

This research aims to determine the quality and suitability of liquid wastewater which is guided by the requirements of the Regional Regulations of D.I. Yogyakarta Number 7 of 2016 concerning Waste Water Quality Standards. The research method uses quantitative description, with in-situ testing in the field and laboratory testing at the Yogyakarta Center for Environmental Health Engineering and Disease Control (BBTKLPP). The technology used at the RSI Hidayatullah WWTP has different effects on the levels of parameters Temperature, pH, TDS, BOD, COD, TSS, Free Ammonia, MBAS, Phenol and Coliform bacteria in the inlet and outlet reservoirs. The decrease in the effectiveness of temperature, pH, TDS, BOD, COD, TSS, Free Ammonia, MBAS, Phenol and Coliform bacteria levels is calculated using the effectiveness analysis formula. The results of the analysis of the effectiveness of parameter levels for temperature were 17.884%, Power of hydrogen (pH) was 16.129%, Total dissolved solid (TDS) was 85.092%, Biological Oxygen Demand (BOD) was 92.357%, Chemical Oxygen Demand (COD) was 84.151% , Total Suspended Solid (TSS) was 89.632%, Free Ammonia was 89.855%, Methylene Blue Active Substances (MBAS) was 71.951%, phenol was 7.843%, and Coliform Bacteria was 67.860%. The effectiveness of the anaerobic-aerobic biofilter is calculated based on the value at the inlet and outlet.

Keywords: Wastewater, Wastewater Quality, Wastewater Feasibility, WWTP, Anaerobic-aerobic Biofilter