

**BIOCHEMICAL OXYGEN DEMAND  
PADA PENGOLAHAN LIMBAH CAIR  
DI RSUD DR. M. ASHARI KABUPATEN PEMALANG**

**Rachmawati<sup>1</sup>, Mifbakhuddin<sup>1</sup>, Diki Bima Prasetyo<sup>1</sup>**

<sup>1</sup>Fakultas Kesehatan Masyarakat Universitas Muhammadiyah Semarang

**ABSTRAK**

**Latar belakang :** *Biochemical Oxygen Demand (BOD)* sebagai salah satu parameter pengolahan limbah cair harus memenuhi baku mutu sebelum dibuang ke lingkungan. Berdasarkan pemeriksaan limbah cair di RSUD dr. M. Ashari Mei 2017 nilai BOD 31 mg/l. Nilai tersebut melebihi baku mutu, Baku mutu BOD berdasarkan Peraturan Daerah Provinsi Jawa Tengah nomor 5 Tahun 2012 adalah 30 mg/l. Hal tersebut kemungkinan disebabkan oleh: lepasnya *diffuser*, rusaknya salah satu pompa suplay oksigen, dan Tidak adanya pengawetan terhadap sampel BOD yang akan di periksa di laboratorium. **Tujuan :** Untuk mengetahui BOD pada pengolahan limbah cair di RSUD dr. M. Ashari Kabupaten Pemalang. **Metode :** Penelitian deskriptif dengan desain *cross sectional*. Tipe sampel gabungan waktu dengan jumlah sampel 26 yang diambil pada pukul 05.00 dan pukul 09.00. Variabel penelitian adalah BOD, sedangkan variabel pengganggu temperatur dan pH. Teknik pengumpulan data menggunakan observasi dan pemeriksaan laboratorium. **Hasil :** *Pre-treatment Basin (PTB) laundry* rata-rata BOD masuk 17,94 mg/l dan rata-rata BOD keluar 56,89 mg/l. *Pre-treatment Basin (PTB) dapur* rata-rata BOD masuk 5,58 mg/l dan rata-rata BOD keluar 5,18 mg/l. *Pumping station* rata-rata BOD masuk 81,54 mg/l dan rata-rata BOD keluar 33,39 mg/l. Pengolahan limbah cair rata-rata BOD influent 72,97 mg/l dan rata-rata BOD effluent 0,17 mg/l. **Kesimpulan:** Pada *Pre-treatment Basin (PTB) laundry* rata-rata efisiensi penurunan BOD -533,61%, hal ini menunjukkan tidak ada penurunan BOD. Pada *Pre-treatment Basin (PTB) dapur* efisiensi penurunan BOD 7,20%. Pada *pumping station* efisiensi penurunan BOD 50,54%. Pada pengolahan limbah cair efisiensi penurunan BOD 99,77%.

**Kata Kunci :** BOD, pengolahan limbah cair, PTB

**ABSTRACT**

**Background:** Biochemical Oxygen Demand (BOD) as one of the parameters of liquid waste treatment must meet the quality standard before discharge to the environment. Based on the examination of liquid waste in RSUD dr. M. Ashari May 2017 BOD value 31 mg/l. Value exceeds the quality standard, BOD quality standards based on Central Java Provincial Regulation number 5 of 2012 is 30 mg/l. This is probably caused by: loss of diffuser, damage to one of the oxygen supplying pump, and no preservation of BOD sample to be examined in the laboratory. **Objective:** To find out BOD in effluent treatment in RSUD dr. M. Ashari Pemalang District. **Method:** Descriptive research with cross sectional design. The combined sample type of time with a sample size of 26 taken at 05.00 and 09.00. The research variables are BOD, while temperature and pH disruption variable. Technique of collecting data using observation and laboratory examination. **Result:** Pre-treatment Basin (PTB) average BOD enter 17,94 mg/l and average BOD out 56,89 mg/l. Pre-treatment Basin (PTB) of the average kitchen BOD entered 5.58 mg/l and the average BOD out 5.18 mg/l. The average station pumping in the BOD was 81.54 mg/l and the mean BOD out was 33.39 mg/l. The average effluent treatment of BOD influent was 72,97 mg/l and mean effluent effluent 0,17 mg/l. **Conclusion:** In the Pre-treatment Basin (PTB) average laundry efficiency decrease BOD -533.61%, it shows no decrease BOD. In Pre-treatment Basin (PTB) kitchen efficiency decrease BOD 7.20%. At pumping station efficiency decrease BOD 50,54%. In effluent treatment efficiency decrease BOD 99.77%.

**Keywords:** BOD, waste water treatment, PTB