

**EFFECTIVENESS OF WASTE WATER TREATMENT
INSTALLATION RELATED TO PANDEMIC COVID-19
AT RSUD BHAKTI DHARMA HUSADA SURABAYA IN 2020**

Zainab¹, Iva Rustanti Eri W², Ferry Kriswandana³

Indonesian Ministry of Health
Health Polytechnic of Ministry of Health Surabaya
Department of Environmental Health
Environmental Sanitation Study Program of Bachelor of Applied Science
Email: zaenab.sanitasibdh@gmail.com

ABSTRACT

The quality of wastewater treatment during the Covid-19 pandemic on parameters BOD, COD, Phosphate, NH₃, and MPN Coliform at Bhakti Dharma Husada Hospital did not meet the requirements. The purpose of this study was to determine the effectiveness of wastewater treatment related to the Covid-19 pandemic. RSUD Bhakti Dharma Husada is obliged to carry out wastewater management, according to health protocols so that the treated wastewater is safe for disposal to the environment.

The research method is descriptive-analytic with pre and post-cross-sectional design. The population was 10 samples of wastewater from the WWTP at Bhakti Dharma Husada Hospital before and after being processed using the grab sample method. The instrument used is the result of sample tests examined in an accredited laboratory. The laboratory test results were compared with the Governor of East Java Decree Number 72 of 2013 concerning the Quality Standards for Liquid Waste for Industrial Activities and/or other activities.

The results showed the effectiveness of WWTP at Bhakti Dharma Husada Regional Hospital in reducing BOD, COD NH₃, phosphate, and total coliform parameters. The results of the analysis showed that the wastewater treatment before and after the BOD and COD parameters was effective, but the phosphate and total coliform parameters were less effective. So that the wastewater of the Bhakti Dharma Husada Hospital on the parameters of phosphate, ammonia, and total coliform still does not meet the quality standards of liquid waste according to Governor Regulation number 72 of 2013 concerning Industrial Waste Quality Standards and/or other activities.

The Wastewater Treatment Plant (IPAL) anaerobic-aerobic biofilter system at Bakti Dharma Husada Hospital was not optimal during the Covid-19 pandemic, so it is necessary to modify or repair the aerobic tub.

Keywords: Hospital wastewater, Covid -19, BOD, COD, Phosphate, Ammonia, Total Coliform

**EFEKTIFITAS INSTALASI PENGOLAHAN AIR LIMBAH
TERKAIT PANDEMI COVID-19
DI RSUD BHAKTI DHARMA HUSADA SURABAYA TAHUN 2020**

Zainab¹, Iva Rustanti Eri W², Ferry Kriswandana³

Kementerian Kesehatan RI
Politeknik Kesehatan Kemenkes Surabaya
Jurusan Kesehatan Lingkungan
Program Studi Sanitasi Lingkungan Program Sarjana Terapan
Email: zaenab.sanitasibdh@gmail.com

ABSTRAK

Kualitas pengolahan air limbah saat pandemi Covid-19 pada parameter BOD, COD, *Phospat*, NH₃ dan MPN *Coliform* di RSUD Bhakti Dharma Husada tidak memenuhi syarat. Tujuan penelitian ini untuk mengetahui efektifitas pengolahan air limbah terkait pandemic covid-19. RSUD Bhakti Dharma Husada wajib melakukan pengelolaan air limbah sesuai protokol kesehatan hingga air limbah aman untuk dibuang kelingkungan.

Metode penelitian adalah deskriptif analitik dengan desain pre dan post *cross sectional*. Populasi adalah air limbah dari IPAL RSUD Bhakti Dharma Husada sebelum dan sesudah diolah berjumlah 10 sampel dengan metode grab sampel. Instrumen yang digunakan adalah hasil uji sampel yang diperiksa di Laboratorium yang terakreditasi. Hasil uji laboratorium dibandingkan dengan Keputusan Gubernur Jawa Timur Nomor 72 tahun 2013 tentang Baku Mutu Limbah Cair Bagi Kegiatan Industri dan atau kegiatan lainnya.

Hasil penelitian menunjukkan efektifitas IPAL di RSUD Bhakti Dharma Husada dalam menurunkan parameter BOD, COD NH₃, *phospat* dan total koliform. Hasil analisa menunjukkan pengolahan limbah cair sebelum dan sesudah parameter BOD dan COD efektif namun untuk parameter *Phospat* dan Total koliform kurang efektif. Sehingga air limbah RSUD Bhakti Dharma Husada pada parameter *phospat*, amoniak dan total *coliform* masih belum memenuhi baku mutu limbah cair menurut Peraturan Gubernur nomor 72 tahun 2013 Tentang Baku Mutu Limbah industry dan atau kegiatan lainnya.

Instalasi Pengolahan Air Limbah (IPAL) *system biofilter anaerob aerob* RSUD Bakti Dharma Husada kurang optimal saat pandemic covid-19, sehingga perlu di lakukan modifikasi atau perbaikan pada bak *aerob*.

Kata kunci : Air limbah rumah sakit, Covid -19, BOD, COD, *Phospat*, Amoniak, Total *Coliform*