

STUDY OF DOMESTIC WASTE WATER TREATMENT AT COMUNAL IN NOGOSAREN HAMLET, NOGOTIRTO, GAMPING, SLEMAN IN 2025

Ihsanul Amal, Haryono, Bambang Suwerda
Department of Environmental Health, Polytechnic of
the Ministry of Health Yogyakarta.
Jl. Tata Bumi No.3 Banyuraden, Gamping, Sleman, Yogyakarta 55293
Email : amalihsanul64@gmail.com

ABSTRACT

Background : The Nogosaren Hamlet Communal Wastewater Treatment Plant (WWTP) treats domestic wastewater generated from household activities. This WWTP has been established since 2012. After 12 years, population growth and development has increased, thus increasing the burden on the WWTP so that it requires a processing study to determine the performance of the WWTP

Objectives : Knowing the processing of domestic liquid waste at the Nogosaren Hamlet Communal WWTP

Methods : The type of research used is descriptive research with the object of research the Nogosaren Hamlet Communal WWTP. This study aims to analyze the performance of communal WWTP to test the parameters of pH, TSS, BOD, total coliform, and measurement of discharge derived from IPAL outlet samples and compare them with the quality standards of DIY Regional Regulation No. 7 Year 2016 concerning Wastewater Quality Standards to determine the effectiveness of communal WWTP

Results : The results of the study from three repetitions showed that the average pH level was 6.23 and TSS levels were 36.67mg/L then BOD levels were 21.5mg/L while coliform levels were $3.455 \times 10^5/100\text{mL}$. In the measurement of the liquid waste discharge of the Nogosaren Hamlet Communal WWTP, it wasabatized at $0.000169 \text{ m}^3/\text{detik}$ or equal to $14.6 \text{ m}^3/\text{day}$

Conclusion : Overall WWTP performance is still good. However, there are several parameters that are not in accordance with the standard. There are two parameters that still exceed the threshold value, namely the TSS and total coliform parameters. Meanwhile, the pH and BOD parameters meet the quality standard requirements and the discharge is relatively small

Keywords : WWTP, pH, TSS, BOD, Total Coliform, Wastewater

KAJIAN PENGOLAHAN LIMBAH CAIR DOMESTIK PADA IPAL KOMUNAL DI DUSUN NOGOSAREN, NOGOTIRTO, GAMPING, SLEMAN TAHUN 2025

Ihsanul Amal, Haryono, Bambang Suwerda
Jurusan Kesehatan Lingkungan Poltekkes Kemenkes Yogyakarta,
Jl. Tata Bumi No. 3 Banyuraden, Gamping, Sleman, Yogyakarta 55293
Email : amalihsanul64@gmail.com

ABSTRAK

Latar Belakang : Instalasi Pengolahan Air Limbah (IPAL) Komunal Dusun Nogosaren mengolah air limbah domestik yang dihasilkan dari kegiatan rumah tangga. IPAL ini telah berdiri sejak 2012. Setelah 12 tahun, belum dilakukannya evaluasi kinerja pada IPAL komunal sehingga memerlukan kajian pengolahan untuk mengetahui kinerja IPAL Komunal Dusun Nogosaren

Tujuan : Mengetahui pengolahan limbah cair domestik pada IPAL Komunal Dusun Nogosaren

Metode : Jenis penelitian yang digunakan yaitu penelitian deskriptif dengan objek penelitian IPAL Komunal Dusun Nogosaren. Penelitian ini bertujuan menganalisis kinerja IPAL Komunal untuk menguji parameter pH, TSS, BOD, total *coliform*, dan pengukuran debit yang berasal dari sampel outlet IPAL dan membandingkannya dengan baku mutu Perda DIY No. 7 Tahun 2016 tentang Baku Mutu Air Limbah untuk mengetahui efektivitas IPAL Komunal

Hasil : Hasil penelitian dari tiga kali pengulangan menunjukkan bahwa rata-rata kadar pH sebesar 6,23 dan kadar TSS sebesar 36,67mg/L kemudian kadar BOD sebesar 21,5mg/L sedangkan kadar *coliform* sebesar $3.455 \times 10^5/100\text{mL}$. Pada pengukuran debit limbah cair IPAL Komunal Dusun Nogosaren didapatkan sebesar $0,000169 \text{ m}^3/\text{detik}$ atau sama dengan $14,6 \text{ m}^3/\text{hari}$

Kesimpulan : Secara keseluruhan kinerja IPAL masih baik. Namun terdapat beberapa parameter yang tidak sesuai dengan standar. Terdapat dua parameter yang masih melebihi nilai ambang batas yaitu parameter TSS dan total *coliform*. Sedangkan untuk parameter pH dan BOD memenuhi persyaratan baku mutu serta debit relatif kecil

Kata Kunci : IPAL, pH, TSS, BOD, Total *Coliform*, Debit Limbah Cair