

**TANJUNGGARANG HEALTH POLYTECHNIC**  
**DEPARTMENT OF ENVIRONMENTAL HEALTH**  
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**Planning for Laboratory Wastewater Treatment Plants (WWTP) at the  
Tanjungkarang Health Polytechnic Integrated Laboratory in 2021**

xiii + 140 pages, 16 tables, 5 appendices, and 15 pictures.

**ABSTRAK**

Tanjungkarang Poltekkes Integrated Laboratory was established in 2010. From 2012 to 2017 the Tanjungkarang Ministry of Health Poltekkes integrated laboratory received samples from outside, such as drinking water depots. After the change of the head of the laboratory until now the Tanjungkarang Health Polytechnic integrated laboratory only operates for the activities of students and lecturers of the Tanjungkarang Health Polytechnic.

The sources of the Tanjungkarang Health Polytechnic's integrated laboratory waste are from the head of the laboratory, service room, microbiology laboratory, chemical laboratory, research laboratory, pantry and toilet. The waste discharge in this study was taken using a literature study, which was 100 l/person/day, so that the total discharge being studied was 20.4 m<sup>3</sup>. The characteristics of laboratory wastewater include COD, BOD, pH, TDS, TSS, temperature, turbidity, KMnO<sub>4</sub>, Fe, Mn, and Cr taken from several research journals as literature studies in this study.

The planning design flow in this research is a coagulation tank, a flocculation tank, an initial sedimentation tank, an activated carbon filter stage 1 (2 tubes), an anaerobic biofilter tank, an aerobic biofilter tank, a final sedimentation tank, an activated carbon filter stage 2 (2 tubes) and a pond. fish. The Tanjungkarang Health Polytechnic integrated laboratory is expected to be able to build and maintain the planned WWTP building so that the wastewater treatment process continues to run properly. The planned WWTP construction is expected to improve the quality of wastewater produced by the Tanjungkarang Health Polytechnic integrated laboratory.

Keywords : Wastewater Treatment Plant (WWTP)

Reading list : (2007-2019)

# **POLITEKNIK KESEHATAN TANJUNGPURANG**

## **JURUSAN KESEHATAN LINGKUNGAN**

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### **Perencanaan Instalasi Pengolahan Air Limbah (IPAL) Laboratorium Di Laboratorium Terpadu Poltekkes Tanjungpurang Tahun 2021**

xiii + 140 halaman, 16 tabel, 5 lampiran, dan 15 gambar.

#### **RINGKASAN**

Laboratorium Terpadu Poltekkes Tanjungpurang didirikan pada tahun 2010. Pada tahun 2012 sampai dengan 2017 laboratorium terpadu Poltekkes Kemenkes Tanjungpurang menerima sampel dari luar, seperti depot air minum. Setelah pergantian kepala laboratorium sampai dengan sekarang laboratorium terpadu Poltekkes Tanjungpurang hanya beroperasi untuk kegiatan mahasiswa dan dosen Poltekkes Tanjungpurang.

Sumber limbah laboratorium Terpadu Poltekkes Tanjungpurang yaitu berasal dari ruangan kepala laboratorium, ruang pelayanan, laboratorium mikrobiologi, laboratorium kimia, laboratorium penelitian, pantry dan toilet. Debit limbah pada penelitian ini diambil menggunakan studi literature yaitu 100 l/orang/hari, sehingga didapatkan debit total yang menjadi penelitian adalah 20,4m<sup>3</sup>. Karakteristik air limbah laboratorium diantaranya adalah COD, BOD, pH, TDS, TSS, suhu, kekeruhan, KMnO<sub>4</sub>, Fe, Mn, dan Cr yang diambil dari beberapa jurnal penelitian sebagai studi literature pada penelitian ini.

Alur desain perencanaan pada penelitian ini adalah bak koagulasi, bak flokulasi, bak sedimentasi awal, filter karbon aktif tahap 1 (2 tabung), bak biofilter anaerob, bak biofilter aerob, bak sedimentasi akhir, filter karbon aktif tahap 2 (2 tabung) dan kolam ikan. Pihak laboratorium terpadu Poltekkes Tanjungpurang diharapkan adapat membuat dan melakukan pemeliharaan bangunan IPAL yang telah direncanakan agar proses pengolahan limbah cairnya tetap berjalan dengan baik. Pembuatan IPAL yang telah direncanakan ini diharapkan dapat memperbaiki kualitas air limbah yang dihasilkan oleh laboratorium terpadu Poltekkes Tanjungpurang.

**Kata kunci : Instalasi Pengolahan Air Limbah (IPAL)**

**Daftar bacaan : (2007-2019)**