

ABSTRACT

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EFFECTIVENESS OF WASTEWATER TREATMENT WITH BIO NATURAL SYSTEMS IN REDUCING CHEMICAL CONCENTRATION PARAMETERS IN KELET REGIONAL GENERAL HOSPITAL IN JEPARA 2011
(xiii + 79 pages + 9 tabels + 13 pictures + 13 attachments)

Hospitals do not only produce organic and inorganic waste, but also infectious waste that contains hazardous toxic materials. Considering the effects that may arise from hospital waste such as health problems, environmental degradation as well as disturbance of objects damage, it is required efforts in managing waste water. Basically, waste treatment is an attempt to reduce the waste volume, concentration or danger after the production process or activity. Kelet Regional General Hospital Waste Water Treatment Plant (WWTP) in Jepara applying Bio Natural wastewater management systems. Based on that it is necessary to evaluate whether Kelet Regional General Hospital WWTP in Jepara been effective in reduce chemical concentration parameters.

This research is a Descriptive Research with Cross Sectional Study Design. In this case, researcher only doing observations and measurements of chemical parameters level, without any intervention or treatment to existing waste water treatment. Whereas the sample in this research are some hospital waste water drawn at the inlet of waste water treatment, after going through the septic tank, after Baffled reactor, after the anaerobic filter, and in indicators pool.

Kelet Regional General Hospital WWTP in Jepara has average effectiveness decrease of 84,82% of BOD, COD concentration 93,04%, 94,75% Ammoniac concentration, phosphate content of 39,21%, and for pH value from first until fifth point have almost same mean which 7,2-7,5.

Kelet Regional General Hospital WWTP in Jepara used Bio Natural system which usually effective in reduce BOD, COD, ammoniac, phospate concentration. But phospate concentration in Kelet Regional General Hospital WWTP has not met the standards of quality standards set by "Peraturan Daerah Propinsi Jawa Tengah No. 10 Tahun 2004", which is 2 mg/l.

Suggestion: Evaluation system needs to be done on the wastewater treatment process to identify the cause of high concentration of phosphate in waste water in Kelet Regional General Hospital WWTP in Jepara.

Keywords : BOD, COD, Ammoniac, Phosphate, pH, effectiveness
Literatures : 34 books, 1983 - 2010

ABSTRAK

Aris Budi Setyawan

EFEKTIFITAS PENGOLAHAN LIMBAH CAIR DENGAN SISTEM BIO NATURAL DALAM MENURUNKAN PARAMETER KADAR KIMIA DI RUMAH SAKIT UMUM DAERAH KELET JEPARA TAHUN 2011

(xiii + 79 hal + 9 tabel + 13 gambar + 13 lampiran)

Rumah Sakit tidak hanya menghasilkan limbah organik dan anorganik, tetapi juga limbah infeksius yang mengandung bahan beracun berbahaya (B3). Mengingat dampak yang mungkin ditimbulkan dari limbah Rumah Sakit diantaranya gangguan kesehatan, penurunan kualitas lingkungan serta gangguan terhadap kerusakan benda, maka diperlukan upaya pengelolaan air limbah. Pengolahan limbah pada dasarnya merupakan upaya mengurangi volume, konsentrasi atau bahaya limbah, setelah proses produksi atau kegiatan. Instalasi Pengolahan Air Limbah (IPAL) RSUD Kelet Jepara menerapkan sistem pengelolaan air limbah Bio Natural. Berdasarkan hal tersebut maka perlu dilakukan evaluasi apakah IPAL RSUD Kelet Jepara sudah efektif dalam menurunkan kadar parameter kimia.

Jenis dan rancangan dalam penelitian ini adalah deskriptif dengan pendekatan *cross sectional*. Dalam hal ini peneliti hanya melakukan pengamatan dan pengukuran terhadap kadar parameter kimia, tanpa melakukan intervensi atau perlakuan terhadap pengolahan air limbah cair yang ada. Dimana sampel dalam penelitian ini adalah sebagian air limbah rumah sakit yang diambil pada pengolahan air limbah di inlet, setelah melalui *septic tank*, setelah *baffled reaktor*, setelah anaerobik filter, dan pada kolam indikator.

IPAL RSUD Kelet Jepara memiliki efektifitas penurunan rata-rata kadar BOD 84,82%, kadar COD 93,04%, kadar Amoniak 94,75%, kadar Phospat 39,21%, dan untuk nilai pH dititik pertama sampai titik kelima mempunyai rata-rata yang mendekati sama antara 7,2 sampai 7,5.

IPAL RSUD Kelet Jepara menggunakan system Bio Natural yang rata – rata efektif dalam menurunkan kadar BOD, COD, Amoniak, Phospat. Namun kadar Phospat IPAL RSUD Kelet Jepara belum memenuhi standar nilai baku mutu yang ditetapkan oleh Peraturan Daerah Propinsi Jawa Tengah No. 10 Tahun 2004, yaitu 2 mg/l.

Perlu dilakukan evaluasi sistem pada proses pengolahan air limbah untuk mengetahui penyebab tingginya kadar phospat pada air limbah IPAL RSUD Kelet Jepara.

Kata kunci : BOD, COD, Amoniak, Phospat, pH, Efektifitas

Kepustakaan : 34 buah, 1983-2010