Health Polytechnic of the Ministry of Health Bandung

Applied Undergraduate Study Program in Environmental Sanitation

Thesis, June 2024

ABSTRACT

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THE EFFECT OF VARIATION IN THE LENGTH OF AERATION TIME ON THE REDUCTION OF IRON (Fe) CONTENT BY THE BUBBLE AERATOR METHOD IN CLEAN WATER IN PT. X

vii + 76 pages + 11 Tables + 6 Figures + 8 Appendices

Clean water treatment at PT. X for the production section has been carried out optimally, but in the Baiturahman Mosque there is no equipment that filters or aerates clean water in PT. X. The purpose of this study is to determine the effectiveness of bubble aerator in reducing iron (Fe) levels in clean water in PT. X uses variations in bubble aerator contact time, namely 40 minutes, 50 minutes, 65 minutes. This type of research is pretest – posttest witout control using a variety of contact time, namely 40 minutes, 50 minutes, 65 minutes. The technique used in this study is grab sampling, thesamples used in this study are 36 samples. The analysis of the decrease in iron (Fe) content was carried out using a univariate test and a bivariate test. The results of reducing iron (Fe) levels in clean water with a 40-minute contact time variation can reduce an average of 0.29 mg/L with a percentage decrease of 26%, a 50-minute contact time variation can reduce an average of 0.36 mg/L with a 33% decrease, and a variation of 65-minute contact time can reduce an average of 0.47 mg/L with a percentage of 43%. The conclusion in this study is that there is a difference between the variation of the contact time of the bubble aerator 40 minutes, 50 minutes, 65 minutes to the decrease in iron (Fe) levels in clean water at PT. X, and the most effective time to lower iron (Fe) levels is in the variation in the contact time of the bubble aerator for 65 minutes.

BIBLIOGRAPHY : (2014-2023)

KEYWORDS : Iron, *Bubble Aerator,* Contact Time Variation

Politeknik Kesehatan Kemenkes Bandung

Program Studi Sarjana Terapan Sanitasi Lingkungan

Skripsi, Juni 2024

ABSTRAK

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PENGARUH VARIASI LAMA WAKTUAERASI TERHADAP PENURUNAN KADAR BESI (Fe) DENGAN METODE BUBBLE AERATOR PADA AIR BERSIH DI PT. X

vii+ 76 hal + 11 Tabel + 6 Gambar + 8 Lampiran

Pengolahan air bersih di PT. X untuk bagian produksi sudah dijalankan secara maksimal akan tetapi di Masjid Baiturahman belum adanya teknologi yang dapat digunakan untuk menurunkan cemaran parameter kimia besi (Fe) pada air bersih di PT. X. Tujuan penelitian ini untuk mengetahui efektivitas *bubble aerator* dalam menurunkan kadar besi (Fe) pada air bersih di PT. X dengan menggunakan variasi waktu kontak *bubble aerator,* yaitu 40 menit, 50 menit, 65 menit. Jenis penelitian ini adalah *pretest – posttest witout control* dengan menggunakan variasi waktu kontak yaitu 40 menit, 50 menit, 65 menit., sampel yang digunakan dalam penelitian ini sebanyak 36 sampel. Analisa penurunan kadar besi (Fe) dilakukan menggunakan uji univariat dan uji bivariat. Hasil penurunan kadar besi (Fe) pada air bersih dengan variasi waktu kontak 40 menit dapat menurunkan rata – rata 0,29 mg/L dengan persentase penurunan 26%, variasi waktu kontak 50 menit dapat menurunkan rata – rata 0,36 mg/L dengan persentase penurunan 33%, variasi waktu kontak 65 menit dapat menurunkan rata – rata 0,47 mg/L dengan persentase 43%. Kesimpulan dalam penelitian ini yaitu terdapat perbedaan antara variasi waktu kontak *bubble aerator* 40 menit,50 menit, 65 menit terhadap penurunan kadar besi (Fe) pada air bersih di PT. X, dan waktu yang paling efektif untuk menurunkan kadar besi (Fe) ada pada variasi waktu kontak *bubble aerator* 65 menit.

DAFTAR PUSTAKA : (2014-2023)

KATA KUNCI :Besi , *Bubble Aerator,* Variasi Waktu Kontak