

ABSTRACT

SHARDS OF POTTERY AS FILTRATION MEDIA TO LOWER IRON (Fe) WATER LEVELS OF DRILL WELL

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Background: Water is an important element for humans. The provision of clean water must meet the quantity and quality as required. Based on preliminary tests, Mr. Murtijo's drill well water in Badran Kidul Hamlet has a Fe content of 2.0 mg/L, while according to the quality standard of 1.0 mg/L. To lower Fe in water can be done by various processing processes, one of which is filtration. In the process of pottery production there are failed products and leftovers that are not utilized by craftsmen, so it becomes waste. Preliminary test with shards of earthenware 30 mesh contact with high Fe water (2.0 mg/L), there was a decrease in Fe by 1.7 mg/L (85%).

Purpose: Know the thickness of the optimum shard filtration media to lower Fe levels in drill well water.

Methods: This research is a type of Quasi Experiment research. The object of this research is well water drill in Badran Kidul Hamlet. This study was conducted with 3 variations in the thickness of pottery fraction media, discharge 100 mL /min, with 3 times filtering, and obtained the results of 1 pre-test sample and 12 post-test samples. Data analysis was conducted with Anova's One Way Test on the SPSS program.

Results: One Way Anova test results obtained a sig value of 0.000 which means H_0 was rejected and H_a received, or there is a statistically meaningful difference between the variation in the thickness of the pottery fraction media against the decrease in Fe levels.

Conclusion: Filter Media III with a thickness of 40 cm pottery fraction media that is effective in lowering Fe levels in drill well water in Badran Kidul Hamlet with a decrease in Fe content by 2.57 mg/L (72%).

Keywords: water well drill, Fe content, shards of earthenware

INTISARI

PECAHAN GERABAH SEBAGAI MEDIA FILTRASI UNTUK MENURUNKAN KADAR BESI (Fe) AIR SUMUR BOR

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Latar belakang: Air merupakan unsur penting untuk manusia. Penyediaan air bersih harus memenuhi kuantitas dan kualitas sesuai syarat. Berdasarkan uji pendahuluan, air sumur bor milik Bapak Murtijo di Dusun Badran Kidul mempunyai kadar Fe sebesar 2,0 mg/L, sedangkan menurut baku mutu sebesar 1,0 mg/L. Untuk menurunkan Fe pada air dapat dilakukan dengan berbagai proses pengolahan, salah satunya filtrasi. Dalam proses produksi gerabah terdapat produk gagal dan sisa yang tidak dimanfaatkan oleh pengrajin, sehingga menjadi limbah. Uji pendahuluan dengan pecahan gerabah 30 mesh kontak dengan air Fe tinggi (2,0 mg/L), terjadi penurunan Fe sebesar 1,7 mg/L (85%).

Tujuan: Mengetahui ketebalan media filtrasi pecahan gerabah yang optimum untuk menurunkan kadar Fe pada air sumur bor.

Metode penelitian: Penelitian ini merupakan jenis penelitian *Quasi Experimen*. Obyek penelitian ini adalah air sumur bor di Dusun Badran Kidul. Penelitian ini dilakukan dengan 3 variasi ketebalan media pecahan gerabah, debit 100 mL/menit, dengan 3 kali penyaringan, dan diperoleh hasil 1 sampel *pre-test* dan 12 sampel *post-test*. Analisis data dilakukan dengan Uji One Way Anova pada program SPSS.

Hasil: Hasil uji One Way Anova diperoleh hasil nilai sig 0,000 yang artinya H_0 ditolak dan H_a diterima, atau ada perbedaan yang bermakna secara statistik antara variasi ketebalan media pecahan gerabah terhadap penurunan kadar Fe.

Kesimpulan: Media Filter III dengan ketebalan media pecahan gerabah 40 cm yang efektif dalam menurunkan kadar Fe pada air sumur bor di Dusun Badran Kidul dengan penurunan kadar Fe sebesar 2,57 mg/L (72%).

Kata kunci: air sumur bor, kadar Fe, pecahan gerabah