

TITIK JENUH FILTER FELITA DALAM MENURUNKAN KADAR FE
SUMUR BOR DI DUSUN WATUGAJAH, SENDANGAGUNG, MINGGIR,
SLEMAN

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INTISARI

Latar belakang: Air merupakan sumber daya yang esensial bagi makhluk hidup. Air harus memenuhi persyaratan kualitas dan kuantitas. Adanya kandungan kadar Fe dalam air dapat menyebabkan gangguan teknis dan kesehatan. Batas baku mutu keberadaan Fe dalam air sesuai Permenkes RI No. 32 Tahun 2017 adalah 1 mg/l. Pemanfaatan air dengan kadar Fe melebihi batas baku mutu harus melalui proses pengolahan terlebih dahulu.

Tujuan: Penelitian ini bertujuan untuk mengetahui titik jenuh filter Felita dalam menurunkan kadar Fe sumur bor di Dusun Watugajah, Minggir, Sleman.

Metode: Penelitian ini merupakan penelitian *quasi eksperiment* dengan *time series design*. Objek penelitian ini adalah air sumur bor salah satu rumah warga di Dusun Watugajah, Minggir, Sleman. Pengolahan air menggunakan filter Felita dengan media filter berupa ferolite, zeolite dan arang aktif dikemas dalam pipa PVC setinggi 130 cm. Aliran debit 3 liter/menit. Pengambilan sampel setiap 2 m³.

Hasil: Hasil penelitian ini diperoleh hasil kadar Fe sebelum filtrasi 1,75 mg/l, rata-rata setelah filtrasi 0,1164 mg/l dan persentase penurunan kadar Fe sebesar 93,35%. Filter Felita akan jenuh setelah volume air terfilter sebanyak 601 m³. Hasil uji statistik regresi linier menunjukkan nilai 0,00.

Kesimpulan: Ada perbedaan kadar Fe sebelum dan sesudah Filtrasi menggunakan Filter Felita. Filter Felita mampu menurunkan air dengan kadar Fe tinggi sesuai standar baku mutu Permenkes RI No. 32 tahun 2017 sehingga dapat diaplikasikan di masyarakat dalam jangka waktu 10 bulan.

Kata kunci: Titik jenuh, kadar Fe, filtrasi, ferolite, zeolite, arang aktif.

SATURATION POINT OF FELITA FILTER TO REDUCE THE Fe IN DRILL WELLS IN WATUGAJAH, SENDANGAGUNG, MINGGIR, SLEMAN

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ABSTRACT

Background: Water is an essential resource for living things. Water must meet quality and quantity requirements. The presence of Fe content in water can cause technical and health problems. The quality standard limit for the presence of Fe in water according to the Minister of Health of the Republic of Indonesia No. 32 of 2017 is 1 mg/l. Utilization of water with Fe levels exceeding the quality standard must go through a processing process first.

Purpose: This study aims to determine the saturation point of the Felita filter in reducing the Fe content of bore wells in Watugajah, Sendangagung, Minggir, Sleman

Method: This research is a quasi-experimental study with a time series design. The object of this research is the borehole water of one of the residents' houses in Watugajah Sendangagung, Minggir, Sleman. Water treatment uses a Felita filter with filter media in the form of ferrolite, zeolite and activated charcoal packed in a 130 cm high PVC pipe. The flow rate is 3 liters/minute. Sampling every 2 m³

Result: The results of this study showed that the level of Fe before filtration was 1.75 mg/l, the average after filtration was 0.1164 mg/l and the percentage of Fe content decreased was 93.35%. Felita filter will be saturated after the volume of filtered water is 601 m³. The results of the linear regression statistical test showed a value of 0.00.

Conclusion: There is a difference in Fe levels before and after filtration using a Felita Filter. Felita filter is able to reduce water with high Fe content according to the quality standard of the Minister of Health of the Republic of Indonesia No. 32 of 2017 so that it can be applied in the community for 10 month.

Keywords: Saturation point, Fe content, filtration, ferrolite, zeolite and activated charcoal