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Process Window Determination for Biofiltration by the Taguchi Method

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Author(s)

Man Chung Law, Hong Chua, Ka Po Cheng, Chi Wai Kan

ABSTRACT

Raw water from the Yantian Reservoir in Southern China was used for this study. Several process parameters of biofiltration, temperature, media, empty bed contact time, ozone dosage and concentration of geosmin and MIB, were adopted in order to determine their effects. Experiments were conducted using the Taguchi method and 9 experiments were needed to obtain the best process parameter settings and parameter effects. The results of these experiments indicate the use of biological filtration as a method of geosmin and MIB removal, to be satisfactory. In addition, the results show that temperature impacts the removal rate of both geosmin and MIB. Useful insights into the effects of the filter media on such as, empty bed contact time, ozone dosage and concentration of geosmin and MIB were also obtained.

KEYWORDS

Taste and Odor; Water Quality; Design of Experiment; Taguchi Method

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