Influence of cationic polyelectrolyte coagulant on microfiltration performance for treatment of oxidation pond effluent

ABSTRACT

A laboratory scale microfiltration membrane unit was set up to assess the effectiveness of the microfiltration in polishing oxidation pond effluent. In addition, batch pretreatment with polyelectrolyte coagulant was conducted to assess the improvement in flux and filtrate production during coagulation-microfiltration. Results revealed about 500% increase in steady state flux during coagulation-microfiltration process. Moreover, integration of microfiltration with coagulation also improved the quality of effluent, in terms of turbidity and COD removals. About 50ï 60% and 75% removals were recorded for COD and turbidity, respectively during coagulation-microfiltration which was greater than those obtained during microfiltration alone.

Keyword: Microfiltration; Coagulation; Water treatment; Polyelectrolyte coagulant