

عنوان مقاله:

Water consumption assessment and treatment of carwashes wastewater in Karaj city, Iran

محل انتشار:

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خلاصه مقاله:

This study investigated the rate of water usage and the wastewater characteristics of carwashes in Karaj city, Iran and evaluated removal efficiency of turbidity and chemical oxygen demand (COD) in effluent of carwashes under coagulation/ flocculation/ sedimentation (C/F/S) process in 2 seasons. Physico- chemical properties of effluents from ten carwashes were characterized, and then, in 3 selected carwashes the removal rate of turbidity and COD was measured during C/F/S process by ferric chloride, ferric sulfate and aluminum sulfate (alum) under optimum conditions. The water consumption was estimated in the range of 46.98- 129.65 liter per car that was increased in summer rather than winter due to higher temperature and higher interval of car washing in summer. The concentration of detergents, oil and grease, COD and BOD5 exceeded the discharge standards to cesspool. In the optimum condition the removal efficiency (effluent value) of turbidity ranging from 97.41 - 99.64% (1.46 – 7.88 NTU) for raw wastewater and 75.22 - 97.24% (1.96 – 6.17 NTU) for settled wastewater, and for COD was ranged between 65.38 – 82.03% (132.4 – 219.4 mg/l) for raw samples and 40.56 – 78.70% (129.5 – 219.2 mg/l) for settled samples. Results indicated that C/F/S process can be effectively remove turbidity of carwash effluent but in the case of COD it can be used as pretreatment of carwash wastewater.

کلمات کلیدی:

carwash effluent, coagulation/ flocculation/ sedimentation process, COD, turbidity, wastewater treatment

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