

Abstract

The reason for this study was to examine the efficiency of various water treatment technologies for car wash wastewater. Car wash effluents contain high concentration of pollutants including nutrients, sand, detergents, oil and grease, heavy metals etc. Different technologies of ozonation, chemical co-agulation by using poly-aluminium chloride (PAC), and electro-coagulation by using aluminum electrodes and iron electrodes were evaluated for treating car wash wastewater (CWW). It was found that the greatest evacuation efficiencies of chemical coagulation and electro-coagulation were comparatively higher than the ozonation. Ozonation process is not suitable for heavy metals because it cannot remove heavy metals. Ozonation is not reasonable to treat vehicle wash squander water as it lessened the pH of the examined supernatant to acidic level, which might effect on vehicle paint. The maximum removal rate for COD, BOD, TSS and Methylene Blue Active Substances (MBAS) was achieved to be 96 %, 94.0%, 97%, and 98 %, respectively. The mentioned results were obtained by using 100 mg/l of PAC and external voltage of 40. However, it was also found that the removal rate increase with the increase in external voltage. The treatment efficiency trend for COD, BOD, TSS and Methylene Blue Active Substances is Electro-chemical coagulation>chemical coagulation>Electrocoagulation > ozonation. It is expected that the results of this investigation by the Electro-coagulation was incredibly high. This cycle viably decreased a wide range of toxins and met the vehicle wash water quality National Guidelines. EPA should apply some guidelines regarding activities at service stations and continual audits should be conducted to assess the degree of compliance.