Construction of a treated wastewater reuse system for renewal of a water cycle mechanism in urban areas — modeling analysis of reclamation treatment processes corresponding to target water quality by use

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\textbf{ABSTRACT}

Regarding the target water quality for reuse, it is important to pay attention to the COD taking into account countermeasures against pathogens and trace matters in public waters. The main types of secondary wastewater treatment used until now were conventional activated sludge processes. More recently, however, advance wastewater treatment processes have also been developed aiming at the removal of nitrogen and phosphorus, and so on, and an analysis of the water quality characteristics of treated wastewater obtained using these processes was carried out. In addition, reclamation treatment processes that meet the target water quality for each application were selected and also their design parameters were studied as well as a cost analysis based on those results. It was found that the treatment cost was greatly affected by the COD of treated wastewater, which is a given condition. Thus, the key to a biological reaction treatment system is the attainment of treated wastewater containing as low a concentration of COD as possible.

\textbf{Keywords:} Treated wastewater reuse system; COD; Ozonation

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