

Hydro-thermal Performance of Small Bays

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Abstract

In the present study the gross behavior of heated effluent into small bays was investigated. The dependence of the heat build-up in the small bay caused by the heated effluent, on the geometrical characteristics of the bay-open sea connection was examined. The extent of thermal pollution in a small bay caused by a heated effluent, which is discharged into the bay through a surface outlet channel, has been studied by using the available data in the literature. Using the dimensionless parameters obtained by a dimensional analysis, the functional form is established. It is observed that the scrutinization of all parameters is not practical. However, it was shown that the hydraulic-thermal performance of small bays can be represented in terms of the dimensionless distance from the outlet and a dimensionless parameter called area restriction parameter.