

Dissolved heavy metals and water quality in the surface waters of rivers and drainages of the West Peninsular Malaysia

Abstract

The dissolved concentrations of metals (Cd, Cu, Pb, Ni, Fe and Zn), temperature, total dissolved solids, pH, dissolved oxygen, salinity and conductivity were determined in the surface waters of 24 geographical sampling sites including city and urban drainages and rivers, from the west Peninsular Malaysia, collected in January to April 2005. From these sampling sites, the ranges (min-max) of dissolved metal concentrations (mg/L) were Cd: 0.001-0.055, Cu: 0.001-0.1773, Pb: 0.001-1.523, Ni: 0.001-0.246, Fe: 0.001-35.67 and Zn: 0.0001-0.609 while for the water quality are pH: 4.96-9.81, dissolved oxygen (0.39-7.26 mg/L), total dissolved solids (0.002-10.02 mg/L), salinity (0.00-8.93 ppt), conductivity (3.33-17423 $\mu\text{S}/\text{cm}$) and temperature (27.8-35.3 \diamond). Some sites with elevated dissolved concentrations of heavy metals and poor water quality indicated the anthropogenic inputs of industrial and urban wastes. Regular monitoring of water quality in all drainage waters is recommended.

Keyword: Water quality; Dissolved heavy metals; Rivers; Drainages; West peninsular; Malaysia