

**Heavy metal concentrations(CU, PB, NI AND ZN)in the surface sediments from a semi-enclosed intertidal water, the Johore Straits : monitoring data for future reference.**

**Abstract**

Since decades ago, the 1909-built dam-like Johore Causeway has been of much environmental concerns. This is due to the rapid economic and industrial development in the southern Johore of West Malaysia and Singapore which created a lot of anthropogenic pollutants into this semi-enclosed intertidal ecosystem via riverine inputs. In this study, surface sediments were collected from the western and eastern parts of the Johore Straits, in August 2004. The samples were analyzed for Cu, Zn, Pb and Ni. As a function of dry weight, the mean total concentrations of these metals were 28.6 µg/g (west) and 110 µg/g (east) for Cu; 137 µg/g (west) and 180 µg/g (east) for Zn; 33.7 µg/g (west) and 33.6 µg/g (east) for Pb and 22.6 µg/g (west) and 27.3 µg/g (east) for Ni. Geochemical studies revealed that the metal nonresistant fractions of the sediments were 52.3%, 67.3%, 29.2% and 64.9% for Cu, Zn, Pb and Ni, respectively. The non-resistant percentages indicated that the Johore Straits is receiving anthropogenic Zn, Ni, Cu and Pb. The present data indicated that some sites at the Straits were polluted with heavy metals to a certain degree based on the set Sediment Quality Guidelines/Criteria for the similar metals. The data found in this study should provide useful reference if the dam-like Causeway were to be replaced by a proposed free-flow bridge in the future.

**Keyword:** Johore Straits; Heavy metal pollution; Sediments; Semi-enclosed strait; Monitoring.