

Contamination of trace elements (Cu, Pb, Cr) in Kong Ko Laut, Johor, Malaysia

ABSTRACT

The aim of this study is to determine the contamination of trace elements (Cu, Pb and Cr) and to find the degradation or accumulation pattern of these elements in the sediments of Kong Kong Laut, Johor, Malaysia. Samples were collected from 9 different locations in 3 different months (i.e. February, March and April 2012). Samples were treated with acid digestion method to extract the trace elements. The elemental concentration was detected by using atomic absorption spectrophotometer. The average ranges of obtained trace element concentrations are as followed: Cu: 6.33–87.25 $\mu\text{g g}^{-1}$ dry weight; Pb: 10.18–40.87 $\mu\text{g g}^{-1}$ dry weight; Cr: 21.07–35.28 $\mu\text{g g}^{-1}$ dry weight. Samples from Location No. 2 which received low water current were detected with relatively higher concentration of trace elements as compared with samples collected from site with higher water stream. However, concentrations of all trace elements were found below the threshold level stated in the Hong Kong Interim Sediment Quality Guideline (HK ISQG) except for concentration of Cu in sample from Location No. 2 collected in April, 2012. No significant value found between sampling period except for concentrations of Cu and Pb from Location No. 2.

Keyword: Kong Kong Laut; Sediments; Trace elements; Contamination; Interim sediment quality guideline