

**METAL POLLUTION AND ECOLOGICAL RISK
ASSESSMENT OF BALOK RIVER SEDIMENT**

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ABSTRACT

METAL POLLUTION AND ECOLOGICAL RISK ASSESSMENT OF BALOK RIVER SEDIMENT

The water quality of the Balok River is believed has been deteriorated by anthropogenic impact as a result of the adjacent industries at Gebeng Industrial area. This study was conducted in order to assess the level of metal pollutants in sediment which indirectly representing the quality of the Balok River water. The samples of river sediment have been collected at ten sampling stations along the river. The total Cd, Cr, Cu, Mn, Ni, Pb, and Zn contents were analyzed by using ICP-OES after an acid extraction. Their mean concentrations (mg/kg) are 0.5, 41.9, 24.2, 155.7, 17.3, 30.3 and 152.1 respectively. The metal's pollution was evaluated based on the contamination factor (CF), enrichment factor (EF) and geo-accumulation index (I_{geo}). The used of I_{geo} index clearly indicates that most of the studied metals were in unpolluted to moderately polluted quality. According to the EF values, the Balok river sediments were unevenly enriched with the studied metals which fall within minimal and significant categories. Further analysis based on CF revealed that Pb at one of the sampling stations showed severe contamination while the other metals showed suspected and moderate contamination.