

ESTIMATION OF LIQUID EMISSION LOADS FROM INDUSTRIES WITHIN THE KELANI RIVER BASIN

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The Kelani River could be ranked as the largest recipient of industrial effluents of the country. The pollution burden of this effluent is quite diverse ranging from food manufacturing industries to heavy industrial discharges from textile factories, tanneries, soap and cleaning preparations manufacturing plants and rubber factories. An attempt was made to estimate the liquid emission loads released annually into the Kelani River Basin by the above sectors.

Liquid emission loads were assessed in terms of Biological Oxygen Demand (BOD) and Total Suspended Solid (TSS) content. In certain cases special parameters such as Chemical Oxygen Demand (COD) and Chromium were also assessed because of chemical contamination and hazardous potential. In estimating emission loads Rapid Assessment Procedure and the Date Bade Urban Pollution Control Model were used as the guide.

The results of the study indicate that the Kelani River receives 766.73 tons of BOD and 462.04 tons of TSS annually from the above mentioned industrial sectors and 3.8 million cubic meters of annual industrial wastewater volume. In addition, the tanneries and leather finishing factories discharge untreated effluent, which is contaminated with chromium, a hazardous heavy metal having bioaccumulation potential, into the river basin. The amount of chromium released into the river is as high as 6.36 tons while the COD load from rubber manufacturing sector is 48.71 tons annually.

Keywords: Biological Oxygen Demand, Chromium Effluents, Liquid Emission Loads, Total Suspended Solids Content, Standard Industrial Classification (SIC), World Health Organization.