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WATER QUALITY ASSESSMENT OF RIVER KABUL AT PESHAWAR, PAKISTAN: INDUSTRIAL AND URBAN WASTEWATER IMPACTS

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Untreated wastewater discharges may have significant short term and long term effects on the quality of a river system. Present study was undertaken to assess the present status of the water quality of River Kabul near Peshawar in Pakistan. Seven sites were sampled upstream and downstream in River Kabul in 2009. Samples were also taken from waste water channel (Budni Drain) that carries wastewater of Peshawar Industrial Estate as well as the domestic sewers to assess the pollution contribution of these sources to River Kabul. Physico-chemical and microbiological parameters of the samples were analyzed during the study, as well as possible sources of contamination were investigated. The study showed that the pollution level in river is rising from upstream (at city entrance) to downstream (at city exit) due to discharge of domestic waste water effluents, agricultural activities, and solid waste dumping directly into the river.

Keywords: River Kabul (Pakistan), water quality, industrial waste water, physico-chemical, microbial parameters, heavy metals.

Introduction

Water quality characteristics of aquatic environment arise from a multitude of physical, chemical and biological interactions. A regular monitoring of water bodies with required number of parameters in relation to water quality not only prevents the outbreak of diseases but also help to mitigate occurrence of hazards [1]. Rivers are vital and vulnerable freshwater systems that are critical for the sustainability of all life. However, the declining quality of the waters in these systems threatens their sustainability. Rivers are waterways of strategic importance across the world, providing main water resources for domestic, industrial, and agricultural purposes [2]. Discharge of pollutants to a