



305/C

**Evaluation of critical pollution sources of Kimbulapitiya Oya in the Katunayake-
Seeduwa Urban Council**

H Ravindra¹ and B C L Atapattu^{2*}

¹*Environmental Studies Unit, The Open University of Sri Lanka, Nugegoda*

²*Department of Civil Engineering, The Open University of Sri Lanka, Nugegoda*

Pollution of natural waterways is one of the major environmental issues in Sri Lanka. Because the stream 'Kibulapitiya Oya' that flows to the West coast of Sri Lanka passes through the Air Force Base at Katunayake, the Airport and the Katunayake Export Processing Zone, people are reluctant to utilize its water for general purposes. The polluted water in the 'Kibulapitiya Oya' initially empties into the Negombo lagoon prior to ending up in the sea causing a serious environmental impact on the flora and fauna in the lagoon. Therefore, this study was carried out to investigate the extent of pollution and identify the critical pollutant sources and to propose an appropriate treatment process to ensure that treated effluent is discharged to the lagoon. Several small tributaries which feed the 'Kibulapitiya Oya' have been observed. Water samples were tested from ten selected locations at tributaries in branch canal according to the APHA methods for assessing the degree of pollution. The ten water quality parameters considered for testing were colour, turbidity, oil & grease, pH, DO, NH₄-N, PO₄, BOD, COD, SS and TDS. The critical pollution sources were identified based on the analytical results. Two pollutant sources exceeded the tolerance limits stipulated by the Central Environmental Authority. They were linked to treated wastewater released from water treatment plants of Sri Lankan Catering Services and Katunayake Export Processing Zone. Modification to the existing treatment plants will be proposed in order to improve the quality of the discharged water.