

PREDICTION ON WATER QUALITY OF POINT SOURCE POLLUTION FOR
LUNCHOO RIVER, JOHOR

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Dedicated to...

*My beloved ayah, mak for giving me infinite love, support, care
and blessing*

Friends and lectures...

"Thank for your encouragement and advices"

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ABSTRACT

The growth in population and expansion in urbanization, industrialization and irrigated agriculture are imposing growing demands and pressure on water resources, besides contributing to raise water pollution. As a case in point, Lunchoo River was initiated to be the contribution of water quality deterioration with regional consequences on the aquatic ecosystem and on the health of the downstream sub-basin's user group. Thus, a balance strike between those developments and a good quality of life that has to be considered in the complex relationship between water quality and quantity on one hand and human health and well being on the other. In this study, a limitation on point sources pollutant and low flow condition are accounted for industrialization sectors within Lunchoo River catchment boundary. Approached of Mass Balance concepts are put into practice in order to analyze the situation. However, an understanding of the existing river characteristic and waste stream characteristic is deemed necessary to determine the background level of pollutant. Output generated from this study is important because it is a vital key toward an optimal management of its resources. Then, comparison between the current standard limit or guideline and the result achieved will determine the stage of pollutant. Therefore, the outcome of this study will determine the water quality of Lunchoo River and it is one of the initiative to ensure the water quality and environment been properly manage at Lunchoo River, as it is the most important sources of raw water to satisfy the clean water supply demand for the entire Johore State and also Singapore.

ABSTRAK

Pertumbuhan penduduk dan pemelesaian pembangunan dalam sektor perbandaran, pengindustrian dan pengairan pertanian telah menyebabkan peningkatan permintaan yang mendadak dan seterusnya member impak kepada bekalan sumber air bersih selain menyumbang kepada peningkatan pencemaran sungai. Dalam kajian ini, Sungai Lunchoo telah dikenalpasti sebagai satu contoh terbaik yang merujuk kepada kemerosotan kualiti air akibat yang memberi impak kepada ekosistem akuatik setempat dan pada juga kesihatan bagi kumpulan pengguna di hilir sungai terutamanya. Jesteru itu, perlu ada keseimbangan antara pembangunan dan satu kualiti hidup baik yang perlu dipraktikkan dalam hubungan kompleks antara kualiti air dan kuantitinya dan pada masa yang sama kesihatan dan kesejahteraan manusia dapat di capai. Dalam kajian ini, had telah ditetapkan adalah merujuk pada pencemaran sumber bertitik dan keadaan aliran rendah adalah dikira bagi kawasan pengindustrian di Sungai Lunchoo. Kaedah yang menggunakan konsep Mass Balance dipraktikkan sebagai medium untuk menganalisis data. Walaubagaimanapun, perlu adanya kefahaman yang mendalam terhadap kriteria sediaada sungai dan juga sisa aliran dari kawasan industri yang mana ia amat diperlukan dalam menentukan aras pencemaran sungai tersebut. Hasil dari kajian ini adalah penting kerana ia adalah satu kunci ke arah satu pengurusan optimum terhadap sumber-sumbernya. Kemudiannya, perbandingan antara had standard semasa atau garis panduan dan keputusan yang diperolehi dilakukan yang mana ia akan menentukan pencemaran sungai tersebut. Seterusnya, hasil kajian ini dapat menentukan kualiti air Sungai Lunchoo dan ia merupakan satu inisiatif dalam memastikan kualiti air dan persekitaran dapat diurus dengan sewajarnya sementelah ianya merupakan sumber penting air mentah dalam memastikan permintaan bekalan air bersih untuk seluruh Johor dan juga Singapura dapat dipenuhi.