INVESTIGATION OF SURFACE WATER QUALITY AND DEGREE OF HARDNESS AT SEMENYIH DAM, SELANGOR

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ABSTRACT

INVESTIGATION OF SURFACE WATER QUALITY AND DEGREE OF HARDNESS AT SEMENYIH DAM, SELANGOR

Semenyih Dam is one of the Klang Valley major dams in Malaysia which is an important water resource. Water quality is important because they help to protect and restore of the quality of surface water that is suitable for human use. The objectives of this study are to determine Water Quality Index (WQI), water classification and to measure the degree of water hardness for surface water at Semenyih Dam. Besides that to compare the obtained results with the standards set by Malaysian government for raw water quality. Water samples from four samplings were sampled from January to February 2008 and analyzed for physical and chemical parameters. The findings show that Water Quality Index (WQI) for four samplings are in Class II. Class II is means that the water is suitable for drinking water resource but needs general treatment. Water Quality Index (WQI) was calculated based on 6 parameters which were Dissolved Oxygen (DO), Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), pH, Total Suspended Solid (TSS) and Ammoniacal-Nitrogen. The average of total hardness for all sampling points was 25.44mg/L. This range indicates the degree of water hardness is soft.

CHAPTER 1

INTRODUCTION

1.1 WATER

Water is essential for all life on Earth, including mammals and by extension mankind. Humans can survive for several weeks without food but for only a few days without water. A constant supply is needed to replenish the fluids lost through normal physiological activities such s respiration, sweating and urination.

According to Blunden, J. (1985), water use may be split into three different categories. The categories are agricultural, industrial and domestic. In terms of global water use, agriculture is the largest user followed by industry and then domestic demand. In all these categories, the amount of water used is increasing.

A useful distinction is made between the withdrawal of water and the consumption of water. Withdrawn water is returned directly to its source of supply after use, whilst consumed water is irretrievably lost. For example, water used by industries may be recycled several times before it is returned to the river from where it was initially removed. On the other hand, much of the water used in irrigation is lost through evaporation into the atmosphere and therefore it is referred to as consumed.