



WATER QUALITY ASSESSMENT AT TASIK BIRU KUNDANG AND ITS POTENTIAL HEALTH EFFECTS

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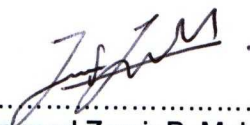
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Declaration by Student

Project entitled "*Water Quality Assessment at Tasik Biru Kundang And Its Potential Health Effects*" is a presentation of my original research work. Wherever contributions of others are involved, every effort is made to indicate this clearly, with due reference to the literature, and acknowledgement of collaborative research and discussions. The project was done under the guidance of Associate Prof. Dr. Hazilia bt Hussain as Project Supervisor. It has been submitted to the Faculty of Health Sciences in partial fulfillment of the requirement for the Degree of Bachelor in Environmental Health and Safety (Hons).

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Abstract

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Introduction : Lake water is an essential renewable resource for mankind and the environment and it is important for civil, industrial and recreational purposes. Sustainable use of water resources requires the coupling of surface water assessment and monitoring programs with decision making and management tools. **Objective :** To assess the lake water quality at Tasik Biru Kundang, Rawang, Selangor. **Methodology :** A cross sectional study, 60 water samples (n=60) were taken from one study location ; Tasik Biru Kundang, comparing the water quality between weekdays and weekends. Water Quality Index were also calculated to compare the water quality during weekdays and weekends. Physical parameters were analyzed at the site by using HANNA HI 9828 Portable MultiParameter, while Colilert test was use to calculate the number of total coliform and E.coli presence in lake water samples. Other parameters such as Pd and Cd were analyze using portable spectrophotometer, HACH DR2800. The results were then compared to the Interim National Water Quality Standards (INWQS). For exposure assessment, sampling data collection were collected through survey questionnaires distributed among the 50 random bathers. **Results :** The WQI for both weekdays and weekends are below the standards which is 70 and 64 respectively .There were 3 parameters that contravened the standard ; Dissolved Oxygen(DO), Cadmium(Cd) and Total Suspended Solids (TSS). Biological parameters such as E.coli and Total Coliform show higher reading during weekends compared to weekdays. Based on contravened parameters concentrations, health risk assessment like chronic daily intake (CDI) and hazard index(HI) was calculated. The mean hazard index was 0.1 which is below 1. HI which does not exceed unity ($HI < 1$) is assumed that no chronic risks are likely to occur. **Conclusion :** Overall, the water quality at Tasik Biru Kundang is slightly polluted during weekends compared to weekdays based on the WQI reading and the lake is classified under Class III where it should be at Class II B. Generally, it can be seen that the quality of water during weekends are poorer than the water quality during weekdays. Factors may due to rainfall, increasing surface runoff, municipal wastes and bathers densities. The poor water quality of Tasik Biru Kundang also may due to its surrounding area where residential area around the lake side, restaurants and workshop.

Keywords : Cadmium, Lead , Dissolved Oxygen, Total Suspended Solids, Water Quality Index.