

**DETERMINATION OF METALS CONCENTRATIONS & WATER
QUALITY STATUS ALONG *ULU JEMPUL RIVER***

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ABSTRACT

DETERMINATION OF METALS CONCENTRATIONS & WATER QUALITY STATUS ALONG *ULU JEMPUL RIVER*

This study was done to determine water quality status and heavy metals concentration along Ulu Jempul River. The distance of this site was about 10 km which was taking 22 minutes travelled by car. The location of Ulu Jempul is near to the Bandar Pusat Jengka and Jerik River along the road of Jerantut Maran. Samples from five sampling stations were analyzed two times which were on March and April 2013. The sampling station was started at Water Plant Ulu Jempul and station 5 was the last point. Eight parameters were analyzed which were temperature, pH, Dissolved Oxygen (DO), conductivity, Total Dissolved Solid (TDS), Biological Oxygen Demand (BOD) by using YSI 556 MPS Handheld Water Quality Meter and two heavy metals which were Chromium and Zinc. Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS) was applied to identify heavy metals concentration in the water samples for two different weather conditions. Agricultural activities were the main causes for the water quality changes. One way analysis of variance (ANOVA) and Microsoft Excel was used to analyze data. The results obtained from ANOVA were compared with the stated value in Interim National Water Quality Standard (INWQS) to determine the river quality status. According to the Environmental Quality Act, 1974, the data collected was complying by the standard A. Almost all parameters showed no significant differences ($P > 0.05$) for March and April for each station with confidence level of 95% except for Dissolved Oxygen (DO) which was significant of $P < 0.05$. Physico-chemical analysis along Ulu Jempul River at the five sampling stations was categorized under Class II which is slightly polluted based on BOD values.