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Effect of Inflow and Infiltration in Sewerage System of Residential Area, Kuantan, Pahang

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Abstract: Inflow and infiltration is a phenomenon in sewerage systems that can have negative effects on the environment and human health if not treated properly. Collaboration has been made between Universiti Malaysia Pahang (UMP) and Indah Water Konsortium Sdn. Bhd. (IWK) where the purpose is to evaluate the amount of inflow and infiltration happening in sewerage systems of residential areas in Kuantan. For this part of the study, one sewer pipeline (MH92a–MH92b) was selected at the residential area of Bandar Putra, having a population equivalent of 1694. The method used in this research was the Flowrate method to tabulate data. ISCO 2150 and 4250 Area Velocity Flowmeters were used to measure flow rate data in the sewer pipeline, whereas ISCO 674 Rain Gauge was used to collect rainfall intensity data. Calibration of all the equipment was done at the Hydrology and Hydraulic Laboratory in UMP. The data was collected for 41 days with each measurement separated by an interval of five minutes. The result shows that the average percentage Infiltration Rate of Q_{peak} and Q_{ave} in this residential catchment were 10.3% and 26.5% which is higher than the value mentioned in Hammer and Hammer (2012). Inflow and infiltration is a real concern, so more study is required to determine whether revision of the infiltration rate recommended in the Malaysian Standard is needed.

Keywords: Inflow, Infiltration, Rainfall, Sewerage system

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