STUDY ON BED MATERIAL CHARACTERISTIC AND BED LOAD CONCENTRATION IN SUNGAI JEMBERAU AT TASIK CHINI

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ABSTRAK

Kajian ini telah dijalankan di Sungai Jemberau, Tasik Chini. Tujuan kajian ini adalah untuk mengenal pasti ciri-ciri dasar sungai dan kepekatan beban dasar di Sungai Jemberau disebabkan oleh aktiviti manusia dan juga dengan menggunakan kaedah yang tertentu dan untuk mengenal pasti corak corak mendapan / beban dasar yang disebabkan oleh proses pemendapan. Untuk menentukan ciri-ciri dasar sungai, dan ciri-ciri tanah, beberapa ujian yang berkaitan dengan ujian tanah telah dijalankan di Makmal Geoteknik, UMP. Ujian yang terlibat adalah taburan saiz zarah, kandungan kelembapan dalam usaha untuk mendapatkan ciri-ciri klasifikasi sample tanah. Keputusan ujian ayakan sample sediemen diklasifikasikan menggunakan jadual Unified Sistem Pengkelasan Tanah. Analisis untuk taburan saiz zarah menunjukkan keputusan yang paling tinggi adalah Sample 3 (5 Mac 2017) 4.20mm diikuti oleh Sample 2 (1 Desember 2017) 3.75mm, Sample 1 (24 November 2016) dan sample yang terakhir adalah 17 Mei 2017 iaitu 2.75mm dan 1.15mm. Kandungan kelembapan sample pada waktu hujan iaitu untuk Sample 1 (24 November 2016) dan Sample 2 (1 Desember 2016) adalah 34.71% dan 33.09% dan diikuti dengan Sample 3 (5 Mac 2017) dan Sample 4(17 Mac 2017) dengan catatan tarikh sample diambil selepas banjir adalah 27.43% dan 41.80%. Tambahan juga, hakisan permukaan juga memberikan sumbangan kepada peningkatan pengangkutan mendapan dan telah menjadi salah satu daripada masalah utama di Sungai Jemberau. Corak beban dasar pada setiap titik telah dikenal pasti melalui proses pemendapan. Corak beban dasar memberi perubahan mod pengangkutan mendapan di Sungai Jemberau. Beban dasar telah dinilai menggunakan tiga formula yang berbeza yang iaitu Schoklitsch dan Duboys. Daripada analisis keputusan setiap formula Duboys boleh digunakan untuk meramalkan pengangkutan beban dasar untuk Sungai Jemberau .

ABSTRACT

The study conducted at Sungai Jemberau sample site. The purpose of this research was to identify the bed material characteristic and bed load concentration in Sungai Jemberau at Tasik Chini because of human activities and also to analyze the bed load discharge of Sungai Jemberau using selected method and to identify the sediment pattern/bed load pattern due to sedimentation process. In order to determine the bed material characteristic and bed load concentration and soil properties, several test were related soil testing conducted in the Geotechnical Laboratory, UMP. Testing that involved are a particle size distribution, moisture content that were carried out in classify properties of the soil sample. The sediment sample sieving test results was classified using Unified Soil Classification System (USCS). Analysis for particle size distribution were shown the highest particle size distribution were Sample 3 (5th March 2017) 4.20mm followed by Sample 2 (1st December 2016) 3.75mm, Sample 1 (24th November 2016) and last sample at 17th May 2017 were 2.75mm and 1.15mm. The moisture content for rainy day which is for Sample 1 (24th November 2016) and Sample 2 (1st December 2016) were 34.71% and 33.09% and followed by Sample 3 (5th March 2017) and Sample 4 (17th May 2017) when recorded that date is after flood is 27.43% and 41.80%. Furthermore, the surface erosion also gives contribution to the increase of sediment transport and had become the one of main problem at Sungai Jemberau. The bed load pattern at each point were identified through the sedimentation process. The bed load pattern gave the variation of sediment transport modes at Tasik Chini. The bed load discharge were evaluated using two different methods which is direct sampling and formula predictions. Then, by using formulas which were Schoklitsch and Duboys equation. From the analysis of the results of each of the formula, Duboys can be used to predict bed load transport for Sungai Jemberau .