

*Seminar Geosains Kebangsaan 2007 (NGC 07)
Universiti Malaysia Sabah, Kota Kinabalu, Sabah
7 – 9 June 2007*

P5A-1

GROUNDWATER MODELLING OF THE CHEPSTOW BLOCK, SOUTH WALES, UK

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ABSTRACT

In this groundwater modelling study, a simplified conceptual model of the Chepstow Block hydrogeological unit was calibrated using the Aquifer Simulation Model (ASM) program under a steady state condition. One of the objectives of the study is to determine the catchment area for the Great Spring. The initial aquifer boundaries of the model and its changing conditions were investigated. The model was found to be insensitive to changes in the boundary conditions. It was also found that the Nadern Fault within the block plays an important role in drawing water from the north to the Great Spring. During the calibration process, it was difficult and impossible to calibrate the model without incorporating a low permeable boundary parallel to the Nadern Fault.