

Texas A & M University and U.S. Bureau of Reclamation

Hydrological Modeling Inventory

Model Description Form

July 18, 2007

Name of Model: Two-parameter water balance model (TPWBM)

Model Type: Conceptual model

Model Objective(s): Runoff simulation and prediction, water resources assessment

Agency and office: Wuhan University, China

Technical Contact and Address: College of Water Resources and Hydropower

Wuhan University, 430072

Hubei Province, P. R. China

Model Structure or Mathematical Basis: Water balance equations

Model Parameters: Two parameters, C and Sc

Spatial Scale Employed in the Model: $10^2 \text{ km}^2 \sim 10^6 \text{ km}^2$

Temporal Scale Employed in the Model: Month

Input Data Requirements: Monthly precipitation, Pan evaporation

(or Temperature)

Computer Requirements: Personal computer

Model Output: Monthly runoff, soil moisture content

Parameter Estimation/Model Calibration: Simplex and trail and error methods

Model Testing and Verification: Model efficiency, relative error of total runoff

relative error of maximum peak runoff

Model Sensitivity: The parameters are insensitive to the initial values

Model Reliability: The model is capable of simulation monthly runoff series and can produce good and reliable results.

Model Application/Case Studies: The model has been applied to more than 100

humid and semi-humid basins in China.

Documentation: The model structure and application results have been published in some academic journals.

Other Comments: No