Recharge from a River of Large Width to a Shallow Water Table Aquifer

Mishra G C and S M Seth

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Using Zhukovsky's function and Schwarz-Christoffel conformal mapping technique, unconfined seepage from a river of large width has been analyzed for a steady-state condition. Seepage quantities occurring through the bed and the bank of the river have been estimated separately. The reach transmissivity constant for a river with large width has been determined. It is found that if the distance between, the riverbank and the observation well is more than 0.5 DI, where DI is the saturated thickness of aquifer below the river bed, the reach transmissivity constant is independent of drawdown at the observation well. The reach transmissivity constant depends on the depth of water in the river and the distance of the observation well from the riverbank.