



Evaluation the river seepage and groundwater drawdown under pumping near riverbank

Jungwei Chen (1), Kuanwei Chen (1), Sunzone Lee (1), and Chenghaw Lee (2)

(1) Chia Nan University of Pharmacy & Science, Province Of China Taiwan (cjw2623@mail.chna.edu.tw), (2) Department of Resources Engineering, National Cheng Kung University, Province Of China Taiwan (leech@mail.ncku.edu.tw)

ABSTRACT

Groundwater is to be pumping near the riverbank could be induced recharge from the river and lateral aquifer layers. In this research, proposes the method of pumping groundwater from the Maoluo riverbank and assesses the effect on the riverbank filtration in the middle of Taiwan. This research constructed the four analytical models using MODFLOW to identify the reliability of numerical model. Five groundwater pumping schemes based on the assessment on the effect of the Maoluo river seepage were implemented. For replace with the external water sources is 60,000 CMD, the ratio of river seepage to pumping is from 37.5% to 40.2%, and the groundwater radius of influence is from 290m to 470m. The research area is 700 m away from the residential area, none pumping schemes will thus affect the residential area.

Keywords: groundwater, riverbank filtration, river seepage, groundwater radius of influence