ARTIFICIAL RECHARGE IN RIVER BED AT URBAN AREAS (CASE STUDY, KARAJ RIVER BASIN)

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In the present study, possibility of artificial recharge in the river beds at urban areas has been investigated. Karaj River has been the main source of groundwater recharge for many years. But in the past decades because of urban development, it has been under depletion drastically. As a mean value, about 93 mcm of water passes through the city of Karaj every year which discharges into the Salt Lake in the southern part of the city. Considering a wide, large area of 150 ha, covered by the river bed and the significant amount of water passing through this area, artificial recharge is a wise option to enrich the groundwater. To determine the infiltration rate of the ground surface, two test ponds were constructed in the middle and the left bank of the river. Based on the results, the rate of infiltration was determined to be 103 lit/sec/ha, which will enables to recharge 1.3 mcm of water every day. To investigate the hydraulic conductivity of the subsurface layers, boring logs of several water supply wells were studied and it was found out that the transmissibility coefficient is more than 6 m/d. Finally, several retarding dams were designed for flood distribution over the river bed, using a computer model.

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