Piezometric Impact of Recharging Waters on the Bruxellien Aquifer at the Lake Detroit of Louvain–La–Neuve

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On the site of Louvain-la-neuve (Belgium), the aquifer of Bruxellien is an unconfined aquifer fed primarily by precipitation water. Since the ponding of the storm basin in 1985, an additional feeding comes from the recharging induced by the infiltration of waters of this storm basin. Near the plan of water, the variations observed of the water level in the piezometers are related to water ponding and to climatic conditions. Water ponding has caused a rise of the water level in piezometers around the plan of water of about 1 m.

On the other hand, since 1989, the piezometer level has decrased. It was noticed that this discharge is not uniform in all the aquifer, but is more accentuated as we move away from the lake. This means that the influence of the lake is not to be neglected, at least nearby.

A question may be asked: what's the artificial recharging part in comparison with the general behaviour of the aquifer. We propose her to calculate the artificial recharge coming from water ponding taking into account the evolution of the groundwater surface in the different piezometers and basing also ourselves on the principle of flow superposition during transient state.

The found value little differs from the one found while using hydric assessment and represents an average between 1990 and 1993. It is not excluded that the quantity of reload varies from one year to the next (see a seasonal variation even). This technique may constitute a first tool for evaluation the artificial recharge efficiency and the prediction of its impact on groundwater.

Key words: artificial recharge, louvain–la–neuve, Bruxellien