



Groundwater Quality as a Variable in Time and Space

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Analysing long time series of groundwater quality data give us the information that groundwater quality vary during time and space. In the time, the critical pollutants change, as well as the source of pollution may change and as a consequence, the detection time change. Groundwater quality is one of the most important parameters in drinking water supply management. For safe drinking water supply we have to control the quality of groundwater in the water wells recharge area. The frequency of sampling should take into consideration the patterns of existing time series that inform us when, where and why the pollutions appear.

Ljubljana field aquifer is an unconfined intergranular aquifer. The phreatic groundwater is recharging from rainfall and from the river Sava. The three quarters of aquifer lies beneath the urbanised and agricultural area. The anthropogenic activities modify the entire aquifer area, impact the hydrological balance, reduce the aquifer recharge, influence the groundwater flow characteristics, change the water source availability and restoration and influence the quality of groundwater.

The climate model simulations for the Ljubljana field area demonstrate that the increase in the air temperature is the strongest in the warm part of the year, particularly in the summer. Precipitation data manifests a high degree of ambiguity in the future periods, but the model simulations agree on a general trend pointing to less precipitation in the summer. Model data also indicates trends in the direction of long duration of dry spell and greater maximum daily rainfall. All these climate changes may have strong influence on groundwater availability and on the groundwater quality as well.

The objective of a research was an analysis of pollution in the past, either as a result of extreme weather event or unauthorized land use, or as a combination of both. With regards to climate model results and predicted land use changes, the recommendations about an organization of a groundwater monitoring will be presented.