

TIME SERIES OF PHYSICO-CHEMICAL PARAMETERS OF KARST SPRING AS A TOOL TO DIFFERENTIATE THE SOURCE OF SPRING WATER

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Poodenow Anticline is within the Zagros Mountain Range of Southern Iran. This anticline, 120km long is best displayed by the outcrop of karstic dolomite Asmari Formation (Tertiary). A system consisting of nineteen springs discharges part of the Poodenow aquifer. All of these springs are concentrated in an area less than 0.2km². The average, minimum, and maximum discharges of the main spring are 1400, 445, and 3031 l/s, respectively. The average discharges of all other springs range from 3 to 313 l/s. The major ions, electrical conductivity, temperature and pH of all the springs were measured once every three to four weeks for a period of 17 months. The discharge, electrical conductivity, and temperature of the main spring were measured daily during the wet season. The recession coefficients, time series of physico-chemical parameters, and quick and base flow of the main spring imply that the type of regime is mainly diffuse-conduit. Geological settings and hydrological methods, especially water balance, were used to determine the probable catchment area of the spring systems. The time series of the physico-chemical parameters of the average discharge of 69 l/s is different from the other springs, even though it is surrounded by all those other springs. A later study by dye-tracer proved the above mentioned discussion. A schematic model was proposed to show the flow of the spring system.