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Using of GIS Spatial Analyses to Study the Selected Location for Dam Reservoir on Wadi Al-Jirnaf, West of Shirqat Area, Iraq

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ABSTRACT

The GIS data of digital elevation model, topographic maps of different scales, satellite images and GPS were used to analyze the geometrical relations, bathometric properties and shape form of selected depressions on Al-Jirnaf valley. GIS was used to analyze the hydromorphometry and geometry of the depressions, these analyses explain the role of main valley ' s contribution to the hydrology of the valley, then, three locations for water storage were suggested. 2D and 3D models of the sites were given, the maximum level, volume, surface area, circumference, shape factor of three supposed reservoirs calculated for different hypothetical levels of water in the reservoir, and the optimal level were determined, the maximum suggested levels are 190, 185 and 180 m, the areas are 3.25, 7.97 and 20.47 km2, the volumes are 0.0096, 0.0334 and 0.1118 km3 for the three locations respectively. This experimental procedure can be repeated in other depressions for the same purpose.

KEYWORDS

GIS; Spatial Analysis; Geometry; Dam Reservoir; Iraq

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