عنوان مقاله:

A New GIS based Application of Sequential Technique to Prospect Karstic Groundwater using Remotely Sensed and Geoelectrical Methods in Karstified Tepal Area, Shahrood, Iran

محل انتشار:

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خلاصه مقاله:

In this research, recognition of karstic water-bearing zones using the management of exploration data in Kal-Qorno valley, situated in the Tepal area of Shahrood, has been considered. For this purpose, the sequential exploration method was conducted using geological evidences and applying remote sensing and geoelectrical resistivity methods in two major phases including the regional and local scales. Thus, geological structures and lithological units in regional scale have been investigated for groundwater potential. In this regard, suitable potential maps have been provided in the geographical information system (GIS) environment, using fuzzy data-driven and knowledge-driven methods. To obtain the final karstic water potential model, the prepared maps were combined using fuzzy 'AND' operator. In the local scale, geoelectrical surveys were conducted in the recognized high potential zones. Consequently, the results of geological investigations, analysis of lineaments extracted from satellite imagery and geoelectrical resistivity data modeling and interpretation were integrated to decide on the position of high yield extraction wells. As a result, karstic water zones in the study area were identified, and based on that, two suitable drilling locations to access and extract karstic groundwater in the study area have been suggested.

کلمات کلیدی:

combined fuzzy data-driven and knowledge-driven method, geoelectrical resistivity method, karstic groundwater potential modeling, sequential exploration approach

لینک ثابت مقاله در پایگاه سیویلیکا: