عنوان مقاله:

GIS to Evaluate Heavy Metal Accumulations in Underground Water Case Study: Examination of zinc, iron, chrome and arsenic for Shiraz drinking water

محل انتشار:

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خلاصه مقاله:

Underground water resources have always played an important role in meeting the water demands in Iran.Underground water supplies approximately 60% of the drinking water consumed in large cities. Various synthetic chemicals and naturally occurring solutes can make underground water unhealthy for drinking.The objectives of this research are; to assess the spatial patterns of zinc, iron, chrome and arsenic concentrations in underground waters; to compare the pollutant values to the standards of World Hygiene Organization (WHO); to identify the potential causes of locational variability among the solutes; and to use Geospatial Information Systems (GIS) for zoning and displaying the concentration.The heavy metal contaminations were calculated from measurements at 20 water wells in the city of Shiraz (Capital City of Fars Province in Iran). Geospatial data is gathered, processed and displayed using GIS functionalities. The concentrations of zinc, iron and chrome in the underground waters' area were found suitable,while the concentration of arsenic in the eastern and southern parts of Shiraz was exceeded the WHO limits. The nearby metal production industrial units and the dry river of Shiraz are identified as the main contributing factors to the contamination

کلمات کلیدی:

GIS, Heavy metals, WHO, Underground Water, Locational Variability