

Groundwater of Lahore: A Review

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Abstract

Water is important for existence of life on the face of Earth. The most important source of freshwater, especially in the arid and semi-arid regions, is groundwater. Unfortunately fresh water sources are being either depleted or contaminated due to improper and excessive usage. Pakistan, being a third world country, is facing a serious threat in maintaining its water resources. It has already been declared as a water scarce country. Most of the towns and cities of Pakistan are facing serious issues of groundwater quantity and quality degradation. The main sources of this contamination are intensive use of fertilizers and pesticides, large water consumption, industrialization and improper sewage system. This paper intends to present a review of the present groundwater conditions of Lahore which is the second largest city of Pakistan and provincial capital of Punjab. Lahore depends entirely on groundwater for domestic use. The groundwater of Lahore is being polluted due to poor drainage system, industrial waste, improper agricultural activities, untreated municipal solid waste and open landfill sites such as Baggrian, Saggian and Mehmood Boti. The results of various physical and chemical analysis are also discussed including the reports from PCRWR. Unfortunately, majority of the water samples are beyond the safe limits as characterized by WHO. Vulnerability mapping to estimate spatial distribution of the tendency of groundwater contamination is being used as a base measure towards socioeconomic and sustainable development of groundwater resources. The use of Geographic Information System (GIS) for mapping the groundwater vulnerability to contamination is also highlighted. At the end possible measures are discussed for proper management of groundwater quantity and quality.