

Groundwater Pollution Models for Hebron/Palestine

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Abstract : These models of a conservative pollutant in groundwater do not include representation of processes in soils and in the unsaturated zone, or biogeochemical processes in groundwater, These demonstration models can be used as the basis for more detailed simulations of the impacts of pollution sources at a local scale, but such studies should address processes related to specific pollutant species, and should consider local hydrogeology in more detail, particularly in relation to possible impacts on shallow systems which are likely to respond more quickly to changes in pollutant inputs. The results have demonstrated the interaction between groundwater flow fields and pollution sources in abstraction areas, and help to emphasise that wadi development is one of the key elements of water resources planning. The quality of groundwater in the Hebron area indicates a gradual increase in chloride and nitrate with time. Since the aquifers in Hebron districts are highly vulnerable due to their karstic nature, continued disposal of untreated domestic and industrial wastewater into the wadi will lead to unacceptably poor water quality in drinking water, which may ultimately require expensive treatment if significant health problems are to be avoided. Improvements are required in wastewater treatment at the municipal and domestic levels, the latter requiring increased public awareness of the issues, as well as improved understanding of the hydrogeological behaviour of the aquifers.

Keywords : groundwater, models, pollutants, wadis, hebron

Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020