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abstracts

Study on Saltwater Origin and Mechanism in Aquifers of Danang Area and Solution for Sustainable Groundwater Development

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abstract

This research project applies a combination of methods to study the source and mode of salinity propagation, thereby determining the thresholds for exploitation to prevent salinity intrusion in coastal aquifers in Danang area, centre of Vietnam in the context of climate change and sea level rise. The methods selected in this project focus on: (i) make full use of existing hydrological and hydrogeological data and documents, especially previous analysis on isotopic water samples to determine the age and source of groundwater (ii) Hydrographic - groundwater flow digital model to determine the amount of groundwater recharge (an important factor that affects the distribution of freshwater lenses) and the mechanism, mode of propagation and distribution of salinity intrusion under the impact of climate change & sea level rise. Numerical models were used in the research to best simulate complex hydrogeological conditions in Danang area and affect by tidal in Han, Cu De river and sea water level. The results of identifying origin and mechanism of salinity propagation and salinity intrusion simulation by models will be the basis for the research to determine the sustainable exploitation thresholds for prevention of salinity penetration in coastal aquifers in the context of climate change and sea level rise in Danang area.

Keywords: Saltwater intrusion, Danang-Vietnam, Numerical modeling, Sustainable groundwater development



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