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## **Extended Abstracts**

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title: **Quality of groundwater in the shallow and deep aquifers of the Gefara Plain, Tripoli region, Libya**

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The Libya as North African Arabic country is located in North Africa, and covers a big surface area. Groundwater is the main source of Drinkwater supply in main regions in Libya.

The study area is located in Gefara Plain between the Mediterranean coast and the Jebel Nafusa Mountain in the south; it is also an agricultural and industrials center with high population and farms activities. Large increases in water demand with very little recharge have affecting the water levels and water quality.

The GMMR project the world's largest engineering venture is intended to transport about 6 Million m<sup>3</sup> per day of drink water from these aquifers in deep Sahara to the northern coastal belt, to provide for the country's 6 million inhabitants and for irrigation.

The groundwater resource in the coastal region of Gefara Plain in the south west of Tripoli city has extreme contaminated by seawater intrusion. Different groundwater samples were collected and analysed for hydrochemical investigations. The chemical analyses of groundwater samples indicate high ions concentrations. Some water samples are characterized by high chloride, sodium, sulphate, total dissolved solids and nitrate. Some water samples were analysed for isotopes techniques. The isotopic analysis aimed to determine the age, recharge and origin of the groundwater bodies and to offer support for the hydrochemical analysis.



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