

Geochemical characterization of geothermal waters in the Geneva Basin

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Context

The study of the geochemical composition of geothermal fluids is crucial to understand the circulation path, and therefore assess the geothermal potential of a study area monitor the performance of the reservoir once in production. In the Geneva Basin the main geothermal reservoir currently targeted by the Geothermie2020 program is the Mesozoic Units where temperature can reach temperatures close to 100°C. Previous studies (Vuataz, 2010), highlighted the main geochemical signature of geothermal fluids in the Thônex well. However thanks to the availability of new wells across the Geneva canton, the current understanding need to be updated to provide a regional understanding of potential targeted across the whole Geneva Basin

Objectives and Methods

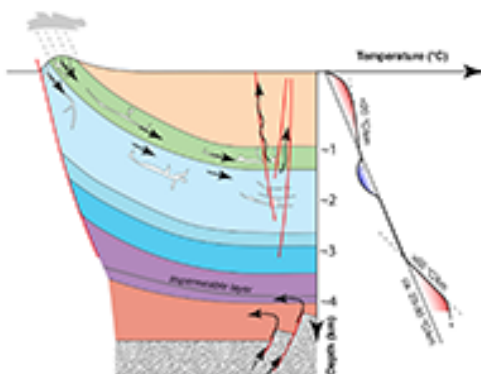
The present project aims at improving the current characterization of the geochemical signature of geothermal waters in the Geneva basin by the collection of new data, analysis and interpretation. Geochemical sampling campaign will be carried out on selected springs and wells across the Geneva area. Geochemical analysis will focus on the physical parameters, major ions, trace elements, stable isotopes of Oxygen and Hydrogen, Tritium, Sulphur and Carbon isotopes, dissolved gas and noble gases.

Geochemical data will be interpreted according to the geological and structural setting of the Geneva basin to provide circulation models in terms of origin of the water, reservoir temperature, circulation time and depth, water-rock interactions, geothermal potential.

Literature

Murault 1999. *Processus hydrogéologiques et hydrochimiques dans les circulations profondes des calcaires du Malm de l'arc jurassien*

Vuataz & Giroud 2010. *Caractéristiques géochimiques du fluide profond du forage géothermique Thônex-1, Genève*



WEB sites

<http://unige.ch/ge-rgba>

Choice of orientation :

Sedimentary, Environmental and Reservoir Geology, geochemistry, geothermal