

Internship evaluation of the lithium content of evaporites

Summary

- **Length:** 6 months
- **Location:** 232 Avenue Napoléon Bonaparte, Rueil-Malmaison, 92500, France
- **Reference:** GEO-2023-02
- **Starting Date:** January - February 2023
- **Internship paid and compliant with school conventions**

Title

Evaluation of the lithium content within the Triassic and Liassic evaporites of Algeria

Intern profile

This internship is proposed to a second year of master's degree, or a last year of engineering school within the course of Geosciences sedimentary basins/reservoir/resources.

The candidate must show interest for integrated work (integration of multidisciplinary fields) and team work, as well as excellent skills for synthesis and communication.

Required knowledge: Sedimentary geology, concepts of sequence stratigraphy, log analysis, thematic mapping, mastering subsurface interpretation tools (i.e. Petrel™)

Objectives

In the present context of transition and energy independence, a growing need in lithium appears for industry, but so far, this resource is limited to surface mining and a few industrial players.

Currently, like Chile and Bolivia, Algeria produces lithium from the surface (chotts), but the Algerian subsurface (Saharan Platform) also holds potentially large reserves of lithium in fossil evaporites. The knowledge of the resources in place in the subsurface within the different levels of potentially lithium-rich salt levels (Triassic, Liassic, Cretaceous) is therefore essential.

The objective of the internship will therefore be to propose, on the basis of a regional database (well and 2D/3D seismic) available, an evaluation of the lithium concentration present in the different levels of evaporites (Triassic/Liassic interval) developed on the Algerian Saharan platform, to map the extension of such lithium-rich evaporites, and finally, to assess the prospectivity of their future exploitation.

Main tasks undertaken during the internship

- A bibliographical summary on lithium-rich evaporitic series
- The construction of a regional subsurface database (~650 wells + 2D seismic)
- A sedimentological and stratigraphic analysis of the targeted evaporitic series
- A sampling campaign on cores and/or cuttings dedicated to measuring lithium content (via spectrometry)
- Discrimination of electrofacies in evaporite intervals based on a multivariate analysis of log records
- Mapping of lithium contents by stratigraphic interval
- Mapping of risks and uncertainties
- Prospective mapping (delineation of sweet-spots)
- Elaboration of conceptual development plans and associated economic evaluation.

The internship will be supervised by a Senior Reservoir Engineer and the Business Unit related Manager to Energy Transition activities.

Software used

Petrel™

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