Geology of the Triassic Complex of Koudiat Djebassa Area El Mhir, Bordj Bou Arreridj, Algeria

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Koudiat Djebassa area corresponds to a Triassic gypsum blade which geographically belongs to the opposite flank of Mzita anticline "sub-bibanic area, Bibans". It corresponds to a section of the Meridional Tellian Atlas.

Macroscopic and microscopic observations of the Triassic complex revealed the existence of six major types of textures: massive, banded, drusy, veined, disseminated, and crested.

The Petrographic study of this Triassic complex allowed us to inventory the minerals which are associated to the Triassic drilling: gypsum, anhydrite, celestite, barite, dolomite, calcite, quartz, albite, pyrite and native sulfur.

Microthermometric results of primary fluid inclusions of the Koudiat Djebassa celestite associated to the Triassic complex show that the fluids which are responsible of celestite crystallization have a deep origin, rich on pure water and drained by the contacts diapir/cover during halokinesis, which would explain the high homogenization temperatures obtained (118 °C to 280 °C). These fluids would have been enriched in Ca and Mg due to the presence of carbonate rocks.

All the results obtained confirm the hypothesis of a slighty salty hot fluid that acquires its salinity during its ascension.