Investigation Mineralogical and Geochemical Characteristics of Tertiary Sedimentary Units Around Bala, SE Ankara, Central Anatolia

EMRE DEMIR[1], ELIF VAROL[1*]

[1]Hacettepe University, Faculty of Engineering, Department of Geological Engineering, TR-06800, Beytepe, Ankara, Turkey (emrdemir.ed@gmail.com)

[1]Hacettepe University, Faculty of Engineering, Department of Geological Engineering, TR-06800, Beytepe, Ankara, Turkey (*correspondence: elvarol@hacettepe.edu.tr)

The Bala Basin, located at the southeast of the city of Ankara, Central Anatolia, Turkey, contains thick evaporitic sedimentary deposits. This basin is developed during Upper Eocene-Oligocene period. Samples were collected from nineteen continuous core drillings at different locations in this basin. Minerals were identified by X-ray diffraction (XRD) technique. Gypsum, calcite and anhydrite are the dominant minerals. Quartz and clay are the most dominant clastic minerals.

The results of chemical analyses of 90 samples state that gypsum and calcite samples are precipitated in an inner basin environment that were influenced by mixing of marine and non-marine brines. The occurrence of variable Sr concentrations indicates that the hydrological conditions are in a state of flux and reveals unstability of salinity of the environment. As a consequence, this reveals that evaporation/precipitation ratio changed periodic intervals.

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