

MINERALOGY AND GEOCHEMISTRY OF GYPCRETE AND GYPSIFEROUS SOIL HORIZONS IN SOME NEOGENE AND QUATERNARY SEDIMENTS OF CENTRAL IRAQ

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Received: 11/10/ 2007, Accepted: 30/ 11/ 2008

ABSTRACT

The present work is concerned with gypcrete and gypsiferous soils in Quaternary and Neogene sediments, studied in two sections near Al-Dor and near Falluja. The study deals with lithology, mineralogy and geochemistry of these sediments and the origin of gypsum and salts. More than 20 samples were collected and studied for grain-size analysis, petrography, X-ray diffraction and chemical analysis of salts and host sediments.

The results show two genetically salt assemblages: an early diagenetic minor concentration of (Na – K – Mg – CO₃ – Cl) salts supplied from internal diagenetic solutions and a late daigenetic overwhelming concentrations of (Ca – SO₄) salts supplied from external sources. The two groups are negatively correlated. Most of the gypsum-rich soils in the studied sections are related to an in situ SO₄ enrichment from groundwater sources, whereas some are of aeolian origin and mechanically transported.

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