



GEOCHEMISTRY OF RARE EARTH ELEMENTS OF PLAYA SEDIMENTS FROM THE EASTERN THAR DESERT, INDIA.

P.D. Roy, W. Smykatz-Kloss

Institute for Mineralogy and Geochemistry, University of Karlsruhe, Germany,
(priyadarsi.roy@bio-geo.uni-karlsruhe.de/Fax: +49-721-608-7247)

The saline lakes (Sambhar, Didwana, Kuchaman and Phulera) occurring in the eastern part of the Thar desert (Rajasthan, India), in front of the Aravalli mountain range provide a prominent example for alkaline brine and evaporites. The chemical evolution of lakes has resulted in the precipitation of (mainly) halite together with minor amounts of anhydrite, thenardite, mirabilite, kieserite, sylvite and trona, occurring in the evaporitic crusts of all these lakes (except Phulera). Phulera exhibits a carbonaceous crust, consisting of calcite and Ca-Mg-carbonates (dolomite and huntite). Quartz and several silicates in these playas are of detrital origin, brought into the playas by aeolian and subordinately fluvial transport processes. The contents of rare earth elements (REE) were determined quantitatively in some selected sediment samples from the above mentioned playa lakes. The REE patterns seems to be comparable for all the studied samples and with that of upper continental crust and PAAS of Taylor and McLennen (1985). But the amount of REE differs from sample to sample, showing the highest values in sediments being rich in detrital minerals than that of evaporite rich. Among the evaporites the higher abundance of REE occurs in the carbonates than chlorides and sulphates.