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## **SEDIMENTOLOGY AND SEDIMENTARY ENVIRONMENT OF MEIGHAN PLAYA EVIDENCE FOR CLIMATE CHANGES IN IRAN**

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### **Abstract**

The main aim of this study is determination of sedimentology and sedimentary environment of Meighan Playa in the Markazi province in Iran. The purpose was to obtain information of sedimentary data and 94 samples of the sediments were collected from a wide range of Meighan playa in order to evaluate the conditions of deposition of the sediments in Meighan playa. With the goal of conducting a detailed and comprehensive study of the sediments in the playa, an attempt was made to collect samples representative of the deposits throughout the region, and investigate and compare the sedimentological and mineralogical changes in the sediments with a view to surface and depth by the collected samples.

This study shows lower brine concentration because of higher and broader level of the lake water resulting in higher levels of dissolved oxygen in water. Besides, due to higher energy of the environment, the brines in the playas are moving and in the state, oxygen exchanges with the environment increase; so, oxygen level in the environment has been higher in the past that this has cause the organic matter in the deposits of Meighan playa at earlier times to oxidize. Finally, the ratio of detrital to evaporative deposits increase from the surface to depth of the playa deposits, which also indicates moisture in the climate in the past and higher energy environments.

*Key words:* Meighan Playa, mineralogy, sedimentology

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