Секция «Геология»

SIRT BASIN: CHARACTERISTICS AND SETTING OF SIRT BASIN

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Sirt basin, is the youngest of the Libyan basins. It has the largest petroleum reserves in Libya and is ranked 13th among the world's petroleum basins, it contains some sixteen giant oil fields, Generally the origin of the Sirt Basin is attributed to the collapse of the Sirt Arch during latest Jurassic to Early Cretaceous times. Massa and Delort (1984) reported that the Sirt Basin was a permanent high from the Middle Paleozoic until the Early Mesozoic. In the Early Paleozoic the basin was the site of siliciclastic deposition, and clastics accumulated all over North Africa. In the Cretaceous and Tertiary, large quantities of organic-rich shales and other terrigenous clastic materials accumulated in the basinal area. The two principal source rocks in the Sirt Province are the Upper Cretaceous Rachmat Shale and Sirt Shale. Hydrocarbon distribution of the Sirt Basin has been controlled by the major tectonic elements. This is particularly true of reservoirs related to Cretaceous and Eocene to Miocene rift structures. These reservoirs in Sirt Basin are composed of 58% of clastic, mostly is of Mesozoic age and 42% of carbonate rocks mostly of Tertiary age.[1] Sirte basin is characterized by desert steppes and includes eolian deposits from the Rebiana and Kalansho Sand Sea of the Sahara Desert. In a relatively narrow, northern coastal strip, some land areas are as much as 47 m below sea level. The basin is floored by a northwest-southeast-trending mosaic of narrow horsts and grabens, an important structural characteristic that distinguishes it from the adjacent intracratonic Kufra, Murzuk, and Ghadames basins. The area of the Sirte Basin occupies about 230,000 km², Recent indications of hydrocarbons within grabens suggest that these areas have potential as well as clastic reservoirs beneath the carbonate reservoirs in the Central Sirte Basin. [2] Major Tectonic events in Sirt basin appertain to Caledonian & Hercynian phases, the various tectonic events of epeirogenic uplift, forming of horest & grabens (platform & troughs) as well as their repeated activation of several transgressive-regressive episodes also volcanic activaties. [3]

The dominate sediment fills in sirt basin are carbonates, the sedimentary rocks range from Late Cretaceous to Miocene in age with several important breaks in sedimentation occurred. [4]

My future plans is to make an Petrophysical Investigation on Sirt basin

Литература

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