MICROFACIES ANALYSIS AND DIAGENETIC FABRIC OF EOCENE CHORGALI FORMATION, TALHAR SECTION, PAKISTAN

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ABSTRACT

The Chorgali Formation of Eocene age is composed of medium to thick bedded limestone with shale intercalations. The study area for this research work Chorgali Formation has been from one designated section that is Talhar section. The Talhar section is located in Islamabad. Thirty one (31) rock samples in Talhar area were collected in the field, the microscopic study revealed four (4) microfacies with discrete texture, fossils content and allochem types. The microfacies are Larger foraminiferal mudstone to wackestone microfacies, Larger benthic wackestone microfacies, bioclastic wackestone microfacies and Nummulitic wackestone microfacies. The depositional texture and faunal association indicates that the microfacies represent deposition in a low energy that is inner to middle shelf settings. The further analysis on Chorgali Formation indicates that formation was subjected to numerous diagenetic changes mostly showing the compaction, stylolitization, aragonite to calcite transformation (neomorphism), tectonically induced fracturing and calcite veins passing from marine diagenesis to meteoric diagenesis through burial diagenesis. Reservoir characteristics porosity from visual estimations suggested that the type of porosity is fractured porosity and average porosities in terms of percentages are 22.7%, 3.62%, 8.3%, 17.4% and 4.3% respectively. SEM analysis indicates type of porosity is vuggy. X-ray Diffraction analysis shows that the limestone of Chorgali Formation contains quartz, calcite and dolomite.

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