

**Depositional Environment and  
Diagenesis of Sakesar and Chorgali  
Formations, Exposed at Chorgali Pass,  
Khair-e-Murat Range, Punjab,  
Pakistan**



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**Session 2007-2008**

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## ABSTRACT

The study is based on the petrographic analysis of 13 outcrop samples of Sakesar and Chorgali Formations, exposed at Chorgali Pass, Khair-e-Murat Range. The 7 outcrop samples were of Sakesar Formation and 6 outcrop samples were of Chorgali Formation. The Sakesar and Chorgali Formations, at this location, consists mostly of benthonic forams, green algae and gastropods shells, embedded in the calcic and dolomitic matrix. Thus the carbonates of Sakesar Formation are represented by biocalastic wackestones and packstones while Chorgali Formation is represented by dolomitic mudstones. 13 samples (7 from Sakesar Formation and 6 from Chorgali Formation) were collected at different horizons.

Vugs and molds are present, indicating the dissolution of bioclasts, which were subsequently filled with calcite and quartz. Fractures are also present in both the formations due to the intense tectonic activity in whole basin. No effective primary porosity was observed in both the formations, but the secondary porosity developed due to the open vugs, molds and fractures in Sakesar and Chorgali Formations, was observed.

Abundance of benthonic forams indicates relatively shallow marine environment of deposition of carbonates of Sakesar Formation and dolomitic mudstone indicates Intratidal to Supratidal environment of deposition of Chorgali Formation. Stylolites have been formed in the Sakesar as well as Chorgali Formation. Dolomitized beds were observed in both the formations. The transition between the Sakesar and the Chorgali Formations are best seen at the Chorgali Pass. There is a change from a shallow, fully marine environment to an intertidal/supratidal environment.