

Comparison of the formation conditions of the sedimentary environment of the Ilam Formation in two sections Tang-e Ban and Tang-e Maghar

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The Ilam Formation (Santonian to Campanian) is widely spread in the Zagros sedimentary basin to the Persian Gulf basin, which is one of the main carbonate reservoir rocks in Iran. The Ilam Formation is continuously located over the Lafan Formation and is gradually located under the Gurpi Formation. One of the main parts of reservoir geology study in comprehensive reservoir studies is Identification of microfacies and facies belts. This study is based on basic information, including thin sections, in the two studied outcrops.

The petrographic analysis includes examining and recognizing different microfacies by the Dunham's (2) classification for facies analysis and Burchette and Wright's (1) model to create a sedimentary environment model.

This research was carried out to investigate microfacies and sedimentary environment. In this study, 88 thin sections from the Ilam Formation have been examined. The thickness of these sediments in the Tang-e Ban section is 80 meter and in the Tang-e Maghar because of the existence of Paleo-high, the sediments of the Ilam Formation weren't deposited in the Tang-e Maghar. The lithology of the Ilam Formation in the study area is of massive to thin-layered limestone. The facies analysis and petrographic studies led to the identification of 7 microfacies in the Tang-e Ban section:

Lagoon facies belt : MF 1. Bioclast (pelecypods) mudstone, MF 2. Benthic foraminifera bioclast wackestone to packstone

Shoal facies belt : MF 3. Bioclast ooid grainstone (Leeward) , MF 4. Intraclast Bioclast grainstone , MF 5. Ooid Bioclast grainstone (Seaward)

Open marine facies belt : MF 6. Bioclast mudstone, MF 7. Planktonic foraminifera Glauconite wackestone to packstone.

Due to the type of microfacies in Tang-e Ban section, the absence of oncoids and pisoids large barrier reef, slump structures, calciturbidite, these sequence deposited in a homoclinal carbonate ramp environment [3]. Also, at the time of the formation of the Ilam Formation in Tang-e Ban section, the sedimentary environment of Tang-e Maghar was out of water and the sediments of the Ilam Formation were not formed in this area.

References

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- 3) Flugel, E., *Microfacies of Carbonate Rocks*. Berlin; Springer-Verlag, 2010.