

Investigation of hydraulic flow units of carbonate shoal reservoir facies of Kangan formation (early triassic) and its relationship with depositional environment and diagenesis

M. Sabouhi^{1*} and P. Rezaee²

1, 2- Dept., of Geology, Faculty of Science, University of Hormozgan

** m.sabouhi.phd@hormozgan.ac.ir*

Received: 2019/8/14 Accepted: 2019/11/2

Abstract

Quantitative and qualitative classification of hydrocarbon reservoir rocks is one of the most important issues in geological reservoir studies. Nowadays, classifications of reservoir rock type are carried out by applying mathematical relationships to porosity and permeability parameters. Since the reservoir properties of the succession are directly related to their depositional environment and sedimentary conditions, therefore the influence of sedimentation and diagenesis should be considered in these classifications. In this study, based on core analysis results from Kangan Formation in six wells in one of the Persian Gulf hydrocarbon fields, hydraulic flow units were investigated by using FZI/RQI and DRT methods. The Unit 4 (HFU-4) has the best reservoir properties index that including the grainstone facies which is deposited in carbonate shoal environment. In this research, based on Carbonate shoal environment setting and diagenesis effects on that, the HFU4-B class that deposited in the center part of carbonate shoal environment, introduce for the best reservoir quality facies. Connected Moldic and interparticle porosities have the main diagenesis parameters that effect to increase the quality of reservoir properties. This facies with 13% average porosity and 199MD permeability has the best hydraulic reservoir unit.

Keywords: *hydic flow unit, reservoir quality, diagenesis, microfacies, Kangan formation*