

STUDY OF GHOM HYDROCARBON FORMATION IN THE CENTRAL IRAN BY USING GEOPHYSICAL METHODS

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INTRODUCTION: Integrated studies play a vital role in exploration projects. This study demonstrates the importance of collaboration of geologists and geophysicists in better locating drilling points.

ABSTRACT: Within exploration studies for oil in the Central Iran, the first seismic survey led to Zavareh 1 exploratory well (3900 meters deep), which turned to be a dry well. In this research, we have tried to conduct an integrated geological and geophysical study for identifying major geological structures in order to better locate exploratory well. For this purpose, firstly, the geology of the Zavareh–Ardestan area was carefully studied and the relevant hydrocarbon horizon was indicated. Then, by using gravity, magnetic and seismic methods the important geological structures including anticlines A, B and C were mapped. By reprocessing and interpreting a number of seismic lines and specially the one intersecting Zavareh 1 exploratory well, we concluded that the drilled well had not reached the target horizon. Based on this study, we suggested the Ghom Formation as the oil producing horizon and anticline C as a suitable target for future exploratory drilling. In addition, we recommended National Iranian Oil Company to conduct denser gravity, magnetic and 3D seismic surveys in order to more precisely determine the new position of the well.

Technical Area: Interpretation and case histories