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Petrophysical modeling of the tertiary reservoirs in the Bai Hassan Field, Northern Iraq

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The recovery efficiency of reservoir is influenced by its heterogeneities, particularly the distributions of porosity and permeability. Therefore, in order to develop a representative model of the reservoir, we should evaluate porosity, permeability properties and production potential of fields. The main aim of the research is to study the application of reservoir characterization and wireline log analyses to build a new petrophysical model for the Jeribe formation in Bai Hassan oilfield in Northern Iraq. A principal objective for building models at Bai Hassan oil field is to integrate the geological, geophysical and reservoir data collected over several decades in order to visualize and evaluate the interactions between these data using full-field reservoir simulation. Application of the petrophysical study and log analysis on Petrel software to build up static geological model and estimate the best well positions for future drilling depending on the high permeable zone resulted from the petrophysical modeling. The most important phase of a reservoir study is definition of a petrophysical model of the reservoir rock, given both the large number of activities involved, and its impact on the end results. As we are known, the production capacity is depended from geometrical and petrophysical characteristics of the reservoir. The availability of a representative static model is therefore an essential condition for the subsequent dynamic modeling (Lucia Cosentino, 2001). The hand-made models proposed by Johnson and Krol (1984) rely on geological interpretation of well log data. The well data provided locations where the channels are positioned arbitrarily in the interwell areas as sandstone is insufficiently extensive laterally to be correlated between wells.

Figure 1

Oil and gas fields of the Northern Iraq.

Biography

I was born in Iraq, Kirkuk city in 14-Jan-1984. I completed my primary education in Kirkuk Aydinlik Elementary school in 1995. In 1998, June Tisin Shehidleri Middle school and Kirkuk Central High School in 2001, June graduated from these school. In September at the same year Baghdad University Faculty of Engineering Petroleum Engineering Department recorded and graduated from this school in 2006, June. In 2007, September successfully passed the Turkish test examination done in Kirkuk and I got master's study in Republic of Turkey. In 2007, October I started in Gazi University in Turkey, Ankara, Training and Education Center (Tomer). I participated successfully TCS exam in 2008, July and got study in Istanbul University. In 14-Oct-2008 registered in Istanbul University Faculty of Engineering Geological Engineering Department. In 18-Aug-2011 graduated from this school and got a master's degree. In 2011, September I started working as a teaching in Kirkuk University. In 2013, October I got a scholarship to study for a doctorate PhD in Azerbaijan, Baku. Know I'm studying in Khazar University Faculty of Engineering and Applied Science, Petroleum and Gas Engineering department.

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