

EVALUATING RESERVOIR HYDRAULIC PROPERTIES USING GEOPHYSICAL WELL LOGGING IN (O) OIL FIELD, NC – 115, MURZUQ BASIN, LIBYA

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ABSTRACT

Production of oil and gas is usually accompanied by the production of water. This produced water consists of formation water, or flood water previously injected into the formation. As exploited reservoirs mature, the quantity of water produced increases. Consequently, the management of produced water requires a structured and integral approach of technologies and strategies.

To assist building strategies for enhancing oil production, two successful supplementary methods are in use at this time: water injection and steam injection. So, the need for hydraulic properties as well as petrophysical characteristics of the oil reservoir is a must for evaluating the locations of the injection system.

An attempt in this work is made to study hydraulic and petrophysical properties of Hawaz reservoir of the O-Oil Field located in south eastern part of the concession NC-115 of Murzuq Basin in Sharara Oil Field in south western of Libya. The approach uses geophysical well logs of five selected oil wells in the study area. These logs include, resistivity, gamma ray, sonic, neutron and density. With the aids of simple spreadsheets, reservoir properties such as porosity, hydraulic conductivity, transmissivity and storage coefficient were calculated.

KEYWORDS: Hydraulic Properties, Geophysical Well Logging, Murzuq Basin, Libya