

**ASSESSMENT OF RESERVOIR PROPERTIES OF THE MUSCHELKALK DEPOSITS
IN THE POLISH LOWLANDS**

Key words

muschelkalk, reservoir properties, fissuring, porosity, permeability

Abstract

Muschelkalk (Middle Triassic) deposits occupy more than 70% of the Polish Lowlands and consist of mainly limestone, dolomite and marls, among which there could be several lithological types. The Middle Triassic formation is one of the less identified Mesozoic aquifers in the Polish Lowlands, which is why arouse more attention inter alia relating to reservoir parameters.

Presence of fissure and pore space in the Muschelkalk deposits and lack of knowledge about their fissuring, makes it difficult to assessment the reservoir properties.

However, on the basis of the parameters of the total porosity and permeability indicated the type of reservoir rock and were selected area and member with the best distribution of these parameters in the Muschelkalk formations in the Polish Lowland.

Changes in petrophysical properties in the Muschelkalk deposits mainly depend on the type of reservoir rocks and the course of dislocation zones. The didtribution of porosity and permeability around the all reservoir area is clearly bipartition. The lowest porosity below 2% and permeability below 1 mD were observed mainly in compact and unfractured limestones, marls and claystones in all the members and every structural units. The permeability close to zero is observed in all formation. Most of the tested samples have a permeability in the range 0–0,1 mD.

The highest values of petrophysical parameters were observed mainly in foam and pure limestone of Lower Muschelkalk in limestone foam series, at depths below 2500 m. The maximum values of the total porosity for limestone are greater than 20% and for permeability are more than 340 mD. The area of the most favorable values of the total porosity and permeability parameters extends to the border of Fore-Sudetic Monocline and Łódź Trough. This was confirmed by comparing the distribution of total porosity with the course of the regional tectonic zones on the Polish Lowlad.