

Neftyanoe Khozyaystvo - Oil Industry 2015 N8, pages 36-40

Estimation of sandstone reservoir properties using X-ray CT studies in Ashalchinskoye oil field

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Abstract

X-ray computed microtomography investigated filtration-capacitive characteristics of core sand Ashalchinsk reservoirs series. To simulate the flow of a viscous fluid in the pore scale we use a mathematical model, which consists of the continuity equation and stationary Navier - Stokes equations. It was shown that Kozeny - Carman formula gives curtailed values of permeability coefficients, compared with filtration characteristics calculated using the Navier - Stokes equations. It was revealed that the reservoir properties of cores, calculated on the basis of microtomography data can be extrapolated to the samples of porous media with larger scale.

Keywords

Kozeny - carman formula, Modeling, Navier - stokes equations, X-ray CT