Radon Indication Method to study oil fields fractured carbonate reservoirs

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Challenges arising in the process of studying carbonate reservoirs are determined by pore space complex structure and great spatial change of reservoir properties. Fractured and porous - fractured reservoirs are the most challenging ones. Filtration and capacity properties of such reservoirs are studied by special logging procedures.

Radon Indication Method (RIM) worked out in VolgogradNIPIneft OJSCS is the most effective and popular procedure that is used in Russia to study complex reservoirs. This method is justified by theory, procedure and field tests. Prompt processing of RIM data is performed on a PC. This method allows to determine permeable intervals, to fix beds of fractured reservoirs, to estimate affective thicknesses, reservoirs dynamic porosity and permeability, to determine residual oil saturation, oil-water contact location, and to determine the type of a reservoir by pore space structure and the principal type of fluid filtration.

Radon gamma-active indicator is allowed to be used in well tests due it's physics - chemical inertness and a short period of it's half-disintegration.

RIM method was successfully used to solve geological problems in more than 400 wells located in the Low-Volga region, Tatar, Bashkiriya, Kazakhstan and to specify geological models of reservoirs in Tengiz, Karachaganak, Astrakhan and other oil and gas fields. Examples showing how some of these problems were solved are presented in the Paper.