

The role of petrogenic water in the hydrothermal process and oil migration in the structures of tectonic activation in Western Siberia

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Abstract

It was found that at the convective heat and mass transfer in the region of Krasnoleninskiy arch (Western Siberia) pulsed lateral pressure mode contributed to an avalanche release of interlayer water from the Upper Jurassic-Lower Cretaceous smectites (montmorillonites) in the free state at their hydromication. Resurgent (petrogenic) water composed the basis of the forming hydrothermal fluids responsible for the processes of ultra-acidic leaching, metasomatism, generation and migration of hydrocarbons. Express micro-oil evacuation from the source bed, which prevents its oxidation with subsequent formation of oil deposits, primarily associated with periods of tectonic and hydrothermal activation of sedimentary basins, regardless of whether they are rifting or are not complicated by rifting.

Keywords

Continental rifting, Illitization of smectite, Oil evacuation, Petrogenic water, Tectonic-hydrothermal activation