

عنوان مقاله:

Permeability and Porosity Changes due to Thermal Effect during Thermal Recovery in Reservoirs

محل انتشار:

پنجمین کنگره بین المللی مهندسی شیمی (سال: 1386)

تعداد صفحات اصل مقاله: 6

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خلاصه مقاله:

The processes of injection and reservoir heating induce large stress change and also perhaps cause change in formation properties through heating. Results indicate that under suitable in-situ stress regimes, thermal stimulation and thermal recovery lead to significant permeability and porosity changes. It has been shown that poroelastic and thermally induced stress can contribute to porosity change and permeability variation. Cooling or heating of a rock due to injection of fluid strongly influences in situ stress state in the vicinity of the injection zone and can affect stability of discontinuities by permeability enhancement. The purpose of this project is to obtain an expression for permeability and porosity changes during thermal recovery methods in oil reservoirs. The relation between porosity and permeability, and relation between their changes due to temperature, pressure and stress changes were investigated.

کلمات کلیدی:

Thermal poroelasticity, permeability and porosity changes, stress changes

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