

عنوان مقاله:

Critical Parameters Affecting Water Alternating Gas (WAG) Injection in an Iranian Fractured Reservoir

محل انتشار:

مجله علوم و فن آوری نفت، دوره 7، شماره 3 (سال: 1396)

تعداد صفحات اصل مقاله: 12

نویسندگان:

seyyed saeed ghorashi - *Research Institute of Petroleum Industry*

karim Akbari - *Pars Oil and Gas company*

خلاصه مقاله:

Microscopic oil displacement of water flooding and sweep efficiency of continuous gas injection could be improved by water alternating gas (WAG) injection. The WAG injection process aims to squeeze more oil out of the reservoirs; in this method, water and gas are alternatively injected into the reservoir. Also, availability of hydrocarbon or CO₂ gases in the field makes it attractive for gas-based enhanced oil recovery (EOR) methods such as water alternating gas (WAG) injection. Conducting some simulations are required to optimize EOR methods for investigating the effect of parameters affecting WAG injection. Reducing and controlling the mobility ratio, creating stable front, and preventing early fingering of gas are the advantages of water alternating gas injection, which have promoted extensive applications throughout the world. Critical parameters, including WAG ratio, injection rates, gas composition variation, cycle times and some others which affect the WAG injection as an enhanced oil recovery method are studied thoroughly in this paper. Because of higher mobility of water relative to gas, injected water has more efficiency, but the excess use of water will cause early breakthrough. This study suggests that injecting proper volume at suitable times with different rates during injection time provides a 10-15 % improvement in the recovery factor for one pore volume which is injected by using commercial reservoir simulator ECLIPSE ۳۰۰. The best rate variation during a cycle time of WAG injection and choosing of first injection phase are discussed in this paper.

کلمات کلیدی:

Water Alternating Gas (WAG), Simulation, Mobility Ratio, WAG Ratio, Enhanced Oil Recovery (EOR), Permeability

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1858953>

