Wang Yazhou et al., J Pet Environ Engineering 2015, 6:5
http://dx.doi.org/10.4172/2157-7463.C1.014

OMICS International
conferenceseries.com

International Conference and Expo on
Oil and Gas

November 16-18, 2015 Dubai, UAE

# Selection and application of improvement measures for low efficiency wells of steam stimulation in heavy oil reservoirs

**Wang Yazhou**[1,2], **Pand Zhanxi**[1] and **Liu Huiqing**[1]
[1]China Petroleum University, China
[2]Binnan Oil Production Plant of Shengli Oilfield, China

Oil production largely decreases when it gets to high cycles of steam stimulation in heavy oil reservoirs. Most wells are at a state of low production. In this article, aiming at low efficiency wells of steam stimulation, we researched its classification standards and improvement measures. Visual experiments of high temperature were employed to analyze effective improvement measures during steam injection in shallow heavy oil reservoirs. According to the results of numerical simulation and oilfield statistics, a diagram was established to choose effective measures for low efficiency wells during steam stimulation. The results showed that a new parameter ($[KH_{\varepsilon}/(\phi \mathrm{Ln}\mu_0)]^{1/Vk}$) was presented to quantitatively classify low efficiency wells of steam stimulation involving three types, such as, high recovery, steam channeling and dual factors. Injection of nitrogen or nitrogen and viscosity reducer along with steam can further expand swept area of steam. High temperature gel can effectively block steam channeling to improve productivity of steam stimulation. The values of ($[KH_{\varepsilon}/(\phi \mathrm{Ln}\mu_0)]^{1/Vk}$) were taken as the boundary to divide the diagram of choosing measures into 4 parts such as, nitrogen injection, foam injection, gel injection (or simultaneous steam stimulation) and invalid zone.

## Biography

Wang Yazhou has graduated from the China University of Petroleum, Beijing in 2009, where he studied many courses on Petroleum Engineering. He has then become a Senior Petroleum Engineer at SINOPEC in 2012. His expertise is in the field of reservoir engineering and numerical simulation of thermal recovery in heavy oil reservoirs. He has published more than 10 refereed journal papers.

pxiad9827@163.com

**Notes:**