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Evaluation of scaling phenomena in glass bead sand control system**Mohsen Fakhari**

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Adherence and growth of scale is a known problem in oil industry that may happen in different areas and tools of oil and gas production and transportation equipment. Especially it can cause severe production drop by plugging sand control system. There are several methods in industry to solve the problem like, acid washing or chemical inhibitors. This paper presents the results of a laboratory study that demonstrates and quantifies the effectiveness of hiring glass beads, as a sand control system, on scaling phenomena. The physical properties of glass beads consist of uniformity and roundness, improving the permeability in sand control system, it can also have positive effects on fine invasion problem because of the uniformity of grains. In the second part of this experiment the coated glass beads with hydrophobic layer was postponing the scaling phenomena. Although the glass surface itself because of high smoothness makes it difficult for scale adherence, coating material will boost this potential. Activated surfaces by hydrophobic coating layer will reduce the contact between the surface and water and makes it difficult for crystal seeds to attach on them and grow. In this study, the glass beads were tested in a tube to create the pressure drop and measure the permeability. The scaling potential has been tested under the worst condition by temperature and existence of high amount of scaling components. Conductivity test and microscopic photos approve the inhibitor nature of glass beads when the results are compared with normal proppants used in the industry as sand control system.

Biography

I have finished my Master in university of Leoben (Austria), in the branch of Petroleum Production engineering. My master thesis was about production reduction because of gravel pack blockage by scaling. I am already working in the university of Leoben in the following topics; evaluation of invasion in gravel packing system, phase separation by ultrasonic, well cleaning by ultrasonic and new techniques.

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