IMPROVED PRODUCTIVITY OF PRODUCING WELLS BASED ON NON-ACIDIC COMPONENT WITH THE FORMATION OF ACID COMPOSITION AT THE BOTTOM-HOLE ZONE

Background
When treating bottom-hole zones of wells with acidic compositions difficulties arise associated with the high temperature and the formation of secondary precipitates. These difficulties are related to the characteristics of the reservoir, the interaction between acid solution and minerals or liquids, properties of solutions used for treatment, etc. The reaction rate and the diffusion rate increase with temperature increase. This leads to the acceleration of the reactions between acid and rocks. Due to the high velocity of the reaction during injection into the formation, the acid is rapidly consumed, reacting with the rocks. As a result, part of the solution continues to penetrate into the reservoir, but has a lower concentration and contains significant amount of reaction products. This process reduces the depth of the acid solution effect. Secondary precipitates causing clogging of the porous space reduce the permeability of the formation. In many cases, due to the formation of secondary precipitates acid treatment has a negative effect, i.e. the permeability of the bottom-hole formation zone is lower after treatment.

Aims and Objectives
Improving the productivity of producing wells based on non-acidic component with the formation of acid composition at the bottom-hole zone of the wells.

Conclusion
It is found that one of the ways to increase the depth of penetration and to prevent the formation of precipitates is the use of systems that promote generated formation of hydrofluoric acid in the reservoir, due to ability of maintaining with time specified hydrofluoric acid concentration. It is shown that the method of hydrofluoric acid generated formation on the basis of chelate compounds and ammonium hydrofluoride simultaneously solves the problems associated with high temperature and those associated with the formation of secondary precipitates. Part of chelate compounds, which is adsorbed on the surface of the stratum in the bottom-hole zone act as an inhibitor of salt deposition due to strong properties of the compounds, and for a long time protects the bottom-hole zone from contamination by inorganic salts. A complex composition consisting of the main treating solution acting by chelating mechanism, acid solution and forcing salt solution is offered for treatment of the bottomhole formation zone of high-temperature wells.
Key words: bottom-hole formation zone, acid treatment, hydrofluoric acid, chelate compounds, high temperature, secondary precipitates, depth of penetration, reaction velocity, reservoir permeability, method of generated formation

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