Modeling of matrix acidizing process under reservoir conditions[1]
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Effectiveness of the process depends on the parameters: well choice, geological structure of the reservoir, definition of physical and chemical properties of rocks and fluids, agent choice. There are different mathematical models of the matrix acidizing, including the two scale model. These models describe the process in the core scale and Darcy scale, i.e. in an area with dimensions of several centimeters. It leads to the main problem – how to use these models to the near wellbore scale under reservoir conditions. Some authors have increased the dimensions of the cores in numerical simulations and investigated the influence of the core dimensions to acidizing process. In this paper effort to indirectly solve this problem made. It based on boundary conditions alteration and simultaneous solution of matrix acidizing in damaged zone and reservoir fluid flow models. Furthermore in this work the criterion of the acid injection shut down for optimal breakthrough volume calculation was modified. Influence of boundary conditions on near well-bore zone treatment process was investigated.

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