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Coiled Tubing and Other Stimulation Techniques

Formation Damage, Well Stimulation Techniques for Production Enhancement

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Good engineers never stop looking for opportunities to improve the performance of their production systems. Performance enhancement methods are always carefully examined, and production data is analyzed in order to identify determining factors affecting performance.

The two main activities of the production engineer in the petroleum and related industries are reservoir stimulation and artificial lift. The classic solution to maximizing a well's productivity is to stimulate it. The basis for selecting stimulation candidates should be a review of the well's actual and theoretical IPR. Low permeability wells often need fracturing on initial completion. In low permeability zones, additional post stimulation production can be significant to the economics, however, the production engineer needs to make management aware of the true long term potential or else overly optimistic projections can easily be made.

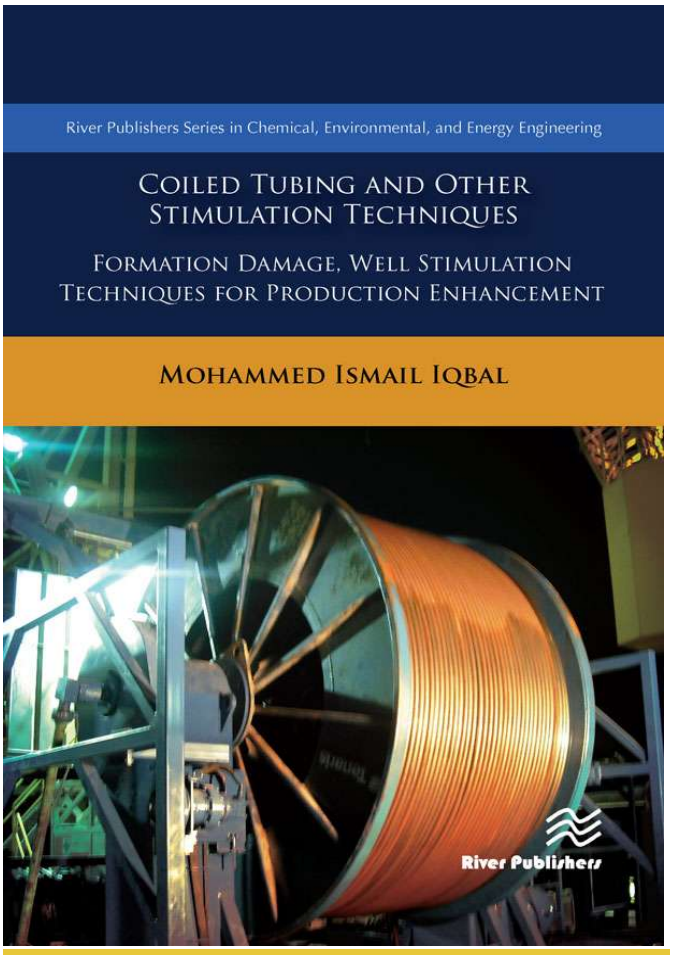
The main purpose of stimulation is to enhance the property value by the faster delivery of the petroleum fluid and/or to increase ultimate economic recovery. The aim of reservoir stimulation is to bypass near-wellbore damage and return a well to its "natural" productivity / injectivity, to extend a conductive path deep into a formation and thus increase productivity beyond the natural level and to produce hydrocarbon from tight formation.

The importance of reservoir stimulation is increasing due to following reasons:

- Hydrocarbon fields in their mid-life
- Production in these fields are in declining trend
- The thrust area: Enhancement of production

Hence, to improve productivity of the well matrix stimulation and hydraulic fracturing are intended to remedy, or even improve, the natural connection of the wellbore with the reservoir, which could delay the need for artificial lift.

This book presents procedures taken in the Oil & Gas Industry for identifying well problems, and it suggests means of solving problems with the help of the Coil Tube unit which is used for improving well productivity and techniques like Acidizing and Hydraulic Fracturing.



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