

Discussion and Prevention Technology Research of High Content Barium/Strontium Scale in Changqing Oilfield

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In the main block of Changqing Oilfield, the multi-formation have been developed at the same system. The production fluids among the different formations and the injection water of the water flooding model with the formation water are seriously incompatible. The mixed transportation mode of surface production leads to a high proportion of scaling in the wellbore and gathering station ($\geq 50\%$). The pipelines and equipments of nearly a thousand stations need high concentration scale inhibitor and frequently scale removing service. For example a major oilfield has spent an annual investment of 100 million yuan in scale comprehensive prevention and removing. Those has become a long-term direction for improving quality and efficiency.

According to the working tenets of 'prevention first, prevention and control combination', a complex scale prevention and controlling technology system combining physical and chemical methods, such as new kinds scale inhibitor, centralized scale forming device and inner coating et al. , has been formed in the scale control demonstration area. It has been popularized and applied in 158 stations of production plants in the oilfield, and the overall application effect is remarkable.

The research on the scale inhibitors for high content of barium/strontium scale needs to be carried out in future : 1. the mechanism of the effect of high Fe^{2+} content production water on the scale inhibitor ; 2. special scale inhibitors with high stability of salt tolerance et al. ; 3. Indoor and on-site scaling dynamic monitoring and evaluation methods; 4. Research on relevant recommendation standards.