FORSA Scale Inhibitor Mitigated Scale for More Than Four Years

An operator in the Bakken/Three Forks was experiencing scale problems, as the brine characteristics and well conditions of this field made it highly susceptible to carbonate scale deposition. The high iron and calcium levels in the brine also made developing an effective chemical treatment program more challenging, due to concerns about chemical solubility in brine with these characteristics.

Baker Hughes, a GE company (BHGE) developed a treater truck batch treatment program utilizing FORSA™ SCW8225 scale inhibitor and successfully treated more than 360 sucker rod lift wells in this field. Additionally, a continuous treatment program utilizing FORSA SCW8225 scale inhibitor was used to treat the electrical submersible pumping (ESP) systems in this field. ESP systems pose a great threat for scale deposition due to the environment and conditions of the system. There were no scale-related failures on the sucker rod lift wells or the downhole ESP equipment in this field during the more than four years of treatment with SCW8225 scale inhibitor. However, given the well characteristics, it is estimated that without treatment, the 360 wells would have experienced over 144 pump failures during the four-year time period, costing more than USD 7.2 million in repairs.

Furthermore, FORSA SCW8225 scale inhibitor proved to be an economical treatment option due to low treatment concentrations required to control carbonate scale deposition using this product.

This case history is presented for illustration purposes only as results may vary between applications.

Results
• Successfully controlled carbonate scale deposition in sucker rod lift wells and ESPs during the four-year period
• Saved approximately USD 7.2 million in pump repair costs

Challenges
• Brine characteristics and well conditions were highly susceptible to carbonate scale formation and deposition
• High iron and calcium levels in the brine created risks for chemical solubility

BHGE solution
• Batch truck treating program utilizing FORSA SCW8225 scale inhibitor for sucker rod lift wells
• Continuous treatment program utilizing FORSA SCW8225 scale inhibitor for wells with ESP systems
• Optimized chemical treatment rates