Cost-effective production improvements in erosion-prone environments

3M™ Ceramic Sand Screens enable efficient sand control

Customer challenge

- Customer had wells in an area where erosion was a common cause of production slowdowns and performance issues
- A full rework of the well is too expensive in the current oil and gas market, so a cost effective rig-less deployment was pursued
- Hot spotting was a key concern when the screen was placed across the new perforation zone
- Required a sand screen to optimize productivity throughout the well design life
- Highly deviated well was at 85° with Dogleg of 5.8°/100ft, where rig-less deployment was challenging

Why ceramic sand screens?

- Increased production envelope enables higher production rates
- Unlocks wells where sand failure has occurred
- Rig-less operation places the screens directly across the perforations
- Simplicity of deployment
- Proven outstanding erosion resistance

Results

Two wells equipped with 3M™ Ceramic Sand Screens Systems in 2017:
- Production rates: 2500BBD compared to 100BBD before ceramic sand screen installation
- Easy rig-less deployment on E-Line with tractor
- Screens straddled in 5 runs

Customer key decision drivers

Decision matrix included:
- Ease of deployment
- Longevity of the screen in terms of its erosion resistance and ceramic properties
- Proven suitability of ceramic sand screens for deployment in highly deviated or horizontal wells
- Ability to maximize productivity with robust downhole sand control

Economic comparison with other options includes:
- Maintaining low production rates through the wellhead for manageable sand production
- Gravel pack at higher CAPEX
- Higher accepted workover risk by redeploying previous sand control system in the field

Photos courtesy of Exxon Mobil Corporation and Helix ESG
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