Gas-Lift System With Capillary Injection Strings Produces 4,500 bbl/d, Reduces Salt Buildup and Interventions

Objectives

- Identify the most economical method of artificial lift that has a small surface-setup footprint to increase total production fieldwide while reducing salt buildup and well interventions.

Our Approach

- Weatherford installed gas-lift systems on 30 newly drilled and existing wells, some of which were not flowing. The systems included a string of retrievable gas-lift valves, side pocket mandrels, and a packer. The design of the gas-lift system enabled use of slickline valves for a more optimized design as a well depletes. A compressor was centrally located to provide lift gas to multiple wells.

- Weatherford capillary injection strings were run on the outside of production tubing to protect the tubulars from salt buildup. The capillary injection string carried fresh water to desolidify produced fluids.

- As soon as the gas-lift wells were kicked off, they began producing at a higher rate than their initial production. As the liquid level fell, loaded-up wells began to produce; production increased in both older loaded-up wells and in newly drilled wells.

Value to Client

- The added production resulting from implementation of the Weatherford gas-lift systems made this artificial lift method economical. Per-well production was more than 4,500 bbl/d on initial startup.

- The use of the Weatherford capillary injection strings eliminated the salt buildup in the tubulars that obstructs well production, resulting in fewer well interventions and allowing the gas-lift systems to function as designed.

- The gas-lift systems combined with the centralized compressor minimized the surface facilities footprint.

- Based on the success of the first 30 wells, the client requested that an additional 30 wells be completed with Weatherford gas-lift and capillary string systems during the next 6 months.