

Case study: California

Production Solution improves ESP system run life more than 50%

An operator in Ventura, California had water source wells that started experiencing a growing number of electrical submersible pumping (ESP) system failures due to increased levels of corrosion. The operator approached Baker Hughes for a solution to increase overall ESP system run life.

An expert multi-disciplined team, composed of engineers experienced in reservoir studies, artificial lift, and upstream chemicals, developed a customized **Baker Hughes Production Solution** for the operator. The solution included the development of coatings for ESP system components to minimize the impact of corrosion on the equipment. Coatings for the stainless steel housings included a specialty coating with excellent resistance to chemicals as well as a two-part epoxy coating.

Based on the metallurgy of the ESP systems and the coating materials, a **CRW9152A oxygen-tolerant inhibitor** and a specialized biocide program were chosen to minimize the corrosive environment of the wells.

Corrosion at the wellheads and in the surface lines was virtually eliminated with the Production Solution. The operator was pleased with the resulting decreased corrosion levels and standardized all the field's ESP system configurations to include external coatings. The operator also implemented a CRW9152A oxygen-tolerant inhibitor and a biocide program for the company's wells. After the Production Solution was implemented, the operator's ESP system failures dramatically decreased from 60% to 7% annually.

Challenges

- ESP system failure rates were increasing in water source wells
- Failures were caused by corrosive downhole conditions

Results

- Combined artificial lift and upstream chemical solution reduced ESP system failure frequency from 60% to 7% annually
- Corrosion inhibitor eliminated corrosion at the wellheads and in the surface lines