

Case study: Rincon de los Sauces, Neuquén, Argentina

Baker Hughes Production Solution saves customer \$370,000 USD per well

A major producer in the oil fields of Neuquén, Argentina, was experiencing calcium sulfate (CaSO_4) scale deposition in the electrical submersible pumping (ESP) systems. These scale deposits were affecting the cooling capacity of the ESP motors, causing the equipment to run at higher-than-normal temperatures.

The producer had been using another supplier's scale inhibitor for several years, but equipment failures and shortened pump run lives due to the high temperatures were still occurring. In order to mitigate the increase in temperature, the customer had to reduce the pump speed. This reduced the number of well interventions required, but it also led to a reduction in the productivity of the wells.

Because the ESP systems were provided by Baker Hughes, the company brought together its artificial lift and chemical engineers together with reservoir experts to study the scaling problem and evaluate different treatment alternatives. Specific modelling and performance tests were conducted to identify a scale inhibitor that effectively inhibited the formation of CaSO_4 in the pumps.

The operator initiated a field trial for a **Baker Hughes Production Solution** that included a proprietary scale inhibitor. Three critical wells, selected from wells having a run life of 600 days or less, were chosen. After two months of trials, the temperatures of the ESPs were stabilized within a safe operating range, and the trial was considered a success.

By implementing an effective scale inhibition program and successfully maintaining the pump operating temperatures within a safe range, the customer saved an estimated \$370,000 USD per well. This figure takes into account savings related to pump repairs, equipment rental, lost production, and the chemical program cost.

The Production Solution exceeded the customer's expectations and the program was expanded to other wells. Baker Hughes is currently treating more than 30 wells for this producer.

Challenges

- Lower-than-planned ESP run life
- Loss of production resulting from unreliable, underperforming equipment
- Additional time and costs associated with well interventions

Results

- Reduced scale buildup
- Stabilized ESP temperatures within a safe operating range
- Tripled ESP run life from 600 days to 1,800 days
- Saved an estimated \$370,000 USD per well