Schlumberger

Shaya Project Saves USD 2.5 Million on Workovers by Eliminating ESP Changes in a Mature Field, Ecuador

REDA Continuum pumps manage gassy and sandy wells with steep production declines and deliver an average 16% increase in liquids production in a new waterflood

While ramping up a waterflood project in a mature field, Shaya Project installed REDA Continuum* extended-life ESP pumps to enable production across a wide production range from 200 bbl/d [32 m³/d] (before waterflood) to 1,500 bbl/d [238 m³/d] (with optimized waterflood).

Limit workover costs in a new waterflood

Shaya Project's goal was to increase ESP lifetime and reduce workovers in a challenging mature field where engineers hoped a new waterflood project would transform 2 years of steep production declines into production increases. As the project began, however, uncertainty about production delivery was high—not only because the waterflood's success was uncertain but also because the reservoir was already known to challenge ESP performance. As a result, engineers wanted an ESP with the widest possible production range.

Eliminate yearly interventions

Conventional ESP technology produced with an average run life of only 200 days because of the challenging conditions: 220- to 230-degF [104- to 110-degC] reservoir temperature, abrasive solids and gas production, and variable flow with a head requirement of 9,500 ft [2,896 m]. The waterflood was not expected to improve those factors.

Install pumps made for challenging conditions

RC1000 REDA Continuum ESP pumps are robust enough to produce fluids with high gas volume fraction and solids content, and they maintain high efficiency across a wide production range. Combined with real-time monitoring, optimization, and control with the Lift IQ* production life cycle management service, Continuum pumps can handle even high-temperature production to extend run life far beyond that achieved with conventional pumps.

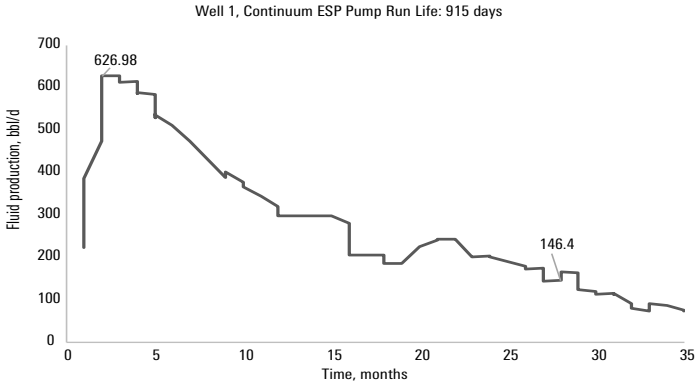
Triple ESP run life despite waterflood production changes

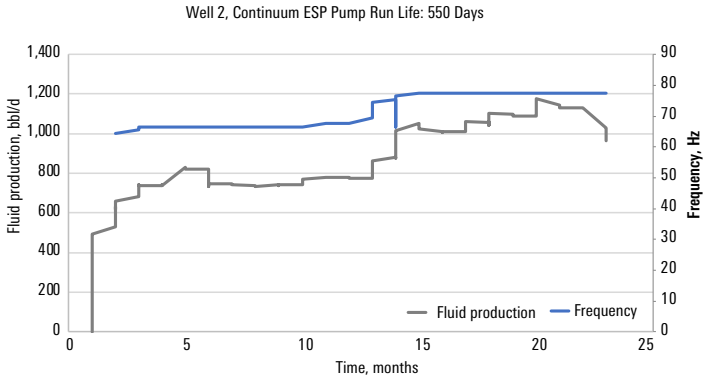
Shaya installed Continuum ESP pumps in 65 wells, achieving an average run life above 600 days despite the abrasive solids and production fluctuations during the waterflood optimization.

Continuously optimized with the Lift IQ service, the Continuum pumps have managed production changes from 83% decline in some wells to 40% increase in others. Overall, the field experienced an average production improvement of 16%. Shaya calculated the benefit of extended run life to avoid workovers and deferred production at USD 2.5 million.

"For this challenging mature field, we needed ESP technology that could manage field production from primary through secondary recovery. Continuum pumps have delivered the reliability we needed to achieve field economics without workovers and NPT."

Carlos Reyes Hill, APS senior production engineer, Shaya Project





Lift IQ service real-time surveillance helped maintain the efficiency of the Continuum ESP pumps in two wells of a mature field despite variations in production from more than 1,000 bbl/d to less than 100 bbl/d.

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