



# Weatherford®

## REAL RESULTS

### Progressing Cavity Pumps Improve Energy Efficiency, Provide a 60% Overall Reduction in Power Consumption

#### Objectives

- Optimize well efficiency by providing an alternative solution to producing heavy oil in Colombia's Teca and Nare fields.
- The combination of high water cut and high sand content was beyond the application envelope for reciprocating rod pumps (RRP), leading to inefficient energy consumption, frequent well interventions, and, therefore, an overall decrease in economic return.

#### Results

- Weatherford successfully designed and installed more than 90 progressing cavity pumping (PCP) systems, because of their ability to produce highly viscous fluids, their effective handling of high sand content, and their ability to operate at high-energy-system efficiencies.
- The PCPs installed showed stable operational conditions with a volumetric efficiency of approximately 90 percent. This behavior indicates that the interaction between fluid and elastomer reached the proper equilibrium without causing damage to the stator material or excessive torque on the pump.
- One of the main advantages gained from the installation of PCPs is the optimization of motor employment. The installed power for the PCP systems required a range of 10, 20, or 30 horsepower (HP) lower than what was required for the original RRP system (50 HP).

#### Value to Client

- By optimizing the design to enhance overall well efficiency, the client encountered lower operating costs, reduced well interventions and servicing, reduced nonproductive time, and increased the overall economic return.
- The higher efficiency achieved with PCP systems led to a 60-percent average reduction in power consumption for the wells within the field.



With high production, lift capacity, and system efficiency, the operator successfully exceeded its key performance indicators (KPIs).

**Location**  
Colombia

**Field**  
Teca and Nare

**Well Type**  
Onshore vertical

**Products/Services**  
Progressing cavity pumping systems

Weatherford  
Ken Saveth  
Senior Applications Engineer  
ken.saveth@ca.weatherford.com

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