

Weatherford®

REAL RESULTS

WellPilot® PCP Flow-Control Technology Optimizes Gas Production Rates, Reduces Cost

Objectives

 Optimize progressing cavity pump (PCP) run life and optimum gas production in a large number of coalbed methane (CBM) wells.
 The wells' gas and water inflow rates varied significantly within a short period of time, jeopardizing the success of the wells.

Results

- Weatherford's WellPilot Flow-Control Technology (FCT)
 controllers were progressively installed in 302 CBM wells over a
 period of 39 months. The technology for the WellPilot FCT
 controllers is based on a proprietary surface-mounted thermal
 probe that contains Weatherford's patented algorithm. The
 WellPilot FCT algorithm controls the acceleration or deceleration
 of the PCP to optimize its speed in relation to the current
 underlying inflow potential of a well while protecting the PCP from
 sudden or gradual fluid loss.
- Prior to WellPilot FCT installation, a typical declining trend in gas production was observed in all wells within the field (Figure 1). However, as WellPilot FCT controllers were installed, the trend in those particular wells flattened out, indicating that optimal or near-optimal pump speeds were achieved.
- The mean RPM data showed a significant overall decrease in wells where WellPilot FCT was installed (Figure 2).

Value to Client

- Weatherford WellPilot FCT controllers optimized the speed of the PCP and slowed the rate of decline in gas production, enabling a more uniform overall production rate for the client.
- WellPilot FCT controllers' optimized speeds were, on average, 30 RPMs lower—from 210 to 180—than wells without FCT controllers, resulting in reduced operational costs.

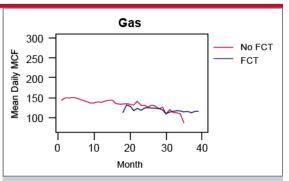


Figure 1 illustrates the declining gas-production trend without the *WellPilot* FCT controllers installed (red) and the flattening out of the decline curve after the *WellPilot* FCT installations occurred (blue).

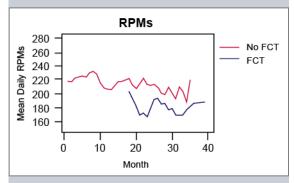


Figure 2 illustrates the mean RPM without the *WellPilot* FCT controllers installed (red) and the reduction in mean RPM after the installations occurred (blue).

Location

Intercontinental, USA

Well Type

Onshore, vertical well

Application CBM

Products/Services WellPilot FCT controller

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