

Black oil foamer technology increased revenue \$7,000 USD/day

A South Texas operator experienced a production decrease in a well. The well operated on a 7 days on and 7 days off production cycle. Over a week, the well would load up with fluid until it stopped producing, and then it would require a week shut-in time to build up enough pressure to resume production. The operator was treating the well with an aqueous foamer.

The foamer was continuously injected near the bottom of the 10,000-ft (3,048-m) well through a capillary string. While continuous application of the aqueous foamer initially improved production, it did not maintain production effectively in the long term. The operator turned to Baker Hughes, a GE company (BHGE), for a long-term solution.

BHGE evaluated fluids from the liquid-loaded well and, based on the results of the evaluation, the operator decided to try the new BHGE **F.O.A.M. PLUS™ FMO8962 black oil foamer**. BHGE planned to continuously feed the foamer into the well using the existing capillary string.

In the 60 days prior to the BHGE black oil foamer application, the well produced 122 Mcf/D of gas and 13 BOPD (2 m³/d oil). After adding the F.O.A.M. PLUS FMO8962 foamer application, the average daily oil production rate increased from 13 to 100 BOPD (16 m³/oil) and gas production increased from 122 to 400 Mcf/D. The production cycle time increased from 7 to 12 days, and the daily production of both oil and gas increased by more than 100%. (Fig. 1). As a result, the operator increased incremental revenue from the well to more than \$7,000 USD per day (Fig. 2).

This case history is presented for illustrative purposes only because results may vary between applications.

Challenges

- South Texas oil well with 40° API crude oil
- Decreased production resulting from liquid loading
- Maximum rate of production: 250 Mcf/D gas with 40 BOPD (6 m³/d) of both oil and water
- Incumbent aqueous foamer ineffective for long-term production
- Improve production cycle and production rates

Results

- Improved production cycle from 7 to 12 days
- More than doubled oil and gas production rates
- Increased well net revenue from \$1,500 to \$7,000 USD per day (based on \$75/barrel crude and \$4/Mcf gas prices)



Production enhancement

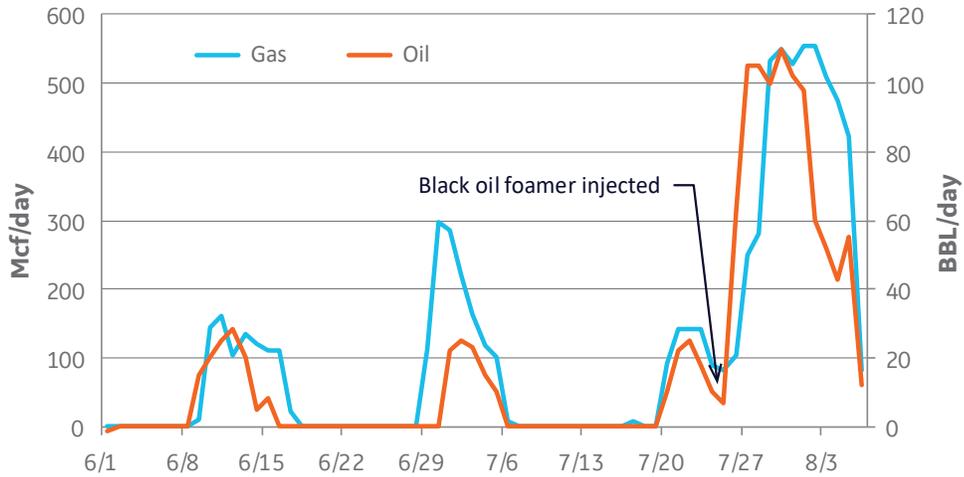


Fig. 1. Oil and gas production increase

Net revenue gain/day

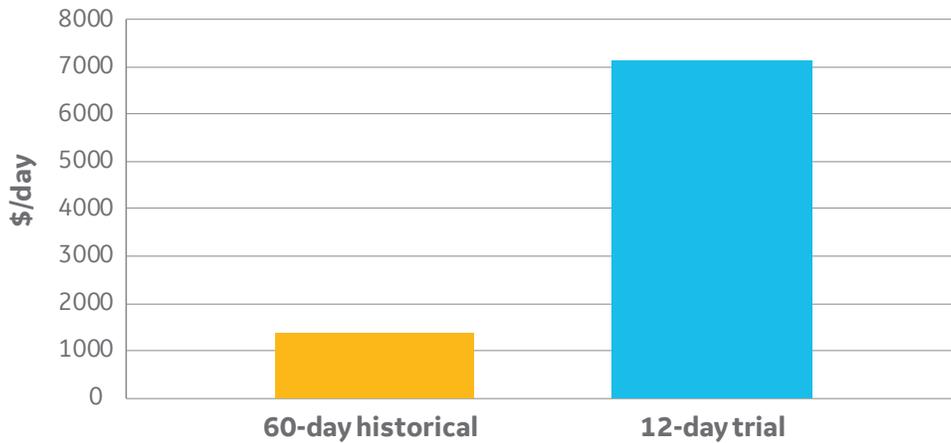


Fig. 2. Incremental revenue increase