

Sand-Tolerant Pump (STP) Increases Run Life by 450% in 56 Sandy, Rod-Pumped Wells



The patented design of the STP reduces sand damage by moving sand upward through the pump and away from the barrel/plunger interface.

Objectives

- Increase run life in a series of rod-pumped wells that have a history of early failure caused by sand damage.

Our Approach

- Weatherford collaborated with the operator to identify problem wells for an in-depth field study. In each of 56 wells, two conventional pumps previously installed had failed in 365 or fewer days as a result of significant sand damage.
- Between 2013 and 2014, STPs were installed in each of those 56 wells.
- As of June 15, 2015, the longest recorded STP run life was 584 days, compared to an average of 174 days for conventional pumps in the same well.
- On average, run life increased by 450% when compared to the average run life of the previous two conventional pumps. This resulted in significant cost savings compared to the typical equipment replacement costs incurred from sand-related failures in conventional rod pumps.

Value to Client

- The STP yielded a 450% average increase in run life compared to the conventional pumps that were previously installed in the same wells.
- By extending equipment life, the STP reduced the frequency of workovers along with the associated costs, downtime, and production losses.

LOCATION

Kern County, California, USA

WELL TYPE

Onshore oil

TOTAL NUMBER OF WELLS

56

PUMP BORE SIZES

1 1/4-in. bore – 24 installations
1 1/2-in. bore – 17 installations
1 3/4-in. bore – 10 installations
2-in. bore – 5 installations

OIL VISCOSITY RANGE

Light sweet to heavy

WATER CUT RANGE

30 to 95%

PUMP DEPTH RANGE

3,000 to 9,000 ft (914 to 2,743 m)

STROKE RATE

6 to 7 strokes/min

PRODUCTS/SERVICES

- Sand-tolerant pump

