

QUADPRO™ Plunger with new hard coating improves well run time by 83% over competitive spray-metal plungers

CASE HISTORY

CHALLENGES

- ▶ Test well was rapidly degrading plunger coatings
- ▶ As the coating wore down, slippage of fluid increased, compromising economic viability of the well
- ▶ Average run time before excessive plunger degradation was 101 days

SOLUTIONS

- ▶ QUADPRO™ Plunger was installed
 - Plunger treated with new unique high-end proprietary coating formulation
- ▶ Not an “improved” spray coating, but a NEW hard coating with ultra-hard particles applied with cutting-edge technology
 - Coating is designed to resist the characteristics commonly found in harsh well-run environments:
 - Hard sand particles
 - Heavy operational wear
 - Particulate abrasion
 - Water-based corrosion



Image 1: Used plunger post inspection

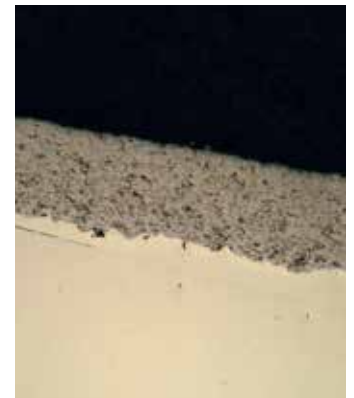


Image 2: Metallograph of coating cross section

RESULTS

- ▶ QUADPRO™ Plunger increased the well’s run time from 101 to 185 days
- ▶ This is an 83% increase compared to the well’s historic run times
- ▶ The plunger was pulled after 185 days due to low production
- ▶ Plunger showed moderate wear near its top and light wear along the rest of its length

WELL INFORMATION

Location	California	Depth	2,227 ft.
Plunger Length	3 ft.	bpd (Oil) / bpd (Water)	12.1/487.5
Plunger Type	Smooth	Historical Run Time	101
Bore Diameter	2.25 in.	QUADPRO Plunger Run Time	185
Strokes Per Minute	6.4	Improvement [days/%]	84/+83%
Stroke Length	145.9	Plunger Status	Pulled
Reason for Pull	Low Production, B&S		

