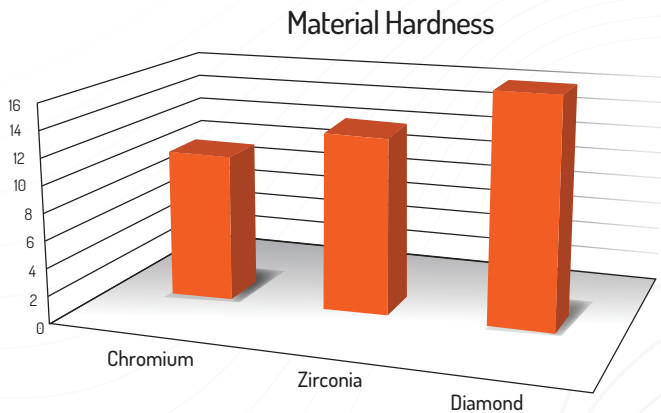
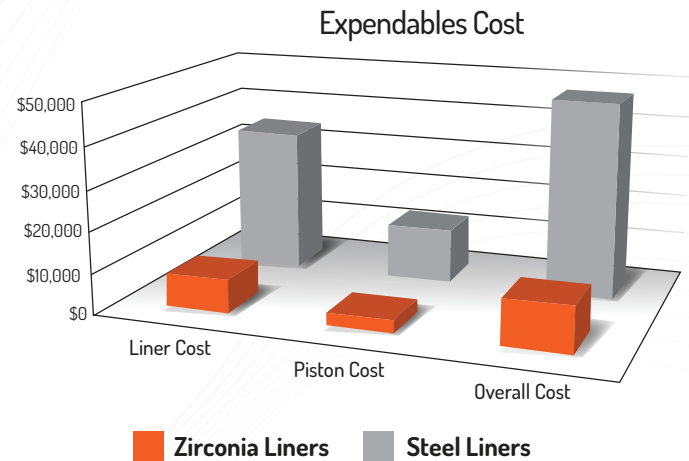


Southwest Oilfield Products Zirconia mud pump liners outperform conventional hardened steel liners due to the unique characteristics of zirconium oxide.



## FOUR YEARS & COUNTING - ZIRCONIA CASE STUDY

Chromium liner expendable costs are over four times the cost of Zirconia liners over the four year life of the project. The Zirconia liners have over 12,000 pumping hours and counting. Pumps using Chromium liners had costs of \$47,000 vs. \$11,000 for Zirconia liners.



Chromium liner and piston usage resulted in thirty-two shutdowns compared to eight shutdowns for the Zirconia liners. Pumps with chromium liners used fifty-five pistons vs. twelve pistons in Zirconia pumps. The original Zirconia liners are still in use.

