

Well Production Comparison Report

ESP to Rod Conversion

Objective

This report summarizes the production performance of a Montana well before and after the artificial lift conversion from Electric Submersible Pump (ESP) to Rod Pump (SSI Lift Long Stroke). The ESP system was in operation until March 15, 2025. The well was converted to rod lift between March 15 and April 8, 2025. Production after April 8, 2025 reflects rod pump operations.

Production Comparison

Metric	ESP (Before Mar 15, 2025)	Rod Lift (After Apr 8, 2025)	Change
Oil Rate	29.0 BOPD	34.0 BOPD	+5.0 BOPD (+17%)
Water Rate	272 BWPD	301 BWPD	+29 BWPD (+11%)
Total Fluids	301 BFPD	335 BFPD	+34 BFPD (+11%)
Gas Rate	5.94 MCFD	6.84 MCFD	+0.9 MCFD (+15%)
Water Cut	89.6%	89.8%	Minimal Change

Key Observations

- The rod lift system increased total fluid production from approximately 301 BFPD to 335 BFPD, representing an **increase of ~11%**.
- Oil production improved from 29 BOPD to approximately 34 BOPD, which represents a **17% increase** in daily oil production.
- Water cut remained essentially unchanged at approximately 90%, indicating that the increase in fluid production resulted in a proportional increase in oil recovery rather than additional water dominance.
- Gas production increased slightly following the conversion. This is consistent with increased fluid throughput and potential reduction in bottomhole pressure associated with the rod pump system.

Operational Interpretation

The production data indicates that the rod lift installation has been successful. The system is moving a higher fluid volume while maintaining a stable water cut, which has translated directly into increased oil production. The results suggest that the well is primarily fluid-rate limited, meaning that incremental increases in fluid production can still yield additional oil recovery.

Estimated Economic Impact

The lift conversion resulted in an approximate oil production increase of 5 BOPD. On an annualized basis this equates to roughly 1,825 incremental barrels of oil. At an assumed oil price of \$70 per barrel, this represents approximately **\$128,000 in additional annual revenue.**

Electrical Savings

Based on an electrical reduction study that was conducted between an SSi unit and an ESP, the SSi unit was measured to have a 57% reduction in electricity usage compared to an ESP installed in a comparable well. Using the average total fluid numbers from the Jones 11-33NH well and assuming an electrical cost of 11.92¢/kWh, the conversion to an SSi unit resulted in **\$20,190 of yearly electrical savings.**

Conclusion

The conversion from ESP to rod lift has improved well performance by increasing total fluid production and generating a measurable uplift in oil production while maintaining stable water cut conditions. Based on the available production data, the rod pump system appears to be operating effectively and represents a successful artificial lift optimization for this well.