

Hyperpool® Conversion Kit outperforms BRANDT® KING COBRA™ HYBRID™

- Improved HSE features light-weight screens, faster screen changes, and no need for hammers or pry bars
- Recovered 46 more barrels of drilling fluid at same screen size over 2200' interval; \$5,750 in savings
- Showed 24% increase in solids removal and no solids bypass due to screen compression technology

Objective

To evaluate the highest performing shaker for the operator/drilling contractor when selecting solids control equipment for their drilling rigs.

The evaluation was conducted comparing the performance of a BRANDT® KING COBRA™ HYBRID™ shaker against a Derrick® Hyperpool® Conversion Kit shaker (KING COBRA to Hyperpool Conversion Kit) on the same drilling rig. An independent third party conducted all testing to gather the data in this report which includes:

- Health, Safety, & Environmental (HSE) evaluation
- Solids discard test for drilling fluid cost comparisons
- Leakage/bypass testing
- Flow capacity comparison

Drilling Parameters

- Drilling rig in Northwest Louisiana
- 15.4 PPG oil-based drilling fluid
- Average Plastic Viscosity - 33
- Average Yield Point - 16
- 2,200' Interval (curve into lateral)

HSE Evaluation

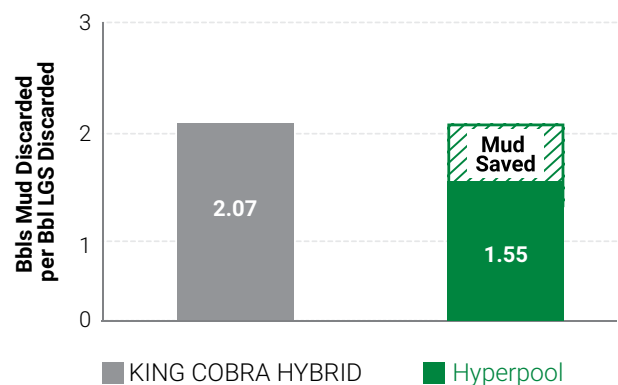
Machine operation safety was evaluated by conducting screen changes. Two BRANDT technicians changed the KING COBRA VENOM™ RHD discard panel (32 lbs) in 52 seconds using a hammer and pry bar. One Derrick technician changed the Hyperpool DX™ feed panel (16 lbs) in 26 seconds using only the compression bar provided. The drilling contractor rig manager stated that since the installation of the two Hyperpool shakers, they predominantly utilized the Hyperpool shakers due to quick, easy screen changes and single point screen angle adjustment.

Solid Discard Test for Mud Cost Comparisons

Flow was split to equalize fluid end points and both shakers were fitted with new API 170 screens. Multiple timed discard samples from the 2,200' interval were analyzed by conducting 50 ml gravimetric retorts.

The analysis showed that the KING COBRA HYBRID shaker discarded an average of .52 barrels of liquid mud per barrel of low gravity solids more than the Hyperpool shaker during the interval which equated to a total of 46 more barrels of base fluid. With base fluid costs at \$125/bbl, the Hyperpool showed a realized savings of \$5,750 over the KING COBRA HYBRID during the test interval. The Hyperpool proved to discard less liquid mud per barrel of solids, which directly relates cost savings in cuttings haul off and dilution.

Average ROC Values Over 2,200' Interval

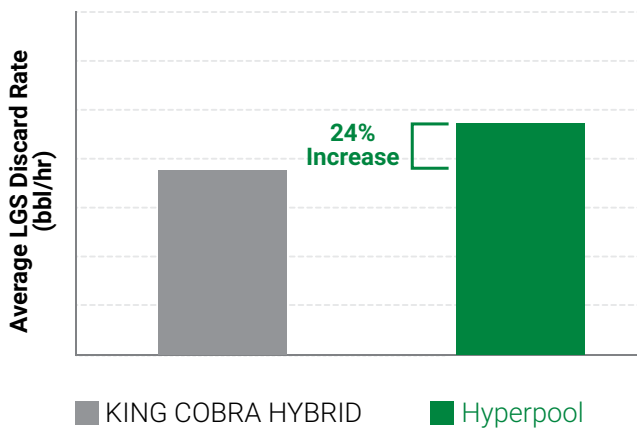


Leakage/Bypass Testing

To determine the amount of fluid and solids bypass for each machine, each shaker was fitted with blanked off screen panels and operated independently. Time began when the mud pumps were started and the flow was incrementally adjusted until it reached the end of the fourth screen panel and run for eight minutes. The fluid height difference in the sand trap was measured.

Results: The KING COBRA HYBRID allowed slurry to bypass the screens at a rate of 14 bbl/hr. There was no slurry bypassing screens when the Hyperpool was tested in the same manner.

LGS Discarded Over 2,200' Interval



With both shakers running API 170 compliant screens, the retort analysis showed that the Hyperpool shaker consistently removed 24% more low gravity solids than the KING COBRA HYBRID shaker. This analysis further confirmed the leakage testing results that the KING COBRA HYBRID bypassed more fluid and solids. The KING COBRA HYBRID allowed low gravity solids into the rigs active system.

Flow Capacity Comparison

Flow capacity was tested by isolating each shaker while drilling and increasing the strokes of the mud pump until the fluid end point reached the end of the third panel per OEM recommendation. Flow capacity (in gallons per minute) and screen angle (in degrees) were recorded. At the rig's normal operating pump rate of 100 GPM, the KING COBRA HYBRID shaker maintained flow at 4° while the Hyperpool shakers maintained flow at 2°. With the rig's maximum pump rate of 292 GPM, the KING COBRA HYBRID shaker maintained this flow at 7° while the Hyperpool shakers maintained the flow at 5.5°. The Hyperpool shaker showed its improved ability to handle flow at lower screen angles.

Conclusion

The drilling contractor witnessed the Hyperpool's improved HSE benefits, increased handling capacity, dryer cuttings, increased solids removal, and elimination of fluid and solids bypass. These results demonstrate the benefits posed to both drilling contractors and operators when selecting the Hyperpool shaker.



For more information, please contact your local Derrick sales representative.

15630 Export Plaza Drive • Houston, Texas 77032 • Toll Free: (866) DERRICK • Office: (281) 590-3003 • Fax: (281) 590-6187
info@derrick.com • www.Derrick.com