SAFETY AWARENESS

APRIL 2024

Liner Wash/Backwash system

The following safety awareness alert is provided as part of MR Group's efforts to raise the awareness of industry personnel regarding the hazards and risks associated with oil and gas drilling rigs and operations. We thank our Clients and field teams for sharing the information.

For the optimum performance of a mud pump piston, the pump must be properly supercharged, have no alignment issues, the liner should be in good condition and, an often overlooked area, is a well functioning liner wash or backflush system. Factors such as mud temperature, solids content, fluid chemistry as well as pump pressure and speed will also have a major impact on piston life.

For this alert we are highlighting the often overlooked liner backwash system as insufficient flow to the rear of the piston can have a detrimental effect on the piston and liner life in service and cause premature failures with the consequent risk to personnel due to increased remedial work requirements.

Some OEMs recommend a minimum of up to 14 US Gallons per minute is delivered to each piston for effective cooling, to aid lubrication and for flushing particulate matter from the liner bore. Maintenance system rarely have a routine for measuring the return flow from the liners.

Some of our recent surveys of mud pumps have seen the measured return flow from the liners as low as 3 to 4 US gallon per minute and there has been a high failuire rate of pistons and liners reported by the rig crews.

Investigations into the root cause of the reduced flow have revealed that non-OEM replacement parts e.g. smaller diameter hoses, restricted quick disconnect couplings, and rig made make shift spray bars have been introduced to the system that have restricted the flow. Also, worn out liner wash pumps or the pumps by-passed completely and ran via the rig raw water supply have resulted in lack of flow rate to the liners spray nozzles.

The difference between the OEM QRV coupling (left hand) and a non-OEM replacement QRV found in the liner spray system.

The smaller diameter of the throat of the 'replacement' severely reduced the flow rate to the nozzles.

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