

SAFETY ALERT



PULSATION DAMPENER FAILURE

ALERT 5-19

WHAT HAPPENED:

During well displacement, a sudden loss in standpipe pressure was observed. (Max circulation pressure at time of the incident was 1750psi). The Driller immediately shut down all mud pumps. The Derrickman confirmed that the discharge dampener on Mud Pump # 3, had separated from the flange area and was wedged in the overhead ducting/pipework above the pump. *Note: No personnel were in the pump-room area at the time.*



CONTRIBUTING FACTORS:

The # 3 Mud Pump Pulsation Dampener separated from its flange and was lodged in the ducting/ beam structure 1.6m above its flanged connection. Operations were immediately suspended. Displacement operations were shut down and the well confirmed secure. Relevant offshore and onshore persons were notified of the incident. Barriers were established around # 3 Mud Pump to prevent access to the area.

The following Root Causes for this event have been established:

- **RC1:** The threaded hole in the dampener body was insufficient for the length of the cap screws used. This allowed corrosive fluid to enter the sump/void surrounding the cap screws providing a hydrogen embrittling environment which lead directly to the cap screw failure.
- **RC2:** The maintenance/Inspection regime for the dampener securing cap screws was insufficient. There was no recommendation from the OEM as to when the failed cap screws should be inspected or replaced.



LESSONS LEARNED:

- Failure of pulsation dampener components.
- Red Zone barrier restrictions reduced the potential for personnel being in the mud pump vicinity.
- Barriers were put in place immediately, until an assessment of the area and situation could be carried out.