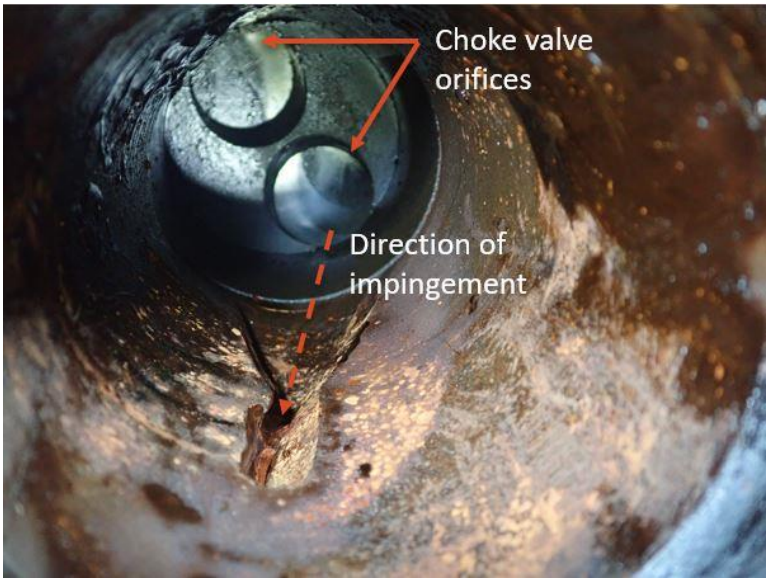
SAFETY ALERT

Unplanned Hydrocarbon Release Following Internal Erosion of Choke Valve



Description of Process:

Gas lifted, multiphase platform well producing via alluding plate type choke valve into production manifold.

Description of Incident:

A production well with an alluding plate type choke was being restarted following a period of shut-in to allow pressure build up (PBU) in the reservoir. During the restart, multiple gas detectors came into alarm in the well manifold area resulting in automatic plant shutdown, system blowdown, GPA annunciation and initiation of deluge system.

No personnel were working, or transiting through the area at time of release, which was subsequently calculated at 28.5kg. A full muster was completed without incident or injury.

It was determined that the leak had occurred through erosion of the choke valve body causing a 40mm by 3mm perforation. The choke model has a 'no-go' Critical Operating Area (COA) of 0-25% open where, if remaining in this position for lengthy periods of time, can result in erosion. Normal operation of the well had the choke at 100% open and only within the COA for short periods of time (5-10 minutes) upon well restart from PBUs, planned shutdown etc. The choke valve had been in place for over 14 years. PBUs on the well became a more frequent requirement over the past 5 years. No sand production

monitoring had been conducted on the wells- historically solids volumes in separators always found to be minimal.

A 6 monthly inspection regime had been in place for several years; however, this planned maintenance was cancelled on the incorrect understanding that all alluding plate chokes had been replaced.

All wells with alluding plate type choke valves remained shut in post incident and are to remain offline until they are changed to an alternative.

Good Practice Guidance:

- Review use of alluding plate type choke valves for the type of service and risk of erosion occurring
- Ensure changes/cancellation in inspection strategies are appropriately documented and supported
- Conduct sand sampling of production wells to allow for visibility of risks through erosion of pipework