

# SAFETY ALERT



## H2S ALARM ACTIVATION

ALERT 4-21

### WHAT HAPPENED:

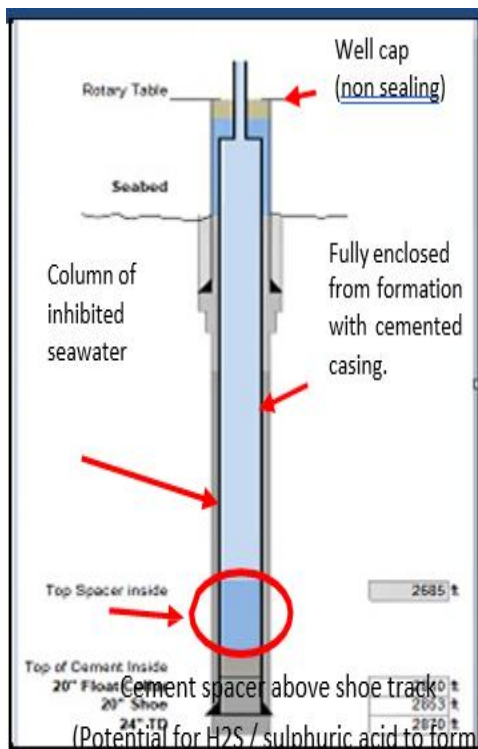
While drilling out the casing shoe track of the well, H2S was detected at surface upon bottoms up. The section was previously cemented and the well suspended for 30 days (duration of the top-hole batch drilling Campaign). The spacer fluid (spacer chemical mixed fresh water) remaining inside the casing was untreated. H2S detection was activated at the Shale Shakers. The rig sensors and the mudlogging sensors in the shale shaker area detected H2S levels of 57ppm and 43ppm respectively.

### CONTRIBUTING FACTORS:

The presence of H2S in the drill string was unexpected as the well being drilled was not a sour gas well. No mechanical or procedural controls failed. H2S detectors acted as expected. The investigation was unable to identify definitive causes. Possible causal factors are bacterial degradation. This is unlikely in most wells due to temperature; but as the 20-inch casing is a shallow section with a low static temperature it is possible that some of the organics could be attacked by the bacteria.

### LESSONS LEARNED:

- H2S may be introduced in wells that are not sour wells from a chemical reaction from certain spacer fluids.
- In addition to H2S detection at Shakers, risk assessment should make provision for the use of remote gas detection at Wellhead Deck area.
- Engage H2S specialist during review of H2S risk assessment and to endorse the effectiveness of mitigations.
- To mitigate any possibility for H2S production in future operations where spacer fluid is to be left with seawater at low temperatures for extended periods of time, fluids should be treated with Biocides and H2S scavengers.
- Review location of vent points relative to the position of Operators. Ensure Personnel are in a safe position when opening vent valves.



H2S Detector at Shale Shaker



F & G Panel-Card 5 for Mud system

**A Safety Alert can consist of any type of health, safety & environment (HSE) notification or Near Miss/Near Hit alert. Proactive Alerts on jobs well done are also encouraged.**