Streamlining Completions in H_2S Prone Geohazard Zones with Advanced Fracture Frequency Measurements

Challenge

+ Completing wells in regions with geohazards such as lineaments or faults presents various operational and safety risks, including:
  - Production Implications (Hazardous Gases & Water)
  - Induced Seismicity and Casing Deformation
+ In an area with known sour lineaments, an operator's procedure required pump-in tests for hazard ID prior to full-stage fracturing.
+ Pump-in tests can be difficult to analyze and prolong each stage resulting in significantly reduced efficiency and increased costs.

Solution

+ Fracture frequency measurements are an early indicator for loss of frac energy downhole and provide real-time identification of connectivity to geohazards, natural fractures or previously created hydraulic fractures.
+ Integrating these measurements with preliminary geological workflows facilitates effective optimization strategies to mitigate interactions with undesirable subsurface features.

Results

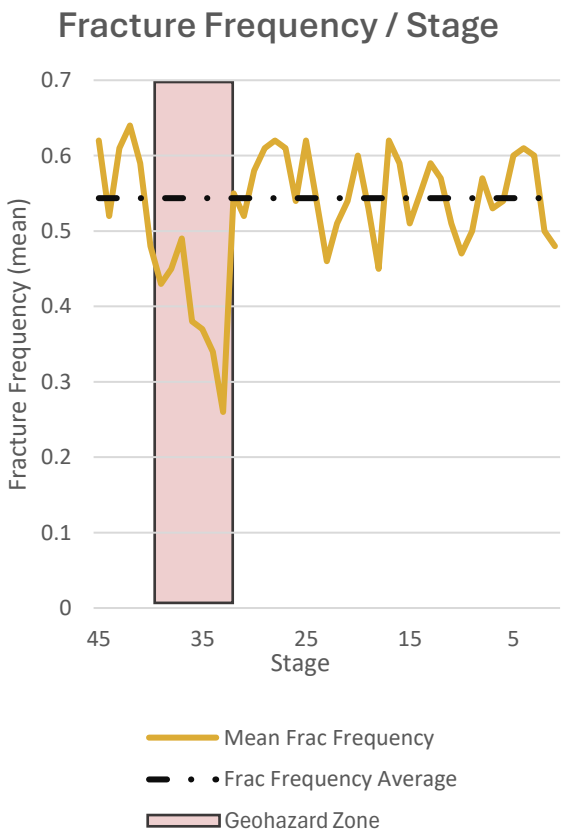
+ By utilizing fracture frequency measurements in real-time, the operator eliminated the need for time-consuming pump-in tests, saving an average of 42 minutes per stage (1.3 days/well).
+ Early identification of hazardous zones facilitated targeted decision-making and bolstered confidence to bypass stages at risk of encountering severe geohazards.
+ The adoption of this technology has accelerated operational workflows, significantly reducing costs.

Basin – Delaware

Formation – Wolfcamp A

Location – Reeves County, TX

Producing Well Type – Oil



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