



INTEGRATED TECHNOLOGIES MWD/LWD Forum

Keeping Your Finger On The Pulse



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Welcome

Speaker Information

- Stephen Allen
- Director of Engineering
- September 18, 2025



PRO
DIRECTIONAL

MWD Reliability Challenges

- **Shock and Vibration**
 - Packaging considerations for fragile internal components
 - Shock isolation tools; probe attachments, centralizer design
- **High Temperature**
 - Sensor/Transducer Drift
 - Sensor Degradation
 - Board-Level Component Failure
- **Solids and Harsh Chemicals**
 - Seal geometry, materials
 - Design considerations for higher LCM tolerance
 - Match/Customize the seal material to the job conditions
- **Hydraulic Noise**
 - Improved Filters for Decoding
 - Stronger pulse signal amplitude; proper pulser configurations



MWD Reliability Solutions

- Temperature

Component Destructive Heat Test

Temperature Screen New Assemblies

Outgoing Heat Test – Full String

Condition Based Maintenance Prgrm

Continuous Improvement



MWD Reliability Solutions

- Shock and Vibration

Dampening with Snubber - Internal

Shock Isolation Probe - External

Centralizer Selection - External

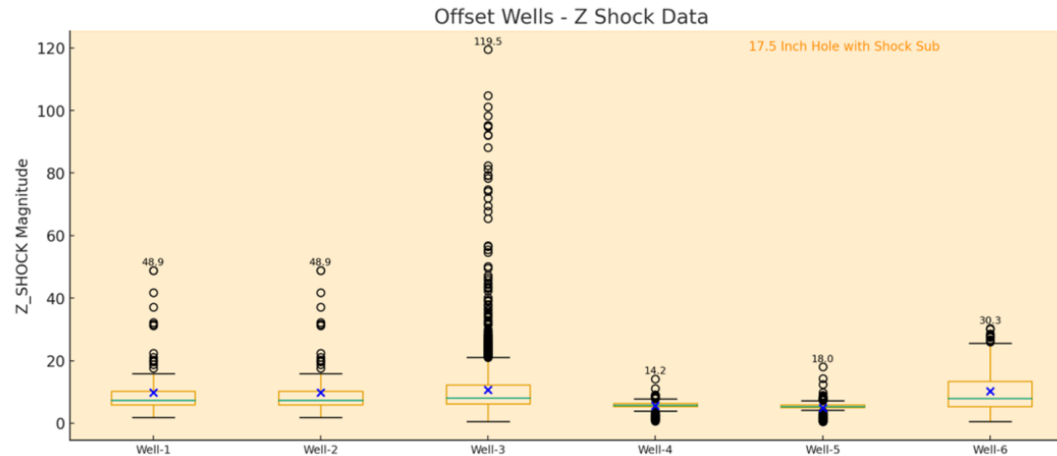
RT Shock and Vibration Monitoring

Adjustment of Drilling Parameters



Conclusion – Maintaining Reliability

- Internal Qualification and Screening
- Continued Preventive Maintenance (QMS)
- Apply Lessons Learned; Customize solutions
- Communicate real-time w/ Operators



LOW

MED

HIGH

DAMAGE



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Thank You