



ReamSync™

Borehole Enlargement System

AADE Houston Chapter
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RipTide™ RFID



Industry First:

- On demand multi activation
- Rathole Killer®
- RFID technology

Deepwater Proven:

- Plug & play with all directional providers
- 6.25" to 35" enlargement
- Enhanced by ReamSync™





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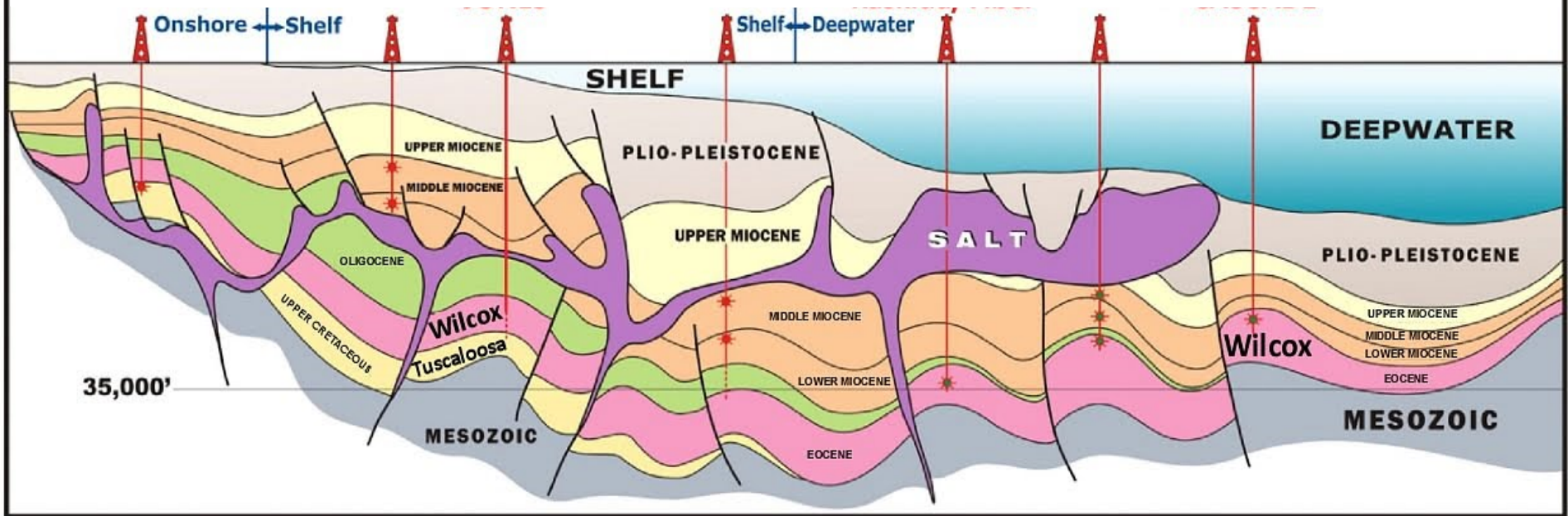
The Challenge?

highly abrasive formations

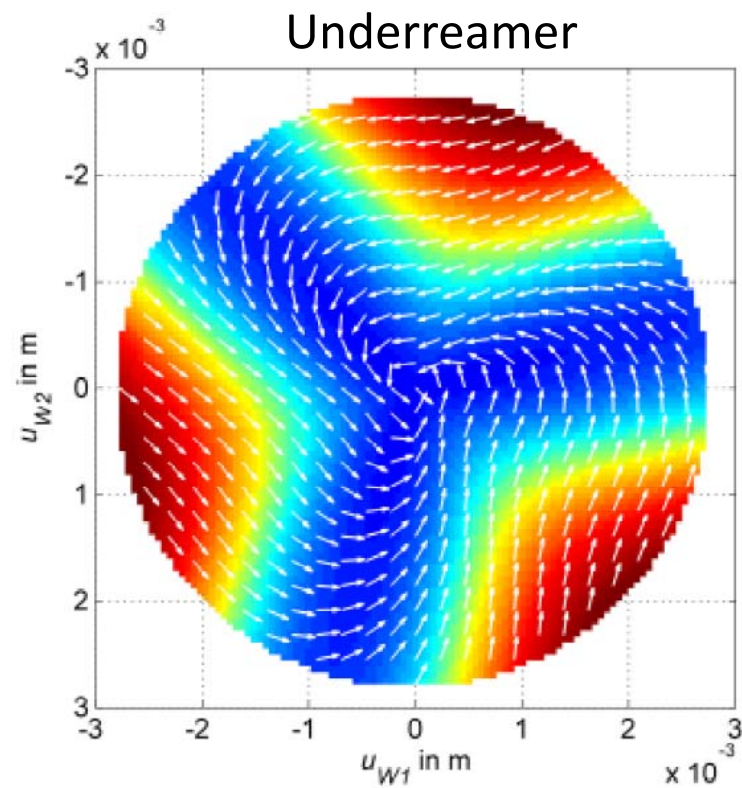
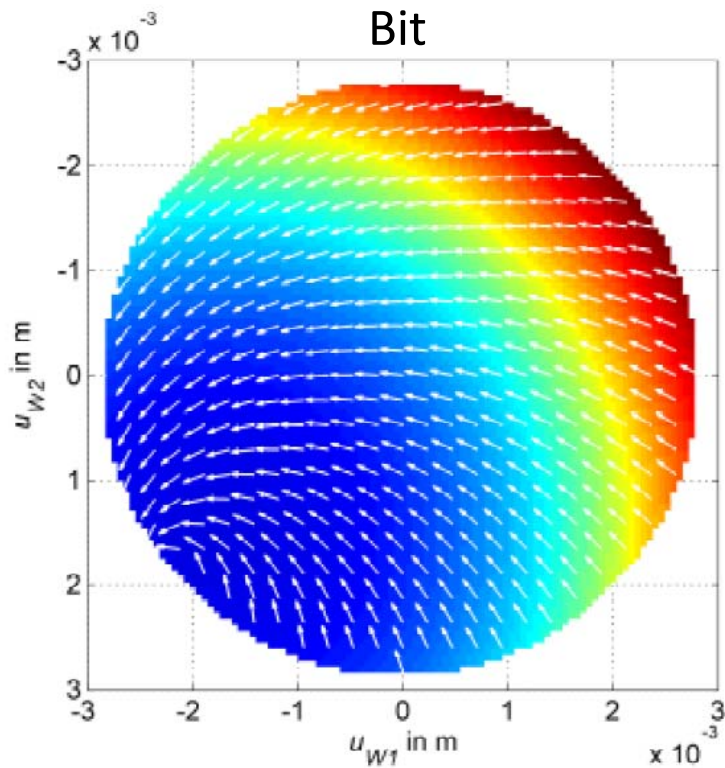
dissimilar wear

narrow PDC product range

Abrasive formations and highly transitional zones can create dissimilar wear between the pilot bit and the drilling underreamer.



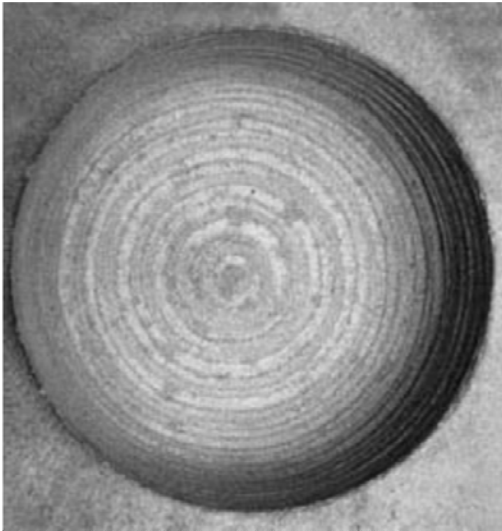
- SPE/IADC 139893 “Underreamer Dynamics” (Meyer-Heye, 2011)
Biased, net – imbalance pilot bit vs. unbiased, concentric underreamer



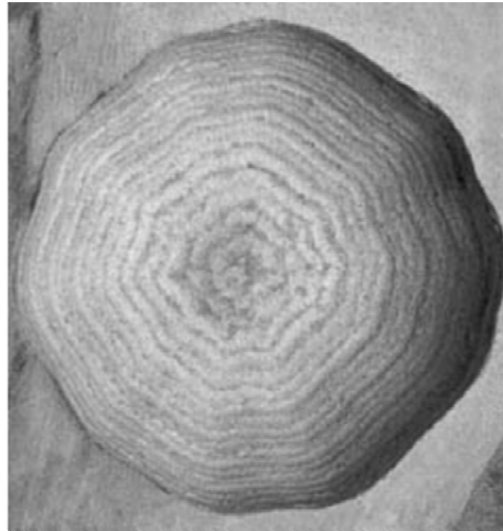


Simultaneous Drilling and Underreaming Dynamics

PDC pilot bit designs



net-imbalanced or biased



balanced or unbiased

drilling underreamer design



concentric triple cutter block



The Answer? ReamSync™

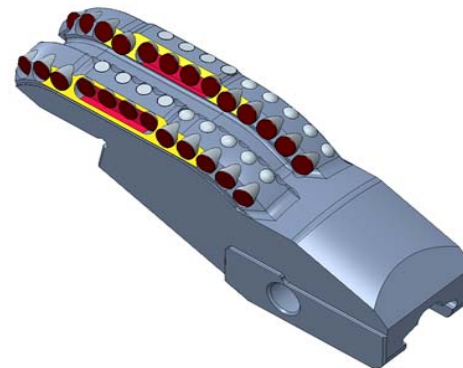
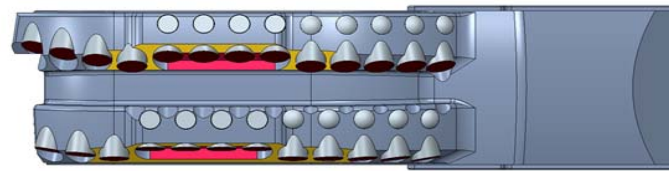
borehole enlargement performance system



DULL GRADE ANALYSIS

TIER 1

- Apply IADC/SPE dull grade method
- Identify successful design features and PDC grades
- Correct or abandon ineffective elements

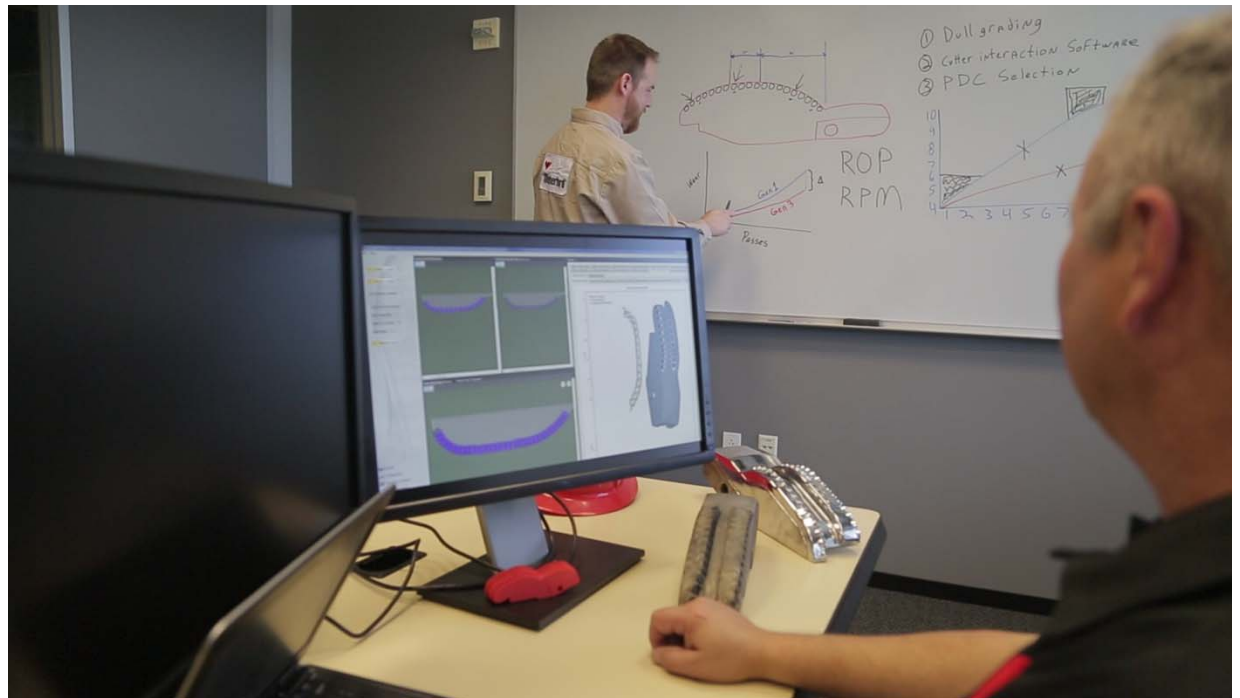




PREDICTIVE CUTTER & FORMATION SOFTWARE

TIER 2

- Simulate a virtual drilling environment
- Distribute work rate equally among all cutters
- Optimize cutter placement and PDC selection



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PDC CUTTER SELECTION

TIER 3

- Synthesize dull grade analysis with software modeling data
- Collaborate directly with PDC manufacturers
- Select PDC that is optimized for application



Offset Wells - Standard Cutting Structure vs ReamSync™ Enhanced Cutting Structure

1. Plural set
2. 16 mm HD PDC
3. No hard facing
4. No stabilizer pad

1. Single set
2. 13 mm 2step leached PDC
3. hard facing
4. Stabilizer pad



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Wilcox Sand – 3712 total feet

Wilcox Sand – 4073 total feet

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