

Welcome to
productive drilling

**Well avoidance with vibration
analysis**

March 2010



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Today presentation

- Background
- Basic Concept
- Equipment used
- Test results
- Going Forward



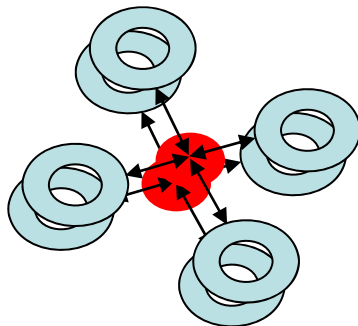
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Background

- Increasing number of congested platforms
- Increasing number of HSE issues
- Increasing number of well shut-ins
- An anti-collision wellhead monitoring system
 - SPE 22123 BP

Basic concept

- Vibration sensors on offset wells
- Establish baseline “drilling” vibration
- Drill ahead, measuring offset well vibration
- Log changes in vibration relative to subject well
- Calculate “movement” away/towards offset wells
- Generate actual distance to generate RT TC plot



Equipment used



Test results

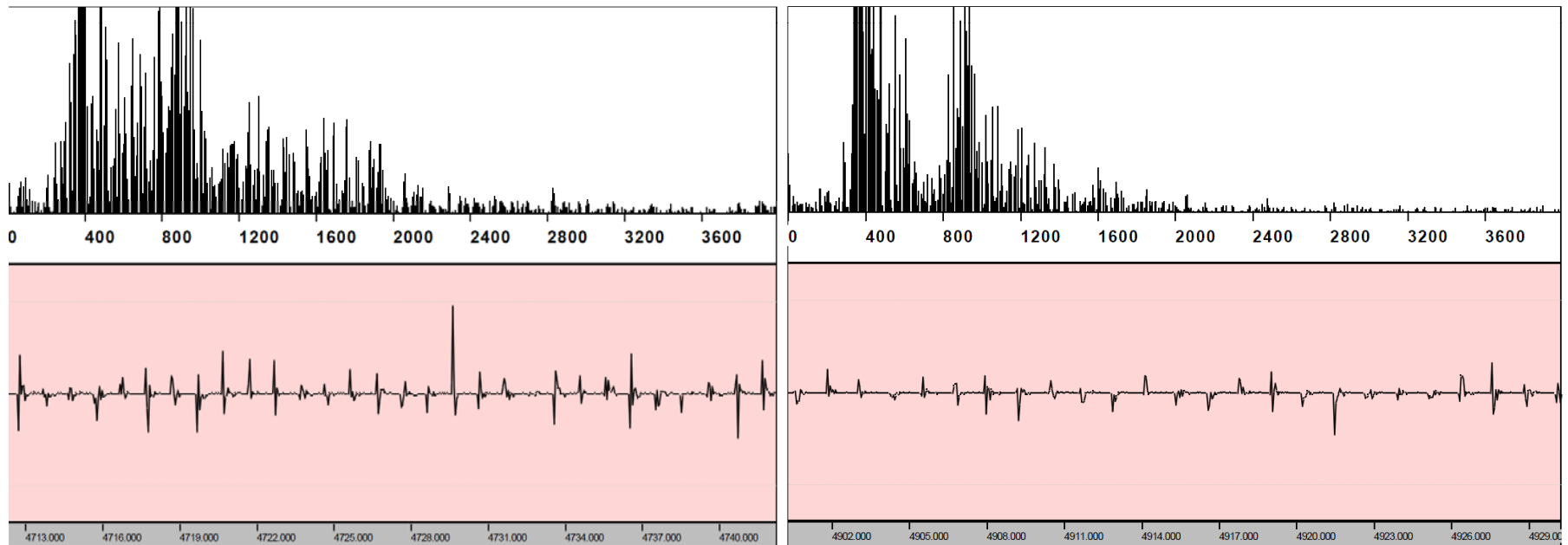
- Limited physical separation
- GWD main survey reference
- Conductor hammered to refusal
- Baseline vibration taken with pumps on

Slot to be drilled



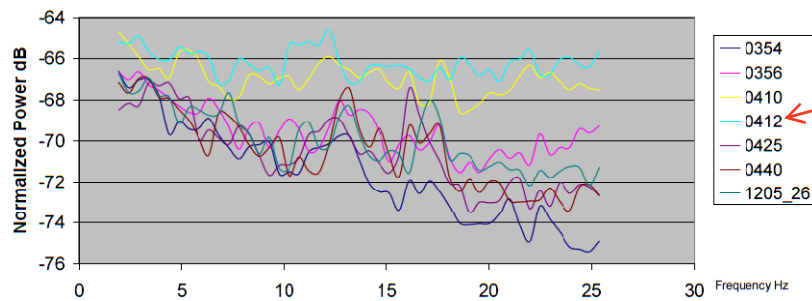
Conductor driving

- Measured whilst driving conductor
- Note Drive vs refusal response
- Can refusal be predicted?

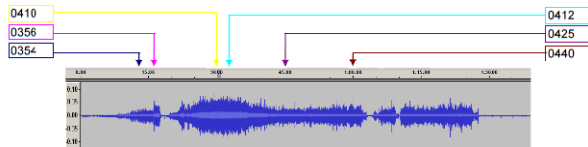


Close Approach

- Baseline Measurement
- Remove Pump noise
- Normalize power at set frequency band



Close approach time
Pumps only



Going forward

- More tests
- Multiple sensors
- Reduce signal to noise ratio
- Off line analysis of multiple sensors
- RT application tested



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Questions?

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