

Distributed Acoustic Sensing: Measurement & Applications

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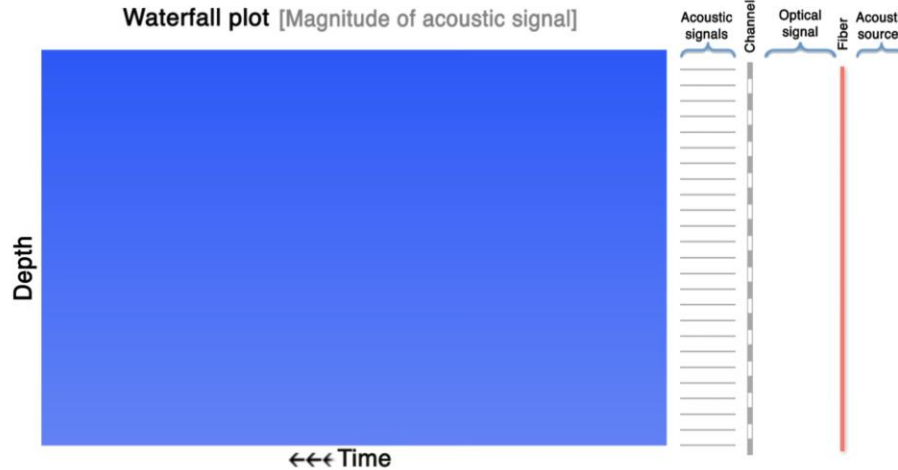
OptaSense[®]
a QinetiQ company

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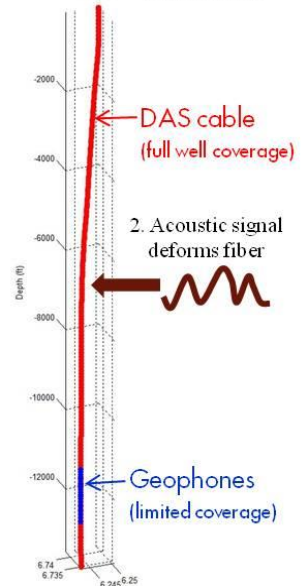
Distributed Acoustic Sensing (DAS)

Dynamic Strain Measurement

- DAS Technology turns regular optic fibre in a cable into an array of sensors
- DAS uses a laser light pulse and the “**Rayleigh scattering**” effect to measure strains in the proximity of the fiber

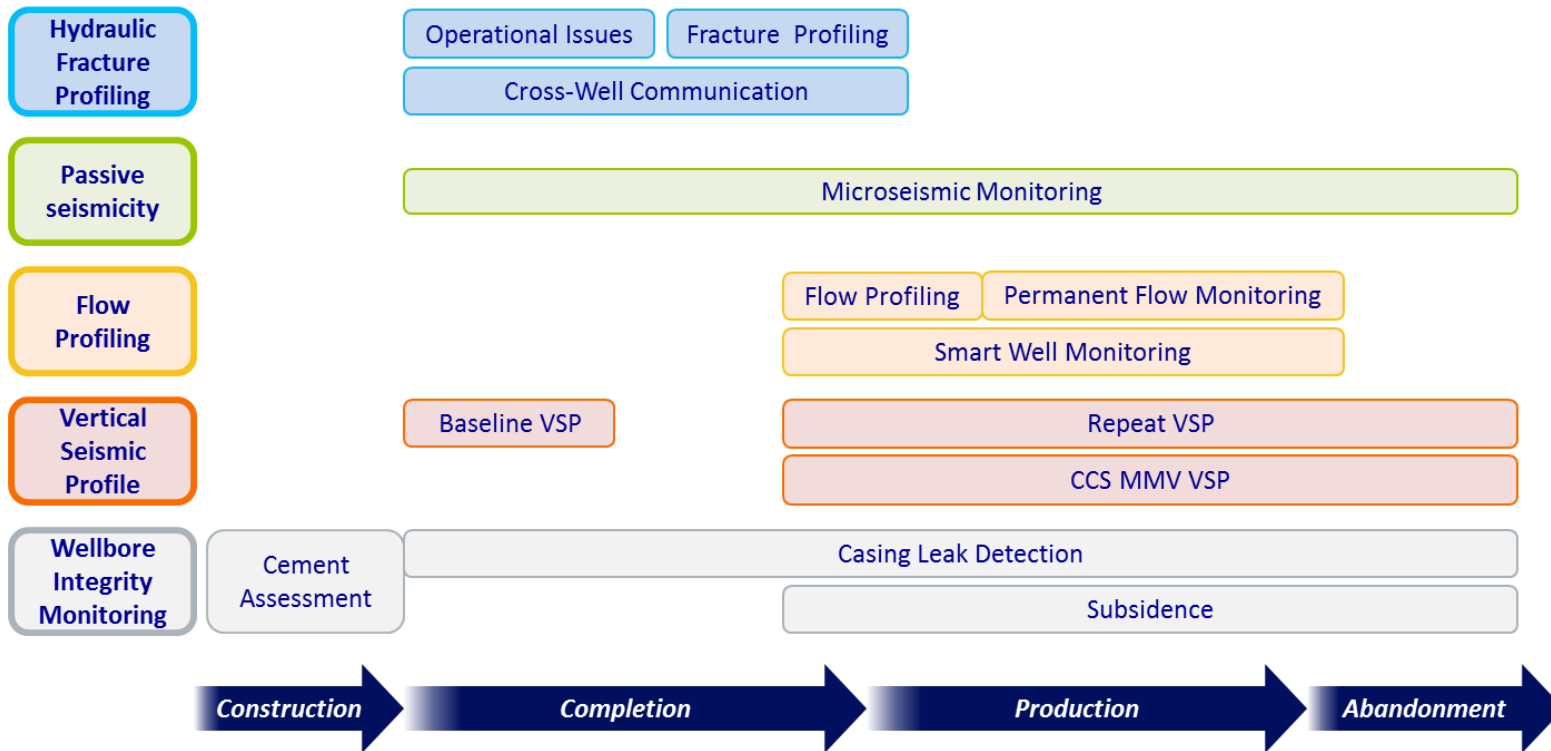


1. Light pulse interrogates fiber
3. Light pulse with an acoustic-modulated signal is backscattered



Integrated Well Surveillance Using DAS

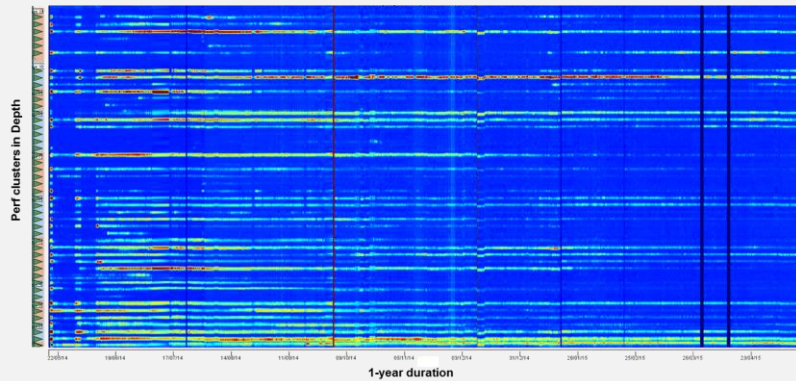
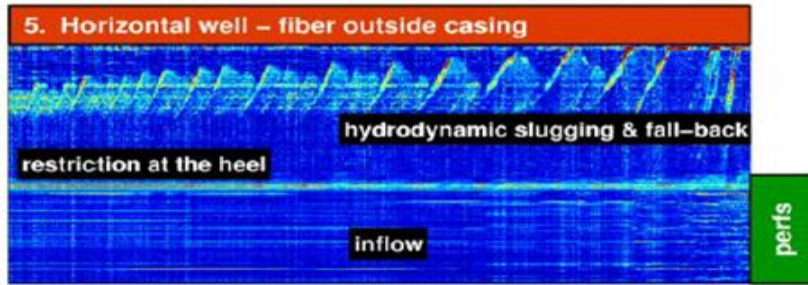
One Fiber ... Multiple Applications ... Applied Over The Life Of The Well



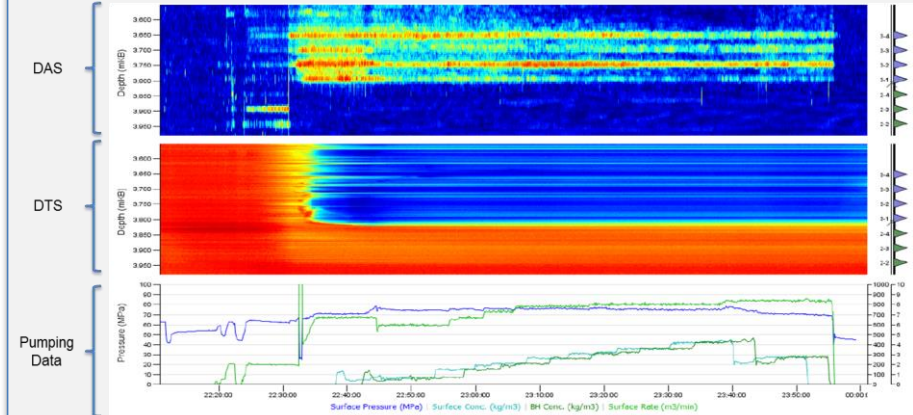
Application Examples

Qualitative and Quantitative

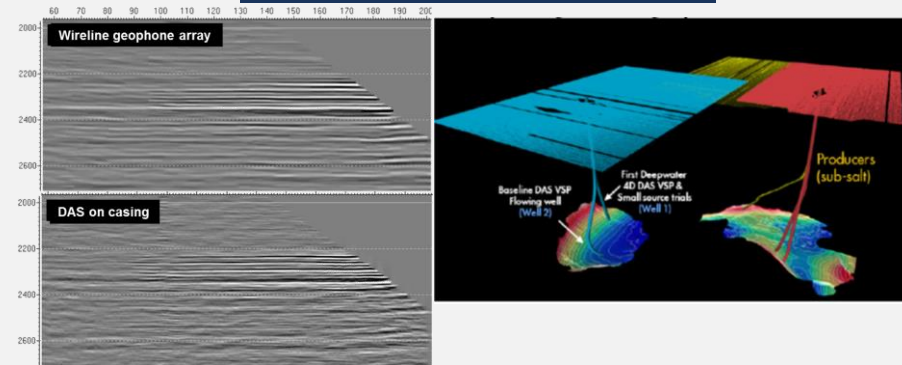
Flow Monitoring



Hydraulic Fracture Profiling



VSP/Seismic via DAS

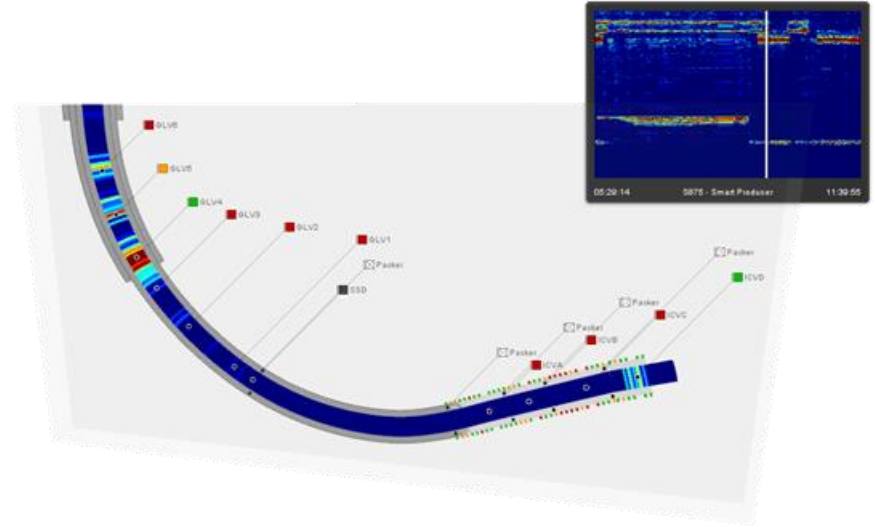
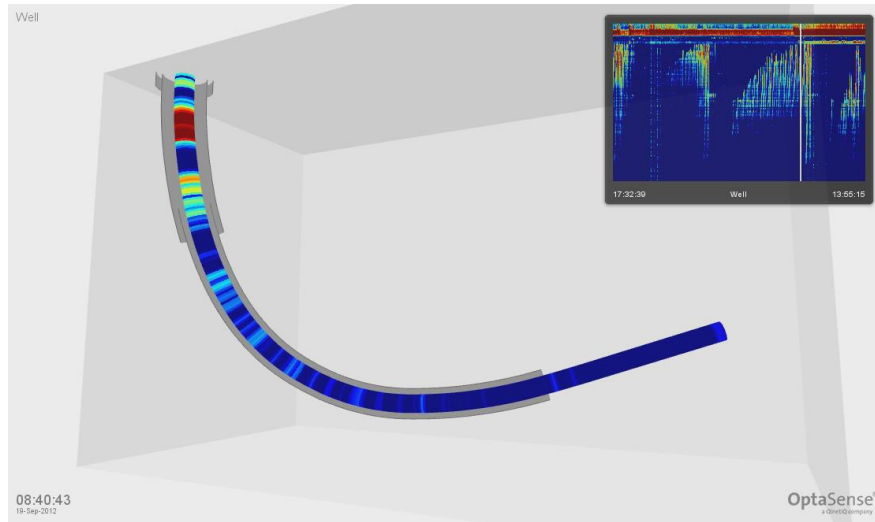


Visualization

Time-Lapse 3D Visualization of Flow in Production/Injection Wells

- Visualization of slug formation and movement

- Visualization of flow across ICV's and GLVs



Questions

