

CaTS™ Advanced Reservoir Testing™

Reducing reservoir uncertainty during field appraisal

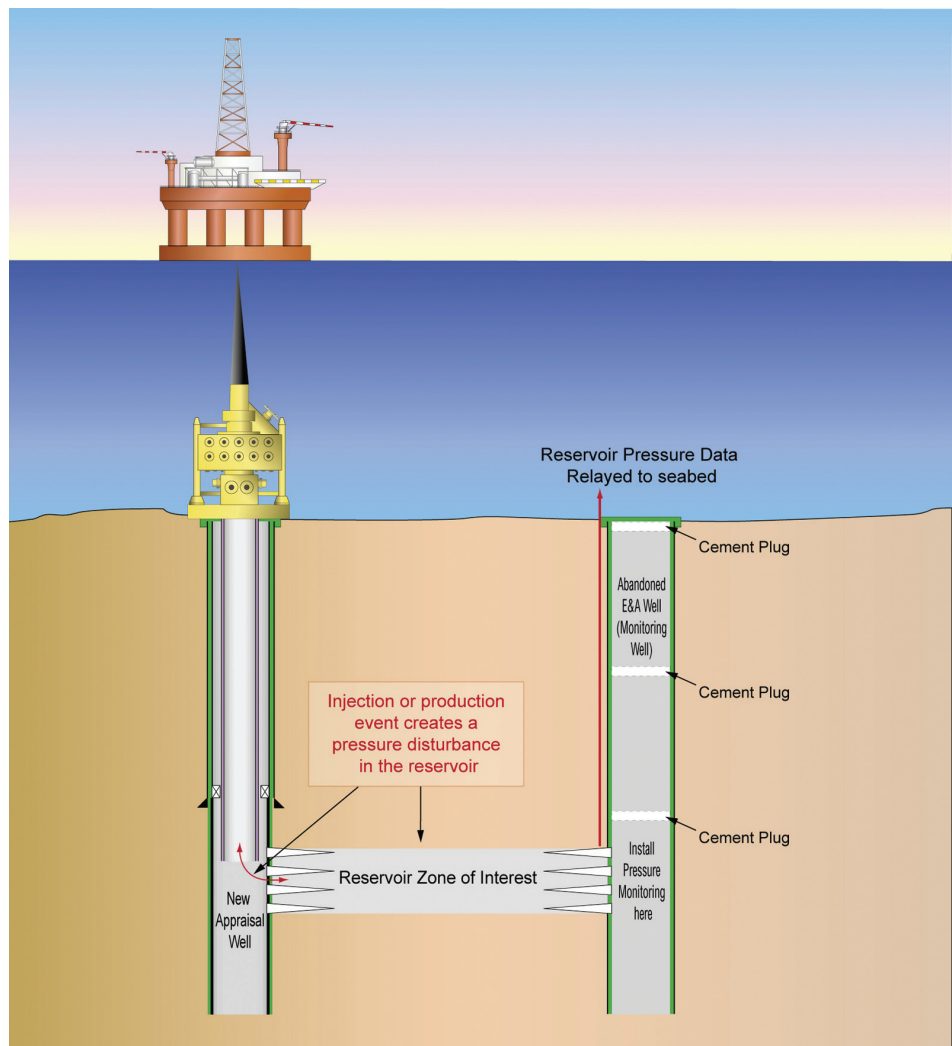


By the application of the CaTS wireless monitoring technology, well testing no longer has to end at well abandonment

During Exploration and Appraisal drilling campaigns, critical decisions regarding future field development planning sometimes have to be taken based on very limited data sets. Uncertainty regarding reservoir connectivity and compartmentalisation is one of the biggest risks the operators have to contend with during any hydrocarbon prospect and field development evaluation.

This uncertainty can be reduced by maximising the time spent on appraising the prospect, but the pressure on minimising rig time and cost reduction often results in appraisal activity being terminated prematurely.

The value of reservoir data that leads to better decision making regarding recovery factors and field development plans is substantial and CaTS Advanced Reservoir Testing can help to provide this critical data.



CaTS Advanced Reservoir Testing

CaTS can be installed into an appraisal well at the end of a drill stem test and used to monitor the reservoir response, potentially for several years after well abandonment.

By using the abandoned appraisal well as a long term monitoring asset it is possible to record any interference effects resulting from production or injection events in the

adjacent field area. This data provides very high value information about the reservoir continuity and connected volumes between several remote well locations.

CaTS can also be applied in those situations where a long term pressure build-up (PBU) may be required to accurately characterise the reservoir; continuing to accurately monitor the PBU for months or even years after the rig has departed the location.

The Advanced Reservoir Testing concept

Pressure and temperature data from a CaTS gauge located adjacent to the abandoned reservoir zone is transmitted wirelessly to a seabed receiver, where it is stored locally. The data is subsequently uploaded from the seabed receiver to a vessel passing overhead using through-seawater communications.

CaTS lends itself naturally to this abandoned well monitoring application for several reasons, including:

- There is no requirement for a tubing string or completion to be installed in the well, minimising rig time and meaning that the well can be permanently abandoned with no requirement to re-enter the well to recover the tubing and perform a final abandonment
- CaTS signal transmission is not affected by cement plugs, bridge plugs or by cemented pipe
- CaTS can be installed into the well cost effectively using conventional wireline or coiled tubing equipment and procedures
- Any in-well cable arrangement represents a potential leak path; CaTS has no in-well cabling meaning that the integrity of the well abandonment is not compromised

