Superior Reservoir Simulation match to wells using Duplex Wave Migration (DWM)

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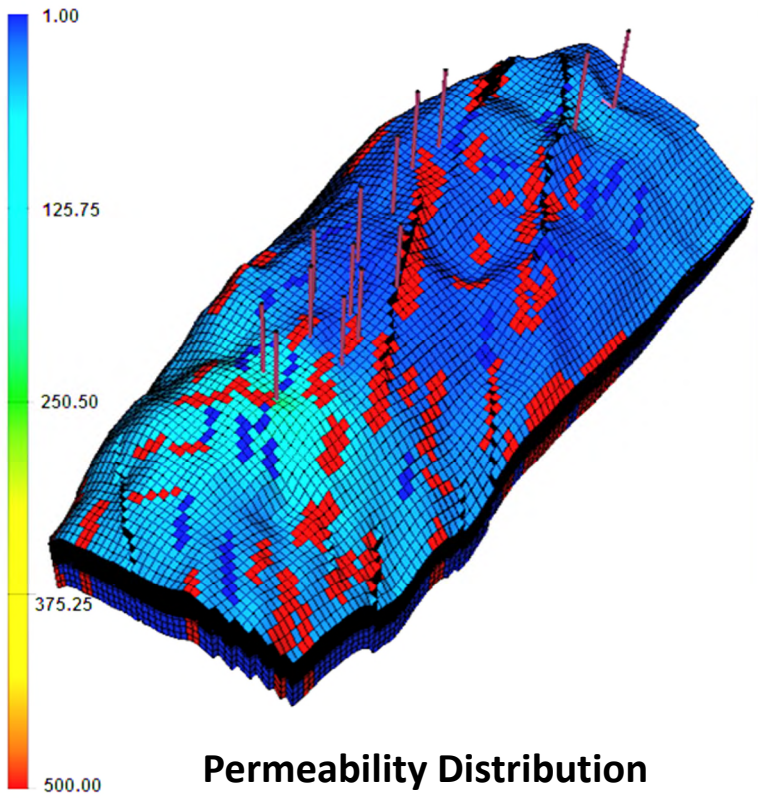
Problem: Explain rapid water cut development in some wells that was not predicted using standard model building tools for Reservoir Simulation.

Solution: Incorporate DWM based predictions of permeability corridors and barriers in the reservoir model to better predict and explain fluid flow behaviour within the reservoir.

- ✓ DWM permeability predictions were confirmed by historical and new well data
- ✓ These results were assisting in the design of improved exploitation plans and corresponding economic risks mitigation

Versatility of use of DWM

- Capable of *direct measurement of relative lateral heterogeneity* (change in acoustic impedance)
- *Identification* of plays with *zero throw faulting*
- Kirchhoff implementation *allows application on any land irregular geometry*
- *View objects from both sides* and with two HV and VH data sets
- Targeted output feature allows us to *focus on specific vertical faults or fractures*
- Additionally allows *velocity verification based on spatial location* and *better tuning of anisotropy parameters*.
- Allows to better determine *reservoir plumbing*



Permeability Distribution

Tetrale Group Services

TetraSeis Inc.

- DWM 3D prestack depth migration.

Tesseral Technologies Inc.

- Remote Forward Modeling Services.