

VLA-31 A CASE STUDY

BLOCK 1 LAKE MARACAIBO

First step

Unsuccessful injection scheme

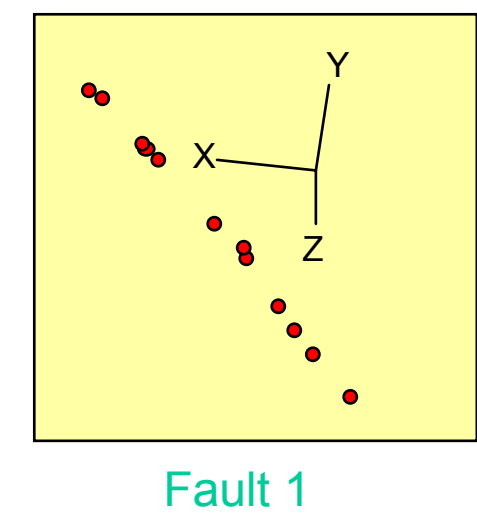
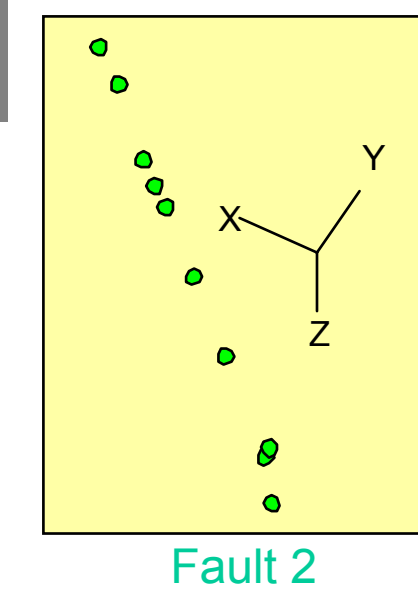
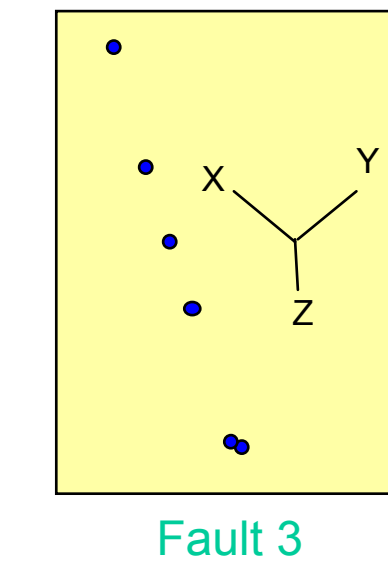
Seismic indicates reverse faults

Not a single repetition recognized in any of the wells

Recognition of fault planes using shallow TDs due to mechanical failures

Problem: No understanding of the faults and stratigraphy

3 groups of wells
With bottom holes
very well aligned
(fault planes?)



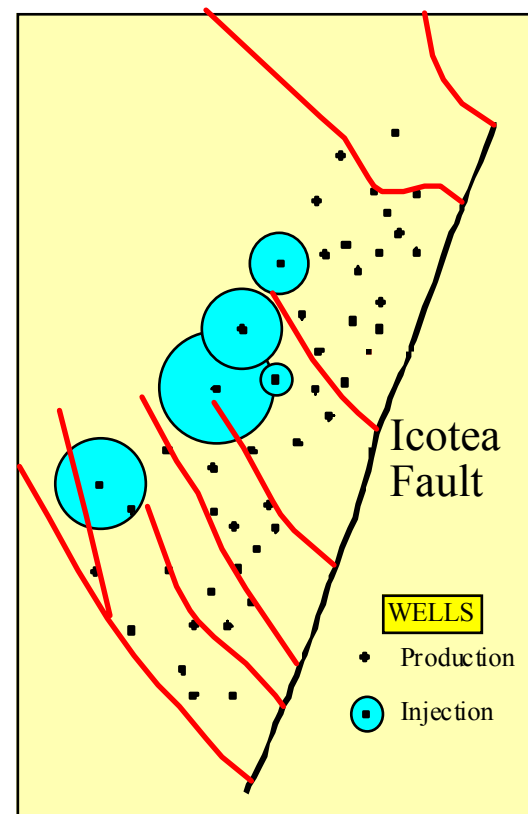
Second step

Multiple Bischke Plot Analysis

Results: Match between the fault planes and the MBPA anomalies

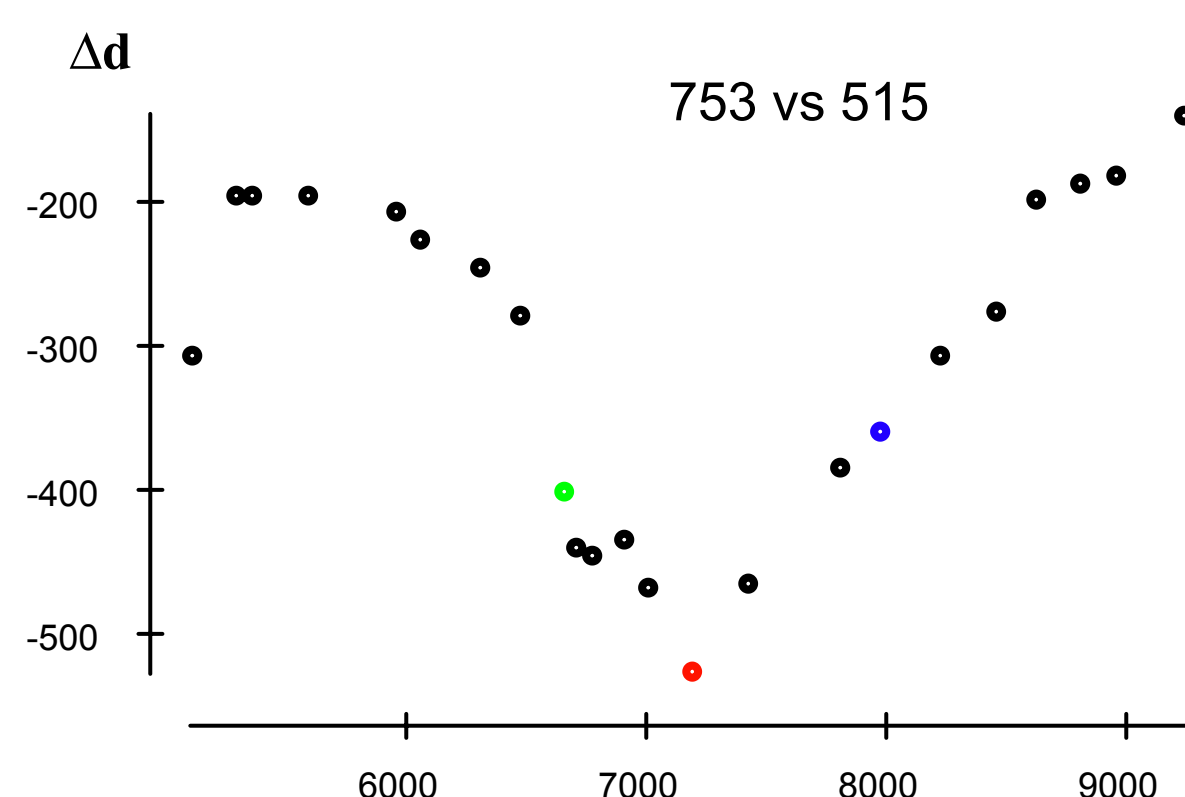
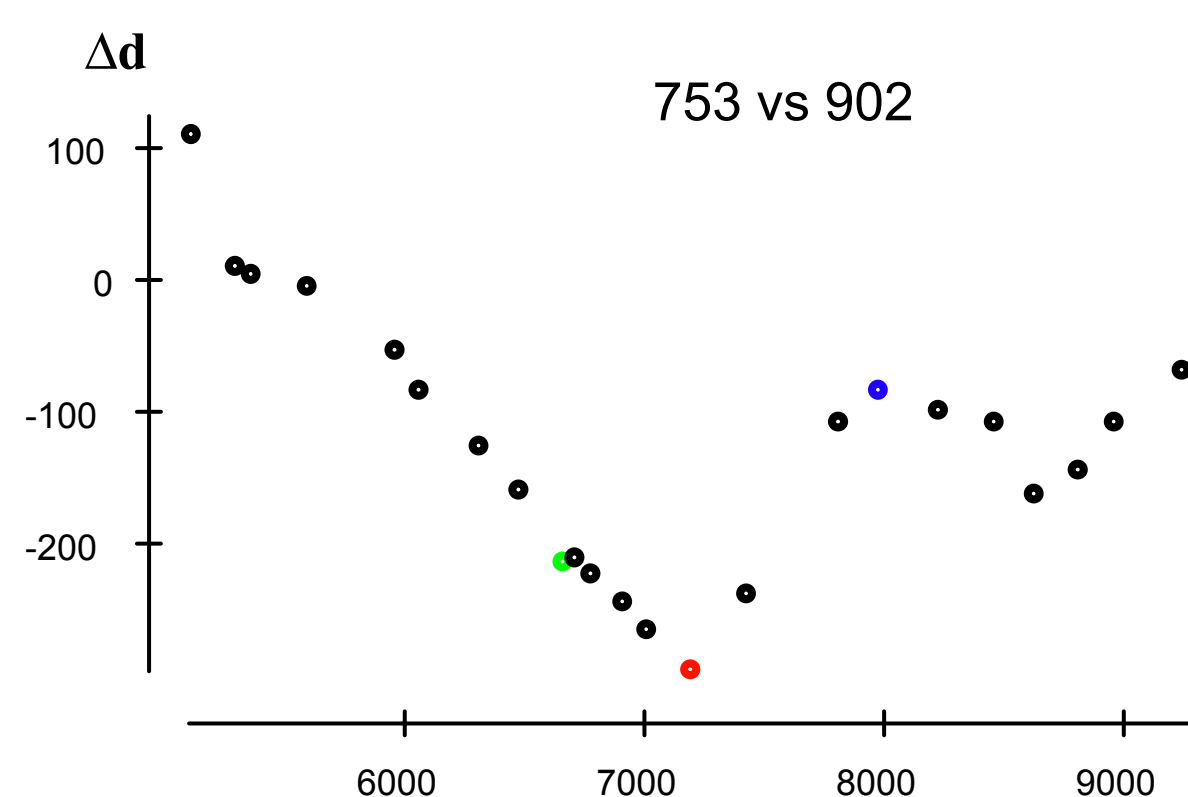
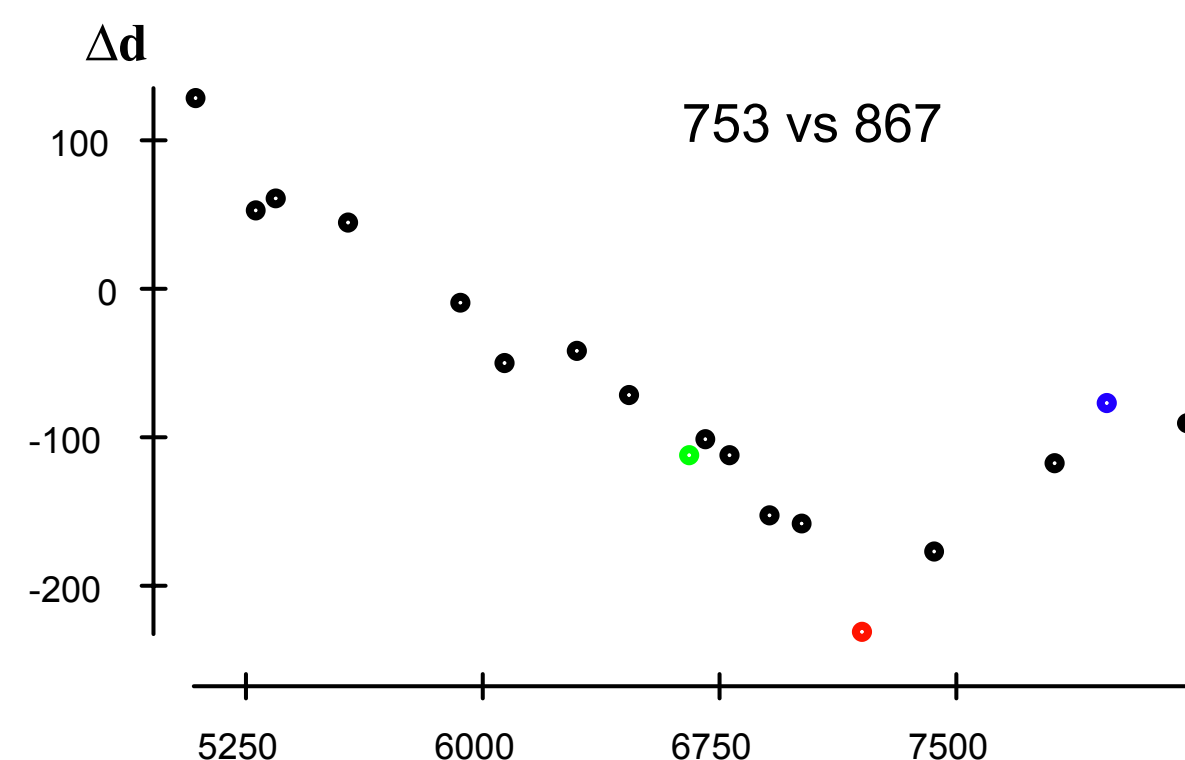
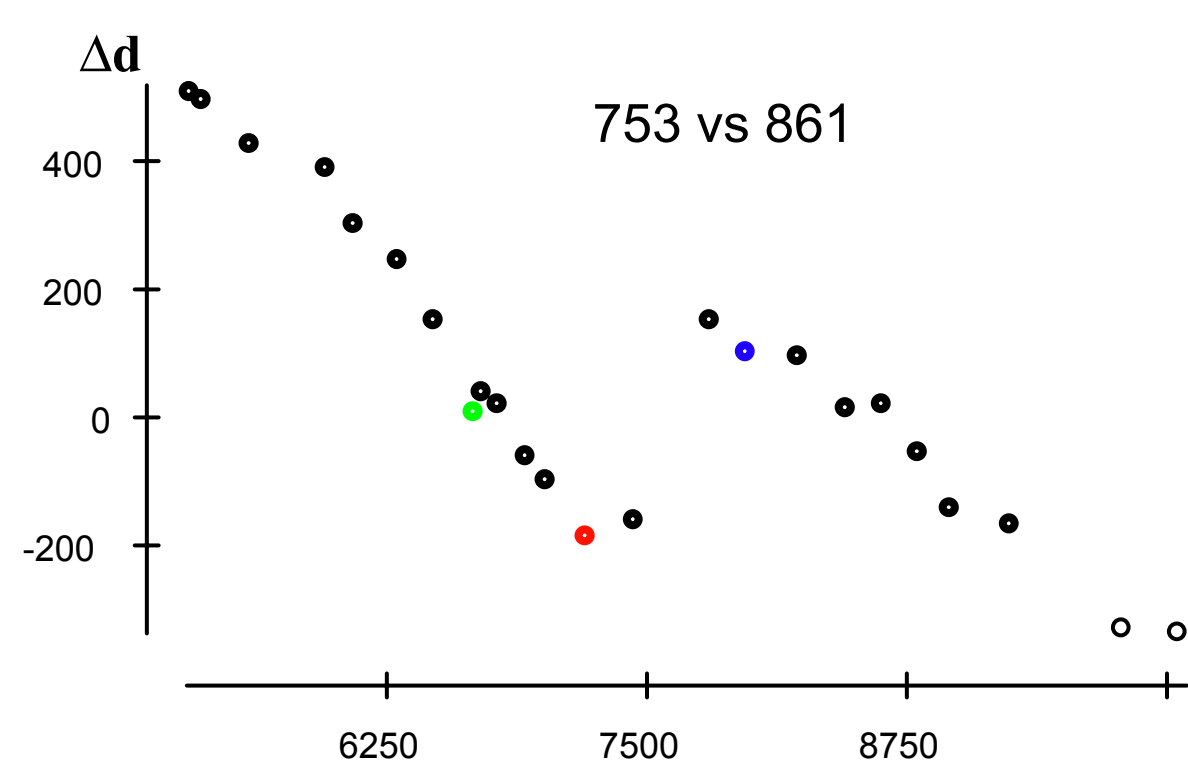
Problem: Still no understanding of the faults and stratigraphy

All of the points used to create these planes correspond to abnormally shallow TDs



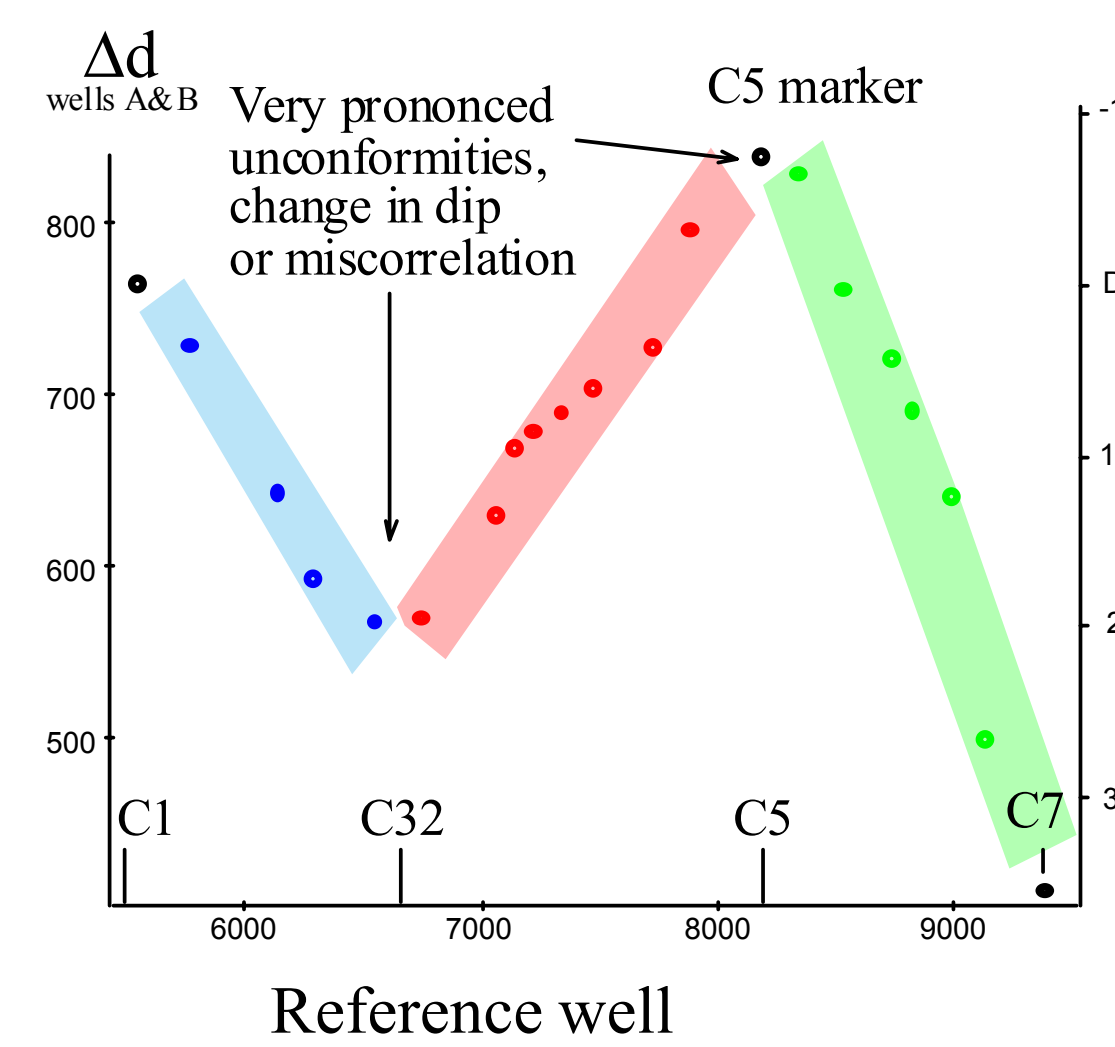
Map view of the VLA31 block

MBPA

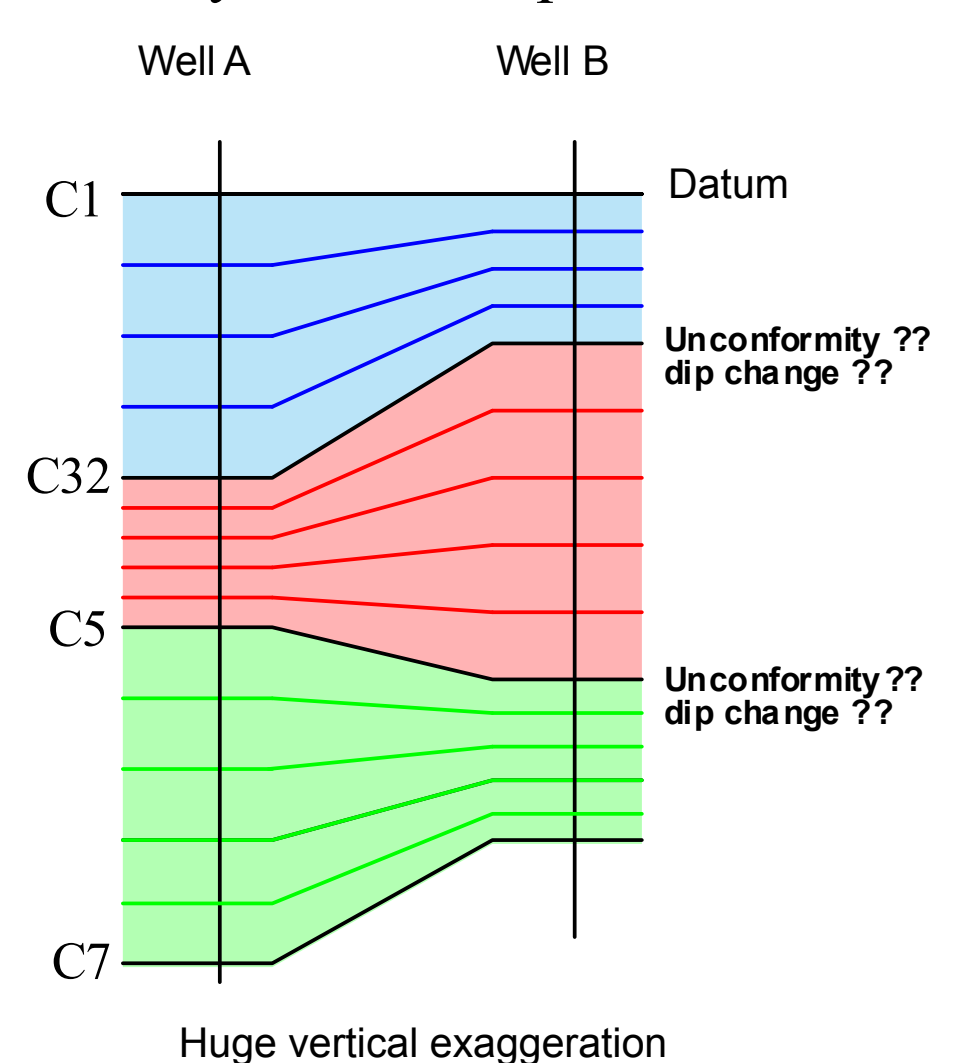


Note that the red stratigraphic marker is systematically an anomaly

Whereas the blue stratigraphic marker is not anomalous in the comparison between well 753 and well 515. That part of the stratigraphy is in the same block for both wells



Coherency of the correlation as seen by a Bischke plot



Visualization of a correlation problem through the use of a Bischke Plot

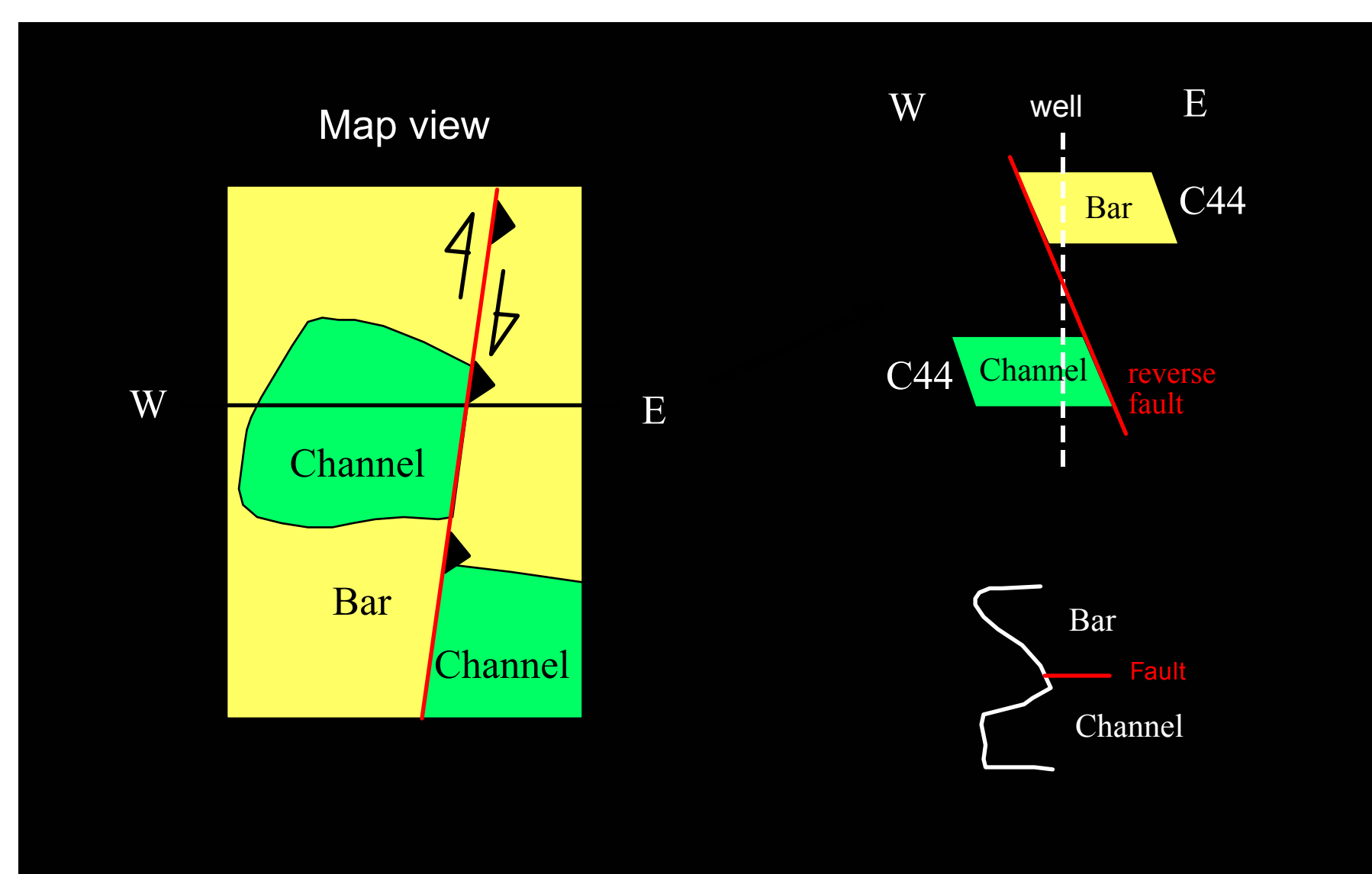
SOLUTION

The MBPA pin-pointed where the stratigraphic anomaly is in each well.

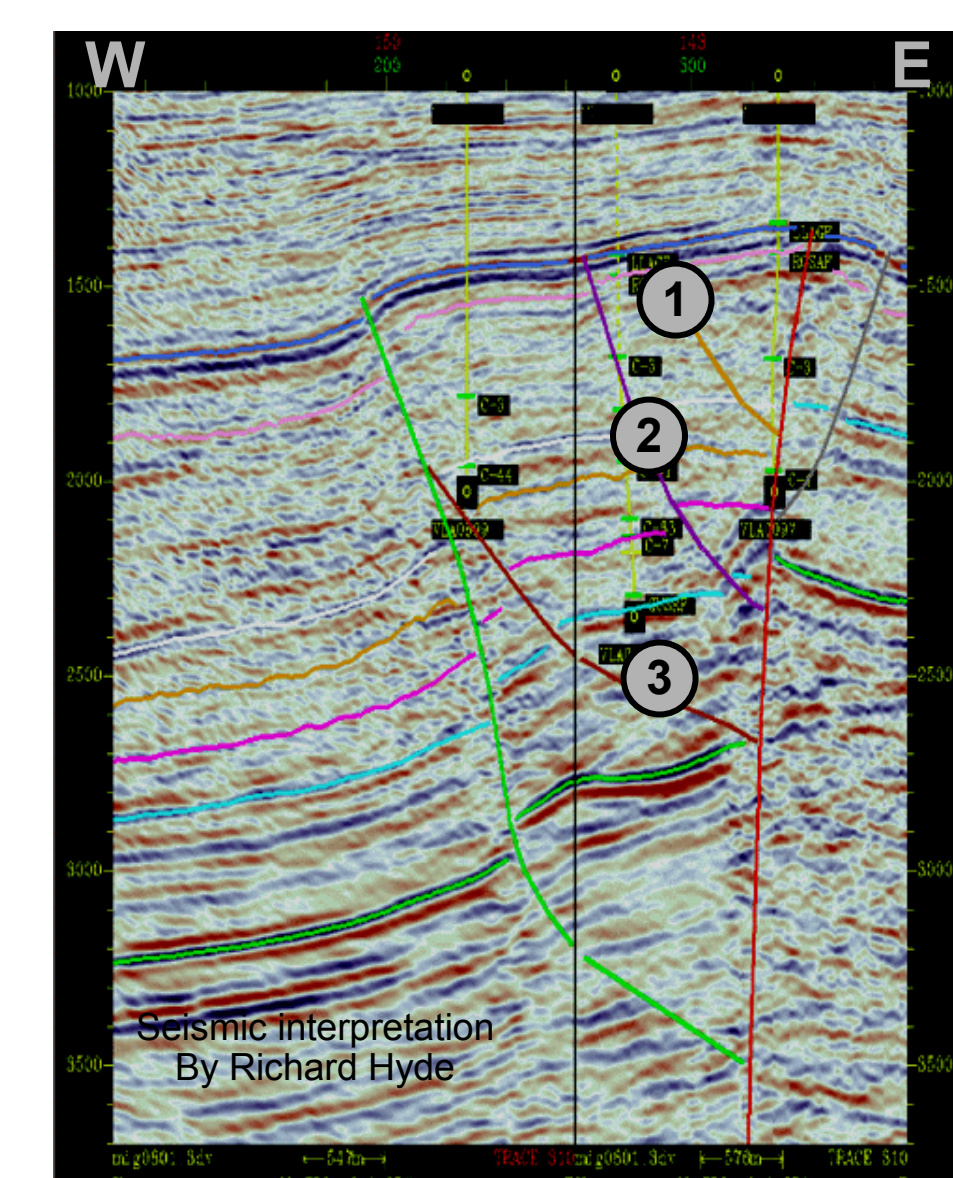
The hypothetical fault planes confirmed the seismic interpretation.

The faults are sealing and oriented North-South.

The strike-slip hypothesis explains why no repetition was seen in any of the reverse faults.



Scheme to explain why no repeated section is associated with any of the reverse faults



Seismic interpretation indicating the presence of reverse faults