

Structural Geology

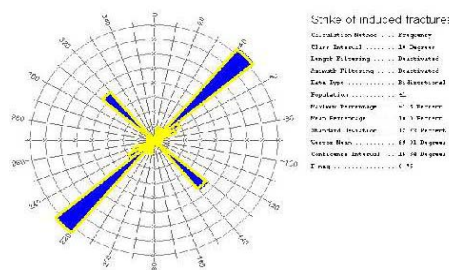
Geoscience Wales Ltd (GWL) provides consultancy in structural geology for E& P oil and gas companies. Areas covered include reservoir fracture studies, structural and tectonic analysis, and field studies.

Reservoir Fracture Studies

GWL offers a structural service analysing the types and distribution of fracture systems in reservoir formations in order to develop 3D models of fractures and faults in the reservoir.

The scope of fracture studies typically addresses issues such as:

- fracture characterisation
- differentiation of multiple phases of fracturing including fractures formed during burial diagenesis and by tectonism
- fracture orientation
- fracture intensity, connectivity, and distribution controls due to lithofacies and structural position
- timing of fracturing in relation to diagenesis and tectonism
- correlation of core and borehole image data
- up-scaling from core to seismic
- identification of zones of flow and potential flow
- artefact fractures and *in-situ* stress



GWL consultants have experience of working with the Mauddud, Shuaiba, Thamama, Arab, Habshan, Marrat, Ahmadi, Mamuniyat and Pinda formations. For optimum integration with sedimentological data, we have a working relationship with **Bryn Solutions**.

Structural and Tectonic Analysis

Analysis of regional tectonism and local structures is tailored to suit requirements and ranges from improving understanding of individual structures to analysis of basin history. The scope of such studies includes the following:

- structural analysis from regional to local/prospect scale
- analysis of tectonism during basin development and deformation
- analysis of regional palaeotectonic, palaeogeographic and palaeoclimate settings and implications for basin development and sediment supply
- seismic interpretation, particularly in structurally complex regions
- burial and growth history analysis
- cross section validation and restoration
- analysis of structural controls on sequence stratigraphy

Field Studies

GWL has the experience and expertise to carry out field studies that range from reconnaissance mapping to detailed structural mapping at prospect scale. Field studies may involve collection of specific data or may provide information for development of analogue models. The scope of field studies include the following:

- field mapping, particularly for structural evaluation
- definition of structural controls during sedimentation
- assessment of faults and fractures
- field verification of interpreted remote sensing data
- analysis of basin development and deformation history
- development of a local tectonic model and extrapolation within a regional plate tectonic context
- identification of seismically resolvable stratigraphic units and sequence boundaries
- collection of samples for sedimentological, biostratigraphic and geochemical analysis.



GWL has experience in the field of the Qamar basin, Yemen; Caucasus, Georgia; Saharan Atlas, Algeria; Palmyride fold belt, Syria; and 'the internal zones' in North Pakistan.

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