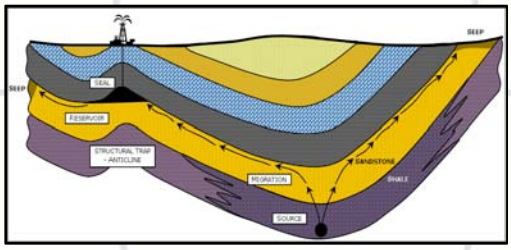
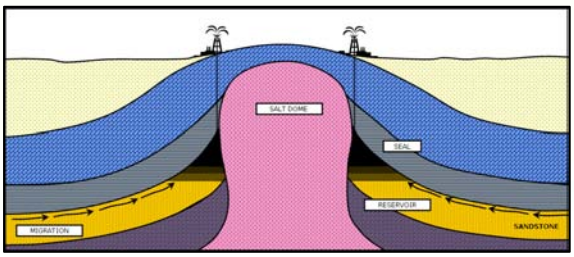
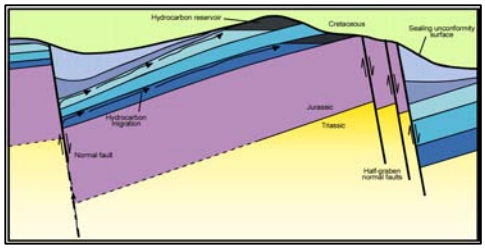
Traps and seals for reservoir assessment



The best known and important traps and seals for petroleum geologists are tectonic traps comprising of salt structures, tilted fault blocks ("half-graben"), horst and graben structures, and anticlinal structures in fold belts. To lesser extent stratigraphic traps like drape structures reefs and unconformities may also be significant features for hydrocarbon explorationists. Most of these are essentially local and regional structures for the accumulation of hydrocarbon reservoirs, but may also have a significant importance on a large scale basis e.g. Zagros Belt spanning from Turkey over Iraq and Iran into Oman, the half-graben structures of the North Sea Basin, and the drape and horst structures of the Arabian Plate.

A sound stratigraphic analysis is vital for basin modelling as source and host rocks are strictly confined to defined stratigraphic formations. A "forward modelling" approach can also be utilised here to evaluate the model, this is based on the seismic data and can help assess its accuracy prior to financing expensive drilling operations.





The three images show main types of traps & seals which enable hydrocarbons to pool and form a reservoir. These three examples (anticlinal fold, saltdome and tilted fault block/"half-graben") are also known as tectonic traps; further traps are stratigraphic traps (like reefs and unconformities). Note that two of these traps require a seal rock which is impermeable to contain the hydrocarbon within the porous reservoir rock. The hydrocarbons would not pool in these traps without the sealing rocks. In the case of siliciclastic rocks these are often shales and mudstones and with carbonate rocks these could be evaporitic salt beds or fine lime mudstones. Trapping in half-graben structures are caused by detachment faulting.

Corex offer the following services for this purpose:

- Field mapping
- Core logging
- Thin section analysis
- Interpreting geochemical data (e.g. XRD, stable isotopes)
- Bio-Sr-stratigraphy