

LACUSTRINE SHALE HYDROCARBONS

Objective – High level objectives of the proposed study.

Investigation of the hydrocarbon (gas and liquid) potential and producibility of lacustrine shales (type I) and shales with mixed type II/type III kerogen

Investigation of the effects that mineralogy and maturity have on sorption properties within these shales.

Systematic studies on selected maturity sequences of different shale source rock types

Review and analysis of selected sample sets covering low to high (“overmature”) rank. It is anticipated that sorption properties of different kerogen types will become more and more similar with increasing rank. Whether this holds for petrophysical and mechanical properties will be investigated.

Assessment of sorption capacity and sorption/desorption kinetics for methane and C₂+ hydrocarbons

Trends in sorption capacity, hydrocarbon recovery efficiency etc. may correlate with TOC, maturity or kerogen types. Once identified, these trends could be used for economic feasibility studies and improvement of exploration strategies in combination with other geological and geochemical information on shale gas/oil reservoirs.

Determination of fluid transport properties on selected carbonaceous shale samples under *in situ* conditions

Numerical modelling

Reconstructions of free and sorbed gas in shales can be performed based on numerical 3D modelling using PetroMod (Schlumberger) software; however, these results have to be tested against real data.