An introduction to sequence stratigraphy in the field: Utah

Intended audience

Geoscientists needing to become acquainted with modern techniques for basin analysis and sequence stratigraphic analysis. The course would be of particular relevance to geologists and geophysicists working in the field of petroleum exploration.

Course objectives

To enable participants to:

- Gain an overview of sequence stratigraphy and facies architecture on a 'ramp type' basin margin in the field.
- Compare lithostratigraphic and sequence stratigraphic approaches to the division of rock successions.
- Gain experience of the sedimentology of the well-exposed, Cretaceous alluvial to marine siliciclastic rocks.
- Gain experience of the sedimentology of alluvial, red bed successions, including palaeosols and of aeolian/lacustrine successions of Permian to Cretaceous rocks of the Paradox Basin (an analogue to the southern and central North Sea).
- Gain experience of extensional and salt tectonics, at an outcrop scale, as analogues to North Sea hydrocarbon traps and pathways.

Course description

The course will enable participants to develop an understanding and appreciation of the role of sedimentology studies in building genetic models and defining parasequences; this is essential to understanding the complexities of the sequence stratigraphic concept. The course is, therefore, designed to allow participants to work through the process of depositional model building and parasequence/sequence boundary recognition, in order that they may critically evaluate the sequence stratigraphic concept.

Particular attention will be paid to the difficulties of applying the sequence stratigraphic concept even in the classic, type locality, and emphasis will be placed on the inherent difficulties of applying the techniques in the sub-surface.

The red bed successions of the Paradox Basin provide the opportunity to extend the sequence stratigraphic concept to fully non-marine strata.

Although all of the sedimentological studies made on the course can be placed into a sequence stratigraphic context, there are also valuable lessons to be learnt in the field concerning many other aspects of petroleum basin studies. Consequently, the course covers a broader spectrum of interest than sequence stratigraphy alone.

Course duration

7 days

Delivery mode

Field-based course

Course fee

Dependent on seasonal price fluctuations and exchange rates

It is expected that course attendees make their own travel arrangements to and from Salt Lake City, Utah

Date(s)

Spring and Autumn

Location

Utah, USA