Lecture on Sunday 29-3-2020

Seismic Sequence stratigraphy

How to perform seismic sequence stratigraphic analysis?

Method

- 1- Delineating the boundaries at which the reflections were terminates in toplapping, downlapping, onlapping or truncating pattern.

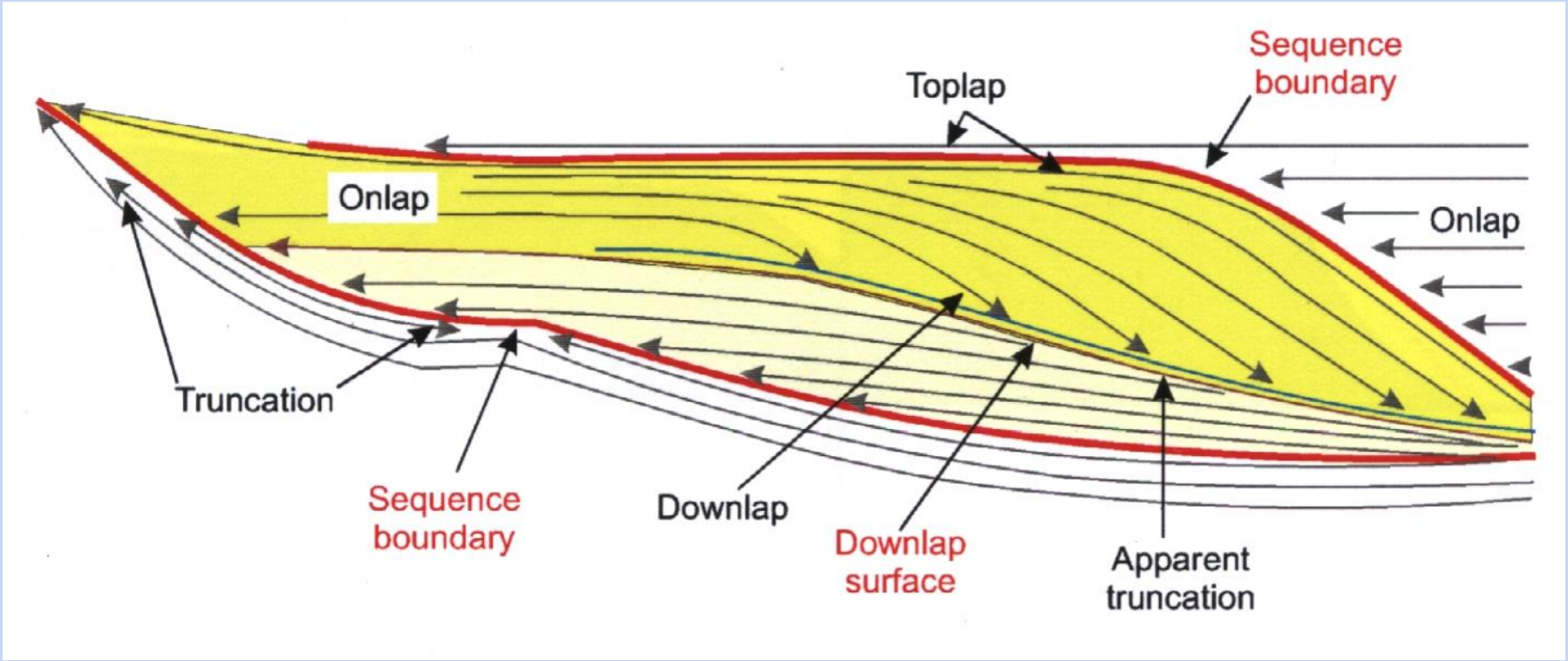
- 2- Tracing these boundaries through the different seismic reflection profiles which previously tied.

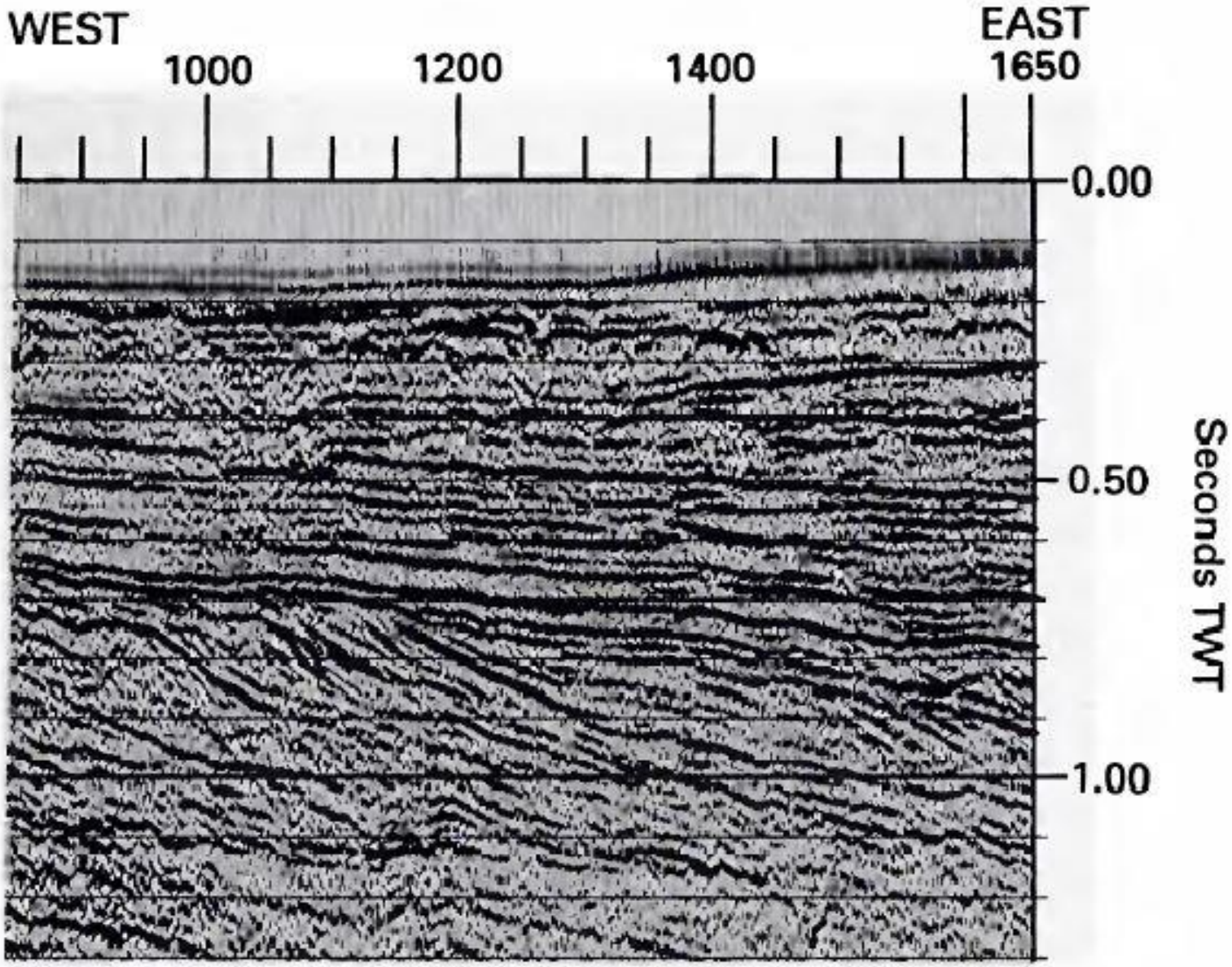
- 3- Grouping different set of reflectors into major sets (Depositional sequences) bounded with the distinct sequence boundaries.

- 4- Determining the thickness of the identified depositional sequences through the whole study area.

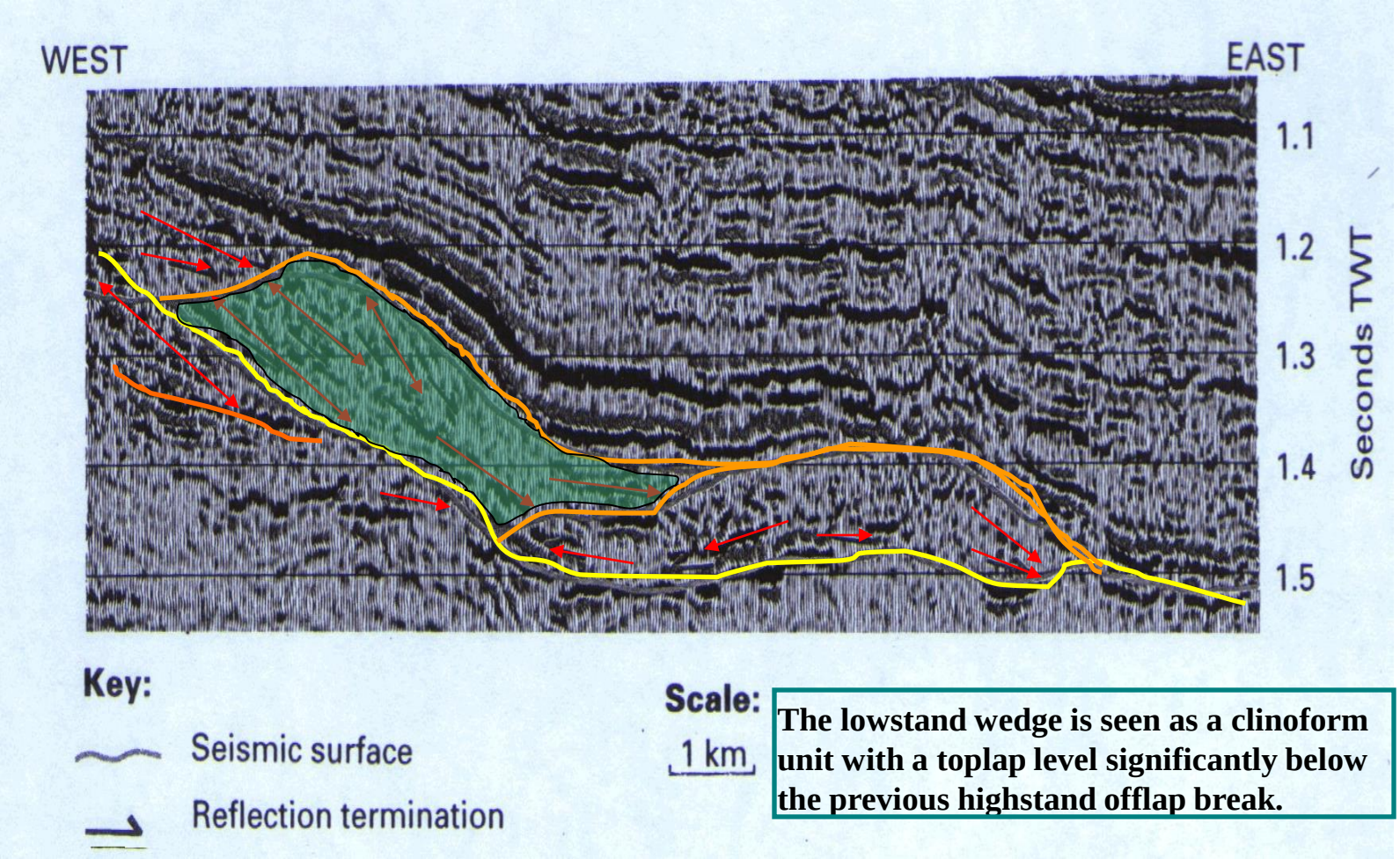
- 5- Classifying each of the outlined depositional sequences into different systems tracts using the delineated depositional surfaces.

- 6- Investigating the stacking pattern within each systems tract to identify the parasequence type that forms this systems tract.


Sequence boundary
Toplap
Onlap
Onlap
Truncation
Sequence boundary
Downlap
Downlap surface
Apparent truncation

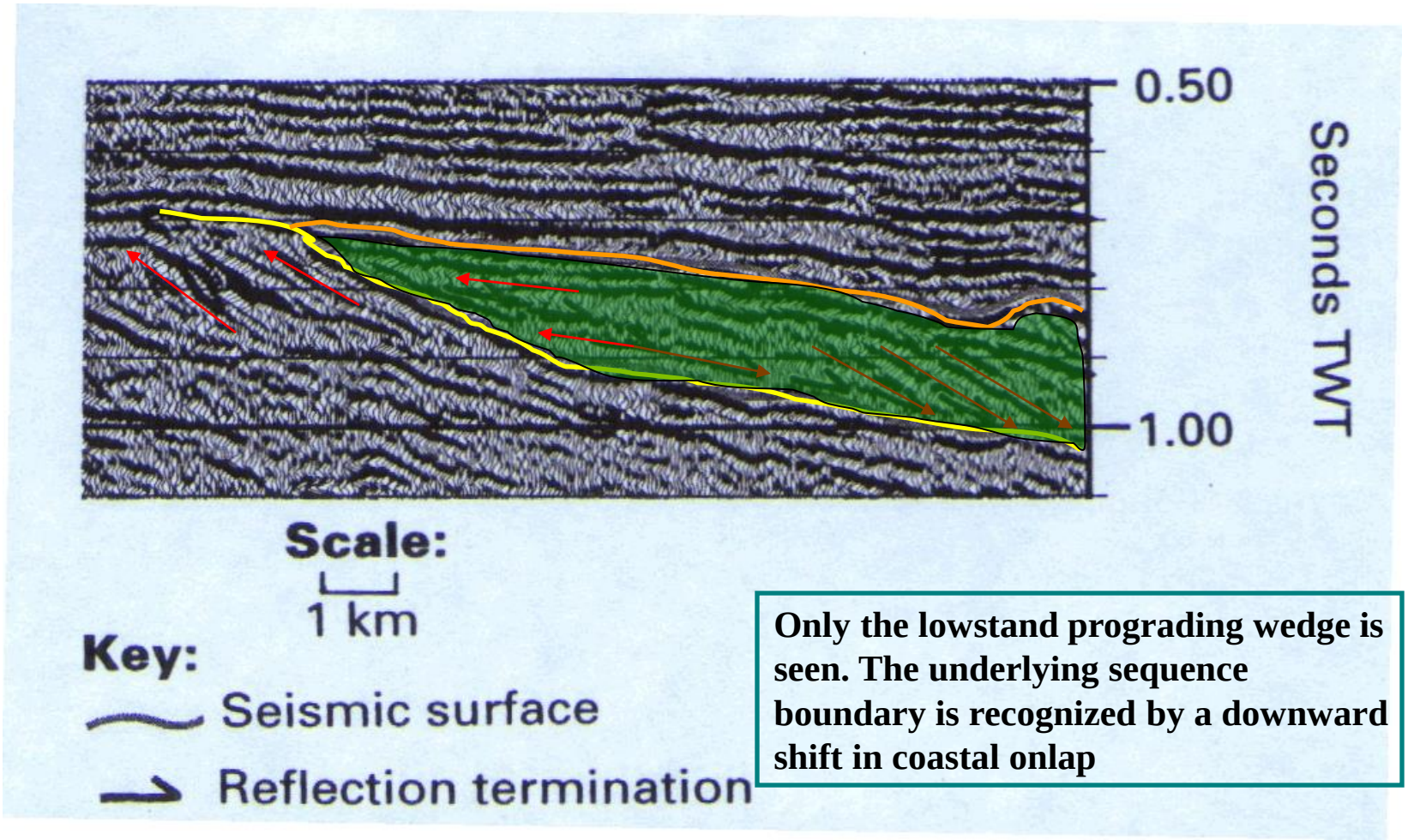

WEST
1000
1200
1400
EAST
1650
0.00
0.50
1.00
Seconds TWT

A lowstand systems tract on seismic data- lowstand wedge



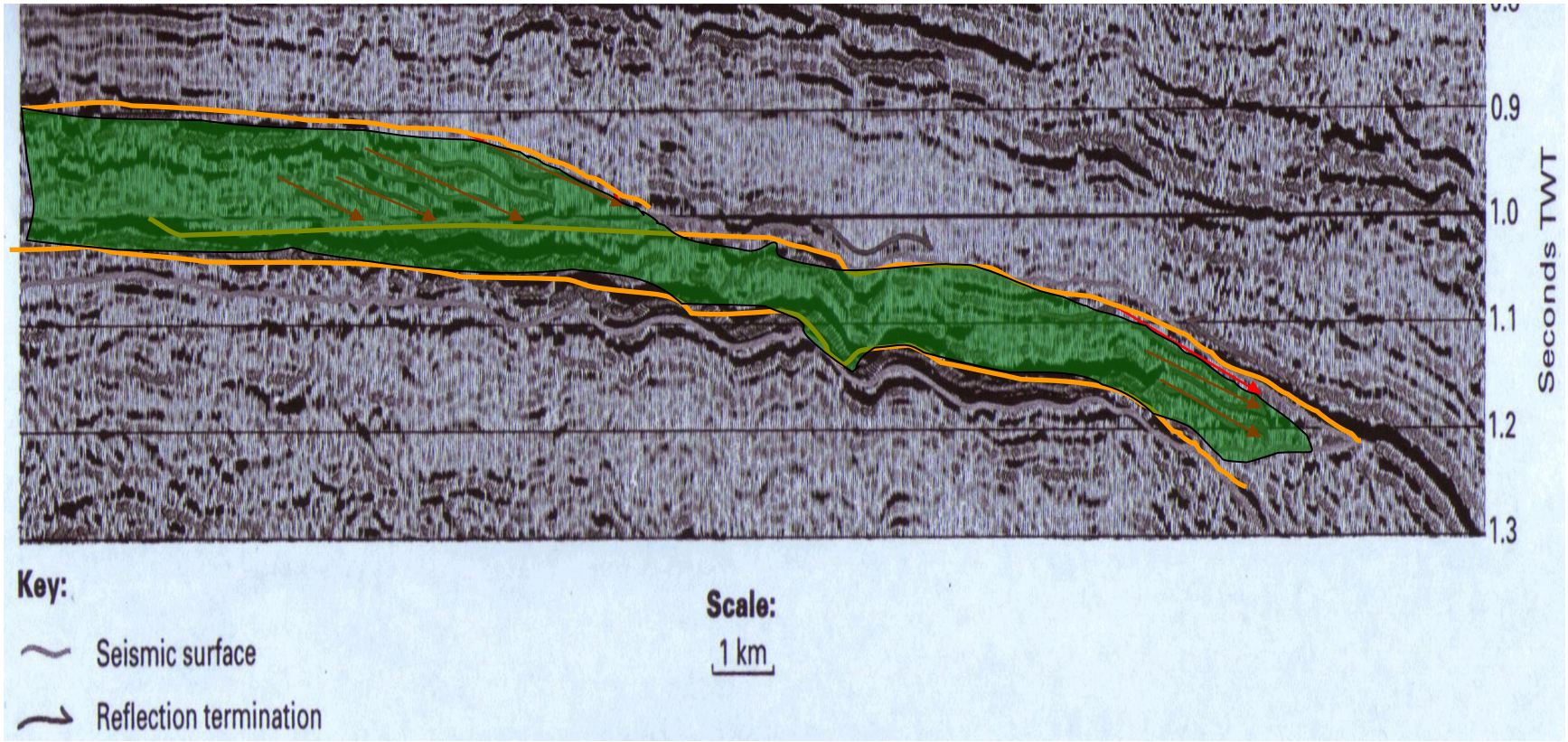
The lowstand wedge is seen as a clinoform unit with a toplap level significantly below the previous highstand offlap break.

A lowstand systems tract on seimic data - lowstand prograding

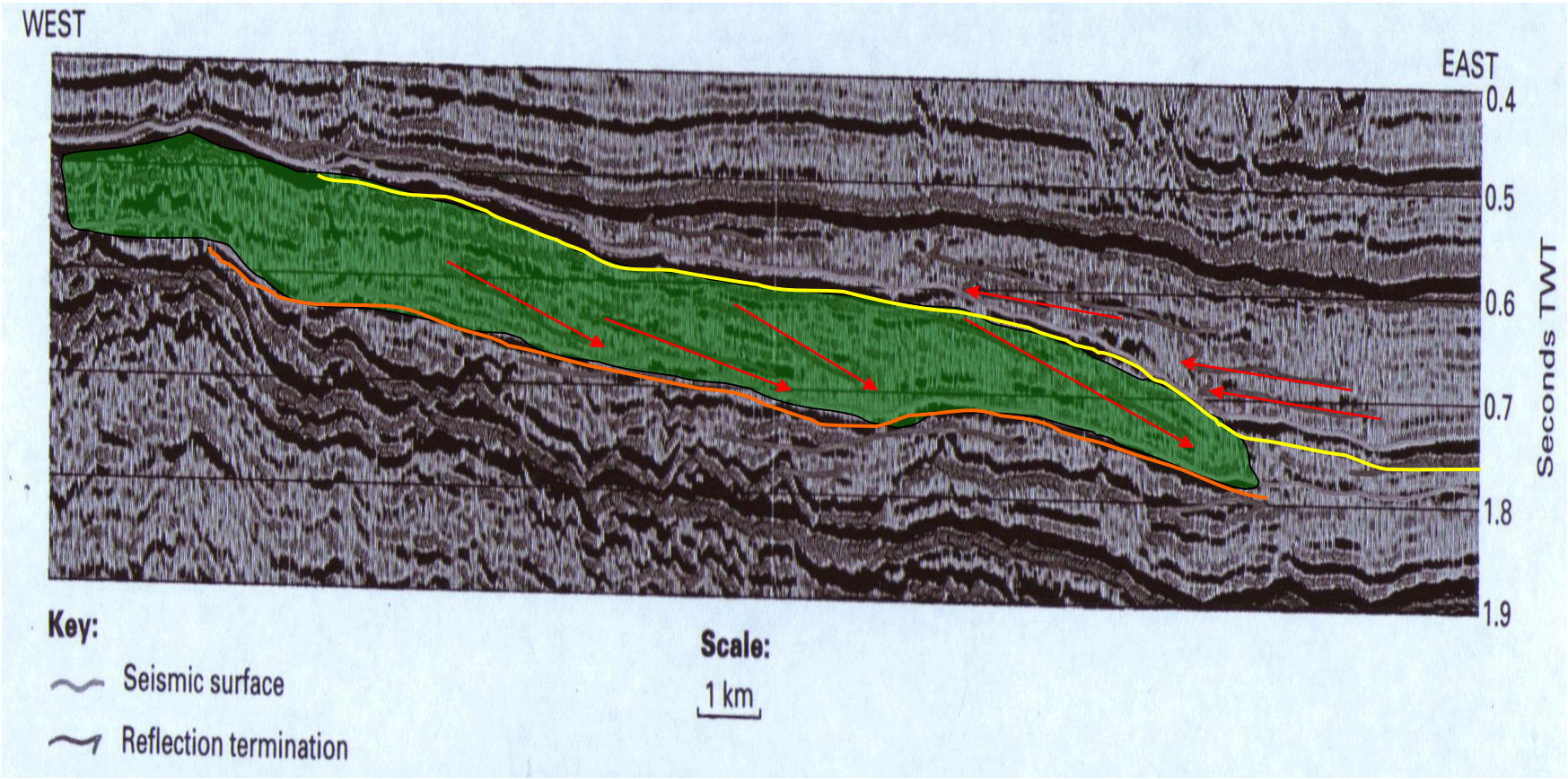


Only the lowstand prograding wedge is seen. The underlying sequence boundary is recognized by a downward shift in coastal onlap

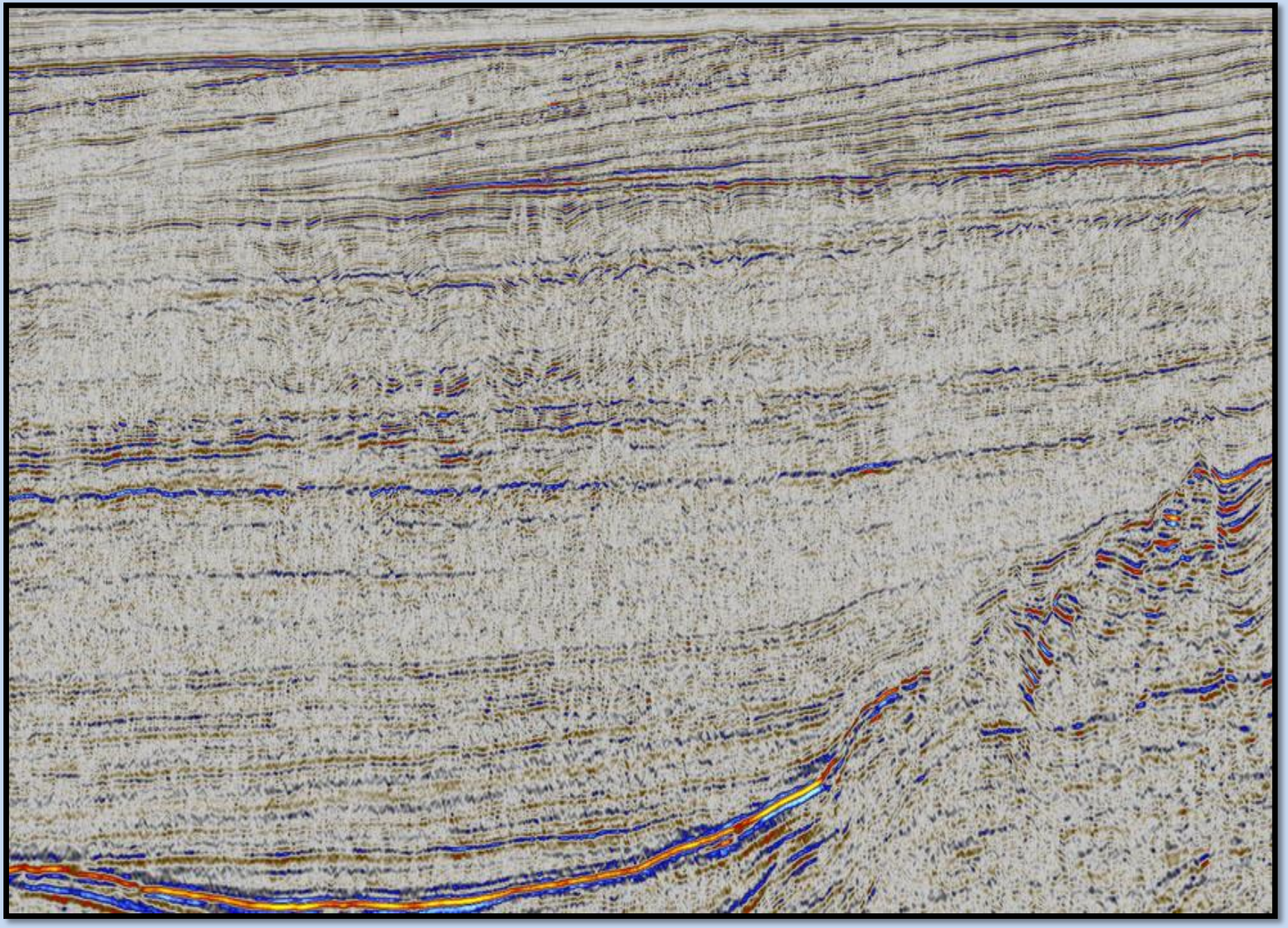
A transgressive systems tract on seismic data

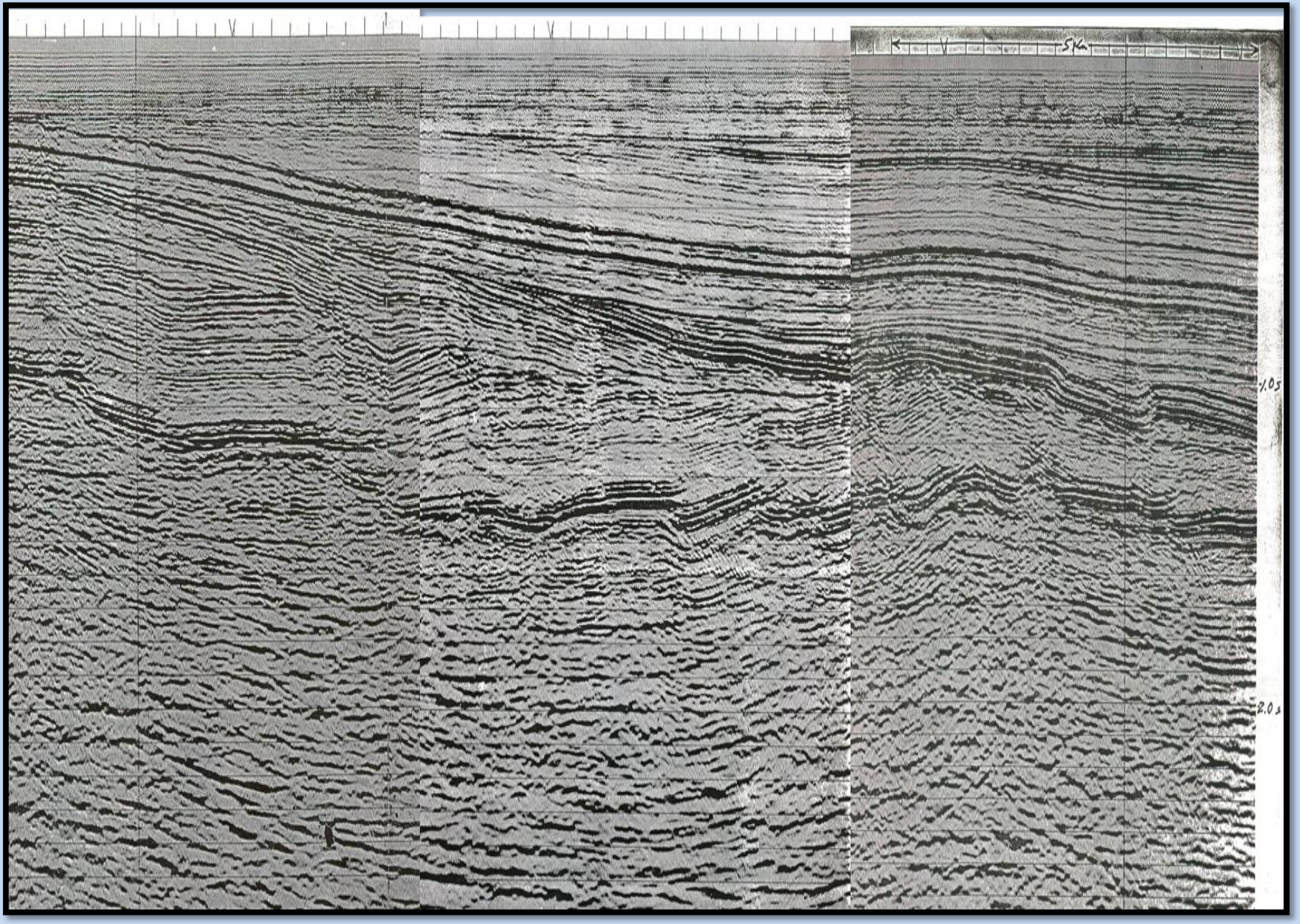


A highstand systems tract on seismic data



Now try by your self to perform seismic sequence stratigraphic analysis for the next seismic sections?




5Km
1.0s
2.0s

Thank you