

## **Appendix A**

Sedimentary logs based on fieldwork

## Symbols used in graphic logs

### Sedimentary structures

- Massive/structureless
- Trough x-bedding
- Tabular x-bedding
- Sigmoidal x-bedding
- Planar parallel-bedding /lamination
- Wavy bedding
- Hummocky x-bedding
- Swaley x-bedding
- Current ripple x-lamination
- Wave ripple x-lamination
- Soft-sediment deformation
- Load casts
- Contorted mud lamina

- Convolute bedding
- Water-escape structure
- Desiccation cracks
- Minor fault
- Mud lamina
- Mud clasts
- Mud trace
- Siderite nodule

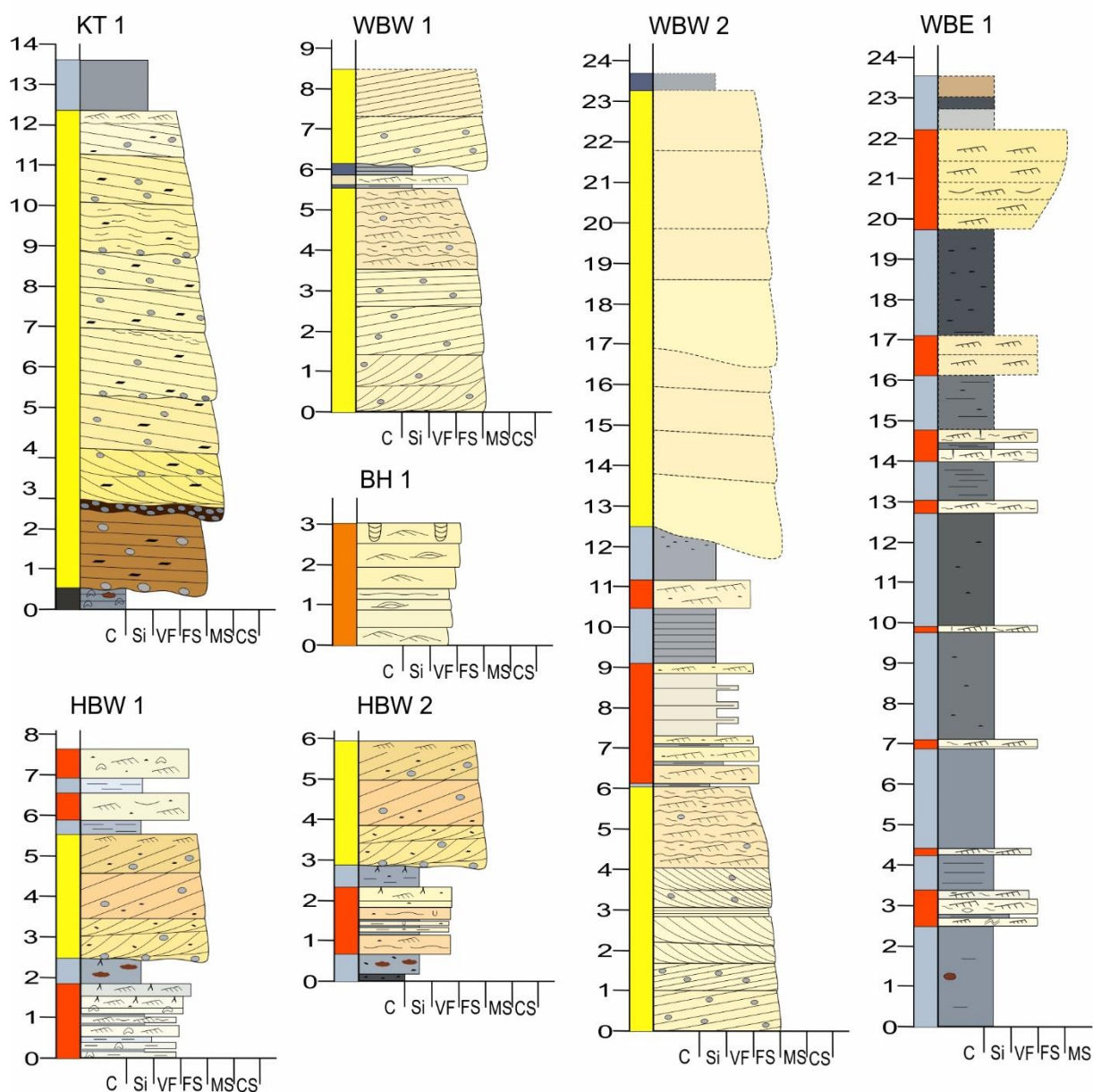
### Fossils/Trace fossils

- Bioturbation
- Diplocraterion
- Rootlets
- Carbonaceous flakes
- Lignite fragments

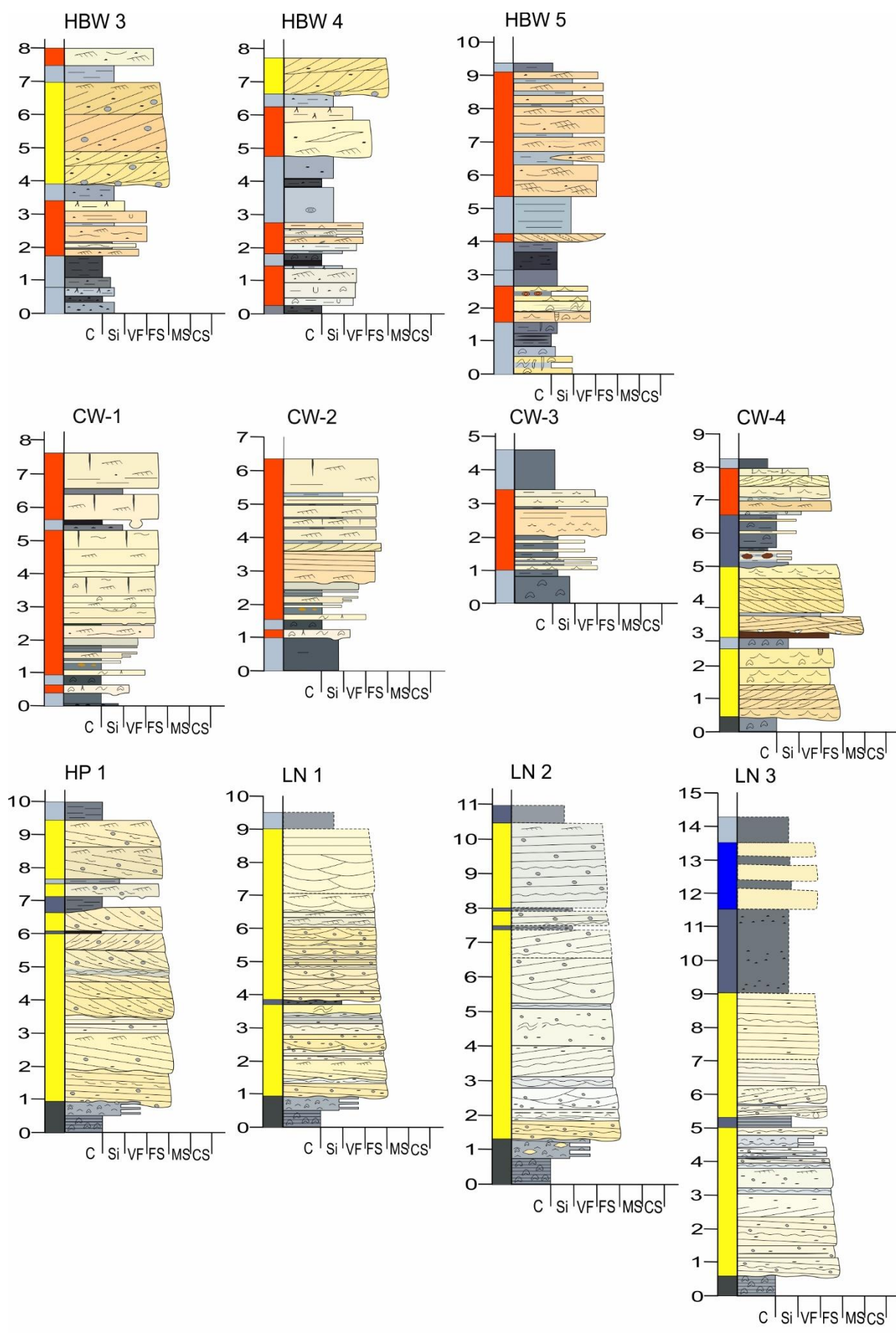
- Fossil shells
- Plant leaf
- Oil trace

### Facies associations

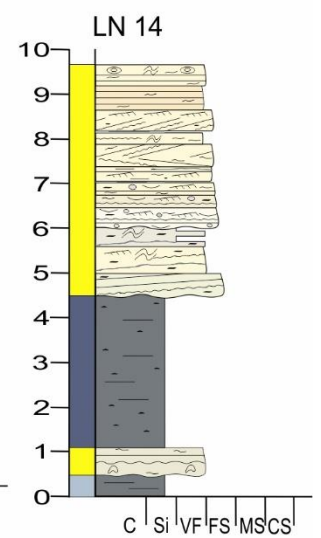
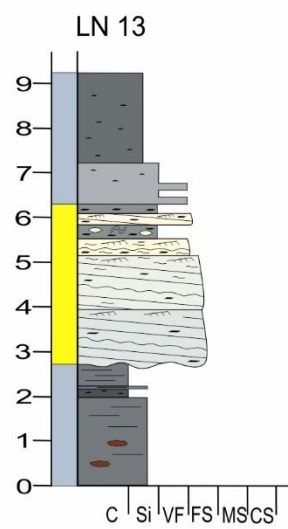
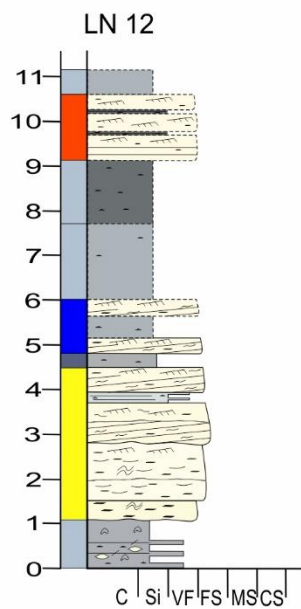
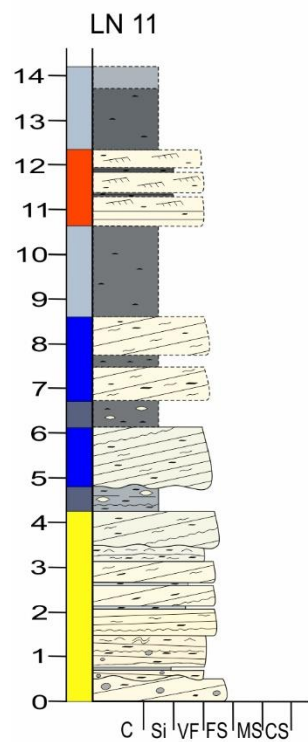
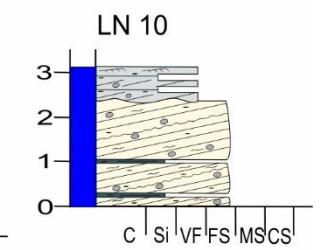
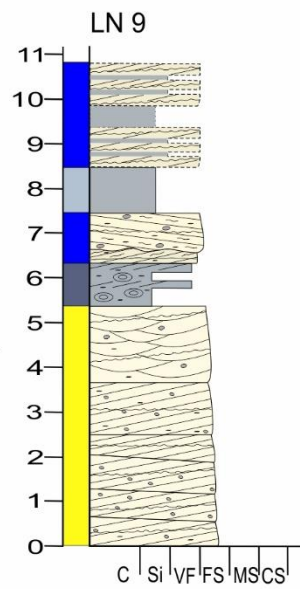
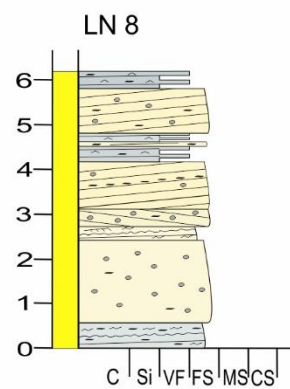
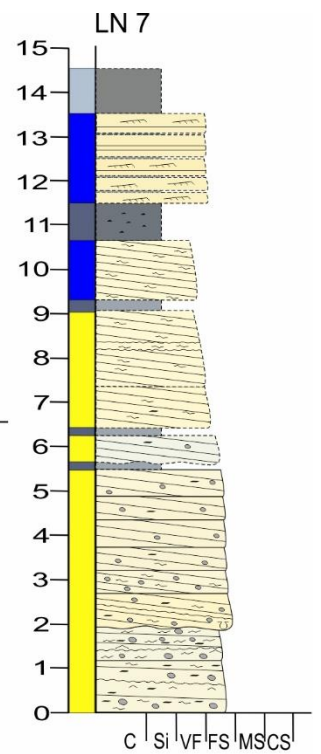
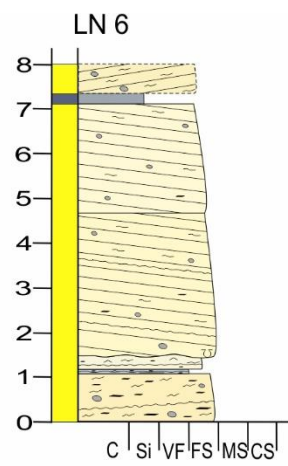
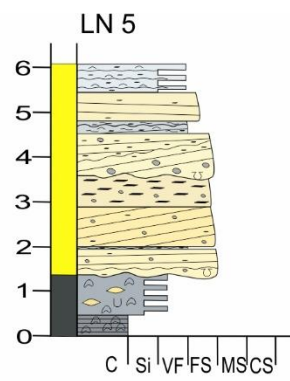
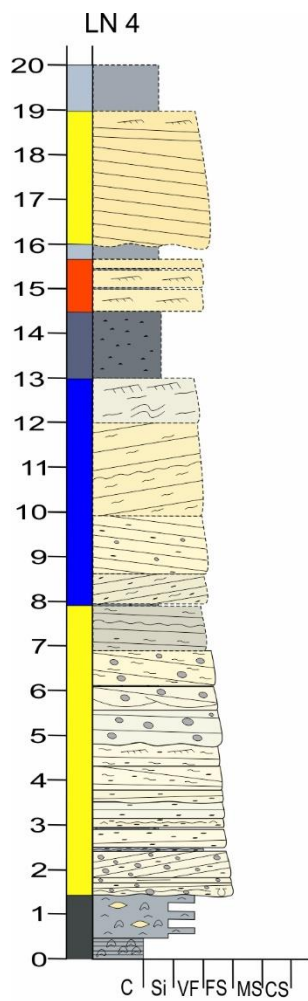
- Sandstone dominated channel deposits
- Tidally influ. heterolithic channel dep.
- Crevasse splay sandstone deposits
- Overbank mudstone deposits
- Mudstone dominated channel deposits
- Marine sandstone
- Marine heterolithic
- Marine mudtone
- Marine limestone



KT= Kettleless; WBW= Whitby West; WBE= Whitby East; BH= Beacon Hill; HBW= Hayburn Wyke

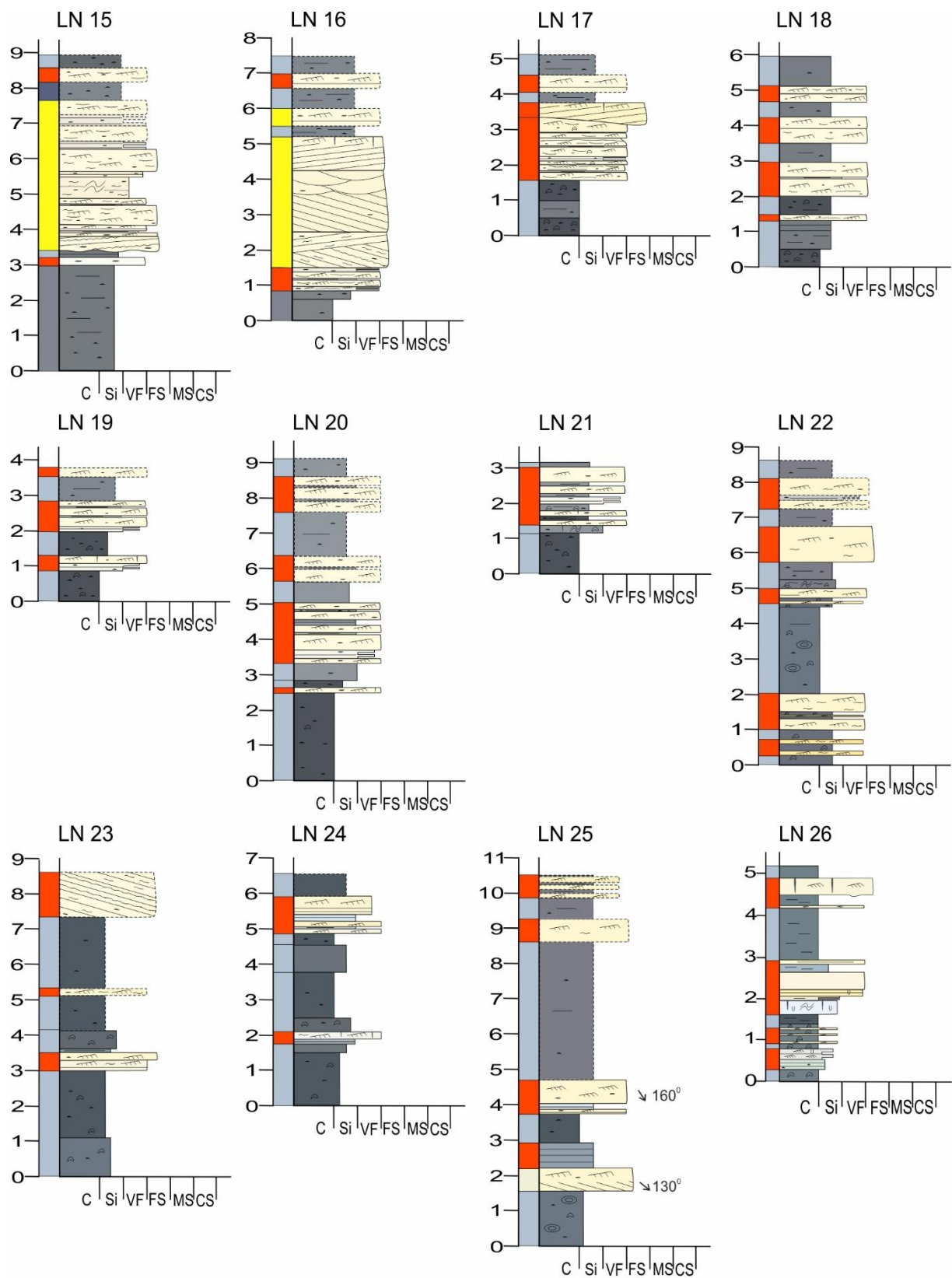


HBW= Hayburn Wyke; CW= Cloughton Wyke; HP= Hundle Point; LN= Long Nab

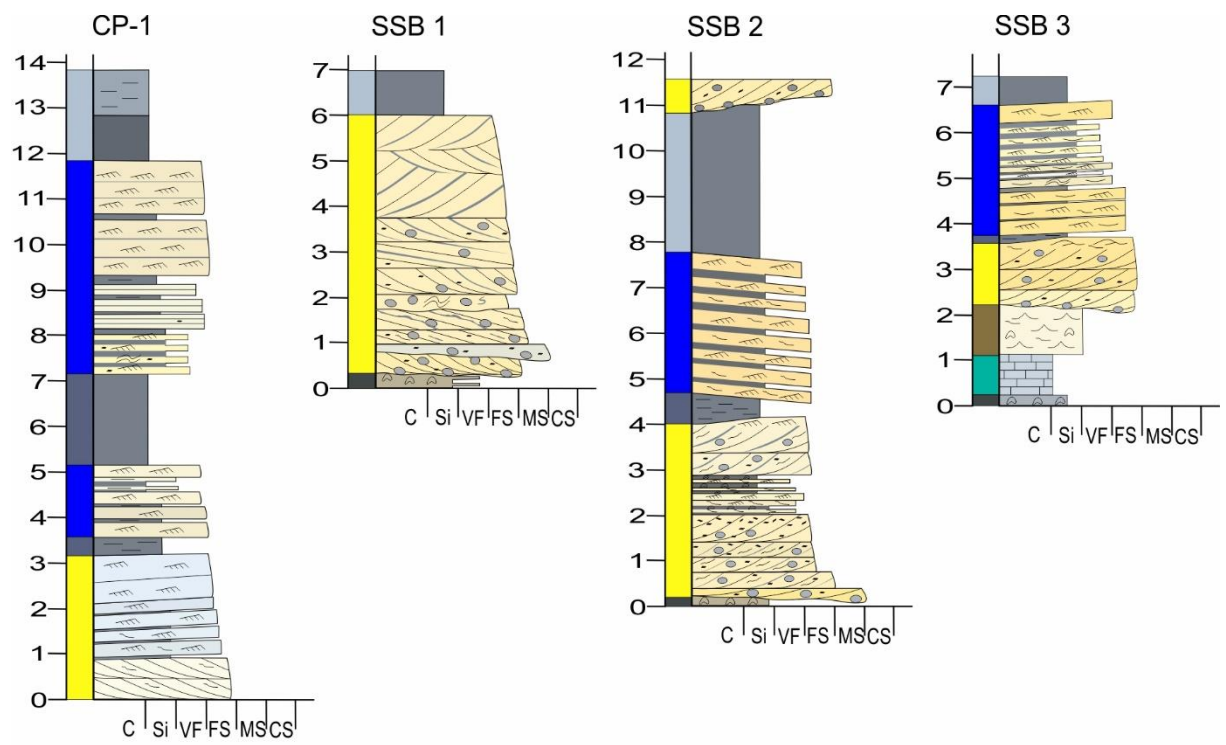


LN= Long Nab





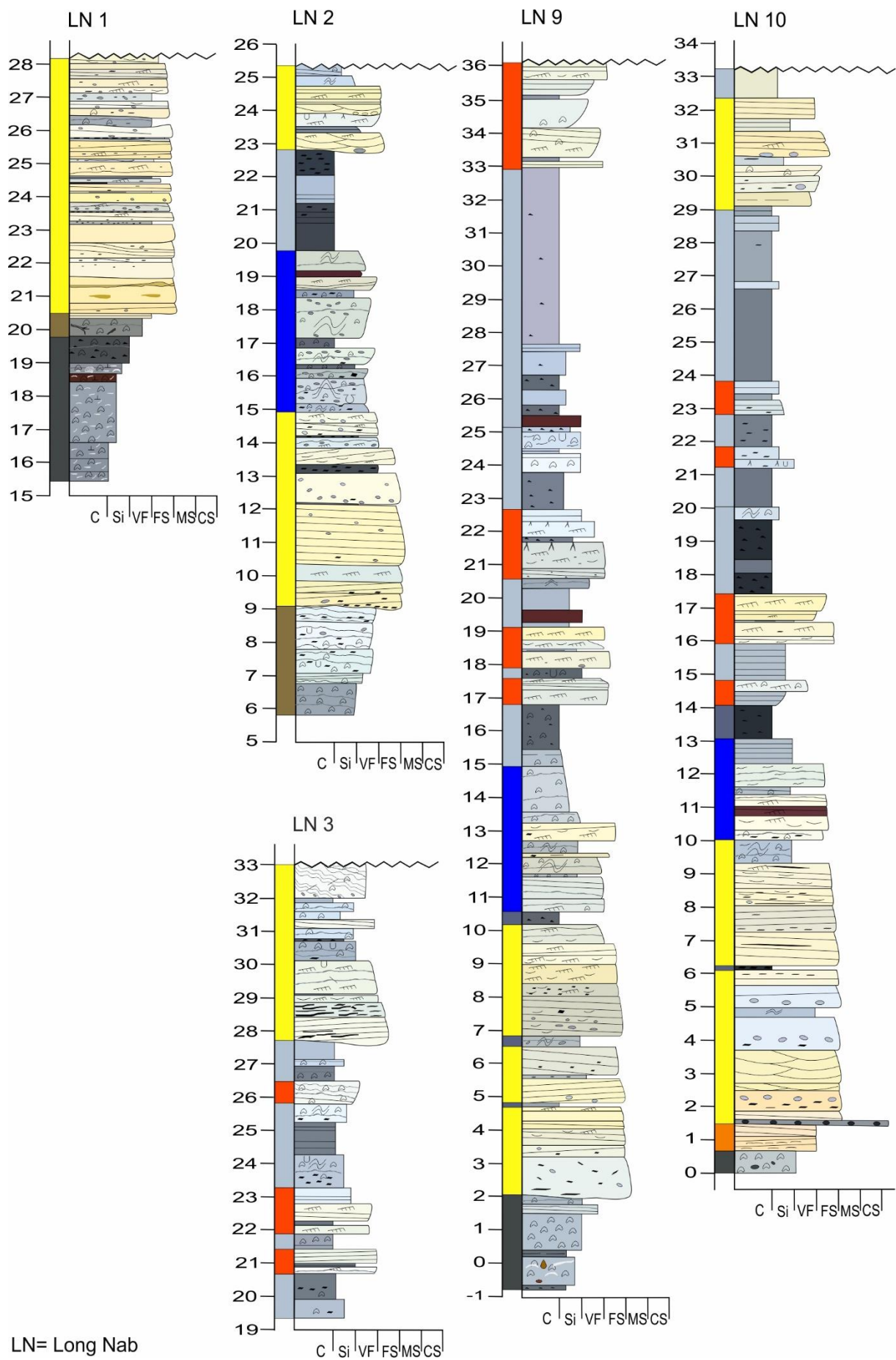
LN= Long Nab



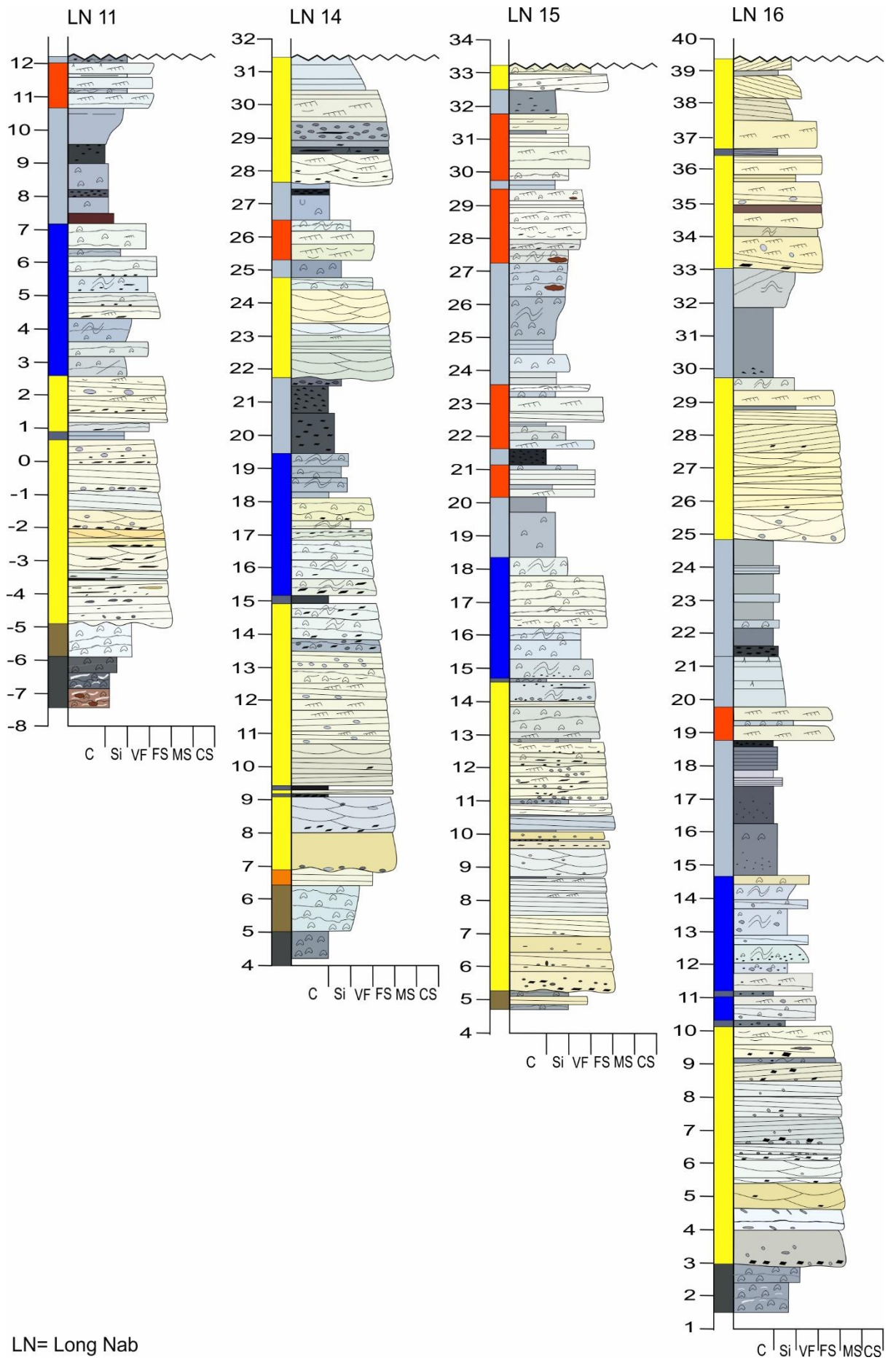
CP = Cromer Point; SSB= Scarborough South Bay

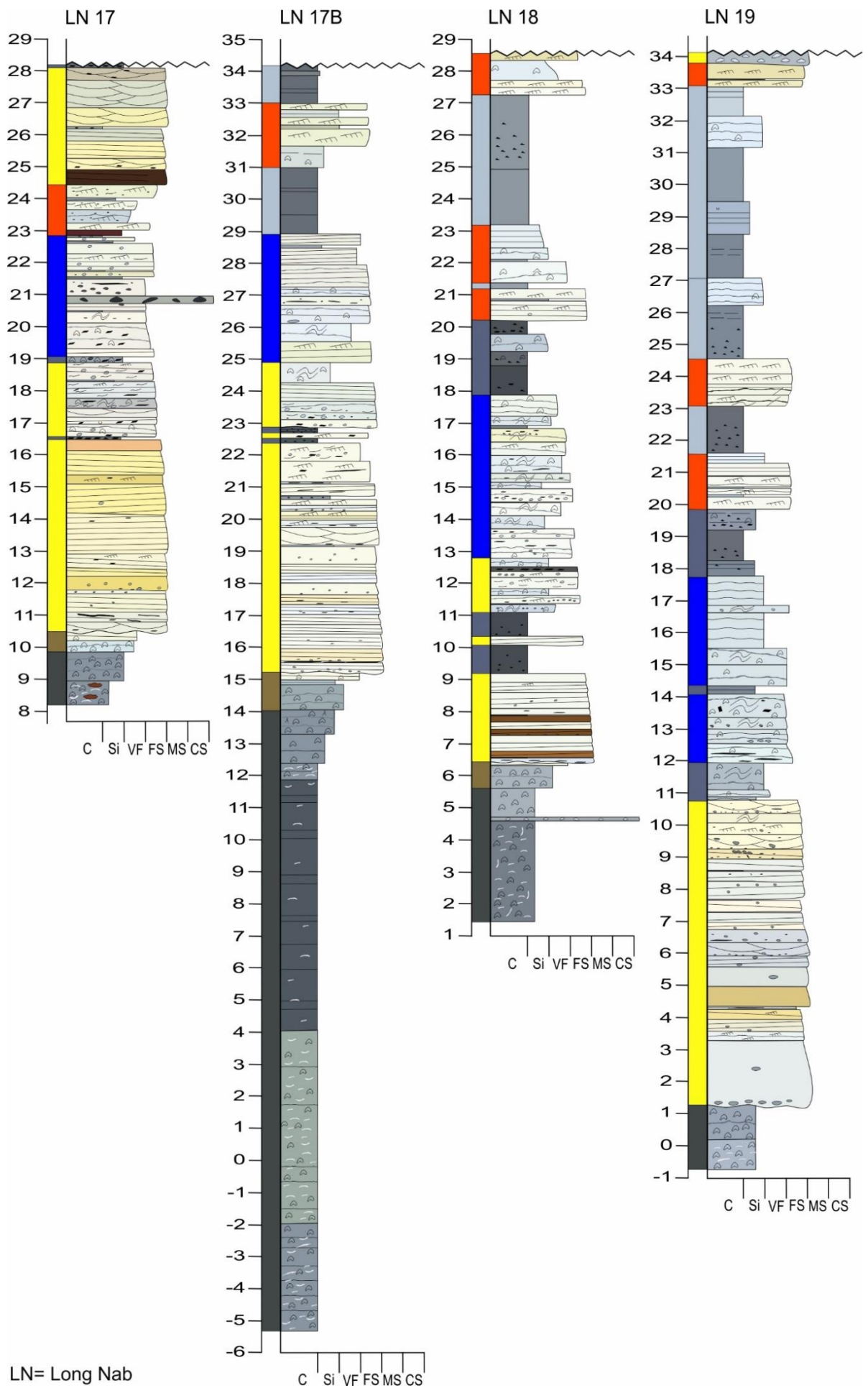
## **Appendix B**

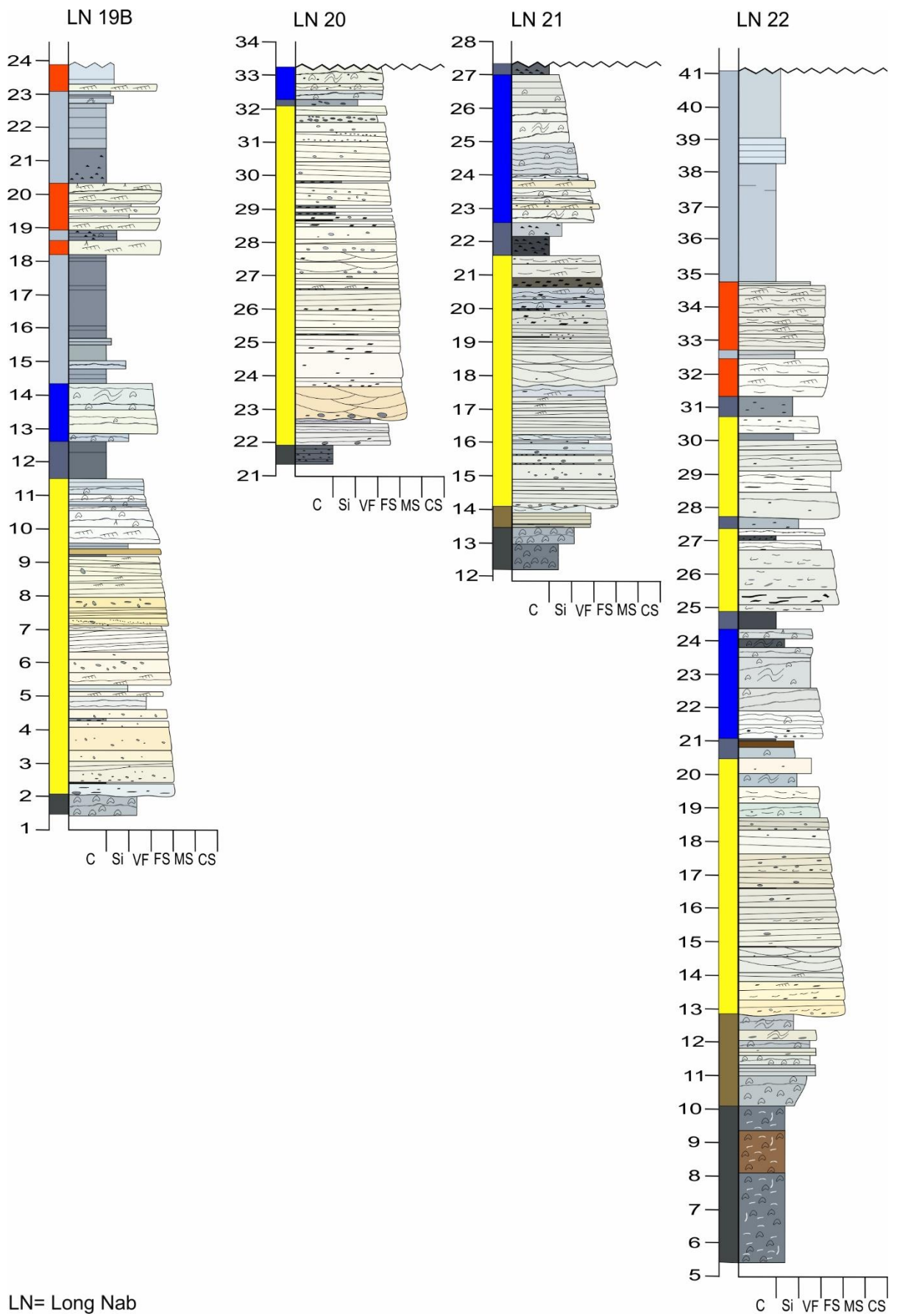
Sedimentary logs based on the core sections with facies proportions



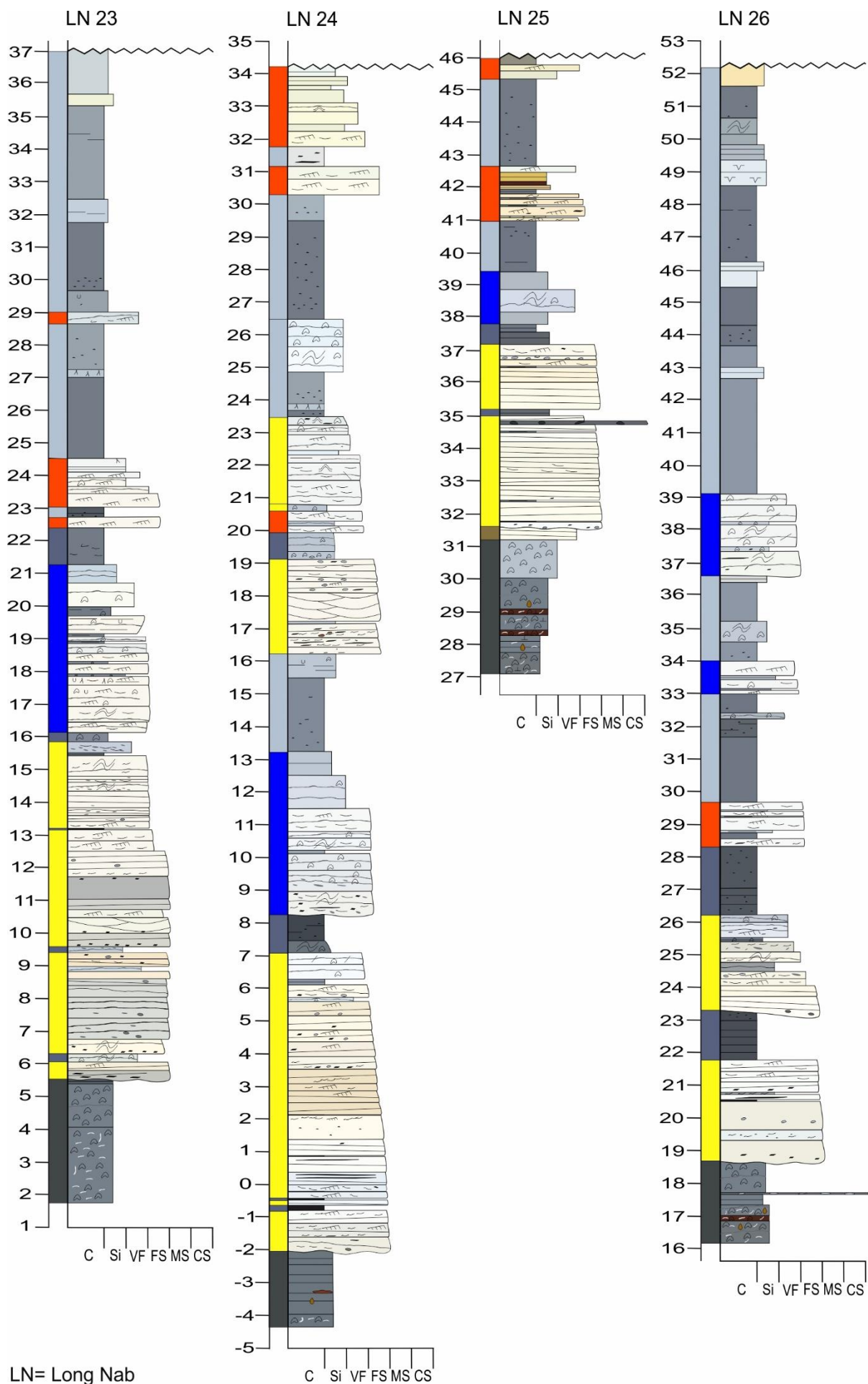




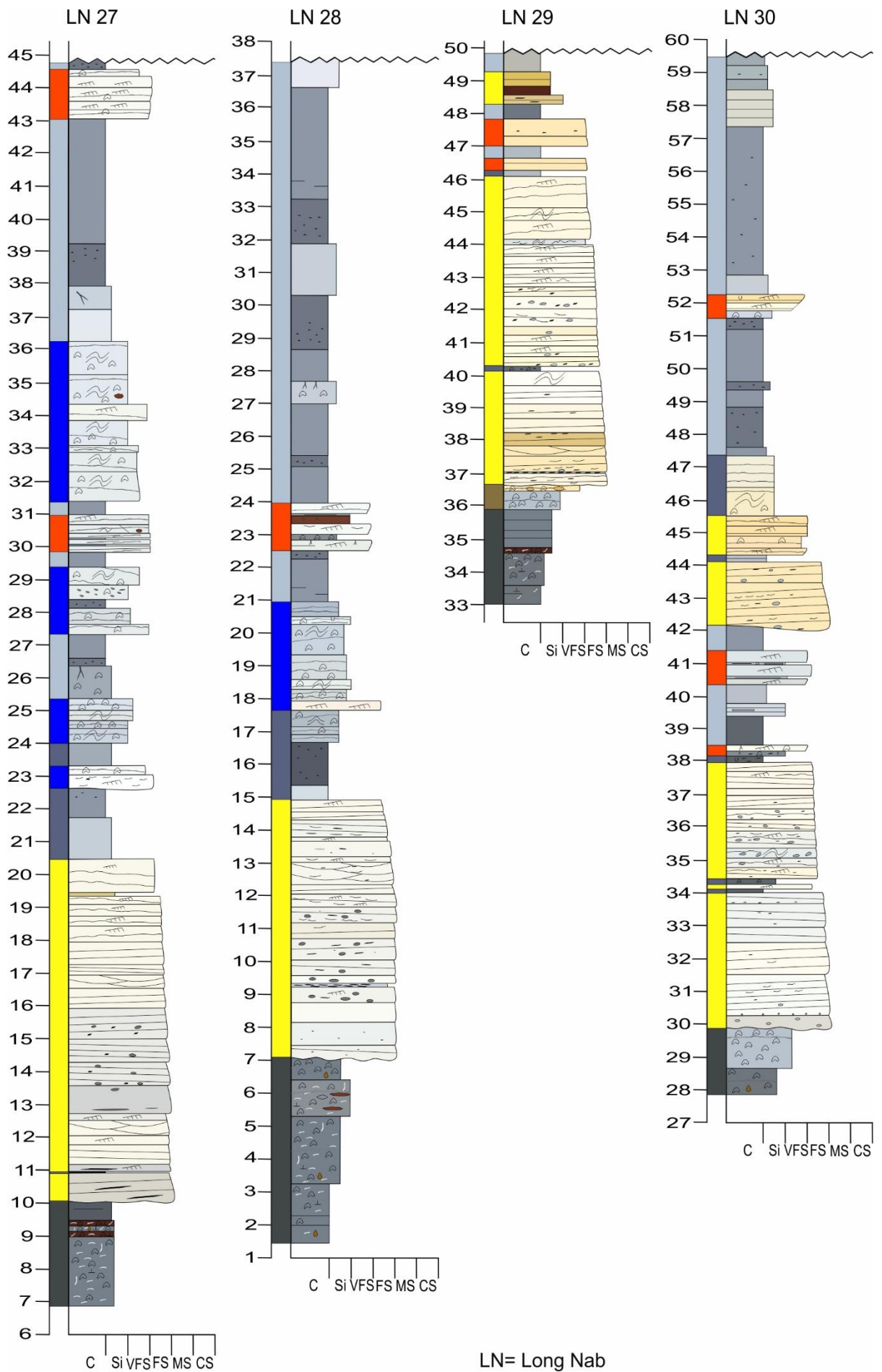


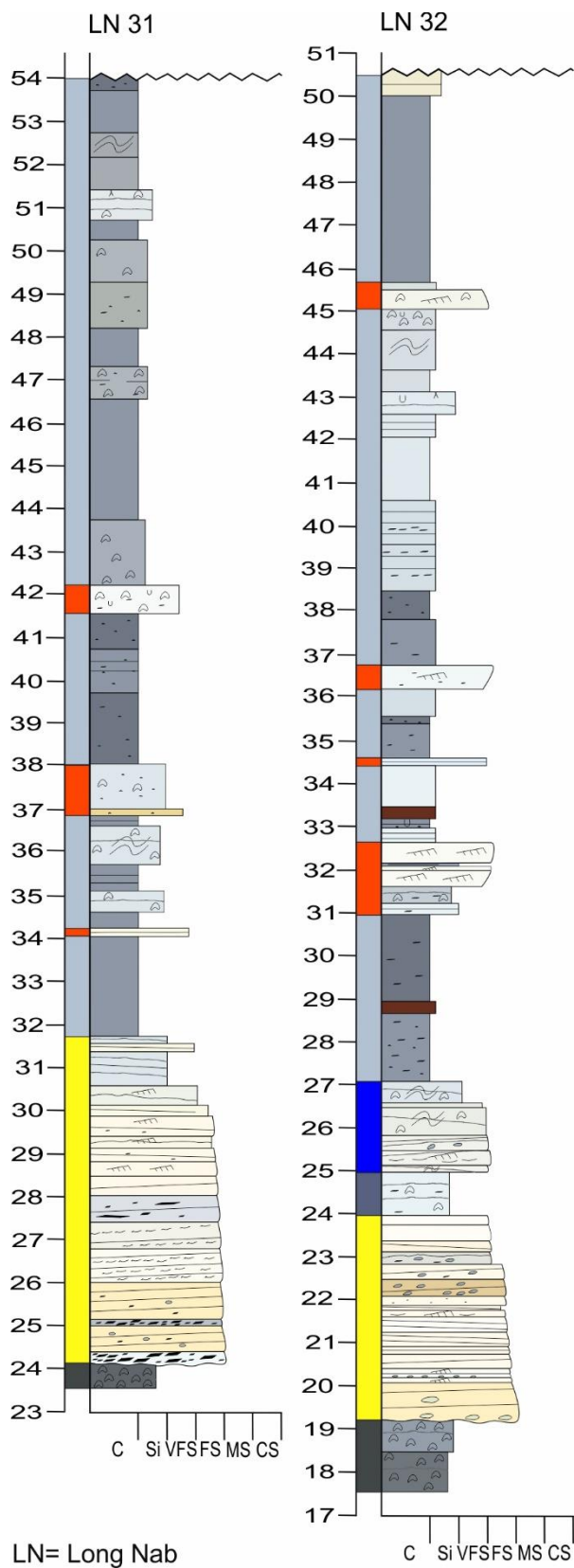




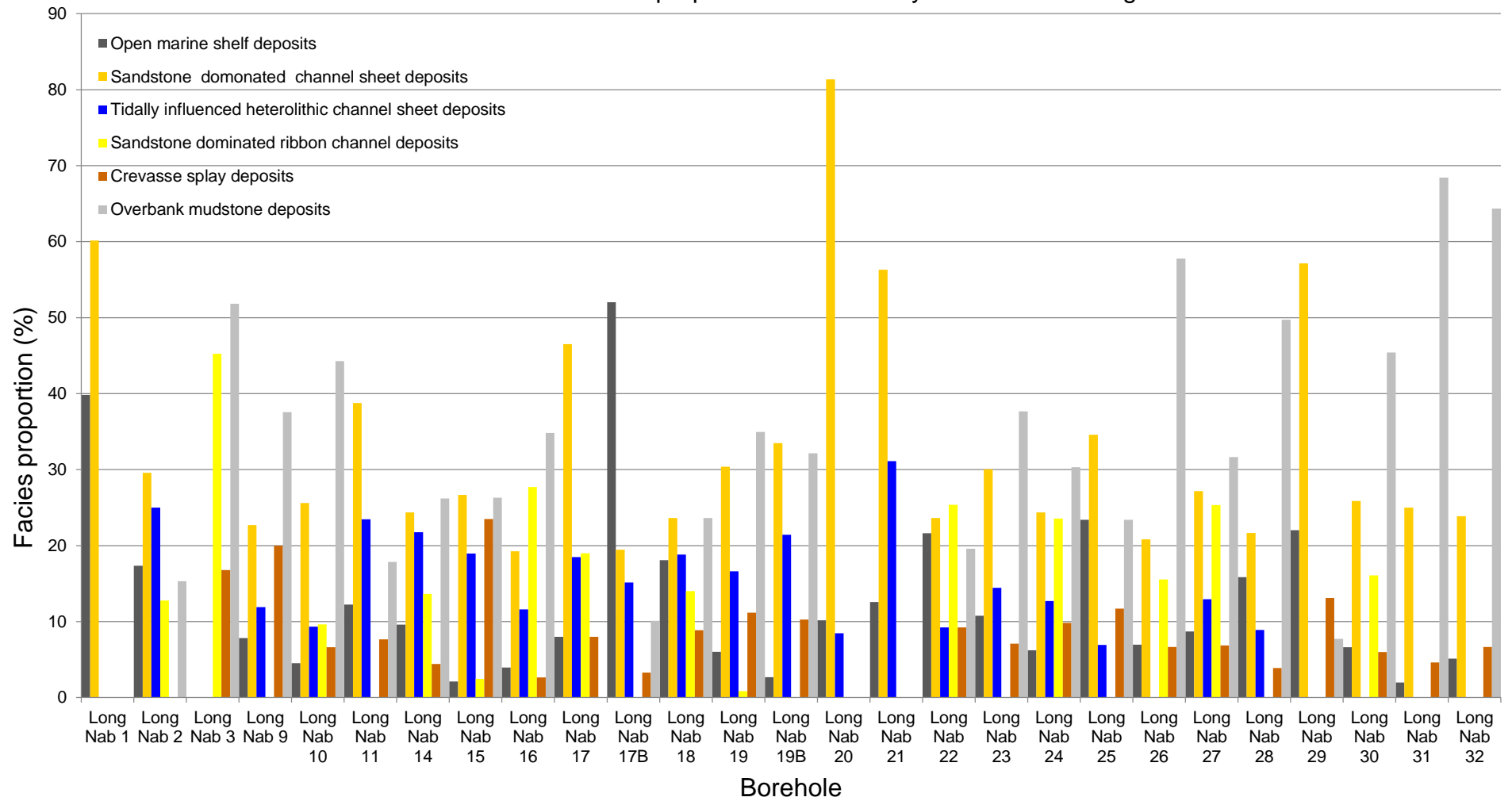








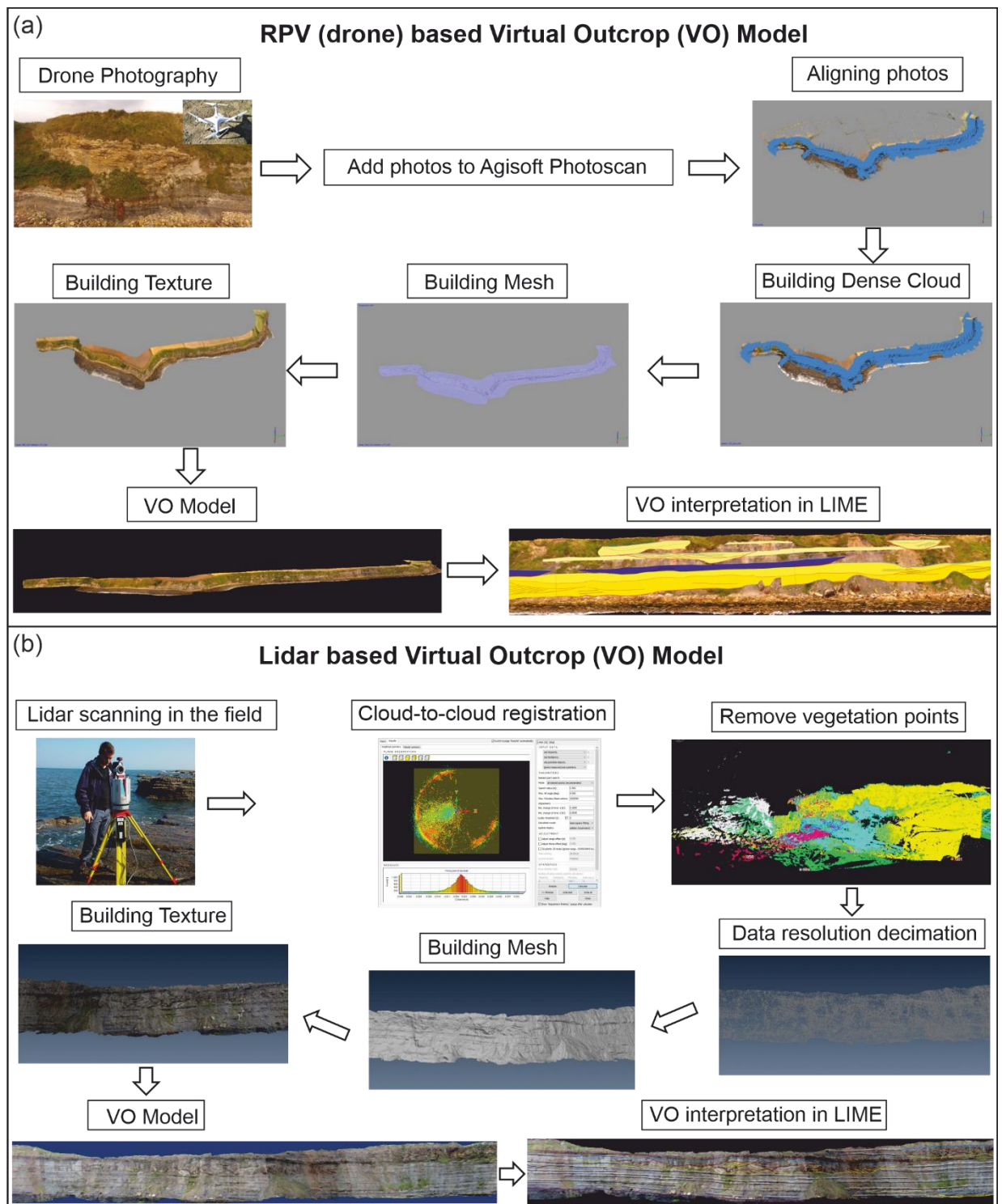
Borehole core based facies proportion of the Scalby Formation at Long Nab



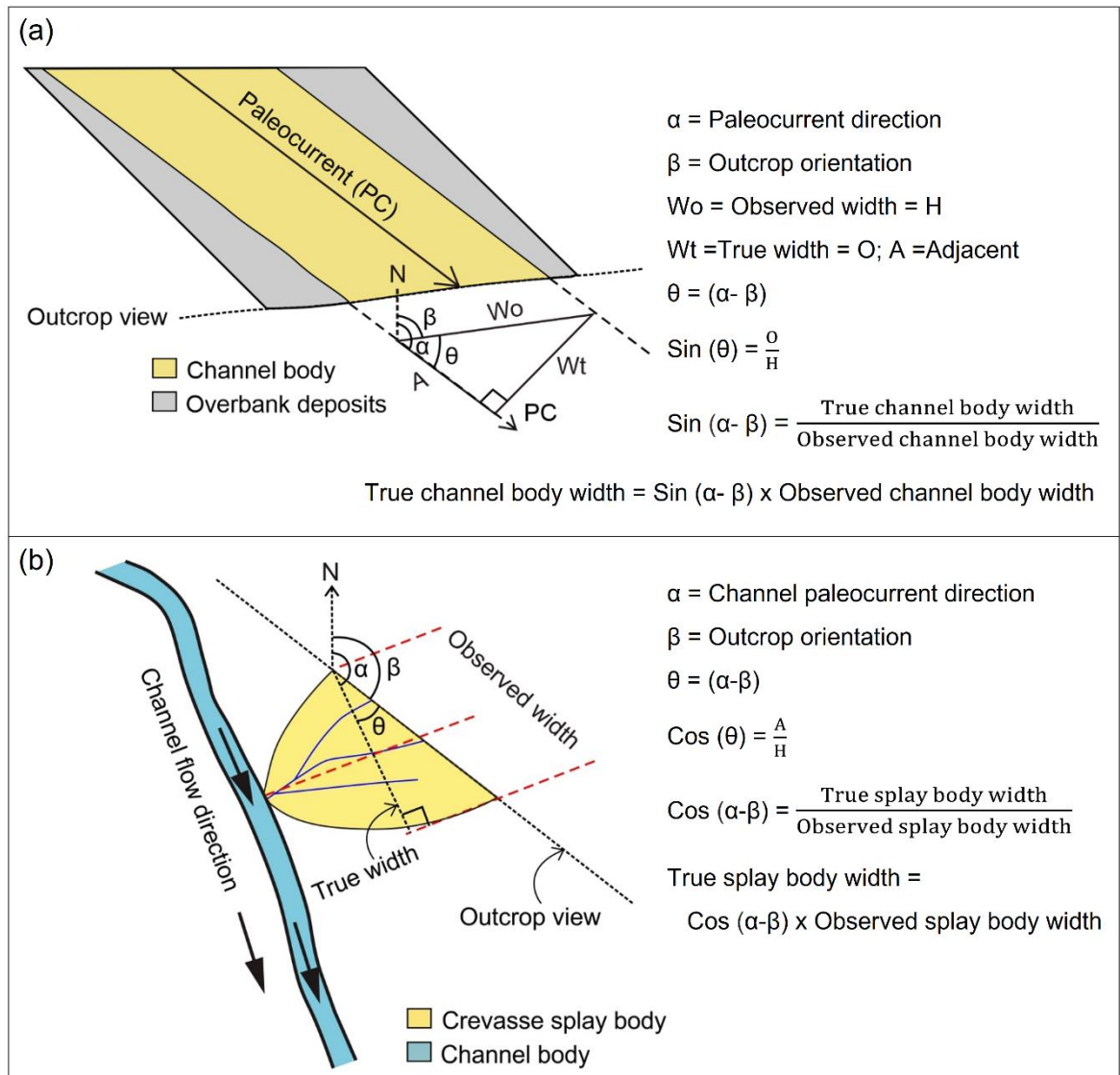
## **Appendix C**

Workflow to prepare Virtual Outcrop and the method used to estimate  
the true width of sandbody





Summary of the workflow to prepare Virtual Outcrop (VO) from **(a)** drone photogrammetry and **(b)** lidar scanning (modified after Buckley *et al.* 2008, p. 635, fig. 7).



Planform diagram showing the interaction between outcrop and sandbodies and the method used to estimate the true width of the sandbody (modified after Fabuel-Perez et al. 2009). (a) Transformation of measured channel width to true width. (b) Transformations of measured crevasse splay width to true width from channel flow direction and outcrop orientation. Splay formation direction measured from the average splay formation angle and paleochannel flow direction.

## **Appendix D**

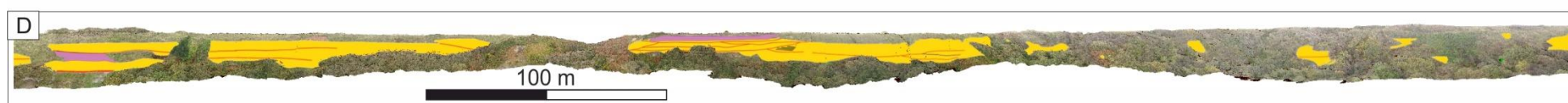
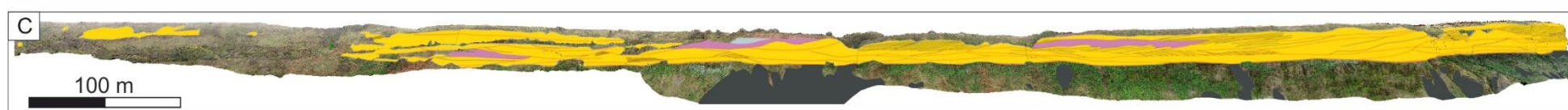
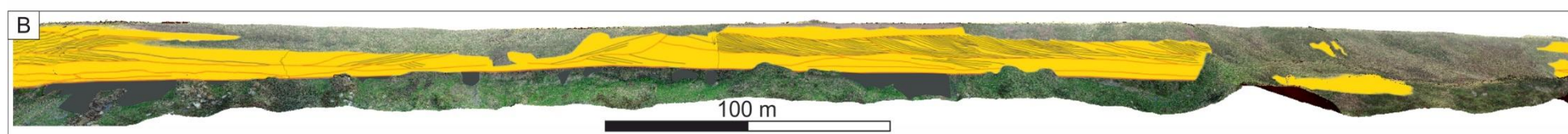
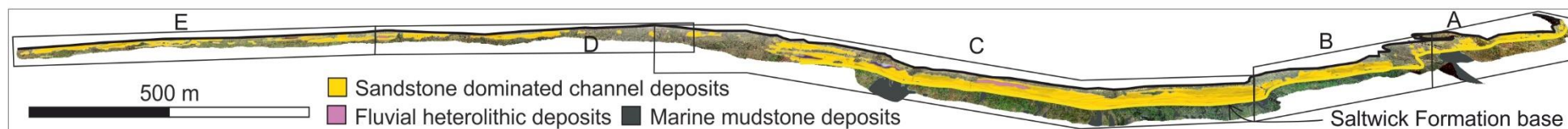
Correlation panel of crevasse splay bodies



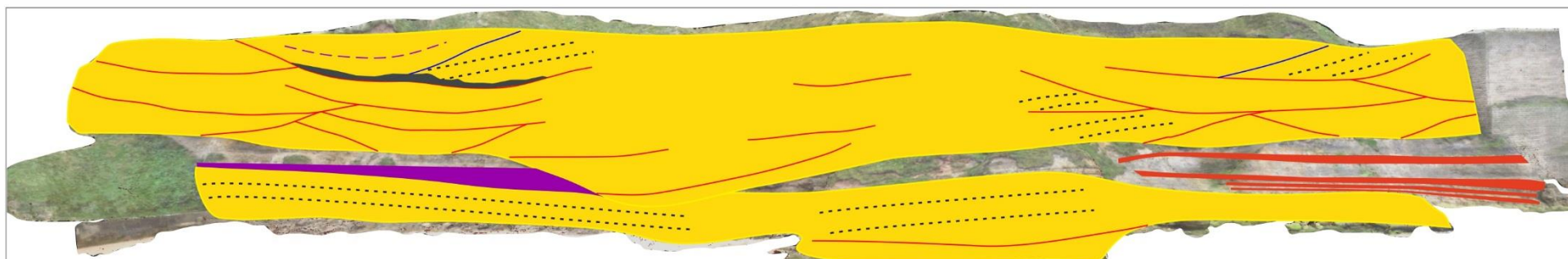


## **Appendix E**

Interpreted virtual outcrops



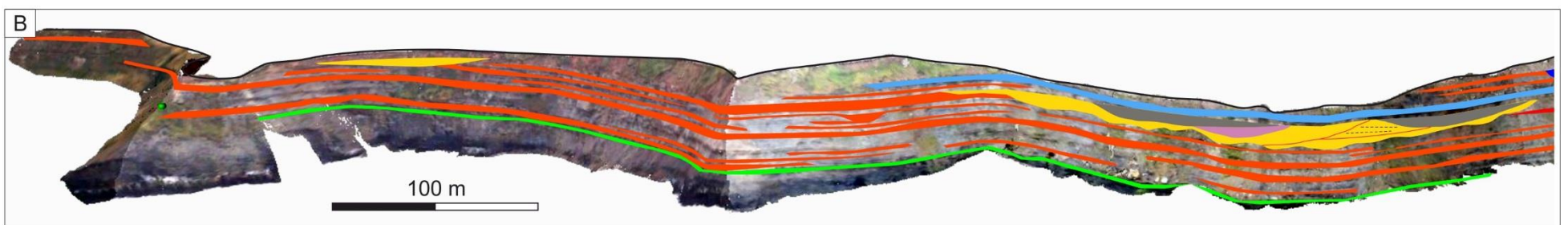
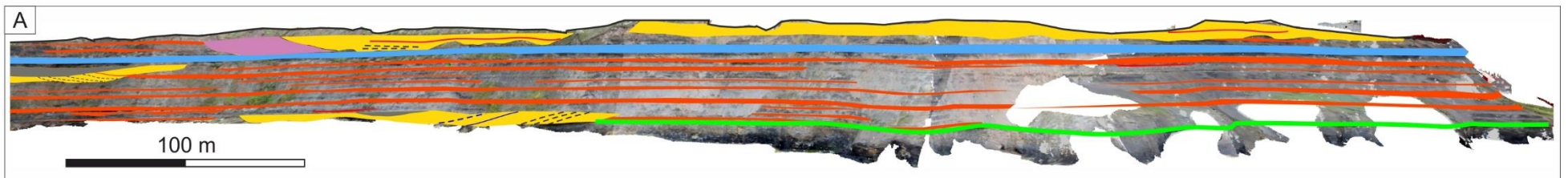
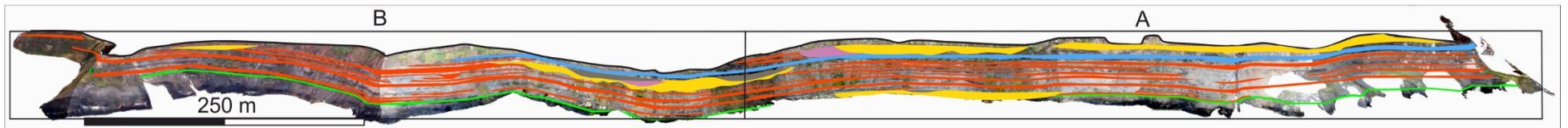
Whitby West Cliff Section, Virtual Outcrop length: 160 m



Key:  Sandstone dominated channel deposits  Crevasse splay sandstone deposits  Mudstone dominated heterolithic levee deposits  
 Mudstone dominated channel deposits  Bedform  Accretion surface  Barform  Storey  Channel body

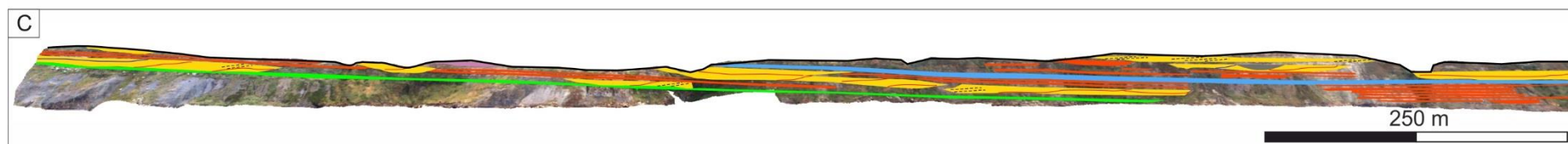
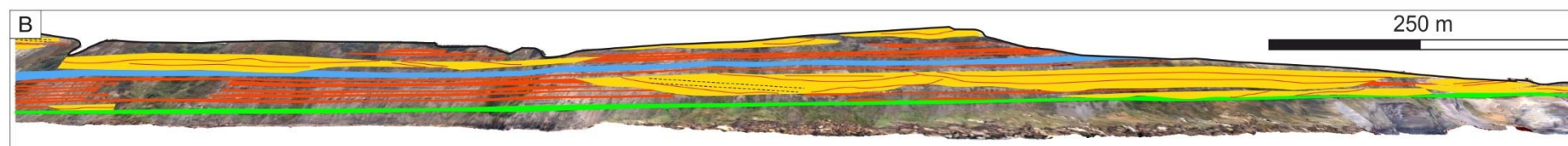
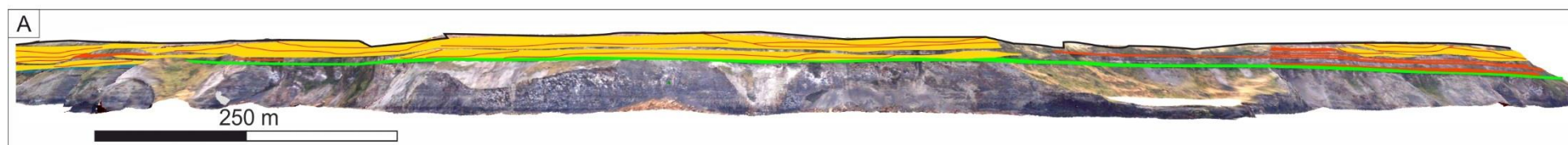
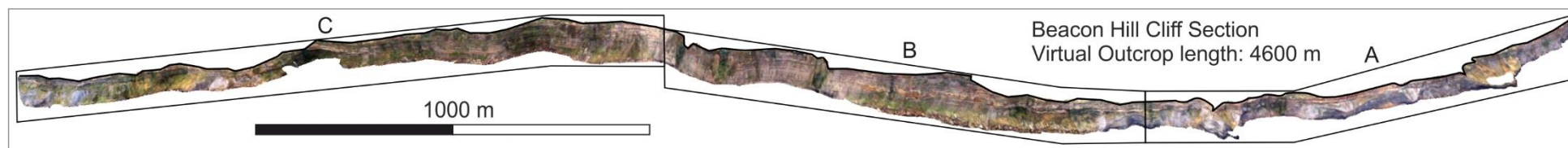


Whitby East Cliff Section, Virtual Outcrop length: 1580 m

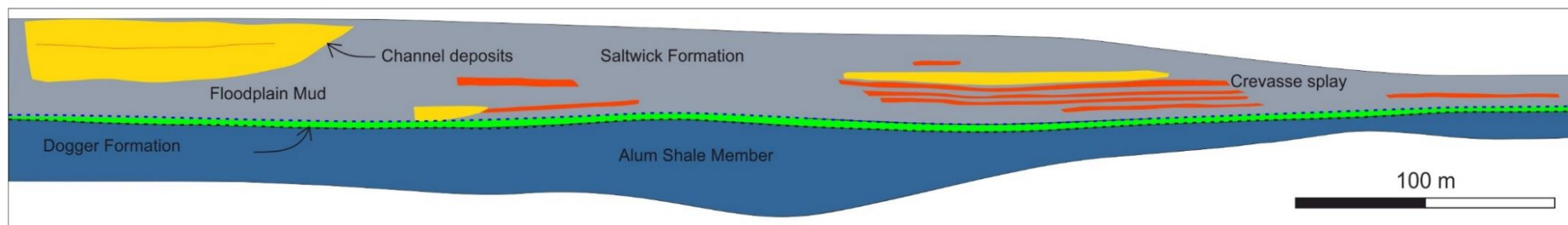
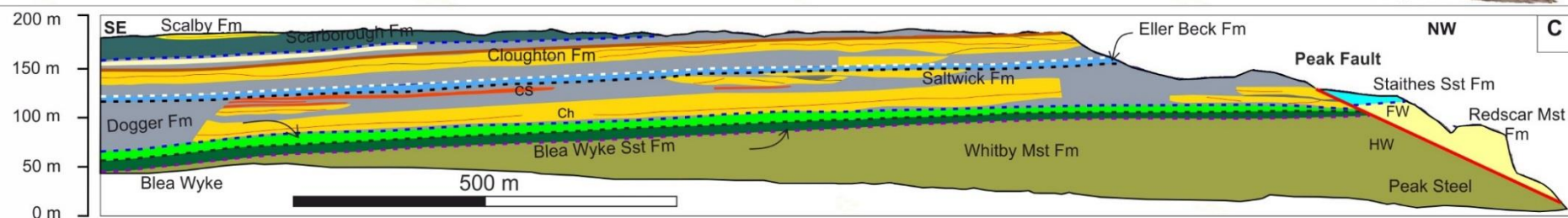
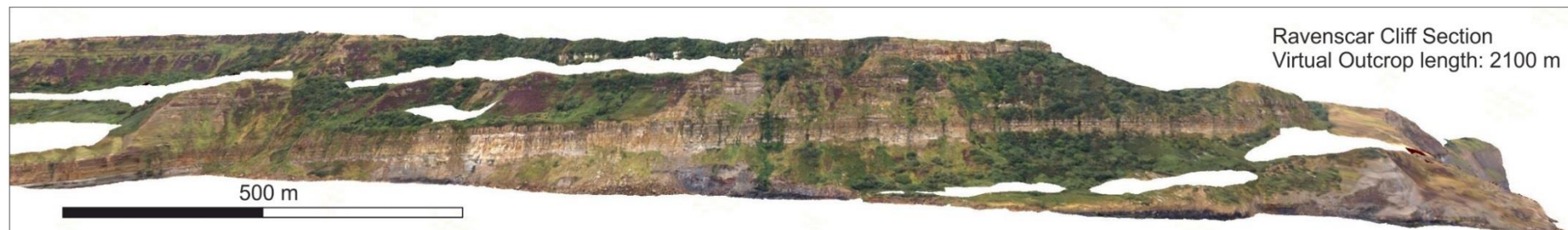


Key: Accretion surface    Bar boundary    Storey surface    Sandstone dominated channel deposits    Fluvial heterolithic deposits  
 Mudstone dominated channel deposits    Crevasse splay & crevasse channel deposits    Dogger Formation (marine sandstone deposits)  
 Eller Beck Formation (marine sandstone deposits)

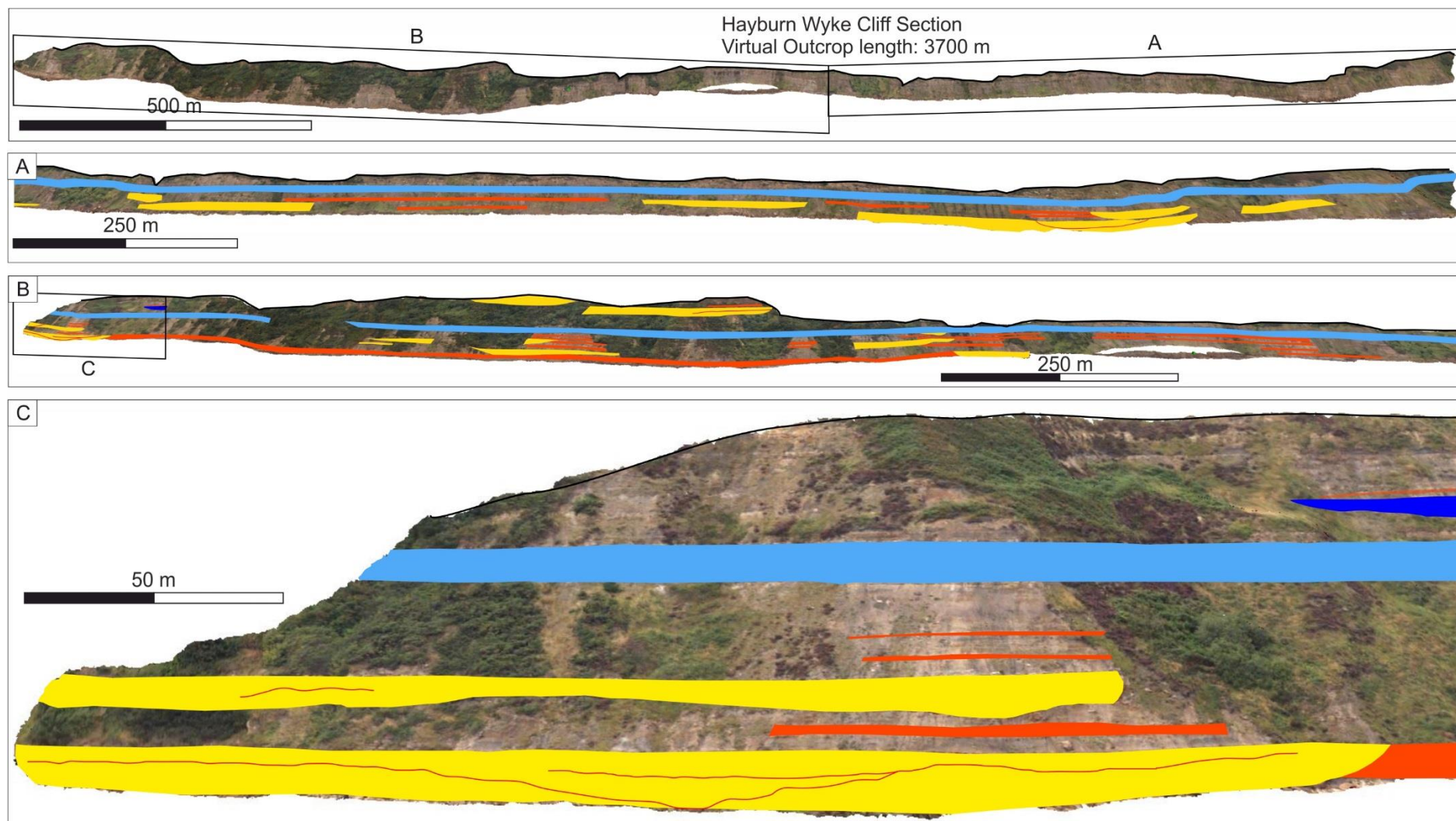




Key:    ↗ Accretion surface    ↘ Bar boundary    ↗ Storey surface    Sandstone dominated channel deposits    Fluvial heterolithic deposits  
 Mudstone dominated channel deposits    Crevasse splay & crevasse channel deposits    Dogger Formation (marine sandstone deposits)  
 Eller Beck Formation (marine sandstone deposits)

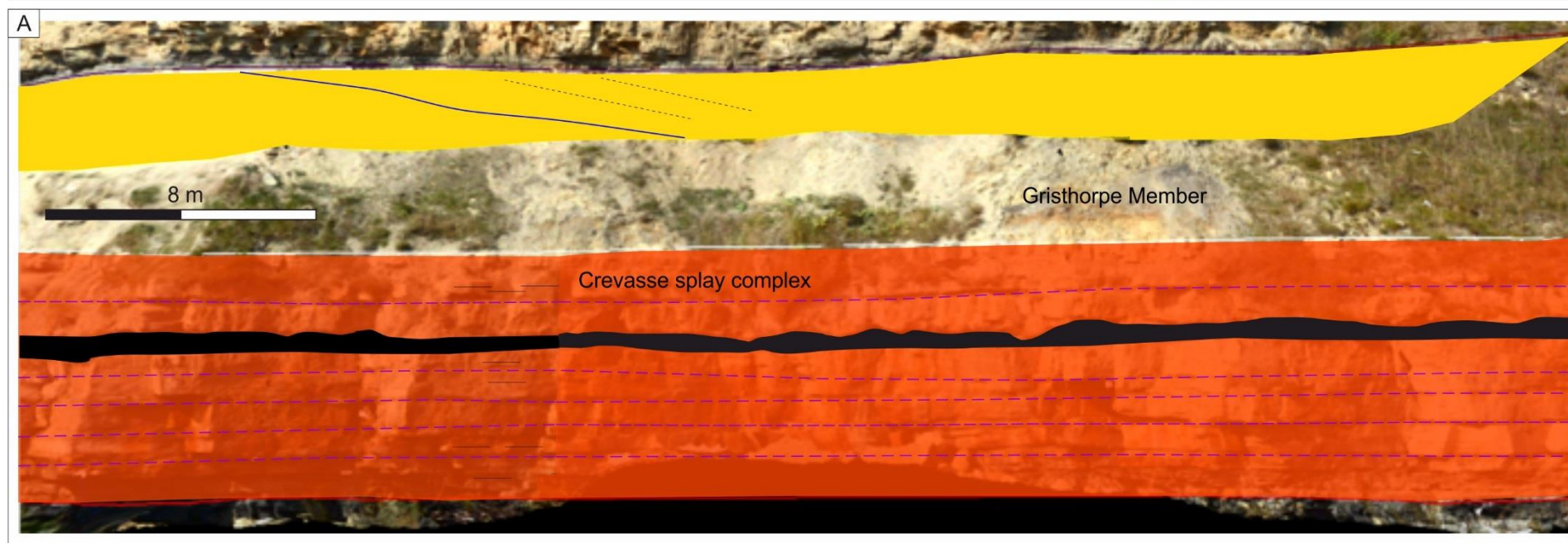
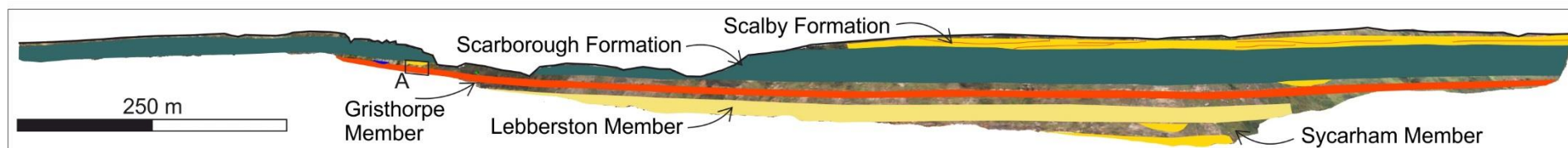
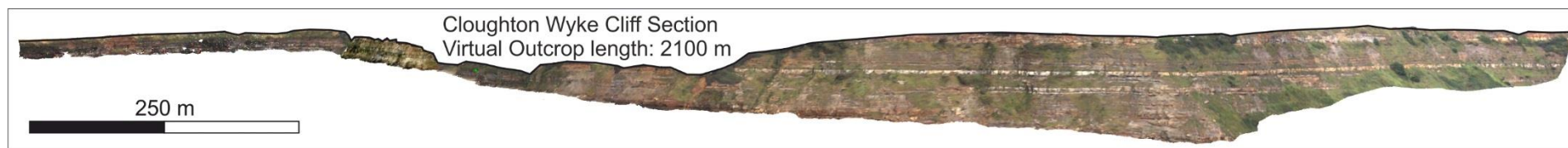






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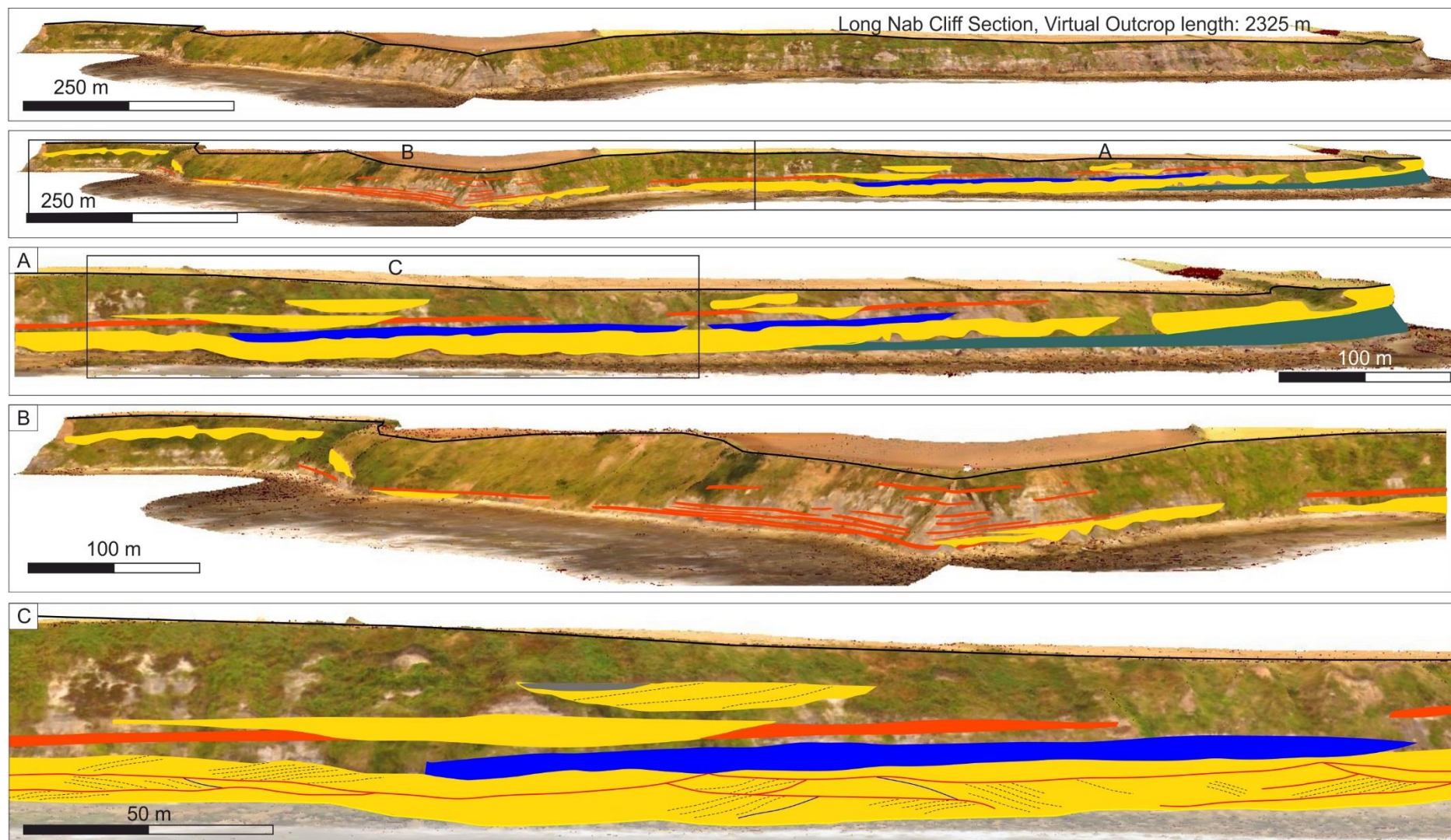
• Accretion surface	Bar boundary	Storey surface	Sandstone dominated channel deposits	Tidally influenced heterolithic deposits (?)
Mudstone dominated channel deposits	Crevasse splay & crevasse channel deposits	Dogger Formation (marine sandstone deposits)		
Eller Beck Formation (marine sandstone deposits)				



Key:

Bedform	Accretion surface	Bar boundary	Storey surface	Sandstone dominated channel deposits	Coal
Tidally influenced heterolithic deposits	Crevasse splay & crevasse channel deposits			Scarborough Formation (marine sandstone & mudstone deposits)	
Lebberston Member (marine sandstone deposits)					

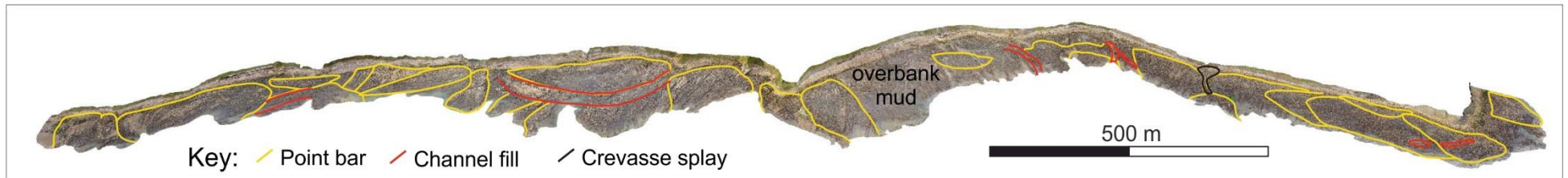


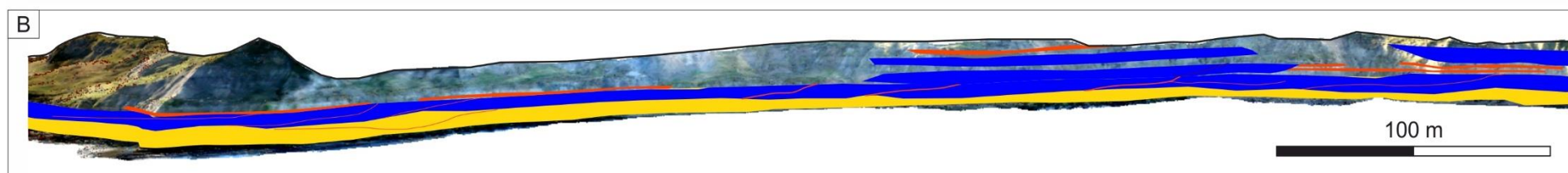
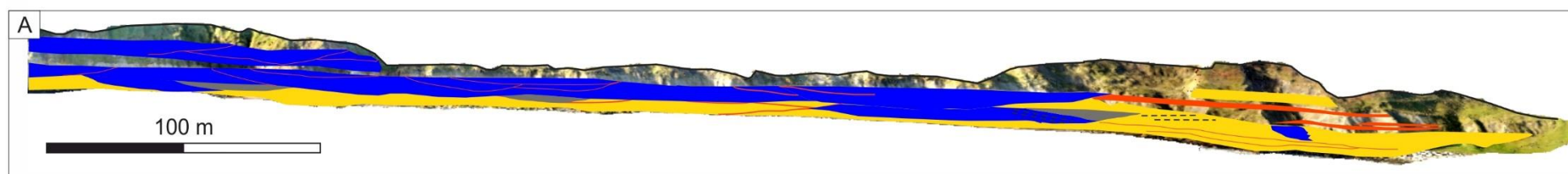
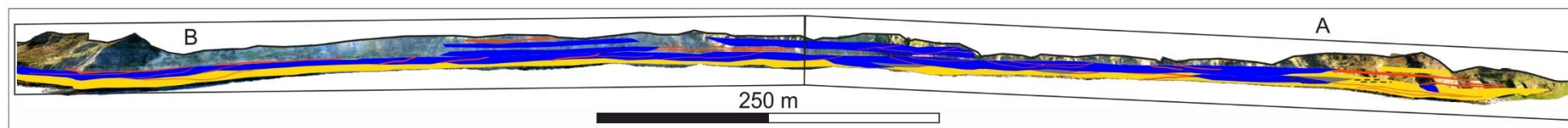


Key:   
 • Accretion surface    Bar boundary    Storey surface    Sandstone dominated channel deposits    Tidally influenced heterolithic deposits  
 Mudstone dominated channel deposits    Crevasse splay & crevasse channel deposits    Scarborough Formation (marine mudstone & sandstone deposits)



Long Nab Foreshore Section  
Virtual Outcrop length: 2800 m





Key: Accretion surface Bar boundary Storey surface Sandstone dominated channel deposits Tidally influenced heterolithic deposits  
 Crevasse splay & crevasse channel deposits Mudstone dominated channel deposits