



## *Supplement of*

# **Phanerozoic paleoenvironmental and paleoclimatic evolution in Svalbard**

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## Supplementary material S1:

**Table S1: Overview of selected sedimentary and biological climate indicators used to construct the Svalbard paleoclimate review plot in Figure 4.**

| Climate                   | Sedimentary facies                                                                                                                                                                         | Fauna/Flora                                                         |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| A- Tropical<br>Humid      | Warm water carbonates.<br><br>Tropical humid paleosols. Coal from swamp/mires deposits. In continental facies kaolinite is the dominating clay mineral                                     | Warm water (tropical) marine fauna. Flora from tropical vegetation. |
| B- Dry<br>Arid, semi-arid | Evaporites/ warm water carbonates.<br><br>Red beds with pedogenic calcretes with scarce to barren flora.<br><br>In continental facies smectite and illite are the dominating clay minerals | Shallow marine biota dominated by foraminifers and algae.           |
| C-Temperate               | Cold water carbonates, siliceous deposits.<br><br>Coal from coastal mire deposits. Glendonites indicating cold bottom water conditions.                                                    | Boreal marine fauna. Flora from temperate vegetation.               |
| E-Polar/Arctic            | Glacial and interglacial deposits                                                                                                                                                          | Arctic fauna                                                        |