

CARBONATE-SHALE TRANSITION ON AN ORDOVICIAN DEEP-SHELF: THE ARNESTAD FORMATION, NORWAY

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Shales make up the bulk of sedimentary rocks on and near the surface, but are still the least understood despite their enormous importance for energy and everyday life. Several measured sections of the Ordovician Arnestad Formation will be documented to describe lithological changes and sedimentary structures throughout the succession macroscopically. Small-scale features are going to be examined using microscopes and SEM, and to fully describe compositional changes, different sedimentary structures, and overall grain size trends throughout the succession. This data will consequently allow for establishing facies belts in the shales and carbonates for this Ordovician shelf, which are most likely arranged showing a proximal-distal facies trend, thereby reflecting distinct changes in sedimentary processes downshelf. This is key to understanding the link between shales and carbonates, and will aid in better predicting rock properties in unconventional reservoirs, especially those associated with carbonate intercalations.

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