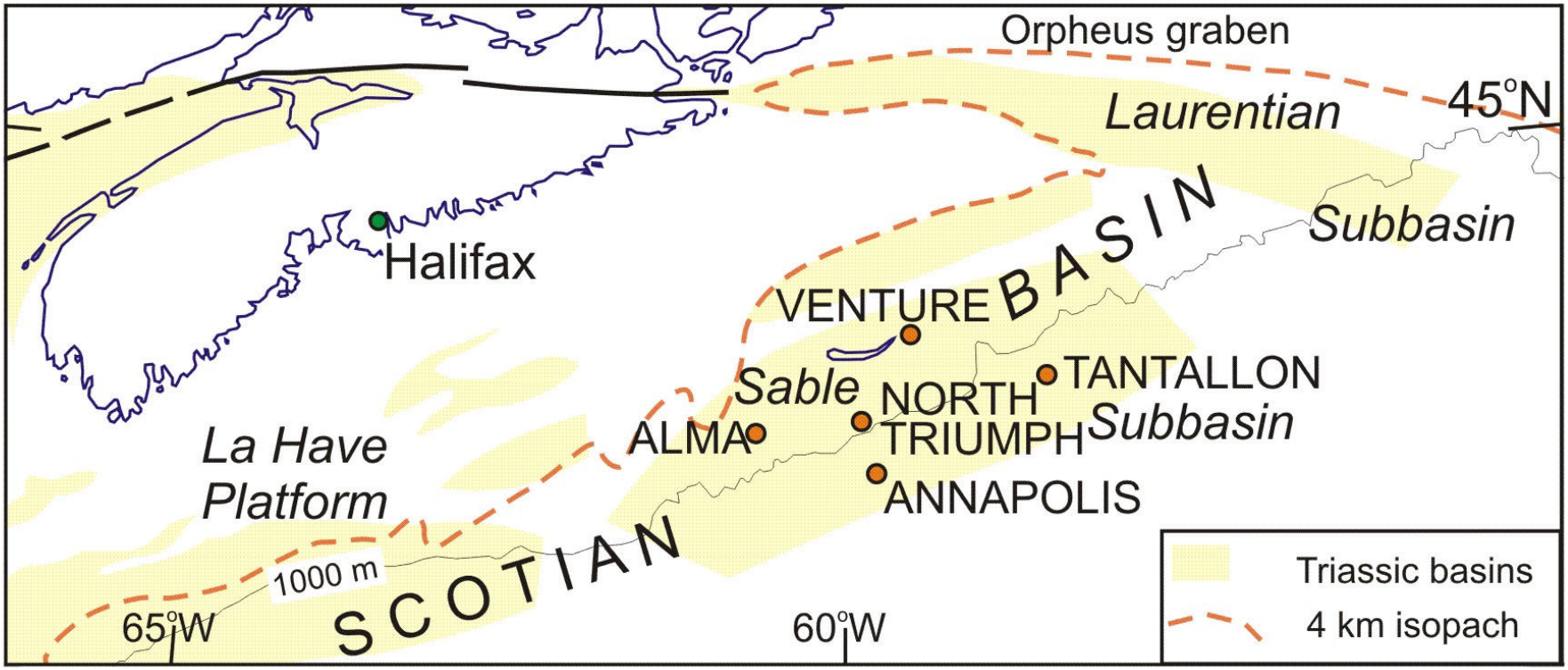
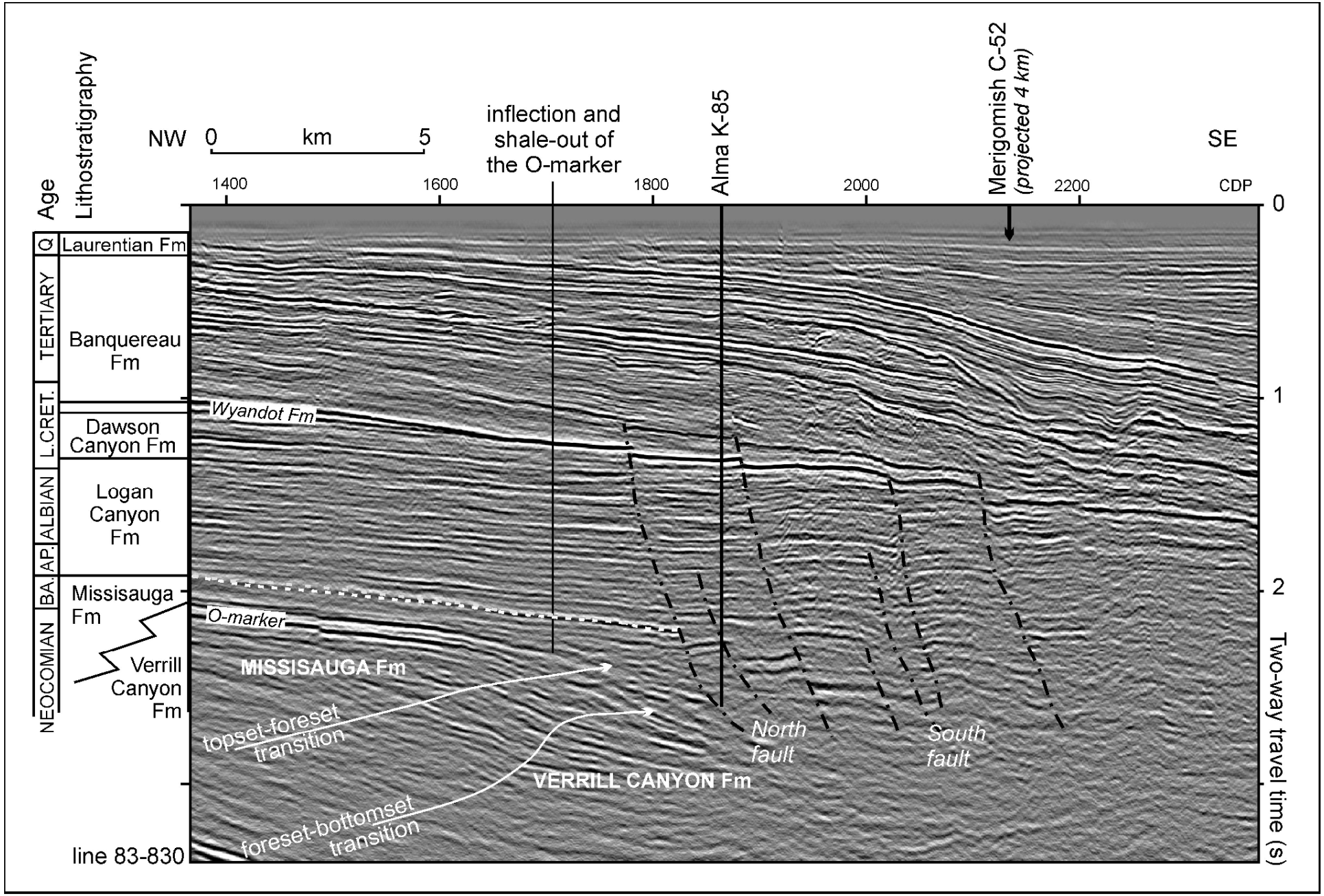
David Piper and Georgia Pe-Piper ABSTRACT

Conventional core through foresets of Lower Cretaceous deltas at the Alma field and in Tantallon M-41 show a wide range of sediment deformation facies. In particular, facies that have shallow-water sedimentological features (tidal-flat structures, wave ripples) occur in blocks of sizes ranging from centimetres to metres overlying a zone of sedimentary mylonite, with highly deformed sediments interpreted as the deforming base of a submarine landslide. Failure to recognise the allochthonous nature of these sediments has led to misinterpretation of the depositional environment and also has consequences for the connectivity of sandstone bodies. The range of observed allochthonous facies will be illustrated with core from Alma and Tantallon.

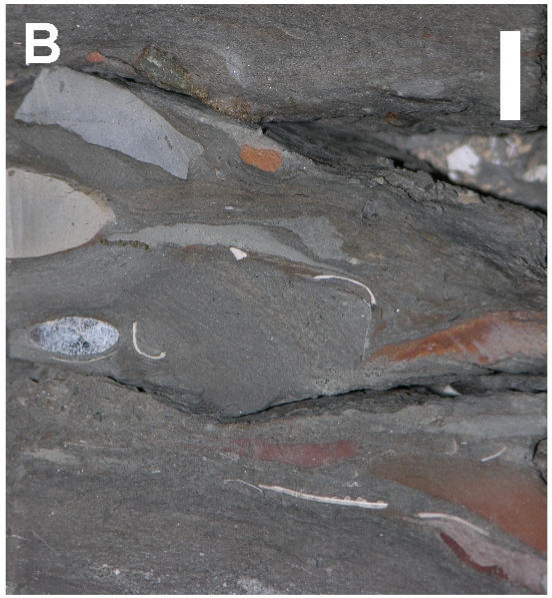
Prodeltaic deformation facies from Alma and Tantallon

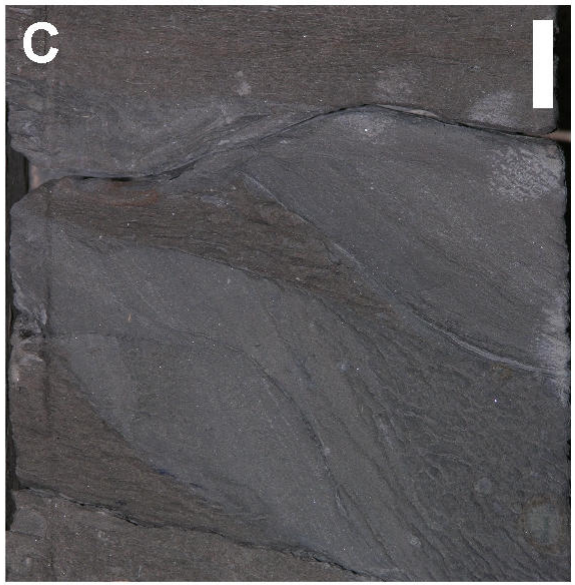


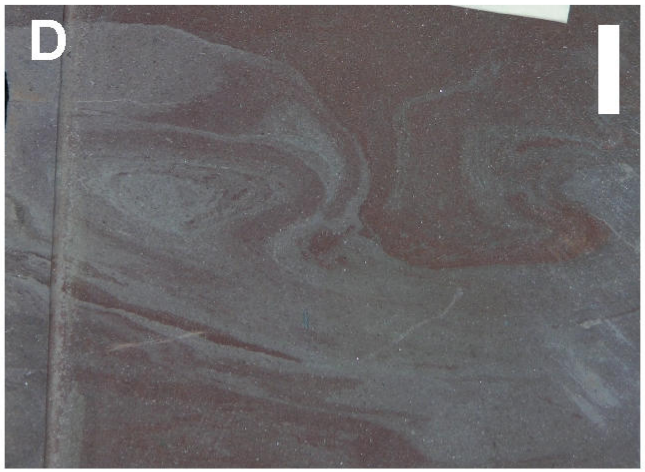
Location of Alma and Tantallon

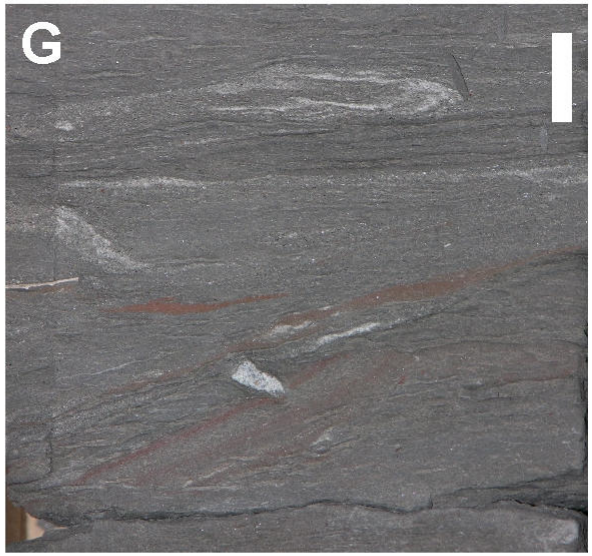


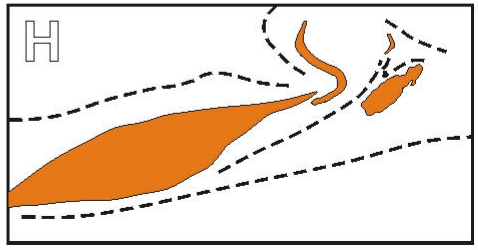
Seismic setting of the Alma K-85 prodeltaic facies



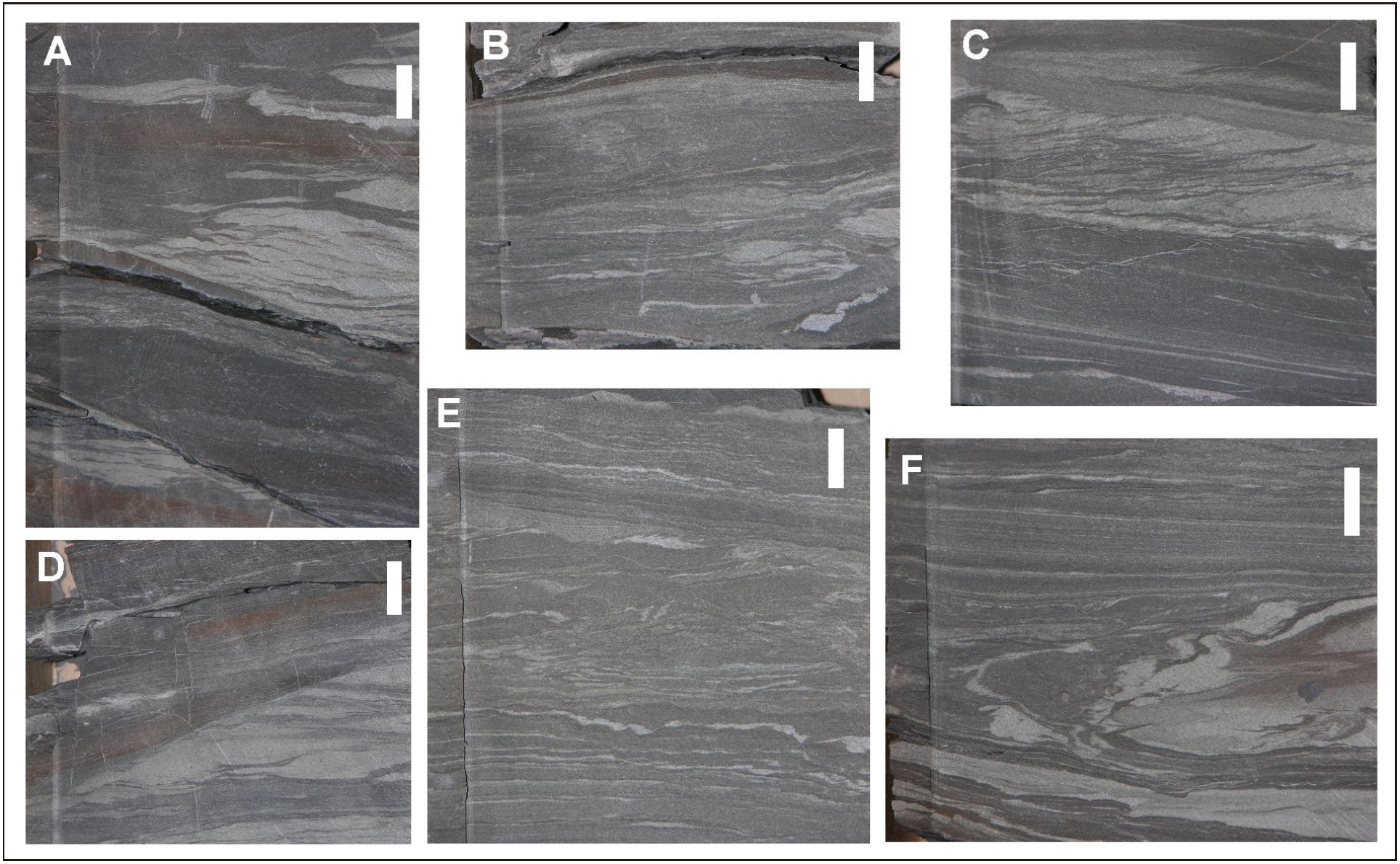




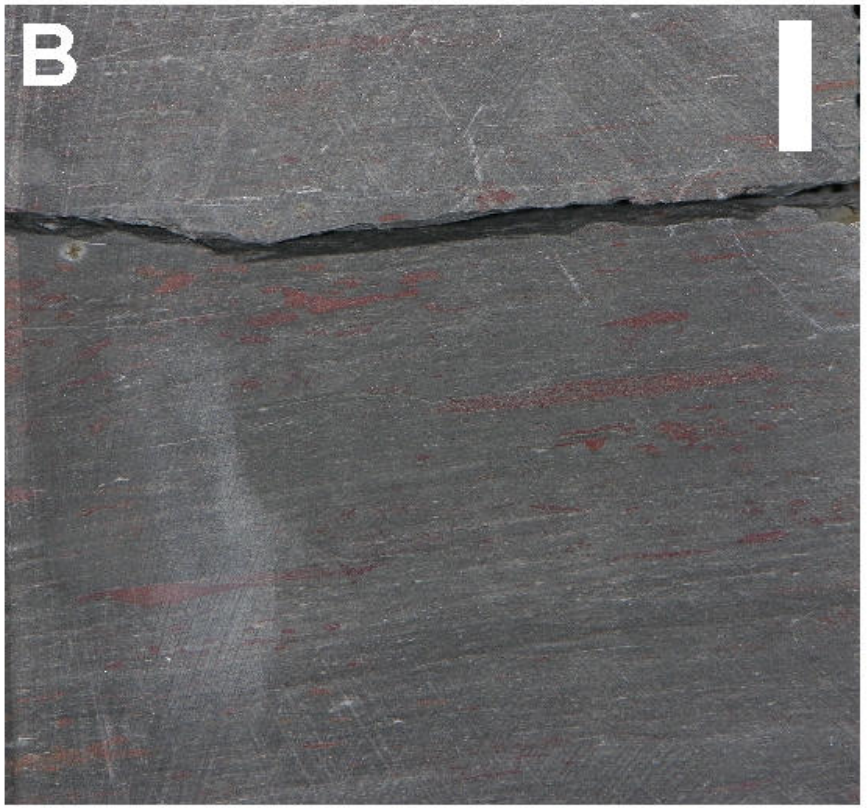


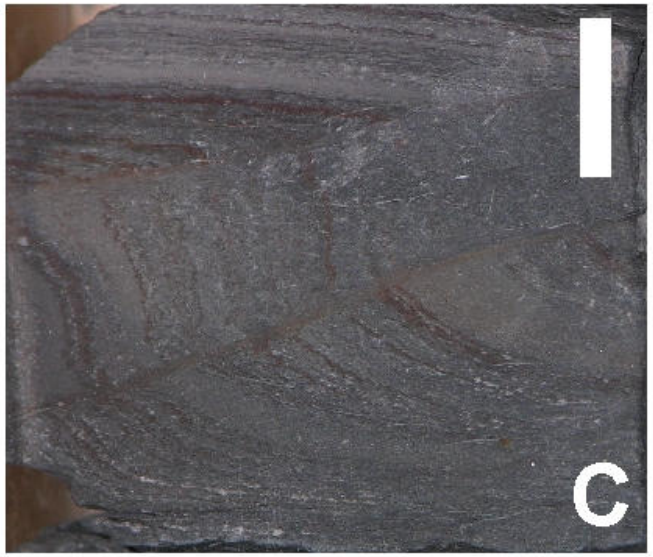


Debris-flow conglomerate (A, B); deformed sandstone (D) and deformed muddy blocks, some with “mylonitic mudstone” (C, G, H); Logan Canyon Fm, Tantallon M-41



Deformed prodeltaic silty mudstone, occurring as dm sized blocks,
Upper Missisauga Fm, Tantallon M-41





"Mylonitic mudstone", rarely folded (A and C), at base of slide in Upper Missisauga Fm, Tantallon M-41. Note stretched siderite in (B)