

Sedimentology of the Halifax Formation, Nova Scotia: Ordovician fine-grained turbidites

*D.A.V. Stow, M. Alam and D.J.W. Piper, Atlantic Geoscience Centre
Geological Survey of Canada, Bedford Institute of Oceanography
P.O. Box 1006, Dartmouth, N.S. B2Y 4A2*

The Halifax Formation is a several kilometre thick shale-rich succession that forms part of the (?) Cambro-Ordovician Meguma Group of Nova Scotia. The Meguma sediments were mostly deposited by sediment gravity flows on a prograding deep-marine slope-rise complex. Eight separate facies of the Halifax Formation are recognized on a facies continuum from very shaley to very sandy. The two most sandy facies show partial Bouma sequences of structures; the others are best interpreted in terms of a more detailed 'ideal sequence' for fine-grained turbidites. Vertical se-

quences have been measured that show thinning-upward, thickening-upward and irregular patterns of sandstone and siltstone beds on a large-scale (100-200 m). There is also much wedging, subdivision and amalgamation of these coarse lithologies. Erosional features are locally common at the base of turbidite beds and still more widespread at the top. Slumps and bioturbation are less common. The depositional setting of most of the Halifax Formation appears to be the mid- or upper-fan area of a muddy deep sea fan, passing upwards into a prograding continental slope.