



Pockmarks in Spitsbergen fjords

M. Forwick, N.J. Baeten, and T.O. Vorren

University of Tromsø, Department of Geology, N-9037 Tromsø, Norway (Matthias.Forwick@ig.uit.no;
Nicole.Baeten@ig.uit.no; Tore.Vorren@matnat.uit.no)

Swath bathymetry and high-resolution seismic data, as well as published material are used to analyse pockmarks in Spitsbergen fjords. Up to 250 m wide and 13 m deep pockmarks occur in Grønfjorden, Ymerbukta, Adventfjorden, Billefjorden and van Keulenfjorden. They developed during the past c. 11,300 years, as the result of seepage of thermogenic gas and porewater. Factors controlling the distribution of pockmarks in these subpolar fjords include 1) tectonic lineaments, 2) the lithological composition and lateral outcrop of bedrock, 3) the orientation of glacial lineations and 4) exceptionally rapid deposition of debris lobes related to glacier surges.