



Natural Gas Seepages; indications from the North Norwegian Continental Margin

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Based on multibeam echo sounder data, numerous pockmarks are mapped in the outer parts of Andfjorden, North Norway. These pockmark features indicate the presence of fluids in the subsurface, and that the fluids migrate upwards.

Andfjorden is a glacial trough located on the north Norwegian continental shelf. The bedrock on the shelf comprises Mesozoic and Tertiary sedimentary rocks, and the area is characterised by SW-NE trending normal faults. Many of the pockmarks are related to the fault zones, indicating that liquids and/or gases migrate from deeper sources. A petrogenic origin of the fluids is therefore more than likely.

In most of the study area Quaternary diamictic sediments (till) superimpose the bedrock. The maximum thickness, of up to 100 m, occurs from the central trough to the shelf edge. In the deeper parts of the trough, Late Weichselian glacimarine, and Holocene marine sediments constitute the uppermost part of the lithostratigraphy. Most of the pockmarks are related to areas of glacial diamicton, indicating less biogenic origin of the fluids.