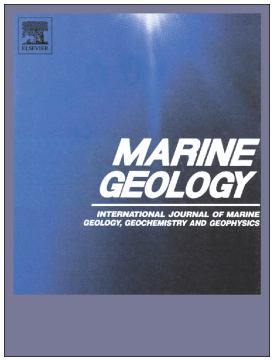

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An integrated view of the methane system in the pockmarks at Vestnesa Ridge, 79°N

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Abstract

The Vestnesa Ridge is a NW-SE trending, ~100 km-long, 1-2 km-thick contourite sediment section located in the Arctic Ocean, west of Svalbard, at 79°N. Pockmarks align along the ridge summit at water depths of ~1200 m; they are ~700 m in diameter and ~10 m deep relative to the surrounding seafloor. Observations of methane seepage in this area have been reported since 2008. Here we summarize and integrate the available information to date and report on the first detailed seafloor imaging and camera-guided multicore sampling at two of the most active pockmarks along Vestnesa Ridge, named Lomvi and Lunde. We correlate seafloor images with