Geophysical Research Abstracts
Vol. 12, EGU2010-12220-1, 2010
EGU General Assembly 2010

Sea-bed image off-shore County Antrim, Northern Ireland

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In September 2009 the British Geological Survey acting for the Department of Enterprise, Trade and Industry (DETI) of Northern Ireland commissioned a high-resolution multichannel nearshore 2D seismic survey in the North Channel, offshore Northern Ireland. The purpose of the survey was to image the Permian and Triassic Halite successions known to exist offshore for the purpose of mapping and evaluating their potential as off-shore gas storage sites.

In addition to the high-resolution seismic data, swath bathymetry was also acquired. These swath data have been gridded into a 10m by 10m data array that although not entirely continuous, does provide a detailed image of the sea floor. The image suggests a complex interplay between the underlying geology and the strong tidal currents that are prevalent within the North Channel. Volcanic features and basin faults have a clear expression on the sea-bed. In slightly deeper water obvious sediment wave-fields are observed as well as very pronounced linear mounds with an ENE- WSW trend. These somewhat enigmatic features do not appear to have any obvious direct relationship with underlying geology in the area. Similar features have been observed regionally in the Beaufort's Dyke, offshore northern Ulster and appear to be very similar to features in the Irish Sea described by other authors as Trochoidal sediment waves. In shallower waters, linear sinuous banks are imaged.

The availability of both swath and coincident 2D high-resolution seismic profiles provides an interesting opportunity to investigate the relationship between sea-bed morphology and deeper geological structures.