

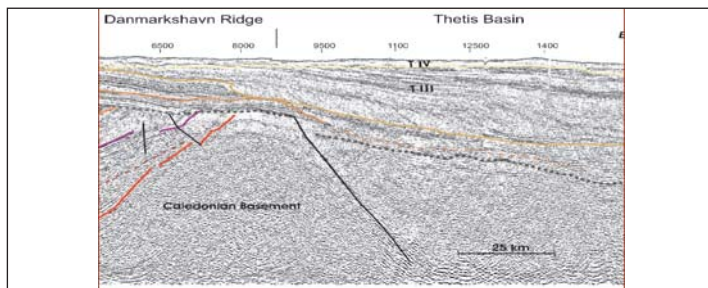
# E&P DAILY NEWS

## 2011 EAGE Conference & Exhibition

# ION Arctic Insights

New deep geological imaging offshore northeast Greenland.

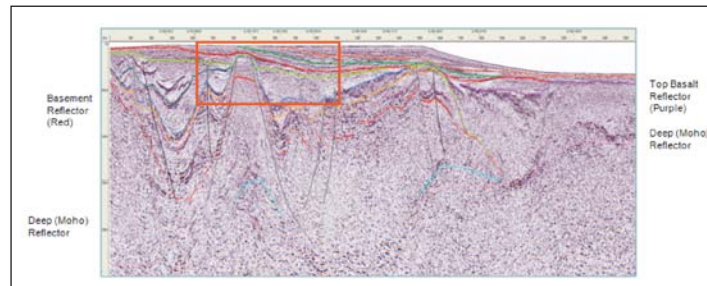
Since its first Arctic survey in 2006, ION Geophysical says it has been pushing the boundaries of Arctic imaging to deliver data for oil companies to accurately assess prospectivity in one of the most hydrocarbon-rich untapped petroleum resources in the world. In 2009, ION developed a unique, integrated acquisition system designed to operate within an ice-covered environment. In 2009 and 2010, ION employed this new technology to acquire 12,000 km of historically unattainable seismic data offshore northeast Greenland. The data have revealed valuable new insights into the subsurface of the region, suggesting the area has greater hydrocarbon potential than previously held.



KANAUMAS seismic data acquired 1991 - 1994 with short streamer recorded to 5.5 s. (Hamann, Whittaker & Stemmerik, 2005)

record length, and processed to 40 km.

The complexity of acquiring data in icy conditions required innovative processing tools and techniques. Overcoming noise and multiple problems in 2D Arctic data is often more challenging than for a typical 3D. ION's GX Technology Imaging Solutions group designed and pioneered processing techniques, including a cascaded processing flow approach, to attenuate noise from various sources, including the ice. Initial results are encouraging. The data are enabling a better understanding of the opening history of the North Atlantic and reconstruction of Greenland with its conjugate Mid-Norway and Barents Sea margins. The better structural development of the



NE Greenland SPAN survey acquired 2009 with 8 km streamer, 18 s record length, processed to 40 km. Note improved imaging of deep geology.

The main objective of the surveys, known collectively as Northeast Greenland SPANTM, is to provide a better understanding of the basin architecture at the crustal scale and the petroleum systems in the offshore areas ranging from the Northeast Greenland Volcanic Province north to the Danmarkshavn Salt Basin and eastward into the Thetis Basin. The focus of Phase I, acquired in 2009, was the South Danmarkshavn and Thetis Basins. Here, ION first utilized its new proprietary streamer and deployment technology to acquire data below the ice pack, enabling the company to acquire seismic data in areas previously hampered by heavy ice coverage. An ice breaker was used to clear first-year ice for the primary acquisition vessel. The survey was acquired with an 8 km streamer, 18 s

region can be used to develop palaeogeographic interpretations that better predict source and reservoir deposits. The data have also resulted in the identification of play types, and numerous structural leads have been mapped. New interpretations suggest that rich oil-prone Jurassic source rocks are present over much of the area. These observations, together with comparisons with the conjugate Mid-Norway margin, suggest that the area has excellent hydrocarbon potential. ION says that this year it is building on its success in the Arctic with four in-ice Arctic programs focused on the US and Canadian Beaufort Seas and Greenland. To learn more about ION's Arctic solutions and ArcticSPAN programs, visit booth 1155.