**Supplementary material**

The samples were analysed for major and trace elements and Light Rare Earth Elements (LREEs) by X-ray fluorescence at the School of GeoSciences, University of Edinburgh using a previously documented method (Fitton *et al*. 1998). In addition, many of the same samples were analysed by ICP-MS for selected major elements, trace elements and REEs at the ACME laboratories in Vancouver, Canada (using the method summarised by Vergili & Parlak (2005).Some elements were analysed by both techniques. For this reason, the XRF and ICP-MS data are tabulated separately. The sample localities are indicated by name of section or area and by GPS co-ordinates (quoted either as WGS 1984 or UTM).

**References**

Fitton, J.G., Saunders, A.D., Larsen, L.M., Hardarson, B. & Norry, M. J 1998. Volcanic rocks from the southeast Greenland margin at 63°N: Composition, petrogenesis and mantle sources. *In*: Saunders, A.D. *et al*. (eds) *Proceedings of the Ocean Drilling Program, Scientific Results,* **152**, 331–350.

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