



AMBASÁID NA hÉIREANN

AMBASSADE D'IRLANDE

EMBASSY OF IRELAND

The Embassy of Ireland presents its compliments to the Ministry for Foreign Affairs of Iceland and has the honour to request clearance for entry into Icelandic waters of the scientific vessel *Celtic Explorer*.

The *Celtic Explorer*'s registered owner is Ireland's Marine Institute, which is the national agency responsible for Marine Research, Technology, Development and Innovation. The Institute hopes to carry out research in Icelandic waters between 21 April and 15 May 2008. It will not call at any Icelandic ports. It is stressed that this is not a naval vessel.

The Embassy has the honour to provide the following information in respect of the vessel and its visit:

Name:	Celtic Explorer
Nationality:	Irish
Owner:	Marine Institute
Overall length:	65.5m
Maximum draught:	5.7m
Net tonnage:	727
Propulsion:	2 x 1530 KW, 1000Rpm, 1 x 1020 KW, 1000 Rpm
Cruising speed:	10 Kts
Call sign:	EIGB
Name of master:	Ciaran Flannagan / Phillip Baugh
Number of crew:	12
Number of scientists on board:	19 (max)

The attached application for the *Celtic Explorer* gives further details of the vessel and the research projects it will be carrying out. It shows the dates that the vessel will enter and exit Icelandic territorial waters.

The Embassy of Ireland avails itself of this opportunity to renew to the Ministry for Foreign Affairs the assurances of its highest consideration.

29 February 2008

Ministry for Foreign Affairs
Reykjavik





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**APPLICATION FOR THE CONSENT TO CONDUCT MARINE SCIENTIFIC
RESEARCH IN AREAS UNDER NATIONAL JURISDICTION OF ICELAND**

Date: 26/02/08

1. General information**1.1 Cruise name and/or number:** CE0806**1.2 Sponsoring institution:**

Name: Marine Institute
Address: Rinville
Oranmore
Co. Galway
Ireland

Name of Chief Executive: Dr. Peter Heffernan**1.3 Scientist in charge of the project:**

Name: Dr. Stephen Jones
Address: Department of Geology
Trinity College Dublin
Dublin 2

Telephone: +353-1-8961235
Telefax: +353-1-6711199

1.4 Scientist(s) from ICELAND involved in the planning of the project**Name(s):** Dr Bryndis Brandsdottir

Address: Institute of Earth Sciences,
Náttúrufræðahús,
Askja, herbergi 327
Sturlugata 7,
IS-101 Reykjavík

Sími/phone: 525 4774**1.5 Submitting officer:**

Name and address: Bernadette Ní Chonghaile
Marine Institute
Rinville
Oranmore
Co. Galway

Country: Ireland**Telephone:** 00 353 91 387200**Telefax:** 00 353 91 387201



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2. Description of project (Attach additional pages as necessary)

2.1 Nature of objectives of the project:

V-Shaped Ridges (VSRs) developed in oceanic crust north and south of Iceland are the world's best window into time-dependent mantle convection processes. It is generally agreed that VSRs result from melting anomalies that propagate outward from Iceland, but the cause of the melting anomalies and the mantle flow pattern that carries them are debated. The proposed survey will provide a unique set of detailed geochemical data that will help to address the question of whether the VSR melting anomalies can be explained entirely by thermal variations within the plume head, or whether chemical heterogeneity also required.

The cruise aims to obtain samples of mid-ocean ridge basalt by dredging at selected sites along the crest of the western arm of VSR-2 and its intersection with the Reykjanes Ridge. New swath bathymetry data will be collected in the vicinity of each proposed site in order to target dredging.

2.2 Relevant previous or future research cruises:

1993, Cruise CD80 (*R.R.S. Charles Darwin*), Iceland hotspot-ridge interaction study, Chief Investigator Dr Bramley Murton, Southampton.

2.3 Previously published research data relating to the project:

Murton B.J., Taylor R.N., Thirlwall M.F., Geochemical interaction between the Iceland Plume and the Reykjanes Ridge: a geochemical perspective. *Journal of Petrology*, 43(11), 1987–2012, 2002.

This paper describes a comprehensive suite of geochemical analyses for samples recovered from 186 sites between 63 N and 57.5 N on the Reykjanes Ridge collected on cruise CD80. The transect characterises geochemistry across the younger flank, the crest and the older flank of VSR-1 as far as the trough between VSRs 1 & 2.

The proposed cruise will obtain additional samples along the Reykjanes Ridge between 57.7 N and 55 N. This transect will characterise the geochemistry across the younger flank, crest and older flank of VSR-2 (see figure below). We will then obtain samples along the crest of VSR-2, working north from its intersection with the Reykjanes Ridge at about 57 N. The northern end of the transect will depend on weather conditions but it will not be further north than 62.5 N, 27 W.

All new geochemical and bathymetric data will be submitted for publication in high-ranking academic journal(s) within four years of the survey. The data will be made available online at the time of publication. Access to data before publication will be through the leading partners (Jones, TCD and Murton, NOC).



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3. Methods and means to be used**3.1 Particulars of vessel**

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Owner: Marine Institute
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Cruising speed: 10 Kts
Call sign: EIGB
Method and capability of communication –
Name of master: Ciaran Flannagan/ Phillip Baugh
Number of crew: 12
Number of scientists on board: 19 max

3.2 Aircraft or other craft to be used in the project: N/A**3.3 Particulars of methods and scientific instruments**

Types of samples and data	Methods to be used	Instruments to be used
High resolution bathymetry.	Swath echosounder.	RESON 8160.
Mid ocean ridge basalt surface samples.	Dredging.	Standard dredges.

4. Geographical areas**4.1 Indicate geographical areas in which the project is to be conducted (with reference in latitude and longitude):**

Corridor between approximately 57 N, 33 W and approximately 62.5 N, 27 W (see figure below).
 The survey will begin at the southern end and we hope to reach at least as far north as 60 N.
 The northern end of the corridor will be surveyed if time / weather allows.

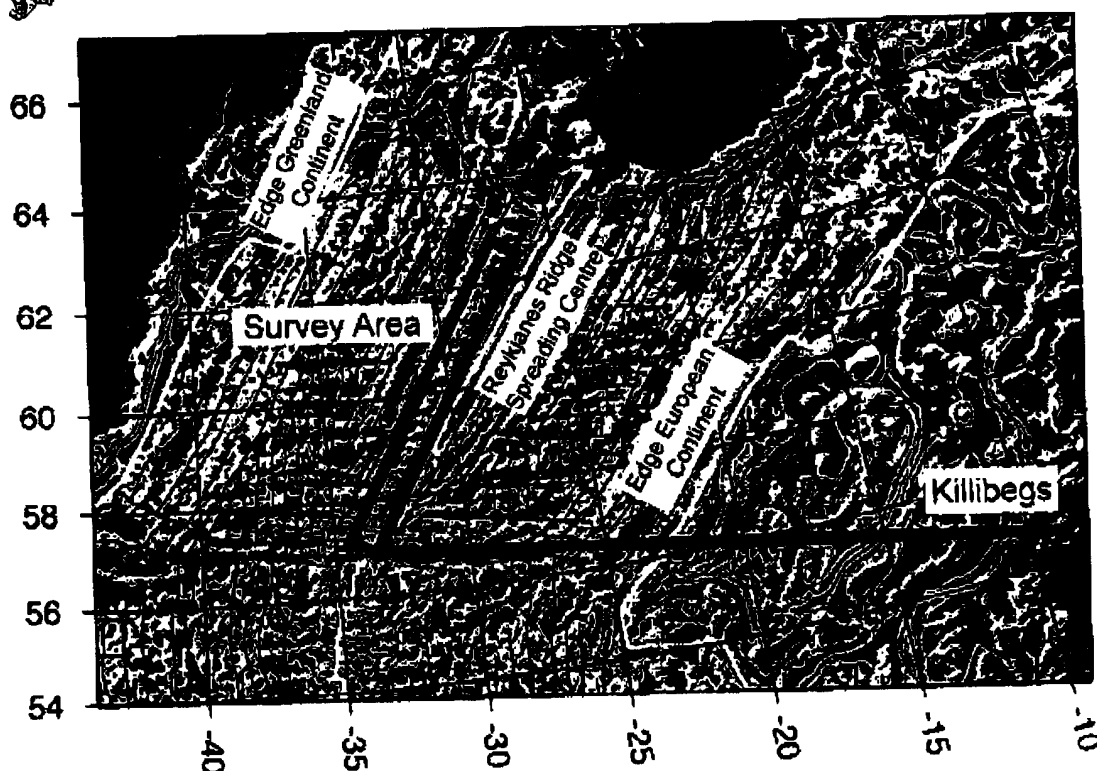
4.2 Attach chart(s) at an appropriate scale showing the geographical areas of the intended work and, as far as practicable, the positions of intended stations, the tracks of survey lines, and the locations of installations and equipment.



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5. Dates

The cruise will take place between 21st April – 15th May 2008.

5.1 Expected dates of first entry into and final departure from research area of the research vessel:

First entry to the Survey Area is expected on 25th April.
Final departure from the Survey Area is expected on 11th May.

5.2 Indicate if multiple entry is expected:

Multiple entry not anticipated.

6. Port calls

6.1 Dates and names of intended ports of calls in ICELAND:

No intended port calls.

6.2 Any special logistical at ports of call:

Not applicable.

6.3 Names/ Address / Telephone of shipping agent (if available)

Not applicable.



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7. Participation

7.1 Extent to which ICELAND will be enable to participate to be represented in research project:

Contact has been established with Dr Bryndis Brandsdottir at the Institute of Earth Sciences. We have extended invitation for Icelandic scientists with relevant experience to apply to join the cruise as scientific observers. As yet, no-one has taken up this offer.

7.2 Proposed dates and ports for embarkation / disembarkation:

Embarkation Killibegs (Ireland) 21st April 2008.
Disembarkation Killibegs (Ireland) 15th May 2008.