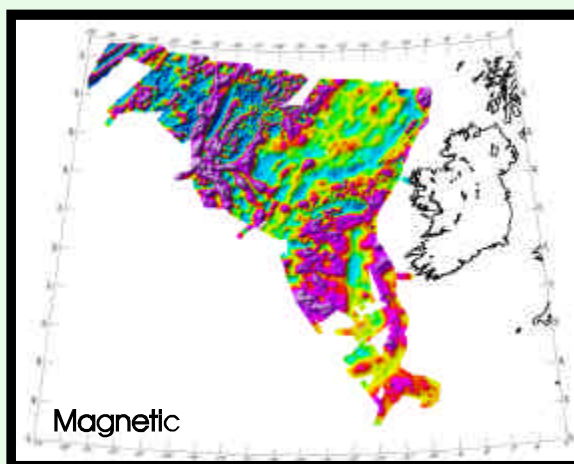
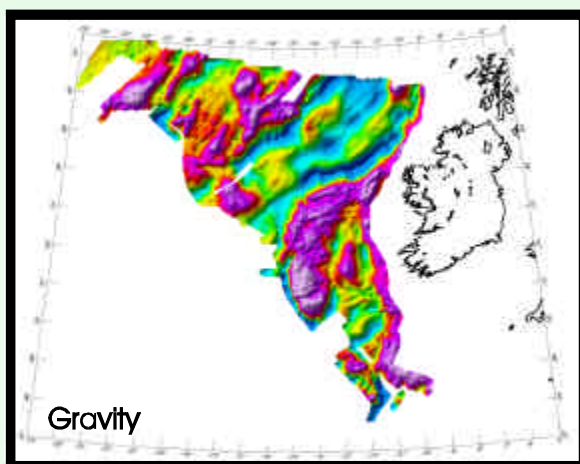
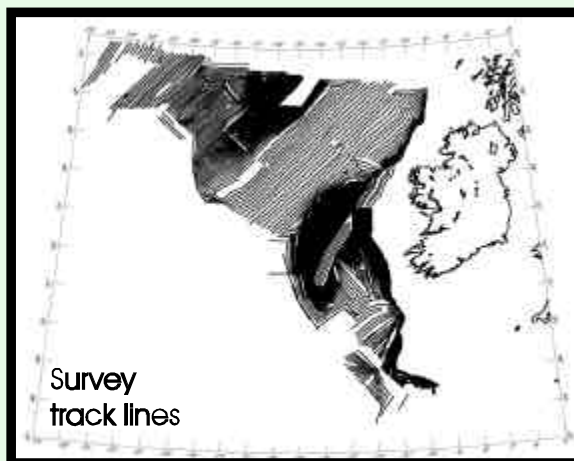
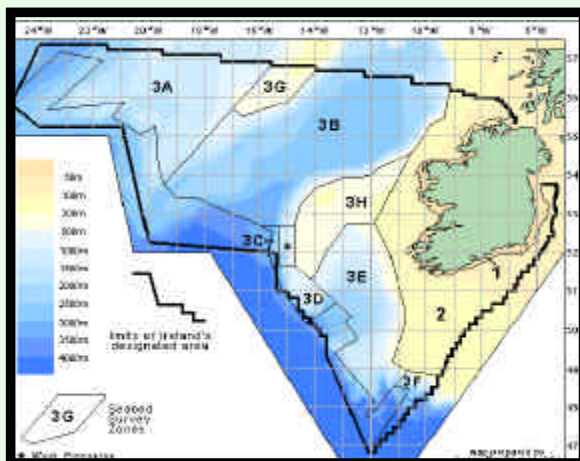




National Seabed Survey of Ireland Gravity & Magnetic Data Sales



Zone 3 Data Products from the 2000-2002 surveys are now available.

Gravity and Magnetic Products Include:

- Free Air and Bouguer Gravity
- Total Magnetic Field
- Enhanced Grids
- Depth Analysis
- Interpretation Reports

PGW Europe Limited are agents for the Geological Survey of Ireland (GSI). The GSI are the owners of all the NSS data products.



PGW Europe Limited

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National Seabed Survey of Ireland

Information Sheet

on

Zone 3 Gravity and Magnetic Data Products and Prices

July 2004

PGW Europe Limited

Geological Survey of Ireland



The National Seabed Survey (NSS) Zone 3 Gravity and Magnetic datasets are currently available to purchase from the Geological Survey of Ireland via their data agents, PGW Europe Ltd.

The data was acquired in the deep water's of the Irish offshore in an area now called Zone 3 (>200m bathymetry contour to international boundary, see attached flyer). Currently, the NSS is acquiring data in the near-shore region in an area now called Zone 2 (between the 50m and 200m bathymetry contours). This data will also be available in the near future.

In Zone 3, over 124,300 line kilometres of gravity data was acquired and over 123,500 line kilometres of magnetic data was acquired. The navigation (lines spacing and direction) was determined by the multibeam coverage which resulted in dense line coverage in the shallower areas and broad lines spacing in the deep water areas. Two vessels were used to collect the data in Zone 3 over the three field seasons between 2000 and 2002. See below for a description of the available data products and prices:

NSS Gravity & Magnetic Data Products and Prices

1) Standard Potential Field Products (Digital)

The following observed and derived products form the standard dataset (digital) available for all of Zone 3.

a) Gravity Products

- Free Air Gravity
- Bouguer Gravity
- Horizontal Derivative of Gravity

b) Magnetic Products

- Total Magnetic Field
- First Vertical Derivative of Total Magnetic Field
- Analytic Signal of Total Magnetic Field

Products will be supplied in ASCII format as x,y,z files and as grids in Geosoft format (or otherwise specified). Deliveries will also include a data distribution map (in DXF) and a brief summary report.

Price: €100,000



2) Partial Product Purchase (Digital)

Partial areas may be purchased at a minimum purchase of a 1° Latitude x 2° Longitude sheet for all products detailed in 1) above.

Price (per 1° x 2° sheet): €7,500

3) Map Products

Hard Copy maps in colour/contour form, each comprising a 1° Latitude x 2° Longitude sheet, may be ordered for select standard products.

Price: €100 /product/map sheet

4) Added-Value Products

A complete suite of enhanced images and interpretation products as detailed below (digital & hard copy). These products can only be purchased with a Standard Potential Field license as detailed in 1) above.

Price: €15,000

Note:

The GSI reserves the right to adjust or modify these prices if and when deemed suitable. All prices are in Euros and are exclusive of VAT.

For sales enquiries please contact:

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Added-Value Products

Gravity

- 1) The isostatic residual grid computed from the Bouguer gravity grid. This removes the effects of isostasy on the long-wavelength gravity field, thereby better isolating the gravity responses due to crustal sources.
- 2) Grids of the total horizontal gradient computed from the Bouguer gravity and isostatic residual grids. These grids display peaks over the edges of source bodies.
- 3) Grids of the first vertical derivative (i.e. vertical gradient) computed from the Bouguer gravity and isostatic residual grids. These grids enhance the responses due to near-surface sources and structure.
- 4) Source-edge detection applied to the Bouguer gravity and isostatic residual grids. This process locates the peaks in the horizontal gradient grids which defines source boundaries in vector format.
- 5) Euler deconvolution applied to the Bouguer gravity and isostatic residual grids. This process locates sources in 3-D space using the step/sill/dyke model ($SI=0.0$). Appropriate windowing techniques are applied to retain the most sensible solutions.
- 6) Source parameter imaging applied to the first vertical derivative of the Bouguer gravity and isostatic residual grids. This process locates sources in 3-D space using the contact/fault model.
- 7) A composite grid of the free-air, Bouguer and satellite gravity, will be prepared incorporating any additional gravity data (onshore or offshore), for regional tectonic studies.

The grids are prepared utilising the resolution and coordinate system of the NSS gravity grids. The co-ordinate systems and digital data formats can be changed to meet client requirements. Additional processed grids (e.g. regional/residual, second vertical derivative, spectral slices) can be prepared to meet client requirements.



Magnetic

- 1) The reduced-to-pole grid computed from the total magnetic field grid. This removes the effects of geomagnetic inclination and declination on the anomaly geometry.
- 2) The grid of the total horizontal gradient computed from the pole-reduced magnetic field grid. This displays peaks over the edges of source bodies.
- 3) The grid of the first vertical derivative (i.e. vertical gradient) computed from the pole-reduced magnetic field grid. This enhances the responses due to near-surface sources and structure.
- 4) The grid of the analytic signal amplitude computed from the total magnetic field grid. This helps to better locate magnetic sources regardless of their geometry and magnetic remanence.
- 5) Grids of the pseudo-gravity and its horizontal gradient computed from the total magnetic field grid. This facilitates direct comparison with the corresponding gravity grids.
- 6) Source-edge detection applied to the reduced-to-pole and pseudo-gravity grids. This helps in locating the peaks in the horizontal gradient grids to define source boundaries in vector format.
- 7) Euler deconvolution applied to the total magnetic field grids. This helps to locate sources in 3-D space using the contact ($SI=0.0$) and sill/dyke ($SI=1.0$) models, and appropriate windowing techniques applied to retain the most sensible solutions.
- 8) Source parameter imaging (SPI) applied to the first vertical derivative of the pole-reduced magnetic field grid. This helps to locate sources in 3-D space using the contact/fault model.
- 9) The Euler and SPI results combined to prepare a depth-to-magnetic-sources grid, a depth-to-magnetic-basement grid (i.e. intra-sedimentary sources removed from the first grid) and a sediment thickness grid (i.e. difference between bathymetry grid and depth-to-magnetic-basement grid).
- 10) Compu-drapeTM applied to the pole-reduced grid. This is used to compute grids of the magnetic field response on the seafloor and on the magnetic basement surface, to remove the effects of the variable depths-to-magnetic-sources
- 11) A composite grid of the total magnetic field, will be prepared incorporating any additional magnetic data (onshore or offshore), for regional tectonic studies.



The grids are prepared utilising the resolution and coordinate system of the NSS magnetic grids. The co-ordinate systems and digital data formats can be changed to meet client requirements. Additional processed grids (e.g. regional/residual, second vertical derivative, spectral slices) can be prepared to meet client requirements.

Signature Analysis & Interpretation Products

The various magnetic and gravity grid and vector products described above have been utilized to prepare an interpretation. It has been supplemented by incorporating the Euler and SPI depth results as starting points for a series of section models that traverse the survey area. These models incorporate joint forward and inverse modelling of the magnetic and gravity data, along a number of sections, which provide a 3-D rendition of the basement, sedimentary section and intra-sedimentary sources. The modelled results are incorporated into the interpretation, which synthesizes the following elements:

- tectonic geometry and structure (e.g. crustal faults and sutures, major terrains)
- basement lithology and structure (e.g. igneous and metamorphic terrains, faults)
- delineation of igneous activity and other intra-sedimentary features (e.g. intrusives, volcanics, sills, dykes, salt bodies)
- delineation of basin geometry and structure (e.g. horsts/grabens, synclines/anticlines, fold systems, basement and intra-sedimentary faults)

The interpretation has been prepared digitally and can be delivered as an ArcGIS project. From this, a series of maps have been prepared that focus on specific elements (e.g. tectonics, structure, sediments, igneous activity). The interpretation incorporates information from the other components of the seabed survey (e.g. bathymetry, sub-bottom profiling, seafloor samples) that contributes to the geological understanding of the area.