

IDITAROD survey area:
Aeromagnetic and frequency-domain electromagnetic (DIGHEM V) data

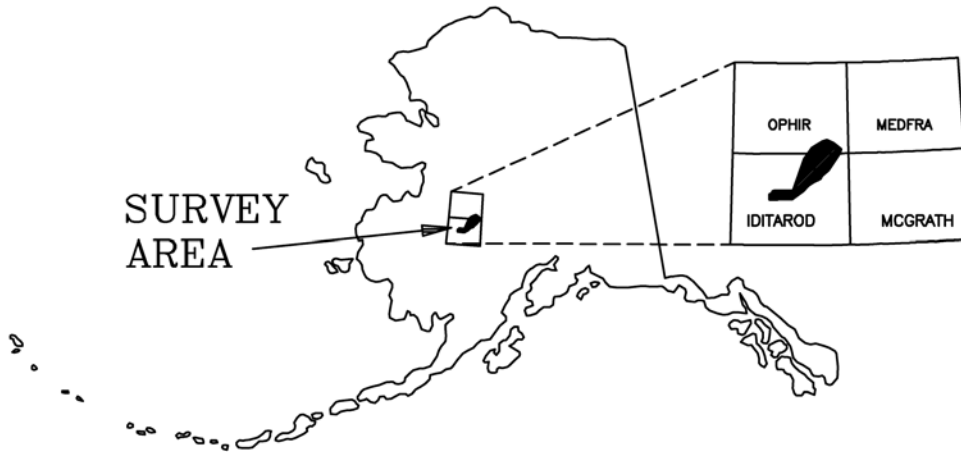


Figure 1: Location of the Iditarod survey area in Alaska.

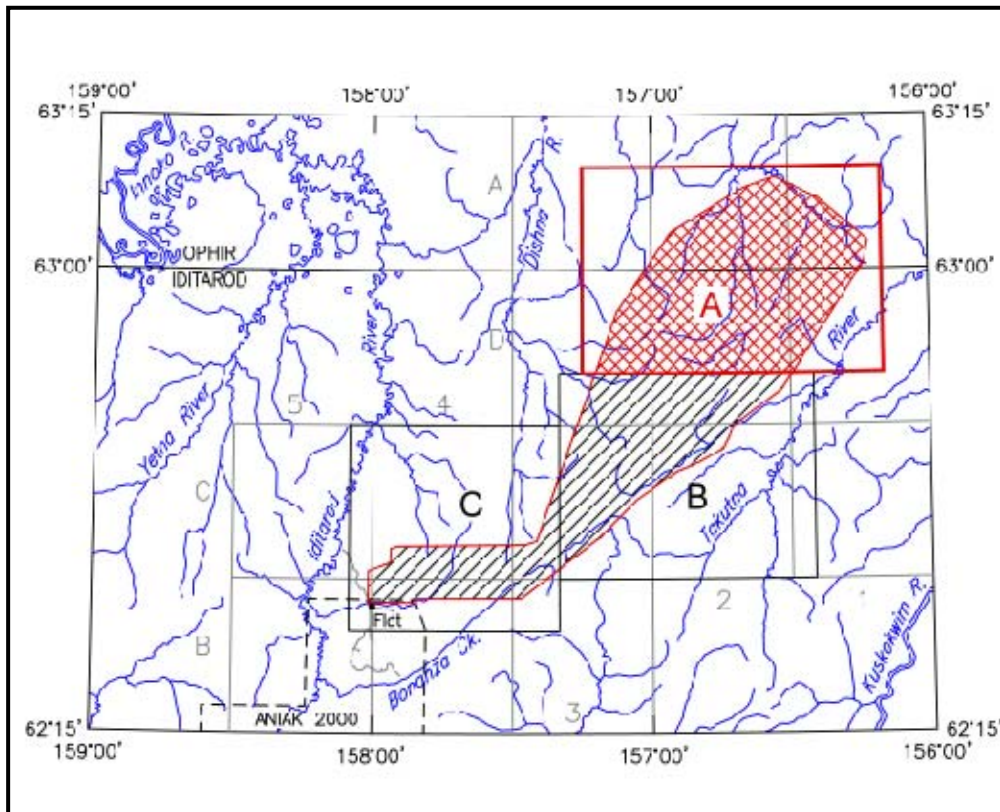


Figure 2: Location of the Iditarod survey area in the Ophir and Iditarod Quadrangles, Alaska.

CONTENTS of this ReadMe file:

- SURVEY LOCATION FIGURES (in the PDF version)
- PROJECT AND TECHNICAL INFORMATION
- INFORMATION FILES
- CONTENTS of the DVD
- PROJECTION INFORMATION
- DATA AVAILABILITY AND TECHNICAL REQUIREMENTS

PROJECT AND TECHNICAL INFORMATION

Project Name:.....Iditarod Survey
Contracting Agency:.....State of Alaska, Department of Natural Resources,
Division of Geological & Geophysical Surveys (DGGGS)
DGGGS Section:.....Minerals Section
Program:.....Alaska Airborne Geophysical/Geological Mineral
Inventory (AGGMI) Program
Funding Source:.....Alaska State Legislature
Contractor:.....Fugro GeoServices, Inc.
Survey Flown By:.....Fugro Airborne Surveys
Fugro Project Number:.....10044B/10044-2
DGGGS Contract Manager:.....Laurel E. Burns
Area Size:.....2206.7 sq km (852.0 sq mi)
Data Acquisition:
Start Date (YYYY-MM-DD):2010-08-25
Data Acquisition:
End Date (YYYY-MM-DD):2010-09-16
Data Acquisition:.....Digitally acquired
Platform:.....Helicopter
Platform: Model:.....AS-350-B3 Squirrel
Survey Altitude Model:.....Mean terrain clearance (height above ground)
Nominal Helicopter Height:.....200 feet
Nominal Bird Height:.....100 feet
Traverse: Line Azimuth:N20°W (340 degrees)
Traverse: Line Spacing:.....1/4 mile (402.3 m)
Tie: Line Azimuth:.....N70°E (70 degrees)
Tie: Line Spacing:.....approximately 3 miles (approximately 4828 m)
Border lines:.....present around all edges
Magnetics: Magnetometer:.....Fugro D1344 cesium magnetometer with Scintrex CS3
cesium sensor, mounted in bird
Electromagnetics: Sensor Model:Dighem(V)
Navigation System: Sensor:.....Global Positioning System
Navigation System: Sensor:.....Novatel OEM4-GL2
Navigation System: Method:.....Post-flight differential positioning
Additional equipment: Radar and laser altimeters, video camera, and 50/60 Hz monitors

INFORMATION FILES:

GPR2011-2ReadMe	Basic survey information and DVD contents; PDF and txt
Figures_1-and-2.jpg	Location figures
LINEDATA\Iditarod_Linedata.txt	Linedata channel information
METADATA\GPR2011-2.txt	Metadata; includes process steps and longer definitions of grids, channel names, etc.

CONTENTS of the DVD:

This publication, GPR2011-2, consists of 1 DVD with files in the root directory and in 7 main folders:

LINEDATA,
GRIDS,
GEOTIFFS,
KMZS,
VECTORS, AND
MAPS, AND
METADATA.

ROOT DIRECTORY FILES:

GPR2011-2ReadMe	This file; PDF and TXT format.
Figures_1-and-2.jpg	Location of Iditarod survey: 1) in Alaska, and 2) in the Iditarod and Ophir quadrangles.

LINEDATA (Folder)

Iditarod.gdb	Oasis Montaj binary GDB database format
Iditarod.XYZ	Oasis Montaj ASCII XYZ format
Iditarod_imxyz.i0	Oasis Montaj import template for XYZ file
Iditarod_Linedata.txt	Channel list

GRIDS, GEOTIFFS, and GOOGLE EARTH KMZs (3 Separate Folders)

The same data are provided as grids, Geotiffs, and Google Earth KMZs files. Gridded files can be manipulated to produce different images. **Each Geotiff** and KMZ file is just basically one image. For the grids that were made into maps, the corresponding images in the Geotiff and KMZ files are the same image used for the grid in the map.

GEOTIFFS (Folder)

Geotiff files automatically register correctly as NAD 27, UTM Zone 4N in GIS programs. Geotiff files can be opened in any graphics program and as long as the file is not saved, the registration information will still be valid.

Idi_MagDiu.tif	Partially processed total magnetic field (nT)
Idi_MagRMI.tif	Residual magnetic intensity (RMI) (nT) - final with IGRF removed
Idi_MagIGRF.tif	Total magnetic field (nT) - final, with IGRF removed
Idi_1VD.tif	First vertical derivative 'dz' (nT/m) of the RMI
Idi_ASig.tif	Analytic signal (nT/m) calculated from the RMI
Idi_TiltDer.tif	Tilt derivative (degrees) of the RMI
Idi_Res56k.tif	Apparent coplanar resistivity (ohm*m) for 56,000 (56k) Hz
Idi_Res7200.tif	Apparent coplanar resistivity (ohm*m) for 7200 Hz
Idi_Res900.tif	Apparent coplanar resistivity (ohm*m) for 9000 Hz
Idi_DTM.tif	Digital terrain or elevation model (m)
Idi_AltLasBird.tif	EM bird height (m) above surface, measured by laser altimeter in EM bird

KMZS (Folder)

Google Earth zip format: can drag and drop the KMZ files into "My Places" in the free downloadable Google Earth program (<http://earth.google.com/download-earth.html>); data will be automatically registered with the locational information used by Google Earth, i.e. WGS84 datum and CGS projection.

Idi_MagDiu.kmz	Partially processed total magnetic field (nT)
Idi_MagRMI.kmz	Residual magnetic intensity (RMI) (nT) - final with IGRF removed
Idi_MagIGRF.kmz	Total magnetic field (nT) - final, with IGRF removed
Idi_lVD.kmz	First vertical derivative 'dz' (nT/m) of the RMI
Idi_ASig.kmz	Analytic signal (nT/m) calculated from the RMI
Idi_TiltDer.kmz	Tilt derivative (degrees) of the RMI
Idi_Res56k.kmz	Apparent coplanar resistivity (ohm*m) for 56,000 (56k) Hz.
Idi_Res7200.kmz	Apparent coplanar resistivity (ohm*m) for 7200 Hz.
Idi_Res900.kmz	Apparent coplanar resistivity (ohm*m) for 9000 Hz.
Idi_DTM.kmz	Digital terrain or elevation model (m)
Idi_AltLasBird.kmz	EM bird height (m) above surface, measured by laser altimeter in EM bird

GRIDS (Folder)

All grids are provided in Geosoft binary float and ER Mapper formats. Two files are included for one Geosoft file: the grid file (.GRD) and the projection file (.GI).

Two files are needed to see ER Mapper data-a header (.ERS) and a data file (no extension). The projection information is already included in the ER Mapper data files.

Idi_MagDiu	Partially processed total magnetic field (nT)
Idi_MagRMI	Residual magnetic intensity (RMI) (nT) - final with IGRF removed
Idi_MagIGRF	Total magnetic field (nT) - final, with IGRF removed
Idi_lVD	First vertical derivative 'dz' (nT/m) of the RMI
Idi_ASig	Analytic signal (nT/m) calculated from the RMI
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Idi_Res56k	Apparent coplanar resistivity (ohm*m) for 56,000 (56k) Hz.
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Idi_DTM	Digital terrain or elevation model (m)
Idi_AltLasBird	EM bird height (m) above surface, measured by laser altimeter in EM bird

VECTORS (Folder)

Data contours provided were made for the maps with this publication. The flight line path, not included on any maps, is also included. The vectors are provided in ESRI shape file (SHP) format. The files can be opened in variety of geophysical and GIS/CAD software such as Oasis Montaj, MapInfo, ArcGIS, and AutoCAD

DATA CONTOURS:

Idi_MagRMI.....	Residual magnetic intensity (RMI) (nT) - final
Idi_ASig.....	Analytic signal (nT/m) calculated from the RMI
Idi_TiltDer.....	Tilt derivative (degrees) of the RMI
Idi_Res56k.....	Apparent coplanar resistivity (ohm*m) for 56,000 (56k) Hz
Idi_Res7200.....	Apparent coplanar resistivity (ohm*m) for 7200 Hz.
Idi_Res900.....	Apparent coplanar resistivity (ohm*m) for 9000 Hz.

ACCESSORY VECTORS:

Idi_SecGrid..... Alaska PLSS Section Grid for the map sheets; includes township and range labels.
Idi_UTMGrid..... Alaska UTM Grid for the map sheets; includes UTM labels on edges
Idi_FP..... Flight path

MAPS (Folder)

Maps are provided as HPGL/2 (PRN) and PDF files. The HPGL/2 files were created with HP Design jet 5000 printer driver v5.32 and will not work with all plotters, but do plot on the DGGS HP Design Jet 5000. The HPGL/2 files have brighter colors and sharper topography than the Adobe Acrobat files, and should be used or requested if at all possible. Freeware software 'printfile' , available currently at (<http://www.lerup.com/printfile/>) prints HPGL/2 files easily on compatible printers. The Adobe Acrobat format files were created with Adobe Acrobat Distiller v7.0 (PDF 1.5) from postscript files created from the HPGL/2 files.

Three sheets (A-northeastern, B-middle, and C- southwestern) are needed to cover the survey area at 1:63,360-scale (Figure 2).

Zip files included:

- GPR2011-s_MAPSasHPGL2_1-5.zip
- GPR2011-s_MAPSasHPGL2_6-8.zip
- GPR2011-s_MAPSasHPGL2_9-13.zip
- GPR2011-s_MAPSasPDFS.zip

Publication No	Part of Map Title	Includes
GPR2011-2-1	Residual magnetic field	topography
GPR2011-2-2	Residual magnetic field with data contours	
GPR2011-2-3	First vertical derivative of the residual magnetic field	topography
GPR2011-2-4	Analytic Signal	topography
GPR2011-2-5	Analytic Signal with data contours	
GPR2011-2-6	Magnetic tilt derivative and data contours	topography
GPR2011-2-7	Color shadow residual magnetic field with magnetic tilt derivative contours	topography
GPR2011-2-8	56K Hz coplanar apparent resistivity	topography
GPR2011-2-9	56K Hz coplanar apparent resistivity with data contours	
GPR2011-2-10	7200 Hz coplanar apparent resistivity	topography
GPR2011-2-11	7200 Hz coplanar apparent resistivity with data contours	
GPR2011-2-12	900 Hz coplanar apparent resistivity	topography
GPR2011-2-13	900 Hz coplanar apparent resistivity with data contours	

METADATA (Folder)

Metadata is provided in four formats.

- GPR2011-2.faq.html.....Hypertext Markup Language format (Question and Answer)
- GPR2011-2.txt.....ASCII text
- GPR2011-2.xml.....Extensible Markup Language format

PROJECTION INFORMATION:

DATUM & PROJECTION ITEMS	GRIDS, GEOTIFFS, & VECTORS	LINEDATA: HORIZONTAL LOCATION CHANNELS		KMZ FILES
		X_NAD27z7n Y_NAD27z7n	LAT_WGS84 LON_WGS84	
DATUM	NAD27 Spheroid; Clarke 1866		WGS84	WGS84
PROJECTION	UTM Zone 4N		LAT/LON WGS 84	Simple Cylindrical / LAT/LON WGS 84
CENTRAL MERIDIAN	-159			
FALSE EASTING	500000			
FALSE NORTHING	0			
SCALE FACTOR	0.9996			
NORTHERN PARALLEL	N/A			
BASE PARALLEL	N/A			
WGS84 TO LOCAL	Molodensky conversion method			
DELTA X SHIFT	+5			
DELTA Y SHIFT	-135			
DELTA Z SHIFT	-172			

AVAILABILITY and TECHNICAL REQUIREMENTS:

DVD-ROM: Purchased by mail, e-mail (mailto:dggspubs@alaska.gov), or in person from DGGs, 3354 College Road, Fairbanks, Alaska, 99709-3707 for \$10 plus postage; 1 DVD-ROM.

ON-LINE: All parts of this publication can be downloaded from the DGGs Web link <http://www.dggs.alaska.gov/pubs/id/22842> in data groups, e.g. MapsAsPDFS. The downloadable groups are near the bottom of the web page. Note that the 'Read Me' file available for each link is not the same file as this document.

MAPS: The PDF version of the maps may be viewed, downloaded, or printed individually from the same link as the downloads: <http://www.dggs.alaska.gov/pubs/id/22842> or through the Iditarod Project page (<http://www.dggs.alaska.gov/pubs/project-orderform/750>) which will contain related geophysical or geological data that are produced in the future. Maps are also available on paper or Mylar through the DGGs office for \$13/sheet plus mail costs. Please ask for the maps to be printed from HPGL/2 files to ensure the best quality image.

Technical requirements for the data on this publication includes software with ability to use, import, or convert Geosoft float GRD, Geosoft binary GDB or ASCII XYZ files, ESRI Shape files, Adobe Acrobat PDF, Google Earth files, and text files. Free downloadable interfaces to view or convert the gridded and shape files are available at the Geosoft Web site (<http://www.geosoft.com>; Oasis Montaj viewer). The KMZ files can be dragged and dropped into the 'My Places' folder of the free downloadable 'Google Earth' software. Freeware software 'printfile' (<http://www.lerup.com/printfile>) prints HPGL/2 files easily on compatible printers. The HPGL/2 files have brighter colors and sharper topography than the PDF maps and should be used for printing when possible. The PDF format maps are the only maps digitally viewable in this publication.

If you have any problems with this archive please contact Laurel Burns or the current geophysicist at the DGGs office.

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