CGG Project #: 13032
Volume Label: CDVD01340
Archive Date: 2014-November 2
This archive consists of 1 DVD-ROM

GPR 2014_005_ReadMe.PDF

EAST STYX SURVEY AREA:

Airborne Magnetic, Electromagnetic, and Radiometric Data in Line (Point), Grid, Vector, and Map formats, Talkeetna, Tyonek, McGrath, and Lime Hills quadrangles, south-central Alaska

by
L.E. Burns, CGG, and Fugro Geosciences

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PROJECT AND TECHNICAL INFORMATION

Project Name:	East Styx Survey
Contracting Agency:	State of Alaska, Department of Natural Resources, Division of Geological & Geophysical Surveys (DGGS)
DGGS Section:	Minerals Section
Program:	Alaska Airborne Geophysical/Geological Mineral Inventory (AGGMI) Program
Funding Source:	Alaska State Legislature
Contractor:	Fugro GeoServices, Inc.
Survey Flown By:	CGG
CGG Project Number:	13032
DGGS Contract Manager:	Laurel E. Burns
Line Km	7865.6 km
Data Acquisition:	
Start Date (YYYY-MM-DD):	2013-08-05
End Date (YYYY-MM-DD):	2013-09-21
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:	N70°E (heading of 70 degrees)
Traverse: Line Spacing:	1/4 mile (402.3 m)
Tie: Line Azimuth:	N160°E (heading of 160 degrees)
Tie: Line Spacing:	approximately 3 miles (approximately 4828 m)
Border lines:	present around all non-parallel and non-perpendicular edges
Magnetics: Magnetometer:	Scintrex CS3 cesium censor, mounted in bird
Electromagnetics: Sensor Model:	Dighem(V)
Spectrometer: Model:	Radiations Solution RS-500 256-channel gamma-ray spectrometer
Navigation System: Sensor:	Global Positioning System
Navigation System: Sensor:	Novatel OEM5-GL2
Navigation System: Method:	Post-flight differential positioning
Additional equipment:	Radar and laser altimeters, video camera, and 50/60 Hz monitors

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NOTE ABOUT THE PUBLICATION AND FUTURE ADDITIONS TO THE PUBLICATION:

DGGS is now using '.DOI.' numbers for each given project. For the geophysical surveys, this means all the data for a survey will be associated with that DOI and the original publication number. While the data included in this publication is in its final form, additions at a future date will include CGG's Project Report, interpretation, and EM anomaly picks, stacked-multichannel profiles, and more. These will all be labeled with a gpr2014-5 number, possibly including letter at the end, such as 'A', 'B', 'C', but possibly just added directly onto gpr2014-5. Regardless of the name, the download page will be http://dx.doi.org/10.14509/29142 or through the East Styx Project page (http://www.dggs.alaska.gov/pubs/project-orderform/1227). The project page will have a listing of what is available.

CONTENTS of the PUBLICATION:

This publication, GPR 2014-5, consists of 1 DVD with files in the root directory and in 7 main folders: metadata, linedata, grids, geotiffs, kmzs, maps, & vectors. It is also downloadable from the web, in which case the Root Directory files have been placed in the Metadata folder.

ROOT DIRECTORY FILES:

gpr2014_005_readme	This file; PDF and TXT format.
gpr2014_005_figure1.jpg	Alaska figure showing location of East Styx survey
gpr2014_005_figure3.jpg	Detailed figure showing location of East Styx survey map sheets, rivers, and 1:63,360-scale quadrangles.

(Figures 1 and 3 used in from Browse Graphic file.)

METADATA (Folder):

Metadata is provided in three formats.

GPR2014-5.faq.html	Hypertext Markup Language format (Question and Answer)
GPR2014-5.txt	ASCII text
GPR2014-5.xml	Extensible Markup Language format

LINEDATA (Folder):

Oasis Montaj (Geosoft) ASCII XYZs have been split into 3 parts due to database size.

EastStyx_Linedata.txt	Channel list
EastStyx_EM.gdb	Oasis Montaj binary GDB database format for mag & EM
EastStyx_RAD.gdb	Oasis Montaj binary GDB database format for RAD
EastStyx_EM_part1XYZ	Oasis Montaj ASCII XYZ format for mag and EM
EastStyx_EM_part2XYZ	Oasis Montaj ASCII XYZ format for mag and EM
EastStyx_EM_part3XYZ	Oasis Montaj ASCII XYZ format for mag and EM
EastStyx_RAD_part1.XYZ	Oasis Montaj ASCII XYZ format for RAD
EastStyx_RAD_part2.XYZ	Oasis Montaj ASCII XYZ format for RAD
EastStyx_RAD_part3.XYZ	Oasis Montaj ASCII XYZ format for RAD
East5Styx_EM_XYZtoGDB.i0	Oasis Montaj import template for XYZ file for mag &
EMEastStyx_RAD_XYZtoGDB.i0	Oasis Montaj import template for XYZ file for RAD

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

The same data are provided as grids, Geotiffs, and Google Earth KMZs files. The list of the files and the definition is provided below the short sections for the three folders. 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.

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 (GRD.GI). Three files are provided for ER Mapper data -- a header file (.ERS), a data file (no extension), and the projection file (.ERS.GI).

GEOTIFFS (Folder)
All file names below have the extension '.TIF' in the GEOTIFF folder. Geotiff files automatically register correctly as NAD 27, UTM Zone 5N in GIS programs. Geotiff files can be opened in any graphics program and as long as the file is not saved, registration information will still be valid.

KMZS (Folder)
All files in the KMZs folder have the extension '.kmz' (Google Earth zip format). One may 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.

FILES IN THE GRIDS, GEOTIFFS, and KMZS FOLDERS:

ESt_MagRMI	Residual magnetic intensity (RMI) (nT) – final with IGRF removed
ESt_MagIGRF	Total magnetic field (nT) - final, with IGRF removed
ESt_1VD	First vertical derivative 'dz' (nT/m) of the RMI
ESt_ASig	Analytic signal (nT/m) calculated from the RMI
ESt_TiltDer	Tilt derivative (degrees) of the RMI
ESt_Res56k	Apparent coplanar resistivity (ohm-m) for 56,000 (56k) Hz.
ESt_Res7200	Apparent coplanar resistivity (ohm-m) for 7200 Hz.
ESt_Res900	Apparent coplanar resistivity (ohm-m) for 900 Hz.
ESt_TC_cc	Corrected total counts (cps)
ESt_K_cc	Corrected potassium counts (cps)
ESt_Th_cc	Corrected thorium counts (cps)
ESt_U_cc	Corrected uranium counts (cps)
ESt_eTh	Equivalent thorium (ppm)
ESt_eU	Equivalent uranium (ppm)
ESt_percentK	Percent potassium (%)
ESt_nadr	Natural air absorbed dose rate [nGy/h (nanogray per hour)]
ESt_ratio_eTh_percentK	Equivalent thorium / percent potassium ratio (ppm/%)
ESt_ratio_eU_percentK	Equivalent uranium / percent potassium ratio (ppm/%)
ESt_ratio_eU_eTh	Equivalent uranium / equivalent thorium ratio (unitless)
ESt_DTM	Digital terrain or elevation model (m)
ESt_AltLasBird	EM bird height (m) above surface, measured by laser altimeter in EM bird

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VECTORS (Folder):
All data contours provided were made for the maps with this publication. The vectors are provided in ESRI shape file format and Autocad DXF. The files can be opened in variety of geophysical and GIS/CAD software such as Oasis Montaj, MapInfo, ArcGIS, and AutoCAD.

DATA CONTOURS:

ESt_MagRMI	Residual magnetic intensity (RMI) (nT) - final
ESt_ASig	Analytic signal (nT/m) calculated from the RMI
ESt_TiltDer	Tilt derivative (degrees) of the RMI
ESt_Res56k	Apparent coplanar resistivity (ohm*m) for 56,000 (56k) Hz
ESt_Res7200	Apparent coplanar resistivity (ohm*m) for 7200 Hz.
ESt_Res900	Apparent coplanar resistivity (ohm*m) for 900 Hz.
ESt_eTh	Equivalent thorium (ppm)
ESt_eU	Equivalent uranium (ppm)
ESt_percentK	Percent potassium (%)
ESt_nadr	Natural air absorbed dose rate [nGy/h (nanogray per hour)]
ESt_ratio_eTh_percentK	Equivalent thorium / percent potassium ratio (ppm/%)
ESt_ratio_eU_percentK	Equivalent uranium / percent potassium ratio (ppm/%)
ESt_ratio_eU_eTh	Equivalent uranium / equivalent thorium ratio (unitless)

OTHER VECTORS:

ESt_FP	Flight path
ESt_SecGrid	Alaska PLSS Section Grid for the map sheets; includes township and range labels.
ESt_UTMGrid	Alaska UTM Grid for the map sheets; includes UTM labels on edges

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MAPS (Folder)

Maps are provided as HPGL/2 (PRN) and PDF files. The HPGL/2 files were created with HP Design jet T1300 printer driver and will not work with all plotters, but do plot on the DGGS HP Design Jet T1300. 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,B, and C) are needed to cover the survey area at 1:63,360-scale.

Zip files include:

GPR2014-5_MAPS_1A-7C_asHPGL2.zip
GPR2014-5_MAPS_8A-13C_asHPGL2.zip
GPR2014-5_MAPS_14A-21C_asHPGL2.zip
GPR2014-5_MAPS_22A-29C_asHPGL2.zip
GPR2014-5_MAPS_1A-7C_asPDF.zip
GPR2014-5_MAPS_8A-13C_asPDF.zip
GPR2014-5_MAPS_14A-21C_asPDF.zip
GPR2014-5_MAPS_22A-29C_asPDF.zip

Map No.	**Grid shown**	**With**
GPR2014-5-1	Residual magnetic intensity (RMI), IGRF removed	topography
GPR2014-5-2	Residual magnetic intensity (RMI), IGRF removed	magnetic contours
GPR2014-5-3	First vertical derivative of the RMI	topography
GPR2014-5-4	Analytic Signal of the RMI	topography
GPR2014-5-5	Analytic Signal of the RMI	analytic signal contours
GPR2014-5-6	Tilt Derivative of the RMI	topography & tilt derivative contours
GPR2014-5-7	Shadowed RMI	topography & tilt derivative contours
GPR2014-5-8	56K Hz coplanar apparent resistivity	topography
GPR2014-5-9	56K Hz coplanar apparent resistivity	56K contours
GPR2014-5-10	7200 Hz coplanar apparent resistivity	topography
GPR2014-5-11	7200 Hz coplanar apparent resistivity	7200 contours

Map No.	Grid shown	With (continued)
GPR2014-5-12	900 Hz coplanar apparent resistivity	topography
GPR2014-5-13	900 Hz coplanar apparent resistivity	900 contours
GPR2014-5-14	Thorium/Potassium (eTh/%K)	topography
GPR2014-5-15	Thorium/Potassium (eTh/%K)	eTh/%K contours
GPR2014-5-16	Uranium/Potassium (eU/%K)	topography
GPR2014-5-17	Uranium/Potassium (eU/%K)	eU/%K contours
GPR2014-5-18	Uranium/Thorium (eU/eTh)	topography
GPR2014-5-19	Uranium/Thorium (eU/eTh)	eU/eTh contours
GPR2014-5-20	Potassium (K%)	topography
GPR2014-5-21	Potassium (K%)	percent K contours
GPR2014-5-22	Thorium (eTh)	topography
GPR2014-5-23	Thorium (eTh)	eTh contours
GPR2014-5-24	Uranium (eU)	topography
GPR2014-5-25	Uranium (eU)	eU contours
GPR2014-5-26	Natural air absorbed dose rate (nGy/h)	topography
GPR2014-5-27	Natural air absorbed dose rate (nGy/h)	NADR contours
GPR2014-5-28	Radioelement-Ternary image	topography
GPR2014-5-29	Flight path vector	topography

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PROJECTION INFORMATION:

GRIDS, GEOTIFFS, VECTORS, & LINEDATA CHANNELS X_NAD27_z5N and Y_NAD27_z5N

DATUM	NAD27 Spheroid; Clarke 1866
PROJECTION	UTM Zone 5N
CENTRAL MERIDIAN	-153
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

LINEDATA CHANNELS LAT_WGS84 and LONG_WGS84

DATUM	WGS84
PROJECTION	LAT/LON WGS 84
CENTRAL MERIDIAN	-153
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	+0
DELTA Y SHIFT	+0
DELTA Z SHIFT	+0

KMZ FILES

DATUM	WGS84
PROJECTION	Simple Cylindrical / LAT/LON WGS 84

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AVAILABILITY and TECHNICAL REQUIREMENTS:

ON-LINE: All parts of this publication can be downloaded from the DGGS Web link http://dx.doi.org/10.14509/29142 in data groups, e.g. MapsAsPDFS. The downloadable groups are near the bottom of the web page.

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.

MAPS: The PDF version of the maps may be viewed, downloaded, or printed individually from the same link as the downloads: http://dx.doi.org/10.14509/29142 or through the East Styx Project page (http://www.dggs.alaska.gov/pubs/project-orderform/1227) 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 USE OF THE DATA: Technical requirements for use of all of 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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