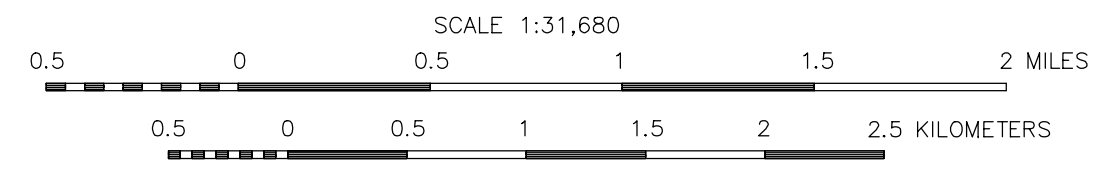


Section outline from U.S. Geological Survey Big Delta B-2, 1958; B-3, 1958; Quadrangles, Alaska



DESCRIPTIVE NOTES
The geophysical data were acquired with a DIGHEM[®] Electromagnetic (EM) system and a Scintrex cesium magnetometer. The EM and magnetic sensors were flown at a height of 100 feet. In addition the survey recorded data from a radar altimeter, GPS navigation system, 50/60 hz monitors and video camera. Flights were performed with an AS350B-2 Squirrel helicopter at a mean terrain clearance of 200 feet along E-W (90°) survey flight lines with a spacing of a quarter of a mile. Tie lines were flown perpendicular to the flight lines at intervals of approximately 3 miles.
An Ashtech GG24 NAVSTAR / GLONASS Global Positioning System was used for navigation. The helicopter position was derived every 0.5 seconds using post-flight differential positioning to a relative accuracy of better than 5 m. Flight path positions were projected onto the Clarke 1866 (UTM zone 6) spheroid, 1927 North American datum using a central meridian (CM) of 147°, a north constant of 0 and an east constant of 500,000. Positional accuracy of the presented data is better than 10 m, with respect to the UTM grid.

ELECTROMAGNETICS
To determine the location of EM anomalies or their boundaries, the DIGHEM EM system measured inphase and quadrature components at five frequencies: two vertical coplanar coils operated at 1000 and 5500 Hz and three horizontal coplanar-coil pairs operated at 900, 7200, and 55,000 Hz. EM data were sampled at 0.1 second intervals. The EM system responds to bedrock conductors, conductive overburden, and cultural sources. The type of conductor is indicated on the aeromagnetic map by the interpretive symbol attached to each EM anomaly. Determination of the type of conductor is based on EM anomaly shapes of the inphase- and quadrature-coil responses, together with conductor and magnetic patterns and topography. The power line monitor and the flight track video were examined to locate cultural sources.

ELECTROMAGNETIC ANOMALIES

Conductivity	Symbol
>100 siemens	●
50-100 siemens	●
20-50 siemens	●
10-20 siemens	●
5-10 siemens	○
1-5 siemens	○
< 1 siemens	○
Questionable anomaly	⊛
EM magnetic response	⊛

Interpretive symbol

Symbol	Interpretive symbol
—	Conductor ("model")
—	Bedrock conductor
—	Narrow bedrock conductor ("thin dike")
—	Conductive cover (horizontal thin sheet)
—	Broad conductive rock unit, deep conductive weathering, (Chert apron)
—	Edge of broad conductor ("edge of half space")
—	Culture, e.g. power line, metal building or fence

Acis indicate the conductor has a thickness >10m

Magnetic correlation in nT

Dip direction

Anomaly identifier

Depth in meters

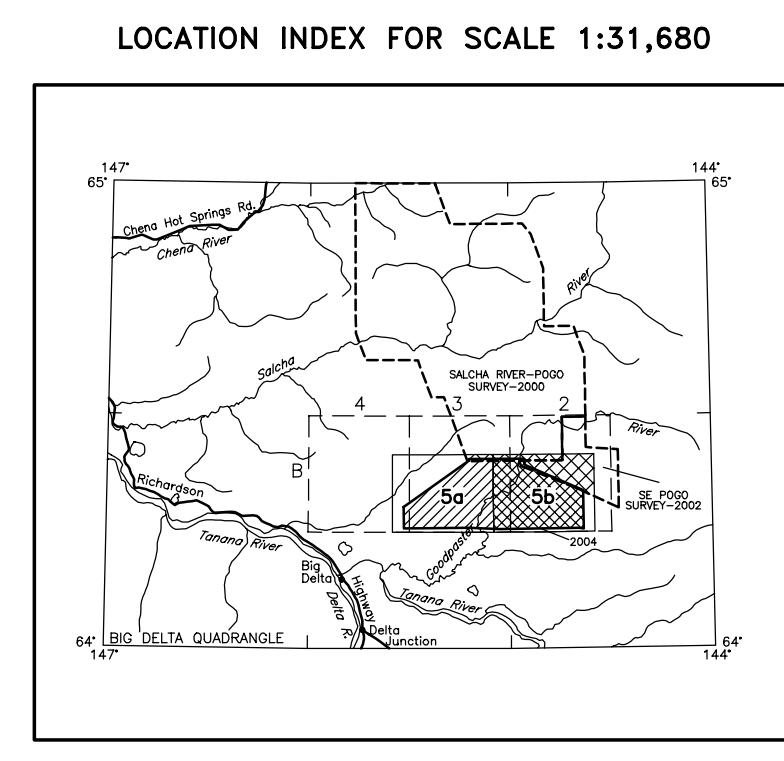
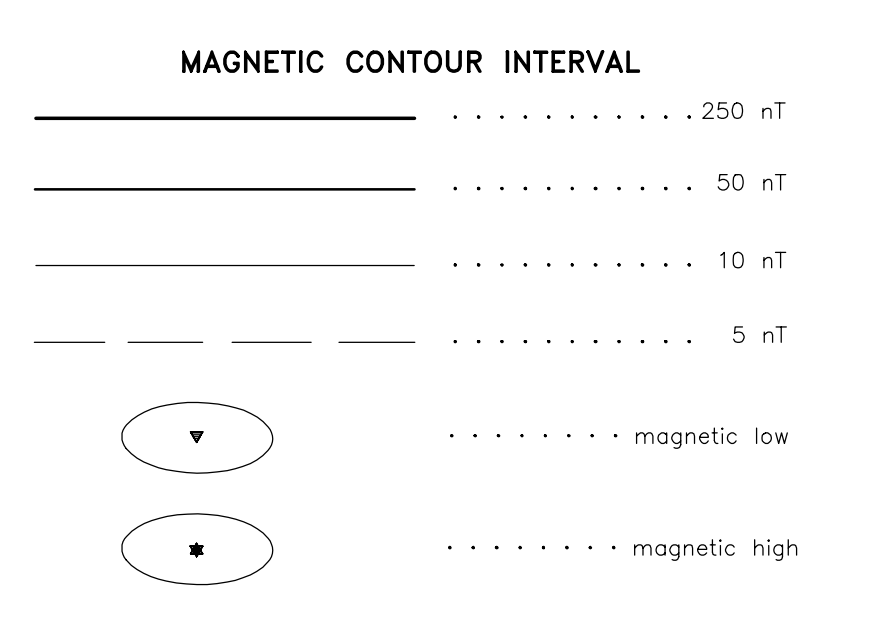
Depth	Inphase and quadrature of coaxial coil is greater than
15 m	5 ppm
30 m	15 ppm
45 m	15 ppm
60 m	20 ppm

APPROXIMATE MEAN DECLINATION, 2004

TOTAL MAGNETIC FIELD AND DETAILED ELECTROMAGNETIC ANOMALIES OF PART OF THE GOODPASTER RIVER AREA, GOODPASTER MINING DISTRICT, INTERIOR ALASKA

PARTS OF BIG DELTA B-2 and B-3 QUADRANGLES

by
Laurel E. Burns, Fugro Airborne Surveys Corp., and Stevens Exploration Management Corp.
2005



The magnetic total field contours were produced using digitally recorded data from a Scintrex cesium CS2 magnetometer, with a sampling interval of 0.1 seconds. The magnetic data were (1) corrected for diurnal variations by subtraction of the digitally recorded base station magnetic data, (2) adjusted for regional variations (or IGRF gradient, 2000, updated to October 2004) using altimeter adjusted IGRF, (3) leveled to the tie line data, and (4) interpolated onto a regular 80 m grid using a modified Akima (1970) technique.

Akima, H., 1970. A new method of interpolation and smooth curve fitting based on local procedures. *Journal of the Association of Computing Machinery*, v. 17, no. 4, p. 589-602.

SURVEY HISTORY
This map has been compiled and drawn under contract between the State of Alaska, Department of Natural Resources, Division of Geological & Geophysical Surveys (DGGG), and Stevens Exploration Management Corp. Airborne geophysical data for the area were acquired and processed by Fugro Airborne Surveys Corp. in 2004. This map and other products from this survey are available by mail order in person from DGGG, 3354 College Road, Fairbanks, Alaska, 99709-3707. Published maps are also available for viewing or downloading as Adobe Acrobat Files (.pdf) on our Web site (<http://www.dggs.dnr.state.ak.us/pubs/>).