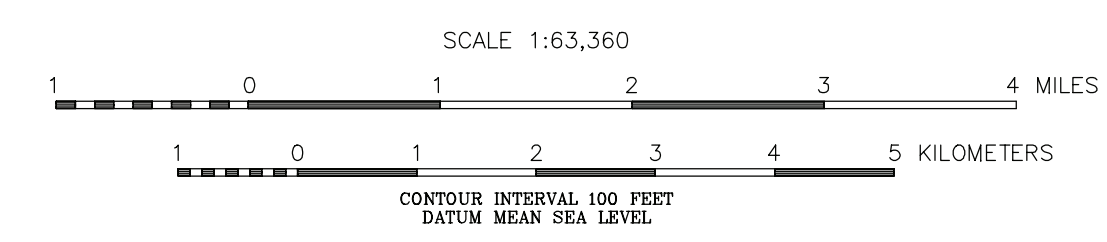
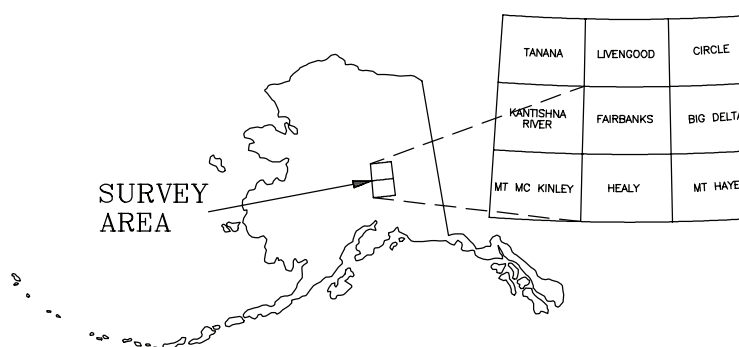
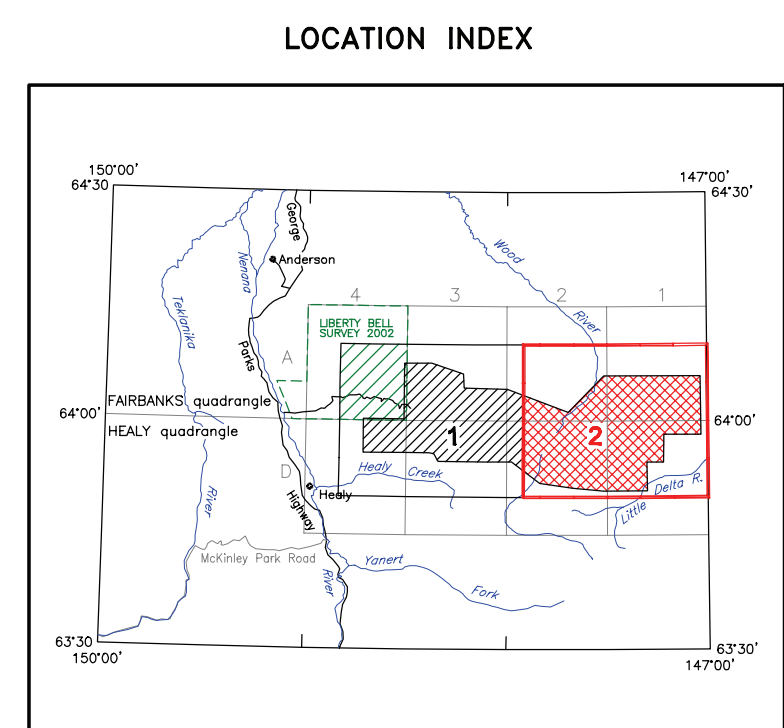


Map from U.S. Geological Survey, Fairbanks, A-1, 1948, A-2, 1972; Healy, D-1, 1976, D-2, 1978, Wallingford, Alaska.



TOTAL MAGNETIC FIELD OF PARTS OF THE BONNIFIELD MINING DISTRICT, INTERIOR ALASKA

PARTS OF FAIRBANKS AND HEALY QUADRANGLES
by
Laurel E. Burns, Fugro Airborne Surveys Corp., and Stevens Exploration Management Corp.
2007



DESCRIPTIVE NOTES

The geophysical data were acquired with a DIGHEMV Electromagnetic (EM) system and a Fugro D1344 cesium magnetometer with a Scintrex CS3 cesium sensor. The EM and magnetic sensors were flown at a height of 100 feet. In addition the survey recorded data from a rotor altimeter, GPS navigation system, 30/60 Hz monitors and video camera. Flights were performed with an AS350B-3 Squirrel helicopter at a mean terrain clearance of 200 feet along N-S (0°) survey flight lines with a spacing of a quarter of a mile. The lines were flown perpendicular to the flight lines at intervals of approximately 3 miles.

A Novatel OEM4-C2L 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 5m. Flight path positions were projected onto the Clarke 1866 (UTM zone 6) spheroid, 1927 North American datum using a central meridian (CM) of 147° 30' north constant of 0 and an east constant of 500,000. Positional accuracy of the presented data is better than 10m with respect to the UTM grid.

TOTAL MAGNETIC FIELD

The magnetic total field data were processed using digitally recorded data from a Fugro D1344 cesium magnetometer with a Scintrex CS3 sensor. Data were collected at 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, 2005, updated to November 2006) using kilometer adjusted IGRF, (3) leveled to the tie line data, and (4) interpolated onto a regular 80 m grid using a modified Azima (1970) technique.

Alkins, 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. 588-602.

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 2006 and 2007.

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.dggg.dnr.state.ak.us/pubs/>).