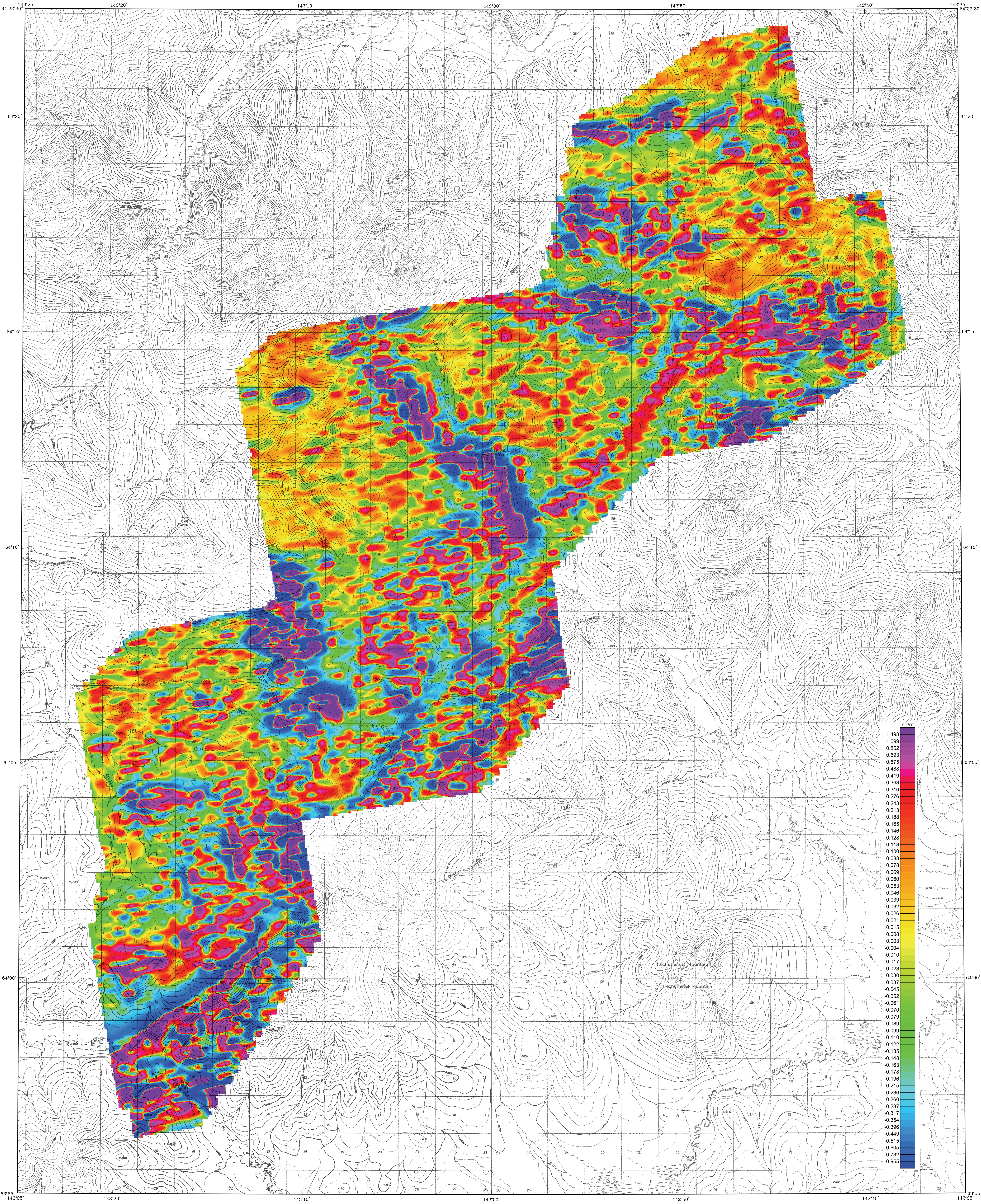
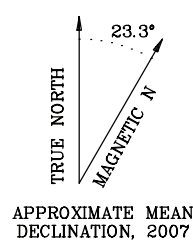
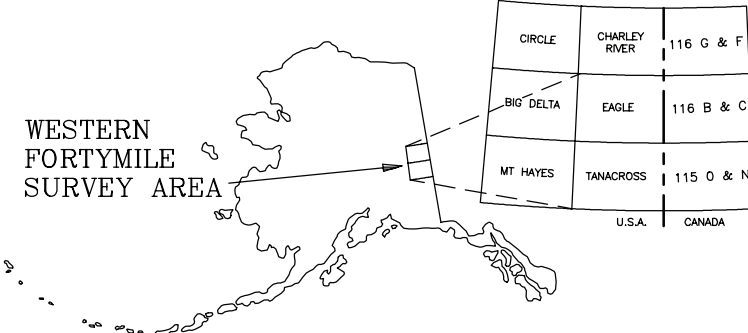




Base from U.S. Geological Survey 7.5' 100K A-N, 1956;
B-C, 1960; D-E, 1962; Tazewell D-A, 1963; D-N, 1965; Quadrangle, Alaska.



APPROXIMATE MEAN
DECLINATION, 2007

FIRST VERTICAL DERIVATIVE OF THE MAGNETIC FIELD OF PART OF THE WESTERN FORTYMILE MINING DISTRICT, EAST-CENTRAL ALASKA

PARTS OF EAGLE and TANACROSS QUADRANGLES

by
Laurel E. Burns, U.S. Bureau of Land Management, Fugro Airborne Surveys Corp., and Stevens Exploration Management Corp.
2008

FIRST VERTICAL DERIVATIVE OF THE MAGNETIC FIELD

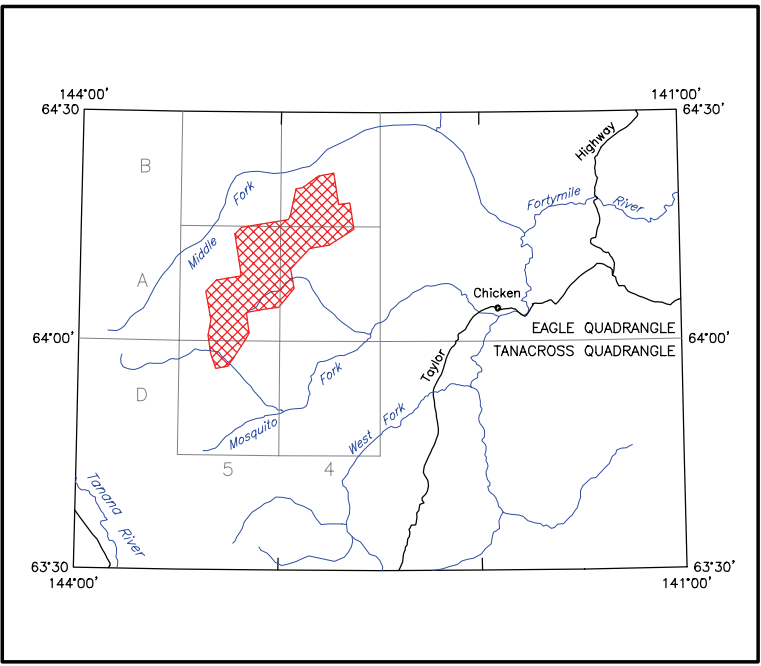
The magnetic total field data were processed using digitally recorded data from a Fugro D1344 cesium magnetometer with a Scintrex CS3 cesium sensor. Data were collected at a sampling interval of 0.1 seconds. The magnetic data were (1) corrected for diurnal variations by subtraction of the digitally recorded base station magnetic data, (2) adjusted for regional variations (or IGRF gradient, 2005, updated to September 2007) 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. The first vertical derivative grid was calculated from the processed total magnetic field grid using a FFT base frequency domain filtering algorithm. The resulting first vertical derivative grid provides better definition and resolution of near-surface magnetic units and helps to identify weak magnetic features that may not be evident on the total field data.

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. 588-602.

COLOR BAR HISTOGRAM

Approximately 98% of the first vertical derivative of the magnetic field for the Western Fortymile Mining District dataset lie within the range displayed on the color bar. Data values actually range from -14,440 nT/m (dark blue) to about 23,823 nT/m (magenta). Actual values can be seen in digital publication GPR 2008-1.

LOCATION INDEX



SURVEY HISTORY

This map has been compiled and shown under contract between the State of Alaska, Department of Natural Resources, Division of Geological & Geophysical Surveys (DGGs), and Stevens Exploration Management Corp. Airborne geophysical data for the area were acquired and processed by Fugro Airborne Surveys Corp. in 2007. Funding for the project was provided by the U.S. Department of the Interior, Bureau of Land Management (BLM).

This map and other products from this survey are available by mail order, or in person, from DGGs, 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/>).