

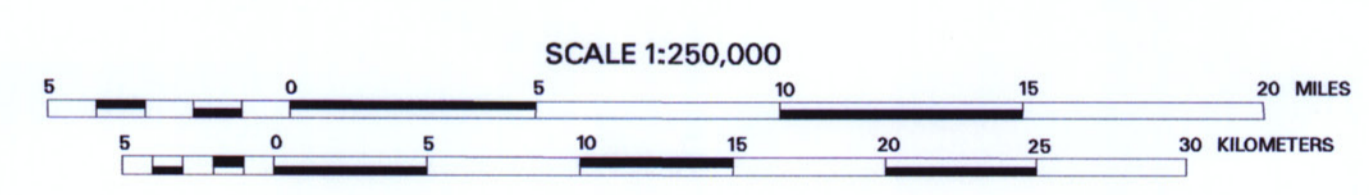
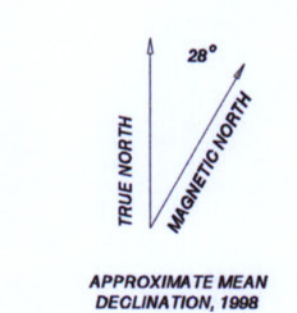
Section grid from U. S. Geological Survey topographic bases: Eagle A-1, (1956), A-2 (1956), A-3 (1957), A-4 (1956), B-1 (1956), B-2 (1956), B-3 (1956), and B-4 (1956); Tanacross D-1 (1956) and D-2 (1956) Quadrangles, Alaska.

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 (DGGS), and Stevens Exploration and Management Corporation. Airborne geophysical data for the area were acquired by Geotrex-Digheim, a division of CCG Canada Ltd., in 1998.

This map and other products from this survey are available from the Alaska Division of Geologic & Geophysical Surveys, 794 University Ave., Suite 200, Fairbanks, Alaska 99709.

DESCRIPTIVE NOTES
Geophysical data were acquired with a DIGHEM Electromagnetic (EM) system and a Scintrex cesium magnetometer. Both were flown at a height of 100 feet. A Herz VLF system was flown at a height of 130 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 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/Racal Real-Time Differential Global Positioning System (RT-DGPS) was used for both navigation and flight path recovery. The helicopter position was derived every 0.5 seconds using real-time differential positioning to a relative accuracy of less than 10 meters. Flight path positions were projected onto the Clarke 1866 (UTM zone 7) spheroid, 1927 North American datum using a central meridian (CM) of 141 degrees, 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.



Department of Natural Resources
Division of Geological & Geophysical Surveys
Geologic Data Modeling System

DIFFERENT COPLANAR RESISTIVITIES AND COLOR SCHEMES FOR PART OF THE FORTYMILE MINING DISTRICT

RESISTIVITY
The DIGHEM EM system measured inphase and quadrature components at five frequencies. Two vertical coaxial-coil pairs operated at 900 and 5500 Hz while three horizontal coplanar-coil pairs operated at 900, 5500, and 56,000 Hz. EM data were sampled at 0.1 second intervals. The EM system responds to bedrock conductors, conductive overburden, and cultural sources. Resistivity is generated from the inphase and quadrature component of the coplanar 900 Hz using the pseudo-layer half space model. The data were interpolated onto a regular 100 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.

COLOR SCHEMES
Different color schemes shown above with histograms and corresponding color bars emphasize different aspects of the gridded data. The color schemes shown here were taken from the program I-Power Visions, which was produced by Geotrex-Digheim. The linear color scheme on the upper left emphasizes only the extreme high and low values of the dataset. The linear color on the upper right is modified such that only five percent of the data is shown in purples and blues (high and low) and more detail can be seen in the midrange data. The equal points color scheme (bottom left) shows more detail about the data in the mid-range by allotting the same number of points to each color, thereby spreading middle values among more colors. The colors shown in the bottom right approaches the Gaussian (normal) distribution and shows more detail in the high and low values than the equal points scheme.

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