

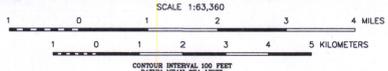
Base from U.S. Geological Survey Fairbanks 8-8, 1960; Livewood 4-8, 1950; 8-5, C-4, 1956; Fairbanks River 2-1, 1950; Tanana 4-1, 1960; B-1, C-1, 1956; Quadrangles, Alaska.

Publication of this report by the Alaska Division of Geological & Geophysical Surveys is made possible by the cooperation of the State of Alaska and the Federal Government in the Rampart-Manley mining district, Alaska. The State of Alaska is providing the land for production of maps, minerals, fuels, and geothermal resources; the Federal Government is providing the geologic history, geologic maps, and other information; and the Federal Government is providing the geologic history, geologic maps, and other information; and the Federal Government is providing the geologic history, geologic maps, and other information.

Supporting activities: Alaska Geological & Geophysical Surveys, 1996. Total field magnetic and electromagnetic anomalies of the Rampart-Manley mining district, Alaska. Alaska Division of Geological & Geophysical Surveys Report of Investigations 96-1, 2 sheets, scale 1:63,360.

**DESCRIPTIVE NOTES**  
The geophysical data were acquired with a DIGEM<sup>®</sup> Electromagnetic (EM) system, a Scintrex caesium Cs22 magnetometer, and a Herz VLF system installed in an AS350B-1 Squirrel helicopter. In addition, the survey recorded data from a radar altimeter, GPS navigation system, 50/80 Hz monitors and video camera. Flights were performed 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.  
A Sercei 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 better than 10 m. Flight path positions were projected onto the Clark 1986 (UTM) spheroid, 1927 North American datum using a central meridian (CM) of 153° 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 DIGEM<sup>®</sup> EM system measured inphase and quadrature components at five frequencies. Two vertical coaxial-coil pairs operated at 900 and 5000 Hz while three horizontal coplanar-coil pairs operated at 900, 7200, 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. The power line monitor and the flight track video were examined to locate cultural sources. The EM anomalies that are indicated are classified by conductance.



CONTOUR INTERVAL 100 FEET  
DATUM MEAN SEA LEVEL

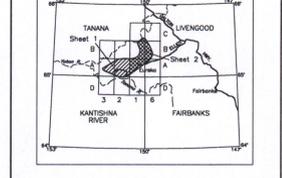
**ELECTROMAGNETIC ANOMALIES**  
Anomaly  
● Conductance  
○ >50 siemens  
⊛ Questionable anomaly  
△ Weak conductivity associated with an EM magnetite response

**MAGNETIC CONTOUR INTERVAL**  
..... 250 nT  
..... 50 nT  
..... 10 nT  
..... 5 nT  
..... magnetic low  
..... magnetic high

# TOTAL FIELD MAGNETICS AND ELECTROMAGNETIC ANOMALIES OF THE RAMPART-MANLEY MINING DISTRICT ALASKA

1996  
IGRF GRADIENT REMOVED

**LOCATION INDEX**



**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, and WGM Inc., Mining and Geological Consultants, Fairbanks. Geophysical data for the area were acquired by DIGEM, a division of CGG Canada Ltd., in 1995. Other products from this survey are available from the Alaska Division of Geological & Geophysical Surveys, 784 University Ave., Suite 200, Fairbanks, Alaska, 99709.

**TOTAL FIELD MAGNETICS**  
The total field magnetic data were acquired with a sampling interval of 0.1 seconds, and were (1) corrected for diurnal variations by subtraction of the digitally recorded base station magnetic data, (2) leveled to the tie line data, and (3) interpolated onto a regular 100 m grid using a modified Akima (1970) technique. The regional variation (or IGRF gradient, 1985, updated to October 1995) was removed from the leveled magnetic 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. 589-602.