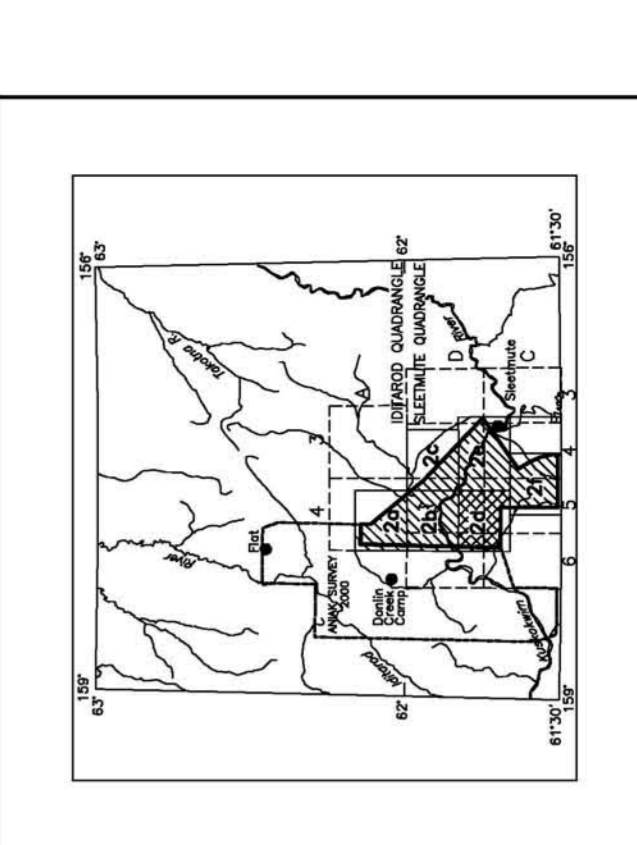


61°40' 158°00' 157°50' 157°40' 61°45' 61°40' 157°35'

SCALE 1:31,680  
0 0.5 1 1.5 2 MILES  
0 0.5 1 1.5 2 2.5 KILOMETERS

CONTOUR INTERVAL 100 FEET  
DATUM MEAN SEA LEVEL

LOCATION INDEX FOR SCALE 1:31,680



# TOTAL MAGNETIC FIELD AND DETAILED ELECTROMAGNETIC ANOMALIES OF THE SLEETMUTE AREA, SOUTHWESTERN ALASKA

PARTS OF SLEETMUTE C-5, C-6, D-5 AND D-6 QUADRANGLES  
2003

**ELECTROMAGNETIC ANOMALIES**

Anomaly	Conductance
●	>100 siemens
○	50-100 siemens
○	20-50 siemens
○	10-20 siemens
○	5-10 siemens
○	1-5 siemens
○	<1 siemens
○	Questionable anomaly
△	EM magnetite response

Interpretive symbol	Interpretive symbol
Area indicate the thickness >10m	Interpretive symbol
Magnetic correction in nT	Interpretive symbol
Dip direction	Interpretive symbol
Conductor ("model")	Interpretive symbol
Bedrock conductor	Interpretive symbol
Narrow bedrock conductor	Interpretive symbol
Conductive cover ("horizontal thin sheet")	Interpretive symbol
Conductive cover ("vertical rock unit, deep conductive weathering, "halo sheet")	Interpretive symbol
Edge of broad conductor	Interpretive symbol
Edge of half space	Interpretive symbol
Power line monitor and the flight track also were examined to locate cultural sources.	Interpretive symbol

**DESCRIPTIVE NOTES**

The geophysical data were collected with a DIGHEM EM system and a Scintrex cesium magnetometer. Both were flown at a height of 100 feet. In addition, the survey recorded data from a real-time video camera. Flights were performed with an AS350B-2 Squirrel helicopter at a mean terrain survey flight lines with a spacing of a quarter of a mile. The lines were flown perpendicular to the flight instrumentations and flight line directions. Altitude, and spacing used for the Anick survey (2000) were similar to the current survey.

An Ashtech GG24 NAVSTAR / GLONASS Global Positioning System was used for navigation. The relative accuracy of the system is better than 5 m. Flight path using post-flight differential positioning to a UTM zone 4) spheroid, 1927 North American datum using a central meridian (CM) of 159° 00' north. 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 coaxial-coil pairs operated at 1000 and 5500 Hz while three horizontal coplanar-coil pairs operated at 900, 7200, and 5500 Hz. The EM system responds to bedrock conductors, conductive overburden, and cultural sources. The type of conductor is indicated on the aeromagnetic map by the shape of the type of conductor is based on EM anomaly shapes of the coaxial- and coplanar-coil responses, together with the EM magnetite response. The EM magnetite response power line monitor and the flight track also were examined to locate cultural sources.

**TOTAL MAGNETIC FIELD**

The total magnetic field data were acquired with a sampling interval of 0.1 seconds, and were managed using the software provided by the U.S. Geological Survey. The data were then processed to the digitally recorded base station magnetic data, (2) leveled to the tie line data, and (3) interpolated to a 100 m grid. The regional variation (or IGRF (1970) technique. The regional variation (or IGRF gradient, 2000, updated to September 2002) was removed from the leveled magnetic data.

Almeida, H., 1970, A new method of interpolation and smooth curve fitting, *Journal of Geophysical Research*, v. 75, p. 589-602.

**MAGNETIC CONTOUR INTERVAL**

.....	100 nT
.....	20 nT
.....	4 nT
.....	2 nT
.....	magnetic low
.....	magnetic high

**SURVEY HISTORY**

This map has been compiled and drawn under contract between the State of Alaska, Department of Natural Resources, and the U.S. Bureau of Land Management (BLM), and Stevens Exploration Management Corp. (SEMC). The data for this map were acquired by BLM, and published by DGGCS. Funding for the project was provided by the U.S. Department of the Interior, Bureau of Land Management. The survey data were flown by Fugro Airborne Surveys in 2000, funded by BLM, and published by DGGCS. Laurel Burns was the project manager. The map was prepared by mail order or in person from DGGCS, 794 University Ave., Suite 200, Fairbanks, Alaska, 99709. Some products are available from the Alaska Division of Geological & Geophysical Information Center, 100 Savikko Road, Douglas, Alaska, 99824.