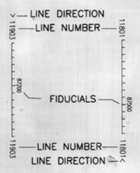
ALASKA DIVISION OF GEOLOGICAL &
GEOPHYSICAL SURVEYS

Public-data File 98-27
Sheet 1 of 4

MAGNETIC CONTOURS

100
25
5
1
magnetic low
magnetic high

FLIGHT PATH INFORMATION



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 On-Line Exploration Services, Inc. Airborne geophysical data for the area were acquired by Sial Geosciences, Inc., in 1997.

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

DESCRIPTIVE NOTES

The geophysical data were acquired with a RMS GR-33/HDS60 data acquisition system, and a Geometrics G822A cesium magnetometer installed in a Piper Navajo 310 (C-GAKM) airplane. In addition, the survey recorded data from a radar altimeter (King KRA-10), GPS navigation system, and video camera. Flights were performed at a mean terrain clearance of 300 ft along survey flight lines with a spacing of a half of a mile. Tie lines were flown perpendicular to the flight lines at intervals of approximately three miles.

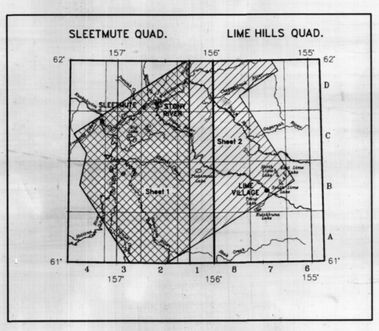
Two Trimble-4000 SE Differential Post-processing Global Positioning Systems were used for both navigation and flight path recovery. The airplane position was derived every one second to a relative accuracy of better than 10 m. Flight path positions were projected onto the Clarke 1866 (UTM) spheroid, 1927 North American datum using a Central Meridian (CM) of 159° W, 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.

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. A regional trend (IGRF 1995, updated to August 1997) was then 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.

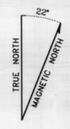
LOCATION INDEX



HOLITNA BASIN

Base from U.S. Geological Survey
Sleetmute A-1, A-2, A-3, A-4; 1954.
B-1, B-2, B-3, B-4; 1954. C-1; 1954.
C-2; 1981. C-3; 1972. C-4; 1954.
D-1; 1985. D-2; 1977. D-3; 1976.
Quadrangles, Alaska.
Projected in UTM zone 4

Scale 1:125,000
1 0 1 2 5 MILES
2.5 0 2.5 5 12.5 KILOMETERS
CONTOUR INTERVAL 200 FEET
DATUM MEAN SEA LEVEL



APPROXIMATE MEAN DECLINATION, 1954

TOTAL FIELD MAGNETICS CONTOURS OF THE HOLITNA BASIN AREA, WESTERN ALASKA

1998

