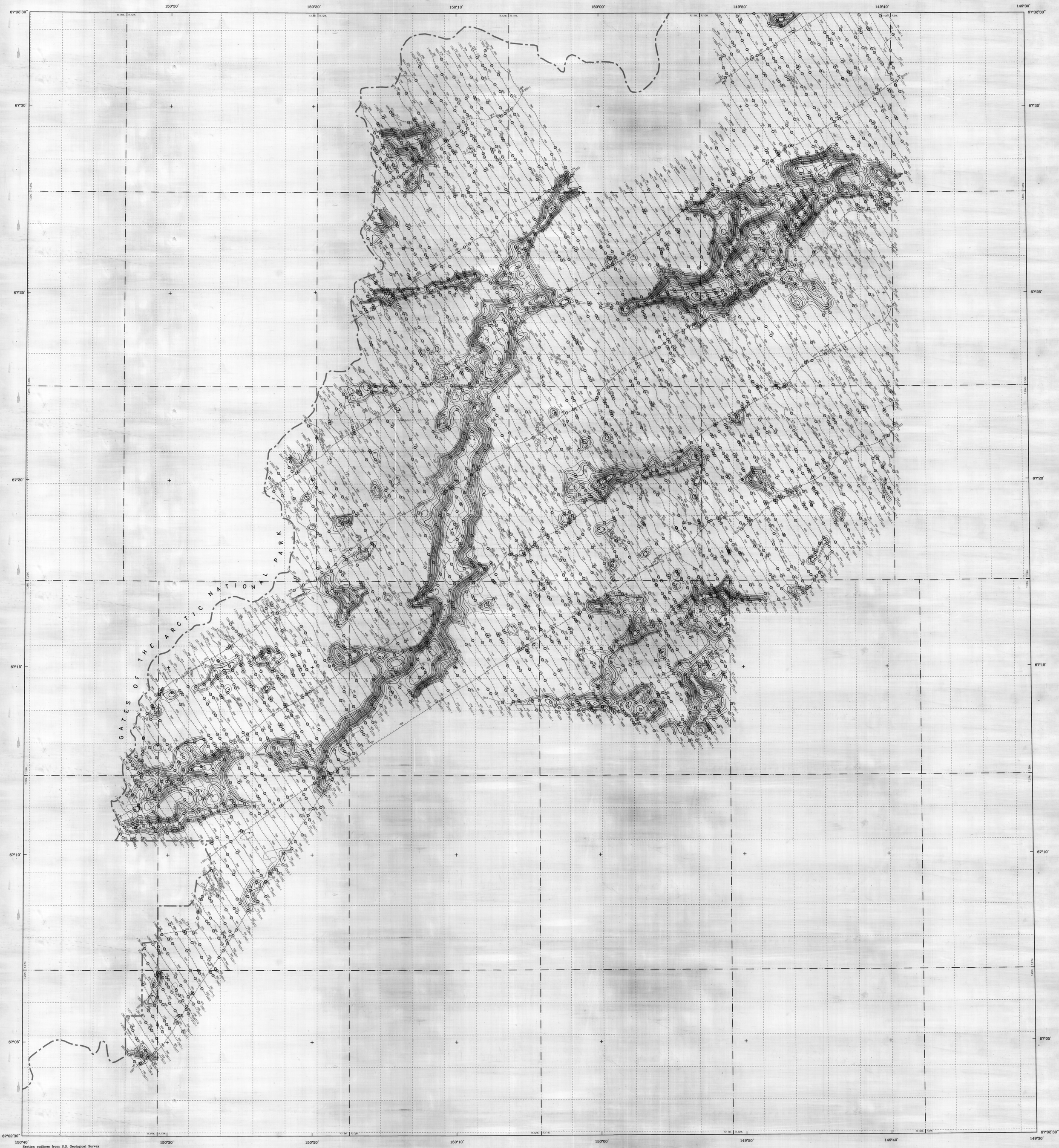
ALASKA DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS
IN COOPERATION WITH U.S. BUREAU OF LAND MANAGEMENT

Public-data File 98-21
Sheet 1 of 2



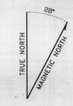
Section outlines from U.S. Geological Survey
Chandalar A–6; 1982, B–6; 1975, C–6; 1975
Wiseman A–1; 1975, A–2; 1970, B–1; 1975, B–2; 1971, C–1,C–2; 1971,
Quadrangles, Alaska.
Projected in UTM zone 6

SCALE 1:63 360

1 0 1 2 3 4 5 MILES

1 0 1 2 3 4 5 KILOMETERS

ALASKA



APPROXIMATE MEAN DECLINATION, 1971 .

900 Hz COPLANAR RESISTIVITY CONTOURS FOR THE NORTHEASTERN PORTION OF THE KOYUKUK MINING DISTRICT, EASTERN BROOKS RANGE, ALASKA

1998

DESCRIPTIVE NOTES

The geophysical data were acquired with a SIGHEM–5 Electromagnetic (EM) system, a Scintrex cesium CS2 magnetometer, and a Herz VLF system installed in a LAMA–N48087 Squirrel helicopter. In addition, the survey recorded data from a radar altimeter (TERRA), GPS navigation system, 50/60 Hz monitors, and video camera. Flights were performed at a mean terrain clearance of 200 ft 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 three miles.

Two Trimble–4000 SE Differential Post–processing Global Positioning Systems were used for both navigation and flight path recovery. The helicopter 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 147° 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.

ELECTROMAGNETICS

To determine the location of EM anomalies or their boundaries, the SIGHEM–5 EM system measured inphase and quadrature components at five frequencies. Two vertical coaxial coil–pairs operated at 870 and 4785 Hz while three horizontal coplanar coil–pairs operated at 945, 4212 and 36360 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 the cultural sources. The EM anomalies that are indicated are classified by conductance.

Apparent resistivity, calculated with leveled inphase and quadrature components, was (1) gridded with bi–directional method using a grid of 100 m, and (2) filtered with a low pass directional filter (decorrugation; Keating,1994).

Keating, Pierre, 1994. Frequency Domain Filtering: Geological Survey of Canada, Unpublished Fortran Program.

ELECTROMAGNETIC ANOMALIES

Anomaly	Conductance
●	>50 siemens
○	<50 siemens

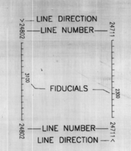
RESISTIVITY CONTOURS

1000
800
600
500
400
300
250
200
150
125
100

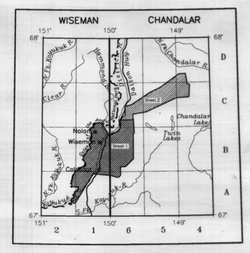
Contours in ohm–m at 10 intervals per decade

. . . . . Resistivity low

FLIGHT PATH INFORMATION



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 On-Line Exploration Services, Inc. Airborne geophysical data for the area were acquired by Sial Geosciences, Inc., in 1997. Funding for the project was provided by the U.S. Department of Interior Bureau of Land Management (BLM).

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.