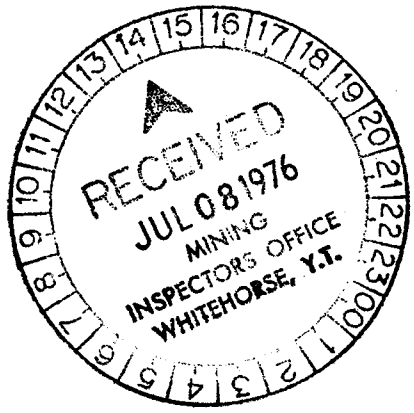
REPORT ON

AIRBORNE MAGNETOMETER SURVEY

ON THE McKINNON AND MONTANA CREEK CLAIMS

DAWSON CITY AREA, YUKON TERRITORIES



This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

$11,000.00

D.B. Craig

Resident ~~Geologist~~ or
Resident Mining Engineer

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

B. R. BAXTER
Supervising Mining Recorder

for Commissioner of Yukon Territory

REPORT ON

AIRBORNE MAGNETOMETER SURVEY

ON THE McKINNON AND MONTANA CREEK CLAIMS

DAWSON CITY AREA, YUKON TERRITORIES

ON BEHALF OF

ANDAC RESOURCES LTD.

by

R. O. Crosby, B.Sc., P.Eng.

May 27, 1976

Claims :	SAM 1-24	)	
	MAC 67-70 & 127-138	)	
	FOX 1-14	)	McKinnon Creek Area
	RAY 1,2,4,6,8,10,12,14	)	
	OX 1[illegible]-32	)	
	RT 1-32		Montana Creek Area

Location : 115-15-2

About 35 miles south of Dawson City, Yukon Territories
Dawson Mining Division

63°42° N	139°12° W
63°31° N	139°11° W

Dates: April 16 to April 23, 1976

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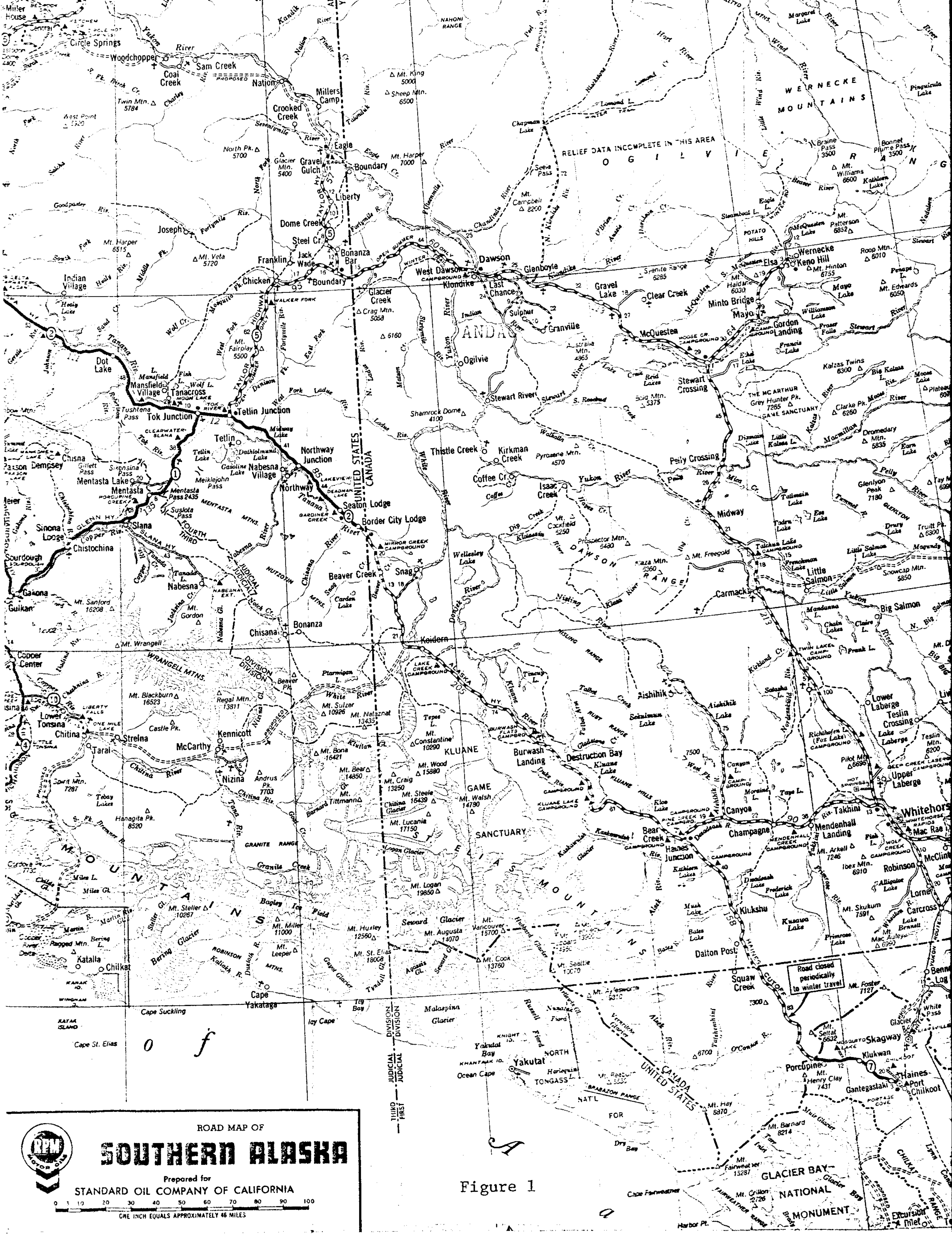
Maps

SUMMARY AND CONCLUSIONS

The airborne magnetic surveys completed over the McKinnon Creek and Montana Creek areas has mapped the distribution of various rock types by their magnetic responses. Basic and ultrabasic rocks are characterized by anomalies generally measuring above 1000 gammas. Volcanic rocks are recognized by their high frequency and intermediate amplitudes and conglomerates by low amplitude anomalies or an absence of anomalies.

The bedrock underlying the Tertiary stream deposits is acidic. Northwest and northeast fault directions are suggested by the magnetic field.



ROAD MAP OF
SOUTHERN ALASKA
Prepared for
STANDARD OIL COMPANY OF CALIFORNIA
ONE INCH EQUALS APPROXIMATELY 46 MILES
RPM MOTOR OILS
UNITED STATES
CANADA
Road closed periodically to winter travel
RELIEF DATA INCOMPLETE IN THIS AREA
Circle Springs
Woodchopper
Sam Creek
Coal Creek
Nation
Millers Camp
Crooked Creek
Eagle
Boundary
Gravel Gulch
Liberty
Dome Creek
Joseph
Steel Cr.
Franklin
Jack Wade
Bonanza Bar
Chicken
Indian Village
Dawson
West Dawson
Klondike
Last Chance
Glenboyle
Sulphur
Granville
Gravel Lake
Clear Creek
McQuesten
Mayo
Minto Bridge
Elsa
Wernecke
Keno Hill
Gordon Landing
Stewart Crossing
Ogilvie
Stewart River
Dot Lake
Mansfield Village
Tanacross
Tok Junction
Tetlin Junction
Tetlin
Northway Junction
Northway
Nabesna Village
Chisna
Dempsey
Mentasta Lake
Mentasta
Slana
Sinona Lodge
Chistochina
Sourdough
Gakona
Gulkana
Seaton Lodge
Border City Lodge
Beaver Creek
Snag
Thistle Creek
Kirkman Creek
Coffee Cr.
Isaac Creek
Pelly Crossing
Midway
Carmacks
Little Salmon
Big Salmon
Nabesna
Chisana
Bonanza
Koidern
Aishihik
Burwash Landing
Destruction Bay
Copper Center
Lower Tonsina
Chitina
Strelna
Taral
Kennicott
McCarthy
Nizina
Lower Laberge
Teslin Crossing
Upper Laberge
Whitehorse
Mac Rae
Takhini
Mendenhall Landing
Champagne
Canyon
Bear Creek
Haines Junction
Robinson
Lorne
Carcross
Klukshu
Dalton Post
Squaw Creek
Skagway
Klukwan
Porcupine
Haines
Port Chilkoot
Gantegastaki
Yakutat
Cape Yakataga
Katalla
Chilkat
Cape Suckling
Cape St. Elias
Icy Cape
Ocean Cape
KLUANE
GAME
SANCTUARY
WRANGELL MTNS.
OGILVIE
WERNECKE MOUNTAINS
DAWSON RANGE
MOUNTAINS
Mt. Logan 19850
Mt. St. Elias 18008
Mt. Lucania 17150
Mt. Sanford 16208
Mt. Blackburn 16523
Mt. Wrangell
Mt. Vancouver 15700
Mt. Cook 13760
Mt. Augusta 14070
Mt. Fairweather 15287
Malaspina Glacier
Bering Glacier
Seward Glacier
Bagley Ice Field
GLACIER BAY NATIONAL MONUMENT
TONGASS NAT'L FOR
ALASKA HY.
TAYLOR HY.
GLENN HY.
SLANA HY.
HAINES CUTOFF
JUDICIAL DIVISION
THIRD FIRST

Figure 1

INTRODUCTION

Between April 16 and April 23, 1976 an airborne magnetometer survey was executed on behalf of Andac Resources Ltd. in the Indian River Area, Dawson Mining District, Yukon Territories.

The claims in McKinnon Creek and the Montana Creek Areas that are pertinent to the survey work are held by Andac Resources Ltd.

The purpose of the magnetometer survey was to provide a map of the subsurface distribution of magnetic minerals. In general, a magnetic map can be interpreted to reveal areas underlain by different rock types, lineaments which may be due to faulting and the location of ore bodies which contain concentrations of magnetite or pyrrhotite.

A Varian proton magnetometer mounted in a Bell Jet Ranger, furnished by Trans North Turbo Air was used to record the earth's total magnetic field. Terrain clearance was maintained with a Bonzer radar altimeter and the flight path was monitored by a 16mm single frame camera. Diurnal magnetic control was monitored with a Scintrex MF-1 magnetometer.

With the above equipment survey, lines were flown every 200 meters at a mean terrain clearance of 150 feet.

An uncontrolled photo mosaic at a scale of approximately 400 meters per inch was used for flight strips and as the base for the magnetic map.

A total of 78 line kilometers of survey were flown in the Montana Creek Area and 538 line kilometers were flown in the McKinnon Creek area. A total of 10.4 hours were required to complete the survey.

The field crew consisted of:

Mr. Ronald Sheldrake - Geophysicist

Mr. Michael McGee - Electronic technician

Mr. Neville Owen - Electronic technician

GEOLOGY

A description of the geology of the area including and surrounding the survey grids is found on G.S.C. Map 711A, "Ogilvie", by H. S. Bostick.

Tertiary and Recent stream deposits underly the northern half of the McKinnon Creek Area. Tertiary conglomerates and andesites are mapped in the remainder of the area except for some ultrabasic rocks which outcrop in the eastern portion of the McKinnon Creek area and gneissic rocks which are exposed in the northeast corner of the Montana Creek area.

GEOPHYSICAL INTERPRETATION

The value of the earth's total magnetic field in the survey area is 57,400 gammas. The inclination of the field is 78.4°. The regional magnetic gradient increases northeasterly at the rate of 1.6 gammas per kilometer.

McKinnon Creek Area Plate 1

The southern one-third of the survey area is characterized by high-frequency, high-amplitude magnetic anomalies rising to a maximum of about 1700 gammas in the southeast corner.

The northern two thirds of the area is rather featureless except for some minor closures along the edge of the claim block. The magnetic field consists of an east-west trending gradient increasing in a northerly direction at the rate of about 16 gammas per kilometer.

The high frequency anomalous areas are coincident with the volcanics as mapped on GSC Map 711A. The intense anomalies, i.e., greater than 1000 gammas, located along the eastern edge of the area, are interpreted as arising from basic and ultrabasic rocks.

The increasing magnetic gradient to the north reflects the combined effects of the earth's normal magnetic field and the field arising from the bedrock surface. The minor magnetic closures located along the northern edge of the claim block probably reflect a topographic high of this bedrock surface.

Offsets in magnetic gradients located in the southern part of the map area suggest the possibility of a northwesterly fault system.

The bedrock underlying the stream deposits is interpreted as an acidic rock.

Montana Creek Area Plate 2

The Montana Creek Area is located approximately 15 kilometers south of the McKinnon Creek claim group.

Five magnetic anomalies are located within the claim block and in the southeast corner of the survey grid. The western half of the area is undisturbed except for minor low amplitude anomalies located on the southwest and northwest corners of the grid.

The anomalous zones in the east are interpreted as arising from volcanic and gneissic rocks. The magnetic field recorded over the western half of the area reflects the distribution of the tertiary conglomerates.

A distinct northwest trending fault zone is indicated by the anomalous pattern recorded on lines 10 through 15 in the central part of the survey area.

Quartz Creek Dredging

Indian River

TIE LINE

CLAIM BLOCK BOUNDARY

SPECIFICATIONS:
PARAMETER: TOTAL MAGNETIC FIELD STRENGTH
EQUIPMENT: VARIAN SENSITIVITY: 2 GAMMAS
AIRCRAFT ALTITUDE: 200' MEAN TERRAIN CLEARANCE
SENSOR – AIRCRAFT SEPARATION: 100'
BASE LEVEL: ARBITRARY

ISOMAGNETIC CONTOURS
- 500 GAMMAS
- 100 GAMMAS
- 50 GAMMAS
- 10 GAMMAS
- MAGNETIC DEPRESSION

FLOWN AND COMPILED APRIL – MAY 1976

SCALE 1:15,500

METERS 500 250 0 500 1000 1500 METERS

TO OVERLAY PHOTOMOSAIC

PLATE I.

RICHARD O. CROSBY & ASSOCIATES

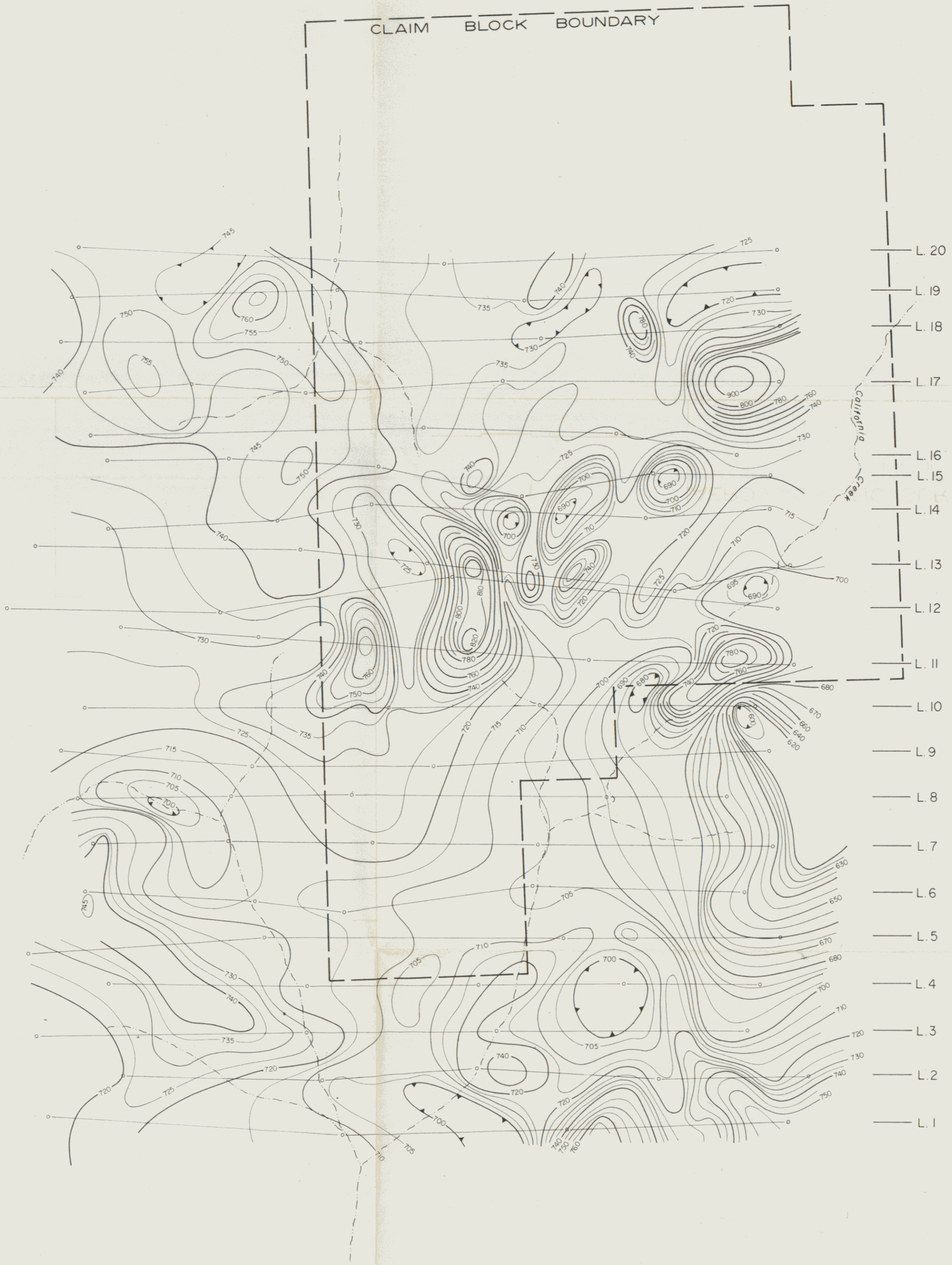
ANDAC RESOURCES LTD.

AEROMAGNETIC SURVEY

INDIAN RIVER PROJECT

McKINNON CREEK AREA

DAWSON MINING DISTRICT



SPECIFICATIONS :

PARAMETER : TOTAL MAGNETIC FIELD STRENGTH

EQUIPMENT : VARIAN PROTON MAGNETOMETER
SENSITIVITY : 2 GAMMAS

AIRCRAFT ALTITUDE : 200' MEAN TERRAIN CLEARANCE

SENSOR – AIRCRAFT SEPARATION 100'

BASE LEVEL ARBITRARY

ISOMAGNETIC CONTOURS

——— 700 gammas

——— 710 gammas

——— 705 gammas

Magnetic depression

FLOWN AND COMPILED APRIL – MAY 1976

N

SCALE 1 : 15,500

MTRS. 0 250 500 1000 MTRS.

TO OVERLAY PHOTOMOSAIC

PLATE 2

RICHARD O. CROSBY & ASSOCIATES

ANDAC RESOURCES LTD.

AEROMAGNETIC SURVEY

INDIAN RIVER PROJECT

MONTANA CREEK AREA

DAWSON MINING DISTRICT

ALTAIR