PLACER DOME NORTH AMERICA

1997 ASSESSMENT REPORT

GEOPHYSICAL SURVEYS on the MARS PROPERTY

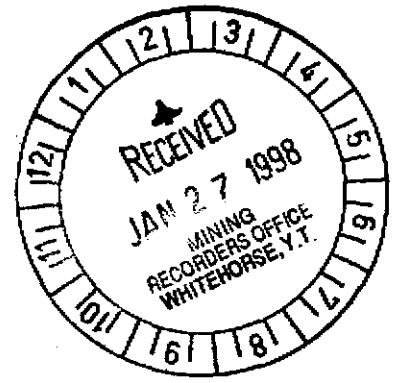
093874

DDH 1 to DDH 16 claims (YB67058 – YB67073 incl.)
MARS 1 to MARS 200 claims (YB96047 – YB96246 incl.)
MARS 201 to MARS 272 claims (YB96731 – YB96802 incl.)

WHITEHORSE MINING DISTRICT
Yukon Territory

MASON LANDING MAPSHEET
NTS 105 E/7

Latitude: 61°17'N
Longitude: 134°49'W



Work Performed: July 24th & 25th, 1997
July 16th to September 18th, 1997

J. Michael Wark
January 22, 1998

This report has been accepted by
the Geological Exploration Unit
under Section 53 (4) Yukon Quartz
Mining Act and is allowed as
representation work in the amount
of $ 12440.00.

for Regional Manager, Exploration and
Geological Services for Commissioner
of Yukon Territory.

TABLE OF CONTENTS

INTRODUCTION 1
LOCATION and ACCESS 1
PHYSIOGRAPHY 3
PREVIOUS WORK 3
PROPERTY DESCRIPTION 5
REGIONAL GEOLOGY 5
  Structure 7
LOCAL GEOLOGY 7
1997 EXPLORATION PROGRAM 8
LINECUTTING/GRIDDING 8
INDUCED POLARIZATION SURVEY 9
AIRBORNE GEOPHYSICAL SURVEY 9
  Magnetics 9
  Radiometrics 10
CONCLUSIONS 10
RECOMMENDATIONS 11
REFERENCES 12
STATEMENT OF QUALIFICATIONS 13

LIST OF FIGURES

Figure 1: Mars Property Location Map
Figure 2: Mars property Regional Geology

LIST OF TABLES

Table 1: Claim Data

LIST OF MAPS

Map 1: Claims and Grid Location

APPENDICES

Appendix I: Costs; Contractor's Invoices
Appendix II: Induced Polarization Survey, Report and Pseudosections
Appendix III: Airborne Geophysical Survey, Report and Maps

INTRODUCTION

This report summarises the ground and airborne geophysical surveys conducted on the Mars Property during 1997. The property was explored under option from 739351 Alberta Ltd..

The property is comprised of 288 claims forming a rectangular block with dimensions of 7315 m x 8230 m (24,000 ft x 27,000ft). The pertinent claim information is provided in Table 1 under the Property Description of this report. A claim and cut grid location sketch is given as Map 1.

The property has seen only limited surface exploration in the past, much of which is discussed in government assessment reports submitted by previous workers.

Exploration work completed on the property during 1997 by Placer Dome included line cutting and grid establishment, systematic grid based soil sampling, mapping, selective IP surveying, a property scale airborne magnetics and radiometric survey, and production of a 1:10 000 scale orthophoto base map with topographic contours. This report describes only the grid construction and geophysical surveys.

All fieldwork was conducted from a small camp that was established on the topographic feature known as Windy Mountain. Coureur Des Bois completed linecutting and grid construction and the IP surveying was conducted by Amerok Geosciences Ltd. Both companies are based locally in Whitehorse. Aerodat Inc. of Mississauga, Ontario, performed the airborne geophysical survey.

Linecutting/gridding was performed during the period of July 16 – August 12,1997 and IP surveying was completed during the period from September 4 – 16,1997. The airborne geophysical survey was completed between September 7, and September 13,1997.

LOCATION and ACCESS

The Mars property is located in Southwest Yukon, about 65 km Northeast of Whitehorse at latitude 61° 17' N and longitude 134° 49' W. The property lies within the Mason Landing mapsheet (NTS 105E/7) approximately 10 km south-west of the point where Miller Creek enters the Teslin River. The property is functionally accessible only by helicopter. Whitehorse, a city with population of approximately 22 000 is the nearest service centre and offers all modern services

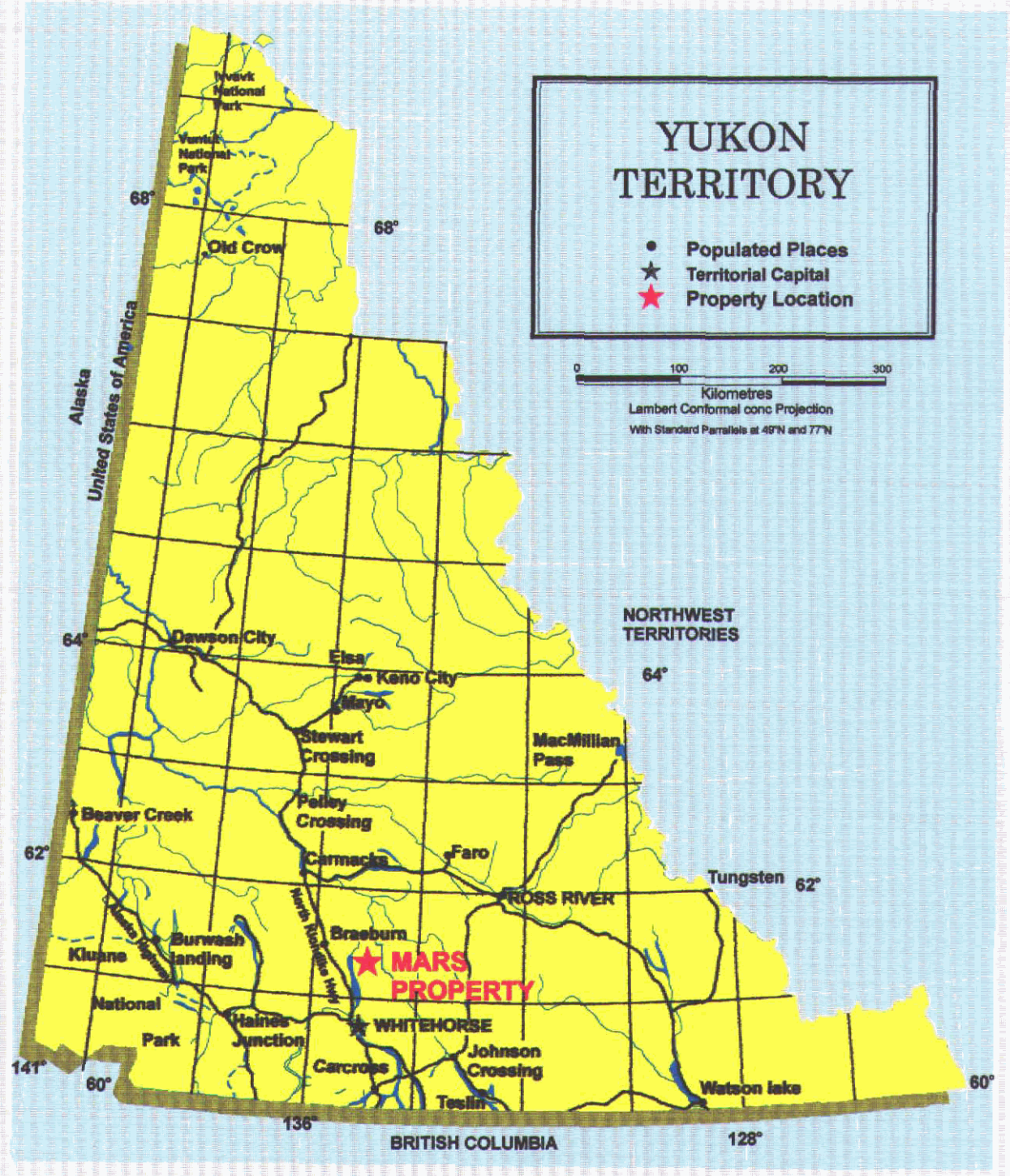

YUKON TERRITORY
Populated Places
Territorial Capital
Property Location
0 100 200 300
Kilometres
Lambert Conformal conc Projection
With Standard Parrallels at 49°N and 77°N
Ivvavik National Park
Vuntut National Park
Old Crow
Alaska
United States of America
68°
68°
64°
64°
62°
62°
60°
60°
141°
136°
128°
Dawson City
Elsa
Keno City
Mayo
Stewart Crossing
MacMillan Pass
NORTHWEST TERRITORIES
Beaver Creek
Pelly Crossing
Carmacks
Faro
Tungsten
ROSS RIVER
Klaane National Park
Burwash Landing
Alaska Highway
North Klondike Hwy
Braeburn
MARS PROPERTY
Haines Junction
WHITEHORSE
Carcross
Johnson Crossing
Teslin
Watson lake
BRITISH COLUMBIA



Figure 1

and supplies. A winter tote trail to the Livingstone Creek placer mining area passes within seven km to the south of the property.

PHYSIOGRAPHY

The property is situated within the Lewis Plateau physiographic region in an area of moderate to rugged topography. The most prominent feature of the area is a long north-west trending ridge known as Windy Mountain. This ridge is within the DDH claim block and roughly at the height of land that occurs at a summit elevation of 1485 m above mean sea level. A Department of National Defence survey monument marks this topographic high. Several secondary spurs, separated by prominent stream valleys, occur perpendicular to the main ridge.

Treeline is at an approximate elevation of 1370 m ASL. Outcrop exposure on the property is generally poor, being obscured by a blanket of glacial till. The best exposures occur above treeline along the Windy Mountain ridge and at the tops of the secondary spurs.

Vegetation below treeline is variable but much of the hillsides are forested by various species of spruce, pine, fir, poplar and birch with willow and alders in the lower lying stream runoff areas. Vegetation above treeline is comprised predominantly of ground birch and willow with sedge grasses in lower lying depressions.

Wildlife seen in the area included black bears, Arctic ground squirrels, deer mice, other unidentified small rodents, rabbits, rough legged hawks, eagles, grouse and numerous other small birds. Blackflies and mosquitoes were also noted. Evidence of moose was abundant below treeline but no moose were sited.

PREVIOUS WORK

The area was first mapped by the GSC at a scale of 4 inches to the mile (1:253 440). This map, released in 1936 (Map 372A), identified an intrusive body of undifferentiated granite, granodiorite, monzonite, and diorite with indicated dimensions of approximately 10 km x 6 km that occurs approximately 10 km south-west of the point where Miller Creek enters the Teslin River. In the accompanying GSC Memoir 217 by Bostock and Lees (1938), this intrusive body is briefly described as being largely comprised of pink, medium-grained monzonite with a grey, porphyritic phase along part of the south-east border of the stock. The Mars property is largely underlain by this pluton.

There is no record of exploration activity within and around the property until 1971 when helicopter-supported regional reconnaissance sampling programmes were conducted in the Laberge map area by United Keno Hill Mines and others. This work resulted in the discovery of copper and molybdenum mineralization associated with the Windy Mountain pluton. Ground follow-up work by United Keno Hill during 1972 resulted in the staking of the TUV 1-24 claims on Windy Mountain followed by geological mapping and geochemical sampling. Results of this programme are summarised in the Yukon assessment report 060152. The TUV claim block was subsequently allowed to lapse and no further work in the area is documented until 1996.

In May of 1996, prospector B. Sauer, under the Yukon Prospectors Assistance Program, and on the suggestion of A. Doherty of Whitehorse, prospected the Windy Mountain area with a three-person crew. Doherty duly noted that none of the samples assayed by United Keno Hill during 1971/72 were checked for gold. The DDH 1-16 claims were staked in June 1996 to cover the area previously staked as the TUV 1-24 claims. Anomalous gold and copper values were returned from rock samples collected from magnetite-rich altered intrusive rocks on the Windy Mountain ridge.

On the basis of the encouraging association of gold/copper mineralization hosted within plutonic rocks, the DDH claims were optioned in September 1996 by Camdan Exploration Inc. Additional claims were staked (MARS 1-272) and a brief exploration programme was carried out. Results of this work and the property geology are summarised in an assessment report filed by Camdan Exploration Inc. (Walton, 1997). Of the rock samples collected during 1996 reconnaissance prospecting and sampling, 23 grab samples returned between 100 and 4790 ppb gold; 11 returned greater than 0.5 g/t gold and 4 samples were greater than 1.0 g/t gold. Thirty-nine samples returned between 500 ppm and 1.95% copper and 33 samples returned between 1.0 ppm and 195.7 ppm silver. These anomalous samples were spread over a 2.5 km length along the Windy Mountain ridge (now known as the Teslin Crossing pluton). A ground total field magnetic survey conducted over a quickly erected grid revealed several areas of strong and anomalous magnetic patterns.

The area was also the focus of a small scale Yukon Geology Program investigation during 1996 by geologist Craig Hart and others. The geochemistry and age of the pluton were evaluated. The pluton is described as alkalic with 3.1- 4.3% K_2O, 60-68% SiO_2 and minor normative quartz. Most rocks are metaluminous but more evolved phases are slightly peraluminous. The pluton is classified as a slightly silica saturated, pyroxenite associated syenite.

The Mars property was optioned to Placer Dome by 739351 Alberta Ltd. and the agreement was finalised on July 12, 1997. Placer conducted field

evaluations during the period from July 16 to Sept. 18, 1997 following a site visit on June 24-25,1997.

PROPERTY DESCRIPTION

The Mars property consists of the DDH 1-16 claims and the MARS 1-272 claims (Map 1). All of the claims were staked under the Yukon Quartz Mining Act within the Whitehorse Mining District. The claims constitute 6019.77 ha. (14 875.20 acres) in a rectangular block with dimensions of 16 x 18 claims. Claim data are summarised in Table 1.

TABLE 1
Claim Data

CLAIM NAME	GRANT NUMBERS	RECORDING DATE	ANNIVERSARY DATE	EXPIRY * DATE
DDH 1-16	YB67058 – YB67073	June 7, 1996	June 7, 1998	June 7, 2002
MARS 1-200	YB96047 – YB96246	August 16, 1996	August 16, 1998	August 16, 2002
MARS 201-272	YB96731 – YB96802	October 10, 1996	October 10, 1997	October 10, 2002

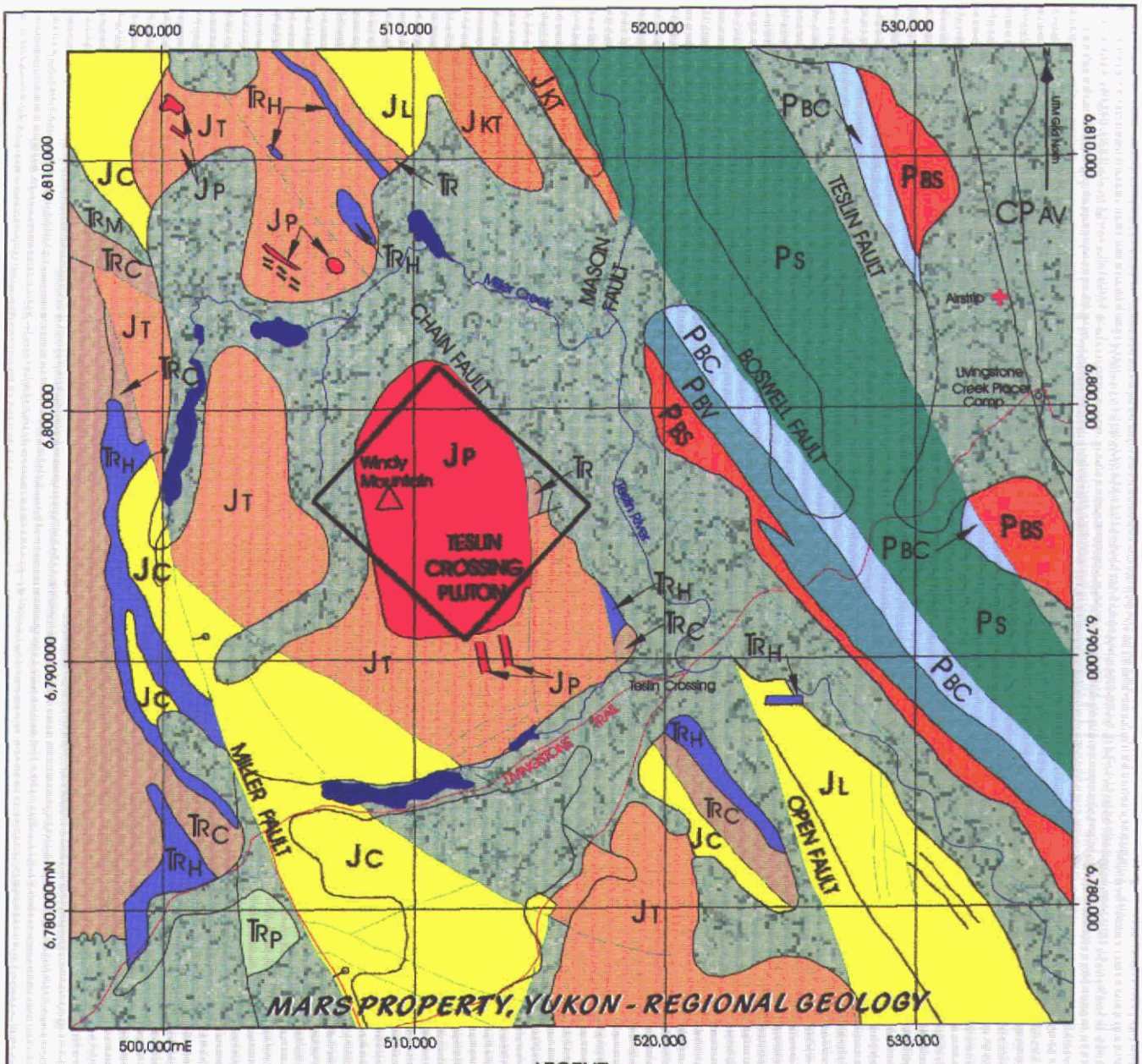
*After credit applied for

REGIONAL GEOLOGY

The regional geology of the Lake Laberge area has been mapped by Bostock and Lees (1938) and more recently by Tempelman-Kluit (1984). In recent years, a number of researchers have made a concerted effort to piece together the tectonic history of the Cordillera and the current hypotheses are summarised in a number of government publications. One pertinent to the area is McMillan et al. (1995).

The Mars property is located in northern Stikinia Terrane near the eastern flank of the Coast Plutonic Complex. Stikinia Terrane here is represented predominantly by Upper Triassic to Jurassic Lewes River Group and Lower to Middle Jurassic Laberge Group rocks. The Teslin Crossing pluton, believed to be Early Jurassic age (Hart, 1997), intrudes strata assigned to the Middle Jurassic Tanglefoot Formation of the Laberge Group (Tempelman-Kluit, 1984).

Stikinia consists of a basement believed to represent an Upper Paleozoic volcanic arc sequence overlain by the Lewes River volcanic arc built during the Middle and Late Triassic. Detritus from the uplifted arc accumulated up to seven km of strata in an adjacent marginal basin through to Middle Jurassic time. This basin, known as the Whitehorse Trough, is comprised of a sequence of Late



LEGEND

UPPER JURASSIC AND/OR CRETACEOUS
Tantalus Formation
- JKT Chert-pebble conglomerate

MIDDLE JURASSIC
Teslin Crossing Stock
- JP Leucocratic monzonite, syenite and granite

LOWER TO MIDDLE JURASSIC
Laberge Group
- JL Undifferentiated shale, greywacke and conglomerate
- JT Tanglefoot Formation Arkose
- JC Conglomerate Formation Conglomerate

UPPER TRIASSIC TO JURASSIC
Lewes River Group
- TRC Casca Member Shale, greywacke and limestone
- TRH Hancock Member Limestone
- TRP Provos Formation Volcanic breccia

CARBONIFEROUS AND/OR PERMIAN
Anvil Allochthonous Assemblage
- CPAV Amphibolite

LOWER AND MIDDLE PENNSYLVANIAN
Semenof Formation
- PS Basalt

Boswell Formation
- PBS Phyllite, greywacke, chert and chert conglomerate
- PBC Limestone
- PBV Basalt

* Map and legend modified from Templeman-Kluit (1984)

- Geological boundary
- Fault, approximate, assumed
- Normal fault (circle on downthrown side)
- Winter tote trail

0 2500 5000 7500 10000
METRES

Figure 2

Triassic volcanic-rich detritus and carbonate of the Lewes River Group and Jurassic intrusive-rich clastics of the Laberge Group (Hart, 1997). Whitehorse Trough strata were subsequently amalgamated with the Cache Creek Terrane and accreted to the west margin of North America along what is now known as the Teslin Suture Zone.

The Cache Creek terrane consists of disrupted upper Paleozoic to lower Mesozoic, predominantly oceanic rocks and subduction complexes dominated by thick assemblages of carbonate and chert but also including considerable basalt, ultramafic rocks and fine clastic strata. Several lines of evidence support a pre-Bajocian amalgamation (ca. 175 Ma) between the Cache Creek terrane and Stikinia (McMillan et al., 1995).

Structure

Faults, lithologies and other regional trends are generally north-west with some younger north-east trending structures. The north-west trending Teslin Fault, which occurs about 20 km east of the MARS property, is the largest structure in the area. Numerous smaller north-west trending faults transect Lewes River Group and Laberge Group strata west of the Mars property.

LOCAL GEOLOGY

The property geology has been previously documented and summarised by several workers and will be only briefly discussed insofar as it relates to the interpretation of the geophysical surveys reported herein. The interested reader is referred to Pangman and Van Tassell, 1972; Pangman, 1973; Walton, 1997; and Hart, 1997 for detailed geology.

The Teslin Crossing stock forms an isolated, slightly elliptical shaped body with approximate surface dimensions of 8.5 x 7 km that intrudes shallowly-dipping Laberge Group siltstone and shale except along its eastern margin where it is in fault contact with Lewes River Group carbonate (Hart, 1997).

Laberge Group rocks within the property are predominantly black argillites and dark coloured, argillaceous siltstones that contain abundant pyrite close to the intrusive contact with the Teslin Crossing pluton. These sedimentary rocks are reported to dip gently eastwards with limonite rich fractures common in the black argillites (Walton, 1997).

The claims are predominantly underlain by the Teslin Crossing stock, which was identified by Tempelman-Kluit (1984) as Middle Jurassic age

monzonite, syenite and granite. More recent work by Hart (1997) has indicated that the pluton consists of a central phase, a porphyritic border phase and associated dyke swarms and sill complexes. This is in general agreement with the findings of Pangman (1973). The central phase is characterised by pink, medium to coarse-grained, equigranular monzonite and syenite whereas the border phase is dominated by medium grey porphyritic and granophyric monzodiorite to monzonite.

Previous work in the area identified sporadic but widespread copper mineralization. Magnetite is noted as a ubiquitous accessory mineral in the intrusive but occurs locally as massive pods and anastomosing veins. Mapping by United Keno Hill is presented in Pangman's thesis and suggests that igneous brecciation and potassium metasomatism is extensive. Native gold has been identified in petrographic thin sections.

1997 EXPLORATION PROGRAM

The 1997 exploration program conducted by Placer Dome included linecutting/gridding, systematic grid based soil sampling, mapping, selective IP surveying, a property scale airborne magnetic and radiometric survey and whole rock chemistry in conjunction with petrographic studies. This assessment report presents only the geophysical survey results from the programme.

LINECUTTING/GRIDDING

Coureur Des Bois Ltd. of Whitehorse were contracted to cut line and establish a chained grid consisting of 42 km of winglines and 12 km of baseline plus tielines for a total of 54 line km. This field grid was subsequently surveyed by differential corrected GPS method by Placer Dome personnel. The surveyed grid is depicted on Map 1.

The baseline is 4 km long at an azimuth of 313°. Winglines are cut every 200 m along the baseline and extend 1 km to the Northeast and Southwest. Two tielines were established at each end of the winglines for additional control. All winglines were turned off the baseline; no back-chaining was permitted. Even so it can be seen from Map 1 that a few of the winglines deviated significantly over a distance of 1 km. All station locations were slope chained and marked with full-length pickets at 25 m intervals.

INDUCED POLARIZATION SURVEY

Amerok Geosciences Ltd. of Whitehorse was contracted to conduct IP surveying over selected portions of the grid. A total of 17.65 line km on 14 lines was covered by the survey between September 4 –16, 1997.

A copy of the Amerok report and geophysical profiles is included as Appendix II.

The most interesting feature of the IP survey appears to be a broad zone of high chargeability that is coincident with copper-gold surface mineralization associated with a zone previously described as the X-zone (Walton, 1997). This zone of high chargeability seems to be coincident with the southerly dipping contact between the intrusive and host sediments. There is also a suggestion that this zone plunges to the north-west below a veneer of sediments. The pseudosections indicate the zone terminates between Lines 11600E and 11 800E as there is no zone of chargeability on Line 11 800E. The zone is traceable as far west (Grid co-ordinates) as L11 000E and may still be present at depth on L10 800E.

AIRBORNE GEOPHYSICAL SURVEY

Aerodat Inc. of Mississauga, Ontario was contracted to complete an airborne magnetic and radiometric survey that encompassed the entire claim block and a large area peripheral to it. The survey was flown between September 7 – 13, 1997 and comprised a total of 2092 line km (2012 km survey lines and 80 km cross lines).

A copy of the Aerodat survey complete with maps and geophysical profiles is included as Appendix III.

Magnetics

The total field magnetic survey confirms the elliptical shape of the stock at surface and indicates the intrusive continues at depth toward the south-west. The sharp termination of the anomaly along the northeast margin would appear to confirm the existence of the Chain fault at this location.

The total field magnetics also appears to support the zoned nature of the pluton. The highest magnetic anomaly appears to be donut or kidney shaped and outlines the porphyritic border phase of the intrusive. Previous mapping has indicated the presence of accessory magnetite in

all phases of the intrusive but notes magnetite as stockwork veins, veinlets and pods within the border phases.

A second magnetic anomaly is located outside the Mars property claims, centred approximately 7 km due south of Windy Mountain. This total field anomaly is incompletely outlined but is circular to ameboid in shape and characterised by extremely low magnetic readings.

Radiometrics

The radiometric data are presented in five separate formats; Total Count, Potassium channel, Uranium channel, Thorium channel, and Ternary plot with potassium, thorium and uranium combined.

The potassium channel should be of most interest due to the widespread potassic alteration associated with porphyry deposits. This map reveals several unconnected regions of high potassium counts within the pluton. The explanation for these could be:

1. The high counts are due to the introduction of potassium as a consequence of hydrothermal alteration associated with a mineralization event.
2. The high potassium counts may be merely mapping portions of the intrusive that are richer in potassic feldspar where the feldspar is primary. (eg. Rocktype may be syenite rather than monzonite)

CONCLUSIONS

The MARS property is underlain by an alkalic pluton of middle Jurassic age that intrudes Jurassic age sediments of the Laberge Group and the Triassic Lewes River Group. The pluton, known as the Teslin Crossing stock, is zoned and variable in composition from monzonite to syenite. The age, lithology, chemistry, style of mineralization, alteration, geochemical and geophysical signature, and its geological setting in Stikinia terrane suggest that the Teslin Crossing Stock is "an excellent target for gold-rich, porphyry copper mineralization".

The occurrence of gold mineralization associated with this intrusive was first documented in 1996 even though the pluton had been prospected and evaluated by several exploration programmes between 1971 and 1975. The reason for this appears to be that previous workers simply did not assay soil, silt, or rock samples for the presence of gold. The widespread and sporadic copper mineralization was clearly recognised and the focus of these earlier efforts

appears to have been directed toward finding porphyry copper-molybdenum deposits.

Alkalic porphyry copper-gold deposits represent a significant proportion of copper and gold production in the Canadian Cordillera. The Teslin Crossing stock has only recently been recognised as belonging to this class of plutons and remains under-explored.

RECOMMENDATIONS

Additional prospecting, mapping and sampling should be done on the entire pluton. Most work to date has been focussed in and around the Southwest margin in the locality of the old TUV claims.

Areas determined to be prospective from the mapping and sampling should be followed up with gridding, geophysics and possibly geochemical surveys. A focussed and systematic approach is likely to uncover which "tools" are most useful and cost effective.

Bona fide diamond drill targets exist in the area around the X-zone and Windy Mountain South based on the geophysics in conjunction with earlier work done by B. Sauer and Camdan Exploration Inc. A series of "fences" of 45° inclined holes over the IP anomalies in this area should be considered as a minimum programme in order to determine style and grade of mineralization.

REFERENCES

Bostock, H.S. and Lees, E.J., 1938, Laberge Map-Area, Yukon. Geological Survey of Canada, Memoir 217, 32 p.

Hart, C.J.R., 1997, Geology and geochemistry of the Teslin Crossing Pluton: A gold-rich alkali porphyry target. Yukon Exploration and Geology 1996, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, pp. 131-137

McMillan, W.J., Thompson, J.F.H., Hart, C.J.R. and Johnston, S.T., 1995, Regional geological and tectonic setting of porphyry deposits in British Columbia and Yukon Territory. *In:* Schroeter, T. (ed.), Porphyry Deposits of the Northwestern Cordillera of North America, Canadian Institute of Mining and Metallurgy and Petroleum, Special Volume 46, pp. 40-57.

Pangman, P.G., 1973, A Petrologic Study of the Windy Mountain Pluton, Yukon Territory. Unpublished B.Sc. thesis, Queen's University, Kingston, Ontario, 69 p.

Pangman, P. and VanTassell, R.E., 1972, Geological and Geochemical Report on the TUV 1 to 24 Mineral Claims, Miller Creek Area, Whitehorse Mining District. United Keno Hill Mines Ltd., Assessment Report No. 060152.

Tempelman-Kluit, K.J., 1984, Geology maps of Laberge (105E), and Carmacks (1151). Geological Survey of Canada, Open File 1101.

STATEMENT OF QUALIFICATIONS

I, J. Michael Wark, resident at P.O. Box 949, Cornwall, Prince Edward Island, do hereby state:

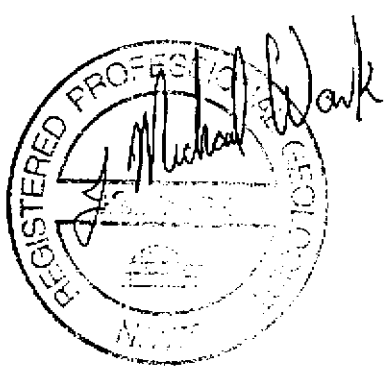
1. I am a graduate geologist (B.Sc. Honours) of Dalhousie University in 1980.

2. I am a member of the Association of Professional Engineers Geologists and Geophysicists of the Northwest Territories.

3. I have been employed in my profession as a geologist since 1980.

4. I personally supervised the field programme on the Mars property

5. I am a contract employee of Placer Dome Canada and do not hold any shares of Placer Dome.



6802136.09N
505767.43E

6802136.09N
516931.75E

N
W E
S

093 874

DIAND - YUKON REGION. LIBRARY

DDH CLAIM BLOCK

1997 GPS GRID

MARS CLAIM BLOCK

PLACER DOME NA

MARS PROPERTY
CLAIMS AND GRID LOCATION MAP

- CLAIM BLOCK OUTLINE
- MARS 15 YB96061 - CLAIM
- 1997 GPS GRID

01/19/98
BY: GAD
NAD 83
UTM ZONE 8
SCALE 1:20,000
NTS MAPSHEET 105E02 / 07

Map 1

0 0.5 1
Kilometers

6790826.24N
505767.43E

6790826.24N
516931.75E

APPENDIX I

COSTS, CONTRACTOR'S INVOICES

Amerok Geosciences Ltd.

Site 6, Comp 11
Whitehorse, Yukon
Y1A 5V8
Phone/fax: (403) 668-7672
amerok@yknet.yk.ca

INVOICE

GST No.: RT89493 8588
File: 97-29

Invoice 97083
September 19, 1997

In account with: **PLACER DOME CANADA LTD.**
1440 Hugh Allan Drive
Kamloops B.C. V1S 1L8

Re: **MARS IP SURVEY**
(September 4-16, 1997)



Mobilization / demobilization		$1,500.00
IP Survey: 17.65 line-km @ $1350		$23,827.50
Logistics report & plotting		$1,400.00
	Subtotal	$26,727.50
	Federal GST	$1,870.93
	TOTAL	**$28,598.43**

Terms: Net 30 days. Interest charged at 2% per month on overdue accounts

aerodat
AERODAT INC.
Tel. (905) 671-2446 Fax. (905) 671-8160
6300 Northwest Drive, Mississauga, Ontario L4V 1J7

Invoice No: 28-9783-0690
Date: November 28, 1997

Placer Dome Canada
Kamloops Exploration
1440 Hugh Allen Drive
Kamloops, B.C.
Canada V1S 1L8

In Account With:

Aerodat Inc.
6300 Northwest Drive
Mississauga, Ontario
Canada L4V 1J7

Attention: Mr. Tracy Campbell
Geophysicist

Re: Helicopterborne High Sensitivity Magnetic and Radiometric Survey, Mars Project, Yukon Territory

Pursuant to Paragraph 9.3 (Upon Delivery of Final Products) of the Agreement between Placer Dome Canada and Aerodat Inc. dated July 29th, 1997:

Mobilization / demobilization	$ 5,000.00
Survey charges - 2,092 ln kms @ $48.50/km	101,462.00
Total Cost of Survey	$106,462.00
Less Invoice #28-9783-0505	25,015.00
Less Invoice #28-9783-0568	50,030.00
Amount due	$31,417.00
7% GST (R100067024)	2,199.19
TOTAL AMOUNT DUE	**$33,616.19**

Account Distribution		Total $	33616.19
Inv. #			
P.O. #		Ref. #	9783-0690
Funds: $C, $US, $Other			
Project/Explor:	$Amount	Project #	Acct./Activity #
$	31,417.00	566	9202
$			
$			
Dept. Expense	$Amount	Account #	Department #
$			
$			
Bill/Charge to:	$Amount	Customer #	Approvals
$			Date
$	2,199.19	GST (151)	
$		GST (152)	

or Wire Transfer purposes is as follows:

30-4174

:)

APPENDIX II

INDUCED POLARIZATION SURVEY REPORT and PSEUDOSECTIONS

PLACER DOME CANADA LTD.

INDUCED POLARIZATION SURVEY ON THE MARS PROPERTY, LAKE LABERGE AREA, YUKON TERRITORY

M.A. Power M.Sc. P. Geo.

Location: 61° 17' N 134° 49' W
NTS: 105 E 7
Mining District: Mayo, YT
Date: September 19, 1997

SUMMARY

This report describes an induced polarization (IP) survey conducted on the Mars Property in the Lake Laberge area of the Whitehorse Mining District. The surveys were conducted between September 4 - 16, 1997 in support of an exploration program investigating intrusive hosted gold-copper mineralization. A total of 17.65 line-km on 14 lines was surveyed using a dipole-dipole array with a dipole spacing of 50 m and reading from the first to the sixth separation. Surveys were conducted in the time domain using semi-logarithmic sampling of the decay curve. Standard pseudosections of the apparent resistivity and total chargeability are attached together digital data in both raw dump and Geosoft format .dat files. In addition, station to station slope measurements were collected and are appended in a spreadsheet file. This report is a logistics report summarizing survey operations and contains no interpretation of the data.

1.0 INTRODUCTION

This report describes an induced polarization (IP) survey conducted on the Mars Property in the Whitehorse Mining District, Yukon Territory. The surveys were conducted for Placer Dome Canada Ltd. (Kamloops Exploration Office) in support of an exploration program investigating gold-copper mineralization on the property.

2.0 LOCATION AND ACCESS

The Mars Property is located east of Lake Laberge in the Whitehorse Mining District, Yukon Territory at 61° 17' N 134° 49' W on NTS 105 E 7 (Figure 1). The property is accessible by helicopter from Whitehorse with the nearest road accessible staging area being the Deep Creek Road on the Dawson Highway.

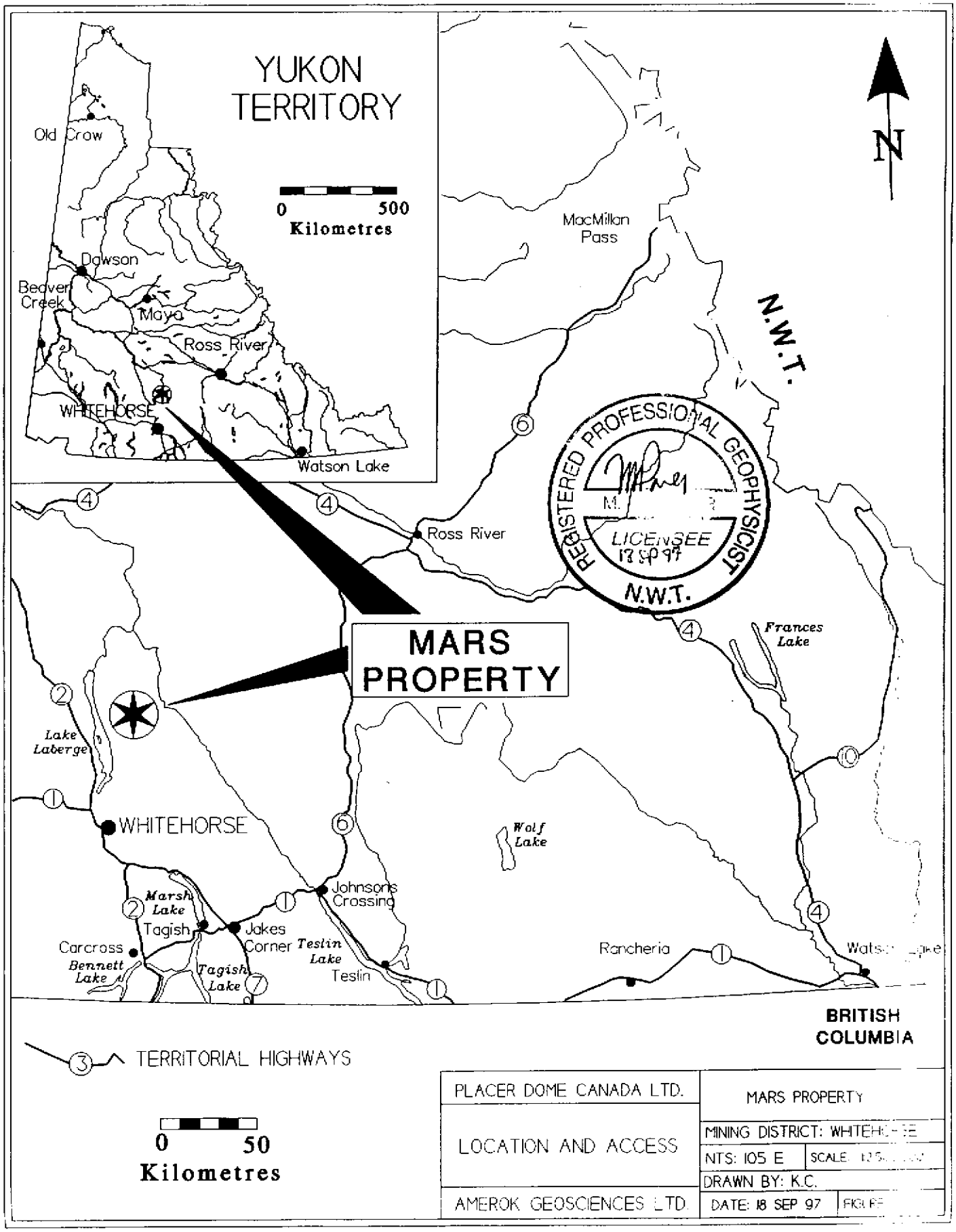
3.0 GRID

The IP survey was conducted on portions of a cut grid centred on the DDH 1-16 claims. Figure 2 shows the portions of the grid that were surveyed together with schematic topography and the 1997 camp location. The grid consisted of cut, slope chained survey lines picketed at 25 m intervals and marked with tagged full length lathe. This 1997 grid is locally coincident with a 1996 grid marked similarly with half-length lathe. A total of 17.65 line-km on 14 lines was covered by the IP survey.

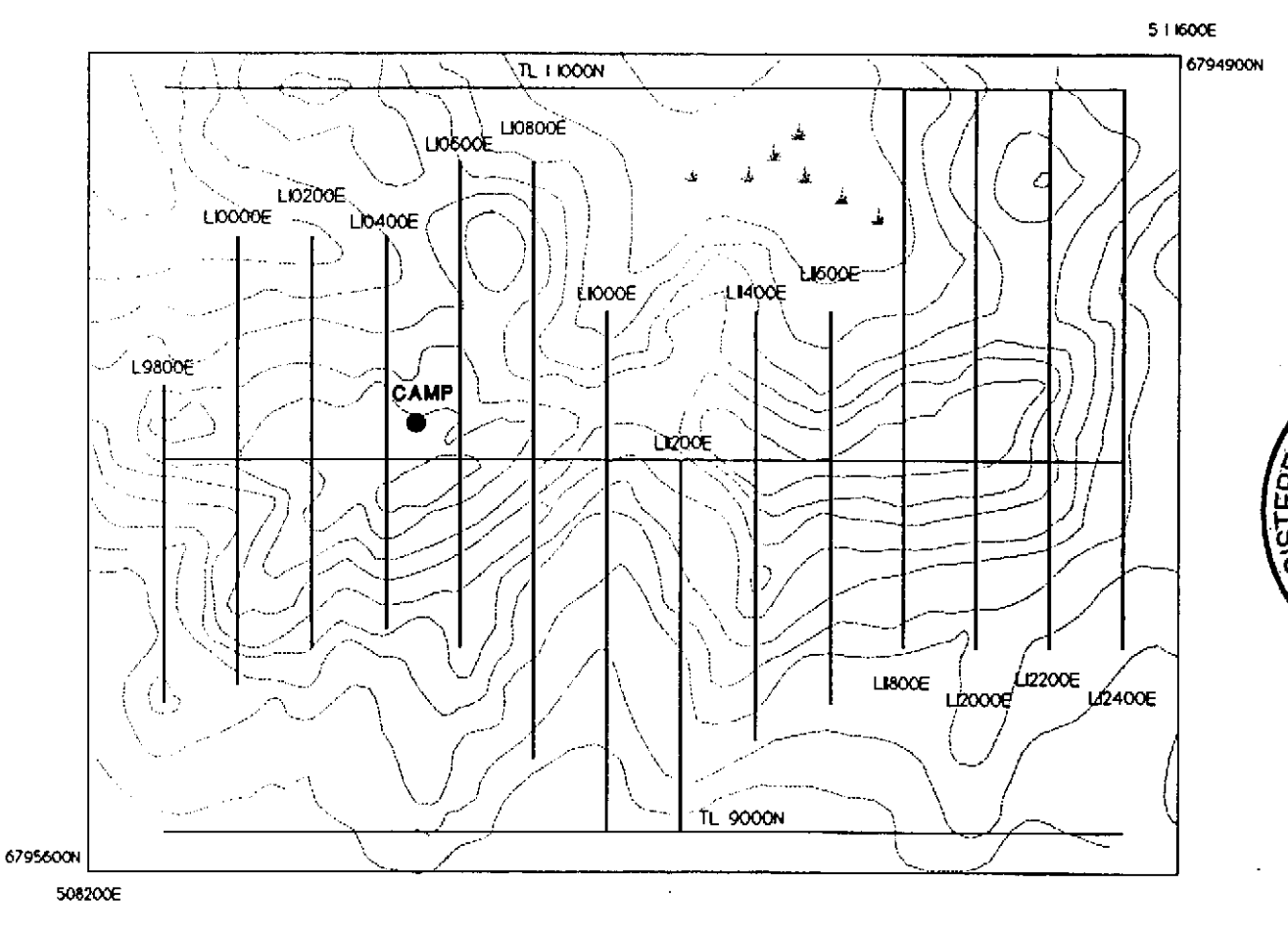
4.0 PERSONNEL AND EQUIPMENT

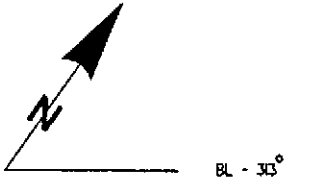
The surveys were conducted by Carmen Lee, Debra Smith, Dan Hall and Mike Power (Crew chief). The crew was equipped with the following instrument and accessory equipment:

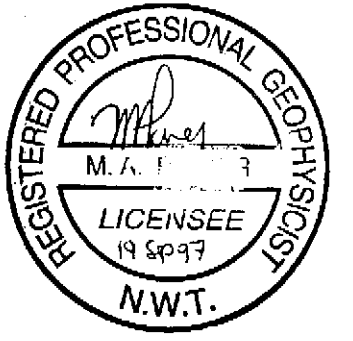
Transmitters:	2 - Phoenix IPT1 3 KW IP transmitters. 1 - MG-3 3 KW motor generator 1 - MG-2 2 KW backpack motor generator
Receiver:	1 - IRIS IP-6 IP receiver
Related equipment:	Georeels / speedy winders with 5 km of 16 guage wire, stainless steel electrodes, tools, VHF radios, P-75 laptop computer, colour printer



PLACER DOME CANADA LTD.	MARS PROPERTY
LOCATION AND ACCESS	MINING DISTRICT: WHITEHORSE
	NTS: 105 E SCALE: N.T.S.
	DRAWN BY: K.C.
AMEROK GEOSCIENCES LTD.	DATE: 18 SEP 97 FIGURE









CONTOUR INTERVAL: 100 FEET

UTM COORDINATES: NAD27

PLACER DOME CANADA LTD.	MARS PROPERTY
INDUCED POLARIZATION SURVEY LINE LOCATIONS	MINING DISTRICT: WHITEHORSE
	NTS: 105 E — SCALE: 1:20,000
	DRAWN BY: M.P.
AMEROK GEOSCIENCES LTD.	DATE: 18 SEP 97 — FIGURE: 2

Other:	4 man camp (less second tent), 650W generator

The equipment was moved to Deep Creek with a one ton truck and slung in to the property by helicopter.

5.0 SURVEY SPECIFICATIONS

The IP survey was conducted to the following specifications:

Array:	Dipole-dipole
Dipole spacing:	50 m
Separations read:	n=1 to 6
Signal:	Time domain: 0.125 Hz, 50% duty cycle, reversing polarity (AC)
Sampling:	Semi-logarithmic sampling of the decay curve using 10 windows with widths of 80, 80, 80, 80, 160, 160, 160, 320, 320 and 320 ms (near time to late time). Total chargeability integrated from 10 channels.
Measurements:	Vp - primary voltage prior to shutoff Mt - total chargeability M1 to M10 - individual time slice chargeabilities. Sp - spontaneous potential . Ro - electrode resistance E - standard deviation in Mt I - applied current Terrain slopes.

In general, the transmitter was installed along the crest of the ridge running the length of the base line in order to maintain radio contact along the length of the survey lines. Consequently, the current electrodes were north of the reading array south of the split point and south of the reading array north of the split point.

6.0 DATA PRESENTATION

Digital data is appended to this report in two formats. Raw IP-6 dump files containing all recorded parameters in ASCII format are named in the following format: **IP09dd.dat** where dd is the day of the month. The digital data is also appended in Geosoft format in files designated by line number and suffixed by **.gsf**. Readings which were omitted by virtue of unacceptable error are replaced by entries of -9999 in the .gsf files. Terrain slopes are appended in the Excel 5.2 format file **SLOPES.XLS**. All slopes are shown facing north and the readings are in percent. Pseudosections of the data were plotted with Geopak IPSECT software and are appended in the pockets.

7.0 RESULTS AND LINE NOTES

This section describes the data quality and contains individual line notes which may be useful in the interpretation of the data. The receiver operators stacked the data a minimum of 15 times during each reading and an acceptable error (standard deviation of Mt) was fixed at 5.0 ms. At this level, readings are generally repeatable within $\pm$ 1 ms. In some situations it was impossible to record data with errors within this specification and the operators took repeated measurements, stacked 15 times, to determine whether repeatable readings were obtainable despite the higher reading error. When the Mt readings were repeatable within $\pm$ 2 ms despite the higher apparent error, the readings were accepted. In situations where high errors were recorded and the Mt readings were not repeatable, the Mt readings were not included in the Geosoft .gsf files and a null entry of -9999 was entered.

Individual line notes follow:

Line 10400E

Surveyed from 9600N to 10600N (1.0 line-km). Transmitter setup at 10050N and with spread split at this point (ie. current electrodes north of reading array south of this point and current electrodes south of reading array north of this point). Good soil and acceptable readings throughout. Some rock and talus near 9900N.

Line 10200E

Surveyed from 9500N to 10600N (1.1 line-km). Split the spread at 10050N. Good soil and acceptable readings. Some rock at ridge crest near 10050N.

Line 10000E

Surveyed from 9400N to 10600N (1.2 line-km). Split the spread at 10100N. Some rocky ground from 10100N to 9800N.

Line 9800E

Surveyed from 9350-10200N (0.85 line-km). Current electrodes north of reading array throughout. Some rocky ground with noisy talus from 9800-9500N.

Line 12400E

Surveyed 11000N-9500N (1.5 line-km). Current electrode grid N of array throughout. Generally good soil, good current and good data. Bursts of telluric noise during readings from 10500 to 9900N; data was repeated until readings were stable. Line was short chained at the north end with the last station at 10975N.

Line 12200E

Surveyed 11000N-9500N (1.5 line-km). Current electrode grid N of array throughout. No significant problems today. Generally good current and good data. Large error readings (5-40) were read on the last diode repeatedly on a few stations. Readings were taken repeatedly until the chargeability was stable despite the large error readings. Line was short chained at the north end with the last station at 10975N.

Line 12000E

Surveyed 11000-9500N (1.5 line-km). Split the spread at 9950N to 10000N. Telluric noise from 10000-9700N. Bad talus from 10100 to 10350N. Generally low current and noisy signals. Negative chargeabilities recorded on one slash; repeatable at short separations. Line was short chained at the north end with the last station at 10975N.

Line 11800E

Surveyed 11000-9500N (1.5 line-km). Split the spread at 9950N to 10000N. Generally good current and good ground.

Line 11600E

Surveyed 9350-10400N (1.05 line-km). Split spread at 9975N.
Unusually high Vp filling in the box at Xc=10150N, 10100N.
Mossy Talus from 10050N - 10300N. Weak current and noisy readings in this area.

Line 11400E

Surveyed 9250-10400N (1.15 line-km). Split spread at 9975N. Talus from 9750N - 9950N; weak current, some noisy readings here.

Line 11200E

Surveyed 9000-10000N (1.0 line-km). Current electrodes north of reading array throughout. Generally good ground with only a couple of stations in talus. Generally good current.

Line 11000E

Surveyed 9000-10400N (1.4 line-km). Split spread at 10125N.
At reading Xp=10000N , Xc=10050N large fluctuations in Rs across d5 (6-2). No apparent detrimental effect on data quality.

Line 10800E

Surveyed 9200-10800N (1.6 line-km). Split the spread at 10000-10100N.
Good current and good data overall. A couple of large error readings at dipole 6 when near the transmitter. Repeated readings of stacked 15 were taken and the data with the lowest error was used.

Line 10600E

Surveyed 9500-10800N (1.3 line-km). Outcrop at 10050-9950N. Short dipole on first reading heading south, current was at 10075 instead of 10100N. Apparent resistivities recalculated manually and corrected in .gsf file. Errors were low. Rocky but nonetheless conductive ground from 10100N to 9700N.

Digital data is appended on disk together with pseudosections in the attached pockets. Appendix A contains the survey log.

Respectfully submitted,
AMEROK GEOSCIENCES LTD.

M.A. Power M.Sc. P.Geoph.
Geophysicist
N.W.T.

APPENDIX A. SURVEY LOG

Thu 04SEP97	Flew into property; first lift at 1600 hrs - last about 10PM. Camp installed by 0100 AM.
Fri 05SEP97	AM: completed camp setup, checked gear. PM: Surveyed L10400E, north half. Wx: Rain, wind, showers. Production: L10400E 10600E - 10050E
Sat 06SEP97	Surveyed lines 10400E and 10200E. Wx: Overcast slightly windy Production: L10400E 10050N - 9550N L10200E 10600N - 9500N
Sun 07SEP97	Surveyed Lines 9800E & 10000E. Wx: cloudy and cool. Production : L 9800E 9350N - 10200N L 10000E 9400N - 10600N
Mon 08SEP97	Surveyed L12400E. Helicopter used to move gear and personnel to start of line. Also cut some poles and slung them to camp to reinforce tent. Started surveying at 1100 hrs, finished around 1700hrs. Telluric noise in mid-afternoon. Wx: windy,warm and partly cloudy. Production: L12400E: 11000-9500N
Tues 09SEP97	Surveyed L12200E. Started surveying at 900 hrs, finished at around 1730 hrs. Helicopter was used to move the gear to the next line and the crew back to camp. Wx: overall sunny and partly cloudy Production: L12200E: 11000-9500N
Wed 10SEP97	Surveyed L12000E. Started surveying at 0900 hrs, finished at 2000 hrs. Rough day, problems with the cables and getting good readings. Telluric noise around noon.

Wx: sunny in the morning, overcast in the afternoon, scattered showers in the evening.
Production: L120000E: 11000-9500N

Thurs 11SEP97 — Surveyed L11800E. Started surveying at 900 hrs, finished at 1830 hrs. Good day, good data. Very few problems today.
Wx: overcast and windy in the morning. Sunny in the afternoon.
Production: L11800E: 11000-9500N

Fri 12SEP97 — Surveyed L11600E, 1/2 of L11400E and repeated one slash L11800E. Transmitter broke down twice due to sticky relay. Lost 3 hrs to repairs.
Production : L11600E: 9350N - 10400N
L11400E: 9250N - 9900N

Sat 13SEP97 — Surveyed L11400E, L11200E. Generally good day had to use the backup transmitter. Occasional problems throughout the day with the transmitter.
Wx: very warm and sunny
Production: L11400E: 10000-10300N
L11200E: 10000-9000N

Sun 14SEP97 — Surveyed L 11000E. Split spread at 10125N.
No equipment problems today.
Wx: snow flurries and cool.

Mon 15SEP97 — Surveyed L10800E and L10600E. Split the spread at 10100N on L10800E. Surveyed 10100-9500N on L10600E. Generally no problems today.
Wx: Sunny in the morning and becoming overcast in the afternoon. Very cool.
Production: L10800E: 9200-10800N
L10600E: 9500-10100N

Tues 16SEP97 — Surveyed L10600E. Completed the remainder of the line to the north. Good current and good data. Demobe equipment and two crew members in afternoon.DH and DS remained in camp to assist PD personnel with their camp demobe.
Wx: Overcast with some flurries.

Production: L10600E: 10100- 10800N

Wed 17SEP97 DH, DS and Jeff Boyce assist PD personnel with camp demobe.

Personnel:

Mike Power
Site 6 Comp 11
Whitehorse, Y.T.

Dan Hall
11 Canyon Crescent
Whitehorse Y.T.

Debra Smith
#12 Takhinni Hot Springs Road
Whitehorse Y.T.

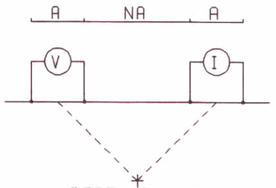
Carmen Lee
#12 Takhinni Hot Springs Road
Whitehorse, Y.T.

LINE : 9800 E

093 874

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY



N = 1, 2, 3, 4, ...
"A" SPACING = 50.0 METRES

REGISTERED PROFESSIONAL GEOPHYSICIST
M. A. POWER
LICENSEE
18Sep97
N.W.T.

PLACER DOME CANADA LTD.

MARS PROJECT

NTS 105 E

DATE : 07SEPT97 | REF : 97-29

SCALE □ 1: 2500

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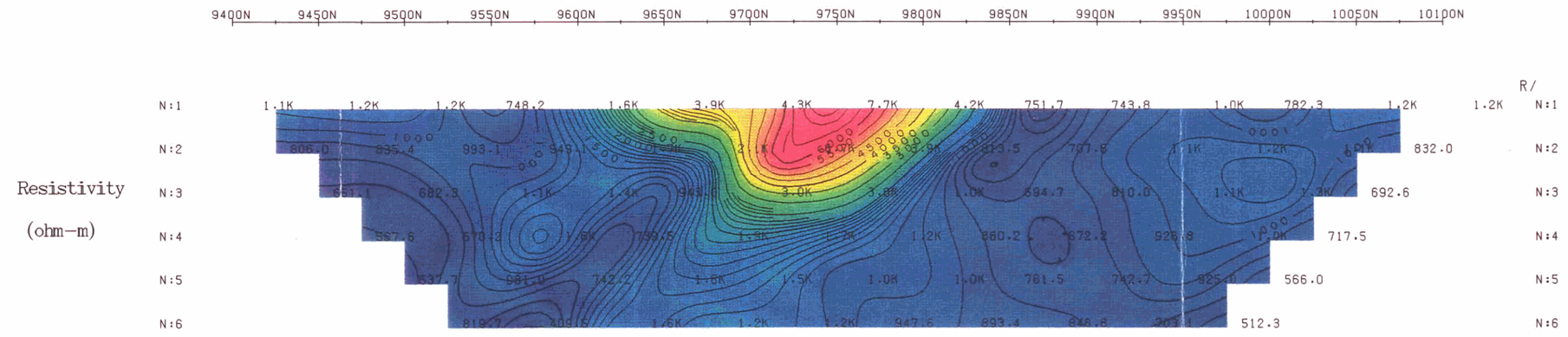
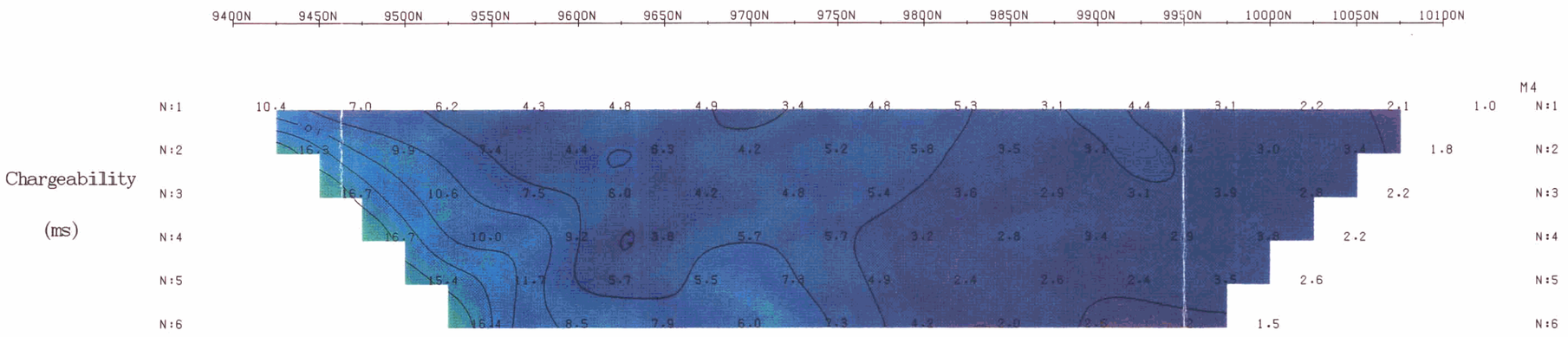
Dwg (2)





LINE : 10000 E

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INDUCED POLARIZATION SURVEY

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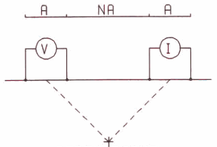

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"A" SPACING = 50.0 METRES

REGISTERED PROFESSIONAL GEOPHYSICIST
M.A. [illegible]ER
LICENSEE
18Sep97
N.W.T.

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MARS PROJECT

NTS 105 E

DATE : 07 SEP 97 | REF : 97-29

SCALE = 1: 2500

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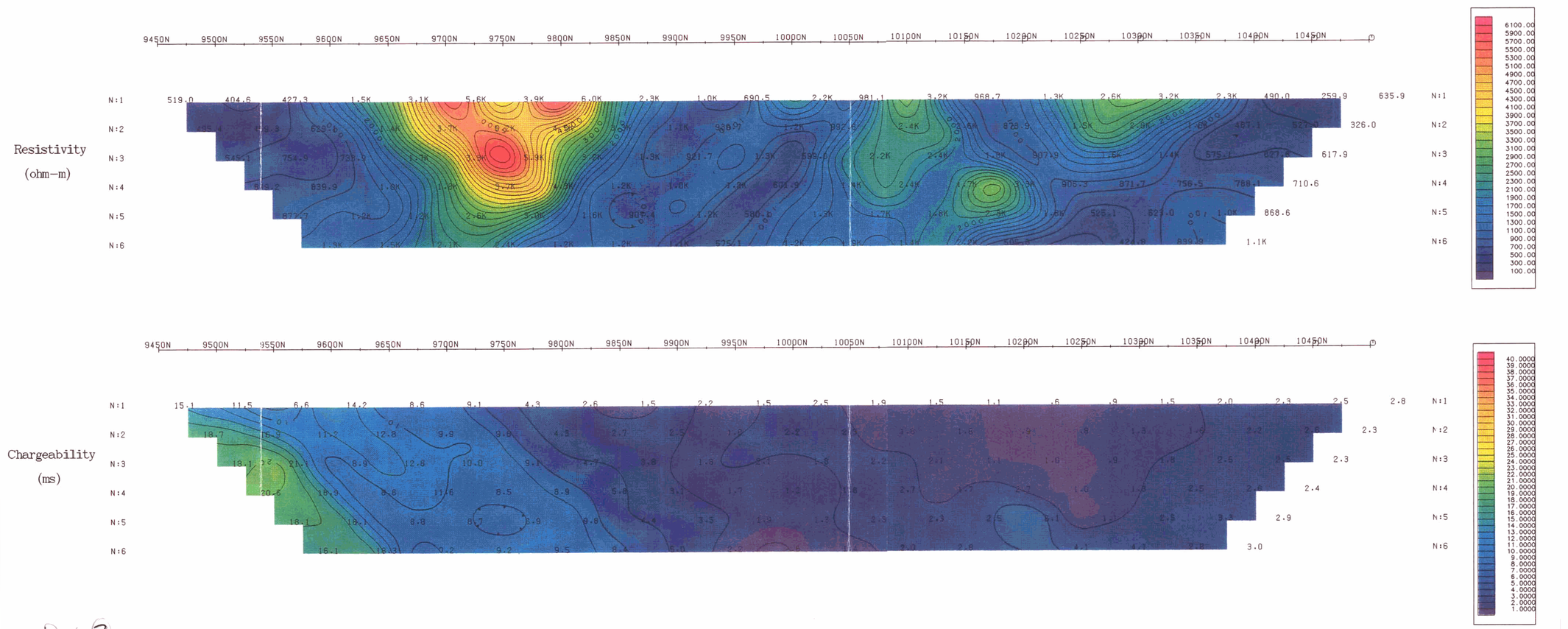

Data 3

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LINE : 10200 E

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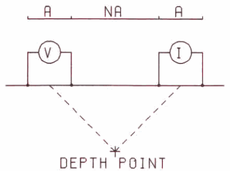
DIPOLE-DIPOLE ARRAY



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N.W.T.

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NTS 105 E

DATE : 06 SEP 97 | REF : 97-29

SCALE = 1: 2500

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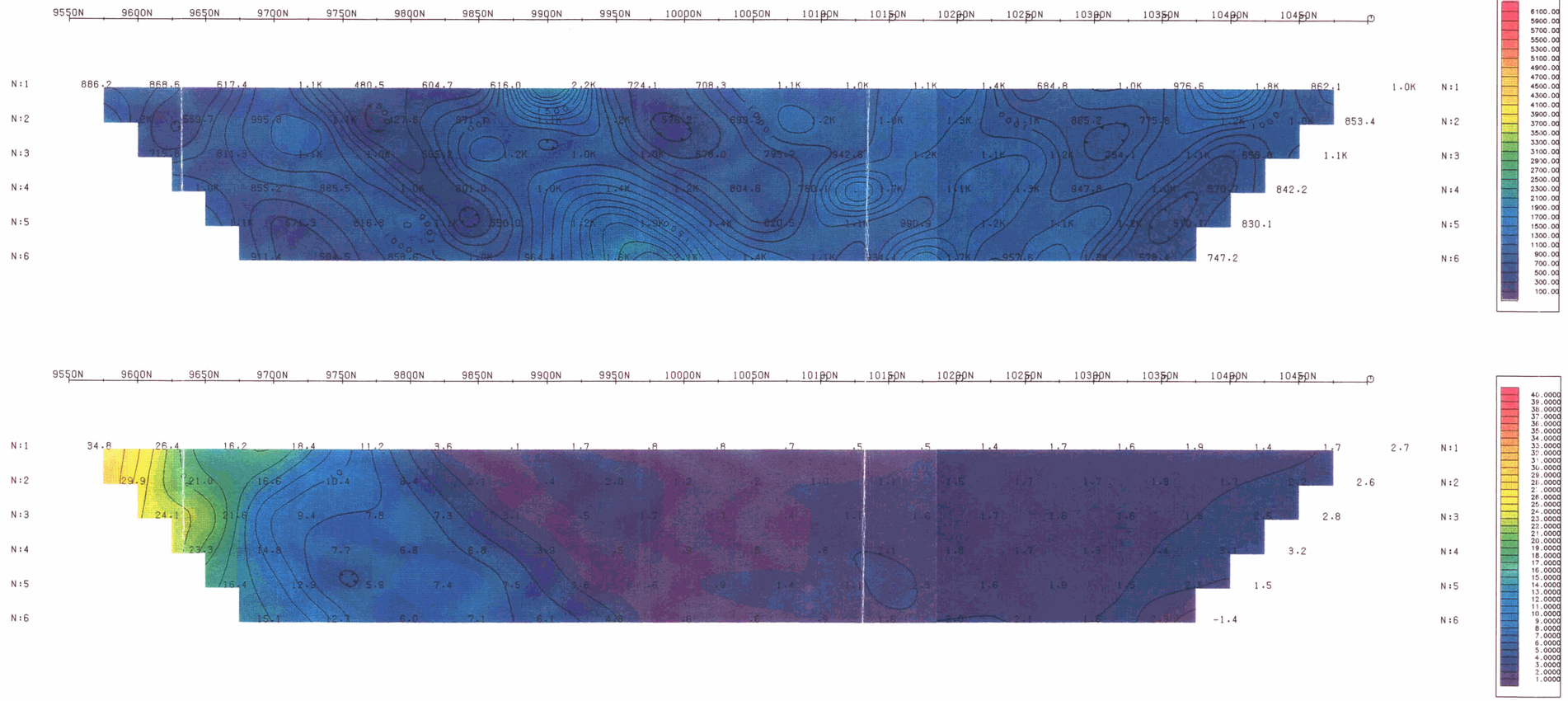

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LINE : 10400 E

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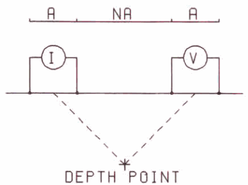
DIPOLE-DIPOLE ARRAY



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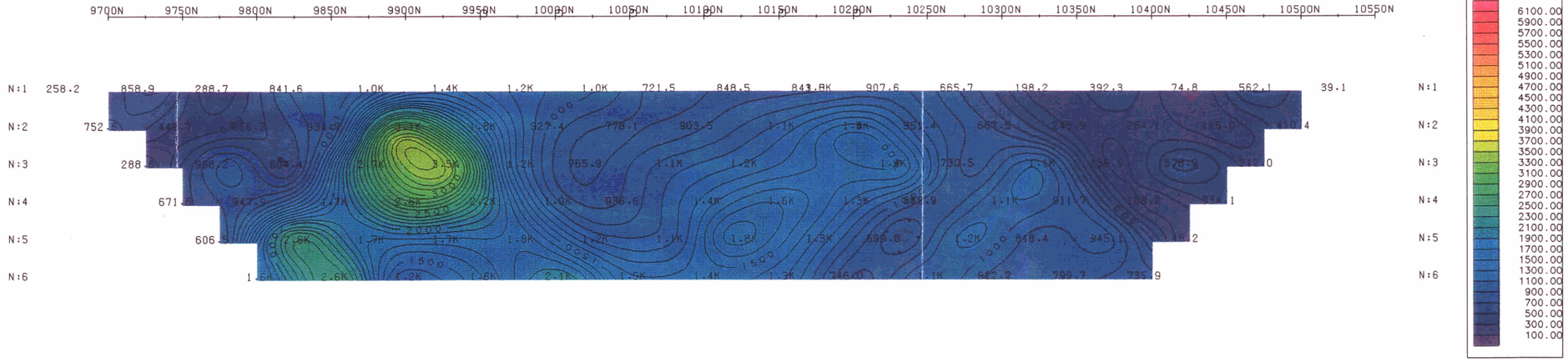
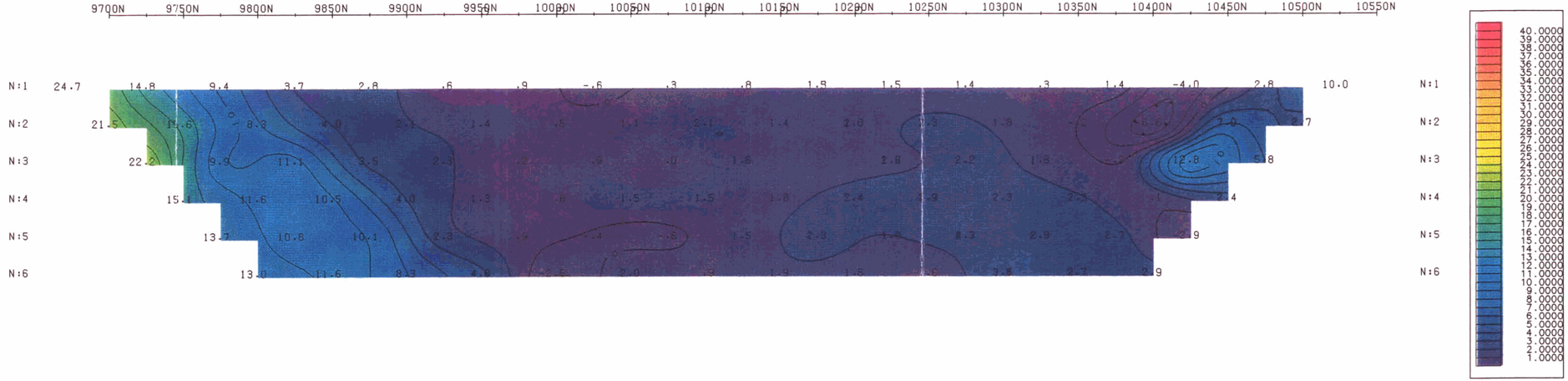
Resistivity (ohm-m)



Chargeability (ms)



Dwh(5)

LINE : 10600 E

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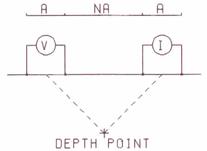

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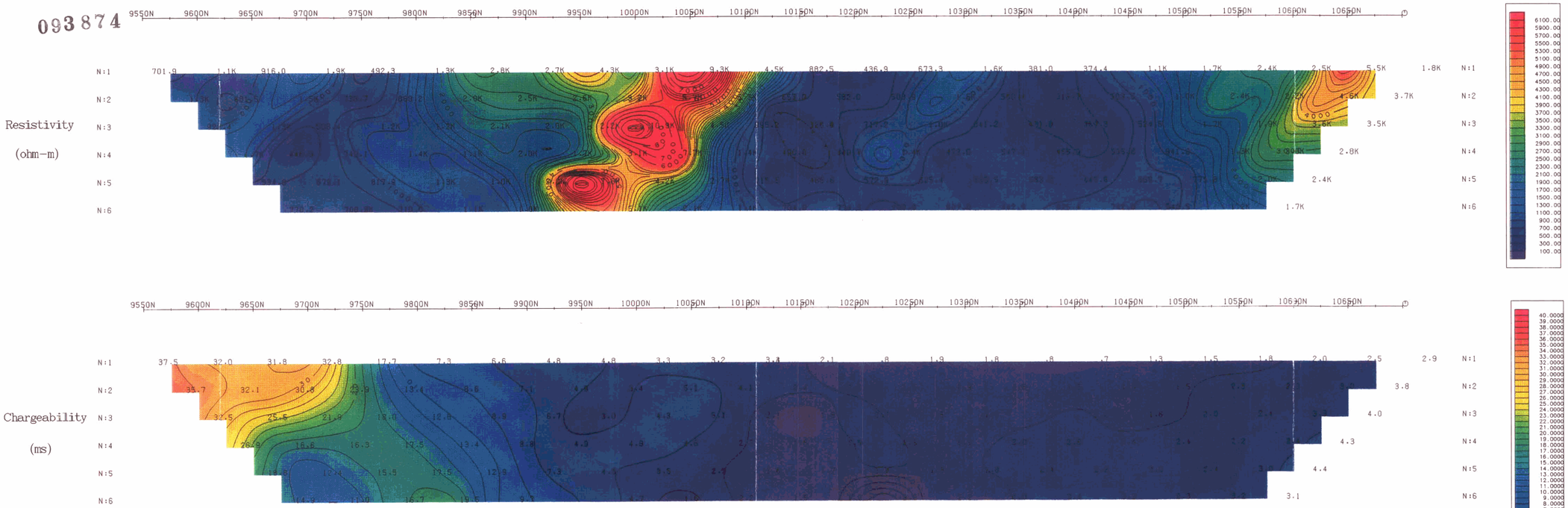

DWG 6

LINE : 10800 E

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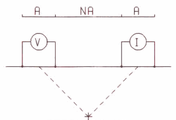

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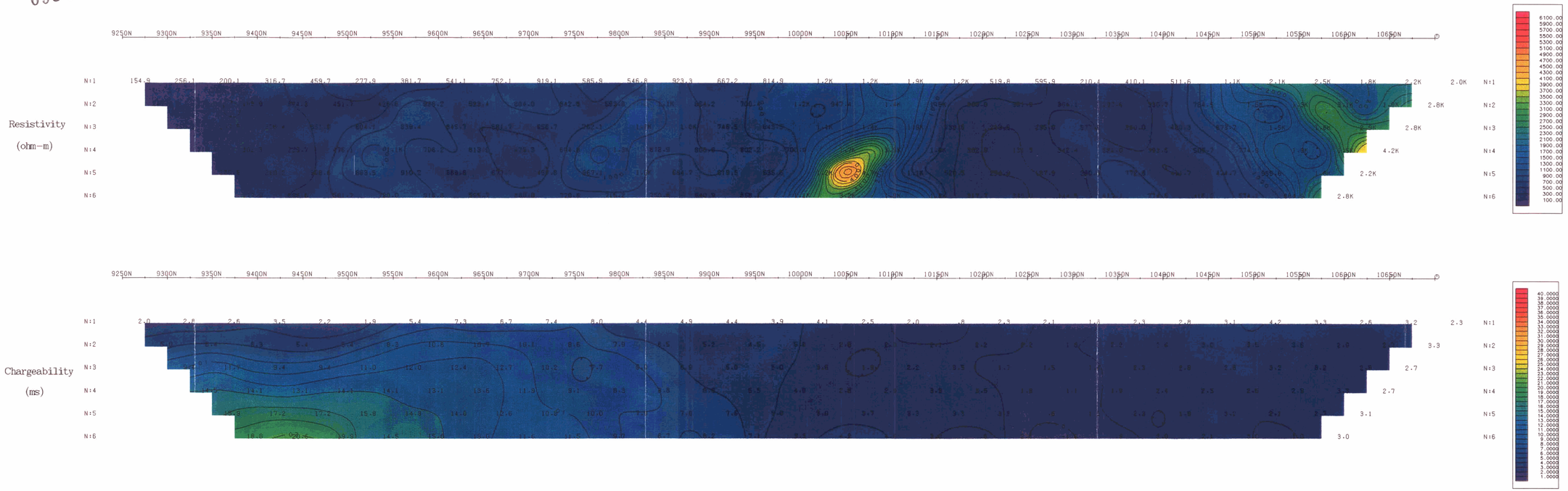

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LINE : 11000 E

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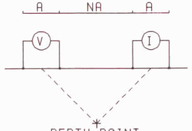

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DATE : 14 SEPT 97 | REF : 97-29

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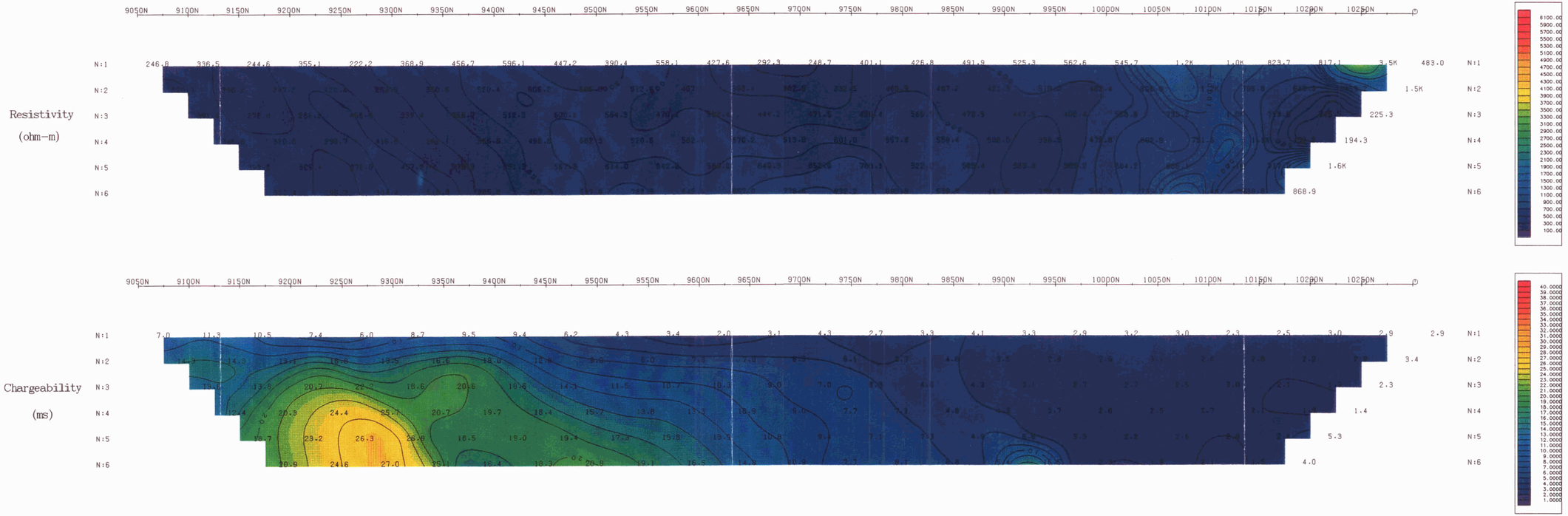

Dwg 8

LINE : 11200 E

INDUCED POLARIZATION SURVEY

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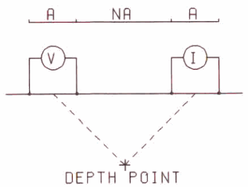

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"A" SPACING = 50.0 METRES

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18Sep97
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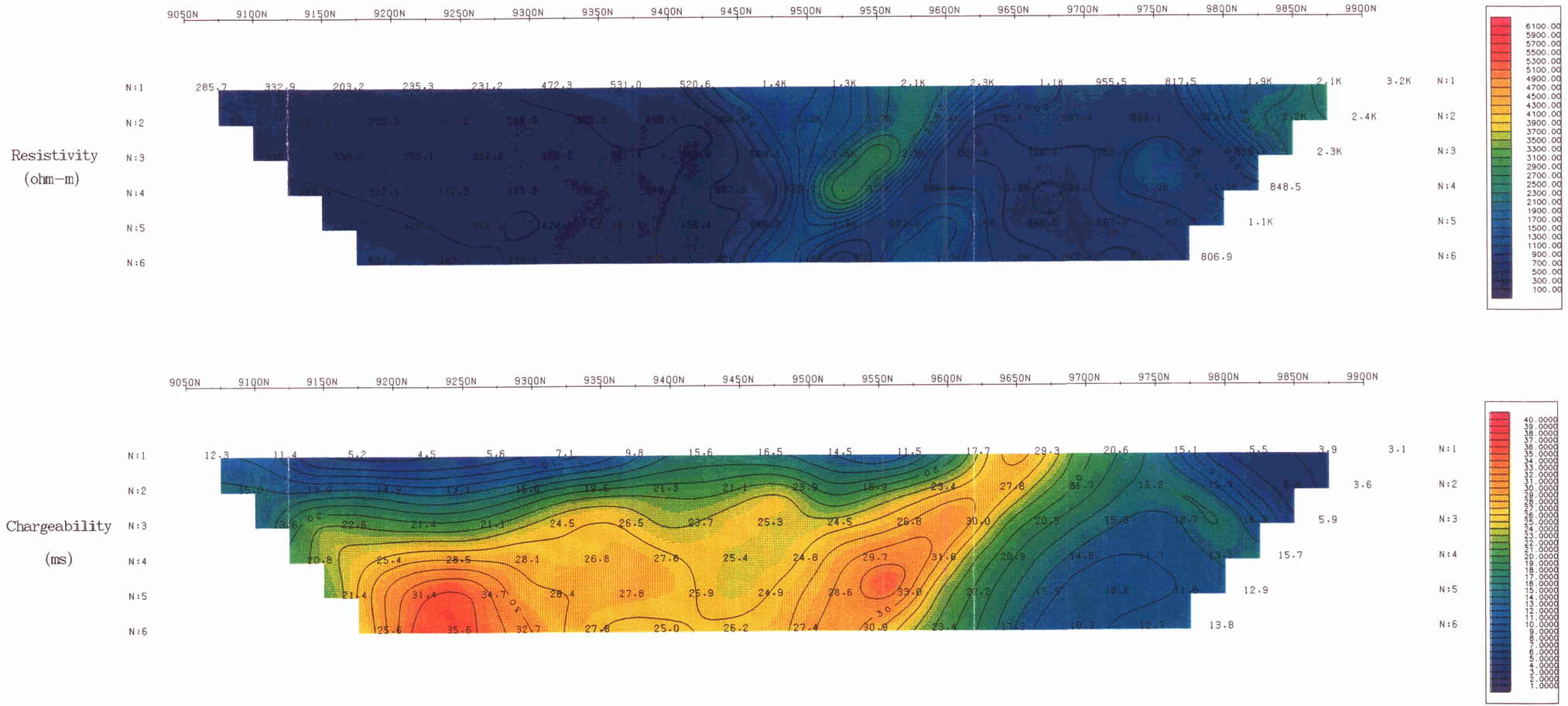

LINE : 11400 E

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INDUCED POLARIZATION SURVEY

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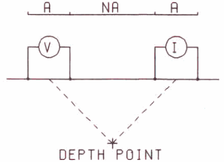

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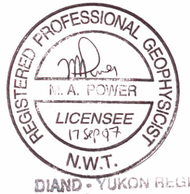

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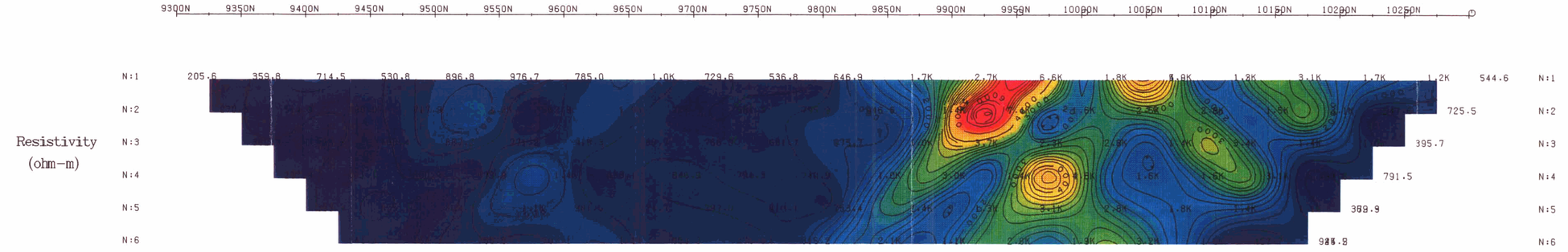
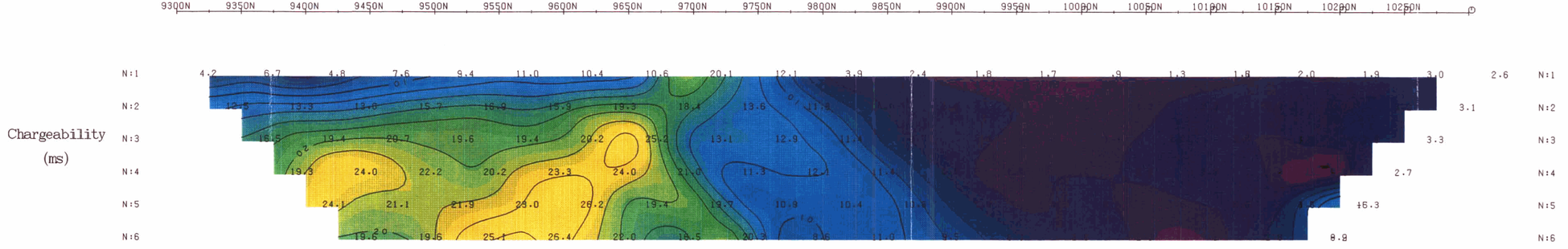




PLACER DOME CANADA LTD.

MARS PROJECT

NTS 105 E

DATE : 13 SEP 97 | REF : 97-29

SCALE ◻ 1: 2500

AMEROK GEOSCIENCES LTD.

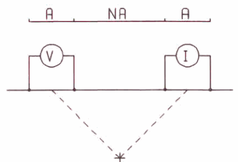
DWG 10

LINE : 11600 E

093874

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY



N = 1, 2, 3, 4, ...
"A" SPACING = 50.0 METRES

REGISTERED PROFESSIONAL GEOPHYSICIST
M.A. POWER
LICENSEE
18 Sep 97
N.W.T.

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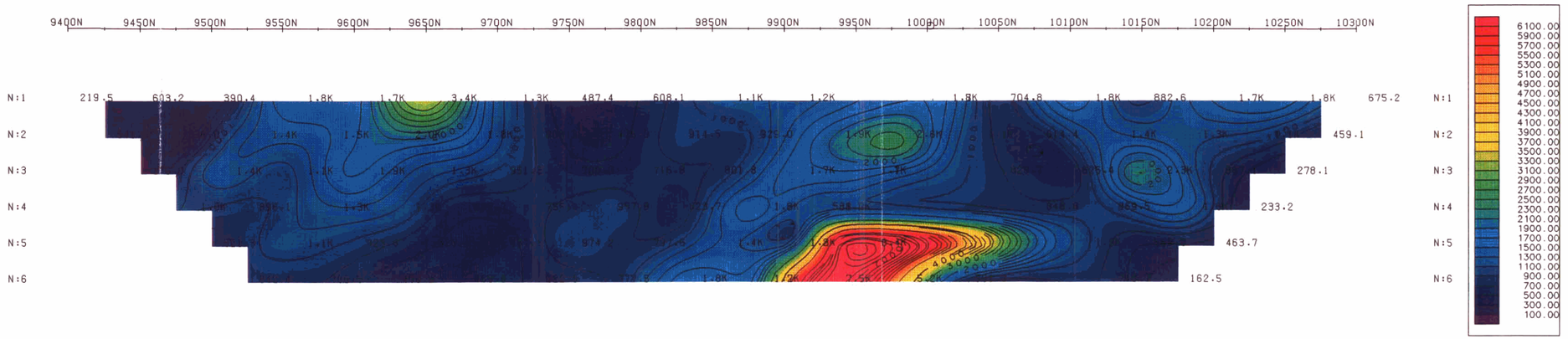
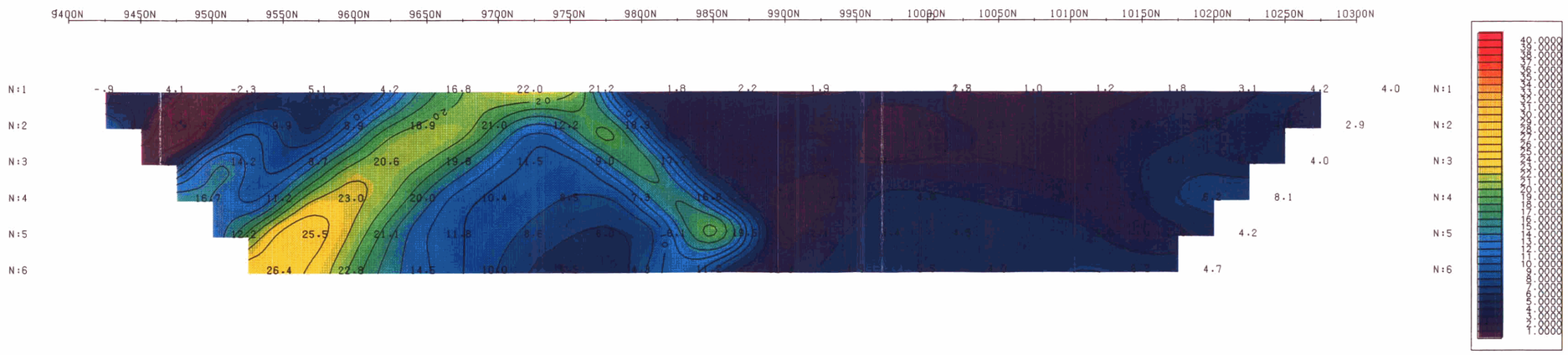




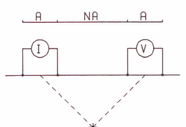
Data II

LINE : 11800 E

093874

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY



N = 1, 2, 3, 4, ...
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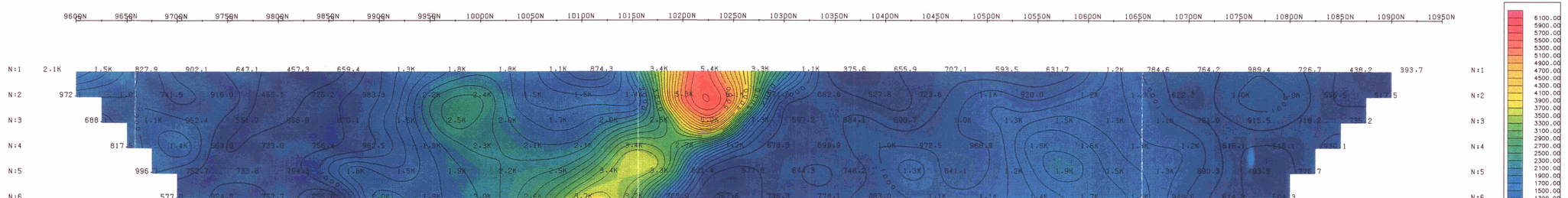
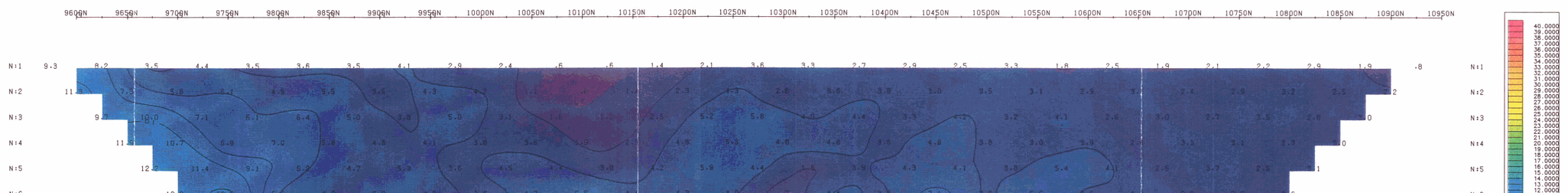
Resistivity (ohm-m)



Chargeability (ms)

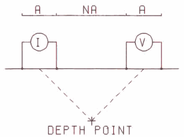


Dwg 12

LINE : 12000 E

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY



N = 1, 2, 3, 4, ...
"A" SPACING = 50.0 METRES

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MARS PROJECT

NTS 105 E

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SCALE ▫ 1: 2500

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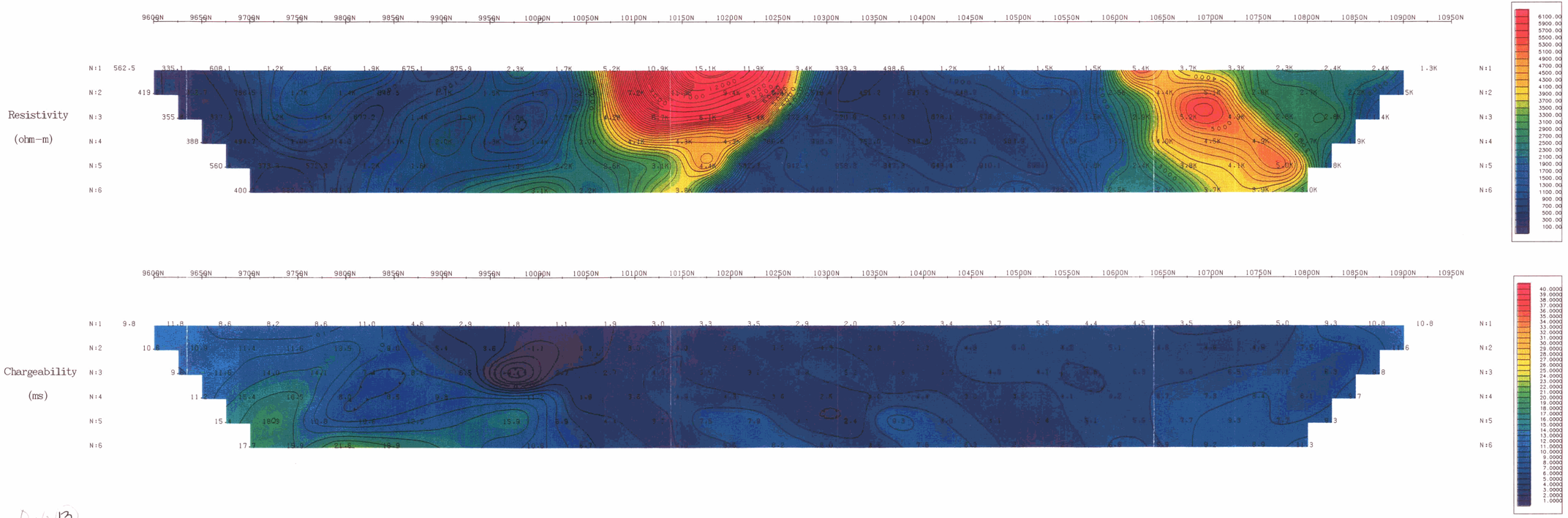
093874

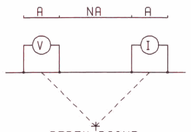


Dwh 13

LINE : 12200 E

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY



N = 1, 2, 3, 4, ...
"A" SPACING = 50.0 METRES

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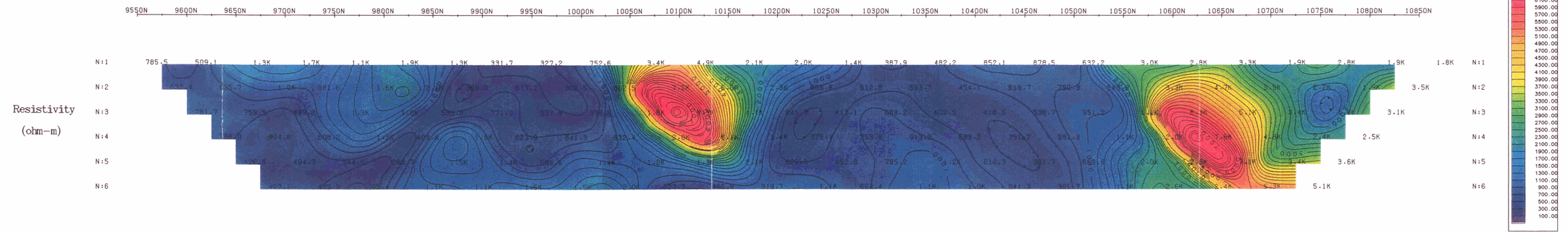
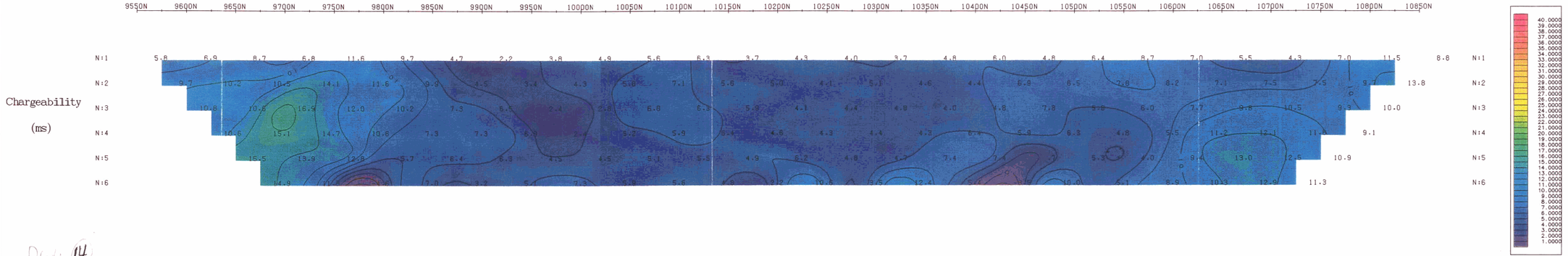




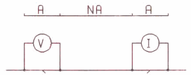
Dwg 14

LINE : 12400 E

093 874

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY



DEPTH POINT

N = 1, 2, 3, 4, ...
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15 Sep 97

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MARS PROJECT

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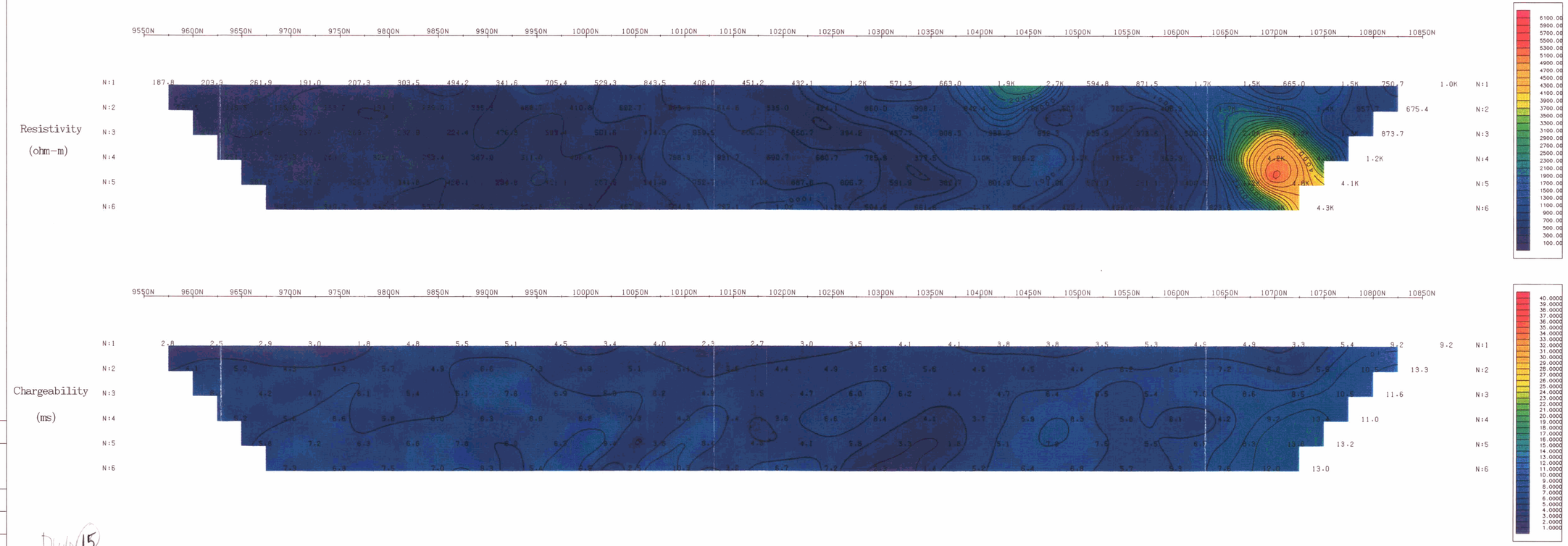

15

APPENDIX III

AIRBORNE GEOPHYSICAL SURVEY REPORT and MAPS

LOGISTICS REPORT

ON A

COMBINED HELICOPTER-BORNE
RADIOMETRIC AND MAGNETIC SURVEY
MARS PROJECT
YUKON TERRITORY

FOR

PLACER DOME CANADA
Kamloops Exploration
1440 Hugh Allen Drive
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BY

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November 27, 1997

Kevin Killin HBsc
Senior Geophysicist

J9783

TABLE OF CONTENTS

LIST OF APPENDICES 3

1. INTRODUCTION 6

2. LOCATION, ACCESS AND TOPOGRAPHY 6

3. SURVEY PROCEDURES AND THE PHYSICAL SURVEY 8

3.1 SURVEY PROCEDURES 8
3.2 THE PHYSICAL SURVEY 8

4. DELIVERABLES 9

5. AIRCRAFT AND EQUIPMENT 10

5.1 AIRCRAFT 10
5.2 MAGNETOMETER 10
5.3 SPECTROMETER 10
5.4 IN-FIELD PROCESSING 11
5.5 ANCILLARY SYSTEMS 11
BASE STATION MAGNETOMETER 11
RADAR ALTIMETER 11
TRACKING CAMERA 11
GPS NAVIGATION SYSTEM 11
ANALOGUE RECORDER 12
DIGITAL RECORDER 12
5.6 EQUIPMENT RACK AND INSTALLATION 13

6. DATA PROCESSING AND PRESENTATION 14

6.1 IN-FIELD PROCESSING 14
6.2 BASE MAP 14
6.3 FLIGHT PATH MAP 14
6.4 DIGITAL TOPOGRAPHY MAP 14
6.5 MAGNETIC DATA 15
TOTAL MAGNETIC INTENSITY 15
CALCULATED VERTICAL MAGNETIC GRADIENT 15
COLOUR SHADOW MAP 15
6.7 RADIOMETRICS PROCESSING 15

9. CONCLUSIONS AND RECOMMENDATIONS 16

REFERENCES 17

APPENDIX 1 18

PERSONNEL 18

APPENDIX 2 19

GENERAL INTERPRETIVE CONSIDERATIONS 19

MAGNETOMETER DATA 19
RADIOMETRIC DATA 19

APPENDIX 3 22

STATEMENT OF QUALIFICATIONS 22

LIST OF APPENDICES

APPENDIX 1 - Personnel
APPENDIX 2 - General Interpretive Considerations
APPENDIX 3 - Certificate of Qualifications

LIST OF MAPS

The survey data are presented in a set of numbered maps in the following format:

I BLACK LINE MAPS: (Scale 1:10,000)

Map No.	Description
1.	TOPOGRAPHIC BASE MAP ; with flight lines.
2.	TOTAL FIELD MAGNETICS MAP; with base map and superimposed contours.
3.	CALCULATED VERTICAL MAGNETIC GRADIENT; with base map and superimposed contours.

II COLOUR MAPS: (Scale 1:10,000)

1.	TOTAL FIELD MAGNETICS; with superimposed contours, and flight lines.
2.	CALCULATED VERTICAL MAGNETIC GRADIENT; with superimposed contours and flight lines.
3a	TOTAL COUNTS; counts in the total count window with superimposed contours, flight lines and EM anomaly symbols.
3b	POTASSIUM CHANNEL; counts in the potassium window with superimposed contours, flight lines and EM anomaly symbols.
3c	URANIUM CHANNEL; counts in the uranium window with superimposed contours, flight lines and EM anomaly symbols.
3d	THORIUM CHANNEL; counts in the thorium window with superimposed contours, flight lines and EM anomaly symbols.
4	DIGITAL ELEVATION MODEL; elevation model calculated from the difference between the barometric and radar altimeters, with base map, flight lines and manual fiducials.

III COLOUR SHADOW AND TERNARY MAPS: (Scale 1:10,000)

1. TOTAL MAGNETICS INTENSITY COLOUR SHADOW MAP; with illumination source at declination of 45° and inclination of 45°.

2. TERNARY MAP OF RADIOMETRICS; ternary map of the potassium, thorium, and uranium windows.

REPORT ON A
COMBINED HELICOPTER-BORNE
RADIOMETRIC
AND MAGNETIC SURVEY
MARS PROJECT
YUKON TERRITORY
CANADA

1. INTRODUCTION

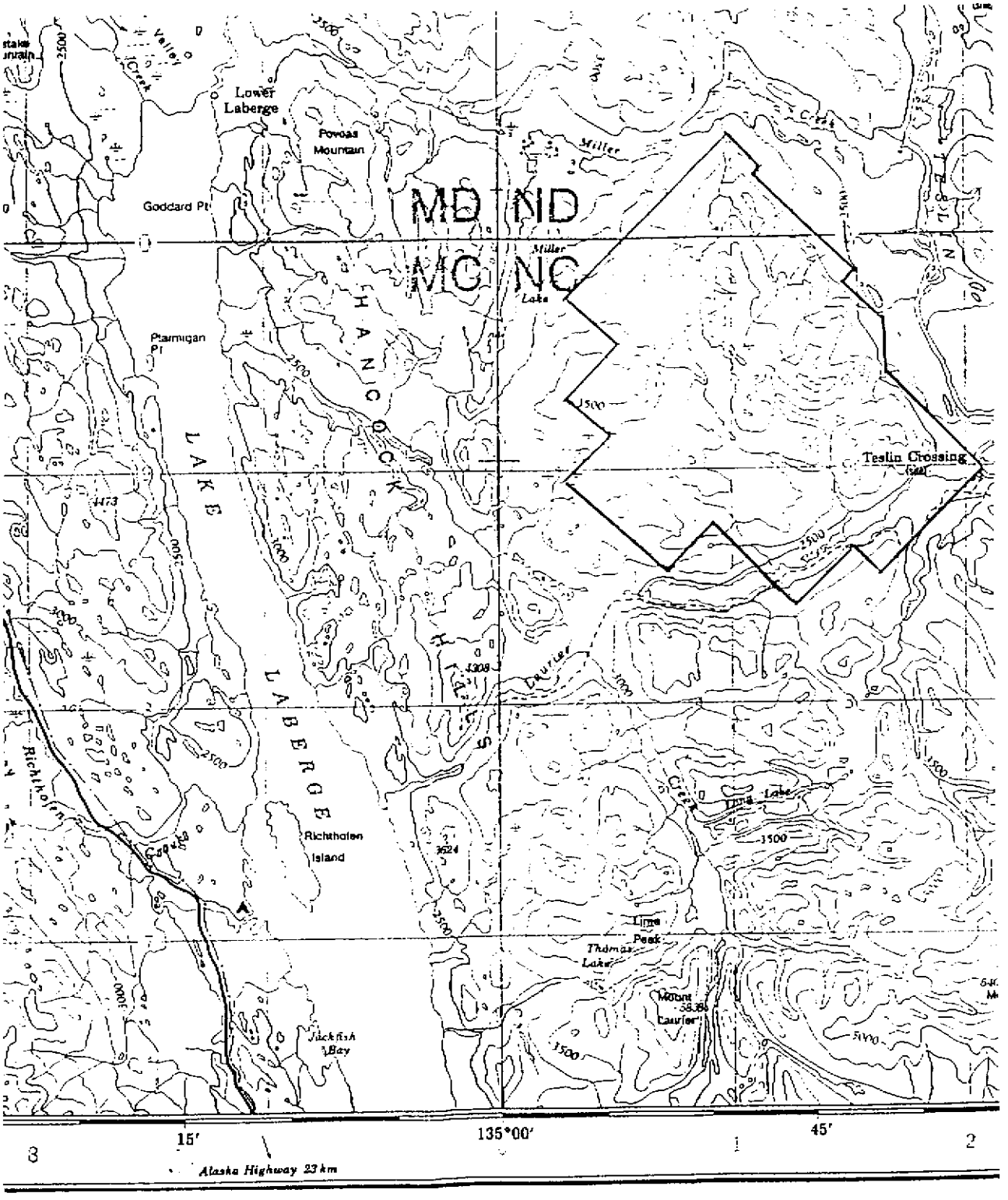
An helicopter-borne radiometric and magnetic survey was flown over Placer Dome's interests in the Whitehorse region of Canada's Yukon Territory as part of an on-going effort to delineate areas of favourable mineralisation. The acquisition of magnetometer and spectrometer data were used as mapping tools.

The survey was flown between September 7, and September 13, 1997. Flight lines in a NE-SW direction and spaced 100 metres were used for the survey lines. Tie lines were flown at a nominal spacing of 2,000 metres perpendicular to the flight lines. Total survey coverage is 2092 line kilometres (2012 km survey lines and 80 km cross lines). A total of 187 traverse lines and 8 control lines were required to cover the survey block. Aerodat's internal reference for this contract is J9783

2. LOCATION, ACCESS AND TOPOGRAPHY

The area can be found on the National Topographic Series map referenced as Lake Laberge, 105E. The survey area is also shown on the attached index map that includes topography and geographic coordinates. An index map also appears on all black line map products. The area is located in the Yukon Territory of Canada, about 45 kilometers from Whitehorse. The elevation of the area ranges from 950 to 1500m above sea level.

INDEX MAP



Lower Laberge
Povoas Mountain
Goddard Pt
MD ND
MC NC
Miller Lake
Miller Creek
Ptarmigan Pt
HANCOCK HILLS
LAKE LABERGE
Teslin Crossing
Laurier Creek
Richthofen Island
Richthofen Creek
Lime Peak
Thomas Lake
Mount Laurier
Jackfish Bay
15'
135°00'
45'
Alaska Highway 23 km

3. SURVEY PROCEDURES AND THE PHYSICAL SURVEY

3.1 Survey Procedures

Aircraft ground speed is maintained at approximately 60 knots (30 metres per second). An aircraft terrain clearance of 60 metres which is consistent with the safety of the aircraft and crew was attempted.

A global positioning system (GPS) consisting of a Magnavox MX 9212 assists in aircraft navigation and flight line control. The receiver antenna is mounted on the magnetometer bird. A base station is used to record static positions for the removal of Selective Availability (a signal degradation technique used by the military to deny the full accuracy of GPS to unauthorised users) from the kinematic readings of the helicopter GPS. The base station GPS was located at the airport complex, away from cultural effects. Differential processing of the GPS data in the field and in the Mississauga office utilises a PC using software supplied by the manufacturer.

Placer Dome provided the UTM coordinates of the survey area corners. These coordinates are programmed into the navigation system along with the survey grid. As a check, the operator enters manual fiducials over prominent topographic features. These manual fiducials are a confirmation of the electronic navigation when plotted on topography maps. Survey lines showing excessive deviation as determined by the in-field processing are re-flown.

Aircraft position is registered by the navigation system. The operator calibrates the geophysical systems at the start, middle (if required) and end of every survey flight. During calibration the aircraft is flown away from ground effects to record electromagnetic zero levels.

3.2 The Physical Survey

The survey was completed on September 13, 1997. Twenty-two survey flights were required to complete the project . Principal personnel are listed in Appendix 1.

Radiometric sample checks were made at the beginning and end of each day's flying using both a thorium and uranium source. Excessive variations (greater than 5% from the mean) of the counts in the background removed windows was cause for the suspension of surveying until the problem has been resolved.

In-field processing consisting of data verification, and backups and some raw outputs was conducted using a Pentium processor based PC and Geosoft software. Differentially corrected flight paths, raw magnetometer, raw radiometric, and radar altimeter were outputted in the field. A colour dot matrix printer/plotter was used as the output device.

4. DELIVERABLES

The maps and report on the results of the survey are presented in two copies. Two copies of the colour, colour shadow, and Ternary maps are also in an accompanying map tube.

All maps show UTM grid coordinates and the survey boundary. The presented coordinate system is NAD 83, using a central meridian of 135 degrees west. A full list of all map types is at the beginning of this report. A summary follows:

MAP NO.	DESCRIPTION
BLACK LINE	
1	Topographic Base Map
2	Total Field Magnetics
3	Calculated Vertical Magnetic Gradient
COLOUR with Embedded contours	
1	Total Field Magnetics
2	Calculated Vertical Magnetic Gradient
3	Total Counts
3	Potassium
3	Uranium
3	Thorium
4	Digital Elevation Model

The processed digital data, including both the profile and the gridded data, is on CD ROMs (ISO 9660). Profile data is written as columnar ASCII records and the gridded data as standard Geosoft PC grids. A full description of the format is included with the package. All gridded data can be displayed on PCs using the Aerodat AXIS (Aerodat Extended Imaging System) or, via grid conversions, on other imaging software. The complete data package includes all analogue records, base station magnetometer records, flight path video tape and original map cronaflexes.

5. AIRCRAFT AND EQUIPMENT

5.1 Aircraft

The survey aircraft was a Eurocopter helicopter SA315B (Lama) from Questral Helicopters, Calgary. J. Barabe of Aerodat acted as navigator and equipment operator. Aerodat performed the installation of the geophysical and ancillary equipment in Whitehorse September 7. Where possible during surveys, the survey aircraft flies at a mean terrain clearance of 60 metres (200 feet) and speed of 60 knots.

5.2 Magnetometer

An optically pumped cesium vapour magnetometer sensor manufactured by Scintrex, coupled to a proprietary magnetometer console designed by Aerodat measures the Earth's magnetic field. The sensitivity of this instrument is 0.001 nanoTesla at a sampling rate of 0.1 second. The sensor is towed in a bird 15 metres below the helicopter, nominally 45 metres above the surface.

5.3 Spectrometer

An Exploranium GR-820 gamma-ray spectrometer coupled to Exploranium GPX 1024/256 sensors was used to record seven channels of radiometric data. The sensors have four 4" x 4" x 16" crystals (4 pi geometry) plus one 4" x 4" x 16" upward looking crystal. The total downward looking crystal volume is therefore 1024 cubic inches (16.8 litres). Gain stabilization is maintained on each crystal separately by following the K photopeak.

The count rates in all 256 channels and in the Total Count (TC), potassium (K), uranium (U), and thorium (Th), Cosmic, and Upward Uranium windows was recorded in digital format. Daily sample checks were performed using uranium and thorium samples. The spectrometer was calibrated daily using a hand sample and will be automatically gained by monitoring the peak. The spectrometer is stabilised on natural potassium or thorium during the flying. An established test line was flown near the survey area to determine the level of signal attenuation.

Channels recorded and their energy windows were as follows:

Channel	Window
Total Count	0.40 to 2.81 MeV
Potassium	1.37 to 1.57 MeV
Uranium	1.66 to 1.86 MeV
Thorium	2.41 to 2.81 MeV
Uranium up	1.66 to 1.86 MeV
Cosmic	3.0 MeV and above

All channels of radiometric data were recorded at a 1 second update rate (counts per second - cps). Digital recording resolution is 1 cps.

5.4 In-field Processing

The infield processing unit consisted of a Pentium class PC with the proper tape drives and backup devices. A colour monitor and a colour dot matrix printer/printer was used. Software was Geosoft's Geophysical Processing and Presentation software.

5.5 Ancillary Systems

Base Station Magnetometer

A second Scintrex magnetometer sensor and Aerodat console is set up at the base of operations to record temporal variations of the earth's magnetic field. Synchronization of the base station magnetometer's clock with that of the airborne system is done to facilitate later correlation. Recording resolution is 0.01 nT with an update rate of one second. Magnetic field variation data are recorded both digitally and on printer plots. The date and chart settings are given at the start of the record.

The magnetometer base station was not operational in the first part of the survey due to a malfunctioning cesium sensor. Flights 1 to 8 do not have base station coverage. Aur's on-site representative agreed that the tie-levelling for these flights will be sufficient.

Radar Altimeter

A King KRA-10A radar altimeter was used to record the terrain clearance. The output from the instrument is a linear function of altitude.

Tracking Camera

A Sony colour video camera records the flight path on VHS video tape. The camera operates in continuous mode. The video tape also shows the flight number, 24 hour clock time (to .01 second), and manual fiducial number.

GPS Navigation System

The GPS navigation system in the helicopter consists of a Magnavox MX 9212 with an Aerodat NavPilot navigation console and a notebook computer to record data. On the ground, a Novatel GPS receiver and notebook computer datalogger is used as a GPS base station.

Analogue Recorder

An RMS dot matrix recorder displays the data during the survey. This allows the geophysical operator to scan the data as it is collected to ensure that the system is functioning properly. Record contents are as follows:

LABEL	PARAMETER	CHART SCALE
GEOPHYSICAL SENSOR DATA		
MAGF	Total Magnetic Intensity, Fine	2.5 nT/mm
MAGC	Total Magnetic Intensity, Coarse	25 nT/mm
TCDN	Total Count	50 cps/mm
K-40	Potassium	5 cps/mm
URDN	Uranium	2.5 cps/mm
TH	Thorium	2.5 cps/mm
COSM	Cosmic	5 cps/mm
ANCILLARY DATA		
RALT	Radar Altimeter	10 ft/mm
BALT	Barometer	50 ft/mm
GALT	GPS Altimeter	50 ft/mm

The zero level of the radar altimeter is 5 cm from the top of the analogue record. A helicopter terrain clearance of 60 m (200 feet) should therefore be seen some 3 cm from the top of the analogue record.

Chart speed is 2 mm/second. The 24 hour clock time is printed every 20 seconds. The total magnetic field value is printed every 30 seconds. The ranges from the radar, and navigation system are printed every minute.

Vertical lines crossing the record are manual fiducial markers activated by the operator. The start of any survey line is identified by two closely spaced manual fiducials. The end of any survey line is identified by three closely spaced manual fiducials. Manual fiducials are numbered in order. Every tenth manual fiducial is indicated by its number, printed at the bottom of the record. Background calibration sequences are present at the start and end of each flight and at intermediate times where needed.

Digital Recorder

A DGR-33 data acquisition system digitises and records the survey data on magnetic media. Contents and update rates are as follows:

DATA TYPE	SAMPLING RATE	RESOLUTION
Magnetometer	0.1 s	0.001 nT
Radiometrics (256 Channels)	1.0 s	1 cps
Position (3 Channels)	0.1 s	0.1 m

Altimeter (2 Channels)	0.2 second	0.05 m
Manual Fiducial		
Clock Time		

5.6 Equipment Rack and Installation

The power supply and the data acquisition system is mounted on an equipment rack which is installed into the helicopter. The spectrometer crystals are secured to the external baskets of the Lama helicopter. Wires are run through the helicopter to connect on to the tow cable outside. The tow cable supports the EM and magnetometer birds during flight via a safety shear pin connected to the helicopter hook. The major power and data cables have a quick disconnect safety feature as well. Installation is by Aerodat's crews and must be certified before surveying.

6. DATA PROCESSING AND PRESENTATION

6.1 In-field Processing

The in field processing products were generated on site some one or two days after each survey flight. Plots of the radar altimeter data showed where the helicopter was flying too high. The differentially corrected flight paths were used to determine the quality of the line spacing. Raw magnetometer and EM plots were used to assess the quality of the survey and to determine if in fill flying had to be done.

6.2 Base Map

The base map was expanded from 1:50000 scale topographic maps. Prominent topographic features—drainages, roads and towns and the survey boundary were used to form the planimetric base for the colour maps.

6.3 Flight Path Map

The flight path record was differentially corrected using the base station GPS and was recorded in geographic coordinates using the WGS84 Spheroid. These positions were then converted into UTM eastings (x) and UTM northings (y) using the North American Datum 1983 Spheroid, and a central meridan of 135 degrees west of Greenwich (Zone 8). Aircraft speed checks using the flight path data are done to identify any offsets which are removed. Positions are updated every 0.1 seconds.

The manual fiducials activated by the survey operator are shown as a small circle and labeled by fiducial number. The 24 hour clock time is shown as a small square, plotted every 30 seconds. Small tick marks are plotted every 2 seconds. Larger tick marks are plotted every 10 seconds. The line numbers are given at the start and end of each survey line. Survey lines are denoted as 10XXX series of lines, while tie lines are 80XXX series lines.

The flight path map is merged with the base map by matching UTM coordinates from the base maps and the flight path record. The match is confirmed by checking the position of prominent topographic features as recorded by manual fiducial marks or as seen on the flight path video record.

6.4 Digital Topography Map

A digital elevation model (DEM) which is a digital representation of an elevation map has been generated and plotted as a topography map. The elevations in the DEM have been calculated from the difference between the barometric altimeter and the radar altimeter along the flight path positions. The GPS elevations were used to

remove the slight drift of the barometric altimeter. There are slight levelling errors in the generated topographic data, mostly noticed by a slight herringbone ripple pattern on slopes perpendicular to the flight lines. This is caused by the radar altimeter being pointed forward slightly and by the helicopter not being horizontal all of the time. In the extreme cases where the radar altimeter has pointed too far down slope (due to the helicopter's nose up maneuver when descending down steep slopes), the data has been edited out.

The DEM topographic maps are at a scale of 1:10,000 and are plotted in a UTM coordinate system. The planimetry seen in the maps were digitised separately from the published 1:50,000 scale base maps and are plotted as a simple overlay without any coordinate shifts.

6.5 Magnetic Data

Total Magnetic Intensity

The aeromagnetic data were corrected for diurnal variations by adjustment with the recorded base station magnetic values. This is followed by fine levelling using tie line intersection information. The corrected profile data were interpolated on to a regular grid using an Akima spline technique. A 5 by 5 Hanning filter was passed over the preliminary grid. The grid provided the basis for threading the isomagnetic contours. The minimum contour interval is 2 nT with a grid cell size of 50 m.

Calculated Vertical Magnetic Gradient

The vertical magnetic gradient is calculated from the gridded total magnetic intensity data. The calculation is based on a 17 x 17 point convolution in the space domain. The results are contoured using a minimum contour interval of 0.1 nT/m. Grid cell sizes are the same as those used in processing the total field data.

Colour Shadow Map

The colour shadow map is produced by calculating and displaying the reflectance of a surface defined by the total magnetic intensity grid and the illumination angle. The reflectance of a surface is a measure of the proportion of illuminating light which will be reflected back to an observer from the surface. The reflection at each grid cell is given by the cosine of the angle between the surface normal and a specified illumination source. Changing the illumination source direction emphasizes features normal to the source direction.

The declination and inclination of the illumination source were 45° and 45° respectively.

6.7 Radiometrics Processing

The processing of radiometrics data involves:

1. correction for system dead-time

2. background removal
3. effective height calculation (correct for pressure/temperature change)
4. Compton scattering correction
5. height correction

The data is then subjected to a minor of amount of filtering for presentation purposes. These are:

6. low pass profile filter (7 pt Hanning for data presentation only)
7. gridding and low pass 5X5 Hanning filter.

As part of the processing step, Aerodat calculates a Digital Elevation Model (DEM) via the subtraction of the radar altimeter from the barometric altimeter. The barometric altimeter is leveled using the GPS altimeter. The DEM is calculated as a check on the barometers. Also note that the terrain clearance correction is limited to 250 metres to prevent unstable amplification of low counts.

Leveling of the radiometrics was carried to the level such that no streaking is evident on enhanced grid images of individual channels or on an RGB mixed image.

9. CONCLUSIONS AND RECOMMENDATIONS

A helicopterborne radiometric and magnetometer survey was successfully performed over Placer Dome's property in the Yukon territory. The data is of high quality and is representative of the geophysical response of the earth in the area. The survey data is within the specifications of the contract between Aerodat and Placer Dome, and will be an asset in an exploration program.

Respectfully submitted,



Kevin J. Killin
Senior Geophysicist

for

AERODAT INC.

November 27, 1997

Aerodat reference: J9783

REFERENCES

Grant, F.S., and West, G.F., **Interpretation theory in applied geophysics**, McGraw-Hill Inc., Toronto, 1965.

Hood, P., Gradient Measurements in Aeromagnetic Surveying, *Geophysics*, **vol. 30**, 1965.

Kanasewich, E.R., **Time sequence analysis in Geophysics**; University of Alberta Press, Edmonton, 1973.

APPENDIX 1

PERSONNEL

FIELD

Flown	September 7 to September 13
Pilot(s)	Mitch Shore
Geophysical Operator	Jean Barabe
Field Geophysicist	Greg Zimmer

OFFICE

Processing	Ed Hamilton
	George Teed
Report	Kevin Killin

APPENDIX 2

GENERAL INTERPRETIVE CONSIDERATIONS

Magnetometer Data

The application for magnetometer surveys is the recognition and delineation of structural or stratigraphic environments favourable for mineral deposits. Specifically, this may involve the delineation of volcanic-sedimentary contacts, intrusive bodies, faults, shears and alteration zones.

The physical parameter which the magnetic method maps is based is magnetic susceptibility and/or remanent magnetization. Generally, magnetic susceptibility is lowest in sedimentary and metasedimentary rocks. The average susceptibility of metamorphic rocks is slightly higher, being about 10 times that of sedimentary rocks. Acid igneous rocks are about twice as susceptible on average as metamorphic rocks. Ultrabasic igneous rocks have the highest susceptibilities and are about 100 times more susceptible than sedimentary rocks. The possible range of susceptibilities for any one rock type is very large and dependent upon the actual concentration of magnetic minerals, chiefly magnetite, contained within the rock.

Faults are recognised as linears and by offsets of other magnetic features. Shears and sericitic alteration zones are areas where ground water flow or alteration may have destroyed the magnetite of the host rocks. This can create areas of lower magnetic susceptibility.

The magnetometer data can be further processed in different ways. It is often filtered to produce a calculated vertical gradient map. Hood, (1965), demonstrated that in areas of steep magnetic inclination, the zero vertical gradient contour level defines the contacts of steeply dipping bodies. Vertical gradient is used to help map contacts and near surface features.

Radiometric Data

The ability to detect natural occurring radiation, whether on the ground or from an airborne platform, depends on a number of factors listed as follows:

Count Time and Detector size

Measurements or count rate statistics are more reliable the longer the detector is in position over a particular location. Therefore in airborne surveying, traverse speed is an important factor in detecting radiation sources. For this reason STOL aircraft and helicopters are a favoured platform for radiometric surveys.

The detector crystal volume and thickness determine the sensitivity of the radiometric system to radiation. For accurate measurement and differentiation of

higher energy levels of radiation, a large crystal volume (minimum of 16.8 litres) is a pre-requisite.

Distance from Source (Altitude)

The attenuation or absorption of radiation in air, although not a significant factor in ground surveys, is a factor in airborne surveys. Normalization of the radiation amplitude data for altitude variations of the aircraft during the survey is necessary. The attenuation is not significant for large areal sources of radiation but is quite severe for localized point sources.

Overburden Cover

Radiation can be completely masked by one foot of rock or three feet of unconsolidated overburden.

Source Geometry

A large exposed outcrop of slightly radioactive material, such as granite which usually has a high potassium count, will be easily detectable from the air. A small outcrop of highly radioactive material, containing an appreciable amount of pitchblende for instance, may not be detectable unless the sensor passes directly over the outcrop and/or is quite close to it.

Source Characteristics

The type and percentage concentration of radioactive minerals present in the rock will determine radiation amplitudes and therefore the ability of the sensor to measure the radiation.

The above factors must be taken into consideration when evaluating and interpreting radiometric surveys. Variations in radiation amplitudes may only be a factor of overburden cover. As a result, an outcrop map of the survey area is very useful for initial evaluation of radioactive element concentrations.

Shales and felsic intrusives tend to have high potassium and thorium levels. Mafic intrusives, sandstone and especially limestone have concentrations of one half to one tenth of the highest levels. Specific intrusives types, such as pegmatites, can have levels of potassium, uranium and thorium, in the order of three to four times the amounts normally present. Uranium ore can contain concentrations of radioactive minerals one to four orders of magnitude greater than normally encountered.

Thus, interpretation of the source of radioactive anomalies, even when the uranium, thorium and potassium thresholds are separated, can be difficult and ambiguous. In some geological environments, specific rock units have higher or lower potassium/thorium, potassium/uranium or thorium/uranium ratios. Additional diagnostic information is sometimes available when such ratio maps are generated and compared to known geological parameters.

Electromagnetic data

Most sulphides (sphalerite is one exception) are many orders of magnitude more conductive than the surrounding host rocks. A time varying electromagnetic field can induce electrical currents in the sulphides. The secondary electromagnetic field from the induced currents can be measured in a receiver coil which provides a detection method for conductive sulphides (Grant and West, 1965). Other sources can produce a conductive response which mimics the response due to sulphides. Graphite, clays, and water filled shears are examples. Helicopter EM responses from coplanar and coaxial coils over simplified targets are shown in this Appendix.

One of the criteria for the volcanogenic massive sulphide targets to be economically viable is a minimum size. A tabular body of 500 by 500 metres by 10 metres thickness representing an idealized and simplified massive sulphide deposit contains

approximately 10 million tonnes of sulphides. Given these dimensions, flight lines spaced 200 metres will cross the hypothetical ore body twice—which is sufficient for confirmation of the EM response.

Apparent resistivity data

A resistivity map portrays all of the EM information for that frequency over the survey area. This is in contrast to an EM anomaly map which only shows the interpreted anomalies from the survey. By representing the response in the form of contour plans, a large dynamic range is represented. Having the values in terms of a physical parameter (resistivity) instead of a field value (ppm of primary field), makes the resistivity parameter a better mapping tool.

In general, sedimentary rocks and unconsolidated materials are more conductive than most of the igneous rocks. This is primarily due to the higher porosity and moisture content of the former. Metamorphic rocks are highly variable due in part to their wide range of porosities and moisture content. Clays and hydrous minerals such as serpentine are generally good conductors and minor amounts of these material will decrease the resistivities. Apparent resistivity data is used in much the way as magnetometer data - that is, to delineate structural or stratigraphic environments favourable for mineral deposits.

APPENDIX 4

STATEMENT OF QUALIFICATIONS

I, Kevin Killin, am employed as a Geophysicist by Aerodat Inc at 6300 Northwest Drive, Mississauga, Ontario, L4V 1J7.

I graduated from the University of Western Ontario with an Honours Bachelor of Science degree in the Geophysics option in 1985

I am a member in the Society of Exploration Geophysicists—SEG (Tulsa), and a member of the Prospectors and Developers Association of Canada—PDAC (Toronto).

Since 1985, I have been involved in the use of geophysics for mineral exploration, geothermal site detection, and various engineering and environmental applications. I have either planned, supervised, conducted, processed, interpreted, and reported on geophysical surveys from Canada, the United States of America, South America, South East Asia, Europe and Africa.

The statements contained in this report and the conclusions reached are based upon evaluation and review of maps and information supplied by Aerodat Inc., and Placer Dome.

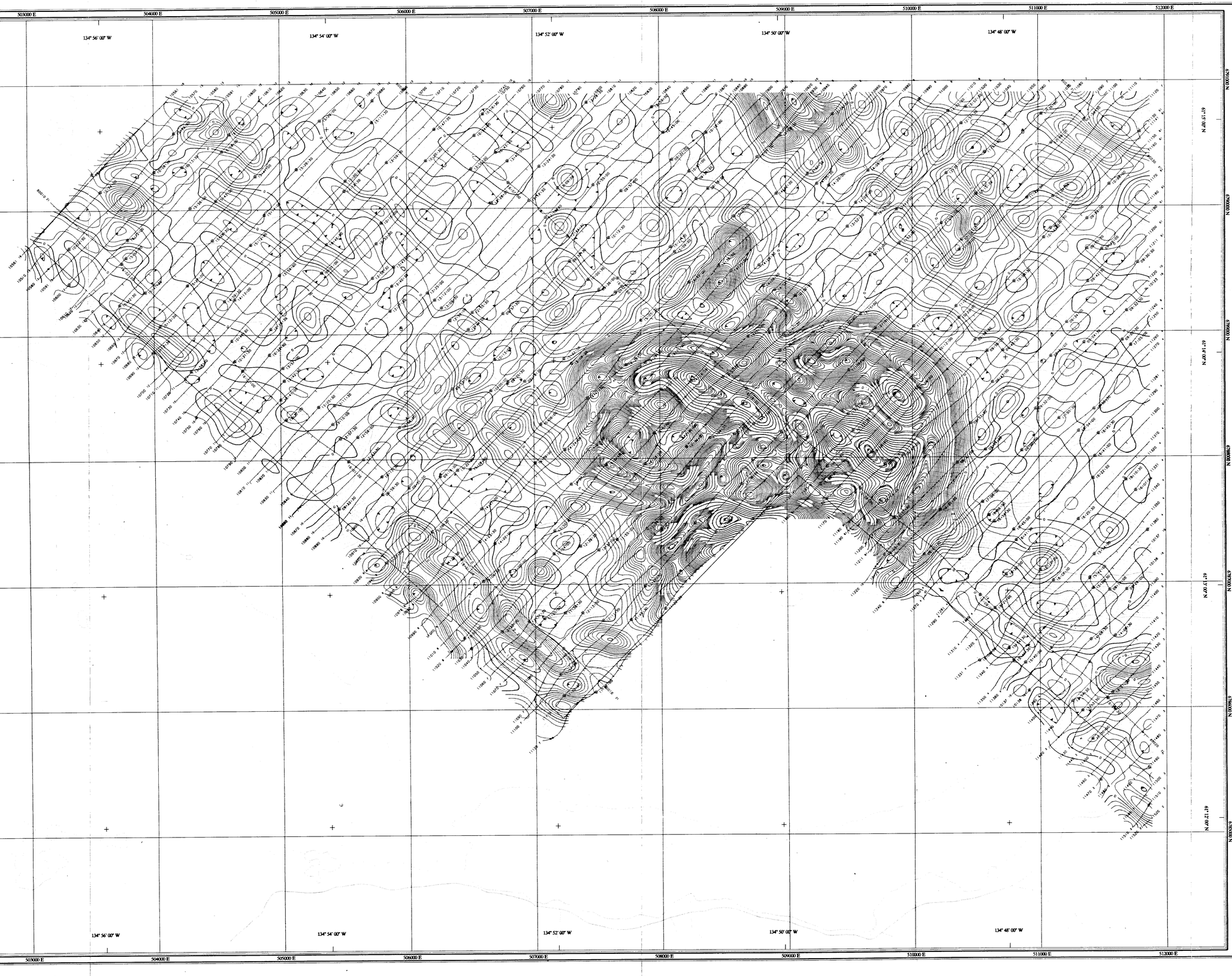
I have not visited the property nor hold any financial interest in the property.

Signed,

J9783
Mississauga, Ontario

Kevin J Killin HBsc.

November 27, 1997





Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.8°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

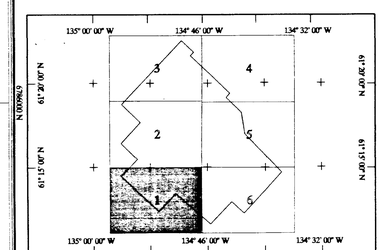
Average terrain clearance of 60m was monitored by radar and barometric altimeters.

VERTICAL GRADIENT

Vertical magnetic gradient contour data, calculated from the pole reduced gridded magnetics data by an FFT algorithm.

Map contours are in nanoTeslas/metre, and are multiples of those listed below:

- 0.025 nT/m
- 0.1 nT/m
- 0.50 nT/m
- 2.5 nT/m
- 10.0 nT/m



PLACER DOME CANADA

VERTICAL MAGNETIC GRADIENT

MARS PROJECT

YUKON TERRITORY

093874

SCALE 1:10 000

250 0 100 200 500 1000 METRES

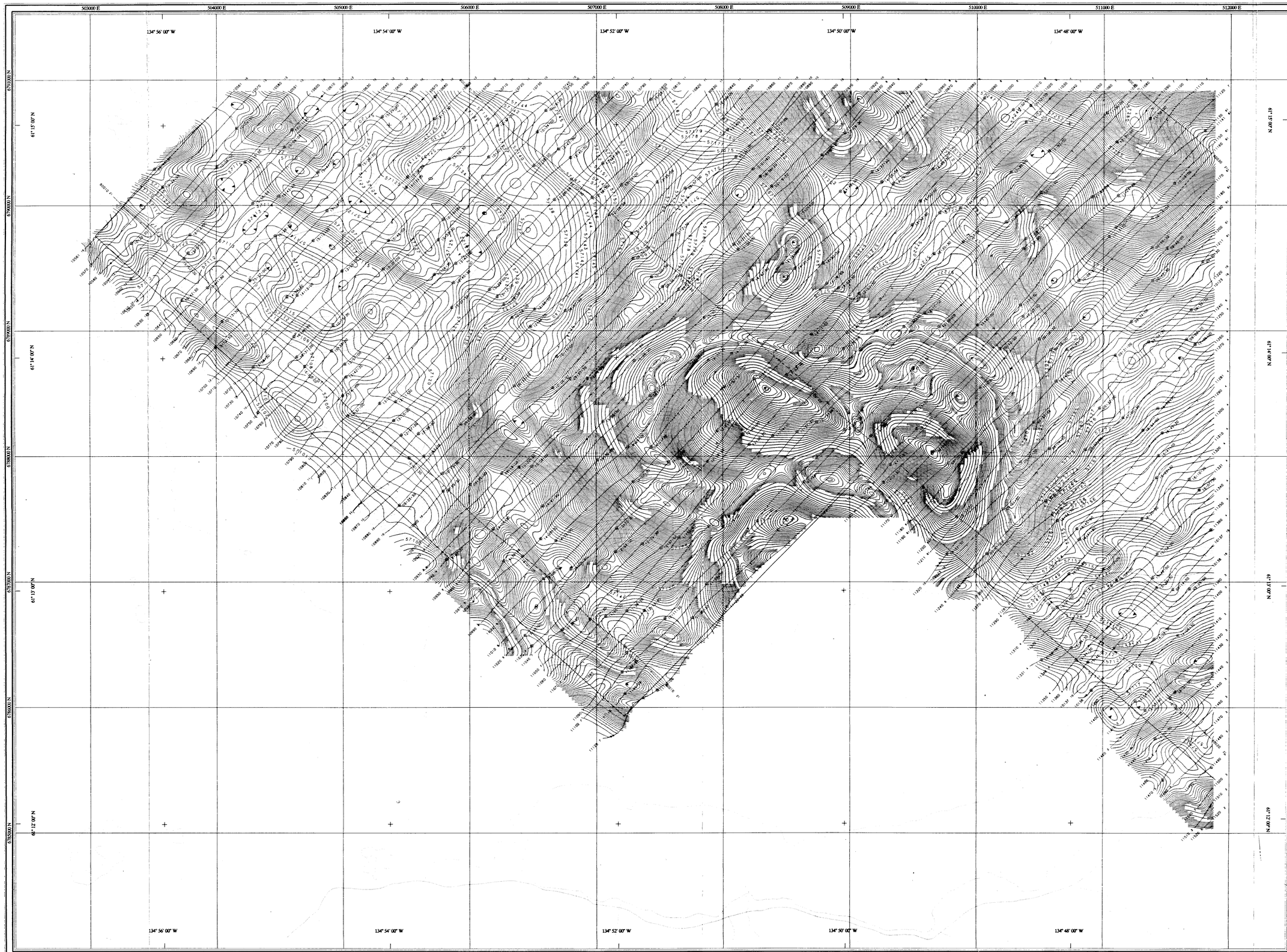
DIAND - YUKON REGION, LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2

Project : J9783 Map Ref : 1 - 3





Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 190m.

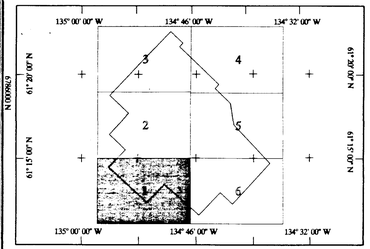
Average terrain clearance of 60m was monitored by radar and barometric altimeters.

TOTAL FIELD MAGNETICS

Total field magnetic intensity contour data, measured by a cesium high sensitivity magnetometer at an average sensor elevation of 45m, and corrected for diurnal variation.

Map contours are in nanoTeslas, and are multiples of those listed below:

- 1 nT
- 50nT
- 25 nT
- 100 nT
- 500 nT



PLACER DOME CANADA

TOTAL FIELD MAGNETICS

MARS PROJECT
YUKON TERRITORY

093 [illegible] 4

SCALE 1:10 000

250 0 100 200 500 1000 metres

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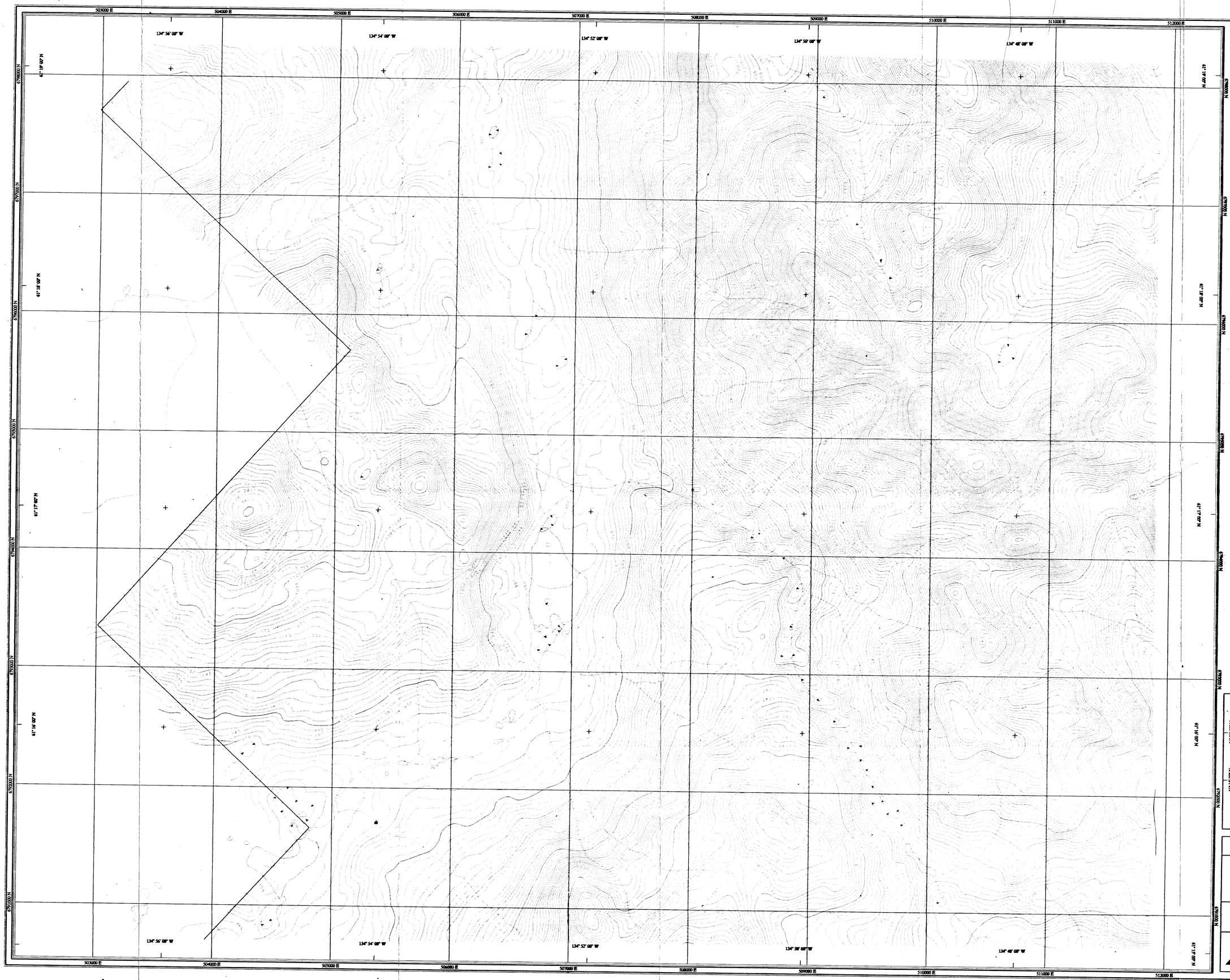
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2

Project : J9783 Map Ref : 1 - 2



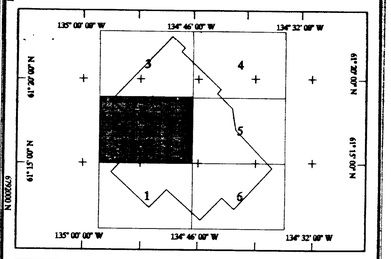


Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet.
Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 136° W



PLACER DOME CANADA

BASE MAP

MARS PROJECT
YUKON TERRITORY

093874

SCALE 1:10 000

DIAND - YUKON REGION LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783
Map Ref : 2 - 1

Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet.
Use diagram for reference only.

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Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

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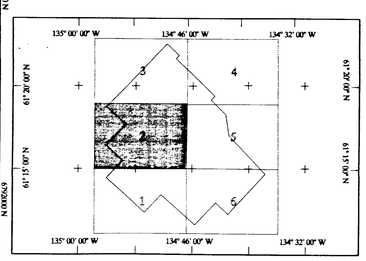
- 50nT
- 25 nT
- 100 nT
- 500 nT



PLACER DOME CANADA

TOTAL FIELD MAGNETICS

MARS PROJECT
YUKON TERRITORY

093B/7
093C/4

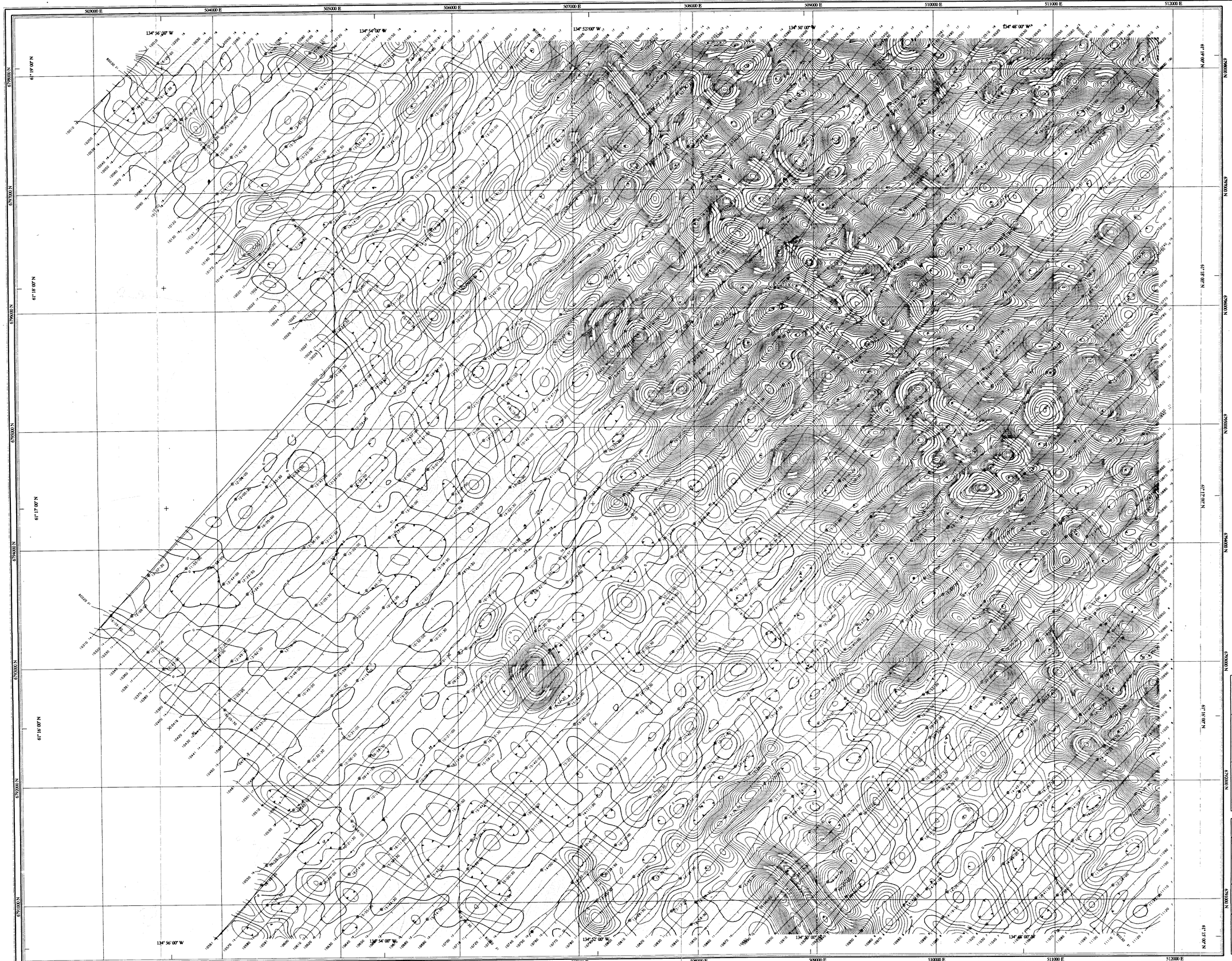
SCALE 1:10 000

250 0 250 500 750 1000 METRES

CANADA - YUKON REGIONAL BOUNDARY

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 2 - 2



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Star: True North
Arrow: Magnetic North

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Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

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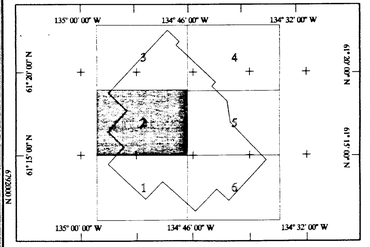
- 0.50 nT/m
- 2.5 nT/m
- 10.0 nT/m



PLACER DOME CANADA

VERTICAL MAGNETIC GRADIENT

MARS PROJECT
YUKON TERRITORY

093 874

SCALE 1:10 000

250 0 500 1000 1500 metres

YUKON REGION, LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 2 - 3

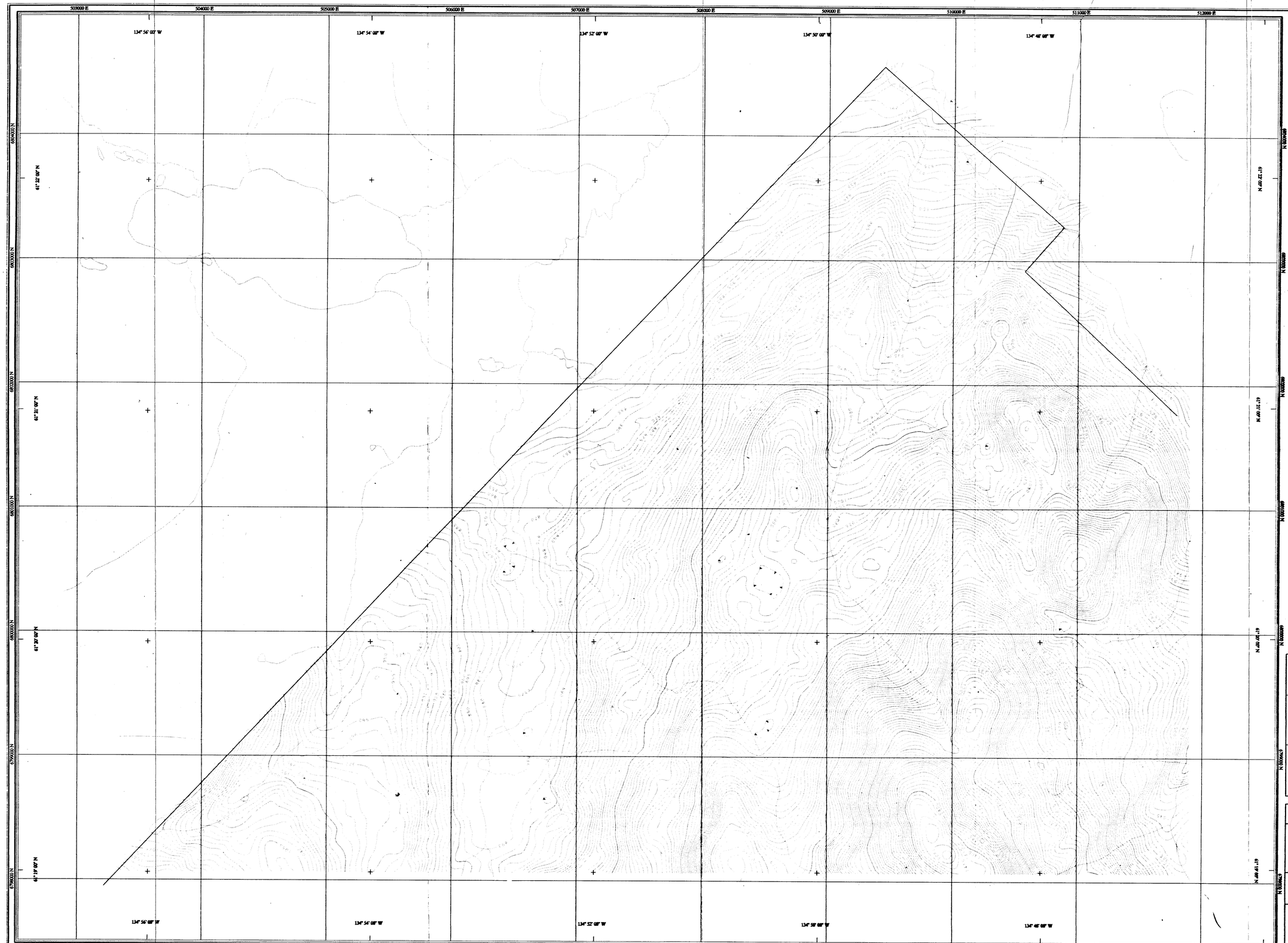
503000 E | 504000 E | 505000 E | 506000 E | 507000 E | 508000 E | 509000 E | 510000 E | 511000 E | 512000 E

134° 56' 00" W | 134° 54' 00" W | 134° 52' 00" W | 134° 50' 00" W | 134° 48' 00" W

6804000 N | 6803000 N | 6802000 N | 6801000 N | 6800000 N | 6799000 N | 6798000 N

N 60° 22' 19" | N 60° 18' 19"

N 6805999 | N 6805089 | N 6804179 | N 6803269 | N 6802359 | N 6801449 | N 6800539 | N 6799629 | N 6798719

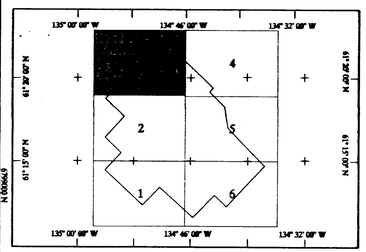


Squares: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.8°
Grid North - Magnetic North : 30.8°
Annual change : 0.3°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 136° W



PLACER DOME CANADA

BASE MAP

MARS PROJECT
YUKON TERRITORY

0938 A

SCALE 1:10 000

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787600 787800 788000 788200 788400 788600 788800 789000 789200 789400 789600 789800 790000 790200 790400 790600 790800 791000 791200 791400 791600 791800 792000 792200 792400 792600 792800 793000 793200 793400 793600 793800 794000 794200 794400 794600 794800 795000 795200 795400 795600 795800 796000 796200 796400 796600 796800 797000 797200 797400 797600 797800 798000 798200 798400 798600 798800 799000 799200 799400 799600 799800 800000 800200 800400 800600 800800 801000 801200 801400 801600 801800 802000 802200 802400 802600 802800 803000 803200 803400 803600 803800 804000 804200 804400 804600 804800 805000 805200 805400 805600 805800 806000 806200 806400 806600 806800 807000 807200 807400 807600 807800 808000 808200 808400 808600 808800 809000 809200 809400 809600 809800 810000 810200 810400 810600 810800 811000 811200 811400 811600 811800 812000 812200 812400 812600 812800 813000 813200 813400 813600 813800 814000 814200 814400 814600 814800 815000 815200 815400 815600 815800 816000 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987800 988000 988200 988400 988600 988800 989000 989200 989400 989600 989800 990000 990200 990400 990600 990800 991000 991200 991400 991600 991800 992000 992200 992400 992600 992800 993000 993200 993400 993600 993800 994000 994200 994400 994600 994800 995000 995200 995400 995600 995800 996000 996200 996400 996600 996800 997000 997200 997400 997600 997800 998000 998200 998400 998600 998800 999000 999200 999400 999600 999800 1000000

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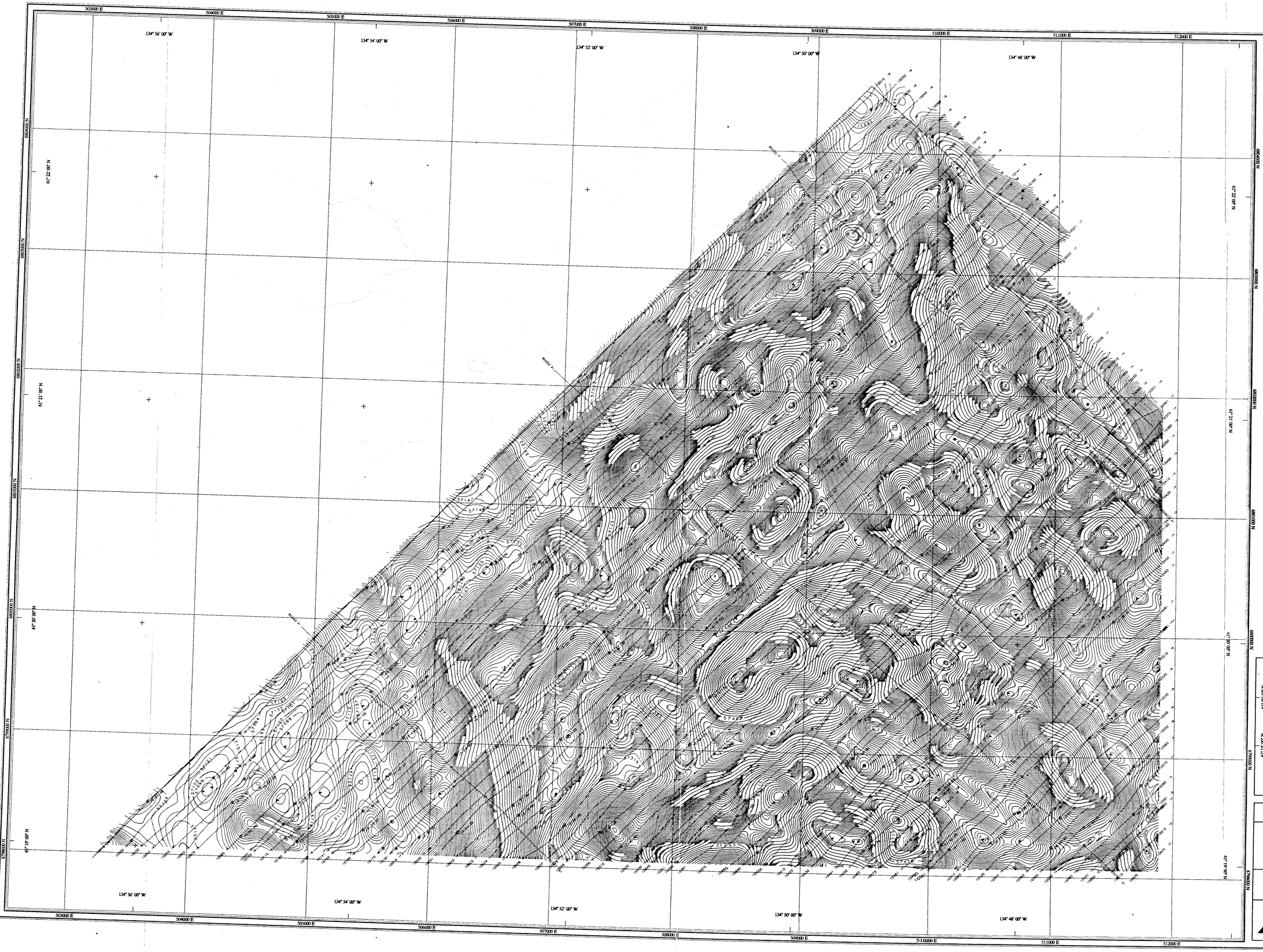
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2 Dwg(2)

Project : J9788 Map Ref : 3 - 1



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 180m.

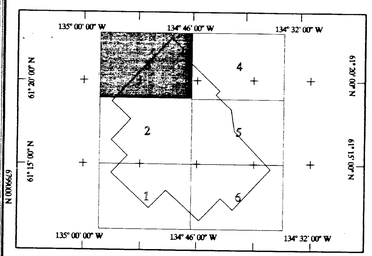
Average terrain clearance of 60m was monitored by radar and barometric altimeters.

TOTAL FIELD MAGNETICS

Total field magnetic intensity contour data, measured by a cesium high sensitivity magnetometer at an average sensor elevation of 45m, and corrected for diurnal variation.

Map contours are in nanoTeslas, and are multiples of those listed below:

- 1 nT
- 50nT
- 25 nT
- 100 nT
- 500 nT



PLACER DOME CANADA

TOTAL FIELD MAGNETICS

MARS PROJECT
YUKON TERRITORY

093

SCALE 1:10 000

250 0 100 200 500 1000 metres

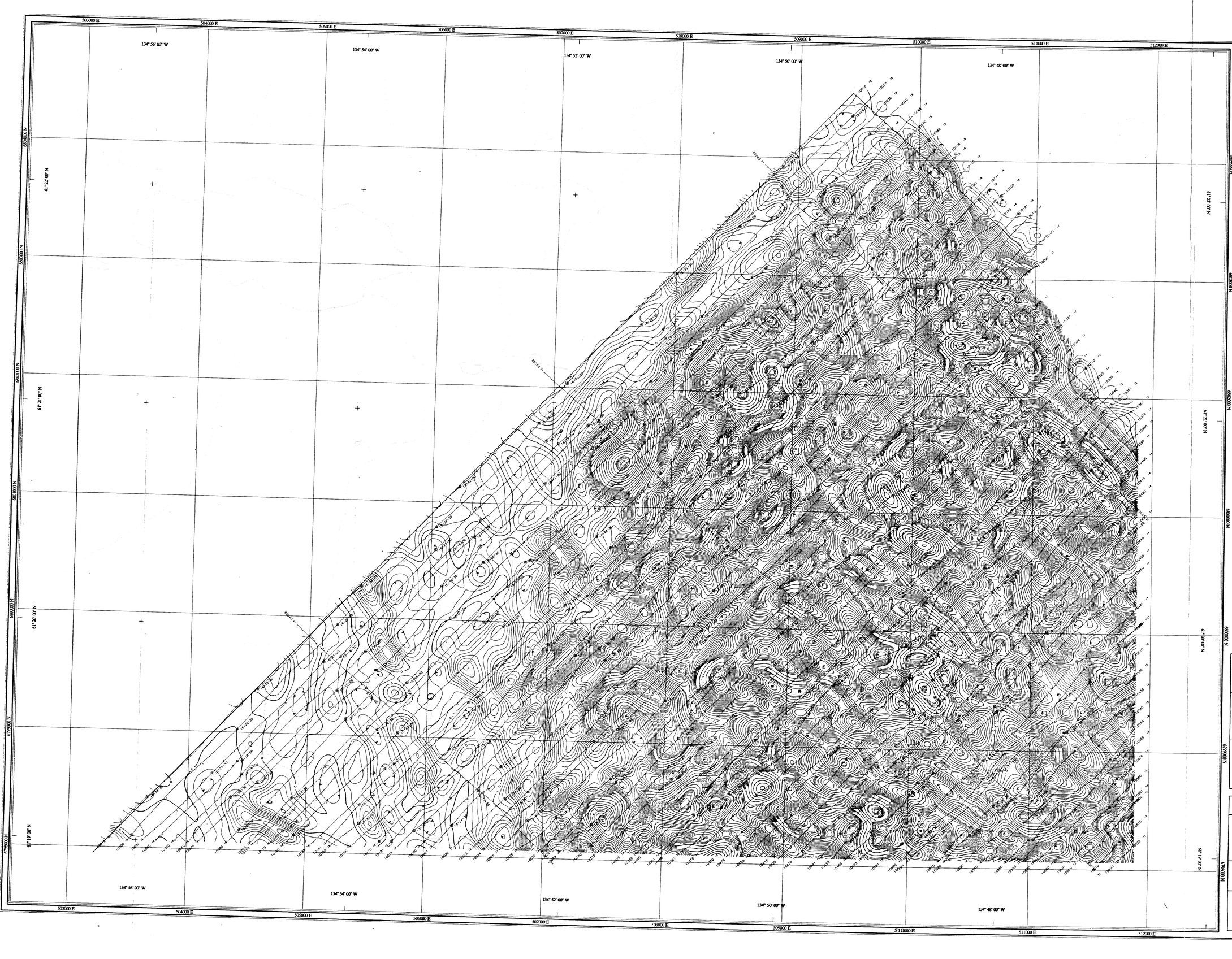
GIAND - YUKON REGION, LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2

Project : J9783 Map Ref : 3 - 2



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

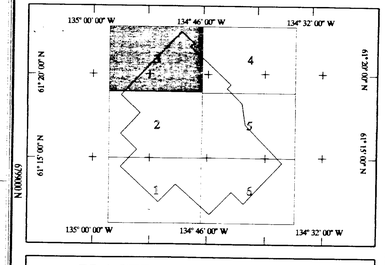
Average terrain clearance of 60m was monitored by radar and barometric altimeters.

VERTICAL GRADIENT

Vertical magnetic gradient contour data, calculated from the pole reduced gridded magnetics data by an FFT algorithm.

Map contours are in nanoTeslas/metre, and are multiples of those listed below:

- 0.025 nT/m
- 0.1 nT/m
- 0.50 nT/m
- 2.5 nT/m
- 10.0 nT/m



PLACER DOME CANADA

VERTICAL MAGNETIC GRADIENT

MARS PROJECT
YUKON TERRITORY

093874

SCALE 1:10 000

250 0 100 200 500 1000 metres

DIAND - YUKON REGION

aerodat
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2

Project : J9783 Map Ref : 3 - 3

511000 E | 512000 E | 513000 E | 514000 E | 515000 E

134° 46' 00" W | 134° 44' 00" W

6803000 N | 6802000 N | 6801000 N | 6800000 N | 6799000 N | 6798000 N | 6797000 N

61° 21' 00" N | 61° 20' 00" N | 61° 19' 00" N

N 000000 | N 001000 | N 000644 | N 000644

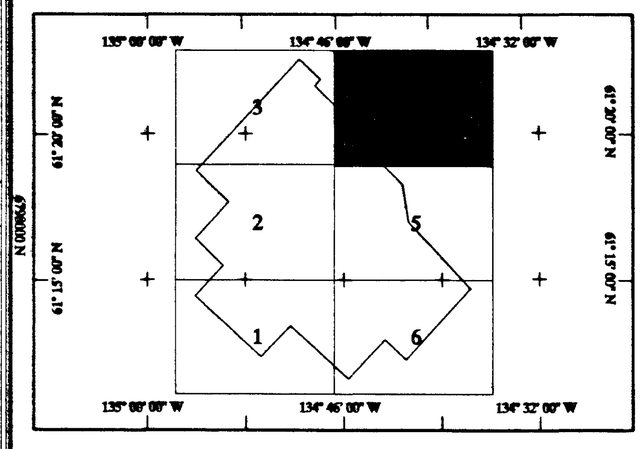


Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 136° W



PLACER DOME CANADA

BASE MAP

MARS PROJECT 093E/4
YUKON TERRITORY

SCALE 1:10 000

250 0 [illegible] [illegible] [illegible] 1000 Metres

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AERODAT INC.

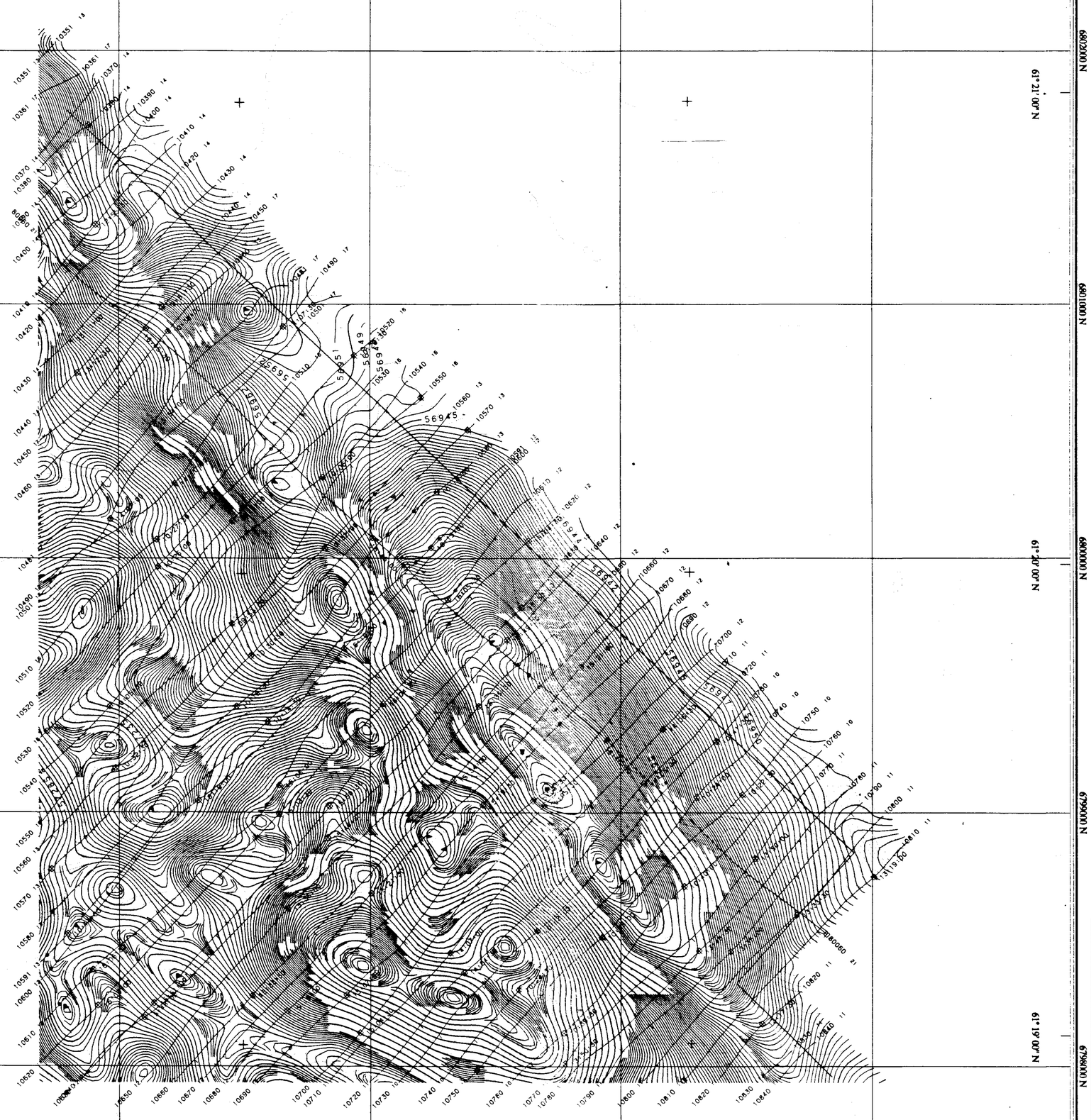
Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 4 - 1

511000 E | 512000 E | 513000 E | 514000 E | 515000 E

134° 46' 00" W | 134° 44' 00" W

6803000 N | 6802000 N | 6801000 N | 6800000 N | 6799000 N

61° 21' 00" N | 61° 20' 00" N | 61° 19' 00" N





Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

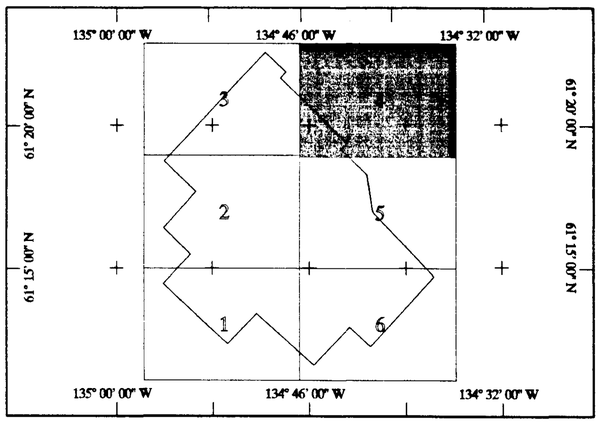
Average terrain clearance of 60m was monitored by radar and barometric altimeters.

TOTAL FIELD MAGNETICS

Total field magnetic intensity contour data, measured by a cesium high sensitivity magnetometer at an average sensor elevation of 45m, and corrected for diurnal variation.

Map contours are in nanoTeslas, and are multiples of those listed below:

- 1 nT
- 50nT
- 25 nT
- 100 nT
- 500 nT



PLACER DOME CANADA

TOTAL FIELD MAGNETICS

MARS PROJECT
YUKON TERRITORY

093874

SCALE 1:10 000

250 0 500 1000 metres

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AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2

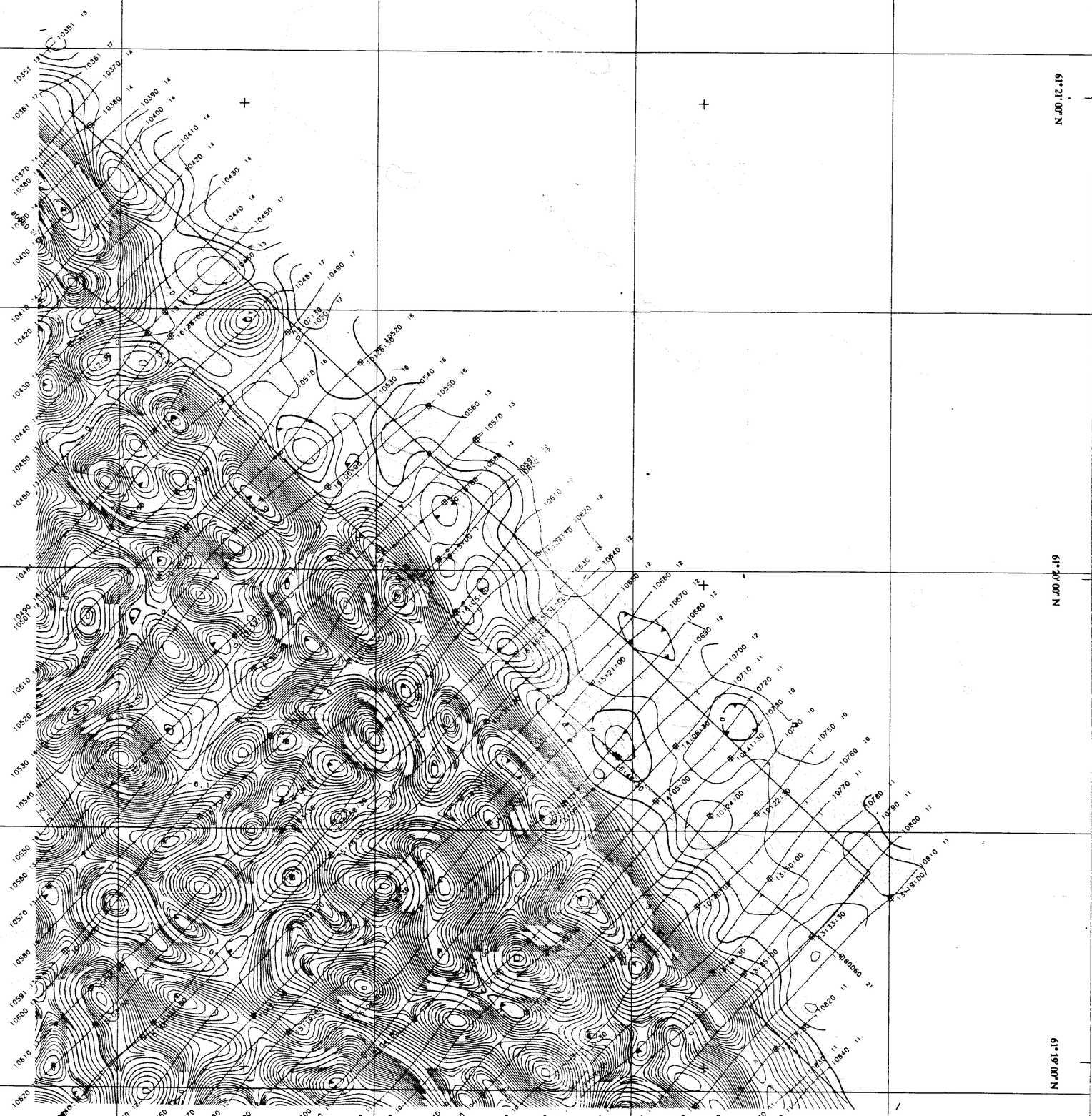
Project : J9783 Map Ref : 4 - 2

511000 E | 512000 E | 513000 E | 514000 E | 515000 E

134° 46' 00" W | 134° 44' 00" W

6803000 N | 6802000 N | 6801000 N | 6800000 N | 6799000 N | 6798000 N | 6797000 N

61° 21' 00" N | 61° 20' 00" N | 61° 19' 00" N



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

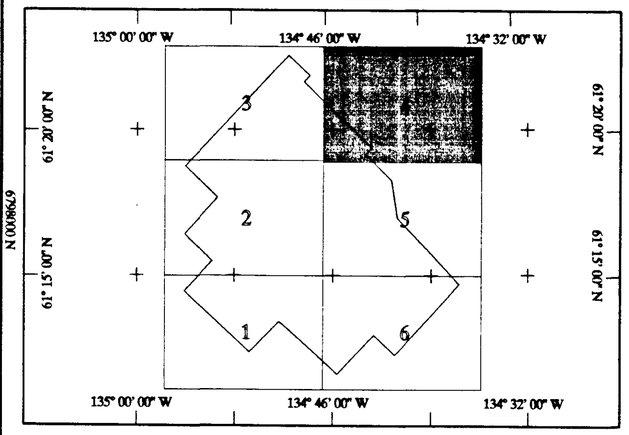
Average terrain clearance of 60m was monitored by radar and barometric altimeters.

VERTICAL GRADIENT

Vertical magnetic gradient contour data, calculated from the pole reduced gridded magnetics data by an FFT algorithm.

Map contours are in nanoTeslas/metre, and are multiples of those listed below:

- 0.025 nT/m
- 0.1 nT/m
- 0.50 nT/m
- 2.5 nT/m
- 10.0 nT/m



PLACER DOME CANADA

VERTICAL MAGNETIC GRADIENT

093

MARS PROJECT
YUKON TERRITORY

SCALE 1:10 000

250 0 100 200 300 1000 metres

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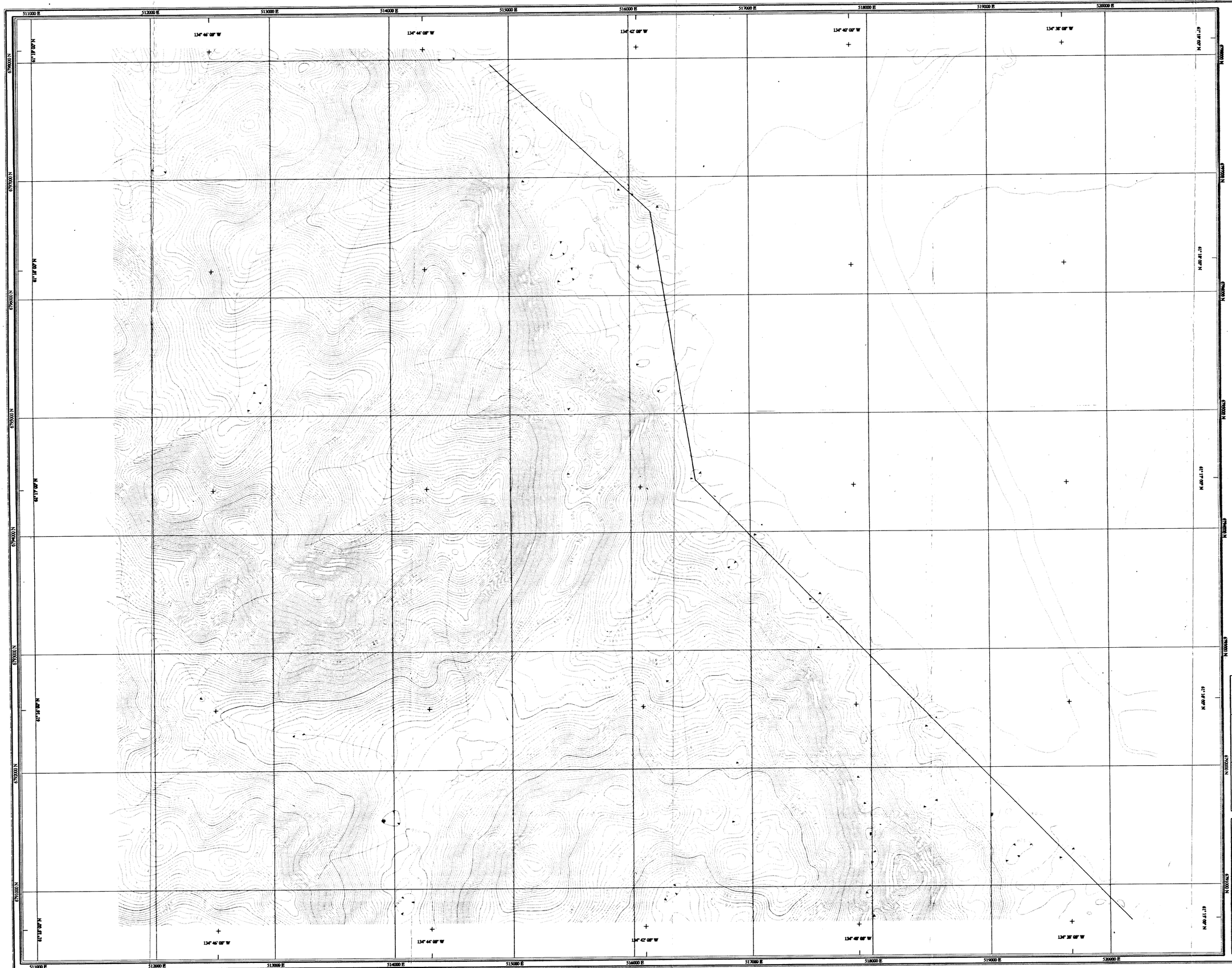
Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 4 - 3



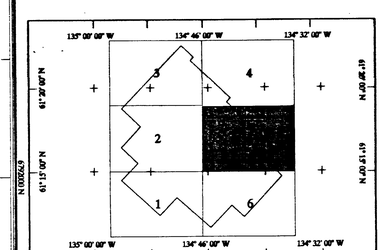


Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet.
Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 138° W



PLACER DOME CANADA

BASE MAP

093874

MARS PROJECT
YUKON TERRITORY

SCALE 1:10 000

250 0 100 200 300 400 500 metres

DIAND - YUKON REGION, LIBRARY

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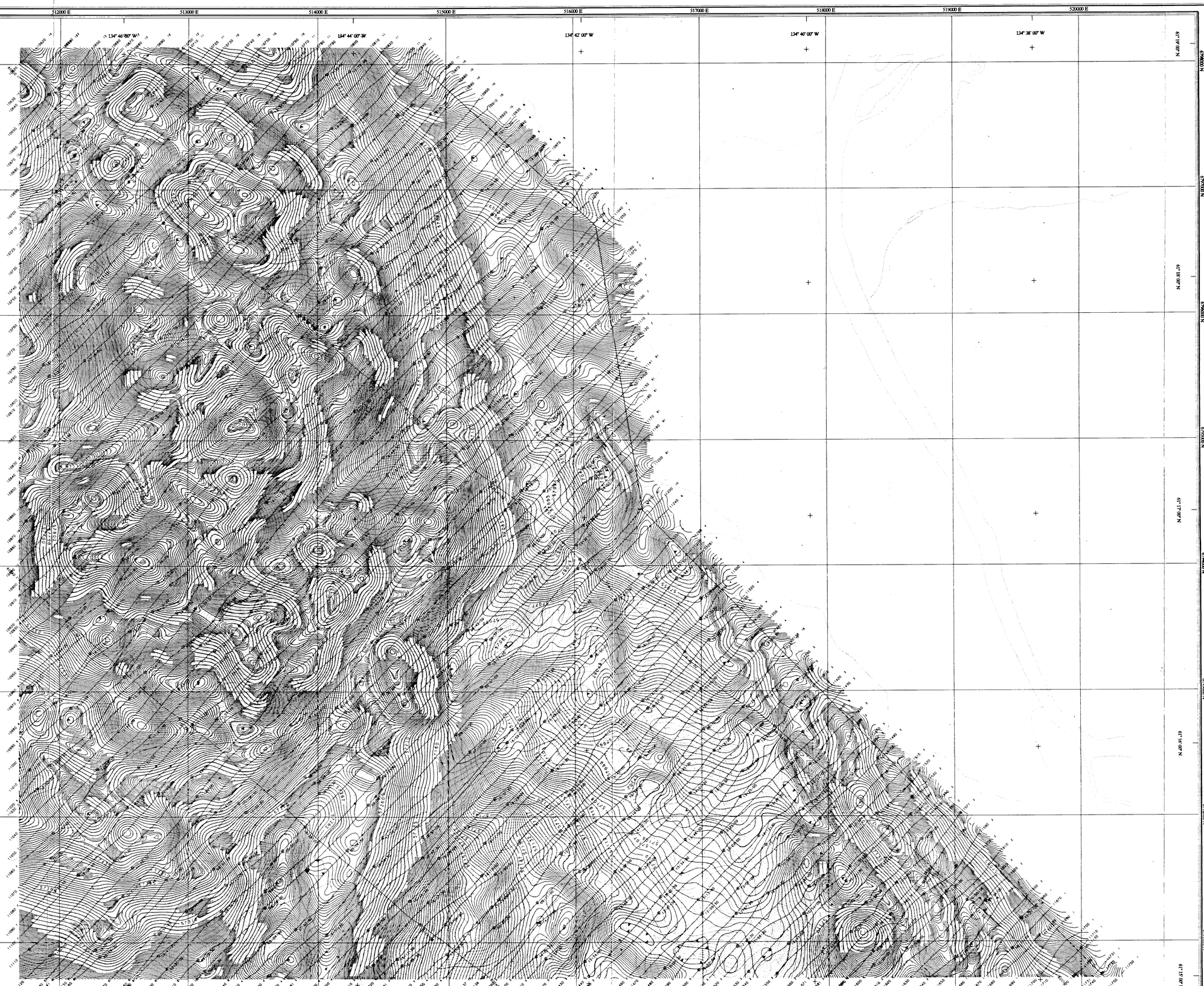
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2 Dub (27)
Project : J9783 Map Ref : 5 - 1



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet.
Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 136° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

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TOTAL FIELD MAGNETICS

Total field magnetic intensity contour data, measured by a cesium high sensitivity magnetometer at an average sensor elevation of 45m, and corrected for diurnal variation.

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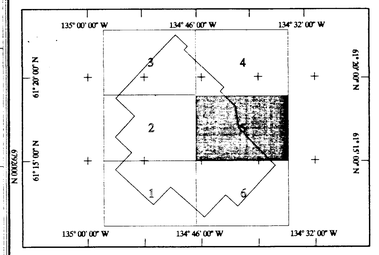
- 50nT
- 25 nT
- 100 nT
- 500 nT



PLACER DOME CANADA

TOTAL FIELD MAGNETICS

MARS PROJECT
YUKON TERRITORY

093 A/4

SCALE 1:10 000

250 0 100 200 500 1000 metres

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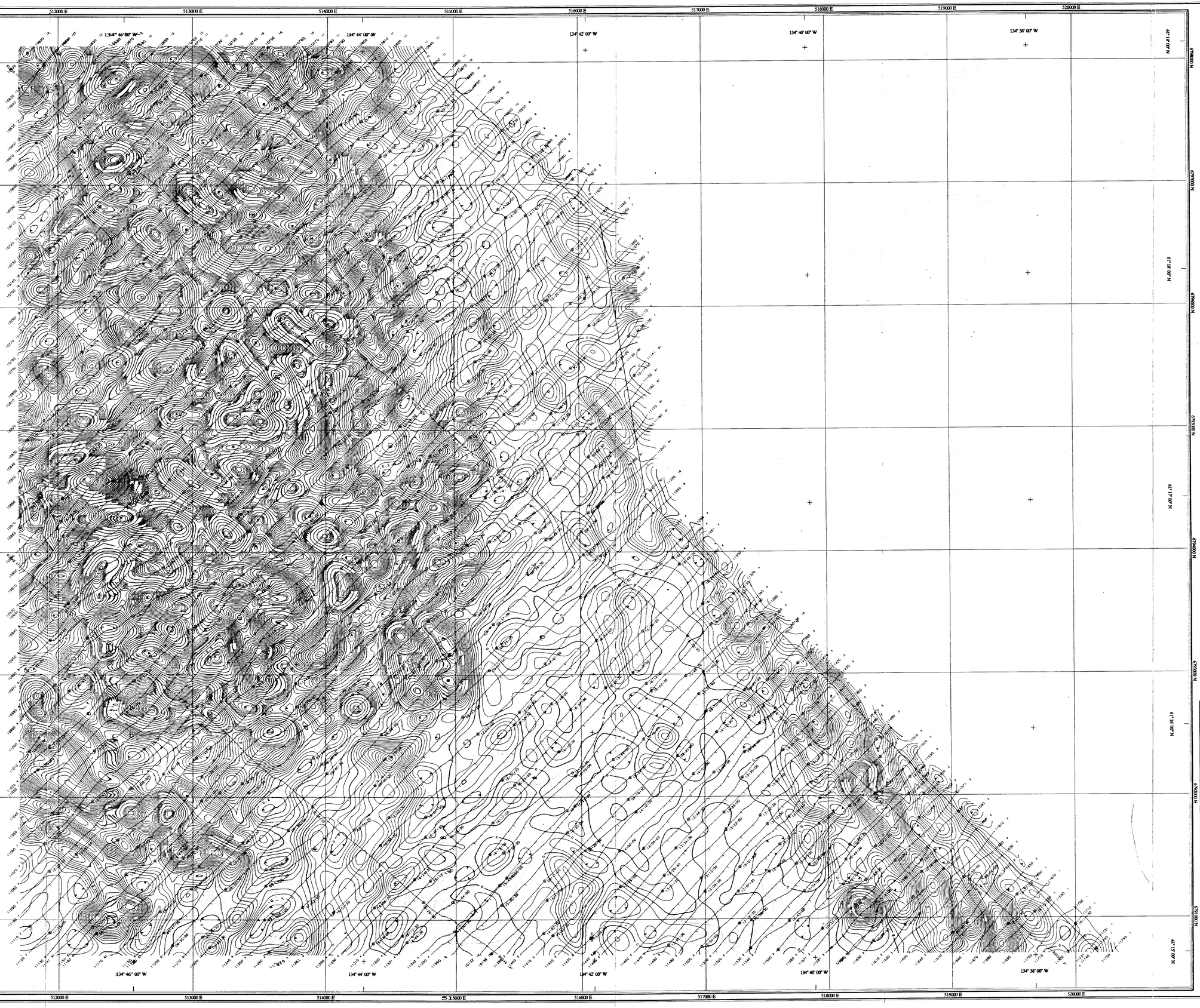
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2

Project : J9783 Map Ref : 5 - 2



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.8°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

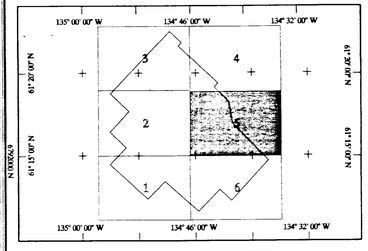
Average terrain clearance of 60m was monitored by radar and barometric altimeters.

VERTICAL GRADIENT

Vertical magnetic gradient contour data, calculated from the pole reduced gridded magnetics data by an FFT algorithm.

Map contours are in nanoTeslas/metre, and are multiples of those listed below.

- 0.025 nT/m
- 0.1 nT/m
- 0.50 nT/m
- 2.5 nT/m
- 10.0 nT/m



PLACER DOME CANADA

VERTICAL MAGNETIC GRADIENT

MARS PROJECT
YUKON TERRITORY

093 874

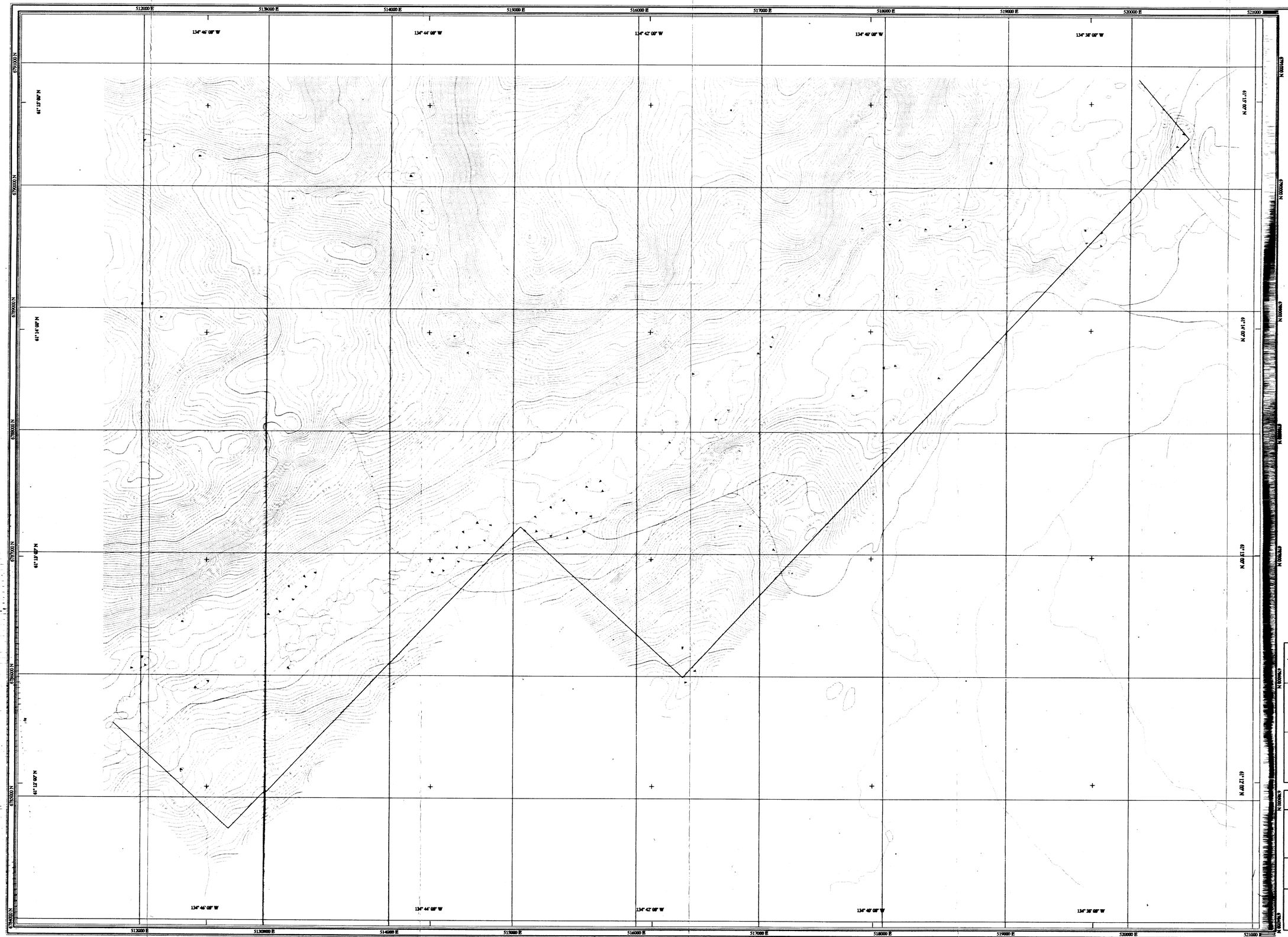
SCALE 1:10 000

250 0 500 1000 1500 2000 metres

DIAND - YUKON REGION, LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 5 - 3



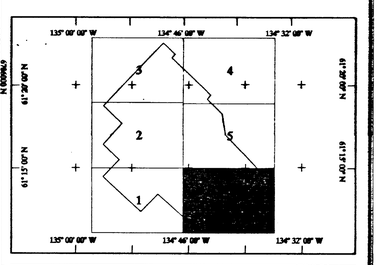


Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet.
Use diagram for reference only.

Grid North - True North : 1.9°
Grid North - Magnetic North : 30.6°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 136° W



PLACER DOME CANADA

BASE MAP

MARS PROJECT
YUKON TERRITORY

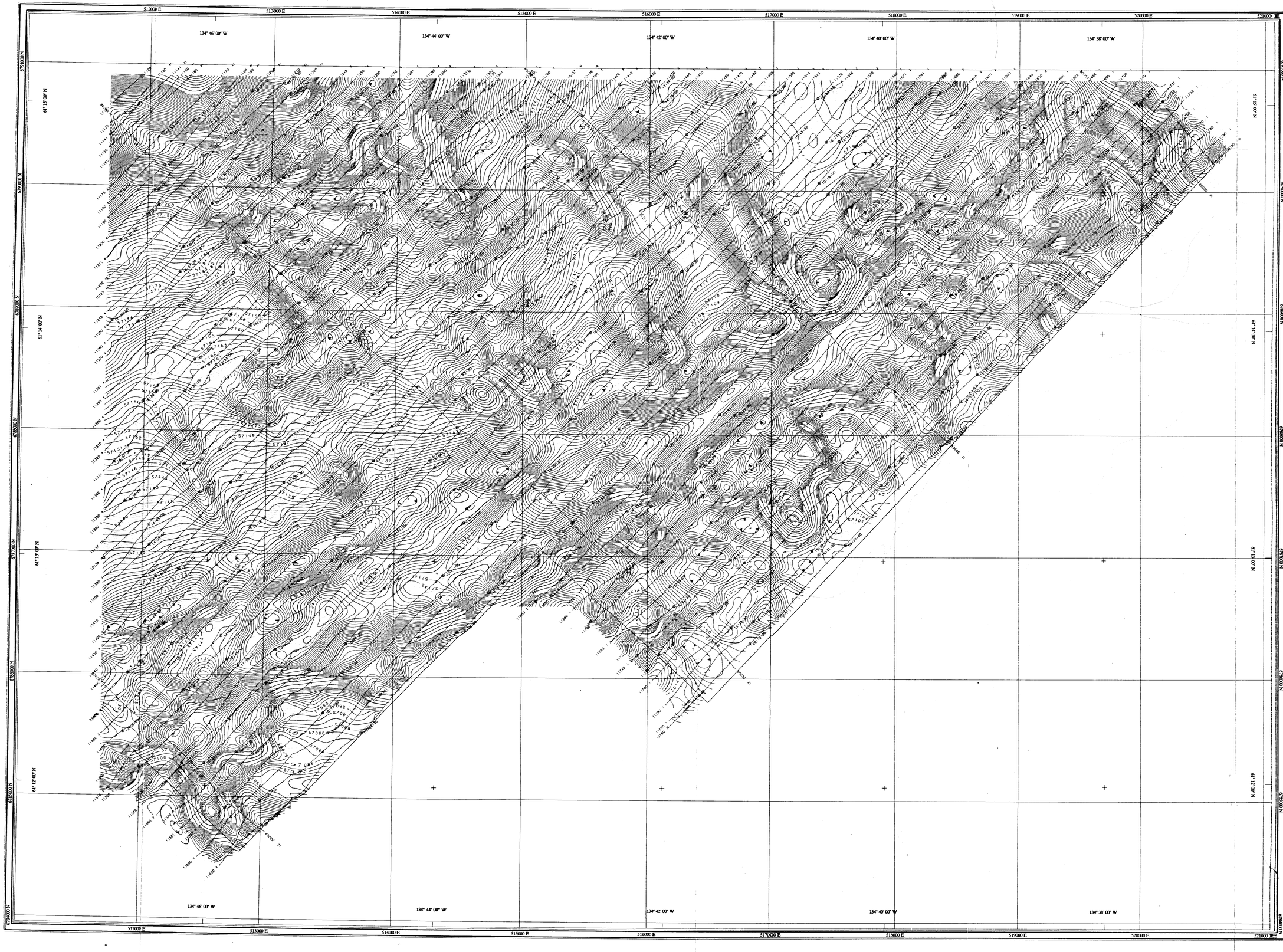
093 ... A

SCALE 1:10 000

DIAND - YUKON REGION, LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2 FWG (30)
Project : J9783 Map Ref : 6 - 1



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

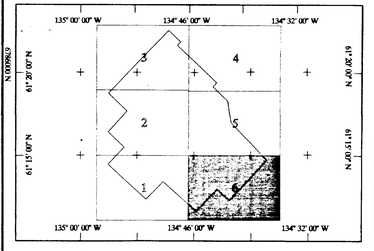
Average terrain clearance of 60m was monitored by radar and barometric altimeters.

TOTAL FIELD MAGNETICS

Total field magnetic intensity contour data, measured by a cesium high sensitivity magnetometer at an average sensor elevation of 45m, and corrected for diurnal variation.

Map contours are in nanoTeslas, and are multiples of those listed below:

- 1 nT
- 50nT
- 25 nT
- 100 nT
- 500 nT



PLACER DOME CANADA

TOTAL FIELD MAGNETICS

MARS PROJECT
YUKON TERRITORY

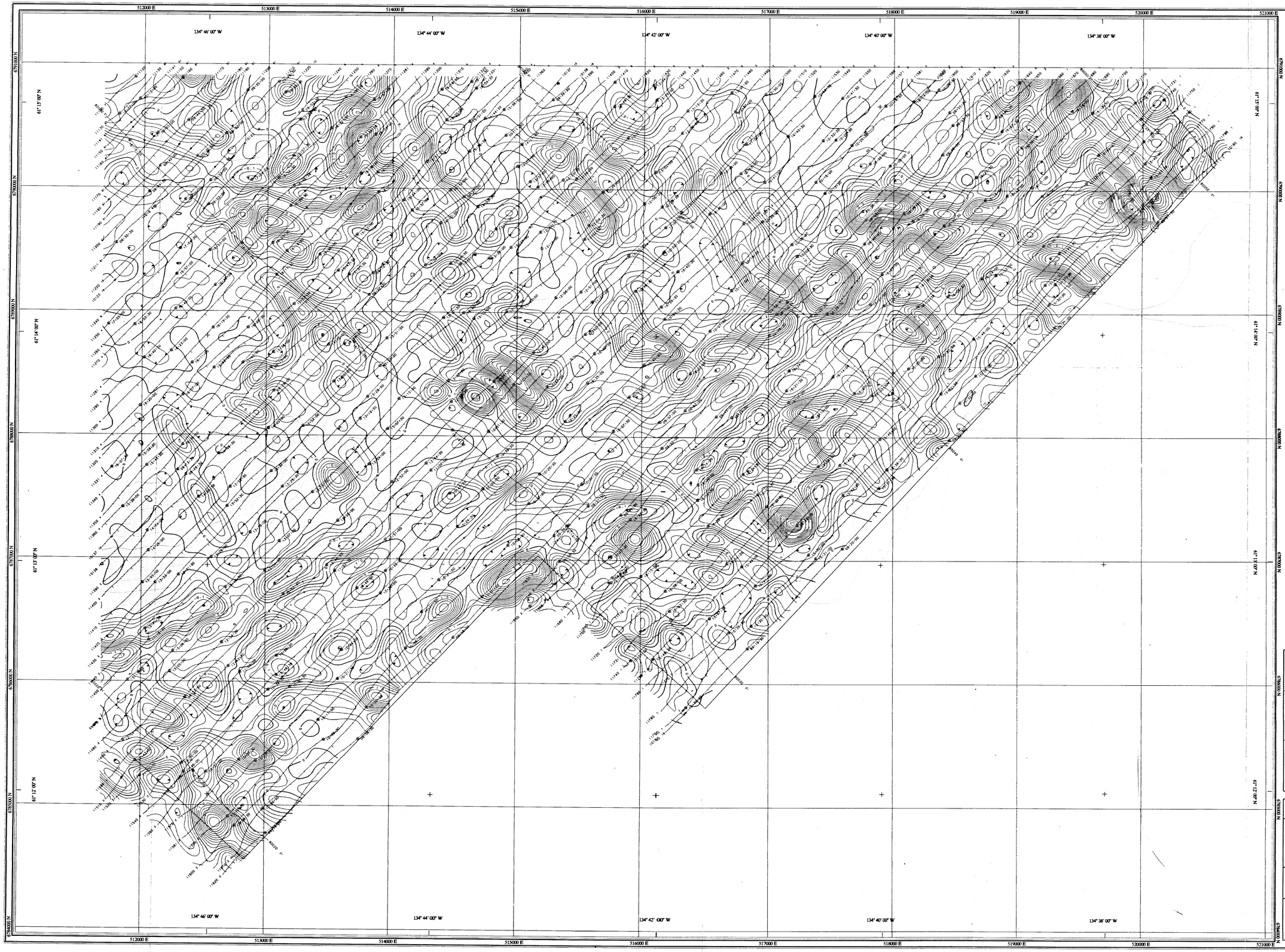
093874

SCALE 1:10 000

250 0 100 200 500 1000 metres

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 6 - 2



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

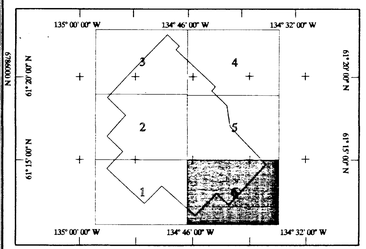
Average terrain clearance of 60m was monitored by radar and barometric altimeters.

VERTICAL GRADIENT

Vertical magnetic gradient contour data, calculated from the pole reduced gridded magnetics data by an FFT algorithm.

Map contours are in nanoTeslas/metre, and are multiples of those listed below:

- 0.025 nT/m
- 0.1 nT/m
- 0.50 nT/m
- 2.5 nT/m
- 10.0 nT/m



PLACER DOME CANADA

VERTICAL MAGNETIC GRADIENT

MARS PROJECT 093 E/7
YUKON TERRITORY

SCALE 1:10 000

250 0 100 200 300 1000 metres

DIAND - YUKON REGION, LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 6 - 3

503000 E | 504000 E | 505000 E | 506000 E | 507000 E | 508000 E | 509000 E | 510000 E | 511000 E | 512000 E

134° 56' 00" W | 134° 54' 00" W | 134° 52' 00" W | 134° 50' 00" W | 134° 48' 00" W

6791000 N | 6790000 N | 6789000 N | 6788000 N | 6787000 N | 6786000 N | 6785000 N

61° 15' 00" N | 61° 14' 00" N | 61° 13' 00" N | 61° 12' 00" N

N 6791629 | N 6790629 | N 6789629 | N 6788629 | N 6787629

N 61° 51' 19" | N 61° 50' 19" | N 61° 49' 19" | N 61° 48' 19"

Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

Average terrain clearance of 60m was monitored by radar and barometric altmeters.

TOTAL FIELD MAGNETICS

Total field magnetic intensity contour data, measured by a cesium high sensitivity magnetometer at an average sensor elevation of 45m, and corrected for diurnal variation.

Map contours are in nanoTeslas, and are multiples of those listed below:

- 1 nT
- 50nT
- 25 nT
- 100 nT
- 500 nT

58800.
57664.
57536.
57476.
57428.
57380.
57335.
57295.
57264.
57238.
57215.
57197.
57181.
57167.
57156.
57147.
57140.
57135.
57129.
57124.
57119.
57114.
57109.
57103.
57089.
57047.
56955.
55700.

135° 00' 00" W | 134° 46' 00" W | 134° 32' 00" W

61° 20' 00" N | 61° 15' 00" N

1 | 2 | 3 | 4 | 5 | 6

PLACER DOME CANADA

TOTAL FIELD MAGNETICS

MARS PROJECT
YUKON TERRITORY

093 C 4

SCALE 1:10 000

250 0 100 200 500 1000 metres

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aerodat
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2 Dwg (33)

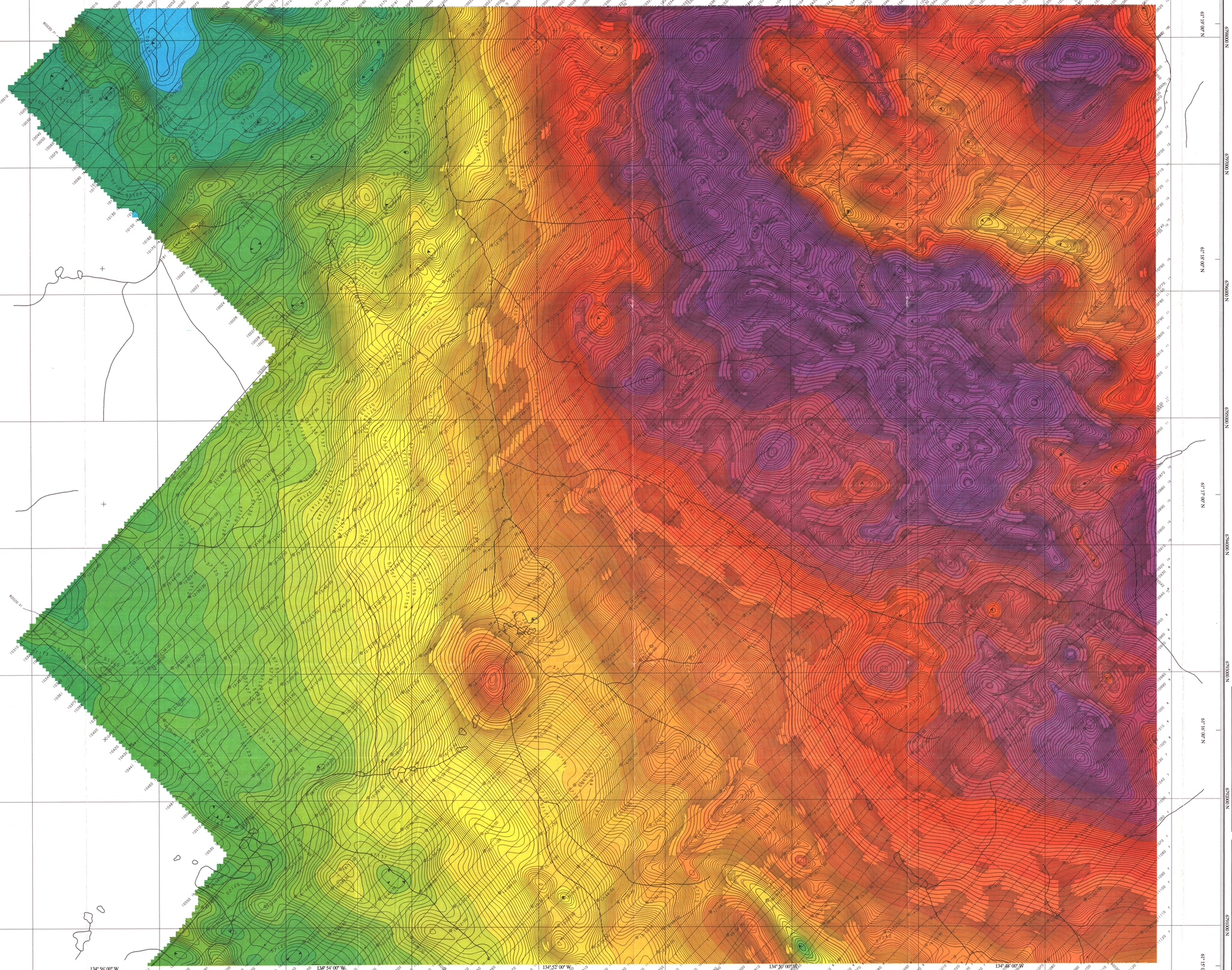
Project : J9783 Map Ref : 1 - 1

503000 E | 504000 E | 505000 E | 506000 E | 507000 E | 508000 E | 509000 E | 510000 E | 511000 E | 512000 E

134° 56' 00" W | 134° 54' 00" W | 134° 52' 00" W | 134° 50' 00" W | 134° 48' 00" W

N 6796000 | N 6795000 | N 6794000 | N 6793000 | N 6792000 | N 6791000

N 62° 19' 00"
N 62° 18' 00"
N 62° 17' 00"
N 62° 16' 00"





Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet.
Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

Average terrain clearance of 60m was monitored by radar and barometric altimeters.

TOTAL FIELD MAGNETICS

Total field magnetic intensity contour data, measured by a cesium high sensitivity magnetometer at an average sensor elevation of 45m, and corrected for diurnal variation.

Map contours are in nanoTeslas, and are multiples of those listed below:

- 1 nT
- 50nT
- 25 nT
- 100 nT
- 500 nT

58800.
57664.
57536.
57476.
57428.
57380.
57335.
57295.
57264.
57238.
57215.
57197.
57181.
57167.
57156.
57147.
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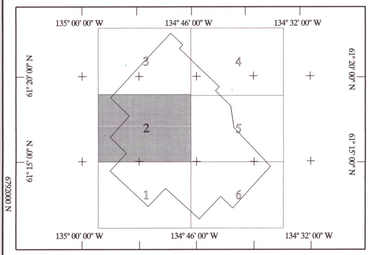
57047.
56955.
55700.



PLACER DOME CANADA

TOTAL FIELD MAGNETICS

MARS PROJECT 093674
YUKON TERRITORY

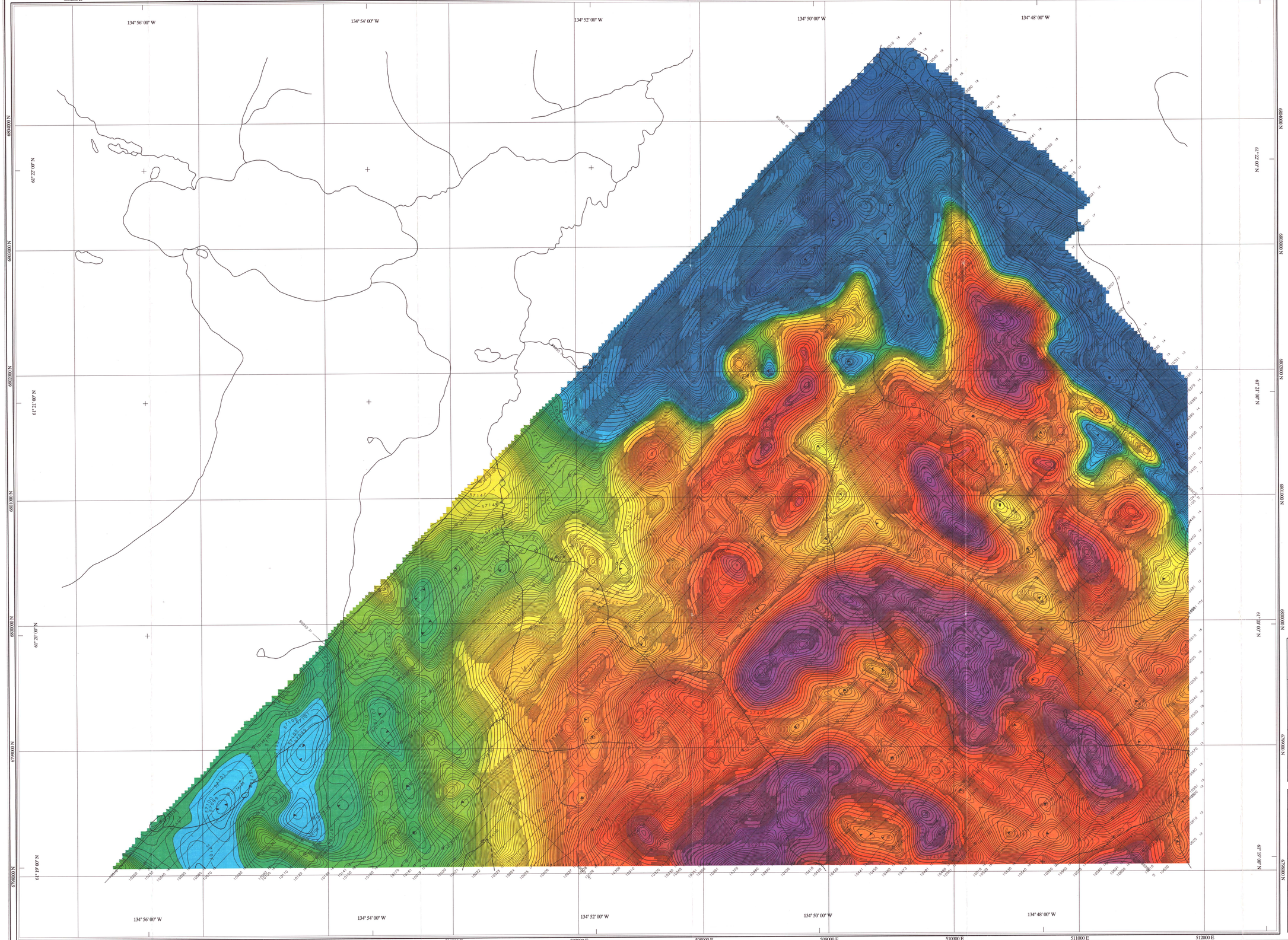
SCALE 1:10 000

250 0 100 200 500 1000 metres

DIAND - YUKON REGION, LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 2 - 1



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

Average terrain clearance of 60m was monitored by radar and barometric altimeters.

TOTAL FIELD MAGNETICS

Total field magnetic intensity contour data, measured by a cesium high sensitivity magnetometer at an average sensor elevation of 45m, and corrected for diurnal variation.

Map contours are in nanoTeslas, and are multiples of those listed below:

- 1 nT
- 50nT
- 25 nT
- 100 nT
- 500 nT

58800.
57664.
57536.
57476.
57428.
57380.
57335.
57295.
57264.
57238.
57215.
57197.
57181.
57167.
57156.
57147.
57140.
57135.
57129.
57124.
57119.
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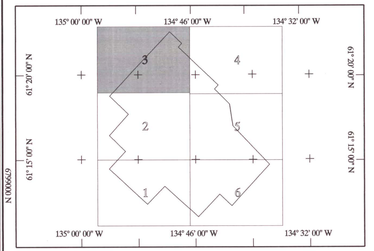
57047.
56955.
55700.



PLACER DOME CANADA

TOTAL FIELD MAGNETICS

MARS PROJECT 093874
YUKON TERRITORY

SCALE 1:10 000

250 0 100 200 500 1000 metres

DIAND - YUKON REGION, LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 3 - 1

511000 E | 512000 E | 513000 E | 514000 E | 515000 E

134° 46' 00" W | 134° 44' 00" W

6803000 N | 6802000 N | 6801000 N | 6800000 N | 6799000 N | 6798000 N | 6797000 N

61° 21' 00" N | 61° 20' 00" N | 61° 19' 00" N



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

Average terrain clearance of 60m was monitored by radar and barometric altimeters.

TOTAL FIELD MAGNETICS

Total field magnetic intensity contour data, measured by a cesium high sensitivity magnetometer at an average sensor elevation of 45m, and corrected for diurnal variation.

Map contours are in nanoTeslas, and are multiples of those listed below:

- 1 nT
- 50nT
- 25 nT
- 100 nT
- 500 nT

58800.
57664.
57536.
57476.
57428.
57380.
57335.
57295.
57264.
57238.
57215.
57197.
57181.
57167.
57156.
57147.
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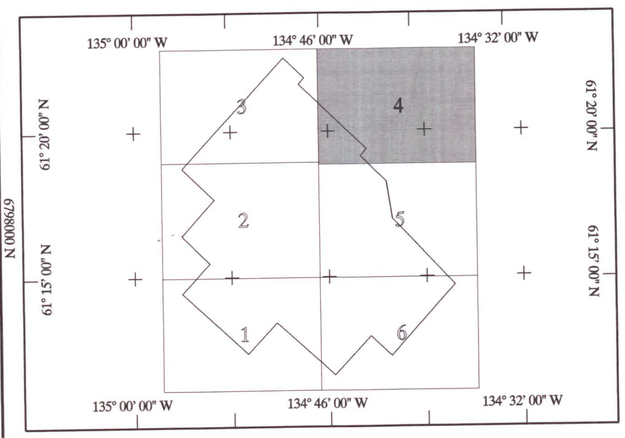
57047.
56955.
55700.



PLACER DOME CANADA

TOTAL FIELD MAGNETICS

MARS PROJECT
YUKON TERRITORY

093874

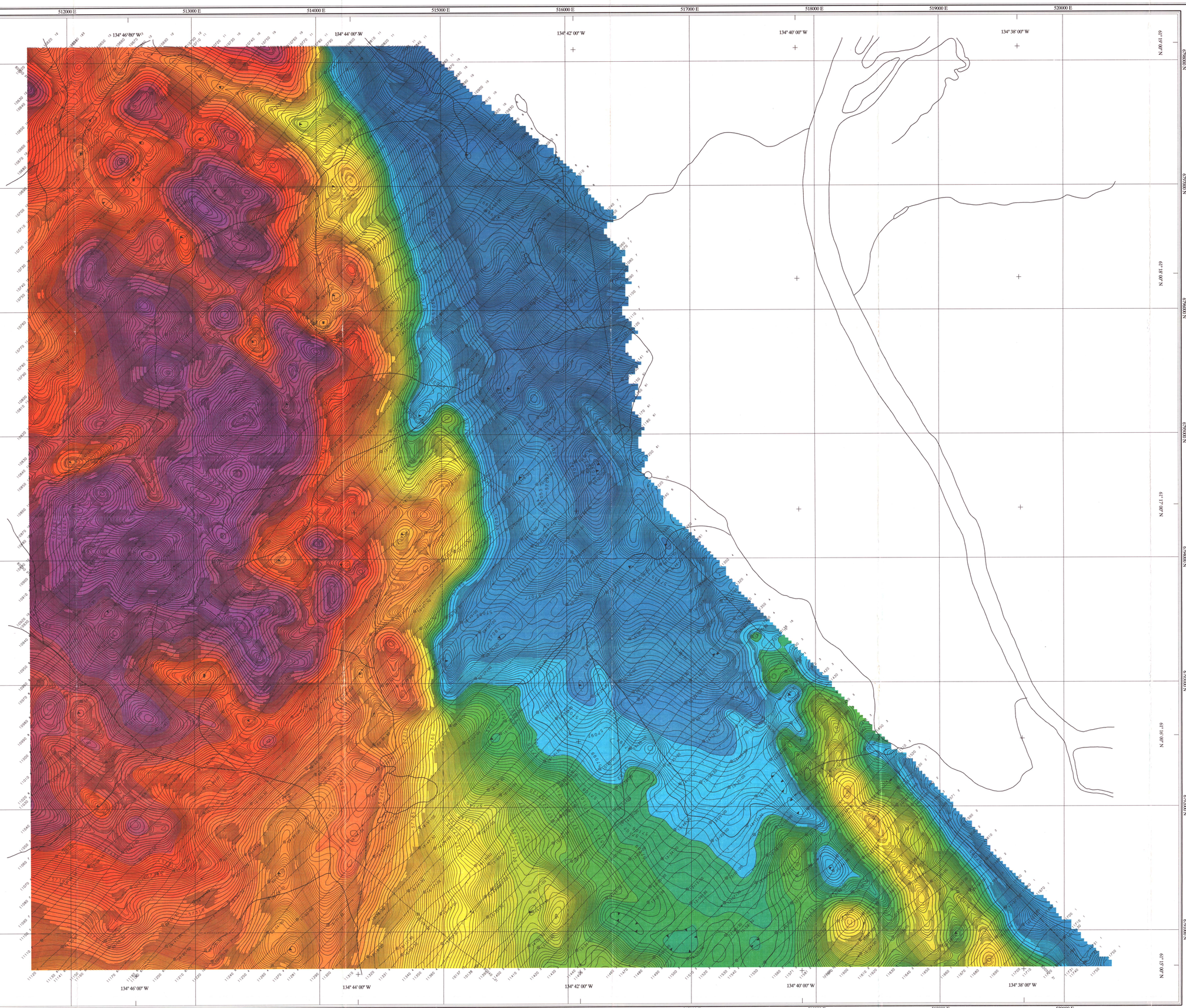
SCALE 1:10 000

250 0 100 200 500 1000 metres

DIAND - YUKON REGION, LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 4 - 1



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24'

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

Average terrain clearance of 60m was monitored by radar and barometric altimeters.

TOTAL FIELD MAGNETICS

Total field magnetic intensity contour data, measured by a cesium high sensitivity magnetometer at an average sensor elevation of 45m, and corrected for diurnal variation.

Map contours are in nanoTeslas, and are multiples of those listed below:

- 1 nT
- 50nT
- 25 nT
- 100 nT
- 500 nT

58800.
57664.
57536.
57476.
57428.
57380.
57335.
57295.
57264.
57238.
57215.
57197.
57181.
57167.
57156.
57147.
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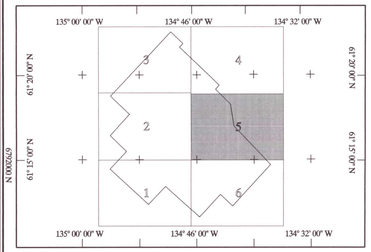
55700.



PLACER DOME CANADA

TOTAL FIELD MAGNETICS

MARS PROJECT 093874
YUKON TERRITORY

SCALE 1:10 000

250 0 100 200 500 1000 metres

DIAND - YUKON REGION, LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 5 - 1

512000 E | 513000 E | 514000 E | 515000 E | 516000 E | 517000 E | 518000 E | 519000 E | 520000 E | 521000 E

134° 46' 00" W | 134° 44' 00" W | 134° 42' 00" W | 134° 40' 00" W | 134° 38' 00" W

6791000 N | 6790000 N | 6789000 N | 6788000 N | 6787000 N | 6786000 N

N.00.15'.19 | N.00.14'.19 | N.00.13'.19 | N.00.12'.19

N.00.15'.19 | N.00.14'.19 | N.00.13'.19 | N.00.12'.19

6791000 N | 6790000 N | 6789000 N | 6788000 N | 6787000 N | 6786000 N

512000 E | 513000 E | 514000 E | 515000 E | 516000 E | 517000 E | 518000 E | 519000 E | 520000 E | 521000 E

134° 46' 00" W | 134° 44' 00" W | 134° 42' 00" W | 134° 40' 00" W | 134° 38' 00" W

Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

Average terrain clearance of 60m was monitored by radar and barometric altimeters.

TOTAL FIELD MAGNETICS

Total field magnetic intensity contour data, measured by a cesium high sensitivity magnetometer at an average sensor elevation of 45m, and corrected for diurnal variation.

Map contours are in nanoTeslas, and are multiples of those listed below:

1 nT
50nT
25 nT
100 nT
500 nT

58800.
57664.
57536.
57476.
57428.
57380.
57335.
57295.
57264.
57238.
57215.
57197.
57181.
57167.
57156.
57147.
57140.
57135.
57129.
57124.
57119.
57114.
57109.
57103.
57089.
57047.
56955.
55700.

135° 00' 00" W | 134° 46' 00" W | 134° 32' 00" W

62° 20' 00" N | 62° 15' 00" N

N.00.0E.19 | N.00.5E.19

1 2 3 4 5 6

PLACER DOME CANADA

TOTAL FIELD MAGNETICS

MARS PROJECT
YUKON TERRITORY

093874

SCALE 1:10 000

250 0 100 200 500 1000 metres

DIAND - YUKON REGION LIBRARY

aerodat
AERODAT INC.

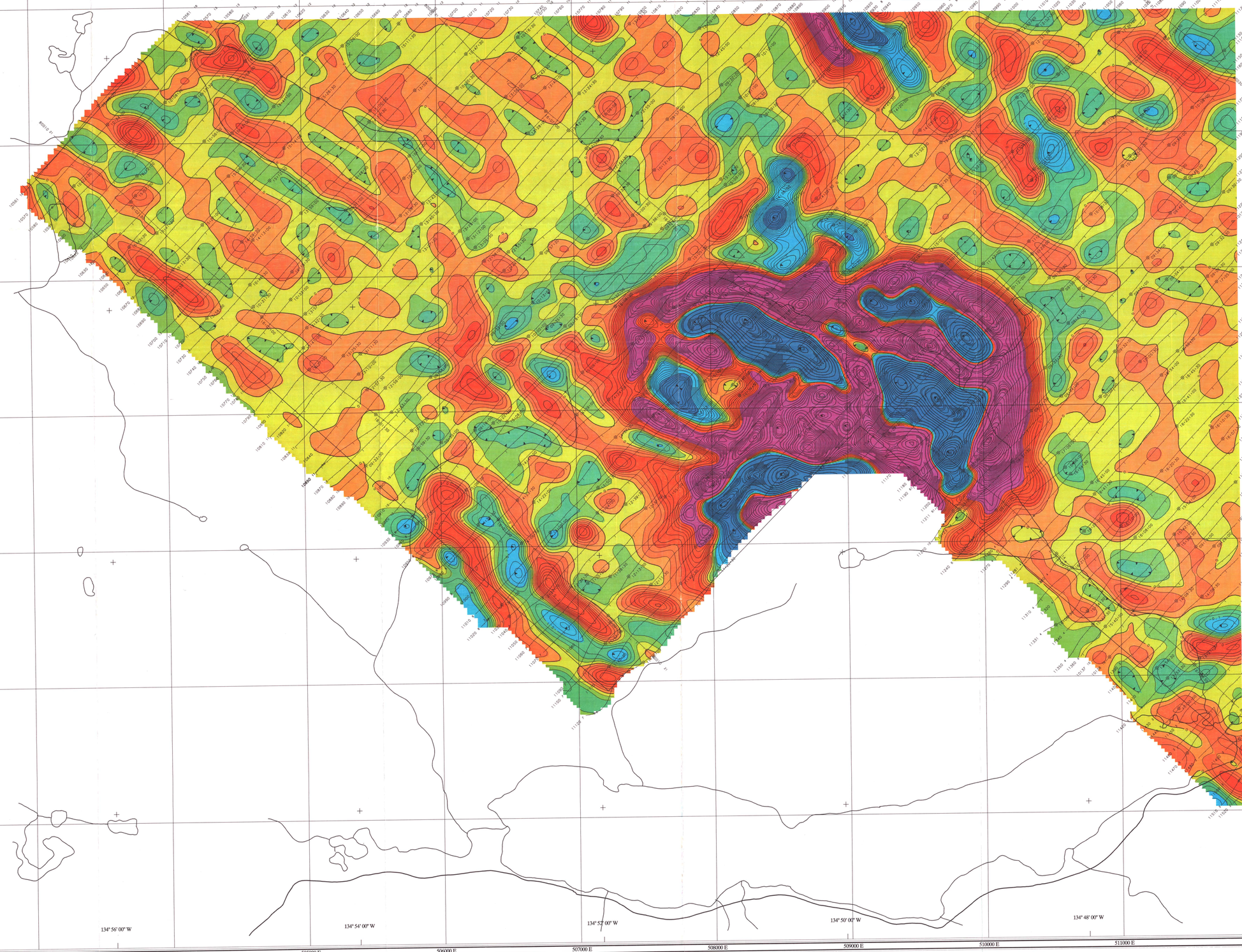
Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 6 - 1

503000 E | 504000 E | 505000 E | 506000 E | 507000 E | 508000 E | 509000 E | 510000 E | 511000 E | 512000 E

134° 56' 00" W | 134° 54' 00" W | 134° 52' 00" W | 134° 50' 00" W | 134° 48' 00" W

6791000 N | 6790000 N | 6789000 N | 6788000 N | 6787000 N | 6786000 N | 6785000 N

N.00°15'19 | N.00°14'19 | N.00°13'19 | N.00°12'19



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

Average terrain clearance of 60m was monitored by radar and barometric altimeters.

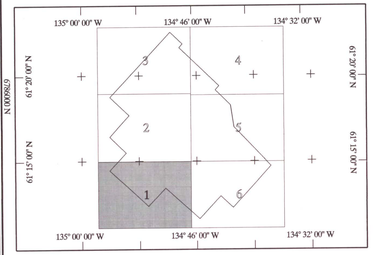
VERTICAL GRADIENT

Vertical magnetic gradient contour data, calculated from the pole reduced gridded magnetics data by an FFT algorithm.

Map contours are in nanoTeslas/metre, and are multiples of those listed below:

- 0.025 nT/m
- 0.1 nT/m
- 0.50 nT/m
- 2.5 nT/m
- 10.0 nT/m

5.95
0.25
0.08
0.03
0.00
-0.00
0.00
-0.03
-0.05
-0.10
-0.30
-5.53



PLACER DOME CANADA

VERTICAL MAGNETIC GRADIENT

MARS PROJECT
YUKON TERRITORY

093874

SCALE 1:10 000

250 0 100 200 500 1000 metres

YUKON - YUKON REGION, LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2

Project : J9783 Map Ref : 1 - 2

503000 E | 504000 E | 505000 E | 506000 E | 507000 E | 508000 E | 509000 E | 510000 E | 511000 E | 512000 E

134° 56' 00" W | 134° 54' 00" W | 134° 52' 00" W | 134° 50' 00" W | 134° 48' 00" W

6798000 N | 6797000 N | 6796000 N | 6795000 N | 6794000 N | 6793000 N | 6792000 N | 6791000 N

61° 19' 00" N | 61° 18' 00" N | 61° 17' 00" N | 61° 16' 00" N

N.00.61.19 | N.00.71.19 | N.00.81.19 | N.00.91.19

N 0006629 | N 0006729 | N 0006829 | N 0006929 | N 0007029 | N 0007129 | N 0007229 | N 0007329

Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

Average terrain clearance of 60m was monitored by radar and barometric altimeters.

VERTICAL GRADIENT

Vertical magnetic gradient contour data, calculated from the pole reduced gridded magnetics data by an FFT algorithm.

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- 0.50 nT/m
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- 10.0 nT/m

5.95
0.25
0.08
0.03
0.00
0.00
0.00
-0.03
-0.05
-0.10
-0.30
-5.53

135° 00' 00" W | 134° 46' 00" W | 134° 32' 00" W

62° 20' 00" N | 61° 15' 00" N

1 | 2 | 3 | 4 | 5 | 6

PLACER DOME CANADA

VERTICAL MAGNETIC GRADIENT

MARS PROJECT
YUKON TERRITORY

093874

SCALE 1:10 000

250 0 100 200 1000 metres

DIAND - YUKON REGION, LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2

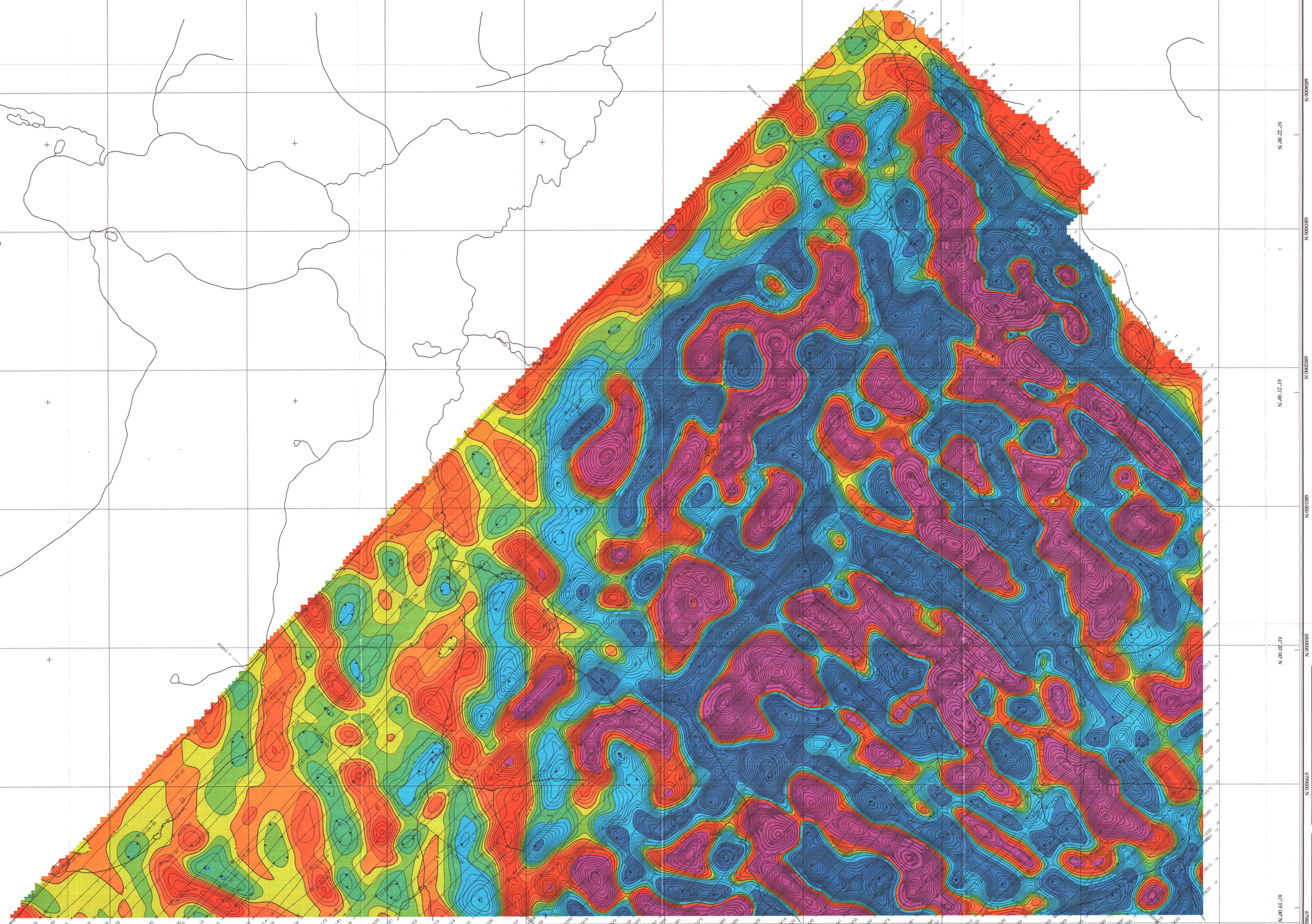
Project : J9783 Map Ref : 2 - 2

503000 E | 504000 E | 505000 E | 506000 E | 507000 E | 508000 E | 509000 E | 510000 E | 511000 E | 512000 E

134° 56' 00" W | 134° 54' 00" W | 134° 52' 00" W | 134° 50' 00" W | 134° 48' 00" W

N 6804000 | N 6803000 | N 6802000 | N 6801000 | N 6800000 | N 6799000 | N 6798000

61° 22' 19" N | 61° 21' 19" N | 61° 20' 19" N | 61° 19' 19" N



Square: Grid North
Star: True North
Arrow: Magnetic North

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Grid North - Magnetic North : 30.0°
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Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

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- 10.0 nT/m

0.95
0.25
0.08
0.03
0.00
0.00
0.00
-0.03
-0.05
-0.10
-0.30
-5.53

135° 00' 00" W | 134° 46' 00" W | 134° 32' 00" W

61° 20' 00" N | 61° 15' 00" N

1 | 2 | 3 | 4 | 5 | 6

PLACER DOME CANADA

VERTICAL MAGNETIC GRADIENT

MARS PROJECT
YUKON TERRITORY

093874

SCALE 1:10 000

250 0 100 300 500 1000 metres

DIAND - YUKON REGION, LIBRARY

aerodat
AERODAT INC.

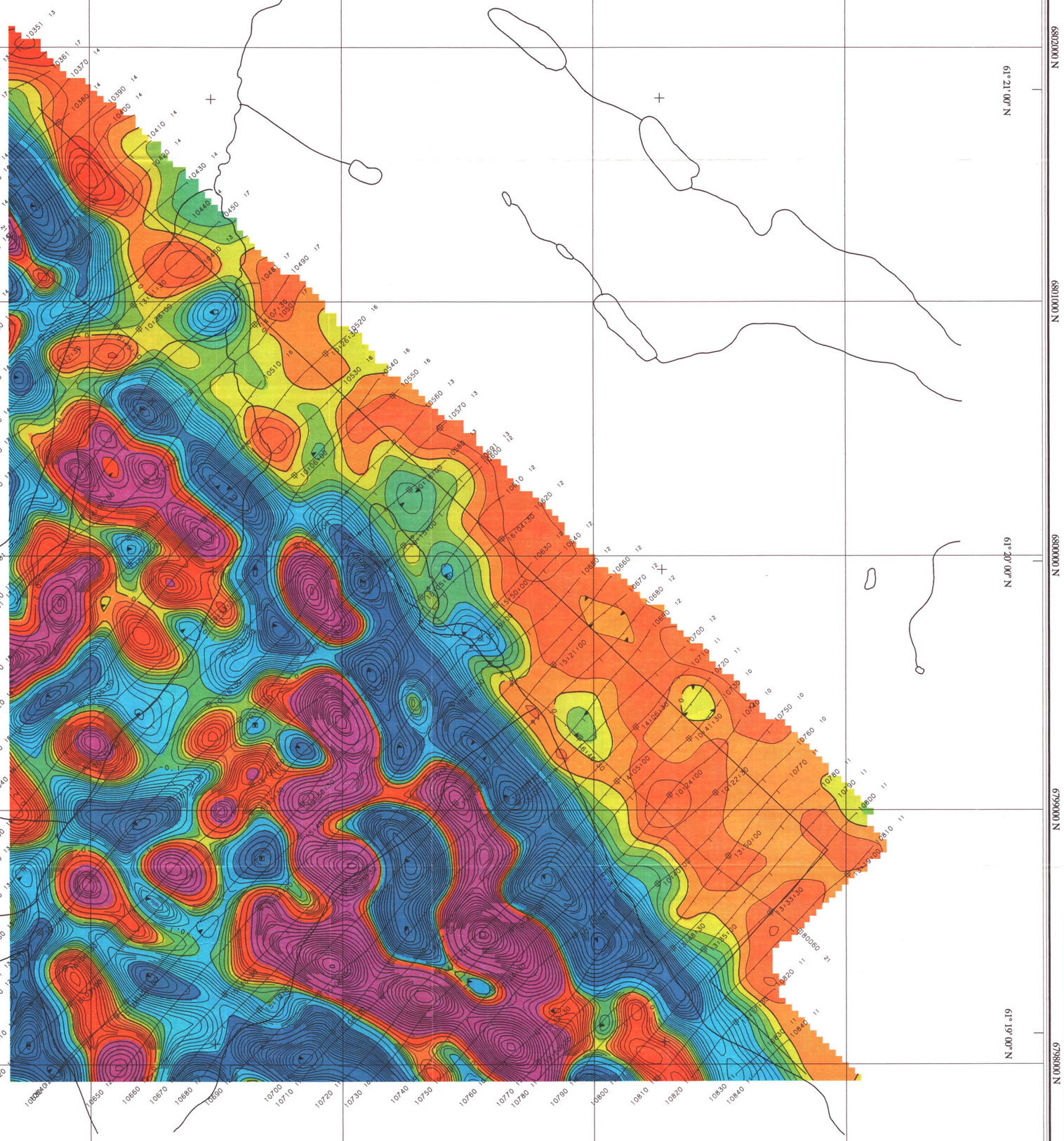
Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 3 - 2

511000 E | 512000 E | 513000 E | 514000 E | 515000 E

134° 46' 00" W | 134° 44' 00" W

6803000 N | 6802000 N | 6801000 N | 6800000 N | 6799000 N | 6798000 N | 6797000 N

61° 21' 00" N | 61° 20' 00" N | 61° 19' 00" N





Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet.
Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

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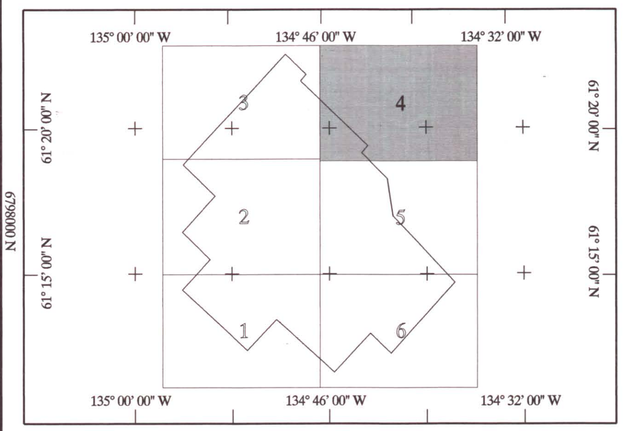
0.25
0.08
0.03
0.00
0.00
0.00
-0.03
-0.05
-0.10
-0.30
-5.53



PLACER DOME CANADA

VERTICAL MAGNETIC GRADIENT

MARS PROJECT

YUKON TERRITORY

093874

SCALE 1:10 000

250 0 100 200 500 1000 metres

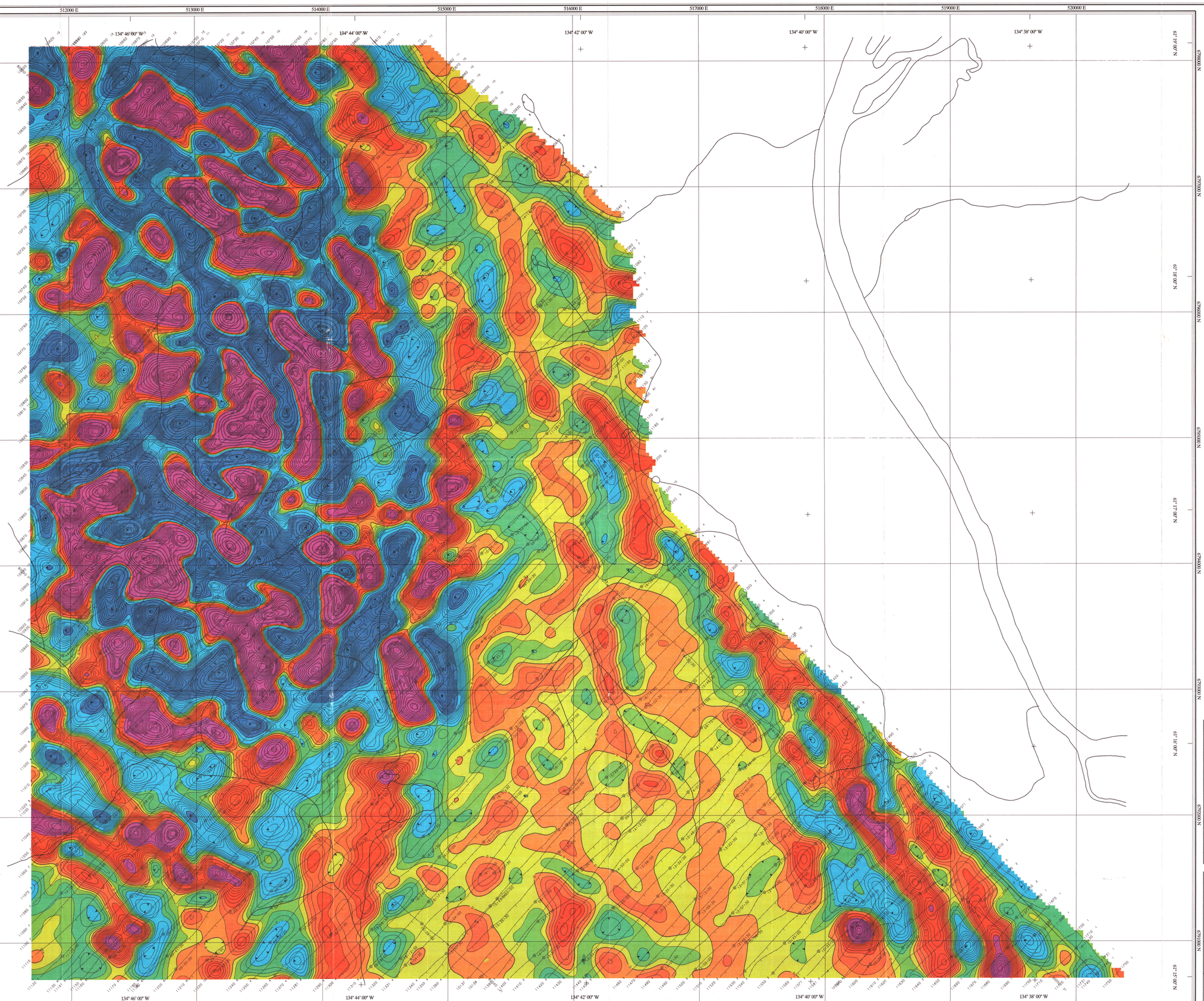
DIAND - YUKON REGION, LIBRARY

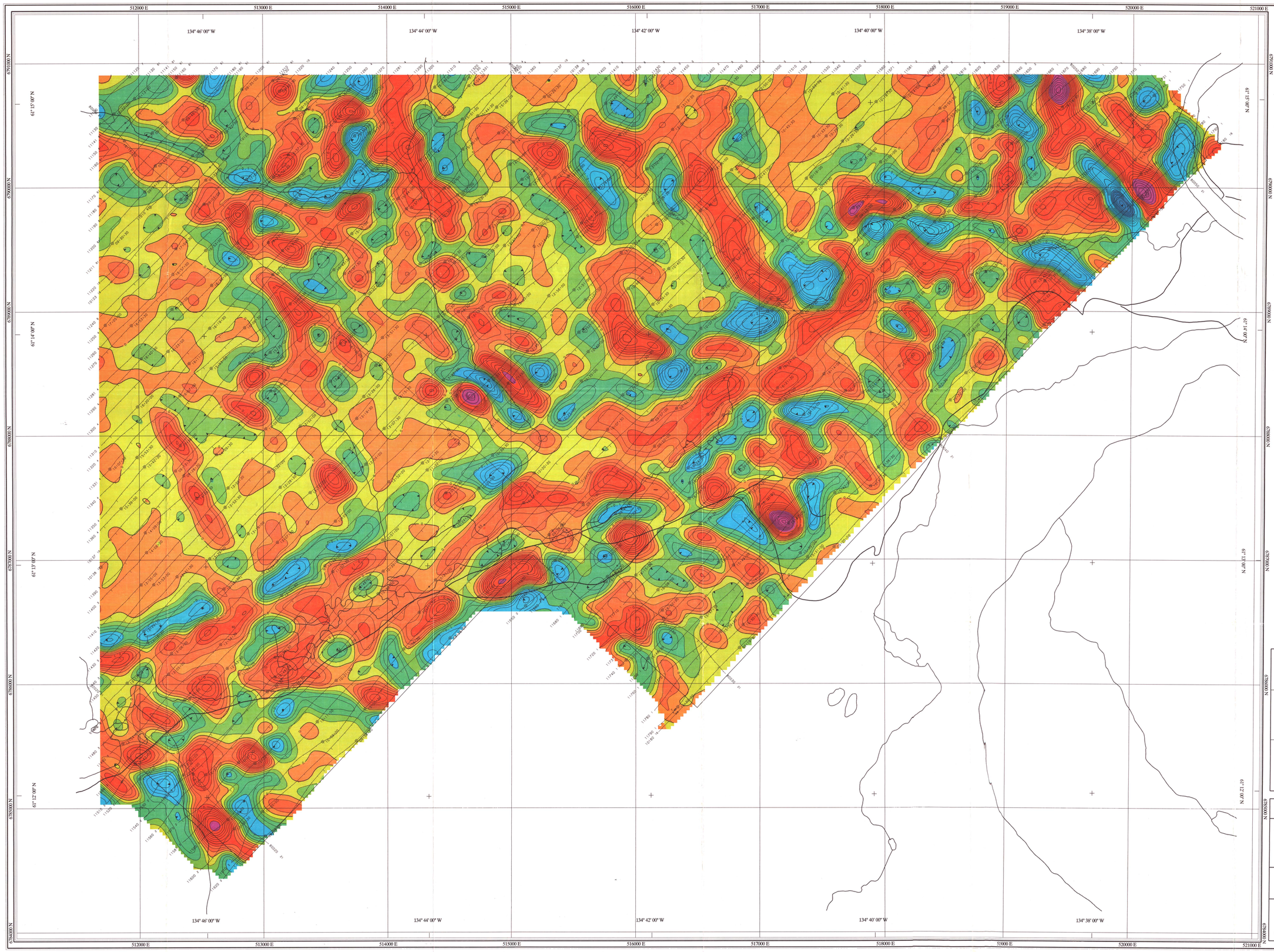
aerodat
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2

Project : J9783 Map Ref : 4 - 2


511000 E
512000 E
513000 E
514000 E
515000 E
516000 E
517000 E
518000 E
519000 E
520000 E
134° 46' 00" W
134° 44' 00" W
134° 42' 00" W
134° 40' 00" W
134° 38' 00" W
61° 19' 00" N
61° 18' 00" N
61° 17' 00" N
61° 16' 00" N
61° 15' 00" N
6798000 N
6797000 N
6796000 N
6795000 N
6794000 N
6793000 N
6792000 N
6791000 N
N 000629
N 000629
N 000629



Square: Grid North
Star: True North
Arrow: Magnetic North

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Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

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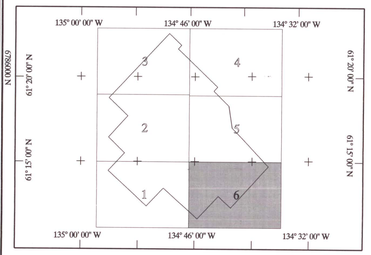
- 10.0 nT/m



PLACER DOME CANADA

VERTICAL MAGNETIC GRADIENT

MARS PROJECT
YUKON TERRITORY

093874

SCALE 1:10 000

250 0 100 200 500 1000 metres

DIAND - YUKON REGION, LIBRARY

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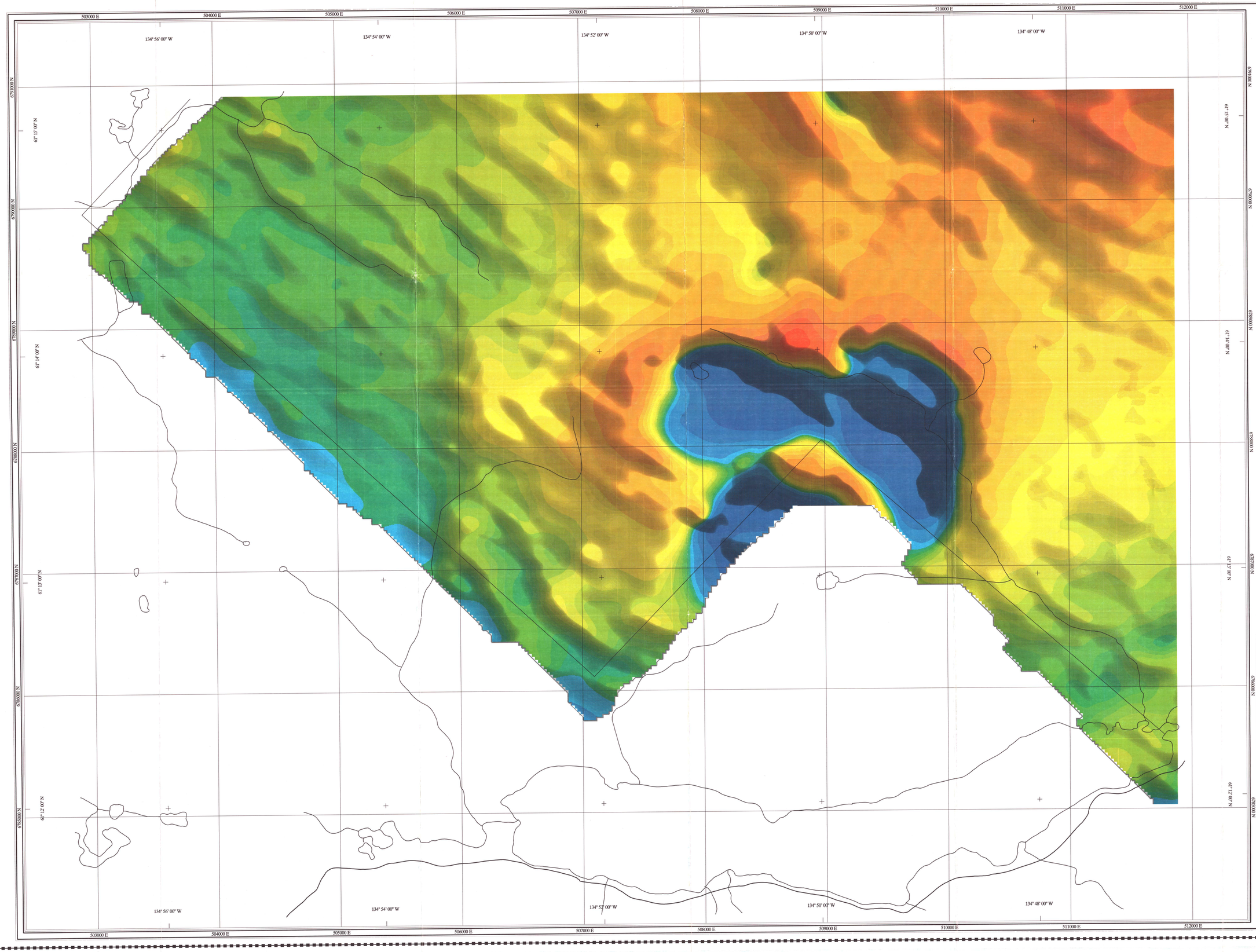
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 6 - 2





Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

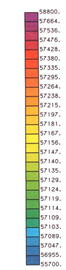
Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

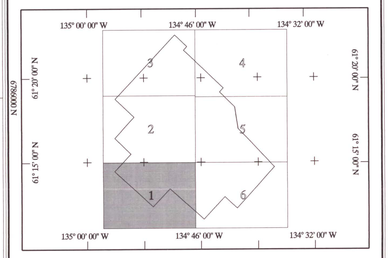
SHADOW MAGNETICS

Total field magnetic intensity data, measured by a cesium high sensitivity magnetometer at an average sensor elevation of 45m, and corrected for diurnal variation.

Data has been shadow enhanced to illuminate trends perpendicular to the chosen sun angle.

Source: declination 45°, inclination 45°.





PLACER DOME CANADA

COLOUR TOTAL FIELD MAGNETICS SHADOW ENHANCEMENT MAP

MARS PROJECT
YUKON TERRITORY

093874

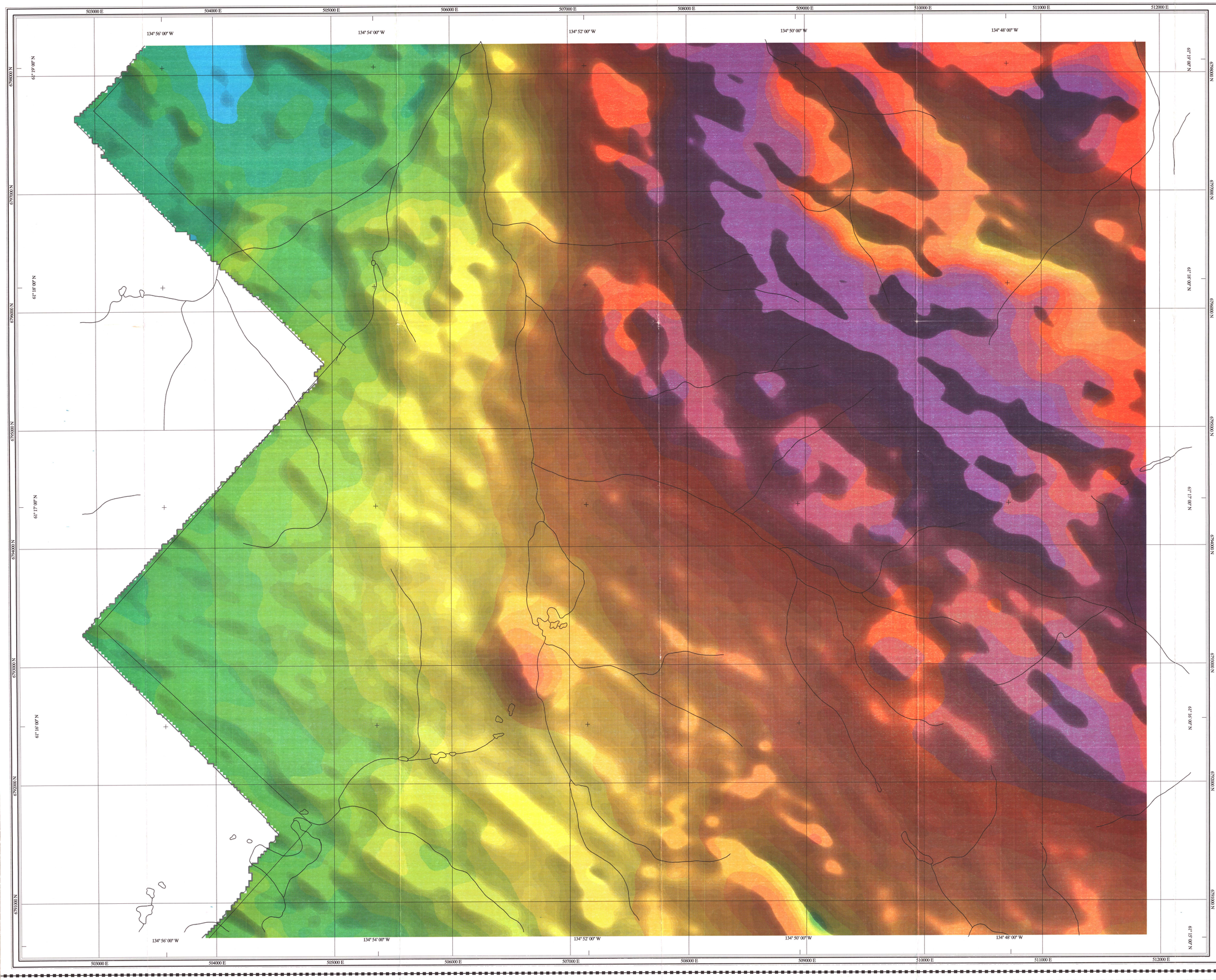
SCALE 1:10 000

250 0 100 200 500 1000 metres

DIAND - YUKON REGION LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 1 - 1



Square: Grid North
Star: True North
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Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

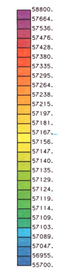
Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

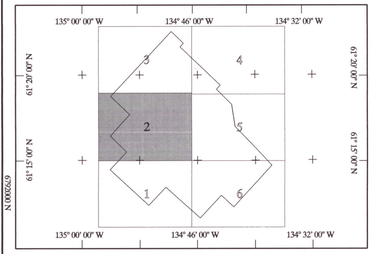
SHADOW MAGNETICS

Total field magnetic intensity data, measured by a cesium high sensitivity magnetometer at an average sensor elevation of 45m, and corrected for diurnal variation.

Data has been shadow enhanced to illuminate trends perpendicular to the chosen sun angle.

Source: declination 45°, inclination 45°.





PLACER DOME CANADA

COLOUR TOTAL FIELD MAGNETICS SHADOW ENHANCEMENT MAP

MARS PROJECT

YUKON TERRITORY

093874

SCALE 1:10 000

250 0 100 200 500 1000 metres

DIAND - YUKON REGION, LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2 Dah (46)

Project : J9783 Map Ref : 2 - 1

503000 E | 504000 E | 505000 E | 506000 E | 507000 E | 508000 E | 509000 E | 510000 E | 511000 E | 512000 E

134° 56' 00" W | 134° 54' 00" W | 134° 52' 00" W | 134° 50' 00" W | 134° 48' 00" W

6804000 N | 6803000 N | 6802000 N | 6801000 N | 6800000 N | 6799000 N | 6798000 N

61° 22' 00" N | 61° 21' 00" N | 61° 20' 00" N | 61° 19' 00" N

N.0.00.89 | N.0.00.39 | N.0.00.89 | N.0.00.39 | N.0.00.89 | N.0.00.39 | N.0.00.89

61° 22' 00" N | 61° 21' 00" N | 61° 20' 00" N | 61° 19' 00" N

Square: Grid North
Star: True North
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Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

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Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

SHADOW MAGNETICS

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Data has been shadow enhanced to illuminate trends perpendicular to the chosen sun angle.

Source: declination 45°, inclination 45°.

58800.
57664.
57536.
57476.
57428.
57380.
57335.
57295.
57264.
57238.
57215.
57197.
57181.
57167.
57156.
57147.
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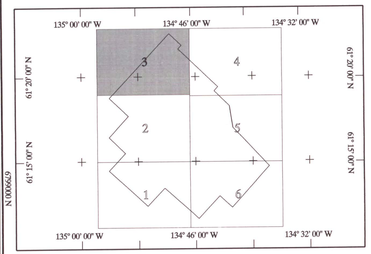
55700.



PLACER DOME CANADA

COLOUR TOTAL FIELD MAGNETICS SHADOW ENHANCEMENT MAP

MARS PROJECT 093 E/7

YUKON TERRITORY

SCALE 1:10 000

250 0 100 200 500 1000 metres

YUKON - YUKON REGION, LIBRARY

aerodat

AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2

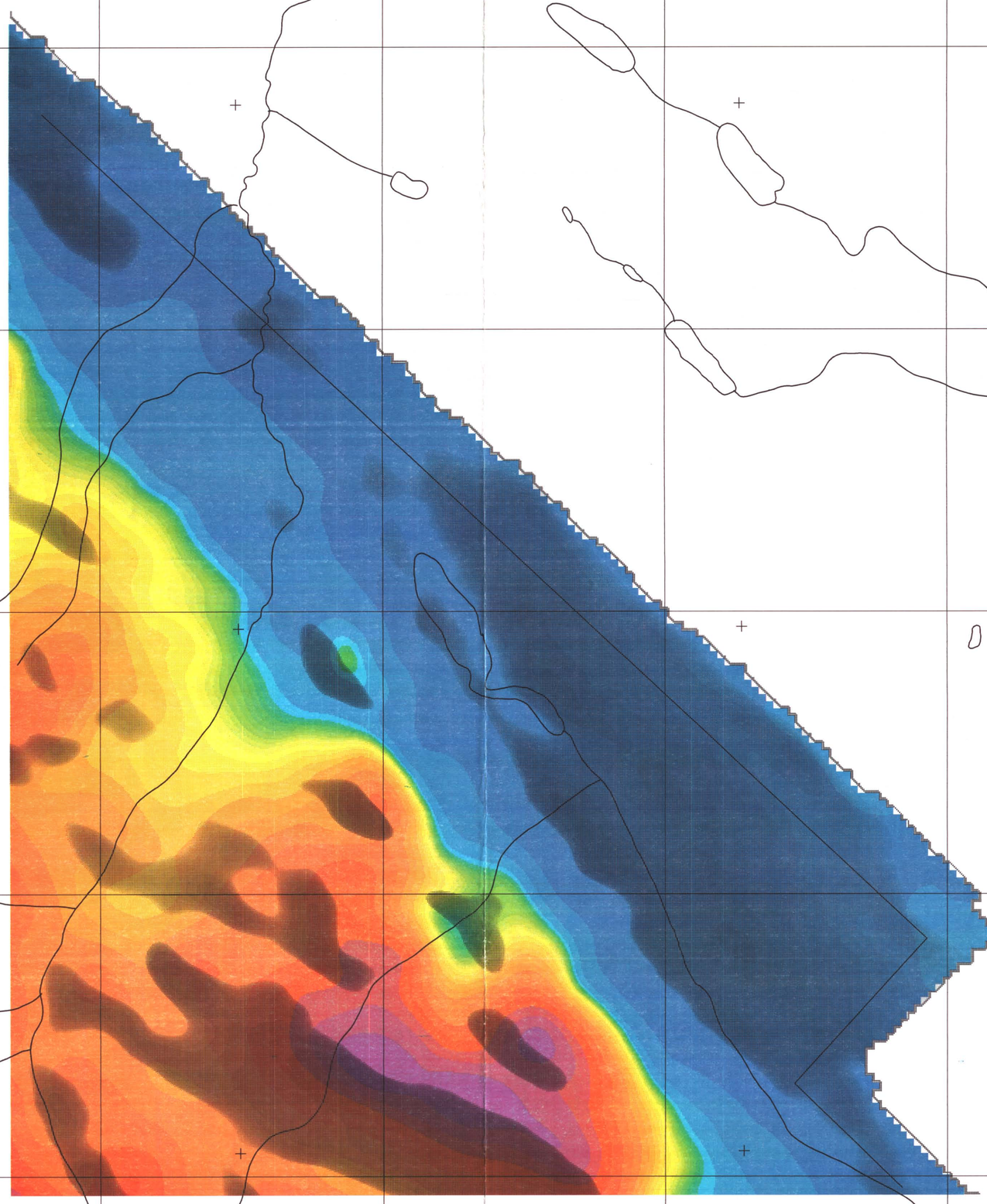
Project : J9783 Map Ref : 3 - 1

511000 E | 512000 E | 513000 E | 514000 E | 515000 E

134° 46' 00" W | 134° 44' 00" W

6803000 N | 6802000 N | 6801000 N | 6800000 N | 6799000 N

61° 21' 00" N | 61° 20' 00" N | 61° 19' 00" N





Square: Grid North
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Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

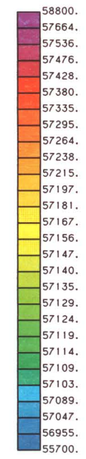
Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

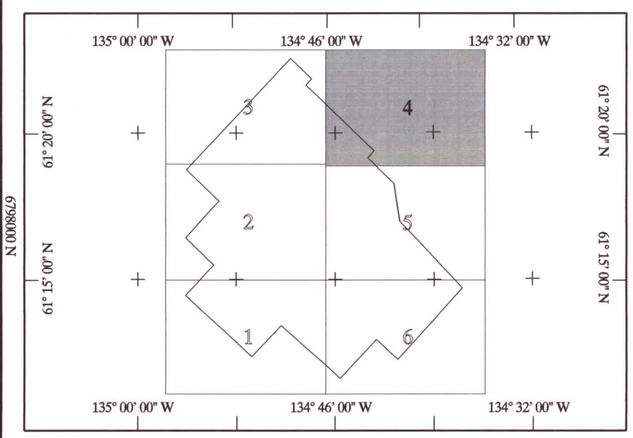
SHADOW MAGNETICS

Total field magnetic intensity data, measured by a cesium high sensitivity magnetometer at an average sensor elevation of 45m, and corrected for diurnal variation.

Data has been shadow enhanced to illuminate trends perpendicular to the chosen sun angle.

Source: declination 45°, inclination 45°.





PLACER DOME CANADA

COLOUR TOTAL FIELD MAGNETICS SHADOW ENHANCEMENT MAP

MARS PROJECT
YUKON TERRITORY

093874

SCALE 1:10 000

250 0 100 200 500 1000 metres

DIAND - YUKON REGION - LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 4 - 1

511000 E 512000 E 513000 E 514000 E 515000 E 516000 E 517000 E 518000 E 519000 E 520000 E

134° 46' 00" W 134° 44' 00" W 134° 42' 00" W 134° 40' 00" W 134° 38' 00" W

61° 19' 00" N 61° 18' 00" N 61° 17' 00" N 61° 16' 00" N 61° 15' 00" N

N.00.61.19 N.00.81.19 N.00.41.19 N.00.91.19 N.00.51.19

6796000 N 6795000 N 6794000 N 6793000 N 6792000 N 6791000 N

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Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

SHADOW MAGNETICS

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Source: declination 45°, inclination 45°.

58800.
57664.
57536.
57476.
57428.
57380.
57335.
57295.
57264.
57238.
57215.
57197.
57181.
57167.
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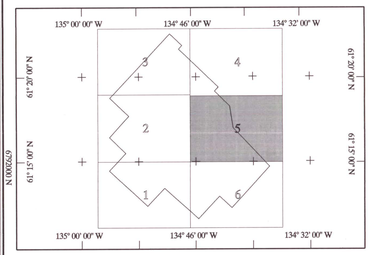

PLACER DOME CANADA

COLOUR TOTAL FIELD MAGNETICS SHADOW ENHANCEMENT MAP

MARS PROJECT
YUKON TERRITORY

093874

SCALE 1:10 000

250 0 100 200 500 1000 metres

DIAND - YUKON REGION, LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2

Project : J9783 Map Ref : 5 - 1

512000 E
513000 E
514000 E
515000 E
516000 E
517000 E
518000 E
519000 E
520000 E
521000 E

134° 46' 00" W
134° 44' 00" W
134° 42' 00" W
134° 40' 00" W
134° 38' 00" W

N.00.51.19
N.00.41.19
N.00.31.19
N.00.21.19

6790000 N
6788000 N
6786000 N
6784000 N

6791629 N
6789629 N
6787629 N
6785629 N
6783629 N

Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet.
Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

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57664.
57536.
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57380.
57335.
57295.
57264.
57238.
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57167.
57156.
57147.
57140.
57135.
57129.
57124.
57119.
57114.
57109.
57103.
57089.
57047.
56955.
55700.

135° 00' 00" W
134° 46' 00" W
134° 32' 00" W
61° 20' 00" N
61° 13' 00" N

1
2
3
4
5
6

PLACER DOME CANADA

COLOUR TOTAL FIELD MAGNETICS SHADOW ENHANCEMENT MAP

MARS PROJECT
YUKON TERRITORY

093 G/1

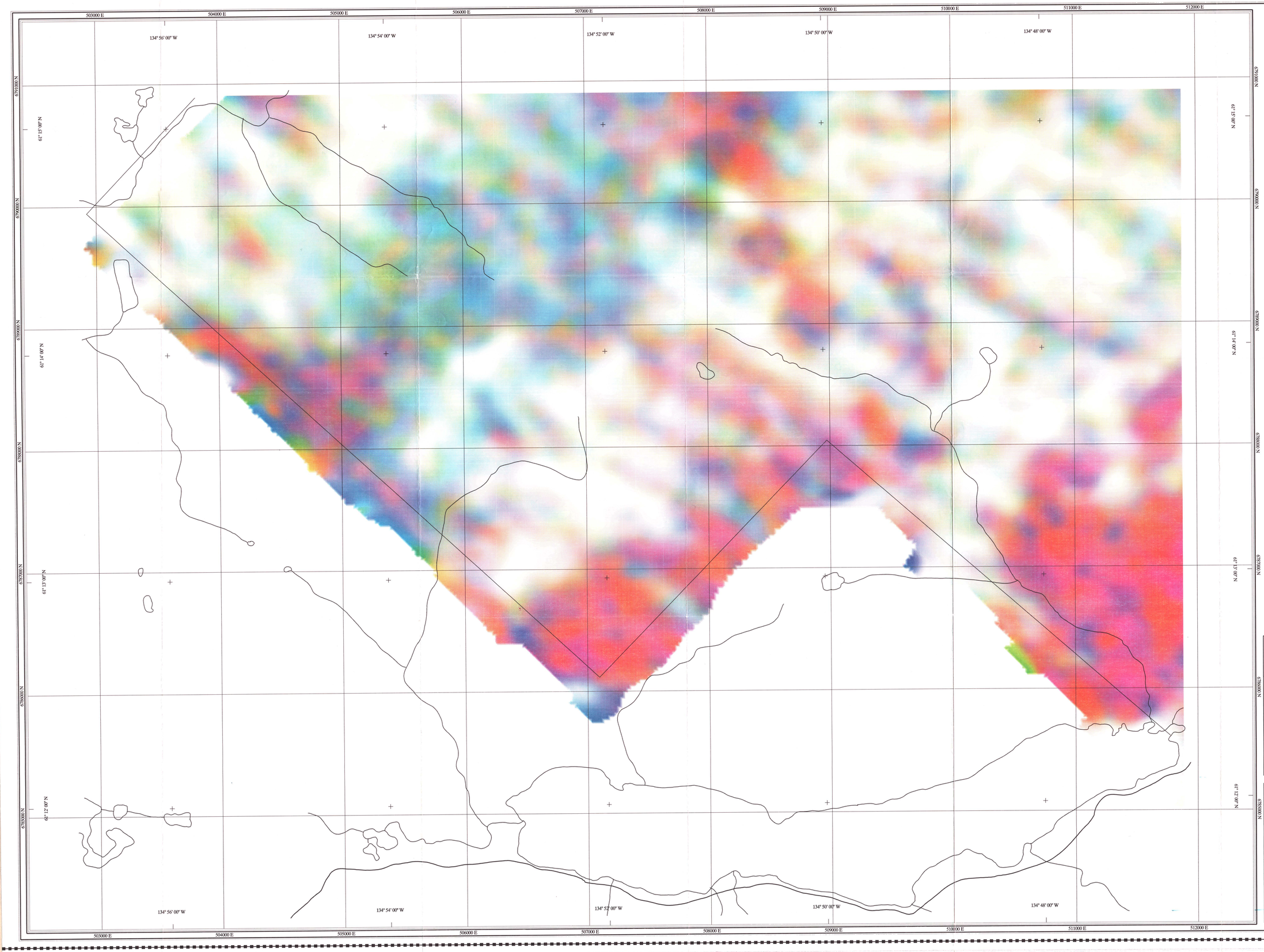
SCALE 1:10 000

250 0 100 200 500 1000 Metres

DIAND - YUKON REGION LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 6 - 1





Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

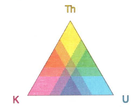
Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

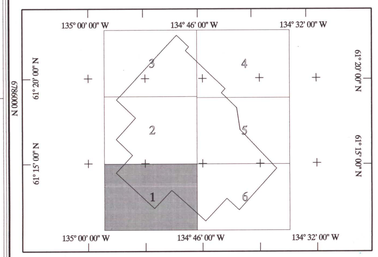
Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

RADIOMETRICS

Radiometric ternary map prepared from the gridded spectrometer data. Each element is assigned a colour and plotted by intensity, and colours are overlain to represent different ratios of the three elements.

The colour diagram below represents a typical cross section of ratios.





PLACER DOME CANADA

TERNARY RADIOMETRICS

MARS PROJECT
YUKON TERRITORY

093874

SCALE 1:10 000

250 0 100 200 500 1000 metres

DIAND - YUKON REGION, LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2 Dwh (51)

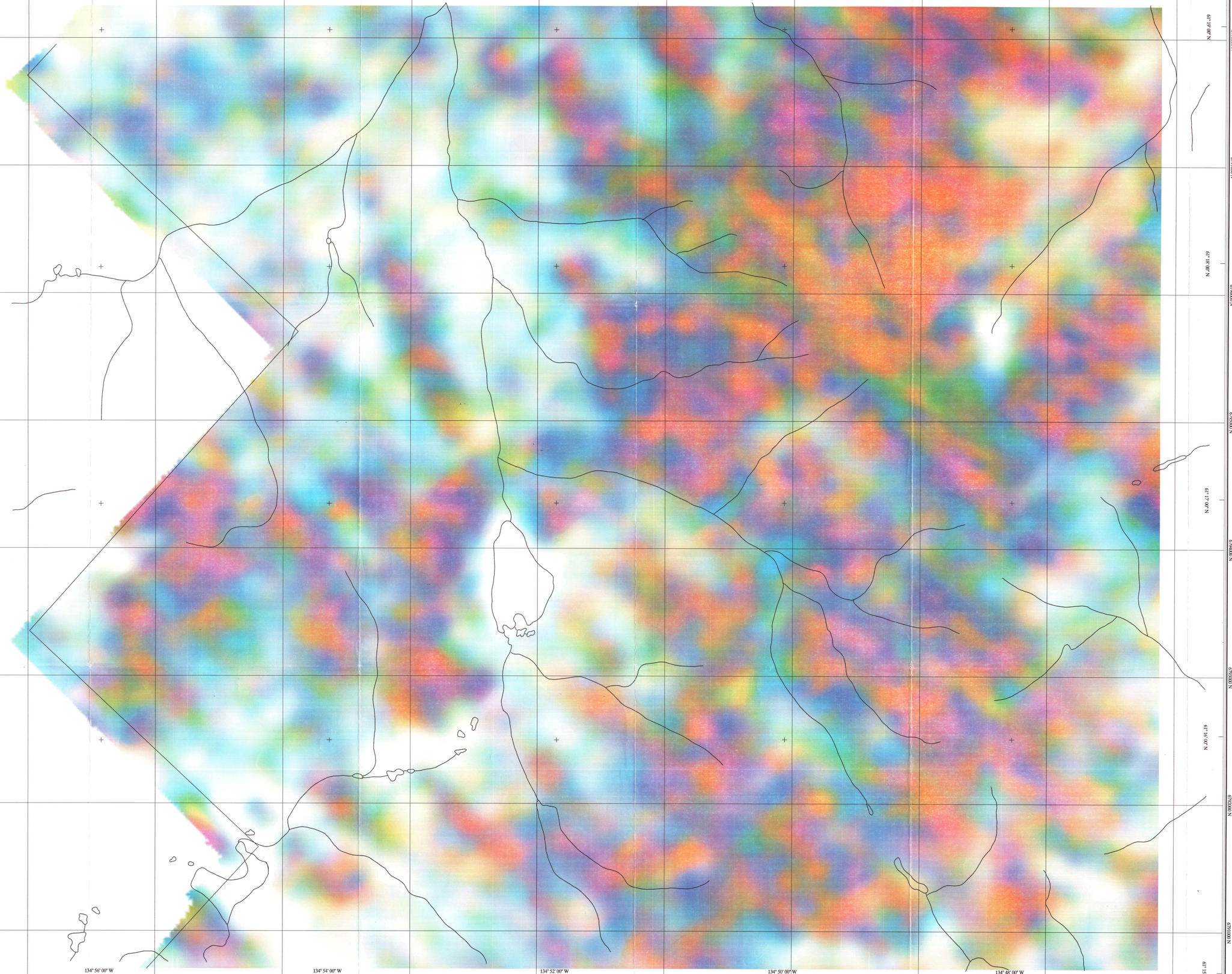
Project : J9783 Map Ref : 1 - 2

503000 E | 504000 E | 505000 E | 506000 E | 507000 E | 508000 E | 509000 E | 510000 E | 511000 E | 512000 E

134° 56' 00" W | 134° 54' 00" W | 134° 52' 00" W | 134° 50' 00" W | 134° 48' 00" W

6798000 N | 6797000 N | 6796000 N | 6795000 N | 6794000 N | 6793000 N | 6792000 N | 6791000 N

61° 19' 00" N | 61° 18' 00" N | 61° 17' 00" N | 61° 16' 00" N





Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

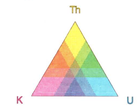
Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

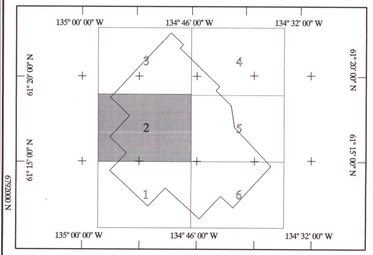
Tranverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

RADIOMETRICS

Radiometric ternary map prepared from the gridded spectrometer data. Each element is assigned a colour and plotted by intensity, and colours are overlain to represent different ratios of the three elements.

The colour diagram below represents a typical cross section of ratios.





PLACER DOME CANADA

TERNARY RADIOMETRICS

MARS PROJECT
YUKON TERRITORY

093E/4

SCALE 1:10 000

250 0 100 200 300 1000 m

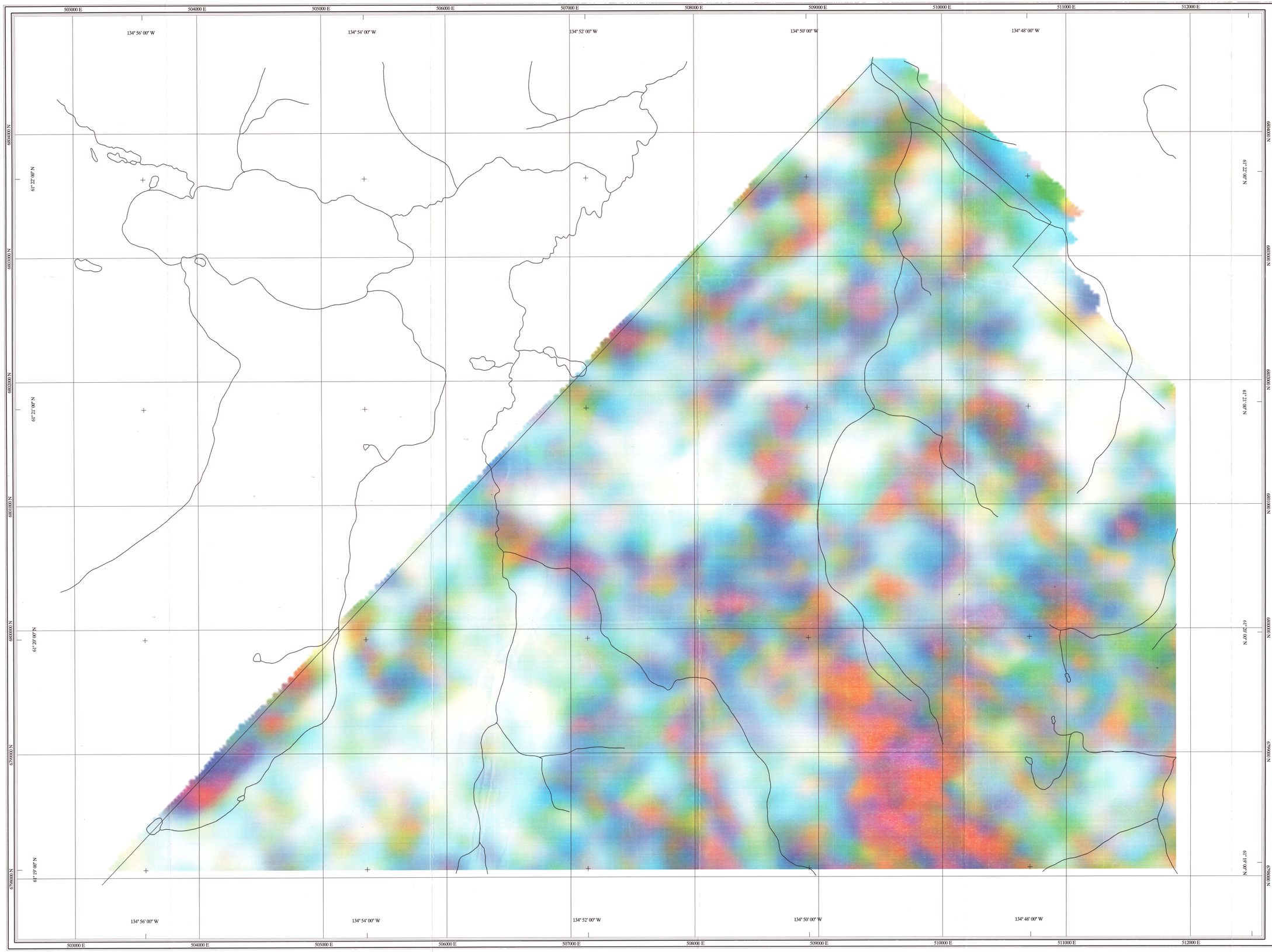
DIAND - YUKON REGION, LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2

Project : J9783 Map Ref : 2 - 2





Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

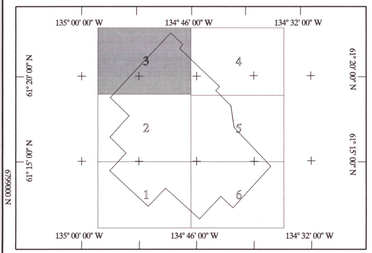
Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

RADIOMETRICS

Radiometric ternary map prepared from the gridded spectrometer data. Each element is assigned a colour and plotted by intensity, and colours are overlain to represent different ratios of the three elements.

The colour diagram below represents a typical cross section of ratios.





PLACER DOME CANADA

TERNARY RADIOMETRICS

MARS PROJECT
YUKON TERRITORY

093874

SCALE 1:10 000

250 0 100 200 500 1000 metres

DIAND - YUKON REGION

aerodat
AERODAT INC.

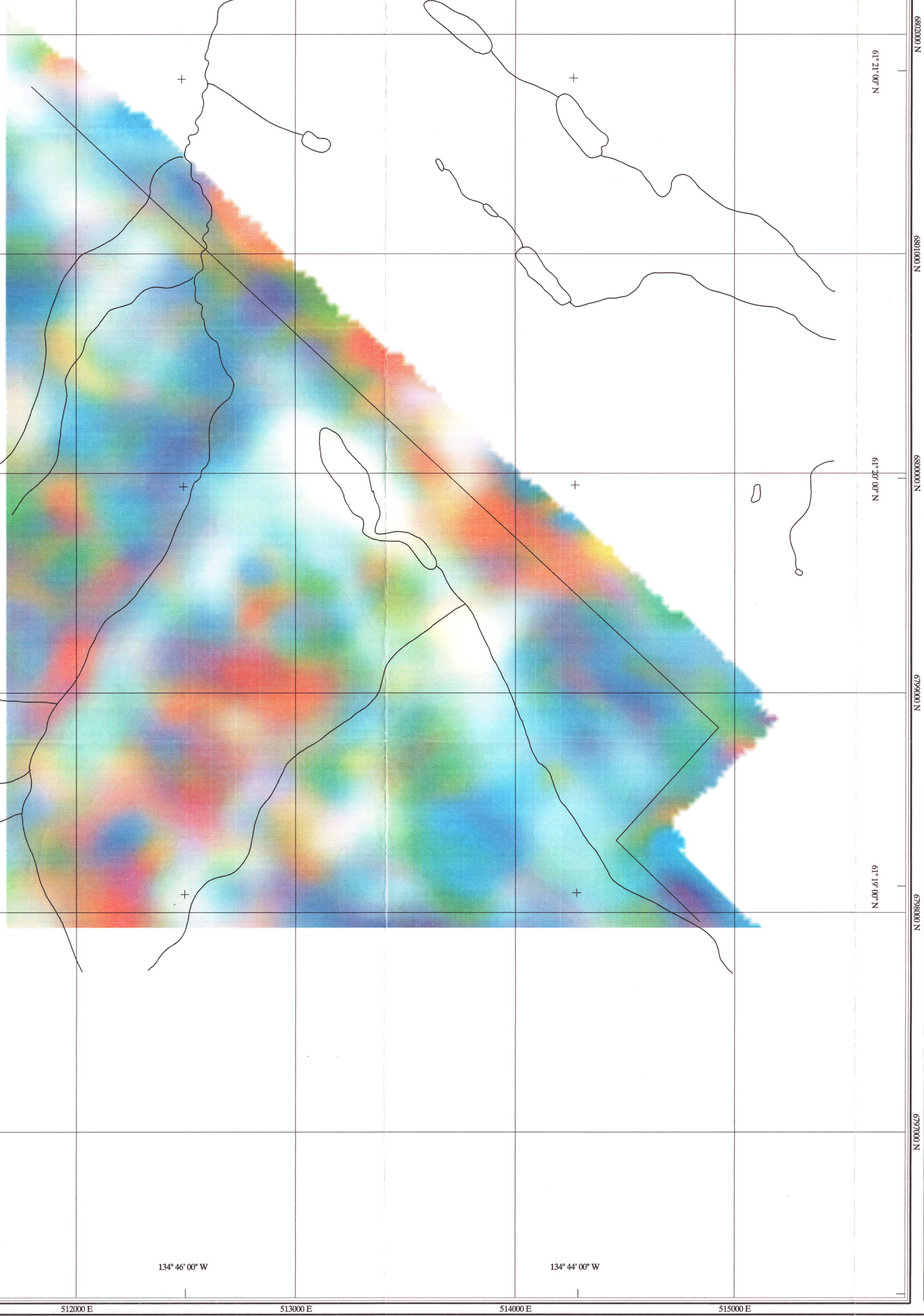
Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2 Dwk (53)
Project : J9783 Map Ref : 3 - 2

511000 E | 512000 E | 513000 E | 514000 E | 515000 E

134° 46' 00" W | 134° 44' 00" W

6803000 N | 6802000 N | 6801000 N | 6800000 N | 6799000 N | 6798000 N | 6797000 N

61° 21' 00" N | 61° 20' 00" N | 61° 19' 00" N





Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet.
Use diagram for reference only.

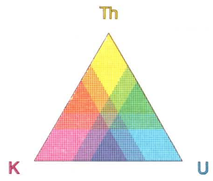
Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

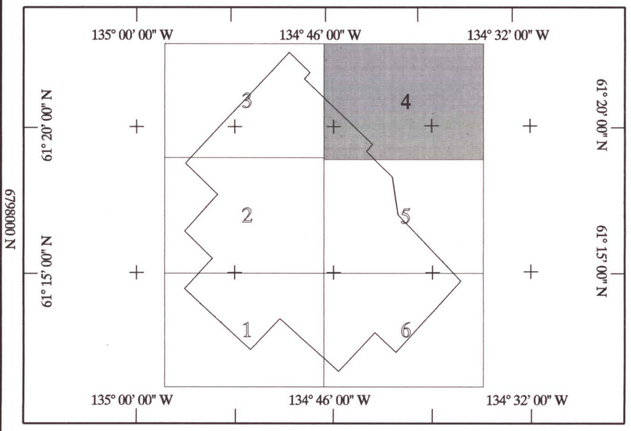
Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

RADIOMETRICS

Radiometric ternary map prepared from the gridded spectrometer data. Each element is assigned a colour and plotted by intensity, and colours are overlain to represent different ratios of the three elements.

The colour diagram below represents a typical cross section of ratios.





PLACER DOME CANADA

TERNARY RADIOMETRICS

093874

MARS PROJECT

YUKON TERRITORY

093E 4

SCALE 1:10 000

250 0 100 200 500 1000 metres

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aerodat

AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2 Duh (54)

Project : J9783 Map Ref : 4 - 2

511000 E | 512000 E | 513000 E | 514000 E | 515000 E | 516000 E | 517000 E | 518000 E | 519000 E | 520000 E

134° 46' 00" W | 134° 44' 00" W | 134° 42' 00" W | 134° 40' 00" W | 134° 38' 00" W

61° 19' 00" N | 61° 18' 00" N | 61° 17' 00" N | 61° 16' 00" N | 61° 15' 00" N

6790000 N | 6791000 N | 6792000 N | 6793000 N | 6794000 N | 6795000 N | 6796000 N

Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet.
Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

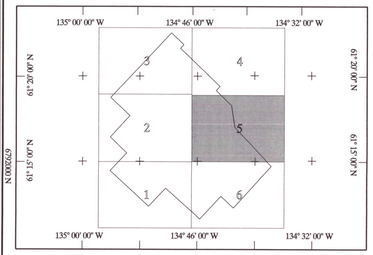
Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

RADIOMETRICS

Radiometric ternary map prepared from the gridded spectrometer data. Each element is assigned a colour and plotted by intensity, and colours are overlain to represent different ratios of the three elements.

The colour diagram below represents a typical cross section of ratios.





PLACER DOME CANADA

TERNARY RADIOMETRICS

MARS PROJECT
YUKON TERRITORY

093874

SCALE 1:10 000

250 0 100 200 500 1000 metres

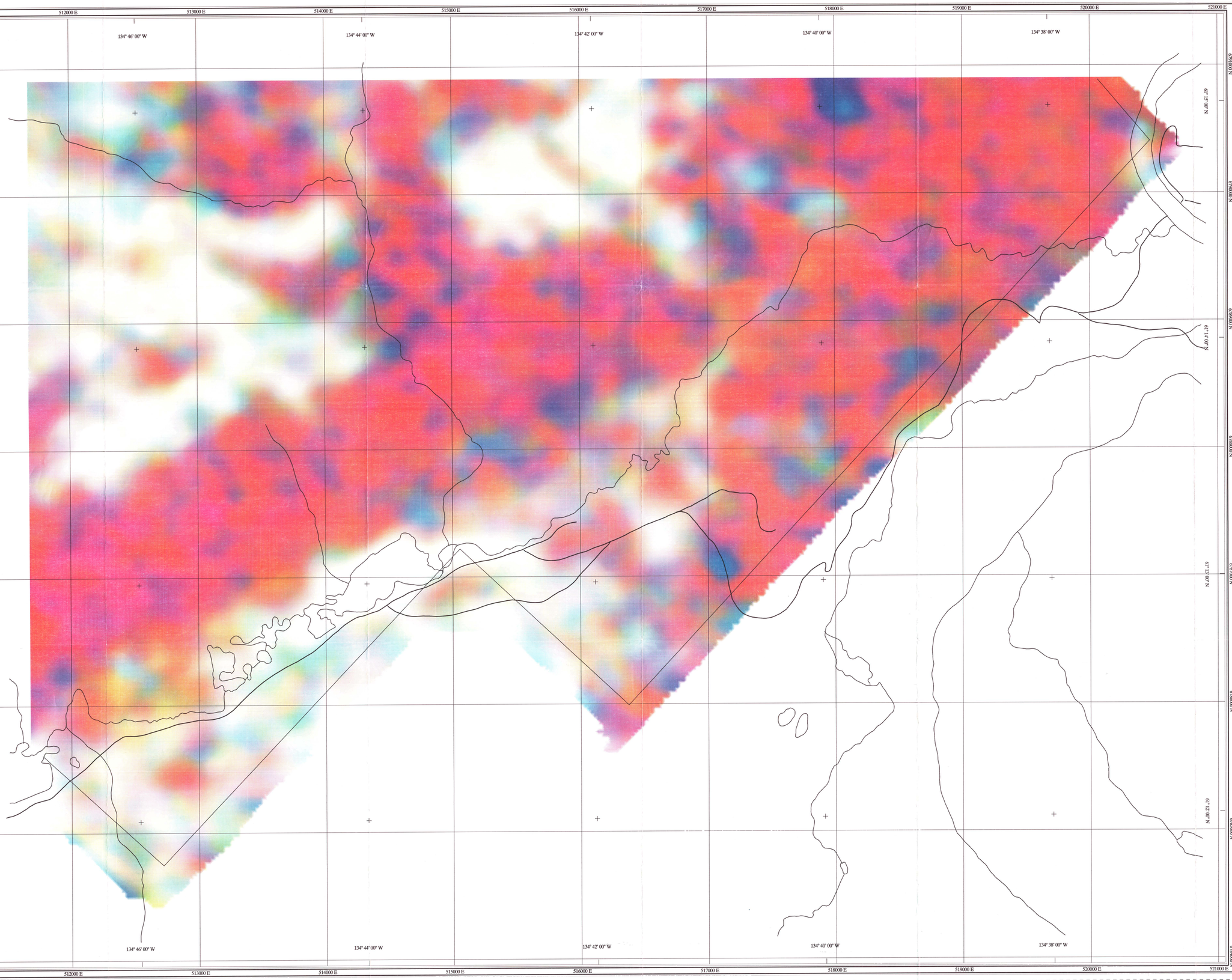
DIAND - YUKON REGION, LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2

Project : J9783 Map Ref : 5 - 2



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

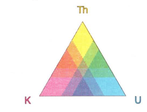
Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

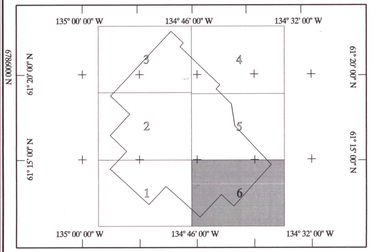
Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

RADIOMETRICS

Radiometric ternary map prepared from the gridded spectrometer data. Each element is assigned a colour and plotted by intensity, and colours are overlain to represent different ratios of the three elements.

The colour diagram below represents a typical cross section of ratios.





PLACER DOME CANADA

TERNARY RADIOMETRICS

MARS PROJECT
YUKON TERRITORY

093874

SCALE 1:10 000

250 0 100 200 300 1000 metres

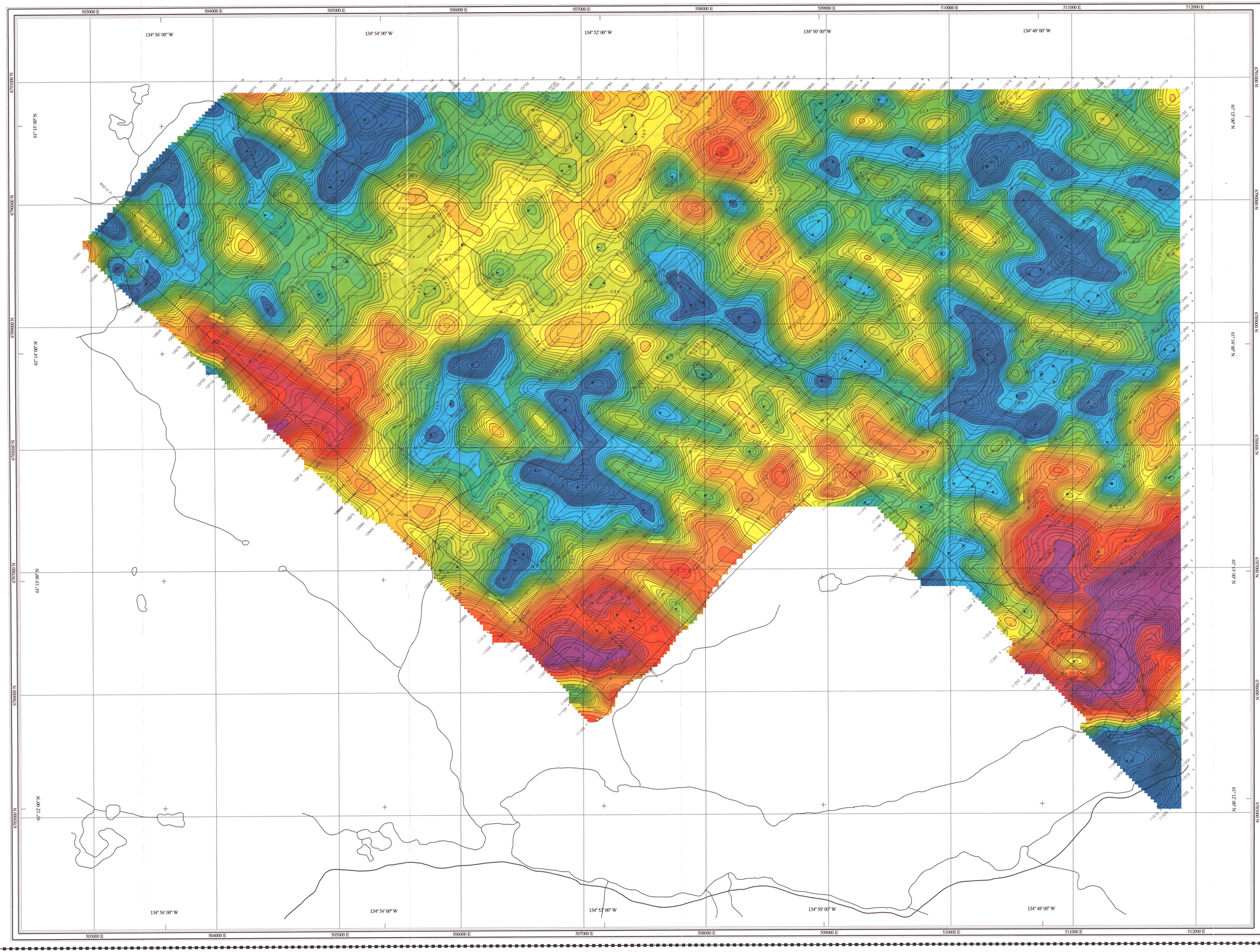
YUKON - YUKON REGION, LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2

Project : J9783 Map Ref : 6 - 2



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

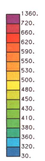
Average terrain clearance of 60m was monitored by radar and barometric altimeters.

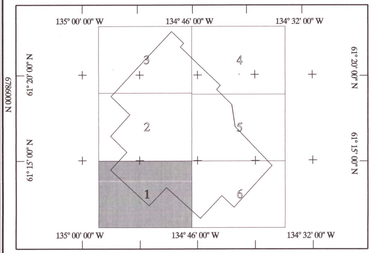
RADIOMETRICS

Total count radiometric contour data measured by a 256 channel spectrometer system mounted in the helicopter at an average sensor elevation of 60m. Corrections were made for cosmic and background emissions, Compton scatter, and altitude variation.

Map contours are in counts/second, and are multiples of those listed below:

10 cps
50 cps
250 cps





PLACER DOME CANADA

TOTAL COUNT RADIOMETRICS

MARS PROJECT
YUKON TERRITORY

093874

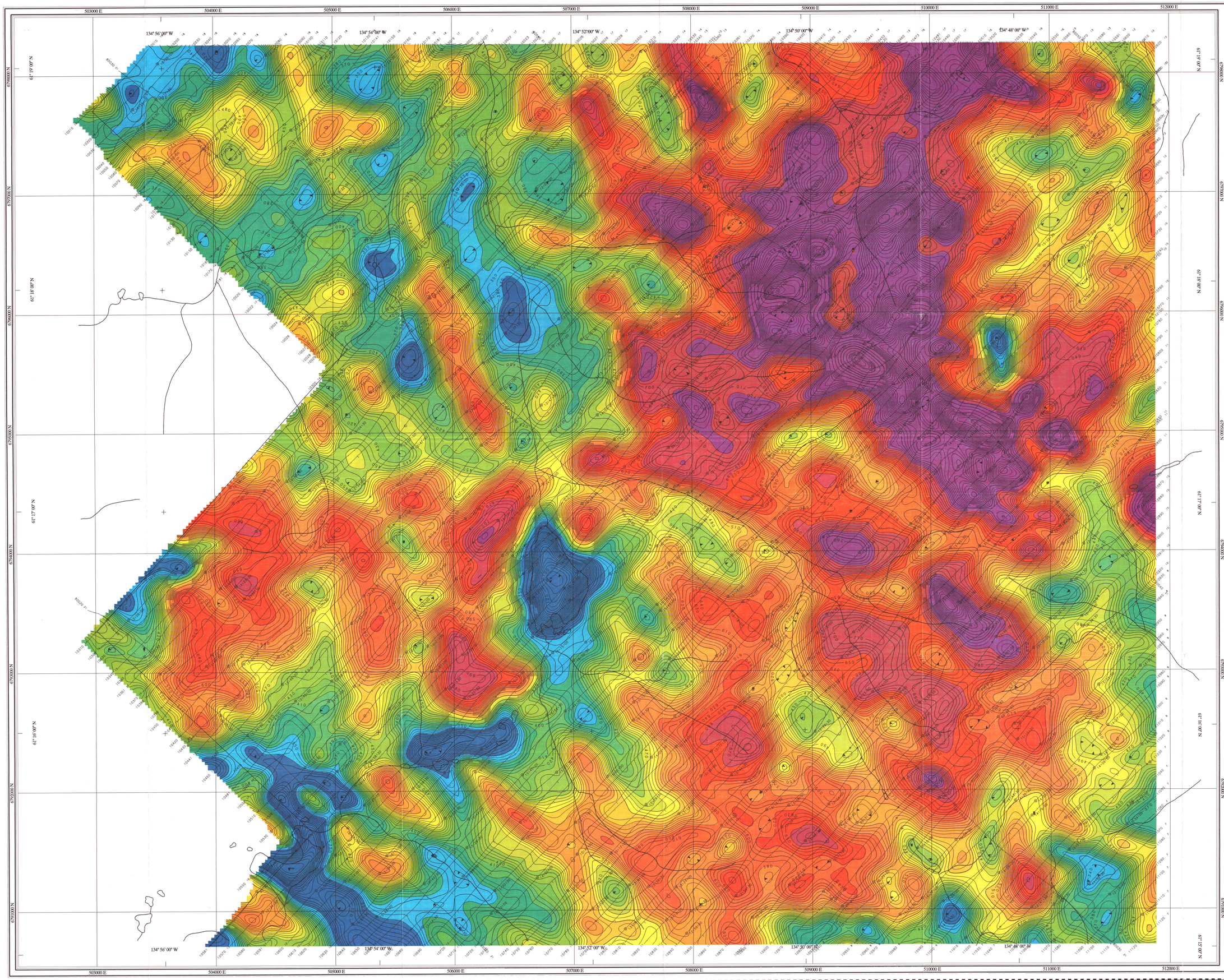
SCALE 1:10 000

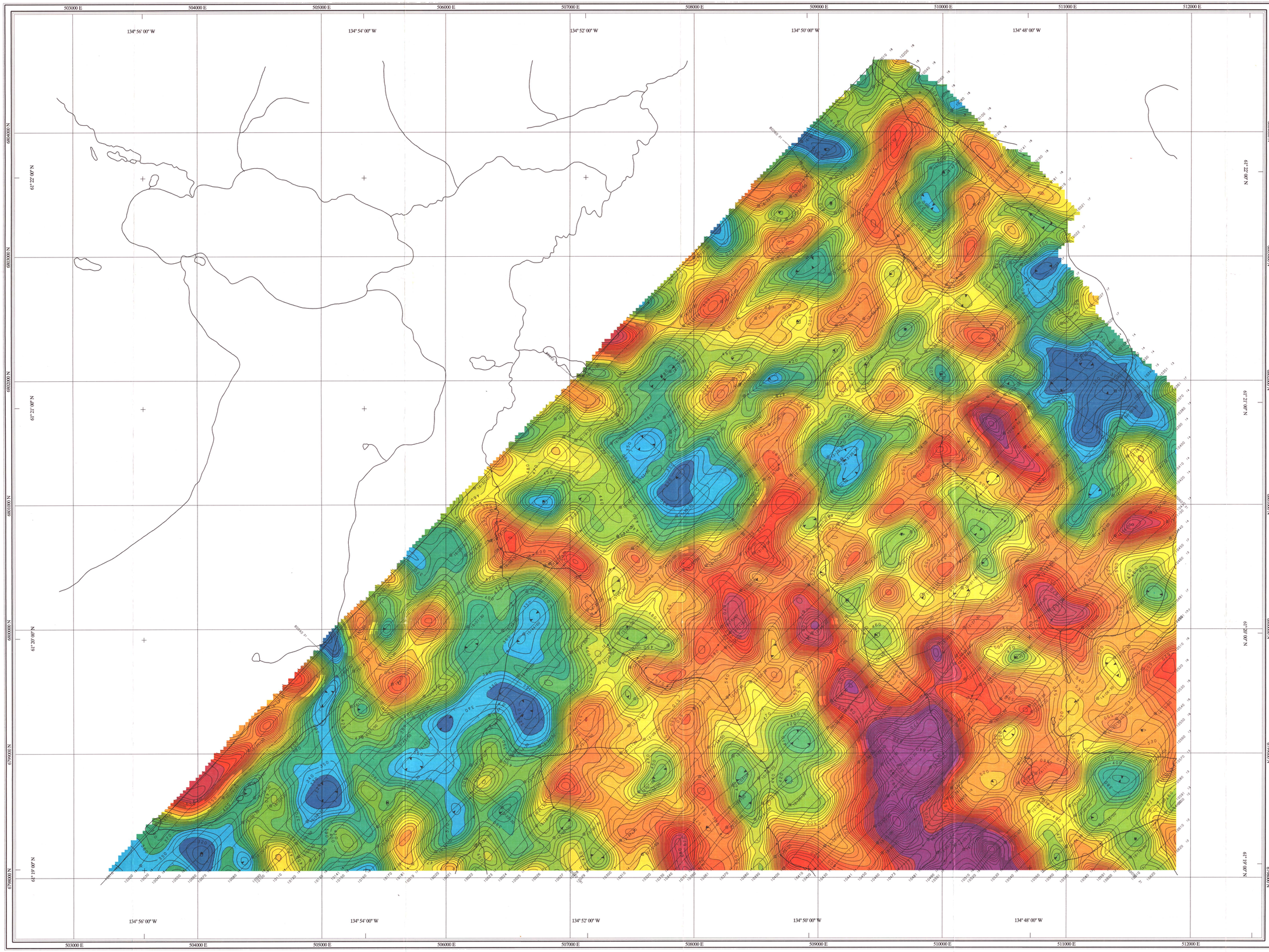
250 0 100 200 500 1000 metres

DIAND - YUKON REGION. LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 1 - 3


503000 E
504000 E
505000 E
506000 E
507000 E
508000 E
509000 E
510000 E
511000 E
512000 E
134° 56' 00" W
134° 54' 00" W
134° 52' 00" W
134° 50' 00" W
134° 48' 00" W
61° 19' 00" N
61° 18' 00" N
61° 17' 00" N
61° 16' 00" N
N 6978000
N 6979000
N 6980000
N 6981000
N 6982000
N 6983000
N 6984000
N 6985000
N 6986000
N 6987000
N 6988000
N 6989000
N 6990000
N 6991000
N 6992000
N 6993000
N 6994000
N 6995000
N 6996000
N 6997000
N





Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

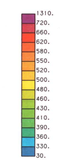
Average terrain clearance of 60m was monitored by radar and barometric altimeters.

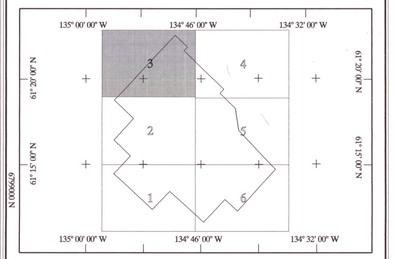
RADIOMETRICS

Total count radiometric contour data measured by a 256 channel spectrometer system mounted in the helicopter at an average sensor elevation of 60m. Corrections were made for cosmic and background emissions, Compton scatter, and altitude variation.

Map contours are in counts/second, and are multiples of those listed below:

10 cps
50 cps
250 cps





PLACER DOME CANADA

TOTAL COUNT RADIOMETRICS

MARS PROJECT 093874

YUKON TERRITORY DIAND - YUKON REGION, LIBRARY

SCALE 1:10 000

250 0 100 200 500 1000 metres

aerodat
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2 Dwh 59

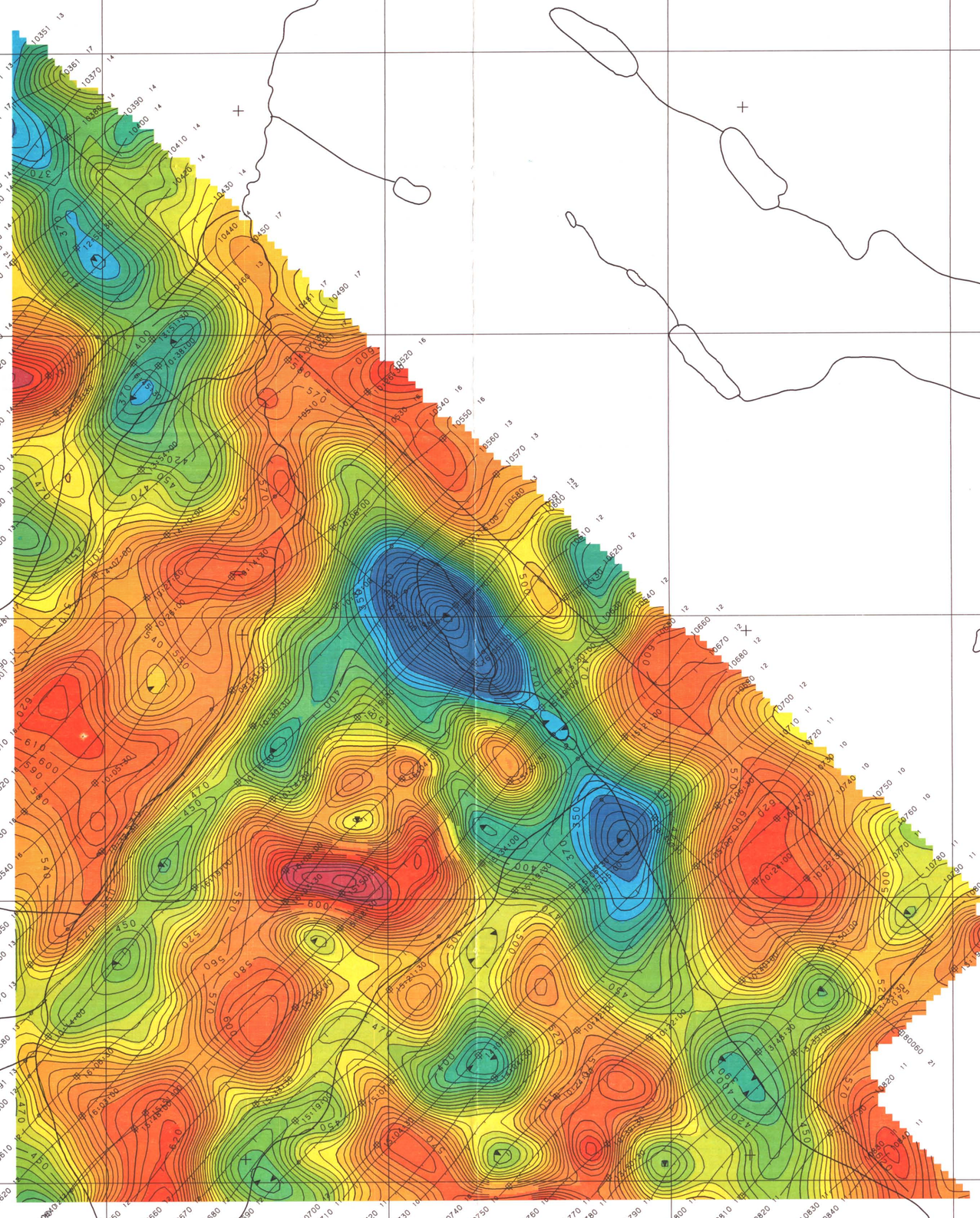
Project : J9783 Map Ref : 3 - 3

511000 E | 512000 E | 513000 E | 514000 E | 515000 E

134° 46' 00" W | 134° 44' 00" W

6803000 N | 6802000 N | 6801000 N | 6800000 N | 6799000 N | 6798000 N | 6797000 N

61° 21' 00" N | 61° 20' 00" N | 61° 19' 00" N



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

Average terrain clearance of 60m was monitored by radar and barometric altimeters.

RADIOMETRICS

Total count radiometric contour data measured by a 256 channel spectrometer system mounted in the helicopter at an average sensor elevation of 60m. Corrections were made for cosmic and background emissions, Compton scatter, and altitude variation.

Map contours are in counts/second, and are multiples of those listed below:

10 cps
50 cps
250 cps

1310.
720.
660.
620.
580.
550.
520.
500.
480.
460.
430.
410.
390.
360.
330.
30.

135° 00' 00" W | 134° 46' 00" W | 134° 32' 00" W

61° 20' 00" N | 61° 15' 00" N

3 | 4 | 2 | 5 | 1 | 6

PLACER DOME CANADA

TOTAL COUNT RADIOMETRICS

MARS PROJECT

YUKON TERRITORY

093874
DIAND - YUKON REGION, LIBRARY

SCALE 1:10 000

250 0 100 200 500 1000 metres

aerodat
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2

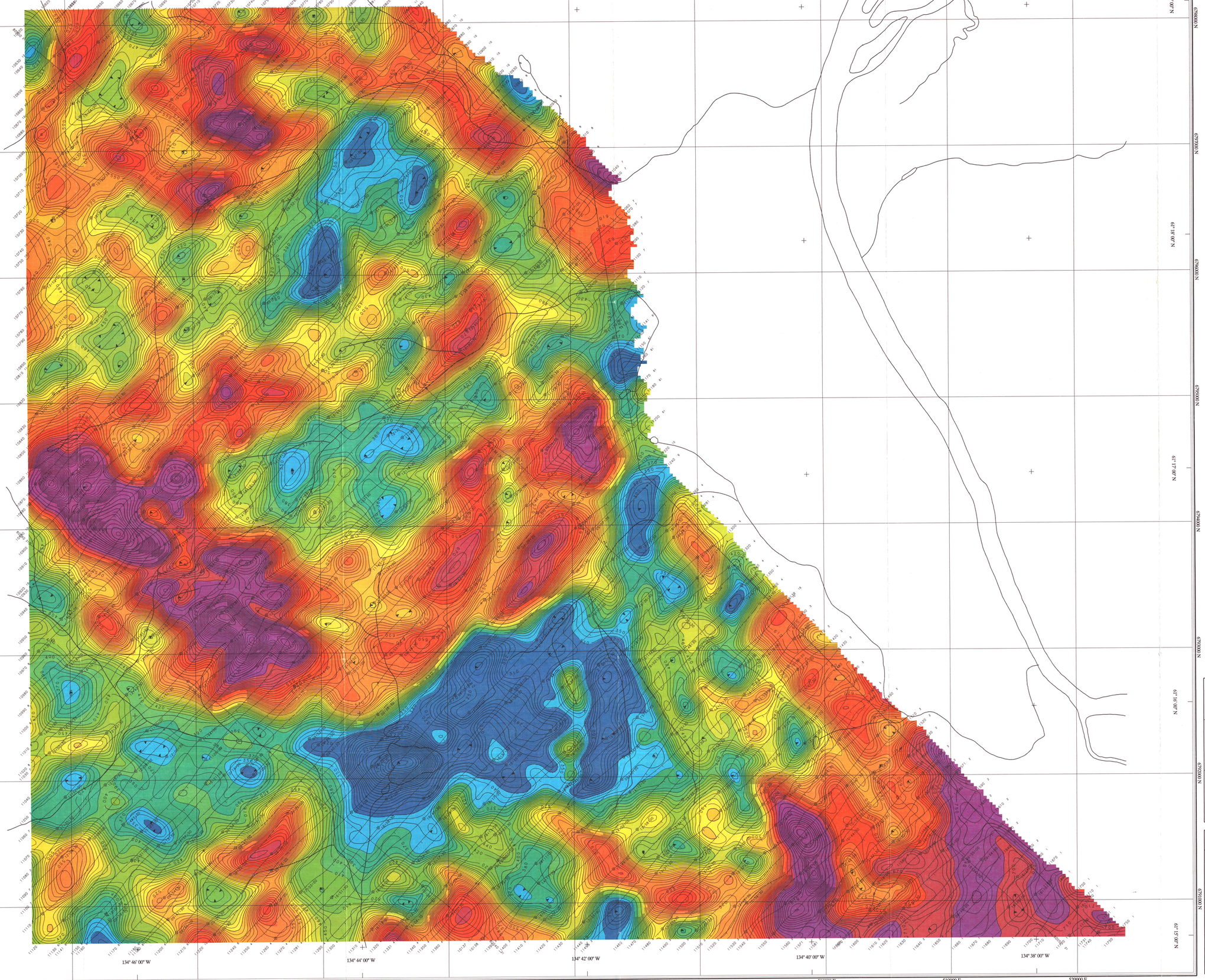
Project : J9783 Map Ref : 4 - 3

511000 E 512000 E 513000 E 514000 E 515000 E 516000 E 517000 E 518000 E 519000 E 520000 E

134° 46' 80" W 134° 44' 00" W 134° 42' 00" W 134° 40' 00" W 134° 38' 00" W

61° 39' 49" N 61° 38' 19" N 61° 36' 49" N 61° 35' 19" N 61° 33' 49" N 61° 32' 19" N 61° 30' 49" N 61° 29' 19" N 61° 27' 49" N

N 6984000 N 6982000 N 6980000 N 6978000 N 6976000 N 6974000 N 6972000 N 6970000 N 6968000 N 6966000 N 6964000 N 6962000



511000 E 512000 E 513000 E 514000 E 515000 E 516000 E 517000 E 518000 E 519000 E 520000 E

134° 46' 00" W 134° 44' 00" W 134° 42' 00" W 134° 40' 00" W 134° 38' 00" W

Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

Average terrain clearance of 60m was monitored by radar and barometric altimeters.

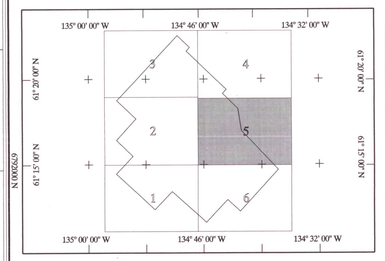
RADIOMETRICS

Total count radiometric contour data measured by a 256 channel spectrometer system mounted in the helicopter at an average sensor elevation of 60m. Corrections were made for cosmic and background emissions, Compton scatter, and altitude variation.

Map contours are in counts/second, and are multiples of those listed below:

10 cps
50 cps
250 cps

1310.
720.
660.
620.
580.
550.
520.
500.
480.
460.
430.
410.
390.
360.
330.
30.



PLACER DOME CANADA

TOTAL COUNT RADIOMETRICS

MARS PROJECT

YUKON TERRITORY

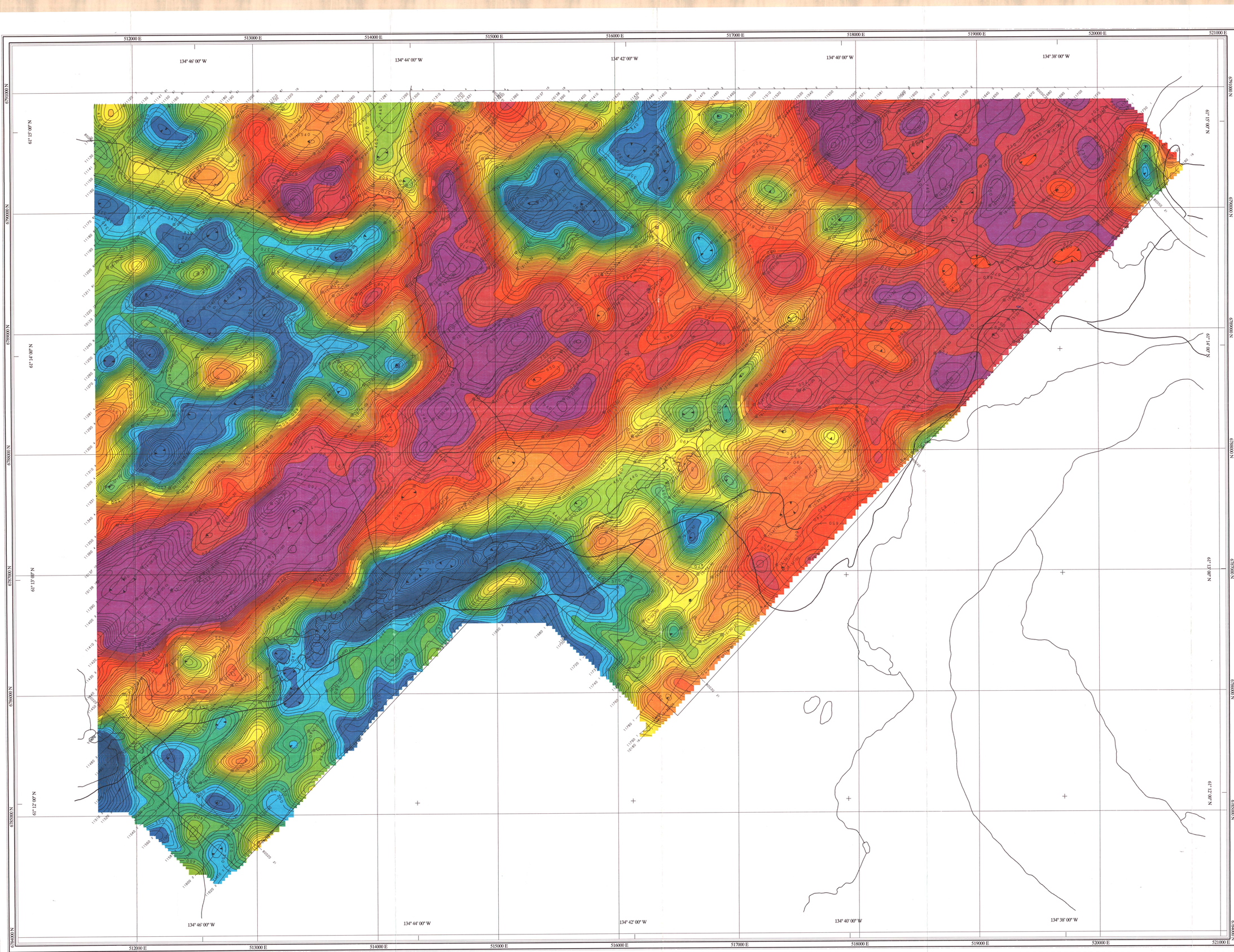
093874
YUKON - YUKON REGION, LIBRARY

SCALE 1:10 000

250 0 100 200 300 1000 metres

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2 Delta 61
Project : J9783 Map Ref : 5 - 3



Square: Grid North
Bar: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24'

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

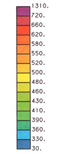
Average terrain clearance of 60m was monitored by radar and barometric altimeters.

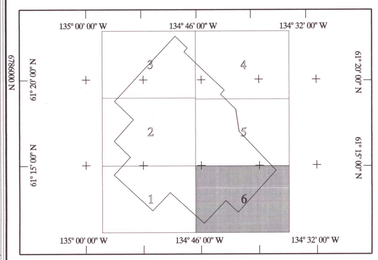
RADIOMETRICS

Total count radiometric contour data measured by a 256 channel spectrometer system mounted in the helicopter at an average sensor elevation of 60m. Corrections were made for cosmic and background emissions, Compton scatter, and altitude variation.

Map contours are in counts/second, and are multiples of those listed below:

10 cps
50 cps
250 cps





PLACER DOME CANADA

TOTAL COUNT RADIOMETRICS

MARS PROJECT
YUKON TERRITORY

093874
DIAND - YUKON REGION, LIBRARY

SCALE 1:10 000

250 0 100 200 500 1000 metres

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS 105 E/7 - 105 E/2
Project : J9783 Map Ref : 6 - 3

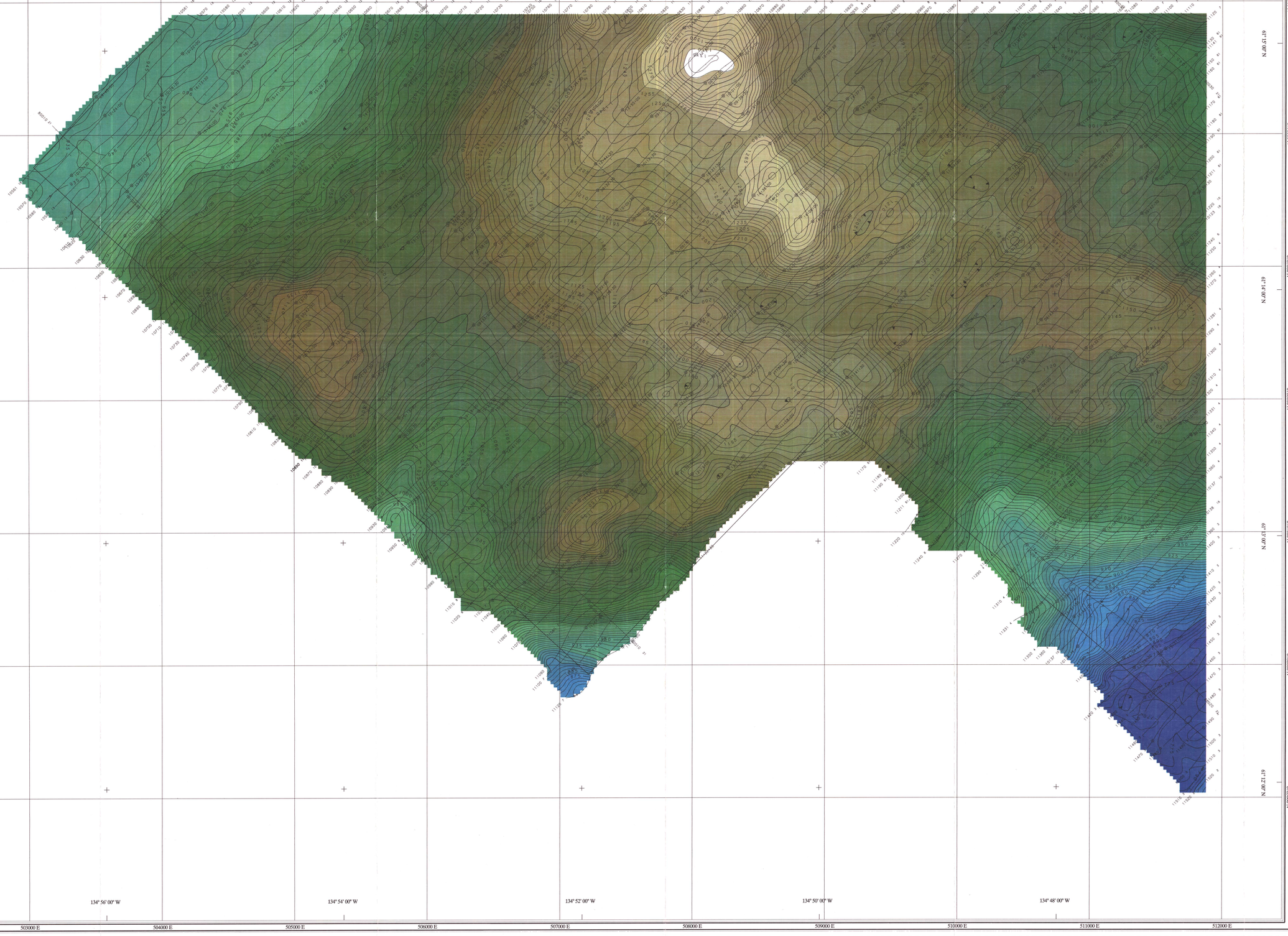
503000 E | 504000 E | 505000 E | 506000 E | 507000 E | 508000 E | 509000 E | 510000 E | 511000 E | 512000 E

134° 56' 00" W | 134° 54' 00" W | 134° 52' 00" W | 134° 50' 00" W | 134° 48' 00" W

6791000 N | 6790000 N | 6789000 N | 6788000 N | 6787000 N | 6786000 N | 6785000 N

N 00° 15' 19" | N 00° 14' 19" | N 00° 13' 19" | N 00° 12' 19"

N 6790829 | N 6789829 | N 6788829 | N 6787829 | N 6786829 | N 6785829



134° 56' 00" W | 134° 54' 00" W | 134° 52' 00" W | 134° 50' 00" W | 134° 48' 00" W

503000 E | 504000 E | 505000 E | 506000 E | 507000 E | 508000 E | 509000 E | 510000 E | 511000 E | 512000 E

Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

Average terrain clearance of 60m was monitored by radar and barometric altimeters.

DIGITAL TERRAIN MODEL

The Digital Terrain Model was calculated by subtracting the radar altimeter values from the levelled barometric altimeter values. Map contours are in metres, and are multiples of those listed below:

5
25
100
500
2500

1500.
1310.
1260.
1230.
1200.
1180.
1160.
1140.
1130.
1110.
1100.
1080.
1070.
1050.
1040.
1020.
1000.0
990.0
970.0
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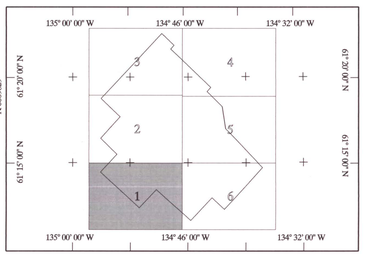
780.0
750.0
590.0



PLACER DOME CANADA

DIGITAL TERRAIN MODEL

MARS PROJECT

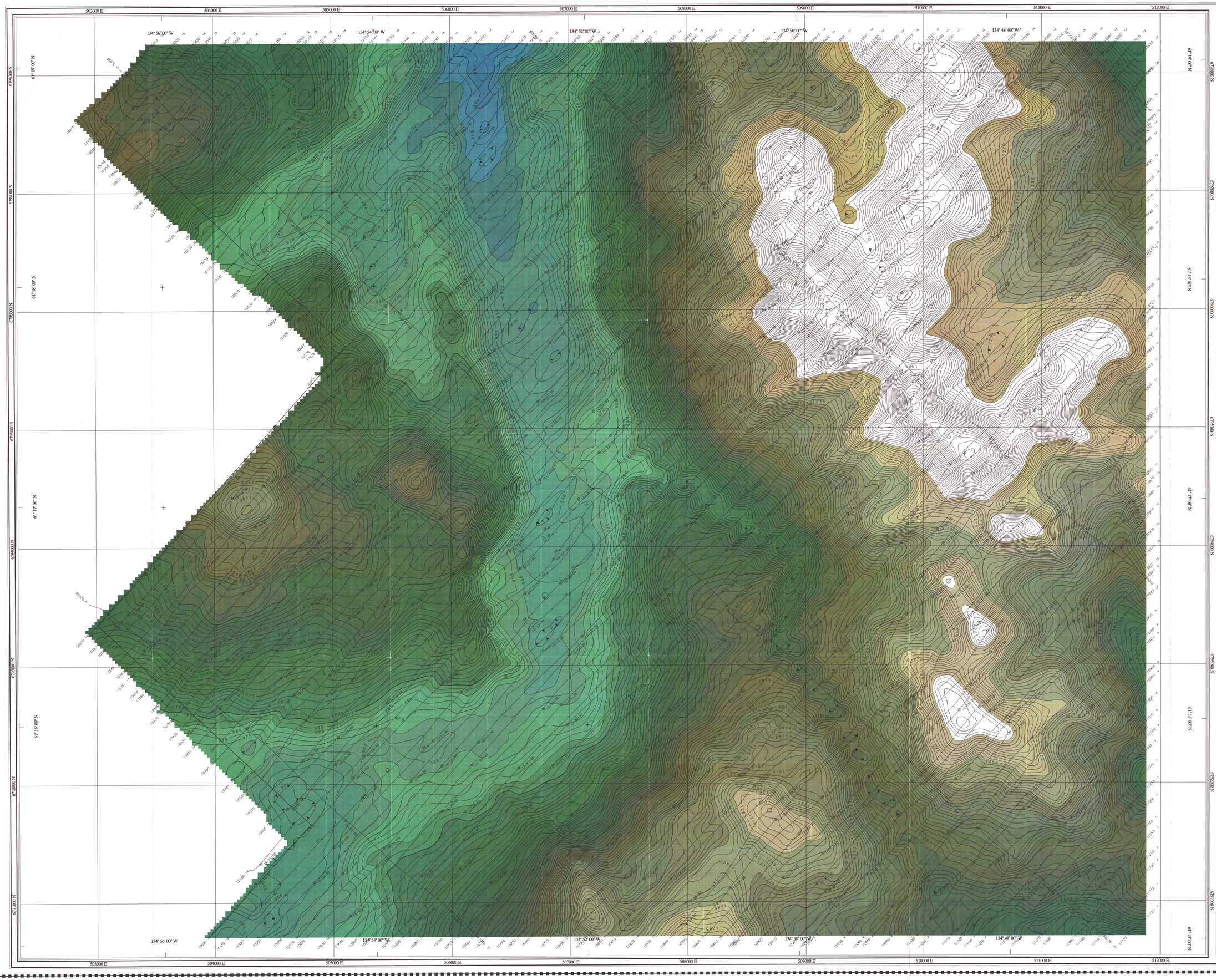
093874
YUKON TERRITORY (LAND) - YUKON REGION, LIBRARY

SCALE 1:10 000

250 0 100 200 500 1000 metres

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 1 - 1





Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

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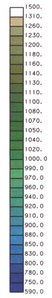
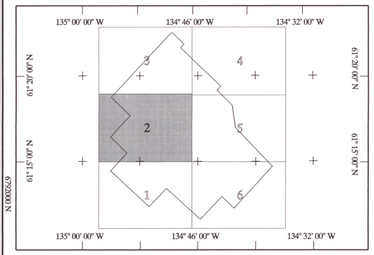
DIGITAL TERRAIN MODEL

The Digital Terrain Model was calculated by subtracting the radar altimeter values from the levelled barometric altimeter values. Map contours are in metres, and are multiples of those listed below:

5
25
100
500
2500





PLACER DOME CANADA

DIGITAL TERRAIN MODEL

MARS PROJECT
YUKON TERRITORY

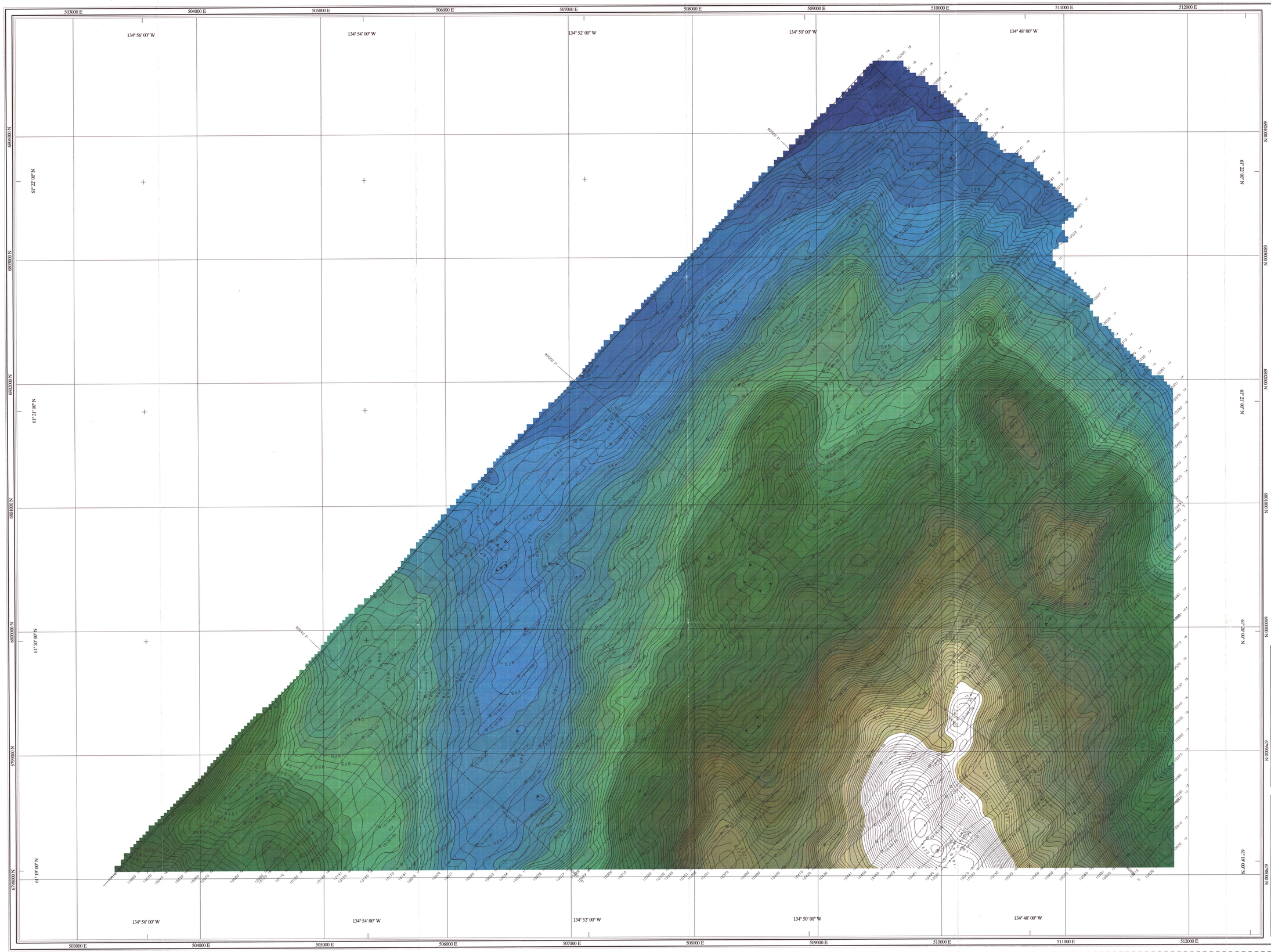
093874
DIAND - YUKON REGION, LIBRARY

SCALE 1:10 000

250 0 100 200 500 1000 metres

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 2 - 1



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

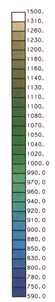
Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

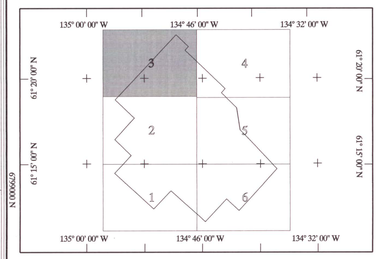
Average terrain clearance of 60m was monitored by radar and barometric altimeters.

DIGITAL TERRAIN MODEL

The Digital Terrain Model was calculated by subtracting the radar altimeter values from the levelled barometric altimeter values. Map contours are in metres, and are multiples of those listed below:

- 5
- 25
- 100
- 500
- 2500





PLACER DOME CANADA

DIGITAL TERRAIN MODEL

MARS PROJECT 093874
YUKON TERRITORY

DIAND - YUKON REGION, LIBRARY

SCALE 1:10 000

250 0 100 200 500 1000 metres

aerodat
AERODAT INC.

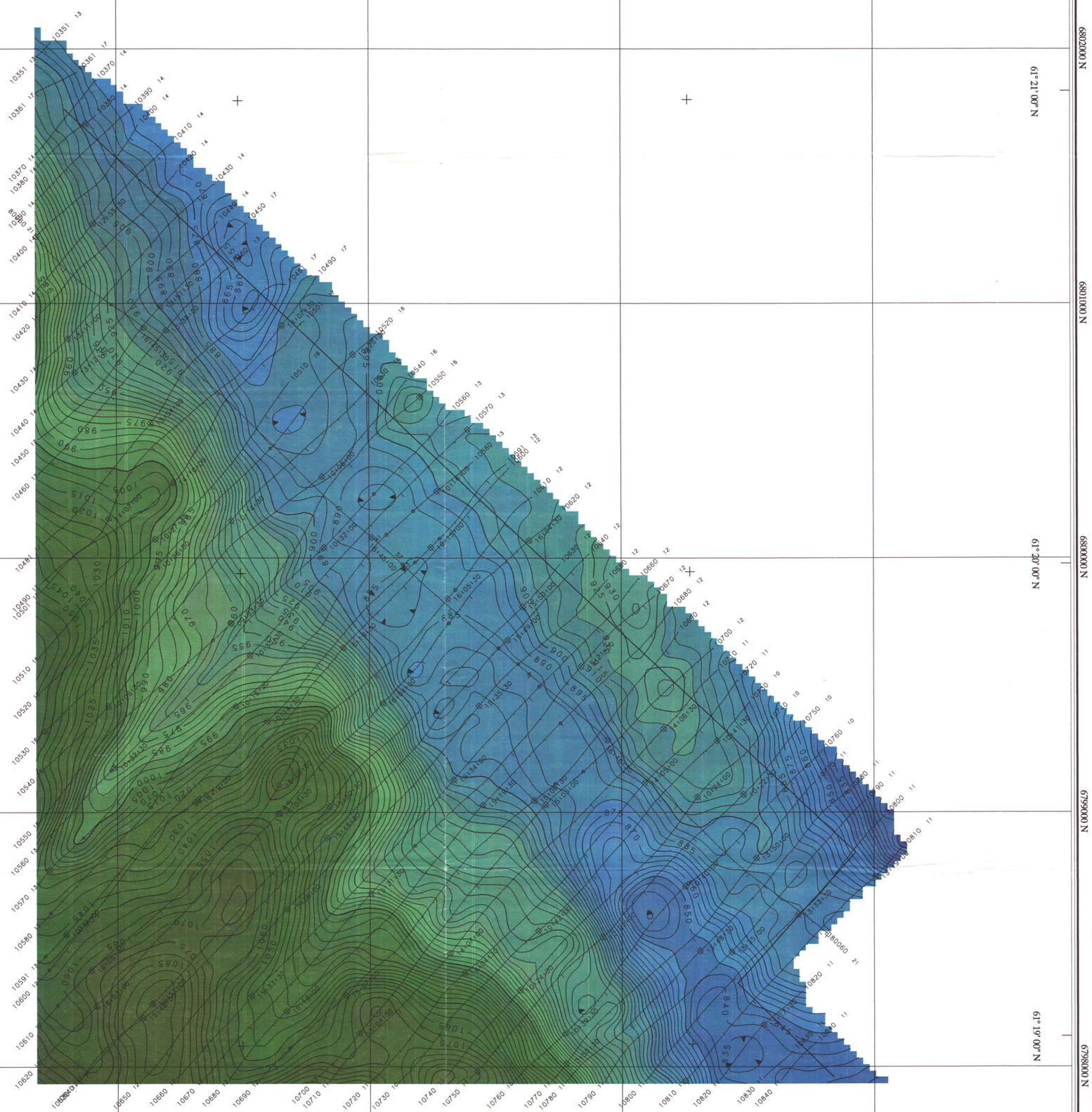
Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2 Dwh (66)
Project : J9783 Map Ref : 3 - 1

511000 E | 512000 E | 513000 E | 514000 E | 515000 E

134° 46' 00" W | 134° 44' 00" W

6803000 N | 6802000 N | 6801000 N | 6800000 N | 6799000 N | 6798000 N | 6797000 N

61° 21' 00" N | 61° 20' 00" N | 61° 19' 00" N





Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet.
Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

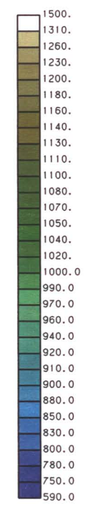
Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

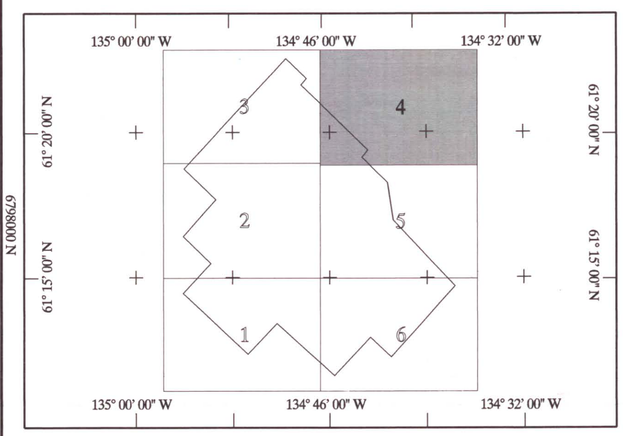
Average terrain clearance of 60m was monitored by radar and barometric altimeters.

DIGITAL TERRAIN MODEL

The Digital Terrain Model was calculated by subtracting the radar altimeter values from the levelled barometric altimeter values.
Map contours are in metres, and are multiples of those listed below:

- 5
- 25
- 100
- 500
- 2500





PLACER DOME CANADA

DIGITAL TERRAIN MODEL

MARS PROJECT
YUKON TERRITORY

093874
DIAND • YUKON REGION, LIBRARY

SCALE 1:10 000

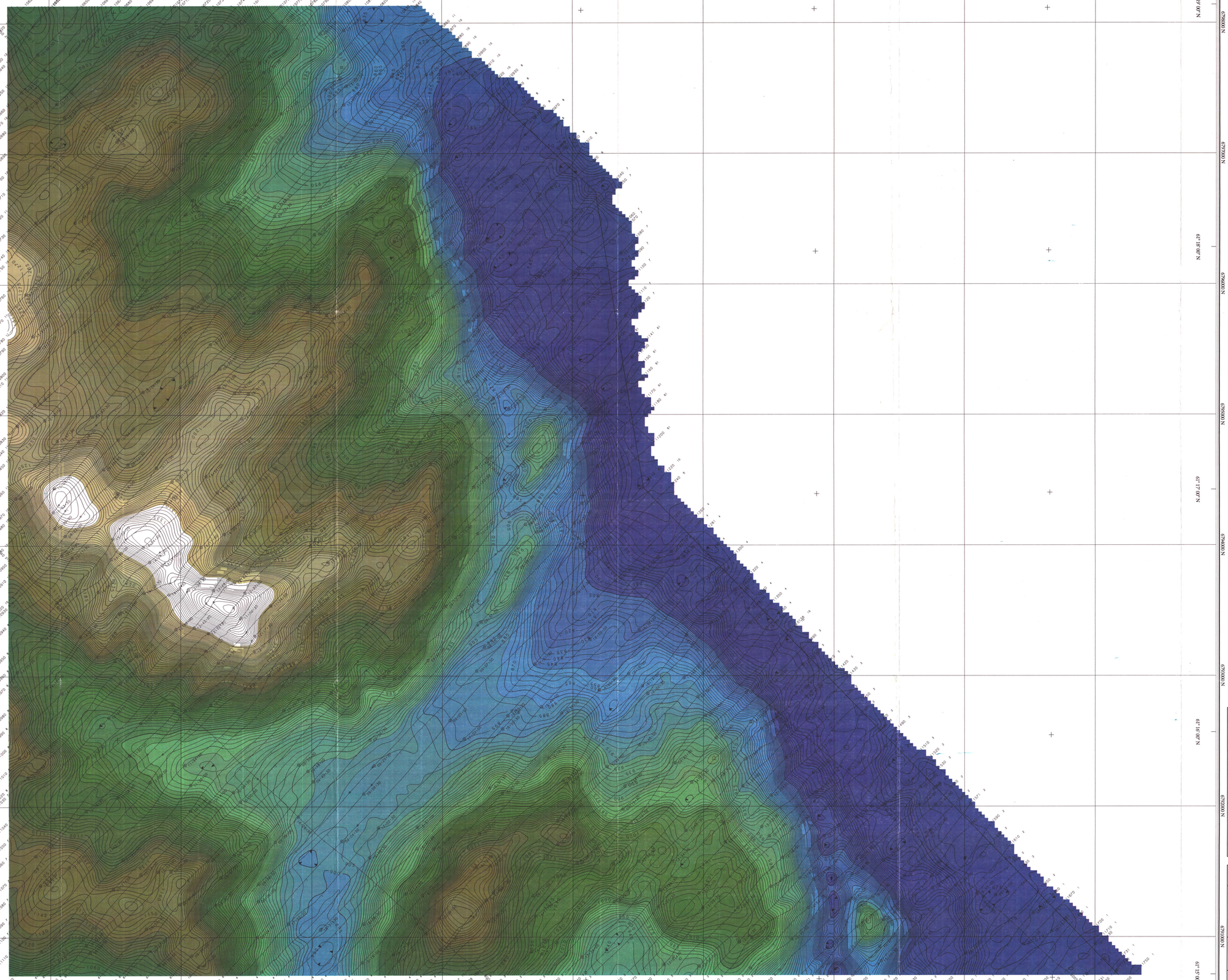
250 0 100 200 500 1000 metres

aerodat
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2

Project : J9783 Map Ref : 4 - 1



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

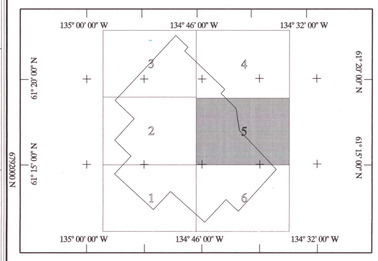
Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

Average terrain clearance of 60m was monitored by radar and barometric altimeters.

DIGITAL TERRAIN MODEL

The Digital Terrain Model was calculated by subtracting the radar altimeter values from the levelled barometric altimeter values. Map contours are in metres, and are multiples of those listed below:

- 5
- 25
- 100
- 500
- 2500



PLACER DOME CANADA

DIGITAL TERRAIN MODEL

093874

MARS PROJECT
YUKON TERRITORY

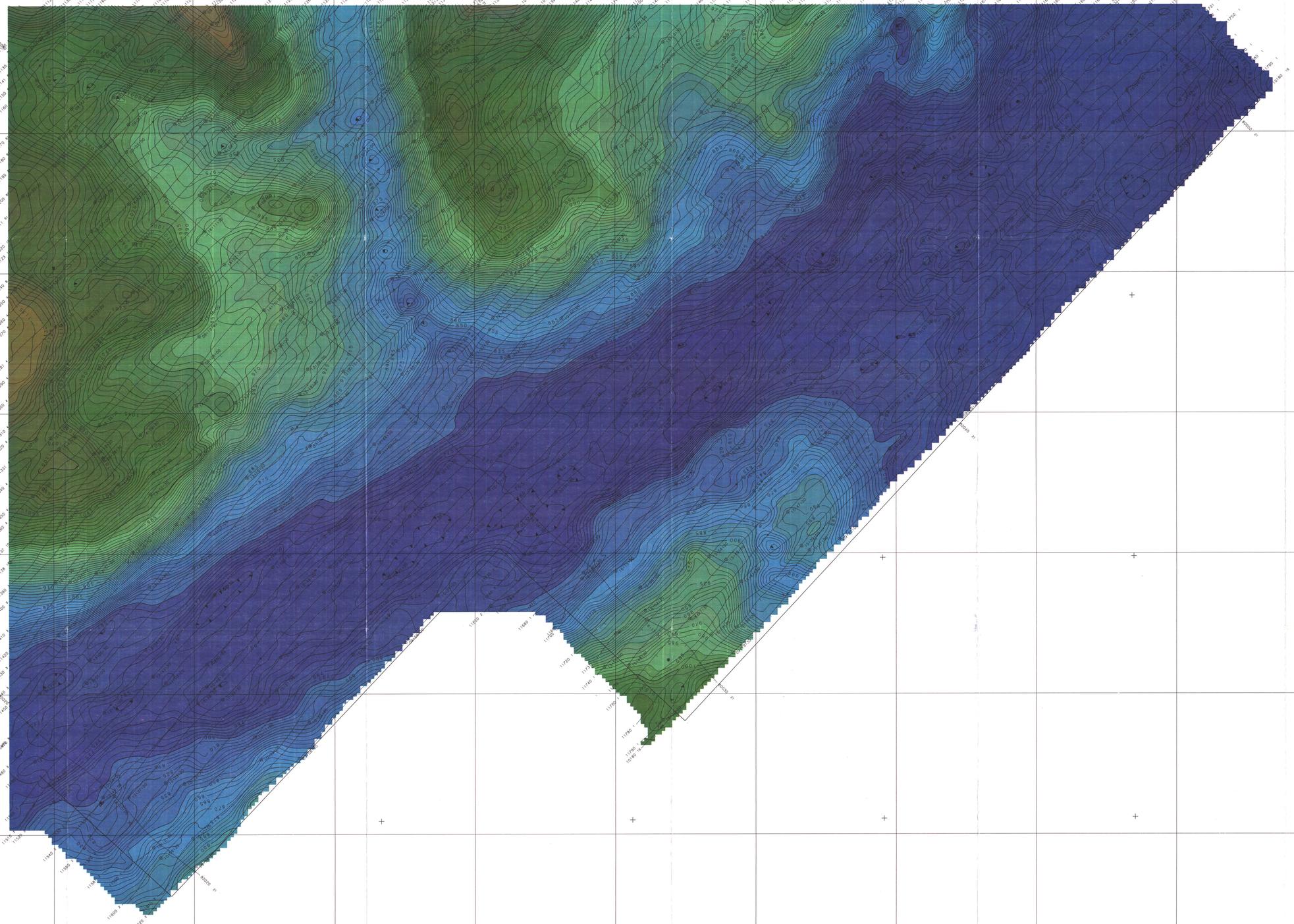
DIAND - YUKON REGION, LIBRARY

SCALE 1:10 000

250 0 100 200 500 1000 metres

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 5 - 1



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

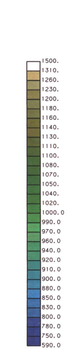
Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

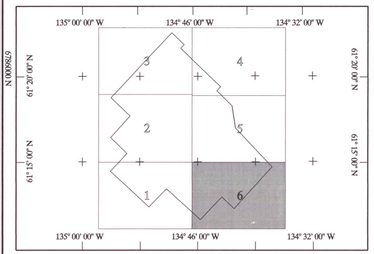
Average terrain clearance of 60m was monitored by radar and barometric altimeters.

DIGITAL TERRAIN MODEL

The Digital Terrain Model was calculated by subtracting the radar altimeter values from the levelled barometric altimeter values. Map contours are in metres, and are multiples of those listed below:

5
25
100
500
2500





PLACER DOME CANADA

DIGITAL TERRAIN MODEL

MARS PROJECT
YUKON TERRITORY

093874
YUKON REGION, LIBRARY

SCALE 1:10 000

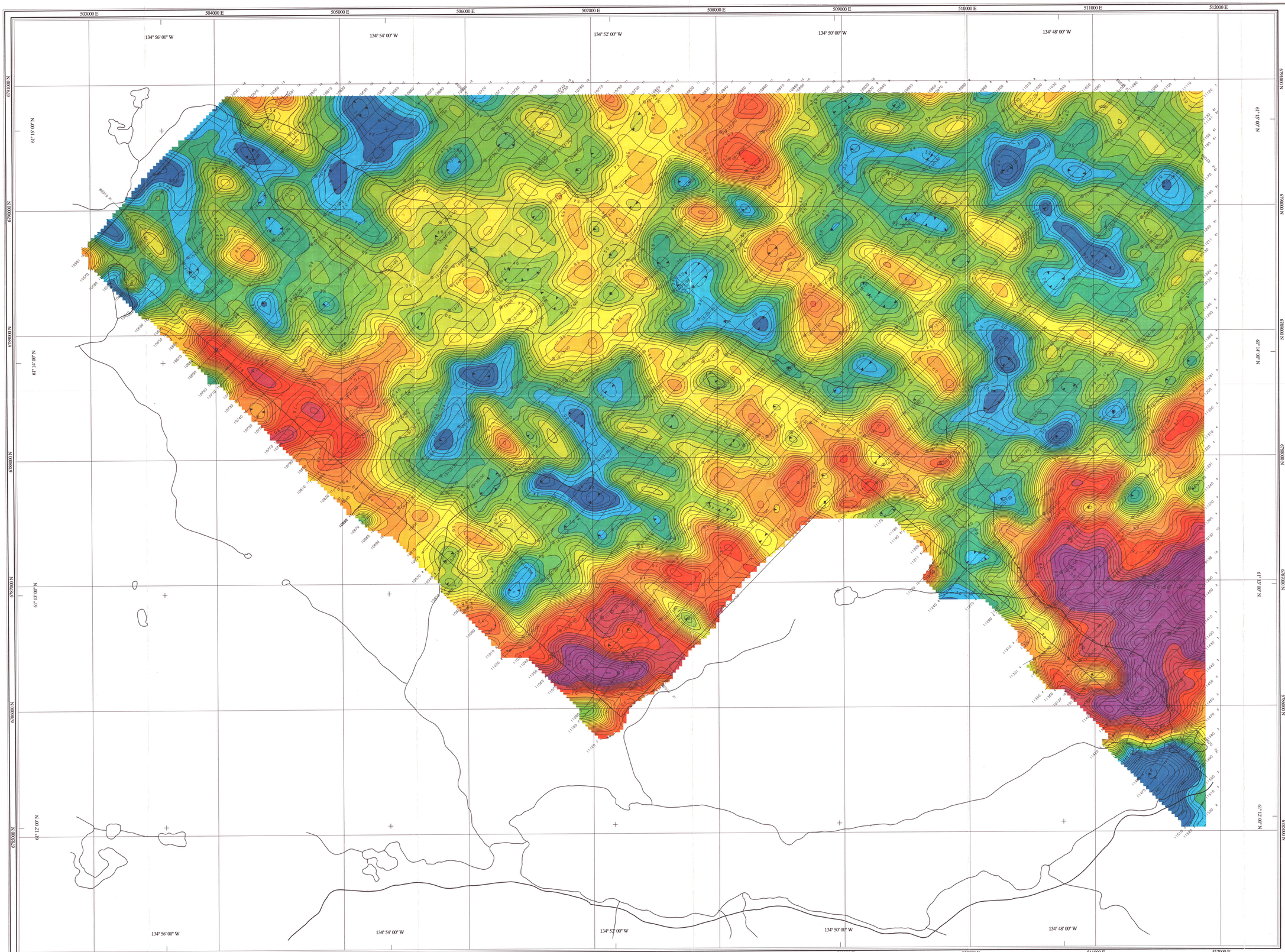
250 0 100 200 300 1000 metres

aerodat
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2

Project : J9783 Map Ref : 6 - 1



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

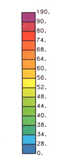
Average terrain clearance of 60m was monitored by radar and barometric altimeters.

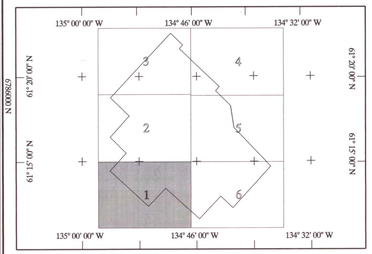
RADIOMETRICS

Potassium count radiometric contour data measured by a 256 channel spectrometer system mounted in the helicopter at an average sensor elevation of 60m. Corrections were made for cosmic and background emissions, Compton scatter, and altitude variation.

Map contours are in counts/second, and are multiples of those listed below:

2 cps
10 cps
50 cps





PLACER DOME CANADA

POTASSIUM COUNT RADIOMETRICS

MARS PROJECT
YUKON TERRITORY

093874
YUKON REGION, LIBRARY

SCALE 1:10 000

250 0 100 200 500 1000 metres

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 1 - 3

503000 E | 504000 E | 505000 E | 506000 E | 507000 E | 508000 E | 509000 E | 510000 E | 511000 E | 512000 E

134° 56' 00" W | 134° 54' 00" W | 134° 52' 00" W | 134° 50' 00" W | 134° 48' 00" W

61° 19' 00" N | 61° 18' 00" N | 61° 17' 00" N

N 6969000 | N 6970000 | N 6971000 | N 6972000 | N 6973000 | N 6974000 | N 6975000 | N 6976000 | N 6977000 | N 6978000 | N 6979000

Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24'

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

Average terrain clearance of 60m was monitored by radar and barometric altimeters.

RADIOMETRICS

Potassium count radiometric contour data measured by a 256 channel spectrometer system mounted in the helicopter at an average sensor elevation of 60m. Corrections were made for cosmic and background emissions, Compton scatter, and altitude variation.

Map contours are in counts/second, and are multiples of those listed below:

2 cps
10 cps
50 cps

190.
90.
80.
74.
68.
64.
60.
56.
52.
48.
44.
40.
38.
34.
28.
0.

135° 00' 00" W | 134° 46' 00" W | 134° 32' 00" W

61° 20' 00" N | 61° 15' 00" N

1 2 3 4 5 6

PLACER DOME CANADA

POTASSIUM COUNT RADIOMETRICS

093E/14

MARS PROJECT
YUKON TERRITORY

LAND - YUKON REGION, LIBRARY

SCALE 1:10 000

250 0 100 200 500 1000 metres

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 2 - 3

503000 E 504000 E 505000 E 506000 E 507000 E 508000 E 509000 E 510000 E 511000 E 512000 E

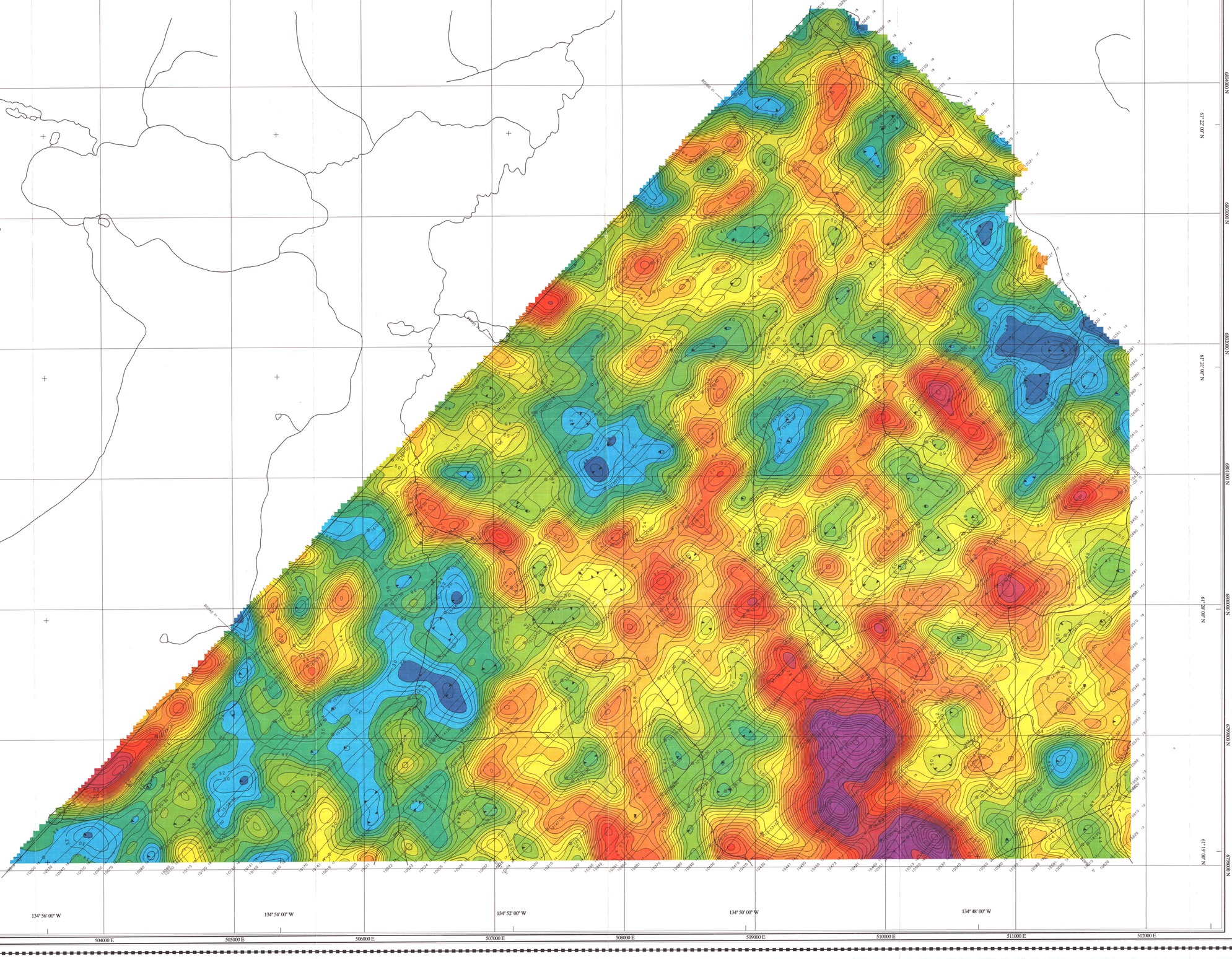
134° 56' 00" W 134° 54' 00" W 134° 52' 00" W 134° 50' 00" W 134° 48' 00" W

N 6940689 N 6930689 N 6920689 N 6910689 N 6900689

N 60° 22' 19 N 60° 17' 19

N 6940689 N 6930689 N 6920689 N 6910689 N 6900689

N 60° 22' 19 N 60° 17' 19



503000 E 504000 E 505000 E 506000 E 507000 E 508000 E 509000 E 510000 E 511000 E 512000 E

134° 56' 00" W 134° 54' 00" W 134° 52' 00" W 134° 50' 00" W 134° 48' 00" W

Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

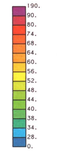
Average terrain clearance of 60m was monitored by radar and barometric altimeters.

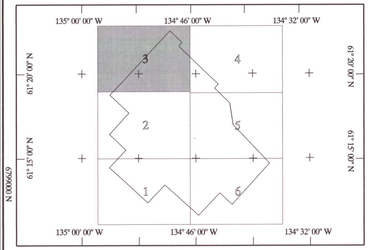
RADIOMETRICS

Potassium count radiometric contour data measured by a 256 channel spectrometer system mounted in the helicopter at an average sensor elevation of 60m. Corrections were made for cosmic and background emissions, Compton scatter, and altitude variation.

Map contours are in counts/second, and are multiples of those listed below:

2 cps
10 cps
50 cps





PLACER DOME CANADA

POTASSIUM COUNT RADIOMETRICS

MARS PROJECT

093E/4
YUKON TERRITORY YUKON REGION, LIBRARY

SCALE 1:10 000

250 0 100 200 500 1000 metres

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 3 - 3

511000 E | 512000 E | 513000 E | 514000 E | 515000 E

134° 46' 00" W | 134° 44' 00" W

61° 21' 00" N | 61° 20' 00" N | 61° 19' 00" N

6803000 N | 6802000 N | 6801000 N | 6800000 N | 6799000 N | 6798000 N | 6797000 N



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

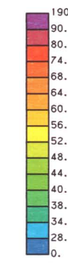
Average terrain clearance of 60m was monitored by radar and barometric altimeters.

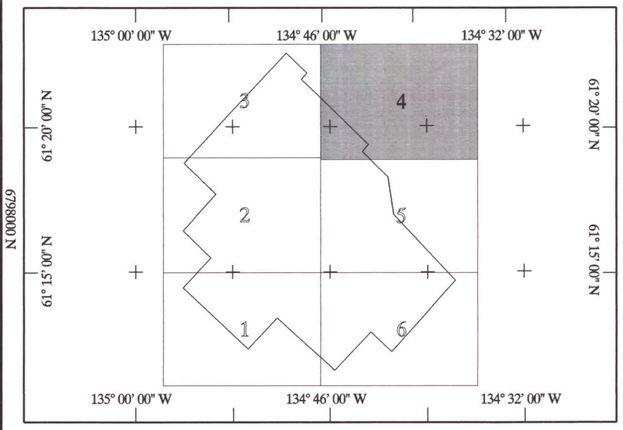
RADIOMETRICS

Potassium count radiometric contour data measured by a 256 channel spectrometer system mounted in the helicopter at an average sensor elevation of 60m. Corrections were made for cosmic and background emissions, Compton scatter, and altitude variation.

Map contours are in counts/second, and are multiples of those listed below:

2 cps
10 cps
50 cps





PLACER DOME CANADA

POTASSIUM COUNT RADIOMETRICS

MARS PROJECT
YUKON TERRITORY

093874

SCALE 1:10 000

250 0 100 200 500 1000 METRES

DIAND - YUKON REGION LIBRARY

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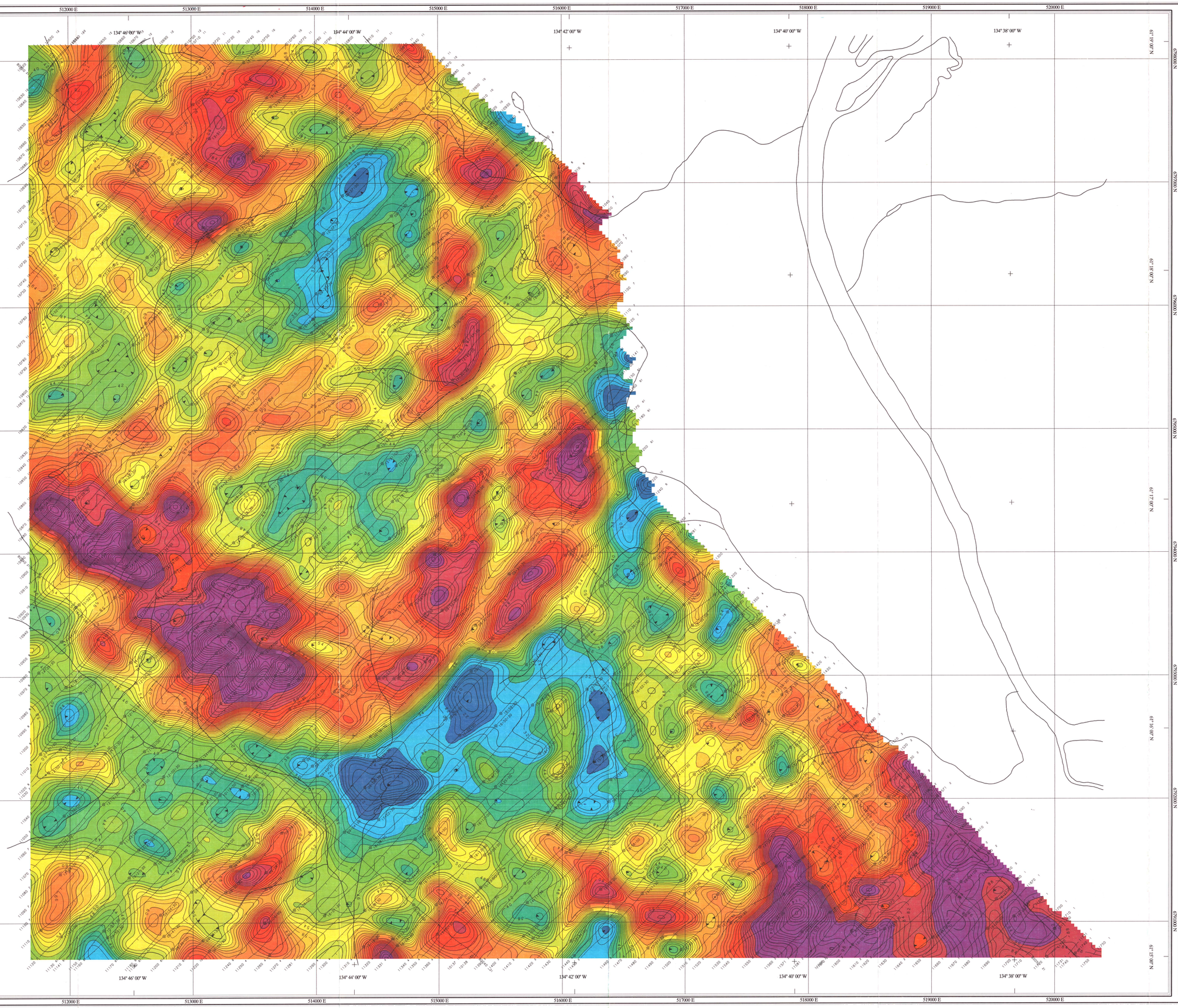
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2 Duh 72
Project : J9783 Map Ref : 4 - 3



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

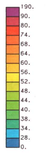
Average terrain clearance of 60m was monitored by radar and barometric altimeters.

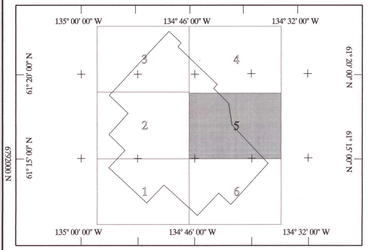
RADIOMETRICS

Potassium count radiometric contour data measured by a 256 channel spectrometer system mounted in the helicopter at an average sensor elevation of 60m. Corrections were made for cosmic and background emissions, Compton scatter, and altitude variation.

Map contours are in counts/second, and are multiples of those listed below:

2 cps
10 cps
50 cps





PLACER DOME CANADA

POTASSIUM COUNT RADIOMETRICS

MARS PROJECT
YUKON TERRITORY

093874

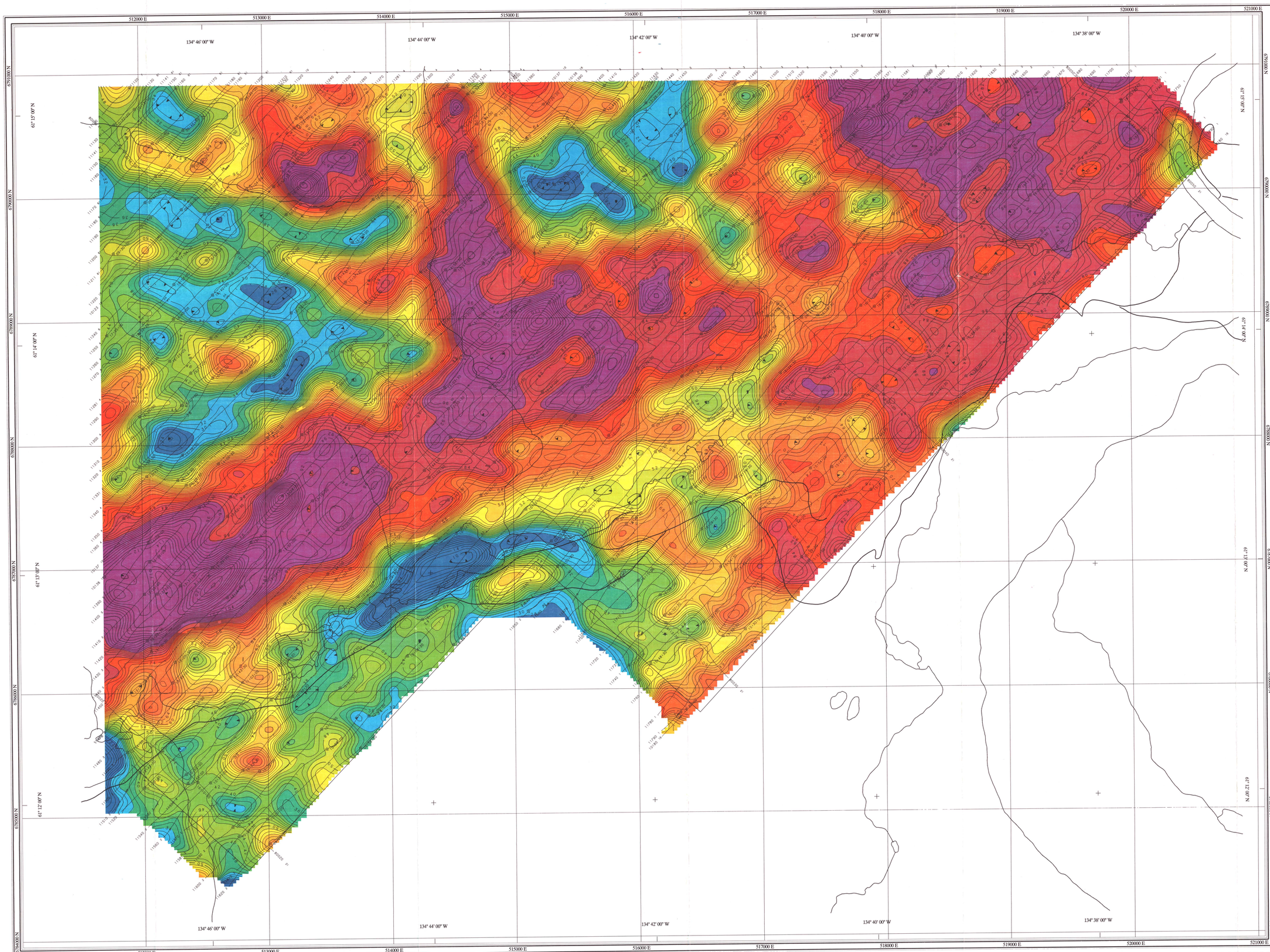
SCALE 1:10 000

250 0 100 200 500 1000 metres

YUKON RESOURCE LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 5 - 3



Square: Grid North
Star: True North
Arrow: Magnetic North

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Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

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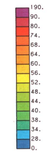
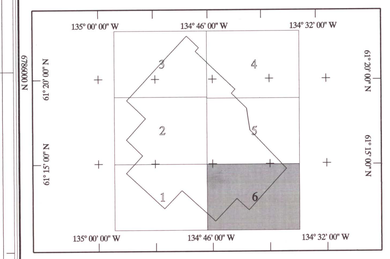
2 cps
10 cps
50 cps





PLACER DOME CANADA

POTASSIUM COUNT RADIOMETRICS

MARS PROJECT
YUKON TERRITORY

093 E/4

SCALE 1:10 000

250 0 100 200 500 1000 metres

DIAND - YUKON REGION, LIBRARY

aerodat
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2

Project : J9783 Map Ref : 6 - 3

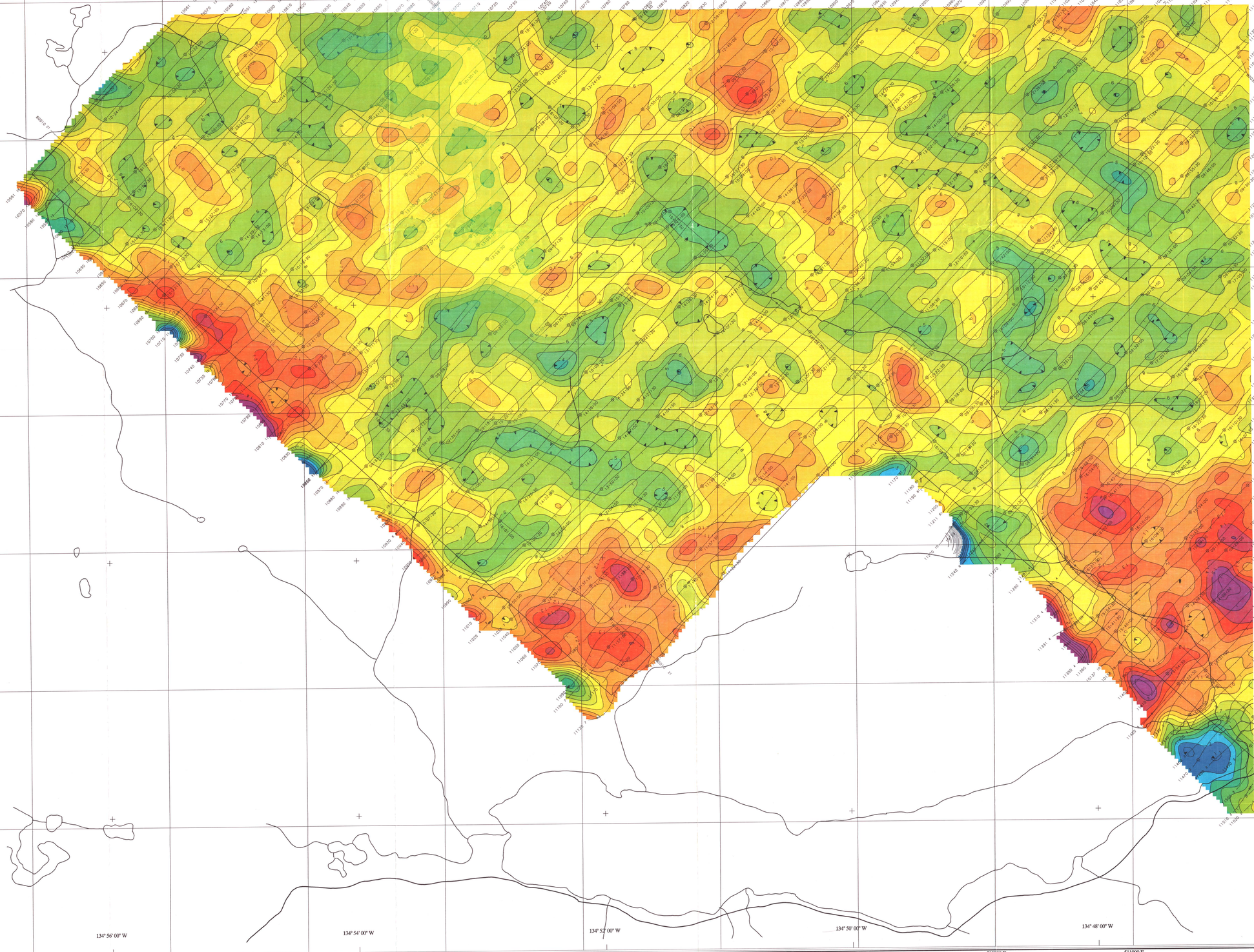
503000 E 504000 E 505000 E 506000 E 507000 E 508000 E 509000 E 510000 E 511000 E 512000 E

134° 56' 00" W 134° 54' 00" W 134° 52' 00" W 134° 50' 00" W 134° 48' 00" W

6791000 N 6790000 N 6789000 N 6788000 N

61° 16' 00" N 61° 14' 00" N 61° 13' 00" N 61° 12' 00" N

N.00.51.19 N.00.41.19 N.00.31.19 N.00.21.19



Square: Grid North
Star: True North
Arrow: Magnetic North

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Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24'

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

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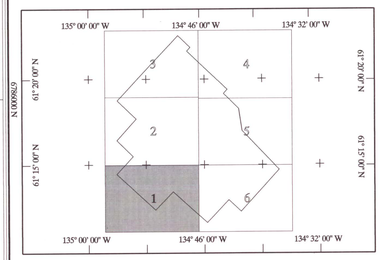
Thorium count radiometric contour data measured by a 256 channel spectrometer system mounted in the helicopter at an average sensor elevation of 60m. Corrections were made for cosmic and background emissions, Compton scatter, and altitude variation.

Map contours are in counts/second, and are multiples of those listed below:

1 cps
5 cps
25 cps

70.
15.
14.
13.
12.
11.
10.
9.
8.
7.
6.
5.
4.
3.
2.
-2.



PLACER DOME CANADA

THORIUM COUNT RADIOMETRICS

MARS PROJECT
YUKON TERRITORY

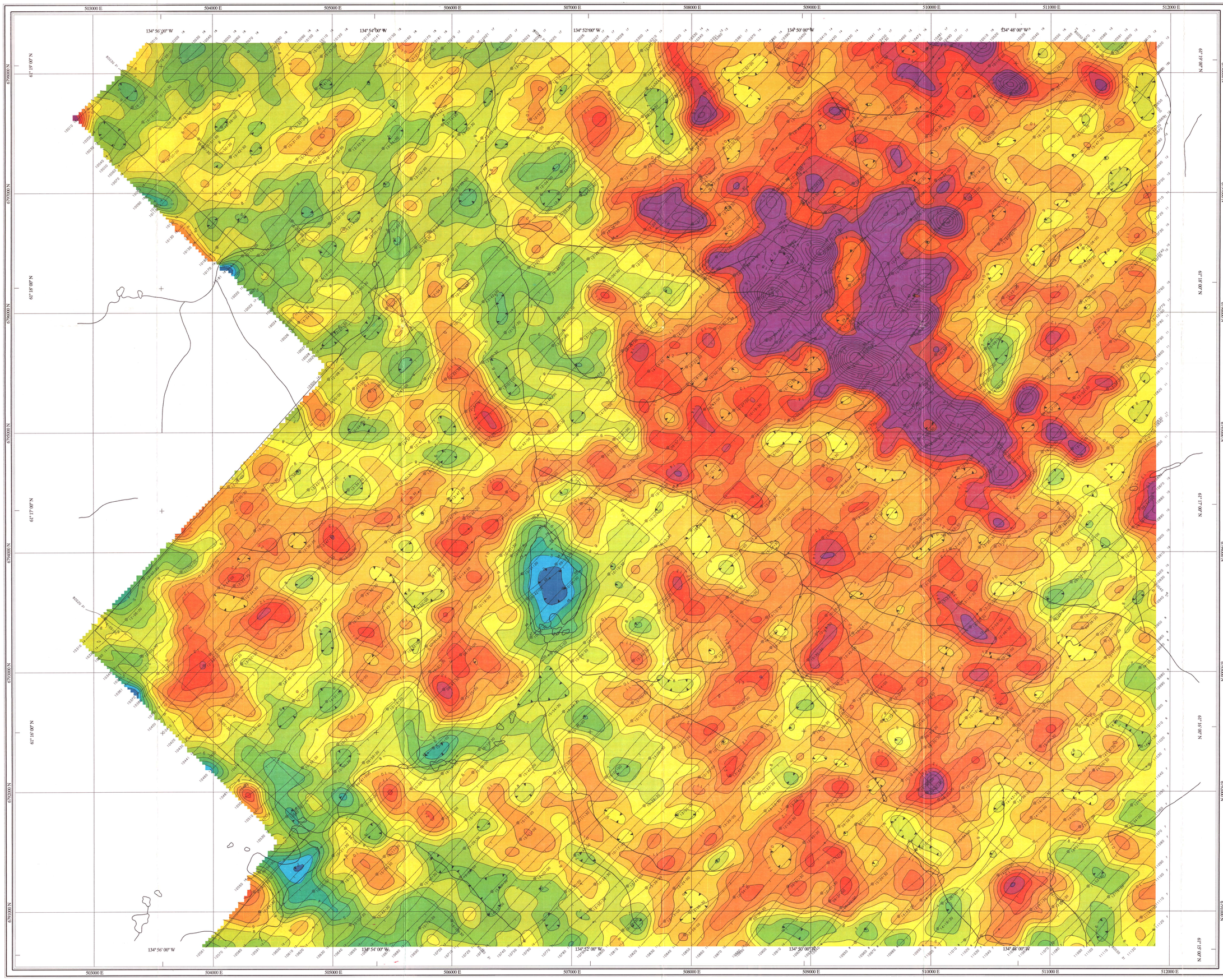
093874
CANMET - YUKON REGION, LIBRARY

SCALE 1:10 000

250 0 100 200 500 1000 metres

aerodat
AERODAT INC.

Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 1 - 3



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

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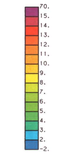
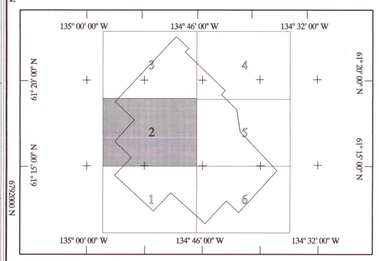
1 cps
5 cps
25 cps





PLACER DOME CANADA

THORIUM COUNT RADIOMETRICS

MARS PROJECT 093 874
YUKON TERRITORY
DIAND - YUKON REGION, LIBRARY

SCALE 1:10 000
250 0 100 200 500 1000 metres

aerodat
AERODAT INC.

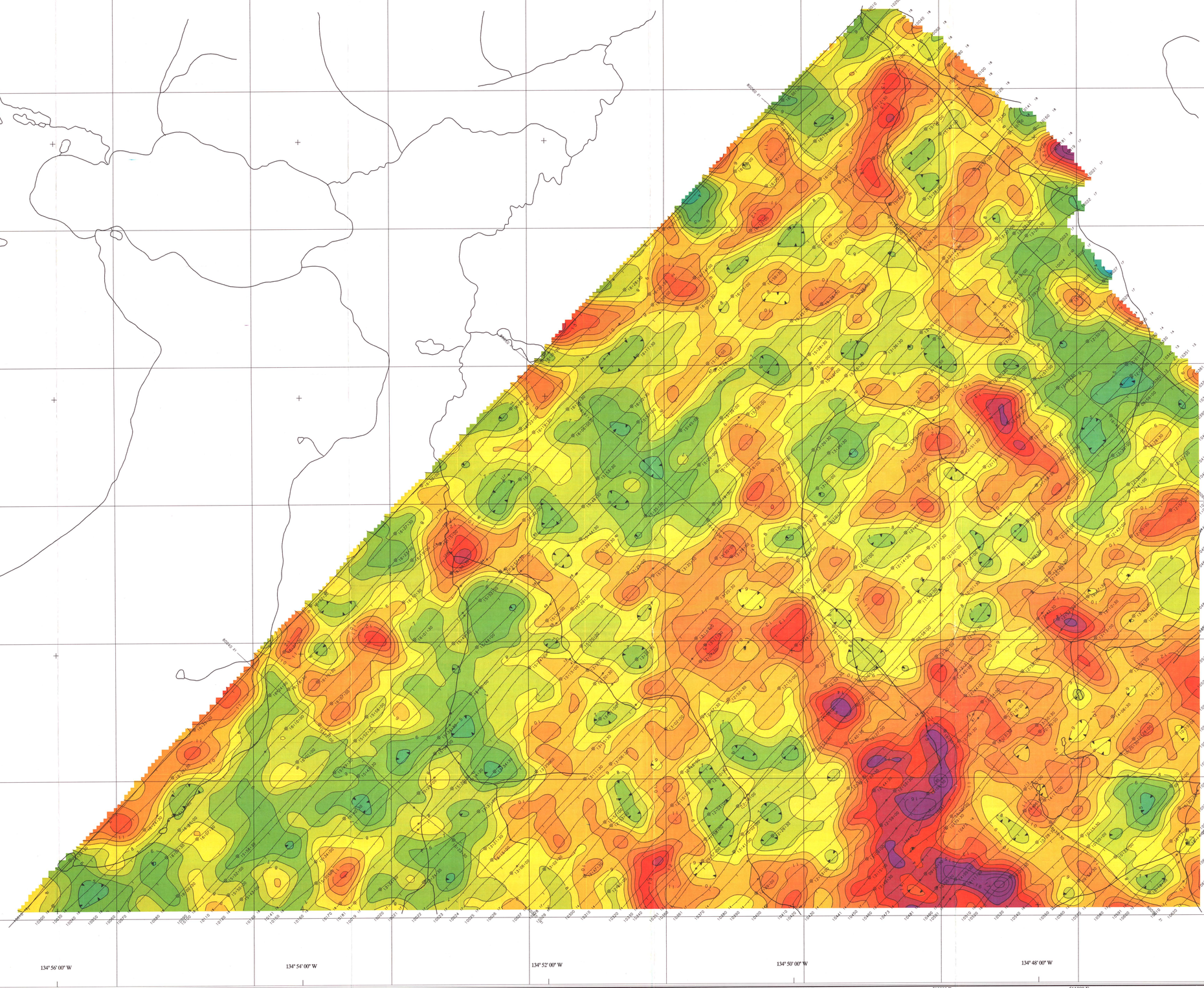
Date Flown : JULY 1997
NTS 105 E/7 - 105 E/2 Dwh 76
Project : J9783 Map Ref : 2 - 3

503000 E 504000 E 505000 E 506000 E 507000 E 508000 E 509000 E 510000 E 511000 E 512000 E

134° 56' 00" W 134° 54' 00" W 134° 52' 00" W 134° 50' 00" W 134° 48' 00" W

N 6990000 N 6991000 N 6992000 N 6993000 N 6994000 N 6995000

N 60° 22' 19" N 60° 17' 19"





Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24'

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

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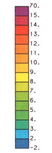
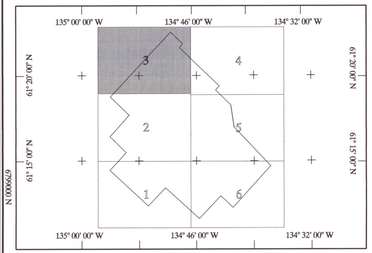
Map contours are in counts/second, and are multiples of those listed below:

1 cps
5 cps
25 cps





PLACER DOME CANADA

THORIUM COUNT RADIOMETRICS

MARS PROJECT

YUKON TERRITORY

093 E/7
DIAND - YUKON REGION, LIBRARY

SCALE 1:10 000

250 0 100 200 500 1000 metres

aerodat
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2

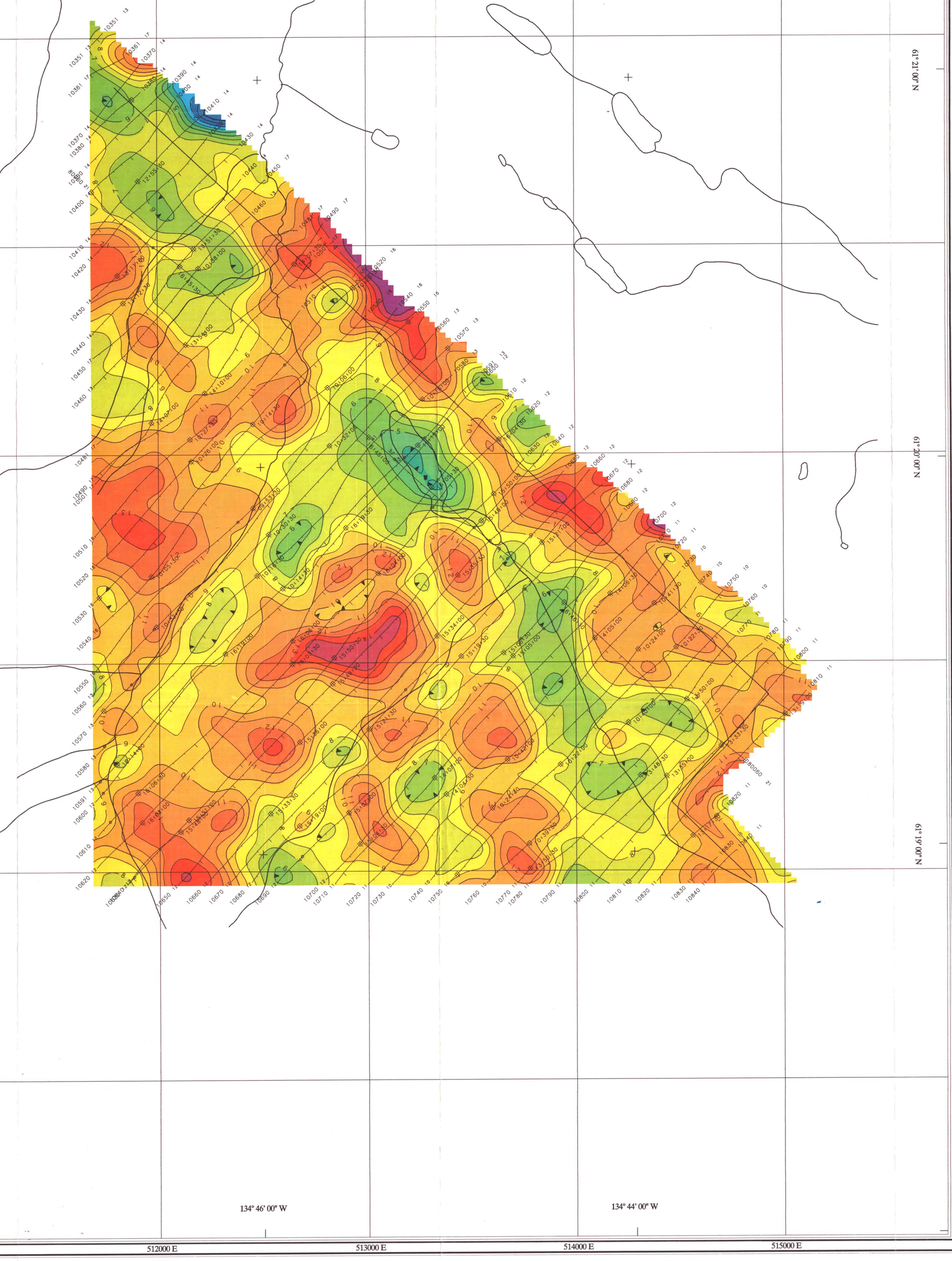
Project : J9783 Map Ref : 3 - 3

511000 E | 512000 E | 513000 E | 514000 E | 515000 E

134° 46' 00" W | 134° 44' 00" W

6803000 N | 6802000 N | 6801000 N | 6800000 N | 6799000 N | 6798000 N | 6797000 N

61° 21' 00" N | 61° 20' 00" N | 61° 19' 00" N



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

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Map contours are in counts/second, and are multiples of those listed below:

1 cps
5 cps
25 cps

70.
15.
14.
13.
12.
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9.
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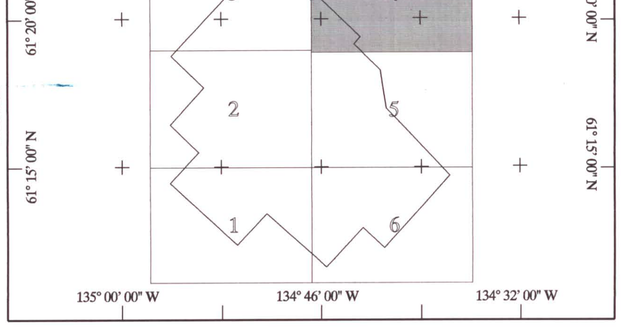
2.
-2.



PLACER DOME CANADA

THORIUM COUNT RADIOMETRICS

MARS PROJECT

YUKON TERRITORY

093874
DIAND - YUKON REGION, LIBRARY

SCALE 1:10 000

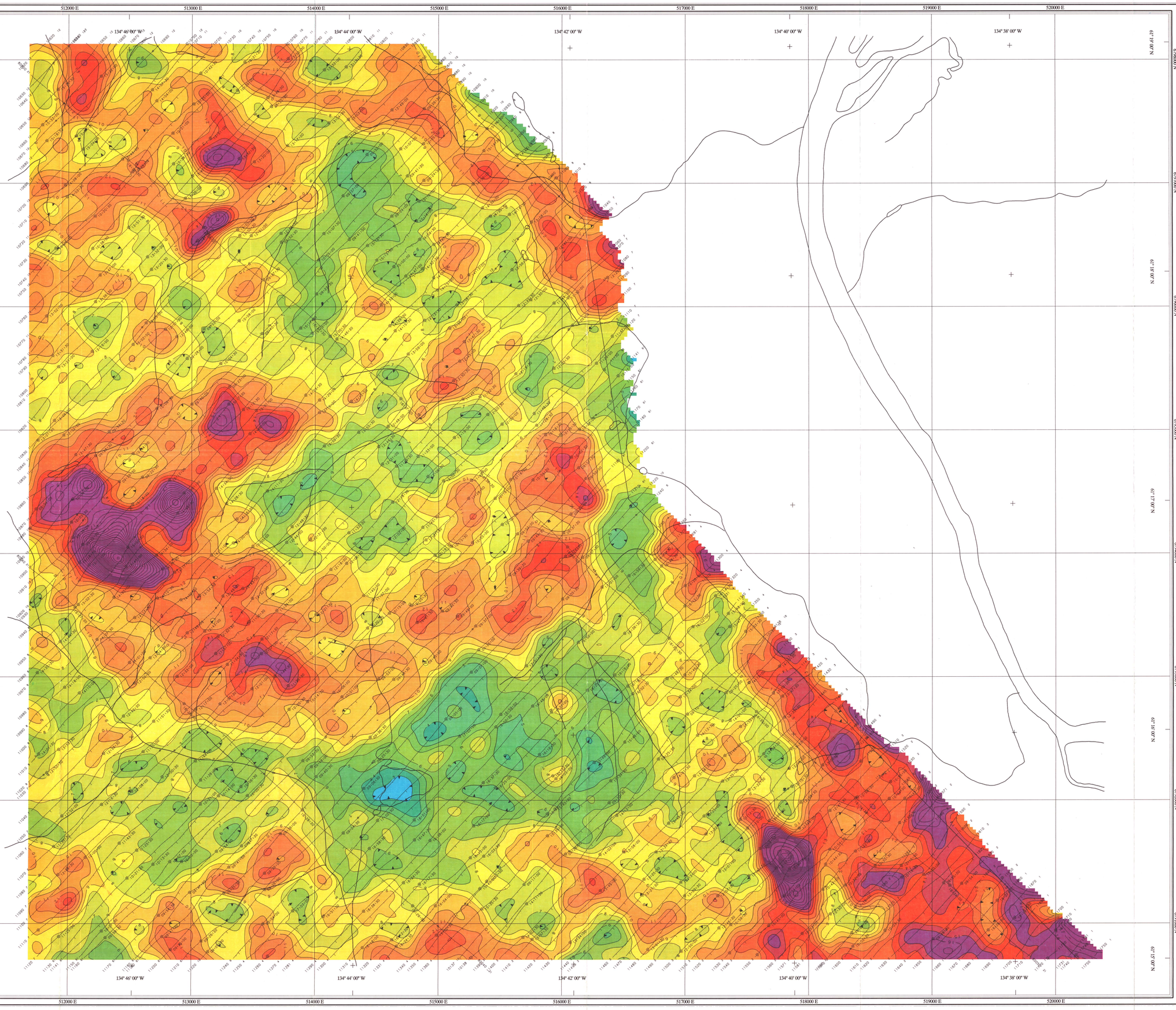
250 0 100 200 500 1000 metres

aerodat
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2 Duh 78

Project : J9783 Map Ref : 4 - 3



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

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1 cps
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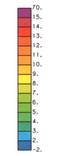
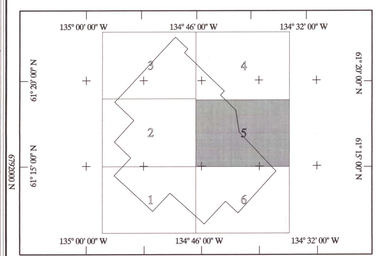
25 cps





PLACER DOME CANADA

THORIUM COUNT RADIOMETRICS

MARS PROJECT 093874

YUKON TERRITORY

INDIAN - YUKON REGION, LIBRARY

SCALE 1:10 000

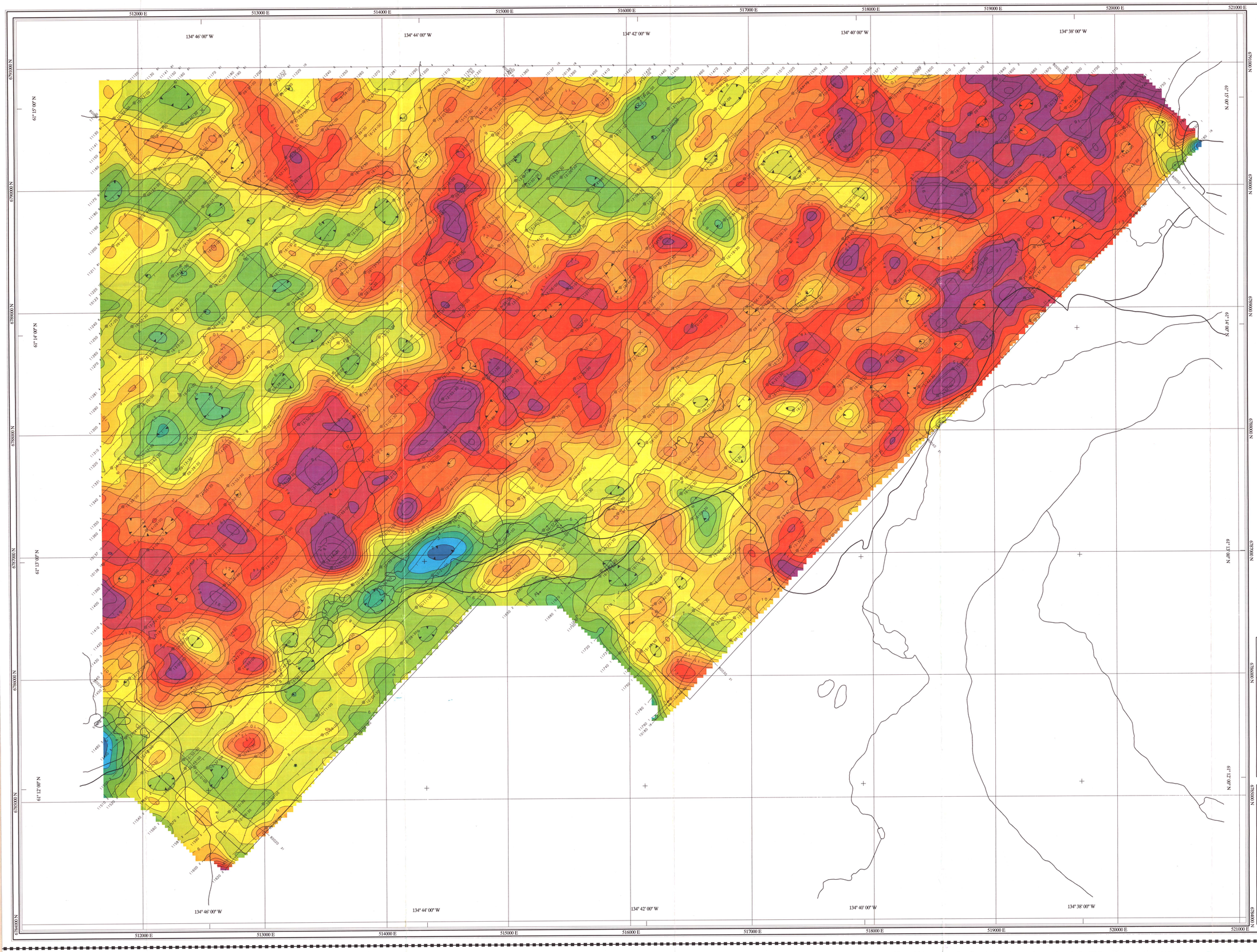
250 0 100 200 300 1000 metres

aerodat
AERODAT INC.

Date Flown : JULY 1997

NTS 105 E/7 - 105 E/2 Duh 99

Project : J9783 Map Ref : 5 - 3



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

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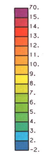
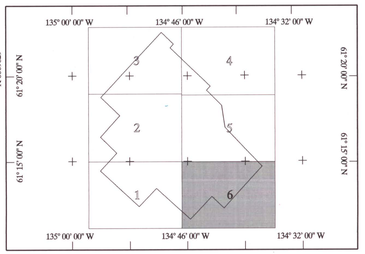
1 cps
5 cps
25 cps





PLACER DOME CANADA

THORIUM COUNT RADIOMETRICS

MARS PROJECT 093 874

YUKON TERRITORY

DIAND - YUKON REGION, LIBRARY

SCALE 1:10 000

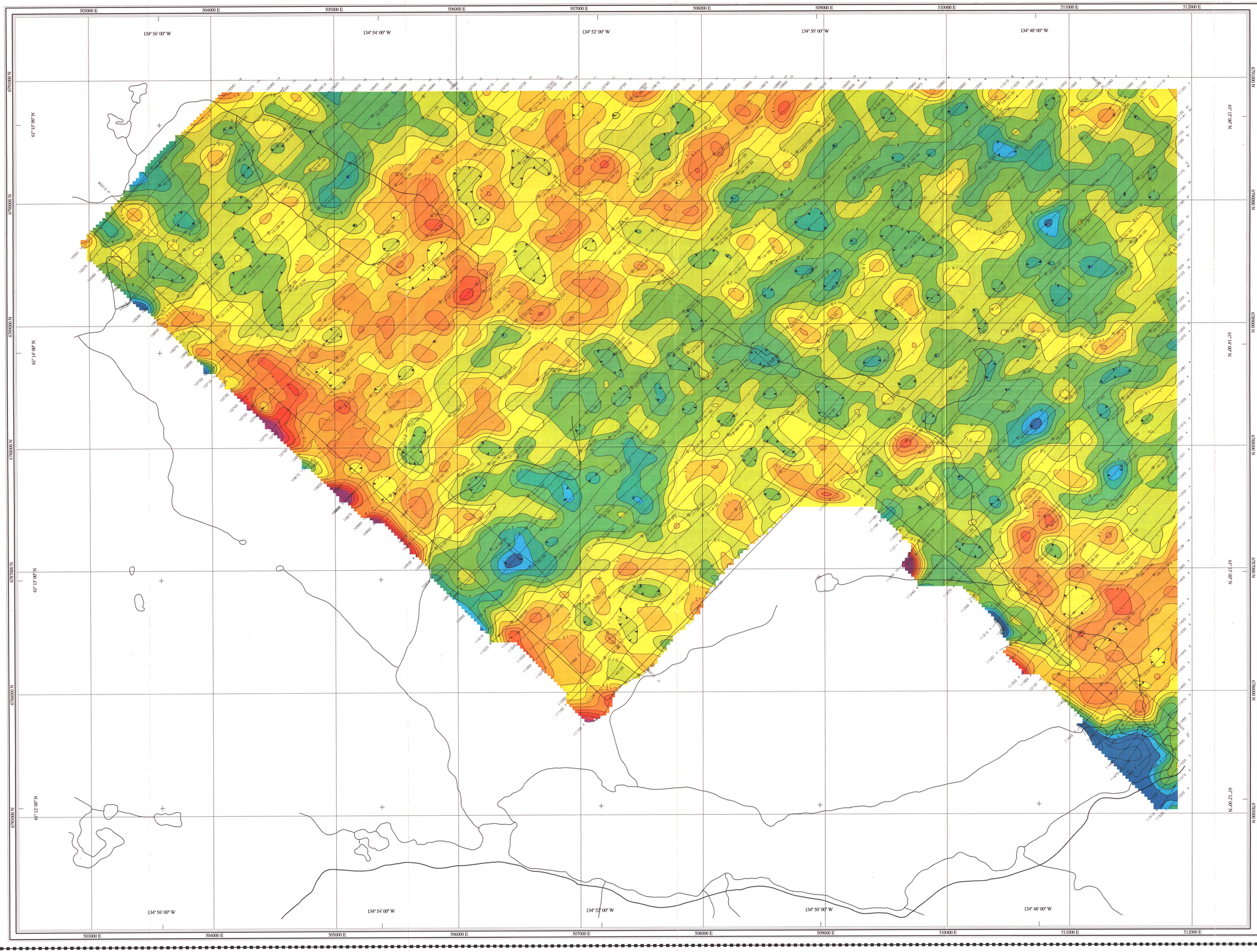
250 0 100 200 500 1000 metres

aerodat
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2 Dwh 80

Project : J9783 Map Ref : 6 - 3





Square: Grid North
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Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

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1 cps
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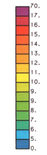
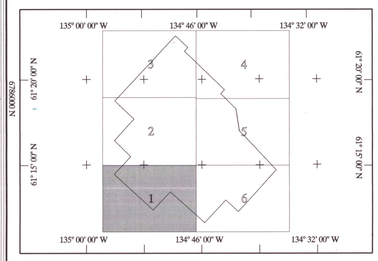
25 cps





PLACER DOME CANADA

URANIUM COUNT RADIOMETRICS

MARS PROJECT

YUKON TERRITORY

093874
DIAND - YUKON REGION, LIBRARY

SCALE 1:10 000

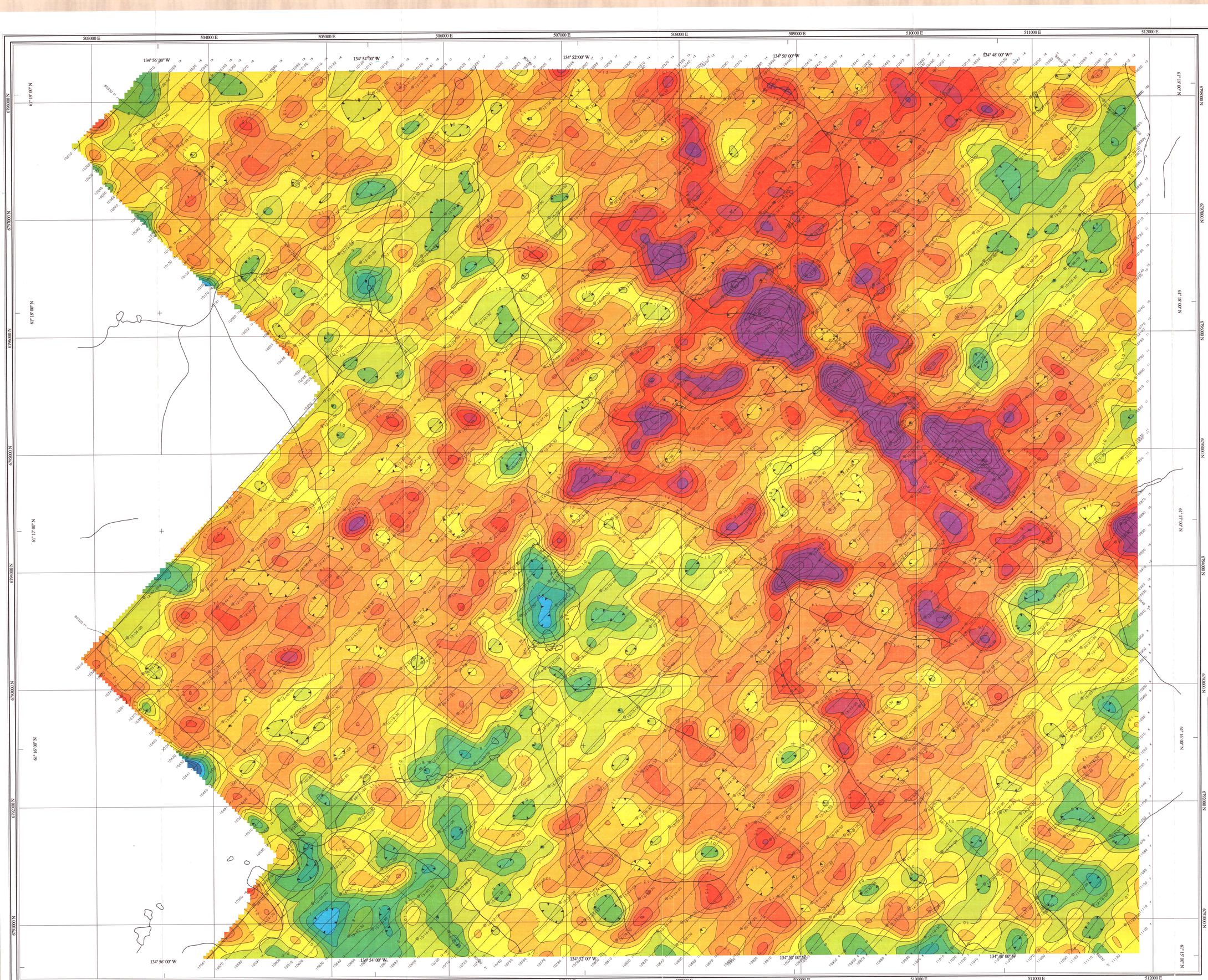
250 0 100 200 500 1000 metres

aerodat
AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2

Project : J9783 Map Ref : 1 - 3



Square: Grid North
Bar: True North
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Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
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Transverse Mercator Projection
North American Datum 1983
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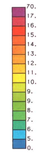
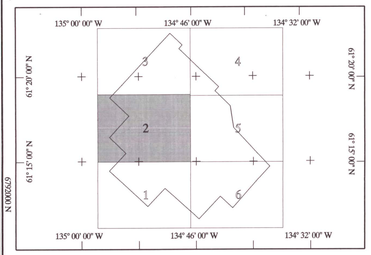
5 cps
25 cps





PLACER DOME CANADA

URANIUM COUNT RADIOMETRICS

MARS PROJECT 093874
YUKON TERRITORY

SCALE 1:10 000

250 0 100 200 500 1000 metres

DIAND - YUKON REGION

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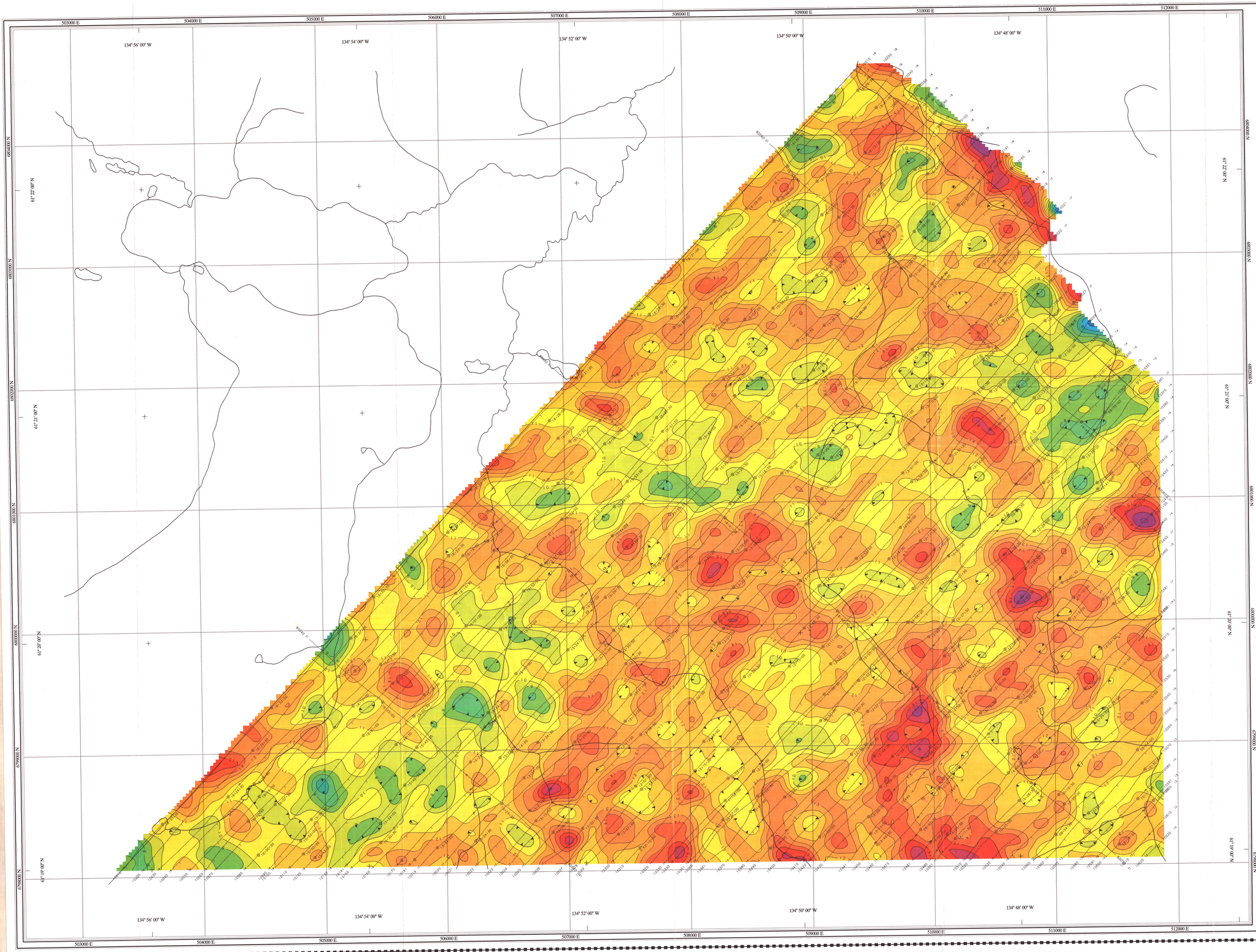
AERODAT INC.

Date Flown :- JULY 1997

NTS: 105 E/7 - 105 E/2

Project : J9783 Map Ref : 2 - 3



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 45 - 225°, with an average line spacing of 100m.

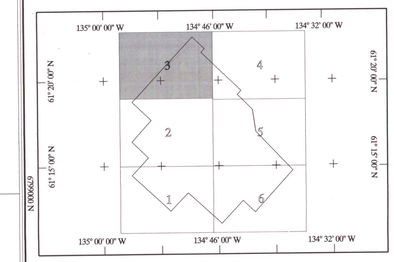
Average terrain clearance of 60m was monitored by radar and barometric altimeters.

RADIOMETRICS

Uranium count radiometric contour data measured by a 256 channel spectrometer system mounted in the helicopter at an average sensor elevation of 60m. Corrections were made for cosmic and background emissions, Compton scatter, and altitude variation.

Map contours are in counts/second, and are multiples of those listed below:

1 cps
5 cps
25 cps



PLACER DOME CANADA

URANIUM COUNT RADIOMETRICS

MARS PROJECT

YUKON TERRITORY

093 8 4
DIAND - YUKON REGION, LIBRARY

SCALE 1:10 000

250 0 100 200 500 1000 metres

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AERODAT INC.

Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2

Project : J9783 Map Ref : 3 - 3

511000 E 512000 E 513000 E 514000 E 515000 E

134° 46' 00" W 134° 44' 00" W

6803000 N 6802000 N 6801000 N 6800000 N 6799000 N 6798000 N 6797000 N

61° 21' 00" N 61° 20' 00" N 61° 19' 00" N

Square: Grid North
Star: True North
Arrow: Magnetic North

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Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

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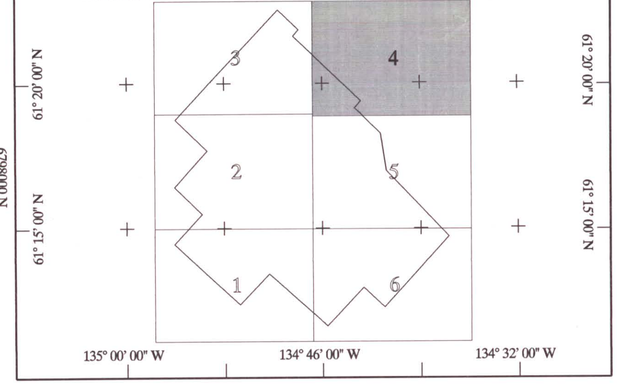
1 cps
5 cps
25 cps

70.
17.
16.
15.
14.
13.
12.
11.
10.
9.
9.
8.
7.
6.
5.
0.



PLACER DOME CANADA

URANIUM COUNT RADIOMETRICS

MARS PROJECT 093874

YUKON TERRITORY DIAND - YUKON REGION, LIBRARY

SCALE 1:10 000

250 0 100 200 500 1000 metres

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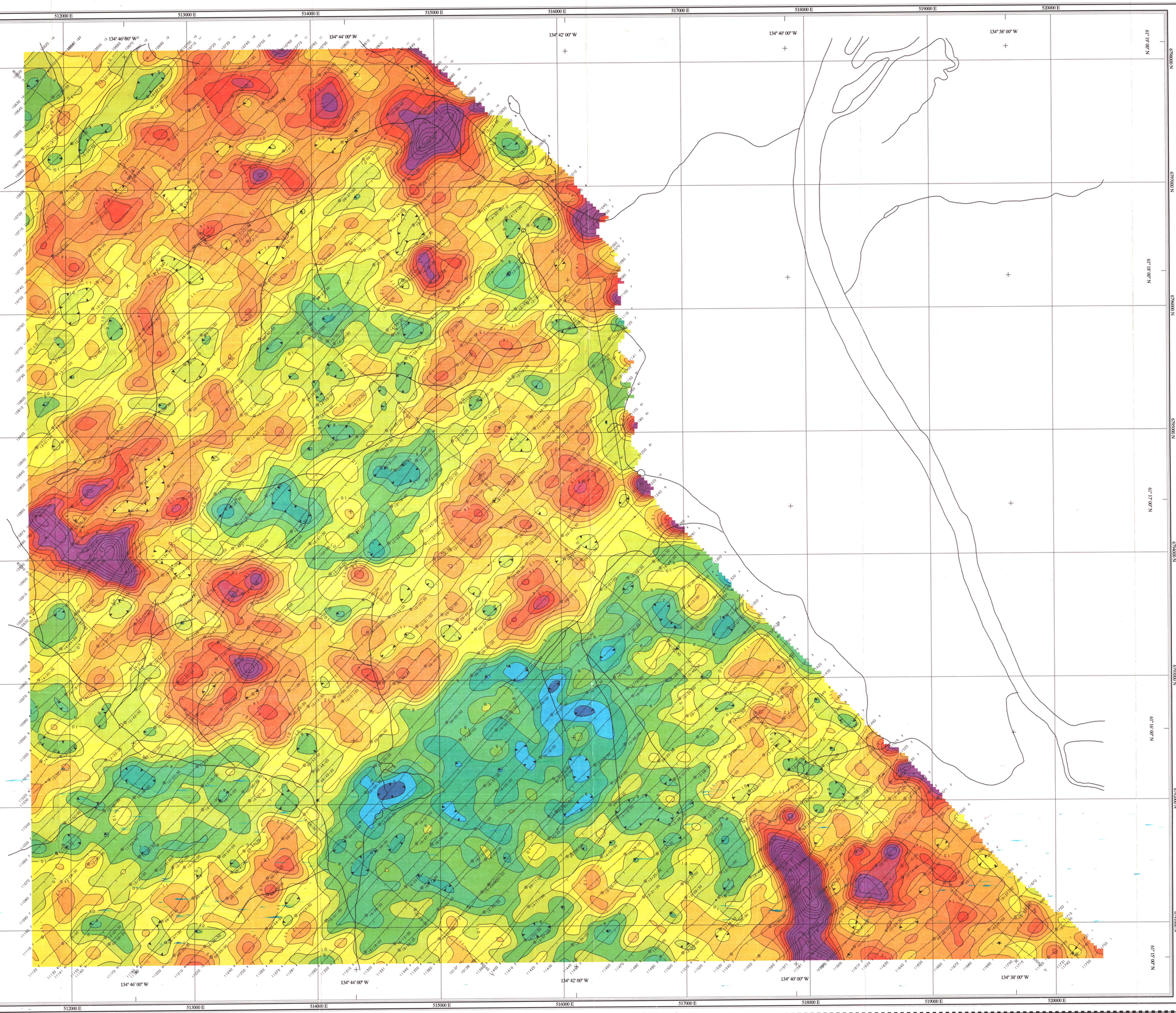
Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2

Project : J9783 Map Ref : 4 - 3



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.5°
Grid North - Magnetic North : 30.0°
Annual change : 0.24°

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

FLIGHT PATH

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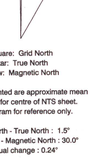
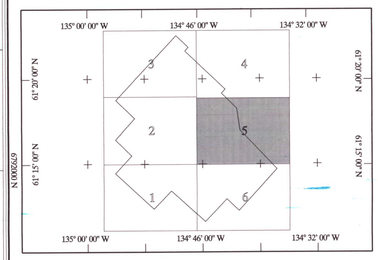
1 cps
5 cps
25 cps





PLACER DOME CANADA

URANIUM COUNT RADIOMETRICS

MARS PROJECT 093674

YUKON TERRITORY

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SCALE 1:10 000

250 0 100 200 500 1000 metres

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Date Flown : JULY 1997

NTS: 105 E/7 - 105 E/2

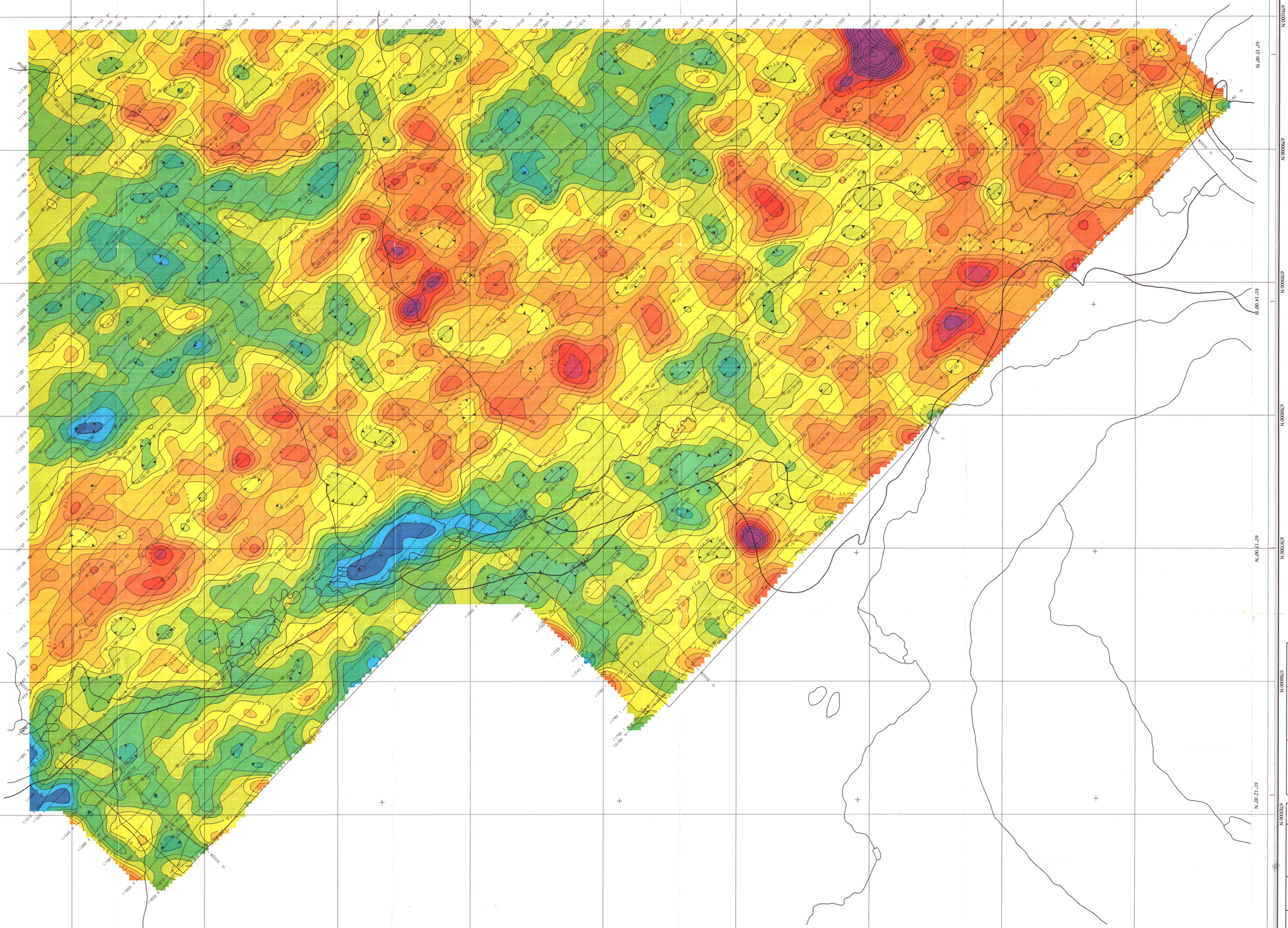
Project : J9783 Map Ref : 5 - 3

512000 E | 513000 E | 514000 E | 515000 E | 516000 E | 517000 E | 518000 E | 519000 E | 520000 E | 521000 E

134° 46' 00" W | 134° 44' 00" W | 134° 42' 00" W | 134° 40' 00" W | 134° 38' 00" W

N.6991000 | N.6990000 | N.6989000 | N.6988000 | N.6987000 | N.6986000 | N.6985000 | N.6984000

N.60° 15' 19" | N.60° 14' 19" | N.60° 13' 19" | N.60° 12' 19"



N.60° 21' 19" | N.60° 20' 19" | N.60° 19' 19" | N.60° 18' 19" | N.60° 17' 19" | N.60° 16' 19" | N.60° 15' 19" | N.60° 14' 19" | N.60° 13' 19" | N.60° 12' 19"

Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

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Grid North - Magnetic North : 30.0°
Annual change : 0.24'

Transverse Mercator Projection
North American Datum 1983
Central Meridian : 135° W

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1 cps
5 cps
25 cps

70.
17.
16.
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12.
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9.
8.
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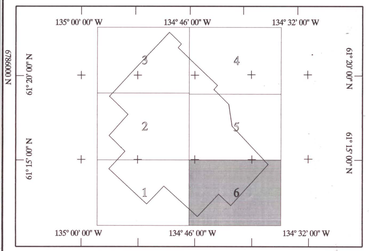
6.
5.
0.



PLACER DOME CANADA

URANIUM COUNT RADIOMETRICS

093874

MARS PROJECT
YUKON TERRITORY

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SCALE 1:10 000

250 0 100 200 500 1000 metres

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Date Flown : JULY 1997
NTS: 105 E/7 - 105 E/2
Project : J9783 Map Ref : 6 - 3