

GEOPHYSICAL REPORT
McLeese Lake - Dragon Mt. Area
Caribou M.D.
N 52° : W 122° 93B/9W
McLeese Lake Joint Venture
August-October 1959 D.W. Smellie

0296

296

Statement to accompany Airborne Geophysical Report
and Submission for Assessment Credit

A. List of Claims for which Assessment Credit
is applied.

Atlas Mineral Claims I-48, owned by A. Berglund
1773 Maple Street, Prince George.

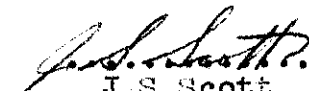
Brooks Mineral Claims I-I6, owned by the
Island Prince Copper Ltd., 709 Dunsmuir St.,
Vancouver, B.C.

Hill Mineral Claims I-6, and
Buster Mineral Claims I and 2, owned by
Harold Hill, rancher, of Marguerite, B.C.

B. Location of the above claims is described
as 5 miles north-east of Marguerite, B.C.
52° 122° S.E.

c. The geophysical contracts were performed on
the authority of Canex Aerial Exploration Ltd.
on behalf of a group of companies. Options
are held on the above claims in the name of
Canex Aerial Exploration Ltd.

Vancouver, B.C.


J.S. Scott,
P.Eng.

DONALD W. SMELLIE, P.ENG.
CONSULTING GEOPHYSICIST

1159 WEST BROADWAY
VANCOUVER, B.C.
BAYVIEW 6584

12 WHITEHALL
LONDON S.W.1, ENGLAND
TRAFALGAR 4461

XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX

AIRBORNE GEOPHYSICAL SURVEYS, QUESNEL RIVER AREA,

for

CANEX AERIAL EXPLORATION LIMITED

INTRODUCTION

INSTRUMENTATION

LOCATION, ACCESS AND TOPOGRAPHY

GENERAL GEOLOGY

ECONOMIC GEOLOGY

AEROMAGNETIC INTERPRETATION

HELICOPTER ELECTROMAGNETIC INTERPRETATION

HELICOPTER MAGNETIC INTERPRETATION

REFERENCES

INTRODUCTION

Between August 20 and September 3, 1959, an aeromagnetic survey was carried out in an area of 310 square miles between Soda Creek and Quasnel and east of the Cariboo highway. Work was done by Hunting Airborne Geophysics Limited using a Gulf magnetometer mounted in a "bird", towed by a cable some 100 feet below and 200 feet behind an Anson aircraft. The flight-line spacing was one-quarter mile, the mean terrain clearance 500 feet, on north-south flight lines.

Between September 1 and 8, 1959, helicopter geophysical surveys were carried out over two portions of the above area by Canadian Aero Service Limited. A Gulf magnetometer and the Newmont electromagnetic apparatus were mounted on a Sikorsky S-55 helicopter. Flight line spacing was one-eighth mile, terrain clearance 100-150 feet, and 210 miles were traversed on lines at N 30° E.

INSTRUMENTATION

The Gulf magnetometer is an instrument of the "flux-gate" type and measures variations in the total intensity of the earth's magnetic field.

The Newmont electromagnetic apparatus consists of vertical coaxial transmitter and receiver coils mounted on booms fore and aft at a spacing of 60 feet. Both in-phase and quadrature (out-of-phase) components of the electromagnetic field at the receiver are recorded.

LOCATION, ACCESS AND TOPOGRAPHY

The area is located immediately east of the Caribee highway between Soda Creek and Quesnel, British Columbia. A number of bush roads provide access to parts of the area for four-wheel drive vehicles. The topography is rolling, with the elevation varying from about 1,800 feet to 4,600 feet.

GENERAL GEOLOGY

Bedrock in the area includes granitic and dioritic types, and tuffs, green schists, breccia and limestone, probably of the Cache Creek group. A capping of Tertiary volcanics extends to the west from near the western boundary of the area.

ECONOMIC GEOLOGY

Copper mineralization is of three types:

- (a) disseminated pyrite-chalcopyrite in granitic rocks (Sunset and Polyanna prospects),
- (b) thin lenses of magnetite or specularite with chalcopyrite and some epidote, pyroxene and garnet replacing limestone and schist,
- (c) disseminated chalcopyrite and magnetite in green schist or tuff.

AEROMAGNETIC INTERPRETATION

Sheet 1

An erratic pattern of positive and negative anomalies in the southwest corner marks a Tertiary volcanic capping. This is also in evidence along the west side of Sheet 2. The two strong local anomalies on lines 15 to 19, south end of Sheet 1, may represent local concentrations of magnetite.

Sheet 2

In the northeast corner, a northwesterly striking anomaly appears to be due to a relatively narrow, magnetic horizon with a northeast dip.

The large anomaly on the east side, containing a local peak of 4000 gammas intensity, may represent either a volcanic capping or a contact zone between granite and Cache Creek group rocks.

At the south end of the area occur a number of magnetic highs. The two southernmost closures, of 3250 gammas, are broad and may indicate volcanic cappings or broad lithologic contrasts. Ground examination will be required to disclose the nature of the other anomalies, some of which may represent magnetite-rich zones.

A contact marked approximately by the 2700 gamma contour, is probably between granite to the north and Cache Creek group rocks to the south.

HELICOPTER ELECTROMAGNETIC INTERPRETATION

Electromagnetic anomalies are plotted on the accompanying maps using symbols according to the value of the ratio of in-phase to quadrature response (I/Q).

Sheet 1

An anomalous zone on lines T-105 to T-116 includes five anomalies with I/Q greater than 1.5, as well as a number showing slightly smaller ratios.

Sheet 2

A zone across the northeast ends of T-3 and T-10 consists of anomalies whose quality is not as good as the above zone. It occurs on a magnetic gradient probably marking a contact between granite and Cache Creek group rocks.

A zone across the southwest ends of T-2 to T-17 is also made up of only fair quality anomalies. The best responses occur over the Westcoast Transmission pipe-line.

HELICOPTER MAGNETIC INTERPRETATION

No compilation of the helicopter magnetic data has been made. Since this survey was carried out at a lower terrain clearance than the fixed-wing survey, the record traces were examined in order to observe some of the fixed-wing aeromagnetic anomalies at better resolution.

REFERENCES

Smellie, D.W., 1956, Elementary approximations in aeromagnetic interpretation: Geophysics, v.21, p.1020 - 1040.

Tipper, H.W., 1959, Quessal: Geol. Survey Can. map 12 - 1959.

Respectfully submitted,



D.W. Smellie, P.Eng.

Vancouver, B.C.,

November 20, 1959.



HUNTING TECHNICAL & EXPLORATION SERVICES LIMITED

Hunting Technical & Exploration Services Limited
Cables: Hunttechnic, Toronto Phone PLymouth 5-1141

December 24th., 1959.

To Whom It May Concern:

The following is a summary of the professional qualifications of Dr. Norman R. Paterson, Chief Geophysicist of Hunting Airborne Geophysics Limited.

- Degrees:**
- B. A. Sc. (Toronto) 1950. Engineering Physics (Geophysics Option)
 - M. A. Sc. (UBC) 1952. Engineering Physics (Physics and Geology Majors)
 - Ph. D. (Toronto) 1955. Physics (Geophysics Major)
- Professional affiliations:**
- Member, Association of Professional Engineers of the Province of Ontario
 - Member, Societies of Exploration Geophysicists, and European Association of Exploration Geophysicists
 - Member, Canadian Institute of Mining and Metallurgy and American Institute of Mining Engineers
- Active Committees etc:**
- Chairman, Geophysics Committee, C. I. M. M.
 - Associate Editor, GEOPHYSICS 1960-1961
 - Mining Representative, Associate Committee on Geodesy and Geophysics, N. R. C., 1958-1961
 - Member, Sub-Committee on Physical Methods Applied to Geological Problems, N. R. C.
 - Advisory Committee on Geological Research
 - Member, Sub-Committee on Gravity, Canadian I. U. G. G. Committee

HUNTING TECHNICAL AND EXPLORATION SERVICES LIMITED

Norman R. Paterson,
Chief Geophysicist.

NRP/ko

AIRBORNE GEOPHYSICAL SURVEY
McLEESE LAKE - GRANITE MT. - DRAGON MT. AREA
CARIBOU MINING DIVISION
BRITISH COLUMBIA

Statement of Cost:

A. Aerial Photography		
The Photographic Survey Corporation Ltd.		
Invoice No. 2438 (copy attached)		\$ 1,027.53
B. Airborne Magnetometer Survey		
The Photographic Survey Corporation Ltd.		
Invoices No. 2466 & 2446 (copies attached)		14,561.10
C. Extra Set of Photos for follow-up		
The Photographic Survey Corporation Ltd.		
Invoice No. 2525 C (copy attached)		117.14
D. Helicopter-Borne Geophysical Survey		
Canadian Aero Service Limited		
Invoice No. 3673 (204 line miles)		
(copy attached)		7,894.00
E. Consulting Fees		
D. W. Smellie, Geophysicist	\$ 900	
J. S. Scott, Geologist	<u>\$1200</u>	
		<u>2,100.00</u>
TOTAL COST		<u>\$25,699.77</u>

THE PHOTOGRAPHIC SURVEY
CORPORATION LIMITED

WEST COAST DIVISION

AIR SURVEY ENGINEERS

Phone: MUluel 3-4301

poor copy

DATE 31st August 1959

SOLD TO

Canex Aerial Exploration Ltd.,
700 Burrard Building,
1030 West Georgia Street,
Vancouver 5, B.C.

YOUR ORDER No. E-542

JOB No. 59-95

TERMS: NET CASH (ORDERS MAY BE CANCELLED
ON 60-DAY ACCOUNT)

SHIPPED VIA

TO:

Progress, Airborne Magnetometer Survey, McLeese Lake
Area: Flying completed.

In accordance with our proposal 28th July 1959, Item
(d), 50% of lump sum price of \$14,400.00 payable on
completion of flying, of

\$7,200.00

E.S.O.E.

No 2446

GENERAL INFORMATION
AERIAL PHOTOGRAPHY
SURVEYS
TOPOGRAPHIC MAPS
CONTROLLED SURVEYS
MAGNETIC CONTROLLED SURVEYS

CANADIAN AERO SERVICE LIMITED

Photogrammetric Engineers

148 QUEEN STREET
OTTAWA - CANADA

PR

September 23, 1959

TELEPHONE 111-1111

NO 3673

Mr. Jim S. Scott,
Consulting Geologist,
402 W. Pender St.,
Vancouver, B. C.

To performing a helicopter-borne geophysical survey
in the location of Williams Lake, B. C. as per
agreement.

Positioning of helicopter
204 line miles @ \$24.75 per line mile
Data man - 13 days @ \$65.00 per day

2,000.00
5,049.00
845.00
\$7,894.00

THE PHOTOGRAPHIC SURVEY
CORPORATION LIMITED

WEST COAST DIVISION

AIR SURVEY ENGINEERS

Phone MU6613401

PC

SOLD TO

Coastal Aerial Reconnaissance Ltd.,
The Standard Building,
1000 West Georgia Street,
Vancouver 1, B.C.

DATE 10th August 1958

YOUR ORDER NO. T. 1. 2-342

JOB NO. 1234

TERMS: NET CASH (INTEREST NOT TO BE CHARGED
ON OVERDUE ACCOUNTS)

SHIPPED VIA

TO:

Completion, Alaska Magnetic Air Survey,
McGowan Lake area, Fairbanks Alaska
Alaska.

	\$18,400.00
Federal Sales Tax	178.40
Provincial Sales Tax	870.00
	<u>\$19,448.40</u>
Less previously invoiced 2248	<u>1,200.00</u>
Balance, this invoice	<u>\$18,248.40</u>

THE PHOTOGRAPHIC SURVEY
CORPORATION LIMITED

WEST COAST DIVISION

AIR SURVEY ENGINEERS

Phone: MR 3443

DATE 8th September 1959

SOLD TO

YOUR ORDER NO Yertal

Mr. J. S. Scott,
402 West Pender Street,
Vancouver 3, B.C.

JOB NO. C-3747

TERMS: NET CASH (FREIGHT NOT BE INCLUDED
ON EXCESSIVE ORDERS)

SHIPPED VIA

TO:

1 Only Double Weight Matte print of each of the following:

~~37374 to 37425~~ 37374 to 37425

37426 to 37457

37460 to 37510

134 prints @ 75¢ ea. \$100.50

11% Federal Sales Tax 11.06

\$111.56

3% Provincial Sales Tax 3.58

\$117.14

E.A.O.E.

Nº 2525 C

**THE PHOTOGRAPHIC SURVEY
CORPORATION LIMITED**

WEST COAST DIVISION

AIR SURVEY ENGINEERS

Phone: MUtual 3-6501

DATE 11st August 1959

YOUR ORDER NO 2-547

JOB NO. 11-99

TERMS: NET CASH INTEREST MAY BE CHARGED
ON OVERDUE ACCOUNTS

SHIPPED VIA

SOLD TO

Canex Aerial Exploration Ltd.,
700 Burrard Building,
1030 West Georgia Street,
Vancouver 5, B.C.

TO:

Completion, Aerial Photography:
Approximate scale of 2000 ft/in of some 300
square miles, vicinity McLeese Lake:

Two sets photos and index delivered - our Packing
Slip Nos. 1056 and 1061

Lease Sum
Federal Sales Tax
Provincial Sales Tax

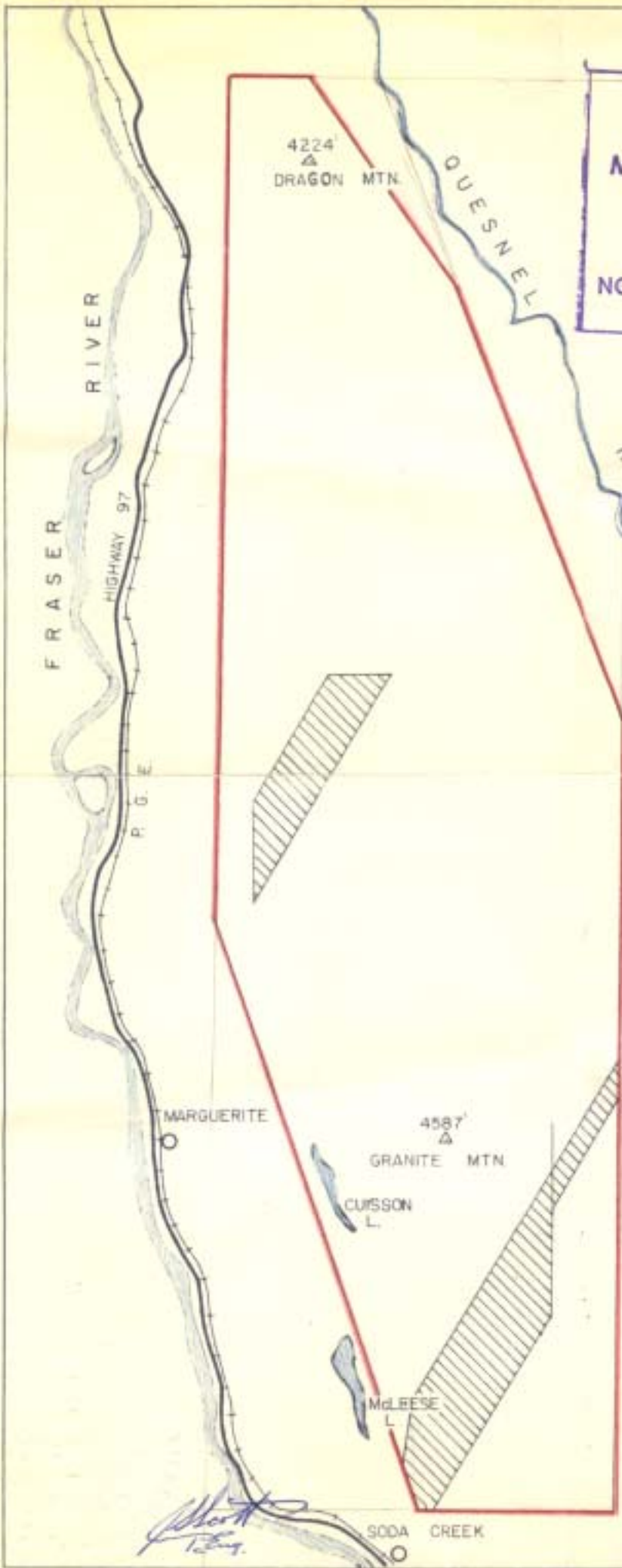
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27.21




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\$810.27

Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. **296** MAP **#1**

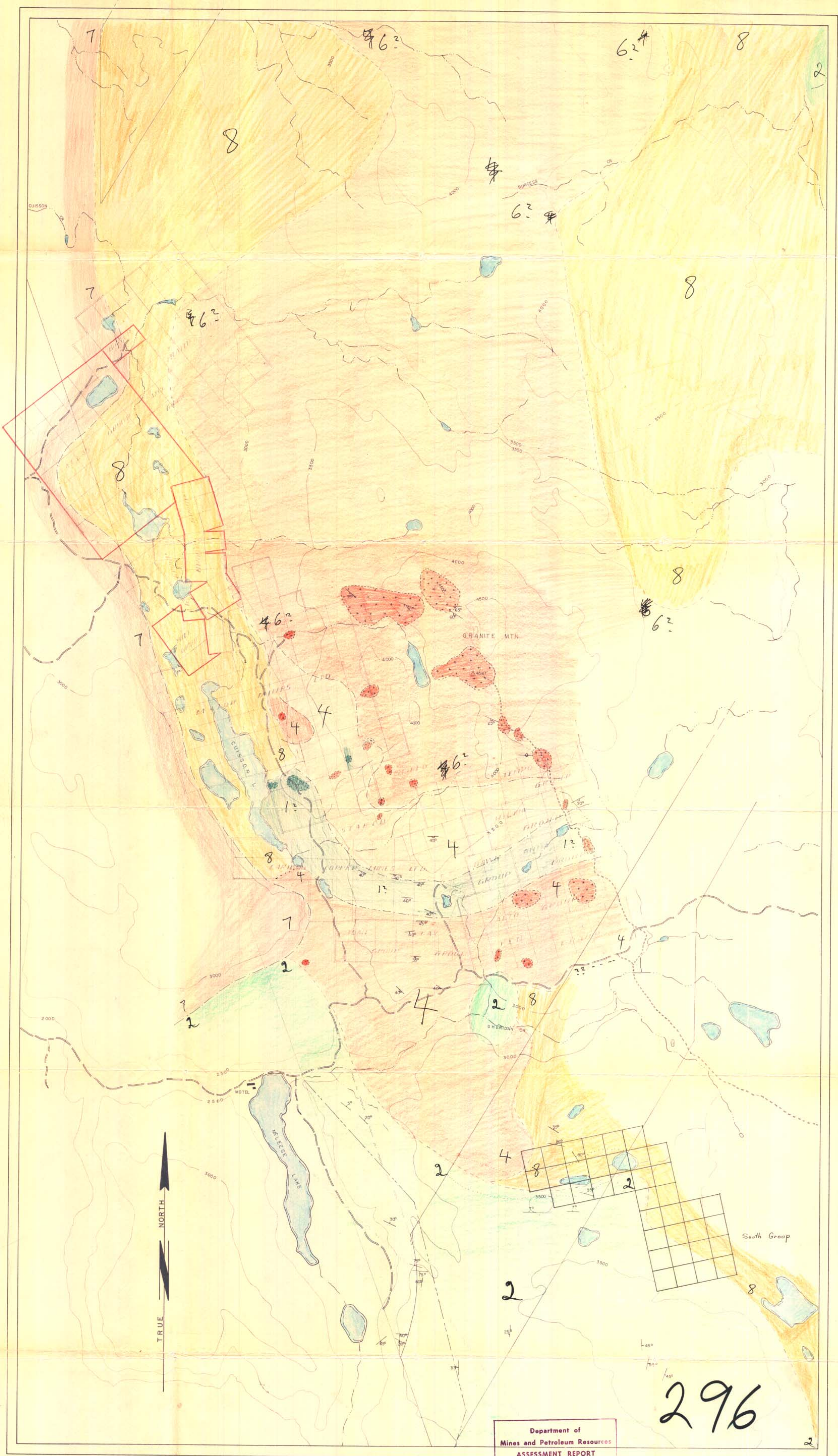


LEGEND

-  AIR PHOTO COVERAGE
by PHOTOGRAPHIC SURVEY CORP
AUG. 1959
-  AEROMAGNETIC COVERAGE
by HUNTING AIRBORNE GEOPHYSICS
AUG. 1959
-  AM and AEM SURVEY
by CANADIAN AERO SERVICE
AUG. 1959

KEY MAP

SHOWING COVERAGE by P.S.C. & C.A.S.
 IN McLEESE LAKE AREA
 SCALE: 1" = 4 Mi.



296

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 296 MAP #2

LEGEND

- | | | |
|---------|--|---|
| LAKE | TILL, GRAVEL, SAND, CLAY & SILT - (G.S.C.) | FAULT |
| CREEK | TERTIARY BASALT - (J.S.S. & G.S.C.) | STRIKE & DIP OF BEDDING |
| HIGHWAY | GRANITIC ROCKS - (J.S.S.) | FOLIATION |
| ROAD | DIORITIC ROCKS - (J.S.S.) | FOLIATION (FLAT) |
| | GRANITE, GRANODIORITE, DIORITE - (G.S.C.) | OUTCROP |
| | TUFF, GREEN SCHISTS, BRECCIA, LIMESTONE - (J.S.S.) | GEOL. BOUNDARY INFERRED (J.S.S.) |
| | CHERT, ARGILLITE, LIMESTONE, GREENSTONE - (G.S.C.) | GEOL. BOUNDARY FROM G.S.C. MAP (2-1959) |
| | CONGLOMERATE, SANDSTONE, GREYWACKE - (G.S.C.) | ZONE OF ANOMALOUS EM |

SHEET 2.
GEOLOGICAL MAP
(SHOWING MINERAL CLAIM GROUPS)

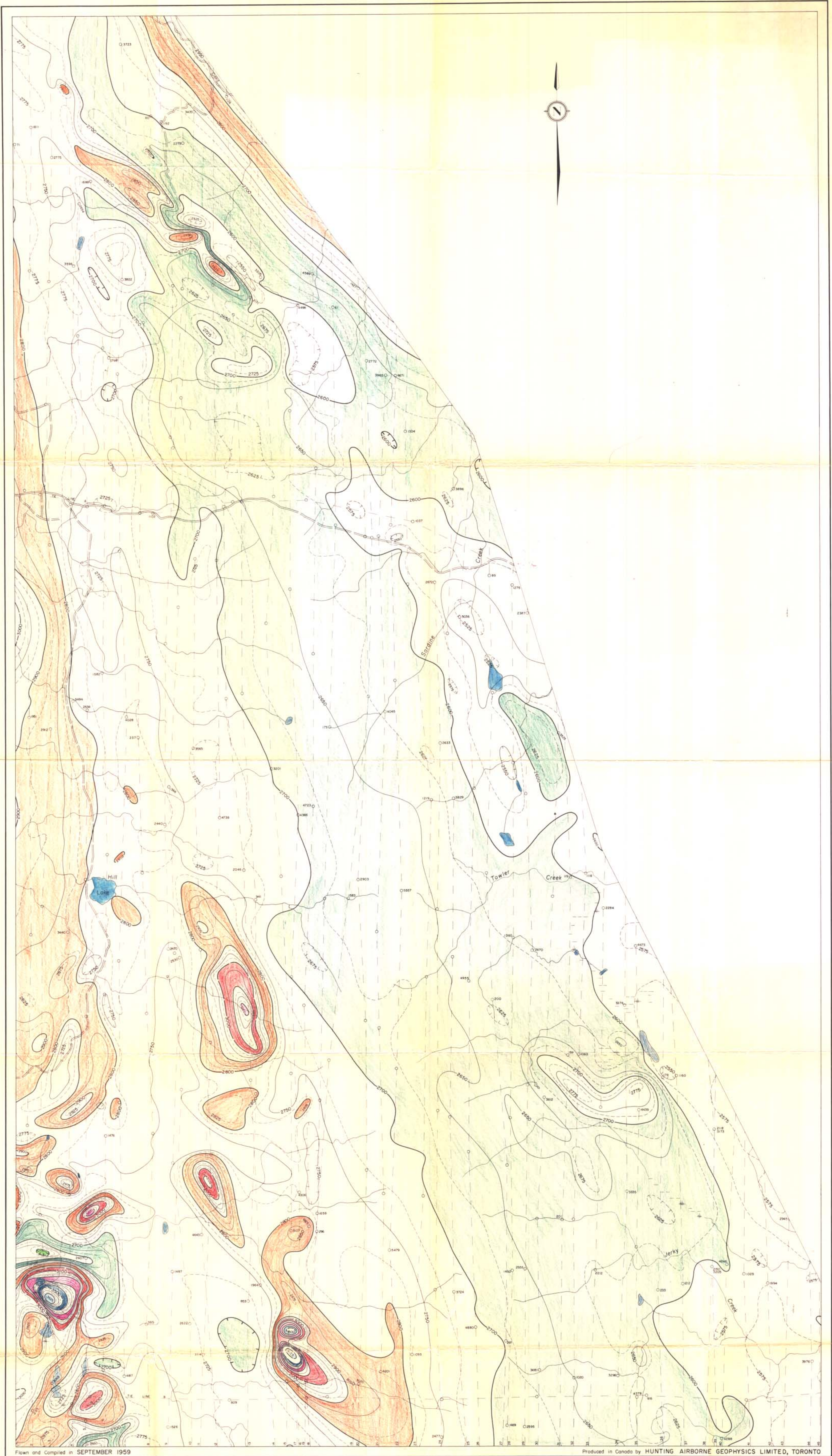
CUISSON - McLEESE LAKE AREA
(GRANITE MTN.)

CARIBOO MINING DIVISION, B.C.
SCALE: 1 in. = 2640 FT.

GEOLOGY BY: J.S. SCOTT
DRAWN: NOV. 1959
B.M.D.
FROM G.S.C. MAP (2-1959)
ASS. ANN. REPT. 1957 PP. 14-17
NOT ACKNOWLEDGED

CANEX AERIAL EXPLORATION LIMITED
AIRBORNE MAGNETOMETER SURVEY

60-8000
5



Flown and Compiled in SEPTEMBER 1959

Produced in Canada by HUNTING AIRBORNE GEOPHYSICS LIMITED, TORONTO

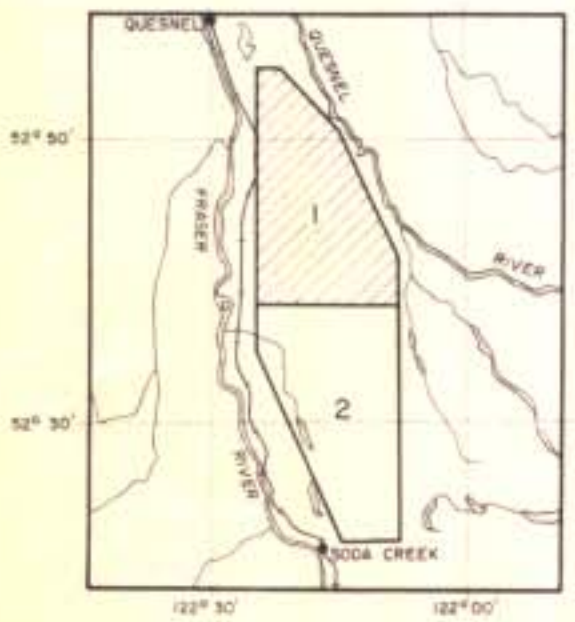
- CONTOUR INTERVAL 25 GAMMA
- MEAN FLIGHT LINE SPACING 1320 FEET
- MEAN TERRAIN CLEARANCE 500 FEET
- 500 GAMMA CONTOUR
- 100 GAMMA CONTOUR
- 50 GAMMA CONTOUR
- 25 GAMMA CONTOUR
- MAGNETIC LOW
- RADIOMETRIC ANOMALY
- FIDUCIAL POINTS 8800
- FLIGHT LINES TO 48

QUESNEL RIVER AREA

SCALE
1 inch to 2640 Feet

296

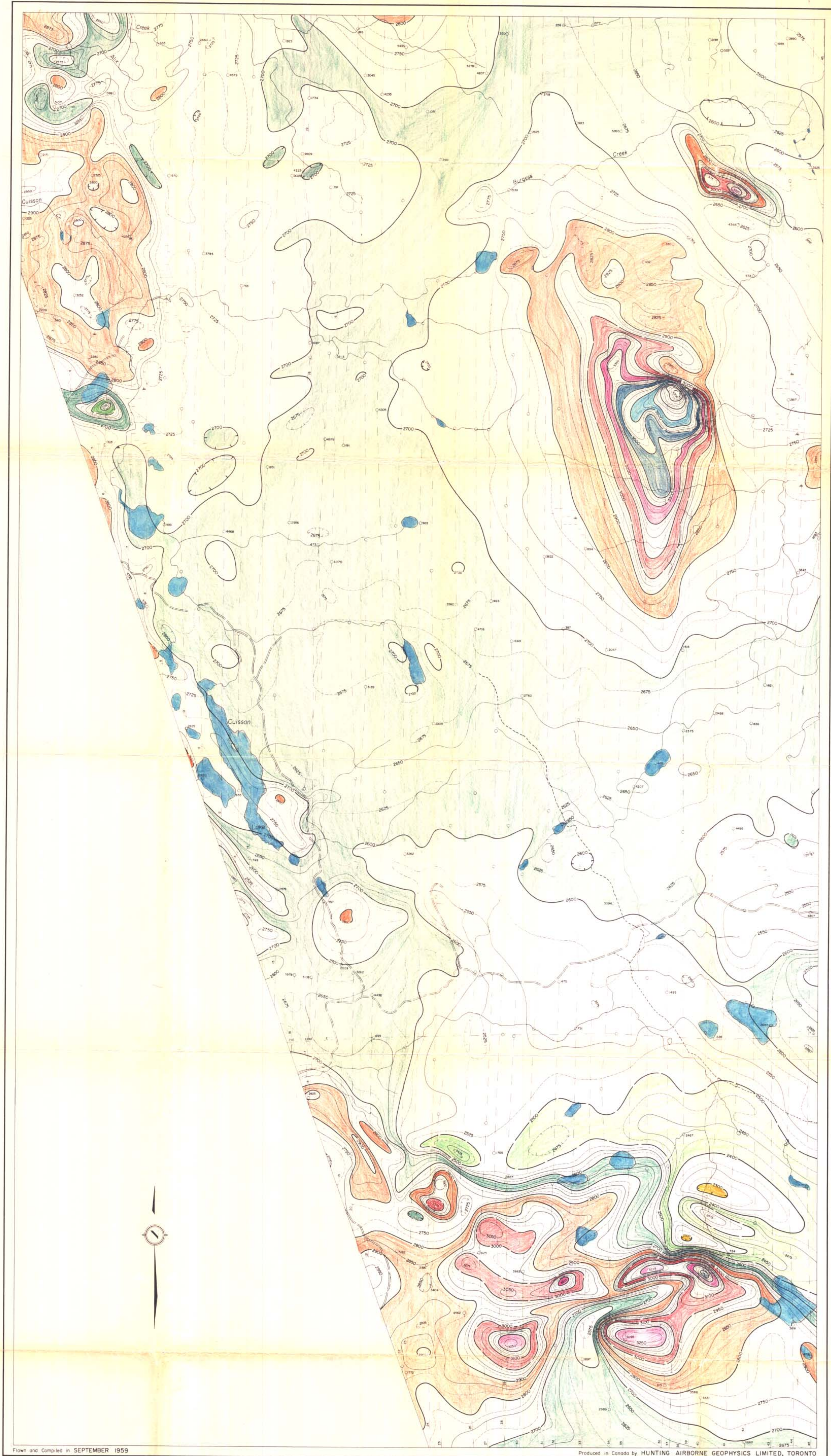
Department of
Mines and Petroleum Resources
ASSESSMENT
NO. 296 #2



Norman Peterson P. Eng
Chief Geophysicist
24/12/59

296-2

CANEX AERIAL EXPLORATION LIMITED
 AIRBORNE MAGNETOMETER SURVEY



Drawn and Compiled in SEPTEMBER 1959

Produced in Canada by HUNTING AIRBORNE GEOPHYSICS LIMITED, TORONTO

- CONTOUR INTERVAL 25 GAMMA
- MEAN FLIGHT LINE SPACING 1320 FEET
- MEAN TERRAIN CLEARANCE 500 FEET
- 500 GAMMA CONTOUR [Symbol]
- 100 GAMMA CONTOUR [Symbol]
- 50 GAMMA CONTOUR [Symbol]
- 25 GAMMA CONTOUR [Symbol]
- MAGNETIC LOW [Symbol]
- RADIOMETRIC ANOMALY [Symbol]
- FIDUCIAL POINTS [Symbol]
- FLIGHT LINES [Symbol]

QUESNEL RIVER AREA

SCALE
 2000 4000 6000 8000 10000
 FEET
 1 inch to 2640 Feet

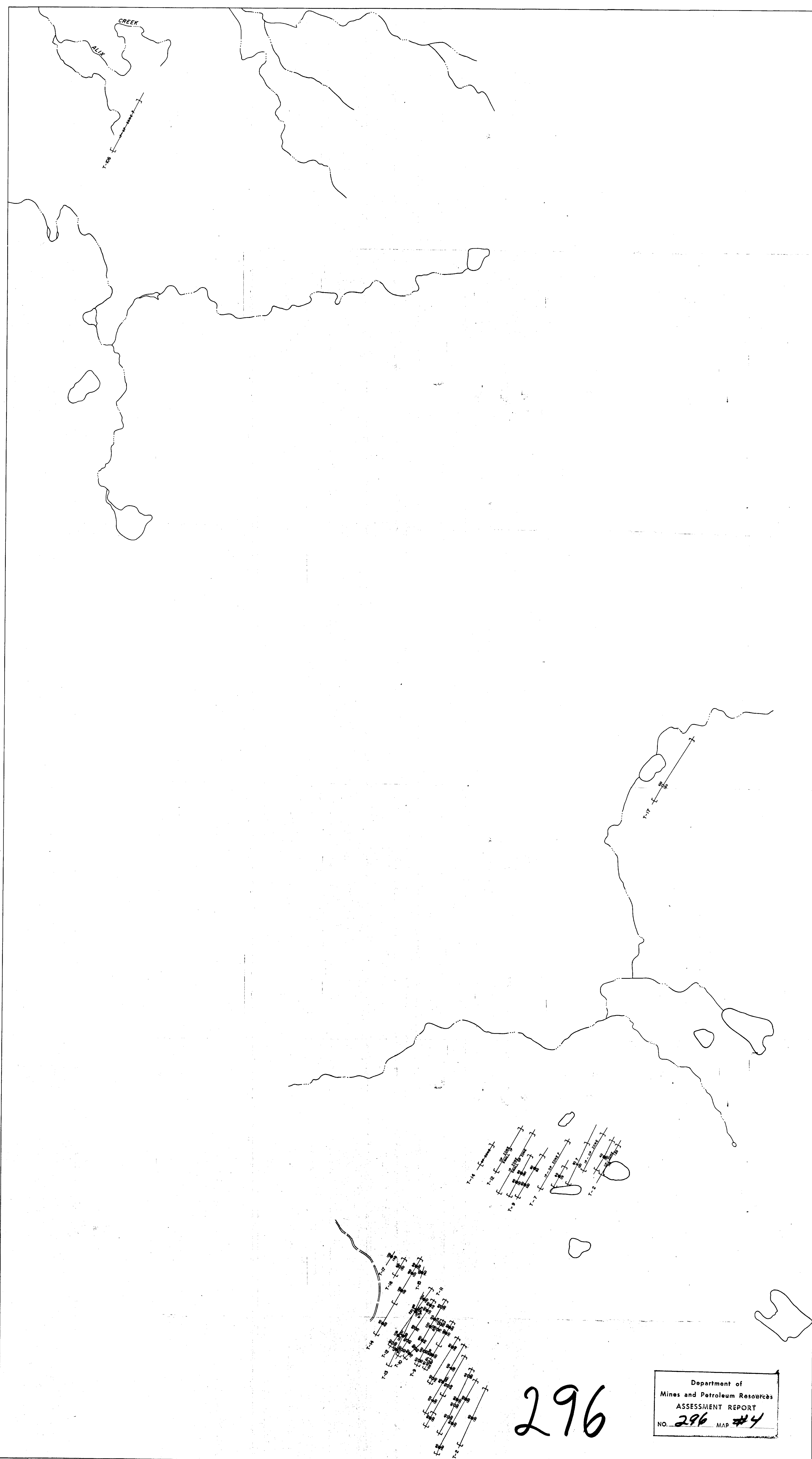
Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 No. 296 Map #3

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296-3

Norman Paterson P. Eng.
 Chief Geophysicist.
 24/11/59



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Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 296 MAP #4

LEGEND

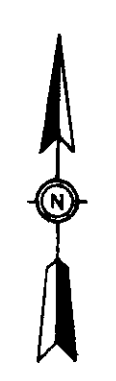
CONDUCTIVE ZONE BOUNDARIES [---]

RATIO SYMBOLS □ 0-75
 (RATIO OF IN-PHASE TO OUT-OF-PHASE COMPONENTS) ■ 75-150
 ▲ 15-30 SYMBOL ALSO SHOWS PEAK POSITION
 X OVER 30

IN PHASE AMPLITUDE (P.P.M.) [---] 80
 [---] 100

TERRAIN CLEARANCE (FEET) [---] 150
 [---] 200

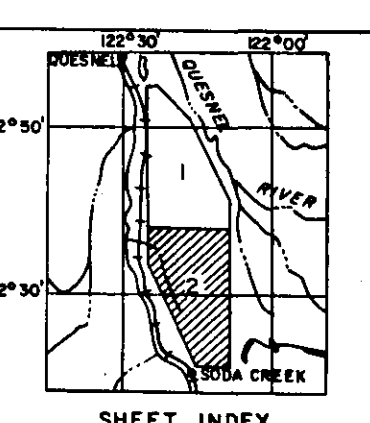
MAGNETIC ASSOCIATION INDEX IN UNITS OF GAUSS (1000 DECIBEL ANOMALY) [---] 200



AIRBORNE ELECTROMAGNETIC SURVEY
QUESNEL RIVER AREA
 BRITISH COLUMBIA
 SCALE: 1 INCH TO 2640 FEET

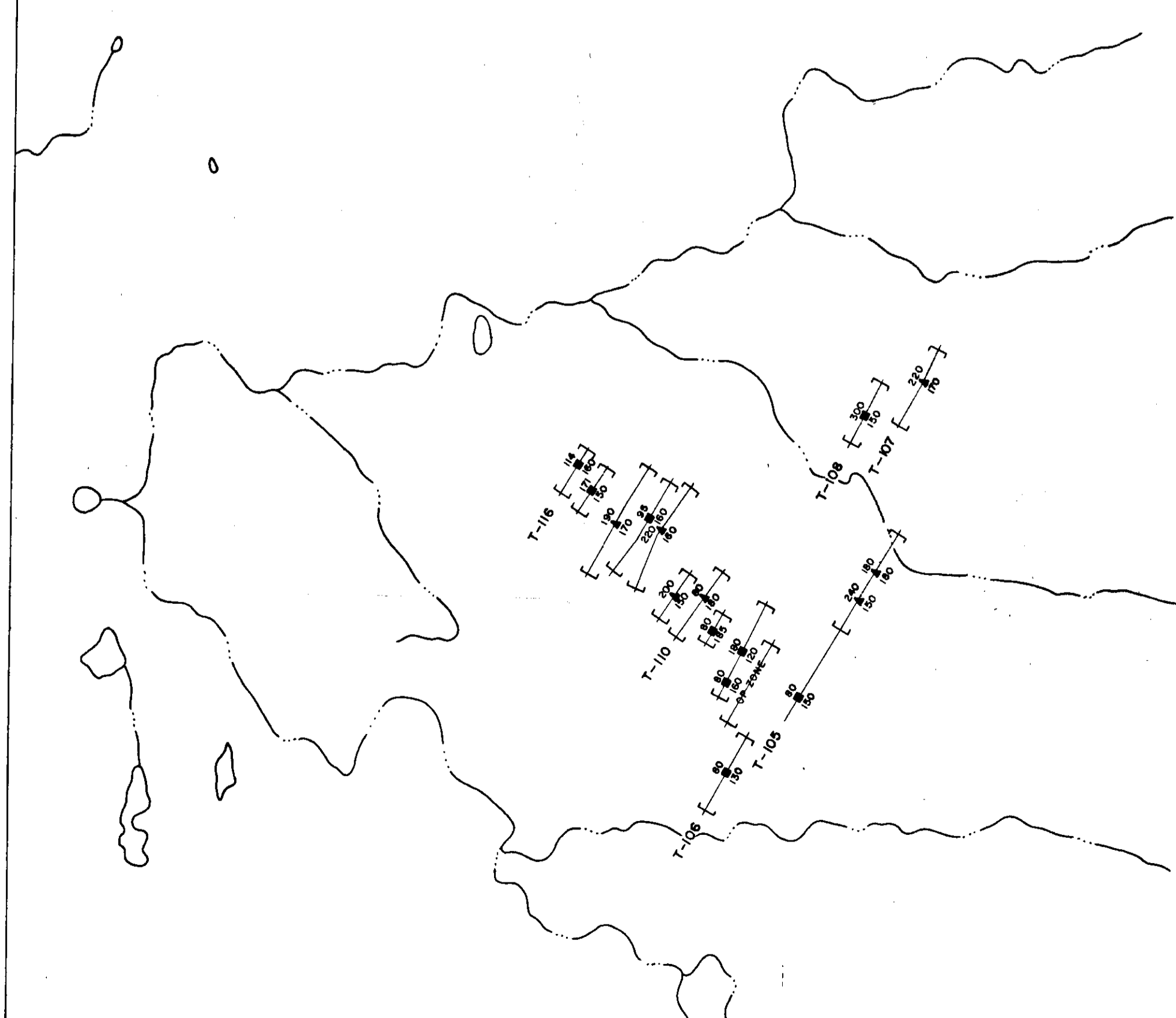
2000 0 2000 4000 6000 8000 10000
 FEET FEET

To accompany report "Airborne Geophysical Survey, Quesnel River area, for Canex Social Corporation Limited," dated November 20, 1959, at Vancouver, B.C.



MEAN TERRAIN CLEARANCE..... 150 FEET
 TRAVERSE INTERVAL..... 1/8 MILE

SHEET INDEX
 CANADIAN AERO SERVICE LIMITED,
 OTTAWA, ONTARIO
 A. R. Hutton
 Geophysicist
 Dec 20, 1959



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Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 296 MAP #5

LEGEND

CONDUCTIVE ZONE BOUNDARIES []

RATIO SYMBOLS

(RATIO OF IN-PHASE TO
OUT-OF-PHASE COMPONENTS)

0-75 □

75-15 ■

15-30 ▲

OVER 30 X

SYMBOL ALSO SHOWS
PEAK POSITION

IN PHASE AMPLITUDE (P.P.M.)

80 []

100 []

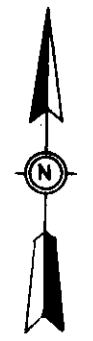
TERRAIN CLEARANCE (FEET)

100 []

MAGNETIC ASSOCIATION

INDEX IN UNITS OF GAMMA
(1000 200 GAMMA ANOMALY)

[]



AIRBORNE ELECTROMAGNETIC SURVEY

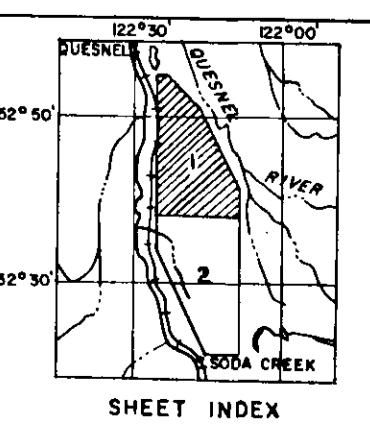
QUESNEL RIVER AREA

BRITISH COLUMBIA

SCALE: 1 INCH TO 2640 FEET

2000 0 2000 4000 6000 8000 10000
FEET FEET

*To accompany report "Airborne Geophysical
Survey, Quesnel River area, for
Canadian Aero Service Limited", dated
November 20, 1955, at Vancouver, B.C.*



MEAN TERRAIN CLEARANCE 150 FEET
TRAVERSE INTERVAL 1/8 MILE

CANADIAN AERO SERVICE LIMITED,
OTTAWA, ONTARIO