

REPORT ON THE 21/88
AIRBORNE GEOPHYSICAL SURVEY
ON THE
GI05
MINERAL CLAIM
GROUSE MOUNTAIN AREA, HOUSTON, B.C.
CK&G MANAGEMENT
54° 35' N 126° 44' W
NTS 93 L 10
OMINECA MINING DIVISION
J.T. WALKER MINING GEOPHYSICS
MARCH 12, 1987

16009

SMITHERS

87-188-16000

498



Province of British Columbia

Ministry of Energy Mines and Petroleum Resources

1987-1988
1987-1988

TYPE OF REPORT/SURVEY(S):

GEOPHYSICAL

TOTAL COST

\$2,700.94

AUTHOR(S):

J.T. Walker

SIGNATURE(S):

J.T. Walker

DATE STATEMENT OF EXPLORATION AND DEVELOPMENT FILED

April 21, 1987

YEAR OF

1986

PROPERTY NAME(S):

G10

COMMODITIES PRESENT

B.C. MINERAL INVENTORY NUMBER(S), IF KNOWN

MINING DIVISION Omineca

NTS

93 L/OE

LATITUDE

54°35.7'

LONGITUDE

126°42.5'

NAMES and NUMBERS of all mineral tenures in good standing (when work was done) that form the property. (Examples: T-1-14, FIRE 2 (12 units), PHOENIX (Lot 1706), Mineral Lease M-123, Mining or Con. Min. Lease ML-12 (lots involved))

G10 5 (20 units)

FILMED

OWNER(S)

(1) CK&G Management

(2)

RECEIVED

MAILING ADDRESS

1158 Powell Street

Vancouver, B.C. V6A 1J3

APR 29 1987

GOVERNMENT AGENT
SMITHERS, B.C.

OPERATOR(S) (that is, Company paying for the work)

(1) CK&G Management

(2)

MAILING ADDRESS

1158 Powell Street

Vancouver, B.C. V6A 1J3

SUMMARY GEOLOGY (lithology, age, structure, alteration, mineralization, size, and attitude):

The claim is underlain by the ^{Lower} Jurassic Hazelton Group which consists of sediments and volcanics dipping in a southerly direction. The Hazelton Group has been intruded by late stage intrusive dikes, sills and small stocks.

REFERENCES TO PREVIOUS WORK

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Location Map - Shown on Drawings No. 1 & 2		

**GEOLOGICAL BRANCH
&
ASSESSMENT REPORT**

16,000

AIRBORNE GEOPHYSICAL SURVEY
ON THE
GIO2, GIO4, GIO5 & GIO6 MINERAL CLAIMS
MCQUARRIE LAKE - GROUSE MOUNTAIN AREA
HOUSTON, B.C.

INTRODUCTION

During the period September 4 and 5, 1986, J.T. Walker Mining Geophysics carried out an airborne geophysical survey in the Grouse Mountain Area, Houston, B.C. The survey area lies 14 kilometers north of Houston, B.C. The area flown is outlined on the Location Map, which depicts the N.T.S. sheet 93 L 10 at a scale of 1:250,000. This map is located at the top right corner of Drawings Nos. 1 & 2.

The survey was flown over the following mineral claims:

<u>CLAIM</u>	<u>RECORD NO.</u>
GIO2	6176
GIO4	6178
GIO5	6179
GIO6	6288

The purpose of the survey was to provide data for compiling a low level aeromagnetic contour map and to locate zones of conductivity at the VLF frequencies (21.4 kHz. - 24.8 kHz.).

Three measurements were recorded during the survey:

- (1) Total magnetic field intensity
- (2) Relative Field Strength of the horizontal component of the VLF electromagnetic field, utilizing two transmitters simultaneously, located near:
 - (a) Seattle, Washington (24.8 kHz.) Azimuth 152°
 - (b) Annapolis, Maryland (24.4 kHz.) Azimuth 093°

A Bell 206 B Helicopter, chartered from Highland Helicopters, Smithers, B.C. was used to fly the survey. Thirty-two survey lines were flown in a north-south direction. A total of 182 line kilometers

were flown covering an area of approximately 4550 hectares. Line spacing of 250 meters was maintained throughout the survey. Terrain clearance was 60 meters. Air speed of 100 kilometers per hour was maintained where possible.

SURVEY PERSONNEL

Pilot: C. Bosman (Highland Helicopters)

Navigator: L. LeBel (Orequest Consultants Ltd.)

Operator: T. Walker (J.T. Walker Mining Geophysics)

Data reduction, compilation, drafting and interpretation: T. Walker

SURVEY PROCEDURE AND NAVIGATION

A flight line base map of the survey area was prepared by enlarging a 1:50,000 N.T.S. topographic map to a scale of 1:20,000. Proposed flight lines and topographically located control points were plotted and numbered prior to flying the survey. During the survey, flight line path deviations were noted and corrected on the flight line base map. Flight line and control point information was announced by the navigator and recorded on magnetic tape. During the course of the survey, this information was notated by the operator directly onto the magnetic and VLF-EM analog charts to provide correlation between the flight line control points and the recorded data.

INSTRUMENTATION

The following instruments were installed in the helicopter for measuring and recording the geophysical data:

(a) Proton Magnetometer (ELSEC - Type 595)

Manufactured by the Littlemore Scientific Engineering Co., Oxford, U.K., the magnetometer measures the total magnetic field at a one-second cycle rate. The measurement is displayed digitally to one gamma and has an analog output of 100, 1000, or 10,000 gammas full scale. The 1000 gamma full scale output was used for the survey. The Toroidal wound detector was installed in a fibreglass 'bird', towed beneath the helicopter on a 12 meter cable.

(b) Electromagnetic Receiver (VLF-EM)

The two-frequency VLF-EM receiver was manufactured by Sabre Electronic Instruments Ltd., Burnaby, B.C. Two omni-directional antenna arrays, (mounted in the fibre-glass 'bird', which also carries the magnetometer detector) are used. The antenna arrays are designed to detect the total horizontal magnetic component of the VLF fields.

VLF signals originating from U.S. Navy transmitters near Seattle, Washington (24.8 kHz.), and Annapolis, Maryland (21.4 kHz.) were utilized for this survey. Two signals are measured simultaneously. The amplitudes of the horizontal component of the fields are measured continuously and displayed as relative field strengths. Two analog outputs are provided for recording.

(c) Recording System

Two chart recorders are used to record the data during the survey:

- (1) A one-pen chart recorder, (Hewlett Packard - Model 7155B) is used to record the aeromagnetic data in profile. The recorder is calibrated to provide a full scale deflection of 1000 gammas.
- (2) A two-pen chart recorder (Soltec - Model VP6723S) is used to record the VLF-EM field strength data from two transmitters.

(d) Radar Altimeter

A radar altimeter (Mark 10 - Bonzer Inc.) was installed to measure and display the helicopter terrain clearance during the survey. The visual meter display assists the pilot in maintaining a constant aircraft-ground clearance.

DATA REDUCTION AND PRESENTATION

All survey data is presented on one plan map at a scale of 1:20,000. Corrected flight lines and control points are plotted and numbered. Flight line direction is indicated by an arrow at the beginning of each line.

(a) Aeromagnetic data (Drawing No. 1)

The aeromagnetic data is presented as an aeromagnetic Contour Map (Drawing No. 1). The contour values are referenced to a base of 57,000 gammas total magnetic field. The results were not corrected for diurnal variation. The magnetic data was transferred manually from the strip charts to the flight lines using a standard graphic method whereby magnetic contour interval points are transcribed to the plan map on the appropriate flight line. Contour lines were drawn through points of equal magnetic intensity. Contour intervals of 500 gammas, 100 gammas and 50 gammas were used.

(b) Electromagnetic data (VLF-EM) (Drawing No. 2)

The VLF-EM data is recorded as a continuous profile of the Relative Field Strength. A significant anomaly is a definitive increase in the Relative Field Strength. The VLF-EM anomalies are shown on Drawing No. 2 by an anomaly symbol and bar along the flight lines. The length of the bar corresponds to the anomalous profile width at the half height. The number enclosed within the anomaly symbol represents the percent increase of the field strength at the maximum profile height. The anomalous locations are transcribed to the flight lines using the graphic method described under Aeromagnetic Data. Anomalous responses from the Transmitter near Seattle are plotted with the anomaly symbol west of the flight line. Responses from the Transmitter near Annapolis are plotted east of the flight line. The location of the flight lines is shown by the screened topographic contour map printed as an underlay on the drawings. Also, a location map, with the survey area outlined, is located at the top right of the drawings. The Location Map covers the 93 L 10 map area at a scale of 1:250,000.

DISCUSSION OF RESULTS

The results of the airborne magnetometer survey are plotted as an Aeromagnetic Contour Map, Drawing No.1, using a 50 gamma contour. The 100 gamma contours are a solid line, with 500 gamma contours accentuated by a heavier line. The contour values are referenced above a total magnetic field value of 57,000 gammas.

The range of the magnetic field varies from a 'low' of 400 gammas to a 'high' exceeding 1700 gammas. However, over the major part of the survey area, the magnetic field varies by less than 200 gammas, averaging about 700 gammas.

Two magnetic anomalies are indicated. A series of small magnetic 'highs' roughly in the shape of an inverted V are located in the south-west corner of the survey area. The magnetic intensity of the enclosed four 'peaks' range to approximately 1000 gammas. The magnetic pattern suggests the presence of a series of weak magnetic dikes. The results of the VLF-EM survey show no correlating increase in conductivity. A second magnetic anomaly is located in the south-east corner of the survey area. This magnetic dipole ranges from a 'high' of 1700 gammas to a 'low' of less than 400 gammas. The pattern as shown on the aeromagnetic map may be quite distorted due to, (a) flight line direction, and (b) flight line spacing; no increase in conductivity is evident.

The results of the Airborne VLF-EM survey are plotted on the Airborne VLF-EM Anomaly Map, Drawing No. 2. An anomaly symbol with bar is used to locate the VLF-EM anomaly along the flight lines. The bar length indicates the anomaly width at the half height of profile. The intensity of the VLF-EM anomaly (maximum amplitude) is expressed as a percentage increase of the Relative Field Strength and is shown within the symbol.

Five VLF-EM anomalies were recorded. These are located on flight lines 7, 8, 13 and 14. All anomalies are considered weak, although the two anomalies on flight lines 7 and 8 may indicate a stronger anomaly located between the lines. The two anomalies adjacent on lines 13 and 14 may indicate a similar situation.

The two-transmitter anomaly toward the south end of flight line 13 is weak and very narrow, suggesting a near surface source. Since navigational control is lacking on the south half of flight line 13, the location of this anomaly cannot be considered accurate.

CONCLUSIONS AND RECOMMENDATIONS

The Airborne Geophysical Survey has provided data for the compilation of a Low Level Aeromagnetic Contour Map showing two interesting magnetic features. The VLF-EM survey results have indicated five weak anomalies. Since these anomalies are weak, further investigation should only be considered if the target were expected to produce a response of this order.

MARCH 12, 1987



J.T. WALKER MINING GEOPHYSICS

Appendix A

STATEMENT OF COSTS

AIRBORNE GEOPHYSICAL SURVEY

ON THE

GIO2, GIO4, GIO5 & GIO6 MINERAL CLAIMS

Field Work: September 4 & 5, 1986

Flight Line Kilometers Surveyed - 180

Flight Line Kilometer Charge - \$30.00
(Exclusive of Helicopter Charges)

TOTAL FLIGHT LINE CHARGE - 180 km. X \$30.00 \$5,400.00

March 12, 1987

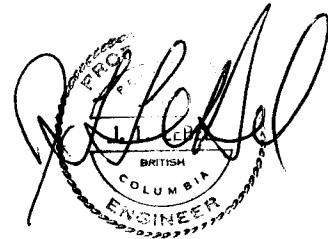


J. T. WALKER MINING GEOPHYSICS

STATEMENT OF COSTS
AIRBORNE GEOPHYSICAL SURVEY
ON THE
GI05 MINERAL CLAIM

Survey Flown September 5, 1986

Data Acquisition & Compilation	\$ 1,862.07
Helicopter	198.72
Field Expenses	316.02
Navigator	186.21
J.L. LeBel (Consulting)	<u>137.92</u>
	<u>\$ 2,700.94</u>



The image shows a handwritten signature in black ink, which appears to be 'J.L. LeBel', written over a circular professional seal. The seal contains the text 'P.R.O.C. P.T. BRITISH COLUMBIA ENGINEER' around its perimeter.

STATEMENT OF QUALIFICATIONS

I, James T. Walker of the Municipality of Richmond,
Province of British Columbia, do certify that:

1. I have been engaged in Mining Geophysics since 1965.
2. I have been engaged in Airborne Geophysical surveying since 1973.
3. I am a member of the Canadian Institute of Mining and Metallurgy.
4. I am a member of the British Columbia Geophysical Society.
5. I am a member of the Society of Exploration Geophysicists.



J.T. Walker

J.T. WALKER MINING GEOPHYSICS

March 12, 1987

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4

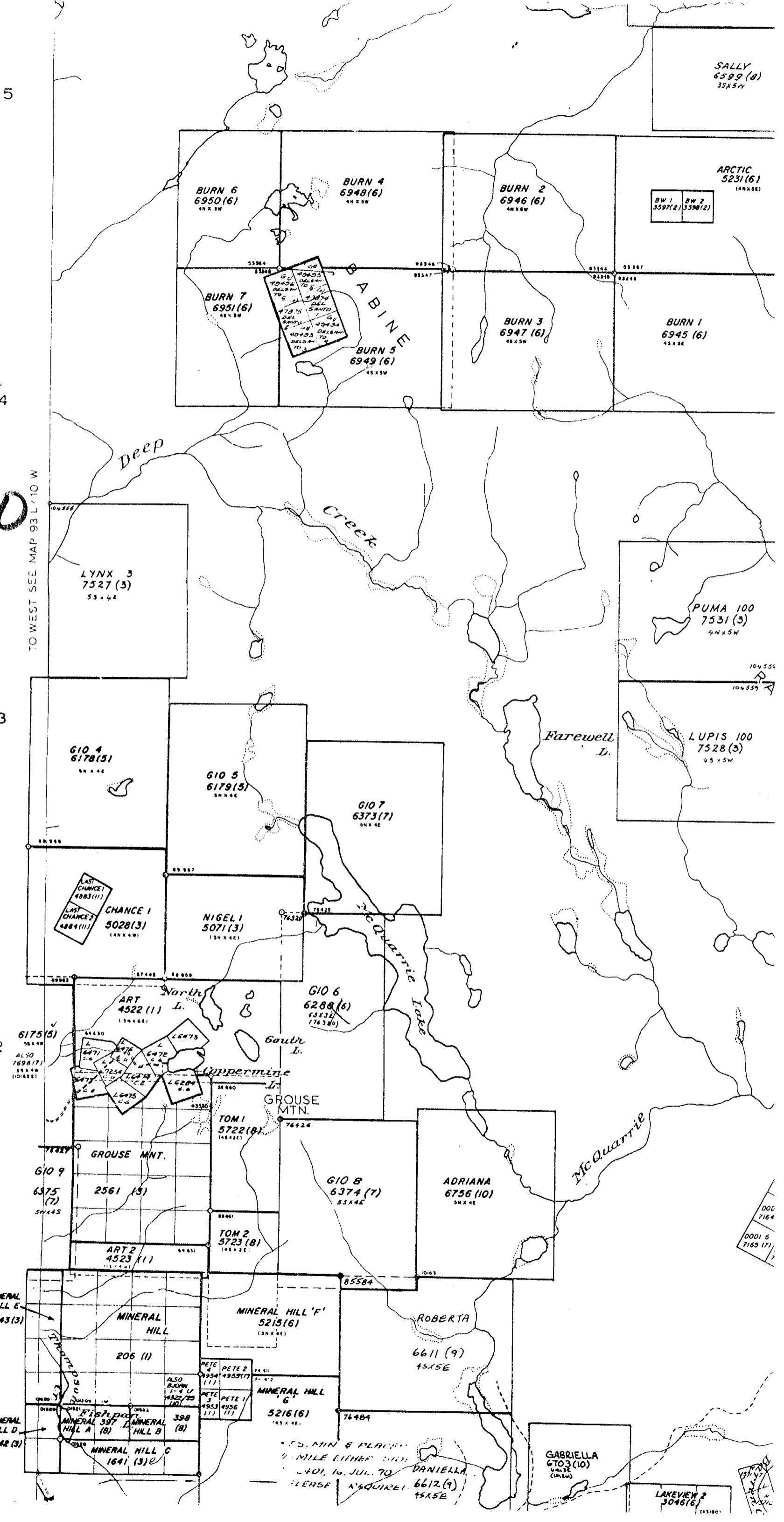
93L/10E⁴

1:50,000

0 500 m.

16,000

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5

3

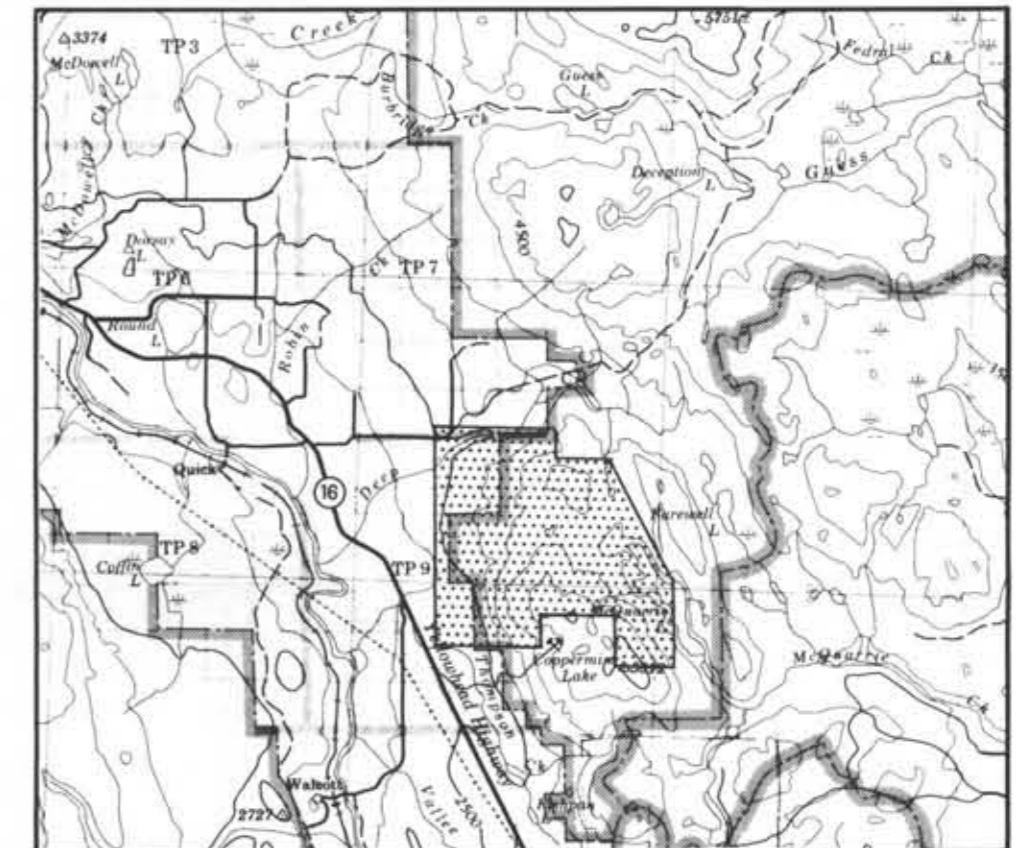
2

1

TO WEST SEE MAP 93L/10 W

DOG
7164
0001 6
7163 (17)

* 1/2 MILE EITHER SIDE
* 401, 16, JUL. 70
* PLEASE ACQUIRE



93 L 10 1: 250,000

LOCATION MAP

LEGEND

- L 12 Flight line number and direction, numbered control point.
- Magnetic Measurement - Total Field.
- Reference Level - 57,000 gammas.
- Contour Interval 500 gammas.
 100 gammas.
 50 gammas.
- Magnetic Low
- Helicopter - terrain clearance - 60 metres
- Flight line spacing - 250 metres

AEROMAGNETIC CONTOUR MAP

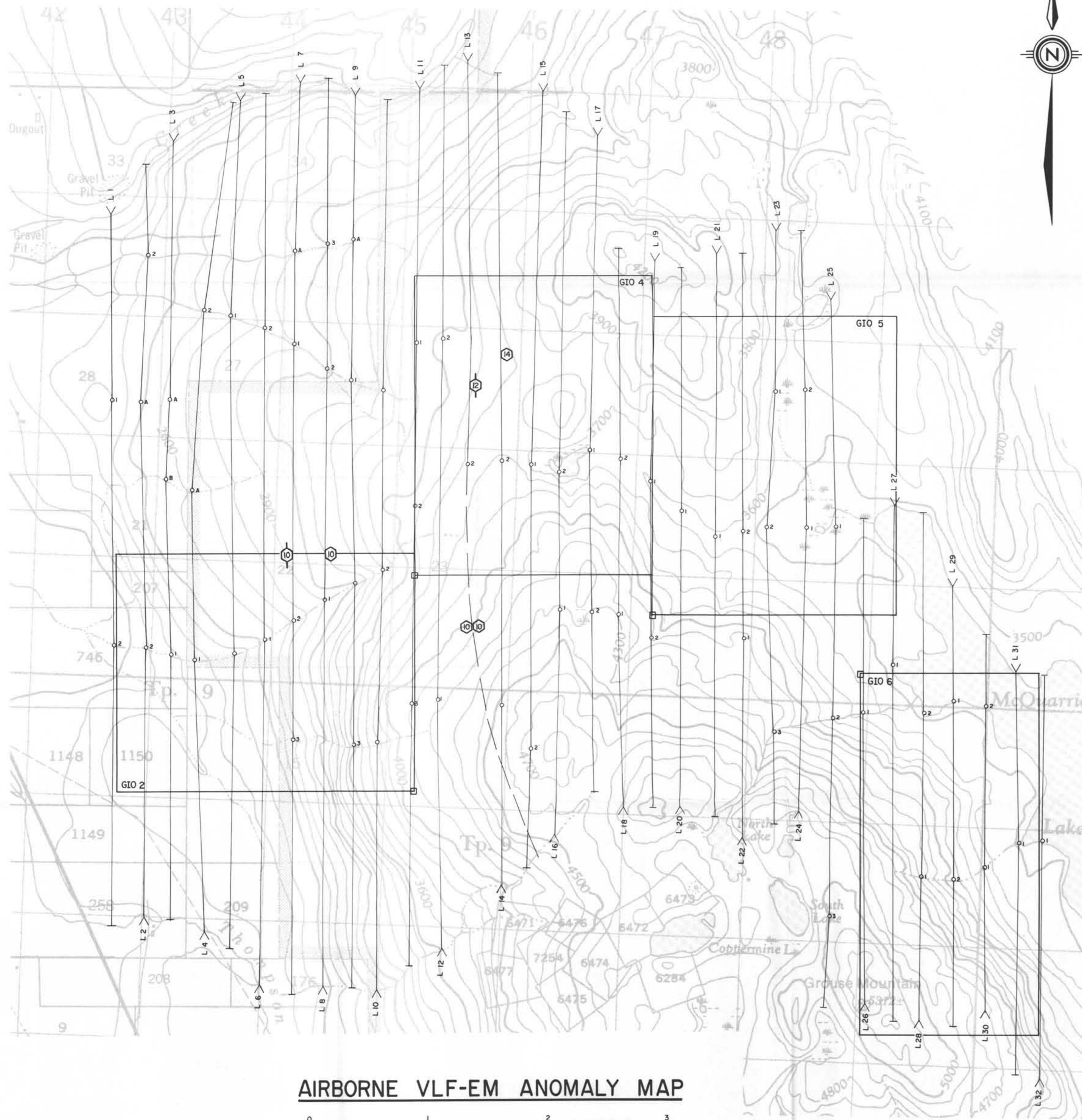


GEOLOGICAL BRANCH
ASSESSMENT REPORT

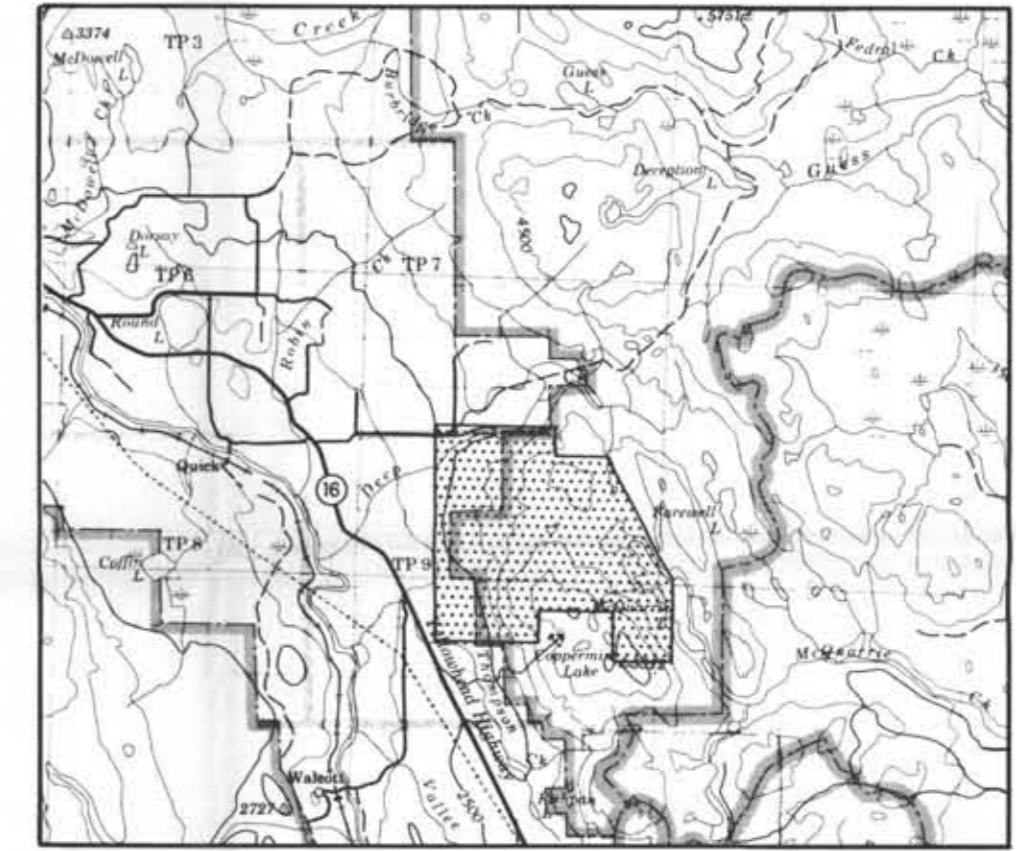
16,000

J.J. Walker

	AIRBORNE GEOPHYSICAL SURVEY	
	GIO 2, GIO4, GIO5 & GIO6 MINERAL CLAIMS	
PROJ. No	SURVEY BY T. Walker & L. Le Bel	DATE March, 1987
N.T.S. 93 L 10	DRAWN BY T. Walker	SCALE 1: 20,000
DWG. No	1 J.T. WALKER MINING GEOPHYSICS	



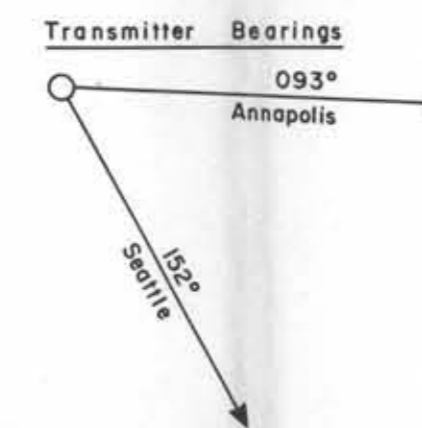
AIRBORNE VLF-EM ANOMALY MAP



LOCATION MAP

LEGEND

- L 12 Flight line number and direction, numbered control point.
- VLF - EM Measurement - Relative Field Strength (horizontal component)
- VLF Transmitters - Seattle, Washington. (24.8 kHz.)
- Annapolis, Maryland. (21.4 kHz.)
- VLF-EM Anomaly, showing % increase in R.F.S.
bar indicates anomaly width at half amplitude height.
- Helicopter - terrain clearance - 60 meters
- Flight line spacing - 250 meters



**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

16,000

J. Walker

	AIRBORNE GEOPHYSICAL SURVEY	
	GIO 2, GIO 4, GIO 5 & GIO 6	
	MINERAL CLAIMS	
PROJ. No.	SURVEY BY <u>T. Walker & L. LeBel</u>	DATE <u>March, 1987</u>
NTS. 93 L 10	DRAWN BY <u>T. Walker</u>	SCALE <u>1: 20,000</u>
DNG. No.	J.T. WALKER MINING GEOPHYSICS	
2		