

GEOPHYSICAL REPORT

on the

Airborne Magnetometer
Airborne Electromagnetic
Radioactivity

of the

TOM-T MINERAL CLAIMS
LETAIN LAKE AREA
LIARD MINING DIVISION

Latitude 58° 22' North; Longitude 128° 48' West

Winco Mining and Explorations Ltd., (N.P.L.)

Airborne Surveys by: Waterton Airex Ltd.

Interpretation by: Weymark Engineering Ltd.

104 I / 7W

3738

20 April 1972

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 3738 MAP

WINCO MINING AND EXPLORATIONS LTD. (NPL)

Tom-T Mineral Claims
Liard Mining Division
British Columbia

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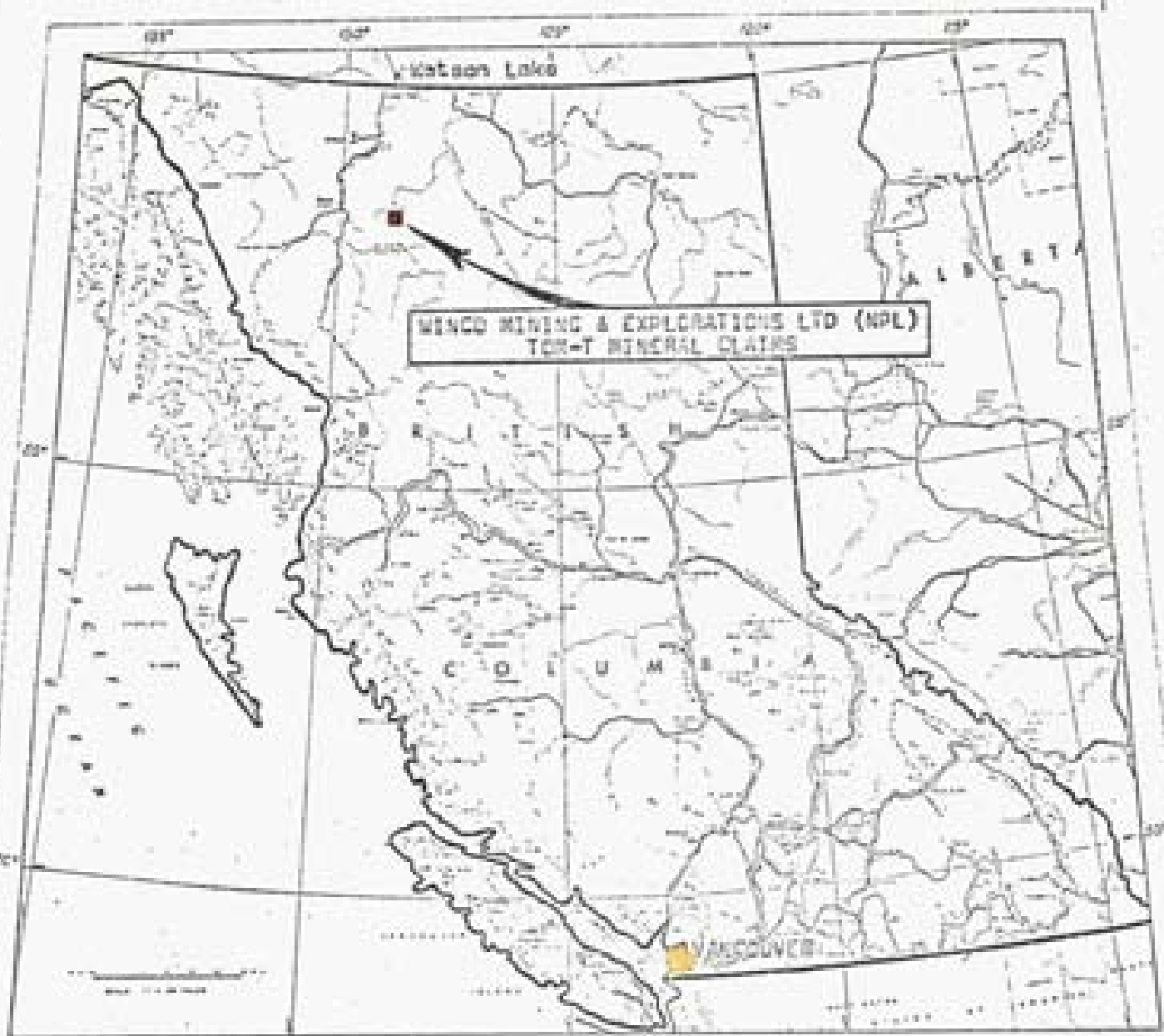
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3738 M-1

LOCATION

WENCO MINING & EXPLORATIONS LTD (NPL)
TOM-T MINERAL CLAIMS
KUTCHOK CREEK AREA
LIARD MINING DIVISION
BRITISH COLUMBIA

Department of
Mines and Petroleum Resources

ASSESSMENT REPORT

NO. 3738 MAP # 1

WEYMARK ENGINEERING LTD.

Consulting Engineers

3310 WESTMOUNT ROAD
WEST VANCOUVER, B.C.
CANADA

TELEPHONE
922-1536

20 April 1972

Winco Mining and Explorations Ltd. (N.P.L.)
1334 West Pender Street
Vancouver, British Columbia

Gentlemen:

Re: Aerial Geophysical Surveys
Tom-T Mineral Claims
Kutcho Creek Area
Liard Mining Division
British Columbia

I am pleased to submit for your information, this Report of the Results of the Aerial Geophysical Surveys completed on the 31st January 1972 by Waterton Airex Ltd, Sidney, B.C. and the interpretation by W. J. Weymark P. Eng., of the field readings, of the Tom-T Mineral Claims, Kutcho Creek Area, Liard Mining Division, British Columbia.

Background technical references relating to the Tom-T Mineral Claims are given in Preliminary Report on the Tom-T Mineral Claims, Kutcho Creek Area, Liard Mining Division, British Columbia, dated 15 December 1970 by Weymark Engineering Ltd. These aerial geophysical surveys were conducted in accordance with the recommended programme of field investigations given in that report.

1.0 Property:

The area covered by the aerial geophysical surveys involved the Tom-T Mineral Claims, part of the disposition areas under application by Winco and adjacent areas known to contain asbestos mineral bearing zones, reportedly of commercial value.

The following details relate to the mineral claims designations:

<u>Claim Name</u>	<u>Staking Date</u>	<u>Record Number</u>	<u>Record Date</u>
Tom-1	23 July 1967	27635	27 July 1967
Tom-2	23 July 1967	27636	27 July 1967
Tom-3	23 July 1967	27638	27 July 1967
Tom-4	23 July 1967	27637	27 July 1967
T-1/ T-6	5 August 1970	45399-45404	10 Aug. 1970

2.0 Location:

The Winco Claims and Disposition Areas are located in the Liard Mining Division, the Liard Land District, and the Cassiar Mountain Range area of British Columbia. The geographic reference is 128° 48' West and 58° 22' North approximately. The holdings are about 120 air miles south of Watson Lake, Yukon Territory and 50 miles easterly from Dease Lake, British Columbia.

Reference is to Figures 1, 2 and 3 for location details.

3.0 Geology:

The presented interpretation of the geological formations of the area comprises a sequence of upper Devonian and lower Mississippian sediments, - chert, argillite, argillaceous quartzite; volcanics, - greenstone; and intrusives, - diorite, meta-diorite, serpentized peridotite and locally meta-andesite and meta-diorite (ultrabasics). See Figure 2.

Structural control varies from northeasterly trending faults to northwesterly shear and brecciated zones, especially along the northeastern margin of the Devonian-Mississippian belt.

Locally, see Figure 3, the bedrock formations consist of a sequence of sediments-argillite and quartzite intruded by ultra basic peridotites which have been serpentized. The trend of the serpentized zone is to the northwest and is enveloped in a peridotite mass of some seven miles in length and one mile in width. In places, the peridotite is highly shattered, other places- fracturing has formed angular blocks and in other places- there has been shearing which has produced lensey fragments with slick-surfaces, and in still other places- the rocks have been pulverized to form greenish-grey gneiss.

Lithologically and structurally, the formations provide a geological environment for the localizing of asbestos containing mineral zones.

To-date asbestos bearing zones have been delineated in the areas adjacent to the east of the Winco Claims, see Figure 4, which have been investigated by geophysical, surface and subsurface testing and drilling and other testing procedures.

The geological setting is appropriate for geophysical testing methods for the localizing of asbestos containing host rock formations.

4.0 Geophysical Surveys:

In accordance with the programme of investigations recommended in the Preliminary Report of 15 December 1970, an airborne geophysical Survey of the Winco holdings and adjacent areas was conducted under contract by Waterton Airco Ltd. of Sidney, British Columbia in January 1972. It was completed on the 31 January 1972 and consisted of combined aeromagnetic,

electromagnetic and radioactivity testing.

The survey covered an area of about 2500 acres, involving four runs each of 29,500 feet and eight parallel runs each 16,000 feet in length. These runs were 500-feet apart and were flown to a true bearing of 133° or alternatively 313°. Readings were taken every 500-foot interval and flight lines were 500 feet above ground cover. The plane was captained by Claude Waterton, VRS-536 Senior Commercial, the co-pilot was Gerald Jeronen, both of Sidney B.C. The flight Plan was filed with the D.O.T. Cry Lake, at Watson Lake, Yukon Territory. Figure 4 shows the location of the flight lines and Figure 5 gives the readings for each of the surveys.

Appendix contains details relating to the aircraft and instrumentation used.

Figure 4 shows the extent and location of the anomalous zones referenced to the available ground photography.

Referring to Figure 5, it will be noted that,-

- the variation in Radioactivity readings ranged from 1 to 2/100 MR/HR
- the variation in electromagnetic readings ranged from 0 to 15 (x.1 microamps)
- the variation in magnetometer readings varied from -10 to +40 (x 100) gammas. Differences are recorded referenced to a background base of 53,000 gammas.

For the radioactivity and electromagnetic tests, background was dialed out.

Results: Referring to Figure 4, it will be noted that seven "low" anomalous zones have been delineated. Zones designated as "A" and "B" are the largest with length dimensions of 14,000 feet and 7500 feet respectively with unmeasured total widths, although "A" is over 2000 feet in places. Zones C-G range from 500 to 2500 feet in length and 1000 feet in width.

These magnetometer low readings of zones "A" and "B" coincide with ground location of asbestos containing mineral areas.

A "High" anomalous zone (H) is revealed to the westerly section of the surveyed area. It has a very strong intensity, but its significance cannot be interpreted until further ground geological information is procured. It appears to be related to sedimentary topped formations. There may be a very strong intrusive underlying the topping sediments.

To be noted is the fact that the trend of the magnetic fields is to the northwest.

Configuration of the electromagnetic readings is not pronounced as those obtained from the magnetometer results. The zones are small and indistinct in the eastern part of the surveyed area. A moderate intensity zone is outlined in the northwesterly section. Its shape and intensity pattern does not conform with interpreted geological settings or with the magnetometer presentations.

Increased radioactivity appears to trend northwesterly and especially about high "H" anomalous zone.

5.0 Summary Conclusions:

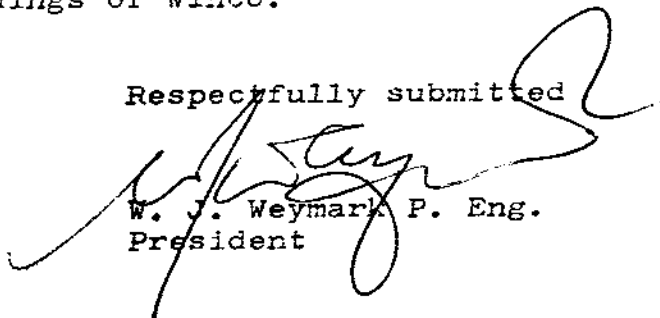
The results of the surveys, as presently interpreted are:

- i. There is a coincidence between the known asbestos containing mineral zones and the "low" magnetic anomalous zones of "A" and "B".
- ii. Projections of these magnetic anomalous zones on to the Winco holdings provide areas of opportunity for localizing similarly mineralized zones as background referenced.
- iii. Interpretation of the High ("H") anomalous zone cannot be definitively interpreted from the information base available. Further ground geological information is required.

6.0 Recommendations:

On the bases of the results obtained from the relating geophysical surveys referred to in this report. It is considered that further field investigations are warranted and that the next phases of the programme presented in the 15 December 1970 Report be initiated in order to assess the mineral potentialities of the Tom-T Mineral Claims holdings of Winco.

Respectfully submitted



W. J. Weymark P. Eng.
President

CERTIFICATE

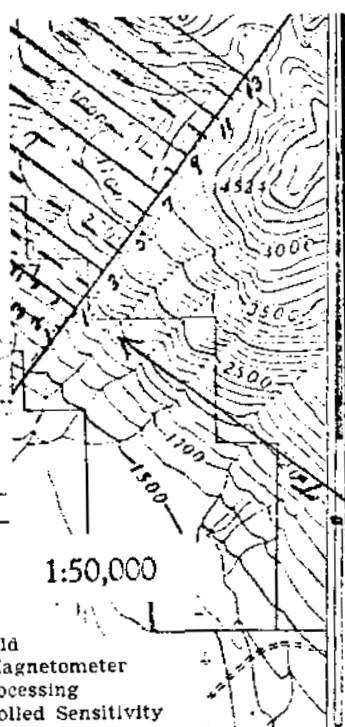
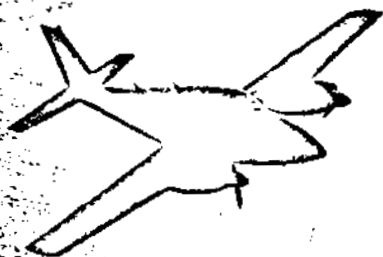
I, William James Weymark, P. Eng., Consulting Engineer President of Weymark Engineering Ltd., of the District of West Vancouver, of the Province of British Columbia hereby certify that:

1. I am a graduate of Mining Engineering, of Queen's University, Kingston, Ontario, B.S.C., 1940 and have been practising my profession for twenty-five years.
2. I am a practising Consulting Engineer and reside at 3310 Westmount Road, West Vancouver, Province of British Columbia.
3. I am a member of the Association of Professional Engineers of the Province of British Columbia and also of the Consulting Engineers' Division of the Association of Professional Engineers of British Columbia.
4. I am a member of the Canadian Institute of Mining and Metallurgy, of the American Institute of Mining, Metallurgical and Petroleum Engineers and of the American Geophysical Union.
5. I have no direct or indirect interest whatsoever in Winco Mining and Explorations Ltd. NPL or do I expect to receive any interest, direct or indirect in the properties of Winco Mining and Explorations Ltd. NPL, or any affiliate or any security of the company or affiliate.
6. The findings of the accompanying report are based on my personal examinations of the Tom-T Mineral Claims in August 1970 and subsequent review of the available information and of the geophysical readings of the surveys conducted by Waterton Airex Ltd of Sidney, British Columbia.

DATED at West Vancouver, British Columbia this 20th day of April 1972.

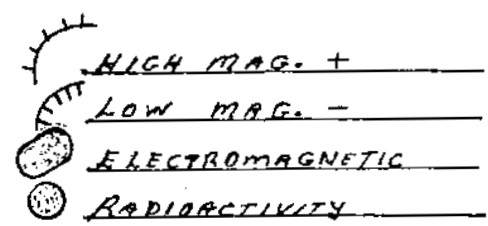

William J. Weymark, P. Eng.
President,
Weymark Engineering Ltd.

APPENDICES



			APPENDIX - A				
3	05° 02' 07"						
2	06° 02' 07"						
1	05° 02' 07"						
		1	2	3	4	5	6

GRID SCALE: 1000' TO 1 INCH



ELECTROMAGNETIC .7 MICROAMPS
 RADIOACTIVITY .002 MR/HR.
 MAGNETOMETER 500 GAMMAS

WATERTON AIREX LTD.

AIRBORNE GEOPHYSICS
(Incorporated 1964)

- A Patented Combined Method
- Total Radioactivity
- Selective Radioactive Threshold
- Electromagnetic + Magnetometer
- Computer Processing
- Controlled Sensitivity

VICTORIA INTERNATIONAL AIRPORT

Box 496, SIDNEY, B.C., CANADA

PHONE 656-2194

Proven in Western and Northern Canada for the highest degree of accuracy at the lowest cost. \$10. Per lineal mile including base and positioning expenses on average surveys.

A 400 square mile area costing \$10,000. taking three weeks could put your ground party a year or more ahead in their exploration program.

By the use of the combination method ~~and our B.S. indicator~~ 80% of the unproductive anomalies can be calculated out of the survey which results in keeping the ground follow up costs to a minimum.

- Electromagnetic: Waterton quadrature system. Tran. on 1,000 CPS. Rec. in units of .1 Microamps.
- Magnetometer: Sharpe PMF-3 or McPhar M700 modified to our method. Flux-gate in units of 10 to 100 Gammas.
- Radioactivity: Detectron - DR299, 24 tubes. Rec. in units of .001 MR/HR, total count.
- Threshold: McPhar TV-5 Crystal Positions 1.3 - 1.63 - 2.5 Mev.

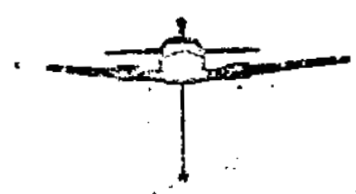
Grid supplied in scales of 1,000 to 2,000 feet per inch with clear overlays showing the anomalous areas.

Ground checks over mountain areas have found the accuracy to be within 500 feet on a 500 foot grid and capable of disseminated sulphide detection.

Over 15,000 lineal miles of reconnaissance and assessment assistance completed in 40 different areas by the end of 1970.

Operations range up to 400 miles from base.

Aircraft type: Cherokee 235 - Twin Comanche.



Our patented method incorporates the combined readings from a flux-gate magnetometer, a nucliometer and a miniaturized electromagnetic unit. The readings are recorded instantly on film and timed electrically to enable the readings to be entered on a grid of a chosen scale.

To obtain anomalies of most value level lines are flown in a certain plane and a fixed wing aircraft is chosen as the most suitable vehicle for this purpose.

Any inaccuracy in the timed readings due to airspeed error is calculated out before the readings are entered on the grid.

The instruments are set on "0" over a predetermined spot near the survey area and this adjustment is made after each $1\frac{1}{2}$ hours. The survey flying is done in certain conditions and at certain times of the day.

Station-keeping is accomplished by electrical counter, reference to topographical features, directional gyro set from compass or astro compass and a set flying technique. Ground checks from over twenty mountainous areas have found the accuracy of this method to be between 250 feet and 500 feet on a 500 foot grid.

Anomalies are plotted from the grid on to transparent sheets and the resulting overlays give us the combination anomalies which, in our experience, have been the most successful.

Magnetometer: PMF-3 Sharpe or McPhar M-700 is used when adjusted to our method. Readings are in units of 100 gammas for mineral reconnaissance and in units of 10 gammas for oil reconnaissance.

Electromagnetic: Built by our company to a miniature scale to enable us to use small aircraft to keep the cost of survey to our rates.

With the sensitivity set at 30%, disseminated sulphides usually read in the 3 to 5 range and heavy sulphides in the 10 to 15 range on a scale division of 25.

The transmitted electrical field is from 200 feet of copper wire attached to the bottom of the aircraft in the horizontal plane and power is taken from the aircraft generator and built up to required strength by the field transmitter which operates in the 1,000 CPS range.

A small 10 oz bird is drawn behind the aircraft powered by its own mercury cell and its receiving coil is in the vertical, 90° to the transmitted field. A booster receiver in the aircraft produces the received signal in units of .1 microamperes.

Nucliometer: Detectron - DR299, 24 tubes suited to airborne work to obtain total radioactive readings in units of .001 MR/HR, milliroentgens per hour. Threshold readings are taken from McPhar TV-3B with 3" crystal.

Computer processing is used when requested, but for this the magnetometer average in the areas is set at 3,000 gammas.

APPENDIX 11

COST DISTRIBUTION

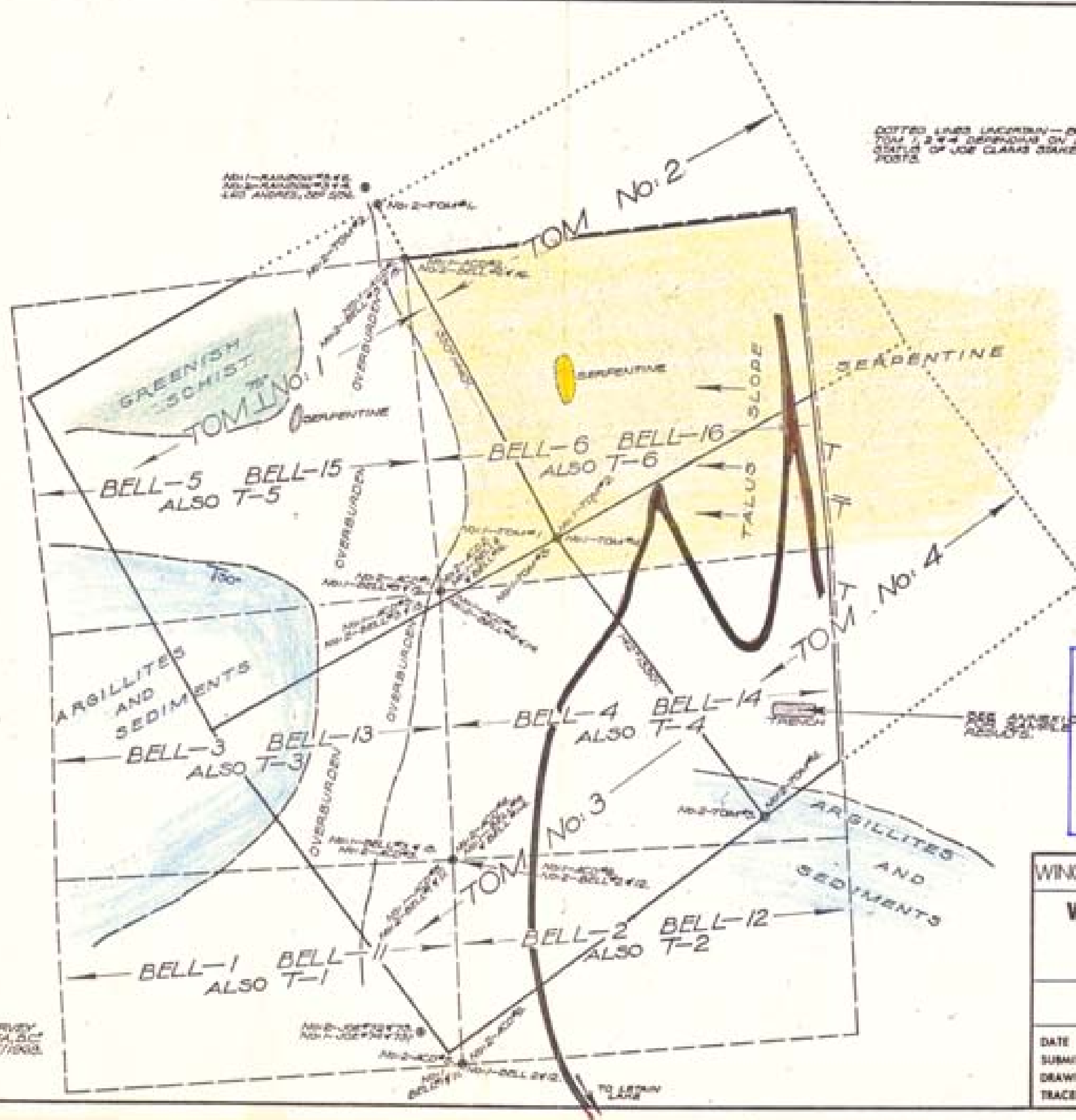
1. Waterton Airex Ltd conducting airborne Aeromagnetic, electromagnetic and Radioactivity readings at 500-ft intervals, 8.5 miles flight lines Tom-T Mineral Claims, Liard Mining Division	\$1390.00
2. Weymark Engineering Ltd. interpretation of geophysical surveys readings and preparation and submission of Report dated 20 April 1972	<u>\$1700.00</u>
Total	#3,100.00

W. J. Weymark P. Eng.

ILLUSTRATIONS

No. 2-10775 B

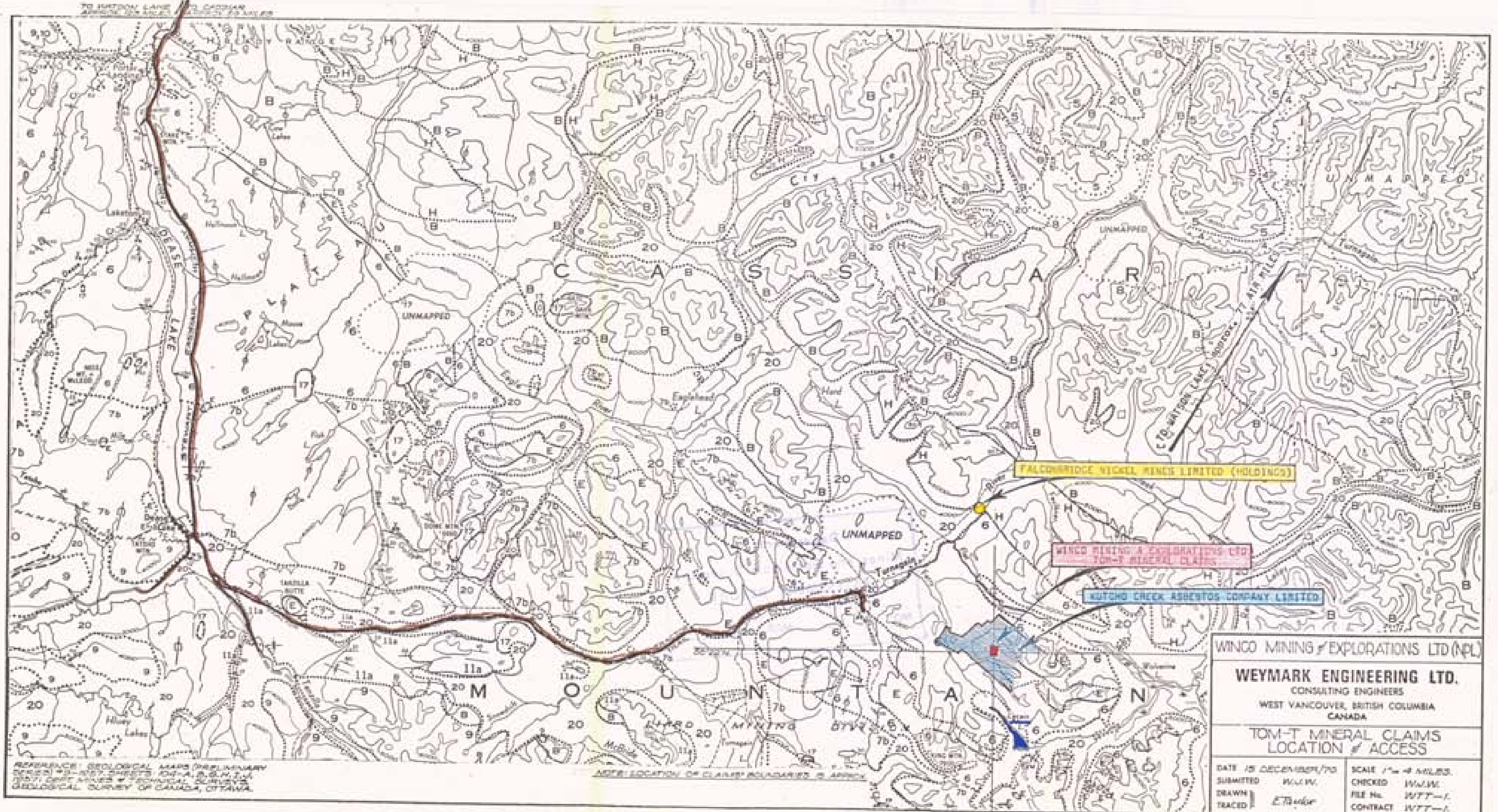
DOTTED LINE LOCATED BY BOUNDARIES OF
TOM 1 & 2 & 3 & 4 DEPENDENT ON LOCATION AND
SCALE OF JOB CLAIMS STAKED BY WITNESSES
POSTS



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3738 MAP #3

WINCO MINING & EXPLORATIONS LTD (NPL)
WEYMARK ENGINEERING LTD.
CONSULTING ENGINEERS
WEST VANCOUVER, BRITISH COLUMBIA
CANADA
TOM-T MINERAL CLAIMS
LOCAL GEOLOGY
DATE 15 DECEMBER/70 SCALE 1" = 400 FEET
SUBMITTED W.J.M. CHECKED W.J.M.
DRAWN FILE No. WTT-1
TRACED E. Taylor CONTRACT WTT-1

DEPT. DRAWING COMPASS & CHAIN SURVEY
TOM 1 - 4 McLEOD LAKE AREA, B.C.
BY W.M. V. SANTEBARDALE, 8 OCT/1968



RESEARCH GEOLOGICAL MAPS (PRELIMINARY)
 SERIES 197-1977 SUBJECTS 107-A, B, C, D, E, F, G
 1071, 1072, 1073 & 1074
 GEOLOGICAL SURVEY OF CANADA, OTTAWA

NOTE: LOCATION OF CLAIM BOUNDARIES IS APPROX.

WINCO MINING & EXPLORATIONS LTD (NPL)

WEYMARK ENGINEERING LTD.
 CONSULTING ENGINEERS
 WEST VANCOUVER, BRITISH COLUMBIA
 CANADA

**TOM-T MINERAL CLAIMS
 LOCATION & ACCESS**

DATE 15 DECEMBER/70	SCALE 1" = 4 MILES
SUBMITTED W.M.W.	CHECKED W.M.W.
DRAWN	FILE No. WTT-1
TRACED E.T.S.	CONTRACT WTT-1

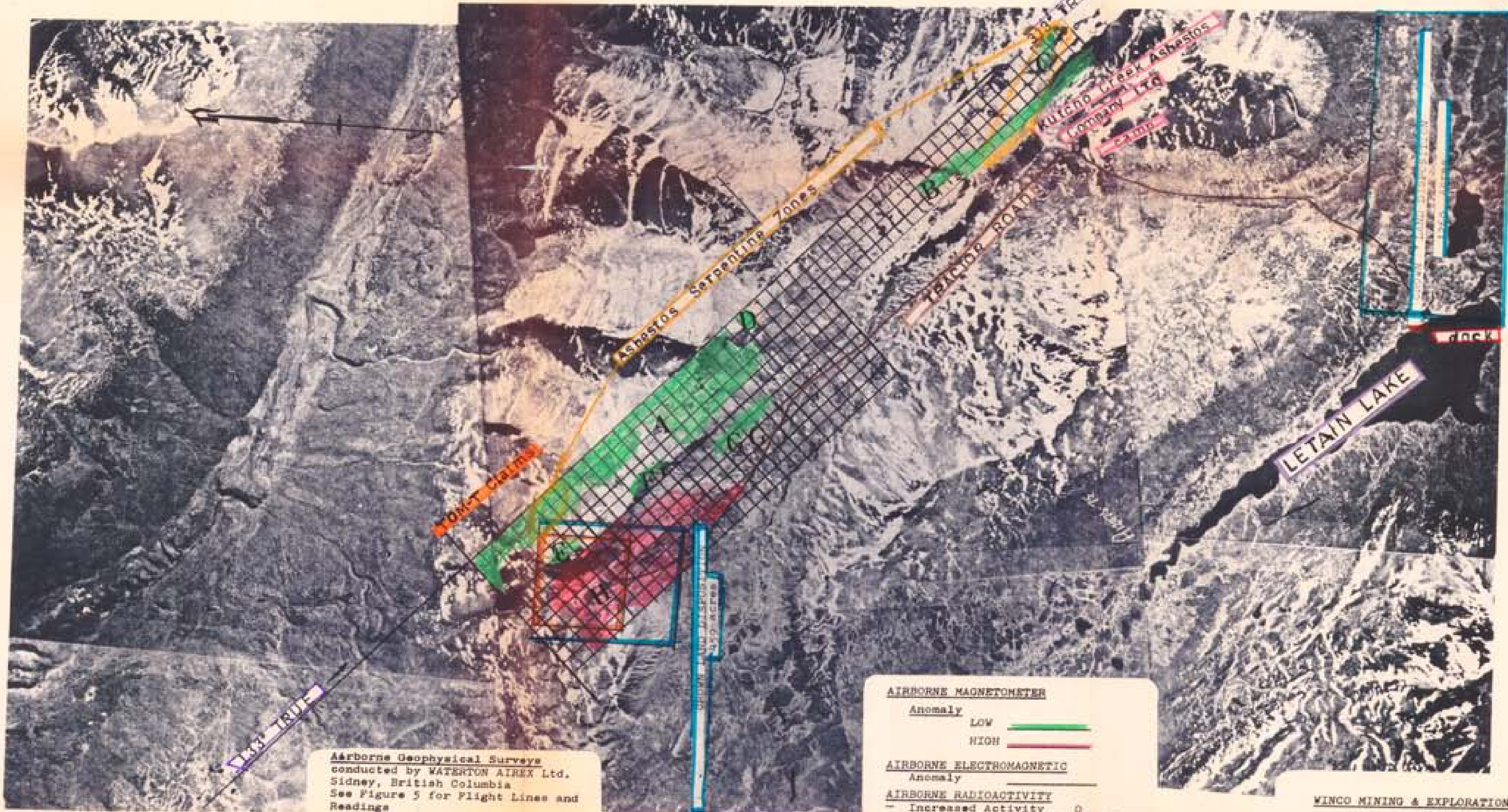
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100	211	118	517	512	120	320	1020	515	37	110	810	1	1	1

1. MAGNETIC 1.1 MILLIGAUSS
 2. MAGNETIC 1.01 MILLIGAUSS
 3. MAGNETIC 1.02 MILLIGAUSS

AIRBORNE GEOPHYSICAL RECONNAISSANCE
 "LETAIN LAKE" - B. C. - LINES 500, AREA I. RECORDED READINGS 500' APART.
 GRID SCALE: 1 INCH = 1,000 FEET. MAGNETIMETER SET TO 0 AS AVERAGE.
 WATERLOO ATOMEX LTD.

Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 No. 3738 MAP #5

Fig 5



Airborne Geophysical Surveys
conducted by WATERTON AIREX Ltd.
Sidney, British Columbia
See Figure 5 for Flight Lines and
Readings

AIRBORNE MAGNETOMETER
Anomaly
LOW —
HIGH —

AIRBORNE ELECTROMAGNETIC
Anomaly —

AIRBORNE RADIOACTIVITY
Increased Activity — 0

WINCO MINING & EXPLORATIONS LTD
TOM - T MINERAL CLAIMS
GEOPHYSICAL SURVEYS
January 1972 Scale: 2 ins = 1 mi
FIG. 4

3738 M-4

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3738 MAP #4