

LAD MINERAL CLAIM GROUP

AIRBORNE GEOPHYSICAL SURVEY REPORT
(Magnetic, Electromagnetic)

Mayo Mining District

Yukon Territory

Longitude : 132°14' W. (approx.)

Latitude : 62°56' N. (approx.)

N.T.S. 105-K-16

Field work done in period
Sept. 13 - Sept. 24, 1968

BY

JOHN S. BROCK

ATLAS EXPLORATIONS LIMITED

February 4, 1969

This report has been examined by
the Geological Evaluation Unit.
Approved as to technical worth by:

A. B. Craig
RESIDENT GEOLOGIST

Approved as to cost in the amount
of \$ 15,381.85

Joe Torrington
DEPUTY MINING COMMISSIONER

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

[Signature]
COMMISSIONER OF YUKON

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LIST OF CLAIMS

<u>Claim Number</u>	<u>Grant Number</u>	<u>Date Recorded</u>
Lad 3-12	Y14068-Y14077	Oct. 11, 1967
Lad 19-24	Y14136-Y14141	Nov. 3, 1967
25-34	Y14078-Y14087	Oct. 11, 1967
45-48	Y14218-Y14221	Nov. 6, 1967
49-62	Y14142-Y14155	Nov. 3, 1967
65-102	Y31259-Y31296	Sept. 10, 1968
103-168	Y31310-Y31375	Sept. 17, 1968
169-188	Y31437-Y31456	Oct. 4, 1968
189-228	Y31461-Y31500	Oct. 16, 1968



NOTES: ONLY 800' SPACED GRID LINES SHOWN (INTERMEDIATE FILL-IN LINES NOT SHOWN)
 LAD # 1 GRID AREA LINE 16W TO 96E, 55S TO 50N
 LAD EAST GRID AREA LINE 104E TO 240E
 LAD NORTH GRID AREA LINE 24W TO 24E, 40N TO 105N

105-K-16

ATLAS EXPLORATIONS LIMITED
 ROSS RIVER (Y.T.)
 HESS REGION
 LAD MINERAL CLAIM GROUP
 KEY MAP OF CLAIMS AND GRID

PARTY CHIEF: T. ADAMSON
 DRAWN BY: T.A. & P.V.
 DATE: DEC. 4/1988

SCALE IN FEET

fig. 1

ATLAS EXPLORATIONS LIMITED

(N. P. L.)

330 MARINE BUILDING

355 BURRARD STREET

VANCOUVER 1, B.C.

LAD MINERAL CLAIM GROUP AIRBORNE GEOPHYSICAL SURVEY REPORT (Magnetic, Electromagnetic)

INTRODUCTION

An Airborne Magnetometer - Electromagnetometer (Mag-EM) Survey was carried out over the Lad Mineral Claims and immediate surrounding area during the period September 13th to September 24th. It was hoped that airborne geophysical data would aid in geologic mapping and interpretation of geochemical anomalies on the Lad Group.

LOCATION AND ACCESS

The Lad Group is located on the SE slope of the Mt. Selous complex, in the north-central portion of claim sheet 105-K-16. Ross River, Y.T., the nearest settlement, is located about 65 air miles south of the claim group. The Canol Road, running to the northeast of Ross River, Y.T., comes to within 38 miles of the Lad Group at the point where the road adjoins the southeast end of Dragon Lake.

Access to the property can be made by float-equipped fixed-wing aircraft to "Van Lake", about 7 miles east of the claims. Helicopter support is required from this lake to the property.

SURVEY METHOD

Instrumentation

A Gulf Fluxgate Magnetometer Mark III and a Mark III electromagnetic unit, consisting of a vertical coaxial transmitter and receiver coils mounted on a thirty-foot boom, were used

for the entire survey. The instruments and operator were provided under a contract agreement with Lockwood Survey Corporation. The survey was conducted with a Bell 206 helicopter as fixed-wing aircraft were judged to be unsuitable for some of the regions of more rugged terrain.

For the electromagnetic apparatus, amplitudes of in-phase and out-of-phase response of the resultant field are measured in parts per million of the primary field, the frequency of the primary current is 4000 cycles per second.

The magnetometer has a sensitivity of 1200 gammas and measures total magnetic field.

Survey Procedure

The geophysical instruments were towed to a mean terrain clearance of 100 ft. over flight lines of 1000 ft. spacing. Effective ground control was maintained by the use of aerial photographs with pre-located flight lines for navigational purposes. The helicopter was equipped with APN-1 radio altimeter and stop motion 35 mm. camera for further ground control and recording of fiducial points. All flight lines were oriented approximately orthogonal to geologic strike.

Plotting of Results

Flight records were processed by the staff of Atlas Explorations, as no plotting of results was done by the contractor during the actual survey. All airborne information was plotted on plastic overlaps showing flight lines, fiducial points, drainage and major topographic expressions to a scale of one inch to one-quarter mile. Magnetic data was contoured for all results corrected and derived from flight records. Isomagnetic contour interval of 100 gammas was used.

Electromagnetic data was presented on a separate sheet by contoured in-phase response. Contours represent amplitude of in-phase response of the resultant expressed in parts per million of the primary field. Relative conductivity is also expressed by a ratio of amplitude in-phase component over quadrature component.

RESULTS

Magnetic

Incomplete coverage due to excessively steep terrain and survey operational problems contribute to lack of detail on some anomalies and anomalous magnetic trends.

Two broad regions of anomalies exist with aeromagnetic patterns of small low-amplitude but well defined local anomalies superimposed on them. Regional strike cannot accurately be determined due to limited survey coverage, however a northwesterly trend has been assumed for broader anomalies, especially the western expression.

Examination of the centrally located magnetic response reveals 21 low-amplitude peaks within the overall expression. These peaks appear to have a spatial relationship somewhat annular in appearance. Local responses do not exceed 400 gammas above the anomaly background.

The western anomaly has a more definite strike direction and its superimposed high peaks create a combined effect of sinuous shaped northwesterly trending expressions. This anomaly is different in character from the central zone.

Electromagnetic

Little emphasis can be placed on the electromagnetic data due to its shallow depth of field penetration and varying thicknesses of overburden cover.

Three major areas of conductivity have been outlined at the northeast corner of the survey area, the western limit and central survey area. Responses other than those within the central area are indicative of large conductive zones of some structural or stratigraphic uniformity. In general relative conductivity within these zones exceeds unity. Magnetic correlation is apparent with the larger conductive zones, however peak in-phase response appears to favour magnetic lows.

Within the central survey area about 14 distinct low-amplitude, low conductivity (less than unity) in-phase responses are recorded. Attitudes are random as is magnetic correlation. In general, the electromagnetic anomalies could be considered in annular array and coincident with magnetic lows.

INTERPRETATION AND RECOMMENDATIONS

1. Actual positive in-phase electromagnetic anomalies adjacent to negative anomalies may be pyritic or graphitic conductors.
2. Topographic relief or small local variations in magnetic susceptibility of intrusives may cause many small magnetic highs and lows. Larger contrasting tectonic units such as faulted blocks produce broader and larger highs and lows.

3. Electromagnetic anomalies representative of near surface sulphide mineralization should have a conductivity ratio of at least 1 and limited strike length.

The centrally located magnetic and electromagnetic anomalies are considered to be of the most interest as they do not appear to reflect larger units as do the combined anomalies to the west and northeast.

In general, the conductors are not coincident with the localized magnetic peaks but fall between them. The conductors are related to the margins of the broad central magnetic anomaly.

An interpretation of this area would suggest that the broad magnetic anomaly represents an area of uplift and basement disturbance. The near surface magnetic expressions are represented as isolated peaks and are probably due to near surface intrusions, their spatial relationship suggests local plug or dike type structures. Between these structures are conductive zones that are interpreted as radial faults related to the area of uplift.

A geologic setting such as described above would favour vein-type mineralization near magnetic gradient and conductor coincidences.

One area of anomalous in-phase and negative magnetics should be investigated near the south end of the survey area on 'Showing J' Creek.

Respectfully submitted,


John S. Brock

February 4, 1969



LIST OF PERSONNEL

J. S. Brock	Geophysicist	Vancouver, B.C.
D. W. Goodbrand	Draftsman	Vancouver, B.C.
G. Preiss	Geophysical Operator	Lockwood Survey Corp. 1409 W. Pender St. Vancouver 5, B.C.
R. Conant	Helicopter Pilot	Trans North Turbo Air, Box 1977, Whitehorse, Y.T.
E. MacKay	Helicopter Engineer	Trans North Turbo Air, Box 1977, Whitehorse, Y.T.

LAD GROUP AIRBORNE GEOPHYSICAL SURVEY
(Magnetic, Electromagnetic)

SUMMARY OF EXPENDITURES

805 - AIRBORNE SURVEYS


		YEAR TO DATE	
		OR 31, 1965	
001 WAGES/SALARY/BONUSES	698.18	1,279.16	1,279.16 CR
008 FREIGHT		125.00	125.00 CR
010 TRAVEL AND ACCOMODATION		225.00	225.00 CR
016 CONTRACT CHARGES		6,402.55	6,402.55 CR
021 HELICOPTER SUPPORT		4,990.12	4,990.12 CR
026 MAPS AND REFERENCES	19.40	19.40	19.40 CR
130 CAMP SUPPORT		334.37	334.37 CR
PROJECT TOTAL	717.58 *	13,375.60 *	13,375.60CR*
Plus Overhead (15% of Project Total)		2,006.25	
		<u>15,381.85</u>	


ATLAS EXPLORATIONS LIMITED
(N.P.L.)

330 MARINE BUILDING
355 BURRARD STREET
VANCOUVER 1, B.C.


AFFIDAVIT SUPPORTING SUMMARY OF COSTS

I, John S. Brock, Geophysicist, Atlas Explorations Limited, Vancouver, British Columbia, do hereby state that, to the best of my knowledge and belief, the statement of costs presented with this report (Appendix II - "Airborne Geophysical Survey Report, Lad Mineral Claim Group") is both correct and true.

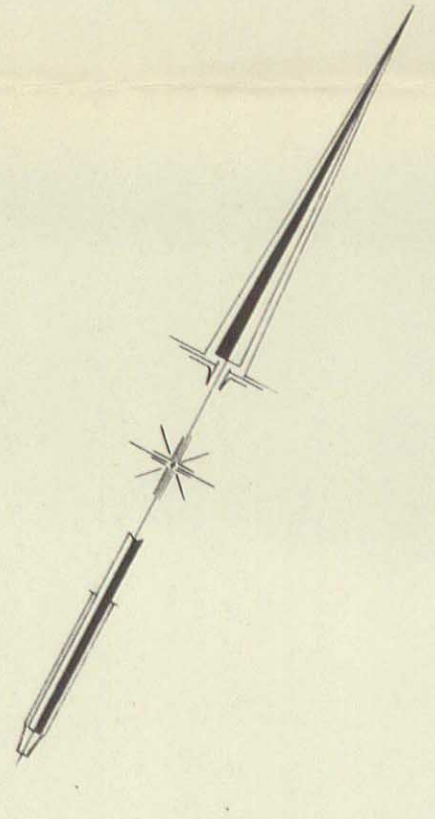


John S. Brock


Date



Commissioner of Oaths in
and for the Yukon Territory



CONTOUR INTERVAL 100 GAMMA
 MEAN FLIGHT LINE SPACING 1020 FEET
 MEAN TERRAIN CLEARANCE 100 FEET
 500, 700, 900 GAMMA CONTOURS
 800, 1100
 1200
 MAGNETIC LOW
 FIDUCIAL POINTS
 FLIGHT LINES

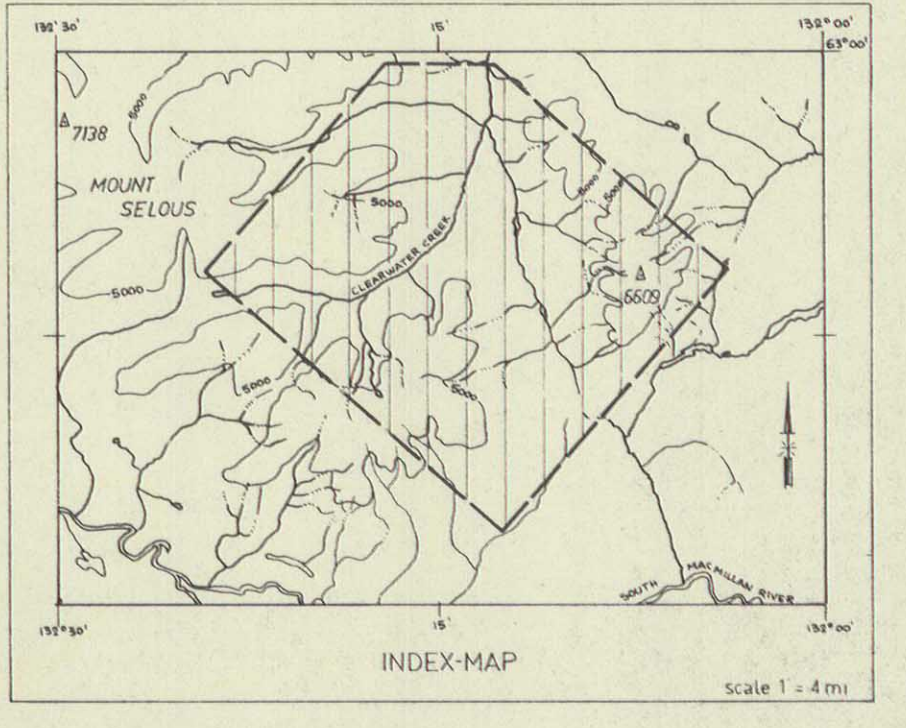
ATLAS EXPLORATIONS LIMITED

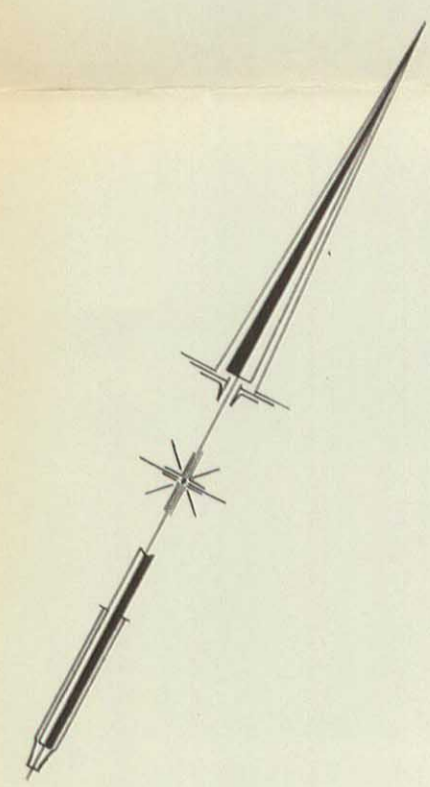
YUKON TERRITORY
 HESS REGION
 LAD MINERAL CLAIMS AREA
 105-K-16

AIRBORNE MAGNETOMETER SURVEY

FLOWN BY: LOCKWOOD SURVEY CORPORATION LIMITED
 COMPILED BY: D. GOODRICH
 DRAWN BY: DW. G. & P. V.
 DATE FLOWN: SEPT. 23, 1954
 DATE DRAWN: DEC. 17, 1954

SCALE IN FEET





MEAN FLIGHT LINE SPACING 1120 FEET
 MEAN TERRAIN CLEARANCE 100 FEET
 ELECTROMAGNETIC CONTOURS 5-10 15 40
 1 2 3 4 40
 NEGATIVE CONTOURS
 -5 -10 40
 -1 -2 -3 -4 40
 FIDUCIAL POINTS 3600
 FLIGHT LINES 3600

The contours represent amplitude of in phase response of the resultant expressed in parts per million of the primary.

The figures (5) represent amplitude in phase component
 quadrature component

The frequency of the primary current is 4000 cycles per second.

ATLAS EXPLORATIONS LIMITED
 YUKON TERRITORY
 HESS REGION
 LAD MINERAL CLAIMS AREA
105-K-16
 AIRBORNE ELECTRO MAGNETIC SURVEY

FLOWN BY: LOCKWOOD SURVEY CORPORATION, LIMITED
 COMPILED BY: D. GOODBRAND
 DRAWN BY: D.W.G. & P.V.
 DATE FLOWN: SEPT 21-1959
 DATE DRAWN: DEC 15-1958

