

A Geophysical Report on the Ladie and Silver Queen Mineral Claims

Mayo M.D.

Sheet 105-M-14

Lat.  $63^{\circ} 57' N.$ , Long.  $135^{\circ} 11' W$

September 3rd. and September 18th. 1971

For Canadian Reserve Oil and Gas Limited

By E.J. Wilson, Supervised by R.W. Stemp, P.Eng.

Spartan Aero Limited, Ottawa

This report has been examined by the Geological Department and is hereby certified to be a true and correct copy of the original as presented to them in the amount of

\$200.00

*D.B. Craig*  
\_\_\_\_\_  
District Manager

Considered as geophysical work under Section 53 (4) Yukon Quartz Mining Act.

*[Signature]*  
\_\_\_\_\_  
Commissioner of Yukon Territory

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### Accompanying this Report:-

- Vertical Loop, V.L.F. E.M. and Magnetic Survey.  
Profile Presentation                      Scale: 1 in. = 200 feet.

I. INTRODUCTION

A geophysical survey was conducted on behalf of Canadian Reserve Oil and Gas Limited by Spartan Aero Limited on the Ladie and Silver Queen mineral claims on the 3rd. and 18th. of September 1971. These claims appear on the Keno Hill Sheet, 105-M-14.

Geophysical methods employed were vertical loop and Crone shoot-back EM, VLF EM and the magnetic method.

The objective was to locate any possible lead-zinc-silver vein deposits running through the claims.

On the Ladie claim 2,600 feet of VLF EM and magnetic profiling was performed on flagged chain and compass traverses with stations spaced 100 feet apart. Also 1,000 feet of Crone shoot-back EM was performed at a station spacing of 50 feet.

On the Silver Queen claim 3,000 feet of vertical loop fixed transmitter search and 700 feet of Crone shoot-back EM was carried out.

Personnel associated with this project were as follows:

E.R. Rockel	Richmond, B.C.	Geophysicist
E.J. Wilson	Ottawa, Ontario	Geophysicist
R.W. Stemp, P.Eng.	Ottawa, Ontario	Chief Geophysicist.

## II. GEOLOGY

Mapping by the Geological Survey of Canada shows the claims to be underlain by rocks of the Lower Schist Formation of the Yukon Group which is Precambrian or Palaeozoic in age. A greenstone intrusion of Mesozoic age occurs in the north west corner of the Ladie claim. Aikins (1968) has inferred the presence of two vein faults running E.NE across the southern portion of the Ladie claim which are terminated by a post ore fault running close to the south west boundary of the Silver Queen claim.

Overburden consists of glacial deposits, scree and soil of shallow depth.

## III. GEOPHYSICAL INSTRUMENTATION AND METHODS

Three instruments were employed. A Sharpe SE 300 unit in the Crone shoot-back mode with 200 feet separation between transmitter and receiver and in the vertical loop-fixed transmitter mode with the receiver traversing at a distance of 400 feet. A Ronka EM 16 VLF EM unit (Serial no. 111) and a Sharpe MF 1 vertical fluxgate magnetometer (Serial no. 409109).

All stations on traverse lines were chained with the exception of the two search traverses running N.NW - S.SE on the Silver Queen claim which were paced.

SE 300 vertical loop-fixed transmitter and EM 16 data are presented such that a conductor has a "crossover" with its minimum to the left and its maximum to the right of the current axis. Crone shoot-back data is presented in the normal way (Crone 1966). The magnetic profiles have an arbitrary base level of 410 gammas on line 0+00E at 0+00N. Magnetic closures were made and corrections applied to remove diurnal drift.

#### IV. DISCUSSION OF RESULTS

Searching over the favoured area of the Ladie claim failed to reveal any significant conductivity or anomalous magnetization. The weak EM 16 crossovers obtained on lines 0+00E and 3+00E at about 8+50N are considered due to topography and/or a bedrock contact.

A square vertical loop search on the Silver Queen claim did reveal conductivity, the two relevant sides of the square are shown on the plan in approximate position. The queried readings are in areas of very high quadrature response particularly on the eastern side, this is usually indicative of a conductor's presence. Two crossovers were located showing a conductor trending east-west. Both profiles show the conductor to be dipping north, and to be at depth, about 200 feet. Because of the northerly dip it is considered not to be one of the targets sought as they both dip south at 60 and 65°. Boyle 1965, fig. 2 shows the bedding in this area

as dipping south at about  $30^{\circ}$ . Thus the possibility exists of the body being a mineralized vein fault in spite of its unusual attitude. The interpreted discordance to the bedding virtually eliminates a graphitic source.

The Crone shoot-back profile shows no response. This is attributed to the depth of the body being beyond the range of the instrument with 200 foot coil separation and/or to the poorer EM coupling between the transmitter and the body.

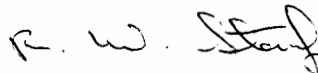
V. CONCLUSIONS AND RECOMMENDATIONS

No conductors were encountered on the Ladie claim. One relatively weak but definite conductor was located on the Silver Queen claim which should be detailed further in order to ascertain its full extent and conductivity. It is considered a probable vein fault deposit, however, its attitude is atypical for the area.

Respectfully submitted,



E.J. Wilson, B.Sc.,  
Geophysicist.



Robert W. Stemp, P.Eng.,  
Chief Geophysicist.

OTTAWA, ONTARIO,  
December 17, 1971.

## References

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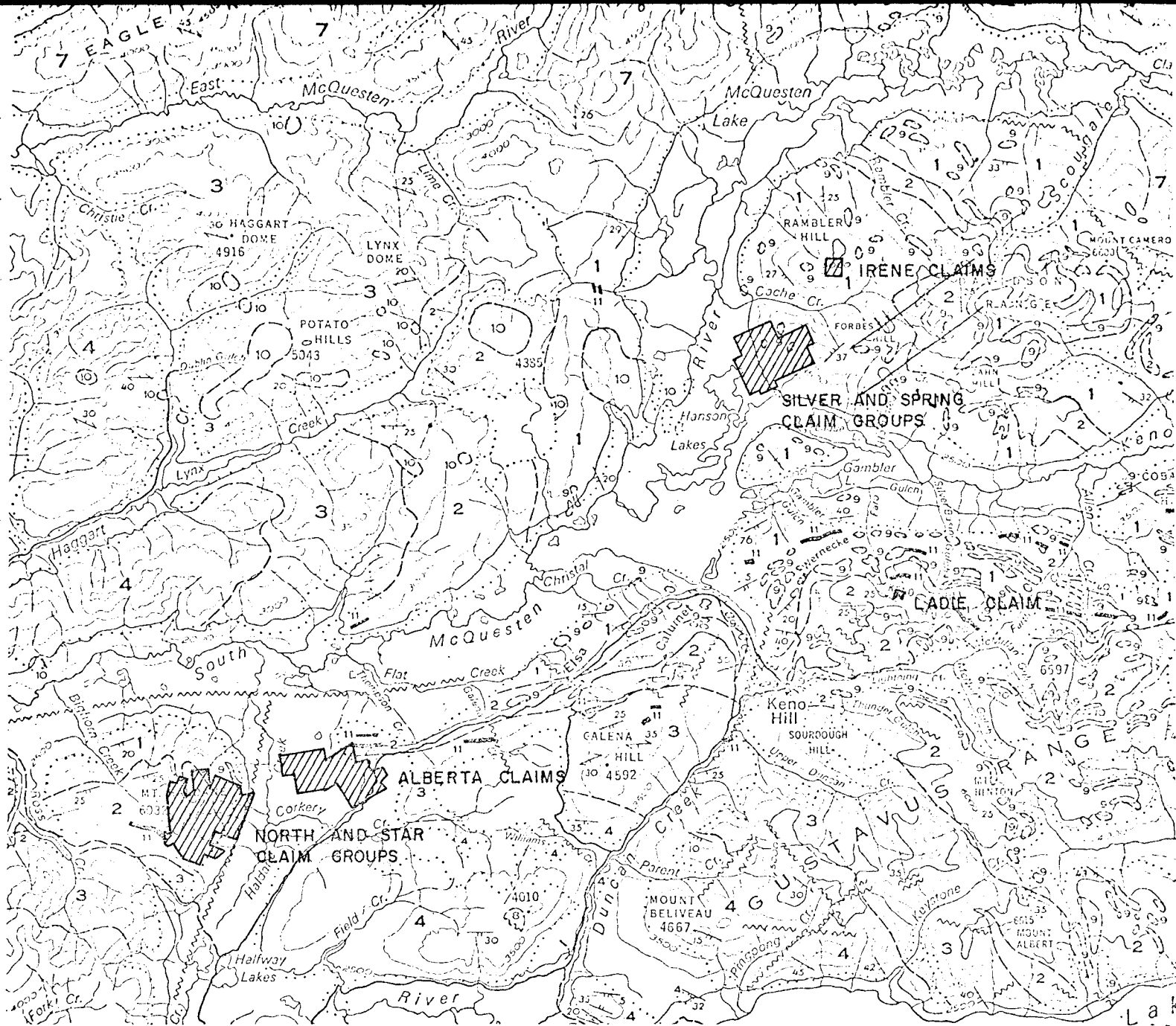
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 (APPROX.)

CANADIAN RESERVE OIL AND GAS LIMITED

CLAIM GROUP LOCATION MAP

MAYO M.D. — YUKON TERRITORIES

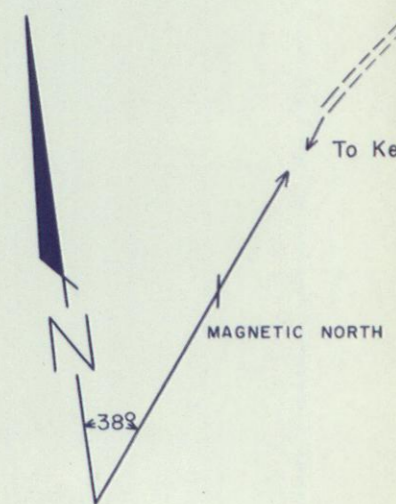
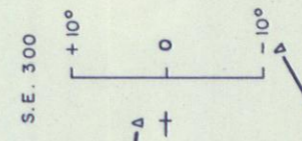
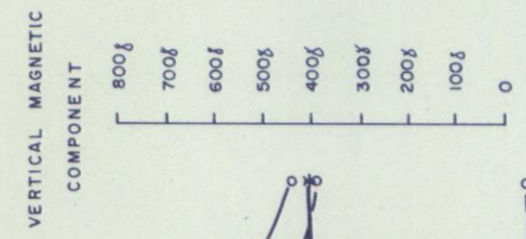
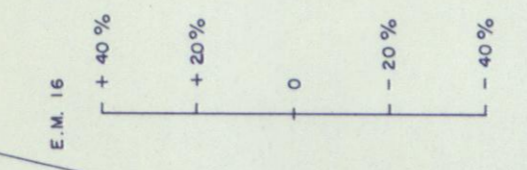
SCALE: 1 INCH = 4 MILES



SILVER QUEEN M.C.

LADIE M.C.

FIXED TRANSMITTER. SEARCH REVEALED  
NO SIGNIFICANT CONDUCTIVITY ON LADIE M.C.



To Keno

- LEGEND**
- CHAINED, COMPASS AND FLAGGED TRVERSE LINE .....
  - CLAIM POST AND BOUNDARY .....
  - ROAD .....
  - ADIT .....
  - CONDUCTOR AXIS .....

**E.M. 16 PROFILES**

STATION N.P.G., 18.6 K.Hz. Jim Creek, Washington

V.L.F.-E.M. PRIMARY F.  
WASHINGTON

- READINGS TAKEN FACING SOUTH
- IN-PHASE .....
  - QUADRATURE .....
- SCALE: 1 INCH = 40%

**SHARPE M.F. 1 PROFILE**

- VERTICAL COMPONENT .....
- SCALE: 1 INCH = 400γ

**S.E. 300 PROFILES**

- SCALE: 1" = 20°
- FIXED TRANSMITTER, SEPARATION ..... 400 FT.
  - 1600 Hz. ....
  - TRANSMITTER LOCATION ..... Δ1
  - CRONE SHOOT-BACK, SEPARATION ..... 200 FT.
  - 1600 Hz. ....

**VERTICAL LOOP, V.L.F. E.M. AND MAGNETIC SURVEY**

**PROFILE PRESENTATION**

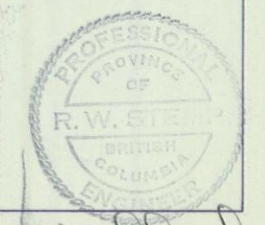
LADIE AND SILVER QUEEN MINERAL CLAIMS  
KENO HILL, MAYO M.D. — YUKON TERRITORIES

FOR  
**CANADIAN RESERVE OIL AND GAS LIMITED**

BY  
**SPARTAN AERO LIMITED**

SCALE: 1 IN. = 200 FEET

*E. J. H. Wilson*



*R. W. Stearns*