25 JUN 1980
MINING RECORDER
LAND AGENT
MAYO, Y.T.

COMBINED GEOLOGICAL AND GEOPHYSICAL REPORT

ON THE

J.T. CLAIM GROUP

KENO HILL AREA

YUKON TERRITORY

RECEIVED
JUL 15 1980
WHITEHORSE, Y.T.

090 626

June 17, 1980.

W.G.Timmins Exploration & Development Ltd.

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

$ 12,400

Geologist or
Mining Engineer

Considered as representation work under Section 53 (1) Yukon Quartz Mining Act.

B. R. BAXTER
Supervising Mining Recorder

for Commissioner of Yukon Territory

TABLE OF CONTENTS

SUMMARY

The J.T. claim group consists of fifty-six mineral claims about 10 miles north of Elsa, in the Galena Hill-Keno Hill area, Yukon Territory.

The property is underlain by graphitic phyllites, and quartzites intruded by sills and lens-like bodies of gabbro and diorite.

Recently, the area to the west of Hanson Lake has been the scene of considerable staking activity.

Mineralization consisting of limonite, galena, pyrite, sphalerite and galena occurs in northerly or northeasterly trending faults and shears on nearby properties.

A mineralized zone on the adjoining Lucky Bear claims containing significant values from grab samples, up to 128 oz./ton silver and 6.45% copper, strikes toward Hanson Lake and may extend through the J.T. property.

Airborne magnetic and VLF-EM surveys conducted in September 1979 have revealed several EM conductors that may represent extensions of the mineralized zone on the Lucky Bear property. A follow-up program consisting of ground geophysics, prospecting, reconnaissance geochem, and ground survey of anomalous areas is recommended.

INTRODUCTION

The claim group consists of fifty-six mineral claims adjoining the Lucky Bear claim group, east of McQuesten Lake, in the Keno Hill area of the Yukon Territory.

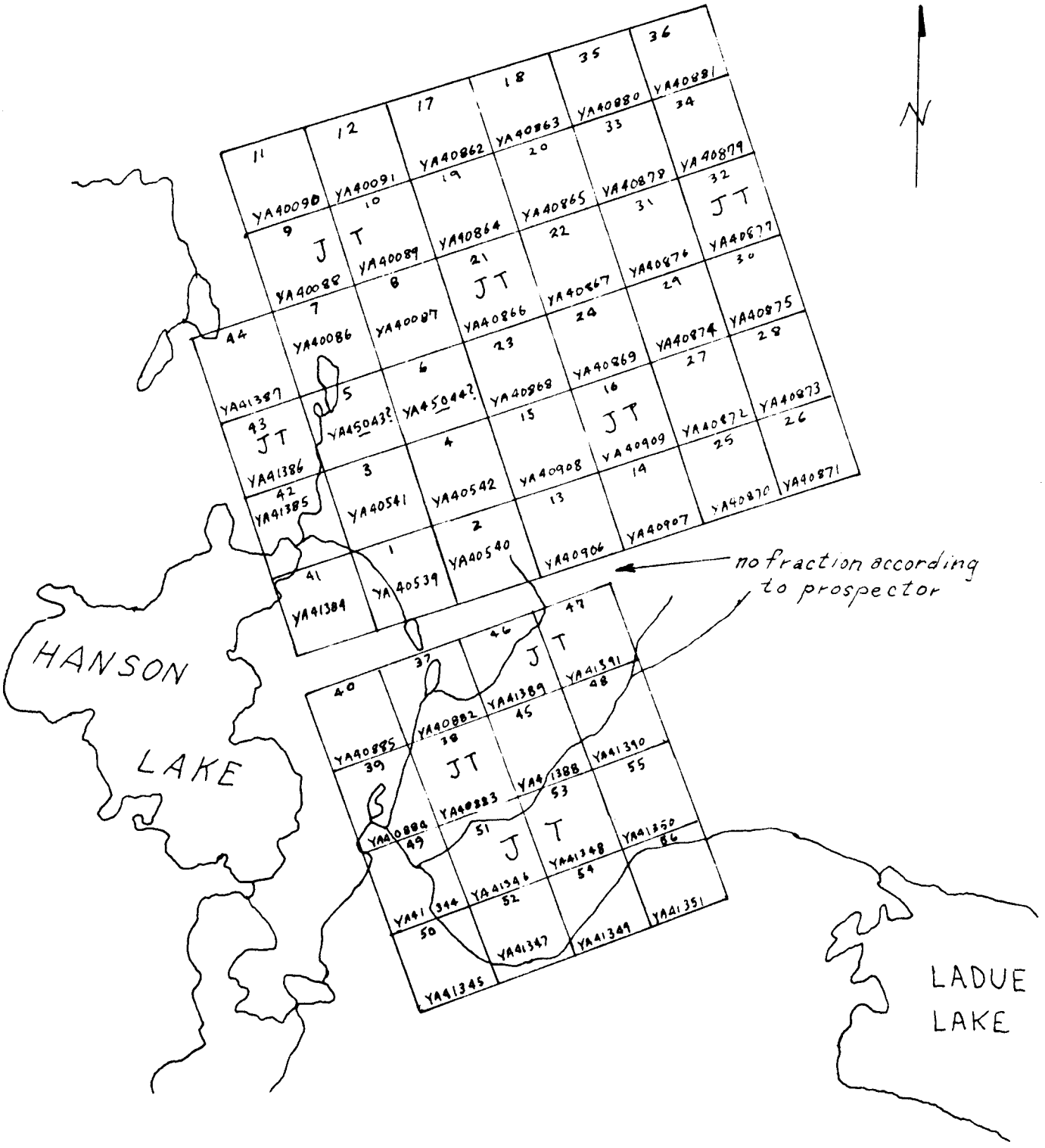
An airborne VLF-EM , magnetometer and scintillometer survey was carried out by Columbia Geophsical Services Ltd. during September 1979.

The purpose of this report is to describe the results of the airborne geophysical survey undertaken in September, 1979, and to recommend a further exploration program to assess the economic potential of the property.

J.T.CLAIM GROUP
KENO HILL AREA
YUKON TERRITORY
LOCATION MAP

FROM SHEET 106D-3

J. T. CLAIM GROUP



PROPERTY

The property consists of fifty-six mineral claims known as the J. T. 1 - 56 group. The claims and their record numbers are listed as follows:

CLAIM NAME(S)	RECORD NO(S)
J.T. 1-4	YA40539 - YZ40542 inc.
J.T. 5-6	YA45043*- YA45044*
J.T. 7-12	YA40086 - YA40091 inc.
J.T. 13-16	YA40906 - YA40909 inc.
J.T. 17-40	YA40862 - YA40885 inc.
J.T. 41-46	YA41384 - YA41389 inc.
J.T. 47	YA41391
J.T. 48	YA41390
J.T. 49-56	YA41344 - YA41351 inc.

* numbers could be typographical errors on the interim claim map published by the Department of Indian Affairs and Northern Development.

LOCATION AND ACCESS

Approx. Co-ordinates: 64° 02' N. Lat. 135° 19' W. Long.

The property is located in the Mayo Mining Division, claim sheet 106-D/3, at Hanson Lake, about 10 miles northeast of Elsa, Yukon Territory.

A gravel road from Elsa, provides access to the claims. Good gravel roads connect Elsa and Mayo, some 30 miles to the south with the highway to Whitehorse.

Mayo is also serviced by Northland Airlines scheduled flights from Dawson and Whitehorse.

TOPOGRAPHY AND TIMBER.

The claims are situated along the western flank of Forbes Hill with elevation ranging from 2500' A.S.L. to 3000' A.S.L. Peaks in the general area rise to 5800' A.S.L.

The region is well vegetated with spruce and willows, along with some poplar, birch and alder. Timberline is about 4000 feet elevation.

The area lies within the Yukon Plateau and is characterized by an undulating surface with broad smooth uplands. The main drainage occurs in wide U-shaped valleys, modified by glaciation.

Several creeks provide water in proximity to the claims and McQuesten, Hanson and Ladue Lakes are present in the valley bottom.

Much of the area is subject to perma-frost conditions.

HISTORY

No previous work is known to have been done on the claim group, however considerable intermittent work over the years has been performed on adjoining properties in the area.

Early work prior to 1922 (Cockfield) consisting of underground exploration and trenching was carried out on showings at the Rambler Hill property, the Stand-to property and the Mount Cameron property.

Bulldozer trenching was carried out on the Rambler Hill property in 1961, and on the Stand-to property in 1966.

Additional bulldozer work has been carried out in recent years on the Lucky Bear property and adjoining properties to the east.

During 1964, the Geological Survey of Canada carried out a reconnaissance stream and spring sediment, surface and ground water, heavy mineral, and rock geochemical survey over some 1900 square miles in the Keno Hill area.

The date was statisically treated by Boyle and Gleeson in 1976.

Considerable staking activity has taken place in the area during the past year with approximately a thousand claims being recorded from the western portion of Hanson Lakes, past Potato Hills and Haggard Dome, as far as Secret Creek, some 20 miles to the west.

REGIONAL GEOLOGY

The area is underlain by sedimentary rocks of the Yukon Group, probably of Precambrian or Paleozoic age. A few geologists consider some units to be Jurassic. The sediments consist of graphitic and sericite schists, phyllites quartzites, argillites and a few limestone lenses.

Conformable lenses and sills of greenstone occur in the schist and quartzite formations and some quartz-feldspar porphyry sills are present locally in all types of rocks.

Granitic stocks of Mesozoic age occur west of Hanson Lakes.

There are two principal fault systems; a northeast trending system of vein faults with numerous subsidiaries containing the ore bodies of the Keno Hill area and a north-northeast to northwest trending series which cut the ore zones and are usually barren.

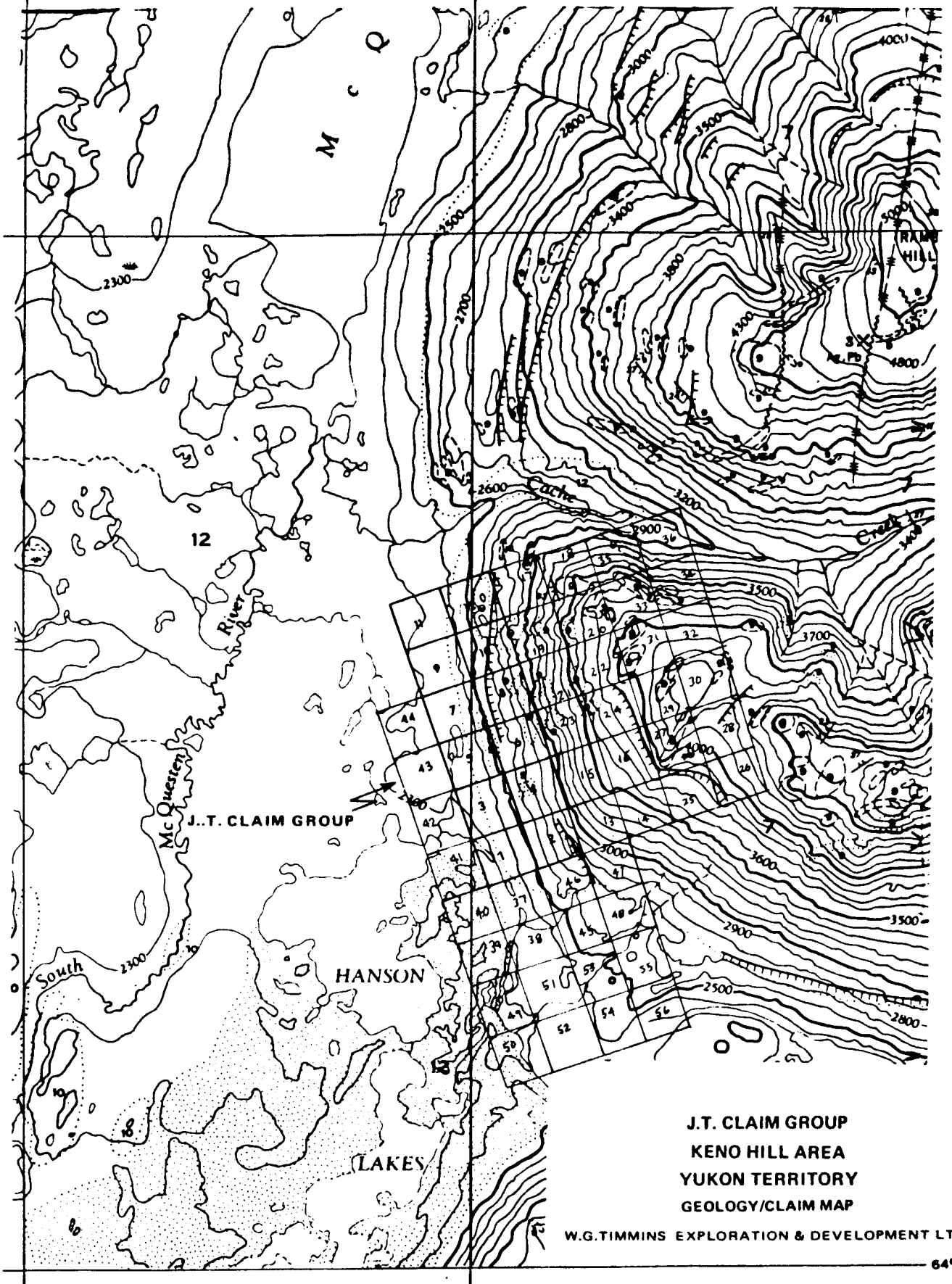
GEOLOGY OF THE PROPERTY.

The property is underlain by the lower Schist Division of graphitic phyllite and dark grey to grey thinly bedded phyllitic quartzites or siltstones of Jurassic ? age.

These sediments are intruded by sills and lens-like bodies of diorite and gabbro, now extensively altered to "greenstone"

MINERALIZATION

Mineralization on the nearby Rambler Hill, Stand-to and Mount Cameron Properties occurs as limonite, galena, pyrite, quartz-siderite, sphalerite and chalcopyrite in north or northeast trending faults or shears. These properties are described in G.S.C. Memoir 357, by L.H. Green, 1971.



J.T. CLAIM GROUP

KENO HILL AREA

YUKON TERRITORY

GEOLOGY/CLAIM MAP

W.G.TIMMINS EXPLORATION & DEVELOPMENT LTD.

A showing area on the southern section of the Lucky Bear property was examined by the writer on June 12,1979. The showing has been opened up by bulldozer trenching, however the extent of mineralization is difficult to assess because of disturbed rubble. The apparent width appears to be 2 to 3 feet. Mineralized material is exposed in two places, 30' apart, called the upper and lower cuts, consisting of rusty to black oxidized limonitic rocks with massive chalcopyrite and pods of galena.

Sample No. 6077 was taken from the upper cut, and is a selective grab of highly mineralized rubble. This sample assayed 128.30 oz./ton silver, 6.15% copper, 2.14% lead and 0.57% zinc.

A very rusty stained creek bed was observed along strike in the vicinity of Hanson Lake, about one mile southwest of the showing area. Iron bearing springs commonly occur on hillsides or in valley bottoms a few feet from the base of the slope, as is the case in point.

Although iron staining is not directly economically significant, the source may be in a nearby sulphide deposit.

GEOCHEMICAL SURVEY

The reconnaissance stream and sediment geochemical survey carried out in 1964 by the Geological Survey of Canada, indicates a regional high in the Davidson Range, in the area of Rambler Hill, Forbes Hill, Stand-to Hill and Mount Cameron. Only a few samples were taken in the area of the J.T.claim group because of lack of streams, however, numerous anomalous samples occur along Cache Creek, just to the northeast, and

three copper anomalous samples occur near Hanson Lake.

RESULTS OF MAGNETIC SURVEY.

The magnetic survey has revealed an apparently east-west trending magnetic low with readings below 1500 gammas occurring over the southern half of the property. The 1700 gamma contour lines to the north and south of this low region are fairly straight and trend due east. There is some suggestion that this low is closed on the west; however the extent of the survey is not sufficient to confirm this.

The entire area of the survey is spotted with small circular or elliptical highs in the order of 2-300 metres across.

INTERPRETATION OF MAGNETIC DATA.

Regional geologic mapping indicates that the J.T. group is underlain by phyllite and schist, with numerous widely distributed small bodies of greenstone. The small magnetic highs in the northern part of the map area correlate fairly well with small lenses of greenstone on the geologic map.

The magnetic low area in the south-central part of the property correlates fairly well with a low on the regional airborne survey (map 3387G McQuesten Lake). This regional low. and a number of others, form a double line trending 065 that appears to reflect the axes of an overturned syncline and anticline mapped on Forbes Hill as plunging at a shallow angle in a direction of 245°. The axis of the sycline projects through the magnetic low on the airborne property survey.

The fairly uniform magnetics along the southern boundary of the survey area appear to agree with the east-west trending 'saddle' between Hanson Lake and Ladue Lake that is shown on the regional aeromagnetic map.

RESULTS OF VLF-EM SURVEY.

The VLF-EM has revealed three conductive zones in the eastern part of the property. The largest appears to span claim nos, 29 - 36 and has a lineation of about 140°. The two others appear to be much smaller and lies in claim nos 25 and 26. These anomalies are too small for any meaningful lineation to be interpreted.

The lineation of the large E.M. anomaly appears to parallel the strike of the phyllite - schist unit, which suggests the possibility that it is due to a graphitic horizon in the phyllite.

However, it should be noted that a mineralized zone on the adjoining Lucky Bear property, when projected southerly along strike, would coincide with the area of the large E.M. anomaly. As high-grade silver - copper mineralization was found on the Lucky Bear, the fact that its projected extension coincides with this E.M. anomaly is significant. This warrants further prospecting.

The two smaller E.M. anomalies appear to be remnants of the larger anomaly displaced by faulting or folding; supported by evidence that the hinge zone of a large-scale overturned syncline passes through or in proximity to this area.

RESULTS OF RADIOMETRIC SURVEY.

The radiometric survey has revealed only one anomaly that correlates with a magnetic high on a hilltop. This anomaly may be due to a concentration of potassium within a greenstone instrusive.

CONCLUSIONS AND RECOMMENDATIONS

The J. T. group consists of fifty-six mineral claims adjoining the Lucky Bear claim group, Rambler Hill area, north of Galena - Keno Hill, Yukon Territory.

The claims are underlain by the Lower Schist unit of graphitic phyllites and phyllitic quartzites intruded by sills and lenses of " greenstone ".

Mineralization consisting of limonite, galena, pyrite, sphalerite and chalcopyrite occurs in northerly or northeasterly trending faults and shears on nearby properties.

A zone located on the Lucky Bear claims has indicated significant silver-copper values, trending toward the J. T, claims and an iron stained creek bed at Hanson Lake.

The area has long been known for the occurrence of high grade silver mineralization at Galena and Keno Hill, however only limited exploration has been carried out in the Rambler Hill - Stand-to Hill - Hanson Lake area.

An airborne magnetometer, VLF- EM, and radiometric survey was conducted over the J. T. claim group in September, 1979 by Columbia Geophysical Services Ltd., and the data compiled, mapped and contoured.

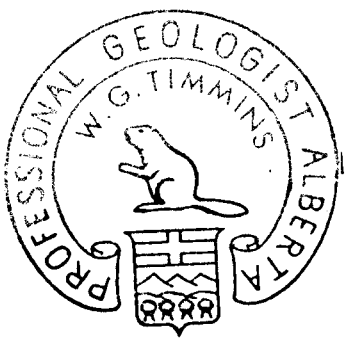
CONCLUSIONS AND RECOMMENDATIONS CONT'D.

The magnetic survey indicated that part of the property lies in the hinge zone of a major regional fold, with consequent possible repetition of some rock units. The VLF-EM survey revealed a conductor in the northeastern part of the property that may represent an extension of the mineralized zone on the adjoining Lucky Bear property.

A programme of exploration in recommended on the J.T. property. The exploration programme should be designed to trace the present known zone on the Lucky Bear and to follow-up the anomalies revealed by airborne geophysical surveys.

The following programme is recommended:

1. Follow-up of airborne anomalies by ground geophysical survey.
2. Geological survey of anomalous areas.
3. Prospecting programme.
4. Reconnaissance geo-chemical soil and stream-sampling surveys.



Respectfully submitted,
W.G.Timmins P. Geol.
Consulting Geologist.

CERIFICATE

I, WILLIAM G. TIMMINS, maintaining offices at 201-909 5 Avenue S.W., Calgary, Alberta do hereby certify that:

1 I am a geologist having been practising my profession for seventeen years.

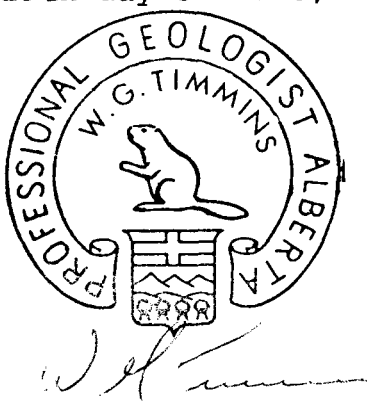
2. I am a graduate of the Provincial Institute of Mining, Haileybury, Ontario, and have attended Michigan Technological University, Houghton, Michigan.

3. I am a member in good standing of the Association of Professional Engineers of British Columbia, and of the Association of Professional Engineers, Geologists and Geophysicists of Alberta.

4. I have no interest direct or indirect in the J.T. claim group, nor do I expect to receive any such interest.

5. This report is based on a study of goverment reports, private reports, and a visit to the property made by me in June 1979, and a study of geophysical data supplied by Columbia Geophysical Services Ltd.

Dated at Calgary, Alberta the 19th day of June, 1980.



W.G.Timmins, P. Geol.
Consulting Geologist.

APPENDIX I

INSTRUMENTATION AND THEORY

1) Magnetic Survey:

The magnetic data was detected using a nuclear free precession magnetometer, made by Sabre Electronics of Burnaby B.C. This measures the absolute value of the earth's magnetic field intensity in three ranges which are 1,000, 2,500 and 5,000 gammas respectively. The sensitivity is 1 gamma and the absolute calibration is governed by a cryatal-controlled oscillator so that it cannot drift.

The magnetic data as well as the VLF-EM data were recorded on an MFE model M-22 CAHA dual channel strip chart recorder. There are four chart speeds which are 1, 5, 25 and 50 mm/sec respectively.

Only two commonly occurring minerals are strongly magnetic; magnetite and pyrrhotite. Hence, magnetic surveys, both ground and airborne, are used to detect the presence of these minerals in varying concentrations. Magnetic data are also useful as a reconnaissance tool for mapping geologic lithology and structure since different rock types often have different background amounts of magnetite and/or pyrrhotite.

2) VLF-EM

A VLF-EM receiver manufactured by Sabre Electronics of Burnaby, B.C. was used for the VLF-EM survey. This instrument is designed to measure the current induced, in a vertical coil, by the primary and secondary fields of the very low frequency electromagnetic field (VLF-EM) transmitted at 18.6KHz from Seattle, Washington.

In all electromagnetic prospecting, a transmitter produces an alternating magnetic field (primary) by a strong alternating current usually through a coil of wire. If a conductive mass such as a sulphide body is within this magnetic field, a secondary alternating current is induced within it which in turn induces a secondary magnetic field that distorts the primary magnetic field. It is this distortion that the EM receiver measures. The VLF-EM uses a frequency range from 16 to 24 KHz, whereas most EM instruments use frequencies ranging from a few hundred to a few thousand Hz. Because of its relatively high frequency, the VLF-EM can pick up bodies of a much lower conductivity and therefore is more susceptible to clay beds, electrolyte-filling fault or shear zones and porous horizons, graphite, carbonaceous sediments, lithological contacts as well as sulphide bodies of too low a conductivity for other EM methods to pick up. Consequently, the VLF-EM has additional uses in mapping structures and in picking up sulphide bodies of too low conductivity for conventional EM methods and too small for induced polarization (in places it can be used instead of IP). However, its subsceptibility to lower conductive bodies results in a number of anomalies, many of them difficult to explain and, thus, VLF-EM preferably should not be interpreted without a good geological knowledge of the property and/or other geophysical and geochemical surveys.

3) Radiometric Survey:

The instrument used to carry out this survey was a Model 118 Royal Scintillator manufactured by Precision Radiation Instruments Ltd. The detecting element used with this scintillator is a 2-inch sodium iodide crystal. The data was recorded on a Bausch & Lomb 6-inch strip chart recorder. The complete airborne system was installed as close as possible to the rear of the aircraft to ensure against radiation from

the plane's navigational equipment.

All radiometric surveys, ground or airborne, work on the principle of gamma-ray emission from radioactive sources. The most common sources incurred in geophysical prospecting are radioactive isotopes of uranium (U^{238}), thorium (Th^{232}), and potassium (K^{40}). These isotopes disintegrate spontaneously into daughter elements emitting alpha and beta particles, and gamma rays. The alpha and beta particles travel no more than 1 to 2 feet through air and thus are little use for geophysical detection. On the other hand, the gamma ray travels hundreds of feet through air and thus is of prime importance. These gamma rays, in a radioactive survey, are generally detected by thallium-activated sodium iodide crystals.

The gamma ray can be shielded by two feet of water or rock and thus over large lakes there is a minimum signal. Thus also radiometric surveying is essentially surveying for outcrop expression of rock containing radioactive minerals. However, around uranium showings, if the rock and overburden is porous and fractured enough (and not water-soaked), the uranium can be detected at greater depths because of the uranium daughter product, radon gas, seeping upwards.

SURVEY PROCEDURE.

A Bell 206B Jet Ranger Helicopter belonging to Trans North Turbo Air flown at a speed of about 120 kph, was used to fly the survey. The magnetometer head and the VLF-EM receiving antenna were towed in a bird at the end of a 20 metre cable. The scintillometer detector crystal was placed in the floor of the helicopter. The flight lines were flown in an east-west direction with a seperation of about 200 meters.

The bird was flown at a terrain clearence of about 30 meters. Tie points were made over prominent topographic features. They were numbered, recorded, and plotted on the flight-line and data sheets. There were considerable topographic features to serve as visual tie points so that the flight lines can be considered to be plotted fairly accurately.

The magnetic readings were taken with the magnetometer set on a 1.2 second recycling period which corresponds to readings taken at intervals of about 40 meters.

The magnetic diurnal change was not monitored but the survey was done in short enough time so that any possible error would be minimal. As for magnetic storms, which are frequent at this time, there were none on the day of the survey. This was checked with the monitoring station at Victoria.

All radiometric readings were taken with the scintillometer set on a 5-second response time whereby the meter would respond to the average count of gamma particles received over a 5-second interval of time. Therefore, the sample length averaged about 160 meters.

To: W.G. TIMMINS EXPLORATION & DEVELOPMENT LTD.
806 , 703 - 6th Avenue S.W.
CALGARY , Alberta T2P 0T9

ATTN : W.G. Timmins

File No. 17140
Date June 19th , 1979
Samples Rock Chip

Certificate of ASSAY

LORING LABORATORIES LTD.

SAMPLE No.	OZ./TON SILVER	OZ.TON PLATINUM	% Cu	% Pb	% Zn	% Cr
ROCK SAMPLES						
6076	-	Trace	-	-	-	28.08
6077	128.30	-	6.45	2.14	.57	-
6078	27.14	-	6.15	.90	.09	-
6079	24.68	-	-	44.39	4.53	-
6080	4.04	-	-	.32	5.46	-

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES . . . .

Rejects Retained one month.

Pulps Retained one month unless specific arrangements made in advance.

A. J. McLeod

Licensed Assayer of British Columbia

TL

L12N

L11N

L9N

L8N

L7N

L6N

L5N

L4N

L3N

L2N

L1N

L0

L1S

L2S

L3S

L4S

L5S

L6S

L7S

L8S

L9S

L10S

L11S

L12S

L13S

L14S

L15S

TL

4500

2600

Cache

3200

2900

River

3700

3000

4000

4600

3600

2900

3500

HANSON

SEVILLE SILVER LTD.

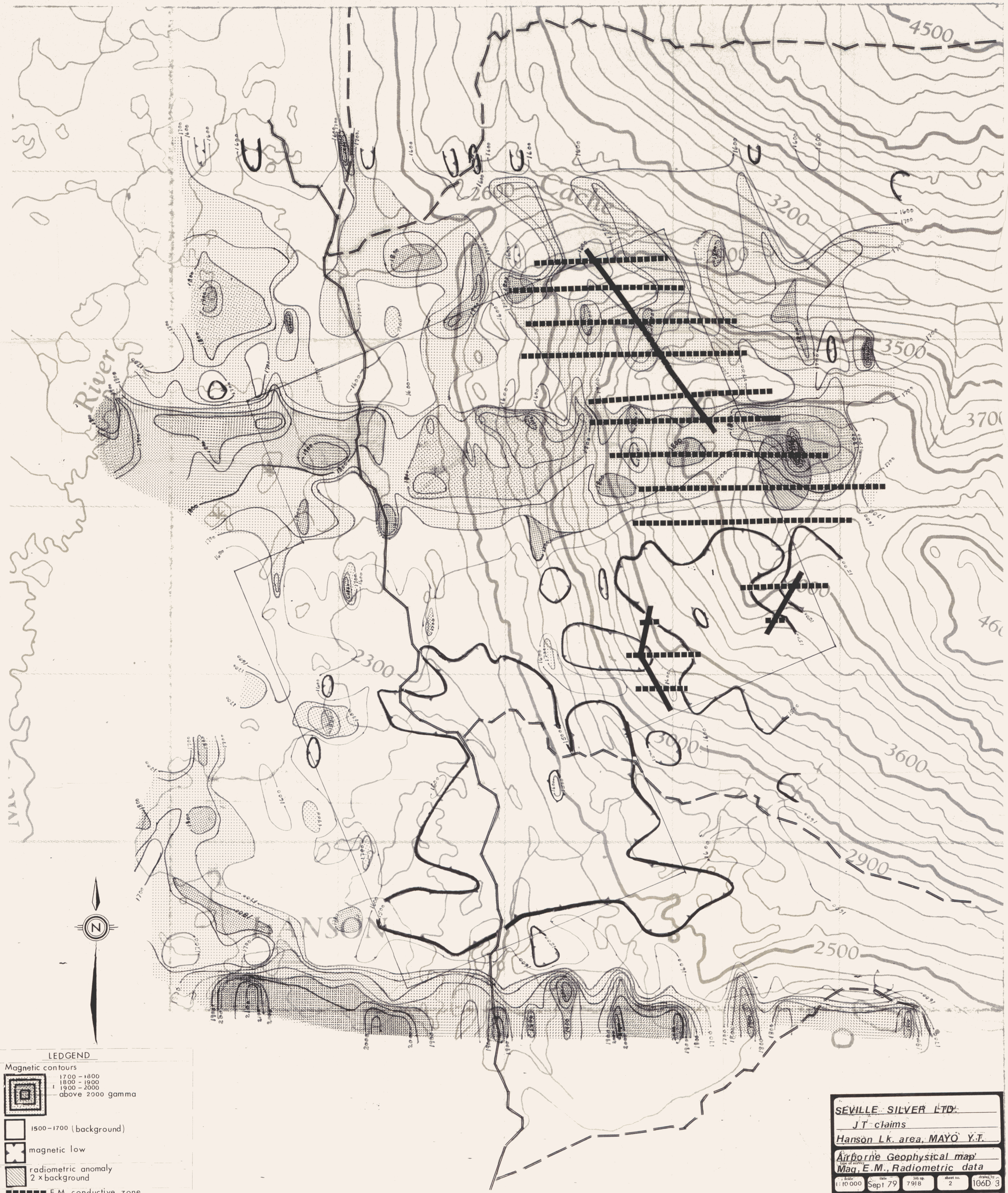
J T claims

Hanson Lk. area, MAYO Y.T.

Airborne Flight Line) map
type of survey

scale	date	job no.	sheet no.	drawn by
1:10000	Sept 79	7918	1	106D/3

Columbia Geophysical Services Ltd.



LEDGEND

Magnetic contours
- 1700 – 1800
- 1800 – 1900
- 1900 – 2000
- above 2000 gamma

1500 – 1700 (background)

magnetic low

radiometric anomaly
2 x background

EM conductive zone

lineament of EM conductor

SEVILLE SILVER LTD.
JT claims
Hanson Lk. area, MAYO Y.T.

Airborne Geophysical map
type of survey
Mag, E.M., Radiometric data

scale	date	job no.	sheet no.	drawn by
1:10 000	Sept 79	7918	2	106D 3

Columbia Geophysical Services Ltd.