

*PROSPECTUS*

*May 17, 1984.*

*062181*

COMBINED GEOLOGICAL, GEOPHYSICAL & GEOCHEMICAL REPORT

ON THE

J.T. & H.L. CLAIM GROUPS

KENO HILL AREA

FOR

ROMEX RESOURCES LTD.

CO-ORDINATES 64°02'N  
135°19'W

September 2, 1982

W.G. TIMMINS EXPLORATION  
& DEVELOPMENT LTD.

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## SUMMARY

This report was originally prepared in October, 1981, for Hacienda Oil & Minerals Ltd., a private Alberta company, who it is understood dropped their option on the property. The claims are now under option to Romex Resources Ltd. Since no further work has been carried out, the report stands as written and recommendations remain the same.

The J.T. and H.L. claim group consists of eighty-eight mineral claims about 16 km. north of Elsa, in the Galena Hill-Keno Hill area, Yukon Territory.

The property is underlain by graphitic phyllites and phyllitic quartzites intruded by "greenstone" bodies.

Airborne magnetometer and VLF-EM surveys conducted in September, 1979 revealed several EM conductors. These were primary targets of follow-up by the ground survey done in July, 1981. The ground survey defined at least two linear EM conductors that extend for a considerable distance over the property. These conductors cannot be explained completely with existing knowledge and warrant further investigation since silver and zinc geochemical anomalies are associated with them.

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Ground geological mapping, VLF-EM and geochemical surveys were carried out by a three man crew supervised by B. Wing employed by W.G. Timmins Exploration & Development Ltd. A program of diamond drilling is recommended at an estimated cost of \$138,000.00.

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## INTRODUCTION

The claim group consists of eighty-eight mineral claims on the west side of Forbes Hill in the Hanson Lake area, Yukon Territory.

An airborne VLF-EM, magnetometer and scintillometer survey was carried out by Columbia Geophysical Services Ltd. during September, 1979. (Appendix I) A follow-up ground VLF-EM survey, with accompanying geology and geochemistry was conducted in July, 1981 supervised by B. Wing, B.Sc., geologist, employed by W.G. Timmins Exploration & Development Ltd. This report summarizes the geology, geochemical and VLF-EM results using the Fraser Filter method.

## PROPERTY

The property consists of eighty-eight mineral claims known as the J.T. and H.L. 1 - 32 groups. The claims and their record numbers are listed as follows:

<u>CLAIM NAME(S)</u>	<u>RECORD NO(S)</u>
J.T. 1 - 6	YA40539-YA40544 inc.
J.T. 7 - 12	YA40056-YA40091 inc.
J.T. 13 - 16	YA40906-YA40909 inc.
J.T. 17 - 40	YA40862-YA40885 inc.
J.T. 47 - 48	YA41390-YA41391 inc.
J.T. 49 - 56	YA41344-YA41351 inc.
H.L. 1 - 32	YA43492-YA43523 inc.

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## LOCATION & ACCESS

Approximate Co-ordinates:  $64^{\circ} 02' N$ . Lat.  $135^{\circ} 19' W$ . 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, TIMBER & CLIMATE

The claims are situated along the western flank of Forbes Hill with elevation ranging from 2,500 ft. A.S.L. to 3,000 ft. A.S.L. Peaks in the general area rise to 4,800 ft. A.S.L.

The region is well vegetated with spruce and willows, along with some poplar, birch and alder. Timberline is about 4,000 ft. 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.

While the year round climate is best described as rigorous the nearly continuous daylight during the short, warm summer provides an excellent environment for mineral exploration activities. Rainfall is moderate.

#### HISTORY

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.



**N.L. + J.T. CLAIM GROUP  
KENO HILL AREA  
YUKON TERRITORY  
LOCATION MAP**



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 1,900 square miles in the Keno Hill area.

During the period between June and September of 1968, Silver Spring Mines Ltd. conducted a program of exploration work on the Silver-Spring claim groups. The Silver and Spring claim groups consisted of 38 full size claims and 2 fractional claims, now completely covered by the present J.T. claims. The field operations were managed by J. Strebchuk, under supervision of P.H. Sevensma, Consulting Engineer from Vancouver, B.C.

Their program consisted of preliminary geochemical soil sampling, geological mapping and 14,300 feet of Ronka EM 16 electromagnetic survey. One deep trench was made with a D8H bulldozer, exposing approximately 100 feet of underlying rust stained phyllitic shale. The bedrock is striking approximately east-west and dipping at 20 - 35 degrees to the south. Several other "bulldozer roads and cuts" were made on the west face of Forbes Hill towards Hanson Lake.

Silver Spring reports "favourable geology and positive geochemical results" and numerous minor conductors that were

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located geophysically. Follow-up of these results 'up slope and to the north' was recommended, though not carried out.

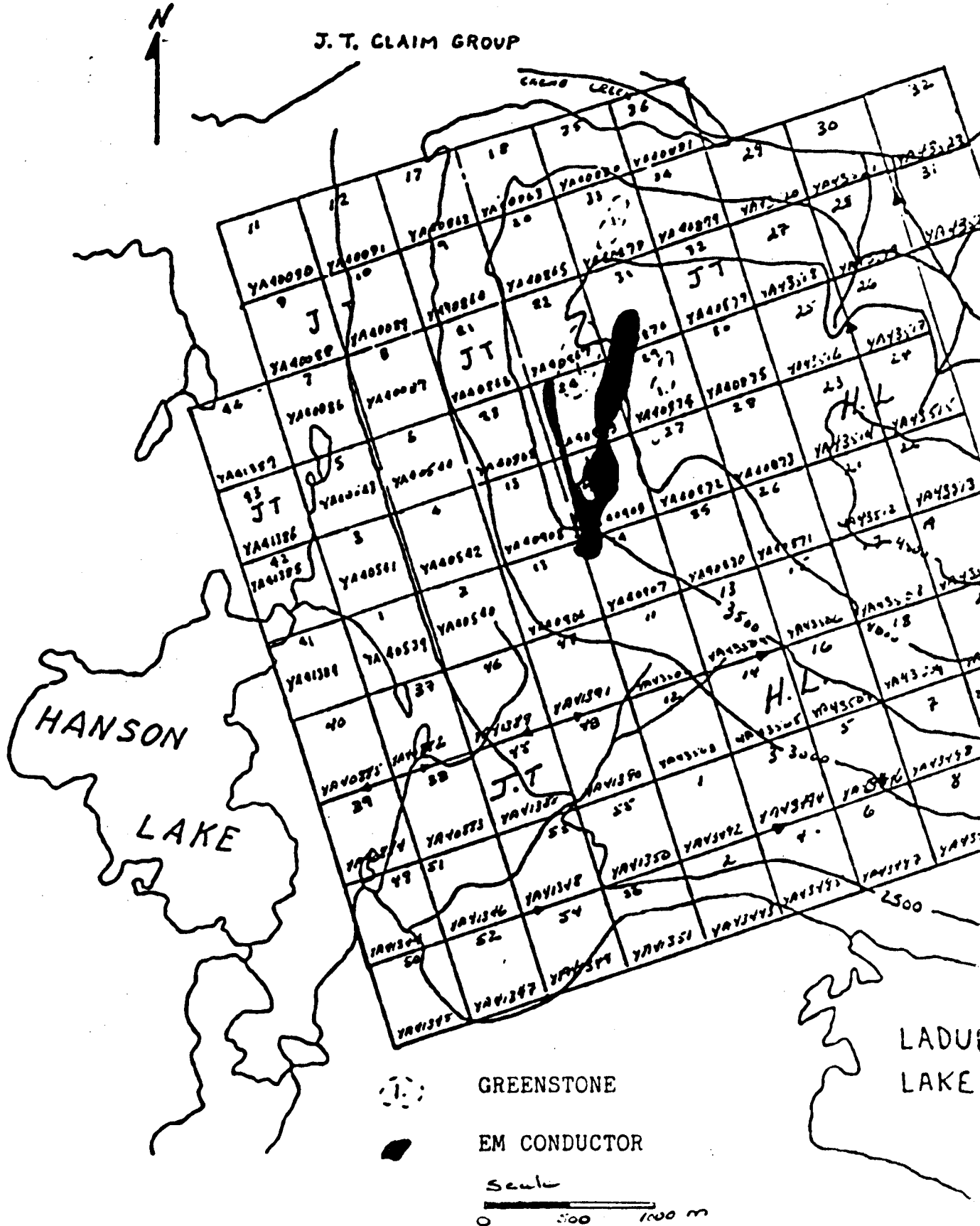
In 1971, Canada Reserve Oil and Gas Limited carried out a geophysical program on the Silver and Spring claim groups under the supervision of R.W. Stemp, P.Eng. This survey located several conductors and although graphitic horizons in the phyllite were believed to be the causative source, a few anomalies were not explained. They recommended further investigation of all conductors, however, no additional work has been reported.

Considerable staking activity has taken place in the area within the last three years, with approximately a thousand claims being recorded in 1980, from the western portion of Hanson Lake 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.

HACIENDA OIL AND MINERALS - Claim Map  
FROM SHEET 106D-3



Conformable lenses and sills of greenstone occur in the schist and quartzite formations and some quartz-feldspare 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 are exposed throughout the property though many occurrences have been frost heaved thus preventing accurate structural measurements. Due to the low resistance to weathering and transport processes characteristic of this rock type the frost altered occurrences are considered to be nearly in place. Where structural measurements are obtainable, the rocks are striking west to northwest and dipping to the south at about 30 - 40°.

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The sediments are intruded by numerous sills, plugs and lens-like bodies of metagabbro and metadiorite now altered to greenstone. The intrusives are more common on the upward slopes of the Forbes Hill and very prevalent in talus and scree slopes. The intrusives contain feldspar laths commonly and are occasionally porphyritic with respect to feldspar. Hornblende needles are present, though not common. The greenstones range from very slightly magnetic in the western sector to highly magnetic in the eastern section and it is believed that they account for the 'highs' mapped by the airborne magnetometer survey.

Sparse disseminated pyrite and chalcopyrite occur locally in the greenstones.

Glacial deposits, mainly till, glacial-fluvial and glacial-lacustrine gravel, sand and silt cover the lower slopes of Forbes Hill and extend to the Hanson Lakes to the west. They range from a metre or less to several metres in depth, and extend up slope to an elevation of 1,100 metres (3,500').

#### MINERALIZATION

Mineralization on the nearby Rambler Hill, Stand-to Hill and Mount Cameron properties occurs as limonite, galena,

pyrite, quartz siderite, sphalerite and chalcopyrite in north and northeast trending faults or shears.

On the Bear #5 claim to the north across Cache Creek on Rambler Hill there is a small showing of galena, tetrahedrite and freibergite, quartz-siderite, chalcopyrite, azurite and malachite, contained in a northeast trending quartz intrusion in the phyllitic rocks.

On the J.T. & H.L. claim groups the only mineralization observed is contained as tetrahedrite in a small quartz vein approximately one metre wide and striking to the north-northwest. The structure occurs on the north side of a talus slope but appears to be nearly in place though the length could not be estimated. A bulldozer D7H attempted to trench down from the top of the hill but could not reach the quartz structure.

Several areas of gossan and iron stain were bulldozed, however, revealed no mineralization of interest.

A large area of boulders down slope to the west of Forbes Hill is heavily iron stained and is responsible for Silver Springs entering the area in the late sixties. Although they did not find the source of the iron it may well be further up the hill, as their work was confined to the lower area of the J.T. and H.L. claims.

INSTRUMENTATION & THEORY - VLF-EM

The instrument used was a VLF-EM receiver, Model 27, manufactured by Sabre Electronic Instruments Ltd. of Burnaby, B.C. This instrument is designed to measure the electromagnetic component of the very low frequency field (VLF) transmitted, for this area, at 18.6 KHz, 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 much lower conductivity and therefore is more susceptible to claybeds, electrolyte-filled 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 structure and in

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picking up sulphide bodies of too low a conductivity for conventional EM methods and too small for induced polarization. (In places it can be used instead of I.P.). However, its susceptibility to lower conductive bodies results in a number of anomalies, many of them difficult to explain.

VLF-EM surveys offer the advantages of being inexpensive and rapid but are subject to a number of limitations. Firstly conductive overburden or host rocks severely limit the depth of exploration. Secondly, anomalies tend to be generated by conductivity changes in the overburden or at the overburden/bedrock interface. Thirdly, since the frequency is high, the response factor of many geological conductors, including orebodies, is above the range where appreciable quadrature effects are generated. Phase shifts are more usually associated with effects of conductive ground. An additional problem in the Keno Hill area is that the strongest primary VLF signal, Seattle, Washington, couples very poorly with the northeast and north trending vein deposits. The signal from Hawaii which would couple excellently is, unfortunately, too weak to be used for reliable measurements.

#### GROUND GEOPHYSICAL PROCEDURE

Control for measurements was obtained by running chain and



compass traverse lines from a base line at 100 metre intervals with stations at 30 or 40 metres. The base line was positioned on an azimuth of  $160^{\circ}$  along the cut line between claims J.T. 17 and 18 respectively and extends for 2,600 metres. Cross lines were run at  $70^{\circ}$  for 1,000 metres in length.

#### MAGNETOMETER

No ground magnetometer survey was done due to the extended length of time needed for closure and magnetic storm conditions.

#### GEOCHEMICAL SURVEY PROCEDURE

Soil samples were taken at every grid station that was possible to sample. Some difficulty with perma-frost was encountered which resulted in some mixing of organic material in many of the samples. A total of 250 samples were collected and shipped to Terramin Research Laboratories, Calgary, Alberta for geochemical analysis.

#### GEOCHEMICAL TEST PROCEDURE

All samples were tested by Terramin Research Laboratories. The soil samples are first thoroughly dried then sifted

through a -80 mesh screen. A measured amount of the sifted material is then put into a test tube with subsequent measured additions of nitric-perchloric. This mixture is next diluted with water. The parts per million (ppm) copper, lead, zinc and silver are measured by atomic absorption.

For analysis of the 35 rock chips, the entire sample is crushed. Approximately 100 grams is then split and pulverized through a -200 mesh screen. A measured amount of the sifted material is then treated as were the soil samples. The parts per million (ppm) copper, lead, zinc and silver are then measured by atomic absorption.

These results are sent to Graycom Systems Limited, Calgary, Alberta. Using a logarithmic program, threshold and anomalous values are obtained.

#### GEOCHEMICAL INTERPRETATION

Statistical treatment of geochemical results yielded four zones of anomalous silver values. Two of the larger silver anomalies to the south are in direct relation with the primary geophysical-VLF-EM conductor (A on map). The larger silver anomaly to the north is weaker and is coincidental with a strong zinc anomaly. This anomaly is along strike of the primary (geophysical VLF-EM) conductor to the north.

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Down slope to the west there is a weak zinc anomaly and a smaller copper-zinc anomaly bordering a small silver anomaly that can be correlated with the secondary geophysical VLF-EM conductor.

In general, silver values produced a good fit with a normal distribution curve; copper values were normal with few high values; zinc values produced a strong anomaly and two weaker anomalies. Lead values were generally low throughout the property.

#### GEOPHYSICAL VLF-EM INTERPRETATION

Geophysical VLF-EM readings were sent to Columbia Geophysical Services, Vancouver, B.C. and filtered using the Fraser Filtering method for 20 metre, 40 metre and 60 metre intervals. There is a large anomaly striking at  $10^{\circ}$  -  $20^{\circ}$  that is continuous over 1,200 metres on the upper plateau to the east of Hanson Lake. The values associated with the anomaly are slightly lower due to the masking and insulation effect related to the perma-frost in the area. Nevertheless, high values can be traced from the J.T. 13 claim northeasterly through the J. 14, 16, 24 and 29 claims. The conductor pinches and swells to a maximum of almost 300 metres, though the average is less.

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A second smaller conductor strikes at  $340^{\circ}$  to the west of the map area. This conductor is discontinuous locally, but has been traced for over 800 metres. To the south it comes in contact with the prementioned anomaly. At this juncture, the largest width of the conductors is obtained.

#### CONCLUSIONS & RECOMMENDATIONS

The J.T. and H.L. claim groups consist of eighty-eight mineral claims located on the west side of Forbes Hill in the Hanson Lake area, Yukon Territory. The adjoining claims to the north are the Lucky and Bear claims on Rambler Hill. The area has long been known for the occurrence of high grade silver mineralization at Galena and Keno Hill.

The claims are underlain by the Lower Schist unit of graphitic phyllites and phyllitic quartzites intruded by sills and lenses of metagabbro and metadiorite altered to greenstone. 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. The results are contained in Appendix I.

In July, 1981 geochemical soil sampling, ground VLF-EM, and

surface geology was done on the J.T. claim group focusing primarily on the highs depicted by the airborne survey. This work confirmed suspicion that the magnetic highs were due to greenstone intrusions, which contain minor magnetite on the upward slopes of Forbes Hill.

Ground VLF-EM results were Fraser Filtered. A large anomaly striking at  $10^{\circ}$  -  $20^{\circ}$  and more than 1,200 metres in length occurs on the upper plateau to the east of Hanson Lake. This linear anomaly is contained in the J.T. 13, 14, 16, 24 and 29 claims. The conductor pinches and swells to a maximum of almost 300 metres, though the average width would be much less. The anomaly although large, is very weak, which may in part be due to the thickness of overburden, which is believed to be up to ten metres and the presence of permafrost in most of the area.

A second weaker conductor, trending about  $340^{\circ}$  and located to the west of the prementioned conductor, occurs over a length of almost 800 metres before converging with the large conductor at the southern end.

At present the conductors appear to have the fingerprints of a fault and when considering the iron stain down hill and that much of the Keno Hill silver is fault related, the area would be expected to prove a worthwhile drill target.

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Geochemical data indicates two silver anomalies associated directly with this conductor, indicating drill targets.

It should be noted that the programmes conducted in 1968 by Silver Springs Mines Ltd. and in 1971 by Canada Reserve Oil and Gas Limited did indicate small geophysical conductors and that they recommended further work. Their grids appear to be slightly to the west of the currently located conductive zone.

A preliminary programme of diamond drilling is warranted to further test geophysical and geochemical anomalous zones and is hereby recommended. The initial programme would consist of 2,000 feet in 5 - 6 holes.

ESTIMATED COSTS OF PROGRAMME

1. Diamond Drilling, 2,000' @ \$40/ft.	\$ 80,000.00
2. Engineering, supervision, core logging, assaying, maps, reports, etc.	25,000.00
3. Transportation, communication, camps, etc.	15,000.00
Contingency @ 15%	<u>18,000.00</u>
	<u>\$ 138,000.00</u>

Respectfully submitted:

September 2, 1982

  
W.G. Timmins, P.Geol.

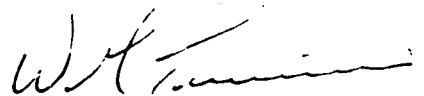
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CERTIFICATE

I, WILLIAM G. TIMMINS, maintaining offices at #203, #4 Parkdale Crescent N.W., Calgary, Alberta do hereby certify that:

1. I am a geologist having been practising my profession for eighteen 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 property or securities of Romex Resources Ltd., nor do I expect to receive any such interest.
5. This report is based on Government and private reports and maps, personal visits to the property during 1980 and July, 1981 and a review of results of the ground geological, geophysical, geochemical programme supervised by B.J. Wing, B.Sc., geologist, employed by W.G. Timmins Exploration & Development Ltd. during 1980 and 1981.

Dated September 2, 1982 at Calgary, Alberta



W.G. Timmins, P.Geol.

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APPENDIX I

## 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 2-300metres 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 syncline 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.

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## 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 no's 29-36 and has a lineation of about 140°. The two others appear to be much smaller and be in claim no's 25 and 26. These anomalies are too small for any meaningful lineation to be interpreted.

The two smaller EM anomalies appear to be remnants of the larger anomaly displaced by faulting or folding; supported by evidence that the high 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 intrusive.

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October 7, 1983

The Directors  
Romex Resources Ltd.  
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Burnaby, B.C.  
V5E 1J3

Gentlemen,

With reference to my report titled "Combined Geological, Geophysical & Geochemical Report on the J.T. and H.L. Claim Groups, Keno Hill Area" dated September 2, 1982, a Phase II programme which would be contingent upon results of the recommended diamond drilling programme and would consist of detailed drilling in favourable areas delineated by the initial programme, is recommended.

Estimated costs for Phase II drilling of approximately 3000 feet would be \$175,000.

Sincerely yours,



W.G. Timmins, P.Eng., P.Geol.

W.G. Timmins Exploration  
& Development Ltd.

/bk