

GEOLOGICAL REPORT
ON THE
PHELP CLAIM GROUP
REY LAKE AREA
NICOLA MINING DIVISION
BRITISH COLUMBIA
NTS 92I/7E & W 50° 21' N 120° 45' W
FOR

TELSTAR PETROLEUMS AND MINERALS INC

MINERAL REPORTS BRANCH ASSESSMENT REPORT NO. 8603
--

by
W. G. Timmins.

W.G. Timmins Exploration & Development Ltd.

November 28, 1980
Calgary, Alberta.

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SUMMARY

Telstar Petroleum and Minerals Inc. has acquired the Phelp claim group located on Rey Creek, about 30 kilometers north of the town of Merritt, British Columbia.

The property is underlain by Nicola volcanics possibly intruded by granodioritic intrusives providing a favourable environment for the emplacement of sulphide mineralization.

The property adjoins the Rey Lake property on which extensive drilling has outlined substantial tonnages of low grade copper and molybdenum mineralization.

A review of geophysical data over a portion of the claim indicates three anomalous zones and an intrusive volcanic contact, requiring geological follow-up.

An exploration programme consisting of detailed geological mapping, VLF-EM and magnetometer surveys, geochemical soil sampling surveys, and I.P. surveys is recommended at a total estimated cost of \$81,000.00.

November 28, 1980.

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INTRODUCTION

An examination of the Phelp claim group was carried out by the writer accompanied by Mr.J. Račavich on July7, 1980.

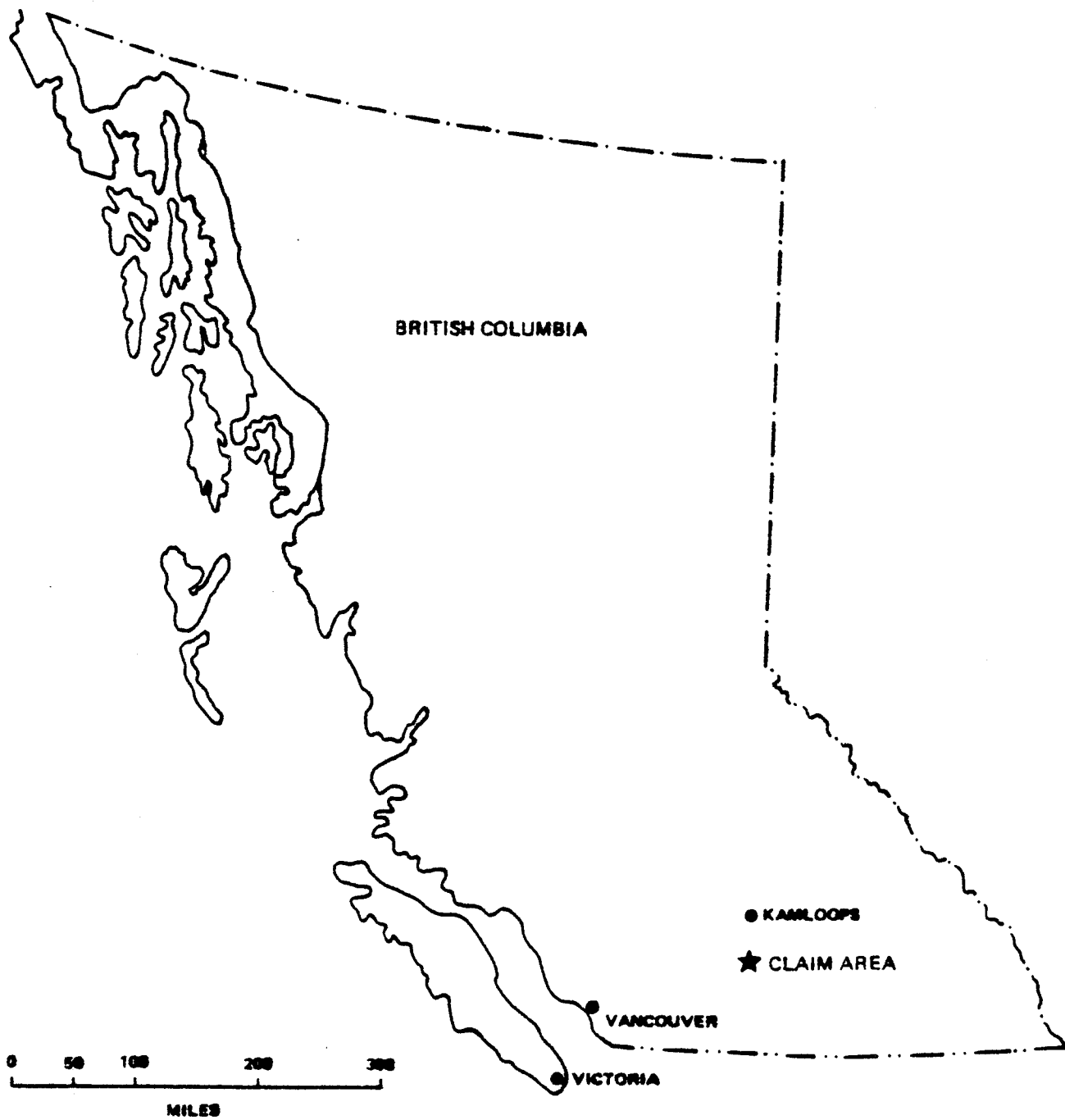
The purpose of the examination and report is to assess the geological potential of the property and to recommend an exploration programme to further evaluate the potential.

PROPERTY

The property consists of two located mineral claims each comprised of 20 units. The northwest portion of the Phelp 400 claim overlaps part of Gigantor claim group, and the southeast portion overlaps part of the Rey Lake Group. The northeast corner of the Phelp 200 claim also overlaps the Gigantor Group. Approximately 30 units and 5 fractional units appear to be in good standing.

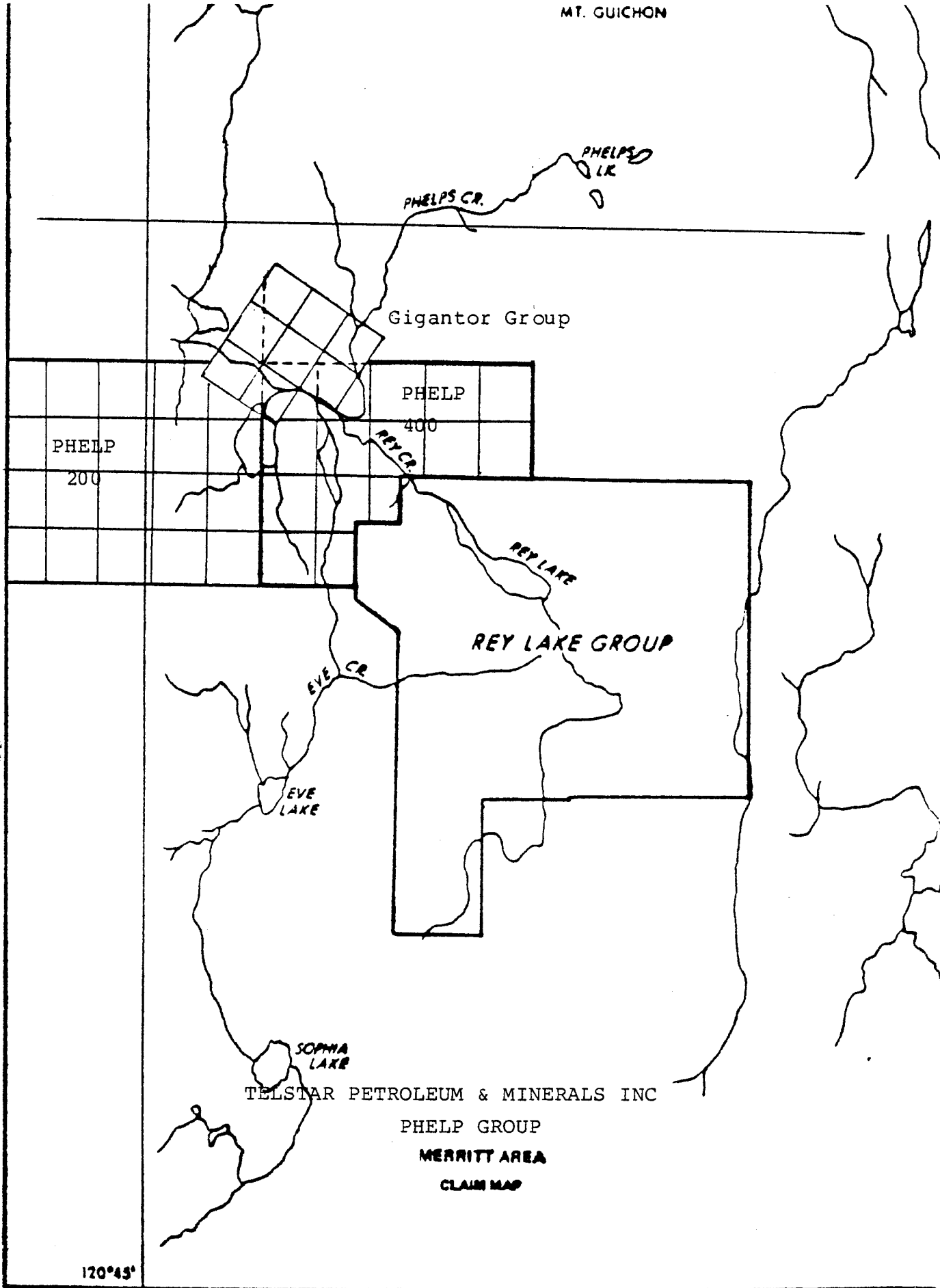
Details of the claims are as follows:

<u>Claim Name</u>	<u>No. units</u>	<u>Record No.</u>	<u>Expiry Date</u>
Phelp 400	20	832(4)	April , 1981
Phelp 200	20	834(4)	April , 1981.



TELSTAR PETROLEUM & MINERALS INC.
MERRITT AREA
INDEX MAP (B.C.)

MT. GUICHON



PHELP
200

PHELP
400

Gigantor Group

REY LAKE GROUP

REY LAKE

EVE CR.

EVE LAKE

SOPHIA LAKE

PHELPS LK

PHELPS CR.

TELSTAR PETROLEUM & MINERALS INC

PHELP GROUP

MERRITT AREA

CLAIM MAP

120°45'

LOCATION AND ACCESS

Approximate Co-ordinates: $50^{\circ} 20'N$, $120^{\circ} 44'W$.

The property is located on Rey Creek about 30 kilometers north of the town of Merritt in south central British Columbia. Merritt is situated about halfway between Princeton and Kamloops on highway No. 5 and can be reached by car over 360 kilometers of paved road from Vancouver.

Approximately 8 kilometers west of Merritt on highway 8, the Guichon Creek paved road is followed north for 25 kilometers to a point just south of Mamit Lake.

A gravel road is then followed south and east up Rey Creek for 6 kilometers to the property.

HISTORY

There is no known history of work on the Phelp claim group, however considerable work has been carried out on the Rey Lake showings about 1.6 kilometers to the south of the property.

Extensive percussion and diamond drilling by Asarco Inc., and Craigmont Mines Ltd. between 1972 and 1975 has indicated

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the presence of significant tonnages of low grade copper - molybdenum. A report by R.W. Phendler, P. Engineer dated November 30, 1979 states drill - indicated reserves as follows:

Class A. 23,689,000 tons averaging 0.23% Cu and 0.023% Mo.

Class B. 27,973,000 tons averaging 0.11% Cu and 0.014% Mo

Some ground magnetics and geochemical soil sampling has been carried out in the past, to the south of the Phelp group.

A programme of ground magnetometer and VLF-EM electromagnetic surveys was carried out over the northern half of the Phelp 400 claim in July - August 1980, by Columbia Geophysical Services Ltd.

TOPOGRAPHY

The claim group lies to the north of Swakum Mountain where elevations vary from 1400 meters to 1700 meters above sea level. The topography is gentle with rolling upland pasture with stands of poplar, fir and pine.

WATER

The claim group straddles Rey Creek. Several other small creeks on the property converge with Rey Creek, thus sufficient water is available for all phases of exploration and development.

CLIMATE

Winters are cold with moderate snowfall, whereas the summer months are warm to hot with low precipitation.

POWER

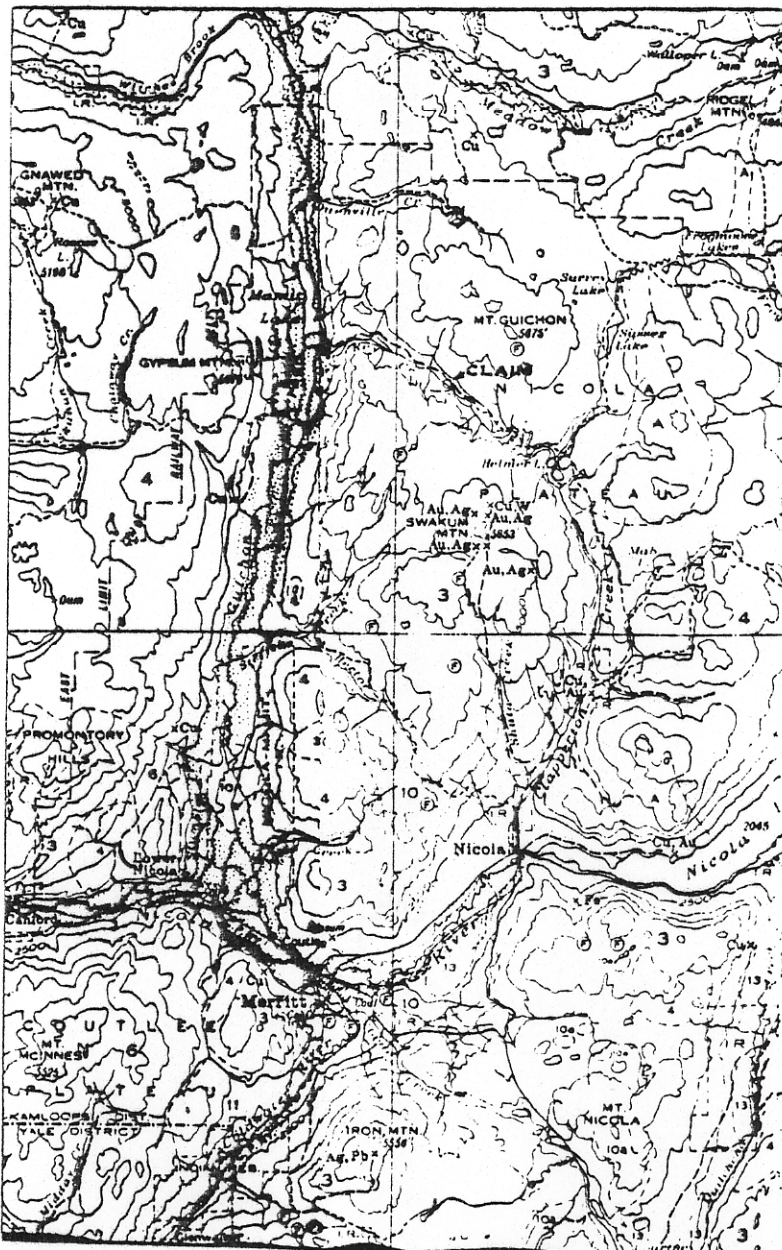
A hydro-electric power line passes through the property.

REGIONAL GEOLOGY

The area is underlain by andesitic volcanic rocks, tuffs and flows, with minor clastic sediments and limestone belonging to the Triassic Nicola Group.

The Nicola rocks form a belt lying between the Guichon batholith to the west and the central Nicola batholith to the east which appear to be genetically related, consisting of granodiorite and quartz diorite, of Jurassic age.

121°00' 50°30' 120°30' 50°30'



MESOZOIC
JURASSIC AND (?) LATER

4 COAST INTRUSION: granite, granodiorite, gabbro; 4a, iron Mask batholith; syenite, monzonite, diorite, gabbro; 4b; pyroxenite and peridotite. Probably not all of the same age, and may be in part post-lower cretaceous

TRIASSIC

UPPER TRIASSIC
NICOLA GROUP

3 Greenstone; andesite, basalt; agglomerate, breccia, tuff; minor arkifite, limestone, and conglomerate

PALEOZOIC
CARBONIFEROUS AND PERMIAN

CACHE CREEK GROUP (?)

2 Greenstone, generally slightly sheared. May include some Triassic rocks (3)
1A Argillite, quartzite, hornstone, limestone, sheared conglomerate, breccia, greenstone, and serpentine; 1A, limestone
A Chlorite schist, quartz-mica schist, amphibolite, and granitic intrusions; commonly gneissic and largely of Paleozoic age

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MERRITT AREA

GEOLOGICAL MAP

The Nicola rocks are intruded by several small plugs one of which is located at the east end of Rey Lake.

GEOLOGY OF THE PROPERTY.

The property appears to be underlain by volcanic tuffs and flows of the Nicola Group, possibly intruded by a granodioritic plug. Much of the property is overburden covered.

MINERALIZATION

There are no known occurrences of mineralization on the property, however extensive drilling on the Rey Lake property to the southeast has outlined substantial tonnages of low-grade copper and molybdenum in Nicola andesitic flows and tuffs. The mineralization encountered by drilling occurs as pyrite, chalcopyrite, molybdenite and magnetite in northerly and westerly trending faults and fractures. Sulphides are also present as fracture coatings and accompanying quartz veinlets and in intrusive breccia.

Narrow quartz-calcite veins containing values in gold, silver, copper, lead and zinc are reported to occur in outcrop exposed in Rey Creek, which dissects the Phelp claim group.

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RESULTS OF MAGNETOMETER SURVEY AND ELECTROMAGNETIC SURVEY ON
THE PHELP 400 CLAIM.

1. The magnetic results appear to delineate a contact zone between two geological horizons, higher magnetics on the western part of the property and magnetic low relief on the eastern part of the property, indicating a possible volcanic intrusive contact.

2. Anomaly A: Magnetic and Electromagnetic:
(located in the northwest part of the property).

The magnetic anomaly appears to reflect a NNW-SSE trending fault or shear and has direct correlation with VLF-EM anomaly A. A sharp, narrow dipole is characteristic of this anomaly, suggesting that it could be caused by a concentration of magnetite with pyrite and/or pyrrhotite, also due to the high degree of conductivity indicated by the VLF-EM results. (greater than +25 deg.)

Magnetic variation is from less than 1,000 gammas to greater than 2,400 gammas.

This zone indicates a good possibility of sulphide mineralization and should be followed up with geological mapping. Dependant

upon these results an Induced Polarization survey should be conducted over the anomalous zone.

Magnetic Anomaly B. (located in the northwest part of the property).

This anomaly appears to be caused by concentration of magnetite, due to the dipole characteristic of the magnetic results (less than 1,000 gammas to greater than 1,600 gammas). In addition the 1,000 gamma lineation delineates the contact between two geological horizons, therefore requires geological investigation.

This anomaly is considered of secondary importance due to the fact that there does not appear to be any direct correlation with the electromagnetic results.

VLF-EM Anomaly B: (located on the north boundary in the centre of the property).

This anomaly strikes north - south and extends into the property. It is very sharp with a high degree of conductivity up to +30 deg. The anomaly has no direct correlation with magnetics, but should be thoroughly investigated by geological mapping.

CONCLUSIONS AND RECOMMENDATIONS

Telstar Petroleum and Minerals Inc has recently acquired the Phelp claim group located approximately 30 km north of the town of Merritt, B.C.

The property is underlain by volcanic tuffs and flows of the Nicola Group, possibly intruded by granodioritic intrusives.

Significant tonnages of low-grade copper-molybdenum mineralization occur on the Rey Lake property adjoining the property to the south-east.

A geophysical programme, has indicated three anomalous zones on the Phelp 400 claim and gold-silver-lead-zinc-copper values have been reported to occur in outcrop on Rey Creek which dissects the property.

The property is situated in a favourable geological environment for emplacement of sulphide mineralization.

An exploration programme consisting of detailed geological mapping, completion of magnetometer and VLF-EM surveys over the Phelp 200 claim and the remainder of the Phelp 400 claim and geochemical soil sampling surveys is recommended. It is further recommended that I.P. surveys be carried out over

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anomalous areas delineated by the above surveys.

Further work consisting of diamond drilling will be dependant upon results of the recommended exploration programme.

ESTIMATED COSTS OF PROGRAMME

1. Geological mapping	\$10,000.00
2. Completion of magnetic survey and VLF-EM survey est. 60 km including survey grid	24,000.00
3. Geochemical soil sampling survey	15,000.00
4. I.P. survey over anomalous zones.	21,000.00
5. Assays, samples, communications associated field cost etc.	3,000.00
6. Engineering, supervision, reports etc...	<u>8,000.00</u>
Total estimated cost	\$81,000.00

Respectfully submitted,



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

November 28, 1980.

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REFERENCES

- Geological Survey of Canada, Map 886A, 1947

- Report on the Rey Lake Copper - Molybdenum
Property by R.W. Phendler, P. Engineer., November 30,
1979.

- Assessment reports by N.B. Vollo.

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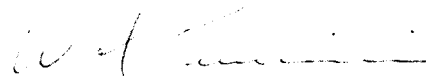
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CERTIFICATE

I, WILLIAM G. TIMMINS, maintaining offices at 201-909- 5th 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 property or securities of Telstar Petroleum & Minerals Inc. nor do I expect to receive any such interest.
5. This report is based on a study of government reports, private reports, and maps, a review of assessment work files, and a visit to the property on July 7, 1980.

Dated at Calgary Alberta this 28th day of Nivember, 1980.



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

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Columbia geophysical supplies Ltd.

7050 HALLIGAN STREET, BURNABY, B.C. V5E 1R6

Phone: (604) 526-1732
or (604) 687-6671

CERTIFICATE OF QUALIFICATIONS

I, Tom Rolston, of 7050 Halligan Street, Burnaby, B.C. have actively been engaged in my profession since 1953 and state as follows:

1. 11 years with the R.C.A.F. as Instrument and Electronic Technician with crew supervisory capacity in various electronic and instrumentation systems.
2. Two years with Kerr-Addison Mines Ltd. as Electronic Technician servicing, repairing and maintaining various type of geophysical instruments, with two seasons as Field Supervisor and Geophysical Instrument Operator in mining exploration, including airborne and ground geophysical surveys, geochemical surveys, geophysical and geochemical drafting and mapping.
3. 10 years with Geotronics Surveys Ltd. as Field Supervisor of geophysical and geochemical surveys and Instrument Operator of various geophysical instruments such as airborne and ground systems magnetometer, electromagnetic, gravity meter, self-potential meter, scintillometer and induced polarization.
4. The past 15 years contracting geophysical survey in close association with mining engineers for various mining companies.
5. President and Manager of Columbia Geophysical Services Ltd.

DATED at Burnaby, British Columbia this 28 day of *NOVEMBER* 19 80.



Tom Rolston, Geophysical Operator and Project Geophysicist
For: Columbia Geophysical Services Ltd.

INSTRUMENTATION AND THEORY:

VLF-EM Unit:

A VLF-EM receiver, Model 27, manufactured by Sabre Electronic Instruments Ltd. of Burnaby, B.C. was used for the VLF-EM survey. This instrument is designed to measure the electromagnetic component of the very low frequency field (VLF), transmitted at 18.6 KHz, from Seattle, Washington or at 17.8 KHz from Cutler, Maine.

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 structure and in 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 and, thus, VLF-EM preferably should not be interpreted without a good geological knowledge of the property and/or other geophysical and geochemical surveys.

MAGNETOMETER:

The magnetic survey was carried out using a portable vertical component, Model G-110 fluxgate magnetometer manufactured by Sabre Electronic Instruments Ltd. of Burnaby, B.C. This is a visual-null type instrument using a digital dial read-out with a range of 100,000 gammas and a reading accuracy of 10 gammas. The G-110 has a temperature co-efficient of 2 gammas per degree centigrade.

This instrument measures the vertical component of the terrestrial magnetic field by electronically measuring the degree of magnetic saturation in a vertically oriented coil of fine wire. The usual procedure involves reading the instrument at a 'check station' and then conducting a traverse. The instrument is then returned to the check station and a reading taken. Any difference between the two check station readings which may be due to instrument drift or diurnal magnetic variation is then divided amongst the traverse stations as a correction.

Only two commonly occurring minerals are strongly magnetic; magnetite and pyrrhotite. Hence, magnetic surveys 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 have different background amounts of magnetite and/or pyrrhotite.

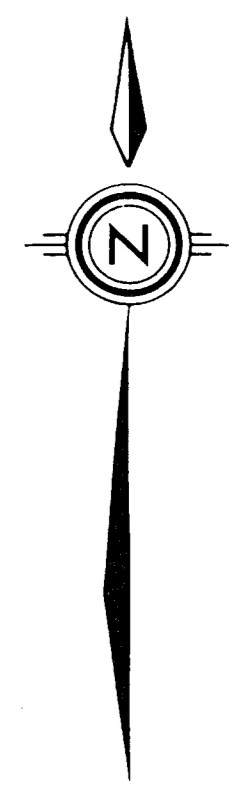
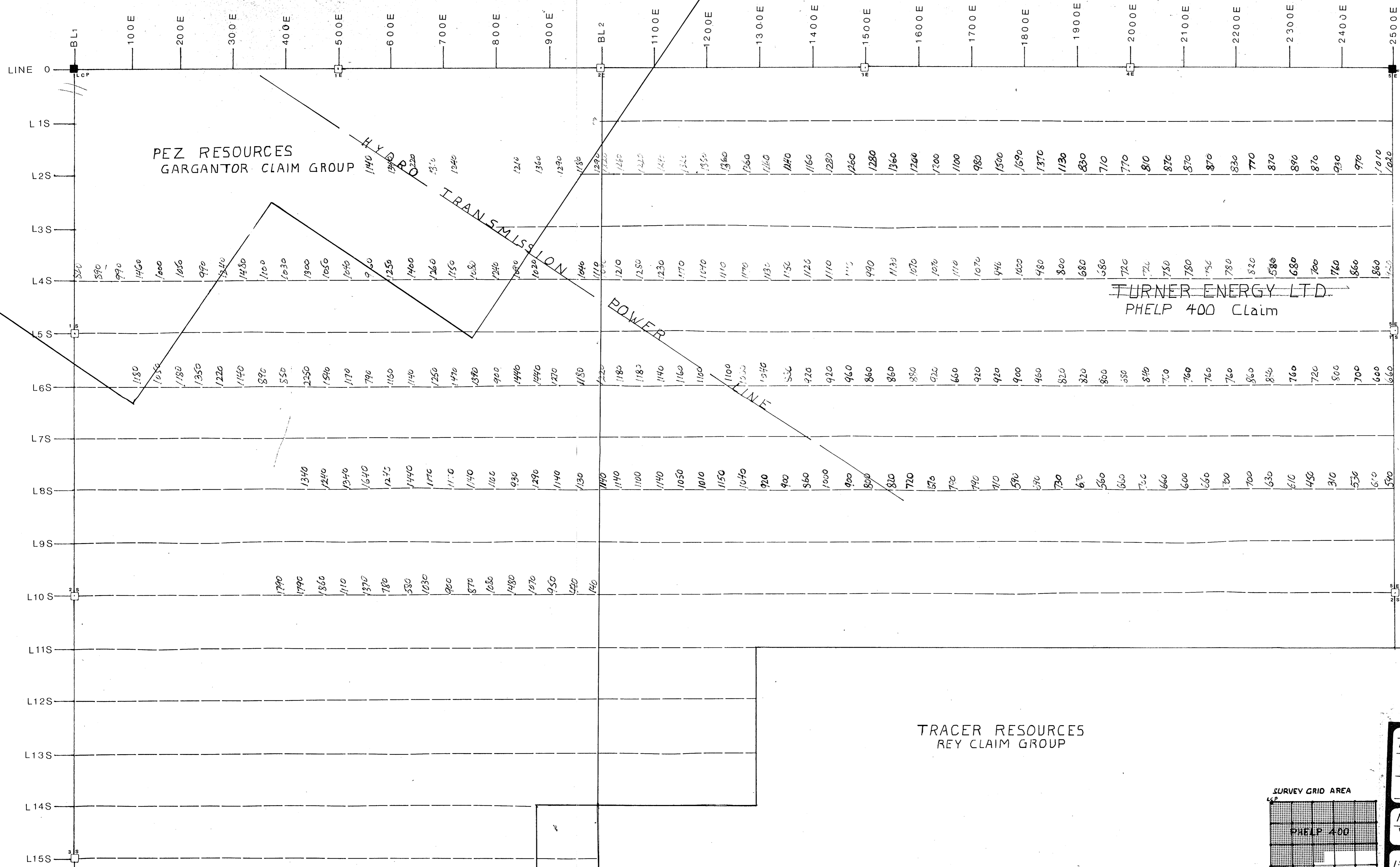
COST BREAKDOWN:

Phelps Group

July 20, 1980 to August 20, 1980

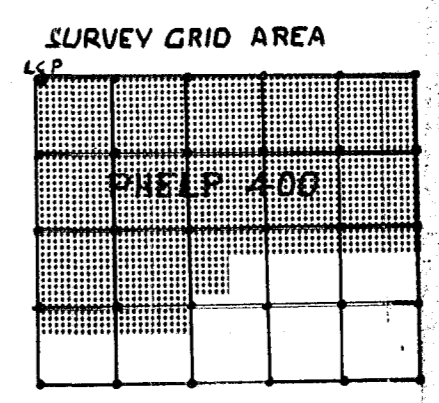
28 L Km., Grid @ \$50.00/Km	\$ 1,400.00
25 L Km. VLF E.M. @ \$200.00/Km	5,000.00
13 L Km. Magnetometer @ \$200.00/Km	2,600.00
	<hr/>
	\$ 9,000.00
Engineering and Geophysical Reports	3,000.00
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Total	<u><u>\$ 12,000.00</u></u>

A handwritten signature in black ink, appearing to be "R. R. R.", is located below the cost breakdown table.



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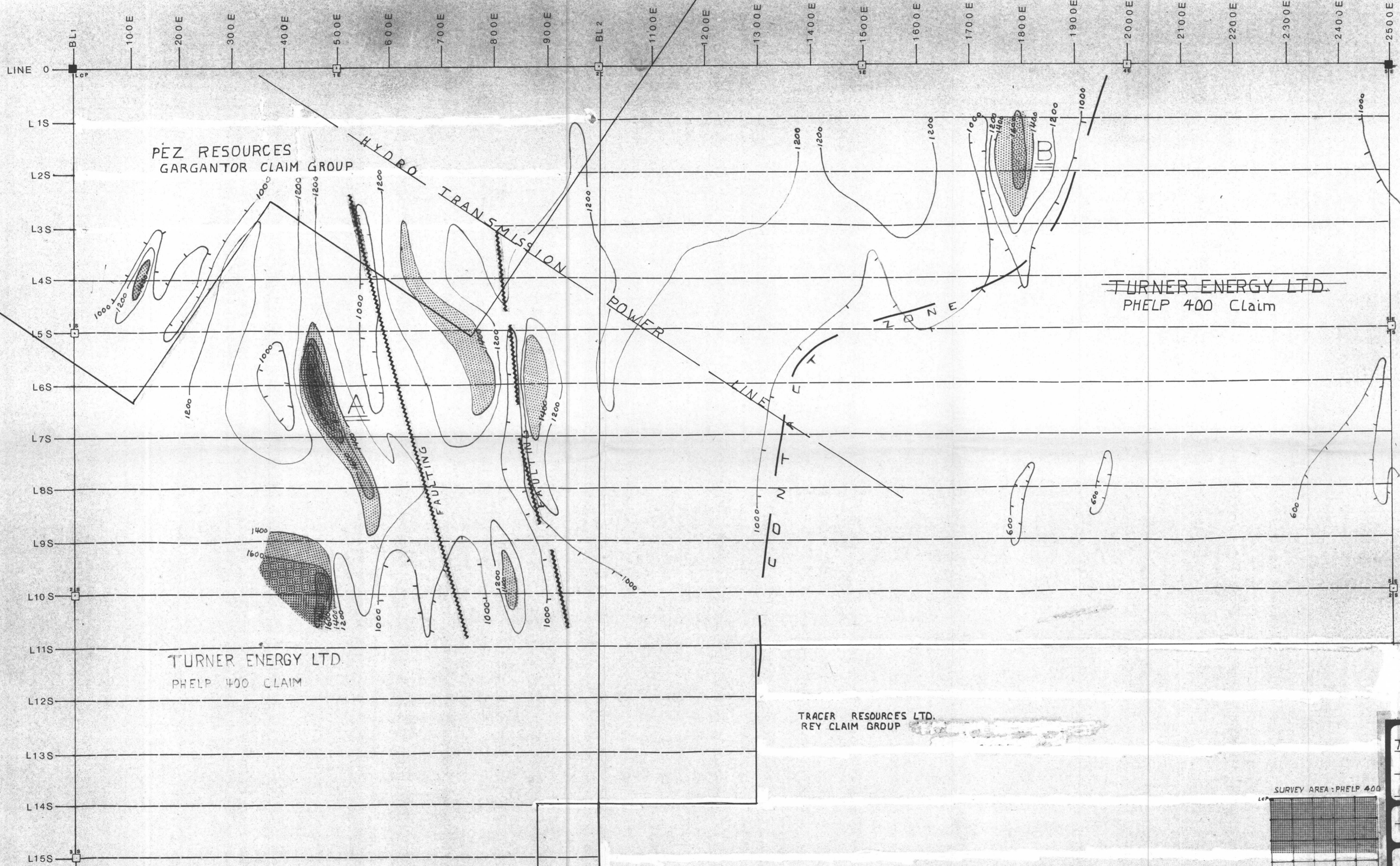


TELSTAR PETROLEUMS & MINERALS INC.
PHELP 400 CLAIM NICOLA M.D. B.O.

MAGNETIC DATA IN GAMMAS
type of survey

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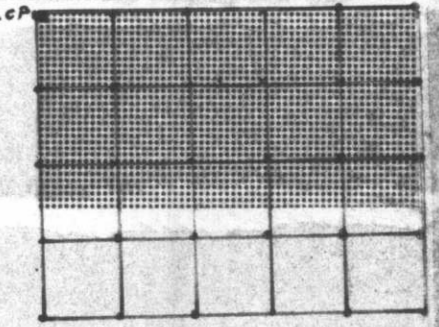


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MINERAL RESOURCES BRANCH
ASSESSMENT REPORT

NO. **8603**

SURVEY AREA: PHELP 400

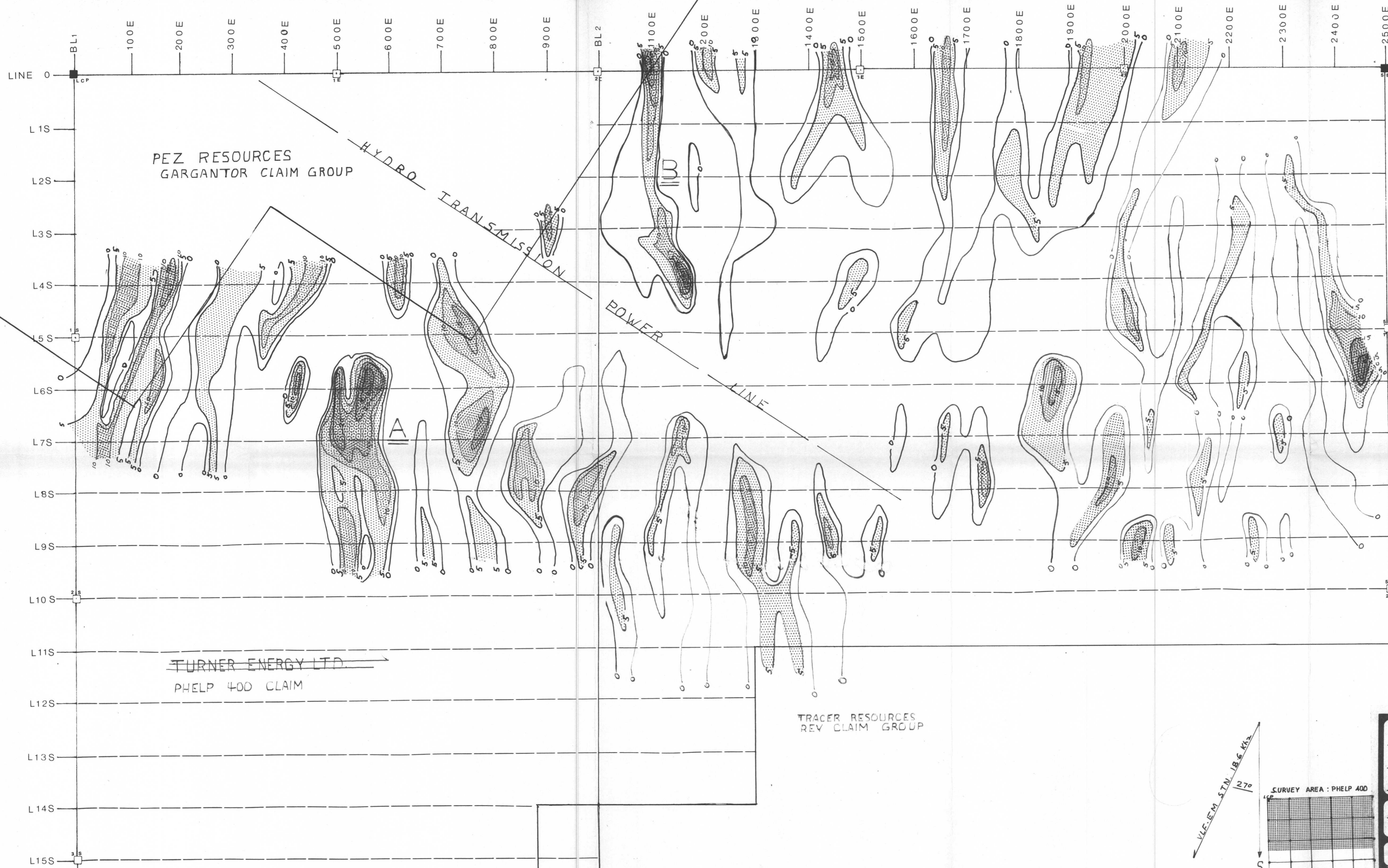


TELSTAR PETROLEUMS - MINERALS INC.
 PHELP 400 Claim, NICOLA M.D. B.C.

ISOMAGNETIC MAP
 type of survey
CONTOUR INTERVAL = 200 Gamma

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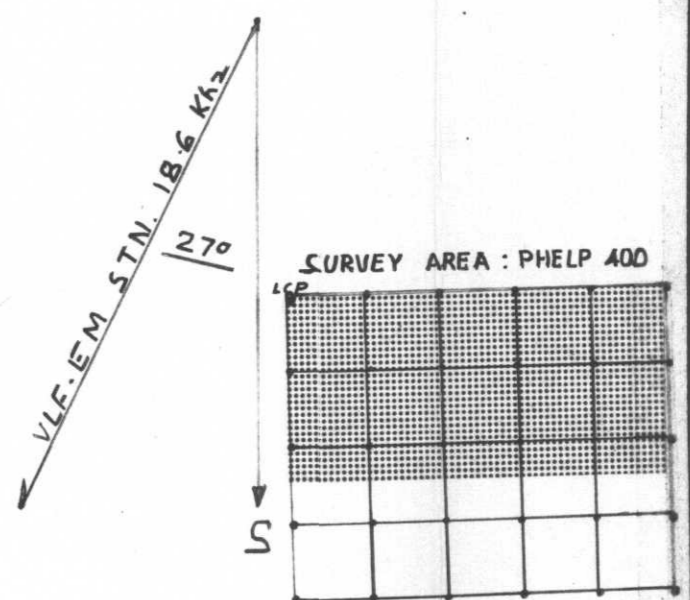
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MINERAL RESOURCES BRANCH
ASSESSMENT REPORT

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TURNER ENERGY LTD.
PHELP 400 CLAIM

TRACER RESOURCES
REV CLAIM GROUP



TELSTAR PETROLEUM + MINERALS				
PHELP 400 CLAIM NICOLA M.D. B.C.				
VLF-ELECTRO MAGNETIC SURVEY				
type of survey				
Scale 1:4000	date NOV 80	job no. 8034	sheet no. 3	drawn by TWR
COLUMBIA GEOPHYSICAL SERVICES LTD.				