

Geophysical Survey

(VLF-EM and Magnetometer)

Title: TOUGH OAKS PROPERTY

Claims: Tough Oaks 2-12, Bwinaby 1-6  
Glynnehill 1-4, Golden Toad

Location: Broken Creek, Osoyoos M.D.  
82 E 5W  
49° 27' N 119° 57' W

By: L. Sookochoff, P.Eng.  
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For (Owner & Operator) Tricor Resources Ltd.  
1620-701 West Georgia  
Vancouver, B.C.

Dates of Work: June 23, 1980 - August 21, 1980

Date of Report: October 3, 1980

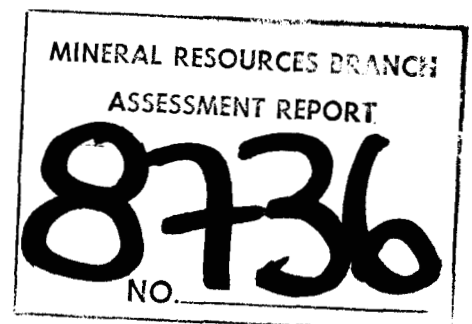


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Geophysical Report  
on the  
TOUGH OAKS PROPERTY  
for  
TRICOR RESOURCES LTD.

INTRODUCTION

During July, 1980, a geophysical survey was carried out on the Tough Oaks Property. The purpose of which was to delineate areas of potential sub surface mineralization and to provide correlative information to geochemical and geological results prior to selecting prime target areas for testing by diamond drilling.

The following report is based on information given to the writer from the results of the completed surveys.

PROPERTY

The property is comprised of 22 contiguous located claims staked under the two post system. Particulars are as follows:

<u>Claim Name</u>	<u>Record No.</u>	<u>Expiry Date</u>
Tough Oaks 2-12	8995-9005	September 10, 1980
Bwinaby 1-6	17521-17526	October 11, 1980
Glynnehill 1-4	17764-17766	October 13, 1980
Golden Toad	8994	September 10, 1980

LOCATION AND ACCESS

The property is located near the headwaters of Broken Creek, a westerly flowing tributary of Hedley Creek. Hedley is 14 km to the southwest.

Access is from Hedley by secondary four wheel drive road - approximately 10 km northward along Hedley Creek, five km westward and two km northward to the property. An alternate route is from the Apex Ski Hill parking lot northward via Nickel Plate Lake for approximately 10 km. The Apex route is also a four wheel drive access road.

### TOPOGRAPHY, WATER AND POWER

The claims cover a low to moderate sloped wooded area with elevations ranging up to 2,000 meters and a maximum relief of 150 meters.

Sufficient water for all exploration purposes would be available from Broken Creek or other water courses covered by the claim group.

A power line parallels with Similkameen River and the No. 3 Highway some 14 km to the southwest.

### TRANSPORTATION AND SUPPLIES

The property is within 5 km of the Apex Ski Hill road which is accessible by all-weather secondary road from the South Trans Provincial Highway, 41 km east of Hedley. Hedley is 331 km east of Vancouver.

Most supplies would be obtainable at Princeton 38 km west of Hedley.

## HISTORY

The history of the immediate area is centered around the gold deposits on Nickel Plate Mountain all within five km northeast of Hedley. The Nickel Plate system of orebodies was discovered in 1898 with production commencing in 1904. Operations were shut down in 1930 to 1934 and again in 1955. To the end of 1954 total production from all operations on Nickel Plate Mountain was approximately one and one-half million ounces of gold. The ore average was .45 oz Au/ton.

Nickel Plate Mountain is 12 km southwest of the Tough Oaks property.

The Hedley area is presently being re-examined and explored. A Vancouver based mining company is currently evaluating the former ore deposits of Nickel Plate Mountain. A percussion drill program and sampling are reportedly in progress.

The Tough Oaks claim group is adjacent to a group of local crown granted claims which have been worked periodically since the early 1900's.

Former work on the property consisted of trenching and blasting on various mineral showings. Umex carried out a local soil sample survey over the Wheelbarrow showing. The results are not available to the writer.

Work recently carried out by Tricor Resources included a magnetometer and VLF-EM survey, the results of which are presented on the accompanying maps.

GEOLOGY

The property is within an area generally underlain by Triassic or earlier sedimentary rocks enveloped by a batholith and/or intruded by stocks and plugs of the Coast Intrusives.

At Nickel Plate Mountain and more specifically at the Nickel Plate Mine, the rocks are composed of a thick pile of Triassic limestone, limy argillite and quartzite, resting on a flattish floor of granodiorite. A host of porphyritic sills and dykes of gabbro-diorite composition is associated with the sediments. The Bradshaw Fault a steep westerly dipping thrust fault from which flatter thrust slices angle up to the east through the formations, trends northeasterly south of Nickel Plate Mountain



The ore bodies at Nickel Plate occur in a sedimentary strata of light grey very fine-grained quartzites with included small amounts of carbonate. Occasional narrow bands of impure limestone also occur. South of the Nickel Plate fault, the beds include metamorphic minerals of garnet, epidote and other metamorphic silicates.

The contact metamorphic deposits "consists of gold-bearing arsenopyrite in a gangue of metamorphic silicates and occur in a group of sedimentary rocks amongst which a nearly equal volume of igneous rock has been intruded in the form of sheets.

The five irregular sheet-like "ore bodies occur in an elongated zone "350 feet horizontally, 215 feet thick, and 2,000 feet long approximately."

MINERALIZATION

On the Tough Oaks property mineralization consists of arsenopyrite and pyrite occurring within quartz and/or silicified zones within a formation of cherts, quartzites, pelitic sediments, and narrow limestone units.

Two significant showings within this formation are the Creek and the Wheelbarrow showings. Descriptions of the showings as indicated on the accompanying map are as follows:

Creek Show

Exposed in a pit adjacent to and west of Broken Creek. The zone is of quartz veins less than 2 cm wide random and oriented at  $050^{\circ}$  in a vertical dipping zone hosted by a grey to reddish quartzite. Mineralization consists of occasional blebs tetrahedrite with rare disseminations of arsenopyrite within the quartz veins.

A select sample of quartz taken by the writer from the zone assayed .01 oz. Ag/ton and .001 oz. Au/ton.

Reported assays from this zone returned up to .236 oz Au/ton.

Wheelbarrow Show

Appears to be on strike 250 meters southwest of the Creek show. Consists of a siliceous and narrow quartz vein zone trending at  $060^{\circ}$  and dipping  $80^{\circ}$  E. Host rock is a black quartzite and chert with silicified argillite with bedding at  $45^{\circ}$  E.

Mineralization is of fine grained and stringers pyrrhotite with rare disseminated arsenopyrite. Samples taken by the writer from the zone returned:

<u>Width</u>	<u>Assay</u>	
	<u>oz Ag/ton</u>	<u>oz. Au/ton</u>
2 meters	.03	.046
Grab sample (quartz veins in dark grey quartzite)	.03	.114

Other showings include:

1. A pit at 225 meters SW of the Wheelbarrow show excavated on a lightly siliceous limonite stained zone within argillite and greenstone. A sample of siliceous and limonitic material from the pit returned .01 oz. Ag/ton and .001 oz. Ag/ton.

A smaller pit within 25 meters exposes an argillite-tonalite contact with associated epidote alteration and silicification. The tonalite is medium grained allotriomorphic textured with predominantly biotite as the mafic mineral.

2. Sitting Rock showing east of Broken Creek. This zone was not included in the recent geophysical surveys. The showing occurs within calcareous units with a course grained limestone exposed in association with a skarn zone. A relatively sharp irregular limestone-skarn contact is exposed. The skarn is dark brown with included calc-silicate minerals and pockets of garnet. Lenses and contact concordant skarn stringers occur within the unaltered limestone. As adjacent pit exposes a quartzite with rare blebs of chalcopyrite. A sample of skarn material returned an assay of .01% Cu, .004 oz. Au/ton and .48% W.

## VLF-EM AND MAGNETOMETER SURVEY

### Introduction

A Model G-110 flux gate magnetometer was utilized in the survey. The magnetometer was manufactured by Geotronics Instruments of Vancouver, B.C.

The purpose of utilizing a magnetometer in a field survey is to detect any magnetic minerals such as magnetite and pyrrhotite which may be associated with economic mineralization.

The magnetometer survey results can also be utilized as an aid in geological mapping, as varying rock types contain variable amounts of magnetic minerals. Major structures as well can be determined from magnetic results as contained magnetic minerals may be decomposed during structural formation.

A Sabre Model 27 VLF-EM Receiver instrument manufactured by Sabre Electronics of Vancouver, B.C. was utilized in the VLF-EM survey.

The VLF-EM method utilizes an electromagnetic field transmitted in the 15-25 KHz range. The signals are propagated with the magnetic component of the field being horizontal in undisturbed areas.

Conductivity contrasts in the earth create secondary fields, producing a vertical component and changes in the field strength or amplitude. These conductive areas may be located, and to a degree, evaluated by measuring the various parameters of this electromagnetic field.

The VLF-EM receiver measures the distortion imposed by the secondary field on the primary magnetic field. However as the VLF-EM utilizes a frequency which is conducive to locating zones of much lower conductivity, the method can be useful as an aid in the geological interpretation of the survey area.

In this case the primary field is produced by a transmitter located in Seattle Wash. which is transmitting at 18.6 KHz.

### GEOPHYSICAL SURVEY

Within the central portion of the property a base line was established so as the survey would cover the known showings. The baseline was oriented at  $070^{\circ}$  with cross lines at  $340^{\circ}$  and at 120 meter intervals. The cross lines were designated east and west of a common line to the claim line. The stations on the base line and cross lines were at 30 meter intervals and were flagged and marked according to grid co-ordinates.

Magnetometer and EM readings were taken at each 30 meter interval as indicated on the accompanying maps 2 and 3.

A total 2.5 line km of EM survey and 2.5 line km of magnetomer survey were completed.

In processing the VLF-EM results, the readings were "Fraser filtered". This process essentially exposes conductive areas that may not be obvious in unfiltered data. The conductive zones are expressed as peaks in positive results.

The field results of the magnetic survey were statistically analyzed with the mean background value determined to be 53,150 gammas. This value was subtracted from the field readings. The result was a negative and a positive value from a mean value of 0 gammas. These resulting values were contoured on a 150 gamma interval.

## SURVEY RESULTS

### VLF-EM

The VLF-EM survey indicated a central northeast trending anomaly from the westernmost pit to the northwest of the Creek and Wheelbarrow showings. An anomalous zone trends north westward from the mid portion of the central anomaly and parallels Broken Creek to the south. An intersecting structure is thus indicated.

### Magnetometer

The magnetometer results indicate a general "low" correlating with the indicated E.M. fault intersection. The Creek show occurs along the eastern periphery of the "low" with the Wheelbarrow show within an embayment of the southern periphery.

CONCLUSIONS

1. Favorable areas for mineralization as interpreted from the results of the magnetometer survey appear to be within a magnetic "low".
2. Structural control for mineralization as indicated initially from the VLF-EM survey may be associated with intersecting fault structures.

RECOMMENDATIONS

Additional geophysical in addition to geochemical and geological surveys should be carried out to obtain more definitive correlative information as to other prime localized mineral localities.

Respectfully submitted,



Laurence Sookochoff, P.Eng.  
Consulting Geologist

October 3, 1980  
Vancouver, B.C.



REFERENCES

- BARR, D.A. - Gold in the Canadian Cordillera, C.I.M.  
Bulletin, June, 1980 p.p. 59-76
- BOSTOCK, H.S. - Geology and Ore Deposits of Nickel Plate  
Mountain, Hedley, British Columbia. G.S.C.  
Summary Report 1929 A

CERTIFICATE

I, Laurence Sookochoff, of the City of Vancouver, in the Province of British Columbia, do hereby certify:

That I am a Consulting Geologist with the firm of Pan-American Consultants Ltd. of 2602-1055 West Georgia Street, Vancouver, B.C.

I further certify that:

1. I am a graduate of the University of British Columbia (1966) and hold a B.Sc. degree in Geology.
2. I have been practising my profession for the past
3. I am registered with the Association of Professional Engineers of British Columbia.
4. The information for the accompanying report is based on pertinent publications as cited under references as well as from the results of field work for the EM & Mag. survey as supplied to the writer.
5. Neither I or Pan-American has direct or indirect interest in the property described herein, or in the securities of Tricor Resources Ltd.

Laurence Sookochoff, P.Eng.  
Consulting Geologist

October 3, 1980  
Vancouver, B.C.



QUALIFICATIONS OF FIELD PERSONNEL

Don A. Hunchuk

20 years with McIlhaney & Co. as instrument man, including geophysical and geochemical surveys. Four years as an independent operator in the mineral exploration industry

Garth E. Johnson

20 years with McIlhaney & Co. as an instrument man, including geophysical and geochemical surveys. Five years as an independent operator in the mineral exploration industry through G & P Exploration

STATEMENT OF EXPENDITURES

1980 Assessment Report

Geophysical Survey - June 1980

TOUGH OAKS PROPERTY

Team Exploration Management

E.M. Survey, magnetometer survey

and grid July 13, 19, 1980

(paid out on contract) \$5,300

Data compilation and rough drafting

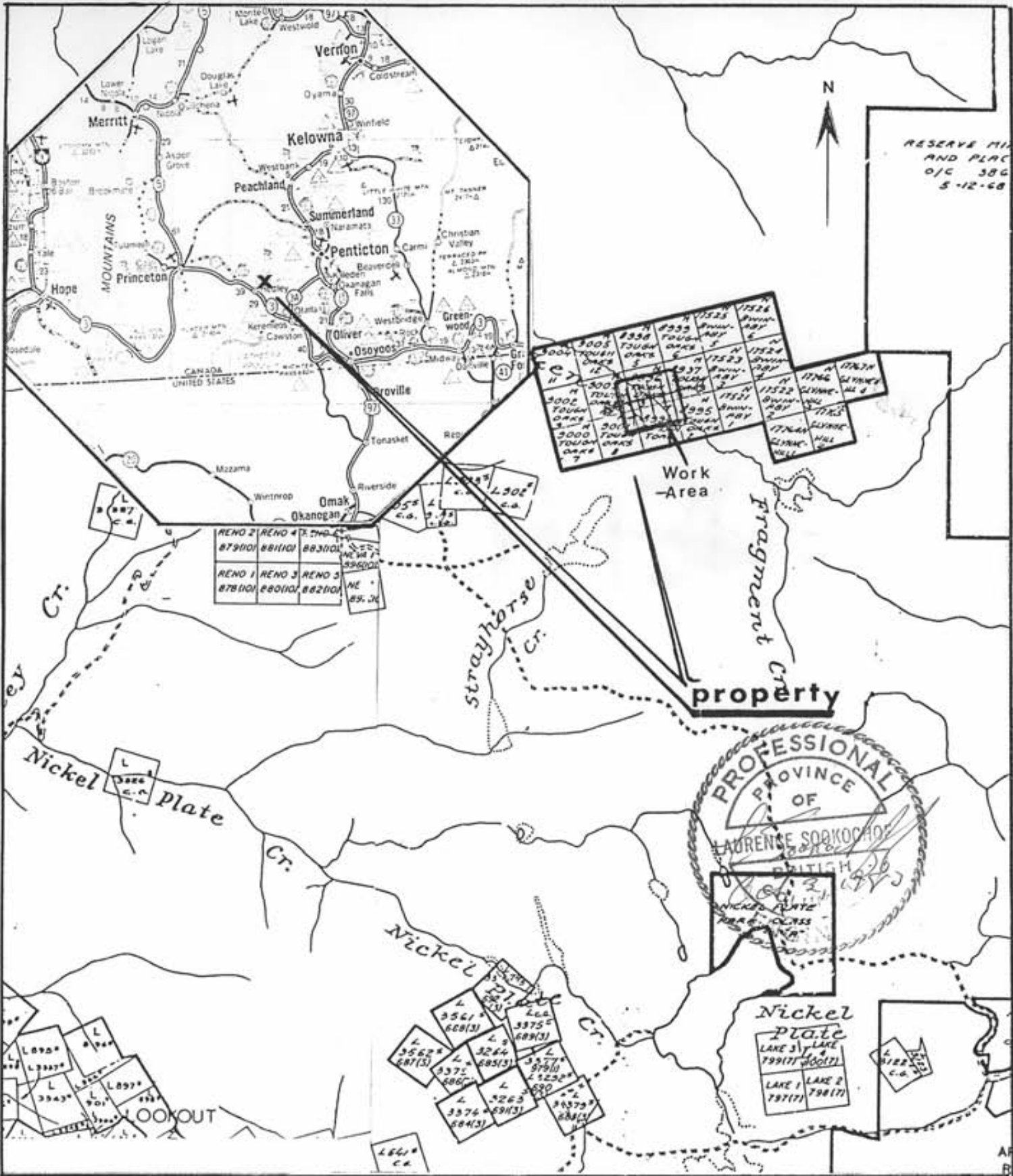
L. Sookochoff 8 hours at \$50 per hour 400

Report on the Geophysical Survey

by L. Sookochoff dated October 3, 1980 1,100

Supervision - A. Simpson

June 27 - July 23 700\$7,500

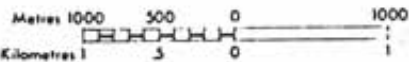


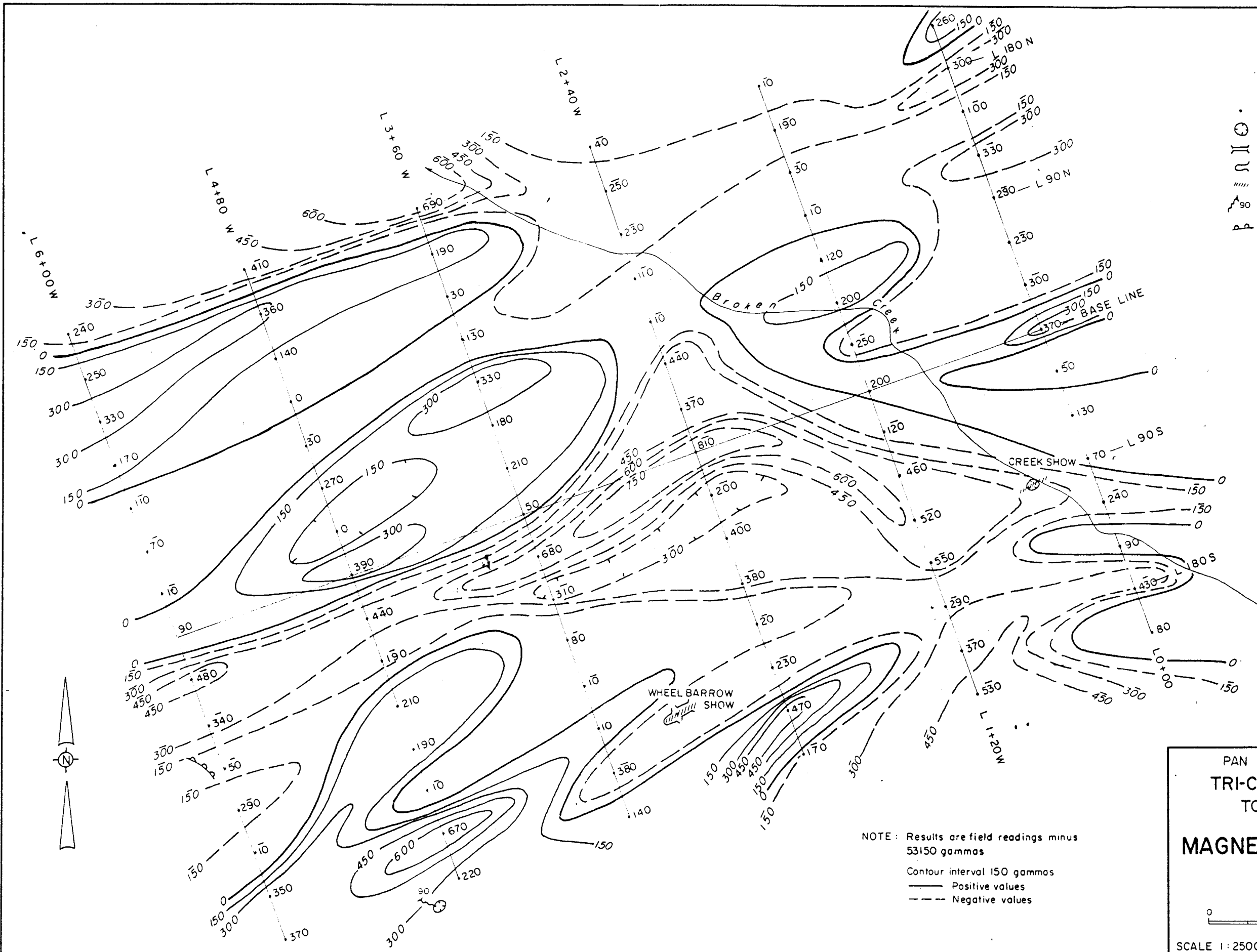
# TRICOR RESOURCES LTD.

Tough Oaks Property

Osoyoos M.D.

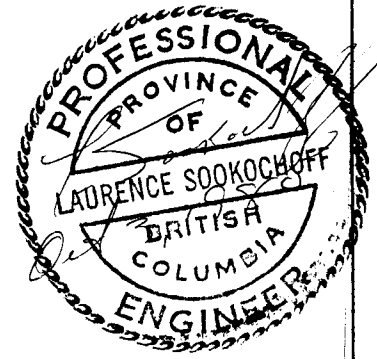
## LOCATION & CLAIM MAP





- LEGEND**
- Survey station
  - Pit
  - ⊖ Trench
  - Open cut
  - ▨ Mineralized zone
  - ∠ 90 Fracture
  - ⊓ Rock bluff

MINERAL RESOURCES BRANCH  
 ASSESSMENT REPORT  
**8736**  
 NO.

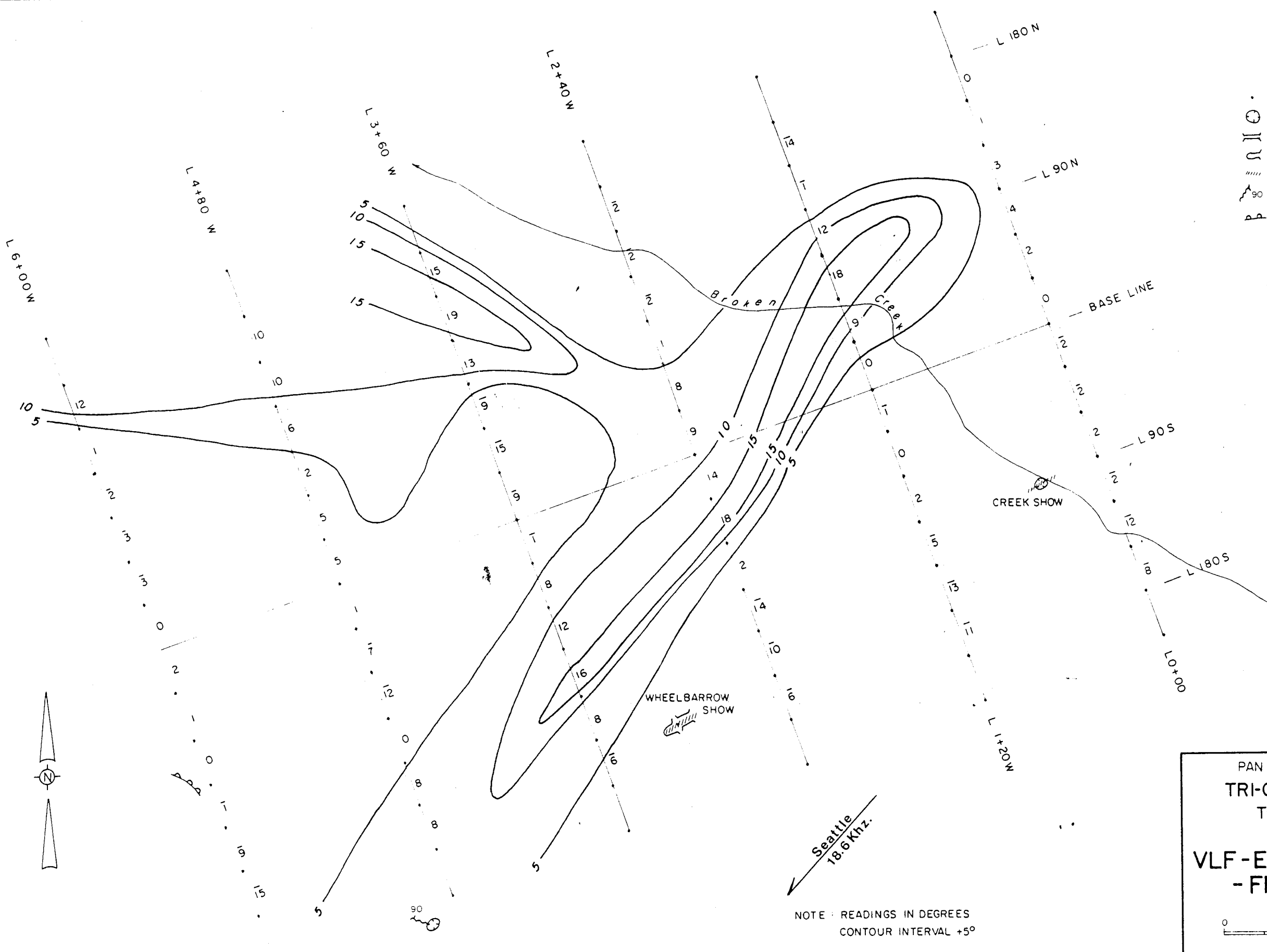


NOTE: Results are field readings minus 53150 gammas  
 Contour interval 150 gammas  
 — Positive values  
 - - - Negative values

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 TOUGH OAKS PROPERTY  
 Osoyoos M.D.  
**MAGNETOMETER SURVEY RESULTS**

0 50 100 150 metres  
 SCALE 1:2500  
 AUG. 1980

To accompany Geophysical Survey Report - L. Sookochoff P.E., Oct. 3, 1980



- LEGEND**
- Survey station
  - Pit
  - || Trench
  - Open cut
  - //// Mineralized zone
  - ∠ Fracture
  - ▬ Rock bluff

MINERAL RESOURCES BRANCH  
 ASSESSMENT REPORT  
**8736**  
 NO.



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 TRI-COR RESOURCES LTD.  
 TOUGH OAKES PROPERTY  
 Osoyoos M.D.  
**VLF-EM SURVEY RESULTS**  
**- FRASER FILTERED -**

0 50 100 150 metres  
 SCALE 1:2500  
 AUG. 1980

NOTE: READINGS IN DEGREES  
 CONTOUR INTERVAL +5°

To accompany Geophysical Survey Report - L. Sookochoff P. Eng Oct. 3, 1980