

531

TABLE OF CONTENTS

	Page
The Property	1
Purposes of the Surveys	1
Surveys Control	2
Dates & Personnel	2
Results of the Survey	3
Costs	3
Notes on the Geology	3
Notes on Geochemical Survey	3
Certificate	Back Page

Maps in pocket

- 1 Soil Survey Har 1 - Har 8 " "
- 2 Geology parts of Har 1, 2 & 4 " "
- 3 Magnette Survey Har 1 - Har 8 " "
- 4 " " parts of Har 1, " "

THE PROPERTY, LOCATION, ETC.

The group consists of eight full mineral claims, being H.A.R. 1 to 8 inclusive, registration numbers 4922 to 4929 inclusive. They comprise about 400 acres.

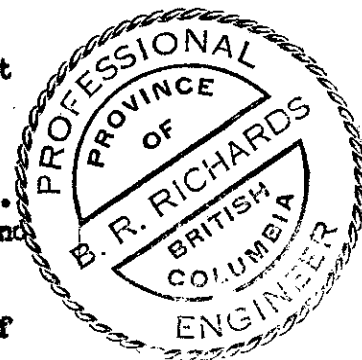
The property is located near the Craigmont Mine, about 2 miles north west of Lower Nicola, in the Nicola Mining Division. The claims are plotted on B. C. claims map 6AM. The property is accessible by "jeep road" from the Promontory Hill Forestry road. Total distance from Merritt is about 8 miles.

PURPOSES OF THE SURVEYS:

The property is overlain by sand, gravel and clay over about 85% of its area. Thus magnetics prove helpful in differentiating rock types and interpreting structure.

Also since copper mineralization is often associated with iron oxides (hematite and magnetite) in the area, magnetic anomalies justify additional exploration. In the case of this operation the following sequence was used:

- 1 - An overall magnetic survey on crosslines 300 feet apart, with readings 100 feet apart on the crosslines.
- 2 - Soil samples were taken over the grid at 200 foot intervals and checked for copper content using the rubcanic method.
- 3 - A selective area was chosen for a detailed magnetic survey on crosslines 200 feet apart. The 39E crossline was used as the baseline and new lines cut at 200 foot intervals for a distance of 400 feet on either side of this baseline. Thus the survey covered an area of 2500 feet long and 800 feet wide.



- 4 - The geology was mapped over the second grid.
- 5 - A spontaneous polarization (or Self Potential) survey was performed by Geophysical Explorations, Ltd., over this second grid.

SURVEYS CONTROL:

The main baseline extends from 6W on the west boundary to 50E on the east boundary (a distance of 5600 feet) at an azimuth of 98 degrees. The crosslines cut these at an azimuth of 348 degrees.

For the second, more detailed survey, as noted above, the 39E crossline was used as a baseline and crosslines at 200 foot intervals were cut to a distance of 400 feet on either side; readings were taken every 100 feet on these crosslines. These same grids were used for soil sampling and S.P. surveys which followed.

DATES AND PERSONNEL

The line cutting, soil sampling and magnetic surveys were carried on simultaneously between August 19 and October 2, 1963.

Those employed in the work were:

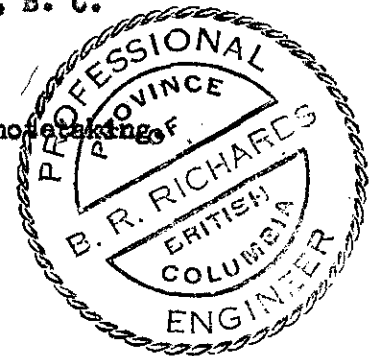
B. R. Richards, 3243 Matapan Crescent, Vancouver, B. C.
Engineer and Magnetometer operator.

W. McClelland, Merritt, B. C.
Line cutting, chaining, taking soil samples and notetaking.

Colin Swan, Vancouver, B. C.
Linecutting, chaining and taking soil samples.

Alan Swan, Vancouver, B. C.
Chaining and soil sampling.

The instrument used was a sharp A3 magnetometer, with a scale content (in this area) of 2300 gammas per scale division. The instrument was read to 0.01 scale division, or 23 gammas. Regular 2 hour check readings were taken and all corrections made before plotting.



RESULTS OF THE SURVEYS:

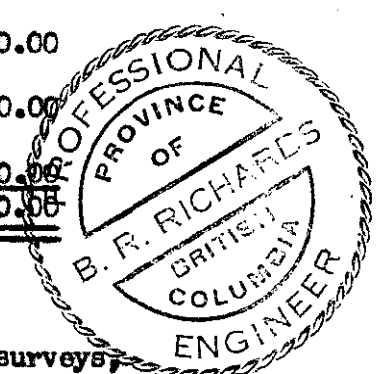
The enclosed contoured maps show the results of the surveys.

Two magnetic anomalies are indicated in the overall survey:

- 1 - Between lines 21E and 33E near the baseline, with readings up to 1000 gammas above "background." This is probably due to a lense of pyritized andesite which outcrops in several places on surfaces.
- 2 - A "double" (probably associated) anomaly from 1500 to 2000 gammas above background on lines 39E and 42E just north and south of the main baseline. These are drift covered, so that the cause is not visible on the surface. The later detailed surveys confirm these anomalies.

COSTS:

B. R. Richards @ \$50.00 day - 15 days	\$750.00
W. McClelland @ \$500.00 per month	750.00
C. Swan @ \$400.00 per month	600.00
A. Swan @ \$15.00 per day - 10 days	150.00
Rental of Magnetometer - @ \$5.00 day - 6 days	30.00
Rental of Jeep - @ \$6.00 day - 25 days	150.00
TOTAL -	<u><u>2430.00</u></u>



NOTE:

These costs cover linecutting, chaining, magnetic surveys, and also soil sampling, a report of which accompanies this report and form part of the submission to be applied as assessment work.

NOTES ON THE GEOLOGY OF A PORTION OF THE H.A.R. MINERAL CLAIMS.

This work was done while the magnetic survey was in progress. Only that portion of the claims that was surveyed in detail magnetically was geologized. The outcrops, contacts, and rock types are shown on the accompanying map entitled "Geology - Portion of the H.A.R. Group."

GENERAL

The volcanic and sedimentary rocks exposed on this part of the property are Mesozoic in age, part of the Nicola group. This area is close to the contact between the Nicola and the Kingsvale group to the east. About 200 feet east of this area there is an outcrop of conglomerate, a member of the Kingsvale group.

Near the north boundary of the map area is an outcrop of post-Nicola diorite.

DESCRIPTION OF ROCK TYPES

Siliceous Dyke: This is an aplite, observed only in two places in the map area, cutting in one place the diorite, and in the other, limestone. This is a very fine grained rock, siliceous, and carrying a low dissemination of pyrite. It is numbered 7 on the map.

Diorite: A dark grey-brown rock, fine to medium grained, with small (1 to 2 mms.) phenocrysts of light colored feldspar, and quartz. In places the rock contains a fine dissemination of pyrite, most noticeable close to shears which occur in the diorite. There is also the occasional fleck of pyrrhotite. It is numbered 6 on the map.

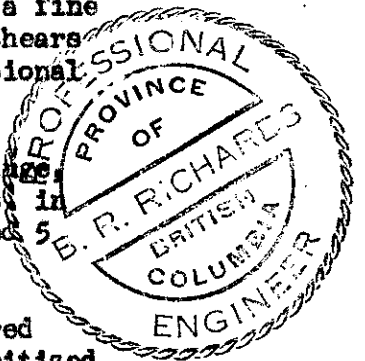
Amygduloidal Flow: This rock is in the andesite range, aphanitic, with numerous amygdules, from 1 to 4 mms. in diameter, filled with calcite and epidote. Numbered 5 on the map.

Volcanic Breccia: A very badly fractured and sheared volcanic in the andesite range. It is highly chloritized and in some places contains small patches of malachite. It weathers to a blotchy brown color. Numbered 4 on map.

Andesite: A very fine grained volcanic, competent and fresh. It outcrops only in one place, near the south west corner of the map area, interbedded in limestones. It is numbered 3 on the map.

Limestone: A fine grained, grey rock, in places exhibiting distinct bedding. Probably a dolomite in the main, rather than a limestone. Numbered 2 on the map.

Purple Agglomerate: This rock outcrops over a wide area, and is very common on the claims. It contains fragments of a red and purple basalt, in a light colored, aphanitic, siliceous matrix. The rock is very massive, with no bedding or banding.



STRUCTURE:

The general strike of the Nicola rocks in the area is north 50 degrees east, with a dip to the south east of from 50 to 80 degrees. The attitudes of the beds is most discernible in the limestone, where in places the bedding is quite distinct. Considerable fracturing and shearing has occurred in the map area, probably due to the diorite intrusive.

SULPHIDE AND COPPER MINERALIZATION:

Pyrite is the most common sulphide, occurring in the diorite and the siliceous dykes. Some very minor pyrrhotite occurs as widely scattered flecks in the diorite.

Malachite occurs sparsely in the volcanic breccia, but no primary copper minerals can be seen on surface.

NOTES ON A GEOCHEMICAL SURVEY ON THE H.A.R. MINERAL CLAIMS.

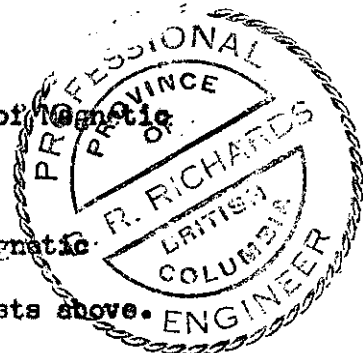
These notes form part of a report entitled "Report of Magnetic Survey on the H.A.R. Mineral Claims."

This work was carried on simultaneously with the magnetic survey, and the costs of same are included in the table of costs above.

The survey covered all the claims, and was controlled by the grid used for the magnetic survey. Samples were taken at 200 feet intervals on the crosslines, except at stations where bedrock occurred. The rubcanic method for copper was used.

RESULTS:

The results are plotted on the accompanying map entitled "Soil Survey - H.A.R. Mineral Claims." "Background" values are plotted as "0"; moderately above background as "1", and high values as "2". Areas of highs are enclosed with contour lines.




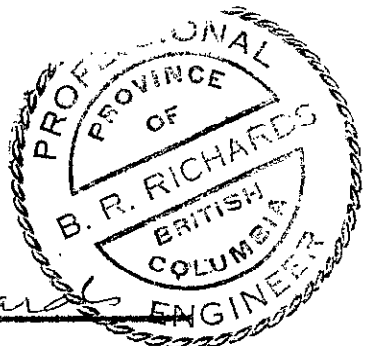
The slope of the ground was recorded and is plotted at each station, in order to assist in determining the source of the high values.

Two main areas show up as having slightly above normal copper content in the soil. These are:

1 - On lines 27E, 30E, and 33E from 700 to 1100 feet south of the baseline.

2 - On lines 33E, 36E and 39E north of the baseline. This latter area coincides in part with the area of magnetic anomalies.

In two places a reading of "2" is recorded. These samples were high in humus, which probably caused the anomalous values.

B. R. Richards, P. Eng.

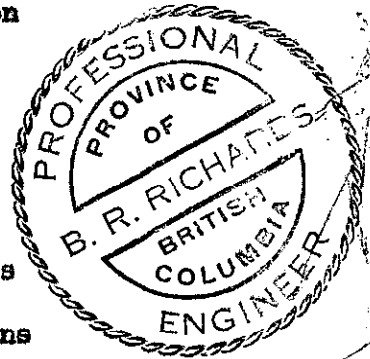
Vancouver, B. C.

October 29, 1963

QUALIFICATION OF PERSONNEL

I, Beresford Robert Richards, of 3243 Matapan Crescent,
Vancouver 12, B. C. do hereby certify:

- 1 - That I am a Mining Engineer, graduate of the University of Alberta, and am a member in good standing of the Association of Professional Engineers of Manitoba, Saskatchewan and British Columbia; and that I have practiced my profession for twenty years.
- 2 - That I have performed, supervised, interpreted and reported upon geological, geophysical and geochemical surveys for many years. Such reports have been acceptable to the Securities Commissions of Ontario, Manitoba, Saskatchewan and British Columbia, as well as to numerous private employers.



B. R. Richards

B. R. Richards, P. Eng.

SUB - MINING RECORDER
 RECEIVED
 NOV 19 1963
 M.R. # 65253 \$ 20.00
 VANCOUVER, B.C.

DOMINION OF CANADA:
 PROVINCE OF BRITISH COLUMBIA.
 To Wit:

In the Matter of Magnetic Surveys, Geochemical Surveys and partial Geological Survey on the H. A. R. Nos. 1 to 8 incl. Mineral Claims

I, Gordon S. Shaw

of 5488 Granville Street, Vancouver

in the Province of British Columbia, do solemnly declare that in accordance with the engineering report submitted by B. R. Richards, P. Eng., work was completed to the extent of \$2,430.

B. R. Richards @ \$50.00 per day - 15 days	\$750.00
W. McClelland @ \$500.00 per month	750.00
C. Swan @ \$400.00 per month	600.00
A. Swan @ \$15.00 per day - 10 days	150.00
Rental of Magnetometer @ \$5.00 per day - 6 days	30.00
Rental of Jeep @ \$6.00 per day - 25 days	<u>150.00</u>
	<u>\$2430.00</u>

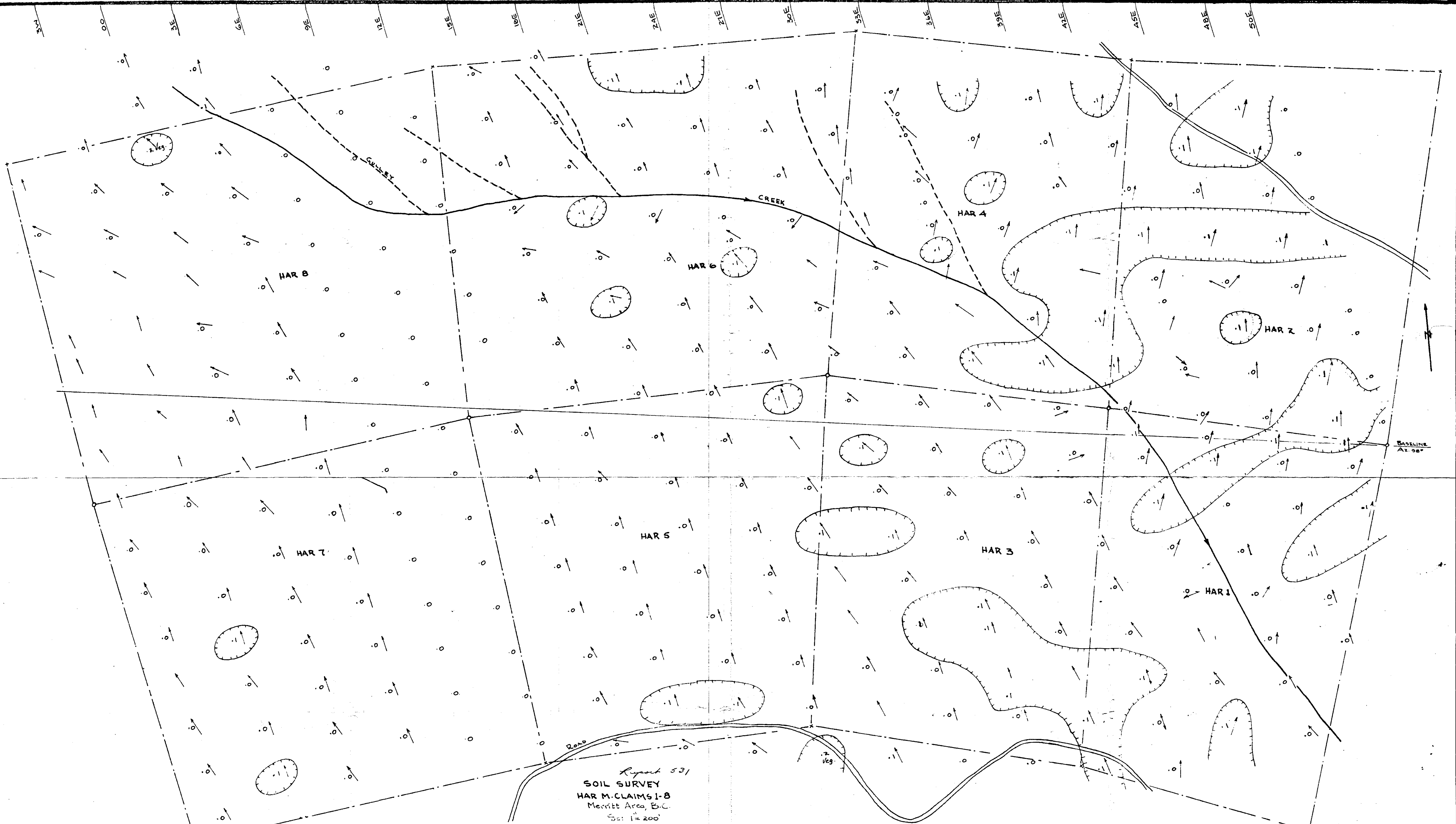
Note: These costs cover - linecutting; chaining; magnetic surveys and, also, soil sampling.

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act." -

Declared before me at the City
 of VANCOUVER, in the
 Province of British Columbia, this 18 th
 day of November, 1963, A.D.

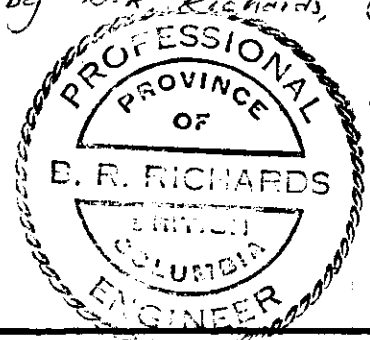
G. S. Shaw

M. Huculak
 A Commissioner for taking Affidavits within British Columbia or
 A Notary Public in and for the Province of British Columbia. M. HUCULAK



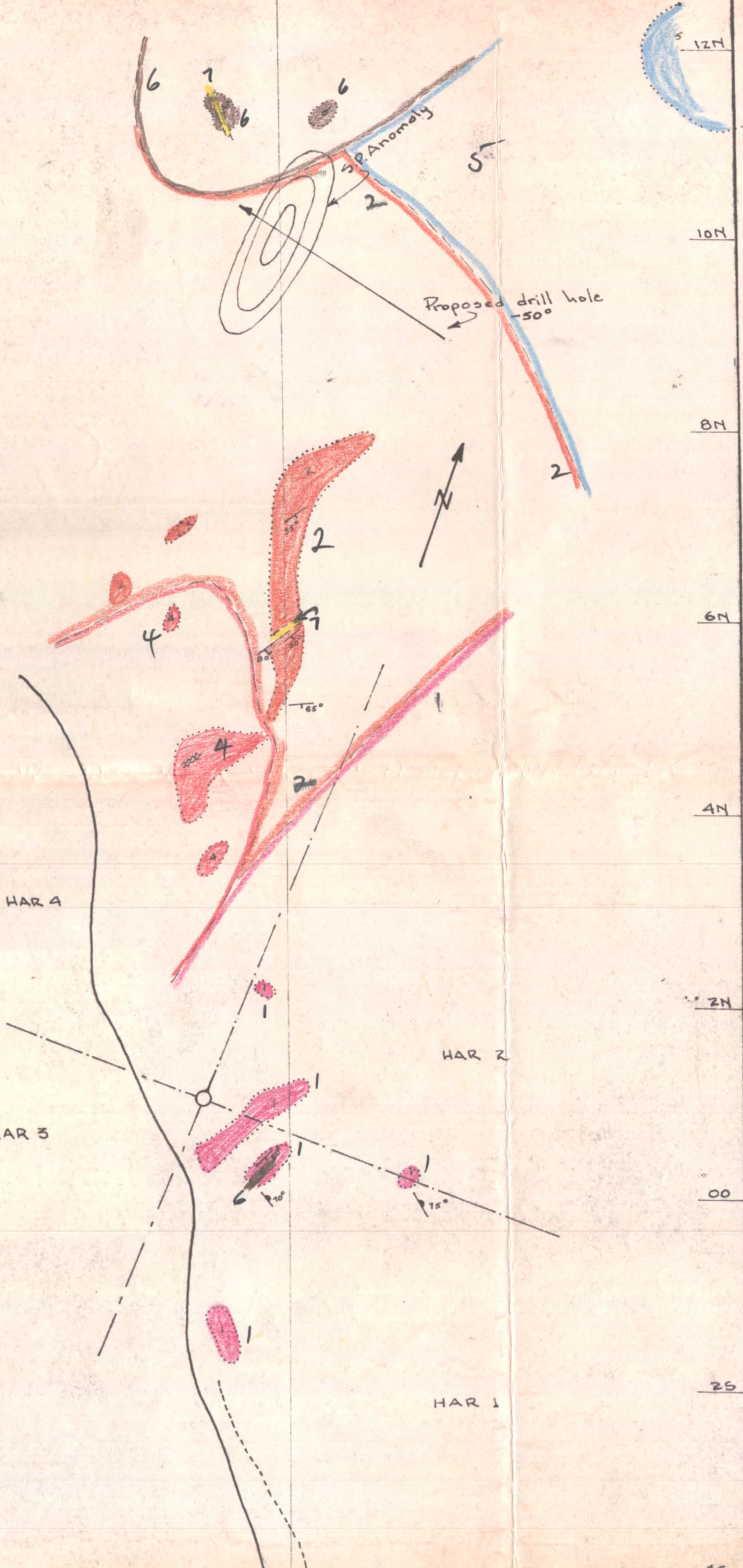
Report 531
SOIL SURVEY
 HAR M. CLAIMS 1-8
 Merritt Area, B.C.
 Sc: 1"=200'

To accompany Report on Magnetic
 Survey - H.A.P. group, by B.D. Richards,
 dated Oct. 29, 1963



RUBENIC METHOD FOR COPPER
 ○ "Background" Anomalies + 2 (Veg.) due to vegetation.
 ⊙ Anomalous area
 ↗ Topographical - slope up
 ↘ " Flat.
 Sept 30, 1943

Department of
 Mines and Petroleum Resources
ASSESSMENT REPORT
 NO. **531** MAP **1**



GEOLOGY
 PORTION OF HAR GR.
 Merritt Area, B.C.
 Sc: 1" = 100' *Report 531*

- Siliceous dyke.
- Diorite
- Amygdaloidal flow
- Volcanic breccia-low cu.
- Andesite
- Limestone
- Purple Agglomerate
- \swarrow_{50} Dip and Strike - bedding
- \swarrow_{10} " " " - Jointing.
- \swarrow_{10} Shearing.

Oct 9, 1963.

To accompany Report on Magnetic Survey HAR group by B.R. Richards dated Oct 9, 1963.

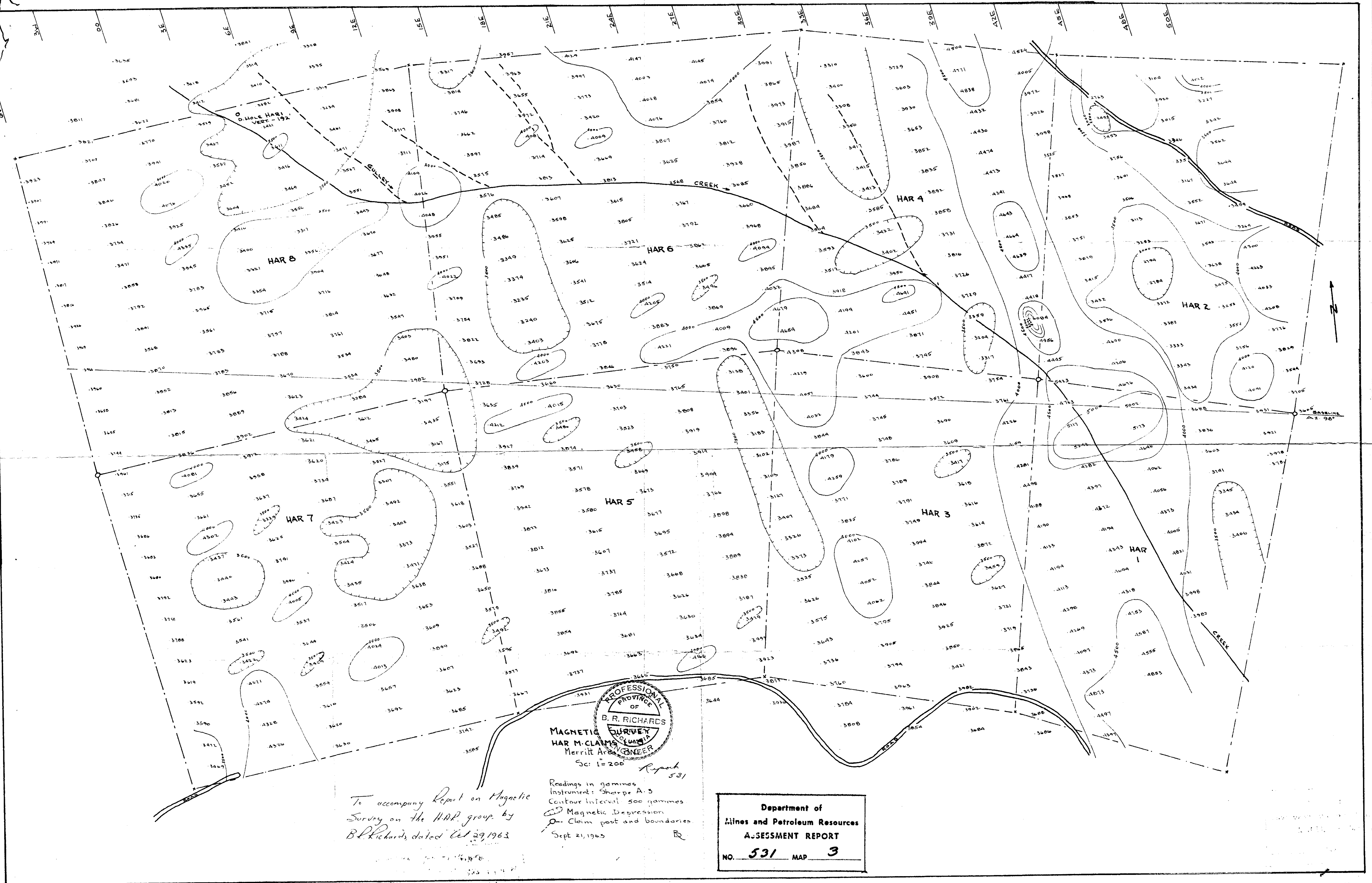


BASELINE: AZ: 340°

Department of
 Mines and Petroleum Resources
ASSESSMENT REPORT

NO. **531** MAP **B 2**



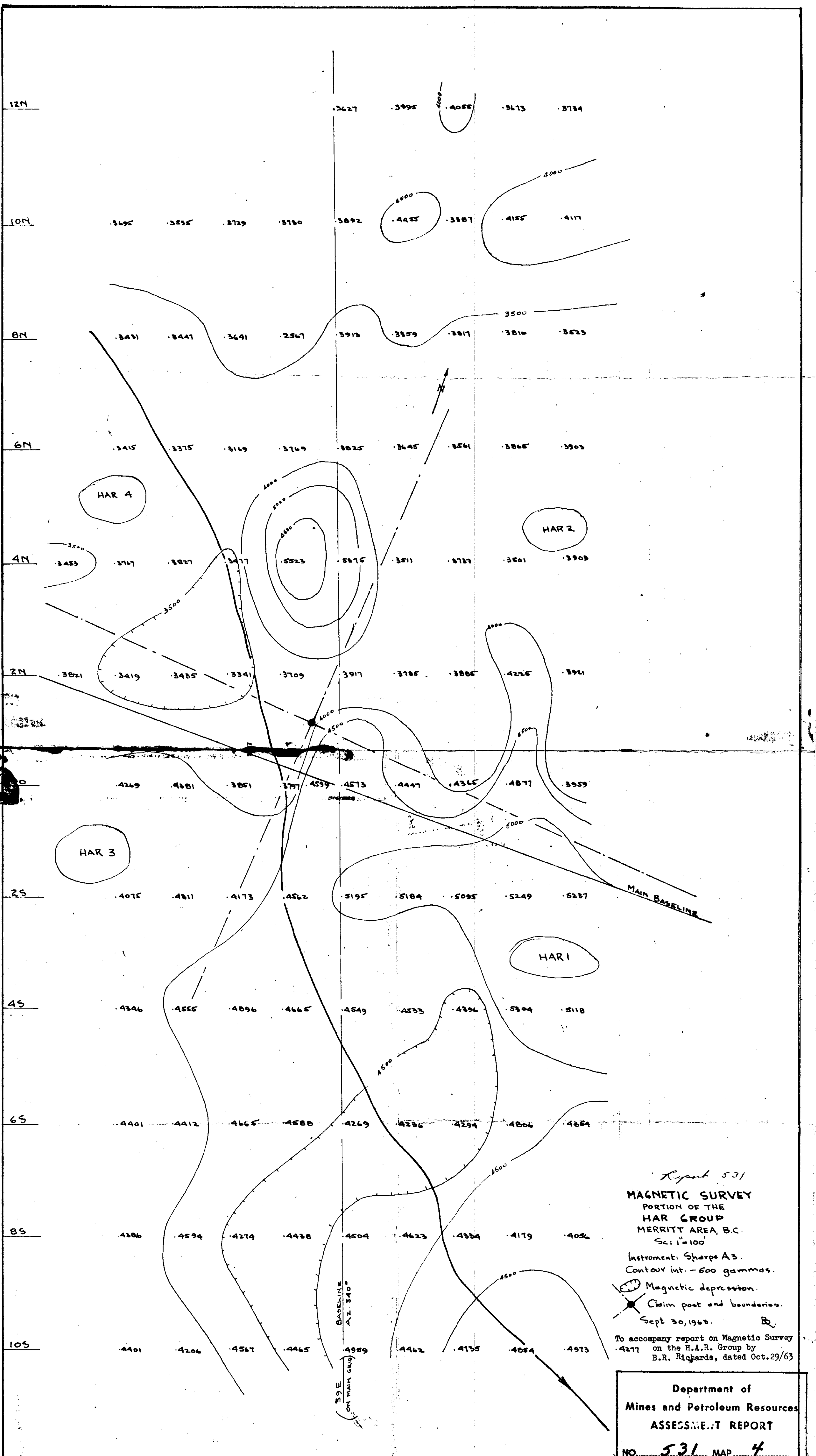


To accompany Report on Magnetic Survey on the H.A.R. group by B.R. Richards dated Oct 29, 1963

PROFESSIONAL SURVEYOR
 PROVINCE OF ALBERTA
B. R. RICHARDS
 MAGNETIC SURVEY
 Merritt Area, ALBERTA
 Scale 1" = 200'

Readings in gammas
 Instrument: Sharpe A-5
 Contour Interval: 500 gammas
 Magnetic Depression
 Claim post and boundaries
 Sept 21, 1963

Department of
 Mines and Petroleum Resources
ASSESSMENT REPORT
 NO. **531** MAP **3**



Report 531
MAGNETIC SURVEY
 PORTION OF THE
HAR GROUP
 MERRITT AREA, B.C.
 Sc: 1"=100'

Instrument: Sharpe A3.
 Contour int. - 500 gammas.

Magnetic depression.
 Claim post and boundaries.
 Sept 30, 1963. *B.*

To accompany report on Magnetic Survey
 on the H.A.R. Group by
 B.R. Richards, dated Oct. 29/63

Department of
 Mines and Petroleum Resources
ASSESSMENT REPORT
 NO. **531** MAP **4**