

# 5355

82F/4W

GEOCHEMICAL REPORT  
BOW RIVER RESOURCES LTD.

Pat mineral claims, Rossland area, Trail  
Creek Mining Division, B.C.  
Lat. 49°00'30"N Long. 117°52'W N.T.S. 82 E/4

AUTHOR: Glen E. White, B.Sc.

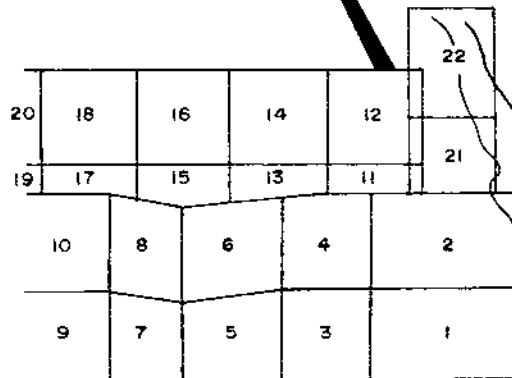
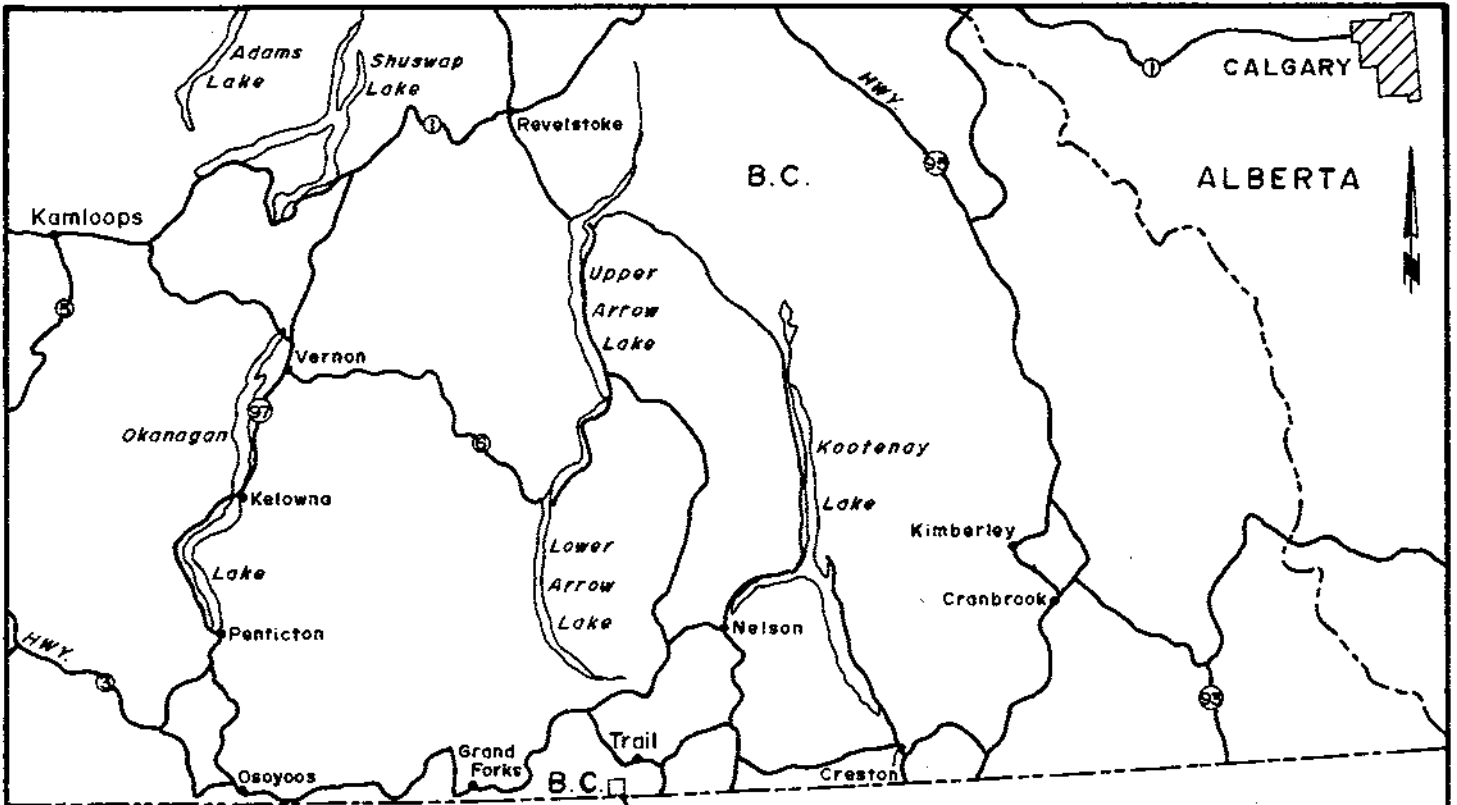
P. ENG: E. D. Cruz

DATE OF WORK: September 23 - October 2, 1974

DATE OF REPORT: November 1, 1974

82F/14W

Department of Mines and Geotechnical Resources ANALYTICAL REPORT NO. 5355 R.P. ....
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Department of  
 Natural Resources  
 ALBERTA REPORT  
 NO. 5355 #1  
 BOW RIVER RESOURCES LTD.  
 PAT CLAIMS  
 LOCATION AND CLAIMS MAP

5355  
 MAP 1

SCALE: LOCATION MAP: 1" = 40 MILES APPROX.

CLAIMS MAP: 1/2" = 1500 APPROX

Glen & White  
 geographical consulting  
 B  
 services ltd.

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"	5 - " " - silver
"	6 - " " - zinc

## INTRODUCTION

The Pat mineral claims cover an old mineral occurrence known as the Sunset Showing near the Canada - U.S. border south of Rossland, B.C. During the period September 23 - October 2, 1974, Glen E. White Geophysical Consulting & Services Ltd. conducted a program of geochemical soil sampling over the Pat mineral claims on behalf of Bow River Resources Ltd.

The purpose of the survey was to examine the area around the old sunset showing to try and locate similar, possibly parallel, veins and to see if the sunset showing could be extended under the overburden to the SW or NE.

## PROPERTY

The property consists of 22 contiguous mineral claims Pat 1 to 22 as shown on Figure 1. Mineral claims Pat 21 and Pat 22 were staked September 29 and subsequently surveyed.

## LOCATION AND ACCESS

The Pat mineral claims are located on the west side of Highway #22 bounding the Canada - U.S. border some 7 miles south of Rossland, B.C., Latitude  $49^{\circ}00'30''N$ , Longitude  $117^{\circ}52'W$ , N.T.S. 82 C/4.

Facile access to the sunset showing area can be gained via the Boundary line Farm after permission is received from the owner. The road is fairly rough, thus a pickup or a 4x4 is required.

## PHYSIOGRAPHY

The topography is relatively steep with an elevation change of some 2300 feet from 2200 feet A.S.L. to 4500 feet in a distance of less than 2 miles. The area has been selectively logged by horse and skidder within the last 10 years; thus a large part of the claim group is a dense jungle of fallen logs and second growth which are intensely intermingled since there has been no slash burning.

## GENERAL GEOLOGY

The general area of the property is underlain by the Mount Roberts Formation of Carboniferous age consisting of argillites with interbedded siltstones, greywackes, conglomerates and limestones. Overlying this is the Rosslund group of lower to Middle Jurassic age consisting of acid to basic flows, flow breccias, augite porphyries and minor interbedded siltstones. These lithologic sequences appear to be striking approximately  $038^{\circ}$  and dipping  $40^{\circ}$  north. The Sheppard intrusions of leucocratic granite and a time-related intrusive of porphyritic diorite cut the above sedimentary rocks probably during the Lower Tertiary period. Further general geological information can be obtained from G.S.C. Memoirs 77 and 308.

## SURVEY SPECIFICATIONS

### Survey Grid

The origin for the survey grid is located at the old core shack on the sunset mineral showing. From this point a principle baseline was established in an eastwest direction. Traverse lines were turned off every 400 feet in a north-south direction and numbered at 100 foot intervals. An eastwest tie line was also cut along 30N. Some 20 line miles of survey grid were established and soil sampled, this including the 1000' x 1800' detail grid which was completed over the sunset showing.

### Geochemical Survey

Soil samples of the upper "B" horizon were obtained with mattocks at 200 foot intervals, except on the detail grid where they were taken at 100 foot intervals. The sample was then placed in a Kraft soil envelope and delivered to Chemex Labs Ltd. of North Vancouver, B.C. The samples were then dried and -80 mesh sieving, digestion by hot perchloric-nitric acid and analysis by atomic absorption were carried out under the supervision of professional geochemists.

Some 531 soil samples were obtained and analysed for p.p.m. copper, lead, molybdenum, silver and zinc.

## DISCUSSION OF RESULTS

The analysis of the soil samples is depicted on the following maps; Figure 2 - copper, Figure 3 - lead, Figure 4 - molybdenum, Figure 5 - silver, and Figure 6 - zinc. A compendium of the results is illustrated on Figure 7, the interpretation map.

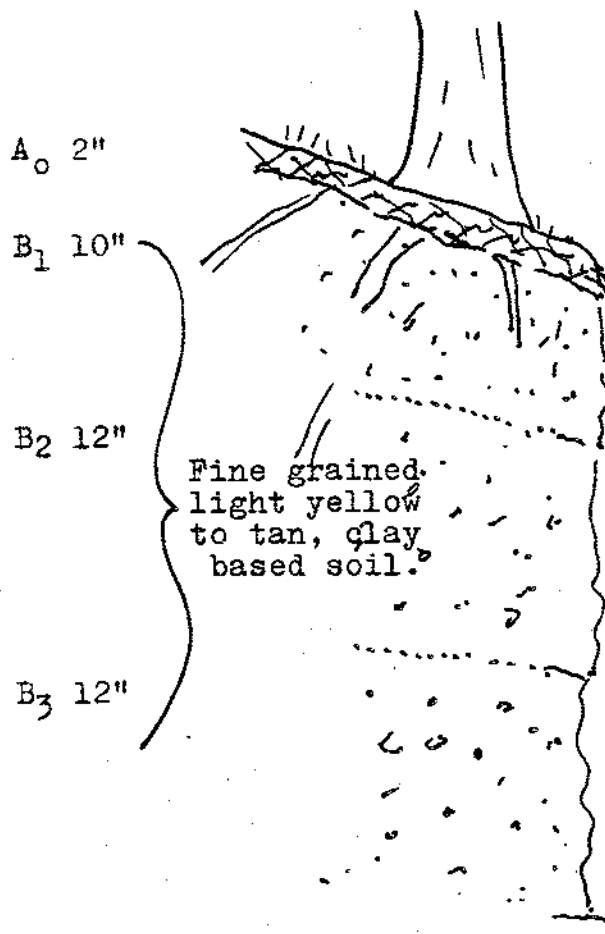
Plate 1 shows the soil profile taken at 6 / 50E 0 / 50S. Plates 2 - 6 diagram the detail soil samples taken on the 1000 x 1800 foot detail grid.

The copper map, Figure 2, shows that copper reached a high of 215 p.p.m. above a mean of some 25 p.p.m. The principle area of interest, the sunset showing, shows only slightly anomalous values except for a single high of 700 p.p.m. obtained close to the vein on the detail sampling, Plate 2. In general, no strong independent trends were obtained.

The values of lead, Figure 3 and Plate 3, show strong responses around the sunset showing to greater than 4000 p.p.m. which can be expected in a disturbed area. However, interesting values were obtained in claim Pat 6 which suggest two parallel NE - SW trending anomaly sources. This zone gave a high of 290 p.p.m. which is considered quite significant for this geochemical environment.

Figures 4 and 5, for molybdenum and silver, show no definable trends or significant responses. Plate 5, silver detail, locates two values, one 10 times higher than the other, but both associated with the heart of the sunset showing. Thus, since the sunset showing is particularly interesting because of its silver assay values, this would suggest that silver is very immobile in this area and that the lack of silver geochemical response cannot be considered derogatory in evaluating other geochemical anomalies.

The zinc geochemical map, Figure 6 and Plate 6, show a number of strong responses. Plate 6 shows that the high values are confined to the sunset showing except for the isolated value on line 4E - 4N. It is encouraging to note that with the element copper, lead and zinc around the sunset showing, there is very little ionic contamination patterns. Thus, the strong zinc responses obtained in claims Pat 5-8 and 12, which reached a high of 3970 p.p.m. and a number between 500 and 1000 p.p.m., would appear to be of definite interest. The zinc anomalous values above tend to indicate possibly one or more parallel NW - SE trending mineral zones.



GEOCHEMISTRY  
(p.p.m.)

	<u>Cu</u>	<u>Mo</u>	<u>Pb</u>	<u>Zn</u>	<u>Ag</u>	<u>pH</u>
B <sub>1</sub> 10"	31	<1	86	285	<0.5	6.9
B <sub>2</sub> 12"	40	<1	56	218	<0.5	6.9
B <sub>3</sub> 12"	41	<1	44	164	<0.5	6.8
	46	<1	36	140	<0.5	6.7

BOW RIVER RESOURCES LTD.

Pat claims

SOIL PROFILE 6+50E 0+50W

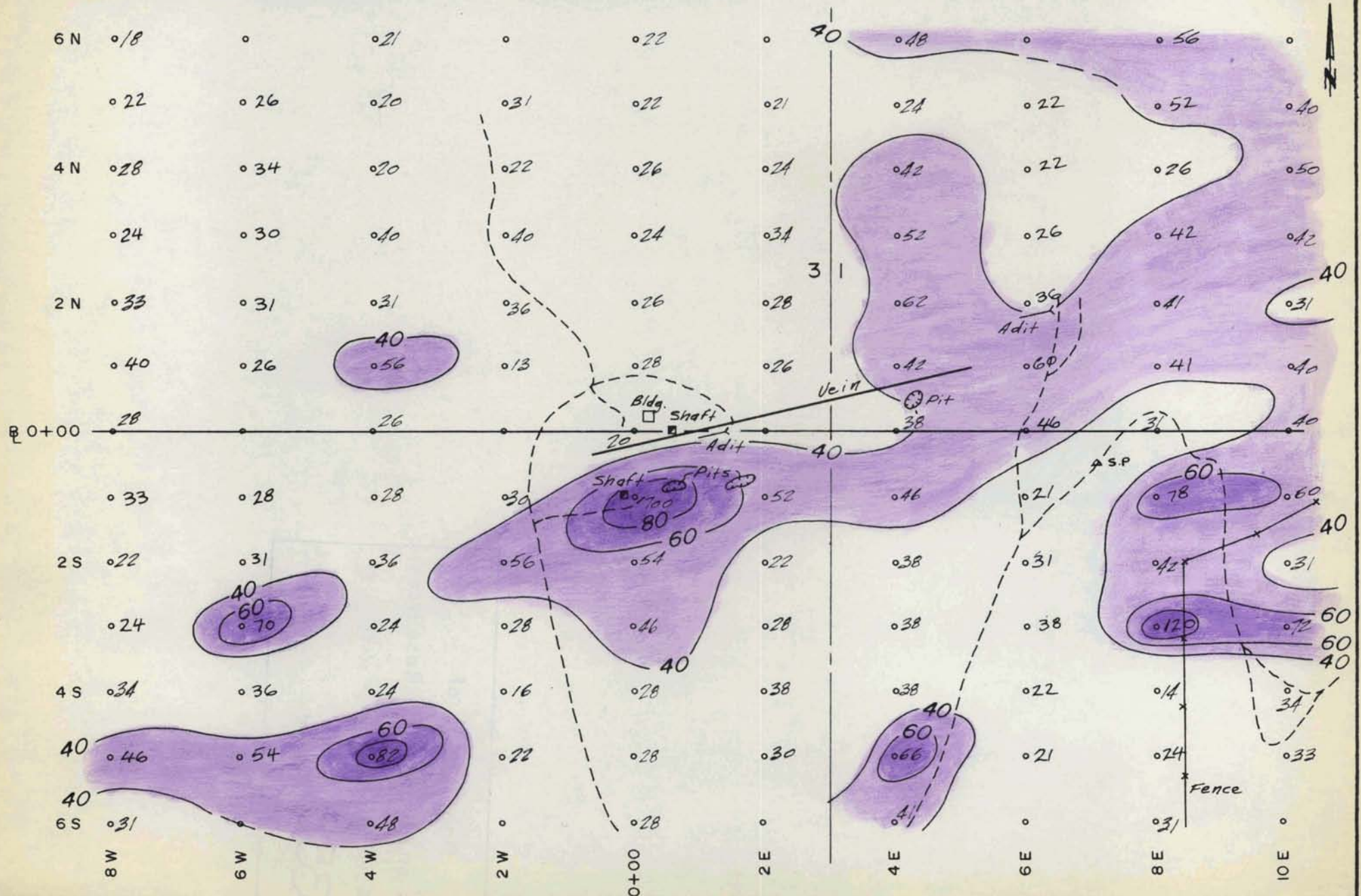
Department of  
Mines and Petroleum Resources  
ANALYTICAL REPORT

NO. **5355** MAP

**5355**

Glen & White  
geophysical consulting  
&  
minerals ltd.

PLATE 1



*Green & White  
geophysical consulting  
&  
services Ltd.*

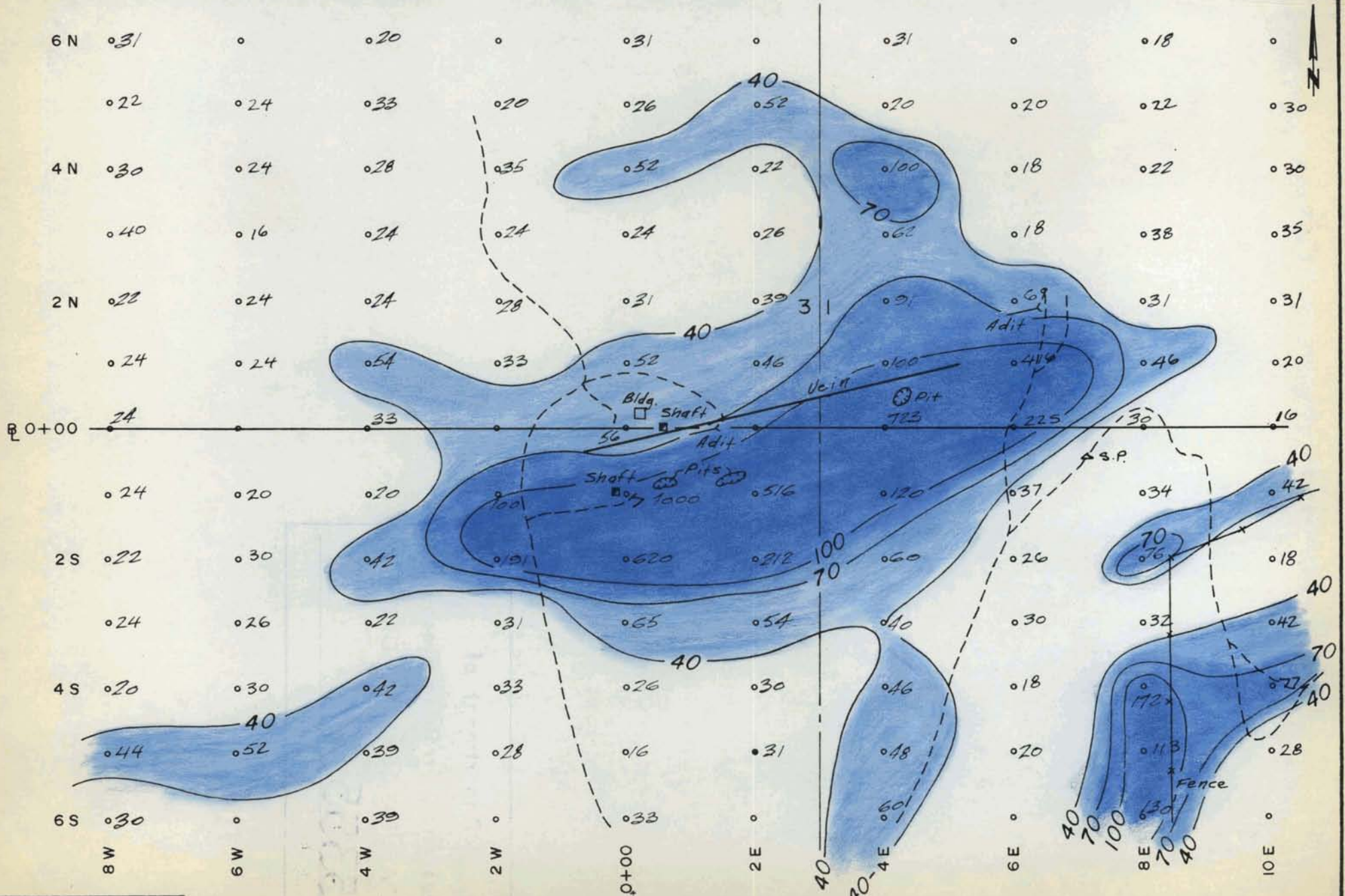
Scale: 1" = 200'

BOW RIVER RESOURCES LTD.  
—DETAIL AREA—

— COPPER P.P.M. —

OCT. 15, 1974  
PLATE 2





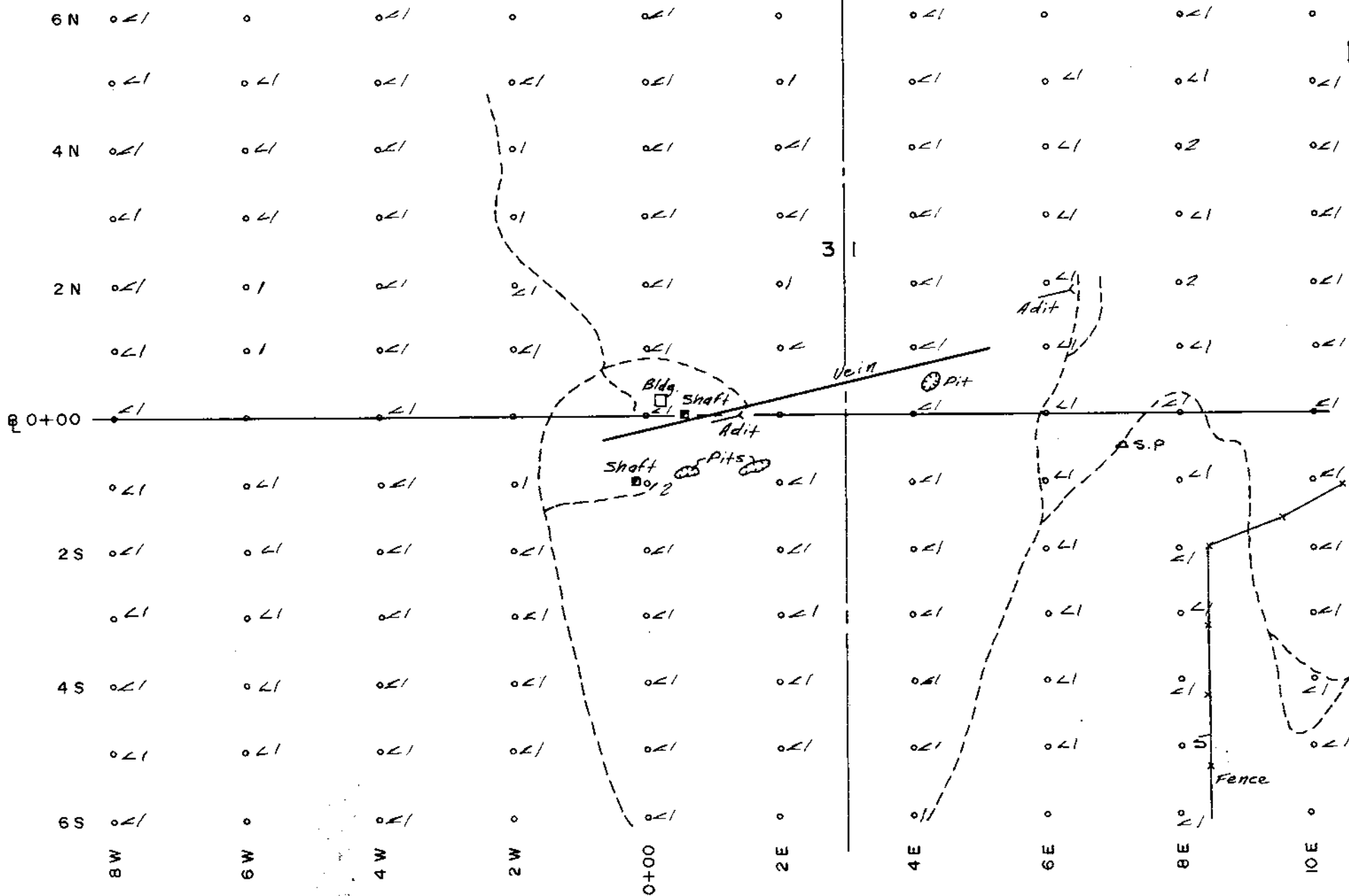
Glen & White  
 geophysical consulting  
 &  
 services Ltd

Scale: 1" = 200'

BOW RIVER RESOURCES LTD.  
 — DETAIL AREA —

— LEAD P.P.M. —

OCT. 15, 1974  
 PLATE 3



*Allen & White*  
 geophysical consulting  
 &  
 services Ltd.

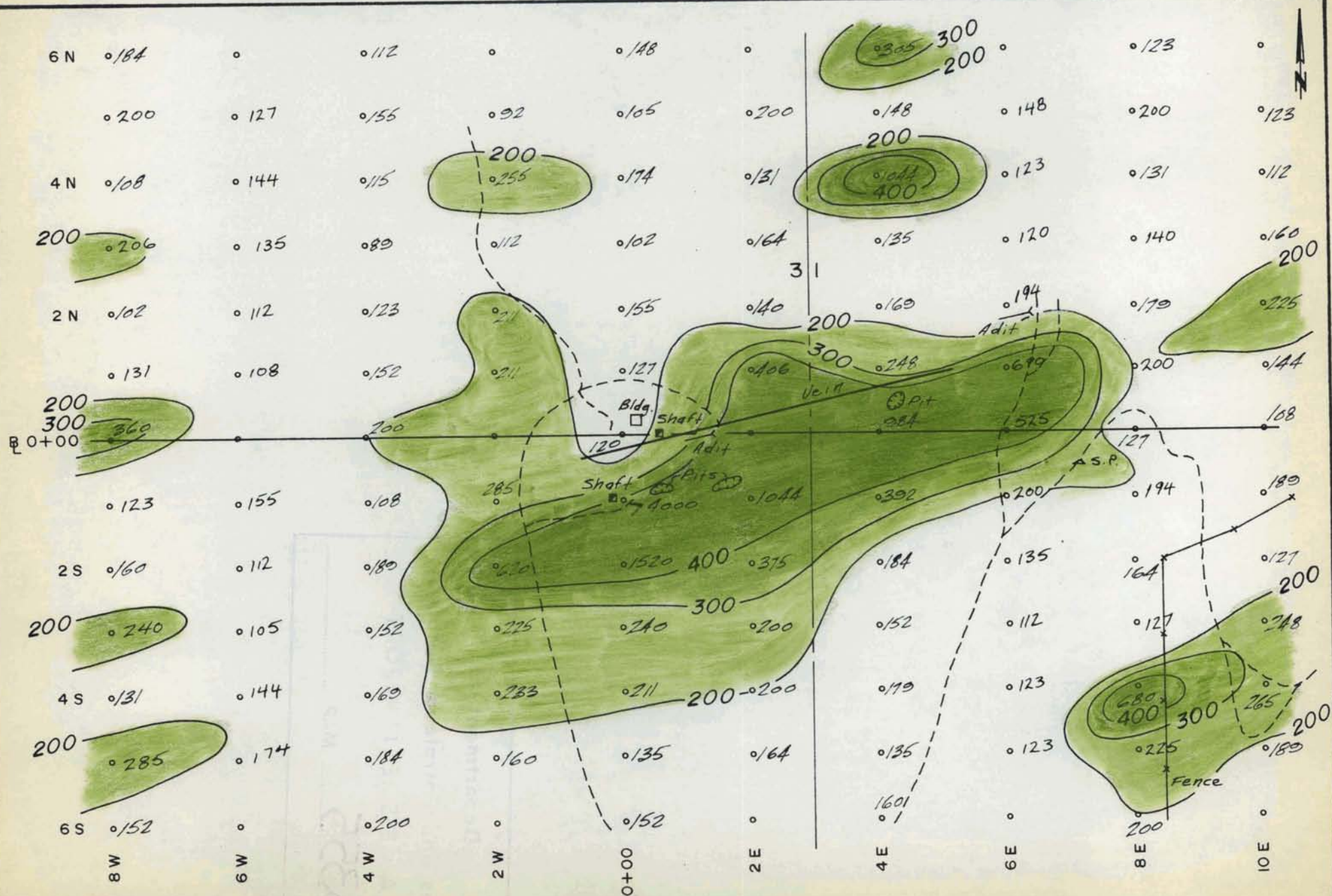
Scale : 1" = 200'

**BOW RIVER RESOURCES LTD.**  
 — DETAIL AREA —

— MOLY P.P.M. —

OCT. 15, 1974  
 PLATE 4





Glen & White  
 geophysical consulting  
 &  
 resources Ltd

Scale: 1" = 200'

BOW RIVER RESOURCES LTD.  
 —DETAIL AREA—

—ZINC P.P.M.—

OCT. 15, 1974  
 PLATE 6

Plate 1 shows the information obtained from the vertical soil profile. Here the pH decreases slowly with depth from 6.9 - 6.7 which is just on the acid side of a neutral pH. Lead and zinc decrease in value with depth while copper increases slightly. The soil profile is downhill from the sunset showing and would appear to be enriched at surface by lead-zinc ions or fine particles. The copper then, probably increases towards bedrock value with decreasing pH since only slightly anomalous values are associated with the Sunset vein.

Correlation of the geochemical data, Figure 7, outlines a number of coincident element geochemical anomalies, particularly in claims Pat 6, 7 and 8. These anomalies show a definite NE - SW trend which is parallel to the strike of the lithology in the area. This is also a region of fairly heavy overburden. The sunset showing appears as a small well-defined anomaly which may possibly extend eastward. In comparison, there is much more ionic dispersion in mineral claims 5 - 8. This may possibly be a result of a number of mineralized veins or leaching from a weakly mineralized lithologic unit which is then being precipitated by a change in pH. However, the author, after examining the area of anomalous response and the sunset showing, is of the opinion that the area of definite geochemical response likely reflects structure controlled vein systems as interpreted on Figure 7.

#### CONCLUSION

During the later period of September and October 1974, a program of geochemical soil sampling was conducted over the Pat mineral claims which overlay the sunset showing of argentiferous galena, sphalerite and chalcopyrite on Crown Grant 6563 also owned by Bow River Resources Ltd.

The survey delineated the sunset showing as a definitely anomalous but confined geochemical pattern which may possibly extend eastward. A number of strongly anomalous values for copper, lead and zinc were also located in claims Pat 5 - 8. The geochemical anomalies in this area have been interpreted as possibly reflecting a number of vein segments as illustrated on Figure 7.

In conclusion then, this new area of anomalous geochemical responses appears to reflect overburden-covered mineralization which should receive further exploration attention.

RECOMMENDATIONS

It is recommended that the interpreted vein areas depicted on Figure 7 in claims Pat 5 - 8 should be prospected for any surface indications of mineralization. It is also considered that detail soil sampling, magnetometer, V.L.F. electromagnetometer and self-potential surveys may be of possible aid in delineating specific targets beneath the overburden cover.

RESPECTFULLY SUBMITTED,  
GLEN E. WHITE GEOPHYSICAL  
CONSULTING & SERVICES LTD.



Glen E. White B.Sc.  
President

STATEMENT OF QUALIFICATIONS

Name: WHITE, Glen E.

Profession: Geophysicist

Education: B.Sc. Geophysics - Geology  
University of British Columbia

Professional Associations: Associate member of Society of Exploration Geophysicists.  
Active member B. C. Society of Mining Geophysicists.

Experience: Pre-Graduate experience in Geology - Geochemistry - Geophysics with Anaconda American Brass.

Two years Mining Geophysicist with Sulmac Explorations Ltd. and Airborne Geophysics with Spartan Air Services Ltd.

One year Mining Geophysicist and Technical Sales Manager in the Pacific north-west for W. P. McGill and Associates

Two years Mining Geophysicist and supervisor Airborne and Ground Geophysical Divisions, with Geo-X Surveys Ltd.

Two years Chief Geophysicist Tri-Con Exploration Surveys Ltd.

Three years Consulting Geophysicist.

Active experience in all Geologic provinces of Canada.

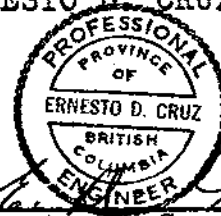
C E R T I F I C A T E

I, Ernesto D. Cruz, DO HEREBY CERTIFY AS FOLLOWS:

- (1) That I am a Consulting Mining Engineer and reside at 8596 Terrace Dr., Delta, B.C.
- (2) That I am a Graduate of Mapua Institute of Technology Phillipines (B.A.Sc.) and University of Washington (M.A.Sc.) in the Faculty of Mining Engineering.
- (3) That I am a registered P. ENG in the Association of Professional Engineers in the province of British Columbia.
- (4) That I have practised geological engineering for eleven (11) years.
- (5) That I have reviewed a report dated November 1, 1974 based on work conducted by Glen E. White Geophysical Consulting & Services Ltd. under the supervision of Glen E. White, B.Sc., Geophysicist, and concur with the findings therein.
- (6) That this report consists of 7 typewritten pages and six maps.
- (7) That I have no interest directly or indirectly in the Pat mineral claims or the securities of Bow River Resources Ltd. nor do I expect to acquire or receive any.

DATED at Vancouver, British Columbia, this 1st day of November, 1974.

ERNESTO D. CRUZ, P. ENG



Ernesto D. Cruz, P. ENG



DOMINION OF CANADA:  
PROVINCE OF BRITISH COLUMBIA.

In the Matter of

Geochemical Survey

To Wit:

Pat Claims, Rossland Area  
Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 5355 MAP

I, Glen E. White

of Glen E. White Geophysical Consulting & Services Ltd.

in the Province of British Columbia, do solemnly declare that the costs for the above survey were as follows:

<u>PERSONNEL</u>	<u>DATE</u>	<u>WAGES</u>	<u>TOTAL</u>
G. White.....	Sept 23 - Oct 2/74.....	\$75/day.....	\$750.00
D. Urban.....	"....."	55/day.....	550.00
A. Findlayson.....	"....."	40/day.....	400.00
P. Troop.....	"....."	40/day.....	400.00
Meals and Accomodations.....			800.00
Vehicle 4x4 plus gas \$30/day.....			300.00
Sample Analysis - Cu, Pb, Mo, Ag, Zn.....			1427.00
Materials.....			60.00
Drafting, Interpretation Maps and Report.....			750.00
<b>TOTAL.....</b>			<b>\$5437.00</b>

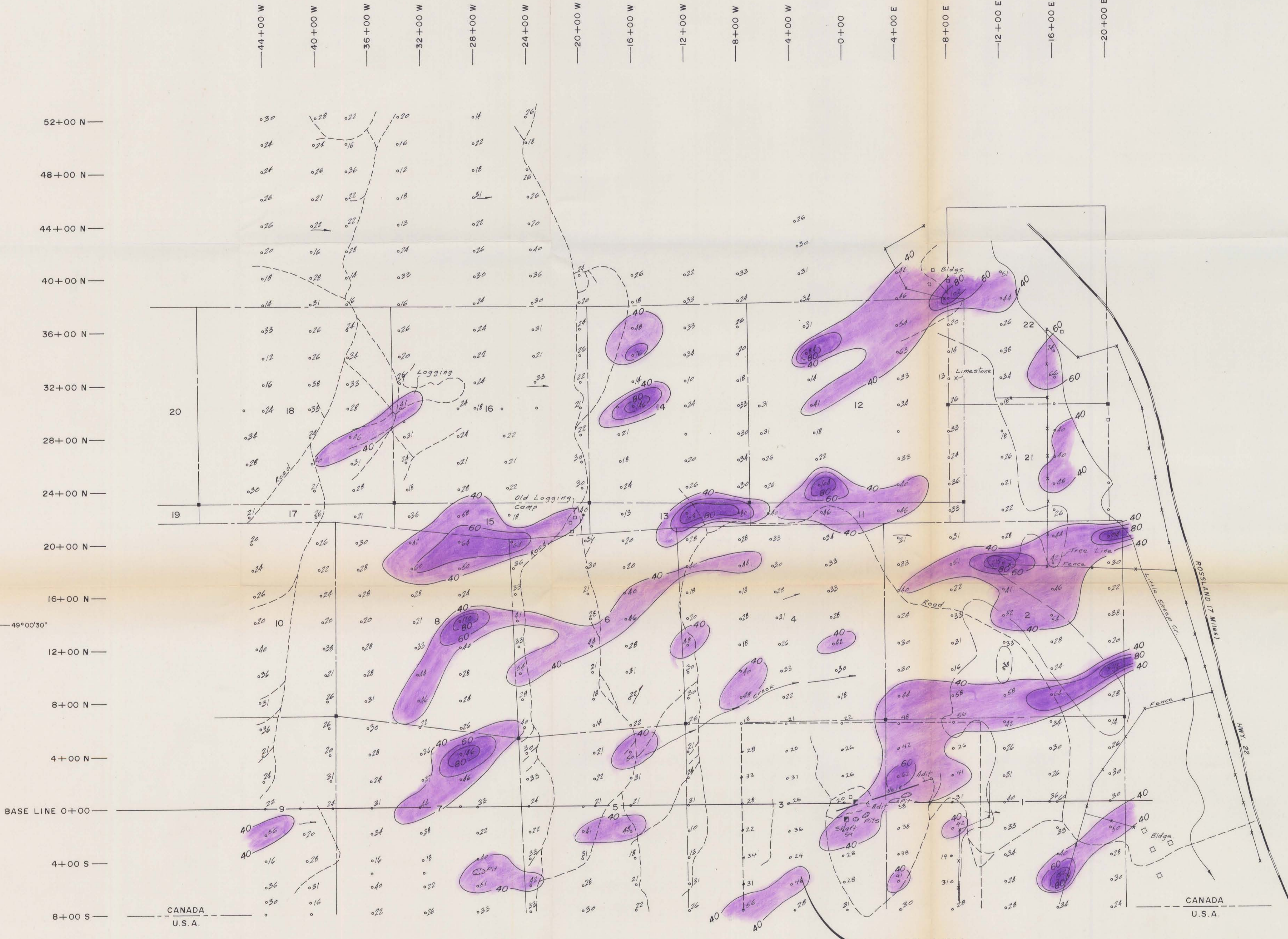
And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the City  
of Vancouver, in the  
Province of British Columbia, this 8  
day of November 1974, A.D.

Jan Finnie  
A Commissioner for taking Affidavits for British Columbia or  
A Notary Public in and for the Province of British Columbia.

Sub-mining Recorder

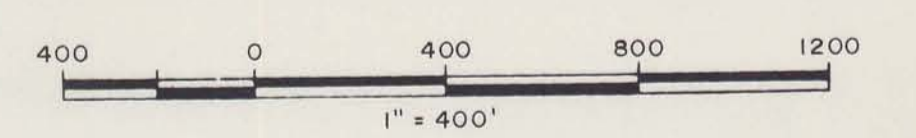
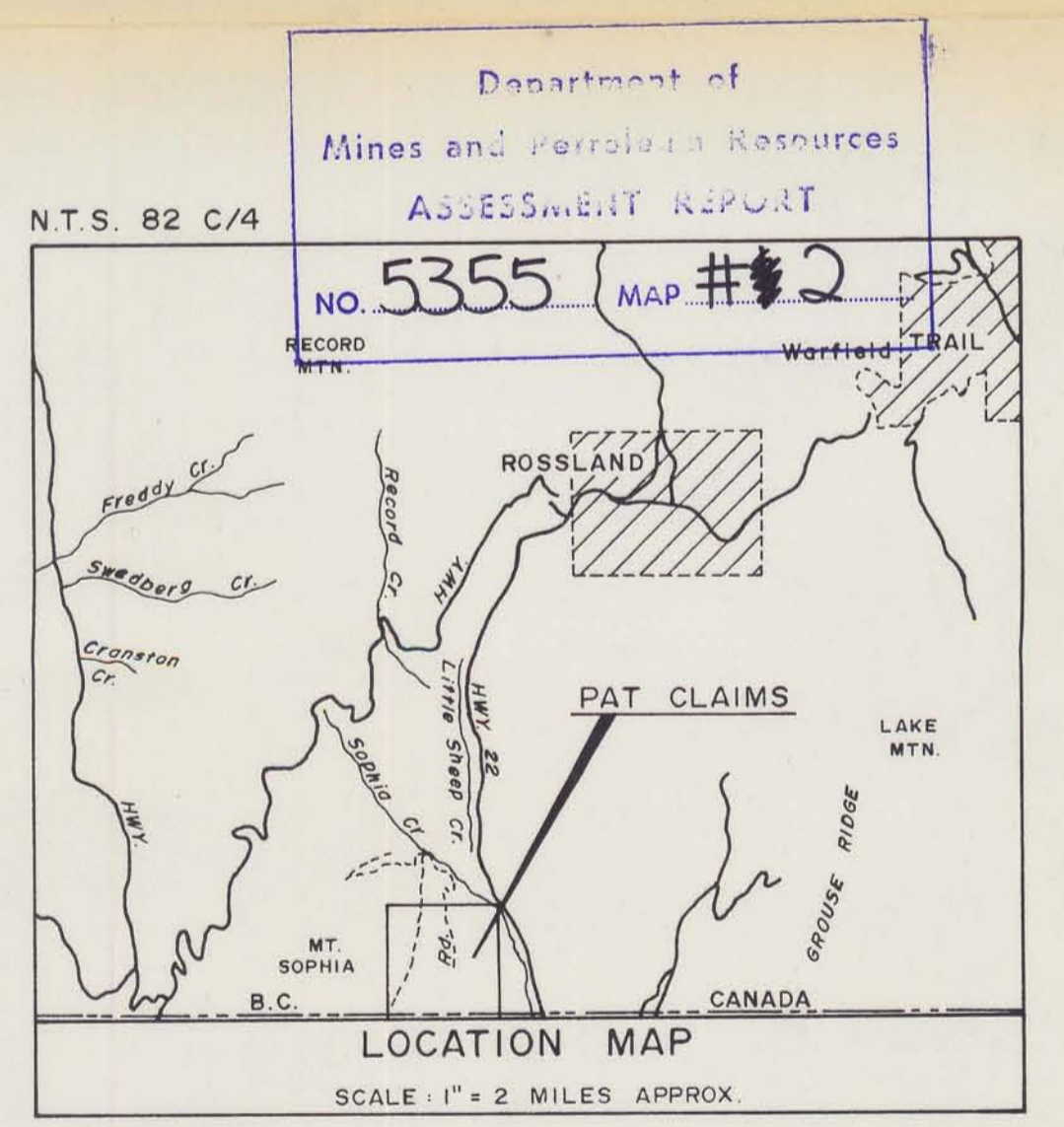
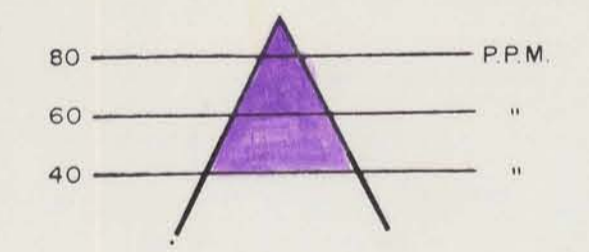
117°52'



LEGEND

- Contour Line, Contour Interval 40,60,80 P.P.M.
- o Stations
- - - Outline of Claims
- Claim Posts
- == Unpaved Roads

COPPER KEY



**BOW RIVER RESOURCES LTD.**  
PAT CLAIMS  
TRAIL CREEK MINING DIVISION - BRITISH COLUMBIA  
GEOCHEMICAL MAP 5355  
COPPER P.P.M. MAP 2

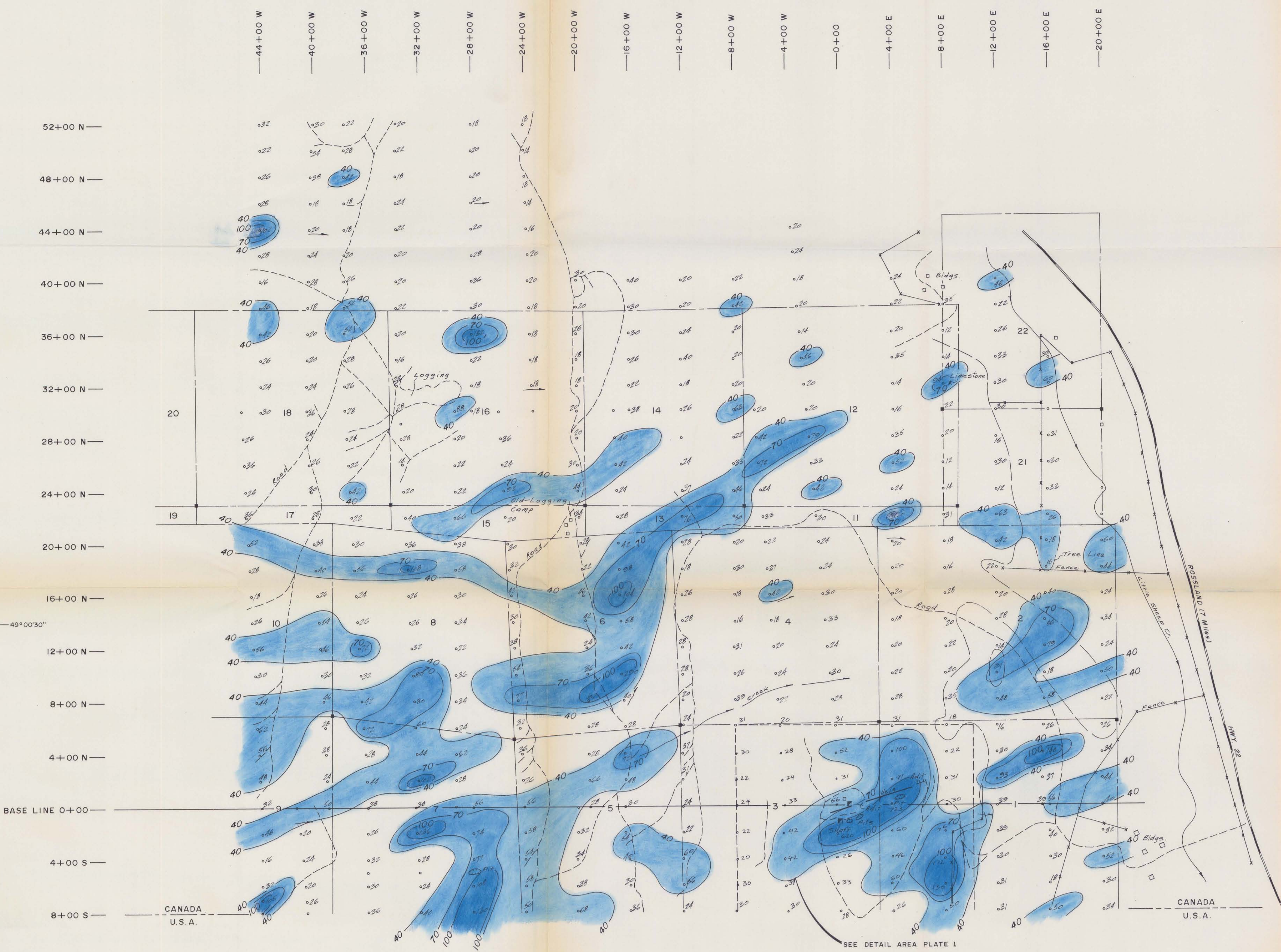
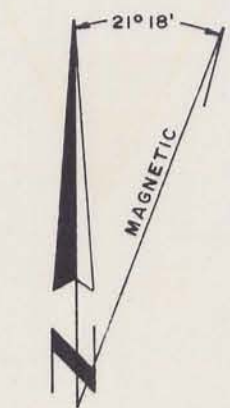
Glen E. White  
geophysical consulting  
services Ltd.

INTERPRETED BY: G.E.W.
DRAWN BY:
CHECKED BY:
DATE: OCT. 15, 1974
FIG No: 2

To Accompany Geochemical Report on  
THE PAT CLAIMS  
Date November 1, 1974  
By GLEN E. WHITE - B.S.

117°52'

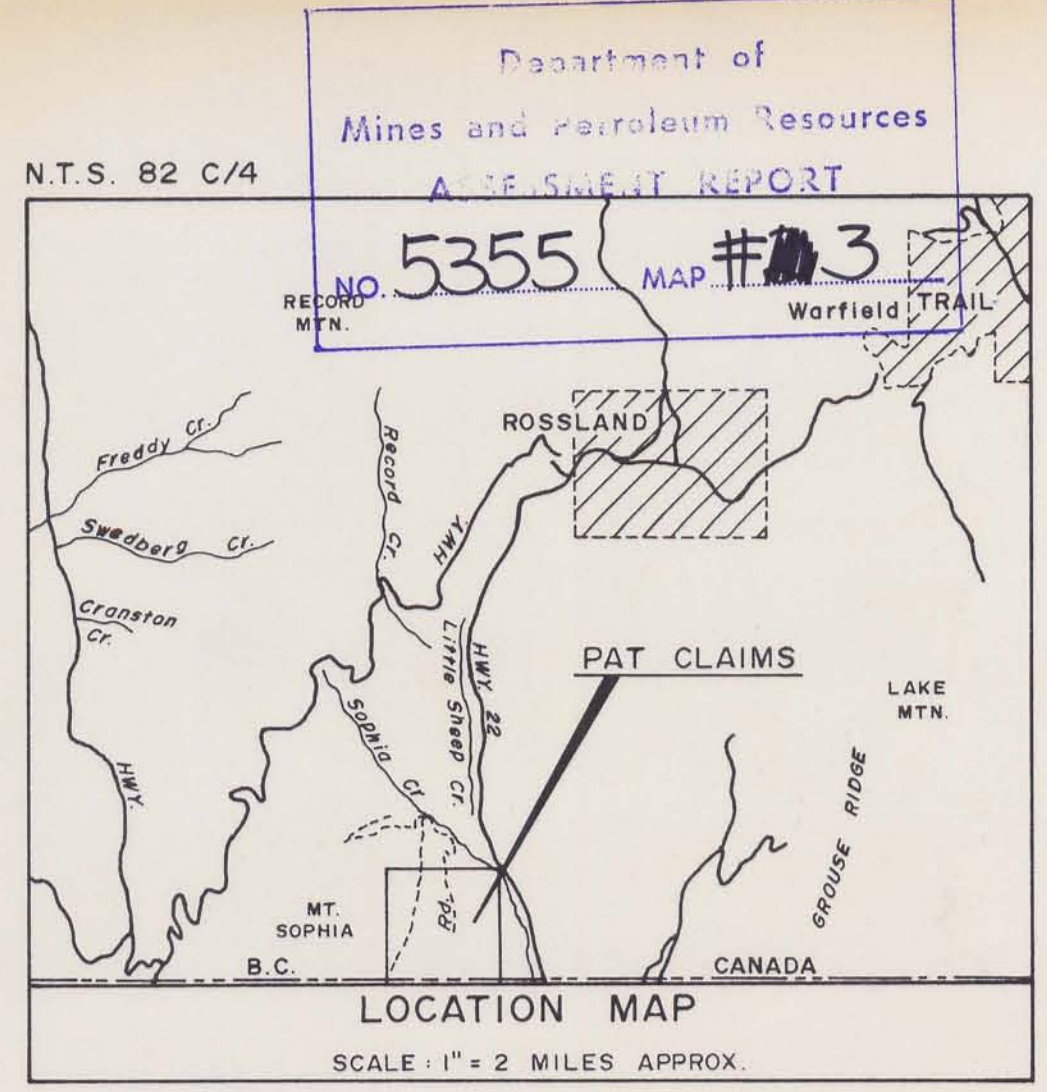
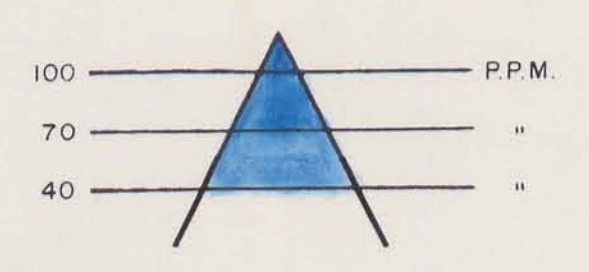
117°52'



LEGEND

- Contour Line, Contour Interval: 40, 70, 100 P.P.M.
- o Stations
- - - Outline of Claims
- Claim Posts
- == Unpaved Roads

LEAD KEY



**BOW RIVER RESOURCES LTD.**

PAT CLAIMS

TRAIL CREEK MINING DIVISION - BRITISH COLUMBIA

GEOCHEMICAL MAP 5355

LEAD P.P.M. MAP 3

Glen E. White geophysical consulting services Ltd.	INTERPRETED BY: G.E.W. DRAWN BY: CHECKED BY: [Signature] DATE: OCT. 15, 1974 FIG. No: 3
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To Accompany Geochemical Report on  
THE PAT CLAIMS  
Date November 1974  
By GLEN E. WHITE - B.S. [Signature]

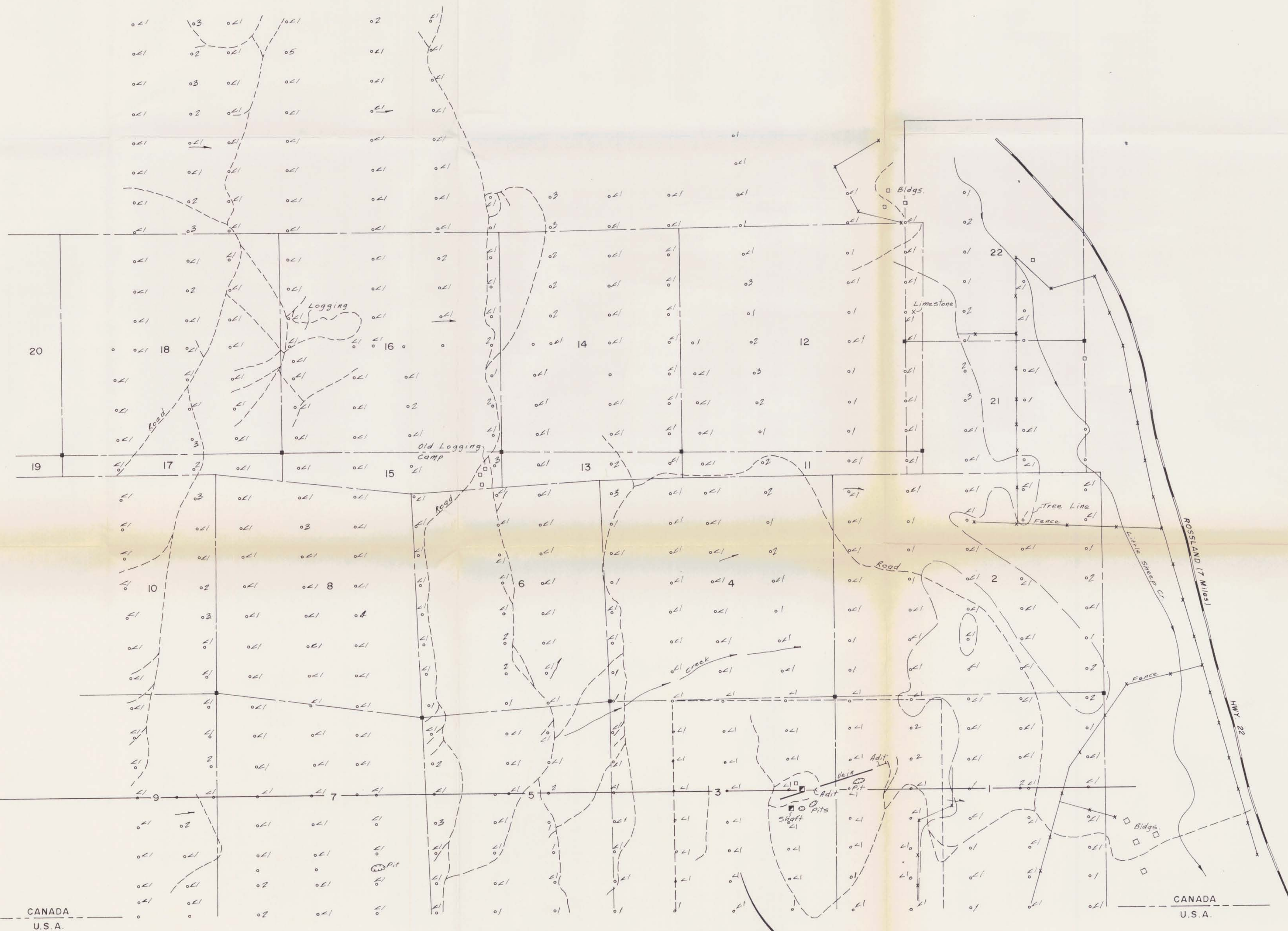
117°52'

117°52'



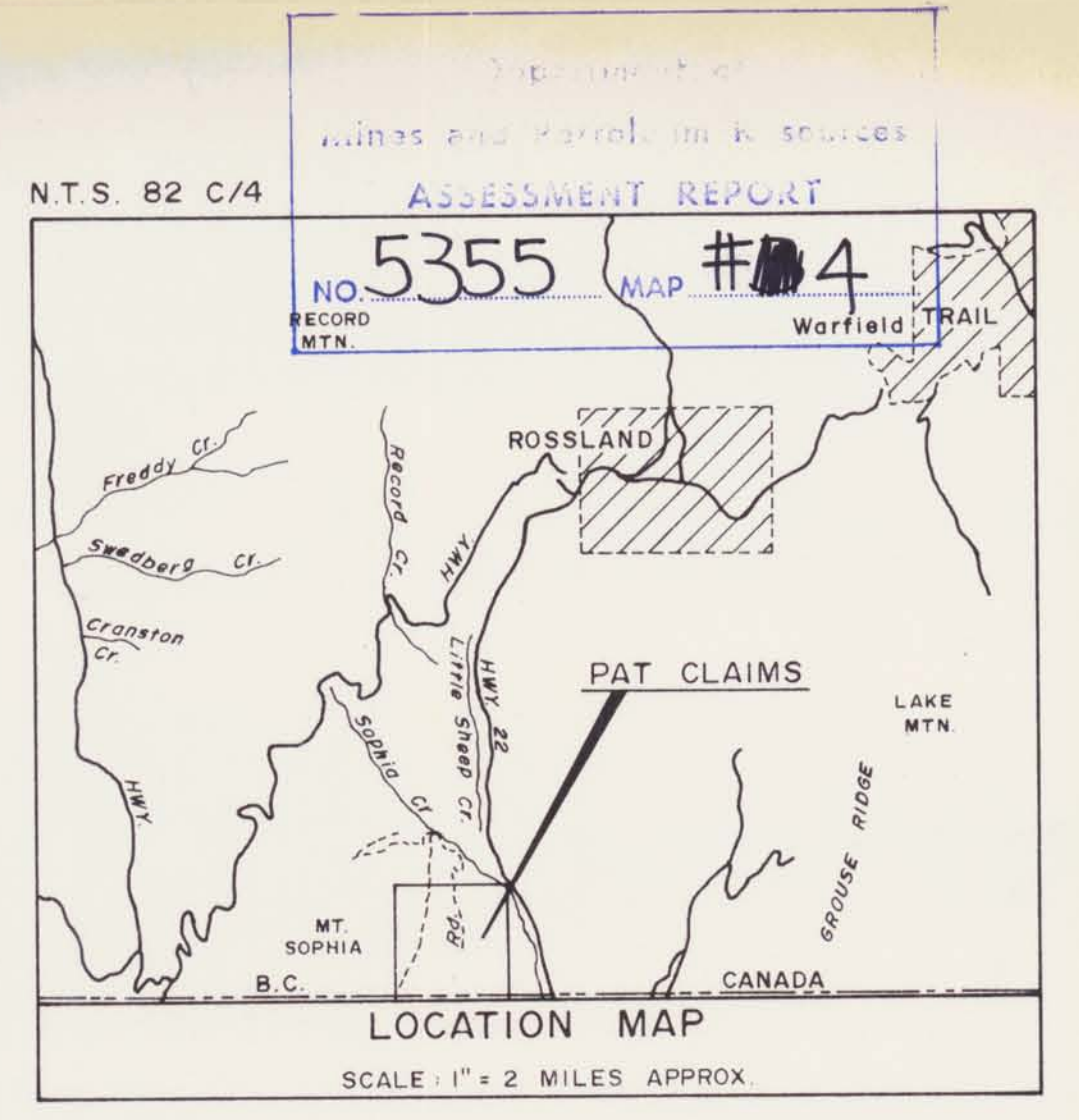
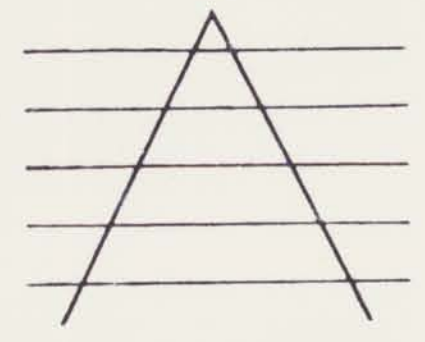
44+00 W 40+00 W 36+00 W 32+00 W 28+00 W 24+00 W 20+00 W 16+00 W 12+00 W 8+00 W 4+00 W 0+00 4+00 E 8+00 E 12+00 E 16+00 E 20+00 E

52+00 N 48+00 N 44+00 N 40+00 N 36+00 N 32+00 N 28+00 N 24+00 N 20+00 N 16+00 N 12+00 N 8+00 N 4+00 N BASE LINE 0+00 4+00 S 8+00 S



LEGEND

- Contour Line, Contour Interval
- Stations
- Outline of Claims
- Claim Posts
- Unpaved Roads



**BOW RIVER RESOURCES LTD.**  
PAT CLAIMS  
TRAIL CREEK MINING DIVISION - BRITISH COLUMBIA

GEOCHEMICAL MAP 5355  
MOLY P.P.M. MAP 4

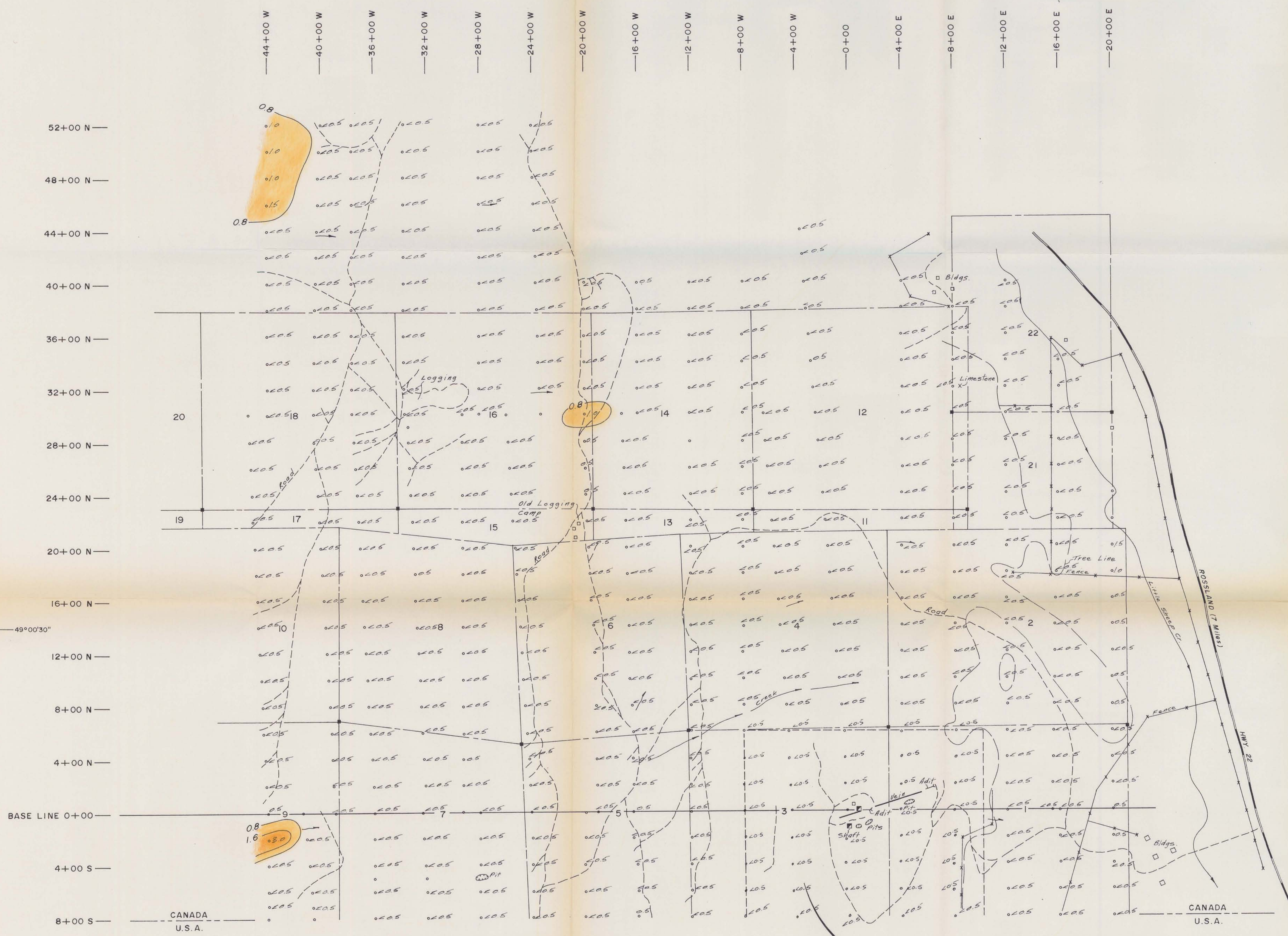
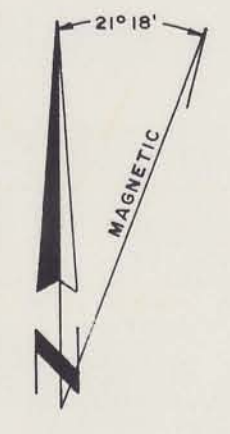
Glen E. White  
geophysical consulting  
services Ltd.

INTERPRETED BY: G.E.W.  
DRAWN BY:  
CHECKED BY: [Signature]  
DATE: OCT 17, 1974  
FIG No: 4

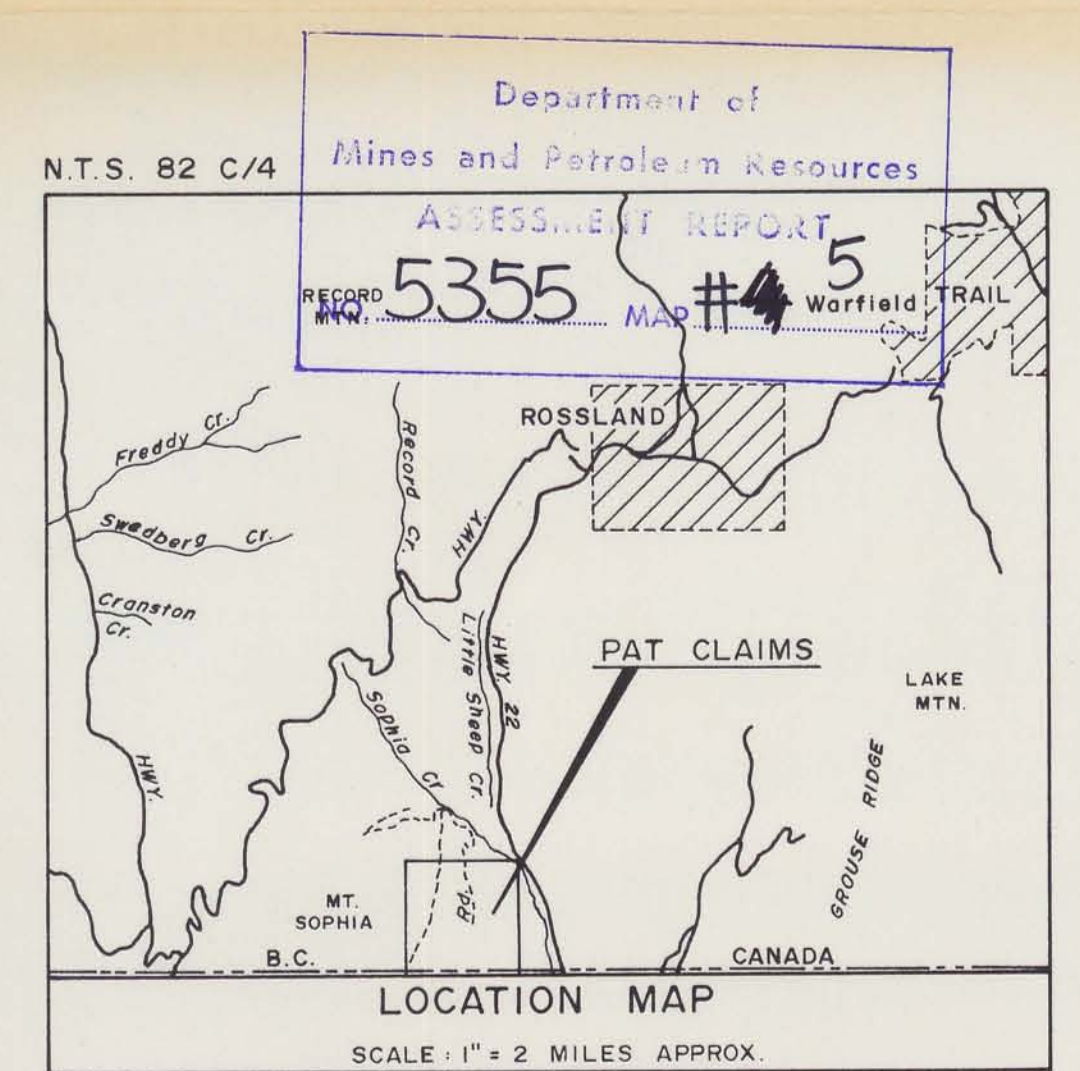
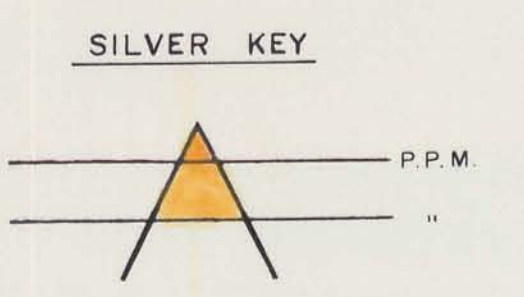
To Accompany Geochemical Report on  
THE PAT CLAIMS  
Date November 17, 1974  
By GLEN E. WHITE B.S. [Signature]

117°52'

117°52'



- LEGEND**
- Contour Line, Contour Interval 0.8, 1.6 P.P.M.
  - Stations
  - Outline of Claims
  - Claim Pits
  - Unpaved Roads



**BOW RIVER RESOURCES LTD.**

PAT CLAIMS

TRAIL CREEK MINING DIVISION - BRITISH COLUMBIA

GEOCHEMICAL MAP 5355

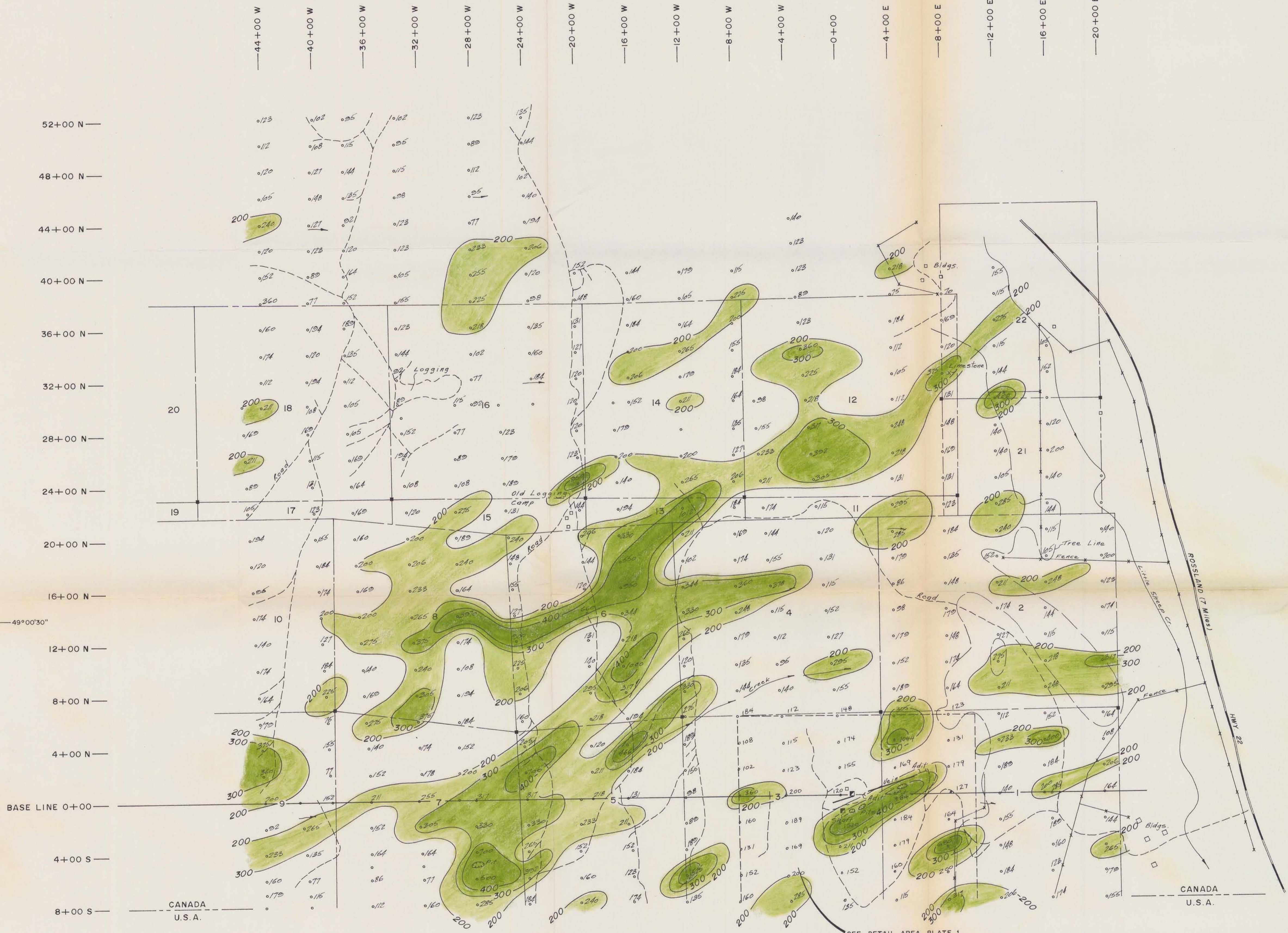
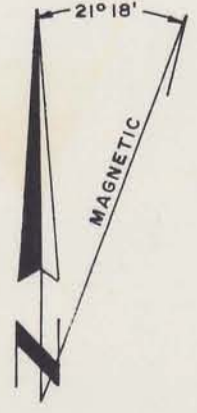
SILVER P.P.M. MAP 5

Glen E. White geophysical consulting services Ltd.	INTERPRETED BY: G.E.W.
	DRAWN BY:
	CHECKED BY:
	DATE: OCT 12, 1974
FIG No: 5	

To Accompany Geochemical Report on  
THE PAT CLAIMS  
Date: November 14, 1974  
By: GLEN E. WHITE - B. White

117°52'

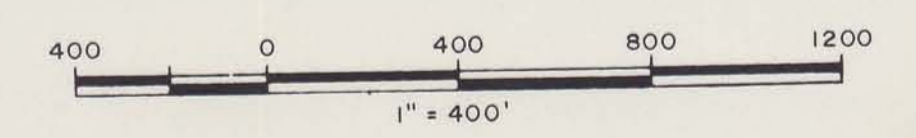
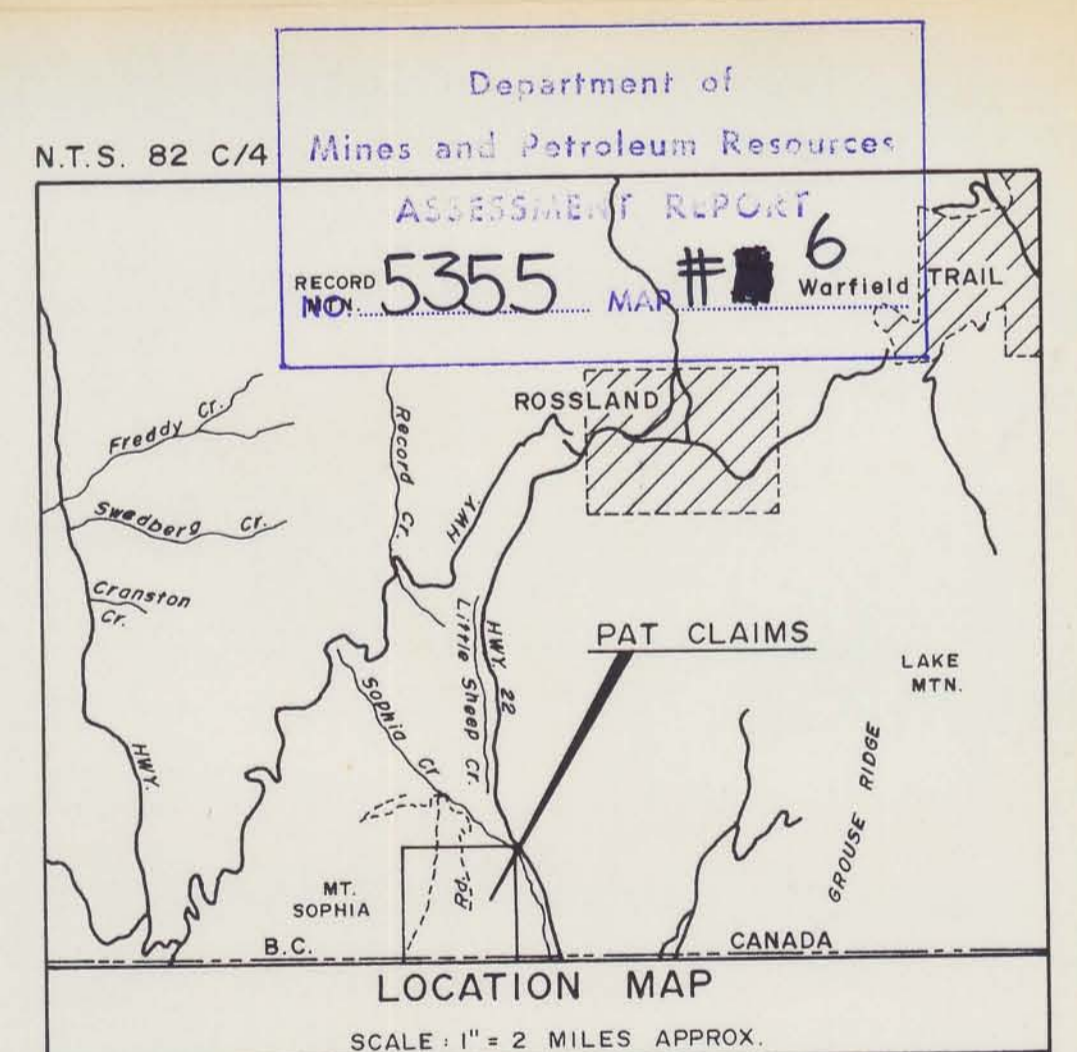
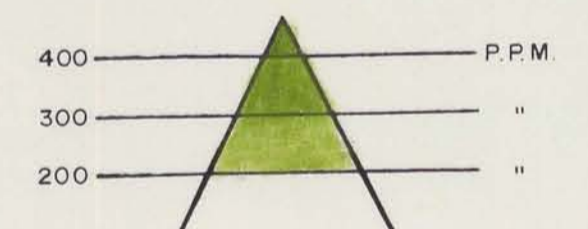
117°52'



**LEGEND**

- Contour Line, Contour Interval 200,300,400 P.P.M.
- o Stations
- - - Outline of Claims
- Claim Posts
- == Unpaved Roads

**ZINC KEY**

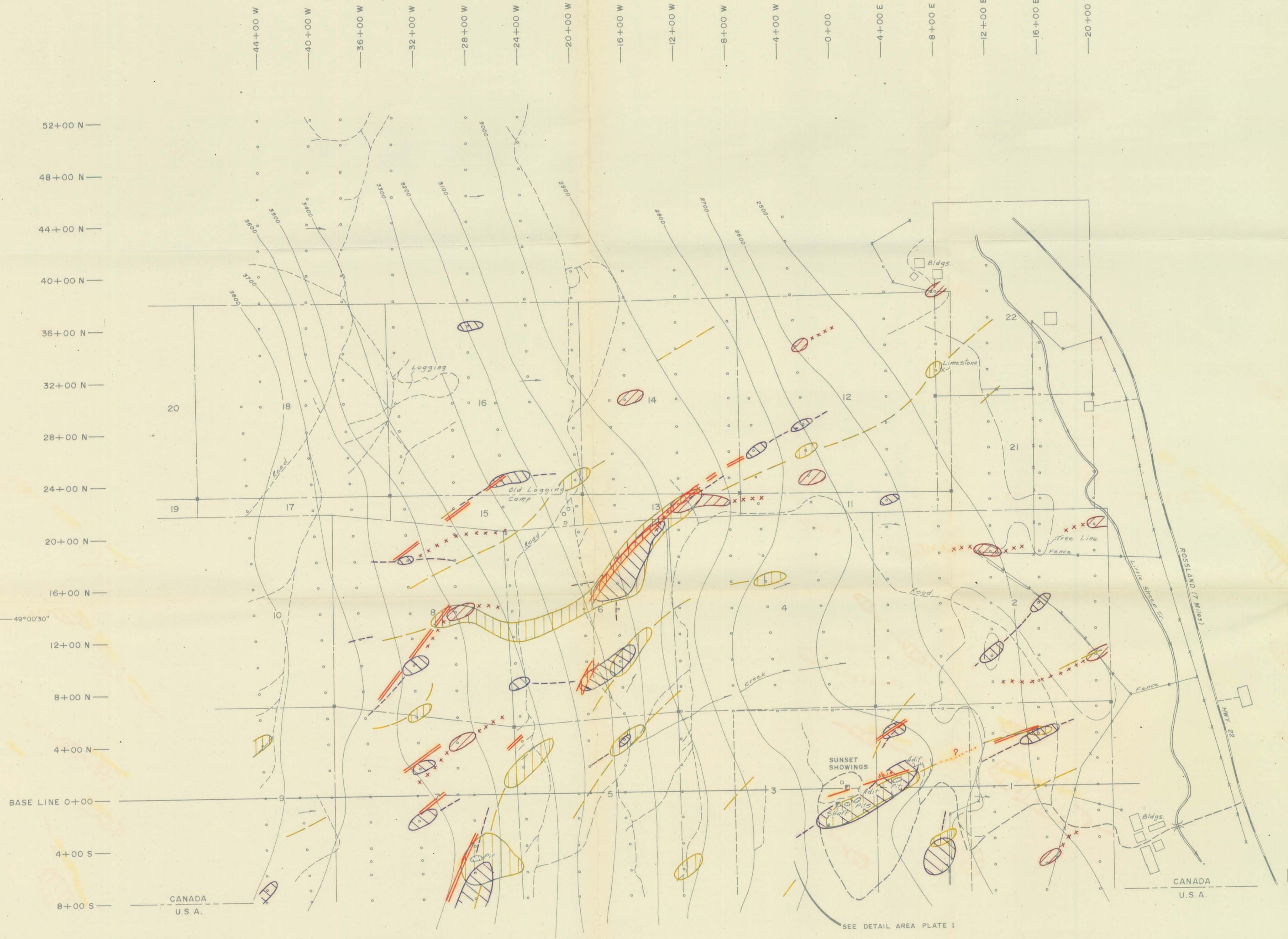
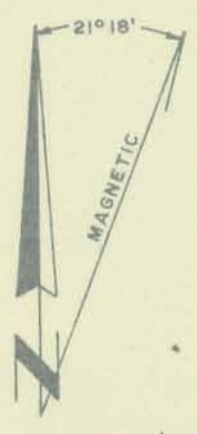


<b>BOW RIVER RESOURCES LTD.</b>	
PAT CLAIMS	
TRAIL CREEK MINING DIVISION - BRITISH COLUMBIA	
GEOCHEMICAL MAP 5355	
ZINC P.P.M. MAP 6	
Glen E. White geophysical consulting resources Ltd.	INTERPRETED BY: G.E.W. DRAWN BY: CHECKED BY: DATE: OCT 1974 FIG. No.: 6

To Accompany Geochemical Report on  
 THE PAT CLAIMS  
 Date November 1974  
 By GLEN E. WHITE & S. J. [Signature]

117°52'

117°52'



LEGEND

- Contour Line, Contour Interval
- o Stations
- - - Outline of Claims
- Claim Posts
- Unpaved Roads
- ZINC
- LEAD
- x x x x COPPER
- POSSIBLE VEIN

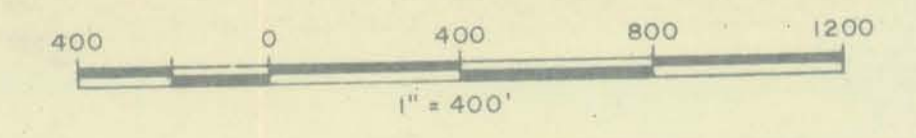
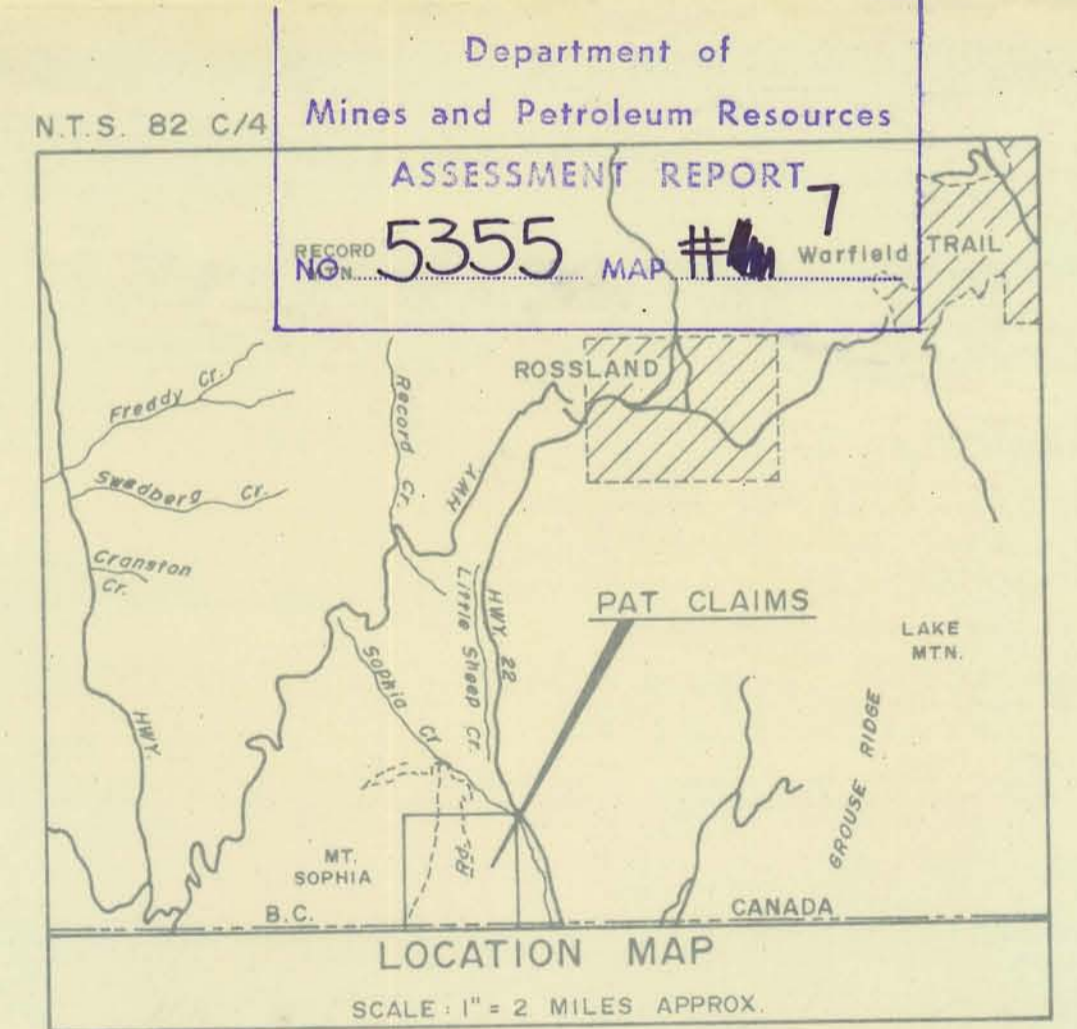
52+00 N —  
 48+00 N —  
 44+00 N —  
 40+00 N —  
 36+00 N —  
 32+00 N —  
 28+00 N —  
 24+00 N —  
 20+00 N —  
 16+00 N —  
 12+00 N —  
 8+00 N —  
 4+00 N —  
 BASE LINE 0+00 —  
 4+00 S —  
 8+00 S —

CANADA  
U.S.A.

CANADA  
U.S.A.

SEE DETAIL AREA PLATE 1

117°52'



BOW RIVER RESOURCES LTD.	
PAT CLAIMS	
TRAIL CREEK MINING DIVISION - BRITISH COLUMBIA	
GEOCHEMICAL MAP	5355
INTERPRETATION MAP	MAP 7
Glen E. White geophysical consulting services Ltd.	INTERPRETED BY: G.E.W. DRAWN BY: CHECKED BY: A DATE: OCT. 15, 1974 FIG. No.: 7

To Accompany Geochemical Report on  
THE PAT CLAIMS  
Date - Nov. 1974  
By GLEN E. WHITE - B.S. *G. E. White*