

GEOLOGICAL MAPPING OF SCHEELITE -
BEARING SKARNS ON THE CANYON, W1 &
W2 CLAIMS, TURNAGAIN RIVER, B.C.

Claims: Canyon, W1, W2
Liard Mining Division
NFS: 104 I - 9E
Latitude: 58°41'N
Longitude: 128°01'W
UNION CARBIDE CANADA LIMITED
Report Prepared by: T. Liverton, September-October 1979

MINERAL DEPARTMENT BRANCH
ASSESSMENT REPORT
NO. **7682**

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M A P S

Location and geology maps - Canyon, W Claims	Pocket
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Location

The Canyon and W claims are approximately 160 km south-south east of Watson Lake. They are on the east side of the Turnagain River, about 6 km northeast of the junction into the Cassiar River. The claims adjoin the Cliff group to the south.

Access is by helicopter from either Watson Lake or Dease Lake. It is possible to travel up the Turnagain River by jet-boat via the Liard and Kechika to a point below the claims, but access by this means is suitable for light loads only.

Topography

The Turnagain River is one of the major drainages in this region. Below the Cassiar River it has a fairly gentle gradient, but there are few large meanders before it meets the Kechika. The valley floor is at around 670 metres elevation, whilst the higher peaks are over 2,000 metres. The claim block covers both sides of a small deep canyon draining north westerly to the river. The area mapped is around 1,260 metres elevation.

Regional Geology

The region of the claims is a sequence of quartz-biotite schist and quartzite containing a 200 metre section of impure carbonates interbedded with the schist. They are of Lower Paleozoic age. The higher peaks to the north of the chains are topped by massive yellow dolomite of similar age. The Cassiar Batholith is exposed in the Turnagain valley at the west edge of the W1 claim. Thermal metamorphism has produced some calc-silicate hornfels and garnet skarn with the carbonate sequence. The sediments are gently deformed in this region and show a broad dome structure over the Turnagain valley.

Previous Work

Scheelite mineralization on the Canyon claims was discovered during 1978 by R. Cook and W. Kuhn and the Canyon claim block staked by W. Kuhn and T. Liverton at that time. The original showings were found at the base of the cliffs mapped in the southeast corner of the present coverage. Scheelite is disseminated throughout two skarn horizons of around one-metre thickness.

Since the stratigraphic equivalent horizon outcrops across the valley to the north the W claims were added to cover any possible extension to the mineralization.

Detailed Mapping

The exposures on both sides of the valley were mapped using tachymetry. This mapping covers portion of the Canyon and W1 claims.

Contours were prepared by interpolation between spot heights and are approximate. They are relative to station c-o as a datum with assured elevation of 1,275 metres.

Mapping of the exposures around the original showing indicated that the two skarn horizons previously found are the only mineralized portion of this sequence. Chipping and ultraviolet-lamping of the rocks indicated that grades were substantially less than 1% WO_3 . The skarn contains a considerable amount of pyrrhotite and is a fairly fine grained garnet-diopside assemblage. The carbonate bed in which the two horizons are found contains much quartz sand and probably argillaceous material.

To the west a further skarn bed was noted which is stratigraphically lower than the others occurring within the quartzite and schist.

Some chip samples were taken and assay results are as follows:

<u>Sample</u>	<u>Stratigraphic Thickness</u>	<u>WO₃%</u>	<u>Mo%</u>
A	1.65m	0.01	0.001
B	1.4	0.08	0.001
C	2.0	0.01	0.001
D	1.5	0.01	0.001
E	0.5	0.01	0.001
F	2.1	0.01	0.001
G	1.1	0.01	0.001
H	2.0	0.03	0.001

On the north side of the valley the carbonate bed continues and is at least 20 metres thick. Here it contains much more fairly coarsely crystallized marble and somewhat less arenaceous content. No skarn horizons were noted within the carbonate and only one, minor, unmineralized bed was found in the schist below.

Stream Sampling

In addition to the mapping, stream sediments were collected in approximately 1 1/2 kilogramme samples at as close intervals as practicable (depending on spacing of pools in the swift-flowing creek) at roughly hundred-metre intervals up the main creek from the helicopter pad to the L.C.P. for the Canyon claim. The samples were panned by hand and concentrates examined under ultra-violet light.

Samples taken near the helicopter pad and below the talus slope shedding from the cliffs where the original showings were found gave at least 200 grain of scheelite per pan, which is considered quite anomalous compared to most regional background values of below 1⁰ grains.

Further upstream, where slope material contained little or no talus from the known mineralized horizon, the values dropped to around 20 grains at the claim post values from 5 to 25 were obtained.

From these results it is considered that the scheelite found in this creek has come from the known source. Certainly earlier prospecting upstream had found no scheelite showings although some thick calc-silicate horizons outcrop in the valley.

Conclusions

It is obvious that at this particular location the skarn beds are of too low a grade to be of economic interest. It is likely, however that this stratigraphic level might correlate with skarn boulders which were found a few hundred metres to the south on the Canyon claims during 1978.

There is practically no exposure at this elevation further south, so any correlation is speculative.

It may be worthwhile to investigate the area in the future. Since the skarns found last year showed pyrrhotite content they might be traced by a magnetic - EM survey. That particular horizon is probably the only potential mineralization existing on these claims. The region further upstream (W2 and the east edge of the Canyon block) has previously been well prospected.

John Brown
1978

COST STATEMENT

Days Worked

S. Fraser, staff geologist - June 7-10, 15, 17th 5 1/2 days @ \$120 per day	660.00
T. Liverton, staff geologist - June 7-10th, 15th, 17th 5 1/2 days @ \$120	660.00
P. Levesque, assistant - 3 days @ \$60 per day	180.00
D. Simpson, assistant - 3 days @ \$60 per day	180.00

Accommodation

17 man days @ \$30	510.00
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Equipment Rental

Surveying instruments	75.00
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Assays

8 samples for W, Mo at \$9	72.00
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Preparation of Base Map

Pacific Surveys - Vancouver	550.00
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Helicopter

5.8 hrs. @ \$185 (Quasar Bell 47)	1,073.00
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Report preparation

450.00

TOTAL

\$4,410.00

STATEMENT OF QUALIFICATIONS OF AUTHOR

Timothy Liverton: Graduated from the University of Sydney with a B Sc degree in Geology and Geophysics in 1964.

Experience: - in Australia.

1965 - Employed by R. Hare and Associates (consultants) to work on tin, tungsten and copper mines and prospect in Queensland and Western Australia. Work included surface and underground surveying and geological mapping, supervision of diamond drilling and regional mapping.

1966 and 1967 - Employed by the Electrolytic Zinc Company of A'Asia Ltd. to work on base metal exploration in souther N.S.W. and uranium prospect in S.A. Work involved detailed mapping, supervision of drilling, geochemical surveys and geophysics and petrographic studies.

1968 to 1970 - Employed by Trans Australian Exploration to carry out regional mapping and prospecting over 2000 square miles of Queensland to explore for copper, molybdenum and tungsten.

1971 and 1972 - Employed by ANZ Exploration (Union Carbide) to carry out uranium exploration in the Northern Territories. - in Canada and abroad.

1973 - Working as a civil engineer in England.

1974 to present - Employed by Union Carbide Canada Ltd. to work in Yukon and Northern B. C. tungsten projects during the summer. During the winter working on reconnaissance for quartz in Greenland, for Manganese in Amazonia, Brazil; as a mine geologist at the Pine Creek Mine, California, work on Tungsten exploration in Norway and development work in Portugal.

STATEMENTS OF QUALIFICATIONS OF AUTHOR

STUART FRASER: Graduated from Dalhousie University, Halifax, Nova Scotia with B.Sc. Degree in Geology and Chemistry in 1973.

Experience

- 1973 - 1975: Underground geologist with Granduc Operating Company in Stewart, B.C.
- 1975: Summer's work with Union Carbide Exploration Corporation, Vancouver, working as exploration geologist in northern B.C.
- 1975 - 1977: Mine geologist with Echo Bay Mines Ltd., Port Radium, N.W.T., supervising underground grade control, underground mapping, laying out diamond drill holes and core logging.
- 1977 to present: Project geologist with Union Carbide Exploration Corporation working throughout Canada.

930 - 800 West Fender Street
 Vancouver, B.C.
 V6C 2V6

BONDAR-CLEGG & COMPANY LTD.

CERTIFICATE OF ASSAY

Samples Submitted: June 25, 1979
 Results Completed: June 29, 1979

PROJECT: 072

I hereby certify that the following are the results of assays made by us upon the herein described ore sample

MARKED	GOLD		SILVER		W	Mo						
	Ounces per Ton	Grams per Metric Ton	Ounces per Ton	Grams per Metric Ton	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
A					0.01	0.001						
B					0.06	0.001						
C					0.01	0.001						
D					0.01	0.001						
E					0.01	0.001						
F					0.01	0.001						
G					0.01	0.001						
H					0.02	0.001						

cc Mr. Stuart Fraser

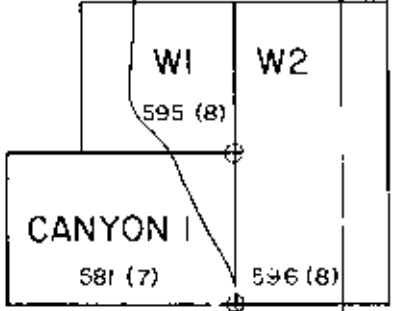
NOTE:
 Rejects retained three weeks
 s retained three months
 as wise arranged.

R. H. Bondar
 Registered Assayer, Province of British Columbia

58°45' N

128°00' W

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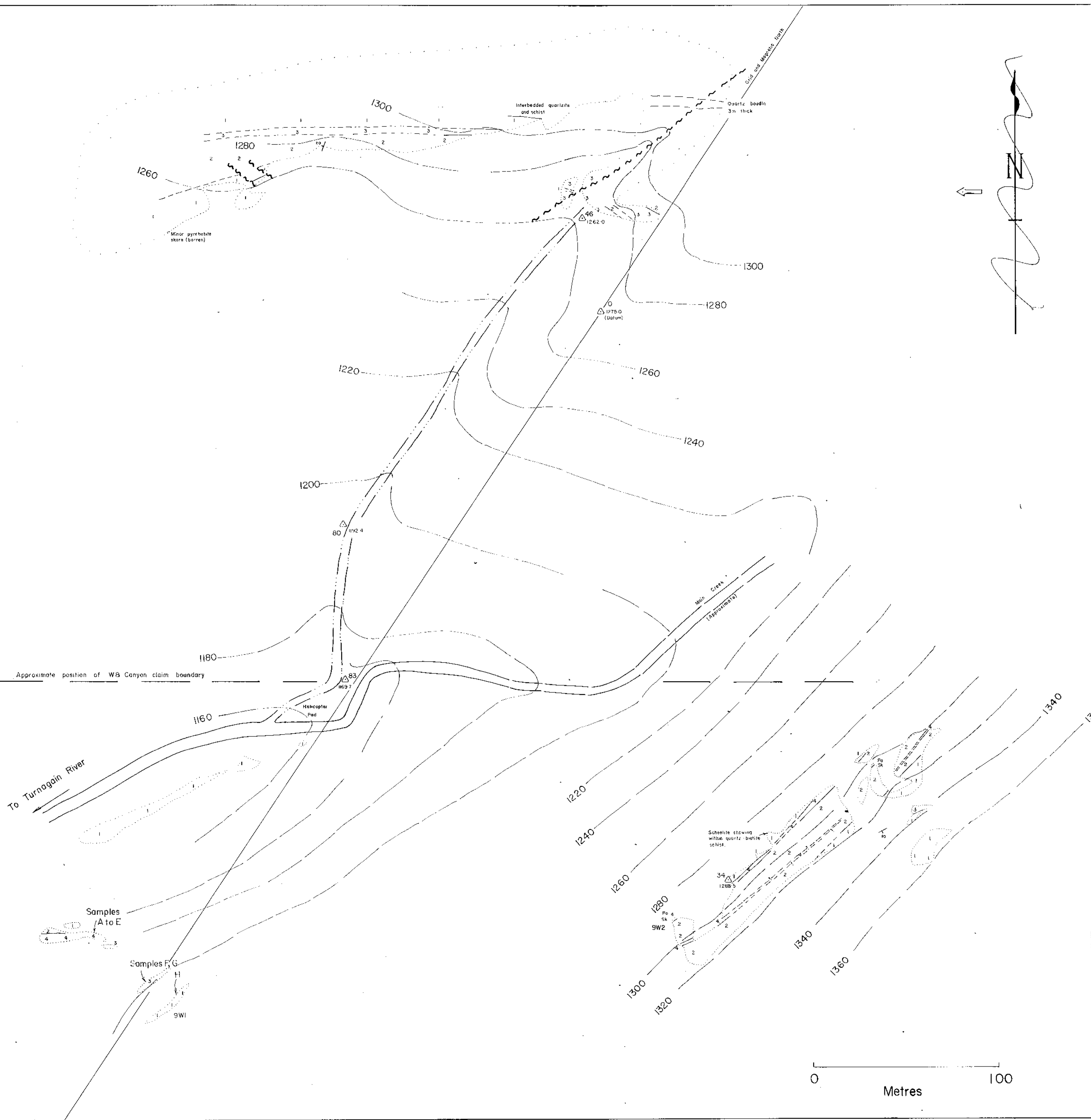
N.T.S 1041-9E
0 2
Km
1:50,000

CANYON & W CLAIMS
LOCATION

Turnagain

River

Cassiar
River



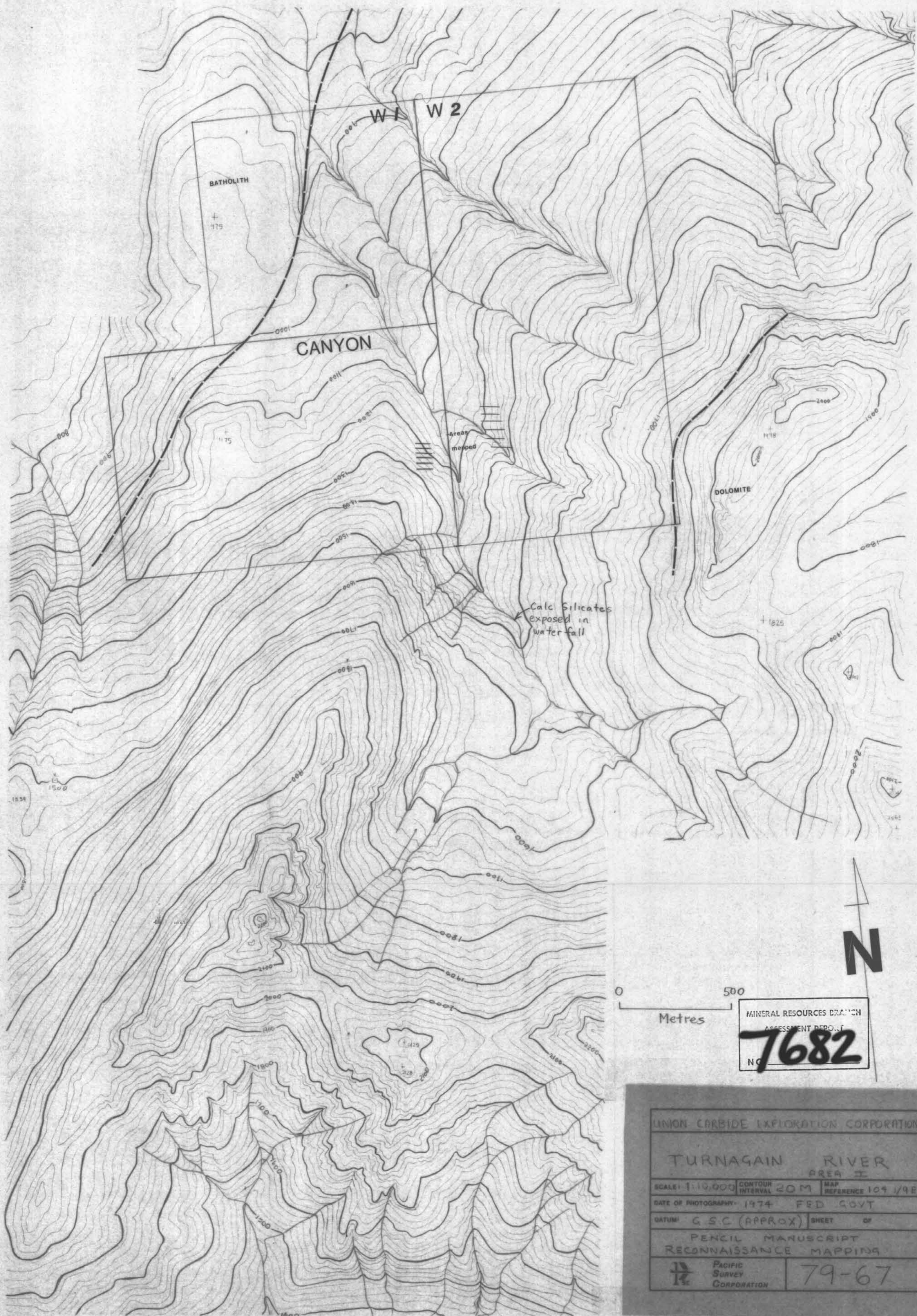
LEGEND

- 1 Quartz - biotite schist
- 2 Argillaceous limestone
- 3 Micaceous quartzite
- 4 Pyrrhotite skarn
- Geological contact, approximate position is indicated where line is broken.
- Attitude of bedding.
- Topographic contour - elevations are relative to station C-O = 1275 metres.
- Survey station, showing elevation.
- Creek
- Gully
- Limits of rock exposure are indicated by dotted lines; where dots are widely spaced the position is estimated.
- Mapping was carried out using theodolite tachometry.

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UNION CARBIDE EXPLORATION CORP.	
CANYON AND "W" CLAIMS TURNAGAIN RIVER, LIARD MINING DIVISION, B.C. GEOLOGY	
Scale: 1 to 1000 metric	Surveying: T. Liverton Geology: S.C. Fraser June 1979
N.T.S. 1041-9E	Drawn: T.L. September 1979

0 Metres 100



0 500
Metres

N

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N.C.

UNION CARBIDE EXPLORATION CORPORATION

TURNAGAIN RIVER
AREA II

SCALE: 1:10,000 CONTOUR INTERVAL: 20 M MAP REFERENCE: 109/198

DATE OF PHOTOGRAPHY: 1974 FED GOVT

DATUM: G.S.C. (APPROX) SHEET OF

PENCIL MANUSCRIPT
RECONNAISSANCE MAPPING

PACIFIC SURVEY CORPORATION 79-67