



Geological Mapping and Prospecting  
on the Molly Claims,  
Watson Lake Mining Division, Yukon  
Territory.

Latitude: 60° 56' N.

Longitude: 128° 49' W.

Map Sheet: 105A - 15

by

T. Liverton

Tarmachan Exploration Services Limited,

August 1981.

090873

This report has been examined by  
the Geological Exploration Unit  
under Section 53 (4) Yukon Quartz  
Mining Act and is allowed as  
representation work in the amount  
of \$ 900.00

*Ruth Debricki* Sr  
Regional Manager, Exploration and  
Geological Services for Commissioner  
of Yukon Territory.

858900

FROM: Mining Recorder at Watson Lake

O. Supervising Mining Recorder at Whitehorse, Y.T.



FOR ACTION ARE:

- NEW APPL'N for PLACER LEASE to PROSPECT: Name: \_\_\_\_\_
- RENEWAL APPL'N PLACER LEASE to PROSPECT: Name: \_\_\_\_\_ Lease No. \_\_\_\_\_
- AFFIDAVIT of EXPENDITURE on PLACER LEASE. Name: \_\_\_\_\_ Lease No. \_\_\_\_\_
- ASSIGNMENT of PLACER LEASE No. \_\_\_\_\_  
From: \_\_\_\_\_ To: \_\_\_\_\_
- GROUPING APPL'N UNDER SEC. 52(2) PLACER MINING ACT.  
Owner: \_\_\_\_\_
- DIAMOND DRILL LOGS:  
Claims: \_\_\_\_\_ Claim sheet no: \_\_\_\_\_
- QUARTZ ASSESSMENT REPORT  
Claims: Molly 1-6 Claim sheet no. 105-A-15  
Type of report: Geological Mappings Submitted by: Tarmachan Exploration Services  
for Alex Black  
Cls. work performed on: Molly 4, 6 \$ Req. for ren. application \$900.00

*[Handwritten Signature]*

Signature

REPLY ACTION

Date Ret.

090873

Signature



**DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT**  
**YUKON QUARTZ MINING ACT**  
**FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK**



(This form required in duplicate with sketch showing location of work.)

I (Name)	TIMOTHY LIVERTON	Occupation	GEOLOGIST
(Postal Address)	Box 529, WATSON LAKE, Y.T.		

OFFICE DATE STAMP

**MAKE OATH AND SAY, THAT:**

- I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.
- I have done, or caused to be done, work on the following mineral claim(s):

(Here list claims on which work was actually done by number and name)

MOLLY 4            YA 35546  
MOLLY 6            YA 35548

situated at MT. MURRAY Claim Sheet No. 105A-15

in the WATSON LAKE Mining District, to the value of at least 960

dollars, since the TWENTY-FOURTH day of JULY 1981.

to represent the following mineral claims under the authority of Grouping Certificate No. 2998

(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

MOLLY 1	YA 35543	1 YEAR
MOLLY 2	YA 35544	1 YEAR
MOLLY 3	YA 35545	1 YEAR
MOLLY 4	YA 35546	2 YEARS
MOLLY 5	YA 35547	1 YEAR
MOLLY 6	YA 35548	1 YEAR
MOLLY 13	YA 57103	1 YEAR
MOLLY 14	YA 57104	1 YEAR

- The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 53.)

GEOLOGICAL MAPPING OF EXPOSURES IN CREEK  
24th to 26th JULY 1981  
Report to follow, end of September

Sworn before me at Watson Lake, Y.T.  
this 15 day of Sept. 1981.  
\_\_\_\_\_  
Notary Public

Timothy Liverton  
Applicant

## INTRODUCTION

The "Molly" claims were staked in September 1979 by Alex Black to cover disseminated molybdenite mineralization in granitic rocks originally prospecting by Montana and Black in 1969. No extensive investigation has yet been carried out on the ground, assessment work previously having taken the form of blasting out of mineralization visible in the creek and on the crest of the spur.

The present work comprises mapping along the creek bed to cover the exposures of molybdenite bearing quartz veins and alteration zones in the granodiorite. Time and equipment did not permit detailed mapping of the cliff exposures of mineralized rock to the East.

## LOCATION

The claim block is 97 Km. North of Watson Lake on the South side of the Nahanni Ridge road. Mineralization is found between 3800 ft. and 5250 ft. (1158 and 1600 metres) elevation. It is accessible by walking from the road, the camp site being reached in about an hour if carry a heavy pack, the top of mineralization in the creek in another hour with light load and highest level of mineralization on the spur in a further one and quarter hour. A helicopter would be useful for gaining access to the ridge, but would not be able to land in the creek below the alpine meadows (4700 feet elevation).

## CLAIMS

The existing claims are:

Molly	1	Record YA35543	
	2	YA35544	
	3	YA35545	
	4	YA35546	Expire 22nd September 1981.
	5	YA35549	
	6	YA35548	
	7	Record YA36849	
	8	YA36850	
	9	YA36851	
	10	YA36852	Expire 5th September 1981.
	11	YA36853	
	12	YA36854	
	13	Record YA57103	
	14	YA57104	
	15	YA57105	Expire 14th October 1981
	16	YA57106	

## GEOLOGY

The claim block is within the granitic pluton extending Northward from Mt. Murray. The intrusive is ubiquitously equigranular and relatively fine grained (2 - 4 m.m. common grainsize) for granitic plutons in the Yukon. In the absence of feldspar staining information it has been termed a granodiorite as the feldspar is white. The claim blocks cover possibly two zones of extremely pervasive North North-East striking jointing which contains quartz veins bearing pyrite and molybdenite mineralization and associated alteration zones where ESE and ENE striking joints carry much pink (possibly potassic) alteration. One leucocratic phase of the granitics was found, a fine - grained 1 to 2 m.m. grainsize rock carrying only a little muscovite as a ferromagnesian termed loosely "aplite" and one diorite dyke carrying much disseminated pyrite is also exposed in the creek.

The N.N.E. trending joint zone exposed in the creek may be seen to extend for about 400 metres length and a width of 100 metres (at this strike projection) is indicated. Alteration consists of bright pink friable material on the Easterly striking joint sets. It is presumed to be a mixture of gypsum, chlorite and perhaps zeolite and often extends 5 m.m. out from the joint planes.

The mineralized NNE trending joints carry quartz veining up to 15 cms. wide, which in places has massive pyrite (15 cm "lumps") and disseminated 5 m.m. size molybdenite flakes and are spaced from 30 cms to 1 metre apart. One set has been traced over 40 metres length across the stream bed.

The alteration zone is on the East edge of the mineralized zone and is separated from a second, more intensely altered zone by unaltered granodiorite. Jointing zones on the ridge, some 200 metres East of the creek mapped are extremely pervasive and the individual joint planes form huge 80° West dipping slabs 80 metres high. These joints are spaced from 0.5 to 1.5 metres apart and similar to these in the creek, carry grey quartz veins which pinch and swell and carry disseminated molybdenite. These are visible over strike length of perhaps 800 metres. To the South, the jointing disappears rapidly by 5400 ft. elevation and is replaced by the more normal rectangulate jointing of the pluton. Near the northern end of the exposure, but not at the end of mineralization, Alex Black has blasted out a pit on the crest of the spur, exposing close-spaced jointing and molybdenite.

It is uncertain whether mineralization seen in the creek and that of the ridge are separate or represent one broad zone. The extension Northward is also obscured by lack of exposure. Exposures along the creek are depicted on the enclosed 1:2000 scale map.

## PROSPECTING

The following traverses were made to examine the exposures around the claim block:

- i) Around the base of the cliffs showing the mineralization and up

the centre of the zone to the crest then into the next valley East. The granitic rocks exposed in the next cirque were found to lack any pervasive joint system and no mineralization was seen.

- ii) Up the cirque above the highest mapped exposures in the creek then up the face at the Southern end of the spur mineral zone. This traverse was continued Southward to the high saddle and across the N.E. face of the opposite peak, then down the West spur to check out rock types there. The equigranular granodiorite was found everywhere and jointing from the mineralized zone found to end before the peak is reached. No mineralization or alteration was noted on the opposite peak or spur, though exposure is non-existent lower down the spur.

#### CONCLUSIONS AND RECOMMENDATIONS

The mineralization exhibited on these claims is not of typical "porphyry" type in that there seems to be no progressive zoning - there is a rapid transition from unaltered granodiorite to altered rock. The mineralization occurs as one or two linear zones which, to the South at least end quite abruptly. Complete lack of exposure on the West side of the creek prevents observation as to whether an alteration zone surrounds the quartz-veined area or that side. There are some similarities however, to the Logtung deposit.

Although every N.N.E. trending joint that has been carefully examined (and chipped apart) was seen to contain molybdenite at least in the obviously mineralized areas, the overall grade at surface is quite low. It is impossible to give a quantitative estimate at present, but a guess would be less than 0.5%. The mineralisation visible is best considered an indication of what might be found below.

Three further stages of exploration might be carried out:

- i) Mapping of the cliff exposures and along the spur to the North, toward the camp site.
- ii) Soil sampling along one or more E - W trending lines in the region of the hill behind camp to check if the mineralized zone extends Northward.
- iii) Some relatively shallow drilling (of holes inclined Eastward) through the obvious mineralization in the creek to get a quantitative idea of grade. To properly test the property would require deeper drilling to test if the mineralization is more pervasive at depth.

Timothy Liverton

COST STATEMENT / ASSESSMENT

Work was performed on the 24th, 25th, and 26th of July 1981.

Costs are as follows:

T. Liverton (Geologist)	3 days @ \$100.00	\$300.00
A. Black (Prospector)	3 days @ \$ 80.00	\$240.00
J. Jimmy (Assistant)		\$150.00
Vehicle from Watson Lake		\$ 50.00
Camp supplies 6 days @ \$20.00		\$120.00
Report Preparation		\$100.00
	Total	<u>\$960.00</u>

It is proposed to apply assessment as follows:

Molly 5 - 2 years

Molly 6,4,3,2,1,13, & 14 - 1 year each.

STATEMENT OF QUALIFICATIONS OF AUTHOR

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

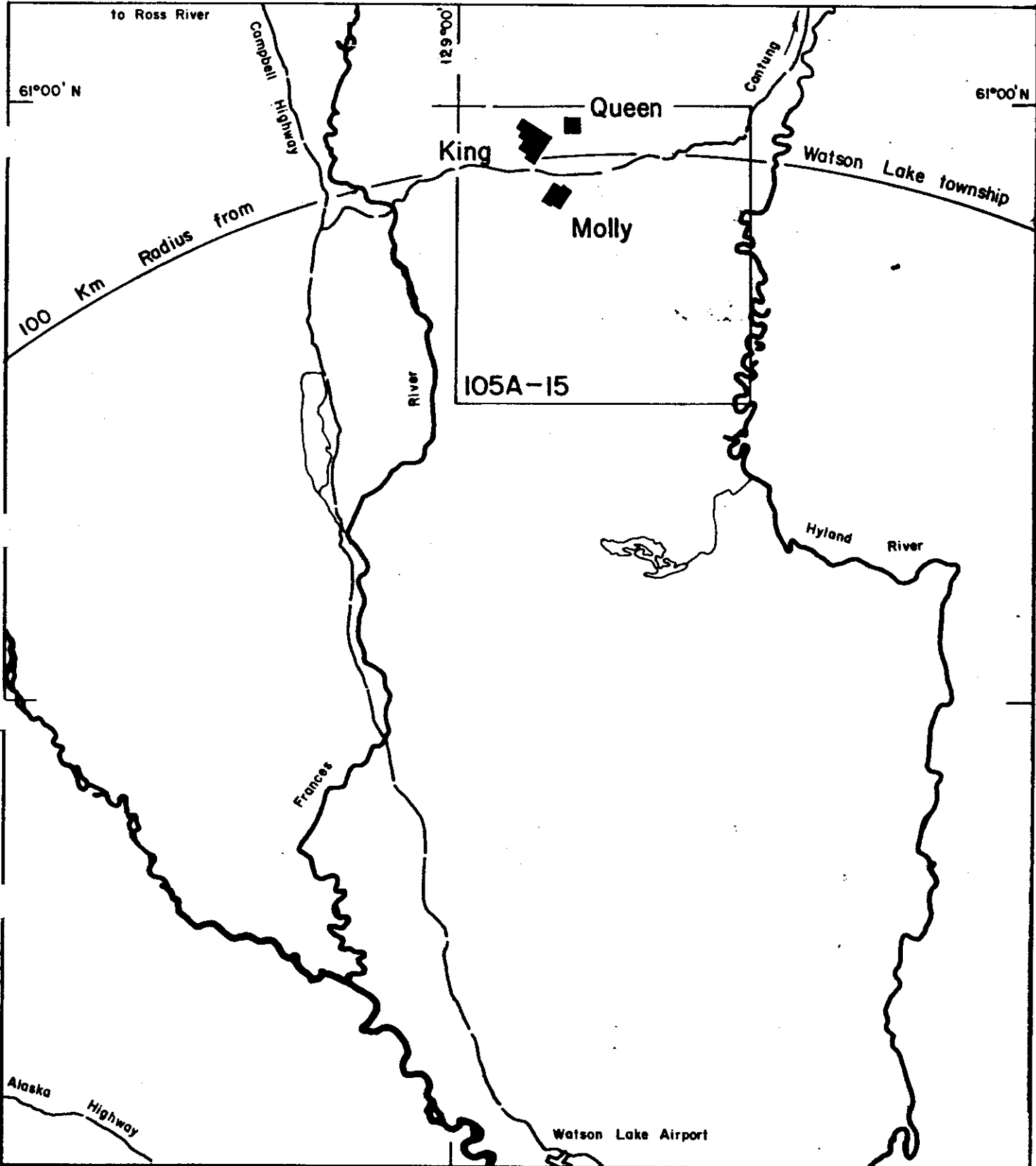
Experience:

(In Australia)

- 1965 - Employed by R. Hare & Associates (consultants) to work on tin, tungsten, and copper mines and prospects in Queensland and Western Australia. Work included surface and underground surveying and geological mapping, supervision of diamond drilling and regional mapping.
- 1966 - 1967 - Employed by the Electrolytic Zinc Company of A'Asia Limited. to work on base metal exploration in southern N.S.W. and uranium prospect in South Australia. Work involved detailed mapping, supervision of drilling, geochemical surveys and geophysics and petrographic studies.
- 1968 - 1970 - Employed by Trans Australiam Exploration (Mc Phar, Sumitomo, St. Joseph, Bethlehem Copper) to carry out regional mapping and prospecting over 2000 square miles of Queensland to explore for copper, molybdenum and tungsten.
- 1971 & 1972 - Employed by ANZ Exploration (Union Carbide) to carry out uranium exploration in the Northern Territory in the Alligator River region.

(In Canada & Abroad)

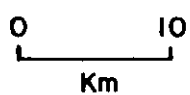
- 1973 - Working as a civil engineer in England, supervising harbour construction.
- 1974 to 1979 - Employed by Union Carbide Canada Limited to work in Yukon and Northern British Columbia tungsten projects during the summer. During the winter months working on reconnaissance for quartz in Greenland, for Manganese in Amazonia, Brazil; as a mine geologist at the Pine Creek Mine, California, on Tungsten exploration in Norway and development work in Portugal.
- 1980 & 1981 - Self-employed, carrying out various projects in the Yukon, Northern B.C. and Saskatchewan (Geological mapping, surveying and property examination) for exploration companies.

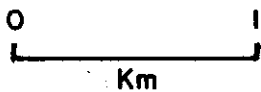
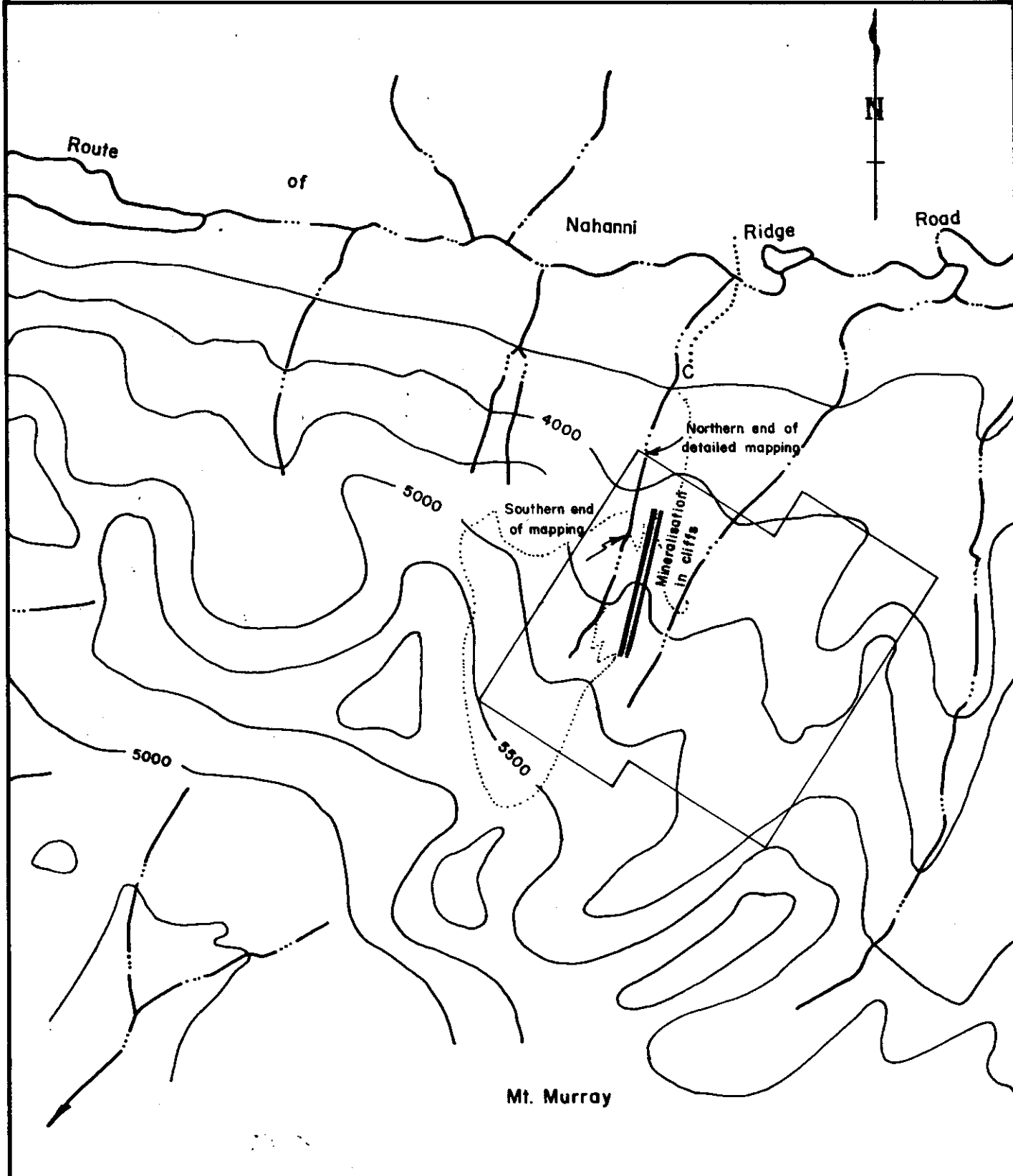


Locality Sketch for King, Queen and Molly Claims  
 105A -15, Watson Lake Mining District, Yukon.

Scale : 1 to 500 000

T.L. Aug. 1981.





Scale: Two inches to one mile (1: 31,680)

## MOLLY CLAIMS

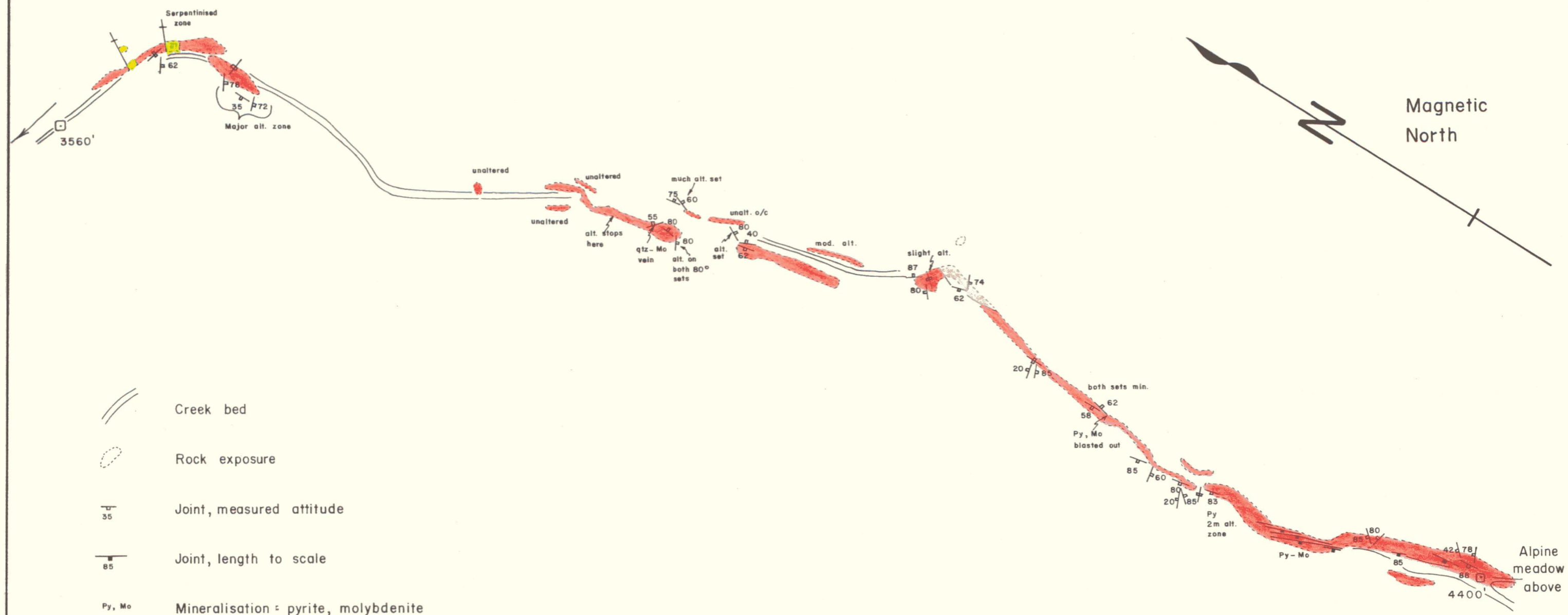
Showing Approximate Claim  
Boundary Position, Mineralisation  
and Area Mapped





T. Liverton, August 1981

Prospecting  
Traverses

Trail to  
camp

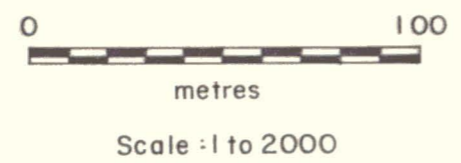
C = Camp site



-  Creek bed
-  Rock exposure
-  Joint, measured attitude
-  Joint, length to scale

Py, Mo Mineralisation = pyrite, molybdenite

-  Granodiorite
-  Serpentinised zone
-  Aplite
-  Diorite dyke



**MOLLY CLAIMS 105A-15**  
 Geological Map of Creek Exposures on  
 The Western Claim Block

Geology: T. Liverton July 1981

Mapped by compass, tape and clinometer traversing.