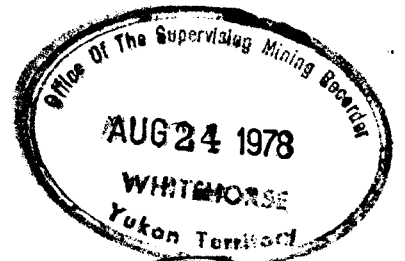




WELCOME NORTH MINES LTD. (N.P.L.)

1027 - 470 Granville St., Vancouver, B.C. V6C 1V5 Telephone (604) 687-1658

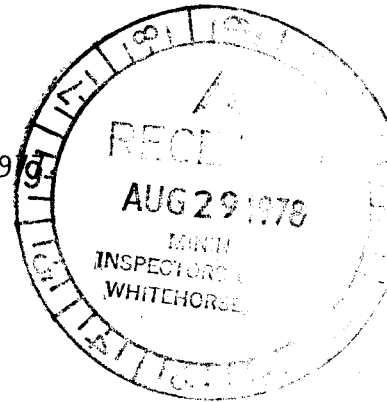
GEOLOGICAL REPORT
ON THE
WOAH 1-56 AND TAI 1-20 CLAIM GROUPS
BASIN PROJECT AREA
N.T.S. 105H-14 & 15
WATSON LAKE MINING DISTRICT
YUKON TERRITORY



Latitude 61°50'N

Longitude 129°10'W

Work conducted in the period Sept. 10 - December 9, 1977



This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

\$7600.00

[Signature]
Resident Geologist or
~~Resident Mining Engineer~~

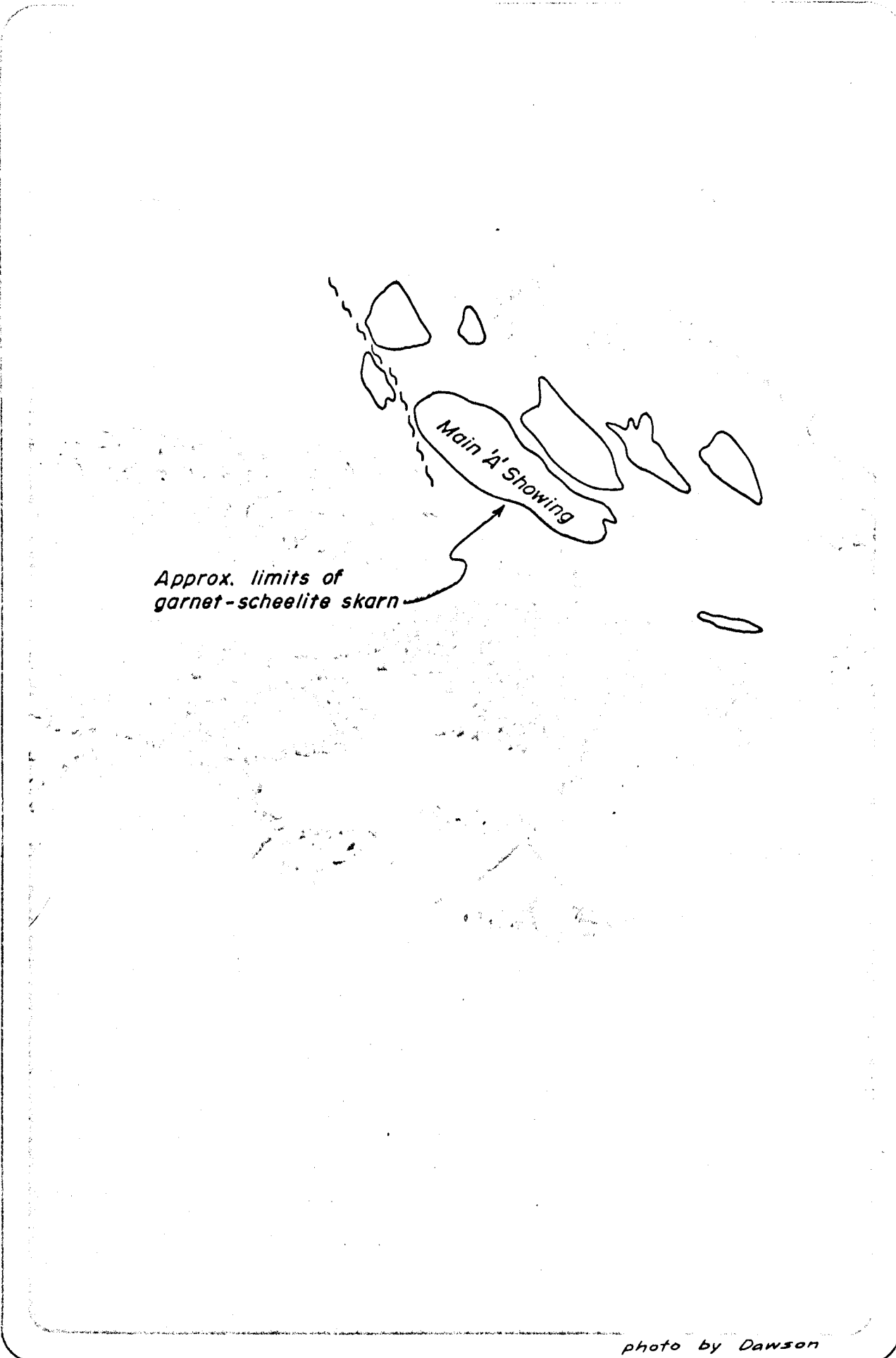
Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

[Signature]
B. R. BAXTER
Supervising Mining Recorder
[Signature]
Commissioner of Yukon Territory

June 1978.

090357

John S. Brock



*Approx. limits of
garnet-scheelite skarn*

Main 'A' Showing

photo by Dawson

VIEW OF WOAH, 'A' SHOWING, LOOKING SOUTHWEST

TABLE OF CONTENTS

	Page
SUMMARY	1
LOCATION AND ACCESS	1
MINERAL CLAIMS	2
GEOLOGY	5
Regional Geology	5
Principal Mineral Occurrences	10
Other Mineral Occurrences	13
CONCLUSION AND RECOMMENDATIONS	21
APPENDICES	
I. Personnel	
II. Statement of Costs	
III. Affidavit Supporting Summary of Costs	
IV. Certificate of Qualification	
FIGURES	
View of WOH "A" Showing Looking Southwest	Frontispiece
1. Location Map	3
2. Basin Project Area Proposed Road Access	4
3. Regional Geology and Mineral Occurrence Location	6
3a. Table of Geological Formations	6a
4. Idealized Section Showing Types of Skarn Deposits	7
5. Geological Cross Section A-B-C	14
6. WOH Claims, East Zone Detailed Geology	15
7. TAI Claims, West Zone Detailed Geology	16
8. TAI Claims, East Zone Detailed Geology	17
PLATES	
1. Claim Location Map	In Pocket
2. Local Geology	In Pocket
3. WOH Claims, West Zone Detailed Geology and Sample Locations	In Pocket
TABLES	
1. A Comparison of Some Characteristics of 22 Skarn Deposits	8
2. Assay Record - WOH West Zone	12

SUMMARY

In August, 1977 Welcome North Mines Ltd., in the course of its Basin regional prospecting program found important showings of tungsten, zinc and lead mineralization in the Tillei-Tustles Lake region, Frances Lake map sheet, Yukon Territory. The showings occur in skarn aureoles to or within granitic stocks of mid-Cretaceous age near the converging headwaters of the Thomas River and Shannon Creek. They lie approximately midway between the Robert Campbell and Cantung highways, some 32 miles to the north of the former and 28 miles to the west of the latter.

A staking program during August and September, 1977 covered the most apparently significant of the showings. This staking included the WOA-H-TAI mineral claim group. Very preliminary geological mapping, prospecting and sampling were conducted on the more important showings during September. The WOA-H West Zone, which has the potential to contain large tonnages of relatively accessible scheelite-rich skarn, is particularly interesting in an economic sense. In addition, its location, several thousands of feet within the granitic batholith, opens new, previously unexamined areas to the implication of possible mineral deposition. Work on the WOA-H and upon other occurrences within the Basin Project Area substantiates the initial belief that the showings hold significant economic potential and therefore warrant an on-going program of exploration and development.

LOCATION AND ACCESS

The location of the WOA-H-TAI claim group is illustrated on the location map (Fig. 1). The coordinates for the claim block are $61^{\circ}50'$ north and $129^{\circ}10'$ west. The WOA-H Claim Group is within N.R.S. sheet 105H-14, while the TAI claims straddle N.T.S. 105H-14 and 15, Frances Lake map sheet. The property is located in the Logan Mountains, Tillei-Tustles Lake area

and the principal known mineral occurrences are above timberline near the converging headwaters of the Thomas River and Shannon Creek. The WOH deposit lies at an approximate elevation of 6,300 feet.

Access to the region can be gained most conveniently by helicopter from Ross River, 110 miles to the west, or from Watson Lake, 118 miles to the south. Alternately, during the exploration season, helicopters based in the region may be utilized in conjunction with fixed-wing travel to Tillei Lake.

Eventual road access appears feasible from either the Cantung road, 28 miles to the east, or from the Robert Campbell Highway, 32 miles to the south (Fig. 2).

MINERAL CLAIMS

The WOH-TAI claims are listed below and are illustrated on the Claim Location Map (Plate 1).

<u>CLAIMS</u>	<u>DATE RECORDED</u>	<u>TAG NUMBERS</u>
WOAH 1- 8	Sept. 9, 1977	YA25740-YA25747
WOAH 9-16	Sept. 9, 1977	YA25748-YA25755
WOAH 17-20	Sept. 9, 1977	YA25756-YA25759
WOAH 21-40	Sept. 14, 1977	YA25802-YA25821
WOAH 41-56	Sept. 16, 1977	YA25894-YA25909
TAI 1-20	Sept. 14, 1977	YA25762-YA25781
TOTAL CLAIMS	76	

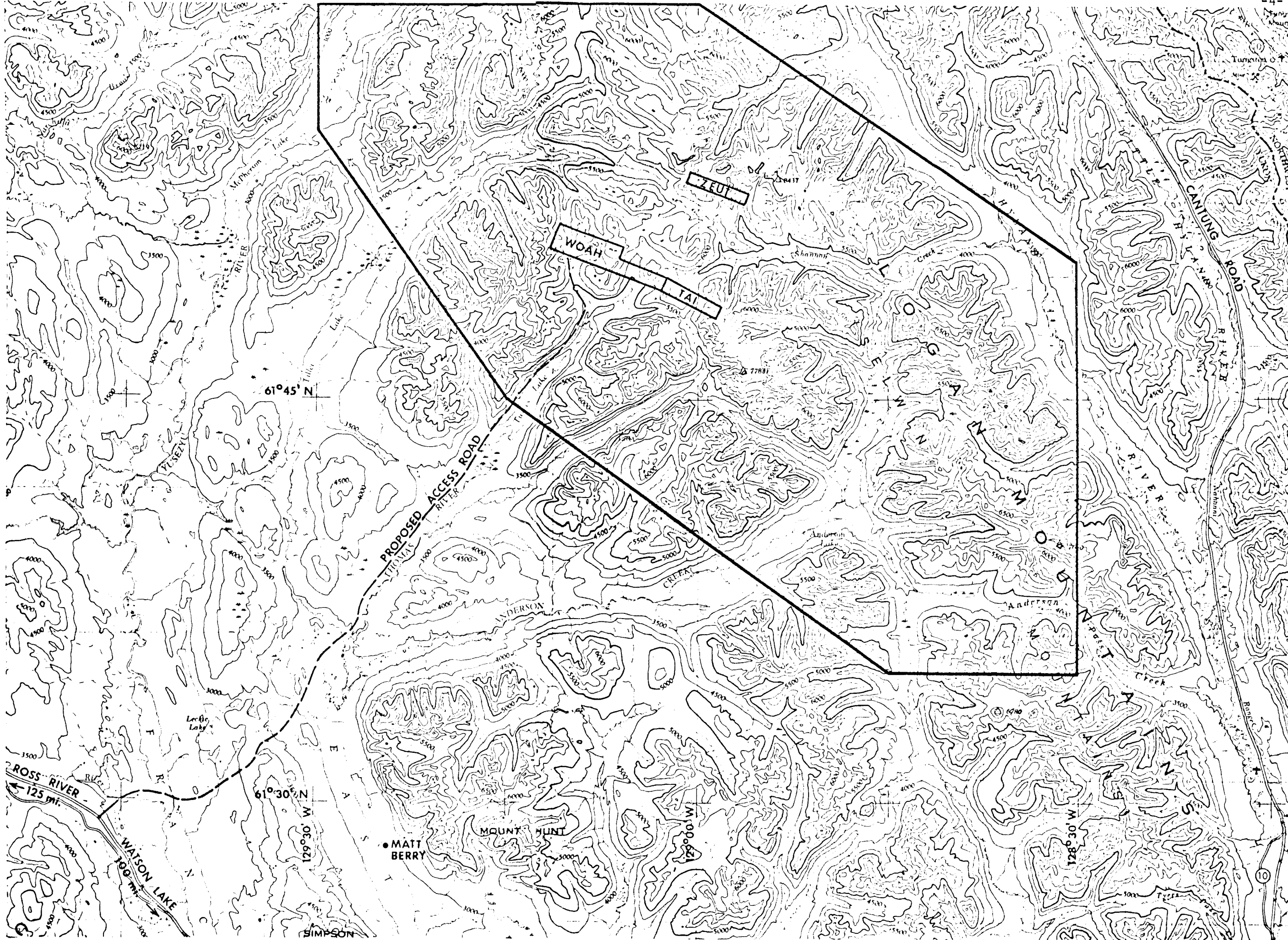


Figure 2

BASIN PROJECT AREA - PROPOSED ROAD ACCESS

SCALE - 1:250,000

GEOLOGY

Regional Geology

Plutons and associated skarn deposits in Selwyn Fold Belt lie to the west of a major tectonic hinge line defined by the westerly shaling out of Lower Paleozoic carbonate rocks (Gabrielse and Reesor, 1974, p. 130). Skarns in the Selwyn Fold Belt area are hosted by upper Proterozoic to Devono-Mississippian miogeoclinal sedimentary rocks, predominantly inter-bedded shale and carbonate.

As a group the plutons are: all Early to mid-Cretaceous age; notably discordant to regional structural trends, with steeply dipping contacts; predominantly quartz monzonites with biotite more abundant than hornblende; and emplaced into relatively unmetamorphosed rocks that show well-developed contact metamorphic aureoles (Fig. 3).

Spatial relationships between pluton and skarn vary from proximal to distal. Skarns may occur as xenoliths and screens within plutonic border phases, as semi-concordant bodies developed in calcareous rocks immediately adjacent to the plutonic contact, as essentially conformable units many tens to hundreds of feet away from the contact, and as discordant, fracture-controlled vein and replacement bodies that may be many miles removed from exposures of granitic rock (Fig. 4). In granitized and migmatitic terrane skarns may develop in calcareous beds adjacent to conformable granitic bodies; without apparent spatial or temporal relationship to discordant plutonic or hypabyssal rocks.

K.M. Dawson and L.A. Dick in their 1977 study of tungsten and base metal skarn deposits in the southeastern Yukon (Regional Metallogeny of the Northern Cordillera - Project 740098) illustrate that skarns in the area can be classified into four coherent groups (Table 1). This comparison is based mainly on ore element assemblages but also, in part, upon host rock age and lithology, degree of regional metamorphism and hydrothermal alteration of associated plutons.

62°00' N

61°45' N

61°30' N

BASIN PROJECT AREA



LEGEND

CRETACEOUS

 Granitic rocks

PALEOZOIC (undifferentiated)

 Sediments and metasediments

CAMBRIAN and/or EARLIER

 'Grit' unit (undifferentiated)

 Marble bands

Geologic contact and/or limit of outcrop

Claim blocks:
Welcome North Mines 
Others 

Mineral occurrences (for descriptions, see text):
Discovered by Welcome North Mines ●
From Archer Cathro Mineral Inventory ○

 WELCOME NORTH MINES LTD.

BASIN PROJECT

REGIONAL GEOLOGY AND MINERAL OCCURRENCE LOCATION

Scale: 1:250,000	Date: OCT. 1977	N.T.S. 105 H
Revised:	By: J.C., J.G.	Figure 3

MESOZOIC CENOZOIC

QUATERNARY

16 Unconsolidated glacial and alluvial deposits

CRETACEOUS (?)

15 Fine- to medium-grained biotite-quartz monzonite, granodiorite, minor diorite and gneiss; 15a, fine- and medium-grained biotite hornblende quartz monzonite and granodiorite, in part porphyritic; 15b, hornblende syenite

DEVONIAN AND (?) MISSISSIPPIAN

13 Brown and black shale, black and grey chert, quartzite, greywacke, chert-pebble conglomerate; 13a, fine-grained light grey limestone and minor dolomite; 13b, greenstone; 13c, serpentinite

14 Rusty brown weathering fine-grained schistose and spotted biotite hornfels, fine-grained quartzite, black pyritic argillite, dense light green to grey calc-silicate hornfels and fine-grained marble; minor slate, silty limestone and greywacke; 14a, light grey thin-bedded fine-grained marble and calc-silicate hornfels. May include some 1 and 2

SILURIAN AND DEVONIAN (?)

12 Fine-grained light to dark grey dolomite and quartzite; minor buff-grey dolomitic quartzite and silty to sandy dolomite

ORDOVICIAN AND SILURIAN

11 Black shale, slate; minor chert, siltstone, dark limestone

PALAEOZOIC

CAMBRIAN

MIDDLE AND LATE CAMBRIAN

9 Light grey and brownish grey weathering, intercalated platy argillaceous silty limestone, siltstone, and fine-grained grey limestone

10 Dark grey and brown silty shale and finely laminated siltstone, dark grey slate, thin-bedded brown-grey fine-grained sandstone; minor hornfels

EARLY AND/OR MIDDLE CAMBRIAN

7 Buff-weathering dolomite, silty and sandy dolomite; minor sandstone and shale

6 Bright yellow and orange-weathering silty and sandy dolomite

8 Dark brown-grey to black, in part pyritic, calcareous argillite, slate, shale, and minor thin-bedded argillaceous limestone

EARLY CAMBRIAN

5 Sandstone, buff-weathering sandy and silty dolomite, dolomite, minor quartzite and argillaceous limestone; basic volcanic flows

4 'Swiss-cheese' limestone, irregular interbedded dolomitic siltstone and argillaceous to silty limestone; pods and lenses of limestone; minor blue-grey fine-grained limestone and orange-weathering dolomite

CAMBRIAN AND/OR EARLIER

3 Brown to red-brown weathering slate, phyllite, siltstone and fine-grained quartzite; 3a, green-grey slate and phyllite

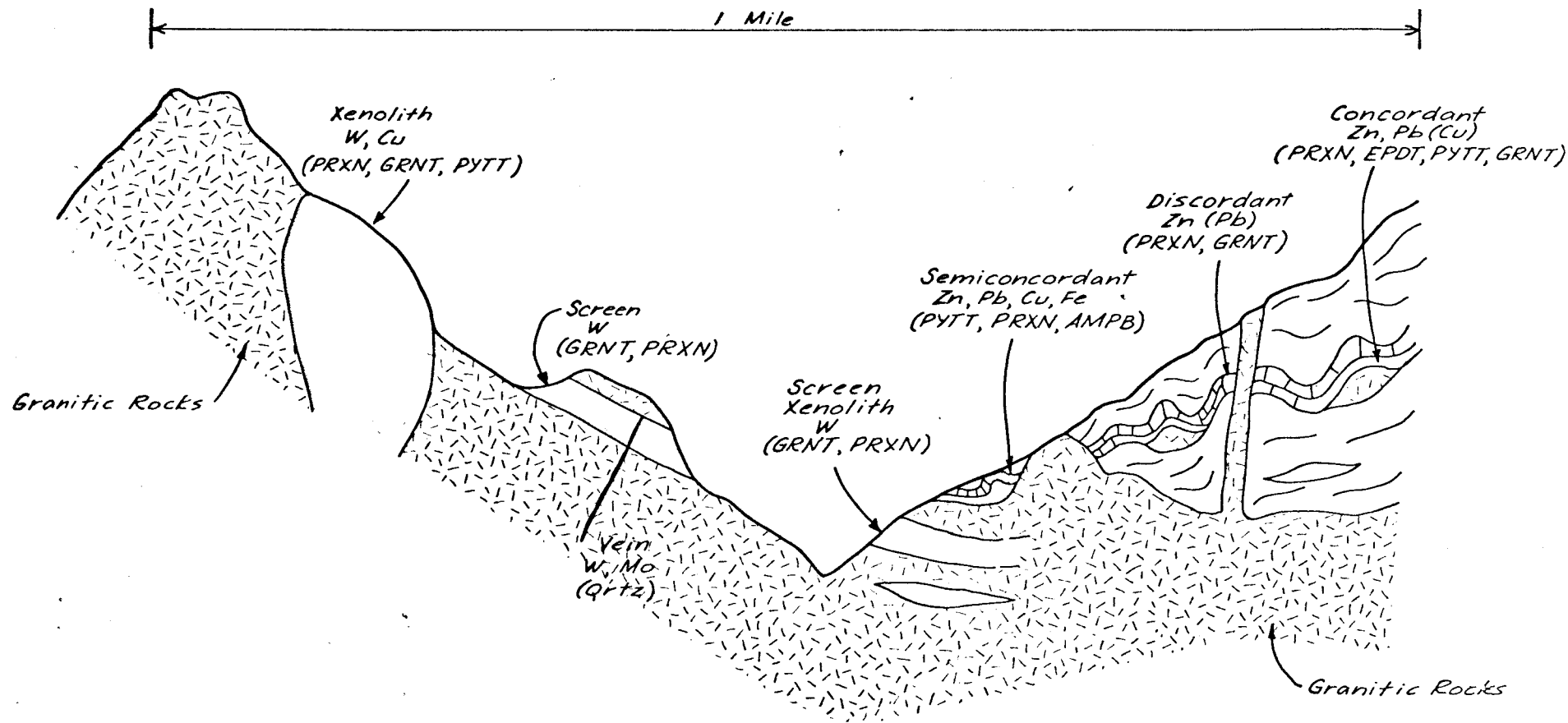
PROTEROZOIC

1 Brown, grey, maroon and green shale; grey to green slate and phyllite, gritty feldspathic quartzite, quartz- and feldspar-pebble conglomerate, sandstone; 1a, minor limestone; 1b, light grey weathering, fine-grained grey limestone; 1c, mainly grey to green slate and phyllite; 1d, maroon and green shale and slate; 1e, mainly brown and grey shale and slate, minor maroon and green shale. 1d and 1e are probably equivalent and perhaps correlative with 1c

2 Quartz-feldspar-mica gneiss and schist, granitoid gneiss, feldspathic and micaceous quartzite, biotite schist, minor marble and skarn; numerous small granitic bodies, aplite and pegmatite; 2a, fine- to coarse-grained marble

A Highly altered, green to brown, megacrystic, coarse-grained biotite-quartz monzonite or granodiorite. Age uncertain

Fig. 3a



Note: Modified after K. Dawson


 WELCOME NORTH MINES LTD.		
BASIN PROJECT		
IDEALIZED SECTION SHOWING TYPES OF SKARN DEPOSITS		
Scale: —	Date: OCT 1977	N.T.S. 125H/4
Revised: —	By: —	Fig. 4

TABLE 1

A COMPARISON OF SOME CHARACTERISTICS OF 22 SKARN DEPOSITS

GROUP	ORE ELEMENT ASSEMBLAGE	HOST ROCK AGE, LITHOLOGY	REGIONAL METAMORPHISM	ALTERATION OF PLUTON	EXAMPLES
I	W, Cu (Zn, Mo)	E to D carbonates interbedded shale	Relatively unmetamorphosed terrane - - -	Border phases argillized; locally greisenized, tourmalinized. - - - - -	Mactung, Clea, Lened, Cantung, Bailey
II	W, Mo (Zn, Pb, Cu)	Late Plimestone xenoliths, screens	Relatively		Woah, Tai, Tanya, Mid-Nite
III	Zn, Pb (W, Cu, Ag)	Late Plimestone beds in quartz-biotite schist	Metamorphosed	Plutons Relatively	Nar, Narchilla, Zeus, Chap, Ron, FirTree Blackjack, Max Glenna-Miko
IV	Zn, Pb, Ag (Cu, Bi, Sn)	DM carbonates, interbedded shale	terrane	Unaltered	Atom, Bom-Munson, Bar

The group II skarns (Table 1) in which scheelite predominates over molybdenite include tungsten occurrences within the Welcome North WOA and TAI claim groups. These and other occurrences are located along a belt of xenoliths extending for some 40 miles through the north central section of the Frances Lake map sheet, along the northeastern margin of the Mount Billings Batholith.

The intrusive rock in the vicinity of the Tillei Lake skarns is mainly hornblende granodiorite, however major quartz monzonitic and minor quartz dioritic phases were noted. Adjacent to the contact, granodiorite is foliated, sheared, chloritized and filled with small mafic xenoliths. Intrusive contacts vary from sharp at WOA to more diffuse at TAI and TANYA, where a complex zone of lit-par-lit migmatites, sills and conformable granitic boudins borders the pluton.

The original composition of the mineralized screens and xenoliths in the Tillei Lake belt probably was limestone, several beds of which serve as markers in the folded, predominantly gritty phyllites of the Upper Proterozoic 'Grit Unit' in the area (Roots, Green, Roddick and Blusson, 1966). Regional metamorphic grade and intensity of migmatization in this schist-gneiss belt decrease northeastward away from the batholithic contact.

Skarns formed in screens and xenoliths in Tillei Lake belt are mainly coarse grained, brown-weathering, foliated assemblages of garnet-quartz-pyroxene-scheelite. Actinolite, epidote, wollastonite and vesuvianite occur locally. Skarns generally are low in sulphides, although several occurrences of pyroxene-pyrrhotite-pyrite chalcopyrite-sphalerite were noted. Skarn bodies may be cut by veins of coarse grained quartz-scheelite-molybdenite and/or quartz-magnetite-actinolite-chalcopyrite. At WOA, a southeasterly striking set of the latter assemblage shows anomalous radioactivity. Pronounced foliation in skarn may represent either relict textures that were developed in the host prior to engulfment by the intrusion or syn-to post-mineralization shearing and recrystallization in the border phase.

Base metal skarn morphology includes concordant bodies adjacent to conformable granitic boudins and sills, semi-concordant skarns at or near plutonic contacts, and discordant skarns adjacent to dykes. Occurrences may contain varying proportions of pyrrhotite, sphalerite, galena, magnetite and chalcopyrite in relatively fine grained pyroxene-garnet-amphibole epidote skarn.

Principal Mineral Occurrences

Welcome North Mines Ltd., in the course of a regional prospecting program, discovered tungsten occurrences along a linear belt of contact metamorphic rocks that extend for 8 miles along the northeastern margin of the Mount Billings Batholith (Plate 2, Fig. 5). Mineral claims which cover these showings include the WOA and TAI claim groups. A preliminary geological mapping and sampling program was carried out on the WOA-TAI claim group by Welcome North personnel in the late fall of 1977. The ZEUT claims, which also contain significant showings of tungsten, are located near the margins of a granitic stock lying five miles to the northeast of the WOA-TAI groups. The ZEUT group has received little attention other than preliminary prospecting.

The WOA West Zone showings, which constitute the tungsten occurrence of most immediate economic interest within the WOA-TAI claim group, occur near the headwaters of Tustles Creek at an elevation of 6,300 feet.

Outlines of the xenolith-like skarn scheelite occurrences, which lie mainly on the floor and steep southern valley wall, have been mapped in and are illustrated on Plate 3. The relatively resistant skarn bodies stand out as topographic highs relative to the surrounding granitic and scree covered slopes. Talus however largely masks the precise contacts of the occurrences, making exact definition of mineral limits difficult. Faulted skarn-intrusive contacts, locally noted, lead to conjecture as to the origin and possible depth projections of the xenolith-like skarn bodies.

The scheelite appears fairly evenly distributed throughout the skarn masses although tungsten concentrations do occur near the margins and for several tens of feet into the adjoining greisened intrusive. Areas of lower tungsten content have also been noted within the skarn bodies.

Although it is premature to consider tonnages and grade in the early stages of development on a prospect such as the WOA, it is interesting to note that in excess of 1 million tons can be conservatively calculated, using dimensions readily apparent from the surface exposures on the Main A Showing only. Should the various exposures on the A Showing be more extensive than is apparent or in part interconnect beneath the veneer of granitic scree, or, as can reasonably be expected, continue to some depth beyond that which can be observed, the tonnage would of course be greater.

Chip sampling of the various WOA showings has indicated in a preliminary way the average grade of the deposit. Utilizing the samples available, weighted by sample length but disregarding the areas of influence, an approximate average grade can be obtained. Samples from the Main A Showing average as follows; numbers 1 to 13 - 0.60% WO_3 , numbers 14 to 18 - 0.18% WO_3 (Plate 3). Samples taken from an outcrop subsidiary to the main showing, numbers 19 to 23, average 0.50% WO_3 . The over-all weighted average for all the chip samples taken by Welcome North Mines Ltd. is calculated to 0.40% WO_3 . This average may approximate the over-all grade of the WOA West Zone deposit.

Tabulated on Table 2 are the assays from preliminary chip sampling performed by Welcome North Mines Ltd. on the WOA West Zone (Fig. 3).

The B, C, and D showings all within a few thousands of feet of the WOA A occurrence have, to date, received little attention other than noting the presence of tungsten. The D, because it occurs at the intrusive-phyllite contact, appears particularly attractive to further exploration.

ASSAY RECORD
WOAH WEST ZONE

<u>SAMPLE NO.</u>	<u>MAP REF. NO.</u>	<u>WIDTH IN FEET</u>	<u>% WO₃</u>	
260-280	1	20	3.00	0.60% WO ₃ over 3 280'
220-240	2	20	0.59	
200-220	3	20	1.82	
160-180	4	20	0.02	
140-160	5	20	0.07	
120-140	6	20	0.21	
100-120	7	20	0.28	
80-100	8	20	0.34	
60- 80	9	20	0.21	
40- 60	10	20	0.19	
20- 40	11	20	0.21	
0- 20	12	20	0.51	
7851	13	11	0.14	
7852	14	5	0.16	
7853	15	12	0.24	
7854	16	10	0.10	
7855	17	* 180	0.21	
7856	18	* 70	0.11	
80-100	19	20	0.03	
60- 80	20	20	0.15	
40- 60	21	20	1.84	
20- 40	22	20	0.09	
0- 20	23	20	0.40	0.50% WO ₃ over 3 100'

Over-all
Weighted
Average
Grade
0.40% WO₃

* Chips taken at 6-inch centres.

The WOAH East Zone, which lies two miles to the east of the West Zone, occurs in an area where granitic rocks are juxtaposed with a 150-foot thick marblized, grey limestone band (Fig. 6). Locally within and adjacent to the marble are bands and lenses, up to 20 feet in thickness, of diopside and garnet skarn containing fine disseminations and blebs of scheelite. Although the tungsten mineralization does not appear to compose economic tenor, the locally mineralized skarnification of this remarkably wide band of marble leads to speculation regarding the possible occurrence of larger mineral concentrations in the overburden-covered area between the zones. Future exploration should be concentrated in this intervening area.

The TAI West Zone has not been geologically mapped in detail. Resistant outcrops of scheelite-bearing garnet skarn up to 100 feet in width are exposed in a scree-covered slope. The skarn which locally contains concentrations of tungsten mineralization occurs over a length of some 1800 feet (Fig. 7). As exposure is poor, the geology of the area is little known, however the extent and nature of the mineralization indicates a more intensive program of prospecting, geological mapping and trenching is justified.

The TAI East Zone lies approximately one mile to the east of the West Zone. Irregular lenses of garnet diopside skarn occur at the contact between granitic rocks and banded hornfels (Fig. 8). The lenses have been noted intermittently over a distance of approximately 1500 feet in an area largely talus covered. Scheelite occurs erratically throughout the exposed skarn. Further geological work on the zone and between this and the West TAI Zone is warranted.

Other Mineral Occurrences

In addition to the WOAH and TAI zones there are numerous tungsten and zinc/lead occurrences discovered by Welcome North prospectors within the Basin Project Area which have received only cursory attention by the Company. The locations of these occurrences are indicated on the accompanying

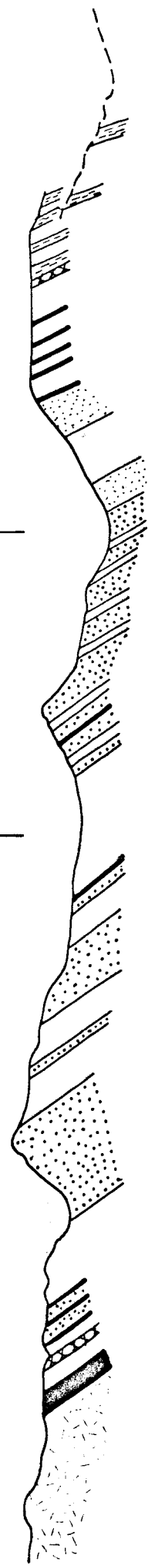
C ———

B ———

lake ———



lake ———

A ———










LEGEND


MESOZOIC CRETACEOUS

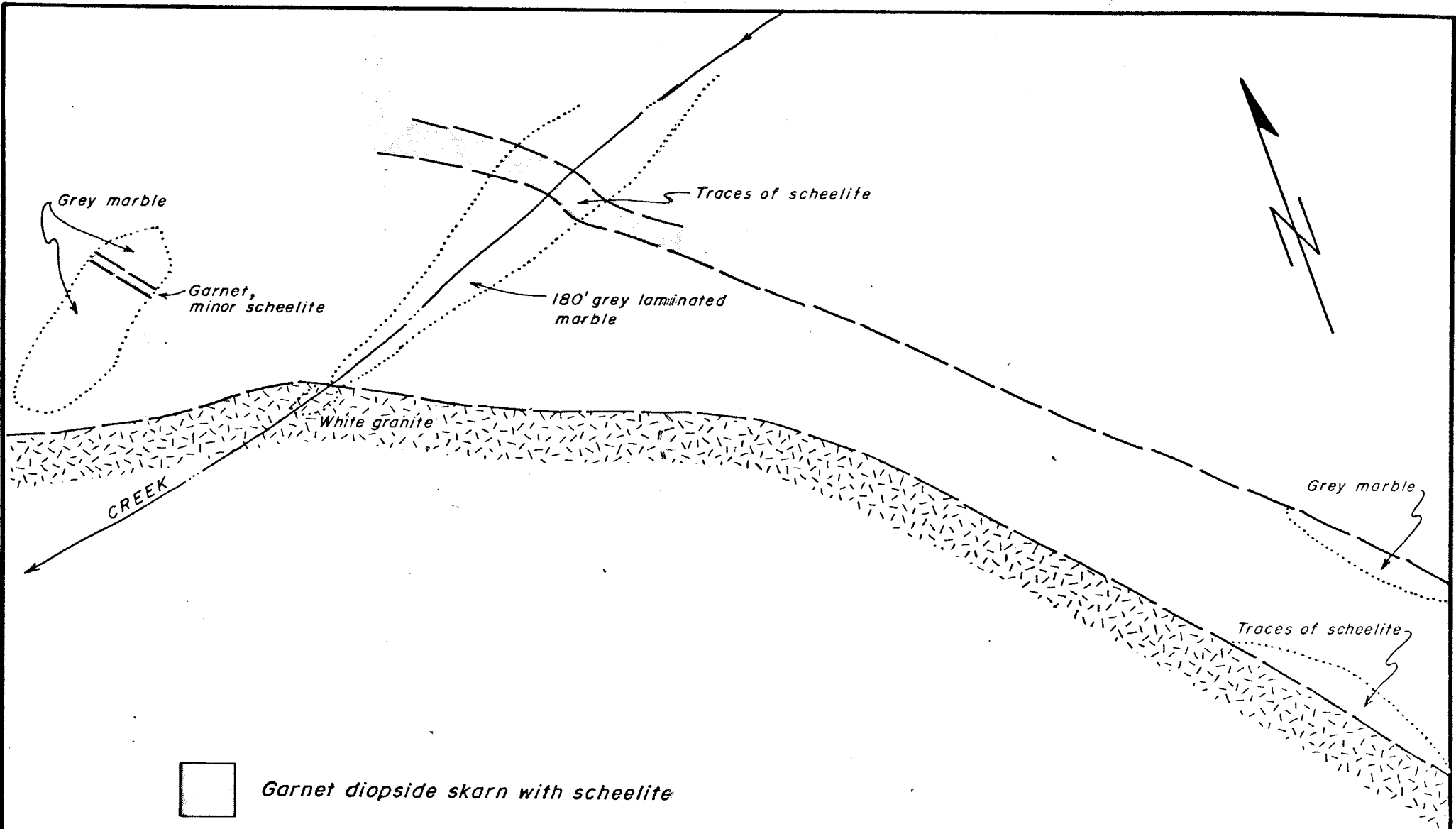
-  Quartz monzonite
-  Granodiorite




PROTEROZOIC CAMBRIAN and/or EARLIER

-  Undifferentiated Proterozoic 'Grits'
-  Marble
-  Gypsum
-  Quartzite
-  Grits
-  Green and grey phyllites
-  Red phyllites


NOTE: For location, see Plate 2

	WELCOME NORTH MINES LTD.		
BASIN PROJECT			
GEOLOGICAL CROSS-SECTION			
A - B - C			
Scale: 1" = 1/2 mi.	Date: OCT 1977	N.T.S. 1054/14	
Revised: _____	By: W.J.C., J.G.	Fig. 5	



-  Garnet diopside skarn with scheelite
-  Granitic rocks
-  Grey marble

Note: For location,
see Plate 2

 WELCOME NORTH MINES LTD.		
BASIN PROJECT		
WOAH CLAIMS, EAST ZONE DETAILED GEOLOGY		
Scale: 1" = 100'	Date: OCT. 1977	N.T.S. 105M/14
Revised: _____	By: W.V.C., J.G.	Fig. 6

Skarn scree → Massive garnet skarn with scheelite



Skarn float


Massive brown garnet skarn (with scheelite)

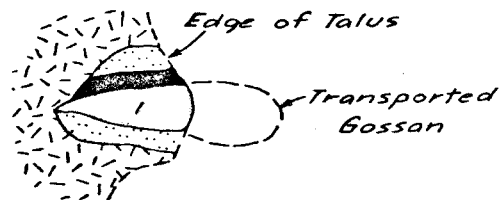
35
100 — Garnet diopside skarn

Diopside skarn

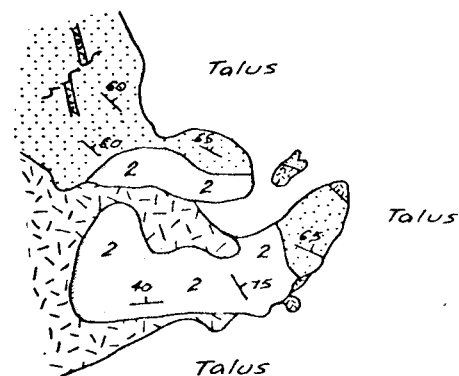
Garnet skarn with scheelite
Granitic scree
70
080 —

Note: For location, see Plate 2

 WELCOME NORTH MINES LTD.		
BASIN PROJECT		
TAI CLAIMS, WEST ZONE DETAILED GEOLOGY		
Scale: 1" = 200'	Date: OCT, 1977	N.T.S. 105H/15
Revised: _____	By: W.J.C., J.G.	Fig. 7



②



1 MASSIVE PYRRHOTITE, SCHEELITE, CHALCOPYRITE

2 GARNET DIOPSIDE SKARN, SCHEELITE

 BANDED HORNFELS

 GREY LIMESTONE

 GRANITIC ROCKS

NOTE: FOR LOCATION,
SEE PLATE 2



WELCOME NORTH MINES LTD.

BASIN PROJECT

TAI CLAIMS, EAST ZONE
DETAILED GEOLOGY

Scale: 1" = 200'	Date: Oct. 1977	NTS 1254-15
Revised: _____	By: W.J.C., J.G.	Fig. 8

plan (Fig. 3). The following descriptions are summarized from prospector field notes.

<u>Showing No.</u>	<u>Description</u>
1	Sphalerite and galena mineralizing meta-sediments, found at head of small cirque; float.
2	Shale-hosted zinc float.
3	Lead-zinc float in skarn; later followed up and found to be minor local patches of mineralization.
4	Chalcopyrite in quartzitic host-rock; several very large pieces of float.
5	Fine grained sphalerite and galena in skarn. Follow-up work, checking for scheelite in same skarn, established the WOH tungsten occurrence.
6	One-inch bands or lenses of galena and black sphalerite in diopside skarn. Abundant float at several localities in scree slope.
7	Disseminated galena and brown sphalerite in fine grained massive, green diopside skarn. Abundant float from several separate areas of scree slope.
8	Skarn bands containing sphalerite and galena outcropping in creek.
9	Hydrozincite coating skarny marble float fragments.
10	Coarse grained galena in rusty weathering diopside skarn, mineralized bands to 3 inches thick in fragments of float; lesser fine grained galena and sphalerite found in place.
11	Bands, in place, of coarse grained white granitic rock up to 20 feet in width contain disseminated galena and molybdenum. Also an associated band of dark green diopside skarn contains abundant brown sphalerite veinlets up to 3 inches in thickness.
12	Copper stain on pale green, white altered skarn. Rock mainly quartz plus an unidentified soft pink mineral.
13	Bands to 2 feet thick, fracture controlled gypsum, conformable to bedding in shale; in place.

- 14 Scheelite and molybdenite in skarn; in place.
- 16 Lead and zinc in skarn; in place.
- 17 Semi-massive galena in quartz; float.
- 18 Scheelite and sphalerite in skarn, scattered outcrops to be followed up. Staked as TAI group.
- 19 Scheelite and sphalerite in skarn; float.
- 20 Scheelite and sphalerite in skarn; float.
- 21 Scheelite in garnetiferous skarn; in place. Included in TAI group.
- 22 Scheelite and pyrrhotite in massive garnet skarn; found in large boulders at toe of glacier. Staked as ZEUT, requires follow up.
- 23 Sphalerite in actinolite, diopside skarn; float boulders in shallow scree slope. P. Risby knows location of mineralization in place. Included in TAI group.
- 24 Sphalerite-scheelite bands in actinolite diopside skarn, found in place low in valley floor. Not examined to date.
- 25 Sphalerite in migmatite boulders found in creek bed.
- 26 Large boulders of scheelite-bearing skarn found at the toe of a glacier, part of ZEUT showing.
- 31 Scheelite, sphalerite and galena in skarny migmatite; float, possible extension of WOH.
- 33 Scheelite and pyrrhotite in skarn; float.
- 34 Scheelite and pyrrhotite in skarn; float.
- 35 Garnet-actinolite-bearing scheelite in two separate bands up to 30 feet thick; in place.
- 36 Scheelite with minor sphalerite and galena in garnet-diopside skarn bands 10 to 20 feet thick and traceable for approximately 1000 feet. Locally high-grade tungsten ranging in estimated grade from 1 to 5%; in place.
- 37 Sphalerite and scheelite in blackish-brown weathering locally epidotic skarn. Similar float found above outcropping.
- 38 Scheelite with minor sphalerite and galena in garnet-diopside skarn band approximately 3000 feet long. Locally well mineralized; in place.

- 39 Scheelite and pyrrhotite in skarn; float.
- 40 Fine grained scheelite in garnet skarn boulders at base of a large talus slope.
- 44 Minor narrow bands scheelite and pyrite in granitic rock; in place.
- 45 High grade scheelite in skarn, float appears to be from narrow bands.
- 46 As showing 45.
- 47 Minor scheelite in skarn.
- 48 Scheelite and pyrrhotite in skarn bands up to 12 feet thick.
- 49 Scheelite and pyrrhotite in skarn bands, similar to showing 48.

The following mineral occurrence descriptions are summarized from the Archer, Cathro Northern Cordillera Mineral Inventory. The showing or claim block locations within the Basin Project Area are shown on Fig. 3.

<u>Mineral Occurrence Map Ref. No.</u>	<u>Description</u>
50	Rea - massive sulphide (lead/zinc/silver) lens measuring 10 x 25 feet in skarn near granitic contact.
51	Nort - staked in a drift-filled valley, type of mineralization unknown.
52	Cree - molybdenite in narrow quartz veins.
53	BR - copper, tungsten in a skarn near granitic contact.
54	Tanya - chalcopyrite, scheelite, galena and sphalerite occur in pyrrhotite lenses and veinlets in skarn zones at edge and as roof pendants in granitic stock. Trenching and diamond drilling carried out in the early 70's indicated erratic nature of mineralization.
55	Guy - similar to Tanya, skarn patches found to be small.
56	Thor - molybdenite and scheelite within a hydrothermally altered quartz stockwork related to a fracture zone and pyritic gossans near the contact between quartz monzonite and earlier granodiorite batholith.


- 57 Broten - included in older Spartan THOR claim group. Chalcopyrite, scheelite and molybdenite occur in skarn roof pendants within batholith.
- 58 Lee - galena and sphalerite associated with pyrrhotite skarn zones.
- 59 Yusezyu - copper occurrence.
- 60 Dodge - molybdenite associated with limy horizons in "Grit" unit.
- 61 Tillei - molybdenite and scheelite occur in hydrothermally altered quartz stock and fracture zone near the contact between porphyritic quartz monzonite stock and granodiorite batholith.
- 62 Hitch-Hiker - lead-zinc-silver occurs in narrow veinlets and small replacement masses in limestones of the "Grit" sequences. Mineralization found at eight locations over a one-mile strike length.
- 63 Zeus - galena, sphalerite and scheelite occur in 1-20 foot wide skarn zones within the hornfels sequence near the batholith contact.
- 64 Chap - tungsten-bearing skarns up to 20 feet in width near the granodiorite-metasediment contact.
- 65 Rekab - stked as the BOW in 1974; no information available.

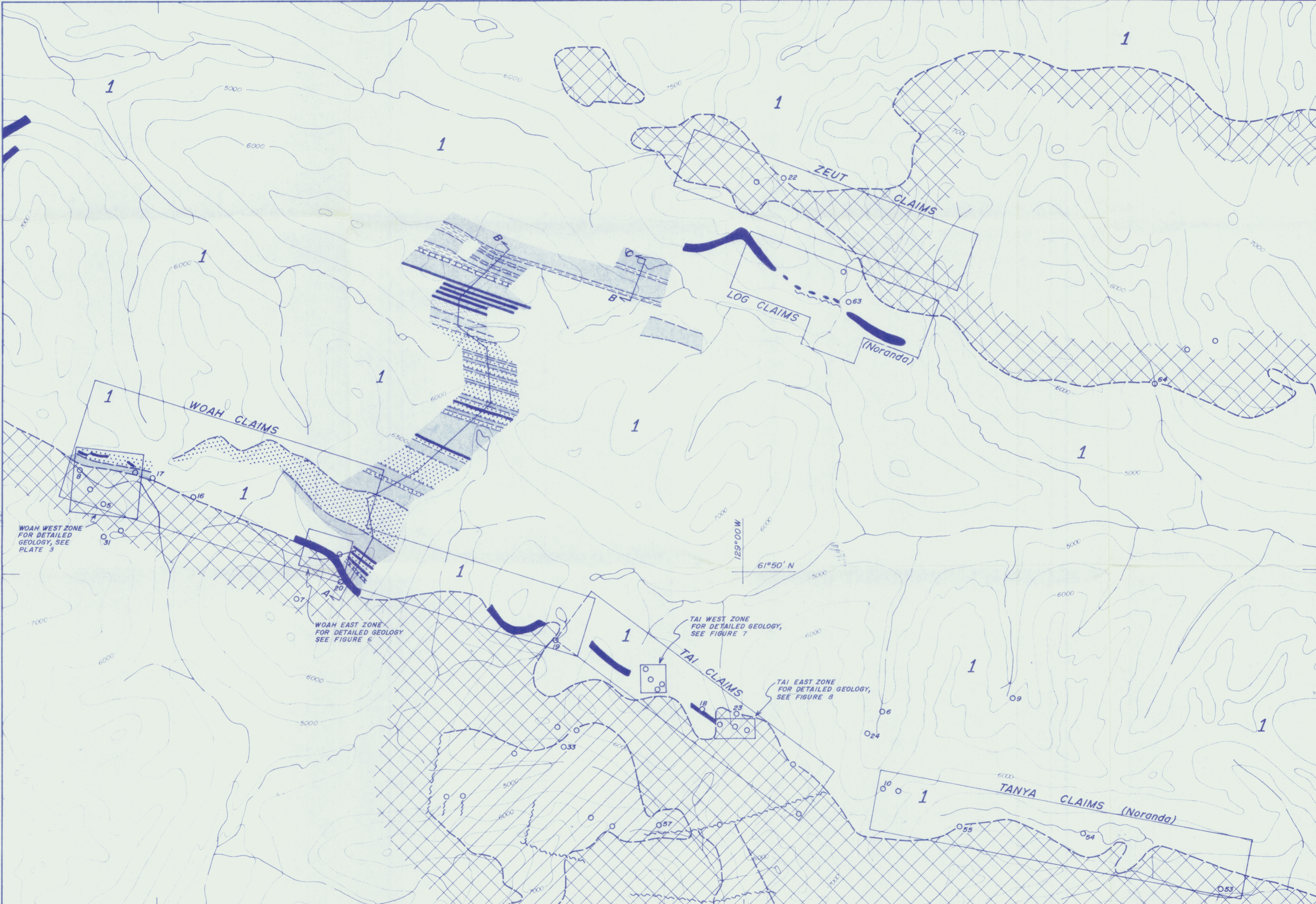
CONCLUSION AND RECOMMENDATIONS

Scheelite mineralization occurs over extensive areas in the central part of the Basin Project Area. The Woah Showing comprises a tungsten prospect of obvious merit and with minimal projections, one of significant potential tonnage. Road access to the area is feasible and providing subsequent exploration of the deposit remains favourable, a relatively rapid and inexpensive mining and concentrating operation could be undertaken. The potential to both extend and add to the known deposits through exploration, appears good and these chances are enhanced by their location well within the previously unexplored batholith itself.

It is recommended that detailed geological mapping and sampling be undertaken in the area of the WOH West Zone in order to ensure a carefully planned test drilling program. It is recommended further that all tungsten, lead and zinc occurrences discovered by Welcome North prospectors within the WOH-TAI claim group in the Basin project area be geologically examined in detail, mapped and sampled to determine priorities for further work.






WELCOME NORTH MINES LTD.
BASIN PROJECT
CLAIM LOCATION MAP
 Scale: $1" = 1/2 \text{ mi.}$ Date: *Oct 1977* NTS/084/100
 Revised: _____ By: *A.L.* Plate: _____



LEGEND

MESOZOIC CRETACEOUS

-  Quartz monzonite
-  Granodiorite

PROTEROZOIC CAMBRIAN and/or EARLIER

-  Undifferentiated Proterozoic 'Grits'
-  Marble
-  Gypsum
-  Quartzite
-  Grits
-  Green and grey phyllites
-  Red phyllites

GEOLOGIC CONTACT

FAULT

MINERAL OCCURRENCE LOCATION (For description, see text)


LINE OF CROSS SECTION

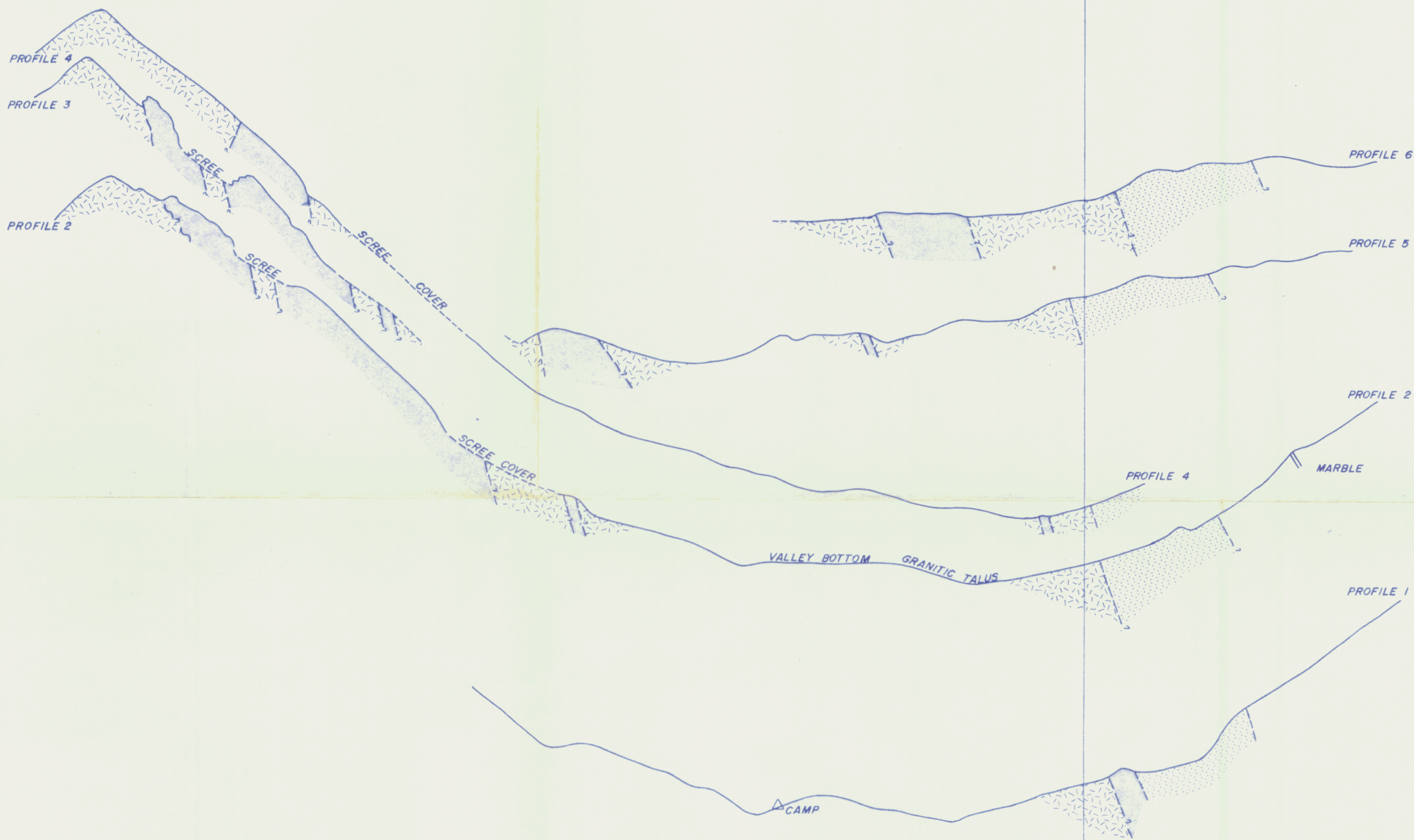
WOAH WEST ZONE FOR DETAILED GEOLOGY, SEE PLATE 3

WOAH EAST ZONE FOR DETAILED GEOLOGY, SEE FIGURE 6

TAI WEST ZONE FOR DETAILED GEOLOGY, SEE FIGURE 7

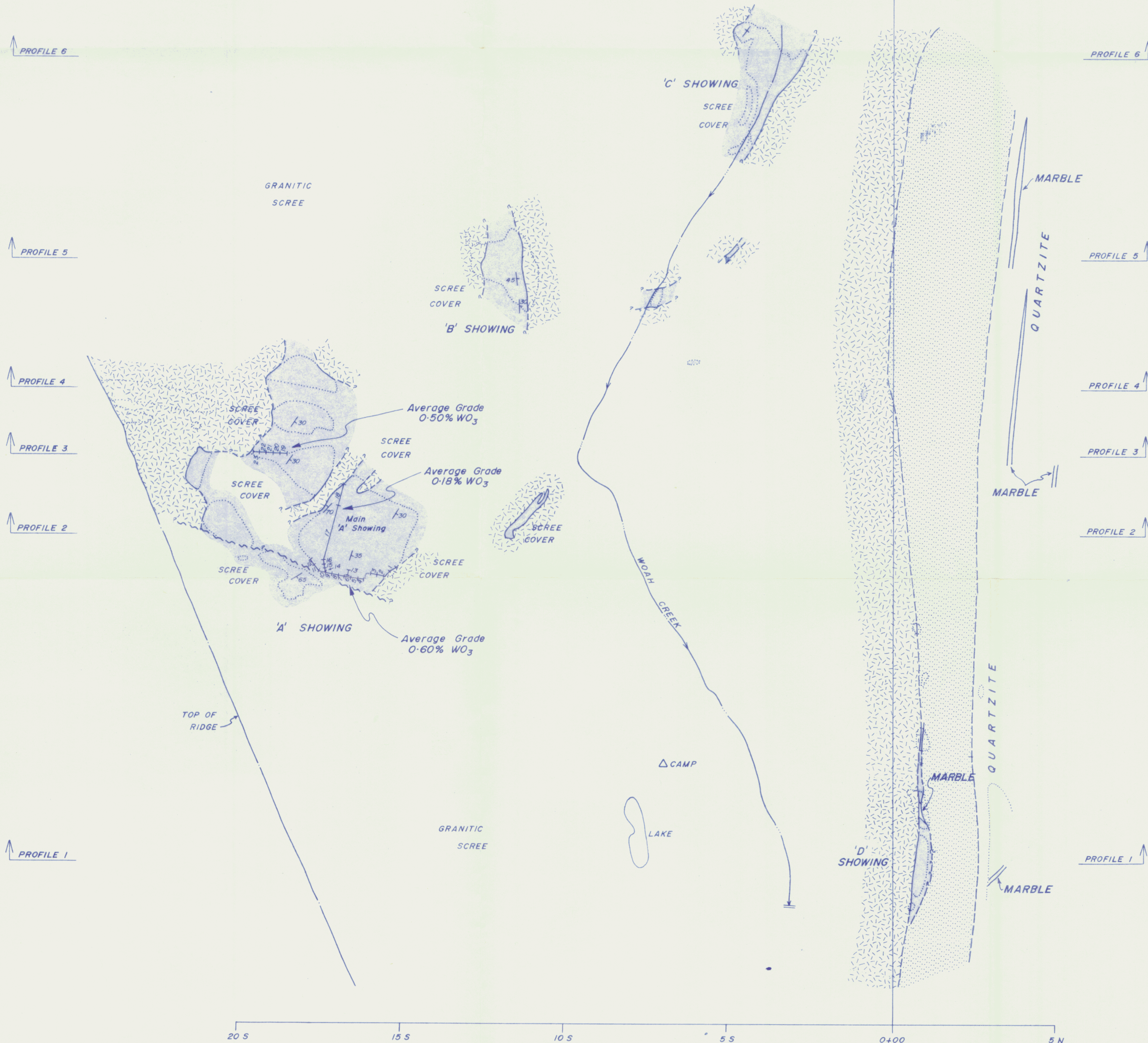
TAI EAST ZONE FOR DETAILED GEOLOGY, SEE FIGURE 8

 **WELCOME NORTH MINES LTD.**
BASIN PROJECT
LOCAL GEOLOGY



LEGEND

- Limit of outcrop
- Geologic contact - observed
- inferred
- Fault
- Foliation
- Chip sample
- Garnet skarn (containing scheelite)
- Granitic rocks
- Phyllite



ASSAYS			
No.	Width	W ₀₃ %	Weighted Av. Grade
1	20'	3.00	
2	20'	0.59	
3	20'	1.82	
4	20'	0.02	
5	20'	0.07	
6	20'	0.21	0.60% W ₀₃
7	20'	0.28	
8	20'	0.34	
9	20'	0.21	
10	20'	0.19	
11	20'	0.21	
12	20'	0.51	
13	11'	0.14	
14	5'	0.16	
15	12'	0.24	
16	10'	0.10	0.18% W ₀₃
17	180'	0.21	
18	70'	0.11	
19	20'	0.03	
20	20'	0.15	
21	20'	1.84	0.50% W ₀₃
22	20'	0.09	
23	20'	0.40	

Note: For location of West Zone, see Plate 2

WELCOME NORTH MINES LTD.

BASIN PROJECT

WOAH Claims, West Zone
Detailed Geology and Sample Locations

Scale: 1" = 200' Date: OCT. 1977 NTS. 105 H/14
Revised: By: W.J.C., J.G. Plate 3