

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

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Brock000061

ARCTIC RED PROJECT

GEOLOGICAL REPORT

ON THE

JAN MINERAL CLAIM GROUP

Latitude 64°33'N.

Longitude 129°58'W.

MACKENZIE MINING DISTRICT

N.T.S. 106-A-12

NORTHWEST TERRITORIES

CANADA

Work Conducted:

September 1-14th, 1973

August 27-September 20th, 1974

by

R.F. McLoughlin

and

John S. Brock

November 30th, 1974

JAN MINERAL CLAIM GROUP

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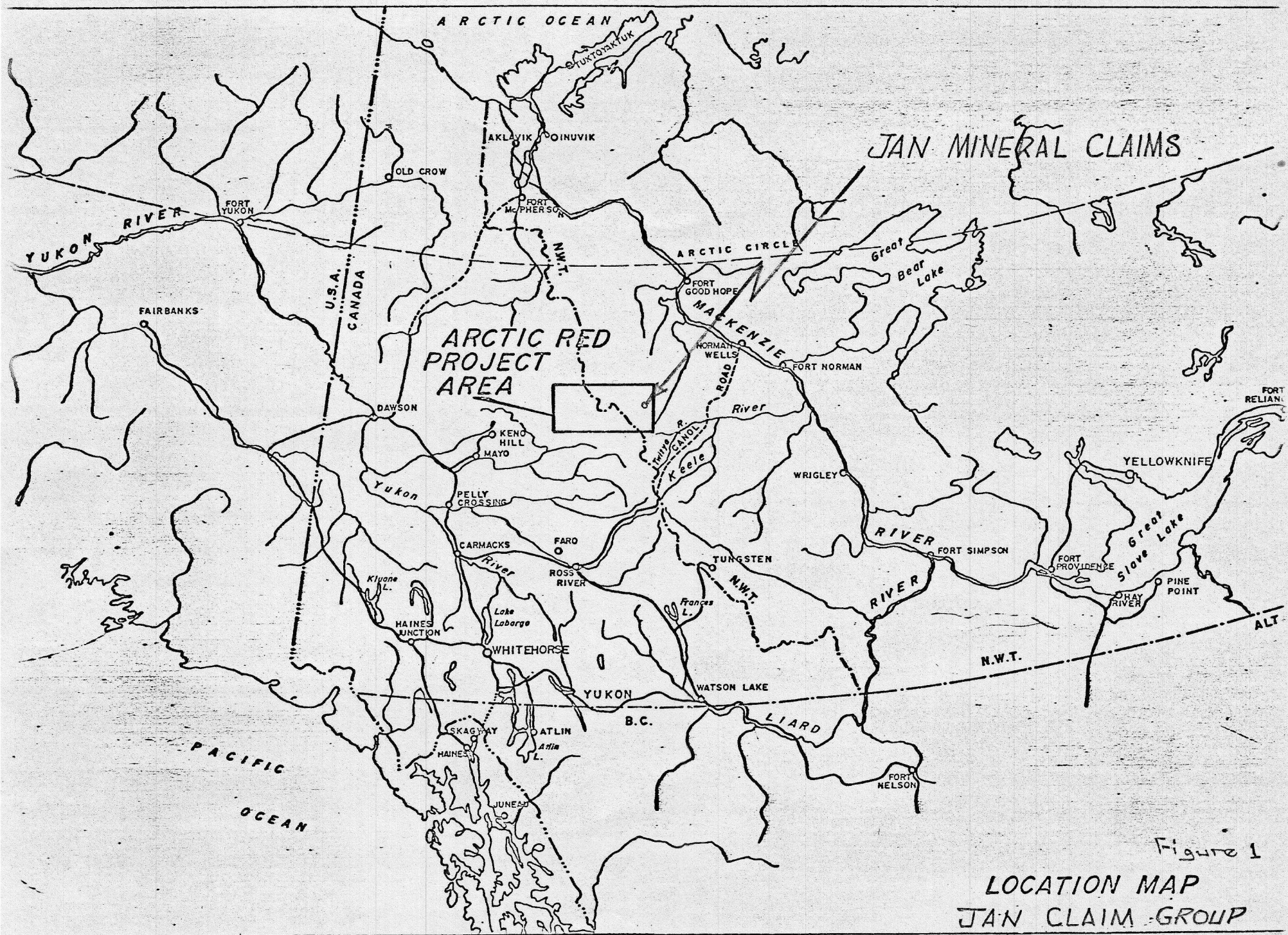


Figure 1
 LOCATION MAP
 JAN CLAIM GROUP

JAN MINERAL CLAIM GROUPLIST OF CLAIMSMACKENZIE MINING DISTRICT

	<u>Grant Numbers</u>	<u>Recording Date</u>
JAN 1-20 incl.	A50421-A50440	Sept. 24, 1973
JAN 21-24 incl.	A69596-A69599	Sept. 24, 1973

TOTAL 24 Mineral Claims

JAN MINERAL CLAIM GROUPINTRODUCTION

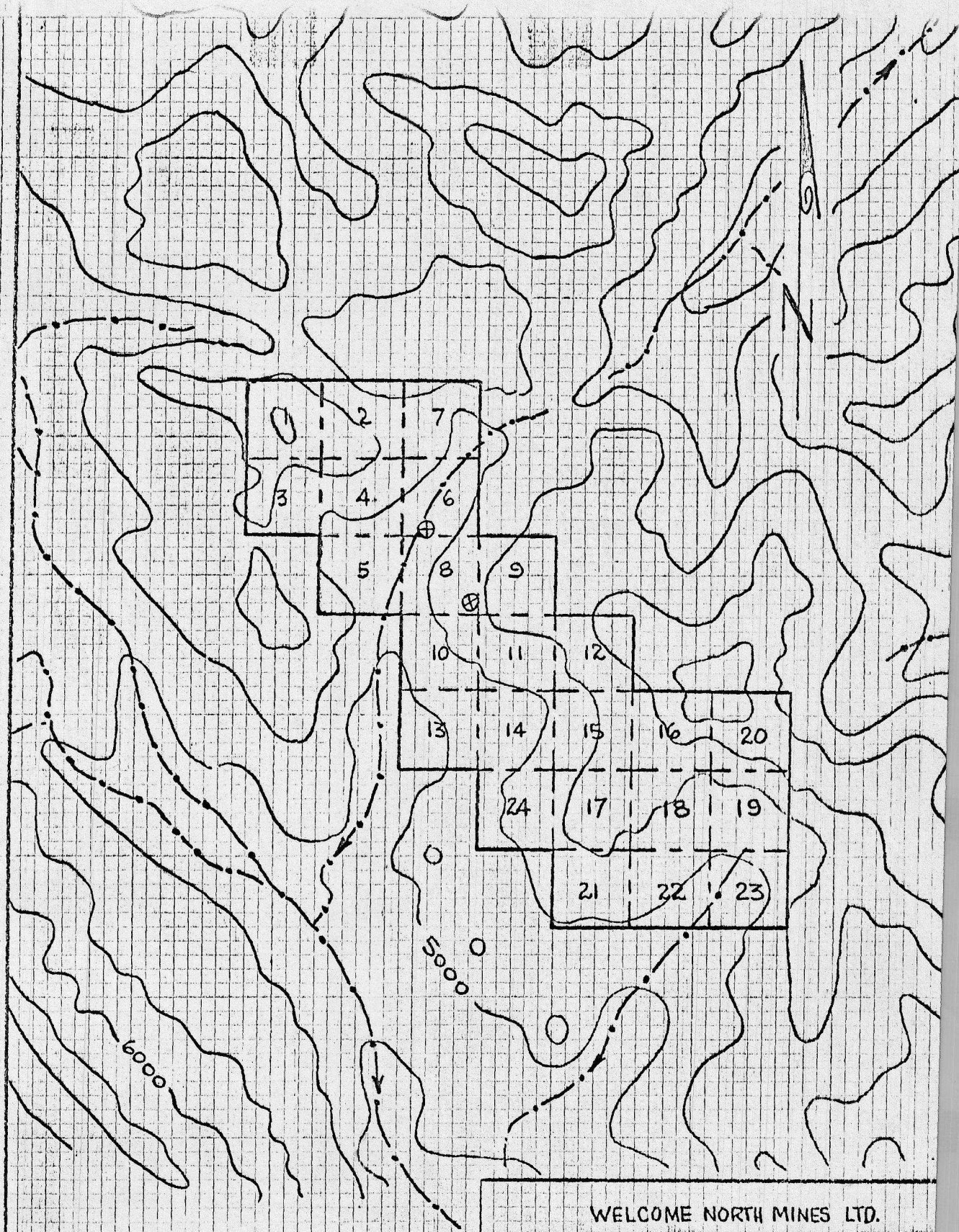
The JAN mineral claim group was staked by Welcome North Ltd. in September, 1973, to cover an occurrence of zinc-lead mineralization within a Devonian sequence of carbonate rocks.

The property has been examined by various geologists to September 20th, 1974. By an agreement dated January 1, 1974, the JAN property became part of the Arctic Red Joint Venture.

On the basis of geological evaluation to date, a further program is considered to be fully warranted. This program should include additional geological mapping, geologically controlled prospecting and systematic silt and soil sampling surveys.

SUMMARY

The mineralization of the JAN property lies close to the contact of overthrust Road River Formation on tightly folded Devonian Landry and Hume formations. The formations on which the property lies form part of the northeast limb of a large synclinatorium whose margins are repeatedly thrust faulted along its major axis northwest to southeast. The structural history of the favourable unit, the Landry Formation, is complicated by the repeated folding and faulting of the footwall which is the main seat of mineralization. The variation in tenor of the mineralized sections is moderate, as evidenced by the assay results returned. Showing No. 1, when sampled continuously across its location, is low in tenor compared to grab assays of 5.28% zinc and 8.30% zinc (Assay No's 881 and 883). Showing No. 2 is separated from Showing No. 1 by approximately 2,000 feet of moderately well mineralized talus (up to 5.6% Zn). Showing No. 2 occurs on the nose of a creek cut and is free of talus. Assays taken from here indicate a grade of 7% combined lead-zinc may be possible locally. Given the strong structural influence which tectonism has imposed, we might expect continuity



JAN CLAIMS 1-24
 TAG NUMBERS
 A 50421 - A 50440
 A 69596 - A 69599

WELCOME NORTH MINES LTD.

JAN PROPERTY

NTS. 106A-12

JAN CLAIMS LOCATION

Figure 2

1" = 1/2 MILE

NOV 1973

of the tenor of Showing No. 2 to extend northwest toward Showing No. 1. The steep slope aspect and talus debris make initial mapping and observation of Showing No. 2 difficult. Sphalerite occurs as a healing matrix to closely spaced fractures in association with calcite and secondary dolomite. Hydrozincite is a common weathering constituent and coats much of the talus debris. Galena tends to occur in semi-isolation in fractures. However, it can form up to 75% of the combined economic sulphides. Fracturing is thought to be related to a thrust fault and is more extensive and better mineralized within closer proximity to the thrust plane. Reference to the regional geology map shows the relationship of the JAN mineralization to the thrust fault and the contorted Devonian formations. (It is worth noting that the RA, RIS, AJ and many notable mineral occurrences lie along the same thrust faulted stretch of Ordovician to Devonian formations.)

LOCATION AND ACCESS

The JAN claim group is located in the Mackenzie Mining District of the Northwest Territories, N.T.S. 106-A-12, at latitude $64^{\circ} 33'N$. and longitude $129^{\circ} 58'W$., 190 miles to the northeast of Mayo, Yukon Territory (Fig. 1).

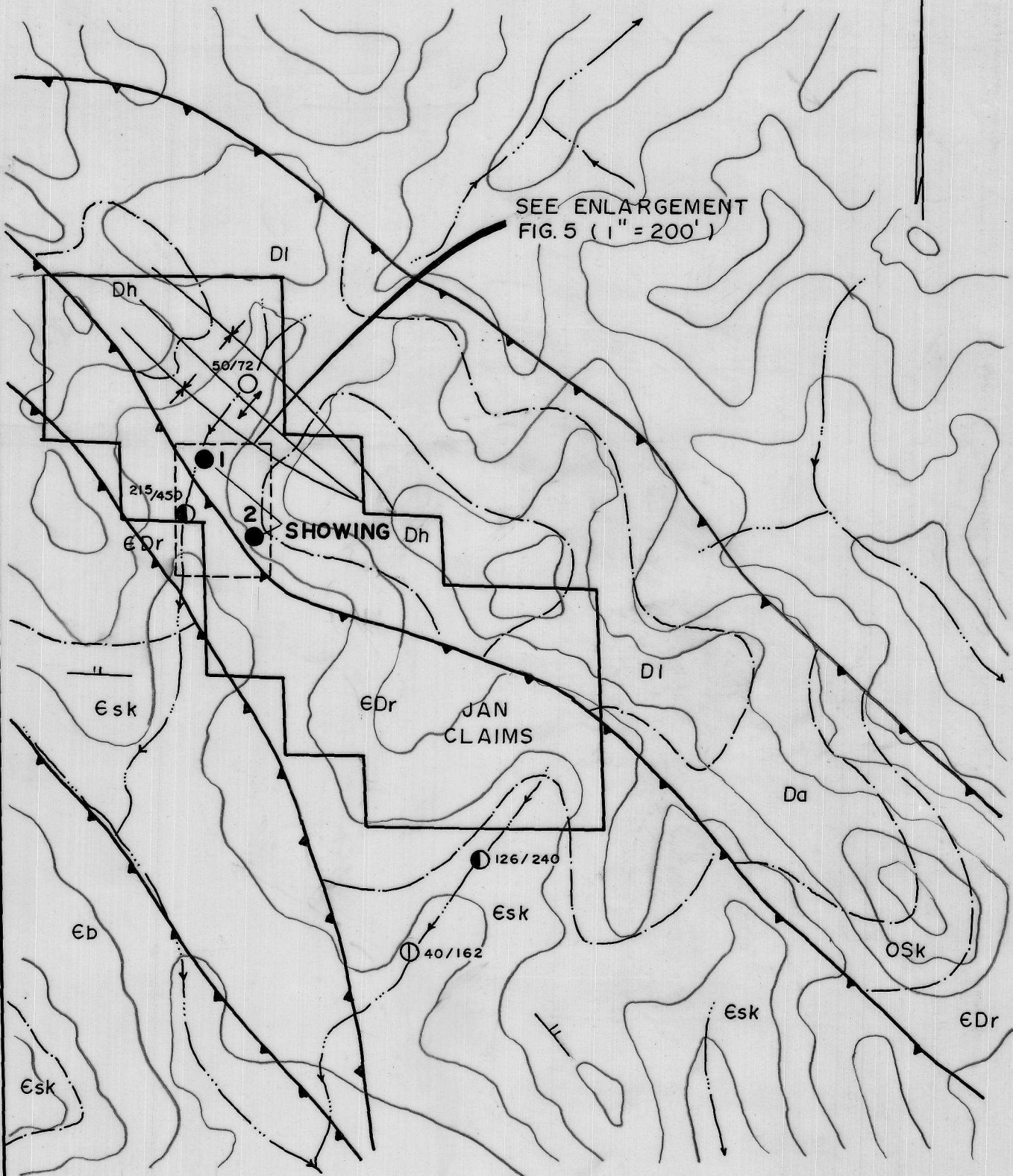
Access to the property can best be gained by helicopter from Mayo. There are helicopter landing sites within a few hundred feet of the JAN showings.

MINERAL CLAIMS

The JAN property consists of the following 24 located mineral claims, Mackenzie Mining District:

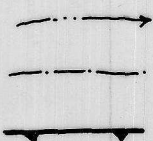
<u>Claims</u>	<u>Grant numbers</u>	<u>Recording Date</u>
JAN 1-20	A50421-A50440	Sept. 24, 1973
JAN 21-24	A69596-A69599	Sept. 24, 1973

N



SEE ENLARGEMENT
FIG. 5 (1" = 200')

LEGEND



CREEK
 CONTACT
 THRUST FAULT

⊙ 126/240

Pb / Zn GEOCHEM. ANALYSIS—SILTS (ppm)



WELCOME NORTH MINES LTD.

JAN CLAIMS

NTS 106 A / 12

LOCATION & GEOLOGY MAP

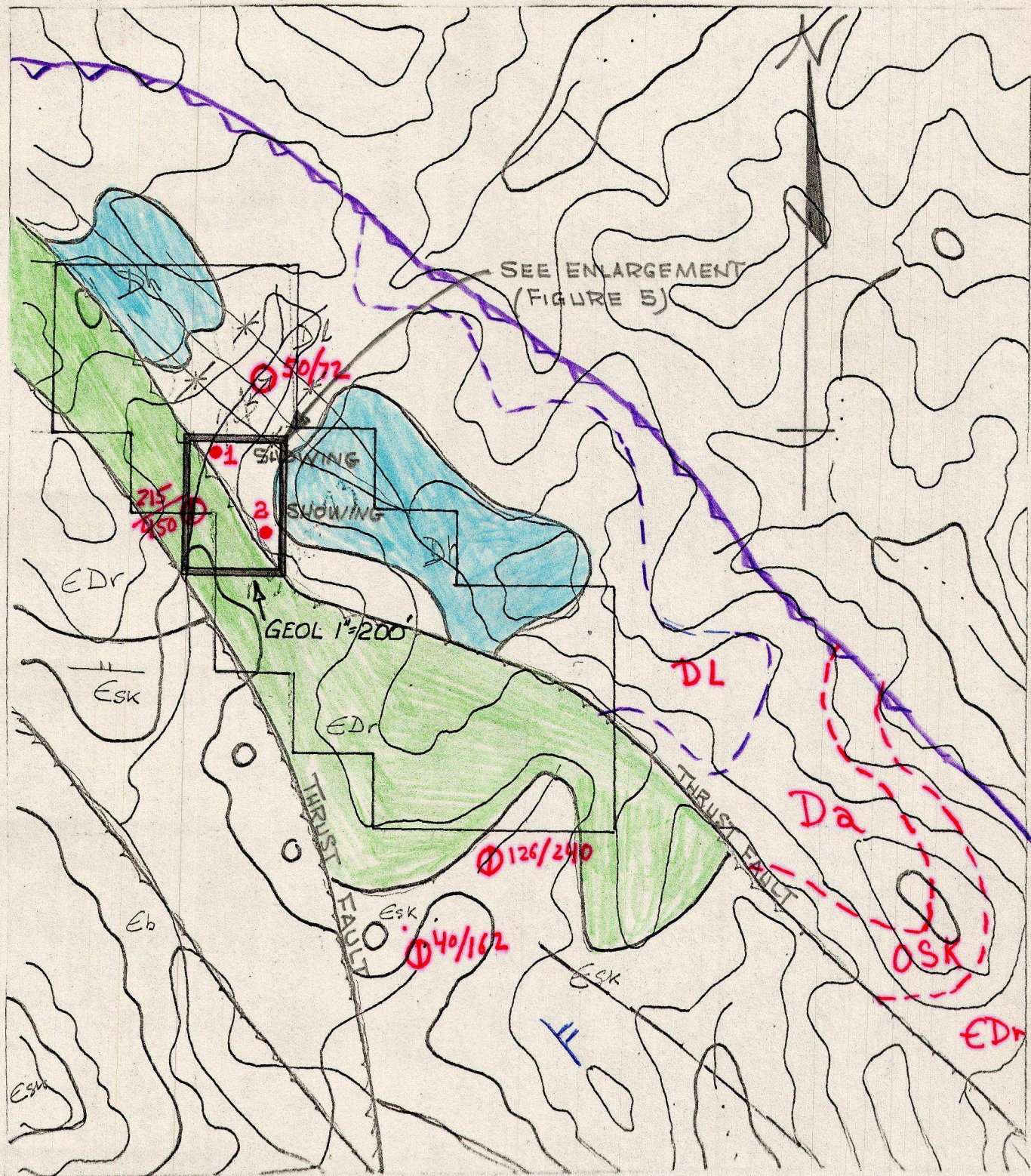
SCALE

JAN. 1975

1" = 1/2 mile

FIG. 3

FOR GEOLOGIC LEGEND SEE TABLE OF GEOLOGICAL FORMATIONS (FIG. 4)



GEOLOGIC
 FOR LEGEND
 SEE
 TABLE OF GEOLOGICAL FORMATIONS
 (FIGURE 4)

⊕ Pb/Zn, Geochemical analysis - SILTS.

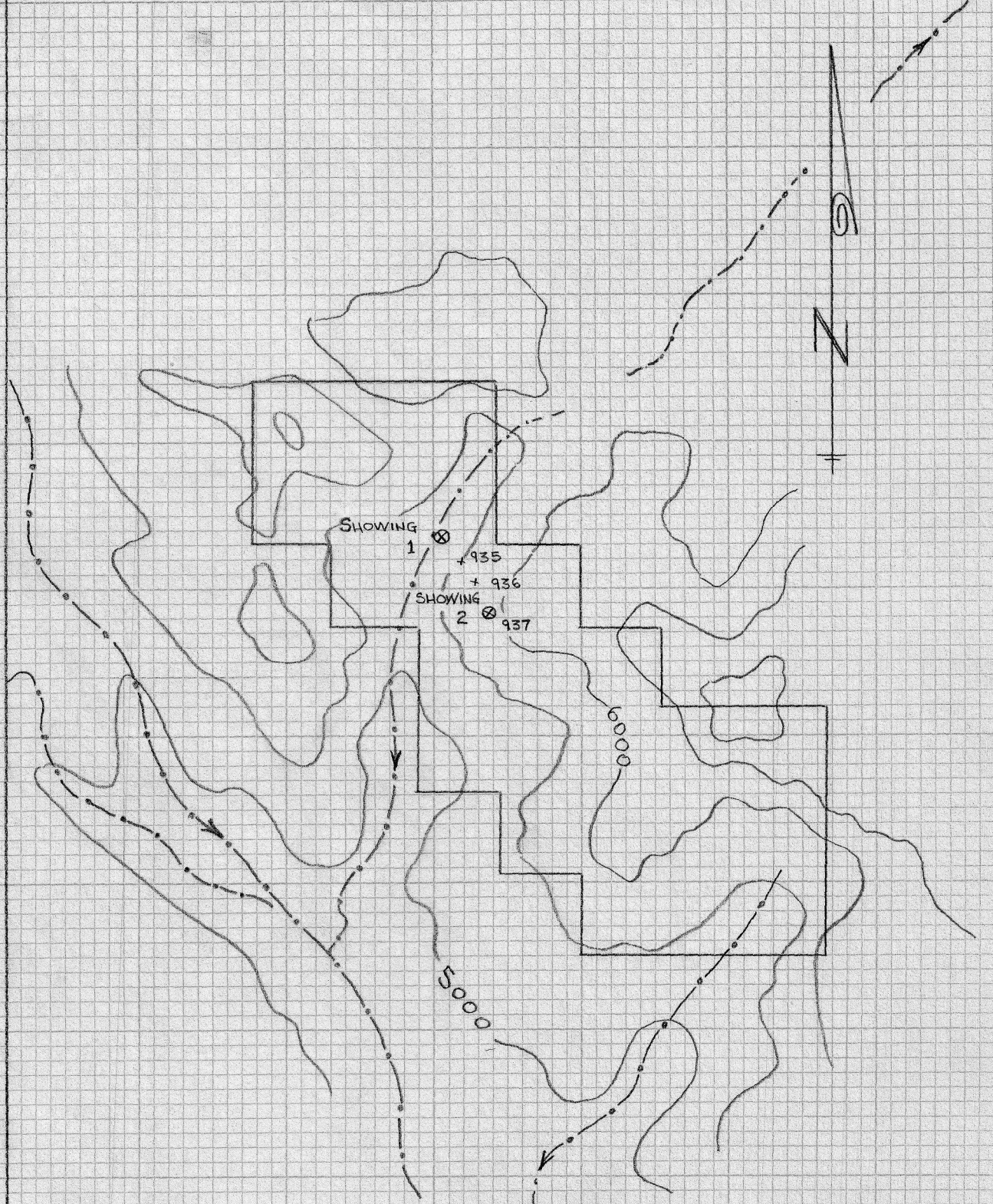
WELCOME NORTH MINES LTD.
 JAN CLAIMS

LOCATION & REGIONAL
 GEOLOGY
 FIGURE 3

OCT. 3, 1974

NTS 106A/12

2640'



WELCOME NORTH MINES LTD.

JAN PROPERTY

N.T.S. 106A-12
SHOWING & SAMPLE
LOCATIONS

Figure 3

1" = 1/2 MILE

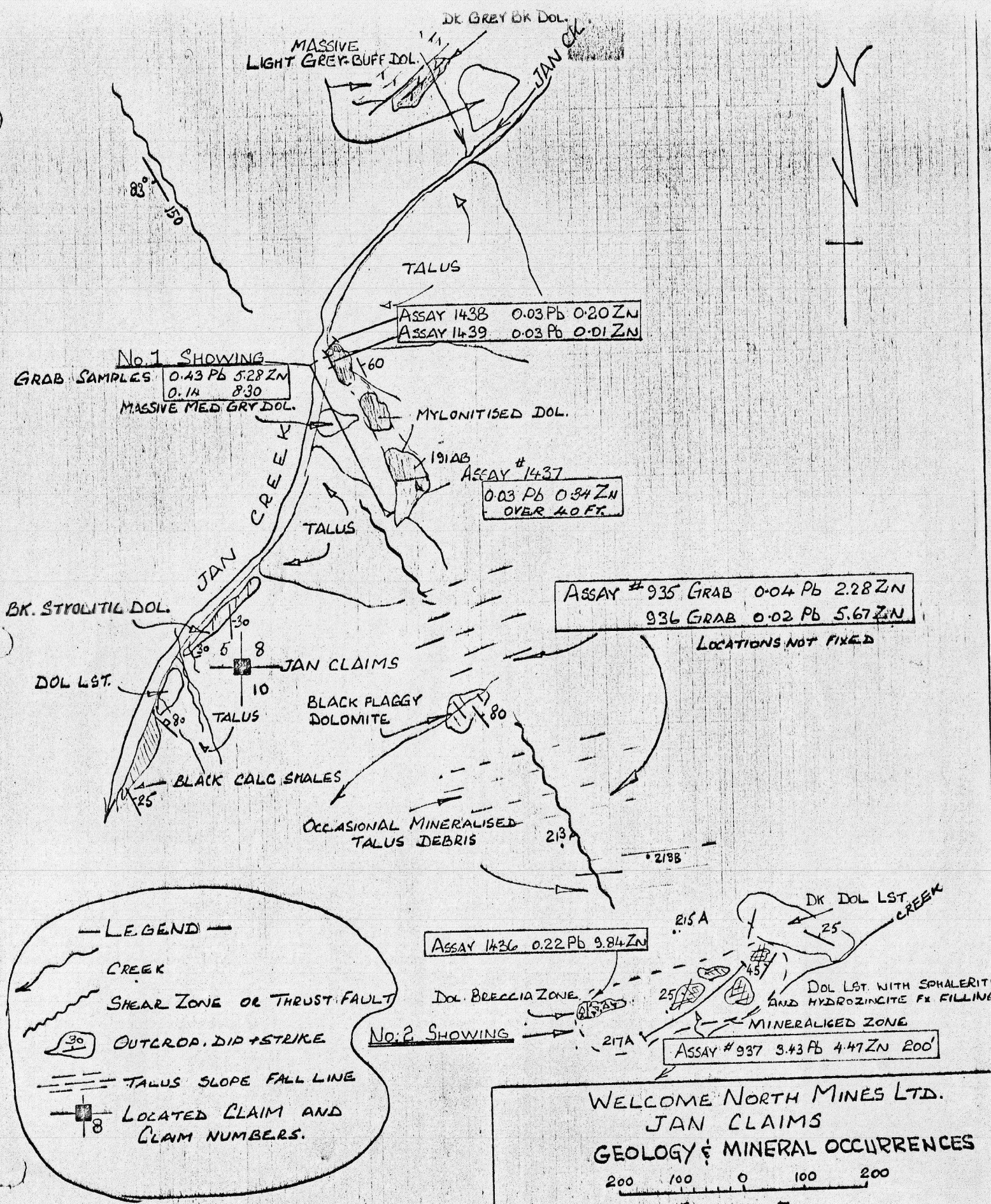
NOV. 1973 55

REGIONAL GEOLOGY

Figure 3, on a scale of 1 inch = 2640 feet, demonstrates the relative position of the JAN claims to the regional geology. A westerly-dipping regional thrust fault strikes through the middle of the claim group and separates overlying Lower Cambrian to Ordovician shale and carbonates (Road River and Sekwi formations) in the southwest from underlying Devonian Landry and Hume carbonate formations in the northeast (Table of Geological Formations, Figure 4). A sequence of northwest trending thrust faults to the southwest of the claim group repeatedly upthrusts the Sekwi and Road River formations which form the northeastern margin of a large northwesterly trending synclinorium. The beds, on the hanging wall side of the thrust fault which passes through the property, have low to moderate dip to the northeast with occasional reversals. The Devonian formations in the footwall margin of the thrust fault are contorted and mylonitized, providing a seat for subsequent mineralization. The two main showing groups are located in the footwall of the thrust fault close to the middle of the claim group. Local geology and assay locations are illustrated on the geology map, Figure 5, at a scale of 1 inch to 200 feet. The location of this detailed sketch is shown on the 1 inch to 2640 feet regional geology map, Figure 2.

PROPERTY GEOLOGY

The geology map, Figure 5, shows the relationship of the thrust fault with the local geology and the two principal mineral showings. The general rock type is massive light grey to dark thin bedded dolomite with occasional black calcareous shale interbeds. The 'contact' between the Cambrian and Devonian



WELCOME NORTH MINES LTD.
 JAN CLAIMS
 GEOLOGY & MINERAL OCCURRENCES

200 100 0 100 200

FIGURE 5

OCT. 2, 1974

NTS 106 A/12
 REMEL

formations is obscure and covered with mineralized talus debris between the two showings. Both showings occur close to the assumed trace of the fault which is well exposed on the opposite northwest side of JAN Creek. Black calcareous shales and dolomites are characteristic of the Sekwi-Road River group on the hanging wall side. The footwall Landry formations consist of buff massive dark grey dolomites and dolomitic limestones which have been mylonitized close to the fault zone. These dolomites are well fractured and healed by sphalerite, hydrozincite and calcite. The mineralized fracture patterns consist of three intersecting sets whose orientation vary in different areas. The fracture density is generally weak, although some mineralized fractures of up to 2 inches in thickness have been found in talus.

MINERALIZATION

Mineralization has been traced in outcrop and intervening talus debris for a distance of 1200 feet from the No. 1 to the No. 2 Showing. Structural control of the mineralization appears to be related to a thrust fault and the folding and mylonitization of the Landry dolomites. The No. 2 Showing is better exposed and exhibits higher zinc values than the No. 1 Showing. Grab samples from the mineralized talus debris between the two showings assay in excess of 7% combined zinc-lead (Assay No.937) and may indicate a continuation of better grade subcrop between the two showings. The strike extensions of known mineralization have not been investigated, as yet.

JAN No. 1 Showing

The JAN No. 1 Showing occurs in outcrop near the JAN Creek bed. The outcrop is approximately 50 feet thick with a steep dip to the northeast. The outcrop may be traced under talus

debris to the southeast for a distance of 800 feet toward the No. 2 Showing. Mineralization occurs in thin fractures, vugs, solution cavities and breccia matrix. Red sphalerite forms encrustations and fillings in association with calcite and secondary dolomite. Galena is a very minor constituent in this showing, the best assays only returning 0.5 per cent lead. Grab samples from the No. 1 Showing returned up to 8 per cent zinc and 0.5 per cent lead. Continuous chip assays run considerably lower, at 0.3% combined lead-zinc, and probably reflect the erratic nature of the mineralization characteristic of this first showing.

Talus debris covers the continuation of the No. 1 Showing to the higher grade No. 2 Showing. However, grab samples taken from the talus debris indicate up to 5.5% combined lead-zinc. The trace of the fault is covered by this same talus debris which extends for 800 feet between the two showings.

JAN No. 2 Showing

The JAN No. 2 Showing occupies an area of some 400 x 100 feet on the bank of a dry wash. The mode of occurrence of this mineralization is similar to that of the No. 1 Showing with the exception of better assay returns in the order of 8-9% combined lead-zinc. A separate dolomite breccia zone outcrop of 100 x 50 feet gave 10% combined lead-zinc over an apparent thickness of 18 feet. Hydrozincite is common and forms encrustations on open fractures and broken rock. The orientation of the mineralized fracture sets is irregular with the exception of a sub-parallel alignment of one set with the regional thrust fault. Galena occurs as small euhedral grains in association with sphalerite and also as isolated blebs. Occasionally,

semi-marine specimens of galena occur in the talus debris. A chip sample taken over a 200-foot length parallel to the creek at No. 2 Showing, indicates a grade over that length of 8% combined lead-zinc. It must be noted, however, that the trace of the mineralized outcrop essentially follows the creek at this point thereby discounting the 200-foot sample length to some degree.

Available assays on the JAN property are tabulated below and illustrated on the Geology and Mineral Occurrence Map (Figure 5):

<u>Assay No.</u>	<u>Field Location</u>	<u>Thickness</u>	<u>Pb %</u>	<u>Zn %</u>	<u>Comment</u>
881		-	0.43	5.28	Grab, Showing No. 1
883		-	0.14	8.30	Grab, Showing No. 1
935		-	0.04	2.08)	Grab samples between
936		-	0.02	5.67)) Showing No. 1 and Showing No. 2.
937		-	3.43	4.47)	Chip every 5 feet
938		-	0.15	0.24)) for 200 feet - Showing No. 2.
1436	217E	18 ft.	0.22	9.84	Cont. chip., Dolomite breccia Zone #2.
1437	191AB	40 ft.	0.03	0.34	6" chip between Zone #1 and #2.
1438	191CD	15 ft.	0.03	0.20	6" chip, Showing #1.
1439	191DE	10 ft.	0.03	0.01	6" chip, Showing #1.

CONCLUSIONS AND RECOMMENDATIONS

The JAN property must be considered for further examination and appraisal. The considerable strike length bounded by showings of promising grade must logically be traced under the heavily mineralized talus at location 213A.

It is recommended that a program of detailed mapping of the showings and their extensions be completed. The general area should be systematically and carefully prospected for further mineral indications; a sequence of silt and soil samples should be taken over the property and especially along strike projections of the showings; systematic detailed sampling of the showings should also be completed in conjunction with precise stratigraphic mapping and correlation.

Respectfully submitted,

R. F. McLoughlin

John S. Brock,
November 30, 1974

JAN GROUPCLAIMS SUMMARY

	<u>Grant Numbers</u>	<u>Recording Date</u>
JAN 1-20	A50421-A50440	Sept. 24, 1973.
JAN 21-24	A69596-A69599	Sept. 24, 1973.
	<u>TOTAL 24 Mineral Claims</u>	

APPLICATIONS FOR CERTIFICATES OF WORK - MACKENZIE MINING DISTRICT

In accordance with the provisions of the Canada Mining Regulations, we the recorded owners of the mineral claims listed below, hereby apply for the following certificates of work, as per APPENDIX III, Statement of Costs, attached hereto:

TOTAL REPRESENTATION WORK - As per APPENDIX III \$ 7,354.26

DISTRIBUTION OF REPRESENTATION WORK:

JAN 1-20	A50421-A50440	(20 claims - 3 years each)	\$6,000.00
JAN 21-24	A69596-A69599	(4 claims - 3 years each)	<u>1,200.00</u>
	TOTAL REPRESENTATION WORK APPLIED FOR		<u>\$7,200.00</u>

JAN GROUPPERSONNEL AND DATES WORKED1974 FIELD SEASON

Richard F. McLoughlin, Aug. 27, 29, 30.
c/o #1010, Sept. 2, 19, 20.
2055 St. MatthewSt.,
Montreal, PQ.

Geologist
\$1200/month

Joan Stickney,
c/o General Delivery,
Whitehorse, Y.T.

Duration of Program -
Salary pro-rated over
all projects - under
camp costs.

Cook
\$900/month

JAN GROUPPERSONNEL AND DATES WORKED1973 FIELD SEASON

Edward H. Rannie,
247 William Street,
Beamsville, Ont.

September 1-14, 1973.

Assistant Geologist
\$700/month

Esau Dick,
Ross River, Y.T.

September 1-10, 1973.

Prospector
\$650/month

Arthur John,
Ross River, Y.T.

September 1-6, 1973.

Prospector,
\$1000/month

Carolyn Hesselstine,
Nonsuch Place,
Mile 929.1 Alaska Highway,
Whitehorse, Y.T.

Duration of program -
Wages pro-rated to
project - under Camp
Costs.

Camp Cook
\$800/month

JAN GROUP
STATEMENT OF COSTS

GEOLOGY/GEOCHEM

Salaries/Wages	\$ 1,073.72	<i>R. M. Howard's</i> 283.14 '74
Field Expenses Misc.	80.41 ✓	
Assays/Analyses	38.00 ✓	
Maps/Prints/Drafting	625.00 —	174

FREIGHT/TRANSPORTATION (Helicopter Support, etc.)	4,195.91 -	<i>479.00</i> 174
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EXPEDITING/ROSS RIVER	106.54 ✓	
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CAMP OPERATIONS	1,134.68 ✓	
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TOTAL	\$ 7,254.26	
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REPRESENTATION WORK APPLIED FOR

JAN 1-20	A50421-A50440 (20 claims - 3 years each)	\$ 6,000.00
JAN 21-24	A69596-A69599 (40 claims - 3 years each)	<u>1,200.00</u>

TOTAL REPRESENTATION WORK APPLIED FOR	\$ 7,200.00	
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The above schedule summarizes the costs incurred by Welcome North Mines Ltd. (N.P.L.) in carrying out an exploration program on the JAN claims during the 1973-1974 field seasons.. This cost summary can be invoice supported or in the case of internal costs documented. The costs do not include:

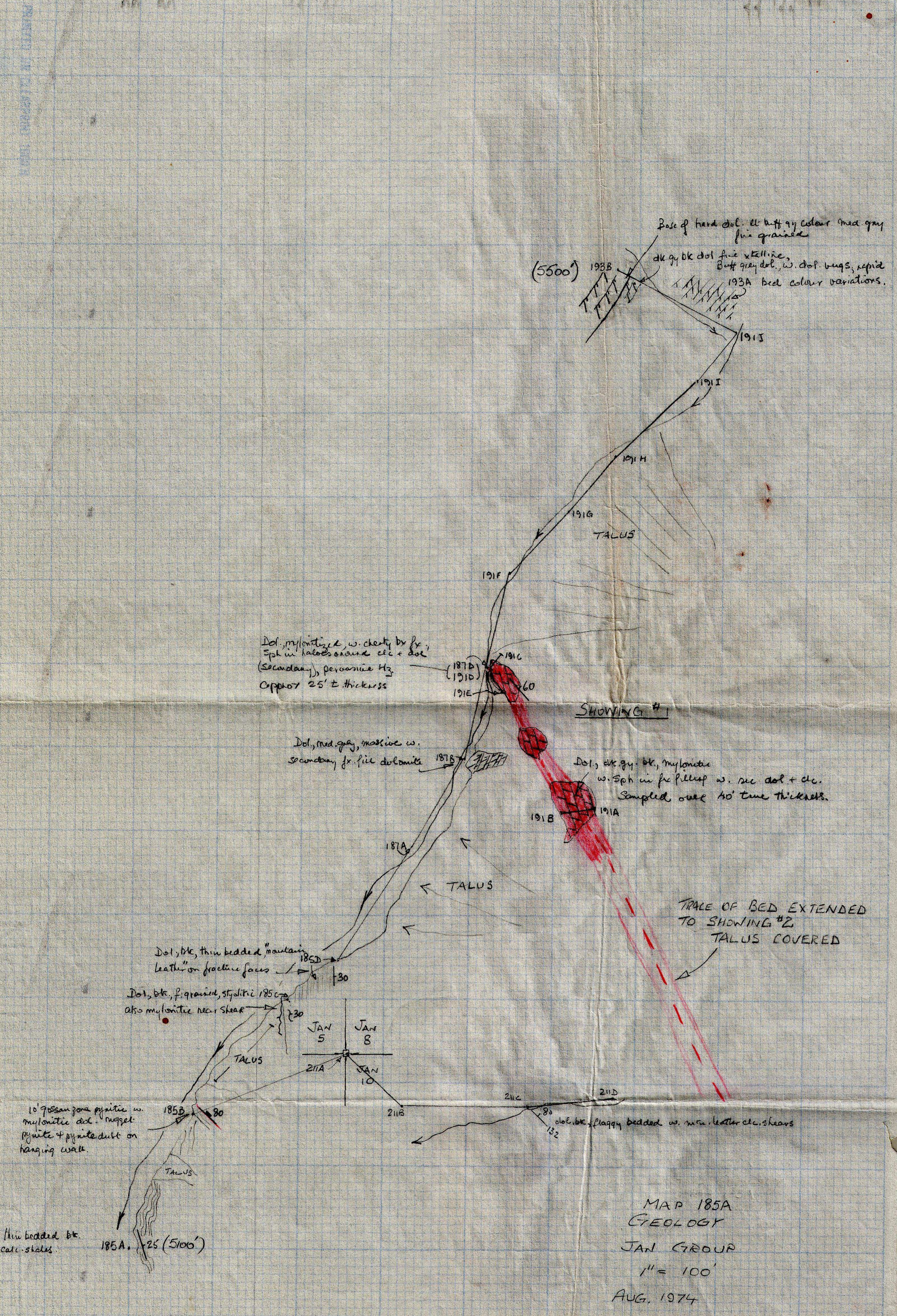
- 1) Option costs and payments, acquisition or staking costs.
- 2) Mobilization of personnel to the Arctic Red area.
- 3) Head office overhead.

Camp Operations include: Cooks' wages, food costs, freight, camp operations/support, misc. camp expenses.

Expediting costs include: Radio, telephone, expediting services.

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

John S. Brock,
Vice-President Exploration.



Base of hard dol. dk buff gy colour med gray fine grained
 dk gy bk dol fine crystalline, Buff grey dol. w. dol. frags, rapid 193A bed colour variations.

(5500')

Dol. mylonitized, w. cherty br fr, Sph in halos around clc + dol (Secondary), perovskite Hz, Copper 25' ± thickness

SHOWING #1

Dol. med. gray, massive w. secondary fr. fill dolomite

Dol. dk. gy. bk, mylonitic w. Sph in fr. pillow w. mc. dol + clc. Sampled over 40' true thickness.

TRAIL OF BED EXTENDED TO SHOWING #2 TALUS COVERED

Dol. dk, thin bedded, "mantain leather" on fracture faces

Dol. dk, f. grained, stylitic also mylonitic near shear

10' gossan zone pyritic w. mylonitic dol. magnet pyrite + pyrite dust on hanging wall

Thin bedded dk. calc. shales

MAP 185A
 GEOLOGY
 JAN GROUP
 1" = 100'
 AUG. 1974

