W03 INFO

REPORT ON THE 1979 WORK PROGRAM

TROUT LAKE PROJECT

REVELSTOKE MINING DIVISION, B.C.

By

H. C. Boyle

March 14, 1980

Newmont Exploration of Canada Limited
Vancouver, B.C.

program could rapidly give a high denisty of information. This technique has not yet been tried at Trout Lake and a testing period for reliability would be required. If it proved unsuccessful, diamond drilling of a less dense grid could be undertaken to achieve the same goal.

TUNGSTEN BEARING SKARN ZONE

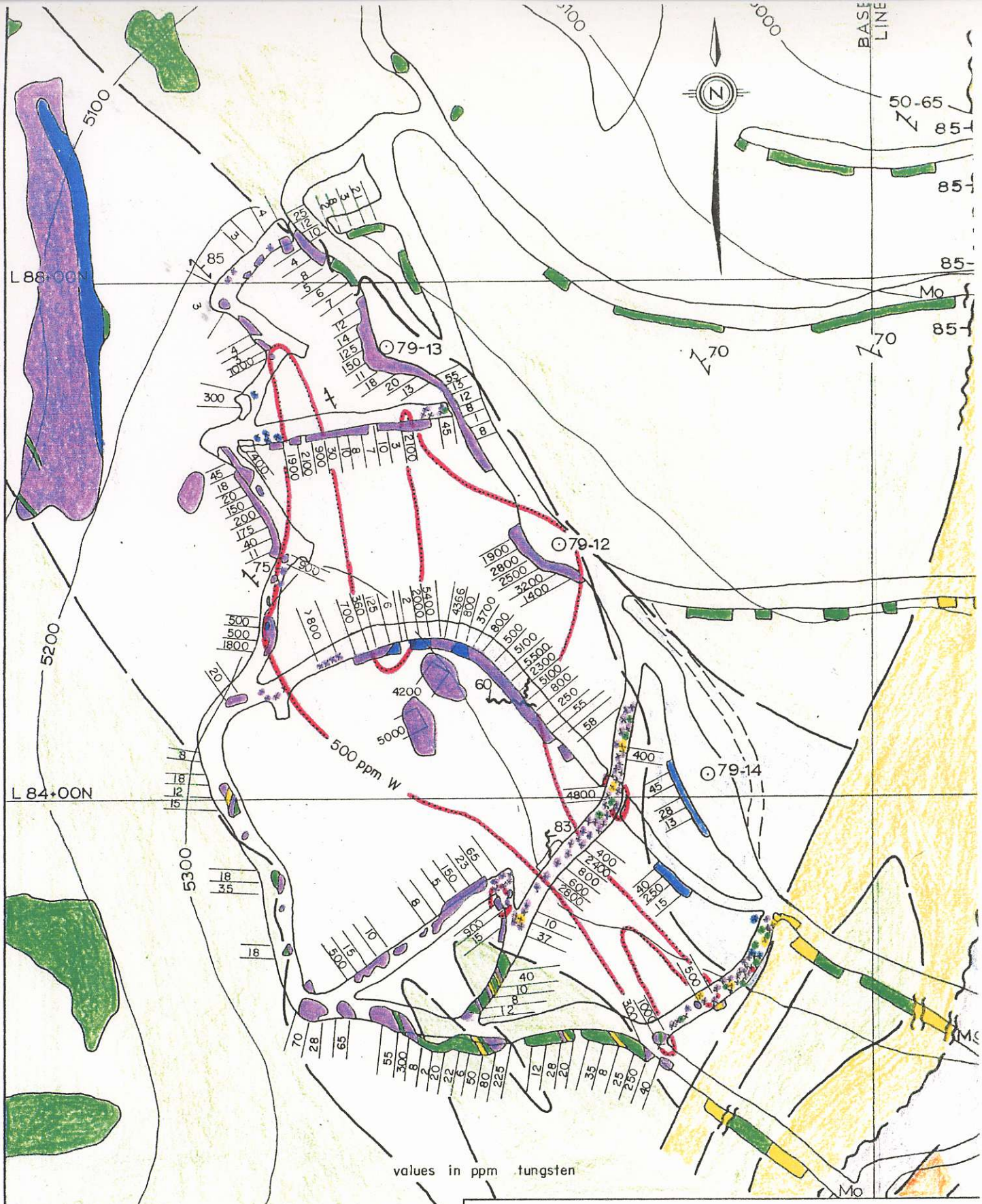
Previous surface trenching, mapping and sampling had indicated a zone of tungsten mineralization, in the form of scheelite, associated with skarn zones cropping out on the Copper Chief Moly No. 1 and No. 2 Claims in the southern extremity of the road-trench system. In part of this system, systematic chip sampling of a trench had turned up 110' of skarn grading 0.32% WO_3. This tungsten appeared to be associated with a dense, dark green, actinolite pyrrhotite skarn striking conformably with the general schistosity in a NW-SE direction. To better understand this mineralization, further trenching, mapping and chip sampling were carried out and followed with three inclined diamond drill holes under the most prospective areas.

The results of the surface work and the location of the collars for DDH's 79-12, 79-13 and 79-14 are shown in Figure 7. As can be seen, most of the values obtained from this year's sampling ran less than 100 ppm tungsten with only a few scattered values over 400 ppm. The exception is the trench wall in the area of 79-12 which ran 0.24% WO_3 over 50'. Combining the results from the two year's chip sampling gives an erratic pattern of plus 500 ppm W (0.04% WO_3), with a lensoidal shape generally parallel to stratigraphy. The better grade material at the centre of the lens appears to be elongated in a NE-SW direction.

Drilling at -45° to the SW directly below the highest surface values did not encounter long lengths of economic grade tungsten, but did intersect short zones of mineralization. Holes 79-12 and 79-13 are shown on Sections II and 9, and 79-14 is on Figure 8. Significant intersections are:

Hole	From	To	Length	%WO_3
79-12	16	45	29'	.106
79-12	430	492	62'	.263
79-13	38	94	56'	.395
79-14	61	76	15'	.287
79-14	398	449	51'	.178

It was noted in the logging that the highest grade tungsten was always associated with concentrations of pinkish brown garnets (possibly spessartine) at or near the borders of intense skarn development. A previous presumption that

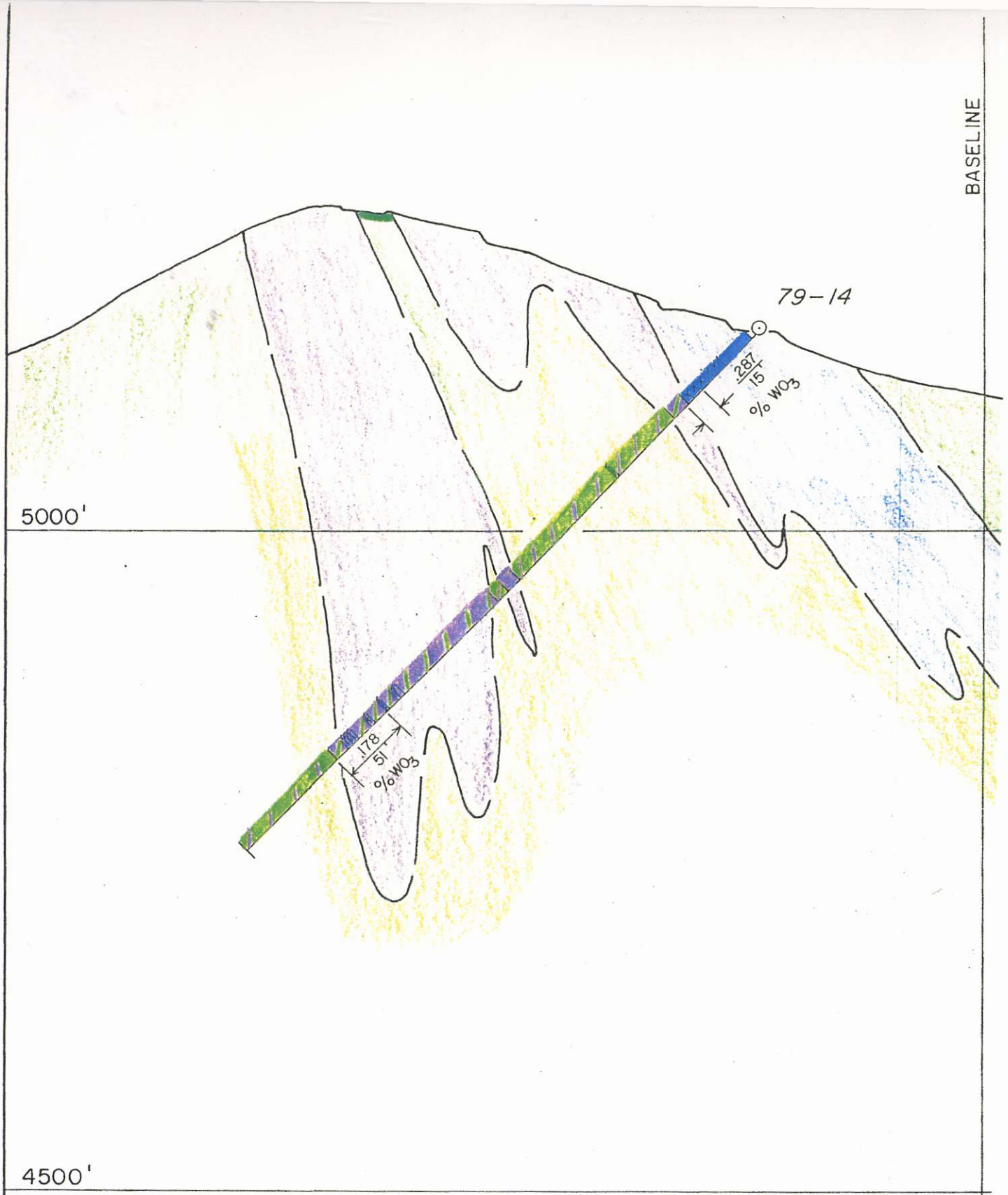


NEWMONT EXPLORATION OF CANADA LTD.

TROUT LAKE PROJECT
COPPER CHIEF MOLY CLAIMS

SCALE	LOCATION	DATE
1" : 100'	82 K/12 E	FEB., 1980
SURVEY BY	DRAWN BY	NO.
HCB	HCB, JN	7

NCI 241 – N.E.C.



NEWMONT EXPLORATION OF CANADA LTD.		
SECTION ALONG DDH 79-14		
SCALE 1" : 100'	LOCATION 82 K / 12 E	DATE FEB., 1980
SURVEY BY HCB	DRAWN BY HCB	NO. 8

JCI 241 — N.E.C.

tungsten mineralization was associated with heavy pyrrhotite mineralization was not substantiated in the drilling.

Geologically, Hole 79-12 encountered strongly to weakly developed skarn from its collar to a depth of 512' where it entered silicified schist. The strongest skarn development was at the edges of the zone with only weak to moderate skarning in the middle. A similar pattern was encountered in 79-13, with mixed silicified schist and weak to moderate skarn from 289' to the bottom of the hole at 500'. Hole 79-14 encountered mixed silicified schist and weak to moderate skarn over its entire length of 544', reinforcing the interpretation drawn from surface mapping that the skarn is feathering out to the SE. Two stretches of good grade mineralization in this hole appear related to brecciated and faulted zones of silicified skarn with garnet development.

In summary, exploration on the tungsten zone within a 400' by 700' area has yielded several intersections of 15' to 60' long grading 0.1 to 0.4% WO_3 in disconnected zones.

Further work on these zones would require more extensive shallow hole drilling. With considerable additional work, a small near-surface deposit of economic significance could be delineated.

CONCLUSIONS

1. Revision of the reserve estimate of the Trout Lake deposit in light of 1979 drilling resulted in a slight increase in tonnage and a reduction in the average grade.
2. The upper portions of the large B zone (above 3000' elevation) has been delimited to the west, north and east. It is still open on the south and to depth, and it holds the best potential for increasing reserves.
3. Because of the depth to which mineralization extends, an underground program of detailed and exploratory diamond drilling, together with bulk sampling, is being undertaken to properly delimit and evaluate the deposit.
4. The outline of the A zone is imprecisely known for purposes of mine planning.
5. Tungsten mineralization associated with skarn occurs in small lenses overlying the molybdenite zones. It has modest potential as an economic deposit and should be explored further.
6. The alteration study carried out on drill core pulps has continued to clarify patterns associated with mineralization.

RECOMMENDATIONS

1. Several alternate approaches should be studied for detailing of the B zone with the underground program now underway. The best drift positioning for drilling long exploratory holes must also be considered.
2. A surface drilling program on the upper portion of the A zone should be undertaken. This should start with a test of the suitability of percussion drilling in areas where the deposit is well known. If the test is successful, further drilling up to 35,000' in 120 closely spaced holes would follow. If the test is unsuccessful, a lesser amount of inclined diamond drilling would suffice.
3. The tungsten mineralization associated with the skarn should be explored further depending on priorities and the availability of drilling equipment used on the A zone.
4. The alteration study should be continued when drilling new areas to better determine guides to ore.
5. The surface geological mapping should be completed in 1980. Work to date is described in a separate report.

H. C. Boyle

Vancouver, B.C.
March 14, 1980

FOR BRUCE ANDERSON. DELIVER A COPY ASAP. MAKE 2 COPIES. 21 pgs. MORE TO COME IN 1-2 HRS. J.M. THANKS.

were located during the present study.

3.2 SKARN DEPOSITS

Introduction

Skarn sensu stricto (also known as tactite) is a rock composed almost entirely of lime-bearing silicates, derived from nearly pure limestones and dolomites into which large amounts of silicon, aluminum, iron and magnesium have been introduced by metasomatism near contacts with granitic intrusives. Metallic minerals are absent or rare, and when present have been introduced by later hydrothermal activity (Lindgren, 1928; Williams, Turner and Gilbert, 1958; Turner, 1968). Common skarn minerals are grossularite-andradite garnet, diopside-hedenbergite pyroxene, hornblende-pargasite amphibole, epidote, bytownite plagioclase and wollastonite. Less common are scapolite, idocrase and prehnite, and, in silica-defficient assemblages only, forsterite and periclase. Accessory minerals include sphene, microcline, phlogopite, fluorite, magnetite and sulphides.

In North America, the term "Skarn Deposit" (sensu lato) has been used to include all those "in which pre-existing rocks, commonly volcanic or carbonate, are converted by metasomatic replacement near intrusive rocks to skarns composed principally of oxide, calc-silicate, sulphide and tungstate minerals with irregular crystalloblastic textures" (Sutherland-Brown et. al., 1971).

Some time was spent examining hand-specimens and thin-sections of limestones, greenstones and "skarns" from outcrops and drill holes in the vicinity of the Trout Lake Deposit. These studies indicate that the skarn deposits on the property consist of metavolcanic rocks (greenstones with thin limestone laminations) which have been metamorposed and metasomatically altered and mineralized in a sequence related to distance from the intrusive body. Four "zones" are described, although these probably represent stages in a continuous sequence. Petrographic descriptions are presented in Appendix I.

Unaltered Metavolcanics

Peripheral to the main orebody, but outside the mineralized area, the metavolcanic sequence consists of greenstones and green schists derived from basic and intermediate lavas and tuffs containing abundant thin limestone laminations (Unit Lv - see Section 2.2.1). The principal mineral assemblages present in basic rocks are chlorite + quartz, actinolite + quartz and actinolite + chlorite + quartz, with or without minor amounts of biotite, albite, calcite and pyrite, and in intermediate rocks muscovite + biotite + quartz + magnetite. These rocks are commonly associated with fairly thick marble units which have been locally

dolomitized (Unit Lm - see Section 2.2.2). These rocks are unmineralized (for the purposes of this study, "mineralized" means >0.03% MoS_2 or >0.03% WO_3).

Shallow Metavolcanic Alteration Zone

Within the outer fringe of the mineralized area, in D.D.H. 79-6, from 12 ft. to 269 ft., the lithologies described in Table 3 were encountered. The interval 53-59 ft. represents a metasomatically altered equivalent of the intermediate greenstone below it; biotite is altered to epidote and magnetite to siderite. The interval 67-121 ft. is a zone in which interlaminated greenstone and limestone have both been metasomatically altered by mutual interaction. The interval 207-245 ft. represents a metasomatically altered equivalent of the mafic greenstone below it; biotite and actinolite are altered to epidote and diopside respectively. The thick, relatively pure dolomite marble horizons remain largely unaltered. Assay results indicate minor molybdenite mineralization (10 ft. of 0.048% MoS_2, 190 - 200 ft.); no tungsten assays are available. Minor pyrite is present in some of the altered and unaltered mafic greenstones.

Within the centre of the mineralized area, two specimens were collected at random from outcrop in the trenches within the main skarn zone (see Boyle 1980). Green "skarn" (SK-1) consists mainly of diopside with minor relict actinolite, calcite and quartz, and brown "skarn" (SK-2) consists of actinolite + diopside + epidote + quartz with a trace of calcite. Garnet has also been found in this area (Fyles & Eastwood, 1962). Presence of relict actinolite indicates alteration of a mafic greenstone; in skarn sensu stricto the amphibole is typically hornblende. The sequence exposed in the trenches includes lenses and bands of unaltered limestone and marble. This zone is moderately mineralized with scheelite (Boyle, 1980); molybdenite assays are not available, and only traces of this mineral have been found.

Intermediate Metavolcanic Alteration Zone

At intermediate depths within the mineralized area, in D.D.H. 79-4, 2090 ft. to 2246 ft., the following lithologies are present:

2090' - 2097' - Altered Greenstone
2097' - 2169' - White dolomite marble
2169' - 2246' - Altered greenstone

Two specimens were studied in thin section, as follows:

79-4-2180' contains patches of unaltered greenstone consisting of diopside + actinolite with minor calcite, and is altered in patches and veins to pale green diopside.

79-4-2190' contains patches of unaltered greenstone consisting of actinolite + quartz + calcite, and is similarly altered in patches to pale green diopside and in

TABLE 3

SHALLOW METAVOLCANIC ALTERATION ZONE - OUTER FRINGE OF MINERALIZED AREA

D.D.H. 79-6, 12-269'

Depth (ft)	Lithology	Specimen No.	Description
12-53	White dolomite marble	--	--
53-59	Altered intermediate greenstone	79-6-59	Epidote-muscovite-quartz schist with magnetite and siderite porphyroblasts.
59-67	Intermediate greenstone	79-6-59	Biotite-muscovite-quartz schist with magnetite porphyroblasts
67-121	Calc-silicate schist (Interbanded altered limestone and altered greenstone)	79-6-75	Light bands of Diopside-epidote-calcite-quartz schist ie. altered limestone. Dark bands of Phlogopite-chlorite-epidote schist, ie. altered greenstone.
121-207	White dolomite marble	79-6-183	Mostly dolomite; accessory quartz and chlorite.
207-245	Altered mafic greenstone	79-6-209	Chlorite-biotite-diopside-epidote orthoclase-quartz schist
		79-6-238'	Actinolite-chlorite- epidote-orthoclase schist, with fibrous patches from which diopside is crystallizing
245-269	Mafic greenstone	79-6-260	Actinolite-calcite-quartz-pyrite schis

addition contains fibrous, poikilitic masses of wollastonite. Garnets were seen in hand-specimens.

In this zone the unaltered greenstone assemblage includes diopside, a result of increased metamorphic grade and formed independently of diopside in patches and veins resulting from later metasomatic alteration. These rocks are moderately well mineralized, containing minor molybdenite associated with coarse grained pyrrhotite, and minor scheelite. Assay values (Table 4) indicate that for the most part molybdenum and tungsten show an antithetic distribution. White dolomite marble remains largely unaltered.

Deep Metavolcanic Alteration Zone

Deep within the mineralized area, in D.D.H. 79-4, 3160 ft. to 3324 ft., the lithologies shown in Table 5 were encountered. The interval 3222 ft. - 3235 ft., consisting of interlaminated altered greenstone and skarn, is a higher-grade equivalent of the interval 67 ft - 121 ft. in D.D.H. 79-6 from the shallow reaction zone. Massive white dolomite marble is beginning to show alteration to skarn along fractures. Hence true skarn assemblages containing garnet, diopside, wollastonite, idocrase, prehnite, phlogopite and spinel or perovskite are developed in limestone laminations within greenstone, and are beginning to develop in the massive white marbles. By analogy with D.D.H. 79-6, it is likely that much of the pyrrhotite present in this zone formed from magnetite and/or pyrite originally present in the metavolcanics. Molybdenite mineralization is associated with quartz vein stockwork and the pyrrhotite, while only traces of tungsten are present (Table 6).

Interpretation and Conclusions

1. In metavolcanic assemblages, diopside replaces actinolite + calcite + quartz in response to rising metamorphic grade. This reaction could have occurred either during regional metamorphism (indicating transition from greenschist facies to amphibolite facies) or during contact metamorphism related to the Trout Lake Stock (indicating transition from albite-epidote hornfels facies to hornblende hornfels facies) or both. This reaction pre-dates formation of diopside by metasomatic alteration.
2. Metasomatic alteration of interlaminated greenstone and limestone has resulted in the formation of mixed assemblages including altered metavolcanic, altered limestone and skarn. The alteration was facilitated by percolating fluids which took advantage of inhomogeneity in the rocks resulting from (a) compositional layering (greenstone v.s. limestone) and (b) schistosity. Skarn forms a relatively minor proportion of the lithology (perhaps 10%). Degree of alteration increases with depth, i.e. with

TABLE 4

MOLYBDENUM AND TUNGSTEN ASSAYS IN INTERMEDIATE METAVOLCANIC ALTERATION ZONE

D.D.H. 79-4, 2090' - 2246'

Lithology	Interval (ft)	% MoS_2	% WO_3
Greenstone	2090 - 2097	0.017	0.01
White Dolomite Marble	2097 - 2104	0.083	0.02
	2104 - 2110	0.040	0.01
	2110 - 2120	0.013	0.02
	2120 - 2130	0.040	0.02
	2130 - 2140	0.037	0.05
	2140 - 2150	0.051	0.01
	2150 - 2160	0.011	0.01
	2160 - 2169	0.278	0.03
Greenstone	2169 - 2180	0.152	0.06
	2180 - 2190	0.230	0.01
	2190 - 2200	0.008	0.09
	2200 - 2210	0.028	0.07
	2210 - 2220	0.018	0.06
	2220 - 2230	< 0.001	0.07
	2230 - 2238	< 0.001	0.09
	2238 - 2246	0.018	0.17

Shading denotes mineralization > 0.03% MoS_2 or > 0.03% WO_3

TABLE 5

DEEP METAVOLCANIC ALTERATION ZONE

D.D.H. 79-4, 3160' - 3314'

Depth (Ft)	Lithology	Specimen No.	Description
3160 - 3222	Greenstone	79-4-3204	Diopside + Quartz; accessory epidote + calcite. Minor Po, traces Mo.
		79-4-3220	Diopside + quartz; 20% Po
3222 - 3235	Calc-silicate schist (Interbanded greenstone and skarn	79-4-3234	Diopside + prehnite + phlogopite + zoisite + quartz; minor idocrase, wollastonite, sphene calcite, chlorite, spinel or perovskite. Traces of Mo.
3235 - 3238	? Biotite Hornfels	--	--
3238 - 3254	White dolomite marble	--	Altering to skarn along fractu
3254 - 3280	Greenstone	79-4-3255	Mostly diopside; accessory quartz, actinolite, idocrase; minor Po
		79-4-3267	Mostly diopside; minor actinolite, idocrase, quartz and pyrrhotite. Veinlets containing dark green biotite, wollastonite, diopside, idocrase and pyrrhotite.
		79-4-3276	Mostly diopside; 20% sulphides (mostly Po, minor Cp); minor actinolite, green biotite, idocrase, spinel or perovskite. (N.B. Garnets observed in hand specimens).
3280 - 3302	Calc-silicate schist	--	Interbanded greenstone and skarn, hosting quartz vein stockwork containing Molybdenite
3302 - 3314	? Greenstone	--	--

TABLE 6

MOLYBDENUM AND TUNGSTEN ASSAYS IN DEEP METAVOLCANIC ALTERATION ZONE

D.D.H. 79-4, 3160 - 3314 Ft.

Lithology	Interval (Ft.)	% MoS_2	% WO_3
Greenstone	3160 - 3167	0.024	0.02
	3167 - 3174	0.033	0.01
	3174 - 3182	0.046	0.02
	3182 - 3190	0.120	0.02
	3190 - 3198	0.110	0.01
	3198 - 3205	0.042	0.01
	3205 - 3213	0.117	0.01
	3213 - 3220	0.048	0.01
Greenstone, skarn and Hornfels	3220 - 3230	0.100	0.01
	3230 - 3238	0.133	0.01
White dolomite marble	3238 - 3246	0.050	0.03
	3246 - 3254	0.090	0.02
Greenstone	3254 - 3262	0.050	0.01
	3262 - 3271	0.045	0.03
	3271 - 3280	0.140	0.04
Greenstone and Skarn	3280 - 3290	0.083	0.01
	3290 - 3300	0.078	0.01
Greenstone	3300 - 3307	0.058	0.01
	3307 - 3314	0.100	0.01

Shading denotes mineralization $>0.03\%$ MoS_2 or $>0.03\%$ WO_3

proximity to the intrusive body. Skarn minerals developed include epidote, diopside and garnet in the shallow zone, diopside, garnet and wollastonite in the intermediate zone, and diopside, garnet, wollastonite, prehnite, phlogopite, zoisite, idocrase and spinel or perovskite in the deepest zone.

3. Thick units of relatively pure white dolomite marble remain relatively unaltered at shallow and intermediate depths, but show moderate alteration to skarn along fractures in the deepest zone. The general lack of alteration in most marbles is the result of recrystallization and homogenization brought about by two regional metamorphic events, which have rendered them relatively impervious to hydrothermal fluids.
4. The best tungsten assays were obtained in the shallow zone of alteration, from the skarn deposit exposed in surface trenches, with only traces of tungsten in intermediate and deep zones. Highest tungsten values apparently come from rocks lacking much sulphide, while molybdenite mineralization in the shallow, intermediate and deep alteration zones is associated with quartz vein stockwork and with coarse-grained pyrrhotite. A general antithetic distribution of molybdenum and tungsten is indicated. These factors suggest that tungsten mineralization was associated with hydrothermal/metasomatic processes accompanying intrusion of the stock, prior to development of the quartz vein stockwork and molybdenite mineralization.
5. The rocks mineralized with tungsten at Trout Lake form a "skarn deposit" as loosely defined by Sutherland-Brown et. al. (1971), however the host rocks are metavolcanics, and for the purposes of interpreting the regional stratigraphy and structure rocks mapped on surface and described in drillholes as "skarn" should be included with the metavolcanics, Map Unit Lv.

3.3 VEIN DEPOSITS

Small deposits of galena, sphalerite, scheelite and argentiferous tetrahedrite occur in quartz veins at several localities around the Trout Lake deposit - these include Lucky Boy, Copper Chief, Kathleen, Oakey and Ethel showings (see Figure 5).

The Lucky Boy and Copper Chief showings, which were not examined by the writer, consist of narrow, flat-lying quartz veins within quartzite, grit and siliceous schist. Both contain sphalerite, galena and tetrahedrite; in addition

the Lucky Boy contains scheelite and the Copper Chief minor chalcopyrite. The Kathleen, Oakey and Ethel showings consist of near-vertical quartz veins hosted by grey argillaceous limestone or white marble, and contain minor amounts of sphalerite and galena. The Oakey showing was held by Newmont under option in 1964, when it was known as the Krail Silver property. An additional occurrence, consisting of minor galena and arsenopyrite in quartz veins hosted by phyllitic grit, was located during this study approximately 300 m north of the portal site. None of these occurrences appear to offer any economic potential.

4. GEOCHEMISTRY

4.1 FIELD PROCEDURE

Three silt samples were taken from headwaters of Goat Creek, a tributary of Wilkie Creek, on the ASH claims. Samples of about 250 g were taken from the middle of the stream bed, ensuring that a minimum of organic material was included, and placed in 9 x 15 cm kraft paper envelopes.

Two soil lines were run on the west side of Wilkie Creek, along the 4300 and 4500 ft. contours, extending a survey begun the year before. Holes were dug with a mattock to intersect the B horizon, generally at 20 to 30 cm depth, at 50 m intervals along the line. Samples of about 250 g were taken, ensuring that a minimum of the overlying humus material was included, and placed in 9 x 15 cm kraft paper envelopes.

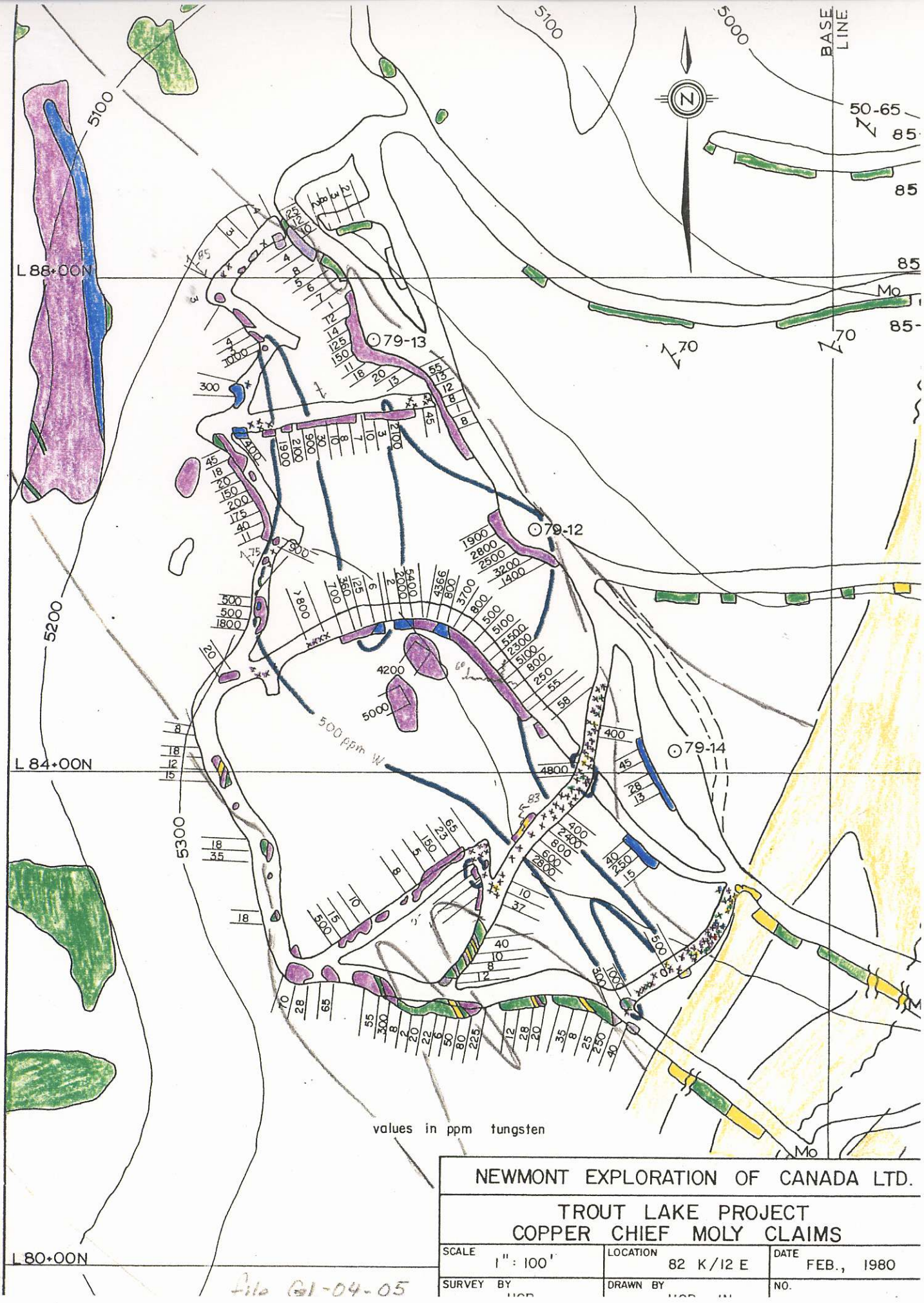
Thirty-two samples of rock types of interest were taken, most of them by collecting numerous small chips over a specified width. Samples of 1 to 2 kg were placed in 20 x 34 cm polythene bags.

4.2 LABORATORY PROCEDURE

The samples were prepared and analysed by Chemex Labs Ltd., North Vancouver, B.C. The silts and soils were dried in their envelopes and sieved to obtain a -80 mesh fraction, while rock chips were crushed, dried, and pulverised to -100 mesh. For analysis of copper, molybdenum, lead, zinc and silver, 1 g of each sample was digested for 2 hours using hot 70% perchloric acid (3 ml) and concentrated nitric acid (2 ml), then the mixture diluted to 25 ml with demineralized water, allowed to settle, and the metal content determined by atomic absorption. For gold, 5 g samples were ashed at 800° C for one hour, digested with aqua regia (twice to dryness), taken up in 25% hydrochloric acid, then the gold extracted as the bromide complex into MIBK and determined by atomic absorption. For

TROUT LAKE PROJECT
UPPER SKARN ZONE
U.V. LIGHT RESPONSE IN TRENCHES (FOR SCHEELITE)
SCALE 1"=100'
SEPT 22/79 H.G. Boyle

○ - response in outcrop
⋯ - response in subcrop in trench floor
× - float response
▨ - high response
▨ - moderate response
▨ - low response



NEWMONT EXPLORATION OF CANADA LTD.

TROUT LAKE PROJECT
COPPER CHIEF MOLY CLAIMS

SCALE	LOCATION	DATE
1" : 100'	82 K/12 E	FEB., 1980
SURVEY BY	DRAWN BY	NO.

File GI-04-05

241 – N.E.C.

2M-MP-868

PROPERTY SUBMITTED

FILE No. 923

Date Oct. 23, 1969

District	Lardeau - Revelstoke M. D. N.T.S. 82 K/6 ?
Name	Lucky Boy C. G.
Location	South of Trout Creek - elevation 4,600'. 3 miles by logging road from small settlement of Trout Lake.
Presented by	Marlow Bros.
Owners	Allan Marlow, Edward Marlow - Trout Lake P. O.
Reports Submitted	
Claims	25 claims around the original Crown Grant "Lucky Boy"
History	Small shipments of 200 - 300 oz. silver, 20 - 35% lead from Lucky Boy workings. Developed by inclined shafts and some stoping underground. Recent interest and an option agreement taken by Scurry-Rainbow. Comes from an interesting moly find close to the original workings.
Mining Facilities	None
Geology	Stripping by cat exposes the nose of a granitic intrusion - total width of granite and adjoining quartz is approx. 400'. Within this area and close to the quartz-rich zone is a width of 21' which contains streaks, bunches and disseminations of MoS_2. The mineralization fades out rapidly in all directions and elsewhere an occasional streak or speck can be seen both in the quartz-rich area on the west and also a few specks in the granite.
Sampling	G. A. Checklin, geologist for Scurry-Rainbow, supplied the following assays: Bulk samples at 5' intervals - 60' - 0.08% MoS_2 Channel samples average for 21' - 0.35% (best exposure)

Ore Reserves

Development — Cat work has exposed a granitic area of about 200' adjoined by a quartz-rich zone of about 200'. The eastern and northern contacts are exposed. Most southerly stripping showed the granite to be more porphyritic, well weathered, but no mineral.

Equipment

Nil

Economics

Terms — Scurry-Rainbow option terms -

$1,000 (in trust) to be paid on signing agreement
$550 per month for 5 months
$5,500 April 1st, 1970
$5,500 October 1st, 1970
$8,500 October 1st, 1971
and 77,000 shares of Cascade Molybdenum stock in October, 1972 or $33,00
Balance - Total $110,000

COMMENTS — The limited exposure of 21' showed nice moly characteristics and the 60' quartz-rich zone was oxidized to some extent.

Comment by R. F. Sheldon

The molybdenite is indicated to be limited in extent and the alteration normally attendant to large deposits is not suggested. Scurry-Rainbow probably intend to drill in the hope of enlarged possibilities with depth.

Date November 7, 1969
File
Prepared by S. W. Barclay.

FILE No. 92 3

MINE OFFICE:
CAMBORNE, B. C.

SUNSHINE LARDEAU MINES LIMITED

(NON-PERSONAL LIABILITY)

BEATON, B. C.

March 18, 1958.

Mr. J. A. Pike, President,
Sunshine Lardeau Mines Limited,
604 - 744 West Hastings Street,
Vancouver 1, B. C.

Re:- Lucky Boy Prospect.

Dear Jim:

On the tenth of March I made a one day preliminary examination of the main underground workings on the Lucky Boy claim owned by my uncle, Mr. A. D. Oakey of Beaton, B. C. This claim is only three miles west of Trout Lake, B. C. and is easily accessible by a narrow road of less than ten percent grade. Mr. Oakey supplied me with a C. M. & S. sketch made in 1942 and I have traced it for our use and am forwarding a copy. The geology shown is their work and I did not check it thoroughly. I have also added a few inferences of my own and marked the location of the twelve samples I took. The samples were taken not only from estimated ore grade material but from barren looking material as well.

The ore bearing structure is a flat-dipping (20^{o}) quartz vein in a thrust fault plane. The vein width varies from six inches to four feet and is estimated to average a little more than two feet. Ore mineralization consists of galena, tetrahedrite, sphalerite, and scheelite. The sulphides occur as disseminations and narrow streaks (4 inches, max.) within the quartz but unfortunately good silver values appear to be erratic. The fault structure cuts across a contact of slates and argillites with limestone. It appears that the best ore occurs where the limestone forms both walls of the vein. The west end stoped area has produced the best grade ore and it is unfortunate that previous operators did not sink the shaft one more level where a greater length of limestone could be drifted on. The abundant siderite in the limestone area is probably a replacement of the limestone. No scheelite was seen in the slate and argillite areas. The old workings shown on the Horseshoe claim were not examined but one could assume that the limestone occurs there because the limestone-argillite contact strikes across the claim.

The assays were somewhat disappointing but Sully and I consider it worth another trip to sample the lowest level at ten foot intervals and in view of the stories about more mineralization "up the hill" along with old showings on the adjoining Copper Chief property another trip should be made after the snow melts. Mr. Oakey is agreeable to our plans and is giving us until June 15, 1958 to make a decision on the property.

Sully and I expect to go up to the property this week and I will let you know when we get the assays run.

Yours truly,

K. G. Sanders

K. G. Sanders

kgs/...

There are two types of mineral deposits on the properties in question. One type consists of nearly flat quartz veins which cut the steep dipping limestones and quartzites at nearly right angles. They carry galena, zincblende, tetrahedrite and scheelite as scattered bunches in the quartz. The Lucky Boy and Copper Chief deposits are of this type. The other type consists of garnetized and silicified limestone and is confined to the limestone bands, usually near their contacts. They strike parallel to the formations which strike northwesterly and dip steeply to the southwest. Besides garnet they contain pyroxene and pyrrhotite and considerable scheelite, but little or no galena or tetrahedrite and only minute amounts of zincblende. They vary in width from three or four up to 40 feet, but none has yet been proven to extend more than a few feet or a few tens of feet in length.

The deposits are scattered over an exceedingly rugged and steep mountains side and their positions relative to one another and to the limestone bands in which they occur have not yet been accurately determined. This can be done only by a difficult transit survey. However, a rough idea of their relative positions is shown on the accompanying sketch made by Mr. Vear.

The amount of tungsten contained by the various showings is indicated by the 13 samples taken and their assay values as shown on the sketch. These samples were taken systematically but each was taken across the best part of its showing.

The old workings of the Lucky Boy and Copper Chief mines still contain remnants of ore which contain little lead and zinc but are quite rich in scheelite. These remnants amount to only a few hundred tons and, because of the condition of the old workings, they would be difficult and expensive to extract. Nevertheless, they contain the richest tungsten ore on the property.

Altogether the samples show that scheelite is present in a great many showings in important amounts and indicate a fair possibility of finding commercial deposits of tungsten. Future exploration should be aimed at increasing the known size of the more promising showings rather than at finding more showings.

This should be done by first, diamond drilling, and then, if the drilling results warrant it, by driving adits in the steep mountain sides. Because it is the lowest showing and because it is within reach of a water supply, the number 1 showing should be drilled first. After this, the showings in the vicinity of the "water hole" near the old cabin should be attacked in such a way as to prove a connection between the showings at and near this level and the number 1 showing, as well as the higher showings.

While the drilling is in progress and before it has been advanced too far, it will be necessary to make a survey of the showings and of the holes already drilled and those to be drilled.

Before this work can be carried out expeditiously, it will be necessary to enlarge the road up to the Lucky Boy camp, to repair the two buildings now in use there and add a new building. Also the trails to the drill sites will have to be enlarged and improved.

This work will require an expenditure in the neighborhood of $20,000.00, but this is justified by the possibilities indicated by the many showings and their tungsten values.

Respectfully submitted,

"V. Dolmage"

F No. 923 13.

VICTOR DOLMAGE

Vancouver, B. C.

August 28, 1952.

MAJOR EXPLORATION

LUCKY BOY & ADJOINING

TUNGSTEN MINERAL CLAIMS, TROUT LAKE, B. C.

Major Exploration hold, by option, by location and otherwise, 17 mineral claims and fractions situated on Trout Mountain, a few miles northwest of Trout Lake, in the Revelstoke mining division of British Columbia.

From two of these claims, the Lucky Boy and Copper Chief, small tonnages of lead-zinc ore were mined many years ago and some tungsten ore was sorted and shipped in 1943-46 from the old dump of the Lucky Boy property. The claims are now under investigation as a possible source of tungsten, which is present in the form of scheelite. Both old properties are described in Bulletin 10 of the B. C. Department of Mines, revised by S. S. Holland and published in 1943. The Lucky Boy is described also by R. W. Brock in the Annual Report of the Canadian Geological Survey for 1903.

Besides the old Lucky Boy and Copper Chief mines, there are 14 other showings on the property, extending from elevation 3600 up to 5360 feet above sea level. All the showings, including the old mines, were examined and 13 samples were taken.

The Lucky Boy camp is used as a base from which the other showings are reached by trails. The Lucky Boy camp is at elevation 4295, and is reached from the village of Trout Lake by an old road which was used to ship ore in former times. The road follows a good grade and, while too narrow for modern vehicles, it could easily be widened and converted into a suitable truck road. From this camp to the other showings only narrow foot trails exist which are built over steep rocky slopes where road construction would be difficult and expensive.

GEOLOGY

The mountains west of Trout lake are composed of schists, quartzite, phyllites and limestone beds folded steeply so that the formations stand nearly vertically and strike north 40 to 65 degrees west. Several limestone beds are known and others not yet discovered probably exist. All the mineral deposits appear to be in or near the contacts of the limestone members.

FILE No. 923

NOTES AND EXTRACTS FROM THE MINISTER OF MINES REPORTS ON THE LUCKY BOY AND THE COPPER CHIEF GROUP.

1898 - 1065, 1069(Molybdenum M. C.)

"..... Five small veins of molybdenite are found on these claims. Copper pyrites and galena with a gangue of quartz and feldspar, in a ledge 10 feet wide".

1902 - 140 (Lucky Boy M. C.)

"..... a short crosscut tunnel that was driven to tap the vein, which was struck at 38 feet in, showing up 6 inches of very high grade galena and grey copper ore. "

1905 - 154 (Copper Chief M. C.)

A shipment of 3 tons gave values of 255 ounces silver, 16% lead, 1.71% copper and 17% zinc.

1906 - 136 (Lucky Boy M. C.)

"..... the Lucky Boy closed down after a few weeks shipping".

1916 - 201 (Copper Chief M. C.)

"It is his intention to drive an adit along the big pyrrhotite exposure for some distance and then crosscut that body, in the meantime keeping close contact with the smaller high-grade, grey copper cross-ledges, ..."

1917 - 165, 191 (Copper Chief M. C.)

Two trial shipments of silver, lead, zinc ore were made. A number of open cuts, plus 258 feet of tunnelling, has shown up the vein for 1,200 feet. A new tunnel was started 100 feet below #1.

1929 - 337 (Lucky Boy M. C.)

Very high-grade silver ore was encountered in a small vein while driving a tunnel in the shaft workings. The associated minerals are tetrahedrite, zinc-blende, chalcopyrite, pyrite and native silver.

1930 - 266 (Lucky Boy M. C.)

This property is connected to Trout Lake settlement with a good wide trail.

1933 - 216 (Lucky Boy Group)

The property, consisting of 6 Crown-granted claims and two other claims, is reached from Trout Lake by a trail 3 miles in length and a good grade. The mine is west of the town at an elevation of 4,000 feet.

The vein is 1.5 to 6 feet wide and strikes east-west, with a dip to the south varying from 15° to 25°. It cuts the dip of the country rocks, consisting of silicified schist and limestone, almost at right angles, the formation having a similar strike but very steep dip to the north.

In the easterly drift the vein has been developed for 140 feet, is 6 feet wide, and contains pay streaks and disseminations of grey copper, galena, zinc-blende and carbonate. In the westerly drift, about the same length, the vein, from 1.5 to 2.5 feet wide, contains streaks of similar high-grade ore.

Molybdenum Deposits of B. C.
Bulletin 9, 1940 - 83 (Copper Chief M. C.)

"On the west side of Trout Creek, near Trout Lake. A small vein following a diorite dyke. Several open-cuts".

Tungsten Deposits of B. C.
Bulletin 10, 1943 - 131 (Lucky Boy)

The vein probably averages 1 foot and 2 feet throughout. The gangue is a white, drusy quartz; sulphide mineralization contains galena, tetrahedrite, sphalerite, chalcopyrite and pyrite; a little native silver occurs locally. Scheelite is present in the vein in small grains and masses up to several square inches in area. Six samples from No. 3 level east of the corner averaged 0.41 per cent tungstic oxide across 33 inches and 7 samples up the shaft on the east wall for 30 feet averaged 0.63% tungstic oxide across 35 inches.

1942 - 79 (Lucky Boy M. C.)

Optioned by C. M. & S. for examination.

1943 - 79 (Lucky Boy M. C.)

Optioned by J. M. Tullen et al, of Trout Lake.

1952 - 183 (Lucky Boy and Copper Chief)

Major Explorations Limited holds 17 mineral claims, 4 recorded claims by the company, 6 Crown-granted and 7 other recorded claims are under option. The two principal claims are the Lucky Boy (Lot 4743) and the Copper Chief.

Currently work is concentrated on exploring the scheelite-bearing skarn on the Copper Cliff. The skarn appears to have localized in drag folds in the limestone.

1281

Old reports mentioned a diorite dyke. It is possible that the skarn was mistakenly called diorite, because no dyke is known on the property.

There are at least three skarn zones on the property. The lengths are not defined, but the widths vary up to 25 feet. The fault and fold problems have not yet been solved.

1953 - 144

Some surface stripping was done during the summer but the chief concern was erecting buildings.

2-27-58

PROPERTY SUBMITTED FILE No. 923

Lardeau

DISTRICT: LARDEAU AND TROUT LAKE DIVISION Sept. 14/34

NAME OF PROPERTY: Lucky Boy Group

OWNERS: Lucky Boy Mining Syndicate; Geo. W. Yuill

LOCATION: 3 miles from Trout Lake

PRESENTED BY: Patterson of Ransford & Frith Ltd.

PREVIOUSLY ~~EXAMINED~~ reported on BY: B. T. O'Grady, Nelson, B. C.

Ref. B. C. Mines, Bull 2. 1914; C.G.S. Sum. Report Pt.A. 1903

PRICE & TERMS:

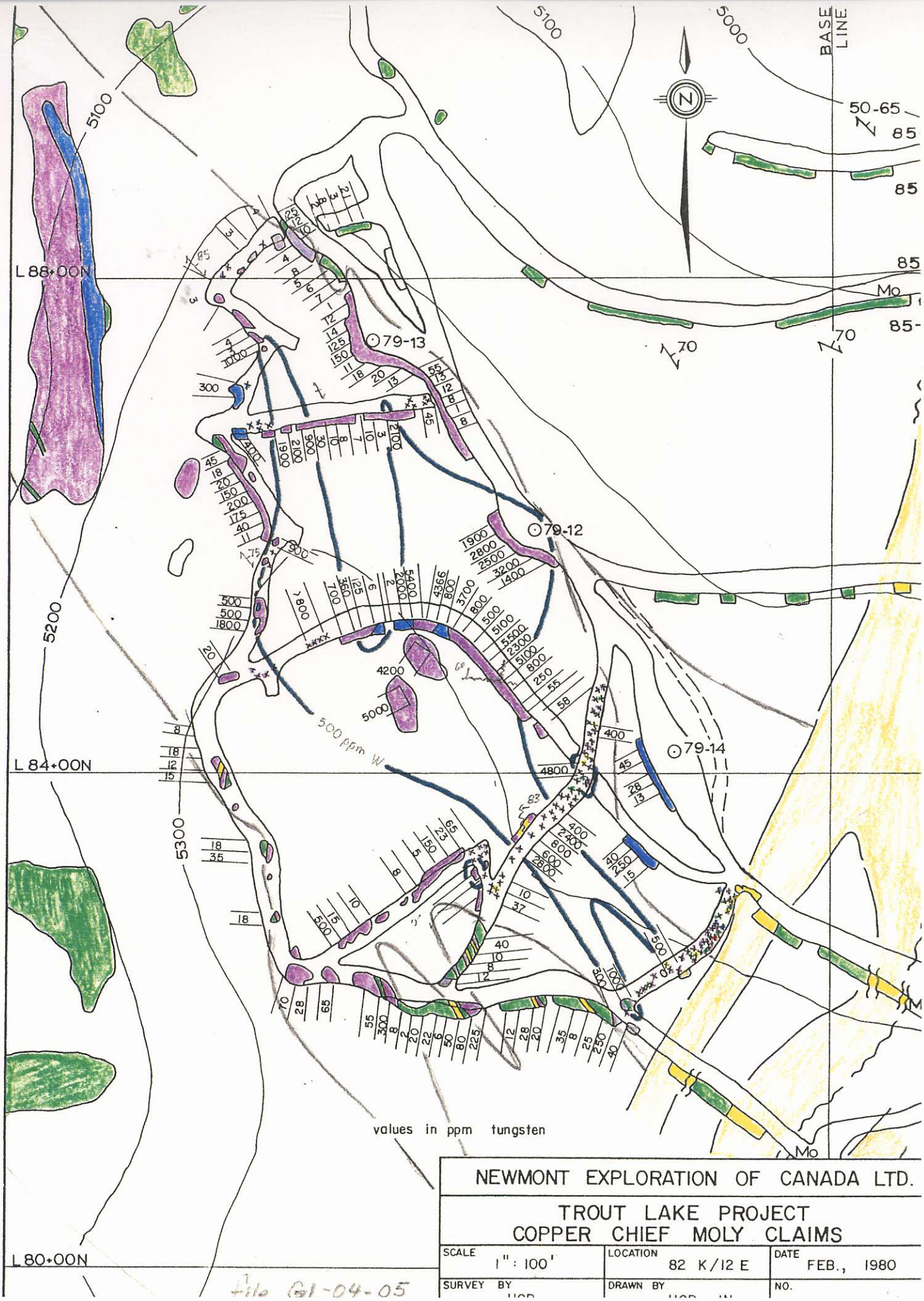
ORE DEPOSIT: Quartz vein, cutting limestone and schists. Widths to 6 feet. Where wide, inclusions Probably from report. Much 1.5 - 2.5 feet streaks and lenses of lead, zinc, some copper. Silver content apparently with lead. Previous work over 500; to 150 ft. depth. Some gold - one assay report: 0.4 oz. (typographical error (?) for 0.04??)

HISTORY: Formerly a Philadelphia Co. owned - shipped several rich cars 1902 - 1906. Worked again 1912 (28 ton only shipped). Some shipments 200 - 300 oz. silver per ton, and 20 - 30% lead. Yuill purchased for taxes.

COMMENT:

Probably narrow and spotty - spots high. Few assays in report, but much talk of working dumps and pillars.

L. B. RILEY REPORT



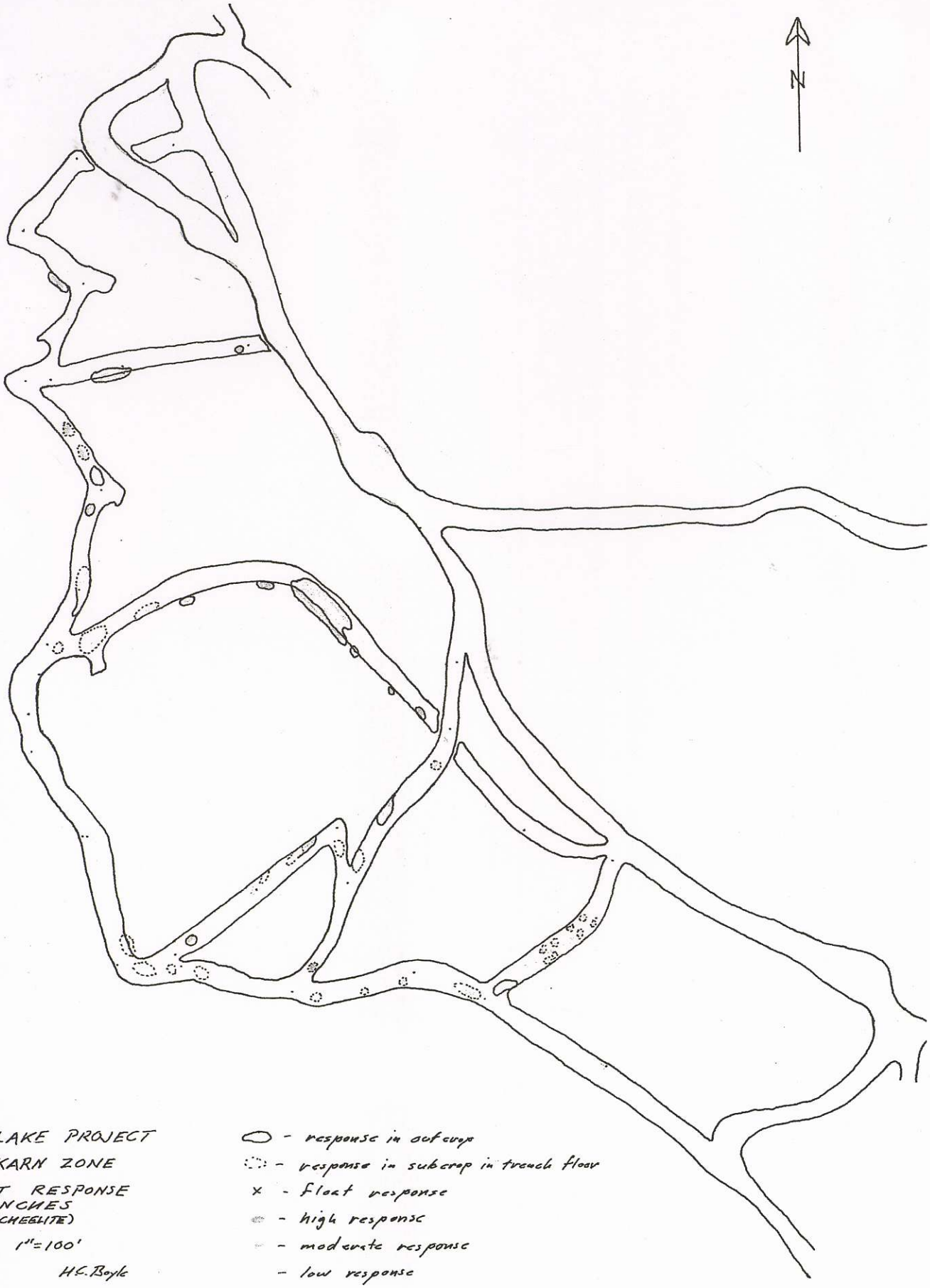
NEWMONT EXPLORATION OF CANADA LTD.

TROUT LAKE PROJECT
COPPER CHIEF MOLY CLAIMS

SCALE	LOCATION	DATE
1" : 100'	82 K/12 E	FEB., 1980
SURVEY BY	DRAWN BY	NO.

File GI-04-05

241 — N.E.C.



TROUT LAKE PROJECT
UPPER SKARN ZONE
U.V. LIGHT RESPONSE IN TRENCHES (FOR SCHEELITE)
SCALE 1"=100'
SEPT 22/79 H.G. Boyle

⬭ - response in outcrop
⬭ - response in subcrop in trench floor
× - float response
● - high response
● - moderate response
● - low response