MOUNT SICKER MINES LTD. (N.P.L.)

INTERIM REPORT
MOUNT SICKER EXPLORATION PROJECT
DUNCAN, B.C. - VICTORIA, MIN. DIV

W. M. Sharp, P. Eng. Marhc, 1972

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March 27, 1972

President & Directors,
Mount Sicker Mines Ltd. (N.P.L.),
P.O. Box 576,
Victoria, B.C.

Attention: Mr. Charles B. Field, Pres.

Gentlemen:

With this the undersigned transmits his "Interim Report on the Geology, Exploration, and Ore Potential of the Mount Sicker Property near Duncan, B.C. in the Victoria Mining Division".

The above has been prepared in accordance with your March 10, 1972 letter of instruction and authorization.

The report content and interpretations derive from the writer's personal examinations of the various underground and surface showings, field work accomplished by field staff and contract personnel during 1969-71, from public reports, and from private reports made available by the Company - for which the writer hereby expresses his thanks and appreciation.

Respectfully submitted,

W. M. Sharp

W. M. Sharp, P. Eng.

INTERIM REPORT

on the

GEOLOGY, EXPLORATION, & ORE POTENTIAL

of the

MOUNT SICKER PROPERTY

near

DUNCAN, B.C.

in the

VICTORIA MINING DIVISION

for

MOUNT SICKER MINES LTD. (N.P.L.)

by

W. M. SHARP, M.A.Sc., P. Eng.

MARCH, 1972

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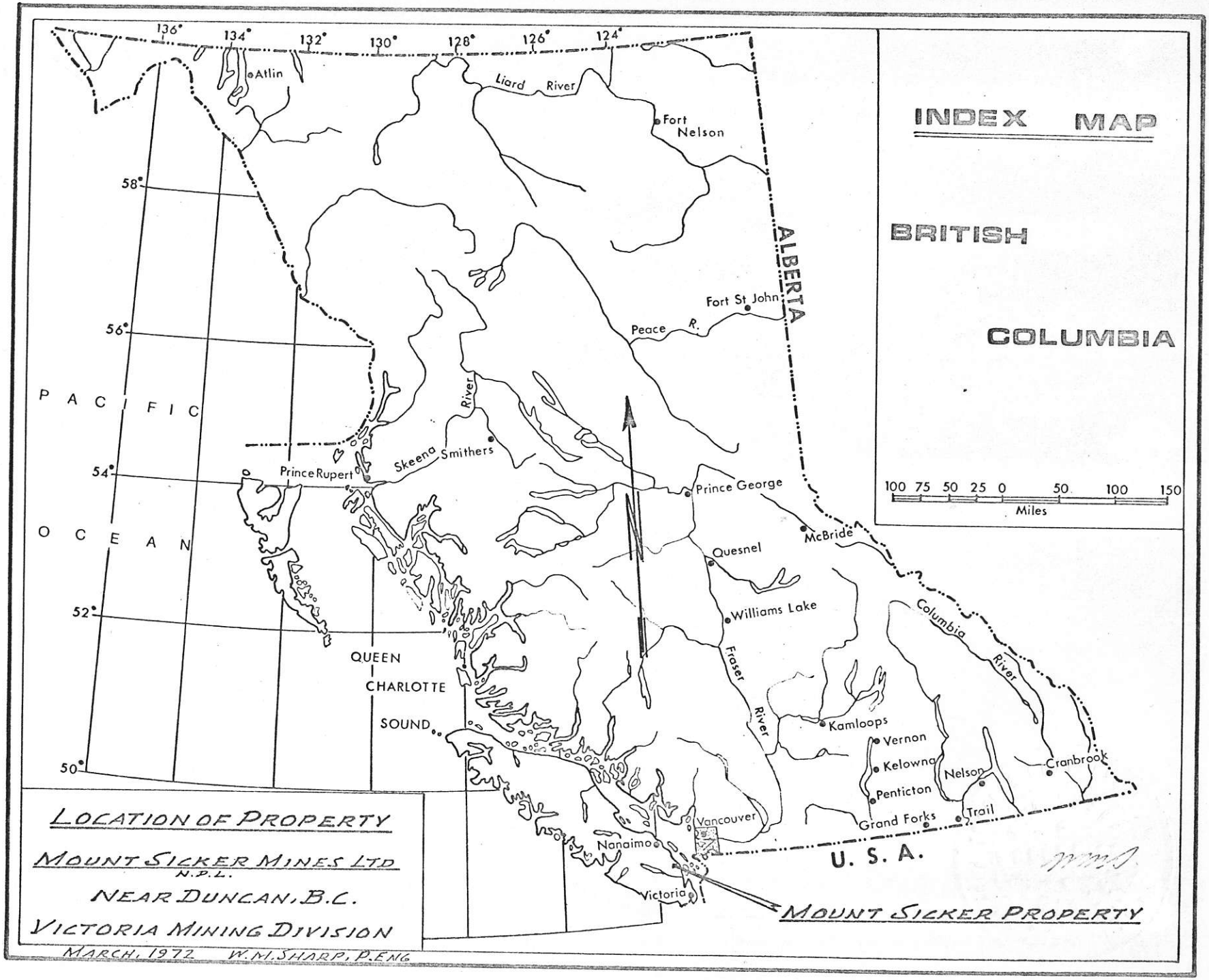
INDEX MAP
BRITISH COLUMBIA
100 75 50 25 0 50 100 150
Miles
136° 134° 132° 130° 128° 126° 124°
58° 56° 54° 52° 50°
Atlin
Liard River
Fort Nelson
ALBERTA
Fort St John
Peace R.
PACIFIC OCEAN
Skeena River
Smithers
Prince Rupert
Prince George
McBride
Quesnel
Williams Lake
Columbia River
Fraser River
QUEEN CHARLOTTE SOUND
Kamloops
Vernon
Kelowna
Penticton
Nelson
Cranbrook
Grand Forks
Trail
Vancouver
Nanaimo
Victoria
U. S. A.
MOUNT SICKER PROPERTY
LOCATION OF PROPERTY
MOUNT SICKER MINES LTD
N.P.L.
NEAR DUNCAN, B.C.
VICTORIA MINING DIVISION
MARCH, 1972 W.M. SHARP, P.ENG

SUMMARY & CONCLUSIONS

The Mount Sicker property straddles the northerly-facing slopes of Mt. Sicker, centering at a point some 5 air-miles north of Duncan, B.C. It is readily accessible from Trans Canada 1 by way of 8 miles of paved and gravelled roads. The mean elevation on the property is about 1500 feet; it is easily accessible as regards ground-based exploration.

The main property comprises a near-rectangular block having average E-W and N-S dimensions of about 3 miles by 2 miles, respectively. It consists of 26 Crown-granted claims, 63 'located' claims, 2 optioned (Canpac Ltd.) blocks, and 3 mineral leases. The key claims of the group center on the old Twin J mine - currently inaccessible.

Ore was first discovered in 1897, over the present Lenora west stope area. During the first, or 1898-1907 operating period the consolidated mining properties produced 252,000 tons of direct-shipping ore grading Au, 0.136 oz./ton; Ag, 2.81 oz./ton; Cu, 3.63%; Zn, approx. 6%. Gross production to 1964 amounted to 305,787 tons @ Au, 0.13 oz./ton; Ag, 2.75 oz./ton; Cu, 3.3%; Zn, 7.5%. The writer estimates the gross ore production, before sorting = 400,000 tons @ Au, 0.10 oz./ton; Ag, 2.1 oz./ton; Cu, 2.5%; Zn, 5.7% - the latter being the probable average grade of potential or possible reserves of similar type ore.

The Mount Sicker ground is underlain by Upper Paleozoic Sicker Group rocks comprising andesite, rhyolite, chloritic tuff, quartzose to sericitic schists, graphitic schists, and chloritic schists. These have been intruded by 'Island' diorites and gabbro-diorites, as sills or dykes on the general WNW formational trend of the near-vertically dipping schist assemblage.

The ore deposits within the Lenora-Tyee section of the mine property comprised banded and massive replacements of Fe-Cu-Pb-Zn

Continued.....

W.M.S.

sulphides in quartz sericite schists, and chloritic schists and tuffs. The richer, flatly-plunging, cigar-shaped orebodies were localized by major drag folds. Ore occurred in parallel 'North' and 'South' zones, separated by some 100-150 feet of crumpled schists and a steeply-dipping reverse fault. The total 'mine panel' strikes E-W to WNW and dips 70-90° south. The strike-lengths of the composite North and South orebodies was 1700 and 2100 feet respectively, with ore widths generally ranging between 5-30 feet. All stoping was above the Lenora 3-level.

Over at least the south (surveyed) half of the property, the favourable schistose host rocks occur within parallel WNW-trending, steeply-dipping panels separated by a roughly conformable diorite intrusive. The South panel is the most thoroughly prospected of the two. It contains the mine workings, the strike-extension of the mine structures, two or more potentially mineralized pyrite zones, and three significant soil-copper anomalies. This panel has dimensions of 2000 by 11,000 feet.

The North panel has been much less intensively explored. However, trench and drill exploration of a major soil-copper anomaly near the east end of the grid has revealed substantial showings of copper mineralization in the underlying schists. Preliminary sampling within the small area exposed has returned assays ranging from 0.13% Cu over a 100-foot width to 1.43% Cu over a 7-foot width and, locally, 4.95% Cu over a 3-foot width.

The trenching and drilling accomplished to date within the N.E. Copper Zone tests less than 5% of the general 2500' by 500' area of the anomaly in which soil-copper assays range up to 830 p.p.m. A closely parallel but distinct anomaly of 1800' by 200' average dimensions, with soil-copper values ranging from 150 to 1575 p.p.m., remains to be tested. Towards the west end of the North panel three strong linear anomalies also warrant detailed exploration. All of these overlie

Continued.....

bedrock schist assemblages similar to those which contained the high-grade Mount Sicker orebodies. At the same time, the geological framework is one in which optimum structural situations may be expected to occur at various depths within both panels; hence, there are excellent possibilities of locating other narrow high grade, or wide low grade ore zones within the Mount Sicker ground.

The following recommendations pertain to the further exploration of the N.E. copper showings and their extensions, the several major soil-copper anomalies occurring towards the west end of the exploration grid, and to the possible strike extensions of the Lenora-Tyee ore zone.

W M Sharp

RECOMMENDATIONS & ESTIMATED COSTS

STAGE 1

A. Carry out low-frequency vertical-loop E.M. surveys:		
a) Grid rehabilitation, 10 mi. @ $100/mi	$ 1,000	
b) E.M. survey, 10 mi. @ $300	$ 3,000	
c) Mobilization, supervision, local travel & accom.	$ 1,000	$ 5,000
B. Perform I.P. surveys W. 7.5 K.W. pulse-type equip:		
a) Grid preparation, 20 mi. @ $150/mi	$ 3,000	
b) I.P. survey, in reconn. & detail, 20 mi. @ $650	$13,000	
c) Mobilization, supervision, etc	$ 1,000	
d) Board lodging, local travel, etc	$ 1,500	$ 18,500
C. Geological mapping & eval. of anom. areas		$ 1,000
D. Provision for bulldozer trenching of anoms		$ 2,500
E. Preliminary dia. drilling (B.Q.W.L.), 2500' @ $13/ft		$ 32,500
F. Provision for supervision, sampling & assaying		$ 2,500
G. Contingencies & overhead @ 15% approx		$ 9,500
TOTAL, STAGE 1		$ 71,500

STAGE 2

a) Diamond drilling, 5000' @ $13/ft	$ 65,000
b) Provision for supervision, sampling, assaying	$ 5,000
c) Contingencies & overhead @ 15% approx	$ 10,500
TOTAL, STAGE 2	$ 80,500

STAGE 3

A. Rotary-drill sampling of geochem.-I.P. anomalous areas, 7500' @ $5.50/ft	$ 41,250
B. Dia. drilling for detail & depth-delin., 3000' @ $13/ft	$ 39,000
C. Provision for preliminary feasibility studies	$ 5,000
D. Provision, contingencies & overhead @ 15% approx	$ 12,750
TOTAL, STAGE 3	$ 98,000
TOTAL, STAGE 1, 2, & 3	$250,000

W. M. Sharp

W. M. Sharp, P. Eng.

INTRODUCTION

In this report the writer interprets and correlates data accruing from personal and personally supervised geological mapping and sampling, geochemical-geophysical surveys, test drilling, and from published and private geological reports and maps - most of these being provided by the principals of Mount Sicker Mines Ltd. Also included is an up-dated schedule of recommendations and estimated costs - based on the writer's current appraisals of the various exploration possibilities revealed by the current report compilations.

The writer's first examination of the property and records was made during April 14-16, 1969. Following this, in his capacity as consulting geologist, he directed general first-stage exploration until November, 1970, and inspected and mapped the various exposures resulting from bulldozer exploration during the 1971 field season.

References for the revised, current report include:

1. W. M. Sharp, P. Eng. report dated January 29, 1971.
2. Mount Sicker Mines Ltd. set of four 1" = 200' "Geochemical S.S. Survey" maps by J. E. B., dated March, 1971.
3. E. P. Sheppard, P. Eng.: (a) "Geological Report on Mt. Sicker Mines Ltd. N.P.L.", March 25, 1968. (b) "Mt. Sicker Mines Ltd. (N.P.L.), Progress Report", June 21, 1969.
4. John S. Stevenson, "Geology of the Twin J Mine" - published in C.I.M.M. Trans., Vol. XLVIII, 1945, pps. 294-308, inclusive.
5. Reports of the Minister of Mines, 1903-1906.

PROPERTY & OWNERSHIP

The properties described below are (A) Owned by Mount Sicker Mines Ltd., with title to the gold-silver undersurface rights and subject to certain exceptions and reservations in favour of the E & N

Continued.....

Railway Company as noted in Mount Sicker Mines' Ltd. (N.P.L.) Schedule of Mount Sicker property; (B) Owned by Mount Sicker Mines Ltd. by virtue of location and record; (C) Owned by Mount Sicker Mines Ltd. (N.P.L.), with title to the base metals and mineral rights other than gold and silver; (D) Held via Mining Agreements, assigned to and made directly with Mount Sicker Mines Ltd. (N.P.L.) as described in the aforementioned Schedule; (E) Held by Mineral Leases granted to Mount Sicker Mines Ltd. (N.P.L.). The Companys properties are variously situated within the Chemainus, Seymour, and Somenos Districts:

A/C - Crown Granted - Total 26

Lot No.	Name	Lot No.	Name
53-G	Estelle	108-G	Muriel Fraction
54-G	Westholme	87-G	Doubtful Fraction
51-G	Blue Bell	85-G	Thelma Fraction
50-G	Moline Fraction	86-G	Imperial Fraction
4-G	Acme	20-G	Herbert Fraction
18-G	Tony	110-G	Phil Fraction
47-G	Hallena	43-G	NT Fraction
59-G	Westholme Fraction	41-G	Magic Fraction
21-G	Dixie Fraction	39-G	Richard III
44-G	Golden Rod	37-G	Key City
18-G	Donagan	35-G	Lenora
19-G	XL	36-G	Tyee
63-G	Donald	60-G	International Fraction

All of the above are known to be in good standing and free of liabilities and charges.

B - Mineral Claims

1. The following claims, held by location and record, comprise two blocks of 18 and 9 contiguous claims respectively adjoining and lying north and south of the Company's key Crown-Granted claims:

Continued.....

Names	Record Numbers	Record Dates
C.F. Group # 1 - #10	14150-14159, incl.	Oct. 25, 1966
C.F. Group #13 - #20	14162-14169, incl.	Oct. 25, 1966
C.F. Group #25 - #28	14185-14188, incl.	Nov. 8, 1966
C.F. Group #29 - #31	14197-14199, incl.	Dec. 20, 1966
C.F. Group #33	14201	Dec. 20, 1966
C.F. Group Fraction	14174	Oct. 25, 1966

Sub-Total - 27 claims in good standing

2. The following, comprising one block of contiguous claims to the west of, and adjoining the Company's key Crown-Granted claims are:

Names	Record Numbers	Record Dates
J. B. 1-12	16836-16847, incl.	Oct. 29, 1970
Dawn 1 & 2	16448-16449	Apr. 30, 1970

Sub-Total = 14 claims in good standing

3. The following, also comprising one block of contiguous claims, adjoin the Company's key Crown-Granted claim block on the east, southeast, and northeast:

Names	Record Numbers	Record Dates
B #1 - #4	16372-16375, incl.	Apr. 13, 1970
B #5	16446	Apr. 21, 1970
B #6 - #22	16376-16392, incl.	Apr. 13, 1970

Sub-Total = 22 claims in good standing

D. (a) Mining Agreement No. 8 dated October 1, 1963, between Canadian Pacific Oil and Gas Limited and V.R. Patriarche and assigned by Agreement dated August 1, 1968 to Mount Sicker Mines Ltd. (N.P.L.) - total 2540 acres, approx.

(b) Mining Agreement No. 73 dated May 1, 1971, between Canadian Pacific Oil and Gas Limited and Mount Sicker Mines Ltd. (N.P.L.)

Continued.....

E. Mineral leases:

M.L. No.	Lot No's.	Date of Lease
(a) 13	33G, 34G, 55G, 56G, 64G, 65G, 100G	Dec. 9, 1969
(b) 17	5G, 6G, 7G, and 89G	Aug. 3, 1970
(c) 18	59G	Aug. 3, 1970

LOCATION, ACCESS, & GENERAL FEATURES

The property situates on the slopes of Mt. Sicker (el. 2300') at about 5 air-miles north of Duncan. It is readily accessible from Trans Canada I, at about 7 miles north of Duncan, via some 8 miles of paved and gravelled roads.

The mine office building situates on an extensive 'bench' at an elevation of about 1350 ft.; this building furnishes excellent accomodation for possibly 8-10 exploration personnel.

Average ground slopes over the property are moderate - excepting those parts of the north slope of the mountain where the upper old mine workings situate.

The area is well forested; a few small areas of dense, low underbrush do not constitute a serious obstacle to general surface exploration.

The Lenora-Tyee mine section lies at only 4 to 5 miles from the nearest B.C. Hydro electric power source. Remaining parts of the old mine and mill plant are unserviceable; however, one large, relatively new building could serve various exploration requirements.

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MINE WORKINGS & SURFACE SHOWINGS

Plan and sectional detail on Drawings No's. 72-1 and 72-2 supplement the following text.

The existing mine workings comprise the consolidated and connected workings of the original Lenora, Tyee, and Richard III mines, named from west to east and on the same through-going faulted-fold ore structure. The general workings are presently inaccessible - excepting 200 ft. of the Lenora No. 2 adit crosscut, some 200 feet of the contiguous North and South drifts, and a small section of one of the North stopes for some 10-15 feet below Lenora 2-level. Originally, the Tyee and Richard III mines were explored and developed by shafts - respectively 1456 and 500 feet deep - and connecting lateral tunnels. The Lenora North and South orebodies were developed via No. 1 adit (el. 1440'), No. 2 adit (el. 1385'), No. 3 adit (el. 1305'), connecting crosscuts, winzes, and raises. In later years, access to the Tyee (and locally, the Richard III) workings was by way of the Lenora adits.

Numerous large and small shafts, which are now essentially inaccessible, explore more easterly and westerly elements of the mine structure; the more important of these include the Westholme, Blue Bell, Estelle, XL, and Key City - including more or less lateral work and surface trenching.

The N.E. Copper showings, centering at 7200 east of, and 2200 north of the Tyee shafts (grid ref. CE, ON) and discovered and roughly delineated by geochemical surveys in late 1969 - early 1970, comprise veining and disseminated chalcopyrite in pyritiferous cherts and schists. Thus far, exploratory work comprises relatively modest amounts of surface trenching and X-ray diamond drilling. This mineralization occurs within a wide belt of favourable schists and intrusives paralleling the mine panel at some 4000-5000 feet to the north of it.

Continued.....

GENERAL HISTORY

The following includes an abbreviated summary of the detailed account provided by Mr. Sheppard in his March 25, 1968 report.

The oxidized outcropping of the South orebody, over the present area of the Lenora west stopes, was discovered in 1897 - shortly after a forest fire had swept the Mt. Sicker area.

Development and mining within the then separately-held Tyee and Lenora claims commenced in 1897 and 1898, respectively.

The properties were amalgamated into the Lenora-Mount Sicker Mining Company in 1900. Development and mining of the Lenora and Tyee ore zones, principally the South orebody, ensued until 1907, when declining copper prices (under 20¢ per lb.) forced a termination of the operation. A small tonnage of ore was independently produced by the Richard III mine during this period.

Between 1926-29 Ladysmith-Tidewater Smelters Ltd. carried out development on the Lenora-Tyee section of the ore zone.

Sheep Creek Mines Ltd. optioned the 3-mine group during 1939-40 and carried out further drilling (scanty records).

Between 1943-47 Twin J Mines Ltd. explored, developed, and mined ore from the consolidated group, producing copper and zinc concentrates for Wartime Metals Corp. and, latterly, the open market.

Vancouver Island Base Metals Ltd. carried out rehabilitation, exploration, development, and mining between 1949-52.

Principals of the current Mount Sicker Mines Ltd. group became interested in 1964, during which year they mined and shipped surface ore from above Lenora 1-level. Subsequently, Mount Sicker Mines Ltd. was formed to explore and develop the general consolidated properties.

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In 1967 Bio-Metals Corp. was engaged to investigate the feasibility of leach-extraction of copper from mineralized rock in the dumps and underground. The results from initial trials did not indicate that this would be an economically feasible mining method.

During 1967-68 E. P. Sheppard and Associates Ltd. geologically mapped surface exposures along the general Mount Sicker ore zone and contiguous areas.

Plans of the early development work, particularly that undertaken in the deeper parts of the Tyee shaft and on levels and winzes below the general Lenora-Tyee 200-Horizon, are apparently non-existent. However, the Minister of Mines reports provide some rather general information on the early development results:

1903 (a) Initial development operations within the Tyee (South) orebody showed it to have a maximum width of 40 feet, with general average widths of 25-30 feet.

(b) At the bottom (closely below the 400-foot level) of the Tyee shaft green schists carrying about 2% copper were encountered - similarly mineralized as the schists flanking the ore lenses in the upper levels.

(c) Throughout Lenora 3-level mineralization of the schists was observed at several places, but ..... did not constitute ore of shipping (min. 4% Cu) grade.

(d) Schists intersected by winze and crosscut 100 feet below Lenora 3-level showed marked mineralization, and appear to be looser (effect of folding-crumpling) than at any other point below 2-level.

1905 - At the 1000 ft. level about 3 ft. of mineralized rock (Cu-Au-Ag assoc. with barite) was intersected 208 ft. south of the shaft.

1906 - The same 'low grade orebody' was intersected at the (Tyee) 1250-foot level ..... as had been intersected at the 1000-ft. and 1150-ft. levels.

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MINE PRODUCTION RECORD

Period	Tons	Au, oz.	Ag, oz.	Cu, lbs.	Zn, lbs.*
1898-1907	78,983	10,349 .13	279,935 3.54	5,951,227) 3.76	(est. @ 8%)
1901-1909	168,290	25,517 .15	441,278 2.62	12,876,369) 3.82	40,428,400 12.01
1903-1907	5,405	734 .14	16,806 3.11	250,453) 2.32	
1943-1944	34,893	2,617 .08	71,531 2.05	921,175 1.32	4,270,903 6.12
1947	8,295	507 .06	15,878 1.9	173,952 1.04	536,995 3.23
1951-1952	9,754	316 .03	15,554 1.59	86,773 .44	713,954 3.65
1964	167	12 .072	294	5,814	est. 10,000
TOTAL	305,787	40,052	841,276	20,265,763	45,960,252

or 305,787 tons @ Au, 0.13 oz./ton; Ag, 2.75 oz./ton; Cu, 3.3%; Zn, 7.5%

The writer estimates that the production of mine ore before sorting plus the subsequent mill feed actually amounted to about

400,000 tons @ Au, 0.10 oz./ton; Ag, 2.1 oz./ton; Cu, 2.5%; Zn, 5.7%

(* Zinc not recovered 1898-1907)

REGIONAL GEOLOGICAL SETTING

The Mount Sicker property is underlain by upper Paleozoic rocks of the Sicker Group. In general, these comprise a tightly-folded sequence of slate, greywacke, and acid-to-intermediate volcanic rocks and related dykes and sills. These have, in part, been metamorphosed to variably siliceous chlorite, talc, and sericite schists and amphibolitic gneisses. The rocks commonly dip steeply, and in many places are isoclinally folded with development of axial plane cleavage and associated linentions. Folding appears to have been accompanied by much intra-formational shearing. Later adjustments were principally by transverse fracturing or faulting.

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During Middle to Upper Jurassic time the Sicker Group rocks were locally to extensively intruded by 'Island' diorites, granodiorites, and granites and finer-grained to porphyritic facies of these intrusions.

Sicker Group rocks host the Western Mines Au-Ag-Cu-Zn-Pb mineralization as well as that occurring in the Mt. Sicker-Mt. Brenton locality. Within southern Vancouver Island these rocks occur in a N.W. to W.W.N.-trending belt, which is known to extend from Chemainus to Alberni, and beyond.

DETAILED GEOLOGY & MINERALIZATION

At the Mt. Sicker property the gross exploration cross-section includes massive and foliated diorites, chloritic tuff, quartzose-to-sericitic schists, graphitic-to-sericitic schists, quartz porphyry, and quartz-feldspar porphyry. Diorites (loc. gabbro) and porphyries function as competent ribs within the section; the schist units, for the most part derived from the softer and more plastic sedimentary-volcanic components, represent zones of weakness in respect to intra-formational adjustments to close folding. Lithologic and structural trends are predominantly to the west and west-northwest, on near-vertical dips. There is, however, some indirect evidence of pronounced strike-wise flexuring and/or transverse faulting within some areas of the property.

Former mining and exploratory operations at the property were principally concerned with more-or-less massive Fe-Cu-Zn-Pb sulphide fillings and (banded) replacements within panels of sheared, folded, and crumpled quartz-sericite and graphitic schists. Ore occurred as large and small lenses, irregular masses, stringers and more-or-less tabular bodies. Within the Lenora-Tyee workings ore was mined from two parallel zones separated by 100-150 feet of sericitic and graphitic schists; these

Continued.....

were designated the 'North' and 'South' orebodies. Quartz and barite, in varied proportions, comprised the principal gangues - the latter often occurring in economically-significant amounts. Both orebodies could be described as structurally-controlled relatively massive replacements of fault-paired, complex, strike-attenuated drag-folds. The North ore zone has strike and dip dimensions of 1700' and 120' respectively; those for the South ore zone are 2100' and 150'. Within both, ore widths commonly ranged up to 20 feet, and locally to 30-40 feet. Through the Lenora-Tyee workings the average strike and dip of the schist panel are N70°W and 70°S, respectively.

The Tyee shaft, sunk to a depth of about 1450 feet, provided geological indications of the persistence of the mine-panel to at least this general depth-range. However, development and exploratory operations were generally concerned with the one established fold complex extending to a depth of 400 feet below the (Tyee) outcrop. In the writer's opinion, the geological characteristics of the mine panel are such that other favourable fold structures occur at depth below this general 400-foot horizon. That the productive section is only part of a through-going W.N.W.-trending regional structure of several miles strike-extent is supported by geophysical, geologic, and photogeologic evidence.

The Lenora-Tyee North and South ore zones, in addition to being separated by the highly deformed panel of schists, are displaced via a major intervening fault which strikes approximately E-W and dips from about 70° - 90° south. By reason of thrust and lateral displacement on this structure, the South ore zone is relatively 100 feet higher in vertical section than its northerly counterpart. Displacements on local and more remote parallel faults and shear zones probably have major dip components.

Drawing 72-2 comprises the writer's present interpretation of the geology of much of the south half of the Company's property. Two

Continued.....

major schist bands, both trending west-northwesterly, dipping steeply, and separated by a large, roughly-conformable diorite dyke(?) are tentatively designated as the North and South schist panels. Both comprise mixed assemblages of quartz, chlorite, and sericite schist, intruded by large and small bodies of diorite and quartz-porphyry and quartz-feldspar porphyry.

The South panel, containing the principal mine workings and most of the smaller prospect workings and showings within the Mt. Sicker area, is generally over 2000 feet wide, with a currently delimited length of about 11,000 feet. The North panel, as thus far delimited, is at least 2000 feet wide and about 10,000 feet in length. The interpreted trends are in accordance with those previously deduced via an air-photo study.

The mapped geology of the South panel indicates that the composite mine structure branches to the west of the Lenora adits, with the more southerly branch passing through, or closely south of the XL workings, at which point it may again branch. The northerly branch appears to pass through the Key City workings.

Eastward of the Richard III workings, the North and South mine structures appear to merge and continue E.S.E. through the Westholme workings to impinge(?) on the south diorite body.

A well pyritized zone within schists paralleling the north contact of the diorite lens immediately north of the mine panel contains at least one narrow 'band' of low-grade copper mineralization which could quite conceivably relate to a broader zone of mineralization not yet exposed. Also, this zone would appear to have a potentially mineralized strike-length of 4000-5000 feet. The frequent occurrences of well pyritized favourable schist assemblages, locally containing appreciable amounts of chalcopyrite, provide a sound reason for a more intensive search for concealed ore zones. These may occur anywhere within the broad expanse of the South schist panel.

Within the North panel, recent follow-up exploration of a strong geochemical anomaly has provided direct evidence of substantial amounts of veining and disseminated copper mineralisation near the east end of the property. These showings, here designated as the 'N.E. copper zone' constitute an immediate exploration target. Assays from the several trench and X-ray core samples taken to date indicate a substantially mineralized zone, with good possibilities for the occurrence of ore-grade copper mineralisation - laterally and at depth.

The schistose wall rocks exposed in the N.E. trenches do not appear to be as conspicuously folded and sheared as those containing the Lenora-Tyee mineralization. However, they appear to have been more pervasively silicified and pyritized. From this the writer suspects that the trench showings occur within a general silica-pyrite halo situating above or outward of a deeper-seated (higher temperature?) zone of the typical Fe-Cu-Zn sulphide mineralisation. This might well occur at only a few hundred feet below the N.E. trenches - within a more intensely folded section of the schist panel.

EXPLORATION, 1969-71

The following exploration was carried out over a 12000 ft. E-W by 7200 ft. N-S area covering most of the south half of the Mount Sicker property lying east of the Chemainus River.

1. Surface Diamond Drilling

The following holes were proposed by E. P. Sheppard, P. Eng.

S-1 Col. 44W,10S, north @ -45° for 594' to test a preliminary V.L.F.- E.M. survey anomaly. This intersected diorite, cherty tuff, sericite-chlorite schist, and light silty tuff(?). The core contained local pyrite disseminations and veinlets, contained small clots and stringers of fairly massive chalcopyrite. The core was not assayed.

Continued.....

S-2 Col. 3W, 1.2S; N55°W; -48°, total length?
This intersected a fractured ore pillar between the Lenora and Tyee stopes above Lenora 1-level. The core contained banded chalcopyrite, pyrite, zinc blende and barite; core assays as follows:

Interval	Au, oz/ton	Ag, oz/ton	Cu, %	Zn, %	Ba SO4 %
59-80.5	0.01	0.15	0.0	-	11.8
80.5-87.0	0.19	2.50	3.1	10.4	38.2

S-3 & S-4, also from set-up @ 3W, 1.2S
Encountered highly broken wall rocks and were stopped before reaching their objectives

2. Underground Sampling - Outer Lenora 2-lev. Drifts

This was done by T. Tough, geologist for E. P. Sheppard, P. Eng. All samples are on the North orebody; distances are from X-C/N. drift intersection, as shown on his June, 1969 assay plan:

No.	Dist.	Length	Au, oz/t	Ag, oz/t	Cu, %	Zn, %	Ba SO4, %
19427	185'	4.0'	0.06	1.45	2.90	3.0	5.6
28	160'	4.5'	0.22	3.40	1.85	11.6	21.8
29	18'	4.5'	0.07	2.30	1.45	9.7	39.2
30	0'	7.0'	0.07	1.75	2.35	6.8	26.6

3. Grid Preparation ..... 32.5 miles.

4. Geochemical Soil Sampling

This carried out over the full grid and portions of the access roads. Approximately 1000 samples of B-Zone soil were analyzed for total p.p.m. Cu and Zn via the atomic absorption spectrometer method. These were statistically evaluated as follows:

Cu and Zn 'background' range..... 0-74 p.p.m.
Cu and Zn 'threshold' range..... 75-149 p.p.m.
Cu and Zn 'anomalous' range..... 150-plus p.p.m.

The several major geochemically-anomalous zones are shown on Dwg. 72-3. Copper anomalies are considered relatively more significant, in that Zn anomalies may be of the 'transported' variety due to this metal's greater geochemical mobility and consequent susceptibility to migration on drainage courses. The principal anomalies

Continued.....

tend to be underlain by schist assemblages, as would be expected. Most relate to bedrock zones of pyrite-pyrrhotite mineralization. At least four are known to straddle zones or local exposures of bedrock copper mineralization.

5. Geological Mapping

This has been done, in varying degrees of detail, over most of the grid. However, as the data have accrued from investigations by several persons, the total survey requires additional field-checking and substantiation.

6. Magnetometer Surveying..... 29.2 line-miles

For legal-financial reasons the results are not presently available.

7. V.L.F.- E.M. Surveying..... 30.6 line-miles

(Results not available, as above.)

8. Preliminary X-ray Diamond Drilling..... total, 255 ft. (77.3m)

Three short holes were put down to test for bedrock mineralization in the area of the principal geochemical anomaly straddling what has now been established as the 'N.E. Copper Zone' (Dwgs. No. 72-2 & 72-3). All intersected minor copper mineralization in charts and variably silicified quartz-sericite-chlorite schists. Assay results are as follows:

Hole #	Sample	Interval	Au, oz/t	Ag, oz/t	Cu, %	Zn, %
X-1	sludge	0-37.5'	trace	trace	0.21	N/A
	sludge	37.5-107.2'	0.005	0.10	0.13	N/A
	sludge	107.2-145.0'	trace	0.08	0.13	N/A
X-2	Core	15-20	trace	0.14	0.88	0.02
	Core	20-25	trace	0.14	0.06	0.01
	Core	25-30	trace	0.02	0.22	0.02
		15-30	trace	0.10	0.35	0.02
X-3	Bit & barrel lost @ 27.5' - no samples					

(8.4m)

9. Bulldozer Trenching - N.E. Copper Zone

About 950 feet of trenches were excavated - including 200 feet in the barren diorite adjoining the mineralized schists. Trenching was essentially concerned with testing the N.W. extension of the

Continued.....

better mineralized section intersected by d.d.h. X-1. The resulting showings (72E, 23N) were sampled by Scurry-Rainbow geological staff, with assays as follows:

No.	Location	Length	Au, oz/t	Ag, oz/t	Cu, %	Zn, %
6716	West Line	3.0'	trace	0.38	4.95	0.01
6717	West Line	5.0'	trace	trace	0.14	-
6721	West Line	2.0'	trace	trace	0.10	-
6718	Center Line	5.0'	trace	0.10	0.78	-
6719	Center Line	6.0'	trace	0.14	1.43	-
6720	East Line	7.0'	trace	0.10	1.43	0.01

The above results indicate that there is a good possibility that similarly mineralized parallel zones occur beneath the soil cover. If occurring over a sufficient width, mineralization of the above grades would constitute low grade, open-pit copper ore deposit.

CURRENT EXPLORATION TARGETS

1. 2500' x 300-800' open geochemical anomaly centering at 23N, 70E. Soil-Cu range @ 150 - 830 p.p.m., and overlying favourable assemblage of bleached and silicified schists. To date, preliminary drill and trench exploration has exposed low, medium, and high-grade mineralization as disseminations and fracture fillings.

2. 1800' x 100-350' geochemical anomaly closely downslope of 1, above. Soil-Cu range @ 150 - 1575 p.p.m., and overlying favourable schists. Not trenched or drilled.

3. Zone of large geochemical anomalies near west end of main claim block, and elongated in direction of known bedrock trends. Composite zone situates between 600-3400' E, 12-44 N. Soil coppers range @ 150 - 1025 p.p.m. Underlain by schist, diorite, and porphyry. Not trenched or drilled.

Continued.....

4. Westerly extensions of mine panel along its apparent north and south branches through the general areas of the 'Key City' and 'XL' workings or showings.

5. Easterly extension of the mine panel through the Richard III - Westholme shaft workings and parallel pyritic zones to north.

6. Depth extensions of the mine structures - principally below the Lenora-Tyee workings. Ore prospects here are considered to depend upon the possible existence of other fold structures similar to that which generally controlled the original orebodies. A proper search for these would entail drilling closely-spaced holes on at least three cross-sections - preferably from underground stations.

ESTIMATED ORE POTENTIAL

A - LENORA-TYEE SECTION

Past production comprised relatively massive ore of direct-shipping grade, probably containing at least 4% copper after sorting. Existing reserves, as blocks and pillars within the presently inaccessible North and South zones, on the whole probably comprise milling-grade ore. While there is undoubtedly a considerable tonnage of this material, there are insufficient data upon which to formulate even an approximate estimate of 'probable ore reserves'. Also, for this reason the writer cannot confirm or refute any previous estimates.

B - GENERAL PROPERTY

The following is essentially an estimate of 'geologically-geochemically inferred' or 'potential' ore reserves. It is based on the trend-length of the more significant geochemical anomalies, the fact that the one geochemical anomaly tested relates to actual bedrock

Continued.....

copper mineralization, the possibility that the favourable bedrock assemblages contain controlling bedrock flexures at accessible (mining) depths, the assumption of a 50% probability factor re the 'validity' of individual anomalies, and the application of second probability factor of 70% to compensate for probable strike-wise dispersion. It is further assumed that the possible ore zones would have minimum widths and depths of 10 and 500 feet respectively, and a tonnage factor of 10 cu. ft. per ton:

Total trend-length of principal anomalies = 14,200'.

Potential ore within grid area, excluding non-geochemically related 'ore situations':

$$= \frac{14{,}200 \times 0.5 \times 0.7 \times 10 \times 500}{10} = 2.5 \text{ million tons}$$

The above estimate admittedly embodies a number of questionable assumptions and could be too high or too low. However, the writer offers it with the hope that it might assist in even roughly evaluating the ore possibilities, and in estimating the scale of exploration expenditures warranted.

Respectfully submitted,

W. M. Sharp

W. M. Sharp, P. Eng.

North Vancouver, B.C.
March 27, 1972

W.M.S.

C E R T I F I C A T E

I, WILLIAM M. SHARP, with business and residential addresses in North Vancouver, British Columbia, DO HEREBY CERTIFY THAT:

1. I am a graduate of the University of British Columbia with an M.A.Sc (1950) degree in Geological Engineering.

2. I am a registered Professional Engineer in the Province of British Columbia.

3. I have practiced my profession since 1950, and in a consulting capacity since 1964.

4. I have personally examined Mount Sicker Mines Ltd. (N.P.L.) Duncan, B.C. property in the course of directing exploration on it since April 14, 1969, and have made use of pre-existing public and private geological reports before preparing this report.

5. I do not have any direct or indirect interest in the properties or securities of Mount Sicker Mines Ltd. (N.P.L.), nor do I expect to acquire any such interest.

6. The 'key' claims of the property comprise owned and leased Crown-granted claims, and leases granted by Canadian Pacific Oil and Gas Limited - all in good standing.

W. M. Sharp

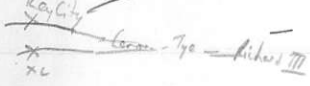
W. M. Sharp, P. Eng.

North Vancouver, Canada
March 27, 1972

Sharp 1972

- flatly plunging, cigar-shaped orebodies
- N.E. Cu includes an assay of 4.95% Cu over a 3 foot width
- N.E. Cu soil anomaly includes one value of 1575 ppm
- production figures
- west of Lenora south orebody passes through Key City and north orebody through XL
- to east through Westholme
- Mona horizon in south schist panel
- tightly folded sequence of slate, greywacke and acid-to-intermediate volcanic rocks
- isoclinally folded with axial plane cleavage and associated lineations accompanied by much intra-formational shearing
- later adjustments by transverse fracturing or faulting
- lithological and structural trends are predominantly to the west and west-northwest on near-vertical dips
- ore as large and small lenses, irregular masses, stringers and more-or-less tabular bodies
- two parallel zones separated by 100-150'

MINE



GENERAL

- two schist panels separated by a large, roughly-conformable diorite - North and South
- pyritized zone
- N.E. Copper rocks exhibit silica-pyrite halo which could be above or outward of a deeper seated zone of Fe-Cu-Zn mineralization

Geochem 1000 samples

(1) NE Copper – Cu only
– 2 linear anomalies

(2) Mine ± Zn only ??
– Cu contamination

(3) South of Mine

(4) Central Panel – south of Postuto-Fulton

(5) Mona Horizon – Cu

X-Ray holes – NE Cu
– widespread Cu values < 1%

16W 12W 8W 4W L-O 4E 8E 12E 16E

RICHARD III MINE

TYEE MAIN SHAFT

TYEE MINE

EL. COLLAR - 1686'

LENORA MINE

EL. 1600

EL. 1400

1-LEV.

2-LEV.

3-LEV.

1-LEV.

0-LEV.

TYEE 300-LEV.

TYEE 400-LEV.

BOTTOM EL. 230'

65-LEV.

165-LEV.

235-LEV.

00-LEV.

425-LEV.

484-LEV.

RICHARD III SHAFT

EL. 1600

EL. 1400

LONG VERTICAL SECTION

5N

G-D

Q-F-P

Q-S-S

2-PORTAL

SERICITE SCHISTS

3

1-PORTAL

3-PORTAL

NORTH ORE BODY

GRAPHITIC - SERICITIC SCHISTS

TYEE MAIN SHAFT

SOUTH ORE BODY

0N

5S

1350 1400 1450 1500 1550 1600 1650 1700 1750 1800 1850 1900

PLAN

NOTE : G-D - GABBRO DIORITE
Q.F.P. - QUARTZ FELDSPAR PORPHYRY
Q.S.S - QUARTZ SERICITE SCHIST

FIGURE 3

W. M. SHARP, P.Eng. — CONSULTING GEOLOGICAL ENGINEER, NORTH VANCOUVER, B.C.

MOUNT SICKER MINES LTD. (N.P.L.)

MOUNT SICKER EXPLORATION PROJECT
VICTORIA M.D.

WORKINGS, GEOLOGY & MINED OREBODIES
LENORA - TYEE - RICHARD III GROUP

LEGEND: ORIGINAL SOUTH OREBODY; ORIGINAL NORTH OREBODY

Scale: 1" = 100' | Dwn. by W.M. SHARP. Date: Mar. 1977 | Revision: REF. TWIN J SURVEY PLAN L 1935 | Dwg. No 72-1

LEGEND:

- DIORITE, GABBRO DIORITE, GRANODIORITE
- FELDSPAR & QUARTZ FELDSPAR PORPHYRY
- CHLORITE SCHIST
- SERICITE SCHIST
- QUARTZ SCHIST
- GRAPHITE SCHIST
- MINERALIZATION: CHALCOPYRITE, SPHALERITE, (GALENA), PYRITE & ASSOC. Au & Ag.
- PYRITE - As VEINS & DISSEMINATIONS
- FAULT (SHEAR) ZONE
- SCHISTOSITY & FOLIATION: VERTICAL & INCLINED DIPS SHOWN
- MINOR FAULT OR JOINT
- DIAMOND DRILL HOLE
- TRENCH / ADIT

ABBREVIATIONS:

Py. = PYRITE
Cp. = CHALCOPYRITE
TR. = TRENCH
CR. = CREEK
FOL. = FOLIATED
MIN. = MINERALIZATION
SER. = SERICITE

ASTRO.

NORTH SCHIST PANEL

SOUTH SCHIST PANEL

NEW ACCESS ROAD

OLD ACCESS ROAD

CREEK

GULLY

ADIT

SHAFT

TRENCH

DISSEM. Py.

BLACK CHLORITIC(?) SCHIST

26N B.L.

0N B.L.

LENORA

TYEE

RICHARD III

NORTH ORE SHOOT

SOUTH ORE SHOOT

XL SHAFT

WESTHOLME SHAFT

ADIT (CAVED)

3.0' @ Au. 0.10; Cu. 0.78
6.0' @ Au. 0.14; Cu. 1.43
7.0' @ Au. 0.10; Cu. 1.43

3.0' @ Cu. 2.82

8' @ Au. 0.005
Ag. Tr.
Cu. 1.53

3.3' Py. W. MINOR Cp.

GRAB, HEAVY Py.
Au. 0.01
Ag. 0.04
Cu. 0.06
Zn. 0.01

0.5 @ Au. 0.10
Cu. 0.35

COL. S-2 - 78°

COL. S-1 - 45°

N.E. Cu ZONE →
Cp. IN SILICIFIED CHERT & QUARTZ-SERICITE-CHLORITE SCHISTS.

NOTE RE. SAMPLES:
(a) GRAB SAMPLES INDICATED AS SUCH. ALL OTHERS ARE CHIP SAMPLES.
(b) SAMPLING BY W. M. SHARP, J. E. BROOKS, AND SCURRY-RAINBOW GEOLOGICAL STAFF.

inches 0 1 2
centimetres 0 1 2 3 4 5

This reference scale bar has been added to the original image. It will scale at the same rate as the original image and can be used as a reference for the original size.

BRITISH COLUMBIA GEOLOGICAL SURVEY

W. M. SHARP, P.Eng.	CONSULTING GEOLOGICAL ENGINEER NORTH VANCOUVER, B.C.
MOUNT SICKER MINES LT.D. (N.P.L.)	
MOUNT SICKER EXPLORATION PROJECT VICTORIA M.D.	
DETAILED GEOLOGY & MINERALIZATION	
REFS.: FIELD MAPPING, 1969-71 & COMPANY DATA.	
Scale: 1 IN. = 400 FT.	Dwn. by: W. M. Sharp; Date: MARCH, 1972
Revision:	Dwg. No. 72-2.

ASTRO.

CREEK

26 N. B.L.

40W 32W 24W 16W 8W 0E 8E 16E 24E 32E 40E 52E 60E 68E 76E 84E 26 N.BL

ZHEMAINUS RIVER

150-425 P.P.M.

150-310 P.P.M.

150-395 P.P.M.

150-475 P.P.M.

150-500 P.P.M.

150-200 P.P.M.

150-1035 P.P.M.

150-335 P.P.M.

150-350 P.P.M.

150-225 P.P.M.

150-1875 P.P.M.

150-830 P.P.M.

150-680 P.P.M.

150-345 P.P.M.

150-425 P.P.M.

150-450 P.P.M.

150-935 P.P.M.

150-1200 P.P.M.(±) MINE DRAINAGE AREA.

150-700 P.P.M.

150-365 P.P.M.

150-285 P.P.M.

150-135 P.P.M.

150-280 P.P.M.

150-675 P.P.M.

150-365 P.P.M.

O·N. B.L. 40W 28W 20W 12W 4W 0E 8E 16E 24E 32E 40E 52E 60E O·N. B.L.

LEGEND:

- Cu. Anomaly Cu ≥ 150 P.P.M.
- Cu. Threshold. Cu @ 75-149 P.P.M.
- Zn. Anomaly. Zn ≥ 150 P.P.M.
- Zn. Threshold. Zn @ 75-149 P.P.M.

inches 0 1 2

centimetres 0 1 2 3 4 5

This reference scale bar has been added to the original image. It will change if the image is reduced as the image, therefore it can be used as a reference for the original size.

BRITISH COLUMBIA GEOLOGICAL SURVEY

W. M. SHARP, P.Eng. CONSULTING GEOLOGICAL ENGINEER NORTH VANCOUVER, B.C.

MOUNT SICKER MINES LTD. (N.P.L.)

MOUNT SICKER EXPLORATION PROJECT

VICTORIA M.D.

GEOCHEMICAL SOIL-SAMPLE SURVEY

(OVER-LAY FOR DWG. No. 72-2)

REF. MOUNT SICKER MINES LTD. N.P.L. "GEOCHEMICAL SOIL-SAMPLE SURVEY", 1" = 200', JAN., 1970.

Scale:	Dwn. by: W.M. Sharp	Revision:	Dwg. No.
1 IN. = 400 FT.	Date: MARCH, 1972		72-3.