Swiss Aluminium Mining Co. of Canada Ltd.

SAMCAN

3847

REPORT ON A

GEOLOGICAL SURVEY

done on the

GU GROUP 104G/12E

of

EMPIRE METALS CORPORATION LTD. (N.P.L.)

on behalf of

SWISS ALUMINIUM MINING CO. OF CANADA LTD.

by

Hanspeter Schielly, D.Sc., P.Eng.

Claims: GU 1 - 12 Rec. Nos. 56426 - 56437

Location: 26 miles south of Glenora, Dokdaon Creek valley
N.T.S. 104 - G - 12

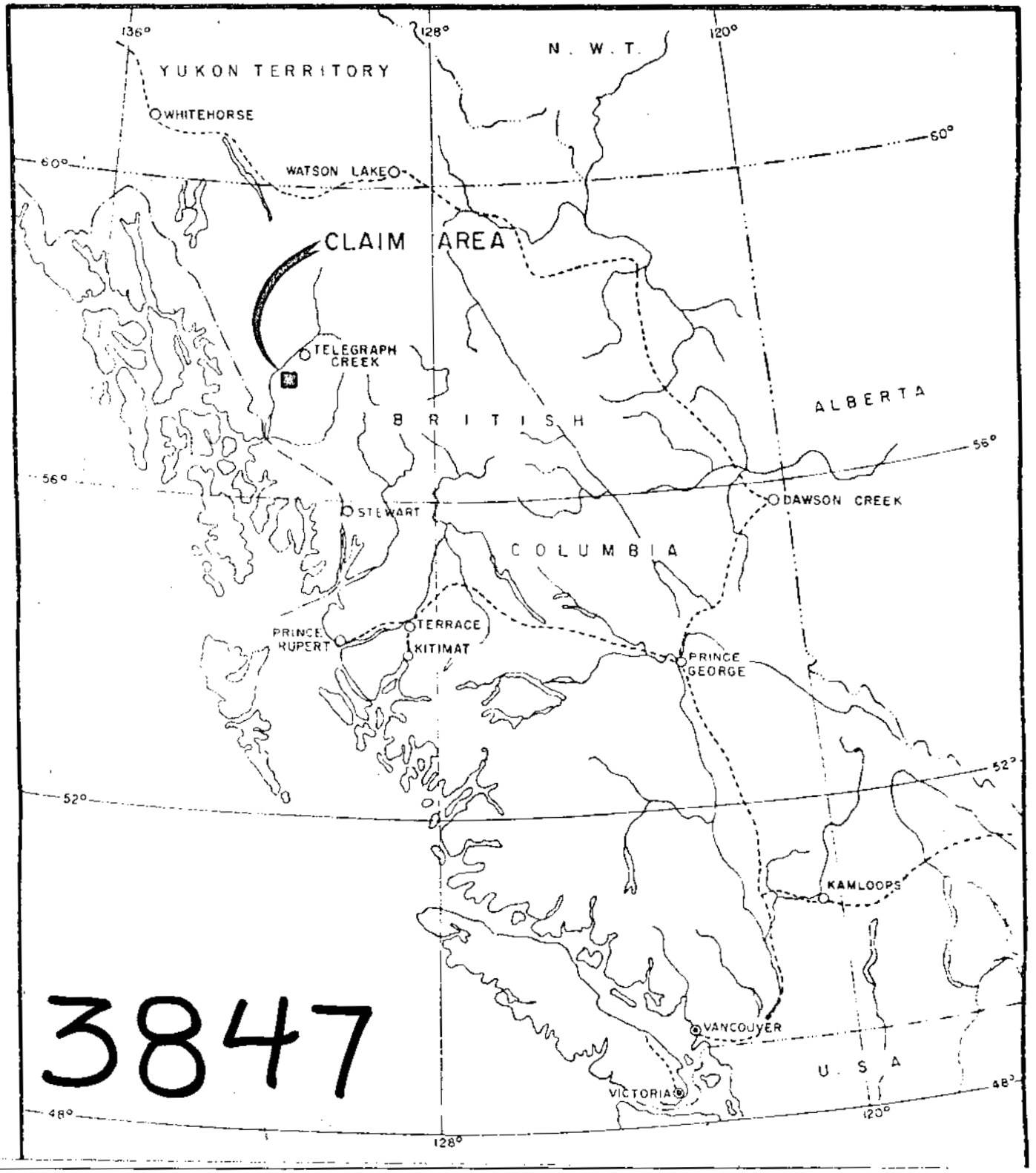
Lat. 57°30' N

Long. 131°34' W

Dates: June 7th - August 4th, 1972

Vancouver, B.C. September, 1972

CONTENT page



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M-1

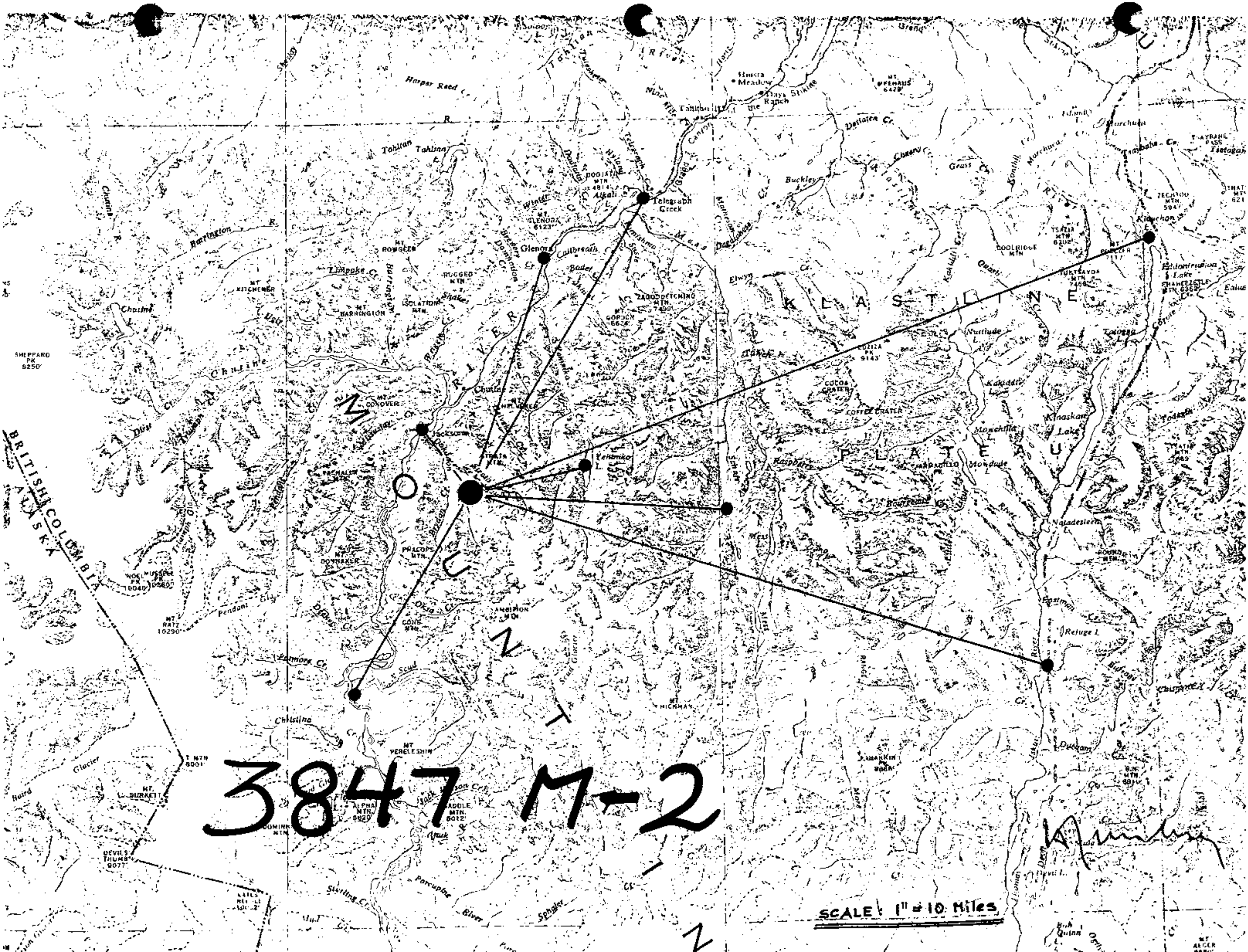
EMPIRE METALS CORPORATION LTD. (N.P.L.)

GU GROUP

CLAIM LOCATION MAP

57°30' N - 131°34' W

LIARD MINING DIVISION


3847 M-2
SCALE 1" = 10 Miles
BRITISH COLUMBIA
ALASKA
KLASTLINE
PLATEAU
MOUNTAIN
Telegraph Creek
Glenora
Jackson
Tahltan
Harper Reed Cr.
Barrington R.
Chutine R.
Limpoke Cr.
MT. BARRINGTON
MT. KITCHENER
ISOLATION MTN.
RUGGED MTN.
MT. GLENORA 6123'
DOOJATH MTN.
MT. GORDON 6624'
ZAGODDETCHINO MTN. 7499'
SHEPPARD PK 8250'
MT. CONOVER
MT. DONNAKER
PRACOPS MTN.
MT. RATZ 10290'
NOEL PK 10040'
MUSSELL PK 10800'
Pendant Gl.
Christina
MT. PERELESHIN
MT. HICKMAN
MT. BURKETT
DEVILS THUMB 9077'
ALPHA MTN. 8020'
SADDLE MTN. 8022'
Porcupine River
Sphaler
Stikine
Klappan
Elwyn
Buckley L.
Grass Cr.
Dallalen Cr.
Cheery Cr.
Kakiddi L.
Kinaskan Lake
Mowchilla L.
Mowdade L.
Nuttlude L.
Natadesleen L.
Tatogga L.
Eddontenajon L.
Eastman Cr.
Refuge L.
Tahltan L.
Days Ranch
Hinsta Meadow
COFFEE CRATER
COCOA CRATER
CUZIZA PK 9143'
TSAZIA MTN. 6302'
DOOLRIDGE MTN.
MT. EDZIZA
TUKTSAYDA MTN. 7458'
Raspberry
Yehiniko L.
Mess
Kluachon L.
Scud
Iskut R.
Ball
Dugrem
Morchuea
Bob Quinn L.

1. ABSTRACT

Geological mapping was carried out over the Gu Group and its nearer surroundings.

Low grade copper mineralization was observed in and along a long shear zone striking slightly north of east within the Coast Range Batholith.

It is felt that the potential of this very low grade situation was definitely limited in size and possibly of no economic significance.

2. INTRODUCTION

2.1. Titles

The GU Group consists of 12 contiguous claims, namely

GU 1 - 12, Record Nos. 56426 - 56437,

owned by Empire Metals Corporation Ltd. (N.P.L.) and under option to Swiss Aluminium Mining Co. of Canada Ltd.

2.2. Property Location

This is indicated on enclosed maps and described below (access).

2.3. Access

Access to the property is quite complicated. The nearest air bases are Telegraph Creek (Gravel, Otter) at some 32 miles, Yehiniko Lake (Water planes and gravel strip for Otter) at some 15 miles, Iskut Village (Gravel, DC-3) at some 60 miles, Burrage River (Gravel, DC-3) at some 70 miles, Scud River (Gravel, DC-3) at some 25 miles, Schaft Creek (Gravel, DC-3) at some 25 miles. Facilities at these strips are generally poor, the best being presently Schaft Creek (Liard Copper). Road access is presently to Telegraph Creek or Glenora Landing at some 32 resp. 25 miles from the property. No regularly schedules barges are presently cruising the Stikine River, which is however navigable from Wrangell (Alaska) till Telegraph Creek, passing the old Jackson Landing at the Dokdaon Creek mouth at some 10 miles from the property. Direct access from these above air-road-river bases would be by helicopter.

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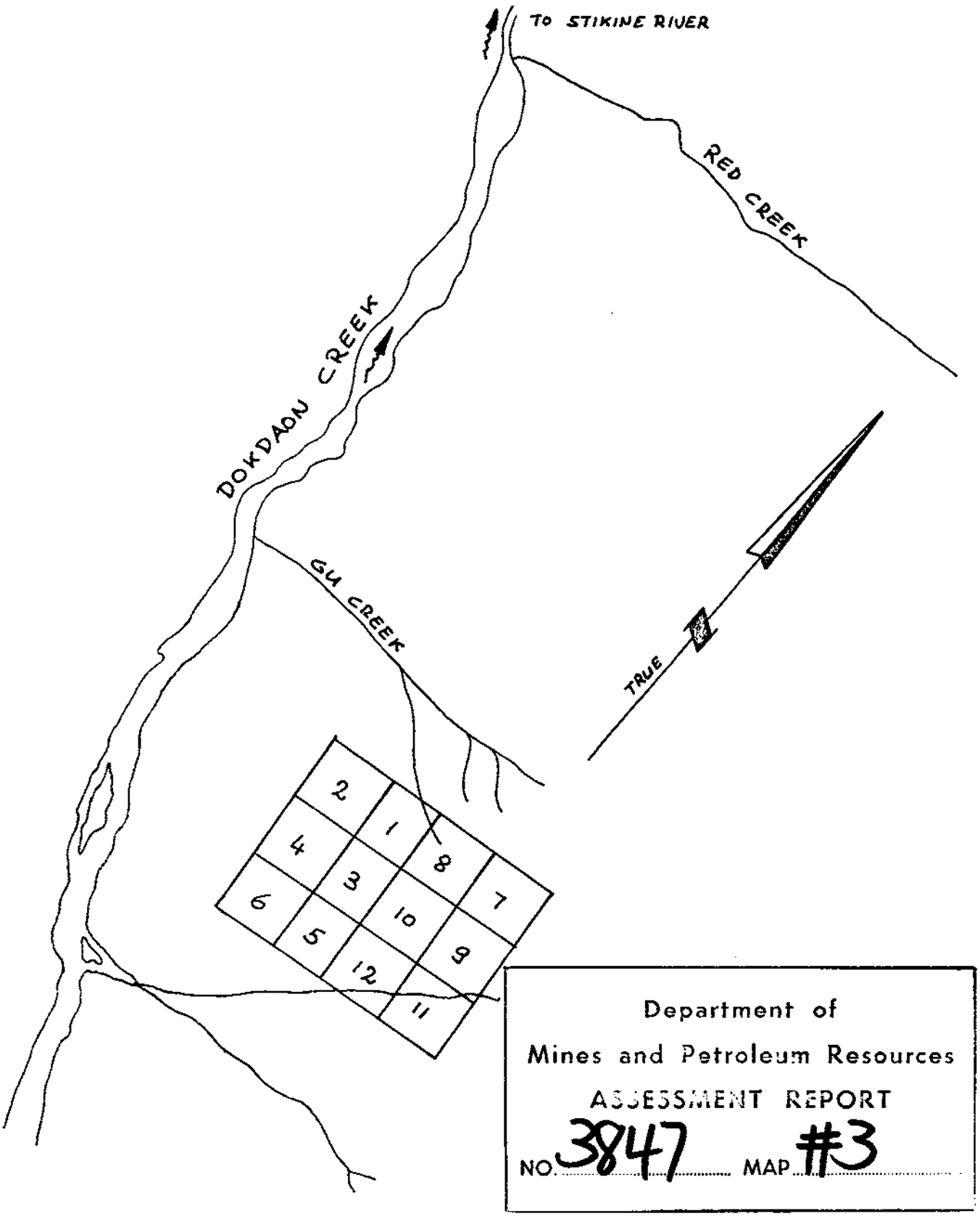

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3847 MAP #3

EMPIRE METALS CORPORATION LTD. (N.P.L.)

GU GROUP

MINERAL CLAIM MAP

Approx. Scale : 1" = 1/2 Mile

2.4. Preface

The Swiss Aluminium Mining Co. of Canada Ltd. holds a large claim-block of Empire Metals Corporation Ltd. (N.P.L.) under option. The GU Group is part of this option.

During the field season 1972 and while diamond drilling was in progress, elsewhere on the optioned claims, a preliminary geological survey was conducted on the GU group using helicopter support. The program was fully conducted and supervised by the writer with some assistance of field helpers.

The GU claims had been staked in fall, 1971 to cover an area of anomalous silt copper values. The 1972 program was to determine the geological background of the anomalous silt values.

3. GEOLOGICAL SURVEY

3.1. General Statement

The claim area lies in the broad "Stikine Arch". Triassic volcanics are intruded by stocks and "plugs" of quartz monzonite, granodiorite and diorite of the Coast Range Batholith. Stocks and dikes of syenite also intrude the volcanics; tabular bodies of rhyolite intrude the granitic rocks and the volcanics. Young dikes of andesite or latite intrude all other rock types.

The claims themselves lie entirely within the Coast Range Batholith, which is just outside the property in intrusive contact with the older rocks as described above.

3.2. Local Geology

The property lies completely within the Coast Range Batholith, however it might be relevant to also briefly describe rocks outside the claim area, which is essential in understanding the property geology.

Triassic-Cretaceous:

3.2.1. Andesitic and Basaltic Volcanics

This unit consists mainly of andesitic and basaltic volcanic rocks (flows, breccias and tuffs with inter-

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bedded sediments). Most of the rocks are of massive andesitic flows which vary in grain size from aphanitic to coarse grained. Much of the area has undergone contact metamorphism and hydrothermal alteration obliterating the original nature of the rocks.

Two main types of andesite or basalt predominate in the relatively unaltered rock. One type is a fine to medium grained, greenish-gray rock with about 60% plagioclase, and mafics of hornblende and pyroxene. When viewed with a hand lens, the volcanics are generally crystalline although, in a few instances, definitely fragmental material can be seen, and the rocks are properly called tuff or breccia. The other type of andesite or basalt is a feldspar porphyry with subhedral, angular plagioclase phenocrysts which make up about 40 - 50% of the rock. The rest of the material is a fine grained, grayish groundmass.

3.2.2. Sedimentary Rocks

Some sediments were found interbedded with the volcanics. They consist of tuff, siltstone, mudstone, limestone, conglomerate and breccia. The most predominant rocks in this unit are massive, fine grained, greenish-gray siltstone and mudstone. Some of the beds are likely tuffs. The limestone found was always a dirty grayish rock containing abundant and very coarse grained, recrystallized calcite. Breccia and interformational conglomerate were found interbedded with the finer grained sediments. They are, in general, similar in composition to the siltstone.

3.2.3. Coast Range Intrusive

These rocks are normally very fresh and unaltered, except for the mineralized zone as described below. In general the rock is of dioritic hiatus, but granodiorite seems dominant on the claim area. The hypidiomorphic mostly coarsly granular material may be typified by the following mineralogy:
10 - 20% quartz, 20% mafics (biotite, hornblende),
0 - 15% potassium feldspar, approx. 50% plagioclase and around 3 - 5% accessory magnetite and pyrite.

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Regional differenciation within this batholith is evident, while on the property itself the intrusive does not vary much from a typical granodiorite to quartzdiorite.

Cretaceous and/or Tertiary

3.2.4. Rhyolite Sequence

Tabular bodies of rhyolite cut across the area, striking about 160°. These are believed to be sills which follow the bedding of the volcanics. The same rock, with a similar attitude was found cutting the Coast Range intrusive within the claim boundaries. The rhyolite is younger than the Triassic volcanics although it appears to be interbedded with them.

The rhyolite is, in general, a fine grained, white, feldspar rich rock which has visible quartz phenocrysts. The quartz is often scarce and barely identifiable. Some of the rhyolite is aphanitic and has a marked fissility. Where the rock is coarser grained it has a sugary texture with very poorly formed equigranular feldspar phenocrysts. The rhyolite contains usually less than 4% but never more than 10% mafic material, usually consisting of biotite which commonly has undergone extensive leaching.

3.2.5. Andesite Dikes

Fine grained andesite dikes occur near and within the large intrusive body. These are the youngest rocks in the area. They cut all joints, all other rock types, follow faults, and postdate all alteration and mineralization.

They consist of green to gray, fine grained and soft fresh andesitic material and occasionally contain up to 25% plagioclase phenocrysts. They form tabular bodies a few inches to 30 feet across.

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Pleistocene - Recent

3.2.6. Surficial Soils

Glacial debris streams and moraines are typical for this high elevation property.

High rock bluffs and sharp crests are extremely exposed to the athmosphere for a longer period and undergo heavy weathering, producing talus fans of great extend.

Other residual developments are scarce.

There is still light glaciation in the SE corner of the property.

3.3. Structures

The two dominant structures are the rhyolite dikes or sills in the western part of the property, striking about 160° (- 180°), and the marked shear zone carrying mineralization (see below) in the northern property area striking about 60 - 80°. These two structures are characteristic for the entire Dokdaon and Strata region and can easily be veryfied on the ground in this extended area.

3.4. Alteration, Mineralization

A typical feature of the contact near (marginal) part of the Coast Range Batholith is fine quartz veining along the regional predominant joints, here striking about 160°. These fine quartz stringers are often only hair fissure fillings but may extend to over one inch width. They consist of mostly milky quartz, containing erratic high percentages of mostly cubic pyrite with minute specks of calcopyrite, galena, sphalerite, molybdenite and the occasional scheelite.

GU Creek cuts across the contact between the Coast Range granodiorite and the Triassic volcanics. A fault zone through the granodiorite south of the creek with some ankerite veining and later andesitic dikes contains sparse copper mineralization. Chalcopyrite, along fractures parallel to the fault or conjugate to the fault, occurs for approximately a mile along the fault. Mineralization does not occur more than 500 feet from the main

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fault. The mineralization is sporadic, restricted to fractures and low grade. Strong chlorite alteration occurs near the fault with barren quartz stringers. The ankeritic material does not contain sulphide mineralization. The rocks, whether mineralized or not, exhibit pervasive pink feldspar alteration within 300 feet of the fault. The pink alteration of the feldspars is thought to be due to potassium feldspar or microscopic hematitic alteration.

North of GU Creek a vein of ankerite approximately 5 feet thick occurs in the volcanic formation. Traces of chalcopyrite, with quartz and epidote, occur in the volcanics near this vein.

3.5. Summary

Copper mineralization was observed in and near an extensive shear zone within Coast Range intrusives as well as in fissure quartz fillings within a larger area of the Coast Range Batholith. Only minor alteration was observed accompagnying this mineralization. All copper occurrences seem to be erratic and definitely very low grade, making the discovery of doubtful economic interest.

4. CONCLUSION, RECOMMENDATIONS

Low grade copper mineralization with very minor lead, zinc and tungsten indication were investigated and geologically mapped.

It is felt that the mineralization discovered on the GU Group was of no further economic interest

No further work is recommended on these claims. However the indication discovered on the GU claims may warrant a regional search in the nearer area for better grades of mineralization, and for this purpose a regional silt sampling program could be recommended as a potential future step of mineral investigations.

Respectfully submitted,

Vancouver, September 22, 1972

Hanspeter Schielly, D.Sc., P.Eng.

Appendix I

C E R T I F I C A T E

I, Hanspeter Schielly, of 2203 - 1160 Haro Street, Vancouver 5, British Columbia, DO HEREBY CERTIFY THAT:

1. I am a Registered Professional Engineer of the Province of British Columbia.

2. I am a graduate of the Swiss Federal Institute of Polytechnique (E.T.H.) of Zurich, Switzerland, Dipl. Ing. Geol. ETH in 1961, and Dr. Sc. Nat. in 1964.

3. I have practised my profession as an engineer and as a geologist in Europe, South America and North America for the past eleven (11) years.

4. I have personally conducted the geological survey on the GU Group as described in this report.

5. I am the Managing Geologist of Swiss Aluminium Mining Co. of Canada Ltd., and that I have no other interests in the property nor in securities of above company.

Vancouver, B.C.

September, 1972

Hanspeter Schielly, D.Sc., P.Eng.

Appendix II

(GU)

P E R S O N N E L & D A T E S

Name + Address	Position	Dates of Work	Days
Hanspeter Schielly, 2203-1160 Haro Str. VANCOUVER 5, B.C.	Geologist	June 7, 20-22 August 3	4 1
Xaver Abt, 187 Industrial Road WHITEHORSE, Yukon	Cook + Camp Attendant	June 7, 20-22 August 3	4 1
Al Archibald 187 Industrial Road WHITEHORSE, Yukon	Helper	August 3,4	2

Appendix III

(GU)

COST OF SURVEY

Professional and Technical Services			
Geologist	5 days x $ 125.--	=	$ 625.--
Cook	5 days x $ 40.--	=	$ 200.--
Helper	2 days x $ 30.--	=	$ 60.--
Related Costs			
Camp rental	5 days x $ 10.--	=	$ 50.--
Board	12 man/days x $ 5.--	=	$ 60.--
Draughting, printing, xerox etc., report		=	$ 150.--
Transportation (helicopter)	2^h x $ 250.--	=	$ 500.--
Total applicable costs		=	$ 1645.--

The above costs are property related costs only and do not include preliminary compilation of previous data, administration costs, transportation to and from Vancouver and other costs not normally applicable for assessment credits.

Declared before me at the

of , in the

Province of British Columbia, this

day of. , A.D.

VANCOUVER, B. C.

SEP 27 1972

Sub-Mining Recorder

A Commissioner for taking Affidavits within British Columbia or
A Notary Public in and for the Province of British Columbia.

Appendix IV

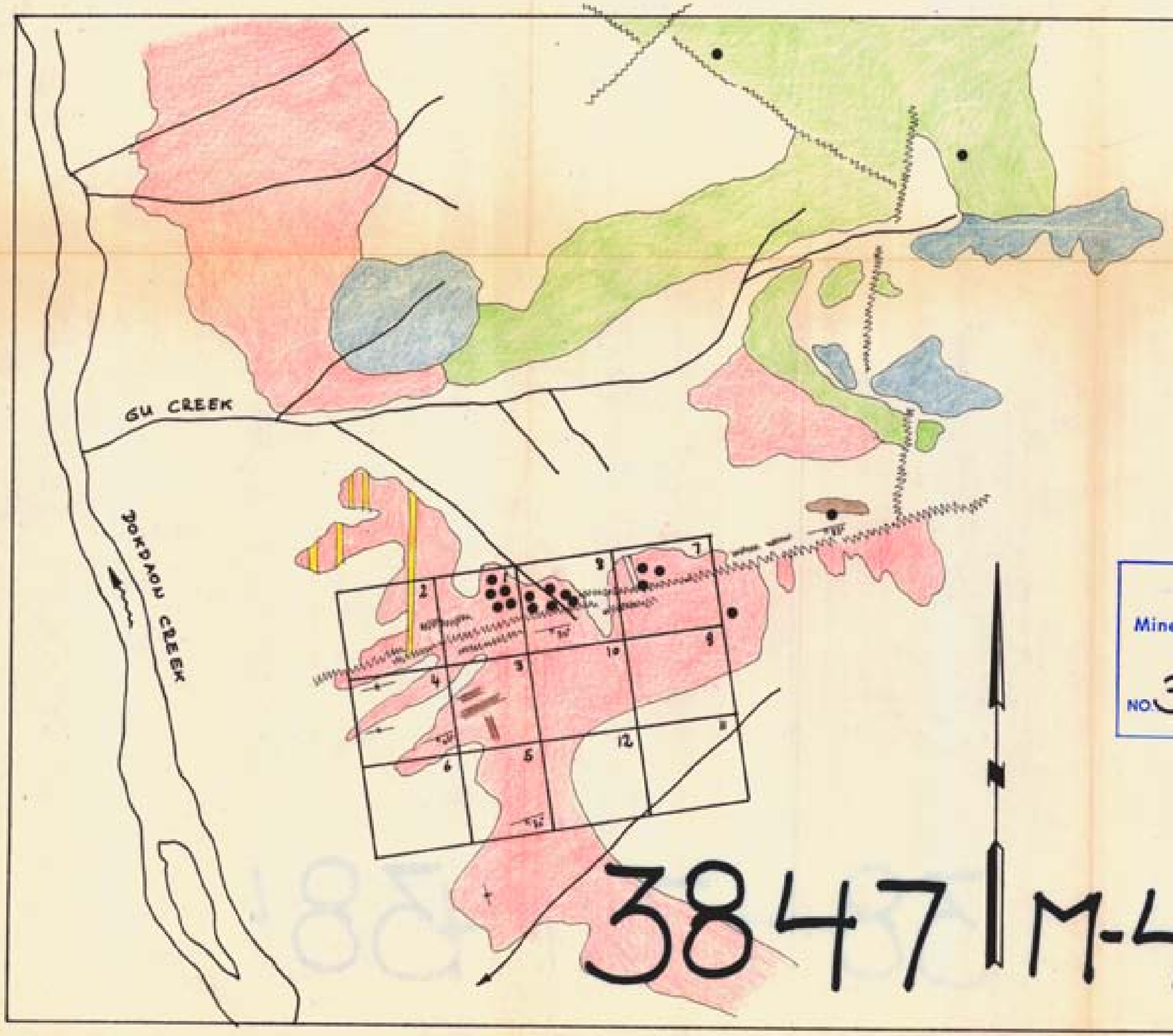
A F F I D A V I T R E C O S T O F S U R V E Y

I, Hanspeter Schielly of 2203 - 1160 Haro Street, Vancouver 5, British Columbia, DO HEREBY SOLEMNLY DECLARE that the geological survey done on the GU Group of Empire Metals Corporation Ltd. (N.P.L.) and under option to Swiss Aluminium Mining Co. of Canada Ltd. was conducted during the field season of 1972 and is described in this report. The data were obtained by Swiss Aluminium Mining Co. of Canada Ltd. at a total property related cost of at least $ 1645.-- as set out under "Cost of Survey" in this report.

AND I make this solemn declaration concientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act".

DECLARED before me
at the City of Vancouver,
in the Province of
British Columbia,
this _____ day of
_____, A.D., 1972

Hanspeter Schielly, D.Sc., P.Eng.



LEGEND:

PLEISTOCENE - RECENT

Surficial Soils

CRETACEOUS AND/OR TERTIARY

Andesite Dikes

Rhyolite Sequence

TRIASSIC - CRETACEOUS

Coast Range Batholith

Andesites + Basalts, Tuffs
Sediments

Copper Minerals

Fault, Shear

Jointing, Shearing

SWISS ALUMINIUM MINING COMPANY OF CANADA LTD — SAMCAN

GU GROUP

UPPER HEADS CORPORATION LTD. (N.P.L.)

GEOLOGICAL MAP

CONTRACTOR:

SCALE: 1" = 1600'

INDEX:

DATE: SEPT. 20, 1972

BY: H. CONNELLY, P.Geo., P.Eng.