Swiss Aluminium Mining Co. of Canada Ltd.

114P/6E 5206

REPORT ON GEOLOGICAL PROSPECTING

in the area of and
leading to the staking of the

SAC CLAIMS

114P/6E

5206

Nelson Glacier Area, B.C.

Atlin Mining Division

for

THE SWISS ALUMINIUM MINING CO. OF CANADA Ltd.

by

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

Claims:	SAC 1 - 12 Rec. Nos: 19489 - 19500
Situate:	Atlin Mining Division, B.C. Some 16 air miles (25,7 kiloretres) at 350° (true) from the confluence of Grand Pacific Glacier into Tarr Inlet, N.T.S. 114 P. Latitude: 59° 18' N Longitude: 137° 08' W
Dates:	Photosurvey: January - March, 1974 Fieldsurvey: July - August, 1974 Report: September, 1974

September 16, 1974

Vancouver, B.C.

I N D E X

#1 Location map
#2 Claim plan
#3 Access plan
#4 Geological sketch

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1. ABSTRACT

Helicopter supported ground prospecting of bedrock exposures and glacial moraines was introduced to verify and evaluate interesting lineation patterns previously observed on aerial photographs. Geochemical silt and soil sampling then narrowed down the area of interest, where we finally discovered copper mineralization in bedrock.

Subsequently 12 claims were staked to cover the nearer surrounding of observed mineralization, which occurs mostly as azurite within a quartzporphyry-rhyolite sill.

This interesting showing has never been staked before, which may also be due to its difficult accessibility and the rather short field working season.

2. INTRODUCTION

2.1. Titles

The staked ground is covered by the SAC claims, namely:

SAC 1 - 12 Rec. nos: 19489 - 19500

All claims are owned by The Swiss Aluminium Mining Co. of Canada Ltd. (SAMCAN).

2.2. Claim Area Map

Enclosed map sketches show location and arrangements of the claims.

2.3. Location and Access

The location of the property lies in the utmost northwestern triangle of British Columbia as shown on enclosed maps. It roughly co-ordinates around 59°18' northern latitude and 137°08' western longitude, occupying the right side of an unnamed tributary glacier to the Melbern Glacier (Grand Pacific Glacier) in the Atlin Mining Division of the Province of British Columbia.

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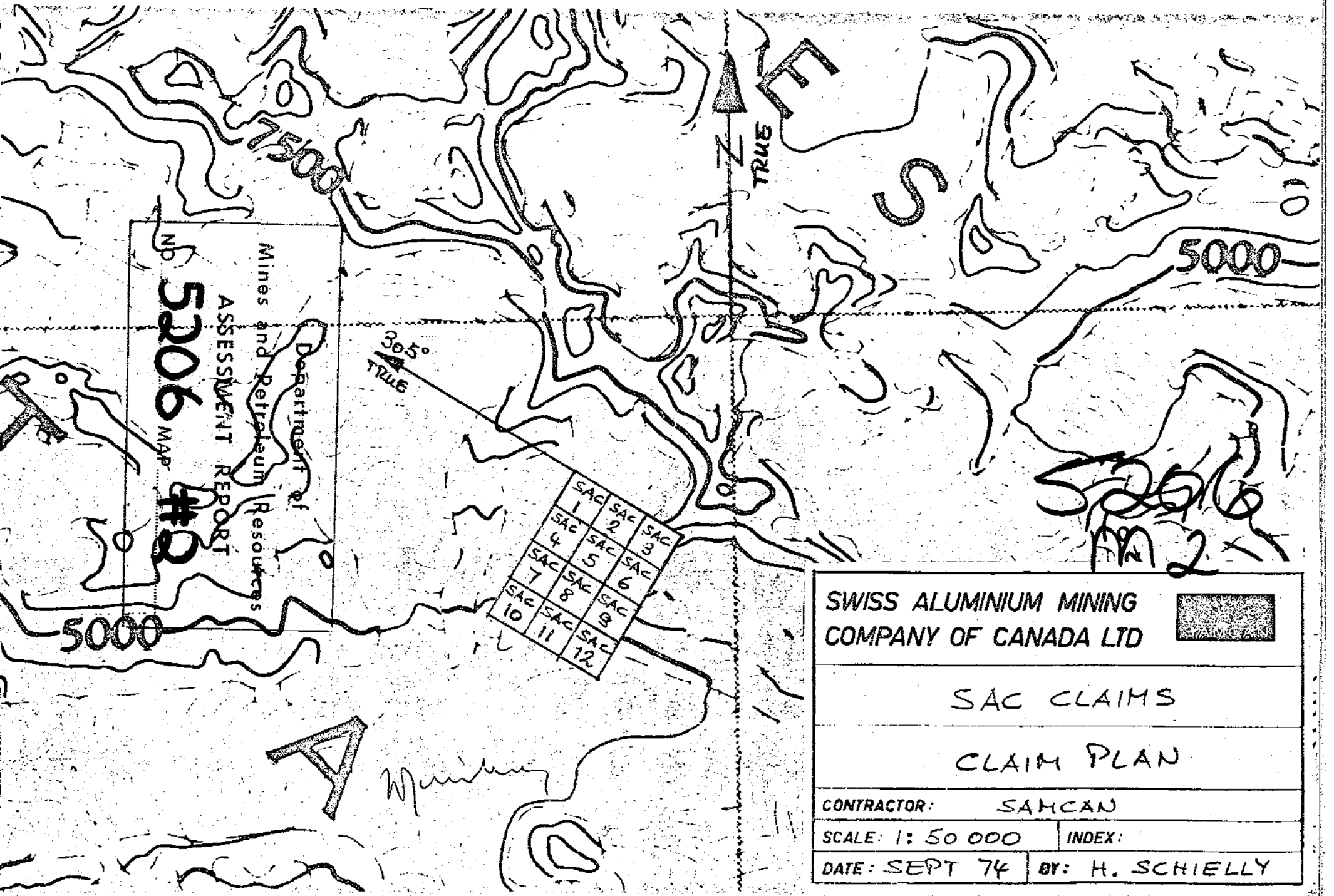
7500
5000
N TRUE
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Mines and Petroleum Resources
Department of
ASSESSMENT REPORT
No 5206 MAP #2
SAC 1
SAC 2
SAC 3
SAC 4
SAC 5
SAC 6
SAC 7
SAC 8
SAC 9
SAC 10
SAC 11
SAC 12
5206
M 2
SWISS ALUMINIUM MINING COMPANY OF CANADA LTD
SAMCAN
SAC CLAIMS
CLAIM PLAN
CONTRACTOR: SAMCAN
SCALE: 1: 50 000
INDEX:
DATE: SEPT 74
BY: H. SCHIELLY

BRITISH COLUMBIA

CLAIM LOCATION MAP

MINING DIVISIONS
Mining Recorder's office— O
—Amended to May, 1958.
Mining Recorder's office for Liard—Victoria.

● = SAC Claims

The Swiss Aluminium Mining Co. of Canada Ltd.

59°18' N/137°08' W

Atlin Mining Division, B.C.

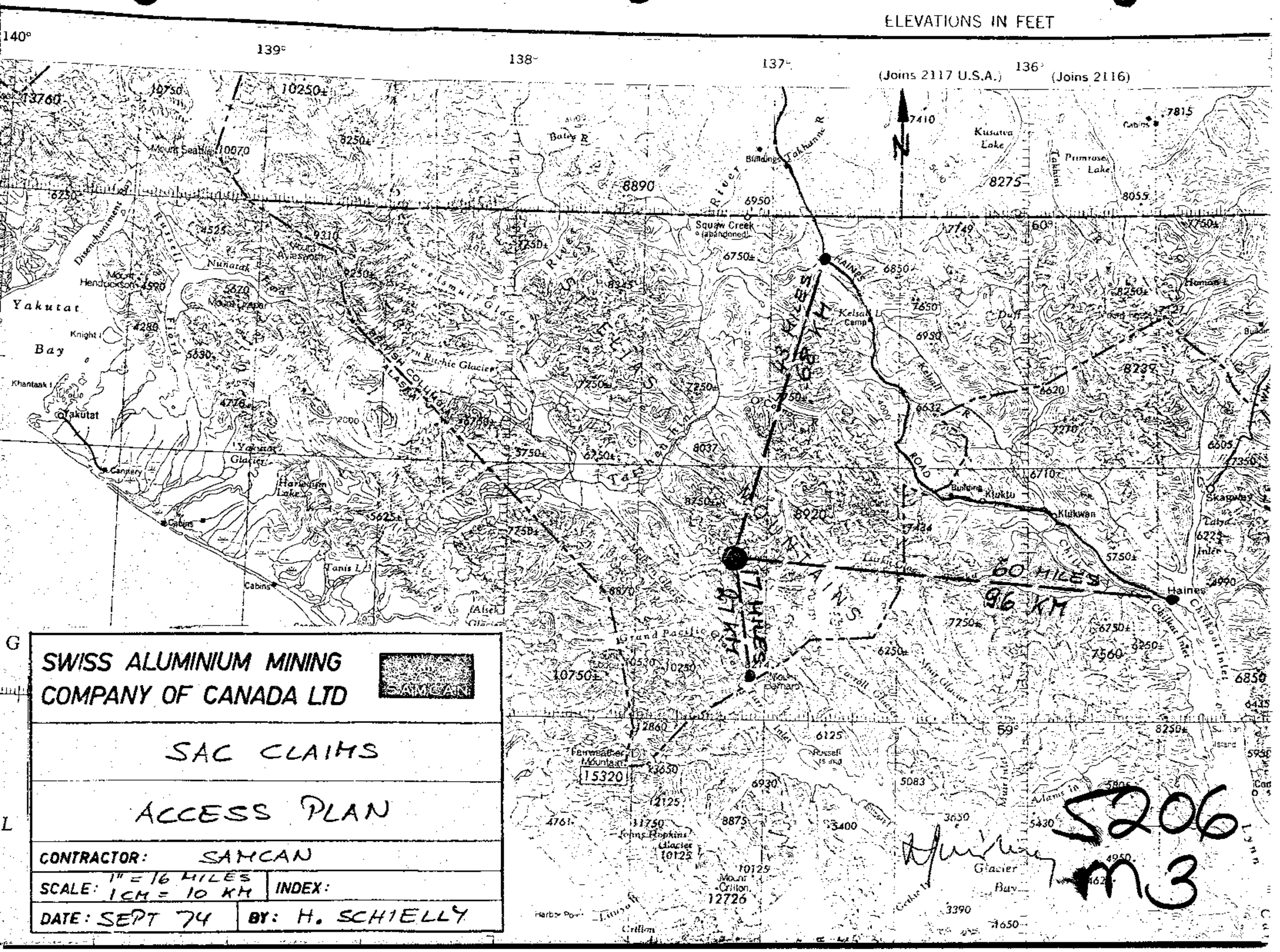
Scale
40 30 20 10 0 40 80 120 160 MILES

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 5206 MAP #1

5206
M 1

Drawn and Produced by Map Production Division, Surveys and Mapping Branch, Dept. of Lands, Forests, and Water Resources, Victoria, British Columbia.

MAP NO. 15 D


ELEVATIONS IN FEET
(Joins 2117 U.S.A.)
(Joins 2116)
140°
139°
138°
137°
136°
60°
59°
N
Yakutat Bay
Yakutat
Mount Seattle 10070
13760
Mount Hendrickson
Knight I.
Khantaak I.
Yakutat Glacier
Harlequin Lake
Cannery
Cabins
Tanis L.
Disenchantment
Russell Fiord
Nunatak
Mount Draper
BRITISH COLUMBIA
ALASKA
Tweedsmuir Glacier
Ritchie Glacier
Bates R.
Takhanne R.
Buildings
Squaw Creek (abandoned)
Kelsall L. Camp
HAINES ROAD
Klukwan
Kusawa Lake
Primrose Lake
Skagway
Haines
Chilkat Inlet
Chilkoot Inlet
Alsek Glacier
Grand Pacific Glacier
Fairweather Mountain 15320
Johns Hopkins Glacier
Mount Crillon 12726
Muir Inlet
Muir Glacier
Carroll Glacier
Russell Island
Glacier Bay
Lynn Canal
60 MILES
96 KM
17 MILES
27 KM
5206
M3

SWISS ALUMINIUM MINING COMPANY OF CANADA LTD

SAMCAN

SAC CLAIMS

ACCESS PLAN

CONTRACTOR: SAMCAN

SCALE: 1" = 16 MILES, 1 CM = 10 KM

INDEX:

DATE: SEPT 74

BY: H. SCHIELLY

The mentioned unnamed glacier may be marked by the "A" of "Mountains" of the overprint "St. Elias Mountains" of the 1 : 250 000 topo map sheet, N.T.S. 114 P.

From Canadian soil, access to the property is rather complicated. The closest "reasonable" road access point is Bear Camp at mile 89 of the Haines Road, which is some 170 miles to Whitehorse, Yukon Territories over the Haines Road (gravel, 70 miles, Haines Junction) and the Alaska Highway (gravel, 100 miles).
There is no direct road access to this extremely remote B.C. soil from "mainland" B.C., except the above one via the Yukon Territories. In fact, the total infrastructure, that little existant as it is, of this triangle seems to be completely maintained by the Yukon resp. the Federal Government. From Bear Camp there are some 43 miles (68 kilometres) as the crow flies (effective distance would be 20 - 50% more) to be negotiated, which could be by various means to be field-evaluated from case to case (helicopter, fixed wing, hoover crafts ?, bombadier ? etc.).

Access from road and/or sea points on U.S.A. territories are definitely of much greater attractiveness. The deep sea harbour of Haines, Alaska, is only 60 miles (96 kilometres) distant as the crow flies, but the very nearest access point is the head of Tarr Inlet, where the Grand Pacific Glacier tributes to this fjord. The large pleasure ferries on the famous Seattle-Vancouver-Prince Rupert "Alaska Cruises" are approaching the head of Tarr Inlet within maybe 1/2 mile (800 metres). Although Tarr Inlet is quite strewn with icebergs from the tributing glaciers, it seems reasonable to assume, without prejudice, that deep sea access was possible to this side, which would only be some 17 miles (27 kilometres) as the crow flies from the SAC claims.
This last leg of possible access could be covered by helicopters, fixed wings, cable ways (part) and roads (other parts) etc.

Direct road access to the property seems, to the writer, a foreconcluded impossibility. The glaciers of the area have proved to be very labile in size and crevasse pattern, some having advanced over 1/4 mile (400 metres) since 1973, and it seems abortive to suggest road negotiations of such powerful obstacles. It seems, only cableways or tunnelling would be possible at specific trouble spots.

A quite important question is whether the head of Tarr Inlet was on Canadian territory or belonged to Alaska. The 1961 edited N.T.S. (Canadian) sheet 114 P shows the Tarr Inlet head well within Canadian boundaries. However, the writer has spent some time in this area and it appears to him that either that map was quite inaccurate, or since 1961 the head of the Grand Pacific Glacier may have pushed some 1,5

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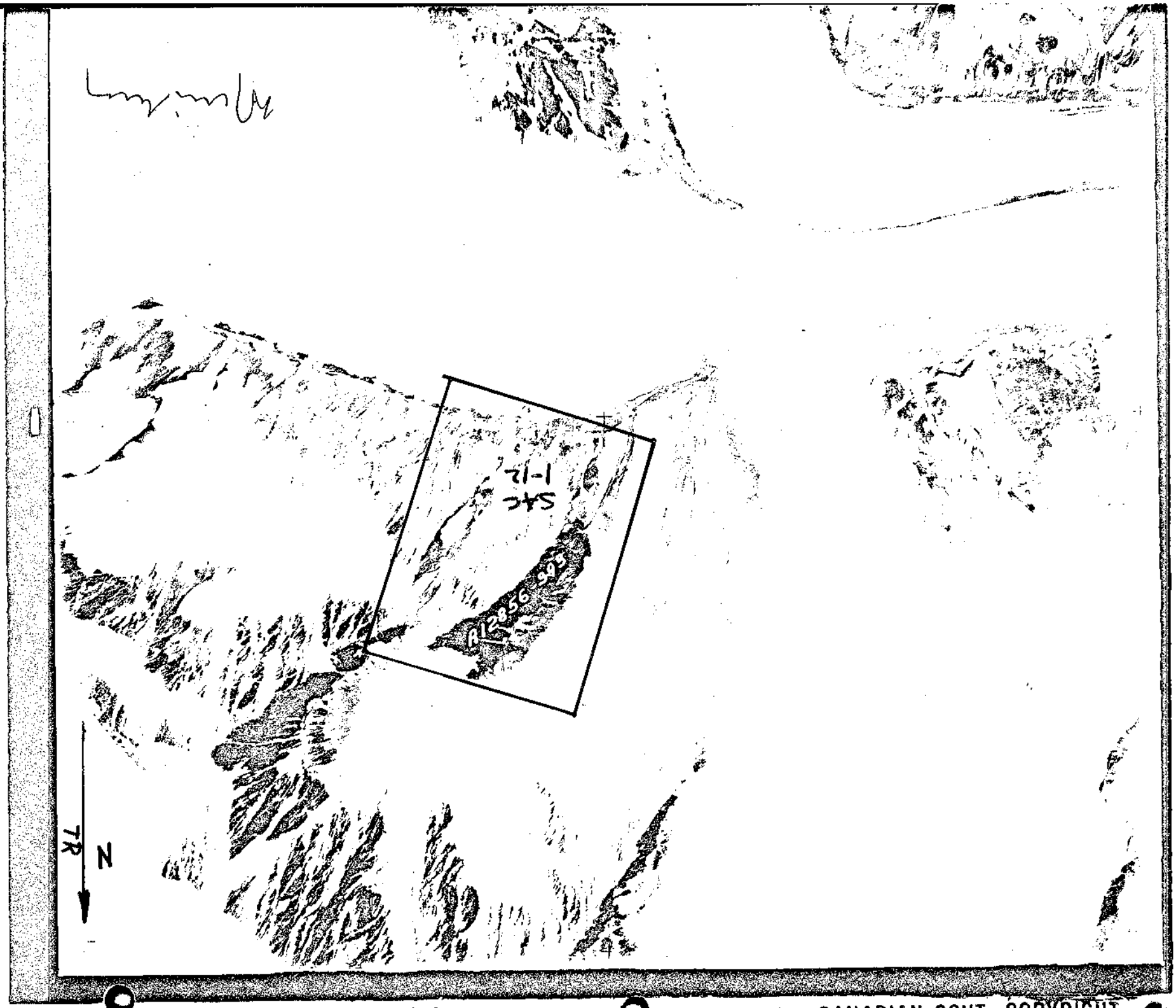

miles (2,5 km) south into the sea fjord.
Maybe the truth lies somewhere between these alternatives. To the writer there is presently no doubt that the Tarr Inlet does not reach the Canadian border but lies completely in Alaska. This, of course, would have to be checked and evtl. surveyed very carefully, should increased activities in the area call for something like this very reasonable deep sea access.
Direct access to the property may at all times become abortive due to the unpredictably changing weather.

2.4. Topography

The topography on and around the property is heavily glaciated and mountainously rugged country that requires some more than just basic outdoor skill for working parties. The steep terrain and the extensive glaciation are the strongest competitors with prospecting crews.

Elevations in the area range from sea level to over 10,000' (3000 m), and so does glaciation. The SAC claims lie at about 5000' - 7000' (1500 - 2100 m) elevation as shown on enclosed claim plan.

While the flora is typically high alpine with its multiple species in small numbers, the local fauna is very poor to non-existant in higher areas. There exists no timber whatsoever in the area at and around the SAC claims. Scarce marmots mingle among colonies of ground squirrels as the only real settlers in the area, while moose, caribou, northern deer, wolf, arctic fox, wolverine, lynx and grizzly bear are the larger and more common nomades of the natural balance. Only the mountain goat seems to really enjoy and florish in this country of rocks and ice, negotiating even the larger glaciers without trouble, while all the other animals, as is the prospector in part, are almost completely restrained to the easier going, but quite often barren grounds of limited extent. No mountain sheep were observed, but one Alaskan brown bear gave us a doubtful welcome in the Alsek River further north.

It is a most beautiful northern mountain place, and every eventual future mine development will have to take care a lot not to spoil such a piece of our dwindling natural beauties.
The climate is to be compared with alpine country at over 6500' (2000 m) elevation and higher, featuring brief, but lively and hot summers (June - August) and long, severe and liveless winters with snowfall possibly exceeding 20' (6 m). Precipitation should be generally high, although in 1974 we enjoyed a real dry weather spell

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from early July till mid August.

2.5. Preface

The SAC claims were staked in August, 1974, to cover a showing of interesting mineralization as to be described below, that was discovered as a result of a large prospecting and geochemical silt survey program undertaken in the area by SAMCAN between June - September, 1974.

The initial interest of SAMCAN to the B.C. Alsek-Tatshenshini triangle dates back as far as 1970, and since then a lot of research of all kinds were initiated on this area, considered to be one of the least explored and surveyed areas of British Columbia. Only one other claim group is known to exist in this B.C. triangle and west of the 137° longitudinal.
In 1973 structural and geological aerial photostudy was undertaken, which was then followed by some 25 hours of helicopter reconnaissance flying.
The result of this 1973 work was then in early 1974 compiled to preliminary reporting and deepened with further aerial photo studies.

This was then used as the base of an extensive regional reconnaissance prospecting and silt sampling program that started in June 1974 and ended end of August 1974, involving a total of 4 geologists, 2 mountain guides and 7-8 samplers and helpers with full-time helicopter (Hughes 500 C-18) support. One positive result of this program was the staking of the SAC 1 - 12 claims.
This report describes some of the initial research work in 1974 as well as the local story of the SAC claims area, as far as known with the limited work done.
Work applied to the SAC claims is of course part of the expensive overall regional research program, but is conscientiously, to the writer's best knowledge, broken down into costs that occurred while directly exploring the SAC claims and their closer surrounding.

3. GEOLOGICAL PROSPECTION

3.1. General Statement

The Property and its nearer surrounding may have about 50% bedrock outcrop above the 4500' (1500 m) level, while below this elevation bedrock is largely of unknown quality due to its almost complete cover with moraine and talus.

In general the area is observed and extrapolatedly thought to be

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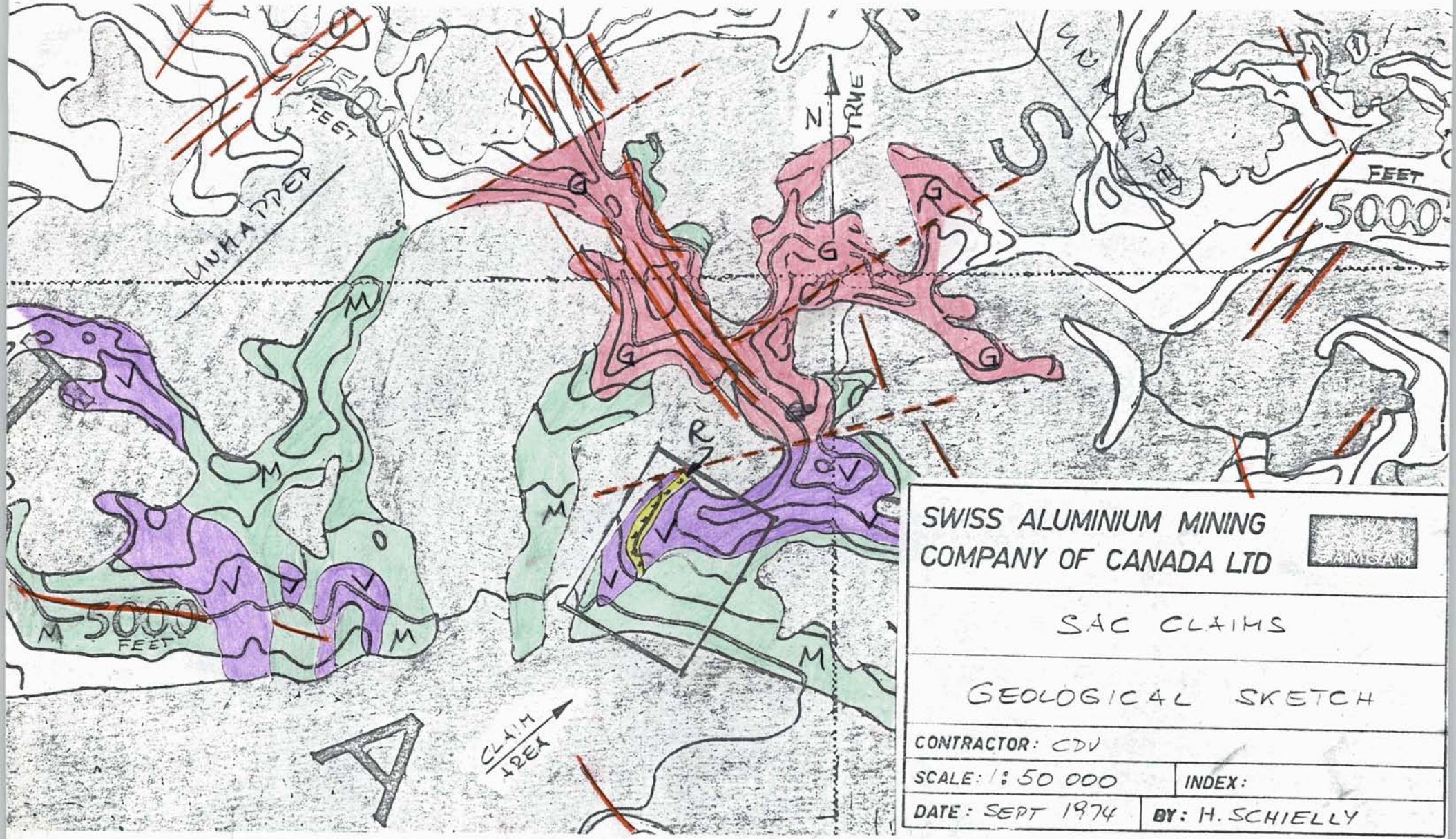

SWISS ALUMINIUM MINING COMPANY OF CANADA LTD

SAMSAM

SAC CLAIMS

GEOLOGICAL SKETCH

CONTRACTOR: CDV	
SCALE: 1: 50 000	INDEX:
DATE: SEPT 1974	BY: H. SCHIELLY

LEGEND:

- AIRPHOTO LINEATION, FAULTS
- GLACIERS
- M MORAINE, TALUS
- R RHYOLITE, QUARTZ PORPHYRY WITH COPPER MINERALS
- G INTRUSIVE GRANITE - GRANODIORITE
- V VOLCANICS, DIORITE

underlain by intrusive rocks of a Coast Range type batholith of quite complexe construction and hiatus. It intrudes country rock of possible Silurian to Jurassic (?) age in a yet to determine network of stocks, plugs, dikes and sills of great lithologic varieties. Country rock is mostly volcanic, and is rather tentatively than strictly scientifically related to the Cache Creek Group of central B.C.

These name-correlations with Coast Range and Cache Creek is here adopted because there simply is no other reasonable means of naming these formations. It may not be adequate when investigations continue, but for the time being these correlations are also used by the USGS and the GSC for this area.

To be mentioned that there exists no geological map whatsoever for this area.

Sedimentary formations consisting mostly of limestone series are not present in the nearer claim area, but occur distantly to be mentioned as the Kaskawulsh Group.

3.2. Local Geology

Enclosed geological sketch represents some prospecting results in a 1 : 50 000 scale.

The claims themselves cover only rock exposures of the (?) Cache Creek Group, here consisting of roughly N-S striking bands and lenses of andesites, basalts, diorites and minor syenites. These rocks are thought to represent a complex volcanic cycle, also including minor black shale type sedimentation as locally intercalated.
The rocks have mostly undergone low grade (regional) metamorphism, but are generally well-preserved. Metamorphism does not seem to have exceeded beyond the sericite-chlorite (biotite?) facies. Rocks are usually massive with only a very minor degree of original brecciation.

The most interesting feature is an irregular band of white rhyolite and quartzporphyry. This band varies in width from two to three feet (60 - 90 cm) up to irregular knots of 100 feet (30 m) width. The difficult terrain of the steep to vertical rock cliffs, where the band is exposed, has so far prevented a detailed investigation of this feature. It seems that the quartzporphyry was related to a nearby granitic body having invaded the volcanics at a very low angle disconformed structure.
The rhyolite is a completely white, massive rock of no obvious and striking "extra" features: only some 5-10% of the rock band may be rhyolite. The quartzporphyry too, is a white to light greenish and quite massive rock.
Quartz phenocrysts are up to 1/2 inch (1,25 cm) in diameter, quite

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round and transparent.
This "white band" is thought to be a sill, but no definite evidence either ways have been collected.
Azurite staining is restricted to marginal zones of the quartz-porphyry, where the elsewhere transparent quartz crystals are milky-blueishly stained.

Seemingly faulted off this above rock formation and not occurring on the property is a granitic intrusive body of considerable extension (not fully delineated). The rocks are usually fresh looking granites and granodiorites with minor quartzdiorites and monzonites of greyish to greenish colours.
They form the nunatak peaks in the "background" of the claims among the heavily glaciated country there.
A typical feature are roughly NNW - SSE striking lineaments possibly reflecting flow or cooling pattern, which are offset by a series of ENE - WSW striking faults of very young origin.
These latter faults also separate the intrusive from the volcanics as mentioned above.

3.3. Surficial Soils, Glaciation

By far the majority of the prospected terrain is covered under extensive glaciation, and a good deal of the non-ice terrain carries moraine and talus, as shown on enclosed geological sketch.
Glaciation is not bound to certain niveaus or elevations, but seems to be controlled mostly by the sun factor. Flat and relatively easily negotiable ice-streams are typical for the southerly facing slopes, and completely inaccessible and non-negotiable hanging glaciers of most bizarre shapes are typical on the north slopes.
Evidently the present glaciation represents only a poor relic of a very much more extensive and more voluminous ice coverage of previous times. That these previous times are historical and may not even be more than one hundred years ago, is suspected from the poor and very localized terrestrial fauna, from lack of residual soil developments everywhere, and from correspondingly poor flora, beside some hearsay reports of the 1800' of "them huge ice sheets up there".
There is plenty of clear evidence that in 1974 95% of the glaciers were in a strongly advancing and growing mood.

A residual soil profile is almost completely lacking, except for some restricted places or ecological niches, which possibly have never been ice-covered.

Talus slopes have developed at all the lower terrain gradients, but pure slope talus is very rare while most of the debris are mixed up with moraine.

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The most common surficial cover is moraine. Mostly side, middle, and end moraines are exposed, and only minor ground moraine has been released by previously receding ice. The moraines are typical boulder (+ 50%) dams and walls, having a poor representation of medium (sand) size components, but contain abundant clay and silt.

Moraines and talus represent an unlimited volume of construction material if need for this would arise.

Relics of ancient ice-flows, as well as newly formed ice-lenses, are commonly to be expected and actually have been observed within the moraine materials.

3.4. Structures, Lineation

Surficial moraine deposits are characterized by aerial photolineation representing side- and end wall moraine stadiums, glacial striae, and debris fills of ancient crevasses and caves.

Granitic bodies show a marked NNW - SSE lineation that represents banding from cooling under certain stress conditions of yet unknown origin.

ENE striking fault systems are of youngest dates and do offset geological formations and above granite lineation.

To the far east of the property lies the Basement Creek and the Melbern-Grand Pacific Glacier-Tarr Inlet valleys, which represent nothing but NNW striking tectonic shears of enormous magnitudes. They are strikingly parallel to the mentioned granite banding and seem to be tectonically active until the present day. Thus these large structures are probably of very old, and deepseated origin, have affected also the Coast Range invasions of granitic bodies, and are still active today, reflected in quite strong seismic activities around the area along these major lineaments.

3.5. Alteration, Mineralization

Alteration is not typical at any place. Low grade (regional) metamorphism is observed in the volcanic sequences, the newly formed minerals being sericite, chlorite and some epidote, zeolithes and doubtful biotite.
Outside the property there is strong evidence of high temperature contact metamorphism featuring the forming of epidote, quartz, garnet, calcite, hornblende, biotite, chlorite and maybe tremolite.

The surficial gossan zone of the claims is visible from miles away,

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deriving mostly from weathered mica rather than from minor pyrite present.

Copper stains are bound strictly to the quartzporphyry, where erratic patches of azurite are observed.

Only a few samples have so far been analyzed, returning copper values of 0.2% maximum, but averaging values well below that.

Economic mineralization resp. ore grade suspective parties of rocks have so far not been observed nor assayed. However, since leaching of the surface minerals (e.g. mica stains, azurite etc.) is so widespread and common, and the rock exposures are that inaccessible, it is felt that present data are by far not conclusive.

4. CONCLUSIONS, RECOMMENDATIONS

During 1974 geological prospecting and geochemical sampling led to the staking of the SAC 1 - 12 claims to cover an area of exposed copper mineralization.

Ore grade so far encountered are non-economic only, and the potential extension of mineralized rocks has yet to be investigated.

The area is one of the remotest spots of British Columbia. If permissible through U.S.A. territories, access could be quite reasonable. However, present B.C. legislation definitely prefers minerals to be processed through Canadian grounds to the sea.
Therefore the property becomes, before it has really been investigated, a political question rather than a geological asset.

Despite this, I recommend further work to be done if the owner fully considers two aspects:

- The area is desolate but has a tremendous potential for hydro power and minerals, both not having been touched at all or hardly, giving this property pioneer value.
- Going ahead with evaluation means accepting the fact that at one stage the property would have to become at least 50% Canadian owned.

It is recommended that the following work be done to further evaluate the SAC claims:

- A thorough but preliminary access study
- Prospecting and rock sampling of the entire mineralized zone, involving climbing crews
- Soil sampling and prospecting of all moraines

- Prepare a geological map at a scale of about 1 : 5000.

This work will have to be fully helicopter supported and under the guidance of at least one certified mountain guide.

A cost estimation of such delicate ovrk seems abortive, expenses will have to be made as necessary and will much depend on the result of the proposed preliminary access study.

To whoever will perform work on this property and in this area, it should be made perfectly clear that he be held fully responsible for any environmental damage he may cause, as this is one of the most splendid nature he deals with.

Respectfully submitted,

Vancouver, B.C.
September, 1974

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

Appendix I

(SAC)

C E R T I F I C A T E

I, Hanspeter Schielly, of 1904 - 1616 Pendrell 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 thirteen (13) years.

4. I have personally supervised the geological prospecting on the SAC claims area as described in this report.

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

Vancouver, B.C.
September, 1974

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

Appendix II

(SAC)

PERSONNEL AND DATES

Name and Address	Position	Dates of Work		Days
H. Schielly, 1904- 1616 Pendrell Str., Vancouver 5, B.C.	Chief Geologist	Feb. 1+4+5+6+7, 74	=	3
		Mar. 4+5+6, 74	=	2
		July 10+24+25, 74	=	3
		Aug. 13+14, 74	=	2
		Sept. 5+6+7, 74	=	3
		Total	=	13
C.D.S. de Vries, 312-2.55 W. 5th Ave, Vancouver, B.C.	Geologist	July 19+24+25+26, 74	=	4
		Aug. 12+13+14+20, 74	=	4
		Sept. 9, 74	=	1
		Total	=	9
R.C. Dickin, 86 Empire Street, Waterloo, Ont.	Geologist	July 17+18, 74	=	2
		Aug. 15+16, 74	=	2
		Total	=	4
L. Soet, 4135 Pender, Burnaby, B.C.	Labour	Aug. 15+16, 74	=	2
M. Alford, #2 Kluhini Cresc. Whitehorse, Y.T.	Guide	July 17+18, 74	=	2
M. Williams, 201-404 Lowe Str. Whitehorse, Y.T.	Guide	July 24+25+26, 74	=	3
		Aug. 15+16, 74	=	2
		Total	=	5
M.M. Key, 1004 Dunoon Drive, Richmond, B.C.	Secretary	Sept. 16+17, 74	=	2

Appendix III

(SAC)

COSTS OF PROSPECTING

1. Professional and Technical Services

1.1. Chief Geologist:			
Airphoto survey	3d x 150.00	= $	450.00
Compilation of work program	1d x 150.00	= $	150.00
Field preparation	1d x 150.00	= $	150.00
Geological prospecting	5d x 150.00	= $	750.00
Report writing	3d x 150.00	= $	450.00
1.2. Geologist De Vries:			
Geological prospecting	8d x 120.00	= $	960.00
Report assistance	1d x 120.00	= $	120.00
1.3. Geologist Dickin:			
Geological prospecting	4d x 80.00	= $	320.00
1.4. Labour:			
Prospecting	2d x 50.00	= $	100.00
1.5. Guides:			
Mountaineering	7d x 80.00	= $	560.00
1.6. Secretary:			
Report	2d x 25.00	= $	50.00

2. Related Costs

2.1. Draughting, printing, xerox, etc. report		= $	250.00
2.2. Helicopter support for camp and prospection	6d x 250.00	= $	1,500.00
2.3. Camp support 26 men-days	x 10.00	= $	260.00
TOTAL APPLICABLE COSTS		= $	6,070.00

The above costs are property related prosepcting 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.

Appendix IV

(SAC)

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 1904 - 1616 Pendrell Street, Vancouver 5, British Columbia, DO HEREBY SOLEMNLY DECLARE that the geological prospecting done in the SAC claims area of Swiss Aluminium Mining Co. of Canada Ltd. was conducted during 1974 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 $ 6,000.00 as set out under "cost of survey" in this report.

AND I make this solemn declaration conscientiously 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 22nd day of
October, A.D. 1974.

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