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REPORT ON THE ARC 18, 19, 20, 21
CLAIMS, LIARD MINING DIVISION
BRITISH COLUMBIA

FOR

SANTA MARINA GOLD INC.
1210 - 750 West Pender Street
Vancouver, B.C.

NTS 104B\10 E

BY

J. Paul Sorbara, M.Sc., F.G.A.C.

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April 3, 1990

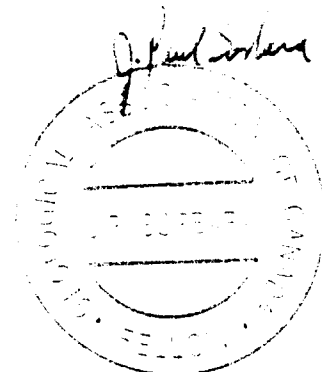


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SUMMARY

The ARC 18, 19, 20 and 21 claims lie 16 kilometres west-southwest of Calpine Resources new Eskay Creek discovery in the Unuk River area of British Columbia.

Very little work has been conducted on the property but regional mapping indicates it is underlain by favourable volcanic rocks of the Betty Creek Formation along with porphyritic intrusions.

During the initial examination of the property, several gossans were observed within the volcanic suite. Two silt samples taken at the time from drainages within the property were found to be anomalous in gold.

The writer concludes that the subject property has the potential to host significant precious metal mineralization and recommends a preliminary program of mapping and sampling to test this potential.

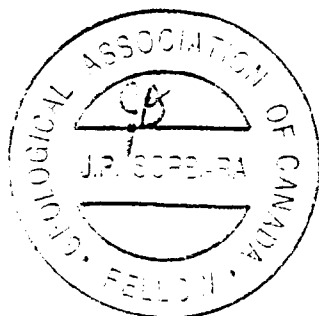
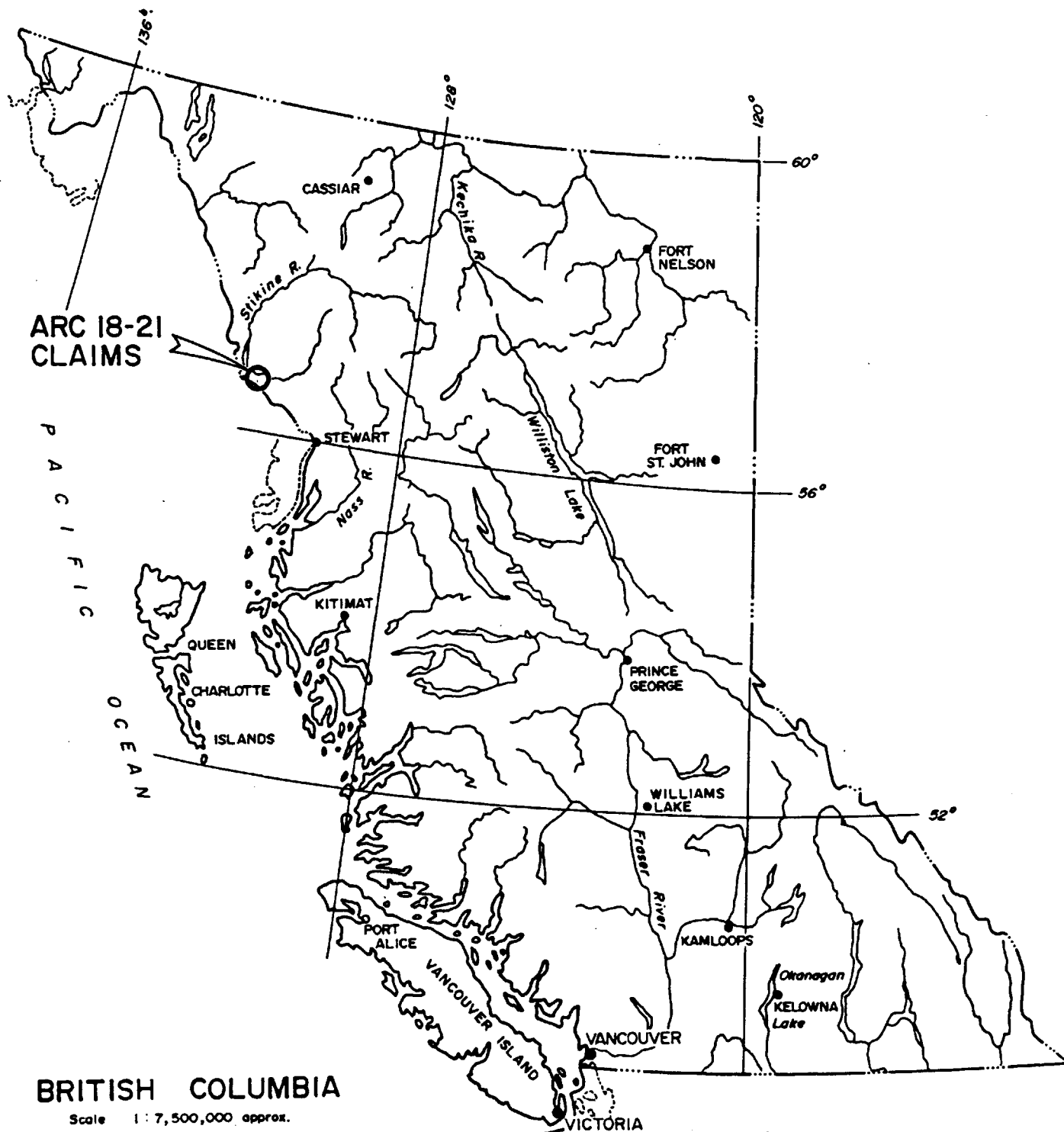
INTRODUCTION

This report is written at the request of the directors of Santa Marina Gold Inc. The main purpose is to evaluate the potential of the subject property for hosting precious metal and base metal mineralization and, if wanted, to recommend an exploration program designed to test that potential.

The report is based upon a thorough review of reports pertaining to the area as well as the writer's personal examinations of several of the important mineral deposits and properties in the area. The writer and geologist V. Kuran inspected and collected samples from subject property during August, 1989.

PROPERTY AND OWNERSHIP

The subject property comprises 4 located mineral claims totalling 72 units situated in the Liard (and partly within the Skeena) Mining Division. Due to some overstaking the total area actually controlled by Santa Marina Gold Inc. is somewhat less than 72 units. Figure 2 shows the exact claim holdings.



SANTA MARINA GOLD INC.		
ARC 18-21 CLAIMS		
Skeena and Liard M.D.'s, B.C.		
General Location Map		
Scale noted above	Date April 1990	N.T.S. 104 B / 10
By SORBARA GEOLOGICAL CONSULTING LTD.		Figure 1

The subject property is currently under option to Santa Marina Gold Inc. from the registered owner, Matt Mason. A list of the pertinent claim data is given below:

<u>Claim Name</u>	<u>Record Number</u>	<u>Current Expiry Date</u>
ARC 18	5620	Jan. 6, 1991
ARC 19	5621	Jan. 6, 1991
ARC 20	5622	Jan. 6, 1991
ARC 21	5623	Jan. 6, 1991

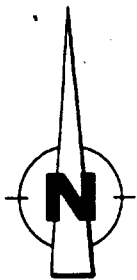
LOCATION, ACCESS AND TOPOGRAPHY

The subject property is located approximately 85 kilometres northwest of Stewart B.C. and is centered on NTS mapsheet 104 B\10 at 56 37' north and 130 42' west. This location lies about 16 kilometres west-southwest of the new Calpine Resources precious and base metal discovery at Eskay Creek.

The most economic access to the subject property is by truck from Smithers for a distance of 275 kilometers to Bell II on Highway 37 at the Bell Irving Creek crossing. At the present time, a 205 Helicopter is stationed at Bell II and the claims can be reached by air.

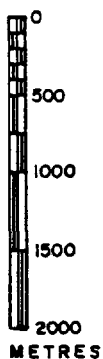
The subject claim group is situated at the headwater of an unnamed creek that flows north into the Iskut River. The property is in mountainous terrain with elevations ranging from 2100 feet along the northern edge to just over 6500 feet in the Southeast corner,

which is partially ice-covered. The lower reaches of the northern portion of the property is tree-covered while the rest is alpine.

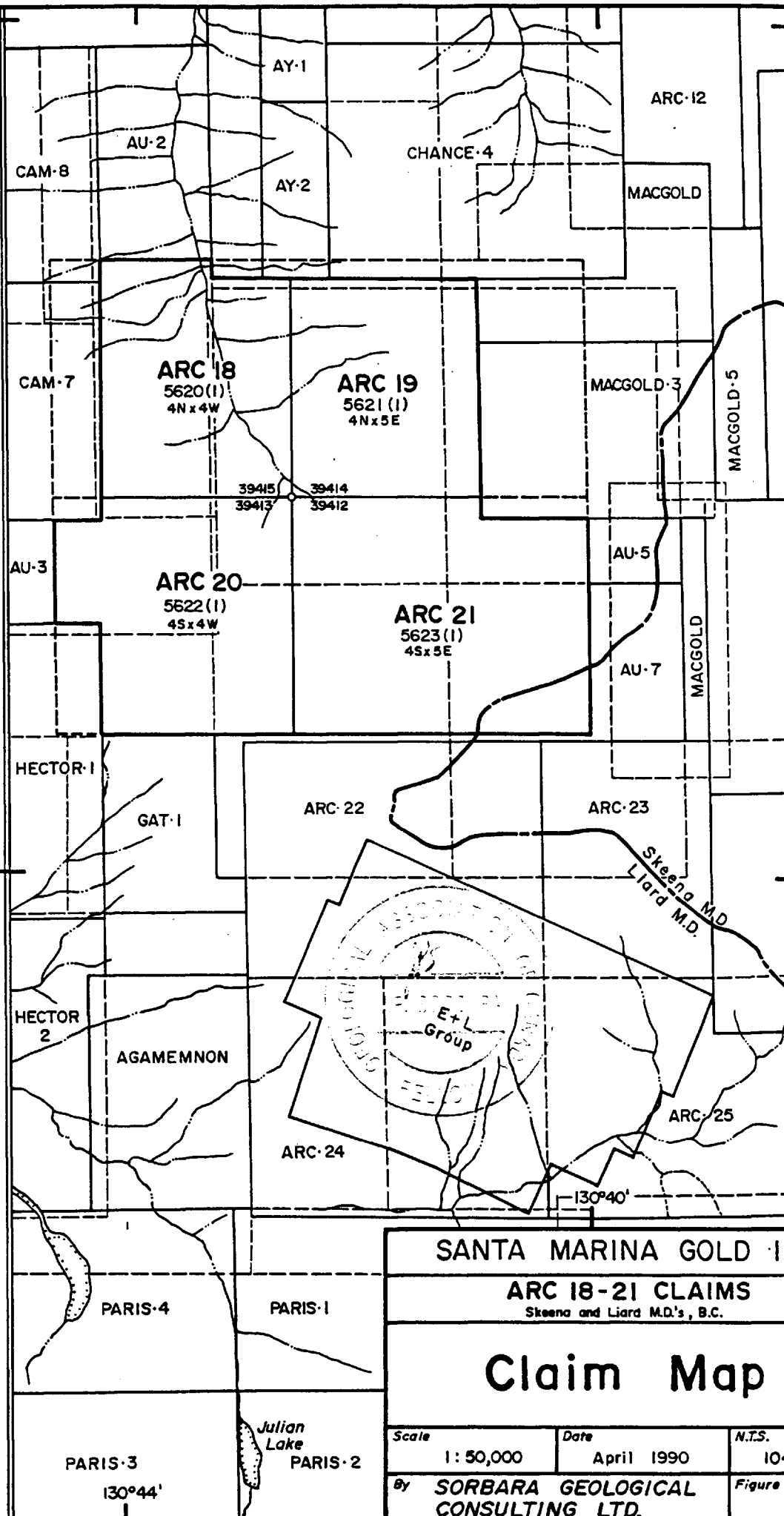


56° 39'

56° 35'



METRES



SANTA MARINA GOLD INC.

ARC 18-21 CLAIMS

Skeena and Liard M.D.'s, B.C.

Claim Map

Scale

1: 50,000

Date

April 1990

N.T.S.

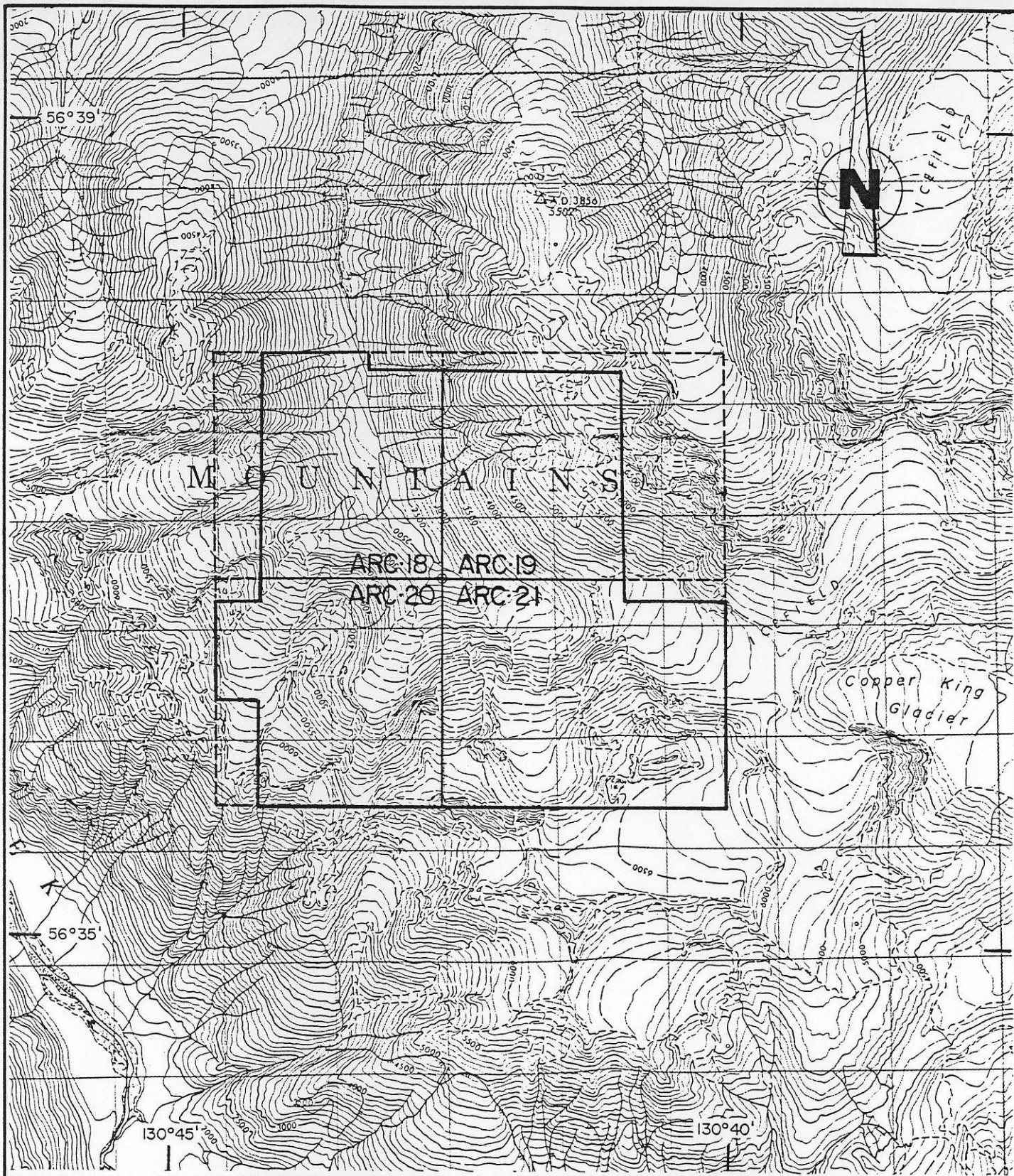
104 B/10

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Figure

2



A detailed map showing the location and topography of the subject property is given in Figure 3.

HISTORY AND PREVIOUS WORK

Exploration for precious metals in the Sulphurets Creek area dates back to the late 1800's when placer gold was discovered in the upper reaches of the Unuk River. By 1898, several prospectors had entered the area and the first mineral claims, the Cumberland and Globe Groups, were staked by H.W. Ketchum and L. Brant. These claims proved to be attractive and by 1901, the Unuk River Mining and Dredging Company had purchased them and established a stamp mill on the Globe group. A road between Burroughs Bay and Sulphurets Creek was also begun by this company but was never completed.

Extensive gossans in the upper reaches of Sulphurets Creek attracted Bruce and Jack Johnson to stake claims in this area in 1935. Hence, the name "Brucejack Lake".

The region was quiet again until 1960 when search for porphyry copper deposits led Newmont Mines to conduct a helicopter borne magnetic survey in the Sulphurets area. Claims were staked on behalf of Granduc Mines Ltd. at the Sulphurets Creek headwaters, and between 1961 and 1967, Granduc and Newmont conducted geological and geophysical work on this ground. More claims were acquired by Granduc and their exploration effort continued until 1970.

In 1965, Silver Standard Mines commenced work on the E & L prospect, a nickel-copper deposit on Nickel Mountain, just south of the subject property, near the headwaters of Snippaker Creek. This prospect was later optioned by Sumito

Metal Mining, and by the end of 1971, 1,500 feet of underground work had been completed in addition to intensive trenching, and surface and underground drilling programs. Current reserves on this presently dormant property are reported to be 3.2 million tons grading 0.8% Ni and 0.6% Cu.

The jump in precious metal prices renewed activity, and in the period of 1975 to 1977, Texasgulf Inc. and Granduc Mines both conducted exploration in the Sulphurets area. In 1979, Granduc optioned their claims to Esso Resources Canada Ltd. who spent more than \$2 million over 5 years in exploration for precious metals.

The Esso-optioned claims reverted back to Granduc and were subsequently optioned under joint venture to Lacana Mining Corporation and Newhawk Gold Mines Ltd.

In 1985, the Lacana/Newhawk joint venture drilled 13,066 feet in the Brucejack Lake area. This effort along with the 26,068 feet previously drilled has outlined mineral reserves of 1,011,543 tonnes grading 0.826 ounces gold equivalent per tonne (silver:gold ratio = 50:1).

In addition to these mineral reserves, the 1985 Lacana/Newhawk project located the new Snowfields Zone. Company reports state that limited drilling on this bulk tonnage target has indicated over 7,000,000 tonnes grading 0.083 oz Au/tonne (Sorbara, 1987).

During 1986, 1,500 feet of underground development drifting and crosscutting was completed on the West Zone in order to obtain a bulk sample. The results showed an average grade of 0.225 oz Au/ton over 52.5 feet without including several high-grade pockets. These results were very encouraging and a winter road to Brucejack Lake was started early in 1987. A permanent camp has been

established and more drilling and underground work is conducted. The Lacana/Newhawk Brucejack property lies approximately 35 kilometers east-southwest of the ARC 18, 19, 20 and 21 claims. Current reserves at Brucejack Lake are 715,400 tons grading 0.431 oz Au/ton and 19.7 oz Ag/ton.

Catear Mines established recently a pilot test mill on their Gold Wedge property, located 2 kilometers east of the Brucejack Zone. Published reserves are 373,224 tons grading 0.753 oz Au/t and 1.07 oz Ag/t and the geological potential is 1,000,000 tons grading 0.5 oz Au/t.

C.R. Harris (1985) summarizes the exploration's history of the Unuk River area, and more particularly of the Calpine Resources Inc.-Consolidated Stikine Silver Ltd.'s Eskay Creek property as follows:

" The property has a long history of exploration by various companies since discovery in 1932 by a party headed by Tom MacKay. The exploration has been principally directed to the location of high grade precious metal mineralization. Following is a brief summary of the work to date.

1934 Unuk Valley Gold Syndicate did some surface work on the #21 and #22 zones.

1935-38 Premier Mines drilled 10 diamond drill holes totaling 1,727' on the #21, #5 and #22 zones and added to the trenching.

1953 American Standard Mines did some surface work.

1963 Western Resources drove the Emma Crosscut and Drift for 360'.

1964 Canex Aerial Exploration drilled six underground diamond drill holes from the Emma Adit totaling 735'.

1965-72 Stikine Silver extended the Emma Drift 265' and added to trenching on the #22 zone.

1973 Kalco Valley Mines drilled seven diamond drill holes, totaling 983' on the north end of the #22 zone.

1975 Texasgulf performed geological, E.M. and magnetometer surveys.

1976 Texasgulf drilled seven diamond drill holes totaling 1,225 feet on the #5 and Emma Creek zones.

1979 May Ralph Industries high-graded trenches of the #22 zone and shipped 9.65 tons of picked ore to the Trail smelter.

1980-83 Ryan Exploration (U.S. Borax) performed soil and rock geochemical surveys and drilled three holes totaling 496m on the #22 zone.

Only two ore shipments have been recorded although several small test shipments are thought to have been made during the 1930's.

1971 Stikine Silver shipped 1.68 tons of picked ore, yielding: 0.3 oz gold, 239 oz silver, 64 lb lead, 94 lb zinc; assaying: 0.2 oz/t gold, 142.3 oz/t silver.

1979 May Ralph Industries shipped 9.65 tons of picked ore yielding: 40.62 oz gold, 819.54 oz silver, 907 lb lead, 2220 lb zinc; assaying: 4.208 oz/t gold, 84.90 oz/t silver."

In 1985, Kerrisdale Resources Ltd. carried out diamond drilling on the #21 and #22 zones, and in 1987 Consolidated Stikine Silver Ltd. conducted a soil sampling and trenching program on the Eskay Creek property.

During 1988 and 1989, the Eskay Creek property was extensively drilled by Calpine Resources Inc.-Consolidated Stikine Silver Ltd. and extremely promising results were reported from the #21 zone since hole 88-6 hit 96.5 feet grading 0.73 oz gold and 1.1 oz silver (Northern Miner, Nov. 7/88). In August 1989, Calpine released a 46 foot interval (hole 89-87) grading 1.67 oz gold (Northern Miner, Aug 14/89) and on August 28, 1989, results from hole 89-109 were

reported in the Northern Miner as follows: "682 foot interval grading an average of 0.875 oz gold, 0.97 oz silver, 1.12% lead and 2.26% zinc. Within this interval is a 200.1 foot section averaging 2.877 oz gold, 0.85 oz silver, 1.86% lead and 3.44% zinc". Also reported in the Northern Miner (Sept. 4/89) is massive sulphide intersection located at the north end of the #21 Zone consisting of a 30 foot section and a 26 foot section of pyrite-galena-sphalerite-chalcopryrite massive sulphide mineralization. To date, the Calpine Resources Inc. - Consolidated Stikine Silver Ltd. Eskay Creek property has probable and possible geological reserves in the 21B zone 1.5 million tons grading 1.43 oz. gold and 40.26 oz. silver per ton, plus 2.1% lead and 5.08% zinc (Northern Miner, April 9, 1990). The ARC 18-21 claims lie 16 kilometres west-southwest of the Eskay Creek deposit.

REGIONAL GEOLOGY AND MINERALIZATION

The subject properties lie within the western most part of the Intermontane Tectonic Belt, close to its boundary with the Coastal Crystalline Tectonic Belt. As a result of the proximity of this area to a regional tectonic boundary, geologic relationships tend to be quite complex. The geology of this area (Figure 3) has been studied by Kerr (1930, 1948), and by Grove (1986), and is represented in Geological Survey of Canada Maps 9-1957, 1418A and 1505A.

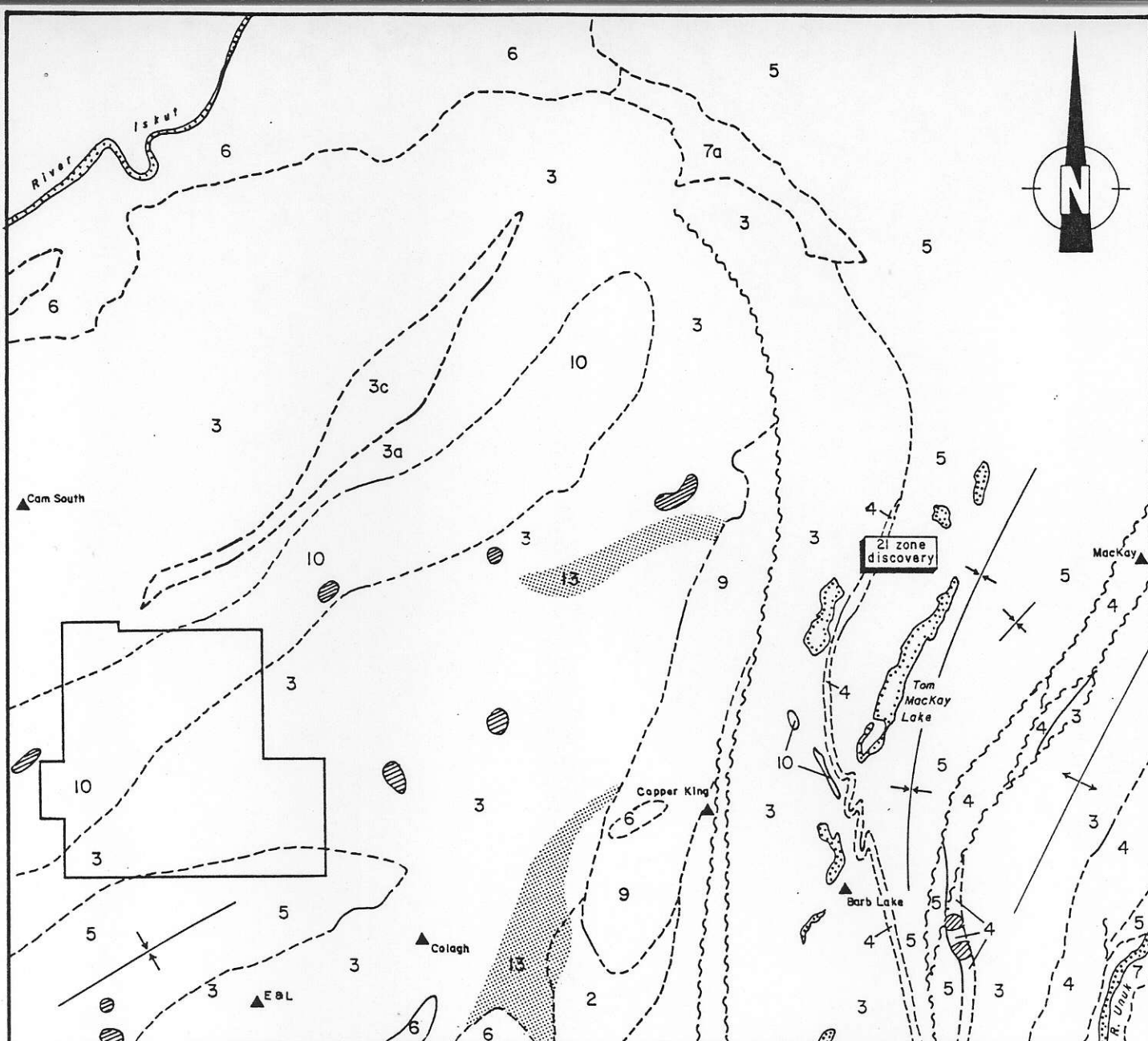
In the Sulphurets area, Shroeter (1983) examined the geology and mineralization in the Brucejack Lake area where hornblende syenites, alkali feldspar syenites and country rocks are cut by numerous north to northwesterly faults and are intensely altered with sericite, K-feldspar, silica, carbonate and chlorite. Five separate sulfide zones occur along a 7 kilometer belt with mineralization occurring in several styles, including low grade disseminations,

epithermal stockworks and veins. Found within these zones are pyrite, chalcopyrite, molybdenite, ruby silver, stephanite, ceragyrite, electrum, native gold, tetrahedrite, freibergite, argentite, galena, sphalerite and bornite.

Within this area, two principal zones were identified. The Peninsula Zone (or Shore Zone) had been traced for 265 meters on surface and to a depth of 140 meters by intersections in 22 drill holes and was still open, when Shroeter visited the property in 1983. By the end of 1985, mineral reserves from this zone were reported to be 490,000 tonnes grading 0.890 oz Au-e/tonne (Au-e = gold equivalent with an Ag:Au ratio of 50:1).

The West Zone, located about 700 meters southwest of the Peninsula Zone, had been tested by 21 drill holes at the time of Shroeter's visit. It measured 310 meters on surface, extended to a depth of 60 meters and was also still open. Shroeter reported ruby silver, freibergite, electrum, native gold, stephanite, galena, pyrite and sphalerite occurring in a stockwork of quartz veinlets in sericitic andesitic tuff. Mineral reserves to the end of 1985 for the West Zone are 496,452 tonnes grading 0.694 oz Au-e/tonne.

During 1986, Newhawk put in 1,500 feet of development drifting and crosscutting to obtain a bulk sample from the West Zone. During November, 1986, one of the writer, J.P. Sorbara, had the opportunity to examine the underground workings and sample the mineralization. Two crosscuts have shown that the width and grade of the body is generally uniform with intermittent spectacular high grade sections. The first crosscut assayed 0.234 oz gold/ton and 6.2 oz silver/ton over a true width of 50 feet and 0.216 oz gold/ton with 14.25 oz silver/ton over a true width of 17 feet (Stockwatch, November 13, 1986). The second crosscut averaged 0.225 oz gold/ton and 16.60 oz silver/ton over a

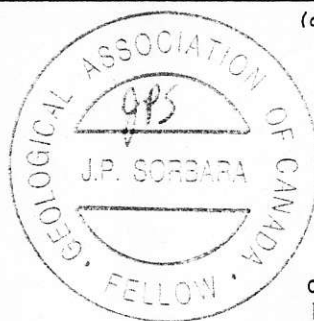


(after G.S.C. open file map 1989-10)

LEGEND

- | | |
|----|---|
| 13 | Post-tectonic dykes |
| 10 | Syn to post-volcanic intrusions |
| 9 | Unuk river diorite suite |
| 7 | Unconsolidated sediments |
| 6 | Basalt flows and tephra |
| 5 | Siltstone sequence (Salmon River Formation) |
| 4 | Felsic volcanic sequence (Mt. Dilworth Formation) |
| 3 | Pyroclastic-epiclastic sequence (Betty Creek Fm.) |
| 2 | Andesite sequence (Unuk River Formation) |

- Gossanous alteration zone
- Geological boundary (approx, assumed)
- Regional anticline, syncline
- Area with over 40% Tertiary dykes
- Mineral occurrence



- Open water
- Claim outline

0 5 10 kilometres

SANTA MARINA GOLD INC.

ARC 18-21 CLAIMS

Skeena and Liard M.D.'s, B.C.

Regional Geology

Scale	Date	N.T.S.
1 : 200 000	April 1990	104 B/10
By	SORBARA GEOLOGICAL CONSULTING LTD.	
	Figure	4

true width of 52.5 feet (Stockwatch, December 2, 1986). Grab samples reported from within this zone returned up to 5.786 oz gold/ton with 890.45 oz silver/ton, but these results were not included in the grade calculations of 0.225 oz gold/ton over 52.5 feet.

Drilling has implied this body is 1,000 feet long and extends at least 1,000 feet down dip. High grade pockets and veins within the mineralized zone are reported to run up to 3 or 4 ounces of gold and hundreds of ounces of silver. A grab sample collected by J.P. Sorbara (1986) from the lowest crosscut returned values of 2.348 oz gold/ton and 1061.67 oz silver/ton.

The Gossan Hill Zone had apparently not been found until after Shroeter's 1983 visit, but lies only 400 meters west of the Peninsula Zone. To the end of 1985, mineral reserves from this high grade area totalled 25,091 tonnes grading 2.209 oz Au-e/tonne over a true width of 10.5 feet.

Together, the 3 zones described above comprise the reported 1,011,543 tonnes of mineral reserves in the Brucejack Lake area, which have a weighted average of 0.826 oz Au-e/tonne. Two more zones, the Spine and Galena, lie just south of the Gossan and West Zones. Here galena, sphalerite, pyrite, chalcopyrite and native gold are reported in altered andesite.

Northwest of Brucejack Lake some 3.5 miles lies the Snowfield Gold Zone, which had not been discovered until 1985. Based on 625 feet of surface trenching and 5 drill holes, preliminary estimates by Newhawk Gold Mines Ltd. are that this bulk tonnage zone could host 7,000,000 tonnes grading 0.083 oz Au/tonne (Sorbara, 1987).

In the Unuk River Area, a geological cross section of the Calpine/Consolidated Stikine's Eskay Creek property was given to the writers by Mr. Jerry McArthur, geologist in charge of the project (personal communication, Sept. 1989). The hanging wall consists of interbedded breccias, pillow lavas and andesites up to 100 meters thick. The contact zone, a black argillite containing felsic fragments up to 2 inches across, is 10 to 15 meters thick with mineralization occurring at the base of the unit. In the north section of the contact #21 Zone, mineralization consists of electrum, aktashite (Cu-Pb-Zn-Ag-Hg sulphosalt) and honey coloured blebs of sphalerite rimmed with chlorite alteration. Free gold was observed in the core. Disseminations and needles of arsenopyrite predominate in the south section of the #21 contact zone with sections of massive stibnite, veinlets of stibnite and blebby realgar. Gold assays from this contact zone vary from .25 oz Au/t to several oz Au/t. Mineralized textures throughout the core vary from structurally controlled to layered syngenetic at as of to date no firm control has been agreed upon.

The footwall belongs to the Dillworth Formation and consists of a 100 to 150 meters thick rhyolite breccia lapilli tuff. Along strike to the north the lapilli fragments are finer. Alteration observed is silicification, strong K-spar and white mica. Gold assays from this section vary up to .25 oz Au/t. A 10 to 20 meters thick argillite layer separates the lapilli tuffs from a felsic lithic tuff which varies from 60 to 100 meters thick. This latter unit, which may be the equivalent of the Betty Creek Formation, forms large gossans of pyritic material assaying from .15 to .25 oz Au/t. The bottom of the footwall is formed by thickly bedded siltstone containing pelecypods (dating in progress) and locally developed conglomerates. Drill intersections from 1990 infill drilling in the 21B deposit include hole 90-239 which intersected 29.5 feet grading

2.047 oz. gold and 72.37 ozf. silver per ton and hole 90-291 which intersected 68.8 feet grading 1.315 oz. gold and 81.81 oz. silver per ton.

The South Zone has been outlined for 300 meters along strike and 200 meters down dip and reserves have been calculated at 6.49 million short tons at 0.535 oz Au/t and 14.13 oz Ag/t (Stockwatch April 11, 1990). This South Zone is to be mined by open pit methods.

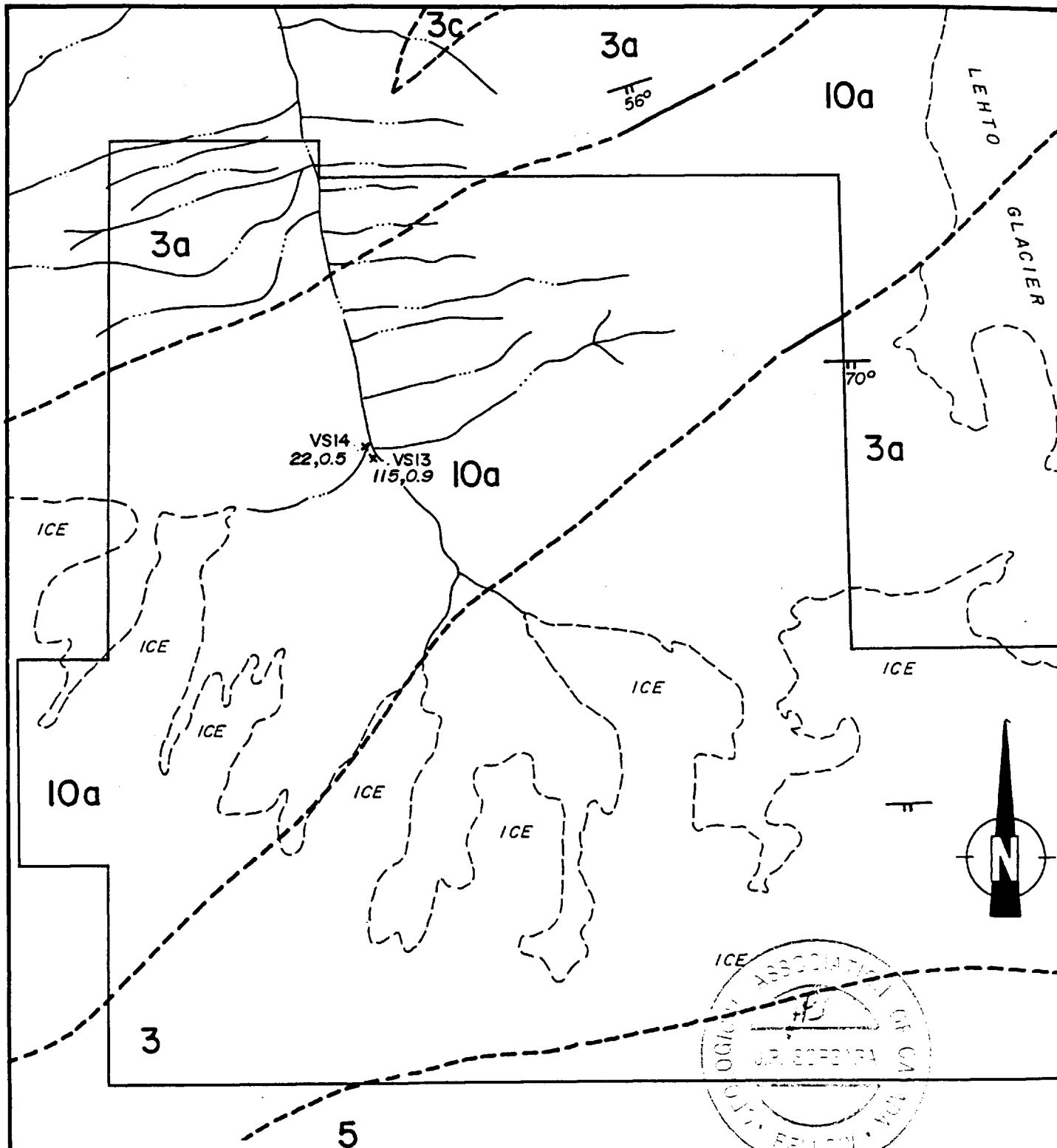
The latest reserve calculation for the 21 Zone of the Eskay Creek deposit (Stockwatch April 11, 1990) by Orcan Mineral Associates is 3.285 million tons (indicated and inferred) grading 1.079 oz Au/ton and 26.85 oz Ag/ton using a 0.250 cut-off grade. The total contained ounces of metal using this cut-off would be 3,544,280 oz Au and 88,226,351 oz Ag.

The Eskay Creek deposit is regarded by many explorationists to be the most significant new discovery in Canada since the Hemlo discovery.

PROPERTY GEOLOGY

The geology of the subject property has been compiled from regional mapping by Alldrick and Britton (1989). Their work implies that the property is predominantly underlain by green and grey, massive to poorly bedded andesitic rocks of Lower Jurassic age belonging to the Betty Creek Formation (Figure 5).

In the southeastern portion of the property these rocks form the northern limit of a northeast trending syncline which cuts Nickel Mountain.



LEGEND

- 10a** Lehto porphyry: K-feldspar-plagioclase-hornblende porphyry granodiorite to syenite
- 5** Dark grey, well-bedded siltstone with minor sandstone and conglomerate
- 3** Heterogeneous grey, green, locally purple or maroon, massive to bedded pyroclastic and sedimentary rocks; pillow lava
 - (3a) Green & grey, massive to poorly bedded andesite
 - (3c) Andesitic lapilli tuff with pink siliceous clasts
- Contact (approx., assumed)
- || Bedding
- x VS14 22,0.5 Silt sample location: I.D. Au(ppb), Ag(ppm)

SANTA MARINA GOLD INC.

ARC 18-21 CLAIMS

Skeena and Liard M.D.'s, B.C.

Property Geology and
Rock Geochemistry

Scale

1:25 000

Date

April 1990

N.T.S.

104 B/10

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Figure

5

While inspecting the subject property by helicopter, the writer observed several gossanous areas occurring withing these volcanics in the southeast quadrant of the claim group.

The central to northern area of the property is reported to be underlain by porphyritic intrusive rocks, namely the Lehto porphyry. This unit comprises K-feldspar-plagioclase-hornblende granodiorite to syenite. Two silt samples were collected by the writer from this portion of the property during the 1989 field season. Sample VS-13 was taken from the main creek adjacent to VS-14 which was obtained from a pup stream draining the western flank of the property. (Figure 5). These samples returned 115 ppb and 22 ppb gold respectively which were considered anomalous. Eleven other creeks sampled outside the property area during the same period returned only from 1 to 4 ppb gold.

The extreme northwestern portion of the property is again underlain by andesitic rocks of the Betty Creek Formation.

Apart from regional mapping, minor geochemical sampling, and some personal observations by the writer, little is known about the subject claims. The limited data, however, does imply that the claims have geology favourable for precious metal mineralization.

CONCLUSIONS AND RECOMMENDATIONS

The subject mineral claims lie 16 kilometres west-southwest of the important new Eskay Creek deposit in northwestern British Columbia. The property is believed to be underlain by andesitic volcanic rocks of the Betty Creek Formation as well as porphyritic intrusive rocks. Little

hard data is available on these claims, however the writer has demonstrated that some streams draining the property have anomalous precious metal contents and that unsampled gossanous areas exist within the claim boundaries.

The writer concludes that the Arc 18, 19, 20, and 21 claims have the potential to host significant precious metal +mineralization and that an exploration program designed to test that potential is warranted.

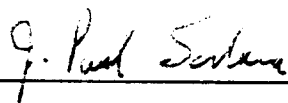
The writer recommends a two-phase exploration program with Phase II being contingent upon favourable results from Phase I. The preliminary phase should include preparation of a proper orthophoto base map for control with extensive geological mapping and geochemical sampling, including rocks, panned concentrates, silts and soils. gossanous areas should be sampled in detail and possibly blast-trenched.

Phase II would consist of preliminary diamond drilling of targate defined by Phase I.

An estimate of the cost of the programs is given in Appendix I.

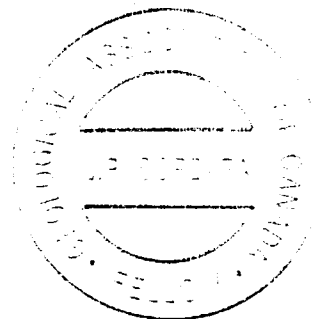
Respectfully submitted,

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J. PAUL SORBARA, M.Sc., F.G.A.C.

April 3, 1990



REFERENCES

- ALLDRICK, D.J., 1984. Geologic Setting of the Precious Metal Deposits in the Stewart Area BCDM. Geol. Fieldwork 1983 paper 1984-1, pp. 149-163.
- ALLDRICK, D.J., et al, 1989. Geology and Mineral Deposits of the Unuk Area. GSC open file map 1989-10.
- BRIDGE, D.A., 1983. Epithermal Silver-Gold Veins, Mitchell-Sulphurets Property, B.C. (CIM 8th District Meeting).
- ECCLES, L., 1981. Geological and Geochemical Report on the SOB Claims, Dupont of Canada Explorations Limited. Assessment Report No. 9234.
- ECCLES, L., 1981. Geological and Geochemical Report on the Elgar Claims, Dupont of Canada Explorations Limited. Assessment Report No. 9233.
- GRAF, C., 1984. Geological Branch Assessment Report 13369.
- GROVE, E.W., 1982. Geology of the Unuk River-Salmon River-Anyox Map Area, BCDM miscellaneous map series (to accompany Bulletin 63 in prep.).
- GROVE, E.W., 1968. Ted Ray Claims, BCDM Annual Report. pp. 45-6.
- HARRIS, C.R. 1985. Report on the Kay and Tok Claims, Unuk River, B.C., Skeena Mining Division. Unpublished report for Kerrisdale Resources Ltd.
- KERR, F.A., 1948. Geology of the Lower Stikine and Western Iskut Rivers Area GSC Memoir 248.
- KIRKHAM, R.V., 1963. The Geology and Mineral Deposits in the vicinity of the Mitchell and Sulphurets Glaciers, Northwest British Columbia. Unpub. M.Sc., Thesis, the University of British Columbia.
- KURAN, V., 1985. Assessment Report on the Unuk River Property, Kay, Tok and GNC Claims, Skeena Mining Division.
- MCLEOD, D.A., 1985. Newhawk Gold Mines Ltd. Press Release (December 10, 1985).

SCHROETER, T.G., 1983. Bruce Jack Lake (Sulphurets Prospect), BCDM Fieldwork, P 1983-1. pp. 171-74.

WALLASTER, 1984. Geochemical Report on a Silt and Soil Sampling Survey Over Portions of the Kerr 1-5, Kerr 7-10, Kerr 12-35, Kerr 38-44 and Kerr 49-51 Claims, B.C. Assessment Report No. 12741.

APPENDIX I
ESTIMATED COST OF PROPOSED PROGRAMS

ESTIMATED COST OF PROPOSED PROGRAM

Phase I

SALARIES

Project Geologist	14 days @ \$375.00/day	\$ 5250.00
Assistant Geologist	14 days @ \$275.00/day	\$ 3850.00
2 Technicians	14 days @ \$200.00/day	\$ 5600.00
Supervision	3 days @ \$400.00/day	\$ 1200.00
		<hr/> \$15,900.00

Mobilization/Demobilization		\$15,000.00
Helicopter Support	30 hours @ \$600.00/day	\$18,000.00
Domicile	59 man days @ \$110.00/day	\$ 6490.00
Field Supplies		\$ 2000.00
Geochemistry	650 samples @ \$15.50	\$10,075.00
Project Preparation (orthophoto base map)		\$ 5000.00
Report Compilation		\$ 5000.00
Drafting		\$ 1000.00
Expediting		\$ 1200.00
Project Management		\$ 7000.00
Contingency @ 15%		\$10,000.00

Estimate of Total costs Can\$:	<hr/>	\$79,987.00
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Say Total Cost:		Can\$80,000.00
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Phase II

The exact cost of Phase II would depend on the number of targets discovered in Phase I that require diamond drilling and is therefore hard to estimate at this time. However a cost on the order of \$200,000.00 would be expected for a modest program of this type in mountainous terrain.

APPENDIX II
STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, J. PAUL SORBARA, of 6703 Nicholson Road, in the Municipality of Delta, in the Province of British Columbia, hereby certify:

1. THAT I am a geologist residing at 6703 Nicholson Road, in the Municipality of Delta, in the Province of British Columbia.
2. THAT I graduated with a B.Sc. in geology from the University of Toronto, in the City of Toronto, in the Province of Ontario, in 1976, and with an M.Sc. in geology from the University of Toronto in 1979.
3. THAT I have practiced geology professionally from 1979 to 1988, including 5 years as an Exploration Geologist with Cominco Ltd.
4. THAT I am a registered Fellow of the Geological Association of Canada.
5. THAT this report is based upon a thorough review of published and printed reports and maps on the subject property and the surrounding area, and a personal examination of the subject property.
6. THAT I have not received, nor do I expect to receive any direct or indirect interest in the mineral claims which are the subject of this report.
7. THAT I do not have, nor do I expect to receive any direct or indirect interest or securities in Santa Marina Gold Inc.
8. THAT I consent to the use of this report in a Prospectus or Statement of Material Facts for the purpose of a private or public financing.

SIGNED: _____

J. PAUL SORBARA, M.Sc., F.G.A.C.

April 3, 1990

SORBARA GEOLOGICAL CONSULTING LTD.

