REPORT
On
1989 ASSESSMENT WORK

EMMA PROPERTY
(Emma, Emma 1 to 22, Su 1 to 3 Claims)

Victoria and Nanaimo Mining Divisions, B.C.
NTS 92F/2 49°10'N Lat., 124°35'W Long.

for

Au Resources Ltd.

G.M. Lorenzetti, BSc.
May 30, 1989

SUMMARY

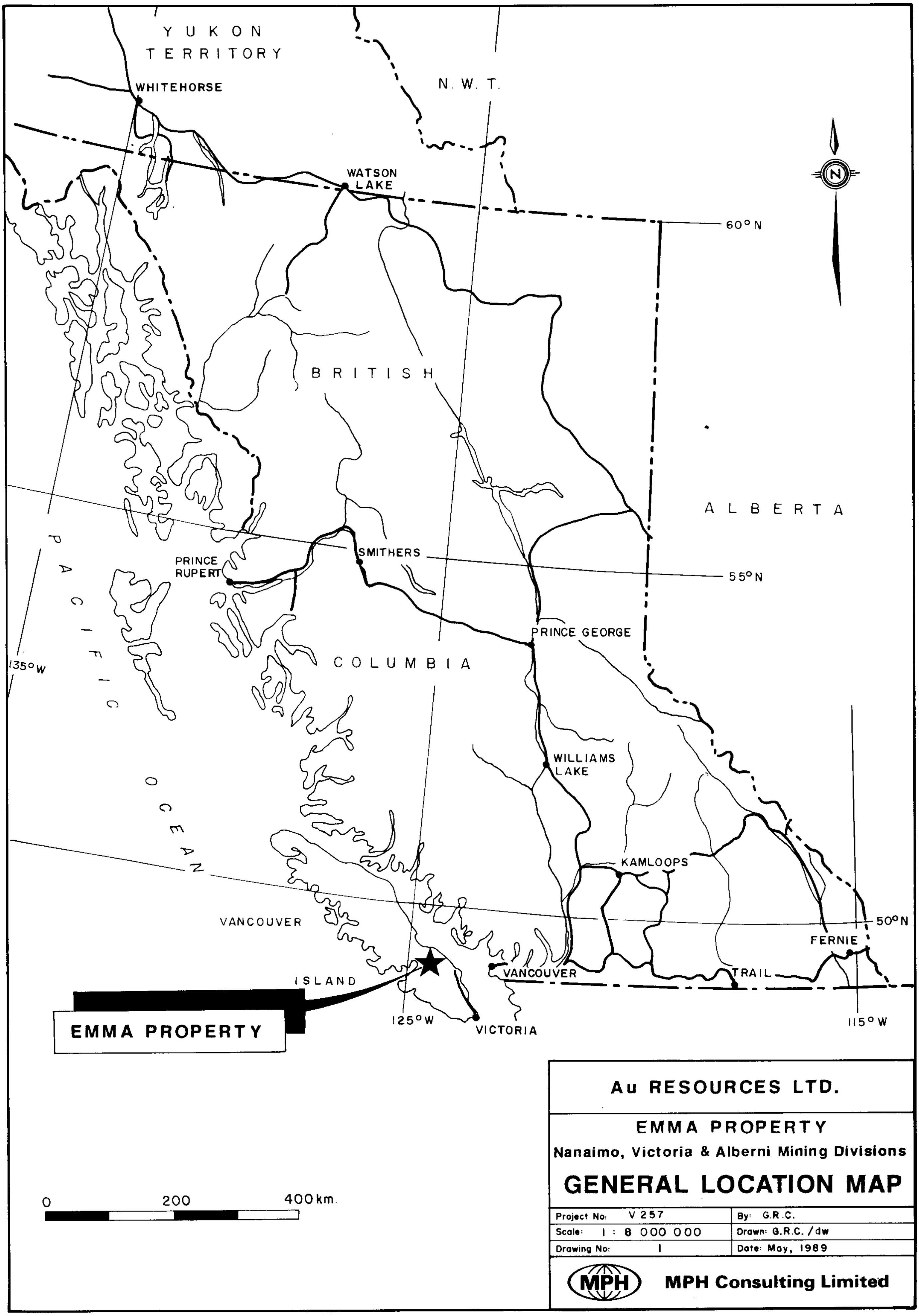
A program consisting of heavy mineral concentrate (HMC) stream sediment sampling (13 samples) and rock sampling (17 samples) was conducted for the purpose of filing assessment work on the Emma 20 and 21 claims. The work was carried out by MPH Consulting Limited from April 26 to 29 and May 4 to 6, 1989.

Ten of the HMC silt samples collected yielded elevated to anomalous gold values, ranging from 50 to 5775 ppb Au. Three of the results came from silts collected at various elevations along a northeast-trending creek on the Emma 20 claim. The rocks underlying this area are Myra Formation and transitional Myra/Nitinat Formation rocks. Rock samples IR-2 and IR-7 were collected along the creek, yielding elevated values for gold (30 and 800 ppb Au), silver 0.7 and 9.9 ppm Ag) and zinc (956 and 619 ppm Zn), respectively.

Two HMC samples collected from creeks draining the High Grade Zone yielded anomalous gold (210 and 600 ppb) values. Sample 89Au-3B also returned elevated values for copper (787 ppm), lead (212 ppm), cobalt (185 ppm) and arsenic (408 ppm).

In addition to the recommendations made by Cope (1988), the following work is proposed for continued exploration on the Emma property:

1) Follow-up prospecting in areas which returned anomalous values in HMC silt samples;
2) Extend the previously established High Grade zone grid to the east in order to cover the area which yielded anomalous HMC stream sediment and grab sample results.


YUKON TERRITORY
WHITEHORSE
N. W. T.
WATSON LAKE
60° N
BRITISH
COLUMBIA
ALBERTA
PACIFIC
OCEAN
SMITHERS
PRINCE RUPERT
55° N
PRINCE GEORGE
135° W
WILLIAMS LAKE
KAMLOOPS
VANCOUVER
ISLAND
50° N
FERNIE
TRAIL
VANCOUVER
125° W
VICTORIA
115° W
EMMA PROPERTY
0
200
400 km.
Au RESOURCES LTD.
EMMA PROPERTY
Nanaimo, Victoria & Alberni Mining Divisions
GENERAL LOCATION MAP
Project No: V 257
By: G.R.C.
Scale: 1 : 8 000 000
Drawn: G.R.C. / dw
Drawing No: 1
Date: May, 1989
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MPH Consulting Limited

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1.0 INTRODUCTION

Mineral exploration was carried out on the Emma 20 and 21 claims from April 26 to 29, 1989 and May 4 to 6, 1989, at the request of Au Resources Ltd.

Work on the property was carried out by MPH Consulting Limited personnel (T. Hayes) and consisted of rock sampling and heavy mineral concentrate (HMC) stream sediment sampling.

2.0 LOCATION, ACCESS, TITLE

The property is located on Vancouver Island, approximately 18 km southeast of Port Alberni, B.C. and lies within the Nanaimo and Victoria Mining Divisions. The property consists of the Emma claims (Emma and Emma 1 to 22) and the adjoining Su claims (Su 1 to 3) which lie astride McLaughlin Ridge and total 107 claim units. The Emma claims were grouped on September 25, 1987 (Notice to Group 1551) as the Emma Group and the Su claims were grouped on December 31, 1987 (Notice to Group 1563) as the Su Group.

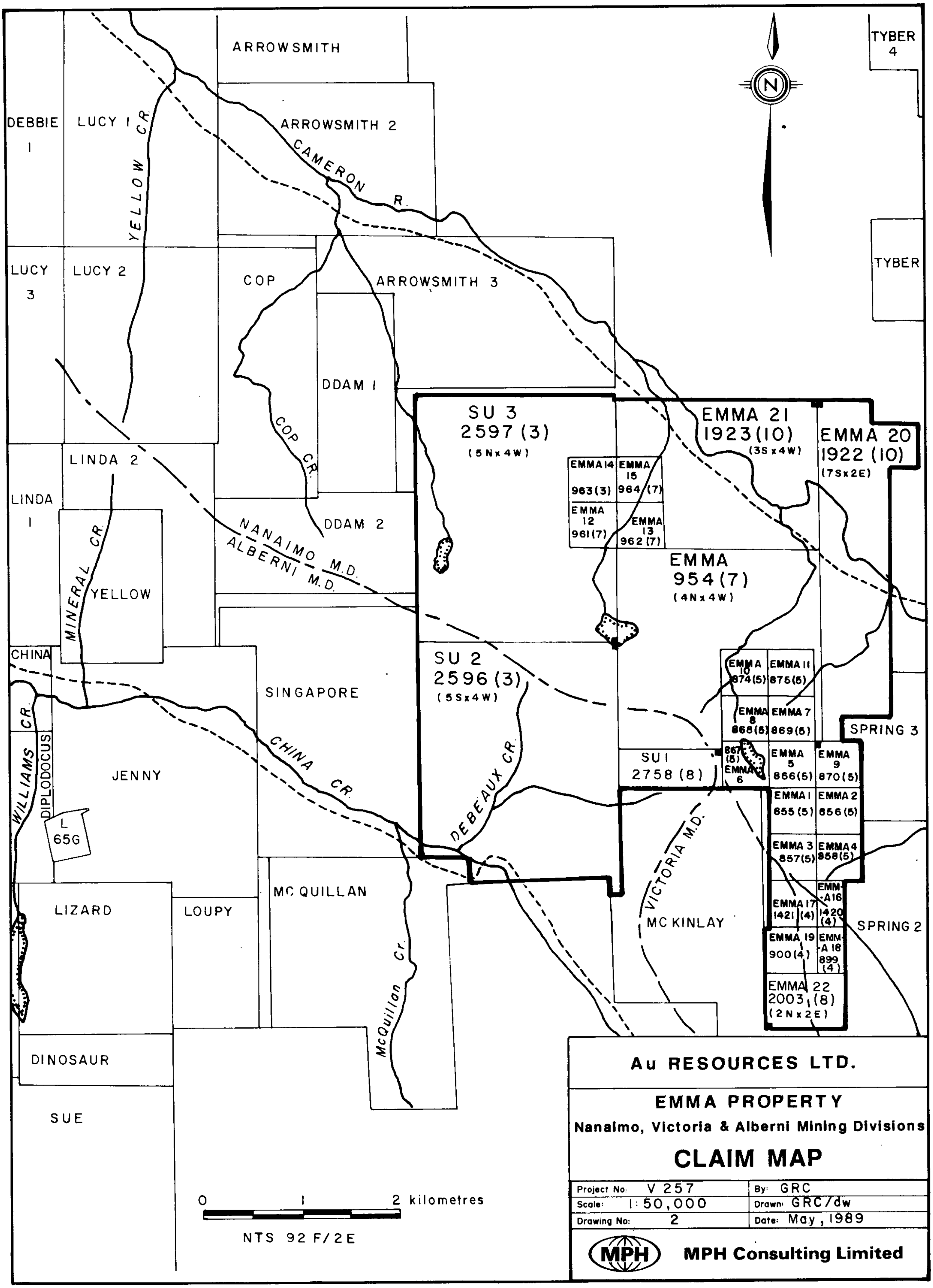
Access to the property is provided by MacMillan Bloedel's Cameron Main logging road. Within the property, exploration is greatly aided by the many secondary haulage roads and skidder trails constructed during logging.

Claim ownership is summarized in the following table:

Table I
Claim Ownership

Claim	Record No.	Units	Owner	Expiry Date
Emma 1	855 (5)	1	R. Elander	May 6, 1990
Emma 2	856 (5)	1	K. Farrell	May 6, 1990
Emma 3	857 (5)	1	A. Farrell	May 6, 1990
Emma 4	858 (5)	1	A. Farrell	May 6, 1990
Emma 5	866 (5)	1	K. Farrell	May 19, 1990
Emma 6	867 (5)	1	A. Farrell	May 19, 1990
Emma 7	869 (5)	1	R. Elander	May 19, 1990
Emma 8	868 (5)	1	A. Farrell	May 19, 1990
Emma 9	870 (5)	1	R. Elander	May 19, 1990
Emma 10	874 (5)	1	R. Elander	May 26, 1990
Emma 11	875 (5)	1	K. Farrell	May 26, 1990
Emma 12	961 (7)	1	R. Elander	July 14, 1990
Emma 13	962 (7)	1	A. Farrell	July 14, 1990
Emma 14	963 (7)	1	R. Elander	July 14, 1990
Emma 15	964 (7)	1	A. Farrell	July 14, 1990
Emma 16	1420 (4)	1	R. Elander	Apr. 25, 1990
Emma 17	1421 (4)	1	R. Elander	Apr. 25, 1990
Emma 18	899 (4)	1	R. Elander	Apr. 25, 1990
Emma 19	900 (4)	1	R. Elander	Apr. 25, 1990
Emma 20	1922 (10)	14	Au Resources Ltd.	Oct. 1, 1990
Emma 21	1923 (10)	12	Au Resources Ltd.	Oct. 1, 1990
Emma 22	2003 (8)	4	Au Resources Ltd.	Aug. 31, 1990
Emma	954 (7)	16	K. Farrell	July 2, 1990
Su 1	2758 (8)	2	Au Resources Ltd.	Aug. 14, 1991
Su 2	2596 (3)	20	Farrell, Farrell, Elander	Mar. 26, 1991
Su 3	2597 (3)	20	Farrell, Farrell, Elander	Mar. 26, 1991

Note: includes work filed this year


ARROWSMITH
ARROWSMITH 2
ARROWSMITH 3
TYBER 4
TYBER
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DEBBIE 1
LUCY 1
LUCY 2
LUCY 3
YELLOW CR.
CAMERON R.
COP
DDAM 1
DDAM 2
COP CR.
LINDA 2
LINDA 1
MINERAL CR.
YELLOW
NANAIMO M.D.
ALBERNI M.D.
SU 3
2597 (3)
(5N x 4W)
EMMA 21
1923 (10)
(3S x 4W)
EMMA 20
1922 (10)
(7S x 2E)
EMMA 14
963 (3)
EMMA 15
964 (7)
EMMA 12
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954 (7)
(4N x 4W)
SU 2
2596 (3)
(5S x 4W)
EMMA 10
874 (5)
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EMMA 7
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SPRING 3
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EMMA 6
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2758 (8)
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EMMA 17
1421 (4)
EMMA 16
1420 (4)
SPRING 2
EMMA 19
900 (4)
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899 (4)
EMMA 22
2003 (8)
(2N x 2E)
CHINA
WILLIAMS CR.
DIPLODOCUS
JENNY
SINGAPORE
CHINA CR.
DEBEAUX CR.
L 65G
VICTORIA M.D.
MC KINLAY
LIZARD
LOUPY
MC QUILLAN
McQuillan Cr.
DINOSAUR
SUE
0 1 2 kilometres
NTS 92 F/2E
Au RESOURCES LTD.
EMMA PROPERTY
Nanaimo, Victoria & Alberni Mining Divisions
CLAIM MAP
Project No: V 257
By: GRC
Scale: 1:50,000
Drawn: GRC/dw
Drawing No: 2
Date: May, 1989
MPH
MPH Consulting Limited

3.0 PREVIOUS WORK

From 1860 to 1890, placer deposits mined along China Creek were reported to have produced in excess of $40,000 in gold. This led to extensive prospecting in the 1890's and the discovery of several precious and base metal deposits. At the turn of the century, a short decline was sunk on a quartz vein on what is now the Emma 1 claim.

In 1962, Hunting Survey Corp. flew an airborne magnetic survey over the area, which also covered the Emma property. From 1963 to 1966, Gunnex Ltd. carried out a regional mapping, silt sampling, and prospecting survey.

Several showings of sulphide bearing quartz veins were examined and sampled by Harlan Meade of Western Mines Ltd. in 1979. Subsequently, R. Elander, K. Farrell, and A. Farrell discovered a narrow quartz vein with anomalous Au and Ag concentrations. The Emma 1-15 claims were staked in 1981.

The property was examined and sampled by G. Sivertz of Prism Resources in 1981, and G. Benvenuto of Westmin Resources Ltd. in 1982. No further work was recommended by either company as there was little potential for a large tonnage deposit. Benvenuto noted five mineralized, broadly folded, bull quartz veins (generally striking northwest) in the area east of Peak Lake. Mineralization includes pyrite, molybdenum, sphalerite, chalcopyrite and galena. The 'high grade zone' assayed up to 105 g/t Au, 146 g/t Ag, 0.365% Cu, 0.9% Pb and 3.2% Zn.

In 1983, Au Resources purchased a 79% interest in the Emma property from R. Elander, K. Farrell and A. Farrell, with the remaining 21% held by the original owners.

R.W. Phendler recommended further work on the property based on a one-day property examination and the presence of a number of auriferous quartz veins. An EM/magnetometer survey, geochemistry survey, trenching and stripping of veins, geological mapping and prospecting were then carried out. In 1984, a small grid was established over areas of interest, resulting in the collection of 759 soil samples, 13 silt samples, and 28 rock samples, which were analyzed for Au and some for Ag. Several anomalous zones were delineated. Follow-up geochemical surveying (227 samples) on closely spaced lines extended some of the anomalies and outlined two new ones (Phendler, 1985).

In 1985, T.E. Lisle was commissioned to conduct a geochemical survey along existing logging roads on the Emma 20 and Emma 21 claims to fulfill assessment requirements for Au Resources. A total of 207 soil samples was collected and assayed for gold and silver. Gold and silver concentrations ranged up to 80 ppb and 2.7 ppm respectively (Lisle, 1985). Late in 1985, a VLF-EM and magnetometer survey was conducted along 12.5 line-km and 7.6 line-km of the grid (respectively). The VLF-EM data was 'Fraser filtered' and plotted, indicating four weak to moderate conductors, some of which were coincident with soil geochemical anomalies. The 'older model fluxgate magnetometer' used was not 'sensitive' enough and only slightly higher than background readings were obtained (Lisle, 1986).

During the 1987-88 field season, detailed geological mapping, rock sampling, soil sampling and an induced polarization survey were conducted on the property under the supervision of MPH Consulting Limited personnel. Subsequently, 1511 m of diamond drilling (12 holes) was carried out to test a number of anomalies outlined by the various surface surveys. An aggressive follow-up program was recommended to further define and examine the anomalous zones.

4.0 REGIONAL GEOLOGY, STRUCTURE AND ECONOMIC SETTING

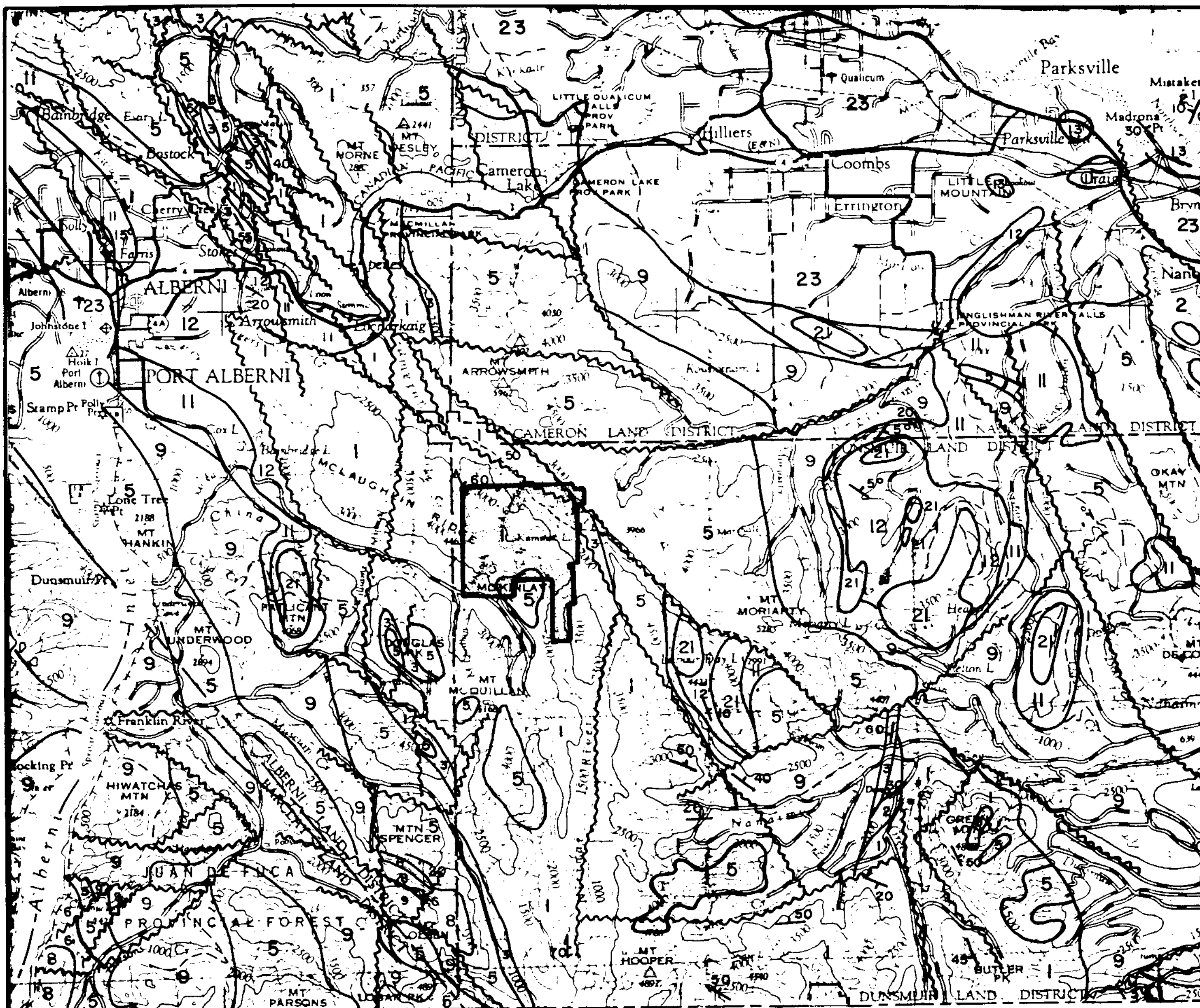
The predominant rock units in the Port Alberni-Nitinat River area are those of the Upper Paleozoic Sicker Group and the Mesozoic Vancouver Group.

Recent government geological mapping has been carried out over the Cowichan Lake area by a number of geologists and compiled with previous work by J.T. Fyles, A. Sutherland Brown and P. Cowley (N.W.D. Massey, 1987). Massey uses the terminology introduced by Sutherland Brown (1986) and has proposed redivisions and renaming of the Sicker Group. However, Muller's terminology has been retained in this report due to the significance of the Myra Formation from an economic standpoint.

4.1 Sicker Group

Muller (1980a) proposed the following subdivision of the Sicker Group, from oldest to youngest: Nitinat Formation, Myra Formation, Sediment-Sill Unit, and Buttle Lake Formation.

The **Nitinat Formation** (Unit 1) consists predominantly of mafic flow-breccias or agglomerates including massive flows and rare pillow basalts. Locally, medium-grained, generally massive basaltic tuff is interbedded with the flows. The flow-breccia is composed of fragments of basalt up to 30 cm in length containing phenocrysts of uralitized pyroxene as well as amygdules, both from 1 mm to more than 1 cm in size, in a matrix of finer grained, similar basalt(?). Thin sections show pale green amphibole (uralite) replacing clinopyroxene. Uralitized gabbroic to dioritic rocks underlie and intrude the volcanics and are believed to represent feeder dykes, sills, and magma chambers to the volcanics. The Nitinat Formation may be distinguished from the similar Karmutsen Formation by the abundance of uralite phenocrysts, a usual lack of pillow basalts, lack of dallasite alteration between pillows (characteristic of the Karmutsen), locally pervasive foliation, and lower greenschist or higher metamorphic grade.



LEGEND

QUATERNARY

23	Glacial and alluvial deposits

TERTIARY

21	Hornblende quartz diorite, leucoquartz monzonite, porphyritic dacite, breccia.

UPPER CRETACEOUS
NANAIMO GROUP

13	EXTENSION-PROTECTION FM.: sandstone, conglomerate, shale, coal.
12	HASLAM FM.: shale, siltstone, fine sandstone.
11	COMOX FM.: sandstone, conglomerate, shale, coal.

MIDDLE TO UPPER JURASSIC

9	ISLAND INTRUSIONS: biotite-hornblende granodiorite, quartz diorite.

LOWER JURASSIC

8	BONANZA GROUP: andesitic to latitic breccia, tuff, and lava; minor greywacke, argillite, and siltstone.

UPPER TRIASSIC
VANCOUVER GROUP

6	QUATSINO FM.: massive to thick bedded limestone, minor thin bedded limestone.
5	KARMUTSEN FM.: pillow-basalt and pillow breccia, massive basalt flows; minor tuff, volcanic breccia; Jasperoid tuff, breccia and conglomerate at base.

TRIASSIC OR PERMIAN

4	Gabbro, periodite, diabase.

LOWER PERMIAN TO PENNSYLVANIAN
SICKER GROUP

3	BUTTLE LAKE FM.: limestone, chert.
2	MYRA FM: lower unit; argillite, greywacke, conglomerate, tuff, minor limestone. Upper unit; rhyodacite to rhyolite tuff, lapilli tuff, breccia lesser siliceous siltstone, argillite, quartz porphyry and mafic flows.
1	NITINAT FM.: basaltic uralite porphyry, agglomerate, pillow lava; greenschist.

0 5 10 km

N

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EMMA PROPERTY

Nanaimo, Victoria & Alberni Mining Divisions

REGIONAL GEOLOGY MAP

Project No: V 257	By: G.R.C.
Scale: 1:250,000	Drawn: G.R.C./dw
Drawing No: 3	Date: May, 1989

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The **Myra Formation** (Unit 2) unconformably overlies the Nitinat Formation. In the Nitinat-Cameron River area the Myra Formation comprises a lower massive to widely banded basaltic tuff and breccia unit, a middle thinly banded albite-trachyte tuff and argillite unit, and an upper thick-bedded, medium-grained albite-trachtye tuff and breccia unit. In the lower unit, crudely layered mottled maroon and green volcaniclastic greywacke, grit and breccia are succeeded by beds of massive, medium-grained dark tuff up to 20 m thick interlayered with thin bands of alternating light and dark, fine-grained tuff with local fine to coarse breccias containing fragments of Nitinat Formation volcanics. The middle unit comprises a sequence of thinly interbedded, light feldspathic tuff (albite trachyte or keratophyre composition) and dark marine argillite which has the appearance of a graded greywacke-argillite-turbidite sequence. In the upper part of the middle unit, sections of thickly bedded to massive black argillite occur. The upper unit contains fine and coarse crystal tuffs in layers up to 10 m thick with local rip-up clasts and slabs of argillite up to 1 m in length, as well as synsedimentary breccias of light coloured volcanic and chert fragments in a matrix of black argillite.

The type locality of the Myra Formation is Myra Creek, at the south end of Buttle Lake. Here, volcaniclastic rocks consisting dominantly of rhyodacitic or rhyolitic tuff, lapilli tuff, breccia, and some quartz porphyry and minor mafic flows and argillite (Upper Myra Formation), are host to Westmin Resources Ltd.'s Myra, Lynx, Price and H-W massive sulphide (Cu-Zn-Pb-Au-Ag-Cd) deposits.

Muller (1980a) estimated the thickness of the Nitinat Formation at about 2000 m and that of the Myra Formation at 750 to 1000 m. Both the Nitinat and Myra Formations were dated as Devonian and/or older by Muller (1980a).

The **Sediment-Sill Unit** (informal subdivision) is transitional between the Myra and Buttle Lake Formations. The upper and lower contacts are poorly defined. Thin bedded, turbidite-like, intensely silicified or cherty massive argillite and siltstone are interlayered with diabasic sills. The sediments show conspicuous dark and light banding on joint surfaces.

The sills consist of a fine-grained, greenish black matrix containing feldspar phenocrysts up to more than 1 cm, commonly clustered in rosettes up to a few centimetres in diameter, producing a very distinctive "flower porphyry" appearance. Subophitic texture may also be visible. The sediments are dated as Mississippian in age, whereas the sills are believed to represent feeders to Triassic Karmutsen volcanics.

The **Buttle Lake Formation** (Unit 3) consists of a basal green and maroon tuff and/or breccia overlain by coarse-grained crinoidal and calcarenitic limestone, fine-grained limestone with chert nodules and some dolomitic limestone. Lesser amounts of argillite, siltstone, greywacke, or chert may also be present.

The Buttle Lake Formation is up to 466 m thick. The age of the formation, on the basis of fossil dating, appears to be Middle Pennsylvanian, but may be as young as Early Permian (Muller, 1980a). This has been confirmed by recent dating work by Brandon and others (1986), including isotopic as well as conodont ages, which indicate that rocks of the Buttle Lake Formation are early Middle Pennsylvanian (Atokan) through Early Permian (probably Sakmarian) in age.

4.2 Vancouver Group

The **Karmutsen Formation** (Unit 5) volcanic rocks unconformably to paraconformably overlie the Buttle Lake Formation limestone to form the base of the Vancouver Group. They are the thickest and most widespread rocks on Vancouver Island. The formation consists mainly of dark grey to black, or dark green, tholeiitic pillow basalt, massive basalt, and pillow breccia. Flows are commonly aphanitic feldspar porphyritic, and amygdaloidal. Pillow lavas generally occur toward the base of the section.

Conglomerate containing clasts of Sicker Group rocks and jasperoid tuff, forms basal section in the Nitinat-Horne Lake area to the northwest.

Karmutsen Formation rocks are generally relatively undeformed compared to Sicker Group rocks and are dated Upper Triassic and older.

Massive to thick bedded limestone of the **Quatsino Formation** (Unit 6) occurs south of Mt. Spencer. The limestone is black to dark grey and fine-grained to microcrystalline. Coarse-grained marble occurs in the vicinity of intrusive rocks. Most of the economic skarn deposits on Vancouver Island are hosted by Quatsino limestone. Thin-bedded limestone also occurs within the formation. Fossils indicate an age of Upper Triassic (Muller and Carson, 1969).

4.3 Bonanza Group

The **Bonanza Group** (Unit 8) stratigraphy varies considerably, as it represents parts of several different eruptive centres of a volcanic arc. Basaltic, rhyolitic, and lesser andesitic and dacitic lava, tuff, and breccia with intercalated beds and sequences of marine argillite and greywacke make up the Bonanza Group. South of Mt. Spencer and south of Corrigan Creek, the Bonanza Group consists of light coloured andesite and latite breccia, tuff and flows with minor greywacke, argillite and siltstone. The Bonanza Volcanics are considered to be extrusive equivalents of the Island Intrusions and to be of Early Jurassic age.

4.4 Island Intrusions

Exposures of **Island Intrusions** (Unit 9) consisting mainly of quartz diorite and lesser biotite-hornblende granodiorite occur throughout the area and are assigned an age of Middle to Upper Jurassic. Intrusive contacts with Sicker and Bonanza Group volcanic rocks are characterized by transitional zones of gneissic rocks and migmatite, although contacts with Karmutsen Formation volcanic rocks are sharp and well-defined. Skarn zones occur at the contact of Island Intrusions with Quatsino Formation limestone and less abundantly with Buttle Lake Formation limestone.

4.5 Nanaimo Group

Upper Cretaceous Nanaimo Group sedimentary rocks occurring throughout the area unconformably overlie Paleozoic Sicker Group rocks. Extensive exposures occur in the Chemainus and Cowichan River valleys. The formations present comprise the basal portions of the Nanaimo Group.

The **Comox Formation** (Unit 11) consists mainly of quartzo-feldspathic, cross-bedded beach facies sandstone and lesser conglomerate. Numerous intercalations of carbonaceous and fossiliferous shale and coal are characteristic.

The **Haslam Formation** (Unit 12) is a nearshore littoral depositional facies unit characterized by massive bedded fossiliferous sandy shale, siltstone and shaly sandstone.

Interbedded coarse clastic conglomerate, pebbly sandstone and arkosic sandstone of the **Extension-Protection Formation** (Unit 13) are beach and deltaic sands. Minor shale and coal are reported.

The Tertiary (Catface or Sooke) Intrusions (Unit 21) comprises mainly hornblende-quartz diorite and dacitic hornblende-feldspar porphyry plus lesser leucocratic quartz monzonite. These sills and stocks intrude Nanaimo Group sedimentary rocks and Sicker Group rocks in the area.

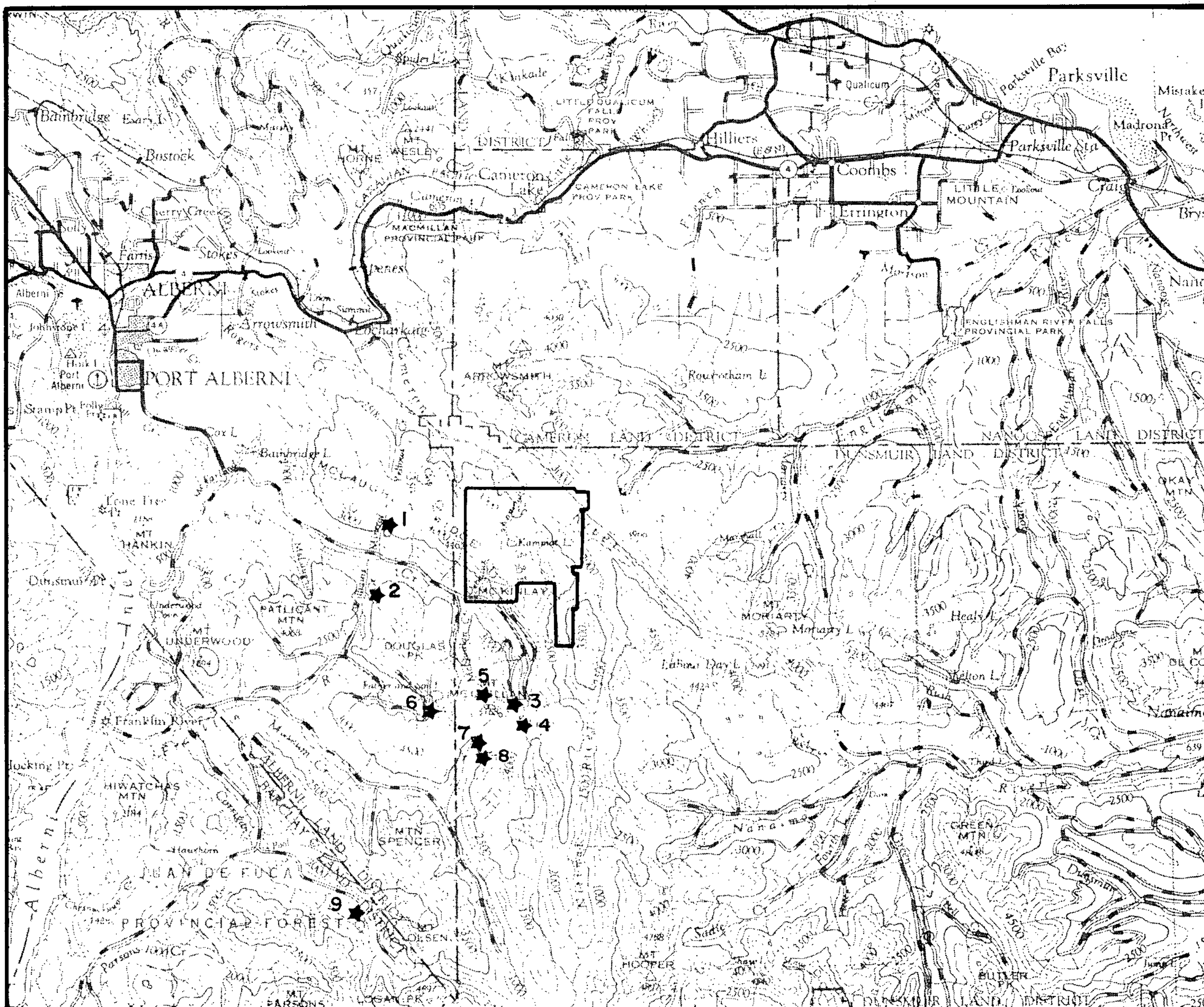
4.6 Structure

The Buttle Lake Arch, Cowichan-Horne Lake Arch and Nanoose Uplift are north-northwesterly trending axial uplifts and are believed to be among the oldest structural elements in south central Vancouver Island. Folding and uplift occurred before the late Cretaceous, possibly before the Mesozoic (Muller and Carson, 1969), and additional tilting, folding, and uplift occurred after the late Cretaceous. Sicker Group volcanic and sedimentary rocks occur at the cores of these uplifts.

Asymmetric southwest-verging, northwest-trending antiformal fold structures characterized by subvertical southwest limbs and moderately dipping northeast limbs are reported at Buttle Lake, in the Cameron-Nitinat River area, and north of Cowichan Lake. Well-developed foliation developed during metamorphism to chlorite-actinolite and chlorite-sericite schist in steep and overturned limbs of folds. Folding may have occurred prior to intrusion of Triassic(?) mafic sills along axial planar surfaces in folded Sediment-Sill Unit rocks. Evidence from K-Ar dating also suggests Jurassic folding. Buttle Lake Formation limestones are relatively undeformed in some places, although in others as in the Chemainus River Canyon, they are highly deformed, along with other Sicker Group rocks (Brandon and others, 1986). Vancouver Group units are not as intensely folded; gentle monoclinal and domal structures have been mapped. However, Karmutsen Formation volcanic rocks locally conform to the attitude of underlying Myra and Buttle Lake Formations (Muller, 1980a).

Some early Mesozoic faulting occurred in the area prior to emplacement of Island Intrusions. Middle to Upper Jurassic intrusive activity (Island Intrusions) occurred along northwesterly trends.

Extensive west-northwest trending faulting occurred during the Tertiary and is best illustrated by large displacements of Nanaimo Group sediments in some areas, such as the north side of the Chemainus River valley, placing Sicker Group rocks above Nanaimo Group rocks. These faults have been traced for up to 100 km. Such structures may represent large scale underthrusting from the southwest, in a regime of long-term semicontinual northeast-southwest compression. Nanaimo Group sediments are tilted up to at least 60° from paleohorizontal where they are overlying folded Sicker Group rocks with angular unconformity such as on the south side of the Chemainus River Valley. Minor late northeasterly trending tear-faults and block faults offset northwest-trending faults in the Cowichan Valley and Saltspring Island areas.



GOLD DEPOSITS AND OCCURRENCES

1. Vancouver Island Gold Mine
2. Regina
3. Golden Eagle
4. B & K
5. Havilah
6. Thistle
7. Black Panther
8. Black Lion
9. 3 - W

0 5 10 km

N

Au Resources Ltd.

MINERAL OCCURRENCE
LOCATION MAP

Project No: V 257	By: T.N.
Scale: 1 : 250,000	Drawn: J.S.
Drawing No: 4	Date: May, 1989

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4.7 Economic Setting

The Sicker Group, and to a lesser extent, the Vancouver Group of volcanics, have been explored intermittently since the 1890's for precious and base metal mineralization.

At Buttle Lake, the Myra Formation hosts Westmin Resources' volcanogenic massive sulphide deposit. Initially discovered in 1917, it was not recognized as a volcanogenic deposit until the late 1960's. Ore minerals including sphalerite, chalcopyrite, galena, tetrahedrite-tennantite, minor bornite and covellite are hosted by pyritic, rhyolitic to rhyodacitic volcanic and pyroclastic rocks of the Myra Formation.

Published reserves of the H-W mine are 13,901,000 tonnes averaging 2.2% Cu, 5.3% Zn, 0.3% Pb, 2.40 g/t (0.07 oz/ton) Au and 37.7 g/t (1.1 oz/ton) Ag (Walker, 1983). From 1980 to 1982, 811,987 tonnes of ore were milled, producing 7,306,880 kg Cu, 43,706,118 kg Zn, 6,455,040 kg Pb, 1,740,000 g (56,000 oz) Au, 78,630,000 g (2,528,000 oz) Ag, and 58,500 kg Cd.

Another volcanogenic massive sulphide deposit in the Sicker Group is the Twin J Mine near Duncan on Mount Sicker. Two parallel orebodies, 46 m apart, each containing pyrite, chalcopyrite, sphalerite and minor galena in a barite quartz-calcite gangue and chalcopyrite in quartz, occur in schists believed to have been derived from acidic volcanics (Myra Formation).

Total production from 1898 to 1964 was 277,400 tonnes producing 1,383,803 g (44,491 oz) Au, 29,066,440 g (934,522 oz) Ag, 9,549,590 kg Cu and 20,803,750 kg Zn with at least 164,590 kg Pb and 4.5 kg Cd.

On the Lara property north of Cowichan Lake, Abermin Corp. has traced the polymetallic volcanogenic massive sulphide Coronation and Coronation Extension zones over a strike length of over 1500 m and to depths of 245 m. Average grades are 5.1 g/t Au, 111.4 g/t Ag, 0.81% Cu, 1.32% Pb, and 5.79% Zn over an average thickness of 3.9 m. A 162 m long high-grade zone within the Coronation zone averages 8.2 g/t (0.24 oz/ton) Au, 229.7 g/t (6.69

oz/ton) Ag, 1.5% Cu, 3.1% Pb, and 14.9% Zn over an average thickness of 3.4 m. Recent exploration has located other similar horizon(s) up to 2.4 km long parallel to the Coronation zone in the northern part of the property. The mineralized zones are hosted by felsic volcanics of the Myra Formation.

In the Port Alberni area, five past producing mines occur. These include the Thistle mine, the Havilah mine, the Black Panther mine, the 3-W mine and Vancouver Island Gold Mine.

Vancouver Island Gold Mine is located on the Yellow claim adjacent to the Debbie property, 4 km west of the Emma property. Nexus Resource Corporation and Westmin Resources Ltd. have recently completed driving an exploration adit on the Debbie property. New discoveries have yielded intersections of up to 4.25 g/t Au over 11.34 m (0.124 oz/ton Au over 37.2 feet) and 3.50 g/t Au over 18.20 m (0.102 oz/ton Au over 59.7 feet) from the Mineral Creek Zone and 139.82 g/t Au over 14.36 m (4.078 oz/ton Au over 47.1 feet) and 38.98 g/t Au over 13.50 m (1.137 oz/ton Au over 44.3 feet) from the 900 Zone.

5.0 1989 FIELD PROGRAM

The 1989 field program was carried out from April 26 to 29 and May 4 to 6, 1989 and entailed rock sampling and HMC silt sampling on the Emma property.

Following preliminary examination of previous results (Cope, 1988), assessment work was performed on the Emma 20 and 21 claims; limited exploration has been carried out in this area.

A total of 17 rock samples was collected and analyzed for Au by AAS and 31 elements by ICP at Rossbacher Laboratories Ltd. of Burnaby. Rock sample descriptions are included in Appendix II. The stream sediment survey consisted of collecting 13 heavy mineral concentrate samples which were analyzed for gold and 31 elements by ICP, also at Rossbacher Labs. Sample locations and anomalous results are shown in figures 5 and 6.

5.1 Geology and Mineralization

As mapped by Cope (1987, 1988), the Emma property is predominantly underlain by Upper Paleozoic Sicker group rocks (Nitinat and Myra Formations) with lesser Triassic Karmutsen Formation and Cretaceous Comox Formation rocks. Figure 5 shows the property geology at 1:10,000 scale and has been compiled from geologic information obtained from previous years' work.

The Nitinat Formation comprises pyroxene-rich massive basalt flows, pillow lava and flow breccia with intra-flow exhalite packages. The basalt flows are dark green to green-grey, massive, pyroxene-rich (phenocrysts partially altered to hornblende), and moderately epidotized and carbonatized. Locally, the pyroxene is altered to apple-green mica (fuchsite?). The pillow lavas are tightly packed, oblate, and amygdaloidal, ranging in size from 10 to 30 cm. The amygdules are infilled with quartz, calcite, and chlorite. Pillow interstices are extremely altered to hematite. The flow breccia consists of angular clasts of amygdaloidal basalt (to 8 cm in size) and is variably chloritized, hematized and silicified. The exhalite package is up to 3 m thick and consists of brick-red, pyritic jasper with minor black chert.

Medium-grained diabasic gabbro has apparently been intruded along north and northeast trending faults. Locally, the gabbro is extensively altered by serpentine with minor exposures of magnetite/ilmenite-rich serpentinite.

A transitional unit (Unit 2) has been mapped to define lithologies of a mixed origin, as mappable contacts between Nitinat Formation and Myra Formation lithologies are rarely observed on the property. The unit consists of intercalated pyroxene porphyritic, basaltic andesite agglomerate, agglomerate lapilli tuff, medium-grained andesitic tuff and minor cherty tuff. The agglomerate consists predominantly of clast-supported, angular clasts (to 20 cm in size), with lesser amygdaloidal basalt and fine-grained tuff. Tuffs are typically thick bedded to massive.

The Myra Formation consists of thin-bedded to massive, fine to medium-grained andesite tuff and laminated to thin-bedded cherty tuff and chert. The tuffs exhibit open to isoclinal folds and fault offsets (at both an outcrop and a regional scale).

The Sediment-Sill unit is exposed immediately east of the property, consisting of interbedded chert, argillite and siltstone with characteristic rip-up clasts of maroon and green chert. The sediments are intruded by several plagiophyric diabase sills up to 1 m wide. Adjacent to this unit are interbedded chert, siltstone, shale and crinoidal bioclastic limestone lithologies of the Buttle Lake Formation.

The northwest trending Cameron River Fault separates the volcaniclastic rocks in the south from thick tholeiitic basalt pillow flows and breccias of the Vancouver Group Karmutsen Formation to the north.

Cretaceous Comox Formation (Nanaimo Group) pebble conglomerates unconformably overlie volcaniclastic rocks in the northwest corner of the property.

Numerous feldspar ± quartz porphyritic dacite dykes of the Tertiary(?) Intrusions crosscut the property.

Structurally, the property is very complex exhibiting tight, open to isoclinal folding, with abundant fractures, shears and fault zones. The dominant fault trends are northerly, steeply dipping to the east, and northeasterly with steep dips to the northwest. Generally, the faults have developed a listwanite alteration envelope to within a few metres of the fault. Fuchsitic pseudomorphs after pyroxene phenocrysts are common within these alteration envelopes.

Five zones of significant mineralization and/or alteration have previously been outlined on the property and include the High Grade, Peak Lake, CM-240, Debeaux Creek and Kammat Creek zones (Cope, 1988). The High Grade vein occurs within a zone of extensive quartz and quartz-carbonate veining. The south-trending milky white quartz vein, referred to as the High Grade vein, contains up to 40% sulphides, including sphalerite (≤50%), pyrite (≤50%), chalcopyrite (≤5%) and minor arsenopyrite. A highly anomalous soil gold anomaly (yielding values up to 2620 ppb Au) is flanked by two zones of moderate to strongly anomalous chargeabilities. Grab sampling of the vein has yielded values up to 149.4 g/t Au, 115.5 g/t Ag, 1.0% Cu and 21.28% Zn.

The Peak Lake zone is characterized by widespread pyrite and pyrrhotite mineralization in Myra and possibly Nitinat Formation lithologies and quartz veins, is up to 600 m wide and is open to the south. Extensive alteration in the zone varies from quartz-epidote flooding to carbonatization proximal to the Peak Lake fault. The quartz veins locally contain sphalerite and chalcopyrite in addition to pyrite. Three very strong, elongated induced polarization anomalies roughly parallel the fault, while chargeability anomalies flank soil gold geochemistry anomalies (values up to 2410 ppb Au). Quartz veins have yielded assays of up to 2.7 g/t Au.

The CM-240 zone consists of north-northeast trending quartz and quartz-carbonate veins with up to 20% pyrite and 1% sphalerite, yielding values of up to 2.3 g/t Au and 6939 ppm Zn. The Debeaux Creek zone exhibits widespread structurally controlled carbonate and serpentine alteration of a fault controlled gabbroic intrusive. Portions of the gabbro have been altered to magnetite-rich serpentinite with associated nickel-bearing sulphide mineralization. The Kammat Creek zone is characterized by well mineralized chert and jasper horizons which yielded elevated values for Au, Ni, Co and Ag.

5.2 Lithogeochemical Results

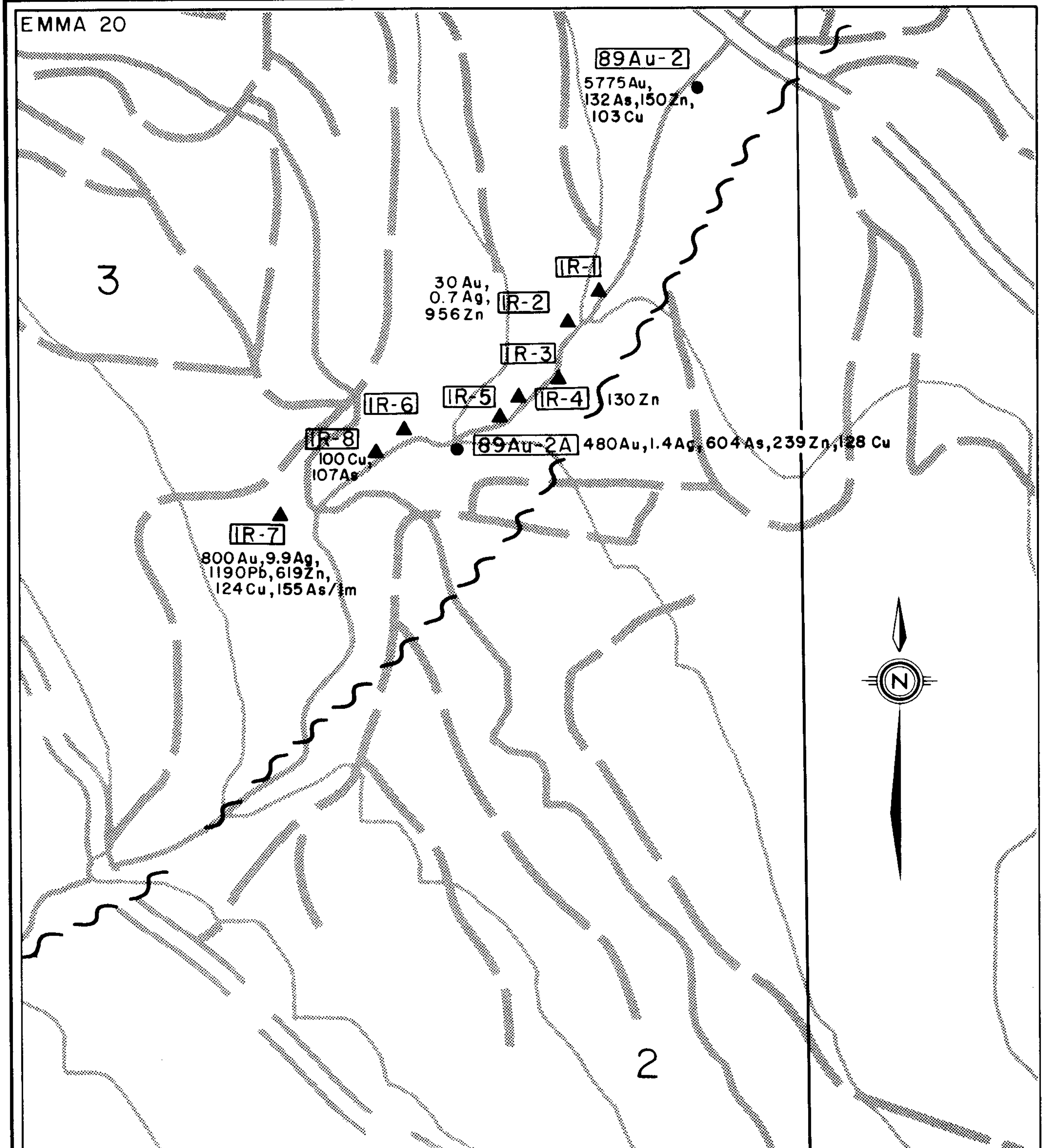
Of the 17 rock samples collected, only three yielded results which were anomalous or at above background levels. Two of the samples (IR-2 and IR-7) were collected from a northeast trending creek crossing the southern portion of the Emma 20 claim. The third sample was collected in the west-central area of the Emma claim, also from a northeast trending creek.

Samples collected along 200 m of the northeast trending creek crossing the Emma 20 claim generally yielded values at background levels. Samples were collected from variably carbonatized and silicified Myra Formation tuff and chert. Of the eight samples collected along this creek, two yielded elevated gold values with associated silver and zinc. Sample IR-7, an intensely carbonatized, silicified and brecciated argillite, with trace disseminated pyrite, yielded 800 ppb Au, 9.9 ppm Ag, 1190 ppm Pb, 619 ppm Zn and 155 ppm As. Collected approximately 160 m downstream, sample IR-2 yielded 30 ppb Au, 0.7 ppm Ag and 956 ppm Zn. The sample is from a moderate to intensely silicified, slightly brecciated, fine-grained tuff(?) with $\leq$1% fine-grained and disseminated pyrite.

Sample #3, collected from a pyritic chert on the west-central part of the Emma claim yielded 10 ppb Au, 0.5 ppm Ag, 283 ppm Cu and 259 ppm Zn. Other rock samples collected in this area yielded values at background levels.

5.3 Stream Sediment Survey

A total of 13 pan concentrated silt samples was collected from various drainages on the Emma 20 and 21 claims. One to two kg samples were



GEOLOGY

3 Myra Fm. - andesite tuff, cherty tuff, chert; minor aphyric pillow basalt

2 Transitional Nitinat/Myra Fm. - intercalated porphyritic andesite agglomerate, lapilli tuff, andesite tuff; minor cherty tuff

SYMBOLS

∽∽		fault
——		claim boundary
●	89Au-2A	silt sample location with selected results
▲	IR-1	rock sample location with selected results

(Au in ppb, all others in ppm)

Au RESOURCES LTD.

EMMA PROPERTY

Nanaimo, Victoria & Alberni Mining Divisions.

Detailed Area of Sample Locations on Emma 20 claim (with selected results)

Project No V257	By T.H., G.M.L.
Scale 1: 2,500	Drawn J.S.
Drawing No 6	Date May, 1989

MPH

MPH Consulting Limited

collected using a 10-mesh sieve. The heavy mineral fraction was further concentrated using a floatation procedure, then analyzed for Au by AAS and 31 elements by ICP. Sample locations and selected results are plotted on Figures 5 and 6. Results are presented in Appendix IV.

Samples 89Au-2, 89Au-2A and 89Au-2B were collected at various elevations from a northeast-trending creek on the Emma 20 claim. The creek approximately follows a fault separating unit 2 transitional rocks, to the southeast, from Myra Formation rocks to the northwest. The uppermost sample (89Au-2B) yielded 270 ppb Au, 0.8 ppm Ag, 109 ppm As, 314 ppm Cu, 184 ppm Pb, 130 ppm Zn, 108 ppm Co and 186 ppm Cr. The next sample downstream (89Au-2A), located approximately 75 m from rock sample IR-7 (which ran 800 ppb Au, 9.9 ppm Ag, 1190 ppm Pb, 619 ppm Zn, 124 ppm Cu and 155 ppm As), yielded 480 ppb Au, 1.4 ppm Ag, 604 ppm As, and 239 ppm Zn. The lowermost sample collected from this creek (89Au-2) yielded 5775 ppb Au, 132 ppm As, and 150 ppm Zn.

Samples 89Au-3A and 89Au-3B were collected from creeks draining the High Grade Zone; samples 89Au-3 and SILT 3 (collected from the same site) are approximately 1 km downstream from 89Au-3A and 3B. In this area, the main creek approximately follows a northeast-trending fault cutting unit 3 Myra Formation rocks. Sample 89Au-3A yielded 210 ppb Au, 139 ppm Cu and 123 ppm Zn. Sample 89Au-3B, collected from the main creek, yielded 600 ppb Au, 787 ppm Cu, 212 ppm Pb, 236 ppm Zn, 1.7 ppm Ag, 185 ppm Co, 408 ppm As and 215 ppm Cr. The downstream samples yielded only slightly elevated values for gold, copper and zinc.

Sample 89Au-4 was collected from a creek which approximately follows a northeast-trending fault and possibly drains the CM-240 Zone. The sample was elevated in gold only (175 ppb Au).

Sample 89Au-5 was collected downstream from sample KAM 1. KAM 1 yielded 110 ppb Au, 172 ppm As, 139 ppm Cu, 169 ppm Ni and 548 ppm Cr, while 89Au-5 yielded only elevated arsenic (92 ppm As). The creek follows a northeast-trending fault which separates Nitinat Formation rocks to the northwest from Myra Formation rocks in the southeast.

6.0 CONCLUSIONS

Based on this and previous work programs conducted on the Emma property, the following can be concluded:

1. Structurally controlled, vein hosted deposits are the most viable exploration targets on the Emma property.

2. The Emma property has a high potential to host a structurally controlled vein deposit similar to the neighbouring Debbie property, based on similar geology, alteration and structural controls.

3. Ten of the 13 heavy metal concentrate (HMC) silt samples collected yielded elevated to anomalous gold values, ranging from 50 to 5775 ppb Au. Locally, elevated silver, arsenic and zinc values corresponded to the high gold values.

    a) Anomalous gold (270 to 5775 ppb Au) was contained in three samples collected from a northeast-trending creek on the Emma 20 claim.

    b) Two HMC samples collected from creeks draining the High Grade Zone yielded anomalous gold (210 and 600 ppb) values. Sample 89Au-3B also returned elevated values for copper (787 ppm), lead (212 ppm), cobalt (185 ppm) and arsenic (408 ppm).

4. Two grab samples collected along the northeast trending creek on the Emma 20 claim yielded elevated and anomalous values for gold (30 and 800 ppb), silver (0.7 and 9.9 ppm), zinc (956 and 619 ppm) and lead (1190 ppm).

7.0 RECOMMENDATIONS

In addition to the recommendations made by Cope (1988), the following work is also proposed for continued exploration on the Emma property:

1. Follow-up prospecting in areas which returned anomalous values from HMC silt samples:

   a) along the northeast-trending creek crossing the Emma 20 claim;

   b) along the northeast-trending Kammat Creek, which crosses the Emma 21 and Su 3 claims;

   c) along the northeast-trending creek on the Emma 21 claim, which drains the CM-240 Zone.

2. Extend the previously established High Grade Zone grid to the east to cover the area which yielded anomalous HMC stream sediment and grab rock sample results. This will total 6.4 line-km of grid extension.

   Along the extended grid lines, carry out:

   1) a soil geochemistry survey, analyzing for gold and 31 additional elements by ICP;
   2) geological mapping and sampling at 1:2500 scale; and
   3) an induced polarization survey, tying in with the previously surveyed lines.

Respectfully submitted

Gwenda M. Lorenzetti, BSc.

Vancouver, B.C.
May 30, 1989

CERTIFICATE

I, Gwenda M. Lorenzetti, do hereby certify that:

1. I am a graduate in geology of the University of British Columbia (BSc., Honours, 1985).

2. I have practised within the geological profession for three years.

3. The opinions, conclusions, and recommendations contained herein are based on field work carried out by MPH Consulting Limited personnel from April 26 to 29, 1989 and May 4 to 6, 1989.

4. I own no direct, indirect, or contingent interest in the subject property or shares or securities of Au Resources Ltd. or associated companies.

G.M. Lorenzetti, BSc.

Vancouver, B.C.
May 30, 1989

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APPENDIX I

List of Personnel and

Statement of Expenditures

LIST OF PERSONNEL AND STATEMENT OF EXPENDITURES

Field Costs: (April 26 to 29, May 4 to 6, 1989)

Personnel - T. Hayes	7 days @ $375			$2,625
Food and Accommodation:	7 mandays @ 65			455
Equipment Rental:				
4WD Truck	7 days @ 110		$ 770	
Rocksaw	17 samples @ 1		17	
				787
Disbursements:				
Laboratory Analyses-				
13 HMC silts (Au,ICP)		$362.25		
17 rocks (Au,ICP)		259.25	621.50	
Communications			3.16	
				624.66
Administration @ 15% on disbursements				93.70
			Total Field Costs	4,585.40

Report Costs

G.M. Lorenzetti, BSc.			
Geologist	3.2 days @ $350	1,120.00	
G. Yip, BSc.			
Geologist	4 hrs @ 35	140.00	
			1,260.00
Map Reproduction		87.90	
Typing		253.00	
Drafting		212.50	
Report Copying (4)		34.20	
Miscellaneous		36.00	
			623.60
Administration @ 15% on disbursements			93.54
		Total Report Costs	1,977.14
		Total - Project	$6,562.54

APPENDIX II

Rock Sample Descriptions and
Selected Lithogeochemical Results

ROCK SAMPLE DESCRIPTIONS

Sample	Description	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Other ppm
IR-1	(Emma 20 claim) Light to medium-green, mottled, moderately chloritized and silicified, fine-grained tuff with 1-2% very fine-grained, disseminated pyrite.	5	0.2	63	18	48	
IR-2	(Emma 20 claim) Medium to dark grey, moderate to intensely silicified, fine-grained tuff(?), with buff, rust and dark brown weathering. Sample is slightly brecciated with light rusty brown silica infilling fractures. Pyrite (to 1%) is very fine-grained and disseminated.	30	0.7	69	43	956	
IR-3	(Emma 20 claim) Soft, orange to orange-brown weathered, light green and green-yellow, mottled, brecciated, intensely altered tuff(?). Alteration includes minor chlorite, moderate to intense sericite, carbonate, iron-carbonate and silica. Breccia fragments up to 1 cm in size. Local laminations of alteration minerals. Less than 1% finely disseminated pyrite.	5	0.4	56	17	60	
IR-4	(Emma 20 claim) Buff to dark red-brown weathered, medium to dark green, moderate to intensely silicified, fine-grained tuff with minor rusty carbonate-filled fractures and minor chlorite alteration. Pyrite (1-2%) is very fine grained and disseminated.	5	0.3	49	12	130	
IR-5	(Emma 20 claim) Buff and orange-brown, deeply weathered, light greenish-grey, intensely silicified feldspar crystal tuff(?). Moderate carbonate alteration. Finely disseminated pyrite and minor fracture-fill pyrite.	5	0.3	38	7	34	

Sample	Description	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Other ppm
IR-6	(Emma 20 claim) Light to dark green and maroon, laminated and mottled, intensely altered, cherty tuff. Alteration includes: intense carbonatization and silicification, minor chloritization. Trace disseminated pyrite.	5	0.3	43	7	46	
IR-7	(Emma 20 claim) Dark grey and black brecciated argillite. Angular breccia clasts up to 2 cm in length. Intense carbonate and minor quartz flooding and veining around clasts. Trace disseminated pyrite. Sample is from an east-west trending, 1.5 m wide breccia zone in green tuff.	800	9.9	124	1190	619	As 155
IR-8	(Emma 20 claim) Light orange-buff weathered, light green-yellow and green, intensely altered tuff(?). Sample is intensely silicified, moderately sericitized, with minor apple-green mica (fuchsite?). Crosscut by randomly oriented quartz carbonate veinlets (post micaceous alteration). Trace-1% disseminated pyrite.	5	0.4	100	18	35	As 107
IR-9	(Emma 20 claim) Black, intensely fractured, slightly brecciated, silicified argillite with rust-stained vugs up to 1 cm in length. Disseminations and blebs of pyrite (to 1%) occur mainly as fracture-fill.	5	0.7	33	33	56	
IR-10	(Emma 20 claim) Rust-weathered, dark green, green-grey, and buff, variably altered tuff. Alteration includes: intense silicification, moderate carbonatization and sericitization, minor chlorite, and minor to moderate fuchsite (apple-green mica) alteration. Sample is crosscut by carbonate-quartz veinlets (≤8 mm wide). Trace disseminated pyrite. Sample is from a north-south trending carbonate zone.	5	0.2	110	16	47	Sr 203

Sample	Description	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Other ppm
IR-11	(Emma 20 claim) Light to dark green, sheared and brecciated, intensely silicified and carbonatized altered tuff(?) with minor chlorite and sericite alteration. Pyrite (2-3%) occurs as blebs and disseminations.	5	0.2	48	10	23	
3B	(Emma claim; at silt 89Au-3B location) Slightly rust weathered quartz vein with local inclusions of intensely silicified and sericitized host rock. Moderate to intense carbonate filled-fractures and flooding. Local rusty vugs ($\leq$4 mm). Pyrite (3-4%) occurs as disseminations, fracture-fill, and small blebs to 3 mm in size.	5	0.4	77	10	40	
River Road	(Emma 20 claim) Buff to orange-brown weathered, orange-yellow to light grey, intensely silicified tuff(?) with moderate carbonate flooding and veining, and moderate sericitization with 1% disseminated pyrite.	5	0.2	77	13	60	
2	(Su 3 claim) Dark rusty-red to brown weathered, light to dark grey and green, intensely fractured tuff with intense silicification, and minor chloritization. No reaction to HCl. Trace to 1% disseminated pyrite throughout; minor rust-stained fractures.	5	0.2	75	14	34	
3	(Emma claim) Medium green-grey, slightly laminated, pyritic chert. Pyrite is very fine-grained and locally cubic, to 2%	10	0.5	283	1	259	

		Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Other ppm
4	(Emma claim) Pitted and orange-brown weathered, intensely fractured quartz vein(?), crosscut by orange-yellow and orange-brown carbonate veinlets (<0.5 cm wide). Carbonate also fills fractures. Pyrite (≤1%) occurs as disseminations and blebs.	5	0.1	13	8	36	
5	(Emma claim) White (quartz) and maroon banded chert. Sample illustrates intense folding and fracturing. Fractures crosscutting banding are infilled with carbonate. Very fine-grained pyrite (1-3%) occurs as laminations ≤4 mm wide, and as disseminations.	5	0.6	20	14	59	

APPENDIX III

Laboratory Methods

JAN. 1989

ANALYTICAL METHODS CURRENTLY IN USE AT ROSSBACHER LABORATORY LTD.

A. SAMPLE PREPARATION:

1. Geochem Soil and Silt: Samples are dried, and sifted to minus 80 mesh, through stainless steel or nylon screens.

2. Geochem Rock : Samples are dried, crushed to minus 1/4 inch, split, and pulverized to minus 100 mesh.

B. METHODS OF ANALYSIS:

1. Multi-element (Mo, Cu, Ni, Co, Mn, Fe, Ag, Zn, Pb, As, Cd, Cr): 0.50 g sample is digested for four hours with a 15:85 mixture of Nitric-Perchloric acids.
   The resulting extract is analyzed by Atomic Absorption Spectroscopy, using Background Correction where appropriate.

2. Tungsten: 0.50 g sample is sintered with a carbonate flux, and dissolved. The resulting extract is analyzed colorimetrically , after reduction with Stannous Chloride, by use of Potassium Thiocyanate,

3. Tin: 0.50 g sample is sublimated by fusion with Ammonium Ildide, and dissolved.
   The resulting solution is extracted by a Trioctylphosphine-Methyl Isobutyl Ketone solution and analyzed by Atomic Absorption Spectroscopy.

4. Fluorine: 0.50 g sample is fused with a carbonate flux and then dissolved.
   The resulting solution is analyzed by use of an Ion Selective Electrode.

5. Gold: 10.0 g sample is digested with aqua regia.
   The resulting solution is subjected to a Methyl Isobutyl Ketone extraction, which extract is analyzed for gold using Atomic Absorption Spectroscopy.

6. pH: An aqueous suspension of soil, or silt is prepared, and its pH is measured by use of a pH meter.

7. Antimony: 0.50 g sample is fused with Ammonium Chloride and dissolved.
   The resulting solution is extracted with a Trioctylphosphine-Methyl Isobutyl Ketone solution and analyzed by Atomic Absorption Spectroscopy.

8. Barium: 0.50 g sample is repeatedly digested with $HClO_4$-HNO_3 and HF.
   The solution is analyzed by Atomic Absorption Spectroscopy.

9. Mercury: 0.50 g sample is digested with HNO_3-H_2SO_4. The solution is analyzed by Atomci Absorption Spectroscopy using a cold vapor generation technique.

10. Rapid Silicate Analysis: 0.100 g sample is fused with Lithium Metaborate and dissolved in HNO_3. The solution is analyzed by Atomic Absorption for SiO_2, Al_2O_3, Fe_2O_3, MgO, CaO, Na_2O, K_2O, TiO_2 and MnO.

11. Partial extraction and Fe/Mn oxides: 0.50 g sample is extracted using one of the following: Hot or cold 0.5 N HCl, 2.5% E.D.T.A., Ammonium Citrate, or other selected organic acids. The solution is analyzed by use of Atomic Absorption Spectroscopy.

12. Biogeochemical: Samples are dried, and ashed at 500°C and the resulting ash analyzed as in No.1 multi-elemental analysis.

13. ICP analysis: 0.50 g sample is digested with aqua regia. The resulting solution is diluted and analyzed using an ICP instrument manufactured by Jobin Yvon (Model JY 32, 1987). The following elements are included in the 30-element analysis: Ag, Al, As, Au, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, La, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Si, Sr, Ti, U, V, W, Zn.

APPENDIX IV

Certificates of Analysis

ROSSBACHER LABORATORY LTD.

2225 S. Springer Ave., Burnaby,
British Columbia, Can. V5B 3N1
Ph: (604)299-6910 Fax: 299-6252

CERTIFICATE OF ANALYSIS

TO : MPH CONSULTING LTD.
#2406-555 W. HASTINGS ST.
VANCOUVER, B.C.
PROJECT : T. HAYES
TYPE OF ANALYSIS : GEOCHEMICAL

CERTIFICATE # : 89038.g
INVOICE # : 90207
DATE ENTERED : 89-03-06
FILE NAME : MPH89038.G
PAGE # : 1

PRE FIX	SAMPLE NAME	PPB Au	HeMin. wt.gm.
L	89Au 1	5	28.58
L	89Au 2	5775	13.78
L	89Au 3	100	10.32
L	89Au 4	175	15.75
L	89Au 5	5	14.93
L	89Au 6	5	18.95

*Au values adjusted for sample wt.

CERTIFIED BY : [signature]

ROSSBACHER LABORATORY LTD.

2225 S. Springer Ave., Burnaby,
British Columbia, Can. V5B 3N1
Ph: (604)299-6910 Fax: 299-6252

CERTIFICATE OF ANALYSIS

TO : MPH CONSULTING LTD
2406-555 W HASTINGS ST
VANCOUVER, B.C.
PROJECT :
TYPE OF ANALYSIS : ICP

CERTIFICATE # : 89038
INVOICE # : 89024
DATE ENTERED : 89-03-03
FILE NAME : MPH89038
PAGE # : 1

PRE FIX	SAMPLE NAME	PPM MO	PPM CU	PPM PB	PPM ZN	PPM AG	PPM NI	PPM CO	PPM MN	% FE	PPM AS	PPM U	PPM AU	PPM HG	PPM SR	PPM CD	PPM SB	PPM BI
L	89AU-1	1	71	7	64	0.2	42	52	679	3.50	69	5	ND	ND	26	1	2	2
L	89AU-2	1	103	38	150	0.2	49	54	939	4.52	132	5	ND	ND	23	1	2	2
L	89AU-3	2	125	38	112	0.1	43	61	1191	5.14	61	5	ND	ND	14	2	9	3
L	89AU-4	3	86	25	95	0.3	40	54	1471	5.15	61	5	ND	ND	24	1	6	5
L	89AU-5	1	88	9	69	0.1	54	56	1238	5.52	92	5	ND	ND	21	1	2	2
L	89AU-6	1	103	9	66	0.1	56	59	983	5.38	27	5	ND	ND	19	1	2	2

PRE FIX	SAMPLE NAME	PPM V	% CA	% P	PPM LA	PPM CR	% MG	PPM BA	% TI	PPM B	% AL	% NA	% SI	PPM W	PPM BE	PPB Au*
L	89AU-1	128	0.54	0.16	9	120	1.71	30	0.20	5	2.18	0.01	0.02	11	2	20
L	89AU-2	132	0.60	0.14	8	101	1.70	74	0.14	30	2.32	0.01	0.02	12	2	10
L	89AU-3	110	0.31	0.09	11	63	1.37	110	0.05	21	2.04	0.01	0.02	10	2	20
L	89AU-4	113	0.55	0.14	13	53	1.13	129	0.07	29	1.80	0.01	0.02	10	2	20
L	89AU-5	130	0.42	0.10	8	64	1.52	94	0.06	29	2.02	0.01	0.02	4	2	30
L	89AU-6	161	0.27	0.07	7	79	1.67	73	0.04	5	2.15	0.01	0.01	2	2	5

CERTIFIED BY : J. Rossbach

FOSSBACHER LABORATORY LTD.

2225 S. Springer Ave., Burnaby, British Columbia, Can. V5B 3N1
Ph: (604)299-6910 Fax: 299-6252

CERTIFICATE OF ANALYSIS

TO : MPH CONSULTING LTD.
#2406-555 W. HASTINGS ST.
VANCOUVER, B.C.

PROJECT : V99-Au
TYPE OF ANALYSIS : GEOCHEMICAL

CERTIFICATE # : 89090
INVOICE # : 90250
DATE ENTERED : 89-05-05
FILE NAME : MPH89090
PAGE # : 1

PR FI	SAMPLE NAME	PPB Au 1	PPB Au 2	PPB Au 3	PPB Au 4	PPB Au Avg	TOTAL Wt.gm
L	89 Au 2A HEAVY	330	480	600		480	94.92
L	89 Au 2B HEAVY	270				270	11.67
L	89 Au 3A HEAVY	210				210	14.32
L	89 Au 3B HEAVY	660				660	3.04
L	DEB 1 HEAVY	40	60	50		50	84.84
L	KAM 1 HEAVY	70	200			110	43.31
L	SILT 3 HEAVY	150	30	50	60	70	115.5

CERTIFIED BY : [signature]

ROSSBACHER LABORATORY LTD.

2225 S. Springer Ave., Burnaby,
British Columbia, Can. V5B 3N1
Ph:(604)299-6910 Fax:299-6252

CERTIFICATE OF ANALYSIS

TO : MPH CONSULTING LTD.
#2406-555 W. HASTINGS ST.
VANCOUVER, B.C.
PROJECT : V99-Au
TYPE OF ANALYSIS : ICP

CERTIFICATE # : 89090
INVOICE # : 90250
DATE ENTERED : 89-05-05
FILE NAME : MPH89090.I
PAGE # : 1

PRE FIX	SAMPLE NAME	PPM MO	PPM CU	PPM PB	PPM ZN	PPM AG	PPM NI	PPM CO	PPM MN	% FE	PPM AS	PPM U	PPM AU	PPM HG	PPM SR	PPM CD	PPM SB	PPM BI
L	89 Au 2A HEAVY	1	126	97	239	1.4	45	48	545	5.20	604	5	ND	ND	84	6	2	4
L	89 Au 2B HEAVY	3	314	184	130	0.8	86	108	1743	8.55	109	5	ND	ND	72	3	2	3
L	89 Au 3A HEAVY	2	139	37	123	0.5	54	86	1668	6.53	91	5	ND	ND	64	4	2	2
L	89 Au 3B HEAVY	8	787	212	236	1.7	90	185	1061	13.86	408	6	ND	ND	89	9	9	2
L	DEB 1 HEAVY	5	159	19	92	0.4	66	76	884	9.25	79	5	ND	14	81	3	4	2
L	KAM 1 HEAVY	6	139	65	68	0.1	169	64	728	6.72	172	5	ND	9	100	1	2	2
L	SILT 3 HEAVY	1	226	10	59	0.1	40	55	800	8.69	31	5	ND	ND	74	2	6	2
L	89 Au 2A FLOAT	1	73	17	86	0.1	45	44	726	4.22	18	5	ND	ND	16	1	2	2
L	89 Au 2b float	1	80	9	85	0.1	51	45	995	4.26	21	5	ND	ND	20	1	2	2
L	89 Au 3A FLOAT	1	82	8	130	0.1	44	48	1615	4.26	14	5	ND	ND	23	3	2	2
L	89 Au 3B FLOAT	1	86	10	117	0.1	37	44	1050	4.36	25	5	ND	ND	19	1	2	2
L	DEB 1 FLOAT	1	66	2	71	0.1	52	48	1045	4.82	7	5	ND	ND	17	1	2	2
L	KAM 1 FLOAT	1	62	4	70	0.1	91	52	957	4.61	8	5	ND	ND	17	1	2	2
L	SILT 3 FLOAT	1	76	1	64	0.1	55	54	909	4.97	2	5	ND	ND	17	1	2	2

SAMPLE NAME	PPM V	% CA	% P	PPM LA	PPM CR	% MG	PPM BA	% TI	PPM B	% AL	% NA	% SI	PPM W	PPM BE
89 Au 2A HEAVY	139	1.38	0.04	8	125	1.36	85	0.20	275	1.95	0.03	0.07	6	3
89 Au 2B HEAVY	181	0.87	0.05	7	186	1.38	108	0.18	106	2.06	0.02	0.05	4	4
89 Au 3A HEAVY	112	0.65	0.03	5	122	1.20	160	0.12	59	1.47	0.02	0.05	2	3
89 Au 3B HEAVY	162	0.87	0.05	9	215	1.22	161	0.14	412	2.14	0.03	0.05	5	4
DEB 1 HEAVY	224	1.13	0.05	7	107	1.44	177	0.25	194	2.03	0.03	0.06	4	5
KAM 1 HEAVY	195	1.84	0.04	7	548	1.97	171	0.26	133	2.47	0.03	0.07	5	4
SILT 3 HEAVY	270	0.68	0.03	6	83	1.16	131	0.16	44	1.86	0.03	0.05	1	5
89 Au 2A FLOAT	125	0.50	0.05	5	116	1.99	94	0.12	28	2.51	0.02	0.06	1	3
89 Au 2b float	123	0.45	0.05	5	145	1.72	118	0.07	29	2.39	0.03	0.05	1	3
89 Au 3A FLOAT	121	0.48	0.04	9	141	1.79	149	0.06	27	2.72	0.03	0.04	1	3
89 Au 3B FLOAT	121	0.40	0.03	6	100	1.71	169	0.06	28	2.63	0.03	0.05	2	3
DEB 1 FLOAT	123	0.37	0.04	6	104	1.76	107	0.04	24	2.41	0.03	0.06	1	3
KAM 1 FLOAT	125	0.57	0.03	4	157	2.46	122	0.10	27	2.82	0.03	0.06	1	3
SILT 3 FLOAT	147	0.26	0.03	4	102	1.82	96	0.03	21	2.54	0.03	0.06	1	3

CERTIFIED BY : Rossbacher

ROSSBACHER LABORATORY LTD.

2225 S. Springer Ave., Burnaby,
British Columbia, Can. V5B 3N1
Ph:(604)299-6910 Fax:299-6252

CERTIFICATE OF ANALYSIS

TO : MPH CONSULTING LTD.
#2406-555 W. HASTINGS ST.
VANCOUVER, B.C.
PROJECT : V 105 AU
TYPE OF ANALYSIS : ICP

CERTIFICATE # : 89376
INVOICE # : 10026
DATE ENTERED : 89-06-01
FILE NAME : MPH89376.I
PAGE # : 1

PRE FIX	SAMPLE NAME	PPM MO	PPM CU	PPM PB	PPM ZN	PPM AG	PPM NI	PPM CO	PPM MN	% FE	PPM AS	PPM U	PPM AU	PPM HG	PPM SR	PPM CD	PPM SB	PPM BI	PPM V	% CA	% P	PPM LA	PPM CR	% MG	PPM BA	% TI	PPM B	% AL	% NA	% SI	PPM W	PPM BE	PPB Au AA
A	IR 1	6	63	18	48	0.2	8	13	433	3.41	18	5	ND	ND	17	2	11	6	132	1.11	0.12	10	45	0.79	27	0.22	576	1.46	0.01	0.02	5	2	5
A	IR 2	3	69	43	956	0.7	9	15	411	3.79	32	5	ND	ND	46	7	14	2	19	1.45	0.14	16	28	0.36	66	0.01	1053	0.46	0.01	0.02	2	1	30
A	IR 3	3	56	17	60	0.4	9	18	1005	3.47	29	5	ND	ND	83	2	10	2	18	2.98	0.15	16	22	0.70	49	0.01	243	0.42	0.02	0.02	11	1	5
A	IR 4	5	49	12	130	0.3	10	15	519	3.55	17	5	ND	ND	15	2	11	8	96	0.61	0.13	13	36	0.98	83	0.23	429	1.36	0.01	0.01	4	2	5
A	IR 5	3	38	7	34	0.3	7	9	739	2.66	66	5	ND	ND	47	1	10	2	16	3.58	0.12	14	32	0.40	49	0.01	192	0.44	0.02	0.03	11	1	5
A	IR 6	4	43	7	46	0.3	17	14	1082	3.01	9	5	ND	ND	100	2	5	3	49	9.00	0.11	14	32	0.61	66	0.01	7	1.67	0.01	0.03	7	2	5
A	IR 7	4	124	1190	619	9.9	19	12	1223	3.62	155	5	ND	ND	94	21	6	3	38	6.72	0.07	6	48	0.63	37	0.01	476	1.38	0.01	0.02	6	1	800
A	IR 8	5	100	18	35	0.4	54	30	1125	4.14	107	5	ND	ND	178	4	10	11	59	7.79	0.07	8	32	2.77	55	0.01	33	0.46	0.06	0.02	12	2	5
A	IR 9	19	33	33	56	0.7	30	11	391	3.80	72	5	ND	ND	15	1	19	2	41	0.72	0.03	4	102	0.45	35	0.01	211	0.53	0.05	0.01	3	1	5
A	IR 10	5	110	16	47	0.2	75	33	983	3.71	78	5	ND	ND	203	3	21	8	68	7.16	0.11	7	79	2.86	86	0.01	36	0.57	0.01	0.02	12	2	5
A	IR 11	5	48	10	23	0.2	26	14	1000	2.37	11	5	ND	ND	241	1	5	5	68	9.25	0.04	5	58	1.45	24	0.01	109	1.32	0.07	0.01	6	1	5
A	3 B	3	77	10	40	0.4	13	16	795	2.16	42	5	ND	ND	51	1	14	7	16	2.48	0.07	4	66	0.67	74	0.01	304	0.26	0.02	0.02	8	1	5
A	RIVER RD.	4	77	13	60	0.2	14	22	1140	3.19	72	5	ND	ND	114	2	11	6	41	4.54	0.13	14	24	1.38	53	0.01	189	0.35	0.05	0.02	12	1	5
A	2	3	75	14	34	0.2	12	15	242	4.63	18	5	ND	ND	38	3	11	2	141	0.87	0.08	3	64	1.75	19	0.21	517	2.51	0.01	0.02	4	2	5
A	3	1	283	1	259	0.5	10	14	1164	3.95	12	5	ND	ND	30	6	5	2	36	0.51	0.02	2	41	1.07	96	0.01	325	1.54	0.01	0.02	1	1	10
A	4	4	13	8	36	0.1	6	7	854	2.36	30	5	ND	ND	116	1	12	5	33	6.32	0.04	8	95	1.01	45	0.01	47	0.22	0.01	0.03	9	1	5
A	5	4	20	14	59	0.6	13	12	1740	3.24	57	5	ND	ND	91	2	12	4	42	5.25	0.05	3	47	1.82	33	0.01	100	0.13	0.06	0.01	10	1	5

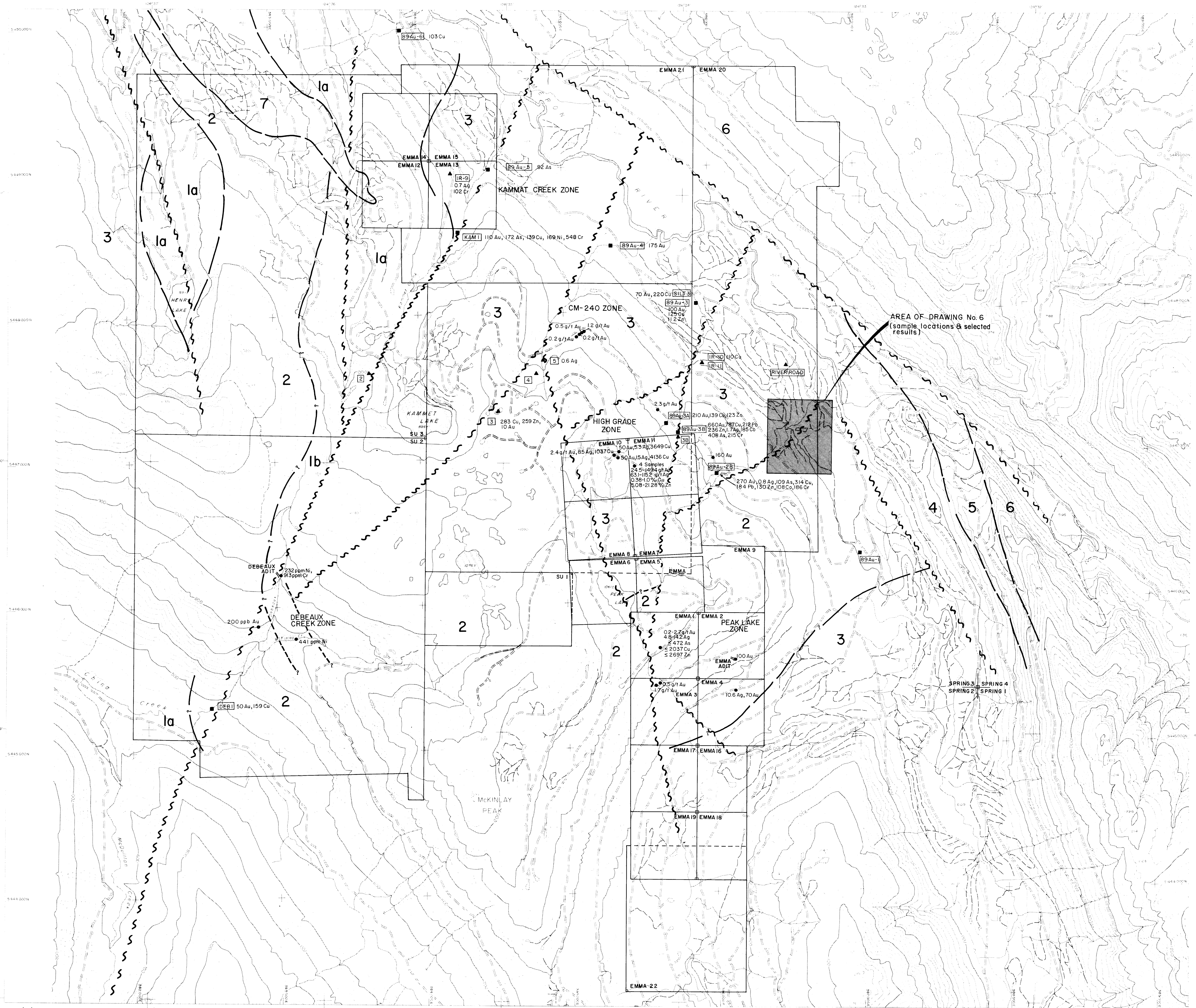
CERTIFIED BY : [signature]

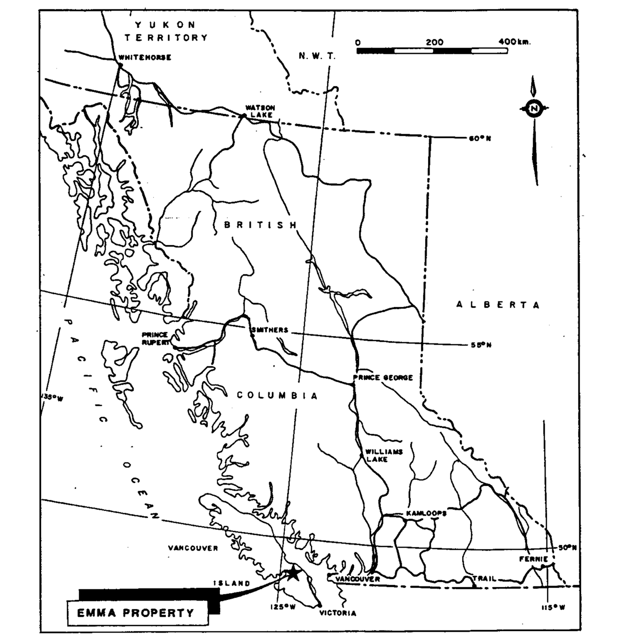
APPENDIX V

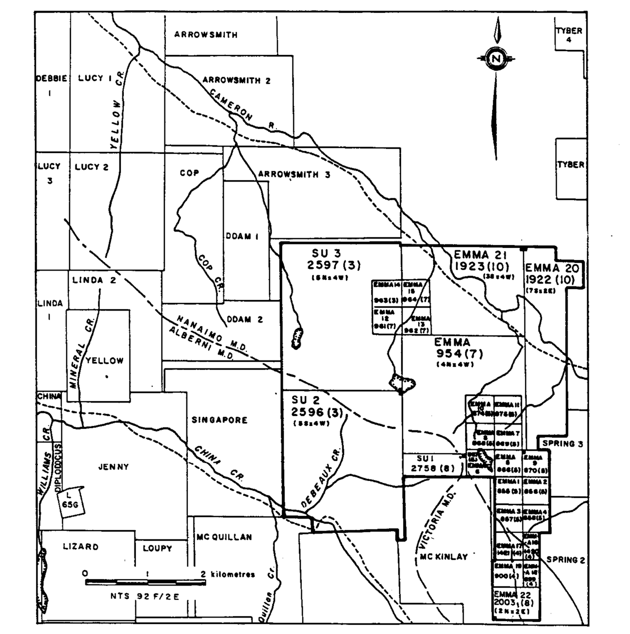
Conversion Factors for Metric Units

Conversion Factors for Metric Units

1 inch	=	25.4 millimetres	(mm)
		or 2.54 centimetres	(cm)
1 cm	=	0.394 inch	
1 foot	=	0.3048 metre	(m)
1 m	=	3.281 feet	
1 mile	=	1.609 kilometres	(km)
1 km	=	0.621 mile	
1 acre	=	0.4047 hectares	(ha)
1 ha	=	2.471 acres	
1 ha	=	100 m x 100 m = 10,000 m^2	
1 km^2	=	100 ha	
1 troy ounce	=	31.103 grams	(g)
1 pennyweight/ton (dwt/ton)	=	1.7143 grams/tonne	
1 g	=	0.032 troy oz	
1 pound (lb)	=	0.454 kilogram	(kg)
1 kg	=	2.20 lb	
1 ton (2000 lb)	=	0.907 tonne (0.9072)	(t)
1 tonne	=	1.102 ton = 2205 lb	
1 troy ounce/ton (oz/T)	=	34.286 grams/tonne	(g/t)
1 pennyweight	=	1.555 grams	
1 g/tonne	=	0.0292 troy oz/ton	
1 g/t	=	1 part per million	(ppm)
1 ppm	=	1000 parts per billion	(ppb)
10,000 g/t	=	1%	







LITHOLOGIES

CRETACEOUS

Nanaimo Group

Comox Formation

7 Boulder to pebble conglomerate, pebbly sandstone

TRIASSIC

Vancouver Group

Karmutsen Formation

6 Tholeiitic basalt pillow lavas and pillow breccia

UPPER PALEOZOIC

Sicker Group

Buttle Lake Formation

5 Interbedded chert, siltstone, shale and crinoidal, bioclastic limestone

Sediment-Sill Unit

4 Siltstone, chert, argillite with rip-up clasts of maroon and green chert intruded by sills of plagio-phyric diabase

Myra Formation

3 Thin-bedded to massive, fine- to medium-grained andesite tuff, laminated to thin-bedded cherty tuff and chert, minor aphyric pillow basalt

Transitional Nitinat/Myra Formation

2 Intercalated pyroxene porphyritic, basaltic andesite agglomerate, agglomeratic andesite lapilli tuff, medium-grained andesite tuff, minor cherty tuff

Nitinat Formation

1 1b: Medium-grained, diabasic gabbro, locally altered to serpentine
1a: Pyroxene-rich pillow basalt overlain by exhalite sequence consisting of pyritic black chert, jasper and laminated cherty tuff

SYMBOLS

Contact (approximate, assumed)

Fault (approximate, assumed)

Claim boundary and claim post

Adit

• 1988 Rock sample location with selected results

▲ 1989 Rock sample location with selected results

■ 1989 HMC silt sample locations with selected results

(Au in ppb and all others in ppm, unless otherwise stated)

Reference: Cope, 1988

0 500 1000 m.

N.T.S. 92 F/2E

GEOLOGICAL BRANCH ASSESSMENT REPORT

19,471

Au RESOURCES LTD.

PROPERTY PLAN, GEOLOGY, SAMPLE LOCATIONS AND SELECTED RESULTS

EMMA PROPERTY

NANAIMO, ALBERNI & VICTORIA, MINING DIVISION

Project No: V 257	By: TH, GML, GRC
Scale: 1:10,000	Drawn: GML/dw
Drawing No: 5	Date: May 1989

MPH Consulting Limited