827567

COPPER CANYON PROPERTY:

GEOLOGICAL, GEOCHEMICAL,

GEOPHYSICAL AND DIAMOND DRILLING SURVEYS,

1985 - 1986

CHEMAINUS RIVER - MOUNT SICKER AREA

N.T.S. 92 B / 13 W
Latitude 48° 52' North / Longitude: 123° 50'
Victoria Mining Division
Vancouver Island, British Columbia

FOR

CANAMERA EXPLORATIONS INC.

BY

DR. G. BENVENUTO

March, 1986

TABLE OF CONTENTS

SUMMARY

The Copper Canyon property straddles the Chemainus River Valley between Mount Sicker and Mount Brenton, 10 km northwest of Duncan, southeastern Vancouver Island, B.C. The property consists of six contiguous claims covering about 0.9 square km: three reverted Crown Grants; Copper Canyon, Victoria, and the Elmore Fraction, and three 2-post claims; Copper Mint I-III, under option to Canamera Explorations Inc.

The exploration target is a stratabound, polymetallic (Cu, Pb, Zn, Au, Ag), volcanogenic massive sulphide deposit.

The property is underlain by a complex succession of island arc-type, calc-alkaline basaltic and rholitic flows? and volcaniclastics of the Myra Formation of the Devonian and older, Sicker Group. The property is located 1 km west, and on trend with, the Twin 'J' deposit on Mount Sicker which produced 305,000 tons of ore grading 3.3% Cu, 7.5% Zn, 0.13 oz Au/t and 2.75 oz Ag/t, between 1898 and 1944. Corporation Falconbridge Copper is conducting an extensive exploration program on Mount Sicker. 4.7 km west of the property, Abermin Corporation, in 1985, discovered a 6.3 km thick by 396 m long zone of mineralization in the Myra Formation, that grades 0.4% Cu, 0.4% Pb, 2.0% Zn, 0.015 oz Au/t and 1.12 oz Ag/t. 160 km to the northwest of the property, at Buttle Lake, Westmin Resources Ltd. has produced 4.6 million tons of ore (to end of 1980) from massive sulphide deposits in the Myra Formation. In 1979, Westmin discovered, on the same property, 15 million tons of ore grading 2.2% Cu, 0.3% Pb, 5.3% Zn, 0.07 oz Au/t and 1.1 oz Ag/t.

The earliest exploration on Copper Canyon (1898 to 1907) consisted of driving adits and trenches along narrow, pyrite and chalcopyrite and quartz veins in shistose rhyolite along the Chemainus River (the Copper Canyon workings), and pyrite and chalcopyrite and quartz and sericite, fracture-controlled? alteration zones in schistose, pyritic basalt 275 m east of the river (the Victoria workings). The Victoria adit produced 120 tons of ore grading 4% Cu and 0.9 oz Ag/t, 79 tons of which graded 0.05 oz Au/t. Between 1971 and 1973, reconnaissance scale, geochemical and geophysical surveys were conducted on the property. V.M.E.X., in 1979, conducted soil sampling, V.L.F.E.M. and magnetometer surveys over most of the property. Comprehensive, deep-reaching exploration on the property was first initiated by Canamera Explorations.

The 1985-86 exploration program on the property included cutting and flagging 12.5 km of gridline, a soil sample geochemical survey over the entire property (320 soil samples at 25 m intervals), an I.P.-resistivity geophysical over most of the property (7.0 km total, along 12 grid lines), 370 m of trenching, as three trenches through overburden, across I.P.-resistivity and/or soil geochemical anomalies, and diamond drilling, totalling 670 m (2,199 ft.), of five holes to test I.P.-resistivity and soil sample anomalies.

Trenching in the Copper Mint III claim uncovered a schistose rhyolite-basalt contact marked by massive barite (+ quartz) veinlets and anomalous Cu (540 ppm) and Zn (225 ppm) within the pyritic basalt over a 12 m width from the contact, which warrants further exploration. Diamond drill hole 85-3 intersected a 16 m wide interval of rhyolitic tuffaceous agglomeratic lapillistone with 0.5-5%, fracture-controlled pyrite, locally with minor chalcopyrite. A total of 4.9 m from this interval contains anomalous concentrations of Cu (to 1180 ppm), Pb (to 152 ppm), Zn (to 1401 ppm), Au (to 20 ppb), Hg (to 1300 ppb) and Cd (to 8 ppm). 46 m downhole (and up-section?) from this, two, 18 and 14 cm wide intervals of graphitic chert occur at the contact between rhyolitic tuff and basaltic tuff?, which warrants further exploration. Drill hole 86-5 intersected a 3 m wide interval of bedded, basaltic, graphitic crystal and ash tuff with 19 m of agglomeratic, tuffaceous lapillistone with clasts of porphyrophyric basalt, grey chert and black cherts. The tuff resembles the "mudstones" within rhyolite containing mineralization discovered by Abermin Corp., 3.5 km to the west. Another horizon with potential for hosting massive sulphide deposits, outcrops on the Chemainus River in the southeastern Copper Mint I claim. It consists of 7 m of bedded, meta-argillaceous chert and meta-argillite.

Although the 1985-86 exploration program did not locate massive sulphide mineralization, it resulted in locating four horizons with several key features, characteristic of horizons hosting massive sulphide deposits. The horizons consist of the contact zone between major units of rhyolite and basalt, marked by meta-argillaceous tuffs and chert in three cases, and by barite veins? in the fourth. Two horizons also are underlain? by pyritic intervals with anomalous concentrations of Cu and Zn.

Diamond drilling, trenching, soil sampling and I.P.-resistivity surveys in 1985-86 have delineated a number of exploration targets that warrant testing. Recommendations for further exploration include a total of 500 m (1,650 ft.) of diamond drilling (6 holes), an I.P.-resistivity survey totalling 3.25 km (11 lines), downhole Crone Pulse E.M. survey in 8 drill holes, totalling about 690 m (2,265 ft.), 3 trenches totalling 225 m (738 ft.) and 4 days of geologic mapping along the Chemainus River.

LOCATION, ACCESS, PHYSIOGRAPHY

The Copper Canyon property is located 10 km northwest of the town of Duncan on southeastern Vancouver Island, British Columbia (Figure 1). The property is easily accessible from the Island Highway, via MacMillan Bloedel's Chemainus River main road for 11 kms (15 minutes drive). Access to various points within the part of the property west of the Chemainus River is provided by four, rehabilitated, old logging roads that, in part require 4-wheel drive.

The property straddles the Chemainus River valley and extends 500 m eastwards, 125 m up the western slope of Mount Sicker, and westward 350 m up the southeastern slope of Mount Brenton. There is extensive overburden in the river valley, at least 40 m thick at the site of one drill hole. However, extensive, cliff-forming outcrops occur along the river. On the slopes of Mount Sicker and Brenton, there are a few widely scattered outcrops of bedrock. Trenching on the southeastern slope of Mount Brenton indicates the overburden there is relatively thin (0.5 to 6 m).

The property is covered by second and third growth, Douglas fir, hemlock, balsam and cedar trees, and a large logging slash in the Chemainus River valley.

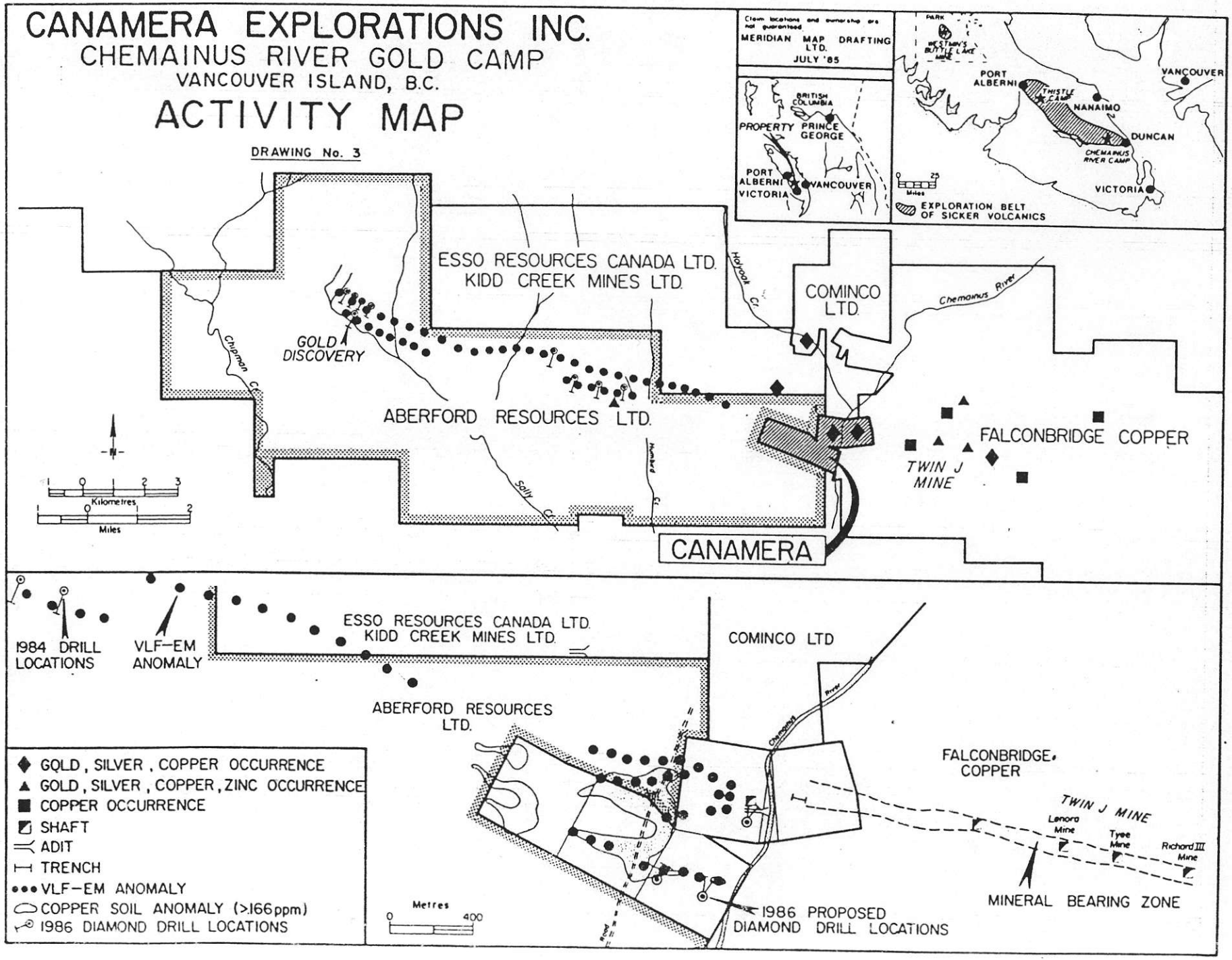
CANAMERA EXPLORATIONS INC.

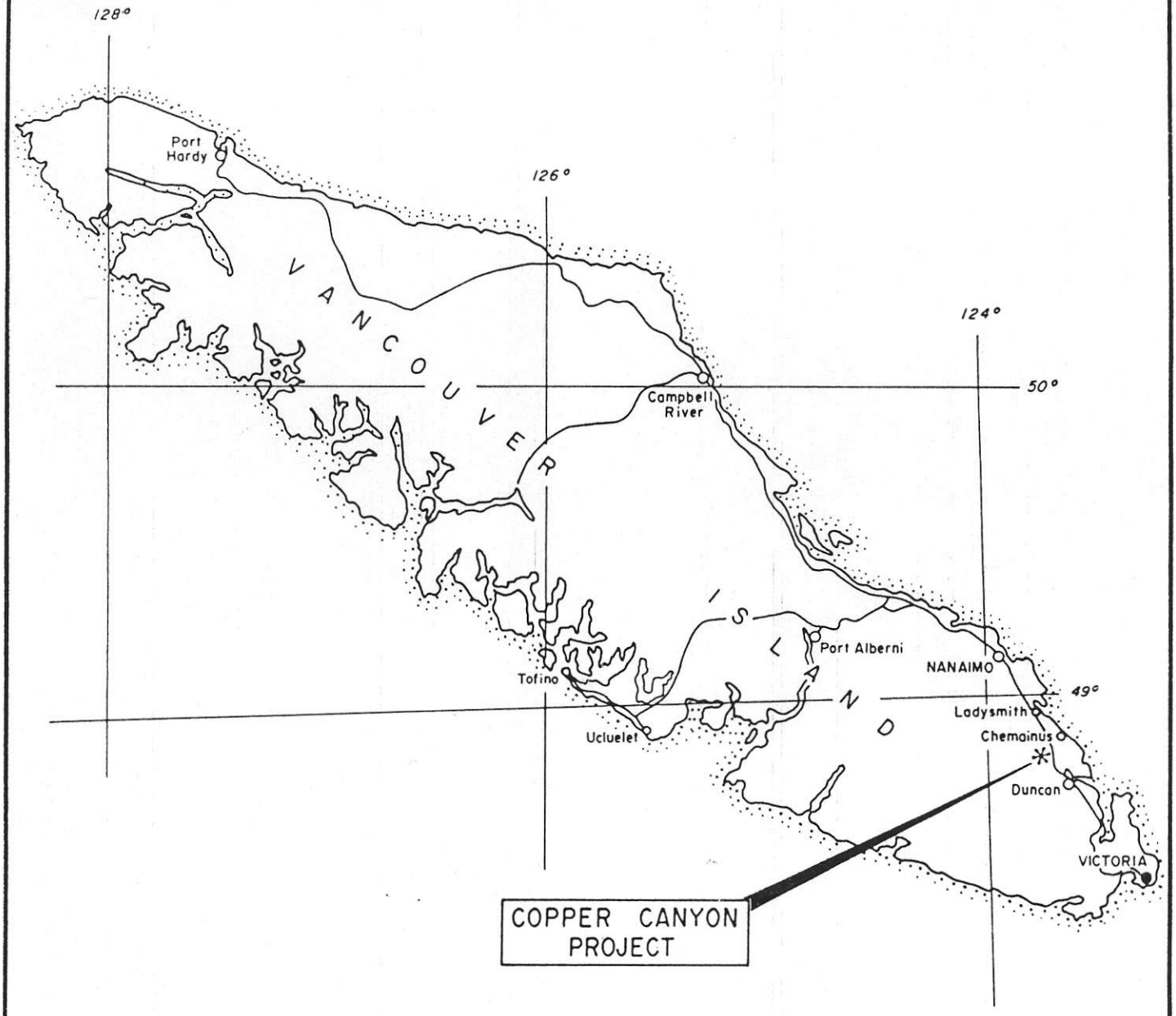
CHEMAINUS RIVER GOLD CAMP

VANCOUVER ISLAND, B.C.

ACTIVITY MAP

DRAWING No. 3





CANAMERA EXPLORATIONS INC.

COPPER CANYON PROJECT

CHEMAINUS RIVER

VICTORIA MINING DIVISION

VANCOUVER ISLAND, B.C.

LOCATION MAP

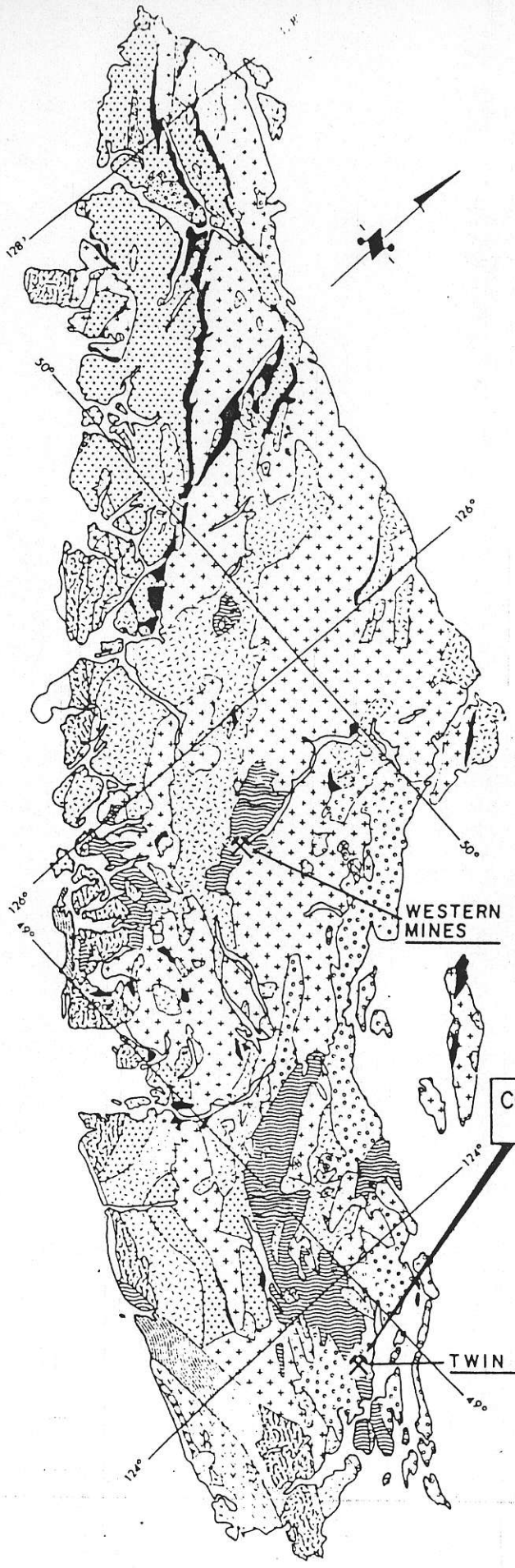
KILOMETRES

0 50 100

DATE Nov., 1985

DRAWING No. 1

Geological sketch map of Vancouver Island.



LEGEND

	CARMANAH GROUP	MIDDLE TERTIARY
	CATFACE INTRUSIONS	EARLY TO MIDDLE TERTIARY
	METCHOSIN VOLCANICS	EARLY TERTIARY
	NANAIMO GROUP	LATE CRETACEOUS
	QUEEN CHARLOTTE GROUP KYUQUOT GROUP	LATE JURASSIC TO EARLY CRETACEOUS
	LEECH RIVER FORMATION PACIFIC RIM COMPLEX	
	ISLAND INTRUSIONS	EARLY AND (?) MIDDLE JURASSIC
	BONANZA GROUP	EARLY JURASSIC
	VANCOUVER GROUP	LATE AND (?) MIDDLE TRIASSIC
	PARSON BAY FORMATION QUATSINO FORMATION	
	KARMUTSEN FORMATION	
	SICKER GROUP	PALEOZOIC
	METAMORPHIC COMPLEXES	JURASSIC AND OLDER

NOTE: After J. E. Muller, 1980—GSC, Paper 79-30

CANAMERA EXPLORATIONS INC.

COPPER CANYON PROJECT
CHEMAINUS RIVER
VICTORIA MINING DIVISION
VANCOUVER ISLAND, B.C.

REGIONAL GEOLOGY

MILES
0 20 40

DATE Nov., 1985

DRAWING No. 2

CLAIMS INFORMATION

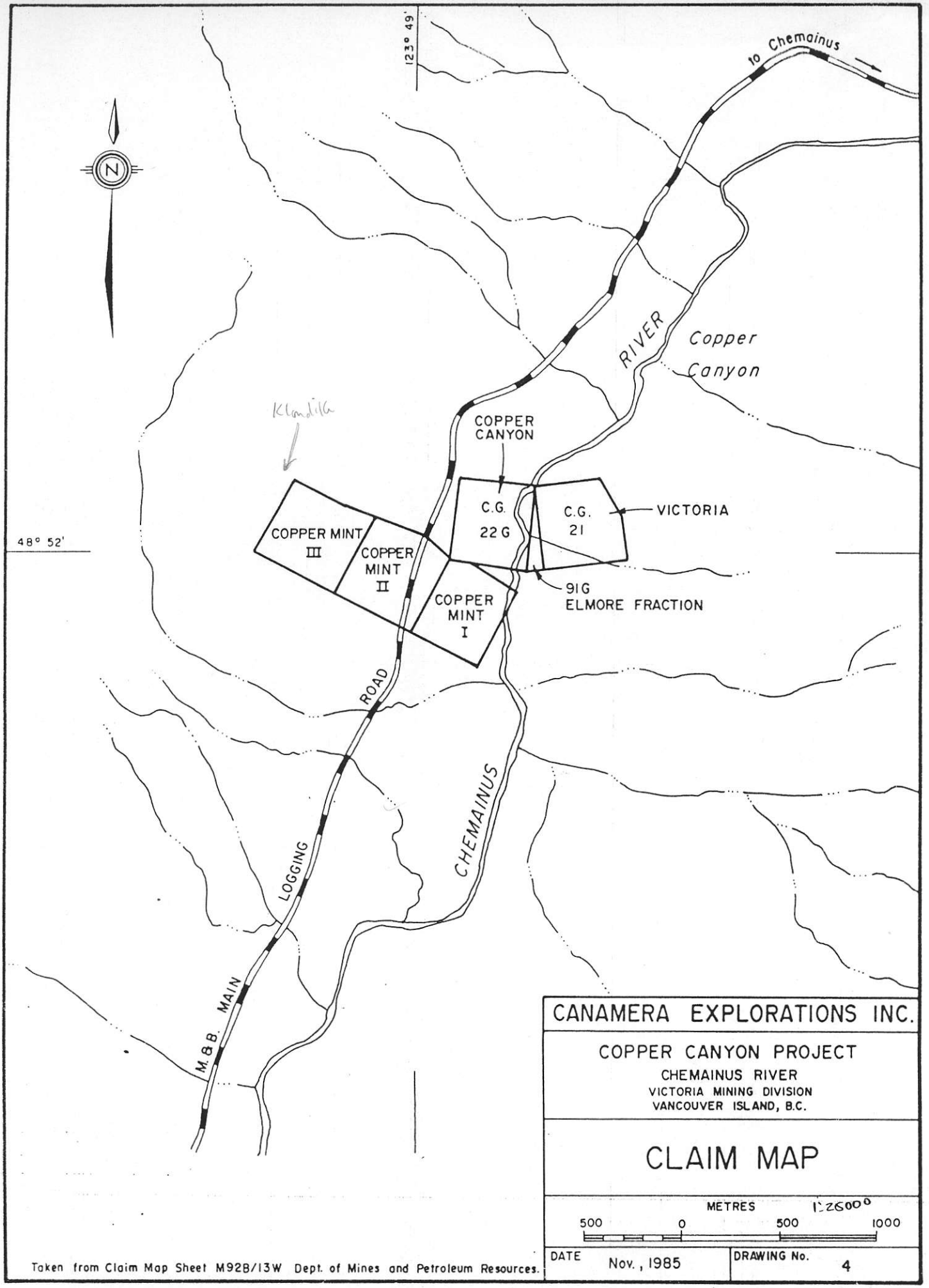
The Copper Canyon property consists of six contiguous claims (Figure 4). The claims information is as follows:

Claim	Type	Record No.	Expiry Date
Copper Canyon	Reverted Crown Grant	1113	Sept. 14, 1987
Victoria	Reverted Crown Grant	1114	Sept. 14, 1987
Elmore Fraction	Reverted Crown Grant	1115	Sept. 14, 1987
Copper Mint #I	2 post staked claim	17566	Aug 8, 1989
Copper Mine #II	2 post staked claim	17567	Aug 8, 1989
Copper Mint #III	2 post staked claim	17568	Aug 8, 1989

The claim block is held under a current option agreement to Canamera Explorations Incorporated.

REGIONAL ECONOMIC GEOLOGY OF THE SICKER GROUP

The Copper Canyon is underlain by the Myra Formation of the Lower Paleozoic Sicker Group of island arc-type, calc-alkaline, basaltic and rhyolitic flows and volcaniclastics. The Myra Formation hosts two major volcanogenic, polymetallic massive sulphide deposits. Just 1 km east of the Copper Canyon property, the Twin 'J' on Mount Sicker produced 305,000 tons of ore with an average grade of 3.3% Cu, 7.5% Zn (estimated), 0.13 oz Au/t and 2.75 oz Agt/, between 1898 and 1944. The ore was produced from two westerly striking, steeply dipping, intervals of thinly bedded, schistose, rhyolitic tuff and meta-argillaceous (i.e. graphitic) tuff. Barite forms a significant gangue mineral in the pyrite and chalcopyrite and sphalerite and galena ore.



CANAMERA EXPLORATIONS INC.

COPPER CANYON PROJECT

CHEMAINUS RIVER
VICTORIA MINING DIVISION
VANCOUVER ISLAND, B.C.

CLAIM MAP

METRES 1:25000

500 0 500 1000

Taken from Claim Map Sheet M92B/13W Dept. of Mines and Petroleum Resources.

DATE Nov., 1985

DRAWING No. 4

160 km to the northwest of the property, Westmin Resources Ltd. has produced, to the end of 1980, 4.6 million tons of ore, grading 1.6% Cu, 1.0% Pb, 7.6% Zn, 0.06 oz Au/t and 2.8 oz Ag/t (and by-product Cd) from the Myra and Lynx mines, near Buttle Lake. Westmin's discovery in 1979 of a new orebody on their Buttle Lake property spurred intensive exploration in the Sicker Group, resulting in extensive staking. The new orebody, the H-W, contains at least 15 million tons grading 2.2% Cu, 0.3% Pb, 5.3% Zn, 0.07 oz Au/t and 1.1 oz Ag/t. The ore deposits occur in a heterolithic succession of basaltic, andesitic, dacitic and rhyolitic volcaniclastics containing subordinate chert, jasper, and graphitic chert to argillite. Barite forms a significant gangue mineral in portions of the ore.

4.7 km to the west-northwest of the Copper Canyon property, Abermin Corporation, in 1985, discovered a zone at least 396 m long, of sub-economic mineralization over an average width of 6.3 m, with an average grade of 0.4% Cu, 0.4% Pb, 2.0% Zn, 0.015 oz Au/t and 1.12 oz Ag/t. This zone, called the Coronation Zone, consists of fracture-controlled sulphides in a unit of rhyolitic tuffs with interlayers of argillite and "chloritic mudstone". 500 m east of the Coronation Zone, a diamond drill hole intersected 3.7 m of sulphides grading 1.6% Cu, 2.53% Pb, 9.22% Zn, 0.213 oz Au/t and 8.60 oz Ag/t.

In the past 8 years a large number of major and junior companies have conducted exploration programs for massive sulphide deposits in the Sicker Group in the area of the Copper Canyon property, including S.E.R.V.M., UMEX, Corporation Falconbridge Copper, Falconbridge Ltd., Esso Resources Ltd., Kidd Creek Mines Ltd., Noranda, Utah Mines Ltd., Abermin Corporation, and Imperial Metals Corp. Corporation Falconbridge Copper is conducting an extensive exploration program on Mount Sicker just east of the property. Their program consists of E.M. surveys, trenching and diamond drilling. The results of thier program have not been made public to date.

PROPERTY HISTORY

The Copper Canyon property was first staked in 1896? by P.J. Pearson, of Duncan, B.C. In the Copper Canyon claim, between 1898 and 1902, an adit was driven westerly for 94.8 m from the Chemainus River, along a 0-36 cm thick, pyrite and chalcopyrite and quartz vein in pyritic (0.5-1%), sericite-quartz-schist derived from rhyolite. Four

cross-cuts, according to the 1903, B.C.D.M. Annual Report, intersected "black schist". A chip sample across the pyrite and chalcopyrite vein at the portal of the adit, where it is 36 cm thick, yielded 1.8% Cu, 5.3 ppm Ag and 76 ppb Au. A number of short adits and trenches were driven from the Chemainus River, along narrow pyrite $\pm$ chalcopyrite + quartz veins in rhyolitic schist north of the main adit.

About 275 m east of the Chemainus River, in the Victoria claim, 120 tons of ore were produced between 1904 and 1907, grading 14% Cu, and 0.9 oz Ag/t (about 79 tons of this ore contained 0.05 oz Au/t). The ore was produced from an adit driven 47 m along 100° azimuth. The ore appears to have consisted of quartzose, fracture-controlled? zones with pyrite and chalcopyrite, with a pyritic, strongly schistose basalt.

Between 1971 and 1973, a number of reconnaissance exploration programs were conducted on the Copper Canyon property by a number of groups and individuals. In 1979, UMEX conducted soil sampling, V.L.F.-E.M. and magnetometer surveys which delineated extensive soil sample anomalies of Cu and Zn and a long V.L.F. anomaly.

In May 1985, Canamera Explorations Ltd. optioned the Copper Canyon property and began a comprehensive exploration that has delineated a number of horizons with the potential for hosting massive sulphide deposits.

1985-86 EXPLORATION PROGRAM BY CANAMERA

A. Summary of Work Completed

Canamera Explorations Inc. funded a comprehensive exploration program on the Copper Canyon property during the summer of 1985 and winter of 1985-86. The program was conducted and directed by Bill Dynes of Geo. P.C. Services, Inc. A summary list of the work completed follows.

1. 12.5 km of grid line was cut and flagged. The lines are 100 m apart, and flagged at 25 m stations along the lines.

2. About 320 soil samples were collected at 25 m intervals along the grid lines, from the 'B' horizon, and analyzed for a wide variety of metals including Cu, Pb, Zn, Au, Ag, Mo, Ni, Co, As, Cd and Cr, by geochemical ICP analytical method.

3. An I.P.-resistivity survey conducted by Peter Walcott and Associates, totalling 7.0 km, along 12 grid lines spaced 100 m apart. The survey utilized the pole-dipole array, with readings taken at 25 m intervals, for 4 to 5 levels of data. The survey completed all but about 525 m of the total grid line covering the property.

4. Scintrex "Genie" EM Survey conducted along a total of 10 km.

5. Trenching with an excavator; three trenches, total length of 370 m, as follows: Line 4+00W / 200 to 325 m S, Line 11+00W / 175 to 250 m N, and Line 12+00W / 005 to 175 m N.

6. Diamond drilling: NQ core size, 5 drill holes, totalling 670 m (2,199 ft.), by Candrill of White Rock, B.C., as follows:

   D.D.H. 85-1: Line 0+00 / 0+25 m S; 62.8 m (207 ft.) long, 022° azimuth, -55°N inclination.

   D.D.H. 85-2: Line 4+00W / 2+07 m N; 94.8 m (311 ft.) long, 186°, -56°S.

   D.D.H. 85-3: Line 4+00W / 3+25 m S; 170.0 m (557 ft.) long 186°, -50° S.

   D.D.H. 85-4: Line 4+00W / 2+45 m S; 124.1 m (407 ft.) long, 007°, -50°N.

   D.D.H. 86-5: Line 6+00W / 1+00 m N; 218.5 m (717 ft.) long, 205°, -50°S.

7. Blasting of a cut through gossanous schists located at the ~~Vicotira~~ Victoria workings.

8. Upgrading of old logging roads to provide access for trenching and diamond drill sites.

9. Geologic mapping and rock sampling along a portion (360 m total) of the outcrop exposed along the Chemainus River and of the few scattered outcrops on the property.

B. Discussion of Results of Geological and Geophysical Surveys, Trenching and Diamond Drilling Programs

1. Property Geology

Lithology

The claims are underlain by a complex, thickly interlayered succession, of rhyolitic and basaltic, volcaniclastics and flows? of the Myra Formation of the Devonian-Silurian Sicker Group. The rhyolite is feldspar, quartz porphyritic and/or microporphyritic and metavitric; the basalt is feldspar (mafic) porphyritic and/or microporphyritic. Rhyolitic and basaltic volcaniclastics appear to comprise predominantly massive to weakly graded, lithic, crystal and ash tuffs with intervals of tuffaceous, agglomeratic lapillistone, and thin bedded, fine tuff to cherty tuff to chert. A large proportion of the succession consists of massive-appearing, porphyritic rhyolite and basalt that may comprise thick flows with minor interflow intervals of bedded tuff and cherty tuff.

The succession also contains at least three intervals of bedded, graphitic, sedimentary rocks up to 6 to 7 m thick, which form key horizons along which to explore for stratabound massive sulphide deposits. Graphitic schists are closely associated with the deposits mined on Mount Sicker, about 1.5 km to the east. The intervals consist of thin bedded to laminated, graded, meta-argillaceous chert, cherty argillite and argillite, or meta-argillaceous crystal and ash tuff.

Alteration

The rhyolites and basalts vary from moderately altered and weakly schistose, to completely altered and strongly schistose. The rhyolite is variably altered to sericite, quartz, clinozoisite?, epidote, minor chlorite, and locally iron-carbonate. The basalt is variably altered to sericite, chlorite, epidote, quartz, and calcite. The basalt, in addition, locally contains up to 15 - 20%, nodular-appearing pathes of very strong

epidote alteration. Moderately to very strongly silicified basalt was intersected over wide intervals in two diamond drill holes. Systematic sampling of the rocks for whole-rock, geochemical analyses and thin-section examination is required to determine the exact nature of alteration. This may delineate alteration zones of the type that commonly result from hydrothermal alteration of the rocks underlying, or proximate to massive sulphide deposits.

Structure

Preliminary work suggests that the rhyolitic and basaltic rocks of the Sicker Group that underlie the claims, form a moderately to steeply south to southwest dipping (60 to 80°) succession that is upright, but locally broadly folded into steep to moderate, north to northwest dips and overturned.

The rocks commonly are cut by a very weak, incipient schistosity which locally grades into thin to thick intervals with moderately to strongly developed schistosity. Bedding is locally apparent in schistose rocks, where it is generally parallel to schistosity.

Along the southern margin of the claims, the Sicker Group is unconformably overlain by (or in fault-contact with) siltstones, sandstones and conglomerates of the Cretaceous Nanaimo Group.

Mineralization

Copper Canyon Workings

Previous surface and underground exploration on the claims appears to have been predominantly centred on an about 90 m wide interval of rusty weathering, pyritic, sericite schist exposed along the Chemainus River in the Copper Canyon claim. Trenches and short adits have been driven along narrow quartz veins with pyrite and chalcopyrite, that occur parallel to, but very locally are cross-cut by schistosity. Within this interval, nine pyritic quartz veins were observed. Individual veins vary from 2 - 8 cm to 0 - 36 cm thick, and contain 2 - 3%, to 50 - 60% pyrite and locally a few percent to 15% chalcopyrite with a matrix of coarse grained, clear grey to milky white quartz. Chip samples across the veins yielded analyses of up to 2.4% Cu, 28 ppm Pb, 144 ppm Zn, 8.5 ppm Ag and 96 ppb Au (across 31 cm).

The pyrite-chalcopyrite-quartz veins along the Chemainus River occur within a 90 m wide interval of relatively uniform appearing sericite-quartz (clinozoisite?-chlorite-pyrite) schist. The schist appears to be derived from feldspar (locally, quartz) porphyritic rhyolite. The schist contains about 0.5 to 2%, disseminated pyrite. The moderate to strong schistosity strikes 085° and dips 75° south, approximately parallel to layering and bedding in rocks just to the north and south of the interval. It is possible that this interval of pyritic schist represents a zone of hydrothermal alteration and sulphide mineralization of the type that often underlies volcanogenic massive sulphide deposits. Thus, further exploration is warranted within the thick succession of interlayered rhyolitic and basaltic tuffs and flows that overlies this interval of schist to the south. One horizon with a higher potential for the occurrence of massive sulhide deposits is located on the Chemainus River, 500 m south of the pyritic schist. It is marked by a 7 m thick interval of bedded, meta-argillaceous chert and meta-argillite. Although this interval does not appear to contain strataform massive sulphides, a chip-sample across interval shows that the meta-argillaceous rocks contain high background concentrations of Cu (179 ppm) and Pb (24 ppm), and weakly anomalous concentrations of As (58 ppm) and Au (22 ppb).

Victoria Workings

The Victoria workings are located in the Victoria claim about 275 m east of the Chemainus River, and consist of a short (47 m) adit and two or more pits. A B.C.D.M. Annual Report indicates 120 tons of ore were produced from the adit between 1904 and 1907, with an average grade of 4% Cu and 0.9 oz Ag/t. About 79 tons of the ore contained 0.05 oz Au/t.

A brief examination was made of waste rock from the adit, one of the pits and a cut blasted in 1985 for Canamera. It appears that production was from fracture-controlled?, pyrite + chalcopyrite + sericite + quartz alteration zones, which locally contain pyrite + chalcopyrite + quartz veins. A small pit about 15 m southeasterly and upslope from the adit exposes an at least 90 cm wide interval of deeply weathered sericite-quartz-schist and quartzose rock with 3-12%, but locally to 50%, disseminated pyrite. A chip-sample (#19A) across the interval yielded _____.

A 7 m wide cut blasted across a 12 m wide outcrop, about 15 m south of the small pit exposes two gossanous zones, 20 cm and 7-18 cm thick and 20 to 36 cm apart. The zones appear to comprise deeply weathered and oxidized quartz? + sericite + pyrite (to 50%) that is locally strongly magnetic. A chip-sample across the 20 cm thick zone (#20A) yielded _____ ppm Cu, _____ ppm Zn, _____ ppm Ag and _____ ppb Ag. A chip-sample across the 20 - 36 cm wide interval of intervening basalt that is strongly schistose and contains about 1 - 5%, disseminated pyrite and 0.5 - 1%, disseminated chalcopyrite? yielded (#20C): yielded _____ ppm Cu, _____ ppm Pb, _____ ppm Zn, _____ ppm Ag, and _____ ppb Au.

The pyritic alteration? zones occur parallel to, and at low (30°) angles to schistosity in the enclosing basalt (which strikes 285° and dips 65 - 70° N). The basalt is strongly schistose, completely sericite-chlorite-altered and contains 2 - 5%, locally to 5 - 10% disseminated pyrite that appears to pre-date, and be deformed by, schistosity. The basalt appears massive, and locally contains to 5%, feldspar? phenocrysts.

Evidence for the occurrence of stratabound mineralization is lacking at the Victoria workings. However, there is a prominant I.P.-resistivity anomaly on Line 3+00E that is approximately centred on the area of the workings. This and the fact that there is very limited exposure of bedrock in the area suggests that the I.P.-resistivity anomaly warrants testing with a diamond drill.

2. Scintrex "Genie" E.M. Survey

The purpose of the "Genie" E.M. survey was to determine whether this relatively inexpensive method could detect several of the anomalies previously detected by V.L.F.E.M. and I.P.-resistivity surveys. If so, it would serve as a cost-effective, reconnaissance geophysical survey technique on the remainder of the property. However, the "Genie" survey failed to detect any anomalies, and was abandoned in favour of the I.P.-resistivity method.

3. I.P.-Resisitivity Survey

This survey detected two or possibly three zones of very high to anomalously high chargeability and somewhat low to very low resistivities in the eastern part of the property (Victoria claim, Lines 1+00E to 4+00E), and two anomalous zones in the western part of the property (Copper Mint III claim, Lines 11+00W, to 13+00W). It also detected three zones of somewhat higher chargeabilities in the central part of the property (Copper Canyon and Copper Mint I and II claims, Lines 1+00W, 3+00W, 4+00W and 6+00W to 8+00W).

Trenching and drilling across several of these zones suggest that the zones of very high to anomalously high chargeabilities reflect the presence of disseminated and stringer pyrite in altered and schistose rhyolites and basalts, locally containing anomalous concentrations of Cu, Zn and Au, characteristic of rocks immediately underlying many massive sulphide deposits. Drilling (D.D.H.s 85-3 and 86-5) has shown that the zones of higher appearing chargeabilities in areas of generally low to very low chargeabilities, reflect the fact that bedrock is buried beneath deep overburden (which yields low chargeabilities). The I.P.-resistivity geophysical survey technique is considered preferable to the E.M. survey technique becaue it is effective at detecting disseminated and stringer sulphides that may be associated with massive sulphide mineralization (particularly if the mineralization is sphalerite-rich, sphalerite being an insulator). However, in the Chemainus River valley, the overburden is very thick and a deep-penetrating I.P.-resistivity is required to reach bedrock.

The I.P.-resistivity survey delineated four diamond drill targets that were tested in 1985-86, as discussed below. Three zones of anomalous chargeabilities and resistivities in the Victoria claim, and two in the Copper Mint III claim remain to be tested by a diamond drill. These drill targets are listed in the section on recommendations.

4. Trenching

A total of 370 m excavated in three trenches as follows:

a) Trench along Line 4+00W

A 125 m long trench was dug between stations 200 S and 325 S, to a depth of 3 to 4 m in order to sample the overburden beneath a 150 m wide zone from which soil samples with highly anomalous copper (786 to 1,792 ppm) were collected. The purpose was to determine whether the anomalous copper extends to depth within the overburden and reflects bedrock mineralization that may warrant testing with a diamond drill.

Soil sampling from the base of the trench indicates the overburden contains relatively uniformly anomalously high concentrations of copper (296 to 560 ppm), high background concentrations of zinc (120 to 205 ppm), and locally weakly anomalous gold (26 to 55 ppb), across at least 125 m. No drill target was delineated from the sampling, but the I.P.-resistivity survey detected an anomaly at 200 m, which was drilled, indicating overburden to be 30 m thick in the area of the soil anomaly.

b) Trench along Line 11+00W

A 75 m long trench was dug to bedrock, between stations 175 and 250 m N, to attempt to locate the bedrock sources of a broad zone of anomalously high chargeabilities and low to anomalously low resistivities, and of weakly anomalous concentrations of Cu in soil samples (210 to 457 ppm) collected between 175 and 250 m N.

Bedrock in the trench consists of schistose, quartz micropyritic rhyolite to the south, and schistose, basaltic flows(?) to the north. The anomalously high chargeabilities appear to reflect the presence of broad zones within the rhyolite and basalt with a few to 5-10%, disseminated and stringer pyrite. A 2.5 m wide interval (at 196.5 - 199 m N) of schistose, pyritic (3 - 4%, overall), rhyolite contains an average of 550 ppm Cu. The southern 1.5 m of this rhyolite also contains 3468 ppm Ba (anomalous). The 2 m wide interval of less pyritic rhyolite immediately to the south contains 8391 ppm Ba (but only 115 ppm Cu). The pyritic rhyolite with anomalous Cu and Ba occurs at the contact between the unit of rhyolite to the south, and basalt to the north. This contact appears to

correlate with a similar contact in the trench along Line 12+00W (at 1+58 m N), 100 m to the west, and warrants further exploration because of the occurrence of anomalous Cu in association with highly anomalous Ba. Continuous 5 m wide chip-samples along the trench indicates bedrock contains high background to weakly anomalous concentrations of Cu which may be the source of the Cu in soil samples. Further exploration of the rhyolite-basalt contact with anomalous Cu and Ba is warranted.

c) Trench along Line 12+00W

A 170 m long trench was excavated to bedrock between stations 0+05 m and 1+75 m N to identify the sources of two I.P.-resistivity anomalies and anomalous copper in one soil sample.

The trench uncovered a thickly interlayered succession of rhyolitic and basaltic flows(?) that are variably schistose and altered. Both rock types contain broad intervals with about 1 to 3%, disseminated and stringer pyrite. Continuous, 5 m wide, chip-sampling along the trench revealed that pyritic, schistose basalt between 158 and 170 m N contains an average of 540 ppm Cu (highly anomalous) and 225 ppm Zn (weakly anomalous). The rhyolite unit immediately to the south, within a 1 m wide interval at its contact with the basalt (157 to 158 m N), contains five or more veins? of massive barite. Two additional barite (+ quartz) veinlets to 8 cm thick, occur in rhyolite, 19 and 21 m south of the contact. The association of barite with anomalous Cu and Zn in pyrite, schistose basalt and rhyolite suggests the contact-zone has potential for hosting a massive sulphide deposit and may warrant testing with a diamond drill at a depth or along its strike-projection.

Chip-samples across a 15 m wide interval (0+85 to 1+00 m N) that straddles the contact been rhyolite and basalt, contain an average of 460 ppm Cu. This interval may also warrant further exploration.

5. Diamond Drilling Program, 1985-1986

Five diamond drill holes (NQ core size) were drilled between August, 1986 and February, 1986, by Canamera Explorations Incorporated, for a total of 670 m (2,199 ft.) to test four I.P. anomalies and a geological target. The most encouraging results from analyses of the core were from three short samples of rhyolitic lapilistone and lapilli tuff with fracture-controlled pyrite and chalcopyrite (at 101.0 - 102.7 m, 106.8 - 109.1 m and 115.7 - 116.7 m) within D.D.H. #85-3. These samples contain anomalos concentrations of Cu, Pb, Zn, and Ag. D.D.H.s 85-3 and 86-5 intersected graphitic sedimentary intervals that are important becaue of their potential for hosting massive sulphide deposits and as guides for further exploration. In addition, the drilling program provided geologic data on the rocks buried beneath extensive overburden and a framework for further exploration.

D.D.H. 85-1

This hole was collared about 40 m southwest (about 232° Az) of the main adit on the Chemainus River (the Copper Canyon showing). It was drilled to a depth of 62.8 m (207 ft.) along an azimuth of 022° at an inclination of -55°. The purpose of the hole was to explore the down-dip projection of the pyrite-chalcopyrite-quartz veins exposed at the Copper Canyon workings, and the "black schists" intersected in cross-cuts from the adit (now inaccessible), mentioned in the 1903, B.C.D.M. Annual Report on the workings.

Hole 85-1 intersected a portion of a major unit of moderately schistose, completely quartz-sericite-(chlorite?) altered rhyolite that is feldspar porphyritic and locally, quartz microporphyritic. The rhyolite contains 0.5 to 1% disseminated pyrite and minor stringer pyrite. At 7.1 m from the collar, a 14.6 m long interval of basaltic flows(?) was intersected. No "black schists" were encountered in the hole.

Between down-hole depths of 30.6 and 59.0 m, four pyrite-quartz-calcite veinlets from 2 to 7 cm thick were intersected within rhyolite. The veinlets contain from 3 - 5% to 10% pyrite. The 7 cm thick veinlet (at 39.2 m) contains weakly anomalous Cu (240 ppm), Au (15 ppb) and Hg (450 ppb). The veinlets resemble those exposed along the Chemainus River. The absence of thicker pyritic veins in the drill hole may be a

reflection of the fact that the veins exposed along the river, pinch and swell markedly over short distances and contain highly variable concentrations of pyrite and chalcopyrite.

D.D.H. 85-2

This diamond drill hole is located about 475 m northwest of the main adit on the Chemainus River, at station 2+07 m N on Line 4+00 m W of the geophysical grid. The hole was drilled to a depth of 94.8 m (311 ft.) along an azimuth of 186°, at an inclination of -56° S. The purpose of this hole was to test a broad zone of high chargeabilities and somewhat lower resistivities defected by an I.P.-resistivity survey in August, 1985. A soil sample with highly anomalous Cu (878 ppm) was collected 25 m south of the centre of this I.P. anomaly.

A cursory examination of the core by E.A. Schiller in November, 1985, revealed "several narrow zones with up to 5%, disseminated pyrite." The core from this hole should be examined and logged in detail, and samples taken for geochemical analyses.

D.D.H. 85-3

Drill hole 85-3 was collared about 500 m southwest of D.D.H. 85-1, at station 325 m S, Line 4+00W of the geophysical grid. It was drilled 170.0 m (557 ft.) along an azimuth of 186°, at an inclination of -50 S. The purpose of this hole was to test a distinct zone of higher chargeabilities defected by an I.P.-resistivity survey in August, 1985, centred at 363 m S on Line 4+00W, beneath an area of extensive overburden. The hole was collared on the southern margin of broad (150 m) zone from which soil samples with highly anomalous concentrations of Cu (786 to 1792 ppm) were collected.

Beneath 14 m of overburden, D.D.H. 85-3 intersected the following succession, from uphole to downhole (and up? stratigraphic section): 1) 47.4 m of weakly schistose, feldspar porphyritic basalt (flows?); 2) 0.8 m of feldspar porphyritic rhyolite crystal tuff with 20 cm of rhyolitic chert containing patches of graphitic chert; 3) 32.4 m of rhyolite (flow?) that is feldspar, (quartz, (mafic)) porphyritic; 4) 57.3 m of weakly schistose, rhyolitic, tuffaceous, agglomeratic lapillistone grading, overall, downhole into bedded, graded feldspar (quartz) porphyritic, rhyolitic crystal, lithic and ash tuff

with intervals of lapilli tuff and two intervals, 1.5 and 1.9 m wide, of bedded, cherty?, rhyolitic tuff and chert; 5) 0.5 m (at 155.3 m depth) with 18 and 14 cm wide intervals of graphitic chert separated by 18 cm of feldspar, quartz porphyritic, rhyolitic crystal tuff; 6) 14 m of basalt (flow?) that is very weakly schistose and feldspar (and mafic) porphyritic and metavitric.

The feldspar (quartz) porphyritic rhyolite contains minor to 5 - 10%, disseminated magnetite between depths of 80.7 and 84.4 m. The rhyolitic lapillistone contains three main intervals (totalling 4.9 m) with 0.25 to 5%, patches of pyrite, locally with chalcopyrite, along fractures, between depths of 101.0 and 116.7 m. Analyses of core samples of these intervals, from 0.2 to 1.3 m long, yielded anomalous to highly anomalous concentrations of Cu (265 to 1180 ppm), Pb (27 to 152 ppm), Zn (402 to 1401 ppm), Ag (0.6 to 3.7 ppm), weakly anomalous Au in two samples (15 and 20 ppb), anomalous Hg (180 to 1300 ppb) and Cd (2.5 to 8 ppm) (intervals at 101.0 - 102.7 m, 106.8 - 109.1 m and 115.7 - 116.7 m). It is possible that the fracture-controlled pyrite within the rhyolitic lapillistone is the source of the I.P. anomaly this hole was designed to test.

The two narrow intervals of graphitic chert (at a depth of 155.3 m) occuring at the stratigraphic top? of a succession of rhyolitic volcaniclastics with anomalous concentrations of Cu, Pb, Zn, Ag, Au, Hg and Cd (between 101.0 and 116.7 m), mark an important horizon that warrants further exploration for massive sulphide deposits. One interval of graphitic chert contains anomalous Zn (301 ppm; at 155.56 - 155.7 m). The horizon should be tested along the strike and down-dip projections of its drill hole intercept, guided by a deep-reaching geophysical (I.P.-resistivity) survey.

D.D.H. 85-4

Drill hole 85-4 was collared 80 m north of D.D.H. 85-3, at station 2+45 m S on Line 4+00W. It was drilled to a depth of 124.1 m (407 ft.), at 50° to the north along an azimuth of 007°, to test a distinct zone of anomalously high chargeabilities centred on 200 m S and the northern part of a broad (140 m) zone of soil samples with highly anomalous Cu (786 to 1792 ppm).

The hole intersected, beneath 30 m (vertical) of overburden, a succession of thick basaltic flows? and minor interlayers of bedded, cherty tuff, that are variably altered. The basalt, within a 16 m wide interval (60.8 to 77.1 m) is very strongly silicified. This silicification may have resulted from hydrothermal alteration of the type that characterizes the rocks in the footwall of several massive sulphide deposits in the Noranda camp. Exploration of the strike-projections of this interval of silicification may be warranted. The sources of the I.P. and soil geochemical anomalies were not apparent in the drill core.

D.D.H. 86-5

D.D.H. 86-5 was collared at station 1+00 m N on Line 6+00W. It was drilled to a depth of 218.5 m (717 ft.) along an azimuth of 205°, at an inclination of -50° to the south. The purpose of the hole was to test the contact zone between higher chargeabilities (to the south) and lower chargeabilities (to the north) (at about 0+38 m N), and the bedrock beneath three soil samples with highly anomalous Cu (1109 to 1534 ppm), anomalous Zn (205 to 362 ppm), Co (57 to 145 ppm), Ni (34 to 36 ppm) and Hg (110 to 160 ppb), collected at 0+25 to 0+75 m N.

Beneath 39 m (vertical) of overburden, the drill hole intersected the following succession, from uphole to downhole, and apparently in an up-section direction: 1) 35 m of very weakly to weakly schistose, basaltic flows? that are mafic? to feldspar porphyritic; 7 m of the basalt? (50.9 - 57.7 m) is strongly silicified? and 18 m strongly to weakly silificified? (62.9 - 81.2 m); 4 m of the basalt is weakly hematite - altered (81.2 - 85.6 m); the basalt generally contains minor to 0.5% (locally to 4%), disseminated pyrite; 2) 19 m (85.6 - 104.2 m) of a very distinctive agglomerate, tuffaceous lapillistone that contains clasts of (predominantly) felspar, mafic porphyritic, metavitric basalt, grey chert (5%), black chert (2-3%) and hematite-altered basalt and jasper (minor to 0.5%); it contains a 3 m wide interval (at 87.8 - 9.6 m) of basaltic crystal, to crystal and ash, to graphitic ash tuff that is graded, thin bedded and very weakly schistose; 12 m from the downhole contact of the unit, is a 20 cm wide interval of graphitic, basaltic?, crystal (and ash) tuff (91.8 - 92.0 m); 3) 114 m (104.2 - 218.5 m) of rhyolitic flows?; the rhyolite is feldspar (and quartz) porphyritic and metavitic?, and generally weakly schistose; 36 m of the rhyolite contains minor to 0.25%, disseminated pyrite; the rhyolite contains about 0.5%,

disseminated pyrrhotite? in two intervals (181.6 - 187.2 m and 189.1 - 196.0 m); a 2 m wide interval (158.4 - 160.5 m) of rhyolitic lapilli tuff interrupt the succession of flows?.

It appears that the abrupt change from higher chargeabilities to the south, to low chargeabilities in the north, reflects the contact between weakly pyritic, baslatic bedrocks to the south, and deep overburden to the north. The anomalous concentrations of Cu, Zn, Ag, Au, Co, Ni and Hg in the soil samples are apparently derived from material weathered from bedrock upslope to the west, and deposited on the north flank of the now buried bedrock slope.

The 3 m wide interval of basaltic crystal and ash tuff with about 1 to 5% disseminated graphite and 0.5%, polished, graphitic shears, intersected at 87.8 - 90.6 m, which contains high background concentrations of Cu (177 ppm average) and Zn (157 ppm), strongly resembles the "mudstones" that form intervals within the mineralized unit of rhyolite that Abermin Corporation has intersected in drill core from their Coronation zone, about 3.5 km west-northwest of D.D.H. 86-5. Although no significant sulphides were apparent in the graphitic, basaltic tuff interval, it marks another horizon with potential for hosting a massive sulphide deposit, and warrants exploration along its westerly strike-projection, where overburden is thinner and the possible source of the anomalous metals in soil samples on Line 6+00W lies.

RECOMMENDATIONS FOR FUTURE EXPLORATION

Diamond Drill Targets

1) D.D.H. collared at 0+05 m N, Line 3+00E, drilled a minimum of 85.3 m (280 ft.) at -50° to the south, to test a zone of low resistivities, and high to anomalously high chargeabilities centred on the pyritic basalts at the Victoria workings.

2) D.D.H. collared at 2+50 m N on Line 2+00E, drilled to a minimum depth of 83.8 m (275 ft.) at -50° to the south, to test a broad zone of high to anomalously high chargeabilities and low resistivities, and the site (2+50N) of a soil sample with highly anomalous Au (275 ppb).

3) D.D.H. collared at 3+93 m S on Line 1+00W, drilled at least 85.3 m (280 ft.) at -50° to the south, to test a narrow zone of low to anomalously low resistivities defected beneath extensive overburden, at the approximate strike-projection of a 7 m wide interval fo graphitic, meta-argillaceous chert and meta-argillite exposed on the Chemainus River, 60 m to the southeast, that resembled those associated with the massive sulphide deposits on Mount Sicker, 1.5 m to the east.

4) D.D.H. collared at 1+95 m N on Line 12+00W, to a depth of 83.8 m (275 ft.) at -50° to the south, to test the down-dip projection of the 12 m wide interval of pyritic basalt with anomalous copper, and the adjoining pyritic rhyolite with massive barite veinlets? in teh trench along Line 12+00W, centred ona broad zone of high to anomalously high chargeabilities and low resistivities.

5) D.D.H. collared at 0+83 m N, Line 13+00W, to a depth of 85.3 m (280 ft.), at an inclination of -50° to the south, to test the bedrock beneath a soil sample with highly anomalous Cu (1526 ppm), Zn (356 ppm) and Mn (8368 ppm), and a narrow zone of anomalous high chargeabilities flanking a narrow zone of low resistivities.

6) Deepen D.D.H. 85-2 at 2+07 m N on Line 4+00W, 80 m, to a minimum depth of 170.7 m (560 ft.) to test the southern half of the broad zone of high chargeabilities and somewhat low resistivities tested by the hole (the casing was not left in this hole which intersected thick overburden).

I.P.-Resistivity Survey

1) Complete the reconnaissance-scale survey commenced in 1985 to provide complete average of the property, as follows: pole-dipole array, a = 25 m, n = 5, Line 11+00W / 0+25 m N to 2+50N to 2+25 m S.

2) Extend the depth of detection on the 1985, I.P.-resistivity survey, from n = 4 or 5 to n = 8, in order to reach well beneath areas of thick overburden in bedrock and spurious anomalies caused by bedrock-overburden contacts, and weathering of bedrock, as follows: Line 1+00W / 150N to 500 m S; Line 4+00W / 0+00 to 2+50 m N; Line 12+00W / 0+00 to 2+50 m N; Line 13+00W / 0+00 to 2+50 m N.

3) Increase the detail of survey data across the rhyolite-basalt contact with barite veinlets? uncovered in the trench along Line 12+00W at 1+58 m N and corresponging contact located in trench 11+00W at 199.0 m N, by surveying: Lines 10+50W, 11+50W, 12+50W and 13+50W / 0+00 to 2+50 m N, with pole-dipole array, a = 25 m, n = 1 through 8.

Downhole Crone Pulse E.M. Survey

This survey is recomended to determine whether there is potential for conductive massive sulphide deposits promixate to diamon drills that intersected horizons with host rock potential, including D.D.H. 85-3, particularly 66.1 - 155.8 m; D.D.H. 86-5, particularly 85.6 - 117.6 m, and upon their completion, drill holes at Line 3+00 E / 0+05 m N, Line 2+00E / 2+50 m N, Line 1+00W / 3+93 m S, Line 12+00W / 1+95 m N, Line 13+00W / 0+83 m N, and D.D.H. 85-2 extension.

Geologic Mapping

Geologic mapping of the bedrock exposures along the Chemainus River, commenced in 1985, should be completed to provide more data on the lithologic succession and mineralization, that extends east and west from the river into areas of extensive overburden.

Trenching

Several zones of anomalous I.P.-resistivity survey results warrant trenching to their bedrock source to determine whether drilling is warranted. These include:

Line 4+00E / 0+25N to 1+00N and 0+25S to 1+00 m S
Line 1+00E / 0+00 to 0+75 m N

Summary

In summary, the following minimum exploration program is recommended:

Diamond drilling (NQ core size):
6 drill holes, 80 to 85.3 m (262 to 280 ft.) deep, totalling 500 m (1650 ft.).

I.P.-resistivity survey:
a = 25 m, n = 4 or 5 to 8, or 1 to 8, pole-dipole array)
11 lines, totalling 3.25 km.

Downhole Crone Pulse E.M. survey:
in 8 drill holes for an approximately survey length of 690 m (2265 ft.).

Trenching:
3 trenches totalling 225 m (738 ft.).

Geologic mapping along Chemainus River: 4 days.

CERTIFICATE

I, Gary L. Benvenuto, of the City of North Vancouver, British Columbia, hereby certify that:

1. I am a consulting geologist with an office and residence at 4699 Strathcona Place, North Vancouver, B.C., V7G 1H1.

2. I graduated with a B.Sc. degree in geology from California State University at Los Angeles, California in 1972, and with a Ph.D. degree in geology from Queen's University at Kingston, Ontario in 1978.

3. I am a fellow of the Geological Association of Canada.

4. I have practised exploration geology with Cominco Ltd. from May to October, 1979, and with Westmin Resources Ltd. from January, 1980 to April, 1985, and have practised as a consulting exploration geologist from May, 1985 to present.

5. I have no direct, indirect or contingent interest in Canamera Explorations Inc., nor do I expect to acquire any interest.

6. This report is based on my examination of the property and diamond drill core, between August 8 - 17, November 22 to December 13, 1985, and February 2 - 20, 1986.

7. I consent to the use of this report in connection with a Prospectus or Statement of Material Facts.

March 7, 1986
North Vancouver, B.C.

Gary L. Benvenuto, Ph.D.