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THE BRETT CREEK PROPERTY
NEW WESTMINSTER MINING DIVISION
BRITISH COLUMBIA
NTS 92H/5

A SUMMARY REPORT

for

RICHLAND MINES INC.

by

C.J. WESTERMAN, Ph.D., F.G.A.C.
Consulting Geologist

July 22nd, 1987

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SUMMARY

Richland Mines Inc. holds 100% interest in 39 claim units comprising the Brett Creek property located 16 km northeast of Harrison Mills in southwestern British Columbia. The property is underlain by Jurassic age volcanic and sedimentary rocks of the Harrison Lake formation which host the Seneca stratiform massive sulphide copper-zinc-lead-silver-gold deposit, six kilometers to the southwest. Such "Kuroko" type deposits generally occur in clusters suggesting that exploration of favourable stratigraphy in the area may result in new discoveries. A complex fault zone which trends NNE across the Brett Creek property is associated with intense silica-pyrite alteration and local zinc-copper-lead-barite stringer veins. This zone is probably a Jurassic age growth fault and hydrothermal feeder system for exhalative mineralizing systems. An area to the east of this structure, in the center of the property, has coincident "footwall breccia", "footwall alteration", anomalous zinc soil geochemistry with local copper-lead highs and favourably interbedded felsic volcanic rocks and argillite-chert sediments. This area is a high priority target with good potential for discovery of stratiform massive sulphide mineralization. Similar targets also appear to exist in the northern and southern parts of the property but these are less well documented. A comprehensive exploration program with three success contingent phases is recommended at an estimated total cost of \$340,000.

INTRODUCTION

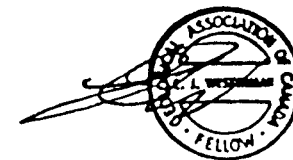
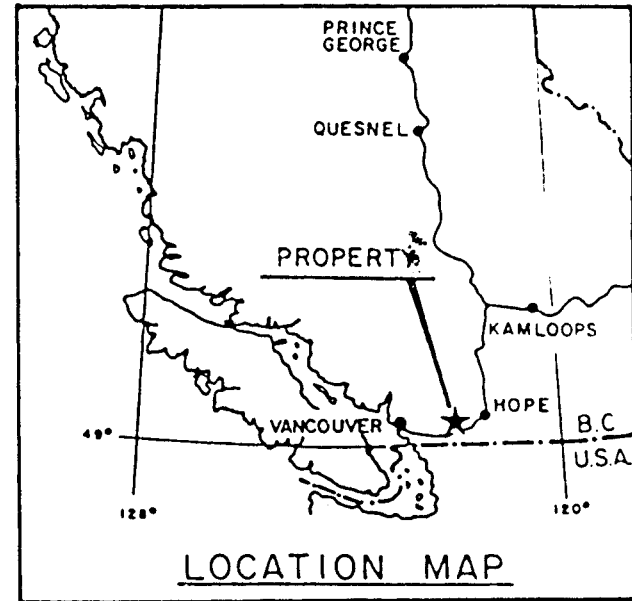
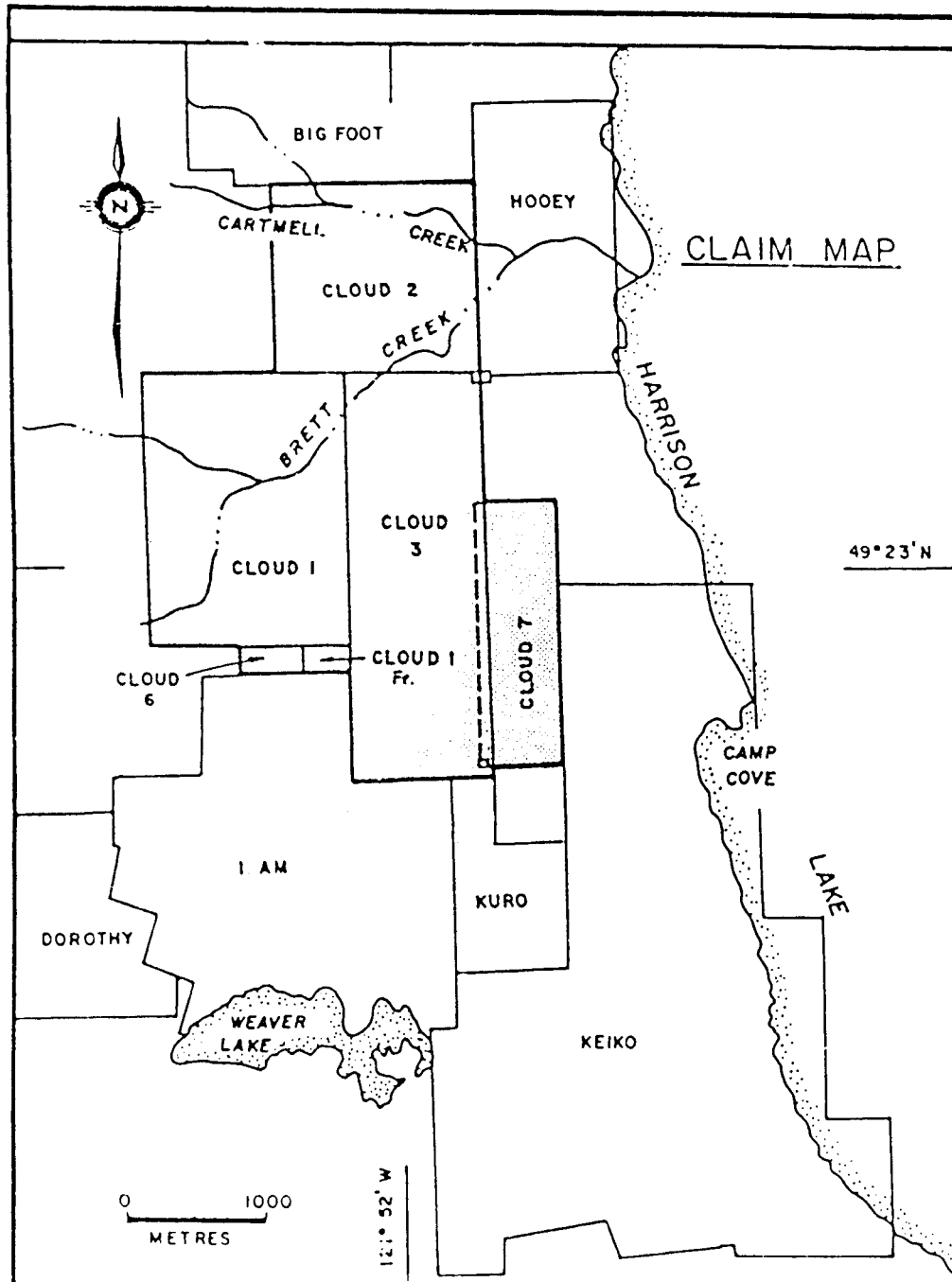
Preamble

The Brett Creek property in the Harrison Lake area of southwestern British Columbia is owned by Richland Mines Inc. Geological and geochemical indicators suggest that the property has potential for discovery of a massive sulphide ore body. Reconnaissance style exploration had been undertaken on the property since 1981 by previous owners and Richland Mines Inc. has just completed a grid geochemical and geological survey. The author, as an independent Consulting Geologist has been retained by Richland Mines Inc. to review the results of this exploration work and report his findings with recommendations for future action. A field examination of the property was undertaken on July 13th, 1987.

Location and Access

The property is located 2 km west of Harrison Lake, approximately 100 km east of the city of Vancouver (Figure 1). It is centered on latitude 49° 23'N, longitude 121° 52' W within NTS map area 92H/5. Access is by paved road northeast from Harrison Mills to the Weaver Creek Fish Hatchery and then by the west Harrison access gravel road to Camp Cove, a distance of about 16 km. An old logging road going northwest from Camp Cove provides 4 wheel drive access to the centre of the property and a network of old roads provide easy foot or trail bike access.

A major hydroelectric power line runs parallel to the shore of Harrison Lake, 2 km east of the eastern property boundary. Topography is moderate to steep with elevations ranging from 150 meters to 1,050 meters. The majority of the property has been logged in the past and vegetation comprises locally thick low bush with semi-mature second growth.



RICHLAND MINES INC.	
BRETT CREEK PROPERTY NEW WESTMINSTER M.D. NTS: 92H/5	
LOCATION & CLAIM MAP	
C.J. WESTERMAN · Ph.D.	
DATE: JULY, 1987	FIGURE: I

Property Definition

The Brett Creek property consists of 6 contiguous metric grid system mineral claims totalling 39 units within the New Westminster Mining Division of British Columbia. (Table 1, Figure 2).

TABLE 1
Claim Data

<u>Claim</u>	<u>Units</u>	<u>Record No</u>	<u>Expiry Date</u>
Cloud 1	12	1075	October 10, 1988
Cloud 2	9	2441	May 2, 1988
Cloud 3	12	2442	May 2, 1988
Cloud 6	1	2459	May 25, 1989
Cloud 1 Fr.	1	2488	May 25, 1989
Cloud 7	4	Pending	May 1, 1990

The claims are owned outright by Richland Mines Inc. Cloud 1 was originally staked in 1980, Cloud 7 in 1987 and the remaining claims in 1984. The author has not examined the claim posts in the field but is not aware of any factors which might invalidate the claims.

History

The earliest reference in the public domain to work done on the property is an assessment report on a gravity and Induced Polarization survey for Bishop Mines Ltd. in May, 1977. These surveys consisted solely of a single traverse along logging roads in the south part of what is now the Cloud 1 claim. Results indicated a weak gravity anomaly which was apparently not investigated further.

The Cloud and pre-existing Brett claims were originally staked by K.W. Livingstone in 1980. The two-post Brett claims were subsequently allowed to lapse into common ownership with the metric Cloud claims as permitted under Section 17 of The Mineral Act of B.C. In 1980 and 1981, J.M.T. Services Corp. undertook reconnaissance style geological and geochemical programs on the Cloud 1 and 2 claims for Territorial Gold Placers Ltd. In 1982, a similar program was undertaken by J.M.T. Services Corp. for K.W. Livingstone. These programs were largely restricted to sampling along logging roads, accumulating a total of 375 soil, rock and silt geochemical samples. In 1985, G.G. Richards, P. Eng. undertook a grid geochemical sampling program, in the northwest corner of Cloud 3 claim. In April

1987 Richards undertook further road sampling, thus accumulating in the two years a total of 27 rock and 231 soil samples.

In June 1987, Richland Mines Inc. undertook a grid soil/rock sampling program covering the Cloud 1 claim and the northern half of the Cloud 3 claim. This program collected 660 soil samples and 123 rock samples, all of which were geochemically analysed for gold (FA + AA) and 30 element standard I.C.P. package by Chemex Labs Ltd. of North Vancouver. The samples were collected at 50 meter intervals along lines spaced at 100 meter intervals. Geological mapping was undertaken in conjunction with the geochemical program.

References

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- D. Arcscott, (1978): Geological Mapping of the IAM 50 claims; B.C.-DMPR-Assessment Report No. 7015.

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- C.J. Westerman (1987): Geological and Geochemical Report on the Keiko 1-7 mineral claims, for Trafalgar Resources Inc., February 25, 1987. B.C.-DMPR-A.R. pending.

GEOLOGY AND MINERALIZATION

Regional Aspects

The Brett Creek property occurs within a northwesterly trending volcanic-sedimentary belt of Jurassic age within the Coast Crystalline Complex. The belt is about 20 km wide and 60 km long and extends along the western side of Harrison Lake. A major fracture system along Harrison Lake is associated with quartz diorite and granodiorite intrusions of mid-Tertiary age and recent to present day hot spring geothermal activity.

The Harrison Lake fracture system and associated Tertiary intrusions are genetically related to gold bearing quartz-pyrite veins and stockworks. At Doctors Point, 32 kilometres north of Brett Creek, drilling has outlined 132,300 tonnes grading 3.5 g/t gold (0.102 oz/t Au) (Ray 1986). Kerr Addison is currently exploring the Abo Oil Corp. gold property located 10 kilometres east of Brett Creek.

Jurassic volcanic rocks of the Harrison Lake Formation are host to a stratiform massive sulphide deposit at the Seneca property, six kilometres southwest of the Brett Creek property. Extensive exploration work over the past 25 years indicates that the Seneca property hosts a Kuroko type baritic, fragmental massive sulphide deposit which was formed at the same time as the host rocks. Chevron Canada Resources Ltd. quoted estimated geologically inferred reserves in 1982 of 800,000 tons grading 0.8% Cu, 6.6% Zn, 0.3% Pb, 1.7 oz/t Ag and 0.035 oz/t Au (Cooke 1982, in Watson 1983).

Arscott (1978) indicates the presence of a footwall type stringer zone carrying zinc and copper values on the IAM 50 claim and Garratt and Tregaskis (1985) document a similar zone on the IAM 51-56 claims. The IAM claims are an integral part of the Seneca property and are contiguous with the south boundary of the Cloud No. 1 claim.

Footwall type stringer mineralization is also present on the Bigfoot claims, contiguous with the north boundary of the Cloud No. 2 claim. These occurrences, together with those on the Brett Creek property (described in the next section) form a crudely linear north-north-east trending zone which passes through the centre of the Brett Creek property. Most investigators concur that this mineralization is probably of Jurassic age and probably represents feeder zones of exhalative systems which may have formed massive sulphide deposits on the Jurassic sea floor. Such deposits generally occur as cluster of several deposits as typified by the Kuroko deposits of Japan and the Noranda deposits of the Canadian Shield. There is therefore considerable support for the suggestion that the Seneca deposit is not the only deposit in the Harrison Lake Formation. Persistent exploration may therefore be financially rewarding.

Brett Creek Property

The property is underlain almost entirely by volcanic and sedimentary rocks of the Jurassic age Harrison Lake Formation (Figure 3). The western boundary of the Cloud 1 claim is underlain by the east flank of a Cretaceous age quartz monzonite stock. The Jurassic strata trend generally west north-west across the property, dipping to the south in the area of the Cloud 1 and 3 claims and to the north throughout most of the Cloud 2 claim. Thus, a major open fold trends westerly through the cloud 2 claim. A localized anticline-syncline pair, associated with a zone of complex faulting trends north-north-east through the centre of the property.

A generalized stratigraphic section of the southern half of the property is presented in the following table:

TABLE II
Stratigraphic Section

Top	
Unit 9	Andesite tuffs - locally intense "footwall" alteration
Unit 8	Rhyodacite flow dome - local crackle breccia
Unit 7	Andesite tuffs
Unit 6	Black argillite-chert-siltstone
Unit 5	Andesite tuffs-local crackle breccia
Unit 4	Massive rhyodacite flows with interbeds of black chert and argillite
Unit 3	Massive andesite flows
Unit 2b	Andesitic tuffs-locally intense "footwall" alteration
Unit 2a	Andesitic flows and tuffs
Unit 1	Black argillite
Base	

Massive rhyodacite flows and black argillites exposed in Cartmell Creek are probably stratigraphic equivalents of Unit 4 but detailed mapping will be required to confirm this projection.

A considerable amount of pervasive silica-pyrite alteration is present throughout the property, notably in the various andesitic tuff units. This alteration is most intense adjacent to the complex NNE trending fault structure. In the immediate vicinity of this structure, some rock units contain crackle breccia infillings (stringer veins) of pyrite \pm chalcopyrite \pm sphalerite \pm galena \pm barite. Price (1982) and Howell (1982) note the presence of such mineralization in stringer veins of Unit 8 Rhyodacite flow dome in the southern part of the property (Figure 3). A character rock sample reported by Price (1982) contains 3,800 ppm Cu, 228 ppm Pb and greater than 1% Zn. Soil samples from the recent Richland program indicate an area of enhanced copper-zinc-lead values around the hill underlain by Unit 8 (Figure 4). A roughly east-west trending zone of anomalous gold values in soils in this same area is of unknown origin.

A second zone of alteration and mineralization is present in the north parts of the Cloud 1 and Cloud 3 claims, in the area where the main logging access road crosses Brett Creek. The complex fault zone passes through here parallel to the creek and strata within the zone locally trend northeast and dip gently to the southeast. A massive rhyodacite breccia with rounded clasts and a pervasively silica-pyrite altered matrix is exposed in the creek. Howell (1982), who has

considerable experience with the Seneca property, commented that this unit "... is remarkably similar to exposures of the Seneca 'footwall breccia'". A composite chip character sample of this unit taken by the author was not significantly anomalous (WR170). An overlying dacitic flow unit contains stringer veins of black sphalerite and minor chalcopyrite. A composite chip character sample (WR171) taken by the author of this mineralized material contained 20,685 ppm Zn and 1108 ppm Cu.

Extending eastwards from the above mentioned mineralized outcrops is a pervasively pyrite-silica altered andesitic tuff unit with local stringer veins (Unit 2b). This unit corresponds to a zone of moderate zinc soil anomalies (Howell, 1982) with local copper and lead high values. (Up to 1,300 ppm Zn, 230 ppm Cu, 260 ppm Pb - Figure 4). Two composite chip character samples of altered rock exposed in the road side were taken by the author but neither returned any significantly anomalous values (WR172, WR173).

Rhyodacite flow units with interbedded chert and argillite (Unit 4) which extend southeast from the mineralized outcrops of Brett Creek are coincident with anomalous zinc values in soils. Locally high lead values in soils occur adjacent to the logging road further east.

TABLE III
Sample Data

By Westerman

WR170	Composite chip character sample, 1m x 2m, coarse felsic agglomerate, rounded clasts, intense pyrite-silica alteration of ground mass
WR171	Composite chip character sample, dacite flow, crackle breccia, veinlet stringers of quartz-carbonate (barite?) - sphalerite ± chalcopyrite
WR172	Composite chip character sample, panel 2m x 4m, andesitic tuff, flat lying (?), intense silica-pyrite alteration
WR173	As WR172

Analyses by Min En Laboratories, North Vancouver

<u>Sample</u>	<u>Ag ppm</u>	<u>As ppm</u>	<u>Cu ppm</u>	<u>Pb ppm</u>	<u>Sb ppm</u>	<u>Zn ppm</u>	<u>Au ppb</u>
WR170	0.6	8	19	16	2	53	4
WR171	1.3	8	1108	17	5	20685	10
WR172	0.4	11	10	12	1	102	3
WR173	0.8	9	31	23	2	151	8

Anomalous zinc copper and lead values in soils of the central Brett Creek area have not been adequately explained by rock chip sampling to date. It is the current author's interpretation that the complex NNE trending fault zone is probably a growth fault and "feeder zone" which existed during deposition of the Jurassic volcanics and sediments. It is significant that there is a strong concentration of geochemical anomalies on the eastern side of this structure. This suggests that the structure is down-faulted and hence basinwards towards the east. The relative abundance of black argillite and chert to the east tends to confirm this interpretation. The northern half of the Cloud 3 claim is therefore a prime target for discovery of stratiform massive sulphide mineralization within the stratigraphic section encompassed by Units 2b, 3 and 4.

Current information also indicates that this stratigraphic section is repeated by folding within the Cloud 2 claim. A single reconnaissance traverse was completed by Richland Mines Inc. along Cartmell Creek. One soil sample from this traverse (Figure 4) returned 167 ppm Cu, 328 ppm Pb and 2840 ppm Zn - significantly anomalous values which constitute a high priority follow-up target.

Stringer type mineralization also exists within the complex fault zone much higher in the stratigraphy (Unit 8) near the south boundary of Cloud 1 claim. This indicates that the structure was periodically rejuvenated and may have acted as a hydrothermal channel way for more than one period of exhalative mineralization. Host rocks for stratiform mineralization related to this later event may be present in the southern half of Cloud 3 claim. This area warrants further investigation.

CONCLUSIONS



The Brett Creek property is underlain by Jurassic age volcanic and sedimentary rocks of the Harrison Lake Formation. These rocks host a polymetallic (Cu, Pb, Zn, Ag, Au) stratiform massive sulphide deposit on the Seneca property, six kilometers southwest of Brett Creek. A complex north-north-east trending fault zone which crosses the Brett Creek property is probably a growth fault-hydrothermal feeder zone of Jurassic age. Zinc, copper, lead stringer type mineralization is associated with this structure. Favourable stratigraphic units east of this structure correlate with zinc-copper-lead anomalous soil geochemistry. These stratigraphic units are interpreted to be on the basinward side of the postulated growth fault and are therefore a prime target for detailed exploration. The target has considerable potential for discovery of stratiform massive sulphide mineralization. Reconnaissance data indicates that a similar target exists in the northern half of the Cloud 2 claim. Completion of grid geochemical and geological surveys throughout the area of the Cloud 2 claim is warranted.

Additional stringer type Cu-Pb-Zn-Ba-Au-Ag mineralization exists at a higher stratigraphic level in the southern half of the Cloud 1 claim. Potential host stratigraphy for stratiform mineralization related to this later system may exist in an unexplored area in the southern half of the Cloud 3 claim. This area clearly warrants a comprehensive exploration program.

RECOMMENDATIONS

A phased, success contingent, exploration program is recommended for the Brett Creek property to further test existing targets and to initially explore those parts of the property which were not previously tested. In Phase 1 of the program it is recommended that detailed prospecting, geochemical sampling, geological mapping and geophysical I.P. surveys be undertaken on a line survey grid in the area of the central Brett Creek target. It is also recommended that the existing prospecting geochemical and geological surveys be extended to cover the entire area of the Cloud 2 and Cloud 7 claims, and the southern half of the Cloud 3 claim. It is estimated that expenditures required to complete Phase 1 of the program will be in the order of \$60,000.

Contingent on successful results from Phase 1 it is recommended that Phase 2 of the program should consist of drill testing of targets at an estimated cost of \$100,000. If initial drilling results are favourable it is further recommended that a more extensive drilling program be undertaken in Phase 3 at an estimated cost of \$180,000.



July 22nd, 1987
Vancouver, B.C.

C.J. Westerman, Ph.D., F.G.A.C.
Consulting Geologist

COST ESTIMATE
RICHLAND MINES INC.
BRETT CREEK PROPERTY

Phase 1

Survey grid and soil sampling, 30 km @ \$250/km	\$ 7,500
Geochemical analyses, 1,200 samples @ \$15	18,000
I.P. survey, 10 km @ \$1,500	15,000
Geologist, 20 days @ \$300	6,000
Prospector, 16 days @ \$250	4,000
Support - 30 man days @ \$50	1,500
Transport	1,000
Supplies	500
Drafting and report costs	1,000
Supervision and consulting	2,500
Government fees	3,000
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Total Phase 1	\$ 60,000

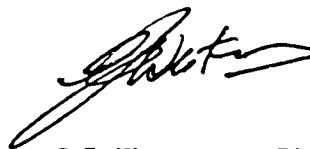
Phase 2

Diamond drilling, 650 m B.Q. @ \$100/m	\$ 65,000
Assays, 300 samples @ \$15	4,500
Drill pad prep/logging	1,500
Bulldozer 5 days	5,000
Geologist, 30 days	9,000
Assistant, 20 days	4,000
Vehicle	1,000
Support and supplies	2,500
Supervision, drafting, report	2,500
Government fees	5,000
	<hr/>
Total Phase 2	\$ 100,000

Phase 3

Diamond drilling, 1,200 m @ \$150/m incl. site preparation, assays, geology supervision and reporting	<hr/>
	180,000
Total Phase 3	\$ 180,000

July 22, 1987
Vancouver, B.C.


C.J. Westerman, Ph.D., F.G.A.C.
Consulting Geologist





CERTIFICATION

I, Christopher John Westerman, hereby certify that:

1. I am an independent Consulting Geologist with an office at 1010 - 470 Granville Street, Vancouver, British Columbia, V6C 1V5.
2. I am a graduate of London University, England with the degree of Bachelor of Science in Geology (1967); of the University of British Columbia with the degree of Master of Science in Geology (1970) and of McMaster University, Ontario with the degree of Doctor of Philosophy in Geology (1977).
3. I am a Fellow of the Geological Association of Canada (F.525) and a member of the Canadian Institute of Mining and Metallurgy.
4. I have practised my profession in North America since 1967, having worked as employee and consultant for several International Mining Corporations and Junior Resource Companies.
5. I have not, directly or indirectly, received or expect to receive any interest, direct or indirect, in the properties of Richland Mines Inc. or any affiliates or of any property within a radius of ten kilometres of subject property, or beneficially own, directly or indirectly, any securities of the company or of any affiliates.
6. This report is based upon a personal examination of all available reports as referenced, and upon personal field observations made whilst examining the property on July 13th, 1987.
7. I have previous experience in the area of the Brett Creek property, having conducted exploration on the Keiko claims which adjoin the Brett Creek property to the southeast and having authored reports on those claims as referenced.
8. I consent to the use of my name and this report on the Brett Creek property dated July 22nd, 1987 in or associated with the filing of a Prospectus or a Statement of Material Facts by Richland Mines Inc.

July 22nd, 1987
Vancouver, B.C.

C.J. Westerman, Ph.D., F.G.A.C.
Consulting Geologist

STATEMENT OF COSTS

re: BRETT PROPERTY

Ruanco Enterprises Ltd.

Invoice to Richland Mines Inc. \$ 30,475.91

Less Filing Costs 1,670.00

\$ 28,805.91

RUANCO ENTERPRISES LTD.

CONSULTING IN MINERAL EXPLORATION AND PLACER MINING

5700 FORSYTHE CRESCENT · RICHMOND, B.C. V7C 2C3 · TELEPHONE (604) 270-6862



Richland Mines Inc
1101-736 Granville Street
Vancouver, B.C.
V6Z 1G3

January 23, 1988

87-23

Dear Sirs:

The following is our final invoice for work on the
Brett Property, Harrison Lake, B.C.

TIME:

G Richards; June 18, 20, 29
July 1-3, 7, 11, 12, 13, 14
Sept 16, 17

9 days @ \$250/day \$2250.00

DISBURSEMENTS: Gimlex Invoice	8791.62
G Richards expenses	1186.49
G Richards telephone	42.67
Terry's Drafting July 13	625.00
Terry's Drafting Sept 21	226.93
Chemex 7460, 7465, 7468, 7474, 1298, 0840	11833.25
Hemlock Valley Resorts	280.00
Neville Crosby Inc	495.53
C.J. Westerman	2074.42
Filing Work B.C. Dept of Mines	1670.00
Assessment Report	1000.00

TOTAL \$ 30475.91

RECEIVED TO DATE 30000.00

BALANCE OWING \$ 475.91

Please remit \$ 475.91

yours truly

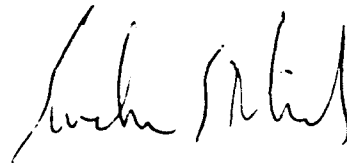
Gordon G Richards

paid Feb 4/88

STATEMENT OF QUALIFICATIONS

I, Gordon G. Richards, of Richmond, British Columbia, do hereby certify that:

1. I am a Professional Engineer of the Province of British Columbia, residing at 5700 Forsythe Crescent, Richmond, B.C., V7C 2C3.
2. I am a graduate of the University of British Columbia, B.A.Sc., 1968, M.A.Sc. 1974.
3. I have practised my profession as a mining exploration geologist continuously since 1968.
4. This report is based on a brief examination of the property and research of available geological-geochemical-geophysical information on the area.



Gordon G. Richards, P.Eng.

Richmond, B.C., April 22, 1988.

