Lumina Copper Corp.

SUMMARY REPORT
ON THE HUSHAMU PROPERTY

Northern Vancouver Island, British Columbia

NTS 92L/12, 102I/9
50º 33’ to 50° 42’ North Latitude
127º 11' to 128° 02’ West Longitude

-prepared for-

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SUMMARY

- This report is written at the request of Lumina Copper Corp and describes the Hushamu property at the north end of Vancouver Island and the procedures and results from a geostatistical study of the Hushamu porphyry copper-gold deposit. The resource estimate was first completed in 1993. This 1993 study has been updated to meet N.I. 43-101 standards.

- The Hushamu copper-gold property is located on northern Vancouver Island from 12 to 40 kilometres south and west of Port Hardy and 360 km northwest of Vancouver, British Columbia.

- The Hushamu property consists of approximately 24,000 hectares (240 km^2) of mineral claims within the Nanaimo Mining Division, wholly-owned or under option by Lumina Copper Corp.

- The Hushamu property covers most of a belt of Lower Jurassic Bonanza Formation andesitic to rhyolitic volcanic rocks which have been intruded by a variety of intrusive rocks of the Jurassic Island Plutonic Suite.

- The Hushamu property has been extensively explored for its copper-gold-molybdenum porphyry potential since 1966.

- The Hushamu deposit itself is hosted by andesitic volcanics and volcaniclastics intruded by a series of porphyritic dykes and stocks of diorite and quartz-diorite composition.

- The assay data was subdivided on the basis of geology into five rock types: siliceous pyrophyllite breccia, siliceous breccia, altered andesite-basalt, intrusive and relatively unaltered andesite. Histograms and probability plots of the distribution of copper and gold show that the metals are distributed differently within each of the five rock units. Each rock unit was therefore independently evaluated.

- The resource study is based on the results from 114 diamond drill holes completed between 1980 - 1993. Composites 20 feet in length were formed from drill hole data and honoured geologic boundaries. For example, andesite composites only contained drill hole data coded as andesite. Simple statistical studies also show that copper and gold distributions for composited values are different for each of the five rock types. As a result copper and gold values within each of the five rock types were modeled and estimated independently.

- A study of copper-gold correlation showed very poor agreement in the area of economic cut-offs. Samples with copper grades between 0.1% to 0.3%, for example, can have gold grades ranging from 0.001 to 0.02 oz/ton. A geologic assumption that copper-gold correlation was different above and below 1100 ft. elevation was tested and not substantiated with the available data.

- Semi-variograms for each variable were produced for each of five rock types. All of the rock types showed isotropic spherical models with the exception of altered andesites and basalts.

For copper within the andesite unit a geometric anisotropy was indicated with a maximum horizontal range of 600 ft. in a N 45° W direction and a minimum horizontal range of 150 ft. at N 45° E. The range of maximum continuity in the vertical plane was 300 ft. plunging N 45° E at 60°. A similar pattern was obtained for gold with ranges 700 ft. and 85 ft. in the horizontal plane and 300 ft. plunging 60° N 45° W.

- A geologic block model for the Hushamu deposit was produced to control the interpolation process. A total of 503,580 blocks, each 100 x 100 x 40 ft. in dimension, were coded with geologic information.

- Ordinary kriging was used to interpolate a grade into each geologic block. A total of 46,515 blocks were estimated. Results for the resource at several copper cut-offs are shown below in Table 1.

Table 1: Summary of Resource Estimation for the Hushamu Copper-Gold Deposit

Class	Cu Cut-off (%)	Tonnage Above Cut-off Million Tonnes	Grade Cu (%)	Grade Au (g/t)
Measured	0.10	87.7	0.21	0.206
Indicated	0.10	495.8	0.20	0.240
Measured + Indicated	0.10	583.5	0.20	0.240
Inferred	0.10	151.9	0.19	0.274
Measured	0.20	39.2	0.29	0.309
Indicated	0.20	191.7	0.27	0.309
Measured + Indicated	0.20	230.9	0.28	0.309
Inferred	0.20	52.8	0.28	0.377
Measured	0.30	14.0	0.37	0.411
Indicated	0.30	49.7	0.37	0.411
Measured + Indicated	0.30	63.7	0.37	0.411
Inferred	0.30	18.2	0.35	0.480

- The Hushamu property is considered prospective for copper-gold-molybdenum porphyry deposits in addition to the Hushamu deposit.

- A two-phase exploration program is recommended for the Hushamu property. The first phase, consisting of data compilation, airborne geophysical surveying, ground-truthing and

2,000 metres of diamond drilling, is estimated to cost CDN$1.0 million. Contingent upon favourable results, the second phase, consisting of 4,000 metres of diamond drilling, is estimated to cost CDN$1.0 million.

1.0 INTRODUCTION AND TERMS OF REFERENCE

This report on the Hushamu project has been prepared for Lumina Copper Corp. ("Lumina") for filing in accordance with continuous disclosure guidelines and National Instrument 43-101. It summarizes historical information from public sources and private reports on the Hushamu property and describes the data analysis and interpolation technique used to produce a geologic block model and mineral resource estimate for the Hushamu porphyry copper-gold deposit. Based upon this, the authors have prepared recommendations for further exploration of the Hushamu property.

The geology and mineralization sections have been written by David Pawliuk, P.Geo. who was property geologist on the Hushamu deposit and logged most of the drill core from 1990 to 1994. The data analysis and resource estimate sections of the report have been written by Gary Giroux, P.Eng. based on work completed in 1993. David Pawliuk, P.Geo. has extensive field knowledge of the Hushamu property, most recently in June, 2004. Gary Giroux, P.Eng. has not made a field examination.

2.0 DISCLAIMER

The authors have made no attempt to verify the legal status and ownership of the Hushamu property, nor are they qualified to do so. The information regarding tenure was obtained from Lumina.

3.0 PROPERTY DESCRIPTION AND LOCATION

The Hushamu copper-gold property is located on northern Vancouver Island from 12 to 40 kilometres south to west of Port Hardy and 360 km northwest of Vancouver, British Columbia (Figure 1). The property covers an area of approximately 15,000 hectares extending along the north side of Holberg Inlet and a second area of approximately 9,355 hectares extending east from the eastern end of Rupert Inlet. It lies between 50° 33' and 50° 42' North latitude and between 127° 11' and 128° 02' West longitude, within the Nanaimo Mining Division.

The Hushamu property consists of three separate claim blocks with different underlying ownership arrangements: the Moraga, Electra and East blocks (Figure 2). The **Moraga** block consists of 144 claims (approximately 2,200 hectares). The claims in the Moraga block are wholly owned by Moraga Resources Ltd., which is in turn wholly owned by Lumina; these claims are subject to a 10% Net Profits Interest in favour of BHP Billiton Diamonds Inc. Lumina is also obligated to pay $1,000,000 to iTech Capital Corp. sixty days after a decision is made to proceed with commercial development of the Moraga block. The **Electra** block consists of 53 claims (approximately 12,600 hectares) which are mainly contiguous with the Moraga block and wholly owned by Electra Gold Ltd. Lumina has been granted an option to earn 100% interest in the Electra block for cash and/or share payments. The **East** block, which extends east from the eastern end of Rupert Inlet, consists of 19 claims (9,355 hectares) which are wholly owned by Moraga Resources Ltd., without any underlying royalties or conditions.

0 75 150 300

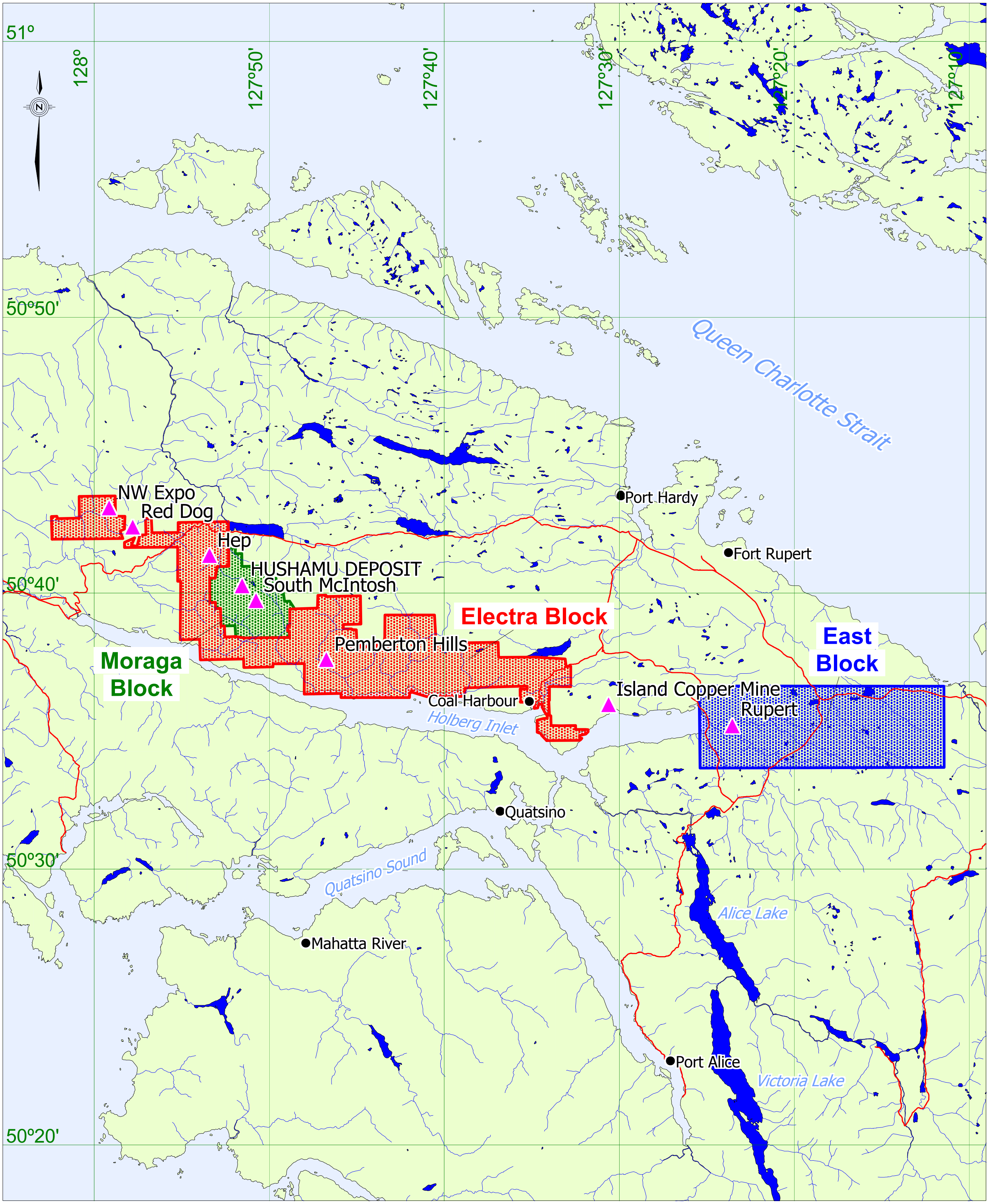
kilometres

LUMINA COPPER CORPORATION

HUSHAMU PROPERTY

LOCATION MAP

Date: APR 2005	Scale: 1:8,000,000	Figure
U.T.M. Zone: UTM 9 - NAD83	Mining District: NANAIMO	1
N.T.S.: 92L	State/Province: BC	



LUMINA COPPER CORPORATION

HUSHAMU PROPERTY

Tenure

Date:	APR 2005	Scale:	as shown	Figure
U.T.M. Zone	UTM 9 - NAD83	Mining District	NANAIMO	2
N.T.S.	92L	State/Province	BC	

The mineral claims have not been legally surveyed. A complete listing of the claims with tenure number, status, number of units and tag numbers is included as Appendix 1.

There is no record of previous industrial-scale mining on the Hushamu property and no major environmental liabilities have been noted. Exploration permits must be obtained from the British Columbia Ministry of Energy and Mines prior to carrying out the surface exploration programs recommended in this report.

4.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The Hushamu property can be reached along logging roads from Port Hardy (Figure 1). The main access to the claim block is via the 'Wanokana Main' logging road which commences on the outskirts of Coal Harbour. The Hushamu deposit is about 12 km by logging road from Holberg Inlet. Port Hardy is about 6 or 7 hours travelling time north from Nanaimo via the Island Highway. Port Hardy can also be reached via commercial airline from Vancouver.

The property is characterized by multiple low, northwesterly to westerly trending hills and ridges bounded by narrow valleys with steep slopes. Elevations range from sea level to 695 m a.s.l. with ridge tops on the property commonly about 300 m above valley floors.

The property was actively logged in the early 1990's. Forest cover consists of mature stands of fir, hemlock, spruce and cedar, areas of dense second growth and open clear-cut areas. The ridge tops are open with widely scattered stunted evergreens. Low areas along creeks are covered by thick bush.

Outcrop exposure is abundant in areas of steep relief and along ridge tops. Thick humus on the forested slopes and residual glacial gravels on the valley floors restrict geologic mapping in these areas.

The property receives little snowfall in winter and can be effectively explored for 10 months each year. The climate is cool and wet, with windstorms in late fall. There are typically hot, dry spells during the summer when exploration work may be curtailed because of forest fire hazard.

5.0 HISTORY

Utah Construction and Mining Company ("Utah") discovered a large, porphyry copper-molybdenum-gold deposit at the eastern end of Rupert Inlet between January 1966 and May 1969. This deposit was developed into the Island Copper Mine, with production beginning in October 1971. The mine produced 345 million metric tonnes of ore with average head grades of 0.41 % copper, 0.017 % molybdenum, 0.19 gm/tonne gold and 1.4 gm/tonne silver by December 1994 (Perello, *et al.*,1995). The now-closed Island Copper Mine lies in the gap between Lumina's Moraga/Electra and East claim blocks (Figure 2).

Utah staked mineral claims covering most of the area between the eastern end of Rupert Inlet and the western end of Holberg Inlet during the late 1960's. This area corresponds largely to the area covered by Lumina's Moraga and Electra blocks. As part of this package, Utah staked the Expo claims, which cover the Hushamu deposit, in 1966. The Expo property was geologically mapped at 1:2400 scale between 1967 and 1975; geochemical soil sampling, geophysical surveying and diamond drilling resulted in the discovery of the "Hushamu Zone". The style of copper mineralization at the Hushamu Zone was similar to that at the Island Copper orebody.

Induced polarization geophysical surveying along 6.7 line-km during 1982 indicated moderately anomalous chargeabilities across a broad area at Hushamu (Muntanion and Witherly, 1982). Four diamond drill holes totaling 480.5 m were drilled at the Hushamu Zone in 1982.

Utah explored the southern Hushamu area for gold in 1980 - 1984, following the recognition of siliceous breccias at McIntosh Mountain (Kesler, 1985). Two diamond drill holes intersected copper- and gold-bearing intervals at McIntosh Mountain.

Moraga Resources Ltd. ('Moraga') optioned the Expo property from BHP-Utah Mines Ltd. in 1987. Moraga performed geological mapping, geochemical soil sampling and diamond drilling between 1987 and 1994; Moraga's work on the Hushamu deposit is outlined below.

- Eleven diamond drill holes totaling 3,822.72 m were drilled at the Hushamu area between April and July, 1990; results of this drilling extended the Hushamu deposit 200 m southwards (Jones, 1990).

- Eight diamond drill holes totaling 2,347.0 m were drilled during November and December 1990; the results of this work further extended the geological boundaries of the Hushamu copper-gold deposit (Pawliuk, 1991a).

- Four diamond drill holes totaling 932.99 m were drilled at Hushamu between February and August, 1991; the results of this work defined additional copper mineralization beneath siliceous, pyrophyllite breccias which cap McIntosh Mountain (Pawliuk, 1991b).

- Nine thin sections of diamond drill core from the Hushamu deposit area were examined during a petrographic study. The results of this study indicated that rocks from the Hushamu area have undergone strong to intense phyllic (quartz-sericite-pyrite) alteration. Pyrite, chalcopyrite and molybdenite were identified; traces of hypogene bornite, chalcocite and covellite, and supergene covellite were also observed (Leitch, 1991).

- Thirteen diamond drill holes totaling 4,832.20 m were drilled between September 1, 1991 and March 15, 1992. The results of this work extended the geological boundaries of the Hushamu copper-gold deposit to the south and southeast (Pawliuk, 1992).

- Four diamond drill holes totaling 972.01 m were drilled between March 3 and April 10, 1994.

The geological boundaries along the southwestern and eastern sides of the Hushamu deposit were delineated by this work. Additional, but low grade, copper-gold mineralization was defined beneath the siliceous pyrophyllite breccias on McIntosh Mountain (Pawliuk, 1994).

- Additional work done on the Hushamu deposit during the years 1991 to 1993 consisted of a metallurgical study, a study of ore transport alternatives and a preliminary mining study.

Outside of the Hushamu deposit area, a number of smaller exploration programs targeted the other mineral occurrences on the current Hushamu property from the 1960's to the 1990's. These programs consisted of geological mapping, silt and soil geochemical surveying, ground geophysical surveys and limited diamond drilling. Compilation of data from these programs into a digital database is recommended by this report.

6.0 GEOLOGICAL SETTING

The geology of Vancouver Island north of Holberg and Rupert inlets consists of Upper Triassic to Middle Jurassic Vancouver and Bonanza groups sediments and volcanics (Nixon *et al.,* 1993*)*. These rocks have been intruded by dykes and stocks of Jurassic to Tertiary age and are overlain by Cretaceous and Tertiary sediments. The major lithologic units have a pronounced northwesterly trend as shown on Figure 3.

The Vancouver Group from bottom to top is composed of:

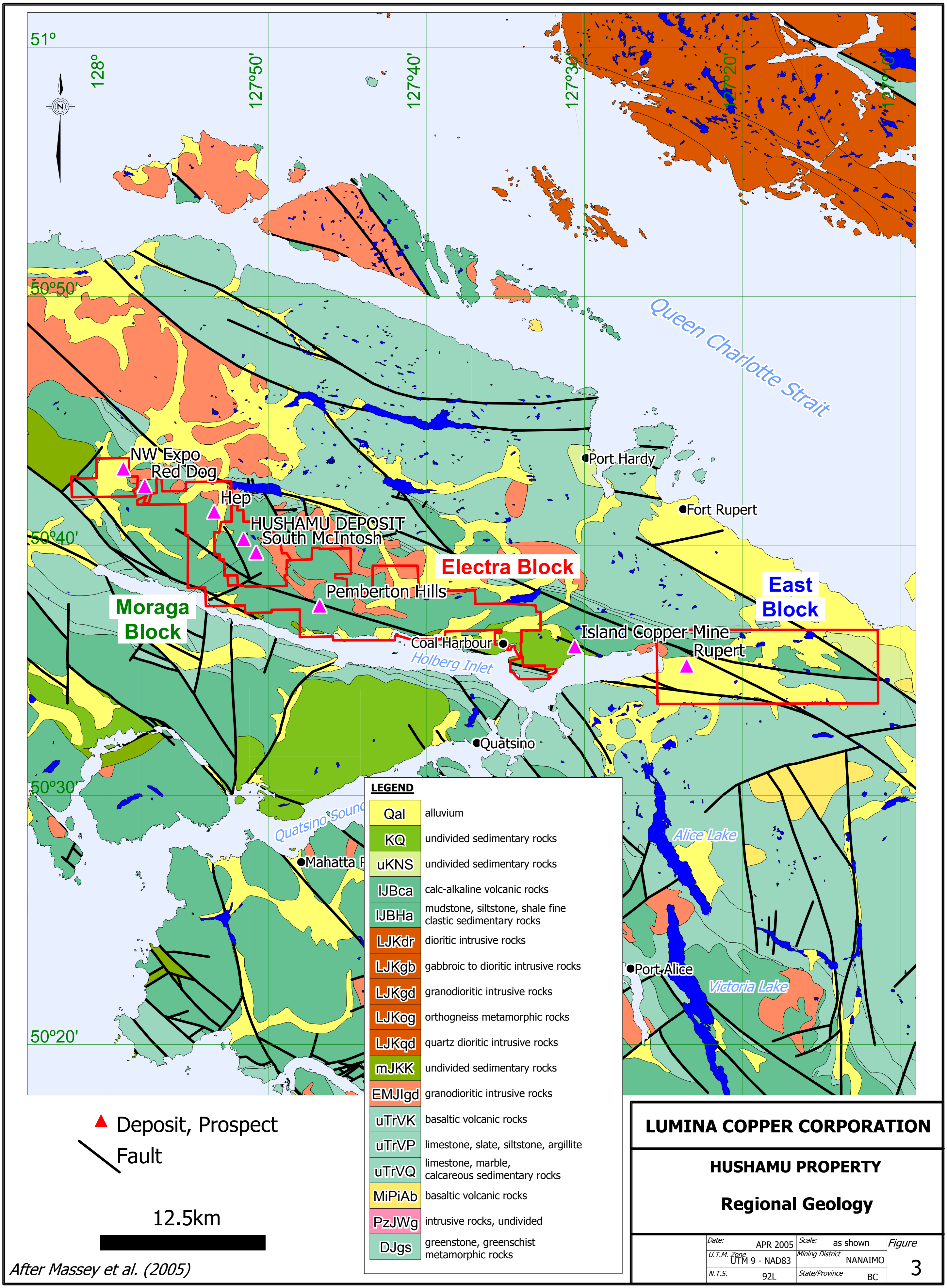
- Basal Sediment - Sill unit - Middle Triassic "Daonella" beds
- Karmutsen Formation - Upper Triassic basaltic flows and tuffs
- Quatsino Formation - Upper Triassic limestone
- Parson Bay Formation - Upper Triassic ash tuffs and sediments

The Bonanza Group from bottom to top is composed of:

- Harbledown Formation - Lower Jurassic sediments
- Bonanza Formation - Lower Jurassic andesitic ash tuff and flows

The Vancouver and Bonanza rocks are intruded by the large diorite-quartz diorite stocks of the Jurassic Island Plutonic Suite. Dykes and irregular bodies of quartz-feldspar porphyry occur along the southern edge of this belt of stocks. Significant copper-gold porphyry occurrences within the region, such as the Island Copper deposit, are hosted within altered Bonanza Formation volcanic rocks adjacent to igneous intrusions (Perello et al, 1995).

A regional fault system trends west to northwest along Rupert and Holberg inlets. This fault splits near the western end of Holberg Inlet; one branch of the fault parallels Holberg Inlet and the other branch underlies the western side of the Stranby River valley (Dasler *et al.*, 1995). A subordinate, conjugate set of northeasterly trending faults has been mapped, showing apparent lateral displacements of several hundred metres. The porphyry copper-gold occurrences at


51°
128°
127°50'
127°40'
127°30'
127°20'
127°10'
50°50'
50°40'
50°30'
50°20'
N
Queen Charlotte Strait
Port Hardy
Fort Rupert
NW Expo
Red Dog
Hep
HUSHAMU DEPOSIT
South McIntosh
Electra Block
Pemberton Hills
East
Block
Moraga
Block
Island Copper Mine
Rupert
Coal Harbour
Holberg Inlet
Quatsino
Quatsino Sound
Mahatta R
Alice Lake
Port Alice
Victoria Lake
LEGEND
Qal alluvium
KQ undivided sedimentary rocks
uKNS undivided sedimentary rocks
lJBca calc-alkaline volcanic rocks
lJBHa mudstone, siltstone, shale fine clastic sedimentary rocks
LJKdr dioritic intrusive rocks
LJKgb gabbroic to dioritic intrusive rocks
LJKgd granodioritic intrusive rocks
LJKog orthogneiss metamorphic rocks
LJKqd quartz dioritic intrusive rocks
mJKK undivided sedimentary rocks
EMJIgd granodioritic intrusive rocks
uTrVK basaltic volcanic rocks
uTrVP limestone, slate, siltstone, argillite
uTrVQ limestone, marble, calcareous sedimentary rocks
MiPiAb basaltic volcanic rocks
PzJWg intrusive rocks, undivided
DJgs greenstone, greenschist metamorphic rocks
Deposit, Prospect
Fault
12.5km
After Massey et al. (2005)
LUMINA COPPER CORPORATION
HUSHAMU PROPERTY
Regional Geology
Date: APR 2005
Scale: as shown
Figure 3
U.T.M. Zone UTM 9 - NAD83
Mining District NANAIMO
N.T.S. 92L
State/Province BC

Hushamu, Hep, Red Dog and Island Copper are located at or near the intersections of these conjugate fault systems.

7.0 DEPOSIT TYPES

The Hushamu property hosts porphyry copper-gold mineralization, deposits of which are important producers of copper, gold, and to lesser extents, silver and molybdenum. These well-studied deposits are directly related to mesozonal to epizonal intrusions that vary widely in composition and tectonic settings. British Columbia examples include Island Copper, Galore Creek and Kemess while important worldwide deposits include Ok Tedi, Bingham Canyon and Grasberg. These deposits are typically located in orogenic belts at convergent plate boundaries and are associated with subduction-related magmatism. The deposits are directly related to epizonal stocks of widely variable composition that intrude coeval volcanic piles or other country rock. The causative intrusions are commonly multi-episodal and range from fine- to coarse-grained equigranular to porphyritic stocks, dike complexes, and breccias.

Mineralization is hosted within the causative intrusions and/or the host rocks and consists of quartz stockworks, veinlets, disseminations and replacements within large hydrothermally-altered systems. Metallic mineralization is comprised of chalcopyrite, pyrite, bornite, molybdenite, magnetite, hematite and chalcocite. The large, up to 10km^2 hydrothermal systems are marked by distinctive alteration assemblages. The core of the systems are comprised of potassic alteration mineral assemblages including potassium feldspar, biotite, magnetite, and locally, anhydrite, diopside and garnet. The cores of the systems commonly host the strongest copper-gold mineralization as chalcopyrite and bornite. Peripheral to the potassic core are large zones of propylitic alteration consisting of albite, chlorite, epidote, calcite, diopside, actinolite and pyrite. These alteration assemblages are commonly overprinted by phyllic (sericite, pyrite, clay, carbonate) alteration, argillic alteration and, in the uppermost parts of the deposits, advanced argillic alteration.

Several other styles of mineralization can be related to these systems, including skarn low and high sulphidation epithermal gold±silver, and auriferous and polymetallic quartz±carbonate veins. These other styles of mineralization, in particular the polymetallic veins, form above and peripheral to the main-stage copper-silver mineralization and can be used to vector towards copper-gold mineralization.

8.0 MINERALIZATION

At least seven copper-gold occurrences have been identified on the Hushamu property, of which the Hushamu deposit is the furthest advanced.

8.1 Hushamu Deposit

In the vicinity of the Hushamu deposit, Lower Jurassic Bonanza Formation andesitic tuffs and flows are intruded by a northwesterly trending, dyke-like, diorite or quartz diorite stock of the Jurassic Island Plutonic Suite. Quartz-feldspar porphyry dykes associated with this diorite stock also intrude the Bonanza Formation volcanic rocks. Brecciated, altered and mineralized

Bonanza Formation volcanic rocks form an envelope around the diorite stock and associated quartz-feldspar porphyry dykes. The diorite stock and porphyry dykes are also locally mineralized (Fleming, 1991).

A northwesterly trending, north-dipping, normal fault is the main structural feature of the Hushamu area. Local northeasterly trending steep faults appear to be spatially related to the porphyry copper style mineralization (Dasler et al, 1995).

Copper-gold-molybdenum mineralization occurs within altered Bonanza Formation rocks at the Hushamu deposit. The mineralization is epigenetic. A silica-kaolinite-alunite-pyrophyllite(?) cap overlies the altered volcanic rocks in the southern part of the Hushamu deposit area (Figure 4). The description of the mineralization at the Hushamu copper-gold deposit that follows is taken mainly from Dasler *et al*. (1995).

The northern part of the Hushamu copper-gold deposit has characteristics of a deep seated porphyry copper-gold occurrence, and the southern part of the Hushamu deposit area has characteristics of a shallow, advanced argillic, epithermal occurrence. Multiple episodes of brecciation, alteration and mineralization have occurred.

Multiple stage quartz-magnetite-chalcopyrite-pyrite stockworks intrude chlorite-altered volcanic rocks, breccias and porphyries in the northern part of the Hushamu deposit area. In addition to chlorite, local early(?) albite- and biotite-altered patches are present. These rocks have undergone later, structurally controlled quartz-sericite-clay alteration associated with veinlet and disseminated pyrite.

A multiple stage hydrothermal breccia complex at Hushamu contains mineralized fragments of various rock types. This breccia complex is centred above the diorite stock. Quartz feldspar porphyry dykes, pebble dykes and late rhyolite dykes crosscut the breccias; some of these crosscutting dykes are mineralized.

The southern, uppermost part of the Hushamu deposit occurs on McIntosh Mountain. A northwesterly trending cap of vuggy silica rock here overlies the rocks that have undergone porphyry-style mineralization. The vuggy silica rock probably formed under extremely acidic conditions, in a high sulphidation epithermal environment. Panteleyev and Koyanagi (1994) recognized hydrothermal and phreatomagmatic breccias within the vuggy silica rock capping McIntosh Mountain. The vuggy silica rock occurs about 350 m vertically above the main porphyry copper-gold deposit/environment at the northern Hushamu area (Figure 5). The two geological environments have therefore been described as "telescoped".

Pyrite is the main sulphide mineral within the Hushamu deposit area. Copper minerals occur as disseminated blebs, as wispy, irregular masses and as hairline veinlets. Chalcopyrite is the main copper mineral with lesser amounts of hypogene bornite, chalcocite and covellite; some supergene covellite was also observed (Leitch, 1991).

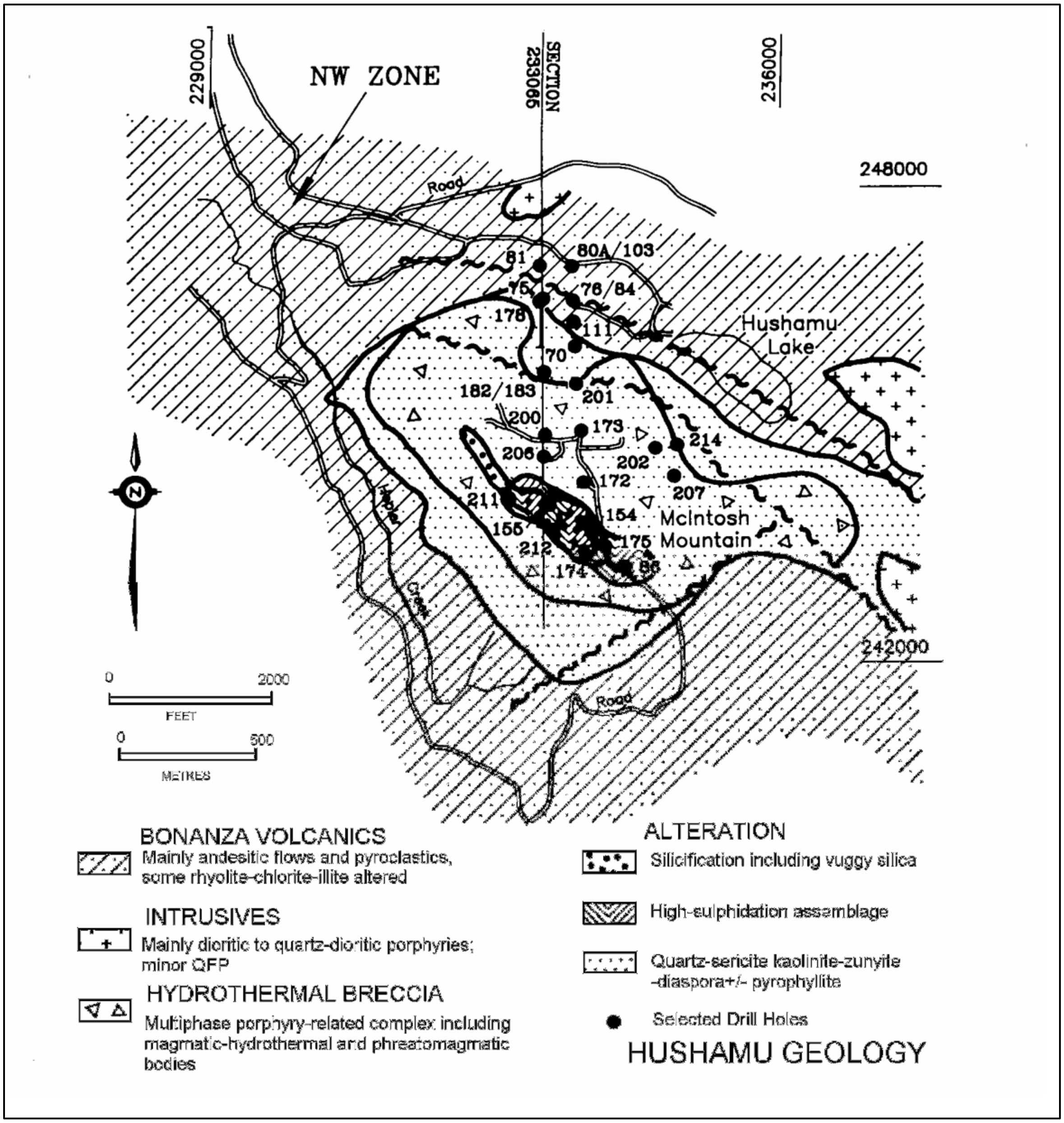


Figure 4: Hushamu Deposit Geology showing breccia complex and alteration (after Dasler et al., 1995)

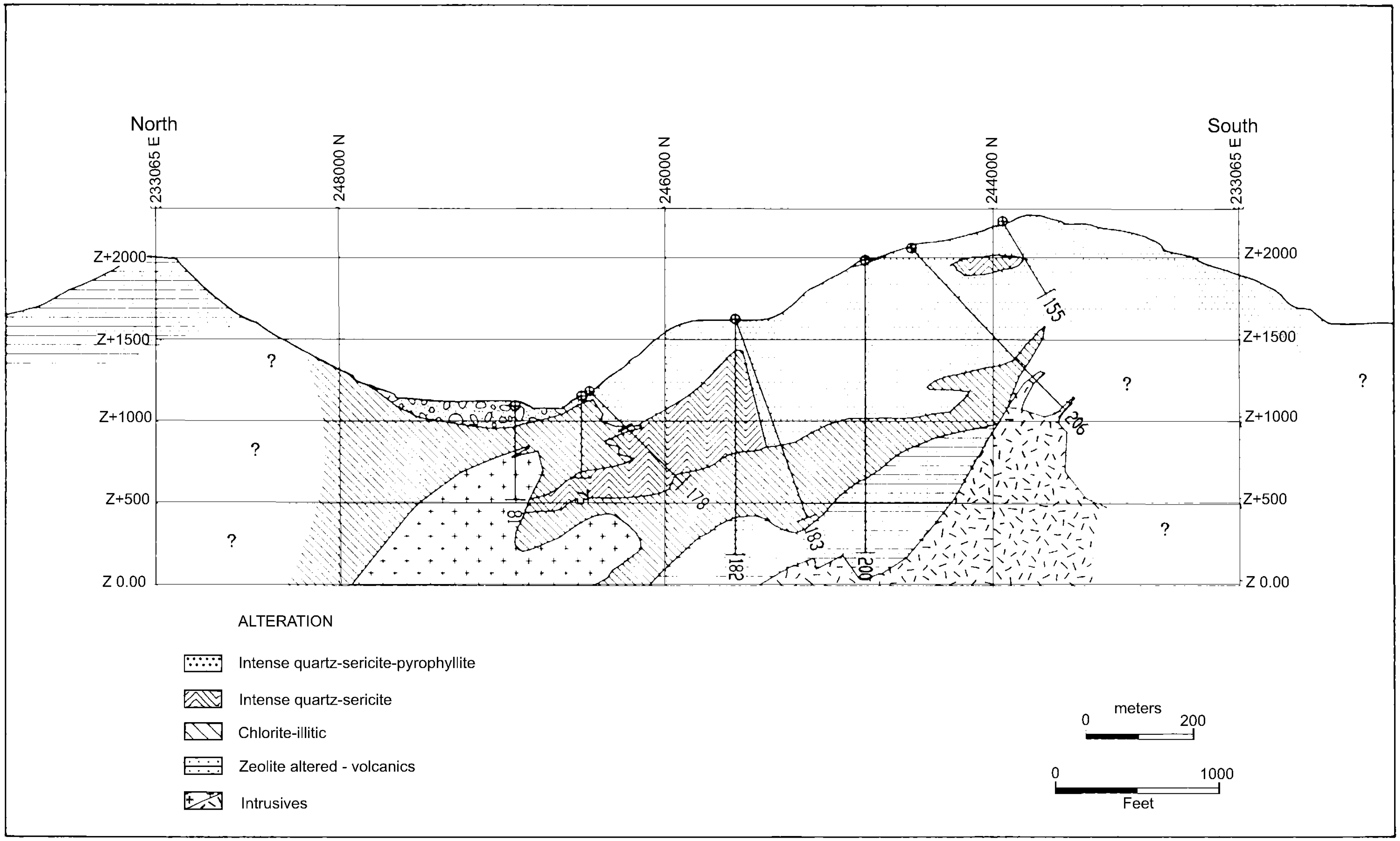


Figure 5: Section 233065E across Hushamu deposit (after Dasler et al., 1995)

The Hushamu-McIntosh porphyry copper-gold deposit appears to be a telescoped and tilted hydrothermal system. The key elements characterizing this system were described by Perello (1992) as follows:

- a deep porphyry copper-gold environment coincident with intrusive bodies in the Hushamu valley;
- an intermediate phyllic to argillic environment on the slopes of McIntosh Mountain south of Hushamu valley; and
- a shallow environment with advanced argillic, high-sulphidation epithermal features on top of McIntosh Mountain.

8.2 Other Occurrences

A number of other copper-gold-molybdenum mineral occurrences have been recognized on the Hushamu property (Figure 2). From northwest to southeast, these include:

NW Expo

The NW Expo area is underlain by Bonanza Formation andesitic to rhyolitic volcanic and volcaniclastics rocks, intruded by dykes of hypabyssal equivalents. The andesites are moderately propylitized while the rhyolites have been variably brecciated and quartz-clay-(sericite)-pyrite altered. Up to 15% pyrite, with traces of chalcopyrite and molybdenite, is concentrated in silica-clay breccias. Drillhole NWE2 intersected 23 metres grading 0.6 g/tonne Au with minor copper (Fingler, 1996).

Hep

The Hep area is underlain by Bonanza Formation andesitic flows and tuffs and felsic tuff, which have been intruded by quartz monzonite. The volcanic rocks have been largely propylitized and locally argillized and/or silicified. Pyrite and chalcopyrite, with lesser bornite and local magnetite, are finely disseminated and fill fractures in the volcanic rocks. Molybdenite is also found along fractures in the volcanic rocks (Minfile 092L-078).

South McIntosh

The South McIntosh area is underlain by propylitized and argillized andesitic flows and pyroclastics which have been intruded by irregular diorite and diabase dykes. Steeply dipping, 20 - 90 metre wide, silica-alunite altered hydrothermal breccias are discontinuously exposed in an east-west direction over 1200 metres. Traces of disseminated chalcopyrite and bornite were reported in a surface exposure and the four drillholes returned no significant results for copper or gold (Fingler, 1996).

Pemberton Hills

The Pemberton Hills area is underlain by propylitized andesitic to dacitic volcanic and volcaniclastics rocks intruded by a multiphase diorite to quartz diorite intrusive. The ridge itself covers a 500 x 2000 metre complex of multistage hydrothermal breccias, comprised largely of silicified clasts commonly cemented by multiple phases of silica. Three drillholes tested the Pemberton Hills area without intersecting significant gold, but one of the holes encountered anomalous levels of copper (1471 ppm) at its base (Fingler, 1996).

Rupert

The Rupert area is underlain by Bonanza Formation andesitic tuff cut by a quartz porphyry dyke, which is associated with disseminated magnetite, pyrite and minor chalcopyrite and molybdenite. Minor chalcopyrite and molybdenite are also found in shears and quartz veins (Minfile 092L-273).

9.0 EXPLORATION

To date, Lumina has not carried out, nor had carried out on its behalf, any exploration work on the Hushamu property.

10.0 DRILLING

To date, Lumina has not carried out, nor had carried out on its behalf, any drilling on the Hushamu property. Results of the drilling on the Hushamu deposit are described in Section 11 (Mineral Resource Estimate). A compilation of results of historical drilling on other occurrences within the Hushamu property is recommended by this report.

11.0 MINERAL RESOURCE ESTIMATE

11.1 Sample Preparation, Analyses and Security

After geological logging the diamond drill cores were split using a Longyear wheel-type core splitter. One-half of the core was retained in the core boxes and stored at the Island Copper mine site. The coreboxes were later placed in outside storage on pallets at the premises of Port Hardy Bulldozing Ltd. at Port Hardy during the decommissioning of the mine. By 2004 many of these wooden coreboxes had become rotten, and therefore the cores were moved into fresh boxes and stacked on racks constructed for this purpose at Port Hardy Bulldozing Ltd. About 75 % of the historic Hushamu drill cores are thereby available for examination, although these samples have deteriorated because of the effects of weathering and oxidation over the years

The other half of the core was bagged and sent via commercial bus lines to Chemex Labs Ltd., ('Chemex') North Vancouver, British Columbia for analysis. The core samples were ground to minus 80 mesh, then a 0.500 gm sub-sample was digested in 3 ml of 3 - 2 - 1 HCl - HNO_3 - H_2O at 95^o Celsius for one hour. This solution was then diluted to 10 ml with water and analyzed by I.C.P. methods for copper, molybdenum, silver, cobalt, iron, manganese, nickel, lead and zinc. Gold analysis was by fire assay and atomic absorption, using a 10 gm sub-sample.

11.2 Data Verification

The Hushamu property was evaluated and drilled in the early 1990's and as a result does not have the quality control checks of blanks, standards and routine duplicates that are required in

N.I. 43-101 for current programs. No independent checks were made by the authors at this time due to the elapsed time between drilling in the early 1990's and this report date and uncertainty over pulp condition, location and if they even still exist. However, a suite of 1,114 archived core sample pulps from pre 1990 drilling were re-analyzed at Chemex during 1991. Chemex had completed the original analysis on these sample pulps.

The 1991 re-analysis was done in order to obtain gold and molybdenum results that were missing from many of the original sample analyses. The 1991 re-analysis created duplicate analyses for copper, gold and molybdenum for a number of samples. These duplicate analysis were compared with the original analyses on scatter plots, and correlation coefficients were obtained.

Copper

A total of 1,110 duplicate copper analyses were obtained and are shown in a scatter plot (Figure 6). There is no indication of any bias with samples falling on both sides of an equal value line. The correlation coefficient was 0.9832.

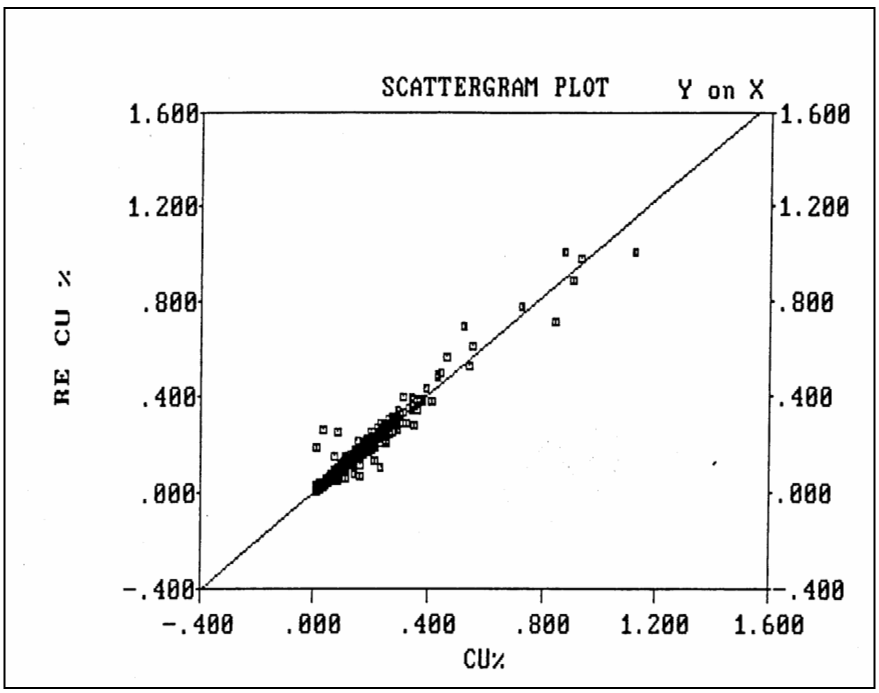


Figure 6: Scatter plot for Original Cu (%) versus Duplicate RE Cu (%) on 1110 sample pulps

Gold

A total of 529 duplicate gold analyses were obtained. These analyses are plotted below on Figure 7. The scatter plot shows that the gold duplicates are more scattered than copper. However, the gold plot shows no bias and has a reasonable correlation coefficient of 0.8011.

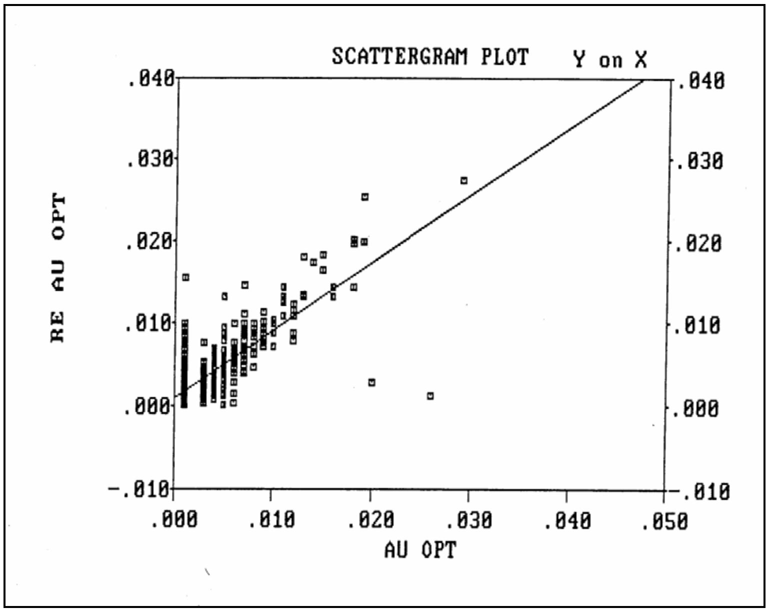


Figure 7: Scatter plot for Original Au (opt) versus Duplicate RE Au (opt) on 529 sample pulps

Molybdenum

A total of 435 duplicate molybdenum analyses were obtained. The scatter plot (Figure 8) again shows no bias and a correlation coefficient of 0.9523.

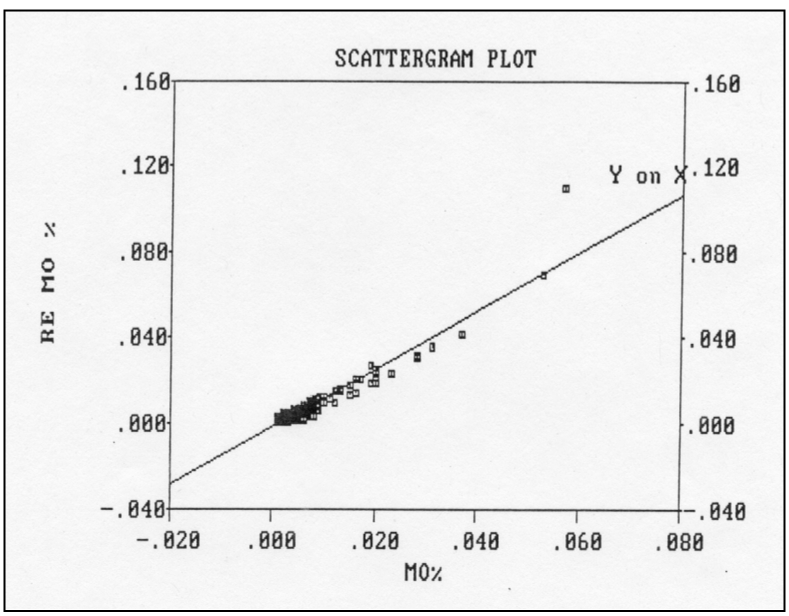


Figure 8: Scatter plot for Original Mo (%) versus Duplicate RE Mo (%) on 529 sample pulps

These duplicate check results show that the analytical data is reasonable, with no sampling bias indicated. The analytical data is therefore suitable for determining a resource estimate.

11.3 Raw Data

The digital data base for the Hushamu copper-gold deposit was received as a series of computer files from Jordex Resources Inc. The files contained the following information: collar coordinates - hole ID, easting, northing, elevation and hole length; Survey Information -hole ID, survey point, azimuth and dip; Assay Information - hole ID, from, to, Cu (%), Au (oz/t), Mo (%), Ag (oz/t) and MOS2 (%); and Geology Information - hole ID, geol. from, geol. to and geologic code. All distances and coordinates are measured in feet. Assay information for silver and MoS2 are incomplete so no further work was done on these variables. The data files were loaded into a computer data base and various validity checks were performed. Any discrepancies found were corrected. Appendix II lists the 114 diamond drill holes used for this study. Drill hole collar locations and topography are shown in Figure 9.

The first step in data analysis was to assign a geologic code to every assay interval and then separate the raw data on the basis of geology. Five separate rock types were identified and evaluated. It should be noted that sample length varied from less than 5 ft. to over 10 ft. No attempt was made to standardize sample intervals for this study. Complete results showing simple statistics, histograms and cumulative probability plots are shown for copper and gold in Giroux, (1993). The results are summarized in Tables 2 and 3.

Table 2: A Comparison Of Simple Statistics For Copper In 5 Rock Domains

ROCK TYPE	n	MEAN (%)	S.D.	POP.1 MEAN (%)	POP.2 MEAN (%)	POP.3 MEAN (%)	POP.4 MEAN (%)	POP.5 MEAN (%)
SPBX	1947	0.098	0.145	0.004	0.010	0.034	0.189	0.582
SLBX	1148	0.138	0.157	0.004	0.012	0.039	0.214	0.749
ANDS	2683	0.192	0.158	0.007	0.022	0.076	0.225	0.848
INTR	671	0.121	0.096	0.010	0.039	0.108	0.199	0.371
ANDZ	317	0.044	0.060	0.001	0.008	0.046	0.159	0.284

Where : SPBX = Siliceous Pyrophyllite Breccia
SLBX = Siliceous Breccia
ANDS = Chlorite/magnetite/biotite/silica altered Andesites & Basalts
INTR = Intrusives - Quartz feldspar porphyry, Diorite, Monzonite
ANDZ= Andesite - relatively unaltered, but having zeolite-epidote alt.

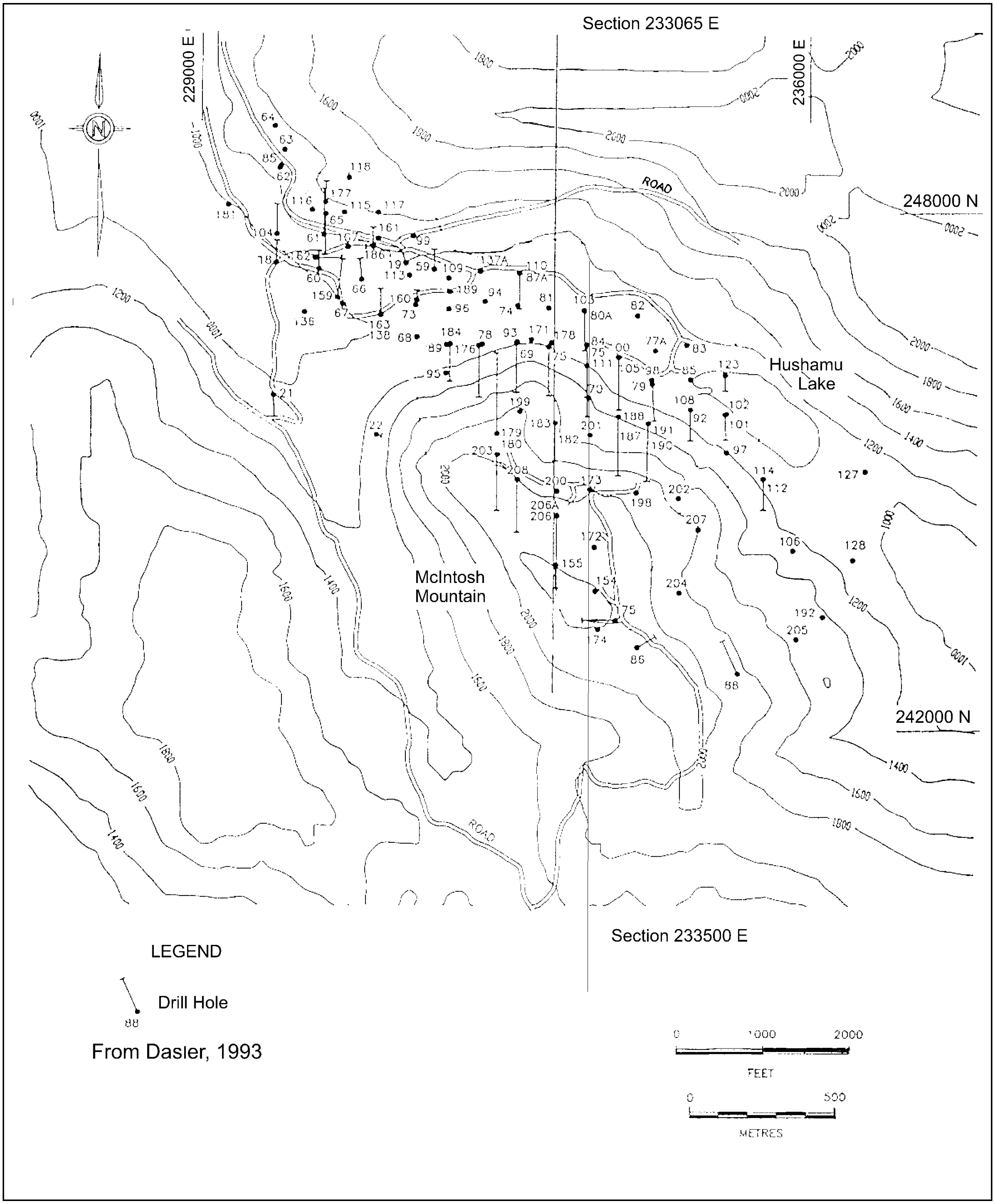


Figure 9: Topography and Drill Hole Locations (after Dasler, 1993)

The distribution of copper in siliceous pyrophyllite breccia (SPBX) is different from the distribution of copper in siliceous breccia (SLBX). Copper in SPBX has a lower mean and standard deviation for all samples. When multiple lognormal populations are separated the lowest two populations in both rock types are essentially the same. Population (3) has essentially the same grade in both rock types (0.034 vs 0.039 %); this population represents 42 % of the data in SPBX while only 27 % of SLBX. Populations 4 and 5 represent commercial mineralization, and are also different both in average grade and proportion of total data. For instance population 4 in SPBX consists of 26 % of the total data and has a mean of 0.189 % Cu while population 4 in SLBX consists of 47.0 % of the data and has a mean of 0.214 % Cu. Population 5 in SPBX consists of 4 % of the data and has a mean of 0.582 % Cu while in SLBX population 5 consists of 1 % of the data and has a mean of 0.749 % Cu.

The distribution of copper in altered andesites and basalts (ANDS) is clearly different from the copper distribution within both siliceous breccia units, both in shape and mean grades of all overlapping populations. The ANDS unit should therefore be estimated separately.

The distribution of copper in altered andesites and basalts (ANDS) is also significantly different from copper within the zeolite-epidote altered andesites (ANDZ) with higher grades for copper in all overlapping populations. The zeolite-epidote altered andesite is thought to have been originally located further away from the mineralizing source and post mineralization faulting has brought the ANDZ unit into the area of the main mineralized zone. The two andesite units should be estimated separately to avoid smearing higher grades across fault contacts.

Finally copper distribution within intrusives is different from all other rock units. Intrusives also have 5 overlapping copper populations but the average grades of the two lower populations (representing background) are significantly higher than copper grades within the other four rock types.

Table 3: A Comparison Of Simple Statistics For Gold In 5 Rock Domains

ROCK TYPE	n	MEAN (oz/t)	S.D.	POP.1 MEAN (oz/t)	POP.2 MEAN (oz/t)	POP.3 MEAN (oz/t)	POP.4 MEAN (oz/t)	POP.5 MEAN (oz/t)
SPBX	1886	0.005	0.005	0.002	0.007	0.015	0.022	0.032
SLBX	1119	0.006	0.006	0.001	0.005	0.012	0.018	0.029
ANDS	2086	0.007	0.007	0.001	0.005	0.010	0.018	0.032
INTR	433	0.005	0.004	0.001	0.004	0.006	0.011	0.023
ANDZ	306	0.002	0.002	0.001	0.003	0.006	0.009	

The average grade for gold in all five rock types is very similar, ranging from 0.002 to 0.007 oz Au/t. When the distribution of gold in each rock type is examined more closely they are clearly different. In siliceous pyrophyllite breccia, for example, 70 % of the total data are in population 1 with a mean grade of 0.002 oz Au/t while in siliceous breccia only 25 % of the data are in population 1 with a mean of 0.001 oz Au/t. Siliceous pyrophyllite breccia, on the other hand, contains two anomalous populations (2 % of data with mean grade 0.022 oz Au/ton and 1 % of the data with mean grade 0.032 oz Au/ton). Both of these populations contain more gold than the most anomalous population in siliceous breccia.

Gold distribution in altered andesites and basalts (ANDS) appears very similar to siliceous pyrophyllite breccia when the mean values for each population are compared. The proportions of these 5 populations, however, are clearly different which indicates how the various mineralizing events are mixed (Giroux, 1993). The three anomalous populations in altered andesites and basalts are also significantly higher in gold grade than the three anomalous populations in zeolite-epidote altered andesites.

As a result of this preliminary study on the original sample data it is evident that individual rock domains are sufficiently different to warrant treating them separately.

11.4 Composites

Composites, 20 feet in length, were formed within each rock domain. Composites less than 10 feet in length were added to adjoining composites of similar rock type and isolated composites less than 10 feet in length were removed from the file. Composites were subdivided into the same five domains described in the previous section, ie. SPBX, SLBX, ANDS, ANDZ and INTR. Again simple statistics, histograms and cumulative probability plots were used to analyse the distributions of copper, gold and molybdenum within each rock type. The results are all shown in Giroux (1993) and summarized in Tables 4 to 6 below.

Table 4: A Comparison Of Simple Statistics For Copper In 20 Foot Composites From Different Geologic Domains

ROCK TYPE	n	MEAN (%)	S.D.	POP.1 MEAN (%)	POP.2 MEAN (%)	POP.3 MEAN (%)	POP.4 MEAN (%)	POP.5 MEAN (%)
SPBX	977	0.095	0.125	0.002	0.015	0.086	0.248	0.495
Proportion of Total				2.0	53.0	25.0	16.0	4.0
SLBX	558	0.136	0.138	0.003	0.011	0.040	0.159	0.375
Proportion of Total				2.0	20.0	26.0	36.0	16.0

Table 4: A Comparison Of Simple Statistics For Copper In 20 Foot Composites From Different Geologic Domains (cont'd)

ROCK TYPE	n	MEAN (%)	S.D.	POP.1 MEAN (%)	POP.2 MEAN (%)	POP.3 MEAN (%)	POP.4 MEAN (%)	POP.5 MEAN (%)
ANDS	1289	0.189	0.143	0.007	0.018	0.081	0.201	0.398
Proportion of Total				5.0	10.0	25.0	40.0	20.0
INTR	341	0.121	0.090	0.008	0.016	0.041	0.139	0.363
Proportion of Total				5.0	10.0	17.0	64.0	4.0
ANDZ	152	0.044	0.054	0.005	0.012	0.039	0.108	0.216
Proportion of Total				15.0	37.0	27.0	17.5	3.5

Table 5: A Comparison Of Simple Statistics For Gold In 20 Foot Composites For Different Geologic Domains

ROCK TYPE	n	MEAN (oz/t)	S.D.	Pop.1 Mean (oz/t)	Pop.2 Mean (oz/t)	Pop.3 Mean (oz/t)	Pop.4 Mean (oz/t)	Pop.5 Mean (oz/t)
SPBX	956	0.005	0.005	0.002	0.006	0.012	0.018	0.026
Proportion of Total				64	27.4	4.3	2.8	1.5
SLBX	551	0.006	0.005	0.002	0.005	0.013	0.020	0.029
Proportion of Total				30.0	56.0	11.0	2.0	1.0
ANDS	1078	0.006	0.006	0.001	0.007	0.017	0.023	0.028
Proportion of Total				40.0	50.0	7.0	2.0	1.0
INTR	256	0.004	0.004	0.001	0.004	0.011	0.013	0.018
Proportion of Total				40.0	52.0	4.0	3.0	1.0
ANDZ	147	0.002	0.001	0.001	0.004	0.008		
Proportion of Total				85.0	13.3	1.7		

Table 6: A Comparison Of Simple Statistics For Molybdenum In 20 Foot Composites For Different Geologic Domains

ROCK TYPE	n	MEAN (%)	S.D.	POP.1 MEAN (%)	POP.2 MEAN (%)	POP.3 MEAN (%)	POP.4 MEAN (%)	POP.5 MEAN (%)
SPBX	970	0.011	0.008	0.002	0.006	0.012	0.021	0.038
Proportion of Total				14.0	37.0	31.0	15.0	3.0
SLBX	532	0.011	0.008	0.001	0.005	0.013	0.021	0.034
Proportion of Total				5.0	45.0	35.0	10.0	5.0
ANDS	1053	0.005	0.004	0.002	0.005	0.013	0.019	0.024
Proportion of Total				35.0	52.0	11.0	1.0	1.0
INTR	260	0.004	0.004	0.002	0.005	0.011	0.020	
Proportion of Total				45.4	46.7	6.2	1.7	
ANDZ	120	0.002	0.002	0.001	0.004	0.007		
Proportion of Total				84.0	13.0	3.0		

The results again show clear differences in both grades and proportions of overlapping mineralized populations for each variable within each domain. To combine rock types for estimation would produce smoothed average grades that would not honour the original geology.

11.5 Copper-gold Correlation

In any multi-element deposit it is important to understand how the different elements, in this case copper and gold, are spatially related. Most economic analysis is based on a single value for each selective mining unit (block). For the Hushamu deposit, gold will provide a significant contribution to any economic evaluation. A study of copper-gold correlation was undertaken to examine the copper-gold relationship. Dasler (1993) discusses two possible mineralized systems at Hushamu: a lower porphyry copper-gold system surrounding quartz feldspar porphyry dykes and an upper, more removed, gold-copper (enargite) zone. This upper zone, thought to be a result of late stage mineralized fluids seeping upward along structural conduits, would now lie above the 1200 ft. elevation. Drill hole samples from above 1200 ft. were compared with samples below 1000 ft. to avoid any overlap. Figures 10 to 13 show scatter plots comparing the copper-gold relationship of the upper zone to the lower zone for siliceous pyrophyllite breccia, siliceous breccia and altered andesites and basalts respectively. The siliceous pyrophyllite breccia which occurs mainly above 1200 ft. shows little difference in correlation or scatter. The siliceous breccia unit shows better correlation and less scatter in the lower zone, as does the altered andesite unit. The intrusive and zeolite-altered andesite both occur mainly in the lower zone; these two units show reasonable correlation between copper and gold (see Figure 13).

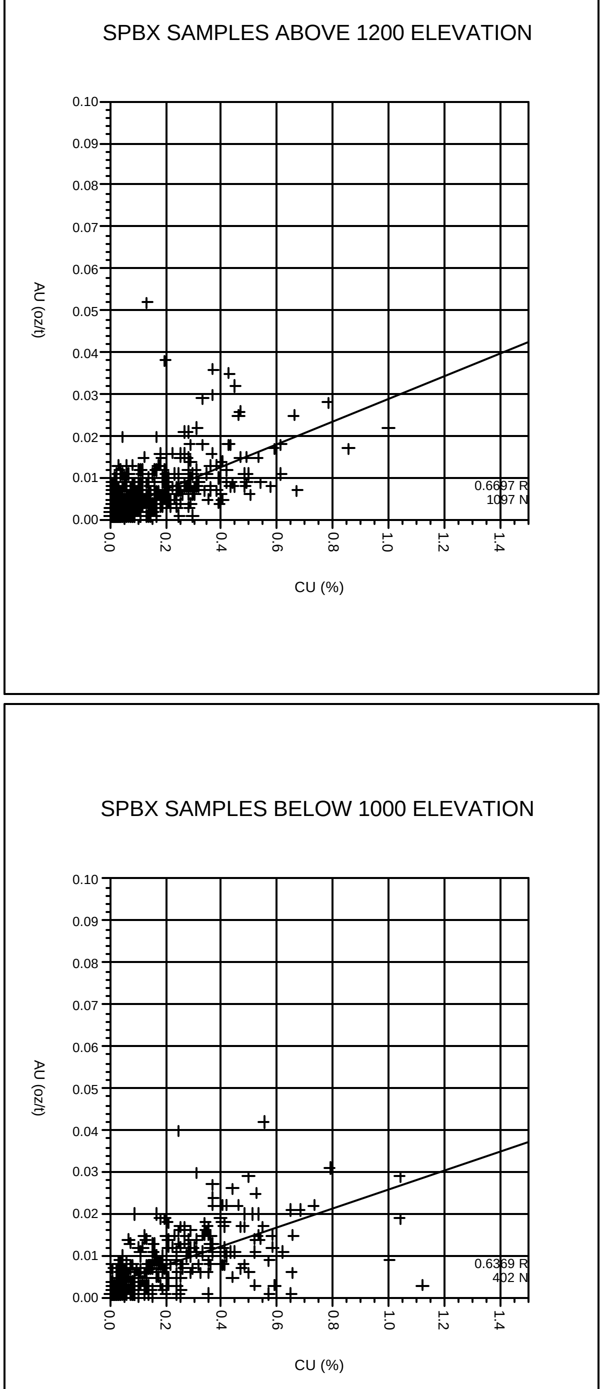


Figure 10: Scatter plots showing copper vs. gold for Siliceous Pyrophyllite Breccia Above 1200 and Below 1000 Elevation

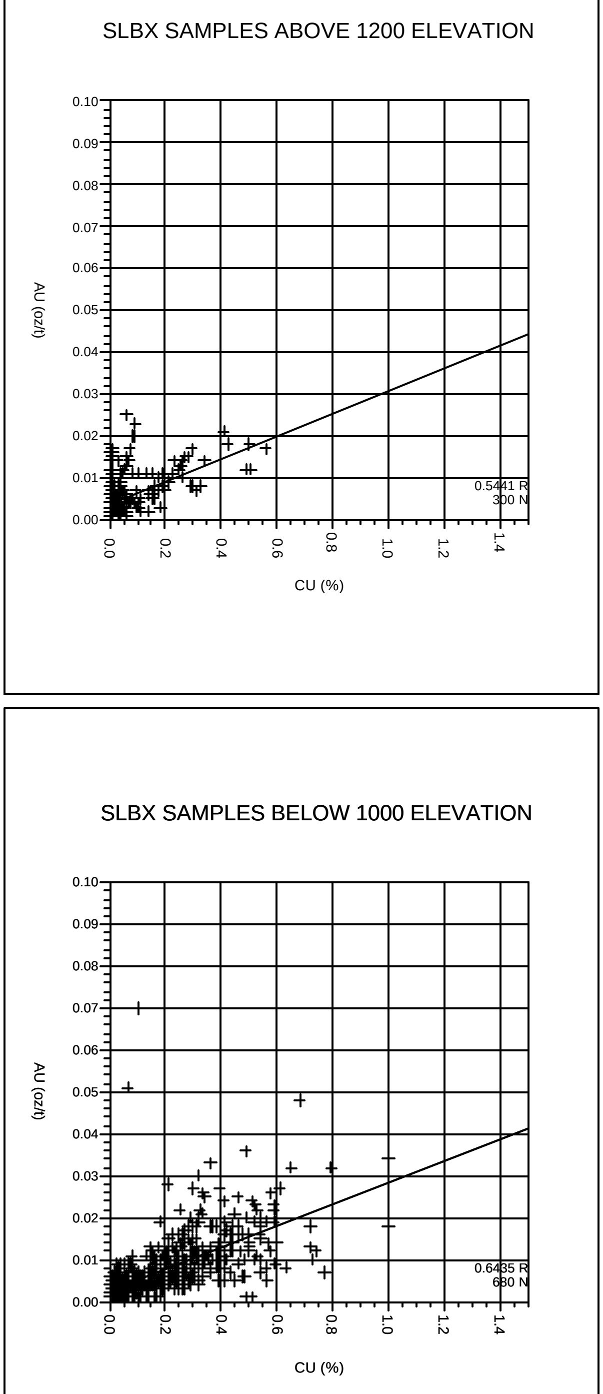


Figure 11: Scatter plots showing copper vs. gold for Siliceous Breccia Above 1200 and Below 1000 Elevation

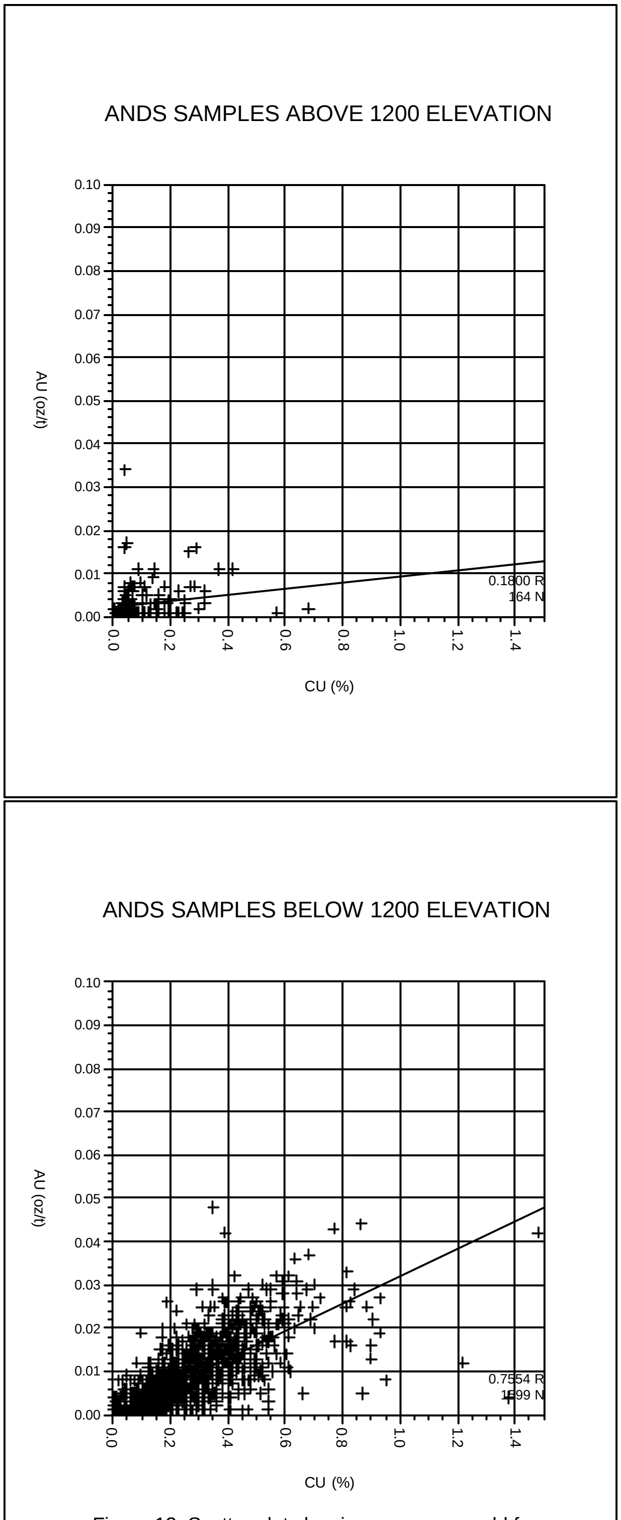


Figure 12: Scatter plot showing copper vs. gold for Chlorite/magnetite/biotite/silica altered Andesites & Basalts Above 1200 and Below 1000 Elevation

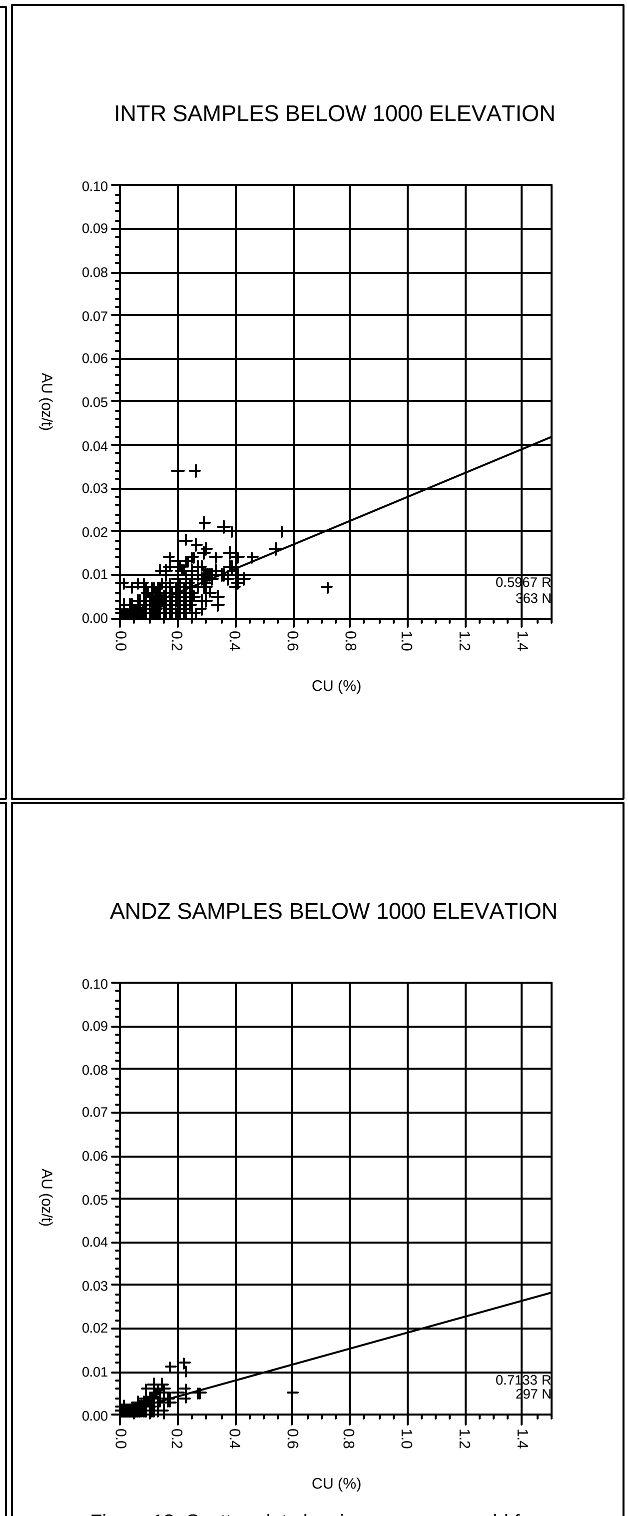


Figure 13: Scatter plot showing copper vs. gold for Andesite with zeolite-epidote alteration and Intrusive Below 1000 Elevation

In conclusion there is a reasonable correlation between high gold values and high copper values for most rock types and the correlation coefficients reflect this agreement. In the area of economic cut-offs, however, the relationship is essentially random. If the lower left grid square is examined in each scatter plot on figures 10 to 13, one can see the variability. A sample containing between 0.1 % to 0.3 % copper may contain anywhere from 0.001 to 0.02 oz/ton gold.

11.6 Semi-Variogram Analysis

11.6.1 Introduction

In nature the grade or value of a particular sample in three dimensional space is expected to be affected by its position and its relationship with its neighbours, (i.e. mineralization is not usually random and is influenced by such things as rock porosity, fracturing, distance from source etc.) The fundamental principal behind geostatistics, developed by George Matheron, takes this dependence into account and is known as the theory of regionalized variables. The procedure or tool to quantify both the amount and direction of this dependence is called the semi-variogram.

A semi-variogram is the fundamental autocorrelation tool of geostatistical procedures. It is defined as half of the mean squared difference of a variable for values separated by a distance h as given by the formula:

$$\gamma(h) = \frac{\sum_{i=1}^{n} (x_i - (x_{i+h}))^2}{2n}$$

where, $\gamma(h)$ is the semi-variogram
x_i is the value at location i
x_{i+h} is the value at a distance h from i
and n is the number of $x_i - (x_{i+h})$ pairs

Gamma (h) is a 3-dimensional function, commonly dependent on direction within a deposit which can also differ from one geological environment to another. An experimental semi-variogram is determined from a set of experimental data (e.g. assay values at known locations) and is shown graphically as a plot of $\gamma(h)$ versus h (lag or sample spacing). For practical applications a smooth mathematical model is fitted to the normally saw-toothed graph of an experimental semi-variogram. The most common form of mathematical model is the spherical or Matheron model (shown in Figure 14) and given by the formula:

?(h) = $C_o + C_1$ (1.5 h/a - .5 h^3 / a^3) for h = a
= $C_o + C_1$ for h > a

where	C_o	is the nugget effect
	C_1	is the structural component
	$C_o + C_1$	is the sill
	a	is the range (or influence of samples)
and	h	is the lag or sample spacing

In many cases where the value of ?(h) increases systematically with grade it is convenient to determine a relative semi-variogram in which ?(h)/m^2 is plotted versus h, where m is the mean value of all samples used to determine an experimental semi-variogram. In this way two (or more) semi-variograms determined for different data sets (with different mean values) become more-or-less equivalent. An alternate approach is to transform (e.g. logarithmic or multigaussian) all the data and then produce normal semi-variograms or semi-variograms of transformed data such as precious metal values.

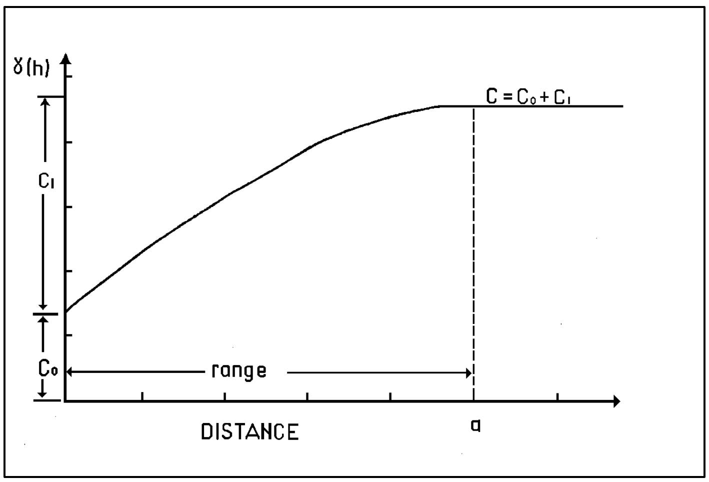


Figure 14: Ideal spherical semi-variogram model, gamma(h) vs. distance.
Co is nugget effect, C is sill value and a is range over which samples are correlated.

Because of the relatively low concentrations of molybdenum present within the Hushamu deposit, only copper and gold were modelled and estimated.

11.6.2 Semi-variograms Copper

Four directional horizontal relative semi-variograms were produced for copper in each of the five geologic domains. For copper within SPBX, SLBX and INTR units in the horizontal plane, no anisotropy could be modelled. In the vertical direction, however, a geometrical anisotropy was evident within each of these three units. Copper in altered andesites and basalts (ANDS) showed a pronounced geometric anisotropy in both the horizontal and vertical planes. The direction of maximum horizontal continuity was N 45° W and the direction of maximum vertical continuity was plunging 60° to the NW. Copper in zeolite-epidote andesite (ANDZ) was assumed to be isotropic in all directions, because there was insufficient data to prove otherwise.

The results for all copper models are shown in Giroux, (1993) and summarized in Table 7.

Table 7: Summary Of Semi-Variogram Parameters For Copper

DOMAIN	Nugget Effect	Sill	Horizontal Range Maximum (ft)	Horizontal Range Minimum (ft)	Vertical Range (ft)
SPBX	0.50	2.00	250.0	*	600.0
SLBX	0.40	0.90	200.0	*	450.0
ANDS	0.05	0.45	600.0	150.0	300.0 Plunging 60° N 45 W
INTR	0.04	0.58	800.0	*	250.0
ANDZ	0.01	2.00	600.0	*	0

* Isotropic Model

11.6.3 Semi-variograms Gold

Four directional horizontal relative semi-variograms were produced for gold in each of the five domains. As for copper, gold within the SPBX, SLBX and INTR units was assumed to be isotropic in the horizontal plane. In the vertical direction, however, a geometrical anisotropy was evident for each of these three units. Gold in altered andesites and basalts (ANDS) also showed a pronounced geometric anisotropy in both the horizontal and vertical planes, in the same directions as copper. Gold in zeolite-epidote andesite (ANDZ) was assumed to be isotropic in all directions; there was insufficient data to prove otherwise.

The results for all gold models are shown in Giroux, (1993) and summarized in table 8.

Table 8: Summary Of Semi-Variogram Parameters For Gold

DOMAIN	Nugget Effect	Sill	Horizontal Range Maximum (ft)	Horizontal Range Minimum (ft)	Vertical Range (ft)
SPBX	0.10	1.40	225.0	*	600.0
SLBX	0.05	0.65	600.0	*	100.0
ANDS	0.01	1.00	700.0	85.0	300.0 Plunging 60^o N 45 W
INTR	0.01	1.00	350.0	*	300.0
ANDZ	0.50	1.70	600.0	*	0

* Isotropic Models

11.7 Block Estimation By Kriging

11.7.1 Introduction

Kriging, commonly referred to as BLUE (best, linear, unbiased estimator), is a method of determining a weighted average in such a way that the geostatistical estimation variance of the weighted average is minimized. For each block (or point) to be estimated the method involves the solution of a set of linear equations in which unknowns are sample weighting factors (that sum to one) and known coefficients are variances and covariances determined from the semi-variogram model. There are (n+1) equations to solve if there are n samples requiring weighting factors. The general form of kriging equations for the specific case of 3 samples for which weighting factors are required, is as follows:

$$?_1\ ?(s_1\ s_1) + ?_2\ ?(s_1\ s_2) + ?_3\ ?(s_1\ s_3) + \mu = ?\ (s_1\ B)$$
$$?_1\ ?(s_2\ s_1) + ?_2\ ?(s_2\ s_2) + ?_3\ ?(s_2\ s_3) + \mu = ?\ (s_2\ B)$$
$$?_1\ ?(s_3\ s_1) + ?_2\ ?(s_3\ s_2) + ?_3\ ?(s_3\ s_3) + \mu = ?\ (s_3\ B)$$
$$?_1 + ?_2 + ?_3 = 1$$

where, $?_i$ is the weight for sample s_i

$?(s_i\ s_j)$ is the semi-variogram value between sample s_i and sample s_j

$?(s_i\ B)$ is the mean semi-variogram value between samples and B (the block to be estimated)

μ is the Lagrange multiplier, a factor that enters the solution of the equation because of the mathematical methodology involved.

In practice, a general block kriging procedure is as follows:

(1) A data file is searched to locate all data within a predetermined, arbitrary distance from

the block to be estimated. The distance is normally set so that a practical number of samples will be obtained (say 5 to 20) for each block estimate.

(2) Semi-variogram values (or covariances and variances) are then determined for all sample pairs to provide the matrix of coefficients on the left hand side of the kriging equations (i.e. all the $?(s_i\ s_j)$).

(3) Sample to block semi-variogram values ($?(s_i\ B)$) (or covariances) are calculated for each sample to provide values for the right hand side of the kriging equations.

(4) Kriging equations are solved for the weighting factors using an appropriate solution procedure.

(5) A kriged block estimate is then determined as follows:

$$?_1\, s_1 + ?_2\, s_2 + ?_3\, s_3 = Z_k$$

where, $?_i$ is the weighting factor for sample value s_i
and Z_k is the kriging estimator

(6) A kriging error (variance) is determined from the formula:

$$s^2 = ?_1\ (s_1\, B) + ?_2\ (s_2\, B) + ?_3\ (s_3\, B) - \mu - ?(BB)$$

where	s^2	is the kriging variance
	$?_i(s_i\ B)$	is the sample to block covariance
	μ	is the Lagrange multiplier
and	$?(BB)$	is the average point to point covariance for all points within block B. This is a constant for a given semi-variogram model and a constant block size.

(7) The procedure from 1 to 6 above is repeated successively for each block to be estimated.

11.7.2 Block Model

A geologic block model consisting of 503,580 blocks, each 100 x 100 x 40 feet, was completed by P. Dasler and SRK. This model was contained between the following limits:

227,000 E -238,000 E
240,000 N-250,900 N
400 Level -2040 Level

Cross sections were created by SRK and interpreted by P. Dasler. The cross sections with geologic boundaries were then digitized and these digitized boundaries were plotted on level plans. The geologic interpretation was then completed on the level plans between sections; the geologic interpretation was validated using the original cross sections. Next, the completed level plans were digitized. A geologic block model was the created from the digital plans and cross sections.

Each block was labeled with one of the following codes:

0	-	Air
10	-	Background
50	-	Overburden
101	-	Siliceous Pyrophyllite Breccia (SPBX)
102	-	Siliceous Breccia (SLBX)
103	-	Chlorite/Magnetite/Biotite/Silica altered Andesite (ANDS)
104	-	Intrusives - Quartz Feldspar Porphyry, Diorite, Monzonite (INTR)
105	-	Andesite - Relatively unaltered with Zeolite-Epidote (ANDZ)

Blocks with codes less than 100 (ie. air, background and overburden) were not estimated. For the remaining blocks only composites with a similar code and the appropriate semi-variogram model were used for the interpolation. Figure 15 shows each rock type colour coded on cross section 233050 E, as an example of the distribution of the various rock types.

11.7.3 Kriged Results

A total of 46,515 blocks each 100 x 100 x 40 ft. were estimated for one of 5 possible rock units by ordinary kriging. Search ellipses for each geologic domain (rock unit) were based on the range of the semi-variogram for the variable within that domain.

A standard tonnage factor of 0.0873 tons per cu. ft. (S.G. 2.80) was supplied by Jordex. The total grade-tonnage for the in situ geologic resource is shown in table 9. Figure 16 is an example of the distribution of kriged copper grades shown within colour coded blocks.

Table 9: Grade-Tonnage for Hushamu Project (Geologic In situ Resource for all Domains)

Cut-off (Cu %)	Tons > Cut-off (tonnes)	Grade > Cut-off	
		Cu (%)	Au (g/t)
0.10	735,340,000	0.195	0.240
0.15	470,210,000	0.235	0.274
0.20	283,660,000	0.276	0.343
0.21	258,410,000	0.283	0.343
0.22	227,200,000	0.292	0.343
0.23	201,730,000	0.301	0.377
0.24	175,250,000	0.311	0.377
0.25	154,560,000	0.320	0.377
0.26	134,450,000	0.330	0.411
0.27	118,860,000	0.338	0.411

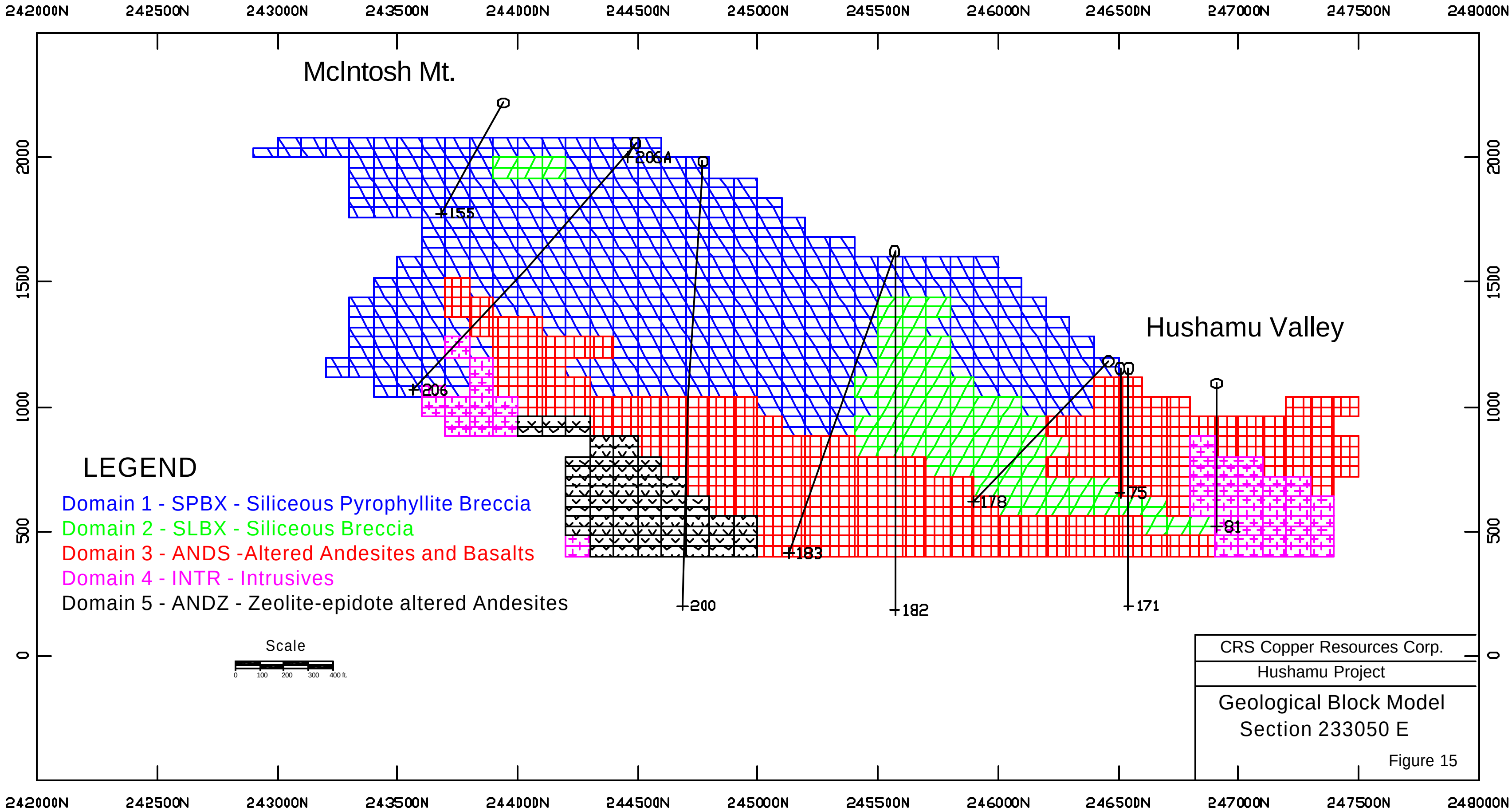


Figure 15: Cross Section 233050 E showing Geologic Codes for Blocks and Drill Holes.

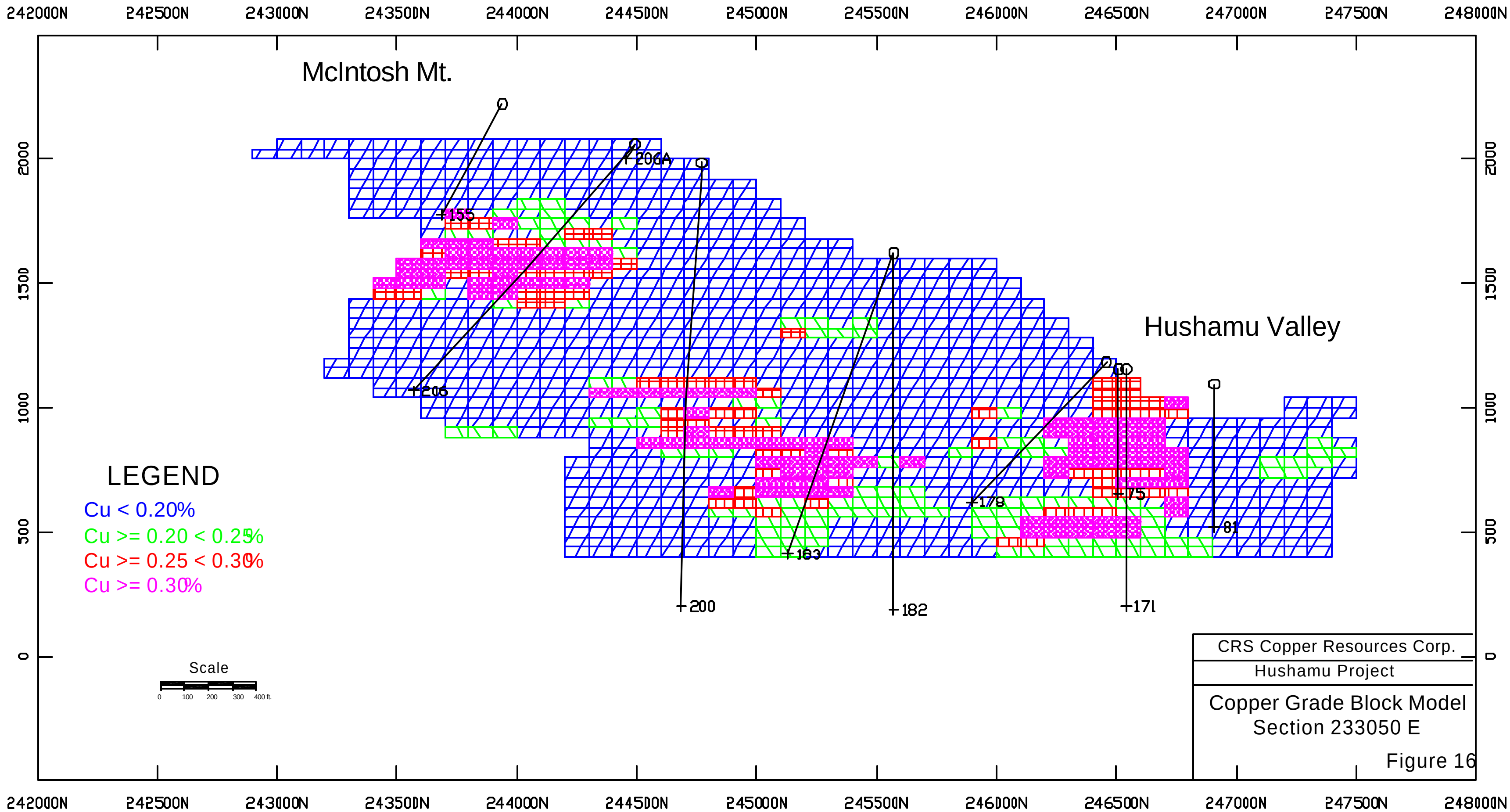


Figure 16: Cross Section 233050 E showing Kriged Blocks for Copper and Drill Holes.

Table 9: Grade-Tonnage for Hushamu Project (Geologic In situ Resource for all Domains) (cont'd)

Cut-off (Cu %)	Tons > Cut-off (tonnes)	Grade > Cut-off	
		Cu (%)	Au (g/t)
0.28	105,680,000	0.346	0.411
0.29	91,460,000	0.356	0.411
0.30	81,920,000	0.363	0.446
0.31	71,310,000	0.371	0.446
0.32	59,750,000	0.382	0.446
0.33	51,890,000	0.391	0.446
0.34	45,590,000	0.399	0.480
0.35	38,620,000	0.409	0.480
0.36	34,500,000	0.416	0.480
0.37	29,870,000	0.424	0.480
0.38	25,600,000	0.432	0.480
0.39	21,230,000	0.442	0.514
0.40	18,220,000	0.449	0.514
0.45	6,910,000	0.490	0.549
0.50	1,870,000	0.548	0.514

11.7.4 Classification

Introduction

Based on the study herein reported, delineated mineralization of the Hushamu Deposit is classified as a resource according to the following definition from National Instrument 43-101:

"*In this Instrument, the terms "mineral resource", "inferred mineral resource", "indicated mineral resource" and "measured mineral resource" have the meanings ascribed to those terms by the Canadian Institute of Mining, Metallurgy and Petroleum, as the CIM Standards on Mineral Resources and Reserves Definitions and Guidelines adopted by CIM Council on August 20, 2000, as those definitions may be amended from time to time by the Canadian Institute of Mining, Metallurgy and Petroleum."*

*"A **Mineral Resource** is a concentration or occurrence of natural, solid, inorganic or fossilized organic material in or on the Earth's crust in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge."*

The terms Measured, Indicated and Inferred are defined as follows:

*"A **'Measured Mineral Resource'** is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, physical characteristics are so well established that they can be estimated with confidence sufficient to allow the appropriate application of*

technical and economic parameters, to support production planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough to confirm both geological and grade continuity."

*"An **'Indicated Mineral Resource'** is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics, can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough for geological and grade continuity to be reasonably assumed."*

*"An **'Inferred Mineral Resource'** is that part of a Mineral Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes."*

Results

Classification of a large porphyry system estimated in blocks presents a challenge and any method is extremely subjective. One procedure is based on the kriged estimation error. This measurement takes into account the distance of data from the block being estimated and the semivariogram parameters and quantifies the estimation error as a function of the block grade. By plotting a histogram of the relative estimation errors for all individual blocks calculated (see Figure 17), one can see the distribution of relative errors. The subjectivity comes in determining the relative breaks between the classifications. The individual block errors are quite high as a result of the size of block estimated relative to the drill hole sample spacing. Nevertheless, blocks classed as measured are clearly known better than those classed as indicated; this added confidence is a result of distance between the blocks and the data points (drill holes). Figure 18 shows the three colour coded resource classes on cross section 233050 E. The red (measured) blocks and green (indicated) blocks are only located close to drill holes. The least known, blue (inferred) blocks form an outer rind further away from drill holes. Grade-tonnage figures for each block classification type are shown in tables 10 to 13.

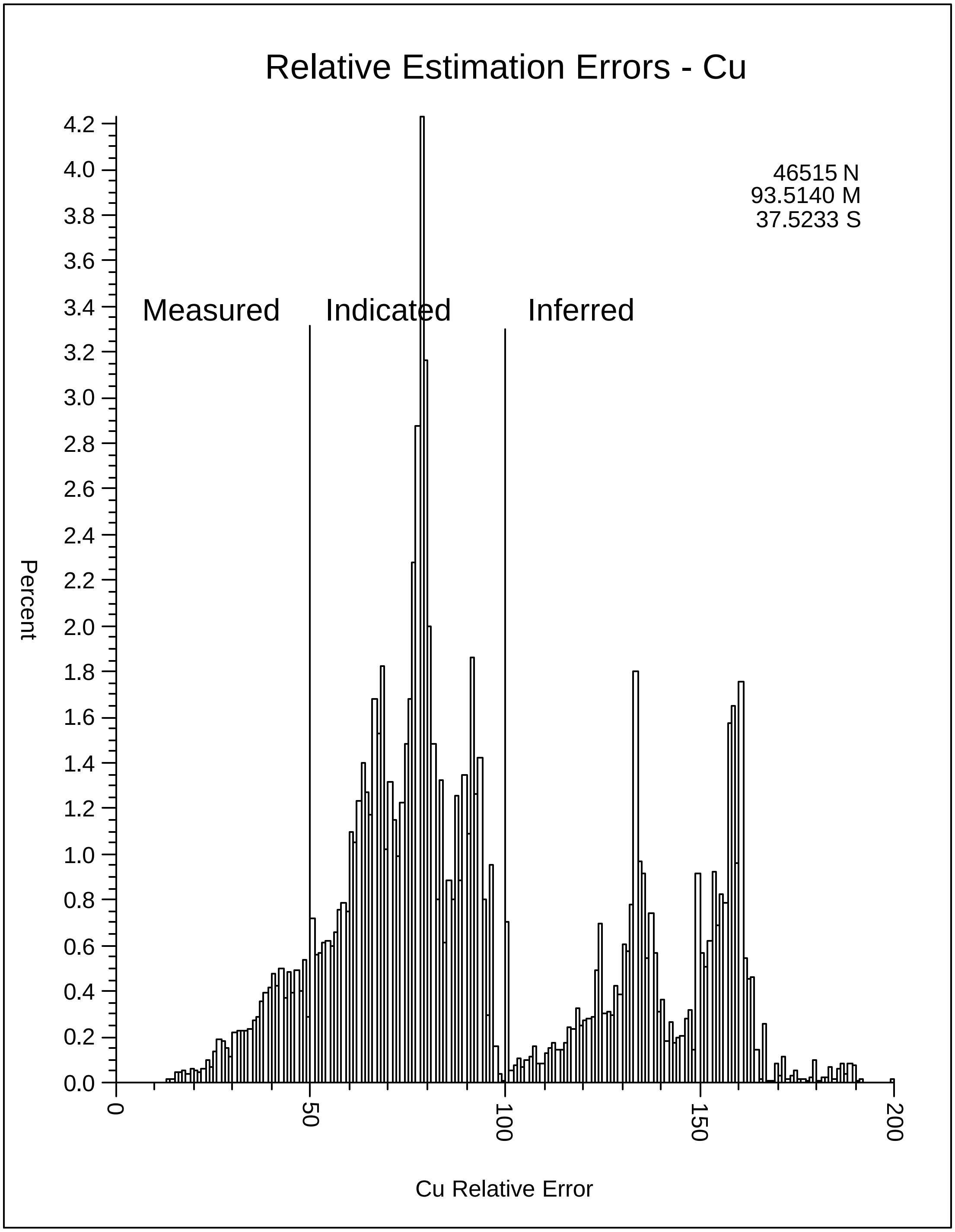


Figure 17: Histogram of Relative Estimation Errors for Copper in Kriged Blocks

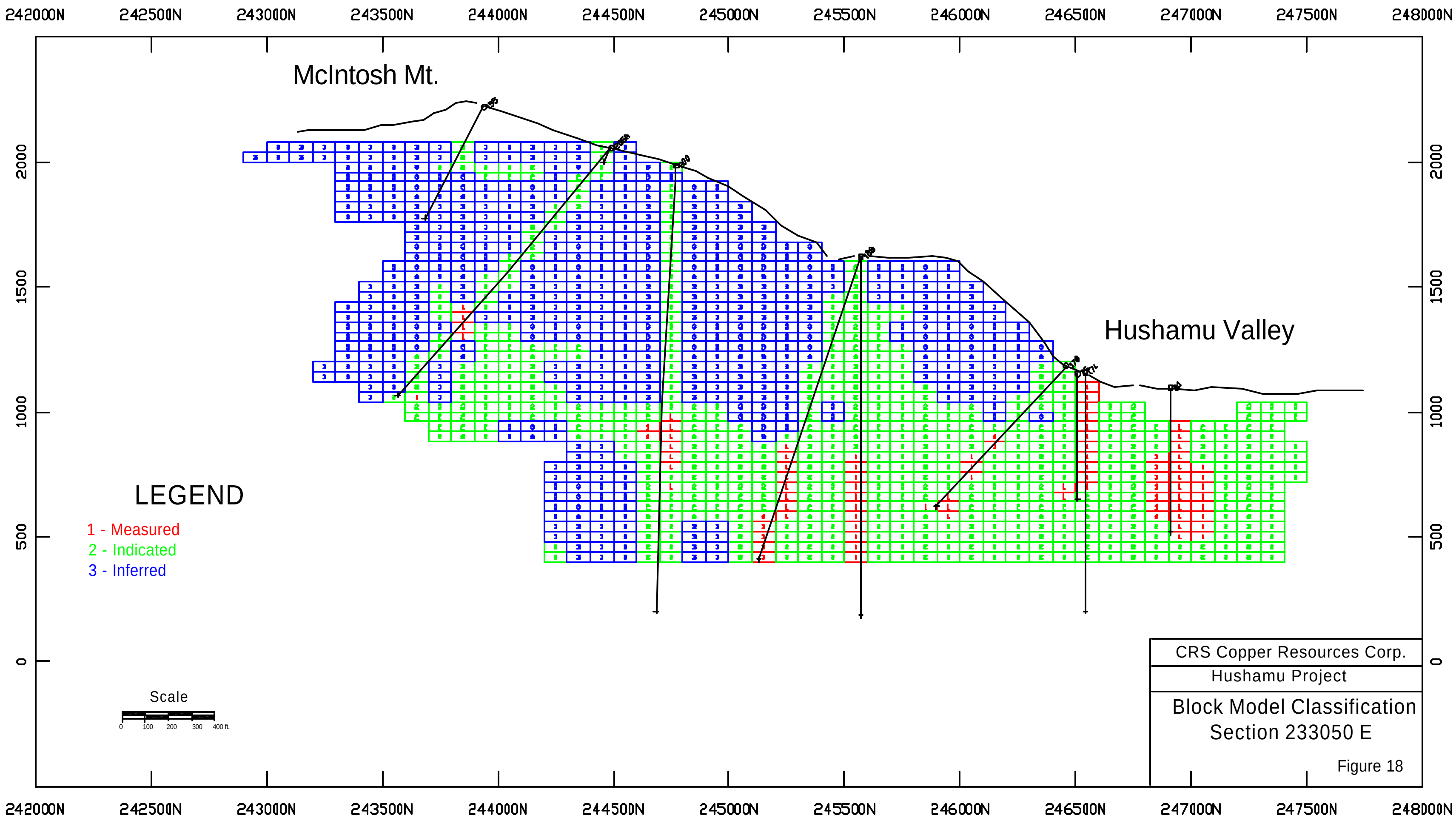


Figure 18: Cross Section 233050 E showing Block Resource Classification relative to Drill Holes.

Table 10: Grade-Tonnage of Hushamu Project - Classed Measured

Cut-off (Cu %)	Tons > Cut-off (tonnes)	Grade > Cut-off	
		Cu (%)	Au (g/t)
0.10	87,660,000	0.211	0.206
0.15	63,300,000	0.244	0.240
0.20	39,160,000	0.287	0.309
0.21	35,320,000	0.296	0.309
0.22	31,840,000	0.305	0.343
0.23	28,830,000	0.314	0.343
0.24	25,820,000	0.323	0.377
0.25	23,320,000	0.332	0.377
0.26	21,290,000	0.339	0.377
0.27	19,420,000	0.346	0.411
0.28	17,490,000	0.354	0.411
0.29	15,680,000	0.362	0.411
0.30	14,000,000	0.370	0.411
0.31	12,580,000	0.378	0.446
0.32	10,900,000	0.388	0.446
0.33	9,500,000	0.397	0.480
0.34	8,520,000	0.404	0.480

Table 11: Grade-Tonnage of Hushamu Project - Classed Indicated

Cut-off (Cu %)	Tons > Cut-off (tonnes)	Grade > Cut-off	
		Cu (%)	Au (g/t)
0.10	495,810,000	0.195	0.240
0.15	323,950,000	0.232	0.274
0.20	191,690,000	0.273	0.309
0.21	175,280,000	0.279	0.309
0.22	152,160,000	0.289	0.343
0.23	134,380,000	0.297	0.343
0.24	115,280,000	0.307	0.343
0.25	99,120,000	0.318	0.377
0.26	84,360,000	0.329	0.377
0.27	73,530,000	0.338	0.377
0.28	65,230,000	0.346	0.411
0.29	55,440,000	0.357	0.411
0.30	49,740,000	0.365	0.411
0.31	43,810,000	0.373	0.411
0.32	37,890,000	0.382	0.446
0.33	32,660,000	0.391	0.446
0.34	28,420,000	0.400	0.446

Table 12: Grade-Tonnage of Hushamu Project - Classed Measured and Indicated

Cut-off (Cu %)	Tons > Cut-off (tonnes)	Grade > Cut-off	
		Cu (%)	Au (g/t)
0.10	583,470,000	0.197	0.240
0.15	387,250,000	0.234	0.274
0.20	230,850,000	0.275	0.309
0.21	210,600,000	0.282	0.309
0.22	183,990,000	0.292	0.343
0.23	163,210,000	0.300	0.343
0.24	141,100,000	0.310	0.343
0.25	122,440,000	0.320	0.377
0.26	105,650,000	0.331	0.377
0.27	92,950,000	0.340	0.377
0.28	82,710,000	0.348	0.411
0.29	71,120,000	0.359	0.411
0.30	63,740,000	0.366	0.411
0.31	56,390,000	0.374	0.411
0.32	48,790,000	0.383	0.446
0.33	42,170,000	0.392	0.446
0.34	36,940,000	0.401	0.446

Table 13: Grade-Tonnage of Hushamu Project - Classed Inferred

Cut-off (Cu %)	Tons > Cut-off (tonnes)	Grade > Cut-off	
		Cu (%)	Au (g/t)
0.10	151,870,000	0.187	0.274
0.15	82,970,000	0.241	0.343
0.20	52,810,000	0.279	0.377
0.21	47,800,000	0.287	0.411
0.22	43,210,000	0.295	0.411
0.23	38,520,000	0.304	0.446
0.24	34,150,000	0.313	0.446
0.25	32,120,000	0.317	0.446
0.26	28,800,000	0.325	0.446
0.27	25,910,000	0.331	0.480
0.28	22,970,000	0.339	0.480
0.29	20,340,000	0.346	0.480
0.30	18,180,000	0.352	0.480
0.31	14,920,000	0.362	0.480
0.32	10,960,000	0.379	0.514
0.33	9,730,000	0.386	0.514
0.34	8,650,000	0.393	0.514

12.0 OTHER RELEVANT DATA AND INFORMATION

12.1 Metallurgy

In 1992 Melis Engineering (Melis) completed five preliminary scoping flotation tests on Hushamu diamond drill composites to quantify potential copper and gold recovery to a copper/gold flotation concentrate (Melis and Cron, 1992). Two different approaches were used: bulk sulphide flotation followed by copper-pyrite separation and cleaner flotation; and a fine grind/selective copper-gold float at elevated pH to effectively depress pyrite in the front-end rougher flotation stage.

Based on these five tests Melis concluded that:

"These preliminary scoping tests indicate that a copper recovery of close to 90% and a gold recovery of 70% to 75%, into a copper/gold concentrate assaying 25% Cu and 34 g Au/tonne, would be achievable for the higher grade composite (calculated head grade of 0.58% Cu and 1.16 g Au/tonne). For the lower grade composite (0.17% Cu and 0.38 g Au/tonne) achievable recoveries appear to be approximately 75% for copper and in the range of 50% to 55% for gold into a copper/gold concentrate assaying 24% Cu and 24 g Au/tonne. These recovery expectations are

only based on preliminary tests, more extensive flotation testing will be required to better quantify copper and gold recoveries for the Hushamu deposit and to determine what recovery improvements can be made."

12.2 Preliminary study of Transportation Alternatives

In August 1991 Fluor Daniel Wright completed a study of the transportation alternatives for shipping possible Hushamu deposit ore to the Island Copper concentrator (Fernie, 1991). The three alternatives were: a slurry pipeline, an overland conveying system and a combination conveyor/barge system. The study results indicated the pipeline system had the highest Capital Cost of $120 million, but lowest operating cost of 0.054 $/ton. The conveyor system had a Capital Cost of $98 million with an operating cost of 0.159 $/ton. Finally the conveyor/barge system had a Capital Cost of $115 million with the highest operating cost of 0.586 $/ton.

The Island Copper Mine was still in production at the time this transportation study was completed. The mine has since closed and the mine site has been reclaimed.

12.3 Mining Study

J.D. Graham & Associates Ltd. produced a mining study for the Hushamu copper-gold deposit (Graham, 1993). Graham designed an open pit and reviewed scheduling and costs, using the resource identified in this report. S.R.K. (B.C.) Inc. designed an optimum open pit using Whittle Four-D computer software.

All costs and metal prices for the mining study were based on 1993 information. This current report concerns only the resource present at Hushamu, so the results for the 1993 mining study are not included in this document.

13.0 INTERPRETATION AND CONCLUSIONS

The Hushamu property covers approximately 240 square kilometres of a belt of Lower Jurassic Bonanza Formation andesitic to rhyolitic volcanic rocks which have been intruded by a variety of intrusive rocks of the Jurassic Island Plutonic Suite. A number of porphyry-style copper-gold-molybdenum occurrences have been identified within this belt. The most significant deposit, which is located between the Hushamu property's East and Electra blocks (and therefore not on the property) is the now-closed Island Copper Mine, which produced 345 million tonnes of ore grading 0.41% Cu, 0.017% Mo, 0.19 g/tonne Au and 1.4 g/tonne Ag between 1971 and 1994 (Perello *et al*, 1995). The Hushamu deposit, which is located on Hushamu's Moraga block, has a measured and indicated resource, as estimated in Section 11 of this report, of 583 million tonnes grading 0.197% Cu and 0.240 g/tonne Au above a cut-off grade of 0.10% Cu. Several other copper-gold-molybdenum occurrences have been identified on the Hushamu property, including the NW Expo, Hep, South McIntosh, Pemberton Hills and Rupert prospects; these have not been thoroughly investigated.

Given current high metal prices, the expectation that these prices may be sustained due to China's steady growth, and the belt's high prospectivity and excellent infrastructure, the entire belt should be further evaluated for economic copper-gold-molybdenum mineralization..

14.0 RECOMMENDATIONS

14.1 Program

A two-phase exploration program is recommended for the Hushamu property. The first phase will consist of data compilation, airborne geophysical surveying, ground-truthing of targets and initial diamond drilling. If warranted by the results of the first phase of exploration, the second phase will consist of additional diamond drilling.

14.1.1 Phase I

The first phase exploration program recommended for the Hushamu property consists of:

- compilation of a property-wide digital database from the results of the exploration programs carried out between the 1960's and the 1990's;
- commissioning a helicopter-borne magnetic/electromagnetic survey over the entire property with a line spacing of 200 metres;
- ground-truthing of targets identified from the compilation and the airborne geophysical survey, through geological mapping and soil geochemical sampling;
- diamond drilling approximately 2,000 metres in eight to twelve holes to test targets indicated by the foregoing work.

14.1.2 Phase II

If warranted by favourable results from the first phase, the recommended second phase of exploration on the Hushamu property will consist of an additional 4,000 metres of diamond drilling.

14.2 Budget

14.2.1 Phase I

An estimate for the cost of the Phase I exploration program on the Hushamu property is given in Table 14.

Table 14: Budget for Phase I Recommended Program

Data Compilation		
Professional Staff	Geologist: 60 days @ $520/day	$ 31,200
	Geophysicist, geochemist	10,000
	Drafting: 300 hr @ $50/hr	15,000
Miscellaneous	Base maps, sundry supplies	5,000
Helicopter-borne Magnetic/EM Survey		
	Mobilization	15,000
	Survey: 2650 km @ $88/km	233,200
	Standby: 4 days @ $3,000/day	12,000
	Geophysicist: 5 days @ $750/day	3,750
Ground-truthing		
Professional Staff	Geologist: 30 days @ $520/day	15,600
	Samplers: 2 @ 30 days @ $250/day	15,000
Analytical Costs	Soil samples: 1800 @ $15	27,000
Miscellaneous	Accommodation, supplies, support	35,000

Table 14: Budget for Phase I Recommended Program (cont'd)

Diamond Drilling		
Professional Staff	Geologist: 35 days @ $520/day	18,200
	Sampler: 35 days @ $250/day	8,750
Diamond Drilling	Mobilization	10,000
	2,000m @ $90/m	180,000
Analytical Costs	Core samples (incl. 10% QA): 1,500 @ $20/sample	30,000
Miscellaneous	Fuel, cat, core boxes: 2,000m @ $50/m	100,000
	Accommodation, supplies, support	110,000
	Report	30,000
Subtotal		$ 904,700
	Contingency (10%)	90,470
Total		$995,170

The recommended Phase I exploration program would cost approximately CDN$1.0 million.

14.2.2 Phase II

An estimate for the cost of the Phase II exploration program on the Hushamu property is given in Table 15.

Table 15: Budget for Phase II Recommended Program

Diamond Drilling		
Professional Staff	Geologist: 65 days @ $520/day	33,800
	Sampler: 65 days @ $250/day	16,250
Diamond Drilling	Mobilization	10,000
	4,000m @ $90/m	360,000
Analytical Costs	Core samples (incl. 10% QA): 3,000 @ $20/sample	60,000
Miscellaneous	Fuel, cat, core boxes: 4,000m @ $50/m	200,000
	Accommodation, supplies, support	200,000
	Report	40,000
Subtotal		$ 920,050
	Contingency (10%)	92,005
Total		$1,012,055

The recommended Phase II exploration program would cost approximately CDN$1.0 million.

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Appendix I: List of Mineral Claims

LIST OF MINERAL CLAIMS - MORAGA BLOCK

Tenure Number	Claim Name	Good To Date	Mining Division	Area (ha)
229789	EXPO 1013 FR.	2011/AUG/05	NANAIMO	20.90
229790	EXPO 1014 FR.	2011/AUG/05	NANAIMO	20.90
229791	EXPO 1015 FR.	2011/AUG/05	NANAIMO	20.90
230979	CLESK 4	2011/AUG/05	NANAIMO	20.90
231649	HEP #34	2011/AUG/05	NANAIMO	20.90
231651	HEP #36	2011/AUG/05	NANAIMO	20.90
231652	HEP #37	2011/AUG/05	NANAIMO	20.90
231653	HEP #38	2011/AUG/05	NANAIMO	20.90
231654	HEP #39	2011/AUG/05	NANAIMO	20.90
231667	HEP #54	2011/AUG/05	NANAIMO	20.90
231668	HEP #55	2011/AUG/05	NANAIMO	20.90
231669	HEP #56	2011/AUG/05	NANAIMO	20.90
231670	HEP #57	2011/AUG/05	NANAIMO	20.90
231671	HEP #58	2011/AUG/05	NANAIMO	20.90
231672	HEP #59	2011/AUG/05	NANAIMO	20.90
231674	HEP #63	2011/AUG/05	NANAIMO	20.90
231675	HEP #64	2011/AUG/05	NANAIMO	20.90
231932	EXPO 189	2011/AUG/05	NANAIMO	20.90
231933	EXPO 190	2011/AUG/05	NANAIMO	20.90
231934	EXPO 191	2011/AUG/05	NANAIMO	20.90
231935	EXPO 192	2011/AUG/05	NANAIMO	20.90
231940	EXPO 197	2011/AUG/05	NANAIMO	20.90
231941	EXPO 198	2011/AUG/05	NANAIMO	20.90
231942	EXPO 199	2011/AUG/05	NANAIMO	20.90
231943	EXPO 200	2011/AUG/05	NANAIMO	20.90
231944	EXPO 201	2006/AUG/05	NANAIMO	20.90
231945	EXPO 202	2006/AUG/05	NANAIMO	20.90
231946	EXPO 203	2006/AUG/05	NANAIMO	20.90
231947	EXPO 204	2006/AUG/05	NANAIMO	20.90
231948	EXPO 205	2006/AUG/05	NANAIMO	20.90
231960	EXPO 217	2011/AUG/05	NANAIMO	20.90
231961	EXPO 218	2011/AUG/05	NANAIMO	20.90
231962	EXPO 219	2006/AUG/05	NANAIMO	20.90
231963	EXPO 220	2011/AUG/05	NANAIMO	20.90
231964	EXPO 221	2011/AUG/05	NANAIMO	20.90
231965	EXPO 222	2011/AUG/05	NANAIMO	20.90
231966	EXPO 223	2011/AUG/05	NANAIMO	20.90
231967	EXPO 224	2011/AUG/05	NANAIMO	20.90
231968	EXPO 225	2011/AUG/05	NANAIMO	20.90
231969	EXPO 226	2011/AUG/05	NANAIMO	20.90
231980	EXPO 227	2011/AUG/05	NANAIMO	20.90
231981	EXPO 228	2011/AUG/05	NANAIMO	20.90
231982	EXPO 229	2011/AUG/05	NANAIMO	20.90
231983	EXPO 230	2011/AUG/05	NANAIMO	20.90

LIST OF MINERAL CLAIMS - MORAGA BLOCK (cont'd)

Tenure Number	Claim Name	Good To Date	Mining Division	Area (ha)
231984	EXPO 231	2011/AUG/05	NANAIMO	20.90
231985	EXPO 232	2011/AUG/05	NANAIMO	20.90
231990	EXPO 237	2011/AUG/05	NANAIMO	20.90
231991	EXPO 238	2011/AUG/05	NANAIMO	20.90
231992	EXPO 239	2006/AUG/05	NANAIMO	20.90
231993	EXPO 240	2006/AUG/05	NANAIMO	20.90
231994	EXPO 241	2011/AUG/05	NANAIMO	20.90
231995	EXPO 242	2011/AUG/05	NANAIMO	20.90
231996	EXPO 243	2011/AUG/05	NANAIMO	20.90
231997	EXPO 244	2011/AUG/05	NANAIMO	20.90
231998	EXPO 245	2011/AUG/05	NANAIMO	20.90
231999	EXPO 246	2011/AUG/05	NANAIMO	20.90
232000	EXPO 247	2011/AUG/05	NANAIMO	20.90
232001	EXPO 248	2011/AUG/05	NANAIMO	20.90
232002	EXPO 249	2011/AUG/05	NANAIMO	20.90
232003	EXPO 250	2011/AUG/05	NANAIMO	20.90
232004	EXPO 251	2011/AUG/05	NANAIMO	20.90
232005	EXPO 252	2011/AUG/05	NANAIMO	20.90
232006	EXPO 253	2011/AUG/05	NANAIMO	20.90
232007	EXPO 254	2011/AUG/05	NANAIMO	20.90
232008	EXPO 255	2011/AUG/05	NANAIMO	20.90
232009	EXPO 256	2011/AUG/05	NANAIMO	20.90
232010	EXPO 257	2011/AUG/05	NANAIMO	20.90
232011	EXPO 258	2011/AUG/05	NANAIMO	20.90
232012	EXPO 259	2011/AUG/05	NANAIMO	20.90
232013	EXPO 260	2006/AUG/05	NANAIMO	20.90
232014	EXPO 261	2011/AUG/05	NANAIMO	20.90
232015	EXPO 262	2011/AUG/05	NANAIMO	20.90
232016	EXPO 263	2011/AUG/05	NANAIMO	20.90
232017	EXPO 264	2011/AUG/05	NANAIMO	20.90
232018	EXPO 265	2011/AUG/05	NANAIMO	20.90
232019	EXPO 266	2011/AUG/05	NANAIMO	20.90
232020	EXPO 267	2011/AUG/05	NANAIMO	20.90
232021	EXPO 268	2011/AUG/05	NANAIMO	20.90
232022	EXPO 269	2011/AUG/05	NANAIMO	20.90
232023	EXPO 270	2011/AUG/05	NANAIMO	20.90
232024	EXPO 271	2011/AUG/05	NANAIMO	20.90
232025	EXPO 272	2011/AUG/05	NANAIMO	20.90
232026	EXPO 273	2011/AUG/05	NANAIMO	20.90
232027	EXPO 274	2011/AUG/05	NANAIMO	20.90
232028	EXPO 275	2011/AUG/05	NANAIMO	20.90
232029	EXPO 277	2011/AUG/05	NANAIMO	20.90
232030	EXPO 278	2011/AUG/05	NANAIMO	20.90
232031	EXPO 279	2011/AUG/05	NANAIMO	20.90

LIST OF MINERAL CLAIMS - MORAGA BLOCK (cont'd)

Tenure Number	Claim Name	Good To Date	Mining Division	Area (ha)
232032	EXPO 280	2011/AUG/05	NANAIMO	20.90
232033	EXPO 281	2006/AUG/05	NANAIMO	20.90
232034	EXPO 282	2006/AUG/05	NANAIMO	20.90
232035	EXPO 283	2011/AUG/05	NANAIMO	20.90
232036	EXPO 284	2006/AUG/05	NANAIMO	20.90
232037	EXPO 285	2011/AUG/05	NANAIMO	20.90
232038	EXPO 286	2006/AUG/05	NANAIMO	20.90
232039	EXPO 287	2011/AUG/05	NANAIMO	20.90
232040	EXPO 288	2006/AUG/05	NANAIMO	20.90
232041	EXPO 289	2011/AUG/05	NANAIMO	20.90
232042	EXPO 290	2011/AUG/05	NANAIMO	20.90
232043	EXPO 291	2011/AUG/05	NANAIMO	20.90
232044	EXPO 292	2011/AUG/05	NANAIMO	20.90
232045	EXPO 293	2011/AUG/05	NANAIMO	20.90
232046	EXPO 294	2011/AUG/05	NANAIMO	20.90
232047	EXPO 295	2011/AUG/05	NANAIMO	20.90
232053	EXPO 302	2006/AUG/05	NANAIMO	20.90
232055	EXPO 304	2006/AUG/05	NANAIMO	20.90
232056	EXPO 305	2006/AUG/05	NANAIMO	20.90
232057	EXPO 306	2006/AUG/05	NANAIMO	20.90
232097	EXPO 501	2006/AUG/05	NANAIMO	20.90
232098	EXPO 502 FR.	2006/AUG/05	NANAIMO	20.90
232099	EXPO 503 FR.	2006/AUG/05	NANAIMO	20.90
232100	EXPO 296	2011/AUG/05	NANAIMO	20.90
232102	EXPO 307	2006/AUG/05	NANAIMO	20.90
232103	EXPO 309	2006/AUG/05	NANAIMO	20.90
232104	EXPO 310	2011/AUG/05	NANAIMO	20.90
232105	EXPO 312	2011/AUG/05	NANAIMO	20.90
232106	EXPO 313	2011/AUG/05	NANAIMO	20.90
232107	EXPO 314	2011/AUG/05	NANAIMO	20.90
232179	EXPO 890	2006/AUG/05	NANAIMO	20.90
232180	EXPO 891	2006/AUG/05	NANAIMO	20.90
232218	EXPO 324	2011/AUG/05	NANAIMO	20.90
232219	EXPO 325	2011/AUG/05	NANAIMO	20.90
232220	EXPO 326	2011/AUG/05	NANAIMO	20.90
232228	EXPO 504 FR	2011/AUG/05	NANAIMO	20.90
232275	EXPO 1008 FR	2011/AUG/05	NANAIMO	20.90
232276	EXPO 1011 FR	2011/AUG/05	NANAIMO	20.90
232277	EXPO 1012 FR	2011/AUG/05	NANAIMO	20.90
232299	DON NO. 2 FR.	2006/AUG/05	NANAIMO	20.90
232300	DON NO. 4 FR.	2011/AUG/05	NANAIMO	20.90
232301	DON NO. 5 FR.	2006/AUG/05	NANAIMO	20.90
232302	DON NO. 6 FR.	2006/AUG/05	NANAIMO	20.90
232303	DON NO.3 FR.	2006/AUG/05	NANAIMO	20.90

LIST OF MINERAL CLAIMS - MORAGA BLOCK (cont'd)

Tenure Number	Claim Name	Good To Date	Mining Division	Area (ha)
232306	DON 9 FR.	2011/AUG/05	NANAIMO	20.90
232307	DON 10 FR.	2011/AUG/05	NANAIMO	20.90
232308	DON 11 FR.	2011/AUG/05	NANAIMO	20.90
232309	DON 12 FR.	2011/AUG/05	NANAIMO	20.90
232310	DON 13 FR.	2011/AUG/05	NANAIMO	20.90
232311	DON 14 FR.	2006/AUG/05	NANAIMO	20.90
232312	DON 15 FR.	2006/AUG/05	NANAIMO	20.90
232313	DON 16 FR.	2006/AUG/05	NANAIMO	20.90
395662	EXPO 308A	2006/AUG/05	NANAIMO	25
395663	EXPO 308B	2006/AUG/05	NANAIMO	25
395664	EXPO 308C	2006/AUG/05	NANAIMO	25
395665	EXPO 308D	2006/AUG/05	NANAIMO	25

LIST OF MINERAL CLAIMS - ELECTRA BLOCK

Tenure Number	Claim Name	Good To Date	Mining Division	Area (ha)
371773	APPLE BAY ONE	2007/AUG/05	NANAIMO	400
371777	APPLE BAY THREE	2007/AUG/05	NANAIMO	200
372883	COAL HARBOUR #1	2006/AUG/05	NANAIMO	100
372884	COAL HARBOUR #2	2006/AUG/05	NANAIMO	200
373854	APPLE BAY FIVE	2007/AUG/05	NANAIMO	300
374744	APPLE BAY FOUR	2007/AUG/05	NANAIMO	400
376138	HANKIN POINT 1	2006/AUG/05	NANAIMO	350
376139	HANKIN POINT 2	2006/AUG/05	NANAIMO	100
377240	APPLE BAY TWO	2008/AUG/05	NANAIMO	500
384437	APPLE BAY SIX	2006/AUG/05	NANAIMO	500
384438	APPLE BAY SEVEN	2006/AUG/05	NANAIMO	400
392518	APPLE BAY EIGHT	2006/AUG/05	NANAIMO	450
392519	APPLE BAY NINE	2006/AUG/05	NANAIMO	375
392520	APPLE BAY TEN	2006/AUG/05	NANAIMO	375
392727	APPLE BAY ELEVEN	2006/AUG/05	NANAIMO	225
392728	APPLE BAY TWELVE	2006/AUG/05	NANAIMO	300
392754	APPLE BAY THIRTEEN	2006/AUG/05	NANAIMO	225
392755	APPLE BAY FOURTEEN	2006/AUG/05	NANAIMO	450
392756	APPLE BAY FIFTEEN	2006/AUG/05	NANAIMO	225
392757	APPLE BAY SIXTEEN	2006/AUG/05	NANAIMO	450
394716	APPLE BAY SEVENTEEN	2006/AUG/05	NANAIMO	500
394717	APPLE BAY EIGHTEEN	2006/AUG/05	NANAIMO	500
394718	APPLE BAY NINETEEN	2006/AUG/05	NANAIMO	500
398335	APPLE BAY TWENTY	2006/AUG/05	NANAIMO	500
398336	APPLE BAY TWENTY-ONE	2006/AUG/05	NANAIMO	500
399238	APPLE BAY TWENTY-TWO	2006/AUG/05	NANAIMO	375
400678	HEP 1	2006/AUG/05	NANAIMO	300
400679	HEP 2	2006/AUG/05	NANAIMO	200
402031	HEP 4	2006/AUG/05	NANAIMO	250
402032	HEP 3	2006/AUG/05	NANAIMO	100
402033	APPLE BAY TWENTY-THREE	2006/AUG/05	NANAIMO	400
402034	APPLE BAY TWENTY-FOUR	2006/AUG/05	NANAIMO	450
402035	APPLE BAY TWENTY-FIVE	2006/AUG/05	NANAIMO	500
402036	APPLE BAY TWENTY SIX	2006/AUG/05	NANAIMO	400
402037	APPLE BAY TWENTY SEVEN	2006/AUG/05	NANAIMO	250
402513	NORTHWEST 900	2006/MAY/25	NANAIMO	250
405214	RD-1	2006/MAY/25	NANAIMO	25
405216	NORTHWEST 901	2006/MAY/25	NANAIMO	25
405217	NORTHWEST 902	2006/MAY/25	NANAIMO	25
405218	NORTHWEST 903	2006/MAY/25	NANAIMO	25
405219	NORTHWEST 904	2006/MAY/25	NANAIMO	25
405220	NORTHWEST 905	2006/MAY/25	NANAIMO	25

LIST OF MINERAL CLAIMS - ELECTRA BLOCK (cont'd)

Tenure Number	Claim Name	Good To Date	Mining Division	Area (ha)
405518	NORTHWEST 906	2006/MAY/25	NANAIMO	450
405519	NORTHWEST 907	2006/MAY/25	NANAIMO	300
409342	NORTHWEST 908	2006/APR/22	NANAIMO	400
410260	NORTHWEST 909	2006/APR/22	NANAIMO	50
413045	HUSH 600	2006/AUG/05	NANAIMO	500
413046	HUSH 601	2006/AUG/05	NANAIMO	100
416121	BAY 1	2006/AUG/05	NANAIMO	25
416122	BAY 2	2006/AUG/05	NANAIMO	25
416123	BAY 3	2006/AUG/05	NANAIMO	25
416124	BAY 4	2006/AUG/05	NANAIMO	25
501677	N/A	2006/MAY/25	NANAIMO	81.854

LIST OF MINERAL CLAIMS - EAST BLOCK

Tenure Number	Claim Name	Good To Date	Mining Division	Area (ha)
509465	MO 1	2006/MAR/23	NANAIMO	492.267
509466	MO 2	2006/MAR/23	NANAIMO	492.523
509467	MO 3	2006/MAR/23	NANAIMO	492.264
509468	MO 4	2006/MAR/23	NANAIMO	492.519
509469	MO 5	2006/MAR/23	NANAIMO	492.26
509470	MO 6	2006/MAR/23	NANAIMO	492.514
509471	MO 7	2006/MAR/23	NANAIMO	492.263
509472	MO 8	2006/MAR/23	NANAIMO	492.517
509474	MO 9	2006/MAR/23	NANAIMO	492.262
509475	MO 10	2006/MAR/23	NANAIMO	492.521
509476	MO 11	2006/MAR/23	NANAIMO	492.256
509479	MO 12	2006/MAR/23	NANAIMO	492.52
509480	MO 13	2006/MAR/23	NANAIMO	492.247
509481	MO 14	2006/MAR/23	NANAIMO	492.517
509482	MO 15	2006/MAR/23	NANAIMO	492.237
509483	MO 16	2006/MAR/23	NANAIMO	492.509
509485	MO 17	2006/MAR/23	NANAIMO	492.234
509486	MO 18	2006/MAR/23	NANAIMO	492.508
509487	MO 19	2006/MAR/23	NANAIMO	492.369

Appendix II: Drill Holes used in Resource Estimate

DRILL HOLES USED IN 1993 RESOURCE ESTIMATE

HOLE	EASTING	NORTHING	ELEVATION	LENGTH	AZIMUTH	DIP
100	233815.0	246335.0	1038.0	850.0	180.0	-45.0
101	235052.0	245680.0	1027.0	198.0	0.0	-90.0
102	235041.0	245672.0	1029.0	411.0	180.0	-45.0
103	233423.0	246873.0	1163.0	1103.0	180.0	-65.0
104	229876.0	247757.0	1028.0	500.0	0.0	-45.0
105	233821.0	246334.0	1038.0	641.0	0.0	-90.0
106	235823.0	244103.0	1304.0	651.0	0.0	-90.0
107	230694.0	247612.0	1135.0	706.0	0.0	-90.0
108	234643.0	245732.0	1070.0	522.0	180.0	-45.0
109	231858.0	247261.0	1115.0	588.0	0.0	-90.0
110	232673.0	247318.0	1120.0	1004.0	180.0	-65.0
111	233455.0	246239.0	1202.0	832.0	180.0	-45.0
112	235478.0	244913.0	1153.0	536.0	0.0	-90.0
113	231400.0	247293.0	1145.0	756.0	0.0	-90.0
114	235479.0	244906.0	1154.0	500.0	180.0	-45.0
115	230650.9	248011.6	1355.0	978.0	0.0	-90.0
116	230280.0	248039.0	1269.0	798.0	0.0	-90.0
117	231041.0	248011.0	1417.0	558.0	0.0	-90.0
118	230702.0	248414.0	1491.0	613.0	0.0	-90.0
123	235040.0	246125.0	1080.0	531.0	180.0	-70.0
127	236650.0	245000.0	1010.0	446.0	180.0	-60.0
128	236514.0	244000.0	1060.0	734.0	180.0	-60.0
136	230200.0	246860.0	990.0	497.0	0.0	-90.0
137A	232220.0	247340.0	1140.0	447.0	0.0	-90.0
138	231080.0	246835.0	1020.0	542.5	0.0	-90.0
150	239300.0	236040.0	1390.0	464.0	0.0	-70.0
151	235530.0	238290.0	1400.0	357.0	0.0	-90.0
152	236300.0	236800.0	1400.0	421.0	180.0	-50.0
153	237920.0	237020.0	1500.0	567.0	0.0	-90.0
154	233555.9	243649.3	2223.4	1485.6	0.0	-90.0
155	233101.8	243939.6	2220.2	512.0	180.0	-60.0
159	230580.0	247030.0	990.0	899.8	7.0	-60.0
160	231490.0	247000.0	1045.0	247.9	0.0	-60.0
161	230990.0	247620.0	1195.0	123.0	270.0	-45.0

DRILL HOLES USED IN 1993 RESOURCE ESTIMATE (cont'd)

HOLE	EASTING	NORTHING	ELEVATION	LENGTH	AZIMUTH	DIP
162	230320.0	247490.0	1080.0	613.9	90.0	-60.0
163	231075.0	246830.0	1020.0	616.8	0.0	-60.0
171	232810.4	246542.2	1155.0	954.0	0.0	-90.0
172	233544.4	244139.7	2086.6	1506.6	0.0	-90.0
173	233490.5	244785.9	1996.3	1497.0	0.0	-90.0
174	233589.3	243207.0	2223.7	297.0	0.0	-90.0
175	233791.3	243308.1	2215.5	1110.0	270.0	-70.0
176	232207.5	246477.2	1127.6	839.8	180.0	-45.0
177	230436.5	247990.7	1301.1	904.8	180.0	-60.0
178	233013.7	246458.0	1182.5	793.8	180.0	-45.0
179	232418.8	245450.8	1927.9	1626.6	0.0	-55.0
18	229867.0	247436.0	966.0	365.0	3.0	-47.0
180	232418.8	245450.8	1927.9	1526.0	0.0	-90.0
181	229315.0	248100.0	980.0	766.0	360.0	-45.0
182	233089.5	245571.6	1622.2	1437.0	0.0	-90.0
183	233089.5	245571.6	1622.2	1290.0	180.0	-70.0
184	231875.0	246490.0	1065.0	602.0	180.0	-45.0
185	229914.0	248555.0	1290.0	657.0	0.0	-90.0
186	231041.0	247711.0	1255.0	637.0	0.0	-90.0
187	233814.5	245650.5	1407.2	1090.0	0.0	-90.0
188	233814.5	245650.5	1407.2	1221.0	180.0	-55.0
189	231871.5	247101.6	1052.0	517.0	0.0	-90.0
19	231361.0	247432.0	1190.0	247.0	338.0	-49.0
190	234155.6	245565.0	1360.2	701.8	0.0	-90.0
191	234155.6	245565.0	1360.2	967.0	181.0	-45.0
192	236171.9	243351.6	1423.9	877.0	0.0	-90.0
198	234022.0	244748.0	1957.0	1716.0	0.0	-90.0
199	232680.0	245710.0	1840.0	1626.0	0.0	-90.0
200	233110.0	244770.0	1985.0	1786.0	0.0	-90.0
201	233484.0	245430.0	1550.0	1186.0	0.0	-90.0
202	234505.0	244682.0	1700.0	1106.0	0.0	-90.0
203	232423.0	245207.0	1975.0	1625.9	180.0	-66.0
204	234525.0	243625.0	1865.0	1245.9	0.0	-90.0
205	235865.0	243100.0	1575.0	956.0	0.0	-90.0

DRILL HOLES USED IN 1993 RESOURCE ESTIMATE (cont'd)

HOLE	EASTING	NORTHING	ELEVATION	LENGTH	AZIMUTH	DIP
206	233110.0	244492.0	2058.0	1355.0	180.0	-48.0
206A	233110.0	244492.0	2058.0	67.0	180.0	-60.0
207	234735.0	244330.0	1770.0	1126.0	0.0	-90.0
208	232656.0	244905.0	1990.0	1195.9	180.0	-60.0
209	238792.0	244613.0	1258.0	416.0	0.0	-90.0
21	229845.0	245901.0	1041.7	365.0	177.0	-45.0
210	239448.0	245084.0	1460.0	446.0	0.0	-90.0
22	231032.0	245434.0	1295.0	89.0	105.0	-45.0
58	230980.0	247622.0	1195.0	305.0	0.0	-45.0
59	231686.0	247361.0	1146.0	326.0	0.0	-45.0
60	230360.0	247360.0	1012.0	303.0	0.0	-45.0
61	230417.0	247752.0	1205.0	763.0	0.0	-45.0
62	229900.0	248530.0	1270.0	151.0	0.0	-90.0
63	229954.0	248732.0	1350.0	152.0	0.0	-90.0
64	229840.0	249005.0	1360.0	155.0	0.0	-90.0
65	230432.0	248134.0	1360.0	347.0	3.0	-46.0
66	230853.0	247241.0	1100.0	361.0	355.0	-47.0
67	230641.0	246957.0	996.0	544.0	0.0	-90.0
68	231494.0	246575.0	1020.0	538.0	0.0	-90.0
69	232650.0	246518.0	1165.0	802.0	0.0	-90.0
70	233474.0	245872.0	1410.0	535.0	0.0	-90.0
73	231475.5	246945.4	1015.9	615.0	0.0	-90.0
74	232652.0	246936.0	1065.0	500.0	0.0	-90.0
75	233045.4	246507.7	1153.0	500.0	0.0	-90.0
76	233451.0	246480.0	1050.0	501.0	0.0	-90.0
77A	234240.0	246406.0	1047.0	468.0	0.0	-90.0
78	232248.0	246496.0	1127.0	500.0	0.0	-90.0
79	234203.0	246027.0	1040.0	500.0	0.0	-90.0
80A	233416.0	246881.0	1163.0	500.0	0.0	-90.0
81	233010.0	246910.0	1094.0	575.0	0.0	-90.0
82	234031.0	246817.0	1070.0	500.0	0.0	-90.0
83	234600.0	246477.0	1155.0	324.0	0.0	-90.0
84	233451.0	246474.0	1050.0	842.0	180.0	-45.0
85	234640.0	246074.0	1060.0	407.0	0.0	-90.0

DRILL HOLES USED IN 1993 RESOURCE ESTIMATE (cont'd)

HOLE	EASTING	NORTHING	ELEVATION	LENGTH	AZIMUTH	DIP
86	234045.0	243005.0	2106.0	697.0	60.0	-70.0
87A	232673.0	247320.0	1120.0	427.0	0.0	-90.0
88	235200.0	242700.0	1750.0	587.0	335.0	-45.0
89	231833.0	246484.0	1065.0	504.0	0.0	-90.0
92	234643.0	245732.0	1070.0	500.0	0.0	-90.0
93	232642.0	246509.0	1170.0	805.0	180.0	-45.0
94	232275.0	246989.0	1060.0	584.0	0.0	-90.0
95	231830.0	246154.0	1249.0	451.0	0.0	-90.0
96	231860.0	246899.0	1040.0	471.0	0.0	-90.0
97	235059.0	245227.0	1200.0	500.0	0.0	-90.0
98	234194.0	246072.0	1035.0	665.0	176.0	-45.0
99	231442.0	247738.0	1285.0	500.0	0.0	-90.0

Appendix III: Statements of Qualification

ENGINEER'S CERTIFICATE

I, G.H. Giroux, of 982 Broadview Drive, North Vancouver, British Columbia, do hereby certify that:

1) I am a consulting geological engineer with an office at #513 - 675 West Hastings Street, Vancouver, British Columbia.
2) I am a graduate of the University of British Columbia in 1970 with a B.A. Sc. and in 1984 with a M.A. Sc., both in Geological Engineering.
3) I am a member in good standing of the Association of Professional Engineers and Geoscientists of the Province of British Columbia.
4) I have practised my profession continuously since 1970.
5) I have read the definition of "qualified person" set out in National Instrument 43-101 and certify that by reason of education, experience, independence and affiliation with a professional association, I meet the requirements of an Independent Qualified Person as defined in draft National Policy 43-101.
6) This report is based on a study of the data and literature available on the Hushamu Project. I am responsible for the resource estimations completed in Vancouver during 1993 and brought up to NI 43-101 standards in 2002. No site visit has been made to this property.
7) I have had prior involvement with the property completing earlier geostatistical studies in 1992 and 1993 as described in the Bibliography.
8) I am not aware of any material fact or material change with respect to the subject matter of the technical report that is not reflected in the Technical Report.
9) I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 42-101.
10) I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
11) I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public files on their websites accessible by the public.

Dated this___day of April, 2005

______*(signed)*________________
G. H. Giroux, P.Eng., MASc.

GEOLOGIST'S CERTIFICATE

I, David J. Pawliuk, P.Geo. do hereby certify that:

1) I am currently employed as a consulting geologist by:
   Nanoose Geoservices
   2960 Anchor Way
   Nanoose Bay, British Columbia, Canada, V9P 9G2.
2) I graduated with a degree of Bachelor of Science with Specialization in Geology from the University of Alberta in 1975.
3) I am a member of the Association of Professional Engineers and Geoscientists of British Columbia, and of the Association of Professional Engineers, Geologists and Geophysicists of Alberta.
4) I have worked as a geologist for more than 20 years since my graduation from university.
5) I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
6) I am responsible for the preparation of the "history" and "geology" sections of the technical report titled "Summary Report on the Hushamu Property" and dated April 14, 2005 (the "Technical Report") relating to the Hushamu property.
7) I have had prior involvement with the property that is the subject of the Technical Report. I supervised diamond drilling programs at the Hushamu property from 1990 to 1994.
8) I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
9) I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-101.
10) I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
11) I consent to the filing of the technical report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the company public files on their web sites accessible by the public, of the Technical Report.

Dated this ___ day of April, 2005

(signed)
David J. Pawliuk, P. Geo.