BRITISH COLUMBIA PROSPECTORS ASSISTANCE PROGRAM MINISTRY OF ENERGY AND MINES GEOLOGICAL SURVEY BRANCH

PROGRAM YEAR:1998/99REPORT #:PAP 98-9NAME:ARND BURGERT

BRITISH COLUMBIA PROSPECTORS ASSISTANCE PROGRAM PROSPECTING REPORT FORM (continued

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B. TECHNICAL REPORT

- One technical report to be completed for each project area.
- Refer to Program Requirements/Regulations 15 to 17, page 6.
- If work was performed on claims a copy of the applicable assessment report may be submitted in lieu of the supporting data (see section 16) required with this TECHNICAL REPORT.

| Name Arnd Burgert | Reference Number <u>97/98 P12</u> |
|---|---|
| LOCATION/COMMODITIES | |
| Project Area (as listed in Part A) <u>Sunshine Coast</u> Location of Project Area NTS <u>92K/1</u> <u>417000E 55630</u> Description of Location and Access <u>From Accell Dive</u> <u>13 km. Turn east onto Goat Lak</u> <u>Three target pendants are accessi</u> Main Commodities Searched For <u>Cu</u> , <u>2n</u> , <u>Pb</u> , Known Mineral Occurrences in Project Area <u>Mt</u> . <u>Diade</u> <u>Hummingbird</u> (MinFile No. 092K 047) | MINFILE No. if applicable 000N Lat 50° 12' N Long 124° 09' W cr, BC, take Huy. 101 south for ke Mainline, Follow to km. 63. ble by ground from here. Ag in VMS mineralization m (Minfile No. 092K 084); |
| WORK PERFORMED 1. Conventional Prospecting (area) 1400 ha 2. Geological Mapping (hectares/scale) 800 ha 3. Geochemical (type and no. of samples) 195 soil S 4. Geophysical (type and line km) | 1:25000 amples; 29 rock samples |
| SIGNIFICANT RESULTS Commodities Zn, Cv, Ag Cla Location (show on map) Lat <u>50° 10.9' N</u> Long <u>1</u> Best assay/sample type <u>1.43%</u> Zn, <u>0.45%</u> C <u>0.01%</u> Cd in <u>sulphide</u> <u>speci</u> Description of mineralization, host rocks, anomalies <u>A</u> Fine to medium grained massive <u>chalcopyrite</u> <u>occurs</u> in <u>medium</u> in <u>a</u> <u>metamorphic</u> roof <u>pe</u> <u>rocks</u> . <u>Report</u> and <u>supporting</u> | im Name Lorat 1 - 11 124° 18.0' W Elevation 5250' C., 19 % Ag, 0.017. Co, men 20cm thick bed of pyrite with sphalerite and grained felsic volcanics ndant of Gambier group documents attatched. |

Supporting data must be submitted with this TECHNICAL REPORT

Information on this form is confidential for one year from the date of receipt subject to the provisions of the Freedom of Information Act.

FINAL REPORT ON

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SUNSHINE COAST PROJECT

PROSPECTOR'S ASSISTANCE PROGRAM GRANT NO. 97/98-P12

ARND BURGERT NOVEMBER 9, 1998

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INTRODUCTION

Prospector's Assistance Grant No. 97/98-12 was issued in June, 1998 to fund a program of reconnaissance exploration north of Powell River, BC (Figure 1). The target was volcanogenic massive sulphide (VMS) base metals mineralization in roof pendants of the lower Cretaceous Gambier group.

Gambier group rocks host the Britannia deposit on Howe Sound as well as the Northair deposit near Squamish. In the Powell River region, uneconomic base metals occurrences lying within the Gambier group include the Mt. Diadem workings overlooking Jervis Inlet and the Hummingbird past producer on Goat Island in Powell Lake. However, in those pendants examined this summer, no previous work was recorded and no evidence of previous prospecting was observed in the field.

Field exploration was conducted from April to October, 1998, from a base camp at mile 35 (km 56) of the Goat Lake Mainline. From there, tent camps were mobilized by foot to several more remote locations. The work consisted of prospecting, reconnaissance soil sampling and large-scale geological mapping. All work was conducted personally by the author, whose Statement of Qualifications appears in Appendix I.



CLAIMS, LOCATION AND ACCESS

The four targets examined are referred to as Targets A, B, C, and D and they are shown on the index map (Figure 2). In 1998, all targets were accessed on foot via the Goat Lake Mainline.

A twenty unit, four-post mineral claim and ten adjacent two-post claims (total 30 units) were staked over Target A on October 20 and 21 (Figure 3). They were named Lorax 1 through Lorax 11. Prospecting of this ground was carried out on foot via Goat Lake Mainline and "G"-branch road, and staking was done by helicopter.

A sixteen unit four-post mineral claim was staked over Target B on June 17 and 18 (Figure 4). The claim is named Old Ironsides, after the local name of the mountain on which it is located. Access to the property was on foot via Goat Lake Mainline and "D"-branch road.

Access to Target C was on foot via Goat Lake Mainline.

Access to Target D was on foot via Goat Lake Mainline and Goat II road.





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GEOMORPHOLOGY

All targets are situated in mountainous terrain of the Coast Ranges. Topography is steep, typically 20 to 40° , with elevations ranging from 2500 feet (760 m) to 6800 feet (2070 m). Impassable cliffs are common in the higher areas.

Vegetation consists of dense stands of second growth fir, douglas fir, hemlock, western red cedar and sitka spruce in the valleys and on the lower slopes giving way to old growth yellow cedar scrub above 3500 feet (1070 m). Density of underbrush varies greatly. Above 4500 feet (1370 m), scattered buckbrush, dwarf balsam and moss dominate, while steep talus slopes and cliffs are vegetated only by lichen.

REGIONAL GEOLOGY

The area of interest lies within the Coast Plutonic Complex of the Coast Mountains. It is underlain mostly by plutonic rocks, predominantly granodiorite and quartz diorite (Roddick, 1976). Figure 5 shows regional geology.

Steeply dipping blocks or pendants of metasedimentary and metavolcanic rocks lie engulfed in the main mass of the Coast Plutonic Complex. Pendants of Gambier Group, named for their type locality on Gambier Island in Howe Sound, were the focus of this project's exploration. They extend discontinuously from North Vancouver in the southeast to north of Loughborough Inlet in the northwest.

These pendants are thought to represent fault slices along which plutonic rock was thrust upwards. The bounding shear zones in places still exist, and in many places are flanked by diorite. The dioritic rocks may represent remnants of a primitive granitoid basement upon which sedimentary and volcanic rocks were deposited.

Deep burial and subsequent deformation followed, probably in response to compressive forces transmitted through the North America Plate against oceanic crust. With the eventual onset of subduction, plutonic masses, formed during the compressive stage, began their movement upwards bounded by synplutonic faults.



REGIONAL MINERALIZATION

The most significant mineral deposit known within Gambier group rocks, and this project's type deposit, is the Britannia Deposit near Britannia beach on Howe Sound. Though once the subject of debate, it is now generally concluded that the deposit is volcanogenic in origin, classified as a Kuroko type VMS deposit. It was deformed during later shearing and faulting (Payne et al, 1980), resulting in complex stratigraphy and structure that have made interpretations difficult (Brown, 1974).

During nearly 70 years of production, 52,783,964 tons of ore produced the following metals:

 Commodity
 Grade
 (Payne et al, 1980)
 Recovery
 (Brown, 1974)

 copper
 1.1%
 1,139,223,376
 pounds

 zinc
 0.65%
 276,220,089
 pounds

 silver
 0.2 oz/ton
 492,968 oz
 cadmium

Massive, bedded and "stringer" ores were mined from ten major orebodies.

McColl (1981) divided geology on Britannia Ridge into three packages: the Footwall, Mine and Hangingwall sequences.

The lowest stratigraphic package, the Footwall sequence, comprises seven rock units aggregating a thickness

of 1400 metres which dip 45° and face southwest. The lowest unit mapped is a purple-black <u>argillite</u> which represents quiet submarine deposition prior to extrusion of overlying fine-grained black <u>andesitic-basaltic flows</u>. Creamy feldspar porphyrytic <u>rhyolite</u> phases form small domes and plugs that lie in steep contact with <u>white block breccia</u>. <u>Felsic crystal ash tuff</u> is associated with minor interbedded argillite, chert and lapilli tuff while <u>mafic lapilli block</u> <u>tuff</u> is represented by discontinuous pyroclastic lenses. The uppermost unit of the footwall package is massive to pillowed <u>altered basalt</u>. Mafic flows, flow-breccias and agglomerate are gradational to spilitized, pillowed basalt flows. Local rhyolite domes with related auto-breccia, tuff-breccia, and tuff interfinger with the mafic flows at the top of the package.

Disseminated sulphides occur within massive white chert in flow top breccias, fractures, and surrounding pillows at several horizons in the Footwall package. Gossans are common along the margins of the massive rhyolite domes.

The Mine sequence represents a basinal facies, a dome complex and a thick pyroclastic blanket that is host to the Britannia orebodies. <u>Argillite and ash tuff</u> represents a sedimentary basin on the flank of a dacitic complex. The intrusive-extrusive <u>dacite</u> dome complex exhibits massive, brecciated and tuffaceous facies while <u>crystal lithic tuff</u>

is characterized by green chloritic mottles. It is overlain by a thin, discontinuous sedimentary unit of ash <u>tuff</u>, <u>argillite and chert</u>. Host to the Britannia orebodies is <u>quartz-sericite schist</u>, primarily a hydrothermally altered felsic crystal lapilli tuff. Sulphide mineralization cosists of pyrite, chalcopyrite, sphalerite, erratic galena, tennantite, tetrahedrite and pyrrhotite. Gold occurs in scattered narrow veins and late high grade quartz veinlets. Non-metallic minerals include muscovite, chlorite, anhydrite and barite.

The Hangingwall sequence is characterized by felsic massive and ash flows overlain by thick sedimentary units and mafic intrusions. <u>Crystal lithic tuff</u> is mottled green and white. Creamy white <u>feldspar porphyrytic rhyodacite</u> forms shallow-dipping outcrops while <u>ash tuff and argillite</u> weathers rusty grey. A monotonous sequence of purple-black <u>argillite</u> marks a hiatus in volcanic activity and is overlain by dark green weathering <u>andesite tuff</u>.

REGIONAL GEOCHEMISTRY

A regional stream sediment survey published by the Geological Survey in 1988 indicates geochemical anomalies in streams that drain all targets. The anomalies are summarized in the following table.

| Target | stream(s) weakly for | stream(s) moderately anomalous for |
|--------|-------------------------|---------------------------------------|
| A | As | Cu, Zn, Pb, Ba, Co, Mo |
| В | Cu, Zn, Pb | Mo |
| С | Pb, Ba, As, Mo | |
| D | Cu, Zn, Pb, Co, Mo | |

REGIONAL GEOPHYSICS

In 1988, the Geological Survey published an airborne magnetometer survey as a series of 1:250,000 and 1:50,000 scale maps. Only Target A is covered by the survey.

Target A is located in a zone of relatively low magnetic gradient, increasing to the south. The magnetic signature in the area appears to be largely controlled by topography.

TARGET A - GEOLOGY

Target A is a large pendant of Gambier group rocks which dip vertically and strike northwest (Figure 6). Due to poor access, only a brief examination was possible. Rocks observed include fine grained mafic to medium grained felsic volcanic rocks of low metamorphic grade.

TARGET A - MINERALIZATION

A 20 cm thick, 8 m long bed of massive sulphides was discovered on the ridge top. It is composed mostly of pyrite with 3% sphalerite and 1% chalcopyrite. A specimen (M500378) of the sulphides was submitted to Chemex Labs in North Vancouver, BC, where it was crushed and pulverized to 150 mesh, digested in a nitric aqua regia solution and analyzed for 32 elements using an induced coupled plasma (ICP) technique. Certificates of Analysis appear in Appendix II. The rock returned values of 1.43% zinc, 0.45% copper, 19 g/t silver, 0.01% cobalt and 0.01% cadmium. The sulphide bed is fine to medium grained, weathered black and is cut by several small quartz veins. Bedrock immediately above and below the sulphide bed is medium grained felsic volcanic.

TARGET A - GEOCHEMISTRY

16 soil samples were collected along two contour soil lines using elevation as the primary control (Figures 7-13). All soil samples were submitted to Chemex Labs Ltd. in North

















Vancouver, BC where they were screened to 150 mesh, digested in a nitric aqua regia solution and analyzed for 32 elements by an induced coupled plasma (ICP) technique. Certificates of Analysis appear in Appendix II. Using regional thresholds, all sixteen samples are anomalous for copper, ranging from weakly to extremely anomalous. The peak copper value is 512 ppm. Most of the samples are also weakly to strongly anomalous for barium, and some are anomalous for silver, arsenic and cobalt. Barite is an accessory mineral at the Britannia Deposit and the Red Dog Deposit in Alaska (Koehler et al, 1991), while cobalt is a commodity at the Fyre Lake and Ice VMS Deposits in southeast Yukon. Arsenic is an indicator in numerous other sulphide deposits.

It is significant to note that the soil lines do not cross topography steeply, indicating that the observed sulphide showing is not the cause of the whole anomalies. The length of the copper anomaly is 1100 m.

TARGET A - RECOMMENDATIONS

The sulphide showing and adjacent soil geochemical anomaly represent a significant VMS target which has been protected by the Lorax 1 through Lorax 11 mineral claims. Due to poor access, it is suggested that a helicoptersupported flycamp be employed for future work.

Geological mapping at a scale no less than 1:10000 is recommended. A suitable basemap will have to be produced or

acquired. Careful prospecting is recommended, in particular in the vicinity of and along strike from the current showing. Hand pitting may be required if mineralized float is encountered. An extensive soil grid is recommended to define the current multielement anomaly.

Pending the outcome of the recommended work, a ground geophysical survey may be warranted by the end of the next field season. Due to the massive nature of the sulphides, they will likely respond to electromagnetic, induced polarization and magnetic field surveys.

TARGET B - GEOLOGY

The target lies within banded low grade metamorphic rocks of Gambier group that dip nearly vertically and strike northwest (Figure 14). A lower mixed package of andesitic volcanics and thinly laminated schist is overlain by predominantly andesitic volcanics with interbeds of felsic volcanics. The proportion of felsics increases to the northeast. High up on the ridge, a mafic agglomerate with a matrix bearing 5% pyrrhotite with minor chalcopyrite crops out.

TARGET B - MINERALIZATION

Fine bands of pyrite are common within the felsics at numerous localities on the upper half of the ridge. Samples of the pyrite-bearing felsics were submitted for analysis, and generally returned background values for all metals.

Two specimens (M500360; M500361) of the mafic agglomerate on the ridge top returned assay values of 01% copper.

A 15 cm wide float specimen collected in the valley bottom near the valley's eastern end contained 5% pyrite and several quartz veins in a host rock that appears to be a felsic volcanic. The specimen (M500355), which returned assay values of 0.29% copper and 5.2 g/t silver, was of insufficient size to determine whether the mineralization



has been deformed by regional metamorphism.

A series of massive magnetite veins at the top of the ridge to the east of the 6072 foot peak is undeformed by regional metamorphism. A specimen (M500362) of the magnetite was analysed and returned background values for all metals except iron.

TARGET B - GEOCHEMISTRY

60 soil samples were collected from a grid with a sample density of 100 by 100 metres and 70 soil samples were collected on reconnaissance lines using elevation as the primary control.

Overburden is considered largely residual or colluvial, and often of thickness of less than four metres. It was observed that soil development at almost all sample sites is extremely poor, with no differentiable horizons. Material commonly sampled was a brown-grey BC or C horizon. The poor soil development suggests that the soil assay results may not reflect an accurate signature of bedrock mineralization.

The grid was located near the western edge of the Gambier pendant, over the zone in which the volcanics change in composition from predominantly mafic to predominantly felsic (Figures 15, 16). The area sampled covers at least two thick felsic units in which fine bands of pyrite were





observed.

The grid samples generally returned background values for all metals with the exception of a single sample from the western edge of the grid. It was extremely anomalous for molybdenum at 51 ppm.

East of the grid, two contour soil lines were sampled at a spacing of 50 metres (Figures 17-20). 450 metres of the top line intermittently returned weakly to moderately anomalous response for copper. The mineralized rock specimen M500355, which returned an assay value of 0.29% copper, was found on the valley floor downhill from the eastern edge of the copper anomaly.

To the west of and downhill from this copper anomaly, barium was weakly anomalous in eight samples. The barium response is likely understated due to incomplete solution of sulphates by the aqua regia digestion. Bedded barite occurs on the margins of numerous VMS deposits.

Three reconnaissance soil samples (S11 - S13) were collected from a location on the north-facing slope approximately 25 metres downhill from the site at which rock specimens (M500360; M500361) of mafic agglomerate were found (Figures 21, 22). Two of these soil samples returned weakly anomalous values for copper.












TARGET B - RECOMMENDATIONS

This target is protected by the Old Ironsides mineral claim. Geological mapping at a scale no greater than 1:10000 is recommended. A suitable basemap will have to be produced or acquired. Further prospecting is warranted in the vicinity of the sulphide-bearing agglomerate on the ridgetop. Detailled prospecting, additional soil sampling and possibly hand pitting are recommended in the vicinity of the molybdenum soil anomaly at the western edge of the soil grid. A soil grid is recommended to define the copper and barium anomalies outlined by the contour lines east of the grid.

TARGET C - GEOLOGY

Target C is located in the same pendant as Target B and represents its northern extension. No detailed geological mapping was done on this target due to very poor access, but felsic and mafic volcanics and schist were observed (Figure 23). Bedding strikes approximately northwest and dips nearly vertical.

TARGET C - MINERALIZATION

Several pieces of float cobble bearing 1/2% to 4% pyrite in fine bands were found, but none were sampled. In granodiorite west of the metamorphic pendant, rare coarse blobs of molybdenite were observed in thick veins of coarse quartz and pink feldspar.

TARGET C - GEOCHEMISTRY

Contour soil lines with a sample spacing of 100 metres were run on the northern and southern lower slopes of the valley which bisects the target (Figures 24-27). Samples on the northern slope returned background values for all metals while those on the southern slope pointed out an interesting anomaly.

Two samples near the eastern end of the line returned weakly anomalous barium values and one of those returned an extremely anomalous arsenic value of 750 ppm. Both barium and arsenic are indicator minerals for VMS mineralization

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(Hoffman, 1986). Base metals response was at background levels.

TARGET C - RECOMMENDATIONS

Geological mapping at a scale no larger than 1:10000 is recommended. A suitable basemap will have to be produced or acquired. Prospecting on the southern valley slope is recommended. Additional reconnaissance contour soil lines are recommended for the southern valley slope, including some closely-spaced sampling in the vicinity of the current arsenic-barium anomaly.

TARGET D - GEOLOGY

Target D is a narrow, linear pendant that dips vertically and strikes northwest (Figure 28). It comprises alternately bands of fine grained volcanics of andesitic to basaltic composition and fine to medium grained felsics of rhyolitic composition. A thick diorite dyke bisects the pendant for about half its length. A thin, coarse grained marble lens was observed near the northern margin of the pendant. Metamorphic grade is low.

TARGET D - MINERALIZATION

Fine pyrite bands were observed at several locations but, where sampled, returned background values for all metals.

TARGET D - GEOCHEMISTRY

43 soil samples were collected along a series of reconnaissance soil lines using elevation as the primary control (Figures 29-31). The most significant result is moderately anomalous molybdenum response near the centre of the area sampled. The peak value is 34 ppm molybdenum.

TARGET D - RECOMMENDATIONS

A limited program of prospecting and soil sampling is recommended, particularly to the north of the ridge, where no work has yet been done.

45









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APPENDIX I

AUTHOR'S STATEMENT OF QUALIFICATIONS

.

AUTHOR'S STATEMENT OF QUALIFICATIONS

I, Arnd Burgert, geologist, with business and residential address in New Westminster, British Columbia, do hereby certify that:

- I graduated from the University of British Columbia in 1995 with a B.Sc. in geology.
- From 1989 to present, I have been actively engaged in mineral exploration in British Columbia, the Northwest Territories and the Yukon Territory.
- 3. I have personally performed the work reported herein.

and Bayn

A. Burgert, B.Sc.

APPENDIX II

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CERTIFICATES OF ANALYSIS



Analytical Chemists * Geochemists * Registered Assayers

North Vancouver V7J 2C1 212 Brooksbank Ave., British Columbia, Canada PHONE: 604-984-0221 FAX: 604-984-0218

To: BURGERT, ARND

242 BOYNE STREET NEW WESTMINSTER, BC V3M 5J8

Page Number :1-A Total Pages :2 Certificate Date: 12-JUL-98 Invoice No. P.O. Number :19823569 QHB Account

Project : SUNSHINE COAST Comments: ATTN: ARND BURGERT CC: ARND BURGERT

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| | SAMPLE | PREP CODE | λg ppm | A1 % | As ppm | Ba ppm | Be ppm | Bi ppm | Ca % | Cđ ppm | Co ppm | Cr ppm | Cu ppm | Fe % | Ga ppm | Hg ppm | K % | La ppm | Mg % | Mn ppm | Mo ppm |
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Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver British Columbia, Canada V7J 2C1 PHONE: 604-984-0221 FAX: 604-984-0218 North Vancouver To: BURGERT, ARND

242 BOYNE STREET NEW WESTMINSTER, BC V3M 5J8

Project : SUNSHINE COAST Comments: ATTN: ARND BURGERT CC: ARND BURGERT

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Page Number :1-B Total Pages :2 Certificate Date: 12-JUL-98 Invoice No. :19823569 P.O. Number : OHB Account

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CERTIFICATION:

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Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver British Columbia, Canada V7J 2C1 PHONE: 604-984-0221 FAX: 604-984-0218 To: BURGERT, ARND

242 BOYNE STREET NEW WESTMINSTER, BC V3M 5J8

Page Number :2-A Totał Pages :2 Certificate Date: 12-JUL-98 Invoice No. :19823569 P.O. Number : Account :QHB

Project : SUNSHINE COAST Comments: ATTN: ARND BURGERT CC: ARND BURGERT

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CERTIFICATION



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers 212 Brooksbank Ave., North Vancouver British Columbia, Canada V7J 2C1 PHONE: 604-984-0221 FAX: 604-984-0218

To: BURGERT, ARND

242 BOYNE STREET NEW WESTMINSTER, BC V3M 5J8

Page Number :2-B Total Pages :2 Certificate Date: 12-JUL-98 :19823569 Invoice No. P.O. Number : QHB Account

Project : SUNSHINE COAST Comments: ATTN: ARND BURGERT CC: ARND BURGERT

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Analytical Chemists * Geochemists * Registered Assayers

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242 BOYNE STREET NEW WESTMINSTER, BC V3M 5J8

Page Number : 1-A Total Pages : 1 Certificate Date: 24-JUL-98 Invoice No. : 19824806 P.O. Number : Account : QHB

Project : SUNSHINE COAST Comments: ATT:ARND BURGERT CC:ARND BURGERT

CERTIFICATE OF ANALYSIS A9824806

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| | SAMPLE | PF | ep De | Ag ppm | A1 % | As ppm | Ba ppm | Be ppm | Bi ppm | Ca % | Cđ ppm | Co ppm | Cr ppm | Cu ppm | Fe % | Ga ppm | Hg ppm | K % | La ppm | Mg % | Mn ppm | No ppm |
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| | \$10 \$11 \$12 \$13 \$14 | 201 201 201 201 201 | 202 202 202 202 202 202 | < 0.2 0.2 < 0.2 0.2 < 0.2 < 0.2 | 0.41 3.51 2.38 3.50 4.12 | 48 < 2 < 2 < 2 < 2 | 10 160 230 260 20 | < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 | < 2 · < 2 · < 2 · < 2 · | < 0.01 0.06 0.03 0.06 0.07 | < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 | < 1 3 1 3 | 1 31 14 28 14 | 10 84 40 66 | 7.31 4.85 4.20 4.38 2.43 | < 10 10 < 10 < 10 < 10 | < 1 < 1 < 1 < 1 < 1 | 0.06 0.42 0.97 0.88 0.10 | < 10 < 10 < 10 < 10 < 10 | 0.15 1.89 1.82 2.08 0.32 | 75 320 325 465 215 | 5 9 3 5 4 |
| 3 | \$15 \$16 \$17 \$18 \$19 | 201 201 201 201 201 | 202 202 202 202 202 202 | < 0.2 0.2 0.2 < 0.2 < 0.2 | 1.88 4.47 3.96 7.57 4.77 | 14 36 12 4 2 | 50 40 30 40 70 | < 0.5 0.5 < 0.5 0.5 0.5 | 2 < 2 < 2 < 2 < 2 < 2 < 2 | 0.05 0.01 0.06 0.04 0.10 | < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 | 4 3 3 6 9 | 10 17 15 16 23 | 16 16 18 26 31 | 4.58 12.05 3.55 3.82 3.58 | < 10 10 10 < 10 < 10 | 1 < 1 < 1 < 1 < 1 < 1 | 0.13 0.13 0.05 0.07 0.20 | < 10 < 10 < 10 < 10 < 10 < 10 | 0.50 0.34 0.22 0.41 0.70 | 190 125 105 180 345 | 17 4 2 8 8 |
| | \$20 \$21 \$22 \$23 | 201 201 201 201 | 202 202 202 202 | < 0.2 0.2 < 0.2 0.4 | 2.29 3.28 5.89 4.19 | 20 4 < 2 < 2 | 70 230 60 80 | < 0.5 < 0.5 < 0.5 < 0.5 | < 2 < 2 < 2 < 2 < 2 | 0.11 0.94 0.07 0.12 | < 0.5 < 0.5 < 0.5 < 0.5 | 14 4 18 | 7 23 21 10 | 17 57 4 35 29 | 2.77 5.38 4.72 4.52 | < 10 < 10 10 < 10 | < 1 < 1 1 2 | 0.16 0.69 0.09 0.12 | < 10 < 10 < 10 < 10 < 10 | 0.39 1.25 0.40 0.75 | 610 550 145 680 | 7 32= 6 3 |
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CERTIFICATION: HartSielle



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Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver British Columbia, Canada V7J 2C1 PHONE: 604-984-0221 FAX: 604-984-0218

To: BURGERT, ARND

242 BOYNE STREET NEW WESTMINSTER, BC V3M 5J8

Page Number :1-B Total Pages :1 Certificate Date: 24-JUL-98 :19824806 Invoice No. P.O. Number : :OHB Account

Project : SUNSHINE COAST Comments: ATT:ARND BURGERT CC:ARND BURGERT

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CERTIFICATION:

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|----------------------------|--|--|--|-------------------------|---------------------------------|------------------------------|--|---------------------------|-----------------------|--------------------------------------|--|--|-------------------------------|--|----------------------------|----------------|
| | SAMPLE | PREP CODE | Na % | Ni ppm | b đđđ | Pb ppm | Sd ppm | Sc ppm | Sr ppm | Ti X | T1 ppm | U PD# | V ppn | W M | Zn ppm | |
| 51 51 51 51 | | 201 20 201 20 201 20 201 20 201 20 201 20 | 2 < 0.01 2 < 0.01 2 0.01 2 < 0.01 2 < 0.01 2 < 0.01 | < 1 7 4 7 5 | 360 600 580 510 270 | 8 < 2 < 2 < 2 10 | < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 | < 1 9 11 13 4 | 2 6 5 9 3 | 0.01 0.18 0.17 0.22 0.14 | < 10 < 10 < 10 < 10 < 10 < 10 | < 10 < 10 < 10 < 10 < 10 < 10 | 15 133 132 154 46 | < 10 < 10 < 10 < 10 < 10 < 10 | 8 56 40 88 36 | |
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212 Brooksbank Ave., North Vancouver British Columbia, Canada V7J 2C1 PHONE: 604-984-0221 FAX: 604-984-0218 To: BURGERT, ARND

242 BOYNE STREET NEW WESTMINSTER, BC V3M 5J8 Page Number :1-A Total Pages :1 Certificate Date: 26-AUG-1998 Invoice No. :19828381 P.O. Number : Account :QHB

CERTIFICATION: Harte Roo

Project : SUNSHINE COAST Comments: ATTN:ARND BURGERT CC:ARND BURGERT

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| SAMPLE | PREP | Ag ppm | λ1 % | As ppm | Ba ppm | Be ppm | Bi ppm | Ca % | Cđ ppm | Со ррп | Cr ppm | Cu ppm | Fe % | Ga ppm | Hg ppm | K X | La ppm | Ng % | Mn ppm | Mo ppm |
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| 534 535 536 537 538 | 201 229 201 229 201 229 201 229 201 229 201 229 | 9 < 0.2 9 < 0.2 9 < 0.2 9 < 0.2 9 < 0.2 9 < 0.2 | 0.90 1.66 1.19 1.20 1.10 | < 2 8 64 22 12 | 10 40 30 10 10 | < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 | < 2 < 2 < 2 < 2 < 2 < 2 < 2 | 0.04 0.04 0.06 0.05 0.05 | < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 | 3 7 2 < 1 3 | 8 13 11 14 10 | 5 5 6 20 15 | 1.09 4.12 2.08 13.25 5.40 | < 10 10 10 10 < 10 | < 1 < 1 < 1 < 1 < 1 < 1 | 0.06 0.13 0.03 0.02 0.03 | < 10 < 10 < 10 < 10 < 10 < 10 | 0.15 0.51 0.17 0.01 0.08 | 55 130 40 15 35 | 3 9 11 17 11 |
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| 844 845 846 | 201 229 201 229 201 229 | 9 0.2 9 < 0.2 9 < 0.2 | 1.69 0.75 1.84 | < 2 2 8 | 10 10 10 | < 0.5 < 0.5 < 0.5 | < 2 < 2 < 2 | 0.04 0.06 0.07 | < 0.5 < 0.5 < 0.5 | 2 < 1 1 | 8 9 51 | 35 5 14 | 1.81 0.85 5.15 | < 10 < 10 10 | < 1 < 1 < 1 | 0.05 0.03 0.03 | < 10 < 10 < 10 | 0.15 0.01 0.41 | 40 5 90 | 7 16 34 |
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Chemex Labs Ltd. Analytical Chemists * Geochemists * Registered Assayers

To: BURGERT, ARND

242 BOYNE STREET NEW WESTMINSTER, BC V3M 5J8

CERTIFICATION:_

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Page Number :1-B Total Pages :1 Certificate Date: 26-AUG-1998 Invoice No. : I9828381 P.O. Number : Account :QHB

 212 Brooksbank Ave.,
 North Vancouver
 V3M 538

 British Columbia, Canada
 V7J 2C1
 Project :
 SUNSHINE COAST

 PHONE: 604-984-0221
 FAX: 604-984-0218
 Comments:
 ATTN:ARND BURGERT

| | | | | | | | | | | CE | RTIFI | CATE | OF A | NALYSIS | A9828381 |
|--------------------------------------|--|--|---------------------------|---------------------------------|----------------------------|---|-------------------------|-------------------------|--------------------------------------|--|--|------------------------------|--|----------------------------|----------|
| SAMPLE | PREP CODE | Na % | Ni ppm | p ppm | Ppm Ppm | Sb ppm | Sc ppm | Sr ppm | Ti % | T1 ppm | ndd D | bbm A | M Mqq | Zn ppm | |
| 824 825 826 827 828 | 201 229 201 229 201 229 201 229 201 229 201 229 | 0.01 < 0.01 < 0.01 < 0.01 < 0.01 < 0.01 | 1 4 2 5 1 | 780 410 220 510 630 | 4 8 6 10 10 | < 2 < 2 < 2 < 2 < 2 < 2 | < 1 2 1 3 1 | 5 13 4 16 5 | 0.05 0.18 0.29 0.19 0.12 | < 10 < 10 < 10 < 10 < 10 < 10 | < 10 < 10 < 10 < 10 < 10 < 10 | 14 67 155 57 67 | < 10 < 10 < 10 < 10 < 10 < 10 | 10 22 12 26 18 | |
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Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave.,North VancouverBritish Columbia, CanadaV7J 2C1PHONE: 604-984-0221FAX: 604-984-0218

To: BURGERT, ARND

242 BOYNE STREET NEWWESTMINSTER, BC V3M 5J8 Page Number :1-A Total Pages :1 Certificate Date: 16-SEP-1998 Invoice No. :19830818 P.O. Number : Account :QHB

Project : SUNSHINE COAST Comments: ATTN:ARND BURGERT

CC:A.BURGERT

CERTIFICATE OF ANALYSIS A9830818

PREP Mg Mn Mo Bİ Cđ Cu Ga ĸ La λg **A1** Àв Ba Be Ca Co Cr Fe Ħg ×. pp∎ SAMPLE CODE % * ppm * DDE ppm ۶. ppm ppm ppm ppm рра ррш ppm ppm ppm ppm \$47 \$48 6 201 229 < 10 0.05 < 10 0.08 25 < 0.2 0.62 < 2 30 < 0.5 2 0.04 < 0.5 < 1 - 5 -5 0.68 < 1 201 229 2.45 10 0.04 < 10 0.16 45 9 16 11 < 1 < 0.2 1.17 6 20 < 0.5 < 2 0.05 < 0.5 1 **\$49** 201 229 0.24 < 10 0.95 270 12 26 3.76 < 10 10 150 32 < 1 < 0.2 2.10 < 0.5 < 2 0.33 < 0.5 10 50 9 \$50 201 229 13 5.26 10 0.02 < 10 0.13 20 17 < 1 < 0.2 1.83 < 2 < 0.5 6 0.04 < 0.5 < 1 70 9 < 1 < 0.01 s51 201 229 < 0.5 0.08 < 0.5 87 16 3.97 10 < 10 1.46 < 0.2 2.15 < 2 < 10 < 2 6 6 35 852 < 1 < 10 0.11 201 229 < 0.2 0.65 2 10 < 0.5 2 0.04 < 0.5 < 1 6 -4 1.00 10 0.04 < 10 0.54 335 6 \$53 201 229 < 0.2 1.76 10 80 < 0.5 < 2 0.48 < 0.5 10 24 17 2.39 < 10 < 1 0.16 35 < 1 854 201 229 < 10 0.02 < 10 0.08 < 0.2 0.77 < 2 10 < 0.5 < 2 0.05 < 0.5 < 1 9 6 0.52 < 1 855 < 10 0.20 < 10 0.68 530 7 201 229 < 0.2 2.00 14 100 < 0.52 0.53 < 0.5 15 29 21 2.90 < 1 **3**56 201 229 10 10 0.07 < 10 0.42 125 6 0.13 < 0.5 6 2.31 < 1 < 0.2 1.18 4 30 < 0.5 2 3 13 30 < 0.5 2 70 \$57 201 229 < 0.2 < 2 < 2 0.08 12 11 1.55 10 < 1 0.06 < 10 0.42 1.44 < 0.5 9 \$58 75 201 229 < 0.2 1.39 < 2 50 < 0.5 < 2 0.13 < 0.5 4 23 5.34 < 10 < 1 0.06 < 10 0.22 -1 70 8 **s**59 201 229 < 0.2 1.26 < 2 10 < 0.5 < 2 0.07 < 0.5 < 1 5 8 2.56 10 < 1 0.03 < 10 0.20 13 160 860 201 229 < 0.2 0.49 < 2 20 < 0.5 < 2 0.10 < 0.5 4 17 8 >15.00 < 10 < 1 0.09 10 0.12 0.82 285 16 \$61 201 229 < 0.2 1.36 2 80 < 0.5 < 2 0.01 < 0.5 5 4 1.59 < 10 < 1 0.28 < 10 < 1 9 \$62 201 229 3.96 10 < 1 0.17 < 10 0.32 160 < 0.2 1.70 12 50 < 0.5 2 < 0.01 12 < 0.5 < 1 4 s63 5 201 229 2.11 0.04 < 0.5 14 2.30 < 10 < 1 0.28 < 10 0.38 415 < 0.2 12 RO < 0.5 < 2 7 -4 \$64 485 201 229 < 0.2 2.07 26 60 < 0.5 < 2 12 2.23 < 10 < 1 0.25 < 10 0.43 3 0.05 < 0.5 6 - 6 \$65 < 1 < 0.01 30 < 1 201 229 < 0.2 0.18 < 2 < 10 < 0.5 2 < 0.01 < 0.5< 1 < 1 0.13 < 10 10 < 0.01< 1 70 **B66** 0.12 4 201 229 < 0.2 4.01 12 10 < 0.5 < 2 0.03 < 0.5 13 10 4.34 10 < 1 0.04 < 10 < 1 201 229 < 1 < 10 25 < 1 **\$67** < 0.2 0.27 < 2 < 10 < 0.5 < 2 0.01 < 0.5 < 1 2 < 1 0,22 < 10 0.01 0.03 868 201 229 < 0.2 0.71 50 < 0.5 10 < 1 0.11 < 10 0.23 75 3 4 4 < 0.01 < 0.5 < 1 1 1 1.94 g 69 201 229 < 0.5 < 1 < 10 0.42 260 6 < 0.2 1.46 < 2 15 1.26 < 10 0.15 < 2 40 0.10 < 0.5 3 14 \$70 201 229 < 0.2 < 2 < 10 < 0.5 < 2 28 20 < 1 0.01 < 10 0.08 60 -3 1.80 0.02 < 0.5 8 6.53 1 \$71 201 229 < 0.2 1.89 < 2 110 < 0.5 < 2 0.05 < 0.5 g 31 11 2.97 < 10 < 1 0.37 < 10 0.94 520 2 \$72 3 201 229 595 < 0.2 1.81 14 170 < 0.5 < 2 0.16 9 15 3.46 < 10 0.77 < 10 0.92 < 0.5 9 < 1 **\$73** 201 229 < 0.2 1.81 40 230 4 < 0.5 < 2 0.15 < 0.5 7 9 18 2.83 < 10 < 1 0.60 < 10 0.66 325 1 874 201 229 750 < 0.2 1.52 200 2 < 0.5 < 2 0.11 < 0.5 7 19 11.45 < 10 0.44 < 10 0.46 215 4 4 < 1 \$75 201 229 < 0.2 1.96 20 160 < 0.5 < 2 0.10 < 0.5 8 17 2.07 < 10 < 1 0.40 < 10 0.59 270 4 5 **s**76 201 229 0.32 135 < 0.2 1.35 18 50 < 0.5 2 0.02 < 0.5 1 6 4 1.50 < 10 < 1 0.12 < 10 1 \$77 2 201 229 0.33 0.03 < 0.2 < 2 < 10 0.01 < 10 20 30 < 0.5 < 2 0.06 < 0.5 < 1 1 2 0.35 < 1 \$78 201 229 < 0.2 2.08 0.41 185 3 6 50 < 0.5 < 2 0.06 < 0.5 3 11 9 2.64 10 < 1 0.17 < 10 \$79 201 229 < 0.2 0.98 < 2 < 10 < 0.5 < 2 0.02 < 0.5 5 1.85 < 10 0.01 < 10 0.03 30 4 < 1 4 < 1 \$80 201 229 < 0.2 0.32 < 2 0.04 55 < 1 < 10 < 0.5< 2 0.04 < 0.5 4 < 1 0.52 < 10 < 1 0.03 < 10 < 1 ij .

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CERTIFICATION: Hartfuller

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Analytical Chemists * Geochemists * Registered Assayers

North Vancouver 212 Brooksbank Ave., British Columbia, Canada V7J 2C1 PHONE: 604-984-0221 FAX: 604-984-0218 To: BURGERT, ARND

242 BOYNE STREET NEW WESTMINSTER, BC V3M 5J8

Page Number :1-B Total Pages :1 Certificate Date: 16-SEP-1998 :19830818 Invoice No. P.O. Number :QHB Account

SUNSHINE COAST Project : ATTN: ARND BURGERT Comments:

CC:A.BURGERT

A9830818 **CERTIFICATE OF ANALYSIS** Tì U V W Zn Tl Pb Sb Sc Sr PREP Na Nì ₽ ррш ppm ppm ٩, DOM ppm ppm SAMPLE CODE * ppm ppm ppm ppm ppm 38 < 10 8 < 10 < 0.01 < 1 0.14 < 10 380 10 4 \$47 201 229 1 < 2 99 < 10 10 < 10 3 0.18 < 10 230 6 \$48 201 229 < 0.01 3 < 2 1 < 10 94 < 10 46 38 0.20 < 10 549 550 201 229 0.03 350 12 < 2 2 8 < 10 151 < 10 8 6 < 2 1 4 0.30 < 10 201 229 < 0.01 з 140 179 < 10 26 < 10 3 1 0.32 < 10 201 229 < 0.01 150 < 2 < 2 851 11 8 < 10 < 10 58 < 10 5 0.28 201 229 140 18 < 2 < 1 952 < 0.01 1 < 10 75 < 10 34 19 0.14 < 10 2 201 229 < 0.01 9 580 10 < 2 \$53 6 < 10 53 < 10 0.17 < 10 1 3 854 201 229 < 0.01 1 180 6 < 2 44 < 10 96 < 10 24 0.17 < 10 \$55 201 229 0.01 9 590 12 2 3 22 94 < 10 11 0.31 < 10 < 10 201 229 < 0.01 230 10 < 2 1 4 **\$**56 18 70 < 10 < 2 2 5 0.33 < 10 < 10 201 229 180 10 857 < 0.01 5 89 < 10 10 9 0.24 < 10 < 10 200 2 1 \$58 201 229 < 0.01 1 2 < 10 127 < 10 14 2 3 0.30 < 10 201 229 300 10 < 2 < 0.01 1 g 59 79 < 10 20 < 10 8 5 0.05 < 10 201 229 < 0.01 220 < 2 1 **\$60** 2 53 < 10 34 < 10 6 0.08 < 10 < 2 < 2 2 **861** 201 229 < 0.01 < 1 260 22 76 < 10 0.20 < 10 < 10 201 229 210 6 < 2 4 з 562 < 0.01 1 < 10 38 < 10 54 6 0.12 < 10 \$63 201 229 < 0.01 2 440 < 2 < 2 4 48 < 10 34 6 0.13 < 10 < 10 S64 201 229 < 0.01 3 230 2 < 2 4 < 10 < 10 1 < 10 < 2 1 < 0.01865 < 2 < 1 201 229 < 0.01 < 1 50 < 2 < 10 88 < 10 10 4 1 0.18 < 10 2 866 201 229 < 0.01 1 150 < 2 14 < 10 < 2 < 10 < 10 < 2 < 2 < 1 1 0.05 S 67 201 229 < 0.01 < 1 80 < 10 < 10 56 < 10 12 < 1 0.13 **\$68** 201 229 < 0.01 < 1 60 < 2 < 2 1 < 10 47 < 10 40 < 10 201 229 290 < 2 2 5 0.13 **5**69 < 0.01 3 4 < 10 < 10 202 < 10 6 1 1 0.21 201 229 190 6 < 2 **\$7**0 < 0.01 2 76 < 10 48 5 0.16 < 10 < 10 < 2 2 3 \$71 201 229 < 0.01 10 660 < 10 70 < 10 56 < 10 8 0.16 < 2 < 2 6 s72 201 229 < 0.01 4 610 58 61 < 10 0.14 < 10 < 10 5 11 s73 201 229 0.01 5 480 2 < 2 < 10 54 < 10 50 0.12 < 10 201 229 0.01 4 430 6 < 2 4 8 \$74 64 52 < 10 5 9 0.13 < 10 < 10 201 229 < 0.01 4 320 < 2 < 2 s75 28 4 0.13 < 10 < 10 48 < 10 201 229 < 0.01 190 6 < 2 3 976 1 10 2 7 0.05 < 10 < 10 < 10 \$77 201 229 < 0.01 < 1 200 4 < 2 < 1 28 < 10 73 < 10 0.15 < 10 2 3 4 \$78 201 229 < 0.01 1 230 < 2 < 10 64 < 10 2 2 0.17 < 10 201 229 < 0.01 120 < 2 < 2 < 1 \$79 1 33 < 10 2 < 1 3 0.11 < 10 < 10 201 229 < 0.01 < 1 110 2 < 2 380 1

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CERTIFICATION Hartfushler



Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver British Columbia, Canada V7J 2C1 PHONE: 604-984-0221 FAX: 604-984-0218 To: BURGERT, ARND

242 BOYNE STREET NEW WESTMINSTER, BC V3M 5J8

Project : SUNSHINE COAST Comments: CC: ARND BURGERT Page Number : 1-A Total Pages :2 Certificate Date: 02-OCT-1998 Invoice No. : 19832053 P.O. Number : Account :QHB

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| | SAMPLE | PREP | Ag ppm | л1 % | As ppa | Ba. pom | Be pom | Bi ppm | Ca % | Cđ ppm | Co ppm | Cr ppm | Cu ppm | Fe % | Ga ppm | Hg ppm | K % | La ppm | Mg % | Mn ppm | Mo ppm |
| | 581 582 583 584 585 | 201 229 201 229 201 229 201 229 201 229 201 229 | 0.2 0.2 0.2 0.6 0.4 | 1.94 2.10 2.14 2.25 3.43 | 32 32 26 78 76 | 230 < 210 < 240 < 240 < 190 < | 0.5 0.5 0.5 0.5 0.5 | < 2 < 2 < 2 < 2 < 2 < 2 < 2 | 0.88 0.94 0.81 0.67 0.51 | < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 | 10 10 10 8 10 | 34 29 30 27 36 | 134 139 154 171 187 | 2.50 2.52 2.76 3.80 3.25 | < 10 < 10 < 10 < 10 < 10 | < 1 < 1 < 1 < 1 < 1 | 0.12 0.12 0.13 0.16 0.08 | < 10 < 10 < 10 < 10 < 10 | 0.64 0.61 0.62 0.55 0.74 | 170 165 170 135 110 | 4 3 3 3 6 |
| Ņ | 586 587 588 589 590 | 201 229 201 229 201 229 201 229 201 229 201 229 201 229 | 0.2 < 0.2 0.2 0.6 1.2 | 2.19 2.29 2.58 2.91 3.26 | 46 48 6 20 32 | 410 × < 220 × 1160 × 1230 × 130 × | c 0.5 c 0.5 c 0.5 c 0.5 c 0.5 c 0.5 | < 2 < 2 < 2 < 2 < 2 < 2 < 2 | 0.24 0.30 0.35 0.33 0.07 | < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 | 10 12 23 13 4 | 49 30 51 71 67 | 133 134 158 232 107 | 3.26 3.06 3.70 4.89 4.89 | < 10 < 10 < 10 < 10 < 10 10 | < 1 < 1 < 1 < 1 < 1 < 1 | 0.16 0.17 0.71 0.41 0.05 | < 10 < 10 < 10 < 10 < 10 < 10 | 0.90 0.79 1.51 1.41 1.53 | 165 245 280 195 210 | 2 < 1 1 6 4 |
| A | 891 892 893 894 895 | 201 229 201 229 201 229 201 229 201 229 201 229 | 2.0 1.2 0.6 0.4 0.8 | 3.03 3.09 3.35 2.83 4.76 | 20 58 38 140 108 | 1030 < 720 < 190 < 870 170 | <pre> 0.5 0.5 0.5 0.5 0.5 1.0 </pre> | < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 | 0.44 0.57 0.52 0.27 0.21 | 1.0 1.5 < 0.5 < 0.5 < 0.5 | 10 43m 10 42 17 | 76 42 53 68 47 | 116 512 138 71 64 | 4.29 6.44 3.95 3.79 4.41 | < 10 < 10 < 10 < 10 < 10 < 10 | < 1 < 1 < 1 < 1 < 1 | 0.40 0.23 0.15 0.30 0.17 | < 10 < 10 < 10 < 10 < 10 < 10 | 1.08 1.13 0.81 0.93 0.81 | 375 330 175 730 410 | 13 5 7 3 3 |
| - | <u>995</u> 897 898 899 8100 | 201 229 201 229 201 229 201 229 201 229 201 229 | 0.2 < 0.2 0.2 < 0.2 < 0.2 0.2 | 4.00 4.72 2.78 0.21 2.75 | 40 6 16 < 2 14 | 350W < 140 < 60 < 10 < 190 < | <pre>< 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5</pre> | < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 | 0.49 0.15 0.21 0.30 0.21 | < 0,5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 | 27 21 9 1 28 | 42 9 26 2 49 | 1824 47 32 5 34 | 4.81 5.59 3.97 0.11 4.24 | < 10 10 < 10 < 10 < 10 < 10 | < 1 < 1 < 1 < 1 < 1 | 0.91 0.30 0.15 0.04 0.40 | < 10 < 10 < 10 < 10 < 10 < 10 | 1.27 2.21 0.85 0.06 0.78 | 500 1025 250 5 1095 | 3 < 1 1 < 1 1 |
| | 5101 5102 5103 5104 5105 | 201 229 201 229 201 229 201 229 201 229 201 229 | < 0.2 0.2 < 0.2 0.2 0.2 0.2 | 2.25 2.49 2.94 2.40 3.36 | 18 18 30 16 24 | 160 < 190 < 120 130 < 150 | < 0.5 < 0.5 0.5 < 0.5 0.5 | < 2 < 2 < 2 < 2 < 2 < 2 < 2 | 0.06 0.20 0.04 0.09 0.12 | < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 | 11 18 11 15 27 | 48 50 60 42 62 | 31 37 41 28 40 | 4.01 3.99 4.67 4.15 4.97 | < 10 < 10 10 < 10 10 | < 1 < 1 < 1 < 1 < 1 < 1 | 0.59 0.60 0.28 0.30 0.31 | < 10 < 10 < 10 < 10 < 10 | 0.71 0.77 0.74 0.67 0.90 | 410 605 300 915 675 | < 1 1 < 1 < 1 |
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Analytical Chemists * Geochemists * Registered Assayers North Vancouver

212 Brooksbank Ave., V7J 2C1 British Columbia, Canada PHONE: 604-984-0221 FAX: 604-984-0218 To: BURGERT, ARND

242 BOYNE STREET NEW WESTMINSTER, BC V3M 5J8

SUNSHINE COAST Project : Comments: CC: ARND BURGERT

CERTIFICATE OF ANALYSIS

Page Number :1-8 Total Pages :2 Certificate Date: 02-OCT-1998 :19832053 Invoice No. P.O. Number OHB Account

A9832053

V M Zn **T1** ប 71 Ni P ЪP Sb Sc Sr PREP Na DDI ppm DDE * DDT DDM DDE DDW. SAMPLE CODE * ppm ppm ppm ppm 30 < 10 63 < 10 0.16 < 10 36 < 2 201 229 0.11 22 610 2 4 581 62 < 10 26 < 10 < 10 47 0.18 201 229 21 630 < 2 < 2 4 582 0.13 63 < 10 28 < 10 < 10 40 0.17 201 229 700 < 2 < 2 4 22 \$83 0.10 30 < 10 66 < 10 < 10 780 24 < 2 3 28 0.18 384 201 229 0.03 16 32 < 10 69 10 < 10 2 33 0.14 740 2 < 2 22 \$85 201 229 0.03 30 65 < 10 13 0.14 < 10 < 10 18 520 6 < 2 4 \$86 201 229 0.03 52 78 < 10 < 10 < 10 10 0.23 0.01 19 670 6 < 2 з 987 201 229 52 90 < 10 27 0.25 < 10 < 10 42 690 4 < 2 4 201 229 0.01 38B 54 118 < 10 < 10 6 26 0.24 < 10 201 229 0.03 36 860 6 < 2 589 56 105 < 10 < 10 0.17 < 10 8 8 6 12 320 < 2 201 229 < 0.01 890 136 147 < 10 < 10 0.20 < 10 10 < 2 7 23 591 1200 201 229 0.01 30 292 < 10 < 10 76 < 10 3 17 0.15 A 56 690 2 < 2 201 229 692 0.02 76 131 < 10 < 10 21 0.18 < 10 5 20 1140 4 < 2 0.01 893 201 229 70 < 10 77 < 10 0.14 < 10 28 36 1010 16 < 2 6 594 201 229 0.01 124 < 10 < 10 < 10 90 7 0.16 14 37 890 < 2 < 2 595 201 229 < 0.01 121 < 10 104 0.28 < 10 < 10 26 <u>596</u> 597 51 840 2 < 2 10 201 229 0.01 194 < 10 126 < 10 0.32 < 10 140 < 2 < 2 15 8 201 229 < 0.01 8 117 < 10 42 0.26 < 10 < 10 5 12 160 6 < 2 398 201 229 0.01 11 2 < 10 20 < 10 < 10 22 < 0.01< 2 < 1 3 420 < 2 201 229 0.01 399 73 < 10 114 < 10 < 2 15 0.16 < 10 8 680 0.01 32 < 2 S100 201 229 72 < 10 < 10 70 < 10 0.15 < 2 7 11 880 2 201 229 < 0.01 24 \$101 108 < 10 62 < 10 0.14 < 10 2 < 2 7 14 201 229 0.01 31 690 \$102 84 < 10 103 < 10 0.19 < 10 390 < 2 < 2 9 9 201 229 < 0.01 32 \$103 68 < 10 < 10 92 < 10 < 2 6 15 0.14 17 630 2 201 229 < 0.01 \$104 120 107 < 10 0.18 < 10 < 10 10 14 530 2 < 2 < 0.01 35 201 229 \$105 106 < 10 64 0.20 < 10 < 10 9 10 2 < 2 < 0.01 14 430 S106 201 229 < 10 68 0.15 < 10 < 10 95 26 8 2 < 2 201 229 0.01 20 680 **S107** 102 < 10 125 < 10 < 10 16 0.21 13 201 229 0.03 7 480 < 2 < 2 **S108** 156 < 10 86 0.25 < 10 < 10 16 75 201 229 0.24 6 390 12 < 2 \$109 72 147 < 10 < 10 12 22 0.29 < 10 290 < 2 < 2 201 229 Ô.Ô3 6 **S11**0 78 153 < 10 < 10 10 10 0.28 < 10 201 229 430 < 2 < 2 < 0.01 5 **s**111 30 189 < 10 0.34 < 10 < 10 5 6 420 < 2 201 229 < 0.01 3 4 \$112 56 < 10 < 10 155 < 10 12 0.27 12 340 2 < 2 201 229 0.03 4 \$113 62 138 < 10 < 10 < 10 < 2 13 20 0.19 520 < 2 201 229 0.05 3 \$114 74 126 < 10 < 10 0.23 < 10 12 20 3 540 < 2 < 2 201 229 0.07 \$115 68 125 < 10 < 10 < 10 0.26 410 < 2 < 2 10 13 201 229 0.01 3 **\$116** 46 140 < 10 < 10 < 10 11 17 0.25 120 < 2 < 2 2 201 229 0.04 s117 < 10 58 134 0.26 < 10 < 10 < 2 8 4 240 4 201 229 < 0.01 18 S118 60 110 < 10 0.20 < 10 < 10 7 < 2 8 24 430 4 201 229 < 0.01 \$119 < 10 102 < 10 < 10 123 0.25 11 8 610 2 < 2 201 229 < 0.01 47 \$120 Hartfichlen

CERTIFICATION:

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Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver British Columbia, Canada V7J 2C1 PHONE: 604-984-0221 FAX: 604-984-0218

To: BURGERT, ARND

242 BOYNE STREET NEW WESTMINSTER, BC V3M 5J8

Project : SUNSHINE COAST Comments: CC: ARND BURGERT

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Page Number :2-A Total Pages :2 Certificate Date: 02-OCT-1998 Invoice No. :19832053 P.O. Number QHB Account

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To: BURGERT, ARND

242 BOYNE STREET NEW WESTMINSTER, BC V3M 5J8

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Page Number :2-B Total Pages :2 Certificate Date: 02-OCT-1998 Invoice No. :19832053 Invoice No. P.O. Number : OHB Account

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Chemex Labs Ltd. Analytical Chemists * Geochemists * Registered Assayers 212 Brooksbank Ave., North Vancouver British Columbia, Canada V7J 2C1 PHONE: 604-984-0221 FAX: 604-984-0218

Project : SUNSHINE COAST Comments: CC: ARND BURGERT

| | | PHONE: 60 | 04-984-02 | | | | | | [| CE | BTIE | ATE | OF A | NALYSIS | S A9832053 |
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| | PREP | Na | Ni | P | Pb | Sb | SC | Sr ppm | TÌ X | Tl ppm | U ppm | V ppm | W ppm | Zn ppn | |
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Analytical Chemists * Geochemists * Registered Assayers

| 212 Brooksbank Ave., | North Vancouver |
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| British Columbia, Canada | a V7J2C1 |
| PHONE: 604-984-0221 | FAX: 604-984-0218 |
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To: BURGERT, ARND

242 BOYNE STREET NEW WESTMINSTER, BC V3M 5J8

Page Number :1-A Total Pages :1 Certificate Date: 12-JUL-98 Invoice No. :19823568 P.O. Number : QHB Account

Project : SUNSHINE COAST Comments: ATTN: ARND BURGERT CC: ARND BURGERT

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Chemex Labs Ltd. Analytical Chemists * Geochemists * Registered Assayers

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242 BOYNE STREET NEW WESTMINSTER, BC V3M 5J8 Page Number :1-B Total Pages :1 Certificate Date: 12-JUL-98 Invoice No. :19823568 P.O. Number : Account :QHB

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Project : SUNSHINE COAST Comments: ATTN: ARND BURGERT CC: ARND BURGERT

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Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

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To: BURGERT, ARND

242 BOYNE STREET NEW WESTMINSTER, BC V3M 5J8 Page Number :1-A Total Pages :1 Certificate Date: 24-JUL-98 Invoice No. :19824807 P.O. Number : Account :QHB

Project : SUNSHINE COAST Comments: ATT:ARND BURGERT CC:ARND BURGERT

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| SAMPLE | PREP CODE | Ag ppm | A1 % | As ppm | Ba ppm | Be ppm | Bi ppm | Ca % | Cđ ppm | Co ppm | Cr ppm | Cu ppm | Fe % | Ga ppm | Hg ppm | R % | La ppm | Mg % | Mn ppm | No ppm |
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242 BOYNE STREET NEW WESTMINSTER, BC V3M 5J8

Project : SUNSHINE COAST Comments: ATT:ARND BURGERT CC:ARND BURGERT

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Page Number :1-B Total Pages :1 Certificate Date: 24-JUL-98 Invoice No. :19824807 P.O. Number : Account :QHB

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212 Brooksbank Ave., North Vancouver British Columbia, Canada V7J 2C1 PHONE: 604-984-0221 FAX: 604-984-0218 To: BURGERT, ARND

242 BOYNE STREET NEW WESTMINSTER, BC V3M 5J8 Page Number :1-A Total Pages :1 Certificate Date: 24-AUG-1998 Invoice No. :19828383 P.O. Number : Account :QHB

Project : SUNSHINE COAST Comments: ATTN:ARND BURGERT CC:ARND BURGERT

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To: BURGERT, ARND

242 BOYNE STREET NEW WESTMINSTER, BC V3M 5J8 Page Number :1-B Total Pages :1 Certificate Date: 24-AUG-1998 Invoice No. :19828383 P.O. Number : Account :QHB

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242 BOYNE STREET NEW WESTMINSTER, BC V3M 5J8

Page Number :1-A Total Pages :1 Certificate Date: 26-AUG-199 Invoice No. :19828382 P.O. Number : Account :QHB

Project : SUNSHINE COAST Comments: ATTN:ARND BURGERT CC:ARND BURGERT

CERTIFICATE OF ANALYSIS A9828382

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| PREP CODE | Ag ppm AAS | Al % (ICP) | Bappm (ICP) | Be ppm (ICP) | Bi ppm (ICP) | Ca % (ICP) | Cđ ppm (ICP) | Coppm (ICP) | Cr ppm (ICP) | Cu ppm (ICP) | Fe % (ICP) | K % (ICP) | Mg % (ICP) | Mn ppm (ICP) |
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242 BOYNE STREET NEW WESTMINSTER, BC V3M 5J8 Page Number :1-B Total Pages :1 Certificate Date: 26-AUG-1998 Invoice No. :19828382 P.O. Number : Account :QHB

Project : SUNSHINE COAST Comments: ATTN:ARND BURGERT CC:ARND BURGERT

CERTIFICATE OF ANALYSIS A9828382

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| | SAMPLE | P | rep Ode | Mo ppm (ICP) | Na % (ICP) | Ni ppm (ICP) | P ppm (ICP) | Pb ppm AAS | Sr ppm (ICP) | Ti % (ICP) | V ppm (ICP) | W ppm (ICP) | Zn ppm (ICP) | | |
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242 BOYNE STREET NEW WESTMINSTER, BC V3M 5J8 Page Number : 1-A Total Pages : 1 Certificate Date: 18-SEP-1998 Invoice No. : 19830821 P.O. Number : Account : QHB

Project : SUNSHINE COAST Comments: ATTN:ARND BURGERT (

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To: BURGERT, ARND

242 BOYNE STREET NEW WESTMINSTER, BC V3M 5J8

Page Number :1-B Total Pages :1 Certificate Date: 18-SEP-1998 Invoice No. :19830821 P.O. Number : QHB Account

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Project : SUNSHINE COAST Comments: ATTN:ARND BURGERT

CC:A.BURGERT

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Project : SUNSHINE COAST Comments: CC: ARND BURGERT

Page Number :1-A Total Pages :1 Certificate Date: 02-0CT-1998 Invoice No. :19832052 P.O. Number Account QHB

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Project : SUNSHINE COAST Comments: CC: ARND BURGERT

Page Number :1 Total Pages :1 Certificate Date: 05-0CT-1998 Invoice No. : 19832686 P.O. Number : QHB Account

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