## ASSESSMENT REPORT ON GEOLOGICAL, GEOCHEMICAL AND GEOPHYSICAL WORK

# ON THE AMPLE/GOLDMAX PROPERTY 

Owned by
Gary Polischuk and David Javorsky
FEB 261996
Gold Commissioner's Offica VANCOUVER, B.C.

GEOLOGICAL SURVEY BRANCH ASSESSMENT REPORTS

DATE RECEIVED
Located on Cayoosh Creek near Lillooet, B.C.

NTS 92J/9E
$50^{\circ} 39^{\prime}$ North Latitude
$122^{\circ} 10^{\prime}$ West Longitude
prepared for
HOMESTAKE CANADA INC.
prepared by
PAMICON DEVELOPMENTS LIMITED
T.C. Scott, FGAC

DATES OF WORK PERFORMED: May 15, 1995 to December 31, 1995
DATE OF REPORT: December, $1995^{\circ} \quad$ SSESSMENTRREPOR

## CUOLDGICRIBRANET

DATE OF REPORT: December, $1995{ }^{\circ}$ - SSESSMENTREANET

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HOMESTAKE CANADA INC.
PROJECT NAME: AMPLE/GOLDMAX TOTAL COSTS 40,417.40

## CODE:

90750
Date of Expenditures: Year Ended December 31, 1995
BESGRIPTON
1.0 SALARIES (IN HOUSE)

| A. KAIP | 4 | 240.00 | 960.00 |
| :--- | :--- | ---: | ---: |
| K. PATTERSON | 2 | 201.00 | 402.00 |
| D. KURAN | 8 | 325.00 | $2,600.00$ |
| G. POLISCHUCK | 2 | 175.00 | 350.00 |
| Seasonal |  |  |  |
|  |  |  | 94.00 |

### 1.1 FEES

(CONSULTANTS)
PAMICON DEVEL.
47
470.10

22,094.70
Subtotal
22,094.70
339.70

3,397.00
Subtotal
3,397.00
(ASSAY, METALLURGICAL)

| Soil | 239 |
| :--- | ---: |
| Rocks | 99 |
| Thin Sections | 8 |

4.0 FIELD/CAMP

Field Supplies

| 13.05 | $3,118.95$ |
| :--- | :--- |
| 17.25 | $1,707.75$ |
| 92.25 | 738.00 |

Subtotal
5,564.70

### 5.0 TRAVEL

| Lodging | 169.00 |
| :--- | ---: |
| Meals | 57.00 |
| Airfare | 0.00 |
| Taxi/Car rental/mileage | 270.00 |
|  | Subtotal |

23.00

Subtotal

Subtotal
496.00

## STATEMENT OF COSTS

HOMESTAKE CANADA INC.

| PROJECT NAME: CODE: <br> Date of Expenditu | $\begin{array}{r} \text { AMPLE/GOLDMAX } \\ 90750 \end{array}$ <br> Year Ended December 31, 1995 | TOTAL CO | 40,417.4 |  |
| :---: | :---: | :---: | :---: | :---: |
| DESCRPTION | AMOUMT | RATEW) | लि15\% | TOTA… |
| 6.0 SUPPORT ACTIVITIES |  |  |  |  |
|  | Communications |  | 0.0 |  |
|  | Maps/publications/photo |  | 4,436.00 |  |
|  | Drafting |  | 0.0 |  |
|  | Office supplies |  | 0.0 |  |
|  | Freight/shipping |  | 0.0 |  |
|  |  | Subtotal |  | 4,436.00 |
|  |  | TOTAL |  | 40,417.40 |

Apportionment of Expenditures
$\$ 40,400$ applied as assessment work to the Ample group claims.

### 1.0 INTRODUCTION

An exploration program comprising survey grid construction, hand trenching, geological mapping, bedrock sampling, and geochemical and geophysical surveys was conducted on the Ample-Goldmax Property. The work was undertaken by Pamicon Developments Limited between July 13 and July 29, 1995 on behalf of Homestake Canada Inc. and was based on recommendations put forth in a report by Kiap and Patterson (1995). The field work was conducted by T. Cameron Scott under the supervision of Mr. David Kuran, Homestake Canada Inc., and Mr. Steve Todoruk, Pamicon Developments Limited.

During the course of the above work program, 900 metres of horizontally chained base line oriented at $290^{\circ}$ and 7550 metres survey line, spaced 100 metres apart was constructed on the property. A total of 171 soil samples collected from the grid area were submitted for geochemical analysis focusing on $\mathrm{Au}, \mathrm{Ag}, \mathrm{As}, \mathrm{Pb}$ and Zn content. VLF-EM and Magnetic geophysical surveys were conducted over the grid area by S.J. Geophysics's personnel. Trenching at 3 geochemically anomalous sites, as indicated by the results of detailed soil survey over the "A" Zone conducted in May, 1995, totalled 29.5 metres in length and amounted to 40.5 cubic metres excavated by hand. The trenches were mapped and channel sampled. These samples and an additional 28 rock samples collected during the course of property mapping were submitted for the same elemental analyses as were the soil samples. This report describes the results obtained from the above work and includes conclusions and recommendations based upon them.

### 2.0 LOCATION, ACCESS AND PHYSIOGRAPHY

The northeast corner of the Ample-Goldmax Property is located approximately 7 kilometres west of Lillooet, British Columbia, Figure 1. The N.T.S. map reference is SHALALTH 92J/C9. The current magnetic declination for the area is $21.53^{\circ} \mathrm{E}$ and the U.T.M. Grid North is $0.58^{\circ} \mathrm{E}$. Access through the centre of the property is made via the Duffey Lake road which runs along the north side of the Cayoosh River canyon. This facilitates the use of foot paths for investigating the adjacent slopes. However, while a network of logging roads services the eastern portion, much of the property requires the use of a helicopter for effective access.

Elevations range from 450 metres, at river level, to approximately 1800 metres atop the mountain immediately north of the Ample Mine. The steep terrane is characterized by escarpments, coarse talus trains and often over steepened, eluvial fans. The incised canyon in the eastern portion of the property exposes eluvial accumulations in excess of 30 metres, while at highway level, accumulations in excess of 6 metres can be expected. The eluvial slopes, carpeted with bunch grass, support an open forest of


AMPLE-GOLDMAX PROPERTY
HOMESTAKE CANADA INC.

LOCATION MAP

PAMICON DEVELOPMENTS LIMITED ${ }^{71.1675}$ Wes hemes
Geologist: T.C.S. ${ }^{\text {NTS: }} 92 \mathrm{~J} / \mathrm{GE} \left\lvert\, \begin{aligned} & \text { Date: } \\ & \text { Dec. } \\ & \end{aligned}\right.$

Douglas fir interspersed with pine. Few outcroppings are found on the eluvial slopes. The climate can be considered semi-arid with a mean annual precipitation of 30 to 50 cm . Mean temperatures range from $-10^{\circ}$ to $0^{\circ} \mathrm{C}$ in January to $18^{\circ}$ to $22^{\circ} \mathrm{C}$ in July. However, short term temperature extremes are not uncommon.

### 3.0 CLAIMS

The property, 56 units in size, comprises 13 mineral claims, Figure 2. All are contained in the Ample-Goldmax Group. Records of the British Columbia Ministry of Energy, Mines and Petroleum Resources indicate that the following claims, located in the Lillooet Mining Division, are owned by Sharon and Gary Polischuk of Lillooet, B.C. and Dave Javorsky of Vancouver, B.C.

Table 3.0.1
CLAIM DATA

| CLAIM <br> NAME | NO. OF <br> UNITS | TENURE <br> NUMBER | DATE OF <br> RECORD |
| :--- | :---: | :---: | :---: |
|  |  |  |  |
| Goldmax \#1 | 1 | 229407 | February 28 |
| Goldmax \#2 | 1 | 229408 | February 28 |
| Goldmax \#3 | 1 | 229409 | February 28 |
| Goldmax \#4 | 1 | 229410 | February 28 |
| Goldmax \#5 | 1 | 229412 | March 13 |
| Goldmax \#6 | 1 | 229413 | March 13 |
| Goldmax \#7 | 1 | 316221 | February 28 |
| Goldmax \#8 | 9 | 316266 | March 1 |
| Goldmax \#9 | 1 | 316267 | February 28 |
| Goldmax Fr. | 1 | 316306 | March 1 |
| Goldmax \#10 | 10 | 317079 | April 20 |
| Ample | 8 | 314521 | October 28 |
| Noel (Arthur) | 20 | 317008 | April 15 |



### 4.0 HISTORY

Mining activity in the area dates back to the late 1850's and 60's with the discovery of placer gold in the lower Fraser River drainage system. Locally, the pursuit and development of placer deposits along the lower reaches of the Cayoosh River led to the subsequent discovery of bedrock gold occurrences up stream. The Golden Cache mine, started in 1887, was the first of several small ventures to undertake development of the various showings. Intermittent activity to date, has not been successful in establishing a viable ore body in the vicinity of the Ample-Goldmax property. However, 60 kilometres to the west, production from lode gold deposits of Bridge River area was substantial. The most notable operations were the Pioneer and Bralorne mines which, between 1929 and 1945, produced 1.7 million ounces gold at a grade of approximately 16 grams to tonne. These deposits and the Ample-Goldmax discovery are similarly hosted by members of the Bridge River Terrane.

Claims of the Ample-Goldmax group cover much of the area previously held under Crown Grants which were clustered around the Ample Mine and adjacent prospects. While some historical activity is evident in the upper portion of the grid area, formerly C.G. L529, the "A" Zone showings were apparently unknown prior to Mr. Polischuk's recent discovery.

### 5.0 REGIONAL GEOLOGY

The Bridge River Terrane (BRT), located at the boundary between the Intermontane and Insular Superterranes, extends for 100 kilometres northwest from Lillooet, Figure 3. Mapping by Coleman (Coleman and Parrish, 1991) indicates the Mesozoic BRT to be a complex zone of faults and fault bounded tectnostratigraphic assemblages. These assemblages comprise a number of oceanic sedimentary and volcanic members as well as their metamorphic equivalents. Deformation related to mid-Cretaceous - Late Eocene dextral, strike-slip faults and normal faults generally obscures the older Mesozoic accretionary structures.

The stratigraphic units of the BRT have been intruded by numerous dykes, sills and stocks which range in age from Mesozoic to Tertiary and in composition from augite diorite (Bralorne Intrusions) to quartz monzonite (Cayoosh Creek). The latter, an ovoid plug 2 kilometres long, straddles Cayoosh Creek at the corner of the property, 3.5 kilometres southwest of the Ample Mine. Elongate bodies of ultrabasic rocks are also prominent within the western part of the Terrane.

The geology with major faults and summarized structural data adjacent to Lillooet is shown in Figure 4. Cross section D-D, Figure 5, illustrates the structural setting and stratigraphy proximal to the Ample-Goldmax property. Here, the Bridge River Schist


Fig. 1. Map of southwest British Columbia showing major lithological units and bounding faults referred to in the text. Abbreviations are CC, Cache Creek; BRT, Bridge River terrane; CAD, Cadwallader terrane; and TLC, Tatla Lake complex.

From: Coleman and Parrish: Eocene Strike Slip, SW British Columbia

| AMPLE-GOLDMAX PROPERTY |  |  |  |
| :---: | :---: | :---: | :---: |
| HOMESTAKE CANADA INC. |  |  |  |
| TECTONIC SETTING |  |  |  |
|  |  |  |  |
| Geologist T.C.S. |  | Figure: | 3 |



## Lithologic Description of Map Units

| Map Unit | Lithologic Description | Age, References |
| :---: | :---: | :---: |
| Lillooet Group | $>850$ m thick sequence of marine argillite, fine-grained sandstone, and grewwacke of volcanic provenance; deposited in the TyaughtonMethow basin. Cross bedding, graded beds, rip-up clasts and load structures are common. | Jurassic to Eariy Cretaceous age Duffell and McTaggart, 1952; Treain, 1961; Jeletsky, 1971] |
| Cadwallader Group | Coarse-grained sandstone and lenticular thick beds of conglomerate. Pebbles and up to 30 cm cobbles of macrofossil-bearing limestone, granitic rocks, and green dacite are supported by a micritic limestone matrix. | Late Triassic Hurley Formation [Rusmore, 1987, Schiarizza et al. 1990; Coleman, 1990] |
| Bridge River (in part equivalent to the Hozameen Group) | A structurally chaotic melange of ribbon radiolarian chert, greenstone, pillow basalt, greywacke, limestone olistoliths, and lenses of sheared serpentinite. It has a structural thickness of $2.5-4.5 \mathrm{~km}$ in this panel (Figure 3); metamorphic grade is prehnite-pumpellyite facies [Potter, 1986]. | Middle Triassic to Middle Jurassic [Potter, 1983; Orchard, 1981; Cordey, 1988] |
| Shulaps ultramafic complex | Variably serpentinized mantle harzburgite with minor dunite and orthopyroxenite. Structurally underlying the mantle harzburgite is olivine cumulate-derived serpentinite melange. Volcanic and sedimentary blocks found throughout the melange, presumably derived from the Bridge River and the Cadwallader Groups, represent incorporated pieces of the footwall over which the Shulaps complex was emplaced. | Late Triassic to Early Jurassic(?) [Leech, 1953; Monger, 1977; Nagel, 1979; Wright et al., 1982; Potter, 1986; Calon et al. 1990; Schiarizza et al. 1990] |
| Eocene (?) sedimentary rocks | 1500 m of well-bedded conglomerate (up to 15 cm clasts), black shale, and sandstone. Clasts are mostly of the Bridge River Group with locally abundant felsite. Clasts of Bridge River schist, phyllite, and associated granitoid intrusions from the footwall of the Mission Ridge fault are absent. Probable Metasequoia stem fossils are common. | Mid-Cretaceous to Middle Eocene age (G. Rouse, pers. comm., 1990). An Eocene age is preferred due to probable Metasequoia, which is common in Eocene deposits of southern B.C. |
| Bridge River Schist | Upper greenschist to lower amphibolite facies metamorphosed equivalents of the Bridge River Group with syn- to posttectonic granitic to felsitic intrusions. Lithologies include metachert, phyllite, chlorite schist, marble, orthogneiss, and minor tale schist. Metamorphic grade is middle to upper greenschist facies. | Middle Triassic to Middle Jurassic age, on the basis of correlation to Bridge River Group [Coleman 1990] |
| Brew Group | The Brew Group, estimated to be at least 2500 m thick, includes argillite, impure quartzite, conglomerate, and their greenschist facies metamorphosed equivalents. Correlated with Lillooet Group. | Jurassic(?) to Early Cretaceous [Duffell and McTaggart, 1952] |
| Mission Ridge Pluton | Eocene Intrusive Rocks <br> Foliated coarse-grained homblende-biotite granodiorite. The pluton transects the foliation in the Bridge River Schist (Figure 2) in map view yet has a variably developed foliation with the same orientation as the foliation of the Bridge River Schist. | $47.5 \pm 0.3 \mathrm{Ma}$ U-Pb zircon age (this paper) |
| Felsite | Leucocratic felsite, in part homblende-phyric, intruding the Mission Ridge fault zone | $<46 \mathrm{Ma}$ |

Units are described in structurally descending order from east to west as they are located in Figure 2.

From:
Coleman and Parrish: Eocene Strike Slip, SW British Columbia


Fig. 3. Cross sections $\mathrm{A}-\mathrm{A}^{\prime}, \mathrm{B}-\mathrm{B}^{\prime}, \mathrm{C}-\mathrm{C}^{\prime}$, and $\mathrm{D}-\mathrm{D}^{\prime}$ are from corresponding lines in Figure 2. Patterns refer to legend of Figure 2. Note the truncation of the Mission Ridge pluton by the Mission Ridge and Marshall Creek faults in cross sections B-B' and C-C'. No vertical exaggeration.

## From:

Coleman and Parrish: Eocene Strike Slip, SW British Columbia

(BRS), comprising argillite, chert, greenstone, phyllite and chloritic schist is placed atop highly deformed greywacke and siltstone of the $U$. Jurassic-Cretaceous Brew Group by the shallow northeast dipping Cayoosh Fault. This fault is considered to be a thrust fault. Separated by a segment of the gently north-dipping Mission Ridge fault, the M. Triassic-M. Jurassic Bridge River Group comprising chert, argillite, greenstone, limestone and serpentine overlies the BRS.

At the northeast corner of the property, the Marshall Creek Fault truncates the Mission Ridge fault and juxtaposes the BRS with the Brew Group. The northwest-trending Mission Ridge fault dips steeply to the southwest. It can be traced for 150 kilometres and displays a dextral strike slip of up to 15 kilometres with a normal dip slip estimated at 3.5 kilometres.

### 6.0 PROPERTY GEOLOGY

Detailed mapping was carried out on the property utilizing the Duffy Lake road and the survey grid as control. Emphasis was put on the area south of the base line uphill from the road. In this report, foliation is used to describe the orientation and fabric of the rocks as bedding, cleavage and mineral alignment are generally indistinguishable from one another, Figure 6.

### 6.1 Stratigraphy

Two shallowly and oppositely plunging anticlines, overturned to the north, are indicated to occur within the Brew Group strata exposed along the Duffey Lake road (Coleman and Parrish, 1991). These may account for the large northeast to northwest variance in direction of the shallow to intermediate dips displayed by foliation and bedding attitudes observed in the strata.

### 6.1.1 Brew Group

Brew Group sediments are exposed in outcroppings south of the base line along the road at an elevation of approximately 640 metres. The strongly deformed black shales, interbedded with 0.3 to 1.0 metre greywacke beds, display pronounced low angle shearing subparallel to bedding and foliation. This has resulted in incremental but significant segmentation of crosscutting quartz veinlets and alteration zones. Some of the quartz veins have developed a boudinage structure with segments rotated subparallel to foliation. Several late, intermediate angled, westerly to northerly dipping faults display small normal offsets of the strata. Higher in elevation, towards the cliffs at $13+00 \mathrm{E}-7+00 \mathrm{~N}$, the greywacke content increases. The greywacke commonly contains shale laminae and grades into a lithic wacke with characteristic 1 to 2 centimetre shale clasts.

Above the greywacke-black shale unit between approximately 870 and 950 metres in elevation, lies a calcareous unit comprising interbedded black calcareous shale and grey-black calcareous greywacke. The latter commonly occurs as lenses or boudins measuring 1 metre thick and several metres long. A matting of white, crusty to fibrous efflorescence coats most shale outcroppings. Subsequent petrographic work, Specimen CS 95-07-18.3 from 12+80E-6+80N, indicates this unit to also contain altered Andesitic rock (Leitch, 1996).

Rocks of the Brew Group, lying above the calcareous horizon, become more foliated and comprise buff to pale green phyllites and chloritic schists, greywacke and lithic wackes. The latter contain minute, $0.5-1.0 \mathrm{~mm}$ quartz eyes which may indicate a significant tuffaceous component to the original sediments. This is supported by the petrographic determination of Specimen CS 95-07-20.1, from 10+90E-7+15N, as an altered felsic-intermediate Crystal-Lithic Tuff (Leitch, 1996).

### 6.1.2 Bridge River Schist

At an elevation of 1100 metres in the vicinity of $10+00 \mathrm{E}-10+00 \mathrm{~N}$, interbedded siliceous argillite, $2-4 \mathrm{~cm}$ dark chert bands, phyllite and chloritic mafic schist occur in the upper plate of the shallow north dipping Cayoosh Fault. The chert bearing sequence can be traced northeasterly to $10+00 \mathrm{E}-3+25 \mathrm{~N}$ where they conformably (?) overlie epidote-rich metavolcanics. These strata are assumed to be representative of the Bridge River Schists.

Surrounded by eluvium, greenstone outcroppings at $15+75 \mathrm{E}-10+00 \mathrm{~N}$ comprised chlorite schist. While the foliation is generally consistent with that found elsewhere within the Brew Group, the lack of shale and degree of chloritization is not. Specimen CS 95-07-17.2, identified as Altered Basaltic Andesite (Leitch 1996), is similar to Specimen CS 95-07-17.7 recovered from outcroppings at $10+00 \mathrm{E}-9+50 \mathrm{~N}$ from within the above BRS.

### 6.2 Intrusive Rocks

A talus train of fine to medium grained hornblende diorite extends uphill from 15+00E and outcroppings of the same occur between $10+50 \mathrm{E}$ and $13+50 \mathrm{E}$ at $7+50 \mathrm{~N}$. Trending $290^{\circ}$, these cut across the fabric of the Brew Group rocks. Hornfelsed sediments and a chilled, border -phase diorite occur at $13+50 \mathrm{E}$. At $10+75 \mathrm{E}$, sericite-pyrite alteration is imposed on the bordering schist. The dyke is $30-50$ metres wide but its length is unknown. It doesn't outcrop on the road below nor has it been observed, as yet, in contact with the BRS above. Petrographic studies of Specimen CS 95-07-18.1 indicate this rock type to be typical of a fined grained version of the Bralorne diorite (Leitch, 1996).

Siliceous-looking grey sills, approximately 0.3 metres in width, lie sub parallel to foliation in greywacke outcroppings along the road near $14+50 \mathrm{E}-3+75 \mathrm{~N}$. Petrographic studies on Specimen CS95-07-22.6 indicate these to be intensely altered diorite or gabbro, similar to the above diorite (Leitch, 1996).

### 6.3 Quartz Veining and Mineralization

Several styles of quartz veining occur on the property. These include: conformable sheared veins (described above), stockworks, quartz-carbonate veins, large bull quartz veins and chlorite-sericite schist hosted ribbon veins. Of these, the last two appear most important with respect to gold distribution.

### 6.3.1 Stockworks

Zones of quartz stockworks comprising veinlets of less than 1 cm in width, which lie conformable to and crosscutting foliation, occur throughout the Brew Group rocks. Most commonly, they are found within the more schistose members and are, in part, likely an expression of excess silica sweated out of the host rocks as a result of regional metamorphism.

### 6.3.2 Quartz-Carbonate Veins

Concentrations of small, irregular, quartz-carbonate veins occur throughout the area. These veins often are enclosed in a hard, bleached, pinkish to buff coloured, alteration envelope up to several metres wide. Small greenish patches, possibly altered clasts, are common. Mariposite (?) is generally present as are sparse amounts of fine grained pyrrhotite and pyrite. A typical example within Brew Group rocks occurs on the road near $16+50 \mathrm{E}-7+50 \mathrm{~N}$ where a cluster of narrow veins are contained in an envelope displaying a vertical dip and a $100^{\circ}$ strike. Sub horizontal shears truncate the zone. Petrographic studies indicate a specimen from this outcropping, CS 95-07-22.1, to be altered mafic rock, possibly diorite to gabbro (Leitch, 1996). Similar occurrences are found at $13+50 \mathrm{E}-8+25 \mathrm{~N}$, at Trench $5 \mathrm{~W}-4 \mathrm{~S}$ and, although hosted by chlorite-serpentine schist, at the footwall of the Upper Vein zone. The only occurrence to carry significant metal values was in Trench 5W-4S where Sample No. 22580 reported 127 ppb Au and 418 ppm As.

### 6.3.3 Bull-Quartz Veins

Bull-quartz in the form of large, gash-like veins occur at four locations within the grid area. These include the "C" Zone, the "B" Zone, the 10-10 Vein and the Upper Vein. Characteristics common to these veins are:

1) lengths in excess of 20 metres and widths in excess of 0.3 metres.
2) inclusions of black silicified wall rock.
3) bordering faults with chloritic selvage.
4) similar orientations and geometry including pronounced inflections as they assume northwesterly strikes with near vertical dips at their southern extremities.
5) very low in sulphide, containing only traces of py, cp , asp? and Fe-oxides.
6) footwalled by contorted sheared strata containing a chaotic quartz stockwork.

### 6.3.3.1 The "C" Zone

The "C" Zone, located near 18+00E-12+00N, comprises two parallel white quartz veins averaging 0.5 metres in width that can be traced over a length of 50 metres (Kiap and Patterson, 1995). Lying parallel to the regional foliation, these veins strike southwest and dip $10^{\circ}$ to the northeast. Samples taken during the initial property examination reported assay values of 5 and 60 ppb gold.

### 6.3.3.2 The "B" Zone

The "B" Zone vein, contained within the calcareous shale-greywacke unit, occurs at approximately $12+60 \mathrm{E}-7+00 \mathrm{~N}$. Exposed for a length of over 20 metres in a near vertical escarpment, the vein strikes $110^{\circ}$ and dips $55^{\circ} \mathrm{N}$ and lies subparallel to foliation. It varies from 0.6 to 0.8 metres in width. At the south end of the exposure, the vein arches forming what appears to be a saddle reef with a plunge of $10^{\circ}$ towards $315^{\circ}$. The vein splits atop the crest of the arch producing a near vertical, 2 metre wide composite vein comprising narrow, parallel ribbons of quartz which strike $310^{\circ}$. Although highly deformed black shale containing a stockwork of $2-10 \mathrm{~cm}$ quartz veins segmented by strong shearing at $240^{\circ} / 40^{\circ} \mathrm{N}$ forms the footwall of the vein, a strong cleavage oriented $305^{\circ} / 85^{\circ} \mathrm{N}$ persists below the arch area.

The immediate wall rock for the vein appears as silicified black shale, fragments of which are often contained within the vein itself. The interface is marked by sub parallel, late faults along which traces of chalcopyrite can be found. A black chloritic selvage is evident.

A 0.6 metre channel sample, No.22564, cut from back of a shallow adit at the vein's north end, reported an assay of $1.97 \mathrm{~g} / \mathrm{A}$ Au. Adjacent foot and hanging wall samples, No.s 22565 and 22566 , returned assays of 466 ppb and 843 ppb Au over widths of 1.0 metres and 0.3 metres respectively. At 6.0 metres and 19.0 metres to the south, vein samples, No.s 22567 and 22568 , returned assays of 1.51 and $1.25 \mathrm{~g} / \mathrm{t}$ Au over widths of 0.65 metres and 0.8 metres respectively. The above samples also reported anomalous As values ranging from 149 ppm to 1800 ppm . No samples were taken from above the arch due to inaccessibility.

### 6.3.3.3 The $\mathbf{1 0 - 1 0}$ Vein

The 10-10 Vein, lying adjacent to grid station $10+00 \mathrm{E} 10+00 \mathrm{~N}$ ( 1100 metres elev.), varies in width from 0.2 to 0.6 metres over an intermittently exposed length in excess of 50 metres. Oriented at $330^{\circ} / 40^{\circ} \mathrm{N}$, it is hosted by siliceous shale and mafic schist of the BRS which, in the hanging wall display a strong $310^{\circ} / 45^{\circ} \mathrm{N}$ foliation. At its southwestern extremity, the vein displays a sharp inflection and assumes a near vertical, northwesterly orientation.

The foot wall is marked by a fault zone in excess of 1.5 metres thick and is assumed to be the Cayoosh Fault which juxtaposes the BRS atop the Brew Group. This zone, with its chaotic assemblage of silicified shale, white quartz clasts and disrupted quartz stringers, displays intense shearing oriented at $290^{\circ} / 25^{\circ} \mathrm{N}$ and may truncate the $10-10$ Vein a short distance to northeast.

The 10-10 Vein, like the "B" Vein, is bordered by late sub parallel faults containing chloritic selvage and traces of pyrite, chalcopyrite, arsenopyrite and limonite. Four vein samples, No.s 22551-2, 22555, 22604, and three wall rock samples, No.s 22556, 22602-3, all reported assay values of less than 44 ppb Au and 134 ppm As.

### 6.3.3.4 The Upper Vein

Located at $9+00 \mathrm{E}-9+25 \mathrm{~N}$ (1190 metres elev.), the Upper Vein is hosted by chloritic mafic schists of the BRS displaying a strong $310^{\circ} / 25^{\circ} \mathrm{N}$ foliation. The 0.2-0.3 metre wide vein, exposed at the base of a 50 metre escarpment, maintains an orientation of $260^{\circ} / 48^{\circ} \mathrm{N}$ for 15 metres to the southwest where, at a sharp inflection, it assumes an orientation of $290^{\circ} / 80^{\circ} \mathrm{N}$. Like the other bull quartz veins, it is bordered by late faults with chloritic selvage and minor yellowish limonite. No sulphides were evident. A 0.2 metre sample from the vein, No. 22557 reported an assay of 5 ppb Au and 110 ppm As.

Foot wall rocks appeared to be highly contorted chlorite-serpentine schist which host a chaotic quartz stockwork of narrow, discontinuous veinlets. The rock is very hard and contains patches of alteration which resemble that of the quartz-carbonate vein alteration envelope. A bright green micaceous mineral (mariposite?) is conspicuous within this assemblage. Chip sample No. 22558, from across 0.6 metres, returned assay values of 6 ppb Au and 257 ppm As.

### 6.3.4 Chlorite-Sericite Schist Hosted Ribbon Veins

This style of quartz veining is exposed in Trench 6.2W-3S. Here, undulating ribbons of sub parallel, 0.5 to 8.0 cm wide, white, quartz veins occur in a chlorite-sericite schist. Lying parallel to foliation, these veins display, in general, a northerly strike with a moderate westerly dip. The known width and strike length, of at least 0.7 metres by 5.0
metres, is limited by the size of the trench. Selvages of the veins comprise chlorite and limonite while the veins themselves contain traces of arsenopyrite and free gold. Assay values are discussed in the following description of the "A" Zone. So far, this occurrence is unique on the property not only for its gold content but also for its vein orientations.

## 6.4 "A" Zone Mineralization

The "A" Zone, centred at $11+50 \mathrm{E}-9+75 \mathrm{~N}$, was discovered through diligent application of prospecting techniques. These included the pursuance of auriferous quartz float, as determined by both visual inspection and subsequent assay results, and the exposing of bedrock, through the construction of prospecting pits, until a source was found. Subsequent investigations, initiated by HOMESTAKE CANADA INC., have identified an area measuring a minimum of 50 by 100 metres from which anomalous and economically encouraging gold values have been realized, Figures 7a to 7d.

The "A" Zone showings comprise three trenches dug to bedrock within a field of highly anomalous gold and arsenic soil geochemistry as defined by detailed sampling at a spacing of 10 metres along lines approximately 40 metres apart. Trench 6.2W-3S, at an elevation of 980 metres, is located at $11+35 \mathrm{E}-9+70 \mathrm{~N}$ on the property grid. The character of the exposed quartz veins, described above, is the most uniform stratigraphy found within the three trenches and the most auriferous. The weighted average of three channel samples, No.s 22605-7, taken across the veining at 2 metre intervals, is an encouraging $5.86 \mathrm{~g} / \mathrm{t}$ representing a length of 5.0 metres. The elevated arsenic values and anomalously low copper-base metal values reflect the relatively simple mineral assemblage of native gold and arsenopyrite plus pyrite as observed in the outcropping.

Trench 6W-2S, 20 metres to the east at $11+53 \mathrm{E}-9+80 \mathrm{~N}$ and at an elevation of 965 metres, expose an intensely fractured, chaotic assemblage of contorted chloritic schists, black argillaceous schists, brecciated quartz veins and 0.3-0.5 metre wide quartz vein segments. This is cut by metre wide shear zones displaying a northwesterly strike and steep southwesterly dips. Quartz clasts within the schists account for up to $20 \%$ of their volume.

Adjacent channel samples, No.s 22591-22600, cut from across the fabric of the bedrock structures and representing the more northerly 6.9 metres of the trench, returned a weighted average grade of $4.01 \mathrm{~g} / \mathrm{t} \mathrm{Au}$. As in trench $6.2 \mathrm{~W}-3 \mathrm{~S}$, arsenic values are elevated but variable and copper-base metal values are anomalously low. In general, the rock is well weathered with abundant limonite present but only traces of arsenopyrite and pyrite are apparent.

Another 45 metres to the southeast, lies Trench $5 \mathrm{~W}-4 \mathrm{~S}$ at an elevation of 945 metres.


(Sample near-vertical) Chlorite-sericite schist ribboned with 0.5 to 5.0 cm qtz veins parallel foliation, 12 qtzv over 0.7 m . 40\% qtz;

## 22606/0.6m

 $2.35 \mathrm{~g} / \mathrm{t} \mathrm{Au}$Chlorite-sericite schist ribboned with 0.5 to 3.0 cm qtz veins; weathered and limonite, $50 \%$ qtz;

22607/0.5m
$5.17 \mathrm{~g} / \dagger \mathrm{Au}$
Chlorite-sericite schist, weathered and limonitic; qtz veins $2-8 \mathrm{~cm}$ wide, limonitic. chloritic selvage; tr. asp and black oxide (?); 70\% qtz.;

NOTE:
Several small specks of Au obsered in quartz clasts removed during excovation of trench. Vein material generally crackled in appearance


TRENCH SIZE
Length 5.0 m
Width 1.5 m

Depth 1.8 m
Volume $\sim 8.0$ Cu.m

| Contorted chloritic schist containing $2-3 \mathrm{~cm}$ quartz vein fragments; limonite, siderite -fissile; 3\% qtz. <br> Crushed quartz vein; limonite, sid. $-75 \%$ qtz <br> Shear zone; fissile chloritic schist tr. qtz <br> Crushed chloritic schist with $6 \times 2-3 \mathrm{~cm}$ qtz $v$ on fractures; $15 \%$ qtz <br> Hard foliated chloritic rock (lithic wacke?) $-2 \%$ qtz <br> Hard foliated chloritic rock (lithic wacke?) cut by $0.5-2.0 \mathrm{~cm}$ qtz carb gashes; tr. py and silver-grey sulphide (dusty coating) in veins; limonite, sid.; $10 \%$ gtz <br> Sheor zone; fissile chloritic schist; limonitic: contains qtz augen; late rusty joints cut shearing; $5 \%$ qtz <br> Chloritic schist containing 5 cm qtz v . -limonite, sid., tr. asp.; $15 \%$ qtz <br> Very hard chloritic rock; ~30\% irregular qtz mosses; moriposite and chloritic selvege adjacent qtz.; limonite, sid.; py on late sid-calc gashes; $30 \%$ qtz <br> Finely laminated chloritic schist; $2 \times 1 \mathrm{~cm}$ and $1 \times 4 \mathrm{~cm}$ qtz vs. crosscut shearing; 12 cm qt $v$ parallel to shearing; very rusty -limonite goethite; chloritic selvege with qtz. veins; $15 \%$ qtz <br> Crenulated finely laminated silty chloritic schist (same as 22577) with 1 mm atz stringers parallel to laminations; 3 cm atz $v$ ougen; folded; limonite; 4\% qtz <br> Crenulated, finely laminated, silty, chloritic schist; sideritic lomellae, $1-2 \mathrm{~cm}$ qtz vs parallel foliation; contains 5 cm qtz vein augen: limonite; $2 \%$ qtz $22585 / 0.85 \mathrm{~m}=\text { Sample No. } / \text { Width }$ |  |  |
| :---: | :---: | :---: |
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Here, the undulating chloritic schist is more continuous than in the previous trench. A minor synclinal structure, plunging $5^{\circ}$ towards $140^{\circ}$ is apparent in finely crenulated schist at the south end of the exposure. Quartz content is variable ranging from $3 \%$ to $30 \%$. This occurs as 1 mm stringers, $2-3 \mathrm{~cm}$ veinlets and $5-12 \mathrm{~cm}$ augens lying parallel to foliation as well as $1-4 \mathrm{~cm}$ gashes cross cutting the foliation. A zone of hard silicified mariposite(?)-bearing rock, cut by $0.5-2.0 \mathrm{~cm}$ quartz-carbonate gashes is exposed in the centre of the trench. This is similar to the zone typified by Specimen CS 95-0722.1. Two near vertical, west-northwesterly trending shears, 0.3 and 0.5 metres wide, are also exposed in the trench.

While limonite +/- goethite and siderite (?) are common, only traces of sulphides in the form of pyrite and a dusty, silver-white mineral (?) are apparent in the exposure. Unlike Trench $6 \mathrm{~W}-2 \mathrm{~S}$, only elevated levels for Au and As are indicated by channel sample assays. The one exception is Sample 22587, from a 0.35 metre wide crushed quartz vein, which assays $1.68 \mathrm{~g} / \mathrm{t}$ Au and 1566 ppm As. Again, copper-base metal values are anomalously low.

Six samples from the above trenches were re-submitted for assay in order that contributions from oversize ( +150 mesh) particles could be assessed. In the initial assay, a 30 gram sample of unscreened pulp (estimated 95\%-150 mesh) was used in the analysis. In the re-assay, the total pulp was screened at 150 mesh and the total of each fraction was assayed. The resulting values were mathematically combined to calculate the assay value for the total sample. A comparison of the results from the two assay methods is illustrated in Table 6.4.1 In two of the six re-assays, a significant portion of the total gold assay value is contributed by over-sized particles representing less than $1 \%$ of the total sample weight. The assay results returned from the original 30 gram unsieved samples should therefore be considered semi-quantitative. A more accurate estimation of the true gold content may be achieved through the comparison of results from repeated sampling of bedrock and the use of larger assay samples in the analytical procedure.

A description of all rock samples submitted for assay and the results thereof are contained in the Appendices.

Table 6.4.1
Comparison of Assays: Check on Influence of Oversize Au Particles

|  | Assay ${ }^{*}$ | Assay ${ }^{* *}$ |  |  |  |  |  | Assay 1 versus: |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sample No. | Au g/t | $\begin{gathered} \mathrm{Au}(\mathrm{~T} t \mathrm{t}) \\ \mathrm{g} / \mathrm{t} \end{gathered}$ | $\begin{gathered} \mathrm{Au}+150 \\ \mathrm{~g} / \mathrm{t} \end{gathered}$ | $\begin{gathered} W t+150 \\ g \end{gathered}$ | $\begin{gathered} \mathrm{Au}-150 \\ \mathrm{~g} / \mathrm{t} \end{gathered}$ | $\begin{gathered} \text { Wt-150 } \\ \mathrm{g} \end{gathered}$ | Total Wt <br> g | $\begin{gathered} \mathrm{Au}(\mathrm{~T} \mathrm{t}) \\ \% \pm \end{gathered}$ | $\begin{gathered} A u-150 \\ \% \pm \end{gathered}$ |
| 22570 | 2.58 | 2.16 | 1.8 | 6.87 | 2.15 | 227.40 | 234.27 | +16.3 | +16.7 |
| 22591 | 8.90 | 11.25 | 479.6 | 1.08 | 7.77 | 246.10 | 247.18 | -26.4 | +12.7 |
| 22595 | 6.27 | 5.66 | 7.1 | 9.51 | 5.61 | 204.17 | 213.68 | +9.7 | +10.5 |
| 22596 | 5.10 | 5.28 | 3.7 | 0.27 | 5.28 | 214.85 | 215.12 | -3.5 | -3.5 |
| 22605 | 9.37 | 8.67 | 63.2 | 2.31 | 7.83 | 247.79 | 250.10 | +7.5 | +16.4 |
| 22607 | 5.17 | 4.46 | 5.0 | 0.20 | 4.46 | 212.47 | 212.67 | +13.7 | +13.7 |

$$
\begin{array}{ll}
\text { * Sample } & \text { - crushed and pulverized but not sieved (est. }>95 \% \text { is }-150 \mathrm{~m} \text { ) } \\
& \text { - assay sample } 30 \mathrm{~g}
\end{array}
$$

### 6.5 Other Mineralization

Of special note are the results of Sample 22562, taken from a rusty roadside outcropping of contorted, pyritic, black shale at $7+00 \mathrm{~N}$. This composite grab sample returned an assay of $950 \mathrm{ppb} \mathrm{Au}, 9.5 \mathrm{ppm} \mathrm{Ag}, 3574 \mathrm{ppm} \mathrm{Pb}, 3507 \mathrm{ppm} \mathrm{Zn}$ and 5802 ppm As. The high silver-base metal content is extremely anomalous with respect to the very low values realized from other samples submitted; especially since no sulphides other than pyrite were observed. The combination of metals, values and host rock may be indicative of a style of gold mineralization quite different from that of the "A" Zone.

Other gold showings which occur on the Ample-Goldmax claims include the Ample and Bonanza mines. These prospects were not visited during the course of the above work and are described in the following excerpts from Kiap and Patterson, 1995.

### 6.5.1 Ample Mine

"Mineralization at the Ample adit consists of semi-massive to massive arsenopyrite with minor pyrite and chalcopyrite within and below a flat lying shear zone hosted by greenstone and metasedimentary rocks. The zone is also
characterized by bull quartz veins with limonitic cavities which host aspy, py and rare cpy. The veins vary from 1 to 10 cm in width and are subparallel to foliation. The zone strikes east and dips shallowly to the north and measures 100 metres along strike. The zone varies from 10 metres width near the centre and pinches out to the east and west. Nine samples were collected from the zone with seven assaying > 1 gpt Au . The highest grade obtained was 16.5 gpt Au from massive arsenopyrite at the entrance to the main adit. Higher grade samples are associated with arsenopyrite mineralization generally occurring within black argillites. Potential for a minable deposit lies down dip of the surface outcropping of the zone and/or along strike."

### 6.5.2 Bonanza Mine

"The Bonanza mine hosts a similar style of mineralization to that described at the Ample mine. Gold is associated with arsenopyrite rich graphitic slates and phyllites with abundant quartz veining. The zone appears to be flat lying and may be folded about an isoclinal fold. A small geological reserve of 550 tons rating 0.407 opt Au has been outlined for the mine (Cardinal, 1985). No samples were collected. "

### 7.0 GEOCHEMICAL DISCUSSION

The terrain in the regional grid area often exceeds the maximum angle of repose, in which the stability of over steepened eluvium is accommodated by a thick covering of bunch grass and moderately spaced fir trees. Partially overgrown coarse talus trains are common on the upper slopes, most often occurring below escarpments. Below the highway, very coarse talus covers the broad gulley occupied by the baseline. Sandyclay eluvial soils, not covered by talus trains, increase in thickness from 0.5 metres at the site to the "A" Zone to in excess of 6 metres where bedrock is not exposed along the highway.

Known showings are well reflected by larger fields of anomalous metal dispersion. The significance of single station anomalies, however, should not be overlooked as talus trains and excessive eluvium depths may modify or mask the geochemical expressions of mineral occurrences yet to be discovered.

A total of 171 soil samples, collected from the property grid, were submitted for geochemical analysis. After a preliminary review of the six elemental determinations: $\mathrm{Au}, \mathrm{Ag}, \mathrm{As}, \mathrm{Cu}, \mathrm{Pb}$ and Zn , the distribution patterns of $\mathrm{Au}, \mathrm{As}$ and Cu were assumed to be most applicable at this time. The data for these elements were analyzed statistically through a simple determination of arithmetic means and standard deviations. These values and contouring levels are shown in Table 7.0.1.

Table 7.0.1 Geochemical Data Analysis

|  | Au <br> $(\mathrm{ppb})$ | As <br> $(\mathrm{ppm})$ | Cu <br> $(\mathrm{ppm})$ |
| :--- | :---: | :---: | :---: |
| No. of Samples | 171 | 171 | 171 |
| Arithmetic Mean | 68.90 | 109.96 | 117.78 |
| Standard Dev. | $(69)$ | $(110)$ | $(118)$ |
| Mean + 1 SD | 87.4 | 64.61 | 53.92 |
| Mean + 2 SD | $(157)$ | $(175)$ | $(172)$ |
| (denotes contour level) |  | $(245)$ |  |

As the data derived from soil samples taken previously from the detailed grid over the "A" Zone represented an obviously anomalous population, they were not used in the above calculations. The above contour levels, however, were still used in interpreting that data.

### 7.1 Gold and Arsenic Geochemistry

The geochemical dispersion patterns of anomalous gold and arsenic in soil samples taken on the regional grid are, for the most part, coincident, Figures 8a and 8b. The downhill dispersion of metals from the 10-10 Vein and the "A" Zone extends for more than 350 metres with its axis lying subparallel to the baseline. This pattern reflects the geometry of the catchments for the dominant rills draining the area. Two smaller fields of elevated arsenic values flank the main anomaly. The field to the north at $11+00 \mathrm{E}$ $10+50 \mathrm{~N}$ is of special significance for not only is it coincident with anomalous copper but it occurs in an adjacent catchment which also drains the northerly extension for the Cayoosh Thrust Fault. It is possible that this field reflects the truncation of the 10-10 Vein by the fault.

South of the baseline, the elevated arsenic value at $12+00 \mathrm{E}-8+50 \mathrm{~N}$ suggests a proximal source for the origin of Rock Sample 22573. This sample of quartz float, containing sericite and chlorite, reported $2.39 \mathrm{~g} / \mathrm{t} \mathrm{Au}$ and 591 ppm As. Further south, the location of the " A " Zone is well reflected by the anomalous arsenic-gold field dispersing from $13+00 \mathrm{E}-7+00 \mathrm{~N}$. At $11+00 \mathrm{E}-7+50 \mathrm{~N}$, a single station gold-arsenic anomaly occurs immediately down hill from the southerly trace of the Cayoosh Fault. The proximity of the Diorite contact to these latter fields may be of significance.



The results of soil sample analysis from the detailed grid over the " A " Zone discloses strong coincident gold-arsenic anomalies straddling the showing ridge with an uphill limit proximal to the gold mineralization exposed in 6.4W-3S Trench, Figures 9a and 9 b . The easterly dispersion of metals from this source area, augmented by contributions from the fault zone exposed in Trenches $5 \mathrm{~W}-4 \mathrm{~S}$ and $6 \mathrm{~W}-2 \mathrm{~S}$, is curtailed by the baseline rill. The spike in values at $4 \mathrm{~W}-5 \mathrm{~S}$, on the south flank of the showing ridge is significant as it occurs proximal to the easterly projected trace of the above trench fault. At $10+00 \mathrm{E}-10+00 \mathrm{~N}$, a gold-arsenic-copper anomaly, the "A1" Zone, appears to reflect a source of gold-arsenic mineralization proximal to the Cayoosh Fault and $10+10$ Vein.

Soil samples collected from along the highway, the "S" series, reported anomalous gold and arsenic values adjacent to the baseline. These likely reflect the down hill dispersion of metals within the baseline rill system.

### 7.2 Copper Geochemistry

The distribution of copper values in soils covered by the regional grid define three geochemical fields, Figure 8c. The first lies to the south of Base Line 10+00E and is a field of values which lies below the Arithmetic Mean of 118 ppm Cu . This suggests that the underlying, predominantly sedimentary, rock units have a low geochemical signature for copper. It also suggests that the intrusion of the hornblende diorite dyke into these sediments did little to alter this geochemical expression. The one elevated value found within this field occurs at $13+00 E-9+50 \mathrm{~N}$, the toe of the "A" Zone goldarsenic anomaly and suggests a low copper content within that mineralizing system. The traces of copper found within the " A " Zone vein are not reflected in the soil geochemistry, Figure 9c.

The area north of the Base Line, can be divided into two fields by an interpretive boundary lying in a northeasterly direction between 10+00E-10+00N and 14+00E $16+00 \mathrm{E}-16+00 \mathrm{~N}$. This boundary coincides approximately with the northeasterly trace of the Cayoosh Fault. Bedrock in the field to the northwest of this boundary comprises greenstone, chert and chloritic schists which appear to have a much higher copper background than the sediments to the south. Since the copper anomaly at 10+00E $10+00 \mathrm{~N}$ probably reflects the $10-10$ Vein and its traces of chalcopyrite, it is possible that the two anomalies to the north along $11+00 \mathrm{E}$ may be reflecting similar structures. The nature of the bedrock underlying the geochemical field lying southeast of the above boundary and north of the Base Line is as yet uncertain. It is, however, most likely underlain by the same sedimentary package as the field to the south. The elevated copper values encountered in this field likely reflect the downhill dispersion of copper from the greenstone terrain. An exception to this may be the narrow but distinctly anomalous zone lying between $11+00 \mathrm{E}-10+50 \mathrm{~N}$ and $13+00 \mathrm{E}-11+50 \mathrm{~N}$. This anomaly, the "A2" Zone, with its coincident arsenic signature cuts across the trend

in slope. Although its cause source is unknown, it may reflect a truncated extension of the 10-10 Vein.

At highway level and below, the " S " samples reported high copper values within the Base Line gully, while the regional samples show only elevated levels. The difference may be attributed, in part, to sample density. In any event, the dispersion train does appear to reflect the copper occurrences located near $10+00 \mathrm{E}-10+00 \mathrm{~N}$.

### 8.0 GEOPHYSICAL INTERPRETATION

A geophysical survey utilizing OMNI PLUS instrumentation was conducted over 8.35 kilometres of grid line at nominal sample spacing of 12.5 metres on lines 100 metres apart. By utilizing the Annopolis VLF signal on a Base Line bearing 290, coupling with easterly trending conductors was optimal.

The E.M. and Mag. data reveals a strong ESE trending geophysical fabric in which Fraser filtered EM highs are generally coincident with Magnetic highs, Figures 10a to 10c. Breaks in the continuity of this fabric may be indicated by the northeasterly trending, en-echalon arrangement of intermediate level conductive zones as indicated in the northwest portion of the grid. This break corresponds closely with the projected trace of the Cayoosh Fault. A similar subparallel break which transects the grid area at the Base Line and 14+00E is coincident with the easterly limit of the "A" Zone geochemical anomalies. A third subparallel break trending northeasterly from 14+50E $7+00 \mathrm{~N}$ lies in the footwall of the " B " Vein. An apparent sinistral offset is suggested by the displacement of the Fraser filtered VLF-EM conductive trend which extends from $11+00 \mathrm{E}-7+00 \mathrm{~N}$ to $17+00 \mathrm{E}-7+00 \mathrm{~N}$.

This conductive trend and the weaker zone lying parallel at $8+25 \mathrm{~N}$ appear to coincide with the limits of the hornblende diorite dyke. Between these zones at 14+00E $7+00 \mathrm{~N}$, outcroppings of diorite are reflected in a moderate magnetic high. The magnetic topography is highlighted by a coupling of extreme relief at the eastern and southern fringes of the grid area. This data may be influenced by the precipitous terrain at the edge of the Cayoosh River Canyon. In the northern grid area, the northeasterly breaks in EM continuity are reflected in the magnetic terrain.

The relationship between mineralization and geophysical responses is uncertain. A shallow magnetic trough coincides with the "A" Zone; both are bounded on the south by a weak EM conductive trend. The "A1" zone also occurs in a similar EM environment. At the "B" Zone, the northwesterly trace of the vein coincides with a strong EM response. This response, however, may also be attributed to the adjacent diorite contact.


### 9.0 COMMENTS AND CONCLUSIONS

The lack of outcrop, especially in the vicinity of "A" Zone on Polischuk Ridge, renders the interpretation of structural, intrusive and mineralizing events somewhat speculative at this point in time. Nevertheless, brief comments on various interrelationships may be helpful to the future exploration of the property.

1. The dominantly clastic and volcanoclastic sediments of the Brew Group contain highly altered, gabbroic to andesitic sills or dykes. These, when altered due to close proximity to a later intrusion such as the Hornblende Diorite, may well result in the hard, dyke-like, quartz carbonate alteration zones as noted on the road and elsewhere on the property.
2. The geometry, attitude and nature of the Bull Quartz veins found within both the Brew Group and the overthrusted Bridge River Schists suggest a common genesis. However, displacement on the Cayoosh Fault which truncates the Brew Group and the 10-10 Vein indicates that the vein was formed prior to the latest movement on the fault and most probably at some distance from the "A" Zone. The development of these large " $s$ " shaped (?) gashes is remotely if at all related to the " A " Zone mineralizing event.
3. The northerly trace of the auriferous vein system in Trench 6.2W-3S is likely truncated by the northwesterly trending, zone of intense faulting exposed in the other two trenches. The progressive easterly reduction in gold values, between Trench $6 \mathrm{~W}-2 \mathrm{~S}$ and $5 \mathrm{~W}-4 \mathrm{~S}$, is possibly attributable to the dissipation of "drag ore" along a fault exhibiting dextral displacement, Figure 11.
4. The northwesterly trace of the "A" Zone fault is likely truncated by the Cayoosh Fault. Therefore, to the west of and above the $6.2 \mathrm{~W}-3 \mathrm{~S}$ trench, additional auriferous ribbon veins lying parallel to the 6.2 W -3S veins would also be truncated.
5. The proximity of the " A " and " B " Zones to the diorite, also apparently truncated by the Cayoosh Fault, strongly suggests the gold mineralization to be related to this Bralorne-type intrusion.
6. The steep north-northeasterly escarpments, in which the " B ", 10-10 and Upper Veins are exposed, trend sub parallel to the offsets noted in the EM conductive zones and may represent fault-line scarps that developed later than the Cayoosh Fault.
7. The "A" Zone is probably not the source of the "discovery boulder" unless the boulder was transported to the north some distance during eluviation.
8. As noted by Kiap and Patterson at the Ample Mine, the main potential for the development of ore at the "A" Zone probably lies down dip to the west below the Cayoosh Fault unless future work exposes a greater lateral extent to the zone.
9. A possible genetic relationship between the Ample and Polischuk Ridge prospects is suggested by their similarities. These include: a) an apparently simple mesothermal mineralogy gold-arsenopyrite $+/$ - pyrite, (?); b) similar host rocks (Brew Group); c) close proximity ( 1.5 kilometres) with the Ample occurring just south of the northwesterly trace of the Polischuk Ridge hornblende diorite;
d) both are apparently truncated by the Cayoosh Fault.

The truncation of these auriferous systems and possibly others, related and proximal, likely resulted in the development of some sort of auriferous "drag ore" leads within the matrix of the Cayoosh Fault itself. If so, the subsequent eluviation of such leads conceivably contributed in part to the gold accumulations in placer from down stream on Cayoosh Creek. In context with current activities, the recognition of such leads within the Cayoosh Fault zone would have major implications with respect to the mineral potential for the property.

In general, the results of mineral exploration activities on the Ample-Goldmax to date are very encouraging. Hand trenching and sampling was successful in confirming the occurrence of auriferous bedrock at the " A " Zone as originally indicated by the prospecting activities of Mr. Polischuk. The work has shown that somewhat continuous and economically significant assay grades in the range of 3 to $9 \mathrm{~g} / \mathrm{t}$ over widths of up to 7 metres can be expected from the as yet undelineated "A" Zone. The soil geochemical survey data readily reflects known mineral sources and provides a focus for further prospecting and development. The results of the geophysical surveys reflect closely the position of the Hornblende Diorite dyke but correlations with the "A" Zone are subtle. The use of VLF transmissions from Seattle or Hawaii would provide a better signal coupling with northeasterly trending structures such as the "A" Zone auriferous ribbon veins, the Cayoosh Fault and possible escarpment-forming late faults. The continued use of petrographic studies in conjunction with detailed mapping will be essential to the continued evaluation of the mineral potential of the property.

In conclusion, the property displays several characteristics similar to those of mesothermal gold-quartz vein deposits hosted by oceanic sediments, volcanics and differentiated mafic oceanic plutons as seen elsewhere in the Bridge River Terrane. The economic potential of these deposit types are highlighted by the production from the Bralorne - Pioneer camp.

### 10.00 RECOMMENDATIONS

1. This report successfully completes the Phase 1 recommendation of Kiap and Patterson (1995). The Phase 2 of their recommendations comprising the construction of an access road to the " A " Zone and the enlargement of the mineralized exposures through mechanical trenching is endorsed. A diamond drill program could be considered towards the completion of the above work should results prove encouraging and a suitable target be postulated.
2. A coincident exploration program similar to that of 1995 comprising geological mapping, test pitting and soil geochemical sampling and OMNI-PLUS geophysical survey should accompany the above work. Objectives should include: the detailed mapping and sampling of bedrock by the above developments; the completion of mapping of the current grid area and westward to include the Ample prospect; the investigation of 1995 soil anomalies; the resurveying of VLF-EM coverage using the Seattle or Hawaii signals; an investigation into the significance of Sample 22562; and the general expansion of exploration coverage of the Brew Group-Cayoosh Fault-Bridge River Schist assemblage in search of additional auriferous showings.



Plate I. Looking west at "B"' Vein


Plate II. Looking west at AMFLE Bluffs from 11+00E-7+00N


Plate III. AMPLE Adit


Plate IV. Upper Vein



Plate VIII. Looking south along Trench 6W-2S

## APPENDIX A

## BIBLIOGRAPHY

## BIBLIOGRAPHY

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## APPENDIX B

## List of Rock Samples

List of Rock Samples
1995 Ample - Goldmax

| Sample No. | Location | Width | Sample Type | Description |
| :---: | :---: | :---: | :---: | :---: |
| 22551 | $10+00 \mathrm{E}-10+05 \mathrm{~N}$ | $0.5 \mathrm{~m}^{2}$ | chip | Reticulate quartz vein and chloritic wallrock in HW of fault; contorted siltstone and chert |
| 22552 | 10+00E-10+05N |  | grab | 15 cm quartz vein in fault adjacent to 22551 - subcrop |
| 22553 | $13+00 \mathrm{E}-7+50 \mathrm{~N}$ | float | grab | $1-2 \mathrm{~cm}$ quartz veins in lithic greywacke; sericite, chloritic shale fragments, limonite, tr. pynite |
| 22554 | $12+90 \mathrm{E}-6+60 \mathrm{~N}$ | composite | grab | 30 cm bull quartz vein in greywacke; chloritic shale clasts, minor serpentine, tr.py, asp(?) |
| 22555 | 9+85E-9+95N | 0.3 m | channel | $10-10$ vein; bull quartz vein containing argillaceous ribbons, chlorite selvage, minor cp, im, mal |
| 22556 | 9+85E-9+95N | 0.15 m | channel | 10-10 vein footwall; finely laminated chloritic schist, 0.5-1.0 cm quartz augen, tr py, cp, mal, limonitic |
| 22557 | $9+00 \mathrm{E}-9+30 \mathrm{~N}$ | 0.2 m | channel | Upper vein; yellow limonite, vein ribboned with argillaceous selvage (chloritic) |
| 22558 | $9+00 \mathrm{E}-9+30 \mathrm{~N}$ | 0.6 m | chip | Upper vein footwall; quartz augen in chlorite-serpentine schist (contorted quartz stockwork), mariposit, limonite |
| 22559 | 10+50E-7+40N | 0.15 | channel | Quartz vein in chloritic schist adjacent to Hornblend diorite dyke; cale, sericite, tr py + cloudy grey bands |
| 22560 | 10+50E-7+60N | $\begin{aligned} & 15 \times 30 \\ & \mathrm{~cm} \end{aligned}$ | pannel | chlorite-sericite schist in contact with Hb diorite; limonitic, minor py, cp |
| 22561 | 16+45E-7+35N | 1.0 m | chip | Altered dyke? Listwänite, tr. mariposite, py, pyrr |
| 22562 | 16+50E-7+10N | composite | grab | Contorted, pyritic black shale, limonitic |
| 22563 | $14+40 \mathrm{E}-3+75 \mathrm{~N}$ | composite | grab | 2 to 5 cm quartz vein in altered light grey, greywacke; calc., mariposite, py; chloritic selvages |
| 22564 | 12+60E - $7+00 \mathrm{~N}$ | 0.6 m | channe! | " B " vein; across back of adit; chloritic shale selvages, tr py, limonitic |
| 22565 | 12+60E-7+00N | 1.1 m | channel | " B " vein footwall; hornfesed sediments with 20\% quartz stringers parallel main viein; chl., tr py, cp, hem. |
| 22566 | 12+60E-7+00N | 0.30 m | channel | "B" vein hanging wall; hornfelsed sediments; minor quartz; chl., tr py |
| 22567 | 12+50E-6+95N | 0.65 m | channel | " B " vein; bull quartz; tr py, cp; mal. from shaley, mid-vein chloritic selvage |
| 22568 | 12+45E-6+90N | 0.80 m | channel | "B" vein; bull quartz; fractured, limonitic |
| 22569 | 11+60E-9+00N | composite | grab | Limonitic quartz, chocolate-red, tr py; s/c; from B/S pile adjacent small pit |


| Sample No. | Location | Width | Sample Type | Description |
| :---: | :---: | :---: | :---: | :---: |
| 22570 | Trench 6W-2S | 1.0 m | channel | Hanging wall of crushed quartz vein; silty, chloritic schist, minor quartz; Im, siderite |
| 22571 | Trench 6W-2S | 0.3 m | channel | Crushed, quartz vein; $\mathrm{lm}, \mathrm{trgn}, \mathrm{cp}$ sid |
| 22572 | Trench 6W-2S | 0.3 m | channel | Footwall fo crushed quartz vein; silty, chloritic schist; Im, sid; weathered |
| 22573 | $11+94 E-8+47 \mathrm{~N}$ | - | grab | Quartz float; brown carbonate weathering; chloritic lithic clasts; sericite, trace silvery sulphide (asp?) |
| 22574 | $12+35 \mathrm{E}-8+35 \mathrm{~N}$ | composite | grab | Quartz - calcite gashes in fissile chloritic schist |
| 22575 | L12+00E - 12+37N | - | grab | Silicified rock; flt; earthy red hematite + pyrolusite? |
| 22576 | 11+75E-13+15N | - | grab | Quartz gashes in chert; limonitic |
| 22577 | Trench 5W-4S | 1.0 m | channel | 1 to 2 cm quartz veins parallel to fol ${ }^{\text {n }}$ in silty chloritic schist; limonite |
| 22578 | Trench 5W-4S | 1.35 m | channel | 1 mm quartz stringers parallel fol ${ }^{\text {n }}$ in silty chloritic schist; limonite |
| 22579 | Trench 5W-4S | 1.3 m |  | Finely laminated chloritic schist cut by narrow quartz veins; limonitic with chlorite selvages, goethite |
| 22580 | Trench 5W-4S | 0.8 m | channel | Very hard chloritic rock; irregular quartz masses; mariposite and chloritic selvage next to quartz; limonite, siderite, py on late fractures 30\% quartz |
| 22581 | Trench 5W-4S | 0.3 m | channel | chloritic schist containing 5 cm quartz vein; limonite, siderite, tr. asp; 15\% quartz |
| 22582 | Trench 5W-4S | 0.55 m | channel | Shear zone in chloritic schist; quartz augen; 5\% quartz |
| 22583 | Trench 5W-4S | 1.0 m | channel | Hard foliated chloritic rock (lithic wacke?) cut by 0.5 to 2.0 cm quartz veins; tr. py, silver-grey mineral; limonite, siderite; 10\% quartz |
| 22584 | Trench 5W-4S | 0.8 m | channel | Hard foliated chloritic rock (lithic wacke) 2\% quartz |
| 22585 | Trench 5W-4S | 0.85 m | channel | Crushed chloritic schist containing 2 cm quartz veins; $15 \%$ quartz |
| 22586 | Trench 5W-4S | 0.3 m | channel | Shear zone; fissile chloritic schist; trace quartz |
| 22587 | Trench 5W-4S | 0.65 m | channel | Crushed quartz vein; limonite; siderite; 75\% quartz |
| 22588 | Trench 5W-4S | 0.9 m | channel | Contorted chloritic schist; 2-3 cm quartz augen; limonite siderite; 5\% quartz |
| 22589 | Trench 6W-2S | 0.7 m | channel | Silty chloritic schist; limonite, siderite; trace quartz |
| 22590 | Trench 6W-2S | 0.6 m | channel | Silty chloritic schist; limonite, siderite; trace quartz |
| 22591 | Trench 6W-2S | 0.7 m | channel | Shear zone in chloritic schist; $5 \times 1-2 \mathrm{~cm}$ quartz vein parallel shearing; rusty carbonate, limonite, $\operatorname{tr}$ py; $10 \%$ quartz |
| 22592 | Trench 6W-2S | 0.5 m | channel | Black agrillaceous schist; dragfold; several 0.2 to 0.5 cm limonitic quartz-carb stringers; 4\% quartz |


| Sample <br> No. | Location | Width | Sample <br> Type | Description |
| :---: | :---: | :---: | :---: | :---: |
| 22593 | Trench 6W-2S | 0.9 m | channel | Crushed rock; quartz and hornfelsed argillaceous clasts contain arsenopyrite; limonite, siderite; $15 \%$ quartz |
| 22594 | Trench 6W-2S | 1.1 m | channel | Crushed weathered rock, in part sulphate (?) and ferrocrete cemented, poor bedrock sample; $20 \%$ quartz |
| 22595 | Trench 6W-2S | 0.5 m | channel | Crushed earthy rock, chloritic, well weathered, 10\% quartz |
| 22596 | Trench 6W-2S | 0.55 m | channel | Quartz vein; chloritic argillaceous selvages; limonite siderite, trace black oxide; $95 \%$ quartz |
| 22597 | Trench 6W-2S | 0.5 m | channel | Crushed quartz vein and talcos schist wallrock; light grey weathering; arsenopynite (?) in quartz; non-limonitic; $50 \%$ quartz |
| 22598 | Trench 6W-2S | 0.45 m | channel | Crushed quartz vein, chloritic selvages, limonitic; trace arsenopyrite (?); $80 \%$ quartz |
| 22599 | Trench 6W-2S | 1.1 m | channel | Shear zone, in part chloritic schist, earthy, weathered; limonite; 5\% quartz |
| 22600 | Trench 6W-2S | 0.6 m | channel | Chloritic schist, in part graphitic; 0.5 to 1.0 cm quartz veins parallel foliation; limonite, 5\% quartz |
| 22601 | 9+75E-10+00N | 0.3 m | channel | Footwall of 30 cm 10-10 quartz vein; goethite, limonite; chlonitic schist; minor quartz |
| 22602 | $9+75 \mathrm{E}-10+00 \mathrm{~N}$ | 1.0 m | channel | Shear zone below (22601) Cayoosh Fault?; contorted, sheared argillite with quartz augen; py, limonite, mariposite, $10 \%$ quartz |
| 22603 | 10+15E-10+20N | 0.6 m | channel | Hanging wall of 10-10 vein; limonitic siliceous argillite, chloritic |
| 22604 | $10+15 \mathrm{E}-10+20 \mathrm{~N}$ | 0.6 m | channel | 10-10 quartz vein; very rusty; pyrite, tr. arsenopyrite; minor argillaceous selvage; $95 \%$ quartz |
| 22605 | Trench 6.2W-3S | 0.7 m | channel | Chlorite-sericite schist ribboned with 0.5 to 5.0 cm quartz veins parallel folliation, 12 quartz veins over $0.7 \mathrm{~m} ; 40 \%$ quartz |
| 22606 | Trench 6.2W-3S | 0.6 m | channel | Chlorite - sericite schist ribboned with 0.5 to 3.0 cm quartz veins; weathered and limonitic; $50 \%$ quartz |
| 22607 | Trench 6.2W-3S | 0.5 m | channel | Chlorite-sericite schist; quartz veins $2-8 \mathrm{~cm}$ wide, limonitic; chloritic selvage; trace black oxide and arsenopyrite (?); 70\% quartz |
| 22608 | $11+50 \mathrm{E}-15+75 \mathrm{~N}$ |  | grab | Limonitic quartz in chloritic schist; tr py |

## APPENDIX C

## ASSAY CERTIFICATES

## CERTIFICATE OF ANALYSIS

iPL 95E0201
2036 Columbia Street
Vancouver. B.C.
Canada V5Y 3E1
Phone (604) 879-787B
Fax (604) 879-7898


CERTIFICATE OF ANALYSIS iPL 95E0201

Client：Howestake Mineral Development Co

| Sample Name |  | $\begin{gathered} \text { Au } \\ \text { ppb } \end{gathered}$ | $\begin{gathered} \text { A9 } \end{gathered}$ | $\underset{\text { pp }}{0}$ | $\begin{gathered} \text { Pb } \\ \text { ppan } \end{gathered}$ | $\underset{\text { ppn }}{\text { In }}$ | As | $\begin{array}{r} \mathbf{5 b} \\ \mathbf{p p m} \end{array}$ | $\begin{gathered} \mathrm{Hg} \\ \mathrm{ppp} \end{gathered}$ | $\begin{aligned} & \text { Mo TI } \\ & \text { ppman ppm } \end{aligned}$ | Bi | $\mathrm{Cd}$ pppa | Co ppm | $\begin{gathered} \mathrm{N} 1 \\ \mathrm{ppon} \end{gathered}$ | $\begin{array}{r} \text { Ba } \\ \text { pppm } \end{array}$ | $\begin{array}{r} \text { N } \end{array}$ | Cr ppm | $\underset{p}{V}$ | $\underset{\text { pprin }}{\mathrm{Mn}}$ | La | Sr pprn | $\begin{gathered} \mathbf{Z r} \\ \text { ppra } \end{gathered}$ | $\begin{array}{r} \text { Sc } \\ \text { ppin } \end{array}$ | $\begin{array}{r} \mathrm{T} \\ \mathbf{Z} \end{array}$ | $\begin{gathered} A 1 \\ Z \end{gathered}$ | $\begin{array}{r} \mathrm{Ca} \\ \overline{2} \end{array}$ | $\begin{gathered} \text { Fe } \\ \text { Z } \end{gathered}$ | $\begin{gathered} \mathrm{Mg} \\ Z \end{gathered}$ | $\begin{aligned} & \mathrm{K} \\ & \mathbf{Z} \end{aligned}$ | $\begin{gathered} \mathrm{Na} \\ \mathbf{Z} \end{gathered}$ | $\begin{aligned} & \mathbf{P} \\ & \mathbf{Z} \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| BL00 +00 | 5 | － | $\leqslant$ | 247 | 6 | 䉥至在 | 88 | $<$ | $\leqslant$ | 3 變 | c | 2.9 | 48 | 93 |  | $<$ | 105 | 85 | 3366 |  | 56 | 2 |  | 0.06 |  | 1.55 | 5.52 | ． 49 | ． 24 | Q12 | 0.44 |
| BLO1H＋00 | $\underline{\varepsilon}$ | － | $<$ | 219 | 4 |  | 107 | $<$ | $\leqslant$ | 4 詮喊 | $<$ | 1.6 | 41 | 87 | 相近 | $\leqslant$ | 102 | 83 | 1924 | 多多 | 32 | 2 |  | 0.06 | 校既 | 1.13 | 4.93 |  | 0.20 | Q\％ | 0.17 |
| BLOEN＋00 | ${ }^{\mathbf{S}}$ | － | $<$ | 202 | 5 | 答 60 | 117 | $<$ | $<$ | 3 繁 |  | 1.7 | 40 | 94 |  | $\leqslant$ | 109 | 88 | 1487 | 絞复 | 32 | 2 |  | 0.06 | 笏矢第 | 0.98 | 5.08 | 1.49 | 0.26 | 的等 | 0.20 |
| L03N＋00 | ＊ |  | $<$ | 175 | 4 | ¢ | 105 | $<$ | $<$ | 4 詵 | $<$ | 1.2 | 32 | 89 |  | $\leqslant$ | 99 | 93 | 903 |  | 18 | 5 |  | 0.09 |  | 0.45 | 4.87 | 1.39 | 0.17 | 6\％ | 0.03 |
| LO3N＋01N | \％ | － | $<$ | 184 | 2 | 筑縘 | 195 | $<$ | $<$ | 4 经 | $<$ | 1.4 | 36 | 103 | 新等 | ＜ | 153 | 101 | 720 |  | 16 | 3 |  | 0.07 | 欵至至 | 0.36 | 5.55 | 1.60 | 0.22 | 6䰻 | 0.03 |
| L03W＋024 | 8 | － | 0.1 | 209 | 5 | 就妾 | 111 | $<$ | $<$ | 3 綮 | $\leqslant$ | 1.4 | 40 | 96 | 枚6 | $<$ | 133 | 125 | 832 | 移 5 | 15 | 4 |  | 0.08 |  | 0.45 | 5.86 | 1.96 | 0.18 | 018 | 0.04 |
| L03M＋03N | 8 |  | $\leqslant$ | 186 | 5 | 約寊 | 115 | $<$ | $<$ | 3 佫 | ＜ | 1.4 | 43 | 91 |  | $<$ | 119 | 1.17 | 1286 | S紬 | 25 | 3. |  | 0.08 |  | 0.70 | 5．58 | 1.76 | 0.23 |  | 0.06 |
| LO3N＋04N | 8 | － | $\leqslant$ | 209 |  | 竘動等 | 112 | $\leqslant$ | 4 | 2 䋨 | $\leqslant$ | 1.5 | 39 | 90 |  | $<$ | 122 | 118 | 716 |  | 16 | 5 |  | 0.09 |  | 0.50 | 5.65 | 1.80 | 0.20 |  | 0.04 |
| LO3N＋05\％ | 苋 |  | $\leqslant$ | 126 | 4 | 粩紬 | 80 | $<$ | $<$ | 2 玹 | $\leqslant$ | 1.2 | 32 | 87 | 㐱69 | $<$ | 105 | 68 | 844 | 矮 | 17 | 4 |  | 0.09 | 翏的家 | 0.44 | 4.81 | 1.41 | 0.23 | 概蚛 | 0.06 |
| L03H＋01S | \＄ | － | $<$ | 125 | 4 | 多析 | 186 | $<$ | $<$ | 4 新 | ＜ | 1.2 | 26 | 72 | 枚勉 | $<$ | 91 | 76 | 797 | \％綵 | 22 | 3 |  | 0.06 | 敉紬 | 0.42 | 4.63 | 1.27 | 0.20 |  | 0.06 |
| L03W＋02S | $\mathfrak{\mathbb { K }}$ | － | $<$ | 136 | 4 |  | 194 | $\leqslant$ | $<$ | 3 䈙 | $\leqslant$ | 1.2 | 24 | 63 |  | $\leqslant$ | 83 | 72 | 614 | 翏䍊 | 22 | 2 |  | 0.07 | 统等第 | 0.51 | 4.41 | 1.15 | 0. | 900 | 0.04 |
| L034035 | 䓅 |  | $<$ | 141 | 7 | 約 | 236 | $<$ | $<$ | 4 经䏣 | $\leqslant$ | 1.3 | 25 | 71 | 年碞 | $<$ | 89 | 78 | 628 | 放新 | 16 | 2 |  | 0.06 | \％ 6 | 0.39 | 4.80 | 1.23 | 0.15 | 9 6 | 0.03 |
| L03H＋04S | 8 | － | $<$ | 154 | 3 | 楽的 | 251 | $\leqslant$ | $<$ | 4 絞 | $<$ | 1.5 | 31 | 85 | 管號 | $<$ | 116 | 89 | 864 | 缕艮 | 20 | 3 |  | 0.06 |  | 0.42 | 5.43 | 1.52 | 0.18 | 敉家 | 0.05 |
| 103M+05S | 8 |  | $<$ | 130 | 4 |  | 222 | $<$ | $<$ | 2 夠 | ＜ | 1.4 | 29 | 78 | 綵血 | $\leqslant$ | 101 | 63 | 1152 | 社 | 24 | 2 |  | 0.05 |  | 0.51 | 5.18 | 1.39 | 0.27 | 6 | 0.06 |
| L03N406S | \＄ | － | $<$ | 165 | 4 |  | 261 | $<$ | $<$ | 5 総 | $<$ | 1.9 | 30 | 83 | 絲复 | $<$ | 92 | 67 | 866 | 䋦 | 19 | 3 |  | 0.04 | 新的悬 | 0.42 | 6.45 | ． 45 | 0.11 | 6的要 | 0.04 |
| LO3W07S | 总 | － | $<$ | B6 |  | 継5 | 134 | $<$ | $<$ | 3 的蛥 | $<$ | 1.2 | 21 | 49 | 洨67 | $<$ | 44 | 55 | 943 | 䊽新 | 26 | 3 |  | 0.03 |  | 0.39 | 4.90 | 0.92 | 0.10 | O起 | 0.04 |
| LO3N+0as | 品 |  | $<$ | 112 | 7 | 等嫁 | 219 | $<$ | $\leqslant$ | 4 竘多 | $\leqslant$ | 1.2 | 27 | 54 |  | $<$ | 52 | 61 | 969 | 斯害 | 35 | 2 |  | 0.02 |  | 0.39 | 5.09 | 0.99 | 0.09 |  | 0.03 |
| L04N＋00 | S | － | $<$ | 111 | 8 | 緵新 | 168 | $\leqslant$ | － | 2 等 | $<$ | 1.4 | 33 | 69 |  | $<$ | 106 | 80 | 1547 | 等积 | 27 | 3 |  | 0.07 | 约枹盛 | 0.55 | 4.78 | 1.20 | 0.27 | 085 | 0.09 |
| LO4H＋01N | $\underset{\mathbf{K}}{\mathbf{8}}$ |  | $<$ | 133 | 5 | 納夏 | 86 | $<$ | $\leqslant$ | 3 䄻 | $\leqslant$ | 1.0 | 27 | 71 |  | $<$ | 87 | 82 | 835 | W䋛 | 18 | 3 |  | 0.08 | 新納 | 0.43 | 4.37 | 1.31 | 0.18 | 名號 | 0.05 |
| L04H＋02N | $\$$ | － | ＜ | 196 | 4 | 筑相 | 169 | ＜ | $<$ | 4 䋨 | $<$ | 1.1 | 31 | 83 | 荗至 | $<$ | 108 | 88 | 792 | 令采 | 15 | 2 |  | 0.07 |  | 0.37 | 4.90 | 1.59 | 0． 15 | 6 6 | 0.03 |
| L04d＋03\％ | 8 | － | 0.1 | 206 | 4 | 蜲社空 | 136 | $<$ | $\leqslant$ | 4 䇣炎 | $<$ | 1.5 | 33 | 91 |  | $<$ | 123 | 96 | 932 |  | 16 | 2 |  | 0.07 |  | 0.42 | 5.26 | 1.74 | 0.13 | 0402 | 0.05 |
| Combroan | $\mathbf{~}$ | － | $\leqslant$ | 212 | $<$ | 䂓空 | 205 | $\leqslant$ | $<$ | 4 緮 |  | 1.4 | 37 | 102 | 綒枵 | － | 142 | 111 | 687 |  | 17 | 3 |  | 0.07 | 縣納 | 0.49 | 5.69 | 1.72 | 0.19 | 6\％ | 0.04 |
| LOMH＋05N | $8$ |  | $\leqslant$ | 165 | 2 |  | 160 | $<$ | $\leqslant$ |  | $<$ | 1.5 | 39 | 103 | 約5 | $<$ | 142 | 108 | 866 |  | 16 | 4 |  | 0.08 |  | 0.38 | 5.58 | 1.68 | 0.21 | 6 | 0.05 |
| LOMH＋O1S | \％ | － | $\leqslant$ | 119 | 3 | 絡酶 | 161 | $\leqslant$ | $<$ | 3 緵㝑 |  | 1.3 | 31 | 89 | 㐱祖 | $<$ | 121 | 81 | 977 | 䇣新 | 21 | 3 |  | 0.07 | 恠酸 | 0.48 | 4.71 | 1.32 | 0.26 | 的\％ | 0.06 |
| Lo4tates | 脢 | － | $<$ | 117 | 4 | 会樓 | 239 | ＜ | $<$ | 4 變 | c | 1.2 | 26 | 78 |  | $<$ | 106 | 80 | 508 | 第采复 | 17 | 5 |  | 0.07 |  | 0.39 | 4.90 | 1.26 |  | 等坆 | 0.03 |
| L04H03s | 8 | － | $\leqslant$ | 156 | 4 | 教至皃 | 207 | $\leqslant$ | $<$ | 3 詨絳 |  | 1.1 | 27 | 82 | 絡哏 | $<$ | 113 | 83 | 599 |  | 14 | 3 |  | 0.05 |  | 0.37 | 5.06 | 1.39 | 0． 10 | 64\％ | 0.03 |
| L044＋04S | 品 | 612 | 0.2 | 180 |  |  | 224 | 6 | $<$ | 5 榽 | c | 1.7 | 39 | 111 |  | ＜ | 154 | 110 | 999 | 絞新 | 13 | 2 |  | 0.05 |  | 0.40 | 6．34 | 2.26 | 0.08 | 的哏 | 0.04 |
| L041＋05s | 筐 | － | 0.4 | 131 | 紋 |  | 408 |  | $<$ | 6 㭠复 | － | 2.2 | 32 | 57 |  | ＜ | 56 | 62 | 1211 | 鹤新 | 74 | 2 |  | 0.02 | 㭠8教 | 3.95 | 5．98 | 1.21 | 0.05 |  | 0.07 |
| LOM+06S | $\underset{\mathbf{K}}{\stackrel{\rightharpoonup}{c}}$ | － | 0.1 | 97 | ， |  | 155 | ＜ | $<$ | 5 詵気 |  | 1.3 | 20 | 55 |  |  | 55 | 55 | 729 | 䈘数 | 19 | 2 |  | 0.02 | 坥的帾 | 0.27 | 5.16 | 1.00 | 0.08 | 6xac | 0.04 |
| LOmb＋07S | \％ | － | 0.2 | 95 | 8 |  | 147 | $<$ | $<$ | 4 総 | c | 1.7 | 27 | 62 |  | $<$ | 46 | 61 | 760 | 䇣恶 | 44 | 5 |  | 0.04 | 䋑敉易 | 0.40 | 5.85 | 1.02 | 0.12 | $6{ }^{6} 5$ | 0.04 |
| Lomitoss | 8 | － | 0.1 | 90 | 8 |  | 155 | ＜ | $<$ | 4 纞 |  | 1.5 | 27 | 61 |  | $<$ | 48 | 64 | 1086 |  | 28 | 3 |  | 0.03 |  | 0.33 | 5.55 | 0.99 | 0.10 | $0{ }^{0}$ | 0.04 |
| L05W00 | \％ |  | $<$ | 204 |  |  | 272 | $<$ | $<$ | 4 㭠 |  | 1.5 | 37 | 103 | 殄社 |  | 141 | 112 | 704 | 䇖紸 | 15 | 4 |  | 0.07 |  | 0.38 | 5.89 | 1.74 | 0.13 | \％的发 | 0.03 |
| $L 05 N+01 N$ | $\frac{8}{4}$ |  | $<$ | 121 |  |  | 291 | $<$ | $<$ | 3 綮 | c | 1.2 | 29 | 7 | 緮㥅 | $\leqslant$ | 82 | 84 | 775 | 䜌営 | 17 | 4 |  | 0.07 |  | 0.42 | 4.88 | 1.13 | 0.22 | 6的兓 | 0.03 |
| 105 ${ }^{2}+024$ | 茹 | － | $<$ | 161 |  |  | 142 | $<$ | $<$ | 3 致复 |  | 1.0 | 26 | 71 |  | ＜ | 94 | 78 | 621 |  | 15 | 3 |  | 0.08 |  | 0.36 | 4.36 | 1.37 | 0.17 | 6縎號 | 0.03 |
| L054＋03N | 5 | － | $\leqslant$ | 250 | 3 |  | 130 | $<$ | $<$ | 3 䇣㝑 | ＜ | 1.2 | 35 | 83 |  | ＜ | 118 | 87 | 760 | 楼㱣 | 13 | 3 | 9 | 0.08 | 約教新 | 0.41 | 4.76 | 1.68 | 0.15 | 6020 | 0.04 |
| LOSH＋04N |  |  | $\leqslant$ | 197 |  |  | 146 | $\leqslant$ | $<$ |  |  | 1.0 | 31 | 85 |  | ＜ | 115 | 93 | 633 |  | 14 | 2 |  | 0.08 |  | 0.39 | 4.84 | 1.75 | 0.13 |  | 0.03 |
| L054＋05M | $\frac{8}{8}$ | － | $<$ | 162 |  |  | 129 | $<$ | $<$ |  |  | 1.3 | 31 | 84 | 鹤碞 | ＜ | 112 | 94 | 819 |  | 17 | 3 |  | 0.07 |  | 0.39 | 5.04 | 1.56 | 0．16 | 0\％${ }^{\text {a }}$ | 0.05 |
| LO5H0IS | 8 |  | $\bullet$ | 119 |  | 䈘號 | 289 | $<$ | ＜ | 3 笏 |  | 1.0 | 27 | 7 | 效数 | $<$ | 105 | 75 | 459 |  | 18 | 3 |  | 0.06 |  | 0.35 | 4.92 | 1.21 | 0.12 | 的受家 | 0.03 |
| L054＋02S | 6 | － | 0.1 | 175 | 2 | 診筀 | 363 | $<$ | $<$ | 5 笶 | ＜ | 1.5 | 29 | 85 | 缷酸 | $<$ | 137 | 91 | 527 | 衫䊽 | 18 | 2 |  | 0.04 |  | 0.37 | 5.97 | 1.47 | 0.09 | 禹笔 | 0.03 |

Out: May 03. 1995 In: Hay OR. 1995 [022315:25:49:59050395] 2 of 2 Certified BC Assayer: David Chic
$\qquad$


#### Abstract

$\qquad$




[^0]
## HOMESTAKE CANADA INC.

1000-700 West Pender St.
VANCOUVER, B.C.
V6C 1G8

## ATTENTION: ANDREW KAIP

35 Rock samples received May 16, 1995
Project \# None Given

| ET\#. | Tag \# | Au <br> $(\mathbf{p p b})$ | Ag <br> $(\mathbf{p p m})$ | As <br> $(\mathrm{ppm})$ | $\mathbf{C u}$ <br> $(\mathbf{p p m})$ | $\mathbf{P b}$ <br> $(\mathbf{p p m})$ | $\mathbf{S b}$ <br> $(\mathbf{p p m})$ | $\mathbf{Z n}$ <br> $(\mathrm{ppm})$ |
| :---: | :---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | 34616 | 10 | 0.1 | 60 | 18 | 18 | $<5$ | 8 |
| 2 | 34617 | 5 | 0.1 | 30 | 24 | 4 | $<5$ | 4 |
| 3 | 34619 | 165 | 0.1 | 355 | 25 | 6 | $<5$ | 28 |
| 4 | 34620 | 430 | 0.1 | 225 | 19 | 8 | $<5$ | 29 |
| 5 | 34621 | 255 | 0.1 | 80 | 43 | 150 | $<5$ | 49 |
| 6 | 34622 | 515 | 0.1 | 110 | 33 | 58 | $<5$ | 58 |
| 7 | 34623 | 815 | 0.1 | 605 | 17 | 22 | $<5$ | 18 |
| 8 | 34624 | 930 | 0.1 | 155 | 25 | 8 | $<5$ | 36 |
| 9 | 34625 | $>1000$ | 0.1 | 40 | 38 | 6 | $<5$ | 100 |
| 10 | 34626 | 60 | 0.1 | 870 | 24 | 6 | $<5$ | 12 |
| 11 | 34627 | 5 | 0.1 | 1005 | 69 | 4 | $<5$ | 21 |
| 12 | 34628 | 5 | 0.1 | 65 | 18 | 8 | $<5$ | 12 |
| 13 | 34629 | 10 | 0.1 | 50 | 159 | 8 | $<5$ | 65 |
| 14 | 34630 | 5 | 0.1 | 15 | 12 | 26 | $<5$ | 39 |
| 15 | 34631 | 5 | 0.1 | 35 | 70 | 6 | $<5$ | 130 |
| 16 | 34701 | 5 | 0.1 | 105 | 11 | 2 | $<5$ | 6 |
| 17 | 34702 | 10 | 0.1 | 35 | 33 | 6 | $<5$ | 57 |
| 18 | 34703 | 100 | 0.1 | 444 | 43 | 4 | $<5$ | 16 |
| 19 | 34704 | $>1000$ | 0.1 | 205 | 7 | 14 | $<5$ | 2 |
| 20 | 34705 | $>1000$ | 0.1 | 385 | 15 | 22 | $<5$ | 18 |
| 21 | 34706 | $>1000$ | 0.1 | 1275 | 34 | 12 | $<5$ | 38 |
| 22 | 34707 | 785 | 0.1 | 510 | 12 | 8 | $<5$ | 10 |
| 23 | 34708 | 90 | 0.1 | 120 | 36 | 8 | $<5$ | 25 |
| 24 | 34709 | 5 | 0.1 | 70 | 16 | 8 | $<5$ | 42 |
| 25 | 34710 | $>1000$ | 0.1 | 525 | 39 | 4 | $<5$ | 14 |
| 26 | 34711 | $>1000$ | 0.1 | 475 | 444 | 10 | $<5$ | 106 |
| 27 | 34712 | $>1000$ | 0.3 | $>10000$ | 97 | 6 | $<5$ | 22 |


| ET\#. | Tag \# | $\begin{array}{r} \mathrm{Au} \\ (\mathrm{ppb}) \\ \hline \end{array}$ | $\begin{array}{r} \mathrm{Ag} \\ (\mathrm{ppm}) \end{array}$ | $\begin{array}{r} \text { As } \\ (\mathrm{ppm}) \end{array}$ | $\begin{array}{r} \mathrm{Cu} \\ (\mathrm{ppm}) \end{array}$ | $\begin{array}{r} \mathrm{Pb} \\ (\mathrm{ppm}) \end{array}$ | $\begin{array}{r} \mathbf{S b} \\ (\mathrm{ppm}) \end{array}$ | $\begin{array}{r} \mathrm{Zn} \\ (\mathrm{ppm}) \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 28 | 34713 | $>1000$ | 0.3 | 3680 | 59 | 8 | <5 | 28 |
| 29 | 34714 | >1000 | 0.5 | >10000 | 321 | 12 | 40 | 146 |
| 30 | 34715 | 825 | 0.1 | 1070 | 82 | 10 | 5 | 89 |
| 31 | 34716 | 190 | 0.1 | 305 | 33 | 4 | <5 | 23 |
| 32 | 34717 | $>1000$ | 0.8 | 9280 | 298 | 12 | 20 | 122 |
| 33 | 34718 | $>1000$ | 0.1 | 2235 | 47 | 6 | <5 | 6 |
| 34 | 34719 | $>1000$ | 0.1 | 5710 | 48 | 12 | <5 | 42 |
| 35 | 34618 | 250 | 0.1 | 200 | 61 | 126 | <5 | 58 |
| QC DATA: |  |  |  |  |  |  |  |  |
| Resplit: |  |  |  |  |  |  |  |  |
| R/S 28 | 34713 | >1000 | 0.1 | 3815 | 64 | 8 | <5 | 28 |
| Repeat: |  |  |  |  |  |  |  |  |
| 1 | 34616 | 10 | 0.2 | 65 | 18 | 18 | <5 | 7 |
| Standard: |  |  |  |  |  |  |  |  |
| GEO |  | 150 | 1.4 | 60 | 90 | 22 | <5 | 83 |

ASSAYING
GEOCHEMISTRY
ANALYTICAL CHEMISTRY ENVIRONMENTAL TESTING

## CERTIFICATE OF ASSAY AK 95-261

HOMESTAKE CANADA INC.
1000-700 West Pender St.
VANCOUVER, B.C.
V6C 1 G8

## ATTENTION: ANDREW KAIP

35 Rock samples received May 16, 1995
Project \# None Given


## QC DATA:

Resplit:
R/S 28
34713
$3.99 \quad 0.116$
Standard:
STD-L
2.020 .059

Mp-1A

- $\quad 0.84$

NOTE: *Metallic Gold suspected
xls/homestake

B.C. Certified Assayer


ASSAYING
GEOCHEMISTRY
ANALYTICAL CHEMISTRY ENVIRONMENTAL TESTING

10041 E. Trans Canada Hwy., R.R. *2, Kamloops, B.C. V2C 2 J3 Phone (604) 573.5700

Fax (604) 573:4557
$24-85-9095$

HOMESTAKE CANADA INC.
23-May-95
1000-700 West Pender St.
VANCOUVER, B.C.
V6C 1 G8

## ATTENTION: ANDREW KAIP

26 Soil samples received May 16, 1995
Project\# None Given

| ET\#. | Tag \# | $\begin{array}{r} \mathrm{Au} \\ (\mathrm{ppb}) \end{array}$ | $\begin{array}{r} \mathrm{Ag} \\ (\mathrm{ppm}) \end{array}$ | $\begin{array}{r} \text { As } \\ \text { (ppm) } \end{array}$ | $\begin{array}{r} \mathrm{Cu} \\ (\mathrm{ppm}) \end{array}$ | $\begin{array}{r} \text { Pb } \\ \text { (ppm) } \end{array}$ | $\begin{array}{r} \mathrm{Sl0} \\ \text { (ppm}) \end{array}$ | $\begin{array}{r} \mathrm{Zn} \\ \text { (ppm) } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | S1 | $<5$ | <, 1 | 40 | 118 | 6 | 10 | 134 |
| 2 | S2 | $<5$ | <. 1 | 40 | 105 | 1.4 | 5 | 169 |
| 3 | S3 | < 5 | <. 1 | 70 | 110 | 10 | 10 | 125 |
| 4 | S4 | 40 | <. 1 | 60 | 110 | 10 | 10 | 168 |
| 5 | S5 Rusty Soil | 125 | <. 1 | 360 | 315 | 22 | 20. | 207 |
| 6 | S6 | <5 | <. 1 | 30 | 140 | 10 | 10 | 145 |
| 7 | S7 Goldmax Road Cut 25 M West of Bend in Road | $<5$ | <. 1 | 45 | 117 | 4 | 5 | 62 |
| 8 | S8 | < | <. 1 | 80 | 60 | 4 | $<5$ | 130 |
| 9 | 59 | $<5$ | <. 1 | 40 | 55 | 2 | $<5$ | 137 |
| 10 | S10 | < | <. 1 | 35 | 60 | 4 | < 5 | 132 |
| 11 | S11 | 40 | <. 1 | 105 | 129 | 4 | 10 | 118 |
| 12 | S12 | 160 | <. 1 | 330 | 243 | 2 | 10 | 129 |
| 13 | S13 | 15 | $<.1$ | 140 | 228 | 6 | 10 | 186 |
| 14 | S14 | 365 | $<.1$ | 360 | 224 | 8 | 10 | 182 |
| 15 | S15 | 10 | <. 1 | 190 | 277 | 4 | 10 | 154 |
| 16 | S16 | $<5$ | <. 1 | 120 | 255 | 4 | 10 | 148 |
| 17 | S17 | $<5$ | <. 1 | 120 | 310 | 4 | 10 | 169 |
| 18 | S18 | 5 | <. 1 | 170 | 240 | 6 | 15 | 154 |
| 19 | S19 | $<5$ | $<.1$ | 90 | 91 | 8 | 5 | 268 |
| 20 | S20 | 10 | <. 1 | 85 | 128 | 4 | 5 | 250 |
| 21 | S21 | < | <. 1 | 90 | 107 | 6 | 5 | 193 |
| 22 | S22 | $<5$ | <. 1 | 85 | 126 | 2 | 5 | 185 |
| 23 | S23 | <5 | <. 1 | 50 | 70 | 6 | 10 | 180 |
| 24 | S24 | 5 | <. 1 | 65 | 75 | 4 | 5 | 128 |
| 25 | S25 | $<5$ | <. 1 | 50 | 60 | 4 | 10 | 143 |
| 26 | S26 | $<5$ | <. 1 | 40 | 51 | 6 | 10 | 227 |


| ET \#. | Tag \# | $\begin{array}{r} \mathrm{Au} \\ (\mathrm{ppb}) \\ \hline \end{array}$ | $\begin{array}{r} \mathbf{A g} \\ (\mathrm{ppm}) \end{array}$ | $\begin{array}{r} \text { As } \\ \text { (ppm) } \end{array}$ | $\begin{array}{r} \mathrm{Cu} \\ (\mathrm{ppm}) \end{array}$ | $\begin{array}{r} \mathrm{Pb} \\ (\mathrm{ppm}) \end{array}$ | $\begin{array}{r} \text { 5b } \\ \text { (ppmi) } \end{array}$ | $\begin{array}{r} \mathrm{Zn} \\ (\mathrm{ppm}) \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| QC DATA: |  |  |  |  |  |  |  |  |
| Repeat: |  |  |  |  |  |  |  |  |
| 1 | S1 | $<5$ | $<.1$ | 45 | 117 | 6 | 10 | 132 |
| Standard: |  |  |  |  |  |  |  |  |
| GEO |  | 150 | 1.4 | 70 | 90 | 20 | $<5$ | 84 |



international plasma laboratory lit
Client: Homestake Mineral Development Co
iPl_: 9503103 M
Out: Nug 04. 1995 In: Jul 31, 1995

Page 1 of 2 $\begin{array}{r}\text { Section } 1 \text { of } 1 \\ \text { C053909:25:5] 95] }\end{array}$

| Sumple Name |  | $\begin{array}{r} \mathrm{Au} \\ \mathrm{ppb} \end{array}$ | $\begin{array}{r} \mathrm{Au} \\ \mathrm{~g} / \mathrm{mt} \end{array}$ | Ag ppm | $\begin{array}{r} \mathrm{Cu} \\ \mathrm{ppm} \end{array}$ | $\begin{array}{r} \mathrm{Pb} \\ \mathrm{ppon} \end{array}$ | $\begin{array}{r} \text { Zn } \\ \text { ppm } \end{array}$ | ns ppin | Sample Name |  | $\begin{array}{r} \mathrm{Au} \\ \mathrm{ppb} \end{array}$ | $\begin{array}{r} \wedge u \\ \mathrm{~g} / \mathrm{mt} \end{array}$ | $\begin{array}{r} \mathrm{Ag} \\ \mathrm{ppm} \end{array}$ | $\begin{gathered} \mathrm{Cu} \\ \mathrm{ppon} \end{gathered}$ | $\begin{array}{r} \mathrm{Pb} \\ \mathrm{ppm} \end{array}$ | $\begin{array}{r} \mathrm{Zn} \\ \mathrm{ppm} \end{array}$ | $\begin{array}{r} \text { ns } \\ \mathrm{ppon} \end{array}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 22551 | R | 2 | -- | 0.5 | 38 | 8 | 24 | 43 | 22590 | R | 300 | -- | <0.1 | 48 | 14 | 68 | 94 |  |
| 22552 | R | 5 | -- | 0.5 | 39 | $\cdots \quad 2$ | 17 | 37 | 22591 | $\stackrel{\text { ¢ }}{\text { R }}$ | 13m | 8.90 | 0.9 | 108 | 217 | 142 | 1337 |  |
| 22.553 | R | 11 | -- | 0.7 | 17 | 5 | 112 | 136 | 22592 | R | 1900 | 1.81 | 0.5 | 28 | 11 | 59 | 250 |  |
| 22554 | $\ddot{\mathrm{K}}$ | 22 | -- | 0.1 | 7 | <2 | 20 | 2.15 | 22593 | R. | 940 | -- | 0.7 | 39 | 11 | 120 | 374 |  |
| 22555 | R | 3 | -- | 0.8 | 19 | $<2$ | 26 | 26 | 22594 | R | 3560 | 3.57 | 0.9 | 45 | 13 | 104 | 1179 |  |
| 22.556 | R | 1 | -- | 0.9 | 1024 | - 3 | 78 | 69 | 22595 | R | 5580 | 6.27 | 1.2 | 21 | 228 | 42 | 590 |  |
| 22557 | R̈ | 5 | -- | 0.7 | 15 | <2 | 15 | 110 | 22596 | R | 5170 | 5.10 | 0.4 | 11 | \% 14 | 23 | 439 |  |
| 22558 | R | 6 | -- | 0.3 | 6 | -6 | 29 | 257 | 22597 | R. | 2700 | 3.19 | 0.3 | 7 | \% 10 | 3 | 181 |  |
| 22559 | R | 2 | -- | 0.5 | 10 | < $<2$ | 40 | 20 | 22598 | R. | 1140 | 1.23 | 0.3 | 14 | \% 6 | 25 | 373 |  |
| 22560 | R | 10 | -- | 0.8 | 149 | \% 3 | 52 | 20 | 22599 | R | 4320 | 4.83 | 1.1 | 75 | \% 18 | 137 | 3956 |  |
| 22561 | R | $<2$ | -- | 0.6 | 53 | \% 8 | 63 | 50 | 22600 | \% | 5390 | 4.00 | 0.8 | 77 | \%14 | 134 | 1615 |  |
| 22562 | $\ddot{R}$ | 950 | -- | 9.5 | 26 | 3574 | 3507 | 5802 | 22601 | R. | 43 | - | $<0.1$ | 249 | \% 2 | 135 | 463 |  |
| 22563 | $\stackrel{\text { k }}{ }$ | 4 | -- | 0.7 | 5 | \% 10 | 32 | 55 | 22602 | R | 27 | - | <0. 1 | 84 | \% | 72 | 96 |  |
| 22564 |  | 1680 | 1.97 | 0.5 | 49 | \% 8 | 58 | 149 | 22603 | \% | 32 | -- | 0.7 | 75 | 83 | 151 | 134 |  |
| 22565 | R | 466 | -- | 0.8 | 27 | 214 | 63 | 1799 | 22604 | 8 | 9 | -- | 0.3 | 25 | \% 82 | 125 | 54 |  |
| 22566 |  | 843 | -- | 0.7 | 24 | \% 1 | 118 | 263 | 22605 | 荗 | 9660 | 9.37 | 0.6 | 41 | \%22 |  | 2553 |  |
| 22567 |  | 1540 | 1.51 | 0.5 | 149 | \% 2 | 99 | 1020 | 22606 |  | 2440 | 2.35 | 0.2 | 57 | \% 88 |  | 2301 |  |
| 22568 | R | 1330 | 1.25 | 0.4 | 34 | \% 2 | 64 | 440 | 22607 | + | 4840 | 5.17 | 0.9 | 51 | \% | 69 | 2306 |  |
| 22569 | R | 7 | -- | <0.1 | 10 | \% 82 | 15 | 77 | 22608 | \% | 50 | - | 0.4 | 50 | \%2 | 10 | 46 |  |
| 22570 |  | 1770 | 2.58 | 0.6 | 62 | \%14 | 274 | 1780 |  |  |  |  |  |  |  |  |  |  |
| 22571 | $\ddot{R}$ | 616 | -- | 1.1 | 62 | 8259 | 74 | 161 |  |  |  |  |  |  |  |  |  |  |
| 22572 | R | 215 | -- | 0.7 | 50 | \% ${ }^{\text {a }}$ | 66 | 216 |  |  |  |  |  |  |  |  |  |  |
| 22573 |  | 1220 | 2.39 | 0.6 | 11 | \% 2 | 19 | 591 |  |  |  |  |  |  |  |  |  |  |
| 22574 | R | 3 | -- | 0.7 | 4 | \% 8 | 41 | 32 |  |  |  |  |  |  |  |  |  |  |
| 22575 | R | $<2$ | -- | 0.1 | 25 | \% 2 | 30 | 14 |  |  |  |  |  |  |  |  |  |  |
| 22576 | R | $<2$ | -- | 0.2 | 96 | \% 2 | 25 | 18 |  |  |  |  |  |  |  |  |  |  |
| 22577 | R | 5 | -- | 0.8 | 45 | \%10 | 129 | 36 |  |  |  |  |  |  |  |  |  |  |
| 22578 | R | 457 | -- | 0.8 | 63 | \%2 | 120 | 435 |  |  |  |  |  |  |  |  |  |  |
| 22579 | R' | 623 | -- | 0.6 | 33 | \%2 | 62 | 236 |  |  |  |  |  |  |  |  |  |  |
| 22580 | R | 127 | -- | 0.3 | 29 | \% 3 | 69 | 418 |  |  |  |  |  |  |  |  |  |  |
| 22581 | 8 | 74 | -- | 0.9 | 105 | \%) 2 | 86 | 178 |  |  |  |  |  |  |  |  |  |  |
| 22582 | R | 121 | - | 0.8 | 82 | \%r 4 | 115 | 622 |  |  |  |  |  |  |  |  |  |  |
| 22583 | R | 50 | -- | 0.6 | 22 | \%2 | 74 | 298 |  |  |  |  |  |  |  |  |  |  |
| 22584 | R | 110 | -- | 0.6 | 40 | \% 8 | 74 | 137 |  |  |  |  |  |  |  |  |  |  |
| 22585 | R | 346 | - | 0.6 | 55 | \% $<2$ | 34 | 462 |  |  |  |  |  |  |  |  |  |  |
| 22586 | ¢ | 920 | -- | 1.0 | 96 |  | 108 | 219 |  |  |  | 1 |  |  |  |  |  |  |
| 22587 | R | 1910 | 1.68 | 0.8 | 48 | \% 8 | 96 | 1566 |  |  |  |  |  |  |  |  |  |  |
| 22588 | R | 131 | -- | 0.9 | 61 | \% 8 | 80 | 219 |  |  |  |  |  |  |  |  |  |  |
| 22589 | \% | 110 | -- | 0.7 | 47 | \% $\%$ | 67 | 117 |  |  |  |  |  |  |  |  |  |  |
| Min limit |  | $?$ | 0.07 | 0.1 | 1 | $?$ | 1 | 5 |  |  | 2 | 0.07 | 0.1 | 1 | 2 | 1 | 5 |  |
| Max Reymerted* |  | 9339 | 1000.00 | 39.9 | 20000 | 20000 | 20000 | 9999 |  |  | 9999 | 1000.00 | 99.9 | 20000 | 20000 | 20000 | 9999 |  |
| M.etheot |  | FMM | Fncrav | $1 \mathrm{ICP}^{\prime}$ | 1 CP | ICP | 1 CP | ICP |  | U=Undefined$\mathrm{Ph}: 604 / 879-$ |  | FAGrav | ICP | ICP | 1 Cl | ICP | ICP |  |
| -- =No Test i <br> \|ntarnat:ional | ns=Insufficient Sample Platani I in l tid. 2036 |  |  |  | S=Soil $\mathrm{R}=$ Rock $\mathrm{C}=$ Cone $\mathrm{L}=$ Silt $\mathrm{P}=\mathrm{Pu}$ ulp Conlunbia St: Vancouver RC. V5Y $3 F 1$ |  |  |  |  |  |  | m=Est | imate/ | 1000 | \%=Esti | mate \% | Max |  |
|  |  |  |  |  | 878 Fax | $x: 604 /$ | 879-789 |  |  |  |  |  |  |

inteanationalplasma laboratory lto.

## Pamicon Development Lta <br> Out: Dec 04, 1995 Project: 90750 Ample <br> In: Dec 01, 1995 Shipper: Cameron Scott <br> POH: <br> Shipment: <br> $I D=C 000300$

Msg: Metallic Au

| 6 Samples | $0=$ Rock | $0=$ Soil | $0=$ Core | $0=R C C t$ | $6=\mathrm{Pulp}$ | $0=$ Other | [107210.36: | 9:59120495] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Raw Storage: | -- | -- | -- | -- | 12Mon/Dis | -- | Mon=Month | Dis=Discard |
| Pulp Storage: | -- | -- | -- | -- | $12 \mathrm{Mon/Dis}$ | -- | Rtn $n=$ Return | Arc=Archive |

Msg: RE:95G3103
Document Distribution
1 Pamicon Development Ltd
711-675 W Hastings St
Vancouver
BC V6B 1N4
ATT: Cameron Scott

2 Homestake Mineral Develpoment Co 1000-700 W Pender St
Vancouver
BC V6C IG8
ATT: Dave Kuran EN RT CC IN FX $\begin{array}{llll}1 & 2 & 2 & 2\end{array}$ DL 3050 BT BL
$\begin{array}{lllll}0 & 0 & 0 & 1 & 0\end{array}$
Ph:604/684-5901 Fx:604/684-0279

Analytical Summary
\#\# Code Met Title Limit Limit Units Description
Element
01 802M Spec Total See Data Pg mpl g Weight (2 Decimal)
02802 M Spec +150 M See Data Pg mpl 9 Weight ( 2 Decimal)
03802 M Spec -150 M See Data Pg mpl g Weight (2 Decimal)
$W t$
$W t$
$W t$
$W t$
01
03 802M Spec -150M See Data Pg mpl g Weight (2 Decimal)
04 368MFA/GraAu+150 See Data Pg $\quad$ mg Au Fire Assay mg
05 368MFA/GraAu-1,50 See Data Pg $\mathrm{g} / \mathrm{mt}$ Au Fire Assay $\mathrm{g} / \mathrm{mt}$
Gold
Gold
05
06 368MFA/GraAu Ttl See Data Pg g/mt Au Fire Assay $\mathrm{g} / \mathrm{mt}$
Gold
lumbia Str
B.

Canada V5Y $3 E 1$
Phone (604) 879-7878
Fax (604) 879-7898

EN RT CC IN FX $\begin{array}{lllll}2 & 2 & 1 & 0 & 1\end{array}$ DL 3D 5D BT BL $\begin{array}{ccccc}0 L & 30 & 50 & B T & B L \\ 0 & 0 & 0 & 0 & 0\end{array}$ Ph: 604/684-2345 Fx:604/684-9831

international plasma laboratory lito


Client: Homestake Mineral Development Co Projert: 90750 Nmple 171 Soil


Dut: Aug 03, 1995
[051018.38.0] Page 1 of 5
[054018:38:0] 95]
5]

| Min Limit | 2 | 0.1 | 1 | 2 | 1 | 5 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Mix Reiforted* | 9999 | 99.9 | 20000 | 20000 | 20000 | 9999 |
| Mothad | FMMA | ICP | ICP | ICP | ICP | ICP |

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=iNo Tost ins=Insufficient Sample $S=$ Soil R=Rock C=Core L=Silt P=Pulp U=Undefined m=Estimate/1000 \%=Estimate \% Max=No Estimate
International Plasma Lab Ltd. 2036 Columbia St. Vancouver BC V5Y 3F1 Ph:604/879-7878 Fax:604/879-7898

Client: Honestake Mineral Development Co Project: 90750 Anple

Out: Mug 03, 1995
In: Jul 31, 1995

Page 3 of 5
[051018:38:1] 95]
Sample Name $\quad \wedge u \quad \Lambda g \quad \mathrm{Cu} \quad \mathrm{Pb} \quad \mathrm{Zn} \quad \wedge \mathrm{s}$

| L15+00E | $16+00 \mathrm{~N}$ | S | 30 | 0.1 | 169 | 9 | 140 | 67 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| L16+00E | $5+50 \mathrm{~N}$ | S | 24 | 0.2 | 49 | 12 | 153 | 70 |
| L16+00E | $6+00 \mathrm{~N}$ | \$ | 33 | 0.2 | 52 | 11 | 104 | 63 |
| L16+00E | $6+50 \mathrm{~N}$ | S | 40 | 0.2 | 34 | 11 | 235 | 50 |
| L16+00E | $7+00 \mathrm{~N}$ | S | 35 | 0.1 | 35 | 8 | 246 | 62 |


$114+00 \mathrm{E} \quad 11+50 \mathrm{~N}$ $\mathrm{L} 14+00 \mathrm{E} \quad 12+00 \mathrm{~N}$
$\begin{array}{ll}\mathrm{L} 14+00 \mathrm{E} & 12+50 \mathrm{~N} \\ \mathrm{~L} 14+00 \mathrm{E} & 13+00 \mathrm{~N}\end{array}$
$\begin{array}{ll}\text { L14+00E } & 13+00 \mathrm{~N} \\ \text { L14+00E } & 13+50 \mathrm{~N}\end{array}$
L14+00E $\quad 14+00 \mathrm{~N}$
L14+00E $14+50 \mathrm{~N}$
L14+00E $\quad 15+00 \mathrm{~N}$
L14+00E $\quad 15+50 \mathrm{~N}$
L14+00E $16+00 \mathrm{~N}$
$\begin{array}{ll}\text { L15 +00E } & 5+00 N\end{array}$
L15+00E $\quad 5+50 \mathrm{~N}$
$\begin{array}{ll}L 15+00 \mathrm{E} & 6+00 \mathrm{~N} \\ \mathrm{~L}+0 \mathrm{~F}\end{array}$
$\begin{array}{ll}\text { L15+00E } & 6+50 \mathrm{~N} \\ \text { L15+00E } & 7+50 \mathrm{~N}\end{array}$
L15+00E $\quad 8+00 \mathrm{~N}$
L15+00E $\quad 8+50 \mathrm{~N}$
$\begin{array}{ll}\text { L15+OOE } & 9+00 \mathrm{~N} \\ \text { L15 +00E } & 9+50 \mathrm{~N}\end{array}$
L15+00E $\quad 10+00 \mathrm{~N}$



CERTIFICATE OF ANALYSIS iPL 95G3104
iniernational plasma laboratiory lio.

Client: Homestake Mineral Development Co Project: 90750 Ample 171 Soi

| Sample Name |  | $\begin{array}{r} \mathrm{Au} \\ \mathrm{ppb} \end{array}$ |  | $\begin{array}{r} \mathrm{Ag} \\ \mathrm{ppm} \end{array}$ | $\underset{\mathrm{ppm}}{\mathrm{Cu}}$ | $\begin{array}{r} \mathrm{Pb} \\ \mathrm{ppm} \end{array}$ | $\begin{array}{r} \mathrm{Zn} \\ \mathrm{ppm} \end{array}$ | $\begin{array}{r} \text { As } \\ \mathrm{ppx} \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |
| 1.18100E | $11+50 \mathrm{~N}$ | S | 47 | $<0.1$ | 88 | 10 | 131 | 66 |
| $128+00 \mathrm{E}$ | $12+00 \mathrm{~N}$ | S | 27 | $<0.1$ | 131 | 9 | 140 | 68 |
| L19.00E | $6+00 \mathrm{~N}$ | S | 49 | 0.2 | 160 | 23 | 356 | 185 - |
| L19+00E | $6+50 \mathrm{~N}$ | S | 43 | 0.1 | 129 | 23 | 353 | 189- |
| L19+00E | 7+00N | S | 35 | 0.1 | 96 | 16 | 255 | 96 |
| L19+00E | $7+50 \mathrm{~N}$ | S | 33 | 0.2 | 130 | 14 | 214 | 143 |
| L19+00E | $8+00 \mathrm{~N}$ | S | 45 | 0.3 | 139 | 15 | 269 | 150 |
| L19+00E | $8+50 \mathrm{~N}$ | S | 30 | 0.2 | 117 | 16 | 305 | 118 |
| L19+00E | $9+00 \mathrm{~N}$ | \$ | 21 | <0.1 | 121 | 10 | 223 | 116 |
| L19.+00E | $9+50 \mathrm{~N}$ | S | 70 | 0.1 | 116 | 17 | 330 | 128 |
| L19+00E | $10+00 \mathrm{~N}$ | S | 21 | <0.1 | 127 | 15 | 247 | 118 |
| L19+00E | $10+50 \mathrm{~N}$ | S | 23 | 0.1 | 66 | 13 | 206 | 93 |
| L19+00E | $11+00 \mathrm{~N}$ | S | 39 | <0.1 | 126 | 14 | 270 | 112 |
| L19+00E | $11+50 \mathrm{~N}$ | S | 27 | <0.1 | 143 | 11 | 276 | 129 |
| L19.00E | $12+00 \mathrm{~N}$ | S | 11. | <0.1 | 141 | 6 | 152 | 82 |

## $\begin{array}{rrrrrr}2 & 0.1 & 1 & 2 & 1 & 5 \\ 9999 & 99.9 & 20000 & 20000 & 20000 & 9999\end{array}$ <br> FM ICP ICP ICP ICP ICP

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Max Reported
FEtimate/1000 $Z=$ Estimate $\%$ Max

Jnt:ernational Plasma l.ab Itt. 2036 Columbia St. Vanoouver BC V5Y 3E1 Ph:604/879-7878 Fax:604/879-7898

## APPENDIX D

## PETROGRAPHIC REPORT ON EIGHT THIN SECTIONS FROM THE BRIDGE RIVER TERRAIN



## Vancouver Petrographics Ltd．

JAMES VINNELL，Manager
JOHN G．PAYNE，Ph．D．Geologist CRAIG LEITCH，Ph．D．Geologist
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## PETROGRAPHIC REPORT ON EIGHT THIN SECTIONS FROM THE BRIDGE RIVER TERRANE

Feport for：T．Eameron SGott Famigan Develapment Ltd． 711－67S West Hastings Street Vancouver，B．E．VEB 1N4．

Jab \＃LL－5E－95
Invaire $95076 \in$
Jan．4，19ヲも．

CS $95-07-17-2:$ AMFHIEOLE－EFIDOTE－CHLOFITE－MINOF：K゙－SFAF ALTEFED EASALT－ BASALTIC ANDESITE EUT EY INTENSE NETWOFK DF FRALTUFES WITH FINE QFAQUES

Dart：grey－green，fine－grained rock cut by a network af fine dart： fractures．There is no reaction to bold dilute Hil，and anly trages of magnetism．One half of the section coloured portion as revealed in the etrhed slab）．In thin sectign， this rout appears ta be an altered basalt or basaltig andesite， possibly belonging to either the Eridge Fiver Group or Eadwallader Graup（sensu lata）．The modal mineralogy is approximately：

Flagiaulase $40 \%$
Amphibale 35\％
Epidate $10 \%$
Chlarite
$10 \%$
Dpaque（fracture network）
K－feldspar（secondary）
Gireen＂hydrabiatite＂
Limonite
$3 \%$
＜ $1 \%$
$t r$
This is an intensely fractured and altered rock，apparently consisting mainl Gf fine plagioulase and amphibole wut by fractures along which very fine Gpaque matter，epidgte and Ehlorite are distributed．Larger patches（ta 2 mm lang）af Ehlorite－epidate alsa oncur．

Fiagigulase forms subhedral Erystals up ta 0.25 mm long with rounded to raqged autlines due ta alteration at their margins ta amphibole and epidate．It is not possible to determine the ampasition Gf the plagioulase due to the fine grain size and alteration；it likely was Ealcir，but may now be sodic due to alteratign．

Amphibale forms aggregates up ta 0.3 mmacross af fine ragged fibrous mats（needles to 0.15 mm long）with pale green colaur and oblique extinction（about $10-15$ degrees）．It is likely after some former mafic mineral such as pyraxene．In places vague outlines af ？former mafig crystals up ta 1 mm long agntain trages af pale greenish brown＂hydrabigtite＂as very fine flates to 35 microns diameter．The amphibole is also heavily replaced along the intense frarture networt： by areas of epidate and chlarite as subhedral crystals ta 0.2 momand flates ta 25 misrons respectively．The epidate－graup mineral has nu pleguhraism，suggesting low Fe Gontent，but the chlorite has ancmalous blue inter ference ralours suggesting moderate Fe Eantent．

## Fage 2

Dpaques along the fractures are very fine-grained ( 1 -20 microns) to amorphous. Earely, especially in the patches of ihlorite-epidote, there are crystalline opaques to 50 microns in diameter. K-feldspar mainly occurs as sub- to anhedral crystals of 0.25 mm size in narrow irregular veinlets up to 0.5 mm thick, or as aggregates of very fine anhedral crystals to 50 microns; the k-spar could be secondary. It shows minor alteration to fine ( $10-20 \mathrm{mi}$ Gron) rosettes of chlorite.

```
15-95-07-17-3: FINE-GFAINED SUCFOSIC QUAFTZ-FILH FOLG, FOSSIELY METAEHEFT，WITH MINDF EALEITE AND DFAEUE MATTEE ALONE FFAETUFES
            White, fine-grained, sugary rock cut by network af fine black
fractures; rare pyrite. Fock is not magnetig and shows no stain for ド-
feldspar except trace along a fracture, but reacts in places tG HCl.
Modal mineralogy in thin section is approwimately:
    Quartz (largely secondary) 80%
    Carbonate (Fmainly Gal&ite) 15%
    Opaque (along fractures) 3%
    Limonite 1%
    Fyrite < 1%
    ド-feldspar <1%
```

This rock is Eamposed almost entirely of fine－grained quartz， probably mostly secondary，with lesser Garbonate，and very fine opaque matter distributed along an intimate fracture network．If there is feldspar，it is not recognizable dit could be fine－grained，untwinned plagigulase with refractive index similar to that af quartz，but I da not $\quad$ onsider this likely）．Guartz mainly forms fine sucrosic antiedral grains af 10－25 micron diameter．Earbonate，likely mostly Galeite ta judge by the reantion in hand speidmen，oucurs as ogarser（25－50 míron）subhedral tGeuhedral Erystals sattered throughout the route and along narrow veinlets（to o． 1 mm thi上k．The rock is Eut by narrow （ 0.25 mm ）irregular anastamasing veinlets af slightly coarser quartz and Earbonate（subtiedral crystals to o． 1 mm ）．

Opaque matter occurs mostly as extremely fine－grained（ $1-5$ migran） grains along very narrow fractures（typically $10-20$ micrans thick）or interstitial to quartz in patohes or areas with subhedral ar
 replaced ？$\quad$ phenocrysts ar fragments．The identity af the bulk af the opaque matter is not elear；it could be carbonaceous material．in plages there is minor redishobrown limonite，as amorphous intergranular films between quartz grains alang a 0.5 mm thist：planar quartz vein cutting the center af the slide．

The arigin af this rock is not obvious；although not banded，it EGuld be a brecriated part of the ribbon oherts af the Eridge fiver Griup．

ES-95-07-17-7: AMFHIBOLE-EFIDOTE-CHLDRITE-EALCITE-TRACE K-FELDSFAR ALTEEED 〒BASALT OE BASALTIC ANDESITE

Fine-grained, pale green possible metavalcanic rock faintly foliated by abundant narrow dark sub-parallel fractures. The rock is slightly magnetic, and reacts slightly to HGl along some fractures; there are also traces of $k$-feldspar along fractures. In thin section, the modal mineralogy is similar to that for sample 17-2:

Amphibole (secondary) $50 \%$
Flagioclase 30\%
Epidate $10 \%$
Chlorite $5 \%$
Opaque matter (along fractures) $\quad 2 \%$
Carbonate (calcite) $1 \%$
Sphene, rutile $1 \%$
Limonite $\quad 1 \%$
K-feldspar
< $1 \%$
Although the proportions differ, this sample is similar to sample $17-2$, being composed mainly of amphibole and plagiaclase with epidate and chlorite along irregular distributed fractures and veinlets.

Amphibole forms fine subheral crystals up to 0.1 mm long with somewhat fibrous habit suggesting secondary origin. The extinction angle near $10-15$ degrees and very pale greenish colour suggest a memeber of the tremolite-actinalite group. In places, the amphibole is partly altered to fine chlorite.

Flagioclase forms sub- to anhedral crystals also up to 0.1 mm , generally finer than and interstitial to the amphibole cthe reverse of the relation in sample $17-2$, so this sample is slighlty mare mafico. It is not possible to determine the composition of the plagioclase in the fine, untwinned, anhedral crystals. There may be quartz present but this is hard ta determine given the lack of twinning in plagioclase. Rare K-feldspar is found as sub- to anhedral crystals to O. 1 mmalong some fractures.

Epidate forms sub- to euhedral crystals up to 0.35 mm size, in places forming layers up to 3 mm thick where it is accompanied by significant chlorite. The epidate-group mineral may be clinazaisite (Fe-pogr) since there is little or no yellowish pleghroism. Chlarite forms fine subhedral flates up to 50 microns in diameter with purpleblue interference colours suggesting relatively Fe-righ compasition; in places there is minar sphene and/or rutile mixed with the chlorite, as fine granular crystals up to 20 microns in diameter. Carbonate is also found associated with the epidgte and chlorite, forming subhedral to euhedral $25-50$ micron $6 r y s t a l s$ in layers up to 0.5 mm thick.

Opaque matter forms very fine, amorphous grains to 5 microns size along the network of fine fractures, partly assouiated with epidote. Minar reddish-brawn limanite associated with epidate may be after former $\%$ pyrite as subhedral Grystals up to 50 microns diameter.

As far 07-2, this appears ta be an amphibole-epidate-Ghlorite altered Fbasalt gr basaltic andesite, typical of the Bridge Fiver and/Gr Cadwallader group volcania rocks.

CS S5-07-18-1: AMFHIEDLE-ALEITE-EHLQFITE-CALEITE ALTEFED DIQEITE
Grey-green, medium-grained digritic intrusive rát composed af raughly equal amounts af dark green mafic and greyish altered plagioclase (na stain for f-feldspar in etched slab). The ract: is very slightly magnetic and reacts moderately to HIl. Madal mineralggy in thin section is approwimately:

Flagioclase (likely albitized) $25 \%$
Secondary amphibole (?tremalite-átinalite) $25 \%$
Amphibale (Fharnblende) 20\%
Ehlorite
$15 \%$
Garbonate (mainly Galcite) $1.0 \%$
Sphene, rutile
3\%
Seríite, clay (after feldspar) 2\%
This appears to be a fairly typical fine-grained versiom af the Eralorne diorite, originally composed of slightly more mafig than plagioulase but now strongly altered ta albite, amphibole, ahlorite and calcite. Flagioclase Erystals are subhedral to anhedral in outline, with no ar only vague twinning suggesting homagenizatian ta albitia Gomposition during alteration fand/ar greensohist facies metamarphism). Most Erystals are heavily gverprinted by subhedral Garbanate to 0.1 mm (aggregates ta 0.7 mm ) and minar sericite as very fine ( $10-20$ migron) subtiedral flat:es.

Former mafics include Eores of brownish green to pale sea-green amphibole (sub- to euhedral crystals to 1.5 mm lang; the green portions appear to be séondary Factiolitic amphibole after Fhornblende, although the hornblende itself may be after pyrawene. The rims gif mafic minerals are replaced by abundant fine-grained fibrous clear amphibole (ztremolitic) up to O. 1 mm long, or in plates by pale green chlorite up ta 50 micrans in diameter (iron to magnesium ratia about 50:50). Minar semi-qpaques cmainly sphene, ta 5o microns, aged by finer rutile to 25 microns) oceur in areas rich in mafis minerals, with subhedral outlines suggestive of former oilmenite or magnetite.

There does not appear to be any quartz present; therefore, this rait: would be classified as an amphibole-albiteriolarite-calcite altered hornblende digrite.


This raur appears ta be a highly altered valcanic, principally composed of fine-grained plagioulase feldspar and alteration products of former mafic minerals, with abundant $\operatorname{coarse}$ carbanate and scattered quartz. The original texture is all but destroyed by the alteration and shearing; anly rarely are el ongate patches af ahlorite seen that suggest $\supsetneq$ former mafje phemourysts up ta 3 mm 1 ong.

Flagigulase grours as o. $1-0.2 \mathrm{~mm}$ subhedral Erystals with vestiges of twinning and relief lower than quarta possibly albiticy, but no grains are large enough to determine the composition precisely. It is not alear whether the abundant $a \operatorname{arbonate}$, whinh forms subhedral ta anhedral arystals up to 0.15 mm áross aggregating in places ta 0.3 mm , is a replacement of plagioulase or af mafir minerals; it may be partly Gf both. Carbonate is likely mostly Galsite to judge by the reaction in hand sperimen.

Ehlorite forms abundant fine (25-35 micron) flakes mainly interstitial ta the other minerals, mixed in places with lesser fibrous colourless ?amphibole up ta or mm long. The ohlarite is a lengthfast, very pale green to aulourless variety that is likely magnesian. Amphibole may be tremolite-actimglite, alsa towards the magnesian end ta judge by the pale colour.

Quartz oceurs as subhedral crystals or aggregates up to o. 25 mm across, in places mixed with a little albite; the quarte could be either primary (small phenocrysts) or largely secondary. The distributian sugqests the farmer, but it is hard to be sure. If sa, then the compasition af this rack might be about that af a quartz andesite ar passibly dacite, intensely altered to albite-adaite-chlraite-amphibole.

## ES G5-O7-20-1: INTENSELY EALEITE-ALEITE-SEFIEITE-EHLOFITE ALTEFED FELSIE-INTEFMEDIATE GFYSTAL-LITHIE TUFF (TDAEITIE) <br> Dark grey-green medium- to fine-grained volaanic rock; texture revealed in etched slabsuggests a crystal tuff, with phenocrysts or shards af quartz © ©imilar ta those less perfectly preserved in the previcus sample;, plagioclase, and mafiss all up to about 1 mm in size. There is na stain for $k$-feldspar, and anly trace magnetism, but the roct rearts strongly to HOl. Modal mineralagy is approximately: <br> Garbonate (largely Ealcite) <br> Felict plagiculase (そalbitic) 25\% <br> Seríjte $\quad 15 \%$ <br> Ľlorite 15\% <br> Tarbonaceous matter $2 \%$ <br> Sphene, rutile $\quad \mathbf{2} \%$ <br> Limanjte $\quad 1 \%$

This sample consists af Glear, unaltered, eutedral ta broten quartz shards up ta 1 mm diameter, smaller plagioulase shards and sheared, altered mafic relict erystals up ta 1.5 mm lang in a matrix of carbonate, serisite and Ghlorite. Earely recognizable lithic Elasts are subangular and up to about 1 mm long; most are partly destrayed by shearing, which is subparallel ta a foliation expressed by a networt: of thin (10-30 micron thick) dark fractures, mainly composed af very finegrained (1-10 míran) TGarbanategus matter, in places with sphene, rutile and limonite. Some clasts are EGmposed of very fine-grained (10-20 micron) quartz; these cauld represent ohert olasts.

Flagioulase forms subhedral ?shards up ta 0.5 mm long that are mainly altered to carbonate and sericite but are still barely resognizable. Mafic relics or Fshards are aminly mainly replaced by a very fine-grained, $5-15$ micron mixture gf chlarite and seríite, in places with minor coarser (to 50 microns) carborate as sub- to anhedral Grystals. Ehlorite is also found in elongate patohes (afractures) as slightly EGarser, subhedral Erystals ta 25 microns diameter, with blue anomal gus interference Gglours indicating moderately Ferrich composition.

Garbanate owiurs as a finew to fairly coarse-grained replacement
 diameter, It $i s$ likely mastly aalaite to judge by the strang reactian ta Gold dilute HEl in hand sperimen.

This appears ta have been a felsic-intermediate arystal-lithia tuff, possibly of about daGite $\quad$ ompositiong before intense alteration ta galgite, albite, sericite and Ghlorite. The origin of the intimate dart frasture metwort gf Foarboraceous matter is mot alear, but it Gould be related to a nearby large-siale fault. The rack Gould be part Gf the Eadwallader Eiratup.

## 15－95－07－22－1：INTENSELY EHLOFITE－DOLOMITE／ANEEFITE－MINOF GUAFTZ

 ALTEFED TMAFIE FOEK，FOSSIELY DIOEITE TO GABBEDMedium－grained ？ metrix in places and cut by slickensided fractures．There are traces of magnetism but the rouk does not react to cold dilute Hill and shows no stain for ドーfeldspar．Modal mineralagy is appraximately：

Ehlorite $55 \%$
Carbonate（odolomite ar anterite）35\％
Quartz（litely secondary） $10 \%$
Fiutile，sphene＜ $1 \%$
Sericite＜1\％

This rack owes its vaguely porphyritig appearance to large euhedral crystals af carbonate（1． 5 mm，aggregating to 3 mm that appear to be general replacements of the rock（in places vein－lite） rather than pseudomorphs af any former phenocrystic arystals．The lack af reastion in hand specimen suggests that most of the Garbonate is dolomite or anterite．

Ghlarite farms fine subhedral flakes af about ze ta 50 micrans in diameter that are length－fast，colourless and with maderate birefringence that suggests a magnesium－rich composition．Minar quarte，as sub－ta anhedral erystals to o． 1 mm ，is intermixed with the Ghlorite．Ehlorite forms an almost massive matrix to the arbonate Grystals，particularly at one end af the slide（the black partion in hand sperimen）which is solid ahlorite．Beyond this massive Ghl arite， there are vague relict textures in the chlarite suggestive gf farmer ？phenourysts ar erystals up to 1.5 mm 1 ong ．

Quartz also ascurs in rare large patches up ta 3.5 mmlang amposed Gf Goarse anhedral strained erystals cundulase extinction，sutured grain boundaries）up to $2 \mathrm{~mm} s i z e$ ．These have the appearance af Gvein fragments，especially where mixed with lesser Garbonate．SeriEite，or muscovjte，gcours as rare subhedral flakes up ta $\mathrm{O}_{\mathrm{a}} \boldsymbol{\mathrm { G }} \mathrm{m}$ m in diameter．

Traces af sphene／rutile gecur as very fine brawn euhedral arystals up to 35 migrons in size，mostly Gontained in carbonate and Ghlorite． The magnesium－rioh oharacter af the chlorite and the Garbonate in this rock，plus the vaguely defined Trelict mafic erystals，and even the possible former presenae af quartz－carbonate veins，suggests a mafic precursor rouk，possibly diorite or gabbra；the relatively low eantent af TiGZ axides daes not suppart an ultramafig pratalith．

## Fage 9

## CS 9S-07-2z-E: INTENSELY ALEITE-GHLORITE-EALEITE-SERICITE ALTEFED

 GDIOEITE OF BABEROFine-grained gray rock characterized by $2-3 \mathrm{~m}$ Jang dark shreddy Tohloritic fragments in a fine matrix of white to buff Faltered feldspar, cut by up to 1 cm thick carbonate veins that react strongly to HCl. There is no stain for K-feldspar; the rouk is very slighlty magnetic. Modal mineralogy is approximately:

Flagioclase (?albite)
45\%
Chlorite 30\%
Carbonate (?mainly $\operatorname{calcite}$ ) $1.5 \%$
Sericite, muscovite 5\%
Epidote (Elinazaisite) $3 \%$
Futile, sphene $1-2 \%$
Apatite <1\%
This sample is similar to the amphibole diorite (18-1) in being composed mainly of plagioulase and altered mafic relics. The plagiaclase forms subhedral crystals up ta 1 mm long with a secondary appearance; twinning and extinction angle about 16 degrees suggest a composition of albite, Ano. Most of the erystals show minor alteration to fine carbonate and sericite. Garbonate forms sub- to anhedral crystals up to o. 5 mm size, both as disseminated replacements of the rock and as poorly defined veins up to 2 mm thick. Sericite, or muscovite where coarser, forms subhedral to bent flakes up to 0.25 mm diameter, in places Eoncentrated along fractures or sidips.

Mafic relics are subhedral ta rounded in outline, up ta 3 mm long. Although they have shard-like outlines (wispy, elongated in places) this could be the result of shearing. They are mainly pseudomorphed by Ghlorite, with minor epidote-group mineral and traces of rutile and/ar sphene, and apatite. Chlorite forms eu- to subhedral flakes of up to 0.1 mm diameter, with length-fast character, weakly anomalcus birefringence and very pale green colour indicating approximately median Fe:Mg ratio. The epidote-group mineral shows no plecichroism and thus may be fe-poor (olinozoisite), forming euhedral to subhedral Grystals up to 0.3 mm in size. Futile forms very fine needles to 20 microns long; apatite crystals are euhedral and up to 50 microns long.

Altheugh it is not clear whether the mafic relics in this sample are derived from clasts of mafic rock or phenocrysts, the composition appears to be about that of a diorite gr gabbro. There is also the possiblilty that the dark shards represent fiamme, or lithic elasts, in a volcanic rock ef andesitic Eomposition, but the abundant plagioclase Grystals argue against this. I have not seen a version of the Bralorme diorite that looks exawty like this, but that seems the most likely protalith。

Graig H.E. Leiteh, Fh. D, F:Eng.
492 Isabella Fgint Foad, Galt Spring Island, B.C. VEK $1 V 4$


APPENDIX E CERTIFICATE OF QUALIFICATION

## T. CAMERON SCOTT, GEOLOGIST

I, T. Cameron Scott of 3925 Fourth Avenue, Port Alberni, in the Province of British Columbia, DO HEREBY CERTIFY THAT:

1. I am a graduate of the University of British Columbia (1973) and hold a B. Sc. in Geology.
2. I am a Fellow of the Geological Association of Canada.
3. My primary employment since 1963 has been in the field of mineral exploration.
4. My experience has encompassed a wide range of geological environments and has allowed considerable familiarization with prospecting geophysical, geochemical and exploration drilling techniques.
5. This report is based on data generated by myself under the direction of Steve Todoruk, P.Geo. and Dave Kuran, P.Geo., and on information contained in the various reports listed in the Bibliography.
6. I have no interest in the property described herein, nor in securities of any company associated with the property, nor do I expect to receive any such interest.

Dated at Vancouver, B.C, this $\qquad$
 day of
 1996.










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