Final Report
Aberford Project

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March 1985

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FINAL REPORT

ABERFORD PROJECT

1984 Field Work
Results and Interpretations
on the
Eva and Thunder Claim Groups

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1. Introduction

The main objectives of the 1984 program were to identify the sources for the gold geochemical targets that were outlined from the 1983 program of stream sediment and follow-up grid sampling. This report covers the results and interpretations of 1984 field work on the Aberford Project.

2. Summary

The 1984 field program included detailed grid soil and rock sampling, geologic mapping, ground magnetometer and VLF-EM surveying over a number of geochemical targets on the Eva and Thunder claims. No work was undertaken on the Mark claims.

The Aberford Project was initiated in 1983 at the stream sampling follow-up stage with the emphasis to systematically explore for signatures and development of micron gold and bonanza vein styles of mineralization. No significant geochemical anomalies, suggestive of these types of mineralization were outlined, and consequently, no additional work can be recommended. Geological interpretation, indicates that several detectable gold signatures and their associated elemental anomalies are related to intrusive contacts, in particular, narrow porphyry dykes, small plutons, and local margins of larger stocks. A number of prominent gossanous shear structures were sampled and results from these often show either undetectable or weak and erratic gold presence with comparatively strong associated element response.

The following are brief comments on the various targets that were investigated on the Eva and Thunder properties.

a) Eva Property

i Taylor Creek Grid

The low-order gold anomaly in soil samples along Taylor Creek Road could not be extended by grid sampling or reproduced in a re-sampling project.

ii Taylor Creek North Slope

The 1983 follow-up results on highly promising heavy mineral assays were somewhat inconclusive, and further sampling in 1984 has not clearly explained the possible source of gold in the initial heavy mineral samples. Only one isolated weak gold signature in siltstone and sandstone unit of the Taylor Creek formation has been identified; its source may be related to the proximal granodiorite stock. A number of gossanous shear and carbonate altered zones in the conglomerate unit were sampled but other than mercury, no significant geochemical anomalies were detected. At this stage, a more detailed study of the glaciofluvial deposits and their general source areas may facilitate the overall interpretation.

iii South Cirque and Charlotte Grids

Detectable gold is related to a small granodiorite plug that intrudes a sequence of thin-bedded chert and pillow basalt. A strong mercury anomaly is present in a locally faulted, silicified and weakly carbonate altered segment of the chert unit.

iv Bruce Creek Target and Grid

A string of anomalous gold in soil samples are aligned in an elongated northerly trend along Bruce Creek. These anomalies are central to a much broader arsenic anomaly that spatially conforms to the interpretive outline of an underlying granodiorite stock. It is suggested that the gold could be related to a structural feature in the granodiorite, and as such may be comparable to the narrow shear zone style of mineralization as seen at the nearby Lucky Jem prospect.

v. Eva 21 Grid

A thin-bedded chert unit with local quartz veining and flooding overlies a greywacke unit in the form of an anticline. A very weak gold signature with coincident arsenic occurs over a restricted three-sample area in quartz-veined chert. Surrounding geochemical and geological parameters are not supportive for an expanded mineralized zone.

vi Eva 25 Grid

A weakly silicified and locally carbonatized siltstone member of a sedimentary sequence is geochemically anomalous in arsenic, antimony and mercury. Rock samples from a narrow strongly carbonatized and limonitized shear zone were also anomalous in arsenic, antimony, mercury and tungsten. However, there is no detectable gold with these anomalies.

vii Eva 26 Grid

Weak and sporadic gold values are related to a feldspar porphyry dyke swarm that intrudes silicified and highly fractured siltstone. Intense silicification and quartz vein flooding border the dykes and these also form part of the weak gold-bearing zone. Strong en echelon pattern of shear zones with associated iron carbonate alteration and quartz veining are developed at the serpentine-siltstone contact. Soil samples indicated a weak gold signature over the shear zone and its bounding area. However, more selective rock sampling of the individual shear zones are not gold-bearing.

viii Upper Taylor Creek "South Bank"

Pan Ocean recorded two rock samples grading 1.57 and 0.03 oz/ton Au respectively in a general area referenced as being on the south bank of Upper Taylor Creek. A follow-up survey during 1984 to explore this local area failed to locate the key sample location. Limited geochemical sampling results across the prospective area were negative.

ix North Cinnabar Creek Sampling

Following the initial encouraging geological features of the South Cirque and Charlotte Grid areas, the adjoining North Cinnabar Creek basin was explored with bulk stream sediment sampling. Mercury content is highly anomalous but no gold was detected in this sampling. No further follow-up work was conducted in this creek.

b) Thunder Property

i Thunder Grid and Cirque

The low-order gold geochemical anomaly from 1983 grid sampling was explored further with selective detailed sampling and geological mapping. The investigation was extended into the cirque that is immediately to the north and beneath the topographic crest of the anomaly location.

The talus-fines sampling indicates that the weak gold-bearing source is possibly associated with feldspar-biotite porphyry dykes and plugs that intrude siltstone and minor greywacke. Intense hornfelsing, rare siliceous calc-silicate skarn, localized carbonatization, late-stage carbonate veining, and prominent limonitic gossans are developed in close relation to the intrusve activity. The rock sampling was discouraging in that no gold was detected in the pyritized dykes and their intensely altered borders. Therefore there is no conformity between the anomalous talus-fines trends and rock geochemistry. Based on these results no definitive conclusion can be made as to the source of gold mineralization.

ii Graveyard Grid

Based on two anomalous bulk sediment samples and results from previous Barrier Reef program, the Graveyard Grid was established to assess the gossans on the north and northeast flank of Elbow Mtn. A quartz monzonite stock and several scattered feldspar-biotite porphyry dykes intrude a sedimentary sequence of greywacke, sandstone and siltstone. Soil, talus-fines and rock sampling did not indicate any significant gold-bearing anomalies. A few "colours" were recognized in a pan from gravels in a small tributary that drains across glaciofluvial material.

iii Elbow Gossan

A restricted gold anomaly was identified in talus-fines sampling by Barrier Reef on the west flank of Elbow Mtn. Gold-bearing mineralization is related to a prominent orangy-tan gossan that is developod across a narrow breccia zone and as enclosing silicified and clay altered border in pyritized greywacke and siltstone sequence. This target is interpreted as being too restricted for size potential to warrant forther werk.

iv Tosh Creek Gossan

A prominent gossan is developed over a pyritized andesitic (volcaniclastic?) unit that has a strong oriented fracture and fault pattern. A very weak gold signature has been detected across the gossan, but more selective sampling has indicated that gold source is restricted to fracture planes and thin in-fill fault matrix.

In summary, the detailed sampling results were discouraging. In particular, the rock chip sampling of specific geologic features did not provide the anticipated signatures for the gold source. Moreover, there are difficulties in depicting and correlating the sporadic and weak gold-bearing features as being the source for anomalous stream sediment samples. In other words, stream sediments in the Bridge River environment appear to be enhanced gold signatures compared to the sparse and possibly erratic tenor of gold mineralization.

3. Property

The Aberford property was enlarged during 1984 by staking 87 units, contiguous and to the west of the Thunder Group, and an additional 20 units at the headwaters of Eldorado Creek in the center of the Eva Group. The schedule of claims as of 1 December 1984 is tabulated below:

Mineral Claim	Units	Record No.	Expiry Date	Grouping
Eva 2-6	77	1458-1462	July 16, 1985	83-4
Eva 10	20	1466	July 16, 1985	83-3
Eva 11	20	1467	July 16, 1985	83-4
Eva 12-16	80	1468-1472	July 16, 1985	83-3
Eva 17-19	60	1473-1475	July 16, 1985	83-2
Eva 20 & 21	36	1476 & 1477	July 16, 1986	83-2
Eva 22	20	1478	July 16, 1985	83-1
Eva 23	20	1479	July 16, 1986	83-1
Eva 24	20	1480	July 16, 1985	83-1
Eva 25	20	1481	July 16, 1986	83-1
Eva 26	20	2908	June 13, 1985	-
Thule 6	20	1384	July 2, 1985	83-1
Mark 3 & 4	40	1500 & 1501	July 24, 1986	Mark
Thunder 2-6	84	841-845	July 28, 1987	83-5
Thunder 8-12	87	1730-1734	April 30, 1985	-

In compliance with the Agreement between Placer Development Limited and Aberford Resources Ltd., additional assessment work as accrued from the 1984 field work will be applied to the appropriate Eva and Thunder claims. No work was undertaken on the Mark claims, so status of Mark 3 and 4 will remain as shown above.

4. 1984 Program

A number of prospective targets were established on the Eva and Thunder properties as a result of the 1983 bulk sediment sampling. Several of these were investigated further with grid sampling in late 1983, specifically, Taylor Creek and Bruce Creek Grids on the Eva, Thunder and Marmot Grids on Thunder, and the Mark Grid on Mark property.

The 1984 field work was designed to locate and assess the source of gold-bearing mineralization for the various geochemical targets. This included more detailed exploration of the Taylor Creek, Bruce Creek and Thunder Grids. Much of the work involved detailed soil, talus-fines and rock chip sampling combined with geological mapping; ground magnetometer and VLF-EM surveys were conducted on several of the grids to complement the geological data. In total, thirteen separate targets on the Eva and Thunder properties were investigated.

5. General Geology

The Aberford properties are within a sequence of Mesozoic sedimentary and volcanic rocks that are structurally disrupted by faulting and folding. They are, in turn, intruded by younger granitic to quartz dioritic stocks and felsic to basaltic dykes. In and around the Eva property, a number of irregularly-shaped to dyke-like serpentinized ultramafic bodies are emplaced in the older Mesozoic rock units. Five ages of rocks ranging from the Triassic to the Upper Cretaceous are exposed and identified on the Aberford properties. The oldest Triassic Bridge River Group comprises a sequence of greywacke, massive and pillow basalts, thin-bedded chert and minor interbedded limestone and siltstone. The serpentinized ultramafic bodies invariably intrude and/or border these older

rocks. The Bridge River Group rocks are overlain or in fault contact with successively younger Upper Triassic Hurley Formation of interbedded greywacke, sandstone, siltstone, limestone and a distinct boulder conglomerate unit with carbonate matrix; Upper Jurassic Relay Mountain Group of argillite, greywacke, shale, siltstone and minor limestone, all of which are commonly fossiliferous; Lower Cretaceous Taylor Creek Group comprised of chert pebble and boulder conglomerate with interbedded greywacke and sandstone; and Upper Cretaceous Kingsvale Group comprised of generally soft and poorly lithified arkose, shale and pebble conglomerate. Medium to coarse equigranular granite to quartz diorite stocks and plugs intrude most of the above rock formations. Dykes, often occurring as swarms and possibly related to the stoeks, intrude the sedimentary and volcanic rocks.

Within the scope of the Aberford Project, a general mapping program was not undertaken. The formational identity of the various rock types from specific target locations on the Eva and Thunder properties were basically identified by correlating the lithology and its spatial distribution with those as represented and shown on regional geology maps. In relating this correlation to exploration potential, the older Bridge River Group and Hurley Formations are the more favourable rock units for mineral prospects on the Eva property. The Taylor Creek conglomerates are hosts for mercury mineralization and a few gold-bearing prospects. The Relay Mtn. Group is the important lithology on the Thunder and Mark properties.

Widespread gossans are developed as prominent crowns, zones and streaks on many of the topographic peaks and their flanks in the Bridge River region. Many of the gossans are accentuated from their actual source as they are spread downslope as scree material. The more widespread gossans normally represent

pyritized rock units whereas the more restricted bands and streaks are commonly developed over and around structures, alteration zones and other localized features such as dykes, thin beds, veins and contacts. Iron carbonate, probably in the form of ankerite is a common alteration and vein mineral that surficially alters to a rusty gossan. These gossans are attractive exploration signatures and certain phases of the detailed program were oriented towards assessing these targets.

6. Field Projects and Results

Nine separate areas on the Eva claims and four on the Thunder claims were examined during 1984. The locations of these targets are shown on appended property maps. The geochemical target on the Mark property is a restricted low-order gold anomaly and consequently no further work was undertaken on these claims.

6.1 Eva Property Geology and Targets

The Eva claims are underlain by a structurally complex sequence of sedimentary and volcanic rocks. These are further complicated by intrusion of granodiorite stocks in the central portion of the property. With reference to the appended geologic map of the Eva claims, the oldest and more favourably mineralized Bridge River Group rocks form the north-northwest-trending core to the lithologic assemblage that, in turn, is flanked by younger Hurley Formation to the west and Taylor Creek Group conglomerate to the east. A localized wedge of Kingsvale Group sedimentary rocks overlie part of the Taylor Creek conglomerate in the northeast sector of the property; these rocks were not examined. The irregularly-shaped granodiorite truncates the Bridge River Group rocks and forms the focal point of interest on the property as a number of mineral showings are proximal or within these intrusive bodies.

6.1.1 Taylor Creek Grid

The Taylor Creek Grid was established during 1983 to explore an apparent gold anomaly in soil samples along Taylor Creek Road. The grid sampling did not expand the anomaly, but the general consistency of the anomalous samples indicated sufficient promise to warrant further detailed work.

6.1.1.1 Geology

A monotonous sequence of massive chert pebble and boulder conglomerate underlies the Taylor Creek Grid and the immediate surrounding area. These 20 to 40 meter thick conglomerate beds are separated by thinner greywacke, sandstone and shale interbeds. Majority of the exposures are along the ridge crest at the top of the Taylor Creek Grid; no obvious alteration or structures are noted in the bedded sequence. A consistent 330°/50° SW bedding can be traced and projected northward from the Taylor Creek Grid to the north slope of Taylor Creek, and this prompted plans to conduct more thorough exploration along this trend.

6.1.1.2 Geochemical Surveys and Results

Additional soil samples were collected to tighten the grid pattern around the original anomaly. Also, the original sample sites on the Taylor Creek Road were re-samplod with profile samples of the B_1, A_0 where available and the overlying volcanic ash layer. The grid soil sampling was extended to the north side of Taylor Creek to test possibilities of a northerly extension to the anomaly.

TABLE 1

Taylor Creek Grid Comparative Au and Cu Contents Between 1983 Soil Sampling and 1984 re-Sampling

1983 Soil	Soil Horizon	Au ppm	Cu ppm	1984 Soil	Soil Horizon	Au ppm	Cu ppm
EVX 193	B_1	0.04	8	EVX 2708	B_1	<0.02	16
				EVX 2707	Ash	<0.02	11
EVX 194	B_1	0.10	8	EVX 2706	B_1	<0.02	18
				EVX 2705	Ash	<0.02	4
EVX 195	B_1	0.10	43	EVX 2704	B_1	<0.02	44
				EVX 2703	Ash	<0.02	38
EVX 196	B_1	<0.02	15	EVX 2702	B_1	<0.02	29
				EVX 2701	Ash/Sand	<0.04	5
EVX 197	B_1	0.02	27	EVX 2700	BC	<0.02	31
EVX 198	B_1	0.09	39	EVX 2699	BC	<0.02	44
EVX 199	B_1	0.08	5	EVX 2698	B_1	<0.02	24
				EVX 2697	Ash	<0.02	11
EVX 200	?	0.03	13	EVX 2696	B_1	<0.02	8
				EVX 2695	Ash	<0.02	22
EVX 201	B_1	0.07	12	EVX 2694	B_1	<0.02	25
				EVX 2693	Ash	<0.02	16
EVX 202	B_1	<0.02	2	EVX 2692	B_1	<0.02	18
				EVX 2691	Ash	<0.02	7
EVX 203	B_1	0.17	10	EVX 2690	B_1	<0.03	24
				EVX 2689	Ash	<0.04	7
				EVX 2688	Ash/Sand	<0.03	10
EVX 204	B_1	0.04	8	EVX 2687	B_1	<0.02	20
				EVX 2686	Ash	<0.02	6
EVX 205	B_1	0.06	3	EVX 2685	B_1	<0.02	16
				EVX 2684	Ash	<0.02	5
				EVX 2683	A_0	<0.20	8
EVX 206	B_1	0.03	15	EVX 2682	B_1	<0.02	25
				EVX 2681	Ash	<0.03	6
EVX 207	B_1	<0.02	5	EVX 2680	B_1	<0.02	21

Results of all soil sampling was negative including the re-sampling of the original anomalous road samples. Table I shows the re-sampling results compared to the original sample.

6.1.1.3 Interprotation of Results

The gold anomaly in soils could not be repeated, and at this stage, it is assumed that there was a contamination problem with the original 1983 samples.

6.1.2 Taylor Creek North Slope

Several of the highest Heavy Mineral gold eontents were recorded on tributaries that are draining the north slope of Taylor Creek. The initial 1983 follow-up bulk sediment sampling during heavy run-off indicated no detectable gold from these streams. Subsequent bulk sediment samples from the same sites were collected under more controlled flow conditions, and these confirmed the gold presence. Two contour soil lines showed low-order gold at the lower level, but nene for a line close to base-of-outcrop. The soil sampling results did not satisfactorily explain the possible source of the high gold in stream samples, and therefore additional detail work was conducted in the 1984 program.

6.1.2.1. Geology

The well-bedded Taylor Creek Group conglomerate and greywacke sequences are the dominant rock types across the north slope of Taylor Creek. These sediments are intruded by the main granodiorite stock near the west

boundary of the Eva claims. Near this contact zone, finer greywacke, sandstone and siltstone interbeds are proportionately more abundant than conglomerate beds. A nose of the Kingsvale sedimentary rocks are shown to extend onto part of the ridge close to the intrusive contact; these rocks were not observed in the field. Several faults and breccia zones were mapped in the conglomerate and greywacke sequence. These structures are generally marked by prominent rusty gossan zones, probably as a result of ankerite and pyrite oxidation.

A major northwest fault is inferred at the contact between Taylor Creek Group sediments and granodiorite stock. Other than the creek which for some segments, shows sharp downcutting there is no geologic evidences along the North Slope for a fault. The contact at the ridge is notched but not exeessively as might be expected for a major fault. At this contact zone, the granodiorite, ten meters from the conglomerate does not show evidences of chilling so this might be argued as a basis for a faulted contact.

6.1.2.2 Geochemical Surveys and Results

Taylor Creek North Slope is locally very difficult to systematically sample and map on a controlled grid due to precipitous rock cliffs and very steep ravines. The sampling and mapping programs were therefore confined to several contour soil lines at the lower to intermediate levels on the sidehill. These lines were complemented by collecting soil, rock chips of outcrops and minor talus chip samples down the banks of two major tributary streams. The sampling patterns are shown on appended maps.

Pan Ocean collected a series of rock chip samples along and close to the ridge approximately 300 meters southeast of Eldorado Mtn. Eight of the samples within a tight 60 by 170 meter area were anomalous with values ranging from 0.07 to 2.04 ppm Au. Field notes for these samples indicate a zone of carbonate veining with associated pyrite, arsenopyrite and galena (?) (possibly stibnite) within granodiorite or possibly proximal to its contact with older rock. This anomalous area was not investigated in the 1984 program, mainly because it was felt that the style of mineralization was not favourable for a large-scale deposit.

Soil and rock chip sampling results were very disappointing for gold content. A few consecutive soils showed low detectable gold in the 0.04 to 0.08 ppm Au range along the banks of a stream approximately 400 meters southeast of Eldorado Mtn. These "anomalous" soils were supported by two rock chip samples from the local area that showed 0.03 and 0.09 ppm Au. All other samples for the 1984 program across the entire North Slope were negative for gold. Samples along the larger drainage directly opposite and northwest of the Taylor Creek Grid indicates a high mercury content; this might be expected as this area is encroaching the mercury halo effect that surrounds the Silverquick and Paul mercury deposits to the north and east respectively.

6.1.2.3. Interpretation of Results

The follow-up sampling along the North Slope does not reflect the high order gold anomalies that were detected in the original stream sediment samples. There are subtle gold signatures in soil and rock samples from a

drainage southeast of Eldorado Mtn. The gold in this creek is probably related to the nearby contact zone between the granodiorite stock and sedimentary rocks. Several carbonate altered and gossanous faults in this same creek do not appear to be gold-bearing. Carbonate veins such as those sampled by Pan Ocean near Eldorado Mtn. were not encountered in this creek and in other areas across the North Slope terrain. The general opinion is that the intrusive contact zone is a weak gold-bearing source, but it was probably insufficient to account for the significantly higher concentration of gold as collected in the stream samples.

In attempting to interpret the significance and possible source of gold in the heavy mineral samples, there is possibly a field problem in that these samples were collected from sites below the nickpoint in the stream gradient. And if so, the gravels at that point may be part of the valley glaciofluvial deposits. The gold in these deposits may have its source higher up Taylor Creek from such high grade vein systems as the Lucky Strike and Northern Lights. It is noted that the lowest line of soils along Taylor Creek Road showed spotty detectable gold, and this feature may be a reflection of the dispersed gold in the valley gravels.

6.1.3 South Cirque and Charlotte Grids

An interesting gold anomaly from talus-fines sampling was established in late - 1983 at the headwaters of a tributary that flows northerly into upper part of Taylor Creek. The anomalous samples ranged from 0.07 to 0.18 ppm Au across a 40 meter width. From the limited information the anomaly appeared to be related to a dark massive carbonate veined rock unit in the footwall of a prominent gossan zone. Two soil grids, the South

Cirque to the north and the Charlotte to the south were established as part of the 1984 program to explore the extensions of this gold anomaly and gossan zone. The Charlotte Grid was named after an old mercury prospect, the Charlotte Ann, that is one kilometer southeast of the South Cirque anomaly.

6.1.3.1. Geology

A sequence of southwesterly-dipping sedimentary and volcanic rocks correlative with the Bridge River Group is the dominant lithologic units for the area. The lower ribbon chert unit is characterized by thin one to three centimeter thick grey chert bands intercalated with dark chloritic and possibly graphitic schistose layers. These are overlain by very dark greenish grey pillowed and massive basalt. The pillows are locally well-preserved as 10.0 to 40.0 cm crudely elliptical to bun-shaped features with 0.5 to 2.0 cm rims. The basalts are laced with numerous thin to 3.0 cm calcite and lesser amounts of quartz veins and lenses. This unit is in sharp contact and overlain by thin-bedded chert that is earbonate altered with minor pyrite. At the contact, the altered chert is highly gossanous over widths ranging from 10.0 to 40.0 meters and this prominent gossanous zone extends southeasterly from the South Cirque to the east end of the Charlotte Grid, a distance of 1,300 meters. Small five to ten meter limestone lenses occur as scattered interbeds. The chert exposures on the Charlotte Grid are locally intensely quartz-vein flooded or "silicified" and the rock resembles a quartzite with a craggy weathered surface appearance similar to the Nevada jasperoids. A greywacke unit that might be a volcaniclastic rock overlies the chert. Minor sandstone and carbonate breccia comprise part of this unit.

A small subcircular medium to coarse equigranular textured granodiorite plug intrudes chert on the cirque wall below and northwest of the Charlotte Grid. The surface evidence of "silicified cherts" across part of the Charlotte Grid may suggest that there is a more extensive underlying intrusive body, and the quartzite exposures actually represent the metamorphic effects around these hidden intrusives. Two occurrences of narrow rhyolitic dykes intruding chert were recorded, but their exact relationship to other intrusives or possible mineralization are unknown.

Two serpentinized ultrabasic bodies are noted on the grids. With reference to the geology map, the body in the cirque floor appears to be related to a major shear as rocks alongside its contacts are highly shattered. The other body approximately 500 meters northwest of the Charlotte Grid stands out as a rubbly lenticular-shaped mound. The greywacke wallrock surrounding this ultrabasic body is altered to a bright orangy gossan. There are no obvious evidences of faults bounding this body.

There are several significant faults that crosscut and offset the lithologic units. The associated gouge and shatter zones range up to one meter in width. Relative lateral offsets up to 100 meters are evident from geologic mapping. These offsets are measurable on altered chert horizon and therefore the last sense of fault movement was definitely post-alteration. Several shears are however very rusty and geochemically anomalous in mercury, and this would suggest earlier premineral breaks.

6.1.3.2. Geochemical Surveys and Results

The original South Cirque anomaly was detected near the toe of precipitous cirque wall. This anomaly was further examined by soil and talus-fines sampling on the Charlotte Grid to the southeast and the South Cirque Grid to the north. The talus-fines sampling was continued into the adjoining cirque to the east where the southeasterly extension of the gossanous chert horizon partly rims and arouately traverses the cirque wall. Numerous rock chip samples were collected to complement the soil sampling to identify the possible sources of gold.

Low-order gold was detected for a small group of soil and talus-fines samples. With reference to the gold geochemical results in soils and the accompanying geology map these gold signatures were detected along the ridge immediately upslope from the subcircular granodiorite plug, and from the cirque to the east in a zone immediately downslope from an area of carbonatized chert. The gold values ranged from 0.05 to 0.15 ppm Au.

Results from rock chip samples were very disappointing. Only one sample contained detectable gold; this sample was taken in the east cirque. A number of the rock chip samples were actually collected from the prominent gossanous carbonate altered chert horizon. None of these indicated any gold. The granodiorite plug is exposed in an almost inaccessible part of the cliff-forming cirque wall, and therefore only one small segment of the plug and its contact zone were sampled.

Several indicator elements, namely mercury, arsenic and antimony defined some interesting anomalies and elevated

patterns. In particular, mercury in both soil and rock shows a very strong pattern for the east sector of the Charlotte Grid and northwesterly into the headwall of the east cirque. Arsenic is locally anomalous in soil samples and these generally coincide and magnify the subtle gold signatures. Unfortunately these arsenic-bearing soil samples were contained in samples from a single line along the ridge crest, and consequently it is difficult to infer trends. Higher antimony is spotty, but generally the anomalous samples again mirror the gold signature. Nickel is well-elevated to anomalous over segments of two grids. It is obviously higher in areas close to the ultrabasic bodies but the higher and more widespread patterns suggest that these ultrabasic bodies are possibly more extensive than interpreted on the geology maps.

6.1.3.3 Geophysical Surveys & Results

Ground magnetometer and VLF (EM-16) surveys were conducted over the two grids on lines nominally 100 meters apart. 7.9 km of data was gathered at 10-meter intervals. Magnetic data was corrected for diurnal variation.

Line orientation dictated the use of the Seattle VLF transmitting station since Hawaii and the Eastern seaboard stations are poorly situated for the geologic structure on these grids. VLF in-phase data was "Fraser" filtered in order to reduce the severe topographic contributions to the VLF data.

Magnetic, VLF In-phase, and "Fraser" filter data were plotted as "stacked" profiles at a scale of 1:5,000.

Charlotte Grid (3.6 km)

Ground magnetometer data suggests the presence of a narrow dyke extending from line 2+00N to 4+00N. It is most likely a smear of magnetic material (along a shear or fracture) or very thin dyke with a very limited susceptibility contrast. Data from line 4+00N suggests the presence of a small lense of more magnetic rock at a depth of 20 to 30 meters, that may outcrop on the steep scarp beyond the east end of the survey area. The rest of the magnetic data is typical of sedimentary sequences.

VLF data is generally inconclusive. Topographic relief is responsible for the In-phase and Fraser filter anomalies at the East ends of the survey lines. Distinct weak responses were noted on lines 2+00N to 4+00N coincident with the magnetic feature.

South Cirque Grid (4.3 km)

The one strong magnetic feature on line 2+00N lies in a creek bed. Its shape indicates the source to be buried no more than 10 meters. A vertical dyke or lens, 3 to 5 meters wide buried 10 meters would produce a 1,000 gamma anomaly if it contained approximately 8% equivalent magnetite. Only peridotites, near massive pyrrhotite or other ultrabasic rocks exhibit this susceptibility. Magnetometer data reflects the more basic roeks that have been mapped in the north-west corner of the property. The approximate boundary inferred from the magnetometer data is shown on appended map. It is highly probable that the anomaly on line 2+00N is caused by an inclusion of these rocks.

Severe topographic relief on the east ends of lines 4+00N to 6+00N contributed significantly to the VLF data. However, one major and several weaker structures are interpreted to traverse the grid. The major conductor at 7+00E is acccentuated by the fact that it is at a sharp break in slope. The fact that the VLF and magnetometer anomalies are linear in the steep topography suggests that the structures are vertical or nearly so.

6.1.3.4 Interpretation of Results

The pattern of gold distribution suggests that it is a very low-grade halo feature related and peripheral to an intrusive granodiorite plug. The carbonatized chert horizon is visually a very prominent and favourable-appearing zone. Main alteration is probably iron carbonate with lesser silicification; minor pyrite and rare chalcopyrite were observed. Other than its general proximity to the granodiorite plug in the South Cirque location, there are no direct evidences to indicate that this alteration and mineralization are related to the intrusion. Majority of rock chip samples from this alteration zone were non-gold-bearing.

Other than the disappointing gold signatures in a geologically favourable environment, the mercury geochemical pattern is interesting. The data suggests that mercury is structurally controlled within and surrounding a part segment of the carbonatized and silicified chert horizon. The higher mercury distribution pattern over other areas of the grids may also infer that mercury possibly forms a halo, somewhat distal to the granodiorite plug.

6.1.4 Bruce Creek Target and Grid

The bulk stream sediment sampling results showed a very strong and consistent gold anomaly on Bruce Creek. The pattern indicated that part of the source was at the headwaters of the creek in a large horse-shoe shaped cirque. The persistent and increasing gold content in the lower part of Bruce Creek may partially be attributable to a placering effect, but more importantly, suggestive of possible gold source somewhere along the drainage course. These inferences were initially explored by sampling part of the cirque walls that showed localized gossans, carbonate alteration and minor pyritization in dominantly Taylor Creek conglomerate and sandstone sequences. This sampling did not identify any significant sources for gold mineralization in the cirque but bank sampling along Bruce Creek indicated a potential source downstream from the cirque apron. The Bruce Grid sampling was subsequently conducted, and the spotty anomalous gold distribution indicated a possible north-trending structurally-controlled gold source within a broad arsenic anomaly.

6.1.4.1. Geology

The precipitous cirque walls at the headwaters of Bruce Creek were not mapped. The general geology as observed from a few outcrops and supported by talus examination indicated predominantly conglomerate and greywacke of Taylor Creek Group intruded by leucocratic coarse grained quartz diorite. With reference to the geology map, this intrusive body is inferred as being distributed over a comparatively large area along Bruce Creek. Outcrops over this intrusive rock area are

scarce and the general configuration of the intrusive was interpreted from float distribution as noted at soil sample sites. A subsidiary north-draining creek in the center of the Bruce Grid forms a distinct contact between quartz diorite to the west and conglomerate to the east. Considerable amount of intensely silicified and pyritized light to medium grey siltstone float material is seen on the west side of Bruce Grid. These rocks, probably correlative with Hurley Formation, were observed as talus from the rugged slopes to the west of the Grid.

Outcrops are extremely sparse over the heavily-forested north-facing slope on which the Bruce Grid is located. Terrain is uniformly steep for most part and other than the north-trending gullies forming the Bruce Creek and the smaller subsidiary creek drainages, no significant structural features are evident.

6.1.4.2. Geochemical Surveys and Results

The 1984 Bruce Grid soil sampling was conducted on east-west lines spaced at 200 meters. The 1985 follow-up soil sampling was performed on fill-in 100 meter lines that were only extended approximately half the distance of the original lines. The easterly half of the grid is underlain by unfavourable chert pebble conglomerate and consequently this segment of the grid was not sampled.

Results from this fill-in sampling confirmed the somewhat erratic and narrow north-trending gold distribution. The main trend follows the Bruce Creek drainage to a point where the creek bends

northwesterly; several anomalous gold samples north of this bend show that the trend continues due northward. There are indications of two or three northeasterly branching splays from the main trend of gold values.

Arsenic geochemistry shows a very distinct higher coincidence with the gold trend, and a widespread lower order halo across almost half of the grid area. This halo extends to the west limit of sampling and to the east has a definitive cut-off at the small creek 1,000 meters east of Bruce Creek. This cut-off line corresponds to inferred contact between quartz diorite and conglomerate to the east.

Detectable antimony in the range of 2.0 to 59.0 ppm closely follows and sharply defines the gold and higher arsenic trend. Mercury is locally anomalous but no definitive patterns or trends can be inferred. It does not show a preferential relationship to the gold and antimony trend, but more ideally can be interpreted as a vague halo to the east of the gold geochemical anomaly.

Nickel is unexpectedly elevated as a comparatively widespread anomaly at the upslope or southerly end of the gold anomaly. This subcircular nickel pattern tapers to a narrower tail that overprints and trails the gold trend down Bruce Creek drainage. The mushroom shape of the anomaly is possibly suggestive of downslope dispersion that is partly controlled by the drainage pattern. More curiously, the significance and possible source of nickel in the Bruce Creek environment are not understood.

6.1.4.3 Geophysical Surveys and Results

Ground magnetometer and VLF (EM-16) surveys totalling 10.7 km were conducted on east-west lines nominally 200 meters apart at 10 meter station spacing. VLF signal was provided by the Navy VLF station at Jim Creek (Seattle 24.8 khz).

Profiles of the magnetometer, VLF in-phase and "Fraser" filter data were generated at a map scale of 1:5,000. Magnetic data was also contoured.

Intrepretation

Magnetometer data reflects the north-northwesterly trend of the underlying rocks; several weak linear anomalies are recognized. In general, the magnetometer data is more typical of sedimentary rocks rather than intrusives, as shown in the geologic mapping. The southwest corner of the survey area is occupied by a more magnetic unit, most probably intrusive or a thick volcanic unit of moderate to low magnetite content (Lines 4 & 6 N).

VLF In-phase data is strongly affected by the severe topographic relief in the vieinity of the baseline on lines 20N, 22N and 24N and also at 8+00E on lines 4N and 6N. "Fraser" filtering has reduced but not entirely eliminated this topographic contribution. As a result, "Fraser" filter anomalies are shown on the lines approaching Moose Creek. These cannot be entirely ignored, since they do form a "linear." In particular, the anomaly on line 4+00N appears to be a real event, not entirely generated by topography.

6.1.4.4 Interpretation of Results

The gold and its associated pathfinder element geochemistry indicates a possible narrow structure-related type of mineral source in quartz diorite. The Bruce Grid gold geochemical pattern is similar to the anomaly over the Lucky Jem showing near headwaters of Eldorado Creek. The mineralization at this prospect is gold-bearing quartz vein with associated grains and massive patches of pyrite, arsenopyrite, minor chalcopyrite and stibnite in a well-defined 0.3 to 0.5 meter wide shear in quartz diorite and older siltstone unit. There are however difficulties in confirming a shear type of structure on the Bruce Grid interpretation as the geophysical response over the geochemical anomaly was essentially flat. Nevertheless the narrow linear trend of the geochemical anomaly strongly suggest a structural association.

The distribution of quartz diorite intrusion across the Bruce Grid area was interpreted from proportion of quartz diorite float boulders at the soil sample sites. Following this interpretation it was noted that the elevated arsenic pattern closely mirrors the inferred quartz diorite body. This complementary correlation adds a degree of reliability to the geological interpretation. The spatial location and configuration of the gold anomaly within the quartz diorite intrusive somewhat reduces the exploration significance of this geochemical target for large tonnage type deposit.

6.1.5 Eva 21 Grid

The Eva 21 Grid on the Eva 21 Claim was established to explore the possible source of several anomalous gold-bearing rock samples that were collected by Pan Ocean. In particular, two samples showed 0.05 and 0.285 ppm Au along with several other samples in which arsenic content ranges from 22 to 300 ppm. Local orangy rust gossan zones occur along the topographic ridge where these samples are generally located.

6.1.5.1 Geology

Geologic mapping in conjunction with grid sampling shows a greywacke and volcaniclastic sequence of andesitic compositon overlain by thin bedded chert unit. This lithology is correlative with the Middle Triassic Bridge River Group and they occur along the ridge and its steep flanks in the form of a broad south plunging anticline.

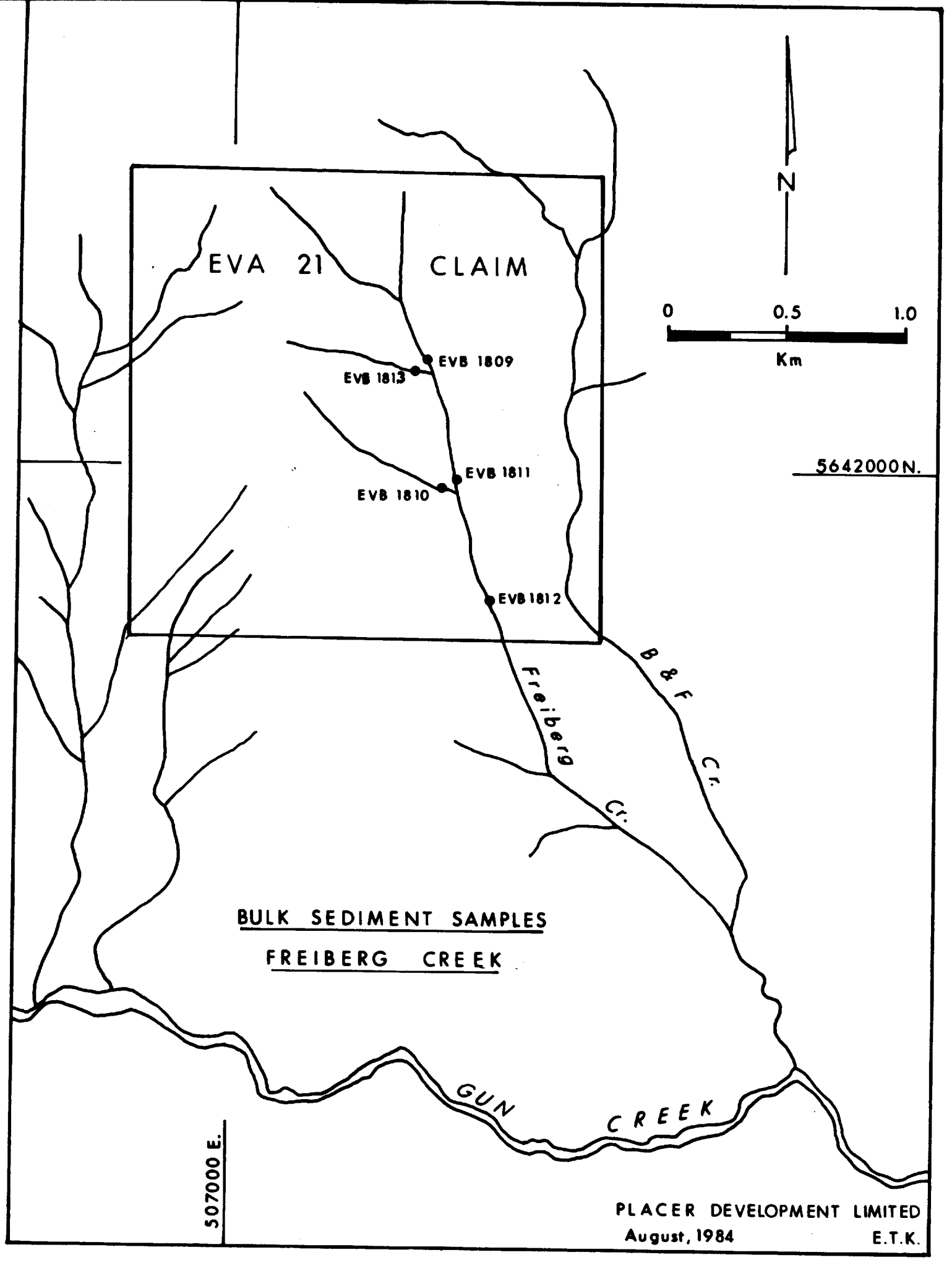
The greywacke and volcaniclastic unit are locally silicified and cut by thin quartz and minor calcite veins. One notable 0.5 meter wide quartz vein with minor associated pyrite in silicified greywacke is exposed along the ridge in an old hand-blasted trench. A nearby outcrop is rusty especially within a 3.0 meter zone of shearing with minor quartz veining.

The chert unit is often flooded with a lacework of quartz veinlets, minor calcite veins and pyrite disseminations that result in rusty limonitic-coated surfaces. These gossans, veins and altered zones in both rock units presumably formed the focus for the earlier exploration on this claim.

6.1.5.2 Geochemical Surveys and Results

The Eva 21 Grid was designed to cover the favourable surface signatures along a north-south trending ridge and its steeply-sloped flanks. Soil samples were collected at 40 meter intervals along east-west grid lines, spaced at 100 meters. Extreme difficulties were often experienced in obtaining B1 horizon soil samples as the overlying volcanic ash and lithic tuff layers were abnormally thick, occasionally attaining depths of 1.5 meters. Rock chip samples were collected from outcrops that were encountered along or close to the grid lines.

Results from soil sampling were generally flat but several subtle elemental features are noteworthy. Firstly, gold is detectable in three samples in the central portion of the grid; this local area also supports samples with spotty high arsenic and mercury. A nearby outcrop is quartz-vein-flooded chert that is close to the contact with greywacke. Overburden is generally quite thin for this location. Therefore it is felt that this geochemical feature is closed related to immediately underlying bedrock with a restricted and weak mineral source. Secondly, copper shows a slightly anomalous trend at the west side of the grid, and this feature may be related to more intense fracturing and minor shearing in the greywacke and volcaniclastic sequence. Lastly, it is noted that soil sample results at the southeast sector of the grid are geochemieally lower for almost all elements. There are no outcrops over this part of the grid, so it is difficult to speculate as to whether a rock type change may be attributable to this subdued geochemical expression.


EVA 21 CLAIM
N
0 0.5 1.0
Km
EVB 1809
EVB 1813
EVB 1811
EVB 1810
EVB 1812
5642000N.
Freiberg Cr.
B & F Cr.
BULK SEDIMENT SAMPLES
FREIBERG CREEK
GUN CREEK
507000 E.
PLACER DEVELOPMENT LIMITED
August, 1984
E.T.K.

A number of rock chip samples were collected from outcrops. Many of these were selectively collected to represent gossan zones and various structural features. A few samples were higher than normal in arsenic and mercury. No gold was detected in any of the rock samples.

6.1.5.3. Freiberg Creek Sampling and Results

Five bulk stream sediment samples were collected from upper reaches of Freiberg Creek that flows southerly through the east half of Eva 21 Claim. Two small tributaries that flow into this creek are draining the east-facing slope of Eva 21 Grid. The purpose of bulk sediment sampling on this creek was to test for possible gold signatures that may be shedding from the ridge and easterly flank of the Grid. Also the sampling would test the creek itself as a possible gold-bearing structure as well as possible gold signatures on the far east slope of the stream.

Sample sites are shown on attached map and results for the five samples are tabulated in the following table.

Sample No.	Cu	Zn	Pb	Ni	Ag	Au	As	Hg	Sb
EVB 1809	69	121	68	230	0.2	<0.02	50	137	2
EVB 1809*						<0.02			
EVB 1809*						NSS			
EVB 1810	73	120	32	140	0.3	<0.02	8	77	2
EVB 1810*						<0.02			
EVB 1810*						<0.02			
EVB 1811	54	117	37	216	0.2	<0.02	10	124	2
EVB 1811*						NSS			

Sample No.	Cu	Zn	Pb	Ni	Ag	Au	As	Hg	Sb
EVB 1812	49	109	27	233	0.2	<0.02	12	147	2
EVB 1812*						0.32			
EVB 1812*						NSS			
EVB 1813	108	188	29	258	0.3	<0.02	50	37	2
EVB 1813*	109	186	36	259	0.2	<0.02	60	47	2
EVB 1813*						<0.02			

All analyses are in ppm except for Hg which is in ppb.
NSS denotes not sufficient sample to carry out analysis.
* indicates duplicate analysis.

With reference to the results and respective sample sites on attached map, gold was detected in only one of the samples. Arsenic is elevated for two samples that were collected near the headwaters of Freiberg Creek. These bulk sediment results more or less conform to the relatively flat goechemical response that was obtained from the soil and rock samples on the east flank of Eva 21 Grid.

6.1.5.4. Geophysical Surveys and Results

Ground magnetometer and VLF-EM surveys were conducted on only two lines of Eva 21 Grid. The main purpose was to ascertain as to whether any significant response could be detected from the narrow shear zones in the greywacke, and also to test for expressions of rock type changes. The response over these two selected lines was very flat, and as a result the survey was not completed over the remainder of the grid.

6.1.5.5 Interpretation of Results

The resticted occurrence of the weak gold anomaly in soil samples suggests that it is probably related to small quartz veins and related pyrite in the chert unit.

Results from bulk stream sediment sampling more or less confirms that gold-bearing targets on this claim would be restricted.

6.1.6 **Eva 25 Grid**

The Eva 25 Grid on Eva 25 Claim was established to explore the significance of arsenic, antimony, mercury and tungsten anomalies that were indicated from previous wide-spaced rock sampling. Several elemental results included arsenic ranging from 26 to 400 ppm on a background of 5 ppm; antimony from 60 to 10,000 ppm on a background of 1 or 2 ppm; mercury from 90 to 410 ppb on a background of 20 ppb; and tungsten from 10 to 830 ppm on a background of 2 ppm. Gold was undetected in majority of samples, but the general concentration of favourable pathfinder elements for gold indicated a potential target.

6.1.6.1 Geology

A well-stratified sequence of sedimentary rocks correlative with the Upper Triassic Hurley River Group are exposed on the Eva 25 Claim. The predominantly steeply southeasterly-dipping formation is comprised of shale, greywacke, siltstone with minor interbedded limestone and a very distinctive boulder conglomerate with carbonate matrix. This latter rock type contains

well-rounded granitic boulders that are speculated to have been derived from older intrusions to the east of the Bridge River region, possibly from regions east of the Fraser River break. These stratified sediments are locally intruded by narrow feldspar porphyry dykes. A dark grey massive basalt outcrops in the center of the Eva 25 Grid; it appears to overlying the sedimentary rocks as a cap rock, but there is a carbonate breccia developed alongside one portion of the contact that possibly might suggest the basalt to be intrusive.

Abrupt changes in attitude of the strata are indicative of faulting. These features are evident on the steep rock cliffs. The actual faults are not exposed but are assumed to be represented as scree-filled rills and "talus runs." Folding may also be influencing the attitude changes. Several shears and breccia zones with associated ankeritic and siliceous alteration are exposed as prominent gossans over parts of the grid.

6.1.6.2 Geochemical Surveys and Results

Much of the surface on Eva 25 Grid is felsenmeer and rubbly talus overlying bedrock. Therefore the soil sampling was largely confined to collecting the finer regosol layer or talus-fines material beneath the surface rubble. Soil was available in areas close to the creek at the east end of the grid, but generally it is poorly developed with no distinct horizons. Ocassionally soil material was overlain by 10 to 30 cm of volcanic ash and lithic tuff layer.

The soil and talus-fines samples were collected at 40-meter intervals along east-west lines spaced at 100 meters. Additionally a series of rock chip samples

were collected from rock exposures. These are plentiful across the grid area and along ridge crests and precipitous rock cliffs to the west and south of the grid. Many rock chip samples were selectively cut across visually mineralized, altered and gossanous zones. Several of the earlier Pan Ocean rock samples were located at the southeast corner of Eva 25 Claim. These were collected from exposures forming the rugged canyon walls of a creek that were considered to be inaccessible for examination and re-sampling.

With reference to the results, arsenic, antimony, and mercury for both soil and rock samples are indicating a localized anomalous trend that is centered at the south end of the grid. Mercury shows a more expanded trend that extends north-northeasterly across the grid. Gold was undetected in all samples, and essentially Cu, Pb, Zn, Ag and Ni were at background levels. Tungsten is undetected over major portion of grid; however several rock and soil samples are coincidently elevated at the south end of the grid where As, Sb and Hg are also anomalous.

The original Pan Ocean sample sites were not recognizable, and so attempts to correlated or orient the previous sampling with respect to the Eva 25 Grid sampling are somewhat difficult. It is noted that elemental assays are generally lower in the follow-up program as compared to the respective anomalous values from the Pan Ocean sampling.

6.1.6.3 Interpretation of Results

The anomalous arsenic, antimony and mercury trends are correlatable with an underlying member of siltstone with minor interbedded limestone. The siltstone is weakly silicified and locally intensely carbonatized at the south and northeast ends of the grid where higher arsenic and antimony are recorded. Rock samples from a narrow northwest-trending shear zone with strong ankeritic alteration at the south end of the grid are anomalous for arsenic, antimony, tungsten and mercury.

It is noted that there is a relatively close correlation between rock and soil geochemistry. In other words, anomalous rock samples correspond closely to location of anomalous soil samples. The range of values for respective elements is also of the same order. These correlations would indicate that the soil samples from this felsenmeer-covered terrain are essentially reflecting the lithogeochemical characteristics of the underlying bedrock.

In summary, it is suggested that geochemistry is reflecting weak mineralization and alteration within a siltstone member of the sedimentary sequence.

6.1.7 **Eva 26 Grid**

The Eva 26 Claim was staked in June 1984 following the lapsing of Golden Rule Resources' Ural 7 Claim. The former owners had conducted a small soil geochemical sampling program on this claim and the results indicated an open-ended gold anomaly. Our firm's 1983 bulk sediment sampling program confirmed consistent and

relatively attractive gold-bearing results in streams shedding the soil anomaly area. Prominent gossans mark the potential target.

Examination and funther testing seemed warranted to positively identify and assess the possible gold source. With this in mind, the Eva 26 Claim (20 units), at the upper reaches of Eldorado Creek was acquired as part of the Aberford Venture and field work was accordingly planned and undertaken.

6.1.7.1. Geology

The Eva 26 Claim is predominantly underlain by intensely fractured cherty shale and siltstone with local intercalations of light grey limestone beds and lenses. The limestone occurs as isolated and scattered exposures representing narrow beds up to eight meters wide, impure fossiliferous lenses and larger 30 meter lenses. The shale and siltstone units that are correlative with Upper Triassie Hurley River Group are intruded by an irregularly-shaped serpentinized ultrabasic body. A series of steep northeasterly-oriented faults partially bound and dissect the ultrabasic unit.

A rhyolite dyke swarm intrudes the Hurley rocks. These east-northest trending feldspar porphyry dykes are 2.0 to 20.0 meters wide, and are bounded by prominent 5.0 to 30.0 meter wide silicified and quartz-vein-flooded alteration zones. Minor pyrite occurs as disseminations on the dykes and alteration zones.

Quartz, carbonate and minor pyrite zones up to 4.0 meters wide occur as sub-parallel lenses at the fault contact between siltstone and ultrabasic units. These mineralized zones are exposed as bright orangy red gossans on a northeast-facing cirque wall. Their northerly to northeast orientation is disrupted by a series of faults to provide the sub-parallel and en echelon pattern.

6.1.7.2 Geochemical Surveys and Results

Parts of former Golden Rule Resources soil sampling grid were still recognizable. Therefore in attempts to obtain some means of matching the new survey with the original geochemical anomaly, the Eva 26 Grid was oriented in the same directions as the former grid.

The terrain over the sampling area of Eva 26 Claim is essentially comprised of felsenmeer, talus and craggy rock ridges and cliffs. Consequently, majority of grid sampling was talus-fines colleoted at 50 meter intervals along lines spaced at 100 meters. A series of rock chip samples were collected from rock exposures along and close to the grid lines. Many of these were selectively cut from alteration, mineralized and gossan zones in attempts to pinpoint the gold source.

The talus-fines grid sampling approximately re-established the anomalous gold geochemieal trends that were indicated on Golden Rules' grid. The main feature is an easterly-trending 100 to 150 meter wide gold anomaly through the centre of the grid. Gold content in this anomaly raoges from 0.03 to 0.61 ppm;

these compare to 0.02 to 2.50 ppm in the original Golden Rule anomaly. The gold anomaly trend is supported by minor elemental features, namely arsenic, antimony, mercury and to a lesser degree by copper.

A separate anomaly can be depicted at the southwest corner of the grid. This anomaly might be related to the main trend as a downslope dispersion train. However if it is representing a separate source it may be considered as being open to the east and for a short distance to the south. It is also supported by arsenic and antimony.

The gossanous quartz-carbonate-pyrite zones at the northeast corner of the grid indicate low-order erratic gold and arsenic anomalies that reflect the narrow fault-disrupted style of occurrence. The nickel geochemistry strongly emphasizes the presence of ultrabasic rock unit at the northwest sector of grid.

Results from rock ehip sampling were disappointing as they do not correlate and support the soil geochemical pattern. Gold was detected in only three rock samples within the main anomaly trend; these were very low ranging from 0.02 to 0.07 ppm. Arsenic is erratically anomalous within the main anomaly. Other than anomalous nickel at the northerly one third of the grid, the remaining elemental results are at background levels.

6.1.7.3 Geophysical Surveys and Results

A total of 2.6 km of Ground magnetometer and VLF (EM-16) data was gathered in four lines on a pre-existing grid, using a station interval of 12.5 m. The VLF radio signal was provided by the U.S. Navy station at Cutler (Maine).

"Stacked" profiles of the magnetometer data, VLF In-phase and "Fraser" filter data were plotted at a scale of 1:5000. A contour map of the magnetometer data was generated, also to 1:5000 scale.

The VLF data reveals a series of three north-northeast trending conductors immediately west of a strong magnetic linear. A weaker northeast trending conductor is also evident approximately 200 meters southeast of the magnetic feature.

The rocks to the northwest of the magnetic linear are magnetically "quiet", typical of sediments. The magnetic feature is undoubtedly caused by the ultramafics evident on the ridgetop. Line 11+00N also reveals the presence of a magnetic unit. On this line, it is somewhat deeper and narrower.

6.1.7.4 Interpretation of Results

The talus-fines sampling indicated a fairly well-defined gold-bearing anomaly across the central part of the grid. This anomaly trend is spatially situated over the feldspar porphyry dyke swarm. Rock sampling results more or less confirm that very weak

gold-bearing source is related to the quartz-rich alteration zones bounding the dykes.

The quartz-carbonate-pyrite zones at the siltstone-ultrabasic rock contact appear to be shear-related features. Rock samples across these mineralized zones did not offer any encouragement for follow-up work.

6.1.8 Upper Taylor Creek: "South Bank"

One anomalously high grade rock sample was collected by Pan Ocean on the south bank of Upper Taylor Creek. The sample assayed 1.57 oz/ton Au, 63.4 oz/ton Ag, 0.12% Pb, 0.10% Zn, 8.83% As and 0.83% Sb. An adjacent gossan zone sample assayed 0.03 oz/ton Au and 0.99 oz/ton Ag. Although the occurrence was seemingly isolated, the grade of the sample presented a potential target warranting investigation. With this in mind, a limited geological examination and prospecting were conducted in the general sample location.

With reference to the attached map, Taylor Creek valley at this location is characterized by relatively broad gently-sloped flanks that abruptly steepen at the toe of talus and rock forming cliffs. Underbrush is thick in the valley.

The sample is described as being collected near the top of a talus slope from a 15.0 to 20.0 cm rusty weathered vein of arsenopyrite and stibnite with late calcite filling. This actual showing was not re-discovered. The rock forming slopes above talus material are comprised of

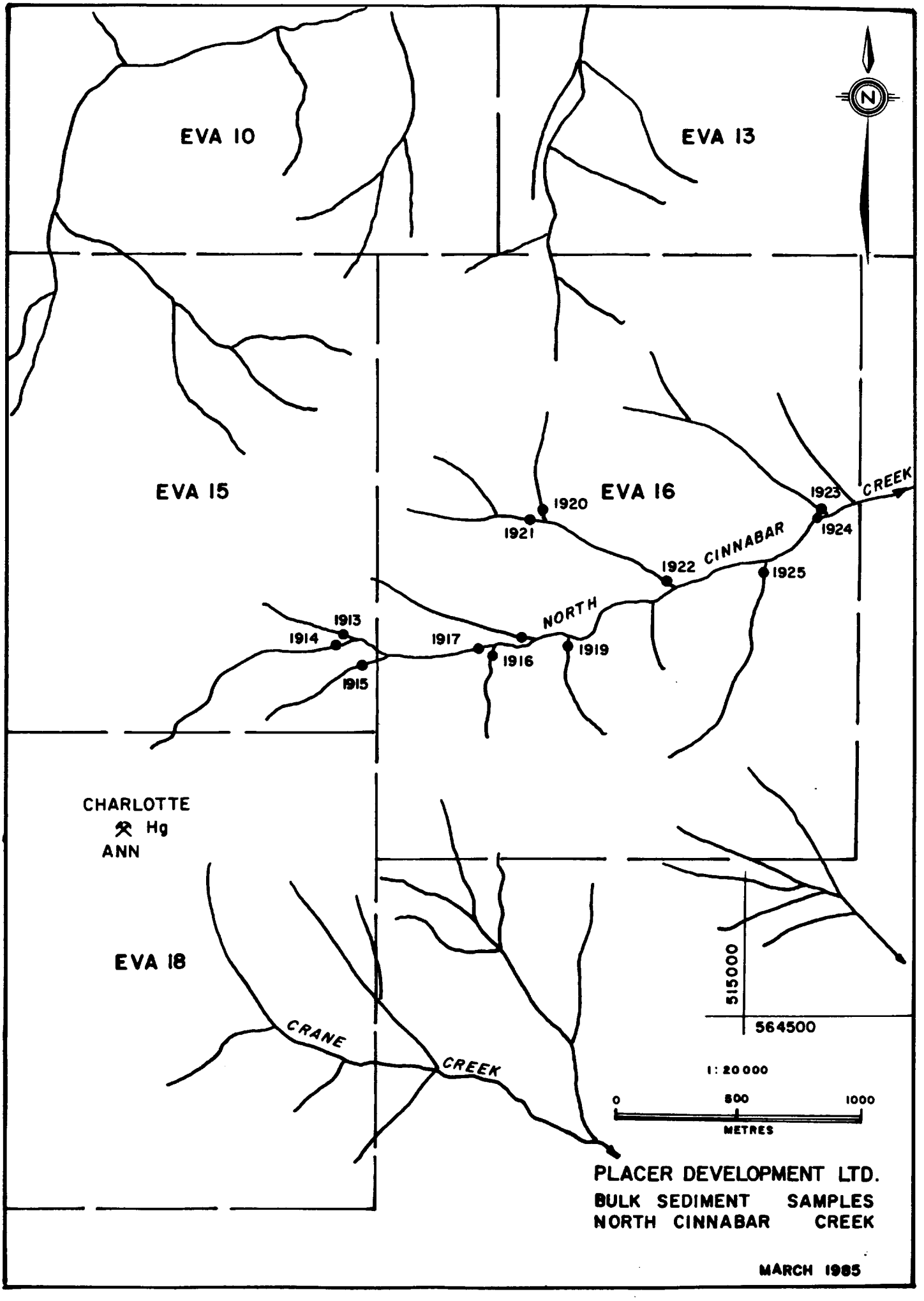
unaltered greywacke and minor volcaniclastaic rock that are correlative with the Bridge River Group. Several helicopter passes over the general area failed to identify any tell-tale signs of gossans.

A short line of soil samples were collected in the flatter valley below the talus, and in the general suspected location of the original rock sample. No anomalous assays were indicated. From the information available it is not possible to speculate as to the possible significance of the showing.

6.1.9 North Cinnabar Creek Sampling

A series of bulk stream sediment samples were collected from the upper part of North Cinnabar Creek. This creek was not sampled during the 1983 program as the original heavy mineral sampling results were not encouraging. However, based on the more positive results in the adjacent South Cirque the priorities were shifted to investigate the possible potential in the North Cinnabar Creek drainage system. The headwall of the creek was geologically interesting because part of the favourable calcite veined basalt and rusty-stained chert units extend into the crest of this headwall.

The bulk sediment sample results are tabulated in the following table. With reference to the results, no gold was detected. Other than mercury which is highly anomalous in a number of samples, all other elements are effectively at background levels. The mercury is obviously related to the Charlotte Ann prospect. The bulk sediment sampling is possibly indicating that the mercury distribution of this prospect extends easterly, well beyond the surface trenching area at the east end of the Charlotte Grid.


EVA 10
EVA 13
EVA 15
EVA 16
EVA 18
N
1913
1914
1915
1916
1917
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1920
1921
1922
1923
1924
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NORTH CINNABAR CREEK
CHARLOTTE
Hg
ANN
CRANE CREEK
515000
564500
1:20 000
0
500
1000
METRES
PLACER DEVELOPMENT LTD.
BULK SEDIMENT SAMPLES
NORTH CINNABAR CREEK
MARCH 1985

NORTH CINNABAR CREEK BULK STREAM SEDIMENT SAMPLING ANALYSIS

Sampling	Cu	Zn	Pb	Ni	Ag	Au	As	Hg	Sb
EVB 1913	33	72	7	113	<0.2	<0.02	<2	>2000	<2
EVB 1913*						<0.02			
EVB 1913*						<0.02			
EVB 1914	47	76	11	98	<0.2	<0.02	<2	>2000	<2
EVB 1914*						<0.02			
EVB 1914*						<0.02			
EVB 1915	68	98	9	151	<0.2	<0.02	<2	1350	<2
EVB 1915*						<0.02			
EVB 1915*						<0.02			
EVB 1916	70	110	12	146	<0.2	<0.02	40	887	<2
EVB 1916*						<0.02			
EVB 1916*						<0.02			
EVB 1917	45	96	13	97	<0.2	<0.02	4	1299	<2
EVB 1917*						<0.02			
EVB 1917*						<0.02			
EVB 1918	30	79	10	64	<0.2	<0.02	<2	717	<2
EVB 1918*						<0.02			
EVB 1918*						<0.02			
EVB 1919	33	86	11	43	<0.2	<0.02	4	27	<2
EVB 1919*						<0.02			
EVB 1919*						<0.02			
EVB 1920	27	84	17	91	<0.2	<0.02	<2	61	<2
EVB 1920*						<0.02			
EVB 1920*						NSS			
EVB 1921	29	80	9	64	<0.2	<0.02	<2	1255	<2
EVB 1921*	29	80	19	60	<0.2	<0.02	<2	1125	<2
EVB 1921*						<0.02			
EVB 1922	26	71	12	68	<0.2	<0.02	<2	>2000	<2
EVB 1922*						<0.02			
EVB 1922*						NSS			
EVB 1923	35	67	5	116	<0.2	<0.02	<2	316	<2
EVB 1923*						<0.02			
EVB 1923*						<0.02			
EVB 1924	37	74	9	94	<0.2	<0.02	12	1843	<2
EVB 1924*						<0.02			
EVB 1924*						<0.02			
EVB 1925	20	81	12	67	<0.2	<0.02	8	75	<2
EVB 1925*						<0.02			
EVB 1925*						NSS			

* denotes duplicate analysis
NSS denotes not sufficient sample material for analyses
All element assays are in ppm except Hg in ppb.

6.2 Thunder Property Geology and Targets

The Thunder property is largely underlain by sedimentary sequences correlative with Upper Jurassic Relay Mountain Group. The main rock units that were encountered on the claim group are siltstone, dark grey fossiliferous shale, sandstone, greywacke and minor limestone. At the northern end of the claim group, this steeply northest-dipping lithologic sequence is overlain by Lower Cretaceous Taylor Creek Group chert pebble conglomerate with interbedded shale and sandstone. These rocks, which dip much shallower (30° to 40° northeast) than the underlying formation, are in turn overlain by comparatively soft and locally poorly consolidated dark pebble conglomerate, arkose and shale of Upper Cretaceous Kingsvale Group.

Quartz monzonite plutons and related dykes intrude the Relay Mountain sediments. With reference to the Thunder claim group, an extensive pyritic hornfelsed aureole is developed on the Thunder 5 Claim; this metamorphosed zone is centered over several plutons and dyke swarms intrusive into siltstone. Another quartz monzonite stock intrusive into greywacke is recognized on the easterly flank of Elbow Mtn. The margins of these intrusive bodies are intensely limonitic-altered and show up as contrasting bright orangy-red gossan zones and "scree slides" across the more widespread rusty tan surface of the pyritized hornfels.

6.2.1 Thunder Grid and Cirque

A low-order widespread gold geochemical anomaly was defined in late 1983 by talus fines grid sampling over

the pyritized hornfels aureole on Thunder 5 and 6 Claims. The higher core of this 2000 meter long anomaly stretched across the crest and shoulders of a north-facing cirque. A more localized and erratically higher gold values occurred on the gently north sloping flank of a rounded knoll at the westerly end of the grid. These two higher gold centers were the main focus for detailed field work in 1984.

6.2.1.1 Geology

The Thunder Grid is predominantly underlain by siltstone and shale that have been intruded by several quartz monzonite plutons and associated dyke swarms. The older host rocks have been metamorphosed to a light to dark grey locally highly siliceous pyritic hornfels. In consldering the relatively small dimensions and scattered distribution of the intrusive bodies, the hornfels is developed as a significantly large aureole. The hornfels is characteristically pyritized with pyrite occurring as fine disseminations and thin fracture fillings. It is very intensely fractured and scree material is typically comprised of very sharp angular and blocky 2.0 to 10.0 cm fragments. Fracture surfaces are typically limonite coated and this has resulted in development of prominent orangy tan gossan across felsenmeer-covered slopes, scree, and cliff-forming rock faces.

The quartz monzonite plutons are irregularly elliptical to elongated bodies, 100 to 400 meters in size. The two main plutons on the Thunder Grid are well separated with one occurring on the rounded knoll at the west half of the grid and the second approximately 600

meters to the east. Dykes of the same compositon occur singly or as swarms across the Thunder Grid. The largest swarm occurs on the crest of the north-facing cirque at the east half of the grid. The steep north-northwest oriented dykes range from 2.0 to 10.0 meters in width. Most of the dykes are pyritic, but more noticeably they are bounded by an alteration zone which on surface is oxidized to a bright rusty orange gossan. These zones are deeply oxidized, crumbly and consequently, it is difficult to obtain specimens that show their mineralogic composition. The degree of gossan development would suggest that pyrite and possibly ankerite are abundant.

Several talus fragments of banded siliceous pyritized calc-silicate skarn were observed in the scree slopes. The largest fragment was approximately 15 to 20 cm thick. These skarn pieces only comprise a very minor percentage of the total scree and therefore it is felt that this type of alteration is very restricted.

A system of four calcite veins, 0.10 to 0.60 meters thick, occur as near-vertical north and northeast-trending structures on the crest of the cirque. Veins are creamy-white, locally vuggy with no associated sulphides or wall rock alteration. Spatially the veins occur at the east margin of the quartz monzonite dyke swarm; one vein cross-cuts a dyke and thereby establishes the calcite mineralization as a post-dyke event. Several other localized carbonate altered and calcite veined zones near the margins of the hornfels aureole were noted on the Thunder Grid.

6.2.1.2. Geochemical Surveys and Results

Main objective of 1984 program was to identify the gold source. Sampling and mapping were confined to three areas of interest; 1. the highly gossanous dyke swarm area on the crest of the cirque; 2. the rounded knoll at the west end of the grid, and 3. the cirque wall and its flanks.

For the first two areas of interest, fill-in talus-fines samples were collected to tighten the grid pattern around the higher segments of the original gold anomalies. Rock chip sampling was co-ordinated to specific geologic features such as intrusive rocks, alteration zones, mineralized veins and gossans. In most cases three rock chips were collected from each dyke occurrence, one sample to represent the dyke and two others to represent the bounding alteration zones.

Fill-in grid sampling confirmed the gold geochemical anomalies that were originally indicated in 1983 program. The higher values within the widespread anomaly are continuing to show a spotty distribution, and consequently it is difficult to define specific patterns that might suggest source-related geologic features. Arsenic and antimony are generally coincident with higher gold assays, but again spotty distributions do not complement the data for inferring meaningful trends. Mercury is erratically anomalous within the dyke swarm environment; mercury is not directly coincident with higher gold. Copper and zinc are elevated over an area that encompasses the dyke swarm. These anomalies possibly indicate that feldspar porphyry dykes, in addition to disseminated pyrite, also contain minor copper and zinc sulphide

associations. Gold was undetectable in the entire suite of rock chip samples. Several of the rock samples were collected from sites very proximal to anomalous talus-fines samples while others were selectively cut from highly gossanous altered and mineralized zones. The negative results show that gold content as present in the fine regosol layer is seemingly very difficult to reproduce in chip samples of immediately overlying and surrounding subcrop material. The indicator elements in rock samples were also low compared to respective elements in talus fines. In particular, arsenic and antimony can be considered as being at background levels. All in all, the rock chip geochemistry is one order of magntitude lower than that for talus-fines samples, and does little to clarify the problem of identifying the element source.

The bulk sediment samples that were collected in 1983 from tributaries originating in the cirque were all negative for gold detection. However, with the higher gold-bearing samples at the crest of the cirque and the prominent gossans on the cirque wall, it was felt that these geologic features in the cirque could form a favourable target. The dyke swarm and calcite veins can be traced down the cirque wall. A series of talus-fines were collected from the talus slopes in the cirque and rock chip samples were cut from geologic features.

The results of the cirque sampling were very similar to those on the Thunder Grid. Low-order gold with a few

scattered higher values were obtained from the talus-fines samples as a downslope and northerly extension of the main anomaly on the cirque crest. Gold was not detected in the rock chip samples.

6.2.1.3 Interpretation of Results

Intensive sampling and mapping within the geochemically higher portions of the widespread Thunder anomaly did not conclusively identify the gold source. At this stage in the evaluation, it is felt that very weak and sporadically distributed gold-bearing mineralization are related to the intrusive plutons, dykes and their altered contact zones. The localized carbonate alteration zones and calcite veins are visually favourable targets but sampling results have not been encouraging.

It is seemingly very difficult to obtain a representative rock chip sample of the gold-bearing mineralization characteristic of the Thunder geology. The intense surface oxidation may also have a bearing on the metal content of rock chip samples. Perhaps a larger bulk sample from fresher bedrock is more applicable in sampling this type of mineralization.

6.2.2 **Graveyard Grid**

Two anomalous bulk sediment samples were recerded from 1983 program on a stream that drains into Graveyard Creek from northeast flank of Elbow Mountain. These two samples possibly pointed to targets further upstream, an area that was previously explored by Barrier Reef Resources. Their sidehill contour sampling data

indicated two localized gold-bearing anomalies. Also, several gossans on the flanks of the creek were noted as possible mineralized zones.

Following the acquisition of the mineral claims adjoining and west of the Thunder Claims, the Graveyard Grid was established to explore this drainage system and its surrounding area in more detail. A program of soil, talus-fines and rock chip sampling, geologic mapping and ground geophysical surveys were undertaken. Additionally, several bulk sediment samples were collected along the stream, and stream gravels were panned at several locations in an attempt to identify possible source points.

6.2.2.1 Geology

Medium to dark grey massive sandstone, greywacke and silicified siltstone are dominant rock units on the Graveyard Grid. The steep southwest-dipping sedimentary sequence is correlative with Upper Jurassic Relay Mountain Group. These are intruded by light grey to pinkish grey, medium equigranular textured hornblende quartz monzonite bodies, narrow feldspar porphyry and andesitic dykes.

Unaltered sandstone and greywacke are exposed as massive bluffs at the northeast corner of the Grid. These clastic sedimentary units that are frequently fossiliferous prevail over this half of the Grid; these are overlain by darker grey, very fine textured siltstone and minor shale unit that is, for the most part, siliceous or possibly silicified. Pyrite commonly occurs as fine disseminations and occasionally

as fine fracture fillings. Outcrops over much of the central portion of the Grid are well-scattered, and the few outcrops of quartz monzonite on the southerly Grid lines can only be interpreted as separate intrusive bodies. The terrain rises sharply to the south along a rock forming spur of Elbow Mountain. The toe of this rock bluff is hornblende quartz monzonite; this rock exposure due to partial snow cover was not mapped for its extent upslope, but the general surficial characteristics suggest a sizeable intrusive plug.

Several localized rusty gossans are developed on the sedimentary rocks. The most visible one is on a northerly-facing slope in the center of the Grid. A steep easterly-dipping shear cross-cuts homogeneous medium grey sandstone that has limonite-coated fracture surfaces and well-spaced calcite veinlets. Ne sulphide minerals were recognized. Another prominent gossan zone occurs approximately 400 meters upstream from the Graveyard Grid and high on the precipitous west flank of Elbow Mountain. This inaccessible gossan is visually estimated to be a five to ten meter thick band possibly representing a steep southeast dipping shear. Talus fragments beneath this gossan are rusty pyritized feldspar porphyry, fine-grained diorite, silicified siltstone and hornfels, some of which are brecciated.

Gravelly glaciofluvial deposits cover parts of the sidehill west of the stream that drains northeasterly across Graveyard Grid. Well-rounded leucocratic coarse-grained quartz diorite boulders comprise part of this surficial material. These boulders are definitely "foreign" as to their origin in this drainage as they are compositionally and texturally different from the

hornblende quartz monzonite intrusions on Elbow Mountain. These glacial deposits are locally spread well up the west flank of the stream, and undoubtedly will have an effect on soil geochemistry.

6.2.2.2 Geochemical Surveys and Results

The Graveyard Grid was established to obtain a more detailed and controlled sampling pattern across the geochemically anomalous drainage system, sidehill contour talus-fines sample anomalies, and gossan zones. The terrain across the Graveyard Grid varies from very steep-sided slopes, rocky talus to more gently and rolling grassy slopes and felsenmeer-covered knolls. Seepage areas near the toe of steeper slopes were commonly encountered. As a result of these variable terrain conditions, sampling material was accordingly varied.

One of the larger seepage areas occurs near the lower reaches of the main drainage system where it is joined by a subsidiary tributary. This is the general area of one of Barrier Reef's gold geochemical anomalies. It was noted that a small tightly patterned grid of organic-rich soil samples were collected at an earlier period, probably by Barrier Reef. There are no records of this grid sampling.

Results of soil and talus-fines sampling on Graveyard Grid showed a few scattered low-order detectable gold in the 0.02 to 0.08 ppm Au range. No trends or patterns can be inferred from these results. One sample with detectable gold is probably reflecting an association with the gossan zone in sandstone. Several

other gold-bearing samples at the west end of the grid are possibly related to silicified and pyritized siltstone. It is noted that gold is undetected near or at the margins of intrusive bodies. The main indicator elements, namely antimony and mercury show scattered and erratic anomalous distributions that are not coincident with gold. This is especially noticeable for mercury which has a very spiky distribution with no specific relationship to rock type or structural features. Copper and zinc are generally flat across the main segment of the grid, but there are some elevated values for both elements that are possibly related to intrusive occurrence.

No gold was detected in rock chip samples. Consequently, the objective of positively identifying the gold-bearing source has not been realized.

A series of talus grab samples were collected near the southwest corner of the Grid. These samples represent the narrow gossan zone higher up on the cirque wall. Although gold was not detected in these rock samples several were highly anomalous in associated elements. In particular, mercury ranged from 1,300 to over 4,000 ppb in five samples that were collected from rusty brecciated feldspar porphyry, siliceous siltstone and hornfels; antimony ranging from 6 to 53 ppm and arsenic ranging from 148 to 2,000 ppm are coincident with anomalous mercury samples. Several of these samples were also anomalous in lead with higher values ranging from 58 to a peak of 303 ppm on a background of 6 to 10 ppm. Zinc is also elevated for those samples that are high in lead.

Six bulk stream sediment samples were collected on the stream and tributaries that drain across the Graveyard Grid. Locations are plotted on rock sample site map. Results are tabulated below:

SAMPLE	CU	ZN	PB	AG	AU	AS	HG	SB
THB 939	333	128	20	<0.2	0.44	220	948	<2
THB 939*					0.06			
THB 939*					0.07			
THB 940	125	124	25	0.2	0.13	46	87	<2
THB 940*					0.77			
THB 940*					NSS			
THB 941	132	136	35	<0.2	<0.02	48	80	<2
THB 941*					0.58			
TRB 941*					NSS			
THB 942	91	143	30	<0.2	0.09	34	161	<2
THB 942*					<0.04			
THB 942*					NSS			
THB 943	68	204	42	<0.2	NSS	54	107	<2
THB 944	75	249	36	<0.2	<0.02	46	1652	<2
THB 944*					<0.02			
THB 944*					0.41			
THB 945	72	245	30	<0.2	0.05	60	47	<2
THB 945*	72	245	30	<0.2	0.26	60	47	<2
THB 945*					0.04			

* Denotes duplicate analysis

NSS denotes not sufficient sample. All analyses are in ppm except for Hg which is in ppb.

With reference to the bulk sediment results, gold was detected in all samples except for THB 943 which did not contain sufficient -150 mesh material for a gold analysis. The gold content for any one sample is highly variable with analyses ranging from non-detectable to 0.58 ppm. It is noted that the most southerly or farthest upstream sample is gold-bearing as well as being anomalous for arsenic, mercury and copper; these metal contents might be attributable to the rusty shear zone on the cirque wall.

Stream gravels from bulk sediment sample sites were panned on-site to ascertain as to whether some "colours" could be obtained. Interestingly, two small flecks were observed at bulk sediment site THB 940 which is a small tributary draining across a lobe of glaciofluviatile material. Analyses from bulk sediment sample averaged 0.45 ppm Au at this site. Gold was not recoverable in any other sites; these included gravels from stream sample sites that previously recorded 0.46 and 0.69 ppm Au in two bulk sediment samples and 0.19 and 0.40 ppm Au in conventional stream samples. This panninng exercise possibly indicates that gold is probably very fine and difficult to retain in the pan.

6.2.2.3 Geophysical Surveys and Results

A total of 6.5 km of ground magnetometer and VLF (EM-16) data were gathered on lines 200 meters apart at 10 meter intervals. Seattle (24.8 khz) provided the source field for the VLF survey on the E-W lines. Considerable topographic-induced ("noise" is evident in the VLF in-phase data; not all of the "noise" is eliminated by the "Fraser filtering" process.

"Stacked" profiles of VLF In-phase, Fraser filter and magnetometer data were made at a scale of 1:5000. In addition, a contour map at the same scale was made from the magnetometer data.

Interpretation

VLF In-phase and Fraser filter data reveals the presence of one strong NNW trending conductor and several weak parallel discontinuous structures. Correlation of the several VLF anomalies is difficult at 200 m line spacing.

Magnetometer data confirms the presence of the intrusive rocks mapped on line 10+00N, on the ridge at approximately 492000E and at the east end of the line. Between these zones, the magnetic data exhibits response typical of sediments. Intrusive rocks extending to some depth are indicated at 4917000 on line 12+00N. The rest of the magnetic data is more typically representative of thin flat lying sills or possibly volcanics. This possibility may account for the fact that the magnetics and VLF data do not correlate very well.

6.2.2.4 Interpretation of Results

The bulk stream sediment samples indicated a favourable gold signature on the Graveyard Grid drainage system. The follow-up soil and talus-fines sampling indicate very weak and spotty gold association with restricted silicified and pyritized siltstone and sandstone. Although geological information is limited across the Grid, it appears as if the intrusive contacts are not

altered, mineralized and geochemically enhanced, as compared to intrusive contacts at the Thunder and several Eva targets.

Grab sample results of gossanous talus material indicate highly anomalous arsenic, antimony, mercury and lead. This elemental association is interesting, but the rusty shear zone source is narrow and additionally with no other support or associated structures in close proximity, this target is viewed as being too restricted to warrant further investigation.

6.2.3 Elbow Gossan

A prominant orangy tan gossan zone occurs on a rock face and talus slope on the southwesterly approach to Elbow Pass which, in turn, is one kilometer southwest of Elbow Mountain. Barrier Reef Resources sampled this gossan with two tiers of sidehill contour soil and talus-fines sampling at 100 meter spacing. A coincident gold-arsenic anomaly across a width of 200 to 300 meters was outlined. More specifically, a cluster of six samples ranging from 0.09 to 1.39 ppm Au are recorded; arsenic actually forms a broader zone over and around the gold anomaly with values ranging from 185 to a peak of 2000 ppm over a 40 ppm background. This target, although appearing somewhat limited in size, was examined in more detail with the objectives of identifying the gold-bearing source and evaluating its geologic potential.

6.2.3.1 Geology

The area of interest is along the crest of a local bench or terrace-like feature on the westerly flank of ridges south of Elbow Mountain. This terrace which overlooks the broad Big Creek valley to the west may represent the remnants of a cirque floor or a hanging spur level.

The terrace is underlain and rimmed by well-bedded medium green greywacke and sandstone with minor interbedded siltstone correlative with Relay Mountain Group. These 45° to 60° northeast-dipping sedimentary rocks have a well-developed joint pattern parallel to bedding. Pyrite, up to 5%, occurs as disseminations and this undoubtedly contributes to the overall rusty red surficial oxidation on the sedimentary sequence.

A series of three 1.0 to 2.0 meter thick dacite porphyry dykes cross-cut the greywacke unit. These dykes are also pyritized and highly gossanous.

The main gossan zone is a bright orangy tan streak of fine scree and rubblecrop material that cascades down from the north crest of the terrace. This gossan is noticeably orange compared to the rusty red oxidation over the broader expanse of pyritized greywacke. A closer examination of the main gossan revealed a steep-dipping two meter wide breccia zone at the toe of the scree. This breccia is comprised of siltstone fragments in a soft rusty matrix. It was exposed through a small window in the snow bank and can be aligned upslope to conform with gossan zone trend. The rubblecrop comprising the gossan is highly crackled

light grey silicified and possibly weakly clay altered (carbonate?) siltstone with up to 10% disseminated pyrite. The southwesterly trace of this breccia and silicified siltstone zone can be roughly inferred along the toe of the sidehill above the terrace to a point 200 meters to the southwest. Here, a narrow 20.0 cm breccia with associated quartz, calcite and minor pyrite is exposed. The greywacke wallrock around this breccia is weakly silicificd over a 1.0 meter width.

6.2.3.2 Geochemical Surveys and Results

A series of rock chip samples were cut across the main part of the gossan. This was complemented with a short line of talus-fines sampling along the base of outcrop in attempts to duplicate the Barrier Reef geochemical results. Additionally, a few soil samples were collected across the terrace floor in hopes of possibly intersecting the southwesterly extension of the breccia/silicified siltstone structure. However, gravelly glacial till was encountered on the inner segment of the bench and therefore this phase of sampling was not extended into any form of a grid.

Both rock chip and talus-fines sampling verified the former Barrier Reef gold anomaly. The rock chip sampling results confines the anomaly to the breccia and associated pyritized and silicified siltstone. The values range from 0.06 to 0.31 ppm Au in the bright orangy tan gossan as ccmpared to undetectable in the more weakly rust stained greywacke. By comparison, the results of the talus-fines sampling in the scree shows a much broader pattern across a 160 meter width with values ranging from 0.09 to 0.19 ppm Au; this wider anomaly in the scree is a reflection of the downslope dispersion and fan-like spread to the orangy tan gossan

material from its narrow source on the crest. Arsenic in talus-fines is anomalous across the entire sample line, but other indicator elements are comparatively "quiet".

The one rock chip sample of quartz-carbonate-pyrite breccia is gold-bearing with an assay of 0.27 ppm Au. It is also highly anomalous in arsenic.

It is noted that the rock chip sample of the pyritic dacite porphyry dyke and its surrounding wall rock is anomalous in antimony at 22 ppm. None of the other elements for this sample are above background.

Interestingly, the short soil sample line across the middle of the terrace is geochemically anomalous for arsenic and antimony at the terrace crest. The values then gradually decrease to background levels as the glacial till is encountered at the back end of the bench.

6.2.3.3 Interpretation of Results

The narrow breccia zone and associated band of silicified and pyritized siltstone are the main gold-bearing source. There is a suggestion that this zone might extend southwesterly and be correlated with a very narrow quartz-carbonate breccia structure.

The Elbow Gossan shows some interesting geochemical patterns. However, its restricted width negates its potential as a large tonnage deposit.

6.2.4 **Tosh Creek Gossan**

Barrier Reef Resources' exploration program had indicated a gold-arsenic anomaly near the confluence of Tosh Creek and Big Creek. This location is 4.5 kilometers northwest of Elbow Mountain, and can be readily recognized as a prominent gossan on the south bank of Tosh Creek. Barrier Reef's sidehill talus-fines samples outlined a gold anomaly ranging from 0.05 to 0.44 ppm over a 300 meter width; a coincident arsenic anomaly ranging from 96 to 579 ppm over a wider 450 meters is also indicated. This area is actually outside of the Thunder Claim boundaries but its general proximity to the Thunder property was an attraction warranting investigation.

6.2.4.1 Geology

Big Creek valley forms a distinctive dividing line between the rugged mountainous topography characteristic of the Bridge River region and the vast flat terrain of the Dil Dil Plateau to the northwest. Tosh Creek is incised into the southeastern fringe of this plateau, and at its confluence with Big Creek, the steep escarpment style of creek banks are comprised of fine grained dark green andesite or a volcaniclastic unit. It is probably correlative with Upper Jurassic Relay Mountain Group. Stratigraphy is well-exposed on the opposite creek bank, and there, the older rocks are unconformably overlain by younger plateau basalts. This relationship is not exposed on the south bank.

The Tosh Creek Gossan is developed and exposed across 400 meters immediately below the crest of the south bank. The gossan is generally a light tan to rusty

brown with local bright orangy tan streaks that are more eye-catching. A very consistent 55° to 65° northwest-dipping joint and fault pattern is developed across the exposure face. There are also narrow highly fractured and crackled zones. A discontinuous 1.0 to 1.5 meter wide heterogeneous, loosely consolidated rusty breccia or ferricrete material was recognized near the west end of the gossan. It was not determined as to whether this rubbly material was a fault breccia or an open gash filler.

The andesitic host rock is clay altered and locally silicified. Disseminated pyrite occurs almost ubiquitously with local zones containing up to 5%.

6.2.4.2 Geochemical Survey and Results

A series of rock chip samples almost continuous over a 250 meter width were cut across the gossan. Two additional samples were cut near the east limit of the gossan where pyrite content in unaltered host andesite is less abundant and joint pattern is weaker. One select rock ship sample was collected from a narrow fault and this included the 10.0 to 20.0 cm thick rusty shear and in-fill material. Another sample of ferricrete material was obtained.

Results show a low-order gold signature ranging from 0.03 to 0.11 ppm Au over a 180 meter width of the gossan. The more highly anomalous samples represented the fault in-fill material at 0.24 ppm Au, and the rusty ferricrete at 0.27 ppm Au. Arsenic and silver are elevated for several samples, but otherwise all other indicator elements are at relatively low levels.

The high mercury contents in four samples are considered to be a laboratory contamination problem and therefore not significant to this project.

6.2.4.3 Interpretation of Results

The Tosh Creek Gossan is comparatively small but visually an attractive target. However, sampling results indicate that the gold-bearing source is probably restricted to very narrow fault and breccia zones. The persistence of the low-order gold across the gossan is possibly suggestive that the well-developed joint fractures are also very weakly mineralized. The highly fractured, clay altered and more brightly gossanous crackle zones are by comparison non-gold-bearing.

Examination of the Tosh Creek Gossan was conducted over a comparatively limited area. No intrusive bodies were observed, but this does not preclude the total absence of possible intrusions in and around the gossan, and the possibilities of intrusive-related mineralization. At any rate, the interpretation of fracture-controlled mineralization as based on available information possibly indicates a slightly different style of mineralization from those that were recognized on the Thunder and Eva property grids.

6.3 **Mark Property**

Well-bedded and locally fossiliferous greywacke, sandstone, argillite and shale units underlie much of the Mark 3 and 4 Mineral Claims. This northwesterly-trending sedimentary sequence is part of the Upper Jurassic Relay Mountain Group.

Considerable faulting and large scale folding are evident. Near and at the peak of the mountain on this property, the Relay Mountain Group rock units are overlain by boulder conglomerate of the Upper Cretaceous Kingsvale Group, and this unit, in turn, is capped by a prominent pinnacle of columnar basalt.

The older sedimentary rocks are intruded by several cross cutting 1.0 to 3.0 meter wide buff coloured rhyolite dykes. Float material of fine grained phaneritic quartz diorite was also noted; this intrusive rock was not observed in outcrop but it is presumed to be a dyke.

Several rusty gossan bands are developed on the canyon-like rock walls at the headwaters of a stream. Bulk sediment sampling of this stream indicated a fairly strong gold anomaly. This stream is down-cutting through a sequence of manganiferous greywacke, sandstone and shale. The very dark to black surfical manganese coatings on the more competent and resistent greywacke unit form intriguing targets. Two of the rusty gossans as referred to above are centered on narrow 10.0 to 30.0 cm calcite veins with 1.0 to 3.0 meter ankeritic alteration zones. These structures appeared to be the gold source, but sampling results were negative. Additional exploration at the headwaters of the stream indicated a small low-order gold presence in talus-fines samples. This is coincident with an area at which quartz diorite float is present in close proximity with the manganiferous greywacke and shale. From this association it is presumed that there is very weak gold source related to the dyke intrusion into the sedimentary rocks.

No field work was undertaken on the Mark Claims during 1984. The possibilities of the gold being related to dyke contacts were factors in a decision to suspend the planned follow-up work. Another relevant negative factor was the rather weak and restricted pattern of the geochemical anomaly.

7. Statement of Expenditures

The following is a summary of the expenditures incurred by Placer Development Limited on the Aberford Project during 1984.

i Personnel Costs

Salaries and benefits for permanent and temporary employees are allocated for: -

a) Field time costs	$30,628.00	
b) Office time costs for planning, data compilation, evaluation, report and map preparations	34,672.47	$65,300.47

ii Helicopter Costs

a) Pemberton Helicopter Services Ltd.	$10,718.00	
b) M.F. Air Services Ltd.	21,417.66	32,135.66

iii Geochemical assaying costs	43,867.75
iv Travel expenses incl. vehicle costs	3,660.48
v Board and room costs	6,325.76

vi	Claim staking costs incl. helcopter costs		$ 2,214.44
vii	Recording fees for claims, assessment work, etc.		7,057.43
viii	Computer costs		
	a) Geochemical	1,159.92	
	b) Geophysical	151.89	
	c) Geological	69.05	1,380.86
ix	Miscellaneous costs, freight, supplies, etc.		857.28
Total 1984 expenditures			$162,799.83

8. Conclusion

The main objectives of the Aberford Project were to explore and develop deposits of micron gold and bonanza vein styles of mineralization. A number of regional and localized geological and geochemical parameters prominent in the Bridge River environment indicate favourable controls and setting for potential development and host for this type of mineralized systems.

The Aberford Project was focused on a systematic examination and evaluation of a number of geochemical and geologic targets. Several styles of mineralization were recognized. Gold-bearing mineralization related to intrusive contacts is the most prevalent mode of occurrence. Narrow shear and structurally-controlled mineralization are inferred as the other more common occurrences. Sampling of these altered and mineralized features essentially indicated only trace amounts to very weak and erratic gold presence in the various targets. No positive signatures for micron gold type of mineralization were identified.

Submitted by,

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E.T. Kimura

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J.M. Thornton

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B.W. Barde

ETK/cs
04:10:85

EVA 3
EVA 4
EVA 2
BRUCE
EVA 5
EVA 6
ELDORADO + MTN.
EVA 11
EVA 12
EVA 10
EVA 13
EVA 14
TAYLOR
THULE 6
EVA 22
EVA 26
EVA 25
EVA 15
EVA 16
NORTH CINNABAR
EVA 23
EVA 20
EVA 17
EVA 18
ELDORADO
EVA 24
EVA 21
EVA 19
FREIBERG
BOE
TYAUGHTON CREEK
BONANZA CR.
SPRUCE LK.
RELAY CREEK
NOAKE CR.
CRANE CR.
LAKE
PEARSON CR.
LICK CR.
SLIM CR.
ROXEY CR.
GUN CREEK
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BRITISH COLUMBIA GEOLOGICAL SURVEY

DRAWN: E. T. K.	SCALE: 1:50,000	PLACER DEVELOPMENT LIMITED	MINERAL CLAIMS
DRAWN: A. K.	DATE: MARCH, 1985	ABERFORD PROJECT EVA PROPERTY	
APPROVED:	REVISED:		FILE REF. No.:

TYAUGHTON CREEK
RELAY CREEK
BONANZA CR
BRUCE CR
NOAKE CR
SPRUCE LK
ELDORADO MTN.
TAYLOR CR
CINNABAR CR
NORTH
ELDORADO
SLIM CR
PEARSON CR
LICK CR
FREIBERG CR
B&F CR
ROXEY CR
GUN CREEK
CRANE CR
LAKE
CARPENTER LAKE
TYAUGHTON CREEK

Silver
Quick Hg
Robson Au
Lucky Jem Au
N. Lights Au
Lucky Strike Au
Charlotte Ann Hg
Paul Hg
Peerless Au
B&F Au
Minto Au
Congress Au
Howard Au
Wayside Au

H
KS
TC
BR

5650000 m N
5640000 m N
510000 m E
520000 m E

0 1.0 2.0 5.0 km

LEGEND

SEDIMENTARY AND VOLCANIC ROCKS

KS — KINGSVALE GROUP – Upper Cretaceous
Greywacke, conglomerate

TC — TAYLOR CREEK GROUP – Lower Cretaceous
Chert pebble and boulder conglomerate, greywacke & shale

H — HURLEY FORMATION – Upper Triassic
Greywacke siltstone minor argillite, limestone & conglomerate

BR — BRIDGE RIVER GROUP — Lower to Middle Triassic
Greywacke, siltstone, chert, massive and pillow basalt, minor argillite and limestone

INTRUSIVE ROCKS

x x / x x — Quartz Diorite and Granodiorite stocks

Serpentinized Ultrabasic bodies

SYMBOLS

Fault

Rock contacts

Mineral Prospects

inches
0 1 2
0 1 2 3 4 5
centimetres

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

BRITISH COLUMBIA GEOLOGICAL SURVEY

DRAWN: E. T. K.	SCALE: 1:50,000	PLACER DEVELOPMENT LIMITED	GEOLOGY
DRAWN: A. K.	DATE: MARCH, 1985	ABERFORD PROJECT EVA PROPERTY	MODIFIED AFTER GSC MAPS
APPROVED:	REVISED:		FILE REF. No.:

BRUCE CR. GRID

TAYLOR CR. NORTH SLOPE

TAYLOR CR. GRID

UPPER TAYLOR CR. SOUTH BANK

SOUTH CIRQUE GRID

CHARLOTTE GRID

EVA 26 GRID

EVA 25 GRID

EVA 21 GRID

BULK SED. FREIBERG CR.

BULK SED.

ELDORADO + MTN.

TYAUGHTON CREEK

RELAY CR.

BONANZA CR.

SPRUCE LK.

BRUCE CR.

TAYLOR CR.

NOAKE CR.

CINNABAR CR.

NORTH

CRANE CR.

LAKE

TYAUGHTON CREEK

TYAUGHTON CR.

PEARSON CR.

LICK CR.

FREIBERG CR.

BEEF CR.

SLIM CR.

ELDORADO

ROXEY CR.

GUN CREEK

GUN

LAKE

CARPENTER LAKE

5650000 m N.

5640000 m N.

510000 m E.

520000 m E.

N

0 1.0 2.0 5.0 km

inches 0 1 0 1 2 centimetres

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DRAWN: E. T. K.	SCALE: 1:50,000	PLACER DEVELOPMENT LIMITED	EXPLORATION TARGETS
DRAWN: A. K.	DATE: MARCH, 1985	ABERFORD PROJECT EVA PROPERTY	
APPROVED:	REVISED:		FILE REF. No.:

5670000 m N.

TOSH CR.

CR.

CR.

GRAVEYARD CR.

MARMOT CR.

RELAY CR.

THUNDER 12

THUNDER 3

THUNDER 2

THUNDER 6

BIG

THUNDER 8

ELBOW MTN.

THUNDER 10

THUNDER 4

THUNDER 5

MARK 3

MARK 4

THUNDER 9

THUNDER 11

RELAY MTN.

LORNA LK

TYAUGHTON CR.

PARADISE CR

LIZARD CR.

inches

0 1

0 1 2

centimetres

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5660000 m N.

490000 m E

500000 m E

0 1.0 2.0 5.0 km

DRAWN: E. T. K.	SCALE: 1:50,000	PLACER DEVELOPMENT LIMITED	MINERAL CLAIMS
DRAFTING: A.K	DATE: MARCH, 1985	ABERFORD PROJECT	
APPROVED:	REVISED:	THUNDER & MARK PROPERTIES	FILE REF. No.

5670000 m N.

TOSH CR.

TOSH CR. GOSSAN

GRAVEYARD CR.

MARMOT CR.

MARMOT GRID 1983

GRAVEYARD GRID

ELBOW + MTN.

THUNDER CIRQUE

ELBOW GOSSAN

THUNDER GRID

BIG

LORNA LK.

TYAUGHTON CR.

LIZARD CR.

RELAY CR.

MARK GRID 1983

RELAY + MTN.

PARADISE CR.

N

inches
0 1
0 1 2
centimetres

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BRITISH COLUMBIA GEOLOGICAL SURVEY

0 1.0 2.0 5.0 km

5660000 m N.

490000 m E.

500000 m E.

DRAWN: E. T. K.	SCALE: 1:50,000	PLACER DEVELOPMENT LIMITED	EXPLORATION TARGETS
DRAFTING: A.K.	DATE: MARCH, 1985	ABERFORD PROJECT	
APPROVED:	REVISED:	THUNDER & MARK PROPERTIES	FILE REF. No.: