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**GEOLOGY OF THE BRONSON SLOPE
PORPHYRY GOLD, COPPER
DEPOSIT**

**located in
NORTHWESTERN
BRITISH COLUMBIA**

**by
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1.0 REGIONAL GEOLOGY (after Rhys 1993)

The Iskut River region is within the Intermontane Belt on the western margin of the Stikine terrane. Three distinct stratigraphic elements are recognised in the western portion of the area (Anderson, 1989): (i) Upper Paleozoic schists, argillites, coralline limestone and volcanic rocks of the Stikine Assemblage, (ii) Triassic Stuhini Group volcanic and sedimentary arc related strata, and (iii) Lower to Middle Jurassic Hazelton Group volcanic and sedimentary arc related strata.

Intrusive rocks in the Iskut River region comprise five plutonic suites. The Stikine plutonic suite comprises Late Triassic calc-alkaline intrusions which are coeval with Stuhini Group strata. The Copper Mountain, Texas Creek and Three Sisters plutonic suites are variable in composition but are roughly coeval and cospatial with Hazelton Group volcanic strata. Tertiary elements of the Coast Plutonic Complex are represented by predominantly granodioritic to monzonitic Eocene intrusions of the Hyder plutonic suite, exposed 12 kilometres south of the Bronson Slope deposit (Britton et al., 1990).

The age, mineralogy and texture of the Red Bluff porphyry stock (associated with the Bronson Slope deposit), suggest that it belongs to the metallogenetically important Early Jurassic Texas Creek plutonic suite (Alldrick, 1985; Alldrick et al, 1987; Brown, 1987). Plutons of this suite are widespread in the Stewart, Iskut River region and range in age from 196 to 185 million years (Anderson, 1993; MacDonald et al., 1992, and in preparation).

2.0 LOCAL GEOLOGY

2.1 Geology of the Bronson Creek Area

Strata in the Bronson Creek area are divided into a lower and an upper sequence; probably correlating with Triassic Stuhihi Group and Jurassic Hazelton Group respectively. The sequences are separated by a flat lying to gently dipping regional unconformity exposed some three kilometres to the southwest of the deposit near the Johnny Mountain Gold mine.

The lower sequence comprises folded turbiditic greywackes with interbedded siltstones, mudstones, volcanic conglomerate and rare lenses of carbonate rocks. The sequence is weakly to moderately metamorphosed (lower greenschist facies).

The lower sequence is intruded by the Red Bluff porphyry stock, a hydrothermally altered, potassium feldspar megacrystic, plagioclase porphyritic intrusion of probable granodioritic composition. The stock is approximately 2.0 kilometres long, up to 0.3 kilometres wide and trends southeast along the southwest side of the Bronson Creek valley. Contacts of the stock with country rocks are not well defined, but where observed in drill core or underground workings are either faulted or intrusive. The southwest and northeast contacts appear to be southwesterly dipping.

2.2 Geology of the Bronson Slope Deposit

The Bronson Slope porphyry gold, copper, silver, molybdenum deposit occurs on the southwest flank of the Red Bluff porphyry stock in hydrothermally altered country rocks and to a lesser extent in altered intrusive rocks.

The country rocks in the deposit comprise dark coloured, intermediate to mafic mudstones, siltstones and greywackes with lesser amounts of light coloured felsic wackes as interbeds. The sedimentary rocks are variably hydrothermally altered as a function of proximity to the intrusive porphyry. The alteration sequence in order of increasing distance from the intrusive is: (i) potassium feldspar alteration with subordinate chlorite, sericite and biotite, (ii) chlorite biotite hornfels with subordinate calcite and (iii) biotite carbonate alteration (occasionally schistose) with subordinate chlorite and sericite. There is field mapping evidence of a quartz, sericite, pyrite phyllic zone followed by a calcite, epidote, biotite, chlorite propylitic zone adjacent to those previously mentioned but these zones have not been encountered in the present drill pattern.

The intrusive rocks in the deposit comprise the Red Bluff porphyry stock variably but extensively altered by the overprint of quartz, magnetite mineralization. The quartz, magnetite was emplaced by multiple phases of veining which exhibit a wide range of depositional textures including: (i) simple widely spaced quartz, magnetite stringers ranging from several millimetres to several centimetres thick, (ii) several sets of crosscutting quartz, magnetite stringers of similar size, (iii) a stockwork of multiple sets of crosscutting quartz, magnetite stringers of sufficiently dense spacing to comprise greater than 50% of the whole rock mass, (iv) complete replacement of the original rock by quartz (90%) and magnetite (10%) and (v) a stockwork of quartz magnetite stringers cutting total quartz, magnetite replacement to form a quartz, magnetite breccia. The quartz, magnetite mineralization has also occurred in the sedimentary rocks in the deposit.

The deposition of gold, copper, silver and molybdenum has accompanied late quartz, pyrite veining that has cut the sedimentary rocks, the intrusive rocks and the quartz, magnetite mineralization. The ore minerals have deposited as discrete grains in and along boundaries of quartz stringers, as discrete grains disseminated throughout altered mafic sedimentary rocks and as thin films coating closely spaced late hairline fractures.

2.3 Ore Mineralogy

The ore minerals in the deposit are as follows; (i) copper: chalcopyrite with minor covellite, chalcocite, malachite, native copper and cuprite, (ii) silver: tetrahedrite, (iii) molybdenum: molybdenite and (iv) gold: not seen but demonstrates a correlation with copper and likely occurs microscopically on chalcopyrite grain boundaries and free in quartz. The gangue minerals in the deposit are quartz, pyrite, dolomite and calcite with minor chlorite, biotite and sericite. The magnetite content of the deposit is approximately

10% and represents a recoverable and potentially profitable component of the deposit if transportation costs from the site to tidewater can be minimized.

2.4 Host Mineralogy

The mineralogy of the host rock and of the waste rock comprises predominantly feldspar, quartz, chlorite, dolomite, pyrite, calcite, biotite, sericite and minor clay minerals.

3.0 RESERVES AND MINE LIFE

3.1 Mineral Resource

The in-situ resource of the Bronson Slope deposit was estimated by Mr. G.H. Giroux, P.Eng. in December 1996. The estimate for the deposit is based on information from 57 drill holes comprising 10,000 metres of drilling. These holes were drilled during exploration projects in 1988 and 1993-1996. The 1988 program gave preliminary indications of the gold potential of the deposit but it was not until the 1993 drilling that the size potential was discovered. The high grade core of the deposit was outlined in 1994, sectional drilling was performed in 1995 and definition drilling was performed in 1996.

The resource has been calculated using the block model method. The steps used to calculate reserves in this fashion are as follows: (i) the deposit is divided into a matrix of 10m x 10m x 10m blocks; (ii) each block is assigned a rock code based on a three dimensional geologic model; (iii) in each drill hole, metal assay values are composited into 10m lengths by finding the weighted arithmetic mean of the assay intervals that fall within each 10 metre elevation slice; (iv) each metal value for each block is then estimated using ordinary kriging, using only composites from a similar rock type; (v) a combined net smelter return value is calculated for each block based on assumed metal prices, metal recoveries, transportation costs, smelter deductions and currency exchange rates; (vi) the weight of mineralised rock associated with each block is calculated by multiplying the volume of each block by the specific gravity of the rock (S. G. = 2.65), (vii) the results are classified on the basis of the distance from the block centroid to the nearest composite; (viii) the total tonnages of the blocks falling within the various distance and net smelter return categories are compiled.

The metal prices used to define the metal grade categories are: (i) gold at US \$12.38 per gram or US \$385 per troy ounce, (ii) silver at US\$ 0.169 per gram or US \$5.25 per troy ounce and (iii) copper at US \$2,424.40 per metric tonne or US \$1.10 per pound. Molybdenum values were not included in the determination of metal grade categories. The Canadian dollar value used is equivalent to US \$0.75.

In the case of the Bronson Slope deposit, the total measured and indicated resource of mineralised rock containing a net smelter return value of greater than US\$6.00 is 74.5 million metric tonnes containing an average of 0.56 grams gold per metric tonne, 2.67

grams silver per metric tonne and 0.20 % copper. The net smelter return value of metals contained within this resource is US\$678 million (CDN\$904 million) or an average of US\$9.10 (CDN\$12.13) per metric tonne. A further 23.4 million tonnes of similarly mineralised material (NSR US\$9.66) is classified as inferred. Undrilled geologic potential exists for an additional 80 million tonnes at similar grades.

Within this larger deposit, the company has designed a 56.7 million metric tonne open cut. This proposed open cut mine plan is presently the subject of Environmental Review.

3.2 Projected Mine Life

The company is proposing to construct a concentrator nominally capable of processing 12,000 metric tonnes per day of ore. Assuming a plant availability of 345 days per year, this mine plan should be completed in 13.7 years.

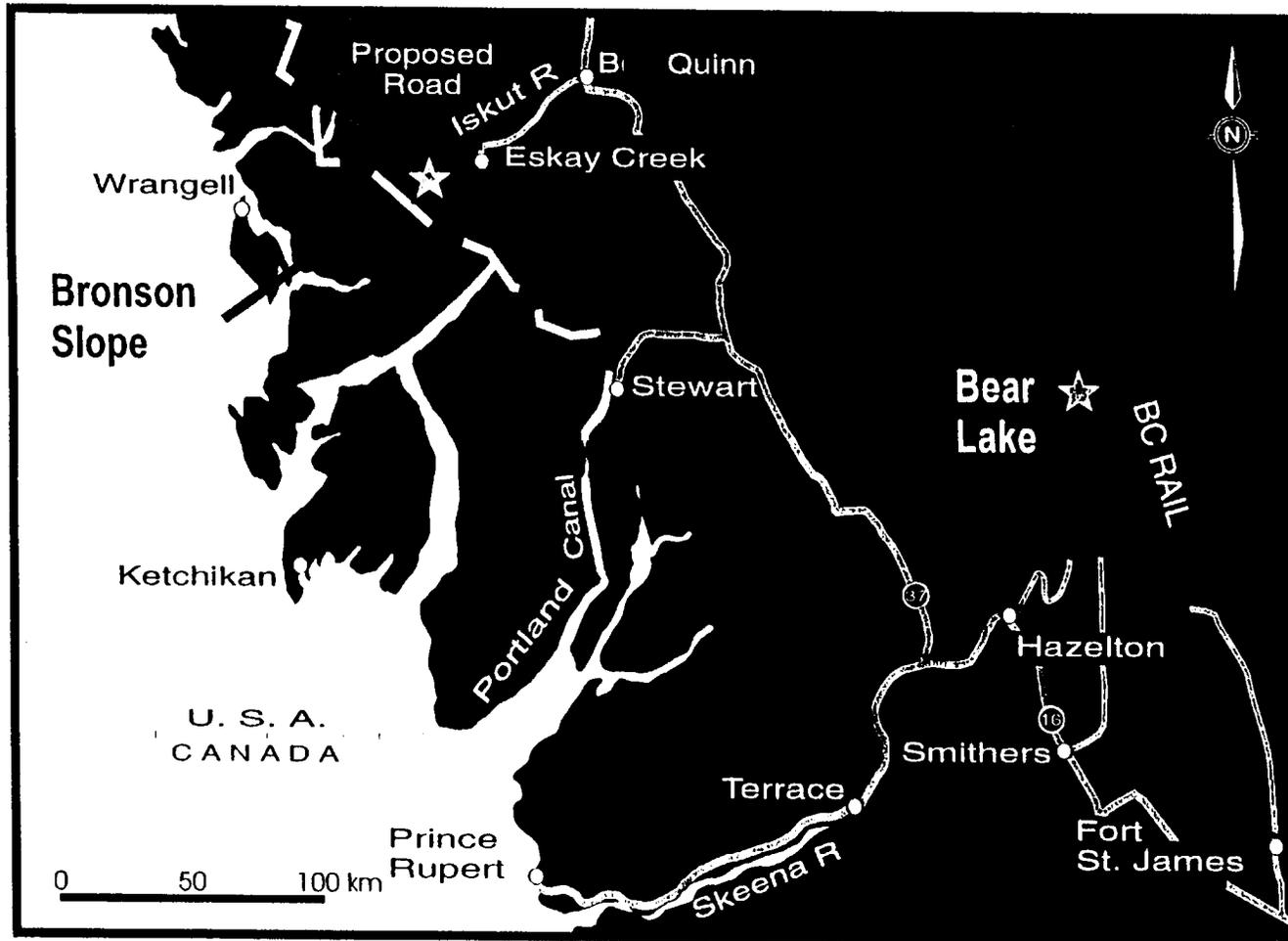
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REGIONAL ACCESS MAP



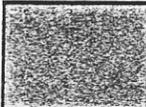
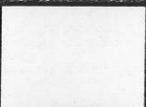
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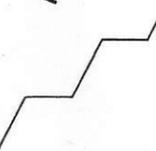
**INTERNATIONAL SKYLINE
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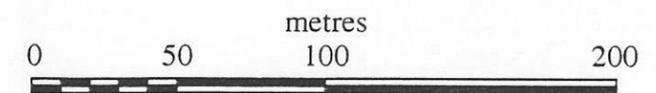
**BRONSON SLOPE
PORPHYRY GOLD-COPPER
PROJECT**

CROSS SECTION 25300 E (Looking East)
GEOLOGY AND ASSAY COMPOSITES

LEGEND

-  Highwall sedimentary rocks
-  Upper sedimentary rocks
-  Quartz magnetite stockwork
-  Red Bluff porphyry intrusion

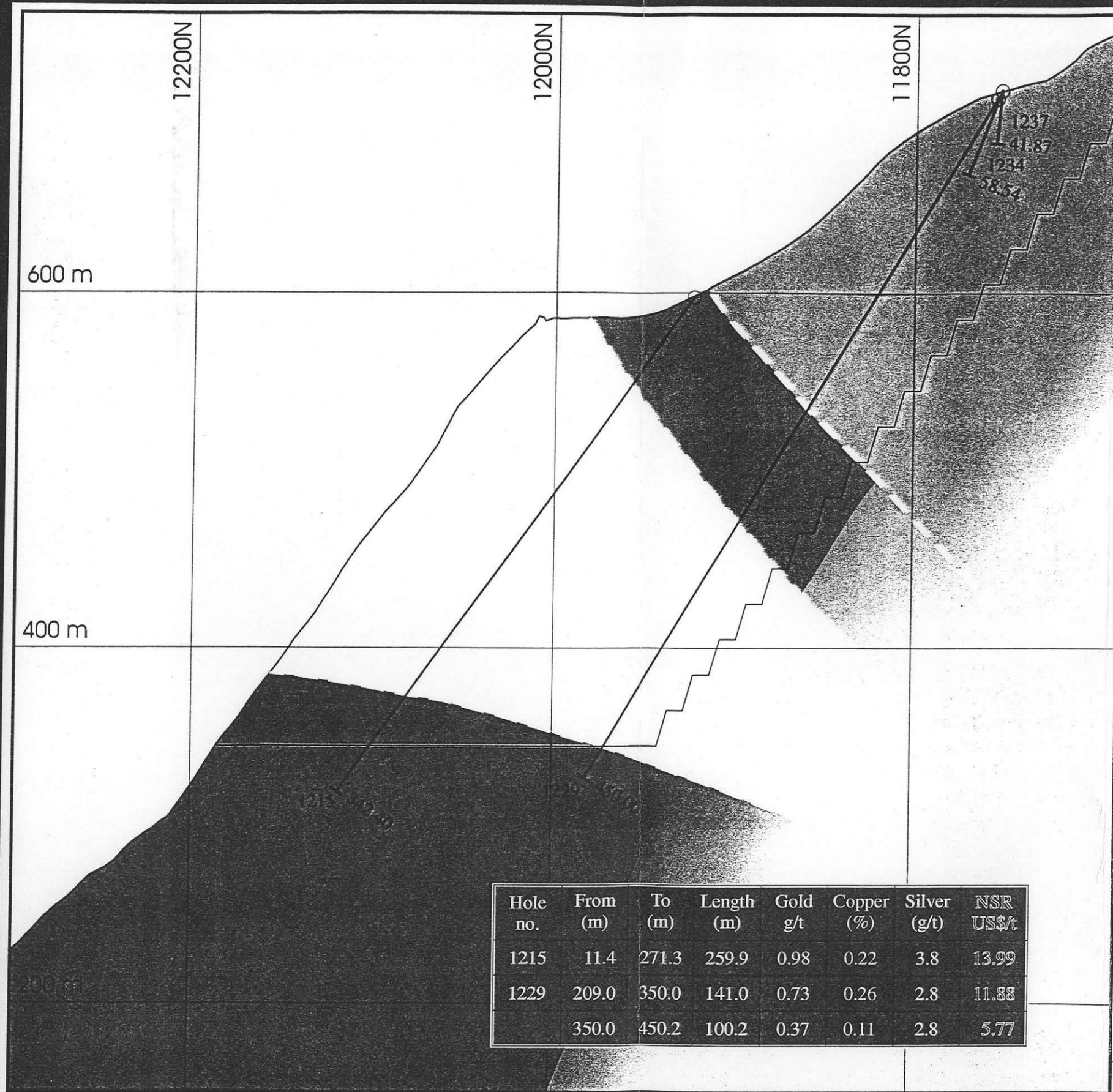
-  Diamond drill hole trace
-  Pit outline



Scale: 1 : 2500

NTS : 104B/11

January 24th, 1997



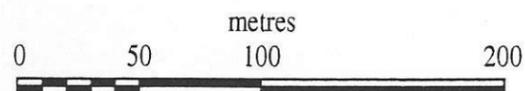
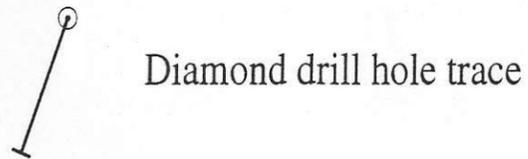
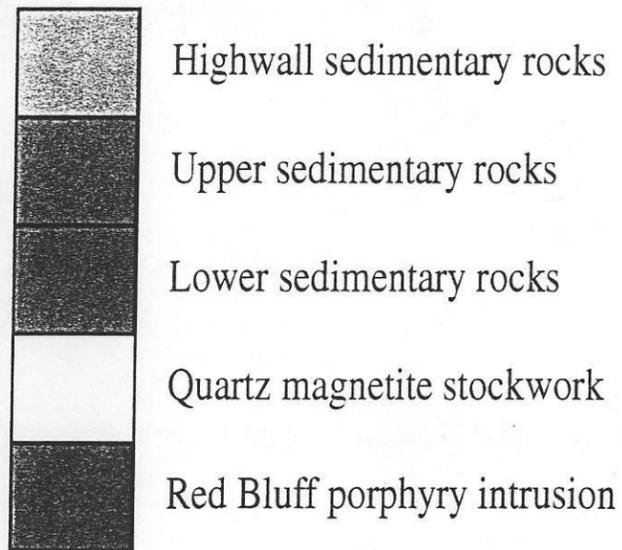
Hole no.	From (m)	To (m)	Length (m)	Gold g/t	Copper (%)	Silver (g/t)	NSR US\$/t
1215	11.4	271.3	259.9	0.98	0.22	3.8	13.99
1229	209.0	350.0	141.0	0.73	0.26	2.8	11.88
	350.0	450.2	100.2	0.37	0.11	2.8	5.77

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BRONSON SLOPE
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PROJECT

DIAMOND DRILL HOLE PLAN
INCLUDING SURFACE GEOLOGY

LEGEND



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