

THE GEOLOGY OF THE ESKAY CREEK PROPERTY AND
THE #21 ZONE DEPOSITS

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The Eskay Creek property is underlain by a lower-middle Jurassic calc-alkaline island arc assemblage termed the Hazelton Group. The #21 Zone deposits are hosted by upper Hazelton Group lithologies and have a combined geological resource of 4.745 million Mt @ 0.84 opt Au and 29.97 opt Ag. Mining reserves for the #21B are 1.19 million Mt grading 1.91 opt Au and 85.5 opt Ag using a 0.4 opt cut-off. Feasibility studies on the #21B deposit are on-going and will be complete in mid-1993.

The oldest rocks on the property are siliciclastic units possibly time equivalent to the Unuk River Formation. The regional marker sequence (Mt. Dilworth Fm.) of dacitic pyroclastics and flows lie beneath the ore bearing sequence of intercalated rhyolitic to basaltic flows, breccias, tuffs and fragmentals and are correlative to the lower Salmon River Formation which hosts the #21 Zone deposits. Syn-volcanic felsic intrusives (K-altered felsite and monzo-diorite) are present in the footwall rocks as sill-like bodies and are possible conduits for mineralization and or rhyolite flows. Basaltic intrusives are present in both footwall and hangingwall rocks as sills and dykes, and are co-magmatic with basaltic flows.

At least two phases of deformation have affected all the rocks on the property. The earliest imparts a NNE trending pervasive cleavage which is axial to the Eskay anticline implying a 120° trending compressive regime. The later event has locally re-oriented cleavage and formed N and NNE trending normal faults. The later event implies a NNE-SSW directed compression.

The #21 Zone deposits are present in two basic forms: i) tabular syn-sedimentary sulphide sheets with graded and fragmental sulphides of high Ag:Au (50-100), ii) low-high angle cross-cutting vein and disseminated zones present footwall to the overlying stratiform zones with lower Ag:Au (10-20). The metal association in the deposit is As-Sb-Zn-Ag-Au-Hg-Cu. A zone of widespread k-feldspar and silica alteration is present in the rhyolitic footwall enveloping a pervasive tabular chlorite-sericite alteration zone, locally developed within tuffs and fragmentals in the immediate #21B footwall. The deposit is viewed as forming in a shallow (~100m) submarine environment as a result of submarine hydrothermal activity focused on high level felsic intrusives and their extrusive equivalents; possibly analogous to a *Maar* crater setting.

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ABSTRACTS OF TECHNICAL PRESENTATIONS