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## Granduc Project

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### Introduction

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- **[Update August 31, 2005 - Review of Airborne Survey results in Company increasing land holdings in Granduc area 6 fold](#)**

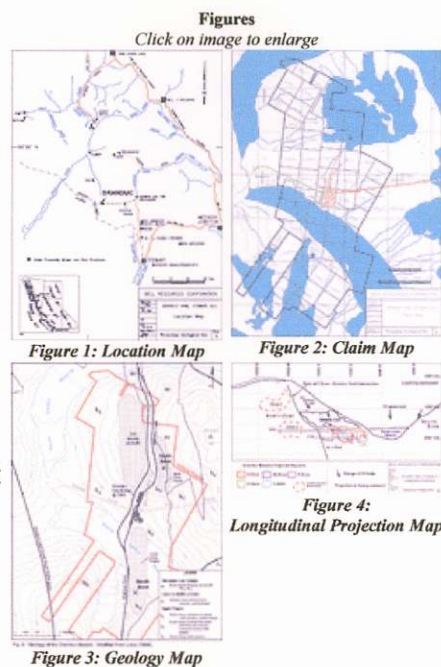
The Granduc deposit is a copper-rich syngenetic volcanogenic massive sulphide deposit hosted in strongly deformed Upper Triassic volcanic, chemical, and clastic sedimentary rocks. Historically, the property produced 420 million pounds of copper and 4 million ounces of silver plus some gold, up to 1984, according to annual reports filed with the BC Mines Branch. Significant resources remained untapped when the mine closed due to low copper prices.

Increasing metal prices combined with a new geological interpretation of the mine series strata and structural regime make extensions to the Granduc deposit high potential exploration targets. Bell Resources is targeting new discoveries beyond the zones of past exploration and mining, and is seeking to define resources of significantly higher copper grades, a target well supported by the recent geological studies.

### Location and Infrastructure

The property is located 40 km northwest of Stewart in northwestern British Columbia (Fig. 1), approximately 900 km north of Vancouver. It is located on map sheets

104B/1E, 1W, 8W, centered near longitude 130°20'N and latitude 56°14'W. The Granduc property is comprised of 64 Crown Granted mineral claims that total 1090.97 hectares in area (Fig. 2). Topography at the Granduc property is mountainous, modified by valley glaciation with elevations ranging from 700 to 2000m above sea level. Access is by helicopter from Stewart, B.C. During mine development and production, access was via a tunnel that connects underground workings at the Granduc mine site with the former mill site near Summit Lake (Fig. 1). This tunnel has been decommissioned and is not currently available for exploration activities. Summit Lake is accessed by a 35 km all weather road from Stewart, B.C. Stewart has port facilities for Panamax-size ocean-going ships, and a paved 5000 ft. airstrip capable of handling prop-driven aircraft and small business jets.



### **Previous Work**

Mineralization was first discovered on Granduc Mountain 1931. The copper showings were staked by E. Kvale and T.J. McQuillan in 1951. Granby Mining Company acquired the property in 1952 and completed surface and underground exploration work under the newly formed company, Granduc Mines Ltd.

Newmont Mining Corporation Ltd. entered into agreement with Granby in 1953 where Newmont provided mine development financing. Mine development commenced in the early 1960s with production in 1968 at a mine/mill capacity of up to 10,000 tons per day. The mine was acquired in 1979 by Esso Minerals Canada (Canada Wide Mines division) and operated until closure in May, 1984. No other major mining or exploration activities were conducted after 1984.

Regional mapping by Lewis (1994) and studies of the Granduc property by Melnyk (1991), Barrett (1994), Childe (1994) and Dawson et al. (1994) have contributed greatly to the understanding of the deposit.

### **Mineral Resources**

Total mineral resources for the Granduc mine were historically reported as an "in situ" estimate of grades and tonnages with no allowance for grade dilution or recoverable tonnages during mining (Schmidt, et al 1983). During the life of the Granduc mine, mineral resource estimates depended on closely spaced diamond drilling sections and sampling of drifts and crosscuts. Although current geoscience practice would regard the historical mineral resource information as an "Indicated Mineral Resource" those resources are not currently suitable to be termed such, due to a lack of necessary verification by a qualified person. These historical estimates are relevant only as geological information for the purposes of targeting future exploration. The total mineral inventory calculated by Newmont, in 1966, for in-situ resources above the 1600 level, was 39,442,403 tonnes grading 1.73% copper (Schmidt, et al 1983). Low copper prices forced the closure of the mine and demolition of the mill facilities in 1985. Prior to the closure of the mine, the remaining in-situ resources were estimated to be 5,083,178 tonnes, grading 1.84% copper, not including the copper-rich massive sulphide mineralization in the North Zone (Schmidt, et al 1983). The reader of this summary cannot depend on these historical estimates to conform to the standards of NI 43-101.

Bell Resources is targeting significant new massive sulphide deposits in areas north and south of historical mining, and will not give exploration priority to the known down plunge extensions of the Granduc deposits or to confirming the resource estimates remaining within the area of mine development. These regions can be further tested during more advanced stages of exploration and development, success contingent on the discovery of entirely new massive sulphide deposits on the property.

### **Regional Geology**

Rocks mapped on Granduc Mountain and to the north are separated into two easily recognizable geological successions (Fig. 3): Upper Triassic and Lower to Middle Jurassic age successions, termed in earlier studies the western and eastern series, respectively. The Triassic and Jurassic successions are separated on the Granduc property by the north-northwest striking South Unuk shear zone, a 60 km length linear trending from the Iskut area south to Granduc Mountain. The Late Triassic or older strata are correlated with the Stuhini Group and consist of moderately to highly foliated schists, phyllites, marbles and gneisses. The Lower to Middle Jurassic age Eastern series rocks are correlated with the Hazelton Group and consist of relatively undeformed, mainly volcanic rocks that are subdivided into three conformable stratigraphic units.

### **Mine Geology**

Mine series rocks consist primarily of interbedded tuff, chert, and minor chloritic plus calcareous wacke, argillite and the Granduc limestone. Mine series rocks were subdivided by McGuigan and Tucker (1981) into the: (i) *Lower Mine unit*, (ii) *Middle Mine unit*, and (iii) the

**Upper Mine unit.** They are separated by faults of small displacement. The three units each represent similar cycles of argillite, siltstone, and mafic tuff deposition, marked by an interval of exhalative mineralization comprised of massive sulphide, tourmaline-bearing chert and magnetite iron formation.

The area of drift defined massive sulphide deposits is shown on Figure 3, in relation to the property geology. Depicted on that figure are the regions that are prospective drill targets, according to McGuigan (2005). Figure 4 shows the regions of historical mining on a longitudinal section of the North Zone, Granduc Mine and South Zone. Prominent on the longitudinal is the south plunging shape of the Granduc orebodies that plunge at 55° towards 230°. The highest grades of Cu and Ag are found in fold thickened hinges that contain significant widths of remobilized sulphides.

The best of the orebodies is the F zone, which is the thickest and highest grade. The F zone orebody is truncated on the north extremity by the Granduc Fault. The fault displaced western segment of this orebody is likely in close proximity to the Granduc Mine, yet remains untested by drilling.

### **Granduc: A Windy Craggy Analogue?**

The data, compared with that from other volcanogenic massive sulphide deposits worldwide, indicate that the Granduc deposit is a Besshi-type massive sulphide deposit. For purposes of exploration planning only, the company's consultants find strong geological similarities with another Besshi deposit in the north coast of BC, the world's largest, the **Windy Craggy deposit**, which has 297 million tonnes of 1.4% Cu, 0.3% Zn, 4 g/t Ag and 0.2 g/t Au (Slack, 1993), plus about 0.09% Co. A higher grade core, has up to 1.7% Cu. The resource figures were not prepared under the guidelines of the NI 43-101, and are cited for geological information only. The company's geologists find that the Windy Craggy is located in rocks of the same tectonic setting, age, and chemistry as the Granduc.

### **Conclusions**

Cumulatively, the latest studies on the Granduc deposits (e.g. Lewis, 1994; McGuigan et al., 1990; Melnyk, 1991; Barrett, 1994; Childe, 1994; Dawson et al., 1994) open several new approaches to the exploration of the volcanic-sedimentary host succession. Most importantly, the new understanding of the geology allows exploration of target well beyond the areas of historical mining operations and suggests a potential for significant additional massive sulphide deposits on the Granduc property. These targets lie under the South Leduc glacier, in the South Zone, and in the North Zone areas. Additionally, an undrilled target area lies northwest of the present Granduc mine workings. Due to much higher copper and silver prices, and new metallurgical techniques, the potential of these target areas is very significantly greater than at the time of mine closure.

Conceptual deposit sizes for the new drill targets are 50 to 150 million tonnes at a grade between 1.5% and 3.0% copper with significant silver, zinc, cobalt and gold. In keeping with the size of other Besshi-type massive sulphide deposits.

### **Recommended Exploration Program**

**A two phase exploration is recommended** by P. McGuigan, P. Geo. (2005) to follow-up on the drill targets lying north and south of the historical mining operation (see Figures 3, 4):

- (i) **Phase One** comprises airborne geophysical surveys, 2500m of diamond drilling and technical work, at an estimated cost of **\$1,518,000.**
- (ii) **Phase Two**, is success contingent on Phase One, and is for 6000m of diamond drilling and comprises **\$2,068,000** in estimated expenditures.

The estimated cost of both **Phase One and Phase Two is \$3,586,000.**

### **References**

*Barrett, T. J., 1994, Preliminary Lithogeochemical Data for the Granduc Mine, Northern British Columbia.: In: Mineral Deposits Research Unit "Volcanogenic Massive Sulphide Deposits of the Cordillera", First Annual Technical Report, The University of British Columbia.*

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- [View Complete Granduc Tech Report](#) (PDF, 3.2 Mb)

### Update December 14, 2005 - Drilling at Granduc Confirms Grades of up to 3.92% Cu

#### Highlights:

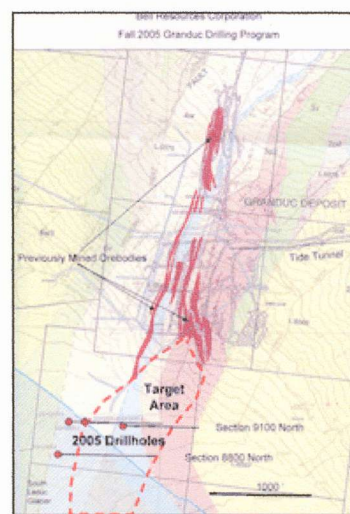
- Significant copper intersections of up to 3.92% Cu, including 25.5 ft of 2.57% Cu, 24.9 ft of 2.21% Cu and 26.7 ft of 2.13% Cu
- Intersections show an overall pattern of increasing copper grade, thickness, and byproduct metal grades in the downdip and southwest directions, and remain open to extension in these directions
- Ore zones have been extended at least 800 feet southward along strike and at least 800 feet down dip from historically mined areas
- Drill program focused on less than ten percent of the known 3.5 kilometre strike length of the deposit and sets the stage for a comprehensive 2006 work program

This initial drill program at the Granduc has demonstrated that high grade chalcopyrite-magnetite-pyrrhotite mineralization is indeed the cause of the geophysical anomalies identified earlier in the 2005 field season. The drill program also confirmed that the sulfide ore zones previously mined at Granduc extend at least 800 feet further southward along strike and at least 800 feet further down dip. Much of this additional strike length was previously inaccessible beneath the South Leduc Glacier, which through recent rapid melting has retreated about 700 feet southward and 400 feet vertically downward.

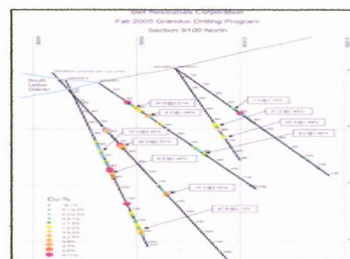
These drill intersections show an overall pattern of increasing

#### Maps

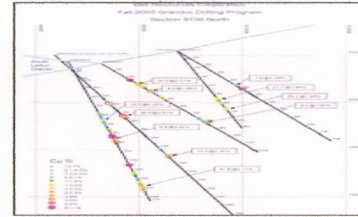
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**Granduc Drilling Program**



copper grade, thickness, and byproduct metal grades in the downdip and southwest directions, where the drillholes cut in-situ metal values exceeding \$100 per ton at current market prices. The mineralization in this magmatic massive sulfide system remains open in these directions, and will be drilled in 2006 when the Company pursues the continuations of these thick, higher tenor beds as part of a significantly larger field program to be announced in January 2006.



**Granduc Drilling Program - Section 9100 North**

This season's drill program was focused on less than ten percent of the known 3.5 kilometre strike length of this Besshi-type deposit, which are known for their multi-kilometre strike lengths.

"These assays show that we have just begun to scratch the surface of the potential at Granduc", said Tim Marsh, Bell's VP of Exploration.

**The following table summarizes the most significant intersections of this program.**

Drillhole	From (ft) To (ft)		True Intercept Thickness (ft)		Cu %	Ag g/t	Au g/t	Co g/t
2005-1	304.0	334.0	30.0	24.9	2.21	11.8	.157	94
2005-1	746.0	754.0	8.0	6.6	1.66	18.8	.112	114
2005-1	806.0	814.0	8.0	6.6	1.85	21.8	.072	203
2005-2	461.8	469.3	7.5	6.1	1.19	16.7	.115	103
2005-3	535.8	557.0	21.2	13.3	1.84	20.7	.127	98
2005-3	646.4	671.7	25.3	15.9	1.49	13.1	.102	128
2005-4	716.0	752.0	36.0	25.5	2.57	6.7	.159	114
2005-4	1199.0	1214.0	15.0	11.1	2.02	20.3	.224	156
2005-5	647.3	657.6	10.3	5.7	2.42	17.4	.236	271
2005-5	863.0	871.8	8.8	4.9	3.92	36.0	.255	168
2005-5	1367.0	1414.8	47.8	26.7	2.13	23.2	.237	139

**Note: historic grades were 1.84% Cu, 7 g/t Ag and .1 g/t Au (as last reported by Schmidt, et al 1983 - Non NI43-101)**

All drillholes were located south of historic mining areas, and were targeted to test the along-strike continuity of known ore beds into a region of overlapping geophysical anomalies, formerly located beneath the South Leduc glacier. Drillholes 2005-1, -2, -3, and -5 were drilled along section 9100 North, located 500 feet southwest of the historical limit of past mining. Drillhole 2005-4 was drilled 300 feet further to the southwest along section 8800 North. Each of the drillholes was angled in a due east direction into the 70 degree west-dipping, N20E-striking Granduc Mine Series rocks that host the stratiform copper-iron orebodies. The spacing of the 5 drillholes that were completed this season is inadequate to reliably estimate the volume represented by the sulfide intersections, and a much larger program of infill drilling will be required to bring the mineral resource into compliance with NI43-101. See the accompanying cross section with drill results and map outlining drill hole locations.

### **Update September 21, 2005 - Drilling begins at the Granduc Project**

Drilling is underway at the Granduc project in west-central British Columbia. A twenty-man camp is currently in operation at the site, and diamond drilling is being conducted around the clock. Drilling is focused on testing the southerly extension of the Granduc orebody, where 15 million tons of ore averaging 1.83% Cu have been historically produced.

**Photos**  
Click on image to enlarge



**Camp set up at the View of South Leduc**

The present drilling program calls for 2000 meters of diamond drilling distributed among six holes. All holes are testing an area of coincident electromagnetic (EM) and magnetic anomalies identified this past spring in an AEROTEM II survey conducted by Aeroquest Corporation. The Company expects to complete the drilling and assaying of samples by mid-November.



**Dr. Timothy Marsh spotting drill hole location**

**Granduc**

**Glacier. Picture taken from directly above old Granduc mine**

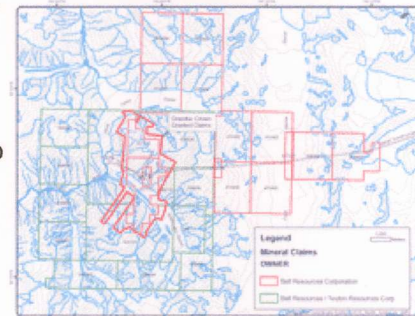
### **Update August 31, 2005 - Review of Airborne Survey results in Company increasing land holdings in Granduc area 6 fold**

Further to receipt of results from the AEROTEM airborne electromagnetic survey on the Company's Granduc Property, the Company has substantially increased its land position in the Granduc area.

The Survey was flown over the Granduc Property and the surrounding Leduc Silver claims. The Survey was designed to detect VMS type mineralization such as the syngenetic copper rich massive sulphides previously mined at Granduc. The Survey detected a number of anomalies on the Granduc Property, which will be tested during an upcoming drill program. Further anomalies, deserving of follow-up were detected on the surrounding Silver Leduc claims.

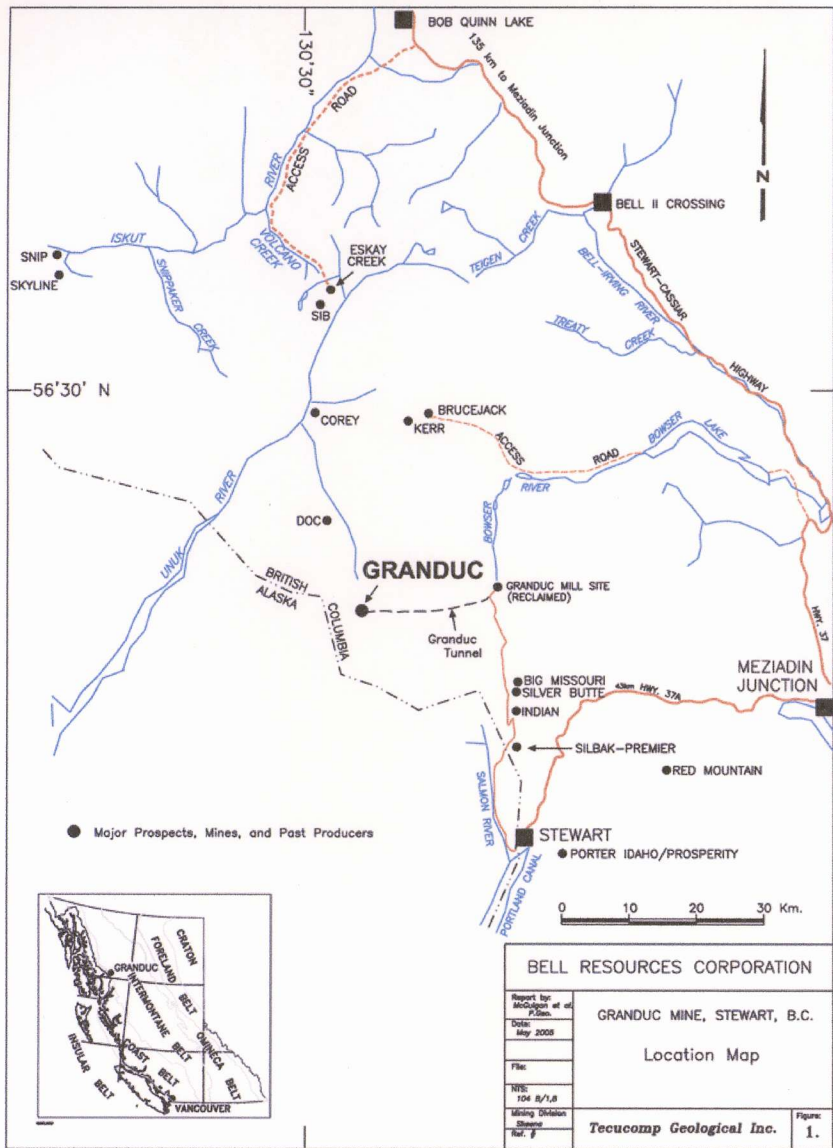
In this regard, the Company has concluded a binding Letter of Intent with Teuton Resources Corporation for a sixty percent (60%) option interest on the Leduc Silver property. The Leduc Silver property consists of 13 claims totalling approximately 6800 hectares surrounding the Granduc Property in the Skeena Mining Division of British Columbia. The Company has also added to its land position in the Granduc area by staking a further 12 claims which are contiguous to the Leduc Silver claims. Certain of these claims were staked in order to capture up to a one kilometre wide section of the Eskay Creek sediments to the east of the Granduc Property.

**Map**  
Click on image to enlarge



**New Granduc claim area as of Aug 31, 2005.**

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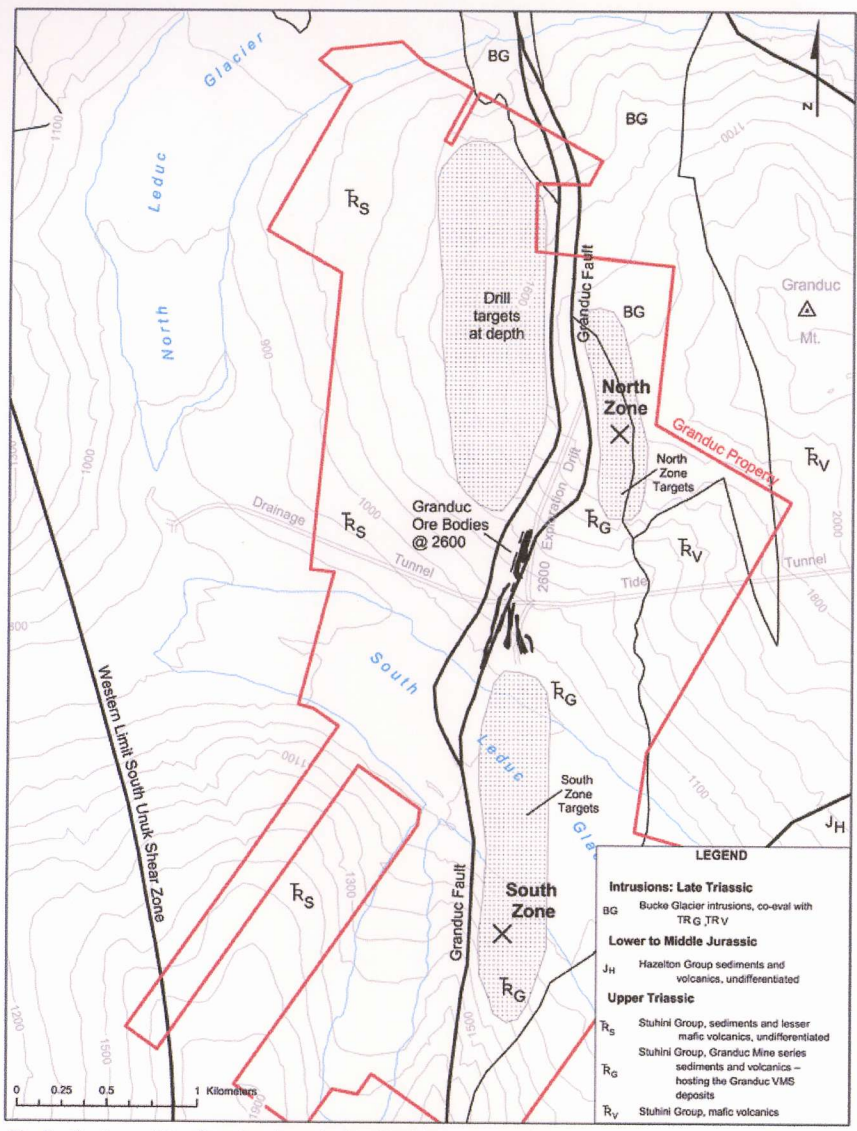
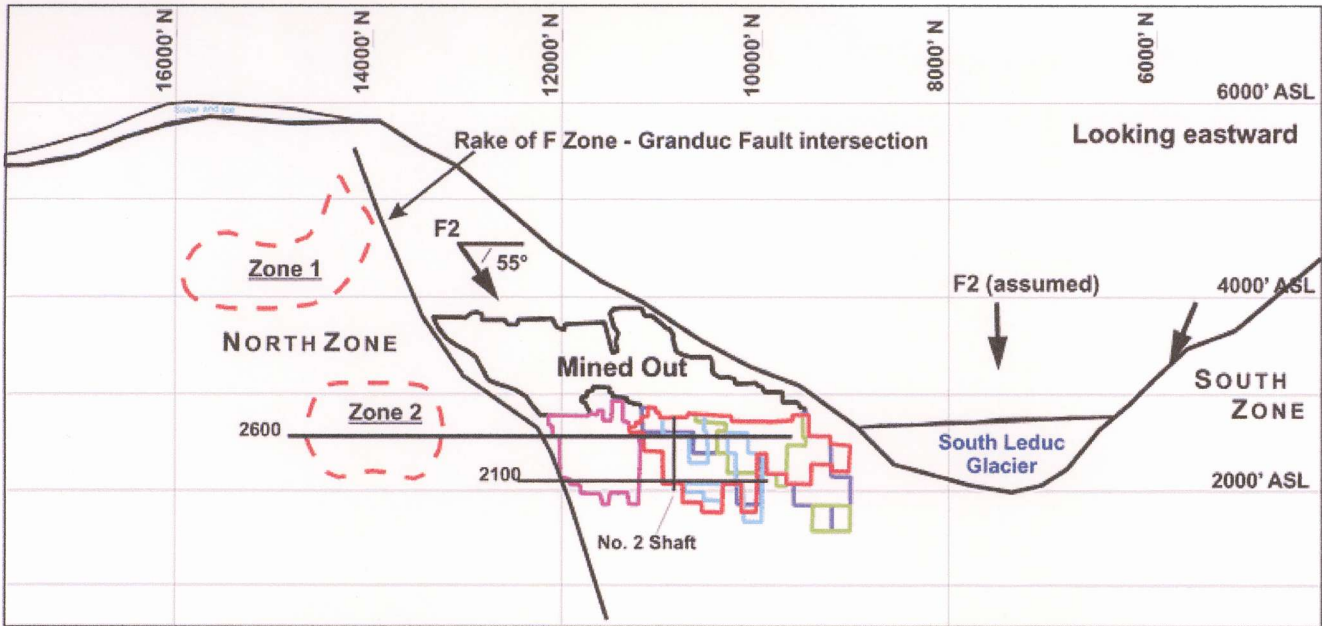


Fig. 3. Geology of the Granduc deposit. Modified from Lewis (1994).



**Granduc Massive Sulphide Deposits**

- A Zone
- B2 Zone
- F Zone
- B Zone
- C Zone
- Cu Mineralization (North Zone)

↓ Plunge of F2 folds  
 Projection is facing eastward

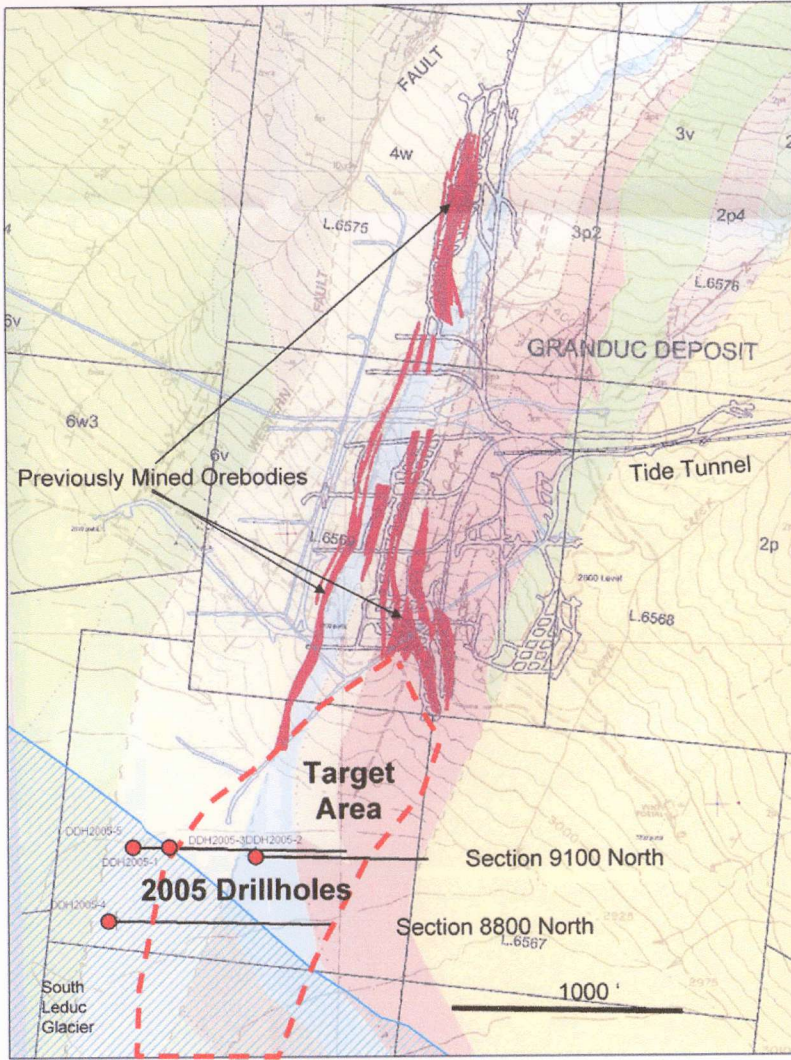
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 Mining Division:  
 Stewart

GRANDUC MINE, STEWART, B.C.  
 Longitudinal Projection

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Fall 2005 Granduc Drilling Program



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Fall 2005 Granduc Drilling Program  
Section 9100 North

