

# ELVEDEN CONSULTANTS LTD.

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200 - 535 Thurlow Street, Vancouver, B.C., Canada V6E 3L2 (604) 681-7281 Fax (604) 925-1035

December 1990

**Subject: BEAR PASS COPPER - GOLD PROPERTIES / Tournigan Mining Expl.**

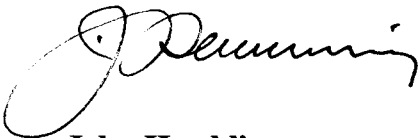
Our client (Tournigan Mining Explorations Ltd.) has been in the mineral exploration business for 24 years. Their expertise lies in the identification and acquisition of viable mineral deposits, and they have been relatively successful in this area.

They are not mine operators, and they have no ambition in that area. They have acquired excellent prospects in the "Golden Triangle" of the Stewart area in Northwestern British Columbia, and are seeking an experienced operator capable of both efficient exploration technology and even more importantly of efficient operating background.

Tournigan Mining was the instigator and successful initiator of the Premier Gold Project at Stewart, B.C. currently in production. They spent 16 years developing and confirming the commercial reserves at the property, and ultimately joint ventured the "package" with Westmin Resources Limited.

A competent and dependable J/V partner is sought for this unique and probable long term mining project.

**ELVEDEN CONSULTANTS LTD.**



**John Hembling**  
President

JNH:lt

## **SUMMARY AND BRIEF DESCRIPTION OF MINING PROPERTIES LOCATED IN THE BEAR PASS AREA, STEWART, B.C.**

### **Summary**

Tournigan Mining Explorations Ltd. of Vancouver, Canada, owns 100% interest in 5 (highway accessible) relatively contiguous properties located in the Bear Pass area, 16 miles northeast of Stewart, British Columbia. There are a total of 57 Crown Granted (surveyed / patented) claims which have received varying degrees of development work. These five properties include; **George Gold-Copper, Enterprise, Red Top, Heather and Barite.** (They were discovered and Crown Granted in the early part of this century).

Exploration work completed on the Tournigan properties has included prospecting, geological mapping, trenching, tunneling and a limited amount of drilling. The information obtained indicates the presence of appreciable values in silver, gold, copper, lead and zinc, such as the reserves located on the **George Gold-Copper** claim group. The drilling completed in 1926 and 1927 by the Consolidated Mining and smelting Company indicated reserves of 500,000 tons of material grading 2-3% copper, 0.05 - 0.08 ounces of gold and 0.5 ounces of silver. Seven drill holes were completed on the copper bearing iron formation on the Red Top claims, only three of these holes reached the target area. These holes contained copper and gold values, however, there was not sufficient data to make a preliminary reserve estimate. The work on the other 4 groups of claims was not of sufficient detail to outline reserves. No physical work has been completed on the Tournigan properties since 1978. The precious metal discoveries in the Iskut River-Eskay Creek (Stewart area), have renewed the interest in and indicated the potential of the mineral deposits owned by Tournigan. The host rocks for the precious and base metal deposits are the volcanic-sedimentary sequence of the Hazelton Group which are of Lower to Mid Jurassic Age.

### **Conclusion**

The mineralization found to date on the **five claim groups** warrants detailed and aggressive programs of exploration. Detailed geologic mapping has only been completed in the areas of known mineralization. The claim groups should be mapped and the exposures sampled in detail, as disseminated silver has been found in oxidized volcanic rocks over large areas, especially those on the northerly claims of the **Enterprise** group (which has never been drilled) . Where the topography permits, geophysical surveys should be completed. After the compilation of basic information, drilling targets will be outlined. With the completion of basic surveys, the data should be critically reviewed using the information obtained from detailed drilling programs completed since 1985 in the Iskut River-Eskay Creek (Stewart) area.

### **Lac Bond Gold (update)**

A huge aggressive and imaginative exploration program is being carried out in the Stewart area by Lac Bond Gold of Toronto. Over the past 18 months they have acquired either outright title, or options towards same, on claims covering over two hundred square miles in the Stewart area (see map).

**Bond Gold's latest** release of information regarding their Stewart project was published in the October 9th, 1989 edition of the Northern Miner Newspaper (Toronto), and is partially quoted below;

**"BOND GOLD FIND NEAR STEWART"** by Geoff Pearce

"Recent drilling by Bond International Gold (TSE) has intersected a significant new gold discovery on the company's Red Mountain property in northwestern British Columbia.

Situated about 15 km east of Stewart, B.C., the Red Mountain property is owned 100% by Bond International Gold. The claims were originally purchased by Bond from a private owner earlier this summer.

The best drill intersection in the recently announced results is 66 metres (216 feet) averaging 9.88 grams gold per tonne (0.28 oz per ton), and 49.29 grams silver (1.4 oz). That intersection came from one of five holes drilled in a radial pattern from a single drill station. The holes were testing the Marc zone which has been traced on surface for a strike length of 500 metres.

Elsewhere on the claims, another zone known as the Willoughby Gossan has returned an intersection of 20.5 metres (67 ft.) of 24.98 grams gold per tonne (0.73 oz per ton) and 184.21 grams silver (5.3 oz). The Willoughby Gossan is 6 km east of Red Mountain.

Bond has staked, or entered into option agreements for about 3,600 claim units covering nearly 225,000 acres in the Red Mountain area. Bond said it plans to proceed with an aggressive exploration program next spring.

News of Bond's discovery comes on the heels of other recent announcements of significant finds by Calpine Resources (VSE) and Stikine Resources (VSE) on their **Eskay Creek property**, more than 100 km to the north.

"We view our recent find at Red Mountain as a major discovery." said Desmond Kearns, president of Bond Gold Canada. (Bond Gold Canada is 65% owned by Lac Minerals of Toronto)."

There has not been any further information published since the above release in October '89. During the 1990 season Bond continued accumulating the largest block of claims in history in the Stewart area, and has conducted an extensive drilling program utilizing at least 3 drills throughout the 1990 season. It has been estimated that they have spent in excess of \$ 6,000,000 during the past 18 months in exploration and acquisition.

**Introduction**

This report is a brief summary of the information contained in twenty engineering and field reports describing the **five claim groups** in the Bear Pass near Stewart, British Columbia.

Tournigan Mining Explorations Ltd. owns 100% interest in these surveyed "Crown Granted Claims" with no underlying royalties outstanding. The company has owned the claims for 20 years and retains absolute title by the payment of annual taxes, much the same as ordinary real estate.

### Access, Power, Townsite

Access to the claims is by paved highway, a distance of 16 miles NE from Stewart, a deep water port. Power is supplied by B.C. Hydro to Stewart, B.C., a fully serviced family community with schools, recreation centre, hospital and all amenities. Stewart was incorporated in 1907, and is a thriving bustling town of a few thousand inhabitants.

### General Geology

The Bear Pass area lies along the east side of the Stewart complex, which is a belt of deformed volcanic, sedimentary and metamorphic rocks that lie between the Coast Crystalline Belt to the west and the Bowser Basin to the east (Groves; Dept of Mines, Bulletin 57, 1971). The complex, which extends from Alice Arm at its southern end through Stewart to the Iskut River at its northern end, has a length of approximately 150 miles. **In the Stewart area this volcanic assemblage includes the currently operating Premier Gold Project (2,300 tonnes /day), the recent discoveries at Red Mountain by Bond Gold Canada, and over 200 listed mineral occurrences.** In the Stikine area the same mineral belt contains the well known Eskay Creek deposits.

### Geology at the Bear Pass Area

The geology of the Bear Pass area was mapped by Dr. William G. Smitheringale for Tournigan Mining Explorations Ltd. in 1976 and the following information is quoted from his December 1976 report.

### **GENERAL GEOLOGY (Smitheringale, December 1976)**

"The Rufus Creek-Bear River Pass area is underlain by volcanic and volcanoclastic rocks belonging to the Unuk River Formation of Lower Jurassic age (Grove, personal communication). This is the same formation that contains the **Granduc Mine** 38 km to the northwest. Near the ridge crests on both sides of the Bear River valley, at approximately 5,500' elevation, the Unuk River Formation is overlain by Middle Jurassic clastic and volcanoclastic sediments. A monzonite stock, about one km across, outcrops on both sides of the valley floor in the vicinity of Cullen Creek. Apart from its intrusive relationship with the Unuk River Formation, the age of the stock is not known. It is probably one of the younger outlying components of the Coast Crystalline Belt and is likely Tertiary in age.

In general the bedding strikes easterly, subparallel to the valley sides. On the south side of the valley the dip is gentle southwards and on the north side it is moderate northwards. In places, however, sharp folding has produced steep dips and strikes that are divergent from the general trend.

Along the south side of the valley the Unuk River Formation can be divided into three units. On the George Gold Copper claims the lower unit consists of generally massive flow and volcanic fragmental rocks of argillite, tuff and cherty iron formation. It outcrops at the 3,200' elevation and varies in thickness from about 6 to 30 metres (20' -100'). The upper unit consists of andesitic tuff and breccia and is more distinctly fragmental than the lower unit."

**The argillite-tuff-iron formation unit is important because it contains stratabound sulphide showings. On the south side of the valley it can be traced from the Heather claims westward for 5.7 km (3.5 miles). A similar, if not the same unit can be traced on the north side of the valley from the Red Top property westward for 2 km (1.3 miles).**

At the Premier Gold Project (currently in production 10 km north of Stewart), the prime source of ore is andesite beds. Similarly, in the Bear Pass area, andesitic formations contain the bulk of known showings. Owing to the distance between these properties it is not possible to make a **definite correlation** between the volcanic units in the Big Missouri / Premier area and the Bear Pass. Tournigan has a 5% net profit interest in the Premier Gold Project.

### Mineralization in the Bear Pass Area

Dr. William G. Smitheringale noted three types of mineralization in the Bear Pass area. The following quote is from his report of December 1976.

"Three types of sulphide deposits are found in the Bear River Pass area: vein deposits, stratabound deposits, and disseminated-stringer deposits. All three types occur in the Unuk River Formation.

#### Veins

On the Red Top, Argenta and Grey Copper claims there are Pb-Zn-Ag-(Cu) veins containing quartz, calcite, barite and jasper as gangue minerals. The veins are up to 2 metres wide and 1 000 metres long. Most strike oblique to the regional strike of bedding and dip steeply. They occur in the upper part of the Unuk River Formation, above the argillite-tuff-iron formation unit or its projection.

#### Stratabound Deposits

Cu-(Zn, Pb, Ag) showings occur in the argillite-tuff-iron formation unit (or units) on both sides of the valley. Pyrite and/or pyrrhotite, chalcopyrite, sphalerite and galena are the main sulphides. Quartz (often chert), jasper, hematite, chloritic tuff or volcanic breccia and argillite form the gangue. In places the sulphides are massive to semi-massive, however, they generally occur as laminae, lenses, stringers and disseminations. Examples are the New York and London claims, the Erickson 'vein', and the lower showing on the Red Top property. Some of these showings have been described as replacement or bedded replacement deposits and others, where bedding dips steeply, have been described as veins. Their true nature apparently has not been appreciated.

widths  
of zones  
assays"

### **Disseminated-Stringer Deposits**

On the Enterprise, Heather and Rufus claim groups there are zones containing disseminations and stringers of pyrite and chalcopyrite. Au and Ag are present in some areas. Host rocks to these zones have been weakly to strongly altered by silicification, chloritization, pyritization or the addition of quartz veins. There are also a number of highly silicified pyritic zones that are barren of economic minerals. These showings occur both above and below the argillite-tuff-iron formation unit. Many of the gossans exposed in the bluffs of the Bear River Pass area are zones of disseminated or stringer pyrite."

The mineral bearing zones of the Bear Pass area have been classified as "veins". However, considering the volcanic environment of the Stewart camp they would now be placed in the category of the "exhalitives". Consequently, the geologic setting of mineral bearing zones in the Bear Pass area are believed to have the potential to contain very large ore bodies.

### **BRIEF DESCRIPTION OF THE FIVE PROPERTIES IN THE BEAR PASS**

#### **No. 1. George Gold-Copper (12 Crown Granted Claims)**

This property was discovered in the early part of this century by William B. George. It was under the direct guidance of Dr. W.V. Smitheringale that Tournigan Mining Explorations Ltd. acquired and explored the Bear Pass properties described in this summary.

A large part of the detailed surface work and virtually all of the drilling on the George Gold-Copper property was conducted prior to 1929.

The 12 claims are located on the south side of the Bear River Valley and are now bounded on their south boundary by Bond Gold Canada.

#### **Geology**

The geology of the area has been described in the reports listed in the bibliography. The report of particular interest is that of Dr. William V. Smitheringale titled "Geologic Report on the George Gold-Copper Mining Company Limited, Stewart, B.C." This report is dated 1926. Recent reports on the George Gold-Copper property have been completed by Dr. William George Smitheringale (son of William Vicars; Ph.D. from M.I.T. also), and Geoff Keytes.

The rocks on the George Gold-Copper claims from the road (1,100') to the adit (3,250') are a series of fine-grained flows of andesite composition.

At the adit level this flow unit is overlain by the iron formation which is composed of tuff and argillite. The iron formation has a thickness that varies from 20 to 100 feet. It derives its name from the fact that this band is continuous in the area and contains variable amounts of iron and copper sulphides over a distance of more than 3 miles. Above the iron formation there is a series of andesites, breccias and tuffs. The Cu-Au-Ag bearing veins occur in the upper series of andesitic breccias and tuffs.

## MINERALIZATION

### Veins

Dr. Wm. V. Smitheringale (1926) completed a plane table survey of the veins on the Grandview and Helena Mineral claims. These veins, which are located between an elevation of 4,200 and 4,700 feet have been developed by a series of trenches or "open cuts". The Blue and Jasper veins have a general strike of S 80 E and a dip of S 65 W. The veins vary in width from 4 to 10 feet and have an average width of 6.7 feet.

Dr. Wm. V. Smitheringale reports that the Blue vein has continuous mineralization over a length of 480' which consists of pyrite, hematite, arsenopyrite and chalcopyrite. The Blue vein structure appears to have a length in excess of 1,100 feet. The central portion of the vein system is called the Jasper vein and the eastern portion is called the Green vein. The readily accessible portion of the White vein has a length of about 400 feet. The ore in this vein has a width of about 10 feet. The White vein appears to continue to the east beyond two inaccessible canyons. The eastern portion of the White vein was surveyed by tape and compass. The total length of the White zone appears to be about 2,400 feet.

### DISSEMINATED COPPER MINERALIZATION

Little attention was paid to the disseminated or stratabound copper mineralization by the early geologists, even though it extends for more than 3 miles along the south side of the valley, and for over 1.5 miles on the north side. The likely explanation for this oversight lies in the fact that the "veins" contained such "high grade" copper that attention was focused there.

An adit was driven in the disseminated horizon by the early developers and was re-opened in 1976. Dr. William George Smitheringale reports that a moiled sample representing 115 feet along both walls of the tunnel assayed 0.89 % Cu. Two of the Cominco drill holes, numbers 4 and 6 were completed from the portal.

The property was optioned to The Consolidated Mining and Smelting Company in 1926 and eight drill holes were attempted, to intersect the surface "veins" at depth. The holes were all "flat" and none succeeded in reaching the target. According to Dr. William V. Smitheringale, who was there at the time, they were drilled from poorly located drill sites (because of the terrain), and there was no wedging which resulted in "downward plunging drill sections incapable of testing the target areas".

In spite of the above, drill hole 4 intersected copper and silver as follows:

				<u>% Cu</u>	<u>Ag/T</u>	<u>Au/T</u>
DDH No. 4	110'	130'	(20')	1.86	0.42	Tr
S 5 W	222.5	232	(9.5')	1.60	0.26	Tr
Horiz'l	242 - 263		(21')	1.02	0.09	Tr
	275 - 284.5		(9.5')	0.62	0.33	Tr
	1235 - 1256		(21')	0.55	0.19	Tr

The 21 foot portion of drill hole 4 from 1,235 to 1,256 intersected copper mineralization which did not contain gold values. Since all of the surface trenches and open cuts on the veins contained gold values from 0.05 - 0.08 oz Au/ton, Smitheringale and others are convinced that these drill results are from the southern extension of the "disseminated zone", where the large tonnage potential lies.

			<u>% Cu</u>	<u>Ag/T</u>	<u>Au/T</u>
DDH No. 6	127'-142'	(15')	1.84	0.017	Tr
S 32 W	174'-185'	(11')	0.36	0.05	Tr

Dr. W.G. Smitheringale in 1976 mapped the adit and completed two vertical holes on the disseminated copper zone. He noted that the main zone of disseminated mineralization had the form of a stratabound lens which lies within the argillite-tuff iron formation. The copper zone is composed of iron formation that contains pyrite, hematite, magnetite, chlorite, epidote, chert and massive mafic tuff.

At the top of the copper zone there is a thin zone of bedded, impure argillite that contains lenses and stringers of calcite. Pyrite and chalcopyrite are irregularly distributed throughout the copper zone in the form of disseminations. the sulphide rich portion of the iron formation near the old adit appears to have a length of about 360' and a thickness of about 100'. The width of the zone is not known. However drill hole 4 intersected copper mineralization 1,000 feet due south of the collar of the hole, and there is no reason to assume the zone stops there. The low precious metal content of this copper mineralization suggests that it is a part of the iron formation. The two Tournigan drill holes (102 & 103) contained disseminated chalcopyrite. Assays from these holes are as follows;

<u>DDH</u>	<u>Feet</u>	<u>% Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Ag</u>	<u>Au</u>
102 37.1-55.1	18	1.09	.01	.05	.06	.003
Length						
70' 62.7-64.3	1.6	0.01	0.01	.05	.02	.003
103 85.3-89.2	3.9	0.04	0.03	.02	.17	.007
Length						
98' 89.2-91.2	2.0	0.82	0.05	.04	.58	.010
92.1-94.8	2.7	1.05	.03	.04	.18	.005
	9.6	0.62	0.02	.03	.24	.006

### Tonnage and Grade of the Vein Systems

The open cuts and trenches on the "veins" have been sampled by various engineers in the period 1924 and 1927. The results of the samples have been compiled and various estimates of the tonnage and grade have been made (from the surface exposed veins alone) and ranges around 500,000 tons of 2-3 % Cu; 0.05-0.08 Au; and 0.5 Ag per ton. Since the drilling by Cominco was a virtual waste of money, nobody to this day has any real knowledge of what the true tonnage is.



**Argillaceous-tuff-iron formation** contains potentially huge geological reserves of ore the extent of which is not yet known. For whatever reason this area has received little or no exploration work. We know that Cominco encountered respectable copper values more than 1,000 feet from the collar in this zone. We know that this "iron formation" extends for more than 3 miles along the southern valley slope and 1.5 miles on the north side (probably the north limb of a pre-glacial anticline), and in addition we know that there are significant silver, copper, gold, lead and zinc showings throughout the area which encompass almost 4 square miles, and there has neither been a modern exploration program, where all the properties were under common ownership, nor of sufficient magnitude to determine the economics of this group of claims.

what grade  
no sign. #'s seen so far.

### Potential Tonnage

The true potential of the property is not known. However, with the indicated reserve from such minimal work as already described, it is not unreasonable to expect an excellent chance of delineating a significant deposit within the boundaries of the presently held claims. Geological projections allow for several hundred million tonnes of potential <sup>ore.</sup> <sub>rock</sub>

### Recommended Exploration (W.G. Smitheringale, December 1976)

"The showing at the adit warrants further exploration by diamond drilling to determine if the grade of mineralization continues to improve southward. It is recommended that 6 holes be drilled for this purpose, 3 from the end of the adit and 3 from the base of the cliffs at about 140 metres higher elevation and about 160 metres south of the adit. The base of these cliffs is accessible by a not too-steep slope, and drill set-ups there would be protected from rolling rocks from above. All holes should be drilled to the bottom contact of the iron formation unit. The first hole from the end of the adit should be drilled in a direction S 70 E and at an inclination of -45 degrees, the other two holes should be drilled due south and S 60 W at -35 degrees to 45 degrees, depending on the information obtained in the first drill hole. It is estimated that these drill holes will average about 40 metres in length. The three holes drilled from the base of the cliff above the mineralized iron formation unit should be drilled one to the east inclined -45 degrees to -60 degrees. The exact inclination of the eastward and westward holes will depend on the location chosen for the drillsite. These holes will indicate the nature of the mineralization for a distance of about 160 metres (525 feet) south of the George Gold-Copper adit.

If the results from the first six holes are encouraging a second stage of drilling can be embarked upon involving a series of holes drilled from the base of the cliffs southeastward, southward and southwestward and inclined into the hill to intersect the mineralized zone farther southward."

### NO. 2. ENTERPRISE (19 Crown Granted Claims)

The Enterprise Group is located in the NE portion of the claim group. The main work completed to date was conducted between 1928 and 1929 By Dr. Wm. V. Smitheringale and William B. George and consisted of trenching, tunneling and sampling. More recent work conducted for Tournigan by Dr. Wm. G. Smitheringale (1976) consisted of geological mapping. In 1978 Geoff Keytes continued mapping, check sampling and prospecting. To date there has never been any drilling on these claims.

The most impressive aspect to the Enterprise group of claims is the thousands of metres of gossans above tree-line and the widespread occurrences of disseminations of copper.

The "Frenchman's Tunnel" was driven on better grade material, which at that time (1928) was of marginal interest. From Dr. Wm. V. Smitheringale's 1928 Report is the following description;

"The mineralization about the tunnel 'B' is quite encouraging. In cut 7, 95 feet above 'B' there is a vein striking N 15 W. dip 89 E. The mineralization is pyrite, chalcopyrite and bunches of galena containing gold and silver values. This mineralization extends over 5-6 feet. The ground here is badly broken up, but the vein zone can be traced with a fair degree of certainty southward to cuts 2 and 1, about the same elevation as 'B'. Northward from 7 the vein goes under heavy overburden.

Along the trail, north and west of cut 8, there is a zone some 15 feet wide which is cut by ramifying veinlets of quartz and when broken into many of these veinlets contain a heavy mineralization of chalcopyrite. Some forty feet west of these quartz stringers there is a sheared area along the upper side of the trail, which contains galena, sphalerite, chalcopyrite, and pyrite in small quantities.

In these two latter places only sufficient work has been done to show that there is a mineralization of economic minerals. More work is required before the quantities of these minerals present can be determined.

This area about Tunnel 'B' holds forth promising possibilities of ore minerals occurring in sufficient quantity to form an economic grade of ore."

The highest of the three rusty cliff bands runs largely through the Enterprise Claim, and involves a more distinct vein system than the others. The silver values there are much better than in the lower prospects, keeping with the regional rule that silver values increase with altitude. Copper values in assays are also promising, although there is less indication that the copper is widely disseminated. Smitheringale's description of 1928 follows:

"The rocks in this zone are, in general, impregnated with pyrite, which in places shows a considerable concentration. These latter places stand out as red or yellow oxidized outcrops. This more promising mineralization so far discovered in this zone, lies along the foot of the bluffs some 300 feet north of tunnel 'B'.

There is here a vein which strikes N 78 W. dip 33 N. In cut 9 this vein is approximately 18 inches to 24 inches wide; it is in a brecciated zone in a volcanic breccia which, below the vein is intensely altered, but above the vein the rock shows little apparent alteration. The original metallic minerals present in the vein were pyrite, chalcopyrite, tetrahedrite (grey copper) galena and sphalerite. These minerals occur in the interstices of the breccia, and the cracks in the adjoining rock, but there is also some dissemination through the rock. The gangue is calcite and quartz and the metallic minerals appear, at present, to follow the veinlets of calcite with some quartz. The metallic minerals in cut 9 are now leached, their presence being indicated by masses of limonite in the vein material.

*very little mention of grades - have to be high for these narrow widths.*

In cut 15 the broken zone varies from 11 inches to 18 inches and is well mineralized with galena, tetrahedrite, chalcopyrite, pyrite and sphalerite. Below this, stringers of calcite and quartz containing the same minerals are found over a width of 2-3 feet. This cut shows a very favourable type of mineralization and it is in fair quantity.

Northwest from cut 18, three cuts were put in near the top of the steeply sloping rock. These expose a mineralization chiefly of pyrite, but small specks of galena may be seen here and there. The oxidized zone has not been passed so that the primary mineralization is not definitely known.

On the "flats" above, heavy pyrite mineralization may be found in a number of places. Two of such places are marked on Fig. 2-1057 and "pyrite vein." The former shows massive pyrite in a dense silicified rock. A specimen from here ran 1.4% copper. The "pyrite" vein is heavily oxidized and its values are not known. These pyrite areas should be carefully studied and some work done on them to correlate the various showings, if possible, and to determine their possible value. Only a small amount of work was carried out there in 1929.

The zone, containing the high grade silver was explored by three short tunnels and a number of open cuts. The main development was a tunnel (#15) along the vein. This was advanced 45 feet and on the whole the mineralized area widened, and showed some improvement. A short length of the drift exposed values approaching economic proportions but the quantity is too small at present. It is thought that as opportunity presents itself more work can be done here.

From time to time high-grade silver float has been found on the slide west of the cliff. One piece found south-westerly from tunnel 15, consisting of weathered drusy quartz with interstitial masses of tetrahedrite assayed: Gold, 0.30 oz/ton; silver, 149.8 oz/ton. The source of this float has not been found."

Although the Enterprise claims contain very good grades of copper, they also hold an unknown deposition of gold-silver mineralization. In the mid 1920's Smitheringale returned silver values from float on the main talus slide there in excess of 600 ounces per ton. The top of the slide is at 3,900 feet (1 200 metres). Favourable assays occur over very large areas on the "flats". In this region over an ounce of silver with intermittent values in gold and lead are found. The area is heavily oxidized, silicified and pyritized in an andesitic environment which has never been tested. The snow-ice cover prevented early explorers from sampling these vast gossans, which are now well exposed.

### **No. 3 (Red Top Claims)**

The 15 Crown Granted Claims of the Red Top Group are located on the northern slope of the Bear River Valley and are just west of the Enterprise claims.

In 1978 forty metres of trenching was completed on the Red Top claim, with thirty metres at the base of the cliff and ten metres across the chert argillite farther to the west. (The argillaceous chert unit is likely the same one as on the George Gold-Copper claims).

The dominant rock types at Red Top are, as elsewhere in the Bear Pass, volcanics. The cliffs at Red Top are broken up by conspicuous patches of irregularly shaped rusty chert and argillite beds. The structure is quite undecipherable. The beds are convoluted, faulting is definitely present and isoclinal folding is suggested. The true nature of the structure is a mystery.

A further complication is revealed by trenching at the main showing. Excellent mineralization is present between the two faults but the rock type is not a chert although its weathered rusty appearance is very similar to the chert, which the rest of the trench exposes. - grades -

The rock type between the faults is strongly chloritized which together with the chalcopryite and minor pyrite make it impossible to identify with certainty. It is probably a tuff. Values in the tuff unit vary from 0.4 - 5% Cu; 0.16 - 0.96 Ag; and 0.005 - 0.014 gold.

### **Superior Claim (Red Top)**

The country rock at the showings is similar everywhere. It is a medium green very fine grained andesite. It is quite featureless with a few feldspar phenocrysts (felsic volcanic).

The fracture infilling consists of broken volcanic material, quartz, calcite, barite, galena, sphalerite, chalcopryite and pyrite. The proportions vary greatly from place to place.

**The assays show consistently good values in silver (1.3 - 15.9 oz). Other metals are variable, lead being the most abundant (1.4 - 50%), followed by zinc (0.7 - 15%), and copper up to 1%.**

It is probable that the "argillaceous tuff" unit described on the Red Top claims extends westward to the Barite claims, and is the northerly limb of an anticlinal structure hosting the George Gold-Copper deposit on the south side of the Bear River valley, a very positive indication of the large tonnage potential of the area.

### **No. 4. Heather Claims**

The 7 Heather claims are located on the southern slope of the Bear River Valley 6,000' east of the George Gold-Copper claims.

### **Geology (W.G. Smitheringale, 1976)**

"The Heather claims were not examined below elevation 3,000'. The topographic break that marks the location of the argillite-tuff-iron formation unit extends intermittently from the George Gold-Copper claims to the western margin of the Heather Fraction. East of this point it cannot be distinguished with any degree of certainty because the south slope of the valley becomes less steep with fewer cliffs. Flows, flow breccias and coarse pyroclastic rocks of basaltic and andesitic composition occur between elevations 3,500' and 3,900' on Heather No. 2 claim. These rocks resemble those in the upper unit on the George Gold-Copper claims."

The Heather claims contain the same host rocks as the George Gold-Copper and the rest of the Bear Pass. Intense silicification, pyritization occurs with copper mineralization noted in veins and disseminated. Little work has been conducted on these claims since their discovery. There is a tunnel on the Heather claims which was driven to intersect a very rich Pb-Zn structure. This tunnel has not been located since the 1930's, but is mentioned in W.V. Smitheringale's reports.

**No. 5. BARITE CLAIMS**

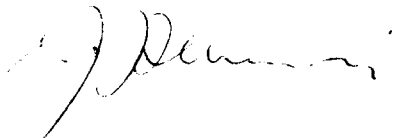
The 5 barite claims are located at an elevation of 5,000 feet approximately 1,500 feet northwest of the Red Top Group.

There is little information on this claim group as the claims were not mapped by Tournigan Mining Explorations Ltd. after their purchase. The following notes are taken from a 1926 field report of Wm. Tompkins, the 1935 Memoir 175 of the Geological Survey of Canada and a 1938 field report of Harry Quickstad.

Three parallel veins, striking northwesterly and spaced 4 to 10 feet apart, are located on the Barite claims. The veins have been traced for a distance of 1,500 feet. The centre vein has been investigated by stripping and open cuts for a distance of 400 feet. This vein has a width of 4 to 18 feet and the ore minerals are silver bearing galena and gold. The gangue mineral is barite. A porphyry dyke is located on the western side of the 3 veins. The northwestern portion of the three veins and the porphyry were reported, in 1938, to extend under a glacier. It is not known if the galena bearing veins on the Barite claims are located on the same structure as the Galena vein on the Superior claim of the Red Top group.

**December 1990**

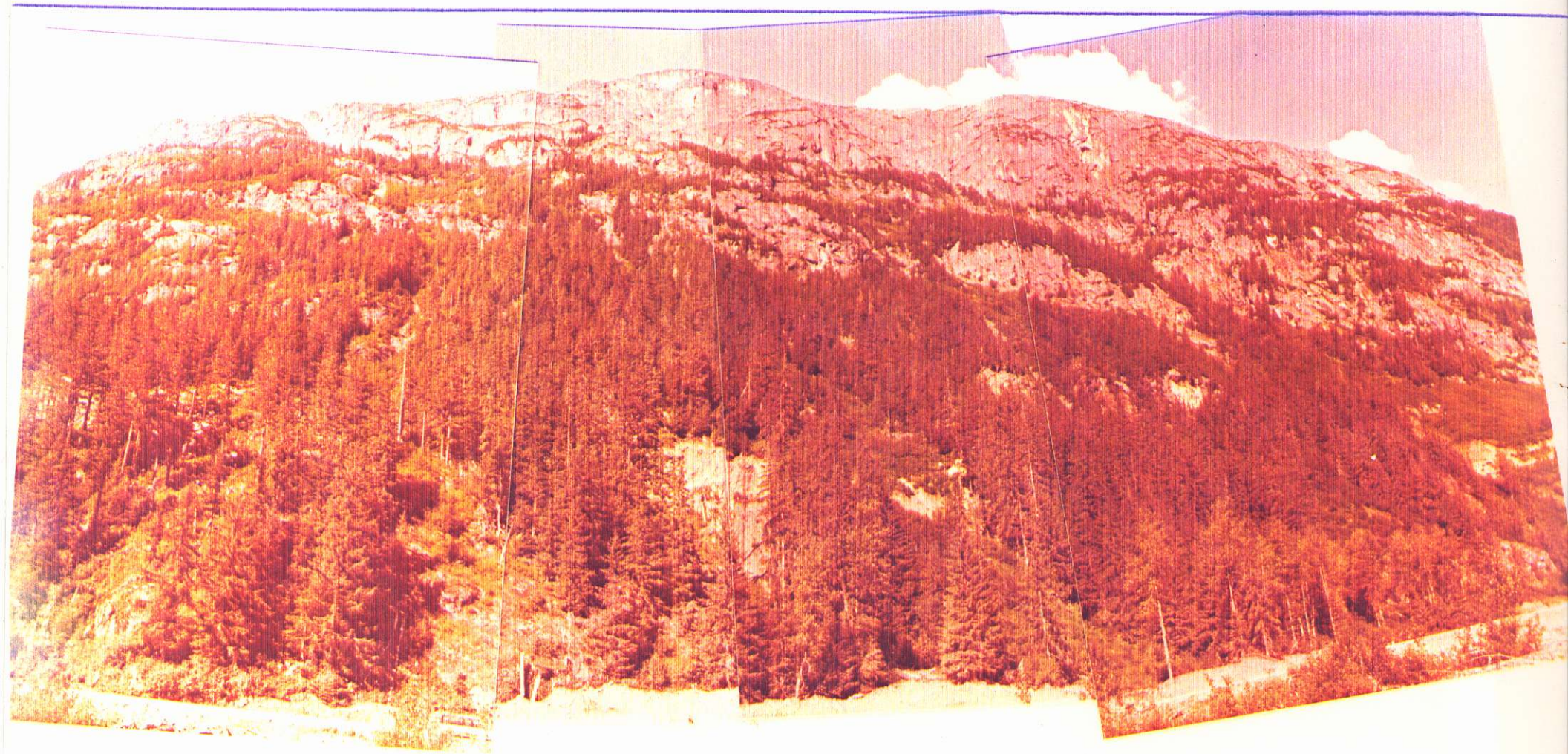
**ELVEDEN CONSULTANTS LTD.**



**JOHN HEMBLING**  
President

JNH:lt





LOOKING NORTH AT ENTERPRISE CLAIMS / Bear Pass

Stewart, B.C.