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SUMMARY REPORT
ON
TOURNIGAN MINING EXPLORATIONS LTD.
BEAR PASS PROJECT

ISKUT-SULPHURETS-STEWART AREA
SKEENA MINING DIVISION
BRITISH COLUMBIA



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November 1, 1991

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

22,172

SUMMARY

Tournigan Mining Explorations Ltd. owns a 100% interest in 57 crown grants, 4 modified grid claims and 6 reverted crown grants and owns an additional 21 reverted crown grants all located on Highway 37A, approximately 25 km northeast of Stewart, B.C. straddling the Bear Pass, NTS 104A/4E and 104A/4W, in the Skeena Mining Division. The company has owned many of the claims for nearly 20 years but has carried out little systematic or modern exploration on the property.

The property, was previously mapped by Grove (1986), and is underlain by mostly volcanics and sediments of the Lower Jurassic Unuk River Formation comprised of andesitic tuffs and breccia and lesser sandstone and siltstone. The upper elevations on the south side of the Bear Pass are mapped as andesitic volcanics and sediments of the Middle Jurassic Betty Creek Formation.

A compilation map provided by Tournigan has the lower portions of the property underlain by the lower volcanic unit - corresponding to Groves Unuk River Formation. This is bounded by an argillaceous tuff horizon or iron formation, a siliceous iron rich horizon. This iron formation is bounded by the upper volcanic unit, likely equivalent to the Betty Creek Formation volcanics.

The geology of the eastern end of the property is undifferentiated volcanic and sedimentary rock. A small monzonite stock of the Cullen Creek Intrusive lies on the south side of Bear River near Snow Lake and Cullen Creek. It is not known exactly what

relationship or age the intrusive stock has relative to the surrounding units. The geology indicates a possible broad antiform feature whose axis trends roughly east-west through the Bear Pass.

Previous work has included mapping and prospecting, trenching, underground work and minor drilling intermittently between the periods 1926-1978. These programs have located three significant styles of mineralization on the property: a stratabound copper multi element zinc-lead and/or silver target (New York, London, Erikson and Red Top Zones); a quartz vein hosted lead-zinc-silver, copper and/or gold mineralization (Red Top, Argenta and George Copper Gold Zones), and disseminated stringer mineralization (Enterprise, Heather, Rufus and George Copper Gold Zones).

Cominco completed 2488 m of drilling between 1927-1929 and outlined a geological resource of 500,000 tons of 2% copper, 0.06 oz/ton gold and 0.5 oz/ton silver for vein systems at the George Gold-Copper area (R.G. McEachern, 1956). None of the other areas of mineralization received enough work to calculate further reserves. The claims were again worked in the 1960-70's but have not been explored since 1978.

The main work during the 1960-1970's was done by W.G. Smitheringale (1976), who examined the area around the George Copper-Gold adit. Work around the adit area consisted of detailed mapping, limited trenching and two diamond drill holes through the width of the iron formation unit. During the same program Smitheringale also

examined showings on the Heather claims, the Erickson Vein and on the New York and London crown granted claims.

The mineralization found to date on the Tournigan - Bear Pass property warrants a detailed and an aggressive exploration program. A detailed geologic data base needs to be completed in all the areas of known mineralization. The claim groups should be mapped and the exposures sampled in detail geophysical surveys and trenching should be completed. After the compilation of the first phase information a preliminary drilling program is recommended.

TABLE OF CONTENTS

Summary	
Introduction	1
Location and Access	1
Physiography and Vegetation	2
Claim Status	3
Property and General Area History	4
Regional Geology	6
Property Geology	11
Mineralization	12
George Gold Copper	12
New York	16
Heather	16
Enterprise	17
Red Top	18
Barite	19
Rufus-Argenta	20
Conclusions and Recommendations	21
Cost Estimate	23
Statement of Qualifications	
G. Cavey, P.Geo., F.G.A.C.	
W. Raven, F.G.A.C.	
Bibliography	

LIST OF FIGURES

Figure 1	Location Map	Following Page	1
Figure 2	Claim Map	Following Page	3
Figure 3	Regional Geology	Following Page	7
Figure 4	General Property Geology	Following Page	11
Figure 5	Detailed Geology of the George Gold-Copper Adit Area	Following Page	13
Figure 6	Red Top Showing - Geology and Chip Sample Locations	Following Page	18

LIST OF TABLES

Table 1	Drill Hole Intervals (1920's)	Page	15
Table 2	Drill Hole Intervals (1976)	Page	15

LIST OF APPENDICES

Appendix I	Claim Information
Appendix II	Assay Certificates
Appendix III	Rock Sample Descriptions

INTRODUCTION

This report, prepared by OreQuest Consultants Ltd. on behalf of Tournigan Mining Explorations Ltd., summarizes the regional and property history and geology, and makes recommendations for further work.

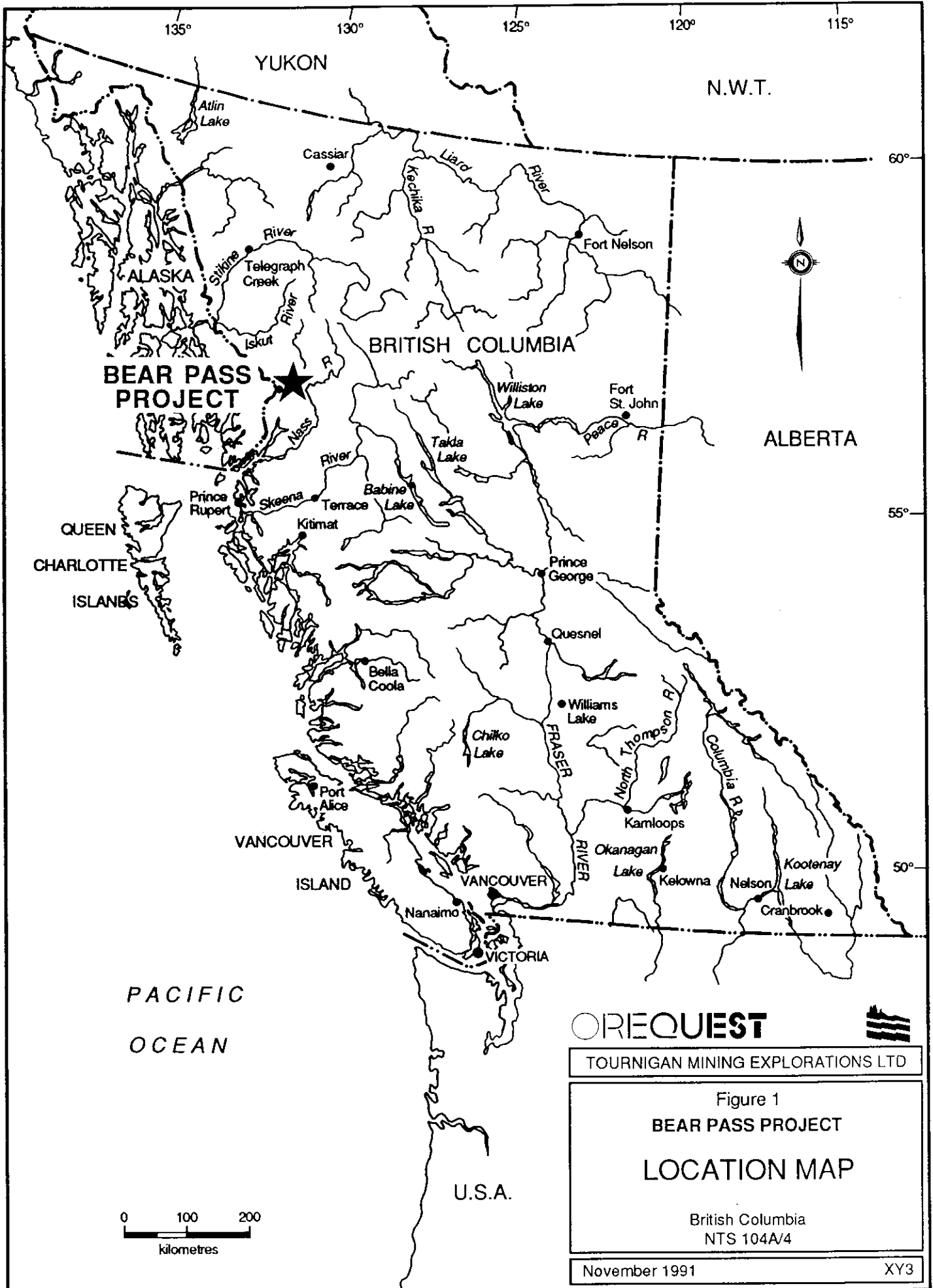
The property is situated in the Stewart area which has recently experienced a resurgence in exploration activity leading to the redevelopment of some existing gold deposits and the discovery of several new ones.

The information contained in this report is derived from the references cited, a preliminary sampling program completed by OreQuest Consultants Ltd. in 1991 and familiarity with the region gained by OreQuest through work conducted on behalf of various companies from 1987 to 1991.

LOCATION AND ACCESS

The Bear Pass Project is located approximately 25 km north-northeast of Stewart, British Columbia. The property is centred at coordinates $56^{\circ}07'N$ latitude and $129^{\circ}45'W$ longitude, on maps 104A/4W and 4E (Figure 1).

Access to the property is via Highway 37A which bisects the middle of the property providing excellent access to the lower portions of the claims. Helicopters must be utilized for the higher



areas of the claim group and can be chartered from a year round Vancouver Island Helicopter base in Stewart 25 km to the southwest.

The town of Stewart receives its electricity from a large powerline which follows Highway 37A through the Bear Pass property. Therefore all power needs for future development of the property will easily be met by existing facilities.

PHYSIOGRAPHY AND VEGETATION

The Bear Pass property is located within the Boundary Ranges of the Coast Mountain area of British Columbia. Elevations on the property range from 230 m in the valley of Bear River in the middle of the property up to 2075 m on the peaks on the south side of Bear River and up to 1675 m on the north side of Bear River. The terrain rising from the Bear River to the north and south is extremely steep. Many areas on the property are only accessible to crews with technical climbing abilities utilizing ropes and other climbing apparatus. Most of the known mineral showings have been located in areas that are less steep where ropes are not required. Much of the claim group appears to contain favorable geology that has not been explored due to the steep terrain.

The upper reaches of the property contain glacial icefields. Grove (1986) states that at present, most of the glaciers in the Unuk River - Salmon River - Anyox area are retreating at about 50 m per year in the terminal areas, exposing fresh outcrop for prospecting.

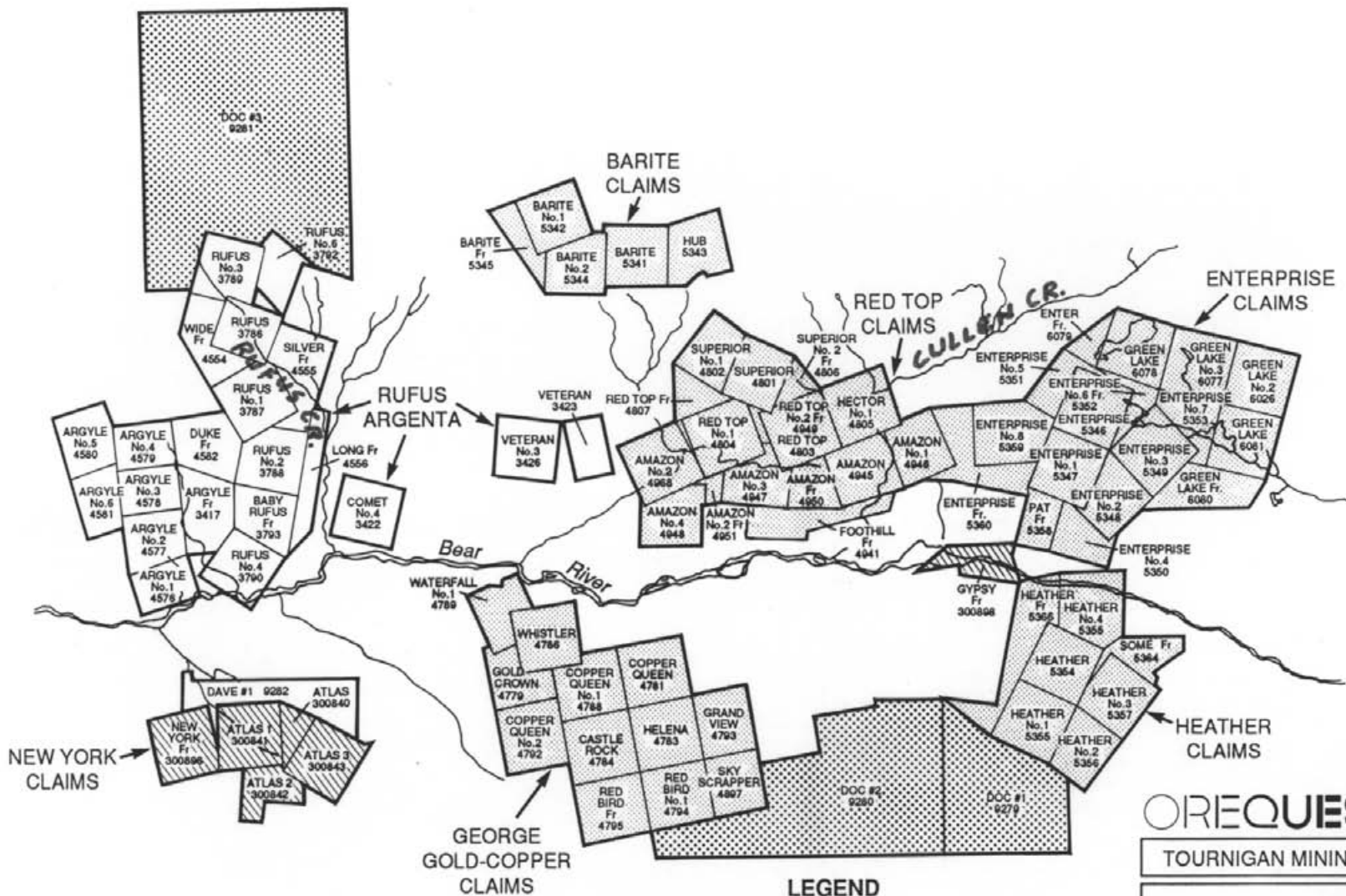
This is significant in the project area as prospective areas lie adjacent to retreating glaciers.

Low lying regions are vegetated by mature mountain hemlock and balsam. This changes to subalpine and alpine vegetation consisting of stunted shrubs and grasses. Outcrop is plentiful and, in those areas where the ice has receded, is virtually continuous except where covered by talus.

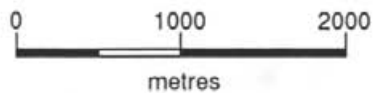
Climate in the area is severe, particularly at the higher elevations. Heavy snowfalls in winter and rain in the short summer working season are typical of the Iskut-Sulphurets-Stewart area. Inclement weather conditions, steep terrain and reliance on helicopter transport for the upper reaches make this a difficult area to explore for minerals. This property does have the advantage of road and power for any future development.

CLAIM STATUS

The Tournigan - Bear Pass Project consists of 57 Crown Grants, 4 modified grid claims (33 units) and, 6 reverted crown grants. In addition, the company owns an additional 21 reverted crown grant modified grid claims, therefore the Bear Pass Project totals 88 mineral claims, all within the Skeena Mining Division (Figure 2). The company has owned 100% interest in the 57 crown granted claims for 20 years and is required to pay annual taxes of \$610.55 to keep them valid. The reverted crown grants are similar to modified grid claims



NEW YORK CLAIMS



LEGEND

-  Modified Grid
-  Reverted Crown Grant (purchased)
-  Crown Grants
-  Reverted Crown Grants (staked)

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TOURNIGAN MINING EXPLORATIONS LTD

Figure 2
**BEAR PASS PROJECT
CLAIM MAP**

Skeena Mining Division
British Columbia
NTS 104A/4

November 1991

XY3

and require annual assessment work to keep them in good standing. The company owns a 100% interest in an additional 21 reverted crown grants (the Rufus group). The status of the claims appears in Appendix 1.

PROPERTY AND GENERAL AREA HISTORY

The Bear Pass Project lies within an historically active mining and exploration area that extends some 225 km from Stewart in the south to near Telegraph Creek in the north. Within this area, which has been referred to as the Stikine Arch, mining activity goes back to the turn of the century. Due to the size of the region it historically has been referred to as more specific areas, ranging from the Stewart area to Sulphurets, Iskut River and Galore Creek, however all of these individual camps appear to be related to the Stikine Arch as a whole and are located in the area now referred to as the "Golden Triangle". Recent discoveries appear to be filling in areas between these known mineralized camps. It is probable that the entire area can be considered as one large mineralized province with attendant subareas. The location of several deposits and mineral occurrences appears in Figure 3 (Regional Geology), which also locates the Bear Pass Project with respect to these sites. This list of mineral occurrences is by no means comprehensive but is included to illustrate distribution in the region.

The Stewart area has been mined actively since the early 1900's and is one of the most prolific mining districts in British Columbia (Grove, 1971). Most prominent among the numerous mining properties are the Silbak - Premier, Big Missouri and Granduc deposits, located 15 km southwest, 15 km west and 35 km northwest of the Bear Pass Project respectively.

The Premier vein system, first staked in 1910, was in production until 1968 and the nearby Big Missouri deposit, first staked in 1904, produced between 1938 and 1942. Both these deposits have been re-evaluated and developed by Westmin Resources and placed into production as open pit, low grade gold deposits. Westmin has also completed an extensive surface and underground drilling program on the nearby SB (Silver Butte) property which it has optioned from Tenajon Resources Corp. Esso Minerals produced a reserve estimate of 308,000 tons grading 0.505 oz/ton gold (uncut) and 1.07 oz/ton silver with all zones remaining open (Canadian Mines Handbook, 1990-1991). Production began in July, 1991, with the first shipment of 15,000 tons of ore being treated at the Premier Mill site.

The Granduc deposit, a massive sulphide copper orebody, was discovered in 1951 and produced from 1971 to 1978 and 1981 to 1982. Scottie Gold Mines commenced production on a vein gold deposit at the north end of Summit Lake in 1981 but closed in 1985, having experienced financial difficulties brought on by depressed metal

prices and loss of infrastructure as a result of the closure of the nearby Granduc facilities.

Bond International Gold Inc. have been exploring their Red Mountain Project which includes the Marc and Willoughby Gossan Zones, located approximately 15 km and 17 km respectively south of the Bear Pass Project. Drilling programs were carried out in both 1989 and 1990, with further exploration completed 1991. A reserve estimate of 933,000 tons grading 0.37 oz/ton gold has been published for the Marc Zone from the 1989-1990 work.

The Bear Pass Project is located approximately 50 km southeast of the Iskut-Sulphurets area, which has seen extensive exploration in the last three years. The new era of gold exploration began with the 1979 option of the Sulphurets claim block by Esso Minerals Canada and the 1980 acquisition of the Mount Johnny claims by Skyline Explorations Ltd. Skyline (now Skyline Gold Corporation) commissioned its mill in July, 1988, however production has been suspended temporarily. Cominco Ltd. and Prime Resource Group Inc. have recently placed the adjacent Snip deposit into production, and the Eskay Creek deposit of Prime Resource Group/Stikine Resources/Corona/Placer is undergoing underground development and exploration.

REGIONAL GEOLOGY

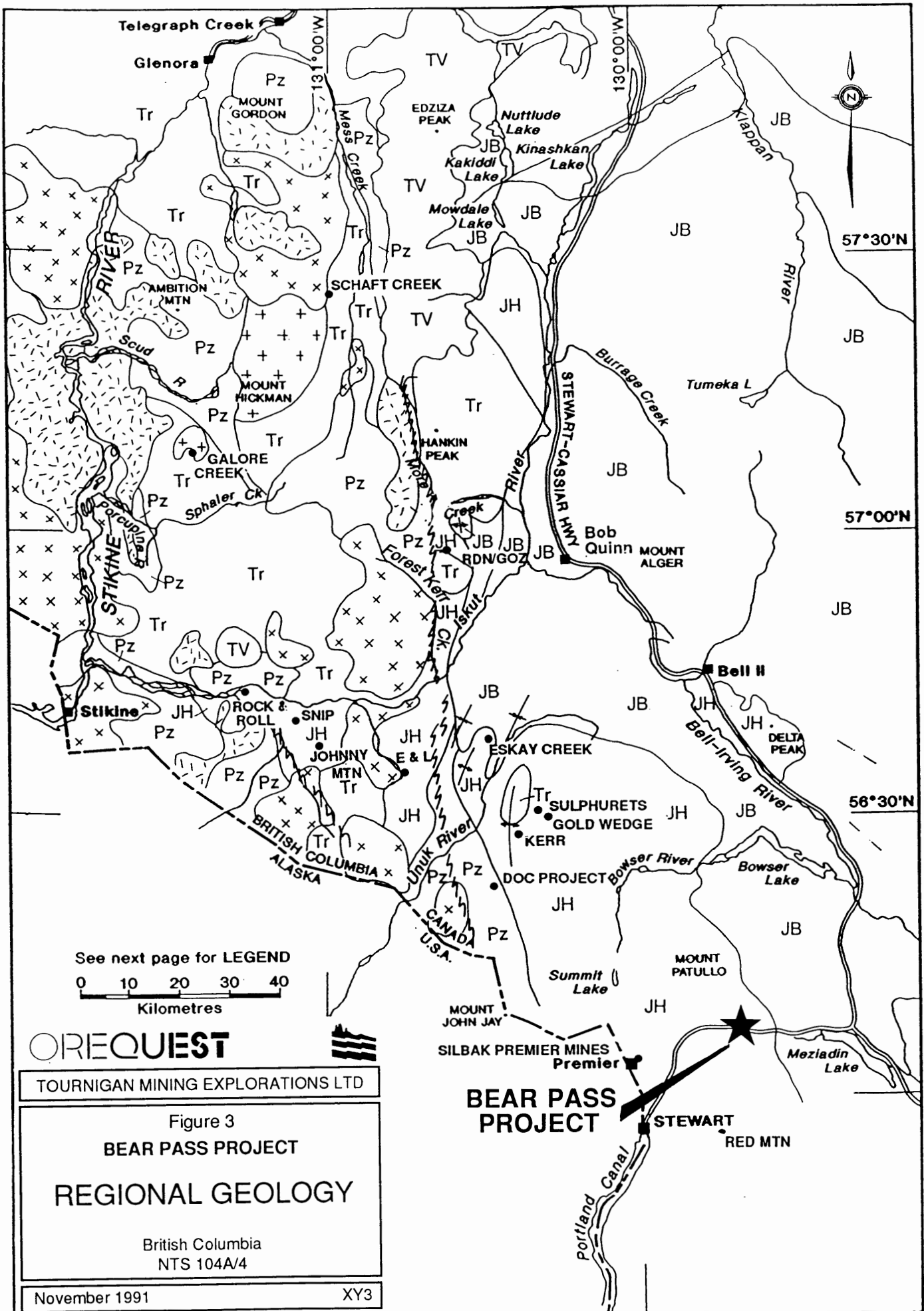
The Bear Pass property lies within the Iskut River-Bowser Lake map area (NTS 104A&B) which encompasses an important geological

transect through the west-central Cordillera. The area is underlain by the Stewart Complex (Grove 1971, 1986) which includes Late Paleozoic and Mesozoic rocks, confined by the Coast Plutonic Complex to the west, the Bowser Basin to the east, Alice Arm to the south and the Iskut River to the north. A simplified representation of the regional geology setting appears in Figure 3.

Grove (1971, 1986) established the modern stratigraphic, plutonic and metalogenic framework for the Stewart mining district. Alldrick (1983, 84, 85, 87), Alldrick et al. (1987, 89), Alldrick and Britton (1988), and Britton and Alldrick (1988) have redefined and extended the Mesozoic stratigraphy around the Silbak Premier and Big Missouri mines north to the Sulphurets and Bronson Creek Camps.

The stratigraphy and plutonic framework are most simply described in terms of four tectonostratigraphic elements: Paleozoic Stikine Assemblage, Triassic and Jurassic Stikinian strata and plutons, Middle and Upper Jurassic Bowser Lake Group and Tertiary Coast Plutonic Complex (Anderson, 1989). Of particular interest to mineral explorationists are the Lower Jurassic volcanics and associated Early Jurassic alkaline granitic rocks of the Stikinian assemblage; many of the precious metal vein deposits seem to be associated with them (eg. Premier, Big Missouri, Silver Butte, Sulphurets camp).

The Hazelton Group encompasses Lower Jurassic Unuk River and Betty Creek Formation volcanics along with Middle Jurassic Mt.



See next page for LEGEND
 0 10 20 30 40
 Kilometres

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TOURNIGAN MINING EXPLORATIONS LTD

Figure 3
BEAR PASS PROJECT
REGIONAL GEOLOGY

British Columbia
 NTS 104A/4

November 1991

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Dilworth Formation volcanogenic rocks. These are overlain by upper Middle Jurassic sediments of the Salmon River Formation and Upper Jurassic Bowser Lake Group sediments.

The Unuk River Formation in the eastern Iskut River map area is dominated by white and grey-brown andesitic volcanic breccia and thin-bedded lava (Anderson and Thorkelson, 1990). West of the Bowser River, the volcanoclastics grade into a sedimentary unit, dominated by siliceous siltstone and subordinate pebble conglomerate and greywacke.

The Betty Creek Formation, conformably overlying the Unuk River Formation, contains characteristic hematitic maroon to green volcanic siltstone, greywacke, conglomerate and breccia. The members are massive, thick- or medium-bedded. The clastic sediments have likely been derived by weathering and erosion of Unuk River Formation tuffs and flows. Areas where Betty Creek Formation thins or wedges out represent paleotopographic highs.

In the eastern Iskut River map area, the Mount Dilworth Formation is the least heterogeneous and most extensive marker within the Hazelton Group. It consists of distinctive white, maroon or green weathering, siliceous felsic welded tuff and tuff breccia (Anderson, 1989). This thin, distinctly colored unit is resistant, a cliff-former and is an important regional stratigraphic marker (Alldrick, 1988). The formation represents airfall deposits from a

series of subaerial explosive felsic volcanic eruptions, and indicates the last volcanic event of Hazelton Group volcanism.

The Salmon River Formation in this area is a thick assemblage of thin to medium-bedded siltstones and wackes and is comprised of two members. A thin, sandy, bioclastic limestone occurs at the base with the overlying member having three facies that form north-trending belts.

Plutonic rocks occur throughout the Iskut map area, but dominate in the southwest. In the past geologists have included all granite plutons as part of the Tertiary Coast Plutonic Complex. Recent mapping and geochronometry have helped to define the plutonic episodes. At least four episodes are recognized (Anderson, 1989) as follows:

1. Late Triassic - Stikine plutonic suite
2. Early Jurassic - Texas Creek plutonic suite
3. Middle Jurassic - Three Sisters plutonic suite
4. Eocene - Hyder plutonic suite.

The Early Jurassic Texas Creek plutonic suite is coeval with eruption of Lower Jurassic Hazelton Group volcanic rocks, and is crosscut by alkali - feldspar - phyrlic andesite dykes, ie "Premier Porphyry" dykes (Anderson & Bevier, 1990). These dykes are thought

to have fed the porphyritic volcanic flows present at the top of the Unuk River andesitic sequence.

Recent age dating has identified the Three Sisters plutonic suite as Middle Jurassic.

The Tertiary Hyder plutonic suite of the Coast Plutonic Complex lacks dykes and preserved volcanic equivalents. Tertiary plutons crosscut all regional structural fabrics and are post-tectonic (Anderson & Bevier, 1990).

The regional structural pattern is a north - northwest - striking system of open to tight folds. The axial planes dip steeply west-southwest and the folds are doubly plunging, creating a series of canoe-shaped synclinal troughs in the Long Lake area.

During the Cretaceous, moderate deformation with lower greenschist facies regional metamorphism along north-trending fold axes took place and major folds and slaty cleavage were formed (Alldrick, 1986).

Precious and base metal veins developed in the area occur within the Upper Triassic (Kerr, Doc, Inel, Snip, and Stonehouse deposits), Lower Jurassic (Premier and Sulphurets deposits) and lower Middle Jurassic (Eskay creek deposit) strata. For many deposits (Premier, Kerr, Inel and Snip) proximity to Early Jurassic calc-alkaline to

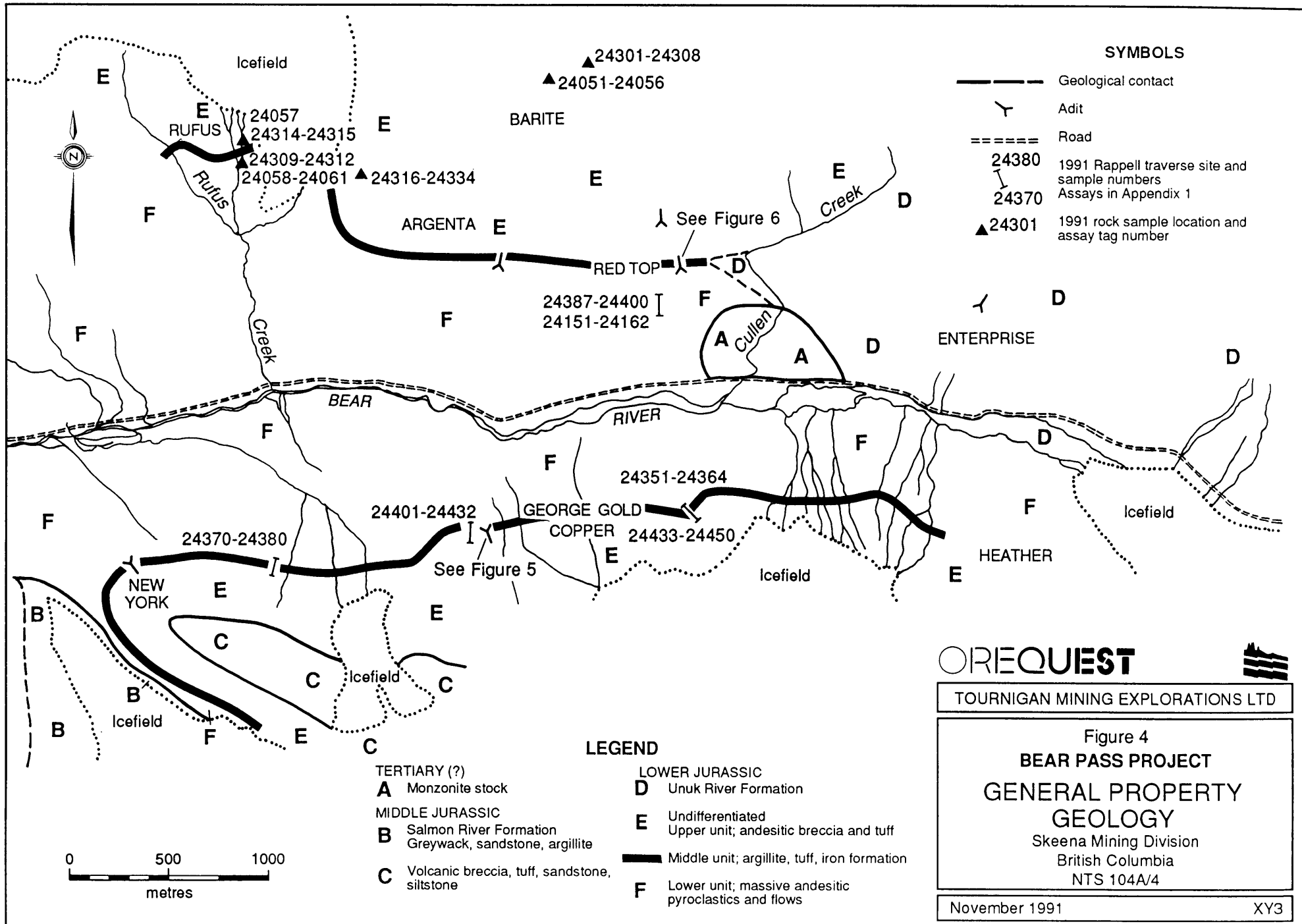
alkaline plutonic intrusions, especially the alkali-feldspar porphyry variety (Premier porphyry) seems to be the main control, in which case the host strata are of secondary importance.

The Eskay Creek deposit is an important exception where the precious metal veins seem to be mainly stratabound within a sedimentary and pillowed lava sequence of the Eskay Creek facies of the Salmon River Formation (Anderson, Thorkelson & Bevier, 1990).

PROPERTY GEOLOGY

A general property geology map was produced by Groves (1986) as part of an overall much larger regional mapping program. This map shows the property to be underlain mostly by volcanics and sedimentary rock of the Lower Jurassic Unuk River Formation which is comprised of andesitic tuffs and breccias with lesser sandstone and siltstone. The upper elevations on the south side of the Bear Pass are mapped as volcanic and sedimentary rocks of the Betty Creek Formation, similar to those of the Unuk River Formation.

A compilation map provided by Tournigan is similar to that of Groves but with more detail. The lower portions of the property are underlain by the "lower volcanic unit", likely equivalent to the Unuk River Formation. The "upper volcanic" unit would be the Betty Creek formation equivalent. An argillaceous tuff or iron formation lies at the contact between the upper and lower volcanic units. This "iron formation" has considerable strike length on both sides of the Bear



SYMBOLS

- Geological contact
- Adit
- Road
- 24380 1991 Rappell traverse site and sample numbers
- 24370 Assays in Appendix 1
- 24301 1991 rock sample location and assay tag number

LEGEND

- TERTIARY (?)
 - A** Monzonite stock
- MIDDLE JURASSIC
 - B** Salmon River Formation
Greywack, sandstone, argillite
 - C** Volcanic breccia, tuff, sandstone, siltstone
- LOWER JURASSIC
 - D** Unuk River Formation
 - E** Undifferentiated
Upper unit; andesitic breccia and tuff
 - Middle unit; argillite, tuff, iron formation
 - F** Lower unit; massive andesitic pyroclastics and flows

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Figure 4
BEAR PASS PROJECT
GENERAL PROPERTY GEOLOGY
 Skeena Mining Division
 British Columbia
 NTS 104A/4

November 1991 XY3

Pass and is the host unit to many of the known showings on the Bear Pass Project. The geology on the eastern edge of the property is complex and is mapped as an undifferentiated sequence of volcanic and sedimentary rock. A small monzonite stock lies on the north side of the Bear Pass near Snow Lake and Cullen Creek. The age and relationship of this stock to the surrounding units is unknown as it has not been examined by the authors. The geology indicates a possible broad antiform feature whose axis trends east-west through the Bear Pass (Figure 4).

MINERALIZATION

George Gold-Copper

This area has probably received the most attention of all the Bear Pass properties now held by Tournigan. A large part of the detailed surface work and virtually all of the drilling on the property was conducted prior to 1929. Considerable advancements in technology in terms of equipment available, ease of access to the adit area (via helicopter versus pack horse), and greater understanding of ore genesis and deposit models in volcanic terranes should greatly expand current knowledge of the area. Additionally the higher prices now commanded for gold and copper increase the attractiveness of the showing making what were interesting prospects in the 1920's potentially economic producers in the 1990's.

The property has two distinct styles of mineralization, a systems of veins outcropping between elevations 1300 m and 1450 m and a disseminated zone in a flat lying "Iron Formation" at 1000 m.

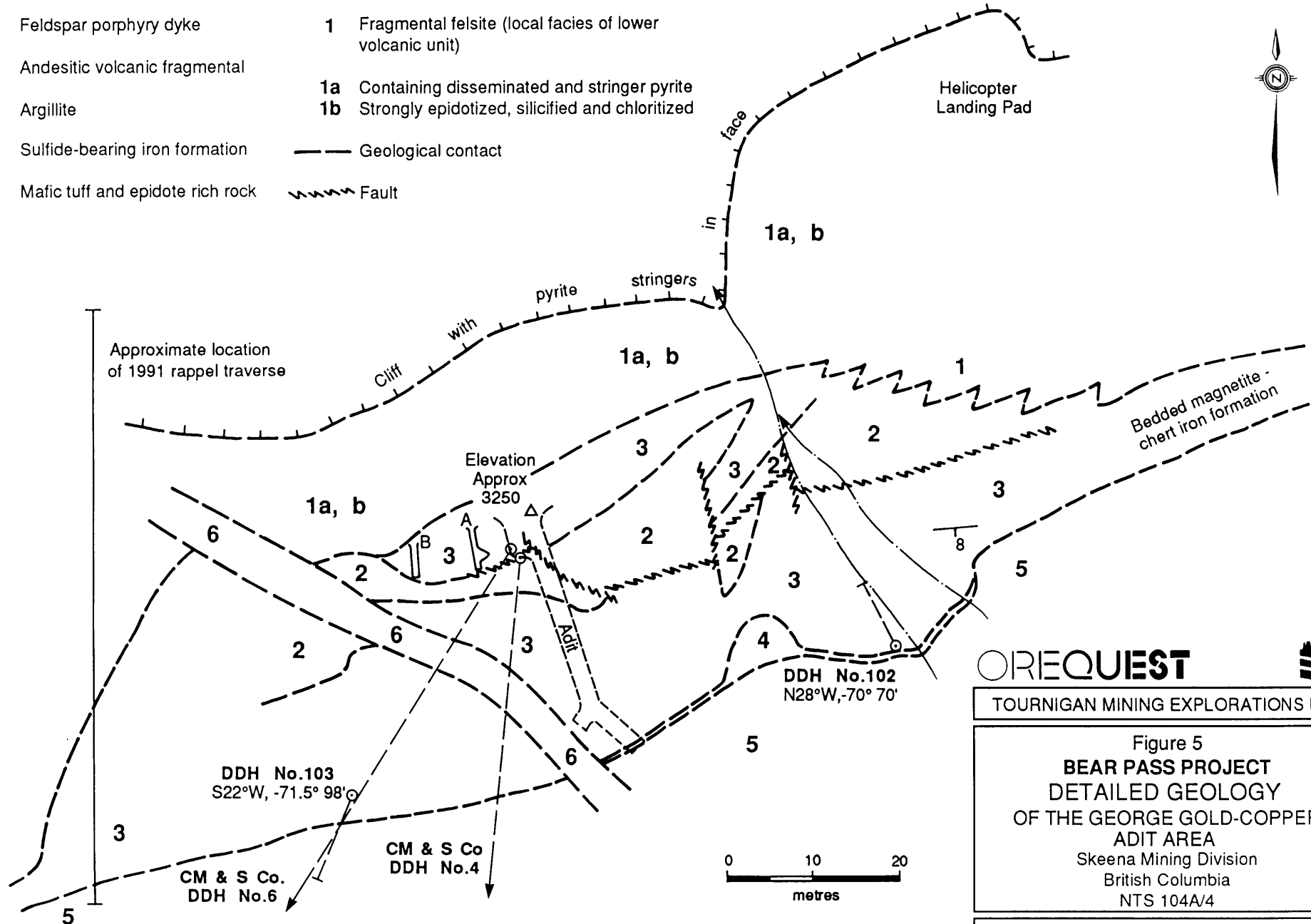
The majority of previous work has focused on the copper-gold-silver bearing vein systems which have been called the Blue, Jasper, Green and White Veins. The Blue and Jasper Veins form one continuous vein with a general orientation of $110^{\circ}/65^{\circ}\text{SW}$. The Green Vein appears to be the eastward extension of this vein system. The veins vary in width from 1.2 m to 4.3 m and average 2 m. The Blue Vein structure appears to have a length in excess of 335 m and Dr. W.V. Smitheringale reports the Blue Vein has continuous mineralization over a length of 145 m which consists of pyrite, pyrrhotite, hematite, arsenopyrite and chalcopyrite. The White Vein, some 50-75 m north of the Blue Vein system, appears to have an overall length of approximately 730 m.

Various preliminary reserve estimates for the vein system have been estimated to be approximately 500,000 tons grading 2% copper, 0.5 oz/ton silver and 0.06 oz/ton gold (R.G. McEachern, 1956). This reserve figure includes indicated, inferred and potential reserves.

The zone of greatest potential for a large tonnage deposit is the stratabound copper mineralization seen in the George Gold-Copper adit. The host unit for this mineralization has been described as an argillaceous tuff band or cherty "Iron Formation". This iron formation contains variable quantities of pyrite, hematite, magnetite,

LEGEND

- | | | | |
|---|----------------------------------|----|--|
| 6 | Feldspar porphyry dyke | 1 | Fragmental felsite (local facies of lower volcanic unit) |
| 5 | Andesitic volcanic fragmental | 1a | Containing disseminated and stringer pyrite |
| 4 | Argillite | 1b | Strongly epidotized, silicified and chloritized |
| 3 | Sulfide-bearing iron formation | — | Geological contact |
| 2 | Mafic tuff and epidote rich rock | ⚡ | Fault |



after W.G. Smitheringale, 1976

OREQUEST

TOURNIGAN MINING EXPLORATIONS LTD

Figure 5
BEAR PASS PROJECT
DETAILED GEOLOGY
OF THE GEORGE GOLD-COPPER
ADIT AREA
 Skeena Mining Division
 British Columbia
 NTS 104A/4

November 1991 XY3

chlorite, epidote, chert, massive mafic tuff and chalcopyrite. Pyrite and chalcopyrite are found as disseminations, bedding parallel laminae, cross cutting stringers and occasionally as massive pods (Figure 5).

This argillaceous tuff-cherty iron formation is defined for a strike length of nearly 5 km on the south side of the valley and for over 3 km on the north side of the valley. Two other showings of interest are located in this unit, the New York and the Red Top and possibly the Comet and the Rufus-Argenta. The unit has a variable thickness of 6 to 30 m and most likely represents a volcanic exhalative facies. The greatest implications of a volcanic exhalative horizon is its potential for a large tonnage deposit of overall lower grade which also may contain local high grade pods.

Previous work of underground sampling and diamond drilling at the George Gold-Copper showing has revealed variable grades over various lengths. Drilling was done by The Consolidated Mining and Smelting Company of Canada (now Cominco) in the mid 1920's. Their program was designed to test down dip extensions of the upper vein systems which was unsuccessful due to extreme difficulties in finding suitable drill pads. As a result, two of their holes, hole 4 and hole 6 were drilled horizontally from the face of the old workings. These holes were drilled subparallel to the dip of the iron formation and are believed to have drilled through portions of the iron formation. Drill Hole No. 4, intersected disseminated mineralization from 12.2 m to 87 m

(40' to 285') and from 332 m to 407 m (1090' to 1335') and drill hole No. 6 intersected disseminated mineralization from 13.7 m to 62.5 m (45' to 205'). The best intersections within these intervals are shown on the following table.

TABLE 1: DRILL HOLE INTERVALS (1920's)

HOLE NO.	INTERVAL (feet)	LENGTH (feet)	COPPER %	SILVER oz/ton	GOLD oz/ton
DDH NO. 4	110 - 130	20	1.86	0.42	Tr
	222.5-232	9.5	1.60	0.26	Tr
	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
DDH NO. 6	127 - 142	15	1.84	0.017	Tr
	174 - 185	11	0.36	0.05	Tr

More recent work was done in 1976 by W.G. Smitheringale. A moiled sample representing 35 m (115') along both walls of the adit assayed 0.89% copper. Also 2 short vertical diamond drill holes #102 and #103 were completed by Tournigan to test the thickness of the stratabound sulphide zone. Result of these holes are summarized below.

TABLE 2: DRILL HOLE INTERVALS (1976)

HOLE NO.	INTERVAL (feet)	LENGTH (feet)	COPPER %	LEAD %	ZINC %	SILVER oz/ton	GOLD oz/ton
102	37.5 - 55.1	18	1.09	0.01	0.05	0.06	0.003
	62.7 - 64.3	1.6	0.01	0.01	0.05	0.02	0.003
103	85.3 - 89.2	3.9	0.04	0.03	0.02	0.17	0.007
	89.2 - 91.2	2.0	0.82	0.05	0.04	0.58	0.010
	92.1 - 94.8	2.7	1.05	0.03	0.04	0.18	0.005

Limited sampling by OreQuest in 1991 in the adit area returned elevated gold, silver, copper, lead and zinc values. Results from the sampling include 180 ppb gold, 21 ppm silver, 0.94% copper, 450 ppm lead and 840 ppm zinc. Also of interest were the elevated arsenic (to 1500 ppm) and titanium (to 1200 ppm) values.

In summary, it is felt that the George Gold-Copper showing is a valued target worthy of additional exploration.

New York

The Lower portion of the argillite tuff-iron formation is exposed in an old adit and in trenches. It consists of a quartzose epidote altered rock containing up to 50% semi-massive to heavily disseminated pyrrhotite, pyrite, and chalcopyrite, in places the material appears bedded. Thickness of the sulphide bearing zone is about 10 m. No assay results are known. Bearing in mind the implications of a volcanogenic exhalative horizon, the prospect deserves an examination of the old workings and systematic sampling of the iron formation unit.

Heather

The Heather claims are at the eastern end of the ground currently held by Tournigan. They have received little work except for one short adit, located well below the iron formation unit. The adit was driven in on a zone containing a stringer of semi-massive sulphides, particularly lead and zinc. Assays reported between 1949 and 1952

from the George Enterprise Mining Co. records indicate hi-grade lead and zinc to 21.1% and 36.7% respectively from select samples. Old reports indicate that the stringers of massive sulphides are up to 25 cm wide, the overall width of the zone hosting the stringers has not been documented.

The iron formation unit has been reported as extending intermittently from the George Gold-Copper showing to the western margin of the Heather Fraction and warrants mapping and systematic sampling for potential copper mineralization.

Enterprise

The Enterprise Group is located on the northeast portion of the claim group. The majority of work done to date was completed between 1928 and 1929 consisting of trenching, tunnelling, and sampling. More recent work was completed by Tournigan in 1976 and 1978. The main workings consist of the Frenchman's and Enterprise tunnels which drifted in on zones of copper mineralization containing sporadic values in gold, silver and lead. Pyrite is the most abundant sulphide as pervasive disseminations. Chalcopyrite ± galena, sphalerite, chlorite, quartz and calcite are found as small veins, stringers, pods, disseminations, shear zones and stockworks. The best mineralization encountered in the Frenchman's tunnel is reported to be 2-5% copper but there are no assays to substantiate this claim. The area seems to represent "Stringer Zone" mineralization.

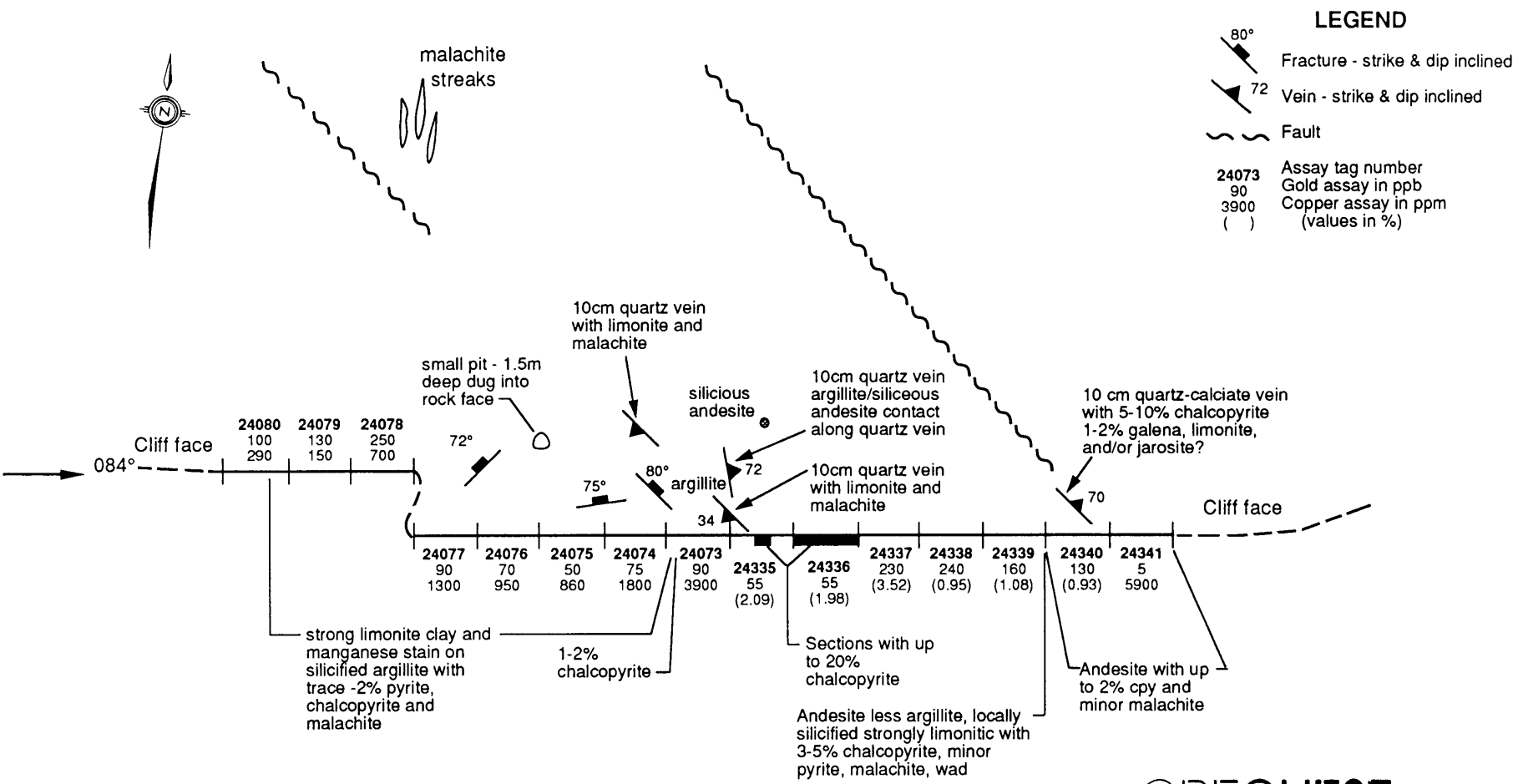
The iron formation unit lies below the old workings and has not been actively explored. Additional mineralized zones are found above and northwest of the Enterprise tunnel where good values in gold, silver, copper, lead, and zinc are reported. Exact assays are unknown as the samples were collected in the 1920's, float samples collected at that time from a large talus slide are reported to have run in excess of 600 oz/ton silver and 0.30 oz/ton gold. The mineralization occurs in fault breccia, and shear zones as narrow veins, stringers, or disseminations. Numerous gossanous cliffs are found throughout the claim area and warrant systematic sampling.

Red Top

There are two separate main areas of work on this area, an adit on the Red Top Claim and also one on the Superior Claim.

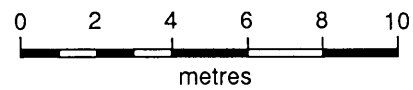
The adit on the Red Top Claim appears to be in the iron formation unit which consists of siliceous looking andesite and argillite. The units are quite convoluted with obvious faulting present. Mineralization consists of pyrite, chalcopyrite, and malachite stain found as disseminations and semi-massive pods.

Limited diamond drilling was done by United Asbestos in 1968 consisting of seven holes of which only three were drilled deep enough to fully investigate the thickness of the iron formation unit. Intersections are in the range of 0.5% copper. OreQuest spent one day in the area of the adit sampling the highly altered cliff face above



OREQUEST
TOURNIGAN MINING EXPLORATIONS LTD

Figure 6
BEAR PASS PROJECT
RED TOP SHOWING
GEOLOGY & CHIP SAMPLE
LOCATIONS
Skeena Mining Division
British Columbia
NTS 104A/4



the adit entrance and received favourable results. Continuous 2m chip samples were collected along a portion of the face and returned up to 1.76% copper over 12m including 6m of 2.53% copper. The chip line is along strike of the iron formation as the exposed cliff face representing the width of the unit was unaccessible without ropes. The unit appears to be at least 15m thick and is heavily altered by silica and clay with obvious malachite staining (Figure 6). Further detailed rope assisted systematic rock sampling is warranted.

The adit on the Superior Claim, vertically higher than the main copper showing, was following a vein system within a fracture zone, with veins up to 2m wide. They contain quartz, calcite, barite, galena, sphalerite, chalcopryrite and pyrite. Assays show consistently good values of silver - 1.3 to 15.9 oz/ton, lead - 1.4 to 50%, zinc - 0.7 to 15% and copper - trace to 1%. The fracture system deserves additional mapping and sampling to determine if it can be traced for a reasonable strike length.

Barite Claims

Little work has been done on these claims with only scant notes available from 1926, 1935, and 1938. The zone described by these reports indicates three parallel veins striking northwesterly, spaced 4 to 10 feet apart and traced for a distance of 1500 feet (450m). The center vein has a reported width of 4 to 18 feet with silver bearing galena and gold.

OreQuest spent one day in the area and located some barite veins though it is not known whether the veins found were the same ones described in the old reports. The veins had a characteristic red hematite stain comprising 5-10% of the vein. Sulphides were patchy and discontinuous ranging from trace to 15-20% galena and 2-3% chalcopyrite. The longest vein was traced on surface for approximately 100m over which it exhibited considerable pinch and swell ranging from 20cm to 6m wide.

Samples collected were continuous chips across the width of the largest vein. Results were mixed, gold was low, though silver up to 1.39 oz/ton and lead to 2.73% was returned from two of the samples. Limited prospecting of the area is warranted to see if additional veins can be located. Additionally, numerous gossans are now exposed due to receding ice and they should be systematically sampled.

Rufus-Argenta

The Rufus-Argenta area is characterized by vein type lead-zinc-silver-copper mineralization with some potential for stratabound mineralization as the iron formation unit should transect the area. The veins form a complex stockwork pattern, no preferred orientation is present.

OreQuest spent one day examining a small portion of the total claim area. Numerous rusty siliceous veins were observed with a

variable pyrite content of 10-60%. Results of the sampling returned one assay of 0.030 oz/ton gold, base metal values were negligible.

It is felt that the area deserves further work as there are a considerable number of veins and old adits reporting good values that were not examined.

CONCLUSIONS AND RECOMMENDATIONS

The history of the Stewart Area as a prolific mining district, recent advancements in technology, a greater understanding of ore genesis in volcanic terranes, and the numerous encouraging showings, all indicates that the Bear Pass Project is well situated to host new mineral discoveries. Of particular interest on the property is the "Iron Formation" unit which has considerable strike length on both the north and south sides of the Bear Pass and a variable thickness of 6 to 30 m. The unit has the potential to host a large tonnage copper-gold deposit as it is the host of many of the better showings on the property. Results of work both past and present have returned encouraging copper-gold assays.

A comprehensive work program should be initiated to re-evaluate many of the known showings such as the George Gold-Copper, Heather, New York, Enterprise and Red Top. This would involve mapping and sampling of surface and underground workings to gain a better understanding of what controls exist on the mineralization. Most of these showings are associated with the iron formation unit which

should be sampled where accessible in areas outside the known showings.

Additional work would include mapping and sampling of the many vein systems that exist on the property, such as the Blue and White Veins, the Erickson Vein, Comet Vein and many other systems reported to contain both precious and base metal mineralization. Similar work should be done on the breccia systems seen on the south side of the Bear Pass.

Many areas on the upper reaches of the property have newly exposed gossans which have never been examined, as local glaciers and icefields continue to retreat. These new gossans should be mapped and sampled as their potential for mineralization is unknown.

A Phase I exploration program costing \$144,550 has been outlined to explore the numerous target areas. Further work would involve trenching and advanced geophysical surveys, where permitted by terrain, would be conducted on the most favorable targets located by the Phase I program. The next phase, contingent upon success in the Phase II program would be diamond drilling of the best targets.

COST ESTIMATES**PHASE I**

Mob/Demob		\$ 3,000
Wages:		
Project geologist (1)	30 days @ \$450/day	13,500
Prospector (1)	30 days @ \$350/day	10,500
Assistants (2)	30 days @ \$250/day	15,000
Assays	400 rocks @ \$20/sample	8,000
Helicopter	40 hours @ \$750/hr	30,000
Food and accommodation	120 mandays @ \$75/man	9,000
Trenching (including powder and plugger)		10,000
Project supervision		5,000
Report		<u>10,000</u>
Subtotal		\$114,000
Contingency @ 20%		<u>22,800</u>
Total Phase I		\$136,800
Say		\$137,000

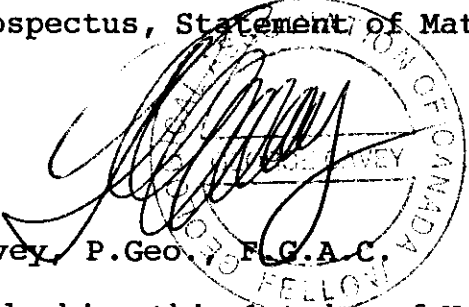
PHASE II

Diamond drilling	600 m @ \$200/m	<u>\$120,000</u>
Total (all inclusive)		\$120,000
TOTAL OF PHASES I and II		\$256,800
SAY		<u>\$257,000</u>

STATEMENT OF QUALIFICATIONS

I, George Cavey, of 6891 Wiltshire Street, Vancouver, British Columbia hereby certify:

1. I am a graduate of the University of British Columbia (1976) and hold a BSc. degree in geology.
2. I am presently employed as a consulting geologist with OreQuest Consultants Ltd. of #306-595 Howe Street, Vancouver, British Columbia.
3. I have been employed in my profession by various mining companies since graduation, with OreQuest Consultants Ltd. since 1982.
4. I am a Fellow of the Geological Association of Canada.
5. I am a member of the Canadian Institute of Mining and Metallurgy.
6. I am licensed to practice as a Professional Geologist of Alberta.
7. I am licensed to practice as a Professional Geologist of British Columbia.
8. The information contained in this report was obtained from a review of data listed in the bibliography, knowledge of the area and an onsite property review.
9. Neither OreQuest Consultants Ltd. nor myself have or expect to receive direct or indirect interest in the Bear Pass Project or securities of Tournigan Mining Explorations Ltd.
10. I consent to and authorize the use of the attached report and my name in the Company's Prospectus, Statement of Material Facts or other public document.


George Cavey, P. Geol., F.G.A.C.

DATED at Vancouver, British Columbia, this 1st day of November, 1991.

STATEMENT of QUALIFICATIONS

I, Wesley D.T. Raven, of #108-1720 West 12th Ave., Vancouver, British Columbia hereby certify:

1. I am a graduate of the University of British Columbia (1983) and hold a BSc. degree in geology.
2. I am presently retained as a consulting geologist with OreQuest Consultants Ltd. of #306-595 Howe Street, Vancouver, British Columbia.
3. I have been employed as an exploration geologist on a full time basis since 1983.
4. I am a Fellow of the Geological Association of Canada.
5. The information contained in this report is based on work carried out by OreQuest Consultants Ltd. for which I was the field project manager, an onsite examination and a review of information listed in the Bibliography.
6. I have no interest, direct or indirect, in the Bear Pass Project nor in the securities of Tournigan Mining Explorations Ltd.
7. I consent to and authorize the use of the attached report and my name in the Company's Prospectus, Statement of Material Facts or other public document.

Wesley Raven

Wesley D.T. Raven,
B.Sc., F.G.A.C.

DATED at Vancouver, British Columbia, this 1st day of November, 1991

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APPENDIX I
CLAIM INFORMATION

BEAR PASS PROPERTY

STEWART AREA, B.C.
Skeena Mining Division NTS 104A/4

Mineral Claim List

<u>CROWN GRANT NAME</u>	<u>LOT NO.</u>
Amazon	4945
Amazon No. 1	4946
Amazon No. 2	4968
Amazon No. 3	4947
Amazon No. 4	4948
Amazon Fraction	4950
Amazon No. 2 Fraction	4951
Barite	5341
Barite No. 1	5342
Barite No. 2	5344
Barite Fraction	5345
Castle Rock	4784
Copper Queen	4781
Copper Queen No. 1	4788
Copper Queen No. 2	4792
Enterprise	5346
Enterprise No. 1	5347
Enterprise No. 2	5348
Enterprise No. 3	5349
Enterprise No. 4	5350
Enterprise No. 5	5351
Enterprise No. 6 Fraction	5352
Enterprise No. 7	5353
Enterprise No. 8	5359
Enterprise Fraction	5360
Enter Fr.	6079
Gold Crown	4779
Grandview	4793
Green Lake	6081
Green Lake No. 2	6076
Green Lake No. 3	6077
Green Lake No. 4	6078
Green Lake Fraction	6080
Heather	5354
Heather No. 1	5355
Heather No. 2	5356
Heather No. 3	5357
Heather No. 4	5365
Heather Fraction	5366
Hector No. 1	4805
Helena	4783
Hub	5343
Pat Fraction	5358
Red Bird No. 1	4794
Red Bird Fraction	4795

<u>CROWN GRANT NAME</u>	<u>LOT NO.</u>
Red Top	4803
Red Top No. 1	4804
Red Top Fraction	4807
Red Top No. 2 Fraction	4949
Skyscraper	4897
Some Fraction	5364
Superior	4801
Superior No. 1	4802
Superior No. 2 Fraction	4806
Waterfall No. 1	4789
Whistler	4786
Foothill Fraction	4941

<u>REVERTED CROWN GRANTS (Staked)</u>	<u>LOT NO.</u>	<u>RECORD NO.</u>	<u>EXPIRY DATE</u>
New York Fr	1485	300896	June 3, 1992
Atlas #1	1480	300841	June 3, 1992
Atlas #2	1484	300842	June 3, 1992
Atlas #3	1481	300843	June 3, 1992
Atlas #4	1483	300844	June 3, 1992
Gypsy Fr	5397	300898	June 3, 1992

MODIFIED GRID CLAIMS

<u>CLAIM NAME</u>	<u>UNITS</u>	<u>RECORD NO.</u>	<u>EXPIRY DATE</u>
Doc 1	6	9279	April 9, 1992
Doc 2	12	9280	April 9, 1992
Doc 3	12	9281	April 10, 1992
Dave 1	3	9282	April 24, 1992

<u>REVERTED CROWN GRANT (Purchased)</u>	<u>LOT NO.</u>	<u>RECORD NO.</u>	<u>EXPIRY DATE</u>
Argyle Fraction	3417	520	March 1, 1992
Comet No. 4	3422	522	March 1, 1992
Veteran	3423	523	March 1, 1992
Veteran No. 3	3426	524	March 1, 1992
Rufus No. 1	3787	525	March 1, 1992
Rufus No. 2	3788	526	March 1, 1992
Rufus No. 4	3790	527	March 1, 1992
Rufus No. 6	3792	528	March 1, 1992
Baby Rufus Fraction	3793	529	March 1, 1992
Wide Fraction	4554	530	March 1, 1992
Silver Fraction	4555	531	March 1, 1992
Long Fraction	4556	532	March 1, 1992
Argyle No. 1	4576	534	March 1, 1992
Argyle No. 2	4577	535	March 1, 1992

REVERTED CROWN GRANT

LOT NO.

RECORD NO.

EXPIRY DATE

(Under Option)

Argyle No. 3	4578	536	March 1, 1992
Argyle No. 4	4579	537	March 1, 1992
Argyle No. 5	4580	538	March 1, 1992
Argyle No. 6	4581	539	March 1, 1992
Duke Fraction	4782	540	March 1, 1992
Rufus	3786	2140	March 14, 1992
Rufus No. 3	3789	2141	March 14, 1992

APPENDIX II
ASSAY CERTIFICATES



TSL LABORATORIES

2 - 302 - 48th STREET, EAST
SASKATOON, SASKATCHEWAN
S7K 6A4

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CERTIFICATE OF ANALYSIS

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306 - 595 Howe Street
Vancouver, B.C.
V6C 2T5

REPORT No.
S3255

SAMPLE(S) OF Pulps

INVOICE #: 18232
P.O.:

Project: Bear

	Ag ozt	Pb %	Zn %	Cu %
24054	1.39			
24055		2.73		
24066				1.17
24068				.96
24301	1.71	2.73		
24335				2.09
24336				1.98
24337				3.52
24338				.95
24339				1.08
24340			.90	.93
24402				.94

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REPORT No.
S3128

SAMPLE(S) OF Rock

INVOICE #: 18061
P.O.: R3430

Project: Bear (Dalhousie)

	Au ppb	Au ozt
24051	<5	
24052	<5	
24053	<5	
24054	<5	
24055	<5	
24056	<5	
24057	30	
24058	<5	
24059	50	
24060	40	
24061	15	
24062	600	
24063	>1000	.070
24064	300	
24065	>1000	.387/.393
24066	>1000	.504/.499
24067	>1000	.061
24068	>1000	.129/.147
24069	>1000	.061
24070	>1000	.109

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SAMPLE(S) OF Rock

INVOICE #: 18061
P.O.: R3430

Project: Bear (Dalhousie)

	Au ppb	Au ozt
24071	>1000	.039
24072	>1000	.031
24073	90	
24074	75	
24075	50	
24076	70	
24077	90	
24078	250	
24079	130	
24080	100	
24151	5	
24152	<5	
24153	<5	
24154	<5	
24155	10	
24156	<5	
24157	<5	
24158	<5	
24159	<5	
24160	<5	

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SAMPLE(S) OF Rock

INVOICE #: 18061
P.O.: R3430

Project: Bear (Dalhousie)

	Au ppb	Au ozt
24161	5	
24162	10	
24301	20	
24302	10	
24303	<5	
24304	5	
24305	5	
24306	5	
24307	5	
24308	15	
24309	10	
24310	10	
24311	5	
24312	10	
24313	340	
24314	>1000	.030
24315	50	
24316	5	
24317	<5	
24318	<5	

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SAMPLE(S) OF Rock

INVOICE #: 18061
P.O.: R3430

Project: Bear (Dalhousie)

	Au ppb
24319	20
24320	10
24321	<5
24322	<5
24323	<5
24324	<5
24325	<5
24326	<5
24327	<5
24328	5
24329	10
24330	<5
24331	<5
24332	<5
24333	<5
24334	<5
24335	55
24336	230
24337	200
24338	240

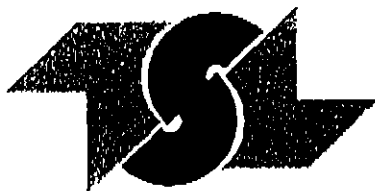
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V6C 2T5

REPORT No.
S3128

SAMPLE(S) OF **Rock**

INVOICE #: 18061
P.O.: R3430

Project: Bear (Dalhousie)

	Au ppb
24339	160
24340	130
24341	5
24351	10
24352	15
24353	10
24354	20
24355	10
24356	10
24357	5
24358	5
24359	5
24360	20
24361	20
24362	10
24363	10
24364	10
24365	10
24366	<5
24367	<5

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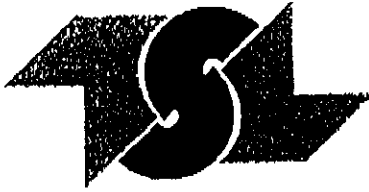
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V6C 2T5

REPORT No.
S3128

SAMPLE(S) OF Rook

INVOICE #: 18061
P.O.: R3430

Project: Bear (Dalhousie)

	Au ppb
24368	10
24369	5
24370	<5
24371	20
24372	5
24373	<5
24374	<5
24375	<5
24376	<5
24377	<5
24378	<5
24379	<5
24380	10
24381	<5
24382	<5
24383	<5
24384	<5
24385	<5
24386	<5
24387	<5

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V6C 2T5

REPORT No.
S3128

SAMPLE(S) OF Rock

INVOICE #: 18061
P.O.: R3430

Project: Bear (Dalhousie)

	Au ppb
24388	<5
24389	<5
24390	<5
24391	<5
24392	<5
24393	<5
24394	<5
24395	<5
24396	<5
24397	<5
24398	<5
24399	5
24400	<5
24401	35
24402	5
24403	10
24404	30
24405	10
24406	30
24407	70

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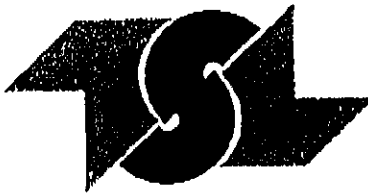
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TSL LABORATORIES

2 - 302 - 48th STREET, EAST
SASKATOON, SASKATCHEWAN
S7K 6A4

☎ (306) 931-1033 FAX: (306) 242-4717

CERTIFICATE OF ANALYSIS

SAMPLE(S) FROM OreQuest Consultants Ltd.
306 - 595 Howe Street
Vancouver, B.C.
V6C 2T5

REPORT No.
S3128

SAMPLE(S) OF Rock

INVOICE #: 18061
P.O.: R3430

Project: Bear (Dalhousie)

	Au ppb
24408	120
24409	120
24410	180
24411	130
24412	60
24413	5
24414	<5
24415	<5
24416	10
24417	80
24418	120
24419	15
24420	15
24421	10
24422	10
24423	10
24424	15
24425	10
24426	5
24427	10

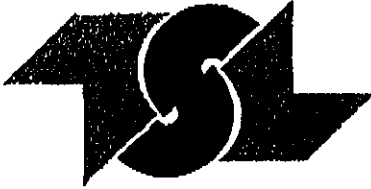
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S7K 6A4

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V6C 2T5

REPORT No.
S3128

SAMPLE(S) OF Rock

INVOICE #: 18061
P.O.: R3430

Project: Bear (Dalhousie)

	Au ppb
24428	15
24429	10
24430	40
24431	70
24432	20
24433	15
24434	20
24435	20
24436	30
24437	10
24438	10
24439	5
24440	5
24441	15
24442	15
24443	10
24444	15
24445	10
24446	10
24447	15

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CERTIFICATE OF ANALYSIS

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306 - 595 Howe Street
Vancouver, B.C.
V6C 2T5

REPORT No.
S3128

SAMPLE(S) OF Rock

INVOICE #: 18061
P.O.: R3430

Project: Bear (Dalhousie)

	Au ppb
24448	5
24449	10
24450	15

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PTOJ: BEAR
S3128

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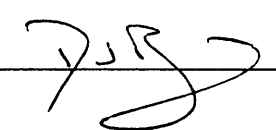
I.C.A.P. PLASMA SCAN

Aqua-Regia Digestion

REPORT No. : M9659
Page No. : 1 of 6
File No. : AU30MC
Date : SEP-03-1991

SAMPLE #	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sn ppm	Sr ppm	Ti ppm	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
24051	16	0.19	10	< 10	850	< 1	< 5	0.07	< 1	2	29	12	2.6	0.07	0.05	58	< 2	< 0.01	1	200	51	5	2	< 10	270	280	32	< 10	3	23	5
24052	22	0.08	5	< 10	1100	< 1	< 5	0.06	< 1	2	29	11	1.3	< 0.01	0.02	88	< 2	< 0.01	< 1	120	32	< 5	< 1	< 10	300	120	12	< 10	1	14	3
24053	10	0.28	5	< 10	1200	< 1	< 5	0.08	< 1	3	33	21	1.4	0.08	0.10	210	2	< 0.01	1	300	67	< 5	1	< 10	190	22	17	< 10	3	49	2
24054	52	0.04	400	< 10	230	< 1	< 5	0.02	< 1	5	39	48	0.81	< 0.01	0.02	1000	4	< 0.01	3	24	6200	25	1	< 10	330	4	2	< 10	1	78	3
24055	64	1.8	45	< 10	130	< 1	< 5	0.20	6	10	19	32	5.5	< 0.01	1.2	910	< 2	< 0.01	3	570	9999	40	5	< 10	190	30	60	20	5	260	10
24056	21	0.23	20	< 10	730	< 1	< 5	0.47	2	4	70	30	2.4	0.03	0.12	1100	< 2	< 0.01	3	86	210	5	2	< 10	290	42	16	< 10	2	58	5
24057	2	1.9	35	< 10	32	< 1	< 5	0.70	< 1	15	49	16	12	0.12	1.1	700	< 2	0.02	10	990	93	5	11	20	30	40	90	< 10	8	57	14
24058	2	0.29	25	< 10	7	< 1	< 5	2.1	< 1	22	28	7	8.0	0.20	0.96	1300	2	0.02	16	1000	20	< 5	10	< 10	64	7	17	< 10	8	36	13
24059	4	0.12	240	< 10	1	< 1	< 5	0.76	< 1	32	23	23	22	< 0.01	0.23	560	< 2	0.03	6	500	78	10	4	50	18	12	< 1	< 10	6	4	4
24060	5	0.39	110	10	5	< 1	< 5	1.2	< 1	26	27	24	19	0.15	0.69	1200	< 2	0.01	12	770	130	< 5	7	40	24	9	22	< 10	7	36	3
24061	< 1	0.86	20	< 10	14	< 1	< 5	0.36	< 1	12	39	6	7.9	0.03	0.64	280	2	0.05	7	670	9	< 5	4	10	12	22	49	< 10	4	14	12
24062	3	2.6	30	< 10	24	< 1	< 5	0.25	< 1	10	43	470	13	1.0	1.4	1600	48	0.02	< 1	350	13	5	2	10	16	500	25	< 10	3	120	7
24063	4	1.6	90	10	10	< 1	< 5	0.21	< 1	16	76	470	18	0.61	0.90	1100	24	< 0.01	3	290	12	< 5	1	30	10	460	21	< 10	3	140	< 1
24064	7	2.5	25	< 10	18	< 1	< 5	0.09	< 1	32	35	1700	15	0.42	1.4	2400	12	< 0.01	3	280	2	10	1	20	5	400	11	< 10	3	170	3
24065	9	2.8	250	< 10	5	< 1	< 5	0.12	2	20	22	720	24	0.30	1.6	2500	26	< 0.01	3	360	53	10	1	50	4	410	5	< 10	4	270	6
24066	17	1.8	80	< 10	5	< 1	< 5	0.12	11	18	56	9999	20	0.21	0.98	1800	30	< 0.01	1	200	53	15	< 1	30	7	210	5	20	3	480	< 1
24067	5	1.6	35	< 10	14	< 1	< 5	0.16	< 1	14	45	3400	12	0.72	0.76	1200	10	0.01	2	270	30	5	< 1	20	12	270	4	10	3	200	5
24068	15	1.4	100	< 10	3	< 1	< 5	0.22	6	34	64	9999	21	0.30	0.70	1000	6	0.02	2	100	18	10	< 1	40	10	170	6	20	3	300	3
24069	7	1.9	35	< 10	9	< 1	< 5	0.17	3	28	41	4400	20	0.49	0.93	1200	32	0.02	1	120	< 1	< 5	< 1	30	10	230	24	40	2	190	< 1
24070	7	1.6	100	< 10	2	< 1	< 5	0.12	< 1	37	26	7000	28	0.61	0.91	1300	10	< 0.01	< 1	170	< 1	10	< 1	40	6	210	27	80	3	290	< 1
24071	7	2.8	50	< 10	11	< 1	< 5	0.32	< 1	22	29	9700	19	0.58	1.4	2300	46	0.01	2	340	2	15	2	30	14	450	14	< 10	4	190	< 1
24072	3	2.5	30	< 10	30	< 1	< 5	0.18	< 1	12	21	2900	12	0.78	1.2	2000	16	0.01	2	370	12	10	1	< 10	11	470	12	10	3	110	4
24073	12	0.27	590	< 10	31	< 1	< 5	0.12	17	35	53	3900	9.8	0.14	0.12	3200	110	< 0.01	6	540	420	20	9	10	14	22	9	< 10	8	740	12
24074	11	0.34	430	< 10	86	< 1	< 5	0.06	12	54	87	1800	4.9	< 0.01	0.08	4100	64	< 0.01	8	420	140	35	11	< 10	9	11	24	< 10	6	500	11
24075	8	0.15	660	< 10	90	< 1	< 5	0.03	3	29	80	860	4.5	0.04	0.03	2600	40	< 0.01	5	520	160	70	4	< 10	17	8	16	< 10	3	270	7
24076	15	0.14	770	< 10	73	< 1	10	0.03	3	28	91	950	4.9	0.12	0.02	1400	50	< 0.01	6	600	250	70	4	< 10	17	7	15	< 10	2	260	8
24077	10	0.16	550	< 10	40	< 1	10	0.12	17	37	80	1300	3.7	0.05	0.04	2500	36	< 0.01	7	460	200	150	4	< 10	12	5	6	< 10	3	630	8
24078	31	0.33	1300	< 10	24	< 1	< 5	0.18	11	27	43	700	7.5	0.14	0.11	2000	120	< 0.01	8	620	470	110	6	< 10	30	16	26	< 10	7	510	11
24079	30	0.15	640	< 10	30	< 1	< 5	0.03	2	6	120	150	3.7	0.23	0.01	440	44	< 0.01	6	280	300	55	1	< 10	13	11	5	< 10	1	120	6
24080	28	0.11	920	< 10	87	< 1	< 5	0.02	2	5	46	290	6.1	0.31	0.01	220	64	< 0.01	3	670	310	65	2	< 10	32	8	8	< 10	2	120	10
24151	< 1	0.26	45	< 10	73	< 1	< 5	0.10	< 1	4	43	37	5.7	0.29	0.04	230	8	0.01	2	1200	9	< 5	4	< 10	18	23	47	< 10	3	22	10
24152	< 1	0.15	50	< 10	76	< 1	< 5	0.05	< 1	3	35	23	4.8	0.15	0.02	74	6	0.01	2	850	18	< 5	3	< 10	10	14	45	< 10	2	18	9
24153	< 1	0.18	55	< 10	91	< 1	< 5	0.08	< 1	3	21	27	10	0.18	0.02	180	2	< 0.01	< 1	2000	9	< 5	5	< 10	13	16	87	< 10	3	9	10
24154	< 1	0.14	50	< 10	41	< 1	< 5	0.22	< 1	9	38	26	8.2	0.34	0.01	300	8	< 0.01	7	1600	14	< 5	4	< 10	14	14	25	< 10	3	13	10
24155	< 1	0.13	75	< 10	67	< 1	< 5	0.05	< 1	9	17	46	11	0.23	0.01	690	6	< 0.01	2	1500	18	< 5	5	< 10	11	12	14	< 10	4	15	10

A .5 gm sample is digested with 2 ml of 3:1 HCL/HNO3
at 95 C for 90 min and diluted to 10 ml with DI H2O
This method is partial for many oxide materials

SIGNED : 

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2-302-48TH STREET, SASKATOON, SASKATCHEWAN S7K 6A4
PHONE #: (306) 931 - 1033 FAX #: (306) 242 - 4717

REPORT No. : M9659
Page No. : 2 of 6
File No. : AU30MC
Date : SEP-03-1991

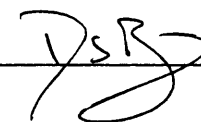
I.C.A.P. PLASMA SCAN

Aqua-Regia Digestion

SAMPLE #	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sn ppm	Sr ppm	Ti ppm	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
24156	< 1	0.20	40	< 10	87	< 1	< 5	0.04	< 1	4	26	32	7.4	0.28	0.02	480	6	0.01	2	1200	8	< 5	4	< 10	15	17	43	< 10	3	9	10
24157	25	0.27	25	< 10	66	< 1	15	0.08	1	5	21	30	5.7	0.01	0.03	220	< 2	0.01	2	1100	8	< 5	3	< 10	12	17	47	< 10	4	12	7
24158	< 1	0.16	25	< 10	49	< 1	< 5	0.04	< 1	3	15	21	4.1	0.12	0.02	160	4	0.01	< 1	720	6	< 5	2	< 10	6	10	26	< 10	2	6	7
24159	< 1	0.36	15	< 10	68	< 1	5	0.15	< 1	7	22	15	5.6	0.19	0.06	310	4	0.01	1	1200	6	< 5	4	< 10	8	19	47	< 10	4	9	11
24160	< 1	0.46	20	< 10	53	< 1	< 5	0.20	< 1	8	26	28	5.8	0.19	0.09	290	4	0.02	3	1200	4	< 5	6	< 10	8	20	72	< 10	6	11	12
24161	< 1	0.30	45	< 10	99	< 1	< 5	0.23	< 1	5	21	92	5.3	0.26	0.06	130	4	0.02	1	1300	9	< 5	4	< 10	12	21	71	< 10	4	7	11
24162	< 1	0.35	35	< 10	100	< 1	< 5	0.12	< 1	5	25	61	6.1	0.21	0.04	190	8	0.02	2	1400	49	< 5	5	< 10	7	25	78	< 10	4	8	13
24301	68	0.19	80	< 10	350	< 1	< 5	0.02	3	2	110	37	1.5	0.03	0.02	80	< 2	0.01	2	250	9999	55	2	< 10	4	10	25	< 10	2	320	6
24302	5	0.29	55	10	21	< 1	< 5	0.06	< 1	6	97	46	20	0.01	0.06	160	10	0.01	3	170	660	40	3	50	4	22	8	< 10	4	53	< 1
24303	2	0.14	< 5	< 10	200	< 1	< 5	9.4	< 1	7	19	10	13	0.04	0.87	4500	< 2	0.01	3	320	110	10	4	< 10	210	11	< 1	< 10	27	110	9
24304	< 1	0.36	20	< 10	340	< 1	< 5	0.52	3	16	35	35	4.4	0.14	0.06	1000	6	0.01	4	1200	310	10	8	< 10	21	17	18	< 10	11	300	11
24305	< 1	0.50	5	< 10	180	< 1	< 5	0.26	< 1	4	30	12	3.2	0.25	0.05	220	< 2	0.01	2	1000	54	< 5	3	< 10	11	35	14	< 10	10	66	9
24306	1	0.15	< 5	< 10	67	< 1	< 5	0.04	< 1	1	6	26	40	0.06	0.01	49	< 2	0.01	< 1	660	< 1	< 5	< 1	20	4	51	< 1	< 10	5	30	26
24307	< 1	0.30	35	< 10	140	< 1	< 5	0.28	< 1	1	26	5	3.7	0.17	0.01	33	< 2	0.01	< 1	1600	33	< 5	5	< 10	39	15	16	< 10	9	21	11
24308	4	0.18	420	< 10	140	< 1	< 5	0.13	< 1	1	13	5	4.9	0.25	0.01	41	46	0.01	< 1	1400	94	25	4	< 10	26	10	8	< 10	5	22	12
24309	< 1	1.4	90	< 10	7	< 1	< 5	0.23	< 1	25	24	8	11	0.01	1.3	280	< 2	0.06	6	960	4	< 5	1	20	8	39	30	< 10	4	16	10
24310	< 1	1.5	20	< 10	12	< 1	< 5	0.43	< 1	19	24	8	7.5	0.02	1.7	330	< 2	0.05	6	1200	5	< 5	3	10	11	50	54	< 10	5	19	10
24311	< 1	1.8	15	< 10	12	< 1	< 5	0.31	< 1	19	21	7	7.7	0.01	1.7	380	< 2	0.05	6	1200	3	< 5	4	< 10	9	35	95	< 10	6	23	12
24312	< 1	1.2	35	< 10	13	< 1	< 5	0.34	< 1	17	27	11	10	0.01	0.95	290	< 2	0.04	5	950	< 1	< 5	2	< 10	9	57	34	50	4	16	8
24313	1	0.49	60	< 10	41	< 1	< 5	0.35	< 1	6	35	12	11	0.09	0.22	670	4	0.01	< 1	1000	8	< 5	4	< 10	13	18	22	< 10	7	25	9
24314	2	1.1	35	< 10	250	< 1	< 5	12	< 1	3	13	12	11	0.01	1.7	4700	< 2	0.01	3	< 2	5	10	4	< 10	110	26	22	60	18	53	12
24315	1	0.92	55	< 10	8	< 1	< 5	2.3	< 1	23	37	24	22	0.01	0.86	1600	< 2	0.01	3	380	< 1	15	5	50	27	17	17	< 10	10	23	6
24316	< 1	0.68	10	< 10	46	< 1	< 5	0.29	< 1	7	16	15	4.6	0.23	0.27	400	2	0.01	3	1200	16	< 5	4	< 10	9	24	23	< 10	6	29	8
24317	< 1	0.41	20	< 10	48	< 1	< 5	0.10	< 1	9	24	16	4.5	0.17	0.09	240	4	0.01	2	1400	21	< 5	4	< 10	6	17	12	< 10	6	14	9
24318	< 1	0.44	20	< 10	24	< 1	< 5	0.13	1	8	12	18	4.8	0.10	0.16	270	4	0.01	1	1300	22	< 5	3	< 10	8	19	19	< 10	5	21	8
24319	< 1	0.37	40	< 10	71	< 1	< 5	0.12	< 1	7	23	18	3.9	0.28	0.12	180	< 2	0.01	2	1000	26	10	3	< 10	16	37	13	< 10	4	9	9
24320	< 1	0.49	20	< 10	31	< 1	< 5	0.19	< 1	12	17	22	5.0	0.21	0.18	470	4	0.01	2	1400	32	< 5	4	< 10	10	100	19	< 10	6	15	12
24321	< 1	1.4	20	< 10	59	< 1	< 5	0.39	< 1	11	11	10	5.1	0.20	1.1	970	2	0.01	3	1300	15	< 5	6	< 10	10	260	52	< 10	8	94	10
24322	< 1	0.76	15	< 10	40	< 1	< 5	0.13	< 1	7	14	6	4.5	0.25	0.44	370	4	0.01	2	1100	9	< 5	4	< 10	6	56	29	< 10	4	50	9
24323	< 1	0.98	10	< 10	26	< 1	< 5	0.65	1	9	14	9	4.7	0.20	0.70	740	< 2	0.01	1	1100	12	< 5	4	< 10	11	340	29	< 10	6	64	9
24324	< 1	1.2	20	< 10	38	< 1	< 5	0.51	< 1	9	13	11	5.1	0.23	0.92	860	< 2	0.01	2	1300	14	10	5	< 10	10	210	40	< 10	6	85	10
24325	< 1	1.2	20	< 10	61	< 1	< 5	0.36	< 1	6	16	11	3.9	0.16	0.89	650	< 2	0.01	3	1300	8	< 5	4	< 10	10	130	28	< 10	5	72	9
24326	< 1	0.94	15	< 10	69	< 1	< 5	0.21	< 1	5	16	10	3.8	0.34	0.63	510	2	0.01	2	1200	13	< 5	4	< 10	9	330	24	< 10	5	50	8
24327	< 1	0.95	5	< 10	30	< 1	< 5	0.32	< 1	7	19	14	4.4	0.26	0.53	440	< 2	0.01	3	1200	12	< 5	4	< 10	9	370	24	< 10	6	44	11
24328	< 1	1.0	10	< 10	35	< 1	< 5	0.40	< 1	6	12	13	4.4	0.17	0.66	530	< 2	0.01	2	1400	10	< 5	4	< 10	16	260	26	< 10	5	52	9

A .5 gm sample is digested with 2 ml of 3:1 HCL/HNO3
at 95 C for 90 min and diluted to 10 ml with DI H2O
This method is partial for many oxide materials

SIGNED :



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VANCOUVER B.C.
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T S L LABORATORIES

2-302-48TH STREET, SASKATOON, SASKATCHEWAN S7K 6A4
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REPORT No. : M9659

Page No. : 3 of 6

File No. : AU30MC

Date : SEP-03-1991

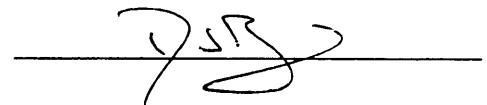
I.C.A.P. PLASMA SCAN

Aqua-Regia Digestion

SAMPLE #	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sn ppm	Sr ppm	Ti ppm	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
24329	< 1	1.3	5	< 10	35	< 1	< 5	0.25	< 1	5	13	10	4.4	0.25	0.98	470	< 2	< 0.01	1	1100	11	5	4	< 10	9	220	31	< 10	4	62	10
24330	< 1	1.4	20	< 10	21	< 1	< 5	0.47	< 1	7	18	12	4.4	0.23	1.2	500	< 2	< 0.01	4	1100	10	5	4	< 10	14	240	33	< 10	5	67	10
24331	< 1	0.42	10	< 10	33	< 1	< 5	0.30	< 1	6	18	12	3.1	0.10	0.12	330	< 2	< 0.01	1	940	13	< 5	3	< 10	12	330	9	< 10	6	7	7
24332	< 1	0.32	10	< 10	33	< 1	< 5	0.07	< 1	4	12	10	3.4	0.09	0.06	110	< 2	< 0.01	< 1	830	14	< 5	3	< 10	17	310	5	< 10	4	5	8
24333	< 1	0.48	10	< 10	51	< 1	< 5	0.09	< 1	7	14	14	3.6	0.19	0.15	420	< 2	< 0.01	< 1	1100	17	< 5	4	< 10	13	35	8	< 10	5	11	7
24334	< 1	0.43	10	< 10	56	< 1	< 5	0.08	< 1	4	10	13	3.2	0.24	0.12	180	< 2	< 0.01	< 1	880	14	< 5	2	< 10	10	15	7	< 10	4	9	6
24335	29	0.35	1600	< 10	7	< 1	< 5	1.1	17	80	17	>9999	33	0.07	0.48	6700	170	< 0.01	10	1500	140	55	4	40	67	7	< 1	< 10	21	350	15
24336	22	0.81	1600	< 10	2	< 1	< 5	0.33	14	76	21	>9999	33	0.02	0.53	5600	160	< 0.01	10	750	110	70	3	30	27	14	< 1	< 10	13	350	13
24337	27	2.0	1300	< 10	< 1	< 1	< 5	0.40	75	73	23	>9999	33	< 0.01	0.91	7000	160	< 0.01	11	740	140	210	7	30	29	36	4	20	12	500	14
24338	14	1.8	2500	< 10	7	< 1	< 5	0.39	3	72	32	>9999	31	< 0.01	0.69	6700	140	< 0.01	7	790	89	90	6	20	30	35	8	< 10	15	210	8
24339	14	0.88	870	< 10	18	1	< 5	0.91	4	53	13	>9999	36	< 0.01	0.67	7100	34	< 0.01	4	170	23	80	3	20	69	24	< 1	< 10	22	200	17
24340	48	0.63	750	< 10	16	1	< 5	1.0	200	64	< 1	>9999	35	0.01	0.76	6800	32	< 0.01	6	310	6100	140	5	20	60	14	< 1	130	19	>9999	18
24341	17	0.95	95	10	120	1	< 5	0.19	11	14	6	5900	24	0.05	0.52	7200	< 2	< 0.01	4	350	140	40	5	20	17	13	< 1	10	12	440	< 1
24351	4	0.68	75	< 10	45	< 1	< 5	0.41	< 1	20	17	370	8.7	0.07	0.18	1800	6	< 0.01	4	1000	78	10	6	< 10	28	440	90	< 10	10	88	14
24352	5	0.37	70	< 10	56	< 1	< 5	0.26	< 1	24	13	88	5.5	< 0.01	0.08	940	4	< 0.01	2	1200	71	5	4	< 10	11	270	64	< 10	8	29	10
24353	4	0.60	55	< 10	160	< 1	< 5	0.13	< 1	12	13	54	7.7	0.09	0.14	390	4	< 0.01	2	1100	54	< 5	3	< 10	14	460	97	< 10	7	32	9
24354	6	0.86	95	< 10	68	< 1	< 5	0.18	< 1	14	16	54	7.8	0.07	0.23	470	6	< 0.01	1	1000	58	5	4	< 10	14	230	82	< 10	7	43	10
24355	4	0.88	90	< 10	83	< 1	< 5	0.24	< 1	13	15	48	6.0	0.10	0.24	410	6	< 0.01	3	1300	60	< 5	4	< 10	13	220	83	< 10	8	43	10
24356	4	0.31	70	< 10	85	< 1	5	0.17	< 1	20	14	55	4.6	0.06	0.06	330	4	< 0.01	2	910	72	< 5	5	< 10	12	190	62	< 10	5	19	9
24357	3	0.33	50	< 10	93	< 1	< 5	0.41	< 1	19	15	51	3.7	0.14	0.07	580	< 2	< 0.01	2	1000	47	< 5	4	< 10	16	180	59	< 10	6	20	7
24358	2	0.17	55	< 10	59	< 1	< 5	2.1	< 1	22	14	35	3.3	0.08	0.03	940	< 2	< 0.01	2	820	37	< 5	5	< 10	49	95	36	< 10	7	13	6
24359	2	0.27	55	< 10	75	< 1	< 5	3.1	< 1	19	16	32	3.4	0.19	0.04	1400	6	< 0.01	2	860	40	< 5	4	< 10	58	64	35	< 10	7	18	7
24360	5	0.76	160	< 10	35	< 1	< 5	4.9	< 1	21	11	55	15	0.06	0.21	1900	< 2	< 0.01	1	640	48	15	3	< 10	50	81	65	70	12	66	5
24361	5	0.69	120	< 10	50	< 1	< 5	5.4	< 1	17	10	56	5.2	0.03	0.22	2300	6	< 0.01	1	970	80	< 5	4	< 10	68	51	55	< 10	13	120	9
24362	3	0.70	60	< 10	58	< 1	10	0.43	< 1	21	17	27	6.1	0.13	0.16	500	8	< 0.01	3	1200	69	< 5	4	< 10	20	320	74	< 10	8	38	11
24363	4	0.82	85	< 10	78	< 1	< 5	0.27	< 1	13	11	27	5.9	0.09	0.23	520	8	< 0.01	3	1200	66	< 5	6	< 10	11	190	80	< 10	7	50	10
24364	3	1.2	65	< 10	110	< 1	< 5	0.24	< 1	8	11	25	7.3	0.07	0.38	430	6	< 0.01	2	1300	56	< 5	5	< 10	11	210	91	< 10	8	59	11
24365	3	0.70	50	< 10	41	< 1	< 5	0.30	< 1	12	15	20	5.1	0.11	0.21	330	6	< 0.01	1	1200	76	< 5	4	< 10	14	120	71	< 10	6	39	11
24366	1	0.68	25	< 10	44	< 1	< 5	0.34	2	10	19	23	4.9	0.07	0.25	440	4	< 0.01	2	1000	43	< 5	4	< 10	13	120	74	< 10	7	46	10
24367	2	0.75	25	< 10	41	< 1	< 5	0.31	< 1	10	14	100	5.2	0.09	0.28	350	6	< 0.01	< 1	1200	45	< 5	4	< 10	14	150	69	< 10	6	50	9
24368	1	0.62	55	< 10	47	< 1	< 5	0.49	< 1	10	18	30	4.7	0.03	0.23	400	4	< 0.01	1	1100	44	10	4	< 10	25	190	69	< 10	7	38	10
24369	10	1.0	45	< 10	65	< 1	< 5	0.17	< 1	9	11	29	8.7	0.08	0.33	370	10	< 0.01	2	1100	59	10	4	< 10	11	360	100	< 10	7	52	13
24370	< 1	0.14	130	20	21	< 1	< 5	2.1	< 1	9	19	54	24	< 0.01	0.07	290	< 2	< 0.01	< 1	680	< 1	10	< 1	20	3	120	< 1	50	3	5	< 1
24371	1	0.29	210	< 10	19	< 1	< 5	0.52	< 1	6	18	43	27	< 0.01	0.10	120	< 2	< 0.01	< 1	980	3	10	< 1	20	45	800	2	< 10	3	2	3
24372	< 1	0.40	160	10	13	< 1	< 5	0.65	< 1	3	15	56	22	< 0.01	0.14	120	< 2	< 0.01	< 1	850	7	5	< 1	20	65	2000	32	< 10	3	5	4

A .5 gm sample is digested with 2 ml of 3:1 HCL/HNO3
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Page No. : 4 of 6

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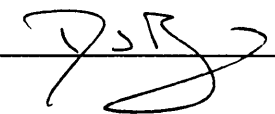
Date : SEP-03-1991

I.C.A.P. PLASMA SCAN

Aqua-Regia Digestion

SAMPLE #	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sn ppm	Sr ppm	Ti ppm	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
24373	< 1	0.81	75	< 10	13	< 1	< 5	1.1	< 1	3	24	10	5.4	< 0.01	0.41	230	6	< 0.01	1	880	12	< 5	3	< 10	110	2300	47	< 10	3	12	13
24374	< 1	0.90	60	< 10	15	< 1	< 5	0.94	< 1	20	29	18	7.5	< 0.01	0.61	290	4	< 0.01	1	970	12	< 5	4	< 10	100	2600	53	< 10	3	17	15
24375	< 1	1.2	30	< 10	7	< 1	< 5	1.5	< 1	6	54	12	3.6	< 0.01	0.54	420	4	< 0.01	4	900	6	< 5	4	< 10	160	2600	57	< 10	4	13	13
24376	< 1	1.6	20	< 10	7	< 1	< 5	1.7	< 1	13	47	14	4.2	< 0.01	1.1	900	4	< 0.01	7	1000	4	< 5	5	< 10	170	2800	76	< 10	5	24	14
24377	< 1	1.9	< 5	< 10	5	< 1	< 5	2.0	< 1	6	30	8	3.5	< 0.01	1.6	1000	4	0.01	6	1300	4	< 5	6	< 10	190	2900	81	< 10	7	33	13
24378	< 1	1.3	10	10	2	< 1	< 5	1.3	< 1	20	34	3	2.9	< 0.01	0.96	680	< 2	< 0.01	5	950	3	< 5	4	< 10	120	2400	46	< 10	4	18	12
24379	< 1	1.1	20	< 10	3	< 1	< 5	1.4	< 1	26	47	5	2.9	< 0.01	0.67	500	< 2	< 0.01	8	870	3	< 5	4	< 10	130	2200	53	< 10	4	12	12
24380	< 1	0.83	330	< 10	1	< 1	< 5	0.73	< 1	17	26	19	11	< 0.01	0.49	310	12	< 0.01	4	680	2	< 5	3	< 10	84	2300	47	< 10	3	15	18
24381	1	0.18	85	< 10	81	< 1	< 5	0.07	< 1	5	16	19	6.0	0.47	0.03	150	10	0.02	1	1300	220	< 5	3	< 10	27	97	17	< 10	2	80	9
24382	< 1	0.21	25	< 10	68	< 1	< 5	0.19	< 1	4	28	10	2.2	0.06	0.02	250	2	0.01	2	1000	44	< 5	2	< 10	10	27	4	< 10	5	56	4
24383	< 1	0.16	45	< 10	130	< 1	< 5	0.09	2	12	21	22	6.1	0.26	0.01	990	14	< 0.01	4	1300	58	< 5	5	< 10	11	19	5	< 10	5	170	11
24384	< 1	0.12	50	< 10	140	< 1	< 5	0.08	< 1	3	20	9	3.6	0.22	< 0.01	100	8	0.02	1	830	77	< 5	3	< 10	9	30	10	< 10	3	61	7
24385	2	0.14	140	< 10	68	< 1	< 5	0.05	< 1	4	20	17	7.5	0.24	< 0.01	95	14	0.02	1	1000	70	< 5	3	< 10	15	25	30	< 10	3	32	10
24386	< 1	0.11	55	< 10	78	< 1	< 5	0.05	< 1	4	23	11	5.1	0.29	< 0.01	78	18	0.01	< 1	1200	27	< 5	2	< 10	17	16	8	< 10	2	22	8
24387	< 1	0.15	20	< 10	100	< 1	< 5	0.04	< 1	2	21	8	2.8	0.35	< 0.01	25	10	0.01	< 1	560	15	< 5	2	< 10	12	16	19	< 10	1	10	4
24388	< 1	0.14	90	< 10	67	< 1	< 5	0.12	< 1	5	20	24	6.0	0.27	0.03	180	28	0.01	1	2000	45	5	3	< 10	15	13	4	< 10	4	48	10
24389	< 1	0.12	40	< 10	75	< 1	< 5	0.02	< 1	6	16	8	4.5	0.49	< 0.01	320	14	< 0.01	3	1300	65	< 5	2	< 10	30	11	2	< 10	3	45	6
24390	< 1	0.10	45	< 10	52	< 1	5	0.03	1	2	10	7	5.6	0.59	< 0.01	110	14	< 0.01	< 1	2000	110	< 5	2	< 10	39	12	3	< 10	2	62	9
24391	< 1	0.11	35	< 10	55	< 1	< 5	0.02	< 1	4	21	7	2.8	0.37	< 0.01	30	10	< 0.01	2	680	32	< 5	1	< 10	9	12	7	< 10	2	13	5
24392	< 1	0.12	30	< 10	68	< 1	5	0.05	< 1	4	17	8	5.3	0.31	< 0.01	150	8	< 0.01	< 1	1700	13	< 5	1	< 10	20	12	16	< 10	2	10	8
24393	< 1	0.14	35	< 10	82	< 1	< 5	0.02	1	2	19	27	11	0.38	< 0.01	110	6	< 0.01	< 1	1500	5	< 5	2	< 10	22	14	16	< 10	2	13	9
24394	< 1	0.20	50	< 10	76	< 1	< 5	0.07	< 1	5	18	20	7.8	0.17	0.01	240	10	< 0.01	2	1400	13	< 5	3	< 10	11	14	11	< 10	2	14	10
24395	< 1	0.20	35	< 10	65	< 1	< 5	0.20	< 1	3	24	10	3.9	0.18	0.02	67	6	< 0.01	1	1400	12	< 5	2	< 10	11	21	26	< 10	4	7	7
24396	< 1	0.12	30	< 10	68	< 1	< 5	0.07	< 1	3	15	9	4.5	0.07	< 0.01	53	8	< 0.01	1	960	9	< 5	2	< 10	8	19	19	< 10	2	7	7
24397	< 1	0.45	35	< 10	51	< 1	< 5	0.13	< 1	6	23	10	5.5	0.24	0.08	420	6	0.01	3	990	6	< 5	3	< 10	8	20	59	< 10	4	15	9
24398	< 1	0.32	40	< 10	40	< 1	< 5	0.11	< 1	10	20	24	9.8	0.29	0.05	1200	4	< 0.01	3	1800	7	< 5	5	< 10	25	22	56	< 10	3	17	9
24399	< 1	0.23	25	< 10	38	< 1	5	0.25	< 1	7	27	10	5.0	0.23	0.03	230	4	< 0.01	3	1400	8	< 5	3	< 10	13	25	29	< 10	4	9	10
24400	< 1	0.26	15	< 10	45	< 1	< 5	0.37	< 1	7	21	15	4.7	0.28	0.04	300	4	< 0.01	3	1300	5	< 5	3	< 10	15	18	28	< 10	5	13	10
24401	8	3.7	290	20	22	3	< 5	2.8	5	40	14	3000	22	< 0.01	2.0	5400	18	< 0.01	4	820	89	25	5	30	130	160	31	< 10	9	520	10
24402	14	4.2	140	10	13	2	< 5	3.0	4	39	11	9999	24	0.02	2.1	5700	2	< 0.01	2	1200	21	30	4	20	120	170	< 1	20	8	840	6
24403	4	2.1	55	20	59	2	< 5	0.79	< 1	9	31	760	23	0.04	1.8	3000	8	< 0.01	2	390	38	15	2	20	34	180	< 1	< 10	8	130	7
24404	6	1.9	80	10	13	5	< 5	2.0	3	11	17	2300	30	< 0.01	1.8	5200	2	< 0.01	< 1	830	44	15	2	30	60	280	< 1	20	24	570	15
24405	3	2.3	55	20	12	5	< 5	1.6	2	7	19	940	26	< 0.01	1.8	5200	< 2	< 0.01	< 1	1100	39	25	4	30	53	380	< 1	< 10	14	440	8
24406	8	3.5	170	30	15	4	< 5	1.9	1	9	15	150	26	< 0.01	1.9	7200	< 2	< 0.01	< 1	580	80	20	6	20	61	540	33	< 10	11	210	14
24407	10	2.0	300	< 10	7	3	< 5	1.4	1	8	12	230	33	0.06	0.89	4600	2	< 0.01	< 1	330	450	25	2	20	34	310	< 1	10	10	630	13

A .5 gm sample is digested with 2 ml of 3:1 HCL/HNO3 at 95 C for 90 min and diluted to 10 ml with DI H2O This method is partial for many oxide materials

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Aqua-Regia Digestion

SAMPLE #	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sn ppm	Sr ppm	Ti ppm	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
24408	15	0.66	450	20	23	4	< 5	0.37	3	7	12	240	37	0.07	0.37	2200	8	0.01	1	300	270	40	< 1	30	19	190	< 1	20	6	630	20
24409	8	0.91	420	10	33	2	< 5	0.89	< 1	7	16	230	32	< 0.01	0.50	2700	58	< 0.01	< 1	370	120	45	< 1	20	31	210	< 1	10	8	470	8
24410	13	0.85	690	20	30	2	< 5	0.16	< 1	4	13	280	36	0.03	0.48	1600	66	< 0.01	< 1	470	240	45	< 1	30	12	320	< 1	< 10	7	480	14
24411	17	1.1	530	10	38	2	< 5	0.34	< 1	9	15	380	29	< 0.01	0.89	1900	210	< 0.01	< 1	370	240	40	< 1	20	16	220	< 1	< 10	7	360	4
24412	21	0.97	480	20	23	1	< 5	0.35	< 1	9	13	300	23	0.03	1.4	1500	22	< 0.01	< 1	440	190	40	< 1	30	51	320	< 1	< 10	5	480	1
24413	< 1	1.4	45	< 10	440	< 1	< 5	0.56	< 1	11	40	70	3.8	< 0.01	1.2	670	6	0.03	11	910	44	10	2	< 10	74	990	34	< 10	3	190	12
24414	< 1	1.6	30	< 10	160	< 1	5	0.62	2	11	35	50	4.3	0.14	1.4	1100	4	0.04	10	930	48	< 5	3	< 10	74	1200	42	< 10	4	210	15
24415	1	1.6	80	< 10	71	< 1	< 5	0.88	1	12	26	110	4.7	0.04	1.2	2900	8	< 0.01	2	700	28	< 5	1	< 10	120	470	7	10	6	210	11
24416	4	2.7	230	10	19	1	< 5	1.1	< 1	19	18	1600	18	< 0.01	1.9	4400	12	< 0.01	3	800	46	10	1	30	130	590	2	< 10	8	360	5
24417	19	2.1	710	10	3	2	< 5	0.12	< 1	38	13	250	27	0.03	2.1	2500	< 2	< 0.01	4	390	120	45	< 1	40	14	260	< 1	10	6	680	2
24418	18	1.2	640	< 10	3	1	< 5	0.15	< 1	26	21	160	30	< 0.01	1.7	1400	48	< 0.01	1	280	130	45	< 1	40	19	290	< 1	< 10	6	210	9
24419	10	1.1	490	10	11	1	< 5	0.12	< 1	10	26	400	28	< 0.01	1.4	1000	18	< 0.01	< 1	320	130	40	< 1	30	27	290	< 1	20	5	160	5
24420	2	0.68	120	< 10	32	< 1	< 5	0.37	< 1	7	30	54	5.0	0.11	0.49	390	2	< 0.01	< 1	730	32	10	1	< 10	77	790	13	< 10	5	56	12
24421	4	0.71	130	< 10	26	< 1	< 5	0.34	< 1	8	30	22	5.2	0.02	0.50	380	8	< 0.01	< 1	700	40	10	2	< 10	70	820	17	< 10	5	110	13
24422	2	0.62	110	< 10	29	< 1	5	0.26	< 1	13	30	31	6.2	< 0.01	0.45	390	8	< 0.01	2	690	63	15	2	< 10	48	870	12	< 10	7	350	19
24423	3	0.71	110	< 10	37	< 1	< 5	0.24	< 1	10	31	36	4.3	< 0.01	0.64	440	4	< 0.01	< 1	740	42	10	2	< 10	35	770	15	< 10	5	100	14
24424	5	0.88	150	< 10	52	< 1	< 5	0.27	< 1	10	23	48	4.1	0.19	0.91	580	2	< 0.01	1	730	61	15	3	< 10	23	810	17	< 10	7	130	13
24425	2	0.90	60	< 10	74	< 1	< 5	0.33	< 1	7	32	450	4.0	0.06	0.88	580	2	< 0.01	< 1	780	41	10	2	< 10	25	790	22	< 10	9	120	14
24426	4	1.3	110	< 10	59	< 1	< 5	0.23	< 1	7	21	170	5.6	0.22	1.1	750	6	< 0.01	< 1	820	63	10	3	< 10	22	710	30	< 10	7	140	16
24427	6	1.5	200	< 10	57	< 1	< 5	0.15	< 1	6	22	340	8.4	< 0.01	1.2	1600	4	< 0.01	< 1	830	120	25	3	< 10	15	770	38	< 10	8	180	17
24428	13	1.3	220	< 10	55	< 1	< 5	0.14	< 1	10	18	340	8.0	0.01	0.96	880	10	< 0.01	3	790	78	40	4	< 10	10	850	52	30	8	560	16
24429	9	1.5	210	< 10	120	< 1	< 5	0.19	< 1	5	25	250	8.0	< 0.01	0.97	710	4	0.01	1	870	82	10	5	< 10	21	940	60	20	10	470	17
24430	15	1.2	770	< 10	22	< 1	< 5	0.61	1	12	21	360	15	0.05	1.1	770	4	< 0.01	< 1	810	58	35	2	10	15	470	29	20	11	590	6
24431	7	0.24	1500	40	1	2	< 5	4.4	6	72	15	3500	30	< 0.01	0.29	4200	4	< 0.01	1	630	110	30	< 1	40	75	38	< 1	20	8	570	15
24432	2	0.04	160	20	5	< 1	< 5	0.23	< 1	5	45	230	17	< 0.01	0.03	250	44	< 0.01	1	62	6	10	< 1	30	5	18	< 1	< 10	2	49	< 1
24433	17	1.8	230	10	8	< 1	< 5	0.15	< 1	12	9	140	20	0.03	0.86	1800	4	< 0.01	3	920	100	15	5	30	6	120	56	< 10	6	150	2
24434	6	1.6	210	10	21	< 1	< 5	0.14	< 1	9	9	60	21	0.10	0.68	890	< 2	< 0.01	2	810	61	20	5	30	7	400	58	20	7	120	3
24435	5	0.31	80	< 10	56	< 1	5	0.12	< 1	13	10	32	5.6	0.09	0.08	900	6	< 0.01	3	1000	66	5	4	< 10	9	380	69	< 10	5	17	12
24436	8	0.44	95	< 10	70	< 1	< 5	0.15	< 1	10	15	22	5.1	0.17	0.13	440	10	< 0.01	2	1100	98	5	4	< 10	13	220	78	< 10	5	20	10
24437	2	0.65	30	< 10	49	< 1	< 5	0.37	< 1	10	10	15	4.7	0.10	0.25	560	4	< 0.01	1	1200	42	5	4	< 10	10	170	68	< 10	9	35	9
24438	2	0.36	25	< 10	47	< 1	< 5	0.23	< 1	10	13	12	4.1	0.12	0.11	300	4	< 0.01	< 1	930	42	< 5	4	< 10	10	150	63	< 10	5	20	8
24439	2	0.45	40	< 10	32	< 1	< 5	0.23	< 1	6	11	13	4.3	0.06	0.15	210	4	< 0.01	2	990	49	< 5	3	< 10	9	150	62	< 10	4	26	7
24440	1	0.61	30	< 10	62	< 1	< 5	0.16	< 1	7	14	36	4.7	0.08	0.19	290	4	< 0.01	< 1	1200	40	< 5	3	< 10	11	130	61	< 10	5	31	9
24441	2	0.16	35	< 10	44	< 1	< 5	0.09	< 1	8	13	18	3.0	0.14	0.02	43	2	< 0.01	< 1	840	64	< 5	1	< 10	8	110	30	< 10	2	6	5
24442	3	0.32	30	< 10	81	< 1	< 5	0.11	< 1	5	12	13	4.0	0.20	0.09	290	6	< 0.01	< 1	1100	67	< 5	2	< 10	16	160	49	< 10	4	14	7

A .5 gm sample is digested with 2 ml of 3:1 HCL/HNO3
at 95 C for 90 min and diluted to 10 ml with DI H2O
This method is partial for many oxide materials

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REPORT No. : M9659

Page No. : 6 of 6

File No. : AU30MC

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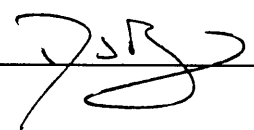
I.C.A.P. PLASMA SCAN

Aqua-Regia Digestion

SAMPLE #	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sn ppm	Sr ppm	Ti ppm	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
24443	4	0.39	35	< 10	63	< 1	5	0.16	1	7	8	23	5.6	0.17	0.11	260	4	< 0.01	< 1	1100	71	< 5	3	< 10	11	280	84	< 10	5	17	10
24444	3	0.61	45	< 10	30	< 1	10	0.30	< 1	12	11	120	5.5	0.20	0.20	370	6	< 0.01	1	1200	66	< 5	4	< 10	13	200	68	< 10	7	37	12
24445	2	0.73	45	< 10	36	< 1	5	0.26	< 1	12	11	100	5.1	0.10	0.24	380	6	< 0.01	< 1	1300	47	< 5	4	< 10	9	160	63	< 10	7	48	11
24446	4	0.57	100	< 10	25	< 1	5	0.26	< 1	16	17	67	5.4	0.38	0.16	450	2	< 0.01	1	1100	62	< 5	3	< 10	9	100	53	< 10	6	40	9
24447	3	0.81	70	< 10	34	< 1	< 5	0.23	< 1	13	17	110	5.0	0.37	0.26	450	4	< 0.01	1	1200	56	< 5	3	< 10	11	78	58	< 10	5	55	9
24448	3	0.46	70	< 10	29	< 1	< 5	0.27	< 1	10	14	47	5.3	0.36	0.14	390	4	< 0.01	1	1100	60	15	3	< 10	14	120	46	< 10	6	49	10
24449	2	0.77	80	< 10	42	< 1	5	0.42	< 1	14	12	50	5.4	0.07	0.23	870	6	< 0.01	3	1300	43	< 5	5	< 10	14	130	65	< 10	8	67	11
24450	3	0.52	60	< 10	58	< 1	10	0.21	< 1	13	10	20	5.5	0.19	0.13	340	10	< 0.01	1	1200	57	< 5	4	< 10	9	260	59	< 10	6	30	11

A .5 gm sample is digested with 2 ml of 3:1 HCL/HNO3 at 95 C for 90 min and diluted to 10 ml with DI H2O This method is partial for many oxide materials

SIGNED :



APPENDIX III
ROCK SAMPLE DESCRIPTIONS

~~PROJECT~~ PROJECT

Sample:	Date:	Location:	Lithology:	Remarks / Alteration / Structure:	Mineralization:	Analysis:
24051	08/16/91	Barite Vein	Barite Vein #1	2m chip, white vein with 5-10% hematite	None visible	
24052	"	"	"	"	"	
24053	"	"	"	2.3m chip	Trace py	
24054	"	"	"	1.5m chip, no hematite in vein	1-2% py, 5% galena + tr sph, cpy over last 10cm of sample	
24055	"	"	"	1.5m chip, 1/2 andesite, 1/2 barite vein	up to 15-20% gal, 2-3% cpy and 1% sph? over 15-20cm at contact with andesite	
24056	"	"	Barite Vein #2	0.7m chip, barren vein	None visible	
24057	08/17/91	RUFUS-ARGENTA	YELLOW GOSSON	intense yellow gossion. 2.0m chip siliceous unit = EF??	5-10% py, 1-2% specular hematite	
24058	"	"	ORANGE GOSSON	2 3m chip, strongly oxidized siliceous gossion = dacite? or an altered stockwork zone?? Elev: 790m	5-8% fine diss. py	
24059	"	"	STACKWORK VEIN	Silicified gossionaceous pyritic stockwork vein, Elev: 800m	60% massive py	
24060	"	"	"	"	"	
24061	"	"	"	2m chip over pyritic stockwork vein	10-15% pyrite	
24062	08/16/91	Dalhousie Claim	Dacite / Andesite?	1m chip, cut #2 silt silicified looking andesite?? tuff with variable replacement by quartz	5-10% py, 1% cpy tr magnetite "	
24063	"	"	"	"	"	
24064	"	"	"	"	"	
24065	"	"	"	"	40-50% py, 3-5% cpy	
24066	"	"	"	"	"	
24067	"	"	"	"	5-10% py, 1% cpy, tr magnetite	
24068	"	"	"	"	"	

BEAR PROJECT

Sample:	Date:	Location:	Lithology:	Remarks / Alteration / Structure:	Mineralization:	Analysis:
24301	Aug. 16	Barite claims	Dacite	Chip 1.6 m from silicif dacite	1-2% py, limon.	
24302	-4-	- " -	Dacite ?	Grab from a pod of silicif dacite 40 cm across with 20-30% py	20-30% py	
24303	- " -	- " -		Chip 1.0 m across calc-lim stockwork zone ~ 1 m wide striking 135 / vert.	limonite	
24304	- " -	- " -	dacite ?	Chip 3.2 m from completely sericite altered rock	limonite	
24305	- " -	- " -	dacite / andesite	chip 2.0 m from silicified limonitic dacland.	- " -	
24306	- " -	- " -		Chip 0.5 m through sericitic breccia body 0.5 m across	70-80% limon-goethite	
24307	- " -	- " -	- " -	Chip 2.0 m through porphyry dacite / andes.	limonite	
24308	- " -	- " -	- " -	- " -	- " -	
24309	Aug 17	"Stockwork zone"	And. congl/breccia	Chip 2.0 m over pyrite-silica altered zone	10-30% py	
24310	- " -	- " -	- " -	- " -	- " -	
24311	- " -	- " -	- " -	- " -	- " -	
24312	- " -	- " -	- " -	Chip 2.5 m over pyrite-silica altered zone	- " -	
24313	- " -	- " -	- " -	Chip 1.0 m from pyr-qu-ser altered zone	5-10% py	
24314	- " -	- " -		Chip 0.6 m across qu-calc-barite vein oriented 50° / vert	limonite, minor py.	
24315	- " -	- " -	- " -	Grab from py-qu-ser altered zone	10-15% py.	

BEAR Project

Sample:	Date:	Location:	Lithology:	Remarks / Alteration / Structure:	Mineralization:	Analysis:
24316	Aug. 18	West of the Barite Claims	Andesitic congl./breccia	Chip 2.0 m over pyr-quartz -seric. altered rock	5-10% pyr	
24317	- -	- -	- -	- -	- -	
24318	- -	- -	"	- -	- -	
24319	- -	- -	"	- -	- -	
24320	- -	- -	"	- -	- -	
24321	- -	- -	"	- -	3-5% pyr.	
24322	- -	- -	"	- -	- -	
24323	- -	- -	"	- -	- -	
24324	- -	- -	"	- -	- -	
24325	- -	- -	"	- -	- -	
24326	- -	- -	"	- -	- -	
24327	- -	- -	"	- -	- -	
24328	- -	- -	"	- -	- -	
24329	- -	- -	"	- -	- -	
24330	- -	- -	"	- -	- -	
24331	- -	- -	"	- -	- -	
24332	- -	- -	"	- -	- -	
24333	- -	- -	"	- -	- -	
24334	- -	- -	"	- -	- -	
24335	Aug. 19	Red Top Showing	Andesite	Chip 2.0 m / silicific.	10-20% chalc, minor limon, pyr., malach	
24336	- -	- -	Andes + argillite	Chip 2.0 m / silicific.	20-30% chalc, 1-3% opyr	
24337	- -	- -	Andes + argillite	- -	10-20% chalc, limonite, minor pyr, malach, wad	
24338	- -	- -	- -	- -	3-5% chalc, minor pyr, malach., wad	
24339	- -	- -	- -	- -	- -	
24340	- -	- -	Andesite	Chip 2.0 m / chloritization	1% chalc, minor malach	
24341	- -	- -	- -	- -	- -	