

GEOLOGICAL AND GEOCHEMICAL ASSESSMENT REPORT

ON THE LES CLAIM GROUP

VANCOUVER MINING DIVISION

CHEAKAMUS RIVER AREA, BRITISH COLUMBIA

LOCATION:

N.T.S. : 92 J/3E  
LATITUDE : 50° 06'N  
LONGITUDE : 123° 04'W

CLAIMS:

LES III (# 2416)  
LES IV (# 2495)  
LES V (# 2850)

OWNER/OPERATOR

LES DEMCZUK  
1835 E. 13TH AVE.  
VANCOUVER B.C.

BY

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SEPTEMBER 15, 1990

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GEOLOGICAL BRANCH  
ASSESSMENT REPORT

20,627

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## 1.0 SUMMARY

The Les claim group consisting of 38 units is located approximately 8 km of the Whistler in the Cheakamus River Area B.C. (Vancouver Mining Division). The property was staked by Les Demczuk to explore for deposits similar to those adjacent Northair Mines Property and nearby Silver Tusk Mines Ltd. Property. The Northair deposits are about 3 km north and Silver Tusk deposits are about 4 km southwest of the subject property.

The Les property is underlain by quartz diorite (Coast Plutonic Complex) and metavolcanic (Gambier Group), but much of the property remains unexplored. The geological and geochemical survey located silver-copper showing along the old logging road. This mineralization is exposed for a width of about 2-3 m and length of at least 25 m. Chip samples from this showing average 46.5 ppm (1.5 oz/t) silver, 3.1% copper and 134 ppm molybdenum. Work performed so far on the Les property produced undoubtedly positive results and further work on the property is fully warranted.

In order to fully evaluated mineral potential of the Les claims a program of prospecting, detailed geological mapping, geochemical and geophysical survey is warranted and recommended.

## 2.0 INTRODUCTION

The Les III, IV and V claim groups consists of 38 units and are owned by Les Demczuk of Vancouver B.C.

The field work on the claims was conducted in May, June and August totaling 7 field days by Les Demczuk geologist and B. Ablay assistant. The work consisted of prospecting, reconnaissance mapping, rock and silt sampling.

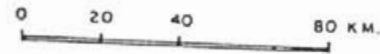
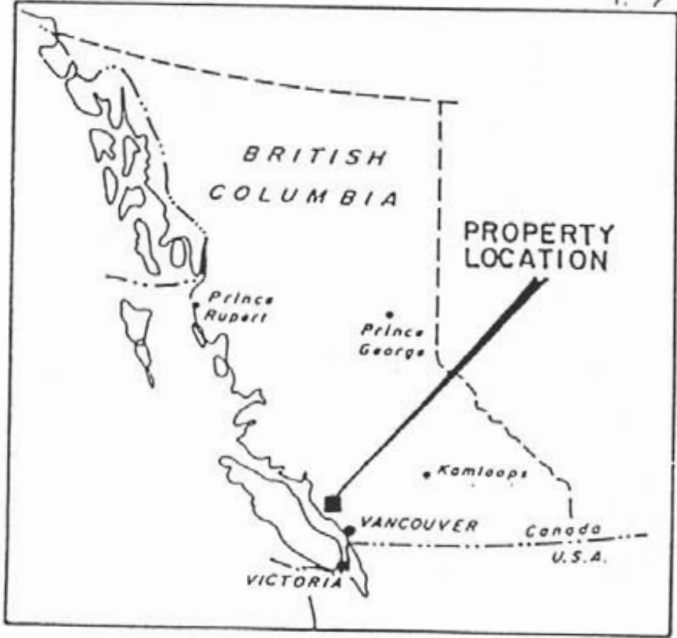
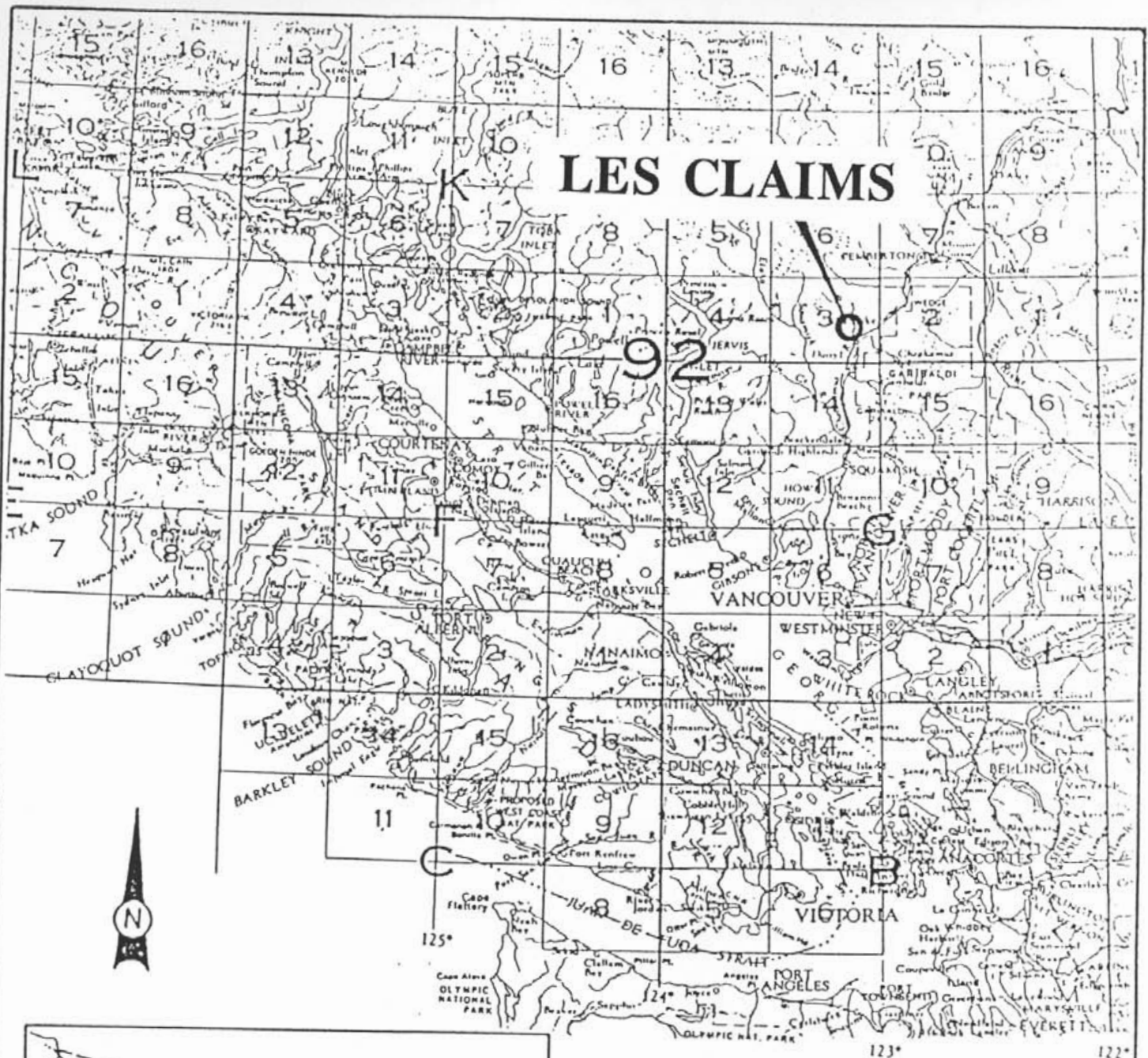
The field work and results described within this report are intended to fulfill the assessment requirements for the Les III, IV and V claims.

## 2.1 LOCATION AND ACCESS

The Les claim block is located in the Vancouver Mining Division approximately 8 km of the ski-resort of Whistler and 85 km north of Vancouver B.C.

Access to the property from Vancouver is Via Highway 99 to the Callaghan Creek Logging (Northair Mine) road which extends northward about 2 km to the southern property boundary. Logging operations throughout the property have resulted in a network of two and four-wheel drive roads on the property.

Elevation on the property range from about 2000 feet (610 meters) in the Cheakamus River Valley to about 5200 feet (1700 meters) with strong relief of 1100 meters. Vegetation is typical of coast rain forest with most of the property being recently logged for commercial stands of hemlock, yellow cedar and balsam.



<b>LES CLAIMS</b>		
<b>LOCATION MAP</b>		
SCALE: AS SHOWN	DATE: SEPT./1990	NTS. 92J/3E
<b>LES DEMCZUK</b>		FIGURE No 1

## 2.2 CLAIM STATUS

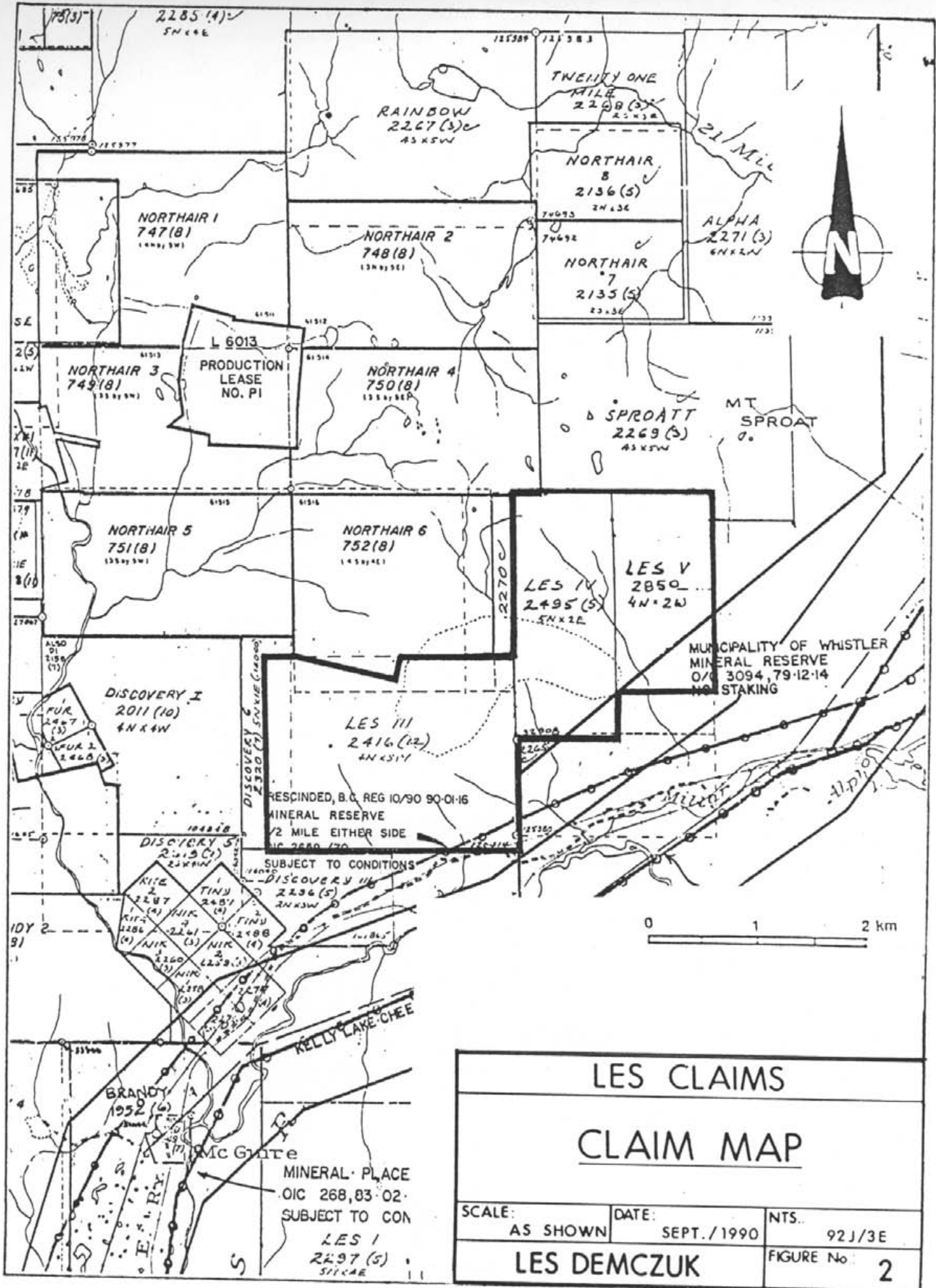
The Les claim group consists of three continuous claim blocks (Les III, IV and V ) totaling 38 metric units in the Vancouver Mining Division.

Claim locations shown on Figure 2 are after government claim map 92 J/3E with pertinent claim data summarized below:

<u>Claim</u>	<u>Units</u>	<u>Record No</u>	<u>Record date</u>
Les III	20	2416	Dec 30, 1988
Les IV	10	2495	May 20, 1989
Les V	8	2850	June 28, 1990

## 2.3 HISTORY

The earliest recorded work in the area dates back to 1917 when prospectors first located veins with precious and base metal values in the Brandywine Creek area. Various mineral groups such as the AMADRA, BRANDYWINE, BLUEJACK, ASTRA, and FITZSIMMONS were staked along with numerous other small groups. Sporadic interest continued through the years in areas such as these and others such as the east side of Daisy Lake area. In 1969, a Vancouver dentist prospecting along Callaghan Creek isolated mineralized Float in conjunction with anomalous stream sediment samples. Lead-zinc-copper mineralization was later isolated in outcrop during the 1970 summer and later trenching exposed what is known today as the Manifold Zone. Two other zones (Discovery and Warman) were also found, and the three combined gave birth to the Northair Mine.



<b>LES CLAIMS</b>		
<b>CLAIM MAP</b>		
SCALE:	DATE:	NTS.
AS SHOWN	SEPT./1990	92J/3E
<b>LES DEMCZUK</b>		FIGURE No. 2

Les III previously known as Discon claim group. In 1979 and 1981 Crack Resources performed exploration program including mapping soil sampling and I.P. survey. Mr. J.B. Davies (Ph.D.) reported: "Chalcopyrite, Argentite and Gold exist on surface outcrops near the fracture zones. Grab samples of these rocks yielded .66 oz/t Ag. .04 oz/t Au and 1-2% Cu. Soil and stream sediment samples taken in October of 1978 and April 1980 show consistently high values for copper, silver and gold in two areas. A VLF instrument, recorded anomalous values, in the same vicinity. The apparent wallrock alteration, Cu and iron staining abundant minerals on surface outcrops, large surface extend of quartz-carbonate veins on strike only 4 km south of Northair veins, along with the geochemical and geophysical results establish a promising foundation of evidence for potentially significant mineralization in the Discon claims. (Ass. Rep. 8833).

In 1981 Crack Resources established small grid on the south east part of Discon claim block and Mr. Davies (ph.D.) concluded. "copper minerals have been found on Discon in a number of outcrops of different character-chalcopyrite and leached salts, zinc salts such as smithsonite and hydrozincite are exposed over large areas."

#### Soil Sampling Survey:

"Anomalous zones are extensive in the north of the grid being mainly for silver, zinc, lead primary. To the south (where carbonate rocks occur) occur copper and zinc anomalies."

#### J.P. Survey:

"The largest values are on line 7+50N with values greater than 50. This anomalous chargeability is exceptionally high and indicates the possible presence of a high metal content ore-body." (Ass. Rep. 11127).

Les IV and V claims were staked to cover of the C3A claim block. This claim block was previously own by McMahon Resources Ltd. and work conducted in 1984 identified favorable for precious and base metals mineralization Cambier Group rocks. Three copper-molybdenum showings have been located on the property (Main showing 5 m width and at least 25 m long-.5 oz.t Ag. .5% Cu and .1% molybdenum). Mr. Cukor P. Eng located a few gold anomalous zones on the C3A claim with the highest value of .086 oz/t Au. (Ass. Rep. 12801 and 17063).



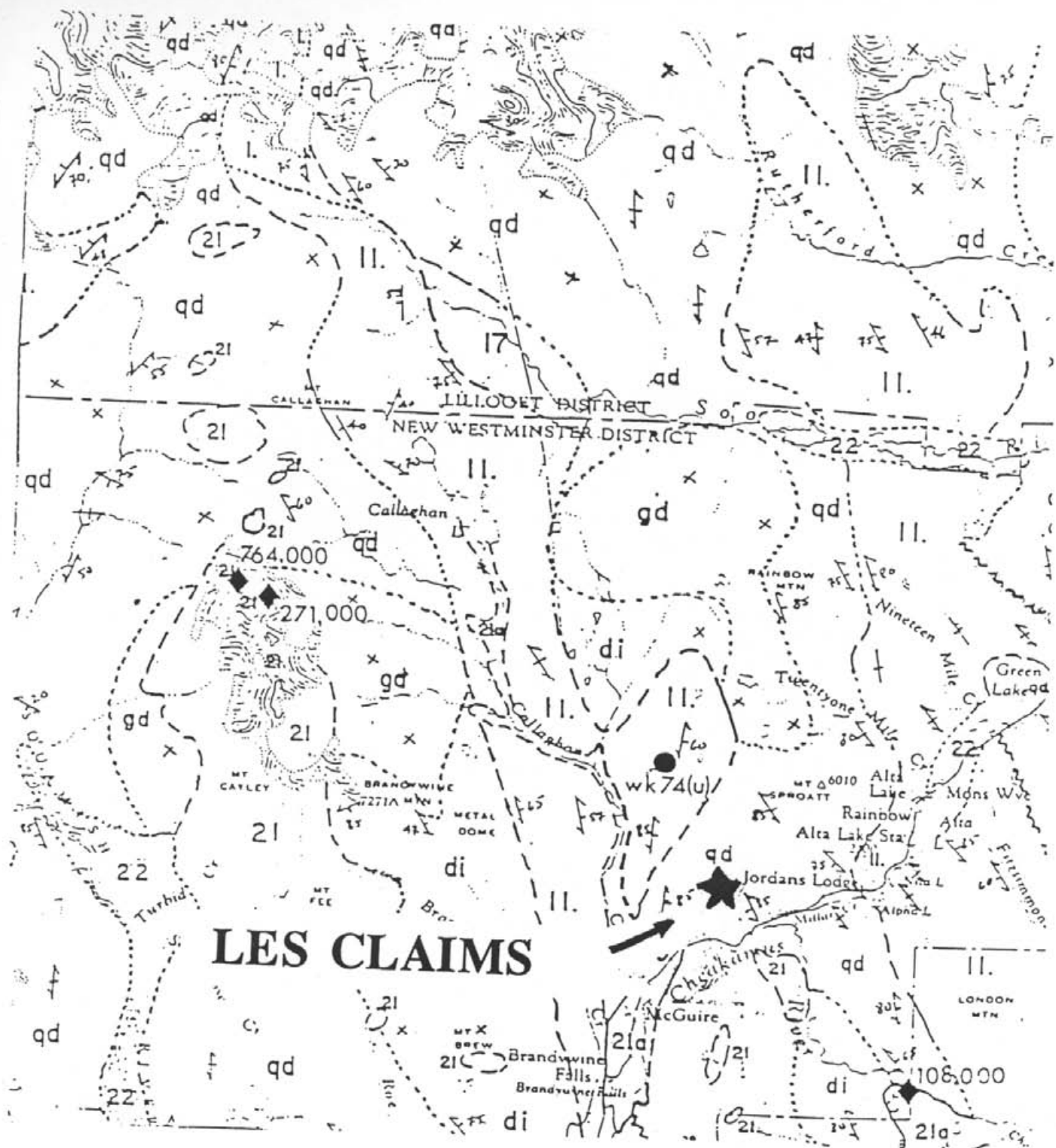
### 3.0 GEOLOGY

#### 3.1 REGIONAL GEOLOGY AND MINERALIZATION

Regionally the area is underlain by volcanic and sedimentary rocks of the Callaghan Creek roof pendant. This pendant forms one of the many volcanic/sedimentary roof pendants found within the Coastal Plutonic Complex of British Columbia and correlates similarly to the area and formation of the Gambier Group Britannia Mine roof pendant. Associations of the Callaghan Creek roof pendant to the Cheakamus and Fire Lake Groups have also been suggested but confirmation is still in doubt. A K/Ar date of  $127 \pm 4$  Ma on hornblende on a possible zone within the Callaghan Creek pendant suggests a lower Cretaceous age for the volcanics (Miller, 1978). Surrounding the pendant rocks is the coast Plutonic Complex of Cretaceous and early Tertiary diorite, quartz diorite and quartz monzonite. Overlying these units are local Pleistocene mafic and felsic volcanic flows of the Garibaldi Group Regionally the Callaghan Creek pendant rocks can best be described by Miller (1978).

The volcanic rocks have been metamorphosed to greenschist facies, characterized by the occurrence of actinolite, epidote, zoisite, chlorite, biotite, and albite. North northwesterly trending schistosity is commonly subparallel to bedding in the volcanic rocks with near vertical dips. Miller (1978) has indicated with the use of sedimentary structures that units trends to the east. Unit contacts, noticeably the pendant contacts are generally sharp and are commonly associated with narrow shear zones subparallel of foliation.

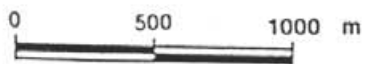
Important to note regionally is all orebodies presently known in the area are restricted to particular units within the volcanics rocks, which in turn offers excellent advantages for mineral exploration. The following are descriptions of known occurrences:



# LES CLAIMS

## LEGEND

- di Dioritic complex
- qd Quartz diorite
- 21 Garibaldi group
-  Foliation
-  Bedding



<b>LES CLAIMS</b>		
<b>REGIONAL GEOLOGY MAP</b>		
SCALE	DATE	NTS
AS SHOWN	SEPT./1990	92J/3E
<b>LES DEMCZUK</b>		FIGURE No <b>3</b>

The Brandywine Camp (Silver Tunnel, Millsite, Tedi-Pit, Zone 4). Located 5 kilometers southwest along strike of the Les claims, these old showings have extensive history for volcanogenic massive sulphide (Pb,Zn,Cu) and high grade gold silver base metal quartz veins. Presently Silver Tusk Mines of Vancouver own 100% interest in the properties. These ore bodies are confined to lense like satellite pendants of the main Callaghan roof pendant. They include greenstone, andeitic volcanics, marbles and intrusive hornblende diorite. These rock units are considered the oldest within the volcanic package.

The Silver Tunnel (Blue Jack) occurs as sulphide minerals in veinlets crosscutting the host greenstone. Ore also occurs as massive sulphide formed parallel to foliation (Miller, 1978). Previous recorded values from fieldwork are as follows:

Open Cut	1	0.24 oz/ton Au ,	1.8 oz/ton Ag
Open Cut	2	0.20 oz/ton Au ,	2.4 oz/ton Ag
Open Cut	3	0.36 oz/ton Au ,	2.6 oz/ton Ag, 2.5%Pb

The Millsite showing is essentially a base metal (Pb,Zn,Cu,) occurrence located within greenstone with associated nearby hornblende diorite. Small veinlets and stringers of sphalerite, galena, and chalcopyrite are commonly found within the greenstone.

The Tedi-Pit (Cambria and Astra) has four distinguishable rock units. The mineralized greenstone unit consists of both disseminated and massive sulphide zones of galena, sphalerite, pyrite, and chalcopyrite. Meta dacite, hornblende diorite, and rhyodacite dykes are also closely associated with the ore. Small amounts of mineralized (Pb,Zn,Cu) fault breccia have been isolated in the Tedi-Pit but remain limited in strike length.

<u>Width</u>	<u>Au oz/ton</u>	<u>Ag oz/ton</u>	<u>Pb</u>	<u>Zn</u>
15 ft chip	0.4	2.0	2.6%	4.0%
75 ft chip	tr.	1.5	1.4%	4.0%

(after Marton, 1978)

Other chip samples from underground workings have yielded similar values as above.

The Zone 4 showing is very possibly a replacement base metal occurrence (Zn,Pb,Cu) located within a pod of marble surrounded by massive greenstone. Limited work has been done on this showing.

The Northair Camp (Warman, Discovery, Manifold)

Located 3 kilometers north of the Les claims, the Northair mine first began producing ore in 1976 at a rate of 300 tpd. Reserves as of May, 1977 were estimated at 330.637 tons (Ditson) averaging 0.4 oz/ton Au, 4.6 oz/ton Ag, 2.7% Pb, and 4.0% Zn. After mine closure in 1982 reserves are presently 65121 tons averaging 0.265 oz/ton Au, 0.78 oz/ton Ag, and 2% combined Pb,Zn (Gardner,1986).

The ore body is confined to the upper units of the Callaghan Creek roof pendant. It strikes south southwesterly and is confined to quartz and quartz carbonate veins within andesitic agglomerate and volcanic breccia. It has been suggested these deposits formed originally as distal volcanogenic ore bodies and were later partially remobilized into crosscutting vein structures. High level hydrothermal (?) precious metal mineralization may have accompanied the remobilization during Tertiary times.

Drill indicated grades from 1976 (after Ditson) are as follows:

	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Au oz/ton</u>	<u>Ag oz/ton</u>
Discovery Zone	0.55%	5%	6.5%	0.10	1.18
Warman Zone	0.24%	1.4%	2.4%	0.68	0.85
Manifold Zone	0.07%	0.3%	0.5%	0.28	14.48

Daisy Lake (venetian, Nani, Daisy)

These old showings and adits are located approximately 10 km southwest of the Les claims. Property descriptions are best described by Camsell (1917) as follows:

"Several mineral locations have been made on the east side of Daisy Lake, but the only important deposits seem to be on Venetian group which is 750 ft above the lake. Sandstone, slate, and some limestone north 30 degrees west and dipping at high angles, are traversed by a quartz vein striking north 75 degrees west and dipping southward 20 to 35 degrees. The vein is very irregular in size and pinches and swells from a few inches up to 15 feet. The ore minerals are mainly pyrite and chalcopyrite which occur more abundantly near the walls and along fractures in the quartz. The ore contains gold, silver, and copper and about fifteen tons of it have been picked and sacked for shipment. The owners estimate this well average about \$90 per ton in these metals. The vein is developed by an incline from the outcrop, 72 feet in length, and a crosscut tunnel 158 ft long which cuts the vein at a vertical depth of 40 feet below the outcrop."

### 3.2 PROPERTY GEOLOGY AND MINERALIZATION

North-west and central part of the Les III claim block is mainly underlain by quartz-diorite and diorite of the Coast Plutonic Complex (Figure 4). The diorite unit is fine to medium grained and pale to medium grey-green with an equigranular texture. Dioritic rocks in the area contain mostly of 45% plagioclase, 25% chlorite, 10% epidote and 20% quartz and the remainder accessory minerals. Occasionally this unit is weakly foliated especially in the southern and central part of Les IV and V claim blocks.

Strongly altered porphyritic rhyodacite unit was located in the north-west quarter of the Les III and southern portion of Les IV and V claims. The rhyodacite of the Garibaldi group is grey to tan, fine grained to aphanitic and equigranular. Phenocrysts of quartz, plagioclase, sanidine and biotite constitute about 50% of the rock.

Andesitic agglomerate of the Gambier Group is present in the central north part of Les III and southeast end of Les IV claim block. This rock is fine grained, dark grey-green, weathered on surface with the tuffaceous matrix, averaging 40 volume percent. Fragments are: porphyritic andesite (70%), equigranular andesite (22%) porphyritic dacite (5%), sandstone (2%) and equigranular dacite (1%). Fragments are rounded to subangular, ovoid, and up to 15 cm in diameter. Traces of pyrite were noted in this unit. The contacts of the granodiorite with rhyodacite are in most cases gradational.

The chlorite-muscovite schist and phyllite units located mainly in Les V claim appear to be related to major shear or fault zones that cross the property with a number of northerly and northwesterly ( $320^{\circ}$ ) zones with mainly steep easterly dips.

All rocks except the late stage silicious dikes have been subject to a low grade regional dynamothermal metamorphism of greenschist facies. Rocks within the shear zones have further undergone intense dynamic metamorphism causing remobilization of the sulphides and recrystallization. The sulphide rich areas are mostly composed of quartz, pyrite, muscovite and minor chlorite. Outward from these areas the intensity of the silification decreases gradually from complete replacement to fine veinlets and stringers.

Mineralization on the property is associated with shear zones, grey-green phyllitic argillites or intrusive rocks. Sulphide minerals occur primarily in crosscutting veinlets or as massive sulphide zones. Some of the grey-green phyllitic argillites within the shear zones contain significant quantities of pyrite, chalcopyrite, argentite, bornite, malachite. Sulphide rich layers are intercalated with the phyllite-schist in places forming laminae basically composed of massive sulphide (chalcopyrite, pyrite). Perfect example of this type mineralization is copper-silver showing hosted in schist-phyllite exposed for a width of about 2-3 meters and length of at least 25 m along the logging road located on Les V claim block. Chips samples from this showing average 46.5 ppm (1.5 oz/ton) Ag, 3.1% Cu and 134 ppm Mo. Disseminated sulphide and copper stain are mainly associated with granitic rocks.

### 3.3 GEOCHEMICAL PROGRAM

The geochemical program consisted of 35 rock and 20 silt samples. All samples were analyzed by 30 element ICP and gold by atomic absorption in Acme Analytical Labs in Vancouver B.C. Rock sample descriptions are presented in Appendix I. Certificates of analysis for rocks and silts are included in Appendix II. Analytical results for Au, Ag, Cu, Pb and Zn are plotted on Figure 4.

#### GOLD

Gold values varies from 1 ppb to .010 oz/ton. Except two weakly anomalous samples the occurrence of gold was found insignificant and warrants no further discussion.

#### SILVER

Silver values in the rock samples range from .1 ppm to 111.1 ppm. Anomalous silver values exceeding 1.0 ppm were recorded in eight samples. The anomalous samples are correlated with schist-phyllite unit and are associated with copper anomalies.

## COPPER

Anomalous copper values exceeding 200 ppm were recorded in ten samples. The highest values were obtained from massive sulphide zone (sample: 90T31-2.12%, 90T32-4.37%, 90T33-6.87%, 90T34-1.66% and 90T35-.52%) in road cut. The copper anomalous values are associated with silver and molybdenum anomalies.

## LEAD

The lead values are generally very low and range from 2 ppm to 44 ppm, there is only one anomalous sample 90T32-44 ppm associated with copper-silver showing.

## ZINC

Zinc values varies from 1 ppm to 248 ppm. Only two values in rock and five in silt samples exceeding 150 ppm and are considered anomalous.

## MOLYBDENUM

Molybdenum values in the initial 55 samples varied from 1ppm to 493 ppm with values over 10 ppm considered anomalous. A total of thirteen anomalous molybdenum values from rocks and eight from silts were obtained.

## 4.0 CONCLUSIONS AND RECOMMENDATIONS

The subject property lies in the similar geological setting to the adjacent Northair Mines Ltd. and is surrounded by well know precious and base metal prospects.

The 1990 exploration program has been successful in locating high-grade silver-copper mineralization over considerable length and width.

The results of the geological and geochemical survey indicate that potential for significant precious and copper mineralization exists on the Les property and further work is warranted and strongly recommended.

The phase 2 - exploration program should include grid establishment over the silver-copper showing with base line trending  $320^{\circ}$ . In the grid area : detailed geological mapping, soil sampling, VLF-magnetometer survey trenching and blasting over the best anomalies. Prospecting, geological mapping and geochemical sampling is needed to cover unexplored areas of the property in order to develop other targets for detailed work.

Recommendation for a phase 3 - program should be made after evaluation of phase 2 - results and should include exploration drilling program over the best targets to define the source and extent of mineralized or anomalous zones.

Respectfully submitted

L. DEMCZUK M. SC.

Les Demczuk, M.Sc., F.G.A.C.  
September 15, 1990



## 5.0 REFERENCES

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A P P E N D I X    I

## ROCK SAMPLE DESCRIPTION

SAMPLE #	TYPE	DESCRIPTION
90T01	Grab	Light grey coarse fresh granite, iron stain, diss pyrite.
90T02	Grab	Greenish strongly altered intrusive tr. of sulphide.
90T03	Grab	0.2-0.3m wide milky qtz. vein, occ. brecciated and rusty on surface.
90T04	Grab	Strongly silicified tuff, 10% diss. Py.
90T05	Grab	Silicified bedded volcanic (andesite?) tr. of Py.
90T06	Grab	Quartz vein on contact with volcanic 5% sulphide and malachite stain.
90T07	Grab	Rusty qtz. vein in altered volcanic strongly sheared, tr. of sulphide.
90T08	Grab	Rusty-reddish on surface strongly brecciated volcanic cemented by silica with 15% sulphide mineralization.
90T09	Grab	Fine, strongly altered volcanic with stockwork of qtz. and diss sulphide.
90T10	Grab	Coarse to med. grained granite (coastal intrusion), clay altered.
90T11	Grab	Granite with iron rich rims and clay alteration, sporadic diss. Py.
90T12	Grab	Mica-chlorite schist with milky qtz. veining, tr. of sulphide.
90T13	Grab	Strongly altered brown on surface of phyllitic appearance 30% sulphide.

SAMPLE #	TYPE	DESCRIPTION
90T14	Grab	0.3 m wide rusty qtz. vein.
90T15	Grab	Phyllite strongly silicified with 5% sulphide.
90T16	Grab	0.2 m wide milky qtz. vein with tr. of Py.
90T17	Grab	0.3 m wide strongly sheared qtz. vein on contact with intrusive.
90T18	Grab	0.3-0.5 m wide qtz. vein chlorite schist.
90T19	Grab	Coarse, rusty on surface massive granodiorite with 5% diss. sulphide.
90T20	Grab	Metavolcanic of phyllitic appearance (greenstone) with tr. of sulphide.
90T21	Grab	Strongly silicified, massive intrusive with 30% sulphide (mostly Py.).
90T22	Grab	Vugy, rusty qtz. vein (0.3 m wide).
90T23	Grab	Rusty on surface strongly silicified andesite with tr. of sulphide.
90T24	Grab	Yellow on surface massive qtz, tr. of sulphide.
90T25	Grab	Strongly altered rusty intrusive with qtz. stockwork.
90T26	Grab	Silvery-grey schist with veining and large Py. cubes.
90T27	Grab	Schisty rock with 20% Py.
90T28	Grab	Schisty volcanic grey-green with 10-20% Py.
90T29	Grab	Strongly altered phyllite with large crystal of epidote and malachite stain.

SAMPLE #	TYPE	DESCRIPTION
90T30	Grab	Greenstone, schisty with Ph. veining and tr. of sulphide.
90T31	Grab	Over 1.2 m silvery grey schist zone with qtz. veining malachite, tr. of chalcopyrite.
90T32	Chip	1.5 m silvery-grey schist with strong malachite stain and up to 5% massive chalcopyrite.
90T33	Chip	Over 1.0 m silvery-grey schist with qtz. veining strong malachite stain up to 10-15% massive chalcopyrite and azurite, argentite ?.
90T34	Chip	Over 0.9 m similar as above.
90T35	Chip	Over 1.6 m as above but less mineralization.
90T36	Grab	Rusty qtz. vein tr. of sulphide.
90T37	Grab	Rusty metavolcanic (tuff) with 5-7% Py.
90T38	Grab	Rusty-grey schist with 5% Py.
90T39	Grab	Strongly altered and silicified pyhyllite no visible mineralization.
90T40	Grab	Strongly altered intrusive with tr. of sulphide.
90T41	Grab	White-yellow schist with 30% sulphide.
90T42	Grab	Fine grained diorite with qtz. stockwork and tr. of sulphide.
90T43	Grab	Strongly silicified intrusive.
90T44	Grab	Strongly altered and silicified intrusive with 20-30% massive sulphide (mostly Py.)

A P P E N D I X    I I

GEOCHEMICAL/ASSAY CERTIFICATE

Les Demezuk File # 90-2130

1835-13th Ave, Vancouver BC V5N 2B9

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Au**	Cu	Au**
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppb	%	oz/t
90 T 31	19	25374	13	134	31.7	9	6	895	2.66	2	5	ND	3	35	2.5	2	29	10	.59	.053	4	11	.76	90	.06	2	.85	.03	.17	1	-	2.12	.003
90 T 32	17	48640	44	141	64.3	5	5	846	4.25	6	5	3	3	83	5.8	2	52	5	1.49	.041	5	10	.50	24	.05	2	.64	.04	.18	1	-	4.37	.010
90 T 33	332	72710	37	167	111.1	2	5	394	6.30	6	5	5	5	31	8.4	4	65	3	.62	.031	4	7	.17	46	.03	7	.34	.01	.15	1	-	6.87	.007
90 T 34	193	19827	28	96	19.6	4	5	611	3.11	2	5	ND	9	59	2.9	2	21	7	.64	.036	4	5	.35	78	.04	2	.59	.02	.23	5	-	1.66	.003
90 T 35	111	6338	23	55	5.8	3	3	657	1.22	2	5	ND	11	48	.9	2	5	6	.23	.022	11	6	.28	94	.04	2	.52	.04	.18	1	-	.52	.001
90 T 41	45	858	4	65	1.6	5	27	489	4.82	5	5	ND	4	21	.2	2	2	6	.07	.023	5	8	.65	41	.01	4	.74	.02	.11	1	3	-	-
90 T 42	5	105	2	13	.1	8	1	195	.53	2	5	ND	1	2	.2	2	2	1	.01	.002	2	10	.19	16	.01	2	.24	.01	.01	1	3	-	-
90 T 44	15	117	2	35	.1	2	2	229	1.42	2	5	ND	5	30	.2	2	2	8	.16	.038	2	7	.53	36	.05	2	.64	.04	.07	1	8	-	-
STANDARD C	18	56	40	130	7.2	67	31	1018	3.86	37	17	7	36	51	18.6	15	19	56	.49	.095	37	58	.87	178	.08	34	1.81	.06	.14	12	-	-	-

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG.C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.  
 THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.  
 AU\*\* (PPB) ANALYSIS BY FA/ICP FROM 10 GM SAMPLE. AU\*\* (OZ/T) BY FIRE ASSAY FROM 1 A.T.  
 - SAMPLE TYPE: Rock

DATE RECEIVED: JUN 29 1990 DATE REPORT MAILED: *July 7/90* SIGNED BY: *C. Leong* .D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

✓ ASSAY RECOMMENDED

GEOCHEMICAL ANALYSIS CERTIFICATE

Les Demezuk File # 90-3374 Page 1  
1835-13th Ave, Vancouver BC V5N 2B9

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au** ppb
90T-02	1	35	2	65	.2	19	21	753	3.14	4	5	ND	1	54	.2	2	2	59	1.24	.074	2	52	2.83	33	.09	2	2.54	.03	.04	2	12
90T-03	3	5	2	13	.1	13	3	241	.86	2	5	ND	1	12	.2	2	2	6	.14	.022	2	14	.37	21	.01	2	.47	.04	.03	1	9
90T-04	2	5	4	1	.1	4	1	94	.28	2	8	ND	6	27	.2	2	2	3	.20	.005	14	17	.04	48	.01	2	.28	.04	.09	2	4
90T-06	1	4	2	1	.1	7	1	116	.27	2	9	ND	2	24	.2	2	2	1	.65	.001	3	5	.01	46	.01	2	.21	.06	.10	2	11
90T-07	6	16	2	1	.1	14	3	122	.44	3	8	ND	1	5	.2	2	2	2	.06	.004	2	53	.04	15	.01	2	.11	.01	.03	1	8
90T-08	2	9	8	7	.1	10	1	84	.70	2	5	ND	1	17	.2	2	2	3	.27	.021	3	8	.09	83	.05	2	.30	.05	.14	1	7
90T-10	9	165	2	50	.3	10	17	586	3.22	5	5	ND	1	45	.2	2	2	23	.96	.069	4	27	1.28	62	.10	2	1.37	.06	.11	1	12
90T-11	493	33	2	36	.2	5	20	565	6.25	6	5	ND	1	84	.7	2	2	26	.56	.094	5	12	1.17	16	.06	2	1.50	.02	.03	2	14
90T-12	14	18	2	27	.1	8	5	293	1.06	5	5	ND	2	44	.2	2	2	9	.38	.035	5	31	.65	33	.06	2	.81	.03	.07	1	5
90T-14	32	48	2	1	.1	8	4	233	.74	2	8	ND	10	22	.2	2	2	3	.30	.034	8	10	.10	50	.01	2	.29	.04	.07	1	8
90T-15	9	53	5	57	.3	4	15	666	4.97	4	5	ND	1	81	.7	2	2	22	.59	.138	4	17	1.44	69	.11	2	1.75	.04	.12	1	15
90T-16	3	5	3	1	.1	9	1	127	.44	2	7	ND	1	10	.2	2	3	1	.05	.008	2	8	.08	13	.01	2	.15	.01	.02	1	7
90T-18	5	3	3	1	.1	9	1	24	.25	2	5	ND	1	2	.2	2	2	1	.01	.001	2	40	.01	1	.01	3	.01	.01	.01	1	7
90T-19	2	7	2	56	.1	5	3	572	1.55	5	5	ND	1	101	.6	2	2	11	.67	.064	3	9	.71	51	.08	3	1.16	.05	.09	1	4
90T-20	11	61	2	64	.1	3	3	488	2.31	2	5	ND	1	109	.5	2	2	17	.75	.123	5	16	1.08	112	.13	4	1.53	.05	.44	1	4
90T-21	53	756	2	90	2.4	6	6	811	4.30	6	5	ND	4	65	.5	3	3	24	.37	.072	5	12	1.55	41	.13	2	1.72	.02	.09	1	18
90T-22	6	11	2	1	.1	11	1	45	.34	2	5	ND	1	4	.2	2	2	1	.02	.004	2	44	.03	4	.01	5	.04	.01	.01	1	2
90T-23	7	23	3	42	.1	3	1	309	2.42	3	5	ND	4	46	.2	2	2	13	.18	.052	3	9	.60	66	.08	2	.64	.03	.13	1	5
90T-24	4	27	2	158	.1	10	7	1500	2.98	2	5	ND	1	7	.2	3	2	9	.02	.009	2	38	2.23	196	.01	2	2.00	.01	.02	1	7
90T-25	7	56	8	56	.4	7	2	263	2.53	3	5	ND	4	32	.4	2	2	10	.10	.044	3	8	.52	47	.10	2	.64	.02	.09	1	1
90T-26	12	53	2	21	.1	3	1	204	2.93	2	5	ND	3	44	.5	2	2	11	.21	.044	3	24	.35	205	.08	4	.65	.02	.13	1	1
90T-27	3	62	2	52	.3	5	6	361	2.51	2	5	ND	2	39	.3	2	2	9	.31	.073	4	7	.55	74	.07	2	.74	.03	.15	2	2
90T-28	6	5522	2	140	5.1	6	9	652	5.60	5	5	ND	1	94	1.4	2	2	19	.55	.051	2	24	1.00	37	.08	3	1.21	.01	.05	1	9
90T-29	1	726	5	55	.5	7	17	725	1.95	2	5	ND	3	92	.2	3	2	21	.62	.043	7	10	1.26	39	.03	2	1.49	.02	.04	1	3
90T-30	3	31	2	20	.1	7	3	401	.96	8	7	ND	18	14	.2	2	2	12	.11	.016	8	22	.20	48	.01	5	.56	.03	.06	1	8
90T-36	2	9	4	6	.2	3	1	47	.57	2	5	ND	4	13	.2	2	2	3	.09	.011	2	5	.03	69	.04	2	.24	.05	.06	1	1
90T-37	3	748	3	60	.3	8	15	429	2.84	2	5	ND	1	42	.5	2	2	18	.53	.094	3	19	.90	70	.14	2	1.13	.04	.30	1	4
STANDARD C/AU-R	18	60	37	131	6.9	71	32	1050	3.94	41	16	7	38	53	18.3	15	21	55	.51	.099	39	59	.87	180	.07	35	1.88	.06	.14	13	494

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.  
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.  
- SAMPLE TYPE: P1 Rock P2 silt AU\*\* ANALYSIS BY FA/ICP FROM 10 GM SAMPLE.

DATE RECEIVED: AUG 10 1990

DATE REPORT MAILED: Aug 17/90.

SIGNED BY: C. Leong, D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS



SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au** ppb
90TS-01	1	128	16	133	.4	17	14	1459	2.69	4	5	ND	1	77	.2	2	2	39	1.03	.082	6	17	1.15	99	.07	2	2.55	.05	.06	4	2
90TS-02	2	138	17	60	.5	3	6	760	1.44	3	5	ND	1	65	.2	3	4	17	1.92	.075	7	6	.41	54	.03	6	1.35	.01	.05	1	6
90TS-03	1	74	34	94	.5	13	9	1419	1.74	3	5	ND	1	76	.9	2	2	22	2.55	.135	14	24	.70	75	.02	7	1.50	.01	.06	2	1
90TS-04	3	223	19	166	.8	10	29	1197	3.43	3	5	ND	1	52	.5	2	11	29	1.14	.106	9	10	.84	106	.05	6	1.80	.01	.08	1	5
90TS-05	2	110	11	103	.7	8	15	888	3.61	4	5	ND	1	33	.2	2	3	29	.61	.116	9	8	1.34	80	.08	2	1.84	.01	.22	1	1
90TS-06	3	108	6	116	.5	11	18	1002	4.10	7	5	ND	1	31	.2	2	2	46	.60	.101	9	15	1.48	110	.09	5	1.99	.01	.27	1	6
90TS-07	2	83	11	110	.5	5	9	934	1.86	2	5	ND	1	72	.6	2	3	23	1.85	.105	13	7	.56	89	.04	6	1.92	.01	.06	1	2
90TS-09	2	86	5	75	.5	7	13	708	3.60	7	5	ND	1	53	.2	2	3	45	.83	.048	6	10	.98	65	.09	4	2.03	.01	.06	1	12
90TS-10	1	57	3	60	.5	3	6	601	2.04	3	5	ND	1	46	.2	2	2	24	.66	.034	9	9	.59	67	.05	2	1.07	.03	.09	2	4
90TS-11	1	98	6	85	1.0	9	7	917	1.82	2	5	ND	1	74	.2	2	2	22	1.52	.075	13	16	.74	97	.05	2	2.53	.03	.07	2	9
90TS-12	23	272	2	62	.3	9	10	600	2.22	3	5	ND	5	54	.2	2	3	24	.48	.049	9	5	.68	104	.07	2	1.26	.03	.18	1	2
90TS-13	30	442	2	84	.2	3	14	885	2.55	2	5	ND	4	59	.2	2	5	25	.67	.094	16	3	.98	109	.06	3	1.46	.01	.20	1	1
90TS-14	10	306	2	223	.4	7	16	1820	1.55	2	5	ND	1	122	1.7	2	5	15	1.45	.073	51	5	.35	180	.04	3	2.50	.02	.06	3	1
90TS-16	39	131	5	66	.3	5	5	392	3.33	7	5	ND	7	18	.7	3	9	33	.12	.173	5	6	.55	42	.13	2	4.02	.01	.03	2	1
90TS-17	16	231	4	205	.3	6	19	1683	2.21	3	5	ND	1	56	1.3	2	4	25	.71	.060	11	5	.60	93	.05	4	1.46	.01	.06	1	1
90TS-18	46	427	12	81	.3	7	34	2654	3.04	2	5	ND	1	77	1.1	2	4	25	.81	.106	17	4	1.05	150	.07	2	1.55	.02	.23	1	4
90TS-19	11	353	18	204	.4	7	21	1202	2.84	2	5	ND	1	82	.8	2	2	24	.84	.061	12	4	.68	116	.06	3	1.61	.02	.05	1	1
90TS-20	15	421	5	224	.4	3	25	1574	3.24	2	5	ND	1	78	.8	2	2	19	.86	.061	13	3	.51	136	.04	2	1.68	.01	.04	1	6
90TS-21	15	450	7	248	.5	5	30	2305	3.21	3	5	ND	1	81	1.1	2	2	21	.86	.065	13	4	.54	159	.05	3	1.81	.01	.05	1	20
90TS-22	9	67	7	171	.2	6	16	856	2.03	2	5	ND	1	48	.7	2	3	23	.51	.036	5	7	.64	74	.07	3	1.64	.01	.04	1	4
STANDARD C/AU-S	19	58	37	131	7.0	73	31	1049	3.95	40	15	7	38	53	18.3	15	19	56	.51	.093	37	58	.91	183	.07	39	1.91	.06	.14	11	50

A P P E N D I X    I I I

L E S III

May 18, 19 June 27, August 8, 1990

Personnel

L. Demczuk, M.Sc. Geologist	4 days	@	\$325	\$ 1,300.00
B. Ablay, Prspector/Asst.	4 days	@	\$220	\$ 880.00
Truck 4x4 Rental	4 days	@	\$100	\$ 400.00
Travel (Meals, Gas, etc.)	4 days	@	\$ 90	\$ 360.00
Geochemistry				\$ 511.00
Field Supplies				\$ 175.30
Report 1/3 (writing, typing, drafting, copy)				\$ 450.00
			Total	\$ 4,076.30

L E S IV

August 9, 10, 1990

Personnel

L. Demczuk, M.Sc., Geologist	2 days	@ \$325	\$ 650.00
B. Ablay, Prospect./Asst.	2 days	@ \$220	\$ 440.00
Truck 4x4 Rental	2 days	@ \$100	\$ 200.00
Travel (Meals, Gas, etc.)	2 days	@ \$ 90	\$ 180.00
Geochemistry			\$ 200.00
Field Supplies			\$ 125.00
Report 1/3 (writing, typing, drafting, copy)			\$ 450.00
		Total	\$2,245.00

LES V

August 11, 1990

Personel

L. Demczuk, M.Sc., Geologist	1	day	@	\$325	\$	325.00
B. Ablay Prospector/Asst.	1	day	@	\$220	\$	220.00
Truck 4x4 Rental	1	day	@	\$100	\$	100.00
Travel (Meals, Gas, etc.)	1	day	@	\$ 90	\$	90.00
Geochemistry					\$	211.00
Air photo, Mapps, Field supplies					\$	210.00
Report 1/3 (writing, typing, drafting, copy)					\$	450.00
					Total	\$ 1,606.00

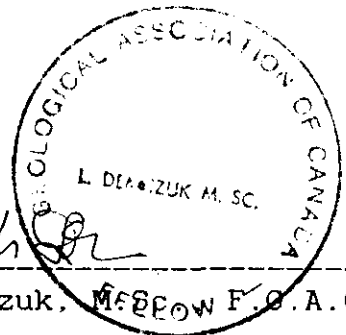
A P P E N D I X    I V

## STATEMENT OF QUALIFICATION

I, Les Demczuk, of the city of Vancouver, Province of British Columbia so hereby certify that:

1. I am a Mining Geological Engineer residing at 1835 E. 13th Ave., Vancouver B.C.
2. I graduated from University of Mining and Metallurgy, Krakow, Poland in 1977 with Master of Science degree in Geology.
3. I have worked in mineral and coal exploration since 1977 and have practiced my profession since 1977.
4. I am a registered Fellow of the Geological Association of Canada.
5. This report is based upon field work carried out by myself and a review of published and privately held literature pertaining to the claim area.

SIGNED :



Les Demczuk, MEMBER F.G.A.C

A P P E N D I X V

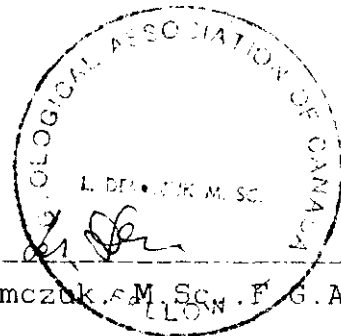


## COST ESTIMATES

### Phase 2. VLF-Mag, Soil Surveys and Trenching

Project Preparation		\$ 1,500.00
Supervision and Geological Support		\$ 7,000.00
Grid establishment	20 km /lines	\$ 5,000.00
Soil Survey		\$ 6,000.00
VLF/Mag. Survey	20 km @ \$ 300	\$ 6,000.00
Trenching		\$ 15,000.00
Geochemical Costs	900 @ \$ 20	\$ 18,000.00
Field Supplies		\$ 3,000.00
Transportation & Shipping		\$ 3,000.00
Domicile		\$ 6,000.00
Report and Engineering		\$ 6,000.00
Contingency		\$ 7,000.00
	Total	\$ 83,500.00

Recommendation for a Phase 3 program should be made after evaluation of phase 2 results.



Les Demczuk, F.M.Sc., F.G.A.C.



90T 31	(1005, 317, 2.14, 13, 134)
90T 32	(1005, 317, 2.14, 13, 134)
90T 33	(1005, 317, 2.14, 13, 134)
90T 34	(1005, 317, 2.14, 13, 134)
90T 35	(1005, 317, 2.14, 13, 134)

**LEGEND**

- Road
- Creek
- Outcrop
- Fault or Shear Zone
- Geological Contact
- Bedding
- Foliation
- Massive Sulphide
- 90T02 Rock Sample Location
- ▼ 90TS3 Silt Sample Location

**GEOCHEMICAL RESULTS**

90T02	Au	Ag	Cu	Pb	Zn
	ppb	ppm	ppm	ppm	ppm
90TS3	[1]	[.3]	[23]	[4]	[19]

**ROCK UNITS**

- 1 Quartz - Diorite
- 2 Rhyodacite
- 3 Schist - Phyllite
- 4 Andesitic Agglomerate

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

20,627

Metres 100 50 0 100 200 300 Metres

LES CLAIMS		
GEOLOGY & GEOCHEMISTRY		
MAP		
SCALE: 1:5,000	DATE: SEPT. 1990	NTS: 92J/3E
LES DEMCZUK		FIGURE No. 4