

81-#677
-9369

1981 Diamond Drilling
Assessment Report

TITLE Tuzo Creek Property
CLAIMS Mo 4-34
COMMODITY Mo

LOCATED 15 km southwest of Beaverdell
Latitude 49°22' Longitude 119°08'
Greenwood Mining Division
82 E/6

BY S.G. Enns
FOR AMAX OF CANADA LIMITED AND
E & B EXPLORATION INC.
WORK PERIOD July, 1981

AMAX VANCOUVER OFFICE

Sept 4/81

9369

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SUMMARY

This report presents results of a diamond drill program on the Tuzo Creek molybdenum property conducted between May 5 and June 10, 1981. The joint venture project was managed by AMAX of Canada Limited and funded by E & B Exploration Inc.

The Tuzo Creek property, consisting of 16 two-part claims wholly owned by AMAX, is located 15 km southeast of Beaverdell in southern British Columbia. Previous work by AMAX in the period 1964 to 1966 served to outline a large area, 1,300 by 300 metres, of weak surface molybdenite mineralization associated with an early Tertiary porphyritic quartz monzonite intrusive complex.

In the current drill program, one hole was drilled vertically to a depth of 764 metres in the centre of the molybdenite zone. It intersected weakly mineralized and strongly altered porphyritic quartz monzonite in the upper 400 metres, grading to unmineralized weakly altered porphyritic quartz monzonite and Nelson granodiorite at depth.

Assay results were as follows:

<u>Interval</u>	<u>Thickness</u>	<u>Average Grade</u>
120-270 feet	150 feet	0.10% MoS ₂
180-230 feet	50 feet	0.16% MoS ₂
200-210 feet	10 feet	0.28% MoS ₂

\$32,000 of a field cost of approximately \$135,000 was applied as assessment to the following claims for 10 years: Mo-4-10, Mo-15-21, Mo-32 and Mo-34.

INTRODUCTION

Location and Access

The Tuzo Creek property lies 15 km southwest of Beaverdell, B.C. which is 290 km east of Vancouver and 50 km southeast of Kelowna. This property is favourably located near service and supply centres in southern B.C. Beaverdell is the site of the currently operating Highland Bell Ag-Pb-Zn mine (Figure 1).

Access onto the property is by highway 33 to a bridge crossing the West Kettle River 12 km south of Beaverdell and then by four-wheel drive road 10 km up the mountain slope west of the river. A large clearing west of the bridge was used as the offload point for camp and drill equipment.

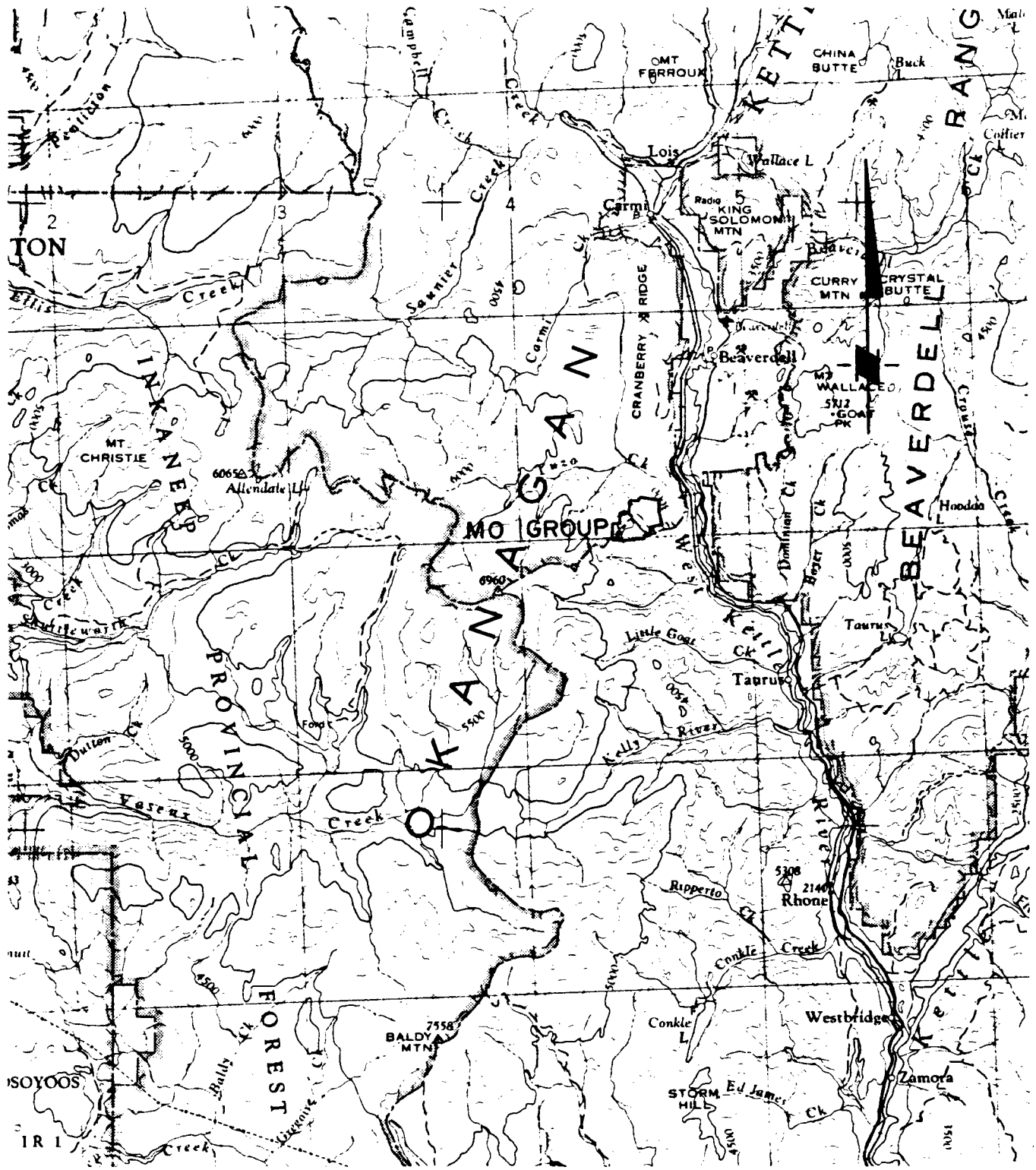
Physiography

Elevations range from 760 metres on the West Kettle River to 1,500 metres on the Interior Plateau west of the river where the property is situated. Most of the property is gently rolling and covered with open pine and larch but relatively steep east facing slopes incised by numerous draws occur below the 1,350 elevation. These draws are densely covered with thick underbrush.

Property

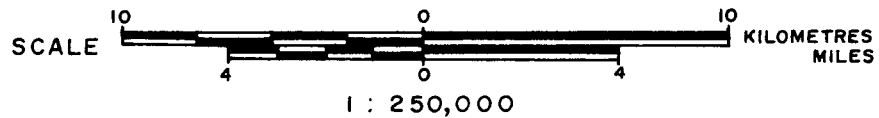
16 two-post claims wholly owned by AMAX cover the area of interest (Figure 2). They are located in the Greenwood Mining Division. Pertinent claims data follows:
Mo 4-10 (7 claims) staked July 16, 1964; expire July 29, 1991;*
Mo 15-21 (7 claims) staked July 16, 1964; expire July 29, 1991;
Mo 32, 34 (2 claims) staked July 28, 1964; expire July 29, 1991.

* following acceptance of the 1981 work for assessment.

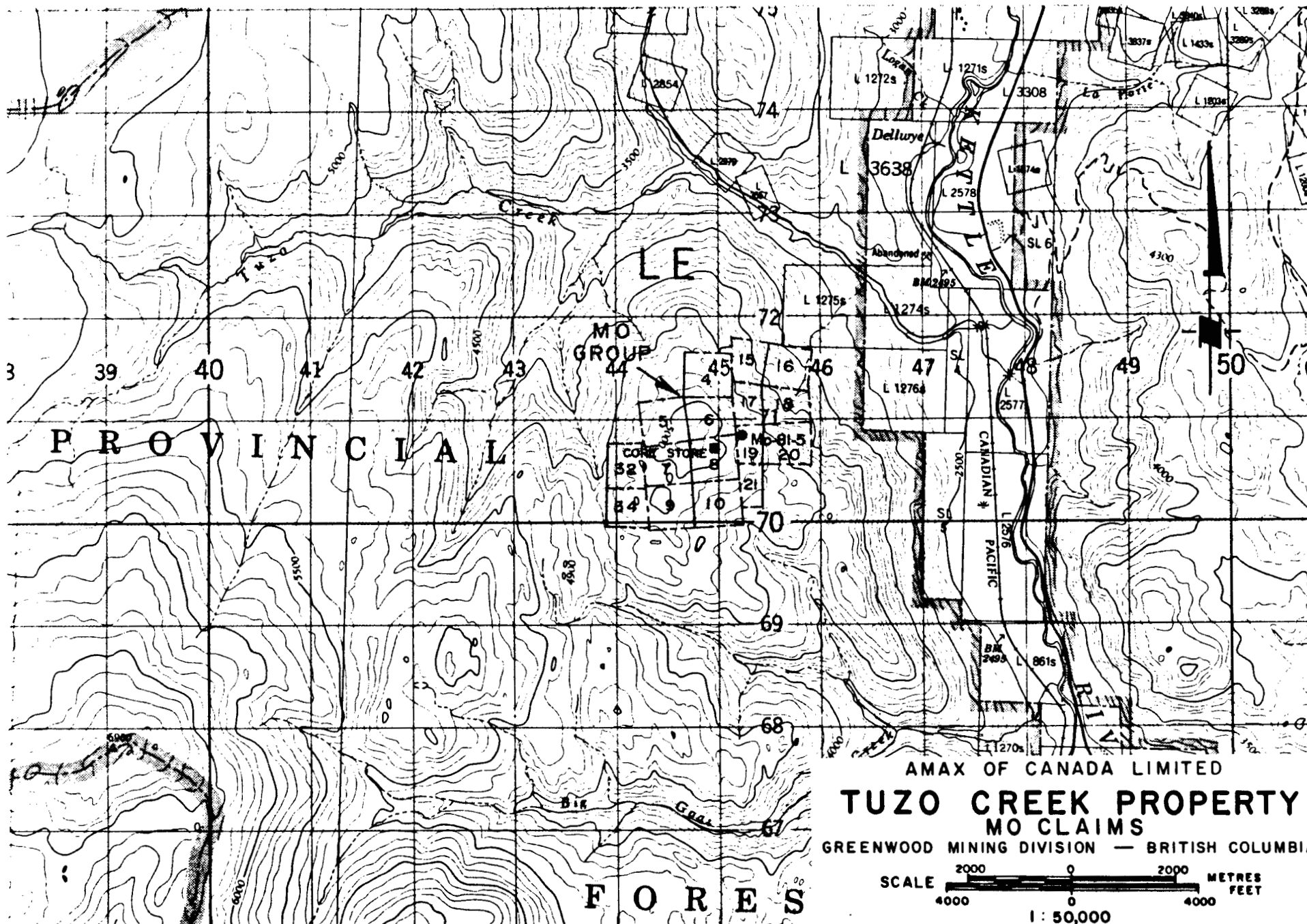


AMAX OF CANADA LIMITED
TUZO CREEK PROPERTY
 NO CLAIMS
 GREENWOOD MINING DIVISION — BRITISH COLUMBIA

LOCATION MAP



N.T.S. Ref. 82 E 6



AMAX OF CANADA LIMITED
TUZO CREEK PROPERTY
 NO CLAIMS

GREENWOOD MINING DIVISION — BRITISH COLUMBIA

SCALE
2000
0
2000
 METRES

4000
0
4000
 FEET
 1 : 50,000

N.T.S. Ref. 82 E 6

FIG. 2

Previous Work

The property was first staked by Kennco, who in 1961-62 constructed an access road, conducted a limited IP survey and explored the property for base metals.

In 1964 AMAX acquired the ground by restaking and conducting exploration on the property until 1966. During this time a grid was cut, soil sampling and mapping conducted, packsack drilling in 13 holes totalling 301 metres and BQ drilling of four holes totalling 1,481 metres carried out. An M.Sc. thesis study of the property, completed by Leary at U.B.C. in 1970, presents the most comprehensive surface mapping of the property.

In 1973, Rio Tinto Mines conducted Pb-Zn exploration in the area adjacent and to the east of the Mo claims. They drilled nine holes totalling 1,002 metres.

PROPERTY GEOLOGY

The property lies within the upper Cretaceous Nelson batholithic complex and is centred on a small pluton mapped as Coryell-type intrusive by the G.S.C. The stock is approximately 2.5 km in diameter, consisting of porphyritic biotite quartz monzonite. It is flanked by older Nelson granodiorite basement. Irregular leucocratic quartz feldspar porphyry and feldspar quartz porphyry masses and dykes mapped by Leary as differentiated equivalents to the porphyritic Valhalla quartz monzonite, have been emplaced into the stock to form a complex igneous pattern. Both pre-mineral and post-mineral porphyry dykes are represented.

A generally northeast trending swarm of late basic dykes occupies the northwestern section of the claim block.

Important hydrothermal alteration mapped as a "central alteration" zone consists of quartz-sericite pervasive and fracture controlled alteration and represents a hydrothermal centre. It extends approximately 1,500 by 350 metres on surface with a northeast long axis. Peripheral chlorite alteration surrounds this "central alteration zone" and extends outward beyond the claim block.

The limit of surface molybdenite mineralization outlined over an area 1,300 by 300 metres also with northeast long axis is confined to the most intense "central alteration zone". It is underlain by areas of quartz vein stockwork. Best mineralization appears to show a close spatial relationship to contacts of pre-mineral quartz feldspar porphyries. Mineralization consists of fine-grained

molybdenite as a dense "dry" stockwork accompanied by weak pyrite and little quartz. Some of the seams reach a maximum width of one to two centimetres. A late stage of mineralization consisting of sphalerite-galena-fluorite is present.

1981 DRILLING

General Statement

A single vertical NQ (1 7/8") diamond drill hole driven to a depth of 2,507 feet (764 metres) was collared at an elevation of 4,500 feet (1,370 metres) and at a site midway between AMAX drill holes Mo-66-1 and Mo-66-3 along a previously constructed drill road. Contractor for the job was Connors Drilling of Kamloops, B.C. using a Long-year 56 drill with hydraulic breaker. Drilling was conducted from May 19 to June 2, 1981.

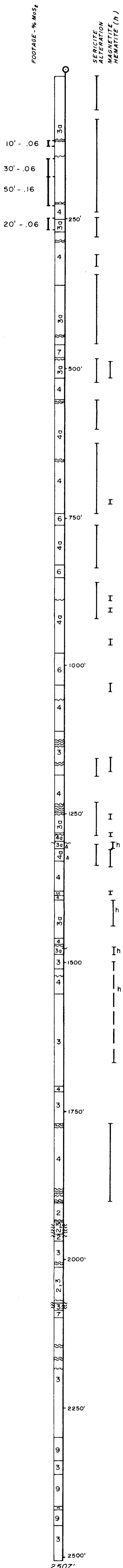
Core recovery averaged close to 100%. All the core was logged and continuously split to 1,350 feet. Below this depth ten feet were split every 50 feet to a depth of 2,200 feet and then ten feet every 100 feet for the remainder of the hole. The ten foot split core samples were submitted to Rossbacher Laboratory, Burnaby, B.C. and analysed for total MoS₂ assay and geochemical F, Ag, Pb and Zn. A skeletal core was taken for permanent record and stored at the AMAX warehouse. Core for all the AMAX drill holes is stored on the property at the old campsite.

The drill log for Mo-81-5 is given in Appendix II, with MoS₂ assays. Other analytical results are separately listed following the drill log.

Results

Lithology

Six units were identified in core logging and are shown on the drill hole section, Figure 3. Most of these units correspond to Leary's mapped units.



L E G E N D

- 9 Coryel type pink syenitic dyke.
- 8 Dark brown to black basic dyke; includes lamprophyre dykes.
- 6 Quartz feldspar porphyry.
- 4 Feldspar-quartz porphyry 4a: altered.
- 3 Valhalla porphyritic quartz monzonite 3a: altered.
- 2 Nelson granodiorite.

S Y M B O L S

- ≡ Shearing.
- △ Brecciation.

AMAX OF CANADA LIMITED
 9369
 NO.

AMAX OF CANADA LIMITED
TUZO CREEK PROPERTY
 MO GROUP
 GREENWOOD MINING DIVISION - BRITISH COLUMBIA
DIAMOND DRILL HOLE
 MO - 81 - 5
 SCALE METRES FEET
 1 : 1,200

Unit 2 - Nelson Granodiorite

This oldest unit consists of 60% plagioclase, 15% Kspar, 20 to 30% quartz and 5 to 10% hornblende plus biotite. It is pre-mineral, hence strongly altered and occurs only at depth in the drill hole (below 1,700 feet).

Unit 3 - Porphyritic Quartz Monzonite

One of the most predominant lithologies in drill hole Mo-81-5, pre-mineral quartz monzonite is typically porphyritic, consisting of 10 to 15% large pink .5 to 2.5 cm Kspar phenocrysts and 15 to 20% smokey euhedral 2 to 10 mm quartz crystals. Overall average composition is 30 to 35% Kspar, 30 to 35% quartz, 30-35% plagioclase and 1 to 2% biotite. The matrix is medium grained hypidiomorphic of similar mineral composition to the phenocrysts. Minor aplitic segregations and injections are locally present and aid in distinguishing this unit from unit 3.

Unit 3a

Unit 3a is a hydrothermally altered equivalent of fresh unit 3 and occurs only above 1,500 feet.

Unit 4 - Feldspar Quartz Porphyry

This unit (abbreviated FQP) is pre-mineral and intermineral and constitutes the second most abundant lithology which occurs in the upper 1,700 feet of the drill hole. It displays 10 to 15% conspicuous Kspar phenocrysts up to two centimetres across and euhedral quartz phenocrysts .5 to 1 cm in size set in a variable grain-sized matrix which ranges from fine to medium grained. Biotite may be present in the amount

of 1 to 2%. Sharp chill margins and porphyritic quartz monzonite inclusions in FQP between 1,340 and 1,365 feet suggest the FQP is the younger of the two. In other places rapid gradational contacts exist between these same lithologies suggesting a co-magmatic relationship. The FQP displays pink, gray and brown variants based on matrix colouration. There may be two distinct ages of this unit present.

Unit 4a

Unit 4a is a hydrothermally altered FQP found only at higher levels (above 1,300 feet). A common internal contact alteration phenomenon was observed; FQP is strongly altered up to 10 or 15 feet from its contact with older unit 2 but the central portion remains unaltered.

Unit 6 - Quartz Feldspar Porphyry

This unit (abbreviated QFP) is present only in several logged intervals quite high up in the hole. It is post-mineral (contains .001 to .004% MoS_2) generally unaltered, pale orange in colour, contains up to 1% disseminated pyrite and usually contains less than 5% large pale pink Kspar phenocrysts. Inclusions of FQP at 973 feet suggest a younger age, yet a gradational contact from QFP to FQP at 1,032 feet suggests a close age relationship.

Unit 7 - Basic Dyke

Dark brown to black basic andesitic and lamprophyre dykes were intersected. These dykes are fine grained, post-mineral and range from one foot to 24 feet in apparent width.

Unit 9

Pink syenitic dykes intersected near the bottom

of the drill hole (below 2,300 feet) display dark brown to black chill phases and locally give the appearance of a lamprophyre. Overall appearance of the feldspar and hornblende phenocrysts set in an orange to pink matrix is very characteristic of Coryell-type intrusions.

Distribution

The upper 1,300 feet of the drill hole consists generally of alternating strongly altered porphyritic quartz monzonite cut by FQP itself locally altered near contacts. Three post-mineral QFP also cut this sequence. Below this depth the rocks are less altered and FQP intercepts are less abundant. The section from about 1,800 feet to 2,100 feet contains long intercepts of Nelson granodiorite possibly as large inclusions near the Valhalla stock contact. The lower portion of this section displays intense shear zones, some brecciation and a good deal of mylonitization. Below 2,100 feet the drill hole encountered predominantly fresh Valhalla quartz monzonite.

Alteration and Quartz Veining

Porphyritic quartz monzonite has been most affected by hydrothermal alteration which is strongest in the upper portion of the drill hole and consists of silicification, sericitization, chloritization and possibly potassic alteration. As plotted on Figure 3, the alteration includes moderate and strong pervasive sericite alteration of plagioclase, quartz-sericite envelope and fracture style alteration accompanied by pervasive silicification (in the upper 200 feet) and patchy pervasive chloritization and fracture fillings.

From the drill hole section it is evident that significant hydrothermal alteration rapidly dies out with depth and decrease in FQP abundance.

Possible potassic alteration may be present as manifest by fine shreddy brown secondary biotite in occasional quartz veins observed at several intervals above 500 feet. Possible pink Kspar addition was also noted here and there to a depth of 800 feet.

Pyrite content is generally low averaging less than 1% and between $\frac{1}{2}$ and 1% in the zones of strongest sericite alteration.

Zones of strongest quartz veining occur at 1,160 to 1,195 feet where between 85 and 250 quartz veins per 10 feet (total count) are present. Two ten foot intervals beginning at 1,260 and 1,300 respectively each contain 50 and 53 quartz veins above an average 10 to 20 total quartz veins per 10 feet. These zones appear to be a relict, barren quartz stockwork in porphyritic quartz monzonite.

Mineralization

Mineralization consists of molybdenite, fluorite, sphalerite-galena and magnetite-hematite.


Molybdenite typically occurs as fine-grained "dry" fracture fillings, paint on slip-faced fractures and less commonly in quartz veinlets. Valhalla porphyritic quartz monzonite and FQP are mineralized; the latter less so. Dry fracture fillings are narrow, sometimes crenulated and stylolitic in appearance. Absence of quartz accompanying

molybdenite is striking. The 180 to 230 foot intercept of 0.16% molybdenite as plotted on Figure 3 (using a .06% cutoff) includes 30 feet of 0.19% MoS_2 between 200 and 230 feet with one 10 foot section of 0.28% MoS_2 between 200 and 210 feet. Mineralization falls off abruptly below 270 feet. Molybdenite assays are listed in the drill log.

Purple and sometimes green fluorite is ubiquitous in minor amounts as veins, blebs and fine sparse disseminations. It is found in most rock types (units 1 through 4) most commonly as accessory to quartz and in sericite in cross-cutting veins and is most abundant in the zone of strongest hydrothermal alteration. Rare disseminated blebs of purple fluorite are present within large Kspar phenocrysts in FQP. At least two generations of fluorite are represented; one with quartz-sericite alteration and molybdenite mineralization and the other with late stage base-metal mineralization. Fluorine analysis plotted on Figure 3 display marked increase above the base of the molybdenite zone with values between 2,100 and 5,800 ppm above a background of 1,500 to 1,800 ppm.

Sphalerite and less commonly galena are present as minor constituents in mineralized quartz veins. The Pb-Zn analysis indicate a crude metal zonation below the molybdenite mineralization with Zn extending to greater depth into barren intrusive than Pb.

Magnetite as conspicuous black fracture fillings and veins locally forms stockworks 1 to 2%, up to 8 to 10% (by volume) which are plotted on Figure 3. These concentrations of magnetite significantly lie beneath the base of the molybdenite zone. Hematite as coatings on fractures and slip shears occurs in the same area.



S.G. Enns

APPENDIX I

DRILL LOGS

DIAMOND DRILL RECORDPROPERTY TUZO CREEK Project Number 300Hole No. 81 - Mo - 5 Co-ordinates _____ Bearing at Collar _____Dip at Collar - 90°Collar Elevation 4500 feet (1370 m) Commenced Drilling May 20, 1981Total Depth 2507 feet (765 m) Completed Drilling June 2, 1981Logged By: S. EnnsCore Size NQ Coring Method Wireline Drilling Contractor Connors Drilling

<u>Survey Summary</u>				<u>Pertinent Assay Data</u>		<u>Pertinent Geology</u>	
Depth	Dip	Bearing	Method	Interval	%	Interval	Rock Type
Collar	-90°	-	Compass				
1500'	-89	-	Sperry Sun	120-230	.10% MoS ₂		
2000'	-89	-	Sperry Sun	120-130	.06% MoS ₂		
				150-180	.06% MoS ₂		
2500'	-88½	-	Sperry Sun	180-230	.16% MoS ₂		
				(includes 30' of	.19% MoS ₂)		
				250-270	.06% MoS ₂		

AMAX MINERALS EXPLORATION

TUZO CREEK

PROPERTY

D D H 81-Mo-5

SHEET 1 OF 32

Box No.	Depth	Recovery	Lithology	STRUCTURE			ALTERATION					MINERALIZATION					ASSAY					REMARKS	
				RQD	Shears	Veins	Chl	Clay	Ser.	Kspar	Sil	Py	MoS ₂					Sample No.	Est. MoS ₂	MoS ₂			
	0-8																					Overburden	May 22/81
	8-100																					Altered Porphyritic Quartz Monzonite	
																						20-23 highly fractured core	
																						29-30 shattered core	
																						highly broken core 32-35, 37.5-38.5,	
																						80-82, 87-88, 91.5-95	
																						weathering on fracture to depth of 40'	
																						ie: limonite on fractured ends at 40'	
																						pyrolusite on fractured ends at 29'	
																						Predominant silicified with subordinate	
																						strong sericite alteration. Silicifi-	
																						cation as pervasive zones and as 1 cm	
																						envelopes in pervasive sericite altered	
																						zones	
																						Overall a fractured patchy gray appear-	
																						ance is characteristic where silicified	
																						texture poorly preserved	
																						In sericite altered zones: large pink	
																						K-spar phenocrysts 0.5 to 1.5 cm quartz	
																						2 to 10 mm. Cloudy creamy and greenish	
																						plagioclase laths form crowded matrix 2	
																						to 3 mm. Rare biotite approx. 1% is	
																						visible in a few less altered zones	
																						Clay especially common on fractures -	
																						dies out below MoS ₂ on tight slips as	
																						paint throughout but 75' minor sphaler-	
																						ite-galena occasionally present as blebs	
																						in vague veins; purple fluorite (accomp-	
																						panied by calcite) commonly present through	
																						out; pyrite approx. 1/4 to 1/2% as fine	
																						disseminated with greater amounts as 1	
																						to 2 mm crystals in quartz-sericite-	
																						pyrite fractures; strong MoS ₂ slips	
																						@ 37 and @ 52 - 20-30° core axis	
																						very weak quartz veining. as narrow (1-	
																						2 mm) poorly defined veinlets 10-20°	
																						core axis and barren	

very common along fractures

#1 {
#2 {
#3 {
#4 {

AMAX MINERALS EXPLORATION

TUZO CREEK

PROPERTY

DDH 81-Mo-5
SHEET 2 OF 32

Box No.	Depth	Recovery	Lithology	STRUCTURE			ALTERATION					MINERALIZATION					ASSAY					REMARKS													
				RQD	Shears	Veins	Chl A	Clay B	Ser. C	Kspar	Sil E	Py	MoS ₂					Sample No.	Est. MoS ₂	MoS ₂															
#5	80	x												3/4%	↑	↑																			Pink fine grained aplitic patches @ 71 @ 96-98 as narrow zoned where rock is fresher
	100	x												minor	65208	.021																		Green and purple fluorite @ 80.5 4 mm vein	
#6	90	x												↓	↑	<.05																		Galena-sphalerite with chalcopyrite as poorly defined vein @ 86 with calcite also @ 90.5	
	95	x												3/4%	65209	↓	.031																	Highly fractured rock 87-90	
	100	x												trace slips	65210		.026																	Chlorite-epidote on fractures 83-105-moderate amounts (with calcite)	
#7	100	x												*	65211		.046																	97-98 Narrow .2 to .3 m feldspar quartz dyke?? (6" to 1') as they appear slightly less altered	
	110	x												Py-MoS ₂ slips	65212	↓	.05																		100-109 Altered Porphyritic Quartz Monzonite
	120	x												slips	65213		.046																		As above
	130	x												qtz v	65214	↓	.068																		Highly broken core 100-101, 104-105
#8	130	x												qtz v strong slip	65215	↓	.05	.046																	105-109 strongly silicified and sericite altered
	140	x												vein common in light slips and occ. quartz through-out	65216	↓	.1	.046																	Conspicuous fracturing with calcite 30-40° core axis; very abundant purple fluorite blebs 1-2%
	150	x												vein	65217	↓	.07	.064																	100-109 Altered Porphyritic Quartz Monzonite
#9	140	x													65218	↓	.046																		Sericite Altered Porphyritic Quartz Monzonite
	150	x													65219	↓	.064																		Silicic alteration confined to 1' wide zones
	150	x													65220	↓	.064																		Purple fluorite in micro-fractures cut by later quartz pyrite sericite ± fluorite veins

May 23/81

AMAX MINERALS EXPLORATION

TUZO CREEK

PROPERTY

DDH 81-Mo-5

SHEET 3 OF 32

Box No.	Depth	Recovery	Lithology	STRUCTURE			ALTERATION					MINERALIZATION					ASSAY					REMARKS					
				RQD	Shears	Veins	Chl. A	Clay B	c Ser.	eKspar	m Sil	Py	MoS ₂					Sample No.	Est. MoS ₂	MoS ₂							
#10	160																								160-210	Altered Porphyritic Quartz Monzonite Pink K-spar up to 1.5 cm. Alteration renders rock a mottled gray overall (where silicified) Greenish where sericite alteration predominates Sericite alteration is pervasive; only K-spar unaffected. Local pink patches and white clay altered plagioclase; this interval shows high degree of micro fracturing and clay in fractures MoS ₂ on tight slips common and occasional quartz veins; → brown biotite begins @ 160 Fluorite present throughout as blebs on fractures, in veins and micro fractures cutting K-spar crystals	
	x	100																									
		170																									
	x	100																									
#11	x	180																									
	x	100																									
	x	190																									
	x	90																									
#12	x	200																									
	x	100																									
	x	210																									
	x	100																									
#13	x	220																									
	x	100																									
	x	230																									
	x	100																									
	240																										

↑
¼% com-
mon on
slips
and
qtz vs

↓ ↓
¼%

↓ ↑
¼% vein

200-210 Several 10-20° core axis quartz monzonite veins
3-5 mm cutting 50-60° core axis MoS₂ slips as anastomosing feature
Pyrite approx. ¼% disseminated strong on 10-20° core axis veins-occasional

210-228.5 Altered Porphyritic Quartz Monzonite
As above but distinctly pink 218-228.5-K-spar alteration? well mineralized by MoS₂ slips + rholites and quartz-MoS₂ veins; veins appear controlled by incipient fractures. Similarly MoS₂ slips. Narrow altered quartz feldspar porphyry dykes? 6" wide 217-218 or brecciated veins altered quartz monzonite
→ Brown biotite? fine grained @ 217-218
secondary biotite

228.5-254.5 Feldspar Quartz Porphyry
Highly irregular upper contact - approx. 80° core axis
Broken core 253-254
Greenish colour with pink K-spar up to 2 cm
Strongly altered matrix and moderately altered K-spar to within 10 feet below contact central portion relatively fresh. Cross-cut by narrow quartz-pyrite fractures (counted as veins)

AMAX MINERALS EXPLORATION

TUZO CREEK

PROPERTY

DDH 81-Mo-5
SHEET 4 OF 32

Box No.	Depth	Recovery	Lithology	STRUCTURE			ALTERATION					MINERALIZATION						ASSAY				REMARKS				
				RQD	Shears	Veins	Ch. A	Clay e	Ser. c	Kspar o	Sil f	Py	MoS ₂	Sample No.	Est. MoS ₂	MoS ₂										
#14	240																								Occasional pyrite-sphalerite-galena-fluorite mineralized veins @ 20-30° core axis Lower contact similarly altered to plagioclase → sericite pervasive and phenocrysts Lower contact irregular and well MoS ₂ mineralized by cross-cutting ½ foot zone of MoS ₂ slips within porphyritic quartz monzonite	
	x	250	100															65224	<.01	.003						
#15																								254.5-272 Altered Mixed Quartz Monzonite Locally sub-porphyrific. Contains 1-3 cm pink aplite inclusions. Mineralized ½ foot MoS ₂ slips @ upper irregular contact. Lower contact sharp 60° core axis. Kspar altered near feldspar quartz porphyry contacts? Both are pink. Pervasive sericite alteration predominates. MoS ₂ slips (incipient fractures) and occasional broken quartz-MoS ₂ veinlets here and there		
	x	260	100															65225	.05	.061						
	x	270	100															65226	.07	.072						
#16																								272-320 Feldspar Quartz Porphyry - gray in colour Large pink Kspar crystals up to 3 cm and variable in abundance quartz 5-8 mm. Plagioclase 2-4 mm generally sericite altered 280-290 up to 1% biotite present Variably altered-generally weak pervasive sericite alteration throughout becoming strong 7 feet from upper contact conspicuously cut by common quartz pyrite sericite veinlets generally 20-30° core axis with widening associated sericite envelopes 5 mm below 300 foot depth Many are galena-sphalerite mineralized occasionally with fluorite; fine grained sphalerite-pyrite slips minor occurrence Fluorite noted in Kspar cores @ 319 Sericite replacement of Kspar adjacent to quartz-pyrite-sericite veins		
	x	280	100															65227	.01	.012						
#17																										
	x	290	100															65228		.003						
	x	300	100															65229		.003						
#18																										
	x	310	100															65230		.003						
																		65231		.002						

AMAX MINERALS EXPLORATION

TUZO CREEK

PROPERTY

DDH 81-Mo-5
SHEET 5 OF 32

Box No.	Depth	Recovery	Lithology	STRUCTURE			ALTERATION					MINERALIZATION						ASSAY					REMARKS				
				RQD	Shears	Veins	Chl A	Clay B	Ser. C	Kspar D	Sil E	Py	MoS ₂							Sample No.	Est. MoS ₂	MoS ₂					
	320																									460-484 Black Dyke	
#19	100			35°										1/4%						65232	.002					320-363	Feldspar Quartz Porphyry Same as above Sericite alteration becomes stronger 350-363 Fluorite common in fractures as blebs and in veins Pyrite seams 20° core axis and 60° core axis present occasional with sparse sphalerite Broken core 321-322
	330													↓						*							
	100													1/4%						65233	.001						
#20	340			10°										1%]						*						363-400	Altered Porphyritic Quartz Monzonite Variable, subporphyritic in places. Exten- sively fractured contains innumerable incipient? Quartz veinlets which are broken and frequently truncated. Near contact rock is predominantly pinker for about 15 feet (Kspar alteration?) Weakly mineralized by tight quartz-MoS ₂ veins and MoS ₂ slips Purple fluorite cut by quartz-sericite- pyrite 20-30° core axis
	100													1/4%						65234	.001						
	350													↓						*							
#21	100													1/2%						65235	.002						
	360			20°										↓	slip					*							
	100													1/4%	slip					65236	.07	.042					
#22	370													↓	slip					*							
	100													1/2%	slip					65237	<.05	.024					
	380			30°										↓	slip					*							
#22	100			40°										3/4%	slip					65238	.05	.026					
	390													↓						*							
	100													3/4%						65239	<.05	.021					
400													↓						*								

AMAX MINERALS EXPLORATION

TUZO CREEK

PROPERTY

DDH 81-Mo-5
SHEET 8 OF 32

Box No.	Depth	Recovery	Lithology	STRUCTURE			ALTERATION					MINERALIZATION					ASSAY				REMARKS		
				RQD	Shears	Veins	Chl. A	Clay	ser.	epspars	Fe Sil	Py	MoS ₂	Sample No.	Est. MoS ₂	MoS ₂							
#32	560	90										1/2%						65254	<.01	.002			envelopes. Trace MoS ₂ occasional present in quartz sericite pyrite veinlets Altered to sericite in vicinity of shear zones Lost 1 foot core @ 560 feet in shear zone Altered Feldspar Quartz Porphyry Highly sheared broken core sections 558-566 (gouge), 572-574 (gouge), 579-580 (gouge) Similar to above but generally more altered. Due to increased showing? - Appears related. Quartz pyrite fluorite veins with sericite envelopes approx. every foot. As tight quartz sericite pyrite fractures a few per foot. Occasional trace MoS ₂ found in these veins. Shear zone @ 580 - tetrahedrite or enargite? ? @ 583 Also with quartz-sericite-pyrite veins and fracture Shear zones contain abundant pyrite and clay, occasional fluorite; occasional quartz pyrite MoS ₂ ? veinlet 600-610 in fresh rock.
	x											variable locally						*	↓				
#33	570	100									1%							65255	<.01	.002			
	x																	*	↓				
#34	580	100																65256	<.01	.002			
	x																	*	*				
#35	590	100																65257		.003			
	x																	*	<.01				
#36	600	100																65258		.003			
	x																	*					
#37	610	100																65259		.002			
	x																	*					
#38	620	100																65260		.001			
	x																	*					
#39	630	100																65261		.007			
	x																	*	↓				

AMAX MINERALS EXPLORATION

TUZO CREEK

PROPERTY

DDH 81-Mo-5

SHEET 9 OF 32

Box No.	Depth	Recovery	STRUCTURE			ALTERATION					MINERALIZATION							ASSAY				REMARKS					
			RQD	Shears	Veins	Chl. A	Clay	Ser.	Kspar	Sill	Py	MoS ₂					Sample No.	Est. MoS ₂	MoS ₂								
#37	640				20°										trace												
	x	650	100													65262	↑	.001									
#38	660				20° 60°										trace												
	x	666	100													65263	*	.002									
#39	670														tight slips												
	x	677	100												65264	*	.001										
	x	680	100												65265	*	.004									675-747	<u>Pink Feldspar Quartz Porphyry</u> Similar to above but with distinctly pink colouration change is gradational. This section cut by numerous dark green fractures (chlorite-clay-sericite?) 1% mafics chloritized Plagioclase still sericite altered matrix appears to be harder than above (Kspar altered??) Cut by sparse 20° core axis quartz sericite pyrite veinlets. Fluorite specks common throughout as minor accessory specks. Trace MoS ₂ and minor tight MoS ₂ slips as noted
#40	680														slip												
	x	688	100												65266	*	.010										
	x	690	100												65267	*	.004										
	x	700	95												65268	*	.008										
	710													slip													
x	710	100												65269	*	<.01											
x	720	100												65269	↓	.011											
x	720	100												65269	↓	<.01	.011										

675-747

Pink Feldspar Quartz Porphyry
Similar to above but with distinctly pink colouration change is gradational.
This section cut by numerous dark green fractures (chlorite-clay-sericite?)
1% mafics chloritized
Plagioclase still sericite altered matrix appears to be harder than above (Kspar altered??)
Cut by sparse 20° core axis quartz sericite pyrite veinlets.
Fluorite specks common throughout as minor accessory specks.
Trace MoS₂ and minor tight MoS₂ slips as noted
@ 725 10 cm silicified zone with visible fine grained MoS₂; 2 slips @ 735 approx. 1' MoS₂ slip runs along core axis @ 745 @ 672 @ 676
727-730 strong magnetite stockwork with associated pyrite magnetite 5-6% stockwork has 35° and 60° core axis orientation
approximately 675 some resemblance to pink porphyry quartz monzonite

AMAX MINERALS EXPLORATION

TUZO CREEK

PROPERTY

Box No.	Depth	Recovery	Lithology	STRUCTURE			ALTERATION					MINERALIZATION					ASSAY					REMARKS																	
				RQD	Shears	Veins	Chl. A	Clay	Ser.	Kspar	Stil.	Py	MoS ₂						Sample No.	Est. MoS ₂	MoS ₂																		
#41	720																																				(Magnetite stockwork not counted as veins)		
	x	730	100																																				
#42	x	740	100																																				
		750	100																																				
		760	100																																				
#43	x	770	100																																				
		780	100																																				
		790	100																																				
#44	x	800																																					

#41

#42

#43

#44

747-767

767-800

35°

40°

Orange Quartz Feldspar Porphyry
 Conspicuously fewer Kspars and orange colour is characteristic different from above
 Weakly sericite altered matrix
 Sharp upper contact 30° core axis
 Variable pyrite in narrow zones up to 1%
 Quartz-pyrite-sericite fracture with speck MoS₂ @ 750

Altered Feldspar Quartz Porphyry
 Similar to above quartz feldspar porphyry
 Pink and sericite altered
 MoS₂ slips on tight fracture here and there (ie: dry mineralization)
 Quartz sericite pyrite cross cutting fractures and veinlets.

AMAX MINERALS EXPLORATION

TUZO CREEK

PROPERTY

DDH 81-Mo-5
SHEET 11 OF 32

Box No.	Depth	Recovery	Lithology	STRUCTURE			ALTERATION					MINERALIZATION					ASSAY				REMARKS		
				RQD	Shears	Veins	Chl. A	Clay	ser.	Kspar	Sill	Py	MoS ₂	Sample No.	Est. MoS ₂	MoS ₂							
#45	800																				800-833	Pink Altered Feldspar Quartz Porphyry — May 25/8	
	100	x													3/4%	65278	.07	.028				As above	
	810														↑ in tight fracture	*	↓					Moderate sericite altered pervasive with pyrite-sericite fracture and envelopes 60° core axis mafics chloritized	
#46	100	x												locally up to 1% in 1 foot section	65279	.05	.052				Weakly mineralized by fine grained minor MoS ₂ on tight slip and minute fracture accompanied by fluorite and pyrite		
	95	x													*	↓					Fluorite associated with pyrite-sericite fractures		
	820	x													65280	.05	.037				Several quartz sericite Kspar flooded sections 6" to 1' 621-628 with minor MoS ₂		
	100	x			30°										↓	*	↓					Moderately fractured. Chlorite in fractures increases slightly last 10 feet to contact	
#47	830	x												↑	65281	.01	.003				833-863	Pale Orange Quartz Feldspar Porphyry	
	100	x												absent	*	↓						Irregular sharp upper contact approx. 80° core axis	
	840	x													65282	<.01	.001					Lower sheared contact 60° core axis Pervasive sericite altered plagioclase and cut by sparse pyrite-sericite fracture with occasional fluorite alteration variable some 2' zones strong sericite; 1% biotite chloritized	
#48	850	x												1/2-1% Fine diss.	65283	<.01	.001					Kspar replacement-sericite adjacent to pyrite-sericite fracture	
	860	x													*	↓						Black sphalerite? galena on tight pyrite filled fractures eg. 859. Post mineral dyke?	
#49	870	x												1/2%	65284		.003					863-982	Pink Altered Feldspar Quartz Porphyry
	100	x													*	↓						Broken Core 867-868 Fractured same as above dyke Magnetite pyrite chlorite fractures. Chlorite conspicuous on fractures 863-890 Very strong sericite altered zone 879-880	
	880	x													65285	<.01	.009						

AMAX MINERALS EXPLORATION

TUZO CREEK

PROPERTY

DDH 81-Mo-5
SHEET 18 OF 32

Box No.	Depth	Recovery	Lithology	STRUCTURE			ALTERATION					MINERALIZATION							ASSAY				REMARKS
				RQD	Shears	Veins	Chl. A	Clay B	c Ser.	Kspar	Siil	Py	MoS ₂							Sample No.	Est. MoS ₂	MoS ₂	
	1360																						
#76	x 100																						1365-1377 Gray Quartz Feldspar Porphyry - probable variant of brown feldspar quartz porphyry Sparse Kspar and smaller 2% biotite Fresh - unaltered
	x 100																						1377-1380 Brown Feldspar Quartz Porphyry As 1332-65
	x 100																						1380-1384 Altered Pink Porphyritic Quartz Monzonite Brecciated 2 feet upper contact Weakly magnetic Black slips of chlorite-clay and hematite Large inclusion in feldspar quartz porphyry
#77	x 100																						1384-1395 Gray Feldspar Quartz Porphyry Black upper 2 feet Inclusions of altered quartz monzonite Weakly magnetic black patches
	x 100																						1395-1464 Altered Pink Porphyritic Quartz Monzonite Brecciated upper contact Brecciated zones 1397-1402 1405-1409
	x 100																	65333	.002				
#78	x 100																						Fractured 1412-1414 cut by innumerable 1417-1421 black criss-cross fractures. Hematite?
	x 100																	65334	.002				
	x 100																						Becomes distinctly less porphyritic
#79	x 100																						1414-1442 1449-1450 1452-1464
	x 100																	65335	.002				
	x 100																	65336	.001				
	1440																						

30°

AMAX MINERALS EXPLORATION

TUZO CREEK

PROPERTY

DDH 81-Mo-5

SHEET 19 OF 32

Box No.	Depth	Recovery	Lithology	STRUCTURE				ALTERATION					MINERALIZATION						ASSAY				REMARKS		
				RQD	Shears	Veins		Chi. A	Clay B	c Ser.	eKspar	m Sil	Py	MoS ₂					Sample No.	Est. MoS ₂	MoS ₂				
#80	1440	100																							Intermittent quartz-pyrite-sericite-hematite envelopes 1 cm to 2 cm wide @ 1415, 1416, 1419, 1431, 1436-1459, 1451-1456 Overall alteration weak sericite by virtue of numerous sericite bearing fractures. Locally sericite pervasive alteration over several feet. Hematite common on slips locally 2-3% in dark patches. Very crackled 1457-1464 abundant hematite on slips.
	x	1450	100																						
	x	1460	100																						
	x	1470	100																						
#81	1471	100																						1464-1471 <u>Brown Feldspar Quartz Porphyry</u> Moderate crushed pink Kspar phenos. Micro fractured with chlorite on slips and abundant hematite.	
	x	1480	100																						
	x	1490	100																						
#82	1485	100																						1471-1485 <u>Porphyritic Quartz Monzonite - Contact Zone</u> 1471-1475 gradational contact brown feldspar quartz porphyry - porphyritic quartz monzonite gradual brown to pink colour change. 1476-1484 brecciated zone abundant hematite Strong shear zone 1483-1484.5 - black brecciated lower contact 1477-1486. 1484.5 becomes less broken and fractured @ depth 1490.5-1491 2-3% pyrite.	
	x	1500	100																						
	x	1510	100																						
#83	1512	100																						1485-1512 <u>Fresh Porphyritic Quartz Monzonite</u> Hematite seams 3-4 mm become less abundant after 1510. Pyrite sericite shears 2-10 cm occasional. Common chlorite fractures. 1512-1515 <u>Gray Feldspar Quartz Porphyry</u> Oscillatory zoned Kspar. Chlorite fracture common.	
	x	1520	100																						

↑
variable
1/4-1/2%
↓
3%
pyrite

45°
70°
30°
80°
55°

AMAX MINERALS EXPLORATION

TUZO CREEK

PROPERTY

DDH 81-Mo-5

SHEET 21 OF 32

Box No.	Depth	Recovery	STRUCTURE			ALTERATION					MINERALIZATION					ASSAY			REMARKS	
			RQD	Shears	Veins	Chl. A	Clay B	Ser. C	Ksparg	Sil. E	Py	MoS ₂	Sample No.	Est. MoS ₂	MoS ₂					
	1600																			
#88	100																65341	.001		
	x																			
	1610																			
#89	100																			
	x																			
	1620																			
#90	100																			
	x																			
	1630																			
#91	100																			
	x																			
	1640																			
#92	100																			
	x																			
	1650																			
#91	100																			
	x																			
	1660																			
#92	100																			
	x																			
	1670																			
#92	100																			
	x																			
	1680																			

↑

↓

#88

#89

#90

#91

#92

30°

30°

40°

60°

1% trace?

1650-1704 Pink Porphyritic Quartz Monzonite
 As above 1650. Fresh and hydrothermally unaltered.
 Chloritic fractures common frequently with hematite on slips.
 Abundant green sericite hairline fractures here and there

Mostly D.R.! (Dog rock)

1676-1677 Shear zone with 1% pyrite, green sericite, black graphite and hematite. White pegmatite 1677-1677.5 with sparse hematite and trace MoS₂

AMAX MINERALS EXPLORATION

TUZO CREEK

PROPERTY

DDH 81-Mo-5
SHEET 24 OF 32

Box No.	Depth	Recovery	STRUCTURE			ALTERATION					MINERALIZATION					ASSAY				REMARKS			
			R/D	Shears	Veins	Chl. A	Clay B	c Ser.	e Kspar	f Sil	Py	MoS ₂					Sample No.	Est. MoS ₂	MoS ₂				
#101	x 1840																						May 30/81
		100																					
#102	x 1850																						
		100														65345	.001						
	x 1860																						
#103	x 1870																						
		100																					
#103	x 1880			45°																			
		95		250°																			
#104	x 1890			10°																			
		100																					
#104	x 1900			10°																			
		100		20°																			
#104	x 1910																						
		100																					
#104	x 1920																						
		100																					

Increasingly strong chlorite and sericite alteration toward contact. Hematite on slips

1904-1935 Pink Quartz Monzonite
Pink overall colouration, sub-porphyritic Kspars mafics (biotite) 1-2%. Abundant 1-2 mm pale green sericite slips - talcy. Inclusions of granodiorite 1929-50 mixed zone.

1935-1964 Shear Zone and Mylonitized Mixed Zone
Strongly foliated. Crushed quartz Kspar and plagioclase. Dark green with chlorite sub-brecciated. Occasional calcite veinlets.

AMAX MINERALS EXPLORATION

TUZO CREEK

PROPERTY

DDH 81-Mo-5

SHEET 28 OF 32

Box No.	Depth	Recovery	Lithology	STRUCTURE			ALTERATION					MINERALIZATION					ASSAY				REMARKS
				RQD	Shears	Veins	Chi A	Clay B	Ser. C	Kspar D	Sil E							Sample No.	Est. MoS ₂	MoS ₂	
#118	2160																				2160-2250 Fresh Pink Porphyritic Quartz Monzonite Large up to 3 cm Kspars, euhedral smokey quartz .5 cm, 1-2% black biotite Except in vicinity of shearing - rock is very fresh and unaltered.
	100																				
	x																				
#119	2170																				
	100																				
	x																				
#119	2180																				
	100																				
	x																				
#120	2190																				
	100																				
	x																				
#120	2200																				
	100																				
	x																				
#119	2210																				
	100																				
	x																				
#119	2220																				
	100																				
	x																				
#119	2230																				
	100																				
	x																				
#119	2240																				
	100																				

↑
55353
↓

AMAX MINERALS EXPLORATION

TUZO CREEK

PROPERTY

DDH 81-Mo-5
SHEET 29 OF 32

Box No.	Depth	Recovery	Lithology	STRUCTURE			ALTERATION					MINERALIZATION					ASSAY					REMARKS		
				ROD	Shears	Veins	Chl. A	Clay	ser.	epher	m Sil	Sample No.	Est. MoS ₂	MoS ₂										
#122	2240	100																						
	X																							
#123	2250	100																						
	X																							
#124	2260	100																						
	X																							
#125	2270	100																						
	X																							
#126	2280	100																						
	X																							
#127	2290	100																						
	X																							
#128	2300	100																						
	X																							
#129	2310	100																						
	X																							
#130	2320	100																						
	X																							

2250-2299 Pink Porphyritic Quartz Monzonite → June 2/81
As before
Fresh unaltered

2272-2279 Sericite in fractures associated with weak shearing.

2293 6 inch pale green quartz porphyry dyke contact 50° core axis sheared.

2299-2346 Dark Orange Brown Syenitic Dyke
Correlate with Leary trachy-andesite?
Upper contact 50° core axis.
Calcite veinlets.
Narrow sections of 1-3 feet distinctly orange matrix alternate with black sections.
Zeolites common.
2324-2326 Pink porphyritic quartz monzonite inclusion

AMAX MINERALS EXPLORATION

TUZO CREEK

PROPERTY

DDH 81-Mo-5
SHEET 32 OF 32

Box No.	Depth	Recovery	Lithology	STRUCTURE			ALTERATION					MINERALIZATION					ASSAY					REMARKS		
				RQD	Shears	Veins	Chl A	Clay C	Ser. S	Pyrope P	Sil E							Sample No.	Est. MoS ₂	MoS ₂				
#135	2480																							
	x																							
#136	2490																							
	x															65355	.001							
	2500																							
	END OF HOLE																							2507 END OF HOLE

APPENDIX II

STATEMENT OF COSTS

Statement of Costs

Tuzo Creek Property

Summary of Work

Diamond Drilling 2,257 feet NQ

Period of Work

May 5 to June 10, 1981

Drilling

Connors Drilling, Box 3340, Kamloops,
B.C. - Invoice #11211, #11165, #11139

= \$85,322.55

To be applied to Mo-4-10, 15-21, 32 and 34 mineral claims \$32,000
for 10 years.

APPENDIX III

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

NAME S.G. Enns

ADDRESS 601-535 Thurlow Street
Vancouver, B.C.

EDUCATION 4 year BSc (Honours Geology) 1967
University of Manitoba
MSc (Ec. Geology) 1971
University of Manitoba

EXPERIENCE Geol. Assistant Manitoba Mines Branch 1964(field season)
Geol. Assistant Sherritt Gordon Mines 1965 "
Geol. Assistant AMAX Exploration 1966-1970 "
Staff Geologist Cerro Mining of Can. 1971
Staff Geologist Hudson's Bay Oil & Gas 1972
Staff Geologist BP Minerals of Canada 1973-1975
Staff Geologist BP Alaska Exploration 1975-1979
Staff Geologist AMAX of Canada 1979-