

81-11 247-9-10

1981 Assessment Report

TITLE Clear Creek Property

CLAIMS GEM 1-8

COMMODITY Mo

LOCATED 45 km due north of Harrison Hot Springs, B.C. at the headwaters of Clear Creek.
Latitude 49°43'N Longitude 121°43'W
New Westminster Mining Division
92 H/ 12 E

BY S.G. Enns

FOR AMAX OF CANADA LIMITED

WORK PERIOD Work was carried out during July, 1981.

AMAX Vancouver Office

9470

ASSESSMENT REPORT COVER SHEET

Name CLEAR CREEK PROPERTY Fig. _____ No. _____

Mining Inventory Nos. _____ NTS _____

Lat. 49° 43' Long. 121° 43' NTS 92H/12E

Mining Division New Westminster Location ON CLEAR CREEK, 12 km NORTH, NORTHWEST OF MT. URQUHART

Claims (Central Records) Gem

Claims (total) GEM 1 - 8 (4, 4, 4, 1, 20, 12, 20, 12 units)

Owner 1. E & B Explorations 2. AMAX OF CANADA LIMITED
 Address 1440/800 W. Pender St., Vancouver 1600-1066 W. HASTINGS

Operator 1. As Above 2. VANC. VGE 3X1
 Address _____

Owner/Operator 3. _____

Metals _____

Geological description A Miocene quartz-monzonite stock intrudes foliated quartz-diorite, coarse biotite schists, and gneiss of the Coast Range Complex. The stock, named the Gem stock, is 1200 x 500 metres with the long axis N-S. A younger porphyritic granodiorite

References phase dated at 34 my. occurs at depth within the stock.
 Work done Drilling / The Gem Breccia intrudes the Gem stock at its

Type	Amount	Claims Worked On
<u>D.I.A.D.: 611.74m; 1 hole; NO-BQ</u>		<u>W.F. Contact</u>

Author(s) S.G. Enns

Aff. date Sept 25/81 Year of work 1981 To geology October 5, 1981

Attention _____ Information class 3

Comments OK.

Value	Name of PAC Account	Amount
Value work done (from report) <u>75,035.55</u>		
Value of work approved <u>75,035.55</u>	<u>Amax of Canada Ltd</u>	<u>62,035.55</u>
Value claimed (from statement) <u>\$13,000.00</u>		
Value credited to PAC account <u>62,035.55</u>		
Value debited to PAC account _____		

Accepted [Signature] Date 3/11/81 Report No. 81-#747 9470.

NTS 92H/12E

TABLE OF CONTENTS

SUMMARY-----	1
INTRODUCTION	
Location and Access-----	3
Physiography-----	3
Property-----	4
Previous Work-----	4
PROPERTY GEOLOGY-----	5
1981 DIAMOND DRILLING	
General Statement-----	8
Results-----	8

APPENDICES

- Appendix I - Statement of Costs
- II - Drill Logs
- III - Statement of Qualifications
- IV - Detailed Work History

ILLUSTRATIONS

- Figure 1 - Location and Regional Geology----1:250,000----after page 4
- 2 - Claim Map-----1:50,000----after page 5
- 3 - Geological Map-----1:4,800----in pocket
- 4 - Section Along Diamond Drill Hole
 CC-81-1-----1:2,400----in' pocket

SUMMARY

This report presents results of drill hole CC-81-1 drilled by AMAX during the period June 9 to July 13, 1981 on the Clear Creek property. The property consists of 8 claims (77 units) located at the rugged headwaters of Clear Creek and Spuzzum Creek approximately 55 air-km due north of Agassiz, B.C., in the New Westminster Mining Division.

The property covers a Miocene-age quartz monzonite stock, 0.7 square kilometres in extent, which intrudes schist, gneisses and foliated quartz diorite of the Coast Range batholith. Intrusive into the northeastern portion of the stock is a large circular body of breccia (Gem Breccia) which is in turn cut by younger rhyolite porphyry dykes.

Mineralization consists of coarse molybdenite in quartz veins and is most abundant in an arcuate zone around the northeastern margin of the stock. Drilling by previous owners between 1964 and 1968 (21 holes, 14,000 feet) outlined 25 million tons of 0.15% MoS₂.

Drill hole CC-81-1 was driven to a depth 2,007 feet (612 metres) to the centre of the intrusive complex to test for a blind molybdenite system. It encountered porphyritic gray biotite quartz monzonite throughout its entire length. Hydrothermal alteration is weak to absent and quartz-molybdenite mineralization is weakly persistent throughout the entire hole.

Assay results indicate a number of isolated 10-foot intercepts in the range 0.10-0.25% MoS₂. Overall, the core averaged in the low 0.0X% MoS₂ range, decreasing slightly at depth.

\$57,800.00 of direct drilling cost of \$13,000.00 was applied as assessment work to GEM 1-4 for five years.

INTRODUCTION

Location and Access

The Clear Creek property is located approximately 48 km north of Harrison Hot Springs which is 100 km due east of Vancouver, B.C. It occupies the headwaters of Clear and Spuzzum Creeks (Figure 1).

Access to the property is by Rene Logging Company's road up to the headwaters of Spuzzum Creek from which a 3/4 mile foot-trail runs to the 1981 drill site on upper Clear Creek. The drill camp was established at "17½ mile" along the Spuzzum Creek road. This site was also used as off-load point to fly the drill and related supplies to the drill site.

Alternative access is provided by logging roads along the east shore of Harrison Lake to Big Silver Creek and then by a 13 km rough four wheel drive up Clear Creek to the hot spring's cabin.

A 20 minute helicopter flight from the Highlands helicopter base at Agassiz affords the most direct means of access on to the property.

Physiography

Topography is typical of the rugged coastal mountains with elevations ranging from 2,500 to 5,500 feet. Steep cliffs and talus slopes are largely covered by heavy timber consisting of virgin stands of cedar, hemlock and firs. Non-timbered areas are covered by thick underbrush consisting of maple, alder and salmonberry. The north portion of the property which extends into the Spuzzum Creek drainage has been partly logged off.

Property

The Clear Creek property consists of eight claims (77 units) wholly owned by AMAX (Figure 2).

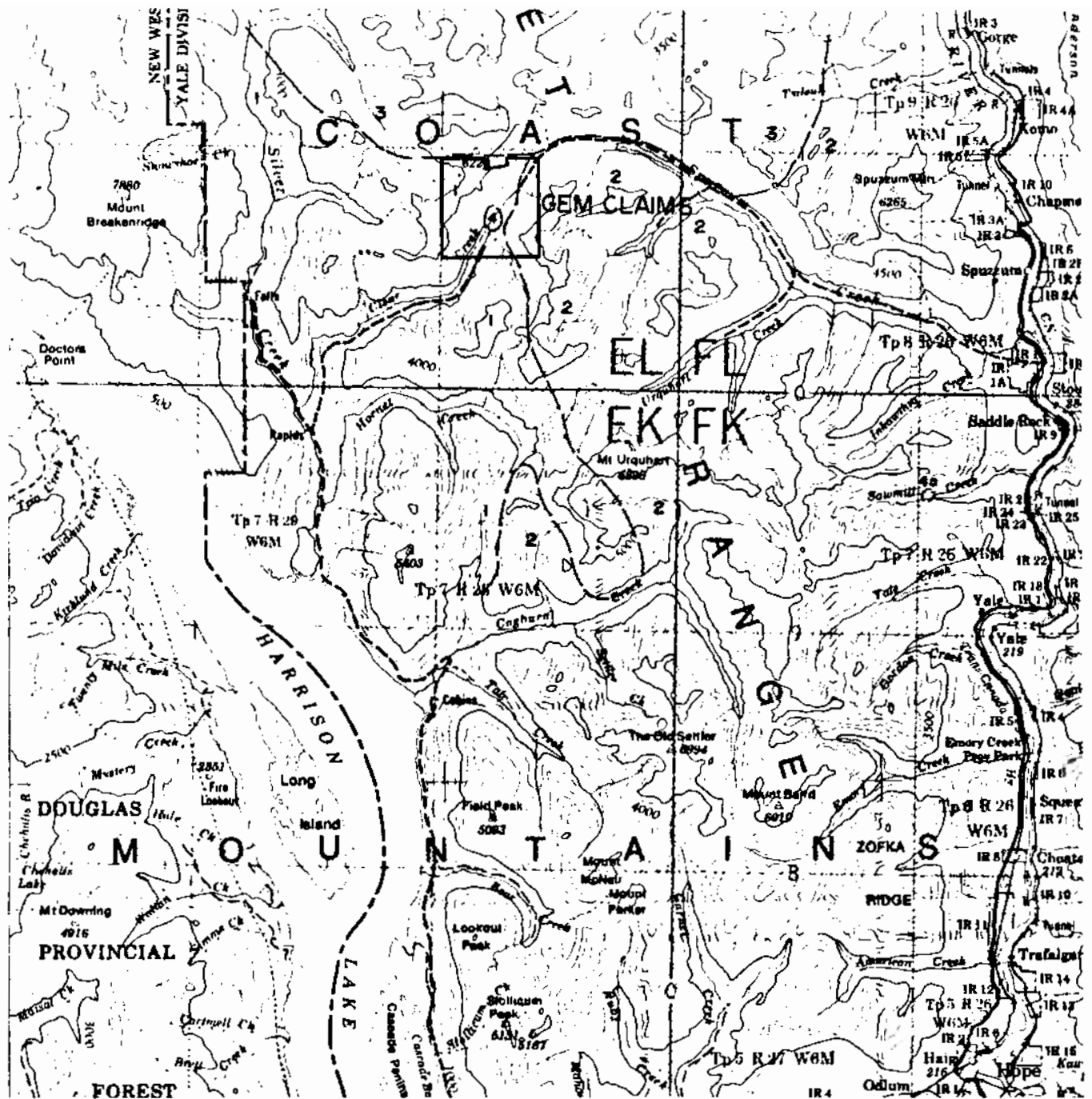
Pertinent claims data are as follows:

<u>Claim Name</u>	<u>Record No.</u>	<u>Record Date</u>	<u>Expiry Date</u>
Gem 1 (4 units)	27	June 5/75	June 5/82
Gem 2 (4 units)	28	June 5/75	June 5/82
Gem 3 (4 units)	29	June 5/75	June 5/82
Gem 4 (1 unit)	30	June 5/75	June 5/82
Gem 5 (20 units)	1170	April 1/81	April 1/82
Gem 6 (12 units)	1171	April 1/81	April 1/82
Gem 7 (20 units)	1172	April 1/81	April 1/82
Gem 8 (12 units)	1173	April 1/81	April 1/82

*Pending acceptance of assessment work.

Previous Work

The Clear Creek property, previously known as the Gem Molybdenite prospect, before 1970 received substantial exploration including the driving of a 493 foot adit and nearly 14,500 feet of diamond drilling in 21 holes. A drill indicated near surface reserve of 25 million short tons grading 0.15% MoS₂ was outlined by Utah Mining. A detailed work history of the prospect is summarized in Appendix IV.



L E G E N D

- | | | | |
|---|-------------------------------------|---|--|
| 2 | CRETACEOUS- Spuzzum quartz diorite. | 4 | Gem stock, 40 - Sawmill Creek breccia. |
| 1 | Schist, gneiss and amphibolite. | 3 | OLIGOCENE- Scuzzy granodiorite and quartz monzonite. |

AMAX OF CANADA LIMITED

CLEAR CREEK PROPERTY

NEW WESTMINSTER MINING DIVISION—BRITISH COLUMBIA

LOCATION AND REGIONAL GEOLOGY



1 : 250,000

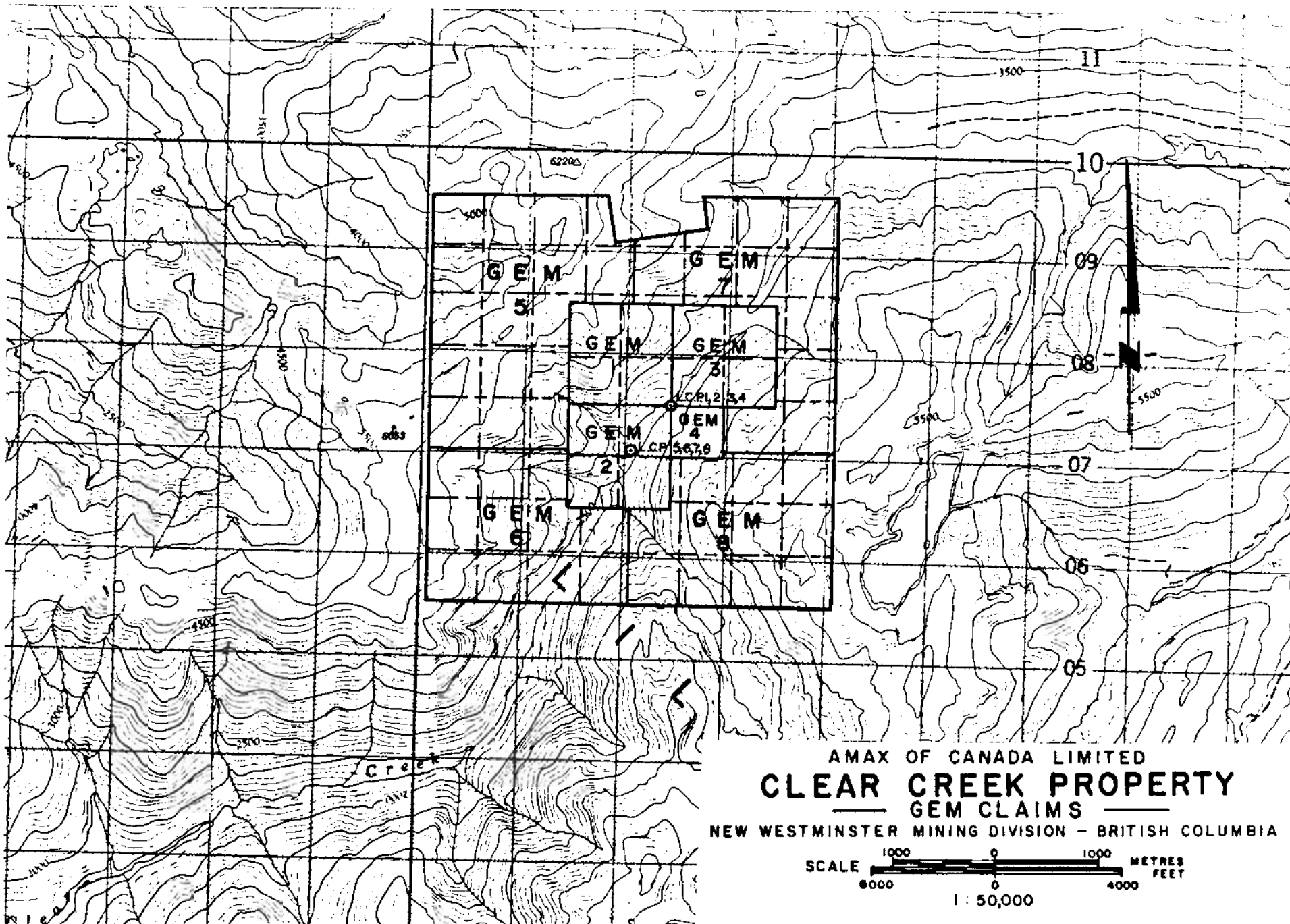
N. T. S. Ref. 92 H 12

PROPERTY GEOLOGY

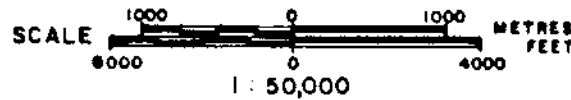
The Clear Creek property covers a Miocene-age quartz monzonite stock which intrudes foliated quartz diorite, coarse biotite schists and gneiss of the Coast Range Complex. The stock, named the Gem stock by previous owners (Map unit 2) is 1,200 x 550 metres in extent with long axis north-south. The quartz monzonite is predominantly inequigranular to locally porphyritic, becoming medium grained equigranular at depth. A younger porphyritic biotite porphyritic granodiorite phase (Map unit 2a) recently dated at 34 m.y. occurs at depth within the stock.

A roughly circular (in plan) breccia pipe, the Gem Breccia, approximately 400 metres in diameter, has intruded the northeastern contact of the quartz monzonite stock. Sub-angular to sub-rounded clasts commonly three to ten centimetres across comprise up to 50% of the rock. Quartz latite fragments (of unknown source) predominate but quartz monzonite, schist and aplite fragments are also present, being more common near the pipe's margin. The matrix consists of finely comminuted rock with conspicuous quartz phenocrysts and abundant fine brown biotite and locally chlorite. Intra-breccia dykes of quartz latite are present locally with parallel attendant flow-structures at 150° Az. A mega-breccia, termed "Mixed Breccia", restricted mainly to the stock's contact with country rock as well as with Gem Breccia is composed of large clasts of abundant coarse schist and foliated quartz diorite. This breccia is compact so that relatively little matrix exists between the subangular clasts.

Narrow one to three metres rhyolite porphyry dykes intrude all of the above units and are most plentiful near the east contact of the stock. They are pale white to cream



AMAX OF CANADA LIMITED
CLEAR CREEK PROPERTY
GEM CLAIMS
 NEW WESTMINSTER MINING DIVISION - BRITISH COLUMBIA



coloured and weather to pale pink slabby talus blocks displaying prominent but not abundant bi-pyramidal quartz phenocrysts.

Gray coarse grained feldspar-quartz porphyry intrusive dykes occur locally within the Gem Breccia. Late black andesite and lamprophyre dykes represent the youngest igneous stage. A north northeast trending fault traces the course of Clear Creek.

Mineralization consists predominantly of molybdenite in all units except the coarse grained feldspar quartz porphyry and late andesite dykes are mineralized. Best mineralization as outlined by Utah's work appears to favour the quartz monzonite/schist-gneiss contact. It occurs as a 1,600 by 200 foot crescent shaped zone straddling the eastern edge of the Gem Breccia. Molybdenite occurs in the following modes listed in order of decreasing abundance: 1) as medium grained (2 mm to 5 mm) crystals discontinuously sprinkled along the edges of and within one to two centimetres coarse quartz (\pm calcite) veins; 2) as coarse .5 to 1.5 centimetres isolated spectacular rosettes and blebs in wide two centimetres to .5 metres wide quartz veins; 3) as fine grained quartz-molybdenite blueish veins one to two millimeters wide, and; 4) as occasional "paint" along fractures. The first three modes combined in wide quartz veins (several feet) comprise the spectacular mineralization which attracted the early prospectors. Occasional minor pyrite and pyrrhotite accompany molybdenite-quartz veining which constitutes a random, coarse stockwork. Two stages of molybdenite veining have been noted cut by a later barren quartz veining stage. Most veins display no wallrock effect; only occasional veins show distinct wallrock bleaching of feldspars. Only those quartz-molybdenite veins found in rhyolite porphyry dykes and extending into the Gem Breccia were observed to contain substantial sericite accompanying molybdenite.

Alteration on the property associated with hydrothermal activity is generally lacking. Biotite in quartz monzonite is predominantly fresh. Local strong sausseritization and chloritization of quartz monzonite several tens of feet away from the Gem Breccia contact was noted in Breccia Creek. The over all Fe-sulphide content of the molybdenite system is conspicuously low (ie. <1% pyrite).

DIAMOND DRILLING

General Statement

One diamond drill hole was driven to a depth of 2,007 feet (612 metres). The hole was collared at an elevation of 2,600 feet (793 metres) on upper Clear Creek, at a site situated 400 feet (122 metres) on a bearing 210° Az. from the common LCP to the GEM 1-4 claims. This site was used in 1965 by Utah Mining for DDH G-3. The AMAX hole was collared at an inclination of -70° on a bearing 340° Az. and started with NQ (1 7/8") core. At 314 feet it became necessary to reduce to BQ (1 7/16") core. Contractor for the job was Connors Drilling of Kamloops, B.C. using a Boyles 37 A drill with hydraulic breaker. Drilling was conducted from June 14 to July 4, 1981.

Core recovery averaged close to 100%. All core was logged and split, then stacked at the drill site on the property. A skeletal core was taken for permanent record and stored at the AMAX warehouse. Ten foot intervals of split core were submitted to Rossbacher Laboratory, Burnaby, B.C. and analysed for MoS_2 total assay and geochemical Cu, Ag, Pb, Zn, WO_3 and F.

The drill log for CC-81-1 is given in Appendix II. Sample numbers and molybdenite assays have been entered on the drill logs the remainder of the analytical results are listed separately following the drill log.

Results

The hole was collared in gray biotite quartz monzonite of the Gem Stock and penetrated the same lithology over most of its entire length as shown in Figure 3. Texture of the quartz monzonite varies from porphyritic to medium grained equigranular; becoming predominantly equigranular at depth. Black biotite (2 to 3 percent) is overall fresh and unaltered.

Locally, pink phases of quartz monzonite are present.

Two 13 and 87 foot intersections of dark gray porphyritic granodiorite are present between 1,000 and 1,150 feet. Granodiorite contains 7 to 10 percent fresh black biotite and locally up to 10 percent pink orthoclase phenocrysts. Inclusions of biotite quartz monzonite suggest granodiorite is younger, but a chill contact at 1,146 feet contradicts this age relation. The granodiorite appears lithologically similar to that intersected at the bottom of Utah's drill hole G-21.

Narrow 10 to 20 centimetre wide bands of dark gray feldspar quartz porphyry with aplite matrix are present in quartz monzonite between 1,900 and 2,000 feet. Sharp chill contacts demonstrate their younger age. Composition of these bands based on visual examination suggests that they may be related to the granodiorite.

Eight post-mineral andesitic dykes ranging in apparent width from less than one up to 12 feet were intersected.

Only minor alteration is present and consists of pervasive but patchy chlorite-epidote in 10 to 30 foot wide zones. Two chlorite-epidote alteration zones each about 60 feet wide were intersected at 840 to 900 feet and 1,550 to 1,620 feet. The alteration consists of chlorite on fractures, weak pervasive chloritization of biotite and moderate to strong pervasive green sausseritization of feldspars. This alteration may be deuteric in origin, or it may be caused by the influence of the nearby Gem Breccia pipe.

Mineralization consists predominantly weakly persistent molybdenite throughout the entire length of the drill hole. Coarse molybdenite crystals up to one centimetre wide

occur in drusy white quartz veins one to two centimetres wide and are the most common type of mineralization. Fine grained molybdenite-quartz seams and occasional molybdenite "paint" fractures one to two millimeters wide are also present. Together these modes of molybdenite mineralization form a random, widely spaced stockwork. Total quartz veining averages 15 to 25 veins per 10 foot interval but shows no apparent trend with depth. Most quartz-molybdenite veins show little or no alteration; only occasional narrow bleached envelopes are present.

Between 25 and 40 percent of the total quartz veins counted per 10 foot interval, are mineralized with molybdenite. Only in the bottom 250 feet does the molybdenite mineralized quartz vein count fall off abruptly. The grade of MoS_2 is more influenced by presence of coarse molybdenite rosettes than by number of fine grained one to two millimeter wide molybdenite-quartz veinlets.

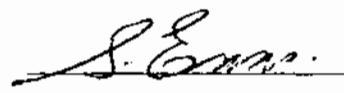
Total Fe-sulphide content is low, estimated to be less than one-quarter percent. Pyrrhotite appears to dominate the upper 1,300 feet and pyrite the lower part of the hole. Both types of sulphide accompany molybdenite and occupy occasional fractures.

Trace amounts of chalcopyrite, sphalerite, scheelite and bismuthinite occur locally. Analytical results for base metal, tungsten and fluorine are uniformly low.

Significant assay results for molybdenite are as follows:

<u>Interval</u>	<u>Thickness (feet)</u>	<u>Average Grade %MoS_2</u>
180-200	20	.07
220-230	10	.07
250-280	30	.13

<u>Interval</u>	<u>Thickness (feet)</u>	<u>Average Grade %MoS:</u>
320-330	10	.21
360-380	20	.11
420-430	10	.25
420-450	30	.11
560-570	10	.09
580-600	20	.07
600-620	20	.12
680-690	10	.08
740-750	10	.16
970-990	20	.13
1050-1060	10	.15
1120-1130	10	.16
1150-1170	20	.08
1240-1250	10	.14
1290-1300	10	.12
1410-1420	10	.13
1410-1430	20	.10
1440-1450	10	.08
1670-1680	10	.08
1710-1720	10	.21


S.G. Enns

APPENDIX I
STATEMENT OF COSTS

STATEMENT OF COSTS

Summary of Work - 314 feet NQ to 1,683 feet BQ Diamond
Drilling in one hole.

Period of Work - June 9 - July 13, 1981

Drilling done by - Connors Drilling,
Box 3340,
Kamloops, B.C.

Invoice #11209, #11254 \$75,035.55

Five years GEM 1-4 = \$13,000.00

APPENDIX II

DRILL LOGS

DIAMOND DRILL RECORD

PROPERTY CLEAR CREEK Project Number 795

Hole No. CC-81-1 Co-ordinates _____ Bearing at Collar 340°

_____ Dip at Collar -70°

Collar Elevation 2,600 feet (793 m) Commenced Drilling June 14, 1979

Total Depth 2,007 feet (612 m) Completed Drilling July 3, 1981

Depth Casing 85 feet (26 m)
23 feet (7 m) Casing Pulled
Casing left in Logged By: S.G. Enns

Core Size WQ 138-314 Coring Method _____ Drilling Contractor Connors Diamond Drilling
BQ 314-2007

<u>Survey Summary</u>				<u>Pertinent Assay Data</u>		<u>Pertinent Geology</u>	
Depth	Dip	Bearing	Method	Interval	% MoS ₂	Interval	Rock Type
110'	-70°	322° Az	Sperry Sun	270-280	0.266%	0-138	Talus blocks of schist, gneiss, quartz monzonite, granodiorite, quartz porphyry
1375'	-68°	321° Az	" "	320-330	0.214%		
1957'	-62°	356° Az	" "	360-380	0.114%	138-2007	
				420-450	0.113%		Biotite quartz monzonite

AMAX MINERALS EXPLORATION

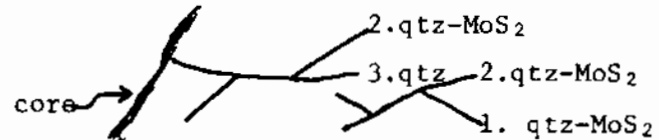
CLEAR CREEK

PROPERTY

DDH CC-1

SHEET 1 OF 24

Box No.	Depth (in ft)	Recovery	Lithology	STRUCTURE			ALTERATION					MINERALIZATION					ASSAY					REMARKS	
				RCD	Shears	Veins	Chl A	Clay B	Sausserite C	Opasite D	Sil E	Py	Po	MoS ₂	Sample No.	Est. MoS ₂	MoS ₂						
#1																						0-138	Talus Blocks - Lithology consists of: banded feldspar gneiss Foliated coarse grained biotite quartz diorite - MoS ₂ mineralized White quartz feldspar porphyry - MoS ₂ -quartz mineralized Altered white porphyry quartz monzonite quartz mineralized Dark grey Gem Breccia White quartz feldspar porphyry shows three ages of quartz veining thus:
	130		bedrock																				
#6	x	60%																					
	x	140	100	11																			
	x		2	19																			
	x		100	14									65801										
	x	150	77												.01	.015							
#7	x		14	9																			
	x		100										65802										
	x	160																					
	x		86	16	21										.01	.019							
#8	x	170											65803										
	x		100	14											.01	.026							
	180																						



138-200 Gray Porphyry Biotite Quartz Monzonite
 4-5% fresh black biotite
 weak sericite alteration of plagioclase
 local associated chlorite 2 m - weak as 1 m wide zones
 narrow 1-2 mm sharp quartz veinlets with MoS₂ as fine grained and coarse grained mineralization 20 - 70° core axis
 trace pyrite, occasional pyrrhotite on fractures
 Quartz monzonite has sub-porphyrific texture
 Several 1-1.5 cm barren quartz veins present around 200 feet with attendant bleaching.
 (Greenish plagioclase+sausserite biotite+chlorite alteration). These crosscut MoS₂ mineralized veins.

AMAX MINERALS EXPLORATION

CLEAR CREEK

PROPERTY

DDH CC-1
SHEET 3 OF 24

Box No.	Depth	Recovery	Lithology	STRUCTURE			ALTERATION					MINERALIZATION					ASSAY				REMARKS	
				RQD	Shears	Veins	Chl	e Clay	c Saus	e Kspar	e Sil	Po	MoS ₂					Sample No.	Est. MoS ₂	MoS ₂		
#13	260	100	BC	16	20												65813	.03	.041			
	270	98	BC	↓	↓													↓				
	280	100	BC	18	10												65814	.05	.266			
#14	290	100	BC	↓	↓												65815	.03	.030		300	quartz-MoS ₂ veinlet 45° core axis crosscut by barren quartz vein 35° core axis (both 2 mm)
	300	100	2 BC	2	13	22											65816	.03	.056		306-307	2 quartz MoS ₂ veins with fine grained MoS ₂ 15° core axis
	310	100	BC	↓	↓													↓				300-400
#15	320	100	BC	12	12												65817	.03	.031			
	330	100	NQ	↓	↓													↓				
	340	100	BQ	17	7												65818		.024			
#16	350	100	reduce	↓	↓													↓				
	360	100		19	16													↓				
	370	100		↓	↓												65819	.03	.214			5 mm w/pt 1 cm 2 mm quartz veins
#17	380	100		24	9												65820		.026			
	390	100		↓	↓													↓				

AMAX MINERALS EXPLORATION

CLEAR CREEK

PROPERTY

DDH CC-1
SHEET 4 OF 24

Box No.	Depth	Recovery	Lithology	STRUCTURE			ALTERATION					MINERALIZATION					ASSAY				REMARKS		
				RQD	Shears	Veins	Chl A	Clay e	Saus s	epher e	Sil E	Po	MoS ₂				Sample No.	Est. MoS ₂	MoS ₂				
	340																						
#17	100																						
	x				19	15																	
	350				↓	↓																	
	100																						
#18	x				16	18																	
	360				↓	↓																	
	x				13	18																	
	370				↓	↓																	
	100																						
#19	x				13	17																	
	380				↓	↓																	
		100																					
	x				5	16																	
	390				↓	↓																	
	100																						
#20	x				15	8																	
	400				↓	↓																	
		100																					
x				18	10																		
	410				↓	↓																	
	100																						
#20	x				19	22																	
	420				↓	↓																	

358-359 weak chlorite-sausserite alteration - localized to quartz pyrrhotite MoS₂ vein
 fine grained MoS₂ shear. 25° core axis @ 377
 coarse MoS₂
 @ 379 3 mm MoS₂ veins. Coarse MoS₂ crosscuts
 coarse MoS₂ quartz
 @ 396 2 cm quartz MoS₂ (fine grained) vein
 contains fine specks of scheelite

400-500 As before
 Sausserite altered 385-387
 395-398
 404-406
 MoS₂ filled shear 396 30° core axis MoS₂ fine
 grained and slip.
 .3 cm crackle brecciated shear @ 414
 MoS₂ quartz-minor mineralization as hairline
 veinlets throughout approx. 20% of total quartz
 veining is mineralized.
 Larger .5-1 cm quartz veins barren and later

AMAX MINERALS EXPLORATION

----- CLEAR CREEK -----

PROPERTY

DDH CC-1
SHEET 6 OF 24

Box No.	Depth	Recovery	Lithology	STRUCTURE			ALTERATION					MINERALIZATION					ASSAY			REMARKS
				RQD	Shears	Veins	Chl A	Clay B	Causes C	Kspar D	Sil E	Py	Po	MoS ₂	Sample No.	Est. MoS ₂	MoS ₂			
#24	500																			500-600 As Above
	x		15	20												65837	.034			Same as above
	510		↓	↓																Fresh black biotite 3-4%, locally 4-5%
	x		2	19	15											65838	.060			Weak MoS ₂ mineralized quartz veinlets with
	520		↓	↓																medium grained MoS ₂ and locally in hairline
#25	x		15	9											65839	.024			fractures. Main sulphide associated pyrrhotite	
	530		↓	↓															here and there. Estimate 15% of quartz vein-	
	x		5	16	16														lets MoS ₂ bearing but variably mineralized	
	540		↓	↓																along each veinlet.
	x		10	18	8															20° and 45° core axis quartz MoS ₂ veinlets.
#26	x		5	16	8															Black Andesitic Dyke 527-539
	550		↓	↓																541-542.5
	x		11	12																
	560		↓	↓																
	x		2	16	17											65841	.055			
#26	570		↓	↓																560-580 Quartz and feldspar distinctly euhedral and
	x		16	17											65842	.901				show slight foliation contacts? very
	580		↓	↓																gradational. Grey siliceous matrix lower
x		20	16																	contact ~575 with attendant alteration
580		↓	↓																	Greenish sericite and weak chlorite alteration
x		20	16												65843	.028				as noted
580		↓	↓																	Trace chalcopyrite @ 603

AMAX MINERALS EXPLORATION

CLEAR CREEK

PROPERTY

DDH CC-1
SHEET 7 OF 24

Box No.	Depth	Recovery	Lithology	STRUCTURE			ALTERATION					MINERALIZATION					ASSAY				REMARKS		
				RQD	Shears	Veins	Chl. A	Clay	Caustic	Ksp	Sil	Py	Po	MoS ₂	Sample No.	Est. MoS ₂	MoS ₂						
#27	500																						
	x	100		BC																			
#28																							
	x	590																					
		100																					
	x	600			20		22																
		100																					
	x	610			14																		
#29																							
	x	620																					
		100																					
	x	620			20		24																
#30																							
	x	630																					
		98																					
	x	640																					
#30																							
	x	650																					
		100																					
	660																						

600-700 Grey Porphyry Biotite Quartz Monzonite
As before - generally unaltered with fresh black biotite.
MoS₂ persists as weak mineralized throughout. Dominant Fe S is pyrrhotite as weak accessory. Overall Fe S deficient. MoS₂ quartz veins varying core angles. Thick well mineralized ones usually 10-20° core axis as @ 749. Toward base of interval calcite accompanies quartz veins.

AMAX MINERALS EXPLORATION

CLEAR CREEK

PROPERTY

DDH CC-1
SHEET 8 OF 24

Box No.	Depth	Recovery	Lithology	STRUCTURE			ALTERATION					MINERALIZATION					ASSAY					REMARKS
				RQD	Shears	Veins	Chl. A	Clay e	Saus B	Keppar C	Sil F	Py	Po	MoS ₂	Sample No.	Est. MoS ₂	MoS ₃					
	660																					
#31	100		↑																			
	x	670		8		15															660-670	5 of 15 veins mineralized.
		100		↓																	65852	.013
	x	680		13		22															65853	.039
#32	100		↓																			
	x	690		27		23																
		100		↓																		
	x	700		24		18																
		100		↓																		
	x	710		17		21																
#33	100		BC																			
	x	720		3		19																
		100		↓																		
	x	730		11		17																
#34	100		↓																			
	x	740		11		24																

660-670 5 of 15 veins mineralized.

700-800 Grey Porphyry Biotite Quartz Monzonite
Unaltered - black fresh biotite.

710-740 Several quartz calcite MoS₂ veins .5 cm @ 729 Rutile needles? - Bismuthinite? Trace chalcopryrite here and there.

720-730 11 of 17 veins mineralized

AMAX MINERALS EXPLORATION

CLEAR CREEK

PROPERTY

DDH CC-1

SHEET 10 OF 24

Box No.	Depth	Recovery	STRUCTURE		ALTERATION					MINERALIZATION					ASSAY				REMARKS
			RQD	Shears Veins	Chl A	Clay E	Saus S	oKapar P	Sil	Py	Po	MOS ₂	Sample No.	Est. MoS ₂	MoS ₂				
#38	830	100	16	21							minor on fractures								800-900 Grey Porphyry Biotite Quartz Monzonite As before, generally fresh MoS ₂ variably present persistently in 20-25% of quartz veinlets usually as 1-2 mm and occasional .5-1 cm veins. Later generally crosscutting narrow veins and seldom are mineralized. Also they are higher core axis ~40-50, whereas 1-2 mm are 10-25° core axis. Rare blue quartz Mo veinlet with fine grained MoS ₂ -early stage MoS ₂ on chlorite fracture as paint here and there 895. Pyrrhotite predominant Fe S, pyrite rare 820-850 - absent above this depth chloritic fracture 840-850. Greenish feldspar → Sausserite altered as pervasive altered then diminishes to 2-3 cm wide envelopes about 1 cm barren as well as MoS ₂ mineralized quartz veins. Occasional coarse MoS ₂ crystals in 1 cm quartz vein @ 884.
	x	830	100								weak				65868		.015		
	x	840	100	11	21						slight occasional increase vein with <3% MoS ₂				65869		.013		
	x	850	100	20	38										65870		.056		
	x	860	100	2	19							weakly persistent throughout			65871		.020		
	x	870	100												65872		.018		
	x	880	100	18	17										65873		.004		
	x	890	100	13	24										65874		.014		
x	900	100	7	20										65875		.009			

AMAX MINERALS EXPLORATION

CLEAR CREEK

PROPERTY

DDH CC-1
SHEET 11 OF 24

Box No.	Depth	Recovery	Lithology	STRUCTURE			ALTERATION						MINERALIZATION					ASSAY			REMARKS		
				RQD	Shears	Veins	Chl	Clay	Saus	Ksp	SII	Py	Po	MoS ₂	Sample No.	Est. MoS ₂	MoS ₂						
	900																						
#41		100	↑																		900-928	Grey Porphyry Biotite Quartz Monzonite Same	
	x			9		25									slight increase					55876		.024	
	910			↓		↓																	
x		100		15		23														55877		.020	
#42		920	↓	↓		↓									weakly						920-928	Greenish Black Andesite Dyke @ 920-928; 2 inclusions of andesite in quartz monzonite above 920 feet suggests irregular low core axis contact Mineralization same as above: Occasional 1-2 mm fine grained MoS ₂ rich seams here and there. 15° core axis - 20° core axis cut by 1 cm quartz vein-barren 20-30° core axis	
	x		100	5		23									persistent						/		
	930			25°	↓	↓																	
x		100	↑	18		19									through-					55878		.032	
#43		940		↓		↓									out								
	x		100	17																55879		.010	
	950			↓		↓																	
x		100	2			21														55880		.007	
	960			↓		↓																	
x		100		22		20														55881		.020	
#44		970		↓		↓															979.5-980	Black Andesitic Dyke - 15° core axis 1.0 cm brecciated quartz vein @ upper contact 20° core axis? - MoS ₂ rosettes	
	x		100	16		17									blebs 10cm								
	980			50	↓															55882	.03	.156	
				5	80	↓																5 of 21 quartz veins MoS ₂ bearing 950-960 @ 983 1 cm brecciated black shear zone 20° core axis strong MoS ₂ paint.	

AMAX MINERALS EXPLORATION

CLEAR CREEK

PROPERTY

DDH CC-1
SHEET 12 OF 24

Box No.	Depth	Recovery	Lithology	STRUCTURE			ALTERATION					MINERALIZATION					ASSAY				REMARKS						
				R/D	Shears	Veins	Chl A	Clay a	Saus s	epur e	Sil E	Py	Po	MoS ₂				Sample No.	Est. MoS ₂	MoS ₂							
#45	980	100																					980-994	as before			
	x		2	19	24																		65883	.106			
		990	100	↓	↓																				994-995	Black Andesite Dyke	
	x		50	17	21																				995-1002	as before	
		1000	2	↓	↓																						
	x		5	12	14																						
		1010	100	↑	↓	↓																					
	x		15	14																							
		1020	100	2	↓	↓																					
	x		17	19																							
#46		1030	100	↓	↓																						
	x		13	10																							
		1040	2a	↓	↓																						
	x		90	7	10																						
		1050	2a	↑	↓	↓																					
#47	x		100	2	15	10																					
		1060	↓	↓	↓																						
	x		100	2	15	10																					

quartz MoS₂ vein mineralized 40°
550

AMAX MINERALS EXPLORATION

CLEAR CREEK

PROPERTY

ODH CC-1
SHEET 19 OF 24

Box No.	Depth	Recovery	Lithology	STRUCTURE			ALTERATION				MINERALIZATION					ASSAY				REMARKS	
				RQD	Shears	Veins	Chl	Clay	sauss	Kspar	Fe Sil	Py	Po	MoS ₂	Cpy	Sample No.	Est. MoS ₂	MoS ₂			
#72	1540	100	↑	15	15																
	x			↓	↓										65939		.010				
#73	1550	100		22	15																
	x			↓	↓										65940		1.005				
#74	1560	100		21	14																
	x			↓	↓										65941		.012				
#75	1570	100		11	14																
	x		2	↓	↓										65942		.018				
#76	1580	100		24	21																
	x			↓	↓										65943		.011				
#77	1590	100		21	17																
	x			↓	↓										65944		.014				
#78	1600	100		27	9																
	x			↓	↓										65945		.051				
#79	1610	100		21	8																
	x			↓	↓										65946		.020				
	1620			↓	↓																

1570-1658.5 Variably Altered Biotite Quartz Monzonite
 Clayed altered feldspar as noted
 curious medium-green soft coating on
 fractures in altered zone
 Green sausseritized feldspar-hard
 Still weakly mineralized coarse MoS₂
 rosettes in quartz veins
 Fine grained MoS₂ now rare @ this depth
 Pyrite dominated FeS but still weak
 Fresh quartz monzonite variable texture -
 grades into medium grained inequigranular
 with pinkish Kspars than back into medium
 coarse grained hypidiomorphic quartz
 monzonite
 mylonitized 1601-1605

AMAX MINERALS EXPLORATION

CLEAR CREEK

PROPERTY

DDH CC-1
SHEET 21 OF 24

Box No.	Depth	Recovery	Lithology	STRUCTURE			ALTERATION					MINERALIZATION					ASSAY					REMARKS	
				RQD	Shears	Veins	Chl A	Clay	Saus	Ksp	Sil	MoS ₂					Sample No.	Est. MoS ₂	MoS ₂				
#79	1700	100	Δ																				1700-1800 Variably altered Biotite Quartz Monzonite As before Biotite Quartz Monzonite Altered probably sausseritization of Feldspar-green and hard accompanied by weak chloritization of Biotite. Mylonitization @ 1733-1735 In unaltered zones Quartz Monzonite displays conspicuous pink colour of Feldspar (Fe stain?) here and there. MoS ₂ still present but appears to be weaker overall. Occasional coarse crystals of MoS ₂ . Pyrite in dry fractures @ 1712. associated with chlorite @ 1770 @ 1790 Bleached Feldspar envelopes about 1 cm quartz vein @ 1702 1 cm quartz vein @ 1704 2 cm quartz vein @ 1722
	x	1710	100	BC	19	19										65955	.023						
	x	1720	100	BC	16	10										65956	.03	.210					
#80	x	1730	100		29	12										65957	.005						
	x	1740	92	2 BC	17	6										65958	.004						
	x	1750	100	BC	25	13										65959	.004						
#81	x	1760	100	BC	18	8										65960	.003						
	x	1770	100	BC	27	11										65961	.004						
#82	x	1780	100		24	2										65962	.019						

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-

STATEMENT OF QUALIFICATIONS

NAME

L.R. Flint

EXPERIENCE

Climax Molybdenum Company of British
Columbia Limited - Engineering Assistant
May 2, 1966 - May 15, 1979

Yorke-Hardy Project - Hudson's Bay Mtn.
Smithers, B.C.

Kitsault Project - Kitsault, B.C.

AMAX of Canada Limited - May 16, 1979 to
present

Geological Technician: claim staking,
line cutting, soil sampling, drill core
splitting, drill supervision, camp
building and road building.

APPENDIX IV

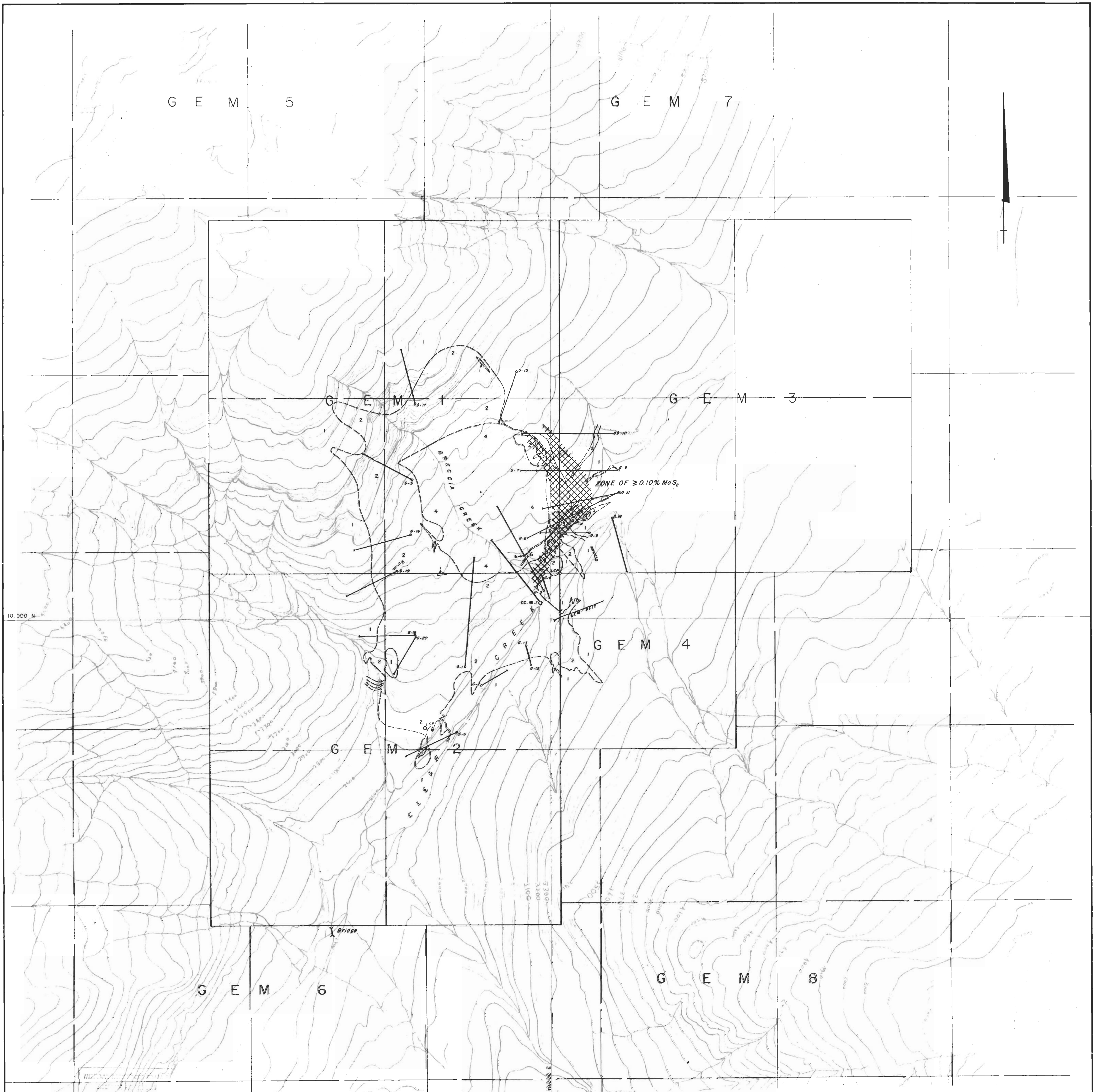
DETAILED WORK HISTORY

Detailed Work History

The detailed work history of the Clear Creek prospect has been summarized as follows:

- 1912 Jamieson hired natives to pack high grade ore down Spuzzum Creek to Fraser River.
- 1921 Bailey of Hope, B.C. acquired the ground around high grade veins on Clear Creek.
- 1937 Hendry recommended trenching veins at intervals to determine extent and degree of mineralization and further prospecting.
- 1959 Newmont took an option on property and later dropped.
- 1961 Willey of Gem Exploration Ltd. preliminary examination option with Bailey.
- 1963 Fawley recommended limited program, suggesting more prospecting to determine if high grade veins would sufficiently "sweeten" barren to low grade material between veins to make an economic stockwork type deposit. His sampling ranged from 0.12 to 3.74% MoS₂. No. 1 Vein (up to seven feet wide) was traced over 400 feet at 150°. Noranda tried unsuccessfully to secure an option. Gem Explorations drove 593 foot adit to intersect No. 1 Vein at depth. Found extension had pinched to only two inches in width.
- 1964 Cohen of Cimco sampled drift and reported 375 feet averaging 0.11% MoS₂.
- 1964 Chapman, Wood and Griswold resampled drift and reported same 375 feet averaging 0.03% MoS₂ with only one sample 0.19% MoS₂.
- 1964 Utah Mines took option and conducted mapping, soil geochemistry limited IP surveying.
- 1965 Gem Explorations Ltd. put in rough haul road from Harrison Lake. Utah Mines drilled six holes (G1 to G6)

- totalling 4,300 feet. Core was removed from property.
- 1966 Utah drilled four holes (G7 to G10) totalling 3,550 feet. Concluded best zone of molybdenite to lie on northeast side of stock, near contact.
- 1967 Utah Mines with joint venture partner Phelps Dodge drilled ten holes (G11 to G20) totalling 5,100 feet. Concluded pre-mineral fracturing of country rock adjacent to quartz monzonite stock controlled mineralization.
- 1968 Utah-Phelps Dodge drilled last hole G21 to 1,500 feet, which did not show greater size potential or grade improvement with depth.
- 1969 Utah-Phelps Dodge relinquished their 57% interest in property.
- 1975 Gem Explorations Ltd. allowed their claims to lapse. AMAX picked up property by staking four claims (13 units) to cover stock.
- 1976-79 AMAX conducted line-cutting and geological studies to keep claims in good standing.
- 1979-81 Cash in lieu of assessment.
- 1981 AMAX staked four claims (64 units) to obtain peripheral protection. AMAX with joint venture partner E & B Explorations drilled one 2,000 foot hole to test out breccia pipe at depth for higher grade mineralization.



9470

L E G E N D

- | | |
|--|--|
| <ul style="list-style-type: none"> 6 Porphyritic quartz latite, rhyolite, aplite dykes. 5 Andesite, diorite dykes. 4 Gem breccia. 3 Mixed breccia. 2 Quartz monzonite porphyry. 1 Gneissic quartz diorite, schist, gneiss. | <ul style="list-style-type: none"> ○ CC-81-10 Collar location and surface projection of diamond drill hole. (Amax 1981) ○ CC-81-11 Collar location and surface projection of diamond drill hole. (Pre 1981) ⊕ LCP Legal corner post, claim boundary. --- Claim unit boundary. ■ Building — Road ~ Stream --- Topographic contour (contour interval 20'). |
|--|--|

NOTE — Base map is a pencil manuscript prepared by Pacific Survey Corporation at 1" = 400' and a 20' contour interval for AMAX using aerial photographs BC 5215 (148-150).

Geology modified after Young and Aird, 1969; and Allen 1975

AMAX POTASH LIMITED			
CLEAR CREEK PROPERTY			
GEM CLAIMS			
NEW WESTMINSTER MINING DIVISION — BRITISH COLUMBIA			
GEOLOGICAL MAP			
SCALE		FEET	
200 0 400		0 200	
200 0 400		0 200	
DATE REVISION	DATE PRINTED	Drawn by Date N T S File 92 H 12	FIG 3
To accompany '1981 ASSESSMENT REPORT' by S G Enns			

Elev.

4000'

LOOKING NORTHEAST

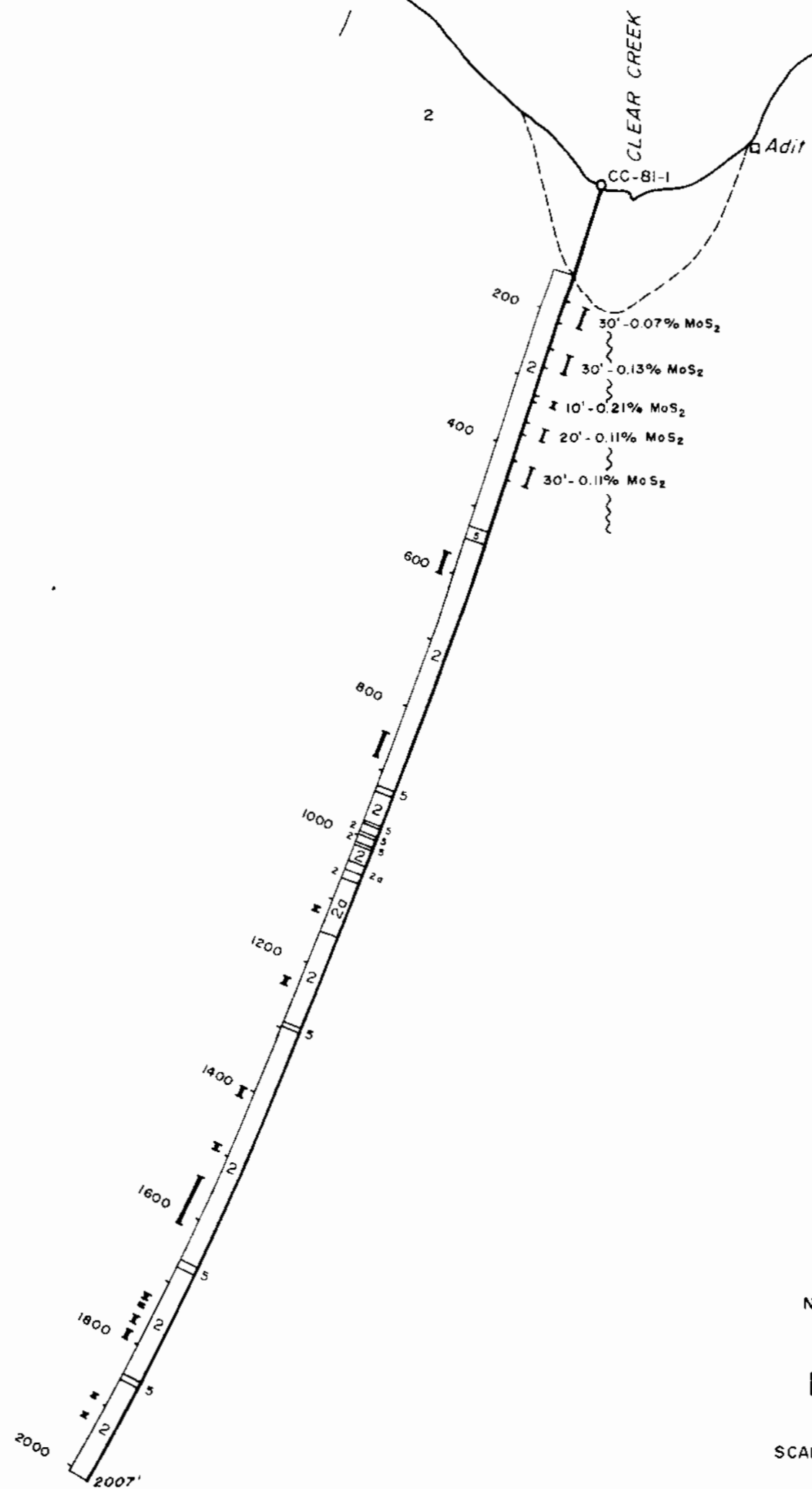
3000'

2000'

1000'

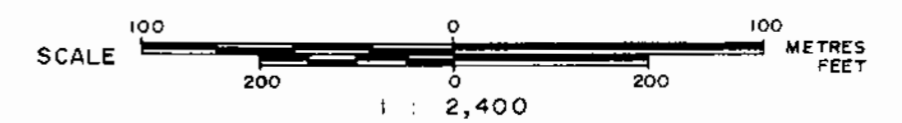
LEGEND

- 5 Andesite, diorite dykes.
- 4 Gem breccia.
- 2a Porphyritic granodiorite.
- 2 Quartz monzonite porphyry.
- 1 Gneissic quartz diorite, schist, qneiss.
- Sausserification and chloritization.



9470

AMAX OF CANADA LIMITED
 CLEAR CREEK PROPERTY
 NEW WESTMINSTER MINING DIVISION-BRITISH COLUMBIA
 SECTION ALONG
 DIAMOND DRILL HOLE CC-81-1



To accompany 1981 ASSESSMENT REPORT by S.G. Enns
 Vancouver