ARCHER, CATHRO
& ASSOCIATES LIMITED
CONSULTING GEOLOGICAL ENGINEERS

VANCOUVER, B.C. (604) 688-2568

BOX 4127, WHITEHORSE, Y.T. Y1A 3S9 (403) 667-4415

1016 - 510 WEST HASTINGS STREET
VANCOUVER, B.C. V6B 1L8

RECEIVED
1981 FEB 12
MINING RECORDER
WATSON LAKE, Y.T.
I.A. & N.D.

Office of the Supervising Mining Recorder
FEB 17 1981
WHITEHORSE
Yukon Territory

REPORT ON

GEOLOGICAL MAPPING AND DIAMOND DRILLING

BOOT 1-284 & MARMOT 1-24 CLAIMS

YA25436-YA25459
YA25687-YA25699
YA26131-YA26154
YA33838-YA34052
YA34734-YA34741
YA34852-YA34859
YA34948-YA34955
YA34994-YA34997
YA35531-YA35534

WATSON LAKE MINING DISTRICT, Y.T.

CLAIM SHEET 105G/6

Latitude 61°26'N Longitude 131°10'W

FOR CHEVRON CANADA LTD.

U. Schmidt, B.Sc.

R.J. Cathro, B.A.Sc., P.Eng.

JANUARY, 1981

090728

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

$ 12,600.00

Resident Geologist or
Resident Mining Engineer

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act

E. R. BAXTER
Supervising Mining Recorder

for Commissioner of Yukon Territory

INDIAN and NORTHERN AFFAIRS

TRANSMITTAL FORM

MR File No _____

S.M.R. File No. _____

Date Fwd 12 Feb 81

FROM Mining Recorder at ... WATSON LAKE .....

TO: Supervising Mining Recorder at Whitehorse, Y.T.

Office of the Supervising Mining Recorder
FEB 17 1981
WHITEHORSE
Yukon Territory

FOR ACTION ARE:

☐ NEW APPL'N for PLACER LEASE to PROSPECT: Name:

☐ RENEWAL APPL'N PLACER LEASE to PROSPECT: Name: Lease No. .....

☐ AFFIDAVIT of EXPENDITURE on PLACER LEASE. Name. Lease No .....

☐ ASSIGNMENT of PLACER LEASE No. .....
From: To:

☐ GROUPING APPL'N UNDER SEC. 52(2) PLACER MINING ACT.
Owner:

☐ DIAMOND DRILL LOGS:
Claims: Claim sheet no.

☑ QUARTZ ASSESSMENT REPORT
Claims: Boot 1-284, MARMOT 1-24 Claim sheet no. 105-G-6

Type of report:
Geological Mapping & Diamond Drilling

Submitted by:
Archer, Cathro & Assoc. Ltd.

Cls. work performed on:
Boot 3, 6, 34, 11
Marmot 13, 14

$ Req. for ren. application
$ 121,600 00

Signature

REPLY ACTION: Date Ret.

090728

090728

Signature

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

(This form required in duplicate with sketch showing location of work.)

RECEIVED 1981 JAN 28 MINING RECORDER WATSON LAKE, Y.T. I.A. & N.D.

OFFICE DATE STAMP

I (Name) M.P. PHILLIPS	Occupation GEOLOGIST
(Postal Address) P.O BOX 4127, WHITEHORSE, YUKON	

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, wotk on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)

BOOT 6 YA 25441

situated at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $1,200.00

dollars, since the 19 day of JANUARY 19 80,

to represent the following mineral claims under the authority of Grouping Certificate No. 3828
(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 1

BOOT 120 YA 33920 4 YRS
122 YA 33922 |
123 YA 33923 4 YRS
TOTAL 12 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by section 53.)

DIAMOND DRILLING - SEE REPORT FOR DETAILS
SEE SCHEDULES 1 & 2

TOTAL EXPENDITURES BOOT 6	$20,000
LESS GROUP 1	1,200
BALANCE GROUP 1	$18,800

Sworn before me at WHITEHORSE, Y.T.

this 8 day of JANUARY 19 81

M Southwick
Notary Public

M P Phillips
Applicant.

M.P. PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

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WATSON LAKE, Y.T.
I.A. & N.D.

I (Name) M.P PHILLIPS Occupation GEOLOGIST	OFFICE DATE STAMP
(Postal Address) P.O. Box 4127, WHITEHORSE, YUKON	

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, wotk on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)

BOOT 6 YA 25441

situated at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $1200 00

dollars, since the 19 day of JANUARY 19 81,

to represent the following mineral claims under the authority of Grouping Certificate No. 2839
(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 2

BOOT 83	YA 33883	4 YRS
84	884	1
85	885	4 YRS
TOTAL		12 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by section 53.)

DIAMOND DRILLING - SEE REPORT FOR DETAILS

SEE SCHEDULES 1&2

BALANCE GROUP 1	$18,800
LESS GROUP 2	1,200
BALANCE GROUP 2	$17,600

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 19 81

M Scutthwick
Notary Public

M P Phillips
Applicant.

M P PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

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I (Name) M.P PHILLIPS Occupation GEOLOGIST

(Postal Address) P.O BOX 4127, WHITEHORSE, YUKON

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, work on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)
BOOT 6 YA 25441

situated at GRASS LAKES AREA Claim Sheet No. 105 G/6

in the WATSON LAKE Mining District, to the value of at least $2,000

dollars, since the 7 day of FEBRUARY 80 BOOT 263, 265
19 day of JANUARY 19 80 BOOT 117, 119, 121

to represent the following mineral claims under the authority of Grouping Certificate No. 2830
(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 3

BOOT	117 - YA 33917	- 4 YRS
	119 YA 33919	|
	121 YA 33921	|
	263 YA 34949	|
	265 YA 34951	4 YRS
	TOTAL	20 CLAIM YEARS

3. The following is a detailed statement of such work. (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 53.)

DIAMOND DRILLING - SEE REPORT FOR DETAILS

SEE SCHEDULES 1 & 2

BALANCE GROUP 2	$17,600
LESS GROUP 3	2,000
BALANCE GROUP 3	$15,600

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 1981

M. Southwest
Notary Public

M. P. Phillips
Applicant.

M.P. PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

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(Postal Address) P.O BOX 4127, WHITEHORSE, YUKON

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, wotk on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)
BOOT 6 YA 25441

situated at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $1600.00

dollars, since the 7 day of FEBRUARY 1980,

to represent the following mineral claims under the authority of Grouping Certificate No. 2831
(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 4

BOOT	253	YA 35531	4 YRS
	282	YA 35532	|
	283	YA 35533	|
	284	YA 35534	4 YRS
		TOTAL	16 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by section 53.)

DIAMOND DRILLING - SEE REPORT FOR DETAILS
SEE SCHEDULES 122

BALANCE GROUP 3	$15,600
LESS GROUP 4	1,600
BALANCE GROUP 4	$14,000

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 1981

H. Southwick
Notary Public

M. P. Phillips
Applicant.

M.P PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

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(Postal Address) P.O. BOX 4127, WHITEHORSE, YUKON

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2. I have done, or caused to be done, wotk on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)

BOOT 6 YA 25441

situated at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $ 2000.00

dollars, since the 7 day of FEBRUARY 19 80,

to represent the following mineral claims under the authority of Grouping Certificate No. 2832

(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 5

BOOT 270	YA 34856	4 YRS
271	YA 34857	|
275	YA 34855	|
276	YA 34858	|
277	YA 34859	4 YRS
TOTAL		20 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 53.)

DIAMOND DRILLING - SEE REPORT FOR DETAILS

SEE SCHEDULES 1 & 2

BALANCE GROUP 4	$ 14,000
LESS GROUP 5	2,000
BALANCE GROUP 5	$ 12,000

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 1981

M Beaudrie

Notary Public

M.P. Phillips

Applicant.

M.P PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

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I.A. & N.D.

OFFICE DATE STAMP

I (Name) M.P PHILLIPS Occupation GEOLOCIST

(Postal Address) P.O. BOX 4127, WHITEHORSE, YUKON

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, wotk on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)
BOOT 6 YA 25441

situated at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $2800.00

dollars, since the 7 day of FEBRUARY 19 80,

to represent the following mineral claims under the authority of Grouping Certificate No. 2833

(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 6	BOOT 266	YA 34852	4 YRS
	267	853	|
	268	854	|
	269	855	|
	272	952	|
	273	953	|
	274	954	4 YRS
		TOTAL	28 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 53.)
DIAMOND DRILLING - SEE REPORT FOR DETAILS
SEE SCHEDULES 1&2

BALANCE GROUP 5	$12,000
LESS GROUP 6	2,800
BALANCE GROUP 6	$ 9,200

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 1981

H Scrutton

Notary Public

M P Phillips

Applicant.

M.P PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

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(Postal Address) P.O. BOX 4127, WHITEHORSE, YUKON

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, work on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)
BOOT 6 YA 25441

situated at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $2400.00

dollars, since the 7 day of FEBRUARY 1980,

to represent the following mineral claims under the authority of Grouping Certificate No. 2034

(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 7

BOOT	258	YA 34738	4 YRS
	259	739	|
	260	740	|
	261	741	|
	262	YA 34 948	|
	264	950	4 YRS
		TOTAL	24 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by section 53.)

DIAMOND DRILLING SEE REPORT FOR DETAILS
SEE SCHEDULES 1 & 2

BALANCE GROUP 6	$9,200
LESS GROUP 7	2,400
BALANCE GROUP 7	$6,800

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 1981

H Braithwaite
Notary Public

M.P Phillips
Applicant.

M.P PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

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I.A. & N.D.

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I (Name) M.P. PHILLIPS Occupation GEOLOGIST

(Postal Address) P.O. BOX 4127, WHITEHORSE, YUKON

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, wotk on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)

BOOT 6 YA 25441

situated at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $1600.00

dollars, since the 19 day of JANUARY 19 80,

to represent the following mineral claims under the authority of Grouping Certificate No. 25835

(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 8

BOOT 56	YA 33856	4 YRS
57	857	|
58	858	4 YRS
59	859	
	TOTAL	16 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 53.)

DIAMOND DRILLING - SEE REPORT FOR DETAILS
SEE SCHEDULES 1 & 2

BALANCE GROUP 7	$6,800
LESS GROUP 8	1,600
BALANCE GROUP 8	$5,200

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 1981

J. Southcott
Notary Public

M.P. Phillips
Applicant.

M.P PHILLIPS FOR ARCHER CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

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I.A. & N.D.

OFFICE DATE STAMP

I (Name) M P. PHILLIPS	Occupation GEOLOGIST
(Postal Address) P.O BOX 4127, WHITEHORSE, YUKON	

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, work on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)
BOOT 6 YA 25441

situate at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $1600.00

dollars since the 19 day of JANUARY 19 80,

to represent the following mineral claims under the authority of Grouping Certificate No. 3836
(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

	BOOT	80	YA 33880	4 YRS
		81	881	|
GROUP 9		82	882	|
		118	918	4 YRS
			TOTAL	16 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by section 53.)
DIAMOND DRILLING - SEE REPORT FOR DETAILS
SEE SCHEDULES 1&2

BALANCE GROUP 8	$5,200
LESS GROUP 9	1,600
BALANCE GROUP 9	$3,600

Sworn before me at WHITEHORSE, YUKON
this 8 day of JANUARY 1981

H Matthewick
Notary Public

M P Phillips
Applicant.
M P PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

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I.A. & N.D.

OFFICE DATE STAMP

I (Name) M.P PHILLIPS Occupation GEOLOGIST

(Postal Address) P.O. BOX 4127, WHITEHORSE, YUKON

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, wotk on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)
BOOT 6 YA 25441

situated at GRASS LAKES AREA Claim Sheet No. 105 G/6

in the WATSON LAKE Mining District, to the value of at least $3200.00

dollars, since the 19 day of JANUARY 19 80,

to represent the following mineral claims under the authority of Grouping Certificate No. 3831

(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested.)

GROUP 10	BOOT 48	YA 33848	4 YRS
	49	849	
	50	850	
	51	851	
	52	852	
	53	853	
	54	854	
	55	855	4 YRS
		TOTAL	32 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 53.)

DIAMOND DRILLING - SEE REPORT FOR DETAILS

SEE SCHEDULES 1 & 2

BALANCE GROUP 9 $3,600
LESS GROUP 10 3,200
BALANCE GROUP 10 $ 400

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 1981

A. Southwood
Notary Public

M.P. Phillips
Applicant

M.P PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

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I (Name) MP PHILLIPS	Occupation GEOLOGIST
(Postal Address) P.O. BOX 4127, WHITEHORSE, YUKON	

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, work on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)
BOOT 3 YA 25438
6 YA 25441

situated at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $2400.00

dollars, since the 19 day of JANUARY 19 80,

to represent the following mineral claims under the authority of Grouping Certificate No. 2838
(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 11

BOOT 74	YA 33874	4 YRS
75	875	|
76	876	|
77	877	|
78	878	|
79	879	4 YRS
	TOTAL	24 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 53.)
DIAMOND DRILLING - SEE REPORT FOR DETAILS
SEE SCHEDULES 1 & 2

BALANCE GROUP 10	400
TOTAL EXPENDITURES BOOT 3	38,440
TOTAL	$38,840
LESS GROUP 11	2,400
BALANCE GROUP 11	$36,440

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 1981

H Southwood
Notary Public

M.P. Phillips
Applicant.
M.P PHILLIPS FOR ARCHER, CATHRO

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(Postal Address) P.O. BOX 4127, WHITEHORSE, YUKON

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1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, wotk on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)
BOOT 3 YA 25438

situated at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $280.00

dollars, since the 19 day of JANUARY 1980,

to represent the following mineral claims under the authority of Grouping Certificate No. 3839
(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 12

BOOT 110	YA 33910 -	4 YRS
111	911	|
112	912	|
113	913	|
114	914	|
115	915	|
116	916	4 YRS
	TOTAL	28 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 53.)
DIAMOND DRILLING - SEE REPORT FOR DETAILS
SEE SCHEDULES 1 & 2

BALANCE GROUP 11	$ 36,440
LESS GROUP 12	2,800
BALANCE GROUP 12	$33,640

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 1981

A Lavitsuck
Notary Public

M.P. Phillips
Applicant.
M.P. PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

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(Postal Address) P.O. BOX 4127, WHITEHORSE, YUKON

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1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, wotk on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)
BOOT 3 YA 25438

situated at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $3200.00

dollars. Since the 7 day of FEBRUARY 19 80,

to represent the following mineral claims under the authority of Grouping Certificate No. 3840
(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 13

BOOT	254	YA 34734	4 YRS
	255	735	|
	256	736	|
	257	737	|
	278	YA 34 994	|
	279	995	|
	280	996	|
	281	997	4 YRS
		TOTAL	32 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 43.)

DIAMOND DRILLING - SEE REPORT FOR DETAILS
SEE SCHEDULES 1&2

BALANCE GROUP 12	$33,640
LESS GROUP 13	3,200
BALANCE GROUP 13	$30,440

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 19 81

M. Davidovich
Notary Public

M.P. Phillips
Applicant.

M.P. PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

(This form required in duplicate with sketch showing location of work.)

RECEIVED
1981 JAN 28
MINING RECORDER
WATSON LAKE, Y.T.
I.A. & N.D.

OFFICE DATE STAMP

I (Name) M.P PHILLIPS Occupation GEOLOGIST

(Postal Address) P.O. BOX 4127, WHITEHORSE, YUKON

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, wotk on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)
BOOT 3 YA 2548

situated at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $4800.00

dollars, since the 19 day of JANUARY 19 80,

to represent the following mineral claims under the authority of Grouping Certificate No. 3841
(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 14

BOOT 98	YA 33898	4 YRS
99	899	
100	900	
101	901	
102	902	
103	903	
104	904	
105	905	
106	906	
107	907	
108	908	
109	909	4 YRS
TOTAL		48 CLAIM YEARS

3. The following is a detailed statement of such work. (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 53.)

DIAMOND DRILLING - SEE REPORT FOR DETAILS

SEE SCHEDULES 1 & 2

BALANCE GROUP 13	$ 30,440
LESS GROUP 14	4,800
BALANCE GROUP 14	$ 25,640

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 1981

Notary Public

Applicant.

M.P. PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

(This form required in duplicate with sketch showing location of work.)

RECEIVED
1981 JAN 28
MINING RECORDER
WATSON LAKE, Y.T.
I.A. & N.D.

OFFICE DATE STAMP

I (Name) M.P. PHILLIPS Occupation GEOLOGIST

(Postal Address) P.O. BOX 4127, WHITEHORSE, YUKON

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, wotk on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)

BOOT 3 YA 25 438

situated at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $4800.00

dollars, since the 19 day of JANUARY 19 80,

to represent the following mineral claims under the authority of Grouping Certificate No. [illegible]
(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 15

BOOT 62	YA 33862	4 YRS
63	863	
64	864	
65	865	
66	866	
67	867	
68	868	
69	869	
70	870	
71	871	
72	872	
73	873	4 YRS
TOTAL		48 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 53.)

DIAMOND DRILLING - SEE REPORT FOR DETAILS

SEE SCHEDULES 1 & 2

BALANCE GROUP 14	$25,640
LESS GROUP 15	4,800
BALANCE GROUP 15	$20,840

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 1981

M. Southcott
Notary Public

M.P. Phillips
Applicant.

M P PHILLIPS FOR ARCHER, CATHI

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

(This form required in duplicate with sketch showing location of work.)

RECEIVED
1981 JAN 28
MINING RECORDER
WATSON LAKE, Y.T.
I.A. & N.D.

OFFICE DATE STAMP

I (Name) M P PHILLIPS Occupation GEOLOGIST

(Postal Address) P O BOX 4127, WHITEHORSE, YUKON

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, wotk on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)
BOOT 3; YA 25438

situated at GRASS LAKES AREA Claim Sheet No. 105 G/6

in the WATSON LAKE Mining District, to the value of at least $5600.00

dollars, since the 19 JANUARY 26 day of FEBRUARY 1980 BOOT 40-47 1980-BOOT 17-20 & 32-33

to represent the following mineral claims under the authority of Grouping Certificate No. 384

(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 16

BOOT	17	YA 25452	4YRS
	18	453	
	19	454	
	20	455	
	32	694	
	33	695	
	40	YA 33840	
	41	841	
	42	842	
	43	843	
	44	844	
	45	845	
	46	846	
	47	847	4YRS
		TOTAL	56 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by section 53.)

DIAMOND DRILLING - SEE REPORT FOR DETAILS

SEE SCHEDULES 1 & 2

BALANCE GROUP 15	$20,840
LESS GROUP 16	5,600
BALANCE GROUP 16	$15,240

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 1981

A Davidson
Notary Public

M.P. Phillips
Applicant.

M.P PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

(This form required in duplicate with sketch showing location of work.)

RECEIVED
1981 JAN 28
MINING RECORDER
WATSON LAKE, Y.T.
I.A. & N.D.

I (Name) M.P PHILLIPS	Occupation GEOLOGIST
(Postal Address) P.O. BOX 4127, WHITEHORSE, YUKON	OFFICE DATE STAMP

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, wotk on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)
MARMOT 13 YA 26143

situated at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $3600 00

dollars, since the 19 day of JANUARY 1980,

to represent the following mineral claims under the authority of Grouping Certificate No. 3804

(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 17

BOOT	124	YA 33924	4 YRS
	125	925	|
	127	927	|
	129	929	|
	131	931	|
	132	932	|
	133	933	|
	144	944	|
	145	945	4 YRS
		TOTAL	36 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 53.)
DIAMOND DRILLING - SEE REPORT FOR DETAILS
SEE SCHEDULES 1 & 2

TOTAL EXPENDITURES MARMOT 13 =	$ 20,960
LESS GROUP 17	3,600
BALANCE GROUP 17	$ 17,360

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 1981

Notary Public

Applicant.
M P PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

(This form required in duplicate with sketch showing location of work.)

RECEIVED
1981 JAN 28
MINING RECORDER
WATSON LAKE, Y.T.
I.A. & N.D.

OFFICE DATE STAMP

I (Name)	M.P PHILLIPS	Occupation	GEOLOGIST
(Postal Address)	P.O. BOX 4127, WHITEHORSE, YUKON		

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, work on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)
MARMOT 13 - YA 26143

situated at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $3600.00

dollars, since the 19 day of JANUARY 1980,

to represent the following mineral claims under the authority of Grouping Certificate No. -3845
(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 18

BOOT	126	YA 33926	4 YRS
	128	928	|
	130	930	|
	134	934	|
	135	935	|
	137	937	|
	139	939	|
	146	946	|
	147	947	4 YRS
		TOTAL	36 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 53.)
DIAMOND DRILLING - SEE REPORT FOR DETAILS
SEE SCHEDULES 1 & 2

BALANCE GROUP 17	$17,360
LESS GROUP 18	3,600
BALANCE GROUP 18	$13,760

Sworn before me at WHITEHORSE, YUKON
this 8 day of JANUARY 1981

M. Courtnicock
Notary Public

M.P. Phillips
Applicant.
M.P PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

(This form required in duplicate with sketch showing location of work.)

RECEIVED
1981 JAN 28
MINING RECORDER
WATSON LAKE, Y.T.
I.A. & N.D.
OFFICE DATE STAMP

I (Name) M. P. PHILLIPS Occupation GEOLOGIST

(Postal Address) P.O. BOX 4127, WHITEHORSE, YUKON

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral clair(s) to which reference is made herein.

2. I have done, or caused to be done, wotk on the following mineral claim(s):
(Here list claims on which work was actually done by *number and name*)
MARMOT 13 YA 26143

situated at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $3600.00

dollars, since the 19 day of JANUARY 19 80,

to represent the following mineral claims under the authority of Grouping Certificate No. 2846
(Here list claims to be renewed in numerical order, by *grant number and claim name*, showing renewal period requested).

GROUP 19

BOOT	136	YA 33936	4YRS
	138	938	
	140	940	
	141	941	
	142	942	
	143	943	
	148	948	
	149	949	
	151	951	4YRS
		TOTAL	36 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 53.)

DIAMOND DRILLING - SEE REPORT FOR DETAILS

SEE SCHEDULES 1&2

BALANCE GROUP 18	$13,760
LESS GROUP 19	3,600
BALANCE GROUP 19	$10,160

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 1981

H Southcott
Notary Public

M.P. Phillips
Applicant.

M.P PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

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RECEIVED
1981 JAN 28
MINING RECORDER
WATSON LAKE, Y.T.
I.A. & N.D.

OFFICE DATE STAMP

I (Name) M. P. PHILLIPS Occupation GEOLOGIST

(Postal Address) P.O BOX 4127, WHITEHORSE, YUKON

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein..

2. I have done, or caused to be done, wotk on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)
MARMOT 13 YA 26143

situated at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $4000.00

dollars, since the 19 day of JANUARY 1980,

to represent the following mineral claims under the authority of Grouping Certificate No. 32-1
(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 20

BOOT 158	YA 33958	4 YRS
159	959	
160	960	
161	961	
162	962	
163	963	
164	964	
165	965	
166	966	
167	967	4 YRS
	TOTAL	40 CLAIM YEARS

3. The following is a detailed statement of such work. (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by section 53.)
DIAMOND DRILLING - SEE REPORT FOR DETAILS
SEE SCHEDULES 1 & 2

BALANCE GROUP 19	$10,160
LESS GROUP 20	4,000
BALANCE GROUP 20	$ 6,160

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 1981

A. Sawtuck
Notary Public

M. P. Phillips
Applicant.
M.P. PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

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RECEIVED
1981 JAN 28
MINING RECORDER
WATSON LAKE, Y.T.
I.A. & N.D.

OFFICE DATE STAMP

I (Name) M P PHILLIPS Occupation GEOLOGIST

(Postal Address) P.O BOX 4127, WHITEHORSE, YUKON

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, work on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)
MARMOT 13 YA 26143

situated in GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $4,000.00

dollars, since the 19 day of JANUARY 1980,

to represent the following mineral claims under the authority of Grouping Certificate No. 3845

(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 21	BOOT 180	YA 33980	4 YRS
	181	981	
	182	982	
	183	983	
	184	984	
	185	985	
	186	986	
	187	987	
	188	988	
	189	989	4 YRS
		TOTAL	40 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 53.)

DIAMOND DRILLING - SEE REPORT FOR DETAILS

SCHEDULES 1 & 2

BALANCE GROUP 20	$6,160
LESS GROUP 21	4,000
BALANCE GROUP 21	$2,160

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 1981

A Southcott
Notary Public

M.P. Phillips
Applicant.

M.P PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

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1981 JAN 28
MINING RECORDER
WATSON LAKE, Y.T.
I.A. & N.D.

OFFICE DATE STAMP

I (Name) M.P PHILLIPS Occupation GEOLOGIST

(Postal Address) P.O. BOX 4127, WHITEHORSE, Y.T

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, wotk on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)

MARMOT 13 YA 26143
14 144

situated at GRASS LAKE AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $4000.00

dollars, since the 19 day of JANUARY 19 80,

to represent the following mineral claims under the authority of Grouping Certificate No. 8849
(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 22

BOOT 204	YA34004	4YRS
205	005	
206	006	
207	007	
208	008	
209	009	
210	010	
211	011	
212	012	
213	013	4YRS
	TOTAL	40 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by section 53.)

DIAMOND DRILLING - SEE REPORT FOR DETAILS

SEE SCHEDULES 1&2

TOTAL EXPENDITURES MARMOT 14	$22,760
BALANCE GROUP 21	2,160
TOTAL	$24,920
LESS GROUP 22	4,000
BALANCE GROUP 22	$20,920

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 19 81

Notary Public

M.P. Phillips

Applicant.

M.P PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

(This form required in duplicate with sketch showing location of work.)

RECEIVED
1981 JAN 28
MINING RECORDER
WATSON LAKE, Y.T.
I.A. & N.D.

OFFICE DATE STAMP

I (Name) M.P. PHILLIPS Occupation GEOLOGIST

(Postal Address) P.O. BOX 4127, WHITEHORSE, YUKON

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, work on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)
MARMOT 14 YA 26144

situated at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $4800.00

dollars, since the 19 day of JANUARY 19 80,

to represent the following mineral claims under the authority of Grouping Certificate No. B850
(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 23

BOOT	190	YA 33990	4 YRS
	191	991	
	192	992	
	193	993	
	194	994	
	195	995	
	214	YA 34 014	
	215	015	
	216	016	
	217	017	
	218	018	
	219	019	4 YRS
		TOTAL	48 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 53.)

DIAMOND DRILLING - SEE REPORT FOR DETAILS

SEE SCHEDULES 1 & 2

BALANCE GROUP 22	$20,920
LESS GROUP 23	4,800
BALANCE GROUP 23	$16,120

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 1981

H. Sattler

Notary Public

M. P. Phillips

Applicant.

M.P PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

(This form required in duplicate with sketch showing location of work.)

RECEIVED
1981 JAN 23
MINING RECORDER
WATSON LAKE, Y.T.
I.A. & N.D.

OFFICE DATE STAMP

I (Name) M.P PHILLIPS Occupation GEOLOGIST

(Postal Address) P.O. BOX 4127, WHITEHORSE, YUKON

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, wotk on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)
MARMOT 14-YA 26144

situated at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $3600.00

dollars, since the 19 day of JANUARY 19 80,

to represent the following mineral claims under the authority of Grouping Certificate No. 28251
(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 24

BOOT	150	YA 33950	4 YRS
	152	952	
	153	953	
	154	954	
	155	955	
	168	968	
	169	969	
	170	970	
	171	971	4 YRS
		TOTAL	36 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 53.)

DIAMOND DRILLING - SEE REPORT FOR DETAILS

SEE SCHEDULES 1 & 2.

BALANCE GROUP 23	$16,120
LESS GROUP 24	3,600
BALANCE GROUP 24	$12,520

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 1981

M Smithwick
Notary Public

M.P Phillips
Applicant.

M.P PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

(This form required in duplicate with sketch showing location of work.)

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1981 JAN 28
MINING RECORDER
WATSON LAKE, Y.T.
I.A. & N.D.

OFFICE DATE STAMP

I (Name) M.P PHILLIPS Occupation GEOLOGIST

(Postal Address) P.O BOX 4127, WHITEHORSE, YUKON

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, wotk on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)
MARMOT 14 YA 26144

situated at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $5200.00

dollars, since the 19 day of JANUARY 19 80,

to represent the following mineral claims under the authority of Grouping Certificate No. 8552
(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 25

BOOT 156	YA 33956	4 YRS
157	957	|
172	972	|
173	973	|
174	974	|
175	975	|
176	976	|
177	977	|
196	996	|
197	997	|
198	998	|
199	999	|
220	YA 34020	4 YRS
	TOTAL	52 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 43.)

DIAMOND DRILLING - SEE REPORT FOR DETAILS
SEE SCHEDULES 1&2

BALANCE GROUP 24	$12,520
LESS GROUP 25	5,200
BALANCE GROUP 25	$7,320

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 1981

M. Southcott
Notary Public

M.P. Phillips
Applicant.

M.P PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

(This form required in duplicate with sketch showing location of work.)

RECEIVED
1981 JAN 28
MINING RECORDER
WATSON LAKE, Y.T.
I.A. & N.D.

OFFICE DATE STAMP

I (Name) M.P PHILLIPS Occupation GEOLOGIST

(Postal Address) P.O. BOX 4127, WHITEHORSE, Y.T

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, work on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)

MARMOT 14 YA 26144

situated at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $6400.00

dollars, since the 19 day of JANUARY 80 BOOT 221
26 FEBRUARY 19 80 MARMOT CLS

to represent the following mineral claims under the authority of Grouping Certificate No. B953
(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 26

MARMOT	9	YA 26139	4 YRS
	10	140	
	11	141	
	12	142	
	13	143	
	14	144	
	15	145	
	16	146	
	17	147	
	18	148	
	19	149	
	21	151	
	22	152	
	23	153	
	24	154	
BOOT	221	YA 34021	4 YRS
		TOTAL	64 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 53.)

DIAMOND DRILLING - SEE REPORT FOR DETAILS

SEE SCHEDULES 1 & 2

BALANCE GROUP 25 $7,320
LESS GROUP 26 6,400
BALANCE GROUP 26 $ 920

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 1981

M. Schlitzerdt
Notary Public

M.P. Phillips
Applicant.

M.P PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

(This form required in duplicate with sketch showing location of work.)

RECEIVED
1981 JAN 28
MINING RECORDER
WATSON LAKE, Y.T.
I.A. & N.D.

OFFICE DATE STAMP

I (Name) M P. PHILLIPS Occupation GEOLOGIST

(Postal Address) P.O BOX 4127, WHITEHORSE, YUKON

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, wotk on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)
BOOT 34 YA 25696

situated at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $ 16,040.00

dollars. Since the 19 26 day of JANUARY 19 80 BOOT 60,61,90-97,178-179
day of FEBRUARY 19 80 BOOT 34,35,38,39

to represent the following mineral claims under the authority of Grouping Certificate No. 2854
(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 27

BOOT 34	YA 25696	- 4 YRS	
35	697		
38	698		
39	699		
60	YA 33860		
61	861		
90	YA 33890		
91	891		
92	892		
93	893		
94	894		
95	895		
96	896		
97	897	4 YRS	

BOOT 178	YA 33978	4 YRS
179	979	4 YRS
TOTAL		64 CLAIM YEARS.

3. The following is a detailed statement of such work. (Set out full particulars of the work done indicating later work commenced and ended in the twelve months in which such work is required to be done as shown by section 13.)

DIAMOND DRILLING - SEE REPORT FOR DETAILS

SEE SCHEDULES 1 & 2.

TOTAL EXPENDITURES BOOT 34	$ 16,040
LESS GROUP 27	6,400
BALANCE GROUP 27	$ 9,640

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 19 81

H Southwick
Notary Public

M P Phillips
Applicant.

M P PHILLIPS FOR ARCHER CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

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I.A. & N.D.

OFFICE DATE STAMP

I (Name) M P PHILLIPS Occupation GEOLOGIST

(Postal Address) P.O BOX 4127, WHITEHORSE, YUKON

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, work on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)

~~MAEHOT~~ 34 YA 25696
BOOT

situated at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $5600.00

dollars since the 19 JANUARY 80 BOOT 200-203
26 day of FEBRUARY 1980 BOOT 5-8, 13-16, 23-24

to represent the following mineral claims under the authority of Grouping Certificate No. 9855

(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 28

BOOT 5	YA 25	440	4 YRS
6		441	
7		442	
8		443	
13		448	
14		449	
15		450	
16		451	
23		458	
24		459	
200	YA 34	000	
201		001	
202		002	
203		003	4 YRS
	TOTAL		56 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 53.)

DIAMOND DRILLING - SEE REPORT FOR DETAILS
SEE SCHEDULES 1&2

BALANCE GROUP 27	$9,640
LESS GROUP 28	5,600
BALANCE GROUP 28	$4,040

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 1981

Notary Public

Applicant.

M.P PHILLIPS FOR ARCHER CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

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I.A. & N.D.

OFFICE DATE STAMP

I (Name) M.P. PHILLIPS Occupation GEOLOGIST

(Postal Address) P.O BOX 4127, WHITEHORSE, Y.T.

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, work on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)

BOOT 11 YA 25446

situated at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $4400.00

dollars, since the 19 day of JANUARY 1980,

to represent the following mineral claims under the authority of Grouping Certificate No. 25556

(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 29

BOOT	222	YA 24022	4YRS
	223	023	
	224	024	
	225	025	
	226	026	
	227	027	
	228	028	
	229	029	
	230	030	
	231	031	
	232	032	4YRS
		TOTAL	44 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by section 53.)

DIAMOND DRILLING - SEE REPORT FOR DETAILS

SEE SCHEDULES 1 & 2

TOTAL EXPENDITURES	BOOT 11	$ 26,000
LESS GROUP 29		4,400
BALANCE GROUP 29		$ 21,600

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 1981

M Southcott
Notary Public

M P Phillips
Applicant

M P PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

(This form required in duplicate with sketch showing location of work.)

RECEIVED
1981 JAN 28
MINING RECORDER
WATSON LAKE, Y.T.
I.A. & N.D.

OFFICE DATE STAMP

I (Name) M.P PHILLIPS Occupation GEOLOGIST

(Postal Address) P.O. BOX 4127, WHITEHORSE, YUKON

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, wotk on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)
BOOT 11 YA 25446

situated at GRASS LAKES AREA Claim Sheet No. 105G/6

in the WATSON LAKE Mining District, to the value of at least $5,200 244-249
80 BOOT 233-237

dollars, since the 19 day of JANUARY 19 80 BOOT, 29&30
26 FEBRUARY

to represent the following mineral claims under the authority of Grouping Certificate No. 8857

(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 30

BOOT 29	YA 25691	4 YRS
30	692	
233	YA 34033	
234	034	
235	035	
236	036	
237	037	
244	044	
245	045	
246	046	
247	047	
248	048	
249	049	4 YRS
	TOTAL	52 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 53.)
DIAMOND DRILLING - SEE REPORT FOR DETAILS
SEE SCHEDULES 1&2

BALANCE GROUP 29	$21,600
LESS GROUP 30	5,200
BALANCE GROUP 30	$16,400

Sworn before me at WHITEHORSE, YUKON
this 8 day of JANUARY 19 81

M Dauthuxot
Notary Public

M P Phillips
Applicant.
M P PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

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WATSON LAKE, Y.T.
I.A. & N.D.

OFFICE DATE STAMP

I (Name) M.P PHILLIPS Occupation GEOLOGIST

(Postal Address) P.O. BOX 4127, WHITEHORSE, Y.T

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, wotk on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)
BOOT 11 YA 25446

situated at CRASS LAKE AREA Claim Sheet No. 105 G/6

in the WATSON LAKE Mining District, to the value of at least $ 6000.00

dollars, since the 26 day of JANUARY 1980 BOOT 36&37
FEBRUARY 1980 MARMOT 1-8&20
BOOT 9,11,21&22

to represent the following mineral claims under the authority of Grouping Certificate No. 2858

(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 31

BOOT	9	YA 25444	4 YRS
	11	446	
	21	456	
	22	457	
	36	YA 33838	
	37	839	
MARMOT	1	YA 26131	
	2	132	
	3	133	
	4	134	
	5	135	
	6	136	
	7	137	
	8	138	
	20	150	4 YRS
		TOTAL	60 CLAIM YEARS

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 53.)
DIAMOND DRILLING - SEE REPORT FOR DETAILS
SEE SCHEDULES 1&2

BALANCE GROUP 30	$16,400
LESS GROUP 31	6,000
BALANCE GROUP 31	$10,400

Sworn before me at WHITEHORSE, YUKON
this 8 day of JANUARY 1981

H Southwick
Notary Public

M.P. Phillips
Applicant.
M P. PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

(This form required in duplicate with sketch showing location of work.)

RECEIVED
1981 JAN 28
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I.A. & N.D.

OFFICE DATE STAMP

I (Name) M.P PHILLIPS Occupation GEOLOGIST

(Postal Address) P.O. BOX 4127, WHITEHORSE, YUKON

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, work on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)
BOOT 11 YA 25446

situated at GRASS LAKES AREA Claim Sheet No. 105C/6

in the WATSON LAKE Mining District, to the value of at least $6,000

dollars, since the 19 JANUARY 26 day of FEBRUARY 1980-BOOT 238-243, 250-25. 19 80-BOOT, 1-4, 10 & 12

to represent the following mineral claims under the authority of Grouping Certificate No. 5859
(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 32

BOOT 1	YA 25436	4 YRS
2	437	
3	438	
4	439	
10	445	
12	447	
238	YA 34038	
239	039	
240	040	
241	041	
242	042	
243	043	
250	050	
251	051	
252	052	4 YRS
	TOTAL	60 CLAIM YEARS

3. The following is a detailed statement of such work. (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 53.)
DIAMOND DRILLING - SEE REPORT FOR DETAILS
SEE SCHEDULES 1 & 2

BALANCE GROUP 31	$10,400
LESS GROUP 32	6,000
BALANCE GROUP 32	$4,400

Sworn before me at WHITEHORSE, YUKON
this 8 day of JANUARY 1981

Notary Public

M.P PHILLIPS

Applicant.
M.P PHILLIPS FOR ARCHER, CATHRO

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

(This form required in duplicate with sketch showing location of work.)

RECEIVED
1981 JAN 28
MINING RECORDER
WATSON LAKE, Y.T.
I.A. & N.D.

OFFICE DATE STAMP

I (Name) M.P PHILLIPS Occupation GEOLOGIST

(Postal Address) P.O. BOX 4127, WHITEHORSE, YUKON

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, work on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)

BOOT 11 YA 25446

Properties: GRASS LAKES AREA Claim Sheet No. 105G/6

In the WATSON LAKE Mining District, to the value of at least $2,000.00

dollars, since the 26 day of FEBRUARY 19 80,

to represent the following mineral claims under the authority of Grouping Certificate No. J860
(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

GROUP 33

BOOT	25	YA 25687	4 YRS
	26	688	|
	27	689	|
	28	690	|
	31	693	4 YRS
		TOTAL	20 CLAIM YEARS

3. The following is a detailed statement of such work. (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by section 13.)

DIAMOND DRILLING - SEE REPORT FOR DETAILS

SEE SCHEDULES 122

BALANCE GROUP 32 $4,400
LESS GROUP 33 2,000
BALANCE GROUP 33 $2,400

Sworn before me at WHITEHORSE, YUKON

this 8 day of JANUARY 1981

H Southwood

Notary Public

M P Phillips

Applicant.

M P PHILLIPS FOR ARCHER CATHRO

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SUMMARY AND RECOMMENDATIONS

The Boot-Marmot property occurs within an unusually complex geological setting caused by regional overthrusting of oceanic and island arc rocks from the southwest onto upper Proterozoic to lower Mesozoic shelf strata. The regional geology has recently been remapped by Dirk Tempelman-Kluit for the GSC. His findings and interpretation form the framework for the Archer, Cathro mapping, which subdivides the numerous map units into five major structural or age divisions named in ascending order: Autochthonous rocks, Nisutlin Allochthon, Allochthonous Schist Assemblage, Anvil Allochthon, and Intrusive Suite.

In addition to a review of the 1980 program, this report also provides a final summary and reinterpretation of previous mapping on the Boot-Marmot claims by Archer, Cathro in 1977-80 inclusive. The 1980 program included magnetometer surveys, mapping and soil surveys and 1232 m of drilling in 10 holes.

Surface exploration and diamond drilling on the Boot-Marmot claims have been primarily directed towards scheelite mineralization that occurs in disseminated contact aureoles with no associated sulphide minerals. This mineralization is quite different from typical Yukon tungsten skarn deposits in both mineralogy and geological setting. The usual host rock to better-grade mineralization on the Boot-Marmot claims is an altered, foliated black and white contact rock called Biotite Zone which is composed of biotite, feldspar, quartz, chlorite and clay.

The discovery outcrop in Boot Cirque, known as the Boot A Zone, grades 5.88% WO_3 and 0.056 oz/ton Au across 1.8 m, which is the best showing found in the district. Unfortunately, drilling showed that it is merely a small erosional remnant with no economic potential. A nearby zone, known as the Boot B Zone,

is similar in nature and contains three narrow semi-conformable bands of mineralization from 0.6 to 2 m thick. The best mineralization is an alteration zone developed at the margin of the stock rather than a typical skarn zone. The alteration zone transcends the stratigraphic section somewhat within the favourable calc-silicate unit. The B Zone has a geological potential for about 500,000 tonnes grading about 0.5 to 1.0% WO_3. Drilling problems related to faulting and a lowered water table have prevented the complete assessment of the south end of the B Zone. Further investigation will be quite expensive and is not warranted at this time in view of the limited size and modest grade.

Similar float was found on Marmot Ridge to the south but detailed exploration including drilling failed to find an occurrence of any significance.

North of the Boot Cirque, intense soil panning anomalies near Lampman Lake have been traced to weakly disseminated scheelite mineralization. A fourth mineralized zone, known as the Pika area, consists of widely spaced and narrow quartz veinlets containing pyrite, scheelite, wolframite and molybdenite. Traces of arsenopyrite have been seen in quartz veins in all areas and occasional tin assays were obtained from specimens of Pika mineralization. None of these mineral occurrences are thought to have economic potential.

Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES LIMITED

Uwe Schmidt, B.Sc.

R.J. Cathro, B.A.Sc., P.Eng.

INTRODUCTION

The Boot-Marmot claims of Chevron Canada Ltd. cover a group of tungsten showings and anomalies discovered by an Archer, Cathro crew led by Uwe Schmidt in 1977 and 1978. This report is a summary of all work to date, including the results of diamond drilling conducted in 1980. It also incorporates revised geological maps and drill logs from the 1979 program. All the field work was performed or supervised by Uwe Schmidt under the overall direction of R.J. Cathro.

The 1980 program consisted of 899 m (2948 ft.) in 8 holes on the Boot target and 33 m (1093 ft.) in 2 holes on the Marmot target, for a grand total of 1232 m (4041 ft.) in 10 holes. In addition, detailed mapping was expanded on Boot grid, Marmot and Pika area. A soil sampling and panning grid was established on the Marmot claims and gaps were filled in the Boot grid.

D.J. Tempelman-Kluit of the Department of Indian Affairs and Northern Development, Whitehorse, visited the Boot-Marmot claims and examined other nearby geological features on August 13-14. His assistance in regional and property geological interpretation and correlation is gratefully acknowledged.

HISTORY

The initial Boot claims were staked in August, 1977 by Archer, Cathro for Chevron Canada Ltd. They were staked on a well mineralized showing discovered by Uwe Schmidt during a uranium exploration program. Additional Boot claims were added during a small tungsten reconnaissance program that followed the discovery. A second scheelite-bearing float occurrence discovered in a talus slope south of the Boot claims was staked as the Marmot claim group at that time.

The Boot-Marmot area had previously been staked as Gee claims in 1966 by Northlake Mines Ltd. The geometry and size of the 1966 group was similar to the present claims although work was directed toward the search for massive sulphide copper-lead-zinc mineralization. Older claim posts, which predate the Gee claims, have been found on the Boot grid. These may date from staking in 1954 by Pelly River Exploration Ltd.

In 1978, an additional 244 Boot claims were staked to enlarge the group to its present shape. Staking was based on favourable results from 1977 stream sediment sampling and reanalysis of stream and soil samples collected in 1973. The 1978 program included soil sampling and panning of the Lampman grid and parts of Boot grid and Marmot areas, as well as reconnaissance mapping.

In 1979 grid sampling was expanded in northern Lampman grid and on Boot Cirque grid. The A and B zones were drilled in Boot Cirque with 10 holes totalling 1414 m (4638 ft.). Three blind scheelite zones were intersected by five holes in the B Zone but the A Zone was found to have no size potential. Boot grid, Marmot and selected areas on Lampman grid were mapped in detail.

PROPERTY, LOCATION AND ACCESS

The Boot and Marmot claims form an irregular, elongated, contiguous group totalling 308 claims that are recorded in Watson Lake Mining District in the name of Archer, Cathro & Associates Ltd. as follows:

CLAIM NAME	GRANT NUMBERS	EXPIRY DATE
Boot 1-24	YA25436-YA25459	26 Feb. 1985
Boot 25-35	YA25687-YA25697	26 Feb. 1985
Boot 36-37	YA33838-YA33839	19 Jan. 1985
Boot 38-39	YA25698-YA25699	26 Feb. 1985

Boot 40-252	YA33840-YA34052	19 Jan. 1985
Boot 253	YA35531	7 Feb. 1984
Boot 254-261	YA34734-YA34741	7 Feb. 1984
Boot 262-265	YA34948-YA34951	7 Feb. 1984
Boot 266-271	YA34852-YA34857	7 Feb. 1984
Boot 273-275	YA34952-YA34955	7 Feb. 1984
Boot 276-277	YA38858-YA38859	7 Feb. 1984
Boot 278-281	YA34994-YA34997	7 Feb. 1984
Boot 282-284	YA35532-YA35534	7 Feb. 1984
Marmot 1-24	YA26131-YA26154	26 Feb. 1984
TOTAL 308		

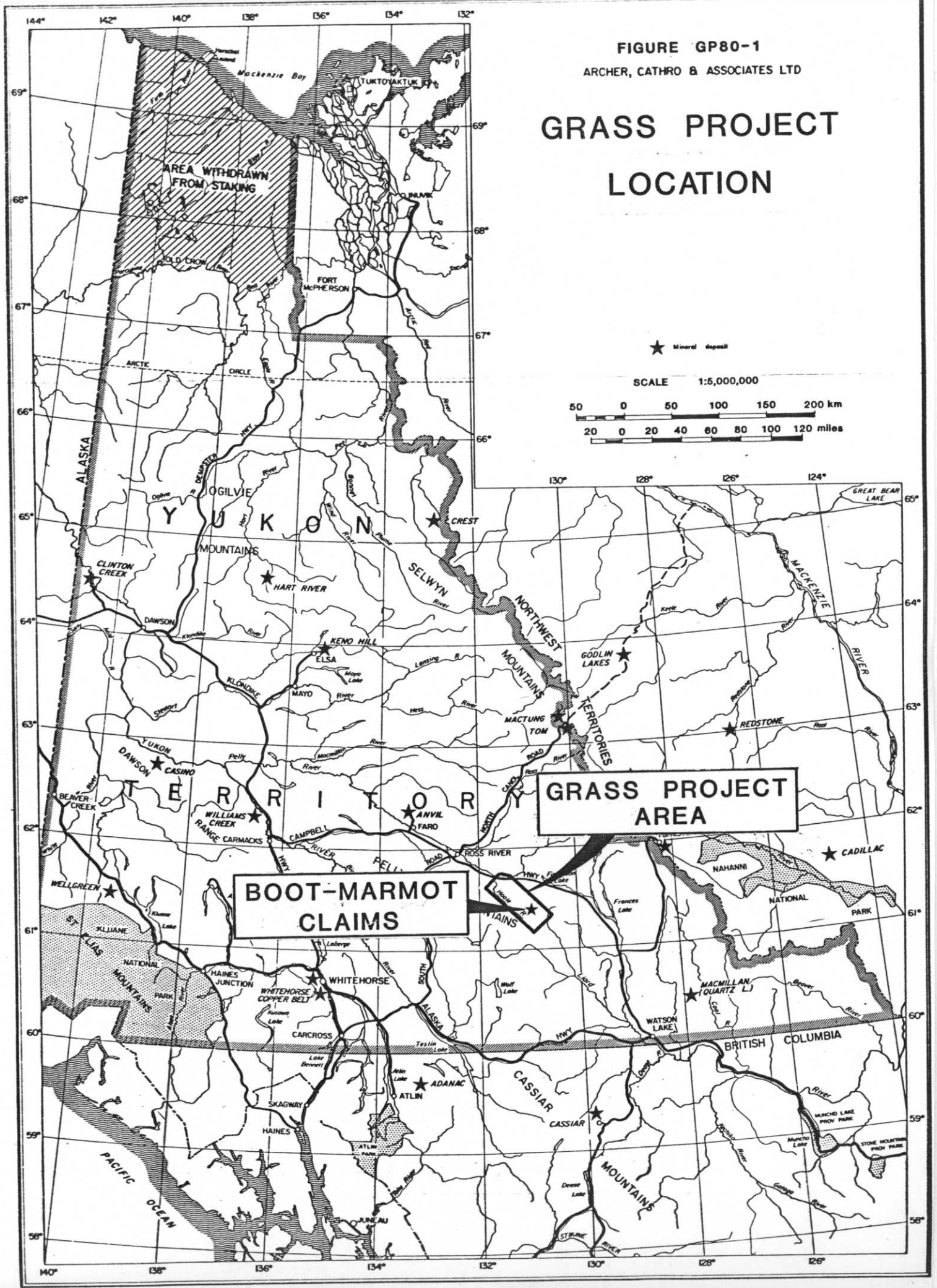
The claims are located within NTS claim sheet 105G/6 at latitude 61°25'N and longitude 131°10'W, approximately 100 km southeast of Ross River and 230 km northeast of Whitehorse. (See Figure GP80-1 on the following page.) Access in the early stages of the 1980 program was by float-equipped aircraft from Ross River to Lampman Lake, which is within the northern limits of the claim block. Fixed wing aircraft were also chartered from Whitehorse to the Hoole River airstrip, 24 km northwest, and to the Finlayson Lake airstrip, 39 km north-northeast. Later in the program supplies were flown by helicopter from a gravel pit on the Robert Campbell Highway near Finlayson Lake, located 42 km north-northeast.

The Campbell Highway is an all-weather gravel road connecting Ross River to Watson Lake that passes within 30 km of the claims to the north. A 45 km long winter tote trail from the highway extends to within 8 km of the north end of the claim group. The tote trail, which was built in 1967, has only been used occasionally since then and is in poor condition.

FIGURE GP80-1

ARCHER, CATHRO & ASSOCIATES LTD

GRASS PROJECT LOCATION



LOGISTICS

The 1980 crew consisted of geologists Leo Lindinger and Doug Onaschuk and student assistants Duncan Hamilton, Peter Moreton, Cam Chalmers, Mike Gerasimoff, Chris Bishop and Alfie Balfry.

The program was supported by Bell 47, Jet Ranger and Hughes 500D helicopters chartered from Trans North Turbo Air Ltd., Shirley Air Ltd., Keystone Helicopters, and Buffalo Helicopters.

Drilling was performed by Caron Diamond Drilling Ltd. of Whitehorse using a Longyear 38 drill.

PROPERTY GEOLOGY

The Boot-Marmot claim group is subdivided into four map areas which are described from north to south in the following order: Lampman Grid, Boot Cirque, Marmot and Pika. The first three areas have been mapped and explored systematically on 100 m square grids. The fourth area, Pika, has been mapped on the same scale but without grid control.

The geological setting of this district is unusually complex because of regional overthrusting of oceanic and island arc rocks from the southwest onto upper Proterozoic to lower Mesozoic shelf strata. The regional geology has recently been remapped by Dirk Tempelman-Kluit for the GSC. His findings and interpretation, which form the framework for the GP work, are available as Open File Map 486 (1977), and Paper 79-14 (1979) "Transported Cataclasite, Ophiolite and Granodiorite in Yukon: Evidence of Arc-Continent Collision".

Five major structural or age divisions have been used in GP property mapping. They are based on Tempelman-Kluit's work but have been expanded by GP to include transitional units. The units are, in ascending order: Autochthonous Rocks, Nisutlin Allochthon, Allochthonous Schist Assemblage, Anvil Allochthon, and Intrusive Suite. GSC units have been used whenever possible although property scale mapping required further sub-division of the GSC units. These are shown in map legends by separating unit symbols into two columns. The left column in the legends shows GSC symbols while the right column indicates corresponding GP symbols.

Autochthonous Rocks

Autochthonous rocks represent sedimentary rocks of ancient North America that have been assigned an upper Proterozoic and lower Cambrian age by Tempelman-

Kluit. The oldest unit, named Quartz Augen Gneiss, is thought to be a metamorphosed equivalent of Hadrynian "Grit" unit. In Grass Project mapping the symbol Pnq is used for this unit. The symbol Pn is applied to Feldspar Augen Gneiss, which is probably derived from the same source rock but has been metamorphosed to such a degree that it became mobile (probably plastic) and was injected or remobilized into metamorphic rocks. This injection is interpreted to have occurred just prior to the intrusion of quartz monzonite stocks. The second autochthonous unit is GSC unit PGsc, Muscovite Garnet Marble, of inferred lower Cambrian age. Further subdivisions of this unit were made during property mapping to separate schist and marble varieties.

Nisutlin Allochthon

Nisutlin allochthonous rocks are siliceous micaceous rocks, probably derived from an island arc, that were obducted onto North America. They are mapped as unit PPkl by Tempelman-Kluit. Within the claim group, two units have been assigned to this package. They are characterized by quartz-rich, chlorite-poor schist and quartzite with muscovite often the only mica.

Allochthonous Schist Assemblage

Allochthonous Schist Assemblage is a term applied by Grass Project to a group of schistose rocks which do not clearly fit into one of the tectonic subdivisions of Tempelman-Kluit. The Assemblage is characterized by high chlorite content, some muscovite and abundant biotite, which is often developed at random angles to foliation. Epidote, talc and carbonate-quartz alteration are developed locally, especially in or near faults.

The dark colour, abundant mafic minerals, and pervasive chlorite suggest an affinity to Anvil Allochthon. Slices of serpentinized ultramafics occurring in fault zones within these rocks further support this view. Up to nine mappable units occur within the Allochthonous Schist Assemblage, varying somewhat from map area to map area within the claim block. An additional three contact metamorphic equivalents have been recognized in surface mapping. These are the major tungsten host rocks at Boot and are weakly mineralized elsewhere on the group. In current GSC mapping, the Allochthonous Schist Assemblage is included in unit EPk4, which is a part of Nisutlin Allochthon. However, this assemblage has a stronger affinity to Anvil Allochthon rocks, as previously noted.

Anvil Allochthon

Anvil Allochthon represents obducted oceanic crust that existed west of North America prior to the late Mesozoic. These rocks are primarily basic volcanics, ultramafites, and their altered equivalents. They are restricted to a few locations within the claims but occur as widely spaced klippen on a regional scale.

Intrusive Rock Suite

The youngest major geological event in the district is intrusion of Cretaceous plutons, of which up to four events have been recognized. Aplite and pegmatite are textural phases of the main quartz monzonite phase, while a dark green, altered hornblende porphyritic phase is known to be cogenetic from intrusive relationships.

The best tungsten mineralization on the Boot-Marmot property is directly related to quartz monzonite contacts. It occurs in calc-silicate schist and skarn, which are developed in both Allochthonous Schist Assemblage and Autochthonous carbonate rocks at the contacts. The former is the host rock to the best mineralization in Boot Cirque area.

The Boot-Marmot claim group is subdivided into four map areas which are described below from north to south in the following order: Lampman Grid, Boot Cirque, Marmōt and Pika. The first three areas have been mapped and explored systematically on 100 metre square grids. The fourth area, Pika, has been mapped on the same scale but without grid control.

LAMPMAN GRID (See Figure GP80-L1)

Lampman Grid was first mapped and explored in 1978 by panning and soil geochemistry. These surveys were expanded in 1979 and accompanied by limited additional mapping. In 1980 limited reconnaissance mapping was conducted to confirm the continuity of map units from Boot Cirque to Lampman Grid. All previous mapping has been replotted according to the revised geological interpretation. The major change is the assignment of most schist units into the Allochthonous Schist Assemblage and a large portion of the limy rocks into the Autochthonous structural division of the GSC.

Five autochthonous units and one contact metamorphic equivalent are recognized in Lampman Grid area. Muscovite-Garnet Marble (PGsc) and its associated schist units are exposed in north-facing, buff-weathering cliffs on the north end of a ridge between Northwest Cirque and Lampman Lake. Strong foliation dips moderately southward. Laterally equivalent rocks are exposed east of Lampman Lake in the "Saddle" area of Lampman Grid. In this location the best carbonate exposures are found in the cirque wall immediately to the east of the "Saddle" where micaceous marble and limy garnet-mica schist dip gently to moderately southward.

The geology south of the "Saddle" area changes gradually to schistose chloritic rocks which are equivalent to units of the Allochthonous Schist Assemblage in Boot Cirque. The contact between Allochthonous Schist Assemblage and Autochthonous rocks was drawn at a shallow dipping thrust fault which crosses the ridge halfway between the Saddle and south end of the ridge. On the west side of Lampman Lake, this boundary is also drawn on the lithological evidence from Boot Cirque.

The oldest unit, autochthonous Quartz Augen Gneiss (Pnq) is exposed on the ridge south of Northwest Cirque. The unit is bounded by strong east-west faults which juxtapose it with schists of the Allochthonous Schist Assemblage.

Feldspar Augen Gneiss (Pn) underlies a large area in northeast Lampman Grid and forms resistant exposures up to 300 m high. Chloritic and calc-silicate-bearing schist bodies within Pn are interpreted as pendants. The Augen Gneiss unit in Lampman area is considered by GP as an injected migmitized rock that was derived from unit Pnq.

No further investigation of the mineralized occurrences of Lampman Grid was made in 1980. The present geological interpretation implies two ages for tungsten-bearing calc-silicate host rocks. Occurrences in the Saddle area are in calc-silicate-bearing schist of lower Cambrian age, while the other occurrences in North and Northwest Cirques are in calc-silicate-bearing schists of the Allochthonous Schist Assemblage.

BOOT CIRQUE (See Figure GP80-B1)

Geology

Boot Cirque map area is underlain by all five structural divisions: Autochthonous Rocks, Nisutlin Allochthon, Allochthonous Schist Assemblage, Anvil Allochthon and Intrusive Suite. A diagrammatic interpretation of the structural relationships between these divisions is shown in Figure GP80-B10 on the following page.

Autochthonous Rocks

The oldest structural package, Autochthonous rocks, is subdivided into two units that occur in two separate areas. The oldest unit, Quartz Augen Gneiss (Pnq) occurs on the eastern edge of the property. It is a quartzo-feldspathic unit with feldspar and quartz augen. Biotite and muscovite are common and small isolated carbonate bands are present east of the map area.

Quartz Augen Gneiss (Pnq) is differentiated from Feldspar Augen Gneiss (Pn) by textural and compositional differences. Unit Pnq contains abundant quartz and feldspar augen that seldom exceed 2 cm in length. Unit Pn, on the other hand, commonly contains large K-feldspar augen 5 to 10 cm long. Quartz and other feldspar grains are restricted to the smaller population in the matrix.

Pnq is separated from allochthonous rocks by a steeply-dipping, north-trending normal fault. Outcrops of Pnq overlie outcrops of allochthonous Chlorite Schist (Pcs). The contact between the two units is covered by talus and their relationship is unclear. The second unit within the autochthonous rock suite is Muscovite-Garnet Marble (PGsc). It crops out north of East Cirque, on the south

FIGURE GP80B10

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DIAGRAMATIC STRUCTURAL INTERPRETATION OF BOOT CIRQUE GEOLOGY

WEST

EAST

Mesozoic

Cretaceous

Kqm

Quartz Monzonite
Grey weathering, coarse porphyritic biotite-muscovite quartz monzonite, white K-feldspar phenocrysts up to 10 cm length, weakly developed but common propylitic alteration scheelite-quartz veins occur in some areas.

Kap

Aplite
White, fine to medium grained equigranular quartz feldspar aplite.

KTqfp

Hornblende-Quartz Porphyry
Dark grey-green fine grained altered hornblende quartz-feldspar porphyry, hornblende usually altered to chlorite.

Cretaceous ?

Pn

Feldspar Augen Gneiss
Grey weathering biotite-muscovite-feldspar-quartz augen gneiss with white porphyroblasts of K-feldspar up to 10 cm in length, thought to be older deformed equivalent of quartz monzonite.

Paleozoic — Anvil Allochthon

Carboniferous and Permian (Possibly Older)

CPAub

Serpentinized Ultramafic
Brown weathering serpentinized ultramafic.

CPAc

Altered Ultramafic
Orange weathering altered ultramafic rocks usually containing quartz, carbonate and minor mariposite.

Allochthonous Schist Assemblage

Contact Metamorphosed Equivalents

Pbmcs

Biotite-Muscovite-Chlorite Schist
Grey to brown weathering, dolomitic biotite-muscovite schist, often garnet bearing and calc-silicate bearing in limier sections.

Pcss

Calc-Silicate Schist
Colourful foliated calc-silicate bearing schist, garnet, vesuvianite, wollastonite and minor pyroxene bearing chloritic biotite schist with marble interbeds.

Psk

Skarn
Dark brown weathering, massive dark green pyroxene-garnet skarn, replaces calc-silicate schist and interbanded carbonate bands, occurs as irregular discontinuous replacements in Pcss.

Nisutlin Allochthon

Age Unknown

PPK1

Pms

Muscovite Schist
Light brown, rusty weathering, quartz schist to micaceous quartzite, low feldspar and usually no chlorite present.

Psp

Siliceous Phillonite
Black blocky fracturing carbonaceous siliceous phyllonite to black quartzite, grades to light gray varieties, occurs in Pms.

THRUST FAULT

Allochthonous Schist Assemblage

Age and Relationship Unknown (Probably Paleozoic)

PPK4

Pcs

Chlorite Schist
Dark green lustrous chlorite schist, often with biotite porphyroblasts, minor carbonate, talcy.

Pam

Amphibolite
Dark green to green and white banded amphibolite grades to minor siliceous equivalent Pmq

Pmv

Colour Banded "Metavolcanic"
Green and grey thinly laminated rocks blocky fracturing, sometimes with biotite porphyroblasts, gradational to Pam and Pcs.

Pbm

Biotite Marble
Dark brown weathering blocky fracturing biotite marble, evenly disseminated weakly foliated biotite porphyroblasts, clay alteration in groundmass, may be altered basic igneous rock.

Pmcs

Muscovite-Chlorite Schist
Light brown rusty weathering muscovite chlorite schist, locally grades to gneissic equivalents, may contain biotite.

Pln

Leucocratic Gneiss
Light grey to white leucocratic gneiss weakly foliated low mica content, light brown rusty weathering in part

Pan

Quartz-Feldspar Augen Gneiss
Chloritic quartzo-feldspathic augen gneiss with quartz and feldspar augen,occurs locally within Pmcs.

Pmm

Micaceous Marble
Light to dark grey differentially weathering micaceous siliceous marble,occurs in Pmcs.

Pcp

Carbonaceous Phyllonite
Black carbonaceous phyllonite, occurs locally in Pmcs.

THRUST FAULT

Autochthonous?

Windermere? and Cambrian?

PЄsc

Muscovite-Garnet Marble
Light brown and silvery weathering muscovite-garnet marble commonly associated with chloritic muscovite garnet schist, also includes thick non micaceous crystalline marble sections.

Pnq

Quartz Augen Gneiss
Grey weathering quartz-feldspar augen gneiss variable biotite muscovite, chlorite content, traces of carbonate.

NW FAULT

side of Matthews Creek valley. Unit Psc in this location is a garnetiferous, micaceous, crystalline marble unit with muscovite-chlorite-garnet schist bands. The unit is not well exposed but is traceable for several kilometres to the east. Elsewhere on the claims, well exposed sections occur in Lampman Grid area to the north and in cliff exposures in Marmot area to the south.

Nisutlin Allochthon

Two units of the Nisutlin Allochthon occur in the Boot area. Muscovite Schist (Pms), which is the more abundant, is a light orange-brown weathering quartzose metasediment that grades from muscovite-quartz schist to micaceous quartzite in composition.

This unit caps a prominent peak on the east side of the cirque valley. Carbonaceous Siliceous Phyllonite, the second unit, crops out in one location on the same peak. This block of Nisutlin Allochthon is bounded by steeply dipping to vertical faults to the east and south and flat to moderately dipping thrust faults to the north and west.

Allochthonous Schist Assemblage

Allochthonous Schist Assemblage is a term coined by Grass Project to include units that are thought to be allochthonous by their structural position but do not fit into the GSC classification. Nine mappable units plus three additional units thought to be contact metamorphic equivalents have been found in Boot Cirque.

The mappable units are predominantly chloritic and include dark green, talcy, and limy Chlorite Schist (Pcs), dark green Amphibolite (Pam) (which is

often chloritic), and light grey and green banded rocks called "Metavolcanics" (Pmv) for mapping purposes. These units are gradational to each other and display cataclastic fabric. Late biotite is commonly developed at random angles to cataclastic fabric. A dark brown massive unit, Biotite Marble (Pbm), contains evenly distributed biotite porphyroblasts in an altered, clay-rich, limy matrix. This unit has been interpreted as a highly altered basic intrusive dyke. Unit Pbm is associated with Amphibolite and Chlorite Schist in East cirque but it occurs with unit Pnq in sill-like configurations off the claim group.

The other schist-gneiss varieties are leucocratic quartzo-feldspathic rocks with a more subtle chlorite content. Muscovite-Chlorite Schist (Pmcs) superficially resembles Pms of the Nisutlin Allochthon but differs in feldspar and mica content. Pmcs has a light greenish-brown colour with high feldspar content. Muscovite is the dominant coarse mica and fine-grained chlorite is also common, but biotite is an infrequent component. By comparison, unit Pms is feldspar-deficient and grades from a muscovite-quartz schist to a micaceous quartzite. The contact between the units is difficult to define; however, recessive linear structures on surface indicate a thrust faulted contact. A carbonaceous schist occurs in both unit Pmcs and Pms. Since this carbonaceous unit (Pcp) is not as siliceous as unit Psp and is associated with unit Pmcs, it must belong to the Allochthonous Schist Assemblage.

Micaceous marble (Pmm) lies between Muscovite-Chlorite Schist and Chlorite Schist. The marble unit is a limy equivalent of, and is gradational to, Muscovite-Chlorite Schist. Thick bands of grey crystalline marble are rare. More commonly, about half of the interlaminated schist is crystalline marble. The recessive weathering of these bands results in a distinctive map unit. In comparison to unit PGsc carbonate, unit Pmm is garnet deficient and lacks

accompanying muscovite-garnet schist. Unit PGsc also contains thick sections of crystalline marble that occur as light coloured resistant outcrops. Unit Pmm, on the other hand, weathers medium to dark grey and is recessive.

Two gneissic units occur within the Allochthonous Schist Assemblage, Leucocratic Gneiss (Pln) and Quartz-Feldspar Augen Gneiss (Pan). Quartz-Feldspar Augen Gneiss is similar in appearance to unit Pn augen gneiss but was mapped as a separate unit because of its association with unit Pmcs. In the southeastern part of the grid, sub-outcrops of unit Pan grade into Pmcs. It is assumed from this evidence that Pan is a highly metamorphosed equivalent of Pmcs.

Unit Pln has the appearance of an orthogneiss. Like unit Pn, it is interpreted as a migmitized and remobilized unit. Texturally, it is coarse grained and equigranular, with high quartz and low mica content. The relationship of Pln to other units is obscured by lack of outcrop. However, unit Pln grades into Pmcs in one outcrop. Arsenopyrite occurs intermittently in unit Pln talus and occurs as narrow fracture fillings associated with quartz. Geochemical analyses for gold returned only trace values.

Contact metamorphic Allochthonous Schist Assemblage hosts tungsten mineralization in the Boot A and B zones. Three altered units are recognized in surface mapping. Biotite-Muscovite-Chlorite Schist (Pbmcs), Calc-Silicate Schist (Pcss) and Skarn (Psk). Biotite-Muscovite-Chlorite Schist, which is the most extensive, is the altered equivalent of Pmcs. It is distinguishable from Pmcs by abundant biotite. Muscovite and chlorite contents are significant but variable. Limy equivalents of this unit were altered to Calc-Silicate Schist (Pcss).

The calc-silicate schist unit occurs in both the Upper and Lower B Zones, which are well exposed on the south cirque wall. Calc-silicate schists contain

variable proportions of garnet, pyroxene, vesuvianite, wollastonite and calcite. When all these minerals are present, it results in a distinctive red, brown, green and white banded and mottled rock. Scheelite mineralization in this unit is low grade and erratic in Upper B Zone outcrops. Scheelite is often restricted to cross cutting fractures or dyke and sill contacts. With the exception of a few mineralized float boulders in B Zone float train and diamond drill intersections, mineralization in Pcss is unimportant. Unit Pcss often contains dark green chloritized garnets of regional metamorphic origin which, together with its foliated texture and mineral assemblages, suggests derivation from schist units of the Allochthonous Schist Assemblage. Muscovite-Chlorite Schist and the accompanying Muscovite Marble unit are the most probable unaltered equivalents.

Skarn in the A and B Zones usually occurs as irregular massive pods of dark green pyroxene and pink garnet. They are only weakly mineralized and are confined to calc-silicate schist unit Pcss. Skarn units are not shown on the geology map because of their limited size.

The best scheelite mineralization at Boot occurs in a highly altered, biotite-rich, mottled to foliated rock called Biotite Zone (Pbz) in drill holes. This unit forms the A Zone discovery outcrop within unit Pcss. Similar rocks are found in A Zone talus and B Zone talus on both flanks of the rock glacier. These two zones were studies in 1979 by L. Dick of Chevron, who found an alteration sequence grading from pyroxene bearing, calc-silicate schist to amphibolite bearing, calc-silicate schist. In the best mineralization, the schist is altered to biotite-rich, quartzo-feldspathic rock that is heavily mineralized but lacks calc-silicate minerals. Biotite Zone (Pbz) mineralization was encountered in 1979 drill holes within B Zone and in hole 80-14.

Anvil Allochthon

Rocks of Anvil Allochthon are not common. Two units of this division (CPAub) and (CPAc) are found in the northwest fault zone, which separates contact metamorphosed rocks from their regionally metamorphosed equivalents. Unit CPAub is a dark green, fine grained, serpentinized ultramafic rock that forms small outcrops within light orange weathering CPAc felsenmeer. Unit CPAc consists of quartz carbonate rock containing minor marioposite. An outcrop resembling unit CPAc is located near the mouth of Boot Creek. Further upstream, a creek exposure of white, foliated feldspathic rock may also belong to this unit.

Intrusive Rock Suite

Cretaceous igneous rocks at Boot Cirque can be divided into two groups, a cogenetic intrusive suite and a discordant gneissic unit of possible magmatic origin.

Quartz Monzonite (Kqm) is the most abundant and important intrusive unit. It consists primarily of coarse porphyritic intrusive rock with large white megacrysts of K-feldspar up to 10 cm in length, in a coarse equigranular quartzo-feldspathic biotite-muscovite bearing groundmass. Weak propylytic alteration is pervasive. An aplitic phase (Kap) occurs in some areas, the best example being the Lower B Zone. A third intrusive unit (KTqfp) is uncommon on surface but was encountered in diamond drilling. This unit is a dark green fine grained, porphyritic dyke or sill phase which is now strongly chloritized. Dark green chloritic phenocrysts appear to be derived from hornblende. Feldspar phenocrysts and rounded quartz phenocrysts are occasionally present. Intersections of KTqfp are common in holes 80B11-13 and 80B15. Surface and drill evidence

suggest unit Kqm, Kap and KTqfp are cogenetic. Units Kqm and Kap are mineralized or are directly related to mineralization, whereas unit KTqfp is always barren.

Feldspar Augen Gneiss (unit Pn), the migmitized equivalent of unit Pnq, is restricted to a faulted block in East Cirque. This exposure is similar to extensive exposures in Lampman area, where coarse feldspathic augen gneiss is associated with minor scheelite occurrences. No mineralization is associated with this unit in Boot Cirque map area.

Structure

The dominant structural features of the Boot Cirque area are cataclastic fabric related to regional thrusting and predominantly vertical to steeply dipping faults and fractures which are related to movement on the nearby Tintina Fault.

The cataclastic fabric, which is present in almost all rock units, has a gently undulating to flat lying attitude on a regional scale. This gives the appearance of flat lying strata to most units when they are viewed from a distance. In detail, however, greater complexity is indicated. Compositional layering, which may represent bedding in some units, is acutely deformed. Recumbent and isoclinal folds are common, ranging in scale from tens of centimetres to tens of metres. Larger fold structures are not traceable, probably because of later disruptive tectonic events.

A Late Triassic age has been assigned to the cataclastic event by Tempelman-Kluit, who concluded that transport of allochthonous units probably occurred in Early Cretaceous time. Evidence for this lies outside the project area. The undeformed quartz monzonite intrusions of the Late Cretaceous Grass Lakes stock and its smaller equivalent in Boot Cirque place an upper limit on the age of transport.

Brittle deformation related to Late Cretaceous to Early Tertiary Tintina Fault zone movement has also had a significant effect on the geology of Boot Cirque. Abundant, steeply dipping to vertical faults trend in westernly, northwesterly and northerly directions. Fault blocks of south to southeasterly dipping foliated strata are upthrown when traversing Boot Cirque geology in a southward direction. A later set of north-trending faults has uplifted blocks in an eastward direction.

Brittle deformation has affected Boot Cirque geology more than earlier penetrative deformation, since mineralization postdates obduction but predates movement along Tintina Fault zone. Displacement of the geology along these faults has made it difficult to trace mineralized horizons northward and eastward from B Zone drill intersections. East-trending fault structures in the southern portion of Boot B Zone form a zone that parallel a major east-trending fault zone in the valley between Boot Cirque and Marmot Ridge. Faulting was intense enough to lower the watertable below the deepest drill holes on the south side of the ridge. This creates severe technical problems in conventional diamond drilling exploration.

Mineralization

Several mineralization types and settings have been discovered in Boot Cirque. So far, only disseminated scheelite occurrences without associated sulphides have shown economic potential. Vein or fracture-related tungsten and polymetallic sulphide showings are only erratically and poorly mineralized.

Disseminated scheelite mineralization has been divided into three types: biotite-rich schist "Biotite Zone" (Pbz), Calc-Silicate Schist (Pcss) and Skarn (Psk). The best tungsten mineralization found to date is the original

A zone discovery outcrop, which belongs to the Pbz type. Chip sampling gave an assay of 5.88% WO_3 and 0.056 oz./ton Au across 1.8 m but diamond drilling in 1979 showed that the A Zone has little tonnage potential as it is only a small erosional remnant.

Three buried zones of Pbz type mineralization were subsequently discovered by drilling in the B Zone, which lies on the eastern contact of Boot stock. Drilling has outlined a mineralized horizon with reasonably inferred geological reserves of 125,000 tonnes grading 0.66% WO_3 and less than 500 ppb Au. Tonnages were calculated without dilution using an average mineralized thickness of 1.8 m. Faulting and erosion have limited the ultimate geological potential of the zone to about 500,000 tonnes.

A zone of Pbz mineralization 5.2 m thick intersected in hole 80-14 at the south end of B Zone returned an assay of 1.95% WO_3 and 549 ppb Au. The intersection appears to lie within a small pendant with no tonnage potential. This zone consists of coarse to medium grains of disseminated scheelite in a white and black banded, altered biotite schist. Although core recoveries were poor, it is significant that all rock fragments were mineralized and a 1.2 m interval with 70% recovery assayed over 2% WO_3. The quartzo-feldspathic component of the schist is altered to a white, fine-grained, clay-rich groundmass. Mineralization is similar to the A Zone outcrop and some specimens found in the A one float train. The individual assays are tabulated below:

Sample No.	Length (Ft) From	To	Interval	Recovery	$\%WO_3$	Ppb Au
3501	63.0	66.0	3.0	25%	0.74	1095
3502	66.0	70.0	4.0	70%	2.12	560
3503	70.0	73.0	3.0	33%	2.90	200
3504	73.0	76.0	3.0	22%	3.42	812
3505	76.0	80.0	4.0	34%	0.86	192
3514	80.0	81.25	1.25	100%	0.23	420
Average	63.0	80.0	17.0 (5.2m)	38.5%	1.95%	549

The second type of mineralization, Pcss, is most common in the B Zone float train and in some of the B Zone drill hole intersections. No outcrops of well mineralized calc-silicate schist have been found. Skarn mineralization (Psk) is also erratic and weakly mineralized on surface. Some drill intersections of skarn in B Zone are well mineralized but lack the continuity of biotite zone mineralization. For example, Zone B3 in hole 79-7 assayed 1.63% WO_3 and 200 ppb Au across 1.0 m.

Several minor arsenopyrite occurrences associated with quartz veins have been found in Boot Cirque. Arsenopyrite was found in vein float within unit Pln and Pam east of Boot Creek, where mineralization in quartz veinlets rarely exceeds 1 cm in width, but in East Cirque, it occurs in massive vein fillings up to 2 cm wide, sometimes as concretionary-like replacements in outcrop and float of unit Pam.

In a second variety, polymetallic quartz veins occur in muscovite schist unit Pms, located on the prominent peak on the east side of Boot Cirque. Float from veins are less than 12 cm thick and contain galena, arsenopyrite, wolframite

and scheelite. Specimens of arsenopyrite and quartz vein float from the first two areas were analyzed for gold and gave values ranging from less than 1 to 5 ppb Au. The vein float occurrences at Boot are thought to be a peripheral phase of the tungsten zone and appear to have little economic potential.

Diamond Drilling

Diamond drilling was performed by E. Caron Diamond Drilling Ltd. of Whitehorse, Y.T. Boot holes 80-11 to 80-16 were drilled with BQ size core using a diesel-powered Longyear 38 drill. A larger diesel motor was used for holes 80-17 and 80-18, which were collared with HQ and later reduced to NQ size. Core recoveries improved by drilling larger core diameters but the lack of water return on the south side of the mountain caused continued mechanical and recovery problems. Total footage drilled on the Boot zones in 1980 totalled 898.7 m (2948 feet), as tabulated below:

Hole	Location (metric)	Collar Elevation (Ft)	Collar Dip	Azimuth	Depth Metres	Depth Feet
80B11	505S 540E	5170	-90	---	48.5	159
80B12	505S 540E	5170	-65	265	58.8	193
80B13	440S 682E	5260	-65	260	90.8	298
80B14	365S 416E	5520	-75	000	43.0	141
80B15	097N 650E	5210	-90	---	293.0	961
80B16	885N 073E	4730	-90	---	152.4	500
80B17	260S 515E	5600	-90	---	90.0	295
80B18	130S 480W	4870	-90	---	122.2	401
				TOTAL	898.7	2948

Drill hole locations are shown in plan view on the geology map (Figure GP80-B1) and in section on Figures GP80-B5 to GP80-B9. Drill logs, which are measured in feet, are enclosed as Appendix 1. All drill core was brought to Whitehorse, where it is stored with the 1979 holes in the H.S. Bostock core library.

The 1980 drilling attempted to locate new zones and determine if sulphide-rich skarn mineralization was present, rather than explore known mineralization. Drill targets were based on geological models and ground magnetometer surveys.

The first three holes, 80-11 to 80-13 inclusive, were drilled to locate the southern extension of the B Zone. However, they could not be completed due to bad ground and showed only that the intrusive contact is located farther east than expected from surface mapping. The ground magnetometer survey confirmed the true position of the contact, which dips steeply eastward and is unmineralized.

Hole 80-14 was sited uphill from holes 80-11 and 80-12 and south of hole 79-5 to further define the B Zone contact. This hole intersected 5.2 metres of mineralization in a shallow zone that is interpreted to lie within a small roof pendant in the quartz monzonite stock. No surface expression of this zone was found even though the intersection occurs only 18.3 m below surface. This mineralization was described earlier. Hole 80-17 was collared 100 m northeast of 14 but showed no correlation of lithologies or mineralization. Both holes 80-14 and 80-17 were lost in bad ground.

Hole 80-15 is a deep hole that was drilled east of the Northeast Fault to test the easterly extension of the B Zone mineralization and failed to intersect mineralization. It intersected a completely different section from that encountered in nearby hole 79-3, especially near surface. Another difference

was the abundance of hornblende porphyry and lack of quartz monzonite sills. No marker horizons were identified which would indicate the direction of fault displacement. The rocks in hole 80-15 are interpreted as a downthrown block relative to the B Zone section.

Hole 80-16 was collared in an overburden-covered area north of the A Zone which has a slightly higher magnetic background than adjacent quartz monzonite. This area was previously thought to be underlain by either augen gneiss or quartz monzonite. The hole cut 127.5 m of metamorphic rocks before bottoming in altered quartz monzonite, which was extensively fractured, altered and cemented by late quartz. Chlorite-epidote-carbonate alteration and quartz are pervasive. Fractures are commonly talcy while blue, green and colourless fluorite occurs intermittently with quartz. Geochemical analyses over the bottom 97.5 m ranged from 1 to 16 ppb Au.

Hole 80-18 was drilled west of the A Zone to test a strong magnetic anomaly. This hole penetrated a thick section of unmineralized chloritic schist without reaching the quartz monzonite contact. The magnetometer survey indicates that this pendant is larger than was previously indicated by mapping. The intermittent occurrence of weak pyrrhotite mineralization in chloritic schist may explain the magnetic response.

DDH 79 B1 SECTION 3+67 metres NORTH

WEST — EAST

0+50E (metres) — 1+00E (metres) — 1+50E (metres)

ELEVATION IN FEET

5200

DDH 79B1
3+67N — 0+61.5E (metres)
128 Feet 090°AZ — 70°

BEDROCK

14, 10, 1

Kqm

KTqfp

Psk

Pbmcs

25, T, 1

2 FT. 0.01%, 30

70, T, 1

13, T, 1

11, T, 1

A ZONE

UPPER LIMIT OF WELL MINERALIZED FLOAT

INTERMITTENT BOULDERS OF "A" ZONE MINERALIZATION IN TALUS VISUALLY ESTIMATED TO GRADE FROM 2-10 % WO_3

BPK4 METAMORPHIC ROCKS

LEGEND

Cretaceous

- Kqm — **Quartz Monzonite** — Grey, coarse porphyritic biotite-muscovite quartz monzonite with large white K-feldspar phenocrysts.
- KTqfp — **Hornblende-Quartz Porphyry** — Dark green, fine grained hornblende-quartz porphyry, hornblende altered to chlorite.
- Kap — **Aplite** — White fine grained quartz, feldspar aplite.
- Kpg — **Pegmatite** — White to grey, quartz feldspar tourmaline, muscovite pegmatite.

ALLOCHTHONOUS SCHIST ASSEMBLAGE

Age and Relationship Unknown (Probably Paleozoic)

- Pbmcs — **Biotite-Muscovite-Chlorite Schist** — Dark grey-green biotite-muscovite-chlorite schist, mica content varies, often talcy especially along fractures; dark green chlorite rimmed or totally replaced garnets are common, schist is often lliny.
- Pbcs — **Biotite-Chlorite Schist** — Dark grey-green chlorite schist with variable quartz, talc and carbonate content, biotite porphyroblast growth is often random.
- Pbn — **Biotite Gneiss** — Dark grey biotite dominant quartzo-feldspathic equivalent of above schist unit, contains abundant drawn out quartz bands.
- Pcs — **Chlorite Schist** — Dark green chlorite schist, light green altered, lliny and talcy equivalents are common, randomly oriented biotite porphyroblasts are common.
- Pam — **Amphibolite** — Dark green fine grained amphibolite, gradational to chlorite schist, often contains post strain biotite porphyroblasts.
- Pcp — **Carbonaceous Phyllonite** — Dark grey to black siliceous carbonaceous phyllonite.
- Pggi — **Grey and Green Interbanded Schist** — Dark grey and pale green interbanded biotite schist and chlorttic schist, altered equivalent of biotite schist, chlorttized garnets and calc-silicate minerals may be present.
- Pmm — **Crystalline Marble** — Light grey crystalline marble, grades to micaceous marble.
- Pcss — **Calc-Silicate Schist** — Colourful, foliated calc-silicate schist with minor carbonate bands, may contain pyroxene, garnet, vesuvianite, wollastonite and calcite, may be mineralized with scheelite.
- Psk — **Skarn** — Dark green, massive pyroxene garnet skarn, commonly mineralized with scheelite.
- Pbz — **Mineralized Biotite Schist** — White and black banded to mottled, textured biotite schist, altered and bleached and strongly mineralized equivalent of lliny schist and calc-silicate schist.

SYMBOLS

- Geological boundary defined, approximate, assumed
- Foliation
- Bedrock
- Fault defined, approximate

CORE ASSAY AND ANALYSIS ★

unit — ppm W, ppb Au, ppm Sn — Geochemical analysis of 1" rock fragments taken every foot over the sample interval

sample interval, % WO_3, ppb Au — Assay of half core over the sample interval with accompanying gold geochemical analysis

★ By Chemex Labs Ltd North Vancouver

SAMPLE No.	FOOTAGE	SAMPLE INTERVAL (Ft)	ASSAY WO_3 %	GEOCHEMICAL ANALYSIS ppm W	ppb Au	ppm Sn
H 57082	6 – 30	24		14	10	1
H 57083	30 – 55	25		25	< 10	1
532	55 – 57	2	0.01		30	
H 57084	57 – 80	23		70	< 10	1
H 57085	80 – 100	20		13	< 10	1
H 57086	100 – 128	28		11	< 10	1

SECTION DDH 79B2

NORTH WEST — SOUTH EAST

0+50E (metres) — 1+00E (metres)

ELEVATION IN FEET

5200 — 5100 — 5000 — 4900

DDH 79B2
3+88N — 0+75E (metres)
90 Feet 125°AZ — 70°

BEDROCK

80, T, 1

14 FT. < 0.01%, 55

7 FT. < 0.01%, 5

13, T, 1

18, T, 1

35, T, 1

7 FT. 0.08%, 35

Kqm

Pbmcs

KTqfp

Psk

A ZONE

BPK4 METAMORPHIC ROCKS

SAMPLE No.	FOOTAGE	SAMPLE INTERVAL (Ft)	ASSAY WO_3 %	GEOCHEMICAL ANALYSIS ppm W	ppb Au	ppm Sn
H 57087	4 – 21	17		80	< 10	1
533	21 – 35	14	< 0.01		55	
534	35 – 43	7	< 0.01		5	
H 57088	43 – 57	14		13	< 10	1
H 57089	57 – 64	7		18	< 10	1
H 57090	64 – 83	19		35	< 10	1
535	83 – 90	7	0.08		35	

1980 Interpretation

FIG GP 80 B5

ARCHER, CATHRO & ASSOCIATES LTD

CROSS-SECTION

DIAMOND DRILL HOLES 79B1&2

BOOT CIRQUE A ZONE

BOOT CLAIM GROUP

GRASS PROJECT

SCALE 1:480 (1 Inch = 40 Ft)

0 20 40 60 80 100 Feet

0 10 20 30 40 50 Metres

To accompany report dated Jan/81

SECTION DDH 80 B11, 12, 13

SOUTH WEST

5300
ELEVATION
IN FEET

NORTH EAST

5300 S-
6+10 E
(metric)

5+40 E, 5+05 S (metres)

DDH80B12
193 Feet, 265° AZ,
-65°

DDH80B11
159 Feet, Verticle

DDH80B13
6+82 E, 4+40S (metres)
298 Feet, 260° AZ, -65°

BEDROCK

INFERRED INTRUSIVE CONTACT FROM
GROUND MAGNETOMETER SURVEY

5200

5100

5000

Kqm and KTqfp

Pbmcs

Kqm

KTqfp

Kap

Pggi

Pcss

0.13, 61
0.04, 642
0.11, 166
0.34, 300
0.03, 151
0.09, 13
0.06, 3
0.43, 39

SYMBOLS

Geological boundary defined, approximate, assumed

Foliation

Bedrock

Fault defined, approximate

CORE ASSAY AND ANALYSIS ★

Geochemical analysis of 1" rock fragments taken every foot over the sample interval

Assay of half core over the sample interval with accompanying gold geochemical analysis

★ By Chemex Labs Ltd. North Vancouver

SAMPLE NUMBER	FOOTAGE	SAMPLE INTERVAL (in)	ASSAY WO3%	GEOCHEMISTRY ppb Au
3506	99'-100'	12	0.04	642
3507	112'-112'7"	7	0.11	166
3508	129'6"-130'9"	15	0.39	300
3509	130'9"-133'9"	36	0.07	151
3510	94'-94'9"	9	0.13	51
3511	160'-161'4"	16	0.06	3
3512	167'-168'	12	0.43	39
3513	139'6"-140'6"	12	0.09	13

Cretaceous

Kqm — **Quartz Monzonite**
Grey, coarse porphyritic biotite-muscovite quartz monzonite with large white K-feldspar phenocrysts.

KTqfp — **Hornblende-Quartz Porphyry**
Dark green, fine grained hornblende-quartz porphyry, hornblende altered to chlorite.

Kap — **Aplite**
White fine grained quartz, feldspar aplite.

Kpg — **Pegmatite**
White to grey, quartz feldspar tourmaline, muscovite pegmatite.

ALLOCHTHONOUS SCHIST ASSEMBLAGE

Age and Relationship Unknown (Probably Paleozoic)

Pbmcs — **Biotite-Muscovite-Chlorite Schist**
Dark grey-green biotite-muscovite-chlorite schist, mica content varies, often talcy especially along fractures, dark green chlorite rimmed or totally replaced garnets are common, schist is often limy.

Pbcs — **Biotite-Chlorite Schist**
Dark grey-green chlorite schist with variable quartz, talc and carbonate content, biotite porphyroblast growth is often random.

Pbn — **Biotite Gneiss**
Dark grey biotite dominant quartzo-feldspathic equivalent of above schist unit, contains abundant drawn out quartz bands.

Pcs — **Chlorite Schist**
Dark green chlorite schist, light green altered, limy and talcy equivalents are common, randomly oriented biotite porphyroblasts are common.

Pam — **Amphibolite**
Dark green fine grained amphibolite, gradational to chlorite schist, often contains post strain biotite porphyroblasts.

Pcp — **Carbonaceous Phyllonite**
Dark grey to black siliceous carbonaceous phyllonite.

Pggi — **Grey and Green Interbanded Schist**
Dark grey and pale green interbanded biotite schist and chloritic schist, altered equivalent of biotite schist, chloritized garnets and calc-silicate minerals may be present.

Pmm — **Crystalline Marble**
Light grey crystalline marble, grades to micaceous marble.

Pcss — **Calc-Silicate Schist**
Colourful, foliated calc-silicate schist with minor carbonate bands, may contain pyroxene, garnet, vesuvianite, wollastonite and calcite, may be mineralized with scheelite.

Psk — **Skarn**
Dark green, massive pyroxene garnet skarn, commonly mineralized with scheelite.

Pbz — **Mineralized Biotite Schist**
White and black banded to mottled, textured biotite schist, altered and bleached and strongly mineralized equivalent of limy schist and calc-silicate schist.

FIG. GP 80 B8

ARCHER, CATHRO & ASSOC. LTD.

CROSS SECTION

DIAMOND DRILL HOLE 80 B11, 12, & 13

BOOT CLAIM GROUP

GRASS PROJECT

SCALE 1:480 (1 Inch : 40 FT)

0 20 40 60 80 100 Feet

0 10 20 30 40 50 Metres

To accompany report dated Jan/81

MARMOT AREA (Figure GP80-M2)

Geology

The Marmot claims cover a northwest-trending ridge, composed of a thick sequence of metamorphic rocks, that is bounded to the north and east by a quartz monzonite stock. Outcrops are fairly abundant with the best exposures on a north-facing cliff. Grid control was used for mapping all of the map area except for the cirque wall, where several sections were measured.

The metamorphic rocks have been mapped as an Autochthonous suite of resistant weathering limy schists and marbles sandwiched between schists of the Allochthonous Schist Assemblage. Quartz monzonite and accompanying sills and dykes have thermally altered both allochthonous and autochthonous units.

Numerous vertical to steeply dipping faults dissect the main ridge into a complex sequence of wedge shaped blocks. The complexity is only apparent in cliff exposures on the north side of Marmot ridge. In poorly exposed areas, the limited geological data has made it difficult to project units through the ridge.

Autochthonous Rocks

Autochthonous rocks can be divided into three units, a thick basal unit of limy Muscovite-Garnet Schist (PGsc) overlain by thin interbanded units of a fine grained Siliceous-Biotite Schist (PGbs) and medium grained grey Crystalline Marble (PGcm). Contacts between the units are sharp.

The Muscovite-Garnet Schist unit (PGsc) is medium buff brown, moderately laminated, fine to medium grained, and has a blocky fracture. It contains red, spherical, 3 to 12 mm diameter garnet porphyroblasts rimmed or replaced by

chlorite in a granular, muscovite-rich, carbonate matrix.

The Siliceous-Biotite Schist unit (PGbs) is homogeneous, lustrous, medium to dark brown, and moderately fissile. Fine grained biotite laminations accent dominant fabric within a fine granular siliceous groundmass.

The third unit, Grey Crystalline Marble (PGcm), is a massive to moderately banded, medium to light grey, calcite marble which often contains finely disseminated aligned muscovite within the granular marble matrix.

Carbonate-rich autochthonous units are often altered to Vesuvianite Skarn ($PGsk_1$) and Pyroxene Skarn ($PGsk_2$) where they are in contact with quartz monzonite or aplite. The two skarn varieties are gradational to each other and to unaltered limy equivalents. Skarn areas are irregular in shape and are limited to the proximity of intrusive units. Dark green, fine grained, granular pyroxene skarn occurs adjacent to intrusive rocks and is less common than the olive green vesuvianite skarn.

Allochthonous Schist Assemblage

These rocks form a complexly deformed gradational sequence of interbanded chloritic schists and gneisses. Individual units comprising this assemblage are: Chlorite Schist (Pcs); Muscovite-Chlorite Schist (Pmcs); Micaceous Marble (Pmm); Biotite Marble (Pbm); Amphibolite (Pam); and Carbonaceous Phyllonite (Pcp).

Chlorite Schist (Pcs) is medium to dark green, lustrous, well foliated and moderately fissile. Chlorite biotite frequently carbonate occur as lenses within the altered feldspathic schist matrix. Dark brown to black biotite porphyroblasts often occur as clots developed at random to foliation. Talc is often present, giving this unit a distinctive greasy feel.

The Muscovite-Chlorite Schist (Pmcs) is dark green to yellow-brown, fine to medium grained, strongly banded and quartzo-feldspathic, with random medium to coarse grains of chlorite and muscovite.

Amphibolite (Pam) is a homogeneous dark green to almost black unit with aphanitic to coarse prismatic amphibole crystals in an altered feldspar matrix.

The Biotite Marble (Pbm) is a lustrous, dark grey to brown, dense, moderately foliated, moderately fissile unit with a carbonate matrix that resembles a biotite schist. Chlorite is a minor and variable component of Pbm.

Micaceous Marble (Pmm) occurs as narrow, siliceous and micaceous carbonate bands within the allochthonous package. Muscovite is the dominant mica and individual carbonate bands rarely exceed 10 cm in width. Autochthonous marble unit PGcm is distinguished from Pmm by its greater thickness and garnet, muscovite and chlorite content.

Carbonaceous Phyllonite (Pcp) is limited to small exposures at the north end of the ridge. It is a distinctive dark grey to black, fine grained, siliceous, carbonaceous, platy-fracturing unit.

Contact metamorphism has altered both autochthonous and allochthonous rocks. Metamorphic effects vary with host rock composition and proximity to contact. The most common and least altered rock is a dark, greenish brown, fine grained, Biotite-Muscovite-Chlorite Schist (Pbmcs). This unit grades into unaltered (Pcs) and (Pmcs) or in limier sections into coarse grained, crystalline skarn comprised of dark olive vesuvianite and dark red garnet (Psk). The biotite marble unit (Pbm) grades into a colourful, fine grained, banded vesuvianite-garnet-pyroxene-calc-silicate schist (Pcss).

Intrusive Rock Suite

Intrusive rocks on the Marmot property consist of a massive biotite-muscovite Quartz Monzonite (Kqm) and its aplitic equivalent (Kap). The Quartz Monzonite is a leucocratic, blocky-fracturing rock with large (up to 14 cm long), euhedral, white orthoclase megacrysts in a medium to coarse grained matrix of quartz, feldspar, biotite and muscovite. Grain size of the quartz component increases near the margins of the stock. Biotite is the dominant mica and megacrysts of orthoclase are sometimes aligned.

Aplite (Kap) is an off-white to beige, homogeneous, granular rock containing small quartz phenocrysts and very little mica.

One occurrence of leucocratic Feldspar Augen Gneiss (Pn) is located on the southwest side of the property. White feldspar augen 1 to 2.5 cm long occur within a laminated, micaceous quartzo-feldspathic groundmass. Biotite-muscovite laminations wrap around the strongly aligned feldspar porphyroblasts.

Structure

As in other portions of the Boot-Marmot claim group, cataclasis, intrusion and brittle faulting are recognized as the principal structural events. However, structure is more complex in the Marmot area, where Autochthonous units are sandwiched between units of Allochthonous Schist Assemblage. This imbrication may have occurred during obduction of allochthonous schist units. Small scale features such as flaser fabric, crenulation and drag folding are common features of this event. Later intrusion, possibly accompanied by block faulting, thermally altered both structural packages.

A final, post-intrusive, brittle tectonic event related to movement of the nearby Tintina Fault has produced abundant southwest-trending vertical faults.

Vertical displacement is generally small but some faults show displacement exceeding 50 m. The most common strike directions are approximately 040 and 110 degrees. Slickensides on fault structures suggest a larger horizontal than vertical displacement. Vegetation anomalies and linear topographic features on the poorly exposed southwest side of the ridge indicate more complexity than is apparent when mapping.

Mineralization

Scattered, well-mineralized talus and creek float was found on the Marmot claims in 1977. Selected specimens gave assays in 1.5 to 3.65% WO_3 range. However, similar grades of mineralization were never found in outcrop.

Only two surface showings were found on Marmot Ridge. The best zone is exposed in a 1.5 m square Calc-Silicate Schist (Pcss) exposure at the southeast corner of the map area. Selected specimens of this occurrence, which was found in 1979, assayed 0.70% WO_3 and trace Au. It consists of scheelite in 0.5 to 2 cm bands within pyroxene-garnet-vesuvianite bearing marble in contact with a quartz monzonite sill. A second occurrence was found midway along Marmot Ridge in 1980. It consists of a 2 x 0.3 m lens of altered Muscovite-Garnet Marble. Grade is visually estimated at 0.5% scheelite.

Elsewhere on the ridge, scheelite is weakly disseminated in autochthonous rocks. It occurs as coarse grains in weakly altered skarn bands at intrusive contacts and as coarse fracture and joint fillings. Finer grained mineralization occurs in massive sections of PGsc. Allochthonous rocks are mineralized by disseminated, fine grained scheelite in skarn and limy bands of unit Pcss. Mineralization in intrusive rocks is limited to drusy joints and fracture fillings in isolated areas near intrusive contacts.

Diamond Drilling

Two diamond drill holes were drilled on Marmot between August 14 and September 4. Drill hole locations are shown on Figure GP80M1 while sections are plotted on Figure GP80M5. Hole 80M1 was collared at 5 + 58E-7 + 02N, and drilled to a depth of 173.4 m with good core recovery using BQ rods. Hole 80M2 was collared at 0 + 42E-9 + 26N and drilled to a depth of 159.7 m before the hole was lost in poor ground. NQ rod was used to 77.4 m, where the hole was reduced to BQ rod. Core recovery for this hole was fair to good.

Both holes intersected Allochthonous Schist Assemblage units with minor Calc-Silicate Schist and Skarn sections. Mineralization was limited to 5 cm scheelite-bearing band within Calc-Silicate Schist, intersected at 105 m in hole M1. This interval was not assayed but two geochemical analyses from hole one returned low values in tungsten, gold and tin.

PIKA AREA (Figure GP80-P1)

Geology

The Pika area occupies the southwest portion of the Boot claim block some 4 to 6 km southwest of Boot Cirque, and 1 to 2 km east of the Tintina Trench. It consists of a group of large hills that are dissected by north-facing cirques. Outcrop exposure ranges from fair to excellent on the cirque faces but is poor on south-facing slopes.

The geology of Pika area can be divided into Allochthonous Schist Assemblage and its contact metamorphic equivalents, Anvil Allochthon, and a gneissic and intrusive suite of possible Cretaceous age. Most schistose rocks belong to Allochthonous Schist Assemblage and occur as lenses or in fault-bounded blocks resembling roof pendants within an extensive quartzo-feldspathic gneissic suite.

Allochthonous Schist Assemblage

Three units of the Allochthonous Schist Assemblage and their contact metamorphic equivalents were mapped in Pika area. They are Amphibolite (Pam), Chlorite Schist (Pcs), and Biotite Marble (Pbm). Two contact metamorphic equivalents, Biotite-Muscovite-Chlorite Schist (Pbmcs) and Calc-Silicate Schist (Pcss), are also present. Schists of this assemblage are distinctly different from gneissic rocks with one exception. This is the Chloritic Feldspar Augen Gneiss (Pnc), which contains large feldspar augen in a dark green chloritic matrix. In one outcrop in the centre of the map area, unit Pnc grades into allochthonous Amphibolite (Pam). Most contacts between allochthonous schist units and gneisses are faulted, making it difficult to determine their relationship.

Anvil Allochthon

Two minor occurrences of allochthonous Serpentinized Ultramafic rock (CPAub) lie along a vertical northwest trending fault in the southeast corner of Pika map area.

The southernmost outcrop, measuring approximately 10x20 m is entirely surrounded by augen gneiss (Pn). One side of this block is faulted while another consists of quartz and tourmaline along a vertical contact between ultramafite and augen gneiss. A second exposure of CPAub along this fault is associated with allochthonous Amphibolite (Pam).

Gneisses and Intrusive Rocks

The augen gneiss is subdivided into four units and is associated with a related schist unit. The four augen gneiss varieties are: Feldspar Augen Gneiss (Pn), Chloritic Feldspar Augen Gneiss (Pnc), Siliceous Feldspar Augen Gneiss (Pns) and a related Injection Migmatite (Pn+).

Unit Pn underlies the western and central parts of the map area. It is a light grey-brown, moderately to well foliated rock containing 2 to 4 cm long orthoclase augen. The augen are aligned parallel to foliation in a fine grained, banded muscovite-biotite-quartzo-feldspathic groundmass.

Chloritic Feldspar Augen Gneiss occurs in two isolated pockets within the Feldspar Augen Gneiss. It is a medium to dark green, containing large (4 to 8 cm long), white to rusty weathering, orthoclase augen within a medium grained lustrous, bright green, chloritic and quartzo-feldspathic groundmass.

The third unit, Siliceous Feldspar Augen Gneiss (Pns), found in the eastern portion of the map area, is a beige to pale yellow, fine grained,

well laminated gneiss containing dull white orthoclase augen and thin translucent quartz lenses and stringers. The quartzo-feldspathic groundmass is pale yellow, very fine grained and well laminated. Near the southern end of the map area, the gneiss has a flaser fabric with angular, fractured, orthoclase-rich bands.

The fourth unit (Pn+) is a late stage, leucocratic Injection Migmatite. This rock is a dull reddish weathering, pinkish-green, coarse grained rock containing welded, fractured, crystalline aggregates of quartzo-feldspathic material. It occurs as a large sub-circular body in the south-central map area and as several small dykes in the northwest corner.

A dull orange, coarse grained, highly foliated, highly fissile, friable Muscovite Schist (Pms) is intimately associated with, and appears to be derived from, unit Pn. It is confined to shear zones, faults, and highly deformed areas within this gneiss.

Cretaceous intrusive rocks are rare. Narrow, northwest-trending dykes of dark green Hornblende Quartz Porphyry (KTqfp) intrude leucocratic Siliceous Feldspar Augen Gneiss (Pns) near the southern claim boundary. Minor occurrences of Aplite are located in the northern map area.

White barren or pyritic quartz veins occur in several areas. They are probably related to a quartz monzonite stock to the east or deep-seated equivalents of this event.

Structure

Brittle deformation related to movement along the nearby Tintina Fault is the latest and most evident tectonic event in Pika area. Expressions of this event are seen in the north to northwest trending foliation in gneissic and

allochthonous schistose rocks. Steeply dipping to vertical northwest-trending faults are sub-parallel to the Tintina. These faults make it impossible to determine the relationship between allochthonous schist and augen gneiss units. Injection Migmatite unit Pn+ occurs along some northwest-trending faults in Pika Cirque. Quartz veins in Pika area often have an east-west strike. Their relationship to northwest faulting has not been determined.

Mineralization

Mineralization in Pika area is predominantly associated with white quartz veins although minor disseminated scheelite has been observed within limy bands of Calc-Silicate Schist (Pcss).

Quartz veins are either pyritic or barren of sulphides. Non-pyritic veins sometimes contain scheelite and wolframite mineralization. Most of the tungsten bearing float was discovered by night lamping. Wolframite is rare in these veins and was only detected because it is commonly rimmed by scheelite. No significant wolframite mineralization has been found to date in outcrop, which suggests that this type of mineralization is uncommon.

Pyritic quartz veins are more abundant in the northwest portion of the map area than elsewhere at Pika. These contain intermittent blebs and rossettes of molybdenite in three isolated showings within the westernmost cirque. The southernmost molybdenite occurrences consists of several faulted quartz veins containing traces of coarse grained, evenly disseminated molybdenite. Two showings several hundred metres north contain traces of coarse molybdenite within a vein network. The physical similarity and alignment of the latter veins suggest that they may be part of a larger system, much of which is hidden

by talus. Selected specimens of hydrothermally altered and pyritic quartz veins returned values up to 10 ppm Mo, 35 ppm W, 175 ppm Sn and 45 ppb Au. Two well mineralized molybdenite bearing quartz veins yielded greater than 250 ppm Mo when analyzed, with one also returning 190 ppm Sn and 238 ppb Au and traces of scheelite were found in some of the veins. One small 10 cm^3 quartz vein fragment found in the same area contained an estimated 5% WO_3. A few specimens of pyritic quartz float in the south central part of the map area contained an estimated 5 to 10% WO_3 as wolframite and scheelite.

Discussion

Detailed mapping has revealed several problems in two regional geological models which apply to the Pika area. The problem centres on the origin of the augen gneiss complex of GSC unit Pn. The GSC interpretation by Templeman-Kluit interprets the augen gneiss as a metamorphic equivalent of Hadryninian "Grit Unit" whereas Grass Project has interpreted the augen gneiss as the deformed equivalent of a Cretaceous intrusive event.

The abundant faults in the area have complicated interpretation. Textures observed in the augen gneiss suggest both an igneous and a metasedimentary origin. Although a Cretaceous (?) age was assigned to these units in the mapping, it is beyond the scope of the program to resolve this question.

CONCLUSIONS

General

Surface exploration and diamond drilling on the Boot-Marmot claims have been primarily directed towards an unusual type of scheelite mineralization that occurs in disseminated contact aureoles with no associated sulphide minerals. This mineralization is quite different from typical Yukon tungsten skarn deposits in both mineralogy and geological setting.

Exploration for these deposits requires a special approach because of the absence of sulphides. Field work in the 1977 to 1980 seasons, inclusive, has shown that the most effective prospecting technique is night lamping using portable, battery-powered, short-wave ultraviolet lamps. However, night lamping in mountainous terrain is a very slow and exhausting technique. In order to reduce the size of the area requiring night lamping, soil panning surveys or soil geochemical surveys have proven effective in identifying anomalous zones. Panning usually provides a better anomalous contrast and also provides instant results in the field and a saving in analytical costs. This must be balanced against the extra field labour needed for panning. In general, it was found that panning is the preferred reconnaissance technique but that geochemical analysis is cheaper for extensive grid surveys. The geochemical survey has the added advantage of multielement analysis but requires the precaution of crushing soils before sieving to ensure that no large scheelite or wolframite grains are screened out. Two drawbacks to the panning technique are that it is subject to human error in panning and counting, and wolframite may not be detected if it occurs as fine grains.

Magnetometer surveys are useful for mapping geological contacts in overburden covered areas. However, this technique has not located specific targets due to

the low sulphide content. Magnetic expression on the whole is very subtle and only major features such as faults and igneous-metamorphic contacts have been defined. Their definition requires a high-resolution, proton magnetometer with a one gamma accuracy.

Boot Cirque Area

In the Boot area, the 1980 program attempted to outline a large tonnage potential by drilling widely spaced holes in geologically favourable areas and to determine if any sulphide-rich skarns were present. Results were disappointing in both respects and the only encouragement was an intersection of 5.2 m grading 1.95% WO_3 in hole 80-14. Unfortunately this intersection appears to lie within a small roof pendant and have little tonnage potential.

The Boot A Zone, which contains the best grade in both tungsten and gold found on the property, consists merely of a small erosional remnant with no economic potential. The B Zone was tested by drilling in 1979 and 1980 and appears to contain a geological potential of only about 500,000 tonnes grading 0.5 to 1.0% WO_3. Drilling problems caused by a deep water table related to strong fault zones have prevented the complete assessment of the southern extension of the B Zone. It is concluded, however, that late faulting has diminished the size of both the previously discovered zones and the potentially favourable area. Further exploration would require either dry percussion drilling, underground development or extensive bulldozer trenching. This expense is not justified at this time by the rather limited potential of the B Zone.

Marmot Area

Surface exploration and diamond drilling have shown that the Marmot mineralization occurs in a similar setting to the Boot showings but that it has even less economic potential. Extensive night lamping failed to locate significant mineralization on surface and two drill holes showed that no mineralized skarn units occur deeper in the section. The mineralized float found on surface appears to be derived from small, erratic skarn occurrences developed in limy schists and marbles within both autochthonous and allochthonous rocks near the margins of a stock.

Pika Area

Two types of scheelite mineralization have been found in the Pika area. Traces of finely disseminated scheelite occur within altered, fault-bounded blocks of allochthonous schists surrounded by barren augen gneiss. These blocks are often large enough to produce moderate panning anomalies in the talus beneath them. Scheelite and wolframite anomalies located within the augen gneiss package can usually be traced to mineralized quartz veins. Traces of molybdenum are common in veins in the westernmost cirque. Grades of these small showings are consistently too low to warrant sampling and the property has poor potential for commercial deposits.

Lampman Grid

Previous panning surveys on Lampman Grid led to the discovery of good grades but very small and erratic mineral scheelite occurrences. No further work was

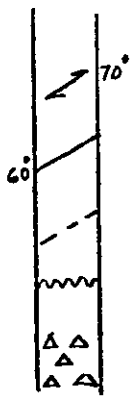
done on these areas in 1980. Work to date suggests that economic mineralization is associated only with intense alteration caused by quartz monzonite intrusion. Since this setting does not exist on Lampman Grid the potential for economic mineralization is poor.

1979 Legend	New Legend GSC Units	New Legend GP Units	Unit Names
	CRETACEOUS		
Kqm	Kqm		Quartz Monzonite
DGD	KTqfp		Hornblende-Quartz Porphyry
AP		Kap	Aplite
		Kpg	Pegmatite
			Allochthonous Schist Assemblage age and relationship unknown (probably Paleozoic)
BMS	PPk4	Pbmcs	Biotite-Chlorite-Muscovite Schist
BMS		Pbcs	Biotite-Chlorite Schist
BMS		Pbn	Biotite Gneiss
		Pcs	Chlorite Schist
		Pam	Amphibolite
		Pcp	Carbonaceous Phyllonite
GGI		Pggi	Grey and Green Interbanded
		Pmm	Crystalline Marble
BSK		Pcss	Calc-Silicate Schist
DSK		Psk	Skarn
BTSK		Pbz	Mineralized Biotite Schist
		Pam*	indicates 1979 unit name revision on drill log

SYMBOLS

Major Geological Boundary

Minor Sub-division or Gradational Boundary



Foliation

Vein Fracture

Fracture

Fault indicated by gouge

Core broken into small fragments

DIAMOND DRILL CORE LOG

HOLE 80M1 PAGE 1 OF 6

PROJECT Grass CLAIM GROUP Marmot CORE SIZE BQ
STARTED Aug 19/80 FINISHED Aug 24/80 TOTAL DEPTH 569'
LOCATION 3+58E 7+02N COLLAR ELEVATION 5115'
ANGLE -75° AZIMUTH 335° LOGGED BY L. Lindinger

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
10		
20	overburden large blocks of talus	
30		
40		
50		
60		
70		
	Bedrock	

DIAMOND DRILL CORE LOG

HOLE 80M1 PAGE 2 OF 6

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
	70° Pbmcs - BIOTITE-MUSCOVITE-CHLORITE SCHIST Dark grey massive fine grained finely foliated and laminated. Randomly spaced alligned medium size lenses and stringers of biotite and feldspar common.	
	Kpg	
90	bleached zone	
	quartz pegmatite vein	
	60°	
	10°	
100	bleached zone with pegmatite vein	
	20	
	pale green chlorite, epidote zone	
110	broken ground	
	bleached zone with segregated amphibole and chlorite lime filled joint	
120	broken ground	
130	60°	
140	30°	
	pyrrhotite veins with bleached zone	
	10°	
150	quartz vein with siliceous segregation	
	fluorite fracture filling	
160	biotite quartz segregations with minor pale pyroxene	
	Kpg- PEGMATITE dyke Mottled fabric of mafic felsic segregations	
170	siliceous pegmatite sill coarse grained with minor tourmaline and muscovite grains	
	Kqm- LEUCOCRATIC QUARTZ MONZONITE	

DIAMOND DRILL CORE LOG

HOLE 80M1 PAGE 3 OF 6

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES Mo ppm	W ppm	Sn ppm
	Kqm cont'd	1	3	8
	Kpg dyke			
	40°			
190	Pbcs- DARK GREY BIOTITE CHLORITE SCHIST Abundant mottled segregations			
	40 70			
	Kpg vein			
200	Kap- APLITE DYKE Contains amphibole segregations			
	Fault gouge - mafic filling with siliceous host rock			
	pegmatite vein			
210				
		2	1	1
220	Kqm			
	Pbmcs - siliceous			
	Kpg			
230				
	25°			
	Kpg darker			
240	quartz vein			
	mottled apatite? rich section			
250	70°			
260	Kpg			
	Pbmcs			
	5 cm of pyrrhotite stringers			
270	pyrrhotite lense calcite filled fault with gouged frags of host rock			
	Kpg sill			
	Pbcs - siliceous			

DIAMOND DRILL CORE LOG

HOLE 80M1 PAGE 4 OF 6

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
	Pbcs siliceous cont'd	
	small pegmatite veins	
290	quartz vein	
	Kpg	
	Pbcs	
	Kpg	
300	chlorite banding	
	mottled and segregated quartz amphibole and tourmaline	
310	bleached muscovite rich zone - minor sulphides	
	mottled biotite rich fabric	
320	quartz tourmaline vein	
	Kap vein	
330	Kpg sill	
340	Kpg	
	quartz porphyry sill	
	Psk- PALE GREEN, PYROXENE, VESUVIANITE, CALC-SILICATE SKARN Pale banded calc-silicates	
350	scheelite mineralization	
	Pcss- BANDED CHLORITE BIOTITE CALC-SILICATE SKARN	
	Psk	
360	Kpg - with minor porphyritic quartz	
	Pbmcs - mottled and biotite rich	
	Kpg	
370	Kpg	
	Pbmcs	
	quartz porphyry vein	

DIAMOND DRILL CORE LOG

HOLE 80M1 PAGE 5 OF 6

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
	quartz porphyry	
	Kpg	
	Pbmcs	
	Kpg	
	Kap	
390	Kqm - Kgp	
	many fractures are calcite lined	
400		
410		
	altered Pcss - silicified by intrusive	
420	Pbcs - Pcss interbanded	
	Pcss	
430	quartz, calcite, chlorite, pyroxene hematite in shear zone 45° to C.A.	
	Kpg	
440	Psk - grey and green band skarn	
	Kpg	
	Pbmcs - Pcss	
450	Pbmcs	
	Kqm- LEUCOCRATIC MEDIUM GREY, MEDIUM TO COARSE GRAINED EQUIGRANULAR QUARTZ MONZONITE	
460	common chlorite, talc, alteration along joints	
470	coarse porphyritic quartz grains	
	coarse grained quartz, tourmaline pegmatite	

DIAMOND DRILL CORE LOG

HOLE 80M1 PAGE 6 OF 6

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
	Kqm cont'd	
490	20	
	fine grained porphyritic to aplitic- very felsic	
500	coarse grained porphyritic	
	40°	
510	30°/90° to 40° joints	
	fabric often oriented 55° to core axis	
520		
	aplite with minor porphyry, chlorite veins, traces of muscovite common	
530		
	grades to medium grained porphyry	
540	5° talc, epidote chlorite filled fault	
550	calcite talcy slickensided faults and joints with trace pyrite	
560		
	END OF HOLE	
570		

DIAMOND DRILL CORE LOG

HOLE 80M2 PAGE 1 OF 6

PROJECT GRASS CLAIM GROUP MARMOT CORE SIZE NQ-BQ
STARTED Aug 29/80 FINISHED Sept 3/80 TOTAL DEPTH 524'
LOCATION 0+42E 9+26N COLLAR ELEVATION 5250 ft.
ANGLE -65° AZIMUTH 135° LOGGED BY L. Lindinger

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
	OVERBURDEN	
10		
20	BEDROCK	
	Pbmcs - SILICEOUS BIOTITE-MUSCOVITE-CHLORITE SCHIST	
	Pcss — pale grey, pale green, dark grey, banded siliceous, PYROXENE, BIOTITE, GARNET CHLORITE SCHIST	
30	- garnets rimmed or replaced by chlorite - faults 60° to C.A. - vertical slickensides	
	Pbmcs — - mottled fabric	
40	- retrograde chloritized garnets	
NQ / BQ		
50	52 - calcite lined joints	
	- irregular quartz veins - host rock altered to vesuvianite	
	5-10	
	Pcs	
	Pcs — GARNETIFEROUS CHLORITE SCHIST, minor secondary biotite	
60		
BQ / NQ		
70	4' missing core - siliceous biotite schist	
	Kpg — fault contact	
	Pbmcs — 1' missing core	
	Kpg	
80	3' missing core	

DIAMOND DRILL CORE LOG

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
80	Pbmcs continued	
	- mylonitized shear zone	
	- 3' missing core	
90		
	Pbcs BIOTITE CHLORITE SCHIST	
	- chlorite schist	
100		
	siliceous Pbcs	
	- quartz vein	
	1	
110	- increasing grain size and biotite content	
	- healed breccia zone	
120		
130	broken ground	
	- 2' missing core	
	- 4' missing core	
140		
	- 6' missing core	
150		
	- fault with siliceous mylonite and hematite stained rock	
	- siliceous lenses 3 cm long	
	- kinked foliation	
160		
	- silicified zone	
	Pbmcs QUARTZO-FELDSPATHIC-LEUCOCRATIC-PALE GREEN SCHIST	
	- random garnets and hematite stained joints	
170	70	
	50	
	Kpg	
	Pbmcs COARSE GRAINED CHLORITIC BIOTITE-MUSCOVITE SCHIST	
180	- quartz veins	

DIAMOND DRILL CORE LOG

HOLE 80M2 PAGE 3 OF 6

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
180	Pbmcs cont'd Kpg	
	Kpg	
190		
	Kpg with quartz veins	
200	broken core with rusty, carbonate filled fractures	
	3' missing core	
	quartz tourmaline vein	
210	1' missing core	
	quartz vein with traces of sulphides	
	50 6' missing core	
220		
	4' missing core -recrystallized and healed fault breccia with prismatic chlorite needles in a siliceous groundmass	
230	2.5' missing core	
	Pcss-Pbmcs BIOTITE MUSCOVITE CHLORITE SCHIST with calc-silicate bands	
	Psk PALE GREEN PYROXENE GARNET SKARN	
240	Pcss GARNETIFEROUS CALC-SILICATE CHLORITE SCHIST	
250		
NQ BQ	Pbcs Mesocratic BIOTITE CHLORITE SCHIST	
260	80	
	5 bleached chloritic schist	
270	Pbmcs	
	40	
280	quartz vein	

DIAMOND DRILL CORE LOG

HOLE 80M2 PAGE 4 OF 6

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
280	Pbmcs cont'd	
290	Kap-Kpg	
	Kqm	
	Pbmcs	
300	chloritic Pbmcs	
310		
320	Pcs	
	Kpg	
	Pcss	
	quartz vein Pbcs GARNETIFEROUS BIOTITE CHLORITE SCHIST	
	85	
330	Kpg	
	Pcs	
	fault with gouge - chloritized	
	Kpg vein	
340		
	pale Pbmcs SILICEOUS, CHLORITIC BIOTITE MUSCOVITE SCHIST	
	chlorite lined joints common	
350		
360	Pbmcs BIOTITE RICH MUSCOVITE-CHLORITE SCHIST	
	talc lined joints and faults	
370	80	
	talc lined fault	
380	pegmatite vein	

DIAMOND DRILL CORE LOG

HOLE 80M2 PAGE 5 OF 6

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
380	Pbmcs cont'd Chloritic Pbmcs	
	traces of sulphides with pegmatite vein	
390	6' missing core - broken ground	
400	calcite and talc filled joints	
	4' missing core	
	leucocratic Pbmcs - mildly altered	
410	4.5' missing core	
	3' missing core	
420	highly bleached, brecciated Pbmcs	
	fault breccia - partially annealed, calcite rich	
430	Pcss - pale grey, green, limy BANDED, PYROXENE CHLORITE CALC-SILICATE SCHIST	
	65	
440	10 shear zone	
	lime filled fractures - very fresh appearance biotite rich bands are common	
450	60	
	Kpg	
	pegmatite vein Pbmcs	
	grey chloritic siliceous marble	
460	chlorite rich Pbmcs - annealed brecciated ground with lime filled joints	
470		
480	Pbcs	

DIAMOND DRILL CORE LOG

HOLE 80M2 PAGE 6 OF 6

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
480	Pbcs GARNETIFEROUS BIOTITE CHLORITE SCHIST, chlorite rimmed garnets common in a melanocratic biotite background	
	buckled foliation and cracked quartz veins	
490		
	Psk GREY-GREEN BANDED GARNETIFEROUS CALC-SILICATE SKARN. Chlorite rimmed garnets common	
500	70	
	Pcs PALE GREEN SILICEOUS CHLORITE SCHIST	
510		
	Pbmcs	
	talc lined joints	
520		
	Hole stopped because rods broke off at 380'. END OF HOLE	

DRILL HOLE LOG

HOLE No. 79B-1
PAGE 1 OF 3

COORDINATES (metres) 3 + 71.3N - 0 + 61.5E
ELEVATION 5200'
DIP -70°
AZIMUTH 090°

CORE SIZE BQ
HOLE STARTED 13/08/79
HOLE COMPLETED 18/08/79
LOGGED BY M.P. Phillips

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
	First core			
	Kqm* QUARTZ MONZONITE: porphyritic biotite quartz monzonite; phenocrysts to 30 mm of white feldspar; biotite normal, medium grained, inequigranular, strong fine fracturing with biotite pervasively altered to strong limonite.	(14)	10	1
10				
20				
	Transitional to finer grained, large white feldspar not as common.		-	
30				
	50° KTqfp* FELDSPAR PORPHYRY: tan coloured aphanitic matrix with rare to 2 mm feldspar phenocrysts and fine grained soft chloritized mafic phenocrysts. Matrix fairly soft. Weak calcite filled fractures.			
40	Contact broken. Brecciated with strong crack fracturing; occasional pyritic fracture. Approximate base of weathering; fracturing decreases.	(25)	<10	1
	47.0'-64': occasional patches with moderately hard creamy feldspars.			
50	weak foliation			
	60° 0.3' white quartz with k-spar phenocrysts followed by white fine grained with <2% strongly chloritized biotite.			
	35° sharp contact Psk DARK GREEN MASSIVE SKARN: medium-dark green hard siliceous skarn with high siliceous biotite rock (altered marble) Skarn has fair to 10mm pink garnet.	0.01	30	
	QUARTZ MONZONITE Kqm*			

DRILL HOLE LOG

HOLE No. 79B-1
PAGE 2 OF 3

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
60	Kqm* QUARTZ MONZONITE continued: still weakly porphyritic; white phenocrysts up to 15 mm.			
		(70)	<10	1
70	Dark grey, fine grained, abundant pepper biotite.			
	---- Start of occasional up to 0.3' white, coarse grained with faint pink up to 8 mm k-spar.			
80				
	-vein crosscuts foliation; white aphanitic, minor chlorite speckling	(13)	<10	1
90	Becomes dark grey, higher pepper biotite rare to 10 mm. Feldspar phenocrysts.			
	Normal porphyritic, medium grained, few patches soft altered medium grained feldspar. Minor, weak chlorite alteration along fractures.			
100				
110	Dark grey, fine grained, fine pepper biotite to 20%.	(11)	<10	1
	-transitional			
120	Dark grey fine grained, fine pepper biotite to 20%.			

DRILL HOLE LOG

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
120	QUARTZ MONZONITE continued			
128	End of Hole			

DRILL HOLE LOG

HOLE No. 79B-2
PAGE 1 OF 2

COORDINATES (metres) 3 + 88.5N - 0 + 75.3E
ELEVATION 5160'
DIP - 70°
AZIMUTH 125°

CORE SIZE BQ
HOLE STARTED 18/08/79
HOLE COMPLETED 23/08/79
LOGGED BY M.P. Phillips

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
	First core			
	Kqm* QUARTZ MONZONITE: non-porphyritic, biotite content lower than normal - 5-7%; inequigranular, fine to mainly medium grained. Fractures 3-4/ft with weak limonite; fair to moderate fine cracks and shears often healed. Weak limonite staining pervasive and fractured to 11.5'.			
10	30° 0.2' biotite free; very fine grained aphanitic matrix with a few phenocrysts of quartz feldspar.	(80)	<10	1
20	contact 70° broken			
	Pbmcs* BIOTITE MARBLE AND SCHIST: altered biotite dolomite marble, strongly sheared and fractured; dark and light green, irregularly banded; strong calcite veining and overall moderate to strong pervasive calcite. In places irregular wisps, bands and patches of pale green siliceous, light coloured pyroxene skarn with blebby silica.	<0.01	55	
30	Massive skarn: slightly soft, fair (10%) porphyroblasts of pink garnet. Minor pyrite/pyrrhotite, blebby silica fair - moderate.	<0.01	5	
40	-- Banded and massive skarn: slightly soft to hard, pale to medium green, generally pale to medium green pyroxene. Weak pyrite/pyrrhotite.			
	45° Kqm* QUARTZ MONZONITE: medium-coarse grained, a few clear feldspar phenocrysts (up to 10 mm) strong becoming weak towards bottom; strong clay alteration to feldspars. Biotite fresh except chloritized along fracture envelopes.			
	--phenocrysts up to 10 mm diameter; white	(13)	<10	4
50	--normal feldspar appears.			
	Porphyritic medium tending to coarse grained inequigranular; biotite content normal (10-13%), weak to fair chloritization of biotite.			
	60° contact			
	KTqfp* FELDSPAR PORPHYRY: aphanitic tan coloured matrix, weak fine feldspar phenocrysts and fine black pepper texture; chlorite?			

DRILL HOLE LOG

HOLE No. 79B-2
PAGE 2 OF 2

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
60	KTqfp* FELDSPAR PORPHYRY continued	(18)	410	1
	40°			
	Kqm* QUARTZ MONZONITE: normal porphyritic quartz monzonite; rare patches with weakly altered cream coloured slightly soft feldspars; fractures 1-2/' with weak clay and calcite.			
70		(35)	410	1
80				
	55° contact			
	Psk* DARK GREEN MASSIVE SKARN: massive-faintly banded pale-medium green lightly soft pale green pyroxene skarn with ill-formed garnet porphyroblasts up to 5 mm and 'streaks'. Vesuvianite to 5 mm garnet. Fair (1-3%) crack and fracture filling pyrrhotite.	0.08	35	
	20° contact			
	Kqm* QUARTZ MONZONITE: light grey, fine-medium grained equigranular; biotite content lower than normal monzonite 3% biotite, fair chloritization; a few narrow bands mafic free.			
90	End of Hole			

DRILL HOLE LOG

COORDINATES 0 + 97N - 4 + 34E, 4 + 50E
ELEVATION 5185'
DIP -90°
AZIMUTH -

CORE SIZE BQ
HOLE STARTED 23/08/79
HOLE COMPLETED 31/08/79
LOGGED BY M.P. Phillips

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
0				
	Pbmcs* — 0.5' recovery BIOTITE MARBLE AND SCHIST: biotite, dolomitic, siliceous; milky quartz veining and garnet banded skarn.			
	Biotite dolomitic marble with siliceous bands.			
10	Kap* — feldspars soft, yellow colour WHITE APLITE: white, fine grained, high quartz content; high pervasive carbonate; altered feldspars.	(2)	T	1
	Pggi* GREY AND GREEN INTERBANDED SCHIST AND GNEISS: fine grained, narrow siliceous bands, up to 0.2' white quartz segregations; pale greenish 'bleach' bands. Pale to dark green banded, grading into massive, hard; massive with vesuvianite > calcite up to 1.5 mm; white band in middle.	(14)	T	1
20	0.1' intrusive- fine-medium grained Minor chlorite. Banded skarn and calc-silicate gneiss: mainly massive dark green pyroxene skarn, moderately soft-weakly hard with weak garnet, vesuvianite and bands of pale green banded hard with vesuvianite, wollastonite partings.			
	Psk* — massive, dark green fine grained hard to moderately hard; trace garnet?; vesuvianite, minor pyrite.	0.05	50	
	10°			
	KTqfp* — carbonate content becomes nil; fine needle like crystals - tremolite? DARK GREEN DYKE: dark grey-green, very fine grained with strong <1 mm chlorite speckling and minor white carbonate (altered feldspar?) speckling. Strong pervasive carbonate, chlorite? is weakly foliated.			
30		(3)	T	1
	45°			
	Pggi* — GREY AND GREEN INTERBANDED SCHIST AND GNEISS: pale-medium green banded and mottled skarn, hard with a few <0.1' siliceous marble bands.	0.18	<5	
	Psk* — DARK MASSIVE SKARN: dark green, weakly soft-fairly hard, dark green pyroxene; fair-moderate pervasive carbonate; fine white bleb of calcite up to 20 mm garnets at top half where stronger sulphide mineralization; 2% pyrite pyrrhotite; garnets 5%.			
	Pggi* — GREY AND GREEN INTERBANDED SCHIST AND GNEISS: pale- medium green, hard, tending to massive with a few remnant biotite ex garnet porphyroblast; massive skarn; bottom 0.5' with minor pyrite.			
40	late biotite in pale chloritic matrix			
	Pggi* — Biotite dolomitic marble with narrow light pale green pyroxene bands, narrow white bands and overall looks bleached; start of skarnification? blebby and fracture quartz common; bleached biotite starts to disappear and pyroxenes appear.	(4)	T	1
	Pcss — BANDED SKARN AND CALC-SILICATE SCHIST: alternating bands, laminations and streaks of milky white wollastonite and pale green hard pyroxene skarn with brown vesuvianite pale pink garnet - 10-15%.			
50	Pggi — GREY AND GREEN INTERBANDED SCHIST dark, in places silicified (primary?? or introduced with skarnification cut by up to 0.5' of banded pale green skarn; patches replacing marble of light green skarn and rarely soft chloritized anaemic green marble; quartz blobs and irregular segregation common; minor massive skarn. Exhibits transition from marble to massive skarn.	(125)	T	1
	Pcss — BANDED SKARN AND CALC-SILICATE SCHIST: see page 2 for description.			

DRILL HOLE LOG

HOLE No. 79B-3
PAGE 2 OF 14

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION		WO_3% (ppm)	ppb Au	ppm Sn
60	late biotite porphyroblasts	Pcss*	BANDED SKARN AND CALC-SILICATE SCHIST: continued: alternating bands, laminations and lenses of light mottled grey wollastonite and marble; pale green banded skarn; brown vesuvianite with up to 15 mm vesuvianite porphyroblasts. Some light pink garnet as streaks and 5 mm porphyroblasts. At bottom contact pale green banded skarn with irregular remnants of biotite. pyroxene?	(125)	T	1
		Pbmcs*	BIOTITE MARBLE AND SCHIST: biotite marble schist and weakly altered and weathered equivalents. Many siliceous bands- primary; occasional 1/ft up to 0.1' aplite; siliceous bands = 60-70%. quartzo-feldspathic schist			
	0.1' coarse grained, intrusive, coarse muscovite and abundant tourmaline.				
70	Brown altered and weathered equivalent.		(1)	10	1
	Siliceous bands become less common.				
80	2 15° and 30° up to 5 mm black tourmaline-quartz veins with irregular border of weak pale green skarn-fairly soft; scheelite trace in quartz tourmaline.				
	Siliceous biotite schist and marble.				
90	0.2' glassy quartz with soft chloritized marble envelope. 0.2' weak chloritic aplite with wing of quartz tourmaline; marble bleached to pale dirty green around vein. Blebby quartz to 3 mm common.		(5)	T	1
		Pggi*	GREY AND GREEN INTERBANDED SCHIST AND GNEISS: grey biotite and light green pyroxene layers interbanded, altered equivalent of biotite marble and schist.			
100	Coarse biotite and strong blebby quartz				
	Milky quartz with patches of soft green pyroxene				
		Psk*	DARK GREEN MASSIVE SKARN: massive, pale green hard to moderately soft with strong blebby white quartz; fair fracture > disseminated pyrite. Weak calcareous.	0.10	35	
		Pcss*	BANDED SKARN AND CALC-SILICATE GNEISS: pale-medium green, abundant blebby quartz and weak-fair, light pink garnet streak, rare porphyroblasts with tourmaline.	0.05	T	
		Pggi*	GREY AND GREEN INTERBANDED SCHIST AND GNEISS: dark grey biotite dolomite with light green interbanded pyroxene bands. Strongly foliated, siliceous bands common. Moderate to 5 mm and 2 mm garnets usually rimmed by fine black mineral.	0.09	10	
110	Streaky banded pale green hard pyroxene with lenses and partings of marble; garnet pseudomorphs altered to a very fine black mineral; minor blebby quartz.		(6)	T	1
	70° parallel to foliation — clear quartz cut by quartz feldspar				
120	70° parallel to foliation				

see page 3 for description

DRILL HOLE LOG

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FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
120	Pggi* GREY AND GREEN INTERBANDED SCHIST AND GNEISS continued			
	increasingly blebby and fracture quartz become more uniform in texture and pale-medium dirty green colour.			
	Pcss* BANDED SKARN AND CALC-SILICATE GNEISS: pale green hard, pyroxene with altered garnets; minor pink garnets streaks and vesuvianite. Bands and lenses of altered garnet biotite marble.	0.04	5	
		0.04	10	
130	Still banded but becoming more massive altered garnets disappear. Biotite marble absent; garnets, vesuvianite up to 15%.	0.05	10	
	Psk* DARK GREEN MASSIVE SKARN: dark green pyroxene 20-40%, low in garnet and vesuvianite.	0.07	103	
	garnet vesuvianite band 40%	0.10	172	
140		0.08	T	
	Weak quartz minor pyroxene banding starts light colour.	0.08	103	
		0.06	T	
150	Pcss* BANDED SKARN AND CALC-SILICATE SCHIST: light and dark banded; increasing light coloured pale green pyroxene bands toward bottom.	0.06	T	
	bottom contact-abundant garnet porphyroblasts.			
	undigested streaks laminations and wisp of biotite marble appear and porphyroblasts of altered 2 mm garnets; tendency for fine blebby quartz to appear.	0.06	T	
		0.01	T	
160	banded but tending to massive	0.03	T	
	Pbmcs* BIOTITE MARBLE AND SCHIST: marble - soft; biotite to chlorite? more greenish than normal with occasional narrow bands of pale green. 3 mm garnet fair usually with no alteration rim.	(1)	T	1
170	0.5' aplite - fine grained biotite - 3% feldspars cloudy and hard.			
	Blobby and blebby quartz and weak soft pale green pyroxene skarn wisps and irregular bands appear.			

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FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
180	Pcss* **BANDED SKARN AND CALC-SILICATE SCHIST:** alternating irregular bands up to 0.2' average<1' of mottled white wollastonite with pale green mottled pyroxene speckling, with trace minor carbonate; hard pale-medium green weakly banded skarn; narrow vesuvianite garnet porphyroblasts disseminated and in bands; garnets ≥ vesuvianite 10-20%.	(15)	T	1
	transition Mainly hard medium green mottled pyroxene skarn with up to 0.1' bands and lenses of marble. A few partings of white wollastonite-carbonate. Garnet vesuvianite - 5% decreasing toward bottom. In skarn alteration up to 5 mm. Black pseudo-garnets.			
	Pggi* **GREY AND GREEN INTERBANDED SCHIST AND GNEISS:** dark grey biotite and pale green pyroxene interbanded schist and gneiss. Highly siliceous, looks primary; very dark colour.			
190	Mottled banded pale green pyroxene with dark grey-green hard siliceous marble lenses and narrow bands with altered garnets.	(1)	T	1
	Siliceous biotite dolomitic marble.			
	Mottled banded pale and medium green hard pyroxene with garnet completely and partly altered to black moderately soft mineral (biotite?); blebby and fine lensy quartz common at top. Occasional siliceous marble bands; minor pyrrhotite. - could be siliceous chloritic epidote bearing			
200		0.07	10	
	Transition- as above with increasing number of fairly hard siliceous biotite marble bands (up to 0.5') lenses and wisps (undigested marble); siliceous wisps and blebs fair; increasing porphyroblasts of vesuvianite mainly some incipient pale pink garnets alternating skarn and marble in part gneissic texture. Up to 8 mm altered garnets - fair.			
	2 - up to 0.2' glassy quartz segregations parallel foliation	(32)	T	1
210	Occasional poorly defined up to 0.2' and 0.1' wollastonite with garnet vesuvianite.			
	Interbanded wollastonite-garnet-vesuvianite.			
	10° contact parallels foliation Glassy milky quartz with <1% chlorite up to 1mm minor patches towards bottom of banded skarn. Weak pyrite, minor pyrrhotite. Numerous up to 0.05' fragments of dark green pyroxene skarn with garnet porphyroblasts up to 1.5 mm in a fractured white quartz with fracture and disseminated chlorite. Fair fracture pyrite >pyrrhotite.	0.10	T	
220	10° fracture weathered sugary light limonite - fault related?	0.35	125	
	60° parallels foliation white quartz - 2 strong chlorite- 30° parallels foliation pyrrhotite fractures.			
	Psk* **DARK GREEN MASSIVE SKARN:** massive to weakly banded; medium green pyroxene skarn; fine blebby quartz in parts weak banding rare light coloured green altered garnet pyroxene skarn; vesuvianite in massive high to 40% garnet low, after 227' better banded and altered garnets more common. Low fracture and disseminated pyrite-pyrrhotite.	0.04	T	
230	Pggi* **GREY AND GREEN INTERBANDED SCHIST AND GNEISS:** pale green and grey pyroxene-biotite interbanded schist and gneiss. Massive dark green vesuvianite > garnet grading into generally banded medium green skarn.	0.07	15	
	fracture contact aplitic phase - irregular, feldspars cloudy Fractures 3/ft with minor carbonate and weak 3 mm envelope with finer grained than normal biotite quartz feldspars cloudy. monzonite Sharp - 45°	(2)	T	1
	Kqm* **QUARTZ MONZONITE:** porphyritic feldspars to 30 mm common			

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FOOTAGE	DESCRIPTION		WO_3% (ppm)	ppb Au	ppm Sn
240	45° parallels foliation	Pbmcs* BIOTITE MARBLE AND SCHIST: slightly more siliceous; biotite dolomitic marble.	(1)	T	1
	80° parallels foliation 0.4' glassy quartz Aplite - fine and medium grained minor to 10 mm chlorite phenocrysts.	Kqm* QUARTZ MONZONITE: biotite quartz monzonite with weak bleaching, strong carbonate along fractures. Fractures 6/ft.			
250	30° fracture with irregular chlorite	*Porphyritic phenocrysts of plagioclase to 40 mm.* Biotite 10-15% fine-medium grained, occasional carbonate on fractures.	(1)	T	1
260	Biotite weak to moderately chloritized.				
	0.3' coarse quartz feldspar with 2 mm chloritized quartz feldspar.				
	80° contact	Pbmcs* BIOTITE MARBLE AND SCHIST: black irregular wisps and patches soft light khaki green colour. Dark grey green, fine grained, foliated biotite to 30%; *minor narrow* 0.2' diffuse siliceous bands - primary, but most look like intrusive introduced; minor to 2 mm garnet porphyroblasts. Fair carbonate-weak limonite along fractures. Minor disseminated pyrite.			
	dark grey and green				
270	0.3' sill non-porphyritic biotite quartz monzonite	- biotite-chlorite-muscovite-garnet schist - altered basic rock, talcy fractures	(10)	T	1
	1/4" brown tourmaline with quartz envelope - dip 20°				
280	xenolith-contacts-20° biotite dolomite marble	Kqm* QUARTZ MONZONITE: white; biotite- nil to trace; fine grained; rice pudding texture - aplitic; 1/2% chlorite speckling; in a few places weak clay-carbonate alteration to feldspars. Thin film of carbonate along fracture.	(1)	T	1
	Up to 0.2' xenoliths of marble in biotite quartz monzonite				
	20° contact Marble becomes pink near contact Garnets fair to moderate 0.5' biotite quartz monzonite	BIOTITE MARBLE AND SCHIST: as above; with irregular and diffuse paler green bands - weak skarnification? Anhedral <0.2mm dark green disseminated mineral looks like talc. This appears to be weak dolomite alteration.			
290		Pbmcs* - *biotite-chlorite muscovite-garnet schist-* - talcy on fractures			
	45° - 0.1' white very fine grained quartz monzonite.				
	Steep dipping quartz monzonite and quartz veining.		(2)	T	1

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FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
300	Pbmcs* biotite-chlorite-muscovite-garnet schist — BIOTITE MARBLE AND SCHIST continued			
	Irregular pale and dark green weak silicification; dark green talc? specks and lenses; in places pink garnets abundant; pale green soft, looks like *chlorite may be pyroxene*			
	0.5' non-porphyritic biotite quartz monzonite with fair green tourmaline.			
	Still pale bands but looks more like typical marble; occasional black talc specks; medium-coarse dolomite? crystals, disseminated and in bands.			
	70° 0.3' clear quartz with orthoclase phenocrysts			
310	garnet to chlorite talcy rocks	(20)	T	1
	Kqm* QUARTZ MONZONITE: fine grained, non-porphyritic, weakly biotitic; quartz-kspar tourmaline *(green) veining* weak.			
320	Pbmcs* BIOTITE MARBLE AND SCHIST: crude dark and light green banding dark green looks like talc and biotite mixture.			
	'Bleach' band - khaki green with eyes, streaks and knots of dark green			
	- altered basic rocks - epidote chlorite bleaching along fractures			
330	0.5'abundant <1 mm pink garnets			
	0.3' abundant <1-5 mm garnets			
	Strong calcite-quartz veinlets and highly weathered. More massive, uniform dark green, appears slightly more siliceous than normal.	(6)	T	1
	Biotite quartz monzonite and coarse quartz kspar tourmaline bands. Weak clay alteration in place. 50° foliation.			
	0.2' up to 5 mm garnets			
340	Pbcs* biotite chlorite garnet schist pale epidote alteration			
	Siliceous biotite schist: black, *finely* laminated. Foliation, graphitic, fair (to 2%) laminae and crack pyrite.			
	30-40% *up to 5 mm garnets in* a hard pale pyroxene skarn.			
350	Strong up to 5 mm garnet bands in pale green marble with grapnitic quartzite bands. Pcp*	(32)	T	1
	Pcs* altered basic rock - quartz carbonate chlorite epidote			
	contact 0-20°			
	contact 80° yellowish, foliated quartz, high moderately soft yellow feldspar Fair pyrite. - light brown to light olive			
	...fault? May just be crushed shale as it is parallel to foliation. Pcp*			

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FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
360	Pcp* ..... - grades to nitrite bleached quartzite. Siliceous biotite schist continued: light grey very fine grained foliated wtih chlorite specks and partings and wisps.			
	Bleached - aplitic - fine grained greenish colour feldspar, in some places gone to clay. Transitional			
	Kqm QUARTZ MONZONITE: medium grained; biotite scattered to 20 mm feldspar phenocrysts with fractures to 3 ft. Bleached bands feldspar moderately soft to hard, chlorite to pale anaemic green. In some places chlorite is altered to dark green imparting greenish tint to rock. Fair clear quartz veining to 0.1 ft; fair up to 1/16" green calcite fractures 2-4/ft. epidote?	(1)	T	I
370				
	grey green mottled Kqm chlorite matrix	0.12	10	
	White aplite vein.			
	- pale yellow brown altered feldspar phenocrysts - chlorite epidote alteration - variable silica content	(1)	T	I
380				
390		(1)	T	I
400				
	Blebby and fine veinlet silification. Psk* DARK GREEN MASSIVE SKARN: dark green, massive to faintly banded dark green pyroxene; 10-15% up to 15 mm prismatic red brown vesuvianite and up to 5% pink garnets up to 5 mm rarely with black rims.	(1)	T	I
	Garnet becomes > vesuvianite to 10%. Variable lime content- strong to weak. Fair pyrrhotite.			
	0.2' white marble	0.11	350	
410	White marble - faintly banded. Skarn: massive; dark-medium green with 15-20% garnets to 15 mm wide and up to 5% vesuvianite. Minor-trace limy partings. Fair blobby and hairlike veinlet silicification.	0.04	20	
	Psk* dark green dark skarn pyroxene or amphibolite with large late biotite blebs	0.05	395	
420	- see page 8 for description			

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FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
420	sample — Psk* continued			
	Biotite siliceous marble with dark green pyroxene and biotite clots. Medium green, fair-moderate fine grained dolomite marble? Matrix (partly going to pyroxene?) with large irregular up to 10 mm sheared coarse biotite 'clots', sometimes with clusters of fine garnets and marble 'eyes'. Fair gash silicification.	(8)	T	1
	Silicified - primary or introduced			
	GREY AND GREEN INTERBANDED SCHIST AND GNEISS:			
	Marble - grey-green uniform to fine gneissic banding toward bottom.			
430	- pale grey siliceous biotite schist Pggi* 0.2'-0.1' bands parallel and crosscut foliation of light-medium green massive pyroxene with fair blebby silicification replacing biotite marble, slight pink quartz? garnet			
	Biotite marble - silicified along foliation.			
	Pcss*			
	BANDED SKARN AND CALC-SILICATE SCHIST: Banded pyroxene wollastonite vesuvianite garnet skarn. Garnet 10-15%, vesuvianite 5% up to 20 mm porphyroblasts and in up to 0.2' bands in marble- wollastonite with narrow light coloured pyroxene skarn bands.			
440	pale green garnet wollastonite, pale green chlorite with biotite bands, garnet to chlorite			
	Irregular narrow light coloured pyroxene skarn replacing biotite dolomite marble with garnets replaced by fairly hard black mineral. Strong blebby silicification minor up to 4 mm garnets in whiter bands, with wollastonite, calcite.	(23)	10	1
	0.4' white marble			
	Irregularly, generally fine interbanded white marble; garnet, vesuvianite wollastonite with pale green bands.			
450		0.56	T	
	biotite-chlorite-muscovite-garnet schist			
	Pbmcs*			
	BIOTITE MARBLE AND SCHIST: siliceous biotite dolomitic marble- normal dark grey green, massive-weak foliation-gneissic texture, weak disseminated, rare fracture pyrite.			
	60° contacts parallel foliation. Biotite quartz monzonite towards bottom contaminated.			
	talcy fractures	(1)	T	1
460				
	Pcss*			
	BANDED SKARN AND CALC-SILICATE GNEISS: white marble with coarse garnets vesuvianite porphyroblasts < 10% and occasional < 0.2' pale coloured skarn band partings of wollastonite.			
	10-20% vesuvianite > garnets fair pale green skarn bands. 0.3' biotite quartz monzonite - fine grained highly chloritized; 80° contacts.			
470		(2)	T	1
	60° contact 70° Up to 0.3' clear quartz	Aplite- fine-medium grained; white colour, fair black tourmaline.	Biotite dolomitic marble - strong foliation silicification garnets up to 4 mm partly or completely replaced by biotite common.	
	White calc-silicate gneiss: occasional < 0.2' bed; almost completely replaced by garnet vesuvianite - 10-15% up to 20% wollastonite and irregular partings and wisps of pale green pyroxene skarn.			
480				

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FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
480	Pcss* cont'd pale green calc-silicate schist with minor biotite bands, grades to skarn GREY AND GREEN INTERBANDED SCHIST AND GNEISS: mottled white and pale green, intense pervasive blobby silicification with up to 3 mm garnets usually partly or totally replaced by fairly hard black mineral - biotite. Narrow 0.2-0.5' remnant bands of biotite dolomite marble. pyroxene or amphibolite?	(3)	T	1
		0.21	100	
	Psk* DARK GREEN MASSIVE SKARN: dark green, 10% garnet>vesuvianite porphyroblasts up to 15 mm. Minor blebby quartz, rare veinlets of quartz. Massive to weakly foliated dark green pyroxene vesuvianite garnet skarn.	(9)	140	1
490		0.19	50	
		(125)	T	1
500	Pcss* BANDED SKARN AND CALC-SILICATE GNEISS: dark and medium green banded pyroxene, wollastonite vesuvianite -garnet skarn with minor dark green massive pyroxene skarn. Whitish to greenish tinged, minor carbonate wollastonite bands with porphyroblasts of garnet=vesuvianite up to 15 mm (15-20%) with narrow partings up to 0.2' of banded-massive medium green pyroxene skarn. 60° parallels foliation 70° parallels foliation Massive skarn - medium-dark green 50% up to 15 mm garnet, minor vesuvianite	0.05	10	
		(1)	T	1
510				
520	Massive skarn - to 25% garnet porphyroblasts; minor pyrrhotite.	0.10	155	
		0.03	T	
	Garnet>vesuvianite, wollastonite band with narrow massive and banded dark green skarn bands. Banded skarn - light - medium pale green, mottled, hard; minor vesuvianite>garnet. Occasional narrow indistinct white bands with garnets vesuvianite.	0.04	T	
		0.03	T	
530		0.07	10	
	Massive skarn as 519.97'-522.6' 40° foliation KTqfp* DARK GREEN DYKE: dark green aphanitic very fine dark green speckling.	0.04	T	
	Psk* DARK GREEN MASSIVE SKARN: dark green, strong garnets to 25%; minor vesuvianite.	0.03	10	
	BANDED SKARN AND CALC-SILICATE GNEISS: banded mottled skarn as 522.6'-530.3'	0.06	60	
540	Pcss*			

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FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
540	Pcss* continued BANDED SKARN AND CALC-SILICATE GNEISS continued Milky quartz veining parallel core with skarn fragments.	0.05	40	
	Pggi* GREY AND GREEN INTERBANDED SCHIST AND GNEISS: alternating to irregular banding of biotite and pale pyroxene, becomes softer; less silicification. Irregular 80° glassy quartz cut by feldspar veining	(2)	30	1
550	Pbcs* BIOTITE MARBLE AND SCHIST: siliceous dolomite biotite marble-dark grey 10-15% fine biotite; occasional quartz veinlet. In places hairlike quartz along foliation - primary. - biotite chlorite schist to limy schist 0.6' 60° contacts parallel foliation. Aplitic 1-3% chloritized biotite.	(4)	T	1
560	0.3' chloritized very fine grained quartz monzonite			
	Pggi* GREY AND GREEN INTERBANDED SCHIST AND GNEISS: many 1-2/ft narrow irregular bands up to 0.2' average 0.1' wide of silicified marble with weak to fair pale green pyroxene. Blebby quartz common. Quartz primary? Weakly cooked and pyroxenized. Garnet (high) at top 0.4' grading into alternating marble and pale green pyroxene; crack pyrrhotite fair.	(1)	T	3
	Pale green pyroxene gneiss with fair pale green pyroxenes and up to 15 mm garnets. Pyrrhotite crack filling bottom 0.4' with scheelite; occasional <0.1' band marble.	0.03	T	
570		0.02	T	
	Pale green pyroxene gneiss - 75% pyroxene-light green trace scheelite blebby quartz 25% pyroxene dark green.	0.04	T	
	30° fault slickenside 0.5' on contact - sheared incipient garnet.			
	Transitional Kqm* QUARTZ MONZONITE: shredded biotite 10-15% light-medium grey, medium grained, occasional - rare feldspar phenocrysts to 15 mm inequigranular; along fractures up to 0.2' pale green bleached envelope; density 1-2/ft weak carbonation fracture.			
580		(12)	T	1
	Bottom of pale green bleach fractures. Occasional 1/5 ft irregular up to 0.3' patch with low biotite and fine feldspars cloudy white weakly altered.			
590		(30)	T	1

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FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
600	QUARTZ MONZONITE continued			
	15° - 20 mm glassy quartz minor k-spar? filled fracture with irregular bleach envelope.			
610	2-10° fractures with weak carbonate, weak bleach envelopes.			
	White feldspar phenocrysts up to 40 mm long, average 15-20 mm become common. Pink (k-spar?) up to 10 mm, average 5 mm abundant more so than before 612.5'.	(2)	T	1
620				
	Slightly bleached, disseminated scheelite. 0.2' marble - silicified. 30° foliation Ragged poikilitic pink k-spar in a white feldspar matrix.	0.16	5	
	late biotite interbanded with pale green chloritic bands	(1)	20	1
630	Pggi* GREY AND GREEN INTERBANDED SCHIST AND GNEISS: many narrow irregular pale green pyroxene bands average 0.1' with blebby white quartz fair in marble - blebby dolomite not quartz marble. Pale green massive faint banded, moderately hard blebby quartz with lenses and bands of marble; minor pyrrhotite. Grey siliceous biotite dolomitic marble with pale green interbanded pyroxene bands. Biotite no garnets with many irregular diffuse pale grey green <0.2' 'bleach' bands and occasional pale green, soft, blebby quartz veins.	(1)	T	1
	60° parallels foliation Aplite- white, fine grained, <1% chloritized biotite cut by coarse grained glassy quartz-feldspar vein. Marble - normal, minor blebby quartz segregations and fair up to 2 mm garnets.	(1)	T	1
640	Kqm* QUARTZ MONZONITE: light grey, 10% speckled biotite fine-medium grained weak - fair to 15 mm white feldspar phenocrysts; weak bleaching bottom 0.8'.			
	- altered biotite chlorite interbanded basic schist			
	Pggi* GREY AND GREEN INTERBANDED SCHIST AND GNEISS: biotite dolomitic marble interbanded with pale green pyroxene. Foliation stronger than normal; fair pervasive silicification along foliation; with many irregular wisps lenses and bands of hard, pale green low pyroxene blebby silicified skarn bands 0.05-0.2' wide. Minor pyrrhotite in skarns. Biotite coarser than normal.	(1)	T	1
650	40° foliation Aplite - fine grained fresh weak chlorite speckling.			
	35° foliation Pale green hard, blebby quartz, garnets 0.2 mm altered to black mineral. Fair crack pyrrhotite.			
	50° parallels foliation Kqm* QUARTZ MONZONITE: biotite 10-15% weakly porphyritic with aplitic mafic free bands, common at top contact.			
660				

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FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
660	Kqm* QUARTZ MONZONITE continued			
	60° parallels foliation. Pggi* GREY AND GREEN INTERBANDED SCHIST AND GNEISS: biotite dolomitic marble with interbanded pale green pyroxene bands; towards bottom biotite fining, in places fine garnets rimmed with biotite.	(1)	20	1
	0-10° fracture with biotite? (fairly hard tourmaline); minor pyrrhotite in places carbonate filling fracture. secondary carbonate			
670	20 mm 30° quartz, yellow calcite (altered feldspar?) filled fracture. – quartz carbonate alteration – Pale khaki coloured, bleached? marble in places limy; strongly chloritic, primary?	(8)	T	1
	Marble silicified moderately minor garnets.			
	Bands of pale green hard pyroxene. Bands irregular in a strong silicified marble.			
680	Pbcs*			
	pale olive green epidote altered biotite chlorite schist. BIOTITE MARBLE AND SCHIST: dirty medium green, biotite chloritized talc alteration? with yellow vein flecking towards bottom; garnets to talc 5 mm porphyroblasts.			
	Strong milky quartz veining and segregations with fair yellow carbonate veining. *Light grey, fine grained massive-weakly foliated; weak to in places* fair quartz; weakly chloritic-micaceous; cut by fair-weak yellow calcite-quartz veinlets.	(10)	10	1
	Transition, increasingly micaceous(chlorite)			
690	Chlorite dolomite marble- dirty, anaemic green, chloritic, massive-weakly foliated slight carbonate when scratched; occasional clear quartz band up to 0.2'. Chloritic biotite quartz schist to quartzite-variable chlorite, quartz content; overall high near top, biotite quartzite bands. Original rock may be biotite quartzite as chlorite in areas with yellow moderately hard 3 mm veining- feldspar? or siderite. Clear quartz lenses up to 0.2' average 0.05' common. May be primary and remobilized. Pale to anaemic medium green colour.			
	0.3' white quartz with patches of quartz pale yellow moderately soft feldspar; cut by 5 mm brown tourmaline? vein. - pale olive green - epidote chlorite biotite schist with pale yellow muscovite and talc quartz carb. alteration			
	0.2' parallel to foliation medium grained quartz monzonite no mafics. - like sample at 670	(10)	T	1
700	0.2' high chlorite with abundant up to 5 mm medium green (talc) ex garnet porphyroblasts.			
710	Pcss* Biotite quartzite: quartz content high; fair up to 3mm garnets partly or completely altered to soft black mineral. Irregular chloritic quartzite bands with garnet.	(9)	T	1
	BANDED SKARN AND CALC-SILICATE GNEISS: banded in place massive pale green pyroxene skarn with blebby quartz; also narrow bands and interparting wollastonite and white marble up to 3 mm garnets partly or completely replaced by soft to hard black mineral. In places incipient to 15 mm garnets.			
	Pbcs* BIOTITE MARBLE AND SCHIST: siliceous biotite dolomitic marble with garnets and bands of light coloured quartzite, biotite quartzite and pale green chloritic dolomite marble. White quartz segregations up to 0.1'.			
720				

DRILL HOLE LOG

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
720	Pbcs* BIOTITE MARBLE AND SCHIST continued: pale green altered equivalent.	(2)	T	1
	0.4' aplite: fine-medium grained with coarse quartz-feldspar veining. - epidote pale olive colour, pale carbonate quartz alteration			
	biotite-chlorite-epidote-quartz schist			
730	Pale green bleached and altered equivalent of biotite marble and schist with chlorite and epidote. Strong foliation; 7-15% biotite high quartz content near intrusives, quartz segregation and veins biotite often altered to chlorite. Minor<0.5' chlorite quartz 'schist' bands. Fair 1/5' up to 0.2' quartz and intrusive segregations.			
	20° foliation - 0.3' porphyry-fine quartz phenocrysts in tan aphanitic matrix. Quartz Monzonite-fine grained, 3% biotite. 50° parallel to foliation · epidote pale olive colour, pale carbonate quartz alteration	(2)	T	1
	50° parallel to foliation Quartz monzonite fine grained biotite to 10% feldspars slightly cloudy.			
	60° parallel to foliation			
740	Note: chloritization of biotite along cracks, intrusive and veins			
	Hairlike crack with 0.1' irregular biotite to chlorite envelope. Occasional garnets with biotite dolomite marble.			
	0-10° parallel to foliation			
	Porphyritic biotite quartz monzonite moderate chloritization; 0.2' milky quartz on bottom contact			
750	Interbeds up to 1' of biotite dolomite marble often chloritized.			
	30° parallel to foliation			
	70° to foliation White milky quartz with 3 up to 0.2' bands of fine-medium grained quartz monzonite- minor chloritized biotite;feldspars altered cloudy white moderately hard.	(6)	T	1
	Irregular 0-30° 0.5' strong biotite			
	Pale dirty green soft quartz low chloritized dolomitic marble?			
	50° to foliation Biotite quartz monzonite milky quartz and pink k-spar Irregular patches of 5% biotite.			
760				
770				
	Dark grey biotite dolomitic marble soft garnets to soft black mineral	(10)	10	1
780	Silicified marble			

DRILL HOLE LOG

HOLE No. 79B-3
PAGE 14 OF 14

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
780	Psk* dark green-black green at 781.2'; weak fractures with scheelite - 0.2' biotite dolomite marble at bottom contact.	(225)	T	1
	Irregular Pbcs* BIOTITE MARBLE AND SCHIST: greenish grey, in places silicified. biotite-epidote-chlorite schist			
	Contact broken Kqm* QUARTZ MONZONITE: grey, medium to coarse grained; fine biotite up to 15%; phenocrysts up to 20 mm common of feldspars. Fractures 3-5/ft with thin film of carbonate. Minor quartz filled fracture with green alteration envelopes. Mainly milky quartz minor aplite with fair cloudy feldspars. Scheelite on fracture.			
790	0.3' quartz vein with scheelite.	(28)	T	1
	30°-50° fractures. Pale green alteration feldspars soft and pale green - montmorillonite. At top aplite with quartz veining - 0.4' followed by bleached quartz monzonite.			
800	Normal with in places weak chloritization scheelite disseminated and fracture.	0.04	10	
		(55)	T	1
810	Slight chloritization of biotite and disseminated scheelite cut by 10 mm glassy quartz vein.	1.00	T	
		0.04	T	
	Slight chloritization of biotite; along well fractured zone; disseminated scheelite.	0.14	5	
	20° fine quartz minor carbonate fracture filling with 0.1 ft chloritization envelope. Minor scheelite.			
820		(50)	T	1
	45° quartz-k-spar? veinlet with fracture scheelite.			
		0.31	520	
	0.4' 5mm aplite and 45° weak fracture			
830		(4)	T	1
	End of Hole			
835				

DRILL HOLE LOG

HOLE No. 79B-4
PAGE 1 OF 9

COORDINATES 0 + 97N - 4 + 34E, 4 + 50E
ELEVATION 5185'
DIP -50°
AZIMUTH 270°

CORE SIZE BQ
HOLE STARTED 31/08/79
HOLE COMPLETED 02/09/79
LOGGED BY M.P. Phillips

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
0				
10	Approximate start of coring			
	Kqm* QUARTZ MONZONITE: sheared and bleached, biotite to chlorite; fair pervasive limonite.			
	Contact ground - 30°? KTqfp* DARK GREEN DYKE: brown weathering green dyke; tan greenish matrix with diffuse chlorite? spotting and 1-2 mm feldspar phenocrysts. Fractures low angle to core axis 1/6"-12" with clay and weak limonite.			
20	Contact broken - 30° Kqm* QUARTZ MONZONITE: light coloured, minor chlorite (<1%) very fine grained- chilled margin; pink- white phenocrysts? feldspar in a very fine grained-aphanitic matrix? looks sheared.	(45)	T	1
30	Transition to normal — Light grey fine-medium grained, 5-7% biotite and chloritized biotite speckling fractures 1/6"-12" with weak clay, carbonate and minor limonite. Towards bottom chlorite on fractures.	(14)	T	1
	Strong chlorite fracture — White grey, mixed chilled, prominent chlorite clots up to 20 mm.			
40	? - Xenolith- foliated, chlorite in feldspar matrix - fair disseminated scheelite. White, very fine grained to aphanitic, trace weak chlorite speckling, rare diffuse narrow band with chlorite moderate to strong. Fair disseminated weak fracture scheelite.	0.05	T	
	Transition — Light grey, fine-medium grained, greenish colour due to 1-2 mm 5-7% chlorite. Matrix looks foliated, probable chill zone.			
50		(13)	T	1
60	BIOTITE DOLOMITE MARBLE			

DRILL HOLE LOG

HOLE No. 79B-4
PAGE 2 OF 9

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
60	Pggi* GREY AND GREEN INTERBANDED SCHIST AND GNEISS			
	Irregular 45°-90°			
	Fault contact parallels core 62.2-70° contact wollastonite band Pcss* BANDED SKARN AND CALC-SILICATE GNEISS: dark green and pale green banded pyroxene skarn with wollastonite-vesuvianite and pink garnets. Pyroxene, weak vesuvianite< garnet. Scheelite 63-69.3' - minor, <1/2%.	0.05	30	
	wollastonite band			
	wollastonite band: greenish light grey, moderately hard wollastonite interbanded with fine grained pale-dark green vesuvianite skarn. Vesuvianite low 1-2%.			
70	Pggi* GREY AND GREEN INTERBANDED SCHIST AND GNEISS: biotite and pyroxene interbanded siliceous dolomitic marble and schist. Dark grey to dark grey-green; well foliated with narrow bands rarely up to 1.5' of biotite quartzite; rock fairly soft. Weak carbonate and limonite along fractures 1-2/ft. A few 1/5-10' narrow <0.1' quartz monzonite sills.			
80	Pbmcs* BIOTITE MARBLE AND SCHIST: siliceous biotite dolomitic marble and quartz schists locally grading to biotite gneiss.	(1)	T	1
90				
100		(2)	T	1
110				
	Sheared, weak quartz veining; core broken.			
120				

DRILL HOLE LOG

HOLE No. 79B-4
PAGE 3 OF 9

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
120	Pbmcs BIOTITE MARBLE AND SCHIST continued			
	Pggi* GREY AND GREEN INTERBANDED SCHIST AND GNEISS: alternating bands 0.1 to 0.5' of biotite dolomitic marble and pale green pyroxene bands, soft to hard silicified, pale green pyroxene and garnets partly or totally replaced by biotite-chlorite. Trace scheelite.	(27)	T	2
	←Transition			
130	Pcss* Banded Skarn: pale-medium green, banded, pale green pyroxene garnet-vesuvianite-wollastonite skarn with narrow <0.1' wisps. Bands of biotite dolomite marble; garnet generally totally to biotite and minor vesuvianite. Transition- banded mainly light green with a few narrow (<0.1') wollastonite and dark green massive skarn sections. Fair garnet > vesuvianite. Disseminated weak-fair scheelite.	0.07	T	
	Garnet=vesuvianite=20% 20-30% wollastonite Transitional			
	Fair fracture > disseminated scheelite.			
	Psk* DARK GREEN MASSIVE SKARN: dark green pyroxene, massive up to 15 mm garnet > vesuvianite - 10% total; minor carbonate veinlets.	0.08	T	
140	Disseminated scheelite <1/2-1% very fine.	0.07	20	
	Pcss* BANDED SKARN AND CALC-SILICATE GNEISS: banded pyroxene wollastonite vesuvianite skarn.			
	Pggi* GREY AND GREEN INTERBANDED SCHIST AND GNEISS: faintly banded pale to medium green pyroxene with lenses and wisps of biotite dolomite marble; fair garnet to black mineral; fairly hard, doesn't look like biotite.	(65)	T	2
150	Traces scheelite			
	Pcss* BANDED SKARN AND CALC-SILICATE GNEISS: fine banded pale green garnet vesuvianite, pale green pyroxene skarn with irregular 0.2-1' bands of wollastonite vesuvianite > garnet.			
	Pbmcs* BIOTITE MARBLE AND SCHIST: grey biotite dolomitic marble with minor garnets.	(65)	T	1
160				
	Pcss* BANDED SKARN AND CALC-SILICATE SCHIST: banded pyroxene-wollastonite-vesuvianite with biotite bands.			
170	Quartz veinlets with scheelite and disseminated scheelite=1%.	0.05	T	
	Pggi* GREY AND GREEN INTERBANDED SCHIST AND GNEISS: dark green foliated; minor pink garnets; 178-185' numerous irregular and diffuse white-pale green siliceous and hard pale pyroxene bands with biotite? pseudomorphs after garnet to 184'.			
180				

DRILL HOLE LOG

HOLE No. 79B-4
PAGE 4 OF 9

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
180	Pggi* continued — GREY AND GREEN INTERBANDED SCHIST AND GNEISS continued	(1)	T	1
	pink garnets 1-2mm diameter become common 1-2%. — BIOTITE MARBLE AND SCHIST: dark grey siliceous biotite schist and dolomitic marble with minor pale pyroxene bands. Pbmcs*			
190	0.7'- 50° & 20° contacts to foliation - Biotite Quartz Monzonite: white, very fine grained occasional clot of chlorite.	(3)	T	1
200	Contact irregular - 60° — Kqm* — QUARTZ MONZONITE: biotite chloritized, fine-medium grained white, large fractured phenocrysts of feldspar, quartz flooded, very fine grained; <0.1' xenoliths of biotite dolomite marble.			
	- 0.2' biotite dolomite marble.			
	30° contact to foliation Transition up to 3mm chlorite ex garnet and parting of pale green pyroxene. — BANDED SKARN AND CALC-SILICATE SCHIST: irregular light to dark green, generally ganded, occasionally massive; pale skarn light coloured pyroxene vesuvianite < garnet; minor wollastonite and weak silica veining; dark bands garnetized marble.	0.12	T	
210	Pcss*			
	10-30° - 0.5' fault-weak	0.05	10	
	Massive garnet in chlorite matrix.			
	30° contact to foliation 30° contact to foliation — Quartz monzonite- white, coarse grained	0.04	T	
220	Pggi* — GREY AND GREEN INTERBANDED SCHIST AND GNEISS: foliated; fair-moderate foliation and veinlet silicification with scheelite Scheelite fracture > disseminated < 1/2%.			
	Pale green banded skarn with 3 mm biotite chlorite ex garnet.	0.05	T	
	40° contact to foliation 30° contact to foliation — Pegmatite-quartz, orthoclase and feldspar.			
230	Pcss* — BANDED SKARN AND CALC-SILICATE SCHIST: pale green banded with chlorite (undigested biotite marble) streaks to 5 mm garnets with biotite rims and pink garnet streaks minor to 10 mm vesuvianite. Scheelite disseminated < fracture and quartz veined.	0.06	10	
	Transition — GREY AND GREEN INTERBANDED SCHIST AND GNEISS: grey and green interbanded biotite schist and marble with pale green pyroxene bands. Scheelite minor, fracture and disseminated.	0.19	T	
	Strong quartz veining scheelite strong. Pggi*			
	Weak skarn- garnet biotite porphyroblasts to 5 mm rock fairly soft.			
240				

DRILL HOLE LOG

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
240	Highly fractured and fine quartz-carbonate veinlets Strong scheelite 1-3%. Pggi* GREY AND GREEN INTERBANDED SCHIST AND GNEISS continued Marble- 239.5'246.5'	0.07	T	
	Intense silicification or quartz monzonite; strong scheelite 1-3%.	0.64	T	
		0.02	10	
	Pcss* BANDED SKARN AND CALC-SILICATE SCHIST: weak banded, pale-medium green; pyroxene with up to 0.5' bands with vesuvianite and garnet, coarse porphyroblasts, and occasional irregular zone with biotite-chlorite ex garnet porphyroblasts; weak to fair fine quartz veining and silicification. Occasional<0.5' bands of silicified biotite dolomite marble.	0.08	T	
250		0.05	T	
	Psk* DARK GREEN MASSIVE SKARN: dark green massive diffuse coarse pyroxene garnet-fair> vesuvianite.	0.11	40	
260	Pggi* GREY AND GREEN INTERBANDED SCHIST AND GNEISS			
	Psk* DARK GREEN MASSIVE SKARN: dark green, pyroxene, massive to weakly banded; vesuvianite > garnet 3:1 porphyroblasts vesuvianite to 10 mm; garnet to 5mm.	0.08	T	
270		0.04	T	
	Pcss* BANDED SKARN AND CALC-SILICATE SCHIST: banded pyroxene-biotite skarn with pyrrhotite; alternating silicified marble with 3 mm porphyroblasts of garnet; bands of massive pyroxene skarn and light grey banded skarn.	0.95	900	
	Contact irregular- 50° parallel to banding			
	Kqm* QUARTZ MONZONITE: porphyritic phenocrysts to 15 mm; up to 10% biotite speckled.			
280		(4)	T	1
290				

DRILL HOLE LOG

HOLE No. 79B-4
PAGE 6 OF 9

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
300	Kqm* QUARTZ MONZONITE continued			
310		(13)	T	1
320		(14)	T	1
330				
340	White, very fine grained 45° contact parallels foliation Pdmcs* BIOTITE MARBLE AND SCHIST: siliceous biotite schist, marble and altered equivalent. Dark green, tending to mottled biotite appears to have gone completely to chlorite; fine porphyroblasts of garnet totally to chlorite?? Occasional <0.1' siliceous bands; minor quartz and carbonate veining. Foliation tending to gneissic. Appears to be biotite with minor chloritization, fine garnets porphyroblasts completely or partially rimmed by biotite, garnets <1 mm.			
	Bleached, some dark and light green mottled banding; 1/2" pegmatite at 346.3'; strong chlorite on fracture at bottom contact.	(13)	20	1
350	Diffuse contact Bleached Band: porphyroblasts of garnet to chlorite- 1-2 mm quartz segregation; chlorite fracture and wisps of biotite? to chlorite. Diffuse contact			
360				

DRILL HOLE LOG

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
360	Pbmcs* BIOTITE MARBLE AND SCHIST continued change from mottled stripy to more even texture. 361' - orange fluorescent mineral abundant - thin section.	(14)	T	1
370				
	Fair white quartz veining and segregations. Contact 40°			
380	Kqm* QUARTZ MONZONITE: minor limonite on fractures. In places, mafic-low to free; highly fractured 12/ft carbonate and clay on fractures; weak pervasive clay alteration. Porphyritic feldspars to 15 mm; 10-15% biotite; fractures 4/ft; weak clay-carbonate on fractures.			
	Contact 70° parallels foliation 'Bleaching' - biotite to chlorite; some dark green fine lenses and specks appear to be dark green talc? BIOTITE MARBLE AND SCHIST: dark grey green well foliated tending to gneissic texture; 20-40% biotite; may be fine garnets <1 mm to biotite	(70)	T	1
390	Pbmcs*			
	Contact 60° parallels foliation Porphyritic biotite quartz monzonite Contact irregular 50° parallels foliation.			
400	Trace to minor garnets (<1mm) most appear to have gone to biotite Minor (<1/4%) pyrite.			
	30° to foliation fracture with envelope and wings of strong brown biotite; note cuts with quartz band parallel to foliation.	(14)	T	1
410	Quartz veining with coarse biotite at bottom contact 0.2'			
	Biotite coarser along distinct foliation planes; general increase in milky white quartz segregations, lighter colour, distinct marble and biotite layers.			
	Bleach envelopes along foliation fractures and rarely quartz veins Biotite Dolomitic Marble: dark green, more even colour than normal marble, not as prominent foliation; due to biotite not as coarse and distributed throughout. Occasional up to 0.1' brown biotite band; quartz segregations and silicification stronger.			
420				

DRILL HOLE LOG

HOLE No. 79B-4
PAGE 8 OF 9

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
420	Pbmcs* BIOTITE MARBLE AND SCHIST continued: silicified marble strong silicification along foliation; dark grey green and khaki bleached banded; occasional quartz and quartz feldspar crack filling; minor up to 0.2' white quartz segregations; fine foliation; higher pyrite than usual. Mottled and irregular stripy light and dark green minor fine garnets often rimmed by biotite chlorite mottling - chloritization.	(70)	T	1
	0.1' coarse garnet moderate pyrrhotite and magnetite			
	Silicification parallels foliation and strong khaki bleaching, minor along fracture.			
430	Contact lost - 80°?			
	Kqm* QUARTZ MONZONITE: rusty colour (biotite to clay and limonite) fine to medium grained. Trachytoid feldspar phenocrysts to 30 mm, moderate to crowded in a coarse quartz (high) feldspar matrix. Weak mafics (<1%) to chlorite. Fractures 1/ft fair weathering.	(15)	T	1
	Minor 0.1' white quartz veining.			
	Pbmcs* BIOTITE MARBLE AND SCHIST: xenolith ? bleached, light grey, foliated with foliation 0-20°, cut by minor yellow siderite filled fractures. Few remnant black (chlorite) ex garnet specks.			
440	25° fault contact			
	Kap* WHITE APLITE: light colour, yellowish brown tinged very fine grained, soft highly altered cut by milky quartz veins, feldspar (kspar?) veinlets and weak pervasive quartz-feldspar veinlets and bands of porphyritic mafic free quartz monzonite. In places quartz phenocrysts fairly common, moderate-strong fracturing with clay and carbonate. Kspar altered - phyllic alteration and sericite in rock (alteration of felspars) noted. Minor tourmaline in coarse quartz feldspar veinlet.	(15)	T	1
	25° fault - 0.1' gouge			
450	25° fault - weak			
	altered phenocrysts of kspar.	(15)	T	1
	Aplite becomes coarser from very fine to fine-medium; feldspars altered to moderately soft yellow white clay; strong argillic alteration.			
460	Xenoliths of highly silicified marble.			
	45° fault contact — — — — White hard, myrmakytic quartz feldspar high quartz content, weak foliation carbonate along fractures. Fair carbonate veinlets.	0.13	T	
470				
	45° contact	0.04	T	
	Pbmcs* BIOTITE MARBLE AND SCHIST: marble - dolomitic becoming limy towards bottom, dark green massive to weakly banded; weak <1 mm garnet phenocrysts; pinkish tinge suggests massive garnets.			
	70° contact			
	Kap* WHITE APLITE: white, foliated weakly myrmakytic feldspar and quartz, quartz content high.	0.48	T	
480				

DRILL HOLE LOG

HOLE No. 79B-4
PAGE 9 OF 9

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
480	Kap* WHITE APLITE continued: white, moderately soft aphanitic intrusive with chlorite speckling.			
	Psk* dark green marble, massive to weakly banded with faint garnet bands. DARK GREEN MASSIVE SKARN: massive to finely banded with A zone textures, pale green pyroxene, wispy mottled texture, pyrite and pyrrhotite in fractures and quartz veins.	0.04	20	
		045	10	
490	Banded pyroxene, garnet, vesuvianite, skarn with pyrrhotite, pyrite, highly altered equivalent of biotite marble.	1.45	20	
	Kqm* QUARTZ MONZONITE: greenish chloritized biotite quartz monzonite, aplite and milky quartz veins up to 0.2' feldspars soft clay and carbonate.			
	Calcite - fluorite? filled fracture.			
500	Porphyritic phenocrysts of feldspar up to 20 mm common; variable mafic - nil to high usually chloritized; highly fractured 4-6/ft with clay carbonate.	(40)	T	1
510	Plagioclase feldspars altered to clay-carbonate. Low-nil mafics			
520	Normal porphyritic biotite quartz monzonite; fair-moderate calcite-clay filled fractures 4/ft.	(13)	10	1
530				
	End of Hole			
537				

DRILL HOLE LOG

HOLE No. 79B-5

COORDINATES 1 + 75S - 4 + 50E
ELEVATION 5695'
DIP -90°
AZIMUTH -

CORE SIZE BQ
HOLE STARTED 04/09/79
HOLE COMPLETED 18/09/79
LOGGED BY M.P. Phillips

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
0				
10				
20	First core			
	Pbmcs **BIOTITE MARBLE AND SCHIST:** biotite dolomitic marble; medium-dark grey, somewhat gneissic banding depending upon biotite imparts crude banding; slightly siliceous rarely as narrow <0.5' bands; in places vague 'bleached' appearance becoming paler in colour; biotite not as common and appears to be partly altered to talc. Pale anaemic pink usually partly replaced throughout by biotite-disseminated and often moderate - above average distributed in narrow bands. Weak disseminated pyrite. Fair-moderate fracturing with limonite. Light grey <1 mm dolomite? brucite pseudomorphs.	(3)	T	1
30				
40				
	Highly fractured.			
	Garnet content drops.	(1)	T	1
50				
	40° foliation 65° foliation Aplite- light coloured, fine grained weak biotite strongly chloritized; fair quartz veining.			
60				

DRILL HOLE LOG

HOLE No. 79B-5
PAGE 2 OF 7

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
60	Pbmcs* BIOTITE MARBLE AND SCHIST continued			
70	Core loss may be due to narrow quartz veins.	(5)	T	1
80	Siliceous partings, wisps and narrow bands up to 5 mm become more common.			
90	0.3' 70-80° contacts - fine-medium grained chloritized biotite quartz monzonite parallels foliation. Note: pale grey moderately soft dolomite? brucite phenocrysts next to intrusive contact.	(1)	T	1
	60-70° contacts parallel foliation; chloritized biotite quartz monzonite. Up to 8 mm stubby lenses and porphyroblasts of quartz and grey white mineral - dolomite.			
100	Occasional 'quartz' porphyroblast. Black green, massive rock higher specific gravity than marble; suggests fine acicular major mineral - tremolite? possible serpentinite or talc.	(2)	T	1
110	Marble loses alternating dark and lighter colour gneissic banding due to decreasing biotite; light grey green colour. Biotite changes from dark brown to green colour - phlogopite? or decreasing iron in biotite?			
	Pggi* GREY AND GREEN INTERBANDED SCHIST AND GNEISS: white pale green pyroxene mottled calcic marble with 10-15% pale garnet > vesuvianite porphyroblasts and in streaks - wollastonite? A few narrow bands of normal biotite marble.	(5)	10	2
120	0.1' vein calcite with pale green-white pyroxene crystals. 118.0-118.7' - strongly silicified marble with indistinct streaks of garnet.	0.03	5	

DRILL HOLE LOG

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
120	118.7-120.0' - medium green soft limy pyroxene skarn; moderate-above average carbonate.			
	Pggi* GREY AND GREEN INTERBANDED SCHIST AND GNEISS continued: light to medium green-massive-weak banded moderately soft; darker bands altered marble strongly calcic - looks like first stage skarn.			
	Alternating soft, pale-medium green (pyroxene) and weak calcite and hard siliceous; pseudogarnet - black - slightly magnetic in places highly calcic; siliceous areas - blebby silica. Mainly banded, hard, high parting and blebby quartz with altered garnets - dark green moderately soft; bands and parting calcic weak-strong; highly siliceous.	(4)	T	1
	0.2' 20° very fine-aphanitic with phenocrysts of kspar?-quartz.			
130	Still siliceous altered garnet alternating light and dark green, overall lighter colour and mainly bands of soft highly calcic marble.			
	Contact ground			
	Kqm* QUARTZ MONZONITE: porphyritic phenocrysts to 30 mm, strong fracturing with weak carbonate and fair clay (supergene) weak to fair chloritization of biotite.	(1)	T	1
140	Contact ground			
	Pggi* GREY AND GREEN INTERBANDED SCHIST AND GNEISS: soft, mottled green banded fair silicification near contact. Banded hard moderately soft massive dark green pyroxene bearing. Interbanded light green hard pyroxene bands and soft dark grey green marble. Both types up to 5 mm garnet partly usually completely altered to black mineral. A few <0.1' limy and non-limy garnet> vesuvianite quartz bands - porphyroblasts up to 5 mm no wollastonite.	(126)	T	1
		0.03	35	
150		(2)	T	1
	Psk* DARK GREEN MASSIVE SKARN: massive faintly banded, hard medium dark green weakly calcic. Minor pyrite/pyrrhotite strong limonite on fractures. Weak pale pink garnet up to 15 mm in top half.	0.08	100	
	Pggi* GREY AND GREEN INTERBANDED SCHIST AND GNEISS: mainly pale light green pyroxene with characteristic almost totally altered garnet; siliceous calc-silicate gneiss with lense patches and narrow bands of altered biotite dolomite marble occasionally calcic.	0.10	295	
160	strongly calcic, very soft.			
	Contact ground			
	Kqm* QUARTZ MONZONITE: fine grained weak quartz veining.	(13)	T	1
	Contact broken High pervasive, weak fine blebby calcite.			
	Contact ground Fine grained biotite quartz monzonite, moderate chloritization.			
	Contact ground			
170	Contact ground Biotite quartz monzonite-core highly broken; feldspars to clay and strong calcite			
	Contact ground Fine grained up to 0.2' banded skarn. Biotite fair; weak chloritization.			
	Pcss* BANDED SKARN AND CALC-SILICATE SCHIST: pale green hard light green pyroxene gneiss with darker, softer usually calcareous bands and patches which impart banded appearance, completely altered garnets soft black, slightly magnetic, occasionally darker <0.5' slightly soft medium green bands common after 175' pink garnets> vesuvianite up to 20 mm diameter. Minor pyrite> pyrrhotite in massive soft dark calcareous may be talc-carbonate.	0.05	75	
	Dark green soft highly calcareous.	(200)	T	2
	Contact ground - 0.2' biotite quartz monzonite.			

DRILL HOLE LOG

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE		DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
180	Psk*	DARK GREEN MASSIVE SKARN: medium-dark green, slightly soft dark green pyroxene skarn with fair blebby white quartz and occasional narrow limy parting and band, strong garnet > vesuvianite in top 1' (20%) elsewhere weak pyrite/pyrrhotite.	0.26	105	
	Pcss*	BANDED SKARN AND CALC-SILICATE SCHIST: light and dark green finely banded skarn consisting of interbanded dark green hard, siliceous dark green pyroxene and light and dark green soft moderately-highly calcareous skarn; weak garnet > vesuvianite porphyroblasts; Weak pyrite/pyrrhotite.			
		White band, whiter green mottled banded pale skarn, wollastonite and minor calcite with vesuvianite > garnet 5-25 mm up to 15%.			
		Banded slightly soft (altered biotite dolomite marble-silicified) and pale green hard highly silicified pale green pyroxene skarn, altered garnet-to black mineral fairly common, parting and bands 0.1-0.5' of wollastonite minor carbonate with vesuvianite > garnets up to 40% common.			
190	Pggi*	GREY AND GREEN INTERBANDED SCHIST AND GNEISS: silicified biotite dolomite marble with bands highly silicified and to 20% pale green pyroxene.	(2)	T	1
	Pcss*	BANDED SKARN AND CALC-SILICATE GNEISS: narrow white bands partings become common-wollastonite, pale skarn and minor calcite with pink garnet and brown vesuvianite common.			
200	Pggi*	GREY AND GREEN INTERBANDED SCHIST: mottled, pale khaki green and dark green, often white and dark green banded, soft rarely siliceous, strongly calcareous; fair talc? In places pale green soft calcareous light-dark green pyroxene with weak garnet vesuvianite. In places 0.1' bands siliceous yet still calcareous talc-carbonate - alteration of biotite dolomite marble?	(10)	T	4
210					
220	Contact ground				
	Kqm*	QUARTZ MONZONITE: soft, highly weathered/altered extreme chloritization; carbonate moderate-above average. In places strong quartz segregations up to 0.3'.	(5)	T	1
	Contact ground				
	Pggi*	GREY AND GREEN INTERBANDED SCHIST: interbanded pale green siliceous, pale green pyroxene (20%) bands and darker coloured slightly soft siliceous altered biotite dolomite marble; altered garnets to 5 mm common, occasional irregular <0.05' white bands with vesuvianite > garnet; rare soft dirty dark green highly limy band.			
230		Aplite - highly altered fine grained biotite highly chloritized; soft fair-moderate carbonate.	(2)	T	1
		Pyroxene bands become softer, not as siliceous and calcareous bands more common, altered garnets not common to 249'.			
240					

DRILL HOLE LOG

HOLE No79B-5
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COORDINATES
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CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
240	Pggi* GREY AND GREEN INTERBANDED SCHIST AND GNEISS continued			
	Patches of moderately hard dark green pyroxene skarn in banded skarn; minor or weak garnet-vesuvianite.	0.05	30	
250	Contact ground			
	Kap* WHITE APLITE: white fine grained with occasional patches of medium grained, mafic free, abundant fine hairlike quartz veinlets with minor pyrite. Fractures 4/ft with weak clay and carbonate. Blebby quartz feldspar phenocrysts to 10 mm common.	(10)	T	1
260	Contact ground			
	Pggi* GREY AND GREEN INTERBANDED SCHIST: pale green hard highly siliceous pale green pyroxene (20-40%) with darker coloured darker green slightly soft-moderately hard siliceous biotite dolomite marble with fine patches with a mixture of quartz-altered? biotite and moderate green pyroxene. Irregular narrow <0.1' white bands with vesuvianite >garnet porphyroblasts up to 15 mm diameter rare altered garnets. Massive becoming weakly banded towards bottom; medium-dark green pyroxene; vesuvianite= garnet=10 mm; minor pyrrhotite crack filling.	(20)	T	1
		0.05	90	
270	Pcss* Parting to bands up to 2' of interbanded wisps, lenses and bands of white bands - alternating wollastonite and pale green siliceous hard light green skarn 10-15% vesuvianite >garnet porphyroblasts to 15 mm. Lenses and patches of biotite dolomite marble impart a gneissic banding to rock; as skarnification increases silicification replacing dolomite, biotite still present and silicification has up to 10% pale green pyroxenes. When skarnification increases only wisps and eyes of biotite present and wollastonite, vesuvianite and garnet present.	(12)	T	1
	0.4' massive medium green, siliceous vesuvianite >garnet=15%.			
	Pggi* GREY AND GREEN INTERBANDED SCHIST: mainly biotite dolomite marble with a few white bands; good example of marble starting to silicify with blebby quartz; rare minor light coloured pyroxene.			
280	Contact ground.			
	Kqm* QUARTZ MONZONITE: fine biotite 10-15%; feldspar phenocrysts not as common as typical monzonite and small size average 10 mm. Fractures 2-4/ft 10-45% and with weak clay carbonate and minor limonite. Fresh weak to strong chloritization of biotite especially along cracks and fractures.	(2)	T	1
290	Rock has many rusty coloured alteration bands with feldspars; reddish colour and slightly soft and biotite to chlorite and when intense to mica. Fractures 2-4/ft average at 45°.	(4)	T	1
300				

DRILL HOLE LOG

COORDINATES
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CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
300	Kqm* Biotite quartz monzonite continued: generally finer grained feldspars - yellow slightly soft to pink soft to pale green (montmorillonite) biotite to white or pale green mica (chlorite) quartz veinlets up to 10 mm common 1/6"-1ft. 0.5' strong clear white quartz veining.			
	Pbmcs* BIOTITE MARBLE AND SCHIST: cut by a couple of fine grained biotite low quartz monzonite, 0.2' sills. Altered strong becoming weaker calcareous toward bottom	(5)	T	1
310	Dark strongly foliated, strong pervasive and laminae silicification.			
	Kqm* QUARTZ MONZONITE: porphyritic phenocrysts to 40 mm; feldspars altered to slightly soft pale yellow to pale anaemic pink, biotite to mica.			
320	20° shear Finer grained biotite quartz monzonite; less biotite than normal 1-3% becoming highly siliceous toward bottom contact. Normal biotite (10-15%) now porphyritic, fine-medium grained, increasing chloritization towards bottom contact. Fine grained look sheared and crackled pink colour - chlorite release iron; moderately hard to soft white fresh to pale yellow slightly soft feldspar; 323.0-326.0' ex - altered?	(25)	T	1
330	Transition Hard-slightly soft yellow and white feldspars; look somewhat like feldspar porphyry-may be silica flooding. In a siliceous matrix; matrix free. Yellow colour, soft white-pale yellow feldspar; minor aplite? Biotite to chlorite and mica; medium grained. 0.2' sheared marble - transition. Fine grained biotite quartz monzonite.			
	Highly altered Porphyritic. Fine grained, dark grey, abundant fine grained biotite imparts darker colour. In places greenish colour due to weak alteration of feldspars clay-calcite on fractures.	(5)	T	1
340	Porphyritic quartz monzonite: medium grained ± 5% biotite; strong fractures with calcite.			
	Contact lost Pbmcs* BIOTITE MARBLE AND SCHIST: medium mottled green, foliated soft, weak-fair pervasive and weak crack and blebby silicification; strong to weakly calcareous; biotite weak-completely altered to soft green micaceous mineral; calcite on cracks.	(20)	T	1
350	Generally strongly calcareous.			
	Psk* DARK GREEN MASSIVE SKARN: massive-weak banded, fine grained, hard medium-dark green-highly pervasive silicification (50%) strong trace molybdenite.	0.04	110	
	Dark green banded and massive.	0.09	180	
	GREY AND GREEN INTERBANDED SCHIST banded light green	0.03	15	
	Pggi* 2-4 mm pyroxene fresh pyrite porphyroblasts; dark mottled, green, slight-strongly calcareous occasional narrow siliceous band; minor fracture pyrrhotite, strong pyrrhotite fracture at 357.8'.	0.16	200	
	Kqm* QUARTZ MONZONITE:			

DRILL HOLE LOG

HOLE No. 79R-5
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COORDINATES
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CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
360	Fair silicification, strong chloritization imparts dark green colour to rock in places feldspar-sausseritized. Kqm* QUARTZ MONZONITE continued	(90)	T	1
	White, medium grained quartz feldspar - perthitic?			
	Pggi* GREY AND GREEN INTERBANDED SCHIST AND GNEISS: weak-fair calcareous banded pale to medium green hard siliceous with minor marble bands; fair crack pyrrhotite at top contact.	0.03	5	
	0.1' coarse biotite in quartz blob.	0.03	T	
	Contact 70° White fine grained with minor chlorite-quartz monzonite.	0.16	35	
	Irregular 30-70° contact Hard, pale green highly siliceous pyroxene bands.	0.02	5	
370	Narrow bands tending to massive dark green skarn and garnet. Soft, strong calcareous, gradually becoming siliceous toward bottom contact.	0.04	10	
	Contact - 80° parallels foliation. Aplite grading in porphyritic biotite quartz monzonite towards bottom, feldspars altered to hard yellow fair chloritization.			
	Kap* Contact 45° parallels foliation.			
	30° and 45° contacts parallel foliation - 0.6' - Quartz monzonite- white-light grey weak trace biotite strongly chloritized.	(10)	T	1
	Kqm* QUARTZ MONZONITE:			
	70° parallels foliation Porphyritic biotite quartz monzonite			
	70° parallels foliation Moderate chloritization feldspars- pink moderately soft, phenocrysts hard white.			
380	Pbmcs* BIOTITE MARBLE AND SCHIST: biotite looks chloritized, soft dark grey strongly foliated, rare narrow banded skarn zone. After 383.0' yellow orange-weathering along fractures and rock strong hairlike healed cracks.			
	Rock becomes yellowish colour Weathering.			
	Strong 0-45° fractures. Moderate-strongly calcareous.	(9)	T	1
390				
	0.1' biotite high fine grained medium grained porphyritic-dark grey quartz monzonite.			
400	End of Hole- abandoned cave.			
410				
420				

DRILL HOLE LOG

HOLE No. 79B-6
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COORDINATES 2 + 47N - 4 + 50E
ELEVATION 5145'
DIP 90°
AZIMUTH -

CORE SIZE BQ
HOLE STARTED 20/09/79
HOLE COMPLETED 26/09/79
LOGGED BY U. Schmidt
M.P. Phillips

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
0	No core - casing			
	Pbmcs* - altered allochthonous, altered and weathered chloritic micaceous quartzose schist micaceous quartzose package; weakly chloritic, weakly foliated, fine grained light grey colour. Strong core penetrating fractures at 0-45°, 4/ft with weak-fair limonite; strong closed hairlike fracturing.			
10	contact ground 0.4' white quartz Limestone- reddish brown, highly weathered, high in clay. 45°?			
20				
		(8)	T	1
30				
	55° contact Quartz feldspathic unit- low biotite, moderate chloritization, possibly altered intrusive? Contact ground Base? of weathering- rock hard competent but still abundant hairlike fracturing.			
40	Slickenside contact 65° Biotite Quartz Monzonite: medium grained, low biotite. 80°			
	Rock becomes highly broken.			
50				
	Fault? weak Fault Zone Pcs* Dark grey to pale olive green altered Pcs with light brown quartz carbonate alteration, epidote, talc, chlorite			
	57.0-63.0': mainly white quartz fragments; minor clay; major fault.			
60				

DRILL HOLE LOG

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
60	Pcs* Grey-green chloritic epidote altered equivalent of biotite-chlorite-muscovite-garnet schist, with pale yellow brown quartz carbonate alteration			
	0.4' mainly white quartz, minor quartzite.			
70	0.8' major fault- brown sandy and clay fault gouge.			
		(2)	T	1
	Up to 0.1' subangular fragments of orange minor dark greenish grey limestone with white calcite veining.			
80				
	Contact? Major thrust fault - 30-55° brown, clay and quartz gouge with fair graphite, in places calcareous.			
90	Gougy fractures - rock highly broken. Carbonaceous fault gouge			
	60° fault — aphanitic, tan grey quartzite in graphitic matrix.			
	Chloritic epidote equivalents of Pbmcs* — BIOTITE MARBLE AND SCHIST: and weathered and altered equivalents. Chloritic marble dark green and light grey irregular stripy to mottled banding strong-weakly calcareous, green; in places siliceous; overall weak; in places slump breccia may be due to fault. Fair to moderate quartz and calcite veining. Only alteration appears to be possible formation of talc?? and altered garnet pseudomorph in trace amounts, fair to moderate fracturing, slickensides along bedding common.			
100				
		(6)	T	2
110				
	Strong fracturing parallel to core. 20° fault- fair. Fault Zone - fair to moderate 40° Highly fractured			
120				

DRILL HOLE LOG

COORDINATES
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CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
120	Pbmcs* BIOTITE MARBLE AND SCHIST continued: chloritic marble			
	Transitional, more massive, loss of banding grey-green chloritic talcy equivalent Marble: dark grey, rare weak light coloured banded, fair-strongly calcareous, occasional siliceous zones up to 1 ft (primary); abundant fine calcite veinlets and where intense, rock bleached. Fractures with gouge 30-45°, 1-2/5'.	(8)	T	7
130				
140				
	Biotite content increasing - chlorite epidote decreases, also includes lighter quartzo feldspathic equivalents - similar to Pbmcs or surface	(2)	T	1
150				
160		(1)	20	1
170				
	Pbcs* Biotite chlorite schist			
180				

DRILL HOLE LOG

HOLE No. 79B-6
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COORDINATES
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CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
180	Pbcs BIOTITE MARBLE AND SCHIST continued: chloritic marble.			
	30° clay gouge			
	Decreasing lime, increasing silica.			
	Light grey green siliceous biotite chlorite equivalent of biotite and chlorite schist lighter greenish colour is caused by bleaching and chloritization of biotite rich section.	(1)	10	1
	55°			
190	- paler quartzo feldspathic equivalents, similar to Pmcs			
	Dark grey chloritic biotite marble grading to siliceous chloritic biotite schist and gneiss.			
	20°			
200	Green grey siliceous chloritic schist and dolomitic marble.			
	Quartz vein			
		(4)	T	2
210				
	Siliceous fragments in chloritic matrix.			
220	Pbcs medium grey biotite chlorite schist with carbonate bands and calc-silicate bearing sections with pyroxene garnet wollastonite bands; chloritic in sections.			
	?minor garnet vesuvianite			
230	grey wollastonite-garnet vesuvianite pyroxene calcite skarn band.	(1)	T	1
	Calc-silicate band - pyroxene wollastonite.			
	40° Pyroxene wollastonite garnet biotite band.			
240				

DRILL HOLE LOG

HOLE No. 79B-6
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COORDINATES
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CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
240	chloritic epidote schist Pbcs* Dark grey biotite siliceous dolomitic schist and schist	-		
	Grey green chloritized biotite siliceous, dolomitic schist	(3)	T	6
250				
	Grey green siliceous dolomitic marble breccia with chloritic matrix.			
260	Pcp* CARBONACEOUS PHYLLONITE	(3)	T	7
	Fractured dolomitic breccia with calcite in some fractures. ? Black graphitic fault gouge in black micaceous marble host rock.			
270	Pggi* and Pcss* grey green amphibole 80° chlorite epidote groundmass BANDED AND CALC SILICATE SCHIST: white green and grey banded calc-silicate skarn and gneiss: pink garnets, pyroxene-garnet-wollastonite-vesuvianite-calcite with minor biotite and chlorite after garnet. Calcite filled fractures 10-30° to core.	(2)	T	2
280	Pcp*			
	Pbcs* DARK GREY GREEN CHLORITE SCHIST - dark grey to grey green chloritic biotite silicate dolomitic limy chlorite schist, talcy, with biotite porphyroblasts	(2)	10	2
290	Pcss* BANDED SKARN AND CALC-SILICATE SCHIST: white wollastonite-quartz calcite skarn with minor pink garnet and pyroxene.	(3)	T	1
	Pbcs* BIOTITE CHLORITE SCHIST - limy Pcs			

DRILL HOLE LOG

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CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
300	garnet wollastonite vesuvianite band. Pggi GREY AND GREEN INTERBANDED SCHIST AND GNEISS	(2)	20	1
	Pcss BANDED SKARN AND CALC-SILICATE SCHIST: green and white, grey and brown banded pyroxene-wollastonite-garnet-vesuvianite-calcite-quartz gneiss and skarn with intermittent biotite bands and schist Light pink garnet Light(green pyroxene) ?chlorite Dark brown vesuvianite Pale green schist and calc-silicate skarn	(1)	T	1
310	Biotite rich bands.			
	80°			
320	Biotite rich bands.			
330	80°	(1)	T	1
340	Quartz vein at 20° to core.			
	Medium green pyroxene wollastonite garnet banded calc-silicate skarn			
350		(1)	T	1
360				

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FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
360	Pcss* Banded pyroxene-wollastonite-garnet-vesuvianite skarn continued.			
	Pggi* GREY AND GREEN INTERBANDED SCHIST: thinly laminated biotite pyroxene gneiss, light green pyroxene bands, 50% pyroxene, 50% biotite Minor wollastonite-vesuvianite bands. - dark grey biotite and pale green interbanded schist			
370		(1)	T	3
	Pbcs* BIOTITE CHLORITE SCHIST: dark grey banded biotite-silicate gneiss with minor light green pyroxene bands. - dark grey with thin pale green chloritic bands			
380				
390		(1)	20	1
	Pggi* GREY AND GREEN INTERBANDED SCHIST: Light green and dark grey banded biotite-pyroxene gneiss			
400				
	Quartz vein 70° to core; trace pyrrhotite and pyroxene.			
410		(1)	T	1
	Quartz vein 50° to core.			
420				

DRILL HOLE LOG

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CORE SIZE
HOLE STARTED
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LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
420	Pggi* continued — GREY AND GREEN INTERBANDED SCHIST Light green and dark grey banded biotite pyroxene silicate gneiss continued, minor wollastonite bands, light green pyroxene bands are irregular and crosscut foliation in places. Calcite vein 20°			
430	Calcite 10°	(2)	20	1
	Pbmcs* — BIOTITE MARBLE AND SCHIST: grey and grey green thinly laminated biotite siliceous marble, grey green sections are altered chloritic equivalents of grey biotite marble. - pale olive green epidote bearing altered equivalent			
440				
	Dark grey siliceous biotite dolomitic marble and siliceous schist with olive green chloritic altered equivalents; variable silica content, dark grey-green limy biotite-chlorite-muscovite schist, limy, talcy	(1)	T	1
450	70°			
	quartz vein Grey green altered equivalent - paler siliceous equivalent with epidote, olive coloured variety of biotite-chlorite schist			
460	Medium grained altered quartz monzonite.			
	Grey green altered equivalent.	(1)	T	1
470				
	Green altered equivalent.			
480				

DRILL HOLE LOG

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CORE SIZE
HOLE STARTED
HOLE COMPLETED
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FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
480	Pbmcs* continued — BIOTITE MARBLE AND SCHIST continued			
	Green altered equivalent.			
	Feldspar augen			
		(2)	T	1
490				
	Green altered equivalent. - epidote, olive coloured equivalent			
	White quartz vein at 80° to core.			
500	Pbcs* BIOTITE-CHLORITE-MUSCOVITE SCHIST - Dark grey with talcy fractures			
		(1)	T	1
510				
520	Pbmcs* BIOTITE-CHLORITE-MUSCOVITE SCHIST: Pale grey quartzo-feldspathic schist, talcy			
		(1)	T	1
530				
	Quartz vein			
	Fractured ground			
540	Quartz vein			

DRILL HOLE LOG

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FOOTAGE	Pbmcs* continued — DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
540	Green altered equivalent. Pale green muscovite-chlorite-epidote talc schist			
	Quartz vein Bleached equivalent.			
	limy biotite-chlorite-muscovite-schist	(1)	T	1
550				
	Black tourmalinized band.	(8)	10	1
560	Green altered chloritic equivalent. - epidote	(1)	T	1
570				
	Dark grey siliceous biotite limy dolomite schist	(1)	T	1
580				
	Pcss* BANDED SKARN AND CALC-SILICATE SCHIST: light to medium green banded to massive pyroxene garnet vesuvianite skarn, pink garnets, light green pyroxene, dark brown vesuvianite.	(125)	T	1
590				
	Pbmcs* BIOTITE MARBLE AND SCHIST: black thinly laminated biotite siliceous marble.			
600	BANDED SKARN AND CALC-SILICATE GNEISS			

DRILL HOLE LOG

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FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
600	Pcss* BANDED SKARN AND CALC-SILICATE SCHIST: weakly banded wollastonite-pyroxene vesuvianite garnet quartz calcite skarn. Light green pyroxene, pink garnet, dark brown vesuvianite.	(1)	T	1
610	Medium grained biotite quartz monzonite dyke 80° to core.			
	Pbmcs* BIOTITE-MUSCOVITE-CHLORITE SCHIST: dark grey biotite-siliceous marble and minor green altered equivalent, pale grey green biotite-chlorite-muscovite talc schist			
620		(1)	T	1
630	80° Grey banded biotite-dolomitic marble with minor green chlorite bands and siliceous bands. Foliation 80° to core.			
640		(1)	T	1
	Psk* DARK GREEN MASSIVE SKARN: dark green coarse pyroxene garnet vesuvianite skarn			
	3" of vesuvianite calcite.			
650	Pbmcs* BIOTITE-CHLORITE-MUSCOVITE SCHIST: grey green fine grained, thinly laminated siliceous biotite dolomitic schist and marble. - talcy fractures			
	Light grey calcite quartz-wollastonite? marble.	(1)	T	2
	Grey green siliceous chloritic biotite marble and schist.			
660				

DRILL HOLE LOG

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CORE SIZE
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LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
660	Pbmcs* BIOTITE MARBLE AND SCHIST continued Grey green siliceous biotite marble siliceous bands.			
	Pcss* BANDED SKARN AND CALC-SILICATE GNEISS: grey green pyroxene-garnet- vesuvianite-wollastonite skarn.			
	Pbmcs* BIOTITE MARBLE AND SCHIST: grey green biotite siliceous dolomitic marble.			
670	10° fracture with calcite. 80° medium grey biotite siliceous marble.	(2)	T	3
	quartz monzonite dyke- medium grey, cut by late silica veins.			
	Biotite marble breccia in silica matrix Carbonate vein at 20°.			
680	Psk* DARK GREEN MASSIVE SKARN: dark green, massive to weakly laminated pyroxene skarn with garnet minor pyrite and pyrrhotite.	0.13	T	
690	Pcss* BANDED SKARN AND CALC-SILICATE GNEISS: green white brown banded pyroxene garnet wollastonite vesuvianite calcite skarn.			
	Psk* DARK GREEN MASSIVE SKARN: dark green pyroxene garnet skarn with vesuvianite.	0.03	80	
	Epidote in skarn bands and pyrrhotite calcite vein in fracture quartz pyrrhotite hematite? epidote vein and in skarn matrix.			
700	Pcss* BANDED SKARN AND CALC-SILICATE GNEISS: light grey wollastonite-calcite quartz skarn. Weakly foliated to massive skarn with bands of wollastonite-garnet-vesuvianite occurring intermittently. Banded pyroxene garnet wollastonite skarn with calcite and minor epidote.	0.06	T	
	Vein 60° to core. Green fluorite, quartz, molybdenite?	0.40	100	
710		0.02	T	
	Quartz vein with pyrrhotite and epidote.			
	Pggi* GREY AND GREEN INTERBANDED SCHIST AND GNEISS:			
720				

DRILL HOLE LOG

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
720	80° Pggi* GREY AND GREEN INTERBANDED SCHIST continued: grey and green pyroxene biotite calcite siliceous with garnet dolomitic marble with calc-silicate bands (pyroxene, garnet, vesuvianite)			
	Calcite 10° to core.	<0.01	T	
	Pcss* Dark green banded pyroxene garnet vesuvianite skarn			
	Grey green pyroxene biotite marble as before.	(200)	T	3
	Grey green biotite marble breccia with calcite matrix.			
730	Pggi*			
	80° biotite marble as above.			
	Banded pyroxene garnet vesuvianite skarn Pcss* Medium green and brown banded calc-silicate schist, banded skarn with biotite bands, garnet-pyroxene-vesuvianite chlorite bands	0.02	T	
	Grey green biotite pyroxene banded marble			
	Green banded biotite pyroxene garnet vesuvianite calc-silicate gneiss.	0.01	T	
740	Calcite vein 20°.			
	Green weakly banded coarse pyroxene garnet vesuvianite skarn with minor wollastonite.			
	Pyrrhotite 40° to core	0.04	T	
	Pyrrhotite in fracture 30°.			
750		0.01	10	
		0.01	20	
	Wollastonite garnet vesuvianite calcite band.	0.01	T	
760	Kqm* QUARTZ MONZONITE: medium to coarse grained biotite quartz monzonite; quartz epidote alteration minor chlorite kaolinite with weak large remnant porphyroblasts.			
	Biotite marble xenolith.			
	Quartz monzonite is grey, coarsely porphyritic biotite, large phenocrysts 2-3 cm are mainly ghosts, shows chlorite, epidote quartz alteration also a few quartz and carbonate veins cut the monzonite.	(14)	T	2
770				
	10°			
780				

DRILL HOLE LOG

HOLE No. 79B-6
PAGE 14 OF 14

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
780	Kqm continued			
	Chlorite epidote quartz alteration. Kaolinized medium grained feldspars.	(4)	10	1
790	Chlorite epidote quartz alteration.			
800	20°			
	Dolomite epidote quartz alteration.	(1)	T	1
810				
820				
	3-5 cm phenocryst of k-spar.	(2)	T	1
	epidote quartz alteration calcite veins.			
830				
	End of Hole			

DRILL HOLE LOG

HOLE No79B-7
PAGE 1 OF 8

COORDINATES 0 + 15N - 4 + 50E
ELEVATION 5330'
DIP -52°
AZIMUTH 275°

CORE SIZE BQ
HOLE STARTED 28/09/79
HOLE COMPLETED 1/10/79
LOGGED BY U. Schmidt

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
0				
10	Bedrock			
	Pbmcs — BIOTITE MARBLE AND SCHIST: dark blue grey siliceous biotite schist and siliceous biotite dolomitic marble with light grey brown altered equivalents.			
20	70°	(7)	T	1
	pegmatite quartz monzonite sill 40°, perpendicular to foliation 60°			
30	rusty limonite staining along fractures. calcite, minor sandy gouge, small core fragments.			
	KTqfp — DARK GREEN DYKE: medium-dark green equigranular fine grained amygdaloidal dyke rock with white calcite filled amygdules. Fine grained phenocrysts, dark green crystals in grey green matrix.			
40		(32)	T	1
50	yellow brown oxide or carbonate.			
	Pbmcs — BIOTITE MARBLE AND SCHIST: bleached and siliceous equivalents of biotite schist.			

DRILL HOLE LOG

HOLE No79B-7
PAGE 2 OF 8

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
60	Pbmcs* BIOTITE MARBLE AND SCHIST continued: bleached and altered siliceous biotite schist unit; grey and tan colour with abundant hairline fractures.	(30)	T	2
	60°			
70	tan coloured sandy gouge			
	Dark grey and blue grey siliceous biotite schist with biotite, hard blue grey porphyroblasts; chlorite? gradational to dolomite schist; core is weakly limy.	(30)	T	2
	altered quartz monzonite dyke.			
80	Light grey, more siliceous variety of biotite schist, less lime.			
	quartz vein			
	quartz vein	(1)	T	1
90	70°			
100	quartz vein			
	Dark grey and blue grey siliceous biotite schist unit with dolomitic schist sections.			
	pinkish grey bleached altered siliceous equivalent.			
110		(3)	T	1
	50°			

DRILL HOLE LOG

HOLE No. 79B-7
PAGE 3 OF 8

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
120	Pbmcs BIOTITE MARBLE AND SCHIST continued			
	10° clay gouge			
	- light brown weathered equivalent of grey biotite siliceous dolomitic marble.			
	35° Dark grey foliated biotite siliceous dolomitic marble; chloritic with blue grey porphyroblasts, hardness about 5-6; also light grey hard siliceous sections and light brown weathered equivalents; weathering along hairline fractures and joints.			
130				
140	light brown weathering	(1)	T	1
150				
160	Pcss BANDED SKARN AND CALC-SILICATE SCHIST: light green banded pyroxene-wollastonite-vesuvianite garnet quartz skarn Garnet is pink, pyroxene light green.			
	-wollastonite, Pggi GREY AND GREEN INTERBANDED SCHIST:	(20)	T	1
	vesuvianite, pyroxene. Dark grey siliceous biotite schist with minor			
	pyroxene skarn or calc-silicate gneissic bands.			
170	Pcss BANDED SKARN AND CALC-SILICATE SCHIST: light green banded pyroxene vesuvianite wollastonite garnet banded skarn; contact 40° to core.	0.02	20	
	20° quartz Psk DARK GREEN MASSIVE SKARN: dark green weakly banded to massive pyroxene-garnet-vesuvianite skarn with dark green pyroxene, red brown garnet, dark brown vesuvianite, minor disseminated and vein pyrite, pyrrhotite	0.24	20	
	pyrrhotite			
20°	quartz chlorite			
70°	pyrrhotite pyrite vein.			

DRILL HOLE LOG

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
180	quartz vein Psk* DARK GREEN MASSIVE SKARN continued: also quartz chlorite pyrite veins. Pyrite and pyrrhotite about 10%.	0.01	T	
	fracture with quartz, pyrite, 10°, rusty.	0.08	20	
	Kqm* QUARTZ MONZONITE: altered medium grained quartz monzonite dyke, highly fractured with calcite veins.			
	Pggi* GREY AND GREEN INTERBANDED SCHIST			
190	light green banded pyroxene-wollastonite-vesuvianite-biotite calc-silicate gneiss. dark grey siliceous biotite dolomitic marble with light green calc-silicate bands.	(35)	T	3
	Pyroxene band.	0.01	10	
	Quartz monzonite dyke 10° to core with graphic texture, tourmaline.			
	Dark green and light green banded pyroxene vesuvianite garnet wollastonite skarn			
	Biotite marble			
200	White and green banded pyroxene-wollastonite-vesuvianite-garnet skarn with pink garnet and green pyroxene.	(10)	T	2
	Pbmcs* BIOTITE MARBLE AND SCHIST: Dark grey biotite siliceous dolomitic marble.			
	quartz monzonite sill, 4" wide.			
	Psk* DARK GREEN MASSIVE SKARN: dark green massive and banded pyroxene-vesuvianite-garnet wollastonite skarn, light and dark green pyroxene, pink and red brown garnets, dark brown vesuvianite.			
210	Pbmcs* BIOTITE MARBLE AND SCHIST: Fault zone-fragments of biotite marble in sandy clay gouge, also with calcite stringers. 60-80% core recovery.	<0.01	T	
220	Psk* DARK GREEN MASSIVE SKARN: highly fractured, dark green, pyroxene skarn breccia with calcite stringers, weakly disseminated mineralization, some mineralized fractures and some quartz vein related.	0.14	30	
	Pbmcs* BIOTITE MARBLE AND SCHIST: biotite marble breccia filled with sandy clay matrix and gouge.	0.06	T	
230		(14)	T	3
240				

DRILL HOLE LOG

HOLE No79R-7
PAGE 5 OF 8

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
240	Pbmcs* BIOTITE MARBLE AND SCHIST continued: fault zone continued, biotite marble breccia with sandy clay matrix.			
	end of fault zone			
	50° Pggi* GREY AND GREEN INTERBANDED SCHIST dark grey siliceous biotite dolomitic marble with variable silica content and light green pyroxene bands.			
250	-quartz monzonite sill, 4" wide.			
	light green pyroxene			
	quartz monzonite dyke- altered - medium grained biotite quartz monzonite.			
	Quartz monzonite - tourmaline			
260	light brown weathering breccia.	(9)	T	2
	Light green pyroxene biotite calc-silicate gneiss.			
	70°			
270	4" quartz monzonite sill			
	Psk* DARK GREEN MASSIVE SKARN: dark green weakly laminated to massive pyroxene garnet skarn, dark green pyroxene, red garnets, minor biotite with minor pyrrhotite and pyrite.	0.10	40	
	calcite vein			
280	light green pyroxene, garnets rimmed by dark green mineral. GREY AND GREEN INTERBANDED SCHIST dark grey and light green banded siliceous biotite schist and dolomitic marble with pyroxene bands.			
	Calcite vein.			
	Light green pyroxene bands.			
	Pggi*	(5)	T	1
290	light green pyroxene bands.			
	chalcopyrite in fracture at 30°			
	Altered garnets - chlorite? with garnet cores.			
300	fracture 10°			

DRILL HOLE LOG

HOLE No. 79B-7
PAGE 6 OF 8

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
300	Pbmcs* BIOTITE MARBLE AND SCHIST: dark grey siliceous schist and marble. Pale green pyroxene band. Calcite filled fracture 10°.			
310	Olive and grey green altered equivalent of biotite schist and dolomitic marble, rusty weathering along fractures. Pale pyroxene dark green altered garnet and quartz.	(40)	10	5
	Pggi* GREY AND GREEN INTERBANDED SCHIST banded siliceous biotite schist, siliceous dolomitic marble with pyroxene bands. Dark grey and light green banded siliceous biotite garnet schist interlayered with pyroxene quartz bands and minor garnet wollastonite pyroxene vesuvianite bands.			
320	Quartz carbonate veins 40°. Pyroxene quartz rich. Biotite about 50%, pyroxene bands about 50%.			
	Rusty altered olive green equivalents.			
	Pcss* BANDED SKARN AND CALC-SILICATE SCHIST: weakly banded pyroxene garnet skarn, minor pyrrhotite. Biotite and pyroxene gneiss. Pale green pyroxene garnet vesuvianite banded calc-silicate gneiss.	0.12	75	
330		(20)	T	1
	Pggi* GREY AND GREEN INTERBANDED SCHIST dark grey siliceous biotite garnet schist, many garnets chloritized.			
	pyroxene, vesuvianite, garnet. 50° 20° quartz vein. Pale green pyroxene vesuvianite garnet calc-silicate gneiss interbanded with dark grey siliceous biotite garnet schist, minor wollastonite calcite quartz. Bands are generally from 1-4". Dark green altered garnets common with later pink garnets in calc-silicate bands.			
340	vesuvianite, wollastonite, garnet, pyroxene.	(100)	T	1
350	wollastonite, vesuvianite, pyroxene, garnet skarn			
	Vesuvianite garnet wollstonite pyroxene.			

DRILL HOLE LOG

HOLE No. 79B-7
PAGE 7 OF 8

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
360	Psk* DARK GREEN MASSIVE SKARN: dark green massive to weakly foliated pyroxene garnet vesuvianite skarn. Very fine grained disseminated scheelite parallels foliation.	0.40	60	
	Fragments of pyroxene rich rocks are suspended in pyrrhotite breccia which has 30-40% pyrrhotite with minor chalcopyrite, abundant quartz. Mineralized with fine grained scheelite, also coarse scheelite.	0.40	30	
	Grey and dark green mottled and brecciated quartz pyroxene skarn	1.63	200	
370	Kap* QUARTZ BRECCIA: quartz, pyrrhotite breccia with coarse scheelite; probably a quartz-feldspar-fluorite aggregate; highly fractured white quartz breccia in pyrrhotite matrix, with fluorite, coarse scheelite in sulphide matrix, fine grained disseminated foliated mineralization and coarser scheelite along fractures. 30-40% pyrite, pyrrhotite matrix Boxwork structures with hollow cores.	0.22	180	
		0.41	65	
	Pbmcs* BIOTITE MARBLE AND SCHIST: dark blue grey biotite garnet quartz schist with minor dolomitic marble and light green pyroxene quartz bands. 65° quartz carbonate 25° perpendicular to foliation. Pyroxene quartz garnet band.	0.10	20	
380	calcite vein			
	Altered low biotite quartz monzonite dyke 30°			
390	quartz monzonite			
	quartz vein	(30)	T	1
	Quartz monzonite sill and quartz vein, low biotite, muscovite quartz feldspar equigranular.			
	70°			
400	quartz			
	Quartz monzonite dyke coarsely porphyritic biotite quartz monzonite.			
410	Pbz* BIOTITE ZONE: A ZONE TYPE MINERALIZATION dark green and white banded pyroxene quartz dolomitic marble with minor brown biotite bands; very finely disseminated weakly foliated scheelite mineralization, minor remobilized mineralization along fractures. Grey brown banded biotite pyroxene quartz dolomitic marble biotite has replaced pyroxene, mottled texture, indistinct mineral	0.84	140	—
420		—	—	—

DRILL HOLE LOG

HOLE No 79B-7
PAGE 8 OF 8

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE		DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
420	Pbz *	BIOTITE ZONE continued	0.19	35	
	Pbmcs *	BIOTITE MARBLE AND SCHIST: blue grey and brown biotite garnet quartz dolomitic schist.			
	70°				
	Kqm *	QUARTZ MONZONITE: grey coarse porphyritic quartz monzonite with areas of yellow brown alteration, quartz epidote-chlorite.			
	trace scheelite				
430	weak quartz epidote chlorite.				
		Minor scheelite along fractures, frequent joints at 70°.			
	70°				
	trace scheelite		(225)	T	1
440					
450	quartz vein				
		End of Hole			
456					

DRILL HOLE LOG

HOLE No. 79B-8
PAGE 1 OF 8

COORDINATES 0 + 15N - 4 + 50E
ELEVATION 5330'
DIP -90°
AZIMUTH -

CORE SIZE BQ
HOLE STARTED 01/10/79
HOLE COMPLETED 05/10/79
LOGGED BY U. Schmidt

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
	Bedrock			
10	Pbmcs* BIOTITE MARBLE AND SCHIST: blue-grey siliceous biotite-schist and marble; weakly limy with variable silica content and grey-green altered sections. -biotite-chlorite schists & limy equivalents			
	grey-green weak chloritic alteration			
20	70°	(45)	T	1
	qtz rusty weathering			
30	rusty weathering along fractures			
	60° pyrite in quartz vein			
40	KTqfp* DARK GREEN DYKE: amygdaloidal; dark green, fine grained with calcite amygdules.	(28)	T	1
	30°			
	quartz monzonite dyke Pbmcs* BIOTITE MARBLE AND SCHIST: blue-grey biotite siliceous dolomitic marble and schist continued.			
50	10°			
	bleached and fractured	(11)	T	1
	quartz monzonite sill - broken up quartz			
60				

DRILL HOLE LOG

HOLE No. 79B-8
PAGE 2 OF 8

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
60	Pbmcs* - bleached and altered pale rusty colour - rusty weathering and fractured			
	Biotite schist with quartz bands. 70°			
70	- olive green, weakly altered schist	(13)	T	1
80	Dark grey and greenish equivalents Siliceous blue-grey schist with chloritic matrix in some areas, also light coloured altered equivalents. Biotite-chlorite-muscovite schist with pale epidote, talc 70° pyrite			
90	80° - weakly altered grey-brown chloritized equivalent } rusty pale yellow brown altered basic rocks	(5)	T	1
100	Pale green siliceous chlorite epidote?; tan altered porphyroblasts.	0.12	T	
	trace scheelite appearance of metamorphosed detrital rock Blue-grey siliceous biotite schist and marble. - biotite-chlorite-muscovite schist			
110	quartz tourmaline vein 2" quartz monzonite sill	(40)	T	2
	pale rusty brown weathering and alteration			

DRILL HOLE LOG

HOLE No. 79B-8
PAGE 3 OF 8

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE		DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
120	Pbmcs*	Biotite Marble and Schist continued: Blue-grey biotite siliceous schist and dolomitic marble; also altered, chloritized equivalents, minor garnet. - pale rusty carbonate alterations along fractures			
	?garnet biotite schist				
	Kap*	WHITE APLITE Sill: white aplite sill with intermittent disseminated biotite and biotite clusters.			
130					
			(2)	T	1
140					
	30°	grain size increases with depth			
150	Pcss*	BANDED SKARN AND CALC-SILICATE SCHIST: pale to dark green weakly foliated to massive pyroxene-vesuvianite-garnet skarn. Mainly dark green pyroxene, red and red-brown garnet.	0.05	30	
	pyrrhotite, pyrite in fracture at 15°, also a black mineral.				
	Pbmcs*	BIOTITE MARBLE AND SCHIST: medium grey siliceous biotite schist.			
	Light green quartz, altered schist equivalent.				
160	Pcss*	BANDED SKARN AND CALC-SILICATE SCHIST	0.11	50	
	Dark green massive pyroxene-garnet-vesuvianite skarn		0.10	30	
			0.03	T	
	Pggi*	GREY AND GREEN INTERBANDED SCHIST interbanded pyroxene-biotite schist gneiss. Evidence of pyroxene alteration of siliceous biotite schist.			
170					
	Pcss*	BANDED SKARN AND CALC-SILICATE SCHIST: banded pyroxene-wollastonite-vesuvianite-garnet skarn. Minor biotite lenses. Pale green pyroxene, pink garnet, dark brown vesuvianite.	(12)	T	3
	trace scheelite				
	80°				
	Pggi*	GREY AND GREEN INTERBANDED SCHIST			
	Biotite schist and pyroxene gneiss interbedded				

DRILL HOLE LOG

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION		WO_3% (ppm)	ppb Au	ppm Sn
180	Pggi*	GREY AND GREEN INTERBANDED SCHIST continued biotite-pyroxene schist gneiss			
	Pcss*	BANDED SKARN AND CALC-SILICATE SCHIST: light and dark banded, pyroxene-garnet-vesuvianite-wollastonite-calcite skarn; mainly light coloured but also dark skarn. Pale and dark green pyroxene Pink garnet Dark brown vesuvianite.	(60)	T	1
	- gouge and breccia		0.05	20	
190	pyrrhotite 80°		(60)	T	1
	Pbmcs*	BIOTITE MARBLE AND SCHIST: blue-grey siliceous biotite schist with altered and limy equivalents. Dark grey and grey green siliceous biotite schist and dolomitic marble sections which are weakly limy; also minor pyroxene-bearing bands. - biotite-chlorite-muscovite schist			
	quartz and quartz monzonite sill 80°				
200	quartz				
	brown weathering olive grey green				
210	white quartz vein and foliation with a trace of molybdenite and tourmaline.		(11)	T	1
	-quartz vein and fracture				
	-calcite coated fracture 5° to core				
220					
	-rusty red-brown weathering light green altered biotite schist equivalent. - pale olive epidote, rusty fractures				
	Psk*	DARK GREEN MASSIVE SKARN: dark green mottled pyroxene-garnet vesuvianite skarn.	0.03	T	
230	Pggi*	GREY AND GREEN INTERBANDED SCHIST pale green and dark grey interbanded siliceous chlorite schist gneiss; garnets are rimmed by dark green chlorite?	(15)	T	1

DRILL HOLE LOG

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE		DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
240	Kqm*	QUARTZ MONZONITE: white, low mica, equigranular quartz monzonite.			
	Pbmcs*	Biotite-Chlorite-Muscovite-Garnet Schist dark grey and pale green interbanded siliceous biotite schist and altered equivalents with dark green altered garnets.			
	-black mineral? chlorite?	- carbonate along fractures			
250					
	60°				
260	Pggi*	Grey and pale green interbanded siliceous biotite schist and pyroxene gneiss, pale green pyroxene quartz schist altered equivalent of biotite schist. Garnets rimmed by dark green to black chlorite. Irregular pyroxene development caused by pre-pyroxene fracture.	(33)	T	1
270					
	Pcss*	BANDED SKARN AND CALC-SILICATE SCHIST: pale green to dark green banded pyroxene-vesuvianite-garnet skarn with minor wollastonite and massive dark green sections.	(80)	T	1
280	Pggi*	GREY AND GREEN INTERBANDED SCHIST grey and pale green banded siliceous biotite-pyroxene schist gneiss.			
	Psk*	DARK GREEN MASSIVE SKARN: dark green mottled vesuvianite garnet skarn.	0.16	30	
	Pggi*	GREY AND GREEN INTERBANDED SCHIST pale green and minor grey siliceous pyroxene biotite schist. Pale green pyroxene is after biotite. Minor pyrrhotite along fractures.	0.05	T	
290			0.35	T	
	white quartz monzonite - garnet, vesuvianite-pyroxene	Minor pyrrhotite in fractures 20° to core; mottled white and green texture altered equivalent of biotite schist. Dark green altered garnets in biotite schist.	0.05	T	

DRILL HOLE LOG

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
300	Pggi* GREY AND GREEN INTERBANDED SCHIST continued: banded biotite pale pyroxene siliceous schist gneiss . - equivalent of biotite-chlorite-muscovite schist	(60)	T	2
	-quartz veins Pale green to white banded pyroxene gneiss (altered biotite schist)			
310	Psk* DARK GREEN MASSIVE SKARN: dark green massive to banded pyroxene-garnet skarn; minor pyrite and pyroxene disseminated along fractures.	0.40	T	
		0.12	T	
	Pggi* GREY AND GREEN INTERBANDED SCHIST pale green and grey banded siliceous biotite-pyroxene schist gneiss. With pale green pyroxene, dark green altered garnet and trace wollastonite.			
	-altered quartz monzonite			
320		0.04	T	
	-altered quartz monzonite with green fluorite	0.19	30	
	5-10° Psk* DARK GREEN MASSIVE SKARN: dark green massive pyroxene-vesuvianite skarn with minor pyrrhotite.	0.31	T	
	-altered quartz monzonite with pyrrhotite and scheelite mineralization.			
330	Pcss* Highly altered pyroxene and biotite siliceous schist cut by thin quartz monzonite apophyses mineralized with coarse scheelite.	0.05	T	
		5.70	T	
	Pggi* GREY AND GREEN INTERBANDED SCHIST banded pale green and dark grey pyroxene biotite schist with minor skarn bands (vesuvianite, pink garnet)	0.05	T	
340		0.05	T	
	-calcite filled fracture 5-10°			
	30°	(13)	T	2
350	40°			
	-green chloritized equivalents, chlorite-epidote.			
	Pcss* - BANDED SKARN AND CALC-SILICATE SCHIST: medium green banded pyroxene garnet vesuvianite skarn	0.05	80	
	Pbz* - BIOTITE ZONE: grey and green banded zone, pale green banded biotite chlorite calcite silicate schist, pale green equivalent of grey and green banded	1.76	780	
360				

DRILL HOLE LOG

HOLE No. 79B-8
PAGE 7 OF 8

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE		DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
360	Pbz*	BIOTITE ZONE continued: pale green and white banded, mottled biotite schist altered equivalent.	0.18	380	
			1.60	T	
			0.13	40	
	altered medium grained quartz monzonite with epidote, chlorite and quartz	Kqm* QUARTZ MONZONITE: white, porphyritic biotite quartz monzonite with coarse white phenocrysts of k-feldspar.			
370	40°	With altered sections which are brown and olive coloured primarily chlorite epidote quartz; also late quartz veins cut core.			
	quartz vein 50° altered equivalents				
380			(3)	T	1
	50°				
	calcite vein 10°				
390					
	light brown altered equivalent chlorite quartz feldspar quartz epidote chlorite				
400					
410			(1)	T	1
	orange "potassic"? alteration in feldspar along fractures and matrix.				
420	orange alteration				

DRILL HOLE LOG

HOLE No. 79B-8
PAGE 8 OF 8

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
420	weak orange alteration also quartz dolomite epidote.			
	aplitic quartz feldspar dyke 5°, kaolinized feldspars along fractures.			
	calcite in fractures at 10°			
430	altered, epidote chlorite and minor potassic	(30)	T	1
440	20° also quartz chlorite epidote alteration			
	high fracture density			
450				
460	altered quartz monzonite; orange brown potassic alteration along fractures and olive grey green, chloritic and epidote alteration.	(1)	T	8
	End of Hole			
470				

DRILL HOLE LOG

HOLE No.79B-9
PAGE 1 OF 6

COORDINATES 0 + 15N - 4 + 50E
ELEVATION 5330'
DIP -61°
AZIMUTH 110°

CORE SIZE BQ
HOLE STARTED 06/10/79
HOLE COMPLETED 08/10/79
LOGGED BY U. Schmidt

FOOTAGE	DESCRIPTION			WO_3% (ppm)	ppb Au	ppm Sn
0						
10		Bedrock				
	Pbmcs*	BIOTITE MARBLE AND SCHIST: blue grey siliceous biotite schist and biotite dolomite; red brown weathered equivalents.				
20	quartz vein pegmatite vein 50° quartz	Most fractures parallel core.		(4)	T	1
30	Quartz and medium grained quartz monzonite dyke.					
	50°					
40	30°					
	Kap*	APLITE: white equigranular aplite medium grained quartz feldspar.				
	30°					
50	50° Pbmcs*	Blue grey biotite schist and dolomite marble.		(6)	T	1
	KTqfp*	DARK GREEN DYKE: dark green dyke with calcite filled amygdules.				
60		Grey biotite dolomitic marble and biotite schist.				

DRILL HOLE LOG

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
60	brown weathering altered green dyke. KTqfp*			
	Kap* WHITE APLITE: white medium grained equigranular aplite dyke.	(2)	T	1
	calcite rich fault gouge			
	Pbmcs* BIOTITE MARBLE AND SCHIST: biotite schist and dolomitic biotite marble with altered equivalents.			
70	light brown weathered Talcy chloritic in sections near fault zones.			
80	50% core in pebbles			
	50°			
	Quartz tourmaline feldspar in vein.			
	Red brown weathered equivalent.	(13)	T	1
90	chloritic biotite schist: Siliceous biotite schist with minor dolomitic bands with brown weathered equivalents and dolomite.			
100	red brown weathered and fractured siliceous biotite schist, limy altered biotite marble equivalent.			
	60°			
	White quartz feldspar aplite. Kap*			
110	Siliceous biotite schist and dolomitic marble yellow brown weathered and altered equivalent.	(11)	T	1
	Kap* WHITE APLITE: white equigranular aplite, calcite in highly fractured areas.			

DRILL HOLE LOG

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
120	Kap* White equigranular aplite continued	(3)	T	1
	fracture filled with calcite			
	Kqm* QUARTZ MONZONITE: grades to equigranular biotite quartz monzonite.			
130				
	Pbmcs* BIOTITE MARBLE AND SCHIST: grey biotite schist and siliceous dolomitic biotite marble and altered equivalents.			
	quartz vein			
140	Yellow brown weathered and altered equivalent chloritic and talcy equivalent.	(15)	T	1
150	Grey dolomitic biotite marble with biotite schist bands and chloritic matrix, light brown rusty weathering along hairline fractures.	(3)	T	1
160	quartz vein 40° quartz vein 10°			
170	quartz veins highly fractured and rusty weathering biotite dolomite marble.			
	Dark grey to black and blue grey biotite dolomitic marble. Chlorite sericite in matrix.			
	10°	(13)	10	1
	60°			
180				

DRILL HOLE LOG

HOLE No. 79B-9
PAGE 4 OF 6

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
180	olive green altered equivalent			
	Grey and white banded siliceous biotite dolomitic marble, some chlorite after biotite, similar to A zone.	0.25	1200	
	Pcss* BANDED SKARN AND CALC-SILICATE SCHIST: white band wollastonite pyroxene vesuvianite garnet skarn-calcite. Pale green pyroxene, pink garnet dark brown vesuvianite. Pale pyroxene increasing wollastonite calcite decreasing. Minor biotite in porphyroblastic clots parallel to foliation.	(2)	T	1
190	Pale banded pyroxene with small garnets			
200	biotite clots			
	Pggi* GREY AND GREEN INTERBANDED SCHIST green and grey green pyroxene marble, pale green dark green banded pyroxene gneiss with biotite bands and minor wollastonite-garnet-pyroxene-vesuvianite bands (very limy) Texture similar to A zone but mafic is all pyroxene.	(2)	T	1
	60° quartz feldspar pegmatite dyke.			
210	60°			
	Green and grey interbanded pyroxene biotite dolomitic marble and schist with minor wollastonite pyroxene garnet bands.			
	wollastonite-vesuvianite			
220	wollastonite pyroxene vesuvianite garnet.			
	wollastonite pyroxene vesuvianite garnet	0.05	100	
	wollastonite pyroxene vesuvianite garnet			
	wollastonite pyroxene vesuvianite	(2)	T	1
	calcite in fracture 15°			
230	30°			
	quartz vein			
	70° Pcss* BANDED SKARN AND CALC-SILICATE SCHIST: white banded wollastonite pyroxene vesuvianite garnet calcite skarn, pale pyroxene brown vesuvianite pink garnet.	(200)	10	1
	quartz calcite vein 30°			
	calcite vein 50°			
	quartz feldspar aplitic dyke. Pyrrhotite along fractures Pyroxene bands	0.17	285	
240				

DRILL HOLE LOG

HOLE No. 79B-9
PAGE 5 OF 6

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION		WO_3% (ppm)	ppb Au	ppm Sn
240	Pcss* continued	BANDED SKARN AND CALC-SILICATE GNEISS continued	(200)	10	1
	~~quartz~~ parallel to foliation	GREY AND GREEN INTERBANDED SCHIST			
	Pggi*	grey and green interbanded biotite siliceous pyroxene schist gneiss with minor limy dolomitic sections and lighter siliceous sections. Biotite layers are differentially altered to pale pyroxene.			
	quartz parallel to foliation Quartz feldspar		(1)	T	1
250	pyrrhotite in fracture parallel to foliation.				
	quartz feldspar				
	Pbmcs*	BIOTITE MARBLE AND SCHIST: medium to dark blue grey siliceous biotite schist and dolomitic marble with minor pale pyroxene bands, minor garnet.			
260	55°				
	quartz feldspar vein and fracture parallel to foliation.		(4)	T	1
270	biotite quartz veins parallel foliation 60°				
	quartz carbonate vein				
280					
	quartz carbonate vein with chlorite	GREY AND GREEN INTERBANDED SCHIST			
	Pggi*	pale green pyroxene quartz marble with minor biotite layers.			
290	calcite vein	Red garnets rimmed by dark green pyroxene.	(18)	20	2
	pyrrhotite 20-30% parallels foliation in pale pyroxene marble		(350)	100	1
	quartz vein				
	quartz monzonite				

DRILL HOLE LOG

HOLE No. 79B-9
PAGE 6 OF 6

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION		WO_3% (ppm)	ppb Au	ppm Sn
300	Pggi*	GREY AND GREEN INTERBANDED SCHIST AND GNEISS	(18)	20	2
302	Kqm*	QUARTZ MONZONITE			
		End of Hole			

Hole discontinued because rods got stuck.

DRILL HOLE LOG

HOLE No 79B-10
PAGE 1 OF 10

COORDINATES 0+ 15N - 4 + 50E
ELEVATION 5330'
DIP -67°
AZIMUTH 110°

CORE SIZE BQ
HOLE STARTED 08/10/79
HOLE COMPLETED 12/10/79
LOGGED BY U. Schmidt

FOOTAGE		DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
0					
10					
	Pbmcs*	BIOTITE MARBLE AND SCHIST: blue grey biotite siliceous dolomitic marble and rusty weathered and altered equivalents.			
	quartz vein				
20					
	quartz	Broken and light brown weathered colour along fractures.			
30			(13)	T	1
	quartz vein				
	50°				
	quartz monzonite sill				
40					
	quartz vein				
			0.14	10	
	quartz vein Kap*	WHITE APLITE			
	Pbmcs*	BIOTITE MARBLE AND SCHIST			
50	KTqfp*	DARK GREEN DYKE: dark green limy amygdaloidal dyke rock.	(50)	T	1
	Pbmcs*	BIOTITE MARBLE AND SCHIST: grey siliceous dolomitic marble.	(3)	T	1
60	Kap*	WHITE APLITE			

DRILL HOLE LOG

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
60	Kap* WHITE APLITE continued: medium grained aplitic quartz and feldspar.			
	brecciated aplite in carbonate matrix.	(3)	T	1
70	Pbmcs* BIOTITE MARBLE AND SCHIST: blue grey siliceous biotite dolomitic marble with siliceous schist and altered equivalent.			
	quartz vein Light brown weathered equivalent.			
80		(14)	T	1
90	malachite stain parallel to foliation			
	45° Blue grey biotite siliceous dolomitic marble and schist.			
	Brown weathering equivalent.			
100	oxide filled fractures 20-30° to core.	(18)	T	1
	quartz vein			
110				
	brown weathering Kap* WHITE APLITE: white quartz feldspar aplite medium grained no mafics.			

DRILL HOLE LOG

HOLE No. 79B-10
PAGE 3 OF 10

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION		WO_3% (ppm)	ppb Au	ppm Sn
120	Kap*	White quartz feldspar aplite continued	(3)	T	1
130	Pbmcs*	BIOTITE MARBLE AND SCHIST: blue grey siliceous biotite dolomitic marble with fractured rusty and altered equivalents.			
	aplite				
	quartz vein 20°		(13)	T	1
140					
150	60°				
160			(8)	T	1
170					
	Pcss*	BANDED SKARN AND CALC-SILICATE SCHIST: banded pyroxene wollastonite vesuvianite garnet skarn	0.02	80	
	70°				
	Psk*	DARK GREEN MASSIVE SKARN: dark green pyroxene garnet vesuvianite skarn.	0.11	50	
180					

DRILL HOLE LOG

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
180	**Psk*** DARK GREEN MASSIVE SKARN continued			
	Pcss* BANDED SKARN AND CALC-SILICATE SCHIST: banded pyroxene biotite schist dolomitic marble ---- Banded wollastonite garnet vesuvianite skarn.	(65)	T	1
190	40° 60° 20°			
	Pggi* GREY AND GREEN INTERBANDED SCHIST green and grey interbanded biotite schist and pyroxene gneiss with minor pyroxene wollastonite bands.	(4)	10	1
	wollastonite pyroxene garnet vesuvianite			
200	**Pcss*** BANDED SKARN AND CALC-SILICATE SCHIST: white and green banded pyroxene wollastonite garnet vesuvianite skarn. Pale pyroxene, pink garnet, dark brown vesuvianite.			
210	dark grey siliceous biotite schist and dolomitic marble.	(4)	T	4
	60°			
220	**Pbmcs*** BIOTITE MARBLE AND SCHIST: blue grey banded biotite schist and siliceous dolomitic marble with minor pyroxene bands and altered equivalents.			
230	biotite feldspar clots - A zone alteration.	(3)	T	1
	quartz monzonite			
240				

DRILL HOLE LOG

HOLE No. 79 B-10
PAGE 5 OF 10

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION			WO_3% (ppm)	ppb Au	ppm Sn
240	quartz vein	Pbmcs*	BIOTITE MARBLE AND SCHIST continued: blue grey biotite schist and siliceous dolomitic marble.			
	quartz monzonite dyke 30°					
250	calcite and quartz vein 10°			(85)	T	3
	quartz vein 60°					
260						
	30°	Psk*	DARK GREEN MASSIVE SKARN: dark green pyroxene garnet vesuvianite skarn; dark pyroxene, red brown garnet.	0.05	20	
270	45°					
	aplite	Pggi*	GREY AND GREEN INTERBANDED SCHIST green garnet schist altered equivalent of biotite garnet schist.	(12)	T	1
	aplite dyke					
280	aplite dyke	Kap*				
		Pbmcs*	BIOTITE MARBLE AND SCHIST: blue grey biotite garnet schist and siliceous dolomitic marble.			
290				(1)	T	1
300						

DRILL HOLE LOG

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
300	aplite dyke 60° Pbmcs* BIOTITE MARBLE AND SCHIST continued			
	calcite vein			
310	Kqm* QUARTZ MONZONITE: grey medium grained biotite quartz monzonite.	(1)	T	1
	Pggi* GREY AND GREEN INTERBANDED SCHIST green and grey interbanded biotite pyroxene schist gneiss altered version of biotite schist.	(1)	T	4
320	quartz monzonite			
	Psk* DARK GREEN MASSIVE SKARN: dark green weakly banded pyroxene garnet skarn with minor banded wollastonite pyroxene garnet vesuvianite	0.12	10	
		0.06	40	
330	white quartz calcite vein			
	dark green pyroxene garnet skarn	0.42	170	
	quartz calcite vein			
	biotite and pyroxene interbanded schist gneiss	0.05	T	
		0.26	20	
	mottled quartz			
340	Pcss* BANDED SKARN AND CALC-SILICATE SCHIST: banded wollastonite pyroxene garnet vesuvianite skarn.	0.06	T	
	calcite vein 20° Pggi* GREY AND GREEN INTERBANDED SCHIST grey and green interbanded pyroxene-biotite schist gneiss with dark green altered garnets.			
350		(37)	T	1
	? quartz with mottled pyroxene chlorite			
360				

DRILL HOLE LOG

HOLE No. 79B-10
PAGE 7. OF 10

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
360	Pggi* GREY AND GREEN INTERBANDED SCHIST continued quartz monzonite white medium grained mottled biotite quartz monzonite			
	wollastonite mottled pyroxene texture in white marble Green and dark grey interbanded pyroxene biotite schist gneiss and siliceous dolomitic marble with dark green rimmed garnets also minor wollastonite garnet vesuvianite bands.			
		0.20	560	
370				
	garnet wollastonite vesuvianite.			
		(20)	10	1
380	50° light grey brown altered equivalents.			
390				
	Psk* DARK GREEN MASSIVE SKARN: dark green pyroxene garnet skarn weakly foliated to massive.	0.08	130	
	quartz vein			
	Pcss* BANDED SKARN AND CALC-SILICATE SCHIST: banded pyroxene wollastonite garnet vesuvianite skarn.	0.05	T	
400	Pggi* GREY AND GREEN INTERBANDED SCHIST AND GNEISS: grey and green interbanded biotite and pyroxene schist gneiss, dark green altered garnets.			
	quartz monzonite	0.01	T	
410				
	Kqm* QUARTZ MONZONITE: grey medium grained biotite quartz monzonite with quartz veins.	(1)	T	1
420	Pdmcs* BIOTITE MARBLE AND SCHIST			

DRILL HOLE LOG

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE		DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
420	Pbmcs*	BIOTITE MARBLE AND SCHIST continued: blue grey biotite garnet schist and siliceous dolomitic marble with minor altered pyroxene bands.	(1)	T	2
430	quartz monzonite sill				
440	Pggi*	GREY AND GREEN INTERBANDED SCHIST light green and grey interbanded pyroxene biotite schist-gneiss with limy sections also minor wollastonite-garnet vesuvianite bands, dark green vesuvianite, altered garnets.	0.23	T	
	20°				
	10°		(90)	T	1
450					
460	quartz monzonite dyke		0.83	100	
			(7)	T	1
470	Psk*	DARK GREEN MASSIVE SKARN: dark green massive to weakly laminated pyroxene garnet skarn.	0.72	T	
	50°		0.27	T	
			0.02	T	
480		BANDED SKARN AND CALC-SILICATE GNEISS			

DRILL HOLE LOG

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
480	mottled mineralized quartz monzonite hybrid continued	0.80	T	
	Kqm* QUARTZ MONZONITE: grey coarse porphyritic biotite quartz monzonite with finer grained and altered equivalents, usually quartz chlorite epidote.			
490				
500		(11)	T	2
	quartz chlorite epidote			
510				
520	40°			
530				
540	10°	(55)	T	2

DRILL HOLE LOG

HOLE No. 79B-10
PAGE 10 OF 10

COORDINATES
ELEVATION
DIP
AZIMUTH

CORE SIZE
HOLE STARTED
HOLE COMPLETED
LOGGED BY

FOOTAGE	DESCRIPTION	WO_3% (ppm)	ppb Au	ppm Sn
540	Kqm*			
		(55)	T	2
550	Medium grained quartz feldspar, low silica equivalent.			
560				
570		(14)	T	1
	minor rusty fractures, possible k-spar alteration.			
580	chlorite and epidote in matrix.			
	End of Hole			
590				

DIAMOND DRILL CORE LOG

HOLE 80B11 PAGE 1 OF 2

PROJECT GRASS CLAIM GROUP BOOT CORE SIZE BQ
STARTED Jul 10/80 FINISHED Jul 14/80 TOTAL DEPTH 159
LOCATION 5+40E 5+05S COLLAR ELEVATION 5225
ANGLE 90° AZIMUTH - LOGGED BY U. Schmidt

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
10		
20	BEDROCK Kqm- QUARTZ MONZONITE White to light grey coarse porphyritic quartz monzonite; weak to moderate alteration, carbonate, clay chlorite	
KTqfp	KTqfp- HORNBLENDE QUARTZ PORPHYRY Dark green mottled rock	
30	Broken ground - - weak propylitic, intensity related to faults	
20° 30°	KTqfp- HORNBLENDE QUARTZ PORPHYRY Minor epidote, hornblende to chlorite - massive, limy; fine to medium grained	
40	50% core recovery Kqm - QUARTZ MONZONITE White to light tan altered equigranular Kqm	
	broken core	
50	highly broken ground	
	KTqfp- HORNBLENDE QUARTZ PORPHYRY Dark green altered, massive to blocky fracture, equigranular to weakly foliated	
30° with calcite		
60	no core recovered, just a few pebbles	
	Kqm- QUARTZ MONZONITE Coarse porphyritic biotite quartz monzonite with weak propylitic alteration - blebby secondary chlorite	
70	40° core recovery	
80		

DIAMOND DRILL CORE LOG

HOLE 80B11 PAGE 2 OF 2

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
80	Kqm continued minor scheelite White coarse porphyritic quartz monzonite in quartz vein with local alteration, chlorite	
90		
	KTqfp- DARK GREEN HORNBLENDE QUARTZ PORPHYRY 30° Medium to fine grained massive to mottled textured hornblende altered to chlorite, dark green spotted rock	
100	10°	
	Kqm- ALTERED QUARTZ MONZONITE Broken ground Weak propylitic, relation to faulting	
110	30° core recovery	
120		
	Highly fractured Kqm	
130	light brown colour caused by limonite feldspar, white opaque - clay carbonate	
140		
	50°	
150	40°	
	END OF HOLE	
160		

DIAMOND DRILL CORE LOG

HOLE 80B12 PAGE 1 OF 3

PROJECT GRASS CLAIM GROUP BOOT CORE SIZE BQ
STARTED Jul 14/80 FINISHED Jul 17/80 TOTAL DEPTH 193 ft.
LOCATION 5+05S 5+40E COLLAR ELEVATION 5225
ANGLE 65° AZIMUTH 265 LOGGED BY U. Schmidt

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
10		
	BEDROCK	
20	Kqm- White coarse porphyritic quartz biotite, monzonite - blebby quartz up to 5 mm, minor chlorite after biotite and calcite along fractures 70° 10°	
30	dark green dyke rock - contacts are broken	
	50° Altered quartz monzonite - propylitic alteration, biotite to chlorite, epidote, calcite, feldspars altered to grey olive colour	
40	siliceous altered Kqm	
	a few <1 mm size scheelite grains seen along fractures	
	KTqfp	
50	broken ground	
60		
	KTqfp- Dark green altered hornblende quartz porphyry - with quartz fragments, igneous rock fragments, massive to blocky fracture abundant fragments including chert and igneous ? clasts	
70	30° altered 15° Kqm Kqm porphyritic quartz monzonite	
80	30 10	

DIAMOND DRILL CORE LOG

HOLE 80B12 PAGE 2 OF 3

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
	KTqfp cont'd — Faulted contact	
	Kqm- Altered Biotite Quartz Monzonite - light grey to light olive green altered quartz monzonite - propylitic, chlorite, epidote, calcite	
90		
100	30 highly fractured core	
110	Faulted	
	KTqfp — Dark green 80 Faulted	
	Kqm continued — Kqm altered porphyritic	
	20% core recovery — Fault Zone	
120	25% core recovery	
130	15% core recovery	
	- light brown altered quartz monzonite - limy altered feldspars, weathering related to ground water circulation along fault	
140		
150	50% core recovery 25% core recovery	
160	- grey unaltered coarse porphyritic quartz monzonite	
	30 50°	2 grains of scheelite *
	20°	
170	10 50°	
	50°	1 grain of scheelite in fracture *
180		

DIAMOND DRILL CORE LOG

HOLE 80B12 PAGE 3 OF 3

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
	Kqm cont'd - grey coarse porphyritic biotite quartz monzonite 50% core recovery	
190	60% core recovery Kqm with altered biotite to chlorite limonite along fractures END OF HOLE	

DIAMOND DRILL CORE LOG

HOLE 80B13 PAGE 1 OF 4

PROJECT GRASS CLAIM GROUP BOOT CORE SIZE BQ
STARTED Jul 19/80 FINISHED Jul 25/80 TOTAL DEPTH 298 ft.
LOCATION 4+40S 6+82E COLLAR ELEVATION
ANGLE 65° AZIMUTH - LOGGED BY U. Schmidt

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
10		
20	BEDROCK	
	Pbmcs BIOTITE-MUSCOVITE-CHLORITE SCHIST	
30	5% core recovery	
	KTqfp HORNBLENDE QUARTZ PORPHYRY	
40	Medium to dark green, hornblende altered to chlorite 25% core - small rusty spots - micas weathered out - massive to blocky fracture	
50	highly broken core	
	Pggi GREY AND GREEN INTERBANDED	
50	12 60 - grey and green banded limy biotite schist altered to inter laminated pale pyroxene? or chlorite	
60	dark brown weathering along fractures - calc-silicate bands, limy, cut by hairline calcite bearing fractures - dark green porphyroblasts (chloritized garnets) occur intermittently; also epidote common as alteration product	
	70 60	
70	red brown rusty gouge	
	broken core	
	quartz chlorite vein with calcite	
80		

DIAMOND DRILL CORE LOG

HOLE 80B13 PAGE 2 OF 4

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES WO₃ %	PPB Au
80	Kap — White aplitic, quartz monzonite		
90	Pggi -trace disseminated scheelite; -8" fine disseminated scheelite, rusty, <.1 — Grey and Green Banded - medium grained, chloritized biotite marble and schist, with pyroxene and garnet	.13	51
100	-trace scheelite — pyroxene, garnet, epidote replacing limy bands - biotite and chloritic garnet porphyroblasts, dark brown garnets in calc-silicate sections	0.09	692
	-fine grained disseminated scheelite		
110	Kqm -1/2' medium grained scheelite; -scheelite with biotite; -chloritic breccia; -disseminated scheelite — - light grey to white altered medium grained quartz monzonite, with minor altered fine grained biotite to chlorite, altered mottled sections of A Zone type, feldspar to clay calcite, biotite to chlorite	0.11	166
	fractured		
120	-1 to 2 mm quartz veins cut core at variable angles to core axis with quartz matrix		
	Pggi -fine grained scheelite -Pcss trace — -grey and green banded siliceous biotite schist with minor limy altered sections - brown biotite bands, epidote, pale pyroxene interlayered, dark green retrograde garnets - light brown garnet and pale pyroxene		
130	disseminated Pcss scheelite .1-.2/ft. -trace scheelite; -vesuvianite with 6" disseminated scheelite trace — - Banded Calc-silicate Schist - with minor Psk sections, dark green weakly foliated pyroxene, brown garnets	0.39 0.07 0.09	300 151 13
	Pggi -trace widely disseminated scheelite — -biotite schist altered with alternating pale pyroxene bands, minor chloritic garnets, minor medium green pyroxene replacement, trace epidote		
140	Kqm -fine grained disseminated scheelite/6" — Medium grained quartz monzonite - grey to white medium grained quartz monzonite biotite > 5%, some biotite to chlorite, epidote, chlorite, quartz alternating with minor calcite		
150	-.5' trace disseminated scheelite — Faulted Contact		
	Pggi — Grey and green banded - banded grey biotite with light green pyroxene -dark green chloritic garnet forms with biotite -also pink garnet, brown vesuvianite in limy bands - medium to dark green banded, pyroxene, quartz feldspar -limy, possibly with black amphibole alteration		
160	Pcss, fine grained disseminated scheelite/2' -6" Kqm; -Kqm; -Kqm	0.06 0.93	3 39
170			
	Broken Core		
180	Kqm — - grey medium grained to coarse porphyritic Kqm		

DIAMOND DRILL CORE LOG

HOLE 80B13 PAGE 3 OF 4

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
180	Kqm cont'd broken core Biotite quartz monzonite with weak propylitic alteration	
190	- moderate to weak propylitic alteration also minor quartz, chlorite veins and fractures	
200	6" quartz vein	
210	Medium grained biotite quartz monzonite - minor chlorite, weak propylitic	
220	broken ground 50% core recovery	
	stronger propylitic alt. Plag is white opaque and limy	
230	60% core recovery broken core	
240	Broken Contact	
	KTqfp Dark green hornblende porphyry - dark green spots, massive, blocky fracture - finely crystalline, altered dyke - hornblende to chlorite	
250		
	Kqm QUARTZ MONZONITE	
	broken core 20% core recovery Light grey to tan coloured altered quartz monzonite; mottled quartz and feldspars, indistinct crystal boundaries; feldspars to clay, carbonate, biotite to chlorite	
260	broken core	
	- white leucocratic equigranular medium grained quartz monzonite	
270	30% core 15% core broken ground	
280		

DIAMOND DRILL CORE LOG

HOLE 80B13 PAGE 4 OF 4

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
280	Kqm continued	
	20% core recovery, broken ground	
	- abundant quartz veins 1-5 mm diameter	
	- density up to 1 cm, feldspars altered	
290	- biotite to chlorite, sericite increasing near end of hole	
	quartz with purple and green fluorite	
	END OF HOLE	
300		

DIAMOND DRILL CORE LOG

HOLE 80B14 PAGE 1 OF 2

PROJECT GRASS CLAIM GROUP BOOT CORE SIZE BQ
STARTED Jul 27/80 FINISHED Jul 30/80 TOTAL DEPTH 141 ft.
LOCATION 3+65S 4+35E COLLAR ELEVATION 5500'
ANGLE 75° AZIMUTH 000° LOGGED BY U. Schmidt

FOOTAGE	DESCRIPTION		ASSAYS AND ANALYSES WO_3 %	Au ppb	
10					
20	BEDROCK				
	Pbmcs- Grey biotite schist Highly fractured and weathered core				
	10% core				
30					
	15% core recovery in small pebbles and gouge				
40					
	Faulted Contact				
60	Kqm- Altered and weathered quartz monzonite - cloudy feldspars stained to light brown colour near fractures; minor chlorite, epidote				
50					
50	white leucocratic Kqm almost				
60					
	Broken Contact				
10	Pbz- Altered Pbmcs - white and dark brown foliated bleached biotite schist, white powdery appearance of matrix are probably feldspars gone to clay, also carbonate - mineralized with finely disseminated scheelite	3501	0.74	1095	
		3502	2.12	560	
70		3503	2.90	200	
		3504	3.42	812	
		3505	0.86	192	
80					

50 black amphibolite alteration

core recovery averages 30%

DIAMOND DRILL CORE LOG

HOLE 80B14 PAGE 2 OF 2

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES WO_3 %	PPB Au
80	Pbz - altered Pbmcs-bleached biotite schist with diss scheelite	0.23	420
	Kqm- altered fine to medium grained equigranular quartz monzonite, limonite filled fractures - leucocratic to aplitic texture		
90	medium grained biotite quartz monzonite, less altered than above - medium grained limonitic Kqm as above - limonite along fractures feldspar to clay calcite; minor chlorite, epidote		
100	broken core 25% core coarse quartz blebs up to 5 mm diameter		
110	Fault Zone		
	3" of gouge no core recovered		
120	6" core recovered Kqm fragment		
130	6" core recovered		
	3' of broken core		
140			

DIAMOND DRILL CORE LOG

HOLE 80B15 PAGE 1 OF 10

PROJECT GRASS CLAIM GROUP BOOT CORE SIZE BQ
STARTED Aug 1/80 FINISHED Aug 11/80 TOTAL DEPTH 961
LOCATION 1N 6+45E COLLAR ELEVATION
ANGLE 90 AZIMUTH - LOGGED BY U. Schmidt

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
10		
20	BEDROCK	
	Kqm Pcs- Chloritic Schist - dark grey to grey green biotite schist; limy schist to micaceous marble - garnets 1-2 mm diameter occur in some sections; chlorite common, minor epidote, grades to chlorite schist Pcs and dark green Pam amphibolite	
30	60°	
40	black secondary amphibolite along fracture — Garnet biotite chlorite schist to chlorite muscovite garnet schist Pcs? talcy?	
	Pale green to pale grey green chlorite schist; muscovite-biotite-garnet chlorite schist	
50	Kqm 1 1/2' core recovered	
	Pcs broken core — Medium to dark grey-green chlorite schist, biotite-muscovite quartz chlorite schist	
60	quartz vein	
	20% core recovery	
	Pcs 30 — Medium green and grey colour banded biotite chlorite schist, limy, dark green chloritized garnets	
70	pyroxene, garnet, vesuvianite	
80		

DIAMOND DRILL CORE LOG

HOLE 80B15 PAGE 2 OF 10

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
	Pcs — Gradational Change	
	Pggi — Grey and Green Banded - 80-70° - limy chlorite biotite garnet schist, grey biotite bands alternate with chloritic bands, may be pyroxene or amphibolite bearing in places - most garnets have gone to chlorite, minor pale garnet, vesuvianite in limier sections - cut by quartz veins, both parallel foliation and cross cutting	
90	40°	
	20° Pmm — Gradational to grey laminated limestone	
	40° Pcs — Gradational to Pcs - limy chloritic micaceous schist, grey green colour banded limy schist biotite, chlorite, epidote, amphiboles, interlaminated limy bands (volcanic affinity?)	
100	50° minor pyrrhotite vesuvianite	
	Pmm grey green and white banded crystalline carbonate with siliceous bands	
110	Pcs Chlorite schist	
	laminated pyrrhotite pyrrhotite, chalcopyrite, sphalerite?	
120	AP fractured core Kap	
	Pbcs — Chloritic biotite schist, medium to dark grey chloritized biotite schist	
	30 80	
	Kqm	
130		
	Pcs black amphibolite? replacing chlorite schist — Pale to medium green chlorite, muscovite, biotite schist - biotite content increases locally to major mica	
140	broken core	
150	AP	
	Pbmcs — Dark to medium grey biotite schist with chloritic sections, grades to biotite muscovite chloritic talcy schist	
	80 20	
160		
	Gradational	
	Pale green talcy schist Pale green? quartz chlorite, minor biotite	
	Pcss — Pyroxene, garnet, vesuvianite, wollastonite, calcite, skarn with grey crystalline limestone bands	
170	LS	
	Pggi — Grey and green banded biotite schist, chloritic bands, with post flaser biotite porphyroblasts	
	30 30	
180	Pcss — Banded pyroxene-garnet-vesuvianite-wollastonite, calcite skarn	

DIAMOND DRILL CORE LOG

HOLE 80B15 PAGE 3 OF 10

ASSAYS AND ANALYSES

FOOTAGE | DESCRIPTION

180

Pcss
20
1" pegmatite dyke 50% core

- altered crystalline marble band
- banded garnet vesuvianite pyroxene wollastonite skarn with crystalline marble bands
- also chloritic sections derived from basic volcanic?

Pbmcs
20
20

Biotite muscovite schist and marble, minor chlorite bands

190

Pcss
90

Banded pyroxene, garnet, vesuvianite, wollastonite, calcite
- banded calc-silicate gneiss with biotite and chlorite

200

Pbcs
Pcss
Pcss
Pcss

Dark grey to black siliceous biotite schist with minor limy banded calc-silicate sections (vesuvianite, garnet, wollastonite, calcite)
- also pale green chloritic sections which parallel and cross cut foliation (retrograde biotite)
- altered basic schist with minor lime bands

210

25% core recovery

Pcss
80

Wollastonite, garnet, vesuvianite, pale pyroxene, calcite - banded calc-silicate gneiss, with pale green chloritic matrix, also minor biotite bands
- altered siliceous limy basic schist

220

2 pegmatite, quartz, tourmaline muscovite, feldspar
Qtz
10
Pbmcs

Gradational

Dark grey to black laminated siliceous biotite, chlorite-muscovite schist, with minor garnet and lime content, late retrograde chlorite bands in some laminae, and grey green mottled texture in altered sections

230

60

- broken ground
- minor deformed quartz veins now parallel to foliation
- late post strain biotite porphyroblasts appear in some areas

240

70-80

250

- chlorite epidote alteration

260

Pcss

Banded vesuvianite-garnet-pyroxene banded calc-silicate gneiss, with light green chloritic? matrix, also wollastonite, calcite

Pggi

Grey and Green Banded

1 grain scheelite

chloritic interlaminated biotite and chlorite schist, chlorite forming at the expense of biotite in alternating bands of 1-2 in. wide, garnets are rimmed by dark green chlorite, most with garnet cores, biotite to pale chlorite siliceous matrix, minor carbonate bearing veins and fractures, pre-strain quartz veins parallel foliation

270

280

80

DIAMOND DRILL CORE LOG

HOLE 80B15 PAGE 4 OF 10

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
280	Pggi	
	Faulted Contact	
	Pcss — 80 — - vesuvianite-garnet-pyroxene? banded calc-silicate gneiss in white calcite and pale green chloritic siliceous groundmass	
290	Pbmcs -traces pyrrhotite — Dark grey biotite-chlorite-muscovite-garnet schist, siliceous, with minor interbands of pale chlorite after biotite, also garnet to chlorite	
	Pcss -quartz vein — - vesuvianite-garnet-wollastonite-pyroxene? banded calc-silicate gneiss in light grey to pale green chloritic groundmass, minor crystalline marble, pale green groundmass believed to be alteration of biotite schist - alteration of limy biotite schist - calc-silicate in crystalline marble matrix	
300	70°	
	-chloritized schist -quartz vein -chloritized schist	
310	- banded calc-silicate gneiss and calc-silicate bearing schist - wispy to mottled grain boundaries of calc-silicate minerals in siliceous chloritic matrix	
	-scheelite in vesuvianite-wollastonite fragment -biotite-chlorite-muscovite-garnet schist	
	-scheelite grain -amphibolitic alteration -pegmatite vein - quartz-feldspar-tourmaline	
320	- amphibolitic alteration, black amphibolite replacing chlorite epidote siliceous groundmass near fractures and pegmatite - pegmatite and schist cut by late carbonate vein	
	Pcss — - vesuvianite-pyroxene?-wollastonite-calc-silicate gneiss - white wollastonite-calcite groundmass to chloritic groundmass	
330	Pggi — Grey and green interbanded altered biotite schist, pale green chlorite after biotite, garnet to chlorite, minor garnet wollastonite	
	Pbmcs — Dark grey biotite-chlorite-muscovite-garnet siliceous schist with minor lime bands, minor pyrrhotite in fractures perpendicular to foliation	
340	80	
	-pyrrhotite in fracture	
	-pyrrhotite remobilized along fractures	
	-interbands of chlorite from biotite	
350	Kqm — Medium to coarse grained equigranular biotite quartz monzonite - minor weak alteration at contact epidote chlorite variable biotite content	
	40 40	
360	Pbmcs — Dark grey to grey green biotite-chlorite-muscovite-garnet schist with siliceous and limy bands and late calcite filled hairline fractures	
370	-broken ground	
380	Pcss — -vesuvianite-garnet-wollastonite in chloritic siliceous schist with minor biotite bands, garnet to chlorite	

DIAMOND DRILL CORE LOG

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
380	Pcss — pale green groundmass in calc-silicate bearing schist	
	Pbmcs — Dark grey to black biotite-chlorite-muscovite	
	80 calcite in fracture	
390	calcite in fracture — grades to Pggi	
	Pggi — Grey and pale green chloritic siliceous biotite schist, chlorite after biotite, garnet to chlorite, minor calc-silicates in schist	
400	Gradational	
	Pcss — Pale green siliceous vesuvianite-garnet-wollastonite-pyroxene? schist - chloritic calc-silicate bearing schist derived from limy biotite schist, retrograde garnet to chlorite, biotite to pale chlorite	
410	20 quartz vein	
	20 darker altered equivalents of mafic schists chlorite epidote, vesuvianite, amphibolite?	
420	Faulted	
	KTqfp — Dark green massive chloritic hornblende feldspar porphyry, age equivalent to Kqm, minor quartz phenocrysts	
	40	
	Fractured Contact	
430	Kqm	
	Pbmcs — Dark grey to grey green biotite-chlorite-muscovite-garnet schist, variable silica and lime content, also minor epidote, and calcite along hairline fractures, derived from basic igneous rocks?	
	20 Kqm dyke	
440	black amphibole alteration envelopes quartz vein	
	Kqm dyke	
	Kqm quartz feldspar dyke	
450	70	
	40	
	garnets common	
460	schist turns to olive grey colour, possibly caused by presence of epidote alteration	
	Kqm	
	Kqm	
470	quartz veins	
	hornblende alteration along narrow vein	
	20	
480	garnets to chlorite	

DIAMOND DRILL CORE LOG

HOLE 80B15 PAGE 6 OF 10

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
480	Pbmcs broken ground Biotite-Chlorite-Muscovite-Garnet Schist - garnet to chlorite, some biotite to chlorite and groundmass to pale olive green alteration along fractures, epidote et al	
490	-calcite filled fractures 10°	
	- dark grey to black biotite schist with graphite	
500	40 quartz filled fractures pyrrhotite along hairline fractures - quartz tourmaline vein and tourmaline replacement in schist, pale brown biotite schist to olive grey green altered equivalent of biotite muscovite schist, biotite, chlorite, epidote et al	
510	schist Pcss marble - pale green to light grey banded garnet-vesuvianite-wollastonite-pyroxene schist to marble to skarn - pale green siliceous chloritic matrix grades to grey crystalline carbonate matrix -schist calcite vein 50°	
520	Pbmcs - grey to olive grey green biotite-chlorite-muscovite-garnet schist with epidote alteration Kqm quartz-feldspar tourmaline dyke broken ground -tourmaline quartz replacement -graphitic biotite schist -quartz vein with minor pyrrhotite	
530	80 - grey green altered biotite-muscovite schist equivalent, epidote et al -quartz vein, pyrrhotite Pcss schist -amphiboles - banded garnet-vesuvianite-wollastonite-pyroxene? calc-silicate schist to marble, contains minor epidote, possibly amphiboles	
540	-marble - garnet-vesuvianite-wollastonite in crystalline carbonate matrix schist -dark green amphiboles	
	80 - intermittent biotite bands, minor garnet to chlorite banded garnet-vesuvianite-wollastonite in pale green siliceous chlorite groundmass with minor biotite bands	
550	Kqm aplitic -medium to coarse grained - grey medium grained biotite-quartz-monzonite to coarse porphyritic, altered in part, chlorite-epidote-calcite, large feldspar phenocrysts, indistinct grain boundaries, opaque white - brittle joints abundant	
	10	
560		
	40 coarse porphyritic altered feldspar biotite to chlorite	
570	- coarse equigranular Kqm biotite, 10-30% quartz, up to 30% remaining K-feldspar minor plag	
580	40 -altered biotite schist, biotite to chlorite Pbcs	

DIAMOND DRILL CORE LOG

HOLE 80B15 PAGE 7 OF 10

FOOTAGE	DESCRIPTION		ASSAYS AND ANALYSES
580	Kqm continued	equigranular medium grained biotite quartz monzonite	
590	Pcss schist 70-80°	Banded vesuvianite-garnet-wollastonite, pyroxene? schist to banded calc-silicate gneiss, minor biotite schist bands; pale green siliceous chloritic groundmass varying to white, calcite-wollastonite-bearing groundmass	
600	Kqm	Medium grained equigranular quartz monzonite biotite 20% to 5% core; biotite to chlorite	
610	Pcss biotite schist marble marble	Vesuvianite-garnet wollastonite calcite calc-silicate schist to gneiss; pale green chloritic groundmass to white calcite wollastonite groundmass, grading to grey marble sections, minor biotite bands in schist sections	
620	schist	Broken Contact	
630	KTqfp 30 30	Dark green hornblende feldspar quartz porphyry. - age equivalent to Kqm, massive aphanitic matrix containing disseminated dark green 1-2mm chlorite clots after hornblende - quartz circular to subrounded clots 2-4mm diameter - no penetrative deformation	
640			
650	3 cm clot of altered equigranular chlorite quartz rock, possibly Kqm quartz clot schist xenolith 3x2 cm 15° joint filled with silica		
660	20° calc filled fracture		
670	30		
680			

DIAMOND DRILL CORE LOG

HOLE 80B15 PAGE 8 OF 10

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
680	KTqfp continued — Dark green massive hornblende quartz feldspar porphyry age equivalent to Kqm	
690		
700		
710	Contact fault - with calcite along joint	
	Pcss — Banded vesuvianite-garnet-wollastonite-pyroxene? schist- in pale green siliceous chloritic matrix, minor remnant biotite bands and chloritized garnet remaining, altered limy biotite monzonite schist	
720	Kqm — quartz feldspar hornblende?- or tourmaline, pegmatite	
	Dark grey biotite interbands 1-4 cm wide more common, some biotite porphyroblasts exhibit post strain growth, minor epidote et al in chloritic sections	
730	40% epidote at contact	
	KTqfp — Dark green massive hornblende quartz feldspar porphyry - hornblende to chlorite, 1-2 mm clots disseminated - no penetrative deformation	
740		
750		
760	finer grained ↓	
	Jointed contact	
770	Pbcs — Dark to light grey siliceous biotite schist	
	- pale green chloritic equivalent	
	Kqm Kqm — Medium grey siliceous biotite schist, post strain biotite porphyroblasts common, also pre strain quartz veins which are now "foliation"	
780		

DIAMOND DRILL CORE LOG

HOLE 80B15 PAGE 9 OF 10

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
780	Pbcs continued — Pale grey siliceous biotite schist	
	pegmatite vein	
	limy equivalent	
790	Pale grey olive green equivalent of siliceous biotite schist	
	60 tourmaline quartz vein	
	Kqm vein	
	Pbmcs — Dark to medium grey biotite chlorite muscovite schist	
	quartz vein	
800		
	broken ground — Pale olive green altered equivalent grey biotite siliceous, schist, medium to dark grey	
810	80	
	Fractured Contact	
	KTqfp — Dark green massive hornblende, feldspar, quartz porphyry, hornblende to chlorite intermittent quartz clasts	
820		
	20	
830	10	
	20 fractured intrusive contact	
840	Pbmcs chlorite biotite, muscovite, chlorite, garnet schist — Dark to light grey siliceous biotite schist, chloritized equivalents grading to biotite-chlorite-muscovite-garnet schist, and light grey quartz schist	
	Pale olive green grey sections in biotite schist, (epidote? etc), also early quartz veins now deformed parallel foliation	
850		
	70	
	Dark grey to black biotite schist, higher siliceous sections with chlorite	
860		
870	50	
	minor pale green chloritic bands	
	early deformed quartz gneiss	
880		

DIAMOND DRILL CORE LOG

HOLE 80B15 PAGE 10 OF 10

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
880	70° 30° Intrusive Contact Pbmcs	
	KTqfp Dark green hornblende-feldspar-quartz porphyry, hornblende-chlorite, minor quartz inclusions, also euhedral pyrite disseminated	
	Pbms Dark grey colour banded biotite-chlorite-garnet siliceous schist, minor pale	
890	Kqm chloritic altered bands	
	- biotite-chlorite-muscovite-garnet-quartz	
	50°	
900	quartz vein, early, remobilized	
	Kqm Medium grey coarsely crystalline to	
	40° porphyritic biotite-quartz-monzonite, also	
910	pale grey aplitic sections, weak alteration throughout, some biotite to chlorite,	
	10° cloudy feldspars	
	50°	
920		
	40° Intrusive Contact	
	KTqfp	
930	40° Intrusive Contact	
	Kqm Light grey coarsely porphyritic biotite-	
	chloritic quartz-monzonite, weakly altered throughout	
	30° some biotite to chlorite	
	-fault breccia with fragments of KTqfp in Kqm	
	- xenoliths of KTqfp in Kqm, Kqm chloritic around xenoliths	
940		
	20°	
	KTqfp - large xenoliths of KTqfp in Kqm with calc. inclusion	
	30	
	KTqfp - medium grey, more mafic than normal	
950	- 20%+biotite, coarse indistinct feldspar phenocrysts	
	20° Intrusive Contact	
	KTqfp Normal dark green hornblende-feldspar-	
	quartz porphyry, hornblende to chlorite	
960		
	END OF HOLE	
970		

DIAMOND DRILL CORE LOG

HOLE 80B16 PAGE 1 OF 6

PROJECT GRASS CLAIM GROUP BOOT CORE SIZE BQ
STARTED Aug 12/80 FINISHED Aug 17/80 TOTAL DEPTH 500 ft.
LOCATION 8+85N 0+73E COLLAR ELEVATION 4730 ft.
ANGLE 90° AZIMUTH - LOGGED BY U. Schmidt

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
10		
20	BEDROCK	
	Kqm — Quartz Monzonite - altered	
	3 ft. of broken core	
30		
	Pbcs — Biotite-Chlorite Schist - weathered and altered, chloritic, siliceous, biotite schist	
40	- rusty weathering bleached equivalent - all schist varieties are derived from chlorite schist which may be metamorphosed basic volcanic rocks	
	30°	
	- fractured, rusty and bleached equivalent	
50	40°	
	Medium to grey brown chloritic biotite schist	
60	40°	
70	Pbmcs — Grey brown and green biotite-chlorite-muscovite schist	
	40°	
	40°	
	Pbcs — Grey brown chloritic biotite schist	
80		

DIAMOND DRILL CORE LOG

HOLE 80B16 PAGE 2 OF 6

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
80	Pbcs cont'd broken core	Grey to olive grey chloritic schist and siliceous chloritic schist
	fault zone, gouge and fault breccia	
90	chloritic and talcy gouge broken ground 30°	
100	90° - trace pyrrhotite	grey chloritic biotite schist
		Pale grey-green banded siliceous chloritic schist
	- minor garnet - quartz vein - quartz vein	
110	30°	
	healed breccia, some remobilized quartz	
120	Pcs & Pam 30°	Chlorite Schist and Amphibolite -dark green chlorite schist and green banded amphibolite, fine grained with late biotite porphyroblasts,
	pyrrhotite	-dark green and light grey banded limy siliceous chloritic amphibolite
130		
	Pcs	Chlorite Schist
140	40°	-grey-green to grey-brown limy chlorite chlorite schist with biotite porphyroblasts, abundant hairline fractures filled with calcite
	10°	
	pyrite, pyrrhotite, chalcopyrite	-darker pyrrhotite bearing chloritic schist, dark green weakly laminated to massive chlorite schist, pyrrhotite up to 10% remobilized along foliation and small cross-fractures
150		
	Pcs & Pam quartz vein fragments quartz vein	Chlorite Schist and Amphibolite -grey to green laminated siliceous chlorite schist and banded amphibolite, minor epidote alteration
160	broken ground	
	0 20°	-light grey and dark green laminated limy chlorite schist with minor biotite, abundant calcite filled fractures
170	- pale grey and green siliceous laminated schist -calcite matrix 50° - crenulated laminations	
	50°	
180		

DIAMOND DRILL CORE LOG

HOLE 80B16 PAGE 3 OF 6

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES PPM W	PPB Au	PPM Sn
180	Pcs & Pam cont'd			
	Pcs — Chlorite Schist -dark green, chloritic schist, very fine, light coloured elongated mineral grain define foliation, calcite is remobilized into late fractures	35	1	1
190				
	-pyrite in fault breccia - grey siliceous fault breccia			
200	- dark to light grey chloritic and carbonaceous fault gouge fault gouge			
210		10	<1	1
	-light grey-green siliceous breccia, light coloured siliceous fragments in chloritic matrix -grades to grey-green mottled siliceous chloritic rock which has appearance of highly altered Kqm Kqm?			
220				
	Faulted Contact			
230	KTqfp 50° — Grey-green hornblende-feldspar-quartz porphyry, hornblende to chlorite	10	<1	1
	- siliceous breccia - altered Kqm — Intrusive Contact			
	KTqfp -siliceous breccia — Fault Zone			
240	KTqfp -siliceous breccia gouge -white siliceous breccia in chloritic matrix			
	- darker grey siliceous breccia with darker siliceous chloritic matrix, with epidote alteration	5	<1	2
250				
260	- dark grey-green chloritic siliceous fault breccia			
	Kqm — breccia			
	Kap 40° — Altered aplite, strong talc developed near fractures, minor disseminated chlorite after biotite	1	<1	1
270				
180	Kqm			

DIAMOND DRILL CORE LOG

HOLE 80B16 PAGE 4 OF 6

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES PPM W	PPB Au	PPB Sn
280	Kqm cont'd — Quartz Monzonite -medium to light grey, brecciated and altered Kqm, light grey siliceous fragments in grey-green chloritic matrix, healed breccia, talc, epidote along narrow fractures, limy fractures very common talcy gouge talcy gouge			
290		5	1	2
300	KTqfp — Hornblende Quartz Porphyry - faulted contacts, calcite in fractures			
	Kqm? - grey siliceous rock fragments of unknown origin in dark green chloritic matrix, rock fragment boundaries all diffuse, may be severe alteration along fractures rather than breccia			
310	Pbcs — Dark grey green siliceous and limy breccia, altered siliceous clasts in dark green chloritic matrix, limy, late faults and fractures are talcy, no foliation, breccia is healed and then fractured and faulted again by past Kqm faults	5	<1	3
320	talcy 50° 30°			
	fractured quartz vein			
330	Kqm — Quartz Monzonite 30° talc talc -highly fractured quartz monzonite with talcy fractures, indistinct grain boundaries, finely disseminated chlorite after biotite	10	T	4
	chloritic talc schist 20° 30°			
340	-dark chloritic matrix			
	Pcs — Dark grey to grey-green chloritic siliceous breccia, calcite in 1-2mm fractures at 20° to core			
350	50°	1	2	2
	-carbonaceous fault gouge with grey chloritic and siliceous rock fragments			
360	Pcss — Banded Calc-silicate Schist, garnet-vesuvianite-pyroxene-epidote in chloritic mottled matrix 40°			
	Pcs — Chloritic Schist -grey-green to dark green			
370	Pmm — Micaceous Marble green fluorite -clear fluorite 30° 2mm — -grey to white banded crystalline marble with dark grey and green bands	200	6	3
	30 Pcs — Chlorite Schist -dark green brecciated chlorite schist limy chloritic fault gouge			
380	pyrite			

DIAMOND DRILL CORE LOG

HOLE OUD10 PAGE 5 OF 6

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES PPM W	PPB Au	PPM Sn
380	Pcs cont'd chloritic limy clay gouge talcy fracture -grey green mottled chlorite schist, weakly laminated to massive siliceous chloritic rock -epidote, carbonate, talc also present			
390	quartz vein, minor pyrite	10	2	6
	talc and carbonate gouge			
	40° 40° pyrite and calcite in fractures garnets			
400	Pcss -garnet vesuvianite pyroxene in chloritic schist, late calcite filled fracture, pale pink to cream coloured garnet			
	40° -garnet vesuvianite pyroxene? in dark green matrix, trace pyrrhotite, dark bands of aphibole? replacing banded chloritic schist	35	16	6
410	60° -pyrrhotite remobilized in fractures - minor pyrite, calcite and fluorite veins			
	20° Kqm 30° Quartz Monzonite -grey to grey green fractured and altered -Kqm highly altered to epidote, chlorite, sericite and talc along pervasive fracturing, larger fractures are talcy and calcite bearing, some fractures suggest open space filling, in general the rock is competent, suggests healing by late hydrothermal fluids, later brittle joints and faults are talc, calcite and epidote? bearing -late green and pale purple fluorite, large opaque phenocrysts of feldspar are seen in some sections			
420	40°			
	30° 40°	7	10	2
430	30° 20° pyrrhotite injoint - small rock fragments in silica fluorite matrix			
440	Pcs xenolith			
	quartz, fluorite replacement of Kqm quartz druses along vuggy fractures 40°	5	4	1
450				
460	60° 20° -green and minor purple fluorite veins up to 5 mm wide 30°			
	-pyrite, pyrrhotite quartz vein with fluorite	8	3	2
470	-fluorite vein			
	-fluorite, pyrrhotite quartz 50°			
480	-calcite filled fractures in silicified Kqm			

DIAMOND DRILL CORE LOG

HOLE 80B16 PAGE 6 OF 6

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES PPM W	PPB Au	PPM Sn
480	Highly altered Kqm cont'd -fluorite quartz veins common, chlorite, epidote alteration, open space filling with silica, late brittle fractures with late calcite			
	40°	12	1	1
490	broken core			
500	END OF HOLE			

DIAMOND DRILL CORE LOG

HOLE 80B17 PAGE 1 OF 4

PROJECT GRASS CLAIM GROUP BOOT CORE SIZE HQ,NQ
STARTED Sept5/80 FINISHED Sept18/80 TOTAL DEPTH 295'
LOCATION 2+65S 5+15E COLLAR ELEVATION 5600
ANGLE 90° AZIMUTH - LOGGED BY U. Schmidt

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
10	BEDROCK	
HQ	Pbmcs Biotite-Chlorite-Muscovite Schist -brown weathering on fractures, blue grey to dark grey to dark brown colour, narrow remobilized quartz veins parallel to foliation	
20	70°	
	broken core	
	quartz vein	
30	broken ground	
	40° - white porphyroblasts	
	broken core	
40	limonite stained schist	
	30°	
	50°	
	broken core -dark blue grey biotite-chlorite-muscovite schist, biotite porphyroblasts, altered equivalent of biotite porphyry bearing Pam or Pcs?	
50	aplite fragments	
	?brownish altered Pcs	
	aplite fragments	
60	quartz vein	
	dark green Pcs to Pam massive fine grained basic schist	
	Kqm Quartz Monzonite -equigranular, leucocratic	
	60°	
70	broken ground Pbmcs-dark grey biotite-muscovite-chlorite schist	
	20	
	Kqm -white aplite, aphalitic white aplite to grey equigranular quartz monzonite	
80	Pbmcs -biotite-chlorite-muscovite schist	
	quartz	

DIAMOND DRILL CORE LOG

HOLE 80B17 PAGE 2 OF 4

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
80	Pbmcs cont'd -dark grey to grey-green biotite-chlorite-muscovite schist Kqm 50° 60° 40° - biotite altered to amphibole near dyke	
90	10° pebbles Kqm dyke	
	Pbcs -dark brown secondary biotite pervasive	
100	Kqm dyke Pbcs -dark brown and green mottled textured biotite-chlorite schist, abundant late biotite development highly fractured core	
	Kqm - coarse pegmatitic Kqm	
	broken core Pbcs -more typical dark grey Biotite Chlorite Schist with subparallel quartz stringers	
110	70° quartz tourmaline vein coarse late biotite over 6" in Pbmcs	
120	50° sand seam altered Pbmcs broken ground	
130	HQ / NQ Pbmcs	
140	-clay gouge and small angular fragments 142-142.2 -broken core	
150		
160	foot small pebbles -cave redrilled	
	Kqm sill	
170	Pggi Grey and Green Interbanded -grey and green banded biotite and chloritic schist, retrograde garnets to chlorite	
180		

DIAMOND DRILL CORE LOG

HOLE 80B17 PAGE 3 OF 4

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
180	Pcss-garnet-pyroxene-vesuvianite banded skarn with trace disseminated scheelite	
	Pggi-grey biotite bands, light green chloritic siliceous schist	
	70° -dark green pyroxene garnet skarn with trace disseminated	
	30° scheelite, biotite chloritic schist with minor calc-silicate minerals	
190	Pcss-Calc-Silicate Schist - vesuvianite, wollastonite, garnet,	
	80° pyroxene banded calc-silicate schist to skarn, minor sections of altered biotite-garnet schist, grades to minor dark green massive pyroxene sections	
	20	
	broken core	
	Fractured Contact	
200	Kqm -medium grey biotite Quartz Monzonite, coarse grained to porphyritic	
	broken ground -biotite is chloritized in part	
	50	
210	30°	
	40° -coarse porphyritic grades to	
	20° coarse equigranular	
220	1 ft. recovered	
	3 ft. recovered	
	Kpg - white and grey Tow mica quartz-feldspar pegmatite	
	20 Ground Contact	
230	Pggi - grey and green banded biotite, chlorite schist, dark	
	40° grey to brown biotite bands in pale green siliceous	
	80° chloritic schist, with minor limy sections	
	tourmaline quartz vein	
	40°	
240	-paler rusty weathered equivalent, limonite stained fault gouge	
	20° - normal Pggi - grey to brown bands of biotite in pale	
	80° green siliceous chloritic schist, post strain biotite	
	Kqm - Quartz Monzonite sill - medium to coarse grained,	
250	20° equigranular, some biotite to chlorite	
	Pggi Biotite Chlorite Schist - interbanded	
	50	
	Kqm medium grained Kqm sill	
	50	
	Pggi Biotite and Chlorite Schist - interbanded	
260	vesuvianite with minor calc-silicate minerals,	
	bands vesuvianite garnet	
	50°	
	50°	
	fractured core	
270	broken core	
	broken core	
	Broken Contact	
280	Kqm - coarse equigranular Kqm	

DIAMOND DRILL CORE LOG

HOLE 80B17 PAGE 4 OF 4

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
280	Pbmcs Biotite-Muscovite-Chlorite Schist -medium to dark grey	
	broken core	
290	broken core	
	END OF HOLE	

DIAMOND DRILL CORE LOG

HOLE 80B18 PAGE 1 OF 5

PROJECT GRASS CLAIM GROUP BOOT CORE SIZE HQ,NQ
STARTED Sept20/80 FINISHED Sept 25/80 TOTAL DEPTH 401 ft.
LOCATION 1+15S 4+65W COLLAR ELEVATION 4950 ft.
ANGLE 90° AZIMUTH - LOGGED BY U. Schmidt

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
	talus	
10	BEDROCK	
	Pggi - Grey and Green Interbanded - irregular black biotite schist bands in pale green chloritic groundmass, also calc-silicate bearing sections 60-50° 50° 40°	
20	Kqm - Quartz Monzonite - grey, coarse grained, to coarse coarse porphyritic, altered Kqm, with cloudy altered feldspars, grey clay in fractures 60 broken ground clay	
30	2' of broken core in 5	
40	broken core - chloritized biotite 30-40° 40°	
50	Pcss - Calc-Silicate Schist - grey, brown, green banded, biotite, chlorite, vesuvianite, garnet, siliceous schist, mottled texture in calc-silicate bearing sections -grains of scheelite in fracture related alteration 70-80 - garnet to chlorite	
60	Kqm Quartz Monzonite - grey, coarse equigranular to porphyritic, biotite to 15%, feldspar phenocrysts up to 2 cm, strongly jointed to broken core broken core 30 broken core	
70	Pbcs Biotite Chlorite Schist 30	
	Kqm Quartz Monzonite - medium grey porphyritic broken core	
80		

DIAMOND DRILL CORE LOG

HOLE 80B18 PAGE 2 OF 5

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
80	Kqm cont'd - -medium grey, porphyritic, biotite quartz monzonite	
	20	
	-olive to brown altered equivalent of Kqm porphyry	
90	10° -biotite with feldspar rims altered to chlorite epidote, producing olive colour	
	-late chloritic hairline fractures cut core at 10°	
100	10° -red-brown K-alteration occurs in large feldspar phenocrysts, white opaque feldspars	
	-chlorite, epidote, minor carbonate alteration moderate	
	5° to weak but pervasive	
	70° -quartz content increase down hole to about 40% by volume at 110	
110	-biotite chlorite schist xenolith	
	60°	
	Pbmcs Biotite-Chlorite-Muscovite-Garnet Schist	
	30° -dark grey-green and brown banded schist	
	50-60°	
	70°	
	40°	
120		
	60°	
	Kqm -light grey coarse porphyritic biotite quartz monzonite	
	Pbmcs Biotite-Chlorite-Muscovite-Garnet Schist with pale yellow green fluorescence - apatite?	
130	-quartz vein with muscovite, biotite, pyrrhotite, tourmaline,	
	20° chlorite	
	Kqm	
	-quartz, biotite, chlorite segregations in	
	broken ground 2 mm bands, garnet often chlorite rimmed	
	70°	
	30°	
140	Kqm sill	
	20°	
	quartz vein -apatite? bearing pale grey sub-hedral,	
	20° 1-2 mm grains, pale yellow green	
150	quartz vein fluorescence	
	50°	
	Kqm - pegmatite vein, tourmaline-quartz-feldspar-muscovite	
160	Pam? -dark green amphibolite, garnet and biotite bearing	
	40° amphibolite?, post strain biotite, often in clots and bands 1-2 cm wide, probably chloritized	
	70°	
Rock →	Kqm -grey coarse porphyritic biotite quartz monzonite	
170		
Rock →	-garnet-vesuvianite xenolith, pale greenish altered Kqm feldspars to epidote and chlorite	
180	-red brown alteration, possibly feldspathic or hematite mainly in smaller feldspar grains in groundmass	

DIAMOND DRILL CORE LOG

HOLE 80B18 PAGE 3 OF 5

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
180	Pbcs tourmaline, quartz, chlorite, pyrrhotite, biotite — Biotite-Chlorite Schist -biotite-garnet-chlorite-muscovite schist -dark green with brown bands, -dark grey to dark brown -pale yellow green fluorescent mineral - dark brown late biotite bands	
190	-pale green epidote, chloritic equivalents - bleached biotite-chlorite-muscovite-garnet schist -dark grey with green and brown banded biotite-chlorist schist cont'd -talcy on fracture faces, epidote alteration along fracture faces	
200	Kqm	
210	60° -quartz-pyrrhotite, tourmaline vein 30° 50°	
220	olive green alteration around fracture	
230	quartz muscovite tourmaline vein - pale olive to brown coloured alteration Kqm altered	
240	quartz vein 1 mm garnets in schist 60° altered equigranular Kqm with green mica, and pale yellow green fluorescent mineral, also biotite Kqm dyke 50° -dark grey and green biotite, chlorite schist with garnet	
250	pale olive green altered equivalents	
260	Kqm rusty weathering along fractures — Quartz Monzonite - light grey, medium grained, biotite to chlorite, feldspars are white, opaque	
270	- fine grained aplitic at contact Pcs-Pam - Biotite-Chlorite Schist to Amphibolite? -dark green and brown banded biotite-chlorite-garnet schist minor dark green banded amphibole schist	
280	Kqm — Quartz Monzonite -coarse blebs of quartz	

DIAMOND DRILL CORE LOG

HOLE 80B18 PAGE 4 OF 5

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
280	Kqm cont'd -medium to light grey coarse equigranular to fine grained aplitic biotite quartz monzonite, biotite to chlorite, many feldspars are weakly epidotized	
	20°	
290	20°	
	Pcs biotite-garnet schist — Chlorite Schist, grading to green banded biotite amphibolite	
	70 70 -coarse biotite bands in chlorite schist with garnet, late biotite developed in chlorite schist	
300	dark brown banded biotite schist derived from chlorite schist, post deformation biotite, talcy on fracture	
	40° - coarse garnets up to 2 cm diameter in biotite schist developed in Pcs	
310	- dark grey mottled chloritic garnet biotite schist	
	10° grading to dark grey green dense, weakly foliated biotite-muscovite-chlorite schist	
	Kqm dyke	
320	10°	
	70 50°	
	30°	
330	-dark olive green - altered equivalent, epidote bearing	
	Kqm -pyrite pyrrhotite blebs in lower 2 feet	
	KTqfp — Hornblende Feldspar Porphyry - dark green chloritic, massive to medium grained	
340	Kqm	
	Pcp — Carbonaceous Phyllonite	
	50° -dark grey to black siliceous carbonaceous	
	30° phyllonite with disseminated pyrite less	
350	60° than 1 mm diameter, thinly laminated	
	siliceous, less than 1 mm bands	
	40° -a few minor graphite blebs	
	-broken into 4-10" long pieces	
	Kqm	
360		
	40° - pyritic laminae	
370		
	40°	
380		

DIAMOND DRILL CORE LOG

HOLE 80B18 PAGE 5 OF 5

FOOTAGE	DESCRIPTION	ASSAYS AND ANALYSES
380	Pcp cont'd -black siliceous graphitic phyllonite grades to	
	Pcs - altered -biotite garnet chlorite schist altered to olive grey colour	
	Kqm -grey biotite quartz monzonite	
390	Pcs cont'd -grey and grey-green mottled biotite-chlorite-garnet schist with minor talc and epidote alteration	
400	END OF HOLE	

SCHEDULE 1
GRASS PROJECT
DIAMOND DRILL HOLE DATA
BOOT & MARMOT CLAIMS

GRASS LAKES AREA
NTS 105 G/6
JULY - SEPTEMBER, 1980

RECEIVED
1981 JAN 28
MINING RECORDER
WATSON LAKE, Y.T.
I.A. & N.D.

HOLE NUMBER	ZONE	LOCATION GRID	LOCATION CLAIM	COLLAR ELEVATION	ANGLE	AZIMUTH	FT. DEPTH	STARTING DATE	COMPLETION DATE
80 B 11	'B'	5+40E; 5+05S	BOOT 11	5170 FT	-90°	-	159	JULY 10, 1980	JULY 14, 1980
80 B 12	'B'	5+40E; 5+05S	BOOT 11	5170 FT	-65°	265°	193	JULY 14, 1980	JULY 17, 1980
80 B 13	'B'	6+82E; 4+40S	BOOT 11	5260 FT	-65°	260°	298	JULY 19, 1980	JULY 25, 1980
80 B 14	'B'	4+16E; 3+53S	BOOT 14	5500 FT	-75°	000°	141	JULY 27, 1980	JULY 30, 1980
80 B 15	'B'	6+45E; 1+00N	BOOT 3	5230 FT	-90°	-	961	AUGUST 1, 1980	AUGUST 11, 1980
80 B 16	'A'	0+73E; 8+85N	BOOT 6	4730 FT	-90°	-	500	AUGUST 12, 1980	AUGUST 17, 1980
80 M 1	EAST	5+58E; 7+02N	MARMOT 14	5115 FT	-75°	240°	569	AUGUST 19, 1980	AUGUST 25, 1980
80 M 2	WEST	0+42E; 9+26N	MARMOT 13	5250	-67°	130°	524	AUGUST 29, 1980	SEPTEMBER 3, 1980
80 B 17	'B'	5+15E; 2+65S	BOOT 12	5600	-90°	-	295	SEPTEMBER 5, 1980	SEPTEMBER 18, 1980
80 B 18	'A'	4+80W; 1+30S	BOOT 34	4950	-90°	-	401	SEPTEMBER 20, 1980	SEPTEMBER 25, 1980
						TOTAL	4041		

EXPENDITURES - E. CARON DIAMOND DRILLING > $161,640

$\therefore$ COST PER FOOT = $\frac{161,640}{4041}$ = $40

RECEIVED
1981 JAN 28
MINING RECORDER
WATSON LAKE, Y.T.
I.A. & N.D.

SCHEDULE 2

GRASS PROJECT

DIAMOND DRILL EXPENDITURE BY CLAIM

BOOT & MARMOT CLAIMS

GRASS LAKES AREA

NTS 105 C/6

JULY - SEPTEMBER, 1980

CLAIM LOCATION	HOLE NUMBER	FOOTAGE		EXPENDITURE
BOOT 3 - YA 25438	80B 15	961	@ $40	38,440
BOOT 6 - YA 25441	80B 16	500	@ $40	20,000
BOOT 11 YA 25446	80B 11	159		
	80B 12	193		
	80B 13	298		
	TOTAL	650	@ $40	26,000
BOOT 12 YA 25447	80B 17	295	@ $40	11,800
BOOT 14 YA 25449	80B 14	141	@ $40	5,640
BOOT 34 YA 25696	80B 18	401	@ $40	16,040
MARMOT 13 YA 26143	80M 2	524	@ $40	20,960
MARMOT 14 " YA 26144	80M 1	569	@ $40	22,760
			TOTAL	161,640

ARCHER, CATHRO
AND ASSOCIATES LTD.

CONSULTING GEOLOGICAL ENGINEERS

BOX 4127, WHITEHORSE, Y.T. Y1A 3S9 667-4415 STANDARD BUILDING, VANCOUVER, B.C. 688-2568

1016 STANDARD BUILDING
510 WEST HASTINGS STREET
VANCOUVER, B.C.
V6B 1L8

RECEIVED
1981 JAN 28
MINING RECORDER
WATSON LAKE, Y.T.
I.A. & N.D.

AFFIDAVIT

I, Joan Mariacher, of Vancouver, B.C. make oath and say:

That to the best of my knowledge the attached Statement of Expenditures for exploration work on the Boot 1-85, 90-284 & Marmot 1-24 mineral claims on Claim Sheet 105G/6 is accurate.

Joan Mariacher

Sworn before me at Vancouver, B.C.
this 19th day of
January, 1981.

Notary, Yukon Territory

Statement of Expenditures
Boot 1-85, 90-284; Marmot 1-24 Claims
July 16 - September 30, 1980

Drilling

E. Caron Diamond Drilling Ltd.	$180,774.94
Total	$180,774.94

E. CARON DIAMOND DRILLING LTD. 7 Roundel Road Whitehorse, Yukon. Phone (403) 668-2424 Telex 036-8-337

July 31, 1980

Invoice #- 807

IN ACCOUNT WITH:

Archer Cathro & Associates,
1016 Standard Building,
510 West Hastings St.,
Vancouver, B.C.

Drilling Charges July 16 to 31, 1980: (Grasse Project)

Hole 80-B-12/65/BQ				
Drilling				
6 man hrs.	@ $ 20.00 per hr.	= $ 120.00		
3 mach. hrs.	@ $ 12.00 per hr.	= $ 36.00	$ 156.00	
Reaming Cave				
6 man hrs.	@ $ 20.00 per hr.	= $ 120.00		
3 mach. hrs.	@ $ 12.00 per hr.	= $ 36.00	$ 156.00	
Mud Time				
4 man hrs.	@ $ 20.00 per hr.	= $ 80.00		
2 mach. hrs. ✓	@ $ 12.00 per hr.	= $ 24.00	$ 104.00	
Casing				
70 - 174 = 104 ft.	@ $ 20.00 per ft.	=	$ 2,080.00	
Coring				
110 - 193 = 83 ft.	@ $ 22.00 per ft.	=	$ 1,826.00	
Standby				
8 man hrs. ✓	@ $ 20.00 per hr.	= $ 160.00		
4 mach. hrs.	@ $ 12.00 per hr.	= $ 48.00	$ 208.00	
Travelling Time				
2 man hrs.	@ $ 20.00 per hr.	=	$ 40.00	$ 4,570.00
Hole 80-B-13/65/BQ				
Moving				
80 man hrs. ✓	@ $ 20.00 per hr.	=	$ 1,600.00	
Drilling				
6 man hrs.	@ $ 20.00 per hr.	= $ 120.00		
3 mach. hrs.	@ $ 12.00 per hr.	= $ 36.00	$ 156.00	

E. CARON DIAMOND DRILLING LTD. 7 Roundel Road Whitehorse, Yukon. Phone (403) 668-2424 Telex 036-8-337

Reaming Cave				
20 man hrs.	@ $ 20.00 per hr.	= $ 400.00		
10 mach. hrs.	@ $ 12.00 per hr.	= $ 120.00	$ 520.00	
Waterline				
10 man hrs. ✓	@ $ 20.00 per hr.	=	$ 200.00	
Mud Time				
25 man hrs. ✓	@ $ 20.00 per hr.	= $ 500.00		
12½ mach. hrs.	@ $ 12.00 per hr.	= $ 150.00	$ 650.00	
Standby				
8 man hrs.	@ $ 20.00 per hr.	= $ 160.00		
3 mach. hrs.	@ $ 12.00 per hr.	= $ 36.00	$ 196.00	
Travelling Time				
12 man hrs.	@ $ 20.00 per hr.	=	$ 240.00	
Casing				
0 - 21 = 21 ft.	@ $ 22.50 per ft.	= $ 472.50		
0 - 166 = 166 ft.	@ $ 20.00 per ft.	= $ 3,320.00	$ 3,792.50	
Coring				
0 - 298 = 298 ft.	@ $ 22.00 per ft.	=	$ 6,556.00	$13,910.50
Hole 80-B-14/75/BQ				
Moving				
88 man hrs. ✓	@ $ 20.00 per hr.	=	$ 1,760.00	
Drilling				
14 man hrs.	@ $ 20.00 per hr.	= $ 280.00		
7 mach. hrs.	@ $ 12.00 per hr.	= $ 84.00	$ 364.00	
Reaming Cave				
10 man hrs.	@ $ 20.00 per hr.	= $ 200.00		
5 mach. hrs.	@ $ 12.00 per hr.	= $ 60.00	$ 260.00	
Mud Time				
22 man hrs. ✓	@ $ 20.00 per hr.	= $ 440.00		
11 mach. hrs.	@ $ 12.00 per hr.	= $ 132.00	$ 572.00	
Casing				
0 - 21 = 21 ft.	@ $ 22.50 per ft.	= $ 472.50		
0 - 90 = 90 ft.	@ $ 20.00 per ft.	= $ 1,800.00	$ 2,272.50	
Coring				
0 - 141 = 141 ft.	@ $ 22.00 per ft.	=	$ 3,102.00	$ 8,330.50
Hole 80-B-15/BQ				
Moving				
70 man hrs. ✓	@ $ 20.00 per hr.	=	$ 1,400.00	
Drilling				
10 man hrs.	@ $ 20.00 per hr.	= $ 200.00		
5 mach. hrs.	@ $$12.00 per hr.	= $ 60.00	$ 260.00	
Casing				
8 man hrs.	@ $ 20.00 per hr.	= $ 160.00		
4 mach. hrs.	@ $ 12.00 per hr.	= $ 48.00	$ 208.00	$ 1,868.00

E. CARON DIAMOND DRILLING LTD. 7 Roundel Road Whitehorse, Yukon. Phone (403) 668-2424 Telex 036-8-337

Items Consumed & Chargeable at Field Cost				
Hole B-13/65/BQ				
5 BQ bits	@ $345.00 each	= $ 1,725.00		
3 BQ bits	@ $244.75 each	= $ 734.25		
1 BW casing	@ $ 91.35 each	= $ 91.85	$ 2,551.10	
Hole B-14/75/BQ				
1- 5' core barrel	@ $165.30 each	= $ 165.30		
2 BQ bits	@ $244.75 each	= $ 489.50		
2 BQ shells	@ $279.59 each	= $ 559.18		
1 BQ bit	@ $345.00 each	= $ 345.00		
1- 10' BW casing	@ $ 91.85 each	= $ 91.85		
130 ft. BQ rods	@ $ 71.60/10' length	= $ 930.80		
1 BQ core barrel complete	@ $585.00 each	= $ 585.00		
1 BQ shell	@ $279.59 each	= $ 279.59		
1 BQ bit	@ $244.75 each	= $ 244.75	$ 3,690.97	
	+ 15 %	=	$ 936.31	$ 7,178.38
Mud				
72 bags mud	@ $ 11.50 each	= $ 828.00		
100 bags Quik Trol	@ $ 10.00 each	= $ 1,000.00		
1- 5 gal. Alcomer	@ $225.00 each	= $ 225.00		
3 Quik Seal	@ $ 40.00 each	= $ 120.00		$ 2,173.00
Flights				
Air North # 6323		=		$ 316.23
Fuel & Freight				
White Pass # 141730		= $ 2,526.00		
MacMillan Service # 524		= $ 220.80	$ 2,746.80	
	+ 15 %	=	$ 412.02	$ 3,158.82
			Total Invoice:	$41,505.43

E. CARON DIAMOND DRILLING LTD. 7 Roundel Road Whitehorse, Yukon. Phone (403) 668-2424 Telex 036-8-337

August 15, 1980
Invoice #- 822

IN ACCOUNT WITH:

Archer Cathro & Associates,
1016 Standard Building,
510 West Hastings St.,
Vancouver, B.C.

Drilling Charges August 1 to 15, 1980: (Grass Project)

Hole 80-B-15/90/BQ				
Waterline				
3½ man hrs.	@ $ 20.00 per hr.	=	$ 70.00	
Mud Time				
88 man hrs.	@ $ 20.00 per hr.	= $ 1,760.00		
44 mach. hrs.	@ $ 12.00 per hr.	= $ 528.00	$ 2,288.00	
Testing				
2 man hrs.	@ $ 20.00 per hr.	= $ 40.00		
1 mach. hr.	@ $ 12.00 per hr.	= $ 12.00	$ 52.00	
Casing				
0 - 16 = 16 ft.	@ $ 22.50 per ft.	= $ 360.00		
0 - 24 = 24 ft.	@ $ 20.00 per ft.	= $ 480.00	$ 840.00	
Coring				
20 - 500 = 480 ft.	@ $ 22.00 per ft.	= $10,560.00		
500 - 961 = 461 ft.	@ $ 22.75 per ft.	= $10,487.75	$21,047.75	$24,297.75
Hole 80-B-16/90/BQ				
Moving				
75 man hrs.	@ $ 20.00 per hr.	=	$ 1,500.00	
Casing				
0 - 40 = 40 ft.	@ $ 20.00 per ft.	=	$ 800.00	
Coring				
23 - 267 = 244 ft.	@ $ 22.00 per ft.	=	$ 5,368.00	$ 7,668.00

E. CARON DIAMOND DRILLING LTD. 7 Roundel Road Whitehorse, Yukon. Phone (403) 668-2424 Telex 036-8-337

Truck Trip with mud & fuel		=	$ 1,000.00	
2 hrs. loader	@ $ 40.00 per hr.	= $ 80.00		
5 man hrs. loading at yard	@ $ 20.00 per hr.	= $ 100.00	$ 180.00	
5 hrs. truck time: unloading mud fuel and rods	@ $ 35.00 per hr.	=	$ 175.00	$ 1,355.00
300 bags mud	@ $ 11.50 each	= $ 3,450.00		
200 bags Quik Trol	@ $ 10.00 each	= $ 2,000.00		
10 bags Quik Seal	@ $ 40.00 each	= $ 400.00		$ 5,850.00
			Total Invoice:	$39,170.75

E. CARON DIAMOND DRILLING LTD. 7 Roundel Road Whitehorse, Yukon. Phone (403) 668-2424 Telex 036-8-337

August 31, 1980

Invoice #- 842

IN ACCOUNT WITH:

Archer, Cathro & Associates,
1060 Standard Building,
510 West Hastings St.,
Vancouver, B.C.

Drilling Charges August 16 - 31, 1980: (Grass Project)

Hole 80-B-16/90/BQ				
Mud Time				
6 man hrs.	@ $ 20.00 per hr.	= $ 120.00		
3 mach. hrs.	@ $ 12.00 per hr.	= $ 36.00	$ 156.00	
Coring				
267 - 500 = 233 ft.	@ $ 22.00 per ft.	=	$ 5,126.00	$ 5,282.00
Hole 80-M-1/75/BQ				
Moving				
84 man hrs.	@ $ 20.00 per hr.	=	$ 1,680.00	
Reaming Cave				
23 man hrs.	@ $ 20.00 per hr.	= $ 460.00		
11½ mach. hrs.	@ $ 12.00 per hr.	= $ 138.00	$ 598.00	
Mud Time				
(28) 32 man hrs.	@ $ 20.00 per hr.	= $ 640.00		
(14) 16 mach. hrs.	@ $ 12.00 per hr.	= $ 192.00	$ 832.00	
Testing				
4 man hrs.	@ $ 20.00 per hr.	= $ 80.00		
2 mach. hrs.	@ $ 12.00 per hr.	= $ 24.00 =	$ 104.00	
Casing				
0 - 82 = 82 ft.	@ $ 20.00 per ft.	=	$ 1,640.00	
Coring				
12 - 500 = 488 ft.	@ $ 22.00 per ft.	= $10,736.00		
500 - 569 = 69 ft.	@ $ 22.75 per ft.	= $ 1,569.75	$12,305.75	$17,159.75

E. CARON DIAMOND DRILLING LTD. 7 Roundel Road Whitehorse, Yukon. Phone (403) 668-2424 Telex 036-8-337

Hole 80-M-2/65/NQ

Moving				
✓ 109 man hrs.	@ $ 20.00 per hr.	=	$ 2,180.00	
Reaming Cave				
22 man hrs.	@ $ 20.00 per hr.	= $ 440.00		
11 mach. hrs.	@ $ 12.00 per hr.	= $ 132.00	$ 572.00	
Waterline				
86 man hrs.	@ $ 20.00 per hr.	=	$ 1,720.00	
Mud Time				
18 man hrs.	@ $ 20.00 per hr.	= $ 360.00		
9 mach. hrs.	@ $ 12.00 per hr.	= $ 108.00	$ 468.00	
Standby				
12 man hrs.	@ $ 20.00 per hr.	=	$ 240.00	
Casing				
0 - 28 = 28 ft.	@ $ 22.50 per ft.	= $ 630.00		
45 - 50 = 5 ft.	@ $ 20.00 per ft.	= $ 100.00	$ 730.00	
Coring				
14 - 45 = 31 ft.	@ $ 24.00 per ft.	= $ 744.00		
45 - 67 = 22 ft.	@ $ 22.00 per ft.	= $ 484.00		
67 - 254 = 187 ft.	@ $ 24.00 per ft.	= $ 4,488.00	$ 5,716.00	$11,626.00
Propane				
18 bottles	@ $ 21.00 per refill	=	$ 378.00	
	+ 15 %	=	$ 56.70	$ 434.70
			Total Invoice:	$34,502.45

E. CARON DIAMOND DRILLING LTD. 7 Roundel Road Whitehorse, Yukon. Phone (403) 668-2424 Telex 036-8-337

September 15, 1980

Invoice #-871

IN ACCOUNT WITH:

Archer, Cathro & Associates,
1016 Standard Building,
510 West Hastings Street,
Vancouver, B. C.

Drilling Charges September 1 to 15, 1980: (Grass Project)

Hole: 80-M-2/65/BQ				
Drilling				
18 man hrs.	@ $20.00 per hr.	= $ 360.00		
9 machine hrs.	@ $12.00 per hr.	= $ 108.00	$ 468.00	
Reaming Cave				
4 man hrs.	@ $20.00 per hr.	= $ 80.00		
2 machine hrs.	@ $12.00 per hr.	= $ 24.00	$ 104.00	
Waterline				
2 man hrs.	@ $20.00 per hr.	=	$ 40.00	
Mud Time				
16 man hrs.	@ $20.00 per hr.	= $ 320.00		
8 machine hrs.	@ $12.00 per hr.	= $ 96.00	$ 416.00	
Standby Time				
10 man hrs.	@ $20.00 per hr.	=	$ 200.00	
Casing				
254 - 353 = 99 ft.	@ $20.00 per ft.	=	$1,980.00	
Coring				
254 - 500 = 246 ft.	@ $22.00 per ft.	= $5,412.00		
500 - 524 = 24 ft.	@ $22.75 per ft.	= $ 546.00	$5,958.00	$ 9,166.00
Hole: 80-B-17/90/HQ				
Moving				
73 man hrs.	@ $20.00 per hr.	=	$1,460.00	
Drilling				
5 man hrs.	@ $20.00 per hr.	= $ 100.00		
2½ machine hrs.	@ $12.00 per hr.	= $ 30.00	$ 130.00	
Casing				
6 man hrs.	@ $20.00 per hr.	= $ 120.00		
3 machine hrs.	@ $12.00 per hr.	= $ 36.00	$ 156.00	
Reaming Cave				
115 man hrs.	@ $20.00 per hr.	= $2,300.00		
57½ machine hrs.	@ $12.00 per hr.	= $ 690.00	$2,990.00	
Waterline				
111 man hrs.	@ $20.00 per hr.	=	$2,220.00	
Mud Time				
8 man hrs.	@ $20.00 per hr.	= $ 160.00		
4 machine hrs.	@ $12.00 per hr.	= $ 48.00	$ 208.00	

E. CARON DIAMOND DRILLING LTD. 7 Roundel Road Whitehorse, Yukon. Phone (403) 668-2424 Telex 036-8-337

Cementing				
5 man hrs.	@ $20.00 per hr.	= $ 100.00		
2½ machine hrs.	@ $12.00 per hr.	= $ 30.00	$ 130.00	
Standby Time				
4 man hrs.	@ $20.00 per hr.	=	$ 80.00	
Travelling Time				
9 man hrs.	@ $20.00 per hr.	=	$ 180.00	
Time Not Acct.				
26 man hrs.	@ $20.00 per hr.	= $ 520.00		
6 machine hrs.	@ $12.00 per hr.	= $ 72.00	$ 592.00	
Casing				
0 - 16 = 16 ft.	@ $28.00 per ft.	=	$ 448.00	
Coring				
10 - 135 = 125 ft.	@ $27.00 per ft.	= $3,375.00		
135 - 241 = 106 ft.	@ $24.00 per ft.	= $2,544.00	$5,919.00	$14,513.00
Propane				
30 refills	@ $25.00 per refill	=	$ 750.00	
	+ 15%	=	$ 112.50	$ 862.50
Items Consumed & Chargeable				
Hole: 80-M-2/65/BQ				
1 NW shoe	@ $268.00 each	= $ 268.00		
3 BQ bits	@ $345.00 each	= $1,035.00		
1 BQ shell	@ $279.57 each	= $ 279.57		
140 ft. BQ rods	@ $71.60/10' length	= $1,002.40		
1 BQ corebarrel	@ $630.00 each	= $ 630.00	$3,214.97	
	+ 15%	=	$ 482.24	$ 3,697.21
Hole: 80-B-17/90/HQ				
100 ft. NQ rods	@ $85.15/10' length	= $ 851.50		
5 NQ-3 bits	@ $492.43 each	= $2,462.15		
3 HQ-3 combo bits	@ $652.70 each	= $1,958.10		
2 NQ shells	@ $374.68 each	= $ 749.36		
1 NQ core barrel	@ $190.50 each	= $ 190.50		
1 NQ inner tube	@ $88.00 each	= $ 88.00	$6,299.61	
	+ 15%	=	$ 944.94	$ 7,244.55
1 NQ bit 1 NQ shell 3 NQ rods	(5)			
Mud				
60 bags Quik Gel	@ $11.50 per bag	=		$ 690.00
			Total Invoice	$36,173.26

E. CARON DIAMOND DRILLING LTD. 7 Roundel Road Whitehorse, Yukon. Phone (403) 668-2424 Telex 036-8-337

September 26, 1980

Invoice #- 883

IN ACCOUNT WITH:

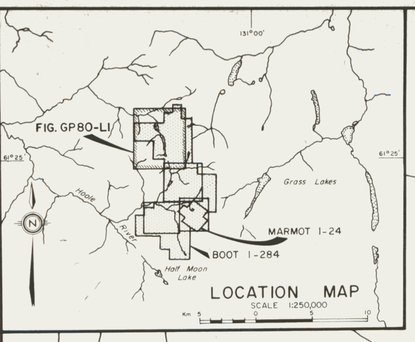
Archer Cathro & Associates,
1016 Standard Building,
510 West Hastings St.,
Vancouver, B.C.

Drilling Charges September 16 to 26, 1980: (Grass Project)

Hole 80-B-17/90/NQ				
Casing				
4 man hrs.	@ $ 20.00 per hr.	= $ 80.00		
2 mach. hrs.	@ $ 12.00 per hr.	= $ 24.00	$ 104.00	
Reaming Cave				
26 man hrs.	@ $ 20.00 per hr.	= $ 520.00		
13 mach. hrs.	@ $ 12.00 per hr.	= $ 156.00	$ 676.00	
Waterline				
2 man hrs.	@ $ 20.00 per hr.	=	$ 40.00	
Coring				
241 - 295 = 54 ft.	@ $ 24.00 per ft.	=	$ 1,296.00	$ 2,116.00
Hole 80-B-18/90/HQ				
Moving				
160 man hrs.	@ $ 20.00 per hr.	=	$ 3,200.00	
Drilling				
4 man hrs.	@ $ 20.00 per hr.	= $ 80.00		
2 mach. hrs.	@ $ 12.00 per hr.	= $ 24.00	$ 104.00	
Casing				
6 man hrs.	@ $ 20.00 per hr.	= $ 120.00		
3 mach. hrs.	@ $ 12.00 per hr.	= $ 36.00	$ 156.00	
Reaming Cave				
14 man hrs.	@ $ 20.00 per hr.	= $ 280.00		
7 mach. hrs.	@ $ 12.00 per hr.	= $ 84.00	$ 364.00	
Testing				
2 man hrs.	@ $ 20.00 per hr.	= $ 40.00		
1 mach. hr.	@ $ 12.00 per hr.	= $ 12.00	$ 52.00	
Travelling Time				
7 man hrs.	@ $ 20.00 per hr.	=	$ 140.00	

E. CARON DIAMOND DRILLING LTD. 7 Roundel Road Whitehorse, Yukon. Phone (403) 668-2424 Telex 036-8-337

Casing				
0 - 10 = 10 ft. @ $ 28.00 per ft.	=		$ 280.00	
Coring				
0 - 93 = 93 ft. @ $ 27.00 per ft.	= $ 2,511.00			
93-401=308 ft. @ $ 24.00 per ft.	= $ 7,392.00		$ 9,903.00	$14,199.00
Items Consumed & Chargeable				
Hole 80-B-17/90/NQ				
1 NQ Longyear bit @ $415.00 each	= $ 415.00			
1 NQ shell @ $379.00 each	= $ 379.00			
1 NQ 5' tube @ $730.00 each	= $ 730.00			
1 NQ overshot @ $392.00 each	= $ 392.00			
1 NQ rod tap @ $106.95 each	= $ 106.95			
110 ft. NQ rods @ $ 85.15/10' l.	= $ 936.65			
80 ft. HQ rods @ $120.35/10' l.	= $ 962.80			
1 HQ-NW adapter @ $ 32.00 each	= $ 32.00			
1 NW casing shoe @ $268.00 each	= $ 268.00		$ 4,222.40	
+ 15 %	=		$ 633.36	$ 4,855.76
Flights				
Islander, trip with extra rods				
Air North # 6438	=			$ 485.34
Demobilization				
of Drill	=			$ 1,200.00
Truck Time				
12 truck hrs. @ $ 35.00 per hr.	=			$ 420.00
Mud				
Westcoast Drilling				
Supplies #1359	= $ 980.00			
	$ 21.75			
	$ 10.70			
	$ 19.50		$ 1,031.95	
+ 15 %	=		$ 154.79	$ 1,186.74
Cook's Wages				
July 7 to Sept. 26/80	=		$ 5,346.01	
(7) + 20 %	=		$ 1,069.20	$ 6,415.21
Fuel				
White Pass #39716 CREDIT	=			($ 1,455.00)
			Total Invoice:	$29,423.05



UNSTAKED
BOOT CLAIM BOUNDARY

BOOT CLAIM BOUNDARY
UNSTAKED

NORTH CIRQUE

CPAub float

Pcs
Pam
Pmcs
undivided

3.65 % WO_3 IN GNEISS

Pcss float

2.23 % WO_3 IN GARNET GNEISS

1.2 % WO_3 IN GREY CALC-SILICATE SKARN

2.90 % WO_3 IN MICA MARBLE BOULDER

TRACE OF W IN MICA MARBLE Q/C

W IN QTZ

Pcs
Pcss
undivided

Pn

Pmcs

Pmcs
Pn?

Pcs
Pam
Pcss
undivided

0.92 % WO_3 IN LIGHT COLOURED SKARN

Pcs
Pmcs
undivided

EAST GULLY

Pcs
Pam
Pcss
undivided

Pmcs
Pn

Pmcs

NORTH WEST CIRQUE

PEsc

PEmcs

PEsc

Pmcs

0.6% WO_3 DISSEMINATED IN RUSTY MUSC-CHL SCHIST

5.4% WO_3 IN RUSTY MUSC. SCHIST WITH DISS SCHEELITE AND SCHEELITE CALCITE VEIN

W IN MUSC SCHIST

W IN SOIL
QTZ VEIN

W IN QTZ. FLOAT

Pmcs

Pmcs

Qtz tourmaline vein

Pmcs

W IN DISS IN GARNET SCHIST Q/C 0.03% WO_3

W IN QTZ FLOAT

Pmm

W IN QTZ TALUS

Pmm

Pmcs

Pcs

Pcm

Pnq?

Pcs

Pnq ?

Pcp

Pcp

Pcp

Pmcs

Pcp

Pan

6000

PEsc

Creek

PEmcs

GP 1978 CAMP

Camp

W IN SOIL

PIT L-2

Pmcs

W IN QTZ VEIN

Pmm

Pmcs

Pmm

Pbm

Pmm

Pcs

Pnq ?

Pmcs

Pmcs

TRACE W IN QTZ TOURMALINE FLOAT

LAMPMAN LAKE

Pnq ?

Pn

Pcs, Pam, Pcss undivided

Pn

Pn

Pn

Pn

Pn

Pn

Pn

0.28 % WO_3, 10 ppb Au IN RUSTY MUSC. SCHIST

73 Creek

W IN QTZ FLOAT

W IN QTZ

0.44 % WO_3
6.8 % WO_3 10 ppb Au
1.56 % WO_3 20 ppb Au
IN QTZ AND TOURMALINE

SADDLE

W IN BANDED GIOPSIDE-GARNET SKARN

PEcss float

Pn

PEsc

W IN QTZ AND SCHIST

biotite hornfels and minor PEcss at contact

PEmcs

PEsc

0.50 % WO_3
0.55 % WO_3, 0.005 oz/T Au
IN GREY MUSC GNEISS FLOAT

PEmcs

PIT L-1
1.08 % WO_3

PEsc
PEmcs
PEbn
PEmcs
PEcm

PEcm

Pmcs
Pmm
Pan
Pcp
Pmm
Pmm
Pcp
Pmm
Pcs
Pmcs

Pmcs

Pmm

Pmcs

Pmcs

Pmcs

TRACE OF W IN QTZ AND SCHIST

Pmcs

BASELINE 'D' 8W

BASELINE 'A' 345°

BASELINE 'B' 8+50E

BASELINE 'E' 14E

Pn

Pn

5200

5000

4800

5400

5600

5800

6000

6200

6400

6600

LEGEND

Paleozoic

Cretaceous ?

Pn — Feldspar Augen Gneiss
Grey weathering biotite-muscovite-feldspar-quartz augen gneiss with white porphyroblasts of K-feldspar up to 10 cm in length thought to be older deformed equivalent of quartz monzonite.

Anvil Allochthon

Carboniferous and Permian (Possibly Older)

CPAub — Serpentinized Ultramafic
Brown weathering serpentinized ultramafic.

Allochthonous Schist Assemblage

Age and Relationship Unknown (Probably Paleozoic)

PPK4 Pcs — Chlorite Schist
Dark green lustrous chlorite schist, often with biotite porphyroblasts, minor carbonate, talcy.

Pcm — Chlorite Marble
Dark green chlorite marble, gradational to Pcs.

Pam — Amphibolite
Dark green to green and white banded amphibolite grades to minor siliceous equivalent.

Pbm — Biotite Marble and Gneiss
Grey-green biotite marble, grades to limy biotite quartzo-feldspathic gneiss.

Pmcs — Muscovite-Chlorite Schist
Light brown rusty weathering muscovite chlorite schist, locally grades to gneissic equivalents, may contain biotite.

Pan — Quartz-Feldspar Augen Gneiss
Chloritic quartzo-feldspathic augen gneiss with quartz and feldspar augen, occurs locally within Pmcs.

Pmm — Micaceous Marble
Light to dark grey differentially weathering micaceous siliceous marble, occurs in Pmcs.

Pcp — Carbonaceous Phyllonite
Black carbonaceous phyllonite, occurs locally in Pmcs.

Contact Metamorphosed Equivalents of above Units

Pcss — Calc-Silicate Schist
Colourful foliated calc-silicate bearing schist, garnet, vesuvianite, wollastonite and minor pyroxene bearing chloritic biotite schist with marble interbeds, scheelite bearing in part.

Autochthonous?

Windermere? and Cambrian?

PEsc — Muscovite-Garnet Marble
Light brown and silvery weathering muscovite-garnet marble commonly associated with chloritic muscovite garnet schist, also includes thick non-micaceous crystalline marble sections.

PEmcs — Muscovite-Garnet-Chlorite Schist
Silvery weathering muscovite-chlorite garnet schist gradational to muscovite-garnet marble

PEbn — Micaceous Gneiss
Biotite-muscovite quartzo-feldspathic gneiss, minor mica-garnet gneiss.

PEcm — Grey Marble
Grey and buff weathering crystalline marble.

Pnq — Quartz Augen Gneiss
Grey weathering quartz-feldspar augen gneiss, variable biotite muscovite, chlorite content, traces of carbonate.

Contact Metamorphosed Equivalents of above Units

PEcss — Calc-Silicate Schist
Pale coloured siliceous, calc-silicate bearing schist, scheelite bearing in part.

Symbols

- Outcrop
- Felsenmeer or talus representing outcrop
- Geological boundaries: defined, approximate, assumed.
- Steeply dipping to vertical fault direction of displacement shown when known: defined, approximate, assumed
- Thrust Fault
- Foliation: inclined
- Claim Posts
- Scheelite float occurrence

BOOT No.1 118, 119 No.2 116, 117

BOOT No.1 116, 117 No.2 114, 115

BOOT No.1 108, 109 No.2 106, 107

BOOT No.1 106, 107 No.2 104, 105

BOOT No.1 104, 105 No.2 102, 103

BOOT No.1 76,77 No.2 74,75

BOOT No.1 74,75 No.2 72,73

BOOT No.1 72,73 No.2 70,71

BOOT No.1 70, 71 No.2 68, 69

BOOT No.1 68,69 No.2 66,67

61°25'

131°10'

FIG. GP80-LI

ARCHER, CATHRO & ASSOCIATES LTD

GEOLOGY

LAMPMAN GRID BOOT CLAIM GROUP

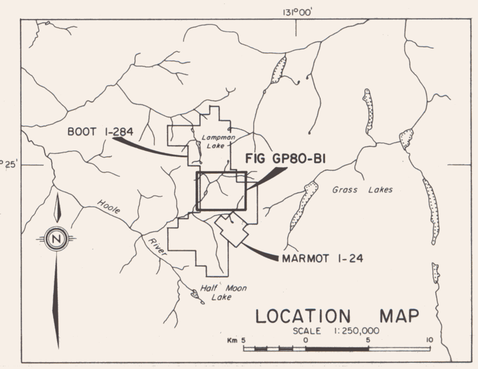
GRASS PROJECT

SCALE 1:5,000

100 0 50 100 200 300 400 500 Metres

Province of the Yukon Territory
GEOLOGICAL ENGINEER

To Accompany Report Dated Jan/81



LEGEND

Mesozoic

Cretaceous

Kqm — **Quartz Monzonite**
Grey weathering, coarse porphyritic biotite-muscovite quartz monzonite, white K-feldspar phenocrysts up to 10 cm length, weakly developed but common propylitic alteration scheelite-quartz veins occur in some areas.

Kap — **Aplite**
White, fine to medium grained equigranular quartz feldspar aplite.

KTqfp — **Hornblende-Quartz Porphyry**
Dark grey-green fine grained altered hornblende quartz-feldspar porphyry, hornblende usually altered to chlorite.

Cretaceous ?

Pn — **Feldspar Augen Gneiss**
Grey weathering biotite-muscovite-feldspar-quartz augen gneiss with white porphyroblasts of K-feldspar up to 10 cm in length, thought to be older deformed equivalent of quartz monzonite.

Paleozoic — Anvil Allochthon

Carboniferous and Permian (Possibly Older)

CPAub — **Serpentinized Ultramafic**
Brown weathering serpentinized ultramafic.

CPAc — **Altered Ultramafic**
Orange weathering altered ultramafic rocks usually containing quartz, carbonate and minor mariposite.

Allochthonous Schist Assemblage

Age and Relationship Unknown (Probably Paleozoic)

PPK4

Pcs — **Chlorite Schist**
Dark green lustrous chlorite schist, often with biotite porphyroblasts, minor carbonate, talcy.

Pam — **Amphibolite**
Dark green to green and white banded amphibolite grades to minor siliceous equivalent Pmq.

Pmv — **Colour Banded "Metavolcanic"**
Green and grey thinly laminated rocks blocky fracturing, sometimes with biotite porphyroblasts, gradational to Pam and Pcs.

Pbm — **Biotite Marble**
Dark brown weathering blocky fracturing biotite marble, evenly disseminated weakly foliated biotite porphyroblasts, clay alteration in groundmass, may be altered basic igneous rock.

Pmcs — **Muscovite-Chlorite Schist**
Light brown rusty weathering muscovite chlorite schist, locally grades to gneissic equivalents, may contain biotite.

Pln — **Leucocratic Gneiss**
Light grey fine grained granitic gneiss, weakly foliated low mica content, light brown rusty weathering in part

Pan — **Quartz-Feldspar Augen Gneiss**
Chloritic quartzo-feldspathic augen gneiss with quartz and feldspar augen,occurs locally within Pmcs.

Pmm — **Micaceous Marble**
Light to dark grey differentially weathering micaceous siliceous marble,occurs in Pmcs.

Pcp — **Carbonaceous Phyllonite**
Black carbonaceous phyllonite, occurs locally in Pmcs.

Contact Metamorphosed Equivalents of above Units

Pbmcs — **Biotite-Muscovite-Chlorite Schist**
Grey to brown weathering, dolomitic biotite-muscovite schist, often garnet bearing and calc-silicate bearing in limier sections.

Pcss — **Calc-Silicate Schist**
Colourful foliated calc-silicate bearing schist, garnet, vesuvianite, wollastonite and minor pyroxene bearingchloritic biotite schist with marble interbeds.

Psk — **Skarn**
Dark brown weathering, massive dark green pyroxene-garnet skarn, replaces calc-silicate schist and interbanded carbonate bands, occurs as irregular discontinuous replacements in Pcss.

Nisutlin Allochthon

Age Unknown

PPK1

Pms — **Muscovite Schist**
Light brown, rusty weathering, quartz schist to micaceous quartzite, low feldspar and usually no chlorite present.

Psp — **Siliceous Phyllonite**
Black blocky fracturing carbonaceous siliceous phyllonite to black quartzite, grades to light grey varieties, occurs in Pms.

Autochthonous?

Windermere? and Cambrian?

PЄsc — **Muscovite-Garnet Marble**
Light brown and silvery weathering muscovite-garnet marble commonly associated with chloritic muscovite garnet schist, also includes thick non micaceous crystalline marble sections.

Pnq — **Quartz Augen Gneiss**
Grey weathering quartz-feldspar augen gneiss variable biotite muscovite, chlorite content, traces of carbonate.

Symbols

- Outcrop
- Felsenmeer or talus representing outcrop
- Geological boundaries: defined, approximate, assumed
- Steeply dipping to vertical fault direction of displacement shown when known: defined, approximate, assumed
- Thrust Fault: defined, approximate
- Foliation: inclined
- Claim posts
- Diamond drill hole location: vertical, inclined
- Scheelite float occurrence
- aspy, gal — mineral occurrences
  aspy - arsenopyrite
  gal - galena
  wol - wolframite
  sch - scheelite

FIG. GP80-BI

ARCHER, CATHRO & ASSOCIATES LTD

GEOLOGY

BOOT CIRQUE

BOOT CLAIM GROUP

GRASS PROJECT

SCALE 1:5,000

100 50 0 50 100 200 300 400 500 Metres

100 50 0 50 100 200 300 400 500 Yards

Professional Engineers of the Yukon Territory — R. V. CATHRO — GEOLOGICAL ENGINEER

To accompany report dated Jan/81

DDH 79 B3, 5, 6, 8, & 80 B14 SECTION 4+50 metres E.

NORTH

SOUTH

ELEVATION IN FEET

METRES 2+50 N 2+00 N 1+50 N 1+00 N 0+50 N 0+00 0+50 S 1+00 S 1+50 S 2+00 S 2+50 S 3+00 S 3+50 S METRES 4+00 S

5700 5600 5500 5400 5300 5200 5100 5000 4900 4800 4700 4600 4500 4400 4300

DDH 79 B5
(1+75 S-4+50 E)
400 FT. VERT.

DDH 79 B6
(2+47 N-4+50 E)
833 FT. VERT.

DDH 79 B8
(0+15 N-4+50 E)
469 FT. VERT.

DDH 79 B3
(0+97 N-4+34 E)
835 FT. VERT.
PROJECTED 16 M FROM WEST

DDH 80 B14
(3+65 S-4+16 E)
141 FT. 055% AZ -75%
PROJECTED 34 M FROM WEST

BIOTITE SCHIST

Pbmcs

UPPER B ZONE
CALC-SILICATE SCHIST
AND SKARN

Pggi, Pcss, Psk, UNDIVIDED

LOWER B ZONE
CALC-SILICATE SCHIST
AND SKARN

B3 ZONE

B1 ZONE

B2 ZONE ?

POSSIBLE SOURCE OF
"B" ZONE FLOAT TRAIN

BOOT TARN AND CAMP ELEVATION

METAMORPHIC ROCKS

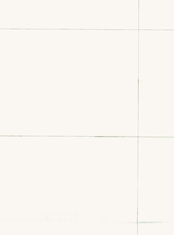
INTRUSIVE OR FAULT
CONTACT DEFINED BY
GROUND MAGNETOMETER
SURVEY

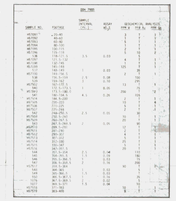
70°

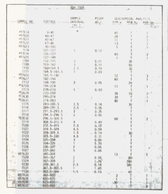
40°

Kqm

BPK









Section No.	From (m)	To (m)	Length (m)	Recovery	% WC	Fib Ag
3501	63.0	66.0	3.0	2%	0.19	1046
3502	66.0	70.5	4.5	3%	2.12	163
3503	70.5	73.5	3.0	0%	2.90	710
3504	73.5	76.5	3.0	22%	3.42	817
3505	76.5	80.5	4.0	34%	0.90	192
3506	80.5	82.25	1.75	100%	0.21	610
Average	63.0	82.2	17.2	36.1%	1.9%	583

LEGEND

Cretaceous

Kqm — **Quartz Monzonite**
Grey, coarse porphyritic biotite-muscovite quartz monzonite with large white K-feldspar phenocrysts.

KTqfp — **Hornblende-Quartz Porphyry**
Dark green, fine grained hornblende-quartz porphyry, hornblende altered to chlorite.

Kap — **Aplite**
White fine grained quartz, feldspar aplite.

Kpg — **Pegmatite**
White to grey, quartz feldspar tourmaline, muscovite pegmatite.

ALLOCHTHONOUS SCHIST ASSEMBLAGE

Age and Relationship Unknown (Triassic ?Jurassic)

Pbmcs — **Biotite-Muscovite-Chlorite Schist**
Dark grey-green biotite-muscovite-chlorite schist, mica content varies, often contains porphyroblasts of biotite, chlorite ribbons or blotchy metasome (areas) are common, schist is often fine.

Pbcs — **Biotite-Chlorite Schist**
Dark grey-green chlorite schist with variable quartz, talc and carbonate content, biotite porphyroblast growth is often remote.

Pbn — **Biotite Gneiss**
Dark grey, fine grained, foliated quartz-feldspathic equivalent of above schist unit, contains abundant clean cut quartz beds.

Pcs — **Chlorite Schist**
Dark green chlorite schist, ?light green altered, ?lmy and talcy equivalents are common, randomly oriented biotite porphyroblasts are common.

Pam — **Amphibolite**
Dark green, fine grained amphibolite, gradational to chlorite schist, often contains epi schen biotite porphyroblasts.

Pcp — **Carbonaceous Phyllonite**
Dark grey to black, siliceous carbonaceous phyllonite.

Pggi — **Grey and Green Interbanded Schist**
Dark grey and dark green interbanded biotite schist and chloritic schist, altered equivalents of biotite schist, chloritized pyrrhotite and calc-silicate minerals may be present.

Pmm — **Crystalline Marble**
Light grey crystalline marble, grades to micaceous marble.

Pcss — **Calc-Silicate Schist**
Light green, fine grained calc-silicate schist with minor carbonate bands, may contain pyroxene, garnet, wollastonite and calcite, may be mineralized with scheelite.

Psk — **Skarn**
Dark green, massive pyroxene garnet skarn, commonly mineralized with scheelite.

Pbz — **Mineralized Biotite Schist**
Dark grey, fine grained, foliated, textured biotite schist, altered and bleached and strongly mineralized equivalent of the schist and calc-silicate units.

SYMBOLS

Geological boundary defined, approximate, assumed
Foliation
Bedrock
Fault: defined, approximate

CORE ASSAY AND ANALYSIS ★

Geochemical analysis of 1" rock fragments taken every foot over the sample interval

Assay of half core over the sample interval with accompanying gold geochemical analysis

★ By Chemex Labs Ltd. North Vancouver

FIG. GP 80-B6

ARCHER, CATHRO & ASSOCIATES LTD.

LONGITUDINAL SECTION

DIAMOND DRILL HOLES 79 B3, 5, 6, 8, AND 80 B14

BOOT CIRQUE B ZONE
BOOT CLAIM GROUP
GRASS PROJECT
SCALE 1:480 (1 inch to 40 Feet)

0 20 40 60 80 100 Feet
0 5 10 15 20 Metres

To Accompany Report Dated 1980

DDH 79 B3, 4, & 80 B15 SECTION 0+97 metres N

DDH 79 B 7, 8, 9, 10 SECTION 0+15 metres N

WEST

EAST

ELEVATION in feet

METRES

ROCK GLACIER

Kqm

POSSIBLE SOURCE OF B ZONE FLOAT TRAIN

B3 ZONE

B1 ZONE

B2 ZONE

DDH 79 B4
537 FT 270° AZ -50°

DDH 79 B3
835 FT VERTICAL

DDH 80 B15
961 FT VERTICAL

BEDROCK

FAULT ZONE

LOWER B ZONE
CALC-SILICATE SCHIST, GNEISS, AND SKARN

DDH 79 B7
436 FT 275° AZ -52°

DDH 79 B9
302 FT 110° AZ -61°

DDH 79 B8
469 FT VERTICAL

DDH 79 B10
588 FT 111° AZ -67°

SYMBOLS

Geological boundary: defined, approximate, assumed

Foliation

Bedrock

Fault: defined, approximate

CORE ASSAY AND ANALYSIS ★

Geochemical analysis of 1" rock fragments taken every foot over the sample interval

Assay of half core over the sample interval with accompanying gold geochemical analysis

★ By Chemex Labs Ltd. North Vancouver

LEGEND

Cretaceous

Kqm — **Quartz Monzonite**
Grey, coarse porphyritic biotite-muscovite quartz monzonite with large white K-feldspar phenocrysts.

KTqfp — **Hornblende-Quartz Porphyry**
Dark green, fine grained hornblende-quartz porphyry, hornblende altered to chlorite.

Kap — **Aplite**
White fine grained quartz, feldspar aplite.

Kpg — **Pegmatite**
White to grey, quartz feldspar tourmaline, muscovite pegmatite.

ALLOCHTHONOUS SCHIST ASSEMBLAGE

Age and Relationship Unknown (Probably Paleozoic)

Pbmcs — **Biotite-Muscovite-Chlorite Schist**
Dark green, fine grained biotite-muscovite-chlorite schist, mica content varies, often carbonaceous along fractures; dark green chlorite sheets or finely reclosed garnets are common, schist is often lumpy.

Pbcs — **Biotite-Chlorite Schist**
Dark fine green chlorite schist with variable quartz, talc and carbonate content, biotite porphyroblast growth is often random.

Pbn — **Biotite Gneiss**
Grey, fine grained, quartz-feldspathic equivalent of above schist unit, containing abundant green and quartz beds.

Pcs — **Chlorite Schist**
Dark green chlorite schist, light green altered, lime and talcy inclusions are common, randomly oriented biotite porphyroblasts are common.

Pam — **Amphibolite**
Dark green, fine grained amphibolite, predatimal to chlorite schist, often contains post schist biotite porphyroblasts.

Pcp — **Carbonaceous Phyllonite**
Dark grey to black siliceous carbonaceous phyllonite.

Pggi — **Grey and Green Interbanded Schist**
Light grey to green, fine grained biotite schist and chloritic schist, altered equivalents of biotite schist, chloritized sammets and calc-silicate minerals may be present.

Pmm — **Crystalline Marble**
Light grey crystalline marble, grades to siliceous marble.

Pcss — **Calc-Silicate Schist**
Calcareous, foliated calc-silicate schist with minor carbonate bands, may contain diopside, garnet, wollastonite, scheelite and calcite, may be mineralized with scheelite.

Psk — **Skarn**
Dark green, massive coarsegrained garnet skarn, commonly mineralized with scheelite.

Pbz — **Mineralized Biotite Schist**
White and black banded to mottled, textured biotite schist, altered and bleached and strongly mineralized equivalent of the schist and calc-silicate schist.

FIGURE GP 80 B7

ARCHER, CATHRO AND ASSOCIATES LTD.

CROSS SECTIONS

DIAMOND DRILL HOLES 79 B 3, 4, 7-10, AND 80 B 15

BOOT CIRQUE B ZONE

BOOT CLAIM GROUP

GRASS PROJECT

SCALE 1:480 (1 inch to 40 Feet)

0 10 20 30 40 50 60 70 80 90 100 Feet

0 5 10 15 20 25 30 35 40 45 50 Metres

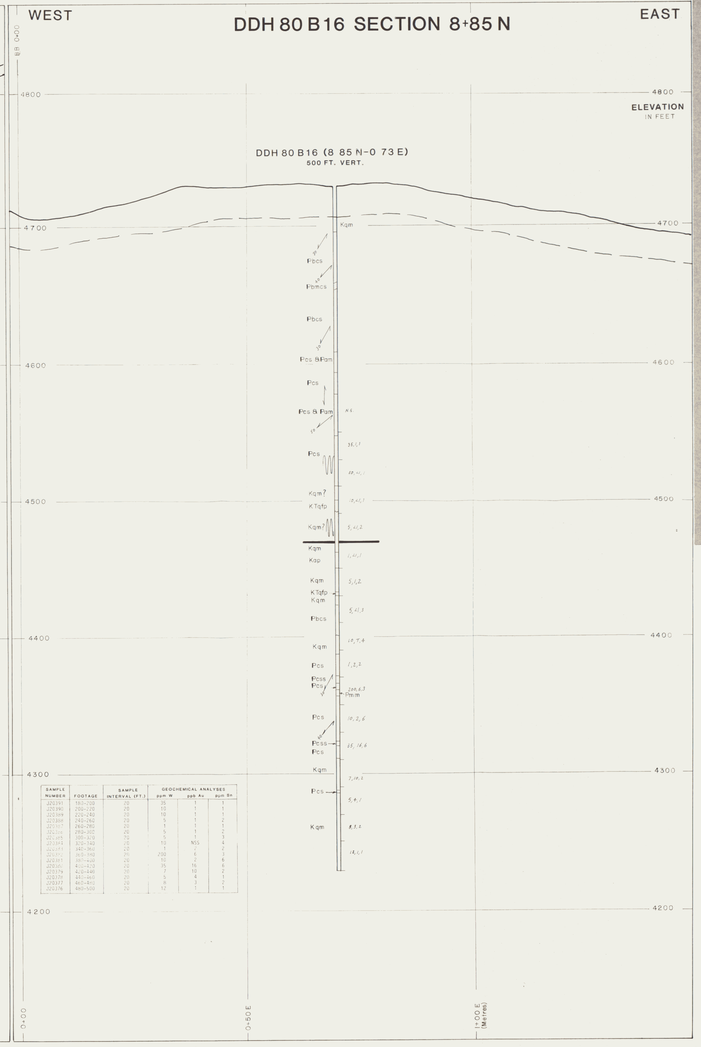
In accordance with Geological Engineers of B.C. Act

J. CATHRO GEOLOGICAL ENGINEER

In accordance with report dated JAN/81







SAMPLE NUMBER	FOOTAGE	SAMPLE INTERVAL (FT.)	GEOCHEMICAL ANALYSES ppm W	ppb Au	ppm Sn
22016	150-170	20	10	1	1
22017	170-190	20	10	1	1
22018	190-210	20	10	1	1
22019	210-230	20	10	1	1
22020	230-250	20	5	1	1
22021	250-270	20	5	1	1
22022	270-290	20	5	1	1
22023	290-310	20	5	1	1
22024	310-330	20	5	1	1
22025	330-350	20	5	1	1
22026	350-370	20	10	1	1
22027	370-390	20	5	1	1
22028	390-410	20	5	1	1
22029	410-430	20	5	1	1
22030	430-450	20	5	1	1
22031	450-470	20	5	1	1
22032	470-490	20	5	1	1
22033	490-510	20	5	1	1
22034	510-530	20	5	1	1
22035	530-550	20	5	1	1
22036	550-570	20	5	1	1
22037	570-590	20	5	1	1
22038	590-610	20	5	1	1

LEGEND

Cretaceous

- Kqm — **Quartz Monzonite** Grey, coarse porphyritic biotite-muscovite quartz monzonite with large white K-feldspar phenocrysts.
- KTqfp — **Hornblende-Quartz Porphyry** Dark green, fine grained hornblende-quartz porphyry, hornblende altered to chlorite.
- Kap — **Aplite** white fine grained quartz, feldspar aplite.
- Kpg — **Pegmatite** white to grey, quartz feldsar tourmaline, muscovite pegmatite.

ALLOCHTHONOUS SCHIST ASSEMBLAGE

Age and Relationship unknown (Probably Paleozoic)

- Pbmcs — **Biotite-Muscovite-Chlorite Schist** Dark grey-green chlorite schist with variable quartz, talc and carbonate content, biotite porphyroblast growth is often random.
- Pbcs — **Biotite-Chlorite Schist** Dark grey-green chlorite schist with variable quartz, talc and carbonate content, biotite porphyroblast growth is often random.
- Pbn — **Biotite Gneiss** Dark grey biotite dominant quartzo-feldspathic equivalent of above schist unit, contains abundant brown out quartz bands.
- Pcs — **Chlorite Schist** Dark green chlorite schist, light green altered, tiny and talcy equivalents are common, randomly-oriented biotite porphyroblasts are common.
- Pam — **Amphibolite** Dark green fine grained amphibolite, gradational to chlorite schist, often contains post strata biotite porphyroblasts.
- Pcp — **Carbonaceous Phyllonite** Dark grey to black siliceous carbonaceous phyllonite.
- Pggi — **Grey and Green Interbanded Schist** Dark grey and pale green interbanded biotite schist and chloritic schist, altered equivalent of biotite schist, chloritized garnets and calc-silicate minerals may be present.
- Pmm — **Crystalline Marble** Light grey crystalline marble, grades to micaceous marble.
- Pcss — **Calc-Silicate Schist** Schistose, foliated calc-silicate schist with minor carbonate bands, may contain pyroxene, garnet, vesuvianite, wollastonite and calcite, may be mineralized with scheelite.
- Psk — **Skarn** Dark green, massive pyroxene garnet skarn, commonly mineralized with scheelite.
- Pbz — **Mineralized Biotite Schist** White and black banded to mottled, textured biotite schist, altered and bleached and strongly mineralized equivalent of Pbz schist and calc-silicate schist.

SYMBOLS

- Geological boundary: defined, approximate, assumed
- Foliation
- Bedrock
- Fault: defined, approximate

CORE ASSAY AND ANALYSIS ★

UNIT — sample interval, % wo3, ppb Au — Assay of half core over the sample interval with accompanying gold geochemical analysis

ppm W, ppb Au, ppm Sn — Geochemical analysis of 1" rock fragments taken every foot over the sample interval

★ By Chemex Labs Ltd. North Vancouver

FIG. GP 80 B9

ARCHER, CATHRO AND ASSOCIATES LTD.

CROSS SECTIONS

DIAMOND DRILL HOLES 80 B16, 17, 18

BOOT CLAIM GROUP

GRASS PROJECT

SCALE 1:480 (1 Inch to 40 Feet)

0 20 40 60 80 100 Feet

0 10 20 30 40 50 Metres

To Accompany Report Dated Jan/81

BOOT CLAIM GROUP

Richards Creek

W. L. Twoduck 4818 Lake

Hammer Creek

Soud Creek

CROSS SECTION SEE FIG. GP80-M5

CROSS SECTION SEE FIG. GP80-M5

BOOT CLAIM BOUNDARY

UNSTAKED

MARMOT CLAIM BOUNDARY

BOOT CLAIM BOUNDARY

UNSTAKED

B 9,100 E AZ 315°

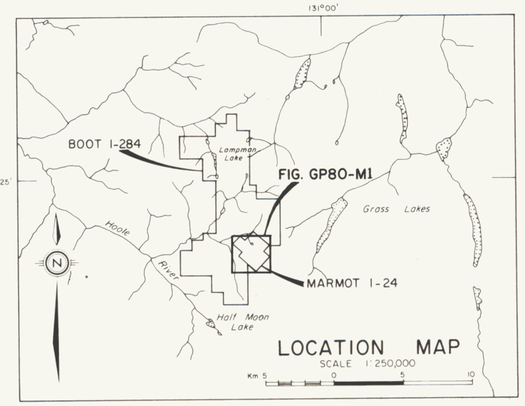
A 9,100 AZ 315°

131°00'

131°06'

61°23'

61°25'



LEGEND

Mesozoic

Cretaceous

Kqm — **Quartz Monzonite**
Grey weathering, coarse porphyritic biotite-muscovite quart monzonite, white K-feldspar phenocrysts up to 10 cm in length, weakly developed but common propylitic alteration.

Kap — **Aplite**
white, fine to medium grained equigranular quartz feldspar aplite.

Cretaceous ?

Pn — **Feldspar Augen Gneiss**
Grey weathering biotite-muscovite-feldspar-quartz augen gneiss with white porphyroblasts of K-feldspar up to 10 cm in length; thought to represent older deformed equivalent of quartz monzonite (Kqm).

Allochthonous Schist Assemblage

Age and Relationship Unknown (Probably Paleozoic)

PPK?

Pcs — **Chlorite Schist**
Dark green lustrous chlorite schist, often with biotite porphyroblasts, minor carbonate altered feldspar), talcy.

Pam — **Amphibolite**
Dark green to green and white banded amphibolite, often coarse grained with prismatic euhedral hornblende in a white feldspar groundmass.

Pbm — **Biotite Marble**
Dark brown weathering blocky fracturing biotite marble, evenly disseminated weakly foliated biotite porphyroblasts, clay alteration in groundmass, may be altered basic igneous rock.

Pmcs — **Muscovite-Chlorite Schist**
Light brown rusty weathering Muscovite chlorite schist, locally grades to gneissic equivalents, may contain biotite.

Pmm — **Micaceous Marble**
Light to dark grey differentially weathering micaceous marble occurs in Pmcs.

Pcp — **Carbonaceous Phyllonite**
Black carbonaceous phyllonite, occurs locally in Pmcs.

Contact Metamorphosed Equivalents of above Units

Pbmcs — **Biotite-Muscovite-Chlorite Schist**
Grey to brown weathering, chloritic biotite-muscovite schist, often garnet bearing with calc-silicate rock in limier sections.

Pcss — **Calc-Silicate Schist**
Colourful foliated calc-silicate schist. Garnet, vesuvianite, wollastonite, and minor pyroxene bearing chloritic biotite schist, interbedded marble common.

Psk — **Skarn**
Medium to dark-olive green fine grained pyroxene-vesuvianite-garnet skarn, confined to intrusive contacts.

Autochthonous?

Windermere? and Cambrian?

PEsc — **Muscovite-Garnet Marble**
Light brown and silvery weathering muscovite-garnet marble, commonly associated with chlorite-muscovite garnet schist.

PEcm — **Grey Marble**
Light grey massive crystalline marble, occurs within PEsc.

PEbs — **Siliceous Biotite Schist**
Medium silver weathering, fine grained siliceous biotite schist, occurs within PEsc.

Contact Metamorphosed Equivalents of above Units

PEsk1 — **Vesuvianite Skarn**
Medium to dark olive green vesuvianite garnet skarn. Textures range from fine grained laminated to coarsely crystalline. Traces of scheelite common.

PEsk2 — **Pyroxene Skarn**
Rusty weathering, very dark green, fine grained dense pyroxene skarn with minor pyrrhotite and chlorite.

Symbols

- Scheelite occurrence
- Geological boundary, defined, approximate, assumed
- Fault: defined, approximate
- Foliation inclined
- Fold axis
- Highly deformed rock
- Outcrop and subcutcrop limits: large, small
- Claim post
- Boulders diamond drill hole

FIG. GP80-M1

ARCHER, CATHRO & ASSOCIATES LTD

GEOLOGY

MARMOT SHOWING
BOOT AND MARMOT CLAIM GROUP
GRASS PROJECT

SCALE 1:5,000

100 50 0 50 100 200 300 400 500 Yards

100 50 0 50 100 200 300 400 500 Metres

Association of Professional Engineers of the Yukon Territory
R. J. CATHRO
GEOLOGICAL
ENGINEER
Jan/81

To accompany report dated Jan/81

DDH 80M 1 SECTION FACING NW

SOUTHWEST — NORTHEAST

7+22.5N 5+00E — 7+00N 5+63.5E

5300 / 5200 / 5100 / 5000 / 4900 / 4800 / 4700 / 4600

DDH 80M 1
7+02N 5+58E (metres)
569' 240° AZ. -75°

Pbmcs
Kqm
1,3,8
Pbcs
Kap
Pbcs
Kqm
Pbmcs
Kpg
2,1,1
Pbmcs
Kpg
Pbcs
Kpg
Pbcs
5cm 0.5% WO_3
Pbcs
Psk
Pbmcs
Kpg
Pbmcs
Pbmcs
Kpg
Kqm
Pcss
Psk
KTqfp
Psk
Pbmcs
Kqm
Kap
Kqm

SAMPLE NUMBER	FOOTAGE	SAMPLE INTERVAL (FT)	GEOCHEMICAL ANALYSES PPM Mo	PPM W	PPB Au	PPM Sn
J-20392	183.5-185	1.5	1	3		8
J-20392	229-246	17.0	2	1		1

7+22.5N 5+00E — 7+00N 5+63.5E

DDH 80M 2 SECTION 0+42 METRES EAST

NORTHWEST — SOUTHEAST

9+00E

5300 / 5200 / 5100 / 5000 / 4900 / 4800 / 4700 / 4600

DDH 80M 2
9+26N 0+42E (metres)
524' 135° AZ-65°

Pbmcs
Pcss
Pbmcs
Pcs
Kpg
Pbmcs
Pbcs
Pbcs
Pbmcs
Kpg
Pbmcs
Pbmcs
Pcss
Psk
Pcss
Pbcs
Pbmcs
Kqm
Pbmcs
Kpg
Pbmcs
Kpg
Pcss
Pbcs
Pbmcs
Pcss
Kpg
Pbmcs
Pbcs
Psk
Pcs
Pbmcs

9+00E

LEGEND

Cretaceous

- Kqm — **Quartz Monzonite** — Grey, coarse porphyritic biotite-muscovite quartz monzonite with large white K-feldspar phenocrysts.
- KTqfp — **Hornblende-Quartz Porphyry** — Dark green, fine grained hornblende-quartz porphyry, hornblende altered to chlorite.
- Kap — **Aplite** — White fine grained quartz, feldspar aplite.
- Kpg — **Pegmatite** — White to grey, quartz feldspar tourmaline, muscovite pegmatite.

ALLOCHTHONOUS SCHIST ASSEMBLAGE

Age and Relationship Unknown (Probably Paleozoic)

- Pbmcs — **Biotite-Muscovite-Chlorite Schist** — Dark grey-green biotite-muscovite-chlorite schist, mica content varies, often talcy especially along fractures, dark green chlorite rimmed or totally replaced garnets are common, schist is often limy.
- Pbcs — **Biotite-Chlorite Schist** — Dark grey-green chlorite schist with variable quartz, talc and carbonate content, biotite porphyroblast growth is often random.
- Pbn — **Biotite Gneiss** — Dark grey biotite dominant quartzo-feldspathic equivalent of above schist unit, contains abundant drawn out quartz bands.
- Pcs — **Chlorite Schist** — Dark green chlorite schist, light green altered, limy and talcy equivalents are common, randomly oriented biotite porphyroblasts are common.
- Pam — **Amphibolite** — Dark green fine grained amphibolite, gradational to chlorite schist, often contains post strain biotite porphyroblasts.
- Pcp — **Carbonaceous Phyllonite** — Dark grey to black siliceous carbonaceous phyllonite.
- Pggi — **Grey and Green Interbanded Schist** — Dark grey and pale green interbanded biotite schist and chloritic schist, altered equivalent of biotite schist, chloritized garnets and calc-silicate minerals may be present.
- Pmm — **Crystalline Marble** — Light grey crystalline marble, grades to micaceous marble.
- Pcss — **Calc-Silicate Schist** — Colourful, foliated calc-silicate schist with minor carbonate bands, may contain pyroxene, garnet, vesuvianite, wollastonite and calcite, may be mineralized with scheelite.
- Psk — **Skarn** — Dark green, massive pyroxene garnet skarn, commonly mineralized with scheelite.
- Pbz — **Mineralized Biotite Schist** — White and black banded to mottled, textured biotite schist, altered and bleached and strongly mineralized equivalent of limy schist and calc-silicate schist.

SYMBOLS

- Geological boundary: defined, approximate, assumed
- Foliation
- Bedrock
- Fault: defined, approximate

CORE ASSAY AND ANALYSIS ★

UNIT — ppm W, ppb Au, ppm Sn — Geochemical analysis of 1" rock fragments taken every foot over the sample interval

UNIT — sample interval, % WO_3, ppb Au — Assay of half core over the sample interval with accompanying gold geochemical analysis

★ By Chemex Labs Ltd. North Vancouver

FIG. **GP 80 M5**

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CROSS SECTIONS

DIAMOND DRILL HOLES 80 M1 & 80 M2

MARMOT SHOWING

BOOT AND MARMOT CLAIM GROUP

GRASS PROJECT

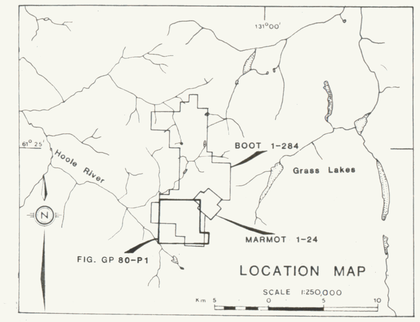
SCALE 1:480

Association of Professional Engineers of the Yukon Territory — J. CATHRO — GEOLOGICAL ENGINEER — Jan/81

0 20 40 60 80 100 Feet

0 10 20 30 40 50 Metres

To Accompany Report Dated Jan/81



LEGEND

Mesozoic

Cretaceous

- KTqfp — **Hornblende-Quartz Porphyry** — Dark grey-green fine grained altered hornblende quartz-feldspar porphyry, hornblende usually altered to chlorite.
- Kap — **Aplite** — White, aphanitic to medium grained equigranular quartz feldspar aplite. Finer grained rocks approach rhyolite in appearance.

Cretaceous ?

- En+ — **Injection Migmatite** — Local homogeneous veining consisting of sills and dykes of fine grained biotite quartz monzonite, aplite and pegmatite, in biotite muscovite augen gneiss and schist; proportion of injected plutonic rocks to the host varies. Many mineralized and barren quartz veins appear to be associated with this phase.
- En — **Feldspar Augen Gneiss** — Grey weathering biotite-muscovite-feldspar augen gneiss with white porphyroblasts of K-feldspar up to 12 cm in length, thought to be older deformed equivalent of quartz monzonite.
- Enc — **Chloritic Feldspar Augen Gneiss** — Dark brown to green weathering chloritic-biotite feldspar augen gneiss. Augen vary from 6 to 12 cm in length and comprise 5 to 60 per cent of rock, may be gradational Pam, Pcs and other augen gneiss species.
- Ens — **Siliceous Feldspar Augen Gneiss** — Leucocratic feldspar augen gneiss with siliceous mylonitic groundmass. Augen vary from 1.5 to 5 cm in length and are bounded by clear mylonitic quartz stringers. Gradational to En and En+.
- Ems — **Muscovite Schist** — Orange, highly fissile, flakey, coarse grained, very muscovite-rich schist, often grades too and may be tectonically altered En.

Paleozoic — Anvil Allochthon

Carboniferous and Permian (Possibly Older)

- CPAub — **Serpentinized Ultramafic** — Resistant dun brown weathering fine grained serpentinized ultramafic.

Allochthonous Schist Assemblage

Age and Relationship Unknown (Propably Paleozoic)

- PPK+ Pam — **Amphibolite** — Dark weathering, massive dark green chloritic fine grained amphibolite (metabasalt). Grades to chlorite schist in shear zones and faults.
- Pcs — **Chlorite Schist** — Dark green lustrous chlorite schist, often with biotite porphyroblasts, minor carbonate, talc.
- Pbm — **Biotite Marble** — Dark brown weathering blocky fracturing biotite marble, evenly disseminated weakly foliated biotite porphyroblasts, clay alteration to groundmass, may be altered basic igneous rock.

Contact Metamorphosed Equivalents of above Units

- Pbmcs — **Biotite-Muscovite-Chlorite Schist** — Grey to brown weathering, distinctive biotite-muscovite schist, often garnet bearing and calc-silicate bearing in lower sections.
- Pcss — **Calc-Silicate Schist** — Colourful foliated calc-silicate bearing schist, garnet, vesuvianite, diopside, epidote and minor pyroxene bearing chloritic biotite schist with marble interbeds.

Symbols

- Outcrop
- Geological boundaries: defined, approximate, gradational
- Steeply dipping to vertical fault, direction of displacement shown when known: defined, approximate
- Quartz vein, vein network
- Cliff edge
- Intense deformation
- Bedding, inclined
- Foliation, inclined
- Claim posts
- Mineral occurrence: outcrop, float

wol - wolframite
Mo - molybdenite
S - barren sulphides (pyrite, pyrrhotite)
Sch - scheelite

△ soil panning location — coarse/fine ppm W, ppm Sn, ppb Au

soil, silt, rock (chip sample) — geochemistry ppm W, ppm Sn, ppb Au

analyzed by Chemex Labs Ltd, North Vancouver

FIG. GP 80-P1

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GEOLOGY, PANNING, W, Sn, Au GEOCHEMISTRY

PIKA AREA BOOT CLAIM GROUP

GRASS PROJECT

SCALE 1:5,000

100 50 0 50 100 200 300 400 500 Metres

To Accompany Report Dated Jan/81

ASSOCIATION OF PROFESSIONAL ENGINEERS OF THE YUKON TERRITORY
J. LATHRO
GEOLOGICAL
ENGINEER
Jan 81

TOPOGRAPHY FROM ORTHOPHOTO MAP

TOPOGRAPHY FROM CLAIM MAP 105G-6

MARMOT CLAIM GROUP

BOOT CLAIM GROUP UNSTAKED

BOOT CLAIM GROUP UNSTAKED

Spud Creek

PMO Creek

FAULT GOUGE