AN ASSESSMENT REPORT DETAILING
THE 1980 DIAMOND DRILLING PROGRAM
ON THE M.U.T. 5 CLAIM

located in the NELSON MINING DIVISION
14 km. south of SALMO, B.C.

NTS 82F/3

49°05' NORTH LATITUDE: 117°12' WEST LONGITUDE

by

M.D. Bradley
E. Meszaros

'80-807-8564

November 28, 1980

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E. Meszaros

submitted: NOVEMBER 28, 1980.

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SUMMARY:

During the period April 11 to May 15, 1980 a total of 478.7 m of diamond drilling was completed in three holes over "M.U.T. Hill" on the M.U.T. 5 claim. The M.U.T. claims (84 units) are owned by Mr. I. Sutherland and Mr. J. Mirko under option to Benson Mines and BP Minerals Limited. The work described in this report was paid for by BP Minerals.

Hole M.D.H. 80-1 was abandoned at 44.66 m due to technical problems.

Hole M.D.H. 80-2 was sited between previously drilled holes 77-1 and 78-2. The target was an MoS_2 mineralized intrusion indicated at the bottom of the previous holes. Hole 2 cored 169.38 m of hornfelsed argillite to encounter subeconomic MoS_2 concentrated in quartz $\pm$ sericite veinlets, in numerous granitic dykes. A hydrothermal system in the area is suggested by: numerous veins and skarns in the hornfelsed argillite, by aplite dykes - barren in the upper hornfels section but MoS_2 mineralized at lower levels and by progressively increasing veining and alteration of the argillite toward the bottom of the hole.

Hole M.D.H. 80-3 was collared 680 m west of hole 80-2 and drilled 200 m of monotonous, unaltered argillite.

A single intrusion of some size was not intersected. The target of an Mo-W mineralized porphyry system is

indicated but remained untested. Further drilling in the area of Hole M.D.H. 80-2 is recommended.

INTRODUCTION:

During the period April 11 to May 15, 1980 a total of 478.7 m (1570') BQ diameter diamond drilling was completed in 3 holes on the M.U.T. 5 claim. The drilling was contracted to Wright Drilling Ltd. of Kamloops, B.C. A Komatzue 65E bulldozer was contracted from Pine Tree Logging of Salmo, B.C., to plow and grade the access road, to construct 2 water reservoirs and to mobilize, move and demobilize the diamond drill.

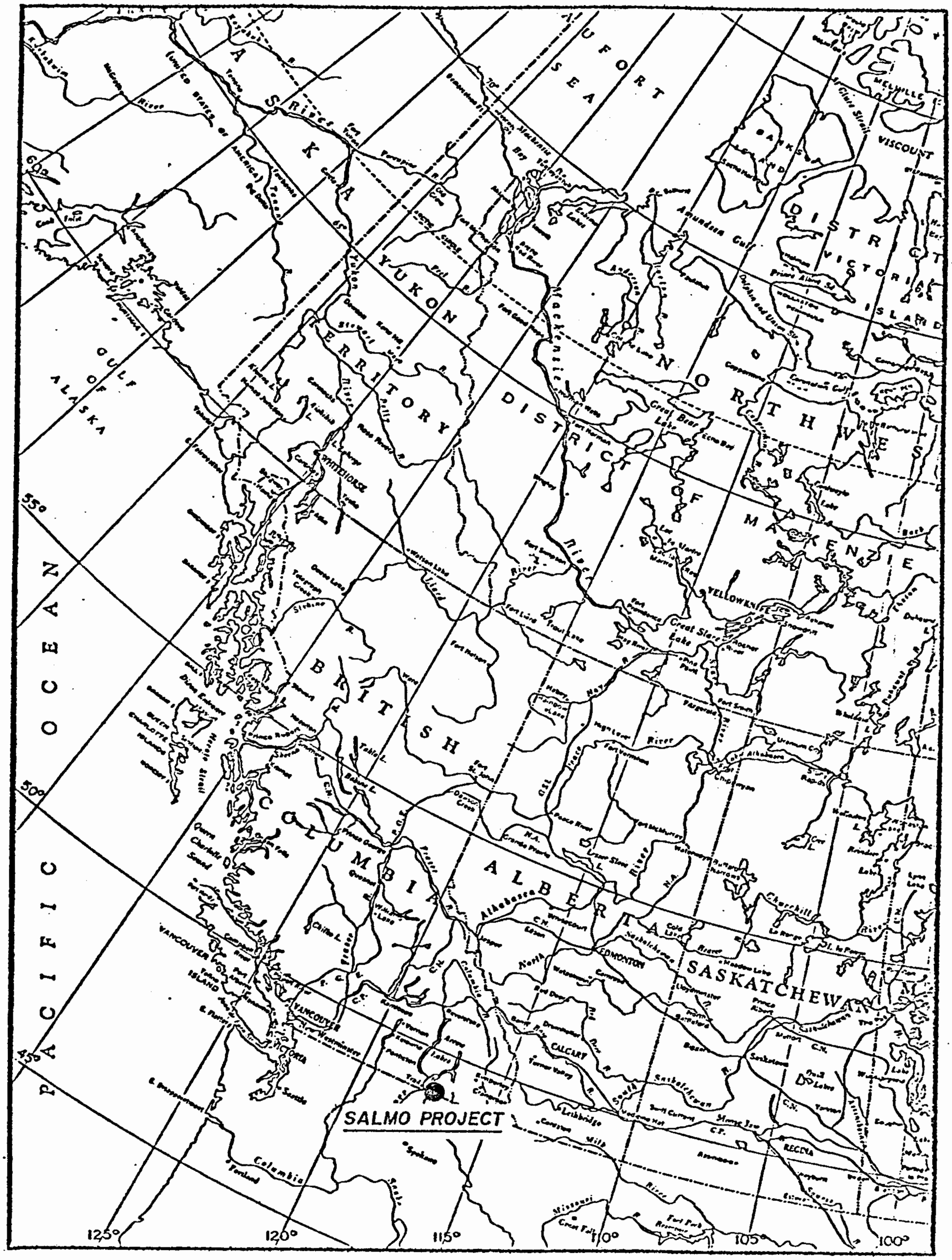
The total cost of the drilling program was approximately $58,775. The drilling was sited to: a) transect a mineralizer intrusive inferred from previous drilling and surface exploration and b) to test a zone of Zn-Ag-Mo-Cu/F geochemical anomaly located during 1979 surveys.

The core was logged and split on site and is currently stored at the 1979 campsite on "M.U.T. Hill". The lower 65 m of hole 80-2 and selected sections of holes 80-1,2,3 are stored in Vancouver. The bulk of the core is stored on site at the 1979 drill camp on "M.U.T. Hill".

This report is submitted in support of applied assessment credits to a total of $58,775.

LOCATION AND ACCESS: (See Figure 1 and 2)

The M.U.T. claims are located in southeastern B.C. in the Nelson Mining Division (N.T.S. 82F/3 at 49^{o} 05'



SCALE 1:15 840,000 OR ONE INCH TO 250 MILES

MILES 100 50 0 100 200 300 400 500 MILES

KILOMETRES 100 0 100 200 300 400 500 600 700 800 KILOMETRES

Federal Capital ....● Provincial Capital ....●
Railways ....

BP Minerals Limited

LOCATION MAP
SALMO PROJECT
MUT CLAIMS, B.C.

SCALE		NTS 82 F3	FIG. 1
DWG.No. 80-39	DATE FEB. 1980	PROJ. 517	
To accompany report: BPVR 79-34			

North Latitude and 117°12' West Longitude). The claims cover the north and south sides of the Lost Creek Valley road approximately 38.4 air kilomtres east of Trail and 14 air kilometres east-southeast of Salmo, B.C.

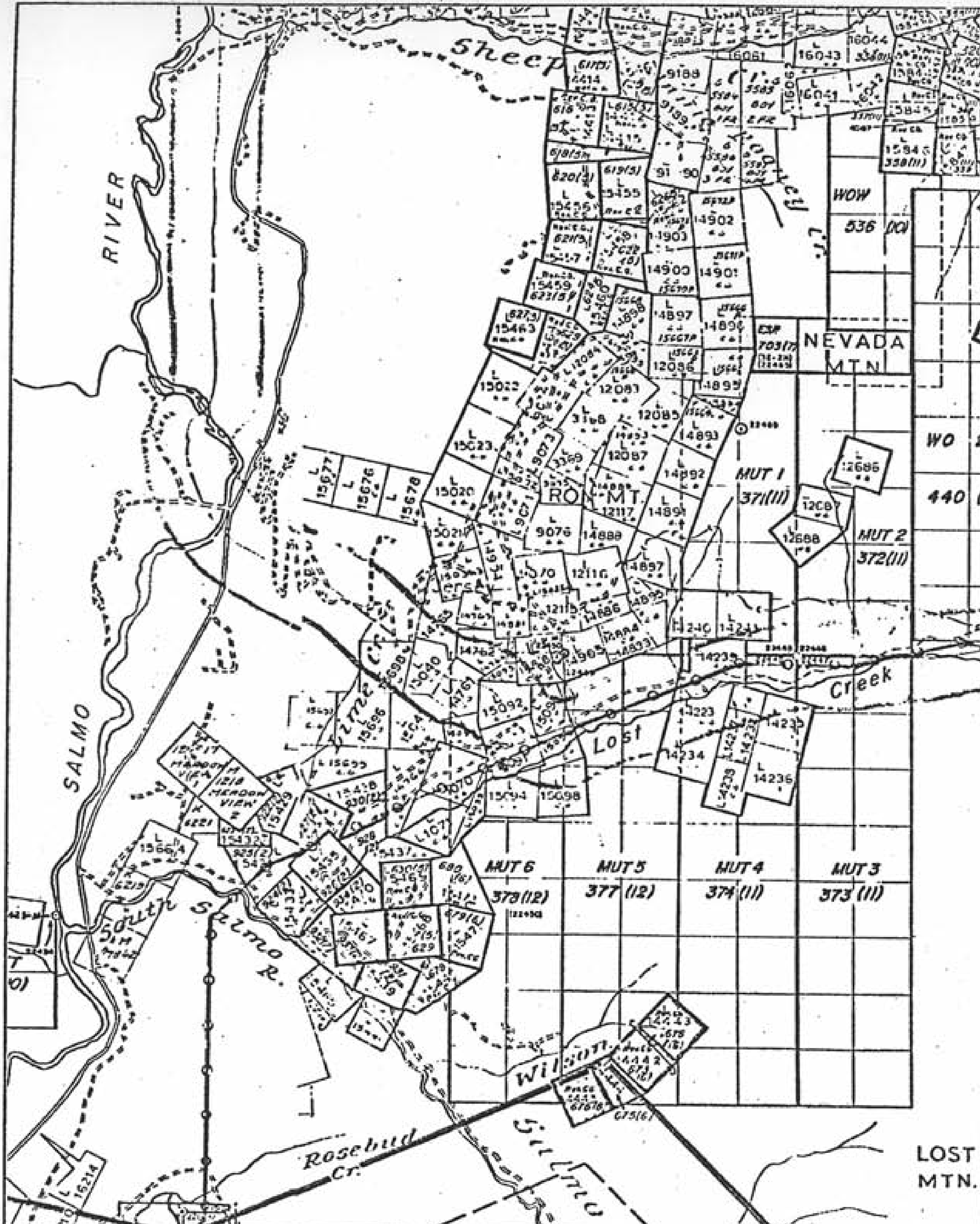
The drill camp on "M.U.T. Hill", between Wilson Creek and Lost Creek, and much of M.U.T. claims 5 and 6 are accessible by a good 4 wheel drive road, which runs 6.5 kilometres north from Highway 3, at a point 2.2 kilometres east of Highway 6 (Salmo-Nelway).

M.U.T. claims 1 and 2 are accessbile by a poor quality 4 wheel drive road, located on the north side of Lost Creek. The road trends eastward from the Jersey Mine and closely follows the 1,250 metre elevation contour. Access to Nevada Mountain is by helicopter from Trail; 40 air kilometres to the west, or from Castlegar; 42 kilometres to the northwest.

CLAIMS OWNERSHIP, STATUS AND ASSESSMENT CREDIT: (See Figure 2)

The M.U.T. claims are owned by Mr. John M. Mirko and Mr. Ian G. Sutherland and held by Benson Mines Ltd., under an option agreement. An option agreement between Benson Mines Ltd. and BP Minerals Limited for further exploration, was finalized on June 5, 1979.

The M.U.T. property comprises 6 mineral claims, containing 84 units. These claims are regrouped (Noevember 28, 1980) as M.U.T. "D".



0 .5 1 Miles

0 .5 1 Kilometres

BP Minerals Limited

M.U.T. CLAIMS
LOCATION MAP

SCALE 1:50000		NTS 82 F/3		FIG. 2
DWG No. 80-40	DATE FEB. 1980	PROJ.	517	
To accompany report: BPVR 79-34				

The component claims of M.U.T. Group "D" are as follows:

Former Grouping	Claims	Units	Record No.	Anniversary
M.U.T. Group A	M.U.T. 1	10	371 (11)	Nov. 30/84
	M.U.T. 4	16	374 (11)	Nov. 30/84
M.U.T. Group B	M.U.T. 2	10	372 (11)	Nov. 30/82
	M.U.T. 3	16	373 (11)	Nov. 30/82
M.U.T. Group C	M.U.T. 5	16	377 (12)	Dec. 7/85
	M.U.T. 6	16	378 (12)	Dec. 7/85

1980 assessment work credits are applied as follows:-

Claim	Units	Credit Years Applied	Assmt. Credit Dollar Value	New Anniversary Date
M.U.T. 1	10	2 yrs.	$ 4,000.00	Nov. 30/86
2	10	3 yrs.	6,000.00	Nov. 30/85
3	16	3 yrs.	9,600.00	Nov. 30/85
4	16	2 yrs.	6,400.00	Nov. 30/85
5	16	5 yrs.	16,000.00	Dec. 7/90
6	16	5 yrs.	16,000.00	Dec. 7/90
Total Assessment Credits:-	84	20 yrs.	$58,000.00	

HISTORY:

The M.U.T. claims were staked in November and December of 1976 by J. Mirko and I. Sutherland to secure ground adjacent to the Molly and Jumbo claims, suspected to contain economic concentrations of molybdenum and tungsten.

The general area has been extensively prospected since 1895, when the Southern Belle group (including the United Verde claims) were staked over silver-lead-zinc-gold mineralized quartz veins, south of Wilson Creek. Replacement lead-zinc-pyrite deposits in carbonate rocks were mined at the H.B., Jersey, Reeves-McDonald, and Hunter V mines from 1902 until 1957. Skarn tungsten deposits were mined at the Emerald, Feeney and Dodger properties during the 1950's. The Molly Mine, owned by Cominco, was operated from 1914-1917 and produced 25,000 pounds of molybdenite concentrate. Tungsten as scheelite, in association with molybdenite, was discovered in 1952 by J. Gallo. Trenching was initiated over a wide area of the Molly claims and on what is now the M.U.T. claims.

In 1977, Westwind Mines under option agreement with Mirko and Sutherland, conducted geological mapping, selective sampling of showings, grid establishment, road repair and 156.5 metres of AQ diameter diamond drilling in hole 77-1. Supervision and reporting on the 1977 project was by J. Montgomery, P. Eng., and G. Von Rosen, P. Eng.

An Assessment Report (#6667) by V.M. Ramalingaswamy indicates an aplitic intrusion was intersected in hole 77-1 from 149.5 m - 156.5 m. The target for the drilling was skarn tungsten-molybdenite mineralization at an hypothesized granite-limestone band contact.

In 1978, Benson Mines Ltd., drilled 454 metres of AQ core in diamond drill holes 78-1, 78-2, 78-3. Hole 78-1 penetrated 116.7 m of argillite and minor limy argillite before termination in broken ground. Hole 78-2, declined 70^{o}, bearing northwest, cored 226.52 m of argillite and terminated at 236.28 m in aplite. Hole 78-3 was collared 5 m south of the M.U.T. Adit on Lost Creek, and drilled vertically for a total of 101.8 metres. The hole intersected granite and interbedded argillite, siliceous sediments, skarn and argillite. Narrow intersections of skarn assayed from .18% to 1.6% Wo_3 with accessory MoS_2 from 0.02% to 0.03%. Additional mapping, road drill site construction sampling of the M.U.T. Adit, United Verde and 1% showings were also completed during this summer.

In 1978 Cominco completed a substantial diamond drilling program in the limestone - Lost Creek granite contact area of the Molly claims. The extent and results of this program are not known to the author.

BP Minerals optioned the M.U.T. claims from Benson Mines in 1979. A 150 m x 50 m cut grid was established on M.U.T. claims 3-6. Geological mapping was completed at a scale of 1:5,000 and 1,175 soil samples were collected on the M.U.T. grid. A ground magnetometer, scintillometer, and E.M.-16 survey were also completed on the grid.

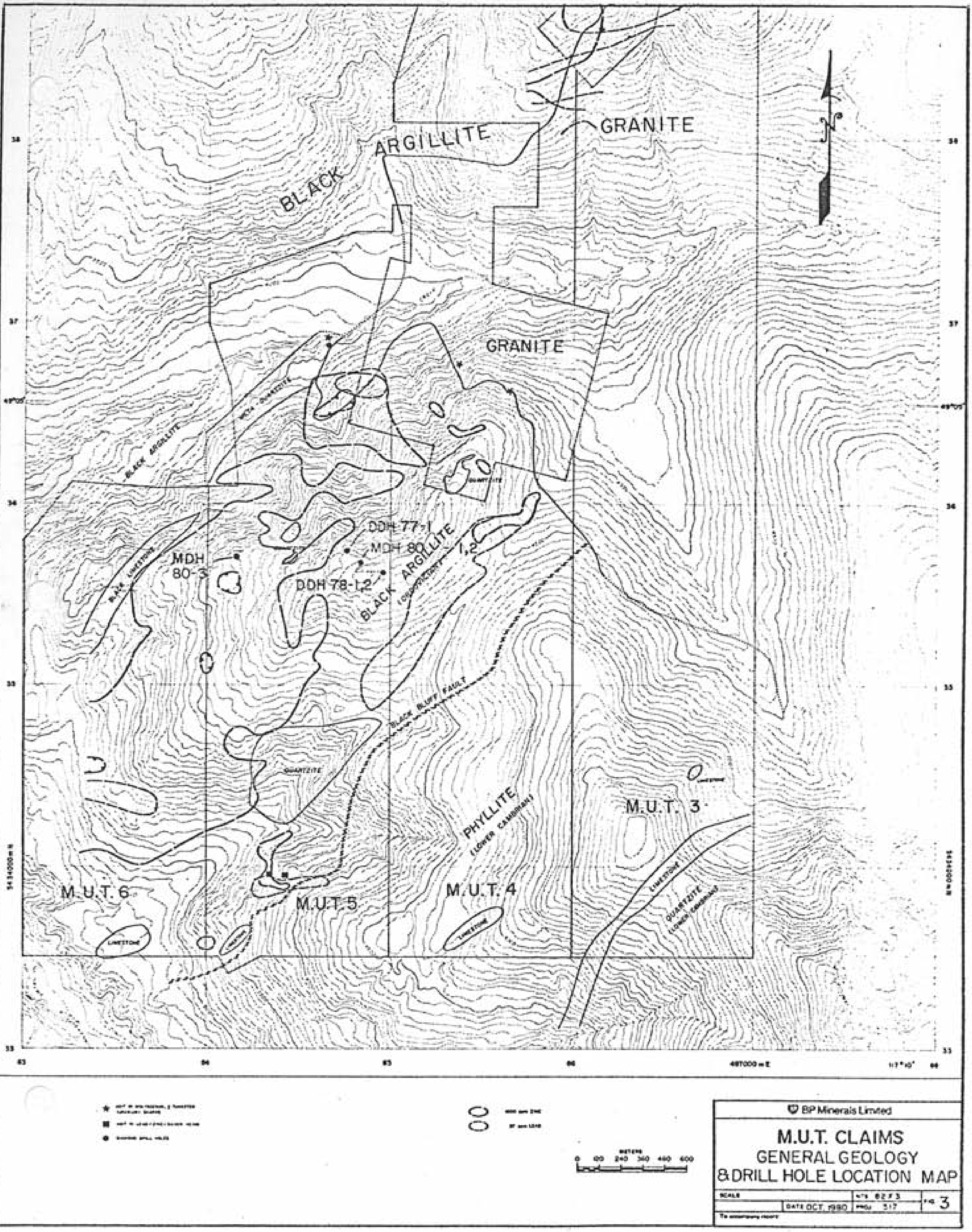
Recommendations in the 1979 BP report included further drill testing of: a) the aplitic intrusion indicated at the bottom of drill holes 77-1 and 78-2 and b) of an elliptical, zoned Zn-Mo-Cu/F geochemical anomaly on the north side of M.U.T. Hill.

This report discusses the 1980 diamond drilling program on M.U.T. claim 5, which was conducted by BP Minerals Limited.

<u>GENERAL GEOLOGY</u>: (See Figure 3)

The M.U.T. claims lie near the southern end of the Kootenay Arc; a curvilinear structural belt of upper Proterozoic to lower Palaeozoic, miogeosynclinal metasediments. The Paleozoic formations are separated into 3 northeast to north trending belts, by 2 southeastward dipping thrust faults of regional extent.

The belt rocks have been subjected to two periods of intense folding. Bedding and thrust faults are common, particularly in the argillites. Structure in the belt rocks is everywhere subparallel to the curvature of the Kootenay Arc. The Kootenay Arc has a marked flexion from northerly to east-west in the M.U.T. claims area.


GRANITE
BLACK ARGILLITE
GRANITE
BLACK ARGILLITE
DDH 77-1
MDH 80
MDH 80-3
DDH 78-1,2
BLACK ARGILLITE
1,2
QUARTZITE
BLACK BLUFF FAULT
QUARTZITE
PHYLLITE
(LOWER CAMBRIAN)
LIMESTONE
M.U.T. 3
LIMESTONE
QUARTZITE
(LOWER CAMBRIAN)
M.U.T. 6
M.U.T. 5
M.U.T. 4
LIMESTONE
LIMESTONE
487000 m E
METERS
0 120 240 360 480 600
BP Minerals Limited
M.U.T. CLAIMS
GENERAL GEOLOGY
& DRILL HOLE LOCATION MAP
DATE OCT. 1980
82 F 3
317
3

The western "Mine Belt" and the "Eastern Belt" are comprised of Cambrian rocks of the Laib, Reno and Quartzite Range Formations. Dolomitized zones in limestone of the Reeves Member of the Laib Formation, have been productive for Pb-Zn deposits in the "Mine Belt".

A central "Black Argillite Belt" contains argillite and lesser calcareous argillite, limestone, and skarn of the ordovician Active Formation.

The M.U.T. claims are underlain by rocks of the "Black Argillite" and "Eastern Belts", intruded by granite of the Lost Creek Stock. The contact between the two belts is marked by the Black Bluff Thrust Fault, which trends northeastward along the eastern side of Wilson Creek.

The oldest rocks of the Eastern Belt are quartzites; they form the core of the Sheep Creek Anticline, which is centered on Lost Mountain, to the southeast of the claims. To the northwest, and upsection, the quartzites contact Reeves Member limestone of the Laib Formation. The Reeves member is overlain by intensively deformed phyllite and muscovite schist of the (Cambrian) upper Laib Formation. The phyllites are thrust over argillites of the ordovician Active Formation, along the Black Bluff Fault.

Exploration activity on the M.U.T. and Molly claims has focused on the Active Formation and its contact areas with the Lost Creek Stock. The formation is predominantly composed of black argillite with thin interbeds of carbonaceous limy argillite and quartzite. A bed of carbonaceous to argillaceous limestone which occurs on M.U.T. 6 above Lost Creek, grades eastward into siliceous limy quartzite and hornfels. The bed is altered to mineralized, pyrrhotite-garnet-diopside skarn, in contact with aplitic granite, at the margin of the Lost Creek Stock.

Several hornfels zones are noted in argillite on "M.U.T. Hill". Numerous tremolite-wollastonite skarns occur in narrow limy argillite beds on M.U.T. 5 and 6; these contain variable but commonly low-grade quantities of scheelite. A small but very high grade MoS_2 deposit, was mined on the Molly claims from 1914-1917. The MoS_2 is concentrated in a jointed zone of fine-grained to aplitic granite at the southwestern margin of the Lost Creek Stock contacting Active Formation argillite and limy argillites. Tungsten as scheelite is found in nearby bedded replacement bodies which occur in 1-3 m thick beds of limestone.

The presence of a porphyry molybdenum system beneath the "M.U.T. Hill" is suggested by a) fine-grained MoS_2 in cross cutting quartz veins with potassic and phyllic alteration selvedges, in aplite intersected at the bottom of drill holes 77-1 and 78-2, and b) geochemical anomalies on the northwest slopes of "M.U.T." Hill".

DIAMOND DRILLING REPORT:

i) Physical Work:

A Komatzue 65E bulldozer was contracted from Pine Tree Logging of Salmo, B.C. to clear the M.U.T. access road and drill camp of snow. In addition, two reservoir pits were dug to pond local seepages for use in the drilling program. The bulldozer mobilized the drill and supplies from Highway 3 to "M.U.T. Hill", leveled drill sites, then moved and demobilized the drill at project end.

The machine was used during the period April 11th to May 13th, 1980 for a total of 42 hours, at a contract rate of $53.50/hour.

ii) Geological Description of Diamond Drill Hole M.D.H. 80-1:

Hole M.D.H. 80-1 was sited approximately 130 m northwest of hole 78-2, at an elevation of 1,494 m. The hole was declined -80^{o} on a bearing of azimuth 315^{o} and drilled to a depth of 44.66 m. A synopsis of the hole follows:-

Interval	Main Lithology	Secondary Features	
0-2.85 m	Casing in Black Argillite	Limonite on foliation	
2.85-43.97	Black Argillite	2.85-3 m	Tremolite Skarn
	" "	6.56-7.36 m	Aplite Dyke
	" "	16.7-17.14 m:	Scapolite Hornfels plus 8% pyrite
	" "	29-29.4 m:	silicified bx + 10% f.g. py
	" "	30.7 m:	Fault
	" " " "	38.24-38.8 m:) 37-37.8 m:)	Qtz-Biotite Hornfels
	" "	37.8-38.24 m:	Aplite Dyke
	" "	41.75-42.1 m:	Fault?
	" "	41.75-41.9 m:	Sheared, graphite on frac.
	" "	42.4-.6 m:	Chloritized aplitic(?) dyke
43.97-44.51	Aplite	Chloritized	
44.51-44.54	Fragments of Graphite and Argillite	Bit shatters and hole is abandoned.	
END OF HOLE:			

The predominant unit cored in this hole is Black Argillite. The unit is characteristically carbonaceous and well bedded at 75^{o}-85^{o} to the core axis (t.c.a.). Bedding is marked by thin laminations and by small vugs. A prominent foliation is noted in the interval 20 m to 28 m at 55^{o}-65^{o} t.c.a. A 1 m thick calcareous bed at 35 m downhole is porous and friable due to alternating thinly laminated, silty and calcareous layers. Argillite is commonly unaltered to weakly hornfelsed and contains 1/2% fine-grained blebby pyrite and, pyrrhotite with lesser sphalerite. The section from 26-44 m contains > 1% fine-grained pyrite and lesser pyrrhotite, along bedding and in occassional 1 cm thick bands. Limonite and goethite commonly occur in fractures down to 13 m, suggesting that leaching of sulphides is active to this depth.

Altered zones in the argillite unit; (listed under Secondary Features above) such as tremolite skarn, scapolite hornfels, silicified breccia (bx) and quartz-biotite hornfels occur over narrow intervals. The altered zones are marked by increased silica and pyrite content. The higher temperature, quartz-biotite hornfels occurs as an alteration envelope to a narrow aplite dyke. The hornfels envelope below this dyke is highly quartz veined and contains minor disseminated fine-grained scheelite and very fine-grained molybdenite.

The aplite dykes are fine-grained, equigranular, grey, grey-brown and green coloured rocks; similar in appearance to an arenite. The dykes contain minor carbonate and up to 1% very fine-grained matrix biotite, in part altered to chlorite. The dyke at 37.8 m contains 3% disseminated fine-grained magnetite and has strongly altered the argillite country rock.

The silicified pyritic breccia at 29 m contains subrounded to subangular fragments of silicified argillite up to 2 cm in diameter, outlined by fine-grained pyrite.

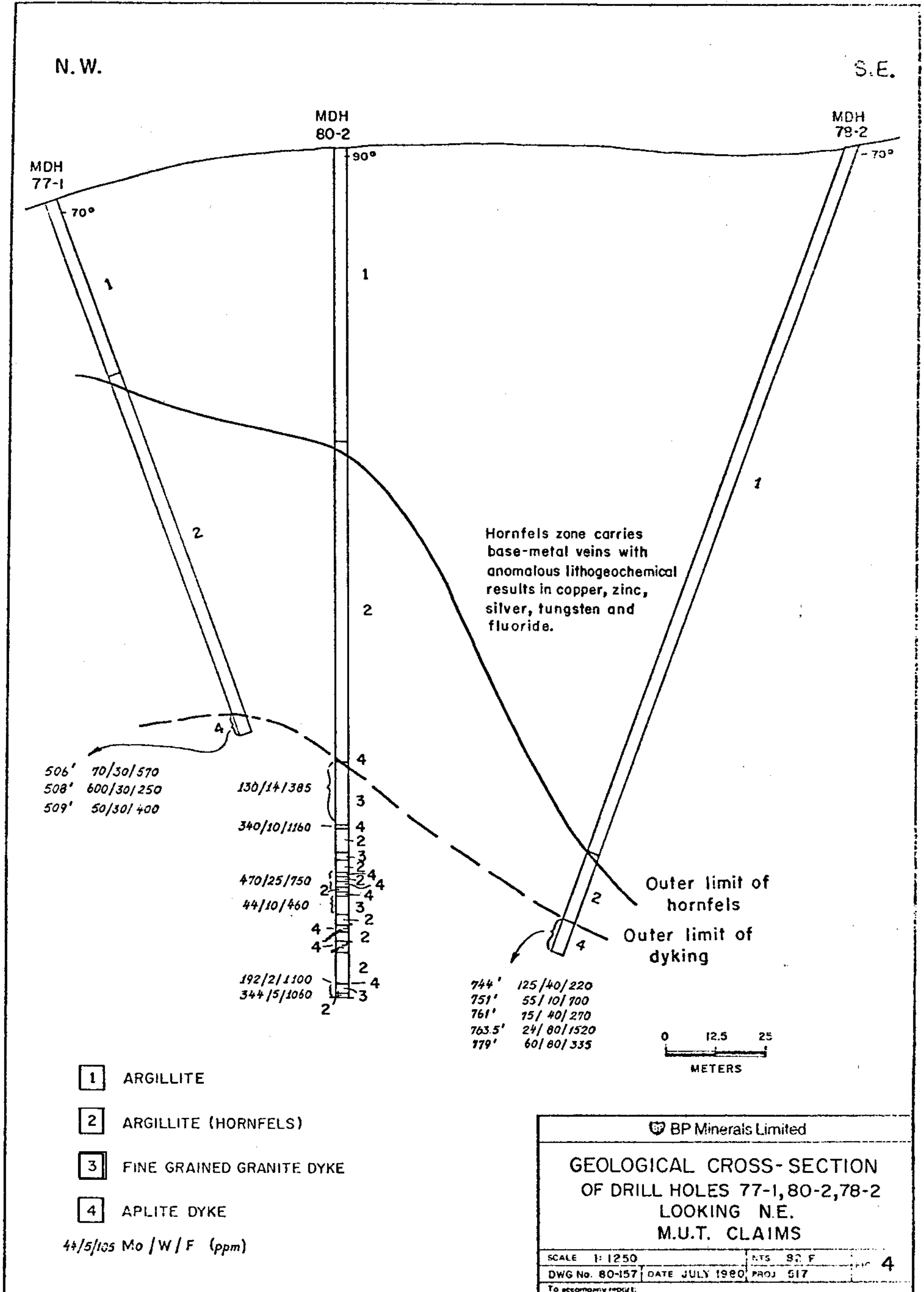
The hole was abandoned at 44.54 m. The drill was left unattended with the rods downhole during a lightning storm. When drilling resumed after the storm abated, coring would not proceed. The rods were pulled and it was discovered that the reaming shell was fractured and the bit shattered, leaving the bit crown downhole. Unsuccessful attempts were made to chop out and drill through the bit crown. It is speculated that a lightening strike caused destruction of the bit.

iii) Geological Description of Diamond Drill Hole M.D.H. 80-2: Hole 2 was drilled vertically from the collar of hole 1.

Interval	Main Lithology	Secondary Feature
0-1 m	casing in Black Argillite	limonite on fractures and foliation
1-80 m	Black Argillite	Aplite: 12.05-14.13, 44.97-45.03 (?), 46.95-47.15 (?) Faults: 71.1 → .5; 76.9-77.05 (70°) - bedded, occasionally banded py/po, 1-5% - po/py ± sph. ± galena 1-5% in narrow hornfels - 1 MoS_2 bearing qtz. v. @ 75.6 m
80-146 m	Weakly Hornfelsed Argillite	Faults: 97.1 and 97.5 (shear) - a few calc-silicate hornfels zones in the section associated w. silicified zones and/or qtz.vs. - commonly carry greater amounts of po/py ± sph. ± cp ± scheelite. - numerous qtz. vs. subparallel to foliation; some have qtz. ± biotite ± garnet selvedges - a few qtz. vs. carry trace v. f.g. MoS_2 from 107.6-146 m.

Interval	Main Lithology	Secondary Features
		- moderate to strong hornfelsing of argillite throughout - numerous zones of intense silicification - quartz-biotite hornfels common near contact with the granite - a few gypsum fracture-fill veins noted near top of section
146-169.38	Hornfels	- qtz. vs. with silicate $\pm$ garnet $\pm$ biotite selvedges; carry py/po $\pm$ sph $\pm$ cp $\pm$ MoS_2 $\pm$ fluorite; are found throughout section but common near granite - v.f.g. MoS_2 no pyrite found in wide spaced gray coloured qtz. vs. throughout. - marked increase in qtz. veining and disseminated, fracture-fil and vein fill sulphides 164-169.38 m
169.38-169.51	Aplite	- upper contact highly silicified with trace MoS_2, pyrite, contact sharply gradational - cut by f.g. granite dyke
169.51-186.9	Fine Grained Granite	- weak pervasive sericitization - v.f.g. MoS_2 plus pyrite in numerous gray quartz veins and micro veinlets and in fractures - MoS_2-qtz. vs. cut by sheeted hairline fr. infilled with sericite
186.9-188.05	Aplite	- pervasive weak sericitization except intense granite contact and 187.3→.7. - very numerous qtz.-MoS_2 veins and micro veinlets, some x cutting

Interval	Main Lithology	Secondary Features
188.05-195.47	Quartz-Biotite Hornfels	- v.f.g. MoS_2 in a few qtz.-ser. micro-vs. - hornfels altered to biotite hornfels - biotite hornfels cut by qtz.-ser.vs. and silicified
195.47-196.52	Fine-Grained Granite	- silicified and seritized zones - minor MoS_2 with 2 qtz.-ser vs.
196.52-200.72	Quartz-Biotite Hornfels	- strongly silicified zones - qtz.vs. w. garnet selvedges carry po, py minor sphalerite - biotites, altered to chlorite
200.72-206	Quartz-Biotite Hornfels with Aplite Dykes	- a few qtz. micro-v. carry MoS_2 - Aplite: 200.55 → .6, 200.72-201.12, 202.16 → .8, 203.16 → .56 205.44 206.
206 – 211.47	Fine-Grained Granite with Aplite Dykes	- numerous MoS_2 bearing qtz.-ser. ± py. micro vs. in aplite, fewer seen in granite - Aplite: 206.33 → .63, 206.9 207.3, 207.65 → .95, 208.08 → .45, 209.04 → .1, 209.9-210.6, 211 → .47
211.47-230.1	Quartz-Biotite Hornfels with Aplite Dykes	- several qtz. and qtz.-ser.vs. have biotite and silica altn. envelopes. - dissem. and fr. fill MoS_2 in several qtz. ± ser. vs. - Aplite: 215.03-216.44, 219.25-220.87
230.1-232.94	Fine Grained Granite	granite sericitized by sheeted sericitic hairline fr. - numerous hairline fractures and some qtz.vs. carry v.f.g. MoS_2 - Sericitized Aplite: 230.1 → .6; 232.86 → .97 - Biotite Hornfels: 232.97 - 233.84 m


N.W.
S.E.
MDH 77-1
MDH 80-2
MDH 78-2
70°
90°
70°
1
1
1
2
2
2
4
Hornfels zone carries base-metal veins with anomalous lithogeochemical results in copper, zinc, silver, tungsten and fluoride.
506' 70/30/570
508' 600/30/250
509' 50/30/400
130/14/385
340/10/1160
470/25/750
44/10/460
192/2/1100
344/5/1060
Outer limit of hornfels
Outer limit of dyking
744' 125/40/220
751' 55/10/700
761' 15/40/270
763.5' 24/80/1520
779' 60/80/335
0 12.5 25
METERS
1 ARGILLITE
2 ARGILLITE (HORNFELS)
3 FINE GRAINED GRANITE DYKE
4 APLITE DYKE
44/5/105 Mo / W / F (ppm)
BP Minerals Limited
GEOLOGICAL CROSS-SECTION
OF DRILL HOLES 77-1, 80-2, 78-2
LOOKING N.E.
M.U.T. CLAIMS
SCALE 1: 1250
NTS 82 F
4
DWG No. 80-157
DATE JULY 1980
PROJ 517
To accompany report:

The upper 80 m of the Black Argillite unit is well bedded and is altered in only a few narrow, widespaced zones. Bedding is common at 70^{o}-85^{o} t.c.a. and is well marked by vuggy sulphide laminations, by quartz microlaminations and by a few sections of thinly laminated silt and carbonate layers. A single foliation is present, varying in orientation from 50^{o}-65^{o} and marked by deformed and offset beds and by graphitic partings. Pyrite and lesser, pyrrhotite are common on bedding, in quantities up to 5% by volume of the rock. Sphalerite, as "Black Jack", is occasionally found on bedding as 2-5 mm diameter aggregates. Pyrite, pyrrhotite, and sphalerite (rarely chalcopyrite and galena are found in greater concentrations as disseminations, vein and fracture fill in the altered zones. The hornfels zones are marked by obscured bedding and a fine-grained, dense appearance in the argillite. Hornblende, actionolite, phlogopite, epidote, quartz and pyrrhotite are common in the hornfels. Quartz veining and silicification are more common in the lower part of this section and veins are oriented subparallel to foliation. Aplite dykes appear to intrude along foliation and superficially resemble weakly altered arenites. The dykes are equigranular fine-grained, light gray-green in colour and contain minor epidote, biotite and chlorite. The higher level dykes are barren of sulphides and commonly have sharp, weakly altered contacts with the enclosing argillites.

The section 80-146 m is characterized by weak pervasive hornfelsing of the argillite. The argillite is dense and compact, though more fractured than in the upper 80 m. Bedding is rarely seen but a prominent "cryptic foliation" is commonly outlined by white quartz microveinlets. The effects of regional metamorphism are suggested by the prominent foliation and by subparallel, white, barren quartz veins and micro veinlets "sweated" into place during compaction and dewatering of the argillites. Graphite occurs on several fractures and shears. Hydrothermal effects are suggested by the increased occurrence of calc-silicate hornfels and silicified zones and by numerous sulphide bearing quartz veins and micro-veinlets with alteration envelopes. Pyrite, and pyrrhotite with lesser sphalerite and/or chalcopyrite are found more frequently in quartz veins and altered zones, than is matrix disseminations. A few widely scattered quartz veinlets, in the interval 107.6 to 146 m, are found to contain minor concentrations of very fine-grained MoS_2 on their walls.

The interval 146 to 169.38 m is moderately to strongly hornfelsed. The section has numerous pervasive zones of intense silicification and calc-silicate hornfels, containing sulphides. Quartz veins with 1/2-1% pyrite, pyrrhotite and lesser sphalerite and chalcopyrite are common in the section. The veins commonly have fine-grained garnets lining their walls and selvedges of silica and of black biotite moderately altered to chlorite. Numerous hair-line fractures contain biotite altered to chlorite. Zones of biotitization are common in the interval 165-169.38, near contact with the aplite. Very few MoS_2 bearing quartz veins are noted in the hornfels section.

The interval from 169.38 m to the bottom of the hole at 233.84 m contains equal amounts of Biotite Hornfels and Granitic dykes. The biotite hornfels is cut by 5-10 quartz ($\pm$ sericite $\pm$ garnet $\pm$ pyrrhotite $\pm$ pyrite) veins per meter and locally silicified and chloritized. While quartz-sericite veinlets with quartz-sericite envelopes are most common in the hornfels, quartz-biotite veins carrying sulphides, with biotite envelopes are also present. The hornfelsed sections contain 2 to 5 (rarely 9) grey quartz $\pm$ biotite or $\pm$ sericite veins per meter, which carry visible MoS_2. The hornfels is cut by numerous narrow aplite dykes and by fewer but larger, fine-grained granite dykes. Dyke contacts are commonly irregular at 60^{o}-75^{o} t.c.a. and are sharply gradational. The gradational zone is marked by silicification and peripheral chloritization of biotite.

Fine-Grained Granite is the most voluminous of the intrusive dykes, occupying three times the volume of the section as does aplite. The granite dykes are light gray to gray-green in colour, contain up to 3% fine-grained biotite and rarely, 2% fine- grained, subporphyritic quartz phenocrysts. The larger dyke in the interval 169.5 to 186.9 m is pervasively weakly sericitized - occasionally strongly so adjacent to quartz veins. The smaller granite dykes are strongly silicified and sericitized adjacent to quartz-sericite veins. The granite contains trace disseminated and up to 1/2% vein and fracture fill, fine-grained pyrite. Granite is cut by numerous quartz and quartz-sericite veins at 15^{o}-30^{o} t.c.a. It is noted that barren quartz-sericite veins at 45^{o} t.c.a. and sheeted sericite hair-line fractures at 20^{o} t.c.a. are seen to cross-cut and (rarely) offset, quartz-MoS_2 veins at 20-30^{o} t.c.a. An average of 3 to 5 quartz $\pm$ sericite veins per meter, in the main dyke, contain visible fine-grained MoS_2. Where the granite is cut by aplite dykes (55^{o}-65^{o} t.c.a.) it is strongly sericitized and the number of quartz-sericite and quartz-MoS_2 $\pm$ sericite veins increases. The contact relationships between fine-grained granite and aplite, suggest that they were intruded penecontemporaneously. In three instances granite dykes in hornfels have gradational aplitic contacts. In one such instance a narrow fine-grained granite dyke intrudes aplite. Numerous sheeted aplite dykes cut and alter granite in the interval 206-211.47 m.

Aplite dykes cut both the hornfels and granite dykes and commonly are less than 1 meter in apparent width. The aplites are very fine-grained equigranular, light gray to green in colour and contain up to 3% irregularly distributed fine-grained biotite. The aplite is cut and locally strongly sericitized, by numerous quartz veins. Aplite may contain sections of sheeted fractures infilled with sericite.

Aplite dykes commonly contain numerous MoS_2 bearing quartz $\pm$ sericite veins and microveinlets.

Hole 2 was terminated at 233.84 m in biotite hornfels when cave from a fault, located at 216.8 m, could not be stabilized, filled the hole and caused continuous excessive bit wear.

iv) Geological Description of Diamond Drill Hole M.D.H. 80-3:

Hole M.D.H. 80-3 was collared 500 m north of the main access road at 501 + 45 N, 492 + 60 m near the edge of the steep north slope of "M.U.T. Hill"; elevation 1,265 m. The hole was drilled vertically to a depth of 200 m. The purpose of the hole was to locate a subsurface, possibly hydrothermal, source for the zoned Zn/Ag/Mo/Cu/F geochemical anomaly positioned on the slopes of "M.U.T. Hill". Several prospecting traverses over the anomaly zone failed to locate concentrations of economic sulphide minerals.

The hole cored a 200 m section of monotonous, grey-black argillite. The argillite has a persistent, prominent and convoluted bedding foliation at 50^{o} to 70^{o} t.c.a., marked by alternating laminations of graphitic material and quartz. The narrow quartz laminae commonly contain less than 1% fine-grained pyrrhotite and lesser pyrite. A single 10 cm wide aplite dyke was found subparallel to foliation at 29.05 m. A quartz veinlet nearby at 27.7 m carrys minor fine-grained MoS_2. The section 91 m to 95 m contains several quartz veins with siliceous alteration envelopes and quartz-scapolite-amphibole veins containing up to 2% pyrrhotite, 1/2% pyrite and 3% sphalerite. Quartz-scapolite veins also occur in the intervals 117 to 120 m, 131 m, 135 to 144 m, 153 to 162 m, 189 to 191 m. Larger quartz veins containing pyrrhotite, pyrite and sphalerite become more numerous below 100 m.

A few quartz veins containing sulphides with epidote $\pm$ garnet selvedges occur from 108 to 114 m and below 183 m. A highly graphitic zone from 106.7 to 107.5 m is healed with quartz and calcite and contains some sphalerite. This zone may mark a major fault at 60^{o} t.c.a., as bedding foliation on the footwall is highly convoluted and laminae contain more massive concentrations of vein quartz $\pm$ garnet plus pyrite, pyrrhotite, and spahlerite to 3% by volume. The convoluted massive quartz veins give the argillite a "marbled" appearance.

While numerous sulphide bearing quartz and quartz-scapolite veins occur over narrow sections, the argillite unit as a whole showed but little alteration down to 200 m. It was decided that a hydrothermal source for the veins was at some depth and/or lateral distance and that the hole should therefore be terminated.

v) Results:

The results of geochemical analysis of diamond drill core for Mo,Cu,Pb,Zn,Ag,Sn,W,F are presented in Tables 1 to 3

TABLE 1

TRACE ELEMENT ANALYSIS OF M.D.H. 80-1 CORE

Sample I.D.	Interval (metres)	Rock Type	Feature of Interest	TRACE ELEMENTS (ppm) Mo	Cu	Pb	Zn	Ag	Sn	W	F
579280	9-12	Black Argillite	1/2% f.g. bedded pyrite	15	54	4	480	1.0	0	18	940
579281	15-18	Black Argillite	16.7-17.14: hornfels W. 8% diss. py. + py.vs.	11	52	2	680	1.2	0	10	750
579282	27-30	Black Argillite	29-29.4: sil. hornfels bx. + 10% diss. and f.f. py.	20	60	4	1560	1.2	2	2	1010
579283	36-39	Black Argillite	37.3 .8: hornfels; 37.8-38.24 aplite + 3% mgt.	31	116	4	1920	0.4	2	90	2370

TABLE 2

TRACE ELEMENT ANALYSIS OF M.D.H. 80-2 CORE

Sample I.D.	Interval (metres)	Rock Type	Feature of Interest	TRACE ELEMENTS (ppm) Mo	Cu	Pb	Zn	Ag	Sn	W	F
579201	1-3	Black Argillite	2% f.g. py. on bedding fractures	16	40	2	128	1.2	2	120	540
579202	3-6	Black Argillite	2% f.g. py. on bedding fractures	14	44	2	96	1.2	2	50	800
579203	6-9	Black Argillite	2% f.g. py. on bedding fractures	17	48	2	146	1.2	2	20	740
579204	9-12	Black Argillite	2% f.g. py. on bedding fractures diabase dyke 8.84-9.05 m	-	-	-	N.A.	-		-	-
579205	12-15	Black Argillite; Aplite 12.05-14.13	1/2 - 1% py in vugs on bedding	-	-	-	N.A.	-	-	-	-
579207	15-18	Black Argillite	1/2 - 1% py in vugs on bedding	9	62	2	1040	2.2	0	2	900
579206	18-21	Black Argillite; wk. hornfels 19-20	2-5% py in vugs, 20% py + po in local bands	-	-	-	N.A.	-	-	-	-
579208	21-24	Black Argillite; w. hornfels bands	2-5% py on vugs, 20% py + po in local bands	-	-	-	N.A.	-	-	-	-
579209	24-27	Black Argillite	2-5% py on vugs, 20% py + po in local bands	11	40	2	236	0.8	2	15	800
579210	27-30	Black Argillite	2-5% py on vugs, 20% py + po in local bands	19	50	2	540	1.0	0	5	750

TABLE 2 (Continued)

TRACE ELEMENT ANALYSIS OF M.D.H. 80-2 CORE

Sample I.D.	Interval (metres)	Rock Type	Feature of Interest	TRACE ELEMENTS (ppm) Mo	Cu	Pb	Zn	Ag	Sn	W	F
579211	30-33	Black Argillite	5-7% py. in bands	-	-	-	N.A.	-	-	-	-
579212	33-36	Black Argillite	20% py, po; minor cp + sph in hornfels 33→.92m 5% py in vugs and along fractures	16	134	26	540	0.8	2	120	910
579213	36-39	Hornfelsed Argillite	2% diss. py, po, sph and 5% py + sph in bands	77	52	2	5100	0.6	2	2	1630
579214	39-42	Hornfelsed Argillite	2% diss. py, po, sph and 5% py + galena(?) in qtz. fr. fill	31	30	6	3500	0.2	2	5	2350
579215	42-45	Hornfels and Black Argillite	sph + po w. actinolite + calcite in fractures	16	62	2	1420	0.4	0	35	1950
579216	45-48	Black Argillite w. aplite dykes	5% in thin bands	8	46	12	290	0.2	2	0	800
579217	48-51	Black Argillite	5-10% py, po dissem. and in thin bands	10	64	4	242	0.4	2	5	1100
579218	51-54	Black Argillite	5% thinly banded py	11	40	4	204	0.2	0	0	910
579219	54-57	Black Argillite	20% po, py dissem. and banded in hornfels 55.6→55.7	-	-	-	N.A.	-	-	-	-
579220	57-60	Black Argillite	5% thinly banded py	12	44	2	154	0.2	2	0	970

TABLE 2 (Continued)

TRACE ELEMENT ANALYSIS OF M.D.H. 80-2 CORE

Sample I.D.	Interval (metres)	Rock Type	Feature of Interest	TRACE ELEMENTS (ppm) Mo	Cu	Pb	Zn	Ag	Sn	W	F
579221	60-63	Black Argillite	5-10% po, py, prominent in hornfels 60.23 → 60.77	-	-	-	N.A.	-	-	-	-
579222	63-66	Black Argillite	10% po + py in vugs	15	50	6	190	0.2	2	0	900
579223	66-69	Siliceous Hornfels	po, py in vugs and bands	-	-	-	N.A.	-	-	-	-
579224	69-72	Black Argillite	71.1 → 71.5 fault marked by bx, frac. and qtz. v.	25	60	6	490	0.2	2	10	1350
579225	72-75	Argillite and Hornfels	shear zones 72.1, 74, 74.3 m	-	-	-	N.A.	-	-	-	-
579226	75-78	Black Argillite	tr. Mo w. sericite adjacent qtz. v; 2 shear zones	24	72	16	540	0.6	0	2	1000
579227	78-71	Black Argillite	79-80 silicified veined zone. py diss. po in vs;	-	-	-	-	-	-	-	-
579228	81-84	Hornfelsed Argillite	po. in hornfels; qtz. vs. few sulphides	27	70	10	840	0.2	0	40	1900
579229	84-87	Argillite and Hornfels	qtz. vs. carry magnetite, hematite, pyrite	-	-	-	N.A.	-	-	-	-
579230	87-90	Hornfelsed Argillite	qtz. vs; zones of k-feldspar or garnet	35	114	6	3100	0.2	2	1400	2500

TABLE 2 (Continued)

TRACE ELEMENT ANALYSIS OF M.D.H. 80-2 CORE

Sample I.D.	Interval (metres)	Rock Type	Feature of Interest	TRACE ELEMENTS (ppm) Mo	Cu	Pb	Zn	Ag	Sn	W	F
579231	90-93	Hornfelsed Argillite	py, po on foliation; bx. qtz.v. + py, po, sph	-	-	-	N.A.	-	-	-	-
579232	93-96	Hornfelsed Argillite	py, po on fol. also 1-3% in qtz. vs.	36	58	8	450	0.2	2	30	1200
579233	96-99	Hornfelsed Argillite	silica alt. env. to qtz.vs. + po, py	-	-	-	N.A.	-	-	-	-
579234	99-102	Hornfelsed Argillite	numerous qtz. vs.on fol. + py, po, sph	33	64	8	650	0.2	2	15	1200
579235	102-105	Hornfels and Argillite	numerous qtz.micro v.+ py, po	-	-	-	N.A.	-	-	-	-
579236	105-108	Hornfelsed Argillite	skarned; MoS_2 in 1 qtz v; po, py in qtz.vs.	41	62	4	860	0.2	0	12	2000
579237	108-111	Hornfelsed Argillite	qtz.vs. with silica and sericite env. MoS_2 in 1 vein	-	-	-	N.A.	-	-	-	-
579238	111-114	Hornfelsed Argillite	qtz.vs. with silica and sericite env. MoS_2 in 2 qtz. vs.	53	58	2	710	0.2	-	20	2050
579239	114-117	Hornfelsed Argillite	biotite and silica env. to qtz vs; MoS_2 in 4 qtz.vs.	-	-	-	N.A.	-	-	-	-
579240	117-120	Hornfelsed Argillite	qtz vs and silicification, MoS_2 in 2 qtz.vs.	42	60	2	880	0.2	0	12	1050

TABLE 2 (Continued)

TRACE ELEMENT ANALYSIS OF M.D.H 80-2 CORE

Sample I.D.	Interval (metres)	Rock Type	Feature of Interest	TRACE ELEMENTS (ppm) Mo	Cu	Pb	Zn	Ag	Sn	W	F
579241	120-123	Hornfelsed Argillite	tr. scheelite and 5% po in skarn bands	-	-	-	N.A.	-	-	-	-
579242	123-126	Hornfelsed Argillite	trace scheelite and 5% po in skarn bands	29	94	2	4500	0.2	2	70	2450
579243	126-129	Hornfelsed Argillite	silicified zones, skarn bands, trace MoS_2 + scheelite in sil. zones	-	-	-	N.A.	-	-	-	-
579244	129-132	Hornfelsed Argillite	pervasive silicification, 2 MoS_2 qtz. vs. + bi/sil. selvidges	37	64	2	520	0.2	0	70	1950
579245	126-129	Hornfelsed Argillite	silicified zones, 4 qtz vs. + MoS_2, garnet skarn + F	-	-	-	N.A.	-	-	-	-
579246	135-138	Hornfelsed Argillite	silicification; 1 qtz.v. + MoS_2, qtz.vs.+ py (bi)	44	76	2	980	0.2	2	20	4600
579247	138-141	Hornfelsed Argillite	silicification; semi massive py. bands;	-	-	-	N.A.	-	-	-	-
579248	141-144	Hornfelsed Argillite	silicified zones; silica-garnet env. to qtz.vs.	32	56	4	338	0.2	0	0	1400
579249	144-147	Hornfels	silicified; biotite and silica-garnet env. to qtz.vs.-4 MoS_2 qtz.vs.	-	-	-	N.A.	-	-	-	-
579250	147-150	Hornfels	1 qtz-MoS_2 v. + garnet-diopside selv.	57	84	4	740	0.2	0	20	1650

TABLE 2 (Continued)

TRACE ELEMENT ANALYSIS OF M.D.H. 80-2 CORE

Sample I.D.	Interval (metres)	Rock Type	Feature of Interest	TRACE ELEMENTS (ppm) Mo	Cu	Pb	Zn	Ag	Sn	W	F
579251	150-153	Hornfels	qtz-garnet and qtz-epidote selv. to qtz.vs.	-	-	-	N.A.	-	-	-	-
579252	153-156	Hornfels	2 qtz.MoS_2 vs + po/sph/cp + frags. qtz. and feld.	50	74	4	1600	0.2	2	20	1350
579253	156-159	Hornfels	qtz.vs.carry po, sph w. garnet envelopes	-	-	-	N.A.	-	-	-	-
579254	159-162	Hornfels	garnet-epidote skarn bands; qtz.vs.+ po/sph	40	56	4	380	0.2	0	5	1300
579256	162-166	Hornfels	silicified; qtz. vs. + po/sph; scheelite in po band	40	90	2	870	0.2	0	35	580
579257	166-169	Quartz Biotite Hornfels	silicified; minor po/MoS_2/cp/py in fracs.	27	116	2	1540	0.8	2	210	1730
579258	169-171	F.G. Granite	minor aplite; sericite cut by 22 qtz. veinlets + v.f.g. MoS_2	84	14	2	20	0.4	0	12	340
579259	171-174	F.G. Granite	16 qtz. veinlets carry v.f.g. MoS_2	110	4	6	10	1.0	0	15	300
579260	174-177	F.G. Granite	10 qtz. veinlets carry trace v.f.g. MoS_2	90	2	6	40	0.4	2	10	300
579261	177-180	F.G. Granite	8 MoS_2 qtz.vs: cut by sheeted sericitic hairline fr.	156	2	4	8	0.4	2	12	260

TABLE 2 (Continued)

TRACE ELEMENT ANALYSIS OF M.D.H. 80-2 CORE

Sample I.D.	Interval (metres)	Rock Type	Feature of Interest	TRACE ELEMENTS (ppm) Mo	Cu	Pb	Zn	Ag	Sn	W	F
579262	180-183	F.G. Granite	8 qtz.vs.+ MoS_2; tr. MoS_2 on sheeted ser. ff.	168	4	8	10	0.4	2	10	230
579263	183-186.9	F.G. Granite	19 qtz. vs. + MoS_2 +py +sericite + py envelopes	168	4	8	8	0.6	0	25	230
579264	186.9-188.05	Aplite (Altered)	v.f.g. MoS_2 dissem and in fr. in 30 qtz. vs.	340	6	6	38	0.6	2	10	960
579265	188.05-192	Biotite Hornfels	v.f.g. MoS_2 dissem and in fr. in 10 qtz.vs.	42	48	2	520	0.6	0	18	1160
579266	192-195.47	Biotite Hornfels	2 qtz-sericite veinlets + MoS_2	58	50	2	550	0.4	0	20	1310
579267	195.47-198	Hornfels and Granite	F.G. Granite 195.47→196.52 cut by 4 qtz-ser. v + MoS_2	90	36	2	104	0.4	2	15	1000
579268	198-201	Hornfels	Aplite 200.55→201; MoS_2 in 5 qtz.-garnet vs.	66	32	4	414	0.4	0	0	1450
579269	201-205.44	Hornfels	Aplite 202.16-202.8, 203.16-203.56; 9 MoS_2 vs.	58	24	2	690	0.2	2	20	1950
579270	205.44-206 206.33-.63 206.9-207.3	Aplite Dykes	13 qtz-ser. vs + MoS_2	470	8	4	84	0.4	2	25	750
579271	206-206.33 206.63-.9 207.3-210	F.G. Granite	sericite altn; minor aplite; 10 qtz-MoS_2 vs.	44	32	6	10	0.4	2	10	460

TABLE 2 (Continued)

TRACE ELEMENT ANALYSIS OF M.D.H. 80-2 CORE

Sample I.D.	Interval (metres)	Rock Type	Feature of Interest	TRACE ELEMENTS (ppm) Mo	Cu	Pb	Zn	Ag	Sn	W	F
579272	210-213	Biotite Hornfels	aplite 210→ .6, 211→ .47, 8 qtz-MoS_2 vs. + py	320	26	8	400	0.2	2	2	900
579273	213-216	Hornfels	numerous qtz-ser. zones; 11 qtz-ser. vs. + MoS_2 ± po/py/cp	126	48	6	1000	0.2	2	5	920
579274	216-219	Hornfels	aplite 216→ .44; 7 qtz-ser.vs. + MoS_2	89	48	2	100	0.2	2	2	580
579275	219-222	Aplite and Hornfels	hornfels 220.87-222; 20 qtz-ser. vs. + MoS_2	140	18	10	68	0.2	0	0	880
579276	222-226	Biotite Hornfels	aplite 222.34 → .98; 12 qtz.-ser. vs + MoS_2	57	38	6	72	0.2	0	0	800
579277	226-230	Hornfels	fault 224.7 → .85; 15 qtz. vs. + MoS_2	40	54	2	82	0.4	2	10	840
579278	230.1-230.6	Aplite	sericitized; 18 qtz.-ser. vs. + MoS_2	192	52	6	104	0.6	0	2	1100
579279	230.6-232.86 END	F.G. Granite	sericite hairline fr; 35 qtz.-ser. hairlines + MoS_2	344	14	10	38	0.6	0	5	1000

TABLE 3

TRACE ELEMENT ANALYSIS OF M.D.H. 80-3 CORE

Sample I.D.	Interval (metres)	Rock Type	Feature of Interest	TRACE ELEMENTS (ppm) Mo	Cu	Pb	Zn	Ag	Sn	W	F
579284	3-6	Black Argillite	f.g. po disseminated in silica laminations	22	76	4	770	0.6	0	0	820
579285	9-12	Grey Black Argillite	po/py in qtz. micro-vs. and graphite on fol.	22	104	16	820	2.6	0	0	1300
579286	15-18	Grey Black Argillite	po/py in qtz. micro-vs. and graphite on fol.	21	84	16	730	1.4	0	0	750
579287	21-24	Grey Black Argillite	silicification 21.1→ 21.7	16	86	20	700	2.4	0	0	970
579288	27-30	Grey Black Argillite	MoS_2 in qtz. veinlet, 27.7 m; 29.05 : aplite dyke	20	92	16	1110	1.4	0	0	920
579289	33-36	Grey Black Argillite	disseminated f.g. po on foliation	16	84	10	680	0.8	0	0	1150
579290	39-42	Grey Black Argillite	qtz. veins parallel foliation	20	62	10	410	1.0	0	0	620
579291	45-48	Grey Black Argillite	qtz vein + 2% po crosscuts fol.	21	46	12	418	0.6	0	0	570
579292	51-54	Grey Black Argillite	53.5→ 54: silicified w. po + py but ≤ 1% total	4	92	10	620	2.8	0	0	2250
579293	57-60	Grey Black Argillite	numerous qtz. veins on convoluted foliation	10	110	20	970	3.2	0	0	2050

TABLE 3 (Continued)

TRACE ELEMENT ANALYSIS OF M.D.H. 80-3 CORE

Sample I.D.	Interval (metres)	Rock Type	Feature of Interest	TRACE ELEMENTS (ppm) Mo	Cu	Pb	Zn	Ag	Sn	W	F
579294	63-66	Grey Black Argillite	numerous qtz veins on convoluted foliation, qtz.vs. have assoc. f.g. po/py < 1%	6	128	20	820	3.4	0	0	1800
579295	69-72	Grey Black Argillite	as above. minor sphalerite with po/py	7	124	22	720	3.4	0	0	2200
579296	75-78	Grey Black Argillite	as above.	10	168	16	1220	6.4	0	5	2850
579297	81-84	Grey Black Argillite	as above.	5	114	12	860	2.8	0	0	2500
579298	87-90	Grey Black Argillite	as above.	5	96	8	1110	2.4	0	0	2700
579299	93-96	Grey Black Argillite	several 10 cm wide qtz-scapolite-actinolite - sulphide vs.	5	104	6	1000	1.8	0	0	2300
579300	99-102	Grey Black Argillite	qtz.micro-veinlets carry po + py ≃ 1%	16	154	10	1270	4.4	0	2	2500
579301	105-108	Grey Black Argillite	shear zone + qtz, calcite, sph at 106.7 m	14	152	6	1000	3.8	0	2	2600
579317	108.9-109.2	Argillite w. Qtz. Marbling	py/po/sph 2-3% in qtz.vs.	10	78	2	290	1.4	0	0	1150

TABLE 3 (Continued)

TRACE ELEMENT ANALYSIS OF M.D.H. 80-3 CORE

Sample I.D.	Interval (metres)	Rock Type	Feature of Interest	TRACE ELEMENTS (ppm)							
				Mo	Cu	Pb	Zn	Ag	Sn	W	F
579318	109.9-110.4	Argillite w. Qtz Marbling	py/po/sph (galena ?, MoS_2 ?) in qtz. vs.	10	124	2	1510	1.8	0	0	1900
579302	111-114	Argillite in Qtz Marbling	as above with garnet and epidote	9	128	6	750	2.0	0	0	2800
579303	117-120	Grey Black Argillite	scapolite v. + sph, MoS_2 ? + garnet parallel fol.	8	134	6	700	2.6	0	0	2150
579304	123-126	Grey Black Argillite	marbeled qtz. vs. + po/py/sph/ garnet/epidote	11	148	4	1070	2.6	0	2	2000
579305	129-132	Grey Black Argillite	sulphides in qtz. vs; qtz-scapolite v at 131 m.	13	158	8	770	3.2	0	2	2550
579306	135-138	Grey Black Argillite	numerous qtz-scapolite zones + po/sph	17	118	14	900	3.0	0	2	1950
579307	141-144	Grey Black Argillite	as above.	12	118	18	660	2.6	0	0	1400
579308	147-150	Grey Black Argillite	po/py/sph? in a few qtz. stringers	14	98	18	710	2.0	0	0	1500
579309	153-156	Grey Black Argillite	several f.g. qtz-scapolite-sulphide zones	18	116	78	1020	2.8	0	2	950
579319	157.2-157.7	Scapolite Skarn	qtz-scapolite-sulphide sill (?) with silica env.	7	176	6	50	1.4	0	0	1650

TABLE 3 (Continued)

TRACE ELEMENT ANALYSIS OF M.D.H. 80-3 CORE

Sample I.D.	Interval (metres)	Rock Type	Feature of Interest	TRACE ELEMENTS (ppm) Mo	Cu	Pb	Zn	Ag	Sn	W	F
579310	159-162	Grey Black Argillite	qtz-scapolite-sulphide sill (?) with silica env. from 161.4→ 162 m	16	106	12	600	2.4	0	0	1750
579311	165-168	Grey Black Argillite	5% po/py in qtz. micro-vs.	13	186	30	900	4.0	0	0	2000
579312	171-174	Grey Black Argillite	as above.	7	166	18	720	3.6	0	0	2850
579313	177-180	Grey Balck Argillite	1-2% f.g. dissem py/po/sph in qtz. laminae	9	142	28	1250	3.8	0	2	1900
579314	183-186	Grey Black Argillite	183.7→184: massive sph/po/py in qtz.v.	14	156	20	1600	3.8	0	0	2150
579315	189-192	Grey Black Argillite	several qtz-scapolite zones; sulphides with qtz.v.	14	140	24	1760	4.0	0	0	2200
579316	195-198	Grey Black Argillite	much po/py/sph in a few qtz.vs.	15	166	22	1120	4.8	0	2	2050

for drill holes M.D.H. 80-1 to 3 respectively.

The results of hole 3 from unaltered, visually homogeneous argillite are worthwhile examining first as they provide some information on background values for the Black Argillite unit. Hydrothermal effects in the argillite and backgrounds for the hornfels and intrusive rocks can then be evaluated.

The upper 90 m of hole 3 showed little evidence of alteration or hydrothermal veining. Background ranges for various elements follow:-

Mo	Cu	Pb	Zn	Ag	Sn	W	F
4-22 ppm	46-168	4-22	410-1220	0.6-6.4	0	0-5	0-2700

The sections containing the aplite dyke and lower marbled argillite and quartz-scapolite zones (noted to contain visibly more sphalerite) returned elemental values well within the background range for the argillite.

A marked overall increase in Fluorine (F), Silver (Ag), Copper (Cu), and Zinc (Zn) content is noted below 51 m in the hole. Values for Tungsten (W) and Tin (Sn) commonly associated with igneous-hyrdrothermal processes are very low throughout the hole.

The results for hole 1 in the interval 36-39 m suggest that the aplite is the cause of higher F, W, Zn, Cu, and Mo and lower Ag values when contrasted to the preceeding argillite.

In hole 2 the fine-grained granite in the interval 169-186.9 is typically low in F (230-340 ppm), Ag (0.4-1), Zn (8-40), Pb (2-8) and Cu (2-14) but contains rather high Mo values (84-156 ppm increasing to 168 ppm in contact with aplite). The aplite has a similar chemical signature to the granite but contains even greater amounts of Mo (340-470 ppm). In the Hornfelsed Argillite below 80 m, generally higher values are noted for Mo, Cu, F and W while Pb and Sn are similar and Zn and Ag are generally lower, than in the upper 80 m, or in hole 3. Certain skarn bands as at 123-126 m are high in Zn (1700 - 4600 ppm). Hornfelsed zones in the upper 80 m of the Black Argillite unit; e.g., 36-45 m are high in Zn (1420-5100 ppm), F (1630-2350) and/or Mo (31-77) and W (35 ppm).

iv Conclusions:

Hole M.D.H. 80-2 encountered subeconomic molybdenite concentrated in quartz ± sericite veins and veinlets in granite and aplite dykes, below 169 m. The aplite dykes contain approximately twice as much MoS_2 as the granite. The aplite appears to be a siliceous contact phase of the fine-grained granite dykes; however, the aplite is also seen to cut and alter the granite.

Alteration of the argillite increases downhole to moderately high-grade, biotite hornfels, in contact with the granitic dykes. A hydrothermal system of some size is evidenced by veins and skarns extending well above the dykes, which are enriched in base metal content. It is as yet unclear whether: 1. the granitic source for this hydrothermal system lies directly below or lateral to the bottom of the hole M.D.H. 80-2 or 2: whether the granitic source is a cupola lateral to the Lost Creek Stock or a separate and later event.

vi) Recommendations:

Further drilling in area of M.D.H. 80-2 is recommended to locate a sizable mineralizer intrusion, indicated to lie beneath M.U.T. Hill. The target model is a Mo-W porphyry system.

APPENDIX 1

STATEMENTS OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, Michael D. Bradley of #1007-1111 West Hastings Street, in Vancouver, in the Province of British Columbia, Do Hereby State:

1. That I am a graduate of the University of British Columbia, Vancouver, B.C., where I obtained a B.Sc. degree in Physics-Geology in 1973.

2. That I obtained an M.Sc. degree in 1975 from Scripps Institute of Oceanography, La Jolla, California.

3. That I am a member in good standing of The Canadian Institute of Mining and Metallurgy and the Prospectors and Developers Association.

4. That I have been active in mineral exploration since 1968.

5. That I have practiced my profession continuously as a staff geologist for BP Minerals Limited, since 1975

Michael D. Bradley
BP Geologist

Vancouver, B.C.

STATEMENT OF QUALIFICATIONS

I, Ernie E. Meszaros, of 749 Scenic Drive, Hamilton, in the Province of Ontario, do hereby state that:

1) I obtained a B.Sc. degree in Geology from McMaster University, Ontario in May, 1980.

2) I have been active in exploration as a geological assistant during the summers of 1977, 1978 and 1979.

E. Meszaros

July 30, 1980, Vancouver, B.C.

APPENDIX 2

STATEMENT OF COSTS

STATEMENT OF COSTS FOR
M.U.T. 5 CLAIM-1980

1. CONTRACTORS

A. DRILLING: (Wright Drilling Ltd.)

(i) Footage:

(I) Casing:

Hole MDH 80-1	2'			
MDH 80-2	4'			
MDH 80-3	2'			
	8'	@ $16/ft.	$ 128.00	

(II) Coring:

Hole MDH 80-1		
145' @ $15.50/ft.	2,247.50	
MDH 80-2		
396' @ $15.50/ft.	6,138.00	
367' @ $16.35/ft.	6,000.45	
MDH 80-3		
398' @ $15.50/ft.	6,169.00	
256' @ $16.35/ft.	4,185.60	
	$24,869.00	$24,869.00

(ii) Drill Rental:

51 hours @ $18/hr. — $ 918.00

(iii) Labour:

109 hrs.	- Mobilization	
161 hrs.	- Camp and Drill setup	
232 hrs.	- Drill Moves and Demobilization	
502 hrs.	- Total man/hrs. @ $16.50/hr.	$ 8,283.00

(iv) Truck Rental:

4 x 4 Truck - 51 hours @ $6/hr. and 30 hours @ $6.50/hr.	-	$ 501.00	
4 x 4 Truck Repairs	-	222.00	
4 Ton Truck - 1 month	-	1,043.00	
Overload Permit	-	33.00	
		$1,799.00	$ 1,799.00

(v) Materials Consumed or Lost:

1 - B.W. Casing Shoe	$ 140.00	
1 - 2' B.W. Casing	26.25	
1 - 10' Casing	86.55	
142 1 Kutwell Oil	116.85	
Thiesen Equip. Inv. (mud) #7352	254.70	
66- Coreboxes @ $4.15/box.	273.90	
B.C. S.S. Tax @ 4% of $273.90	10.96	
	$ 909.21	
15% of $909.21 (handling charge)	163.38	
1 - Coffee Pot	14.30	
Gas	598.00	
Meals and Rooms	698.00	
	$2,383.00	$ 2,383.00

(vi) Bit Wear:

1 - BQ 100 Series Diamond Bit	$ 356.00	
1 - BQ 200 Series Diamond Bit	392.27	
B.C. S.S. Tax @ 4% of $748.77	29.93	
15% on Supplies Used	116.73	
	$ 895.00	$ 895.00

TOTAL DRILLING COST: $39,147.00

B. BULLDOZER: (Pinetree Logging Company Ltd)

Komatzue 65E: CAT Work - 42 hours @ $53.50/hr.	$ 2,247.00	
Mobilizing Bulldozer - 8 hours @ $35.00/hr.	280.00	
	$ 2,527.00	$ 2,527.00

2. LABOUR (BP Personnel)

M. Bradley - Project Geologist (April 8-12 and April 21-May 15) (Oct. 20-24)		
35 days @ $126/day.	$ 4,410.00	
J. Gravel - Property Geochemist (May 1-May 13)		
13 days @ $83/day.	1,079.00	
E. Meszaros- Property Geologist (May 10-May 15)		
6 days @ $83/day.	498.00	
B. Wotton - Technician (April 21-May 15) (July 3,4)		
20 days @ $50/day.	1,000.00	
B. McCarthy- Technician (May 2-May 15) (July 3,4)		
16 days @ $53/day.	848.00	
A. Fyfe - Slasher (July 3,4)		
2 days @ $60/day.	120.00	
	$ 7,955.00	$ 7,955.00

3. TRUCK RENTAL (Redhawk Rentals)

4 x 4 Truck - (April 21 - May 15) 25 days (5/6 mo.) @ $762/mo.	$ 635.00	$ 635.00

4. TRAVEL AND SUBSISTENCE:

10 days Accommodation in Motels	$ 288.30	
Meals	338.22	
Groceries	1,975.41	
Airfares	430.85	
Tilden Rent-A-Car	112.79	
	$ 3,145.57	$ 3,147.57

5. <u>MATERIALS AND SUPPLIES</u>: (Consumables)

Gas for BP rental truck	$ 489.10	
Phone Calls	48.73	
Postage	14.85	
Radio Licence	52.00	
Freight Haulage	216.79	
Camp Supplies	2,096.00	
Reproduction (maps)	851.08	
Diesel Fuel for drill and pumps 1,068 litres @ $0.20/litre	214.00	
	$3,932.55	$ 3,932.55

6. <u>DRILL CORE SAMPLE ANALYSIS</u>: (95 Samples)

5 elements (Mo, Cu, Pb, Zn, Ag)	$ 2.50/sample	
Sn	2.00	
W	2.00	
F	3.25	
Preparation for geochemical assay	2.25	
	$12.00/sample x 95 =	$ 1,140.00

7. <u>REPORT PREPARATION</u>:

Drafting - 25 hours @ $9.50/hr.	$ 143.00	
Reproduction	40.00	
Typing - 20 hours @ $5.50/hr.	110.00	
	$ 293.00	$ 293.00

<u>TOTAL ASSESSMENT CREDIT CLAIMED</u>: $58,775.00

Folio ________ Statement Project 517.

May 14 1980

M B.P MINERALS
\# 1007 - 1111 WEST HASTINGS ST.
VANCOUVER B.C.

In Acc't With PINETREE LOGGING COMPANY LTD
BOX 27, SALMO, B.C.
V0G 1Z0

Terms ________

re	Cat Work			
Apr 24/80	8 HRS.			
✓ 26	10 ✓			
✓ 28	5 HRS			
May 8	6 ✓			
✓ 13	5 HRS.			
	34 HRS. @	53.50	1819.00 ✓	
	MOVING CAT			
	4 HRS @	35.00	140.00 ✓	
			#	1959.00 ✓

O.K. for payment; [signature]

May 16/80 [signature]

RECEIVED
MAY 1980
B P MINERALS LIMITED
VANCOUVER, B.C.

APPROVED FOR PAYMENT $1959.00
CHARGE 80065-418
DATE MAY 2 8 1980 INTLS [initials]

L-34

April 11 1980

M B.P. MINERALS
1107-1111 WEST HASTINGS ST.
VANCOUVER B.C.

In Acc't With PINETREE LOGGING COMPANY LTD

Terms Box 27, Salmo B.C.
V0G 1Z0

	re	Cat Work			
APRIL	11/80	8 HRS @	53.50	428.00 ✓	
		MOVING CAT			
		4 HRS @	35.00	140.00 ✓	
		SNOW REMOVAL AND DIGGING WATER PITS			
		O.K'd			
		APPROVED FOR PAYMENT $ 568.00			
		CHARGE 8312-068			
		DATE APR 17 1980 INTLS.		568.00	

RE: 517 80065-418 - 568.00

SERVICE WORK ORDER № 64701

IMPORTANT
Above S.W.O. Number must be shown on all Invoices and Correspondence pertaining to this work.

Date Services/Material Required April 10, 1980

(area)

...onditions on both sides hereof.

...GARY OFFICE

...d and rates to be ...ada Limited by the	RATE TO BE CHARGED Amount	Per
	53.50	Hour
	35	Hour

End Use | Charge to Account

BP Exploration Canada Limite...

Contractor

Per

...e services/materials checked and approved as to rate and quantity by

Date

RECEIPT COPY — FORWARD IMMEDIATELY TO PURCHASING DEPT. WHEN ORDER COMPLETED

INVOICE

WRIGHT DRILLING LTD.
~~1510 WINDWARD PLACE~~ Box 3096 M.P.P.
KAMLOOPS, B.C.
~~V2E 1A6~~ V2C 6B7

INVOICE NO. 256

SOLD TO

B.P. MINERALS LIMITED
1111 - WEST HASTINGS
VANCOUVER, B.C.
V6E 3N5

SHIPPED TO

SALMO PROJECT
Project 517

DATE	ORDER NO.	SALESMAN	TERMS	SHIPPED VIA	PPD.	COLL.
17/05/80			15 DAYS			

QUANTITY	DESCRIPTION	PRICE	AMOUNT
	DIAMOND DRILLING APRIL 27 - MAY 15		$32,565.71

80060-448-$ 314.11
80065-448-$ 32,251.60
32,565.71

APPROVED FOR PAYMENT
CHARGE 80065-448
DATE JUN 9 1980 INTLS

RECEIVED
May 21/80
B P MINERALS LIMITED
Vancouver, B.C.

PAST DUE INVOICES SUBJECT TO
2% INTEREST PER MONTH.

FORM NO. PK1032-3
AVAILABLE FROM BUSINESS ENVELOPE MANUFACTURERS OF CANADA, LTD., 3015 KENNEDY ROAD, UNIT NO. 8, AGINCOURT, ONTARIO M1V 1E7

LOT # 576949
PRINTED IN U. S. A.

BREAKDOWN

HOLE # MDH-80-1	
CASING 0 - 2' 2' @ $16.00	$32.00
CORING 2 - 147' 145' @ $15.50	2247.50
DRILLING OUT B.T	
12 HRS. @ $16.50	198.00
3 HRS @ $18.00	54.00
3 HRS @ 6.00	18.00
SUPPLIES USED & DAMAGED	
1 - B.Q 100 SERIES DIAMOND BIT	$356.00
1 - B.Q 200 SERIES DIAMOND BIT	292.27
B.C. S.S TAX @ 4% OF 748.27	29.93
15% ON SUPPLIES USED	116.73
MOVING ON HOLE MDH 80-2	
LABOR 15 HRS @ $16.50	$247.50
EQUIP 3 HRS @ $18.00	54.00
TRUCK 3 HRS @ 6.00	18.00
HOLE # MDH 80-2	
CASING 0 - 4 - 4' @ $16.00	$64.00
CORING 4 - 400' - 396 @ 15.50	6138.00
400 - 767' - 367 @ 16.35	6,000.45
HOLE STABLIZATION	
LABOR 15 HRS @ 16.50	247.50
EQUIP 7.5 HRS @ 18.00	135.00
TRUCK 7.5 HRS @ 6.00	45.00
MOVING SUPPLY PUMP	
LABOR 20 HRS @ 16.50	330.00
EQUIP 10 HRS @ 18.00	180.00
TRUCK 10 HRS @ 6.00	60.00
MOVING TO HOLE # MDH-80-3	
LABOR 54 HRS @ 16.50	891.00
EQUIP 15.5 HRS @ 18.00	279.00
TRUCK 15.5 HRS @ 6.00	93.00
DRILLING HOLE # MDH 80-3	
CASING 0 - 2 - 2' @ $16.00	32.00
CORING 2 - 400' 398' @ $15.50	$6,169.00
400 - 756 - 356' @ 16.35	4,185.60
MOVING DRILL FROM LAST HOLE TO LOADING AREA	
LABOR 47 HRS @ 16.50	775.50
EQUIP 12 HRS @ 18.00	216.00
TRUCK 12 HRS @ 6.00	72.00

DEMOBILIZATION TRUCK LOADING TO KAMLOOPS

69 HRS @ $16.50		1138.50
GAS		139.00
MEALS + ROOMS		156.65

SUPPLIES USED + CONSUMED

1 B.W CASING SHOE	$140.00		
1 2' B.W CASING	26.25		
1 10' B.C. CASING	86.55		
285 LITRES KUTWELL @ 82¢	233.70	– 116.85 to MAL (519)	
THIESSEN EQUIP INV (MUD) #7352	254.70	– 197.26 to MAL (519)	
CORE BOXES (E.C. WHALLEY)	491.76		1232.96
B.C. SS TAX @ 4% OF 486.50			19.46
15% OF 1252.42			187.86
1 COFFEE POT (KITCHEN			14.30

TOTAL $32,565.71

INVOICE

WRIGHT DRILLING LTD.
1510 - WINDWARD PLACE
KAMLOOPS, B.C.
V2E 1A6

RECEIVED
MAY 1 1980
B P MINERALS LIMITED
Vancouver, B.C.

INVOICE NO. 251

SOLD TO

B.P. MINERALS LIMITED
1007 - 1111 WEST HASTINGS ST.
VANCOUVER, B.C.

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SALMO

DATE	ORDER NO.	SALESMAN	TERMS	SHIPPED VIA	PPD.	COLL.
30/4/80			15 DAYS			

QUANTITY	DESCRIPTION	PRICE	AMOUNT
	MOBILIZATION KAMLOOPS - SALMO	$3477.51	
	CAMP & DRILL SET-UP	$3249.00	
	APPROVED FOR PAYMENT CHARGE 80065-448 $6726.51 TOTAL DATE MAY 8 1980 INTLS [illegible]		$6726.51
	URGENT PAID		

FORM NO. PK103R-3
AVAILABLE FROM BUSINESS ENVELOPE MANUFACTURERS OF CANADA, LTD., 3015 KENNEDY ROAD, UNIT NO. 8, AGINCOURT, ONTARIO M1V 1E7

LOT # 57694
PRINTED IN U.S.A.

L-32

MOBILIZATION

LABOUR ✓ 109 MAN HRS @ 16.50	✓1,798.50
Truck 4 TON 1 month April 21 - May 21	1,043.00
OVER LOAD PERMIT	33.15
4X4'S Truck ✓20 HRS @ 6.50	130.00
GAS	381.76 ~~285.76~~
MEALS	✓ 91.10
	3,477.51

CAMP & DRILL SET-UP

LABOUR ✓ 161 MAN HRS. @ 16.50	✓2,656.50
4 X 4'S Trucks ✓10 HRS @ 6.50	65.00
GAS	✓77.15
Rooms	✓233.10
MEALS	✓217.2[illegible]
	3,249.00 ✓

INVOICE

WRIGHT DRILLING LTD.
Box 3096 M.P.P
KAMLOOPS, B.C.
V2C 6B7

RECEIVED
JUN 5 1980
B P MINERALS LIMITED
Vancouver, B.C.

INVOICE NO. 261

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B.P. MINERALS LIMITED
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VANCOUVER, B.C.

SHIPPED TO
SALMO PROJECT

DATE	ORDER NO.	SALESMAN	TERMS	SHIPPED VIA	PPD.	COLL.
2/06/80			15 DAYS.			

QUANTITY	DESCRIPTION	PRICE	AMOUNT
	ROOMS	$48.30	
	MEALS	$63.50	
	TRUCK REPAIRS	$221.80	
		TOTAL	$333.60

APPROVED FOR PAYMENT
CHARGE 80065-448-$333.60
DATE JUN 9 1980 INITLS

PAST DUE INVOICES SUBJECT TO
2% INTEREST PER MONTH.

FORM NO. PK103R-3
AVAILABLE FROM BUSINESS ENVELOPE MANUFACTURERS OF CANADA, LTD., 3015 KENNEDY ROAD, UNIT NO. 8, AGINCOURT, ONTARIO M1V 1E7
LOT # 5769
PRINTED IN U

INVOICE

WRIGHT DRILLING LTD.
~~1510 WINDWARD PLACE~~ Box 3096 M.P.P.
KAMLOOPS, B.C.
~~V2E 1A6~~
V2C 6B7

INVOICE NO. 266

SOLD TO

B. P. CANADA
1111 - WEST HASTINGS ST.
VANCOUVER, B.C.

SHIPPED TO

SALMO - MALAKWA.

DATE	ORDER NO.	SALESMAN	TERMS	SHIPPED VIA	PPD.	COLL.
6 JULY 80						

QUANTITY	DESCRIPTION	PRICE	AMOUNT
	BOWMAC TRUCK RENTAL		
	INV # 59961	1112.23	
	INV # 74658	601.54	1713.7
	✓ LESS AMOUNT PREVIOUSLY BILLED INV 251	CR.	1043.0
			670.7
	CALLS BY 4 FROM B.P CANADA PERSONNEL 475-7686		21.0
	TOTAL DUE		$691.8

APPROVED FOR PAYMENT $ 691.82
CHARGE 80065-448-
DATE 8 July 80 INITLS [illegible]

PAST DUE INVOICES SUBJECT TO 2% INTEREST PER MONTH.

LOT # 576

FORM NO. PK103R-3
AVAILABLE FROM BUSINESS ENVELOPE MANUFACTURERS OF CANADA, LTD., 3015 KENNEDY ROAD, UNIT NO. 8, AGINCOURT, ONTARIO M1V 1E7
PRINTED IN U. S

L 48B

Mail remittance to Office:
1308 Hamilton Street
New Westminster, B. C. V3M 2N3
Phone 521-7881

REDHAWK RENTALS LTD.

BP MINERALS
405, 1199 W. PENDER ST.
VANCOUVER, B. C.
V6E 2R1

TERMS: NET CASH

CONTRACT NO. 620	VEHICLE NO. 304	YOUR P.O. G. GULAJEC	DATE APRIL 30/80

RENTAL OF 1979 GMC 4 WHEEL DRIVE 3/4 TON PICKUP WITH WINCH UNDER CONTRACT FROM APRIL 15, 1980:

RENTAL FEE APRIL 15 - 30 16/30 @ 675.00/MO.	$ 360.00
SALES TAX 4%	14.40
INSURANCE FEE APRIL 15 - 30 16/30 @ 60.00/MO.	32.00
TOTAL	$ 406.40

RECEIVED
MAY 5 1980
BP MINERALS LIMITED
VANCOUVER B.C.

NOTE: ALL CONTRACTS ARE INVOICED TO THE END OF THE FIRST MONTH AND MONTHLY THEREAFTER.

DEPOSIT WILL APPLY ON FINAL INVOICE OF CONTRACT.

APPROVED FOR PAYMENT
CHARGE 80065-425 #406.40
DATE MAY 8 1980 INITLS

"Nobody Knows 4 Wheel Drive Better Than REDHAWK"

L-33

REDHAWK RENTALS LTD.

Mail remittance to Office:
1303 Hamilton Street
New Westminster, B. C. V3M 2N3
Phone 521-7881

BP MINERALS
405, 1199 W. PENDER ST.
VANCOUVER, B. C.
V6E 2R1

TERMS: NET CASH

CONTRACT NO. 620	VEHICLE NO. 304	YOUR P.O. GULAJEC	DATE MAY 31/80

RENTAL OF 1979 GMC 4 WHEEL DRIVE 3/4 TON PICKUP WITH WINCH UNDER CONTRACT FROM APRIL 15, 1980:

RENTAL FEE MAY 1 - 31 PER CONTRACT	$ 675.00
SALES TAX 4%	27.00
INSURANCE FEE MAY 1 - 31 PER CONTRACT	60.00
TOTAL	$ 762.00

NOTE: DEPOSIT WILL APPLY ON FINAL INVOICE OF CONTRACT.

APPROVED FOR PAYMENT
CHARGE 80065-425 - $381.00
DATE JUN 11 1980 INTLS & 80060-425 - $381.00
$762.00

"Nobody Knows 4 Wheel Drive Better Than REDHAWK"

L-80-41

Rossbacher Laboratory Ltd.

GEOCHEMICAL ANALYSTS & ASSAYERS

2225 S. SPRINGER AVE.,
BURNABY, B.C.
CANADA
TELEPHONE: 299-6910
AREA CODE: 604

B.P. MINERALS LTD.
1007-1111 W. Hastings St.
Vancouver, B.C.
Project 517. M. Bradley

DATE June 3,1980
INVOICE NO. 0163
CERTIFICATE NO. 80106.80110

ITEM	DESCRIPTION		SUB-TOTAL	TOTAL
162	Geochem analysis for 5 elements	@ $ 2.50	$ 405.00	
31	Sn	2.00	62.00	
162	F	3.25	526.50	
162	W	2.00	324.00	
77	Soil/Silt prep	0.30	23.10	
54	Rock prep	1.50	81.00	
31	Assay prep for geochem	2.25	69.75	
77	pH analysis	0.75	57.75	
	Freight		122.80	
				$ 1,671.90

RECEIVED
JUN 5 1980
B.P. MINERALS LIMITED
Vancouver, B.C.

APPROVED FOR PAYMENT
CHARGE 80065-458- $1,671.90
DATE JUN 23 1980 INTLS [illegible]

TERMS – NET 30 DAYS

L-44

Rossbacher Laboratory Ltd.

GEOCHEMICAL ANALYSTS & ASSAYERS

2225 S. SPRINGER AVE.,
BURNABY, B.C.
CANADA
TELEPHONE: 299-6910
AREA CODE: 604

B.P. MINERALS LTD.
1007-1111 W. Hastings St.
Vancouver, B.C.
Project 517

DATE June 16,1980
INVOICE NO. 0172
CERTIFICATE NO. 80127/113

ITEM	DESCRIPTION		SUB-TOTAL	TOTAL
88	Geochem analysis for 5 elements	@ $ 2.50	$ 220.00 ✓	
(64)	Sn	(2.00)	128.00 ✓	
88	W	2.00	176.00 ✓	
88	F	3.25	286.00 ✓	
5	pH analysis	0.75	3.75 ✓	
5	Soil sample prep	0.30	1.50 ✓	
19	Rock sample prep	1.50	28.50 ✓	
(64)	Assay prep for geochem analysis	(2.25)	144.00 ✓	
	Freight		16.20 ✓	
				$ 1,003.95 ✓

RECEIVED
... 1980
BP MINERALS LIMITED
VANCOUVER, B.C.

APPROVED FOR PAYMENT
CHARGE 80065-458-$1,003.95
DATE JUN 23 1980 INTLS [illegible]

TERMS – NET 30 DAYS

L - 44

APPENDIX 3

GEOCHEMICAL ASSAY RESULTS OF DRILL CORE FROM HOLES M.D.H. 80-1, 2, 3,

(Rossbacher Laboratory)

80110-1

GEOCHEMICAL LABORATORY REPORT

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8564
NO.

LABORATORY: Rossbacher Labs

REPORT No. ....

DATE: May 9, 1980

BP MINERALS LIMITED
TORONTO ONT.

	SAMPLE	YEAR	PROJECT NO.	DUPL	I.D. SAMPLE	CARD	~~U~~ Mo	CU	PB	~~Co~~ Zn	~~Ni~~ Ag	Sn	W	F
1	87	80	517		579201	2	16	40	2	128	1.2	2	120	540
2	87	80	517		579202	2	14	44	2	96	1.2	2	50	800
3	87	80	517		579203	2	17	48	2	146	1.2	2	20	740
4	87	80	517		579207	2	9	62	2	x 1040	2.2	0	2	900
5	97	80	517		579209	2	11	40	2	236	0.8	2	15	500
6	87	80	517		579210	2	19	50	2	x 540	1.0	0	5	750
7	87	80	517		579213	2	77	52	2	x 5100	0.6	2	2	1630
8	87	80	517		579257	2	27	116	2	x 1540	0.8	2	210	1730
9	87	80	517		579258	2	84	14	2	20	0.4	0	12	340
0	87	80	517		579259	2	x 110	4	6	10	1.0	0	15	300
1	87	80	517		579260	2	90	2	6	40	0.4	2	10	300
2	87	80	517		579261	2	x 156	2	4	8	0.4	2	12	260
3	87	80	517		579262	2	168	4	8	10	0.4	2	10	230
4	87	80	517		579263	2	168	4	8	8	0.6	0	25	230
5	87	80	517		579264	2	x 340	6	6	38	0.6	2	10	960
6	87	80	517		579265	2	42	48	2	x 520	0.6	0	18	1160
7	87	80	517		579266	2	58	50	2	x 550	0.4	0	20	1310
8	87	80	517		579267	2	90	36	2	104	0.4	2	15	1000
9	87	80	517		579277	2	40	54	2	32	0.4	2	10	840
0	87	80	517		579278	2	192	52	6	104	0.6	0	2	1100

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80113-1

GEOCHEMICAL LABORATORY REPORT

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 8564

LABORATORY: Rossbacher Labs.

REPORT No. ....

DATE: May 14, 1980

BP MINERALS LIMITED
TORONTO ONT.

PAGE 1 OF 2

	SAMPLE	YEAR	PROJECT NO.	DUPL	I.D. SAMPLE	CARD	Mo	CU	PB	Zn	Ag	Sn	W	REMARKS
1	87	80	517		579212	2	16	134	26	540	0.8	2	120	910
2	87	80	517		579214	2	31	30	6	3500	0.2	2	5	2350
3	87	80	517		579216	2	8	46	12	290	0.2	2	0	800
4	87	80	517		579218	2	11	40	4	204	0.2	0	0	910
5	87	80	517		579220	2	12	44	2	154	0.2	2	0	970
6	87	80	517		579222	2	15	50	6	190	0.2	2	0	900
7	87	80	517		579224	2	25	60	6	490	0.2	2	10	1350
8	87	80	517		579226	2	24	72	16	540	0.6	0	2	1000
9	87	80	517		579228	2	27	70	10	840	0.2	0	40	1900
0	87	80	517		579230	2	35	114	6	3100	0.2	2	1400	2500
1	87	80	517		579232	2	36	58	8	450	0.2	2	30	1200
2	87	80	517		579234	2	33	64	8	650	0.2	2	15	1200
3	87	80	517		579236	2	41	62	4	860	0.2	0	12	2000
4	87	80	517		579238	2	53	58	2	710	0.2	0	20	2050
5	87	80	517		579240	2	42	60	2	880	0.2	0	12	1050
6	87	80	517		579242	2	29	94	2	4500	0.2	2	70	2450
7	87	80	517		579244	2	37	64	2	520	0.2	0	70	1950
8	87	80	517		579246	2	44	76	2	980	0.2	1	20	4600
9	87	80	517		579248	2	32	56	4	338	0.2	0	0	1400
0	87	80	517		579250	2	57	84	4	740	0.2	0	20	1650

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80127-1

GEOCHEMICAL LABORATORY REPORT

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 8564

LABORATORY: Rossbacher Labs.

REPORT No. ....

DATE: May 15/80

BP MINERALS LIMITED
TORONTO ONT.

PAGE 1 OF 2

	SAMPLE	YEAR	PROJECT NO.	DUPL	I.D. SAMPLE	CARD	Mo	CU	PB	Zn	Ag	Sn	W	F
1	87	80	517		579254	2	40	56	4	380	0.2	0	5	1300
2	87	80	517		579256	2	40	90	2	870	0.2	0	35	580
3	87	80	517		579284	2	22	76	4	770	0.6	0	0	820
4	87	80	517		579285	2	22	104	16	820	2.6	0	0	1300
5	87	80	517		579286	2	21	84	16	730	1.4	0	0	750
6	87	80	517		579287	2	16	86	20	700	2.4	0	0	970
7	87	80	517		579288	2	20	92	16	1110	1.4	0	0	920
8	87	80	517		579289	2	16	84	10	680	0.8	0	0	1150
9	87	80	517		579290	2	20	62	10	410	1.0	0	0	620
0	87	80	517		579291	2	21	46	12	418	0.6	0	0	570
1	87	80	517		579292	2	4	92	10	620	2.8	0	0	2250
2	87	80	517		579293	2	10	110	20	970	3.2	0	0	2050
3	87	80	517		579294	2	6	128	20	820	3.4	0	0	1800
4	87	80	517		579295	2	7	124	22	720	3.4	0	0	2100
5	87	80	517		579296	2	10	168	16	1220	6.4	0	5	2850
6	87	80	517		579297	2	5	114	12	860	2.8	0	0	2500
7	87	80	517		579298	2	5	96	8	1110	2.4	0	0	2700
8	87	80	517		579299	2	5	104	6	1000	1.8	0	0	2300
9	87	80	517		579300	2	16	154	10	1270	4.4	0	2	2500
0	87	80	517		579301	2	14	152	6	1000	3.8	0	2	2600

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8 0110 - 2

GEOCHEMICAL LABORATORY ~~REPORT~~

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8564
NO.

LABORATORY: Rossbacher Labs

REPORT No. ....

DATE: ....

BP MINERALS LIMITED
TORONTO ONT.

PAGE 2 OF 2

SAMPLE	YEAR	PROJECT NO.	8	DUPL	I.D. SAMPLE	CARD	~~#~~ Mo	CU	PB	~~Co~~ Zn	~~Ni~~ Ag	Sn	W	F
87	80	517			579279	2	344	14	10	38	0.6	0	5	1060
87	80	517			579280	2	15	54	4	480	1.0	0	18	940
87	80	517			579281	2	11	52	2	x 680	1.2	0	10	750
87	80	517			579282	2	20	60	4	x 1560	1.2	2	2	1010
87	80	517			579283	2	31	116	4	x 1920	0.4	2	90	2370
87	80	517			579215	2	16	62	2	x 1420	0.4	0	35	1950
87	80	517			579217	2	10	64	4	242	0.4	2	5	1100
87	80	517			579268	2	66	32	4	414	0.4	0	0	1450
87	80	517			579269	2	58	24	2	x 690	0.2	2	20	1950
87	80	517			579270	2	x 470	8	4	84	0.4	2	25	750
87	80	517			579271	2	44	32	6	10	0.4	2	10	460
						2								
						2								
						2								
						2								
						2								
						2								
						2								
						2								
						2								

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80113-2.

GEOCHEMICAL LABORATORY ~~REPORT~~

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 8564

LABORATORY: Rossbacher Labs

REPORT No. ....

DATE: May 14, 1980

BP MINERALS LIMITED
TORONTO ONT.

PAGE 2 OF 2

	SAMPLE	YEAR	PROJECT NO.	8	DUPL 9	I.D. SAMPLE	CARD	~~U~~ Mo	CU	PB	~~Co~~ Zn	~~Ni~~ Ag	Sn	W	~~REMARKS~~
1	87	80	517			579252	2	50	74	4	x 1600	0.2	2	20	1350
2	87	80	517			579272	2	x 320	26	8	400	0.2	2	2	900
3	87	80	517			579273	2	x 126	48	6	1000	0.2	2	5	920
4	87	80	517			579274	2	89	48	2	100	0.2	2	2	580
5	87	80	517			579275	2	x 140	18	10	68	0.2	0	0	880
6	87	80	517			579276	2	57	38	6	72	0.2	0	0	860
7							2								
8							2								
9							2								
0							2								
1							2								
2							2								
3							2								
4							2								
5							2								
6							2								
7							2								
8							2								
9							2								
0							2								

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80127-2

GEOCHEMICAL LABORATORY REPORT

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8564
NO.

LABORATORY: Rossbacher Labs

REPORT No. ....

DATE: May 15/80.

BP MINERALS LIMITED
TORONTO ONT.

PAGE 2 OF 2

	SAMPLE	YEAR	PROJECT NO.	8	DUPL	I.D. SAMPLE	CARD	~~U~~ Mo	CU	PB	~~Co~~ Zn	~~Ni~~ Ag	Sn	W	REMARKS
1	87	80	517			579302	2	9	128	6	750	2.0	0	0	2800
2	87	80	517			579303	2	8	134	6	700	2.6	0	0	2150
3	87	80	517			579304	2	11	148	4	1070	2.6	0	2	2000
4	87	80	517			579305	2	13	158	8	770	3.2	0	2	2550
5	87	80	517			579306	2	17	118	14	900	3.0	0	2	1950
6	87	80	517			579307	2	12	118	18	660	2.6	0	0	1400
7	87	80	517			579308	2	14	98	18	710	2.0	0	0	1500
8	87	80	517			579309	2	18	116	78	1020	2.8	0	2	950
9	87	80	517			579310	2	16	106	12	600	2.4	0	0	1750
0	87	80	517			579311	2	13	186	30	900	4.0	0	0	2000
1	87	80	517			579312	2	7	166	18	720	3.6	0	0	2850
2	87	80	517			579313	2	9	142	28	1250	3.8	0	2	1900
3	87	80	517			579314	2	14	156	20	1600	3.8	0	0	2150
4	87	80	517			579315	2	14	140	24	1760	4.0	0	0	2200
5	87	80	517			579316	2	15	166	22	1120	4.8	0	2	2050
6	87	80	517			579317	2	10	78	2	290	1.4	0	0	1150
7	87	80	517			579318	2	10	124	2	1510	1.8	0	0	1900
8	87	80	517			579319	2	7	176	6	50	1.4	0	0	1650
9	~~8~~		~~51~~				2								
0							2								

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DRILL LOG (LOGGED BY M.D. BRADLEY) Michael Bradley

LOCATION M.U.T Claims	CO-ORDINATES	NORTH 500+95N	EAST 499+95E	ELEVATION 1494.0m	SHEET NO. 1	5	
DATE STARTED April 27, 1980	DATE COMPLETED April 30, 1980	Hole Attitude: Surface - Azimuth Bearing: 315° Dip: -80°	Depth - Azimuth Bearing: Dip:	HOLE SIZE BQ	TOTAL DEPTH 44.66m	HOLE NO. MDH D.D.H. 80-1	
Horizontal Projection:	Vertical Projection:						

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	V/m	F/m
0	2.85m	0	0	Casing in Argillite					
2.85	4.0m	.67m	67%	Tremolite skarn, hornfels in broken core 2.85m-3.0m. Qtz vein carrys f.g. dissem. to semimassive pyrite, 10°. 3-4 m: Black, well bedded argillite, porous, some vugs, well bedded on 75° t.c.a. Micro qtz vs. on bedding - common	Tremolite skarn band + py Gypsum + py at 3.97m on bedding fr.	- 1/4% dissem f.g. py on bedding fractures - c.g. xtalline py + goethite on fr. at 3.97m.	75° 70° 0°	1 1	30 16
4.0	6.0m	1.98m	99%	Black Argillite: as above Bedding 85°. Numerous rusty fr. 15°, 30° from 5-5.37, 5.5-5.7m. Some micro qtz vs. vuggy, carry pyrite cubes.	Goethite on 30° & 10° fr.	- 1/4-1/2° bedded f.g. py. - massive m.g. xtalline py on fr ± qtz at 5.01-.04, 5.5, 5.65m, 6.0.	85° 15° 30°	4	30
6.0	8.0m	2m	100%	6.0-6.56m; 7.36-8.0 Black Argillite, well bedded 85°, numerous elliptical to oval 1mm quartz grains on bedding. Numerous 30°, 60° fr. carry boxwork goethite 6-6.55m, 7-8.0m. Quartz vein in argillite gosson 7.36-7.46, also manganese oxide - goethite heavy on fr. 7.46-7.57m. 6.56-7.36: Medium gray, grading into gray-brown f.g. equigranular arenite or dyke(?). Slight HCl reaction, 35°, 55° fr. heavily limonitic + pyrolusite. Very f.g. 7.1-7.3: mudstone or? Irregular 2cm fragment of argillite + pyrolusite at 7.2m	Limonite, goethite, pyrolusite on fractures. Heavy limonite & pyrolusite on fr.	- 1/4% bedded f.g. py. - massive xtallic py 7.95m on bedding.	55° 35° 80° 65° 60°	4	40
8.0	10.0m	2m	100%	Black Argillite: Well bedded, weakly hornfelsed, vuggy with f.g. xtals of pyrite on bedding. Micro qtz vs. on bedding.	- limonitic fr. 8-8.4m 9-9.3m. - limonite + clay or talc? in fr. zone at 9.9-10m.	- 1% bedded pyrite f.g. xtalline	15° 65°	7	25

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 8564

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO. 2 / 5

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MDH D.D.H. 80-1

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
10	12m	1.61	80%	Black Argillite: Minor vuggy bedding. Micro qtz on bedding. Bedding at 65° t.c.a. Fr. zones: 10.8-.4m, 11.1m	- limonite on fr. 10m-11.2m	- 1/2% py on bedding. Some beds 2-mm massive py.	70° 15° 80° 0°	4	22
12	14	2m	100%	Black Argillite: Bedding 70°. Crenulated bedding outlined by microquartz at 12.5m.	- limonite on fr. 12.7m 13.6-.7m, 14.7m. - goethite fr. 13.1m 20° + qtz.V.	- 1/2% bedded py. - marcasite py-goethite - sphalerite(?) 20°; 13.1m. x-cuts bedding.	70° 30° 60°	1	10
14	16	1.96	98%	Black Argillite: Bedding 60°. Minor vuggy bedding. Wkly hornfelsed, compact 15.56m-16m.	- wkly hornfelsed 15.56-16m - light gray-green clay on some fr.	- 1/2-1% f.g. blebby pyrite on bedding & fractures.	60° 50° 30° 10°	1	12
16	18	2	100%	Black Argillite: Weakly hornfelsed except 16.7m-17.14m: a black m.g. xtalline zone containing hornblende & radiating black mineral - tourmaline? tremolite?; contains numerous pyrite veins + steely mineral. M.g. white lath-like crystals on irregular lower contact (45°)	- wkly hornfelsed except strong tourmaline(?) hornfels 16.7 - 17.14m - light green clay on f.	- 1/2% f.g. blebby py on bedding - 8% f.g. blebby - semimassive pyrite in hornfels + minor lustrous steely mineral. Sulphides in vuggy veins cutting hornfels at 45° - minor blebby po.	80° 50° 10°	5	12
18	20	2.49	124%	Black Argillite: Bedding 85°. Micro quartz on bedding.	- limonite of 15° fr. 19.6m	- 1/2% f.g. blebby py + sph? on bedding. - 1cm bedded py 19.45m	85° 15° 45°		17
20	22	1.62	81%	Black Argillite: Bedding 75-80°. Foliation 55°. Micro qtz on bedding.		- 1/4% f.g. blebby py. - 1/4% f.g. blebby po. irreg filling on bedding	80° 50°		6

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO. 3 / 5

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MDH D.D.H. 80-1

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
22	24 m	1.9	95%	Black Argillite :- Bedding 65° Rather more micro quartz on bedding 23-24 m.	- green clay on fracture ± qtz ± pyrite 23.1m - 23.8 m	- f.g. semi massive fracture fill py 23.3m - 23.9 + qtz. - massive f.g. 23.85 - .9 - ½% bedded py	70° 40° 15°	1	17
24	26	1.79	89%	Black Argillite :- Bedding - micro qtz banding 75°. Foliation at 60°. Numerous crenulated micro-quartz banding & micro-drag folds?	- green clay on fr.	- ½% bedded vuggy py f-m.g. - 1% bedded po e.g. at 25.9m (crenul...)	30° 30° 55°	2	6
26	28	1.9	95%	Black Argillite :- As above. ½ cm. wide qtz v. brecciates argillite at 27.5 m - carry 4% dissem. po (40° t.c.a.)	- green clay on fr. - minor silvery graphite on bedding fr.	1-2% bedded po, e.g. 1cm wide 26.25m ¼% bedded py.	60° 15° 50°		13
28	30	2	100%	Black Argillite : Weakly hornfels except 29m - 29.4m, brecciated section of strongly silicified, hornfels argillite containing 10% f.g. py dissem & fracture fill & outlining bx frags. Bx frags subrounded to subangular, submetallic to resinous lustrous 0.2 - 2cm diameter. F.g. steely magnetite looking mineral in matrix - silver compound? Above bx several 10:15° fr carry py + tr. po. Below at 29.44m a 2cm wide qtz (feldspar?) vein bx - no sulphides then 29.45 - 29.5m: vuggy, micro qtz rich section contains 15-20% py.	- silvery graphite on several bedding fr.? - light green clay on 10°, 15° fr ± pyrite -	- ½% bedded po - ½% bedded py - 10% diss. & f.f. f-g. py + minor po in bx zone + silver mineral? Sulphide fr. on 55°, 15° + qtz + green clay above bx 28.35 - 29. also vuggy qtz - py 15-20% 29.45 - .5.	10° 15° 40° 75°	9 (carry py)	22
30	32	2	100%	Black Argillite : Much graphite on fr. Fault healed with chlorite & graphite from 30.7 - .8. Several micro-qtz vs. on 0° - 10°, 31 - 31.6 m. Crenulated micro quartz banding 30.5m	- graphite & light green clay on fr. - chlorite + graphite in fault	- 1½% vuggy bedded py - pyrite bands 1cm wide at 31.06, 31.28, 31.16, 31.23, 31.8 - 32.0.	0° 55° 90°	9	23
32	34	2	100%	Black Argillite : Weakly hornfelsed. Qtz banding - bedding 65° qtz + f.g. feldspar (?) vein 5°, 33.96 - 34m. ~0.5cm wide.	- graphite + green clay on fr.	- 2% bedded pyrite - 25° fr. set contains blebby - semi massive py. - e.g. scheelite in qtz. v 33.97	5° 25° 65°	8	

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO. 4 5

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MDH D.D.H. 80-1

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
34	36	2	100%	Black Argillite : Weakly calcareous due to numerous close spaced carbonate bedding bedding planes 35m-36m. Qtz low' 0.5cm. in section.	- calcite on some fr. + light green clay (?)	- 1½% bedded pyrite - 1% bedded pyrite in micro-qtz-carbonate at 35.1-.11	5° 65° 85°	6	9
36	38	2	100%	Black Argillite : Weakly hornfelsed 36-37m. Distinct banding of microqtz & calcite on 45°. Mod. to intense qtz-biotite hornfels 37 to 37.8m. Qtz-biotite banding 90° t.c.a. Contact with v.f.g.-f.g. grey-green, equigranular dyke 37.8 m 55°. 37.8-38.24 : f.g. equigranular dyke contains v.f.g. biotite (?) in weakly chloritized matrix. Weak to moderate presence of matrix carbonate. Dyke looks like weakly altered arenite. Moderately magnetic matrix - v.f.g. pyrrhotite.	- wk hornfels 36-37m - mod biotite hornfels 37-.3 - strong qtz-biotite hornfels 37.3-.7 - intense biotite-qtz hornfels 37.7-.8m. - weak epidote altn in dyke	- 1% bedded pyrite - 3% f.g. magnetite in dyke.	90° 45° 65°	6	9
38	40	1.94	97%	38-38.24m : f.g. dyke as above; lower contact 65° with intense biotite-quartz hornfels. 1cm wide qtz-feld. vein 38.3m 65°. Much 80° qtz veining & banded biotite + section of epidote in intense hornfels 38.24-38.8 38.24-40 : Black Argillite w. minor graphite on fr.	- chlorite wk-mod in dyke strong chlorite diss on lower contact + limonite. - qtz-biotite hornfels 38.24-38.82m. - mod. dissem. epidote 38.5-.55m - limonite on fr 38.4-38.8. - 1cm wide qtz v. with biotite hornfels envelope .5cm wide 45°	- 3% diss magnetite in dyke. - diss. f-m.g. scheelite 38.43-38.57m. V.f.g. MoS₂ (?) - 1% diss. v.f.g. po+py in hornfels zone. - 1% vuggy bedded py in argillite	65° 75° 5° 15°	7	22
40	42	2	100%	Black Argillite : wkly hornfelsed As above section Phyllitic Argillite : light grey-black - highly foliated & fractured - may mark fault 41.75-42.1m (90° & 30° t.c.a.)	- minor graphite-light green clay on fr. - shearing & much graphite on fractures 41.75-41.9m.	- 1½% vuggy f.g. py on bedding	0° 15° 30° 15°	5 2	19 30

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO. 5 / 5

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MDH D.D.H. 80-1

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
42m	44	1.4	70%	Black Argillite :- Weak-moderately hornfelsed throughout. Broken core 42-43m. F.g. equigranular, light green section containing chlorite 42.4-.6m - dyke?? 43.97m :- begin light green dyke.	- graphite 43.9-44. - hornfelsing - Chlorite alt. 42.4-.6	1% f.g. diss. py	75° 5° 45°	2 2	30 30
44	44.54	.52	95%	Dyke? - light green, f.g. equigranular rock cut by vuggy qtz vs. 44.51-44.54 m : Fragments of graphite & argillite & diamond bit - lightning strike shatters bit & cannot drill below. Hole abandoned. See MDH. 80-2.	- much chlorite on frac. - weak chlorite to mod. in matrix.	- 1/4% diss. fracture-fill pyrite.	65° 0°		

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 8564

DRILL LOG (LOGGED BY M.D. BRADLEY & E. MESZAROS)

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO.	
M.V.T. Claims		500+95N	499+95E	1494.0m	1	34

DATE STARTED	DATE COMPLETED	Hole Attitude	HOLE SIZE	TOTAL DEPTH	HOLE NO.
April 30, 1980	May 7, 1980	Surface - Azimuth Bearing: Dip: -90° Depth - Azimuth Bearing: Dip: Horizontal Projection: Vertical Projection:	BQ	233.84m	MDH D.D.H. 80-2

8564

Depth From	Depth To	Core Length	Core % Rec	LITHOLOGY	ALTERATION	MINERALIZATION	Structure F	V/m	F/m
0	1m	1m	0	Casing in fractured, limonitic argillite	- wk. hornfelsing - limonite after pyrrhotite + pyrite on fractures.				
1 metre	2 metres	1m	100%	Black Argillite :- Weakly hornfelsed. Banded. vuggy microquartz on bedding? 80° Rather porous rock	- limonite of f-m.g. py on bedding fr. - wk. hornfelsing	- 2% + f-m.g. py in vuggy quartzose bedding fractures	80° 45° 15°	1	40
2	4m	1.82	91%	Black Argillite: As above. Core very broken on 80° bedding? fractures	- minor muscovite in some vugs w. py + qtz. - limonite on many fr.	- 2% f-m.g. xtalline py as above.	80°	3	40
4	6m	1.76	88%	Black Argillite: As above. Very deformed bedding outlined by microquartz vs. at 5.5m.	as above.	- 2% py as above	80° 65°	1 1	22 23
6	8m	2.0	100%	Black Argillite: Banding 60°. Qtz v. - limonite boxwork, vuggy at 7m.	as above	- 4% diss bedded vuggy py - py prominent 7.8-8 in vuggy py qtz vs. on bedding.	65° 0° 15°		20 27
8.	10	2.05	102%	Black Argillite: Banding 75°. Vuggy micro qtz on bedding? Hornblende rich - diabase? dyke 8.84-9.85m. Upper contact 45° lower contact 55°.	- as above - 2cm. mod. hornfelsed contact to diabase dyke - limonite & goethite on fr. - weak graphite on fr.	- 2% bedded vuggy py. - qtz py veinlets in diabase 25-30°	75° 50° 45°		
10	12	1.99	99%	Black Argillite : Highly fractured 11.84-12.05m Banding 75°. Prominent foliation 50°	- persistent limonite & goethite on fractures in argillite.	- m.g. xtalline py in qtz-carbonate - goethite veinlets 5°, 30° - 1% bedded vuggy py.	0° 75° 50° 0° 15°	1 5	25 26
12	14	2.00	100%	Dyke : 12.05m - 14.13m : light grey green, f.g. equigranular - arenaceous in appearance. Upper contact fractured, lower contact 55°. 13.44-13.55 qtz veined, epidotized, chloritized argillite highly fr.	- limonite, goethite, carbonate on numerous fr. - wk chlorite in dyke, strong on lower contact	- ½-1% vuggy pyrite	80° 30° 0° 55°	5 1	35 23

DRILL LOG

SHEET NO. 2

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	2	34

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: 90° / Depth - Azimuth Bearing: Dip:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MDH D.D.H. 80-2
April 30, 1980		Horizontal Projection: Vertical Projection:			

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
14m	16m	2m	100	Black Argillite: banding 60° vuggy microcrystaline Qtz with pyrite, 4cm thick banding with Qtz, Py+Po at 15.3 m; Arenaceous like Dyke at 14.13m chloritized contact 55° see 12m-14m for description -below dyke foliation is deformed forming banding at 15m -fractures containing micro Qtz cross cut banding at 20°	-micro crystaline Qtz along fractures -Limonite in most fractures	-5% Py in vugs + along bedding fractures -10% Py + Po in localized banding.	75° 13° 60° 20°		
16m	18m	2.14	107%	Black Argillite: banding 80° Py + micro Qtz in vugs + fractures -cross cutting fractures at 20°	-Same as above	-5% Py in vugs + fractures	80° 20°		15 2
18m	20m	1.91	95%	Black Argillite: -banding 85° 18m-19m Py + micro Qtz in vugs + fractures *Hornfels: -19-20m Pyrite + micro Qtz in bands at 45° with Po in some bands banding reverses direction 90° within 20 cm - Hornblende + minor epidote	-same as above -epidote + hornblende alteration in matrix micro Qtz in bands and fractures, Limonite along some fractures	-5% Py in vugs + fractures -20% Py + Po in bands	85° 45°		4 4
20m	22m	2.22	100	Black Argillite: -banding 75° microcrystaline Qtz with Py in vugs along bedding bands	-micro crystaline Qtz + sericite along fractures -Limonite along some fractures	-5% Py in vugs less in fractures	7° 75°		1 17
22m	24m	2.01	100	*Hornfels: 20m-20.13 + 22.90m to 23.03m banded micro Qtz with Py + Po in a matrix containing hornblende Black Argillite: banding 80° micro Qtz + Py in vugs sericite + Py along fractures	-Hornblende alteration in matrix micro Qtz in bands -micro Qtz vugs -sericite fractures	-20% Py + Po in bands -2% Py in vugs + fractures	80° 10°		29 2

DRILL LOG

SHEET NO. 3

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION		
					3	34

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: 90 Depth - Azimuth Bearing: Dip:	HOLE SIZE	TOTAL DEPTH	HOLE NO. DDH
April 30, 1980		Horizontal Projection: Vertical Projection:			D.D.H. 80-2

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
24m	26m	1.99	100	Black Argillite: banding 80° micro QTz + Py in vugs sericite in some fractures at 45° micro QTz in fractures at 5° *Hornfels: 24.5m - 24.6m Hornblende in matrix micro QTz, Py + Po in bands + fractures banding at 60°	Sericity in fractures micro QTz in fractures at 5° Hornblende in matrix micro QTz in bands + fractures	5% Py in vugs + along fractures 20% Py + Po in bands chiefly Po	45° 5° 80°		2 5 24
26m	28m	2.04	102	Black Argillite 26.0m to 27.16m banding at 70° becoming irregular + deformed near Hornfels, micro QTz with Py + Po in vugs, micro QTz in fractures at 10° *Hornfels: 27.16 to 27.42 irregular banding of micro QTz with Po + Py crosscutting fractures at varing angles. contact between Black Argillite + hornfels 50° irredesant tarnish along fracture, -Hornblende in matrix -Large micro QTz lens near base of Hornfels -Lathe like crystals near basal contact Hornfels repeats from 27.86 to 27.86	micro QTz along fractures -Hornblende in matrix -Micro + Macro QTz in fractures lens + bands	5% Py in vugs minor Po 20% Po + Py in matrix, bands + fractures	70° 10°		16 5
28 m	30m	2.10	105	Black Argillite banding at 55° - micro QTz with Py negligable Po in bands + vugs - Sericite + Limonite alteration in fractures at 15°	Sericite + Limonite in fractures	5-7% Pyrite in vugs + bands	55° 15°		8 4

DRILL LOG

SHEET NO. 4

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	4	34

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: 90° / Depth - Azimuth Bearing: Dip:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MDH D.D.H. 80-2
April 30, 1980		Horizontal Projection: Vertical Projection:			

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
30m	32m	1.85	92.5	BLACK ARGILLITE: banding 85° bands are somewhat deformed and contain micro QTZ and pyrite - 1cm thick lenses of micro QTZ - Limonite + sericite in 30° fractures - 31.38m banding at 40°	micro QTz in bands + fractures Limonite + sericite in some fractures	7% Py in bands	85° 30° 40°		14 4 3
32m	34m	2.2	100	Black Argillite: banding 70° micro QTZ and pyrite in banding Local disruption of banding by QTz viens - banding at 55° from 33.57 down marked by 3mm QTz vien Hornfels: at 32.62m + 33.92m marked by hornblende in matrix and mineralized micro QTz viens, bands + vugs	micro QTz in bands + fractures Gypsum in some fractures along banding Sericite in fractures at 10°	5% Py in bands 20% Py, Po, Cp + Sp in Hornfels	70° 55° 10°		22 4 1
34m	36m	1.71	85%	Black Argillite: banding at 70° micro QTz + pyrite in vugs Limonite with micro QTz + pyrite along fractures at 10°	micro QTz in vugs + along some fractures with limonite	5% Py in vugs + along fractures	70° 10°		10 5

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO. 5
					5

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: 90 / Depth - Azimuth Bearing: Dip:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MC-
April 30, 1980		Horizontal Projection: Vertical Projection:			D.D.H. 80-2

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
36m	38m	2.04	10[illegible]	Black Argillite: 36.[illegible] m To 36.6 basal contact with hornfels at 36.6 Banding [illegible] by multiple microQTz filled Fractures Hornfels: Fine grained with hornblende in matrix becoming increasingly finer grained below contact with black Argillite - near contact, fine gr. disseminated pyrite po + sp. away from contact coarser bands of sp + py especially near QTz filled Fractures	Limonite + sericite along some fractures microQTz in most Fractures Limonite along some fractures AT 25° [illegible] crystalline QTz along fractures AT 30°	[illegible]% py in vugs in black argillite 2% Dis. Py, Po, Sp increasing to 5% [illegible] py, sp	30° 25° 30°		4 6 7
38m	40m	2.18m	109	Hornfels: becomes increasingly silicic down hole. Fine disseminated py + sp in matrix minor vugs near QTz Filled Fractures	Same as above For hornfels	Same as above For hornfels	25° 30°		9 13
40m	42m	1.98	99	Silicified Hornfels: increasing injection of QTz viens down hole, minor drag Folds AT 41 m healed over by QTz high degree of AlTeration Hornblende + epidote in matrix minor disseminated py throughout po,sp bands near QTz Fractures + galena?	Hornblende + epidote alteration in matrix MicroQTz in Fractures Sericite + limonite along Fractures AT 40°	2% py in matrix 10% sp, po + galena? along QTz Fractures	40°		6

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO. 6
					6 / 34

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MOH D.D.H. 80-2
30 April					

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
42m	44m	2.06m	103	Silicified Hornfels: highly altered hornblende → actinolite. Also phlogopite, prominant at 42.5m down, calcite from calcite viens - large clot of sp at 42.60m next to calcite vien. minor disseminated py + po throughout. basal contact with black argillite at 42.8m at 70°	hornblende + calcite → actinolite + phlogopite. in hornblende controlled matrix. Limonite along some fractures at 45°	2% py + po in hornblende matrix. 30% sp in actinolite + calcite matrix			
				Black Argillite: banding at 70° with microqtz + pyrite along bands - from 42.8m - 43.17m + 43.42 to 44.0	micro QTz along banding	3% py in bands.	70°		3
				Hornfels: 43.17m - 43.42m, hornblende → actinolite + phlogopite along fractures containing calcite few grains of sp along these fractures	hornblende + calcite → actinolite + phlogopite	2% sp along calcite viens			
44m	46m	1.97	98	Black Argillite: 44.0m - 44.1m + 44.24m - 44.39 + 44.54m - 44.97m from 45.03m to 45.43m from 45.6m to 46.0m banding at 55° micro crystaline quartz and pyrite along banding	micro QTz along banding	5% py along bands	55°		11

DRILL LOG

SHEET NO. 8

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	8	34

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: 40; Depth - Azimuth Bearing: Dip:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MDH D.D.H. 80-2
April 30, 1980		Horizontal Projection: Vertical Projection:			

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
48m	50m	1.96m	98	Black Argillite: banding at 50° bands are deformed micro QTZ, py, po in bands and lenses - Graphite rich	micro QTZ in bands	5% py + po in bands	50°		10
				Hornfels: hornblende in matrix - silicified - po + py Disseminated throughout	hornblende in matrix	10% py + po in matrix			
50m	52m	.60	30	Black Argillite: Graphite Rich poor Recovery due to intense Fracturing due to faulting					
52m	54m	2.03	101	Black Argillite: banding 70° micro QTZ in bands with py	microcrystalline quartz in bands	5% py in bands	70°		4
54m	56m	2.00	100	Black Argillite: banding 65° same as above	same as above	same as above	65°		7
				hornfels: at 55.6m to 55.7m hornblende alteration in matrix po + py in matrix and bands	hornblende in matrix	20% po + py in matrix + bands			

DRILL LOG

SHEET NO. 9

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	9	34

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: 90 / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MQ / D.D.H. 80-2
April 30, 1980					

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
56m	58m	2.04m	102	Black Argillite: banding at 75° Py in bands with microcrystalline quartz, minor Po sericite in some fractures at 30°	micro Qtz in bands sericite in some fractures	5% py some Po	75° 30°		16 1
58m	60m	2.0m	100	Black Argillite: Same as above	Same as above	Same as above	75°		9
60m	62m	1.99m	100	Black Argillite: same as above Hornfels: one minor incursion at 60.23m to 60.37m py + Po in matrix of hornblende + micro Qtz	Same as above hornblende + micro Qtz in matrix	Same as above 10% po + Py	75°		10
62m	64m	1.98m	99	Black Argillite: slightly cooked some graphite - sulfides are po + py - bedding 60° along which occurs micro Qtz with sulfides - deformed in some sections	graphite alteration in most of section	10% po + py	60°		5
64m	66m	2.13m	107	Black Argillite: slightly cooked some argillite multiple quartz intrusions with Py + Po micro Qtz with Py + Po in vugs banding not evident	graphity alteration in most sections	10% po + py in vugs			

DRILL LOG

SHEET NO. 10

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION

DATE STARTED	DATE COMPLETED	Hole Attitude	HOLE SIZE	TOTAL DEPTH	HOLE NO.
April 30, 1980		Surface - Azimuth Bearing: Dip: 90 Depth - Azimuth Bearing: Dip: Horizontal Projection: Vertical Projection:			MO? D.D.H. 80-2

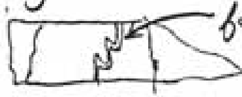
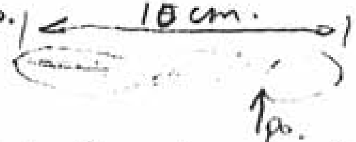
DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
66m	68m	2.07m	103	Silicious Hornfels: From 66.07 to 67.16 interlayered with graphitic argillite - po + py occurring in bands within hornfels - py + po in vugs within argillite - Sericite + gypsum within some fractures at 5° Silicious hornfels with massive white quartz veins biotite + epidote within the quartz veins - py + po in vugs + [illegible]	[illegible] in hornfels, graphite in argillite sericite + gypsum to some fractures epidote + biotite in quartz vein contacts				
68m	70m	2m	100%	Grey-to-black Argillite - extensively silicified, color probably due to presence of silicification. 68.06 – 68.3 massive quartz vein @ 10° vein contains py blebs, as well as epidote. epidote streaks also found at an angle to foliation in the grey-argillite - primary foliation? is 85° epidote streaks at 60°. - contact is fairly sharp between vein & Argillite - with some penetrative fingers migrating of the vein proper into the argillite - some remobilization of argillite material present. 68.3 – 68.55 - zone of pervasive silicification & epidote. - also has bleps of fine gr. py. as well as fine disseminated grains throughout. - micro veinlets of py exist and are ⊥ to primary foliation. - Carbonate mineralogy present through, in micro vein, vugs, and well evidenced by extensive effervescing. - also found is a blue - purple mineral, found in close assoc. with the epidote - with soapy feel.	- extensive silicification with pervasive carbonate mineralogy ie: low grade skarn?	- py found in fine grain blebs, as well as fine disseminated grains in vugs and along micro fractures. - also found in assoc. with py brown mica - epidote is common in microfractures, and esp assoc. with qtz veins.			

BP

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO. 11

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. D.D.H.

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	V/m	F/m
68m	70m.	2m.		cont. → 68.6 - 69.0 the quartz vein is brecciated milky white color, with epidote blebs & veinlets located within. vein is @ 5-10°. - with envelope of biotite and some sericite although this is weak - low temp? At 68.65 the lithology changes from silicified grey-white argillite to dark black Argillite with cryptic quartz fractures. - these fractures are subparallel to major folliation which is 85°. to core axis.	- epidote, silicification little sericitization	- single bleb of hematite located in qtz. vein. @ 68.9. - py & po. found along fractures, as blebs. - carbonate mineralogy persists along fractures. Sulphides 1-2%			
70m	72m.	2m	98%	Black - Argillite - cryptic bedding @ 85° to c.a. - presence of cryptic quartz veins both subparallel to bedding and at various angles to it. - numerous cases of folded micro qtz veins.  folded qtz vein with po. blebs in vein and vugs. particularly in the fold itself. - Also present is boudinage structures in both micro fractures  and more massive boudins of po., + qt.  - Also note that these boudin like form and folded microveins are found in particular lighter black grey less micro folliated bands, more homogeneous bands. - to a certain extent there has been some brecciation in the boudins. - 71.1 - 71.5 is extensively brecciated and fractured, with numerous qtz. veins + a graphitic nature to the rock. - a shear zone?	- in general a mild hornfelsic modification is present. - epidote alteration,	- po. + py. found in qtz. fractures as well as more bedded. - carbonate mineralogy still present, although present in microfractures			

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO. 13	34

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MDH D.D.H. 80-2

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	V/m	F/m
74.0m	76.0m	2.	90%	continued, - alteration at contact between qtz vein + Argillite, gives rise to sericite, possibly flourite impurities; moly slivers in the sericite halo.					
76.0m	78.0m	2.	97%	Black Argillite - folliation at high angle ≈ 70°. with fractures subparallel. → py + po mineralization found in vugs, + micro-fractures often closely associated with the qtz veins. some Sulphides also found disseminated. - microfractures often folded, and crenulated, and exhibit halos. 76.9 is a shear zone with graphitete texture, silicification, sericitization, and brecciation pervasive. zone is 76.9-77.05. Angle is 70° to c.a. 77.55-77.7 a massive qtz vein containing quikening mineral? , Moly slivers at alteration perifery (sericitization) - with po. in micro fractures originating from major vein. - Imediately below this is a shear zone again with increased Sulphide content, + graphite alteration. - Remainder of section is cryptic Argillite with qtz. veining @ 70° also // to foliation.	- Some sericitization at contact of veins, silicification, slightly hornfelsic.	po + py found in close association with veins, few disseminated grains - grains are fine, or fine grained blebs. po + py ≈ 2 %. in veins and disseminated.	70° 80°		10
78.0m	80.0m	2		- Black Argillite - cryptic folliation. from 78.0 → 79.2. after here the rock is well fractured with micro veinlets @ 75° to c.a. - these are suspected to be injected. - from 79.2 → 80.0 is a highly silicified, veined zone, with py. found as recryst. euhedral grains in the Argillite, and po. in the veins. - No po is found in the Argillite i.e. different source. - veins are highly contorted. at various angle to c. a. - little alteration exists at the vein Argillite contacts. -	- silicification, sericitisation, Some epidote Alt.	Py. generally as disseminated grains in Arg. with po found with the qtz. veins, and not in the Argillite - some patches of finely disseminated po. also found, maybe remobilized. po + py ≈ 1.2 %.	70° 80° 60°	1	15

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO. 14 / 24

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MDH / D.D.H. 80-2

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
80.0m	82.0m	2.0	100%	Hornfels. - silicic in nature with light grey-brown color. foliation difficult to see, and quartz veining very diffuse. Silicification extensive. - primary folliation appears to run 70° to C.a., often crenulated and folded. - making determination of folliation direction difficult. - none the less the mineralization seems to follow the folliation traces, and is best associated with the veins and micro fractures.	hematite after magnetite. - hematite staining assoc. with qtz. veins. - epidote.	- po. found in abundance as grains in the hornfel, esp. at 80.49. - po ~ 1% py ~ .5% tot.	80° 75° 10°		8
82.0m	84.0m	2.0	97%.	Hornfels → essentially same as above, with little fracturing and sulphide mineralogy found in the qutz veins that are present. - veins are diffuse with silicification being common throughout the rock. - one vein (82.35-82.40) of qt. is present with vague alteration zone of sericite + magnetite + hematite present in vugs in the vein. - folliation is again vague however perhaps 45°.	- Sericite, silicification, qt veins., hematization, some chloritization.	po. + py low < 1%.	45° 85° 88		3
84.0m	86.0m	2.0	100%	Argillite - cryptic grey banding with numerous qtz. veins. these veins are @ 75-80° and are 1-2cm thick, with inclusions of magnetite, hematite, disseminated py. possibly po. and some covellite + bornite in trace amounts. this zone is from 84.0 → 84.6. There is a short interval of a more hornfelsic rock, with vague folliation present @ 75-80°. Silicification and some qtz veining is present here, with sulphides po + py present in vugs and micro veinlets subparallel to folliation. this hornfelsic - Argillite persists until 86.0, with bands often more hornfelsic than others. At 85.8 there exists a qtz vein ≈ 1-2cm. which cuts at 50° to c.a. It exhibits a good alteration zone with unidentifiable mineral in alteration zone.	Silicification is dominant with some sericitization.	py + po found as fine grained individual disseminated grains in the qtz veins, and often as fine grained aggregates in bleb form.	70° 60%		3

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO. 15 / 34

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MT[illegible] D.D.H. 90-2

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
86.0m	88 m.	2.	100%	Argillite Hornfels - Exhibits silicification, lack of observable foliation of any kind. - presence of brown porphoblasts at about 86.4 in well silicified section. Distinct observable qtz. veins not common. one example 86.7 @ 45°. - milky - black - brown qtz. with little mineralization - @ 87.2 some patches of pink - K - feldspar are found. - also @ 87.4 ~ 87.5 larger porphoblasts of garnet, often occurring with a pink alteration rim. @ 87.7 exists a dark chlorite rich mafic band, oriented at 90° to c.a. - it also contains some disseminated sulphides magnetic, due to magnetite or po. - Note that this white colored mineral (lath like in shape, similar to a spinifex texture (although not suspected to be one.) - also note that the grains are generally oriented with their long axis 90° to C.a. (settling)? or tectonic in origin. - also note Brown mineral at 86.3 closely associated with sulphide possibly sphal.	- Silicification present. Some sericitization, and feldspar alteration. - hornfelsic alteration obvious on large scale as well as envelopes about qtz veins.	throughout section one finds a white grey mineral which exhibits a somewhat birds foot texture and a Amphibole ? cleavage outline. - py + Po - 1 %.	45° 78°		2
88.0m	90.0m	2	95%	Argillite Hornfels. - Very similar to above with the white lath like mineral dominating (amphibole)? Little fractures foliation shown by mineralogy as 60° to C.a. Some very linear stringer formed by the mineral. At 89.1 a brecciated zone exists, here silicification is dominant, with sulphide content being concentrated. (py + po.) Graphitic nature is also observed as well as shearing striations. (ie some shearing, in addition to injection of silica solutions. orientation is 60° to c.a. also note Alteration halos of sericite & silica. - Some sulphides found in vugs in the hornfel matrix apparently not directly assoc. with fractures.	- silicification dominant as above. Some sericitization	- sulphides po + py found in vugs and in the few qtz veins total = 1-2 %.	50° 45°	1	2

BP

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO. 16	34
DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: Depth - Azimuth Bearing: Dip: Horizontal Projection: Vertical Projection:		HOLE SIZE	TOTAL DEPTH	HOLE NO. MDH D.D.H. 80-2

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
90.0	92.0	2	100%	Hornfelsic Argillite → 90.0 → 90.1 the (amphibole)? dominated hornfel continues, after which the rock, although still hornfelsic become darker with cryptic banding dominating, and somewhat more qtz vein showing up. Sulphide mineralogy exists as blebs throughout, generally paralleling the foliation. Silicification is common and in places a higher density of silicified micro veinlets occur. @ 50° to C.a.	- Silicification, with some qtz veining.	- py + po in foliation as individual blebs. Some also present in silicified micro veins. total po + py = 2%. - note that carbonate mineralogy still present in veins with qtz.	50° 45°		3
92.0	94.0	2	85%.	Hornfelsic Argillite → similar to above where zones of quite hornfelsic felted tabular (Ampibole) dominates, and others where, although still honfelsic do not exhibit such extensive cryptal growth. A noticeable change exists at 93.3 where the hornfels gives way to a Argillite with cryptic banding and some hornfelsic alteration. In general qtz veining frequency is low, with microveinlets. Being slightly more prevalent in the Argillite. qtz vein @ 92.1 is well brecciated with alteration halo, massive sulphides including py, po, sph. Also found is chlorite, maybe epidote. at 50° to C.a. Similar band @ 92.9. 85° to C.a.	- Silicification, some feldspar alteration around qtz veins, chlorite also in assoc. with veining. - note presence of carbonate in veins (possib aragonite)	- po + py + sphal found in massive form in qtz veins. - also some disseminated grains in Hornfels Argillite itself. po 5% py 2% in veins sph 1% py + py in dessem. = 2%	60° 50°		2.
94.0m	96.0m	2.	98%	Hornfels-Argillite ⇒ 94.0 → 94.6 grey silicified Argillite with slight hornfelsic texture dominates. 94.6 → 96.0 the Hornfel proper predominates. Argillite is grey in color with moderate qtz veining, and sulphides present as elongate blebs perhaps defining a foliation. qtz veins @ 60 to C.a. 94.6 - 96.0 monotonous poorly foliated amphibole dominated silicified honfel. qtz vein @ 95.1 cutting at. 25° to c.a. but in general qtz veins lacking.	- Silicification, chloritization, and some graphite particularly at lithology change at. 94.6, (ie shear zone due to change in competancy of rock.)	- po found in blebs in Argillite ‖ to foliation also found as dissemin. grains. - pyrite found in minute stringers. sulphides (py + po) also found in veins of qtz. po - 4% ? Dissem inated py - 1% po - 3% py - 1% } vein	25° 60°		2.

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO.
					17 / 34

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. [illegible] D.D.H. [illegible]

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
96.0	98.0	2.	100%	Hornfelsic Argillite - Lithology grades from hornfel at 96.0 - to a [illegible] Argillite rock with a hornfelsic impression to a more cryptic Argillite at approx. 96.4 m. In addition an increase in the no. of micro veinlets of qtz is shown. At 96.4 there is a qtz vein 1cm wide with an equally wide Alteration halo of qtz + feldspar alteration @ 45° to c.a. Primary folliation is variable but approx 45° to c.a. After this vein the Argillite becomes graphitic, highly fractured, and brecciated. folliation here difficult to tell, with veins at 30° to c.a. The lithology changes at 96.8 back to a more silicic, grey hornfelsic Argillite. Note that at the "contact" there is extensive silicification and brecciation @ 40° to c.a. At 97.1 a highly brecciated, graphitic, silicic zone exists. A fault zone, chloritization also present. little sulphide content here. from 97.1 → 98 rock varies from grey Hornfelsic Argillite, to a somewhat grey, silicic cryptic Argillite. with another shear zone ~ 97.5.	- silicic alteration common to pervasive. - with feldspar alteration in halos about qtz veins. - some chlorite is also present, and graphite, both assoc with suspected zones of shearing.	- carbonate mineralization still present in veins - py found in micro veinlets // to primary foliation. - sometimes developing to more massive blebs. - sulphides generally found in blebs of qtz. or in qtz veinlets, or silicified zones. po - 1% py - 2% total dissem and in micro stringers. - scheelite grain at 96.	40° 45° 30°	3	12 12
98.0m	100.0m	2	99%	Hornfelsic Argillite - Again grades in and out, from a cryptic grey black silicic, Argillite, to a more hornfelsic silicified rock at 98.3. This hornfels persist to 98.8, then back to a more graphitic, silicic cryptic Argillite and back to a more hornfelsic rock at 99.5, then back to the grey Argillite at 99.7. The frequency of qtz veins increase in the Argillite, and often a zone of friable, or sheared graphitic, highly fractured rock exist at the boundary between the two lithologies primary folliation @ 45° to c.a. with veins generally // folliation. one qtz vein at 98.5 has massive po. and exhibits a good alteration halo, Sericite [illegible] alt.	- silicification pervasive, qtz veining common, - chlorite, epidote. and graphitic alteration common at shear zones. - carbonate mineralogy still evident in veins.	po - more common than py. - generally as blebs. and dissem grains along folliation in the Argillite. - also found in hornfels although here closely assoc. with silicified zone and qtz veining. po - 3% veins py - .5% veins po - 1% dissem. py - .5% dissem.	45° 50°		12 5

BP

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO. 18 / 34
DATE STARTED	DATE COMPLETED	Hole Attitude: Surface – Azimuth Bearing: Dip: Depth – Azimuth Bearing: Dip: Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. D.D.H. 80-2

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	V/m	F/m
100.m	102.0m	2.	100%	Black Argillite - grey black argillite with cryptic banding. Silicification is pervasive, with qtz veins also being present. foliation is approx. 50° to c.a with fractures & veins generally running ll to the primary foliation. at 101.3 the folliation becomes 70-80°. The silicic veins once again follow the folliation. Mineralization is dominantly associated with the micro veinlets of qt. and po seems to dominate. A very brecciated silicified fracture exists at 101.8, here it is at 45° to c.a, is 1cm thick and is massive sulphide + qt. + calcite + chlorite, biotite (sulphides include po, py, sphal.).	- silicification some sericitization about veins. - chloritic alteration	- py + po + sphalerite. - generally found in micro veinlets or vein subparallel to folliation and closely associated to silica. ie qtz. po - 2% py - 1% Sph - .5%.	50° 45°		10.
102.0m	104.0m	2.	100%	102-103 - Identical to Above. Black - grey Argillite - Silicified, with numerous qtz veins, often crenulated. folliation at 45° to c.a. 103.1 is a gypsum vein of 1-2cm with alteration halo of 1cm each side. also some calcite in vein. 103.1-104 the Rock is more Hornfelsic. especially from 103.5-104. The foliation in the more argilatious portion is 70-80°. M	- silicification pervasive feldspar alteration to (sericite.)	- mineralization is present throughout in the argillite generally in the micro-qtz fractures, and more often po. - very few grains exist which are not assoc. with fractures. - More massive varieties exist in the longer veins, veins where more spaces exist (ie easy growth.) po - 3% py - 1%	45 70 80°		10.
104.0m	106.0m	2	100%	Similar to Above. Black Argillite from 104 → 105.5. folliation here is 80-90° to c.a. with fractures ll to folliation. Mineralization (generally po) closely associated with micro veinlets. 105.5-106 - Light-grey-buff colored calc-silicate Hornfel. - foliation difficult to show. however fractures tend to be 50° to c.a..	- silicification pervasive. - sericite alteration.	- same as above	80° 50°		10 5

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO.
					19 / 34

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface – Azimuth Bearing: Dip: / Depth – Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MDH D.D.H. 80-2

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m	MoS_2 V/m
106.0m	108.0m	2.	100%	Hornfelsic Argillite. – quite similar in Nature to 100–106. – with alternating bands of grey Argillite hornfels, with a more hornfelsic buff colored calc-silicate hornfel. Foliation where well exhibited is 70–80° to C.a. 107.6 – there is a qtz vein with moly. vein is 80 to C.a. and appears to seperate the grey Argillite from the more hornfelsic variety. This pink calc silicate hornfel (skarn?) continues from 107.6 – 108.	– silicification is pervasive with sericitization present in places, particularly near veins.	– moly found as stringer in qtz vein. – po found in close ass. with micro veinlets of qtz; little to no disseminated grains. po – 1% py – .25% Moly – trace	70° 60° 80°		8 7	1
108.0	110.0m	2	100%	Hornfelsic Argillite – 108.0–108.3 A buff colored hornfel exists. @ 108.3 a knife sharp contact exists between it and the grey cryptic Argillite. A qtz veinlet exists at the contact, with the contact at 45°. The grey Argillite exists for .5m and grade into a more hornfelsic material again. Foliation is 70° to c.a. with numerous qtz micro-veins // the foliation. At 108.9 a garnetiferous qtz vein exists @ 20° c.a. At 109.9 a 2cm thick massive fine grained sulphide (po + py) zone exists. It is well silicified and @ an angle of 85° to C.a.	– silicification extensive, some sericitization along vein margins. – carbonate mineralogy still present.	– py + po are exclusively associated with fractures of one kind or another. – po = 2% py = 1%	80° 70°		7 2	
110.0m	112.0m	2.	100%	Hornfelsic Argillite – well silicified with primary folliation @ 70°. Several examples of garnetiferous quartz veins with calcareous mineralogy, and moly. The quartz is generally impure, with contacts with the hornfel being diffuse often showing alteration halo's of sericite + silica alteration. – one example of a gypsum vein @ 111.6. Garnetiferous skarn like zone at 111.0. Note – mystery amphibole also present here.	– Same as above – more skarn like.	– Same as above, but moly found in diffuse qtz veins as stringers. 2% moly in veins.	80° 70°		5 5.	3.

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO.
					20 / 34

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. NTDH D.D.H. 80-2

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
112.0m	114.0m	2.	100%	Hornfelsic Argillite. → gray monotonous hornfelsic, silicified argillite with vague foliation at about 80° to c.a. Fracture frequency is generally low, but where present sulphides are generally associated with them. po seems to be the dominant mineral. @ 113.72 a qtz vein-aragonite vein cuts the core at 40°. It also contains garnet. Several blebs of po. exist, always assoc with qtz., ie fracture related. @ 112.8 - Garnets also found in groundmass, often with reaction rim.	- Alteration is essentially silicification with some alteration of feldspars at the margins of veins. - Some chlorite alteration assoc. with veins.	- po is the dominant sulphide although py, cpy, cov., sphal ?, also located in veins. - the sulphides are always fine grained, often as blebs or stringers with qtz. po 2% py 1% cpy, cov, sphal trace	60° 20° 70°	3 2	5 2
114.0m / 114.0	116.0m	.8m	95%	Hornfels Argillite. - Similar to above. → gypsum vein at 114.0. - Garnetiferous skarnlike zone @ 114.4 with sph, cov. Bor. cpy, py. One gypsum-carbonate vein 0° to c.a. at 114.8.	- Same as above.	Same as above po 1% py .5%. cpy, cov, bor, sphal trace	70° 65°		3

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO. 21 / 34

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface – Azimuth Bearing: Dip: / Depth – Azimuth Bearing: Dip:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MCH D.D.H. 80-2
		Horizontal Projection: Vertical Projection:			

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m	MoS_2 Fr/m
116	118	2	100%	Argillite Hornfels: Black f.g.; cryptic cleavage at 70° t.c.a. Gray qtz v have siliceous envelopes: 116.34, and biotite env. 116.5, 116.75m. Zone of mod. pervasive silicification 117.5-.75m.	- moderate hornfels. - 1cm biotite envelope to 65° qtz v + v.f.g. MoS_2 in vein walls + 1 large blob lustrous sphalerite at 116.5	- 1/2% bedded po - v.f.g - 2% bedded py. - v.f.g. MoS_2 in qtz v walls	15° 80° 30°	11 5	12 8	4 0
118	120	2	100%	Argillite Hornfels: Cryptic bedding cleavage 75° t.c.a. Moderately silicified 118.15-119.0. Intensively silicified section with m.g. relict brown biotite 119.05-.3 cut by 2cm wide qtz-calcite vs. 20°. Zone terminates in 2-1cm wide qtz v 80° with siliceous env. + MoS_2. 2 White veinlets at 20° t.c.a 118.8, 119.06, 119.81 (30°).	- mod. hornfels - qtz-calcite v. 45° in wkly silicified zone wide zone 119.85 m. - calc-silicate skarn (garnets?)	- 1/8% bedded f.g. po - 1/4% " " py. - 80° qtz v. + MoS_2	30° 60° 75° 5°	3 8	11 21	0 2
120	122	2	100%	Argillite Hornfels: Cryptic bedding 75° t.c.a. Several qtz ± calcite? veins 5°, 15° with silica envelopes. Numerous silicified zones throughout ± 2ND ary biotite.	- silicified env. to qtz vs 120-120.15, 120.4-.5; 121-121.23 ± wk 2ND ary bi. also 121.57-.67; 121.95-122	- f.g. MoS_2 in gray qtz v. 50°, 15°. - minor po & py bedded - scheelite grain in silicified zone 120.58	75° 15° 5°	7 6	20 16	1 1
122	124	2	100%	Argillite Hornfels: Black; bedding 75°. Numerous skarn bands in section cut by calcite? veinlets 55°. Qtz v. 123.96 (75°) with dissem MoS_2. Skarns characterized by intense light gray silicification-phlogopite (biotite?) - banded semimassive po ± epidote blebs (diopside?) with 10% f.g. garnet 123.2-.8. Relict biotites altered to chlorite?	- silicified wkly throughout - calc-silicate diopside skarn 121.96-122.1, 122.2-.25, 122.97-124. - zones of grossular garnet	- 2% bedded po - 4-5% blebby & semimassive po in calc-silicate skarn. - f.m.g. dissem. scheelite in skarned bands 123-.05, 123.42, 123.8-.93.	30° 0° 80° 15°	2 10	12 14	0 0
124	126	2	100%	Argillite Hornfels: Black to gray. Weakly silicified throughout with several bands of intense silicification containing dissem epidote.	- qtz vein with chloritized biotite selvedges 124.3 (65° + MoS_2?) 125.91-126 m (30°)	- 2% bedded semimassive po. 4% in skarn bands - minor py with po also, 1/4% py in qtz vs - m.g. scheelite w. po in bands) 124.16, 124.32 m	70° 75° 45° 15° 5°	3 2	16 28	0 0

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO.
					22 / 34

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface – Azimuth Bearing: Dip: / Depth – Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. WT; D.D.H. 80-2

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m	
126	128.	2	100%	Argillite Hornfels : As above Weakly silicified throughout – a few calc-silicate skarn bands with several crosscutting calcite? veins. Qtz vs. have biotite selvedges	– strong silicification 126.1–.25; 126.3–.66 126.9–128. – garnet-diopside skarn 126.57–.66, 127.59–.7 m	– 2% non mag. po + 1% diss f.g. py on bedding – f.g. MoS_2 in silicified zone 30° qtz v. – Scheelite 126.6 m	0° 30° 80° 15°	4 9	21 18	2 1
128	130	2	100%	Argillite Hornfels : Moderate silicification 128–.4, 129.1–130 m. Qtz vs (45°–55°) have qtz–biotite selvedges. Medium green, felted, f.g. xtals in all silicified sections – altered biotite ?	– as per description.	– v.f.g. MoS_2 in 2 qtz vs 75° w. biotite selvedge. – 1% po + trace py in qtz vs. – ½% diss po in hornfels.	10° 65° 45° 15°	10 5	13 19	0 2
130	132	2	100%	Argillite Hornfels – Pervasively silicified throughout Several qtz-calcite (?) veins on 15°.	– calc-silicate skarn garnet-diopside-po (15°) w. qtz v. 130.1–.2, 131.8–.9. – calc-silicate skarn: 130.7–.82.	– ½% f.g. po + ¼% py in skarns trace in silicified zones. – minor purple fluorite in skarns + sphalerite	15° 5° 80°	11 12	12 6	0 0
132	134	2	100%	Argillite Hornfels :– Pervasive silicification 132 – 133.0 m, 133.1–.2, 133.4–134. White qtz-calcite-wollastonite(?) Vs cut skarns 45°. Sheeted fractures 45° 133.5–134 m.	– biotite zones: 132.3–.4, – ser. env. to qtz + MoS_2 + py v. (65°) 132.5, 132.92 – qtz-wollastonite-phlogopite – garnet skarn + purple fluorite + clot of po & sph? 133.6–.7, 133.9 (45°) note chlorite altn on fr adjacent to these bands.	– 3% m.g. blebby py w. qtz vs on bedding in hornfels – ~½% po. w. py. – MoS_2 f.g. in qtz vs 45° 65°	5° 45° 75°	9 7	24 31	2 1
134	136	2	100%	Argillite Hornfels: Cut by large gray qtz Vs 134.2, 134.4 m (75°) carrying dissem py – fractured 45°, 80% respectively & healed(?) by calcite vs. Qtz v. (20°) 135.1 m carry clots of po. Qtz.v. (20°) 135.7 m carries clots of pyrite – biotite selvedge.	– intense silicification 134–.5 – qtz-biotite alteration mod 135–136 m	– qtz vs carry po & py but not together.	45° 80° 15° 5°	6 4	15 11	1 1

586.

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO. 23	34

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface – Azimuth Bearing: Dip: / Depth – Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MDH D.D.H. 80-2

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m	MoS_2 Fr/m
136	138	2	100%	Argillite Hornfels: Cryptic bedding cleavage 80°. Altered throughout. Calc-silicate skarn envelopes to qtz vs hole brown, f.g. mineral which may be garnet, weathered biotite or?? – re-examine whole skarn sections. Garnet = brown mineral.	– silicification mod to intense throughout. – qtz vs (75°) 136.66m, 137.67 (40°), 138° have calc-silicate skarn envelops	– 3% m.g. blebby py in thin bands throughout. – minor dissem po.	80° 10°	3 3	5 5	0 0
138	140	2	100%	Argillite Hornfels: As above. Brown mineral as above, alt envelope to 1cm wide qtz v 138.3 (65°) and to qtz-calcite v. 139.87m. Veins all 65-80° t.c.a. Garnet = brown mineral.	– intense silicification 138-139.78 wk thereafter.	– semi massive, f.g. pyrite (65°) 138.2m, 138.64, 138.7 – minor dissem po.	0° 40° 65°	3 3	5 13	0 0
140	142	2	100%	Argillite Hornfels: Silicified throughout with felted tabular light gray-green mineral. Cryptic banding 65°.	– intense silicification throughout – garnets f-m.g. envelops 2cm wide to qtz vs 141.12 –.2 (20°); 141.3–.4 (60°) 141.48–.52 m also 141 (80°)	– ½% dissem f.g. po 1% diss. f.g. py – 1% blebby aggregate py in qtz vs / calc-silicate skarn	65° 15°	8 9	10 13	0 0
142	144	2	100%	Argillite Hornfels: Cryptic banding 65-80°, weakly hornfelsed, porous, banded cut by 0°-15° fr. fill calcite veinlets 142.9-143.2m, 143.45-144m. Garnet envelopes to 45° qtz vs. 142, 142.35.	– intense silicification 142–.5, 143.45m – mod hornfelsing – black 142.5–.9, 143.2–.5.	– ½% dissem py, ¼% po in silicified zones – ½% diss. py in argillite – ½% diss. po in black hornfels	15° 65° 5°	6 6	17 16	0 0
144	146	2	100%	Argillite Hornfels: Mod. Hornfels 144–144.5 then gradationally increasing strong silicification 144.5-146. 5-45° qtz vs in silicified section have garnet envelopes ½-1cm wide. Veins carry f.g. blebby aggregates py ± v.f.g. MoS_2.	– minor diss epidote in silicified sections. –	– 1% diss. py in sil. section – ½% " po in hornfels. – Fluorite in qtz-garnet v. 145.9	15° 50° 0°	6 5	6 6	0 8
146	148	2	100%	Hornfels: Silicified throughout with light green felted mineral.	– biotite env. to 50° qtz v (147.2) – garnet env. to 2 (65°) qtz v 147-148.	– 3% diss. f.g. aggregates py in gray qtz v. ½% diss overall – Fluorite (purple) in 45° qtz-garnet v. 147.35.	15° 50° 0°	3 5	8 9	1 0

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO. 24 / 34
DATE STARTED	DATE COMPLETED	Hole Attitude: Surface – Azimuth Bearing: Dip: Depth – Azimuth Bearing: Dip: Horizontal Projection: Vertical Projection:		HOLE SIZE / TOTAL DEPTH	HOLE NO. MDH D.D.H. 80-2

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m	MoS₂ Fr/m
148	150	2	100%	Hornfels: Strongly silicified 148→149.5. Argillite, mod hornfelsed 149.5-150m. Cryptic banding 80°. Numerous calcite veinlets 0°, 15°, 80° in hornfels section. Garnet skarns 55° 149.05-.2; 149.3-.35, 149.75.	- Garnet-diopside-po skarn to 30° qtz (MoS_2?) v. 148.1→.25m. - 40° hairline qtz fr. fill + garnet + fluorite 148.75m	- f.g. MoS_2 to gray qtz v. 148.2 - m.g. py in some skarns. 1% - f.g. po in skarns 1-3%. - ½% diss f.g. py in hornfels.	0° 45° 15°	4 20	10 25	1 0
150	152	2	100%	Hornfels: Black after argillite 150-152m. Cryptic bedding cleavage 80°. Several calcite veinlets 30°.	Silicified 151.45-.55 Qtz v. 151.64-.7, 151.74-.76 carry blebby py - breccia hornfels -80°	-1% bedded pyrite - 2% blebby py ± po in qtz lenses 151.85-.98	90° 50° 15° 30°	10 9	11 10	0 0
152	154	2	100%	Hornfels: Cryptic banding 75°. Mod-intense silicification from 152.2 to 153.46m. Garnet selvedge to qtz v. 15° 153.4m. Qtz-epidote altered band 153.53-153.13m.	- 55°, ½cm wide gray qtz vs 153.72, 153.84 have 1cm wide biotite selvedges - garnet diopside - pyrite skarn (chlorite?) to 40° garnet v. 153.1-153.32m	- 1% bedded py - 2% blebby in qtz vs Cpy	80° 15° 65° 15°	3 7	12 16	0 0
154	156	2	100%	Hornfels: Moderate black hornfelsed argillite throughout. Cryptic bedding cleavage 80°. Qtz vs with garnet selvedges. 154.78m (65°), 155m (55°), 155.6m (30°). Note 155.6m qtz v 1cm wide contains subangular to subrounded frags of cloudy white feldspar, transparent qtz, opaque qtz — contains clots of intergrown po & sph with edge phase of garnets + v.f.g. MoS_2, cp, co, bo & minor py. See sample for polish section	- silicified section + m.g. blebs of epidote 154.6-.76	as above - v.f.g. MoS_2 + clots of po-sphal f.g. cp, covellite & bornite in 30° qtz v ½cm wide with frag of transparent qtz & cloudy feldspar.	45° 80° 15° 65°	8 2	13 9	1 1
156	158	2	100%	Hornfels: As above. Note fragments (rafted?) of cloudy white feldspar. Moderate silicification 157.7-158m. Note orange fluorescing mineral (SW only) in garnet env. to 157.04-.14 qtz vein.	- silicified adjacent to gray qtz-po-sphalerite veins with thin garnet envelopes 15° at 156.2-.3, 157.04-.14, 157.44→.49, 157.84 (70°) 157.63 (65°)	- 2% bedded py - sphalerite - pyrrhotite in gray qtz vs.	55° 20° 20°	4 4	5	0 0

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO.	
					25	34

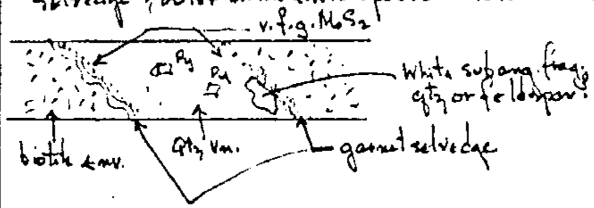
DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. UDH D.D.H. 80-2

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
158	160	2	100%	Hornfels: Intensely silicified. 158-158.7, 159.15-.34 159.75-.9 m	- pink garnets to 65° qtz v at 158.2 m, 158.8 m - black biotite in sil. zone 159.75-.9 m.	- po + minor sphalerite in qtz vs 80°, 30°. - 1% bedded py	65° 15° 45° 80°	8 8	13 9
160	162	2	100%	Hornfels: Gray to black after argillite. Several qtz v's on hairline fr. 10°-20°.	- garnet-epidote stern bands → 160.8 (80°) 161.9-162 m.	- gray qtz vs. 15° carry po + sphalerite ± garnet selvedge at 161 m, 161.56. - ½% - 1% bedded py.	65° 20°	12 5	27 10
162	164	2	100%	Hornfels. Intensive pervasive silicification throughout. 90° gray qtz v. 2 cm wide 163 m. Note qtz v carrying po + sphalerite at 164.4 (0-15°) feldspar - qtz - diopside frags show subrounding - subangular shape.	- pervasive silicification	- ½% bedded py. - sphalerite + po in 15° qtz v. 164.4 - scheelite in massive po band 85° 162.55-.9 m.	15° 50° 80°	4 1	5 6
164	166	2	100%	Hornfels: Cyclic bedding 75°. Note scheelite in narrow band - no po at 167.2 m.	- pervasive silicification 164-.7; 165-166	- 3% banded po 164.2 → .3 m 0° ; 65°. - qtz v 15° at 164.5 carries clots of py but only trace pyrite overall in section	80° 5° 65°	3 4	10 13

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO.
					26 / 34

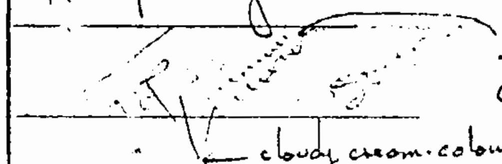
DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MDH D.D.H. 80-2
		Horizontal Projection: Vertical Projection:			

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m	MoS_2 Fr/m
164	166m	2	100%	Silicified Argillite :- Bedding planes 85°-90°. Dark grey colour except grey-green in chloritized section. Qtz-calcite Vein at 65° T.c.a. 165.32m - 2cm wide. Qtz v. 164.6-165.1m-5°. xcuts 85° qtz v. 164.95m Much po in fr 164-165m. gray qtz vs	- Strongly silicified & hornfelsed throughout - mod. pervasive chlorite 165.1-.36 after biotite(?) - wk chl. after bio. on fr 164-165.7m.	- 4% f.g. & smears of pyrite & 1/2% f.g. po. on bedding. - 4 fr filled with po 165-166m 12 or 80° (0°) 164-165m - 4% f.g bedded po 164.76-.9	50° 0 85°	8 8	19	[illegible]
166	168	1.88	94%	Silicified Argillite: Banding 85-75°. Darkgrey. Pervasive Biotite altn 167.47-168 m. Qtz vs. 166.1, 166.46, 166.94 - garnet selvedge & outer biotite envelopes .25-1cm wide. Qtz v. at 166.46m, 1.5cm wide v.f.g. MoS_2 adjacent garnet selvedge.  gray qtz vs.	- Strong silicification perv. - f.g. biotite with po on fr - often altered to chlorite - hairline frs. with chlorite (after bi?) xcutting on 5°, 15°, - qtz vs. with garnet-biotite selvedges also with chlorite selvedges - subparallel.	- 5% f-m.g. po ± py ± cp ± Mo on fr. 75°, 15° - 1/2% diss py 1/2 diss po. - 1/2% overall cp - on fr w. po + minor pyrite + biotite. - v.f.g. MoS_2 on a few po fr. & in qtz v at 166.46m (45°) 166.94m (45°)	65° 80° 50°	26 20	40 27	0
168	170	2	100%	Biotite Hornfels: 168-169.13m Banding on 65° fr. set? Numerous blebs & bands of po + lesser pyrite. Qtz, qtz-feldspar vs. 168.3m + py (30°) Gray Quartz (Aplite?) contact 65° at 169.13m to 169.38 cut by qtz-fld-sericite vs. at contact. Some grey-brown v.f.g. biotite? in matrix. Numerous hairline fractures x cutting on 65°, 80°, 45° - qtz selvedges? Few contain v.f.g MoS_2 + pyrite. Aplite: V.f. grained, gray (light green) 169.38-.51 upper contact 65° + MoS_2 + py. Cut by narrow f.g. granite dyke 35° containing cream to light green qtz-sericite v. + pyrite (35°). Fine grained granite: 169.51-170: Very light gray green in color. Fine grained to very fine grained matrix. Contains 2-3% select biotites altered to chlorite. MoS_2 Qtz vs. at 169.66 (65°), 169.7 (3cm) 75°, 169.75 (30°) + ser + py 169.8 (30°) grey qtz vs.	- pervasive f.g. biotite hornfels - numerous 65° fr contain white feldspar? altering to carbonate + epidote?, & clay from 169-169.2 across contact - qtz-sericite-carbonate v. at 169.13 (65°) in granite: weak pervasive sericite altn also light yellow green sericite ?-pyrite veins on 15°, 45°. - biotite flakes in qtz v. 169.7	- 5% banded & 70° fr. fill po 168-169.13m. ± qtz - 1/2-1% pyrite (dissem) & fr fill - trace cp. in arg. in granite: ~1/2% f.g. xtalline py in sericite fr. fill. - v.f.g. MoS_2 + pyrite on qtz-hairline & veins. - MoS_2 on fr 30° ∩ qtz v 169.7m	65° 80° 15°	7	14 14	16

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO. 27 / 34

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. M.D.H. D.D.H. 80-2

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m	MoS_2 V/m
170	172m	2m	100%	Fine Grained Granite: Very weak development of quartz phenos & feldspar. Very weak sericite envelopes to qtz vs. except 171.4–.8 45° feldspar? v. with ± sericite selvedge + minor MoS_2; also 171.6 intense ser. selvedge to 45° qtz v.  cloudy cream-coloured feldspars? in gray quartz matrix	- numerous hairline ser? + py vs. cut MoS_2-qtz-ser vs - Vague cloudy appearance to matrix may be weak kaolⁿ of feldspar or?	- qtz vs ± sericite env. contain v.f.g. MoS_2 65° - ½% py on fr. dry & qtz-sericite. Very minor d. MoS_2	10° 30° 50° 65°	9 5	32 35	6 3
172	174	2m	100%	Fine Grained Granite: 3% relict biotite; 2% irregular f.g. quartz phenos. M.g. biotite in qtz v. at 173.1m (45°) grey qtz vs	- few hairline fr carry sericite + pyrite - Weak ser. altⁿ 173.13-.25 - weak kaolⁿ to 2cm qtz v + MoS_2 at 172.05 (60°)	- v.f.g. MoS_2 in 15-25° qtz veins - f-m.g. py in sericite fr & on occasional dry fr ¼%.	15°-20° 60°	10 11	30 22	7 6
174	176	2m	100%	Fine Grained Granite: as above. Cut by 15-30° gray qtz vs - most carry MoS_2.	- sericite-py has cream coloured feldspar-ser. env. - 2 qtz vs. 20° at 175 have 1.5 cm upper wall of vuggy qtz-ser.-creamcolored feldspar + py xtals.	- as above - prominent sericite-py v. at 175.6 (15°) - ¼% py dry fr	20° 75° 40°	6 5	10 21	5 4
176	178	1.58	79%	Fine Grained Granite: Possible core loss 177m. As above	- Ser or gypsum-like mineral on 15° fr. 176.98m. - cream coloured-ser? hairline fr.	- ¼% py on dry frs - trace v.f.g. MoS_2 on qtz vs.	75° 0° 10° 15°	3 2	10 17	1 1
178	180	2m	100%	Fine Grained Granite: Cut by gray qtz vs at 20° t.c.a. MoS_2 bearing qtz vs. cut by sheeted, barren sericite hairline fr. 179.11-180m vs & fr x cut on 20° t.c.a.	- strong sericite hairline fr cut qtz-MoS_2 vs. - clouded whitish feldspars in envelope to qtz v. at 179m	- fine grained MoS_2 on qtz vs. 15-25°; prominent 179.11-180m. - tr py on dry fr.	20° 25° 15° 75°	6 7	22 16	3 4
180	182	1.88	94%	Fine Grained Granite: Quartz phenos not visible. Barren qtz-ser. v. cuts & offsets qtz-MoS_2 v. (30°) 180; Ser-cream colored gypsum? on fr. 180.5-181 (15°) (45°) sheeted 15° clay rich minor fractures + ser. 181.25-182.	- sheeted section of ser + clay on hairline fr. 10-15° t.c.a.	- f.g. MoS_2 in gray qtz vs. 15° t.c.a. (gypsum) - also MoS_2 with ser. in sheeted section	10° 15° 80°	6 ?	18 50	3 2?

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DRILL LOG

SHEET NO. 28 / 34

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface – Azimuth Bearing: Dip: / Depth – Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MDH D.D.H. 80-2
			BQ.		

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m	MoS_2 Fr/m
182	184m	1.84	92%	Fine Grained Granite: As above. Broken core 182.3-182.9, 183.4-.6. in sheeted hairline fracture zone.	– main interest is white to creamcoloured sericite fr fill mineral ± MoS_2 on 0°-15° fr.	– f.g. MoS_2 on 5-10° qtz v. also on clay-ser ± qtz fr fill veins. – trace pyrite w. ser. vs. & on dry fr.	5° 70° 80°	4? 3	50 37	3? 1
184	186m	2	100%	Fine Grained Granite: Hairline fractures + sericite 20° 50° throughout. Pale translucent qtz v. + sericite (25°) at 184.45 m.	– 3cm weak sericite envelope to 184.45m qtz v also 2cm ser env. to hairline fr. 185.3m. – weak sericite env. to 3 qtz veinlets (20°) 185.5m. – strong ser. env. 185.9 to 3 MoS_2 qtz veinlets.	– F.g. MoS_2 with grey quartz vs on 20-26° – trace py on dry fr	80° 20° 50° 65°	5 5	27 37	1 7
186	188	2m	100%	Fine Grained Granite: 186m-186.7:- Numerous hairline fractures on 15°-30°. Intensely sericitized 186.8-9m & great number of microfractures. Widely gradational contact to aplite in this zone. Aplite:- From approximately 186.9m to 188.05m, highly altered; fractured from 187.3 to .7. White to cream colour mineral hardness 5½? in plates on fr.	– weak pervasive sericite altn also 2 sericite env. to fr. 80° in granite. – mod. epidote + biotite in fractures in intense sericite zone 187.24 – 187.65m; about qtz-ser v. + MoS_2 fr. fill qtz v. 2cm wide at 187.33m – weaker sericite in bands 187.65-188m also 70° fr. hairlines.	– f.g. MoS_2 on 60°, 45° & 20° fr ± pyrite 186-187 then 90, 80°, 65° 187-188m – minor f.g. xtalline py on fr. – note xcutting 20° & 45° MoS_2-ser-qtz vs. at 186.7m in aplite: 2cm wide grey qtz v 80° at 186.95m carries 3 MoS_2 fr. 85°. MoS_2 fr 65° to contact.	90° 25° 80° 60°	17 20	45 67	16 20
188	190	2m	100%	Biotite Hornfels: 188.05 – 190m. Biotite hornfels cut by qtz-sericite veins & locally bleached grey. Qtz-sericite v. at 189.7m (50°) contains po, py + sph (trace) + biotite replaced by po?.	– c.g. sericite on 50° fr 188.05m – intense silicified-qtz v. 188.2 (1cm-90°); 188.43 to .58 (80° + epidote) – qtz-sericite + garnet 35° at 188.8, .9; 189.9.	– f.g. MoS_2 on hairline fr in qtz v & on qtz v. walls. – po + py in fr. + qtz ser 189.7 m. (50°) + wk epidote.	65° 90° 30° 15°	7 5	13 9	6 3

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO. 29 / 34

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: Depth - Azimuth Bearing: Dip: Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MDH D.D.H. 80-2

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m	MoS_2 Fr/m
190	192	2	100%	Biotite Hornfels: 190.0-190.4, 191.7.3-191.9m Hornfels Argillite: 190.4-191.73, 191.9-192m. Black, f.g. foliation 35°. Biotite Hornfels medium pink brown, v.f.g. - garnet?	- biotite hornfels cut by 45° qtz-ser vs. & qtz-garnet veins	- 1/4% v.f.g. py in hornfels - py + Mo in qtz-ser. vn 191.75m (90°)	35° 45° 15° 65°	5 8	5 8	1 1
192	194	2	100%	Black Hornfels: 192-192.5, 193.15-.42 cut by qtz vs on 50° and 90° which have fed qtz veinlets on bedding ? cleavage 20° Biotite Hornfels:- 192.5-193.15, 193.42-194. Predominantly medium pink brown may contain v.f.g. garnets (?). Opaline qtz vs (50°) at 192.9 annulated vs with thin garnet selvedge + tr. py.	- 192.05-192.2 wk ser. zone in black hornfels - qtz garnet v. 192.1 (60°) - hornfels cut by biotite hornfels in turn cut by qtz. vs. qtz-ser vs.	- 1% po on 20° bedding cleavage 5 fr 192.6-193.58 - f.g. MoS_2 in qtz-ser. vs. - tr. py in vs.	55° 95°	10 14	20 19	? 1
194	196	2	100%	Biotite Hornfels: 194.-195.47m: Bedding cleavage 45° contains numerous quartz veins + po ± sericite. Irregular contact with f.g. granite. biotite hornfels 195.47m ~50°. Fresh f.g. biotite in granite + few f.-m.g. rounded quartz phenos. F.g. Granite 195.47-196m. Microfr. 50° xcut MoS_2 qtz vs.	- 195.3-195.47 mod silicification & chloritn of biotite hornfels - Weak epidote on fr & in matrix of granite.	- po in fractures w. qtz in hornfels - MoS_2 ± py in qtz-ser ± biotite vs. 15° in f.g. granite.	45° 75° 15° 85°	7 7	16 26	0 4 in gr
196	198	2	100%	F.g. Granite: 196-196.52m. Silicified cut by 15° qtz ser. v + MoS_2 196-196.13m, also silicified 196.25-.52 - may be aplite or qtz v. Irregular sharp contacts with silicified & chloritized biotite hornfels left from 196.52-196.75. Irregular silicified zone 196.75-196.93 - qtz-ser-epidote(?) altered contact with chloritized biotite hornfels. (30°) Biotite Hornfels: Medium green-brown. Silicified & mafics chloritized. Intensively 45° fractured section 197.6-198m. 4 narrow qtz vs 45° with garnet selvedge 197.4-198m. - offset by broken, pinch & swell qtz vn. 197.65m.	- intense sericite altn of granite in silicified zone adj 15° v. at 196.1m + MoS_2	- MoS_2 with qtz ser. v. - traces py in veins - minor po dissem in hornfels also blebs of sphalerite.	15° 75° 5° 45°	3 10	20 19	2 1

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DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO.
					30 / 34

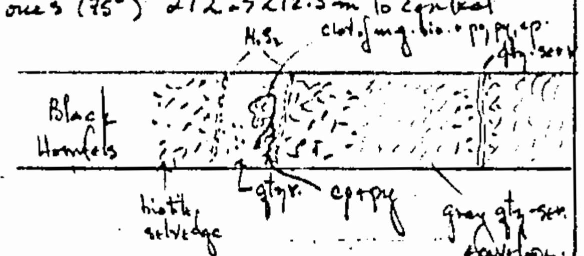
DATE STARTED	DATE COMPLETED	Hole Attitude: Surface – Azimuth Bearing: Dip: / Depth – Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MDH D.D.H. 80-2

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m	MoS_2 Fr/m
198	200	2	100%	Siliceous Hornfels: Medium green, v.f.g. siliceous rock with chlorite in matrix. Cut by numerous dark green hair line fractures 65°, 5°, 45°. Several white .5 cm wide 40° qtz-calcite vs. closely parallel grey qtz vs w. garnet selvedges. All veins cut Hornfels & have dark green - chlorite selvedges. (gray qtz)	- silicification & chloritization of hornfels? - chlorite in hairline fr?	- po clots ± py in gray qtz v. w. garnet selvedges 40° - one such v. has clots of sph. + py at 40°	45° 65° 5°	10 6	17 20	
200	202	2	100%	Biotite Hornfels: 200 - 200.72 m, 201.12 - 202 m: silicified; biotites chloritized throughout. A few gray qtz vs on 65° with garnet selvedge. Aplite: 200.55 - .6 m; 200.72 - 201.12 m contacts with biotite hornfels 65° sharp irregular. Biotite not apparently chloritized on contacts. Qtz-feldspar-chlorite breccia veins 200.8 - .95 could represent veined part of biotite hornfels	- Weak to moderate silicification & chloritization of biotite throughout. - silicification + chlorite 75°, 201.8 - .9.	~1% diss f.g. & fr. fill po - f.g. MoS_2 in gray qtz ± garnet vs. - qtz vs. & qtz-feldspar-carbonate veinlets 45°	15° 80° 30° 65° 45°	13 11	19 20	5 3?
202	204	2	100%	Black Biotite Hornfels: 202 - 202.16 m; 202.8 - 203.16, 203.56 - 204 m. Aplite: 202.16 - 202.8 m, 203.16 - 203.56 m. Has 2 cm siliceous contact with hornfels. 3 narrow aplite dykes (60°) 203 - 203.16. Main dyke of aplite is gray in colour with irregularly distributed weakly chloritized biotite to 3%.	- weak sericite in aplite - hairline fr. in aplite contain chlorite selvedges. - 3 qtz vs with garnet selvedges.	- MoS_2 f.g. w. gray qtz vs 40° - ½% diss po & lesser py. in hornfels.	45° 75° 20°	8 7	15 22	2 3
204	206	2	100%	Hornfels: 204 - 205.44 m. Black f.g. hornfels after argillite. Bedding cleavage weakly developed on 80°. Aplite: 205.44 - 206 m: Contact with hornfels 75° Qtz-feldspar-biotite v. 205.82 m (75°) (+ epidote) also 205.68 (40°). - have sericite envelope.	- mod. biotite hornfels 3 cm wide contact w. aplite. - sericite env. to qtz-ser ± biotite bearing qtz vs in aplite	- ½% py. replaces f.g. biotite in aplite. - MoS_2 in gray qtz vs. 55°, 75°	80° 45° 55°	2 0	2 2	0 2

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO. 31 / 34

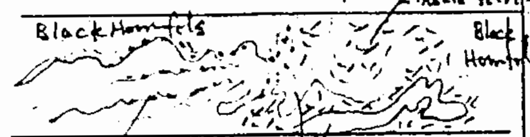
DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MCH D.D.H. 80-2

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m	MoS_2 Fr/m
206	208	2	100%	Fine Grained Granite: 2% f.g. relict biotite. Cut by Aplite dykes 206.33-.63 (55°), 206.9-207.3 m, 207.65-207.95 then by qtz-sericite-MoS_2 vein 207.95-208.08 (65°). Aplite is cut by qtz v; locally sericitized. Microfracturing on 15-30°.	- moderate pervasive sericite alt^n 206.55-.7, 207.64-207.95.	- MoS_2 in qtz-ser. vs. f-mg. - ¼% diss py in qtz vs - tr py in intrusion. - MoS_2 vs. in f.g. granite but less frequent than in aplite	30° 15° 65° 90°	10 11	30 39	11 11
208	210	2	100%	Aplite: 208.08-208.45 m, 209.04-.1 m, 209.9-210. Weakly sericitized throughout. Cut by 1 90° qtz-ser.-py-MoS_2 v. at 208.35. Rest of section is strongly sericitized f.g. granite, moderate chlorite^n of biotite & on fractures.	- qtz vs have sericite env. - pervasive ser + chlorite alt^n in granite.	- MoS_2 in qtz-ser. vs. - trace blebby & stellar diss-py.	15° 30° 10° 90°	4 3	16 25	5 4
210	212	2	100%	Aplite: 210-210.6, 211-211.47, rest ser. f.g. granite. Microfracturing in aplite 0-15°, offsets 80° MoS_2 vein. Biotite Hornfels: contact 211.47 (70°) 211.47-212. Strong silicification apparently predates 2^ND ary biotite since narrow qtz vs (70° t.c.a.) have biotite selvedges. Trace epidote on contact.	- strong sericite & chlorite alt^n of f.g. granite - much silicification in hornfels 211.47-212	- MoS_2 ± py and 65°-80° fr. vs. qtz-ser - 1% f-m.g. po in hornfb - ½% py in intrusive as f.g. aggregates on fr. - tr. cp in veins	25° 65° 10° 0-15°		28 18	5 1
212	214	2	100%	Biotite Hornfels: Black biotite hornfels with numerous medium gray, quartz-sericite (?) zones (75°) 212→212.5 m to central biotite fr's & qtz vein envelopes. Numerous bands of po in hornfels ~4% overall - minor py dis & fr-fill. 	- example below shows qtz-ser ± sulphide veins with biotite selvedges & outer quartz sericite envelopes.	- qtz-sericite v. 212.75-.83 (60°) contains 2 fr. with semi-massive f.g. MoS_2 + f.g. aggregate py x cut by py fr. fill (20°). - qtz-ser + m.g. brown biotite (80°) 213.12-.15; fr. fill MoS_2 on contacts & dissem also clots of po + py + cp. Minor fr. fill cp.	55° 65° 30° 80°	6 6	17 12	2 2
214	216	2	100%	Black Siliceous Hornfels: 214-215 m. Cryptic cleavage-bedding 55°. Quartz-sericite altered zone 214.6-.8 then biotite zone altered to chlorite with minor epidote & carbonate on fractures 214.8-215. Contact 90° - calcite, feldspar qtz-sericite-MoS_2 vein 215-.03 then light green aplite 215.03-216 m. Aplite: microfracturing 0-30°. A few qtz-sericite-MoS_2 veins.	- light green colour to aplite may indicate weak pervasive sericite alt^n. - Cream coloured feldspar on microfractures in aplite	- 3-4% f.g. aggregate po + minor 1% py on bedding cleavage - MoS_2 in 55°-80° fr. & qtz-ser. veins. - ½% diss py in aplite.	35° 65° 0° 15° 30°	2 6	24 42	2 7

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO. 32 / 34

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface – Azimuth Bearing: Dip: / Depth – Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MDH D.D.H. 80-2

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m	MoS2 Fr/m
216	218	1.8m	90%	Aplite: 216-216.44m Microfractured on 0-10° carrying sericite light green coloured. Contact (60°) with highly fractured, mod. sheared argillite healed with calcite and quartz-calcite (epidote) veinlets. Originally biotite hornfels now mod-strong chloritized section from 216.44-217.43 contact biotite hornfels 60° Fault located 216.8m. Biotite Hornfels: 217.43-218m: qtz-MoS2 v at 217.44 (20°) truncated at contact with fault in sheared section. Shearing (30°)	- pervasive mod sericite altn in aplite except strong on contact. - chlorite altn 216.44-217.43 + much graphite in section.	- 1% f.g. stellar py on ser. hairline fr. in aplite. - clots of po in qtz-calcite vs 217.2-.4.	0-10° 20° 30° 55°	3 FAU	15 LT	2 2?
218	220	2m	100%	Hornfels: 218-219.25m: Black with several qtz-sericite vs. on 50° w. biotite selvedges. 218-218.24 also.  Irregular qtz-sericite altered contact with light green-green Aplite 219. Sheeted fractures in aplite 15°-20°. Raft of 2cm biotite hornfels at 219.88m.	- biotite envelopes to qtz sericite vs - weak sericite altn, pervasive in aplite.	- 3% bedded po - ½% fr. fill of bedded py - v.f.g. MoS2 w. qtz-ser vs ∠45° - also dry fr. & qtz-sericite + MoS2 in aplite 65°-80° - ¼% v.f.g py in aplite.	65° 50° 0° 80° 45°	16 7	11 19	3 10?
220	222.	1.86	93%	Aplite: light gray green 220-220.87. Micro fractured 5°-15° & 70° sharp contact at 220.87 with highly chloritized, fractured & sheared biotite hornfels - healed with calcite & qtz-calcite-chlorite-epid. veins to 221.35m Biotite Hornfels: 220.87-222m. less altered 221.55-222m - chlorite remains on fractures. Fault trend 15-25°.	- weak sericite altn pervasive in aplite. - mod. sericite envelopes to qtz v. - fault or shear zone is chloritized & epidotized. - biotite env. to 30° qtz ser. py env. 221.6m.	- sericite-py hairline fr (15°) x cuts qtz-sericite-MoS2 & pyrite vein 85° - 3% po clots in hornfels	5° 25° 65°		13 45	13 2
222	224	2m	100%	Biotite Hornfels: Black to dark brown. Bedding 80-90°. Sharp 80° contacts with light green aplite 222.34-.98. Aplite micro fractured 10-20°. Calcite fracture fill on 5-15° fr. 223.55-.6m in argillite hornfels - bedding cleavage 65° t.c.a.	- intense qtz-sericite altn 223.47-.53m - very wk sericitization of aplite; strong adjacent to qtz v. 80°	- 3% bedded po in hornfels - MoS2 on qtz ser v in aplite 80°.	15° 75°	8 14	38 33	9 1

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO. 33 / 34

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: Depth - Azimuth Bearing: Dip: Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MDH D.D.H. 80-2

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m	MoS_2 F/m
224	226	2m	100%	Hornfels: Black Hornfelsed Argillite. Relict bedding cleavage 80° t.c.a. Numerous 1-3cm wide bands of intense purple-brown biotite hornfels. Highly broken core 224.7-.85m healed with chlorite & calcite	- numerous biotite hornfels bands throughout - silicified, chloritized zone 225.3-225.46m. - silicified zone 225.75-225.94 about qtz v 225.8 - 225.65m +py 2% blebby py in micro qtz vs.	- 2% bedded f.g. po - 1% f.g. bedded fr. fill pyrite - 225.8-.85 2% blebby py. - f.g. MoS_2 with gray qtz vs & silicified zones.	80° 30° 50° 55°	11 11	23 18	2 2
226	228	2m	100%	Hornfels: Predominantly black hornfels after argillite with numerous mod. intensely biotitized zones at 80° t.c.a - more prominent in areas of 80° qtz veining. (Much gray qtz veining at 80° t.c.a.	- biotite hornfels bands on bedding cleavage 80° t.c.a - intense chlorite-epidote alteration 227.74-.82 in biotitized zone.	- 1% f.g. bedded py ± po - 4% semi massive po ± qtz ± pyrite on bedding cleavage - v.f.g. MoS_2 on a few qtz vs & possibly on dry fr.	80° 20° 65° 80°	15 11	9 12	1 3
228	230	2	100%	Biotite Hornfels: Banding & bedding cleavage 80°, 228-229.44m then 60° to 230m. Qtz veins follow cleavage. Qtz v. 60° at 229.45m has chlorite (epidote) alt envelope which brecciates biotite hornfels.	- qtz-MoS_2 vs & veinlets have chlorite alt envelopes. - qtz-feldspar + wk. ser. 229.5m - intense section of chlorite + minor epidote adjacent qtz vs. cutting biotite hornfels 229.43-.8; 229.67-.7; 229.77-.93.	- 1-2% f.g. blebby bedded po. - 2-3% m.g. py in chlorite sections - 1% bedded f.g.-m.g. py. - 1% py f.g.-m.g. in qtz micro v.	80° 60°	7 8	10 10	6 9
230	232	2	100%	Aplite: Contact zone with upper biotite hornfels 65° in highly broken zone 230 + .1m of chlorite, qtz & sericite + v.f.g. MoS_2 pyrite. Microfractured and moderately sericitized aplite 230.1-.5, (fr. 6-20°). Aplite cut and strongly sericitized by white qtz vn. 3cm wide m 5°, with f.g. clots of MoS_2 & sericite. Hard contact with f.g. Granite 230.6m - 232m. Granite contains 2% f.g. relict biotite. Is cut throughout length by 1.5 cm wide white to translucent qtz v on 0° to 5° which cuts & brecciates MoS_2 vs (80-85°)	- numerous hairline fr. filled with sericite radiate from white v. & weakly alter f.g. granite	- numerous hairline fr. containing f.g. MoS_2 75-85° - cut by white qtz v. which recrystallizes MoS_2 & remobilizes	90° 40° ? 20° 15°	4 10	40 35	23 19

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO.	
					34	34

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MDH / D.D.H. 80-2

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m	MoS_2 Fr/m
232	233.84		100%	F.G. Granite: 232 m - 232.86. Aplite 232.86 - .97. - microfractured sericitized. Biotite Hornfels: 232.97 - 233.84 end hole.	- granite mod. sericitized high hairline fr. filled by sericite. - 75° fr. hosts qtz vs with 2 cm chlorite-epidote env.	- MoS_2 on qtz vq. 75°-85° - dry fr. in hornfels - MoS_2 - qtz v. 233.84 m contain f.g. MoS_2.	65° 50° 90°	17 3	12 15	17 8

DRILL LOG (LOGGED BY E. MESZAROS)

SHEET NO. 1

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION		
M.U.T. Claims		501+45 N	492+60 E	1265 m	Box 1	1

DATE STARTED	DATE COMPLETED	Hole Attitude	HOLE SIZE	TOTAL DEPTH	HOLE NO.
MAY 9/80	MAY 11, 1980	Surface - Azimuth Bearing: Dip: -90° Depth - Azimuth Bearing: Dip: Horizontal Projection: Vertical Projection:	BQ	200 m	MDH D.D.H. 80-3

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
3.0 m	5.0 m.	2.0	85%	Black Argillite - This Argillite exhibits consistant cryptic bedding foliation ? ∴ It's color is distinctly black-grey. and this is due to the alternating laminations of graphitic material, and quartz. It is difficult to determine weather the silica is injected, or through heat the organics were altered to graphite, while the silica segregated to form the micro laminations. Possibly both processes existed. ① - in situ segregation of silica + graphite due to p&t. or ② injection of silicifying fluids, which accompanied the graphitic alteration... Evidence of pinch and swell structures, as well as crenulation folding. This may indicate a somewhat fluid ie qtz. (ie. qtz. is generally brittle to deformation when tectonics applied, unless sufficient P & T is supplied.) The folding indicates the qtz was highly ductile, and possibly in fluid state. ∴ an injection hypothesis may be applicable. Folliation is highly convoluted but generally is ~ 60° to c.a. Some veins of qtz crosscut the general foliation. The qtz forms the boudin, as is to be expected when comparing competancy with graphite. ∴ deformation continue as the injection silicification developed, and to a certain extent after the event as well. periodic porphoblasts of qtz are observed, however these appear as small <.5mm specks Some more brittle deformation is also observed with fractures, and crenulation in the laminae. The sulphide is suspected to have been introduced with the qtz.	- pervasive graphitic and silicic Alteration.	- mineralization is essentially po. found closely associated with the silica micro lamination, the po is fine grained and well disseminated in these veins. po - .1%			

DRILL LOG

SHEET NO. 2

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MDH D.D.H. 80-3

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
0.5m	0.7m	2.	100%	Finely Laminated Grey Argillite. - Identical to Above with fine lamination of qtz & graphite. Folliation is 70°. Extensive convoluted folding of materia ie ductile response.	- silicification & graphite.	- po. in minor amounts with qtz laminae. Trace amounts.			
7 m	9 m	2	98%	Fine Lamin. Grey Argillite - Little variation with above. Folliation again highly folded and contorted but trend is 50°	- same as above. - some chloritic alteration may be present.	- po in trace amounts as above. - one gypsum bleb found in a fracture with foliation.			
9.0m	11.0m	2m	100%	Fine. Lam - Grey Argillite - No change Folliation 70° to c.a. Some places exhibit somewhat thicker graphitic bands or qtz. bands. (.5cm). at 10.2 a carbonate veins exists @ 10° to c.a. Crystals are at times are well developed in the vein, with sulphides also being present, although in trace amounts.	- Same.	- po & py found in micro veinlets and in graphite, along foliation. - Remobilized? sulphides in trace.			
11.0m	13.0m	2.	100%	Fine - Lam - Gray Argillite - No change Folliation 50° to c.a. in Places qtz blebs occur, with po mineralization being more evident, as anhedral to euhedral masses. ≈.1+5mm in Size. This is found at 11.15 and 12.5.	Same.	- po + py found in close association with qtz. → Trace to 1%.			
13.0m	15.0m	2.	100%	Fine Lam - Gray Argillite - No change. Folliation 70° to c.a. More qtz rich zones, with massive qtz veins, 1cm wide exist @ 13.5 → 13.7. Here sulfide concentration exists up from trace amounts to 5-10% of vein (generally po). Veins at 70° to c.a. Note Here as in all previous sections graphite/qtz ratio is 50/50.	Same	- po + some pyrite Same as above and up to 5-10% in veins mentioned			

DRILL LOG

SHEET NO. 3

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: Depth - Azimuth Bearing: Dip: Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MDIT D.D.H. 80-3

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
15.0	17.0m	2.0m	100%	Fine Lam. Grey Argillite - Little Change. folliation 50° to C.a. Here the folliation is less crenulated, but still quite monotonous. At 15.55 and 15.75. qt veins exist, here sulphide mineralization increases from trace to 5-10%, mostly PO, some py. Note that the sulphide is euhedral up to .1 cm in size.	Same as above. - with silicification pervasive, and very little qtz veining proper.	- same as above. - mineralization speckled throughout. yet in low quantities trace to 1% total sulphide associated from enriched qtz zones.			
17.0m	19.0m	2.0m	100%	Fine Laminated Grey Argillite. - Little change. folliation is 50° to c.a. again zones of increased silicification seem to concentrate the sulphides, from the trace amounts in the normal rock.	- same as above.	- same as above.			
19.0m	21.0m	2m.	100%	Same As Above. - folliation @ 50° to c.a. Here the folliation becomes more convoluted, with qtz content increasing somewhat.	same as above, but qtz zones present @ 19.3, 20.6, 20.7.	- same as above.			
21.0m	23.0m	2m	100%	Same as above. - Increased zone of silicification from 21.1 - 21.7. folliation at 70°. calcite vein at 23.0 at 50° to c.a., little sulphide mineralization associated with calcite.	Same as above.	- Same as above.			
23.0.m	25.0m	2m	100%	Fine Lam. Grey Argillite - little change, but silicification is dominant especially 24.0-24.5, and 24.8-25.0, here also excessive convolution of folliation exists. Folliation is generally 70° to c.a.	- Same as above.	- no change from above.			
25.0m	27.0m	2m	100%	Same as above. → folliation at 70° to c.a. One long qtz blob, 26.7., not extensively mineralized at all.	Same	- Same as above. with small grains in qtz veinlets.			

BP

DRILL LOG

SHEET NO. 4

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MDH D.D.H. 80-3

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
27.0	29.0	2	100	Fine Lam. Grey Argillite → Not quite as much qtz zones, and less convolution in folliation. Some thin zones of qtz concentration. folliation is 70°.	- Same as above.	- sphalerite grain found. - moly found in vein at 27.7. minor amoun. - sulphide present as abo.			
29.0	31.0	2	100	Same as above → At 29.05 what appears as a intrusive dike like structure exists. It is approx. 10 cm thick, shows settling of grains and fining upward sequences. Crystals are lath like (feldspar?) Quartz vein crosscuts it. at 30.8-30.9 a series of qtz veins with sulphide enrichment exist.	Same.	- po+py in veins and dissiminated very fine gr. - low % ≤ 1% total.			
31.0	33.0	2	100	Same as above - Well laminated not extensively convoluted. Some qtz veins, but parallel to folliation. - with increased sulphides from Argillite proper. folliation at 65° to c.a.	- Same (qtz + graphite.)	- Same.			
33.0	35.0	2	100	Same as above.	Same as above	Same as above.			
35.0	37.0	2	100	Fine grained Gray Argillite → same as above with slightly more silicic zones at 35.1 and 35.8. Here again convolution is increased, with sulphide content somewhat more concentrated in qtz zones.	Same.	Same. - sulphide mostly po. - note that carbonate is often associated with qtz veins.			
37.0	39.0	2	100	Same as above - breccia zone present at 37.1. but no sulphide mineralization visible. Some qtz zones at 37.7, have sulphides present (po). - Some crosscutting veins present. folliation at 70°.	Same	- Same. - po + py? dissem. inated throughout but at low concents., with slight concentration increases at veins.			

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MDH D.D.H. 80-3
		Horizontal Projection: Vertical Projection:			

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
39.0	41.0	2	100	Fine laminated Grey-Argillite - same as above. with qtz vein [illegible] at 39.05, and 39.2. [illegible] Veins are brecciated, and these veins trend along foliation (70°). From 39.2-41.2 the zone is quite silicic and [illegible] [illegible]. Numerous examples of tectonic structures [illegible] minor fractures, crenulations.	- same as above.	- Same as above. - [illegible] [illegible] veins.			
41.0	43.0	2	100	Same as Above. - slightly less silicic, well laminated. Numerous porphyroblasts [illegible] of qtz., a zone of qtz somewhat brecciated occurs at 42.5, with no substantial increase in sulphide concentration. - foliation is still 70°.	- Same as above	- mineralization [illegible] found disseminated - at low concentration. - same as above.			
43.0	45.0	2	100	Identical to above - with silicic zone present at 44.2. sulphides are present [illegible] rather concentrated within the rock [illegible]. - again foliation is 70°, with most qtz microveins ~~and~~ ∥ to lamination and some crosscutting veins.	Same (graphitic and silicic alteration)	- Same as above			
45 m	47 m	2	100	Fine-laminated Grey Argillite - well laminated [illegible], with minor qtz veins at 45.5 and 46.7. What appear to be tension gashes, or crenulations with qtz concentration at fold occur at 45.0-45.3. Very little difference to above sections.	- Same as above.	- mineralization difficult to see [illegible] [illegible] - [illegible] disseminated but [illegible] associated with qtz. ≤ 1% total [illegible] sulphide.			
47 m	49 m	2	100	Identical to Above. - ~~[illegible]~~ - with crosscutting vein slightly mineralised (2% of vein) (Po). @ 47.7. Remainder is monotonous well laminated. foliation at 70°.	Same as above.	[illegible]			
[illegible] m	51 m	2	100	Identical to above. - foliation still at 70°. one qtz [illegible] zone [illegible] [illegible] 49.31. - mineralization [illegible] above [illegible] with overall [illegible] sulphide [illegible].	Same as above	[illegible]			

DRILL LOG

SHEET NO. [illegible]

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. D.D.H. MDI-85-3

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
51.0 M	53.0 M	2	100	Fine laminated. Grey Argillite → foliation at 70° with convolution of beds not [illegible]. well laminated - sulphides more observable than previous 2-3 sections, yet still at low content. few qtz stringers or veins, some crosscutting foliation @ 0-10° C.a.	- Same - qtz, + graphite. pervasive	- Same as above. - with po + py more abundantly observed in minute qtz assoc. stringers. <1%.			
53.0 M	55.0 M	2	100	Same as above → here qtz content is somewhat higher, as a result convoluted folliation is evident, and marble like texture observed. @ 53.5 - 54.0 m. a zone of well silicified rock exists, sulphide content (po + py) is concentrated, however still at low levels. Foliation still at 70°	Same	- same as above			
55 M	57 M	2	100	Identical to above (especially 53-55) with well convoluted, marble like texture, and more qtz than normal 50/50 split. Here as in 53-55 it's 60/40 qtz/graph. However no increase in sulphide content relative to other sections, still ≤ 1% total sulphides.	Same	same as above.			
57 M	59 M	2	100	Identical to section (53→55 and 55→57m), with pervasive more massive qtz veins, giving a marble like texture.	- Same, possibly some vague chloritic alteration with graphite	Same as above.			
59 M	61 M	2	100	Identical to above section. 53→55, 55→57, 57-59.	- silicic + graphite alteration pervasive.	Same as above.			
61 M	63 M	2	100	Fine laminated. Grey Argillite - here argillite is highly convoluted with foliation at 50° to c.a., and well folded etc. Qtz rich zones are not as prominent as above, however the laminations ~~[illegible]~~ aren't as fine as some previous [illegible] sections.	Same as above	- Same as above.			

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO. 7

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. ML- / D.D.H. 20-[illegible]

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	V/m	F/m
63.0	65.0	2	100	Finely Laminated Grey Argillite - Similar in general characteristics to above sections, with well interlaminated graphitic qtz, convoluted foliation and 50/50 graphite/qtz ratio. Sulphide content present as micro stringers and disseminated grains closely associated with qtz foliation @ 50° to c.a.	- same as above	- same as above with [illegible] disseminated sulphides of small grain size, with sulphide content [illegible] po+py of about <1%.			
65.0	67.0	2	100	same as above.	same as above	- same as above			
67.0	69.0	2	100	Similar to above with zones of qtz concentration and core brecciation @ 67.4. - here mineralization was present at increased concentration. Foliation is 70°. Numerous examples of crenulated foliation, boudinage, etc.	- same as above.	- po, py, sphal. found in qtz zones. - also calcite. - po ≈ .5% [illegible] py ≈ .25% total = 1%. sp = .1%.			
69.0	71.0	2	100	Finely Laminated Grey Argillite - foliation @ 60° well convoluted section, with numerous qtz rich and swell structures, some qtz veins slightly brecciated - again mineralization concentrated with the qtz micro veinlets	as above	as above.			
71.0	73.0	2	100	Fine laminated Grey Argillite - Identical to above, with extensive crenulation of lamellae at 73.0. Also there are several qtz veins // to foliation at 50-60°. these veins contain qtz + gypsum and sulphides.	same as above	- po, py, sphal. found especially in qtz veins. po ≈ 1% py - .5% [illegible] in veinlets sp - .75%			
73.0	75.0	2	100	Finely laminated Grey Argillite. - Identical to previous section, with finely laminated well crenulated lamellae. foliation varies from 0° to 50° to 70°, with the higher angles being more [illegible]. Mineralization is pervasive in boudinaged microveinlets of qtz. However not unlike any of the previous sections. [illegible] %.	same as above.	as above			

DRILL LOG

SHEET NO. 2

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MC- / D.D.H. 86-3

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
75.0m	77.0m	2	100	Fine lam Grey Argillite - slightly more finely laminated than immediately previous section, otherwise similar, with a few qtz rich zones, but not extensive. These zones also moderately mineralized, but sulphides (po, py, sphal?) are persistent throughout the section in micro stringers. foliation is 70°.	Same as above				
77.0M	79.0M	2	100	Fine Laminated Grey Argillite. - Identical to 75→77 m. well laminated, no qtz rich zones, but rather pervasive qtz. foliation 70°. - fold axis 50° to c.a.	Same as above - few crosscutting veins				
79.0m	81.0m	2	100	Fine laminated Grey Argillite - Identical to 77→79 - note that laminar character is lost at 79.0, and it seems that the graphite dominates with little qtz laminae present.?	Same as above. - fairly few crosscutting veins.				
81.0m	83.0m	2	100	Fine laminated Grey Argillite - Identical to 77-79 and 79-81.	Same as above.				
83.0m	85.0m	2	100	Fine laminated Grey Argillite: here the qtz content becomes more apparent - foliation is 50° to c.a. Numerous breccia character occur at 83.9. Convolution of foliation is also present. Several large bleaching qtz (semi-dia...) occur at 83.0.3. one large vein at 84.2 @ 70° to c.a.	Same as above.	- again mineralization is present throughout but not conspicuously [illegible] - In large vein especially at the borders of the			
85.0m	87.0m	2	100	Identical to Above. → qtz rich zone at 85.2-86.1. here numerous breccia features exist in the qt. but no material other than the qtz & graphite & sulphides.	Same as above.				

DRILL LOG

SHEET NO. [illegible]

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: / Dip: ; Depth - Azimuth Bearing: / Dip: ; Horizontal Projection: / Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. A[illegible] D.D.H. 80-3

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
87.0M	89.0M	2	100	Monotonous finely laminated slightly convoluted grey Argillite - no qtz zones, foliation varies but at about 70° to c.a. Mineralization as above present in qtz microveinlets throughout.	- same as above.				
89.0M	91.0M	2	100	Same as Above. - here qtz ribbon zones exist at 89.5, and 89.8-89.9. also at 90.5, lamination is well distorted about these blebs, one fold axis of 50° to c.a. at 89.2. qtz blebs subparallel to foliation at 50°. Mineralization evident especially at contact of large vein.	- Same as above.				
91.0M	93.0M	2	100	Same as Above with foliation at 50° to c.a., and often well [illegible] [illegible]. At 92.0 there is a zone of qtz [illegible] with diffuse contacts. this zone extends to 92.[illegible] and contains higher concentration of [illegible], [illegible] in vein of similar character. vein // to foliation.	- Same as above.	- essentially po. in similar character and quantity as [illegible] previous sections.			
93.0M	95.0M	2	100	Fine laminated Grey Argillite - there a vein of amphibole, qtz + Scapolite?, + sulphides such as sphal, py, po. @ 93.0. This zone extends for 10-15 cm. The vein is separated by a short interval of [illegible] Argillite then another vein [illegible] exists. Again similar mineralization. Foliation here is 70°. Several other veins [illegible] parallel to foliation also exist at 93.7. Analyze for potassium [illegible] etc. An extensive similar intrusion exists at 94.6-95.0. here also is actinolite, scapolite, etc. Also note that these section fluoresce under short wave quite blue-green.	- same as above, with some epidote?, particularly about the [illegible] amphibo[le] scapolite veins.	- po, py, sphal. - Here more sphal. is shown, particular [illegible] with the amphibole rich veins. po, py, sphal = 1-2% in Argillite [illegible] - 2% [illegible] in vein. [illegible] = 3%			
[illegible]5.0M	[illegible]7.0M	2	100	Fine [illegible] Laminated Grey Argillite - here the [illegible] [illegible] to a more normal well silicified [illegible], some qtz veins or blebs // to foliation exist at 96.5-96.8. foliation is @ 50°. Again mineralization is found throughout and more concentrated in the qtz vein.	- Same as above. [illegible] silicification [illegible] graphitic alteration.	[illegible] ≈1% [illegible]			

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO. 1

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. / D.D.H. 20-3

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
97.0m	99.0m	2	100	Finely Laminated Grey Argillite → Similar in many respects to section 95.→97 with predominantly laminated graphitic silica. One zone of amphibole qtz intrusion is present at 96.2, this zone is also well graphitized. foliation is 70° to c.a. laminae are somewhat convoluted.	Same as above	Same mineral section. All sulphides mainly po + py found throughout [illegible] concentrated in silica [illegible] microveinlets. total sulphides	= 1%.		
99.0m	101.0m	2	100	Section Identical to above. → well laminated with minor crenulations, and some larger qtz stringers, usually mineralized. One qtz zone at 99.1 containing po trending 30° to c.a. // to foliation. Another zone of highly [illegible] qtz [illegible] as [illegible], and the vein contains po (2%) veins // foliation. fold axial at 30° to c.a.	- Same as above	Same as above. po + py fine grained ≈ 1%. po in veins ≈ 2%.			
101.0	103.0m	2	100	Identical to above - foliation @ 50°. - a few boudined stringers of qtz. - some mineralization. Note [illegible] grains of [illegible] [illegible].	Same as above	Same as above			
103.0	105.0m	2	100	Identical to above - Here the Argillite shows somewhat more qtz lamellae, with convolution prominent especially at 103.1 and 104.6. Foliation is 60° to c.a.	Same as above	-Same as normal. -[illegible] Same as above.			
105.0m	107.0m	2	100	Same as above - A highly graphitic schist zone at 105.7 contains [illegible] crystals + calcite [illegible]. (shear zone)? foliation at 60°.	Same as above.	Same as above.			
107.0m	109.0m	2	[illegible]	Same as above. - with slight increase in qtz content and convolutions [illegible]. At 108.7 the texture changes slightly with much more massive qtz veins becoming present. This gives rise to a [illegible] [illegible] texture. [illegible] [illegible] veins are [illegible] mineralized.	Same as above.	- py, po, [illegible] found in concentrated quantities [illegible] [illegible] veins, [illegible] garnet. in vein sulphides ≈ 2-3%.			

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO.

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. [illegible] / D.D.H. [illegible]

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
109.0m	111.0m	2	100	Finely laminated Grey Argillite => here the unit is [illegible] marked with qtz veins, and [illegible]. This marbled section is well mineralized [illegible] especially [illegible] more massive veins. Foliation is marked by the [illegible] [illegible] 30 to C [illegible] approximately 55° to [illegible] foliation although convolution [illegible].	- Same as above.	- [illegible] [illegible] [illegible] [illegible] moly? found in qtz veins, as minor [illegible] [illegible]. total sulphides in veins = 3%. total sulphides in Arg. - 1%.			
111.0m	113.0m	2	100	Identical to above with convoluted marble [illegible] dominating and associated sulphide content [illegible] veins [illegible] normal Argillite content. Folia [illegible] difficult to ascertain and varies from 50 to 70°.	- Same as above.	- [illegible] [illegible] [illegible] [illegible] [illegible] + [illegible], - moly? + garnet [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]			
113.0m	115.0m	2	100	From 113 - 114.0m identical to above 2 sections. From 114 - 115 the lithology changes back to finely laminated non convoluted Argillite. [illegible] [illegible] [illegible] [illegible] at 114.1 here the [illegible] [illegible] may be [illegible] scapolite, or [illegible], Note that [illegible] [illegible] [illegible] [illegible] foliation is 45°.	- Same as above	Same as above between 113 - 114, & 114 - 115 [illegible] [illegible] [illegible] [illegible]			
115.0m	117.0m	2	100	Finely laminated Grey Argillite - [illegible] well laminated, non convoluted, [illegible] [illegible] foliation [illegible], [illegible] [illegible] [illegible]. One qtz vein 1cm thick @ 115.3. [illegible] [illegible] [illegible]?	- Same as above	- [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].			
117.0m	119.0m	2	100	Same as above - Well laminated foliation at 55°. One qtz vein at 118.2. here the vein is [illegible] the foliation, mineralized with sphal, garnet, moly?. One intrusive [illegible] [illegible] @ 118.9-11 to foliation, composition [illegible] scapolite.	Same as above	Same as above.			

DRILL LOG

SHEET NO. 12

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip:	HOLE SIZE	TOTAL DEPTH	HOLE NO. [illegible]
		Horizontal Projection: Vertical Projection:			D.D.H. [illegible]-3

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
119.0m	121.0m	2	100	Identicle to above section - of finely laminated monotonous graphitic [illegible] foliation. 50° to c.a.	Same as above. ie graphitic + silicic.	[illegible] Argill[illegible] [illegible].			
121.0m	123.0m	2	100	Fine Laminated Grey Argillite → Identicle to above section from 121-122. from 122-123 the section once again becomes more silicic with a more convoluted marble like nature. foliation very variable [illegible]. Mineralogy once again becomes concentrated in qtz veins and is associated with epidote?	Same as above.	as has been common, mineralization present in Argillite as micro stringers but on limited concentration in massive qt veins there an increase in content. → it appears that more sph has been showing up particularly in the qt veins.	[illegible]	po [illegible] + sph [illegible] [illegible] in veins. Sulphide [illegible] veins ≈ [illegible]	
123.0m	125.0m	2	100	Finely Laminated Argillite - here the section is quite convoluted and marbled. qtz content is 70% or greater. Foliation difficult to determine perhaps 50°. mineralization as above.	Same as above	as above			
125.0m	127.0m	2	100	Finely laminated Grey Argillite - here the lithology returns to well laminated monotonous [illegible]. Foliation here is 20° to c.a. Some minor qtz blebs and stringers exist. Mineralization again associated with qtz [illegible].	Same as above	- po, py, sph[illegible]. [illegible] [illegible] po - 2%. py - .5%. sph - .5%. ie) somewhat higher than normal Argillite.			
127.0m	129.0m	2	100	Same as above section - [illegible] however there are several intrusive sills [illegible] [illegible] Green, and are comprised of lath like crystals (Scapolite?) These sills are at. 127.5, 128, 128.5 → 128.8. These sills are rich in sphalerite, garnet, po. (section these). Slight porphyritic nature to these sills? foliation [illegible] 25°-70°	as above.	- here in addition to the [illegible] has numerous [illegible] ([illegible]?), and these [illegible] [illegible] appear to be enriched more than the [illegible] itself. - The [illegible] is [illegible] [illegible] as this intrusive [illegible].	po + sph	= 3-4%	ie - greater mineralization [illegible]

DRILL LOG

SHEET NO. 1[illegible]

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MC[illegible] D.D.H. 80-3
		Horizontal Projection: Vertical Projection:			

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m	
129.0m	131.0m	2	100	Fine laminated Grey Argillite - here the section [illegible] once more to a well laminated periodically convoluted crenulated laminations with 50/50 qtz/graphite. Foliation is 50° to c.a. From 130-131 the qtz content increases and the [illegible] [illegible] and convolution dominates. At 131 a zone of qtz + Scapolite exists, with B.Grec. However	-as above. →Foliation at 40°.	— as above with [illegible] being concentrated in zones of Silica [illegible] in [illegible] veins. total sulphides, po - 2%. sphal - 1%.				
131.0m	133.0m	2	100	Finely laminated Grey Argillite - The more normal Argillite is present here, with qtz/graphite ~50%. foliation is 50°. to c.a. Periodic zones of scapolite? sills. 1-2cm thick. One zone of [illegible] [illegible] qtz and scapolite [illegible] is 132.4 132.6. A highly graphitic shear zone exists at 131.8. (3cm thick)	as above.	-as above. it appears now that the sphal content is generally heavier in these lower sections 105 →. -and closely associated with qtz veins, and also scap?				
133.0m	135.0m	2	100	Identical to above section with scapolite? rich intrusions at 133.4, 133.8, 134.8. These zones are also qtz rich and are well mineralized with sph and po. Foliation is generally 50° to c.a. fairly well laminated.	Same as above	-Same as above				
135.0m	137.0m	2	100	Identical to above → well laminated with zones of scapolite + qtz., these zones exist at 135.4 - 135.5, 136.3 136.4, 136.95. These zones seem to control the mineralization and also convolute the laminae in proximity to the intrusion	as above.	as above. -not only do the sulphides [illegible] most, associated with the qtz veins and scapolite intrusions as minute stringers but also found as fine grained blebs about 1cm in size.				
137.0m	139.0m	2	100	Identical to above → well laminated, with some more intrusion at 137.4, 137.6, 138.0, 138.8. These zones contain lamellae of qtz thicker than normal (up to 1-2cm thick) [illegible] the scapolite zones also exist in 1-2cm thick zones // foliation. Foliation is @ 70°.	as above.	· Mineralization closely associated to scapolite [illegible] [illegible], and qtz bands, but [illegible] [illegible] throughout [illegible]. po + sph [illegible]				

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO.

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. / D.D.H.
					[illegible]

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	V/m	F/m
139.0m	141.0m	2	100	Identical to above → well laminated Argillite with approx 50/50 graphite qtz split. Fracture like scapolite rich inclusions are frequent, sometimes brecciated (140.15). These zones exist at 139.9, 140.0, 140.15-140.3, 140.6. All are mineralized to a significant extent. Zones show chill zone i.e. coarse grained centers, fine grained margins, no observable alteration halos. foliation @ 65°.	- as above.	- as above po + sphal found in close ass. with scap + qtz veins and argillite present - though at somewhat less concentration. Sulphides - 3%.			
141.0m	143.0m	2	100	As above. - foliation at 70° to c.a. - well laminated with some zones of qtz crenulation at 141.5-142. here crenulation is extensive, and mineralization seems a bit more concentrated. One scapolite zone exists at 142.7.	as above	as above. total sulphides at about 1-2% sphal + po. + py.			
143.0m	145.0m	2	100	As above. → here often the lamination is somewhat absent with zones of extensive graphite alteration and crenulation as in 141.1. foliation in general is 50°. Numerous zones of scapolite + qtz veining exist, with expected mineralization. One vein of massive py. exists at 144. it is 15 cm wide, at 50° to c.a. and associated with qtz + scapolite zone (Note fluorescence again b.) at scap. zones. *Amphiboles	as above	- as above. po, py + sphal at 1-3% total.			
145.0m	147.0m	2	100	Identical to above - Very well laminated. Scapolite zone at 145.0-145.15. Mineralization is apparently more abundant now in the Argillite itself. But still closely associated with qtz stringers. foliation @ 70°.	as above	as above. - sulphides more evident now, in the argillite itself. sulphides total about 3%. po, + py + sphal.			
147.0m	149.0m	2	100	as above. - very well laminated not crenulated. foliation at 70°. from 148.4 → 149 the foliation became so fine that the qtz stringers almost disappear and a more homogeneous Py. ... appears.	as above	- as above, with sulphide confined in ... not as much as observable as 145-147. Sulphides = 2-3%			

DRILL LOG

SHEET NO.

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. / D.D.H.

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
149.0m	151.0m	2	100	As above. - very well laminated grey argillite [illegible] qtz lamellae appear to be decreasing giving rise to a grey more homogeneous color. fairly uniform except for 149.9 where a qtz vein intrudes. foliation is at 50° to c.a.	as above.	- mineralization present throughout [illegible] qtz stringers Po + [illegible] ??? [illegible] concent. in the qtz vein [illegible] → sulphides 1-2% vein - sulphides 2%.			
151.0m	153.0m	2	100	Identical to above - At 152.8 a qtz rich zone appears. Here the lamellae are slightly folded and crenulated. The sulphide content is increased here over the normal argillite concentration. foliation 50°.	as above	- as above			
153.0m	155.0m	2	100	Finely laminated grey argillite - Here the qtz content + scapolite content again become important, however not on a large scale as in section above. From 153 → 154.0 the qtz + scapolite [illegible] are pervasive, on a subtle, finer grained scale. Sulphide mineralogy is also somewhat increased, at [illegible] also subtly. From 154 to 155.0 the unit becomes more normal in qtz content.	- as above	- mineralization as above.			
155.0m	157.0m	2	100	Finely laminated grey argillite homogeneously laminated @ 30° to c.a. not crenulated and not intruded, massively as previous sections have been. One zone of scapolite rich material is at 156.0. with epidote, this one does not contain as much mineralization as previous examples. Note flourescence. Zone of silicification exists on either side of this 15cm intrusion	- as above	as above			
157.0m	15[illegible].0m	2	[illegible]	Finely laminated grey argillite - here the lamellae are highly crenulated. [illegible]. From section 157.2 — 158 a zone of [illegible] exists. The outer contains a [illegible] structure of qtz + scapolite, with the [illegible] being a wide zone of silicification giving a uniform light grey color. From 158 - 159 the more common crenulated argillite with [illegible] scapolite exists.	- as above.	- as above. - [illegible] mineralization found disseminated throughout, but concent. with intrusive quartz veins. Po, Py, [illegible] Chalco. [illegible] 2%.			

DRILL LOG

SHEET NO. 1

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. ML-? D.D.H. 70-3

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
159.0m	161.0m	2	100	Finely laminated grey argillite → [illegible] 20/30 qtz [illegible] [illegible] with crenulated foliation [illegible]. 70° to c.a. Fold axis at 159. at 70°. One major qtz vein at 160.6. with a grey [illegible] alteration [illegible]. qtz vein has sulphide mineralization [illegible] as usual.	as above	- as above. - no apparent [illegible] decrease or increase in previously observed			
161.0m	163.0m	2	100	Identical to above - with a [illegible] at 161. [illegible] at 70° to c.a. Note [illegible] [illegible] foliation is 70° or [illegible] and 50° on lamellae. At 161.4 - 162.0 a zone of intrusion [illegible] [illegible] qtz veins form. with possible actinolite and epidote [illegible]. Adjacent to these intrusions are chlorite, or alteration zones of increased qtz content [illegible] immediately after this zone is a dark gray, [illegible] zone of argillite. Followed by the more normal sequence. Foliation is 70°, with lamellae not extensively crenulated.	as above.	- again [illegible] best mineralization [illegible] the intrusive zones. - with [illegible] po. being most common. - po still found in Arg. proper. little [illegible] overall.			
163.0m	165.0m	2	100	Finely laminated Grey Argillite. → well laminated at 80° to C.a. some crenulation of lamellae but not extensive. In general quite monotonous, with sulphide sprinkled throughout. Narrow qtz vein concentrate pyrite pyrrhotite. Some crosscutting qtz. veins.	as above	po + py in Argillite ≈ 1%. po + py in vein ≈ 5%.			
165.0m	167.0m	2	100	Identical to above	as above	- as above			

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO. [illegible]

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. [illegible] D.D.H. [illegible]

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
167 m	169 m	2	100	As above section 163-165 and 165-167. Here the lamilla are slightly more convoluted, with more observable reaction to the [illegible] quite observable. All other aspects identical.	as above	- as above - sulphide [illegible] as found in other previous sections, in micro veins, sometimes associated with qtz.			
169.0 m	171 m	2	100	As above. - Some brecciation in veins found, however not extensive.	as above	as above.			
171.0 m	173.0 m	2	100	Fairly Laminated Grey Argillite - here the qtz content is somewhat increased, and convoluted lamella are more prominent. Po + no dominant sulphides. Intrusive qtz zones less dominant, but rather a pervasive qtz increase throughout. Again qtz veins when present contain blebs of sulphides, and overall possess a higher concentration. foliation at 60°.	as above	- as above			
173.[illegible]	175.[illegible]	2	100	As above.	as above	- Po + Py + sphal both disseminated & in qtz veins at total of 3%.			
175.0 m	177.0 m	2	100	As above	as above	as above.			

DRILL LOG

SHEET NO. [illegible]

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. [illegible] D.D.H. [illegible]

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
177.0m	179.0m	2	100	Finely laminated Grey Argillite - Identical to previous 5-6 sections. Well laminated and crenulated, with general foliation at 50° to c.a., although variable & Development of boudins & porphyroblasts in qtz stringers, is common. No larger qtz veins present.	- as above - silicification +	- as usual, well disseminated grains in qtz lamellae of Arg. [illegible] no major qtz veins. - [illegible] sulphides [illegible] po + py + sphal? - 1-2%			
179.0m	181.0m	2	100	As above. - Finely laminated, highly crenulated monotonous grey Argillite. A isoclinal fold with fold axis of 5° to c.a. is present at 179.5. Qtz seems to be pinched into the nose although mineralization is not so obvious. Several zones of highly agitated and micro crenulated qtz exist. One of these zones extends from 180-181.0, no apparent increase in mineralization is observed.	- as above.	- po + py - mostly po as usual. - one zone of qtz exhibits concentration nothing abnormal to rest of section.			
181.0m	183.0m	2	100	Finely laminated Grey Argillite → Here the Argillite returns to a more consistently laminated zone. There are however zones which disturb this monotony, and thus create crenulations, and qtz concentrated veins. These veins also as usual contain increased sulphide content. Foliation here is 60°.	- as above.	po + py mostly py here, some sphalerite, most noticeable in qtz rich zones.			
183.0m	185.0m	2	100	As above. → Highly convoluted here, with qtz rich zones common, ~~and~~ these disrupting the lamination. At 183.7-184 one zone is qtz dominant, with massive sulphides sphal + po + py present. Foliation in general is 50°	as above.	- as above - Sphal + po + py. in veins. - although sulphides including sphal present in Arg. proper.			
185.0m	187.0m	2	100	Finely laminated Grey Argillite - In general this zone is well laminated, the [illegible] has developed into porphyroblasts with crenulations being common, and sulphides present as blebs, well dispersed in the argillite. Some zones are more [illegible] [illegible] and brecciated [illegible] the foliations well convoluted. Here mineralization is best shown with sphal + po + py most prominent. In addition a zone of black (graphitic) [illegible] at 10.5 [illegible]	- as above.	- sphal + po + py, especially in veins - 1% in Arg. as stringers & blebs. 2% [illegible] in veins.			

DRILL LOG

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION	SHEET NO. 17

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip: / Horizontal Projection: Vertical Projection:	HOLE SIZE	TOTAL DEPTH	HOLE NO. D.D.H. [illegible]

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
187.0	189.0m	2	100	Finely laminated - Grey Argillite - well laminated at times, crenulated and convoluted, with qtz veins, which are sometimes brecciated. As usual mineralization is common in Argillite (in qtz stringers) but concentrated in the more massive qtz veins, and qtz vein contains po + py. + epidote + garnet. On either side of the vein is a zone which is graphite rich?. foliation is 70° to c.a	as above. ie silicification and graphitic alteration pervasive.	- as above. - epidote + py + po + garnet + sphalerite in qtz vein.			
189.0m	191.0m	2	100	Finely Laminated Grey Argillite - Here the Argillite is well laminated with periodic greyer qtz rich bands, the foliation is 30° and not extensively foliated. Several zones of qtz + Scapolite exist, with as slightly more deformed foliation [illegible] to it. As usual sulphides present throughout but especially associated with qtz. particl. Sphal.	as above.	- Sphal + po + py - in 1-3%.			
191.0m	193.0m	2	100	As above - highly crenulated in places and convoluted, but zones of excess qtz, or scapolite lacking. foliation is 70° to c.a.	as above	- as above.			
193.0m	195.0m	2	100	As above .- with periodic qtz veins slightly brecciated and well mineralized with Sphal. + po + py.	as above	- as above			
195.0m	197.0m	2	100	As above .. well laminated, sometimes crenulated with periodic qtz veins, enriched in sulphides (po + py). (Note this and all sulphide bearing veins in hole are // to local foliation). One graphitic shear zone exists at 96.4 → 96.41 foliation is @ 50° to c.a.	as above	- as above - po + py found as micro [illegible] and euhedral in qtz veins. In veins sulphides are 5-20% [illegible] 10 to 50% [illegible]			

DRILL LOG

SHEET NO. [illegible]

LOCATION	CO-ORDINATES	NORTH	EAST	ELEVATION

DATE STARTED	DATE COMPLETED	Hole Attitude: Surface - Azimuth Bearing: Dip: / Depth - Azimuth Bearing: Dip:	HOLE SIZE	TOTAL DEPTH	HOLE NO. MDH D.D.H. 80-3
		Horizontal Projection: Vertical Projection:			

DEPTH From	DEPTH To	CORE Length	CORE %Rec	LITHOLOGY	ALTERATION	MINERALIZATION	STRUCTURE F	STRUCTURE V/m	STRUCTURE F/m
197.0	200.0	3	100%	Finely laminated Grey Argillite → Similar to above. Foliation is present yet quite crenulated, and a more graphitic nature exists with distinct white qtz. laminations not present, but rather a dirty grey siliceous material. Convolution is pervasive. Foliation at about 50°. Periodic qtz veins with massive sulphides, up to 20% of vein. However mineralization present throughout.	as above	as section 195-197			
				Summary and trend. Entire hole basically same rock with minor variations in behavior of laminations ie convolution or crenulation. Foliation varied from 50 to 70°, these suspected to be fold limbs. Mineralization is present throughout at 1% total sulphide, but always associated with the qtz lamellae in the argillite. The zones of qtz concentration or qtz veins, or qtz breccia veins, or qtz. Scapolite [illegible] always had 2 - 10x the concentration of sulphides. The best mineralization "appears" to be in the marbled zones of qtz + scapolite in the argillite. Also note that the sphalerite [illegible] seem to be low in the first 100 m., but once the massive qtz veins appear the sphal. content increases. However sphal may still be present in the first 100 m. but too small to find. [illegible] sulphides [illegible]	qtz in the silicification process. Note sphal often assoc. with epidote + garnet.				