

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

85-374-13784

**15,784**

**DIAMOND DRILL REPORT**

**ON THE**

**MAG GROUP**

**Cariboo Mining Division**

**93 B/8**

**(Latitude 52 33', Longitude 122 10')**

**OWNER AND OPERATOR**

**GIBRALTAR MINES LIMITED**

**McLEESE LAKE, B.C.**

**AUTHOR: G. D. Bysouth**

**Submitted: June 7, 1985**

## TABLE OF CONTENTS

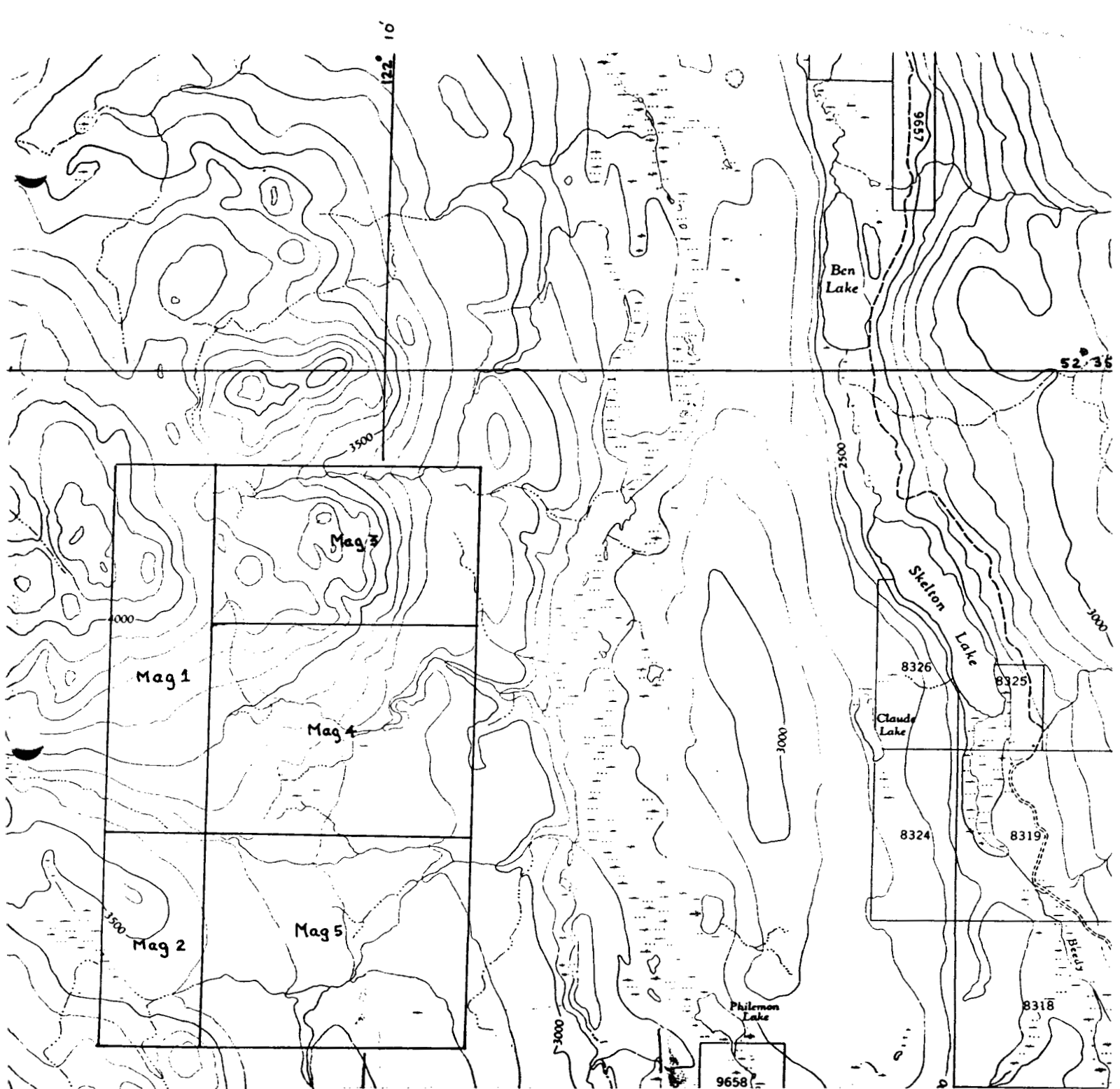
	Page
1.0 INTRODUCTION, PHYSIOGRAPHY AND ACCESS.....	1
2.0 GEOLOGY.....	2
3.0 PROPERTY DESCRIPTION.....	2
4.0 PREVIOUS WORK.....	2
5.0 DRILL PROGRAM.....	2
5.1 Objective.....	2
5.2 Results.....	3
5.3 Discussion.....	4
5.4 Conclusion.....	4
6.0 STATEMENT OF EXPENDITURES.....	5

## FIGURES

Figure I	Area Location Map	(In Text)
Figure II	Mineral Claim and Drill Hole Location Map	(In Pocket)

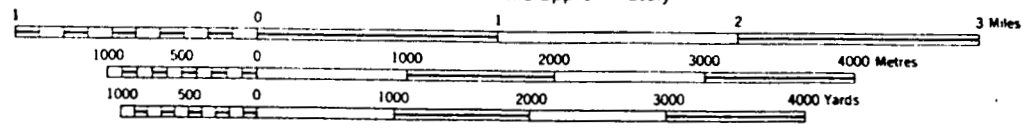
## APPENDICES

A.	Statement of Qualifications.....	7
B.	List of Abbreviations.....	8
C.	Drill Log: Hole 85-23.....	(In Pocket)
D.	Drill Log: Hole 85-24.....	(In Pocket)



**FIGURE 1**  
**MAG GROUP LOCATION MAP**  
**93 B 8**

SCALE 1:50,000  
 1.25 inches to 1 mile approximately



CONTOUR INTERVAL 100 FEET  
 Elevations in Feet above Mean Sea Level  
 North American Datum 1927

## 1.0 INTRODUCTION, PHYSIOGRAPHY AND ACCESS

The Mag Group is a copper-gold prospect located in Cariboo District, approximately 4 miles (6.4 km) northeast of the Gibraltar Mines concentrator and about 10 miles (16.0 km) northeast of McLeese lake.

The claims cover a predominately easterly sloping terrain which drains into the valley of Beaver Creek. Relief varies from 3000- to 4200-feet. The area is poorly drained and covered by thick stands of spruce, douglas fir and jackpine.

Access is via a 4-wheel drive-type road which links up the Gibraltar tailings pond road near the eastern end of the pond. General location of the claim group is shown in Figure 1.

This report covers a diamond drill program conducted during the period May 15 to June 6 1985. Two vertical N.Q. diamond drill holes were completed for a total footage of 730 feet (222.65 m). The contractor was Double G Diamond Drilling Ltd. of Williams Lake, B.C. Core is stored at the Gibraltar Mines plant site.

## 2.0 GEOLOGY

The Mag Group appears to be underlain by a sequence of dark green volcanic flows and associated breccias which form prominent outcrops above the 3400-foot level. These rocks are considered to be mainly of andesitic or basaltic composition and are likely of Jurassic age. Most specimens examined were dense, dark-green, fine grain rocks which often displayed tiny chloritic phenocrysts. In several places epidote-garnet-magnetite scarns were noted interbedded with the volcanics. Below the 3400-foot level very little rock exposure has been found. Resistivity data suggests this area may be underlain by predominately sedimentary units.

## 3.0 PROPERTY DESCRIPTION

The mineral claims of the Mag Group were staked in 1980 to cover a large aeromagnetic anomaly and several zones of magnetite-scarn. The mineral claims are shown in Figure 2. Information on these claims is tabulated below.

<u>CLAIM NAME</u>	<u>RECORD NO.</u>	<u>NO. OF UNITS</u>	<u>ANNIVERSARY DATE</u>
Mag 1	1660	14	June 10
Mag 2	1661	8	June 10
Mag 3	1662	15	June 10
Mag 4	1663	20	June 10
Mag 5	1664	20	June 10

All of these claims are owned by Gibraltar Mines Ltd. The drilling was located on the Mag 4 claim.

## 4.0 PREVIOUS WORK

During October and November of 1981 an induced polarization survey was carried out over the property by Peter E. Walcott and Associates Limited for Gibraltar Mines. Approximately 28.4 miles (45.5 km) of I.P. line was run and at least five definite anomalies were discovered. This work was submitted for assessment work in March 1982.

## 5.0 DRILL PROGRAM

### 5.1 OBJECTIVE

Two vertical N.Q. holes were drilled to test a narrow but extensive I.P. anomaly near rock exposures of magnetite-epidote-garnet scarn.

## 5.2 RESULTS

Drill hole locations are shown in Figure 2. In both holes, oxide and supergene effects appear negligible. Drill recoveries were over 90% in hole 85-23 except in a few faults and shatter zones. Recoveries were very poor in hole 85-24, averaging about 75%. Both holes appeared essentially barren and were not assayed. The pyrite and copper concentrations reported in the log are visual estimates. Hole 85-23 was drilled to 500-feet. Hole 85-24 was drilled to 230 feet.

Hole 85-23 intersected a sequence of volcanic flows, volcanic breccias, tuffaceous sediments and volcanic greywacke. The hole was cased to 58-feet. From 58-feet to 295-feet a dark green to dark grey fine grain rock was intersected which has been interpreted to represent a series of volcanic flows and associated breccias, all of andesitic composition. From 295-feet to the end of the hole at 500-feet, a predominately sedimentary unit was encountered having the same coloration and appearance as the overlying volcanic rocks but composed mainly of alternating beds of fine tuffaceous material and coarse greywacke. The beds range between six inches and seven-feet in apparent thickness and in places include conformable bands of epidote. Commonly, the tuff appears quite siliceous and may grade to an impure chert. Both the volcanic and sedimentary units contain enough finely disseminated magnetite to strongly attract a magnet. Both units also appear to be extremely hard and are probably much more siliceous than would be expected for the rock types involved. No significant zone of sulfide was intersected, although finely disseminated pyrite and sparse chalcopyrite were noted in the sedimentary unit. Throughout the hole, the core appears to be cut by veinlets containing various combinations of quartz, carbonate, epidote and chlorite. Most of these appear cut the bedding at a large angle. In general, the vein pyrite appears strongly associated with the epidote but the chalcopyrite appears confined to quartz-carbonate veins which in one case clearly cuts and displaces some epidote-pyrite veins. In both sedimentary and volcanic units, the prevailing bedding dip seems to be about 45 deg.

Hole 85-24 intersected a similar sequence of rocks. From the casing at 18-feet to 85-feet a volcanic unit was encountered consisting mainly of green feldspar porphyry. From 85-feet to the bottom of the hole at 230-feet a sedimentary unit was intersected which appeared almost identical to that of hole 85-23, except for a smaller proportion of tuffaceous material. This unit also possessed the same hard cherty character and contained the same finely disseminated magnetite. No significant zone of sulfide was intersected. Sparse pyrite and chalcopyrite were noted in a breccia zone associated the quartz, epidote, chlorite and carbonate deposited between the fragments. Throughout the hole the prevailing bedding dip was 45 deg.

### 5.3 DISCUSSION

Although no significant mineralization was encountered, the two holes did reveal some information which may have a bearing on future exploration. First of all, the very hard compact nature of all the core appears anomalous for rock types involved. Pervasive silicification is one possibility. Secondly, fine disseminated magnetite occurs throughout both holes regardless of rock type. Epigenetic magnetite mineralization is an obvious possibility and provides added interest to the sparse chalcopyrite mineralization also present.

### 5.4 CONCLUSION

More exploration work is required. All geophysical targets should be tested by drilling. Some thin section work should also be done.

Submitted by,

*G. D. Bysouth*

G. D. Bysouth  
Senior Geologist  
Gibraltar Mines Limited

4.0 STATEMENT OF EXPENDITURES

May 1985 Diamond Drilling, Mag Group

(a) Drilling costs

85-23	500' @ \$14.00/ft.	\$7,000.00	
85-24	230' @ \$14.00/ft.	\$3,220.00	
		-----	
			\$10,220.00

(b) Site Preparation

Cat time:

(1) Pushing Roads and Developing Sites			
39 hrs @ \$41.00 per hours			\$ 1,599.00

(c) Supplies

Drilling Mud		\$ 25.50	
Core Boxes - 50 boxes @ 5.85/box		292.50	
Tags, bags, miscellaneous		25.00	
		-----	
			\$ 343.00

(d) Vehicle

Rental 4X4 1985 pickup, May 15-17			
May 23, 27, 28, 30, 31 June 3			
8 days @ 36.00/day		\$288.00	
Fuel		100.00	
		-----	
			\$ 388.00

(e) Personnel Costs

(1) Core Logging and Supervision

G. Bysouth	3 May-8hrs.		
	28 May-4hrs.		
	30 May-4hrs.		
	3 Jun-8hrs.		
	4 Jun-8hrs.		
	5 Jun-8hrs.		
	6 Jun-8hrs.		
48 hrs @ 31.00/hr		\$1,488.00	

(2) Field Work and Sample Preparation

E. Oliver	15 May- 8hrs.		
	16 May- 4hrs.		
	17 May-11hrs.		
	23 May- 4hrs.		
	27 May- 4hrs.		
	28 May- 4hrs.		
	30 May- 4hrs.		
	31 May- 8hrs.		
	3 Jun- 6hrs.		
53 hrs @ \$19.64		\$1,040.92	



(3) Field Work and Sample Preparation

T. Bains 16 May- 4hrs.

5 Jun- 4hrs.

8 hrs @ \$16.67/hr \$ 133.36

(4) Field Work and Sample Preparation

D. Exshaw 17 May-11hrs.

23 May- 4hrs.

27 May- 4hrs.

28 May- 4hrs.

30 May- 4hrs.

31 May- 8hrs.

3 Jun- 6hrs.

5 Jun- 4hrs.

45 hrs. @ \$14.29/hr \$ 643.05

\$3,305.33

Total Drilling Costs

\$15,855.33

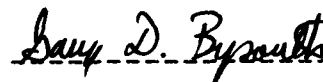
*LOB*

APPENDIX I

STATEMENT OF QUALIFICATIONS

I, Garry D. Bysouth, of Gibraltar Mines Limited, McLeese Lake, British Columbia, do certify that:

1. I am a geologist.
2. I am a graduate of the University of British Columbia, with a B.Sc. degree in geology in 1966.
3. From 1966 to the present I have been engaged in mining and exploration geology in British Columbia.
4. I personally supervised this drill program, logged the core and assessed the results.

  
-----  
Garry D. Bysouth

APPENDIX II

ABBREVIATIONS USED IN DRILL LOGS

cal.....calcite  
carb.....carbonate  
chl.....chlorite  
cp.....chalcopyrite  
cren.....crenulated  
dissem.....disseminated  
ep.....epidote  
foln.....foliation  
grn.....grained  
lim.....limonite  
mal.....malachite  
mag.....magnetite  
py.....pyrite  
QSP.....quartz-sericite-py

# GEOLOGICAL BRANCH ASSESSMENT REPORT

GRID \_\_\_\_\_

177801  
GIBRALTAR MINES LTD.

HOLE No. 85-24

SHEET No. 1 of 4

LOCATION Mag Group

BEARING \_\_\_\_\_

DATE COLLECTED May 31, 1985

LENGTH 230'

DATE COMPLETED June 5, 1985

DIP -90°

LA TITUDE  
LONGITUDE  
ELEVATION

CORE SIZE N.O.W.

LOGGED BY G.D.B.

SCALE OF LOG 1" = 10'

DATE June 4, 1985

REMARKS hole intersects a sequence of volcanic flows, greywackes and tuffaceous sediments

ROCK TYPES & ALTERATION		L to Core Foliation	GRAPHIC LOG	Veins L to Core Axis	Width of Vein	Mineralization	FRACTURE ANGLE TO CORE AXIS -FREQUENCY-	ESTIMATED % PYRITE	BOTTOM DEPTHS		Estimated Core Recovery %	R O D	ASSAY RESULTS					
									LEACH CAP	LIM. ZONE			Sample Number	% Cu	% Mo	Estimated Grade (Cu)		
Casing To <u>18'</u>																		
Andesite Porphyry (18'-85')																		
a highly broken complex zone including 6"-12" zones of massive ep, bx zones healed with ep-gfs and minor dk grey cherty rx. Principle rx type is a dark green		45?	30x2+60x4 40x3	hlex6 1/10x3		lim-MnO <sub>2</sub> x6 ep-lim x3		0	limonite weak note: angles in foly column ref to bedding dips	18 23 27 30	40 20 40							.01
feldspar porphyry consisting of ~40% subhedral 1/20" dia plag. pheno's in a dk green aphanitic matrix.		?	?	12" 10" 12"		massive ep massive ep massive ep		0	note: this core is unusually hard (H6-7) and moderately magnetic -The magnetite is in the form of fine pervasive dissemination throughout all rx types.	37 40	40 15							.01
this is prob. an altered zone with the porphyry as the principle host rx.		45	5x4	hlex4		lim x4		0		50 53	60							.01
				14" 3'		massive ep and chert? fine cherty bx. zone		0		50 53	60							.01

GRID \_\_\_\_\_

GIBRALTAR MINES LTD.

HOLE No. 85-24

SHEET No. 2 of 4

ROCK TYPES & ALTERATION	L to Core Footage	GRAPHIC LOG	Vein L to Core Alt	Width of Vein	Mineralization	FRACTURE ANGLE TO CORE AXIS -FREQUENCY-	ESTIMATED % PYRITE	BOTTOM DEPTHS			Estimated Core Recovery %	R O D	ASSAY RESULTS			
								LEACH CAP	LIM. ZONE	SUPERGENE			Sample Number	% Cu	% Mo	
	45?	70	?	4'?	zone of soft white (non carbonate) material (alunite?) (gypsum?) massive ep (clay?) + soft white material	0 10 20 30 40 50 60 70 80 90	0				50					.01
	?	80	?	3'	zone of bleaching and patches of ep + soft white material as above	0 10 20 30 40 50 60 70 80 90	0				85					.01
	?	90	?	1"	blk prismatic mineral (schrol?)	0 10 20 30 40 50 60 70 80 90	0				75					.01
	?	90	?	1/4	qtz-chl-ep	0 10 20 30 40 50 60 70 80 90	0				40					.01
	95	100	45	6"	massive ep	0 10 20 30 40 50 60 70 80 90	0				55					.01
SEDIMENTARY UNIT (95'-230')		100		1/2	massive ep	0 10 20 30 40 50 60 70 80 90	0				97					.01
	40 -80	110	45+35x3	hlc + t	lim + MnO <sub>2</sub> + t	0 10 20 30 40 50 60 70 80 90	0				60					.01
	50	120	?	2"	ep	0 10 20 30 40 50 60 70 80 90	0				80					.01











GRID \_\_\_\_\_

GIBRALTAR MINES LTD.

HOLE No. 45-23  
SHEET No. 3 of 8

ROCK TYPES & ALTERATION			L to Core Feet	GRAPHIC LOG	Vein L to Core Feet	Width of Vein	Mineralisation	FRACTURE ANGLE TO CORE AXIS - FREQUENCY -	ESTIMATED % PYRITE	BOTTOM DEPTHS		Estimated Core Recovery %	R O D	ASSAY RESULTS			
										LEACH CAP	LIM. ZONE			SUPERGENE	REMARKS	Sample Number	% Cu
		finer grained and generally greenish grading in places to epidote green.	45	170	75	1/8	carb-qq-lim	0	0		162	95					.01
		- this unit may be a coarse volcano-clastic sequence rather than a flow breccia	45	180	60	1/4	ohl-lim	0	0		178	90					.01
			40	180	56	1/10-1/20 x 6	qq-lim x 6	0	0		184	98					.01
			45	190	45	1/8	ep	0	<.05		195	100					.01
			30-40	200				0	<.05	missing footage block?	208	70					.01
				210	15-20 x 6	1/20-1/16 x 6	chl-qq-(CpP)	0			213	95					
		<u>ANDESITE UNIT (213'-264')</u>		220	5 60 x 7 60 x 6	1/10 1/20-1/10 1/8-1/10 x 6	carb ep x 6 carb x 6	0			213	98					

ROCK TYPES & ALTERATION	L to Core Foliation	GRAPHIC LOG	Y vein L to Core Ash	Width of Vein	Mineralization	FRACTURE ANGLE TO CORE AXIS -FREQUENCY-	ESTIMATED % PYRITE	BOTTOM DEPTHS		Estimated Core Recovery %	R O D	ASSAY RESULTS			
								LEACH CAP	LIM. ZONE			Supergene	REMARKS	Sample Number	% Cu
dense dark green rock of likely andesitic or basaltic composition - fine grain tex. in place brecciated (ang. frags) - cut by numerous	45	230	30x4	1/10x2	ep x 2	0	0			223					01
						10									
Carbonate veins and occasional ep stringers.	45	240	10+15	1/8+1/10	Fe-carb. x 2	0	0			70					01
						10									
	40	250	7	6"	qq	0	0			15					01
						30									
3' zone of greywacke below fault. (250-253)	50	260	15	1/2	qq-hem qtz-ep	0	0			60					01
						20									
ANDESITE PORPHYRY (264-295)	45	270	45 50-80x4 50	1/10x4 6"	ep carb x 4 qtz-ep (Cpyl)	0	0			90					01
						20									
similar to above but contains 20-60% saus. plag. pheno's in dark green aphanitic matrix -phenos up to 1/10 dia	45	280	50 70	1/4	ep carb-ep	0	0			90					01
						20									
			60+50 x 2	1/5-1/10 x 2	carb x 3	0									

highly  
broken  
zone  
Poss. fault  
core sl.  
bleached.  
minor lim



GRID

GIBRALTAR MINES LTD.

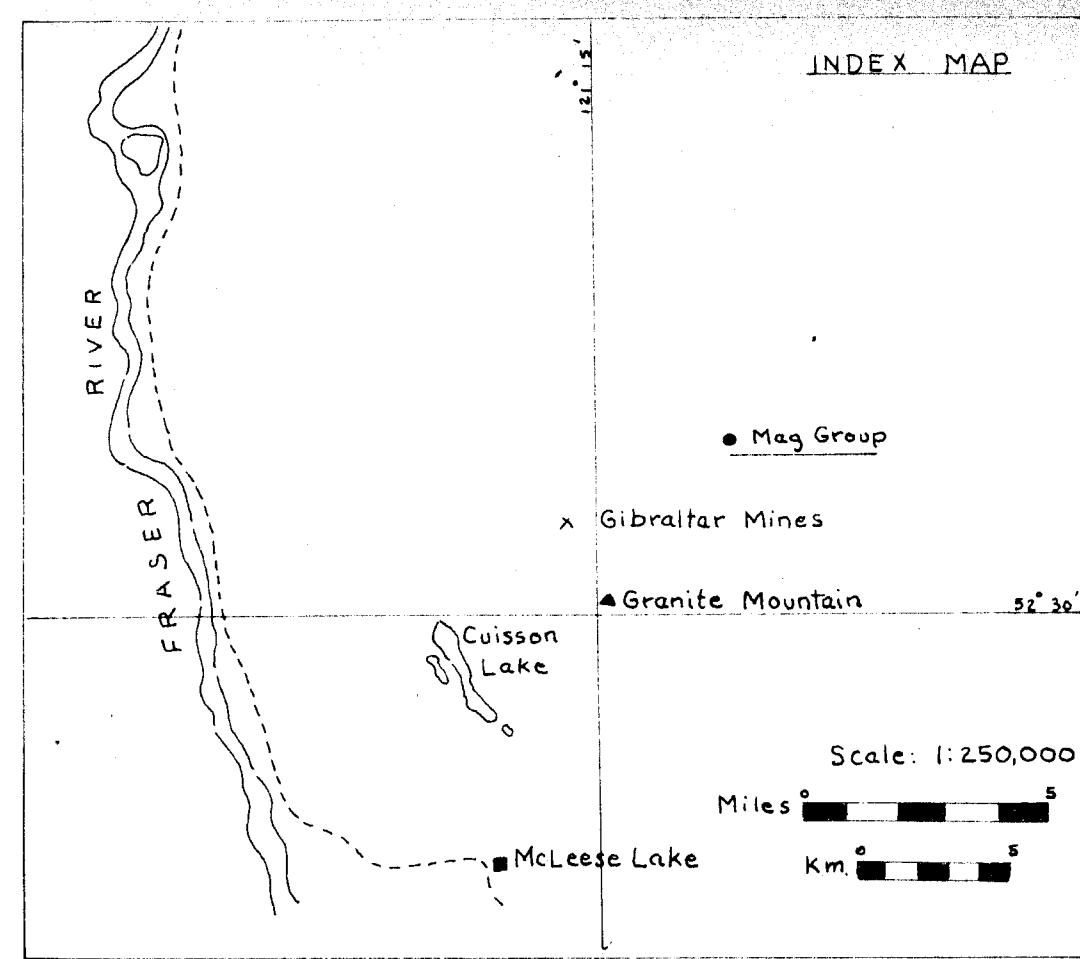
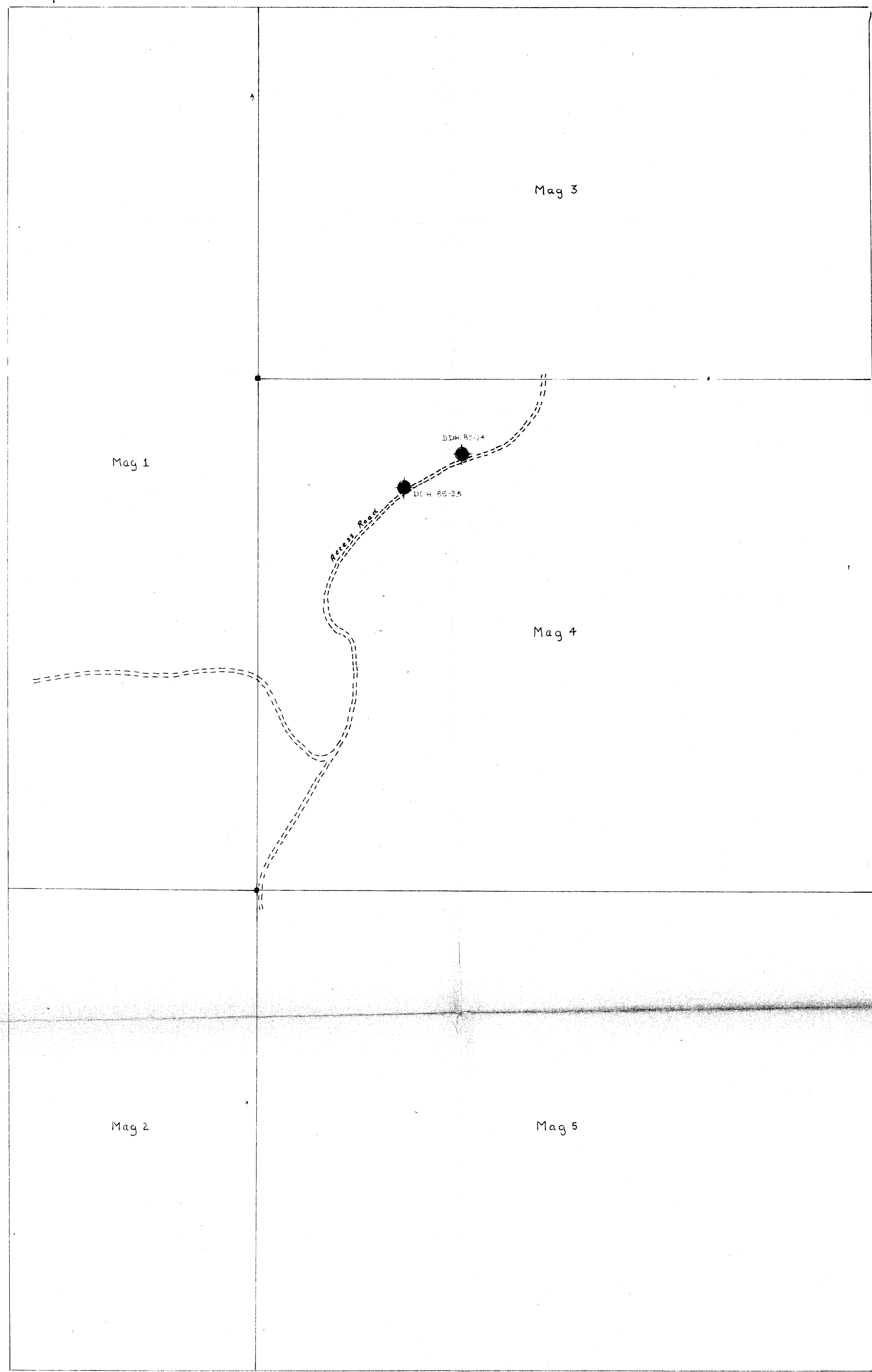
HOLE No. 8523  
SHEET No. 6 of 8

ROCK TYPES & ALTERATION			L to Core Foliation	GRAPHIC LOG Foliation Alteration Footage Size	Ylns L to Core Ain	WIDTH of Vein	Mineralisation	FRACTURE ANGLE TO CORE AXIS -FREQUENCY-	ESTIMATED % PYRITE	BOTTOM DEPTNS			Estimated Core Recovery %	R O D	ASSAY RESULTS			
										LEACH CAP	LIM. ZONE	SUPERGENE			Sample Number	% Cu	% Mo	
			40	350	45 60 30 x2 70 x2	1/5 1/2 1/5 x2 1/10 x2	qtz-chl qtz-chl qtz-epx2 epx2	0	0			350	100					.01
			40	360	45 20 40	1/10 x3 1/4 3'	qtz-chl (py) x3 qtz-ep qtz-chl-ep (mag) zone	0	0			360	98					.01
			40	370	40 40	12' 7'	dk cherty magnetic zone with (py) dark siliceous bx "healed" with ep - fine grn mag (py)	0	.5	magnetite is very fine - not visible without magnification		370	95					.01
			40	380	40 40	3' 2'	dk siliceous bx as above - finely diss. mag in chert dk chert - mag (py)	0	.5			380	98					.01
			40	390	45 40 60 60 x10	1 1/2' 1/10 3" 1/2 - 1/10 x10	dk chert - mag (py) chl-ep (py) qtz-chl qtz x10	0	.5			390	100					.01
			40	395	40 x2 40	1/10 x2 8"	qtz + ep dk chert - mag (py)	0	0			395	100					.01
				400								400						



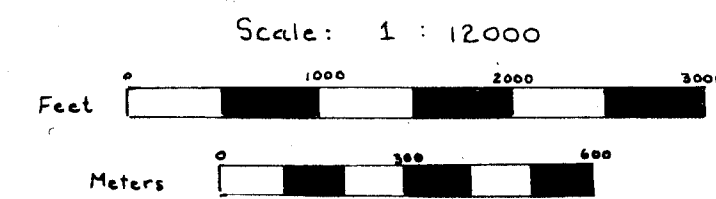
ROCK TYPES & ALTERATION		L to Core Foliation	GRAPHIC LOG Foliation Alteration Footage Structure	Veins L to Core Xm	Width of Vein	Mineralization	FRACTURE ANGLE TO CORE AXIS -FREQUENCY-	ESTIMATED % PYRITE	BOTTOM DEPTHS		Footage Block	Estimated Core Recovery %	R O D	ASSAY RESULTS					
									LEACH CAP	LIM. ZONE				SUPERGENE	REMARKS	Sample Number	% Cu	% Mo	Estimated Grade
<u>CHLORITE-EPIDOTE CARBONATE ZONE</u> (458' - 476')  a dark green swirled mixture of ep and andesite (chl. phenos) cut by numerous qtz and qtz-carb. veinlets. -incr py-cp.		45?	470 	45 x 2	1/4 + 1/3	qtz-carb x2	0	.5			470	95							
				5	1"	qtz-ep-chl (cp)	10												
				60 + 80	1/10 x 2	qtz-chl-carb x2	20												
<u>SEDIMENTARY UNIT (476' - 495')</u>		45	476 	5 + 70 x 2	1/4 x 3	qtz-carb-cp + qtz-chl-py *	30	1.0	* the cp veins clearly cut and displace the py veins	480	90								
				80	1/2	qtz-carb (cp)	40												
				70	1/2	qtz-carb-ep	50												
<u>SEDIMENTARY UNIT (476' - 495')</u>		45	480 	70	1/10	qtz-chl-py	60	.5		490	85								
				30	1/10	qtz-chl-py	70												
				45 x 3	1/10 x 3	qtz-carb (cp)	80												
<u>EOH 500'</u>		45	490 	45	1/4	qtz-carb	90	0		490									
				45	6"	qtz-carb	0												
				40	1/4	qtz-carb	10												
S.D. Report																			





**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**13,784**



Control by chain and compass

**GIBALTAR MINES LIMITED**

DRILL HOLE LOCATIONS

MAG GROUP

FILE No. FIGURE 2

DWN.	CHECK	APPR.	ISSUED FOR	DATE	REV.	DESCRIPTION	DWN.	CHECK	APPR.	ISSUED FOR	DATE	REV.	DESCRIPTION	REFERENCE	No.	DWG. No.	SCALE
																	1 inch = 1000 feet

NG-211-6 ML