83-#682 -# 11429

DIAMOND DRILL REPORT

ON THE

PURPLE GROUP

Cariboo Mining Division

93 B/9W

(Latitude 52 33', Longitude 122 18')

OWNER AND OPERATOR

GIBRALTAR MINES LIMITED

McLEESE LAKE, B.C.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,429

AUTHOR: G. D. Bysouth

Submitted: November 16, 1983

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FIGURES

APPENDICES

1.0 INTRODUCTION

The Purple Group forms part of the Gibraltar Mines permanent property and includes a large portion of the tailings pond. The general location of the group in shown in Figure 1.

This report is concerned with the southern end of the group which extends into eastern portions of the Gibraltar East orebody. Here, three vertical N.Q. diamond drill holes were drilled during the period August 3-6, 1983. Purpose of the drilling was to test the northwesterly extension of a shallow ore zone presently exposed along the Gibraltar East pit northwall. The holes were short - two were drilled to 220-feet and the other to 260-feet, which gives a total of 700-feet (213.36m). The contractor was G. & D. Diamond Drilling of 5425 Dallas Drive, Kamloops, B.C. Core is stored at the Gibraltar Mines plant site.

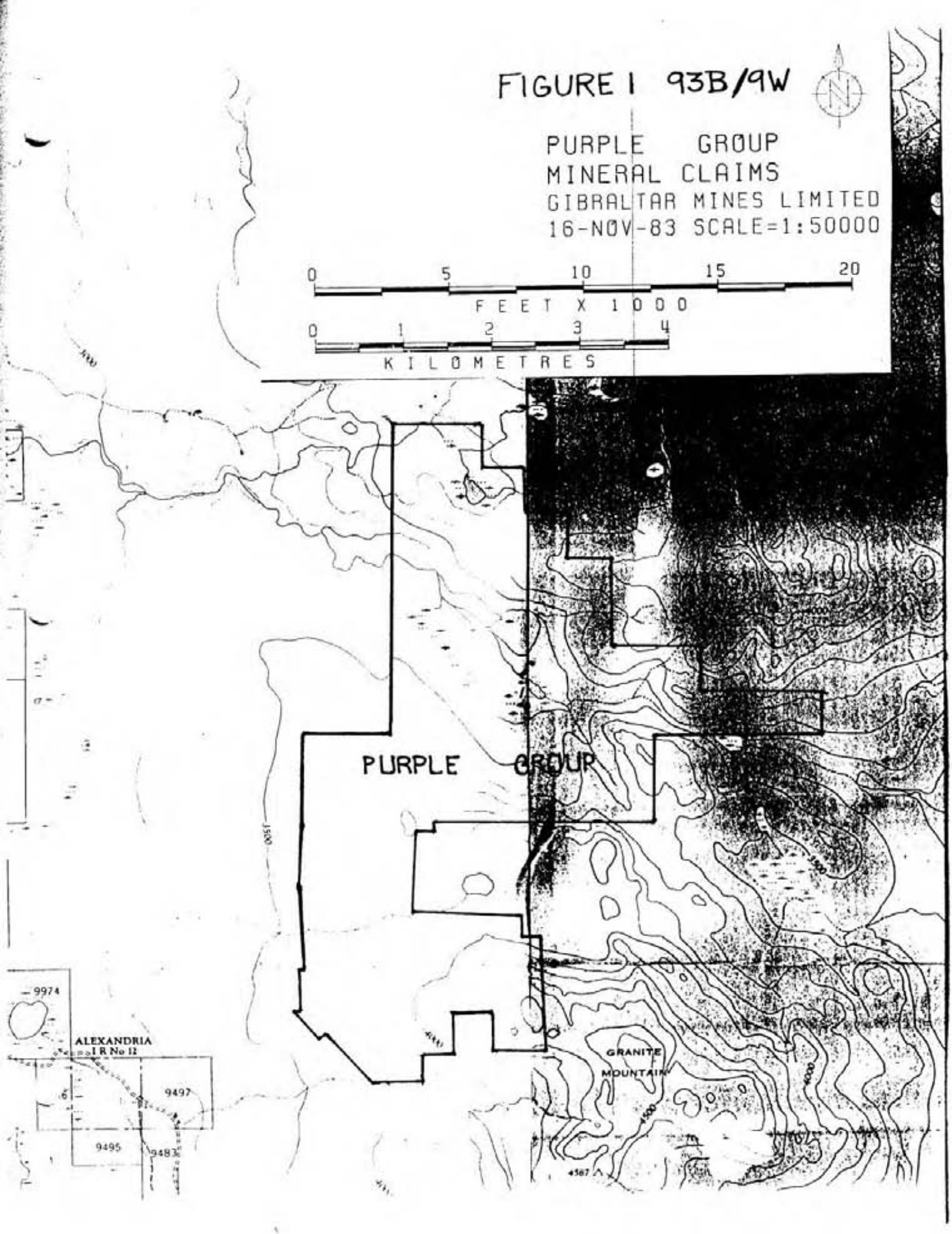
FIGURE 1 93B/9W
PURPLE GROUP
MINERAL CLAIMS
GIBRALTAR MINES LIMITED
16-NOV-83 SCALE=1:50000
0 5 10 15 20
FEET X 1000
0 1 2 3 4
KILOMETRES
PURPLE GROUP
ALEXANDRIA
I R No 12
9974
9497
9495
9483
GRANITE
MOUNTAIN
4587

2.0 MINERAL CLAIMS

Claims and leases of the Purple Group are shown in Figure 2. All of the claims belong to Gibraltar Mines Limited. Pertinent information is tabulatd below.

GIBRALTAR MINES LIMITED
14-NOV-83

CLAIM GROUPS

PURPLE GROUP MINERAL CLAIMS

NAME	RECORDED DDMMYY	RECORD NUMBER	UNITS	MINERAL LEASE
HY 5	120678	01710	10	
HY 6	010578	00675	4	
HY 7	010578	00676	3	
HY 12	100680	01669	14	
HY 13	100680	01670	6	
HY 14	100680	01671	7	
HY 15	100680	01672	6	
HY 16	100680	01673	4	
HY 17	100680	01674	2	
HY 18	241180	03025	1	
HY 19	240381	03246	2	
GG #85	250865	30669	1	3598 M36
GG 40	280864	28881	1	3598 M36
GG 80	220465	29747	1	3598 M36
GG 82	220465	29749	1	3598 M36
GG 86A FR	091266	39653	1	3598 M36
GIB #8	200571	62411	1	3598 M36
GG # 2	281064	29234	1	3599 M37
GG # 4	281064	29236	1	3599 M37
GG # 6	281064	29238	1	3599 M37
GG # 5	281064	29237	1	3600 M38
GG # 7	281064	29239	1	3600 M38
GG # 8	281064	29240	1	3600 M38
GG #16	281064	29248	1	3600 M38
GG # 1	281064	29233	1	4136 M55
GG # 3	281064	29235	1	4136 M55
GG 30	280864	28871	1	4136 M55
GG 41	280864	28882	1	4136 M55
GG #11	281064	29243	1	4137 M56
GG #12	281064	29244	1	4137 M56
GG #13	281064	29245	1	4137 M56
GG #14	281064	29246	1	4137 M56
GG #21	281064	29253	1	4137 M56
GG #24	281064	29256	1	4137 M56
GG 31	280864	28872	1	4137 M56
RUM #41 FR	200470	57295	1	4137 M56
GG #23	281064	29255	1	4138 M57
GG #25	281064	29257	1	4138 M57
GG #26	281064	29258	1	4138 M57
GG #27	281064	29259	1	4138 M57
GG #28	281064	29260	1	4138 M57

TOTAL UNITS 89

3.0 DRILL PROGRAM

3.1 OBJECTIVE

The purpose of this drill program was to test the northwesterly extension of a near surface ore zone currently exposed along the northwall of Gibraltar East pit.

3.2 RESULTS AND INTERPRETATION

The drill locations are shown in Figure 3. All holes intersected typical "Mine Phase Quartz Diorite" consisting of about 50% pale green saussaritized plagioclase, 15% dark green chloritized mafics, and 30% medium grey quartz. Pyrite was the most abundant sulfide and averaged about 2.0% for all three holes. Most of the pyrite and associated minor chalcopyrite, occured with various quartz-chlorite-sericite alteration assemblages in a complex system of veins, shears and shear zones.

Hole 83-16 was collared on the bedrock of the 3660 Bench and was cased to 21-feet. From 21- to 28-feet a leach cap was intersected consisting of vuggy, leached limonite stained core containing only .03% copper. From 28-feet to the end of the hole at 220-feet a supergene zone was intersected characterized by random chalcocite coatings on pyrite and chalcopyrite. The degree of chalcocite replacement appears in part to be structurally controlled - that is, the strongest replacement occurs along steep open structures and shatter zones. As shown in the log, chalcopyrite occurs as a very minor mineral but this may be due to its tendency to be replaced by chalcocite more readily than pyrite. The best grade and greatest sulfide concentrations occur in quartz-sericite-chlorite shears and shear zones which range from less than an inch to 33-feet in apparent width. These shears, and the sporadic distribution of strong chalcocite enrichment, provide an erratic grade distribution within the supergene zone. Average grade for the 190-feet of intersected supergene zone was .32% copper.

Hole 83-17 was also collared on the bedrock of the 3660 Bench but was cased to 10-feet. From 10- to 80-feet a leach cap was intersected consisting of the same vuggy, leached, limonitic rock of very low copper content. From 80-feet to the end of the hole at 220-feet a supergene zone was intersected which was essentially the same as that of 83-16 but of lower grade. At the bottom of the hole a 33-foot quartz-sericite shear zone was intersected which contained zones of massive pyrite and high grade ore. This gave the last 40-feet of core an average grade of .58% copper. The remaining core appears erratic and low grade. A strong possibility exists that the ore intersected in this hole is a down-dip extension of that intersected in 83-16.

Hole 83-18 was collared in overburden and cased to 47-feet. A leach cap was intersected from 47- to 100-feet, and a supergene zone from 100-feet to the end of the hole at 260-feet. No significant ore grade sections were encountered. The 160-feet of intersected supergene zone gave an average grade of .17% copper. Grade distribution was much more uniform than that of the other two holes. No large shear zones were encountered. Very likely, this hole has intersected the outer, eastern wall of the ore system indicated by holes 83-16 and 83-17.

4.0 STATEMENT OF EXPENDITURES

August 1983 Diamond Drilling, Purple Group

(a) Drilling costs

83-16	220' @ $13.00/ft.	$2860.00	
83-17	220' @ $13.00/ft.	$2860.00	
83-18	260' @ $13.00/ft.	$3380.00	
			$9100.00

(b) Vehicle

4X4 1980 Suburban, August 3-6 5 days @ $20/day	$ 100.00

(c) Assay Costs

62 Cu - MoS2 assays @ 4.40/assay	$ 272.80

(d) Supplies

Core boxes, tags, bags, logs etc.	$ 253.00

(e) Personnel Costs

(1) Core Logging and Supervision G. Bysouth Aug. 17, 18, 19, 23 32 hrs @ $31.25	$ 999.50	
(2) Field Work and Sample Preparation E. Oliver Aug. 3-6, 23-26 43 hrs @ 20.00	$ 860.00	
		$ 1895.50

TOTAL DRILLING COST	$11,585.30

5.0 CONCLUSIONS

Drill holes 83-16 and 83-17 appear to have intersected the same ore system. Both indicate that the ore exposed along the pit wall continues at least several hundered feet northwesterly beyond the wall. Hole 83-18 is interpreted as having intersected an eastern low grade fringe of the zone. In conclusion, more drilling is required to fix the boundaries of the ore, particularly towards the west and northwest.

Submitted by,

G. D. Bysouth
Senior Geologist

GIBRALTAR MINES LIMITED

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

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

qtz.....quartz

rx.....rock

ser.....sericite

str.....strong

stkwk.....stockwork

wk.....weak

GRID _____

GIBRALTAR MINES LTD.

HOLE No. 83-16
SHEET No. 2 of 4

ROCK TYPES & ALTERATION	∠ to Core Foliation	GRAPHIC LOG Foliation, Alteration, Footage, Structure	Veins ∠ to Core Axis	Width of Vein	Mineralization	FRACTURE ANGLE TO CORE AXIS -FREQUENCY-	ESTIMATED % PYRITE	BOTTOM DEPTHS: LEACH CAP / LIM. ZONE / SUPERGENE; REMARKS	Footage Blocks	Estimated Core Recovery %	P Q D	ASSAY RESULTS: Sample Number	% Cu	% Mo		Estimated Grade
	80 vein	130	30 x 20	1" - ½"	qt3-cp (vuggy) x2		.5		123	55						
									129	65	0	46586	.19	<.002		08
	Bowk	140	60 30 45x5 70-45x5 90 40	1/10 6" 1/10-1/20 x c 1/10 x c ½ ⅛	qt3-chl-py ((cpl)) leucocratic zone qt3-chl-py x c qt3-chl-py x c qt3-chl-py ((cc)) qt3-chl-py ((cc))		1.5		137	100	57	46587	.14	.004		.10
	30 Str	150	45 - 40 30 50 x 2	⅛ & 1/10 10" 1/10 x 2	qt3-chl-py (cc) x2 qt3-chl-py (cc) qt3-chl-py ((cc)) x2		2.0		147	80	27	46588	.41	.004		.25
	40 Str	160	30-40				4.0		152 157	80 98	13	46589	.70	006	350	.35
	35-40 Str	170	35-60	33'	qt3-chl-ser-carb -py (cp) (cc) zone		2.0		163 167	40 25	10	46590	.43	.020		.30
	30-45 Str	180	25-40				3.5		173 177	50 70	13	46591	.58	.012		.35

GRID _____

GIBRALTAR MINES LTD.

HOLE No. 88-16
SHEET No. 2 of 4

ROCK TYPES & ALTERATION	∠ to Core Foliation	GRAPHIC LOG: Foliation Alteration	Footage	Size/Style	Veins ∠ to Core Axis	Width of Vein	Mineralization	FRACTURE ANGLE TO CORE AXIS -FREQUENCY-	ESTIMATED % PYRITE	BOTTOM - DEPTHS: LEACH CAP / LIM. ZONE / SUPERGENE / REMARKS	Footage Direct	Estimated Core Recovery %	P O D	ASSAY RESULTS: Sample Number	% Cu	% Mo		Estimated Grade
	ND		70	5	35 5	4" klc	qtz-ser-py-cc hem		1.0		67	90	53	46580	.19	.002	3590	.15
steep Fault Zone (70'-87')	ND 80 WK		80 90	5 5°	5°	⅛ 17'	qg-hem qg-bx (hem)		?		77 87	65 60	7 20	46581 46582	.16 .24	.002 .004		? ?
	80 WK		100	5 35 x 10		3' ⅛₀ - hlex 10	qg-bx-hem qtz-chl-py ((cc)) x 10		.5		93 99	60 90	30	46583	.24	.002		.08
	25-40 Str.		110	20 25-40		⅛₀ x 2 15'	qtz-chl-py-cc x 2 qtz-ser-chl-py-cc		2.0		107	50	3	46584	.95	.004		.40
	40 Str.		120						1.0		117	30	0	46585	.90	.002	3595	.80

GRID _____

GIBRALTAR MINES LTD.

HOLE No. 83-16
SHEET No. 1 of 4

LOCATION GIBRALTAR EAST (N.Wall) | BEARING — | LATITUDE 50,985.54 N | CORE SIZE N.Q.W. | LOGGED BY G.D.B
DATE COLLARED August 3, 1983 | LENGTH 220 | DEPARTURE 47,452.54 E | SCALE OF LOG 1"=10' | DATE August 17, 1983
DATE COMPLETED August 4, 1983 | DIP -90° | ELEVATION 3,660.93 | REMARKS

ROCK TYPES & ALTERATION	∠ to Core / Foliation	GRAPHIC LOG: Alteration	Footage	Structure	Veins ∠ to Core Axis	Width of Vein	Mineralization	FRACTURE ANGLE TO CORE AXIS -FREQUENCY-	ESTIMATED % PYRITE	BOTTOM DEPTHS: LEACH CAP / LIM. ZONE / SUPERGENE / REMARKS	Footage	Recovery %	Sample Number	ASSAY RESULTS: Au oz/T	Ag oz/T	% Cu	% Mo	Estimated Grade
Casing To 21 Feet								0 10 20 30 40 50 60 70 80 90										
21								0 10 20 30 40 50 60 70 80 90										
MINE PHASE QUARTZ DIORITE (21 – 220)	70 vir		90	70 80×2 ≈60×30 70×6+5 70+80+5 2K	Y/A Y/20-hle×4 hle×6+Y/15 hle×3 Y/20	qtz-lim lim×4 lim×6+lim-qtz lim×3 chl-py	0 10 20 30 40 50 60 70 80 90	<.5		27	95	33	46576	.03	.004	3635	.05
–30-35 % chl ~ 45 % saus. plag ~ 20-25 % qtz typical rx.	70 vir		40	60 45 70 35×3 30×2	hle 12" 2" Y/20-Y/10×3 Y/10×2	lim qtz-chl-ep (qtz) ep-lim qtz-chl-py(cc)×3 qtz-chl-py(cc)×2	0 10 20 30 40 50 60 70 80 90	.5		37	95	43	46577	.22	.006		.10
	ND		50	30 50-60 25 20×3	Y/20 hle×2 Y/10 Y/20×3	chl-py lim×2 qtz-chl-py(cc) qtz-chl-py(cc)×2	0 10 20 30 40 50 60 70 80 90	.5	strong cc replacement but poor primary sulfide mineralization	47	98	43	46578	.09	.002		.10
	ND		60	5 80 60 60 35 15 20	6" ¼ ¼ Y/20 3" Y/10 6"	ep qtz qtz(ep) qtz-chl-py(cc) qtz-chl-ep-py(cc) zone qtz-chl-py-cc qtz-ser-chl-py-cc	0 10 20 30 40 50 60 70 80 90	2.0		57	95	43	46579	26	.002		.25

GRID _____

GIBRALTAR MINES LTD.

HOLE No. 83-17
SHEET No. 4 of 4

BOTTOM DEPTHS
LEACH CAP
LIM. ZONE
SUPERGENE
REMARKS

ROCK TYPES & ALTERATION	∠ to Core Foliation	GRAPHIC LOG: Foliation Alteration	GRAPHIC LOG: Footage	GRAPHIC LOG: Structure	Veins ∠ to Core Axis	Width of Vein	Mineralization	FRACTURE ANGLE TO CORE AXIS -FREQUENCY-	ESTIMATED % PYRITE	Footage Blocks	Estimated Core Recovery %	P.O.D.	ASSAY RESULTS: Sample Number	% Cu	% Mo		Estimated Grade
	60 Mod		180		90 3+50+60 = +50+80+95 95 60+20	15" 1"-½+½ ⅛+¼+½+2" 1/10 x2 1/10 x2	qtz-chl-ep-(py)((cc)) qtz-chl (vuggy) x3 qtz-chl (vuggy) x 4 qtz-py-cc x2 qtz-chl-py((cc)) x2	0 10 20 30 40 50 60 70 80 90	1.0	175	95 95	57	46631	.11	<.002		.12
	50-60 Str		190		60 70 x 2 40-45 x 4 70 55	12" 2" + ¼ 1/20-1/10 x4 ½	qtz-ser-py((cc)) qtz-ser-py (cc) x2 qtz-chl-py x 4 qtz-ser-py-cc	0 10 20 30 40 50 60 70 80 90	5.5	185	98	53	46632	.68	.002		.30
	45-60 Str		200		30-60			0 10 20 30 40 50 60 70 80 90	3.5	192 197 200	90 95	13	46633	.97	.004		.25
	45-60 Str		210		50	33'	qtz-ser-py((ep))(cc) 3ore - numerous sheared rusty zones - grades in placer to zones of massive py-qtz	0 10 20 30 40 50 60 70 80 90	8.0	204 207 210	50 70 95	17	46634	.39	.011	3'5"	.30
	60 Str		220		60		- this zone appears to be an altered leucocratic zone.	0 10 20 30 40 50 60 70 80 90	2.0	214 220	70 95	23	46635	.27	.002		.20

L.D. Byrnett

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GIBRALTAR MINES LTD.

HOLE No. 83-17
SHEET No. 3 of 4

BOTTOM DEPTHS: LEACH CAP | LIM. ZONE | SUPERGENE | REMARKS

ROCK TYPES & ALTERATION	∠ to Core Foliation	GRAPHIC LOG: Foliation Alteration	Footage	Structure	Veins ∠ to Core Axis	Width of Vein	Mineralization	FRACTURE ANGLE TO CORE AXIS -FREQUENCY-	ESTIMATED % PYRITE	Footage Blocks	Estimated Core Recovery %	P.O.D.	ASSAY RESULTS: Sample Number	% Cu	% Mo		Estimated Grade
	60 Mod		120	50	40	10"	qt3-chl-(py)(cp) zone		1.5	112	85	40	46625	.22	.003	3545	.18
				50×8	½₀-⅒×8	qt3-chl-py((cc))×8				117							
				45×4	¼-⅛×4	qt3-chl-py(cp)×4											
				45	¼	qt3-ser-py(cc)											
	50 Mod-Str.		130	45×3	⅒×3	qt3-chl-py×3			1.5	127	90	73	46626	.13	<.002		.15
				30	½	qt3-ser-py(cc)											
				20×2	½×2	qt3-ser-py-cp×2											
				60	1"	qt3-ser-py-cc											
				40×2	⅒×2	qt3-chl-py((cp))×2											
	50 Mod		140	45	⅛	qt3-py			1.5	137	85	50	46627	.24	<.002		.12
				35-40×4	½+¼+⅒×2	qt3-chl-py×4											
				45×3	⅛+⅒×3	qt3-py((cc))×3											
				45×2	⅒×3	qt3-chl-py(cc)×3											
	45-50 Mod		150	50×2+5	¼+½+6"	qt3×3			1.0	147	95	60	46628	.10	<.002		.12
				45-40	⅒×2	qt3-chl-py(cc)×2											
				30	1"	qt3-chl(cp)-lim											
				40	1"	qt3-ser-carb-py											
				3	⅒	qt3-chl(cp)-lim											
	50 wk-Mod		160	60	2"	qt3-chl (vuggy)			2.0	154½	98	37	46629	.13	<.002	3502	.14
				45×3	⅛×2+⅒	qt3-chl-lim×3											
				35	½	qt3-ser-py-cc											
				60	1"	qt3-ser-py((cc))											
				50	½₀	qt3-ser-py-cc											
	50 Mod-Str.		170	50	1"	qt3-ser-cc			1.0	165	100	57	46630	.19	<.002		.35
				60	⅒	qt3-ser-cc											
				45	¼	qt3-ser-cc											
				50×2	14"+6"	qt3-ser-cp-chl-lim zone ×2		def ½" of cc									
				70	¼	qt3-ser-cc											

GRID _____

GIBRALTAR MINES LTD.

HOLE No. 83-17
SHEET No. 2 of 4

ROCK TYPES & ALTERATION	∠ to Core Foliation	GRAPHIC LOG: Foliation Alteration Footage Structure	Veins ∠ to Core Axis	Width of Vein	Mineralization	FRACTURE ANGLE TO CORE AXIS -FREQUENCY-	ESTIMATED % PYRITE	BOTTOM DEPTHS: LEACH CAP / LIM. ZONE / SUPERGENE / REMARKS	Footage Discrepancy	Estimated Core Recovery %	P.O.D	ASSAY RESULTS: Sample Number	% Cu	% Mo		Estimated Grade
	80 Wk	60	5 10+60 ?	½" 1"x2 6"	qtz-chl-lim qtz-chl-(gougy) qtz-cp		0		55	55	10	46619	.01	.002		.05
	60 wk-Mod	70	60-50x2 50 45+5+60 5	hle<1 2" ½-hlex2 ½	lim x4 qq lim x2 chl		0		63 67	60 70	20	46620	.02	<.002	3570	.05
	70 wk-Mod	80	30 70+50	2" ½ex2	qtz-leucocratic zone qtz-chl-ser-py Az		<.5		71 72 75 77	50 50 50	20	46621	.08	<.002		.05
	60-70 wk-Mod	90	30+45 40 10+60x2	8"+6 ½0 hlex2	leucocratic zone x2 qtz-chl-py ((cc)) hem x2		<.5		87	95	43	46622	.07	<.002		.08
	60 wk-Mod	100	5+40 ?	½0+½ 8'	qqx2 gougy and broken qtz-ser-py(cc) zone		1.0		94½	70 40	10	46623	.10	<.002		.30
	70 wk	110	30 50+80 80° 45x2+5x2	6" ½0+¼ ½ ½0x2+½0x2	qtz-ser-py(cc) qtz-chl-py x2 qtz(cp) py qtz-chl-py-(cp)(cc) x4		1.5		101 103 107	40 70 90	33	46624	.56	.009		.30

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GIBRALTAR MINES LTD.

HOLE No. 83-17
SHEET No. 1 of 4

LOCATION GIBRALTAR EAST (N. Wall) | BEARING - | LATITUDE 51,093.32 | CORE SIZE N.Q.W. | LOGGED BY G.D.B.
DATE COLLARED August 4, 1983 | LENGTH 220' | DEPARTURE 47,188.27 | SCALE OF LOG 1" = 10' | DATE August 19, 1983
DATE COMPLETED August 5, 1983 | DIP -90 | ELEVATION 3661.23 | REMARKS

BOTTOM DEPTHS: LEACH CAP 80' | LIM. ZONE 207' | SUPERGENE To E.O.H

ROCK TYPES & ALTERATION	∠ to Core Foliation	GRAPHIC LOG: Foliation Alteration	GRAPHIC LOG: Footage	GRAPHIC LOG: Structure	Veins ∠ to Core Axis	Width of Vein	Mineralization	FRACTURE ANGLE TO CORE AXIS -FREQUENCY-	ESTIMATED % PYRITE	REMARKS	Footage Bloc.	Estimated Core Recovery %	ASSAY RESULTS: Sample Number	Au oz/T Cu	Ag oz/T Mo	Estimated Grade
Casing To 10-feet			10					0 10 20 30 40 50 60 70 80 90			10					
MINE PHASE QUARTZ DIORITE (10'-220') 15 o/o chl	65 WK		20	5	hlc	hem		0 10 20 30 40 50 60 70 80 90	0		17	70	33	46615 .02	.002	05
55 o/o sous pleg 30 o/o qtz texture grades to seriate - large o/o of spar gives rx	65 WK		30	35 3	hlc ⅛	tim qq		0 10 20 30 40 50 60 70 80 90	0		27	75	17	46616 .01	.004	05
an overall epidote green coloration - otherwise rx is typical!	70 WK		40	10 20+5 3	⅛ ⅛×2 hlc	qq ×2 tim-MoO₂		0 10 20 30 40 50 60 70 80 90	0		36 29½	40 90	17	46617 .01	.009	05
—	80 WK		50	20 60 5	⅛ 3" hlc	qtz-chl-tim qtz-tim tim		0 10 20 30 40 50 60 70 80 90	0		45	80 65	13	46618 .01	.002	05

GRID _____

GIBRALTAR MINES LTD.

HOLE No. 83-18
SHEET No. 4 of 4

ROCK TYPES & ALTERATION	∠ to Core Foliation	GRAPHIC LOG Foliation Alteration	Footage	Structure	Veins ∠ to Core Axis	Width of Veins	Mineralization	FRACTURE ANGLE TO CORE AXIS -FREQUENCY-	ESTIMATED % PYRITE	BOTTOM DEPTHS: LEACH CAP / LIM. ZONE / SUPERGENE / REMARKS	Footage Blocks	Estimated Core Recovery %	R Q D	ASSAY RESULTS: Sample Number	% Cu	% Mo		Estimated Grade
	ND		220	50 x 5 45 x 2 45 60 x 2	1/10 x 5 1/10 x 2 1" 1/10 x 2	qt3 - (chl) - py x 5 qt3 - chl - py x 2 qt3 - ser - py (cc) qt3 (ser) - py ((cc)) x 2		2.0		213 217½	80 95	53	46670	.15	.006		.10
	70 WK		230	50 x 2 45 5 5 30 50 x 3	1/10 x 2 1/8 1/20 1/4 1/10 1/20 x 3	qt3 - chl - py x 2 qt3 - ser - py (cc) qq - hem qt3 - chl - (vug) ((cp)) qq qt3 - chl - py x 3		1.5		227	95	27	46671	.12	.004		.08
	70 WK		240	40 45 35 x 3 15 30 x 3 ? 60	1/8 3/8 1/10 x 2 - 1/4 3/4 1/20 - 1/10 x 3 12" 1"	qt3 - py qt3 - ser - py ((cc)) qt3 - ser - py ((cc)) x 3 qt3 - chl (vug) ((cp)) qq x 3 bx - qq qt3 - ser - py (cc)		2.0		235 238	95 70	20	46672	.21	.002		.15
	60 Mod - Str		250	60 60 5	2" 1/4 + 1/10 1/10	qt3 - ser - py - cc qt3 - ser - py - cc x 2 qq		1.5		242 247	70 95 90	20	46673	.16	.002		.12
E.O.H 260'	60 Mod.		260	60 45 x 4 60 x 3 70	6' 1/8 - 1/10 x 4 2" + 1" x 2 3"	qt3 - ser - py - cc (lim) zone (+ qq - bx) qt3 - chl - py ((cc)) x 4 qt3 - ser - py - (cc) x 3 qt3 - ser - py		3.0		252 254 260	60 95	47	46674	.12	.002		.40

L. D. Bysouth

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GIBRALTAR MINES LTD.

HOLE No. 83-18
SHEET No. 3 of 4

BOTTOM DEPTHS: LEACH CAP | LIM. ZONE | SUPERGENE | REMARKS

ROCK TYPES & ALTERATION	∠ to Core	Foliation	GRAPHIC LOG: Foliation/Alteration	Footage	Structure	Veins ∠ to Core Axis	Width of Vein	Mineralization	FRACTURE ANGLE TO CORE AXIS -FREQUENCY-	ESTIMATED % PYRITE	Footage Distance	Estimated Core Recovery %	R Q D	ASSAY RESULTS: Sample Number	% Cu	% Mo		Estimated Grade
	ND					40 70 x 45	7' 2" 1/2 + 1/10	3one of lost core and bx. qt3-ser-py((cc)) qt3-ser-py((cc)) x3	0 ||||| 10 ||||| 20 ||| 30 || 40 || 50 || 60 || 70 || 80 || 90	2.0		157	15	7	46664	.16	.004		.12
	70 WK			160	45 x 4 45-50 x 8 50 45 x 2 50	1/10 x 3 + 1/3 1/8 - 1/10 x 8 1/4 1/10 x 2 1/3	qt3-chl-ser-py((cc)) x3 qt3-chl-ser-py((cc)) x 8 qt3-py qt3-py (cp) x2 qt3-py	0 || 10 || 20 || 30 || 40 || 50 || 60 || 70 || 80 || 90	2.5		167	80	53	46665	.12	.003		.12
9' leucocratic 3one.	70 WK- Mod			180	45-50 x 5 50-60 x 6 50 x 2 45-50 x 5	1/6 - 1/20 x 5 14" 1/6 - 1/6 x 6 1/8 x 2 1/8 - 1/10 x 5	qt3-chl-py x 5 bx (qq) qt3-chl-py x 6 qt3-chl-py x 2 qt3-chl-py (cc)	0 || 10 || 20 || 30 || 40 || 50 || 60 || 70 || 80 || 90	3.0		177	80	17	46666	.17	.003		.10
	60 WK			190	50 x 3 45 x 2 45 x 4 40	1/8 x 3 1/8 x 2 1/20 - 1/10 x 4 8" 1/4	qt3-chl-ser-py x 3 qt3-py x 2 qt3-chl-py x 4 qq-bx qt3-chl-py (cc)	0 || 10 || 20 || 30 || 40 || 50 || 60 || 70 || 80 || 90	3.5		187	85	37	46667	.15	.005		.10
	ND			200	30 10 60 30+60+45 50 x 2 40 45	1/10 x 2 1" 2" 1"/2 + 1/3 1/10 x 2 1" 1/10	qt3-chl-py x 2 qt3-chl (vuggy) qt3-ser-py qt3-ser-py qt3-carb-py(cc) qt3-ser-py(cc) qt3-chl-py	0 || 10 || 20 || 30 || 40 || 50 || 60 || 70 || 80 || 90	4.5		197	90	23	46668	.24	.003		.10
	ND			210	45 x 4 3+10 50 x 2 40	1/10 x 4 1/20 x 2 1/10 x 2 1/4	qt3-chl-py x 4 qq x 2 qt3-chl-py x 2 qt3-ser-py(cc)	0 || 10 || 20 || 30 || 40 || 50 || 60 || 70 || 80 || 90	1.0		201 207	90 95	40	46669	.11	.002		.12

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GIBRALTAR MINES LTD.

HOLE No. 83-18
SHEET No. 2 of 4

BOTTOM DEPTHS: LEACH CAP | LIM. ZONE | SUPERGENE | REMARKS

ROCK TYPES & ALTERATION	∠ to Core Foliation	GRAPHIC LOG: Foliation Alteration	GRAPHIC LOG: Footage	GRAPHIC LOG: Structure	Veins ∠ to Core Axis	Width of Vein	Mineralization	FRACTURE ANGLE TO CORE AXIS -FREQUENCY-	ESTIMATED % PYRITE	Footage Blocks	Estimated Core Recovery %	P.Q.D	ASSAY RESULTS: Sample Number	% Cu	% Mo		Estimated Grade
	60-70 VLE				5	1/10	qtz-chl-lim (cp)				90						
					40-45 x 6	hle-1/20 x6	qtz-chl-lim x6		.5	96		40	46658	.08	.002		05
					30+20	1/4 x2	qtz-chl-lim (py) x3										
			100		70 x3	hle x3	lim x3										
	ND				30+40	1/4 x2	qtz-chl-lim x2				90						
					35x3	1/4 x2 + 1/10	qtz-(chl)-carb-py x3		1.0	106		37	46659	.13	.002		.08
					40 x2	1/4 + 1/16	qtz-ser-py (cc) x2										
			110		5-50 ? x5	hle x5	lim x5				95						
					50	6"	qtz-ser-py-lim										
	ND				35-40 x3	1/10 x3	qtz-ser-lim-py x3			113							
					45	4"	qtz-ser-lim		2.0			13	46660	.15	.002		.12
					10	1/4-1/2"	qtz-ser-py (cc)				65						
					35	1"	qtz-ser-py (cc)			117							
4' leucocratic zone			120		5?	1/4	qtz-ser-py-cc										
											60						
Fault?	ND				?	7'	lost core, bx, (qg) and (hem)		.5?	125		13	46661	.22	.002		.08
										127	50						
			130		20+10+30 x2	hle x4	lim x4				65						
					45	6"	qg			132							
	ND				5 ? x2	1/10 ? x2	qg-chl-py (cc) x2		2.5		75	13	46662	.38	.002		.12
					35 x2 + 60	3/8 + 1/4 + 1/2	qtz-chl-ser-py ((cc)) x3			137							
					?	12"	qg-bx										
			140		2 x 2	1/2 + 1/8	qtz-ser-py ((cc))										
											40						
3-5' leucocratic zone	ND				?	10'	zone of lost core and bx.		?	147		3	46663	.18	001		?
			150														

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GIBRALTAR MINES LTD.

HOLE No. 83-18
SHEET No. 1 of 4

LOCATION GIBRALTAR EAST (N. Wall) | BEARING — | LATITUDE 50,977.28N | CORE SIZE N.Q.W. | LOGGED BY G.D.B
DATE COLLARED August 5, 1983 | LENGTH 260' | DEPARTURE 47,748.58E | SCALE OF LOG 1"=10' | DATE August 23, 1983
DATE COMPLETED August 6, 1983 | DIP -90° | ELEVATION 3,721.85' | REMARKS

BOTTOM DEPTHS: LEACH CAP 100' | LIM. ZONE 140 (mod) | SUPERGENE To E.O.H.

ROCK TYPES & ALTERATION	∠ to Core Foliation	GRAPHIC LOG: Foliation Alteration	GRAPHIC LOG: Footage	GRAPHIC LOG: Structure	Veins ∠ to Core Axis	Width of Vein	Mineralization	FRACTURE ANGLE TO CORE AXIS -FREQUENCY-	ESTIMATED % PYRITE	REMARKS	Footage Blocks	Estimated Core Recovery %	R Q D	ASSAY RESULTS: Sample Number	% Cu	% Mo		Estimated Grade
Casing to 47'			50								47							
MINE PHASE QUARTZ DIORITE (47-260')	15 Str		60		45	10'	qt3-ser-lim zone		0		54	80						
					45-50 x 4 ?	1/8-1/4 x 4 12"+14"	qt3-ser-lim x 4 qq-bs-lim x 3				58	60	7	46654	.06	.003		05
Typical except ~ higher chl - 45% caus plag - 20-25% chl	60-35 Str		70		35-60	9'	qt3-ser-(chl)-lim zone		0		66	75	7	46655	.08	.004		05
- 25-30% qt3 ; below 200' the rx contains about 10-15 % chl. and	ND		80		40-60 x 10 5 x 3	hle x 10 1/20+1/8 x 2	lim x 10 qt3-chl-lim x 3		0		73	90	23	46656	.02	<.002		05
~ 40 % qt3 (Grey Mtn) (Phase?)	70 WK		90		3 30 x 2 45? 70+60	1/4 1/10 x 2 14" 1/10 x 2	qt3-chl-lim qt3-chl-lim x 2 leucocratic zone qt3-chl-lim x 2		0		79 86	100 98	53	46657	.09	<.002		05

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GIBRALTAR MINES LTD.

HOLE No. 83-16
SHEET No. 4 of 4

ROCK TYPES & ALTERATION	∠ to Core Foliation	GRAPHIC LOG: Foliation, Alteration, Footage, Structure	Veins ∠ to Core Axis	Width of Vein	Mineralization	FRACTURE ANGLE TO CORE AXIS -FREQUENCY-	ESTIMATED % PYRITE	BOTTOM DEPTHS: LEACH CAP / LIM. ZONE / SUPERGENE; REMARKS	Footage Digged	Estimated Core Recovery %	P.O.D.	ASSAY RESULTS: Sample Number	% Cu	% Mo		Estimated Grade
	45 Str.		45	7'	qtz-chl-ser-py(cp) zone (a gradual transition to sheared Mine Phase)		3.5		187	85	50	46592	.28	<.002		.25
		190	45 x 12	1/20-hle x12	qtz-chl-py(cp) x 12					95						
	50 Str.		50 x 4	1/10 x 4	qtz-chl-py((cc)) x 4				193							
			40	5"	qtz-ser-carb-py((cc))		2.5				67	46593	.16	<.002		.15
			50 x 3	1/10 x 3	qtz-chl-py x 3					95						
		200	60 x 2	1/4 + 1/2	qtz-chl-py((cc))											
	50-60 Str.		50	1/10	qtz-chl-py				203							
			5	1/2"	qtz-chl		2.5				60	46594	.15	.004	3455	.10
			50 x 10	hle-1/10 x 10	qtz-chl-py((cc)) x 10					90						
		210	70 x 2	1" + 2"	qtz-ser-py x 2				210							
	60-70 Str.		60-70 x 3	1/50 x 3	qtz-chl-py x 3											
			30	1/10	qtz-ser-py											
			30	2"	qtz-ser-py		1.5			90	47	46595	.16	.002		.12
			60+70	1" + 1/2	qtz-chl-(vuggy)											
			15x2 + 60	2" + 1" + 1/2	qtz-chl-(py) - vuggy											
E.O.H 220'		220	50	30'	qtz-ser-py((cp))				220							

40000 50000 60000 70000

90000 80000 70000 60000 50000 40000 30000

HT 12
HT 13
HT 14
HT 16
HT 18
HT 19
HT 5
HT 17
HT 6
HT 7
GG 80
GG 40
GG 41
GG 30
GG 31
GG #21
GG #1
GG #2
GG #12
GG #11
GG #24
GG #23
GG #3
GG #4
GG #13
GG #25
GG #5
GG #16
GG #28
GG #27
GG #7

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,429

FIGURE 2
PURPLE GROUP
MINERAL CLAIMS
GIBRALTAR MINES LIMITED
16-NOV-83 SCALE=1:24000

0 2 4 6 8
FEET X 1000
0 1 2 3
KILOMETRES

40000 50000 60000 70000

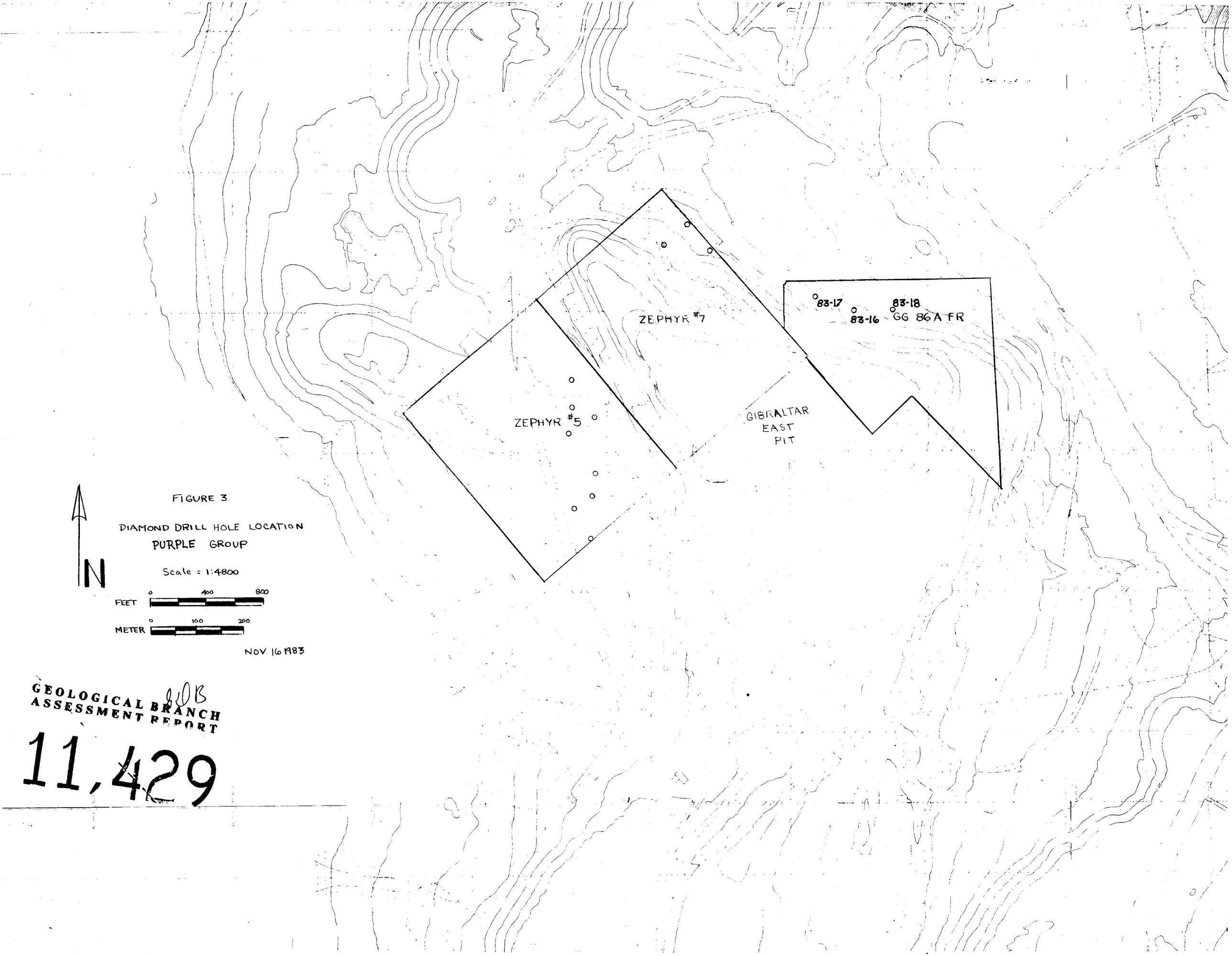

FIGURE 3

DIAMOND DRILL HOLE LOCATION
PURPLE GROUP

Scale = 1:4800

NOV 16 1983