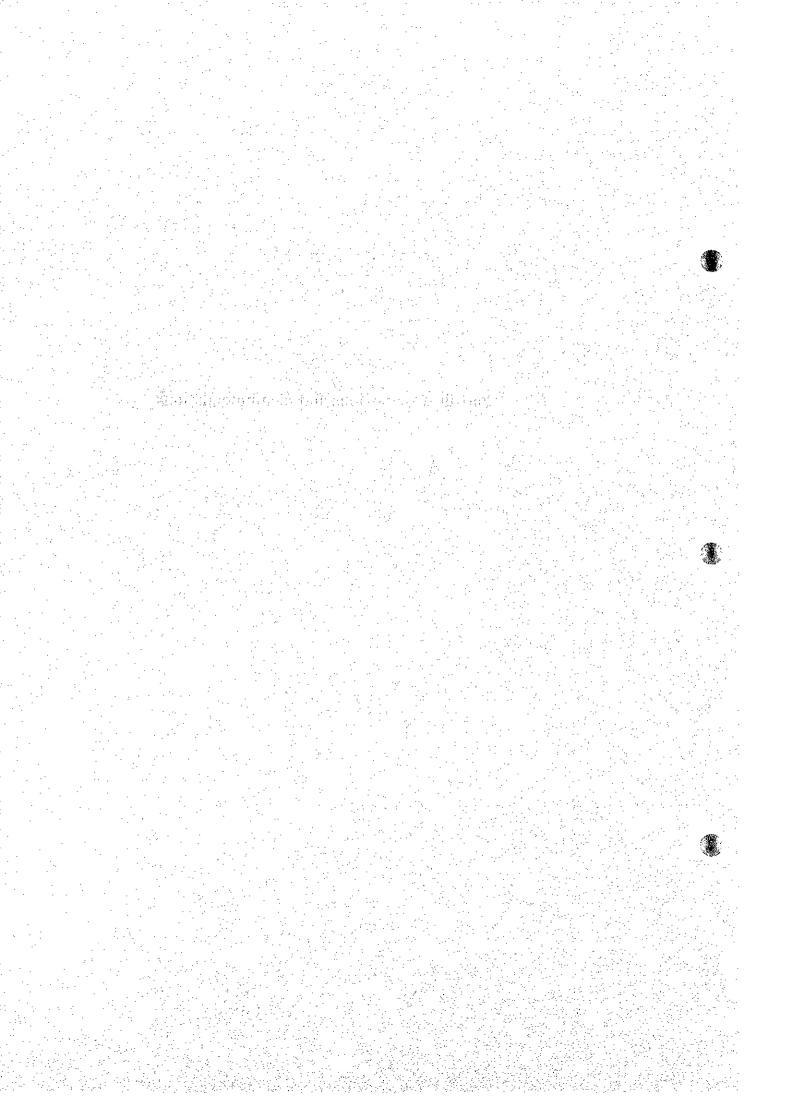
Part III Conclusions and recommendations



#### **Chapter 1** Conclusions

Mudstone, sandstone, sandstone with mud lamina and diorite porphyry intruding these sedimentary rocks were intersected by the drilling survey of two holes (MJSI-6 and MJSI-7). The dips of the sedimentary rock observed in the drilling core is 10 to 30 degree and diorite porphyry, generally, intrudes sub-parallel to the structure of the sedimentary rocks. The geological information of the surface and drilling survey suggest a volume of diorite porphyry more than previously expected in the depth.

Mineralization is more intense in MJSI-7 and in diorite porphyry than in MJSI-6 and in sedimentary rocks. Weak pyrite, pyrrhotite and rarely chalcopyrite dissemination prevail all through diorite porphyry. The intensity of dissemination increase in accordance with silicification and chloritization. The most conspicuous mineralization in two holes is found from 272.80 m to 288.35 m at MJSI-7 where network of thin (1 cm to 1 mm wide) pyrite – arsenopyrite – chalcopyrite veins occurs coupled with dissemination of pyrrhotite, pyrite and chalcopyrite. The samples of approximately 3 m span (from 275.15m to 278.00 m) within this zone show assay results oAu 1.6 g/t to 4.3 g/t, Ag 1.6 g/t to 17.7 g/t and Cu 0.04 % to 0.12%. Other than this, some of few cm wide, quartz – sulfide veins with country rocks of sandstone close to diorite porphyry (Au 2.9 g/t and Ag 58.1g/t ) and with country rock of diorite porphyry (Au 5.1 g/t and Ag 71.5 g/t ) show high Au and Ag. As same as previous results, gold seems to be associated with arsenopyrite.

The following evidence found in the drilling core suggests that the location of MJSI-6 and MJSI-7 belong to peripheral area of the main mineralization.

(1) Because of a common appearance of chlorite-sericite in sedimentary rocks and diorite porphyry, the area of drilling survey seems to belong to a transition zone between propylitic and phyllic zones of porphyry copper type mineralization.

(2) The colloform texture of pyrite commonly observed suggests low temperature environment at the late stage of the mineralization. This tends to occur in outer margin of main mineralization where weak sulfide dissemination is observed.

Considering the results of drilling survey together with geophysical survey, the most possible geological environment of the drilling site is the one found in peripheral zone of mineralization similar to porphyry copper type.

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#### **Chapter 2 Recommendations**

If the mineralization similar to porphyry copper type exists in the S. Imbak Sub-area North, the locations of drilling site conducted in PhaseII and Phase III is in the peripheral area of the main mineralization. The center of mineralization probably exists in the area at the center of a letter "C" shape geophysical anomaly. The drilling survey with more than 300 m deep holes is recommended in the area at the center of "C" shape geophysical anomaly for further evaluation of the S. Imbak Sub-area North (Fig. III-2-1). A similar type of mineralization occurs along the G. Kuli range in S. Imbak Sub-area further south of these areas, south of S. Kuli. This suggests that the area along the G. Kuli range is cover by a similar type of mineralization with high potentiality for Au and Cu mineralization. A detail survey covering from the S. Imbak Sub-area to the south of S. Kuli is awaited.

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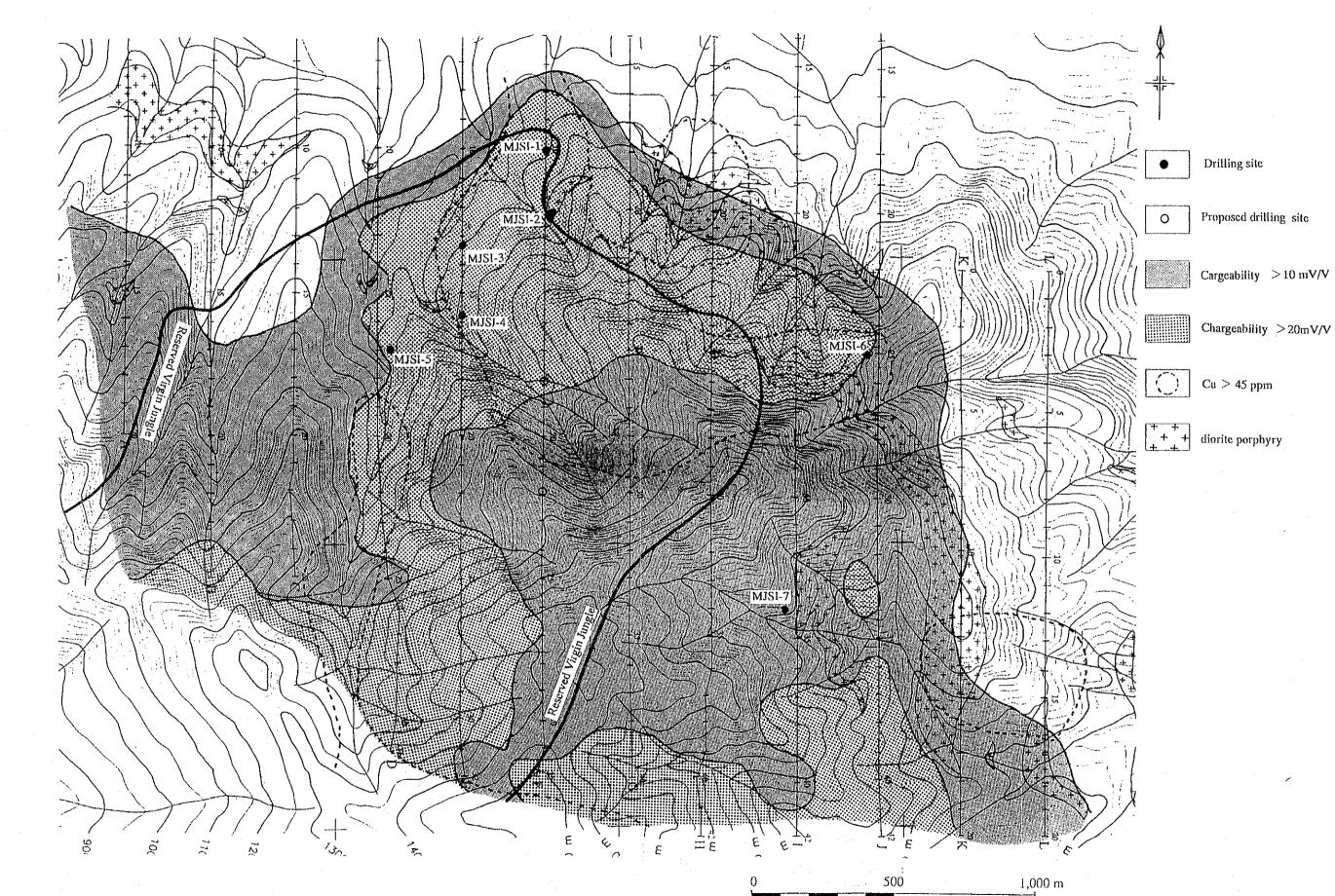
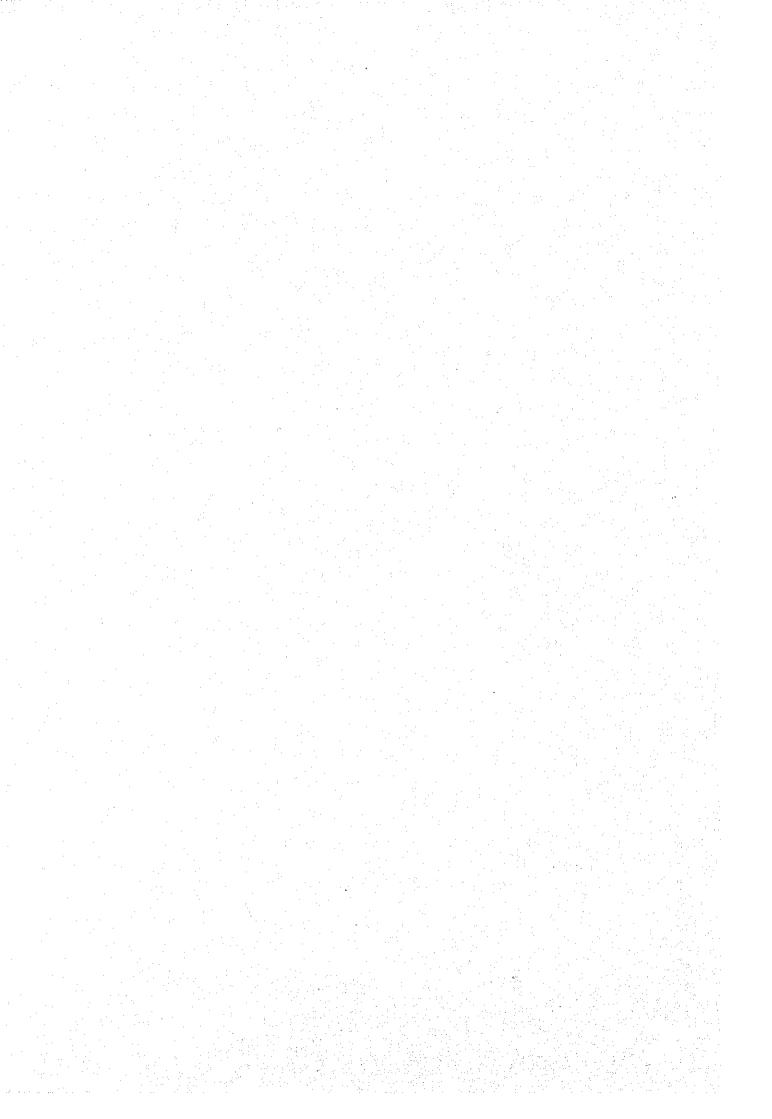


Fig.III-2-1 Recommendation for future work in S. Imbak Sub-area North



#### References

Akiyama Y. (1984): A case history – exploration, evaluation and development of the Mamut porphyry copper deposit, Geol. Soc. Malaysia, Bull. 17, pp.217-225

Benard F., Muller C., Letouzey J., Rangin C., Tahir S. (1991): Evidence of multiphase deformation in the Rajang-Crocker Range (northern Borneo) from Landsat imagery interpretation:
Geodynamic implications, Tectonophysics, 183, pp.321-339

Chung S. K. (1984): Annual Report 1982, Geological Survey of Malaysia, Ministry of Primary Industry.

Collenette P. (1965): Prospecting in Sabah by Borneo Mining Limited 1959 – 1963. Borneo Reg., Geological Survey of Malaysia Annual Report for 1964, pp.57-61

JICA and MMAJ(1994): Report on the mineral exploration: Supra-regional survey in Central Sabah, Malaysia (PHASE IV)

JICA and MMAJ(1995): Report on the mineral exploration in Central Sabah Area, Malaysia, (PHASE I)

JICA and MMAJ(1996): Report on the mineral exploration in Central Sabah Area, Malaysia, (PHASE II)

Kurzl H. (1988): Exploratory data analysis: recent advances for the interpretation of geochemical data. Journal of Geochemical Exploration, vol. 30 pp. 309-322.

Hail N. S. (1968): The northwest Borneo geocyncline in its geotectonic setting. Geolo. Soc. Malaysia Bull. 1, p.59

Lcong K. M. (1976): Mineral distribution map of Sabah, 1st edition. Geological Survey of Malaysia.

Newton-Smith J. (1967): Bidu Bidu Hill area, Sabah, East Malaysia, Exploration of Sheet 5-117-2 and part 5-117-1. Geological Survey of Malaysia.

-53

- Pelton W. H. and Smith P. K. (1976): Mapping porphyry copper deposits in the Philippines with IP. Geophysics, Vol. 41, pp.106-122
- Ragin C., Bellon H., Bernard F., Letouzey J., Muller C., Sanudin T. (1990): Neogene arc-continent collision in Sabah Borneo (Malaysia), Tectonophysics, 183, pp. 305-319

Yin E. H. (1985): Geological Map of Sabah, Third Edition, Geological Survey of Malaysia

Willson R. A. M. (1964): Annual Report of the Geological Survey, Borneo, Malaysia, Geological Survey of Malaysia.

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## Appendix 1

Generalized drilling results and summary of drilling activities

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Drilling Results

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		Drilling Period		Core		Dril	ling Shift	Drilling Rate		
Hoie No.	Machine Type		Drilling Depth (m)	Length (m)	Recovery (%)	Drilling	rilling Preparation Tot & Removing		Weter Per Shift	Weter per Total Shift
MJSI-6	F-31	1996-10- 5 1996-11- 9	300. 50	289. 31	96. 28	41	15	56	7. 33	5. 37
¥JS1-7	F-31	1996-11-10 1996-12-16	302. 71	297. 23	98. 19	17	13	40	17. 81	7. 56

#### Drilling Activities

	Dr	ill Nole	M J S I - 6	M J S I – 7			
	Pre; Day:	paration s (A)	10/5 to 10/12 8	11/10 to 11/23 14			
Drilling Period	Dri Day	tling s (B)	10/13 to 11/ 3 22	11/24 to 12/ 2 9			
priod	Rem Day	oving s (C)	11/4 to 11/9 6	12/ 3 to 12/16 14			
	Tot	al days (D)	36	37			
Depth		nned Depth (E) lied Depth (F)	300. 00 m 300. 50 m	300.00 m 302.71 m			
	0ve	rburden (G)	8.60 m	3.97 m			
Q	Cor	e Length (11)	289.31 m	297.23 m			
Соге	Rec	overy (II/F)	96.28 %	98.19 %			
Recovery	Unit Recovery	0 m to 50 m 50 m to 100 m 100 m to 150 m 150 m to 200 m 200 m to 250 m 250 m to 300 m	92. 01 % 99. 13 % 97. 81 % 99. 94 % 98. 24 % 91. 26 %	90.39 % 95.73 % 100.00 % 100.00 % 100.00 % 100.00 %			
Casing Rate	N	Y Casing X Casing X Casing	18.00 л 49.94 п	12.34 ต 51.20 ต 236.79 ต			
	[	meter/day meter/total day	13.66 m 8.35 m	33.63 m 8.18 m			

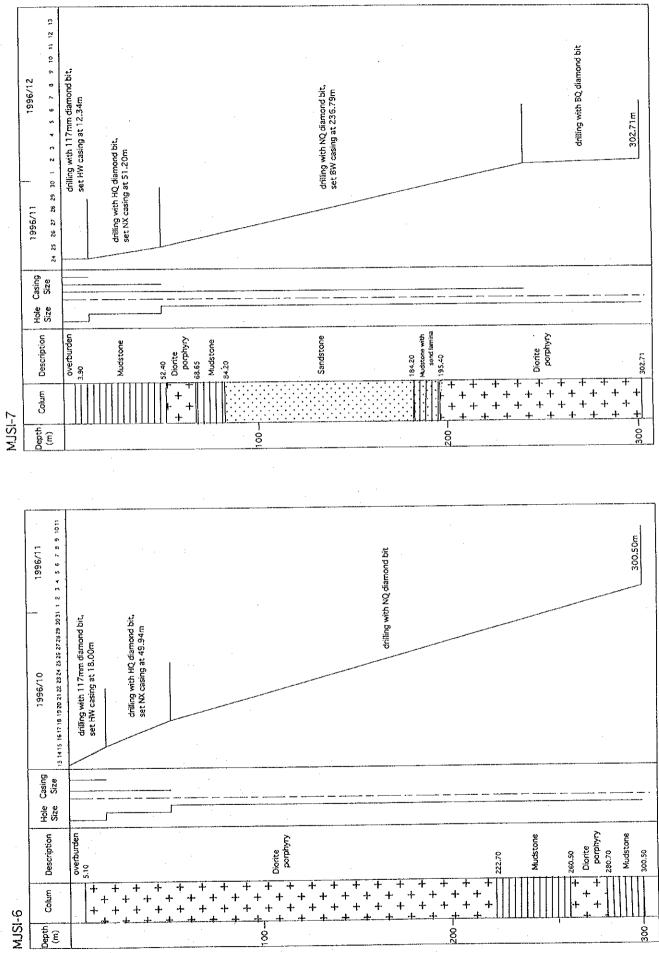
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# Appendix 2

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### Progress record of drilling



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## Appendix 3

### Drilling equipments and consumed material

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### Drilling Equipment

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Article	Model	Specification	Quantity
Drilling Machine	F-31	Maker: Mindrill (Australia)	1 sets
		Capacity: BQWL 400 m	
		Weight: 2,120 kg	
Diesel Engine	SR - 4	Maker: (England)	1 sets
		Norse Power: 31 HP/1,500 rpm	
		Weight: 340 kg	
	SR-2	Waker: (England)	1 sets
		Horse Power: 10 HP/1,500 rpm	
		Weight: 260 kg	
Drilling Pump		Maker: John Bean Tripex (F.M.C)	2 sets
		Max capacity: 240 1/min	
		Weight: 500 kg	
Wireline Hoist	WF-1	Maker: (Australia)	1 sets
		Noisting Capacity: 350 m	
Water Pump	E 32-20	Maker: AJAX PUMP	2 set
		Max. capacity: 150 1/min	
Diesel Engine	L-90E	Maker: Yanmar(Japan)	2 set
		Max. capacity: 6.6 KW, 9.0 PS/3600 rpm	
Drill Rod		HQWL(3.00 m/joint)	17 joints
		NQWL(3.00 m/joint)	103 joints
		BQWL(3.00 m/joint)	133 joints
Casing Pipe		HW(3.00 m/joint)	10 joints
		HW(1.00 m/joint)	6 joints
Generator		Maker: Yanmar (JAPAN)	3 sets
Water Hose		3/4"	700 m
		1. 5"	700 m

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Consumed Material

Hole No.	. HW 1	17 mm	KQ 10	1 mm		NQ 76	MM	:	BQ 5	9 mm -		
	D. L.	Bit	R.	D. L.	Bit	R.	D. L.	Bit	R.	D. L.	Bit	R.
MJSI-6	18.00 m	1		31. 94 m	2	1	250.56 m	5	1			-
NJS1-7	12.34 m	1	-	38.86 m	2	1	185.59 m	3	1	65.92 m	2	1

D.L.:Drilling Length (m) R.:Reamer

Consumed Material

Hole No.	Light Oil(1)	Cement 50 kg/Sx(Sx)	EZ-mud (1)
¥JSI-6	1, 800	2	162
MJSI-7	1, 500	2	126

# Appendix 4

### Drilling logs and assay result

A-13

藻

epth	Chart	Lithology and Alteration	Mineralization	Depth		Au	Ag	Cu	Pb	Zn
(m) 0	9.30			(m)	<u>(m)</u>	(g/t)	<u>(g/t)</u>	(%)	(%)	(%)
		overburden 0.00-5.30: yellowish orange silt with								
-	0.0	fragments and blocks of diorite								
	0 0 0	porphyry, weathered.								
-									:	
5.10		5.10-8.60: reddish yellow saprolite								
-	0.000	of diorite porphyry.								
	OO									
.	0.00			1. 1.					1	
8.60	+ +	gray diorite porphyry with phenocrysts	rately fine Py grains occur.				[			
10 -	+ +	of Pl>Ho, few mm across, xenoliths					· .			
	+ + '	of fine diorite porphyry included,								
-	+ + + +	few cm across. 8.60-36.00: onion skin type								
	+ +	weathering, fresh rock remains as	· .							
	• + • +	few m size boulder. 12.00-12.35: weathered to orange								
14.60	,	brown saprolite.								
	no core	14.55-18.65: weathered, orange brown						· ·		
16.59	+ +	saprolite.								
-	+ +	18.65-19.25: fresh diorite porphyry.	18.45: oxidized sulfides		•					
	· + +	19.25-24.40; weathered orange brown	film, few mm wide, <40°							
20 -	'+'+	saprolite.								
	$  \stackrel{+}{+} \stackrel{+}{+}$				ļ				l .	
								1.		
. •	+ +  + +	24.20- 25.30: relatively fresh. 25.30-28.00: weathered, orange brown			1	1				
		saprolite.							1	1
		•			1.1					
	+  ++	-			1					
	+ +   + +	28.00-30.85: fresh.		111					:	
	+ +	30.85-32.30: weathered orange brown								
30 -	+ +	saprolite.		ļ						
				ł	1					
	<u> </u> _+_1	32.80-33.20: weathered, orange brown		1						
		saprolite. 33.20-35.55: relatively fresh.					1			
	+   + 4	35.55-35.85: weathered, orange brown								
		saprolite.							1	
	+++	36.25-36.65: argillized.	36.40: Py, Ap films, few							
:	+ +	37.25-37.45: pale gray, argillized.	mm wide, <40*							
•	-72552  + +		37.25-37.45: weak Py dism.							
		F.								
40 -	] <u>'</u> +	₽- -							· .	
		H.								1
	]+ +.	+					1			
	+ +	44.80-45.80: amount of xenolith								
	+ +	slightly increases.	1.12							1
10 00	+ •	45.80-118.10: gray diorite porphyry			1					
45.80	+	+ with predominant Pl phenocryst.								
:	] +	+ 46.00-46.20: light brown, weathered.			1		l			
· ",		49.50: xenolith of fine diorite porphyry, 5cm across.								
50.	+ +	1	A-15							

Hole		MJSI-6 (From	50.00m to 100								
Depth (m)	Chart	Lithology and Alteration	Mineralization	Depth (m)		Au (g/t)	Ag (a/t)	Cu (%)	Pb (%)	Zn (%)	
50	+ + + + + + + + + +	gray diorite porphyry with predominant PI phenocryst. 51.60-52.20: slightly weathered.									
- - - - -	+ +	54.45-56.10: fractured, oxidized along fractures, few mm wide.		•							
60-	+ + + + + + + + + + + + + + + + +	58.10-59.55: silicified and chloritized zone, <40*	58.10-59.55: Py weak dism.		· .	-					
-	+ + + + + + + + + + + + + +	63.25: silicified diorite porphyry, 3cm wide, <40° 64.30: xenolith of fine diorite, 9cm	63.25: Ру dism. zone, 3cm wide.								
-		across. 66.65: xenolith of fine diorite, 8cm across.									
70 -											
75.35	+ + + + + + + +	75.35-83.10: light gray, strongly siliciticd diorite porphyry.	75.35-83.10: Py films of few mm wide, sub-vertical	13.50	1.00	<0.1	1.1	0.01	<0.01	0.02	
		76.60-77.50: fragments of strongly silicified sandstone included.	to <45° 78.85: Qz vein, 1.5cm wide, <85°, Py, Ap, Ga, Cp spots along vein margin, Py dism, close to margin.	79.00	1.00	0.4		0.01		0.25	
80-			ry dism, close to magn.	80.00 81.00	1.00	<0.1	0.7	<0.01	0.02	0.02	
90		89.00-89.45: argillized.	89.00-89.45: Py dism. 90.10: Qz vcin, 3mm wide, <40 <sup>*</sup> , Py dism on both side of margins.								
		•	95.30-95.55: three Qz veins with Py, 1-3mm wide, <45 97.20-97.40: Py dism.	•		•					
		97.20-97.40: argillized.	97.32: Qz-Py-Ap vein, 2mm wide, <45* 97.85: Py film, <45* argillized on both sides of	97.20	0.30	, <0.	1 0.5	<0.0	1 <0.01	<0.01	
100		•	arguitized on both sides of Scri wide.	91.30		<0.	* 0.5	<0.0	1 <0.01	<u> &lt;0,01</u>	1.

A-16

	Hol Depth	1	MJSI-6 (From	100.00 m to 150					<u> </u>	- DL	<del>.</del> च
	(m)	Chart	Lithology and Alteration	Mineralization	Depth (m)	D.L. (m)	Au (g/t)	Ag (a/t)	Cu (%)	Pb (%)	Zn (%)
	100		gray diorite porphyry, essentially P1 phenocryst.	· · · · · · · · · · · · · · · · · · ·				~~ <u>~</u>	<u></u>		<u> </u>
	-	+ + +	103.75-104.20: argillized.			•					
		和 [ + _ +	105.20-105.70: siliciticd.	104.00: Qz vcin with Py, 2mm wide, <55"	103.85 · 104.00	0.15	<0.1	0.6	0.01	<0.01	<0.01
		۲ ۲ + + + +	106.65-106.95: silicified.	105.50-105.70: Py dism. 106.65-106.95: Py dism,							
		+ $+$ $+$ $+$		three Py films, 1-2mm wide, <60°							
	110 -	+ + +									
		+ + +		112.25: Qz vein, 3mm wide,							
		+ + +	112.25-112.35: silicified.	<55°							
		τ τ + + ₩***₩***	114.30-114.50: argillized, brecciated. 115.40-115.75: slightly argillized.	114,30-114,50: Py spots. 115,40-115.75: three Py films, 1 mm wide, <60°				* .			-
	-	₩ + + + +		xinno, x min wille, <00							
	118.10	+ + + + + +	118.10-222.70: gray diorite porphyry								
	120 -	+ + + +	with phenocryst of predominantly Pl of few to Smm across and subordinate Ho, fine diorite xenolith	121.60-121.70: Py films.							
		+ + *****	increases. 121.60-121.70: argillized.								
:											
		+++	127.00: xenolith of fine diorite 13cm								
			across.								
	130 -										
		+ + + +									
			134.75-135.15: xenolith of greenish								
• • •			gray diorite porphyry.								
		it	136.50-136.70; argillized. 136.90-138.40: high angle fractures.	136.50-136.70: Py dism. 136.90-138.40: Py along fracture.							
:				138.40, 139.10, 140.30: Qz veins with Py, 2mm wide,							
	140 -	+ + + +		<35° -<45°							
. :											
. • .											
		++++++++++++++++++++++++++++++++++++++									
											• ·
	150	+ +   + +					L	<u> </u>			

<u>Hole</u> pth	Chart	MJSI-6 (From Lithology and Alteration	150.00 m to 200 Mineralization	Depth	D.L.	Au	Ag	Cu	Pb	Zn
n) 150	+ +	gray diorite porphyry with phenocrysts	Inneralization	(m)	(m)	(g/t)	(g/t)	(%)	(%)	(%)
		of predominant Pl and subordinate Ho,								
		xenalith of fine diorite, 1-40 cm included,								
. •								- 1.		
		157.60-158.10: slightly silicified.	157.60-158.10; very weak							
			Py dism. 157.85: Qz vcin with Py							
1.00	+ +		patches, 3 mm wide, $<60$ *							
160-	+ + +		160.85,163.30, 163.50: three Qz veins, 1-3mm							
			wide, <60*							
	+ + +	167.45-167.60: brecciated, argillized.	164.05: Qz veins with Py, 2mm wide, <50°	· ·					1	
	+ +   + +	101.45 TOTIOL OFCCOMOU, Mg.								
	-+ +		167.45-167.60: two Qz vcin with Py, 2mm wide, <50°							
170-	'+'+  + +									
	+ + +		172.70: Qz vein with Py					2.2		
			3mm wide, <75*							
		184.45-184.70: silicified.								
		Г 								
	+ +   + -	- 	177.25: Qz vein, 2 mm wide							
	+ -	< +	<45°, silicified and weak Py dism at both sides of			1				
		ł	vein.						1	
180		۶.					ļ			
	+ + + +	F	184.45-184.70: weak Py							
	the states	+ 3	dism.							а. Д
	+++	F								
	+ + + +	: •						· ·	:	
	+ +  + +	-		· · ·	1					
190			193.70-193.95; Qz vcin,			1.				
			2mm wide, <50 <sup>*</sup> -<65 <sup>°</sup> , silicified and Py dism. at							
			few cm both sides of veins							
	+ +	196.20-20,1.80: slightly silicified.								
	+ +	•	196.20-201.80; weak Py							14 1
	NA 13 13 13 13 13 13 13 13 13 13		dism.	1						
	<b>秋</b> 夏	199.30-200.05: silicified and	199.30-200.05: Py, Ap dism. few %.					a at a	an a	
200	424	argillized.		199.3 200.0	0 0.7	0 <0.	1 4.1	<0.0	0.1	5 0,04

Ê

Depth (m)	Chart	Lithology and Alteration	Mineralization	Depth (m)		Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zı (%
200	**************************************	gray diorite porphyry with phenocryst of predominantly Pl and subordinate	200.55-200.75: weak Py dism.		<u>`</u> .	<u></u>				
	+ +	Ho, xenolith of fine diorite included.	uisin.							
	+ +	200.55-200.75: argillized and								
	+ $+$	silicitied.								
	+ +  + +									
	`+`+									
	+ +	209.40-209.70: chloritized.	200 40 200 20. Tu dam							
210-	+ +		209.40-209.70: Py dism.							
	+ +							•		
	+ +									
	+ + + +				•					
	+ +					1				
	++++									
	+ + ******	216.30: xenolith of sandstone, 20 cm								
÷	和学校	across. 216.60-217.65: slightly silicified.						1		
	+ +									
220.	+ +	220.65-222.70: silicified, light gray								
	] + + E 2 fr/	color.	220.00-222.70: Py dism. ±1%.	221.00	0.70					
		450		221.70	0.70 1.00	<0.1	0.4	<0.01 <0.01	<0.01 <0.01	<0 0
222.70		contact <45° sharp contact, cut the lamination of	Rarcly Py-rich nodule occur,	222.70	2.00	<0,1	0.0	<0.01	<0.01	
	21. 4. 11. A	mudstone.	few - 5cm. 222.70-228.00: occasionally							
		dark gray laminated mudstone, lamina <35°	Py films of ±1mm wide							
	-	222.70-223.70: slightly silicified	occur. 223.60: Qz vein with Py,							
		close to the contac.	5mm wide, < 45°							
:			224.65: Py-rich band, 3cm wide, <30°		1					
								· .		
230-								1.1		
						-				Ì
			233.50-242.10: rarcly							
			Py-rich band and patch occur, 1-2cm across.							
					ļ	[				
					· ·					·
240.										
						1				
	-		242,90-251.00: nodule with							
1.1			Py patch, 1- 4cm.	242.80	0.20	<0.1	0.3	<0.01	<0.01	0.
		244.80-245.00: core crushed, clayey.		243.00		\	·		1	1.
	*******		1			1 .		1		
		246.50-260.55: mudsone with sand	247.90, 249.10, 250.80,						1 .	
		layer and lamina, few mm to few 10 cm.	251.70, 253.30: Qz vcin with	0479.00	0.00		<u> </u>	· · ·		
			Py, 5-10aim, <60 * -<70*	247.80 248.00	0.20	<0.1	0.3	<0.01	<0.01	<0
250									· .	
			A-19							

Hole		MJSI-6 (From	250.00 m to 300	.50 m	)		- <u>_</u>		- <u>F</u> I	
epth (m)	Chart	Lithology and Alteration	Mineralization	Depth (m)	U.L. (m)	Au (g/t)	Ag (q/t)	Cu (%)	Pb (%)	Zn (%)
250		dark gray laminated mudstone,				· <u>·</u> ···	<u></u>	<u>, , , , , , , , , , , , , , , , , , , </u>	<u>,,,,</u>	
•		lamina <25° -30°								:
						-				
									. 1	
260-		contact <30°								:
260.55	$\overline{Y}$	strongly silicified and argillized diorite	Weak Py dism, and rarely							:
	1	porphyry, light gray. 266.85-267.25: mudstone block.	Py films of ±1mm occur.							
	之中(1)年 (年) (十)(4)									
	1774-9-5 19-0-14-0									
	☆+, ∽, +)  +::: +::::									
	. <del>t</del> . t  + +:		267.30: Qz vcin with Py,	266.85 267.25	0.40	<0.1	3.7	<0.01	0.13	0.06
. •	]> <del>],</del>		<1.0cm wide, <80°							
070.	4 +									
270-	*++									
	·····································									
- <sup>1</sup> .	ト・ナ・・+ オン・オン		273.40- 277.00: Py-rich thin vein of 1-3mm wide occur							
	<b>林林林</b>		at 1m spacing.	275.20	1.1	1.4				
	<b>[</b> ]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]			276.20	1.00	<0.1	0.1	<0.01	<0.01	0.02
	+									
	(* <del>*</del> 2 * (* * <i>*</i> * )									
280- 280.40	ل ۱۰، ۲۰، ۲۰، ۲۰ المحمد المحمد الم	contact <30°								
		dark gray laminated mudstone.								
					1					
			285.00-300.50: Py film and Py-vein of 2-5mm wide,						1	
			mostly sub-concordant to lamina							
	A									-
			:							
290	-17	290.20-293.00: crushed zone,								
		brecciated, clayey.	· · ·	292.00				1 :		
		293.20-300.50; core crushed to		292.00		<0.1	0.5	<0.01	<0.01	0.02
	E	pebble size.	1					1		
			:	·						
	EF -									
·	<u>,</u>					:				
	R		299.70-300.50: Py film, few mm wide network.	299.50					1.28	-
300				299.30	1.00	<0.1	1.6	0.02	<0.0	0.01

epth	Chart	Lithology and Alteration	Mineralization	Depth		Au	Ag	Cu	Pb	Z
(m)	Chart		Mineralization	(m)	(m)	(g/t)	(g/t)	(%)	(%)	(%
0		overburden								T
		light brown mudstone pebble and soil				-		ļ		
2.10	0.00	oxidized reddish brown mudstone		1.1	1					
	Ö	pebble and soil.						· ·		
3.90				·						
		3.90-43.50: light gray mudstone with light brown surface, slightly silicified	3.90-43.50: occasionally black film along fracture,	· .						
		and oxidized.	±1mm wide.							1
-		3.90-10.85: crushed to pebble size.								
-										
10 -		11.35-12.35: crushed to few cm size.								
								E		
· -							1			
				1.1.1					ļ	-
					1			ĺ		ł
•	<b> </b>			1	· ·					
		·							ļ	1
							1			
	<u></u>								1 · · · ·	
				1	ŀ					
-	<u> </u>	18.30-19.40; core crushed to few cm size.	·	1		· ·	1			
			1 · · · · ·				1.		1	
20 -						1				
	<u> </u>									
		22.10-26.20: core crushed to few cm	· · ·					· ·	-	
	1	sizc.						]		1
				1					1 . · ·	
	]	4								
	<u> </u>						1	-		
	<u> </u>	28.85-33.75: core crushed to few cm					-			ĺ
	<b></b>	size, partly clayey.								
30~										
•••										
							· ·			
								ļ		
						1			1	ł
	L	34. 10-35.60: patch and lamina of				1				
		dark gray mudslone remain, lamina	. · · · ·						· ·	
	<u> </u>	<20°				<b>.</b>				
	1	· ·	and the second		1	}	1			
					1		1		1	ł
		1	e e e e e e e e e e e e e e e e e e e	1	1					
		39.75-43.50: paiches of dark gray	39.75-43.50; weak Py dism.			1				
40 -		mudstone remain.	in dark gray mudstone,							
10			± 1mm wide Py film is				1	· ·		
1		1	hematized,			·	1		1	
	1		and the second				1			
				1	ľ					
43.50	-	dark gray mudstone, nartly oxidized	43.50- 52,40: Py dism. and			· ·		[	}	1
		dark gray mudstone, partly oxidized, sandstone layer of ±10cm rarely	film.	1	1					
		occur.								
		44.20-45.05: oxidized.	46.50: Py film, 3 mm wide, <80°	<b>1</b> .				. ·	1	
		45,50-45.80: oxidized.	<ðU					1 .		ľ
÷ .			·			1 ·	1.11			
			1. A.							
50		3				L		<u> </u>	<u> </u>	
	a a second s		A-21							

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pth	Chart	Lithology and Alteration	Mineralization	Depth		Au	Ag	Cu	Рb	Zn	
n) 50			Minicranzadon	(m)	(m)	(g/t)	(g/t)	(%)	(%)	(%)	
90		dark gray mudstone.	52.40-54.30: weak Py and								
52.40		52.30-52.40: oxidized near the contact.	Po dism. , Py film along fracture, 土1mm wide.						:		
50,10	+ +	fine diorite porphyry, similar to									
· -	+ +	and on the Breeman Bray, 110	54.30-56.00: Py film of 1mm wide slightly abundant.	• · · · ·							
		phenocryst few -5mm across, slightly silicified and chloritized.							÷.,	2	
-	1414	52.40-54.30: oxidized, orange brown	56.00-58.60: weak Po dism,				a ser e				
	+ +	color,									
-	+ + 	56.00-58.60; relatively fresh. 58.60-62.60; chloritized and silicified.	58.60-62.60: Py weak dism.								
60 —	4×4+	Solo allo chamed and shorton							<i></i>		
00	+			60.80	0.90	<0.1	4.6	<0.01	0.08	0.00	•
-	¥.1	62.60-64.90; relatively fresh.	62.60-64.90: weak dism.	61.70	0.20			<0.01	0.08	0.02	
	+ +		of Po>Py,	63.30							
-	+ + +	64.90-68.65: slightly silicified and	64.90-68.65: weak dism.	64.10	0.80	<0.1	1.4	<0.01	0.04	0.08	
	+ + 4-7+34	chloritized.	of Po>Py.							·	
• -											
60 / 6					• • •						
68.65 69.55 69.70		dark gray mudstone, lamina is not	68.65-84.20: very weak Py dism. and Py films of less								
70	<u></u>	clear, < 0° -10° 68.65-70.00: silicified, gray mudstone.	than 1mm wide rarely								
		69.55-69.70: fine diorite porphyry.	occur,								
		70.00-84.20: dark gray mudstone.									
								:			
										1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	
		78.80-79.60: sand lamina is predominant.									
		79.40-79.55: core crushed and	· · ·								
80-		brecciated.									
			-								
		83.40-85.20: core crushed.									
		Correction of the original				1		1			
84.20	1	gray fine sandstone, slightly silicified.	84.20-114.20: weak Py		·	.					
		86.75: fracture zone, Scm wide, <70°	dism, and thin Py film	ļ					:		
			$\pm 1$ mm wide.				1				1
					1		1		÷.	· ·	1
			89.80-94.00: Py tilm of few mm wide abundant,					1			
90-			oxidized to hematite.			1.1				:	
	围伤	1		91.60				<u> </u>	· ·	· ·	-
	国語		93.50-93.70: Py veinlet, Smm wide.	92.50	0,90	<0.1	+1.7	<0.01	0,02	0.02	$\frac{1}{2}$
	民間は	•	51/10 W100								
									<b>.</b>		
			96.10-98.30: Py film slightly	/	-						
	同時		abundant.				1.44				
	北南	98.40-102.00: irregular mud lamina included, few mm wide, <20° -30°		:							
		menducu, iew min wide, <20 -30		1.1							
100	<u> </u>	1	1	<u> </u>		<u> </u>					1
100	<u>.</u>	4	A-22			- <b></b>			<b>.</b>		•

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	Depth (m)	Chart	Lithology and Alteration	Mineralization	Depth (m)		Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
	100		gray fine sandstone, occasionally few	Py weak dism, and Py film	<u> (11)</u>		(9/0	(9/0	1/07	(70)	(70)
			mm wide mud lamina occurs.	of ±1mm wide.							
			•			:					
÷			j								
		· · · · · · ·									
	}		105.80-107.70: mud lamina is included.								
							-			i.	
	110-		110.40-114.50: includes mud lamIna	110.45: Py-rich band, 1cm							
			of few mm wide.	wide, <30° 111.40: Py-rich mud layer,							
				3cm wide, parallel to	114.00 114.10	0.10	0.2	4.6	0.04	<0.01	0.01
		· · · · · · · · ·		lamina.	]						
	ł			114.00-122.00: Py dism. very weak or none, Py							
				film absent.	1						
										ĺ	
	120-										
				122.00-137.00: very weak Py dism, and Py film,							
		لېنديد و د يونونو لېنديد و د يونونو		125.55: Py-rich layer, 8cm wide, parallel to lamina	125.55	0.10	0.2	1.8	0.05	<0.01	0.02
			· .	<30°	125.65		<u></u>	1.0	0.05	<u>\0.01</u>	0.02
			•	128,40-128,80: Py-rich mud				1			
		a straight		layer, 40cm wide.	128,50 128,80	0.30	<0.1	2.2	0.06	<0.01	0.01
	130 -										
			• • • •								
			•					1			
				-							
			•								
			4	137.00-142.00: Py dism. and film absent or very weak.							
									-		
	140 -		141.40-146.40: mud lamina slightly								
			increases.								
				142.00-149.00: vcry wcak							
				Py dism. and rare occurrences of Py film less		ŕ					
		]		than 1 mm wide.							
		<b> </b>			· · · · :			:		1.	
				149.00-154.80: Py dism, and film absent,							
÷	150		<i>e</i>								
				A-23							

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Hole		MJSI-7 (From	150.00 m to 200	.00 m	)					
epth (m)	Chart	Lithology and Alteration	Mineralization	Depth (m)	D.L. (m)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
150		gray sandstone, mud lumina of few mm wide tarely occurs.	154.80-158.00; Py film of ± 1mm wide and Py band along lamina and Py patches of few cm across rarely occur, very weak Py dism.							
160			157.45: Py rich lamina 5 × 3mm, <20° 158.00-184.60: Py weak dism. and Py film, rarely Py rich mud lamina occur. 159.90: Py rich band in mud layer, Scn wide.	159.90 160.00	0.10	0.8	2.5	0.04	<0.01	<0.01
						- - -				
				167.60 167.90	0.30	2.9	58.1	0.06	0.73	<0,01
170-										
-		174.40-175.00: silicitied.	174.40-175.00: Py film of few mm wide abundant.							
180-			178.95: Py film, 3nm wide, <85° 181.15: Py-rich vein, 5mm							
184.60		181.00-184.60; mud lamina increases.	wide, <60° 184.60-195.40: Py weak							
		dark gray mudstone with sand lamina, mud 70 % and sand 30 %, thickness of sand layer varies from 10cm to few num.	dism. and Py film. 189.45: Py-Qz vcin, 5mm							
190-			wide, <80°							
195.40		boundary < 10°, sub-parallel to lamina. diorite porphyry, gray, phenocryst P1 (±5mm)> Ho (±1mm)	195.40-198.30: Py dism. 196.60: Py- rich vein, Smm wide, <70°	195.85 196.70	0.8	5 0.2	0,4	0.02	<0.01	0.01
200		195.40-198.30: slightly chloritized.								

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	Depth	e No. Chart	MJSI-7 (From Lithology and Alteration	200.00 m to 250 Mineralization	Depth	D.L.	Au (a/t)	Ag (g/t)	Cu (%)	РЬ (%)	Zn (%
	(m) 200	+ +	gray diorite porphyry	198.30-272.80: very weak	(m)	<u>, (11)</u>	1979	(9/1)	( 70 )	(70)	170
		建磷酸	200.85-201.15: slightly chloritized.	Py and Po dism., very							
		· + · +		rarely Cp occurs							
		+ + } + +		associated with Po, rarely altered patches of few cm							
		+ +	· · · ·	with Po occur. altered							
		+ $+$		part is Py dominant,							
		- + +		relatively fresh part is Po dominant.						19	
	1	+ +		part is ro dominant.							
				208.40-208.80: weak							
		N. ST.	208.40-208.80: slightly silicified.	Py>Po dism.	208.35 208.80	0.45	<0.1	0.3	0.02	<0.01	_<0,
	210-	$\left[\begin{array}{c} + \\ + \\ + \\ \end{array}\right]$									
		+ + +	211.70: chloritized band, 3cm wide,				· .				
		+ + +	<30 °								
		]+ <u>+</u> ;	214,75-214,95: slightly chloritized.	214.75-214.95: Po>Py							
		+ + وغياد شخفهم		weak dism.							
	Į	+ +	216.00-217.20: slightly chloritized								
			and silicified.	216.00-217.20: Po with rare	216.40	0.50	0.2	0.2	0.03	<0.01	<0.
		standt-s		Cp dism., Py veinlet of ±5mm wide at 216.65	216.90	0.50	<u> </u>		0.00		
		teste	218.95-219.10: slightly chloritized	and 217.70.					;		
		+ +	and silicified.	218.95-219.10: Py dism.							
	220-	+ +		and film.					· ·		
		+ +									
		{+ +   + +		•							
		+ +									
											1
		+ +	225.10-226.25: silicified.	225,10-226.25: Po (Cp)	225.55						
-	· . ·			dism, and Py film,	226.20	0.65	<0.1	<0.1	0.02	<0.01	<0
		+ +		228.85: Qz vein with						÷	
				Py, (Sp), 2cm wide.	228.90	0.20			0.02	0.02	
	230-	{`+`+			229.10		0.3	27.5	0.02	0.03	0.
				· ·	•						
		$\left[ \begin{array}{c} + \\ + \end{array} \right]$					ļ		- N		
		$\left  \begin{array}{c} + \\ + \\ + \end{array} \right $		1 . · · ·							ĺ
		+ +							· ·	· ·	
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		] + +   + -								1	
		+++			1 . <sup>1</sup>	н. 1				· · .	
		+  -+  -+		MARSED D (C)							
	•	+ +	248.55: chloritized and silicified 20cm wide.	248.55: Py Po (Cp) dism. and patches of ± 1cm					.		
		t + +	249,40 249.50; chloritized.	ACTOSS.	248.55 248.80	0,25	<0.1	<0.1	<0.01	<0.01	<0.
	250	12-14-CS4	247,40 247,50; CHIOLILIZCO.	249.40-249.50: Py, Po dism.	240.8U		\ <u>````````````````````````````````````</u>		.0.01		<u> </u>
	<u>20</u>	<u> </u>	1	A-25	L	<b>.</b>	<b></b>	<b>.</b>	<b>.</b>	. ·	L
			and the second	لىت 11							

Hole	e No.	MJSI-7 (From	250.00 m to 300.	00 m)				· · ·	s di Kasar ku	 
Depth	Chart	Lithology and Alteration	Mineralization	Depth			Ag	Cù	Pb	Zn
(m)				(m)	(m)	(g/t) (	<u>g/t)</u>	(%)	(%)	(%)
250	+ + +	gray diorite porphyry with phenocryst of Pl > Ho.	weak Po <sub>1</sub> (Cp), Py dism.							1 - L
	++++	01112110.	silicified patch and band			·				
	<b>.</b> + +	:	with Po occur.			·				
	+ + + +							!		
	+ +			•						
	+ +									
	+ + + +		1							
	+ +		-							
	+ +								18 A.	
260-				1						
200	+ +	261.80-262.00: chloritized and								
	的流行	silicified.	261.80-262.00 : Po, (Cp),	261.80	0.20	<0,1	<0.1	<0.01	<0.01	<0.01
	+ +  + +		Py dism.	262.00	ľ	<u></u>		<u>&lt;0.01</u>	<b>NO.01</b>	<u> </u>
	+ +	264.10-264.40: chloritized and	264.10-264.40: Po, (Cp)	264.10						
	+ + +	silicified.	dism.	264,40	0.30	<0.1	<0.1	<0.01	<0.01	<0.01
							<sup>н</sup>			
	+ +		267.55-267.95: Po, (Cp),							
	1 + + 35.2500	267.55-267.95: chloritized and silicified.	Py dism., Py film.	267.55 268.00	. 0.45	<0.1	0.4	0.03	<0.01	<0.01
		SIIGNOOL								
270-	+ + +									
210			271,50; Qz vein with Py,							
	<u> </u> ∓		Cp, Sp, 1 cm wide, <80'	271.50	0.25	0.1	15.0	0.27	0,09	0.24
	1 + +	272.80-288.35: chloritized and silicified.	272.80-288.35: Po, (Cp), Py	271.75		<u> </u>				
	这一个"小小小小小小小小小小小小小小小小小小小小小小小小小小小小小小小小小小小小	Smenred.	dism. and Py film of few om wide.	273.20 274.20	1.00	<0.1	1.1	0.01	<0.01	<0.01
	A PERFORM		274.85-275.15: sulfide-rich	274.85	0.65	0,2	4.6	0.05	0.01	0.09
	新聞		vein (patch), Py, Ap, Cp. 276,15-278,15: network of	275.15	1.00	<u>3.5</u> 4.3	26.5 15.6	0.34	0.05	0.02
	相张	277.85-278.00: fractured zone, dark	Fy, Ap, (Cp) veinlet, 1cm	276.15 276.90	1	<0.1	2,2	0.07	<0.01	<0.01
	制理	gray clay.	- 1mm wide, Py 2-3%	277.10	0.75	0.3	1,6	0.05	<0.01	<0.01
	招告			277.85 278.00	0.15	0.7	17.7	0.08	0.06	0.15 <0.01
				279.00	1.00	<0,1 <0.1	0.1	0.02	<0.01	<0.01
280	「「「「「「「」」」	1		280.00	1.00	<0.1	0.7	0.02	<0.01	<0.01
1	3			281.00	1.00	<0.1	0.2	0.02	<0.01	<0.01
· ·	thet.		282.00: vuggy Qz vcin with Py, Cp, Ga, 3 cm wide.,	282.00	0.55	5.1	71.5	0.12	1.15	0.23
			<80°	282.55 283.20	0.65	<0.1	0.6	0.02	<0.01 <0.01	<0.01 <0.01
1	1 Star		283.30: vuggy Qz vein with	283.40	0.80	<0.1	0.2	0.03	<0.01	<0.01
	<b>医</b>	<i>x</i> 7	Py. 5 mm wide, <80° 284.45: Qz-Ca-Py vein,	285.10 285.90	0.90	<0.1	0.9	0.03	<0.01	<0.01
	長行		1 cm wide, <70°	285.90		<0.1	<0.1	0.02	<0.01	<0.01
	主法		288.35-291.00: weak Po,							
	+ +	288.35-291.00: relatively fresh diorite porphyry.	(Cp), Py dism.						. 	
	+ + + +	ի խուհայում։				·				
290	~{ + +			· ·				ļ		
	<b>图</b> 200	291.00-295.50: slightly silicified, porphyritic texture is not clear.	291.00-295.50: Weak Po,	291.40			+			+
	L'ART	in the second se	Py dism.	292,25	0.85	<0.1	0.2	<0.01	<0.01	<0,01
	T.t.							.·		
l.	15 # 30 # 20 H	n - 1		1	]			÷		
	~ t ~	295.50-302.71: relatively fresh diorit	c 295.50-302.71; weak Po,				1			
	マシャ	- рограуту 2	(Cp), Py dism, and Py film	1	1 .					
ĺ		<b>+</b>		· ·						
	_+ · + ·									
1 ·	+ +	r a a an an			÷.,		1			1.00
300	) + -	+1	۸26		<u> </u>	.L	L			المستعمل

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	Hole Depth (m)	e No. Chart	MJSI-7 (From Lithology and Alteration	Mineralization	Depth (m)	D.L. (m)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
	300	+ + + +	diorite porphyry.	weak Po, (Cp), Py dism. and Py film.	301.10 301.30	0.20					
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