第Ⅲ部　結論及び提言

第1章　結　　論

インバック川地区北部において、ＭＪＳＩ－６及びＭＪＳＩ－７の２孔のボーリングを実施し、以下の点が明らかとなった。

ボーリング地点周辺は、泥岩、砂岩、砂岩のラミナを伴う泥岩など堆積岩からなり、それに閃緑斑岩が貫入する。堆積岩類と閃緑斑岩の境界は、地表下では斜交する場合が多く、閃緑斑岩の分布は地下で広がり、今までシート状のあまり幅をもたな岩体と考えていたが、それより大きな体積を持つ岩体であることが想定される。

変質鉱物としてほとんどの試料が緑泥石－絹雲母－石英の組み合わせを持ち、変質分帯からすると、ほぼ普遍的に緑泥石及び絹雲母を持つ点から、両孔の変質作用の程度は、斑岩型銅鉱床に見られるプロピライト帯からフィリック帯への漸移帯に対応すると考えられる。

最も顕著な鉱化作用は、ＭＪＳＩ－７孔の272.80mから288.35mの間で見られ、磁硫鉄鉱－黄鉄鉱－黄銅鉱の鉱染に加えて、黄鉄鉱－硫批鉄鉱－黄銅鉱からなる硫化物の細脈（幅1cmから1mm）のネットワークが見られる。品位の最も良い部分は、ほぼ３m（275.15mから278.00m）に渡ってAu 0.3-4.3g/t、Ag 1.6-17.7g/t及びCu 0.04-0.12%の値がえられた。これら以外では、砂岩中及び閃緑斑岩中に幅数cmの石英－硫化物脈（硫砒鉄鉱、黄鉄鉱、黄銅鉱、磁鉄鉱）が見られ、母岩を含めた品位でAu 2.9 及び5.1g/t、Ag 58.1 及び71.5 g/tと金及び銀に富む。金は、今までの調査での様に硫砒鉄鉱中に含まれると考えられ、硫砒鉄鉱を多量に含む試料は金の品位が高い。

鉱化帯中に見られる黄鉄鉱は、細粒のコロフォーム状の組織を持つ物が自形性の結晶に伴って見られる場合が多く、鉱床生成の後期に比較的低温の熱水循環があり、硫化鉄の急速な沈殿があった事が推定される。この様な現象は鉱化帯周辺部の弱鉱染帯に認められる場合が多い。

今までの調査の結果から、本地区の鉱化作用は、斑岩型銅鉱床に類似した鉱化作用と考えら、ボーリング調査を行った地点は、鉱化帯の中心部よりやや外れた、その周辺部に当たると考えられる。

本調査地域に斑岩型銅鉱床の存在をを想定した場合、「Ｃ」の字形のＩＰ異常帯の中心部が最も有望と考えられる。

第２章　将来への提言

インバック川地区北部に、斑岩型銅鉱床に類似した鉱化作用が存在すると仮定すると、今まで行われたボーリング調査は、鉱化帯の中心からやや外れた周辺部で実施されたこととなる。従って、鉱化帯の中心部は、「Ｃ」の字形のＩＰ異常帯の中心部に存在すると想定され、この地点に深度300m以上のボーリン調査を実施し、鉱化作用を明らかにする必要がある（Fig. Ⅲ-2-1）。

尚、インバック川地区北部及びインバック川地区南部の鉱化作用は一連の類似した鉱化作用であり、更に、類似する鉱徴地の存在がサバ中央地域に隣接してその南にも確認されており、これらの鉱徴地は、一連の山脈に沿って分布する。インバック川地区からその南にかけてのこれら鉱徴地の分布する山脈の地帯は、金、銅の鉱物資源ポテンシャルの高い地域と考えられ、今後、詳しい調査が行われることが望ましい。

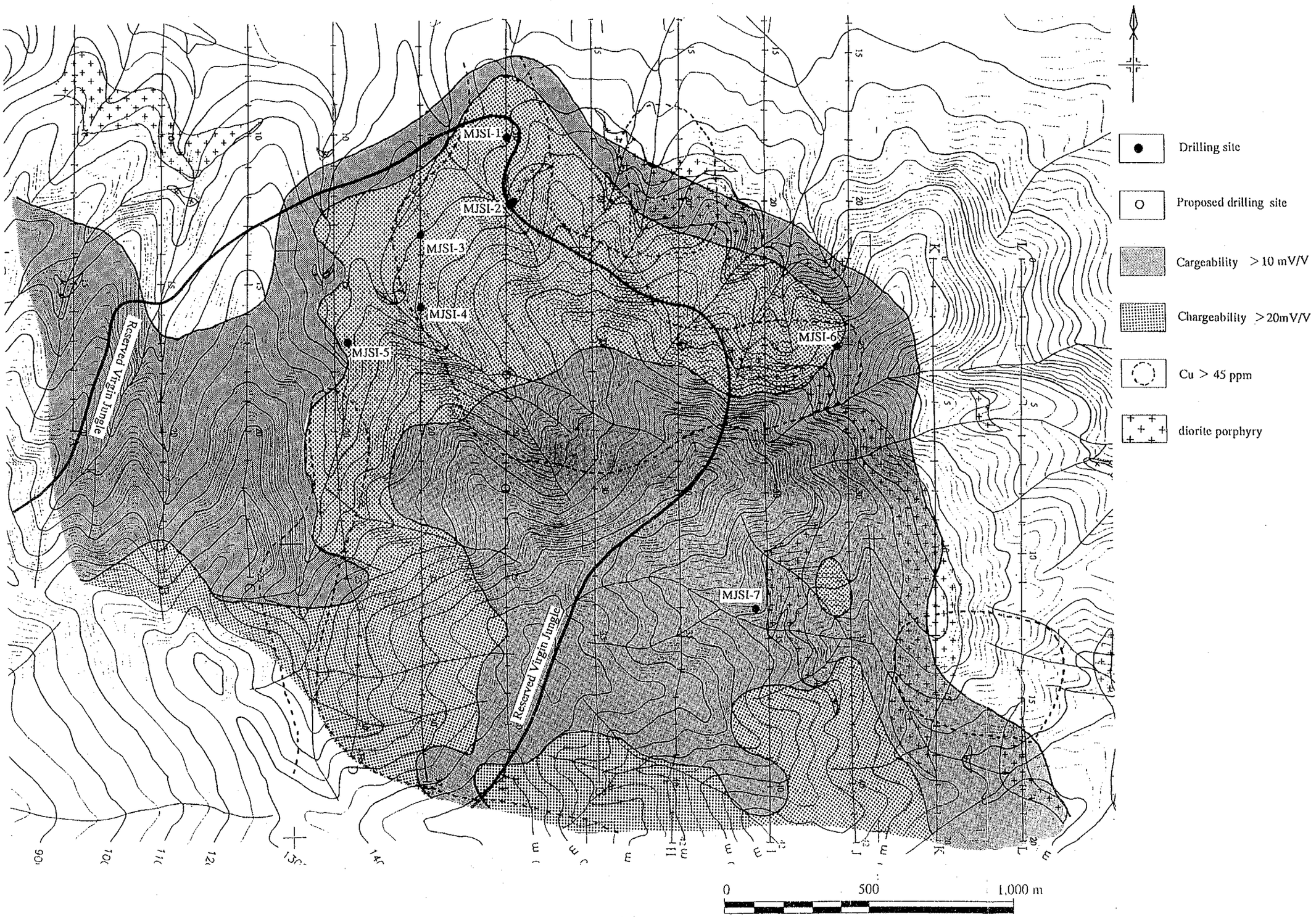

Fig.III-2-1 Recommendation for future work in S. Imbak Sub-area North

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Appendices

Appendix 1

Generalized drilling results and summary of drilling activities

Drilling Results

Hole No.	Machine Type	Drilling Period	Drilling Depth (m)	Core		Drilling Shift			Drilling Rate	
				Length (m)	Recovery (%)	Drilling	Preparation & Removing	Total	Meter Per Shift	Meter 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
MJSI-7	F-31	1996-11-10 1996-12-16	302.71	297.23	98.19	17	13	40	17.81	7.56

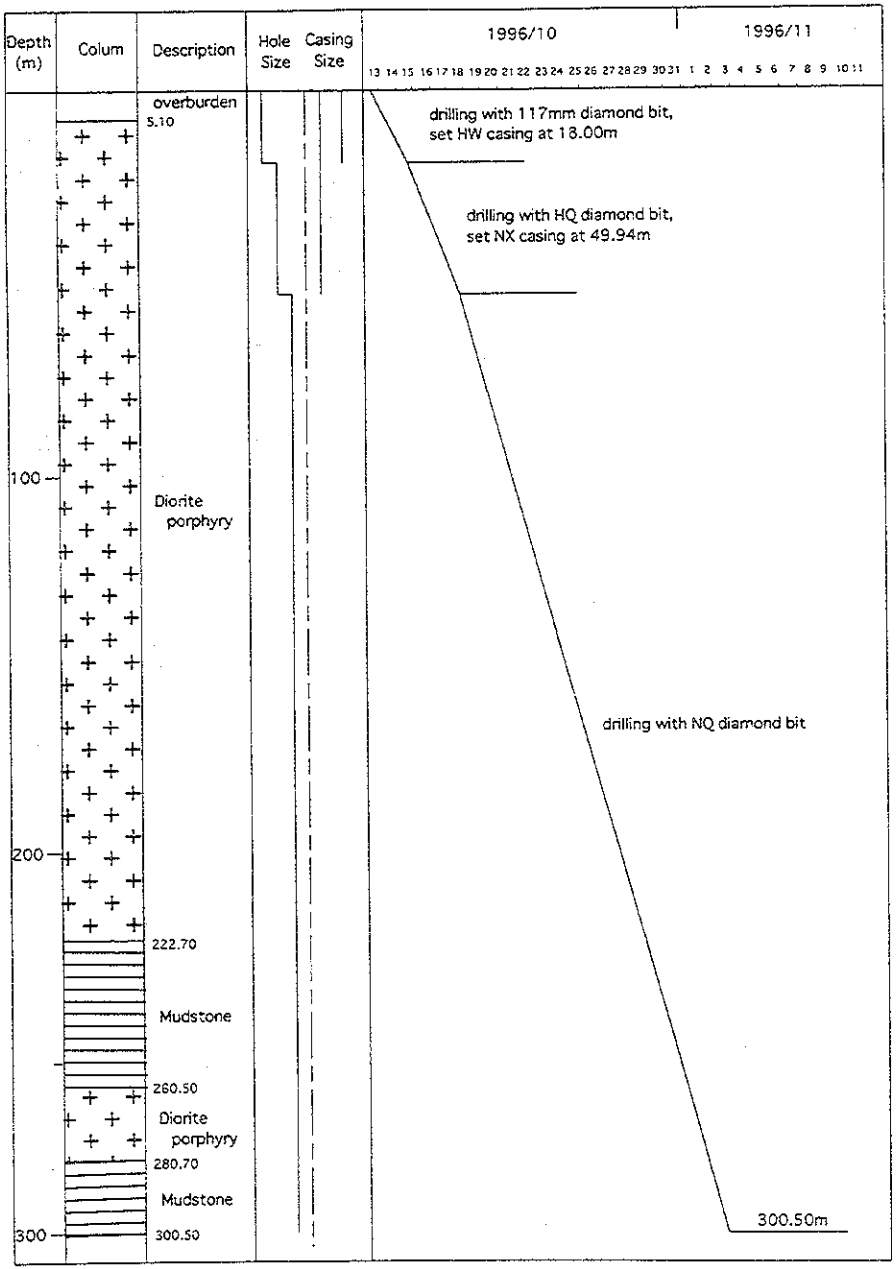
Drilling Activities

	Drill Hole		MJSI-6	MJSI-7
Drilling Period	Preparation Days (A)		10/ 5 to 10/12 8	11/10 to 11/23 14
	Drilling Days (B)		10/13 to 11/ 3 22	11/24 to 12/ 2 9
	Removing Days (C)		11/ 4 to 11/ 9 6	12/ 3 to 12/16 14
	Total days (D)		36	37
Depth	Planned Depth (E)		300.00 m	300.00 m
	Drilled Depth (F)		300.50 m	302.71 m
Core Recovery	Overburden (G)		8.60 m	3.97 m
	Core Length (H)		289.31 m	297.23 m
	Recovery (H/F)		96.28 %	98.19 %
	Unit Recovery	0 m to 50 m	92.01 %	90.39 %
		50 m to 100 m	99.13 %	95.73 %
		100 m to 150 m	97.81 %	100.00 %
		150 m to 200 m	99.94 %	100.00 %
		200 m to 250 m	98.24 %	100.00 %
		250 m to 300 m	91.26 %	100.00 %
Casing Rate	HW Casing		18.00 m	12.34 m
	NX Casing		49.94 m	51.20 m
	BW Casing		—	236.79 m
	F/B meter/day		13.66 m	33.63 m
	F/D meter/total day		8.35 m	8.18 m

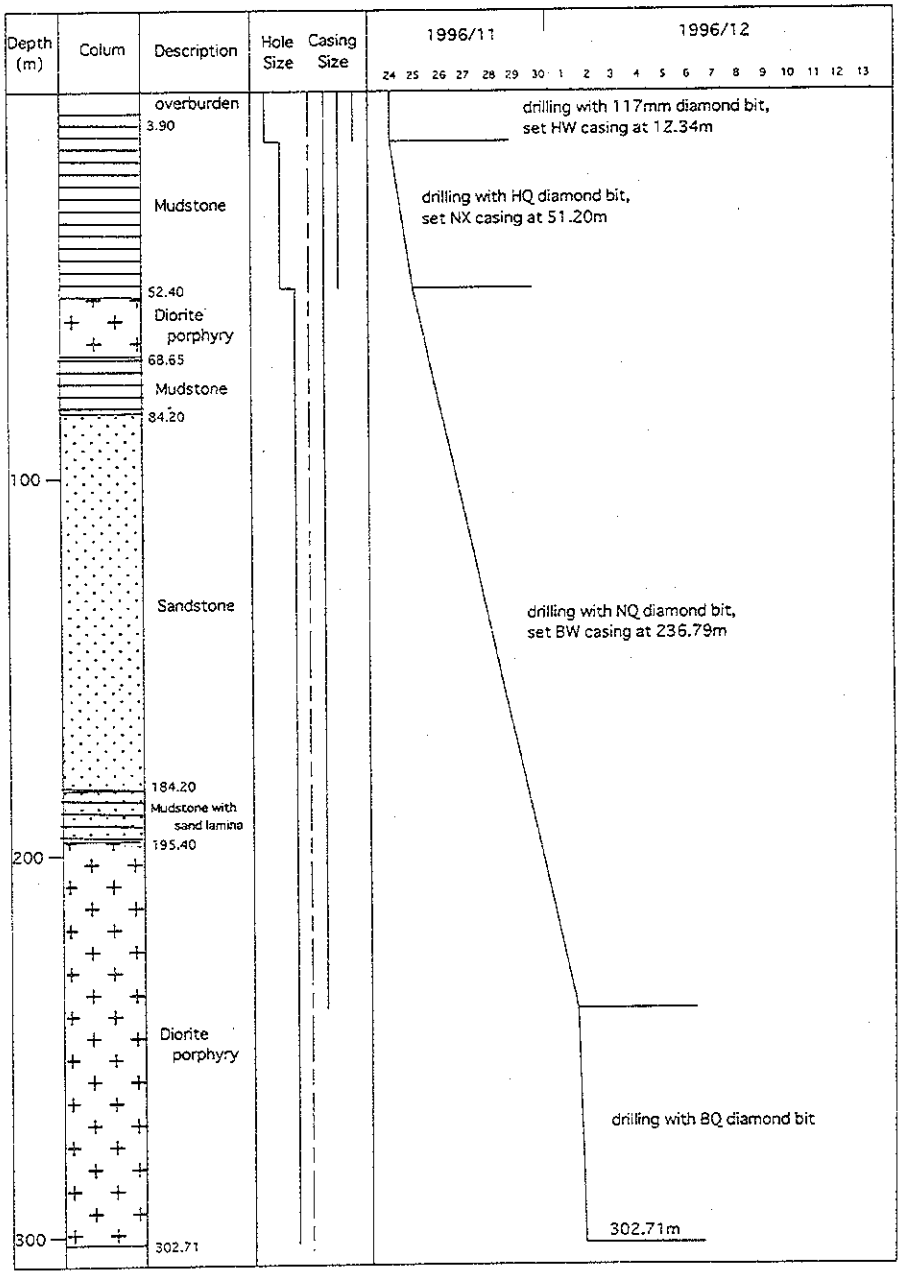
Appendix 2

Progress record of drilling

MJSI-6


Depth (m)
Colum
Description
Hole Size
Casing Size
1996/10
1996/11
13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11
overburden
5.10
Diorite porphyry
222.70
Mudstone
260.50
Diorite porphyry
280.70
Mudstone
300.50
100
200
300
drilling with 117mm diamond bit, set HW casing at 18.00m
drilling with HQ diamond bit, set NX casing at 49.94m
drilling with NQ diamond bit
300.50m

MJSI-7


Depth (m)
Colum
Description
Hole Size
Casing Size
1996/11
1996/12
24 25 26 27 28 29 30 1 2 3 4 5 6 7 8 9 10 11 12 13
overburden
3.90
Mudstone
52.40
Diorite porphyry
68.65
Mudstone
84.20
Sandstone
184.20
Mudstone with sand lamina
195.40
Diorite porphyry
302.71
100
200
300
drilling with 117mm diamond bit, set HW casing at 12.34m
drilling with HQ diamond bit, set NX casing at 51.20m
drilling with NQ diamond bit, set BW casing at 236.79m
drilling with BQ diamond bit
302.71m

Appendix 3

Drilling equipments and consumed material

Drilling Equipment

Article	Model	Specification	Quantity
Drilling Machine	F-31	Maker: Mindrill (Australia) Capacity: BQWL 400 m Weight: 2,120 kg	1 sets
Diesel Engine	SR-4	Maker: (England) Horse Power: 31 HP/1,500 rpm Weight: 340 kg	1 sets
	SR-2	Maker: (England) Horse Power: 10 HP/1,500 rpm Weight: 260 kg	1 sets
Drilling Pump	—	Maker: John Bean Tripex (F.M.C) Max capacity: 240 l/min Weight: 500 kg	2 sets
Wireline Hoist	WF-1	Maker: (Australia) Hoisting Capacity: 350 m	1 sets
Water Pump	E 32-20	Maker: AJAX PUMP Max. capacity: 150 l/min	2 set
Diesel Engine	L-90E	Maker: Yanmar(Japan) Max. capacity: 6.6 KW, 9.0 PS/3600 rpm	2 set
Drill Rod		HQWL(3.00 m/joint) NQWL(3.00 m/joint) BQWL(3.00 m/joint)	17 joints 103 joints 133 joints
Casing Pipe		HW(3.00 m/joint) HW(1.00 m/joint)	10 joints 6 joints
Generator		Maker: Yanmar (JAPAN)	3 sets
Water Hose		3/4" 1.5"	700 m 700 m

Consumed Material

Hole No.	HW 117 mm			HQ 101 mm			NQ 76 mm			BQ 59 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	—	—	—
MJSI-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(l)	Cement 50 kg/Sx(Sx)	EZ-mud (l)
MJSI-6	1,800	2	162
MJSI-7	1,500	2	126

Appendix 4

Drilling logs and assay result

Hole No. MJSI-6 (From 0.00 m to 50.00 m)

Depth (m)	Chart	Lithology and Alteration	Mineralization	Depth (m)	D.L. (m)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
0		overburden								
		0.00-5.10: yellowish orange silt with fragments and blocks of diorite porphyry, weathered.								
5.10		5.10-8.60: reddish yellow saprolite of diorite porphyry.								
8.60		gray diorite porphyry with phenocrysts of Pl>Ho, few mm across, xenoliths of fine diorite porphyry included, few cm across.	rarely fine Py grains occur.							
10		8.60-36.00: onion skin type weathering, fresh rock remains as few m size boulder.								
14.60		12.00-12.35: weathered to orange brown saprolite.								
	no core	14.55-18.65: weathered, orange brown saprolite.								
16.59		18.65-19.25: fresh diorite porphyry.	18.45: oxidized sulfides film, few mm wide, <40°							
		19.25-24.40: weathered orange brown saprolite.								
20		24.20-25.30: relatively fresh.								
		25.30-28.00: weathered, orange brown saprolite.								
		28.00-30.85: fresh.								
30		30.85-32.30: weathered orange brown saprolite.								
		32.30-32.80: relatively fresh.								
		32.80-33.20: weathered, orange brown saprolite.								
		33.20-35.55: relatively fresh.								
		35.55-35.85: weathered, orange brown saprolite.								
		36.25-36.65: argillized.	36.40: Py, Ap films, few mm wide, <40°							
		37.25-37.45: pale gray, argillized.	37.25-37.45: weak Py dism.							
40		44.80-45.80: amount of xenolith slightly increases.								
45.80		45.80-118.10: gray diorite porphyry with predominant Pl phenocryst.								
		46.00-46.20: light brown, weathered.								
		49.50: xenolith of fine diorite porphyry, 5cm across.								
50										

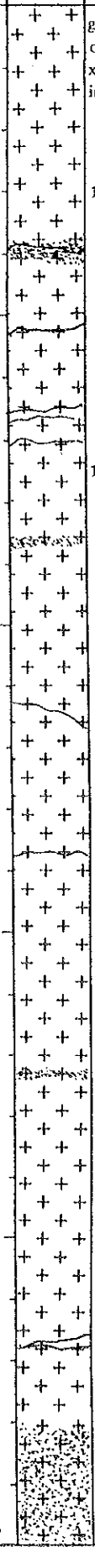
Hole No. MJSI-6 (From 50.00m to 100.00 m)

Depth (m)	Chart	Lithology and Alteration	Mineralization	Depth (m)	D.L. (m)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
50		gray diorite porphyry with predominant Pl phenocryst.								
		51.60-52.20: slightly weathered.								
		54.45-56.10: fractured, oxidized along fractures, few mm wide.								
		58.10-59.55: silicified and chloritized zone, <40°	58.10-59.55: Py weak dism.							
60		63.25: silicified diorite porphyry, 3cm wide, <40°	63.25: Py dism. zone, 3cm wide.							
		64.30: xenolith of fine diorite, 9cm across.								
		66.65: xenolith of fine diorite, 8cm across.								
70										
75.35		75.35-83.10: light gray, strongly silicified diorite porphyry.	75.35-83.10: Py films of few mm wide, sub-vertical to <45°	75.50						
				76.50	1.00	<0.1	1.1	0.01	<0.01	0.02
		76.60-77.50: fragments of strongly silicified sandstone included.	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	10.3	0.01	0.42	0.25
80				80.00	1.00	<0.1	0.7	<0.01	0.02	0.02
				81.00						
83.10										
			89.00-89.45: Py dism.							
		89.00-89.45: argillized.	90.10: Qz vein, 3mm wide, <40° , Py dism.. on both side of margins.							
90										
			95.30-95.55: three Qz veins with Py, 1-3mm wide, <45°							
			97.20-97.40: Py dism.							
			97.32: Qz-Py-Ap vein, 2mm wide, <45°							
		97.20-97.40: argillized.	97.85: Py film, <45° , argillized on both sides of 5cm wide.	97.20						
				97.50	0.30	<0.1	0.5	<0.01	<0.01	<0.01
100										

Hole No. MJSI-6 (From 100.00 m to 150.00 m)

Depth (m)	Chart	Lithology and Alteration	Mineralization	Depth (m)	D.L. (m)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
100		gray diorite porphyry, essentially Pl phenocryst.								
		103.75-104.20: argillized.								
		105.20-105.70: silicified.	104.00: Qz vein with Py, 2mm wide, <55° 105.50-105.70: Py dism.	103.85 104.00	0.15	<0.1	0.6	0.01	<0.01	<0.01
		106.65-106.95: silicified.	106.65-106.95: Py dism, three Py films, 1-2mm wide, <60°							
110										
		112.25-112.35: silicified.	112.25: Qz vein, 3mm wide, <55°							
		114.30-114.50: argillized, brecciated.	114.30-114.50: Py spots.							
		115.40-115.75: slightly argillized.	115.40-115.75: three Py films, 1 mm wide, <60°							
118.10		118.10-222.70: gray diorite porphyry with phenocryst of predominantly Pl of few to 5mm across and subordinate Hb, fine diorite xenolith increases.								
120			121.60-121.70: Py films.							
		121.60-121.70: argillized.								
		127.00: xenolith of fine diorite 13cm across.								
130										
		134.75-135.15: xenolith of greenish gray diorite porphyry.								
		136.50-136.70: argillized.	136.50-136.70: Py dism.							
		136.90-138.40: high angle fractures.	136.90-138.40: Py along fracture.							
			138.40, 139.10, 140.30: Qz veins with Py, 2mm wide, <35° -<45°							
140										
150										

Hole No. MJSI-6 (From 150.00 m to 200.00 m)

Depth (m)	Chart	Lithology and Alteration	Mineralization
150		gray diorite porphyry with phenocrysts of predominant Pl and subordinate Ho, xenolith of fine diorite, 1-40 cm included.	
		157.60-158.10: slightly silicified.	157.60-158.10: very weak Py dism.
			157.85: Qz vein with Py patches, 3 mm wide, <60°
160			160.85,163.30, 163.50: three Qz veins, 1-3mm wide, <60°
			164.05: Qz veins with Py, 2mm wide, <50°
		167.45-167.60: brecciated, argillized.	
			167.45-167.60: two Qz vein with Py, 2mm wide, <50°
170			
			172.70: Qz vein with Py 3mm wide, <75°
		184.45-184.70: silicified.	
			177.25: Qz vein, 2 mm wide <45° , silicified and weak Py dism at both sides of vein.
180			
			184.45-184.70: weak Py dism.
190			
			193.70-193.95: Qz vein, 2mm wide, <50° -<65° , silicified and Py dism. at few cm both sides of veins.
		196.20-20,1.80: slightly silicified.	
			196.20-201.80: weak Py dism.
		199.30-200.05: silicified and argillized.	199.30-200.05: Py, Ap dism. few %.
200			

Depth (m)	D.L. (m)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
199.30 200.00	0.70	<0.1	4.1	<0.01	0.15	0.04

Hole No. MJSI-6 (From 200.00 m to 250.00 m)

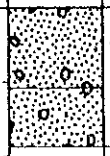
Depth (m)	Chart	Lithology and Alteration	Mineralization	Depth (m)	D.L. (m)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
200		gray diorite porphyry with phenocryst of predominantly Pl and subordinate Ho, xenolith of fine diorite included.	200.55-200.75: weak Py dism.							
		200.55-200.75: argillized and silicified.								
		209.40-209.70: chloritized.	209.40-209.70: Py dism.							
210										
		216.30: xenolith of sandstone, 20 cm across.								
		216.60-217.65: slightly silicified.								
220		220.65-222.70: silicified, light gray color.	220.00-222.70: Py dism. ±1%.	221.00	0.70	<0.1	0.4	<0.01	<0.01	<0.01
		contact <45°		221.70	1.00	<0.1	0.6	<0.01	<0.01	0.01
222.70		sharp contact, cut the lamination of mudstone.	Rarely Py-rich nodule occur, few - 5cm.	222.70						
		dark gray laminated mudstone, lamina <35°	222.70-228.00: occasionally Py films of ±1mm wide occur.							
		222.70-223.70: slightly silicified close to the contac.	223.60: Qz vein with Py, 5mm wide, < 45°							
			224.65: Py-rich band, 3cm wide, <30°							
230										
			233.50-242.10: rarely Py-rich band and patch occur, 1-2cm across.							
240										
			242.90-251.00: nodule with Py patch, 1- 4cm.	242.80	0.20	<0.1	0.3	<0.01	<0.01	0.02
		244.80-245.00: core crushed, clayey.		243.00						
		246.50-260.55: mudsone with sand layer and lamina, few mm to few 10 cm.	247.90, 249.10, 250.80, 251.70, 253.30: Qz vein with Py, 5-10mm, <60° -<70°	247.80	0.20	<0.1	0.3	<0.01	<0.01	<0.01
250				248.00						

Hole No. MJSI-6 (From 250.00 m to 300.50 m)

Depth (m)	Chart	Lithology and Alteration	Mineralization
250		dark gray laminated mudstone, lamina <25° -30°	
260		contact <30°	
260.55		strongly silicified and argillized diorite porphyry, light gray. 266.85- 267.25: mudstone block.	Weak Py dism. and rarely Py films of ±1mm occur.
			267.30: Qz vein with Py, <1.0cm wide, <80°
270			273.40- 277.00: Py-rich thin vein of 1-3mm wide occur at 1m spacing.
280		contact <30°	
280.40		dark gray laminated mudstone.	
			285.00-300.50: Py film and Py-vein of 2-5mm wide, mostly sub-concordant to lamina
290		290.20-293.00: crushed zone, brecciated, clayey.	
		293.20-300.50: core crushed to pebble size.	
			299.70-300.50: Py film, few mm wide network.
300			
300.50			

Depth (m)	D.L. (m)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
266.85 267.25	0.40	<0.1	3.7	<0.01	0.13	0.06
275.20 276.20	1.00	<0.1	0.1	<0.01	<0.01	0.02
292.00 293.00	1.00	<0.1	0.5	<0.01	<0.01	0.02
299.50 300.50	1.00	<0.1	1.6	0.02	<0.01	0.01

Hole No. MJSI-7 (From 0.00 m to 50.00 m)

Depth (m)	Chart	Lithology and Alteration	Mineralization
0		overburden light brown mudstone pebble and soil	
2.10		oxidized reddish brown mudstone pebble and soil.	
3.90		3.90-43.50: light gray mudstone with light brown surface, slightly silicified and oxidized. 3.90-10.85: crushed to pebble size.	3.90-43.50: occasionally black film along fracture, ±1mm wide.
10		11.35-12.35: crushed to few cm size.	
		18.30-19.40: core crushed to few cm size.	
20		22.10-26.20: core crushed to few cm size.	
		28.85-33.75: core crushed to few cm size, partly clayey.	
30		34. 10-35.60: patch and lamina of dark gray mudstone remain, lamina <20°	
		39.75-43.50: patches of dark gray mudstone remain.	39.75-43.50: weak Py dism. in dark gray mudstone, ±1mm wide Py film is hematized.
40			
43.50		dark gray mudstone, partly oxidized, sandstone layer of ±10cm rarely occur. 44.20-45.05: oxidized. 45.50-45.80: oxidized.	43.50- 52.40: Py dism. and film. 46.50: Py film, 3 mm wide, <80°
50			

Depth (m)	D.L. (m)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)

Hole No. MJSI-7 (From 50.00 m to 100.00 m)

Depth (m)	Chart	Lithology and Alteration	Mineralization	Depth (m)	D.L. (m)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
50		dark gray mudstone.	52.40-54.30: weak Py and Po dism., Py film along fracture, ±1mm wide.							
		52.30-52.40: oxidized near the contact.								
52.40		fine diorite porphyry, similar to andesite, pale greenish gray, Ho phenocryst few -5mm across, slightly silicified and chloritized.	54.30-56.00: Py film of 1mm wide slightly abundant.							
		52.40-54.30: oxidized, orange brown color.	56.00-58.60: weak Po dism.							
		56.00-58.60: relatively fresh.	58.60-62.60: Py weak dism.							
		58.60-62.60: chloritized and silicified.								
60				60.80	0.90	<0.1	4.6	<0.01	0.08	0.02
		62.60-64.90: relatively fresh.	62.60-64.90: weak dism. of Po>Py.	61.70						
				63.30						
		64.90-68.65: slightly silicified and chloritized.	64.90-68.65: weak dism. of Po>Py.	64.10	0.80	<0.1	1.4	<0.01	0.04	0.08
68.65										
69.55		dark gray mudstone, lamina is not clear, < 0° -10°	68.65-84.20: very weak Py dism. and Py films of less than 1mm wide rarely occur.							
69.70		68.65-70.00: silicified, gray mudstone.								
70		69.55-69.70: fine diorite porphyry.								
		70.00-84.20: dark gray mudstone.								
		78.80-79.60: sand lamina is predominant.								
		79.40-79.55: core crushed and brecciated.								
80										
		83.40-85.20: core crushed.								
84.20		gray fine sandstone, slightly silicified.	84.20-114.20: weak Py dism. and thin Py film ±1mm wide.							
		86.75: fracture zone, 5cm wide, <70°								
			89.80-94.00: Py film of few mm wide abundant, oxidized to hematite.							
90				91.60						
			93.50-93.70: Py veinlet, 5mm wide.	92.50	0.90	<0.1	1.7	<0.01	0.02	0.02
			96.10-98.30: Py film slightly abundant.							
		98.40-102.00: irregular mud lamina included, few mm wide, <20° -30°								
100										

Hole No. MJSI-7 (From 100.00 m to 150.00 m)

Depth (m)	Lithology and Alteration	Mineralization
100	gray fine sandstone, occasionally few mm wide mud lamina occurs.	Py weak dism. and Py film of ±1mm wide.
	105.80-107.70: mud lamina is included.	
110	110.40-114.50: includes mud lamina of few mm wide.	110.45: Py-rich band, 1cm wide, <30°
		111.40: Py-rich mud layer, 3cm wide, parallel to lamina.
		114.00-122.00: Py dism. very weak or none, Py film absent.
120		122.00-137.00: very weak Py dism. and Py film.
		125.55: Py-rich layer, 8cm wide, parallel to lamina <30°
		128.40-128.80: Py-rich mud layer, 40cm wide.
130		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: very weak Py dism. and rare occurrences of Py film less than 1 mm wide.
		149.00-154.80: Py dism. and film absent.
150		

Depth (m)	D.L. (m)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
114.00 114.10	0.10	0.2	4.6	0.04	<0.01	0.01
125.55 125.65	0.10	0.2	1.8	0.05	<0.01	0.02
128.50 128.80	0.30	<0.1	2.2	0.06	<0.01	0.01

Hole No. MJSI-7 (From 150.00 m to 200.00 m)

Depth (m)	Chart	Lithology and Alteration	Mineralization	Depth (m)	D.L. (m)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
150		gray sandstone, mud lamina of few mm wide rarely 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.							
			157.45: Py rich lamina 5 × 3mm, <20°							
			158.00-184.60: Py weak dism. and Py film, rarely Py rich mud lamina occur.							
160			159.90: Py rich band in mud layer, 5cm 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: silicified.	174.40-175.00: Py film of few mm wide abundant.							
			178.95: Py film, 3mm wide, <85°							
180			181.15: Py-rich vein, 5mm wide, <60°							
		181.00-184.60: mud lamina increases.								
184.60		dark gray mudstone with sand lamina, mud 70 % and sand 30 %, thickness of sand layer varies from 10cm to few mm.	184.60-195.40: Py weak dism. and Py film.							
			189.45: Py-Qz vein, 5mm wide, <80°							
190										
		boundary <10° , sub-parallel to lamina.	195.40-198.30: Py dism.							
195.40		diorite porphyry, gray, phenocryst Pl (±5mm)> Ho (±1mm)	196.60: Py- rich vein, 5mm wide, <70°	195.85 196.70	0.85	0.2	0.4	0.02	<0.01	0.01
		195.40-198.30: slightly chloritized.								
200										

Hole No. MJSI-7 (From 200.00 m to 250.00 m)

Depth (m)	Chart	Lithology and Alteration	Mineralization
200		gray diorite porphyry 200.85-201.15: slightly chloritized.	198.30-272.80: very weak 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.
		208.40-208.80: slightly silicified.	208.40-208.80: weak Py>Po dism.
210		211.70: chloritized band, 3cm wide, <30°	
		214.75-214.95: slightly chloritized.	214.75-214.95: Po>Py weak dism.
		216.00-217.20: slightly chloritized and silicified.	216.00-217.20: Po with rare Cp dism., Py veinlet of ±5mm wide at 216.65 and 217.70.
		218.95-219.10: slightly chloritized and silicified.	218.95-219.10: Py dism. and film.
220			
		225.10-226.25: silicified.	225.10-226.25: Po (Cp) dism. and Py film.
			228.85: Qz vein with Py, (Sp), 2cm wide.
230			
240			
		248.55: chloritized and silicified 20cm wide.	248.55: Py Po (Cp) dism. and patches of ±1cm across.
		249.40 249.50: chloritized.	249.40-249.50: Py, Po dism.
250			

Depth (m)	D.L. (m)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
208.35 208.80	0.45	<0.1	0.3	0.02	<0.01	<0.01
216.40 216.90	0.50	0.2	0.2	0.03	<0.01	<0.01
225.55 226.20	0.65	<0.1	<0.1	0.02	<0.01	<0.01
228.90 229.10	0.20	0.3	27.5	0.02	0.03	0.06
248.55 248.80	0.25	<0.1	<0.1	<0.01	<0.01	<0.01

Hole No. MJSI-7 (From 250.00 m to 300.00 m)

Depth (m)	Lithology and Alteration	Mineralization	Depth (m)	D.L. (m)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
250	gray diorite porphyry with phenocryst of Pl > Ho.	weak Po,(Cp), Py dism. rarely chloritized and silicified patch and band with Po occur.							
260	261.80-262.00: chloritized and silicified.	261.80-262.00 : Po, (Cp), Py dism.	261.80 262.00	0.20	<0.1	<0.1	<0.01	<0.01	<0.01
	264.10-264.40: chloritized and silicified.	264.10-264.40: Po, (Cp) dism.	264.10 264.40	0.30	<0.1	<0.1	<0.01	<0.01	<0.01
	267.55-267.95: chloritized and silicified.	267.55-267.95: Po, (Cp), Py dism., Py film.	267.55 268.00	0.45	<0.1	0.4	0.03	<0.01	<0.01
270		271.50: Qz vein with Py, Cp, Sp, 1 cm wide, <80°	271.50	0.25	0.1	15.0	0.27	0.09	0.24
	272.80-288.35: chloritized and silicified.	272.80-288.35: Po, (Cp), Py dism. and Py film of few cm wide.	271.75 273.20						
			274.20	1.00	<0.1	1.1	0.01	<0.01	<0.01
		274.85-275.15: sulfide-rich vein (patch), Py, Ap, Cp.		0.65	0.2	4.6	0.05	0.01	0.09
			274.85 275.15	0.30	3.5	26.5	0.34	0.05	0.02
		276.15-278.15: network of Py, Ap, (Cp) veinlet, 1cm - 1mm wide, Py 2-3%	276.15	1.00	4.3	15.6	0.12	0.04	0.02
	277.85-278.00: fractured zone, dark gray clay.		276.90	0.75	<0.1	2.2	0.07	<0.01	<0.01
			277.10	0.75	0.3	1.6	0.05	<0.01	<0.01
			277.85	0.15	0.7	17.7	0.08	0.06	0.15
			278.00	1.00	<0.1	<0.1	0.02	<0.01	<0.01
			279.00	1.00	<0.1	0.1	0.02	<0.01	<0.01
280			280.00	1.00	<0.1	0.7	0.02	<0.01	<0.01
			281.00	1.00	<0.1	0.2	0.02	<0.01	<0.01
		282.00: vuggy Qz vein with Py, Cp, Ga, 3 cm wide., <80°	282.00	0.55	5.1	71.5	0.12	1.15	0.23
			282.55	0.65	<0.1	0.6	0.02	<0.01	<0.01
			283.20	0.20	0.3	2.9	0.07	<0.01	<0.01
		283.30: vuggy Qz vein with Py. 5 mm wide, <80°	283.40	0.80	<0.1	0.2	0.03	<0.01	<0.01
			284.20	0.90	<0.1	0.9	0.03	<0.01	<0.01
		284.45: Qz-Ca-Py vein, 1 cm wide, <70°	285.10						
			285.90	0.40	<0.1	<0.1	0.02	<0.01	<0.01
		288.35-291.00: weak Po, (Cp), Py dism.	286.30						
	288.35-291.00: relatively fresh diorite porphyry.								
290									
	291.00-295.50: slightly silicified, porphyritic texture is not clear.	291.00-295.50: Weak Po, Py dism.	291.40	0.85	<0.1	0.2	<0.01	<0.01	<0.01
			292.25						
	295.50-302.71: relatively fresh diorite porphyry.	295.50-302.71: weak Po, (Cp), Py dism. and Py film.							
300									

Hole No. MJSI-7 (From 300.00 m to 302.71 m)

Depth (m)	Chart	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	<0.1	0.3	<0.01	<0.01	<0.01
302.71										
310										
320										
330										
340										
350