Chapter 3 DRILLING SURVEY

3-1 Outline of Drilling Survey

3-1-1 Amount of Work

The drilling survey was conducted in the Prambon District and the Seweden District. In the Prambon District, the drilling target is delineated by the geological and geochemical surveys conducted during Phase 2 and earlier part of Phase 3. The targets in the Prambon District are of precious metal vein type and obvious from the surface exposures. Four holes totaling 1,003.80m in length were drilled against the two separate mineralized zones. Therefore, no geophysical survey was conducted in the district. On the other hand, IP and electric resistivity measurement was carried out in the Seweden District. As a result of the survey, two high chargeability zones are inferred at depth at around the center of three measurement lines. The surface mineral showings above the high chargeability zones are not clear, but geochemical anomalous zones occur along the creeks near the ridges. Consequently, one hole of scout drilling of 400.50 m in length was conducted to reveal the nature of high chargeability zones. The location, drill directions and lengths of drill holes are listed on Table 4-1. The locations of the holes are shown on the Fig.4-1.

Table 4-1 Summary of Collar Location, Direction and Length of Drill Holes

District	Hole Number	UTM Coordinates		Elevation (m)	Direction (degree)	Inclination (degree)	Length (m)
Prambon	MJIE-P1	574596E	9121127N	636	70	-60	250.00
	MJIE-P2	574929E	9120250N	639	70	-60	253.80
	MJIE-P3	574771E	9119924N	632	250	-60	250.00
	MJIE-P4	574922E	9119514N	603	250	-60	250.00
Seweden	MJIE-S1	626604E	9087450N	238	90	-80	400.50

Geologic logging was conducted on each site at a scale of 1:200. Photographs of all the drill cores were taken. Nearshot photos were taken for parts of significant mineralization presumed. A total of 182 samples were analyzed for the 10 elements; Au, Ag, Cu, Mo, Pb, Zn, S, Hg, and Fe. Twenty-four pieces of thin sections of rock samples and 24 pieces of polished sections of mineralized samples were prepared and observed. A total of 90 samples were analyzed for the X-ray diffractometry. Homogenization temperatures and salinities of fluid inclusions from quartz vein were measured for a total of 14 samples.

3-1-2 Drilling Method

(1) Drilling Method

HW casing shoes were used to drill topsoil parts. Then wireline method was applied to drill the bedrock parts. The rocks were drilled by HQ diamond bits to the first about 100m interval and the NQ diamond bids were used to drill further to the planned depths. HW and NW casing piles were inserted about 10-20 meters and 100 meters, respectively. A polymer liquid was mixed with circulating water to protect the walls of the holes and to cool the bits and to reduce the vibration of rods.

(2) Drilling Machines

Long-year L 38 and L44 were used for drilling MJIE-P1 and MJIE-P2, and MJIE-P3 and MJIE-P4 and MJIE-S1, respectively. The specification of the machines, pumps are shown on Table 4-2. The diamond bits used and other consumables are listed on Tables 4-3 and 4-4, respectively.

(3) Working Formation

Drilling work was conducted at three shifts: eight hours per shirt. The mobilization setting-up of rigs was conducted at one shift. One crew consists of one driller and three assistants. Transportation of equipment, pipes, fuel and oils and core boxes were conducted by about 30 other people. A base camp was set-up in the Campung Jerukgulung within 30 minutes walk to the drilling sites in Prambon District. The base camp of drilling crews in the Seweden District was set-up in the Sumberboto village at 10 minutes drive from the drilling site.

(4) Transportation

Drilling equipment and tools were transported from Bandung to a staging area near the drilling sites of the Prambon District by trucks. The drilling rigs and drilling pumps were moved by using the ropes for hoist of the rigs. Water pumps and other small equipment and pipes and consumables were carried by people. The equipment was transported from a staging place in the Prambon District to the drilling site at Seweden District by trucks . Transportation roads of about 2-meter width were constructed by manpower from the staging place to the drilling sites in the Prambon District. While no substantial road was constructed in the Seweden district as the drilling site in the Seweden was adjacent to the public road.

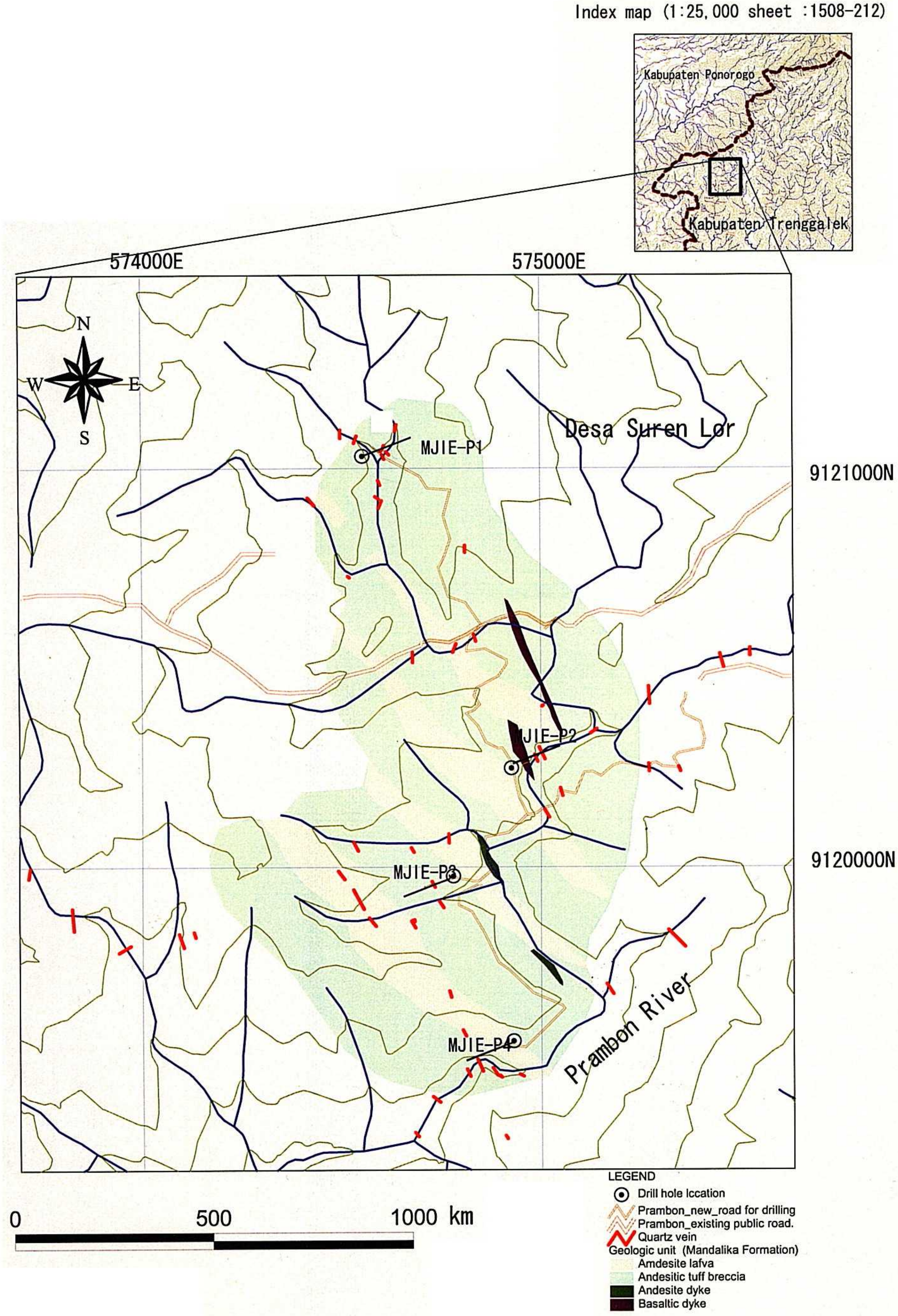


Fig. 4-1 Drill Hole Location Map of Prambon District

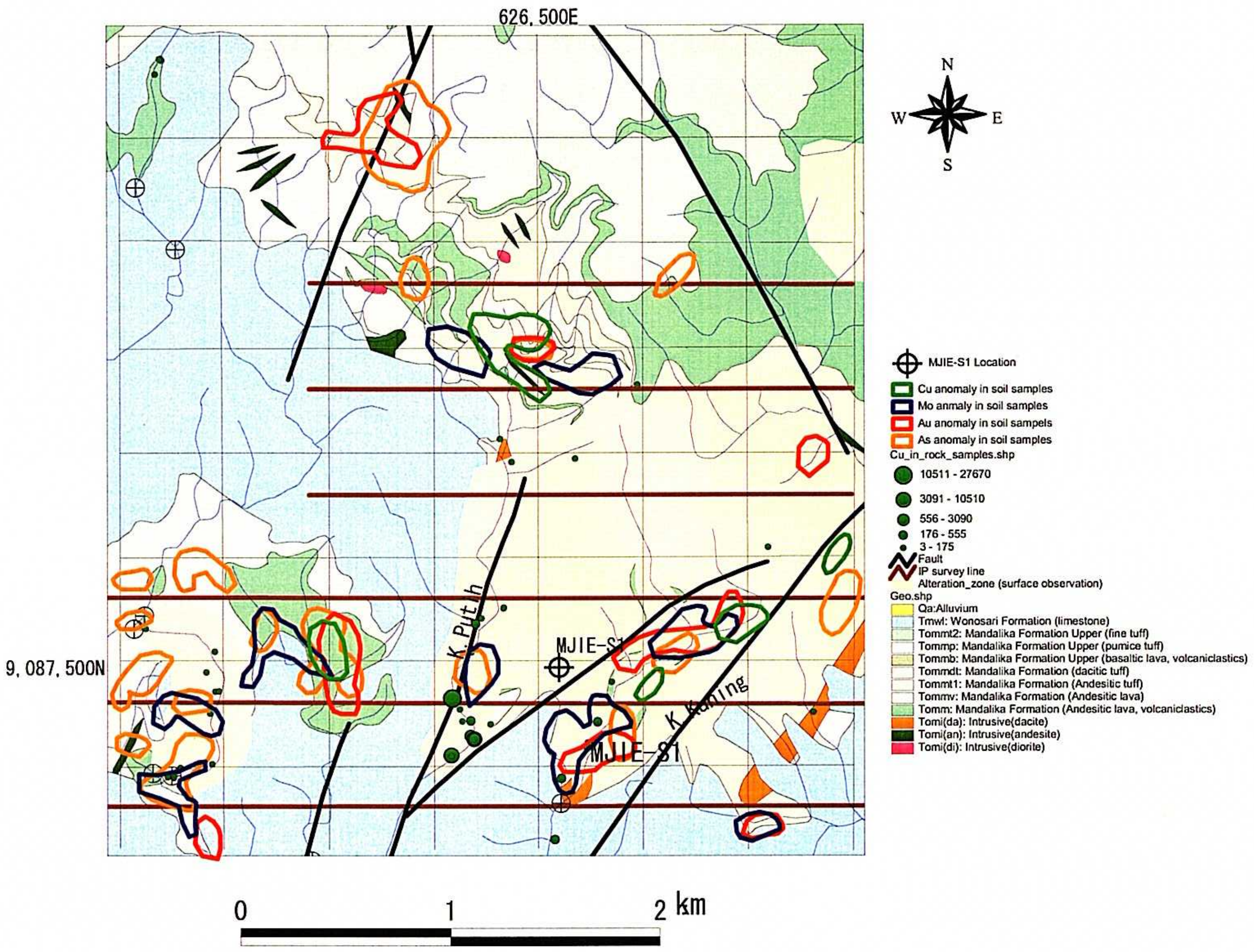


Fig.4-2 Location Map of Drill Hole MJIE-S1 in Seweden District

Table 4-2 Specification of Drilling Equipment (1)

Drilling Machine :Model L-44	1set (Serial No.425-25150)
Capacity	810m(NQ-WL)
Dimensions(L,W,H)	2,400-1,300-1,800mm
Hoisting Capacity	4,500kg
Spindle Speed	Valuable(~1600rpm)
Engine :Model Deutz	F6L/912 (Serial No.5293656)
Drilling Pump :Bean Royal Model 535RQ	1set (Serial No.-)
Pistone Diameter	70mm
Stroke	70mm
Capacity	Dischrge capacity 132 liter/mim.
Dimensione(L,M,H)	1,905-788-940mm
Engine :Model F2L/912(812380574)	11.0kW/3,000rpm
Main Hoist :Type Planetary	1set
Dimensions (Diameter,Length)	330m, 178mm
Maximum Load Capacity	7,511 daN
Wireline Hoist :Model -	1set
Specifications	L-44
Rope Capacity	500m
Motor	Hydraulic motor:max pressure 6,895kP
Hoisting Speed	~100m/min
Water Supply Pump :Model Sanchin SC-45	1set
Pistone Diameter	33.5mm
Stroke	28mm
Capacity	37 liter/min (discharge)
Weight	28kg (excluding engine)
Engine :YANMAR Model -	7.5Hp
Drilling Tools	
Drilling Rods	HQ-WL 3.0m-70 pcs
	NQ-WL 3.0m-165pcs
Casing Pioes	HW CP 3.0m-10pcs
	NW CP 3.0m-70pcs
Core Tubes	HQ-WL 3.0m-2 pcs
	NQ-WL 3.0m-2 pcs

Table 4-2 Specification of Drilling Equipment (2)

Drilling Machine :Model L-38	1set
Capacity	575m(NQ-Wireline)
Dimensions(L,W,H)	2,150-1,170-2,200mm
Weight	2,200kg
Hoisting Capacity	20,000kg
Spindle Speed	100,190,320,530 rpm
Engine :ModelF3L912	380 ps/1,800 rpm
Drilling Pump :Model FMC W1122BCD	1set (Serial No.A24539)
Pistone Diameter	70mm
Stroke	70mm
Capacity	Dischrge capacity 132 liter/mim.
Dimensione(L,M,H)	1,905-788-940mm
Engine :Model F2L/912(812380574)	11.0kW/3,000rpm
Main Hoist :Type Planetary	1set
Dimensions(Diameter,Length)	241mm, 140mm
Drum Capacity	40m (23mm Cable)
Wireline Hoist :Model -	1set
Specifications	L-38
Rope Capacity	1,280m (4.76mm cable)
Motor	Hydraulic motor:max pressure 6,895kP
Hoisting Speed	127m/min
Water Supply Pump :Model Sanchin SC-45	1set
Pistone Diameter	33.5mm
Stroke	28mm
Capacity	37 liter/min (discharge)
Weight	28kg (excluding engine)
Engine :YANMAR Model -	7.5Hp
Drilling Tools	
Drilling Rods	HQ-WL 3.0m-50 pcs
	NQ-WL 3.0m-100pcs
Casing Pioes	HW CP 3.0m-10pcs
	NW CP 3.0m-50pcs
Core Tubes	HQ-WL 3.0m-2 pcs
	NQ-WL 3.0m-2 pcs

Table 4-4 Drilling Meterage of Diamond Bits Used

Item	Size	Bit No.	Drilling Meterage /Each Bit					Total (m)
			MJIE-P1	MJIE-P2	MJIE-P3	MJIE-P4	MJIE-S1	
Bit	HQ	-	3.00	3.20	8.40	0.00	0.00	14.60
		MS-2 3819-4				98.80	111.00	209.80
		3063		24.80				24.80
		U83043G6	102.25	96.70				198.95
		U98692G6			92.60			92.60
		Sub total	105.25	124.70	101.00	98.80	111.00	540.75
	NQ	L4173		3.10	10.55			13.65
		268-202-8	144.75	126.00				270.75
		581909-6			138.45			138.45
		F-9A 221P07				151.20	177.00	328.20
		708510-6					109.65	109.65
		4553539-2					2.85	2.85
		Sub-total	144.75	129.10	149.00	151.20	289.50	863.55
	Total		250.00	253.80	250.00	250.00	400.50	1404.30

Table 4-5 Consumables Used

Expendable Items	Spec.	Unit	Drill Hole No.					Total Amount
			MJIE-P1	MJIE-P2	MJIE-P3	MJIE-P4	MJIE-S1	
Diesel Fuel		l	950	1,675	1,795	1,715	2,710	8,845
Hydraulic Oil		l	40	15	18	45	20	138
Engine Oil		l	26	48	60	16	65	215
Gear Oil		l	11	26	30	16	70	153
Grease		kg	6	7	7	7	17	44
Polymer		l	3	3	3	12	49	70
GS20		l	0	0	0	0	0	0
Lubtub		kg	0	0	0	0	0	0
Solcut		l	0	0	0	0	0	0
Stop Plus		kg	0	0	0	0	0	0
Diamond bit	HQ	pcs	1	2	2	1	1	2
	NQ	pcs	1	2	2	1	3	3
Diamond reamer	HQ	pcs	1	2	1	1	1	2
	NQ	pcs	1	2	2	1	3	3
Metal casing shoe	HQ	pcs	1	1	1	1	1	2
	NQ	pcs	1	1	1	1	1	2
Core barrel assembly	HQ	pcs	1	1	1	1	2	2
	NQ	pcs	1	1	1	1	2	2
Core lifter	HQ	pcs	1	1	1	1	3	7
	NQ	pcs	1	1	1	1	3	7
Inner tube stabilizer	HQ	pcs	1	1	1	1	2	2
	NQ	pcs	1	1	1	1	2	2
Core Box	HQ	pcs	21	26	21	20	23	111
	NQ	pcs	30	27	31	32	52	172

(5) Water

Water for drilling was pumped up from the river nearby.

(6) De-mobilization

The crews for Longyear L38 were demobilized from the Prambon District to Bandung on 11 January, 2004. The crews for Longyear L-44 were demobilized from the Seweden District on 15 February 2004. All the drilled cores were transported from both districts to the core shed of DMRI in Bandung.

3-1-3 Drilling Progress

The drilling progressed as shown on Fig 4-3 through Figs 4-7. The detailed progress and time summary of each drill hole data are shown on Table 4-6 through 4-16.

(1) MJIE-P1

The drilling of the hole MJIE-P1 started on December 23 and finished January 4, 2004. The drilling from the surface to 3.0 m used HW casing and a metal shoe. Wireline drilling method was adopted from 3.0 m to 105.25 m with HQ size diamond bid and from 105.25 m to the end of hole: 250 m by NQ size diamond. HW and NW casing pipes were inserted to 3.0 m and 105.25 m, respectively. Polymer was used during NQ size drilling. The average drilling rate was 8.6 m/shift. The core recovery in a total was 96.9%.

(2) MJIE-P2

The drilling of the hole MJIE-P2 started on December 1 and finished December 17. The drilling from the surface to 3.20 m used HW casing and a metal shoe. Wireline drilling method was adopted from 3.2 m to 124.70 m with HQ size diamond bid and from 124.70 m to the end of hole: 253.80 m by NQ size diamond. HW and NW casing pipes were inserted to 3.2 m and 124.7 m, respectively. Polymer was used during NQ size drilling. The average drilling rate was 5.1 m/shift. The core recovery in a total was 96.9%.

(3) MJIE-P3

The drilling of the hole MJIE-P3 started on December 3 and finished December 19. The drilling from the surface to 8.4 m used HW casing and a metal shoe. Wireline drilling method was adopted from 8.4 m to 101.00 m with HQ size diamond bid and from 101.00 m to the end of hole: 250.00 m by NQ size diamond. HW and NW casing pipes were inserted to 8.4 m and 101.0 m, respectively. Polymer was used during NQ size drilling. The average drilling rate was 5.2 m/shift. The core recovery as a whole was 99.4%.

(4) MJIE-P4

The drilling of the hole MJIE-P4 started on December 24 and finished January 4, 2004. The drilling from the surface to 4.0 m used HW casing and a metal shoe. Wireline drilling method was adopted from 4.0 m to 98.80 m with HQ size diamond bid and from 98.80 m to the end of hole: 250.0 m by NQ size diamond. HW and NW casing pipes were inserted to 23.5 m and 98.8 m, respectively. Polymer was used during NQ size drilling. The average drilling rate was 7.2 m/shift. The core recovery in a total was 96.1%.

(5) MJIE-S1

The drilling of the hole MJIE-S1 started on January 16 and finished February 6. The drilling from the surface to 4. 0 m used HW casing and a metal shoe. Wireline drilling method was adopted from 4.0 m to 198. 0 m with HQ size diamond bid and from 198.00 m to the end of hole: 400.00 m by NQ size diamond. HW and NW casing pipes were inserted to 17.9 m and 198.0 m, respectively. Polymer was used drilling at the deeper than 17.90 m depth. The average drilling rate was 9.0 m/shift. The core recovery in a total was 95.0%.

Table 4-6 Working Time Analysis of the Drilling Operation

Hole no.	Drilling bit size	Drilling length (m)	Core length (m)	Shift	Man working			Working Time					
				Drilling (shift)	Total (shift)	Engineer (man)	Worker (man)	Drilling (h)	Other work (h)	Recovering (h)	Establishment (h)	Dismantlement (h)	Total (h)
MJIE-P1	HQ	105.25	97.50	13	14	16	54						
	NQ	144.75	145.25	14	15	15	45						
	Total	250.00	242.75	27	29	31	99	181	20	24	39	48	312
MJIE-P2	HQ	124.70	117.65	24	26	26	78						
	NQ	129.10	128.35	21	24	24	72						
	Total	253.80	246.00	45	50	50	150	256	139	0	21	24	440
MJIE-P3	HQ	101.00	100.30	24	26	26	78						
	NQ	149.00	148.30	21	24	24	72						
	Total	250.00	248.60	45	50	50	150	277	83	24	24	8	416
MJIE-P4	HQ	98.80	88.95	16	17	17	51						
	NQ	151.20	151.20	16	18	18	54						
	Total	250.00	240.15	32	35	35	105						
Sub-total		1003.80	977.50	149	164	166	504	714	242	48	84	80	1168
MJIE-S1	HQ	111.00	103.85	27	34	40	133						
	NQ	289.50	282.45	33	48	53	198						
	Total	400.50	386.30	60	82	93	331	319	146	137	37	16	655
Grand total		1404.30	1363.80	209	246	259	835						

Table 4-7 Summary of Drilling Operation of MJIE-P1

MJIE-P1	Survey Period				Total Man-day	
Operation	Period	Day	Work Day	Off Day	Engineer	Worker
Transportation/Preparation	Dec.19-Dec.22.2003	4	4	0	12	148
Drilling	Dec.23, 2003-Jan.4, 2004	13	13	0	31	119
Dismantling	Jan.5, 2004	1	1	0	3	39
Total		18	18	0	46	306

Drilling Length	(m)		(m)
Length Planned	250.00	Overburden	7.80
Increase/Decrease in Length	0.50	Core Length	242.75
Length Drilled	250.50	Core Recovery	96.9

Working Hours	(h)	(%)	(%)
Drilling	181	80.4%	58.0%
Other Work	20	8.9%	6.4%
Recovering	24	10.7%	7.7%
Subtotal	225	100.0%	72.1%
Preparation	39		12.5%
Dismantling	24		7.7%
Transportation	24		7.7%
Grand Total	312		100.0%

Casing Pipe Inserted			
Size	Length(m)	INserted Length/Drilling Length(%)	Recovery(%)
HW	3	1.2	100
NW	105.25	42.0	100

Core Recovery of Each 100m Hole		
Depth of Hole(m)	Core Recovery (%)	Cumulative Core Recovery (%)
0.00 to 100.00	92.3	92.3
100.00 to 200.00	100.0	96.2
200.00 to 250.00	100.0	96.9

Efficiency of Drilling			
Total Length/Drilling Period	m	day	m/day
	250.00	14	19.3
Total length/Total Drilling Shifts	m	shift	m/shift
	250.00	29	8.6

Drilling Length/Each Diameter(m)		
Bit Size	Drilling Length(m)	Core Length(m)
HQ	105.25	97.50
NQ	144.75	144.75

Table 4-8 Summary of Drilling Operation of MJIE-P2

MJIE-P2	Survey Period				Total Man-day	
Operation	Period	Day	Wark Day	Off Day	Engineer	Worker
Transportation/Preparation	Nov.14-Nov.30,2003	16	9	7		
Drilling	Dec.1-Dec.17,2003	17	17	0	50	150
Dismantling	Dec.17,2003					
Total		23	26	7		

Drilling Length	(m)		(m)
Length Planned	250.00	Overburden	3.90
Increase/Decrease in Length	3.80	Core Length	246.00
Length Drilled	253.80	Core Recovery	96.90

Working Hours	(h)	(%)	(%)
Drilling	261.67	64.73	63.63
Other Work	78.25	19.36	19.03
Recovering	64.33	15.91	15.64
Subtotal	404.25	100.00	98.30
Preparation	4.50		1.09
Dismantlement	2.50		0.61
Transportation			
Grand Total	411.25		100.00

Casing Pipe Inserted			
Size	Length(m)	INserted Length/Drilling Length(%)	Recovery(%)
HW	18.00	7.1	100
NW	124.00	48.9	100

Core Recovery of Each 100m Hole		
Depth of Hole(m)	Core Recovery (%)	Cumulative Core Recovery (%)
0.00 to 100.00	93.0	93.0
100.00 to 200.00	99.2	96.1
200.00 to 253.80	100.0	96.9

Efficiency of Drilling			
Total Length/Drilling Period	m	day	m/day
	253.80	17	14.9
Total length/Total Drilling Shifts	m	shift	m/shift
	253.80	50	5.1

Drilling Length/Each Diameter(m)		
Bit Size	Drilling Length(m)	Core Length(m)
HQ	124.70	117.60
NQ	129.10	128.35

Table 4-9 Summary of Drilling Operation of MJIE-P3

MJIE-P3	Survey Period				Total Man-day	
Operation	Period	Day	Work Day	Off Day	Engineer	Worker
Transportation/Preparation	Nov.14-Dec.2,2003	19	13	6	39	
Drilling	Dec.3-Dec.19,2003	17	17	0	50	150
Dismantling	Dec.19,2003		1	0	3	9
Total		36	21	6	50	150

Drilling Length	(m)		(m)
Length Planned	250.00	Overburden	4.70
Increase/Decrease in Length	0	Core Length	248.60
Length Drilled	250.00	Core Recovery	99.4

Working Hours	(h)	(%)	(%)
Drilling	271.75	71.37	69.55
Other Work	67.5	17.73	17.27
Recovering	41.5	10.90	10.62
Subtotal	380.75	100.00	97.44
Preparation	6.5		1.66
Dismantling	3.5		0.90
Transportation			
Grand Total	390.75		100.00

Casing Pipe Inserted			
Size	Length(m)	INserted Length/Drilling Length(%)	Recovery(%)
HW	8.40	3.4	100
NW	101.00	40.4	100

Core Recovery of Each 100m Hole		
Depth of Hole(m)	Core Recovery (%)	Cumulative Core Recovery (%)
0.00 to 100.00	99.3	99.3
100.00 to 200.00	99.7	99.5
200.00 to 250.00	99.2	99.4

Efficiency of Drilling			
Total Length/Drilling Period	m	day	m/day
	250.00	17	14.71
Total length/Total Drilling Shifts	m	shift	m/shift
	250.000	48	5.21

Drilling Length/Each Diameter(m)		
Bit Size	Drilling Length(m)	Core Length(m)
HQ	101.00	100.30
NQ	149.00	148.3

Table 4-10 Summary of Drilling Operation of MJIE-P4

MJIE-P4	Survey Period				Total Man-day	
Operation	Period	Day	Work Day	Off Day	Engineer	Worker
Transportation/Preparation	Dec.20-Dec.23,2003	4	4	0	12	151
Drilling	Dec.24,2003-Jan.4, 2004	12	12	0	35	105
Dismantling	Jan.5, 2004	1	1	0	3	30
Total	Dec.20,2003-Jan.5, 2004	17	17	0	50	286

Drilling Length	(m)		(m)
Length Planned	250.00	Overburden	
Increase/Decrease in Length	0.00	Core Length	240.15
Length Drilled	250.00	Core Recovery	96.06

Working Hours	(h)	(%)	(%)
Drilling	192	69.82	56.80
Other Work	39	14.18	11.54
Recovering	44	16.00	13.02
Subtotal	275	100.00	81.36
Preparation	31		9.17
Dismantling	16		4.73
Transportation	16		4.73
Grand Total	338		100.00

Casing Pipe Inserted			
Size	Length(m)	INserted Length/Drilling Length(%)	Recovery(%)
HW	23.5	9.4	100
NW	98.8	39.4	100

Core Recovery of Each 100m Hole		
Depth of Hole(m)	Core Recovery (%)	Cumulative Core Recovery (%)
0.00 to 100.00	90.15	90.20
100.00 to 200.00	100.00	95.10
200.00 to 250.00	100.00	96.07

Efficiency of Drilling			
Total Length/Drilling Period	m	day	m/day
	250.00	12	20.8
Total length/Total Drilling Shifts	m	shift	m/shift
	250.00	35	7.1

Drilling Length/Each Diameter(m)		
Bit Size	Drilling Length(m)	Core Length(m)
HQ	98.80	88.95
NQ	151.20	151.20

Table 4-11 Summary of Drilling Operation of MJIE-S1

MJIE-S1	Survey Period				Total Man-day	
Operation	Period	Day	Work Day	Off Day	Engineer	Worker
Transportation/Preparation	Jan.13-Jan.15,2004	3	3	0	9	42
Drilling	Jan.16-Feb.11,2004	27	26	1	35	105
Dismantling	Feb.11-Feb.14,2004	3	3	0	9	42
Total	Jan.13-Feb.14,2004	33	32	1	99	314

Drilling Length	(m)		(m)
Length Planned	400.00	Overburden	3.80
Increase/Decrease in Length	0.50	Core Length	386.30
Length Drilled	400.50	Core Recovery	96.45

Working Hours	(h)	(%)	(%)
Drilling	319	52.99	49.00
Other Work	146	24.25	22.43
Recovering	137	22.76	21.04
Subtotal	602	100.00	92.47
Preparation	25		3.84
Dismantling	16		2.46
Transportation	8		
Grand Total	651		98.77

Casing Pipe Inserted			
Size	Length(m)	INserted Length/Drilling Length(%)	Recovery(%)
HW	17.9	4.5%	100
NW	171.0	42.7%	100

Core Recovery of Each 100m Hole		
Depth of Hole(m)	Core Recovery (%)	Cumulative Core Recovery (%)
0.00 to 100.00	96.85	96.85
100.00 to 200.00	94.95	95.90
200.00 to 300.00	98.05	96.63
300.00 to 400.50	95.97	96.45

Efficiency of Drilling			
Total Length/Drilling Period	m	day	m/day
	400.50	27	14.8
Total length/Total Drilling Shifts	m	shift	m/shift
	400.50	76	5.3

Drilling Length/Each Diameter(m)		
Bit Size	Drilling Length(m)	Core Length(m)
HQ	111.00	103.85
NQ	289.5	282.45

Table 4-12 Record of Drilling Operation of MJIE-P1

Date	Drilling Length			Daily Tortal				shift		Man Warking	
	Shift 1 (m)	Shift 2 (m)	Shift 3 (m)	Drilling (m)	Drilling (Cum.m)	Core Length (m)	Core Length (Cum.m)	Drilling (Shift)	Total (Shift)	Engineer (man)	Warker (man)
Dec. 19	Transportation									3	34
Dec. 20	Transportation									3	34
Dec. 21	Transportation									3	39
Dec. 22	Set up									3	39
Dec. 23		3.00		3.00	3.00			1	1	3	12
Dec. 24		8.80	7.60	16.40	19.40	12.80	12.80	2	2	2	12
Dec. 25	6.75	5.70	8.90	21.35	40.75	20.20	33.00	3	3	3	12
Dec. 26		9.55	10.10	19.65	60.40	19.65	52.65	2	2	2	12
Dec. 27		10.45	11.00	21.45	81.85	21.45	74.10	2	2	2	12
Dec. 28		7.65	8.15	15.80	97.65	15.80	89.90	2	2	2	12
Dec. 29		7.60		7.60	105.25	7.60	97.50	1	2	2	12
Dec. 30		4.45	9.00	13.45	118.70	13.45	110.95	2	2	2	12
Dec. 31		11.65	11.80	23.45	142.15	23.45	134.40	2	2	2	12
Jan. 1	12.00	7.85	10.70	30.55	172.70	30.55	164.95	3	3	3	13
Jan. 2	12.00	12.00	6.00	30.00	202.70	30.00	194.95	3	3	3	13
Jan. 3	9.00	9.00	18.00	36.00	238.70	36.00	230.95	3	3	3	13
Jan. 4	11.80			11.80	250.50	11.80	242.75	1	2	2	13
Jan. 5										3	39
Jan. 6											

Table 4-13 Record of Drilling Operation of MJIE-P2

Date	Drilling Length			Daily Tortal				shift		Man Warking	
	Shift 1	Shift 2	Shift 3	Drilling		Core Length		Drilling	Total	Engineer	Warker
	(m)	(m)	(m)	(m)	(Cum.m)	(m)	(Cum.m)	(Shift)	(Shift)	(man)	(man)
Dec. 1		3.20	3.35	6.55	6.55	3.85	3.85	2	2	2	6
Dec. 2	2.25	1.20	8.50	11.95	18.50	7.95	11.80	3	3	3	9
Dec. 3	4.95	3.40	2.40	10.75	29.25	10.50	22.30	3	3	3	9
Dec. 4	4.35	4.80	4.80	13.95	43.20	13.95	36.25	3	3	3	9
Dec. 5	7.20	6.10	2.80	16.10	59.30	16.10	52.35	3	3	3	9
Dec. 6		5.05	7.20	12.25	71.55	12.25	64.60	3	3	3	9
Dec. 7	6.10	9.85	8.00	23.95	95.50	23.95	88.55	3	3	3	9
Dec. 8	6.50	7.15	7.80	21.45	116.95	21.35	109.90	3	3	3	9
Dec. 9	1.10	6.65		7.75	124.70	7.75	117.65	3	3	3	9
Dec. 10			1.50	1.50	126.20	1.50	119.15	3	3	3	9
Dec. 11	1.60	2.90	7.55	12.05	138.25	11.30	130.45	3	3	3	9
Dec. 12	9.05	3.50	9.00	21.55	159.80	21.55	152.00	3	3	3	9
Dec. 13	7.00	9.00	6.80	22.80	182.60	22.80	174.80	3	3	3	9
Dec. 14	5.45	8.75	8.40	22.60	205.20	22.60	197.40	3	3	3	9
Dec. 15	9.25	6.05	6.30	21.60	226.80	21.60	219.00	3	3	3	9
Dec. 16	8.35	6.05	6.00	20.40	247.20	20.40	239.40	3	3	3	9
Dec. 17	3.00	3.60		6.60	253.80	6.60	246.00	3	3	3	9
Dec. 18								0	1	3	9

Table 4-14 Record of Drilling Operation of MJIE-P3

Date	Drilling Length			Daily Tortal				shift		Man Warking	
	Shift 1	Shift 2	Shift 3	Drilling		Core Length		Drilling	Total	Engineer	Warker
	(m)	(m)	(m)	(m)	(Cum.m)	(m)	(Cum.m)	(Shift)	(Shift)	(man)	(man)
Dec.3		4.00	2.00	6.00	6.00	5.40	5.40	2	2	2	6
Dec.4	2.40	1.60	5.00	9.00	15.00	8.90	14.30	3	3	3	9
Dec.5	2.05	6.95	4.60	13.60	28.60	13.60	27.90	3	3	3	9
Dec.6	5.05	4.15	5.30	14.50	43.10	14.50	42.40	3	3	3	9
Dec.7	1.70	2.60	1.80	6.10	49.20	4.30	46.70	3	3	3	9
Dec.8	3.50	7.95	6.15	17.60	66.80	19.40	66.10	3	3	3	9
Dec.9	1.50	5.50	7.70	14.70	80.60	13.80	79.90	3	3	3	9
Dec.10	5.20	6.10	6.45	17.75	98.35	17.75	97.65	3	3	3	9
Dec.11	2.65			2.65	101.00	2.65	100.30	3	3	3	9
Dec.12	2.65		4.35	7.00	108.00	6.90	107.20	3	3	3	9
Dec.13	2.55	2.80	7.10	12.45	120.45	12.45	119.65	3	3	3	9
Dec.14	10.35	14.40	6.30	31.05	151.50	30.85	150.50	3	3	3	9
Dec.15	10.10	11.65	9.80	31.55	183.05	31.55	182.05	3	3	3	9
Dec.16	8.50	6.40	7.95	22.85	205.90	22.85	204.90	3	3	3	9
Dec.17	5.10	9.05	3.60	17.75	223.65	17.75	222.65	3	3	3	9
Dec.18	11.60	9.40	3.00	24.00	247.65	23.60	246.25	3	3	3	9
Dec.19	2.35			2.35	250.00	2.35	248.60	3	3	3	9
Dec.20											

Table 4-15 Record of Drilling Operation of MJIE-P4

Date	Drilling Length			Daily Tortal				shift		Man Warking	
	Shift 1	Shift 2	Shift 3	Drilling		Core Length		Drilling	Total	Engineer	Warker
	(m)	(m)	(m)	(m)	(Cum.m)	(m)	(Cum.m)	(Shift)	(Shift)	(man)	(man)
Dec. 20	Trabsportation									3	16
Dec. 21	Trabsportation									3	16
Dec. 22	Trabsportation									3	16
Dec. 23	Set up									3	16
Dec. 24		9.00	7.80	16.80	16.80	7.45	7.45	2	2	2	8
Dec. 25	5.30	2.55		7.85	24.65	7.85	15.30	2	3	3	11
Dec. 26	1.95	5.30	4.80	12.05	36.70	12.05	27.35	3	3	3	11
Dec. 27	3.70	1.65	5.95	11.30	48.00	11.30	38.65	3	3	3	11
Dec. 28	10.70	12.10	5.00	27.80	72.80	27.80	66.45	3	3	3	11
Dec. 29	6.00	11.30	5.70	23.00	98.80	23.00	88.95	3	3	3	11
Dec. 30		1.85	0.80	2.65	101.45	2.65	91.60	2	3	3	11
Dec. 31	8.20	11.10	6.90	26.20	127.65	26.20	117.80	3	3	3	11
Jan. 1	15.00	12.00	16.20	43.20	170.85	43.20	161.00	3	3	3	11
Jan. 2	2.75		8.05	10.80	181.65	10.80	171.80	2	3	3	11

Table 4-16 Record of Drilling Operation of MJIE-S1

Date	Drilling Length			Daily Tortal				shift		Man Warking	
	Shift 1 (m)	Shift 2 (m)	Shift 3 (m)	Drilling (m)	(Cum.m)	Core Length (m)	(Cum.m)	Drilling (Shift)	Total (Shift)	Engineer (man)	Warker (man)
Jan. 13	Trabsportation									3	8
Jan. 14	Set up									3	9
Jan. 15	Set up									3	9
Jan. 16		8.00	9.90	17.90	17.90	13.90	13.90	2	2	3	9
Jan. 17	0.00	0.00	0.00	0.00	17.90	0.00	13.90	3	3	2	9
Jan. 18	0.00	0.00	0.00	0.00	17.90	0.00	13.90	3	3	3	9
Jan. 19	2.70	9.50	13.90	26.10	44.00	24.45	38.35	3	3	3	9
Jan. 20	12.00	15.00	6.00	33.00	77.00	32.50	70.85	3	3	3	9
Jan. 21	3.00	19.00	4.60	26.60	103.60	26.00	96.85	3	3	3	11
Jan. 22	1.10	1.10	0.00	2.20	105.80	2.00	98.85	3	3	3	11
Jan. 23	5.20	0.00	0.00	5.20	111.00	5.00	103.85	3	3	3	11
Jan. 24	4.25	7.70	7.90	19.85	130.85	18.80	122.65	3	3	3	11
Jan. 25	8.50	9.20	7.00	24.70	155.55	24.70	147.35	3	3	3	11
Jan. 26	11.05	18.25	10.50	39.80	195.35	39.80	187.15	3	3	3	11
Jan. 27	12.20	6.50	11.95	30.65	226.00	30.65	217.80	3	3	3	11
Jan. 28	10.90	7.95	12.00	30.85	256.85	30.35	248.15	3	3	3	11
Jan. 29	13.25	4.75	8.50	26.50	283.35	25.45	273.60	3	3	3	11
Jan. 30	4.65	0.00	0.00	4.65	288.00	4.25	277.85	3	3	3	11
Jan. 31	0.00	2.85		2.85	290.85	2.85	280.70	2	2	2	8
Feb. 1				0.00	290.85	0.00	280.70	0	0	0	0
Feb. 2		1.00	1.90	2.90	293.75	2.90	283.60	2	2	2	8
Feb. 3	0.00	0.00	0.00	0.00	293.75	0.00	283.60	3	3	3	11
Feb. 4	0.00	0.00	0.00	0.00	293.75	0.00	283.60	3	3	3	11
Feb. 5	1.00	6.50	6.60	14.10	307.85	14.10	297.70	3	3	3	11
Feb. 6	9.50	6.90	5.80	22.20	330.05	22.20	319.90	3	3	3	11
Feb. 7	3.65	5.50	4.35	13.50	343.55	13.50	333.40	3	3	3	11
Feb. 8	7.45	7.85	3.20	18.50	362.05	18.50	351.90	3	3	3	11
Feb. 9	8.35	10.10	5.35	23.80	385.85	23.80	375.70	3	3	3	11
Feb. 10	6.95	5.20	0.00	12.15	398.00	8.90	384.60	3	3	3	11
Feb. 11	0.00	0.00	2.50	2.50	400.50	1.70	386.30	3	3	3	11
Feb. 12	Dismantling							0	1	3	8
Feb. 13	Dismantling Reclamation							0	1	3	8
Feb. 14	Reclamation							0	1	3	8

3-2 Drilling Survey in the Prambon District

3-2-1 MJIE-P1

(1) Geology

- 0-7.85 m: Top soil.
- 7.85-17.55 m: Porphyritic andesite. Dark greenish-gray, compact massive. Maximum size of pyroxene phenocryst is 10 mm in diameter. Vugs filled with silica material are abundant.
- 17.55- 22.00 m: Andesitic tuff breccia-lapilli tuff. Greenish-gray, lithic, massive, rather soft.
- 22.00-25.57 m: Porphyritic andesite. Plagioclase phenocryst is as large as 5 mm in size.
- 22.57-55.50 m: Tuff breccia. Grayish green, partly whitish caused by alteration. Maximum size of fragments is about 5 cm.
- 55.50-82.70 m: Fine grained andesite. Grayish green, partly weakly silicified and brecciated.
- 82.70-89.30 m: Mineralized zone.
- 89.30-138.80 m: Andesitic tuff breccia, partly lapilli tuff size . Grayish green-pale green, massive, rather compacted.
- 138.80-150.20 m: Dark green andesite. Massive, compact lava?
- 150.20-159.25 m: Lapilli tuff. Pale green, compact and massive.
- 159.20-164.50 m: Fine grained andesite. Pale green, compact, partly brecciated.
- 164.50-209.90 m: Tuff breccia-lapilli tuff. Green colored adesitic fragments are dominant, sporadic reddish or dark green-black colored fragments.
- 209.90-210.25 m: Fine tuff. (Or an intercalation in tuff breccia.)
- 210.25-211.50: Fine-grained andesite. Grayish (due to silicification), compact. inferred to be intrusive rock.
- 211.50-250.00 m: Andesitic tuff breccia, partly lapilli tuff size. Grayish-pale green colored, maximum sizes of fragments are more than 5 cm.. Massive andesite at intervals of 222.50-223.00 m and 237.00-27.40 m inferred to be essential blocks in the tuff breccia.

(2) Alteration

- 7.85-17.50 m: unaltered- very weakly altered (green colored).
- 17.50-21.80 m: Green colored alteration.
- 21.80-22.45 m: Very weak silicification.
- 25.55-27.05 m: Gray -whitish clay.
- 27.05-29.55 m: Weakly bleached (weak argillic alteration).
- 27.05-39.75 m: Green colored alteration (propylitic?)

- 39.75-41.75 m: Argillic alteration. Moderately altered.
- 41.75-47.40 m: Strongly argillic altered and silicified zone. Within the zone, an interval of 41.75-44.00 m is most strongly silicified.
- 47.40-55.50 m: Moderately-weakly argillic altered.
- 55.50-61.60 m: Propylitic (green colored) alteration-very weak silicification.
- 61.60-66.20 m: Moderate-strong silicification. An interval of 66.85-66.05 m is most strongly altered.
- 66.20-82.70 m: Weakly-moderately silicified zone. Within the interval, 70.95-71.15 m and 73.75-74.45 m are strongly silicified and pyrite disseminated. Intrusive andesite at 78.35-79.25 m is not altered.
- 82.70-89.40 m: Moderately-weakly silicified and strongly argillic zone. Within the interval, 87.90- 89.40 m is most strongly silicified and pyrite disseminated ore.
- 89.40-98.15 m: Weak-very weakly argillic alteration.
- 98.15-104.75 m: Weakly silicified and weakly argillic altered. Within the interval, 102.95-103.85 m: is strongly pyrite disseminated.
- 104.75-116.70 m: Propylitic altered-unaltered.
- 116.70-118.60 m: Argillic altered and weakly silicified.
- 118.60-138.80 m: Green color altered (propylitic?)
- 138.80-151.10 m: Unaltered-very weakly propylitic altered.
- 151.10-164.50 m: Green colored altered (propylitic?)
- 164.50-166.20 m: Moderately-weakly silicified. Pyrite is strongly disseminated.
- 166.20-250.00 m: Weakly altered. Dark green-green (propylitic?)-partly contains unaltered black andesitic fragments.

(3) Mineralization

MJIE-P1 intercepted several silicified zones with pyrite dissemination. The hole also intercepted narrow quartz veins. Among those, following zones are chemical analyzed.

- 39.75-55.50 m: Strongly, moderately-weakly argillic altered and silicified zone. Within the zone, an interval of 41.65-47.40 m includes most strongly silicified zones, while Pyrite is most strongly at 50.55-53.05 m within the zone.
- 61.50-82.70 m: Weakly-moderately-strongly silicified zone. Interval of 66.85-66.05 m, 70.95-71.15 m and 73.75-74.45 m are strongly silicified and pyrite disseminated.
- 82.70-89.40 m: Moderately-weakly silicified and strongly argillic zone. Within the interval, 87.90- 89.40 m is most strongly silicified and pyrite disseminated ore.

- 164.50-166.20 m: Moderately-weakly silicified. Pyrite is strongly disseminated.

Table 4-17 Major Intercepts of MJIE-P1

No.	Depth (m)	Drilled Length (m)	Mineralization	Au (ppb)	Ag (ppm)
1	41.65-47.40	5.75	Strongly silicified zone (highest: 43.90-44.55m (0.65m) 4,915ppb)	727	3.1
2	50.55-53.05	2.50	Moderately argillic altered zone with pyrite veinlets	186	3.1
3	68.60-68.90	0.30	Quartz-calcite veining in strongly pyrite disseminated part in silicified zone	219	4.0
4	70.85-71.35	0.50	Strongly-moderately silicified zone	156	3.3
5	73.63-74.82	1.19	Strongly silicified and pyrite disseminated zone	94	3.1
6	82.70-89.40	6.70	Strongly silicified with quartz veining zone (highest: 88.80～89.40m(0.60m) 10,420 ppb)	1,062	39.3
7	165.25-166.25	1.00	Moderately silicified, pyrite strongly disseminated zone	340	1.7

The chemical analysis result of each sample is listed in AppedixTable 4-26.

3-2-2 MJIE-P2

(1) Geology

- 0-3.90 m: Top soil.
- 3.90-18.50 m: Weathered andesite (saprolite)
- 18.50-36.50 m: Andesite

- 36.50-140.00 m: Andesitic tuff breccia. It includes lapilli tuff sized parts boundaries of which are gradual. Green-greenish gray, partly brownish, massive, compact. Dark green compact andesite blocks at 60.55-61.05 m., 119.35-120.15 m, and porphyritic andesite at 123.10-124.10 m.
- 140.00-176.00 m: Andesite (auto brecciated lava). Greenish gray-dark green-black colored, compact, rather hard, massive.
- 176.00-187.60 m: Strongly altered zone (Original rock texture is unclear).
- 187.60-201.35 m: Fine grained Andesite. Dark green-pale green colored, compact. 198.35-201.35 m interval is silicified.
- 201.35–213.80 m: Andesite (auto-brecciated lava). Partly bleached due to alteration and partly greenish.
- 213.80-222.30 m: Andesitic tuff breccia. It includes fine tuff of green and gray color layers.
- 222.30-229.20 m: Andesite. Black or green colored, hard rock. The rock between 222.30-226.00 m is inferred to be intrusive rock.
- 229.20-250.80 m: Andesitic lapilli tuff-tuff breccia. It included auto-brecciated lava like rock at 241.60-243.00 m,
- 250.80-253.00 m: Andesite. Pale green, compact.
- 253.00-253.80 m: Tuff (pale green-grayish, fine-coarse tuff).

(2) Alteration

- 3.90-18.15 m: Weathered.
- 18.15-32.60 m: Weakly argillized and silicified.
- 32.60-93.60 m: Greenish colored alteration (propylitic). Narrow clay zones occur at 55.20-55.26 m and 82.4-82.65 m.
- 93.60-97.80 m: Strongly argillic altered-silicified zone.
- 97.80-162.27 m: Propylitic altered zone. Includes narrow argillic or silicified zones.
- 162.70-188.70 m: Argillized-silicified zone. Pyrite is strongly disseminated.
- 188.70-198.35 m: Propylitic altered zone.
- 198.35-208.43 m: Argillized-silicified zone. Pyrite is disseminated.
- 208.43-244.20 m: Propylitic altered zone.
- 244.20-250.60 m: Argillized-silicified zone. Pyrite is disseminated.
- 250.60-253.80 m: Very-very weakly argillized zone.

(3) Mineralization

MJIE-P2 intercepted argillic-silicified zones with pyrite dissemination. The hole also intercepted narrow quartz veins. Among those, following zones are chemical analyzed.

- 39.75-55.50 m: Strongly, moderately-weakly argillic altered and silicified zone. Within the zone, an interval of 41.65-47.40 m includes most strongly silicified zones, while Pyrite is most strongly at 50.55-53.05 m within the zone.
- 82.65-82.73 m: White quartz vein of 8 cm width.
- 84.50-84.52 m: White quartz veinlet of 2 cm width. Chemical analysis was done for the interval of 84.50-84.65 m (0.20 cm) that includes silicified and pyrite disseminated zone.
- 94.85-97.80 m: Silicified- argillic altered zone. Silicified fragments in which pyrite is strongly disseminated occur in the argillic matrix. Brecciation is inferred to occur after the alteration. A white quartz vein occurs at an interval between 95.26-95.66 cm (0.40 m).
- 130.70-131.45 m: Strongly argillized and silicified zones. Strongly argillized and quartz veining interval between 131.13-131.45 m was chemically analyzed.
- 156.80-168.27 m: White quartz veinlets occur. The widest quartz veinlet at 159.60-159.66 m was analyzed
- 167.90-170.30 m: Strongly silicified and argillized zone with strong pyrite dissemination. Within this interval, the most strongly silicified zone at 168.70-169.55 m was 153 ppbAu, while Argillic zone at 169.55-170.30 m was 14ppb Au.
- 177.00-188.70 m: Strongly silicified -argillized zone with quartz veining. The highest gold value is returned from strongly silicified zone at 185.00-186.00 m. The widest quartz vein is 0.80 m, while the gold value is as low as 28 ppb.
- 198.35-205.25 m: Strongly silicified zone with an argillic altered interval. The highest gold vaule:1,035 ppbAu is returned from dark gray argillic silicified zone at 201.35-202.00 m
- 207.65-208.70 m: Silicified zone with quartz veinlets. The widths of quartz veinlets are 5 cm and 2 cm. The gold assay result is as low as 56 ppb.
- 245.70-250.00 m: Strongly silicified zone with pyrite dissemination and quartz veinlets.
- In addition to above zones, six samples of 10 cm width at the hangings or footwalls of the major mineralized intervals are between 19 and 80 ppb Au.

Table 4-18 Major Intercepts of MJIE-P2

No.	Depth (m)	Drilled Length (m)	Mineralization	Au (ppb)	Ag (ppm)
1	82.45-82.65	0.20	Argllic zone with quartz veining	153	1.7
2	84.50-84.58	0.08	Quartz vein	97	0.8
3	94.85-97.80	2.95	Argillic, quartz	164	16.6
4	131.13-131.45	0.32	Sili,argillic.quartz	181	2.2
5	159.60-159.66	0.06	Quartz veinlet	116	9.8
6	161.45-161.49	0.04	Quartz vein	265	10.8
7	164.87-165.25	0.38	Quartz vein	167	2.3
8	168.70-170.30	1.60	Argillic silicified zone with quartz veining	141	2.7
9	177.00-188.70	11.70	Argillic silicified zone with quartz veining	138	4.7
	including 185.00-187.00 (2.00m) 340ppb				
10	198.35-205.25	6.90	Quartz, silicified zone	233	3.7
	including 201.35-202.00 (0.65m) 1,035ppb				1.7
11	207.65-208.55	0.90	Quartz, silicified zone	56	3.4
12	245.70-250.63	4.93	Quartz, silicified zone	189	

3-2-3 MJIE-P3

(1) Geology

- 0-4.70 m: Top soil.
- 4.70-23.20 m: Andesitic tuff breccia.
- 23.20-26.70 m: Andesite. Flow banded at 26.50-26.70 m.
- 26.70-58.35 m: Andesitic tuff breccia.
- 58.35-59.70 m: Andesite. Grayish green, compact.
- 59.70-71.60 m: Andesitic tuff breccia.
- 71.60-125.00 m: Andesitic auto-brecciated lava.
- 125.00-133.05 m: Andesitic tuff breccia

- 133.05-150.50 m: Andesite lava. Grayish green, fine grained, compact. Abundant amygdales filled with chlorite.
- 150.50-200.65 m: Andesitic tuff breccia. Intercalated three andesite lava(?) layers.
- 200.65-204.75 m: Andesite. Partly brecciated.
- 204.75-206.35 m: Andesitic tuff breccia.
- 206.35-208.60 m Andesite. Dark green, compact and hard. (Lava?)
- 208.60-210.60 m: Fractured Andesite, or andesitic fine tuff.
- 210.60-247.95: Andesite.
- 247.95-250.00: Andesitic tuff breccia.

(2) Alteration

- 4.70-15.00 m: Weathered.
- 15.00-31.30 m: Propylitic (green colored) alteration is dominant. Three narrow zones are weakly argillic altered.
- 31.30 m- 46.00 m: Argillic altered. Whitish clay occurs at 31.30-31.70 m, 33.60-33.61 m, 34.70-34.90 m, 41.40-42.60 m and 43.32-43.55 m depth.
- 46.00-90.60 m: Weak propylitic alteration.
- 90.60-133.50 m: Very weak propylitic alteration.
- 133.50-217.05 m: Unaltered or very weak propylitic alteration, except the weak argillic altered zones at 167.00-167.60 m, , 172.85-173.25 m, 174.03-175.55 and 182.50-182.90 m.
- 217.00-250.00 m: Propylitic alteration: Greenish

(3) Mineralization

The hole intercepted only two weak mineralized zones. The two zones at 31.45-42.60 m (strong argillization at 31.45-31.75 m and 41.40-42.60 m), and 172.85-175.55 m (weak argillization) may correspond to mineralization at the surface. However, no significant mineralization zones were not intercepted.

- 31.30 m- 46.00 m: Argillic alteraterd. Whitish clay occurs at 31.30-31.70 m, 33.60-33.61 m, 34.70-34.90 m, 41.40-42.60 m and 43.32-43.55 m depth.
- 167.00-167.60 m: brecciated zone.
- 172.85-173.25 m, 174.03-175.55 m: Brecciated-argillic zones.
- 182.50-182.90 m: Weak brecciated argillic zone.
- 241.20-241.40 m: Weak brecciated argillic zone with 2 cm wide quartz veinlet. Pyrite dissemination is rare.

Table 4-19 Major Intercepts of MJIE-P3

No.	Depth(m)	Drilled Length (m)	Mineralization	Au(ppb)	Ag(ppm)
1	41.25-41.50	0.25	argillic zone	821	23.3
	41.50-42.47	0.97	argillic zone	83	4.2
	42.47-43.20	0.73	argillic-silicified zone	14	2.4
	42.20-43.55	1.35	argillic zone with quartz veinlets	139	2.5
	Average	3.30		147	4.6
2	172.90-173.35	0.45	argillic zone	39	0.3
	173.35-174.20	0.85	weak argillic zone	11	0.5
	174.20-174.50	0.30	argillic zone	55	0.2
	174.50-175.00	0.50	weak argillic zone	21	0.4
	175.00-175.50	0.50	argillic zone	19	0.2
	Average	2.60		24	0.35

3-2-4 MJIE-P4

(1) Geology

- 0-7.60 m: Top soil.
- 7.60-46.25 m: Andesite (7.60-18.35 m:weathered). Massive, pale green, partly brecciated.
- 46.25-76.30 m: Andesitic tuff breccia. Consists of green colored, rather densely packed lapilli and bigger size fragments
- 76.30-131.65 m: Auto-brecciated andesitic lava.
- 131.65-133.00 m: Lapilli tuff.
- 133.00-163.60 m: Auto-brecciated andesitic lava.
- 163.60-164.13 m: Lapilli tuff.
- 164.13-192.15 m: Auto-brecciated andesitic lava.
- 192.15-192.90 m: Lapilli tuff.
- 192.90-198.15 m: Andesite.
- 198.15-204.35 m: Andesitic tuff breccia.
- 204.35-213.65 m: Andesite. Partly brecciated.
- 213.65-226.00 m: Andesitic tuff breccia.

- 226.00-229.65 m: Andesite. Fine grained, pale green colored.
- 229.65-234.55 m: Andesitic tuff breccia with layered part.
- 234.55-235.35 m: Fine grained andesite.
- 235.35-241.15 m: Tuff breccia. Partly coarse tuff.
- 241.15-245.20 m: Fine grained andesite.
- 245.20-250.00 m: Andesitic tuff breccia. Green colored compact massive rock.

(2) Alteration

- 7.60-18.35 m: weathered
- 18.35-156.30: Propylitic alteration.
- 78.60-136.07 m Argillic alteration silicification.
- 156.30-156.80 m: Argillic alteration.
- 156.80-239.35 m: Propylitic alteration.
- 239.35-241.15 m: Argillic alteration -silicification
- 241.15-250.00 m: Propylitic alteration.

(3) Mineralization

No significant mineralization was encountered in the hole, although the alteration zones listed below are anomalous in gold.

- 135.95-136.13 m: Quartz-pyrite veinlets
- 156.30-156.80 m: Quartz-calcite pyrite veinlet.

Table 4-20 Major Intercepts of MJIE-P4

No.	Depth(m)	Drilled Length(m)	Mineralization	Au(ppb)	Ag(ppm)
1	78.60-79.10	0.50	Silicification Argillic alteration	222	3.6
2	135.80-136.07	0.27	Banded clay-pyrite Silicified zone	52	2.0
3	156.33-156.95	0.62	Quartz stockwork Silicification	107	6.1
4	239.65-240.47	0.82	Silicification Calcite veinlets	63	0.5
5	240.47-241.10	0.63	Silicification Quartz veinlets	42	0.6

3-3 Drilling Survey in the Seweden District

3-3-1 MJIE-S1

(1) Geology

- 0-3.90 m: Top soil.
- 3.90-37.30 m: Silicified, oxidized rock. The rock shows an irregular banded texture of white zones of quartz and red to purplish zones of iron oxide. The rock is inferred to originally be andesitic tuff breccia and bleached by supergene alteration.
- 37.30-106.90 m: Fault zone. Clay and strongly argillic altered tuff breccia: gray colored rather hard blocks are inferred to be fault gouge within soft fault clay. Pyrite is moderately disseminated in both of clay and blocks. The original rock of the blocks is mainly of andesitic tuff breccia, while fine tuff -coarse tuff andesite is inferred to be constituents.
- 206.90-115.80 m: Strongly altered andesite. Dark gray, partly greenish colored, compact, rather hard compared to the clay zones. It may be an intrusive rock as fine grained part at 115.70-115.80 m is inferred to be a chilled margin.
- 115.80-119.85 m: Fine tuff to coarse tuff, rather soft. A thin andesitic intrusive rock intruded at 117.50-117.70 m.
- 119.85-121.20 m: Andesitic-basaltic intrusive rock. Splitic trachitic texture, pale green compact.
- 121.20-137.10 m: Sandy-coarse tuff. The intervals at 125.10-125.85 m, 127.85-17.95 m, 130.45-130.85 m and 133.15-133.25 m are composed of soft clay.
- 137.10-144.65 m: Andesite. Rather hard, compact. The interval at 138.35-139.20 is composed of soft clay.
- 144.65-213.25 m: Andesitic tuff breccia.
- 213.25-216.65 m: Andesitic lava. Weakly auto-brecciated
- 216.65-246.45 m: Andesitic tuff breccia-lapilli tuff. Pyrite is moderately-strongly disseminated.
- 246.85-248.85 m: Fine-sandy tuff. Grayish colored. More strongly altered than tuff breccia-lapilli tuff.
- 248.85-274.00 m: Andesitic tuff breccia. Grayish colored.
- 274.00-279.75 m: Tuff. Black colored streaks occur in the gray colored matrix.
- 279.75-285.15 m: Andesite. White colored due to alteration. Homogeneous and massive.
- 285.15-289.10 m: Tuff breccia. Grayish colored. Composed of rather hard parts and altered

softer parts.

- 289.10-326.90 m: Grayish to pale pinkish colored, compact rather hard, strongly altered rock. Partly fractured and soft clayey rock. Pyrite is strongly disseminated.
- 329.60-374.40 m Tuff breccia. Composed of green colored propylitic parts and white sericitic parts. White parts appear to replace the propylitic part at later stage alteration. Magnetite occurs in the white parts in the form of dissemination or veinlets. The dark green pats at 338.75-339.20 m and 351.02-351.60 m appear to be andesite intrusive rocks or Andesite blocks.
- 374.40-391.85 m: Grayish to pale pinkish compact strongly altered rock. .Original rock appears to be Andesite or microdioritic rock.
- 391.85-400.50 m: Green-grayish tuff breccia. The green colored altered interval of 393.00-395.00 m may be dioritic intrusive rock, while the original rock of the clay zone at 395.00-38-98.50 m is uncertain.

(2) Alteration

- 3.90-37.30 m: Oxidation-silicification (supergene acid leaching)
- 37.30-116.65 m: Fault zone (argillic alteration)
- 116.65-167.55 m: Argillic alteration; alunite-kaoline-smectite-quartz. Pyrite is strongly disseminated
- 167.55-211.00 m: Propylitic alteration. Pyrite is moderately disseminated
- 211.00-222.85 m: Propylitic alteration. Argillic/sericite alteration may overprint the propylitic alteration.
- 222.85-289.15 m: Gray clayish clayey and brecciated zones occurs abundantly. May be sericite-quartz alteration. Soft clay zones are; 225.00-225.80 m, 228.25-228.50 m, 232.85-233.65 m and 234.10-234.20 m.
- 289.15-330.70 m: 330.70: Whitish argillic altered zone. May consist of sericite, quartz and pyrite.
- 330.70-398.50 m: Propylitic alteration is overprinted by later stage white clay alteration. The most of the interval at 394.95-398.50 m appears to consist of soft clay, although the core of the interval could not recovered.
- 398.50-400.50 m: White clay alteration. It appears to be composed of sericite, quartz and pyrite.

(3) Mineralization

No significant base and precious metal mineralization was encountered by the hole, while strong pyrite dissemination occurs quite consistently below the oxidation zone of 3.90-37.30 m.
The pyrite occurs as dissemination of altered andesitic rock or in-veinlets along hair cracks such as joints. A molybdenite-pyrite-quartz-clay veinlet of 2 mm width occurs at 368.40m (102ppm:S1-76). Copper mineral occurs only as exsolution mineral from pyrite under microscopy (Polished sample at188.75m, 290.30 m, 326.15 m and 389.15 m). Sphalerite, galena, cerusite and anglesite occur under microscopy.

3-5 Summary of Results of Drilling

3-5-1 Prambon District

(1) Geology
Geology of the four drill holes consists of andesitic volcanic and volcaniclastic rock of the Mandalika Formation. The intrusive rocks encountered by the holes also considered to be of same age. The andesitic rocks are generally massive and do not show beddings. Therefore, the strike and dip of the formation is difficult to estimate. However, together with surface observation, scared data of fine tuff intercalation indicate the formation dip gently, and strike northwest-south east trending and dip to north. Therefore, it is inferred that the upper part expose in the northern part, and the lower part to the south.

(2) Alteration
The andesite lava and volcaniclastics underwent widely greenish altered. The argillic-silicified alteration zones are wide in the northern two holes, MJIE-P1 and MJIE-P2, while intercepts of the argillic zones are narrow in the southern two holes.

(3) Mineralization
The assay results show the highest gold values 10.40g/t over 0.60m width intercepted by MJIE-P1. Three samples returned 1-5 g/t Au, and most samples retuned less than 1 g/tAu. However, 14 samples among 16 polished samples contains sphalerite, chalcopyrite and galena, indicating these minerals may relate with gold mineralization Acanthite is identified in two samples form MJIE-P2 adjacent to pyrite grains. The gangue and alteration minerals in and adjacent to veins are quartz, calcite, sericite, chlorite and mixed layer mineral. The study of fluid inclusion of quartz or calcite vein show the homogenization temperatures are about t 200 °C and salinities are low. Therefore, epithermal mineralization occurs widely, mainly in the northern part distributed in

Prambon district.

3-5-2 Seweden District

(1) Geology

The geology of the drill hole in the Seweden district consists of volcanic and volcaniclastic rocks of the Mandalika Formation. Intrusive rocks of andesitic to dioritic character are also encountered in the hole. The tuff breccia is most dominant facies of volcaniclastic rocks, while lapilli tuff and fine tuff layers are intercalated in the tuff breccia. The rocks are generally massive and bedding is uncertain. However, based on the surface traversing results, the formation strike northwest-southeast trending and south dipping at the drilling area. The drill hole intercepted wide argillic or clay zones. The zones are assumed to correspond to the east northeast -west southwest trending fault zone shown in the geologic map, which has been inferred from the air photographs interpretation.

(2) Alteration

The andesitic volcaniclastics and volcanic rocks encountered in the drill hole underwent argillic or greenish colored alteration. Argillic alteration continues from the 37.30m, which is the lower boundary of oxidation zone to the bottom of the hole. The green colored zone is termed to be propylitic alteration zone in the filed description and occur at 167.55 –222.85 m and 330.65-394.95 m. The zone of the 330.65-394.95 m appears to be overprinted by sericite alteration. Finally, the both propylitic and sericite alterations are overlapped with younger argillic alteration related faulting.

(3) Mineralization

Pyrite occurs extensively as dissemination or as veinlets in the drill hole. In the deeper part, magnetite occurs in comparatively wide zones. Magnetite occurs as replacement of pyrite and veinlets. Some magnetite is also cut by pyrite veinlets. That indicate pyrite emplaced at least at two stages or magnetite is emplaced with the pyrite mineralization. The magnetite mostly occurs within sericite zone.

No significant base and precious mineralization has been encountered in the drill hole, while fine grains of chalcopyrite, sphalerite and galena are quite often identified under microscopy. A 2mm wide molybdenite-pyrite-quartz clay veinlet occurs at the 368.40 m depth. Seven samples from the bottom part of the drill core returned copper values higher than 100ppm. Also the gold values appear to increase in the deeper part, although the value r is about 20 ppb.

Therefore, it is concluded that the encountered mineralization is weak, but indicates a possibility that epithermal to mesothermal type of mineralization may occurs near the drill holes.

(4) Relation between Geology - Mineralization and Chargeability

The geophysical survey delineated high chargeability zone in the deeper part of line 1 and line 2, where higher chargeability than 20 mV/V is estimated to be deeper than 300 m from the surface. However, the strong dissemination of pyrite continues from 37.30m below surface to the 217 m depth. The high content zone of pyrite is wide at depth that corresponds to quartz-sericite-pyrite alteration. The alteration mineral assemblage is common in hydrothermal alteration and not limited to phyllic alteration of porphyry copper type.

The overall low resistivity of the drilled place well corresponds to be low due to high porosity, pyrite dissemination and fractures/faults.

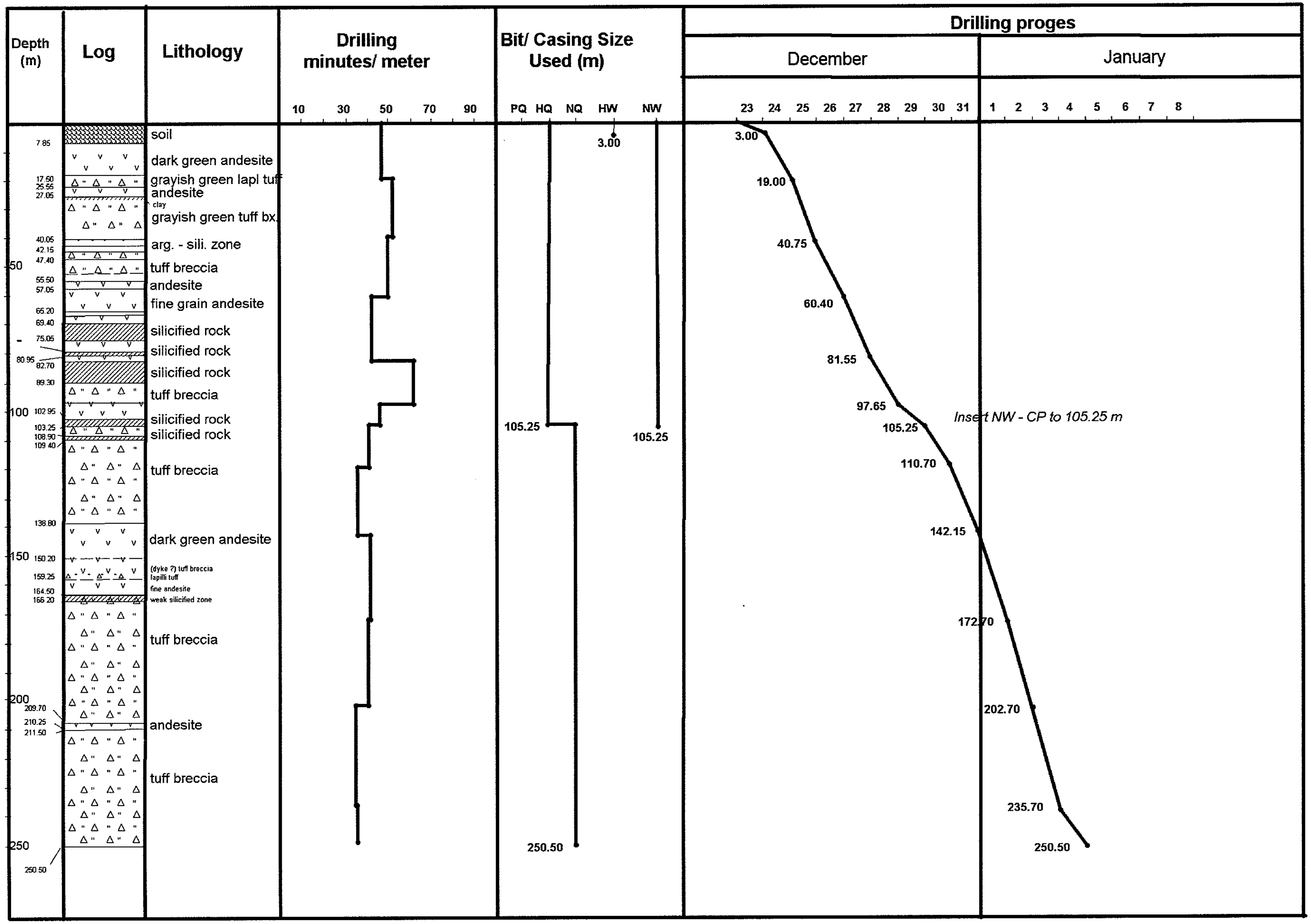


Fig.4-3 Work Progress of Drill Hole MJIE-P1 in Prambon District

Fig.4-4 Work Progress of Drill Hole MJIE-P2 in Prambon District

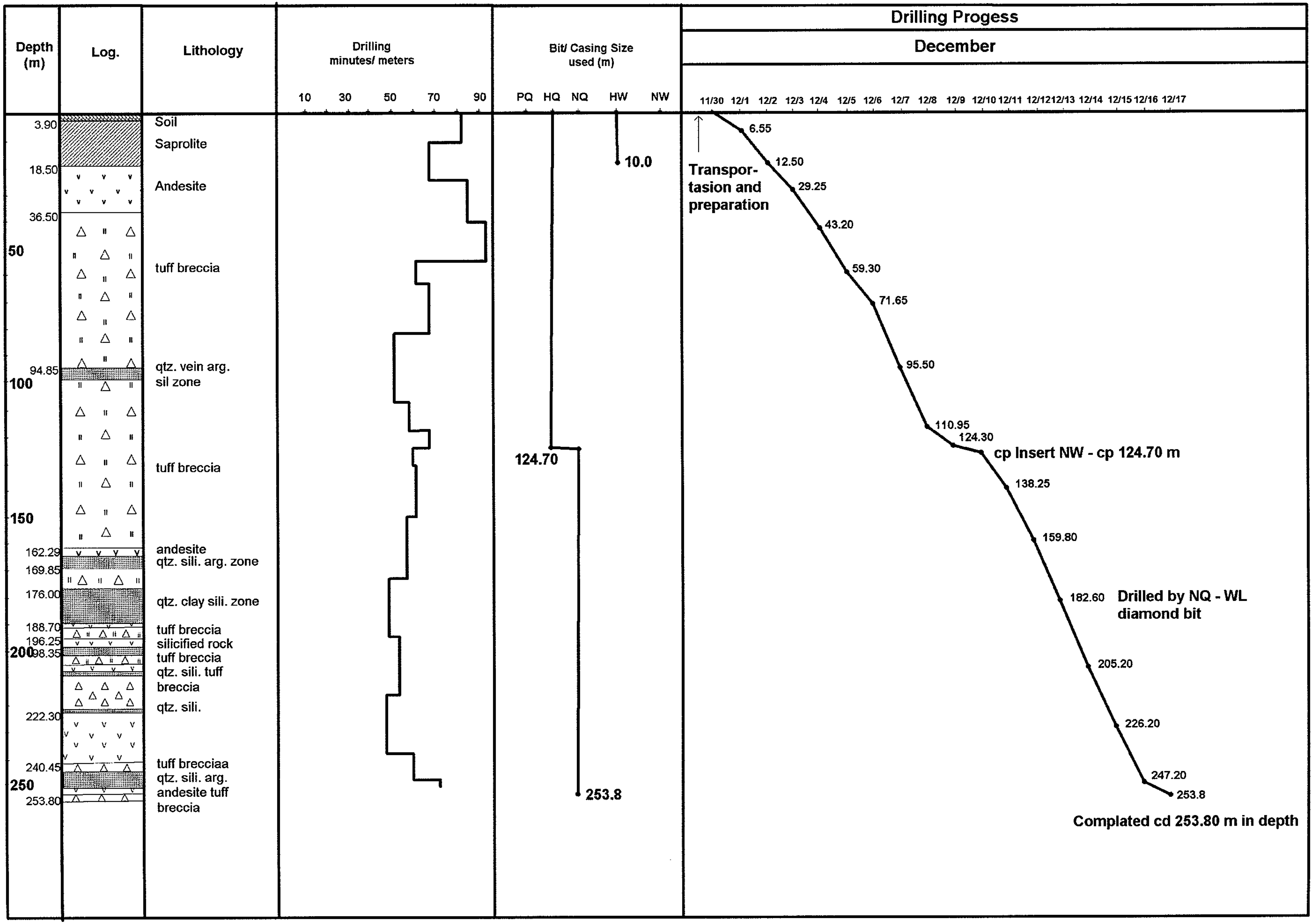


Fig.4-5 Work Progress of Drill Hole MJIE-P3 in Prambon District

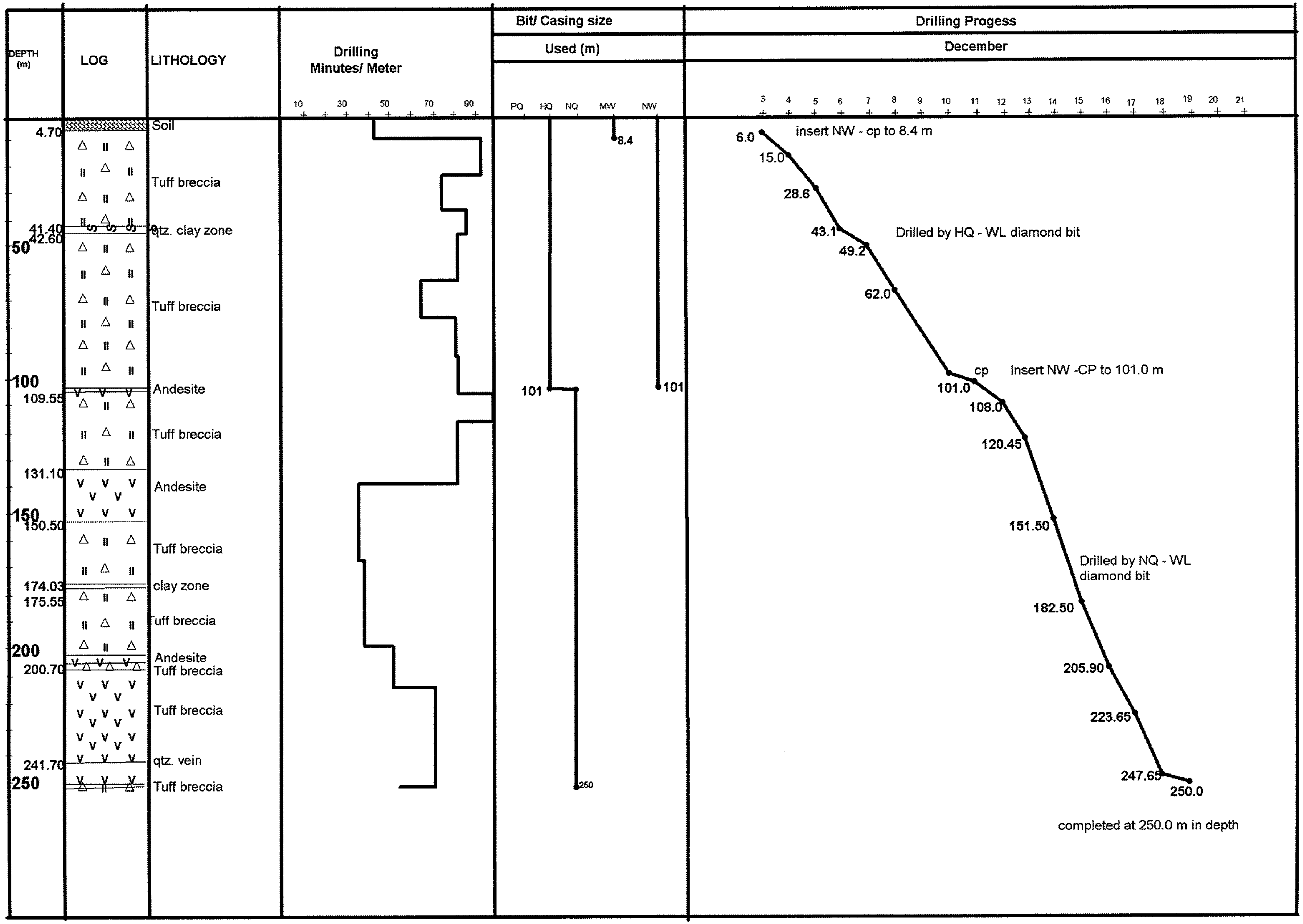


Fig.4-6Work Progress of Drill Hole MJIE-P4 in Prambon District

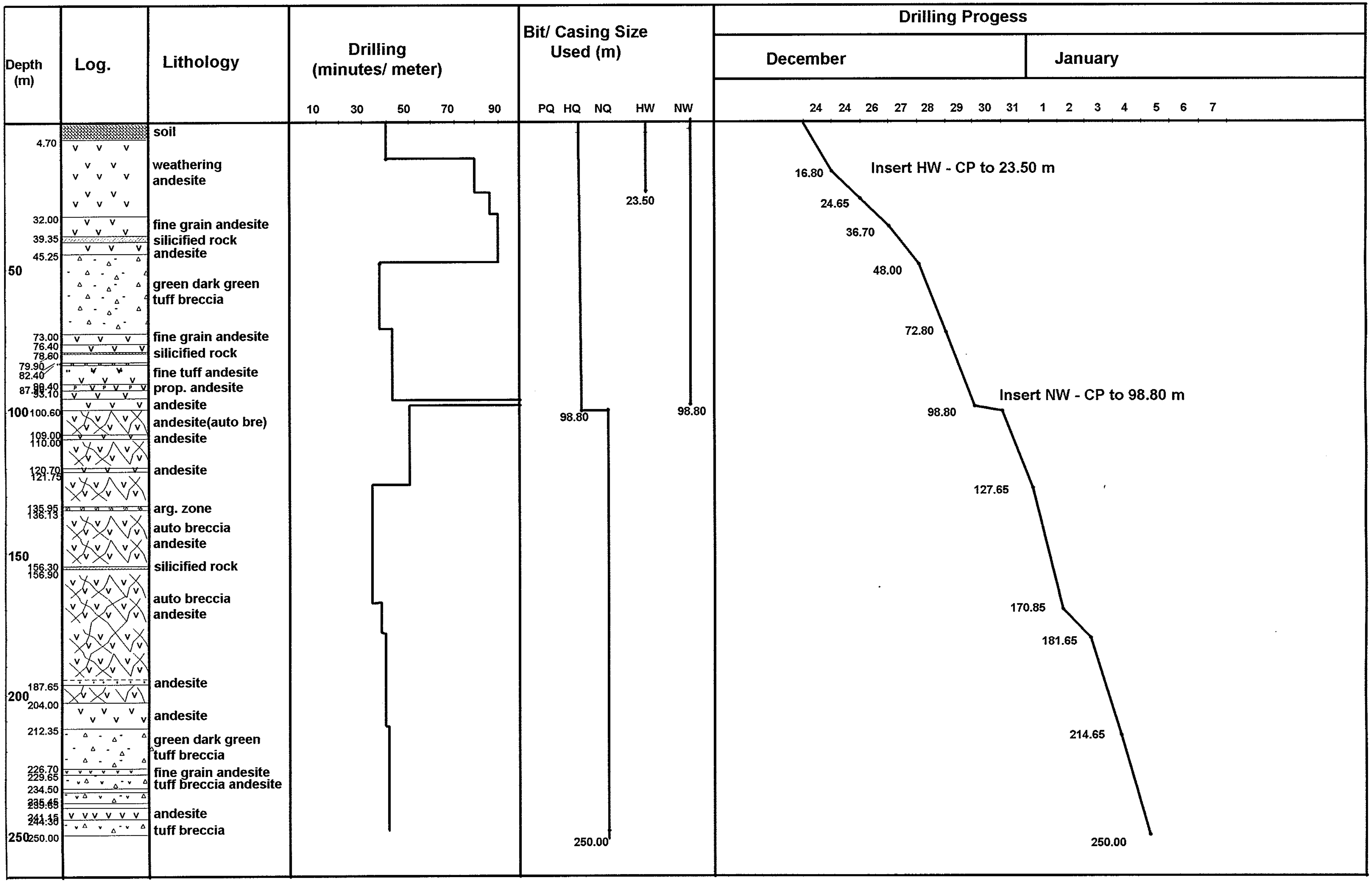
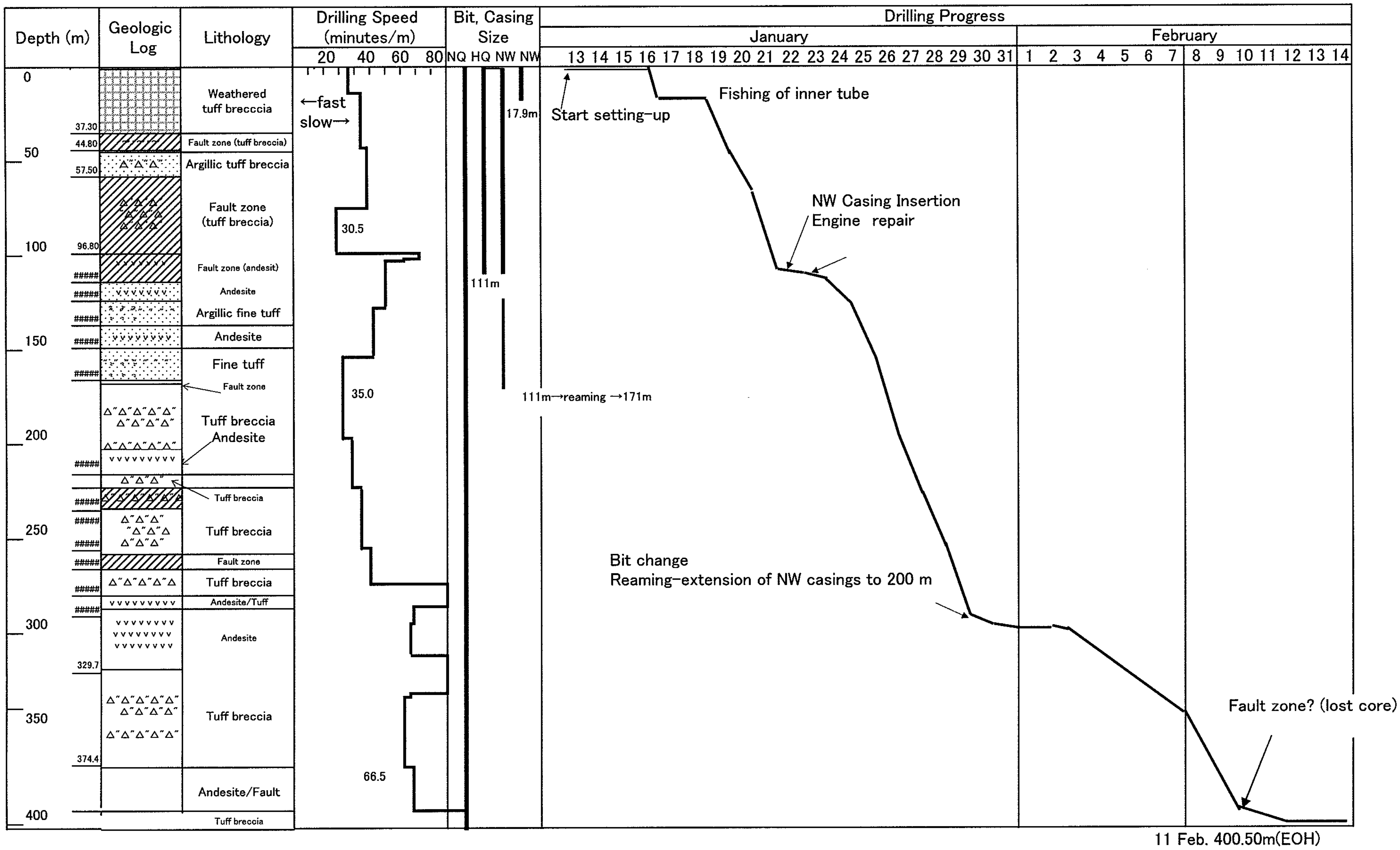


Fig. 4-7 Work Progress of Drill Hole MJIE-S1in Seweden District



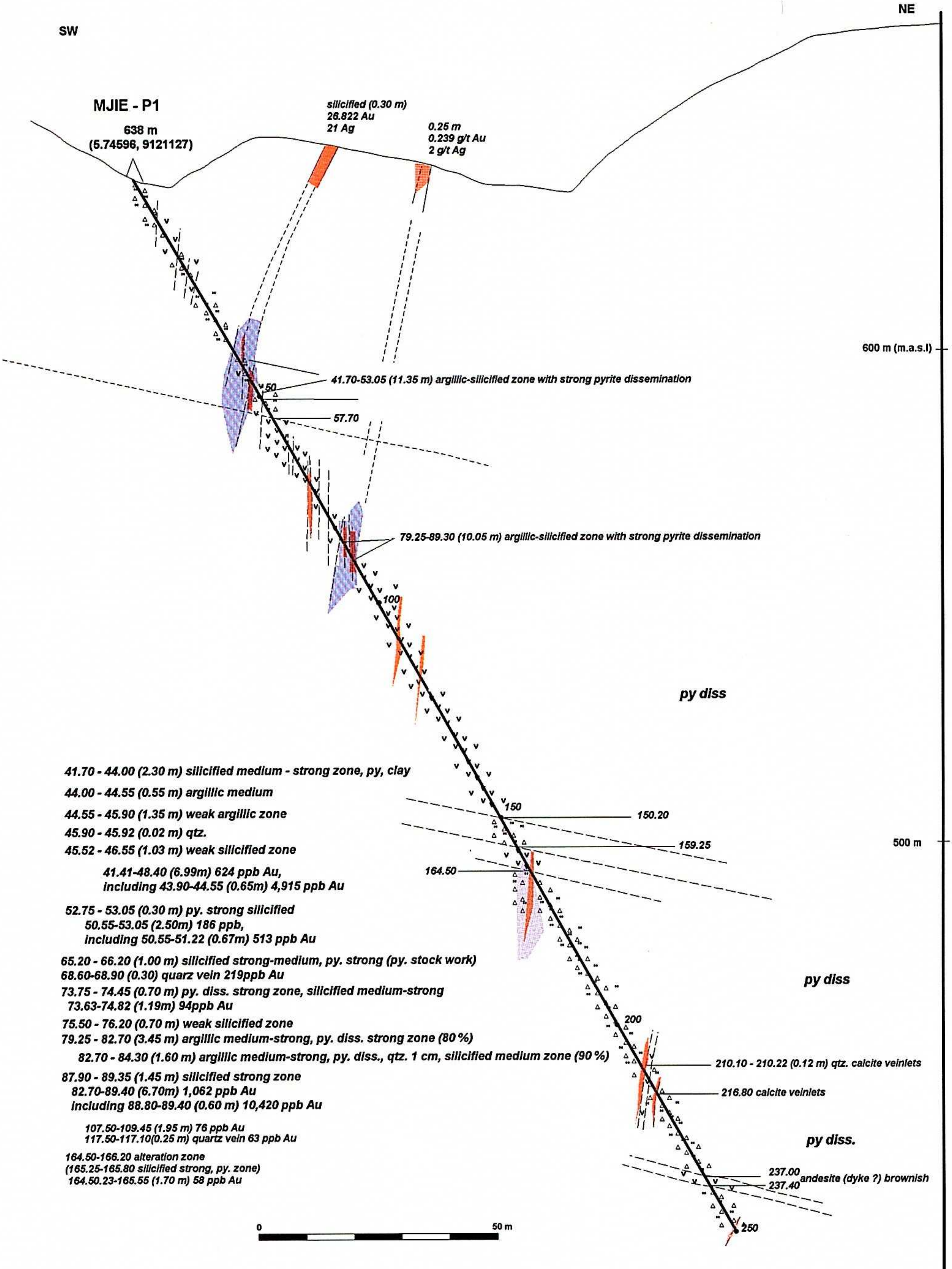


Fig. 4-8 Geolgic Profile of Drill Hole MJIE-P1 in Prambon District

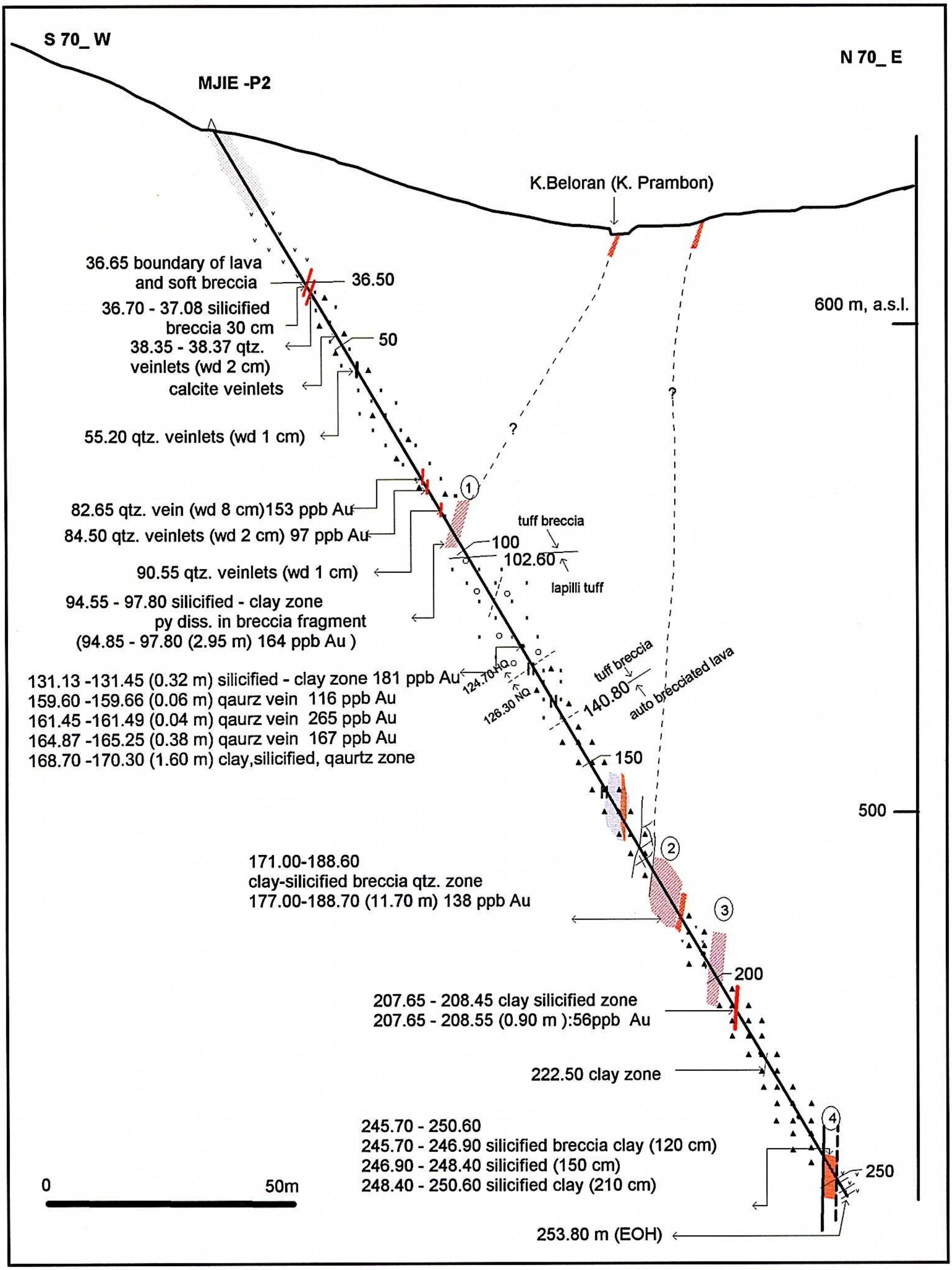


Fig. 4-9 Geolgic Profile of Drill Hole MJIE-P2 in Prambon District

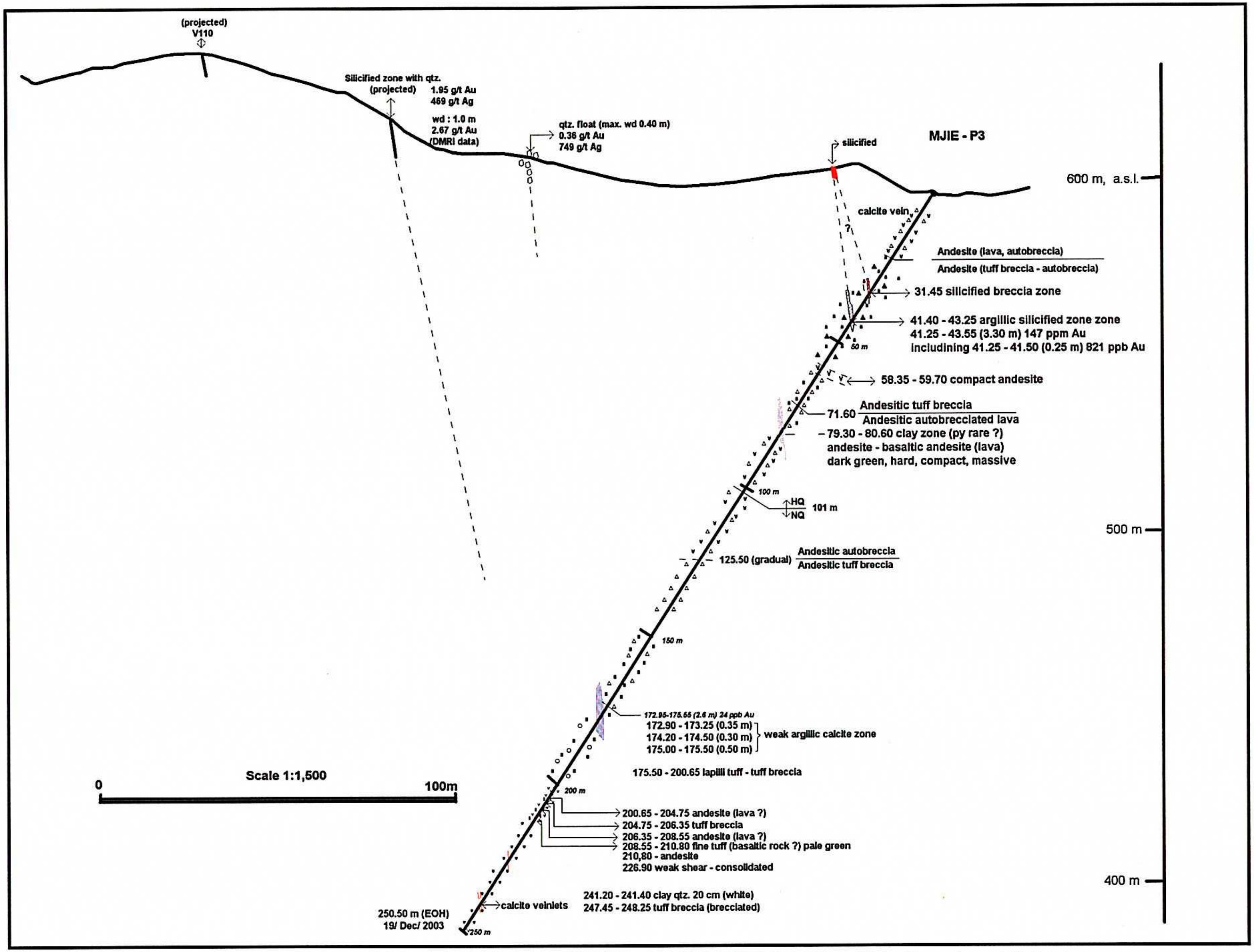


Fig. 4-10 Geologic Profile of Drill Hole M J I E - P3 in Prambon District

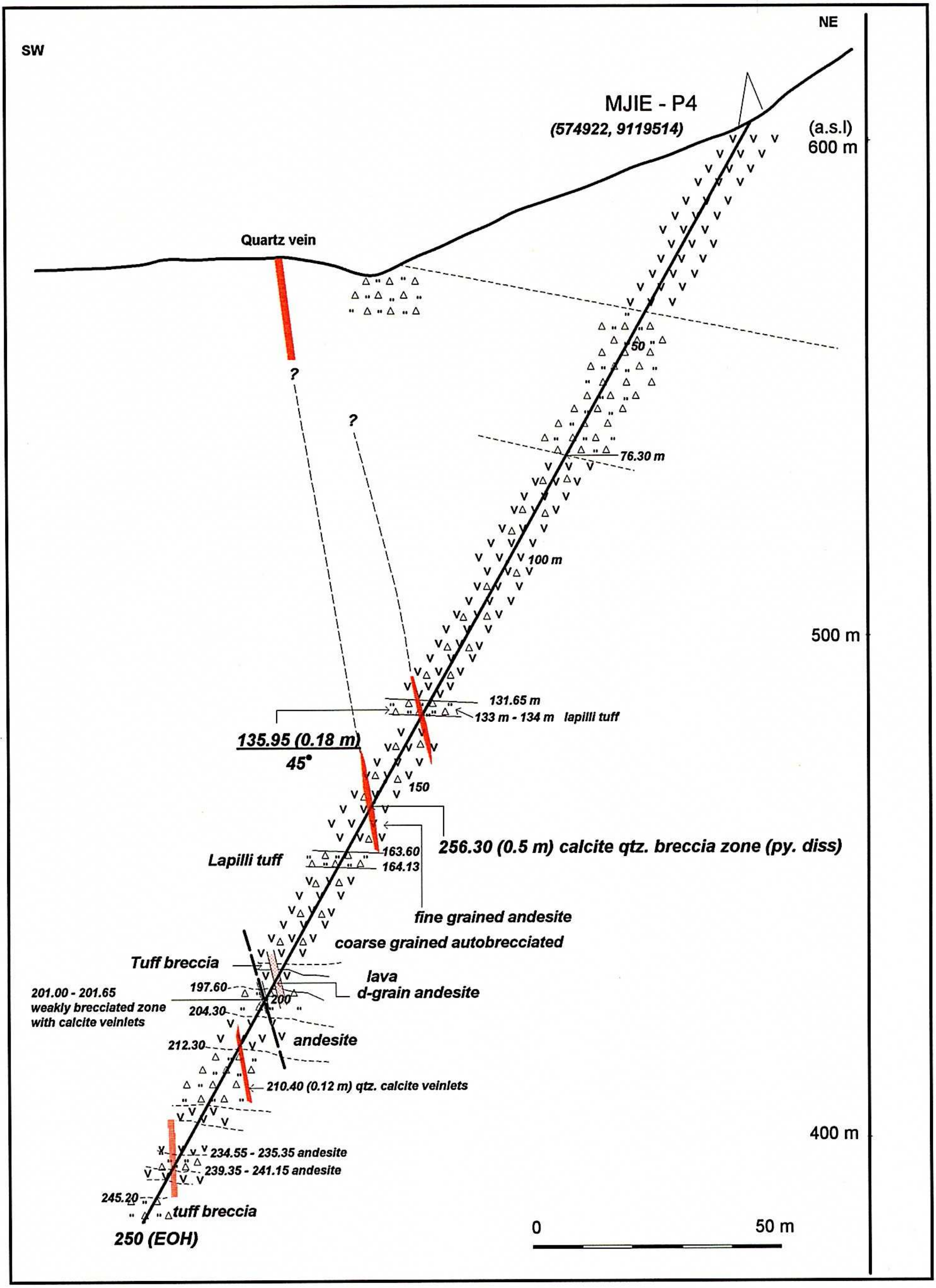


Fig. 4-11 Geologic Profiles of Drill Hole MJIE - P4 in Prambon District

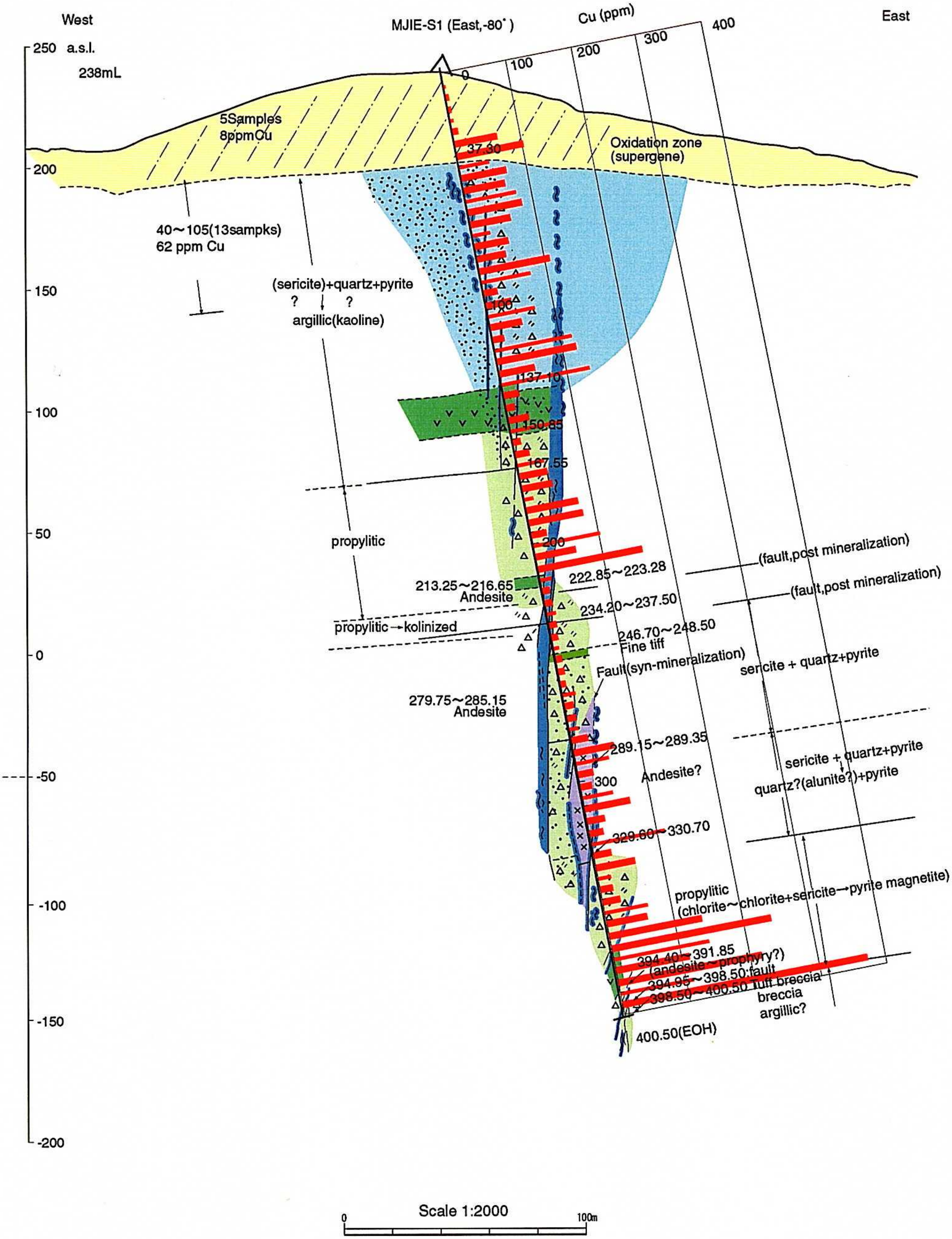


Fig.4-12 Geologic Profile of Drill Hole MJIE-S1

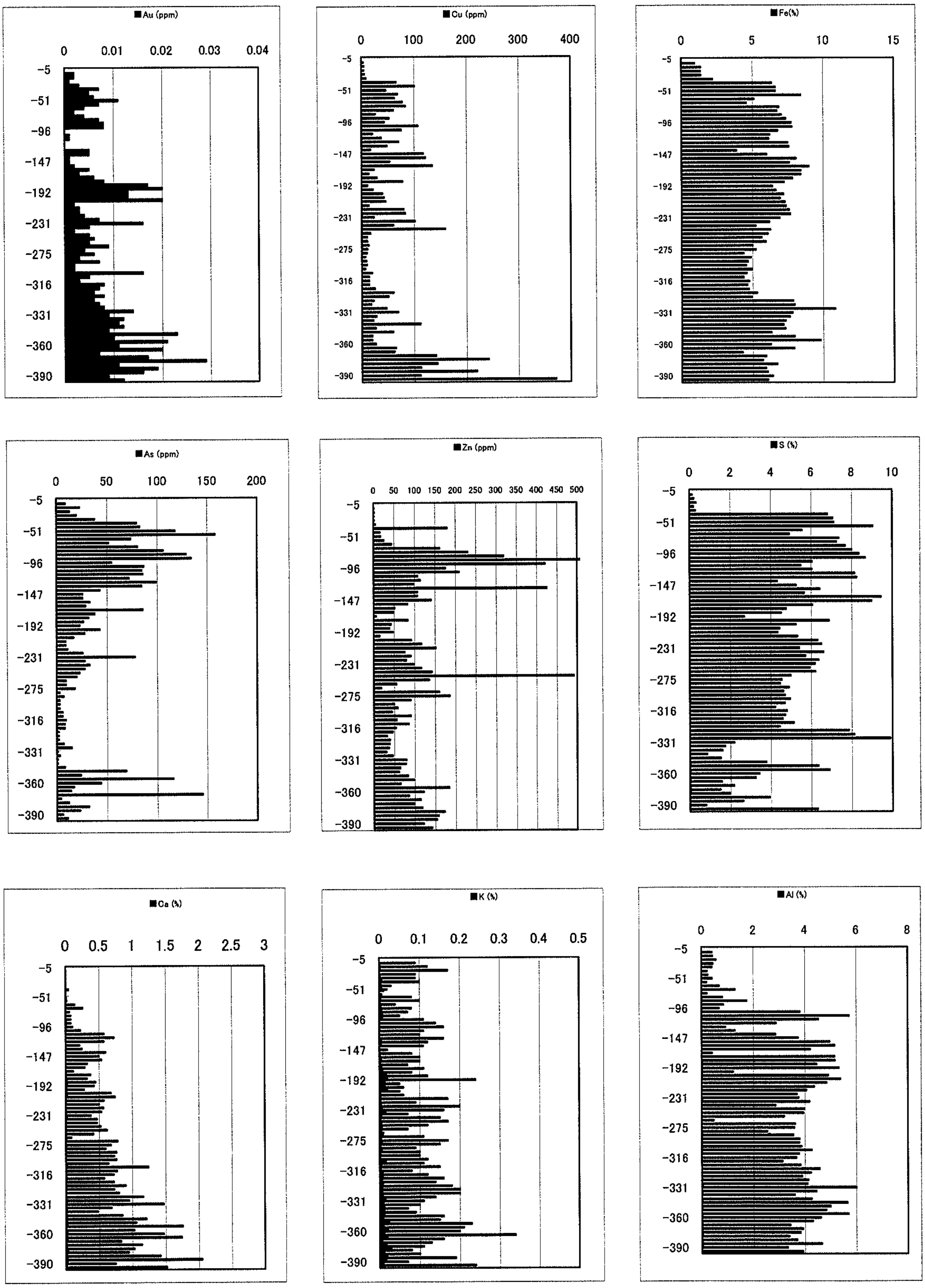


Fig.4-13 Chemical Analysis Results of Drill Hole Core Samples of MJIE-S1

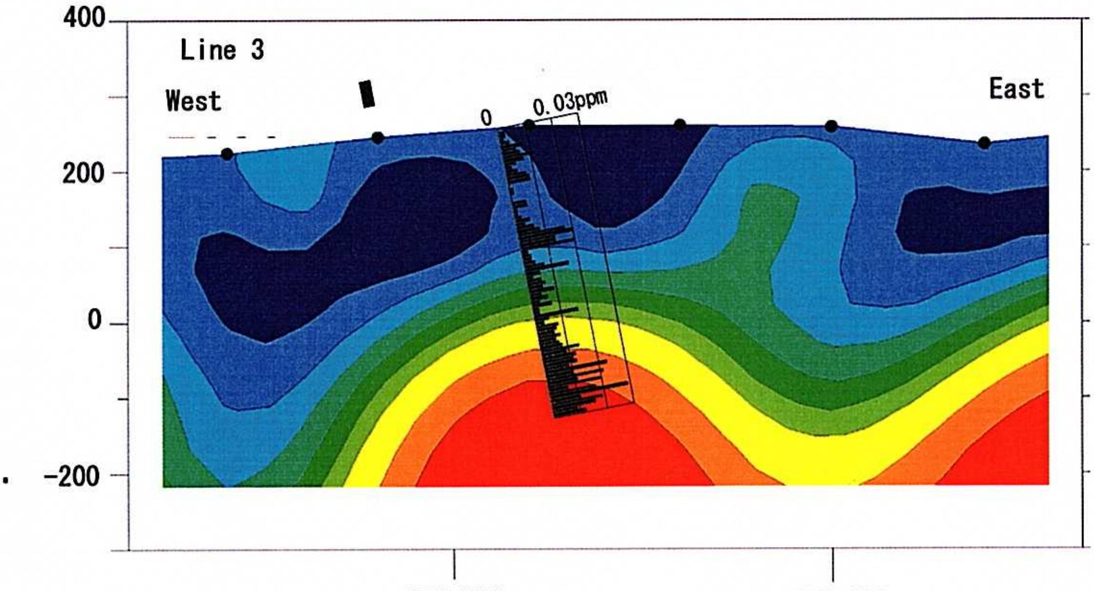


Fig. 4-14 Chargeability and Gold Values of Drill Core Samples from MJIE-S1

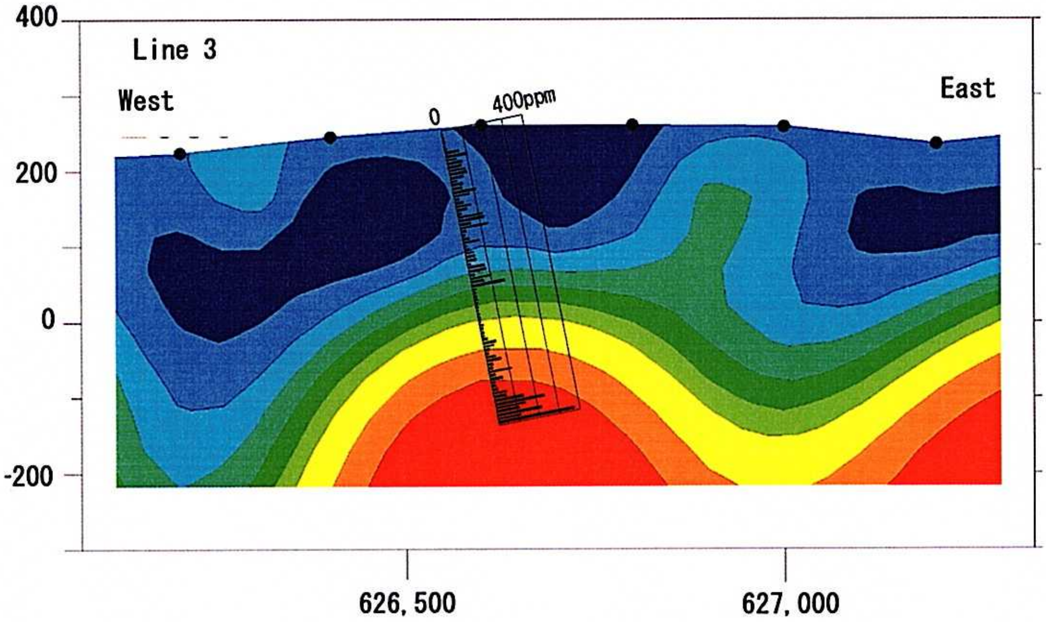


Fig. 4-15 Chargeability and Copper Values of Drill Core Samples from MJIE-S1

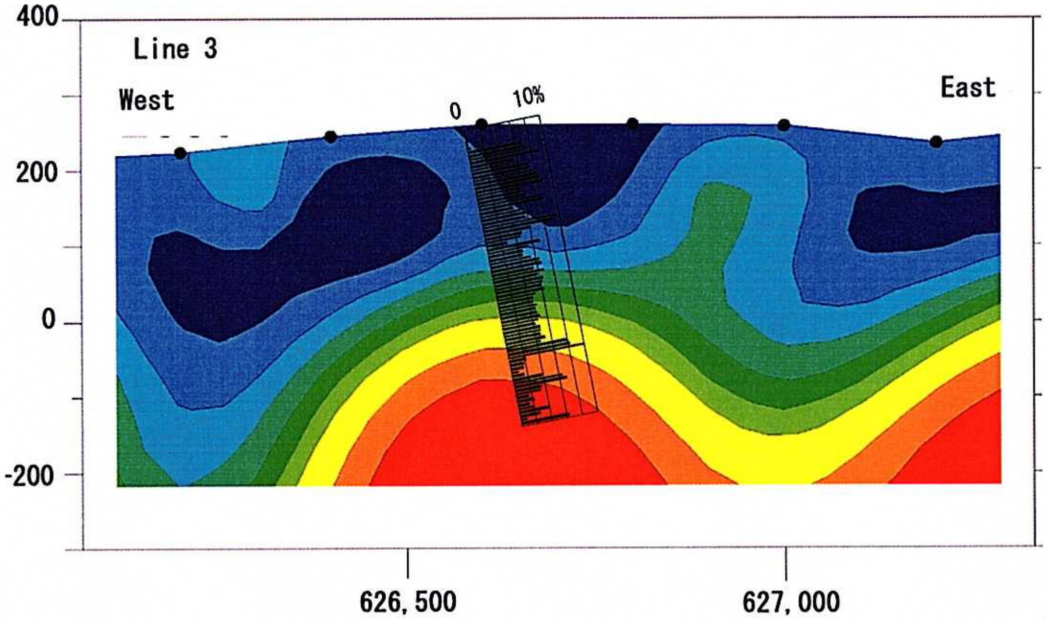


Fig. 4-16 Chargeability and Sulfur Values of Drill Core Samples from MJIE-S1

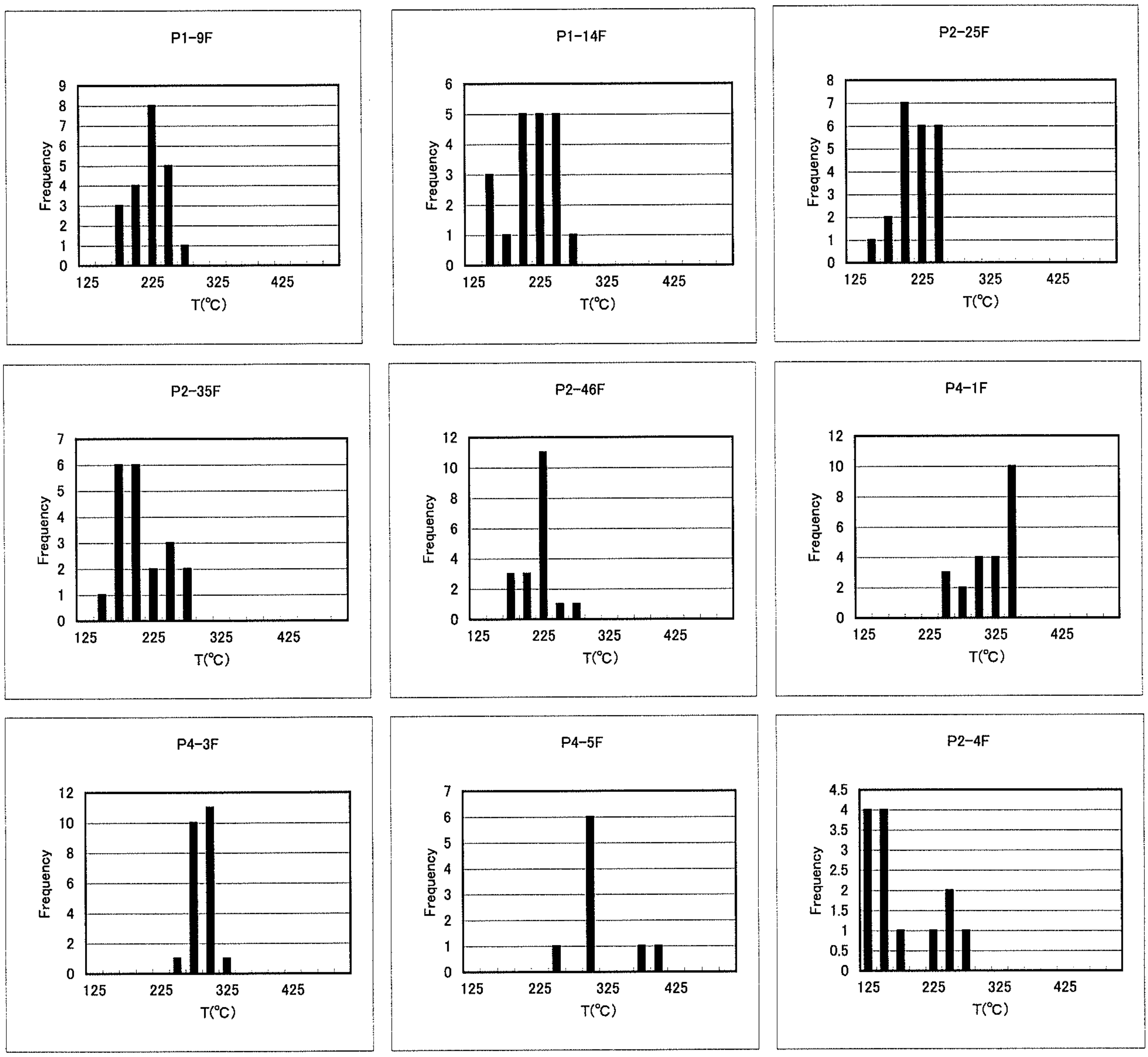


Fig. 4-17 Homogenization Temperature of Fluid Inclusion, Prambon District

Table 4-21 Geologic Log of Drill Hole MJIE-P1 (1)

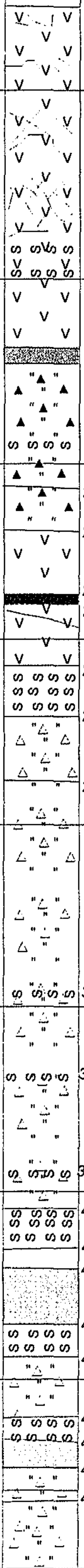
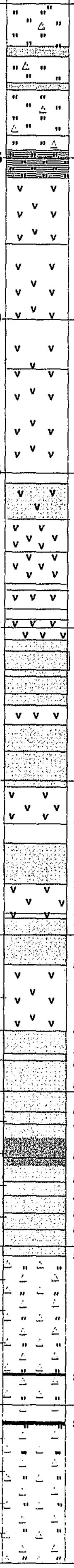
Depth (m)	Geologic Column	Lithology	Alteration	Mineralization	RQD
5		soil			
10		soil 7.85 dsrk green - gray porphyritic andesite			20 76
15		dark green - gray porphyritic andesite 14.30 14.80			45 35 17 20 44
20		40 dark green - gray porphyritic andesite 17.55 45 grayish green lapilli tuff 18.60	19.60-19.95 argillic	19.90 calcite 0.3 cm	100 100 70 68 60
25		20.70 grayish green lapilli tuff fragment 0.5 - 1.0 cm 22.00 dark gray andesite 23.70 fracture zone 24.00	20.00-20.75 argillic weak	20.00-20.75 py weak 23.25-23.70 qtz. vein 0.5 cm 10	80 40 58 63 50
30		25.70 gray - whitish gray argillic rock 27.05 whitish gray tuff breccia fragments 3.0 - 5.0 cm 28.85	25.70-27.05 argillic + silicified zone 27.00-28.85 argillic weak	25.70 py. rich py 27.85 py. vein 0.2 cm 28.85	40 20 100 100 80
35		grayish green tuff breccia 34.70	34.70 argillic		100 90 100 100 90
40		grayish green tuff breccia 36.85 argillic 39.75 argillic	36.85 argillic 39.80 argillic 5.0 cm	39.45 calcite 0.5 cm 39.50 39.80 py. rich	100 100 100 100 100
45		40.50 30 tuff breccia argillic weak 41.75 30 42.15 brecciated silicified rock fragments with py. 44.00 argillic rock, gray 44.55	40.50-41.65 argillic weak 41.65-42.15 argillic strong 42.15-43.65 silicified 43.65-44.55 argillic P1 - 30X	40.00 calcite qtz. vein 1.0 cm 40.50 qtz. vein 0.5 cm 41.65 - py. rich P1 - 1A P1 - 2A P1 - 3A P1 -4A P1 - 5A P1 - 5A P1 - 6A PY	100 20 100 50 100
50		grayish light green tuff breccia 45.90 argillic strong 46.90 silicified strong py. rich 47.40 48.00 gray - light green tuff breccia	46.00-46.70 argillic 46.70-47.30 silicified strong argillic silicified weak	45.90 qtz. vein 2.0 cm P1 - 7A, 7F P1 - 8A 47.00-47.30 py. rich P1 - 9A, 9F, 9P PY P1 - 10P 48.00 qtz. vein 48.20 py. clay 30	100 80 100 100 100

Table 4-21 Geologic Log of Drill Hole MJIE-P1 (2)



Depth (m)	Geologic Column	Lithology	Alteration	Mineralization	RQD
55		51.60-51.70 py vein 52.76-53.05 py stock work gray-whitish gray tuff breccia 54.30 54.70	51.50 51.60 py. vein 51.70 52.0 qtz. vein 0.5 cm silicified 53.50 clay P1 - 13X 54.70 clay	51.50 51.60 py. vein P1 - 11A 51.70 P1 - 12A 52.0 qtz. vein 0.5 cm py 52.60 py stock work P1 - 13A, 13P 54.70 clay + py 54.90 - 55.50 py. rich	90 100 70 80 100
60		flow texture fine tuff 55.60 dark green andesite ? 57.65 grayish green fine grain andesite brecciated	55.40 clay		80 100 75 54 68
65		61.60 grayish green fine grain andesite silicified weak	61.60 clay 10 cm silicified weak	61.60 clay + py 63.40 - 63.80 calcite veinlets 64.00 py. rich	100 100 100 100 100
70		65.20 andesite, silicified weak : py 66.20 67.60 grayish green andesite P1 - 38T 68.60 68.90 69.40 69.85 green andesite ?	65.20 silicified weak P1 - 31X 66.20	65.90 qtz. + calcite vein py. 67.50 calcite py. vein 2.0 cm 68.70 calcite 2.0 cm P1 - 14F, 14A 68.80 py. vein + qtz. + calcite 1-2 cm 69.40-69.75 silicified + py.	100 100 100 100 100
75		70.40 70.85 gray silicified rock 71.35 71.60 72.10 grayish green andesite ? silicified rock 74.00	70.40 silicified strong silicified strong	70.25 calcite vein 0.5 cm 70.60 qtz. calcite P1 - 15F, 15A 71.00-71.30 calcite vein 71.60 py. vein 72.10 py. vein 73.45 py. vein 73.50 py. vein 74.00-74.60 py. veinlets P1 - 16A	100 100 100 100 100
80		75.05 dark green compact andesite ? 76.30 whitish gray silicified rock 78.35 10 dark green compact andesite ? 79.25 79.40	77.00 clay 10 cm silicified strong	76.40-76.85 py. veinlets 0.5-1 cm 77.10-77.30 py. vein 78.25 qtz. vein + py. 1.0 cm 79.40 py. vein 0.2 cm	100 100 100 100 100
85		whitish gray silicified rock 80.95 grayish green andesite ? py spot 82.70 clay calcite 83.70 30 84.00 84.90 gray - whitish gray	silicified strong 83.90 argillic 30 silicified strong	py. rich P1 - 17A P1 - 18A P1 - 19A 85.00 qtz. vein 0.2 cm	100 100 100 100 100
90		silicified rock 85.60 85.90 whitish gray silicified py 87.00 whitish gray silicified strong py vein rich 88.00 silicified strong zone 88.40 silicified zone 88.80 gray qtz. silicified strong 89.40 30	silicified strong 88.40 argillic P1 -23X 88.90 argillic 10 cm P1 - 24X 89.40 argillic 5 cm	85.60 qtz. vein 0.5 cm P1 - 20A 86.00 qtz. vein 0.5 cm py rich P1 - 21A P1 - 22A, 22P py. vein rich P1 - 23A P1 - 24A	100 50 60 73 55
95		90.20 grayish green tuff breccia 94.00 clay			100 100 100 100 100
100		95.40 clay 20 grayish green lapilli - tuff breccia	P1 - 32X silicified weak	99.70 qtz. calcite 0.5 cm	100 100 100 100 100

Table 4-21 Geologic Log of Drill Hole MJIE-P1 (3)

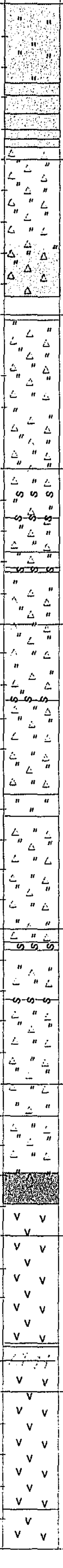
Depth (m)	Geologic Column	Lithology	Alteration	Mineralization	RQD
105		grayish green silicified fine tuff ? 102.50 102.95 whitish gray silicified rock 103.85 silicified medium 104.55	103..50 argillic - silicified strong 104.40 argillic 2.0 cm 104.85 qtz. vein 0.5 cm	py. diss. weak 103.00 silicified qtz. 1.5 cm	100 100 100 43 100
110		whitish gray tuff breccia silicified medium 108.90 gray silicified rock 109.40	35 108.90 - 109.40 silicified strong 109.70 argillic 10 cm	P1 - 42A 108.90 - 109.40 py. rich P1 - 43A P1 - 44A	100 100 100 100 86
115		110.15 whitish gray-green yellow fragments tuff breccia small fragments		110.15 qtz. vein 20	100 100 100 100 100
120		115.70 116.60 118.25 grayish green-light green andesitic tuff breccia	115.70 argillic 2.0 cm 116.60 argillic 1.0 cm P1 - 44X 117.80 - 117.90 silicified py. 118.25 - 118.60 argillic	P1 - 45A 118.25 - 118.60 py. 119.20 calcite vein 119.00 py. fragments	100 100 100 58 100
125		122.50	122.50 argillic weak		100 100 100 100 100
130		125.50 grayish tuff 126.30 grayish-light green lapilli tuff			100 100 100 100 100
135		130.50 132.40 grayish green-light green lapilli tuff - tuff breccia	130.50 argillic weak 132.40 argillic P1 - 33X		100 100 100 100 100
140		136.00 30 137.90 fracture fine grain 138.80 30	136.00 calcite vein 0.7 cm	136.00 calcite vein 0.7 cm	100 100 100 50 100
145		dark green compact prophylitic andesite P1 - 40T 143.60 breccia	prophylitic 143.60 qtz. calcite vein 144.50 calcite vein	143.60 qtz. calcite vein 144.50 calcite vein	100 100 100 100 100
150		dark green andesite			100 100 100 100 100

Table 4-21 Geologic Log of Drill Hole MJIE-1 (4)

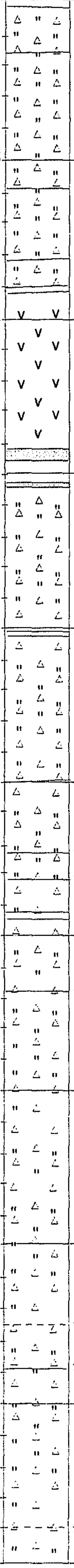
Depth (m)	Geologic Column	Lithology	Alteration	Mineralization	RQD
155		150.20 20 151.65 light green lapilli tuff fragment < 2.0 cm	150.20 clay 1 - 2 cm 151.65 clay	151.65 py. diss.	100 100 100 100 100
160		158.30 159.15-159.25 40	158.30 calcite 0.2 cm	158.30 calcite 0.2 cm 159.15 calcite 0.2 cm 159.25 calcite 0.3 cm	100 100 100 100 100
165		light green compact andesite 164.50 whitish gray argillic tuff	prophylitic 164.50-164.60 argillic 164.75 argillic P1 - 34X P1 - 25X	py. rich	100 100 100 100 85
170		165.25-165.35 whitish gray tuff breccia - lapilli tuff grayish green tuff breccia	165.25-165.35 argillic + silicified P1 - 27X	P1 - 25A P1 - 26A P1 - 27A	100 100 100 100 100
175		170.10-170.20 45 grayish green tuff breccia		170.10 calcite vein 0.3 cm 170.20 calcite vein 0.3 cm	100 100 100 100 100
180		grayish green tuff breccia 177.25 40 178.35 179.40-179.60	179.60 clay 0.2 cm	177.25 calcite 1 cm 178.35-178.45 py. rich fragment 179.40 py. rich	100 100 100 100 100
185		grayish green tuff breccia 181.90	181.90 clay 0.2 cm		100 100 100 100 100
190		grayish - light green tuff breccia			100 100 100 100 100
195		grayish - light green tuff breccia 192.50 193.95	P1 - 35X 192.50 clay 0.3 cm	193.95 qtz. vein 0.5-1 cm	100 100 100 100 100
200		grayish - blueish green tuff breccia 198.90			100 100 100 100 100

Table 4-21 Geologic Log of Drill Hole MJIE-P1(5)

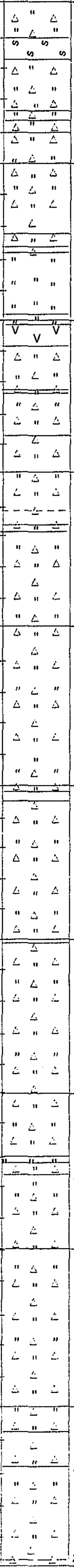
Depth (m)	Geologic Column	Lithology	Alteration	Mineralization	RQD
205		201.00 201.65 grayish green tuff breccia 203.50 203.70 204.00	201.00-201.65 argillic	201.00-201.70 silicified + py. P1 - 24A 203.50 qtz. vein 1 cm 203.70 calcite vein 1 cm 204.00 calcite vein 0.5 cm	100 100 100 100 100
210		207.30 207.70 207.90 grayish green fine tuff ? 209.90		207.30 qtz.-calcite vein 0.5 cm 207.70 calcite vein 0.3 cm 207.90 qtz. vein 2 cm	100 100 100 100 100
215		210.25 dark green andesite 211.50 212.30 212.40 213.70		210.25 calcite vein 10 cm P1 - 29A 211.50 qtz. -calcite vein 1.5 cm 212.30 calcite vein 0.2 cm 212.40 calcite vein 0.2 cm 213.70 calcite vein	100 100 100 100 100
220		216.20 216.60 grayish green tuff breccia 216.90	216.20 clay	216.60 calcite vein 216.90 calcite vein	100 100 100 100 100
225		grayish-light green tuff breccia P1 - 41T	P1 - 36X		100 100 100 100 100
230		225.20 225.50 grayish-light green tuff breccia (fragments 3-5 cm)	225.50 clay 1 cm	225.20 calcite vein 1 cm 225.50 calcite vein 1 cm	100 100 100 100 100
235		230.05 grayish-light green tuff breccia - lapilli tuff (fraagments 2-3 cm)		230.05 calcite vein 1 cm	100 100 100 100 100
240		236.90 237.20 green fine tuff ? 237.50		237.50 calcite vein 5 cm	100 100 100 100 100
245		grayish-blueish green tuff breccis 245.00 20		245.00 20 calcite 1 cm	100 100 100 100 100
250		245.80 246.80 grayish green tuff breccia 249.8	249.80-249.90 argillic P1 - 37X	245.80 80 calcite 0.5 cm 246.80 calcite 0.5 cm	100 100 100 100 100

Table 4-22 Geologic Log of Drill Hole MJIE - P2 (1)

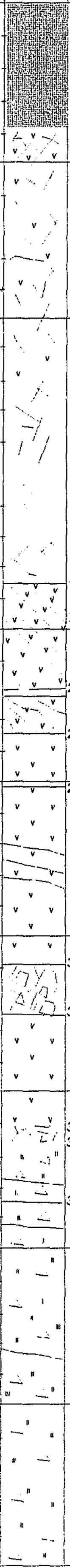
DEPTH (m)	Geologic Column	LITHOLOGY	ALTERATION	MINERALIZATION	RQD
5		Thin section : T brown - brownish red soil whitish gray soft andesite	X-ray defrac. : X	Polished : P Analysis : A Inclusion : F	
10					
15					
20		18.50 50 45 purplish green andesitic lava flow banded		limonitic vein lets	
25		20 22.00 - 22.30 clay breccia zone flow banded andesitic lava 23.45 compact lava pale grayish green	23.45 - 24.80 weak argillic	20.20 limonitic 0.1 cm 22.50 limonitic vein lets 0.2 cm 15 22.55 limonitic vein lets 0.2 - 0.4 cm 24.50 - 24.90 mangan oxide	
30		25.20 greenish gray compact andesite	24.80 - 28.30 very weak silicified + argillic pyrite diss. 28.30 - 29.05 argillic medium - strong 29.05 - 30.95 argillic weak	27.00 limonitic vein 0 - 10 27.80 55 limonitic vein 28.00 15	
35		30.95 30.95 - 32.60 breccia zone (breccia dyke) 32.60 55 gray massive compact andesite	weak argillic - silicified	pyrite diss. weak	
40		35.70 - 36.00 auto breccia 36.50 brown tuff breccia 38.60 fragment : max. 10 cm, gray - greenish gray matrix : brownish ash, lithic, rather hard, compact massive	39.40 calcite vein	37.95 - 38.15 qtz. silicified breccia 18 cm 40 38.60 white qtz. vein 2.0 cm 39.40 calcite vein	100 68 88 92 90
45		brown - greenish gray andesitic tuff breccia		43.30 calcite 2.0 cm 45	100 95 100 95 100
50					100 100

Table 4-22 Geologic Log of Drill Hole MJIE-P2 (2)

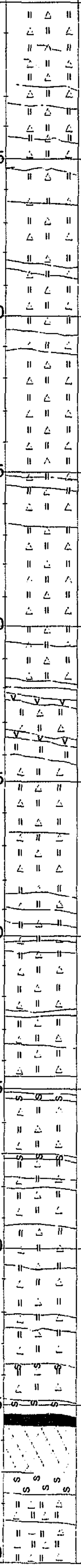
DEPTH (m)	Geologic Culumn	LITHOLOGY	ALTERATION	MINERALIZATION	RQD
55		greenish gray compact andesitic tuff breccia 56.6 53.2 54.2		52.60 calcite qtz. vein 1.0 cm 53.20 calcite qtz. vein 2.0 cm 54.20 clcite qtz. vein 1.0 cm	95 100 95 100 100
60		55.2 clay greenish gray - brown andesitic tuff breccia 58.3 58.6	55.20 argillic weak 6.0 cm	55.20 qtz. vein lets weak 1.0 cm 58.3 qtz. vein 0.5 cm 58.6 calcite vein 0.2 cm	100 80 100 100 100
65		60.55 61.05 greenish gray - brown andesitic tuff breccia compact lapilli tuff		60.55 qtz. vein 0.5 cm 80 61.05 qtz. vein 0.3 cm 50	95 64 90 95 100
70		65.15 65.55 66.75 greenish gray tuff breccia		65.15 qtz. vein 0.3 cm 50 65.55 qtz. vein 0.2 cm 80 66.70 qtz. vein 0.2 cm 70	100 100 95 95 100
75		70.6 71,7 72.0 gray compact andesitic tuff 72.40 andesit dyke 7.0 cm 73.24 73.54 lapilli 74.19		70.6 calcite qtz.vein 0.5 cm 50 71.70 calcite qtz. vein 0.2 cm 73.24 calcite vein 0.5 cm 73.54 qtz. vein 3.0 cm 74.17 calcite vein 0.5 cm	100 100 100 100 100
80		greenish gray - brown andesitic - tuff breccia 76.75 77.05 78.65 greenish gray compact - 79.15 tuff breccia		76.75 qtz. vein pyrite 1.0 cm 77.05 40 qtz. vein 0.2 cm 78.65 qtz. vein 0.4 cm 79.15 calcite qtz. vein 0.8 cm	100 100 100 100 96
85		80.45 82.45 - 82.65 clay zone with qtz. vein 83.50 light greenish gray andesitic tuff breccia 84.45	82.65 cm arg. strong 82.65 m P2- 3X	80.05 qtz. vein 2.0 cm 80.45 qtz. vein 0.5 cm 82.45 - 82.65 qtz. vein with pyrite 83.50 qtz. vein P2- 2A	100 95 100 95 100
90		85.15 greenish brown - gray tuff brecccia 87.0-87.10 87.8 88.2 89.3 gray - light brown tuff breccia	●84.50 m	85.15 qtz. vein 1.5 cm P2 - 1A 85.25 qtz. vein 0.3 cm 87.0 - 87.10 qtz. vein 1.0 cm 87.80 qtz. vein 0.5 cm 88.30 qtz. vein 0.6 cm 89.30 qtz. vein 0.5 cm	100 100 100 100 95
95		90.65 lapilli 92.15 92.45 93.6 breccia arg. 94.85-95 claay zone	93.6 argillic 94.85 - 95.0 argillic strong	90.55 qtz. vein 1.5 cm, 1.0 cm 92.15 qtz. vein 1.5 cm 92.45 qtz. vein 1.0 cm 93.6 qtz. vein 1.0 cm ●P2- 56A 94.80 qtz. vein 1.0 cm ● 94.85	100 80 95 100 90
100		95.26 - 95.66 qtz. vein 95.0 - 97.15 silicified zone 95.26 - 95.66 qtz. vein 97.15 97.80 clay zone py rich 98.55 whitish gray tuff breccia	95.0 - 99.15 sili. strong sili. py rich (97.75) 97.15 - 97.80 arg. strong 97.8 - 99.0 sili. weak P2- 8X, 9X	95.26-95.66 white qtz. vein 40 cm 95.85 qtz. vein 2.0 cm 96.30 60 qtz. vein 3.0 cm 96.70-96.90 qtz. + sili. 97.05-97.15 qtz. vein 10 cm 96.90 P2- 3A-8A P2- 57A P2- 3P, 6P 99.30 qtz. vein 1.0 cm P2- 4F	33 62 60 72 64

Table 4-22 Geologic Log of Drill Hole MJIE-P2 (3)

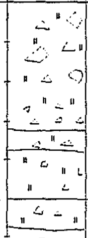
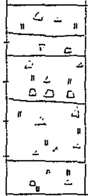
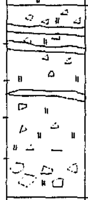
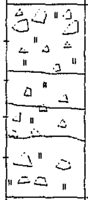
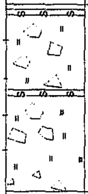
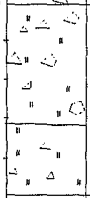
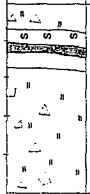
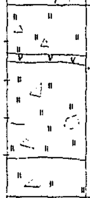
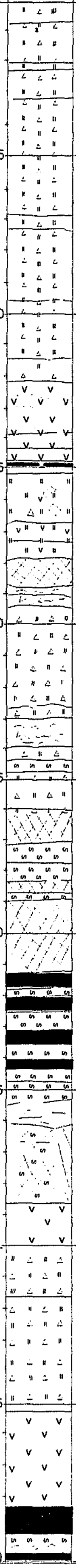
DEPTH (m)	GEOLOGIC Column	LITHOLOGY	ALTERATION	MINERALIZATION	RQD
105		greenish grey tuff breccia 102.40 lapilli 103.20 clay 103.70 clay + qtz.	103.20 argillic 10 cm 103.70 argillic	103.70 qtz.	100 100 100 80 90
110		105.80 clay 106.70 greenish gray lapilli tuff 107.50 109.15 110.0	105.80 argillic 10 cm Propilitic	106.70 pinkish calcite 0.5 cm 107.5 calcite vein 0.3 cm 109.15 qtz. vein 0.3 cm 110.00 qtz. vein 0.5 - 1.0 cm	100 100 100 100 100
115		110.6 110.8 111.0 111.15 112.2 112.3 lapilli tuff 114.0 greenish gray tuff breccia	Propilitic	110.60 calcite vein 0.5 cm 110.80 calcite vein 0.5 cm 111.00 calcite vein 0.5 cm 111.15 pinkish calcite 1.0 cm 112.20 pinkish calcite 1.0 cm 112.30 calcite 0.5 cm	100 100 100 100 100
120		115.65 116.65 greenish gray lapilli tuff 117.75 118.50	Propilitic	116.65 calcite qtz. vein 1.0 cm 117.75 calcite qtz. vein 0.5 cm 118.5 qtz. vein 0.5 cm 119.25 calcite vein 0.5 cm	100 100 100 100 40
125		120.25 - 120.35 clay 122.40 clay 10 cm	120.20 - 120.60 argillic strong	120.60 calcite qtz. vein 120.25 - 120.35 pyrite weak	70 70 90 20 75
130		green - light green lapilli tuff - tuff breccia		128.15 qtz. vein 1.5 cm	90 35 15 20 25
135		130.5 130.7 131.45 131.70 green - dark green lapilli - tuff breccia	130.70 - 131.45 argillic - silicified strong 131.70 argillic 5.0 cm	130.50 qtz. vein 1.0 cm 131.13 - 131.43 arg. + sili + qtz. vein green ep. ? 131.17 qtz. vein 5.0 cm 131.32 qtz. vein 3.0 cm	76 45 74 100 100
140		dark green lapilli - tuff breccia 138.5	propilitic	135.86 qtz. vein 0.5 cm 138.50 qtz. vein 0.4 cm 45	100 100 100 100 100
145		141.50 141.75 greenish gray andesite 144.08 greenish gray andesitic tuff breccia	propilitic weak	141.75 qtz. vein 3.0 cm pyrite (fine) 144.08 qtz. vein 0.2 cm	75 100 75 100 100
150		145.55 145.65 146.00 dark green andesitic tuff breccia	propilitic weak	145.55 qtz. vein 1.5 cm (white) 145.65 qtz. vein 1.0 cm 146.00 qtz. vein 0.5 cm	100 100 100 100 100

Table 4-22 Geologic Log of Drill Hole MJIE-P2 (4)



DEPTH (m)	GEOLOGIC COLUMN	LITHOLOGY	ALTERATION	MINERALIZATION	RQD
155	150.8 152.12 152.38 50 153.24	dark green tuff breccia light green fine grain andesite	prophylitic 152.31 silicified 152.24	150.8 qtz. vein 0.5 cm 152.12 qtz. vein 0.3 cm 152.32 qtz. vein 0.2 m 153.52 qtz. vein 2.0 cm 153.6 10 qtz. vein 1.0 cm 154.85 50 qtz. vein 0.4 cm	100 100 95 100 80
160	156.8 157.4 159.66	P2-34 T light green tuff breccia	P2-33X Prophylitic	156.8 50 qtz. vein 2.0 cm 157.4 qtz. vein 0.5 cm 159.66 qtz. vein 6.0 cm (white) P2- 11A	100 100 90 80 100
165	160.09 161.50 162.27 163.90 164.55 164.85	light green - gray fine grain andesite	162.20 silicified 164.85 argillic strong + silicified	160.09 qtz. vein 0.5 cm 161.50 qtz. vein 4.0 cm (gray) P2- 12A 162.20 qtz. vein 162.55 qtz. vein 0.3 cm 162.70 75 qtz. vein 2.0 cm 163.90 qtz. vein 0.5 cm P2- 13A	100 100 100 100 95
170	166.7 167.3 167.9 168.7 169.0	light green - gray fine tuff ? andesite ? silicified rock clay P2-50 T	166.10 argillic 167.9 - 168.7 Silicified strong 168.7 - 169.0 argillic strong	165.10 - 165.20 qtz. vein 10.0 cm 165.3 qtz. vein 165.68 qtz. vein 1.0 cm 166.10 qtz. vein 2.0 cm 166.70 qtz. vein 5.0 cm 167.30 qtz. vein stock 7.0 cm 168.13-168.27 qtz. vein 14.0 cm P2- 14A P2- 14X 169.40 qtz. vein 8.0 cm P2- 58A P2- 15A	68 95 100 100 100
175	171.45 172.0 173.0 174.0 174.45 174.80	breccia clay zone	172.60 - argillic 10 cm 177.0 - 174.0 argillic strong 174.45 - 174.8 argillic	P2- 16A 173.0 - 174.0 qtz. + argillic 174.90 qtz. vein 1.0 cm	100 100 100 100 100
180	176.0 177.0 178.35 178.75	silicified rock argillic rock silicified rock silicified rock	176.3 - 177,0 Silicified argillic strong 177.0 - 178.35 178.35 silicified strong 178.75 argillic - silicified	176.0 qtz. vein 0.5 cm P2- 17A P2- 17X 178.35 - pyrite rich P2- 18A P2- 19A	100 100 100 95 50
185	181.35 181.80 182.10 182.55 183.10 183.55 184.20 184.44 184.75	whitish gray qtz. + silicified + argillic zone (white qtz. whitish gray silicified) gray argillic zone	silicified strong 181.35 Silicified - qzt. - argillic zone	P2- 20A 181.35 - 181.80 qtz. Py 182.0 pyrite rich P2- 21A 182.10 - 162.55 qtz. vein P2- 22A 183.10 - 183.55 qtz. vein P2 - 23A to P2- 27A 184.20 - 184.44 qtz. vein P2- 25P 184.75 - 184.80 qtz. vein P2- 25F 184.80	40 20 50 35 40
190	186.15 188.90 190.0	silicified + qtz. + argillic silicified + argillic dark green andesite	P2-32 X Silicified + qtz. - argillic 188.70	186.35 qtz. + silicified + argillic Py	20
195	191.70 195.0	light green - gray lapilli tuff clay calcite light green fine tuff			
200	195.25 198.35 192.20 192.45 - 192.75 Clay	dark green prophylitic andesite P2-52 T qtz. vein silicified strong zone qtz. vein	192.20 - 192.45 argillic strong 192.45 - 192.75 silicified strong	198.15 198.35 qtz. vein + silicified pyrite Py 192.20	

Table 4-22 Geologic Log of Drill Hole MJIE-P2 (5)

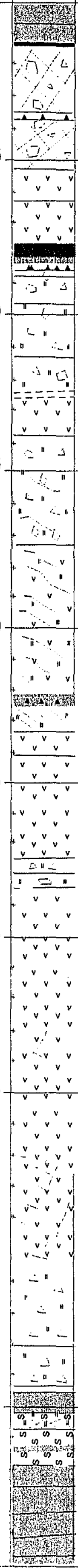
DEPTH (m)	Geologic Column	LITHOLOGY	ALTERATION	MINERALIZATION	RQD
205		dark gray silicified rock 200.60 201.25 dark gray argillic rock gray silicified breccia 203.45 203.71 white gray silicified breccia	200.60 qtz. silicified strong 201.25 silicified + argillic zone silicified + argillic medium Prophylitic	200.60 qtz. silicified strong 201.25 qtz. vein 10 cm 203.45 white qtz. vein 5.0 cm 203.95 qtz. vein 2.0 cm 40 P2- 37A P2- 38A P2- 39A P2-40A P2- 41A P2- 42A py	50 70 70 100 100
210		205.20 206.30 greenish gray andesite 207.65 208.05 208.43 208.70 209.65 green andesitic tuff breccia	silicified weak Prophylitic	205.20 qyz. vein 1.0 cm P2- 61A 206.30 qtz. vein 3.0 cm 50 207.65 qtz. vein + silicified 208.05 P2- 43A 208.43 - 208.49 qtz. vein 208.70 qtz. vein 1.0 cm 209.65 qtz. vein 1.0 cm	100 100 20 100 100
215		211.25 212.50 breccia zone 5.0 cm compact andesite greenish gray 213.80	213.80 - 215.50 argillic weak P2- 53X Prophylitic	211.00 qtz. calcite vein 1.0 cm 211.45 - 211.57 qtz. vein py. 210.75 py 212.50	100 100 95 100 60
220		whitish green tuff breccia 217.30 black andesitic green flow bound fine tuff	Prophylitic		60 100 100 100 100
225		222.15 222.55 qtz. silicified zone breccia 222.30 224.10	222.15 - 222.65 silicified strong Prophylitic	222.15 - 222.55 qtz. + silicified zone 224.10 qtz. vein 0.5 cm	100 100 100 100 100
230		dark green - green compact andesite 217.50 tuff breccia	Prophylitic	228.0 qtz. vein 0.2 cm 229.17 qtz. vein 1.0 cm	100 100 100 100 100
235		greenish gray compact andesite dark green andesite	Prophylitic	232.71 - 232.93 qtz. calcite 2.0 cm	100 100 100 100 100
240		P2- 51T dark green andesite auto brecciated andesite	P2 - 52X		100 100 100 100 100
245		240.45 greenish - dark green andesitic tuff breccia 243.0 244.20 244.45 silicified tuff breccia	P2- 54x 244.20 - 244.45 argillic strong 244.45 - 245.20 silicified weak		100 100 100 100 75
250		245.20 - 245.40 silicified tuff breccia 245.70 clay zone with silicified rock 246 90 247.50 dark gray silicified zone with pyrite 248.40 249.30 249.40	245.20 - 245.40 argillic P2- 44X 245.40 - 245.70 silicified weak 245.70 - 246.90 argillic silicified arg. 246.90 - silicified strong 250.00 sili 249.40 - 249.60 argillic	245.70 py 247.50 qtz. 248.40 qtz. 248.60 qtz. 249.80 qtz. P2- 62a P2- 46f P2- 44A P2- 45 A P2- 46 A P2- 48A py	60 0 70 80

Table 4-22 Geologic Log of Drill Hole MJIE-P2 (6)

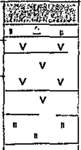
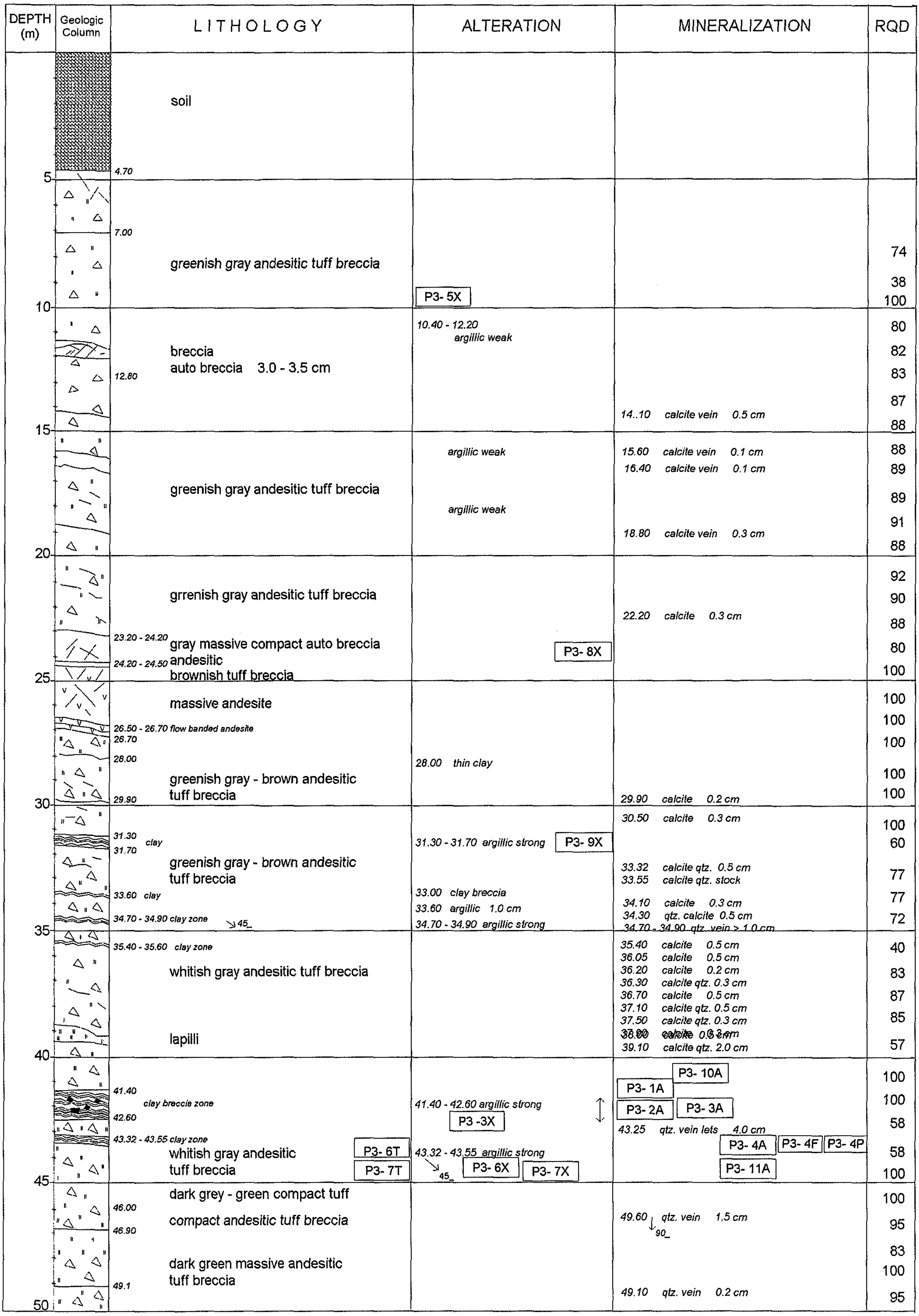
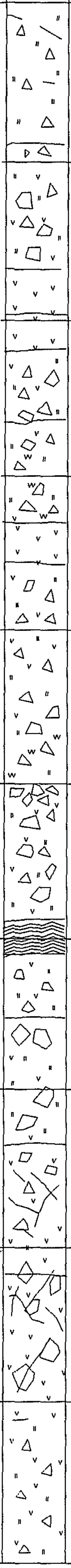
DEPTH (m)	Geologic Column	LITHOLOGY	ALTERATION	MINERALIZATION	RQD
255		250.50 silicified rock 250.80 tuff breccia light green andesite 252.40 253.00 light green - gray andesitic tuff 253.80	250.50 silicified strong 250.50 - 250.60 argillic P2 -49 X P2 -55X Prophylitic	250.50 silicified qtz. pyrite 251.40 calcite vein 0.5 cm 252.40 calcite vein 0.5 cm P2- 19 AP P2- 63 A py	
260					

Table 4-23 Geologic Log of Drill Hole MJIE - P3 (1)



DEPTH (m)	Geologic Column	LITHOLOGY	ALTERATION	MINERALIZATION	RQD
5		soil 4.70			
10		7.00 greenish gray andesitic tuff breccia	P3- 5X		74 38 100
15		breccia auto breccia 3.0 - 3.5 cm 12.80	10.40 - 12.20 argillic weak	14..10 calcite vein 0.5 cm	80 82 83 87 88
20		greenish gray andesitic tuff breccia	argillic weak argillic weak	15.60 calcite vein 0.1 cm 16.40 calcite vein 0.1 cm 18.80 calcite vein 0.3 cm	88 89 89 91 88
25		grrenish gray andesitic tuff breccia 23.20 - 24.20 gray massive compact auto breccia 24.20 - 24.50 andesitic brownish tuff breccia	P3- 8X	22.20 calcite 0.3 cm	92 90 88 80 100
30		massive andesite 26.50 - 26.70 flow banded andesite 26.70 28.00 greenish gray - brown andesitic tuff breccia 29.90	28.00 thin clay	29.90 calcite 0.2 cm	100 100 100 100 100
35		31.30 clay 31.70 greenish gray - brown andesitic tuff breccia 33.60 clay 34.70 - 34.90 clay zone ↘45_	31.30 - 31.70 argillic strong P3- 9X 33.00 clay breccia 33.60 argillic 1.0 cm 34.70 - 34.90 argillic strong	30.50 calcite 0.3 cm 33.32 calcite qtz. 0.5 cm 33.55 calcite qtz. stock 34.10 calcite 0.3 cm 34.30 qtz. calcite 0.5 cm 34.70 - 34.90 qtz. vein > 1.0 cm	100 60 77 77 72
40		35.40 - 35.60 clay zone whitish gray andesitic tuff breccia lapilli		35.40 calcite 0.5 cm 36.05 calcite 0.5 cm 36.20 calcite 0.2 cm 36.30 calcite qtz. 0.3 cm 36.70 calcite 0.5 cm 37.10 calcite qtz. 0.5 cm 37.50 calcite qtz. 0.3 cm 37.90 calcite 0.3 cm 38.00 calcite 0.5 cm 39.10 calcite qtz. 2.0 cm	40 83 87 85 57
45		41.40 clay breccia zone 42.60 43.32 - 43.55 clay zone whitish gray andesitic tuff breccia P3- 6T P3- 7T	41.40 - 42.60 argillic strong ↕ P3 -3X 43.32 - 43.55 argillic strong ↘45_ P3- 6X P3- 7X	P3- 10A P3- 1A P3- 2A P3- 3A 43.25 qtz. vein lets 4.0 cm P3- 4A P3- 4F P3- 4P P3- 11A	100 100 58 58 100
50		dark grey - green compact tuff 46.00 compact andesitic tuff breccia 46.90 dark green massive andesitic tuff breccia 49.1		49.60 ↓90_ qtz. vein 1.5 cm 49.10 qtz. vein 0.2 cm	100 95 83 100 95

Table 4-23 Geologic Log of Drill Hole MJIE-P3 (2)



DEPTH (m)	Geologic Column	LITHOLOGY	ALTERATION	MINERALIZATION	RQD
55		dark green tuff breccia massive 54.50	prophylitic weak	54.50 calcite vein 0.3 cm	100 90 100 100 100
60		greenish gray andesitic tuff breccia 58.35 greenish gray compact andesite 59.70	prophylitic weak	56.00 calcite qtz. 0.5 cm 52.50 calcite vein 0.5 cm 58.7 calcite 0.7 cm 59.70 calcite 0.5 cm	100 100 100 100 100
65		61.00 greenish gray andesitic tuff breccia 63,65	prophylitic weak	63.25 - 63.65 calcite vein 0.5 cm ↓ 90	90 100 90 70 90
70		66.50 compact andesite 67.80 dark green andesitic tuff breccia	prophylitic weak	69.60 calcite 0.2 cm	100 70 80 95 95
75		dark green - gray andesitic tuff breccia	prophylitic		100 100 100 100 90
80		dark green andesitic tuff breccia ? 79.55 clay zone	prophylitic 79.55 - 80.60 argillic strong	py weak	100 100 100 100 44
85		80.60 green - dark green andesitic tuff breccia ? 82.70	Prophylitic	80.80 calcite 0.2 - 0.5 cm 82.7 qtz. vein 10 cm 82.80 pyrite weak	60 100 100 100 100
90		86.70 green - dark green andesitic lava breccia ?	Prophylitic	86.70 qtz. vein 0.5 cm 86.80 qtz. vein 0.5 cm	100 100 100 100 100
95		91.85 dark green andesitic breccia	91.85 clay Prophylitic	91.85 clay with qtz.	100 100 100 100 100
100		dark green andesitic tuff breccia			100 100 80 80 80

Table 4-23 Geologic Log of Drill Hole MJIE-P3 (3)

DEPTH (m)	Geologic Column	LITHOLOGY	ALTERATION	MINERALIZATION	RQD
105		HQ ↕ NQ dark green lapilli tuff	P3- 12X prophylitic	*104.15 calcite vein 0.3 cm*	100 100 80 100 80
110		dark green lapilli tuff breccia *109.55*	prophylitic		70 100 100 100 80
115		greenish gray andesite *112.50* greenish gray - brown tuff breccia	prophylitic		70 100 100 100 100
120		tuff breccia	prophylitic		100 100 100 100 100
125		*121.50* greenish gray - green andesitic tuff breccia *fragments brown - light green color 0.3 - 5.0 cm*	prophylitic		100 100 100 100 100
130			prophylitic		100 100 100 100 100
135		*133.10* *green - light green massive andesite* P3- 19T	prophylitic		100 100 100 100 100
140		*compact andesite (chlorite spot)*	prophylitic		100 100 100 100 100
145		*greenish gray compact andesite*	prophylitic		100 100 100 100 100
150		*greenish gray compact andesite*	prophylitic	*146.70 silicified* *147.20 calcite*	100 100 100 60 100

Table 4-23 Geologic Log of Drill Hole MJIE-P3 (4)

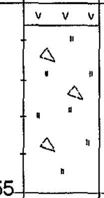
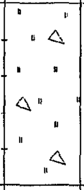
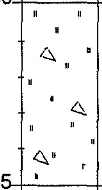
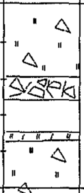
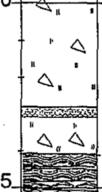
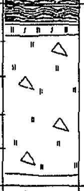
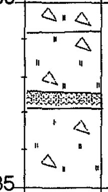
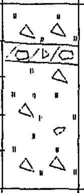
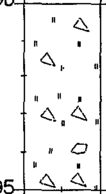
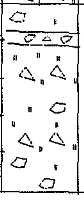
DEPTH (m)	Geologic Column		LITHOLOGY	ALTERATION	MINERALIZATION	RQD
155		150.50	andesite green lapilli - tuff breccia (fragments brown - dark green) D 2 - 3 cm	P3 - 13X prophylitic		100 100 100 100 100
160			green massive lapilli - tuff breccia	prophylitic		100 100 100 100 100
165			green massive lapilli tuff breccia	prophylitic		100 100 100 100 100
170		167.00 167.60 168.50	breccia zone green fine tuff	prophylitic		100 100 100 100 100
175		172.85 173.25 174.03	green tuff breccia argillic weak green clay zone	P3 - 16X 172.85 - 173.25 argillic weak 174.03 - 175.55 P3 - 17X	P3- 16A P3- 20A P3- 17A P3- 21A 172.85 - 173.25 py 174.03 - 175.55 py	100 100 50 40 40
180		175.55 179.90	fine tuff green tuff breccia	argillic calcite prophylitic	P3 - 18A 198.80 calcite	20 100 100 100 100
185		180.80 182.50 182.90	green tuff breccia argillic breccia	180.80 argillic weak 182.90 prophylitic		90 90 90 100 100
190			breccia green massive tuff breccia	prophylitic		100 70 100 100 100
195			green massive tuff breccia	prophylitic		90 100 100 100 100
200			breccia green andesitic tuff breccia	prophylitic P3 - 14X	thin calcite vein	80 100 100 100 100

Table 4-23 Geologic Log of Drill Hole MJIE-P3 (5)

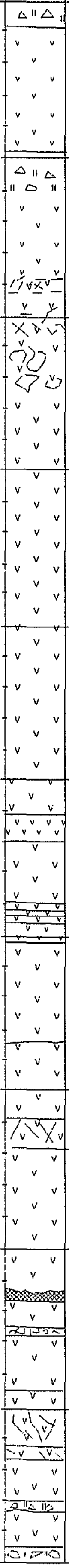
DEPTH (m)	Geologic Column	LITHOLOGY	ALTERATION	MINERALIZATION	RQD
205		green tuff breccia 200.70 dark green compact andesite 204.70	prophylitic		100 100 100 100 100
210		↘ 45_ light green tuff breccia P3- 22T 206.35 dark green andesite fracture	prophylitic		100 100 100 100 70
215		green = grayish andesite			15 65 100 100 100
220		dark green andesite massive			100 100 100 100 100
225		dark green andesite			100 100 100 100 100
230		226.30 ↘ 60_ green fine grain andesite 227.00 229.00 *229.25-229.40* 229.55 dark green compact andesite		226.30 calcite vein 0.5 cm *229.00 calcite vein 0.3 cm ↘ 50_* *229.25 calcite vein 0.5 - 2.0 cm ↘ 30_* *229.55 calcite vein 0.5 cm ↘ 70_*	100 100 100 100 100
235		230.30 grayish - dark green andesite	*235.50 argillic 0.5 cm*		100 100 100 100 100
240		235.90 dark green andesite 236.75 grayish green andesite			100 100 100 100 100
245		241.20 *qtz. vein + silicified 10 - 15 cm* 241.63 *clay* *core broken* 242.50 242.85 244.50	*241.30 - 243.63 argillic zone* *242.50 - 242.85 argillic weak* *244.50 argillic*	*241.20 white qtz. vein 5 - 8 cm py* P3- 23A	100 45 55 60 50
250		245.05 *fracture zone* 246.35 dark green andesite 246.05 grayish green andesite 248.00 dark green tuff breccia grayish green andesite 249.50 dark green tuff brecciaa	*245.30 - 246.35 argillic weak* P3- 15X	*245.65 qtz. vein 0.5 cm py* *246.85 qtz. vein 0.5 cm* *244.89 calcite vein* *243.65 - 244.65 calcite vein 0.3 cm*	25 60 68 90 100

Table 4-24 Geologic Log of Drill Hole MJIE - P4 (1)

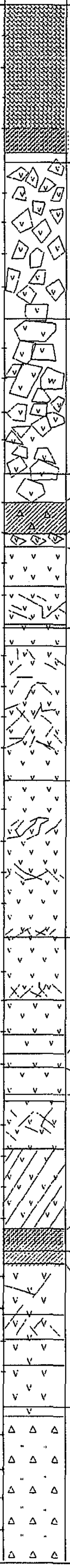
Depth (m)	Geologic Column	Lithology	Alteration	Mineralization	RQD
5		brown soil yellowish brown soil 4 70			
10		brown weathered andesite			
15		brown weathered andesite			
20		15 80 silicified zone brecciated 16 80 brown andesite 17 35 grayish - blackish green compact andesite 18 60	15.80 - 16.80 m silicified strong	15.80 - 16.80 m qtz. stock work py diss. limonite	30 50 90 20
25		20 60 weathered andesite blueish gray - green porphyritic andesite ?		limonite	30 0 0 20 40
30					90 50 40 90 100
35		green porphyritic andesite ? 32 00 green - dark green andesite 33 10 33 70 fine grain andesite 34 20	↑ silicified weak	33.10 calcite vein 0.8 cm 33.70 calcite vein 0.5 cm 34.20 qtz. vein	100 30 100 100 100
40		35 50 fracture zone 36 70 gray - whitish gray silicified rock (andesite) 39 35 silicified rock 38 90	silicified medium - strong 39.35 - 39.90 m silicified strong	39.35 - 39.90 py rich	40 55 39 53 24
45		silicified medium 40 40 gray - whitish gray andesite 42 05 gray - whitish gray andesite 42 80 43 60 gray - light green andesite	silicified + argillic 42.45 - 42.80 argillic weak P4 - 7X		23 18 18 65 65
50		45 25 green - dark green tuff breccia			100 50 100 100 100

Table 2-24 Geologic Log of MJIE-P4 (2)

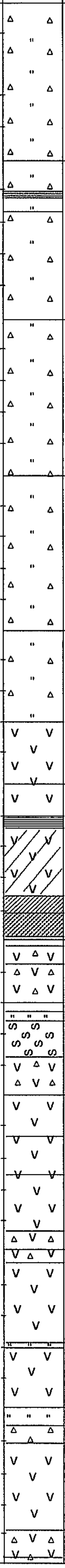
Depth (m)	Geologic Column	Lithology	Alteration	Mineralization	RQD
55		grayish green tuff breccia fragment 3 - 5 cm			100 100 100 100 100
60		56.20 56.70 ↘40 clay green tuff breccia	56.20 - 56.40 argillic weak 56.70 argillic		100 88 100 100 100
65		green tuff breccia (fragments brown-dark green)			100 100 100 100 100
70		green tuff breccia			100 100 100 100 100
75		green - grayish green tuff breccia 73.00 grayish green - green andesite	P4 -8X	73.00 qtz. vein 1.0 cm	100 100 100 100 100
80		76.10 76.40 ↘20 clay blueish green fine grain andesite auto breccia 78.60 silicified zone 79.05 blueish green fine silicified rock 79.90	76.40 clay silicified weak - medium	76.10 qtz. silicified vein 1.5 cm py. diss. P4 -6A 78.60 - 78.90 qtz. silicified py. rich 79.05 silicified + py vein 2.0 cm	100 100 100 100 100
85		80.70 blueish green breccia andesite 82.00 - 82.40 ↘20 clay 82.60 blueish green fine tuff argillic rock 83.70 green brecciated andesite	82.00 - 82.25 argillic 82.60 - 83.20 argillic argillic weak - medium	80.10 qtz. vein 0.5 cm 80.70 qtz. + py. vein 2.0 cm 82.00 - 82.25 silicified vein py. rich 82.40 qtz. vein 3.0 cm	100 100 56 100 100
90		blueish green fine grain andesite 86.30 dark green breccia andesite 87.50 blueish green fine grain andesite epidote rich 89.35 dark green breccia andesite		85.00 qtz. vein 0.5 cm	100 100 100 100 100
95		90.40 dark green prophylitic andesite ? 93.10 flow band fine tuff blueish green fine tuff epidote spot	prophylitic		100 100 100 100 100
100		95.50 breccia 96.10 green - dark green prophylitic andesite 98.90 dark green andesite breccia 99.80	prophylitic P4 -9X	98.90 qtz. epidote vein 1.5 cm	100 100 100 100 100

Table 4-24 Geologic Log of Drill Hole MJIE-P4 (3)

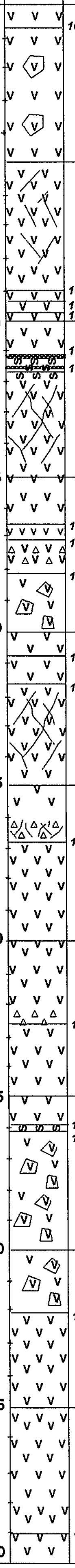
Depth (m)	Geologic Column	Lithology	Alteration	Mineralization	RQD
		100.65 dark green andesite epidote rich dark green andesite (auto breccia)		100.65 qtz. vein 1.0 cm	100 100 100 100 100 100
105		109.00↘ 30 109.40 109.65 grayish green andesite		109.40 qtz. vein 0.5 - 1.0 cm 109.65 qtz. vein 0.5 cm	100 100 100 100 100
110		111.20 111.65 grayish green auto brecciated andesite	111.65 argillic weak	111.20 qtz. vein 0.5 cm 111.65 - 112.00 py. diss.	100 85 100 100 100
115		auto breccia andesite epidote rich 116.50 fine grain andesite 117.00 breccia andesite 118.10 fine grain andesite green auto breccia			100 100 100 100 100
120		andesite 120.70 121.75 dark green brecciated andesite epidote	prophylitic	120.70 calcite 1.0 cm 120.85 calcite 0.5 cm py	100 100 100 100 100
125		breccia 126.70 dark green andesite	P4 -10X	126.70 calcite 0.5 cm 130.00 calcite 0.5 cm	100 100 100 100 100
130		132.60 breccia		132.60 calcite 0.5 cm 135.00 calcite	100 100 100 100 100
135		135.95 136.13 dark green andesite auto brecciated	135.95 - 136.13 argillic P4 -15X	135.95 - 136.13 py. rich P4- 1A	100 100 100 100 100
140		142.00 dark green andesite		142.00 calcite 0.5 cm	100 100 100 100 100
145		dark green andesite 149.00		149.00 calcite	100 100 100 100 100
150					

Table 4-24 Geologic Log of Drill Hole MJIE-P4 (4)

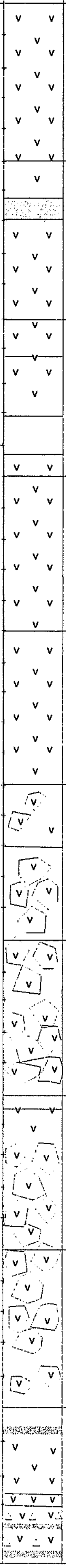
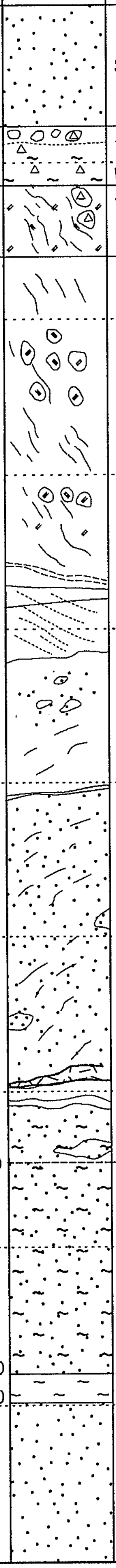
Depth (m)	Geologic Column	Lithology	Alteration	Mineralization	RQD
155		dark green andesite	Prophylitic		100 100 100 100 100
160		156.30 silicified zone 156.90 light green fine grain andessite	P4 - 16X 156.30 - 156.90 silicified strong P4 - 11X prophylitic	156.30 qtz. vein 2.0 cm 156.39 - 156.90 py. rich 156.90 qtz. vein P4 - 2A P4 - 3A	100 100 100 100 100
165		161.30 dark green andesite 163.15 50 tuff breccia 164.30 30	prophylitic		100 100 100 100 100
170		dark green andessite	prophylitic		100 100 100 100 100
175		dark green andesite	prophylitic		100 100 100 100 100
180		177.00 dark green andesite auto breccia	prophylitic	179.00 calcite 0.2 cm	100 100 100 100 100
185		dark green andesite auto breccia	prophylitic		100 100 100 100 100
190		185.40 20 dark green andesite	prophylitic	185.40 calcite vein 1.0 cm	100 100 100 100 100
195		dark green andesite auto breccia	P4 - 12X prophylitic		100 100 100 100 110
		197.65 198.15 fine grain andesite andesitic tuff breccia	prophylitic		100 100 100 100 100

Table 4-24 Geologic Log of MJIE-P4 (5)

Depth (m)	Geologic Column	Lithology	Alteration	Mineralization	RQD
205		gray - light gray tuff breccia andesite 204.10 andesite 204.65	prophylitic		100 100 100 100 100
210		dark green andesite 208.55 45	prophylitic	208.55 calcite vein 0.5 cm	100 100 100 100 100
215		210.10 dark green andesite dyke ? 212.35 50 green tuff breccia		210.10 calcite vein 0.5 cm	100 100 100 100 100
220		green - dark green tuff breccia			100 100 100 100 100
225		green - dark green tuff breccia lapilli tuff tuff breccia	P4 - 13X		100 100 100 100 100
230		226.00 fine andesite 226.70 grayish green - light green 228.35 fine grain andesite ? 228.35 229.65	228.35 clay 0.2 cm	226.70 py. vein 0.2 cm 228.65 calcite vein 0.5 cm	100 100 100 100 100
235		grayish green tuff breccia 234.50 gray fine grain andesite	232.20 clay		100 100 100 100 100
240		235.45 lapilli size fragment grayish green tuff breccia 239.65	239.75 - 241.10 silicified + argillic	238.65 calcite 0.2 cm P4 - 4A 238.75 py. P4 - 5A	48 100 74 64 100
245		silicified argillic zone py diss. 241.05 grayish green tuff (lapilli) 241.15 fine grain andesite 243.60 auto breccia 244.30 grayish-light green andesite	240.00 argillic P4 - 17X P4 - 14X 243.60 - 243.80 argillic	240.70 qtz. py.	77 100 100 83 100
250		245.30 50 grayish green tuff breccia 248.30 grayish green tuff breccia		248.40 silicified + qtz. vein 10 cm	81 100 65 100 100
250.50		250.35		250.35 py. vein 0.3 cm	

Table 4-25 Geologic Log of MJIE-SI (1/8)

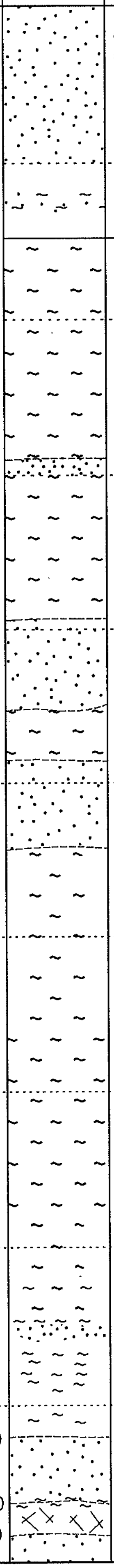
Direction・Inclination: East,-80°



	Depth(m)	Log	Geology	Alteration and Mineralization	RQD	Samples
	3.90		Soil(brown)	(none)		
			Tuff breccia?	weathered (kaolinized)	23	
5	5.80		White bleached rock		95	
	gradual		Tuff breccia? (red white banded texture. secondary, due to weathering)	weak argillic zone (weathered hematitic red FeOx & silicified laminae)	98 82	
			Tuff breccia?		95 90	
10			(similar to flow banded lava.) (pumiceous?)porous part silicified part→white rather hard	weak silicification (hydrothermal alteration →FeOx(reddish) (bleached) FeOx(pyrite boxwork)	90 65 70 75 50	
15 17.90	19.30		ditto	ditto	100 90 90 100 50	
20			ditto	ditto	80 60 100 95 100	
25			ditto 29.60~29.70 gray part(pyrite disseminited. argillic fragment)	ditto	80 95 80 40 95	
30			33.40~34.50 gray part 33.30~34.80 (white)kaolinite?	Oxidized zone (red+white)	35 60 60 45 80	
35			34.90~35.20		80 50 30	
	37.30		Fault zone?	Pyrite disseminated	65 45	
40	44.00 44.80		(soft gray clay) gradual gradual	Argillic zone	10 70 95 25 100	
45 50			gray,harder than clay zone (Tuff?)	Argillic zone Pyrite disseminated medium~strong	80 85 30 100 85	

Table 4-25 Geologic Log of MJIE-SI (2/8)

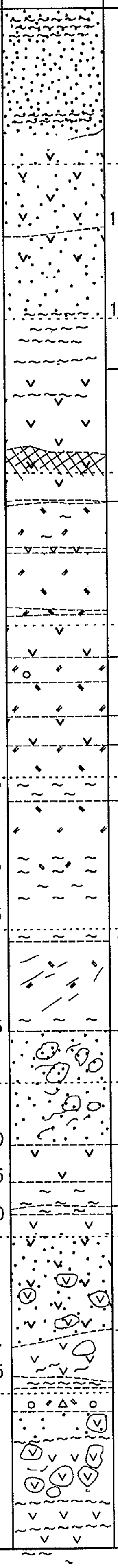
Direction・Inclination: East, -80°



	Depth(m)	Log	Geology	Alteration and Mineralization	RQD	Samples
55			Argillic compact massive zone gray ,harder than clay zone (Original rock:Tuff breccia?)	Pyrite disseminated midium 5~15%	60 80 100 96 95	
60	57.50		clay soft, gray	Pyrite disseminated strongly	50 80 55 65 96	
65	64.20 65.00		rather hard (a block in fault?)	Pyrite disseminated strongly	80 92 100 100 100	
70	69.90		clay:soft gray	Pyrite disseminated strongly	80 100 100 100 40	
75	72.60 74.09		rather hard (a block in fault?) soft	Pyrite disseminated strongly	50 100 80 80 100	
80	77.20			Pyrite disseminated strongly	100 100 60 60 0/100	
85	84.00		soft very soft very weakly consolidated	Pyrite disseminated strongly	100 90 94 100 100	
90	85.20		soft clay gray	Pyrite disseminated	96 90 94 100 98	
95			soft clay (partly harder) gray	Pyrite disseminated	83 100 70 100 98	
100	96.00 98.20 99.00		gradually become harder rather hard weakly fractured	Pyrite disseminated strongly	98 100 92 30 40	

Table 4-25 Geologic Log of MJIE-SI (3/8)

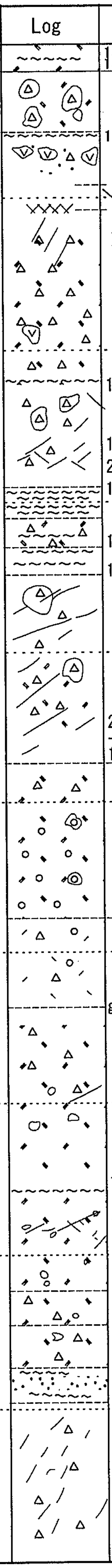
Direction・Inclination: East, -80°



	Depth(m)	Log	Geology	Alteration and Mineralization	RQD	Samples
100	101.00 103.60 104.20 104.70		100.95~101.00 soft clay 103.60~103.80 104.00~(qtghan) 100	Pyrite disseminated	20 80 70 30 60	
105 107.10 108.80	105.10		softer 106.90(gradual) (harder) Andesite?(corpart masive) 100 110.0 gradud		20 95 100 90 34	
HQ 110 111.00 NQ 112.45 114.45	111.65		Andesite(?) (dark-gray greenish? compart hard)	Pyrite 5~10% argillic Pyrite disseminated (3~5%) phyllic-propylitic? argillic 114.00~: silicified weakly Pyrite intensely disseminated(10%)	40 40 50 100 45	
115 115.25	115.70 ~115.80 119.85		chilled magine Gray silliceous rock (fine tuff orgin?) 117.50~117.70: andesite(block?) Coarse tuff, gray rather soft 119.55-119.85 fine ~ sandy tuff	Pyrite disseminated weakly-moderately	20 50 35 86 27	
120	121.20 121.95 123.20 124.00		andesite diabase texture coarse tuff sandy tuff andesite tuff(silems)	argillic alteration	75 25 50 90 50	
125	125.10 125.85 128.25 129.75		soft clay Tuff(?) argillic 127.85~127.95 soft clay soft clay		55 80 95 55 85	
130	133.55		130.45~136.85:Gray soft clay Fine tuff gray partly rather hard 133.15~.25: clay Dacitic tuff breccia? Pale gray~gray		85 80 65 75 50	
135	137.10 138.35 139.20		Andesite rather hard 139.20~: Soft clay	Pyrite:strong, veinlets~dissemination Pyrite:weak, argillic	50 55 100 90 95	
140	1433.50~ 144.65		Andesite? (Argillic rock) (massive copact, rather hard) dark-gray dots (py+SiO2) Andesite (Fine tuff?) 144.65~144.90: clay fractured	Pyrite:strong Alunite? yellowish mineral	100 100 90 95 80	
145 150			Lapillituff~Tuff breccia rather hard 146.60:weakly gray-dark green Andesite breccia(lava?) 148.55(2cm) clay 149.25(2cm) clay	Epidote in amygdals	65 75 75 85 85	

Table 4-25 Geologic Log of MJIE-SI (4/8)

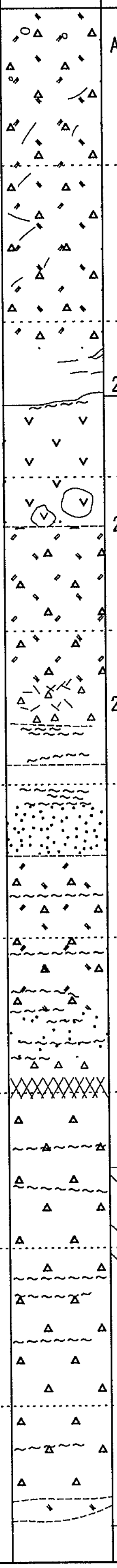
Direction・Inclination: East, -80°



Depth(m)	Log	Geology	Alteration and Mineralization	RQD	Samples
150		150.00~150.35 clay(soft)tuff 150.85 dark-gray~greenish-gray		95	
		fractured Tuff breccia~		90	
		blueish-green dark green 152.90~153.05(propylite?)	pyrite disseminated	62	
		weakly fractive matrix blacky(silica+Maox2)	kaoline like white minaral	92	
		fragment:blue-green	dominant	70	
155		whitish tuff		55	
		Lapilli size fragment dominant		70	
			sericitic clay	86	
			dominant	62	
				92	
160				95	
		161.00~161.20fractureal clay		55	
				48	
		163.10 20° 60°	pyrite:veinlets width<1 mm hair (dense, 2~3cm interval)	60	
		164.50~165.40 white clay soft		38	
165		gray		40	
		166.60 soft clay	fault	55	
		167.55		64	
		Tuff breccia	chlorite-sericite propylitic	80	
		blueich-green rather hard	+ pyrite (moderate~strong)	85	
170			pyrite streak along cracks	96	
			(width<1mm)	65	
		22° -0°		100	
		173.85		70	
				84	
175		Lapilli size>Tuff breccia		80	
		rather soft gray matrix		88	
		~white fragment:greenish lapill		78	
				65	
				92	
180		Lapilli tuff - tuff breccia		85	
		gradual		90	
		Tuff breccia fragment:gray andesite φ=10cm		90	
		matrix greenish(ash-laplli)		85	
		20 ° pyrite disseminated		35	
185		fragment:matrix=1:1		35	
		megascopically homogeneous		55	
		187.55 (40°) clay(soft)	-187.55	82	
		60° Coarse tuff~lapilli tuff	pyrite disseminated:weakly moderate amount	75	
		10°		82	
190				75	
		191.20 —191.35 Tuff breccia		88	
		192.20 lapillituff~tuff breccia		78	
		(green patch tuff) 193.70		70	
		clay-argillic gray soft		77	
195		Tuff breccia		55	
				74	
				75	
				75	
				78	
200					

Table 4-25 Geologic Log of MJIE-SI (5/8)

Direction・Inclination: East, -80°



	Depth(m)	Log	Geology	Alteration and Mineralization	RQD	Samples
200					75	
			Andesitic tuff breccia	Pyrite partly strongly disseminated veinlets	98	
			Fragments:gray max10cm r-hard finegramed andesite	-pool near the boundary between fragments	95	
					91	
			matrix smaller size, green colored ; rather soft gradual		92	
205			gradual matrix:similar color (green)		98	
					90	
					87	
					94	
					96	
210					100	
				211.0 qtz druse 5mm(pool)	16	
			213.25	212.40 white mineral vein	55	
				213.25~213.30(5cm) gray-pyrite clay	52	
			Andesite?		42	
215			(weakly breacciated lava?)		55	
	216.65		216.65	propylitic	65	
					65	
			Andesitic tuff breccia (Auto brecciated lava?)	very weak argillic (bluiesh-green)	76	
					54	
220					78	
					34	
			222.60~222.65(5cm)breccia	222.85	20	
				weak argillic moderate silicification	15	
			224.23	224.23 grayish	75	
225			225.00	225.00 soft clay+brecciated 225.80 weakly brecciated (gradual)	12	
					33	
				227.00	57	
				228.25-228.50(0.25) clay	35	
					36	
230				pyrite dissemnation strong~medium	20	
					55	
				232.85 clayish breccia	45	
				233.65	15	
				234.10~234.20:clay 234.55	20	
235				weak brecciation with clay	10	
				pyrite diss. strong	35	
			237.50		60	
			40		96	
			30		60	
240			10		30	
			241.100~251.55		40	
			Tuff breccia compact	sillicification strong	65	
				moderate~weak argillization pyrite dissemination	80	
					85	
245			246.70~248.85 porus(fine tiff?)	247.60~247.00 argillic	90	
			Fine tuff?		60	
					55	
			248.85		45	
			249.95~245.00 fractured	sillicification moderate~weak	40	
250						

Table 4-25 Geologic Log of MJIE-SI (6/8)

Direction・Inclination: East, -80°

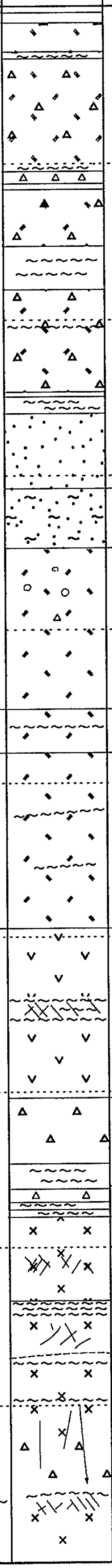
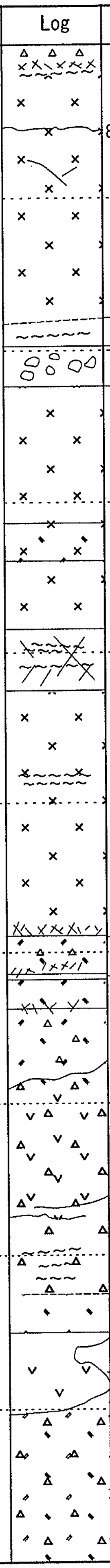
	Depth(m)	Log	Geology	Alteration and Mineralization	RQD	Samples
250			250.10 250.40	250.10~250.50	12	
			Tuff breccia	251.60~250.76	52	
				pyrite:moderte-strong	65	
			gray, rather-hard rather-compact	argillization: moderate	40	
					15	
255				255.10~255.25: fractured 255.40~255.75: clay	55	
					35	
			257.60	257.30~257.50: fractured, pyrite	16	
			259.80	257.60~258.80: partly strong argillization, pyrite disseminaed	-	
					0	
260				260.00~260.33 clay	44	
					73	
			262.30	262.10~0.5cm: calcite veinlet	53	
			262.90	262.30~262.90:gray clay, fractured, pyrite	85	
			Tuff breccia gray hard	pyrite:moderate-strong	34	
265			265.40		17	
			Breccia zone dark gray	Pyrite: strong Argillization: strong	60	
			266.40		60	
			Tuff breccia~lapilli tuff porous		84	
					44	
270					40	
	273.60		Tuff breccia rather compact		30	
					52	
	274.00		Tuff breccia→tuff (gradual)		52	
					46	
275			Tuff(coarse tuff)		58	
			irreglar blackly layered		60	
					33	
					21	
	279.95				65	
280			Andesite	alunite? pyrite	62	
					34	
			282.20 282.75 fractured andesite? compact		32	
					30	
					40	
285			285.0 Andesite tuff breccia	285.18~285.25 argillic zone	45	
					32	
				287.30~288.30: soft clay, gray	5	
			289.10~289.20:fractured zone	288.60~288.65: soft clay (10-20°)	10	
					30	
290			Diortic~porphyritic rock	K-feldspar? Pyrite diss. moderate ~strong, pinky color alunite	20	
	291.81		291.85~292.35 clay		20	
	292.35		292.35~293.75 rather hard	argillization clay(kaoline)	10	
			293.75~293.90(0.15) clay		15	
			294.10~295.20 fractured		20	
295			Tuff breccia?	295.35~75(0-30°) clay	15	
				pyrite diss. moderate~strong 295.50: pyrite hair(20')	12	
	~~		298.00~298.35(0.35) clay	slicification+pyrite-kaoline	40	
					10	
			Igneous rock (porphyry?)		65	
300						

Table 4-25 Geologic Log of MJIE-SI (7/8)

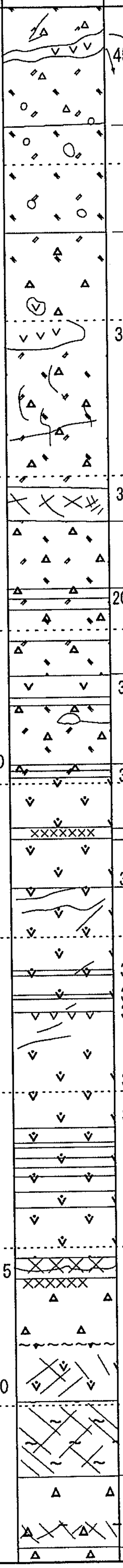
Direction・Inclination: East, -80°



	Depth(m)	Log	Geology	Alteration and Mineralization	RQD	Samples
300	300.85		Silicified tuff breccia?		35	
	301.25		Brecciated	301.25 kaoline veinlet(0°) (weakly argillic altered)	35	
	302.90		80°	pyrite dis s 302.90: white clay+pyrite 80°	95	
			gray~hard compact rock		95	
				304.20(qtz+hemetite) white clay 45°+30°	92	
305					92	
	306.10			qtg v l 2mm 40°chalcedonic qtg v l - 70°-	88	
	307.65		gray		85	
	grodual				95	
	309.85		dark gray+partly green	py. diss: partly strong	35	
310			fractured clay py diss helf traghet	309.85~309.90(0.03 clay)	90	
	312.00		+matrix: (porphyritic) 20	311.00 2mm soft white clay	94	
				313.85(0°)pyrite veinlet Argillic(Kaoline	96	
				-pyrophyllite)	90	
				314.40 pyrite veinlet, kaoline halo	60	
315			315.65	+pyrite +serite	90	
			green dotin wht matrix 317.00 (alterdin)		95	
					100	
			318.20~318.40:fracted	318.30 pyrite veinlets(0~10°)	50	
			319.20	319.20 319.20~30(45)py strong +white	20	
320			weakly fractured partly clay	320.60 clay clay	30	
			321.25 clayey		65	
			compact	silicification:weak, pyrite: strong~moderate	95	
			clay(pinky part)+ quartz+pyrite	323.25 weakly argillic (clay) 323.80 fractured(weak:0.40)	70	
			324.00(10°) Alunite? veinlet	324.60(5°)pyrite veinlet	100	
325				325.00 late calcite veinlet	100	
				argillic silicified	100	
				pyrite strong	95	
					95	
				326.90	60	
330				330.75 pyrophylitic mixed zone	25	
					50	
			Tuff breccia		100	
			334.00:gradual	propylitic	95	
			60°		93	
335				336.20 quartz+magnetite	60	
			(Brecciated lava?)		95	
				338.30:qtz+magnetite(width:1mm) 338.70:qtz+pyrite(width:2mm)	100	
			30° 338.70 339.00		85	
				339.50	60	
340				silicified+clay pyrite(strong)	30	
			341.30	341.35	65	
			342.65 Fine tuff?	sericite, pyrite+magnetite	100	343.80 s 6.351
			Andesite + Fine tuff 343.75	343.75	70	
			(Andesite dyke?) dark green 344.65		95	
345			Tuff breccia	345.00 (0°) : pyrite veinlet (1mm)	90	
				346.00 (10°): pyrite veinlet (1mm)	100	
			gradual 347.00	Chlorite+ pyrite zone	100	
			Tuff~tuff breccia		60	
				350.00:magnetite veinlet	90	
350						

Table 4-25 Geologic Log of MJIE-SI (8/8)

Direction・Inclination: East, -80°

	Depth(m)	Log	Geology	Alteration and Mineralization	RQD	Samples
350			Tuff breccia		90	353.25~354.25 S1-72:6.90%S
	351.00		45 Andesite(dyke?)	py: moderate~strong	85	
			dark-gray		60	
					85	
					98	
355			Lapilli tuff(353.90~357.10)	weakly-silicified	100	
			propylitic	357.10	100	
				357.80	100	
				propylitic	100	
				White mineral stockwork in propylitic rock	100	
360			360.30~360.80 propylitic		100	
					98	
			greenish magnetite rich		100	
				pyrite:moderate	100	
					96	
365			365.45~360.40 silicified(grayish) pyritediss moderately		80	
					80	
				White mineral stockwork in propylitic rock	96	
			20°	368.40 Molybdenite-qtz.veinlet (1mm)with pyrite, clay	100	S1-76 368.40 102ppm Mo
				368.75 0°~80° py veinlets	100	
370				370.15:Pyrite veinlet (1mm) 371.42:Pyrite veinlet (1mm)	97	
	371.40		371.40~372.00:block in tuff br? block:andesite	pyrite: strong	96	
				372.90:Mt.chl.epidote 1cm	96	
					94	
	374.00		374.15	374.15:py.epidote,chl veinlet,1mm	100	
375			374.40~376.40 porphyritic Andesite		100	
				376.40~376.70 dioritic(coarse grain)	95	
			porphyritic Andesite 378.40~37 378.40		100	
				378.35: 1mm py(60°) Magnetite:weak	100	
				379.05: 1mm py(65°) epidote 379.50 1mm py	100	
380			381.00~381.20 Andesite	380.50 5mm py sericite (80°)	100	
			381.95~382.00 ndesite	381.85 1mm qtz (86°) pyrite moderate	100	
			382.55~382.65 Andesite Andesite? (porphyritic)	382.85 8mm py, chl, qtz (30°)	100	
				384.30 1mm py, chl, qtz (45°)	96	
			384.50~385.00 Andesite	385.65 1mm sericite, qtz, chl py(0°)	100	
385			386.70~386.80 dark green	386.20: 1mm qtz (cut qtz veinlet, 70°) 386.80: 1mm py (80°)	100	
			greenish white	386.95: 1mm py (40°) 387.15: 2mm py (40°)	95	
				387.30~387.40 10mm clay (40°) 387.60: 1mm py (5°)	100	
				388.20: 1mm py (9°) 388.50: 1mm py	98	
				py.w~m 389.05: 1mm py chl (30°)	99	
390			390.85~391.15 silicified zone	389.20: (25°) 390.10: (85°)weak argillic	100	
	391.15		silicified block?	pylite modeate yellowish white	98	
			Tuff breccia 393.00~	390.15: py(60°)	75	
			greenish dioritic rock	390.95:Pyrite 391.05:Pyrite	55	
			395.00 weakly fractured	394.90~395.00:chl-sericite-pyrite	40	
395	395.00		clay(?)	(lost core)	0	
					0	
				pyite: moderat	0	
			Tuff breccia	weakly silicified clayey pyrite:strong-moderate	10	
400			399.40~400.50	argillic, weakly silicified	80	

400.50
EOH
2/11

Table 4-26 Chemical Analysis Results of Drill Hole Samples, Prambon District

Sample No.	Depth(m)			Au	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Ti	Tl	U	V	W	Zn	Zn	Ag
				ppb	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm
P1-1	41.41～41.65			156		0.8	0.57	22	<10	20	<0.5	<2	8.37	<0.5	17	21	19	5.72	<10	<1	0.16	10	2.52	2560	2	0.01	<1	460	7	2.95	<2	9	61	<0.01	<10	<10	60	<10	53		
P1-2	41.65～41.92			52		0.5	1.3	21	<10	20	<0.5	<2	4.08	<0.5	17	21	28	4.97	<10	<1	0.2	10	1.48	1625	1	0.01	1	630	3	2.06	<2	10	39	<0.01	<10	<10	63	<10	68		
P1-3	41.92～42.75			63		1.1	0.55	52	<10	20	<0.5	<2	0.34	<0.5	16	58	29	2.81	<10	1	0.23	<10	0.19	282	4	<0.01	5	520	10	2.65	<2	4	16	<0.01	<10	<10	19	<10	68		
P1-4	4275～43.9			31		1.7	0.44	49	<10	20	<0.5	<2	0.46	<0.5	13	122	28	2.27	<10	1	0.22	10	0.15	295	8	<0.01	4	440	24	2.03	<2	4	12	<0.01	<10	<10	18	<10	120		
P1-5	43.90～44.55			4,915		12.3	0.42	163	<10	20	<0.5	<2	0.25	24.4	19	63	867	6.09	<10	1	0.19	<10	0.19	519	10	<0.01	4	490	1690	5.67	4	5	14	<0.01	<10	<10	31	<10	5060		
P1-6	44.55～45.77			208		1	0.7	34	<10	30	<0.5	<2	2.53	<0.5	18	75	85	4.44	<10	<1	0.26	<10	0.26	977	3	0.01	5	580	32	2.56	<2	9	31	<0.01	<10	<10	43	<10	88		
P1-7	45.77～45.87			4,167		30.2	0.25	34	<10	10	<0.5	<2	0.2	59.4	9	210	934	2.28	<10	1	0.14	<10	0.06	232	9	<0.01	8	250	2260	2.85	2	2	8	<0.01	<10	<10	10	<10	>10000	1.31	
P1-8	45.87～46.90			52		1.7	0.58	89	<10	20	<0.5	<2	1.34	<0.5	21	62	23	4.09	<10	<1	0.24	<10	0.27	503	3	0.01	3	560	16	3.51	<2	7	22	<0.01	<10	<10	30	<10	82		
P1-9	46.90～47.40			323		8.4	0.32	92	<10	20	<0.5	<2	0.23	2.9	14	206	132	5.28	<10	1	0.18	<10	0.07	98	11	<0.01	8	300	436	5.77	<2	2	11	<0.01	10	<10	12	<10	728		
P1-10	47.40～48.40			141		1.3	0.52	39	<10	20	<0.5	<2	0.36	<0.5	20	89	32	3.44	<10	<1	0.23	<10	0.14	244	3	0.01	4	510	7	2.94	<2	4	17	<0.01	<10	<10	21	<10	104		
P1-11	50.55～51.22			513		4.6	0.36	38	<10	40	<0.5	<2	1.16	0.7	15	125	176	3.42	<10	1	0.2	<10	0.22	388	7	<0.01	5	400	60	3.13	<2	3	15	<0.01	<10	<10	17	<10	246		
P1-12	51.22～52.70			52		1.4	0.47	46	<10	30	<0.5	<2	1.49	<0.5	19	69	22	4.85	<10	1	0.26	<10	0.43	731	3	0.01	3	570	8	3.21	<2	5	21	<0.01	<10	<10	35	<10	77		
P1-13	52.70～53.05			125		7.7	0.39	97	<10	20	<0.5	<2	1.44	<0.5	17	107	50	8.65	<10	1	0.22	<10	0.37	745	7	0.01	4	450	24	7.76	2	5	18	<0.01	10	<10	35	<10	132		
P1-14	68.6～68.90			219		4	0.44	105	<10	30	<0.5	<2	3.7	1.8	12	110	58	5.18	<10	<1	0.25	10	0.45	1770	5	0.01	2	510	184	6.08	<2	2	24	<0.01	<10	<10	10	<10	421		
P1-15	70.85～71.35			156		3.3	1.06	43	<10	30	<0.5	<2	6.82	<0.5	11	61	69	3.53	<10	<1	0.22	10	0.58	2850	3	0.01	1	490	11	2.47	<2	4	37	<0.01	<10	<10	28	<10	58		
P1-16	73.63～74.82			94		3.1	0.39	105	<10	30	<0.5	<2	0.44	<0.5	13	114	18	5.24	<10	<1	0.25	<10	0.06	138	5	0.01	3	590	21	6.01	<2	2	18	<0.01	<10	<10	9	10	39		
P1-17	82.70～83.70			52		1.2	0.51	64	<10	20	<0.5	<2	1.18	<0.5	14	59	19	4.38	<10	<1	0.24	<10	0.22	459	3	0.01	<1	580	13	4.7	<2	4	21	<0.01	<10	<10	12	<10	41		
P1-18	83.70～84.0			104		1.8	0.37	134	<10	40	<0.5	<2	0.6	0.7	12	114	23	4.89	<10	1	0.25	<10	0.1	182	6	0.01	3	460	24	5.61	2	3	15	<0.01	<10	<10	9	<10	80		
P1-19	84.0～84.90			52		1.9	0.38	69	<10	50	<0.5	<2	0.26	<0.5	13	109	17	4.61	<10	<1	0.25	<10	0.06	61	7	0.01	2	530	26	5.24	<2	3	14	<0.01	<10	<10	9	<10	104		
P1-20	84.90～85.90			193		3	0.35	172	<10	20	<0.5	<2	0.14	0.7	14	161	31	8.23	<10	1	0.22	<10	0.03	32	8	<0.01	5	420	51	9.27	2	2	12	<0.01	<10	<10	9	<10	166		
P1-21	85.90～87.0			42		16.8	0.29	95	<10	20	<0.5	<2	0.28	<0.5	15	274	593	9.65	<10	1	0.19	<10	0.03	61	18	0.01	16	310	152	>10.0	3	2	10	<0.01	20	<10	12	10	102		
P1-22	87.0～88.0			52		18.7	0.32	173	<10	20	<0.5	<2	0.66	1	14	409	743	10.5	<10	<1	0.19	<10	0.09	232	19	<0.01	19	280	212	>10.0	2	3	12	<0.01	10	<10	15	10	308		
P1-23	88.0～88.2			551		37.5	0.41	57	<10	20	<0.5	<2	0.48	0.8	19	118	54	5.21	<10	<1	0.25	<10	0.05	94	7	0.01	5	490	202	6.01	<2	4	18	<0.01	<10	<10	14	<10	274		
P1-24	88.80～89.40			10,420		>100	0.26	116	<10	20	<0.5	<2	0.4	6.2	11	484	160	3.07	<10	1	0.15	<10	0.07	210	22	<0.01	19	220	971	2.96	4	2	9	<0.01	<10	<10	16	10	1665		316
P1-25	164.5～165.23			21		1.3	1.08	56	<10	20	<0.5	<2	5.65	<0.5	18	28	11	4.89	10	<1	0.21	10	0.51	1515	2	0.02	<1	580	10	2.91	<2	12	44	<0.01	<10	<10	60	<10	62		
P1-26	165.23～165.55			94		3.1	0.88	687	<10	50	<0.5	<2	0.9	1.7	15	164	24	3.82	<10	<1	0.28	<10	0.27	359	10	0.03	6	410	30	3.86	13	5	31	<0.01	10	<10	29	<10	312		
P1-27	165.55～166.25			83		1.1	0.97	102	<10	30	<0.5	<2	1.92	0.7	16	69	18	3.08	<10	<1	0.2	<10	0.36	667	5	0.02	2	480	8	2.18	2	6	31	<0.01	<10	<10	35	<10	215		
P1-42	107.50-107.90			94		7.7	0.35	479	<10	60	<0.5	<2	0.12	0.8	16	234	22	4.29	<10	1	0.2	10	0.04	54	22	0.01	11	270	63	4.59	12	2	13	<0.01	<10	<10	15	10	342		
P1-43	107.90-108.90			42		1.9	0.49	173	<10	100	<0.5	<2	0.2	<0.5	12	114	31	2.62	<10	<1	0.26	10	0.08	102	6	0.01	4	520	8	2.57	2	3	17	<0.01	<10	<10	18	<10	107		
P1-44	108.90-109.5			141		14.7	0.38	174	<10	100	<0.5	<2	0.87	1.2	17	211	25	3.15	<10	<1	0.2	<10	0.05	97	22	0.01	9	270	144	3.41	4	2	21	<0.01	<10	<10	14	<10	453		
P1-45	117.70-118.00			63		2.2	0.49	197	<10	30	<0.5	<2	0.2	<0.5	25	93	11	4.61	<10	<1	0.24	<10	0.07	56	5	0.01	2	440	7	5.09	3	3	21	<0.01	<10	<10	15	<10	77		
P2-1	84.50			97		0.8	0.51	8	<10	30	<0.5	<2	1.58	<0.5	9	138	36	1.32	<10	<1	0.3	10	0.12	441	5	0.01	7	600	4	0.53	<2	4	25	<0.01	<10	<10	19	<10	116		
P2-2	82.65			153		1.7	0.55	55	<10	30	<0.5	<2	10	<0.5	30	172	407	4.56	<10	1	0.29	10	2.56	5320	6	0.01	26	430	5	1.8	<2	3	77	<0.01	<10	<10	9	10	118		
P2-3	94.85～95.23			83		3.9	0.5	157	<10	90	<0.5	<2	0.24	11.2	16	112	60	2.74	<10	<1	0.27	<10	0.07	176	14	<0.01	17	480	183	2.85	3	3	19	<0.01	<10	<10	13	<10	1400		
P2-4	95.23～95.64			306		86.1	0.07	314	<10	<10	<0.5	<2	1.14	4.5	6	510	56	1.48	<10	<1	0.04	<10	0.14	812	18	<0.01	21	30	138	0.76	11	<1	9	<0.01	<10	<10	9	10	675		
P2-5	95.64～95.95			125		3.1	0.33	323	<10	10	<0.5	<2	1.2	4.8	12	222	47	2.65	<10	<1	0.21	<10	0.08	569	10	<0.01	16	290	74	2.68	2	2	18	<0.01	<10	<10	13	<10	901		
P2-6	95.95～96.65			167		12.2	0.35	140	<10	10	<0.5	<2	2.47	12.4	15	210	94	3.14	<10	<1	0.21	<10	0.09	1065	8	<0.01	22	330	550	2.89	2	3	22	<0.01	<10	<10	15	<10	1780		
P2-7	96.65～97.15			181		2.9	0.3	62	<10	10	<0.5	<2	3.2	3.2	15	189	41	3.17	<10	<1	0.18	<10	0.15	1525	9	<0.01	16	260	66	2.73	2	3	31	<0.01	<10	<10	11	30	578		
P2-8	97.15～97.80			125		2.1	0.53	40	<10	150	<0.5	<2	0.43	3.7	15	110	62	2.27	<10	<1	0.32	<10	0.1	314	5	<0.01	16	610	77	2.01	<2	3	22	<0.01	<10	<10	14	<10	794		
P2-10	131.13～131.45			181		2.2	1.06	138	<10	20	<0.5	<2	10.35	<0.5	17	51	53	4.32	<10	<1	0.24	<10	1.62	4080	5	0.01	20	430	8	2.51	<2	6	69	<0.01	<10	<10	28	<10	56		
P2-11	159.60～159.66			116		9.8	0.31	8	<10	350	<0.5	<2	10.7	0.5	3	231	89	1.17	<10	<1	0.21	<10	0.31	5640	7	0.01	11	110	27	0.33	<2	3	48	<0.01	<10	<10	10	10	67		
P2-12	161.45～161.49			265		10.8	0.25	564	<10	100	<0.5	<2	2.76	0.9	5	348	136	1.88	<10	<1	0.16	<10	0.13	1695	13	<0.01	16	150	17	1.32	10	1	14	<0.01	<10	<10	11	10	220		
P2-13	164.87～165.25			167		2.3	0.53	108	<10	70	<0.5	<2	9.49	<0.5	10	112	66	4.32	<10	<1	0.31	10	2.27	4970	7	0.01	11	450	10	1.82	<2	6	84	<0.01	<10	<10	17	<10	69		
P2-14	168.70～169.10			153		3	0.57	293	<10	60	<0.5	<2	2.21	<0.5	20	25	65	4.12	<10	<1	0.32	<10	0.18	897	2	0.02	12	760	11	4.47	<2	7	40	<0.01	<10	<10	13	<10	74		
P2-15	169.10～169.55			153		3.4	0.3	195	<10	90	<0.5	<2	1.94	<0.5	11	373	64	3.31	<10	<1	0.19	<10	0.31	1285	13	<0.01	21	270	17	2.77	2	2	20	<0.01	<10	<10	11	10	72		
P2-16	169.55～170.30			14		2.2	0.65	114	<10	50	<0.5	<2	4.89	<0.5	17	24	57	4.63	<10	<1	0.37	10	0.85	3180	4	0.02	9	830	11	2.2	<2	9	50	<0.01	<10	<10	35	<10	44		
P2-17	177.00～178.30			56		2.3	0.7	86	<10	120	<0.5	<2	4.98	<0.5	14	24	61	3.36	<10	<1	0.36	10	0.58	3190	2	0.03	9	760	9	1.98	<2	7	57	<0.01	<10	<10	19	<10	94		
P2-18	178.30～179.30			167		5.1	0.44	392	<10	20	<0.5	<2	4.52	0.7	14	162	46	4.25	<10	<1	0.28	<10	0.14	2030	7	0.01	14	460	43	4.69	4	3	33	<0.01	<10	<10	10	<10	307		
P2-19	179.30～180.30			69		3.6	0.54	240	<10	60	<0.5	<2	4.8	<0.5	17	36	67	3.96	<10	<1	0.32	<10	0.24	2820	2	0.02	12	720	11	4.04	<2	7	43	<0.01	<10	<10	13	<10	63		
P2-20	180.30～181.20			56		6.1	0.56	320	<10	50	<0.5	<2	4.73	<0.5	15	33	56	4.79	<10	<1	0.32	<10	0.26	3470	2	0.02	11	660	13	4.87	3	6	42	<0.01	<10	<10	14	<10	84		
P2-21	181.20～181.68			70		4.5	0.28	136	<10	30	<0.5	<2	1.36	<0.5	9	303	35	2.91	<10	<1	0.17	<10	0.39	839	12	<0.01	18	270	14	2.54	<2	2	16	<0.01	<10	<10	11	10	44		
P2-22	181.68～182.00			56		6	0.64	272	<10	50	<0.5	<2	1.04	<0.5	15	96	76	4.26	<10	<1	0.3	<10	0.15	551	4	0.02	12	530	16	4.11	2	4	29	<0.01	<10	<10	15	<10	64		
P2-23	182.00～182.5			125		5.3	0.06	27	<10	10	<0.5	<2	5.1	1.5	3	421	162	1.76	<10	<1	0.04	<10	1.44	2440	18	<0.01	19	40	168	0.52	<2	1	23	<0.01	<10	<10	9	10	399		
P2-24	182.50～183.17			250		5.8	0.2	98	<10	20	<0.5	<2	1.5	0.8	6	431	124	2.24	<10	<1	0.14	<10	0.49	868	20	<0.01	20	200	128	1.56	2	1	12	<0.01	<10	<10	10	10	204		
P2-25	183.17～183.80			278		12.5	0.11	228	<10	10	<0.5	<2	14.3	2.3	3	321	172	2.51	<10	<1	0.07	<10	0.43	6310	13	<0.01	14	60	185	2.19	3	1	73	<0.01	<10	<10	7	10	796		
P2-26	183.80～184.20			97		5.7	0.41	251	<10	40	<0.5	<2	1.54	0.8	14	132	79	3.35	<10	<1	0.25	<10	0.08	495	8	0.01	13	510	96	3.59	2	2	23	<0.01	<10	<10	10	<10	247		
P2-27	184.20～185.00			28		5.3	0.05	32	<10	<10	<0.5	<2	13.45	6.2	2	293	351	1.42	<10	<1	0.03	<10	0.64	4090	11	<0.01	12	30	188	0.83	2	2	45	<0.01	<10	<10	6	<10	1975		
P2-28	185.00～186.00			347	0.324	4.6	0.35	176	<10	30	<0.5	<2	1.28	4	10	270	138	3.11	<10	<1	0.22	<10	0.2	717	12	0.01	18	380	176	2.97	2	2	18	<0.01	<10	<10	11	<10	558		
P2-29	186.00～187.00			333	0.266	4	0.32	67	<10	20	<0.5	<2	4.78	2.6	6	440	128	1.94	<10	<1	0.19	<10	0.69	3250	16	0.01	20	300	223	0.93	<2	4	33	<0.01	<10	<10	14	10	623		
P2-30	187.00～188.00			28		2.5	0.6	126	<10	50	<0.5	<2	3.27	<0.5	13	26	68	2.52	<10	<1	0.31	10	0.35	1320	2	0.02	9	730	9	2.28	<2	7	44	<0.01	<10	<10	17	<10	75		
P2-31	188.00～188.70			49		3.1	0.51	114	<10	40	<0.5	<2	2.69	1.7	11	104	75	2.7	<10	<1	0.27	<10	0.47	1370	5	0.01	10	480	53	2.23	<2	5	29	<0.01	<10	<10	16	<10	482		
P2-35	198.35～199.20			250		5.2	0.21	97	<10	20	<0.5	<2	8.5	2.1	4	374	81	2.26	<10	<1	0.08	<10	1.03	3510	15	<0.01	16	100	463	0.78	<2	1	40	<0.01	<10	<10	12	10	514		
P2-36	199.20～199.45			125		3.1	1.16	294	<10	40	<0.5	<2	1.5	<0.5	16	70	40	4.58	<10	<1	0.26	<10	0.28	607	4	0.02	13	670	25	2.95	<2	5	29	<0.01	<10	<10	27	<10	74		
P2-37	199.45～200.60			250		3.6	0.31	119	<10	20	<0.5	<2	14.1	2	5	184	174	2.6	<10	<1	0.12	<10	1.2	5100	9	0.01	12	180	58	1.19	2	2	74	<0.01	<10	<10	10	<10	428		
P2-38	200.60～201.35			139		3.8	0.52	260	<10	30	<0.5	<2	4.29	<0.5	11	149	55	3.32	<10	<1	0.26	<10	0.22	1430	6	0.01	12	680	28	3.06	<2	3	42	<0.01	<10	<10	11	<10	93		
P2-39	201.35～202.00			1035	0.987	4	0.49	259	<10	30	<0.5	<2	1.06	<0.5	10	170	28	3.16	<10	<1	0.25	<10	0.1	524	10	0.01	12	760	24	2.91	<2	3	18	<0.01	<10	<10	11	<10	120		
P2-40	202.00～203.00			69		3.8	0.5	316	<10	20	<0.5	<2	3.97	<0.5	9	94	26	4.04	<10	<1	0.28	10	0.16	1990	7	0.01	7	1000	19	3.66	<2	4	29	<0.01	<10	<10	9	<10	79		
P2-41	203.00～204.00			42		3.2	0.49	135	<10	30	<0.5	<2	2.79	<0.5	13	87	40	3.29	<10	<1	0.31	10	0.15	1450	4	0.01	7	1060	17	2.87	2	4	27	<0.01	<10	<10	10	10	81		
P2-42	204.00～205.25			153		3.1	0.53	194	<10	50	<0.5	<2	2.68	<0.5	13	64	34	4.31	<10	<1	0.32	<10	0.52	2430	3	0.02	9	940	18	2.81	<2	4	30	<0.01	<10	<10	16	10	89		
P2-43	207.65～208.55			56		1.7	0.51	107	<10	20	<0.5	<2	3.99	<0.5	12	154	34	3.97	<10	<1	0.27	<10	0.72	1965	7	0.01	16	660	9	2.56	<2	5	34	<0.01	<10	<10	19	<10	93		
P2-44	245.70～246.90			154		1.9	0.45	126	<10	20	<0.5	<2	4.84	<0.5	12	142	33	3.75	<10	<1	0.22	<10	0.73	2590	8	0.01	16	500	39	1.87	2	5	35	<0.01	<10	<10	16	<10	196		
P2-45	246.90～247.34			230		5.3	0.34	496	<10	20	<0.5	<2	1.04	<0.5	12	241	35	3.43	<10	<1	0.24	<10	0.07	469	12	<0.01	19	410	28	3.44	10	1	17	<0.01	<10	<10	8	10	114		
P2-46	247.34～248.55			269		3.2	0.33	148	<10	20	<0.5	<2	1.06	<0.5	10	191	31	2.45	<10	<1	0.22	<10	0.11	374	9	0.01	18	400	16	2.4	2	2	16	<0.01	<10	<10	9	10	43		
P2-47	248.55～249.55			231		3.2	0.35	181	<10	20	<0.5	<2	1.42	0.5	11	291	66	3.28	<10	<1	0.22	<10	0.09	493	13	0.01	21	400	27	3.28	3	2	15	<0.01	<10	<10	10	10	142		
P2-48	249.55～250.20			83		2.2	0.43	148	<10	20	<0.5	<2	2.45	<0.5	11	169	26	2.72	<10	<1	0.26	<10	0.1	651	7	0.01	18	500	18	2.84	2	3	25	<0.01	<10	<10	10	<10	52		
P2-49	250.20～250.63			82		8.2	0.5	954	<10	20	<0.5	<2	7.75	<0.5	10	150	104	6.43	<10	<1	0.24	<10	1.14	3850	12	0.01	16	410	210	5.25	18	4	56	<0.01	10	<10	13	<10	258		
P2-56	94.75～94.85			21		1.3	0.84	36	<10	30	<0.5	<2	4.03	<0.5	9	24	32	4.61	<10	<1	0.49	10	0.36	2580	2	<0.01	10	830	32	3.05	<2	9	46	<0.01	<10	<10	25	<10	326		
P2-57	97.80～97.90			40		1.5	0.5	22	<10	20	<0.5	<2	3.72	3.6	10	28	28	1.84	<10	<1	0.28	10	0.19	1315	2	<0.01	7	780	96	1.17	<2	6	38	<0.01	<10	<10	17	<10	620		
P2-58	168.60～168.70			20		1	0.74	44	<10	50	<0.5	<2	7.36	<0.5	11	12	73	2.26	<10	<1	0.42	10	0.68	3240	1	0.02	8	740	4	0.54	<2	12	58	<0.01	<10	<10	32	<10	41		
P2-59	188.70～188.80			19		0.5	2.08	37	<10	80	0.5	<2	5.11	<0.5	18	5	43	4.11	<10	<1	0.27	<10	1.51	2450	<1	0.04	9	510	5	0.4	<2	19	75	<0.01	<10	<10	89	<10	40		
P2-60	198.25～198.35			0		0.7	2.15	122	<10	70	<0.5	<2	6.05	<0.5	28	6	40	4.38	<10	<1	0.25	<10	1.18	1950	<1	0.04	8	540	12	0.7	2	17	87	<0.01	<10	<10	75	<10	43		
P2-61	205.25～205.35			80		1.4	1.63	118	<10	40	<0.5	<2	2.03	<0.5	14	36	34	4.32	<10	1	0.34	<10	0.91	1655	1	0.02	11	830	4	1.59	<2	6	34	<0.01	<10	<10	24	<10	70		
P2-62	245.60～245.70			56		0.7	0.97	32	<10	30	<0.5	<2	6.59	<0.5	17	61	41	3.15	<10	<1	0.36	10	1.15	2060	1	0.03	19	800	2	0.32	<2	15	56	<0.01	<10	<10	49	<10	38		
P2-63	250.63～250.73					0.8	0.72	59	<10	30	<0.5	<2	4.83	<0.5	9	42	39	2.72	<10	<1	0.36	10	0.94	2140	2	0.02	11	840	6	1.84	<2	7	43	<0.01	<10	<10	18	<10	36		
P3-1	41.25～41.50			821	0.908	23.3	0.58	2900	<10	10	<0.5	<2	0.95	<0.5	16	91	29	3.64	<10	<1	0.29	<10	0.12	184	5	<0.01	13	580	26	3.31	2	2	12	<0.01	<10	<10	9	<10	53		
P3-2	41.50～42.47			83		4.2	1.07	164	<10	10	<0.5	<2	1.68	<0.5	13	48	48	2.78	<10	<1	0.32	<10	0.25	543	2	<0.01	11	790	7	0.75	<2	4	15	<0.01	<10	<10	19	<10	61		
P3-3	42.47～43.20			14		2.4	1.48	219	<10	10	<0.5	<2	4.7	<0.5	17	47	63	4.04	<10	<1	0.33	<10	0.34	1145	2	<0.01	15	750	6	1.52	<2	6	37	<0.01	<10	<10	29	<10	63		
P3-4	42.20～43.55			139		2.5	2.19	190	<10	10	<0.5	<2	6.41	0.6	31	171	43	6.47	<10	1	0.22	<10	0.74	1540	11	0.01	22	470	11	2.53	<2	6	47	<0.01	<10	<10	42	<10	202		
P3-10	41.15～41.25			40		8	1.58	416	<10	10	<0.5	<2	1.4	<0.5	22	27	45	4.71	<10	<1	0.34	<10	0.53	630	2	<0.01	13	900	15	2.12	<2	5	17	<0.01	<10	<10	20	<10	84		
P3-11	43.55～43.65			19		0.6	1.5	11	<10	20	<0.5	<2	7.2	<0.5	15	7	47	2.5	<10	1	0.36	10	0.36	1535	<1	0.01	6	850	4	0.56	<2	8	61	<0.01	<10	<10	27	<10	65		
P3-16	172.90～173.35			39		0.3	2.94	9	<10	30	<0.5	<2	5.45	<0.5	14	4	61	4.71	10	<1	0.29	10	1.61	1875	6	0.02	4	890	3	0.49	<2	8	67	<0.01	<10	<10	70	<10	61		
P3-17	174.20～174.50			11		0.5	2.26	80	<10	20	<0.5	<2	7.48	<0.5	16	9	61	4.21	10	1	0.23	10	1.3	2120	10	0.01	4	770	7	1.44	<2	6	80	<0.01	<10	<10	52	<10	48		
P3-18	175.00～175.50			55		0.2	2.74	18	<10	20	<0.5	<2	11	<0.5	16	21	42	4.23	10	<1	0.21	10	1.46	2180	1	0.02	7	620	4	0.31	<2	9	79	<0.01	<10	<10	64	<10	57		
P3-20	173.35～174.20			21		0.4	3.21	31	<10	30	<0.5	<2	4.58	<0.5	16	4	62	4.92	10	<1	0.35	10	1.66	1960	26	0.01	6	910	3	0.49	<2	9	70	<0.01	<10	<10	71	<10	65		
P3-21	174.50～175.0			19		0.2	2.43	9	<10	30	<0.5	<2	4.84	<0.5	12	5	55	3.98	10	<1	0.29	10	1.23	1695	2	0.01	7	840	5	0.52	<2	6	68	<0.01	<10	<10	59	<10	50		
P3-23	241.2～241.33				0.027	3.5	0.43	21	<10	10	<0.5	<2	3.25	1.4	48	25	246	1.05	<10	<1	0.08	<10	0.27	774	2	<0.01	3	180	77	0.52	<2	1	28	<0.01	<10	<10	8	200	164		
P4-1A	135.8～136.07			52		2	0.91	351	<10	10	<0.5	<2	7.12	8.8	18	206	88	4.87	<10	<1	0.16	<10	0.51	1240	41	<0.01	20	330	1450	4.58	9	4	25	0.08	<10	<10	27	<10	2550		
P4-2A	156.33～156.65			42		1	0.52	185	<10	10	<0.5	<2	6.2	0.9	18	61	14	2.91	<10	<1	0.26	<10	0.11	1180	5	<0.01	10	380	45	3.13	2	5	28	<0.01	<10	<10	14	<10	88		
P4-3A	156.65～156.95			177		11.6	0.31	335	<10	<10	<0.5	10	2.24	24.4	8	471	233	5.59	<10	<1	0.1	<10	0.12	537	22	<0.01	31	120	1625	5.61	2	2	8	<0.01	<10	<10	16	<10	4340		
P4-4A	239.65～240.47			63		0.5	0.83	60	<10	10	<0.5	<2	8.79	<0.5	10	44	15	2.69	<10	<1	0.16	10	0.29	1485	3	<0.01	7	450	11	1.92	<2	3	42	0.08	<10	<10	11	<10	25		
P4-5A	240.47～241.1			42		0.6	0.63	64	<10	10	<0.5	<2	1.72	<0.5	9	118	16	2.71	<10	<1	0.18	<10	0.2	348	9	<0.01	8	550	10	2.15	<2	2	15	0.09	<10	<10	9	<10	22		
P4-6A	78.60～79.10			222		3.6	0.46	260	<10	10	<0.5	<2	2.35	29.1	8	202	76	4.5	<10	<1	0.18	<10	0.17	567	90	<0.01	13	420	447	4.5	4	1	13	<0.01	<10	<10	7	<10	672		

Table 4-27 Results of Microscopic Observstion of Thin Sections, Prambon District

Sample No.	Depth (m)	Field name	Rock type	Texture	Phenocryst or fragment							groundmass or matrix							alteration				Description
					MP	cpx	hb	qz	pl	Kf	op	MP	hb	qz	pl	Kf	gl	op	cb	sm/chl	ser	epi	
P1-38T	25.00	Porphyritic andesite	altered andesite	porphyritic	(○)	△	○		◎		△	(○)		△	◎		(◎)	△	◎	○			Mafic minerals and groundmass are altered into carbonate and smectite.
P1-39T	67.95	Fine-grained andesite?	altered andesite	porphyritic	(○)				(◎)		△	(○)		○	(○)		(◎)	○	○	△	◎		Plagioclase is totally replaced by sericite. Mafic minerals by chlorite and carbonate
P1-40T	143.15	Coarse-grained andesite	altered andesite	porphyritic	(○)				◎		○	(○)		○	◎		(○)	○	◎	○			Mafic minerals by smectite and carbonate. Amygdule by carbonate and smecite.
P1-41T	224.70	Andesitic lapilli tuff-tuff breccia	volcanic breccia	clastic to porphyrtic	(○)			○	(◎)		○	(△)		○	(◎)		(○)	○	◎	○	○		Various rock fragments. Plagioclase totally by sericite. Mafic by smectite and cb.
P2-34T	155.50	Coarse-grained andesite	altered andesite	porphyritic	(○)				◎		△	(△)			◎		(○)	○	○	◎	○		Mafic by smectite and cb. Plagioclase strongly by sericite and cb.
P2-50T	168.25	Coarse-grained andesite	altered andesite	porphyritic	(○)				(◎)		△	(△)		△	(◎)		(○)	○		◎	○		Mafic minerals by carbonate. Plagioclase by carbonate and sericite.
P2-51T	236.00	Lapilli tuff (hyaloclastite?)	lappile tuff	clastic to porphyrtic	(○)			○	◎		△			○	◎		(○)	○	◎	◎	○		Mafic by carbonate and chlorite. Plagioclase by carbonate and sericite.
P2-52T	196.30	Compact andesite	altered andesite	porphyritic	(○)				◎		○	(○)			◎		(○)	○	◎	○			Mafic by smectite and carbonate. Plagioclase locally by carbonate.
P3-6T	43.60	Altered andesite	altered andesite	porphyritic	(○)				(◎)		△	(○)		○	(◎)		(○)	○	◎		◎		Mafic by carbonate. Plagioclase totally by sericite.
P3-7T	44.60	Andesitic lapilli tuff-tuff breccia	altered andesite	porphyritic	(○)				(◎)		○	(○)		○	(◎)		(○)	○	◎	○	○		Mafic by carbonate and chlorite. Plagioclase by sericite and carbonate.
P3-19T	135.00	Andesitie(lava?)	altered andesite	trachtic	(○)				○		○	(○)		○	◎		(○)	○	○	◎	△		Mafic by smecite and carbonate. Amygdule by smectite and carbonate.
P3-22T	206.80	Andesitie(lava?)	altered andesite	porphyritic	(○)				(◎)		○	(○)		△	(◎)	・	(○)	○	◎	○	○		Mafic by chlorite and carbonate. Plagioclase totally by sericite and carbonate.
P4-19T	44.30	Fine-grained andesite	altered andesite	porphyritic	(△)				(◎)		○	(△)		○	(○)		(○)	○	◎	○	○		Mafic by chlorite and quartz. Plagioclase phenocryst totally by carbonate.
P4-20T	129.95	Coarse-grained andesite	altered andesite	porphyritic	(○)				(◎)		○	(○)			◎		(○)	○	○	○		△	Plagioclase strongly by carbonate and epidote. Mafic by chlorite or carbonate.
P4-21T	182.10	Coarse-grained andesite	volcanic breccia	clastic to porphyrtic	(○)				(◎)		○	(○)			◎		(○)	○	◎	○	△		Mafic by carbonate and chlorite. Plagioclase strongly by carbonate, locally by sericite.
P4-22T	227.00	Fine-grained andesite	altered andesite	porphyritic	(○)				(◎)		○	(○)		○	(◎)		(○)	○	○	◎		○	Mafic by carboante and epidote. plagioclase totally by carbonate.

abbrev. MP=pseudomorph of mafic minerals, cpx=clinopyroxene, pl=plagioclase, op=opaque minerals, qz=quartz, hb=hornblende
gl=glass or microcrystalline aggregate, cb.=carbonate, ser=sericite, Kf=K-feldspar, epi=epidote, sm/chl=smectite or chlorite
◎abundant, ○common, △small, ・rare

Table 4-28 Results of X-ray Diffraction Analysis, Prambon District

Drill Hole	Sample No	Depth (m)	Quartz Index										Remarks
			Qtz	Kf	Pl	Chl	Se	Cal	Sid	Kut	Py	Cpx	
MJIE-P1	P1-13	52.70～53.05	59			6	15		26		39		
	P1-23	88.0～88.2	79				13				48		
	P1-24	88.80～89.40	108				10				21		
	P1-25	164.5～165.23	49			14	15	109	26		22		
	P1-27	165.55～166.25	22			24	10	259					
	P1-30	44.80	83			18	12		19		19		
	P1-31	66.45	57			17	13				23		
	P1-32	96.00	30			33	8	94					
	P1-33	132.50	22			29	15	137			4		
	P1-34	164.60	40			14	16	99	19		10		
	P1-35	191.30	18			37	13	96		14	11		
	P1-36	220.60	31			48	11	102		13			
	P1-37	249.00	59			45	13	37					Se: Sericite/smectite mixed layer mineral?
	P1-46	117.30	47			7	12	184			15		Se: Sericite/smectite mixed layer mineral?
MJIE-P2	P2- 1	84.50	22				6			130	14		Se: Sericite/smectite mixed layer mineral?
	P2- 8	97.15～97.80	123				9			34	5		
	P2- 9	98.80	72				13	60					
	P2- 14	168.70～169.10	37				18	54			14		
	P2- 17	177.00～178.30	32				11	325	16	12	10		
	P2- 32	186.80	28				13	64	45	10			
	P2- 33	157.30	26		52	23	8	75			4		
	P2- 44	245.70～246.90	44			4	16	99	13	20	2		
	P2- 49	250.20～250.63	37			6	13	23	12	72	17		
	P2- 51	236.00	24		149	26	8	47	16	45			
	P2- 53	214.00	38		22		9						
	P2- 54	240.00	7		59	28	8	49	13	80			Se: Sericite/smectite mixed layer mineral?
	P2- 55	252.50	41			6	6	89					
MJIE-P3	P3-3	42.47～43.20	65				25	10					Se: Sericite/smectite mixed layer mineral?
	P3-5	10.00	39		45	25	7	94					Se: Sericite/smectite mixed layer mineral?
	P3-6	43.60	26			21	5	102					Se: Sericite/smectite mixed layer mineral?
	P3-7	44.60	24		44	13	6	88					
	P3-8	31.70	66		46	33	6	88					
	P3-9	23.00	62			14	9	12	19	6			Se: Sericite/smectite mixed layer mineral?
	P3-12	100.20	17		145	21		36				34	Cpx: Diopside?
	P3-13	150.20	42		208	24		16					
	P3-14	199.00	25		56	34		260					
	P3-15	249.70	11		334	34	7	72					
	P3-16	172.90～173.35	12		121	55	5	46					
	P3-17	174.20～174.50	33		15	22	9	142			Tr		Se: Sericite/smectite mixed layer mineral?
MJIE-P4	P4-7	44.30	30		163	37	9	82			Tr		
	P4-8	73.00	22	26	35	25	Tr	59				16	Cpx: Diopside?
	P4-9	100.00	50		115	8							
	P4-10	129.95	8		102	26		47					
	P4-11	157.85	35		58	19	Tr	474				25	Cpx: Diopside?
	P4-12	190.45	27		69	24	4	104					
	P4-13	220.50	32		88	37	50	55					
	P4-14	241.80	89			24	19	11					
	P4-15	135.95	59			7	8	73			38		
	P4-16	156.25	66			5	18	35			16		
	P4-17	240.60	85			6	19	11			14		

Qtz:Quartz, Kf: K-felfspar, Pl: Plagioclase, Chl: Chlorite, Se: Sericite, Cal: Calcite, Sid: Siderite, Kut:Kutnahorite, Py: Pyrite, Cpx: Clino-pyroxene

Table 4-29 Results of Microscopic Observation of Polished Sections, Prambon District

Sample No.	Depth (m)	Description	Ore minerals					Gangue minerals									
			Py	Cp	Sph	Asp	Aca	Gn	others	si	ser	pl	kf	chl	epi	cal	others
P1-9P	46.90～47.40	Pyrite disseminated silcified zone	◎		•			•		◎	△						Ti(•)
P1-13P	52.70～53.05	Pyrite disseminated silcified zone	◎				•	•		◎							ank(◎)
P1-47P	88.05	Pyrite disseminated silcified zone	◎		•			•		◎	○						
P1-15P	70.85～71.35	Pyrite veinlets-disseminated silcified zone	○						Pyr(•)Goe(△)	◎	△						cab(◎)
P1-22P	87.0～88.0	Pyrite disseminated silcified zone	◎					•		◎	•						Ti(•)
P2-3P	94.85～95.23	Pyrite disseminated argillic zone	○		△			•		◎	○						Ti(•)
P2-6P	95.95～96.65	Pyrite veinlets-disseminated silcified ore	○		•			△		◎	○						
P2-25P	183.17～183.80	Pyrite veinlets-disseminated silcified ore	○	•	•		•	○		◎	○					△	ank(△)
P2-28P	185.00～186.00	Pyrite disseminated silcified-argillic ore	○		○			△		◎						◎	
P2-35P	198.35～199.20	Pyrite veinlets-disseminated quartz-calcite vein	○	△	○			△		○				△		◎	ank(○)
P2-49P	250.20～250.63	Pyrite disseminated silcified ore	◎		△			△		◎						○	dol(△)
P3-4P	42.20～43.55	Pyrite disseminated argillic zone	○			•		•	Ber(•)	◎						○	
P4-1P	135.8～136.07	Pyrite veinlets, argillic-silcified zone	◎		○			△		◎	○			△			
P4-3P	156.65	Pyrite disseminated quartz vein	◎		•			•		◎						△	
P4-23P	156.70	Pyrite disseminated quartz vein	◎	•	○			△		◎	△						
P4-5P	240.47～241.10	Quartz -calcite vein with pyrite veinlets	○	△						◎	○					○	epi(○)

\bbreviation:
pyrite, Gn=galena, Goe=goethite, Aca=acanthite,
er=berthierite, Pyr=pyrrhotite

' minerals, epi=epidote, cal=calcite, ank=ankerite
e, Ti=TiO2 polymorph, ank=ankerite,

'=common, △=small, •=rare

Table 4-30 Results of Fluid Inclusion Study of Drill Core Samples, Prambon District (1/3)

Specimen	Mineral	Size (μm)	primary or secondary	form	Phasee	Salinity (wt%.NaCl)	Th(℃)
P1-9Fa-1	quartz	10	secondary	irregular	liquid dominant two phase	0.7	228
P1-9Fa-2	quartz	13	secondary	ellipsoidal	liquid dominant two phases	1.5	193
	quartz	12	secondary	ellipsoidal	liquid dominant two phases	1.1	193
P1-9Fa-3	quartz	6	secondary	shperical	liquid dominant two phases	1.5	201
	quartz	5	secondary	ellipsoidal	liquid dominant two phases	1.3	193
P1-9Fa-4	quartz	6	secondary	ellipsoidal	liquid dominant two phases		236
	quartz	10	secondary	ellipsoidal	liquid dominant two phases		215
	quartz	5	secondary	ellipsoidal	liquid dominant two phases		217
P1-9Fa-5	quartz	15	secondary	irregular	liquid dominant two phases		240
P1-9Fb-1	quartz	13	secondary	ellipsoidal	liquid dominant two phases	0.9	207
	quartz	9	secondary	irregular	liquid dominant two phases	0.9	244
P1-9Fb-2	quartz	7	secondary	irregular	liquid dominant two phases	0.9	159
P1-9Fc-1	quartz	20	secondary	irregular	liquid dominant two phases	0.7	155
P1-9Fc-2	quartz	16	secondary	irregular	liquid dominant two phases	0.9	169
P1-9Fd-1	quartz	7	secondary	irregular	liquid dominant two phases	4.5	251
P1-9Fd-2	quartz	10	secondary	ellipsoidal	liquid dominant two phases	4.3	unmeasurable
P1-9Fd-3	quartz	7	secondary	shperical	liquid dominant two phases	4.5	198
	quartz	6	secondary	shperical	liquid dominant two phases	3.5	204
P1-9Fe-1	quartz	10	secondary	ellipsoidal	liquid dominant two phases		202
	quartz	27	secondary	irregular	liquid dominant two phases		204
P1-9Ff-1	calcite	14	secondary	irregular	liquid dominant two phases		230
P1-9Ff-2	quartz	5	secondary	angular	liquid dominant two phases		202

No.2

P1-14Fa-1	quartz	7	secondary	idiomorphy	liquid dominant two phases	2.5	244
P1-14Fa-2	quartz	7	secondary	idiomorphy	liquid dominant two phases	1.5	245
P1-14Fa-3	quartz	6	secondary	ellipsoidal	liquid dominant two phases	1.6	unmeasurable
P1-14Fb-1	quartz	18	secondary	irregular	liquid dominant two phases	1.3	178
	quartz	7	secondary	idiomorphic	liquid dominant two phases	1.5	184
	quartz	7	secondary	irregular	liquid dominant two phases	1.5	178
P1-14Fb-2	quartz	5	secondary	angular	liquid dominant two phases	1.5	148
	quartz	5	secondary	angular	liquid dominant two phases	1.6	148
	quartz	20	secondary	irregular	liquid dominant two phases	1.6	154
	quartz	6	secondary	ellipsoidal	liquid dominant two phases	1.6	147
P1-14Fb-3	quartz	8	secondary	ellipsoidal	liquid dominant two phases		244
	quartz	8	secondary	irregular	liquid dominant two phases		201
	quartz	3	secondary	irregular	liquid dominant two phases		220
P1-14Fc-1	quartz	8	secondary	ellipsoidal	liquid dominant two phases	2.0	unmeasurable
P1-14Fd-1	quartz	5	secondary	ellipsoidal	liquid dominant two phases		188
	quartz	5	secondary	ellipsoidal	liquid dominant two phases		218
	quartz	4	secondary	shperical	liquid dominant two phases		217
P1-14Fd-2	quartz	14	secondary	irregular	liquid dominant two phases		230
	quartz	6	secondary	ellipsoidal	liquid dominant two phases		208
P1-14Fd-3	quartz	5	secondary	idiomorphic	liquid dominant two phases		230
	quartz	5	secondary	ellipsoidal	liquid dominant two phases		184
P1-14Fd-4	quartz	8	secondary	idiomorphic	liquid dominant two phases		251

No.4

	host mineral	size(μm)	primary or secondary	form	Phasee	salinty(wt%.NaCl)	Th(℃)
P2-25Fa-1	quartz	10	secondary	angular	liquid dominant two phases	1.6	225
P2-25Fa-2	quartz	20	secondary	irregular	liquid dominant two phases	1.8	206
P2-25Fa-3	quartz	17	secondary	irregular	liquid dominant two phases		218
	quartz	7	secondary	irregular	liquid dominant two phases		225
	quartz	9	secondary	irregular	liquid dominant two phases		180
P2-25Fb-1	quartz	5	secondary	ellipsoidal	liquid dominant two phases	2.3	181
	quartz	5	secondary	ellipsoidal	liquid dominant two phases	2.3	187
P2-25Fb-2	quartz	7	secondary	ellipsoidal	liquid dominant two phases		178
P2-25Fc-2	quartz	7	secondary	ellipsoidal	liquid dominant two phases	0.9	178
P2-25Fc-3	quartz	17	secondary	irregular	liquid dominant two phases	0.6	243
	quartz	13	secondary	irregular	liquid dominant two phases	0.9	246
	quartz	10	secondary	irregular	liquid dominant two phases	0.7	248
P2-25Fc-4	quartz	13	secondary	irregular	liquid dominant two phases		218
	quartz	20	secondary	irregular	liquid dominant two phases		240
P2-25Fc-5	quartz	5	secondary	irregular	liquid dominant two phases		231
	quartz	11	secondary	irregular	liquid dominant two phases		199
P2-25Fd-1	quartz	10	secondary	ellipsoidal	liquid dominant two phases	1.5	205
P2-25Fe-1	quartz	10	secondary	irregular	liquid dominant two phases	4.5	183
	quartz	5	secondary	idiomorphic	liquid dominant two phases		134
P2-25Fg-1	quartz	4	secondary	idiomorphic	liquid dominant two phases	3.7	unmeasurable
	quartz	3	secondary	ellipsoidal	liquid dominant two phases	3.0	unmeasurable
	quartz	7	secondary	ellipsoidal	liquid dominant two phases	3.0	unmeasurable
P2-25Fh-1	quartz	6	secondary	idiomorphic	liquid dominant two phases		163
	quartz	4	secondary	shperical	liquid dominant two phases		163
P2-25Fi-1	quartz	7	secondary	irregular	liquid dominant two phases		243

Table 4-30 Results of Fluid Inclusion Study of Drill Core Samples, Prambon District (3/3)

No.9

Specimen	Mineral	Size (μm)	primary or secondary	form	Phasee	Salinity (wt%.NaCl)	Th(℃)
P4-3F 2-1-1	quartz	15	secondary	irregular	liquid dominant two phases	0.6	293
P4-3F 2-1-2	quartz	10	secondary	irregular	liquid dominant two phases	0.7	293
P4-3F 2-1-3	quartz	8	secondary	irregular	liquid dominant two phases	0.7	291
P4-3F 2-1-4	quartz	11	secondary	irregular	liquid dominant two phases	0.6	284
P4-3F 2-2-1	quartz	11	secondary	irregular	liquid dominant two phases	0.7	306
P4-3F 2-2-2	quartz	6	secondary	irregular	liquid dominant two phases	0.6	277
P4-3F 3-1-1	quartz	18	secondary	irregular	liquid dominant two phases	0.9	272
P4-3F 3-1-2	quartz	10	secondary	irregular	liquid dominant two phases	1.1	282
P4-3F 3-3-1	quartz	10	secondary	irregular	liquid dominant two phases		298
P4-3F 3-3-2	quartz	10	secondary	irregular	liquid dominant two phases	0.9	275
P4-3F 3-3-3	quartz	8	secondary	irregular	liquid dominant two phases	0.9	284
P4-3F 3-4-1	quartz	18	secondary	irregular	liquid dominant two phases	0.7	281
P4-3F 3-4-2	quartz	8	secondary	irregular	liquid dominant two phases	0.7	286
P4-3F 4-1	quartz	8	secondary	irregular	liquid dominant two phases	0.6	275
P4-3F 4-2	quartz	14	secondary	irregular	liquid dominant two phases	0.6	287
P4-3F 5-1-1	quartz	10	secondary	irregular	liquid dominant two phases	0.7	248
P4-3F 5-1-2	quartz	6	secondary	irregular	liquid dominant two phases	1.3	254
P4-3F 5-3	quartz	10	secondary	irregular	liquid dominant two phases	1.3	254
P4-3F 6-1-1	quartz	7	secondary	irregular	liquid dominant two phases	1.8	257
P4-3F 6-1-2	quartz	10	secondary	irregular	liquid dominant two phases	2.0	268
P4-3F 6-2-1	quartz	12	secondary	idiomorphic	liquid dominant two phases	0.9	255
P4-3F 6-2-2	quartz	15	secondary	irregular	liquid dominant two phases	0.9	268
P4-3F 6-2-3	quartz	12	secondary	irregular	liquid dominant two phases	0.9	263

No.10

Specimen	Mineral	Size (μm)	primary or secondary	form	Phasee	Salinity (wt%.NaCl)	Th(℃)
P4-5F 1-1	quartz	10	secondary	irregular	liquid dominant two phases	2.1	unmeasurable
P4-5F 1-2	quartz	4	secondary	irregular	liquid dominant two phases	2.3	288
P4-5F 2	calcite	7	secondary	irregular	liquid dominant two phases	1.8	283
P4-5F 3-1	calcite	8	secondary	irregular	liquid dominant two phases	0.4	374
P4-5F 3-2-1	calcite	10	secondary	irregular	liquid dominant two phases	0.4	unmeasurable
P4-5F 3-2-2	calcite	12	secondary	irregular	liquid dominant two phases	0.6	unmeasurable
P4-5F 3-3-1	calcite	7	secondary	ellipsoidal	liquid dominant two phases	0.4	unmeasurable
P4-5F 3-3-2	calcite	7	secondary	irregular	liquid dominant two phases	0.4	unmeasurable
P4-5F 3-5-1	calcite	7	secondary	ellipsoidal	liquid dominant two phases	0.6	386
P4-5F 3-5-2	calcite	5	secondary	ellipsoidal	liquid dominant two phases	0.6	288
P4-5F 3-6-1	calcite	6	secondary	irregular	liquid dominant two phases	0.7	245
P4-5F 3-6-2	calcite	12	secondary	irregular	liquid dominant two phases	0.6	278
P4-5F 3-6-3	calcite	4	secondary	ellipsoidal	liquid dominant two phases	0.4	284
P4-5F 3-6-4	calcite	4	secondary	irregular	liquid dominant two phases	0.4	284

Two samples (P2-4F,P3-4F) do not contain fluid inclusions that can be measurable.

Table 4-30 Results of Fluid Inclusion Study of Drill Core Samples, Prambon District (3/3)

No.9

Specimen	Mineral	Size (μm)	primary or secondary	form	Phasee	Salinity (wt%.NaCl)	Th(℃)
P4-3F 2-1-1	quartz	15	secondary	irregular	liquid dominant two phases	0.6	293
P4-3F 2-1-2	quartz	10	secondary	irregular	liquid dominant two phases	0.7	293
P4-3F 2-1-3	quartz	8	secondary	irregular	liquid dominant two phases	0.7	291
P4-3F 2-1-4	quartz	11	secondary	irregular	liquid dominant two phases	0.6	284
P4-3F 2-2-1	quartz	11	secondary	irregular	liquid dominant two phases	0.7	306
P4-3F 2-2-2	quartz	6	secondary	irregular	liquid dominant two phases	0.6	277
P4-3F 3-1-1	quartz	18	secondary	irregular	liquid dominant two phases	0.9	272
P4-3F 3-1-2	quartz	10	secondary	irregular	liquid dominant two phases	1.1	282
P4-3F 3-3-1	quartz	10	secondary	irregular	liquid dominant two phases		298
P4-3F 3-3-2	quartz	10	secondary	irregular	liquid dominant two phases	0.9	275
P4-3F 3-3-3	quartz	8	secondary	irregular	liquid dominant two phases	0.9	284
P4-3F 3-4-1	quartz	18	secondary	irregular	liquid dominant two phases	0.7	281
P4-3F 3-4-2	quartz	8	secondary	irregular	liquid dominant two phases	0.7	286
P4-3F 4-1	quartz	8	secondary	irregular	liquid dominant two phases	0.6	275
P4-3F 4-2	quartz	14	secondary	irregular	liquid dominant two phases	0.6	287
P4-3F 5-1-1	quartz	10	secondary	irregular	liquid dominant two phases	0.7	248
P4-3F 5-1-2	quartz	6	secondary	irregular	liquid dominant two phases	1.3	254
P4-3F 5-3	quartz	10	secondary	irregular	liquid dominant two phases	1.3	254
P4-3F 6-1-1	quartz	7	secondary	irregular	liquid dominant two phases	1.8	257
P4-3F 6-1-2	quartz	10	secondary	irregular	liquid dominant two phases	2.0	268
P4-3F 6-2-1	quartz	12	secondary	idiomorphic	liquid dominant two phases	0.9	255
P4-3F 6-2-2	quartz	15	secondary	irregular	liquid dominant two phases	0.9	268
P4-3F 6-2-3	quartz	12	secondary	irregular	liquid dominant two phases	0.9	263

No.10

Specimen	Mineral	Size (μm)	primary or secondary	form	Phasee	Salinity (wt%.NaCl)	Th(℃)
P4-5F 1-1	quartz	10	secondary	irregular	liquid dominant two phases	2.1	unmeasurable
P4-5F 1-2	quartz	4	secondary	irregular	liquid dominant two phases	2.3	288
P4-5F 2	calcite	7	secondary	irregular	liquid dominant two phases	1.8	283
P4-5F 3-1	calcite	8	secondary	irregular	liquid dominant two phases	0.4	374
P4-5F 3-2-1	calcite	10	secondary	irregular	liquid dominant two phases	0.4	unmeasurable
P4-5F 3-2-2	calcite	12	secondary	irregular	liquid dominant two phases	0.6	unmeasurable
P4-5F 3-3-1	calcite	7	secondary	ellipsoidal	liquid dominant two phases	0.4	unmeasurable
P4-5F 3-3-2	calcite	7	secondary	irregular	liquid dominant two phases	0.4	unmeasurable
P4-5F 3-5-1	calcite	7	secondary	ellipsoidal	liquid dominant two phases	0.6	386
P4-5F 3-5-2	calcite	5	secondary	ellipsoidal	liquid dominant two phases	0.6	288
P4-5F 3-6-1	calcite	6	secondary	irregular	liquid dominant two phases	0.7	245
P4-5F 3-6-2	calcite	12	secondary	irregular	liquid dominant two phases	0.6	278
P4-5F 3-6-3	calcite	4	secondary	ellipsoidal	liquid dominant two phases	0.4	284
P4-5F 3-6-4	calcite	4	secondary	irregular	liquid dominant two phases	0.4	284

Two samples (P2-4F,P3-4F) do not contain fluid inclusions that can be measurable.

Table 4-30 Fluid Inclusion Study of Drill Core Samples, Prambon District (4/4)

Inclusion number	mineral	Size(um)	ary or Seco	Form	Phases	Th(℃)	first ice melting temperature(oC)	Final melting temperature (oC)	Major components	Salinity		Remarks
P1-22 1-1-1	quartz	24	primary	idiomorphic	liquid dominant	unmeasurerale due to decrepitation	-21.4	-9.8	H2O-NaClsystem	14.6	wt % NaCl eq	
P1-22 1-1-2	quartz	6	primary	idiomorphic	liquid dominant	unmeasurerale due to decrepitation		-10.8	H2O-NaClsystem	15.7	wt % NaCl eq	
P1-22 1-2	quartz	12	primary ?	idiomorphic	liquid dominant	unmeasurerale due to decrepitation	-21.9	-7.4	H2O-NaClsystem	11.6	wt % NaCl eq	
P1-22 1-3	quartz	25	primary ?	idiomorphic	liquid dominant	292		-2.7	H2O-NaClsystem	4.8	wt % NaCl eq	
P1-22 2-1	quartz	25	primary ?	idiomorphic	liquid dominant	281		-8.4	H2O-NaClsystem	13.0	wt % NaCl eq	
P1-22 2-2	quartz	19	secondary	不規則	liquid dominant	unmeasurerale due to gas disappear	-20.6	-0.2	H2O-NaClsystem	0.4	wt % NaCl eq	
P1-22 2-3-1	quartz	12	primary	idiomorphic	liquid dominant	221	< -80℃	unfleased				
P1-22 2-3-2	quartz	10	primary	idiomorphic	liquid dominant	225	< -80℃	unfleased				
P1-22 3-1	quartz	13	primary ?	idiomorphic	liquid dominant	220	-34.1	-19.7	H2O-NaCl-CaCl2system ?	21.2	wt % $CaCl_2$ eq	Estimated from final ice melting temperature and H2O-NaCl-CaCl2system
P1-22 4-1	quartz	27	primary ?	idiomorphic	liquid dominant	261		-24.3	H2O-NaCl-CaCl2system ?	23.3	wt % $CaCl_2$ eq	Estimated from final ice melting temperature and H2O-NaCl-CaCl2system
P1-22 4-2	quartz	30	primary ?	idiomorphic	liquid dominant	Decrepted at 300℃	-54.3	-17.3	H2O-NaCl-CaCl2system ?	19.5	wt % $CaCl_2$ eq	Estimated from final ice melting temperature and H2O-NaCl-CaCl2system
P1-22 4-3	quartz	45	primary	idiomorphic	liquid dominant	378	-20.6	-3.9	H2O-NaClsystem	6.7	wt % NaCl eq	
P1-22 4-4	quartz	20	primary	idiomorphic	liquid dominant	316	-44.2	-21.3	H2O-NaCl-CaCl2system ?	21.9	wt % $CaCl_2$ eq	Estimated from final ice melting temperature and H2O-NaCl-CaCl2system
P1-22 4-5	quartz	20	primary ?	idiomorphic	liquid dominant	unmeasurerale due to decrepitation	-33.8	-18.5	H2O-NaCl-CaCl2system ?	20.6	wt % $CaCl_2$ eq	Estimated from final ice melting temperature and H2O-NaCl-CaCl2system
P1-22 5-1	quartz	13	primary ?	idiomorphic	liquid dominant	268	<-80℃	unfleased				
P1-22 5-2	quartz	13	primary ?	idiomorphic	liquid dominant	236	< -80℃	unfleased				
P1-22 5-3	quartz	37	primary ?	idiomorphic	liquid dominant	331	-21.3	-2.4	H2O-NaClsystem	4.3	wt % NaCl eq	
P1-22 5-4	quartz	17	primary ?	idiomorphic	liquid dominant	283	-41.5	-19.8	H2O-NaCl-CaCl2system ?	21.0	wt % $CaCl_2$ eq	Estimated from final ice melting temperature and H2O-NaCl-CaCl2system

Table 4-31 Chemical Analysis Results of Drill Hole Core Samples of MJIE-S1

Width(m)	Field Observation	Description		Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Ti	Tl	U	V	W	Zn
				ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
1.00	oxidezed zone	oxidized zone	FeOx,kaoline	0.002	<0.2	0.42	9	<10	40	<0.5	2	0.01	<0.5	<1	46	4	0.95	<10	<1	0.09	<10	0.01	8	1	<0.01	2	40	5	0.14	<2	1	26	<0.01	<10	<10	5	<10	2
1.00		oxidized zone	FeOx,kaoline	0.002	<0.2	0.43	23	<10	30	<0.5	2	0.01	<0.5	1	134	5	1.38	<10	<1	0.12	<10	0.01	14	4	0.01	5	40	5	0.22	<2	1	23	<0.01	<10	<10	5	<10	3
1.00		oxidized zone	FeOx,kaoline	0.001	<0.2	0.57	13	<10	60	<0.5	2	0.01	<0.5	1	217	5	1.36	<10	<1	0.17	<10	<0.01	21	8	0.01	9	30	7	0.32	<2	1	26	<0.01	<10	<10	7	10	2
1.05		oxidized zone	FeOx,kaoline	0.003	<0.2	0.45	20	<10	60	<0.5	<2	0.01	<0.5	1	196	6	1.38	<10	<1	0.09	<10	<0.01	19	8	0.02	8	100	4	0.21	<2	1	59	<0.01	<10	<10	7	10	2
1.00		oxidized zone	FeOx,kaoline	0.007	<0.2	0.42	38	<10	70	<0.5	<2	0.01	<0.5	1	264	9	2.21	<10	<1	0.09	<10	<0.01	29	12	0.04	11	150	2	0.29	2	1	81	<0.01	<10	<10	11	10	5
1.00	37.30-167.55: argillic	pyrite disseminated	soft clay	0.005	<0.2	0.22	80	<10	10	<0.5	2	0.05	0.8	30	35	66	6.37	<10	1	0.1	<10	0.02	20	2	0.01	48	20	12	6.82	<2	5	7	<0.01	<10	<10	10	<10	180
1.00		pyrite disseminated	rather hard	0.006	0.2	0.25	83	<10	30	<0.5	5	0.01	<0.5	40	105	102	6.65	<10	<1	0.03	<10	<0.01	43	2	0.02	168	50	8	7.08	<2	1	41	<0.01	<10	<10	9	<10	16
1.00		pyrite disseminated	rather hard	0.011	0.3	0.42	118	<10	40	<0.5	4	0.01	2.3	57	64	47	6.63	<10	<1	0.02	<10	0.01	30	1	0.01	220	40	11	7.14	<2	1	40	<0.01	<10	<10	6	<10	18
1.00		pyrite disseminated	rather hard +0.20m caly	0.007	0.5	0.21	158	<10	20	<0.5	9	0.02	<0.5	57	76	69	8.44	<10	<1	<0.01	<10	0.01	31	1	0.01	270	20	20	9.06	<2	2	19	<0.01	<10	<10	9	<10	26
1.00		pyrite disseminated	rather soft	0.004	0.3	0.69	74	<10	20	<0.5	<2	0.14	<0.5	27	31	63	5.13	<10	<1	0.08	<10	0.06	26	1	0.02	55	20	22	5.56	<2	10	11	<0.01	<10	<10	35	<10	44
1.00		pyrite disseminated	clay	0.002	<0.2	1.3	52	<10	30	<0.5	3	0.26	1	29	90	78	4.57	<10	<1	0.1	<10	0.45	132	1	0.03	48	10	19	4.92	<2	9	18	<0.01	<10	<10	66	<10	162
1.00		pyrite disseminated	clay	0.004	0.2	0.21	81	<10	10	<0.5	5	0.06	0.9	38	39	84	6.88	<10	<1	0.04	<10	0.02	23	1	0.03	122	10	6	7.37	2	7	10	<0.01	<10	<10	10	<10	231
1.00		pyrite disseminated	clay	0.007	<0.2	0.81	106	<10	10	<0.5	3	0.08	<0.5	40	58	61	6.73	<10	<1	0.08	<10	0.07	48	<1	0.02	126	10	11	7.26	<2	8	7	<0.01	<10	<10	35	<10	319
1.00		pyrite disseminated	rather soft	0.008	0.2	1.76	129	<10	40	<0.5	<2	0.08	1	31	47	27	7.05	10	1	0.07	<10	0.03	54	<1	0.05	82	70	31	7.7	2	15	26	<0.01	<10	<10	47	<10	762
1.00		pyrite disseminated	clay	0.008	<0.2	0.85	134	<10	20	<0.5	2	0.08	0.8	47	81	53	7.37	<10	<1	0.05	<10	0.24	55	<1	0.02	166	20	38	8.01	<2	11	9	<0.01	<10	<10	54	<10	421
1.00		pyrite disseminated	rather soft	<0.001	<0.2	0.68	55	<10	10	<0.5	2	0.11	<0.5	41	65	44	7.73	<10	1	0.11	<10	0.15	29	<1	0.04	133	20	38	8.37	2	9	10	<0.01	<10	<10	29	<10	176
1.00		pyrite disseminated	rather soft	0.001	0.2	3.82	87	<10	10	0.6	3	0.23	<0.5	48	168	108	7.81	10	<1	0.14	<10	2.31	251	<1	0.07	154	40	23	8.68	<2	18	19	<0.01	<10	<10	154	<10	209
1.00		pyrite disseminated	rather hard+ 0.40m clay	0.001	<0.2	5.73	85	<10	20	0.5	<2	0.58	<0.5	33	191	76	6.8	10	1	0.16	<10	5.32	1345	<1	0.05	104	790	15	6.06	<2	17	35	<0.01	<10	<10	166	<10	108
1.00		pyrite disseminated		<0.001	<0.2	4.54	86	<10	20	<0.5	2	0.73	<0.5	36	205	21	6.23	10	1	0.11	<10	4.94	1480	<1	0.04	120	790	12	5.5	<2	16	44	<0.01	<10	<10	171	<10	114
1.00		pyrite disseminated	Fine tuff	<0.001	<0.2	2.9	72	<10	20	<0.5	<2	0.58	<0.5	21	32	38	6.16	10	1	0.1	<10	3.11	894	<1	0.04	14	1100	11	6.04	<2	10	31	0.01	<10	<10	128	<10	98
1.25		pyrite disseminated	soft clay	0.005	0.4	0.93	99	<10	20	<0.5	3	0.21	2.4	45	50	71	7.5	<10	<1	0.16	<10	0.17	49	<1	0.02	143	30	14	8.15	<2	12	20	<0.01	<10	<10	60	<10	425
1.00		pyrite disseminated	pyrite veinlets	0.005	0.2	1.3	85	<10	10	<0.5	4	0.25	0.5	41	60	49	7.57	<10	<1	0.12	<10	0.4	55	<1	0.05	116	20	14	8.26	<2	8	32	<0.01	<10	<10	49	<10	108
1.00		pyrite disseminated	argillic	0.001	<0.2	2.87	43	<10	20	0.6	<2	0.6	<0.5	11	24	17	3.88	10	1	0.11	<10	2.48	585	<1	0.04	6	750	13	4.32	<2	6	47	<0.01	<10	<10	52	<10	108
1.00		pyrite disseminated	hard, propylitic	0.001	<0.2	3.75	26	<10	<10	<0.5	4	0.5	<0.5	38	168	118	6.04	10	1	0.02	<10	4.82	2170	<1	0.04	93	630	10	5.26	<2	24	41	<0.01	<10	<10	190	<10	141
1.00		pyrite disseminated	Tuff breccia, green	0.002	<0.2	4.97	26	<10	10	<0.5	3	0.54	<0.5	31	31	122	8.08	10	2	0.08	<10	4.28	1205	<1	0.06	18	690	11	6.44	<2	19	49	<0.01	<10	<10	276	<10	83
1.10		pyrite disseminated	sericite	0.005	0.2	5.17	33	<10	20	0.5	2	0.33	<0.5	29	34	54	7.61	10	<1	0.1	<10	3.8	471	<1	0.04	14	630	10	5.66	<2	17	31	<0.01	<10	<10	235	<10	51
1.00		pyrite disseminated,veinlets	weakly fractured	0.003	0.3	4.22	29	<10	10	<0.5	2	0.29	<0.5	32	21	135	9.01	10	1	0.1	<10	2.06	124	<1	0.03	17	370	9	9.46	<2	17	31	<0.01	<10	<10	184	<10	48
1.00		pyrite disseminated	soft clay	0.006	0.3	0.41	86	<10	10	<0.5	9	0.12	<0.5	33	22	24	8.43	<10	<1	0.07	<10	0.11	17	1	0.02	13	20	37	8.99	<2	6	17	<0.01	<10	<10	24	<10	6
1.00	167.55-222.85: propylitic	pyrite disseminated	propylitic	0.008	0.2	5.16	38	<10	20	<0.5	2	0.38	<0.5	30	32	14	8.44	10	<1	0.11	<10	4.65	628	1	0.03	12	920	11	6.08	<2	18	26	<0.01	<10	<10	211	<10	84
1.00		pyrite disseminated	propylitic	0.017	<0.2	5.18	32	<10	20	<0.5	<2	0.32	<0.5	26	41	30	7.85	10	1	0.08	<10	4.5	664	3	0.03	11	760	12	4.77	<2	18	24	<0.01	<10	<10	204	<10	43
1.00		pyrite disseminated	propylitic	0.02	<0.2	4.47	27	<10	40	<0.5	<2	0.45	<0.5	24	40	78	7.23	10	<1	0.12	<10	3.14	579	3	0.03	10	1120	7	4.52	<2	14	33	<0.01	<10	<10	182	<10	39
1.00		pyrite disseminated	propylitic	0.013	<0.2	5.34	23	<10	30	0.5	<2	0.43	<0.5	20	31	12	6.41	10	<1	0.24	<10	3.46	678	5	0.05	9	930	6	2.68	<2	14	35	<0.01	<10	<10	162	<10	47
1.00		pyrite disseminated	clay	0.013	<0.2	1.22	43	<10	10	<0.5	3	0.28	<0.5	17	48	22	6.66	<10	<1	0.05	<10	0.42	68	6	0.01	12	780	24	6.88	<2	6	29	<0.01	<10	<10	21	<10	15
1.00		pyrite disseminated	propylitic	0.02	<0.2	4.92	28	<10	20	<0.5	3	0.68	<0.5	22	40	40	7.2	10	1	0.06	<10	4.02	1980	3	0.05	10	710	33	5.24	<2	19	81	<0.01	<10	<10	235	<10	92
1.00		pyrite disseminated	propylitic	0.002	<0.2	5.4	17	<10	20	<0.5	<2	0.74	<0.5	21	38	43	6.96	10	<1	0.05	<10	4.5	2140	1	0.06	10	580	10	4.45	<2	25	78	0.04	<10	<10	266	<10	117
1.00		pyrite disseminated	very weakly argillic	0.003	<0.2	4.85	9	<10	20	<0.5	<2	0.58	<0.5	25	29	46	7.29	10	<1	0.06	<10	4.54	2350	<1	0.05	10	560	9	4.34	<2	22	60	0.03	<10	<10	270	<10	152
1.00		pyrite disseminated	very weakly argillic	0.003	0.2	4.38	9	<10	40	<0.5	<2	0.5	<0.5	27	27	14	7.39	10	<1	0.17	<10	4.09	1780	<1	0.02	11	490	10	5.33	<2	12	57	<0.01	<10	<10	162	<10	76
1.00		pyrite disseminated	very weakly argillic	0.004	0.3	4.06	11	<10	20	<0.5	<2	0.57	0.5	26	27	80	7.59	10	<1	0.09	<10	3.52	1390	1	0.04	12	540	22	6.33	3	16	64	<0.01	<10	<10	211	<10	91
1.00	gradual change	pyrite disseminated	soft clay	0.007	0.4	3.7	26	<10	40	<0.5	<2	0.54	0.8	27	22	83	7.68	10	<1	0.2	<10	2.71	1010	1	0.04	15	730	24	6.51	3	12	52	<0.01	<10	<10	138	<10	80
1.00		pyrite disseminated	in clayish zones	0.016	0.2	3.77	78	<10	40	<0.5	<2	0.38	<0.5	26	30	24	6.94	10	<1	0.16	<10	2.98	1005	<1	0.04	14	610	14	5.41	2	13	35	<0.01	<10	<10	152	<10	98
1.00	237.50-289.10: sericite+quartz	pyrite disseminated	argillic-silicification	0.005	0.2	4.19	28	<10	10	0.5	3	0.47	<0.5	19	16	102	6.2	10	<1	0.07	<10	2.03	186	<1	0.03	9	860	13	6.61	<2	13	33	<0.01	<10	<10	126	<10	116
1.00		pyrite disseminated	weak argillization	0.002	0.2	2.87	33	<10	20	0.6	2	0.47	0.5	12	14	61	5.23	10	<1	0.15	<10	1.86	572	<1	0.03	8	930	36	5.72	<2	7	34	<0.01	<10	<10	29	<10	142
1.00		pyrite disseminated	clay	0.005	0.2	3.98	28	<10	30	0.6	4	0.53	1.9	19	19	160	6.26	10	<1	0.17	<10	2.45	1135	<1	0.05	16	1220	22	6.37	2	9	32	<0.01	<10	<10	67	<10	492
1.00		pyrite disseminated	clay	0.006	<0.2	3.95	23	<10	40	0.6	2	0.62	<0.5	18	21	17	6.07	10	<1	0.12	<10	2.67	1040	<1	0.06	14	1160	18	6.2	<2	12	45	<0.01	<10	<10	82	<10	136
1.00		pyrite disseminated	clay	0.005	<0.2	3.2	20	<10	40	<0.5	4	0.42	<0.5	16	20	11	5.65	10	<1	0.07	<10	1.68	344	<1	0.03	12	590	14	5.94	<2	10	35	<0.01	<10	<10	59	<10	55
1.00		pyrite disseminated	porous tuff breccia	0.009	<0.2	0.48	9	<10	10	<0.5	<2	0.09	<0.5	15	22	11	5.96	<10	<1	0.01	<10	0.12	50	<1	0.01	13	140	12	6.21	<2	3	7	<0.01	<10	<10	11	<10	19
1.10		pyrite disseminated	Tuff breccia, compact	0.004	<0.2	3.62	9	<10	40	0.6	2	0.78	<0.5	14	21	14	5.01	10	1	0.11	<10	3	1735	<1	0.03	9	900	15	4.99	<2	8	75	<0.01	<10	<10	71	<10	160
1.00		pyrite disseminated	Tuff	0.006	<0.2	3.6	18	<10	80	0.5	2	0.68	0.5	14	32	11	5.22	10	<1	0.17	<10	3.13	1955	<1	0.04	10	890	13	4.55	<2	7	71	<0.01	<10	<10	66	<10	186
1.00		pyrite disseminated	Tuff	0.003	<0.2	2.56	3	<10	50	<0.5	2	0.6	<0.5	13	24	10	4.38	<10	<1	0.15	<10	2.07	893	<1	0.04	10	710	13	4.46	<2	4	57	<0.01	<10	<10	47	<10	90
1.00		pyrite disseminated	argillic	0.007	<0.2	3.56	7	<10	20	<0.5	<2	0.76	<0.5	14	23	7	4.89	10	<1	0.09	<10	2.86	989	<1	0.07	10	850	8	4.89	<2	10	69	<0.01	<10	<10	72	<10	50
1.00	9.35-329.65: Sericite->Alunite	mosaic of pyrite disseminated part and pinky (alunite) part		0.002	<0.2	3.80	3	<10	10	<0.5	<2	0.73	<0.5	14	17	9	4.67	10	<1	0.10	<10	2.92	1335	<1	0.06	8	830	8	4.63	<2	8	75	<0.01	<10	<10	88	<10	59
1.00		clayey-fractured gray rock		0.002	<0.2	3.79	3	<10	10	<0.5	<2	0.76	<0.5	14	32	10	4.53	10	1	0.10	<10	2.95	1070	1	0.06	14	820	9	4.70	<2	7	80	<0.01	<10	<10	69	<10	45
1.00		weakly fractured alunite? pyrite rock		0.016	<0.2	3.88	3	<10	10	<0.5	<2	0.64	<0.5	16	28	7	4.97	10	<1	0.12	<10	3.03	934	2	0.05	12	800	32	4.96	<2	6	63	<0.01	<10	<10	68	<10	91
1.00		silicified, pyrite disseminated		0.005	<0.2	4.27	6	<10	90	<0.5	<2	1.24	<0.5	16	26	20	4.57	10	<1	0.11	<10	2.60	1005	5	0.19	13	820	16	4.69	<2	9	257	<0.01	<10	<10	85	<10	56
1.00		silicified, pyrite disseminated		0.003	<0.2	3.78	6	<10	30	<0.5	<2	0.77	0.6	14	45	14	4.38	10	<1	0.15	<10	3.04	1055	1	0.10	15	740	10	4.22	<2	7	145	<0.01	<10	<10	66	<10	86
1.00		green tuff breccia, pyrite disseminated		0.008	<0.2	3.68	9	<10	30	<0.5	<2	0.72	<0.5	12	27	14	4.76	10	<1	0.08	<10	2.85	822	2	0.10	12	790	12	4.79	<2	8	96	<0.01	<10	<10	90	<10	54
1.00		brecciated, pyrite disseminated		0.007	<0.2	3.14	8	<10	10	<0.5	<2	0.58	<0.5	13	11	14	4.63	10	<1	0.12	<10	2.45	654	1	0.08	7	820	8	4.72	<2	7	67	<0.01	<10	<10	79	<10	46
1.00		pyrite disseminated s	pyrite veinlets	0.006	<0.2	3.84	8	<10	40	<0.5	3	0.72	<0.5	18	11	25	4.74	10	<1	0.16	<10	2.70	752	1	0.11	1	870	8	4.59	<2	7	182	<0.01	<10	<10	61	<10	32
1.00		pyrite disseminated s	pyrite veinlets	0.008	<0.2	4.58	2	<10	50	<0.5	2	0.90	<0.5	16	5	61	5.31	10	1	0.14	<10	3.42	757	3	0.16	1	890	10	5.15	<2	10	212	<0.01	<10	<10	141	<10	40
1.00		pyrite disseminated m	silicification weal, alunite?	0.006	<0.2	4.24	2	<10	20	<0.5	2	0.73	<0.5	13	7	51	4.92	10	1	0.18	<10	3.25	700	2	0.12	<1	810	8	4.44	<2	10	135	<0.01	<10	<10	152	<10	39
1.00		pyrite disseminated	pyrite strong	0.007	<0.2	3.89	2	<10	30	<0.5	2	0.80	<0.5	29	13	23	7.87	10	<1	0.20	<10	2.74	596	4	0.16	2	820	12	7.87	<2	8	198	<0.01	<10	<10	124	<10	37
1.00		pyrite disseminated	pyrite strong	0.008	<0.2	4.14	7	<10	20	<0.5	<2	1.16	<0.5	26	23	18	7.97	10	<1	0.20	<10	2.31	536	3	0.31	4	870	9	8.13	<2	7	298	<0.01	<10	<10	118	<10	31
1.00	330.70-394.50: Propylitic	pyrite disseminated	clayey	0.014	<0.2	4.11	15	<10	30	<0.5	2	0.95	1.2	30	12	47	10.85	10	2	0.14	<10	2.51	860	2	0.19	7	930	13	9.90	<2	12	166	0.01	<10	<10	168	<10	46
1.00		pyrite disseminated	weakly fractured	0.009	<0.2	6.01	<2	<10	50	<0.5	<2	1.47	<0.5	28	7	69	7.82	20	<1	0.11	<10	3.52	1270	3	0.32	<1	810	9	2.19	<2	19	269	0.05	<10	<10	283	<10	79
1.00		pyrite disseminated	Magnetite, biotite?	0.012	<0.2	4.45	3	<10	10	<0.5	<2	0.69	<0.5	16	3	28	7.63	10	<1	0.10	<10	3.23	1195	1	0.11	2	1010	9	1.74	<2	17	78	0.04	<10	<10	236	<10	78
1.00		pyrite disseminated	black streak (tuff?)	0.011	<0.2	3.61	<2	<10	<10	<0.5	<2	0.48	<0.5	20	8	22	7.34	10	<1	0.07	<10	2.96	1085	1	0.08	1	900	5	1.60	<2	19	41	0.04	<10	<10	246	<10	64
1.00		pyrite disseminated	black streak (tuff?)	0.012	<0.2	4.27	<2	<10	10	<0.5	<2	0.85	<0.5	16	8	112	7.18	10	<1	0.09	<10	3.01	1090	2	0.16	2	810	4	0.85	<2	18	101	0.07	<10	<10	273	<10	61
1.00		pyrite disseminated	very weakly silicification	0.009	<0.2	5.66	8	<10	30	<0.5	<2	1.21	<0.5	25	6	27	7.31	10	<1	0.16	<10	3.62	1255	2	0.29	2	880	7	1.53	<2	19	240	0.05	<10	<10	245	<10	84
1.00		pyrite disseminated	clayish	0.023	<0.2	5.01	69	<10	40	<0.5	<2	1.06	1.4	18	7	60	6.32	10	<1	0.15	<10	3.54	1410	3	0.17	1	870	18	3.78	<2	13	166	0.01	<10	<10	168	<10	97
1.20		pyrite disseminated	grayish,compact	0.010	<0.2	4.83	24	<10	20	<0.5	<2	1.76	<0.5	18	20	20	7.97	10	1	0.23	<10	2.19	844	3	0.37	3	890	23	6.35	<2	9	199	0.02	<10	<10	139	<10	66
1.00		pyrite disseminated m	black streak	0.021	<0.2	5.70	116	<10	40	<0.5	2	1.03	1.2	28	12	20	9.81	10	<1	0.21	<10	3.47	1440	4	0.26	6	910	32	6.90	<2	14	150	0.01	<10	<10	164	<10	184
1.00		pyrite disseminated m	black streak	0.011	<0.2	4.62	44	<10	10	<0.5	<2	1.47	0.6	23	10	27	6.29	10	<1	0.20	<10	2.39	800	4	0.44	3	780	23	3.43	<2	12	154	0.10	<10	<10	172	<10	122
1.00		pyrite disseminated	pyrite black streak?	0.020	0.2	4.32	17	<10	30	<0.5	<2	1.74	<0.5	20	39	65	7.93	10	1	0.34	<10	1.24	856	4	0.61	7	720	12	3.25	<2	7	170	0.13	<10	<10	138	<10	86
1.35		pyrite disseminated	weak silicification	0.007	<0.2	3.44	14	<10	10	<0.5	<2	0.83	<0.5	10	11	62	4.27	10	<1	0.16	<10	2.99	1385	4	0.13	4	740	10	1.56	<2	13	39	0.10	<10	<10	126	<10	114
0.20		molybdenite, pyrite clay veinlets 2mm		0.017	0.2	3.93	145	<10	<10	<0.5	<2	1.14	<0.5	23	18	142	5.96	10	1	0.13	<10	3.25	1295	102	0.17	7	420	8	2.17	<2	19	51	0.10	<10	<10	281	<10	98
1.00		pyrite disseminated	Magnetite rich	0.029	<0.2	3.83	4	<10	10	<0.5	<2	1.03	0.6	19	14	242	5.71	10	<1	0.11	<10	3.44	1095	10	0.26	8	620	8	1.50	<2	16	81	0.16	<10	<10	229	<10	118
1.00		pyrite disseminated	porphyritic andesite?	0.011	<0.2	3.40	12	<10	<10	<0.5	<2	0.94	<0.5	20	27	144	6.73	10	1	0.08	<10	3.21	1125	16	0.23	8	510	8	1.96	<2	17	54	0.21	<10	<10	319	<10	173
1.00		pyrite disseminated	Magnetite weak	0.019	0.2	3.71	32	<10	<10	<0.5	<2	1.42	<0.5	25	25	113	5.93	10	<1	0.10	<10	2.97	1065	6	0.34	12	510	17	3.93	<2	16	95	0.19	<10	<10	309	<10	158
1.00		pyrite disseminated (quartz+pyrite+sericite)		0.016	0.3	4.66	23	<10	10	<0.5	<2	2.05	<0.5	24	27	219	6.06	10	<1	0.19	<10	2.54	1345	12	0.51	10	600	21	2.62	<2	15	116	0.16	<10	<10	297	<10	154
1.00		pyrite disseminated		0.009	0.2	3.33	6	<10	<10	<0.5	<2	0.75	<0.5	20	12	112	6.42	10	<1	0.07	<10	3.05	1190	4	0.16	6	730	9	0.81	<2	20	37	0.19	<10	<10	326	<10	122
1.00	argillic?	pyrite disseminated		0.012	0.3	3.93	11	<10	20	<0.5	<2	1.52	0.8	18	83	372	6.08	10	<1	0.24	<10	2.23	1010	1	0.3	11	600	23	6.31	2	11	68	0.01	<10	<10	150	<10	142

Table 4-32 Results of Microscopic Observation of Thin Sections, Seweden District

Sample No.	Depth (m)	Field name	Rock type	Texture	Phenocryst or fragment							groundmass or matrix							alteration				Description
					MP	cpx	hb	qz	pl	Kf	op	MP	hb	qz	pl	Kf	gl	op	cb	sm/chl	ser	epi	
S1-81	108. 72	Andesite	altered andesite	porphyritic	(◎)				◎		○	(○)		○	◎		(◎)	○	◎	△			Mafic minerals and glass were totally decomposed into clay minerals.
S1-82	115. 55	Andesite dyke(fragment?)	tuff breccia	clastic to porphyrtic	(○)				◎		△	(○)			◎		(◎)	○	◎	•	△		Mafic minerals and glass were totally into clay minerals. Epidote locally replacing plagioclase
S1-83	146. 80	Diabase	trachite	trachtic	(○)				◎		△			○	◎			△	○		△		Mafic minerals into chlorite. Matrix is silicified.
S1-84	158. 60	Tuff breccia	silicified volcanics	-										◎	◎			△	◎		△		Totally altered and partly silicified. Texture is uncertain.
S1-85	184. 85	Gray fragment of andesitic tuff breccia	silicified volcanics	-										◎	○			○	○				Totally altered and partly silicified. Amygdule of calcednic quartz is common.
S1-86	232. 00	Tuff breccia	altered volcanics	-										◎	○			○	◎	△			Mafic minerals and glass totally decomposed into clay minerals. partly silicified pools.
S1-88	376. 35	Porphyry	altered andesite	porphyritic	(○)				◎		○			△	◎		(◎)	○		◎		△	Mafic minerals and glass into chlorite and clay minerals. Actinolite occurs as an aggregate.
S1-157	300. 00	Silicified rock	altered volcanics	-										◎	○			○		◎	△		Texture is uncertain. Quartz vein occurs. partly silicified.

roxene, pl=plagioclase, op=opaque minerals, qz=quartz, hb=hornblende

e, ser=sericite, Kf=K-feldspar, epi=epidote, sm/chl=smectite or chlorite

○common, △small, •rare

Table 4-33 Results of X-ray Diffraction Analysis, Seweden District

Drill Hole	Sample No	Depth (m)	Quartz Index										
			Qtz	Pl	Sm	Chi	Se	Kao	Pyr	Al	Py	Mt	Cpx
MJIE-S1	S1-101	290.35	51		11	7					28		
	S1-102	294.60	52		5	6					58		
	S1-103	112.35	54		11	6					34		
	S1-104	126.25	51			18	12				132		
	S1-105	134.30	51				4	8	8				
	S1-106	139.35	9		15	12							
	S1-107	186.10	28		9	34	4				21		
	S1-108	269.35	19		6						118		
	S1-109	283.65	68		6	5					35		
	S1-110	283.70	57		6	7							
	S1-111	5.00	135					18		48			
	S1-112	25.70	78					11		303			
	S1-113	41.00	80					131	48		35		
	S1-114	52.90	68					13		90	48		
	S1-115	70.00	136					24	4	7			
	S1-116	82.20	49				8	33			52		
	S1-117	96.00	47		4	17					46		
	S1-118	109.20	19	55	20	18					44		
	S1-119	120.40	27	89	7	7					43		
	S1-120	129.00	34				5	25			30		
	S1-121	146.75	24	99	18	10					43		
	S1-122	158.55	44		tr	23					63		
	S1-123	166.40	13				9	94			76		
	S1-124	181.00	39			27					14		
	S1-125	194.85	25					17	6		54		
	S1-126	211.35	21	23		21					27		
	S1-127	225.40	28		tr	9					33		
	S1-128	241.15	104			tr					31		
	S1-129	250.20	9			11					47		
	S1-130	267.20	109					113	22		30		
	S1-131	284.30	79	7		9					29		
	S1-132	290.35	55	19	11	9					23		
	S1-133	304.00	63	41	8	10					22		
	S1-134	313.85	36	92	12	9					15		
	S1-135	325.50	66	13	7	9					14		
	S1-136	336.90	28	12	9	17						49	
	S1-137	345.50	61		8	19	4				10		
	S1-139	361.80	30	64		8						63	
	S1-140	374.60	12	134		13						43	9
	S1-141	390.00	17	106		16	tr					51	
	S1-142	385.50	35	51	tr						47		
	S1-148	271.00	67		21						61		

Qtz:Quartz, Pl: Plagioclase, Chl: Chlorite, Se: Sericite, Cal: Calcite, Sm: Smectite, Kao:Kaolinite, Py: Pyrite, Cpx: Clino-pyroxene, Al:Aumite, Mt: Magnetite
Pyr:Pyrophyllite

Table 4-34 Results of Microscopic Observation of Polished Sections, Seweden District

Sample No.	Drilled Lengthth(m)	Ore minerals							Gangue minerals							
		Py	Cp	Sph	Aca	Cer	Ang	others	si	kao	se	kf	chl	cly	cal	others
S1-89	69.00	○		△					◎	◎						
S1-90	141.45	○		△					◎					◎		
S1-91	188.75	◎							◎					◎		Ti(△)
S1-92	205.55	◎	・			・		Pyr(・)					◎	◎		
S1-93	260.60	○		△					◎					◎		apa(△)
S1-94	290.30	◎	・					Pyr(△)	◎					◎		Ti(△)
S1-95	326.10	○	・	・			・		◎			△		◎		apa(△)
S1-96	389.15	◎	・				・		◎	○	◎				○	

Abbreviation:
Py=pyrite,Cp=chalcopyrite,Cer=cerussite,Ang=anglesite si=SiO2 minerals, chl=chlorite ,cly=clay mineral,kao=kaolinite cal=calcite, kf=K-feldspar
Sph=sphalerite, Pyr=pyrrhotite se=sericite or muscovite, Ti=TiO2 polymorph, apa=apatite,

◎=abundant, ○=common, △=small, ・=rare

Table 4-35 Fluid Inclusion Study of Drill Core Samples, Seweden District (1/2)

Sample number	Mineral	Size (μm)	primary or secondary	form	Phasee	Salinity (wt%.NaCl)	Th(℃)
S1-297 342.65m	calcite	17	secondary	irregular	liquid dominant two phases	0.2	163
	calcite	8	secondary	irregular	liquid dominant two phases	0.0	unmeasurable
	calcite	6	secondary	irregular	liquid dominant two phases	0.2	unmeasurable
	calcite	21	secondary	idiomorphy	liquid dominant two phases	0.2	200
	calcite	12	secondary	irregular	liquid dominant two phases	0.4	200
	calcite	14	secondary	irregular	liquid dominant two phases	0.2	unmeasurable
	calcite	8	secondary	irregular	liquid dominant two phases	0.2	201
	calcite	7	secondary	irregular	liquid dominant two phases	0.2	200
	calcite	8	secondary	irregular	liquid dominant two phases	0.0	141
	calcite	11	secondary	irregular	liquid dominant two phases	1.6	unmeasurable
	calcite	13	secondary	idiomorphy	liquid dominant two phases	0.0	173
	calcite	7	secondary	idiomorphy	liquid dominant two phases	0.0	155
	calcite	6	secondary	idiomorphy	liquid dominant two phases	0.0	172
	calcite	5	secondary	irregular	liquid dominant two phases	0.6	192
	calcite	5	secondary	irregular	liquid dominant two phases	0.6	178
	calcite	31	secondary	irregular	liquid dominant two phases	0.0	193
	calcite	10	secondary	irregular	liquid dominant two phases	0.0	181
	calcite	12	secondary	irregular	liquid dominant two phases	0.2	195

Samplenumber	mineral	Size(um)	Primary or Secondary	Form	Phases	Th(℃)	first ice melting temperature(oC)	Final melting temperature (oC)	Major components	Salinity	Remarks
S1-97F	quartz	5	secondary	ellipsoidal	liquid dominant	427					
	quartz	15	secondary	irregular	liquid dominant	unmeasurerale due to decrepitation	-44.4	-24.3	H2O-NaCl-CaCl2system ?	23.2 wt % $CaCl_2$ eq	Estimated from final ice melting temperature and H2O-NaCl-CaCl2system
	quartz	4	secondary	ellipsoidal	liquid dominant	426					
	quartz	10	secondary	irregular	liquid dominant	416		-25.4	H2O-NaCl-CaCl2system ?	23.8 wt % $CaCl_2$ eq	Estimated from final ice melting temperature and H2O-NaCl-CaCl2system
	quartz	10	secondary	irregular	liquid dominant	416	-45.9	-27.4	H2O-NaCl-CaCl2system ?	24.4 wt % $CaCl_2$ eq	Estimated from final ice melting temperature and H2O-NaCl-CaCl2system
	quartz	16	secondary	irregular	liquid dominant	unmeasurerale due to decrepitation		-0.5	H2O-NaClsystem	0.9 wt % NaCl eq	
	quartz	18	secondary	irregular	liquid dominant	unmeasurerale due to decrepitation		-0.5	H2O-NaClsystem	0.9 wt % NaCl eq	
	quartz	15	secondary	irregular	liquid dominant	464	-40.3	-23.0	H2O-NaCl-CaCl2system ?	22.4 wt % $CaCl_2$ eq	Estimated from final ice melting temperature and H2O-NaCl-CaCl2system
	quartz	10	secondary	irregular	liquid dominant	unmeasurerale due to decrepitation	-46.7	-25.9	H2O-NaCl-CaCl2system ?	23.8 wt % $CaCl_2$ eq	Estimated from final ice melting temperature and H2O-NaCl-CaCl2system
	quartz	7	secondary	irregular	liquid dominant	unmeasurerale due to decrepitation	-41.2	-25.0	H2O-NaCl-CaCl2system ?	23.5 wt % $CaCl_2$ eq	Estimated from final ice melting temperature and H2O-NaCl-CaCl2system
	quartz	8	secondary	ellipsoidal	liquid dominant	426					
	quartz	6	secondary	ellipsoidal	liquid dominant	475					
	quartz	2	secondary	ellipsoidal	liquid dominant	392					
	quartz	2	secondary	ellipsoidal	liquid dominant	400					
	quartz	4	secondary	irregular	liquid dominant	418					
	quartz	6	secondary	irregular	liquid dominant	442					

Table 4-35 Fluid Inclusion Study of Drill Core Samples, Seweden District (2/2)

Inclusion number	mineral	Size(um)	Primary or Secondary	Form	Phases	Th(℃)	first ice melting temperature(oC)	Final melting temperature (oC)	Major components	Salinity	Remarks
S1-75F	quartz	20	secondary	irregular	liquid dominant	257	-19.8	-2.2	H2O-NaClsystem	3.7 wt % NaCl eq	
	quartz	20	secondary	irregular	liquid dominant	unmeasurerale due to decrepitation	-22.8	-2.1	H2O-NaClsystem	3.5 wt % NaCl eq	
	quartz	8	secondary	irregular	liquid dominant	354	-16.1	-2.9	H2O-NaClsystem	4.8 wt % NaCl eq	
	quartz	35	secondary	irregular	liquid dominant	unmeasurerale due to decrepitation	-22.8	-6.7	H2O-NaClsystem	10.1 wt % NaCl eq	
	quartz	6	secondary	irregular	liquid dominant	unmeasurerale due to decrepitation		-1.0	H2O-NaClsystem	1.6 wt % NaCl eq	
	quartz	6	secondary	irregular	liquid dominant	unmeasurerale due to decrepitation		-1.1	H2O-NaClsystem	1.8 wt % NaCl eq	
	quartz	7	secondary	irregular	liquid dominant	unmeasurerale due to decrepitation		-0.7	H2O-NaClsystem	1.3 wt % NaCl eq	
	quartz	8	secondary	ellipsoidal	liquid dominant	unmeasurerale due to decrepitation		-0.5	H2O-NaClsystem	0.9 wt % NaCl eq	
	quartz	20	secondary	irregular	liquid dominant	152		-1.9	H2O-NaClsystem	3.2 wt % NaCl eq	
	quartz	6	secondary	irregular	liquid dominant	268		-1.9	H2O-NaClsystem	3.2 wt % NaCl eq	
	quartz	24	secondary	irregular	liquid dominant	265		-1.8	H2O-NaClsystem	3.0 wt % NaCl eq	
	quartz	8	secondary	irregular	liquid dominant	190		-1.9	H2O-NaClsystem	3.2 wt % NaCl eq	
	quartz	30	secondary	irregular	liquid dominant	277	-17.8	-2.3	H2O-NaClsystem	3.8 wt % NaCl eq	
	quartz	6	secondary	ellipsoidal	liquid dominant	372		-1.9	H2O-NaClsystem	3.2 wt % NaCl eq	
	quartz	3	secondary	irregular	liquid dominant	238		-1.8	H2O-NaClsystem	3.0 wt % NaCl eq	
	quartz	36	secondary	irregular	liquid dominant	345	-13.4	-2.9	H2O-NaClsystem	4.8 wt % NaCl eq	
	quartz	6	secondary	irregular	liquid dominant	383		-2.8	H2O-NaClsystem	4.6 wt % NaCl eq	
	quartz	4	secondary	ellipsoidal	liquid dominant	unmeasurerale due to decrepitation		-1.1	H2O-NaClsystem	1.8 wt % NaCl eq	
	quartz	5	secondary	idiomorphic	liquid dominant	359		-2.6	H2O-NaClsystem	4.3 wt % NaCl eq	
	quartz	7	secondary	irregular	liquid dominant	348		-3.1	H2O-NaClsystem	5.1 wt % NaCl eq	
	quartz	6	secondary	irregular	liquid dominant	337			H2O-NaClsystem		
	quartz	20	secondary	irregular	liquid dominant	405	-20.3	-1.8	H2O-NaClsystem	3.0 wt % NaCl eq	
	quartz	5	secondary	irregular	liquid dominant	379		-3.0	H2O-NaClsystem	5.0 wt % NaCl eq	

S1-72A Liquid dominant two phase inclusions

Sample number	Mineral	size (um)	Primary or secondary	Form	Phase	Th(℃)	First melting temperature (T℃)	Final melting temperature (T℃)	Salinity (wtNaCleq.)
S1-72A 1-1	quartz	16	secondary	irregular	Liquid dominant multi-phase inclusions	Gas disappear		-0.5	0.9
S1-72A 1-2	quartz	7	secondary	irregular	Liquid dominant multi-phase inclusions	291		-0.5	0.9
S1-72A 1-3	quartz	13	secondary	irregular	Liquid dominant multi-phase inclusions	291	-19.9	-0.5	0.9
S1-72A 1-4	quartz	19	secondary	irregular	Liquid dominant multi-phase inclusions	355		-0.5	0.9
S1-72A 1-5	quartz	11	secondary	irregular	Liquid dominant multi-phase inclusions	unmeasurerale due to decrepitation	-19.6	-0.5	0.9

S1-72A Liquid dominant multi-phase inclusions

Sample number	Mineral	size (um)	Primary or secondary	Form	Phase	Th of each phase (℃)			Salinity (wtNaCleq.)
						KCl	NaCl	gas	
S1-72A 1-9	quartz	6	secondary	idiomorphic	Liquid dominant multi-phase inclusions		273	400	NaCl: 36.2 wt %
S1-72A 1-10-1	quartz	6	secondary	irregular	Liquid dominant multi-phase inclusions		325	359	NaCl: 40.2 wt %
S1-72A 1-10-2	quartz	3	secondary	irregular	Liquid dominant multi-phase inclusions		331	368	NaCl: 40.7 wt %
S1-72A 1-11	quartz	7	secondary	idiomorphic	Liquid dominant multi-phase inclusions		> 446℃	> 446℃	> NaCl: 52.8 wt %

No measurable inclusions are included in the following samples

Sample No.	Drilled Lengthth(m)
S1-97	211.35
S1-98	212.30
S1-99	271.90
S1-100	290.30