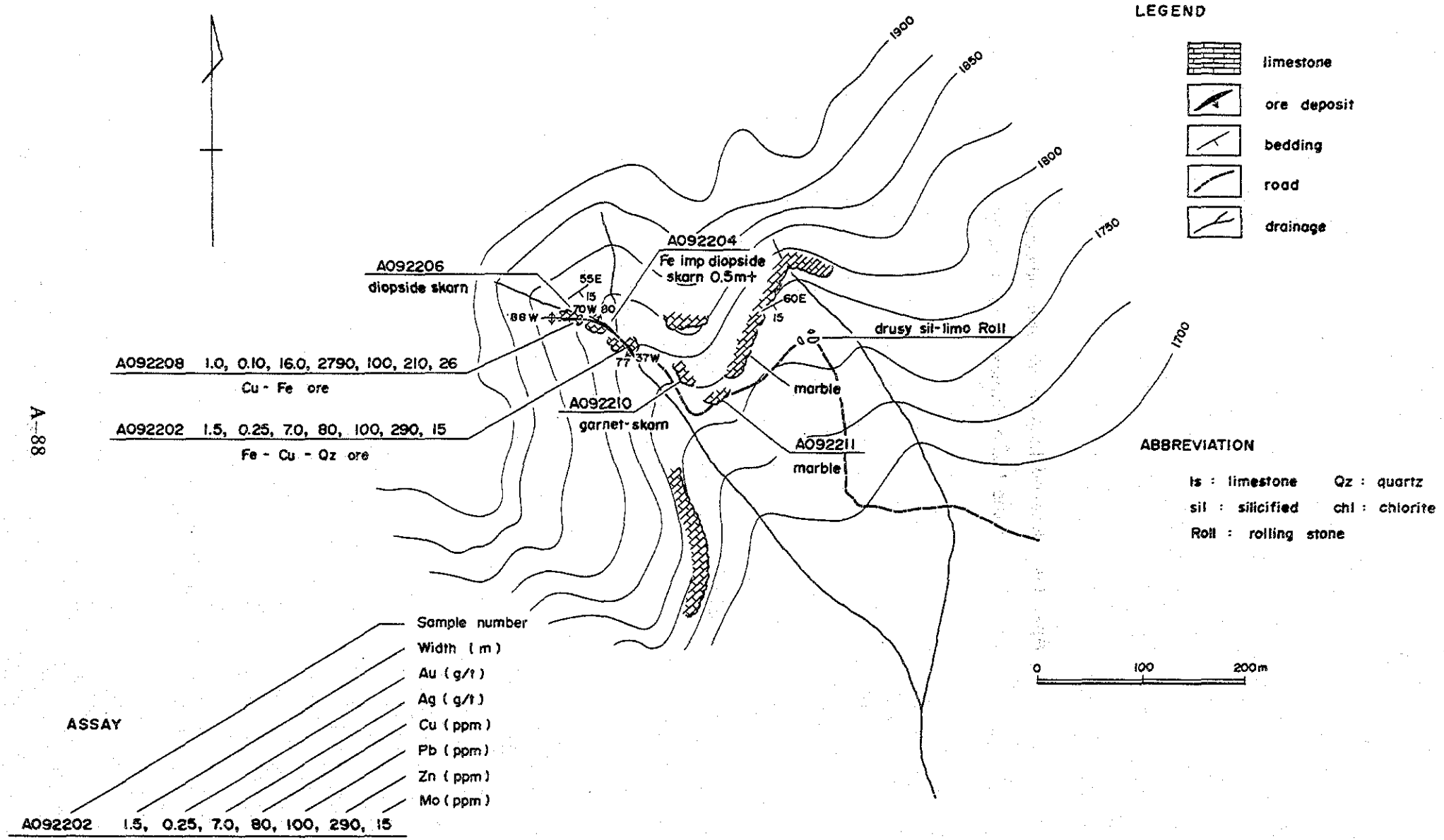
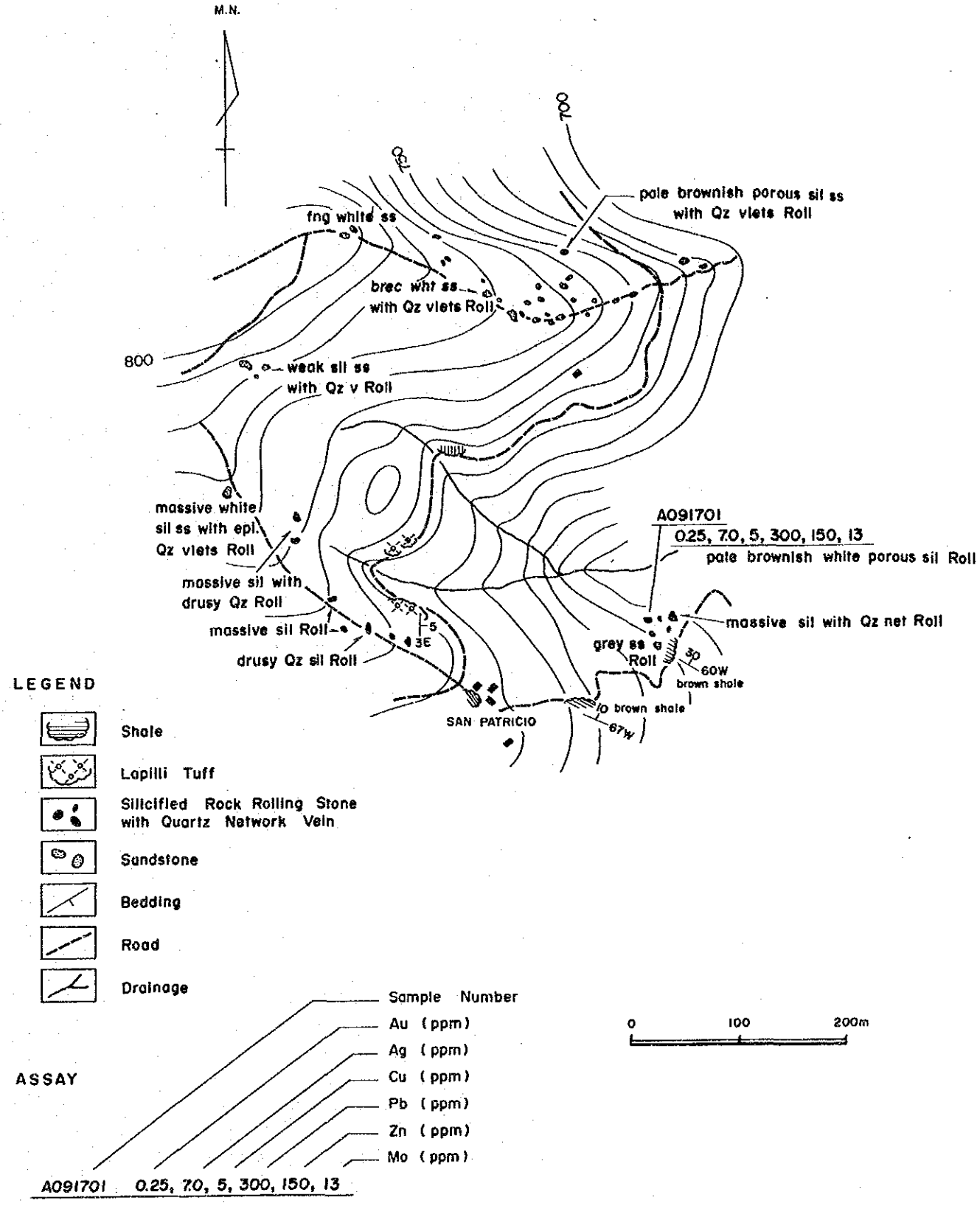
Apx. 14 Detailed Map of Mineral Indication in the Peña Blanca Area (1)～(2)



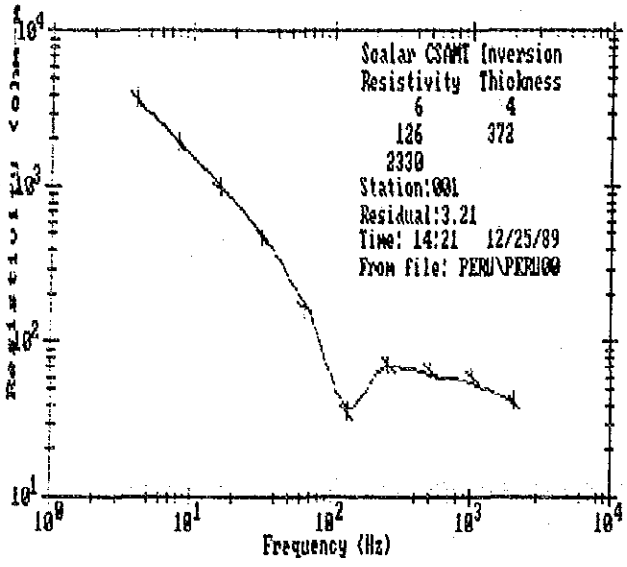
Detailed Map of Mineral Indication in the Peña Blanca Area (1)



Detailed Map of Mineral Indication in the Peña Blanca Area (2)

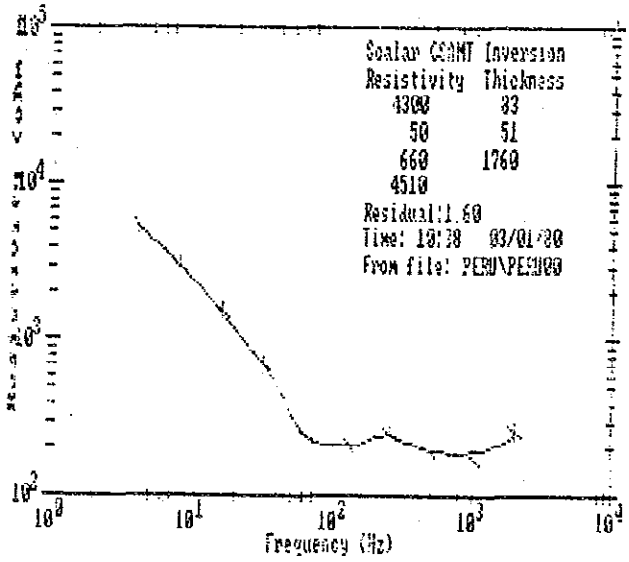
Apx. 15 Apparent Resistivity Curve and Acceptable Model

NO. 1



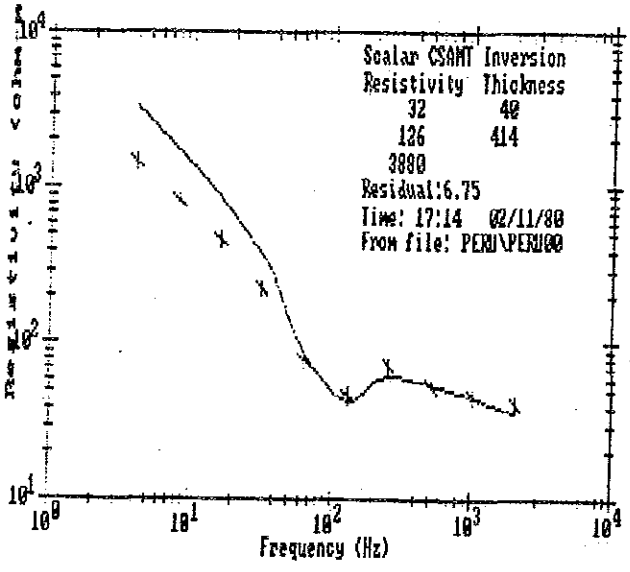
	Resistivity(Ω・m)	Depth(m)
		0
1	6	
		4
2	126	
		376
3	2330	

NO. 2



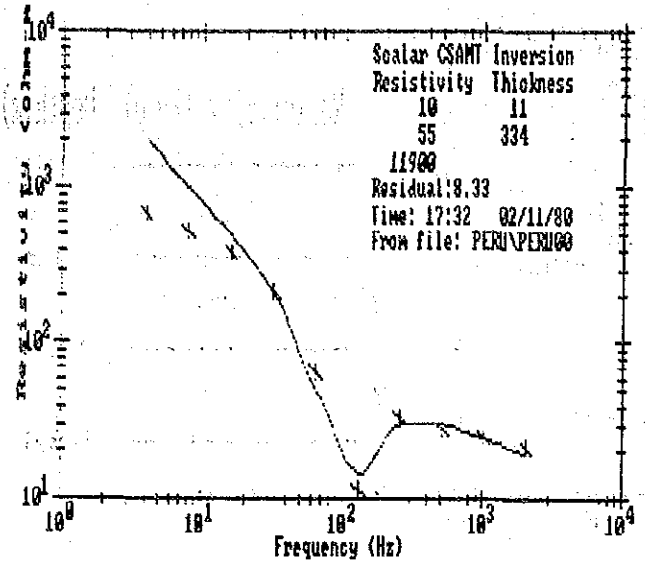
	Resistivity(Ω・m)	Depth(m)
		0
1	4300	
		83
2	50	
		134
3	660	
		1894
4	4510	

NO. 3



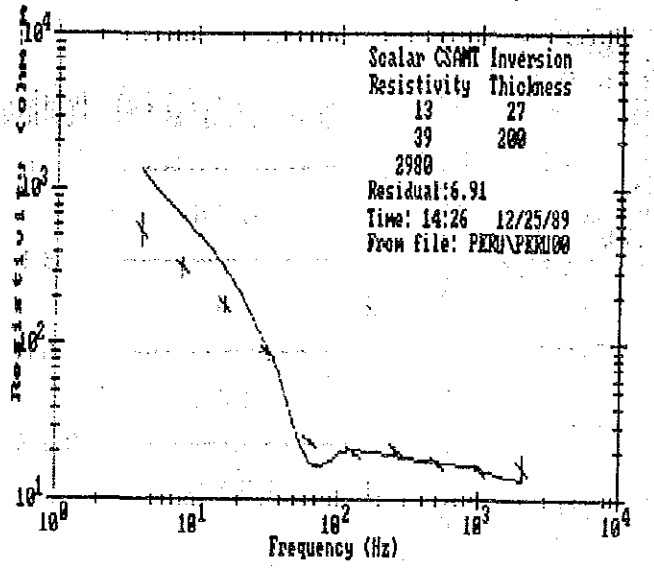
	Resistivity(Ω・m)	Depth(m)
		0
1	32	
		40
2	126	
		454
3	3880	

NO. 4



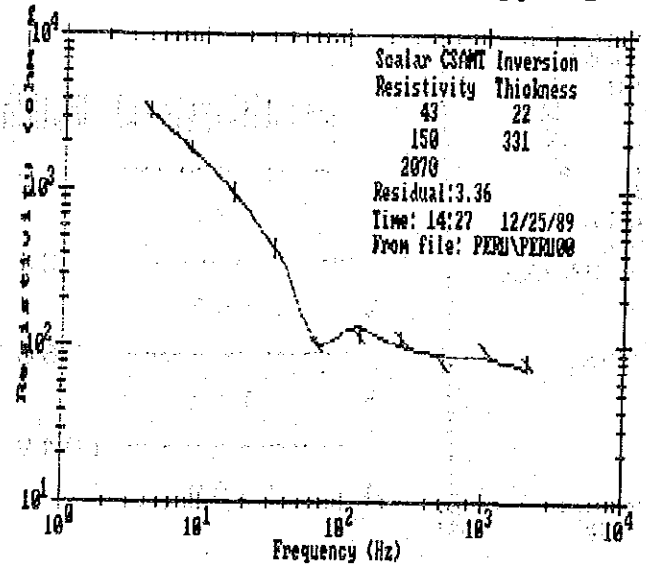
	Resistivity(Ω・m)	Depth(m)
		0
1	10	
		11
2	55	
		345
3	V H	

NO. 5



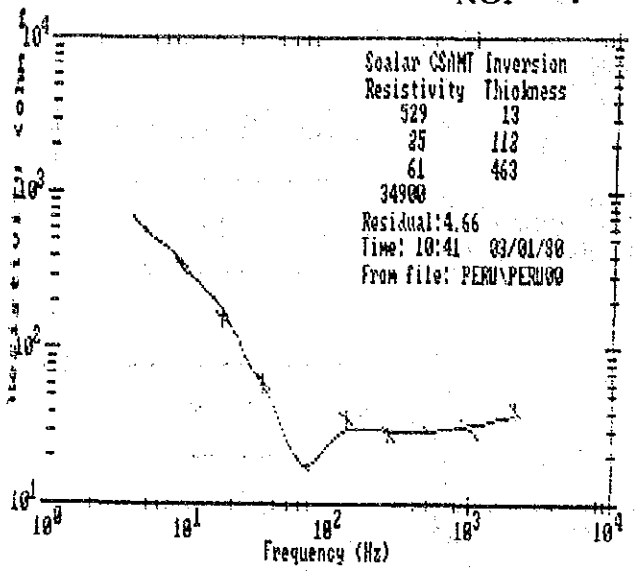
	Resistivity(Ω・m)	Depth(m)
		0
1	13	
		27
2	39	
		227
3	2980	

NO. 6



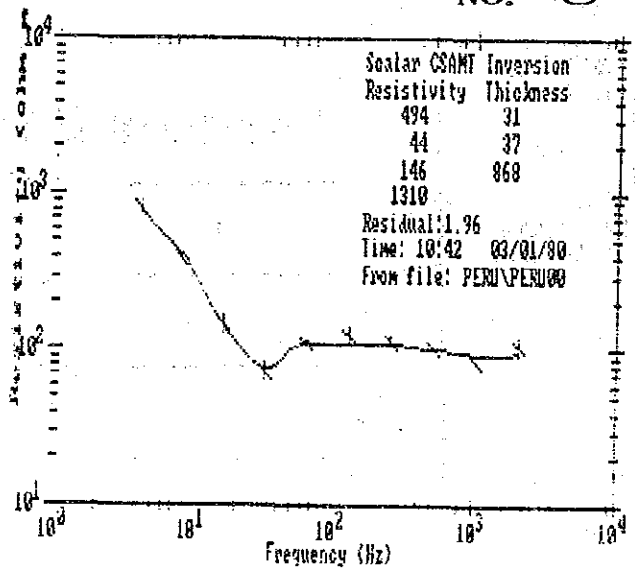
	Resistivity(Ω・m)	Depth(m)
		0
1	43	
		22
2	150	
		353
3	2070	

NO. 7



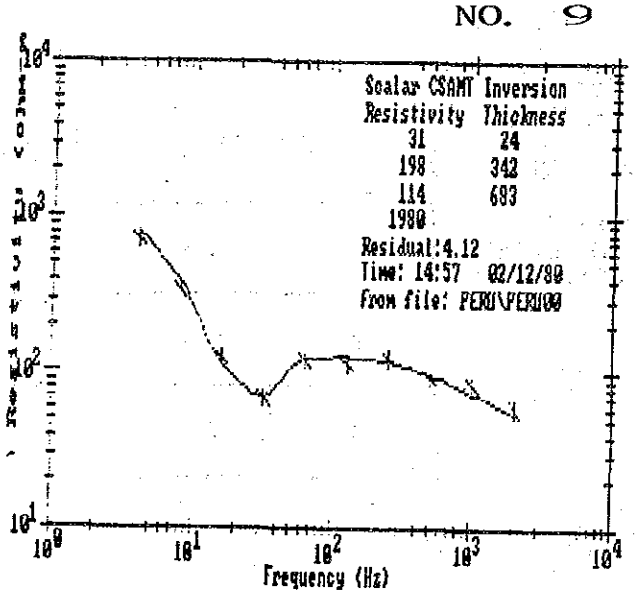
	Resistivity(Ω・m)	Depth(m)
		0
1	529	
		13
2	25	
		125
3	61	
		588
4	V H	

NO. 8



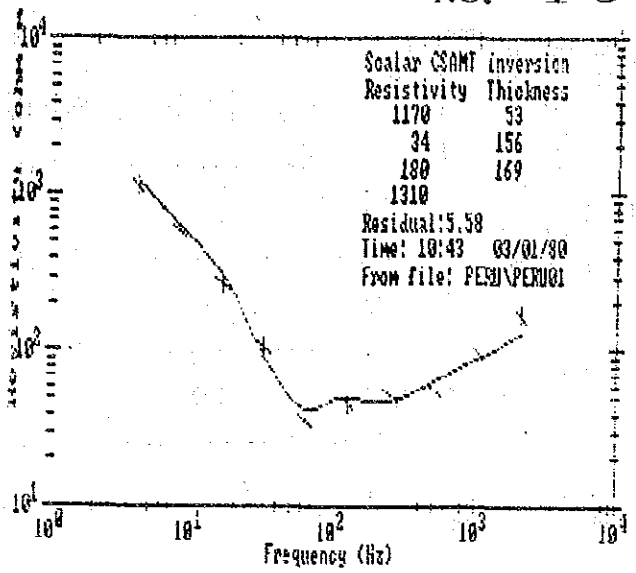
	Resistivity(Ω・m)	Depth(m)
		0
1	494	
		31
2	44	
		68
3	146	
		936
4	1310	

NO. 9



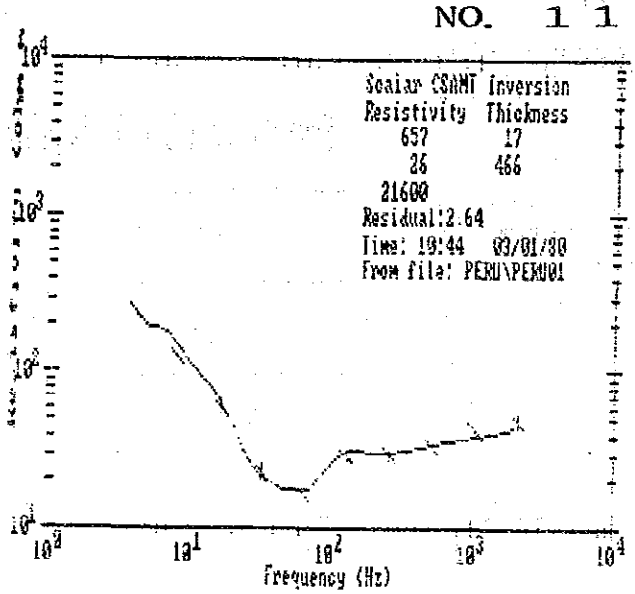
	Resistivity(Ω・m)	Depth(m)
		0
1	31	
		24
2	198	
		366
3	114	
		1049
4	1980	

NO. 10



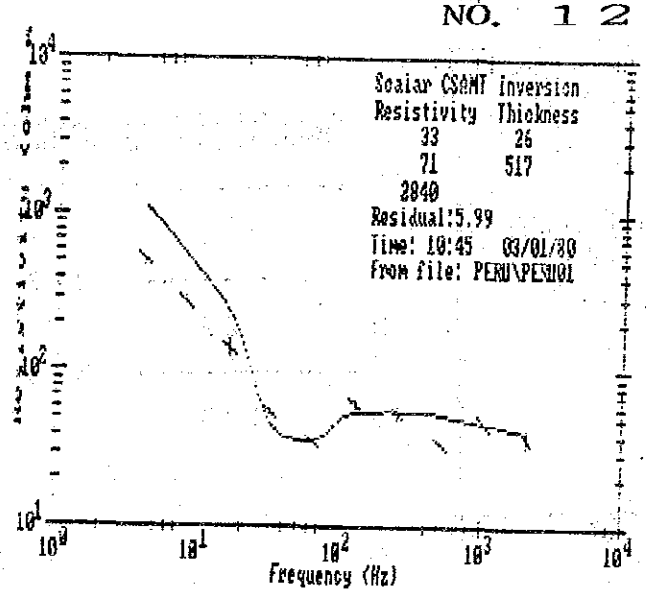
	Resistivity(Ω・m)	Depth(m)
		0
1	1170	
		53
2	34	
		209
3	180	
		378
4	1310	

NO. 11



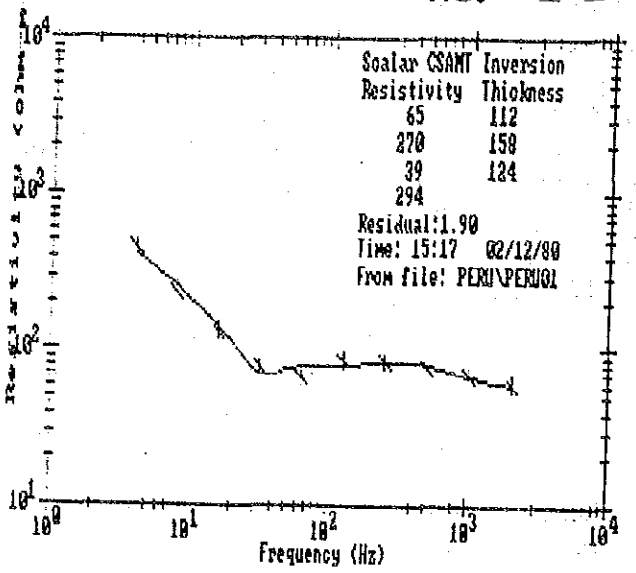
	Resistivity(Ω・m)	Depth(m)
		0
1	657	
		17
2	26	
		483
3	V H	

NO. 12



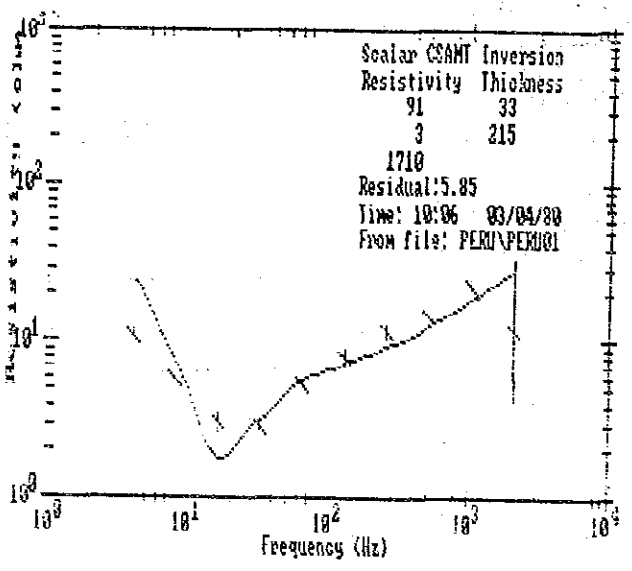
	Resistivity(Ω・m)	Depth(m)
		0
1	33	
		26
2	71	
		543
3	2840	

NO. 13



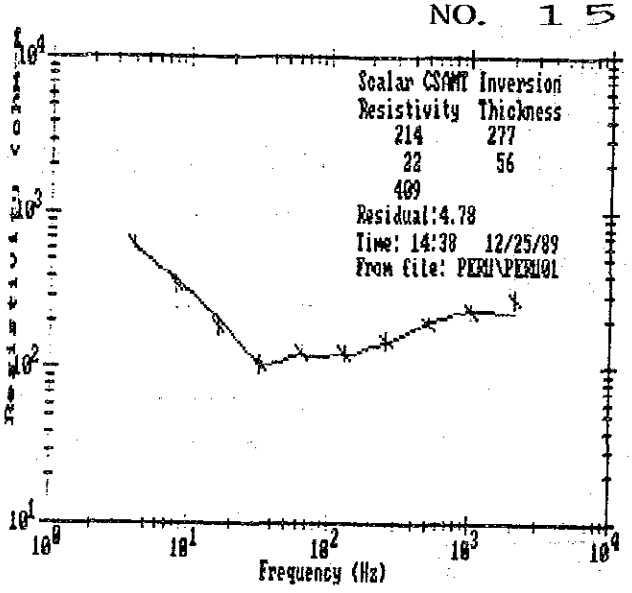
	Resistivity(Ω・m)	Depth(m)
		0
1	65	
		112
2	270	
		270
3	39	
		394
4	294	

NO. 14



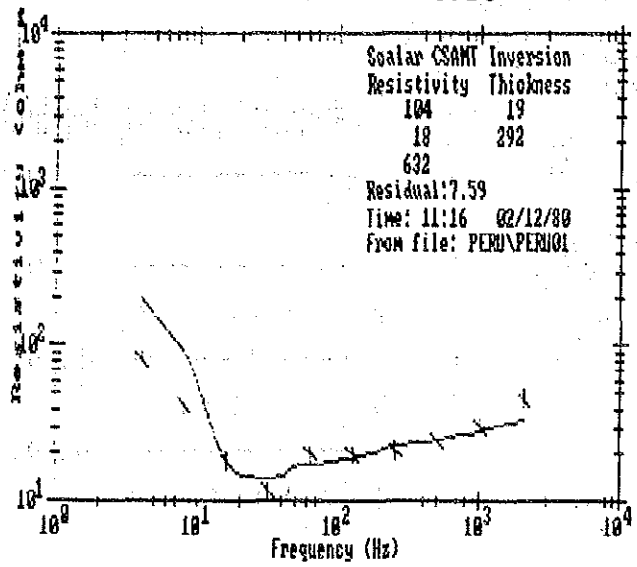
	Resistivity(Ω・m)	Depth(m)
		0
1	91	
		33
2	3	
		248
3	1710	

NO. 15



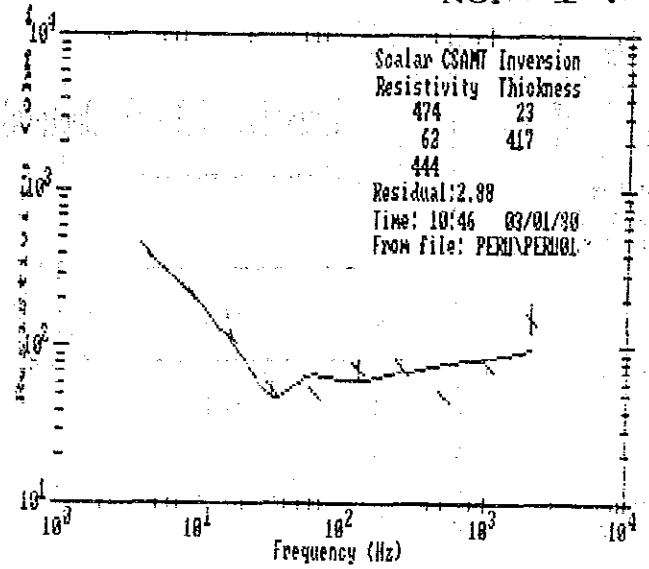
	Resistivity(Ω・m)	Depth(m)
		0
1	214	
		277
2	22	
		333
3	409	

NO. 16



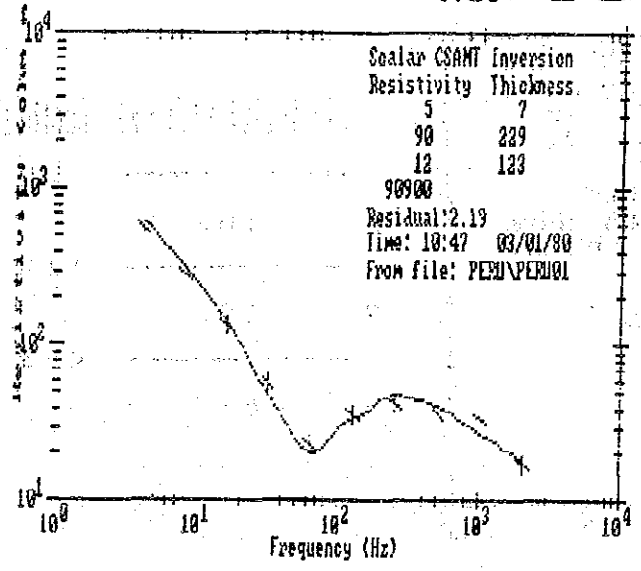
	Resistivity(Ω・m)	Depth(m)
		0
1	104	
		19
2	18	
		311
3	632	

NO. 17



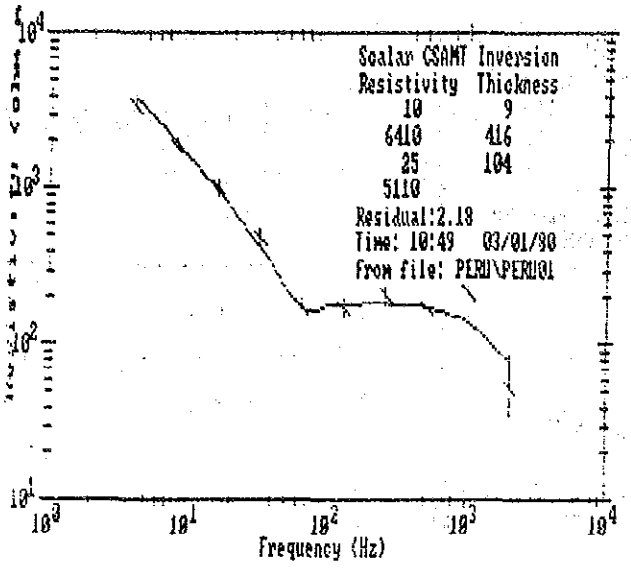
	Resistivity(Ω・m)	Depth(m)
		0
1	474	
		23
2	62	
		440
3	444	

NO. 18



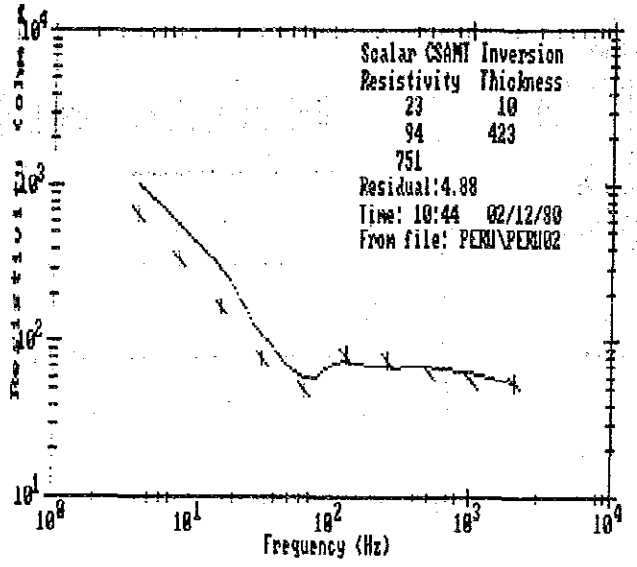
	Resistivity(Ω・m)	Depth(m)
		0
1	5	
		7
2	90	
		236
3	12	
		359
4	V H	

NO. 19



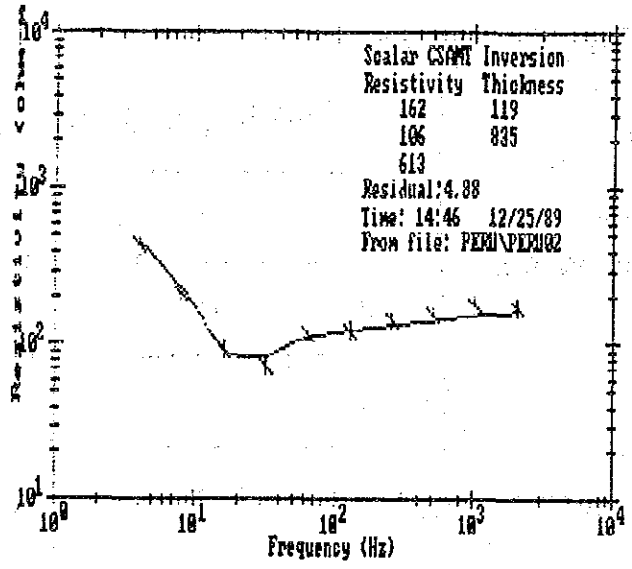
	Resistivity(Ω・m)	Depth(m)
		0
1	10	
		9
2	6410	
		425
3	25	
		529
4	5110	

NO. 20



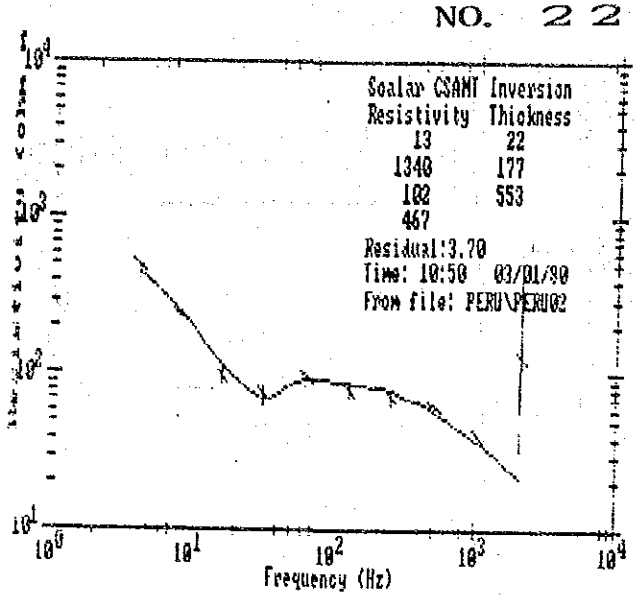
	Resistivity(Ω・m)	Depth(m)
		0
1	23	
		10
2	94	
		433
3	751	

NO. 21



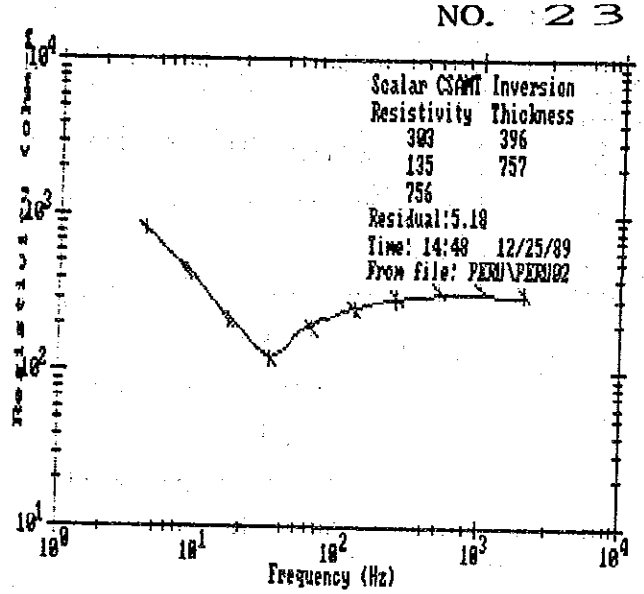
	Resistivity(Ω・m)	Depth(m)
		0
1	162	
		119
2	106	
		954
3	613	

NO. 22



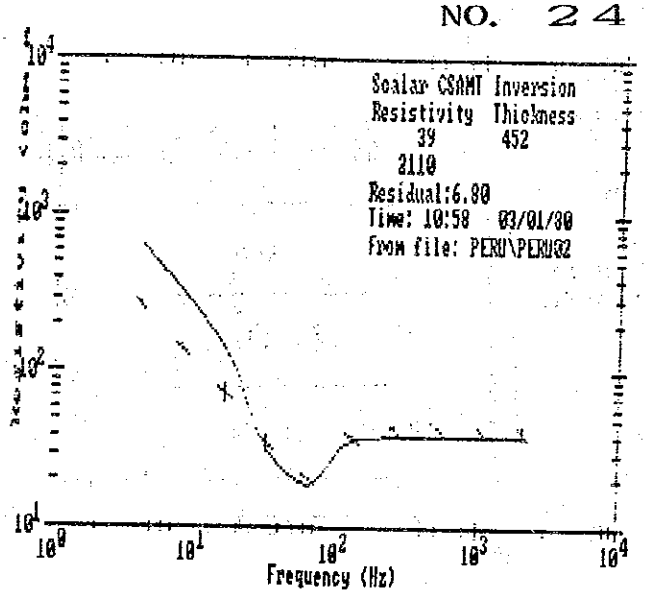
	Resistivity(Ω・m)	Depth(m)
		0
1	13	
		22
2	1340	
		199
3	102	
		752
4	467	

NO. 23



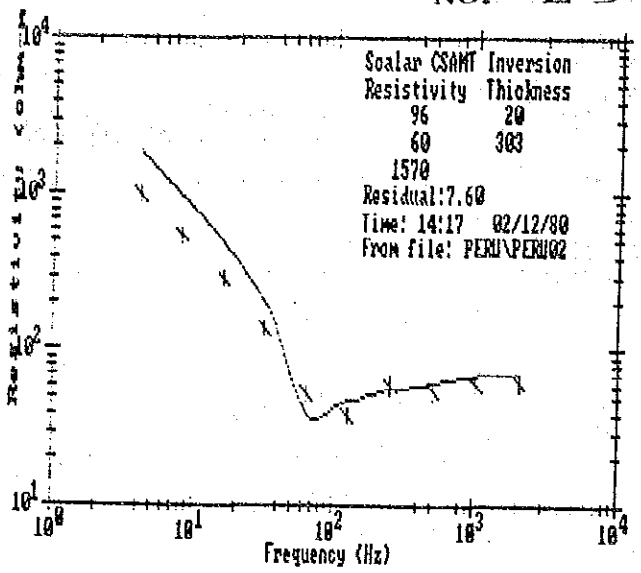
	Resistivity(Ω・m)	Depth(m)
		0
1	303	
		396
2	135	
		1153
3	756	

NO. 24



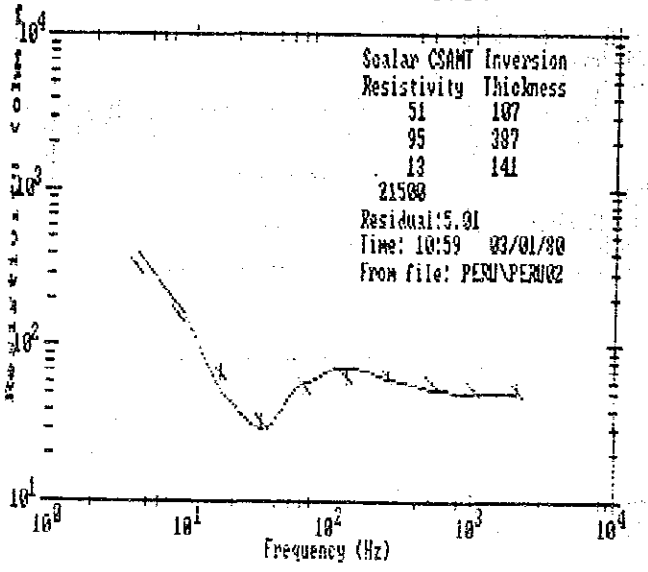
	Resistivity(Ω・m)	Depth(m)
		0
1	39	
		452
2	2110	

NO. 25



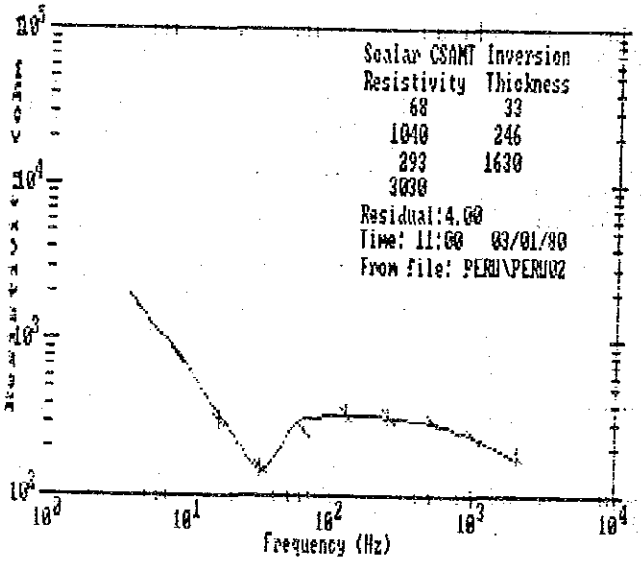
	Resistivity(Ω・m)	Depth(m)
		0
1	96	
		20
2	60	
		323
3	1570	

NO. 26



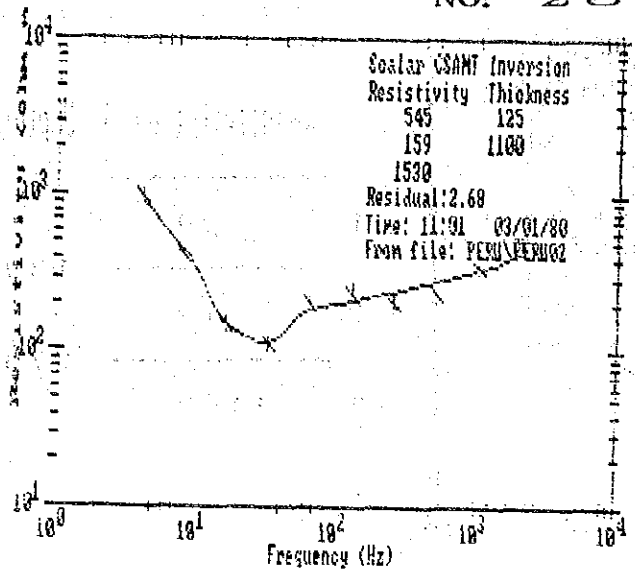
	Resistivity(Ω・m)	Depth(m)
		0
1	51	
		107
2	95	
		494
3	13	
		635
4	V・H	

NO. 27



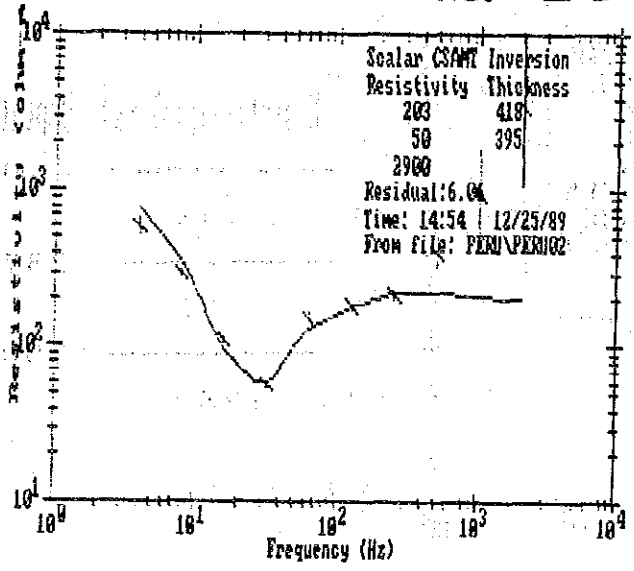
	Resistivity(Ω・m)	Depth(m)
		0
1	68	
		33
2	1040	
		279
3	293	
		1909
4	3030	

NO. 28



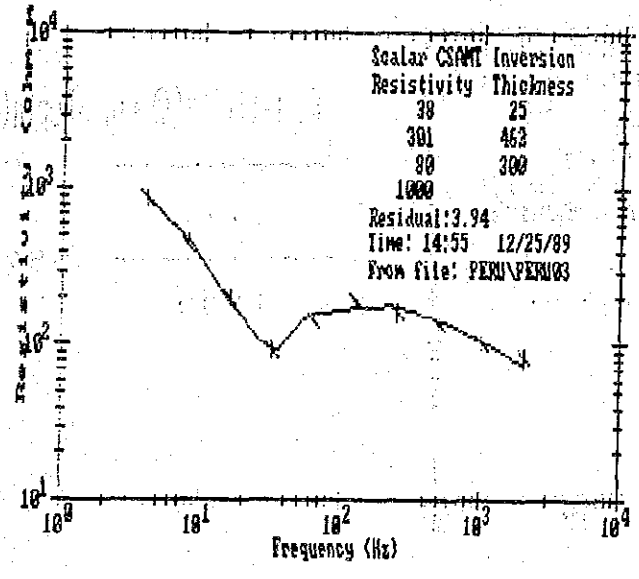
	Resistivity(Ω・m)	Depth(m)
		0
1	545	
		125
2	159	
		1225
3	1530	

NO. 29



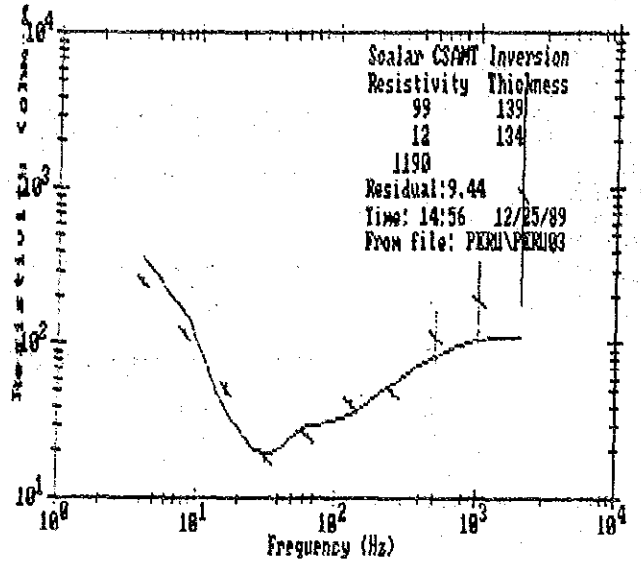
	Resistivity(Ω・m)	Depth(m)
		0
1	203	
		418
2	50	
		813
3	2900	

NO. 30



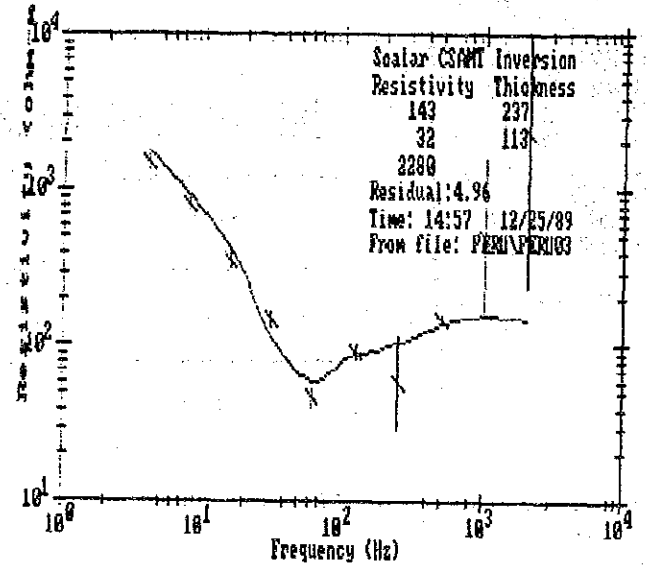
	Resistivity(Ω・m)	Depth(m)
		0
1	38	
		25
2	301	
		487
3	80	
		787
4	1000	

NO. 31



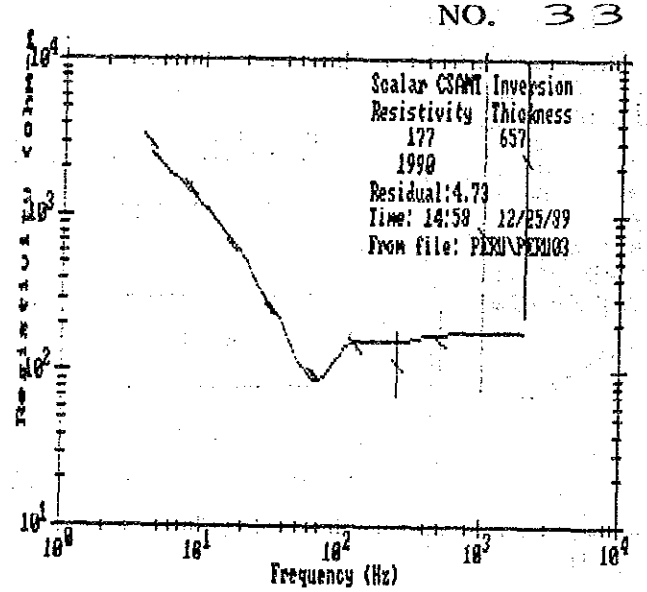
	Resistivity(Ω・m)	Depth(m)
		0
1	99	
		139
2	12	
		273
3	1190	

NO. 32



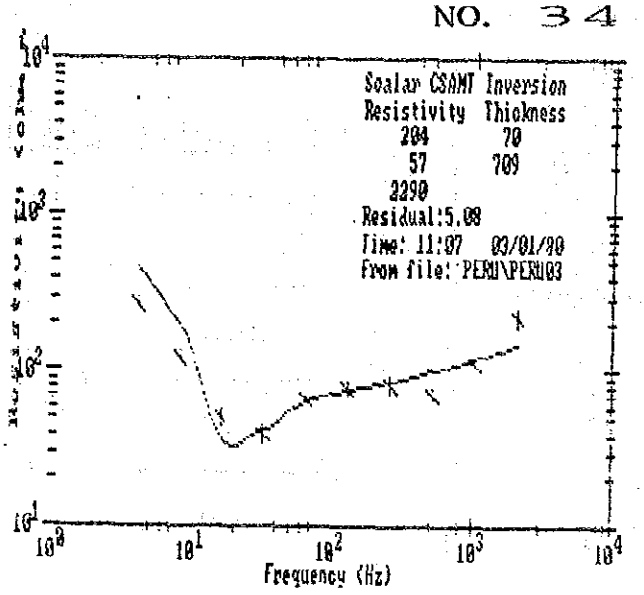
	Resistivity(Ω・m)	Depth(m)
		0
1	143	
		237
2	32	
		350
3	2280	

NO. 33



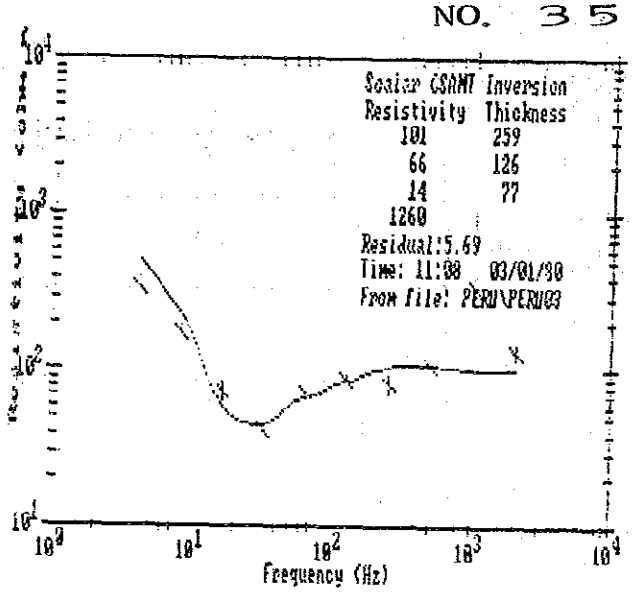
	Resistivity(Ω・m)	Depth(m)
		0
1	117	
		657
2	1990	

NO. 34



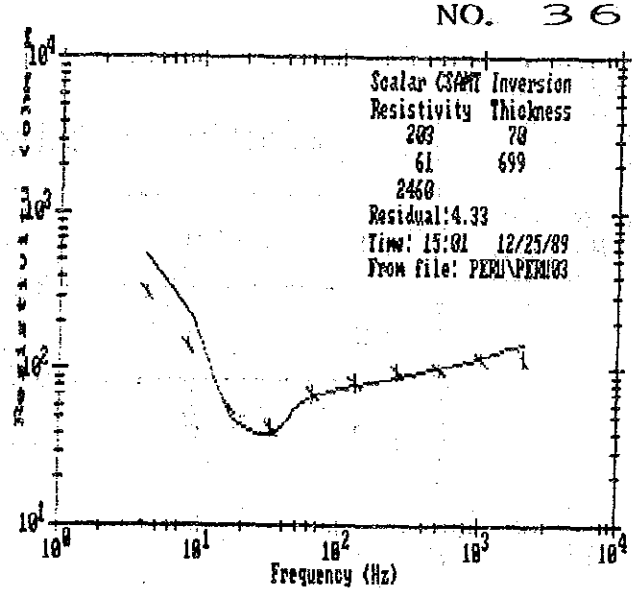
	Resistivity(Ω・m)	Depth(m)
		0
1	204	
		70
2	57	
		779
3	2290	

NO. 35



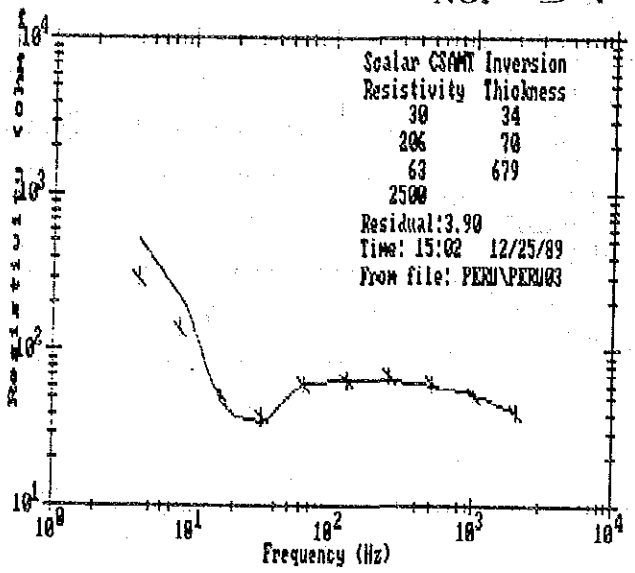
	Resistivity(Ω・m)	Depth(m)
		0
1	101	
		259
2	66	
		385
3	14	
		462
4	1260	

NO. 36



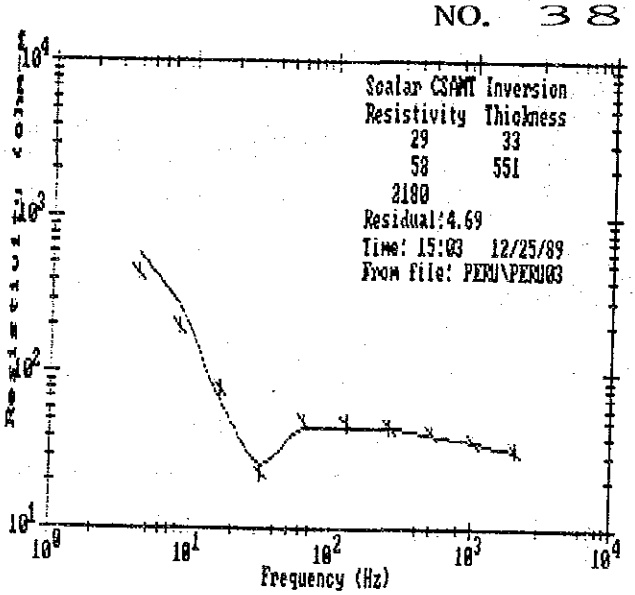
	Resistivity(Ω・m)	Depth(m)
		0
1	203	
		70
2	61	
		769
3	2460	

NO. 37



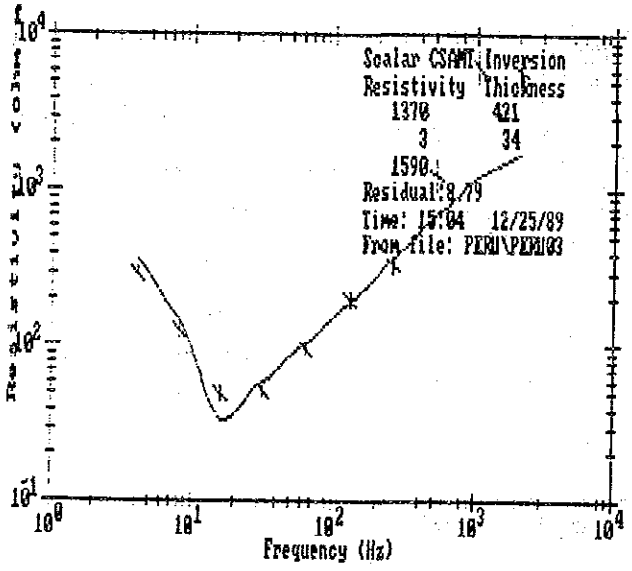
	Resistivity(Ω・m)	Depth(m)
		0
1	30	
		34
2	206	
		104
3	63	
		783
4	2500	

NO. 38



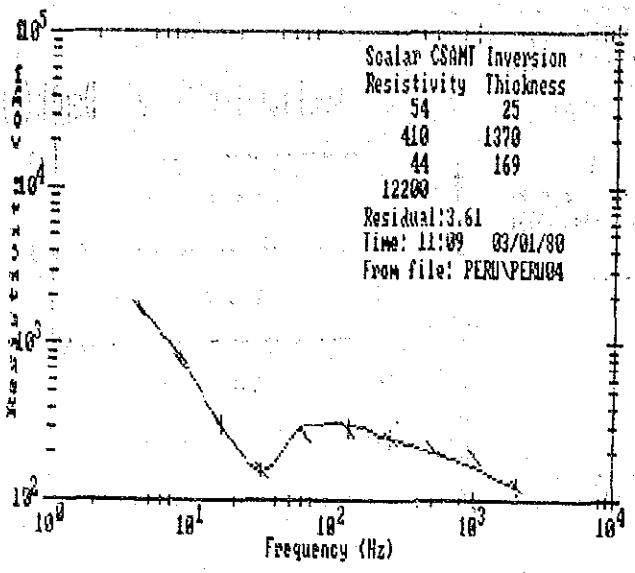
	Resistivity(Ω・m)	Depth(m)
		0
1	29	
		33
2	58	
		584
3	2180	

NO. 39



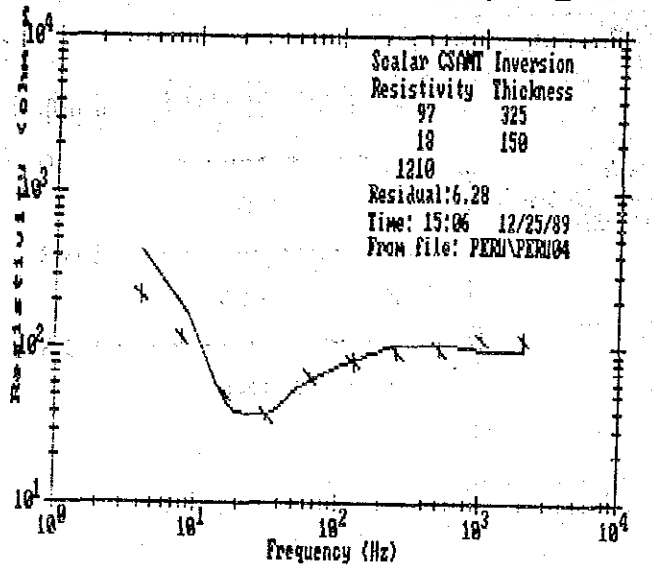
	Resistivity(Ω・m)	Depth(m)
		0
1	1370	
		421
2	3	
		455
3	1590	

NO. 40



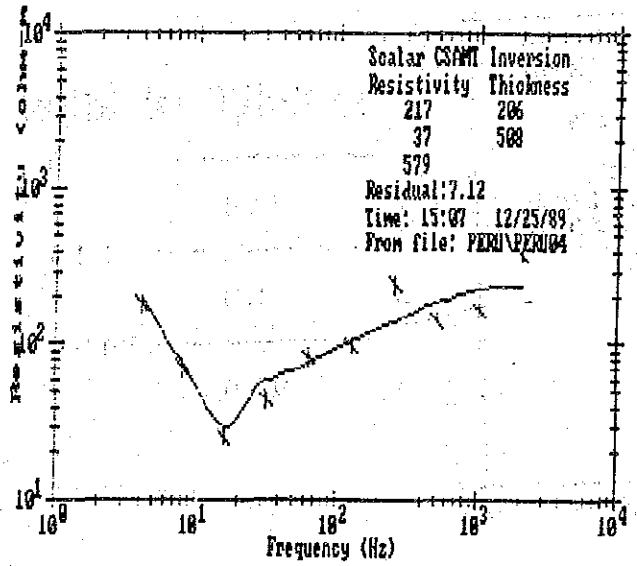
	Resistivity(Ω・m)	Depth(m)
		0
1	54	
		25
2	410	
		1395
3	44	
		1564
4	V H	

NO. 41



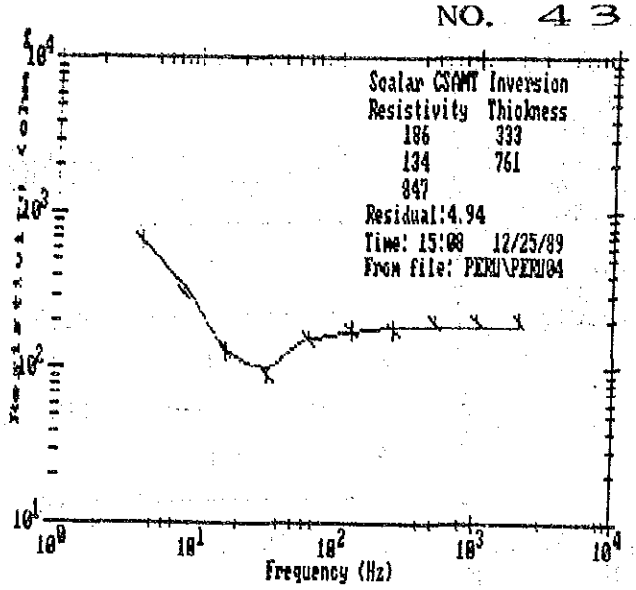
	Resistivity(Ω・m)	Depth(m)
		0
1	97	
		325
2	18	
		475
3	1210	

NO. 42



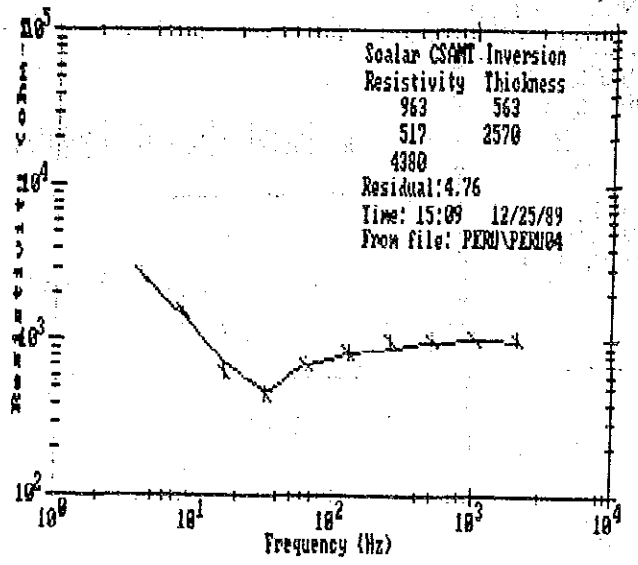
	Resistivity(Ω・m)	Depth(m)
		0
1	217	
		206
2	37	
		714
3	579	

NO. 43



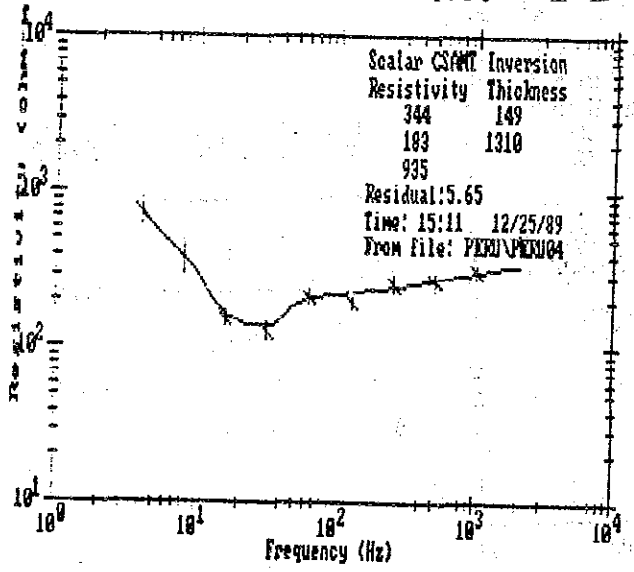
	Resistivity(Ω・m)	Depth(m)
		0
1	186	
		333
2	134	
		1094
3	847	

NO. 44



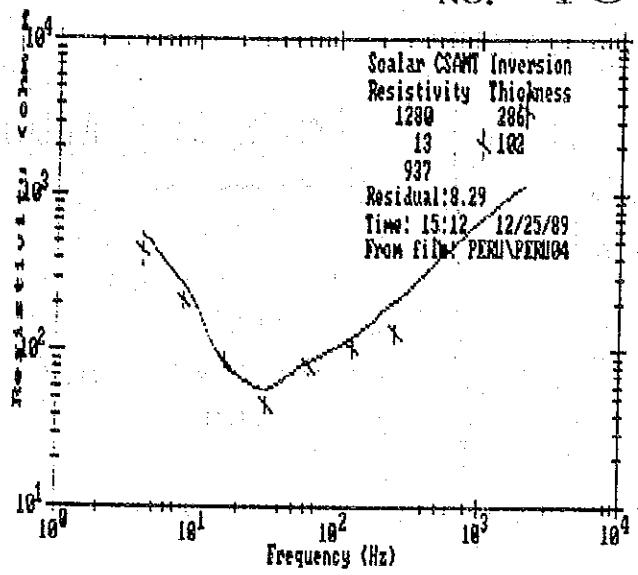
	Resistivity(Ω・m)	Depth(m)
		0
1	963	
		563
2	517	
		3133
3	4380	

NO. 45



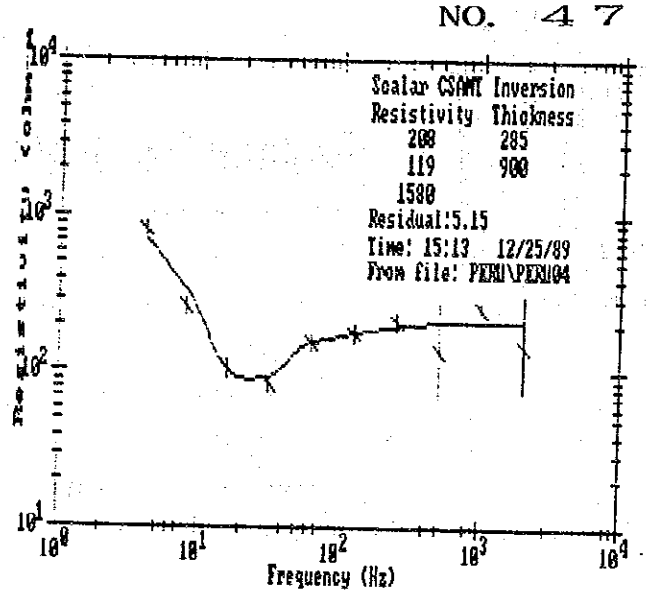
	Resistivity(Ω・m)	Depth(m)
		0
1	344	
		149
2	183	
		1459
3	935	

NO. 46



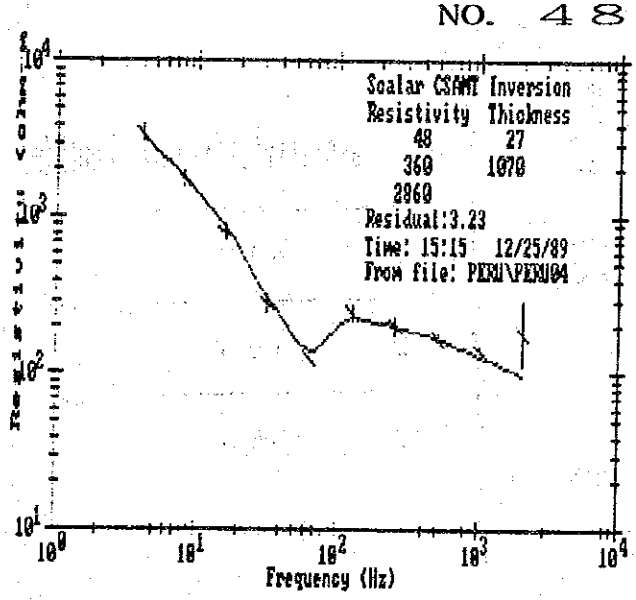
	Resistivity(Ω・m)	Depth(m)
		0
1	1280	
		286
2	13	
		388
3	937	

NO. 47



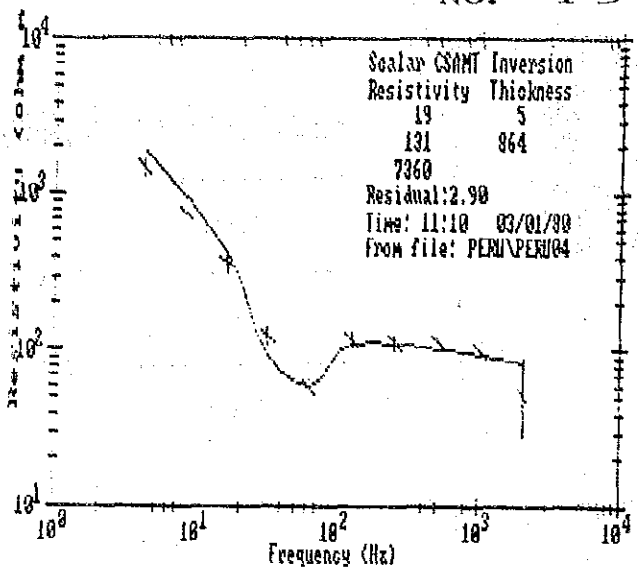
	Resistivity(Ω・m)	Depth(m)
		0
1	208	
		285
2	119	
		1185
3	1580	

NO. 48



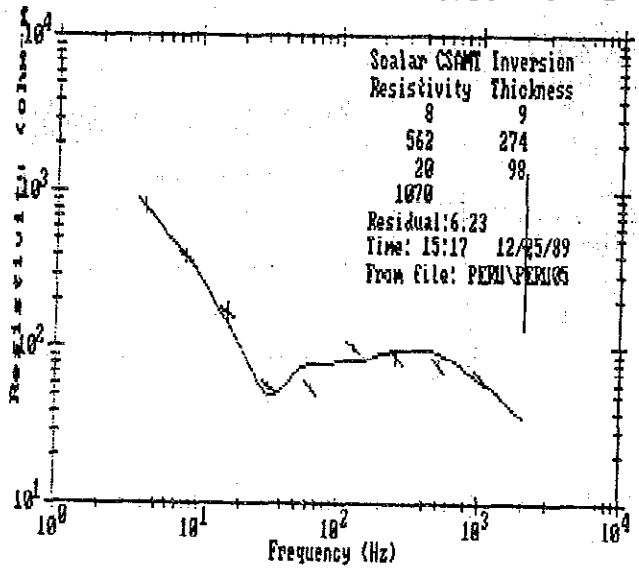
	Resistivity(Ω・m)	Depth(m)
		0
1	48	
		27
2	360	
		1097
3	2860	

NO. 49



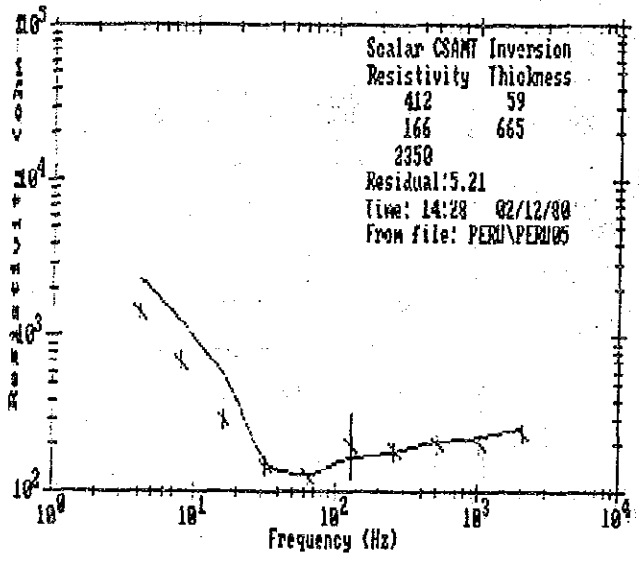
	Resistivity(Ω・m)	Depth(m)
		0
1	19	
		5
2	131	
		869
3	7360	

NO. 50



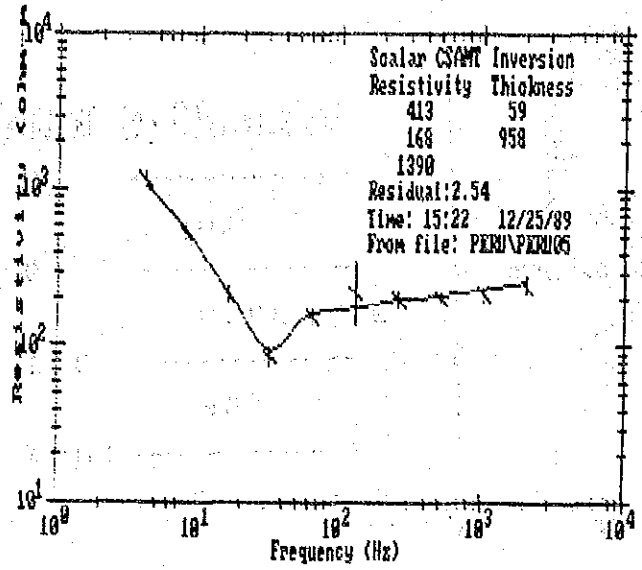
	Resistivity(Ω・m)	Depth(m)
		0
1	8	
		9
2	562	
		283
3	20	
		381
4	1070	

NO. 51



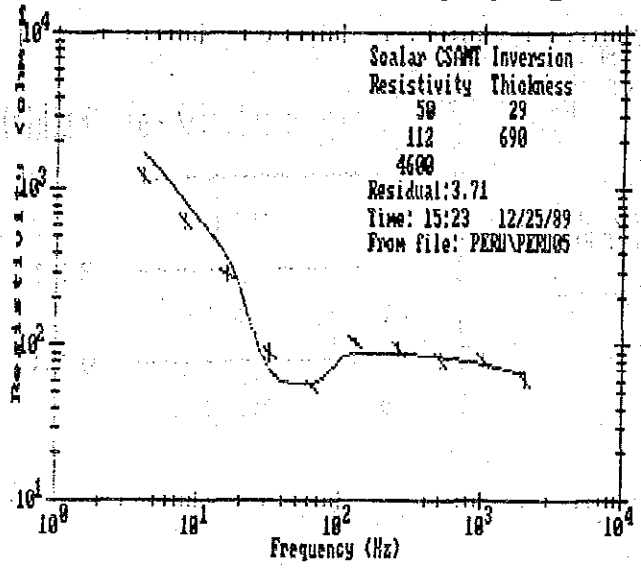
	Resistivity(Ω・m)	Depth(m)
		0
1	412	
		59
2	166	
		724
3	2350	

NO. 52



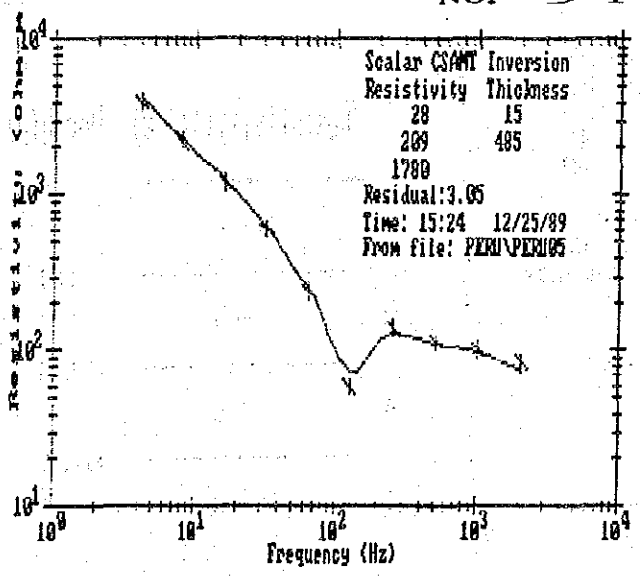
	Resistivity(Ω・m)	Depth(m)
		0
1	413	
		59
2	168	
		1017
3	1390	

NO. 53



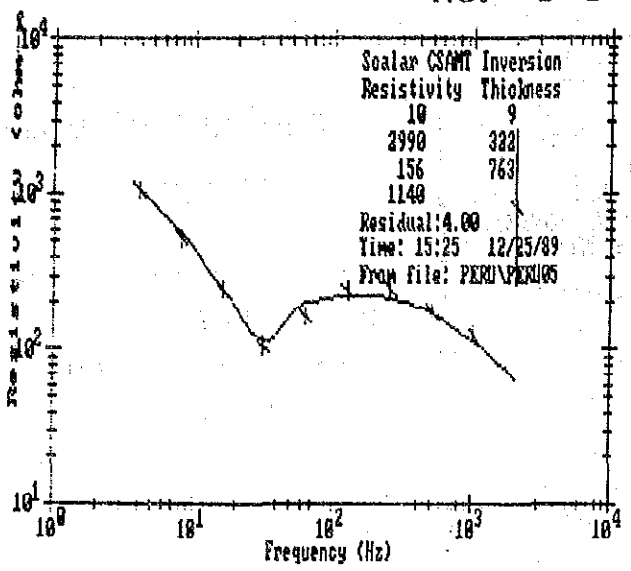
	Resistivity(Ω・m)	Depth(m)
		0
1	50	
		29
2	112	
		719
3	4600	

NO. 54



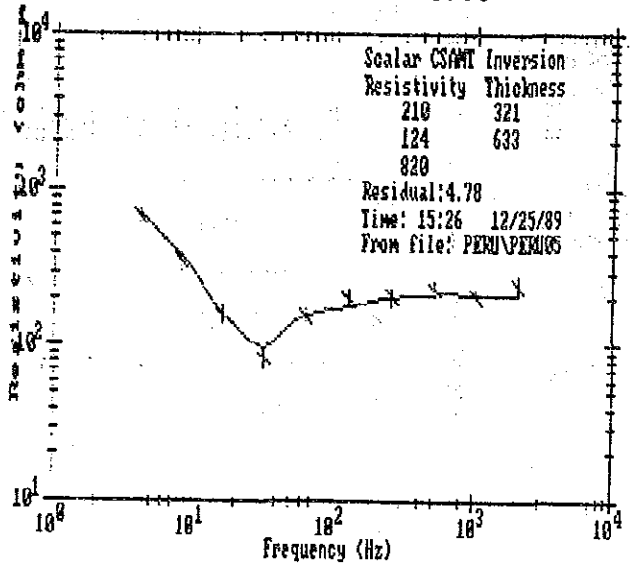
	Resistivity(Ω・m)	Depth(m)
		0
1	28	
		15
2	209	
		500
3	1780	

NO. 55



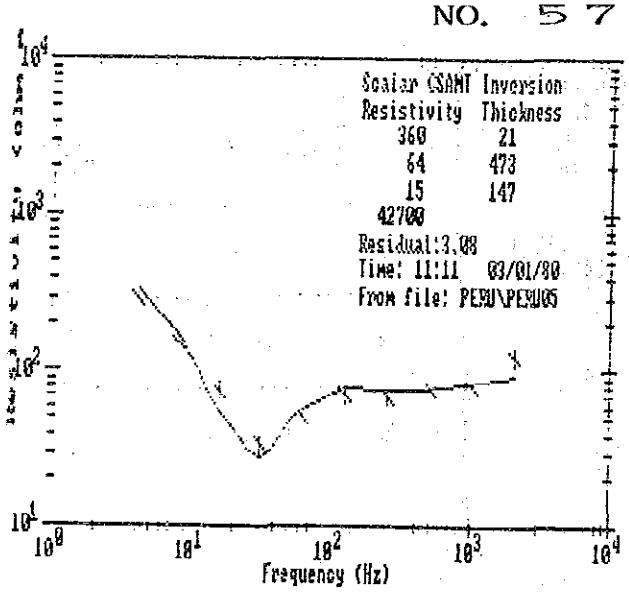
	Resistivity(Ω・m)	Depth(m)
		0
1	10	
		9
2	2990	
		331
3	156	
		1094
4	1140	

NO. 56



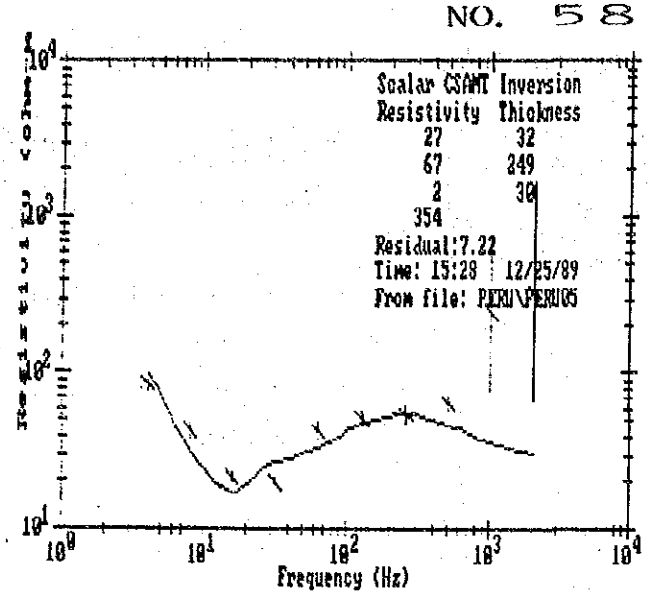
	Resistivity(Ω・m)	Depth(m)
		0
1	210	
		321
2	124	
		954
3	820	

NO. 57



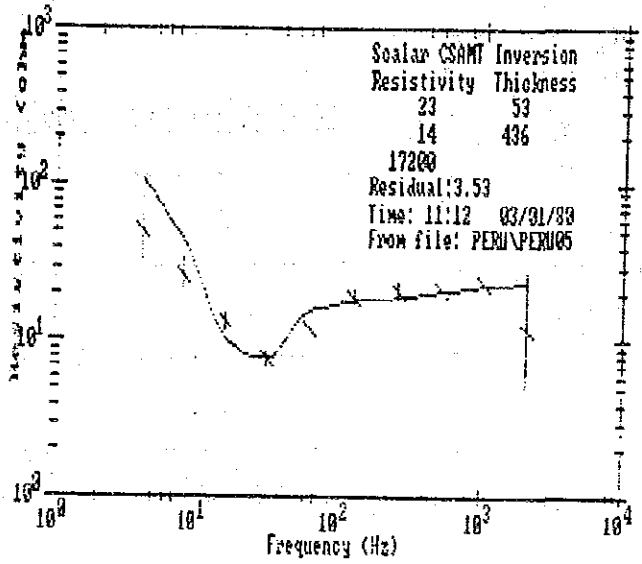
	Resistivity(Ω・m)	Depth(m)
		0
1	360	
		21
2	64	
		494
3	15	
		641
4	V H	

NO. 58



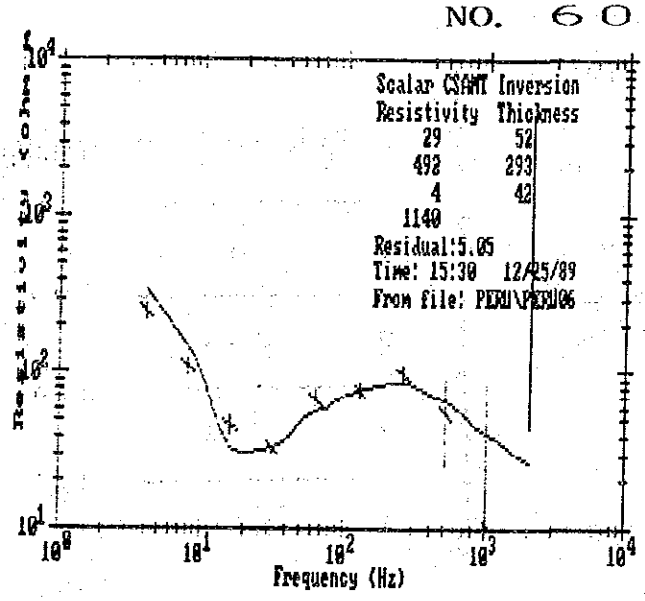
	Resistivity(Ω・m)	Depth(m)
		0
1	27	
		32
2	67	
		281
3	2	
		311
4	354	

NO. 59



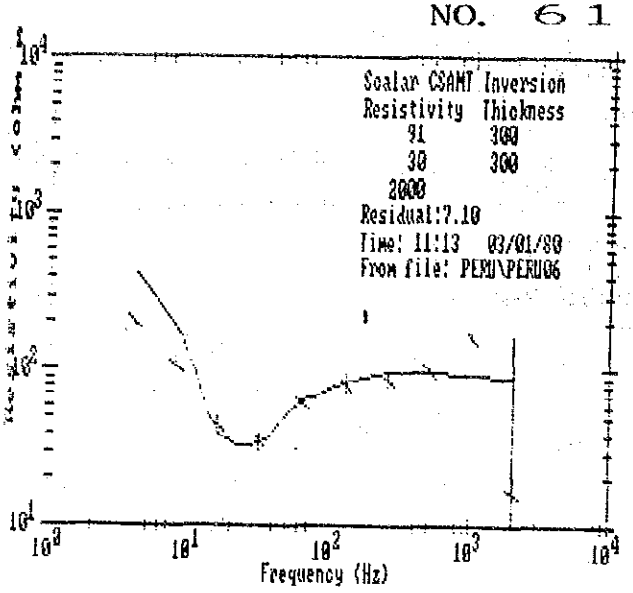
	Resistivity(Ω・m)	Depth(m)
		0
1	23	
		53
2	14	
		489
3	V H	

NO. 60



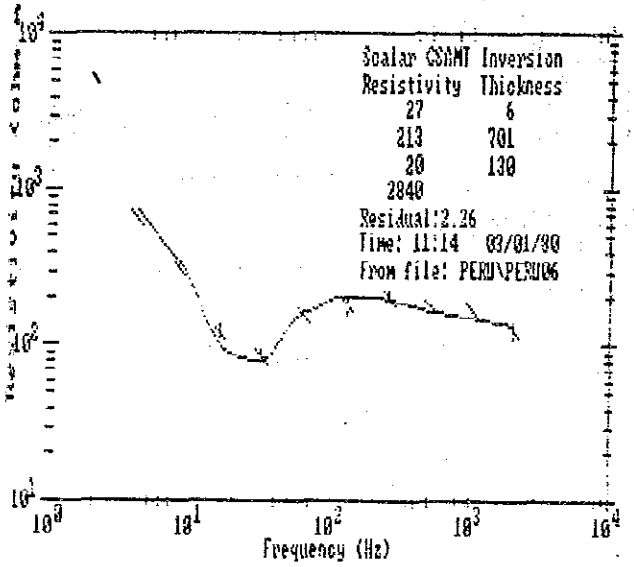
	Resistivity(Ω・m)	Depth(m)
		0
1	29	
		52
2	492	
		345
3	4	
		387
4	1140	

NO. 6 1



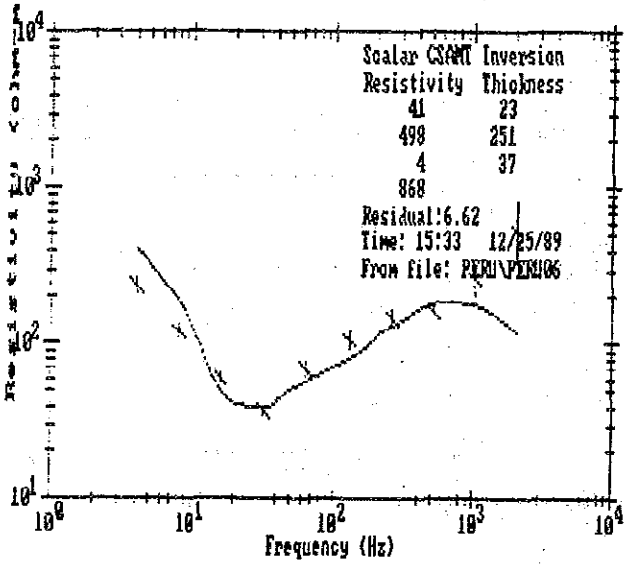
	Resistivity(Ω・m)	Depth(m)
		0
1	91	
		300
2	30	
		600
3	2000	

NO. 6 2



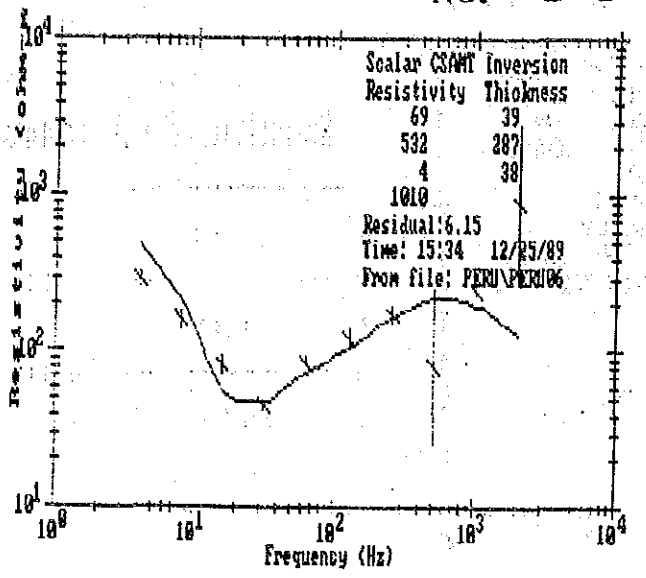
	Resistivity(Ω・m)	Depth(m)
		0
1	27	
		6
2	213	
		707
3	20	
		837
4	2840	

NO. 6 3



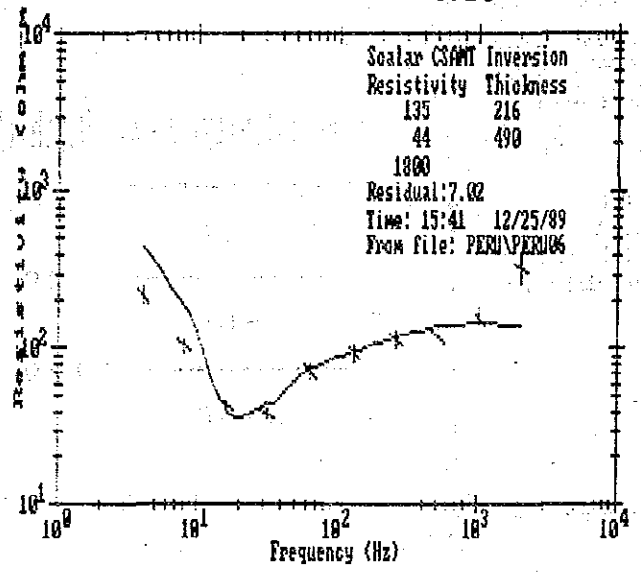
	Resistivity(Ω・m)	Depth(m)
		0
1	41	
		23
2	498	
		274
3	4	
		311
4	868	

NO. 64



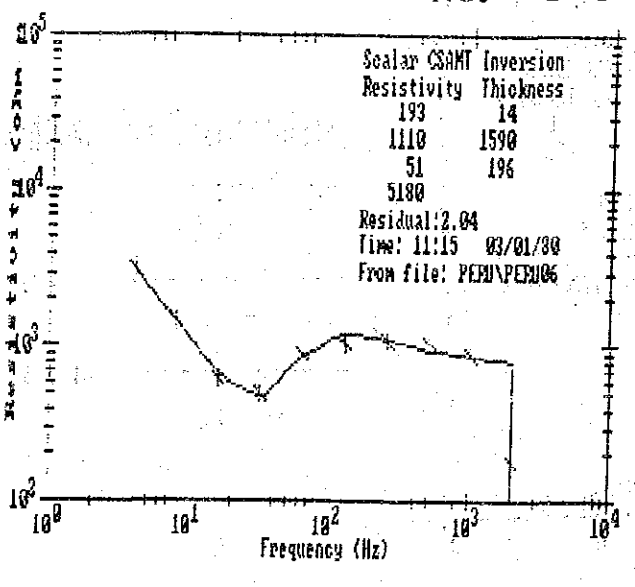
	Resistivity(Ω・m)	Depth(m)
		0
1	69	
		39
2	532	
		326
3	4	
		364
4	1010	

NO. 65



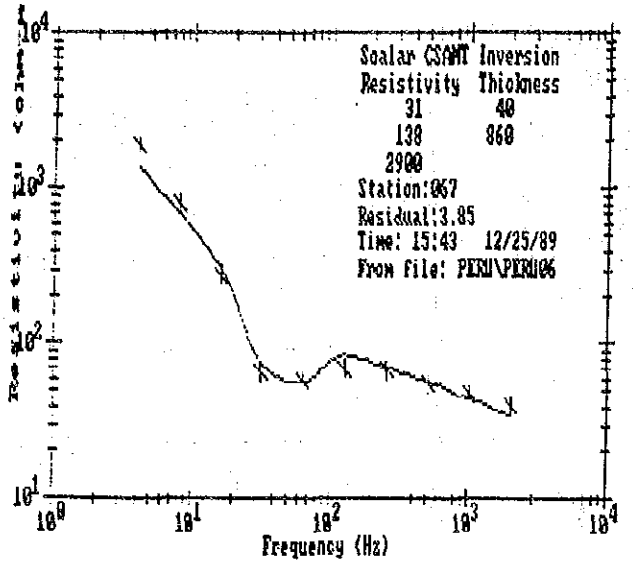
	Resistivity(Ω・m)	Depth(m)
		0
1	135	
		216
2	44	
		706
3	1800	

NO. 66



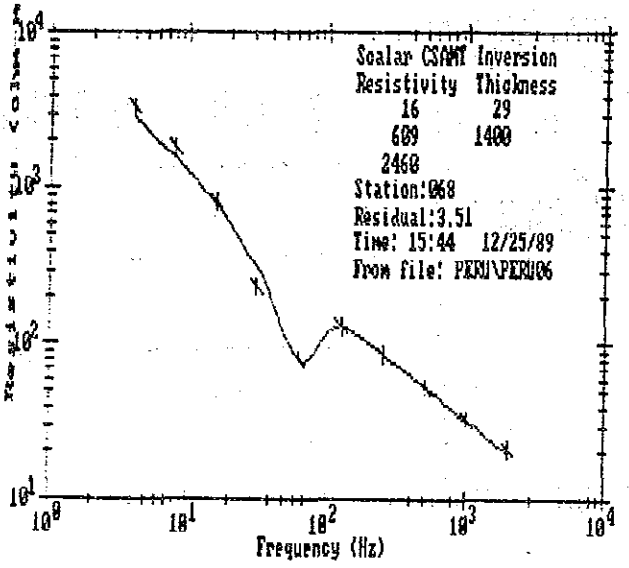
	Resistivity(Ω・m)	Depth(m)
		0
1	193	
		14
2	1110	
		1604
3	51	
		1800
4	5180	

NO. 67



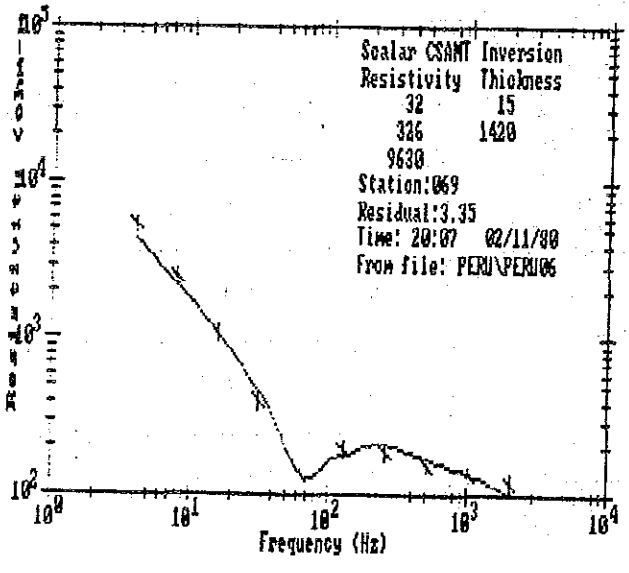
	Resistivity(Ω・m)	Depth(m)
		0
1	31	
		40
2	138	
		900
3	2900	

NO. 68



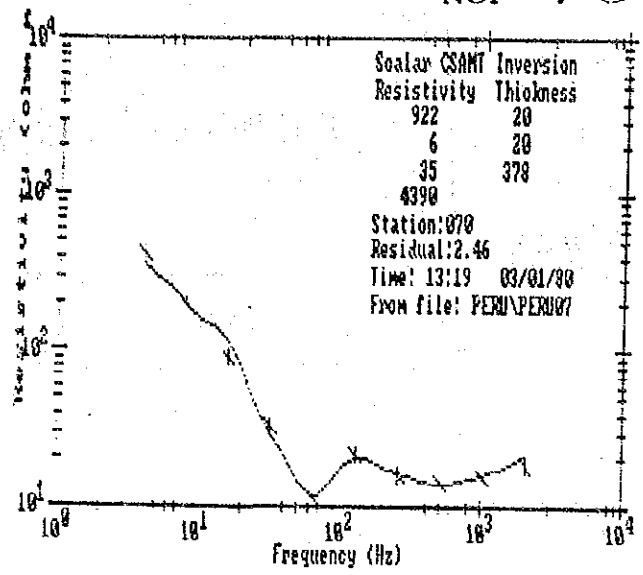
	Resistivity(Ω・m)	Depth(m)
		0
1	16	
		29
2	609	
		1429
3	2460	

NO. 69



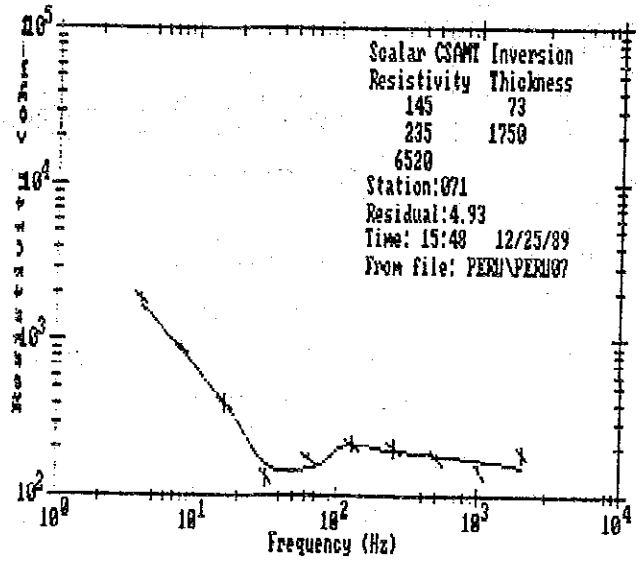
	Resistivity(Ω・m)	Depth(m)
		0
1	32	
		15
2	326	
		1435
3	9630	

NO. 70



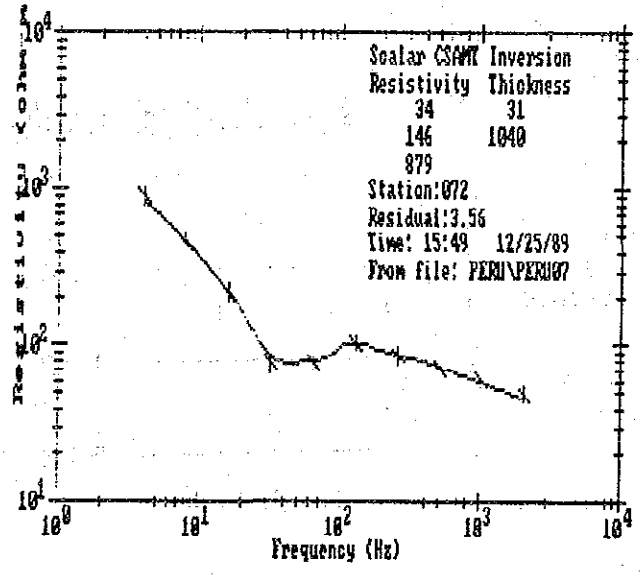
	Resistivity(Ω・m)	Depth(m)
		0
1	922	
		20
2	6	
		40
3	35	
		418
4	4390	

NO. 71



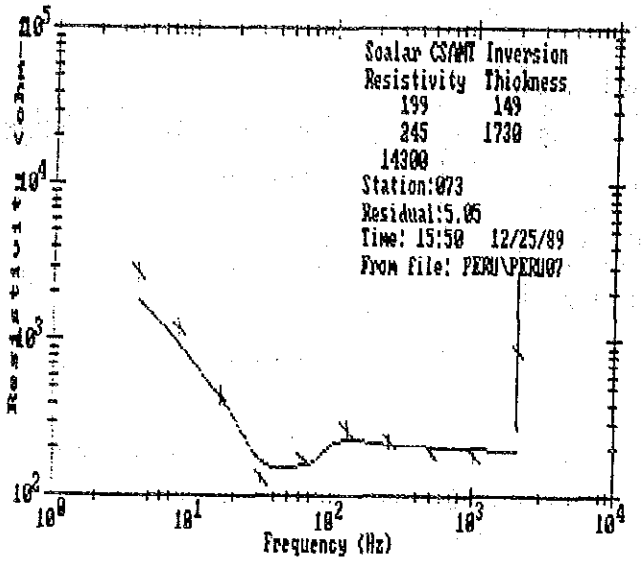
	Resistivity(Ω・m)	Depth(m)
		0
1	145	
		73
2	235	
		1823
3	6520	

NO. 72



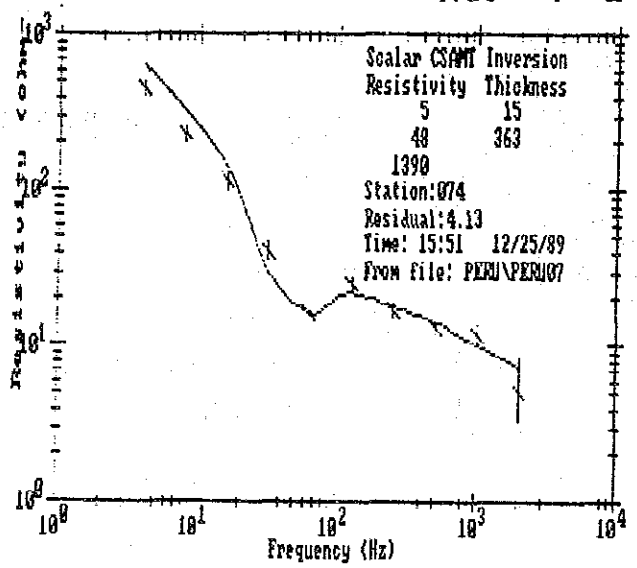
	Resistivity(Ω・m)	Depth(m)
		0
1	34	
		31
2	146	
		1071
3	879	

NO. 73



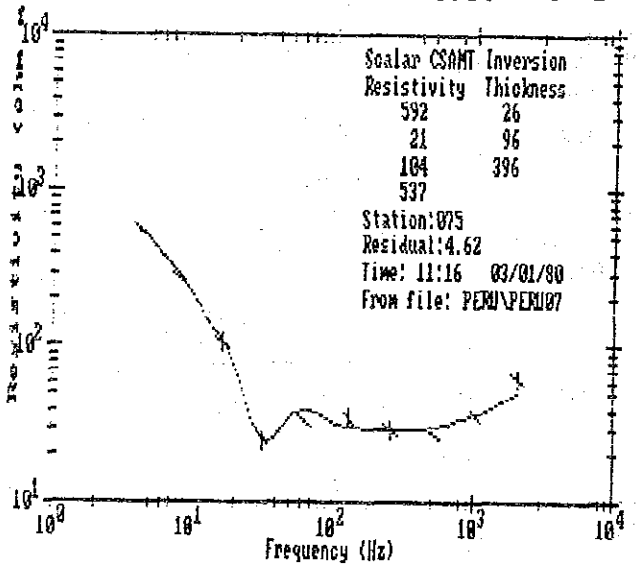
	Resistivity(Ω・m)	Depth(m)
		0
1	199	
		149
2	245	
		1879
3	V H	

NO. 74



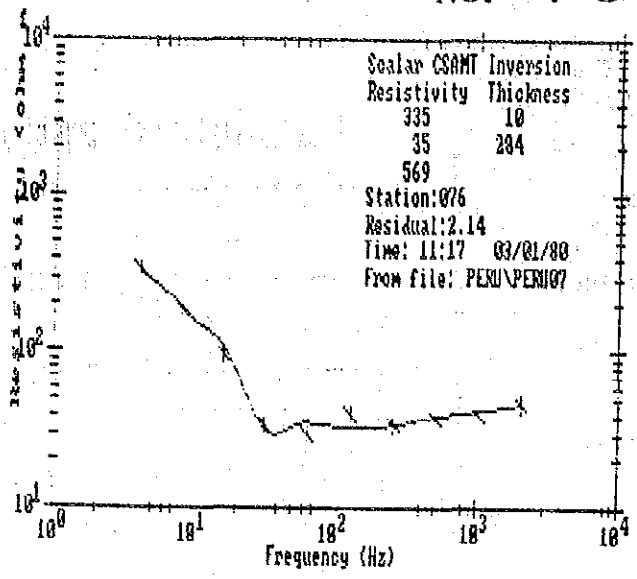
	Resistivity(Ω・m)	Depth(m)
		0
1	5	
		15
2	48	
		378
3	1390	

NO. 75



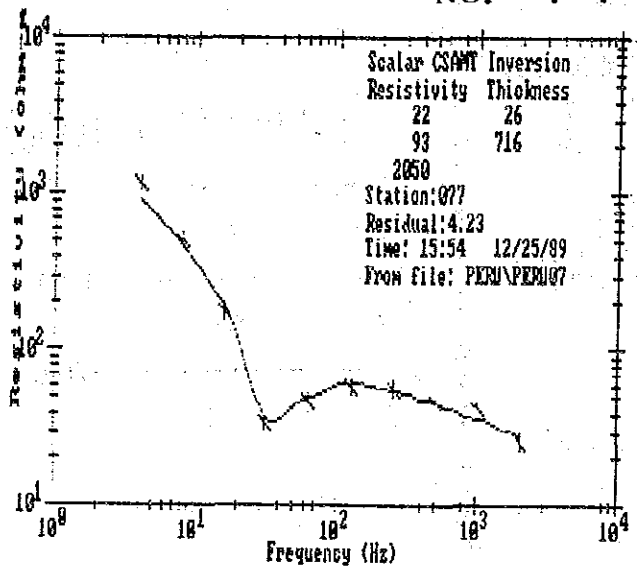
	Resistivity(Ω・m)	Depth(m)
		0
1	592	
		26
2	21	
		122
3	104	
		518
4	537	

NO. 76



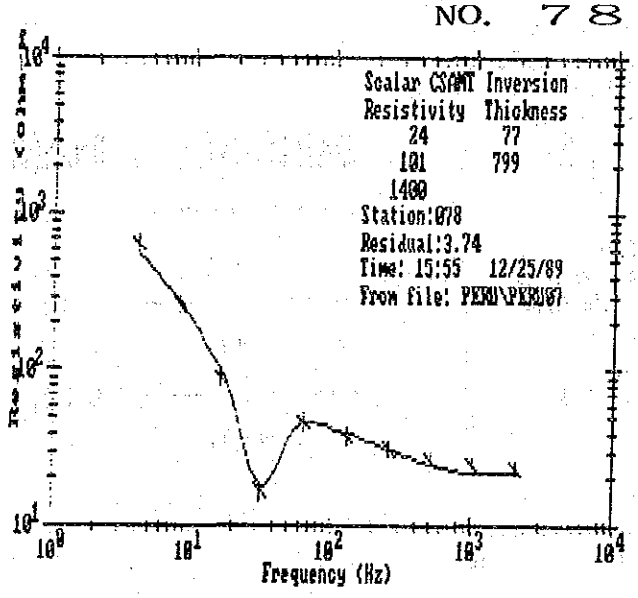
	Resistivity(Ω・m)	Depth(m)
		0
1	335	
		10
2	35	
		294
3	569	

NO. 77



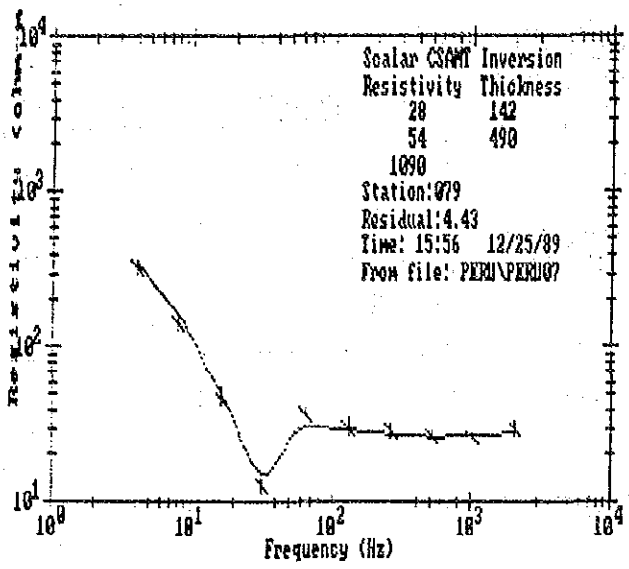
	Resistivity(Ω・m)	Depth(m)
		0
1	22	
		26
2	93	
		742
3	2050	

NO. 78



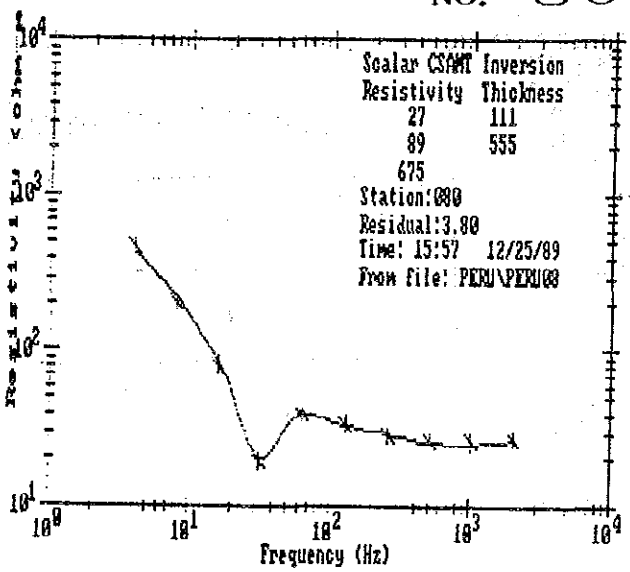
	Resistivity(Ω・m)	Depth(m)
		0
1	24	
		77
2	101	
		876
3	1400	

NO. 79



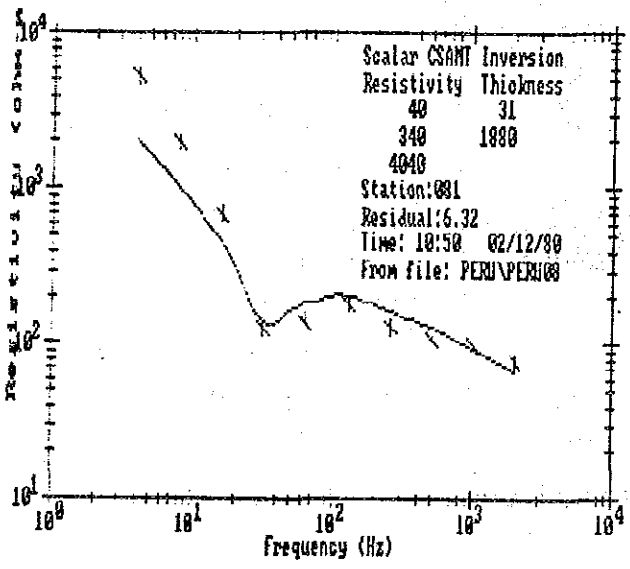
	Resistivity(Ω・m)	Depth(m)
		0
1	28	
		142
2	54	
		632
3	1090	

NO. 80



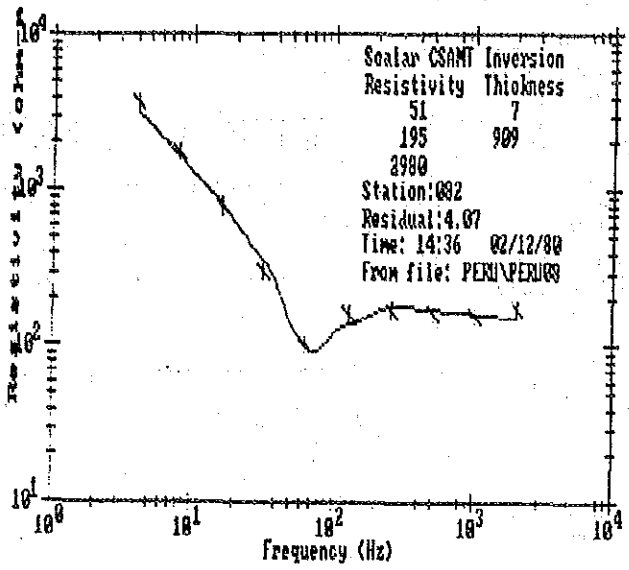
	Resistivity(Ω・m)	Depth(m)
		0
1	27	
		111
2	89	
		666
3	675	

NO. 81



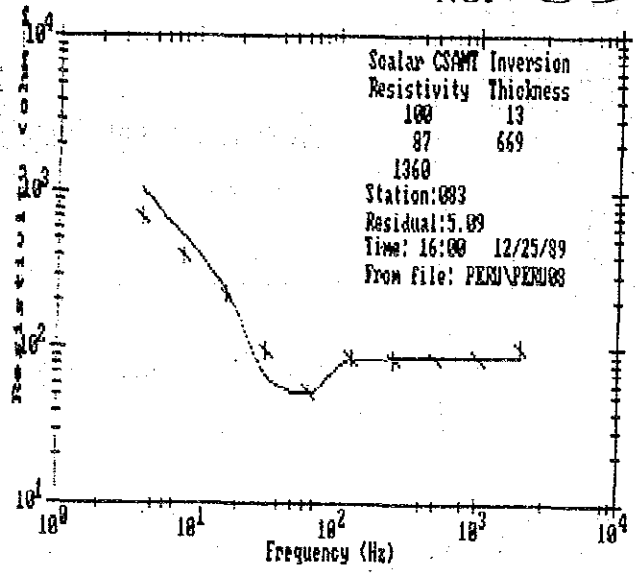
	Resistivity(Ω・m)	Depth(m)
		0
1	40	
		31
2	340	
		1911
3	4040	

NO. 82



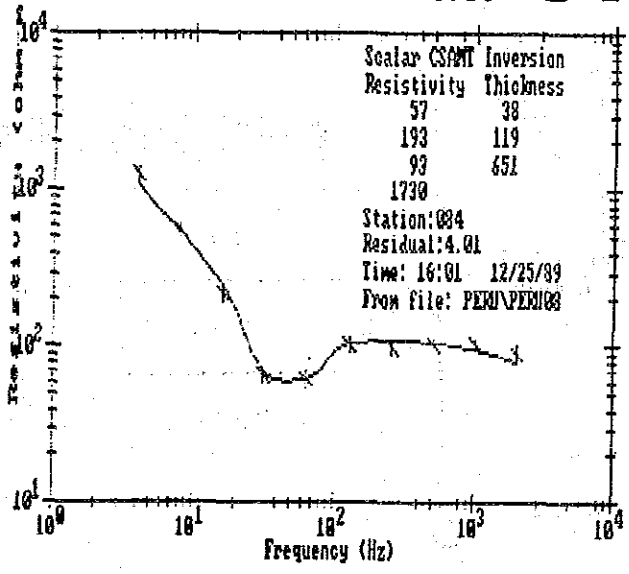
	Resistivity(Ω・m)	Depth(m)
		0
1	51	
		7
2	195	
		916
3	2980	

NO. 83



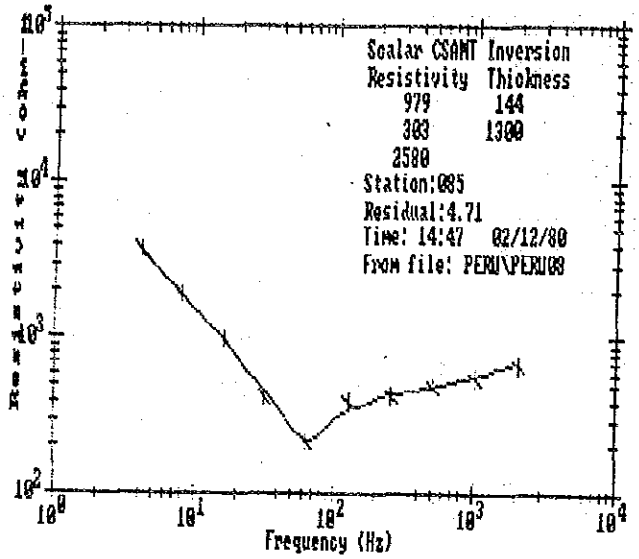
	Resistivity(Ω・m)	Depth(m)
		0
1	100	
		13
2	87	
		682
3	1360	

NO. 84



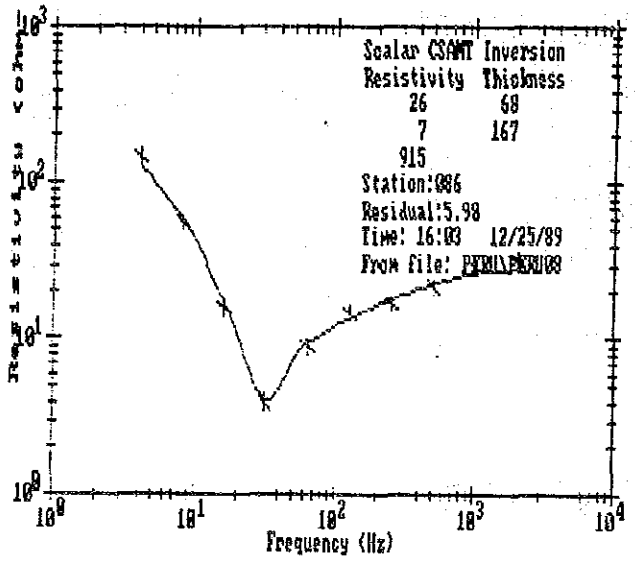
	Resistivity(Ω・m)	Depth(m)
		0
1	57	
		38
2	193	
		157
3	93	
		808
4	1730	

NO. 85



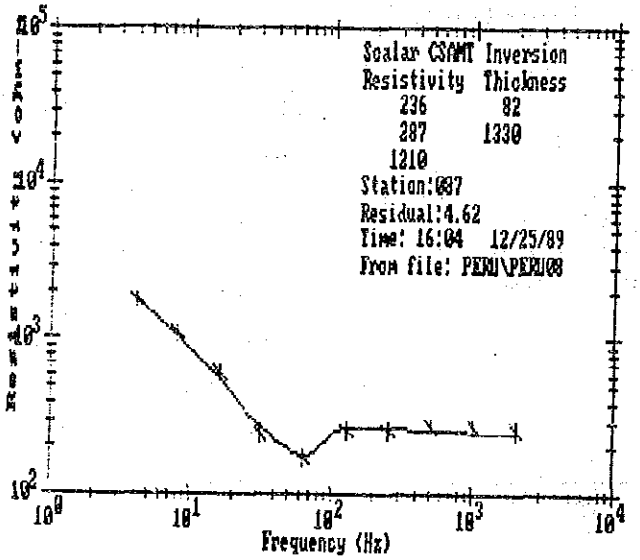
	Resistivity(Ω・m)	Depth(m)
		0
1	979	
		144
2	303	
		1444
3	2580	

NO. 86



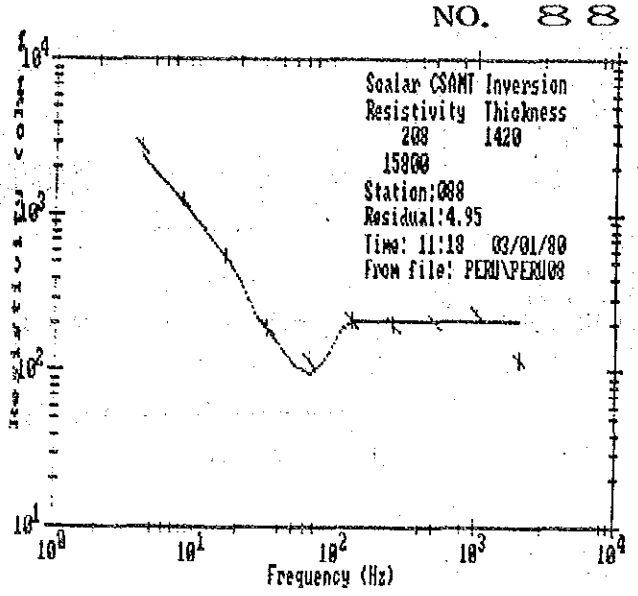
	Resistivity(Ω・m)	Depth(m)
		0
1	26	
		68
2	7	
		235
3	915	

NO. 87



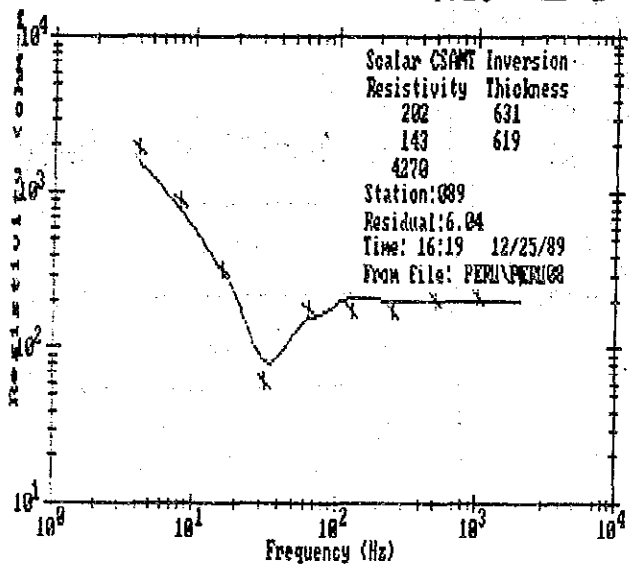
	Resistivity(Ω・m)	Depth(m)
		0
1	236	
		82
2	287	
		1412
3	1210	

NO. 88



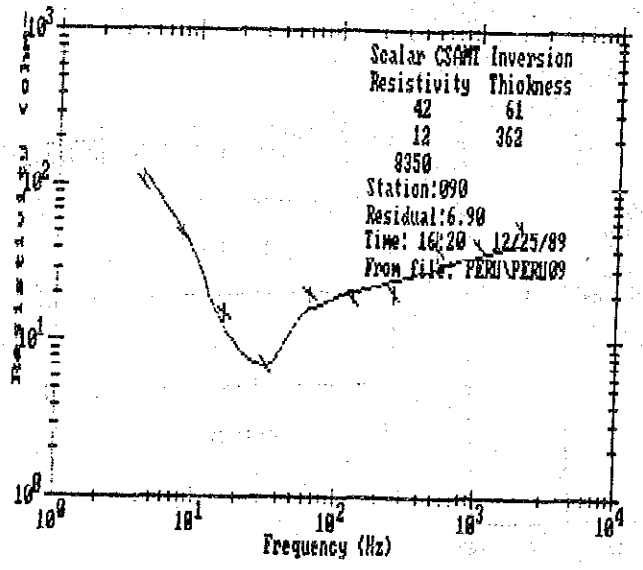
	Resistivity(Ω・m)	Depth(m)
		0
1	208	
		1420
2	V H	

NO. 89



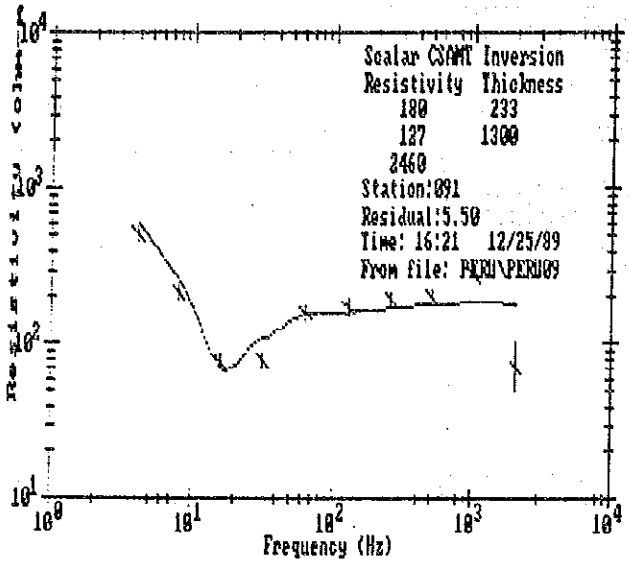
	Resistivity(Ω・m)	Depth(m)
		0
1	202	
		631
2	143	
		1250
3	4270	

NO. 90



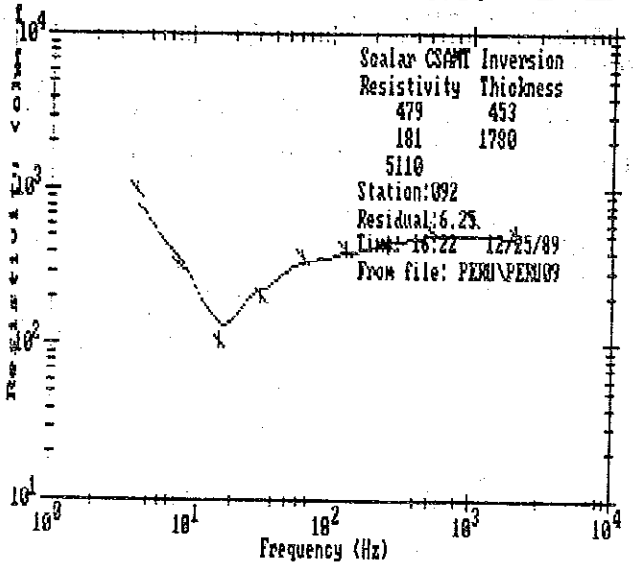
	Resistivity(Ω・m)	Depth(m)
		0
1	42	
		61
2	12	
		423
3	8350	

NO. 9 1



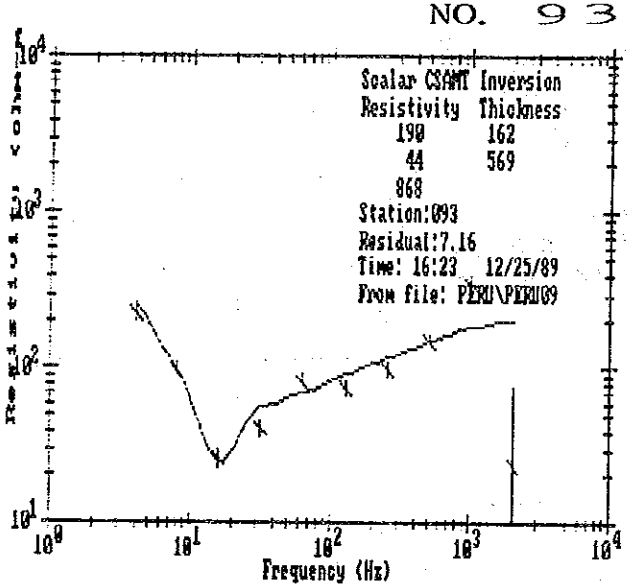
	Resistivity(Ω・m)	Depth(m)
		0
1	180	
		233
2	127	
		1533
3	2460	

NO. 9 2



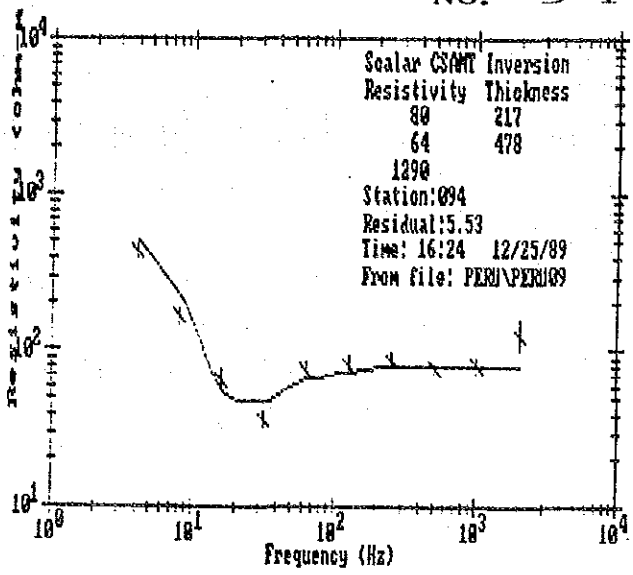
	Resistivity(Ω・m)	Depth(m)
		0
1	479	
		453
2	181	
		2233
3	5110	

NO. 9 3



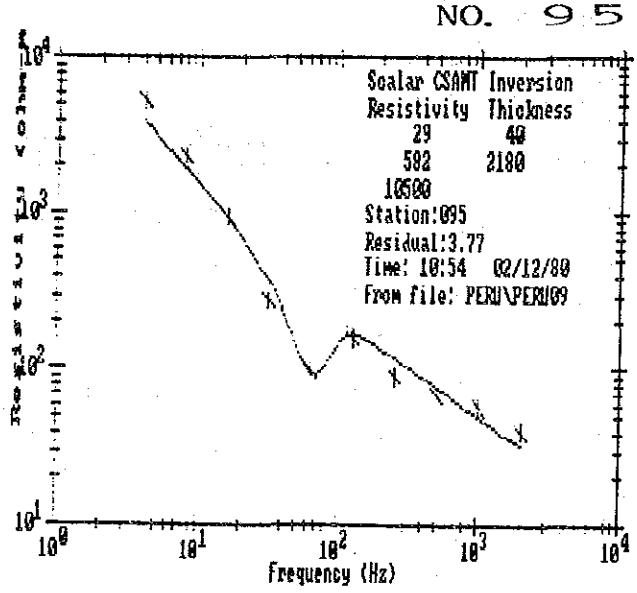
	Resistivity(Ω・m)	Depth(m)
		0
1	190	
		162
2	44	
		731
3	868	

NO. 94



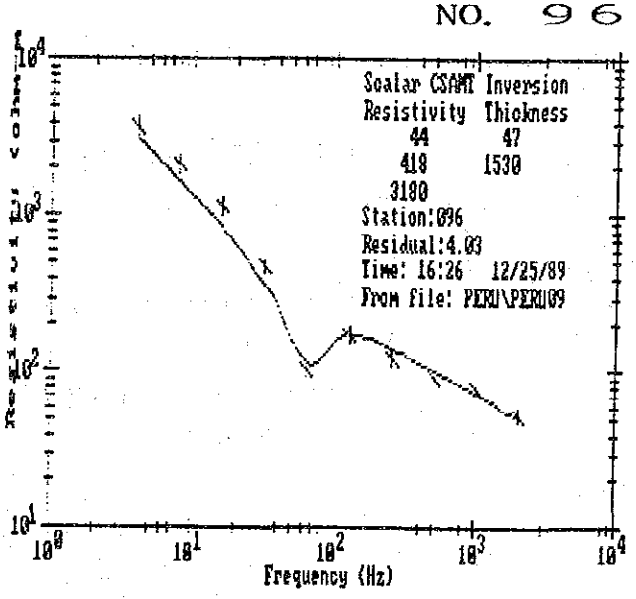
	Resistivity(Ω・m)	Depth(m)
		0
1	80	
		217
2	64	
		695
3	1290	

NO. 95



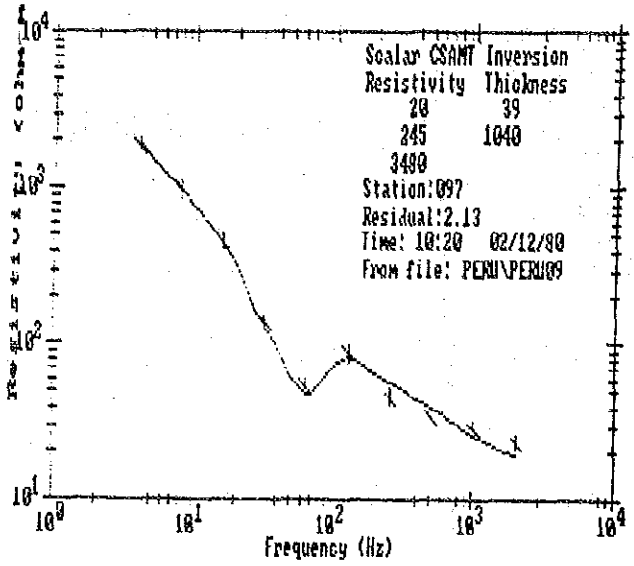
	Resistivity(Ω・m)	Depth(m)
		0
1	29	
		40
2	582	
		2220
3	V H	

NO. 96



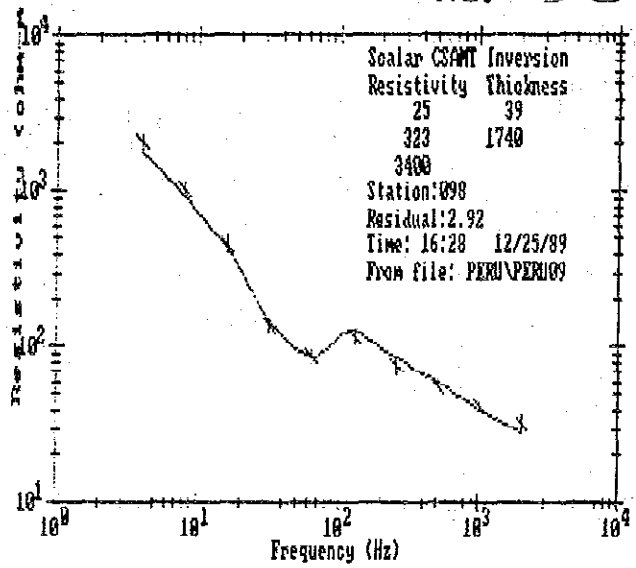
	Resistivity(Ω・m)	Depth(m)
		0
1	44	
		47
2	418	
		1577
3	3180	

NO. 97



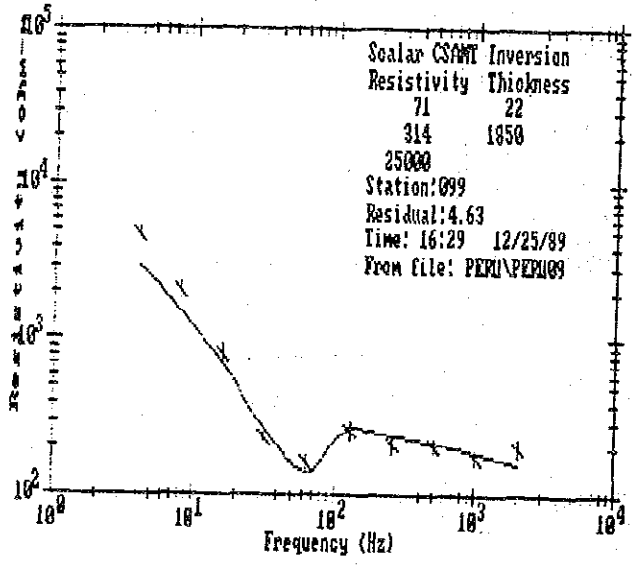
	Resistivity(Ω・m)	Depth(m)
		0
1	20	
		39
2	245	
		1079
3	3480	

NO. 98



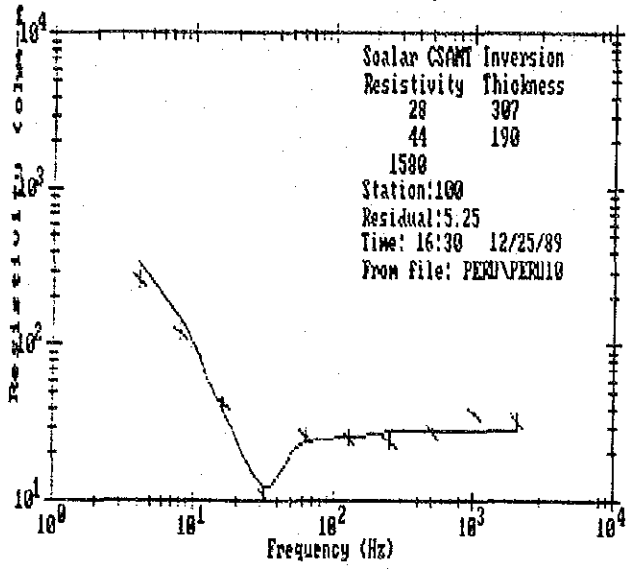
	Resistivity(Ω・m)	Depth(m)
		0
1	25	
		39
2	323	
		1779
3	3400	

NO. 99



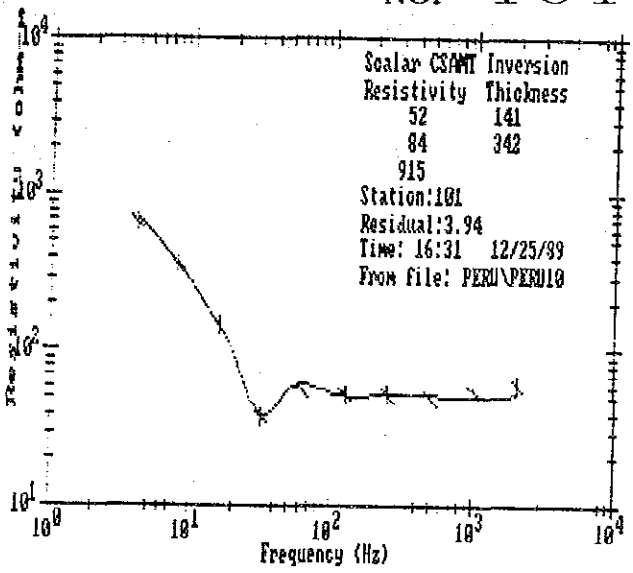
	Resistivity(Ω・m)	Depth(m)
		0
1	71	
		22
2	314	
		1872
3	V H	

NO. 100



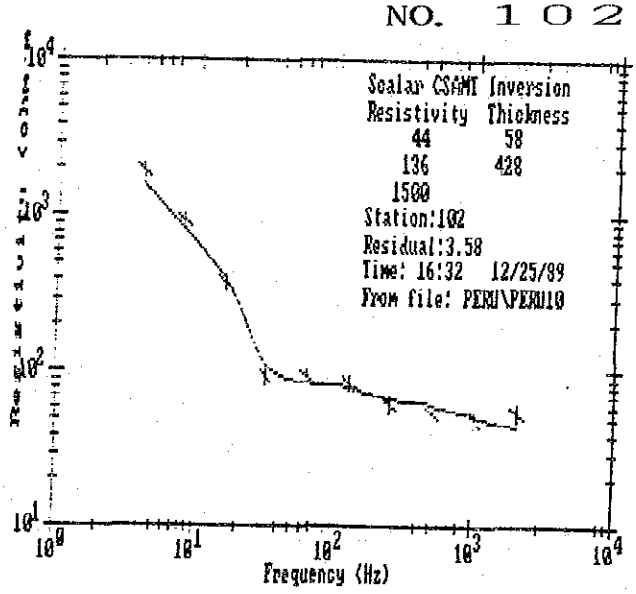
	Resistivity(Ω・m)	Depth(m)
		0
1	28	
		307
2	44	
		497
3	1580	

NO. 101

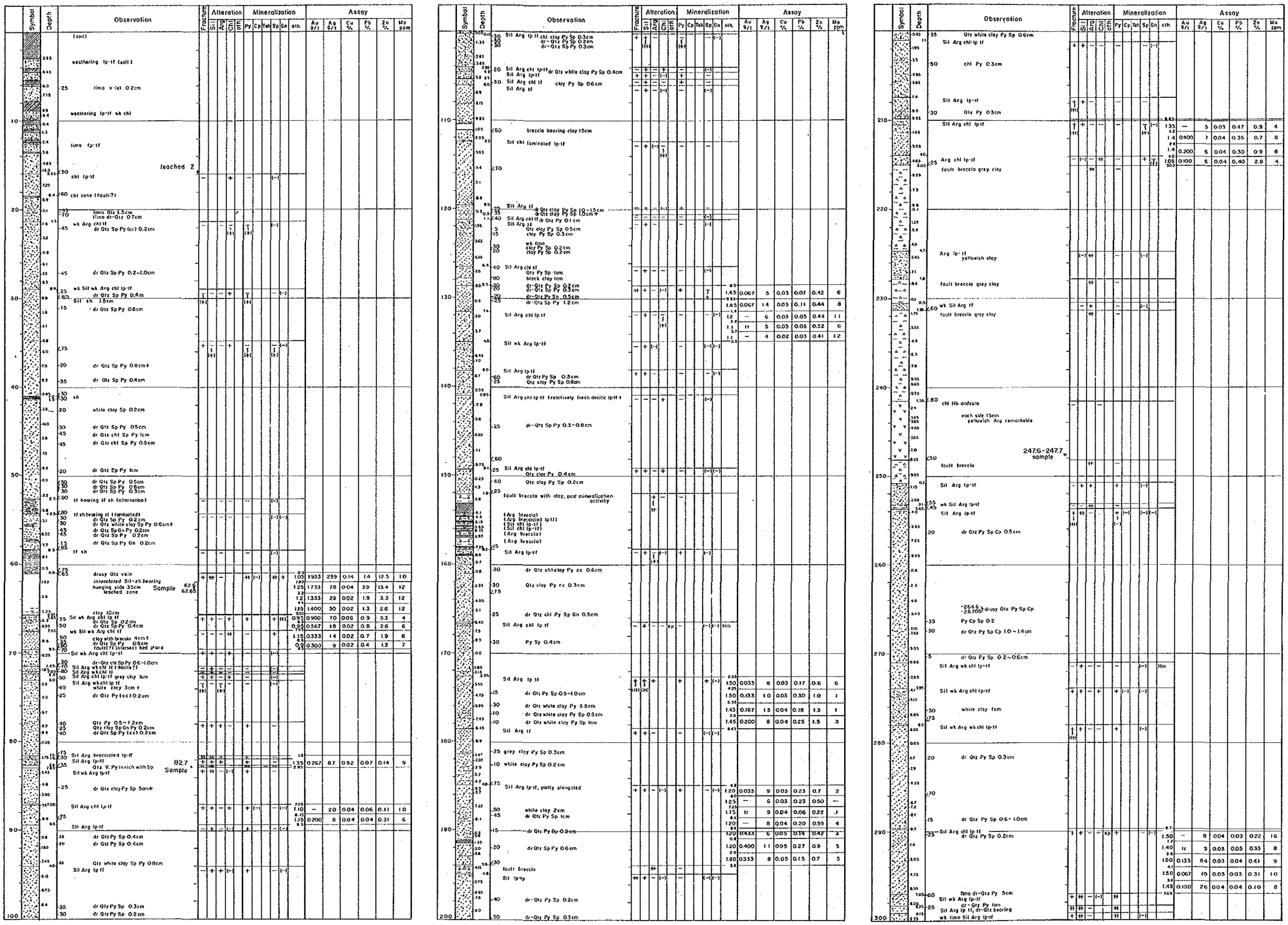


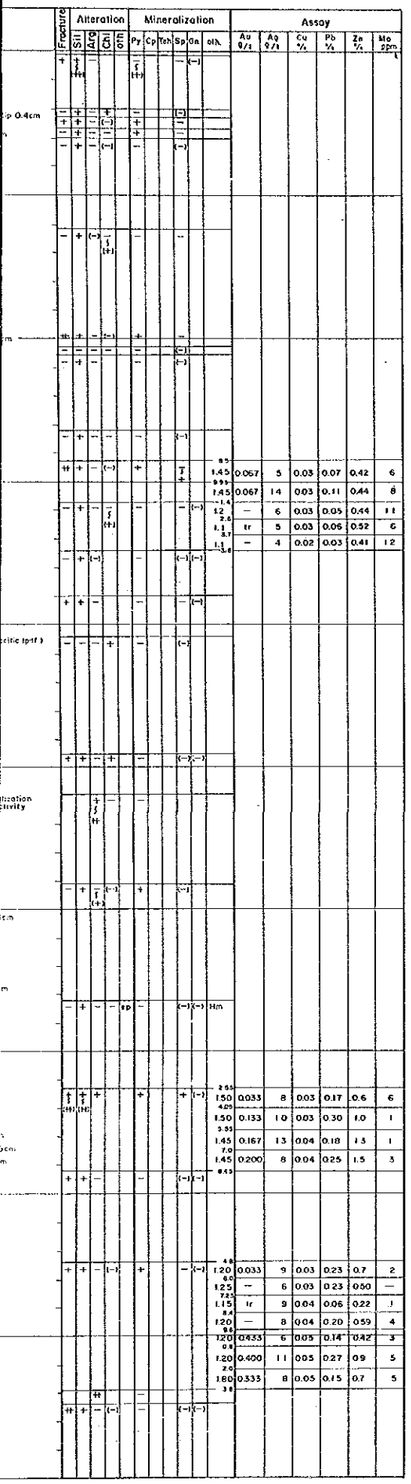
	Resistivity(Ω・m)	Depth(m)
		0
1	52	
		141
2	84	
		483
3	915	

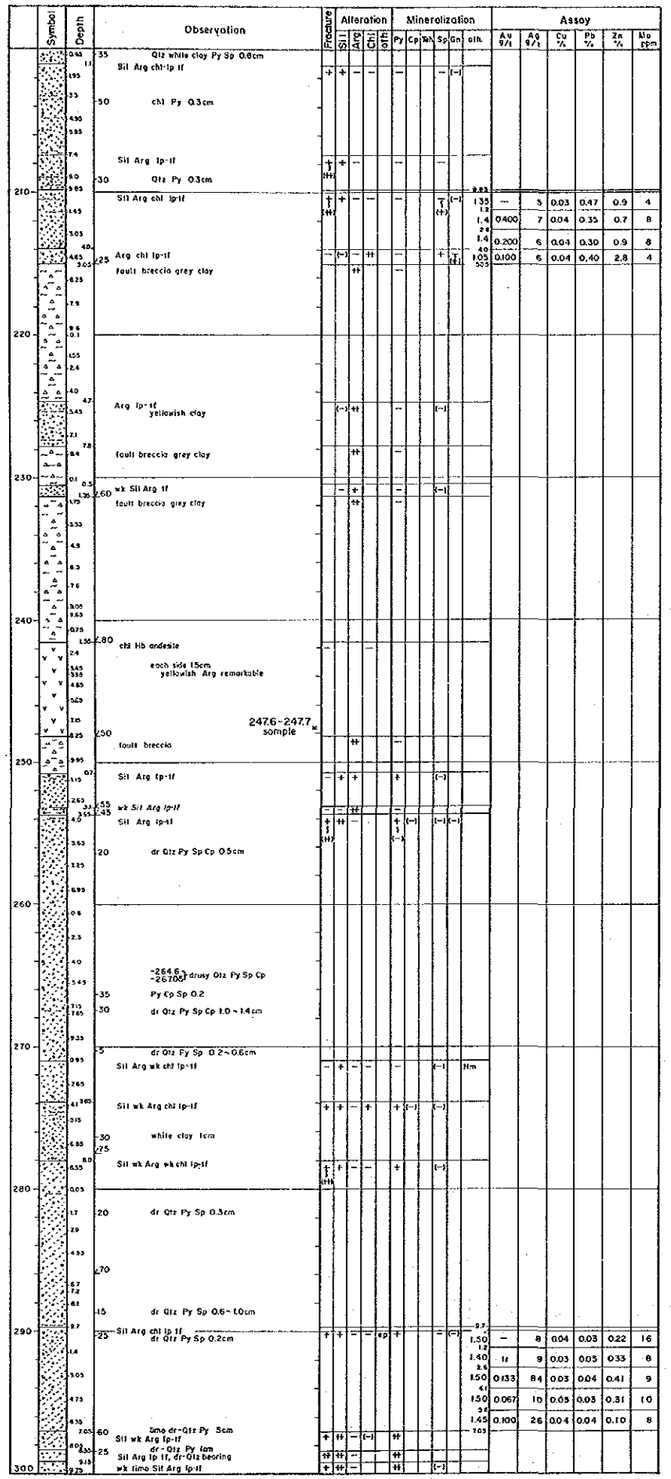
NO. 102

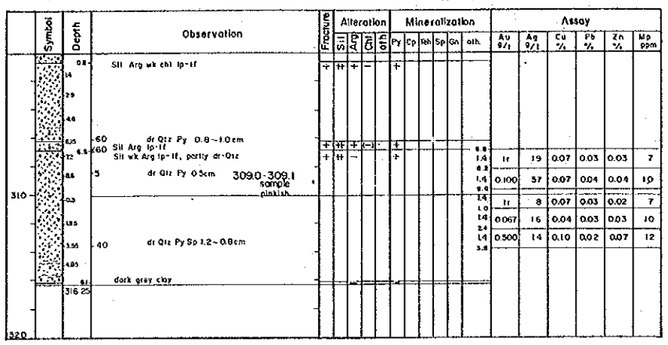


	Resistivity(Ω・m)	Depth(m)
		0
1	44	
		58
2	136	
		486
3	1500	


Observation
Fracture
Alteration
Sil
Arg
Chl
clth
Mineralization
Py
Cp
Tet
Sp
Ga
oth
Assay
Au g/t
Ag g/t
Cu %
Pb %
Zn %
Mo ppm
(soil)
weathering lp-tf (soil)
limo v-let 0.2cm
weathering lp-tf wk chl
limo fp-tf
leached Z
chl lp-tf
chl zone (fault?)
limo Qtz 3.5cm
limo dr-Qtz 0.7cm
wk Arg chl tf
dr Qtz Sp Py (cc) 0.2cm
dr Qtz Sp Py 0.2~1.0cm
wk Sil wk Arg chl lp-tf
dr Qtz Sp Py 0.4m
Sil sh 1.5cm
dr Qtz Sp Py 0.8cm
dr Qtz Sp Py 0.8cm+
dr Qtz Sp Py 0.4cm
sh
white clay Sp 0.2cm
dr Qtz Sp Py 0.5cm
dr Qtz chl Sp Py 1cm
dr Qtz chl Sp Py 0.5cm
dr Qtz Sp Py 1cm
dr Qtz Sp Py 0.5cm
dr Qtz Sp Py 0.6cm
dr Qtz Sp Py 0.3cm
tf sh bearing tf (laminated)
dr Qtz Sp Py 0.2cm
dr Qtz white clay Sp Py 0.6cm+
dr Qtz Sp Gn Py 0.2cm
dr Qtz Sp Py 0.2cm
dr Qtz Sp Py Gn 0.2cm
tf sh
drusy Qtz vein
intercalated Sil~sh bearing
hanging side 35cm
leached zone
Sample 62.6 62.65
clay 10cm
Sil wk Arg chl lp tf
dr Qtz Sp 0.2cm
dr Qtz Sp Py 0.4cm
wk Sil wk Arg chl tf
clay with breccia 4cm+
dr Qtz Sp Py 0.8cm
fault(?) intersect bed plane
Sil wk Arg chl lp-tf
dr-Qtz chl Sp Py 0.6~1.0cm
Sil Arg wk chl tf (specific?)
Sil Arg wk chl tf
Sil Arg chl lp-tf grey clay 1cm
Sil Arg wk chl lp tf
white clay 3cm +
dr Qtz Py (cc) 0.2cm
Qtz Py 0.5~1.2cm
Qtz clay Sp Gn Py 0.2cm
dr Qtz Sp Py (cc) 0.2cm
Sil Arg breccia ted lp-tf
Sil Arg lp-tf
Qtz V. Py in rich with Sp
Sil wk Arg lp-tf
Sample 82.7
dr Qtz clay Py Sp 5cm+
Sil Arg chl lp-tf
Sil Arg lp-tf
dr Qtz Py Sp 0.4cm
dr Qtz Py Sp 0.4cm
Qtz white clay Sp Py 0.8cm
Sil Arg lp tf
dr Qtz Py Sp 0.3cm
dr Qtz Py Sp 0.2cm
1933 239 0.14 1.4 12.5 10
1733 78 0.04 3.9 13.4 12
1333 29 0.02 1.9 3.3 12
1400 56 0.02 1.3 2.6 12
0900 70 0.06 0.9 5.3 4
0567 18 0.02 0.8 2.6 6
0333 14 0.02 0.7 1.9 6
0300 9 0.02 0.4 1.2 7
0267 87 0.52 0.07 0.14 9
– 20 0.04 0.06 0.11 10
0200 6 0.04 0.04 0.31 6
Sil Arg chl lp-tf dr Qtz white clay Py Sp 0.4cm
Sil Arg lp-tf
Sil Arg chl tf cloy Py Sp 0.6cm
Sil Arg tf
breccia bearing clay 15cm
Sil chl laminated lp-tf
Sil Arg tf
dr Qtz clay Py Sp 10~15cm
dr Qtz clay Py Sp 10cm+
Sil Arg chl tf dr Qtz Py 01cm
Sil Arg tf
Qtz clay Py Sp 0.5cm
clay Py Sp 0.3cm
wk limo
clay Py Sp 0.2cm
clay Py Sp 0.2cm
Sil Arg chl tf
Qtz Py Sp 1cm
black clay 1cm
dr-Qtz Py Sp 0.3cm
dr-Qtz Py Sp 0.3cm
dr-Qtz Py Sp 0.5cm
dr-Qtz Sp Py 1.2cm
Sil Arg chl lp-tf
Sil wk Arg lp-tf
Sil Arg lp-tf
dr Qtz Py Sp 0.5cm
Qtz clay Py Sp 0.8cm
Sil Arg chl lp-tf (relatively fresh dacitic lp-tf)
dr-Qtz Sp Py 0.3~0.8cm
Sil Arg chl lp-tf
Qtz clay Py 0.4cm
fault breccia with clay, post mineralization activity
(Arg breccia)
(Arg brecciated lp-tf)
(Sil chl lp-tf)
(Sil chl lp-tf)
(Arg breccia)
(Arg breccia)
Sil Arg lp-tf
dr Qtz chl clay Py cc 0.6cm
Qtz clay Py cc 0.3cm
dr Qtz chl Py Sp Gn 0.5cm
Sil Arg chl lp tf
Py Sp 0.4cm
Sil Arg lp tf
dr Qtz Py Sp 0.5~1.0cm
dr Qtz white clay Py 3.5cm
dr Qtz white clay Py Sp 0.5cm
dr Qtz white clay Py Sp 1cm
Sil Arg tf
grey clay Py Sp 0.3cm
white clay Py Sp 0.2cm
Sil Arg lp-tf, partly elongated
white clay 2cm
dr Qtz Py Sp 1cm
dr Qtz Py 6p 0.2cm
dr Qtz Sp Py 0.6cm
fault breccia
Sil lp-tp
dr-Qtz Py Sp 0.2cm
dr-Qtz Py Sp 0.3cm
1.45 0.067 5 0.03 0.07 0.42 6
1.45 0.067 14 0.03 0.11 0.44 8
– 6 0.03 0.05 0.44 11
fr 5 0.03 0.08 0.52 6
– 4 0.02 0.03 0.41 12
1.50 0.033 8 0.03 0.17 0.6 6
1.50 0.133 10 0.03 0.30 1.0 1
1.45 0.167 13 0.04 0.18 1.3 1
1.45 0.200 8 0.04 0.25 1.5 3
1.20 0.033 9 0.03 0.23 0.7 2
– 6 0.03 0.23 0.50 –
fr 9 0.04 0.06 0.22 1
– 8 0.04 0.20 0.59 4
0.433 6 0.05 0.14 0.42 3
0.400 11 0.05 0.27 0.9 5
0.333 8 0.05 0.15 0.7 5
Qtz white clay Py Sp 0.6cm
Sil Arg chl lp-tf
Sil Arg lp-tf
Qtz Py 0.3cm
Sil Arg chl lp-tf
Arg lp-tf
yellowish clay
fault breccia grey clay
wk Sil Arg tf
fault breccia grey clay
chl Hb andesite
each side 15cm
yellowish Arg remarkable
247.6~247.7 sample
fault breccia
Sil Arg lp-tf
wk Sil Arg lp-tf
Sil Arg lp-tf
dr Qtz Py Sp Cp 0.5cm
-264.6 -267.03 drusy Qtz Py Sp Cp
Py Cp Sp 0.2
dr Qtz Py Sp Cp 1.0~1.4cm
dr Qtz Py Sp 0.2~0.6cm
Sil Arg wk chl lp-tf
Sil wk Arg chl lp-tf
white clay 1cm
Sil wk Arg wk chl lp-tf
dr Qtz Py Sp 0.3cm
dr Qtz Py Sp 0.6~1.0cm
Sil Arg chl lp tf
dr Qtz Py Sp 0.2cm
limo dr-Qtz Py 5cm
Sil wk Arg lp-tf
dr-Qtz Py 1cm
Sil Arg lp tf, dr-Qtz bearing
wk limo Sil Arg lp-tf
135 – 5 0.03 0.47 0.9 4
1.4 0400 7 0.04 0.35 0.7 8
1.4 0.200 6 0.04 0.30 0.9 8
1.45 0100 6 0.04 0.40 2.0 4
1.50 – 8 0.04 0.03 0.22 16
1.40 fr 9 0.03 0.05 0.33 8
1.50 0.133 84 0.03 0.04 0.41 9
1.50 0.067 10 0.05 0.03 0.31 10
1.45 0.100 26 0.04 0.04 0.10 8
Sil Arg wk chl lp-tf
dr Qtz Py 0.8~
Sil Arg lp-tf
Sil wk Arg lp-sl, partly d
dr Qtz Py 0.5cm
dr Qtz Py Sp 1.2~
dark grey clay







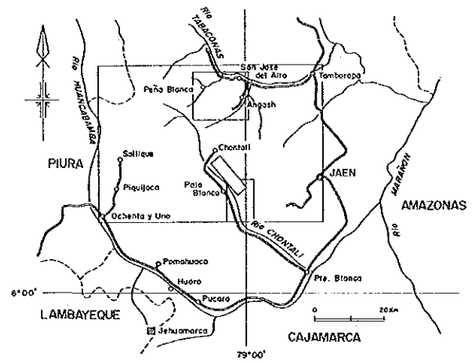
THE MINERAL EXPLORATION

IN

THE PACHAPIRIANA AREA, REPUBLIC OF PERU

(PHASE II)

MJPJ — 1



JAPAN INTERNATIONAL COOPERATION AGENCY

METAL MINING AGENCY OF JAPAN

FEBRUARY 1990

Prepared by MINDECO

0 10 20m

Location : 9'326,058N , 695,205E

Elevation : 3227.32m

Direction : — Inclination -90°

LEGEND

Symbol

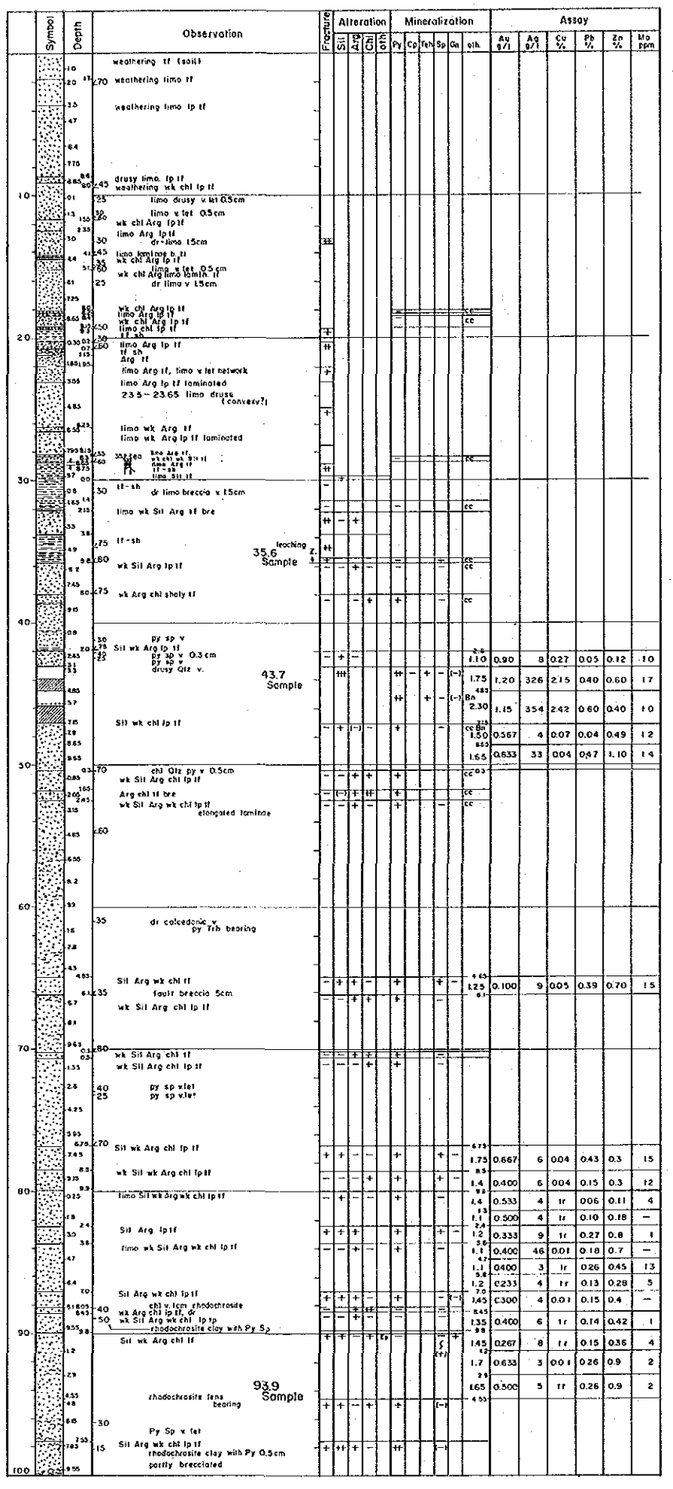
- shale
- tuff
- lapilli tuff
- tuff breccia
- andesite
- bracciated rock
- fault breccia
- sheared zone
- quartz zone
- missing zone
- 15 intersected angle of vein
- 30 intersected angle of bedding plane

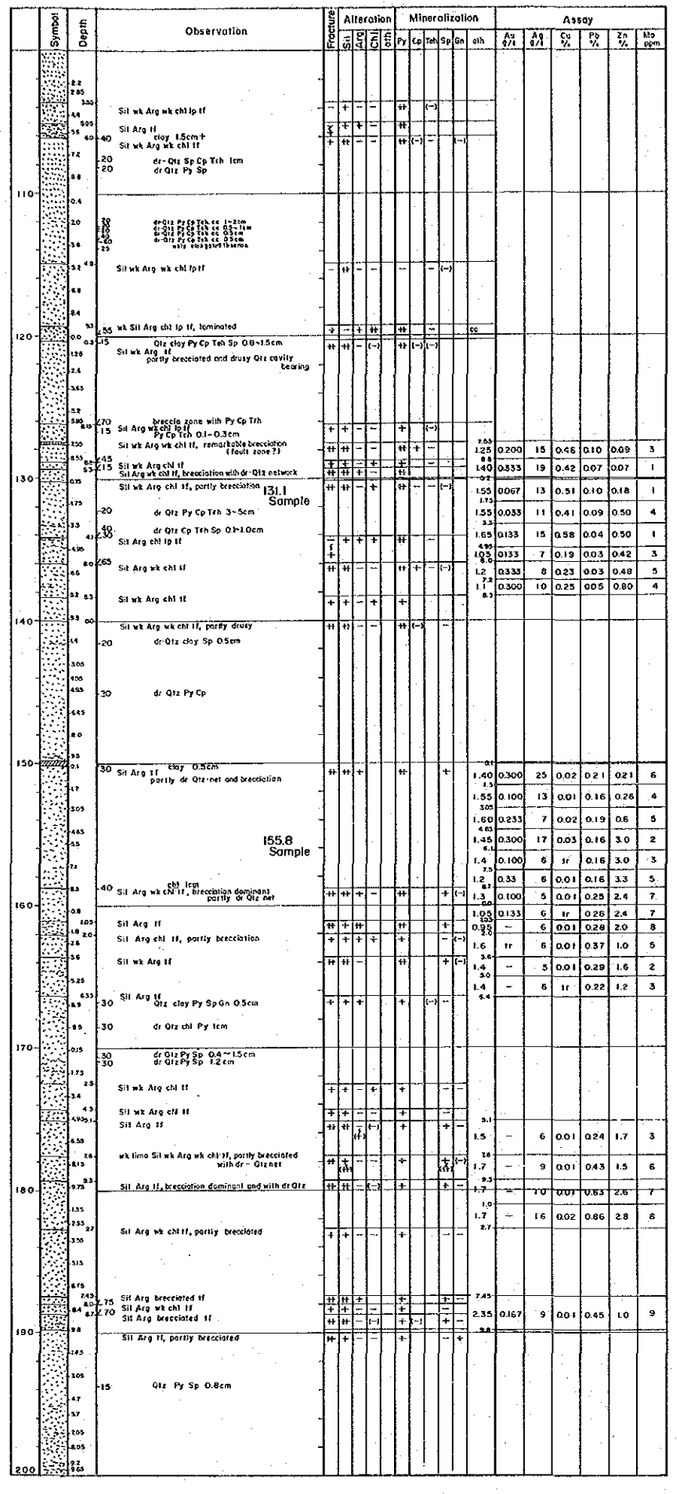
Intensity of alteration and mineralization

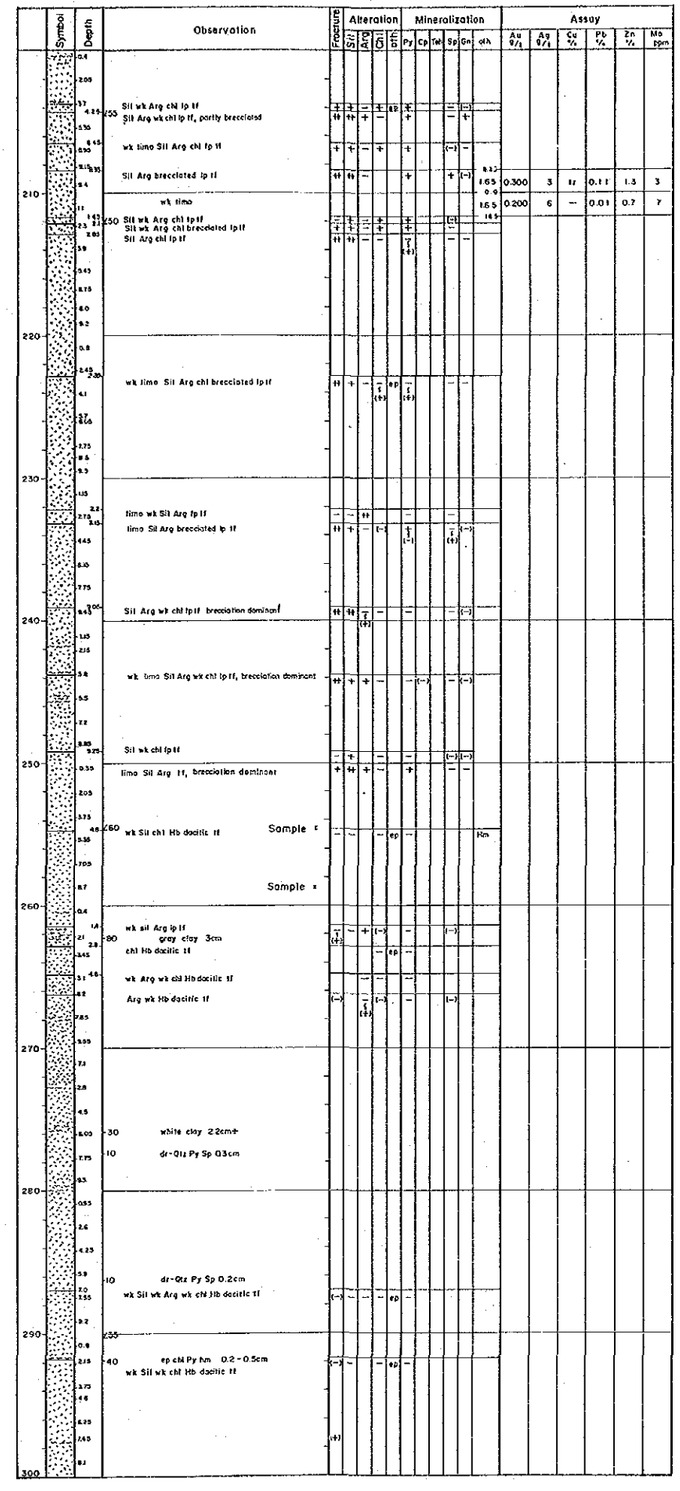
- — weak
- + moderate
- ++ strong
- ( ) sporadically

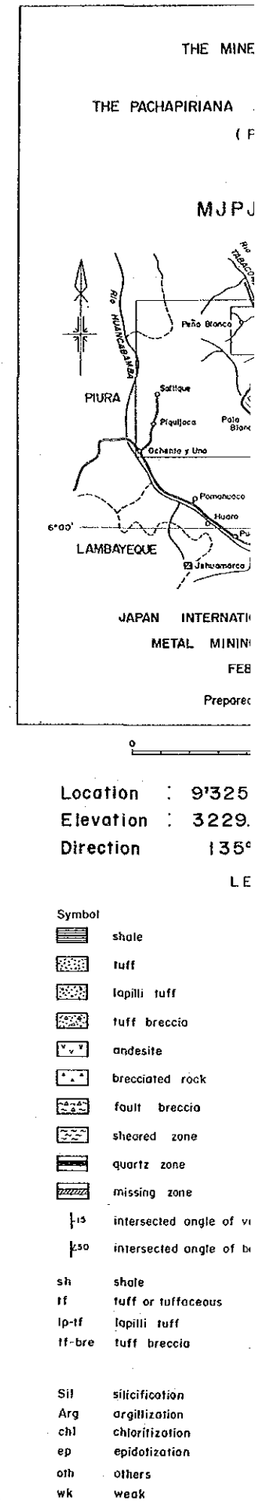
sh	shale	py	pyrite
tf	tuff or tuffaceous	Cp	chalcopyrite
lp-tf	lapilli tuff	Trh	tetrahedrite
tf-bre	tuff breccia	Sp	sphalerite
		Gn	galena
Sil	silicification	cc	chalcocite
Arg	argillization	Bn	bornite
chl	chloritization	limo	limonite or limonitized
ep	epidotization	Hm	hematite
oth	others	Hb	hornblende
wk	weak	Qtz	quartz
		dr	drusy
		v	vein

Apx. 16 Geological Drilling Log in the Jehuamarca Area (1)

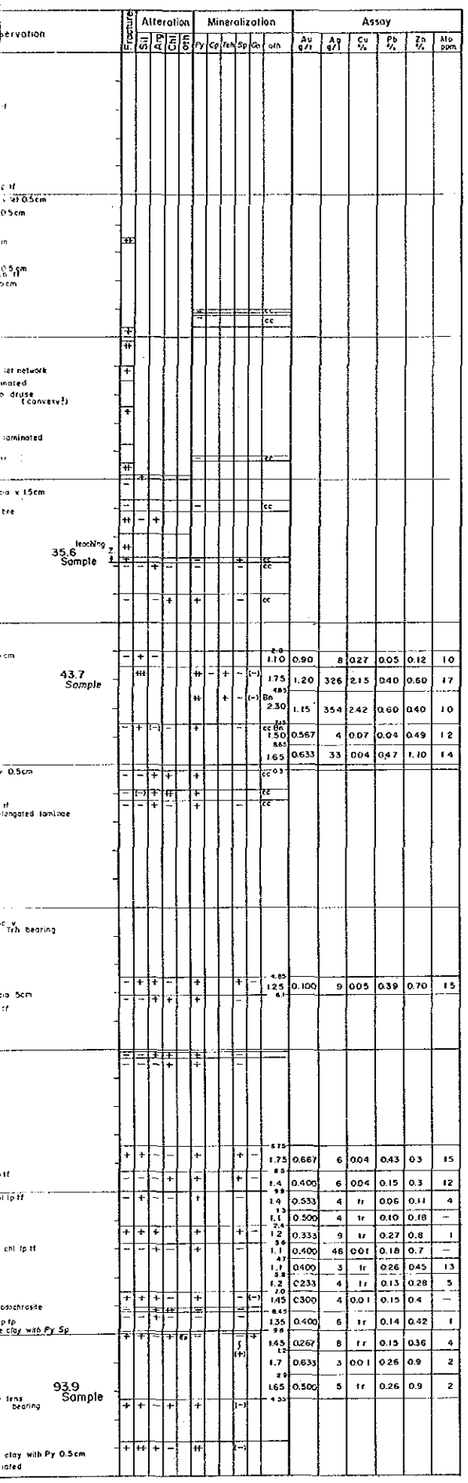


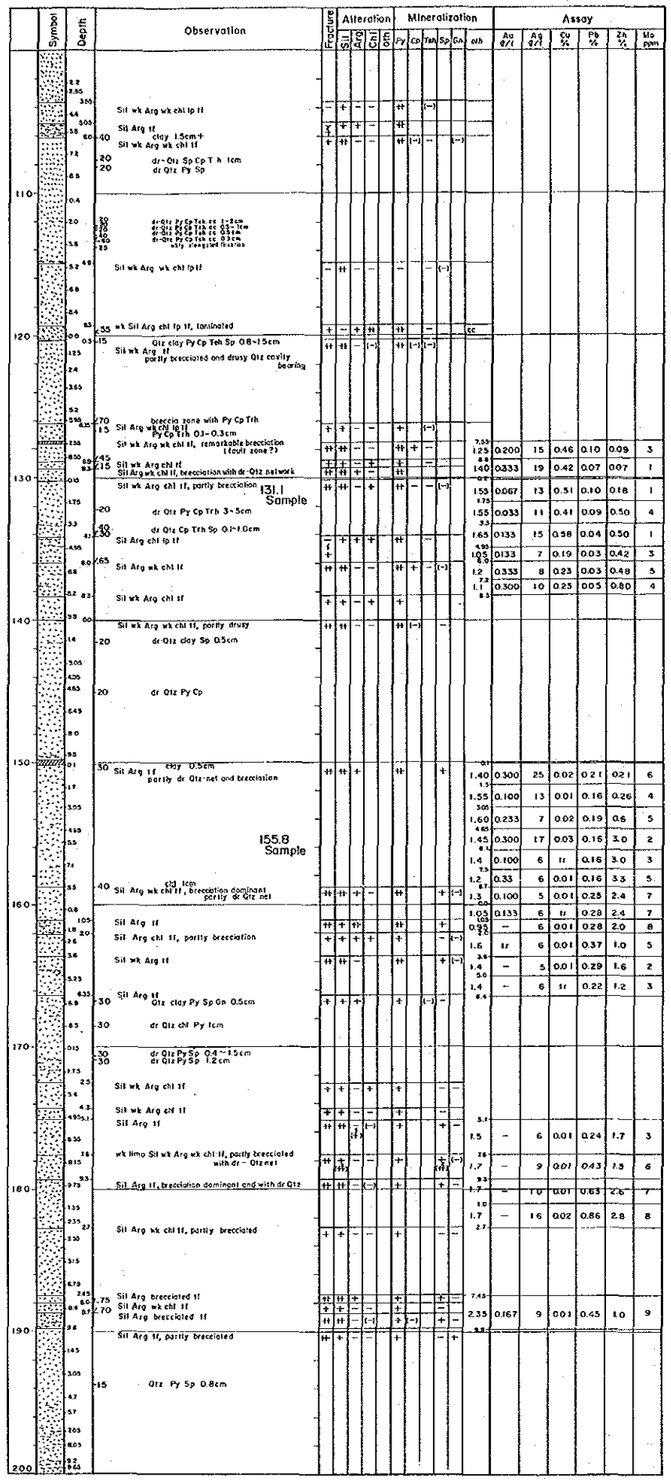


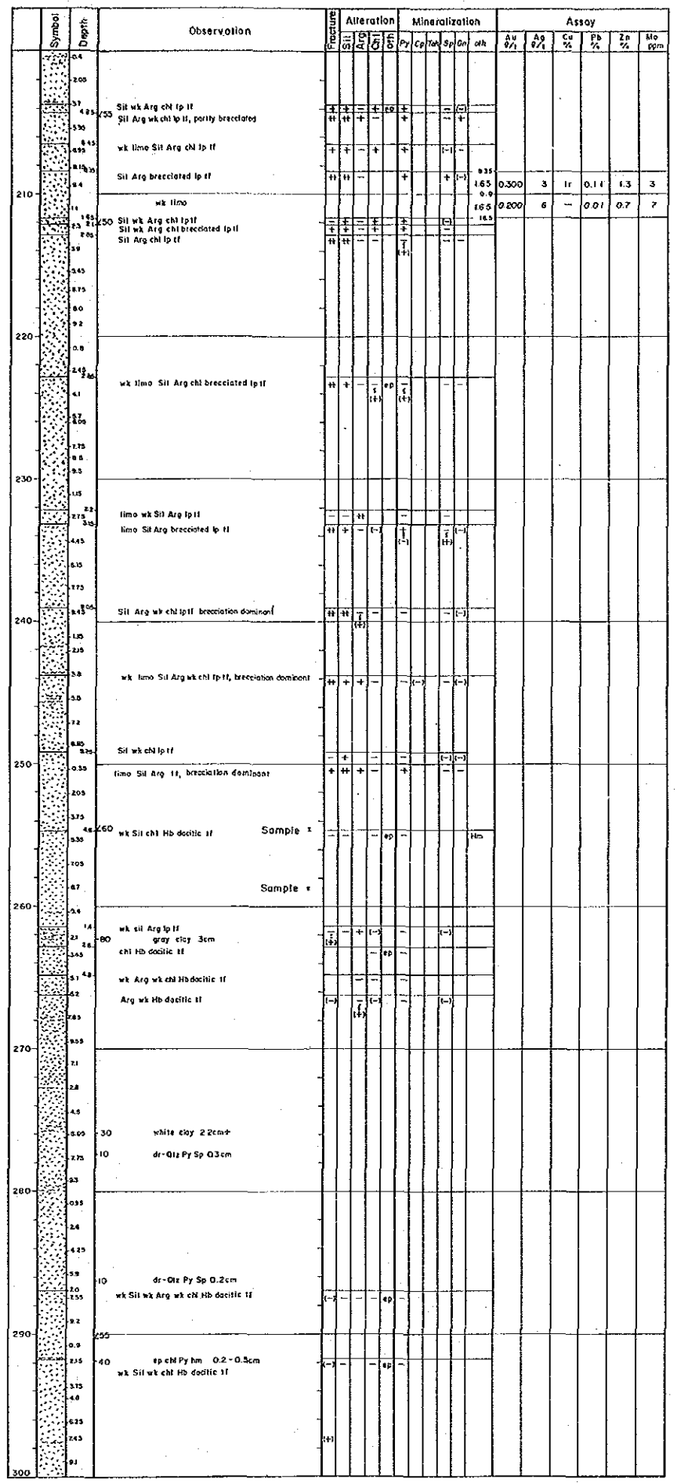




Apx. 16 Geological Drilling Log in the Jehuamarca Area (2)







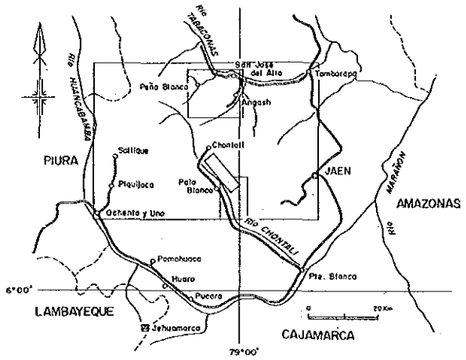
THE MINERAL EXPLORATION

IN

THE PACHAPIRIANA AREA, REPUBLIC OF PERU

(PHASE II)

MJPJ — 2



JAPAN INTERNATIONAL COOPERATION AGENCY

METAL MINING AGENCY OF JAPAN

FEBRUARY 1990

Prepared by MINDECO

0 10. 20m

Location : 9'325,980N , 695,274E

Elevation : 3229.39m

Direction 135° Inclination - 75°

LEGEND

Symbol

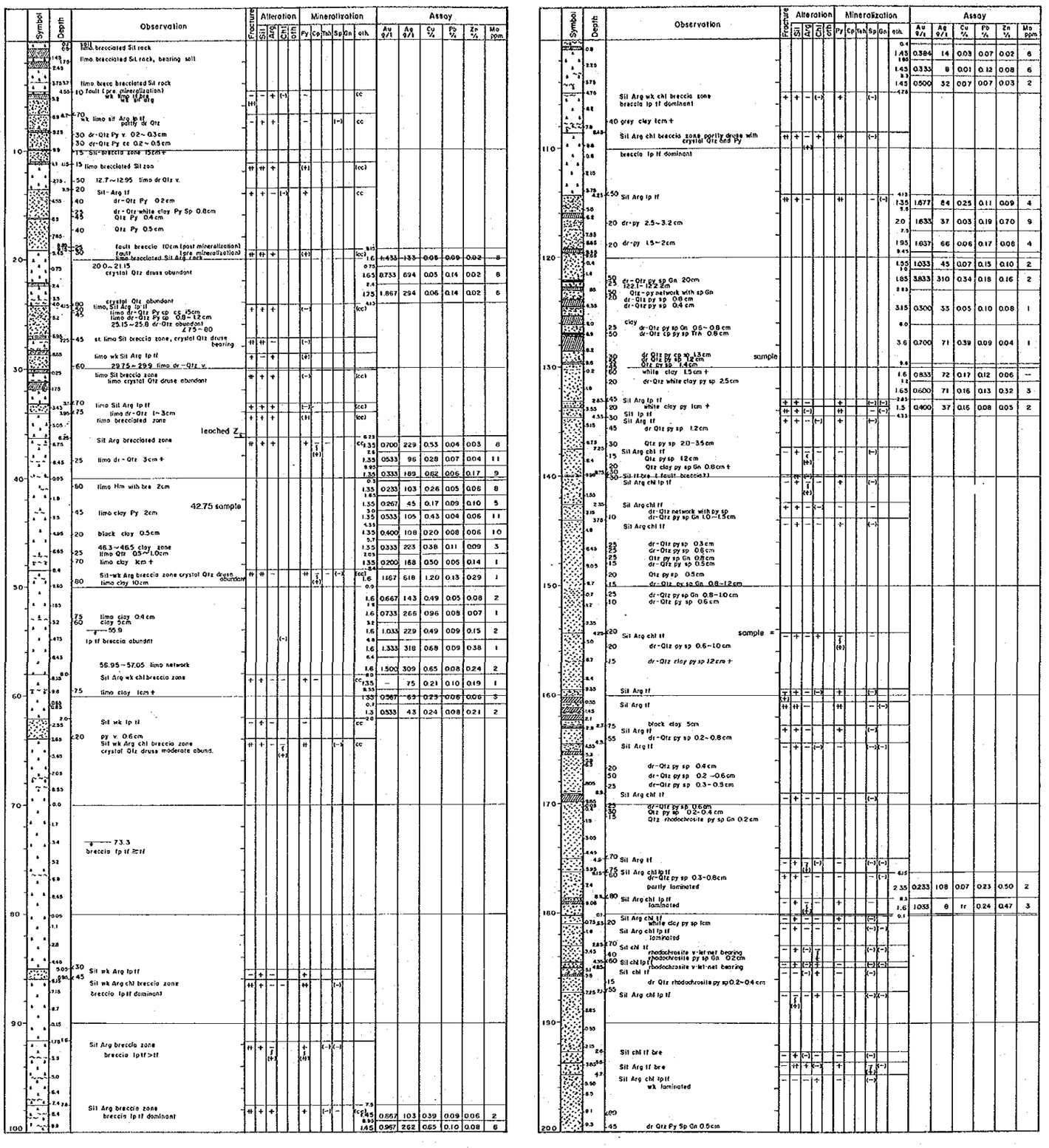
- shale
- tuff
- lapilli tuff
- tuff breccia
- andesite
- brecciated rock
- fault breccia
- sheared zone
- quartz zone
- missing zone
- 15 intersected angle of vein
- 50 intersected angle of bedding plane

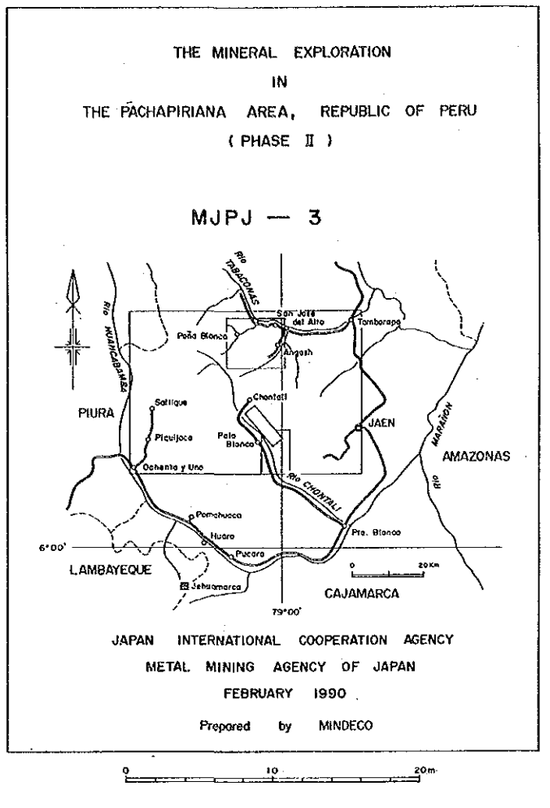
Intensity of alteration and mineralization

- — weak
- + moderate
- ++ strong
- ( ) sporadically

sh	shale	py	pyrite
tf	tuff or tuffaceous	Cp	chalcopyrite
lp-tf	lapilli tuff	Trh	tetrahedrite
tf-bre	tuff breccia	Sp	sphalerite
		Gn	galena
Sil	silicification	cc	chalcocite
Arg	argillization	Bn	bornite
chl	chloritization	limo	limonite or limonitized
ep	epidotization	Hm	hematite
oth	others	Hb	hornblende
wk	weak	Qtz	quartz
		dr	drusy
		v	vein

Apx. 16 Geological Drilling Log in the Jehuamarca Area (2)





Apx. 16 Geological Drilling Log in the Jehuamarca Area (3)

Apx. 16 Miscellaneous Data for the Drilling Survey (1)

List of the Used Equipment for Drilling

Item	Model	Quantity	Capacity, Type and Specification
Drilling Machine	L-38	1	Capacity NQ : 575 m BQ : 725 m Inner Diameter of Spindle : 76 mm Weight (except engine)
Engine for Drill	GMG	1	Diesel Engine 2,200 rpm / 102 ps
Pump	BEAM	2	Piston ϕ 68 mm Capacity 18~137 liter/min Pressure 46 kg/min
Engine for Pump	BOSCH	2	Diesel Engine 2,200 rpm / 33 ps
Generator	BRIGGSTRATON	2	5 kvA 220 v
Engine for Generator		2	Diesel Engine 1,800 rpm / 8.5 ps
Mud Mixer	SRENKA	1	Volume 100 liter 800 ~ 1,000 rpm / min
Derrick	LONGYEAR	1	
Rod Holder	LONGYEAR	1	
Drill Rods	HQ-WL	70	3.00 m/pc
	NQ-WL	100	3.00 m/pc
	BQ-WL	150	3.00 m/pc
Casing Pipes	HW	12	1.50 m/pc
	NW	70	3.00 m/pc
	BW	100	3.00 m/pc
Core Tube Assembly	HQ-WL	2	1.50 m
	NQ-WL	2	1.50 m
	BQ-WL	2	1.50 m
Innertube Assembly	HQ-WL	2	1.50 m
	NQ-WL	2	1.50 m
	BQ-WL	2	1.50 m

Apx. 17 Miscellaneous Data for the Drilling Survey (2)

Articles of Consumption and Drilling Parts

Item	Specification	Unit	Quantity		
			MJPJ-1	MJPJ-2	MJPJ-3
Light Oil		liter	4,000	2,320	1,760
Gasorin Oil		liter	2,645	1,760	1,060
Hydraulic Oil		liter	50	80	10
Drilling Oil		liter	240	47	50
Grease		kg	60	30	50
Mobil Oil		liter	120	60	20
Bentonite	23 kg/bag	bag	123	30	55
CMC		kg	55	16	26
Cement	47 kg/bag	bag	33	5	5
Tel-Stop		kg	60	80	120
Single Core Tube	116 mm× 0.5 m	set	1		
Wireline Core Barrel	HQ× 1.7	set		1	
Wireline Core Barrel	NQ× 1.7	set		1	
Wireline Core Barrel	BQ× 1.7	set		1	
Inner Tube Assembly	HQ× 1.7	set		1	
Inner Tube Assembly	NQ× 1.7	set		1	
Inner Tube Assembly	BQ× 1.7	set		1	
Outer Tube	HQ× 1.7	set		1	
Outer Tube	NQ× 1.7	set		1	
Outer Tube	BQ× 1.7	set		1	
Inner Tube	HQ× 1.7	set		1	
Inner Tube	NQ× 1.7	set		1	
Inner Tube	BQ× 1.7	set		1	
Casing Diamond Shoe	HW	pc	1	1	1
Casing Diamond Shoe	NW	pc	1	1	1
Casing Diamond Shoe	BW	pc	1	1	1
Core Box	HQ	pc	44	31	31
Core Box	NQ	pc	23	26	13
Core Box	BQ	pc	11	13	4
Wire Rope	6 mm× 500 m	roll	1		
Wire Rope	12 mm× 90 m	roll	1		
Manila Rope	18 mm× 100 m	roll		1	
Pump Packing		pc			1
Valve Steel Ball	38.1 ϕ	pc			1
Piston Rod		pc			1
Guide Pipe	HQ	pc		1	
Guide Pipe	NQ	pc		1	
Guide Pipe	BQ	pc		1	
Guide Coupling	HQ	pc		1	
Guide Coupling	NQ	pc		1	
Guide Coupling	BQ	pc		1	
Suctin Hose		pc			1
Water Swivel Packing		pc			1
Water Swivel Spindle		pc			1
V Belt		pc	1		
Core Lifter	HQ	pc	3	3	3
Core Lifter	NQ	pc	1	2	2
Core Lifter	BQ	pc	2	2	1
Core Lifter Case	HQ	pc	3	3	3
Core Lifter Case	NQ	pc	2	2	2
Core Lifter Case	BQ	pc	1	2	1

Apx. 1-7 Miscellaneous Data for the Drilling Survey (3)

Drilling Meterage of Diamond Bits

Item	Size	Type	Bit No.	Drilling Meterage by Drill Hole. Unite Meter			Total
				MJPJ-1	MJPJ-2	MJPJ-3	
Bit	116 mm	116 mm	70001	2.95			2.95
			Total	2.95			2.95
	NC	HQ	63601		33.25		33.25
			63602		33.45		33.45
			63603		37.70		37.70
			63604	39.55			39.55
			63605	42.10			42.10
			63606	31.90			31.90
			63607	33.75			33.75
			63608			56.30	56.30
			63609			54.30	54.30
			Total	147.30	104.40	110.60	362.30
	NX	NQ	51617		28.90		28.90
			51618		65.90		65.90
			51619		26.85		26.85
			51620	42.10			42.10
			51621	37.90			37.90
			51622	15.40			15.40
			51623			39.00	39.00
			51624			20.05	20.05
			Total	95.40	121.65	59.05	276.10
	BX	BQ	40963		42.05		42.05
			40964		31.90		31.90
			40965	38.90			38.90
			40966	31.70			31.70
			40967	0.00			0.00
			40968			30.35	30.35
			Total	70.60	73.95	30.35	174.90

Apx. 17 Miscellaneous Data for the Drilling Survey (4)

Operational Results of Drill Hole, MJPJ-1

Working Period		Period			Number of Days	Actual Working Days	Day Off	Total Number of Workers
	Preparation	22. Oct. '89～ 6. Dec. '89			11	11	—	232
	Drilling	24. Oct. '89～ 7. Dec. '89			35.5	32.5	3	697
	Removing	7. Oct. '89～ 7. Dec. '89			0.5	0.5	—	11
	Total	22. Oct. '89～ 7. Dec. '89			47	44	3	940
Drilling Length	Planned Length	400.00 m	Over-burden	2.95 m	Core Recovery for each 100m section			
	Increase or Decrease in Length	-83.75 m	Core Length	311.75 m	Depth of Hole		Section	Total
	Length Drilled	316.25 m	Core Recovery	98.58 %	0～100 m		95.5%	
					100～200 m		100%	97.8%
Working Time	Drilling	198h	23.6%	22.5%	200～300 m		100%	98.5%
	Hoisting & Lowering Rod	65h	7.7%	7.4%	300～316.25m		100%	98.58%
	Hoisting & Lowering I.T.	103h	12.3%	11.7%				
	Miscellaneous	133h	15.8%	15.1%	Efficiency of Drilling			
	Repairing	253h	30.1%	28.8%	316.25 m/Working Period			6.7m/day
	Others	88h	10.5%	10.0%	316.25 m/Working Days			7.1m/day
	Total	840h	100.0%	95.5%	316.25 m/Drilling Period			8.9m/day
	Removing Preparation	32h	—	3.6%	316.25 m/Net Drilling Days			9.7m/day
	Removing Moving	8h	—	0.9%	Total Workers / 316.25 m			2.97Man/m
	G. Total	880h	—	100.0%				
Casing Pipe Inserted	Pipe Size & Meterage	Inserted Length / Drilling Length		Recovery of Casing Pipe	Total Drilling Workers / 316.25 m			2.2 Man/m
					Hoisting & Lowering Rod 65 Times		Hoisting & Lowering I.T. 103 Times	
	HW 10.85 m	3.4%		100.0%				
	NW 150.25 m	47.5%		100.0%	Remerks			
	BW 245.65 m	77.7%		61.2%	G : Grand			
					I.T. : Inner Tube			

Apx. 17 Miscellaneous Data for the Drilling Survey (5)

Operational Results of Drill Hole, MJPJ-2

Working Period		Period			Number of Days	Actual Working Days	Day Off	Total Number of Workers
	Preparation	23.Jul.'89～27.Sep.'89			65.5	19.5	46	1,055
	Drilling	26.Sep.'89～20.Oct.'89			24.5	24.5	--	518
	Removing	21.Oct.'89～21.Oct.'89			1	1	—	21
	Total	23.Jul.'89～21.Oct.'89			91	45	46	1,594
Drilling Length	Planned Length	300.00 m	Over-burden	—	Core Recovery for each 100m section			
	Increase or Decrease in Length	—	Core Length	296.30 m	Depth of Hole		Section	Total
	Length Drilled	300.00 m	Core Recovery	98.77 %	0～100 m		96.8%	
					100～200 m		100%	98.4%
Working Time	Drilling	200h	34.2%	31.6%	200～300 m		99.5%	98.77%
	Hoisting & Lowering Rod	44h	7.5%	7.0%				
	Hoisting & Lowering I.T.	106h	18.2%	16.8%				
	Miscellaneous	114h	19.5%	18.0%	Efficiency of Drilling			
	Repairing	32h	5.5%	5.1%	300.00 m/Working Period			3.29m/day
	Others	88h	15.1%	13.9%	300.00 m/Working Days			6.66m/day
	Total	584h	100.0%	92.4%	300.00 m/Drilling Period			12.24m/day
	Removing Preparation	40h	—	6.3%	300.00 m/Net Drilling Days			12.24m/day
	Removing Moving	8h	—	1.3%	Total Workers / 300.00 m			5.31Man/m
	G. Total	632h	—	100.0%				
Casing Pipe Inserted	Pipe Size & Meterage	Inserted Length / Drilling Length		Recovery of Casing Pipe	Total Drilling Workers / 300.00 m			1.72Man/m
					Hoisting & Lowering Rod 44 Times		Hoisting & Lowering I.T. 106 Times	
	HW 7.40 m	2.5%		100.0%	Remerks			
	NW 104.40 m	34.8%		100.0%	G : Grand			
	BW 226.05 m	75.4%		100.0%	I.T.: Inner Tube			

Apx. 17 Miscellaneous Data for the Drilling Survey (6)

Operational Results of Drill Hole, MJPJ-3

Working Period		Period			Number of Days	Actual Working Days	Day Off	Total Number of Workers
	Preparation	8. Dec. '89～11. Dec. '89			4	4	—	112
	Drilling	12. Dec. '89～22. Dec. '89			11	11	—	275
	Removing	23. Dec. '89～23. Dec. '89			1	1	—	25
	Total	8. Dec. '89～23. Dec. '89			16	16	—	412
Drilling Length	Planned Length	200.00 m	Over-burden	—	Core Recovery for each 100m section			
	Increase or Decrease in Length	—	Core Length	189.45 m	Depth of Hole		Section	Total
	Length Drilled	200.00 m	Core Recovery	94.72 %	0～100 m		96.4%	96.4%
					100～200 m		93.05%	94.7%
Working Time	Drilling	120h	46.9%	34.1%				
	Hoisting & Lowering Rod	22h	8.6%	6.3%				
	Hoisting & Lowering I.T.	55h	21.5%	15.6%				
	Miscellaneous	59h	23.0%	16.7%	Efficiency of Drilling			
	Repairing	—	0.0%	0.0%	200.00 m/Working Period			12.5m/day
	Others	—	0.0%	0.0%	200.00 m/Working Days			12.5m/day
	Total	256h	100%	72.7%	200.00 m/Drilling Period			18.2m/day
	Removing Preparation	32h	—	9.1%	200.00 m/Net Drilling Days			18.2m/day
	Removing Moving	64h	—	18.2%	Total Workers / 200.00 m			2.06Man/m
	G. Total	352h	—	100.0%				
Casing Pipe Inserted	Pipe Size & Meterage	Inserted Length / Drilling Length		Recovery of Casing Pipe	Total Drilling Workers / 200.00 m			1.38Man/m
	HW 4.50 m	2.3%		100.0%	Hoisting & Lowering Rod 22 Times		Hoisting & Lowering I.T. 55 Times	
	NW 110.60 m	55.3%		100.0%	Remerks			
	BW 169.65 m	84.8%		100.0%	G : Grand			
					I.T.: Inner Tube			

MJPJ – 1 PROGRESS RECORD OF DIAMOND DRILLING

Depth (m) | Drill. Log | Lithology | Drilling HOUR (Hr./m) .30 .60 .90 .120 | Drilling method | Process

2.95 soil

100 Lapili tuff

200

215.05 Fault breccia

241.55 Andesite

248.25 Fault breccia

259.70 Lapili tuff

300

316.25

HW

HQ

NW

NQ

BW

BQ

10/22 23 24 25 26 27 28 29 30 31 11/1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 12/1 2 3 4 5 6 7

Drilling W / 116mm Diamond bit

Insertion of HW casing pipes

Insertion of NW casing pipes

Reparationes

Insertion of BW casing pipes

Preventive work for loss of mudwater

Ground – leveling and transportation of the drilling rig
Mounting of the drilling machine

Drilling completed

Reparaciones

Holiday

MJPJ-2 PROGRESS RECORD OF DIAMOND DRILLING

Depth (m) | Drill. Log | Lithology | Drilling HOUR (Hr./m) 30 60 90 120 | Drilling method | Process

Lithology: Lapili tuff; 28.75; Shale; 35.60; Lapili tuff; 100; 125.00; Tuff; 200; 300; 300.00

Drilling method: HW; HQ; NW; NQ; BW; BQ

Process: 7/ 23 24 30 31 | 8/ 1 2 7 8 | 9 2 | 3 4 | 5 12 | 22 23 24 25 | 26 27 28 29 30 | 10/ 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

- Insertion of HW casing pipes
- Insertion of NW casing pipes
- Preventive work for loss of mudwater
- Repair a drilling machine
- Insertion of BW casing pipes
- Drilling completed
- Removal casing pipes dismount of the drilling rig
- Waiting of mobilization of the contractor
- Mobilization
- Waiting of helicopter for transportation
- Transportation by helicopter
- Waiting of helicopter for transportation
- Transportation by helicopter and preparation

MJPJ – 3 PROGRESS RECORD OF DIAMOND DRILLING