

7 . Results of Geophysical Survey

1. General

1-1 Purpose of Geophysical Survey

The purpose of the geophysical survey is to find the promising communities with high potential ground water development.

1-2 Contents of geophysical survey

-1st Stage (BD1)

The geophysical survey was conducted in 100 communities of high priority selected among 220 communities

-2nd stage (BD2)

56 communities among 100 communities were analyzed as low potential water development in 1st stage. The geophysical re-survey conducted at these 56 communities and in the new 17 additional communities. Total of geophysical survey including re-survey is 117 communities (173 sites).

Electromagnetic Survey

- Method : Loop-Loop (Srigram)
- Line : more than 200 m (5 m interval)
- Equipment : GEONICS EM34
- Analysis : Horizontal Electric Conductivity Profiling

Resistivity Survey

- Method : Schlumberger method
- Survey depth : a=100m
- Equipment : ABEM SAS300B
- Analysis : 1dimention inversion

2. Result of survey

2-1 Potential of Ground Water

Basement of survey area is composed with crystal formation (Granite, Gneiss) in Precambrian Period. Upper stratum is weathered. According to the situation of weathered zone, crack and fault in crystal rock (Granite, Gneiss), the formation of aquifer is not constant due to thickness of weathered zone and scale of crack etc.

Formation of aquifer are as follow:

- It is difficult to find aquifer in fissure zone
- Main aquifer from the test boreholes are located in the boundary between weathered zone and basement.
- The thickness of weathered zone needs to be more than 20m for high potential of water development
- Based on the electric conductivity and existing data, the resistivity of weathered zone needs to be less than 130 ohm-m.
- In Ibarapa East, Ibarapa North, Ibarapa Central, there are many rocks of the basement surfaced on the ground, and therefore, the flow route of ground water is irregular.

2-2 Evaluation of target communities for ground water development.

Based on the geophysical survey, 80 communities were selected for the high potential of ground water development among 117 community through BD1 and BD2.

Community list of geophysical survey is shown in Table F-1,2. The resistivity log is shown in Fig.F-1.

Table F-1 Community list of geophysical survey(1)

Priority	LGA	Community	Lat.	Lon.	Depth of Basement (m)	Potential of Ground Water		
						BD1	BD2	Evaluation
1	Ibarapa North	Isale -Akao	7 ° 40 37	3 ° 11 05	10	x	x	x
2	Ibarapa North	Oke-Ola I	7 ° 40 43	3 ° 10 43	25		Drilling	-
3	Orire	Daodu	8 ° 25 19	4 ° 07 53	23		-	
4	Orire	Elekulu	8 ° 23 26	4 ° 18 28	56		Drilling	-
5	Afijio	Aba Ilorin	7 ° 42 06	3 ° 39 06	4	x	x	x
6	Orire	Alangua	8 ° 25 35	4 ° 10 21	25	x		
7	Ibarapa North	A.U.D.(Igaagan)	7 ° 40 15	3 ° 11 09	43		-	
8	Afijio	Ilori	7 ° 48 00	3 ° 54 02	35	x		
9	Ibarapa North	Igitele	7 ° 40 50	3 ° 11 03	20		-	
10	Ibarapa North	Isale-Oja(Igangan)	7 ° 40 32	3 ° 10 59	29		-	
11	Iseyin	Ado-Awaye	7 ° 49 53	3 ° 25 44	26	x		
12	Ibarapa North	Oke-Ola II	7 ° 40 54	3 ° 10 52	34		-	
13	Ibarapa North	Iwafin (Ayete)	7 ° 32 45	3 ° 13 23	28			
14	Ibarapa North	Imofin (Ayete)	7 ° 32 25	3 ° 13 15	41		-	x
15	Ibarapa North	Asunara	7 ° 39 13	3 ° 06 52	27		-	
16	Iseyin	Iserin	7 ° 46 49	3 ° 17 40	25			
17	Ibarapa North	Idiyan	7 ° 47 45	3 ° 07 24	5	x	x	x
18	Ibarapa North	Gbelekale	7 ° 37 04	3 ° 07 19	26	x		
19	Ibarapa North	Olore	7 ° 43 22	3 ° 16 36	26	x		
20	Orire	Eleyele	8 ° 28 52	4 ° 11 44	-		Drilling	-
21	Oyo West	Sooku	7 ° 53 56	3 ° 44 39	10	x	x	x
22	Orire	Alaje	8 ° 27 56	4 ° 16 47	35		-	
23	Orire	Ahese	8 ° 28 01	4 ° 07 12	31		-	
24	Orire	Igbo-Ayin I	8 ° 27 44	4 ° 10 25	25			
25	Orire	Onilu	8 ° 26 46	4 ° 14 18	27	x		
26	Orire	Eleru	8 ° 28 26	4 ° 09 03	18		x	x
27	Orire	Alawodi	8 ° 27 15	4 ° 08 50	25	x		
28	Ibarapa Central	Apata	7 ° 23 41	3 ° 10 59	32	x		
29	Ogo-Oluwa	Otamokun	7 ° 57 31	4 ° 10 17	7	x	x	x
30	Ogo-Oluwa	Olorunda	7 ° 55 27	4 ° 11 21	4	x	x	x
31	Ibarapa North	Akoya Ojelere	7 ° 44 03	3 ° 05 52	17		x	x
32	Ibarapa East	Maya Ipa	7 ° 40 40	3 ° 26 44	26			
33	Ibarapa East	Maya	7 ° 40 46	3 ° 26 36	25		x	x
34	Ibarapa North	Iwafin (Tapa)	7 ° 33 56	3 ° 13 51	42		-	
35	Ibarapa North	Ominigbo	7 ° 44 50	3 ° 06 59	25		-	
36	Surulere	Elesinmeta	8 ° 07 31	4 ° 25 49	36		-	
37	Ibarapa North	Aba-Ibadan	7 ° 43 36	3 ° 07 53	32		Drilling	-
38	Ibarapa North	Aba Isale	7 ° 43 56	3 ° 07 27	25	x		
39	Ibarapa North	Eleede	7 ° 45 26	3 ° 06 47	8	x	x	x
40	Orire	Adafile	8 ° 27 35	4 ° 14 27	27			
41	Ibarapa East	Isale Togun	7 ° 36 05	3 ° 26 50	38		-	
42	Ibarapa North	Eleede Idifa	7 ° 34 25	3 ° 08 13	25	x		
43	Orire	Akute	8 ° 29 31	4 ° 11 57	-		-	x
44	Orire	Alasapa	8 ° 31 18	4 ° 09 13	16		x	x
45	Orire	Olokun	8 ° 21 22	4 ° 18 33	32		Drilling	-
46	Ibarapa East	Alapa	7 ° 39 17	3 ° 32 18	25		-	
47	Surulere	Abogunde	8 ° 13 12	4 ° 15 15	26		-	
48	Orire	Okonimowaro	8 ° 30 20	4 ° 12 28	19	x	x	x
49	Orire	Omidoyin	8 ° 20 52	4 ° 16 06	28			
50	Ibarapa North	Egbeomo	7 ° 45 08	3 ° 11 55	25		-	
51	Orire	Oloya	8 ° 20 33	4 ° 11 57	32		-	
52	Ibarapa East	Idi-Ope	7 ° 25 00	3 ° 29 49	26			
53	Ibarapa North	Kolawole-Akamo	7 ° 32 07	3 ° 07 37	13	x	x	x
54	Ibarapa North	Obape	7 ° 40 03	3 ° 18 00	44	x		
55	Orire	Alawowo	8 ° 26 29	4 ° 11 08	25			
56	Orire	Sansan-Alasapa	8 ° 31 29	4 ° 09 09	33		-	x
57	Oyo West	Ounto	8 ° 00 47	3 ° 45 12	33	x		
58	Orire	Agabi	8 ° 23 35	4 ° 13 57	34		-	
59	Ibarapa North	Kajola Asipa	7 ° 34 53	3 ° 07 11	32		-	
60	Ibarapa East	Igbolaja	7 ° 39 41	3 ° 28 52	26	x		
61	Ibarapa Central	Abule-Oba	7 ° 28 39	3 ° 16 55	29		-	
62	Orire	Elebue	8 ° 21 01	4 ° 14 59	40		-	
63	Ibarapa East	Oke-Ola (Lanlate)	7 ° 32 12	3 ° 24 52	27			
64	Iseyin	Ajepero	7 ° 55 00	3 ° 41 39	28			
65	Ibarapa North	Osinago	7 ° 40 10	3 ° 06 43	23		x	x
66	Atiba	Ola-opa	8 ° 02 50	3 ° 55 19	25		-	
67	Orire	Igbo-Ayin II	8 ° 27 43	4 ° 09 59	30		-	
68	Orire	Gaani	8 ° 28 06	4 ° 09 25	29		-	
69	Ibarapa North	Bogunde	7 ° 41 09	3 ° 06 50	31		-	x
70	Ibarapa Central	Pako (Igboora)	7 ° 25 48	3 ° 17 47	32		-	

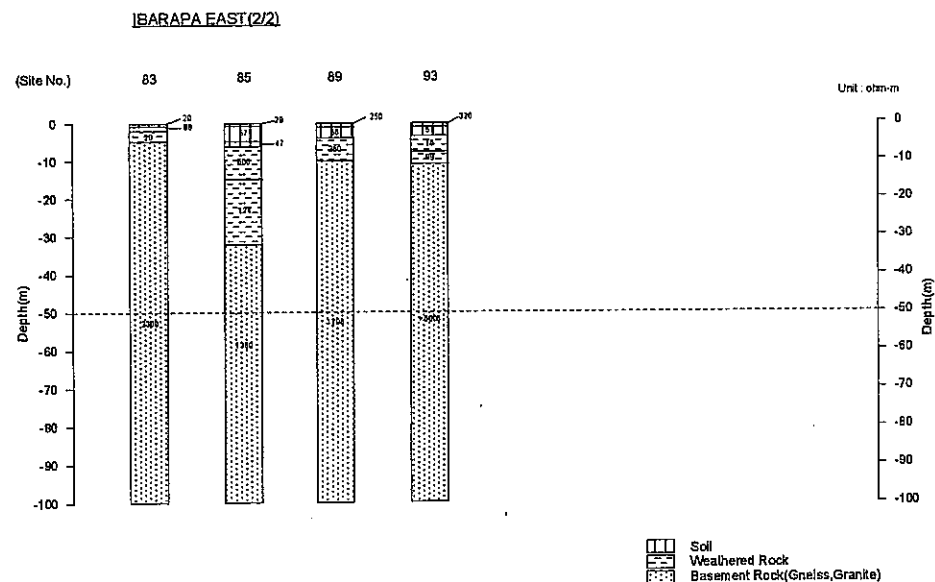
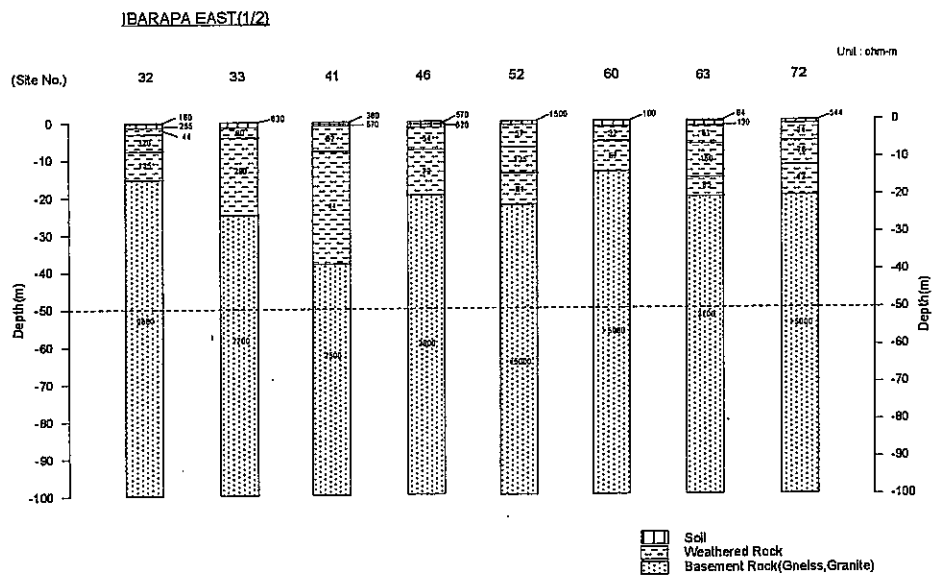
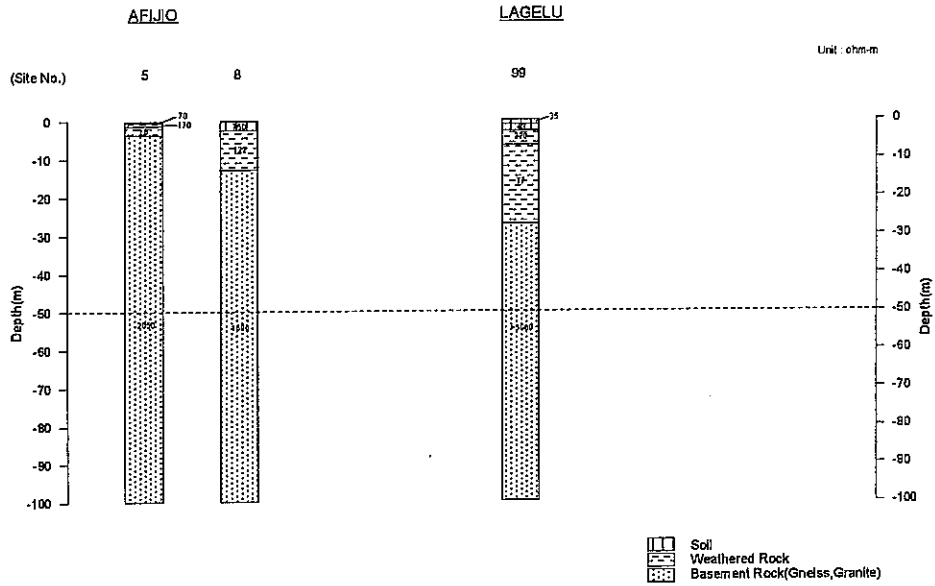
Table F-1 Community list of geophysical survey(1)

Priority	LGA	Community	Lat.	Lon.	Depth of Basement (m)	Potential of Ground Water		
						BD1	BD2	Evaluation
71	Ibarapa Central	Onigbio (Idere)	7 ° 29 45	3 ° 14 43	29	x		
72	Ibarapa East	Oke-Imale I(Lanlate)	7 ° 35 30	3 ° 27 00	27			
73	Surulere	Iwafin	8 ° 09 43	4 ° 23 55	24			
74	Orire	Kajola	8 ° 25 52	4 ° 16 03	26		-	
75	Orire	Ogbin	8 ° 28 47	4 ° 09 35	49		-	
76	Orire	Afekulu	8 ° 29 58	4 ° 12 29	14	x	x	x
77	Ibarapa North	Bello	7 ° 37 21	3 ° 07 55	26	x		
78	Ogo-Oluwa	Ayede	7 ° 58 55	4 ° 08 12	7	x	x	x
79	Ogo-Oluwa	Odo-Ifo	7 ° 59 02	4 ° 08 55	29			
80	Iseyin	Aba-Titun	7 ° 47 09	3 ° 40 08	27		-	
81	Ibarapa Central	Atokun	7 ° 27 33	3 ° 08 24	25			
82	Ibarapa Central	Elegun	7 ° 27 43	3 ° 07 42	23		x	x
83	Ibarapa East	Aborerin II	7 ° 38 21	3 ° 24 11	27	x		
84	Oyo East	Olufayo	7 ° 44 14	3 ° 59 00	25	x		
85	Ibarapa East	Abule-Oba	7 ° 30 17	3 ° 32 04	32		-	x
86	Ibarapa North	Idifa-Idere	7 ° 34 52	3 ° 07 09	37		Drilling	-
87	Ibarapa North	Idi-Ope	7 ° 46 18	3 ° 06 55	27			
88	Ibarapa North	Jagun-Olorunda	7 ° 38 38	3 ° 08 31	24	x		
89	Ibarapa East	Agbere	7 ° 30 23	3 ° 32 13	28	x	x	x
90	Orire	Iroogbadun	8 ° 27 19	4 ° 08 55	16		x	x
91	Orire	Ayepe Kangara	8 ° 24 09	4 ° 15 12	32		-	
92	Orire	Onira	8 ° 21 34	4 ° 14 27	35		-	
93	Ibarapa East	Opete	7 ° 27 44	3 ° 28 50	25	x		
94	Ibarapa North	Alasia	7 ° 37 23	3 ° 09 02	35		-	
95	Atiba	Osate	8 ° 08 45	3 ° 48 33	25	x		
96	Atiba	Idi-Emi	8 ° 07 54	3 ° 51 08	29		-	x
97	Atiba	Sangodare	8 ° 01 57	3 ° 55 43	25	x		
98	Ibarapa Central	Jagode	7 ° 23 23	3 ° 14 11	31		-	
99	Lagelu	Oteda	7 ° 31 58	4 ° 00 02	27		-	
100	Orire	Olokoto	8 ° 35 02	4 ° 17 53	25	x		
106	Iwajowa	Aba-Ibadan	7 ° 52 32	3 ° 05 50	22	-	x	x
110	Ibarapa Central	Koso (Idere)	7 ° 55 24	3 ° 40 34	26	-		
113	Ibarapa East	Anko	7 ° 38 18	3 ° 24 15	4	-	x	x
120	Ibarapa North	Gaa Saliu	7 ° 40 36	3 ° 11 04	26	-		
123	Ogo-Oluwa	Igbo-Ileoje	8 ° 03 30	4 ° 11 57	18	-	x	x
128	Surulere	Olowosoke	8 ° 28 27	4 ° 09 07	30	-		
130	Iwajowa	Idiko-Ago	7 ° 59 22	3 ° 03 59	9	-	x	x
133	Ibarapa East	Ayinde	7 ° 30 00	3 ° 28 29	26	-		
135	Ibarapa East	Olawore	7 ° 30 07	3 ° 29 29	28	-		
139	Ibarapa Central	Alaraba	7 ° 28 14	3 ° 09 39	26	-		
146	Ibarapa North	Alagbaa	7 ° 35 05	3 ° 07 12	27	-		
151	Ibarapa Central	Sangote	7 ° 31 30	3 ° 10 24	24	-		
154	Ibarapa Central	Tuture	7 ° 31 30	3 ° 10 24	25	-		
156	Ibarapa North	Araromi Alagba	7 ° 32 22	3 ° 07 36	8	-	x	x
166	Ibarapa North	Temidire Alalade	7 ° 34 36	3 ° 06 44	12	-	x	x
171	Iseyin	Idi-Ori	7 ° 45 47	3 ° 17 41	31	-		
179	Orire	Egbejoda	8 ° 12 30	4 ° 08 14	26	-		
					total	100	76	117

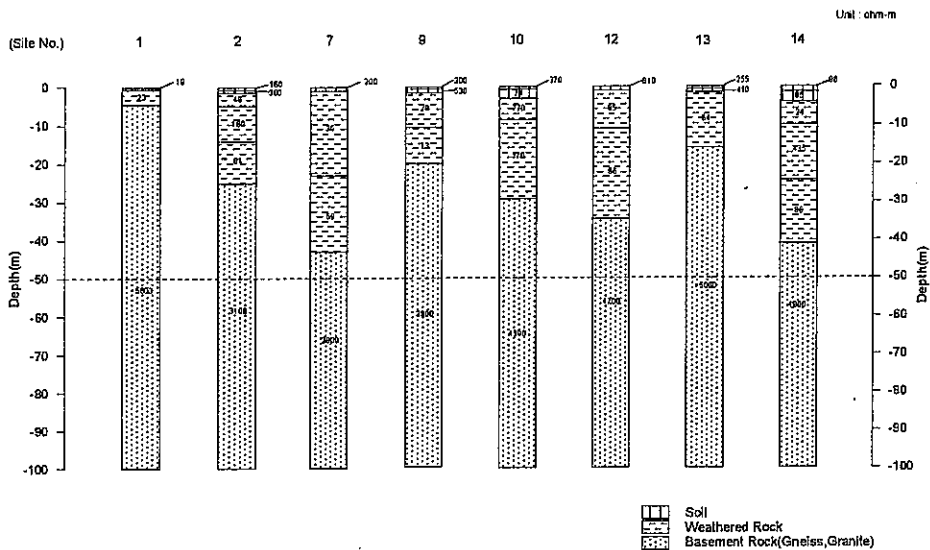
Table F-2 Nos. of high potential communities of ground waterin LGA

S/N	LGA	Evaluation		Drilling	Total
			x		
1	<i>Akinyele</i>	0	0		0
2	<i>Afijio</i>	1	1		2
3	<i>Ibarapa East</i>	11	4		15
4	<i>Ibarapa North</i>	21	10	3	34
5	<i>Ibarapa Central</i>	10	1		11
6	<i>Orire</i>	21	7	3	31
7	<i>Oorelope</i>	0	0		0
8	<i>Iseyin</i>	5	0		5
9	<i>Itesiwaju</i>	0	0		0
10	<i>Lagelu</i>	1	0		1
11	<i>Ogo-Oluwa</i>	1	4		5
12	<i>Atiba</i>	3	1		4
13	<i>Oyo West</i>	1	1		2
14	<i>Oyo East</i>	1	0		1
15	<i>Surulere</i>	4	0		4
16	<i>Iwajowa</i>	0	2		2
		80	31	6	117

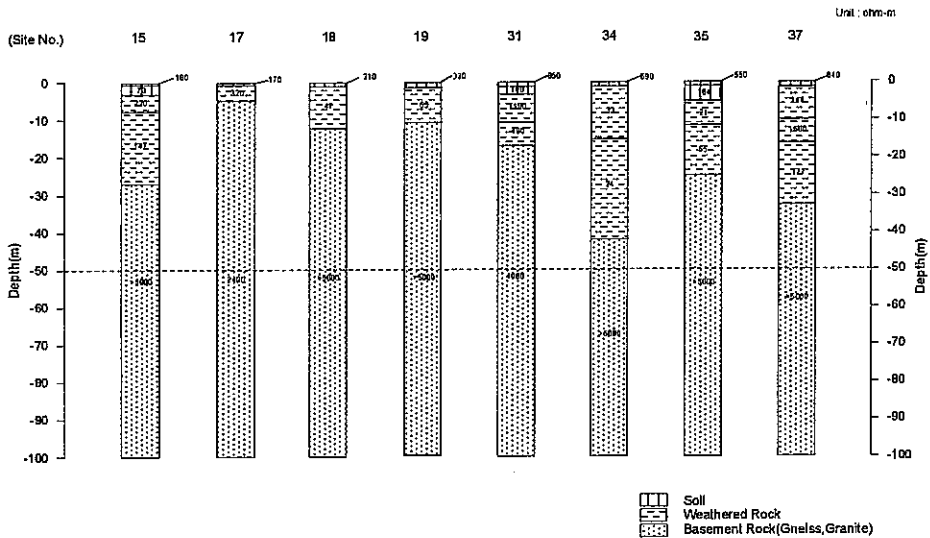
: High
x : Low



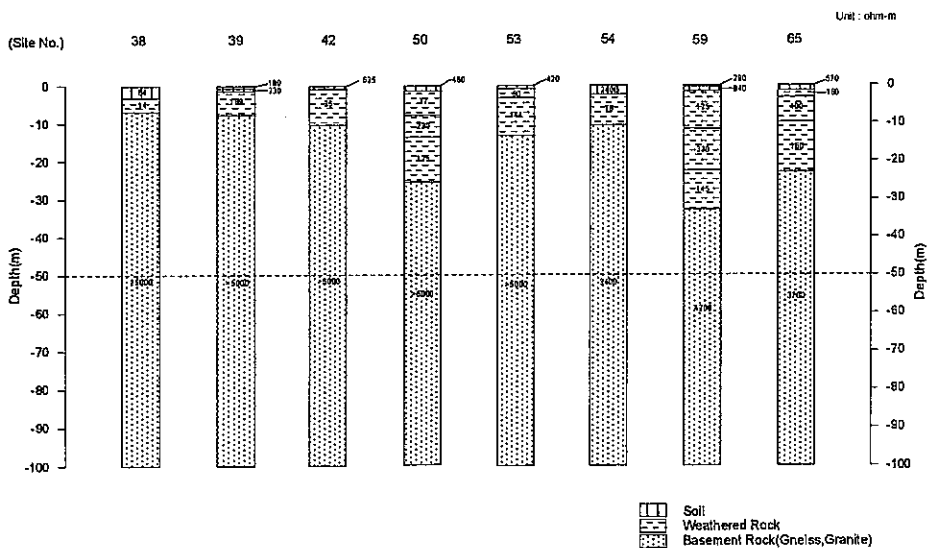
IBARAPA NORTH(1/4)



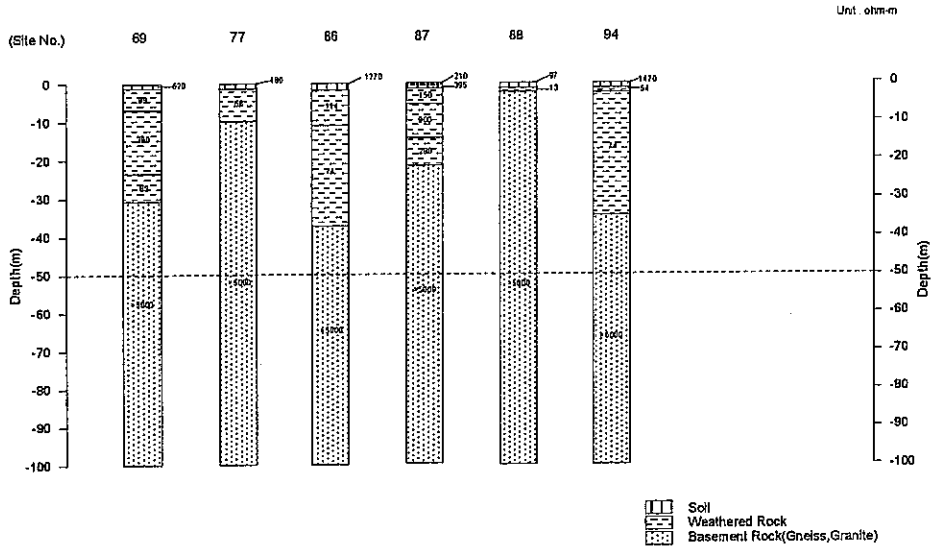
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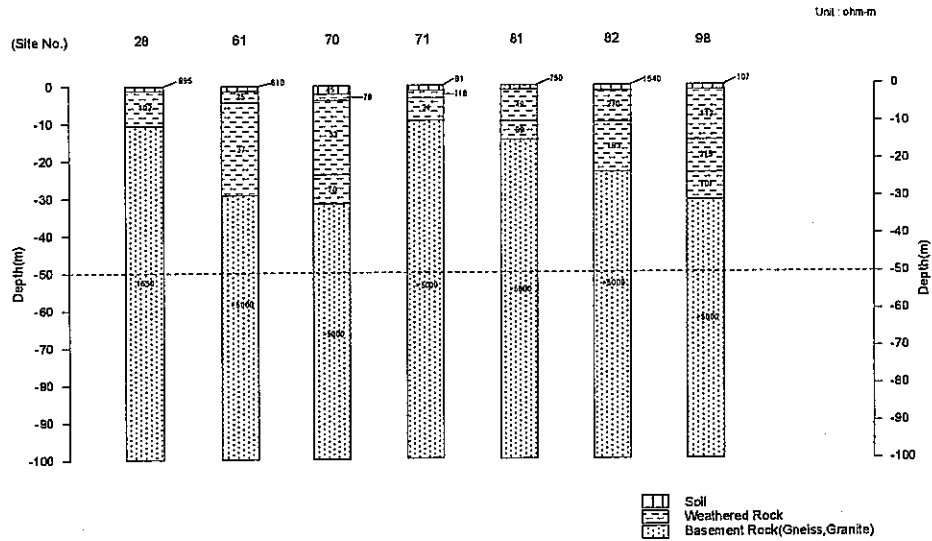
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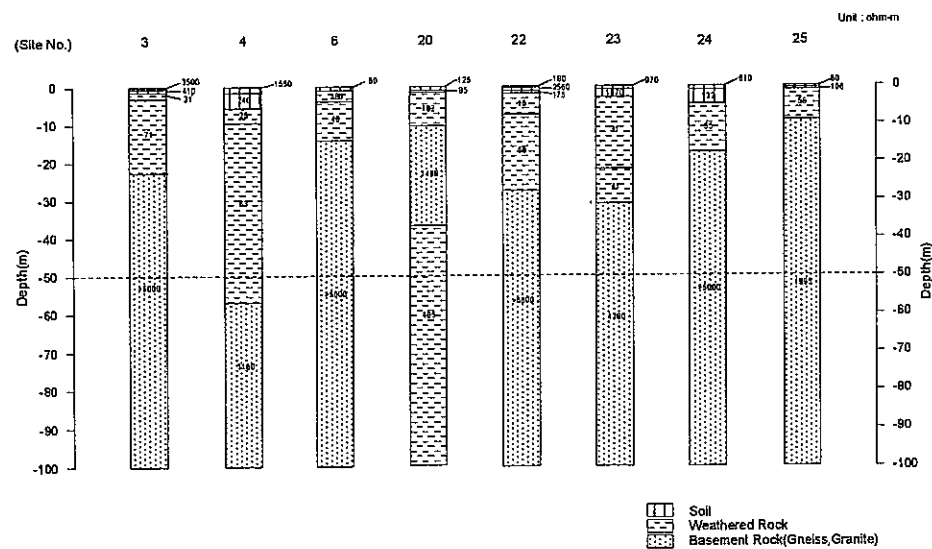
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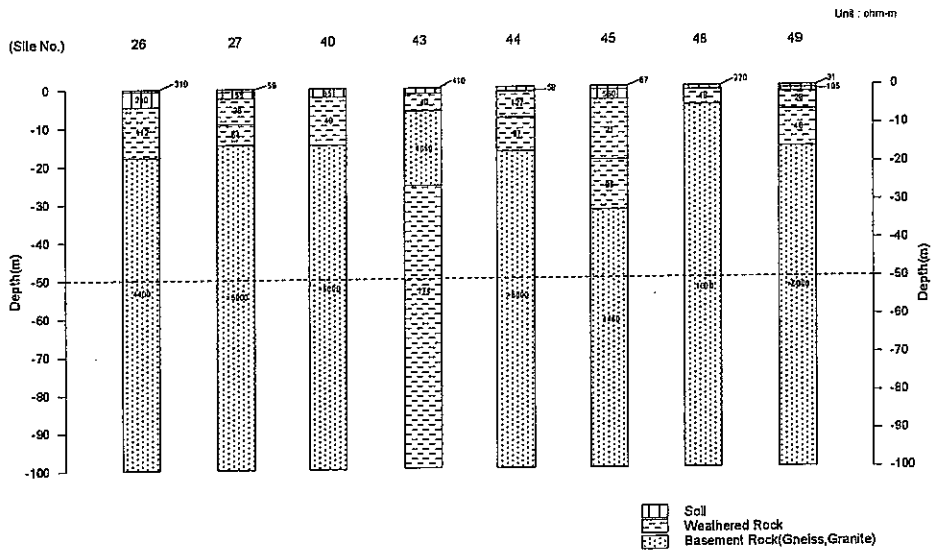
IBARAPA CENTRAL



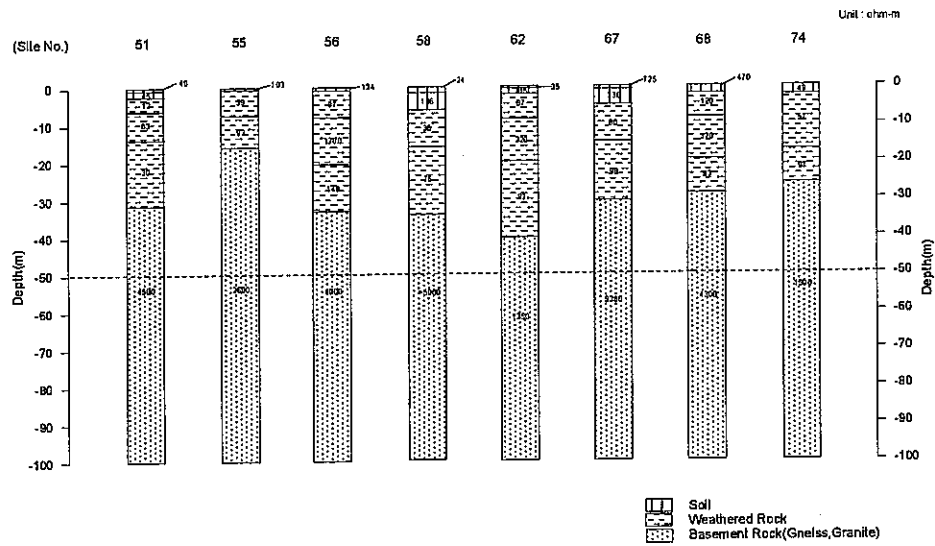
ORIRE(1/4)



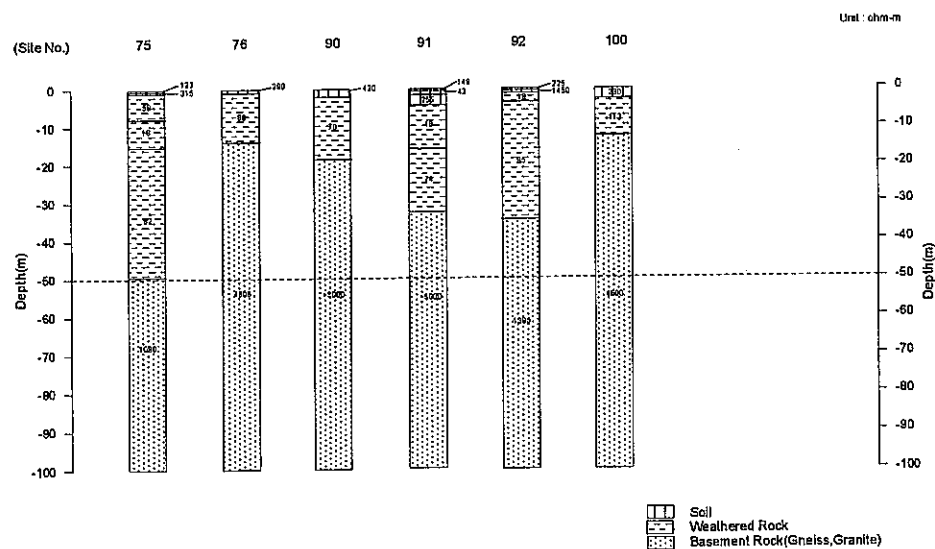
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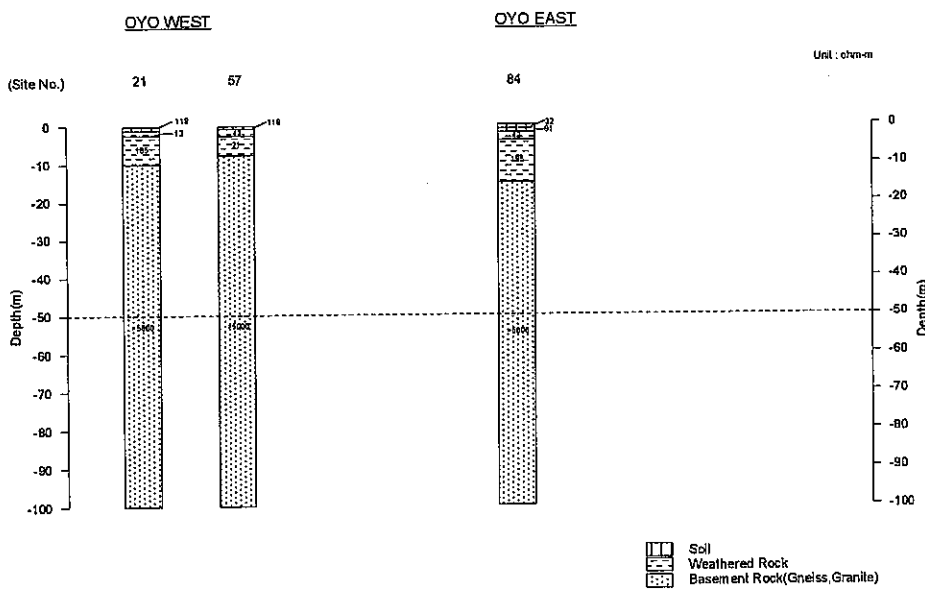
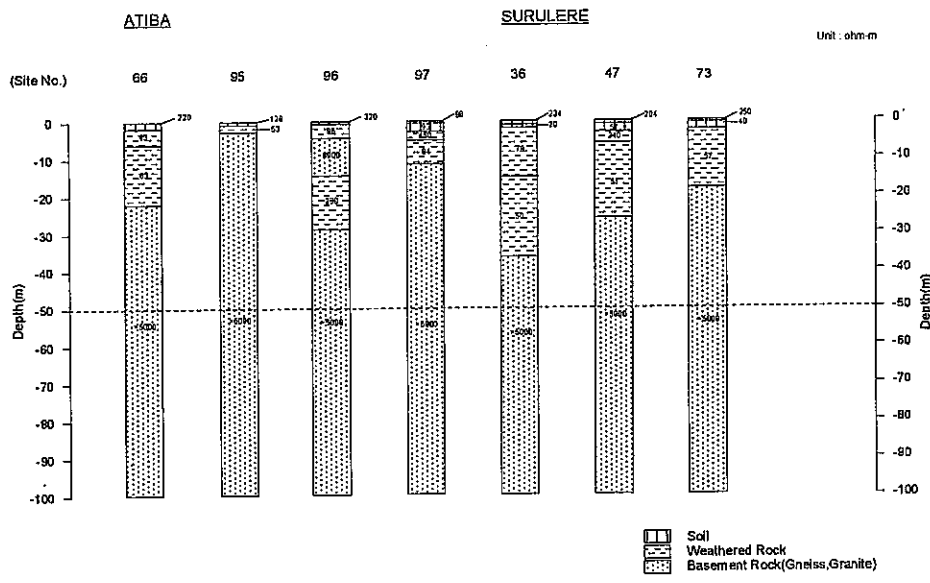
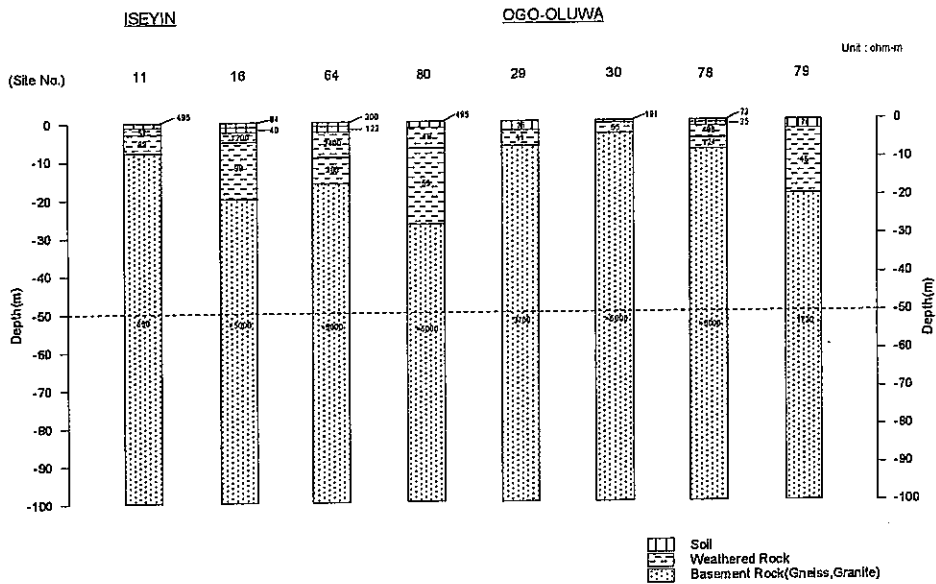


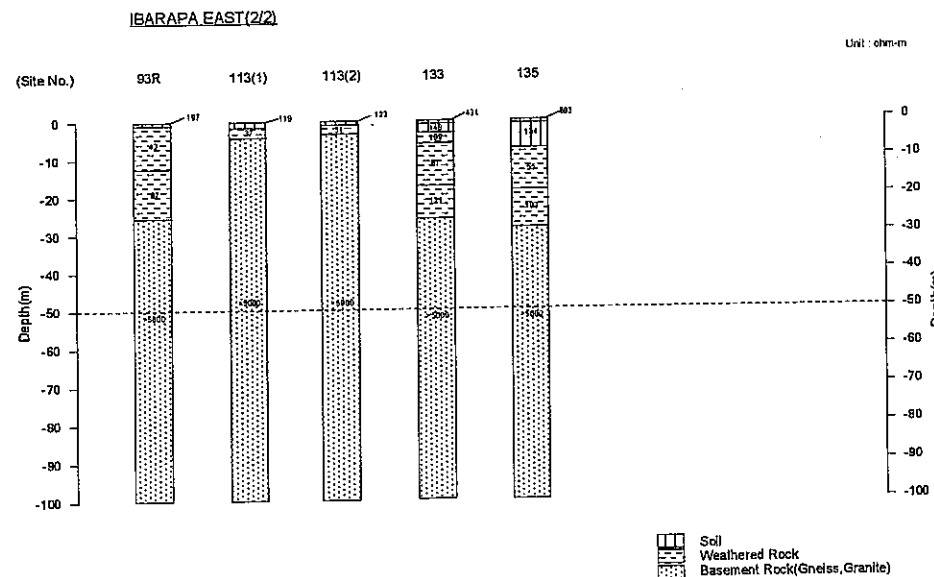
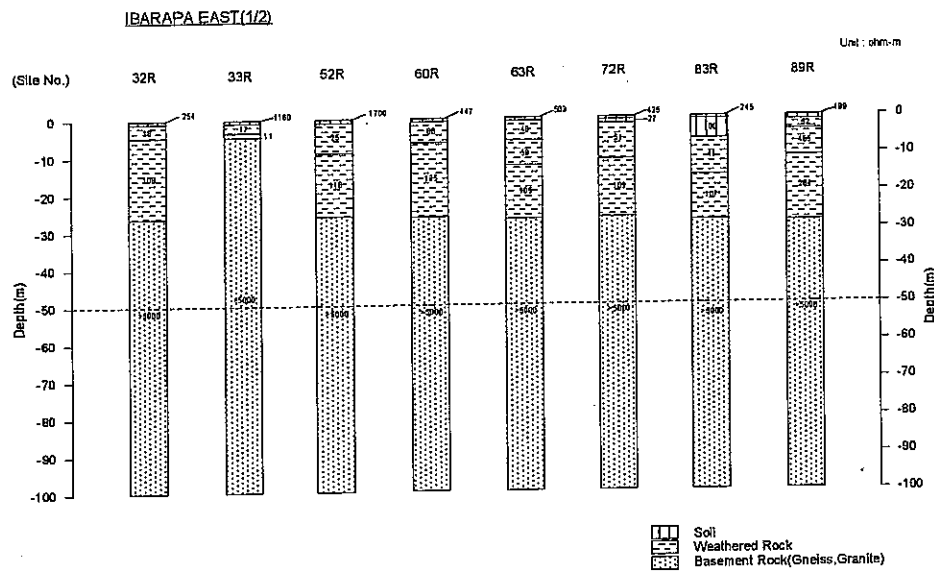
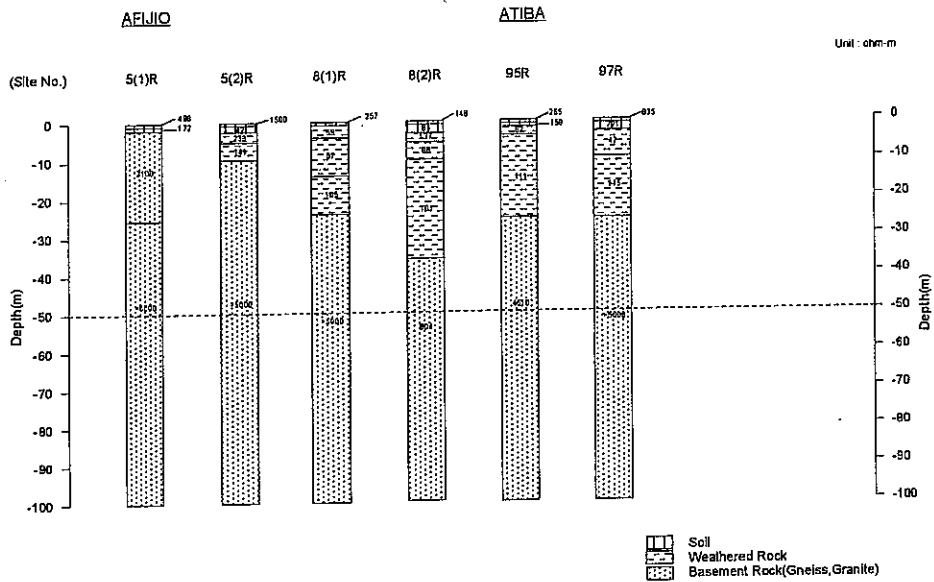
ORIRE(3/4)



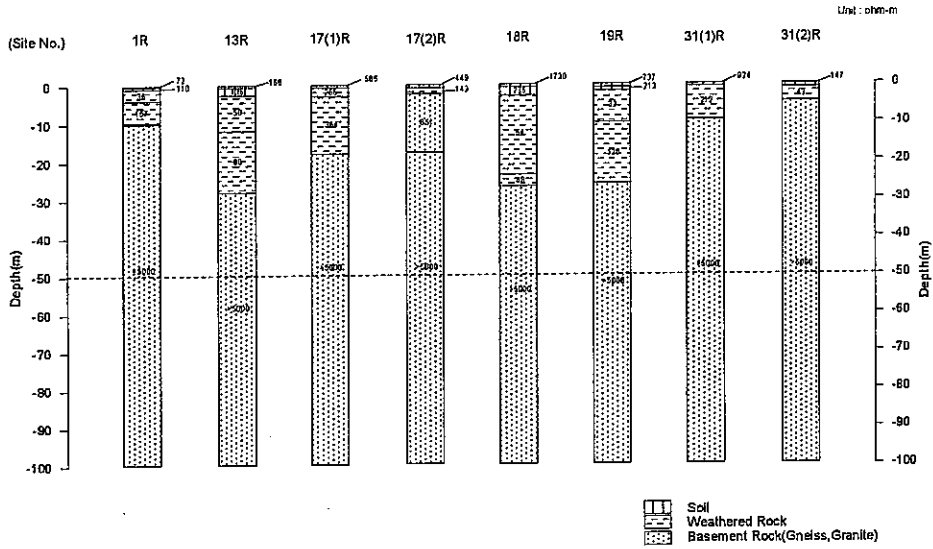
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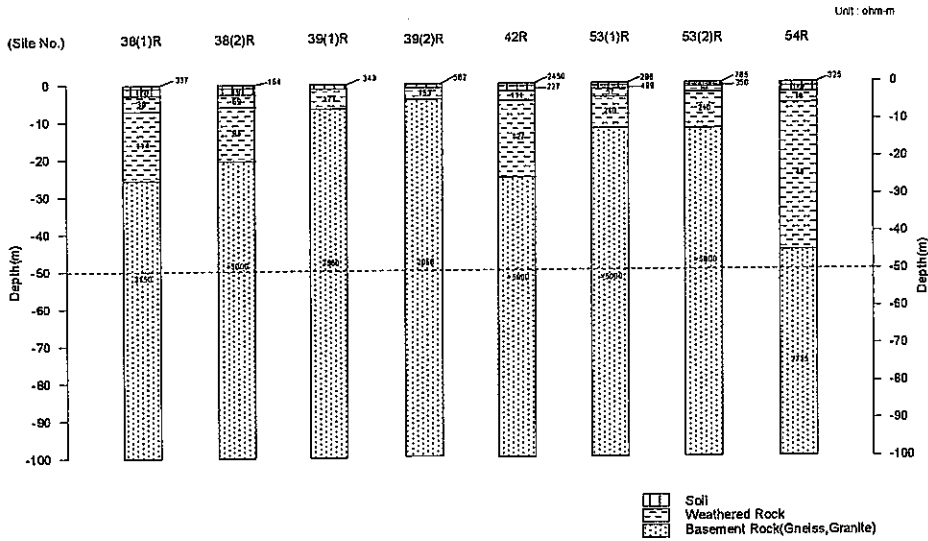




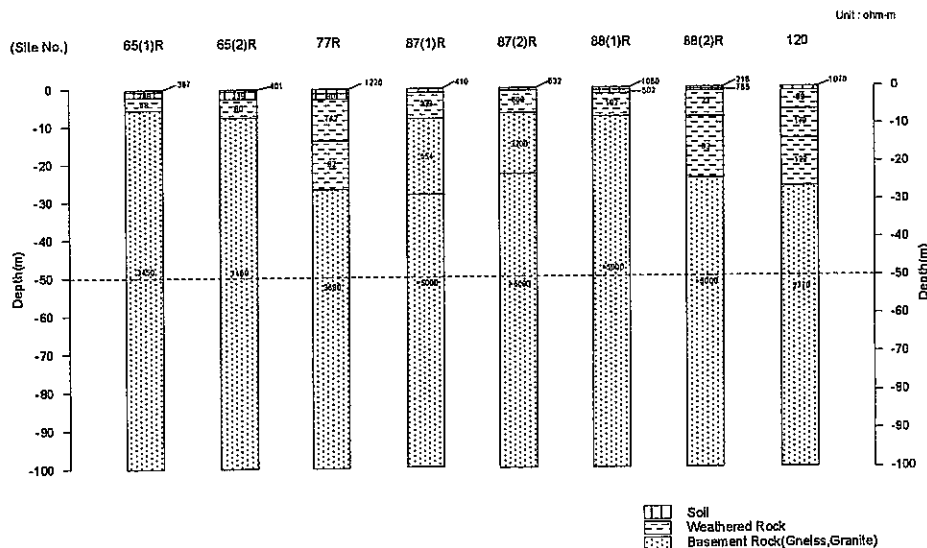
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IBARAPA NORTH(2/4)

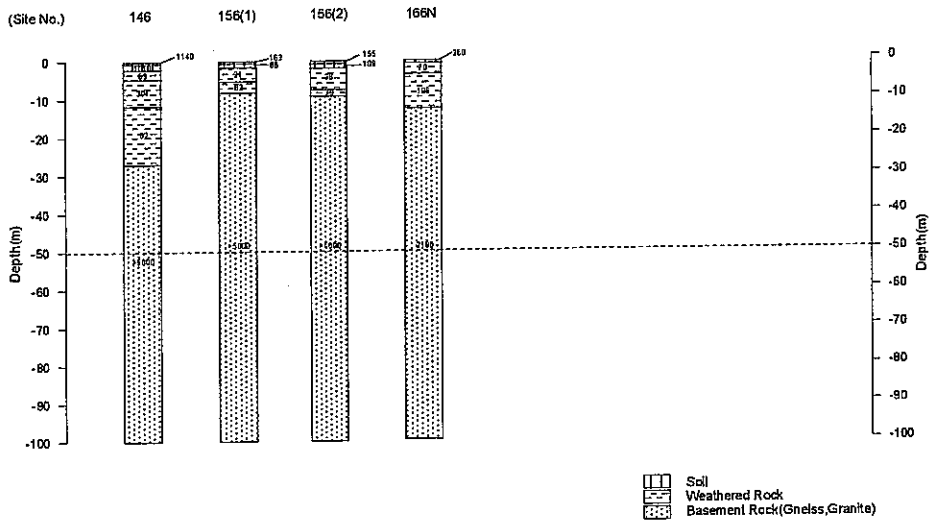


IBARAPA NORTH(3/4)



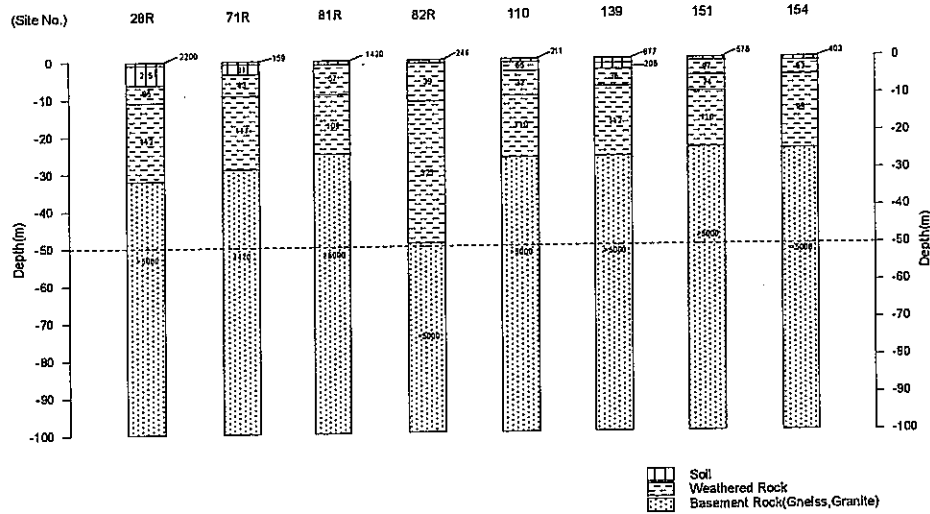
IBARAPA NORTH(4/4)

Unit : ohm-m



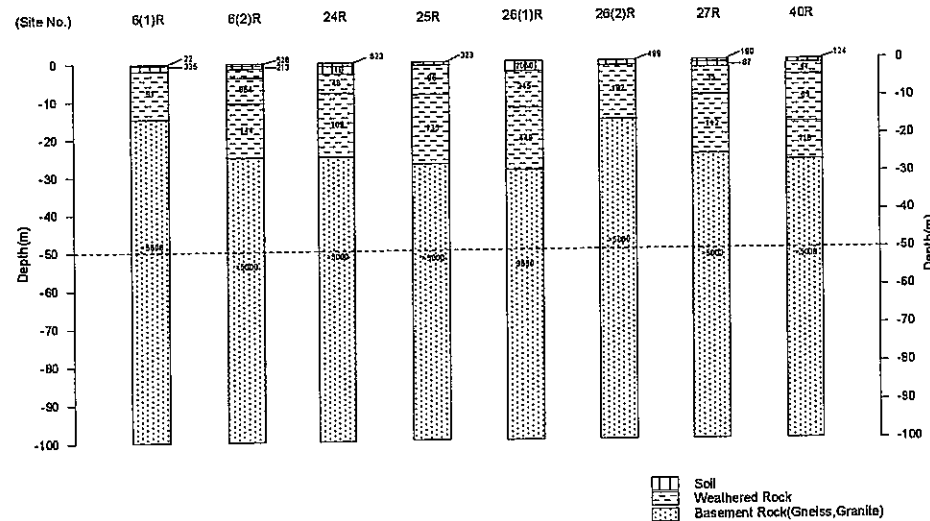
IBARAPA CENTRAL(1/1)

Unit : ohm-m

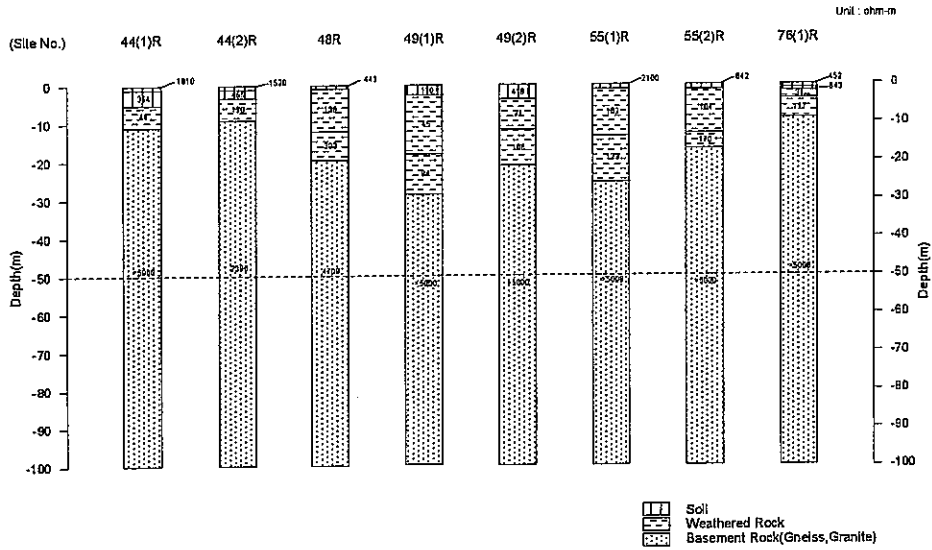


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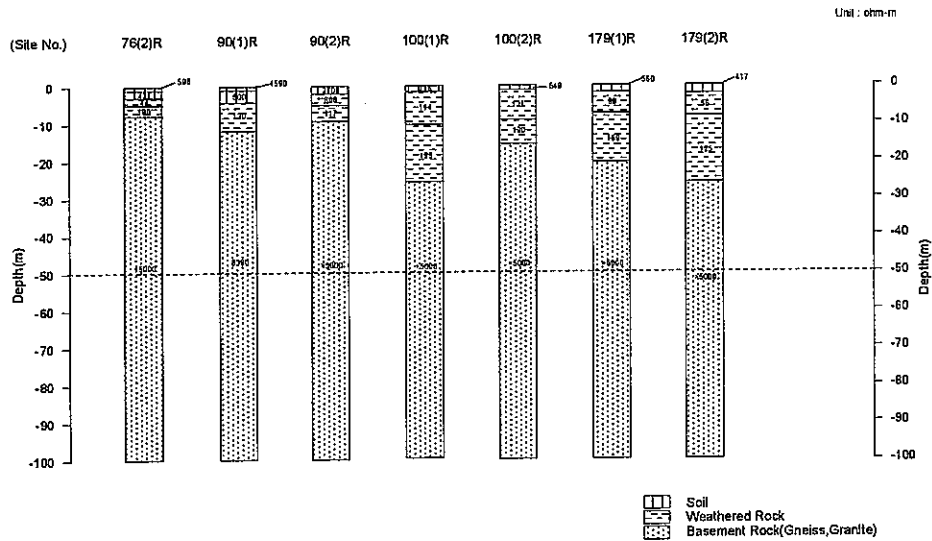
Unit : ohm-m



ORIRE(2/3)



ORIRE(3/3)



OGO OLUWA(1/1)

