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No. 4

REPUBLIC OF THE PHILIPPINES

METROPOLITAN WATERWORKS AND SEWERAGE SYSTEM

STUDY FOR THE GROUNDWATER DEVELOPMENT IN METRO MANILA

VOLUME 4

DATA REPORT

JUNE 1992

JAPAN INTERNATIONAL COOPERATION AGENCY

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DATA REPORT

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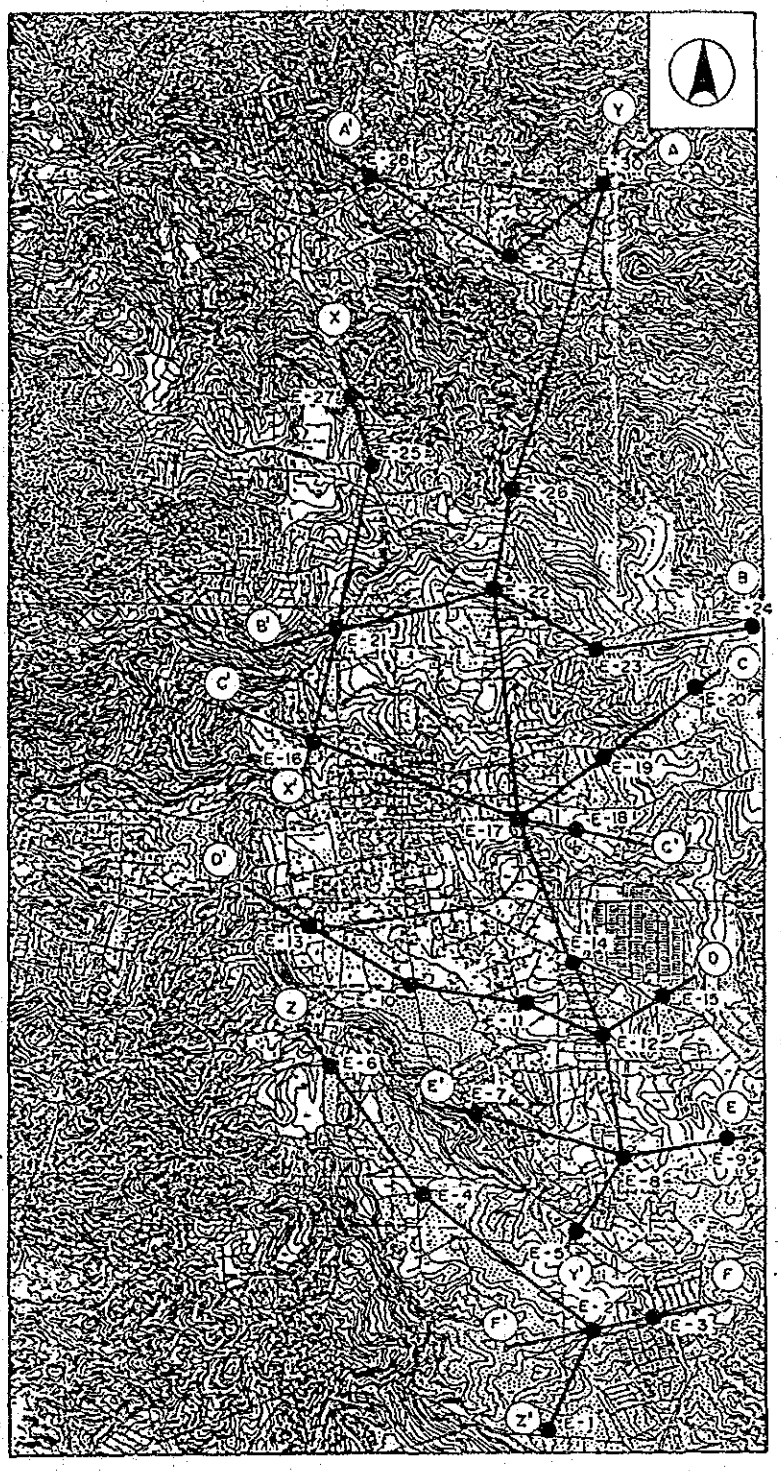
CHAPTER 1

ELECTRIC RESISTIVITY SURVEY

1.1

TABLES OF

RESISTIVITY MEASUREMENT



STUDY FOR THE GROUNDWATER DEVELOPMENT IN METRO MANILA	Figure MEASURING POINT & CROSS-SECTION LINE MEASURING POINTS (E-1 ~ E-30) CROSS-SECTION LINES (A-A' ~ Z-Z')
JAPAN INTERNATIONAL COOPERATION AGENCY	

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-1 Date : Oct. 19, 90 Operated by : K.TAKAYANAGI

Geologic formation : Surface Condition : Weather : Fine

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	58.3	19.9		18.3	
2	12.6	21.3	19.9		13.4	
4	25.1	12.2	19.9		15.3	
6	37.7	8.91	19.9		16.8	
8	50.3	6.91	19.9		17.4	
10	62.8	5.39	19.9		16.9	
12	75.4	11.6	49.9		17.6	
14	88	9.60	49.9		16.9	
16	100.5	8.98	49.9		18.0	
18	113.1	8.12	49.9		18.3	
20	125.7	7.42	49.9		18.6	
22	138.2	6.89	49.9		18.9	
24	150.8	6.40	49.9		19.3	
26	163.4	5.89	49.9		19.1	
28	175.9	5.56	49.9		19.5	
30	188.5	5.08	49.9		19.0	
32	201	4.72	49.9		18.9	
34	214	4.30	49.9		18.4	
36	226	6.37	99.8		14.2	
40	251	7.33	99.8		18.3	
44	276	6.33	99.8		17.4	
48	302	5.29	99.8		15.7	
52	327	4.87	99.8		15.7	
56	352	4.66	99.8		16.2	
60	377	4.45	99.8		16.6	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	4.25	99.8		16.9	
68	427	8.35	199		17.5	
72	452	8.09	199		18.1	
76	478	8.14	199		19.1	
80	503	7.48	199		18.6	
84	528	7.13	199		18.5	
88	553	7.54	199		20.5	
92	578	7.44	199		21.4	
96	603	7.20	199		21.7	
100	628	7.17	199		22.0	
110	691	7.16	199		24.2	
120	754	6.95	199		25.6	
130	817	7.28	199		29.4	
140	880	7.20	199		31.7	
150	943	7.19	199		33.9	
160	1005	6.58	199		32.2	
170	1068	6.42	199		34.2	
180	1131	8.41	199		47.5	
190	1194	7.12	199		41.8	
200	1257	7.08	199		44.0	
220	1382	6.75	199		45.6	
240	1508	7.24	199		54.3	
260	1634	7.24	199		58.8	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-2 Date : Oct. 23, 90 Operated by : K.TAKAYANAGI

Geologic formation : Surface Condition : Weather : Fine, rain later

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	363	19.9		114.1	
2	12.6	160	19.9		100.8	
4	25.1	95.8	19.9		120.4	
6	37.7	58.5	19.9		110.4	
8	50.3	34.5	19.9		87.0	
10	62.8	23.4	19.9		73.6	
12	75.4	17.3	19.9		65.2	
14	88	13.0	19.9		57.4	
16	100.5	10.1	19.9		51.2	
18	113.1	21.5	49.9		48.6	
20	125.7	15.6	49.9		39.2	
22	138.2	14.6	49.9		40.6	
24	150.8	13.0	49.9		39.5	
26	163.4	10.8	49.9		35.5	
28	175.9	10.5	49.9		36.9	
30	188.5	9.0	49.9		33.9	
32	201	9.06	49.9		36.4	
34	214	8.07	49.9		34.5	
36	226	7.80	49.9		35.3	
40	251	7.41	49.9		37.1	
44	276	7.20	49.9		39.7	
48	302	7.48	49.9		45.0	
52	327	6.44	49.9		42.2	
56	352	6.40	49.9		45.1	
60	377	6.25	49.9		47.1	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	5.93	49.9		47.4	
68	427	5.11	49.9		43.6	
72	452	4.61	49.9		41.6	
76	478	4.50	49.9		43.0	
80	503	9.09	49.9		45.8	
84	528	9.46	99.8		49.6	
88	553	11.3	99.8		62.5	
92	578	8.78	99.8		50.9	
96	603	9.21	99.8		55.5	
100	628	7.97	99.8		49.6	
110	691	7.63	99.7		52.5	
120	754	7.75	99.7		58.1	
130	817	8.08	99.8		66.2	
140	880	8.18	99.8		72.2	
150	943	8.50	99.7		80.2	
160	1005	9.25	99.8		92.5	
170	1068	8.58	99.7		90.8	
180	1131	8.33	99.8		93.9	
190	1194	7.25	99.7		86.0	
200	1257	6.37	99.7		79.2	
220	1382	6.33	99.7		87.1	
240	1508					
260	1634					
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-3 Date : Oct. 03, 90 Operated by : K.TAKAYANAGI

Geologic formation : Surface Condition : Weather : Fine

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	28.0	9.99		17.6	
2	12.6	11.5	9.99		14.5	
4	25.1	7.03	9.99		17.6	
6	37.7	4.45	9.99		16.8	
8	50.3	2.83	9.99		14.2	
10	62.8	2.22	9.90		13.9	
12	75.4	3.29	19.9		12.4	
14	88	3.27	19.9		14.3	
16	100.5	2.82	19.9		14.2	
18	113.1	1.69	9.98		19.1	
20	125.7	2.50	19.9		15.7	
22	138.2	2.66	19.9		18.4	
24	150.8	2.70	19.9		20.4	
26	163.4	2.64	19.9		21.6	
28	175.9	2.64	19.9		23.2	
30	188.5	2.60	19.9		24.5	
32	201	2.58	19.9		25.9	
34	214	2.60	19.9		27.8	
36	226	2.60	19.9		29.4	
40	251	2.62	19.9		32.9	
44	276	2.42	19.9		33.4	
48	302	2.20	19.9		33.2	
52	327	4.78	49.9		31.1	
56	352	4.54	49.9		31.7	
60	377	4.51	49.9		33.9	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	4.53	49.9		36.2	
68	427	4.19	49.9		35.4	
72	452	4.16	49.9		37.5	
76	478	8.39	49.9		80.3	
80	503	32.2	49.9		324.9	
84	528	4.33	49.9		45.4	
88	553	4.05	49.9		44.8	
92	578	3.38	49.9		38.7	
96	603	4.01	49.9		48.2	
100	628	4.09	49.9		51.5	
110	691	4.26	49.9		58.7	
120	754	3.56	49.9		53.5	
130	817	3.14	49.9		50.7	
140	880	3.82	49.9		66.9	
150	943	3.94	49.9		73.6	
160	1005	4.27	49.9		85.4	
170	1068	3.72	49.9		79.0	
180	1131	3.30	49.9		74.6	
190	1194	2.90	49.9		69.3	
200	1257	2.75	49.9		69.1	
220	1382	2.58	49.9		70.5	
240	1508					
260	1634					
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-4 Date : Oct. 13, 90 Operated by : K. TAKAYANAGI

Geologic formation : Surface Condition : Weather : Fine

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	314	19.9		98.8	
2	12.6	192	19.9		120.8	
4	25.1	85.6	19.9		107.6	
6	37.7	49.2	19.9		93.0	
8	50.3	26.9	19.9		68.1	
10	62.8	17.3	19.9		54.6	
12	75.4	13.3	19.9		50.4	
14	88	10.9	19.9		48.3	
16	100.5	9.41	19.9		47.3	
18	113.1	8.00	19.9		45.4	
20	125.7	7.12	19.9		44.7	
22	138.2	6.41	19.9		44.2	
24	150.8	5.76	19.9		43.4	
26	163.4	5.12	19.9		41.8	
28	175.9	17.7	19.9		156.0	
30	188.5	4.46	19.9		42.0	
32	201	14.6	19.9		147.1	
34	214	3.56	19.9		38.1	
36	226	8.39	49.9		38.0	
40	251	7.40	49.9		37.1	
44	276	6.76	49.9		37.3	
48	302	6.56	49.9		39.6	
52	327	7.38	49.9		48.1	
56	352	7.02	49.9		49.3	
60	377	6.85	49.9		51.6	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	6.11	49.9		49.0	
68	427	5.13	49.9		43.6	
72	452	4.47	49.9		40.2	
76	478	8.00	99.7		38.2	
80	503	7.33	99.7		36.7	
84	528	6.51	99.7		34.3	
88	553	5.69	99.7		31.5	
92	578	5.22	99.7		30.1	
96	603	4.82	99.7		28.9	
100	628	4.67	99.7		28.9	
110	691	4.37	99.7		29.7	
120	754	3.94	99.7		29.4	
130	817	7.81	199		31.9	
140	880	7.50	199		32.6	
150	943	6.87	199		32.1	
160	1005	6.11	199		30.2	
170	1068	5.96	199		31.0	
180	1131	5.62	199		31.7	
190	1194	5.74	199		33.4	
200	1257	5.48	199		33.9	
220	1382	5.08	199		34.6	
240	1508	4.89	199		37.1	
260	1634	5.02	199		40.9	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-5 Date : Oct. 04, 90 Operated by : K. TAKAYANAGI

Geologic formation : Surface Condition : Weather : Fine

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	93.6	10.0		58.8	
2	12.6	50.8	10.0		63.9	
4	25.1	27.6	9.99		69.5	
6	37.7	20.2	9.99		76.5	
8	50.3	16.1	9.99		81.2	
10	62.8	12.6	9.99		79.7	
12	75.4	10.7	9.99		81.3	
14	88	9.08	9.99		80.0	
16	100.5	7.96	9.99		80.0	
18	113.1	6.82	9.99		77.1	
20	125.7	5.96	9.99		74.9	
22	138.2	5.33	9.99		73.8	
24	150.8	4.80	9.99		72.5	
26	163.4	4.26	9.98		69.6	
28	175.9	4.00	9.99		70.5	
30	188.5	3.95	9.99		74.5	
32	201	3.23	9.99		64.9	
34	214	3.00	9.99		64.2	
36	226	3.01	9.99		68.0	
40	251	3.91	9.98		98.1	
44	276	2.32	9.98		64.0	
48	302	1.93	9.98		58.3	
52	327	1.71	9.98		55.9	
56	352	1.49	9.98		52.4	
60	377	1.52	9.98		57.3	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	1.30	9.98		60.3	
68	427	1.42	9.98		60.6	
72	452	1.32	9.98		59.7	
76	478	1.41	9.98		67.4	
80	503	1.28	9.98		64.4	
84	528	1.24	9.98		65.5	
88	553	1.19	9.98		66.4	
92	578	1.13	9.98		65.3	
96	603					
100	628	1.16	9.98		72.8	
110	691	1.14	9.98		78.8	
120	754	1.03	9.98		77.7	
130	817	1.96	19.9		80.1	
140	880	2.06	19.9		90.6	
150	943	2.01	19.9		95.2	
160	1005	2.45	19.9		123.6	
170	1068	1.57	19.9		83.3	
180	1131	1.42	19.9		80.3	
190	1194	1.33	19.9		78.8	
200	1257	1.29	19.9		80.4	
220	1382	1.14	19.9		78.8	
240	1508	1.17	19.9		87.5	
260	1634	1.21	19.9		99.7	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-6 Date : Oct. 18, 90 Operated by : K. TAKAYANAGI

Geologic formation : Surface Condition : Weather : Rain, fine later

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	74.9	10.0		47.1	
2	12.6	54.7	9.99		68.8	
4	25.1	27.5	9.99		69.2	
6	37.7	13.6	9.99		51.6	
8	50.3	7.45	9.99		37.5	
10	62.8	3.55	9.99		22.3	
12	75.4	2.33	9.99		17.6	
14	88	15.5	9.99		137.1	
16	100.5	1.50	9.98		15.1	
18	113.1	2.68	19.9		15.2	
20	125.7	2.33	19.9		14.6	
22	138.2	2.16	19.9		14.9	
24	150.8	2.02	19.9		15.2	
26	163.4	1.91	19.9		15.5	
28	175.9	4.46	19.9		15.7	
30	188.5	4.27	49.9		16.0	
32	201	4.08	49.9		16.3	
34	214	3.91	49.9		16.7	
36	226	3.79	49.9		17.0	
40	251	3.62	49.9		18.1	
44	276	3.67	49.9		20.1	
48	302	3.61	49.9		21.7	
52	327	3.27	49.9		21.3	
56	352	3.16	49.9		22.2	
60	377	2.97	49.9		22.2	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	2.72	49.9		21.7	
68	427	2.45	49.9		20.9	
72	452	1.99	49.9		17.6	
76	478	4.16	99.8		19.6	
80	503	4.04	99.7		20.1	
84	528	3.84	99.7		20.1	
88	553	7.92	199		21.6	
92	578	7.73	199		22.0	
96	603	7.41	199		22.3	
100	628	7.19	199		22.7	
110	691	5.86	199		20.0	
120	754	5.77	199		21.1	
130	817	4.64	199		18.8	
140	880	4.99	199		22.0	
150	943	5.00	199		23.6	
160	1005	4.82	199		24.1	
170	1068	4.79	199		25.6	
180	1131	4.75	199		26.0	
190	1194	4.45	199		26.3	
200	1257	4.95	199		30.2	
220	1382	4.56	199		30.4	
240	1508	4.54	199		33.2	
260	1634	4.79	199		39.2	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-7 Date : Oct. 04, 90 Operated by : K. TAKAYANAGI

Geologic formation : Surface Condition : Weather : Fine

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	130	9.99		81.8	
2	12.6	98.5	9.99		123.9	
4	25.1	60.6	9.99		152.2	
6	37.7	38.9	9.99		222.4	
8	50.3	24.6	9.99		124.1	
10	62.8	18.0	9.99		113.4	
12	75.4	13.6	9.98		102.7	
14	88	10.9	9.99		96.1	
16	100.5	9.67	9.98		97.4	
18	113.1	7.75	9.99		87.8	
20	125.7	6.53	9.98		82.1	
22	138.2	5.34	9.98		78.9	
24	150.8	4.40	9.98		66.4	
26	163.4	3.66	9.98		59.8	
28	175.9	3.27	9.98		57.5	
30	188.5	2.94	9.98		55.4	
32	201	2.50	9.98		50.3	
34	214	2.29	9.98		49.0	
36	226	2.04	9.98		46.1	
40	251	1.69	9.98		42.4	
44	276	1.41	9.98		38.9	
48	302	1.32	9.98		39.9	
52	327	1.12	9.98		36.6	
56	352	0.99	9.98		34.5	
60	377	1.02	9.98		38.5	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	0.95	9.98		38.2	
68	427	1.85	19.9		39.3	
72	452	1.78	19.9		40.2	
76	478	1.72	19.9		41.1	
80	503	1.77	19.9		44.3	
84	528	1.89	19.9		49.6	
88	553	1.56	19.9		43.1	
92	578	1.40	19.9		42.2	
96	603	1.34	19.9		42.1	
100	628	1.37	19.9		42.7	
110	691	1.24	19.9		42.8	
120	754	1.22	19.9		46.0	
130	817	1.04	19.9		42.5	
140	880	1.09	19.9		47.5	
150	943	0.89	19.9		41.5	
160	1005	1.04	19.9		52.3	
170	1068	0.96	19.9		51.3	
180	1131	1.01	19.9		56.6	
190	1194	1.49	19.9		88.4	
200	1257	2.52	19.9		158.4	
220	1382	0.83	19.9		56.7	
240	1508	0.66	19.9		49.8	
260	1634	0.74	19.9		60.5	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-8 Date : Oct. 19, 90 Operated by : K. TAKAYANAGI

Geologic formation : Surface Condition : Weather : Fine

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	132	19.9		41.8	
2	12.6	42.2	19.9		26.5	
4	25.1	23.6	19.9		29.6	
6	37.7	15.7	19.9		29.7	
8	50.3	11.7	19.9		29.5	
10	62.8	10.5	19.9		33.3	
12	75.4	0.95	19.9		33.8	
14	88	20.6	49.9		36.3	
16	100.5	18.4	49.9		37.1	
18	113.1	16.8	49.9		38.2	
20	125.7	15.0	49.9		37.7	
22	138.2	13.9	49.9		38.4	
24	150.8	12.7	49.9		38.5	
26	163.4	12.1	49.9		39.7	
28	175.9	10.7	49.9		37.6	
30	188.5	20.1	99.7		38.1	
32	201	18.6	99.7		37.4	
34	214	17.2	99.7		36.8	
36	226	15.9	99.7		35.9	
40	251	15.1	99.7		38.2	
44	276	14.7	99.7		40.6	
48	302	13.5	99.7		40.8	
52	327	16.2	99.7		53.0	
56	352	12.7	99.7		44.7	
60	377	11.1	99.7		42.2	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	13.1	99.7		53.1	
68	427	13.3	99.7		57.2	
72	452	11.6	99.7		52.9	
76	478	10.5	99.7		50.7	
80	503	11.1	99.7		55.8	
84	528	11.2	99.7		59.1	
88	553	11.0	99.7		60.8	
92	578	10.1	99.7		59.0	
96	603	9.92	99.7		59.7	
100	628	8.07	99.7		50.2	
110	691	5.70	99.7		39.4	
120	754	4.87	99.7		36.2	
130	817	4.44	99.7		35.9	
140	880	4.66	99.7		40.5	
150	943	4.83	99.7		45.3	
160	1005	7.29	99.7		73.4	
170	1068	4.78	99.7		50.2	
180	1131	4.04	99.7		45.2	
190	1194	4.16	99.7		49.0	
200	1257	3.53	99.7		44.0	
220	1382	6.72	199		45.6	
240	1508	6.60	199		49.8	
260	1634	6.90	199		55.6	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-9 Date : Oct. 17, 90 Operated by : K. TAKAYANAGI

Geologic formation : Surface Condition : Weather : Cloudy

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	108	19.9		34.1	
2	12.6	48.5	19.9		30.5	
4	25.1	21.7	19.9		27.3	
6	37.7	15.1	19.9		28.5	
8	50.3	13.1	19.9		33.2	
10	62.8	11.9	19.9		37.4	
12	75.4	10.0	19.9		37.7	
14	88	8.87	19.9		39.0	
16	100.5	7.83	19.9		39.4	
18	113.1	7.00	19.9		39.6	
20	125.7	16.0	49.9		40.3	
22	138.2	15.2	49.9		42.0	
24	150.8	13.3	49.9		40.1	
26	163.4	24.6	99.8		40.2	
28	175.9	22.9	99.8		40.5	
30	188.5	21.8	99.8		41.3	
32	201	20.6	99.8		41.6	
34	214	21.2	99.8		45.6	
36	226	19.3	99.8		43.8	
40	251	16.6	99.8		41.7	
44	276	14.6	99.7		40.3	
48	302	12.6	99.8		38.1	
52	327	11.5	99.7		37.6	
56	352	10.5	99.8		37.0	
60	377	9.85	99.7		36.9	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	28.2	199		36.6	
68	427	17.1	199		36.3	
72	452	17.0	199		38.4	
76	478	17.0	199		40.6	
80	503	17.1	199		42.8	
84	528	17.0	199		44.9	
88	553	17.0	199		47.0	
92	578	10.7	199		31.2	
96	603	14.2	199		42.8	
100	628	14.5	199		45.8	
110	691	14.3	199		49.8	
120	754	14.1	199		53.5	
130	817	14.5	199		58.8	
140	880	13.4	199		59.0	
150	943	12.7	199		59.4	
160	1005	10.4	199		52.3	
170	1068	10.7	199		56.6	
180	1131	9.32	199		52.0	
190	1194	7.83	199		46.6	
200	1257					
220	1382					
240	1508					
260	1634					
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : B-10 Date : Oct. 04, 90 Operated by : K. TAKAYAANAGI

Geologic formation : Surface Condition : Weather : Fine

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	33.5	9.98		21.1	
2	12.6	38.2	9.98		48.2	
4	25.1	22.6	9.98		56.9	
6	37.7	12.3	9.98		46.6	
8	50.3	8.0	9.98		40.3	
10	62.8	5.69	9.98		35.8	
12	75.4	4.49	9.98		33.9	
14	88	3.63	9.98		31.9	
16	100.5	2.55	9.98		25.6	
18	113.1	3.17	9.98		35.9	
20	125.7	2.88	9.98		36.2	
22	138.2	2.71	9.98		37.5	
24	150.8	2.66	9.98		40.1	
26	163.4	2.62	9.98		42.8	
28	175.9	2.55	9.98		44.9	
30	188.5	2.45	9.98		46.2	
32	201	2.25	9.98		45.2	
34	214	2.19	9.98		46.9	
36	226	1.69	9.98		38.2	
40	251	1.18	9.98		29.9	
44	276	0.81	9.98		22.4	
48	302	0.81	9.98		24.5	
52	327	0.64	9.98		20.9	
56	352	0.62	9.98		21.8	
60	377	1.15	19.9		21.5	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	1.18	19.9		23.7	
68	427	1.56	19.9		33.3	
72	452	1.15	19.9		25.8	
76	478	1.18	19.9		28.2	
80	503	1.12	19.9		28.2	
84	528	1.26	19.9		33.3	
88	553	2.92	19.9		80.7	
92	578	1.19	19.9		34.1	
96	603	3.02	49.8		36.2	
100	628	2.73	49.9		33.9	
110	691	2.62	49.9		35.9	
120	754	2.34	49.9		35.4	
130	817	2.16	49.9		35.1	
140	880	1.94	49.9		33.4	
150	943	1.59	49.9		30.2	
160	1005	1.47	49.9		29.1	
170	1068	1.38	49.9		28.8	
180	1131	1.40	49.9		31.7	
190	1194	1.25	49.9		29.9	
200	1257	2.59	99.7		31.4	
220	1382	2.45	99.7		33.2	
240	1508	2.49	99.7		36.2	
260	1634	2.40	99.7		39.2	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-11 Date : Oct. 18, 90 Operated by : K. TAKAYANAGI

Geologic formation : Surface Condition : Weather : Rain

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	92.8	19.9		29.2	
2	12.6	30.5	19.9		19.2	
4	25.1	9.68	19.9		12.1	
6	37.7	4.29	19.9		8.11	
8	50.3	6.50	49.9		6.54	
10	62.8	4.24	49.9		5.34	
12	75.4	4.29	49.9		6.48	
14	88	7.14	49.9		12.6	
16	100.5	5.38	49.9		10.8	
18	113.1	6.08	49.9		13.7	
20	125.7	11.2	49.9		28.3	
22	138.2	16.1	49.9		44.5	
24	150.8	25.6	49.9		77.4	
26	163.4	31.5	49.9		103.3	
28	175.9	33.9	49.9		119.4	
30	188.5	35.5	49.9		134.0	
32	201	36.7	49.9		147.7	
34	214	37.7	49.9		161.6	
36	226	37.0	49.9		167.5	
40	251	33.6	49.9		168.9	
44	276	32.0	49.9		177.2	
48	302	30.5	49.9		184.5	
52	327	28.1	49.9		184.4	
56	352	28.8	49.9		203.5	
60	377	28.6	49.9		216.4	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	30.0	49.9		241.2	
68	427	30.8	49.9		263.9	
72	452	30.8	49.9		279.3	
76	478	15.2	49.9		145.3	
80	503	15.1	49.9		152.4	
84	528	13.4	49.9		142.0	
88	553	12.4	49.9		138.3	
92	578	11.4	49.9		132.4	
96	603	9.81	49.9		118.2	
100	628	9.08	49.9		114.3	
110	691	8.25	49.9		114.0	
120	754	8.37	49.9		125.9	
130	817	3.96	49.9		64.5	
140	880	8.02	49.9		140.8	
150	943	7.40	49.9		139.6	
160	1005	14.3	99.7		143.7	
170	1068	13.5	99.7		144.2	
180	1131	14.0	99.7		159.5	
190	1194	13.5	99.7		161.2	
200	1257	13.6	99.7		171.0	
220	1382	18.4	199		127.1	
240	1508	16.1	199		122.1	
260	1634	14.2	199		116.0	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-12 Date : Oct. 17, 90 Operated by : K. TAKAYANAGI

Geologic formation : Surface Condition : Weather : Cloudy

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	157	20.0		49.3	
2	12.6	68.9	19.9		43.3	
4	25.1	36.7	19.9		46.1	
6	37.7	52.1	49.9		39.4	
8	50.3	35.5	49.9		35.8	
10	62.8	28.3	49.9		35.5	
12	75.4	24.7	49.9		37.3	
14	88	23.1	49.9		40.7	
16	100.5	21.6	49.9		43.5	
18	113.1	20.6	49.9		46.8	
20	125.7	21.5	49.9		54.2	
22	138.2	39.0	99.8		54.0	
24	150.8	37.2	99.8		56.2	
26	163.4	35.0	99.8		57.2	
28	175.9	31.4	99.8		55.2	
30	188.5	28.9	99.8		54.5	
32	201	27.9	99.8		56.3	
34	214	27.4	99.8		58.6	
36	226	25.4	99.8		57.6	
40	251	23.7	99.8		59.5	
44	276	22.1	99.8		61.0	
48	302	20.9	99.7		63.4	
52	327	18.8	99.8		61.8	
56	352	18.2	99.7		64.1	
60	377	17.6	99.7		66.4	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	17.2	99.7		69.5	
68	427	16.8	99.7		72.2	
72	452	16.8	99.7		76.4	
76	478	16.6	99.7		79.3	
80	503	16.1	99.7		81.0	
84	528	15.4	99.7		81.3	
88	553	15.0	99.7		83.0	
92	578	14.0	99.7		80.9	
96	603	13.3	99.7		80.2	
100	628	11.6	99.7		72.8	
110	691	11.7	99.7		81.5	
120	754	10.1	99.7		76.9	
130	817	9.83	99.7		80.1	
140	880	9.57	99.7		83.6	
150	943	7.64	99.7		71.7	
160	1005	8.19	99.7		82.4	
170	1068	7.53	99.7		80.1	
180	1131	5.69	99.7		63.3	
190	1194	5.72	99.7		68.1	
200	1257	4.82	99.7		60.3	
220	1382	4.02	99.7		55.3	
240	1508	3.47	99.7		51.3	
260	1634	3.59	99.7		47.4	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-13 Date : Oct. 22, 90 Operated by : K.TAKAYANAGI

Geologic formation : Surface Condition : Weather : Fine

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	298	49.9		37.4	
2	12.6	147	49.9		37.0	
4	25.1	63.3	49.9		31.8	
6	37.7	35.9	49.9		27.1	
8	50.3	25.1	49.9		25.3	
10	62.8	19.2	49.9		24.2	
12	75.4	17.8	49.9		26.8	
14	88	12.7	49.9		22.4	
16	100.5	10.5	49.9		21.2	
18	113.1	8.64	49.9		19.6	
20	125.7	7.39	49.9		18.6	
22	138.2	6.37	49.9		17.6	
24	150.8	5.07	49.9		15.2	
26	163.4	4.53	49.9		14.7	
28	175.9	8.97	49.9		15.7	
30	188.5	8.29	99.8		15.6	
32	201	7.73	99.8		15.5	
34	214	6.93	99.8		14.8	
36	226	6.16	99.7		13.8	
40	251	5.49	99.7		13.8	
44	276	5.12	99.7		14.1	
48	302	4.95	99.7		14.8	
52	327	4.49	99.7		14.4	
56	352	8.60	199		15.1	
60	377	8.45	199		15.8	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	8.07	199		16.1	
68	427	7.77	199		16.2	
72	452	7.43	199		16.7	
76	478	7.00	199		16.7	
80	503	6.54	199		16.1	
84	528	6.79	199		18.0	
88	553	6.67	199		18.2	
92	578	5.89	199		16.8	
96	603	5.00	199		15.1	
100	628	5.10	199		15.7	
110	691	5.84	199		20.0	
120	754	6.39	199		24.1	
130	817	6.34	199		25.3	
140	880	6.65	199		29.0	
150	943	6.39	199		30.2	
160	1005	6.52	199		32.2	
170	1068	5.95	199		31.0	
180	1131	5.67	199		31.7	
190	1194	6.92	199		40.6	
200	1257	4.98	199		30.2	
220	1382	5.12	199		34.6	
240	1508	5.70	199		42.2	
260	1634	6.16	199		49.0	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-14 Date : Oct. 08, 90 Operated by : K. TAKAYANAGI

Geologic formation : Surface Condition : Weather : Fine, rain later

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	35.7	9.99		22.4	
2	12.6	11.7	9.99		14.8	
4	25.1	6.24	9.99		15.7	
6	37.7	2.79	9.99		10.5	
8	50.3	1.79	9.99		9.00	
10	62.8	1.74	9.98		10.9	
12	75.4	1.45	9.99		10.9	
14	88	1.34	9.98		11.8	
16	100.5	1.28	9.98		12.9	
18	113.1	1.21	9.98		13.8	
20	125.7	1.16	9.98		14.6	
22	138.2	3.21	9.98		44.4	
24	150.8	1.56	9.98		23.5	
26	163.4	1.08	9.98		17.6	
28	175.9	2.84	9.98		50.0	
30	188.5	1.00	9.98		18.9	
32	201	1.79	19.9		17.9	
34	214	1.71	19.9		18.2	
36	226	2.02	19.9		22.8	
40	251	1.47	19.9		18.3	
44	276	1.45	19.9		19.9	
48	302	1.32	19.9		19.9	
52	327	1.34	19.9		22.0	
56	352	1.25	19.9		21.8	
60	377	0.93	19.9		17.3	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	0.84	19.9		16.9	
68	427	0.82	19.9		17.5	
72	452	0.76	19.9		17.2	
76	478	0.74	19.9		17.7	
80	503	1.83	49.9		18.1	
84	528	1.66	49.9		17.4	
88	553	1.59	49.9		17.1	
92	578	1.48	49.9		16.8	
96	603	0.55	19.9		16.3	
100	628	0.56	19.9		17.6	
110	691	0.53	19.9		18.0	
120	754	0.49	19.9		18.1	
130	817	0.42	19.9		17.2	
140	880	0.93	49.9		15.8	
150	943	1.00	49.9		18.9	
160	1005	1.33	49.9		26.1	
170	1068	0.91	49.9		19.2	
180	1131	0.86	49.9		19.2	
190	1194	0.79	49.9		17.9	
200	1257	0.68	49.9		16.3	
220	1382	0.82	49.9		22.1	
240	1508	0.88	49.9		25.6	
260	1634	0.32	49.9		26.1	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-15 Date : Oct. 08, 90 Operated by : K. TAKAYANAGI

Geologic formation : Surface Condition : Weather : Fine

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	25.9	10.0		16.3	
2	12.6	14.3	9.99		18.1	
4	25.1	8.49	9.99		21.3	
6	37.7	6.10	9.99		23.0	
8	50.3	4.78	9.99		24.0	
10	62.8	3.60	9.99		23.1	
12	75.4	2.91	9.99		22.0	
14	88	2.31	9.99		20.3	
16	100.5	2.16	9.99		21.7	
18	113.1	1.87	9.99		21.1	
20	125.7	1.57	9.99		19.7	
22	138.2	1.66	9.99		22.9	
24	150.8	51.9	9.98		784.6	
26	163.4	1.40	9.99		22.9	
28	175.9	1.32	9.99		23.2	
30	188.5	1.27	9.98		23.9	
32	201	1.22	9.98		24.7	
34	214	1.16	9.98		24.8	
36	226	2.54	19.9		28.7	
40	251	2.12	19.9		26.6	
44	276	2.24	19.9		30.9	
48	302	2.06	19.9		31.1	
52	327	1.95	19.9		31.7	
56	352	1.93	19.9		33.8	
60	377	1.88	19.9		35.4	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	1.58	19.9		31.8	
68	427	1.18	19.9		25.2	
72	452	1.33	19.9		29.8	
76	478	1.29	19.9		30.6	
80	503	1.22	19.9		30.7	
84	528	1.30	19.9		34.3	
88	553	1.15	19.9		31.5	
92	578	1.11	19.9		31.8	
96	603	1.09	19.9		32.6	
100	628	1.08	19.9		33.9	
110	691	1.05	19.9		35.9	
120	754	0.95	19.9		35.4	
130	817	1.17	19.9		47.4	
140	880	0.84	19.9		37.0	
150	943	0.61	19.9		28.3	
160	1005	0.95	19.9		47.2	
170	1068	2.79	19.9		148.5	
180	1131	0.77	19.9		43.0	
190	1194	0.76	49.9		17.9	
200	1257	0.68	49.9		16.3	
220	1382	0.98	49.9		26.3	
240	1508	1.00	49.9		30.2	
260	1634	1.04	49.9		32.7	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-16 Date : Oct. 18, 90 Operated by : K.TAKAYANAGI

Geologic formation : Surface Condition : Weather : Fine

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	113.58	9.99		71.4	
2	12.6	27.9	9.99		35.2	
4	25.1	9.50	9.99		23.8	
6	37.7	14.9	19.9		28.2	
8	50.3	12.0	19.9		30.2	
10	62.8	10.4	19.9		32.7	
12	75.4	8.75	19.9		33.0	
14	88	8.76	19.9		38.5	
16	100.5	7.63	19.9		38.3	
18	113.1	6.87	19.9		38.8	
20	125.7	6.31	19.9		39.7	
22	138.2	5.94	19.9		41.0	
24	150.8	14.0	49.9		42.4	
26	163.4	13.0	49.9		42.8	
28	175.9	10.6	49.9		37.5	
30	188.5	10.1	49.9		38.1	
32	201	8.96	49.9		36.0	
34	214	7.21	49.9		30.8	
36	226	8.06	49.9		36.4	
40	251	7.40	49.9		37.1	
44	276	6.63	49.9		36.4	
48	302	5.81	49.9		35.0	
52	327	4.09	49.9		26.8	
56	352	3.86	49.9		27.1	
60	377	3.69	49.9		27.5	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	2.74	49.9		21.7	
68	427	2.98	49.9		25.2	
72	452	2.66	49.9		24.0	
76	478	2.64	49.9		25.3	
80	503	6.20	99.8		31.2	
84	528	8.30	99.8		43.8	
88	553	5.95	99.8		32.6	
92	578	7.75	99.8		44.5	
96	603	6.11	99.7		36.8	
100	628	5.60	99.8		35.2	
110	691	4.28	99.7		29.7	
120	754	4.13	99.7		28.3	
130	817	4.65	99.8		37.6	
140	880	4.45	99.7		38.7	
150	943	5.93	99.8		55.6	
160	1005	7.37	99.7		73.4	
170	1068	6.50	99.8		69.4	
180	1131	6.47	99.7		72.4	
190	1194	7.84	99.7		93.1	
200	1257	8.83	99.8		110.6	
220	1382	10.3	99.8		142.3	
240	1508	7.38	99.8		111.6	
260	1634	6.25	99.8		101.3	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-17 Date : Oct. 13, 90 Operated by : K. TAKAYANAGI

Geologic formation : Surface Condition : Weather : Cloudy

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	140	19.9		44.1	
2	12.6	107.99	19.9		68.2	
4	25.1	75.0	19.9		94.3	
6	37.7	57.3	19.9		108.2	
8	50.3	52.3	19.9		131.9	
10	62.8	104	49.9		131.9	
12	75.4	81.1	49.9		122.4	
14	88	65.9	49.9		116.2	
16	100.5	54.5	49.9		109.6	
18	113.1	46.3	49.9		105.0	
20	125.7	39.0	49.9		98.3	
22	138.2	32.5	49.9		90.0	
24	150.8	30.1	49.9		91.1	
26	163.4	27.3	49.9		89.4	
28	175.9	36.1	49.9		127.2	
30	188.5	43.2	99.7		81.6	
32	201	38.2	99.7		77.0	
34	214	37.6	99.7		80.7	
36	226	36.7	99.7		83.2	
40	251	32.5	99.7		81.6	
44	276	28.8	99.7		79.5	
48	302	26.0	99.7		78.5	
52	327	24.3	99.7		79.8	
56	352	21.6	99.7		76.0	
60	377	20.4	99.7		77.3	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	18.1	99.7		72.8	
68	427	17.1	99.7		73.0	
72	452	16.3	99.7		73.7	
76	478	30.7	199		73.6	
80	503	14.1	99.7		71.4	
84	528	13.3	99.7		70.8	
88	553	12.4	99.7		69.1	
92	578	11.7	99.7		67.6	
96	603	22.3	199		66.9	
100	628	20.6	199		64.7	
110	691	17.2	199		59.4	
120	754	13.1	199		49.0	
130	817	11.0	199		44.9	
140	880	7.98	199		35.2	
150	943	7.17	199		33.9	
160	1005	6.49	199		32.2	
170	1068	5.97	199		31.0	
180	1131	5.32	199		29.4	
190	1194	5.48	199		32.2	
200	1257	5.78	199		35.2	
220	1382	5.87	199		40.1	
240	1508	4.96	199		36.2	
260	1634	4.42	199		35.9	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-18 Date : Oct. 18, 90 Operated by : K. TAKAYANAGI

Geologic formation : Surface Condition : Weather : Rain

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	120	20.0		37.8	
2	12.6	70.1	18.3		48.0	
4	25.1	47.4	19.9		59.6	
6	37.7	40.0	19.9		75.4	
8	50.3	29.3	19.9		251.5	
10	62.8	23.5	19.9		74.0	
12	75.4	21.0	19.9		79.4	
14	88	20.0	19.9		88.4	
16	100.5	17.3	19.9		87.2	
18	113.1	14.6	19.9		83.0	
20	125.7	13.3	19.9		83.8	
22	138.2	12.4	19.9		86.2	
24	150.8	11.5	19.9		86.7	
26	163.4	26.4	19.9		86.3	
28	175.9	23.5	19.9		82.8	
30	188.5	21.4	19.9		81.1	
32	201	20.3	19.9		82.0	
34	214	19.3	19.9		82.6	
36	226	17.1	19.9		77.5	
40	251	14.9	19.9		75.3	
44	276	13.6	19.9		75.1	
48	302	12.3	49.9		74.6	
52	327	11.0	49.9		72.3	
56	352	9.40	49.9		66.2	
60	377	8.17	49.9		61.5	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	7.12	49.9		57.1	
68	427	6.91	49.9		58.9	
72	452	5.93	49.9		53.3	
76	478	6.02	49.9		57.4	
80	503	4.80	49.9		48.3	
84	528	9.12	99.8		48.0	
88	553	9.00	99.8		49.8	
92	578	8.98	99.8		51.4	
96	603	8.04	99.8		48.2	
100	628	6.07	99.8		37.7	
110	691	8.18	99.7		56.7	
120	754	6.89	99.8		52.0	
130	817	6.76	99.8		54.7	
140	880	11.80	199		51.9	
150	943	7.02	199		33.0	
160	1005	6.71	199		33.2	
170	1068	5.94	199		31.0	
180	1131	5.42	199		30.5	
190	1194	5.29	199		31.0	
200	1257	4.97	199		30.2	
220	1382	4.45	199		30.4	
240	1508	4.32	199		31.7	
260	1634	4.25	199		34.3	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-19 Date : Oct. 09, 90 Operated by : K.TAKAYANAGI

Geologic formation : Surface Condition : Weather : Cloudy

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	94.8	10.0		59.6	
2	12.6	45.3	9.99		57.0	
4	25.1	22.2	9.99		55.9	
6	37.7	16.0	9.99		60.4	
8	50.3	13.1	9.99		66.2	
10	62.8	10.8	9.99		68.3	
12	75.4	9.05	9.99		68.2	
14	88	7.83	9.99		69.0	
16	100.5	6.06	9.99		60.9	
18	113.1	5.29	9.99		59.8	
20	125.7	4.56	9.99		57.3	
22	138.2	4.22	9.99		58.3	
24	150.8	3.35	9.98		50.5	
26	163.4	3.39	9.98		55.4	
28	175.9	3.45	9.99		60.9	
30	188.5	2.71	9.99		51.1	
32	201	2.96	9.99		59.5	
34	214	2.80	9.99		59.9	
36	226	2.23	9.98		50.4	
40	251	2.39	9.98		60.2	
44	276	2.10	9.98		58.0	
48	302	1.87	9.98		56.5	
52	327	1.59	9.98		52.0	
56	352	1.36	9.98		47.9	
60	377	1.22	9.98		46.4	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	1.25	9.99		50.3	
68	427	1.14	9.99		48.7	
72	452	1.08	9.99		48.8	
76	478	0.95	9.99		45.4	
80	503	1.81	19.9		45.3	
84	528	1.71	19.9		44.9	
88	553	1.79	19.9		49.2	
92	578	1.63	19.9		46.8	
96	603	1.69	19.9		50.7	
100	628	1.59	19.9		49.6	
110	691	1.47	19.9		50.4	
120	754	2.22	9.98		167.4	
130	817	0.81	9.98		66.2	
140	880	1.69	19.9		73.9	
150	943	1.81	19.9		84.9	
160	1005	2.10	19.9		105.5	
170	1068	1.44	19.9		76.9	
180	1131	1.54	19.9		87.1	
190	1194	2.32	19.9		138.5	
200	1257	2.14	19.9		134.5	
220	1382	2.14	19.9		147.9	
240	1508	2.52	19.9		190.0	
260	1634	3.69	19.9		300.7	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-20 Date : Oct. 09, 90 Operated by : K. TAKAYANAGI

Geologic formation : Surface Condition : Weather : Rain

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	31.4	10.0		19.7	
2	12.6	19.9	9.99		25.1	
4	25.1	13.9	9.99		35.0	
6	37.7	10.8	9.99		40.9	
8	50.3	8.58	9.99		43.2	
10	62.8	6.23	9.99		39.1	
12	75.4	5.72	9.99		43.1	
14	88	4.99	9.99		43.9	
16	100.5	4.57	9.99		45.9	
18	113.1	3.63	9.99		41.1	
20	125.7	3.59	9.99		45.1	
22	138.2	2.48	9.99		34.3	
24	150.8	3.17	9.99		47.8	
26	163.4	3.36	9.99		54.9	
28	175.9	3.66	9.99		64.4	
30	188.5	2.73	9.99		51.5	
32	201	2.37	9.99		47.6	
34	214	2.18	9.99		46.7	
36	226	1.79	9.98		40.5	
40	251	1.63	9.98		40.9	
44	276	1.44	9.98		39.7	
48	302	1.31	9.99		39.6	
52	327	1.22	9.98		40.2	
56	352	1.06	9.98		37.3	
60	377	2.26	19.9		42.6	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	2.15	19.9		43.0	
68	427	1.88	19.9		40.1	
72	452	1.75	19.9		39.3	
76	478	1.68	19.9		40.2	
80	503	1.61	19.9		40.2	
84	528	1.47	19.9		38.5	
88	553	1.34	19.9		37.1	
92	578	1.22	19.9		35.3	
96	603	1.21	19.9		36.8	
100	628	2.94	49.9		36.4	
110	691	2.64	49.9		36.6	
120	754	2.45	49.9		36.9	
130	817	2.18	49.9		35.1	
140	880	2.06	49.9		36.1	
150	943	1.89	49.9		34.9	
160	1005	1.75	49.9		35.2	
170	1068	1.36	49.9		28.8	
180	1131	1.35	49.9		30.5	
190	1194	1.34	49.9		31.0	
200	1257	1.29	49.9		31.4	
220	1382	1.21	49.9		33.2	
240	1508	2.26	99.9		33.2	
260	1634	2.06	99.8		32.7	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-21 Date : Oct. 15, 90 Operated by : K. TAKAYANAGI

Geologic formation : Surface Condition : Weather : Fine

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	81.9	20.0		25.7	
2	12.6	49.2	19.9		30.9	
4	25.1	32.8	19.9		41.3	
6	37.7	23.6	19.9		44.6	
8	50.3	17.7	19.9		44.6	
10	62.8	37.1	49.9		46.7	
12	75.4	32.6	49.9		49.2	
14	88	29.3	49.9		51.7	
16	100.5	26.6	49.9		53.6	
18	113.1	24.3	49.9		55.1	
20	125.7	22.2	49.9		56.1	
22	138.2	19.5	49.9		54.0	
24	150.8	17.3	49.9		52.2	
26	163.4	16.8	49.9		55.1	
28	175.9	13.4	49.9		47.1	
30	188.5	12.9	49.9		48.6	
32	201	23.7	99.8		47.6	
34	214	21.5	99.8		46.0	
36	226	20.0	99.8		45.2	
40	251	17.0	99.8		42.7	
44	276	15.3	99.8		42.5	
48	302	13.6	99.7		41.4	
52	327	16.2	99.7		53.0	
56	352	11.2	99.8		39.4	
60	377	10.3	99.7		39.2	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	9.54	99.7		38.2	
68	427	8.76	99.7		37.1	
72	452	8.10	99.7		36.6	
76	478	7.46	99.7		35.4	
80	503					
84	528	6.86	99.8		35.9	
88	553	6.53	99.8		35.9	
92	578	10.7	199		31.2	
96	603	11.4	199		34.4	
100	628	10.1	199		31.4	
110	691	9.97	199		33.9	
120	754	9.01	199		33.9	
130	817	8.66	199		35.1	
140	880	7.53	199		32.6	
150	943	7.01	199		33.0	
160	1005	6.82	199		34.2	
170	1068	6.64	199		35.2	
180	1131	6.09	199		33.9	
190	1194	6.01	199		35.8	
200	1257	4.73	199		28.9	
220	1382	5.00	199		34.6	
240	1508	5.35	199		39.2	
260	1634	5.23	199		42.5	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-22 Date : Oct. 15, 90 Operated by : K.TAKAYANAGI

Geologic formation : Surface Condition : Weather : Fine

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	177	19.9		55.6	
2	12.6	119	19.9		75.1	
4	25.1	50.7	19.9		63.7	
6	37.7	34.3	19.9		64.9	
8	50.3	60.2	49.9		60.7	
10	62.8	41.0	49.9		51.6	
12	75.4	31.6	49.9		47.7	
14	88	27.0	49.9		47.6	
16	100.5	23.9	49.9		48.1	
18	113.1	20.0	49.9		45.5	
20	125.7	18.0	49.9		45.4	
22	138.2	16.0	49.9		44.2	
24	150.8	14.1	49.9		42.8	
26	163.4	12.7	49.9		41.7	
28	175.9	11.9	49.9		41.9	
30	188.5	10.5	49.9		39.6	
32	201	20.1	99.7		40.4	
34	214	18.8	99.7		40.2	
36	226	0.61	99.8		1.4	
40	251	2.60	99.7		6.3	
44	276	3.89	99.7		8.0	
48	302	3.89	99.7		11.8	
52	327	8.15	99.7		26.5	
56	352	3.29	99.7		11.3	
60	377	4.16	199		7.5	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	10.5	199		20.9	
68	427	1.12	199		2.1	
72	452	6.54	199		14.5	
76	478	6.29	199		14.8	
80	503	1.82	199		4.5	
84	528	15.6	199		41.2	
88	553	2.30	199		6.1	
92	578	3.79	199		11.0	
96	603	6.26	199		18.7	
100	628	16.8	199		52.8	
110	691	5.53	199		18.7	
120	754	3.00	199		11.3	
130	817	0.79	199		2.5	
140	880	5.42	199		23.8	
150	943	7.04	199		33.0	
160	1005	10.1	199		50.3	
170	1068	11.1	199		59.8	
180	1131	1.01	199		5.7	
190	1194	7.02	199		41.8	
200	1257	11.0	199		69.1	
220	1382	6.14	199		41.5	
240	1508	5.09	199		37.7	
260	1634	6.13	199		49.0	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-23 Date : Oct. 15, 90 Operated by : K. TAKAYANAGI

Geologic formation : Surface Condition : Weather : Fine

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	120	19.9		37.8	
2	12.6	63.0	19.9		39.6	
4	25.1	47.6	19.9		47.6	
6	37.7	26.5	19.9		50.1	
8	50.3	21.9	19.9		55.1	
10	62.8	45.0	49.9		56.6	
12	75.4	38.5	49.9		58.1	
14	88	34.4	49.9		60.6	
16	100.5	30.5	49.9		61.4	
18	113.1	27.9	49.9		63.2	
20	125.7	24.3	49.9		61.1	
22	138.2	21.9	49.9		60.8	
24	150.8	19.5	49.9		59.1	
26	163.4	17.9	49.9		58.5	
28	175.9	16.6	49.9		58.6	
30	188.5	15.0	49.9		56.7	
32	201	14.3	49.9		57.5	
34	214	13.5	49.9		58.0	
36	226	24.4	99.7		55.1	
40	251	21.4	99.7		54.0	
44	276	17.4	99.7		48.0	
48	302	15.6	99.7		47.1	
52	327	12.4	99.7		40.5	
56	352	12.0	99.7		42.2	
60	377	11.5	99.7		43.7	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	11.2	99.7		45.0	
68	427	10.6	99.7		45.3	
72	452	19.3	199		43.8	
76	478	18.3	199		43.5	
80	503	17.0	199		42.8	
84	528	15.8	199		41.7	
88	553	14.9	199		40.9	
92	578	13.3	199		38.1	
96	603	13.0	199		39.2	
100	628	12.9	199		40.8	
110	691	12.6	199		43.5	
120	754	12.1	199		45.2	
130	817	12.6	199		51.5	
140	880	14.2	199		62.5	
150	943	10.1	199		47.2	
160	1005	9.04	199		45.2	
170	1068	7.59	199		40.6	
180	1131	6.80	199		38.5	
190	1194	6.43	199		38.2	
200	1257	5.83	199		36.5	
220	1382	5.86	199		40.0	
240	1508	5.46	199		40.7	
260	1634	5.33	199		42.5	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-24 Date : Oct. 23, 90 Operated by : K. TAKAYANAGI

Geologic formation : Surface Condition : Weather : Fine

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	99.0	19.9		31.1	
2	12.6	47.1	19.9		29.7	
4	25.1	28.1	19.9		35.3	
6	37.7	20.1	19.9		38.1	
8	50.3	15.4	19.9		38.9	
10	62.8	12.5	19.9		39.4	
12	75.4	10.0	19.9		37.9	
14	88	8.16	19.9		35.9	
16	100.5	6.87	19.9		34.6	
18	113.1	6.00	19.9		33.9	
20	125.7	10.3	49.9		26.0	
22	138.2	10.0	49.9		27.8	
24	150.8	8.21	49.9		24.7	
26	163.4	7.87	49.9		25.7	
28	175.9	7.09	49.9		25.0	
30	188.5	6.04	49.9		22.8	
32	201	5.47	49.9		21.9	
34	214	5.27	49.9		22.5	
36	226	5.09	49.9		23.1	
40	251	4.91	49.9		24.6	
44	276	4.68	49.9		25.7	
48	302	9.13	99.8		27.5	
52	327	9.35	99.7		30.4	
56	352	9.00	99.8		31.7	
60	377	6.98	99.7		26.0	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	8.89	99.8		35.8	
68	427	8.80	99.7		37.6	
72	452	8.69	99.7		39.3	
76	478	8.41	99.8		40.2	
80	503	8.31	99.7		41.7	
84	528	8.43	99.7		44.4	
88	553	9.23	99.7		54.2	
92	578	8.25	99.7		47.4	
96	603	8.23	99.7		49.4	
100	628	8.88	99.7		55.3	
110	691	6.11	99.7		42.2	
120	754	6.53	99.7		49.0	
130	817	5.91	99.7		48.2	
140	880	6.10	99.7		53.7	
150	943	5.20	99.7		49.0	
160	1005	4.27	99.7		42.2	
170	1068	4.01	99.7		42.7	
180	1131	3.96	99.7		44.1	
190	1194	4.01	99.7		47.8	
200	1257	3.85	99.7		47.8	
220	1382	3.08	99.7		41.5	
240	1508	2.92	99.7		43.7	
260	1634	5.08	199		48.9	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-25 Date : Oct. 16, 90 Operated by : K.TAKAYANAGI

Geologic formation : Surface Condition : Weather : Fine

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	54.7	10.0		34.4	
2	12.6	34.22	10.0		43.0	
4	25.1	44.8	19.9		56.3	
6	37.7	35.2	19.9		66.4	
8	50.3	28.8	19.9		72.6	
10	62.8	57.7	49.9		72.6	
12	75.4	49.1	49.9		74.1	
14	88	41.7	49.9		73.4	
16	100.5	35.7	49.9		71.9	
18	113.1	30.0	49.9		68.0	
20	125.7	25.8	49.9		65.0	
22	138.2	21.6	49.9		60.0	
24	150.8	19.0	49.9		57.5	
26	163.4	16.6	49.9		54.6	
28	175.9	14.6	49.9		51.4	
30	188.5	12.9	49.9		48.6	
32	201	11.3	49.9		45.6	
34	214	9.97	49.9		42.6	
36	226	9.11	49.9		41.1	
40	251	7.80	49.9		39.2	
44	276	7.00	49.9		38.6	
48	302	6.25	49.9		37.8	
52	327	5.74	49.9		37.3	
56	352	10.2	99.8		35.9	
60	377	10.0	99.8		37.7	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	8.76	99.8		35.0	
68	427	7.83	99.8		33.3	
72	452	7.30	99.8		33.0	
76	478	6.82	99.8		32.5	
80	503	6.79	99.8		34.2	
84	528	6.08	99.8		32.2	
88	553	5.78	99.8		32.1	
92	578	5.41	99.8		31.2	
96	603	5.08	99.7		30.8	
100	628	4.98	99.7		30.8	
110	691	4.36	99.7		29.7	
120	754	3.72	99.7		27.9	
130	817	3.62	99.7		29.4	
140	880	6.60	199		29.0	
150	943	6.34	199		29.2	
160	1005	0.02	0.99		22.1	
170	1068	2.89	99.7		29.9	
180	1131	5.65	199		31.7	
190	1194	5.62	199		33.4	
200	1257	5.54	199		33.9	
220	1382	5.29	199		35.9	
240	1508	5.08	199		37.7	
260	1634	5.00	199		40.9	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-26 Date : Oct. 19, 90 Operated by : K. TAKAYANAGI

Geologic formation : Surface Condition : Weather : Fine

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	115	19.9		36.3	
2	12.6	60.7	19.9		38.2	
4	25.1	30.3	19.9		38.1	
6	37.7	17.8	19.9		33.7	
8	50.3	9.99	19.9		25.2	
10	62.8	8.02	19.9		25.2	
12	75.4	6.73	19.9		25.3	
14	88	5.84	19.9		25.7	
16	100.5	5.23	19.9		26.2	
18	113.1	4.62	19.9		26.1	
20	125.7	10.4	19.9		26.3	
22	138.2	9.67	49.9		26.7	
24	150.8	9.27	49.9		27.9	
26	163.4	9.00	49.9		29.4	
28	175.9	8.48	49.9		29.7	
30	188.5	8.08	49.9		30.3	
32	201	8.27	49.9		33.2	
34	214	8.06	49.9		34.5	
36	226	7.96	49.9		35.9	
40	251	8.55	49.9		42.9	
44	276	7.95	49.9		43.9	
48	302	7.66	49.9		46.2	
52	327	7.61	49.9		49.7	
56	352	6.81	49.9		47.9	
60	377	7.41	49.9		55.8	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	6.53	49.9		52.3	
68	427	12.4	99.7		52.9	
72	452	11.9	99.7		53.8	
76	478	11.4	99.7		54.5	
80	503	11.3	99.7		57.3	
84	528	10.9	99.7		57.6	
88	553	10.6	99.7		58.6	
92	578	10.0	99.7		57.8	
96	603	9.05	99.7		56.1	
100	628	8.89	99.7		55.9	
110	691	8.49	99.7		58.7	
120	754	8.00	99.7		60.3	
130	817	7.38	99.7		60.5	
140	880	7.15	99.7		62.5	
150	943	6.87	99.7		64.1	
160	1005	7.07	99.7		70.4	
170	1068	7.91	99.7		84.4	
180	1131	7.05	99.7		79.2	
190	1194	6.60	99.7		78.8	
200	1257	5.73	99.7		71.6	
220	1382	5.25	99.7		71.9	
240	1508	4.85	99.7		72.4	
260	1634	4.63	99.7		75.2	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-27 Date : Oct. 16, 90 Operated by : K. TAKAYANAGI

Geologic formation : Surface Condition : Weather : Fine

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	145	19.9		45.7	
2	12.6	85.2	19.9		53.6	
4	25.1	36.4	19.9		45.8	
6	37.7	20.9	19.9		39.5	
8	50.3	14.4	19.9		36.3	
10	62.8	11.6	19.9		36.7	
12	75.4	10.3	19.9		39.1	
14	88	8.86	19.9		39.0	
16	100.5	18.8	49.9		37.9	
18	113.1	17.1	49.9		38.8	
20	125.7	14.9	49.9		37.5	
22	138.2	13.7	49.9		38.0	
24	150.8	12.3	49.9		37.2	
26	163.4	11.3	49.9		37.1	
28	175.9	10.3	49.9		36.2	
30	188.5	9.26	49.9		34.9	
32	201	17.2	99.7		34.8	
34	214	15.9	99.8		34.0	
36	226	15.1	99.8		34.4	
40	251	13.3	99.7		33.4	
44	276	12.3	99.8		33.9	
48	302	11.3	99.7		34.4	
52	327	10.6	99.8		34.7	
56	352	9.75	99.8		34.1	
60	377	4.63	49.9		34.7	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	8.64	99.8		34.6	
68	427	7.98	99.7		33.7	
72	452	7.44	99.7		33.4	
76	478	7.28	99.7		34.4	
80	503	7.02	99.7		35.2	
84	528	6.29	99.7		33.3	
88	553	11.9	199		33.1	
92	578	11.4	199		32.9	
96	603	10.7	199		32.0	
100	628	10.7	199		33.3	
110	691	9.79	199		33.9	
120	754	9.18	199		34.7	
130	817	8.49	199		34.3	
140	880	7.71	199		33.4	
150	943	7.40	199		34.9	
160	1005	6.71	199		33.2	
170	1068	6.08	199		32.0	
180	1131	5.39	199		30.5	
190	1194	4.94	199		28.7	
200	1257	5.08	199		31.4	
220	1382	4.82	199		33.2	
240	1508	5.03	199		37.7	
260	1634	5.47	199		44.1	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-28 Date : Oct. 23, 90 Operated by : K.TAKAYANAGI

Geologic formation : Surface Condition : Weather : Fine

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	271	19.9		85.3	
2	12.6	145	19.9		91.6	
4	25.1	71.0	19.9		89.2	
6	37.7	58.1	19.9		109.6	
8	50.3	43.2	19.9		108.7	
10	62.8	32.6	19.9		102.4	
12	75.4	24.8	19.9		93.6	
14	88	19.3	19.9		85.0	
16	100.5	15.6	19.9		78.7	
18	113.1	13.8	19.9		78.4	
20	125.7	12.6	19.9		79.8	
22	138.2	11.7	19.9		81.1	
24	150.8	11.2	19.9		85.1	
26	163.4	10.8	19.9		88.6	
28	175.9	10.6	19.9		93.8	
30	188.5	10.4	19.9		98.0	
32	201	9.90	19.9		99.5	
34	214	9.42	19.9		101.0	
36	226	8.87	19.9		100.3	
40	251	7.84	19.9		98.6	
44	276	7.29	19.9		95.2	
48	302	6.82	19.9		103.0	
52	327	6.23	19.9		101.7	
56	352	5.80	19.9		102.1	
60	377	13.6	49.9		103.3	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	12.8	49.9		103.7	
68	427	12.4	49.9		106.3	
72	452	12.1	49.9		109.4	
76	478	11.9	49.9		113.8	
80	503	11.6	49.9		117.2	
84	528	11.2	49.9		119.3	
88	553	11.3	49.9		125.5	
92	578					
96	603					
100	628	6.86	49.9		86.0	
110	691	14.3	99.7		98.8	
120	754	13.6	99.7		130.4	
130	817	12.7	99.7		103.8	
140	880	12.6	99.7		110.9	
150	943	13.5	99.7		128.2	
160	1005	12.4	99.7		124.6	
170	1068	13.2	99.7		142.0	
180	1131	12.2	99.7		138.0	
190	1194	11.3	99.7		134.9	
200	1257	10.4	99.7		130.7	
220	1382	11.9	99.7		165.8	
240	1508	15.1	99.7		229.2	
260	1634	11.1	99.7		181.4	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-29 Date : Oct. 16, 90 Operated by : K. TAKAYANAGI

Geologic formation : Surface Condition : Weather : Cloudy

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	65.2	19.9		20.5	
2	12.6	27.9	19.9		17.6	
4	25.1	15.4	19.9		19.4	
6	37.7	11.7	19.9		22.2	
8	50.3	27.4	49.9		27.7	
10	62.8	24.1	49.9		30.3	
12	75.4	23.15	49.9		35.0	
14	88	22.1	49.9		39.0	
16	100.5	20.5	49.9		41.3	
18	113.1	19.6	49.9		44.3	
20	125.7	18.1	49.9		45.6	
22	138.2	16.9	49.9		47.0	
24	150.8	16.2	49.9		49.0	
26	163.4	16.4	49.9		53.8	
28	175.9	15.1	49.9		53.3	
30	188.5	14.3	49.9		53.9	
32	201	14.4	49.9		57.9	
34	214	13.4	49.9		57.8	
36	226	13.2	49.9		60.0	
40	251	25.4	99.7		63.8	
44	276	24.1	99.7		66.8	
48	302	22.9	99.7		69.2	
52	327	21.6	99.8		70.6	
56	352	20.8	99.7		73.2	
60	377	20.7	99.7		78.0	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	20.2	99.7		81.2	
68	427	19.8	99.8		84.5	
72	452	19.5	99.7		88.1	
76	478	15.7	99.7		75.0	
80	503	13.8	99.7		69.9	
84	528	16.1	99.7		85.0	
88	553	21.4	99.7		118.3	
92	578	15.0	99.7		87.3	
96	603	14.5	99.7		87.4	
100	628	14.2	99.7		89.2	
110	691	13.9	99.7		96.0	
120	754	12.8	99.7		96.5	
130	817	12.8	99.7		104.6	
140	880	11.9	99.7		104.7	
150	943	11.4	99.7		107.5	
160	1005	11.2	99.7		112.6	
170	1068	11.0	99.7		117.5	
180	1131	10.7	99.7		121.0	
190	1194	10.1	99.7		121.8	
200	1257	10.1	99.7		127.0	
220	1382	10.2	99.7		142.3	
240	1508	10.2	99.7		155.3	
260	1634	10.4	99.7		169.9	
280	1759					
300	1885					

Date Sheet for Resistivity Sounding (Wenner's Configuration)

Name of Place : Antipolo No. : E-30 Date : Oct. 30, 90 Operated by : K. TAKAYANAGI

Geologic formation : Surface Condition : Weather : Fine

a	2πa	V	I	R	ρ=2πaR	Remarks
1	6.28	57.4	19.9		18.0	
2	12.6	33.2	19.9		20.9	
4	25.1	19.5	19.9		24.5	
6	37.7	14.5	19.9		27.4	
8	50.3	10.4	16.3		32.1	
10	62.8	10.6	19.9		34.0	
12	75.4	10.2	19.9		38.5	
14	88	9.75	19.9		42.9	
16	100.5	22.3	49.9		44.9	
18	113.1	21.0	49.9		47.6	
20	125.7	20.1	49.9		50.7	
22	138.2	19.3	49.9		53.5	
24	150.8	18.2	49.9		55.0	
26	163.4	17.7	49.9		58.0	
28	175.9	17.1	49.9		60.5	
30	188.5	17.5	49.9		66.2	
32	201	17.6	49.9		71.0	
34	214	17.6	49.9		75.8	
36	226	17.5	49.9		79.1	
40	251	17.5	49.9		88.1	
44	276	16.9	49.9		93.3	
48	302	17.0	49.9		103.0	
52	327	17.0	49.9		111.5	
56	352	16.6	49.9		117.2	
60	377	14.3	49.9		107.8	

a	2πa	V	I	R	ρ=2πaR	Remarks
64	402	14.4	49.9		115.8	
68	427	13.2	49.9		113.2	
72	452	12.7	49.9		115.3	
76	478	12.5	49.9		120.0	
80	503	17.0	49.9		171.5	
84	528	11.5	49.9		122.0	
88	553	74.4	49.9		824.5	
92	578	17.8	99.8		103.5	
96	603	15.27	99.8		92.3	
100	628	14.6	99.8		91.7	
110	691	12.4	99.8		85.7	
120	754	12.1	99.8		92.0	
130	817	11.3	99.8		92.3	
140	880	10.9	99.8		95.9	
150	943	10.4	99.8		98.0	
160	1005	10.2	99.8		102.5	
170	1068	10.4	99.7		111.1	
180	1131	10.4	99.7		117.6	
190	1194	10.0	99.7		119.4	
200	1257	9.85	99.7		123.2	
220	1382	10.1	99.7		141.0	
240	1508	10.5	99.7		158.3	
260	1634	11.2	99.7		184.6	
280	1759					
300	1885					