

表-2.5 既存井戸の水質分析値

No.	Borehole No.	Region	Community	pH	Turb	Col	Cond	SO <sub>4</sub>	Cl <sup>-</sup>	NO <sub>3</sub>	NO <sub>2</sub>	Fe	Mn	F <sup>-</sup>	Alk	HCO <sub>3</sub>	Hard	TDS	TC	FC
1	M-2-1	Manzini	Ludzeludze	6.7	Nil	2	169	<0.01	12	0.27	0.6	0.03	0.001	<0.01	80	48.8	8.4	5.9	NIL	NIL
2	M-2-2	Manzini	Ludzeludze	6.7	12	76	199	5	20.5	0.66	1.8	0.27	0.014	<0.01	100	61	16.8	10.92	NIL	NIL
3	M-1-1	Manzini	Mbekelweni	6.7	4	30	100	1	10	0.4	2.4	0.08	0.001	<0.01	100	61	Nil	Nil	NIL	NIL
4	M-1-3	Manzini	Mbekelweni	6.7	14	94	55	4	5.5	0.4	1.5	0.28	0.016	<0.01	85	51.9	Nil	Nil	NIL	NIL
7	M-3-1	Manzini	Mahlabane	6.7	2	12	650	1	419	0.49	0.9	0.01	0.38	<0.01	315	192.2	154	423	NIL	NIL
8	M-3-3	Manzini	Mahlabane	6.6	Nil	NIL	497	<0.01	28.5	0.62	0.9	0.03	0.03	<0.01	260	158.6	106	323	NIL	NIL
9	M-3-2	Manzini	Mahlabane	6.9	Nil	NIL	455	21	44.5	0.98	0.6	0.05	0.002	<0.01	80	48.8	61.6	296	NIL	NIL
10	M-6-1	Manzini	Emsindza	7	Nil	NIL	820	NIL	80	0.75	0.6	0.03	0.153	<0.01	360	219.6	99.4	553	NIL	NIL
11	M-8-4	Manzini	Sihhoye	7	40	17	1192	NIL	NIL	1.37	1.2	0.06	0.104	<0.01	335	204.4	133	681.2	NIL	NIL
12	L-2-1	Lubombo	Bhelebane	6.7	30	7	1048	15	15	0.87	0.9	0.06	0.391	<0.01	250	152.5	17.5	681.2	NIL	NIL
13	L-10, 11-3	Lubombo	Shewula, Matjemadze	6.9	81	434	175	22	25.9	2.61	6.9	1.07	0.091	<0.01	90	54.9	Nil	113.8	NIL	NIL
14	L-10, 11-2	Lubombo	Shewula, Matjemadze	6.5	6	32	288	20	17.8	0.31	0.9	1.43	0.004	<0.01	105	64.1	Nil	187.2	NIL	NIL
15	S-5, 6-3	Shiselweni	Sigwe, Kathumbela	7.2	5	27	1006	27	42.5	0.18	0.206	0.36	0.2	0.24	450	275	154	563.4	NIL	NIL
16	S-5, 6-1	Shiselweni	Sigwe, Kathumbela	7.4	1	9	1450	31	115	0.13	0.016	0.05	0.005	0.24	500	305	322	812	NIL	NIL
17	L-6, 7-1	Lubombo	Lomvovo, Vimbabelungu	8.1	59	330	567	14	43.5	1.06	1.15	0.46	0.105	2.2	150	91.5	Nil	317.5	NIL	NIL
18	H-3-5	Hhohho	Zinyane	7.1	28	163	1366	9	118	1.68	0.01	0.03	NIL	1.47	450	274.5	82	765	NIL	NIL
19	H-6-1	Hhohho	Nyakatho	6.8	Nil	NIL	1528	17	250	0.49	0.085	0.01	0.002	1.83	260	158.6	98	855	NIL	NIL
20	H-4-2	Hhohho	Nsangwini	6	Nil	4	90	NIL	10.5	0.40	0.02	0.01	0.001	0.01	440	268.4	Nil	50.4	NIL	NIL
21	H-6-2	Hhohho	Nyakatho	6.7	Nil	8	1551	1	212	0.58	0.049	0.04	0.001	Nil	210	128.1	168	868	NIL	NIL
22	H-6-3	Hhohho	Nyakatho	6.8	Nil	3	937	27	89	2.26	0.987	0.02	0.004	Nil	400	244	9.8	524.7	NIL	NIL
23	M-5-1	Manzini	Emnyokanoka	7	2	4	803	NIL	11.5	0.09	0.01	0.02	0.001	Nil	300	183	53.2	450	NIL	NIL
24	H-2-1	Hhohho	Ngobodzi	7	4	15	548	1	17	0.49	0.01	0.04	0.01	Nil	275	167.8	84	307	NIL	NIL
25	S-8-2	Shiselweni	Ngamudze	8.2	57	305	1044	14	31.5	0.49	0.23	0.08	0.086	Nil	160	97.6	Nil	585	NIL	NIL
26	S-8-5	Shiselweni	Ngamudze	7.2	1	5	1930	9	557	0.22	0.098	0.3	0.006	0.41	455	277.6	420	1080	NIL	NIL
27	H-4-1	Hhohho	Nsangwini	7.2	2	12	45	1	5	0.18	Nil	0.04	0.001	0.18	85	52	Nil	25.2	NIL	NIL
28	H-4-3	Hhohho	Nsangwini	7.1	6	35	61	3	5	0.3	0.013	0.17	0.002	0.01	95	57.9	28	34.2	NIL	NIL
29	S-4-5	Shiselweni	Bambitje	7.1	5	30	1705	33	177	0.18	0.0656	0.17	0.008	<0.01	630	384.3	135	954.8	NIL	NIL
30	S-4-6	Shiselweni	Bambitje	7	4	25	1990	46	96.9	0.22	0.0656	0.28	0.001	<0.01	600	366	241	1114.4	NIL	NIL

表-2.5 既存井戸の水質分析値

No.	Borehole No.	Region	Community	pH	Turb	Col	Cond	SO <sub>4</sub>	CL <sup>-</sup>	NO <sub>3</sub>	NO <sub>2</sub>	Fe	Mn	F <sup>-</sup>	Alk	HCO <sub>3</sub>	Hard	TDS	TC	FC
31	S-4-7	Shiselweni	Bambitje	6.8	11	64	1963	38	247	0.13	0.07	0.52	0.007	<0.01	600	366	276	1099	NIL	NIL
32	S-4-8	Shiselweni	Bambitje	7.1	3	20	1838	34	407	1.02	0.03	0.04	0.009	1.59	450	274	174	1029	NIL	NIL
33	S-4-9	Shiselweni	Bambitje	7.1	Nil	3	1564	NIL	99.4	0.01	0.03	0.02	NIL	0.26	430	262.3	382	876	NIL	NIL
34	S-4-4	Shiselweni	Bambitje	7.1	Nil	1	1973	1	172	0.02	0.1	0.02	NIL	0.91	460	280.6	148	1105	NIL	NIL
35	H-1-1	Hhohho	Mbasheni	7.3	3	18	609	1	16.9	0.05	0.02	0.01	NIL	0.55	230	140.3	47	341	NIL	NIL
36	H-1-2	Hhohho	Mbasheni	6.9	9	51	501	4	11.9	0.04	0.05	0.02	NIL	0.78	145	88.4	48	281	NIL	NIL
37	S-8-3	Shiselweni	Ngamudze	7.5	1	1	1221	19	22.4	0.22	0.21	0.09	0.004	1.26	85	51.9	47	684	NIL	NIL
38	S-8-4	Shiselweni	Ngamudze	7.3	3	17	1308	2	29.9	0.66	0.03	0.07	0.004	0.62	95	58	50	732	NIL	NIL
39	S-4-1	Shiselweni	Bambitje	7.2	10	58	399	27	247	0.62	0.54	1.07	2.3	Nil	275	167.8	126	223	NIL	NIL
40	S-4-2	Shiselweni	Bambitje	7.3	12	73	1143	20	94.5	0.88	0.03	0.04	0.6	1.55	200	122	90	640	NIL	NIL
41	S-4-3	Shiselweni	Bambitje	7.3	2	15	251	1	34.5	0.77	0.03	0.06	0.8	2.2	150	91.5	63	1406	NIL	NIL
42	S-1-1	Shiselweni	Makhava	7.2	19	7	1173	7	147	0.13	0.10	0.1	0.7	0.13	475	289.8	75	658	NIL	NIL
43	L-6, 7-4	Lubombo	Lomvovo, Vimbabelungu	6.9	Nil	NIL	833	NIL	64	NIL	0.05	NIL	NIL	1.12	325	198.3	161	466	NIL	NIL
44	L-6, 7-2	Lubombo	Lomvovo, Vimbabelungu	7.2	Nil	NIL	1074	34	77	0.08	1.08	0.02	NIL	2.2	405	247.1	98	601	NIL	NIL
45	S-5, 6-2	Shiselweni	Sigwe, Kathumbela	7.2	Nil	NIL	1115	NIL	117	0.04	0.02	0.01	NIL	0.52	370	225.7	140	624	NIL	NIL
46	H-5-1	Hhohho	Mcuba	7.4	Nil	19	579	1	46.5	0.09	0.01	0.08	0.016	0.07	250	153	75	324	NIL	NIL
47	H-5-2	Hhohho	Mcuba	7.3	Nil	16	548	1	45.5	NIL	NIL	0.03	0.016	0.05	200	122	107	306	NIL	NIL
48	L-5-1	Lubombo	Letindze	7.4	9	67	1105	15	135	0.18	3.28	0.04	NIL	0.03	325	198.2	130	618	NIL	NIL
49	L-6, 7-3	Lubombo	Lomvovo, Vimbabelungu	7.3	12	86	1931	5	250	0.27	9.84	0.08	0.028	0.02	505	308	110	1081	NIL	NIL
50	L-6, 7-4	Lubombo	Lomvovo, Vimbabelungu	7.2	4	18	1252	1	187	0.18	3.28	0.08	0.001	0.01	325	198.2	90	701	NIL	NIL
51	H-3-2	Hhohho	Zinyane	6.9	Nil	1	924	NIL	96.5	0.7	3.28	0.06	0.3	1.1	325	198.2	113	517	NIL	NIL
52	H-3-3	Hhohho	Zinyane	7.3	21	123	842	8	51.5	0.62	32.8	0.44	1.1	2.2	385	234.8	122	472	NIL	NIL
53	H-3-4	Hhohho	Zinyane	7.2	1	10	584	29	66.5	2.48	9.84	0.04	0.3	0.69	160	97.6	77	327	NIL	NIL
54	H-3-1	Hhohho	Zinyane	7.1	14	85	673	13	63.9	1.86	29.5	0.57	2.7	0.5	290	176.9	105	377	NIL	NIL
55	S-7-1	Shiselweni	Ndlambuti	7.1	Nil	NIL	1584	26	245	1.06	9.84	NIL	NIL	0.24	50	30.5	235	887	NIL	NIL
56	S-8-1	Shiselweni	Ngamudze	7.1	Nil	NIL	1438	NIL	142	0.18	9.84	0.55	0.1	0.43	120	73.2	17.5	805	NIL	NIL
57	L-4-1	Lubombo	Mahhoshe	6.9	25	143	1455	75	247	0.84	16.4	1.41	1.2	0.62	370	225.7	220	946	NIL	NIL
58	L-8-1	Lubombo	Nokwane	7.0	2	12	1492	30	124	0.97	6.56	0.04	0.2	0.32	620	378	266	970	NIL	NIL
59	M-7-1	Manzini	Ethunzini	7.2	Nil	5	535	1	53.0	0.27	3.28	0.05	0.2	0.72	230	140	59	348	NIL	NIL
60	M-10-1	Manzini	Manzana	7.2	8	44	2010	66	288	2.57	9.84	NIL	0.69	Nil	325	198.3	170	1306	NIL	NIL

表-2.6 現地水質測定結果

村落 No.	県名	村落名	採水場所	座標	標高 (m)	地質	色	pH	EC	大腸菌群数	色・状況
H2-1	Hhohho	Meleti	湧水-1	E31° 21.003' S26° 06.613'	569	G	やや白濁	—	—	—	,生活用水,年中枯れない
		Meleti	学校(ハトボンプ)	E31° 20.641' S26° 06.082'	525	G	無色	—	—	—	
		Meleti	湧水-2	E31° 20.942' S26° 05.902'	585	G	やや白濁	—	—	—	
H2-4	Hhohho	Mawonbe	湧水	E31° 29.894' S25° 53.418'	464	G	やや白濁	—	—	—	
		Mawonbe	ハトボンプ	E31° 29.628' S25° 52.302'	491	G	やや白濁	—	—	—	
L2-3	Lubombo	Mantjolini	池	E31° 52.698' S26° 34.988'	278	S	やや白濁	9.0	94	1	生活用水,乾期枯れる,飲料後稀に腹痛起こすことがある
L2-8	Lubombo	Maphungwane	小川	E32° 02.416' S26° 54.750'	535	R	やや白濁	5.7	59	—	
L2-11	Lubombo	Mncumaneni	小川	E31° 49.262' S26° 54.837'	197	S	無色,	7.5	1400	3	生活用水,上流1kmのダム用水
L2-14	Lubombo	Ekutheleni	Mawati ハトボンプ	E32° 02.198' S28° 04.120'	505	R	無色,	6.0	159	0	ハトボンプ, 常時使用
L2-17	Lubombo	Etingumatsini	湧水-1	E32° 03.880' S26° 07.260'	510	R	白濁,	5.0	123	0	家畜用,流出量多,尾根部、道路を伝わって流れている
L2-17	Lubombo	Etingumatsini	湧水-2	E32° 03.890' S26° 07.195'	505	R	雨期は白濁, 乾期は無色	5.1	113	0	生活用水,尾根部通常は年中枯れないが大旱魃時は枯れる
L2-20	Lubombo	Buloyini	小川	E31° 59.582' S26° 00.507'	580	B	やや白濁,	5.4	62	—	生活用水,年中枯れない
L2-21	Lubombo	Junjwini	湧水	E31° 58.162' S25° 58.103'	614	B	やや白濁,	6.3	117	7	尾根部、岩盤裂か水、大腸菌試験結果全面が赤色
L2-23	Lubombo	Mhlabubovu	湧水	E31° 57.116' S25° 59.303'	404	B	白濁,	5.5	280	3	谷地の表流水
M2-6	Manzini	Kantunja	湧水	E31° 22.464' S26° 22.377'	731	G	無色,	6.0	68	0	生活用水(トラム缶)
M2-6	Manzini	Kantunja	河川水	E31° 22.464' S26° 22.377'	731	G	無色,	6.4	44	—	上記湧水のトラム缶脇の小川

地質 : G(Granite)、S(Sandstone)、R(Rhyolite)、B(Basalt)

表 2.7 試掘調査結果:水質分析結果

Serial No.	Site Location No.		Region	Community	Water Quality Analysis																	Remarks	
	Division	District			Temp	pH	Turbidity	Oxigen	Conductivity (μS/cm)	SO4 (mg/l)	Cl (mg/l)	HCO3 (mg/l)	HCO2 (mg/l)	Fe (mg/l)	Mn (mg/l)	P (mg/l)	Alkalinity (mg/l)	HCO3 (mg/l)	Hardness (mg/l)	TDS (mg/l)	Total Calcium (mg/l)		Total Magnesium (mg/l)
1	#3	H2-3	Hibiki	Leikangohatai	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	#4	H2-4	Hibiki	Makawake	4.8	8	49	30	4	24	14	0	0.1	0.4	181	150	92	182	28	98	182		
3	#10	L2-2	Labouch	Shinjyima	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4	#10(2)	L2-2(2)	Labouch	Shinjyima	4.8	9	41	126	7	141	28	0	0.2	0.5	181	1,390	448	140	72	98	182		
5	#12	L2-5	Labouch	Shijobanmi	4.6	10	54	140	47	1,349	78	0	0.1	0.4	181	1,160	1,115	282	72	98	182		
6	#13	L2-6	Labouch	Shibagayomi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7	#14	L2-8	Labouch	Shijobanmi	4.7	19	94	99	0	9	24	0	0.1	0.3	181	410	203	182	72	98	182		
8	L211	L2-20	Labouch	Dōryūta	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	L212	L2-22	Labouch	Shibachibi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10	L213(2)	L2-22(2)	Labouch	Shibachibi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11	#24	M2-1	Mizumi	Makoto	4.9	9	52	51	4	24	10	0	0.1	0.4	181	200	121	182	29	98	182		
12	#25	M2-7	Mizumi	Shibachibi	4.8	9	55	133	9	42	30	0	0.1	0.2	181	480	244	131	71	98	182		
13	#27	M2-14	Mizumi	Shibachibi	4.8	7	25	125	5	77	27	0	0.1	0.3	181	290	221	112	70	98	182		
14	#41	S2-7	Shibuchi	Shibagayomi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15	#44	S2-4	Shibuchi	Shibagayomi	4.8	11	52	67	475	145	139	0	0.1	18.9	181	1,430	481	312	72	18	182		



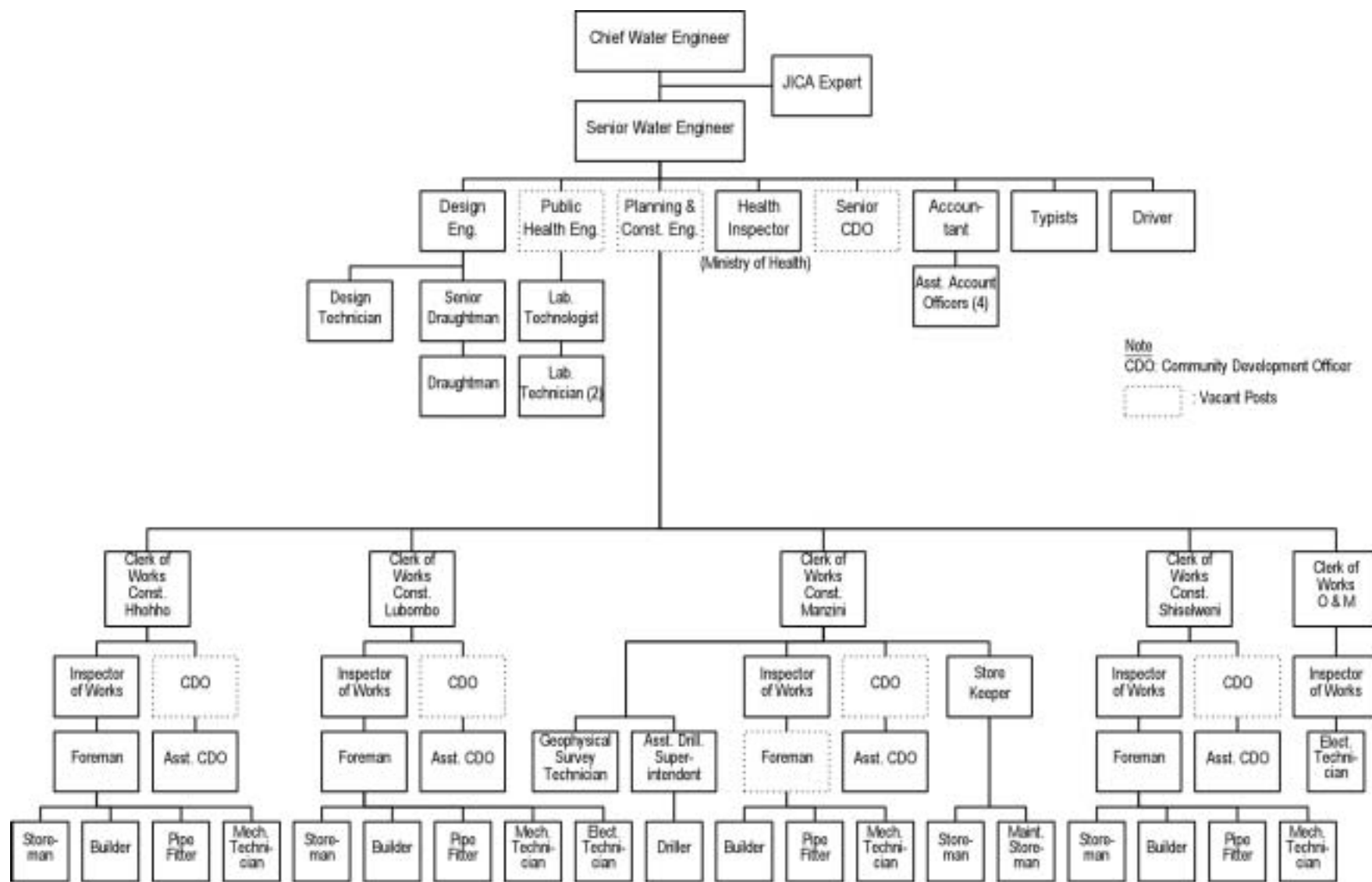
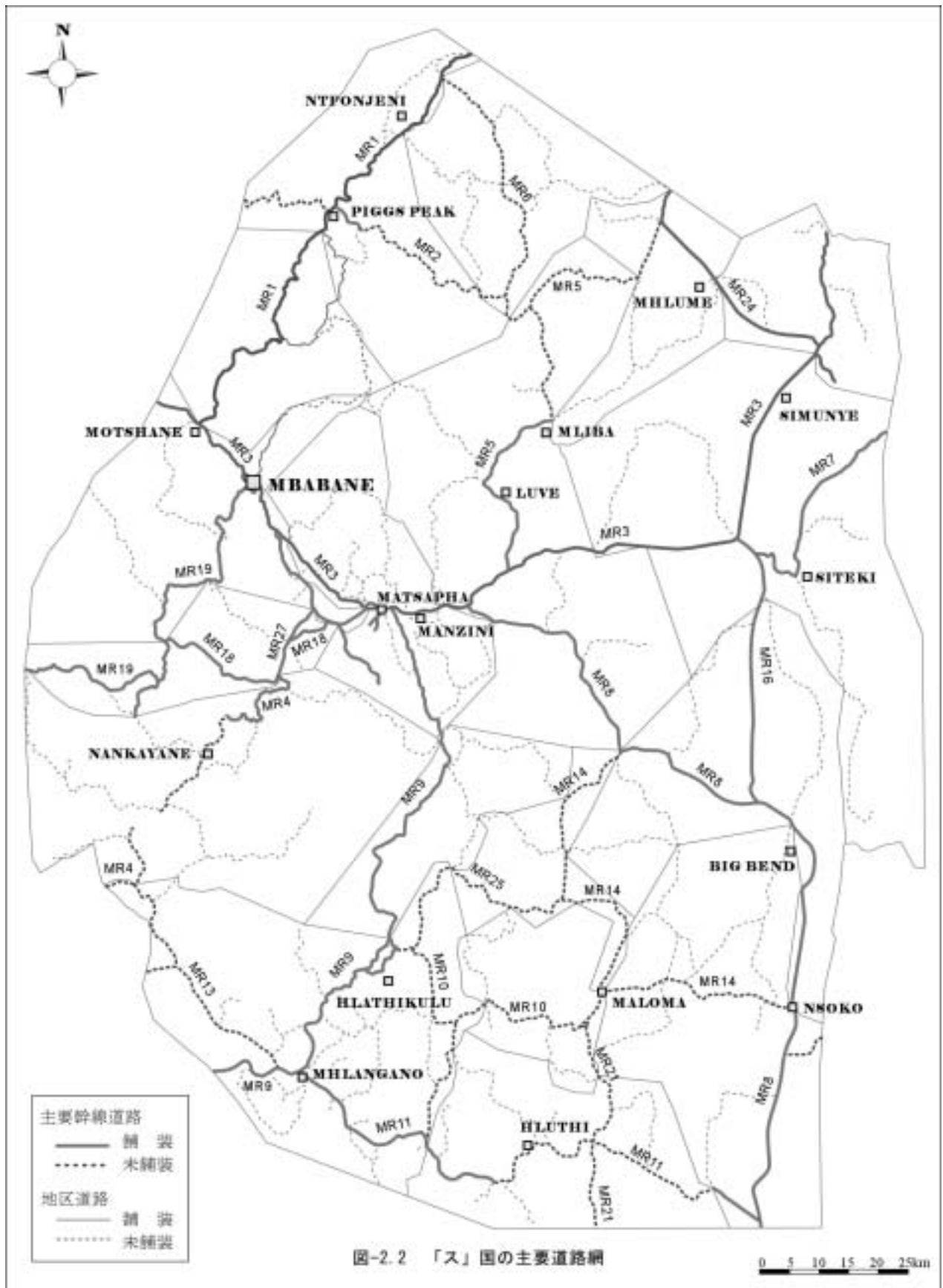


图-2.1 地方給水局(RWSB)組織図



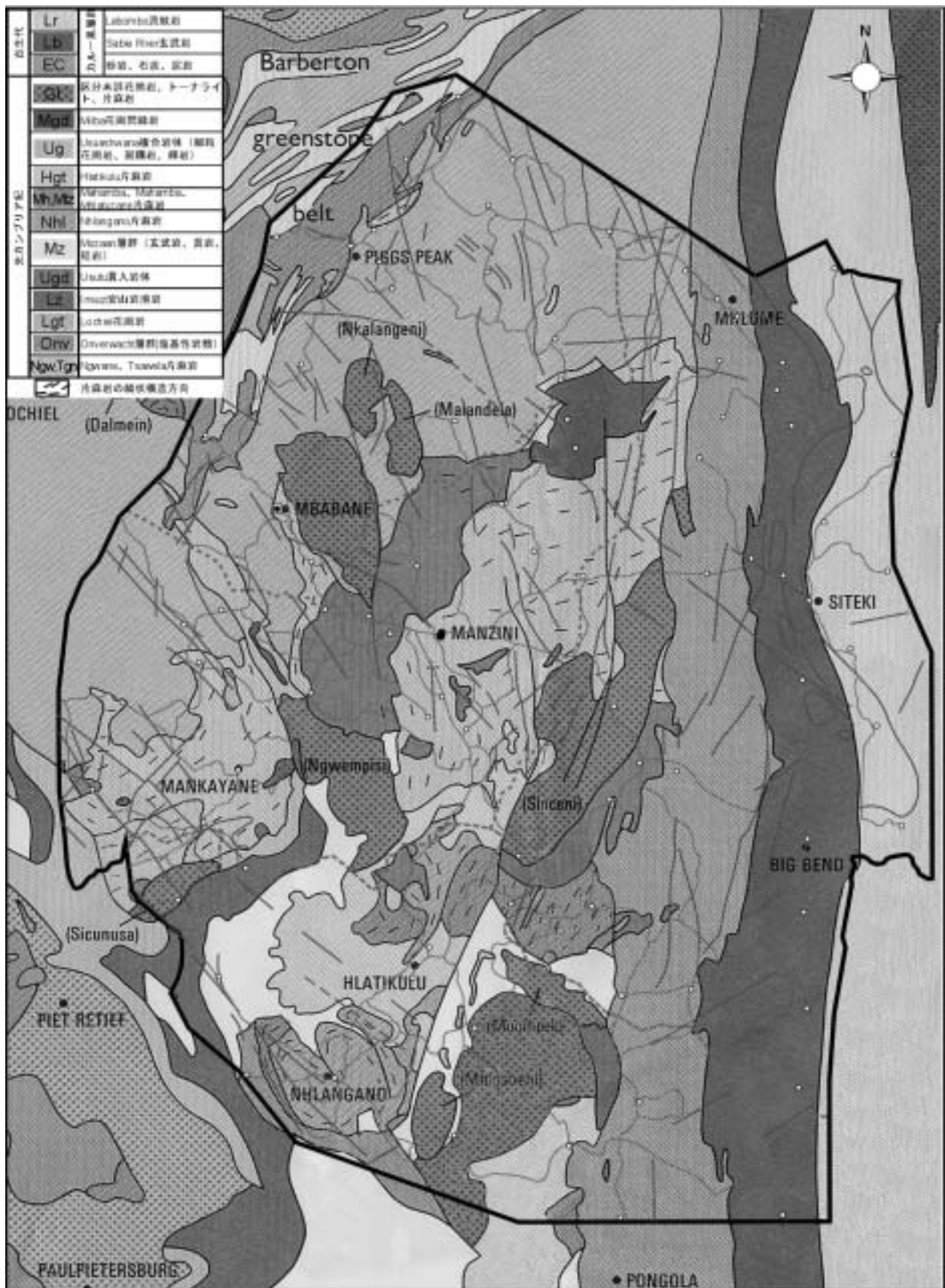


図-2.3 「ス」国の地質図



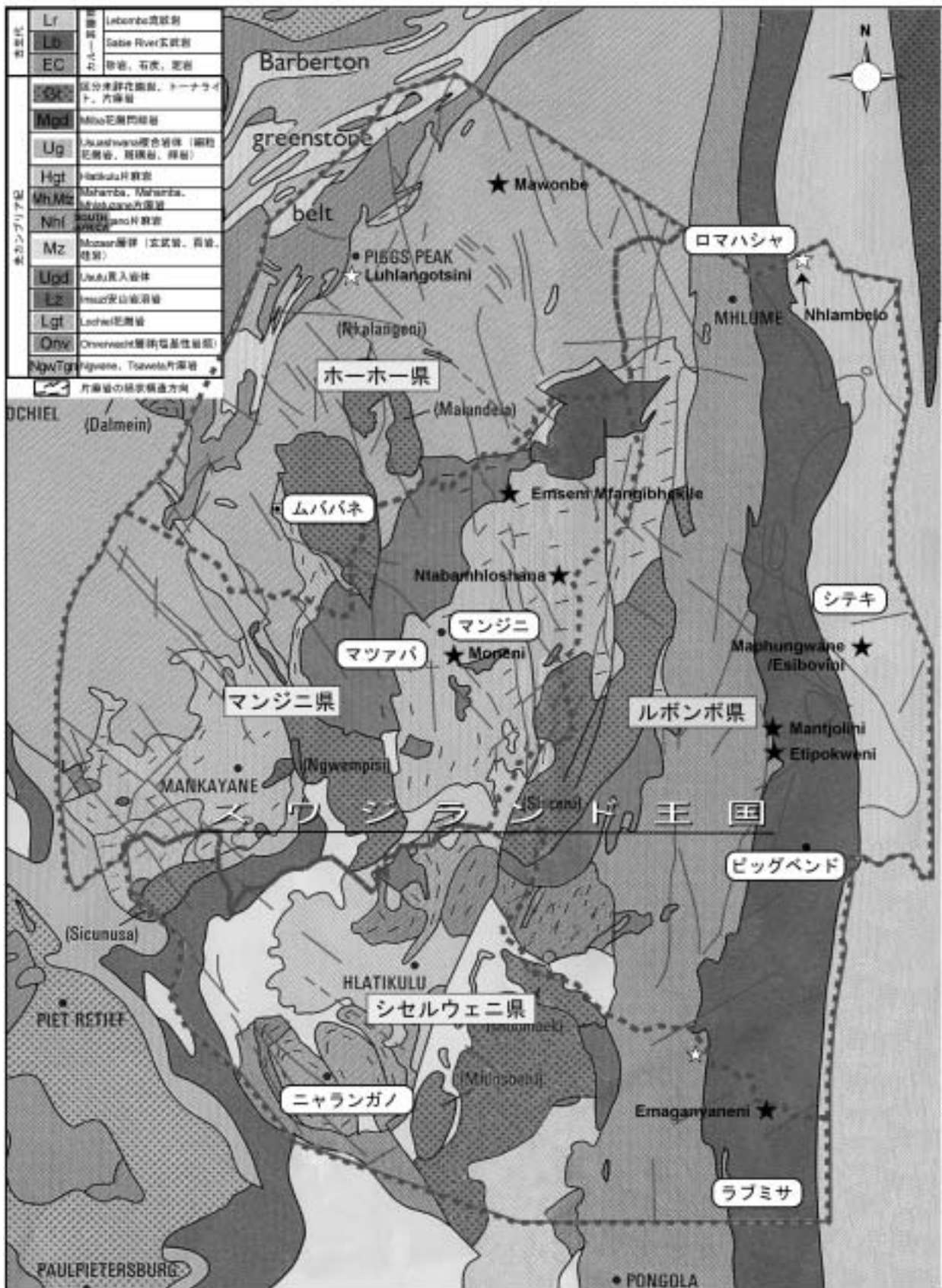


図 2.4 試掘調査対象コミュニティ位置図

**GEOLOGICAL AND GEOPHYSICAL LOG**

Project Title		Beds Design Study for the End Road Water Supply Project					
Site Number	#3 043-21	Latitude	33° 22' 03"	SWL	0.00 m	pH	-
Community	Lehighvalley	Longitude	81° 31' 42"	DTW	0.00 m	Temperature	- C
Region	Western	Elevat. above	#1 m	Quantity	0.00 liter	Conductivity	25/25
Completed Date	March 1, 2002	Completed by	Asst. Geol.	Geophysicist	0.00 m	Conducted by	Edmund Pyette
GEOPHYSICAL LOGGING DATA							
SCALE	DEPTH	LITHOLOGY	COLOR	REMARKS	LOGGING PROGRAM		
					SP-1	SP-2	
0.0	0.0				SP-1	SP-2	
	1.0	Gravel	Dark brown	Dry soil	SP-1	SP-2	
	10.0				SP-1	SP-2	
	11.0	Gravel	Light grey & grey brown	Associated with moderately weathered medium fractured zone.	SP-1	SP-2	
	20.0				SP-1	SP-2	
	30.0				SP-1	SP-2	
	40.0				SP-1	SP-2	
	50.0				SP-1	SP-2	
	60.0				SP-1	SP-2	
	70.0				SP-1	SP-2	
	80.0				SP-1	SP-2	
	90.0				SP-1	SP-2	
	100.0				SP-1	SP-2	
	110.0	Gravel	Light grey	Dark & fractured	SP-1	SP-2	
	120.0				SP-1	SP-2	
	130.0				SP-1	SP-2	
	140.0				SP-1	SP-2	
	150.0				SP-1	SP-2	
	160.0				SP-1	SP-2	
	170.0				SP-1	SP-2	
	180.0				SP-1	SP-2	
	190.0				SP-1	SP-2	
	200.0				SP-1	SP-2	
	210.0				SP-1	SP-2	
	220.0				SP-1	SP-2	
	230.0				SP-1	SP-2	
	240.0				SP-1	SP-2	
	250.0				SP-1	SP-2	
	260.0				SP-1	SP-2	
	270.0				SP-1	SP-2	
	280.0				SP-1	SP-2	
	290.0				SP-1	SP-2	
	300.0				SP-1	SP-2	
	310.0				SP-1	SP-2	
	320.0				SP-1	SP-2	
	330.0				SP-1	SP-2	
	340.0				SP-1	SP-2	
	350.0				SP-1	SP-2	
	360.0				SP-1	SP-2	
	370.0				SP-1	SP-2	
	380.0				SP-1	SP-2	
	390.0				SP-1	SP-2	
	400.0				SP-1	SP-2	
	410.0				SP-1	SP-2	
	420.0				SP-1	SP-2	
	430.0				SP-1	SP-2	
	440.0				SP-1	SP-2	
	450.0				SP-1	SP-2	
	460.0				SP-1	SP-2	
	470.0				SP-1	SP-2	
	480.0				SP-1	SP-2	
	490.0				SP-1	SP-2	
	500.0				SP-1	SP-2	
	510.0				SP-1	SP-2	
	520.0				SP-1	SP-2	
	530.0				SP-1	SP-2	
	540.0				SP-1	SP-2	
	550.0				SP-1	SP-2	
	560.0				SP-1	SP-2	
	570.0				SP-1	SP-2	
	580.0				SP-1	SP-2	
	590.0				SP-1	SP-2	
	600.0				SP-1	SP-2	
	610.0				SP-1	SP-2	
	620.0				SP-1	SP-2	
	630.0				SP-1	SP-2	
	640.0				SP-1	SP-2	
	650.0				SP-1	SP-2	
	660.0				SP-1	SP-2	
	670.0				SP-1	SP-2	
	680.0				SP-1	SP-2	
	690.0				SP-1	SP-2	
	700.0				SP-1	SP-2	
	710.0				SP-1	SP-2	
	720.0				SP-1	SP-2	
	730.0				SP-1	SP-2	
	740.0				SP-1	SP-2	
	750.0				SP-1	SP-2	
	760.0				SP-1	SP-2	
	770.0				SP-1	SP-2	
	780.0				SP-1	SP-2	
	790.0				SP-1	SP-2	
	800.0				SP-1	SP-2	
	810.0				SP-1	SP-2	
	820.0				SP-1	SP-2	
	830.0				SP-1	SP-2	
	840.0				SP-1	SP-2	
	850.0				SP-1	SP-2	
	860.0				SP-1	SP-2	
	870.0				SP-1	SP-2	
	880.0				SP-1	SP-2	
	890.0				SP-1	SP-2	
	900.0				SP-1	SP-2	
	910.0				SP-1	SP-2	
	920.0				SP-1	SP-2	
	930.0				SP-1	SP-2	
	940.0				SP-1	SP-2	
	950.0				SP-1	SP-2	
	960.0				SP-1	SP-2	
	970.0				SP-1	SP-2	
	980.0				SP-1	SP-2	
	990.0				SP-1	SP-2	
	1000.0				SP-1	SP-2	

図 2.5 試掘調査結果:柱状図(1/15)

**GEOLOGICAL AND GEOPHYSICAL LOG**

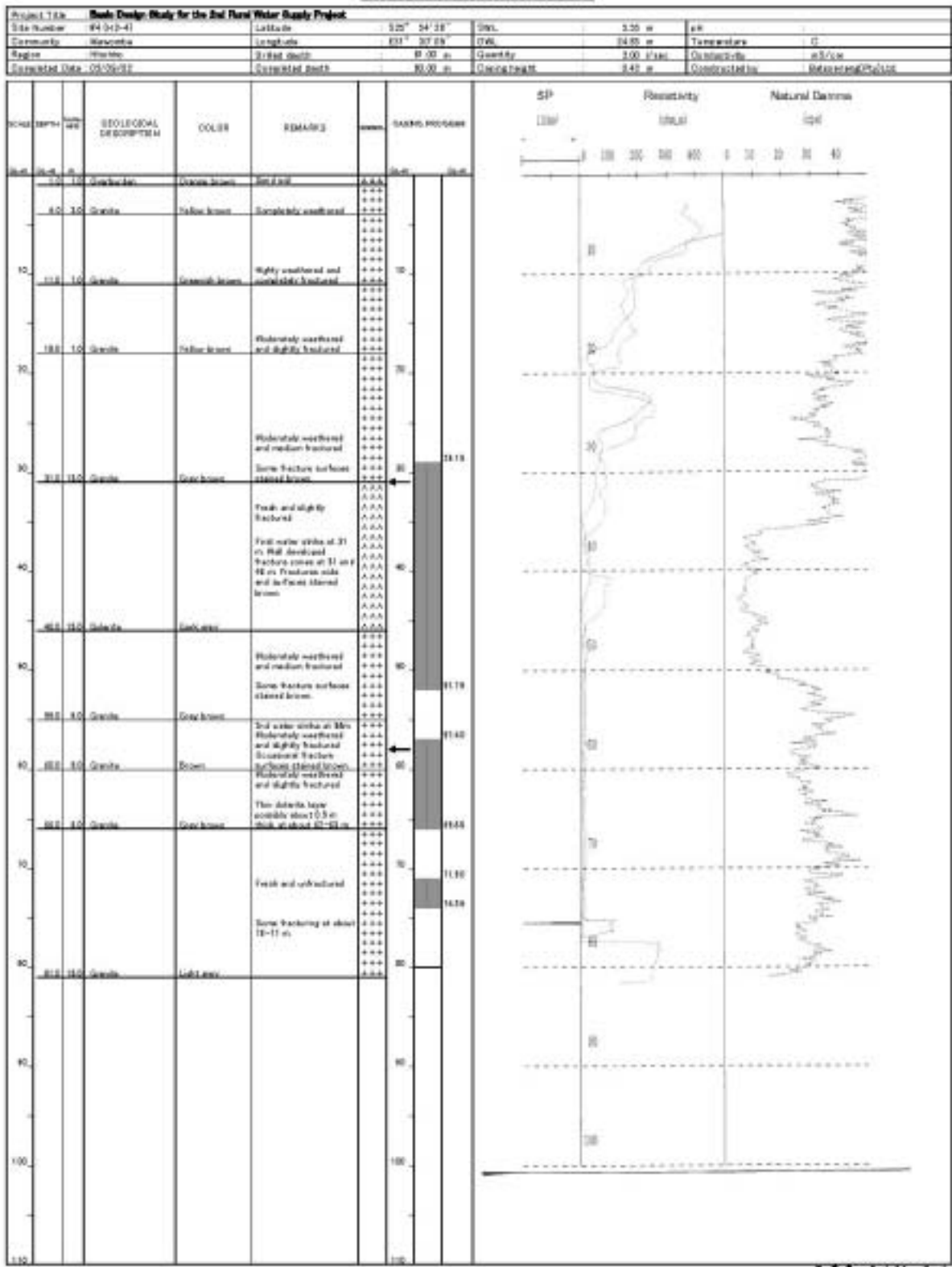


図 2.5 試掘調査結果:柱状図(2/15)

**GEOLOGICAL AND GEOPHYSICAL LOG**

Project Title: <b>Bank Design Study for the Red River Water Supply Project</b>						
Site Number	WFO (L2-1)		Latitude	32° 34' 34"	Drill	020 m
Community	Wardaria		Longitude	83° 57' 38"	DWG	Temperature
Region	Luhaka		Drill depth	FT m	Quantity	020 m
Completed Date	August 31, 2007		Completed Month	August	Geotechnical	Reference/Photo
GEOLOGICAL LOGGING DATA						
Core	Depth	Geological Description	Color	Remarks	Depth	Depth
	m				m	m
	0.0	Overburden	Light brown	Soils cut	0.0	0.0
	10.0	Sandstone	Light brown	Highly weathered and highly fractured	10.0	10.0
	15.0	Sandstone	Light brown	Highly weathered and highly fractured	15.0	15.0
	17.0	Sandstone	Dark grey	Thin & fractured fine grained sandstone	17.0	17.0
	24.0	Sandstone	Light brown and light grey	Thin & fractured fine grained highly sandstone	24.0	24.0
	30.0				30.0	30.0
	40.0				40.0	40.0
	50.0				50.0	50.0
	60.0				60.0	60.0
	70.0				70.0	70.0
	80.0				80.0	80.0
	90.0				90.0	90.0
	91.0	Sandstone	Medium grey	Thin & fractured fine grained sandstone	91.0	91.0
	100.0				100.0	100.0
	110.0				110.0	110.0

図 2.5 試掘調査結果:柱状図(3/15)

GEOLOGICAL AND GEOPHYSICAL LOG

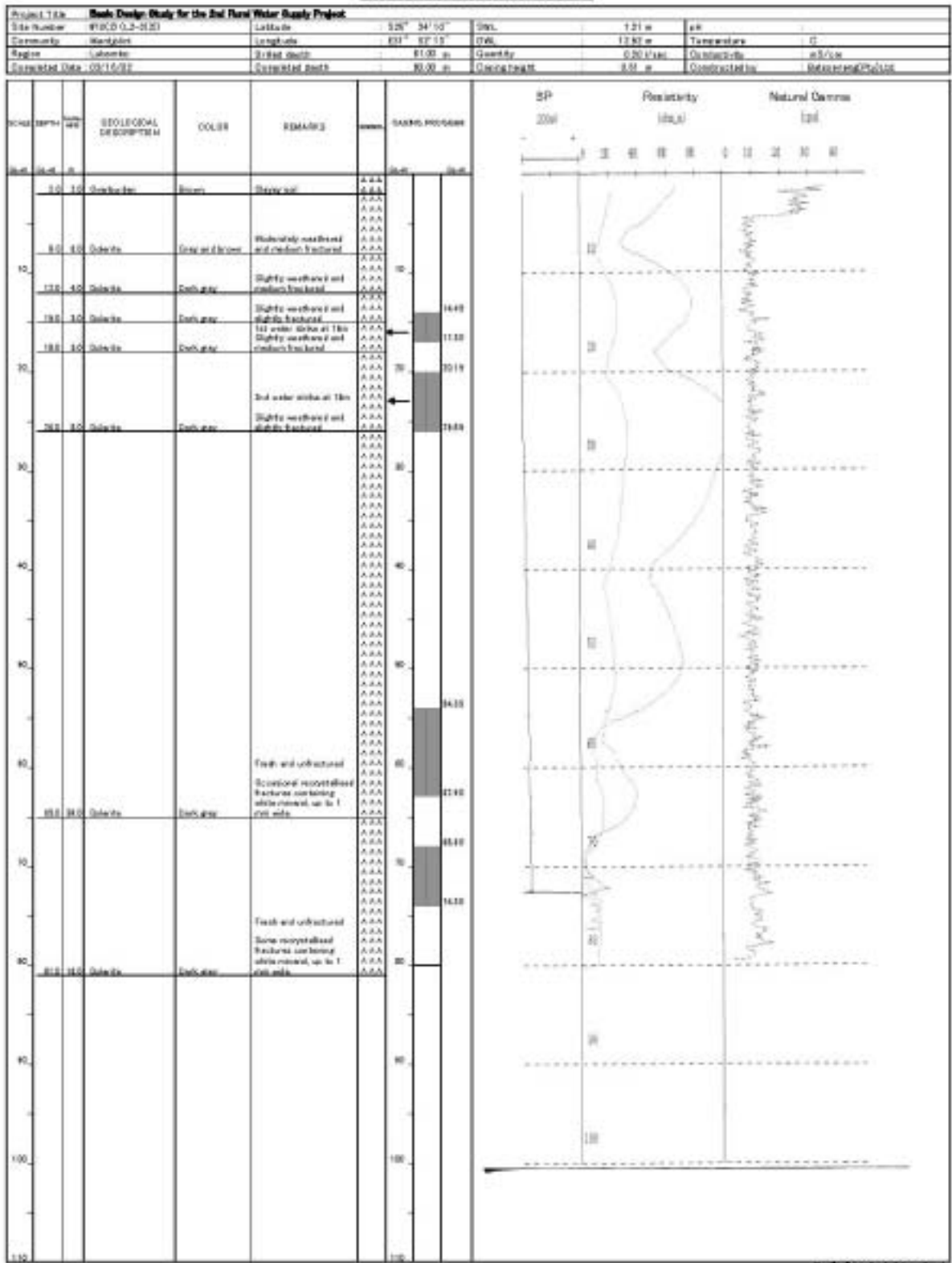


图 2.5 试掘调查结果:柱状图(4/15)

**GEOLOGICAL AND GEOPHYSICAL LOG**

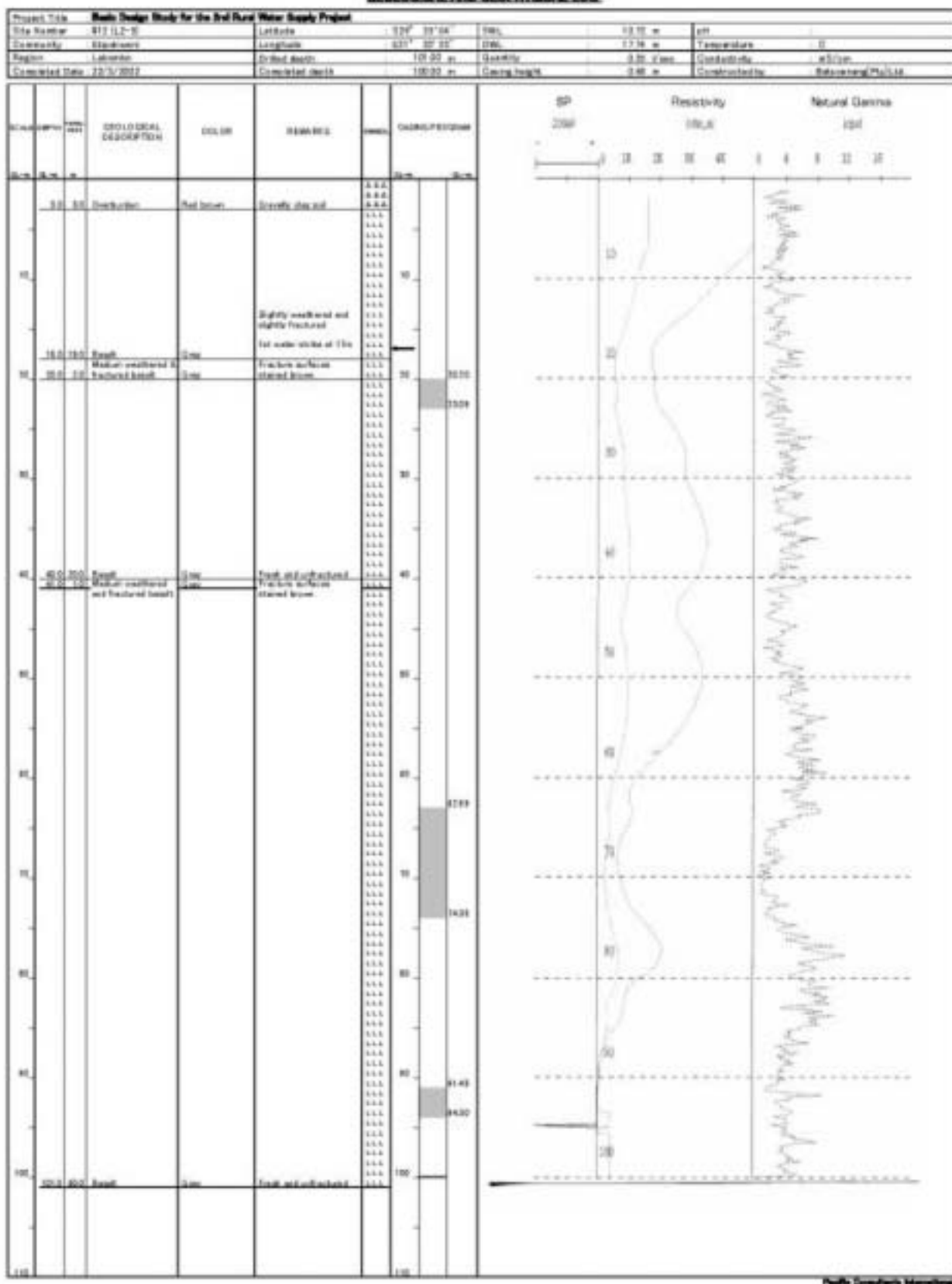


图 2.5 試掘調査結果:柱状図(5/15)

**GEOLOGICAL AND GEOPHYSICAL LOG**

Project Title: <b>Bank Design Study for the 2nd Rural Water Supply Project</b>									
Site Number: 913 (L3-0)		Latitude: 26° 21' 54"		Depth: 000 m		pH:			
Community: Monagayashi		Longitude: 103° 47' 32"		DWS:		Temperature: 0			
Region: Laberna		Elev. above: FT =		Quantity: 000 m <sup>3</sup> /min		Conductivity: mS/cm			
Completed Date: March 14, 2001		Completed Depth:		Revised:		Constructed by: B&B Engineering Inc.			
GEOPHYSICAL LOGGING DATA									
Core No.	Core ID	GEOLOGICAL DESCRIPTION	COLOR	REMARKS	Depth m	CABLE PROGRAM		Geophysics Data	
						Core No.	Core ID		
10	10	Gravelly	Red brown	Very red	0-10	AAA			
10	10	Gravelly	Brown	Slightly weathered and fractured	10-20	AAA			
20	20	Gravelly	Brown and red	Reddish weathered and fractured	20-30	AAA			
30	30	Gravelly	Brown and red	Reddish weathered and fractured. Some fracture surface staining	30-40	AAA			
40	40	Slightly weathered and fractured fine grained sand	Black	Fine to medium grain. Subangular sands	40-50	AAA			
50	50	Gravelly	Red and grey	Slightly weathered red and grey slightly fractured gravels. Red siliceous spherulites	50-60	AAA			
60	60	Gravelly	Dark and red	Slightly weathered red and grey slightly fractured gravels. Red siliceous spherulites	60-70	AAA			
70	70	Gravelly	Dark and red	Fine to medium grained	70-80	AAA			
80	80	Gravelly	Dark and red	Red siliceous spherulites. Occasional quartz and K-feldspar	80-90	AAA			

図 2.5 試掘調査結果:柱状図(6/15)

GEOLOGICAL AND GEOPHYSICAL LOG

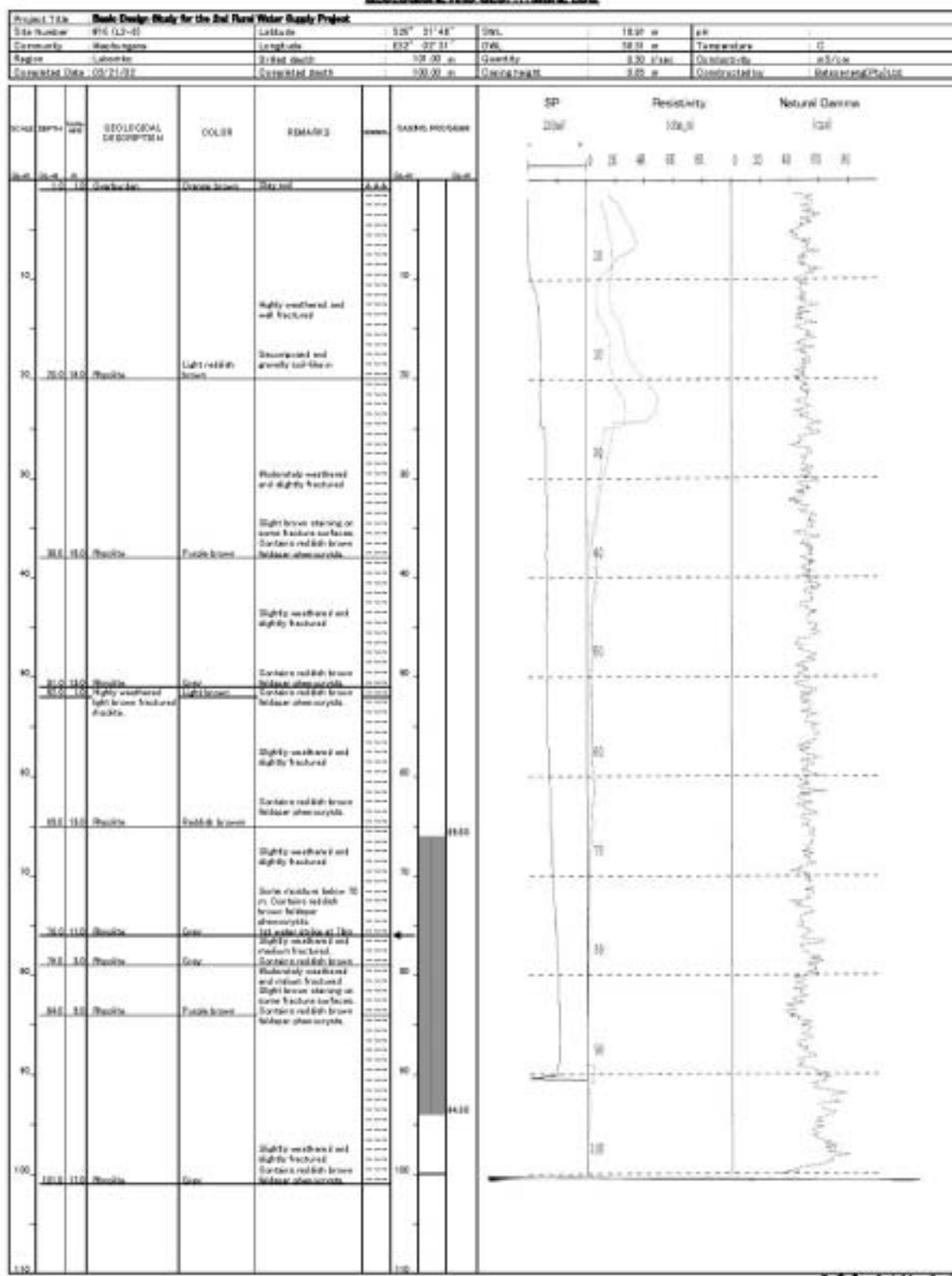


図 2.5 試掘調査結果:柱状図(7/15)



**GEOLOGICAL AND GEOPHYSICAL LOG**

Project Title: <b>Bank Design Study for the 2nd Rural Water Supply Project</b>									
Site Number: L511 (L2-22)		Latitude: 52° 02' 27"		Elev.:		000 m		±0	
Community: Subotic		Longitude: 011° 59' 31"		DWS:		000 m		Temperature: 0°	
Region: Lubero		Elev. above: 100 m		Quantity:		000 m <sup>3</sup> /sec		Contractor: a/s/c/o	
Completed Date: March 15, 2001		Completed Depth:		Horizontal:		000 m		Contracted by: International/Local	
GEOLOGICAL LOGGING DATA									
Core No.	Depth m	GEOLOGICAL DESCRIPTION	COLOR	REMARKS	SANDS PROCENT				
					mm	mm			
	0-10	Dark brown	Dark brown	Dark soil	0.00	0.00			
	10-20	Shells	Light red grey	Slightly weathered	0.00	0.00			
	20-30	Shells	Light grey	Highly weathered and slightly fractured	0.00	0.00			
	30-40	Shells	Light red to red black	Dark brown and black	0.00	0.00			
	40-50	Shells	Light red to red black	Dark brown and black	0.00	0.00			
	50-60	Shells	Light red to red black	Dark brown and black	0.00	0.00			
	60-70	Shells	Light red to red black	Dark brown and black	0.00	0.00			
	70-80	Shells	Light red to red black	Dark brown and black	0.00	0.00			
	80-90	Shells	Light red to red black	Dark brown and black	0.00	0.00			
	90-100	Shells	Light red to red black	Dark brown and black	0.00	0.00			
	100-110	Shells	Light red to red black	Dark brown and black	0.00	0.00			
	110-120	Shells	Light red to red black	Dark brown and black	0.00	0.00			

図 2.5 試掘調査結果:柱状図(8/15)

**GEOLOGICAL AND GEOPHYSICAL LOG**

Project Title: <b>Basic Design Study for the 2nd Rural Water Supply Project</b>															
Site Number		L515 (L2-22)		Latitude		32° 58' 21"		Elev.		620 m		pH			
Community		Wideroin		Longitude		101° 57' 18"		DWS		620 m		Temperature		C	
Region		Laborte		Elev. above		101 m		Quantity		620 m/min		Conductivity		µS/cm	
Contract Date		October 9, 2007		Contract Ref#		None/NA		Contract		620 m		Contract Ref#		Ref: 2007/07/09	
										GEOPHYSICAL LOGGING DATA					
Core No.	Core ID	GEOLOGICAL DESCRIPTION	COLOR	REMARKS	Core Length m	CABLE PROGRAM									
						Core Start m	Core End m								
	10	Subsolute	Brown	Grey soil	0.00	0.00									
	14.8	Shale	Yellow brown	Slightly weathered and fractured.	0.00	0.00									
	20.0	Shale	Grey brown	Moderately weathered and medium fractured	0.00	0.00									
	28.0	Shale	Grey	Very light tan to olive grey at 21 m.	0.00	0.00									
	38.0	Shale	Grey	Slightly weathered and slightly fractured	0.00	0.00									
	34.0	Shale	Grey and tan shaly shale	Slightly weathered and slightly fractured	0.00	0.00									
	34.0	Shale	Grey and tan shaly shale	Contains foliose phyllosites.	0.00	0.00									
	100.0	Shale	Grey and reddish grey	Block & fractured Contains foliose phyllosites.	0.00	0.00									

図 2.5 試掘調査結果:柱状図(9/15)

**GEOLOGICAL AND GEOPHYSICAL LOG**

Project Title		Beds Design Study for the 2nd Road Water Supply Project		Latitude		120° 27' 18"	Long.	100° 00' 00"	Alt.	000 m	Temp.	00
Site Number		L37 N01 L3-01/20		Longitude		101° 27' 30"	Lat.	000 m	Temp.	00	Remarks	
Community		Waterlain		Elevation		101 m	Quantity	000 m	Direction	000 m	Remarks	
Region		Lubero		Elevation		101 m	Quantity	000 m	Direction	000 m	Remarks	
Estimated Date		February 21, 2012		Estimated Depth		1000 m	Quantity	000 m	Direction	000 m	Remarks	
Core	Depth (m)	Geological Description	Color	Remarks	Depth (m)	GEOPHYSICAL LOGGING DATA						
						Depth (m)	Depth (m)					
	0.0 - 1.0	Dark brown	Red brown	Dark red	0.0 - 1.0							
	1.0 - 1.5	Shale	Yellow brown	Slightly weathered	1.0 - 1.5							
	1.5 - 2.0	Shale	Yellow and grey brown	Highly weathered and shaly fractured	1.5 - 2.0							
	2.0 - 3.0	Shale	Grey and reddish white	Slightly weathered and shaly fractured	2.0 - 3.0							
	3.0 - 4.0	Shale	Grey	Some shaly weathered and shaly fractured	3.0 - 4.0							
	4.0 - 5.0	Shale	Grey	Some shaly weathered and shaly fractured	4.0 - 5.0							
	5.0 - 6.0	Shale	Grey	Some shaly weathered and shaly fractured	5.0 - 6.0							
	6.0 - 7.0	Shale	Grey	Some shaly weathered and shaly fractured	6.0 - 7.0							
	7.0 - 8.0	Shale	Grey	Some shaly weathered and shaly fractured	7.0 - 8.0							
	8.0 - 9.0	Shale	Grey	Some shaly weathered and shaly fractured	8.0 - 9.0							
	9.0 - 10.0	Shale	Grey	Some shaly weathered and shaly fractured	9.0 - 10.0							
	10.0 - 11.0	Shale	Grey	Some shaly weathered and shaly fractured	10.0 - 11.0							
	11.0 - 12.0	Shale	Grey	Some shaly weathered and shaly fractured	11.0 - 12.0							
	12.0 - 13.0	Shale	Grey	Some shaly weathered and shaly fractured	12.0 - 13.0							
	13.0 - 14.0	Shale	Grey	Some shaly weathered and shaly fractured	13.0 - 14.0							
	14.0 - 15.0	Shale	Grey	Some shaly weathered and shaly fractured	14.0 - 15.0							
	15.0 - 16.0	Shale	Grey	Some shaly weathered and shaly fractured	15.0 - 16.0							
	16.0 - 17.0	Shale	Grey	Some shaly weathered and shaly fractured	16.0 - 17.0							
	17.0 - 18.0	Shale	Grey	Some shaly weathered and shaly fractured	17.0 - 18.0							
	18.0 - 19.0	Shale	Grey	Some shaly weathered and shaly fractured	18.0 - 19.0							
	19.0 - 20.0	Shale	Grey	Some shaly weathered and shaly fractured	19.0 - 20.0							
	20.0 - 21.0	Shale	Grey	Some shaly weathered and shaly fractured	20.0 - 21.0							
	21.0 - 22.0	Shale	Grey	Some shaly weathered and shaly fractured	21.0 - 22.0							
	22.0 - 23.0	Shale	Grey	Some shaly weathered and shaly fractured	22.0 - 23.0							
	23.0 - 24.0	Shale	Grey	Some shaly weathered and shaly fractured	23.0 - 24.0							
	24.0 - 25.0	Shale	Grey	Some shaly weathered and shaly fractured	24.0 - 25.0							
	25.0 - 26.0	Shale	Grey	Some shaly weathered and shaly fractured	25.0 - 26.0							
	26.0 - 27.0	Shale	Grey	Some shaly weathered and shaly fractured	26.0 - 27.0							
	27.0 - 28.0	Shale	Grey	Some shaly weathered and shaly fractured	27.0 - 28.0							
	28.0 - 29.0	Shale	Grey	Some shaly weathered and shaly fractured	28.0 - 29.0							
	29.0 - 30.0	Shale	Grey	Some shaly weathered and shaly fractured	29.0 - 30.0							
	30.0 - 31.0	Shale	Grey	Some shaly weathered and shaly fractured	30.0 - 31.0							
	31.0 - 32.0	Shale	Grey	Some shaly weathered and shaly fractured	31.0 - 32.0							
	32.0 - 33.0	Shale	Grey	Some shaly weathered and shaly fractured	32.0 - 33.0							
	33.0 - 34.0	Shale	Grey	Some shaly weathered and shaly fractured	33.0 - 34.0							
	34.0 - 35.0	Shale	Grey	Some shaly weathered and shaly fractured	34.0 - 35.0							
	35.0 - 36.0	Shale	Grey	Some shaly weathered and shaly fractured	35.0 - 36.0							
	36.0 - 37.0	Shale	Grey	Some shaly weathered and shaly fractured	36.0 - 37.0							
	37.0 - 38.0	Shale	Grey	Some shaly weathered and shaly fractured	37.0 - 38.0							
	38.0 - 39.0	Shale	Grey	Some shaly weathered and shaly fractured	38.0 - 39.0							
	39.0 - 40.0	Shale	Grey	Some shaly weathered and shaly fractured	39.0 - 40.0							
	40.0 - 41.0	Shale	Grey	Some shaly weathered and shaly fractured	40.0 - 41.0							
	41.0 - 42.0	Shale	Grey	Some shaly weathered and shaly fractured	41.0 - 42.0							
	42.0 - 43.0	Shale	Grey	Some shaly weathered and shaly fractured	42.0 - 43.0							
	43.0 - 44.0	Shale	Grey	Some shaly weathered and shaly fractured	43.0 - 44.0							
	44.0 - 45.0	Shale	Grey	Some shaly weathered and shaly fractured	44.0 - 45.0							
	45.0 - 46.0	Shale	Grey	Some shaly weathered and shaly fractured	45.0 - 46.0							
	46.0 - 47.0	Shale	Grey	Some shaly weathered and shaly fractured	46.0 - 47.0							
	47.0 - 48.0	Shale	Grey	Some shaly weathered and shaly fractured	47.0 - 48.0							
	48.0 - 49.0	Shale	Grey	Some shaly weathered and shaly fractured	48.0 - 49.0							
	49.0 - 50.0	Shale	Grey	Some shaly weathered and shaly fractured	49.0 - 50.0							

图 2.5 试掘调查结果:柱状图(10/15)

**GEOLOGICAL AND GEOPHYSICAL LOG**

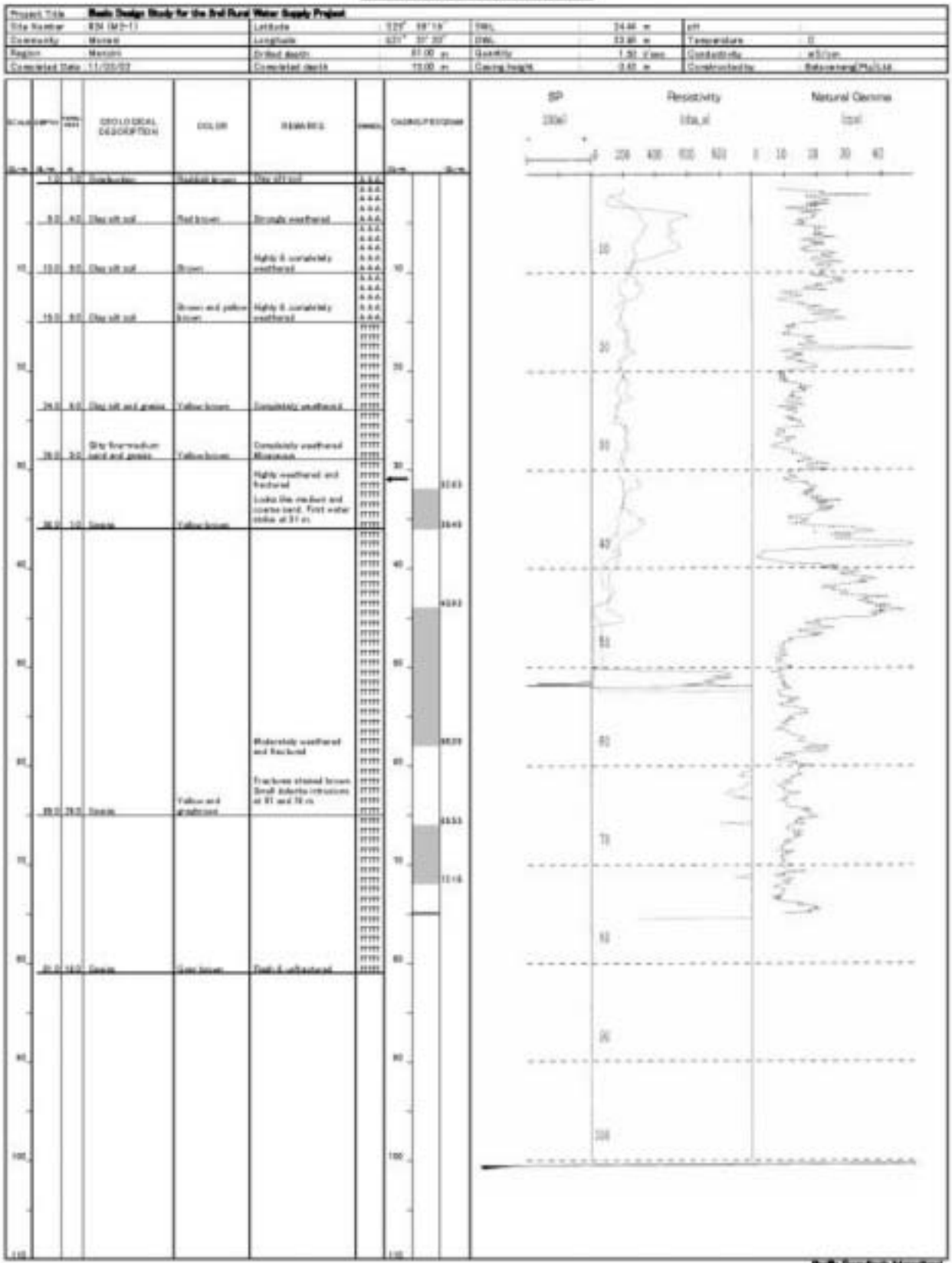


图 2.5 試掘調査結果:柱状図(11/15)

GEOLOGICAL AND GEOPHYSICAL LOG

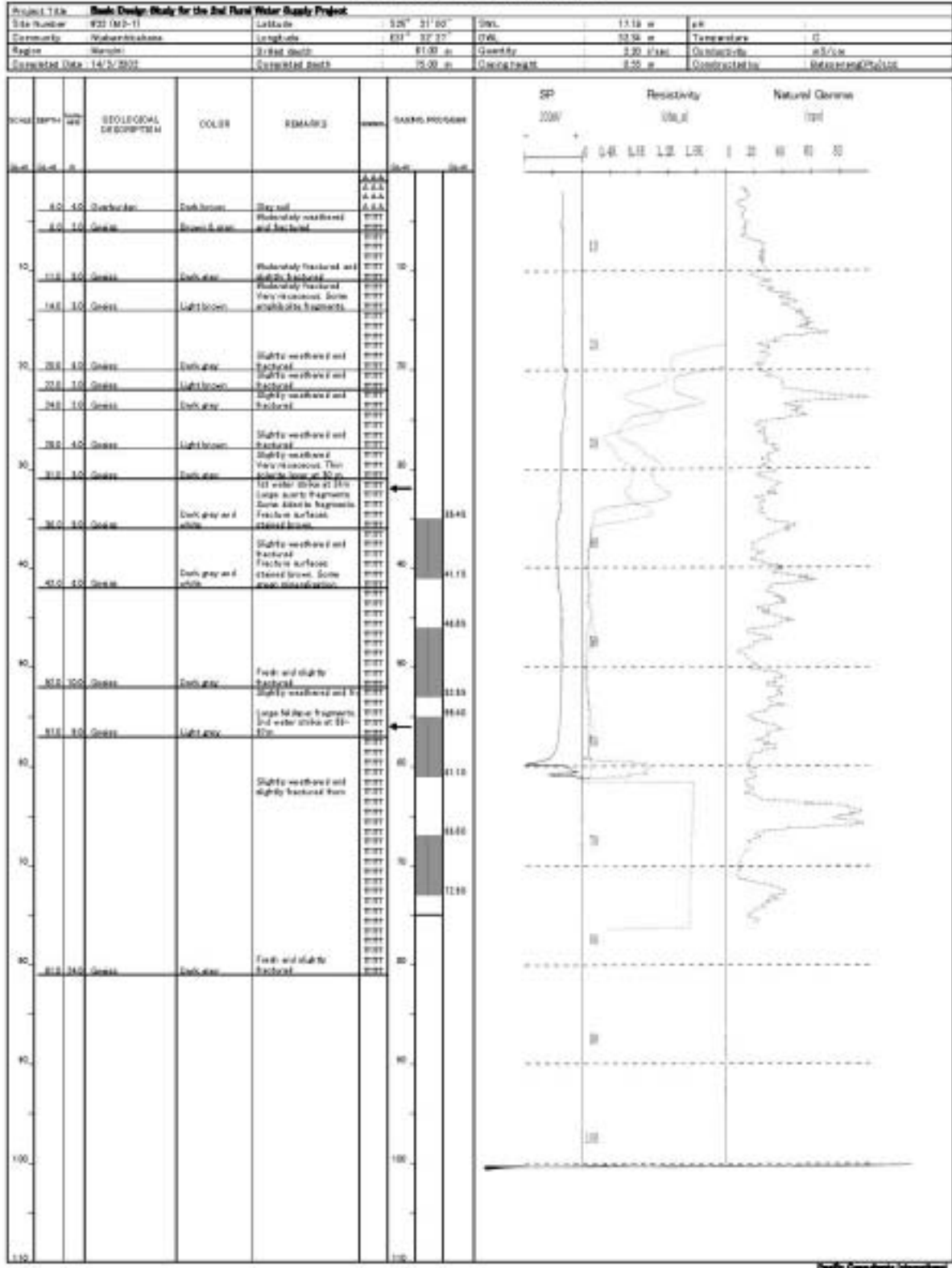


图 2.5 试掘调查结果:柱状图(12/15)

**GEOLOGICAL AND GEOPHYSICAL LOG**

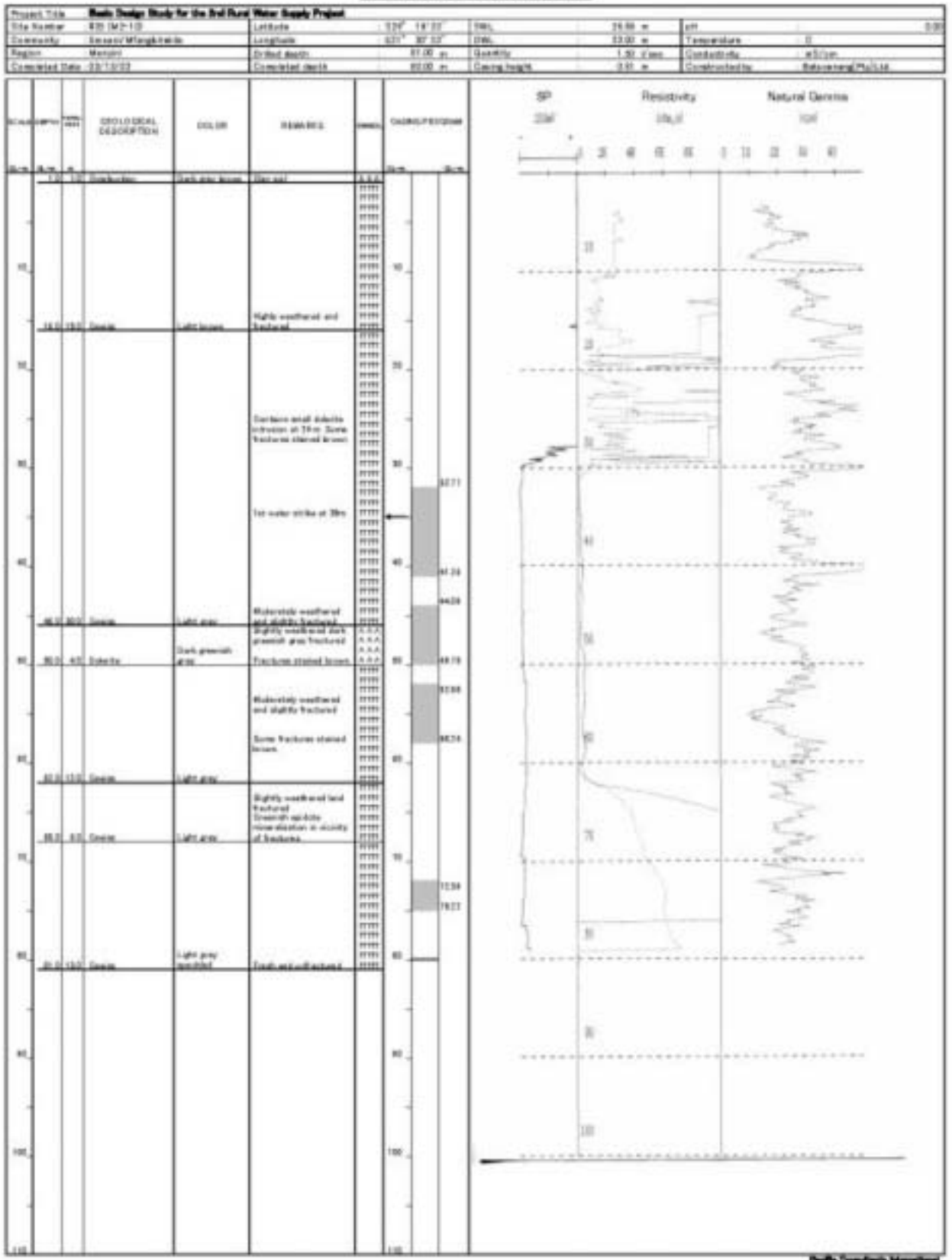


図 2.5 試掘調査結果:柱状図(13/15)

GEOLOGICAL AND GEOPHYSICAL LOG

Project Title: Bank Design Study for the Bal Rural Water Supply Project									
Site Number: 943 (32-1)		Latitude: 22° 18' 18"		SWL: 0.00 m		pH:			
Community: Habayoneni		Longitude: 031° 49' 33"		ITWL: 0.00 m		Temperature: 17			
Region: Swaziland		Borehole Depth: 107 m		Quantity: 200 l/min		Conductivity: 233 µm			
Completed Date: February 29, 2012		Borehole Depth: 107 m		Diameter: 0.15 m		Construction: Bituminous/Steel			
GSEFW004 (00094) BHT									
Depth (m)	Elev (m)	Lithology	Color	Remarks	SPT	CASINO PROGRAM		Casing	Log
						10	20		
7.0	10.0	Subsoils	Reddish brown	dry soil	0.5				
10.0									
13.0	11.0	Gneiss	Black	Fracture surface almost brown					
17.0	9.0	Gneiss	Dark and dark blue grey	Highly weathered and fractured					
30.0									
40.0									
50.0									
60.0									
70.0									
80.0									
90.0									
100.0	10.0	Gneiss	Dark grey and black material	Fract. and unfractured					

图 2.5 试掘调查结果:柱状图(14/15)

**GEOLOGICAL AND GEOPHYSICAL LOG**

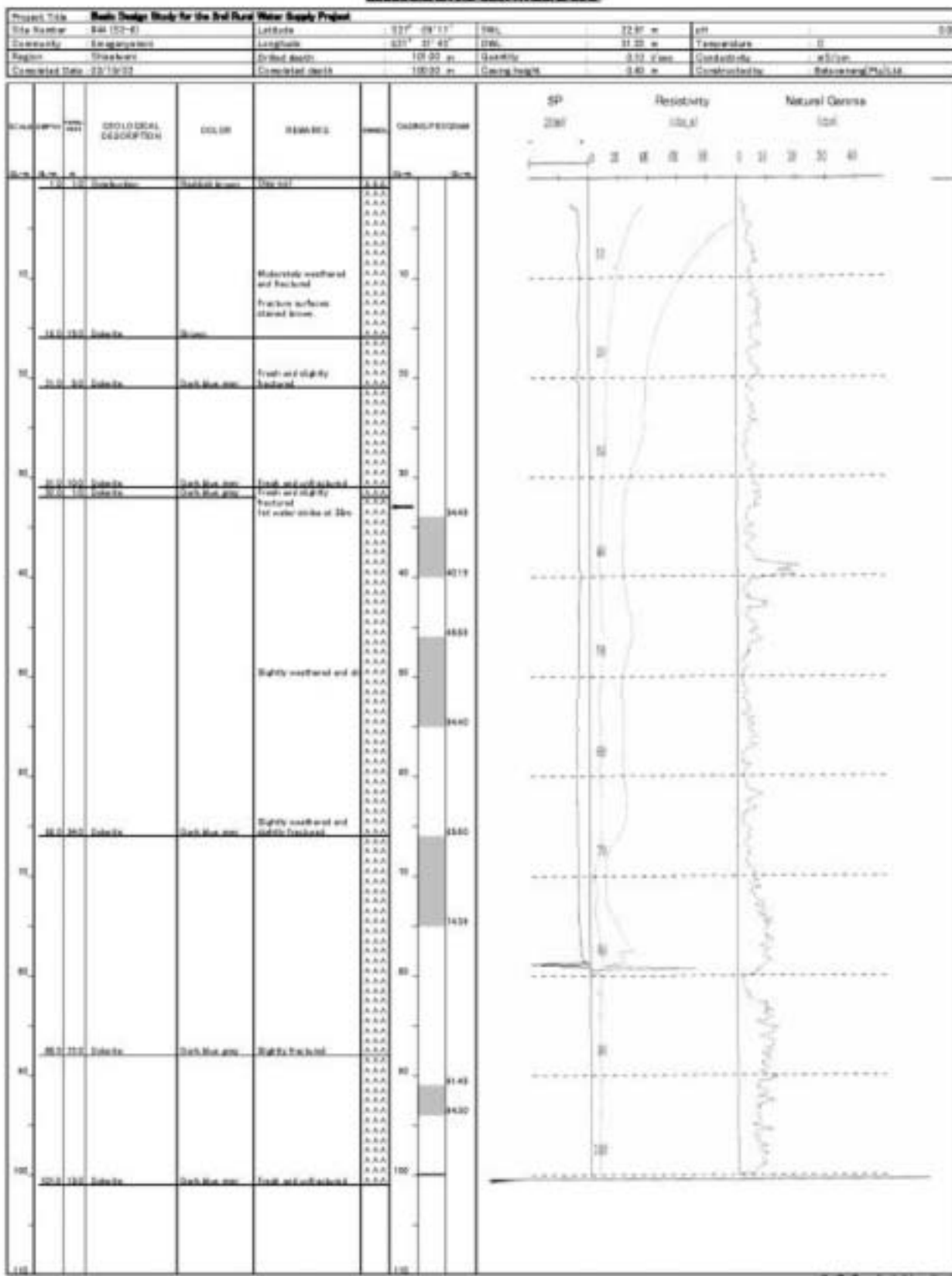


图 2.5 试掘调查结果:柱状图(15/15)