

**WELL LOG**

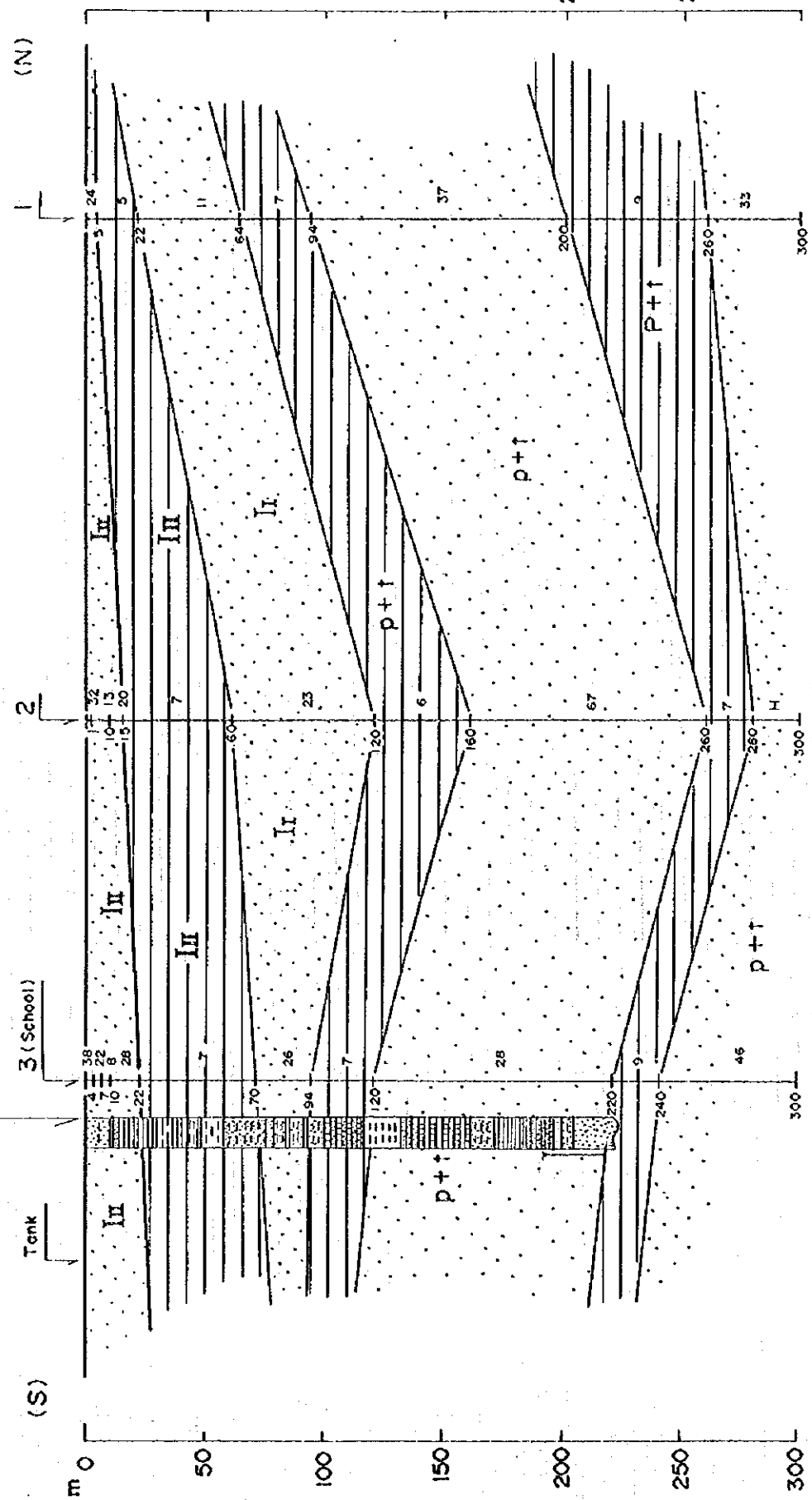
PROJECT NAME : GROUNDWATER DEVELOPMENT STUDY IN SOUTH-WESTERN REGION OF THE REPUBLIC OF MADAGASCAR (PHASE II)			
Area and Location: <i>Malainbandy (2)</i>		(Elevation: <i>m</i> )	Well No.
Well Depth: <i>222 m</i>	Pumping Rate: <i>m<sup>3</sup>/D</i>	<i>l/s</i>	Water Temp. <i>°C</i>
Static Water Level: <i>m</i>	Drilling Rig:	EC(TSU): <i>µs/cm</i>	
Dynamic Water Level: <i>m</i>	Drilling Started:	PH:	
Specific Capacity: <i>m<sup>3</sup>/day/m</i>	Well Completed:	Taste:	

Drilling and Casing Program Bit Size Casing and Screen Size	Depth (m)	Water Level	Log	Litholog. Data Description of Lithology	000v	+	(obs-m)	(cps)
				Grey coarse sandstone <i>201 m</i> Grey siltstone siltstone with coarse sand <i>201 m</i> Grey coarse sandstone <i>210 m</i> Green siltstone siltstone with coarse sand <i>212 m</i> Grey coarse sandstone <i>222 m</i>				
	210							
	220							
	230							
	40							
	50							
	60							
	70							
	80							
	90							
	100							
	110							
	120							
	130							
	140							
	150							
	160							
	170							
	180							
	190							
	200							

6-24

Malaimband  
EL = 200 m

Test Well 222m, SWL 31.10m



6-25

## WELL LOG

PROJECT NAME : GROUNDWATER DEVELOPMENT STUDY IN SOUTH-WESTERN REGION OF THE REPUBLIC OF MADAGASCAR (PHASE II)			
Area and Location: <i>Tsiaraloka (I)</i>		(Elevation: m)	Well No. <i>101-I</i>
Well Depth: <i>71.67</i> m	Pumping Rate: m <sup>3</sup> /D	l/s	Water Temp. <i>30.0</i> °C
Static Water Level: <i>17.18</i> m	Drilling Rig: <i>TOP-200</i>		EC(25°C): <i>5230</i> µs/cm
Dynamic Water Level: m	Drilling Started: <i>12-Sept.-95</i>		pH: <i>7.0</i>
Specific Capacity: m <sup>3</sup> /day/m	Well Completed: <i>19-Sept.-95</i>		Taste: <i>salty</i>

Drilling and Casing Program		Depth (m)	Water Level (m)	Lithology Data		GOC (m)	GOM (m)	CPS
Bit Size	Casing and Screen Size			Log	Description of Lithology			
	4" FRP				Light brown coarse sand with gravel (42-57%)			
		5	1061		Reddish brown silty fine sand			
		10	990		Reddish brown silty fine - medium sand with gravel (φ 2-3 mm)			
		15	870		Light brown silty mud with fine sand			
		20	710		Reddish brown silty fine sand Whitish yell brown medium - very coarse sand and quartzite gravel (φ 2-3 mm)			
		25			Whitish brown sandy mud - mud			
		30			Light brown gravelly sand - cobble (φ 60 mm, chert basalt)			
		35	1323		Light gray silty sand with gravel			
		40	1104		Dark blue gray silty mud			
		45			Dark greenish gray marly limestone			
		50	1230		Dark gray mud			
		55	1125		Light gray Porous limestone			
		60	964		Dark gray marly limestone			
		65			Dark greenish gray silty clay or mud			
		70	917		Whitish gray Porous limestone			
		75	863		Brown Porous limestone			
		80	922		Dark gray Porous limestone			
		85			Gray marly limestone with mud			
		90	922		Dark gray mud with sand and gravel			
		95	822		Brown mud			

## WELL LOG

PROJECT NAME : GROUNDWATER DEVELOPMENT STUDY IN SOUTH-WESTERN REGION OF THE REPUBLIC OF MADAGASCAR (PHASE II)			
Area and Location: <i>Tsiamaloka (II)</i>		(Elevation: m) Well No. <i>101-E</i>	
Well Depth: <i>20.82</i> m	Pumping Rate: <i>99.75</i> m <sup>3</sup> /D <i>1.154</i> l/s	Water Temp. <i>30.0</i> °C	
Static Water Level: <i>13.175</i> m	Drilling Rig: <i>TOP-200</i>	EC(25C): <i>2335</i> µs/cm	
Dynamic Water Level: <i>14.490</i> m	Drilling Started: <i>22 - sept. - 85</i>	PH: <i>6.5</i>	
Specific Capacity: <i>75.85</i> l/day/m	Well Completed: <i>22 - sept. - 85</i>	Taste :	

Drilling and Casing Program		Depth (m)	Lithology Data		00uv	(ohm-m)	(cps)
Bit Size	Casing and Screen Size		Water Level	log			
	4" PVC	0	Ec(25)				
	8VC	5	1041				
		10	1056				
		15	1057				
		20	1058				
		20.62	1059				
			1060				
			1061				
			1062				
			1063				
			1064				
			1065				
			1066				
			1067				
			1068				
			1069				
			1070				
			1071				
			1072				
			1073				
			1074				
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			1077				
			1078				
			1079				
			1080				
			1081				
			1082				
			1083				
			1084				
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			1087				
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			1095				
			1096				
			1097				
			1098				
			1099				
			1100				
			1101				
			1102				
			1103				
			1104				
			1105				
			1106				
			1107				
			1108				
			1109				
			1110				
			1111				
			1112				
			1113				
			1114				
			1115				
			1116				
			1117				
			1118				
			1119				
			1120				
			1121				
			1122				
			1123				
			1124				
			1125				



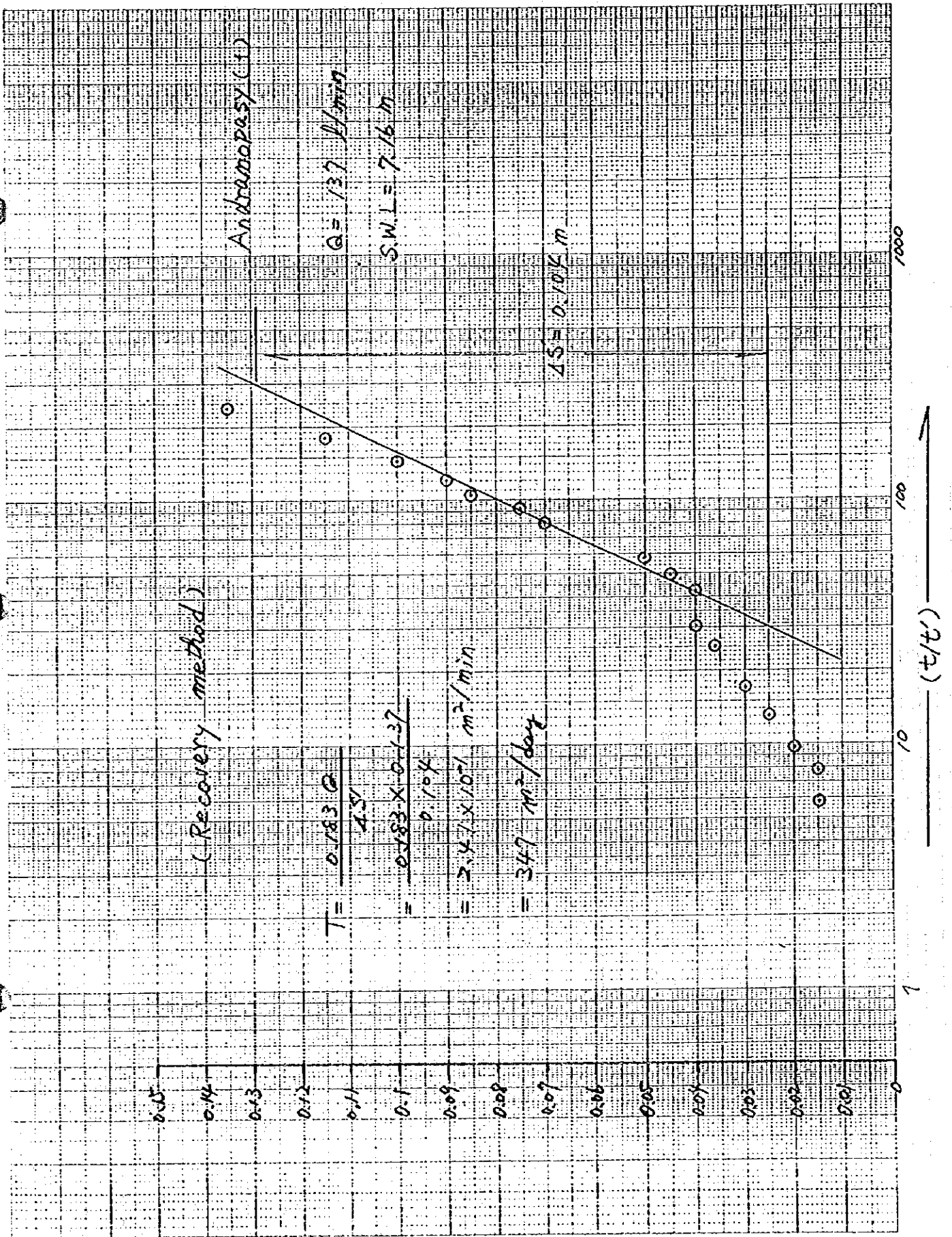
# WELL LOG

PROJECT NAME : GROUNDWATER DEVELOPMENT STUDY IN SOUTH-WESTERN REGION OF THE REPUBLIC OF MADAGASCAR (PHASE II)			
Area and Location: <i>Ambatolaby</i>	(Elevation: m)		Well No.
Well Depth: <i>93.00m</i>	Pumping Rate: <i>5.04 m<sup>3</sup>/D</i>	<i>5.84 l/s</i>	Water Temp. <i>27.5 °C</i>
Static Water Level: <i>12.51 m</i>	Drilling Rig: <i>TRONE TOP-200</i>		EC(TST): <i>242 µs/cm</i>
Dynamic Water Level: <i>24.27 m</i>	Drilling Started: <i>15-11-1995</i>		PH: <i>6.92</i>
Specific Capacity: <i>46.5 m<sup>3</sup>/day/m</i>	Well Completed: <i>22-11-1995</i>		Taste: <i>Good</i>

Drilling and Casing Program	Depth (m)	Water Level	Log	Lithology Data	00ay	(cm-m)	(eps)
Bit Size	Casing and Screen Size			Description of Lithology			
<i>2 1/2"</i>	<i>4"</i>	<i>12.51</i>		Reddish brown - brown coarse sandstone <i>11.00m</i>			
				Brownish grey coarse sandstone <i>12.00m</i> <i>11-12m and 16-17m with brown siltstone</i>			
				Brown gravelly coarse sandstone <i>13.00m</i>			
				Grey - white grey coarse sandstone <i>14.00m</i>			
				Grey sandy siltstone <i>15.00m</i> <i>with gravel</i>			
				Brownish grey gravelly coarse sandstone <i>16.00m</i>			
				Purplish green mudstone <i>17.00m</i>			
				Brownish grey coarse sandstone <i>18.00m</i>			
				Purplish brown (chocolate) mudstone <i>19.00m</i>			
				Greenish grey coarse sandstone <i>20.00m</i> <i>fine sand</i>			
				Brown coarse sandstone <i>21.00m</i>			
				Brown fine sandstone with siltstone <i>22.00m</i>			
				Grey sandy siltstone with pale blue mudstone <i>23.00m</i>			
				Chocolate color mudstone <i>24.00m</i>			
				Greenish grey sandy siltstone with clay <i>25.00m</i>			
				Grey coarse sandstone <i>26.00m</i>			
				pale greenish grey mudstone (clayey) <i>27.00m</i>			
				84-85m Brown clay <i>28.00m</i>			
				pale greenish grey mudstone <i>29.00m</i>			
				Grey mudstone <i>30.00m</i>			
				Grey sandstone <i>31.00m</i>			

6-29







PUMPING (DISCHARGING) TEST (1)

DATE 17 . 11 . 95

Name of Client ANDRANGPASY Site No. \_\_\_\_\_  
 Depth: 30 m Dia: 100 mm Screen Interval: 11.2 m ~ 27 m, m ~ m  
 m ~ m, m ~ m  
 Static Water Level: GL- 9.16 m Dynamic water Level: GL- 12.485 m Pump Setting: m  
 Pumping Rate: (l/min) Pump Type: Air lift. Inspector: \_\_\_\_\_

Time	(t) Elapsed Time(min)	1/t	Water Level (m)	Drawdown (m)	Pumpig Rate (l/min)	EC (µs/cm)	PH	Notes
10:45	(Start) 0							GL = 4m
	2	0.50						
	4	0.25						
	6	0.1666						
	8	0.1250						
	10	0.1000			83	2000		28°
	15	0.0666						
	20	0.0500			85	2000		29.7
	25	0.0400						
10:30	30	0.0333				2020		29.2
	40	0.0250				2020	6.5	29.2
	50	0.0200			81.1	2010		29.7
11:00	60	0.0166			84.94	2000		29.3
	70	0.0142			83.62	1980		28.0
	80	0.0125						
11:30	90	0.01111				1980		27.9
12:00	120	0.00833				2010		28.1
12:30	150	0.00666				2020		"
13:00	180	0.00555				2020		"
	210	0.00476						
14:00	240	0.00416				2040		29
15:00	300	0.00333			137	2030		28.9
16:00	360	0.00277			"	"		29.7
17:00	420	0.00238			"	"	7.0	28.1
18:00	480	0.00208			"	2020	7.0	27.4
19:00	540	0.00185			"	2070		28.3
	600	0.00166			"	1990		25.2
	660	0.00151						
	720	0.00138						
	780	0.00128						
	840	0.00119						
	900	0.00111						
	960	0.00104						
	1020	0.00098						
	1080	0.00092						
	1140	0.00083						
6:00	1200	0.00083			137	2020		28.5
7:00	1260	0.00079			"	2120	7	28.8
8:00	1320	0.00075			"	1950		28.8
9:00	1380	0.00072			"	1910	6.5	"
12:00	1440 (24h)	0.00069			"	2170	7	28.9

RECOVERY TEST

DATE 18 . 11 . 95

Name of Client ANDRANOPASY Site No. \_\_\_\_\_

Depth: 30 m Dia: 100 mm Screen Interval: 11.2 m ~ 27 m, m ~ m, m ~ m

Static Water Level: GL- 8.16 m Dynamic water Level: GL- 12.485 m Pump Setting: \_\_\_\_\_ m

Pumping Rate: \_\_\_\_\_ (l/min) Pump Type: Air lift. Inspector: \_\_\_\_\_

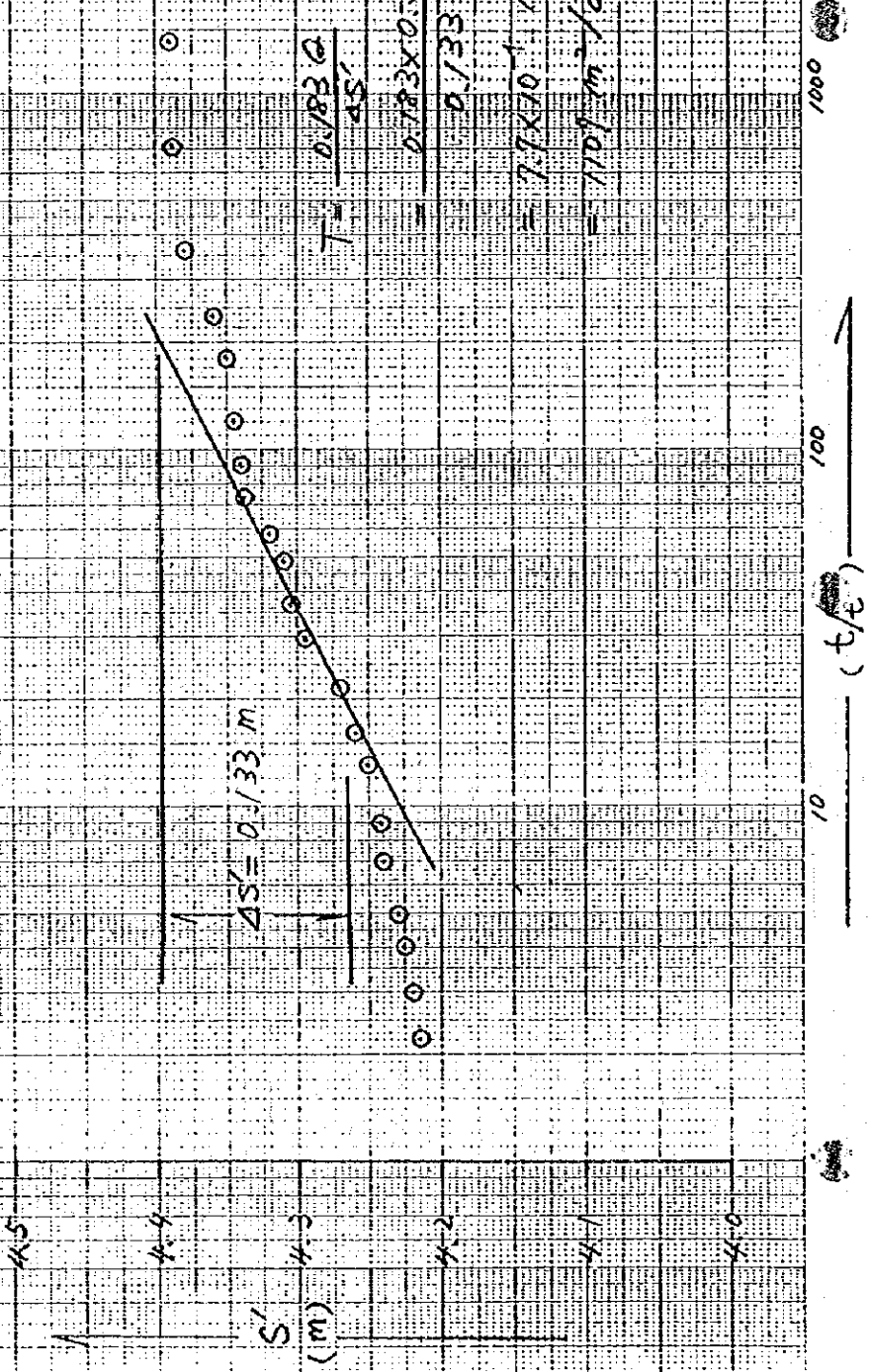
Time	Time (t') Since Recovery Started (min)	Time (t) Since Pumping Started (min)	Ratio t/t'	(s) Water Level (m)	(s') Residual Draedown (m)	Notes
10:00	0			13.485		
	1		1441	9.52	1.36	
	2		721	8.675	0.515	
	4		361	8.35	0.19	
	6		241	8.295	0.135	
	8		181	8.275	0.115	
	10		141	8.260	0.10	
	12		121	8.250	0.09	
	14		103	8.245	0.085	
	16		91	8.235	0.075	
	18		81	8.230	0.07	
	20		73	"	"	
	25		55.2	8.210	0.05	
10:30	30		49	8.205	0.045	
	35		42	8.200	0.04	
	40		37	"	"	
	50		30	"	"	
11:00	60		25	8.195	0.036	
	70		22	"	"	
	80		19	"	"	
11:30	90		17	8.190	0.03	
	100			8.185	0.025	
12:00	120(2h)		13	8.180	0.02	
	150		10.6	8.180	"	
	180(3h)		9	8.175	0.015	
	210		7.8	"	"	
	240(4h)		7	"	"	
	300(5h)		5.8	"	"	
	360(6h)		5	"	"	
	420(7h)		4.4	"	"	
	480(8h)		4	"	"	
	540(9h)		3.7	"	"	
	600(10h)		3.4	"	"	
	720(12h)		3	"	"	
	840(14h)		2.7	"	"	
	960(16h)		2.5	"	"	
6:00	1200(20h)		2.2	8.160	0	
	1440(24h)		2			

Befasy (25)

Q = 560.3 / min

SWL = 55.7 m

(Recovery method)



PUMPING (DISCHAGING) TEST (1)

DATE 27 . 10 . 95

Name of Client BEFASY Site No. 25  
 Depth: 63 m Dia: 100 mm Screen Interval: 22,7 m ~ 62,2 m, m ~ m  
(5,57) m ~ m, m ~ m  
 Static Water Level: GL-322 m Dynamic water Level: GL- m Pump Setting: m  
 Pumping Rate: (l/min) Pump Type: Air lift Inspector:

Time	(t) Elapsed Time (min)	1/t	Water Level (m)	Drawdown (m)	Pumpig Rate (l/min)	EC (µs/cm)	PH	T°C Notes
8:30 (Start)	0		5,80	2,58	456	386	7	28,5
	2	0.50						
	4	0.25						
	6	0.1666						
	8	0.1250						
	10	0.1000						
	15	0.0666						
	20	0.0500						
	25	0.0400						
8:30	30	0.0333	5,76	2,54	451	333	7	27,8
	40	0.0250						
	50	0.0200						
9:00	60	0.0166	5,77	2,55	388,1	348	7	27,9
	70	0.0142						
	80	0.0125						
9:30	90	0.01111	5,78	2,56	536,7	372	7	28,0
10:00	120	0.00833	5,80	2,58	517,5	386	7	28,4
10:30	150	0.00666	5,79	2,57	568,23	380	7	28,3
11:00	180	0.00555	5,78	2,56	616,6	385	7	28,1
	210	0.00476						
12:00	240	0.00416	5,80	2,58	568,23	381	7	28,2
13:00	300	0.00333	5,80	2,58	479,0	373	7	28,3
14:00	360	0.00277	5,805	2,585	517,5	370	7	28,5
15:00	420	0.00238	5,80	2,58	504	372	7	28,5
16:00	480	0.00208	5,81	2,59	499,65	363	7	28,0
17:00	540	0.00185	5,82	2,6	391,18	362	7	28,1
18:00	600	0.00166	5,81	2,59	410,57	370	7	27,7
	660	0.00151						
20:00	720	0.00138						
	780	0.00128						
22:00	840	0.00119						
	900	0.00111						
	960	0.00104						
1:00	1020	0.00098						
	1080	0.00092						
	1140	0.00083						
4:00	1200	0.00083						
	1260	0.00079						
	1320	0.00075						
	1380	0.00072						
8:00	1440 (24h)	0.00069	5,83	2,61	475,08	365	7	27,5

RECOVERY TEST

DATE 28. 10. 1995

Name of Client BEFASY Site No. 25  
 Depth: 63 m Dia: \_\_\_\_\_ mm Screen Interval: 22.7 m ~ 62.2 m, \_\_\_\_\_ m ~ \_\_\_\_\_ m  
 (TN: 1.10m) \_\_\_\_\_ m, \_\_\_\_\_ m, \_\_\_\_\_ m  
 Static Water Level: GL- 3.22 m Dynamic water Level: GL- \_\_\_\_\_ m Pump Setting: \_\_\_\_\_ m  
 Pumping Rate: (3.7) (l/min) Pump Type: Air lift. Inspector: \_\_\_\_\_

Time	Time (t') Since Recovery Started (min)	Time (t) Since Pumping Started (min)	Ratio t/t'	(s) Water Level (m)	(s') Residual Draedown (m)	Notes
8:00	0	1440		5.83	2.61	
	1	1441	1441	5.63	2.41	
	2	1442	721	5.61	2.39	
	4	1444	361	5.59	2.37	
	6	1446	241	5.59	"	
	8	1448	181	5.585	2.365	10.25
	10	1450	145	5.585	"	"
	12	1452	121	5.585	"	"
	14	1454	103.85	5.583	2.363	10.2
	16	1456	91	5.583	"	10.1
	18	1458	81	5.583	"	"
	20	1460	73	5.583	"	9.99
	25	1465	58.6	5.582	2.362	9.95
8:30	30	1470	49	5.582	"	9.94
	35	1475	42.14	5.582	"	"
	40	1480	37	"	"	9.916
	50	1490	29.8	"	"	9.91
9:00	60	1500	25	5.580	2.36	"
	70	1510	21.57	"		9.90
	80	1520	19	"		"
	90	1530	17	"		9.88
	100	1540	15.4	"		"
10:00	120 (2h)	1560	13	"		9.875
	150	1590	10.6	"		9.865
11:00	180 (3h)	1620	9	"		9.855
	210					
12:00	240 (4h)			5.57	2.35	9.82
	300 (5h)					
	360 (6h)					
	420 (7h)					
	480 (8h)					
	540 (9h)					
	600 (10h)					
	720 (12h)					
	840 (14h)					
	960 (16h)					
	1200 (20h)					
	1440 (24h)					

PUMPING (DISCHARGING) TEST (1)

DATE 78 . 10 . 95

Name of Client BEEASY (2) Site No. 25  
 Depth: 63 m Dia: \_\_\_\_\_ mm Screen Interval: 22,7 m ~ 62,2 m, \_\_\_\_\_ m ~ \_\_\_\_\_ m  
 Static Water Level: GL-5,57 m Dynamic water Level: GL-9,98 m Pump Setting: \_\_\_\_\_ m  
 Pumping Rate: \_\_\_\_\_ (l/min) Pump Type: Air lift. Inspector: \_\_\_\_\_

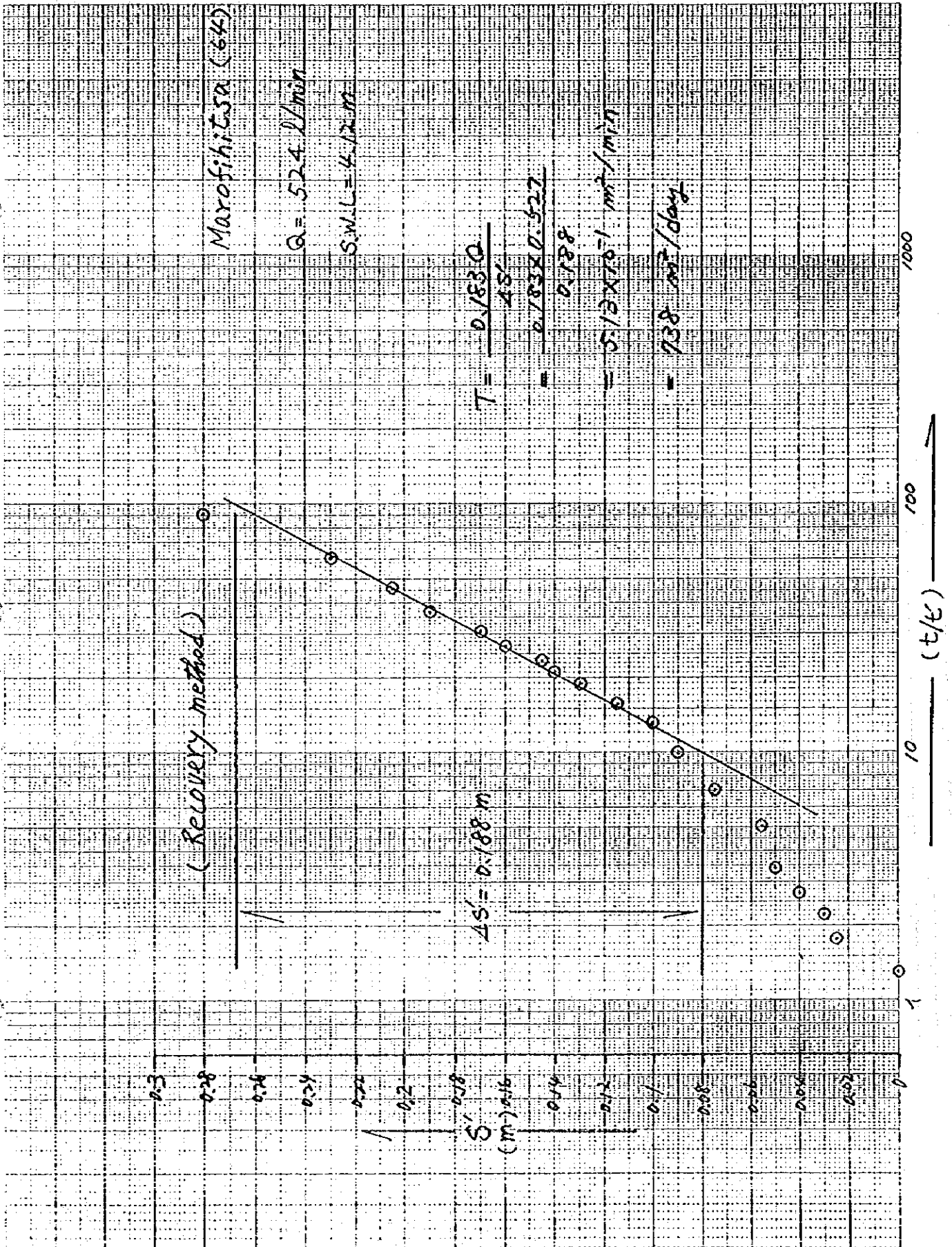
Time	(t) Elapsed Time(min)	1/t	Water Level (m)	Drawdown (m)	Pumpig Rate (l/min)	EC (µs/cm)	PH	T°C Notes
12 <sup>55</sup> (Start)	0							
	2	0.50						
	4	0.25						
	6	0.1666						
	8	0.1250						
	10	0.1000						
13 <sup>00</sup>	15	0.0666			488			
	20	0.0500						
	25	0.0400						
13 <sup>45</sup>	30	0.0333	4,873	0,595	579,6	365		27,3
	40	0.0250						
	50	0.0200						
14 <sup>45</sup>	60	0.0166	4,783	0,781	504	366		28,3
	70	0.0142						
	80	0.0125						
	90	0.0111						
15 <sup>45</sup>	120	0.00833	4,736	0,834	546,79	367		27,9
	150	0.00666						
	180	0.00555	4,72	0,85	591,42	368		27,6
	210	0.00476						
17 <sup>45</sup>	240	0.00416	4,68	0,89	585,45	368		27,8
	300	0.00333						
18 <sup>45</sup>	360	0.00277	4,68	0,89	597,52	361	7	27,7
19 <sup>45</sup>	420	0.00238	4,678	0,892	579,6	333		27,6
20 <sup>45</sup>	480	0.00208	4,678	0,892	568,23	331		27,6
21 <sup>45</sup>	540	0.00185	4,678	0,892	536,66	333	7	27,6
22 <sup>45</sup>	600	0.00166						
23 <sup>45</sup>	660	0.00151						
04 <sup>3</sup>	720	0.00138						
14 <sup>5</sup>	780	0.00128						
24 <sup>5</sup>	840	0.00119						
34 <sup>5</sup>	900	0.00111						
44 <sup>5</sup>	960	0.00104						
54 <sup>5</sup>	1020	0.00098			568,23	360	7	27,7
64 <sup>5</sup>	1080	0.00092			546,79	344		27,5
74 <sup>5</sup>	1140	0.00083			479,0	365	7	27,5
84 <sup>5</sup>	1200	0.00083			504,0	361		27,9
94 <sup>5</sup>	1260	0.00079			552,0	363	7	28,0
104 <sup>5</sup>	1320	0.00075			526,9	351	7	28,0
114 <sup>5</sup>	1380	0.00072			504,0	360		28,1
124 <sup>5</sup>	1440(24h)	0.00069		9.98	585,45	356	7	28,4

RECOVERY TEST

DATE 29 . 10 . 1995

Name of Client BEFASY (27) Site No. 25  
 Depth: \_\_\_\_\_ m Dia: \_\_\_\_\_ mm Screen Interval: 22.7 m ~ 62.2 m, \_\_\_\_\_ m ~ \_\_\_\_\_ m  
 Static Water Level: GL- 5.57 m Dynamic water Level: GL- 9.78 m Pump Setting: \_\_\_\_\_ m  
 Pumping Rate: \_\_\_\_\_ (l/min) Pump Type: Air lift. Inspector: \_\_\_\_\_

Time	Time (t') Since Recovery Started (min)	Time (t) Since Pumping Started (min)	Ratio t/t'	(s) Water Level (m)	(s') Residual Draedown (m)	Notes
12:45	0			9,78	4,41	
	1		14,41	9,97	4,40	
	2		7,21	9,965	4,395	
	4		3,61	9,955	4,385	
	6		2,41	9,93	4,36	
	8		1,81	9,92	4,35	
	10		1,45	9,92	"	
	12		1,21	9,915	4,435	
	14		1,04	9,913	4,343	
	16		91	9,91	4,34	
	18		81	9,908	4,338	
	20		73	9,908	4,338	
	25		58,6	9,89	4,32	
	30		49	9,88	4,31	
	35		42,1	9,88	"	
	40		37	9,875	4,305	
	50		29,8	9,865	4,295	
13:45	60		25	9,85	4,28	
	70		21,6	9,84	4,27	
	80		19	9,835	4,265	
	90		17	9,834	4,264	
	100		15,4	9,833	4,263	
14:45	120(2h)		13	9,82	4,25	
	150		10,6	9,815	4,245	
15:45	180(3h)		9	9,813	4,243	
	210		7,8	9,811	4,241	
16:45	240(4h)		7	9,810	4,24	
17:45	300(5h)		5,8	9,81	"	
18:45	360(6h)		5	9,80	4,23	
19:45	420(7h)		4,4	9,795	4,225	
20:45	480(8h)		4	9,795	"	
21:45	540(9h)		3,67	9,795	"	
22:45	600(10h)		3,4	9,79	4,22	
0:45	720(12h)		3	9,79	4,22	
2:45	840(14h)		2,7	9,79	"	
4:45	960(16h)		2,5	9,79	"	
8:45	1200(20h)		2,2	9,785	4,215	
12:45	1440(24h)		2,0	9,785	"	





PUMPING (DISCHAGING) TEST (1)

DATE 02.11.1995

Name of Client MAROFIHITSA (A) Site No. 46  
 Depth: 73.5 m Dia: 100 mm Screen Interval: 22.15 m ~ 73.5 m  
 Static Water Level: GL- 4.5 m Dynamic water Level: GL- m Pump Setting: m  
 Pumping Rate: (l/min) Pump Type: Air lift Inspector:

Time	(t) Elapsed Time(min)	1/t	Water Level (m)	Drawdown (m)	Pumpig Rate (l/min)	EC (µs/cm)	PH	T°C Notes
(Start)	0							
10:02	2	0.50			530.2		7	29.2
	4	0.25						
	6	0.1666						
	8	0.1250						
	10	0.1000						
	15	0.0666						
	20	0.0500						
	25	0.0400						
10:30	30	0.0333			438.96	14.70	7	28.1
	40	0.0250						
	50	0.0200						
11:00	60	0.0166			459.73	14.27	7	28.5
	70	0.0142						
	80	0.0125						
11:30	90	0.01111			471.27	18.59	7	28.9
12:00	120	0.00833			472.86	19.34	7	28.8
	150	0.00666						
13:00	180	0.00555			511	18.87	7	29.2
	210	0.00476						
	240	0.00416						
	300	0.00333						
	360	0.00277						
	420	0.00238						
	480	0.00208						
	540	0.00185						
	600	0.00166						
	660	0.00151						
	720	0.00138						
	780	0.00128						
	840	0.00119						
	900	0.00111						
	960	0.00104						
	1020	0.00098						
	1080	0.00092						
	1140	0.00083						
	1200	0.00083						
	1260	0.00079						
	1320	0.00075						
	1380	0.00072						
	1440(24h)	0.00069						

PUMPING (DISCHARGING) TEST (1)

DATE 11.10.1995

Name of Client MAROFHITSA (2) Site No. 46  
 Depth: 38 m Dia: 100 mm Screen Interval: 17.45 m ~ 37.2 m, m ~ m  
 m ~ m, m ~ m  
 Static Water Level: GL-4.20 m Dynamic water Level: GL-4.48 m Pump Setting: m  
 Pumping Rate: (l/min) Pump Type: Air lift Inspector:

Time	(t) Elapsed Time(min)	1/t	Water Level (m)	Drawdown (m)	Pumping Rate (l/min)	EC (µs/cm)	PH	Notes
7:00	(Start) 0		4.20					
	2	0.50						
	4	0.25						
	6	0.1666						
	8	0.1250						
7:10	10	0.1000			542.3	7.07	7	28.9
	15	0.0666						
7:20	20	0.0500			556.9	7.02	7	28.7
	25	0.0400						
7:30	30	0.0333			594	6.99	7	28.6
	40	0.0250						
	50	0.0200						
8:00	60	0.0166			572.2	7.07	7	28.7
	70	0.0142						
	80	0.0125						
8:30	90	0.01111			551.9	6.25	7	28.5
9:00	120	0.00833			487.26	6.50		28.6
9:30	150	0.00666			507	6.95	7	28.6
10:00	180	0.00555			487.26	7.04	7	28.9
10:30	210	0.00476			528.55	7.01	7	29.0
11:00	240	0.00416			528.55	6.97	7	28.6
12:00	300	0.00333			515.45	6.84		28.5
13:00	360	0.00277			524.11	6.65	7	28.8
	420	0.00238						
	480	0.00208						
	540	0.00185						
	600	0.00166						
	660	0.00151						
	720	0.00138						
	780	0.00128						
	840	0.00119						
	900	0.00111						
	960	0.00104						
	1020	0.00098						
	1080	0.00092						
	1140	0.00083						
	1200	0.00083						
	1260	0.00079						
	1320	0.00075						
	1380	0.00072						
	1440(24h)	0.00069						

Existing dugwell

Depth : 5.00 m  
 SWL : 4.40 m  
 Ec : 3.87  
 Tpc : 29.0  
 pH : 7

RECOVERY TEST

DATE 11.10.1995

Name of Client MAROFIHITSA (2) Site No. \_\_\_\_\_

Depth: 38 m Dia: 100 mm Screen Interval: 11.45 m ~ 37.2 m, m ~ m, m ~ m

Static Water Level:GL- 4.20 m Dynamic water Level:GL- 4.48 m Pump Setting: m

Pumping Rate: \_\_\_\_\_ (l/min) Pump Type: Air lift Inspector: \_\_\_\_\_

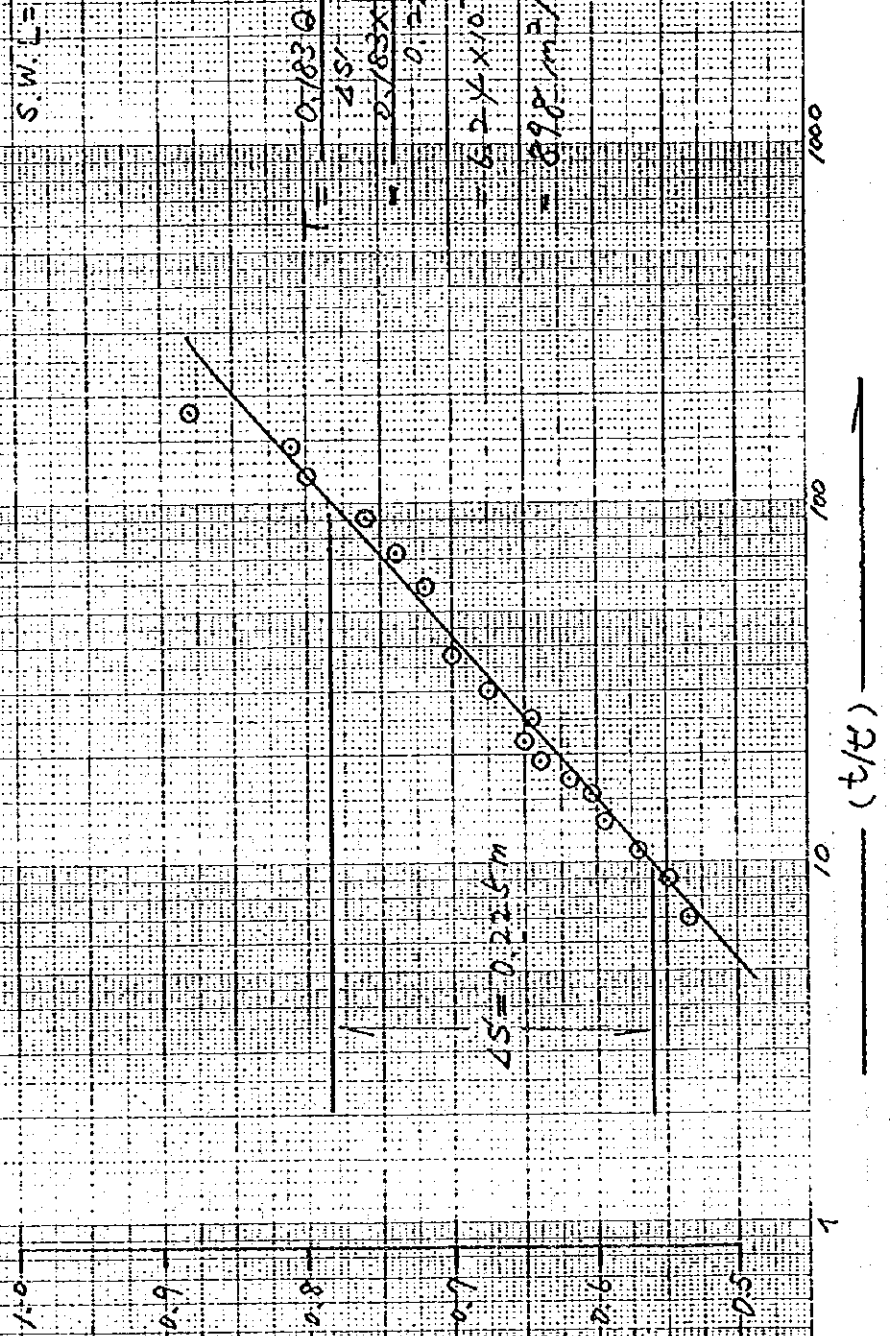
Time	Time (t') Since Recovery Started (min)	Time (t) Since Pumping Started (min)	Ratio t/t'	(s) Water Level (m)	(s') Residual Draedown (m)	Notes
13:00	0	360				
	1	361	361	4.48	0.36	
	2	362	181	4.43	0.31	
	4	364	91	4.40	0.28	
	6	366	61	4.35	0.23	
	8	368	46	4.325	0.205	
	10	370	37	4.31	0.19	
	12	372	31	4.29	0.19	
	14	374	26.71	4.28	0.16	
	16	376	23.5	4.265	0.145	
	18	378	21	4.26	0.14	
	20	380	19	4.25	0.19	
	25	385	15.4	4.235	0.115	
	30	390	13	4.23	0.11	
	35	395	11.28	4.225	0.105	
	40	400	10	4.21	0.09	
	50	410	8.2	4.205	0.085	
14:00	60	420	7	4.195	0.075	
	70	430	6.14	4.185	0.065	
	80	440	5.5	4.175	0.055	
	90	450	5	4.175	0.055	
	100	460	4.60	4.175	"	
15:00	120(2h)	480	4	4.175	"	
	150	510	3.4	4.17	0.05	
16:00	180(3h)	540	3	4.165	0.245	
	210	570	2.75	4.16	0.24	
17:00	240(4h)	600	2.5	4.16	"	
18:00	300(5h)	660	2.2	4.15	0.03	
19:00	360(6h)	720	2	4.15	"	
20:00	420(7h)	780	1.85	4.15	"	
21:00	480(8h)	840	1.75	4.145	0.025	
22:00	540(9h)	900	1.66	4.145	"	
23:00	600(10h)	960	1.6			
01:00	720(12h)	1080	1.5			
03:00	840(14h)	1200	1.428			
05:00	960(16h)	1320	1.375	4.12	0	
07:00	1200(20h)	1560	1.3			
13:00	1440(24h)	1800	1.25			

Ambrata (47)

G = 767 k/min

S.W. L = 2.95 m

(Recovery method)



PUMPING (DISCHARGING) TEST (1)

DATE 01 . 11 . 95

Name of Client AMBARARATA

Sito No. 47

Depth: 73 m Dia: 100 mm Screen Interval: 32.5 m ~ 36.5 m, 40.4 m ~ 72 m  
m ~ m, m ~ m

Static Water Level: GL- 2,95 m Dynamic water Level: GL- 5,21 m Pump Setting: m

Pumping Rate: 767.67 (l/min) Pump Type: Air lift Inspector:

Time	(t) Elapsed Time (min)	1/t	Water Level (m)	Drawdown (m)	Pumping Rate (l/min)	EC (µs/cm)	PH	Notes
15 <sup>00</sup>	0				767.67	751		
	2	0.50						
	4	0.25						
	6	0.1666						
	8	0.1250						
	10	0.1000						
	15	0.0666						
	20	0.0500						
	25	0.0400						
	30	0.0333			759.15		6.5	
	40	0.0250						
	50	0.0200			753.14	736	6.5	26.7
16 <sup>00</sup>	60	0.0166			735.07	753	6.5	28.4
	70	0.0142						
16 <sup>30</sup>	80	0.0125			832.6	758	6.5	28.4
16 <sup>45</sup>	90	0.01111			812.43	759	7.0	28.2
17 <sup>00</sup>	120	0.00833			760.84	760	6.5	26.5
17 <sup>30</sup>	150	0.00666			739.02	722	6.5	27
18 <sup>00</sup>	180	0.00555			735.15	751	6.5	26.1
	210	0.00476						
	240	0.00416						
	300	0.00333						
	360	0.00277						
	420	0.00238						
	480	0.00208						
	540	0.00185						
	600	0.00166						
	660	0.00151						
	720	0.00138						
	780	0.00128						
	840	0.00119						
	900	0.00111						
7 <sup>00</sup>	960	0.00104				763	6.5	26.7
	1020	0.00098						
	1080	0.00092						
	1140	0.00083						
	1200	0.00083						
	1260	0.00079						
	1320	0.00075						
	1380	0.00072						
	1440(24h)	0.00069						

RECOVERY TEST

DATE 02 . 11 . 95

Name of Client AMBERARATA Site No. 47

Depth: 73 m Dia: 100 mm Screen Interval: 32.5 m ~ 36.45 m, 39.4 m ~ 72 m  
m ~ m, m ~ m

Static Water Level: GL- 2.95 m Dynamic water Level: GL- 5.21 m Pump Setting: m

Pumping Rate: 767.67 (l/min) Pump Type: Inspector:

Time	Time (t') Since Recovery Started (min)	Time (t) Since Pumping Started (min)	Ratio t/t'	(s) Water Level (m)	(s') Residual Draedown (m)	Notes
8:00	0					GL: 1.28
	1		100%			
	2		72%			
	4		36%			
	6		24%	6.21	2.26	
	8		18%	3.83	0.88	
	10		14%	3.76	0.81	
	12		12%	3.75	0.8	
	14		10%	3.73	0.78	
	16		9%	3.71	0.76	
	18		8%	3.705	0.755	
	20		7%	3.69	0.74	
	25		58.6	3.67	0.72	
8:30	30		4%	3.65	0.70	
	35		42.1	3.63	0.68	
	40		3%	3.65	0.70	
	50		29.8	3.625	0.675	
9:00	60		2%	3.595	0.645	
	70		21.6	3.60	0.60	
	80		1%	3.59	0.64	
9:30	90		1%	3.57	0.62	
	100		15.4	3.55	0.60	
10:00	120(2h)		1%	3.505	0.595	
10:30	150		10.6	3.52	0.57	
11:00	180(3h)		9	3.50	0.55	
11:30	210		7.8	"	"	
12:00	240(4h)		9	3.485	0.535	
	300(5h)		5.8			
	360(6h)					
	420(7h)					
	480(8h)					
	540(9h)					
	600(10h)					
	720(12h)					
	840(14h)					
	960(16h)					
	1200(20h)					
	1440(24h)		2.6	2.95	0	

PUMPING (DISCHARGING) TEST (1)

DATE 19 / 10 / 90

Name of Client ANDRANOMENA Site No. \_\_\_\_\_  
 Depth: 74 m Dia: 100 mm Screen Interval: 4555 m ~ 74 m, m ~ m  
 m ~ m, m ~ m  
 Static Water Level: GL- +0.5 m Dynamic water Level: GL- \_\_\_\_\_ m Pump Setting: \_\_\_\_\_ m  
 Pumping Rate: \_\_\_\_\_ (l/min) Pump Type: \_\_\_\_\_ Inspector: \_\_\_\_\_

Time	(t) Elapsed Time(min)	1/t	Water Level (m)	Drawdown (m)	Pumpig Rate (l/min)	EC (µs/cm)	PH	Notes
(Start)	0		<u>1.53</u>					
	2	0.50						
	4	0.25						
	6	0.1666						
	8	0.1250						
	10	0.1000						
	15	0.0666						
	20	0.0500						
	25	0.0400						
	30	0.0333						
	40	0.0250						
	50	0.0200						
	60	0.0166						
	70	0.0142						
	80	0.0125						
	90	0.0111						
	120	0.00833						
	150	0.00666						
	180	0.00555						
	210	0.00476						
	240	0.00416						
	300	0.00333						
	360	0.00277						
	420	0.00238						
	480	0.00208						
	540	0.00185						
	600	0.00166						
	660	0.00151						
	720	0.00138						
	780	0.00128						
	840	0.00119						
	900	0.00111						
	960	0.00104						
	1020	0.00098						
	1080	0.00092						
	1140	0.00083						
	1200	0.00083						
	1260	0.00079						
	1320	0.00075						
	1380	0.00072						
	1440(24h)	0.00069						

RECOVERY TEST

DATE 19 . 10 . 1995

Name of Client ANDRANOUE IN Site No. \_\_\_\_\_  
 Depth: 74 m Dia: 100 mm Screen Interval: 45.55 m ~ 74 m, m ~ m  
 m ~ m, m ~ m  
 Static Water Level: GL- +0.5 m Dynamic water Level: GL- \_\_\_\_\_ m Pump Setting: \_\_\_\_\_ m  
 Pumping Rate: \_\_\_\_\_ (l/min) Pump Type: \_\_\_\_\_ Inspector: \_\_\_\_\_

Time	Time (t') Since Recovery Started (min)	Time (t) Since Pumping Started (min)	Ratio t/t'	(s) Water Level (m)	(s') Residual Draedown(m)	Notes
	0					
	1		1441			
	2		721	36.37	36.87	Q = 105 l/min
	4		361	27.68	28.18	
	6		241	22.68	23.18	PH = 6.5
	8		181	16.25	16.75	Ec = 898
	10		145	11.75	12.25	T° = 23.9
	12		121	7.38	7.88	
	14		104	1.82	2.32	
	16		91	0.15	0.65	
	18		81	0	+0.5	
	20					
	25					
	30					
	35					
	40					
	50					
	60					
	70					
	80					
	90					
	100					
	120(2h)					
	150					
	180(3h)					
	210					
	240(4h)					
	300(5h)					
	360(6h)					
	420(7h)					
	480(8h)					
	540(9h)					
	600(10h)					
	720(12h)					
	840(14h)					
	960(16h)					
	1200(20h)					
	1440(24h)					

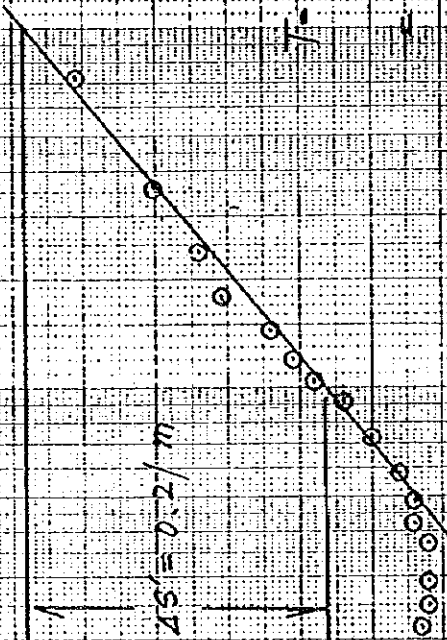


Analytica (68)

(Recovery method)

$Q = 7.5 \text{ l/min}$

$S.W.L = 3.70 \text{ m}$



$T = \frac{0.183 \text{ G}}{4.5'}$

$t = \frac{0.183 \times 0.715}{0.2'}$

$= 6.23 \times 10^{-4} \text{ m}^2/\text{min}$

$= 897 \text{ m}^2/\text{day}$

PUMPING (DISCHARGING) TEST (1)

DATE 23 10 95

Name of Client ANALAIVA Site No. 67  
 Depth: 73 m Dia: 100 mm Screen Interval: 30.6 m ~ 50.35 m, 54.3 m ~ 70.9 m  
 Static Water Level: GL- 3.7 m Dynamic water Level: GL- 4.81 m Pump Setting: \_\_\_\_\_ m  
 Pumping Rate: \_\_\_\_\_ (l/min) Pump Type: Air lift Inspector: \_\_\_\_\_

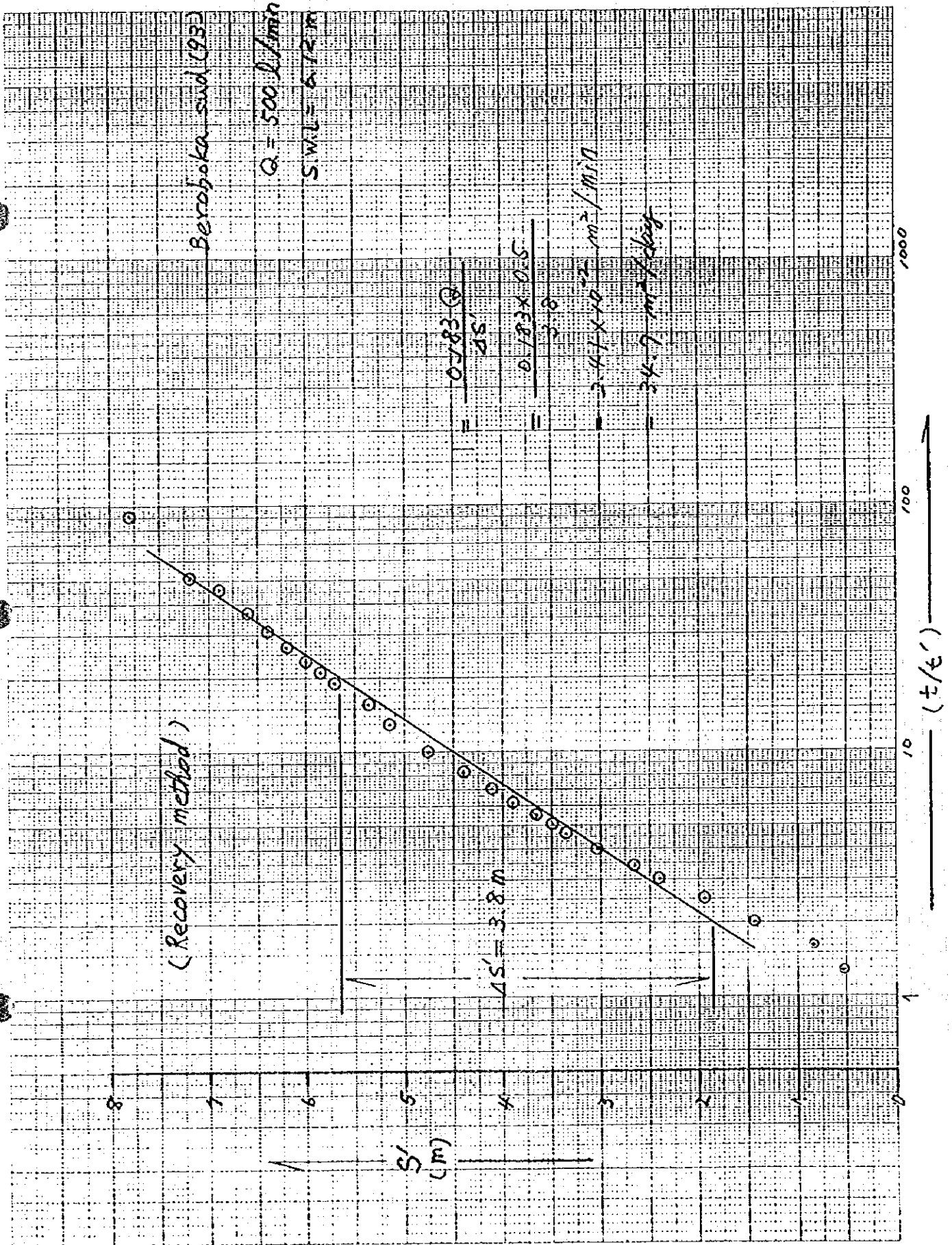
Time	(t) Elapsed Time(min)	1/t	Water Level (m)	Drawdown (m)	Pumpig Rate (l/min)	EC (µs/cm)	PH	Notes
10:00	Start) 0				713.1	171	6.5	27.3°C
	2	0.50						
	4	0.25						
	6	0.1666						
	8	0.1250						
	10	0.1000						
	15	0.0666			770.04	275		27.5
	20	0.0500						
	25	0.0400						
10:30	30	0.0333			775.9	228	6.5	27.6
	40	0.0250						
	50	0.0200						
11:00	60	0.0166			804.6	212	6.5	28.0
	70	0.0142						
	80	0.0125						
11:30	90	0.01111			789.1	201	6.5	31.6
12:00	120	0.00833			793.9	209	6.5	26.4
12:30	150	0.00666				195	"	25.0
13:00	180	0.00555				194	"	"
13:30	210	0.00476			858.1	205	"	27.2
14:00	240	0.00416				215	"	27.4
15:00	300	0.00333			785.1	212	"	28.1
16:00	360	0.00277			860.5	207	"	"
17:00	420	0.00238			840	"	"	29.2
18:00	480	0.00208			872.8	204	"	27.7
19:00	540	0.00185			"	205	"	24.2
20:00	600	0.00166			827.8	"	"	21.3
21:00	660	0.00151			801.9	201	"	24.6
22:00	720	0.00138			789	"	"	25.7
23:00	780	0.00128			744	"	"	21.7
0:00	840	0.00119			732	204	"	26.3
1:00	900	0.00111			792.5	200	"	28.3
2:00	960	0.00104			802.7	199	"	28.5
3:00	1020	0.00098			822.6	195	"	26.9
4:00	1080	0.00092			824.9	205	"	26.7
5:00	1140	0.00083			822.3	204	"	29.4
6:00	1200	0.00083			562	198	"	27.5
7:00	1260	0.00079			600.9	200	"	24.8
8:00	1320	0.00075			757.5	201	"	25.2
9:00	1380	0.00072			622.1	195	"	26.0
15:00	1440(24h)	0.00069			706	186.9	6.5	26.0

RECOVERY TEST

DATE 24 . 10 . 95

Name of Client ANALAIYA Site No. 67  
 Depth: 73 m Dia: 100 mm Screen Interval: 30.6 m ~ 59.35 m, 54.3 m ~ 70.9 m  
 m ~ m, m ~ m  
 Static Water Level: GL- 3.9 m Dynamic water Level: GL- 4.81 m Pump Setting: \_\_\_\_\_ m  
 Pumping Rate: \_\_\_\_\_ (l/min) Pump Type: Air lift Inspector: \_\_\_\_\_

Time	Time (t') Since Recovery Started (min)	Time (t) Since Pumping Started (min)	Ratio t/t'	(s) Water Level (m)	(s') Residual Draedown (m)	Notes
10:00	0		1/1/10			
	1	1441	144/1	4.69	0.99	
	2	1442	72/1	4.81	1.11	
	4	1444	36/1	4.715	1.015	
	6	1446	24/1	4.87	0.99	
	8	1448	18/1	4.66	0.97	
	10	1450	14/5	4.62	0.92	
	12	1452	12/1	4.605	0.905	
	14	1454	10/4	4.59	0.89	
	16	1456	9/1	4.57	0.87	
	18	1458	8/1	"	"	
	20	1460	7/3	4.55	0.85	
	25	1465	58.6	4.53	0.83	
	30	1470	49	4.52	0.82	
	35	1475	42.1	"	"	
	40	1480	37	4.51	0.81	
	50	1490	29.8	"	"	
11:00	60	1500	25	"	"	
	70	1510	21.6	4.515	0.815	
	80	1520	19	4.515	0.815	
	90	1530	17	4.60	0.7	
	100	1540	15.4	4.57	0.67	
12:00	120 (2h)	1560	13	4.58	0.62	
	150	1590	10.6	4.56	0.66	
13:00	180 (3h)	1620	9	4.54	0.64	
13:30	210	1650	7.8			
14:00	240 (4h)	1680	7			
15:00	300 (5h)	1740	5.8			
	360 (6h)					
	420 (7h)					
	480 (8h)					
	540 (9h)					
	600 (10h)					
	720 (12h)					
	840 (14h)					
	960 (16h)					
	1200 (20h)					
	1440 (24h)					



PUMPING (DISCHAGING) TEST (1)

DATE 08 . 12 . 95

Name of Client BERBERJKA SUD Site No. 92  
 Depth: 75 m Dia: 100 mm Screen Interval: 38.2 m ~ 42.2 m, 46.2 m ~ 50.2 m  
58.2 m ~ 74.2 m, m ~ m  
 Static Water Level: GL- 6.27 m Dynamic water Level: GL- 12.50 m Pump Setting:      m  
 Pumping Rate:      (l/min) Pump Type: Air Lift Inspector:     

Time	(t) Elapsed Time(min)	1/t	Water Level (m)	Drawdown (m)	Pumpig Rate (l/min)	EC (µs/cm)	PH	Notes
15 <sup>15</sup> (Start)	0							
	2	0.50						
	4	0.25			654.2	651		28.2
	6	0.1666						
	8	0.1250						
	10	0.1000						
	15	0.0666						
	20	0.0500						
	25	0.0400						
	30	0.0333			492.6	650	6.5	28.1
	40	0.0250						
	50	0.0200						
	60	0.0166			502.5	650	6.5	28.4
	70	0.0142						
	80	0.0125						
	90	0.01111			503.1	650	6.5	28.3
	120	0.00833			502.53	651	6.5	28.2
	150	0.00666						
	180	0.00555						
	210	0.00476						
	240	0.00416						
	300	0.00333						
	360	0.00277						
	420	0.00238						
	480	0.00208						
	540	0.00185						
	600	0.00166						
	660	0.00151						
	720	0.00138						
	780	0.00128						
	840	0.00119						
	900	0.00111						
	960	0.00104						
	1020	0.00098						
	1080	0.00092						
	1140	0.00083						
	1200	0.00083						
	1260	0.00079						
	1320	0.00075						
	1380	0.00072						
	1440(24h)	0.00069						

RECOVERY TEST

DATE 08 . 10 . 95

Name of Client BEROSOKA SUK Site No. 93  
 Depth: 75 m Dia: 100 mm Screen Interval: 38.2 m ~ 42.2 m, 46.2 m ~ 50.2 m  
58.2 m ~ 74.2 m, m ~ m  
 Static Water Level: GL- 6.22 m Dynamic water Level: GL- 12.52 m Pump Setting: m  
 Pumping Rate: (l/min) Pump Type: Air lift Inspector:

Time	Time (t') Since Recovery Started (min)	Time (t) Since Pumping Started (min)	Ratio t/t'	(s) Water Level (m)	(s') Residual Draedown (m)	Notes
17:15	0			12.52	6.3	
	1	121	121	12.27	6.05	
	2	122	61	12.67	6.45	
	4	124	31	12.18	5.96	
	6	126	21	11.97	5.55	
	8	128	16	11.45	5.23	
	10	130	13	11.16	4.94	
	12	132	11	10.96	4.74	
	14	134	8.9	10.77	4.55	
	16	136	8.5	10.51	4.39	
	18	138	7.7	10.46	4.24	
	20	140	7	10.34	4.12	
	25	145	5.8	10.07	3.85	
	30	150	5	9.83	3.61	
	35	155	4.43	9.63	3.41	
	40	160	4	9.45	3.23	
	50	170	3.4	9.14	2.92	
	60	180	3	9.02	2.80	
	70	190	2.71	8.68	2.46	
	80	200	2.5	8.43	2.18	
	90	210	2.33	8.32	2.10	
	100	220	2.2	8.17	1.95	
	120(2h)	240	2	7.94	1.74	
	150	270	1.8	7.67	1.45	
	180(3h)	300	1.67	7.44	1.22	
	210	330	1.57	7.26	1.06	
	240(4h)	360	1.5	7.14	0.92	
	300(5h)	420	1.4	6.93	0.71	
	360(6h)	480	1.33			
	420(7h)	540	1.28			
	480(8h)	600	1.25			
	540(9h)	660	1.22			
	600(10h)	720	1.2			
	720(12h)	840	1.17			
	840(14h)	960	1.13			
	960(16h)	1080	1.12			
	1200(20h)	1320	1.1	6.22	0	
	1440(24h)	1560	1.08	6.22	0	

PUMPING (DISCHAGING) TEST (1)

DATE 09. 10. 95

Name of Client BERBOKA SUD Site No. 93  
 Depth: 75 m Dia: 100 mm Screen Interval: 38.2 m ~ 42.2 m, 46.2 m ~ 50.2 m  
58.2 m ~ 74.2 m, m ~ m  
 Static Water Level: GL- 6.22 m Dynamic water Level: GL- 12.52 m Pump Setting:      m  
 Pumping Rate:      (l/min) Pump Type: Air lift Inspector:     

Time	(t) Elapsed Time(min)	1/t	Water Level (m)	Drawdown (m)	Pumpig Rate (l/min)	EC (µs/cm)	PH	Notes
7 <sup>30</sup> (Start)	0							
	2	0.50			401,1	626	6.5	28,7
	4	0.25						
	6	0.1666						
	8	0.1250						
	10	0.1000						
	15	0.0666						
	20	0.0500						
	25	0.0400						
8 <sup>00</sup>	30	0.0333			438,75	653	6.5	28,4
	40	0.0250						
	50	0.0200						
8 <sup>30</sup>	60	0.0166			501,6	652	6.5	28,4
	70	0.0142						
	80	0.0125						
9 <sup>00</sup>	90	0.01111			480,8	650	6,5	28,4
9 <sup>30</sup>	120	0.00833			474,32	648	6.5	28,5
10 <sup>15</sup>	150	0.00666			471,74	647	6.5	28,5
10 <sup>30</sup>	180	0.00555			471,14	649	6.5	28,4
11 <sup>00</sup>	210	0.00476			477,55	648	6.5	28,5
11 <sup>30</sup>	240	0.00416			468,0	646	6.5	28,5
12 <sup>00</sup>	270	0.00333			474,32	643	6.5	28,4
12 <sup>30</sup>	300	0.00277			447,13	646	6.5	28,5
13 <sup>00</sup>	330	0.00238			438,75	646	6.5	28,5
13 <sup>30</sup>	360	0.00208			433,33	646	6.5	28,5
	540	0.00185						
	600	0.00166						
	660	0.00151						
	720	0.00138						
	780	0.00128						
	840	0.00119						
	900	0.00111						
	960	0.00104						
	1020	0.00098						
	1080	0.00092						
	1140	0.00083						
	1200	0.00083						
	1260	0.00079						
	1320	0.00075						
	1380	0.00072						
	1440(24h)	0.00069						

RECOVERY TEST

DATE 09 . 10 . 95

Name of Client BEROBOKA SUD Site No. 93  
 Depth: 75 m Dia: 100 mm Screen Interval: 38.2 m ~ 42.2 m, 46.2 m ~ 50.2 m  
58.2 m ~ 74.2 m  
 Static Water Level: GL- 622 m Dynamic water Level: GL-          m Pump Setting:          m  
 Pumping Rate:          (l/min) Pump Type: Air lift Inspector:         

Time	Time (t') Since Recovery Started (min)	Time (t) Since Pumping Started (min)	Ratio t/t'	(s) Water Level (m)	(s') Residual Draedown (m)	Notes
13:30	0	360		12.23	6.01	
	1	361	361	11.62	5.40	
	2	362	181	13.13	6.91	
	4	364	91	13.93	7.71	
	6	366	61	13.36	7.19	
	8	366	46	13.00	6.78	
	10	370	37	12.75	6.53	
	12	372	31	12.53	6.31	
	14	372	26.7!	12.32	6.10	
	16	376	23.5	12.10	5.88	
	18	378	21	11.98	5.76	
	20	380	19	11.82	5.6	
	25	385	15.4	11.49	5.26	
	30	390	13	11.18	5.06	
	35	395	11.28	11.06	4.84	
	40	400	10	10.86	4.64	
	50	410	8.2	10.52	4.3	
	60	420	7	10.24	4.02	
	70	430	6.14	10.01	3.79	
	80	440	5.5	9.79	3.57	
	90	450	5	9.61	3.38	
	100	460	4.6	9.43	3.26	
	120(2h)	480	4	9.15	2.93	
	150	510	3.4	8.78	2.56	
	180(3h)	540	3	8.52	2.3	
	210	570	2.71	8.22	2	
	240(4h)	600	2.5	8.06	1.84	
	300(5h)	660	2.2	7.80	1.58	
	360(6h)	720	2	7.56	1.34	
	420(7h)	780	1.85	7.37	1.17	
	480(8h)	840	1.75	7.25	1.03	
	540(9h)	900	1.66	7.15	0.93	
	600(10h)	960	1.6	6.99	0.75	
	720(12h)	1080	1.5			
	840(14h)	1200	1.42			
	960(16h)	1320	1.37			
	1200(20h)	1560	1.3			
	1440(24h)	1800	1.25			
6:00	1500	1800	1.23	6.66	0.44	



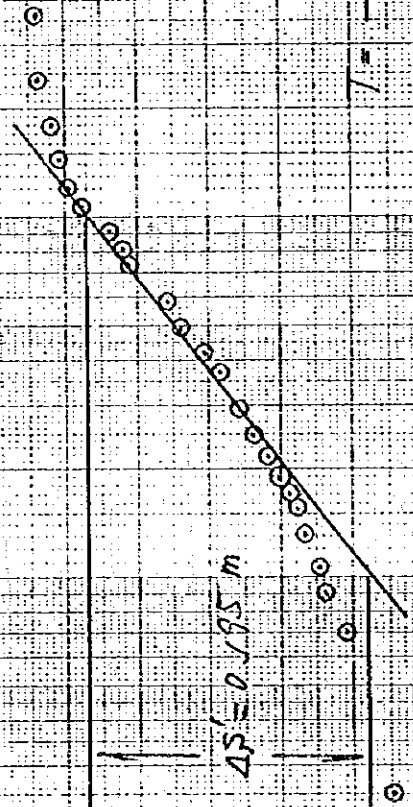


(Recovery method)

Bezdekka (97)

$Q = 930 \text{ l/min}$

$S.W.L = 7.802 \text{ m}$



$\Delta s = 0.195 \text{ m}$

$$T = \frac{0.183 \times 0.93}{2.5}$$

$$= \frac{0.183 \times 0.93}{0.195}$$

$$= 8.73 \times 10^{-1} \text{ m}^2/\text{min}$$

$$= 1256 \text{ mm}^2/\text{day}$$

PUMPING (DISCHARGING) TEST (1)

DATE \_\_\_\_\_

Name of Client BEZEZIKA Site No. \_\_\_\_\_  
 Depth: 42.55 m Dia: 100 mm Screen Interval: 18.05 m ~ 41.75 m, m ~ m  
 m ~ m, m ~ m  
 Static Water Level: GL- 7.802 m Dynamic water Level: GL- 8.64 m Pump Setting: m  
 Pumping Rate: \_\_\_\_\_ (l/min) Pump Type: Air lift Inspector: \_\_\_\_\_

Time	(t) Elapsed Time (min)	1/t	Water Level (m)	Drawdown (m)	Pumpig Rate (l/min)	EC (µs/cm)	PH	Notes
(Start)	0							
	2	0.50						
	4	0.25						
	6	0.1666						
	8	0.1250						
	10	0.1000						
	15	0.0666			1008	325	6.5	20.5°C
	20	0.0500						
	25	0.0400						
	30	0.0333						
	40	0.0250						
	50	0.0200						
	60	0.0166			852.7	274	6.5	20.0°C
	70	0.0142						
	80	0.0125						
	90	0.0111						
	120	0.00833			922.2	270	"	29.2
	150	0.00666						
	180	0.00555			1264.8	221	"	28.2
	210	0.00476						
	240	0.00416			907	213	"	28.6
	300	0.00333			1068	255	"	"
	360	0.00277			802	4	"	28.2
	420	0.00238						
	480	0.00208						
	540	0.00185						
	600	0.00166						
	660	0.00151						
	720	0.00138			1122	252	"	28.7°C
	780	0.00128						
	840	0.00119						
	900	0.00111			1175	248	"	28.3
	960	0.00104						
	1020	0.00098			870	247	"	25.8
	1080	0.00092						
	1140	0.00083			1056	240	"	25.4
	1200	0.00083						
	1260	0.00079			1170	221	"	29.7
	1320	0.00075						
	1380	0.00072						
	1440 (24h)	0.00069			1037	215	"	27.2

RECOVERY TEST

DATE 20.10.1995

Name of Client BEEZIKA Site No. \_\_\_\_\_  
 Depth: 42.55 m Dia: 100 mm Screen Interval: 18.85 m ~ 41.75 m, m ~ m  
 Static Water Level: GL- 7.802 m Dynamic water Level: GL- 8.64 m Pump Setting: m  
 Pumping Rate: (l/min) Pump Type: Air lift. Inspector: \_\_\_\_\_

Time	Time (t') Since Recovery Started (min)	Time (t) Since Pumping Started (min)	Ratio t/t'	(s) Water Level (m)	(s') Residual Draedown (m)	Notes
15:10	0	1440		8.45	0.648	
	1	1441	1441			
	2	1442	721	8.64	0.838	
	4	1444	361	8.62	0.818	
	6	1446	241	8.55	0.763	
	8	1448	181	8.52	0.718	
	10	1450	145	8.49	0.688	
	12	1452	121	8.48	0.678	
	14	1454	103	8.465	0.663	
	16	1456	91	8.455	0.653	
	18	1458	81	8.45	0.648	
	20	1460	72	8.43	0.628	
	25	1465	58.6	"	"	
15:30	30	1470	49	8.42	0.618	
	35	1475	42.14	8.41	0.608	
	40	1480	37	8.40	0.598	
	50	1490	29.8	8.39	0.588	
16:00	60	1500	25	8.38	0.498	
	70	1510	21.57	8.37	0.563	
	80	1520	19	"	"	
16:30	90	1530	17	8.365	0.563	
	100	1540	15.4	8.36	0.558	
17:00	120(2h)	1560	13	8.355	0.553	
	150					
	180(3h)					
	210					
	240(4h)					
	300(5h)					
	360(6h)					
	420(7h)					
	480(8h)					
	540(9h)					
	600(10h)					
	720(12h)					
	840(14h)					
	960(16h)					
	1200(20h)					
	1440(24h)					

PUMPING (DISCHARGING) TEST (1)

DATE 13 . 10 . 75

Name of Client BEZEZIKA Site No. \_\_\_\_\_  
 Depth: 42.55 m Dia: 100 mm Screen Interval: 18.05 m ~ 41.75 m, \_\_\_\_\_ m ~ \_\_\_\_\_ m  
 Static Water Level: GL- 7.82 m Dynamic water Level: GL- 8.61 m Pump Setting: \_\_\_\_\_ m  
 Pumping Rate: \_\_\_\_\_ (l/min) Pump Type: Air lift Inspector: \_\_\_\_\_

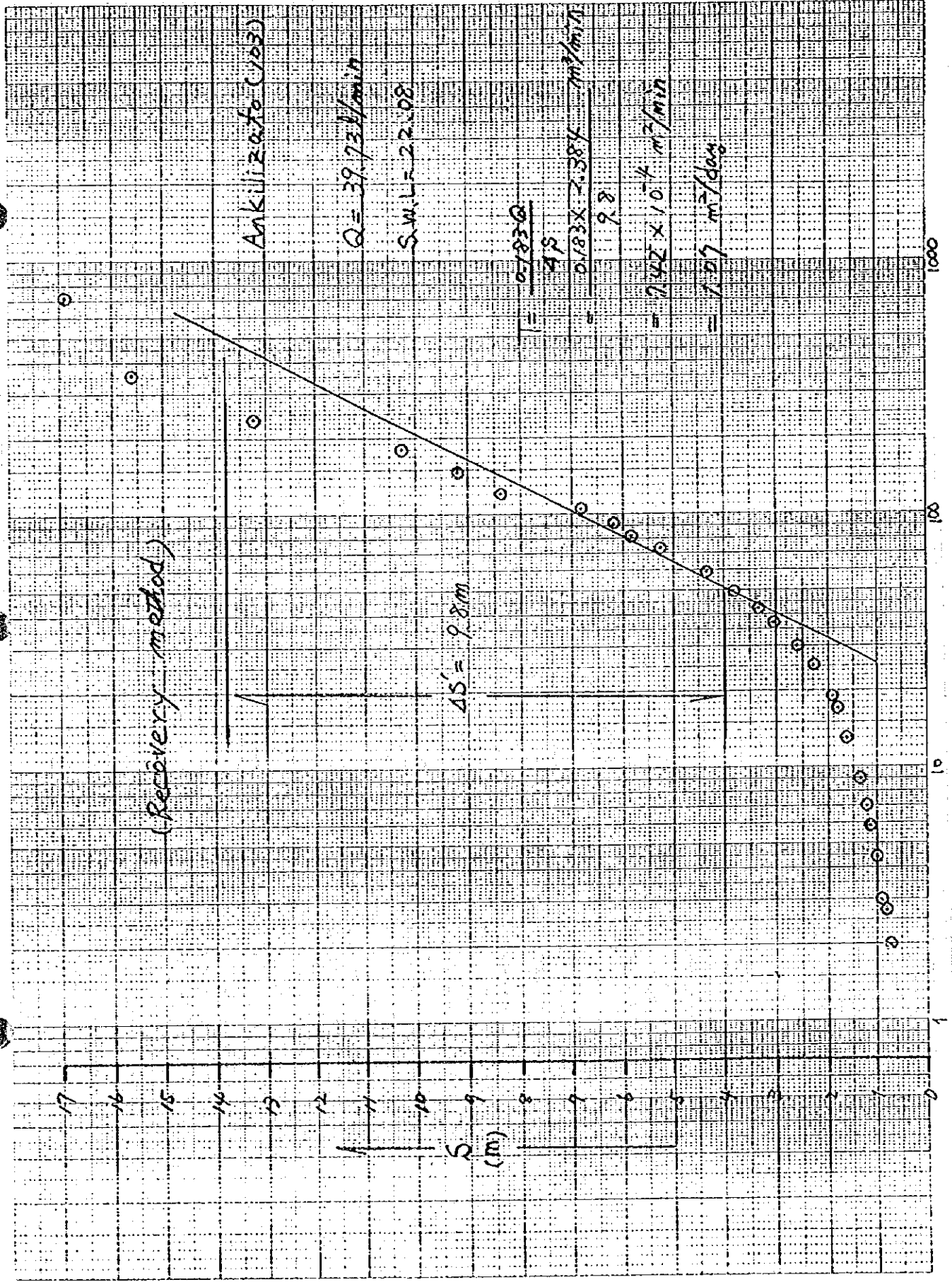
Time	(t) Elapsed Time(min)	1/t	Water Level (m)	Drawdown (m)	Pumpig Rate (l/min)	EC (µs/cm)	PH	Notes
11:11(Start)	0							
	2	0.50						
	4	0.25			551	1111		29.2°C
	6	0.1666						
	8	0.1250						
	10	0.1000				423	7	28.7°C
	15	0.0666						
	20	0.0500						
	25	0.0400						
11:45	30	0.0333			892	347	6.5	29.5
	40	0.0250						
	50	0.0200						
12:15	60	0.0166			1151	312	6.5	30.3°C
	70	0.0142						
	80	0.0125						
12:45	90	0.0111	8.25	0.648		258	"	32.3°C
	120	0.00833						
	150	0.00666						
	180	0.00555						
	210	0.00476						
	240	0.00416						
	300	0.00333						
	360	0.00277						
	420	0.00238						
	480	0.00208						
	540	0.00185						
	600	0.00166						
	660	0.00151						
	720	0.00138						
	780	0.00128						
	840	0.00119						
	900	0.00111						
	960	0.00104						
	1020	0.00098						
	1080	0.00092						
	1140	0.00083						
	1200	0.00083						
	1260	0.00079						
	1320	0.00075						
	1380	0.00072						
	1440(24h)	0.00069						

RECOVERY TEST

DATE 13 . 10 . 1995

Name of Client BEZEZIKA Site No. \_\_\_\_\_  
 Depth: 42.55 m Dia: 100. mm Screen Interval: 18.05 m ~ 41.75 m, m ~ m  
 m ~ m, m ~ m  
 Static Water Level: GL- 7.882 m Dynamic water Level: GL- 8.64 m Pump Setting: m  
 Pumping Rate: \_\_\_\_\_ (l/min) Pump Type: Air lift. Inspector: \_\_\_\_\_

Time	Time (t') Since Recovery Started (min)	Time (t) Since Pumping Started (min)	Ratio t/t'	(s) Water Level (m)	(s') Residual Draedown (m)	Notes
15	0					
	1	1441	1441	8.02	0.218	
	2	1442	721	8.42	0.318	
	4	1444	361	"	"	
	6	1456	241	8.42	"	
	8	1457	181	8.41	0.608	
	10	1450	145	8.425	0.603	
	12	1452	121	8.43	0.598	
	14	1454	123	8.39	0.588	
	16	1456	91	8.37	0.568	
	18	1458	61	8.36	0.558	
	20	1460	75	8.355	0.553	
	25	1465	53.3	8.33	0.528	
	30	1470	24	8.32	0.518	
	35	1475	42.14	8.305	0.503	
	40	1480	37	8.295	0.493	
	50	1490	29.8	8.28	0.478	
	60	1500	25	8.27	0.468	
	70	1510	21.57	8.26	0.458	
	80	1520	19	8.255	0.453	
	90	1530	17	8.245	0.443	
	100	1540	15.4	8.24	0.438	
	120(2h)	1560	12	8.235	0.433	
	150	1590	10.6	8.225	0.423	
	180(3h)	1620	9	8.220	0.418	
	210	1650	7.85	8.217	0.415	
	240(4h)	1680	7	8.206	0.404	
	300(5h)					
	360(6h)					
	420(7h)					
	480(8h)					
	540(9h)					
	600(10h)					
	720(12h)					
	840(14h)					
	960(16h)	2400	2.5	8.176	0.374	
	1200(20h)					
	1440(24h)					
16:45				7.882	0	



Ankizato (103)

$$Q = 39.73 \text{ l/min}$$

$$= 59.21 \text{ m}^3/\text{day}$$

$$S.W.L = 22.08 \text{ m}$$

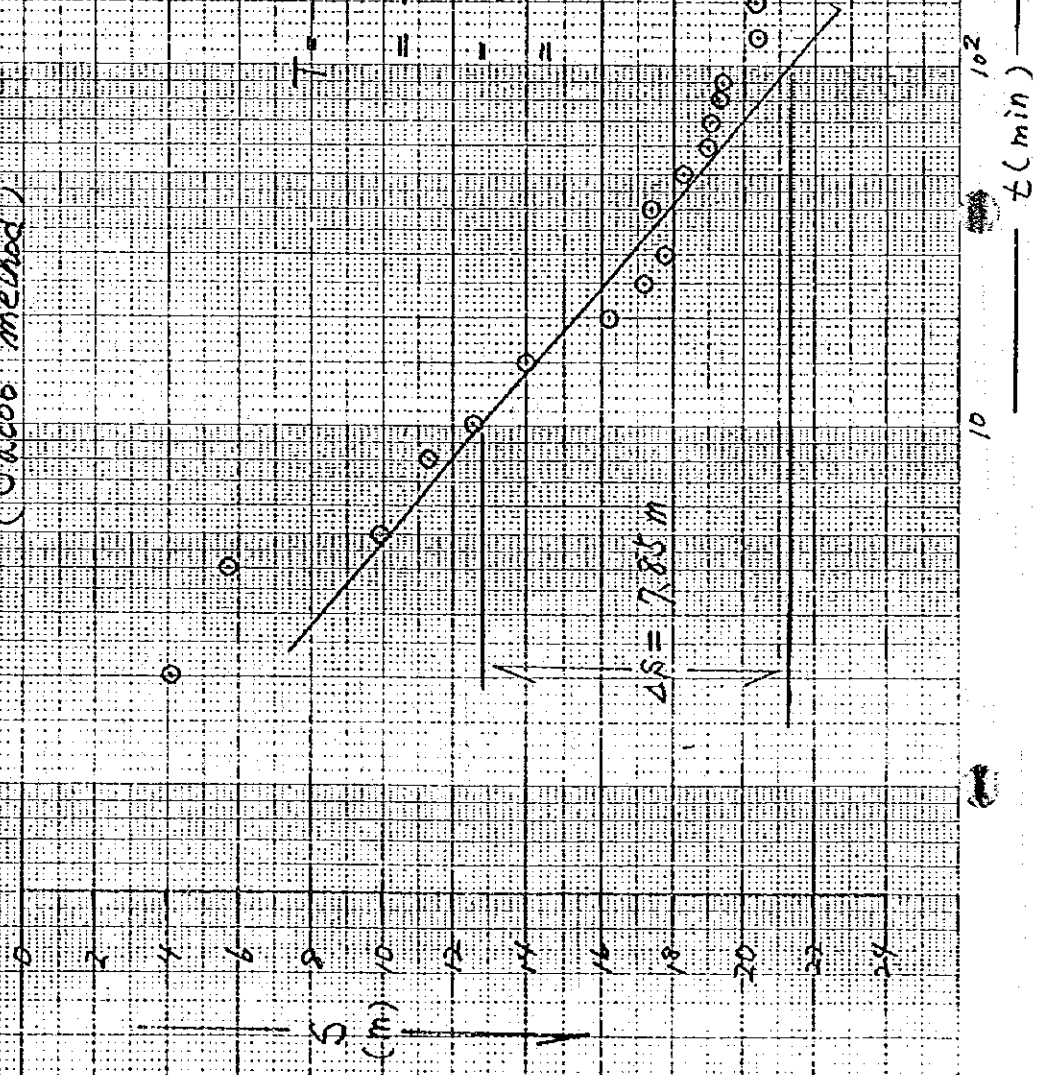
(Jacob method)

$$T = \frac{0.1830}{4.2}$$

$$= \frac{0.183 \times 0.03973 \text{ m}^3/\text{min}}{7.85 \text{ m}}$$

$$= 9.26 \times 10^{-4} \text{ m}^2/\text{min}$$

$$= 1.33 \text{ m}^2/\text{day}$$





(Theis type curve method)

Amkili Zauto (103)

$$Q = 39.738 \text{ m}^3/\text{min}$$

$$= 57.21 \text{ m}^3/\text{day}$$

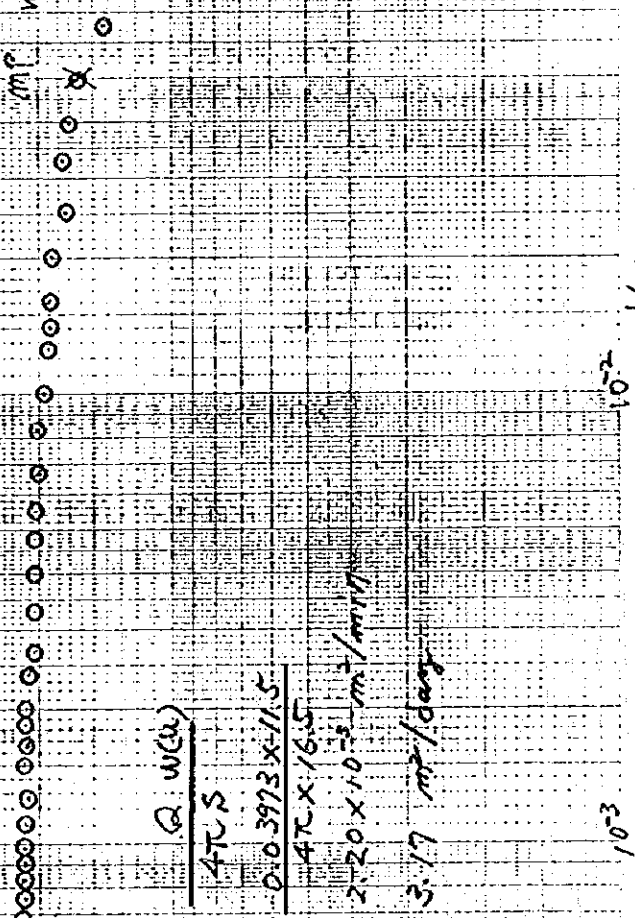
$$S.W.L = 22.08 \text{ m}$$

$$S = 16.5 \text{ m}$$

$$u = 10^{-5}$$

$$w(u) = 11.5$$

mp



$$T = \frac{Q \cdot w(u)}{4\pi S}$$

$$= \frac{0.03973 \times 11.5}{4\pi \times 16.5}$$

$$= 2.20 \times 10^{-3} \text{ m}^2/\text{min}$$

$$= 3.17 \text{ m}^2/\text{day}$$



# STEP DRAWDOWN TEST

DATE 15. 10. 1995

Name of Client ANKILIZATO SITO No. 103  
 Depth: 170,15 m Dia: 260 mm Screen Interval: 109 m ~ 115 m, 121 m ~ 130 m  
142 m ~ 163 m, m ~ m  
 Static Water Level: GL- 22,08 m Dynamic water Level: GL- m Pump Setting: 52,25 m  
 Pumping Rate: (l/min) Pump Type: OKAMOTO Tamp. Submersible Motorpump Inspector: Desice

Time	Elapsed Time (min)	Water Level (m)	Drawdown (m)	Pumpig Rate (l/min)	EC (µs/cm)	PH	Notes
( 1 <sup>st</sup> Step )	0	22,78		-	-		Start
11:12	2	28,70		17,14	2240		Measuring reference 70cm over GL (Rig Table)
	4	28,95		15,78	"		
	6	29,23		16,21	2210		
	8	29,85		18,18	"		
	10	30,12		17,64	2260		
	12	30,37		18,18	2250		
	14	30,50		18,64	2240		
	16	30,60		18,18	2260		
	20	30,70		19,35	2250		
	25	31,15		"	"		
	30	31,40		20,00	2240		
	35	31,55		19,35	"		
	40	31,59		"	"		
	50	31,62		20,00	2490		
12:10	60	31,55		19,35	2220		
	70	31,50		20,00	2250		
	80	31,45		"	"		
	90	31,38		"	2240		
13:10	120	31,28		19,35	2220		
	150	31,55		20,00	2210		

( 2 <sup>nd</sup> Step )	0	31,55		-	-		
13:42	2	31,90		46,15	2490		
	4	35,51		42,85	2230		
	6	36,91		43,47	2240		
	8	38,06		42,85	2250		
	10	38,70		43,47	"		
	12	39,30		41,09	"		
	14	39,70		41,09	"		
	16	40,00		40,54	"		
	20	40,65		40,00	"		
	25	40,64		"	"		
	30	40,85		41,09	"		
	35	41,05		40,54	"		
	40	41,14		41,95	2220		
	50	41,30		42,25	2221		
14:40	60	41,37		39,73	"		
	70	41,45		38,21	"		
	80	41,55		37,97	"		
	90	41,90		38,70	"		
15:40	120	42,05		"	"		
	150	42,15		"	"		

# STEP DRAWDOWN TEST

DATE \_\_\_\_\_

Name of Client \_\_\_\_\_ Site No. 103

Depth: \_\_\_\_\_ m Dia: \_\_\_\_\_ mm Screen Interval: \_\_\_\_\_ m~ \_\_\_\_\_ m, \_\_\_\_\_ m~ \_\_\_\_\_ m  
 \_\_\_\_\_ m~ \_\_\_\_\_ m, \_\_\_\_\_ m~ \_\_\_\_\_ m

Static Water Level: GL- 22.08 m Dynamic water Level: GL- \_\_\_\_\_ m Pump Setting: \_\_\_\_\_ m

Pumping Rate: \_\_\_\_\_ (l/min) Pump Type: \_\_\_\_\_ Inspector: \_\_\_\_\_

3rd Step

Time	Elapsed Time (min)	Water Level (m)	Drawdown (m)	Pumping Rate (l/min)	EC (µs/cm)	PH	Notes
	(16:20 Start) 0	42.15		—	—		Start
	2	43.50		49.18	2220		
	4	43.60		48.02	"		
	6	44.75		47.24	2221		
	8	45.48		46.51	"		
	10	45.88		45.11	2220		
	12	46.05		45.80	"		
	14	46.37		44.77	"		
	16	46.53		46.87	"		
	20	46.70		47.61	"		
	25	46.79		45.80	"		
	30	47.98		46.15	"		
	35	47.03		45.45	"		
	40	47.12		46.87	"		
	50	47.12		44.11	"		
17:20	60	47.23		44.77	"		
	70	47.29		45.11	"		
	80	47.32		45.22	"		
	90	47.34		"	"		
18:20	120	47.45		"	"		
	150	47.62		"	"		
19:20	180	47.80		"	"		
( Step) 8							
	210 <del>8</del>	47.78		44.44	2210		
20:20	240 <del>8</del>	47.60		45.80	"		
	270 <del>6</del>	47.40		"	"		
21:20	300 <del>8</del>	47.78		"	"		
	10						
	12						
	14						
	16						
	20						
	25						
	30						
	35						
	40						
	50						
	60						
	70						
	80						
	90						
	120						
	150						

PUMPING (DISCHAGING) TEST (1)

DATE 16 . 10 . 1995

Name of Client ANKILIZAT Sita No. 103  
 Depth: 170 m Dia: 260 mm Screen Interval: 109 m ~ 115 m, 121 m ~ 131 m  
142 m ~ 153 m, m ~ m  
 Static Water Level: GL-22.08 m Dynamic water Level: GL-43.13 m Pump Setting: 52.25 m  
 Pumping Rate: (l/min) Pump Type: OKAMOTO Inspector:  
Submersible Moto pump

Time	(t) Elapsed Time(min)	1/t	Water Level (m)	Drawdown (m)	Pumpig Rate (l/min)	EC (µs/cm)	PH	Notes
	(Start) 0		22.73					Measuring reference
7:00	2	0.50	26.21	4.13	39.73	2,240		
	4	0.25	29.73	5.70	36.58	"		70cm over GL.
	6	0.1666	31.98	9.9	37.26	2,220		(pig table)
	8	0.1250	33.40	11.32	41.09	2210		
	10	0.1000	34.67	12.59	40.00	"		
	15	0.0666	36.24	14.16	39.73	"		
	20	0.0500	38.33	16.25	38.46	"		
	25	0.0400	39.30	17.22	"	2,170		
	30	0.0333	39.74	17.66	39.21	2,110		
	40	0.0250	39.45	17.37	38.46	2,240		
	50	0.0200	40.81	18.73	39.21	2,260		
8:00	60	0.0166	41.05	18.97	39.96	2,240		
	70	0.0142	41.19	19.11	39.21	2,220		
	80	0.0125	41.38	19.30	38.70	"		
	90	0.0111	41.44	19.36	"	2,210		
9:00	120	0.00833	42.27	20.39	39.73	2,220		
	150	0.00666	42.42	20.34	40.00	"		
10:00	180	0.00555	42.52	20.44	39.21	"		
	210	0.00476	42.57	20.49	41.57	"		
	240	0.00416	42.66	20.58	40.26	"		
12:00	300	0.00333	42.70	20.62	39.70	2,180		
	360	0.00277	42.74	20.66	39.21	2,210		
14:00	420	0.00238	43.44	21.36	39.42	"		
	480	0.00208	43.55	21.47	39.73	2,219		
16:00	540	0.00185	43.70	21.62	"	2,219		
	600	0.00166	43.52	21.44	40.00	2,210		
18:00	660	0.00151	43.53	21.45	39.73	2,220		
	720	0.00138	43.53	21.45	"	"		
20:00	780	0.00128	43.54	21.46	"	2,210		
	840	0.00119	43.60	21.52	41.09	"		
22:00	900	0.00111	43.62	21.54	39.21	"		
	960	0.00104	43.62	21.54	"	"		
24:00	1020	0.00098	43.62	"	"	"		
	1080	0.00092	43.67	21.59	"	"		
2:00	1140	0.00083	43.69	21.57	39.73	"		
	1200	0.00083	43.71	21.63	"	"		
4:00	1260	0.00079	43.78	21.70	40.54	"		
	1320	0.00075	43.80	21.72	39.73	"		
6:00	1380	0.00072	43.82	21.74	40.00	"		
7:00	1440(24h)	0.00069	43.83	21.75	39.73	"		

RECOVERY TEST

DATE 19 . 10 . 1975

Name of Client ANKILIZATO

Sito No. 103

Depth: 170.15 m Dia: 260 mm Screen Interval: 109 m ~ 115 m, 121 m ~ 130 m  
142 m ~ 163 m, m ~ m

Static Water Level: GL-22.08 m Dynamic water Level: GL-43.13 m Pump Setting: 52.25 m

Pumping Rate: (l/min) Pump Type: OKAHOTO PUMP Inspector:

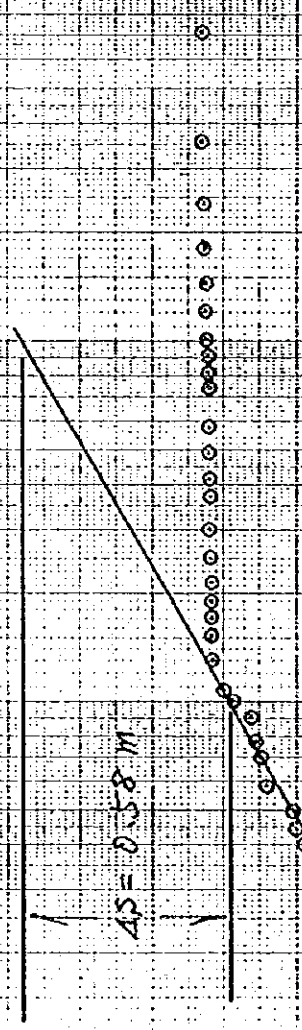
Time	Time (t') Since Recovery Started (min)	Time (t) Since Pumping Started (min)	Ratio t/t'	(s) Water Level (m)	(s') Residual Draedown (m)	Notes
7:00	0	1110		43.13		Measuring reference point over G.L. (Rig table)
	1	1141	1141	42.80	20.72	
	2	1142	721	39.02	16.94	
	4	1144	361	37.72	15.64	
	6	1146	241	35.35	13.27	
	8	1147	121	32.35	10.27	
	10	1150	115	31.27	9.19	
	12	1152	121	30.27	8.39	
	14	1154	104	28.91	6.83	
	16	1156	91	28.29	6.21	
	18	1158	81	27.74	5.86	
	20	1160	73	27.35	5.29	
	25	1165	58.6	26.43	4.35	
	30	1170	49	25.90	3.82	
	35	1175	42.1	25.43	3.35	
	40	1180	37	25.16	3.08	
	50	1197	29.8	24.70	2.62	
8:00	60	1500	25	24.36	2.28	
	70	1510	21.6	24.12	2.04	
	80	1520	19	24.01	1.93	
	90	1530	17	23.90	1.82	
	100	1540	15.4	23.83	1.75	
	120(2h)	1560	13	23.72	1.64	
	150	1590	10.6	23.46	1.38	
10:00	180(3h)	1620	9	23.42	1.34	
	210	1650	7.86	23.37	1.29	
	240(4h)	1680	7	23.30	1.22	
11:00	300(5h)	1740	7.8	23.22	1.14	
	360(6h)	1800	5.0	23.15	1.07	
11:00	420(7h)	1860	4.43	23.08	1.0	
	480(8h)	1920	4	23.05	0.97	
11:00	540(9h)	1980	3.67	23.02	0.94	
	600(10h)	2040	3.40	22.99	0.91	
11:00	720(12h)	2160	3	22.98	0.90	
12:00	840(14h)	2280	2.71	22.88	0.80	
12:00	960(16h)	2400	2.50	22.85	0.77	
13:00	1200(20h)	2640	2.20	22.84	0.76	
14:00	1440(24h)	2880	2	22.835	0.755	

Mandate: (10%)  
(Recovery test)

Q = 240 l/min

S.W.L = 9.80 m

(Recovery method)



$$T = \frac{0.183 \times Q}{AS}$$

$$= \frac{0.183 \times 240}{0.58}$$

$$= 7.57 \times 10^{-2} \text{ min}$$

$$= 1.09 \text{ min/day}$$

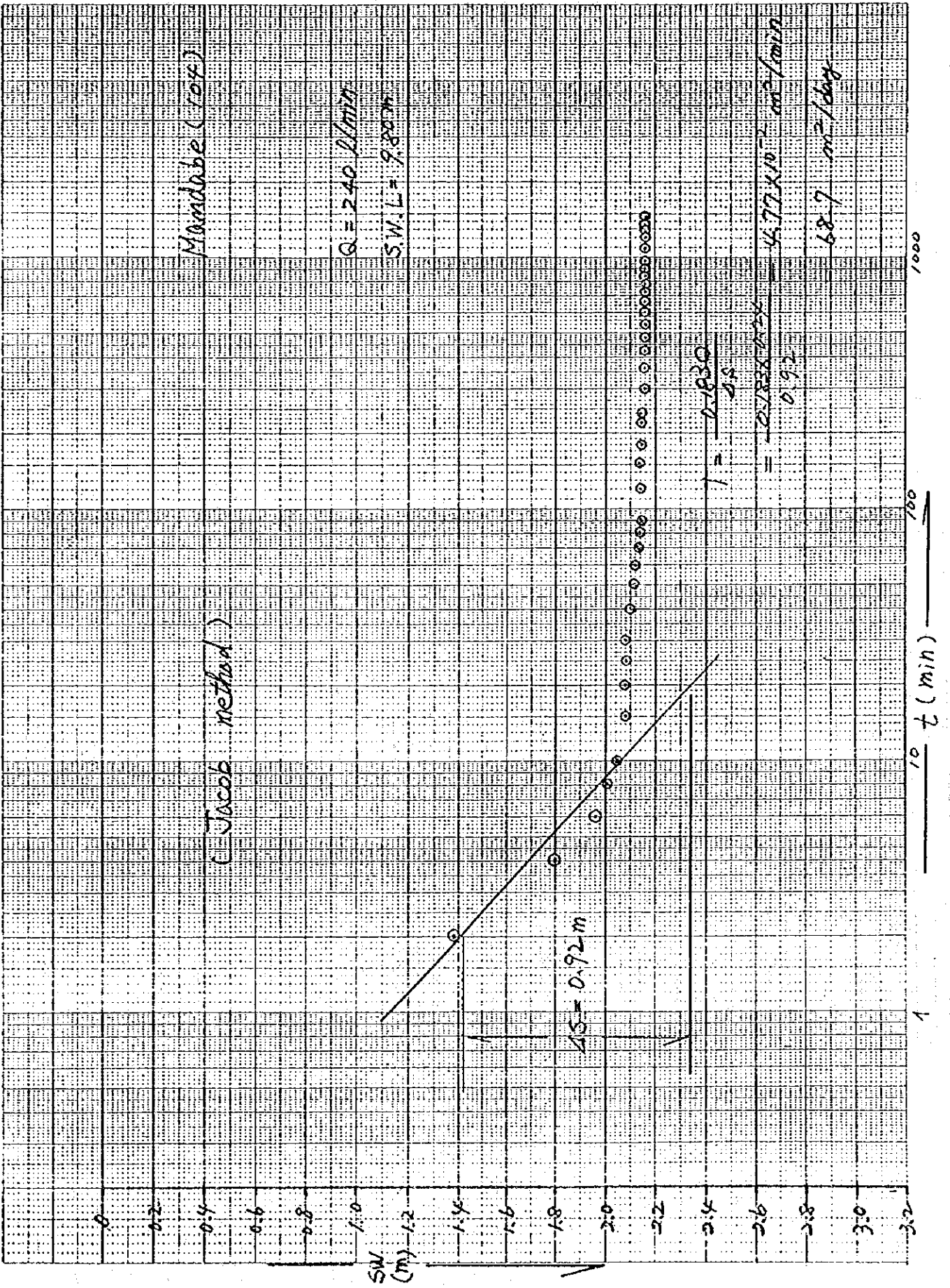
1000  
100  
10  
(1/2)

Mandhabe (10x)

$Q = 240 \text{ l/min}$

$S.W.L = 9.80 \text{ m}$

(Jacob method)

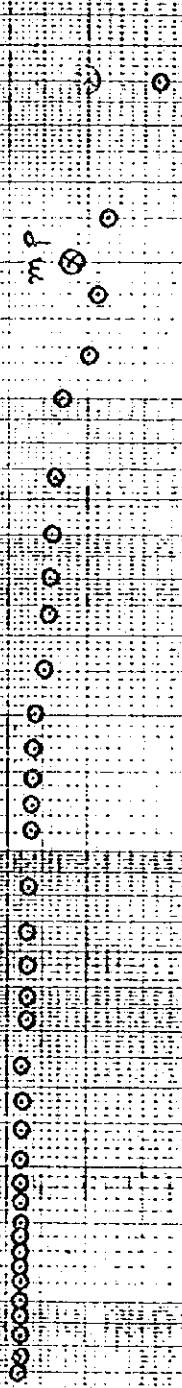


Mandabate (10%)

Q = 240 l/min

S.W.L = 9.80 M

(Theis type curve method)



$u = 10^{-9}$   
 $W(u) = 2.0$   
 $S = 2.4 M$

$$\begin{aligned}
 t &= \frac{Q}{4\pi S} W(u) \\
 &= \frac{0.24 \times 2.0}{4\pi \times 2.4} \\
 &= 1.59 \times 10^{-1} \text{ s} = 6.5 \text{ min} \\
 &= 2.29 \text{ days}
 \end{aligned}$$

STEP DRAWDOWN TEST

DATE 08 . 11 . 1995

Name of Client MANDABE

Sito No. 106

Depth: 103 m Dia: 250 mm Screen Interval: 12 m ~ 27 m, 33 m ~ 39 m  
 m ~ m, m ~ m

Static Water Level: GL- 09.80 m Dynamic water Level: GL- m Pump Setting: 40.25 m

Pumping Rate: (l/min) Pump Type: KAMOTO Inspector: Desire

Time	Elapsed Time(min)	Water Level (m)	Drawdown (m)	Pumpig Rate(l/min)	EC (µs/cm)	PH	Notes
(3 <sup>rd</sup> Step)	0	12.61	2.81				Start
	2	12.77	2.97	200	0.257	6.27	P: 4kpa
	4	12.76	2.96		0.245	6.26	
	6	12.765	2.965		0.254	6.19	
	8	12.77	2.91		0.255	6.18	
	10	12.83	3.03		0.254	6.19	
	12	12.75	2.95		0.255	6.20	
	14	12.78	2.98		0.256	6.24	
	16	12.89	3.09		0.256	6.24	
	20	12.88	3.08		0.255	6.33	
	25	12.87	3.07		0.255	6.23	
	30	12.91	3.11		0.262	6.23	
	35	12.88	3.08		0.255	6.25	
	40	12.91	3.11		0.255	6.27	
	50	12.97	3.07		0.256	6.30	
	60	12.90	3.10		0.255	6.26	
	70	12.92	3.12		0.264	6.21	
	80	12.89	3.09		0.257	6.29	
	90	12.88	3.08		0.257	6.38	
	120	12.88	3.08		0.257	6.38	
	150	12.88	3.08		0.257	6.35	

(	Step) 0	12.88	3.08	240	0.257	6.35	P: 2kpa
	2	13.10	3.30		0.255	6.19	
	4	13.18	3.38		0.254	6.19	
	6	13.15	3.35		0.252	6.14	
	8	13.19	3.39		0.256	6.19	
	10	13.18	3.38		0.255	6.18	
	12	13.18	3.38		0.256	6.18	
	14	13.20	3.40		0.256	6.19	
	16	13.20	3.40		0.256	6.20	
	20	13.18	3.38		0.256	6.20	
	25	13.16	3.36		0.257	6.24	
	30	13.20	3.40		0.257	6.30	
	35	13.17	3.37		0.257	6.31	
	40	13.14	3.34		0.257	6.32	
	50	13.15	3.35		0.258	6.38	
	60	13.13	3.33		0.258	6.38	
	70	13.14	3.34		0.255	6.45	
	80	13.15	3.35		0.257	6.49	
	90	13.145	3.345		0.257	6.49	
	120	13.15	3.35		0.257	6.49	
	150	13.15	3.35		0.256	6.47	



STEP DRAWDOWN TEST

DATE 08 . 11 . 95

Name of Client MANDABE Site No. 106  
 Depth: 103 m Dia: 250 mm Screen Interval: 12 m ~ 27 m, 33 m ~ 39 m  
 Static Water Level: GL-9.80 m Dynamic water Level: GL- m Pump Setting: 40.25 m  
 Pumping Rate: (l/min) Pump Type: OKAMOTO Inspector: Desire

Time	Elapsed Time (min)	Water Level (m)	Drawdown (m)	Pumping Rate (l/min)	EC (µs/cm)	PH	Notes
(1 <sup>st</sup> Step)	0	09.80					Start
	2	11.30	1.5	140	0.402	6.54	P: 5.5 kpa
	4	12.20	2.4	"	0.398	6.37	
	6	12.23	2.43	"	0.389	6.35	
	8	12.25	2.45	"	0.388	6.42	
	10	12.27	2.47	"	0.366	6.37	
	12	12.29	2.49	"	0.340	6.36	
	14	12.30	2.50	"	0.347	6.33	
	16	12.32	2.52	"	0.336	6.41	
	20	"	"	"	0.319	6.35	
	25	12.33	2.53	"	0.213	6.49	
	30	"	"	"	0.289	6.39	
	35	12.33	"	"	0.265	6.43	
	40	12.34	2.54	"	0.269	6.38	
	50	12.36	2.56	"	0.249	6.44	
	60	"	"	"	0.235	6.38	
	70	12.37	2.57	"	0.231	6.33	
	80	"	"	"	0.228	6.15	
	90	12.38	2.58	"	0.233	6.11	
	120	"	"	"	0.247	6.09	
	150	"	"	"	0.236	6.26	

(2 <sup>nd</sup> Step)	0	12.38					
	2	12.48	2.68	170	0.252	6.34	P: 4.5 kpa
	4	12.53	2.73	"	0.245	6.32	
	6	12.54	2.74	"	0.249	6.26	
	8	12.62	2.82	"	0.247	6.26	
	10	12.60	2.80	"	0.250	6.50	
	12	"	"	"	0.249	6.46	
	14	12.61	2.81	"	0.250	6.49	
	16	12.63	2.83	"	0.252	6.20	
	20	12.62	2.82	"	0.248	6.17	
	25	12.63	2.83	"	0.252	6.21	
	30	"	"	"	0.249	6.23	
	35	12.62	2.82	"	0.257	6.26	
	40	12.63	2.83	"	0.252	6.30	
	50	12.62	2.82	"	"	6.39	
	60	"	"	"	0.253	6.27	
	70	12.63	2.83	"	0.255	6.42	
	80	12.60	2.80	"	0.248	6.35	
	90	12.61	2.81	"	0.257	6.23	
	120	"	"	"	0.259	6.28	
	150	"	"	"	0.258	6.29	

PUMPING (DISCHARGING) TEST (1)

DATE 09 . 11 . 75

Name of Client MANDABE Site No. 106  
 Depth: 103 m Dia: 250 mm Screen Interval: 12 m ~ 27 m, 33 m ~ 39 m  
 m ~ m, m ~ m  
 Static Water Level: GL- 9.80 m Dynamic water Level: GL- \_\_\_\_\_ m Pump Setting: \_\_\_\_\_ m  
 Pumping Rate: 240 (l/min) Pump Type: OKAMOTO PUMP Inspector: \_\_\_\_\_

Time	(t) Elapsed Time (min)	1/t	Water Level (m)	Drawdown (m)	Pumpig Rate (l/min)	EC (µs/cm)	PH	Notes
(Start)	0		9.80					
	2	0.50	11.18	1.38	240	0.572		P=2Kpa
	4	0.25	11.60	1.80		0.570		
	6	0.1666	11.68	1.88		"		
	8	0.1250	11.86	2.06		"		
	10	0.1000	12.04	2.24		"		
	15	0.0666	12.16	2.36		0.571		
	20	0.0500	12.21	2.41		0.572		
	25	0.0400	12.22	2.42		0.569		
	30	0.0333	12.225	2.425		0.562		
	40	0.0250	12.30	2.50		0.550		
	50	0.0200	12.40	2.60		0.531		
	60	0.0166	12.41	2.61		0.523		
	70	0.0142	12.46	2.66		0.495		
	80	0.0125	12.46	"		0.483		
	90	0.0111	12.48	2.68		0.475		
	120	0.00833	12.52	2.72		0.466		
	150	0.00666	12.49	2.69		0.421		
	180	0.00555	12.53	2.73		0.366		
	210	0.00476	12.52	2.72		0.347		
	240	0.00416	12.53	2.73		0.338		
	300	0.00333	12.59	2.79		0.331		
	360	0.00277	12.60	2.80		0.327		
	420	0.00238	"	"		0.321		
	480	0.00208	12.61	2.81		"		
	540	0.00185	12.69	2.89		0.381		
	600	0.00166	12.59	2.79		0.325		
	660	0.00151	"	"		0.332		
	720	0.00138	12.60	2.80		0.324		
	780	0.00128	"	"		"		
	840	0.00119	"	"		0.328		
	900	0.00111	12.61	2.81		0.329		
	960	0.00104	12.61	2.81		"		
	1020	0.00098	"	"		0.328		
	1080	0.00092	12.62	2.82		0.329		Valve full open
	1140	0.00083	12.61	2.81		0.327		Q = 320 l/min
	1200	0.00083	12.62	2.82		0.319		Dwl. 10m
	1260	0.00079	"	"		0.328		
	1320	0.00075	"	"		0.327		
	1380	0.00072	12.63	2.83		0.321		
	1440(24h)	0.00069	"	2.83		"		