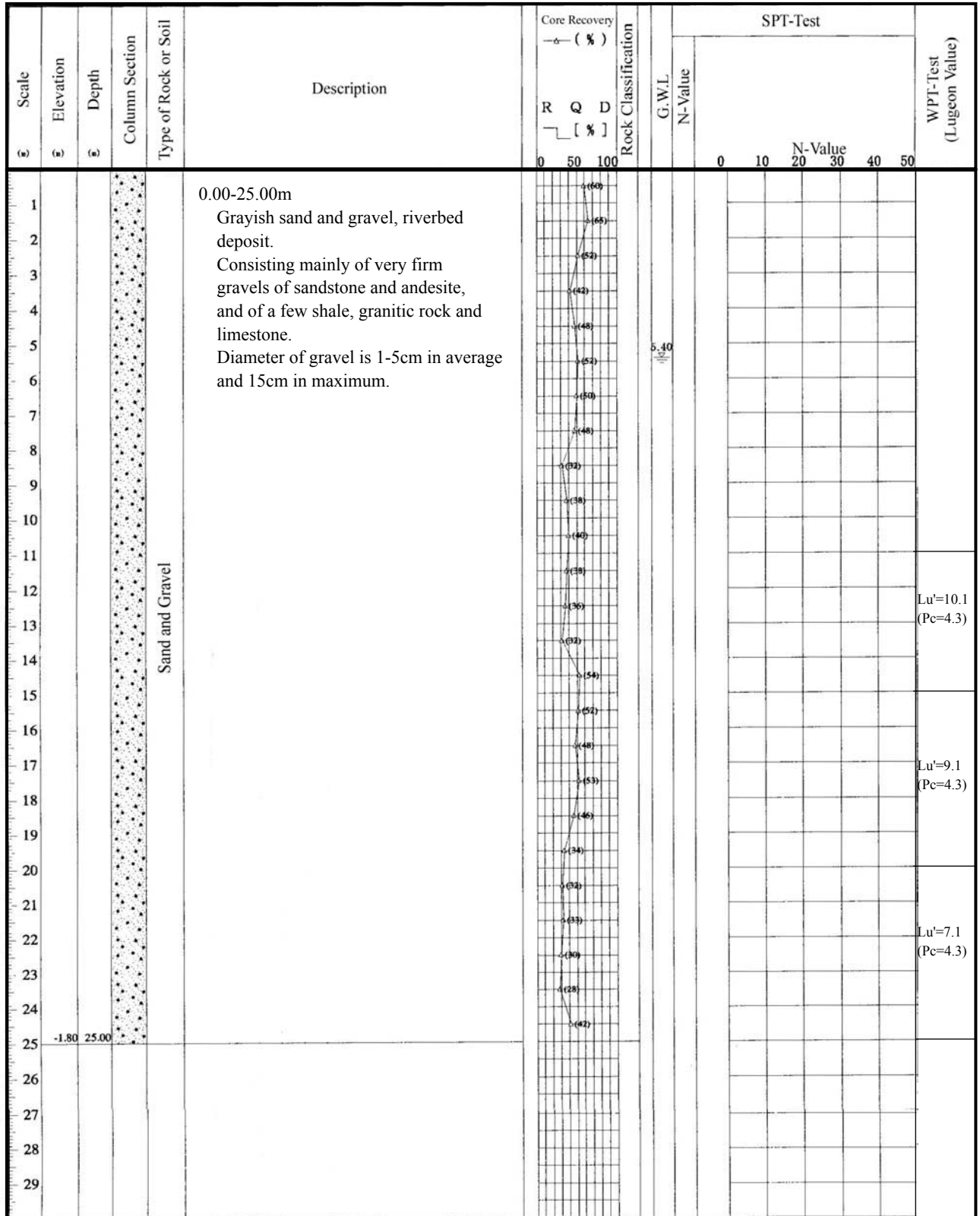
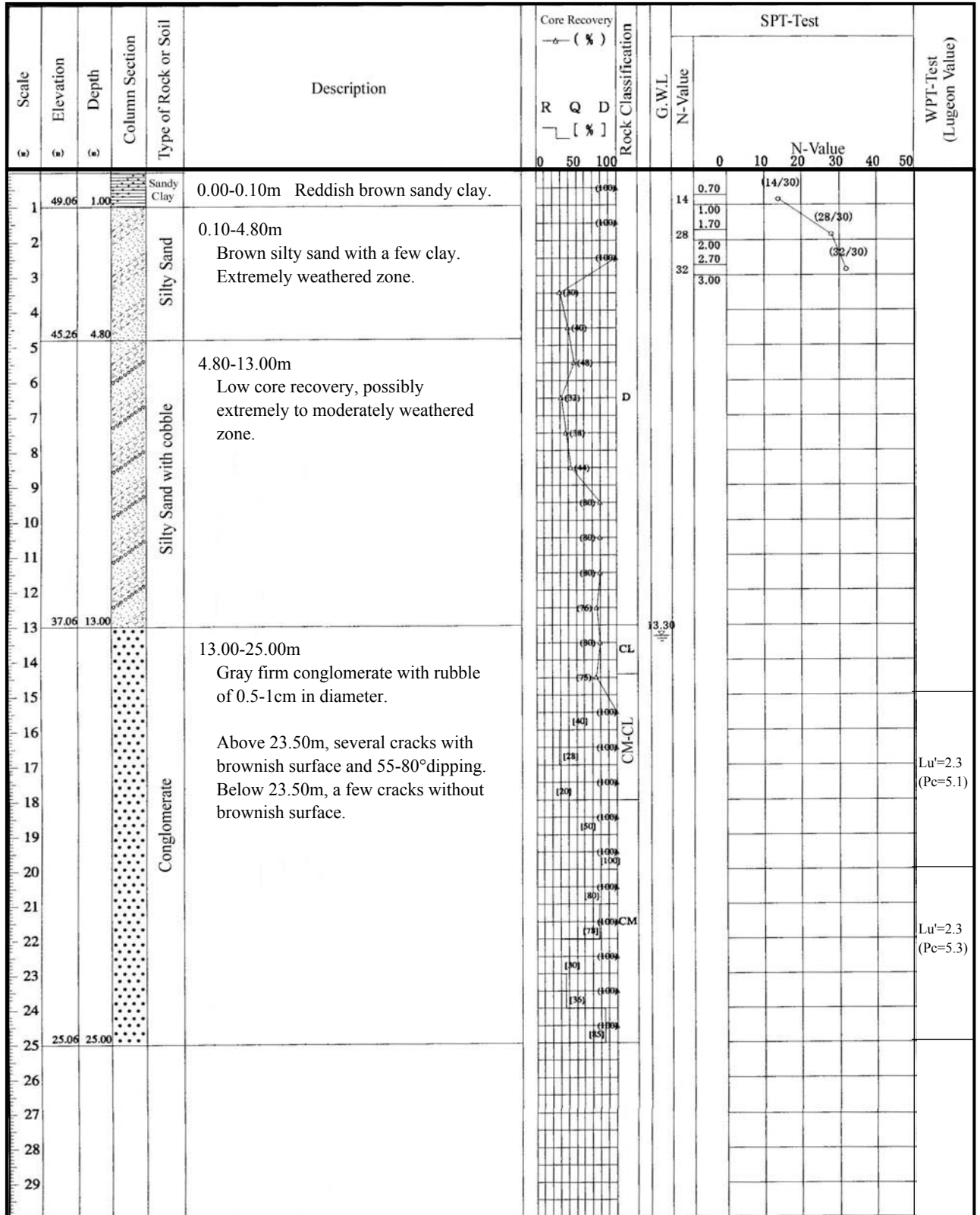


PROJECT	Study on Water Resources Development for Metro Manila		DEPTH	25.00m	ELEVATION	23.20m	
SITE	Agos After Weir Site	COORDINATE	N 1,625,958 ; E 562,103	INCLINATION	Vertical	DRILL RIG	TFM
CASING DEPTH	29.00m	DATE		DRILLED	M.Mabitazan		



PROJECT	Study on Water Resources Development for Metro Manila		DEPTH	25.00m	ELEVATION	50.06m	
SITE	Agos After Weir Site	COORDINATE	N 1,625,858 ; E 562,165	INCLINATION	Vertical	DRILL RIG	TFM
CASING DEPTH	12.00m	DATE		DRILLED	M.Mabitazan		



PROJECT	Study on Water Resources Development for Metro Manila		DEPTH	20.00m	ELEVATION	99.50m	
SITE	Kaliwa Low Damsite	COORDINATE	N 1,616,340 ; E 550,642	INCLINATION	Vertical	DRILL RIG	TS-50-B
CASING DEPTH	2.00m	DATE		DRILLED	M.Mabitazan		

Scale (m)	Elevation (m)	Depth (m)	Column Section	Type of Rock or Soil	Description	Core Recovery — (%) R Q D [%]	Rock Classification	G.W.L	SPT-Test				WPT-Test (Lugeon Value)	
									N-Value					
						0 10 20 30 40 50								
1	98.50	1.00		Sand and Gravel	0.00-1.00m Grayish sand and gravels of 0.5-3cm in diameter.	(100)								
2	96.90	2.60		Sand Stone	1.00-2.60m Dark gray sandstone, coarse grained, slightly cracky.	(100)								
3				Alternation of conglomerate and sandstone	2.60-10.20m Alternation of dark gray conglomerate and coarse sandstone. Rubble of conglomerate is 0.5-3cm in diameter. Some calcite veins of 40-90° in dip are observed in whole of this section.	(100)								
4						(100)								
5						(100)								
6						(100)								
7						(100)								Lu'=3.6 (Pc=7.0)
8						(100)								
9						(100)								
10	89.30	10.20						(100)						
11				Sand Stone	10.20-20.00m Dark gray sandstone, firm, coarse to very coarse grained, with bedding planes of 45° in dip. Some calcite veins of 45-90° in dip are observed in whole of this section. In 16.30-16.70m, chlorite and striation are observed on the crack surface of 60-80° dipping.	(100)								
12						(100)								
13						(100)								
14						(100)								
15						(100)								
16						(100)								
17						(100)								
18						(100)								
19						(100)								
20	79.50	20.00						(100)						
21														
22														
23														
24														
25														
26														
27														
28														
29														

PROJECT	Study on Water Resources Development for Metro Manila		DEPTH	20.00m	ELEVATION	122.00m	
SITE	Kaliwa Low Damsite	COORDINATE	N 1,616,318 ; E 550,632	INCLINATION	Vertical	DRILL RIG	TS-50-B
CASING DEPTH	0.50m	DATE		DRILLED	M.Mabitazan		

Scale (m)	Elevation (m)	Depth (m)	Column Section	Type of Rock or Soil	Description	Core Recovery — (%)			Rock Classification	G.W.L	SPT-Test					WPT-Test (Lu _{geon} Value)		
						R	Q	D			N-Value							
						0	50	100	0 10 20 30 40 50									
1				Sand Stone	0.00-8.00m Dark gray firm sandstone, coarse to very coarse grained. Several cracks observed especially in 4.40-5.00m.	(99)			CM-CL	2.40								
2							(95)											
3							(100)											
4							(100)											
5						Brownish crack surface in 4.40-4.70m.	(100)											
6							(100)											
7						Some thin calcite veins in whole of this section.	(100)											
8	114.00	8.00			Conglomerate	8.00-9.60m Dark gray firm conglomerate.	(100)											
9	112.40	9.60					(100)											
10				Sand Stone	9.60-20.00m Dark gray sandstone, firm and coarse grained.	(100)												
11							(100)											
12							(100)											
13							(100)										Lu=5.0	
14							(100)											
15							(100)											
16						In 14.60-20.00m, thin calcite veins rich.	(100)											
17							(100)											
18							(100)											
19						In 19.20-19.30m, slickenside is observed on surface of vertical crack.	(100)											
20	102.00	20.00				(100)												
21																		
22																		
23																		
24																		
25																		
26																		
27																		
28																		
29																		

PROJECT	Study on Water Resources Development for Metro Manila		DEPTH	30.00m	ELEVATION	226.00m	
SITE	Kaliwa Quarry Site	COORDINATE	N 1,616,272 ; E 551,042	INCLINATION	Vertical	DRILL RIG	TS-50-A
CASING DEPTH	2.00m	DATE		DRILLED	S.Eclera		

Scale (m)	Elevation (m)	Depth (m)	Column Section Type of Rock or Soil	Description	Core Recovery — (%) R Q D [%]	Rock Classification	G.W.L N-Value	SPT-Test					WPT-Test (Lugeon Value)
								N-Value					
1	224.90	1.10	Clay	0.00-1.10m Brown clay with high plasticity.	(92)	D							
2			Sand Stone	1.10-7.40m Gray sandstone, coarse to very coarse grained.	(96)	CL							
3						(93)							
4						(100)							
5					Above 4.40m, sharp cracks with brownish surface.	(34)							
6					In 4.80m, thin vertical calcite vein.	(100)							
7	218.60	7.40				(80)							
8			Alternation of sandstone and shale	7.40-25.80m Alternation of gray fine to coarse sandstone and dark gray shale. Sandstone layers rich (85%) and 10-100cm cycled, with bedding plane of 45°.	(84)								
9						(100)							
10						(100)							
11						(100)							
12						(100)							
13						(100)							
14						(100)							
15						(100)							
16					A few calcite veins in whole of this section dipping 45-60°.	(98)							
17						(100)		16.20					
18						(100)	CM						
19						(100)							
20						(100)							
21						(100)							
22						(100)							
23						(100)							
24						(100)							
25						(99)							
26	200.20	25.80			(78)								
27			Sand Stone	25.80-30.00m Gray sandstone, fine to very coarse grained.	(100)								
28						(100)							
29	196.00	30.00				(100)							

PROJECT	Study on Water Resources Development for Metro Manila		DEPTH	30.00m	ELEVATION	145.00m	
SITE	Kaliwa Quarry Site	COORDINATE	N 1,616,100 ; E 551,065	INCLINATION	Vertical	DRILL RIG	TS-50-A
CASING DEPTH	3.00m	DATE		DRILLED	S.Eclera		

Scale (m)	Elevation (m)	Depth (m)	Column Section	Type of Rock or Soil	Description	Core Recovery — (%) R Q D [%]	Rock Classification	G.W.L	SPT-Test		WPT-Test (Luqeon Value)					
									N-Value	N-Value						
						0	50	100	0	10	20	30	40	50		
1				Clay	0.00-2.50m Brown clay with high plasticity.	(95)	D									
2	142.50	2.50				(95)										
3				Sand Stone	2.50-3.00m Dark gray fine grained sandstone.	(100)	CL									
4					3.00-7.90m Gray sandstone, coarse to very coarse.	(100)										
5					Above 4.80m, several cracks in which surface is brownish.	(100)										
6						(100)										
7						(100)										
8	137.10	7.90				(100)										
9					Alternation of sandstone and shale	7.90-27.20m Alternation of gray medium grained sandstone and dark shale. Sandstone layers rich (90%) and 20-100cm cycled, with bedding planes of 45° in dip.	(100)									
10							(100)									
11						(100)										
12						(100)										
13						(100)										
14						(100)										
15						(100)										
16						(100)			16.00							
17						A few calcite veins in whole of this section dipping 40-70°.	(100)									
18						In 17.30-17.70m, colored greenish gray.	(100)	CM								
19						Crack surface in 17.40m, brownish colored.	(100)									
20							(100)									
21							(100)									
22							(100)									
23						(100)										
24						(100)										
25						(100)										
26						(100)										
27	117.80	27.20		Sand Stone	27.20-30.00m Gray sandstone, fine to very coarse grained.	(100)										
28						(100)										
29	115.00	30.00				(100)										

PROJECT	Study on Water Resources Development for Metro Manila		DEPTH	150.00m	ELEVATION	393.00m	
SITE	Daraitan Limestone Area	COORDINATE	N 14°35'13.2"; E 121°26'07.2"	INCLINATION	Vertical	DRILL RIG	LY 38
CASING DEPTH	72.00m	DATE		DRILLED	M.Mabitazan		

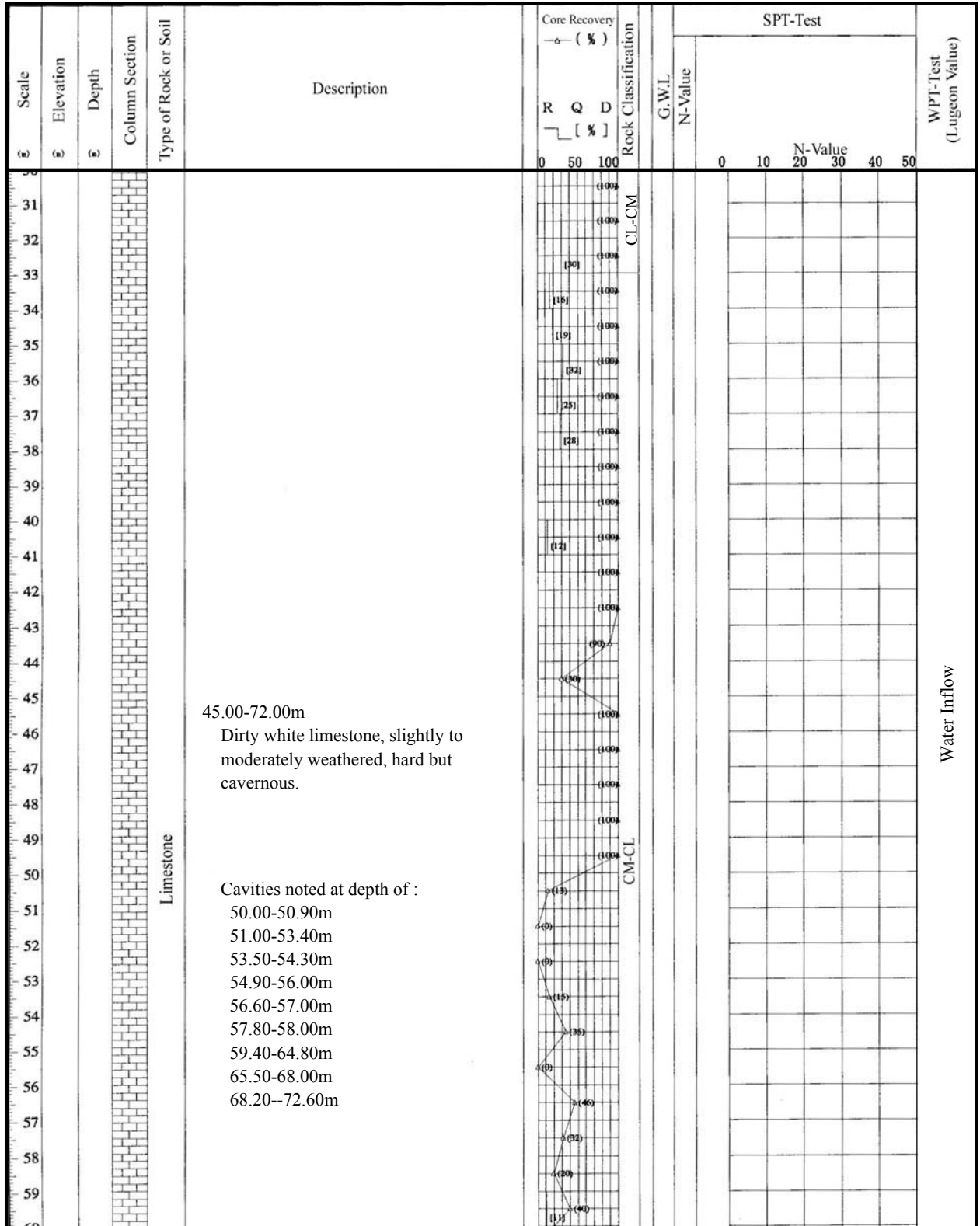
Scale (a)	Elevation (b)	Depth (c)	Column Section	Type of Rock or Soil	Description	Core Recovery — (%) R Q D [%]	Rock Classification	G.W.L. N-Value	SPT-Test					WPT-Test (Lugcon Value)		
									N-Value							
									0	10	20	30	40	50		
1				Clay	0.00-9.00m Reddish brown clay, with high plasticity. Extremely weathered zone.											
2																
3																
4																
5																
6																
7																
8																
9	384.00	9.00				Limestone	9.00-45.00m Dirty white limestone, slightly to moderately weathered. Highly fractured by drilling operation. Rock fragment itself is hard. No cavities found. Iron stains noted on all cracks surface.									
10																
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DRILL LOG

HOLE NO. LD-1

SHEET NO. 2 OF 5

PROJECT	Study on Water Resources Development for Metro Manila		DEPTH	150.00m	ELEVATION	393.00m	
SITE	Daraitan Limestone Area	COORDINATE	N 14°35'13.2"; E 121°26'07.2"	INCLINATION	Vertical	DRILL RIG	LY 38
CASING DEPTH	72.00m	DATE		DRILLED	M.Mabitan		

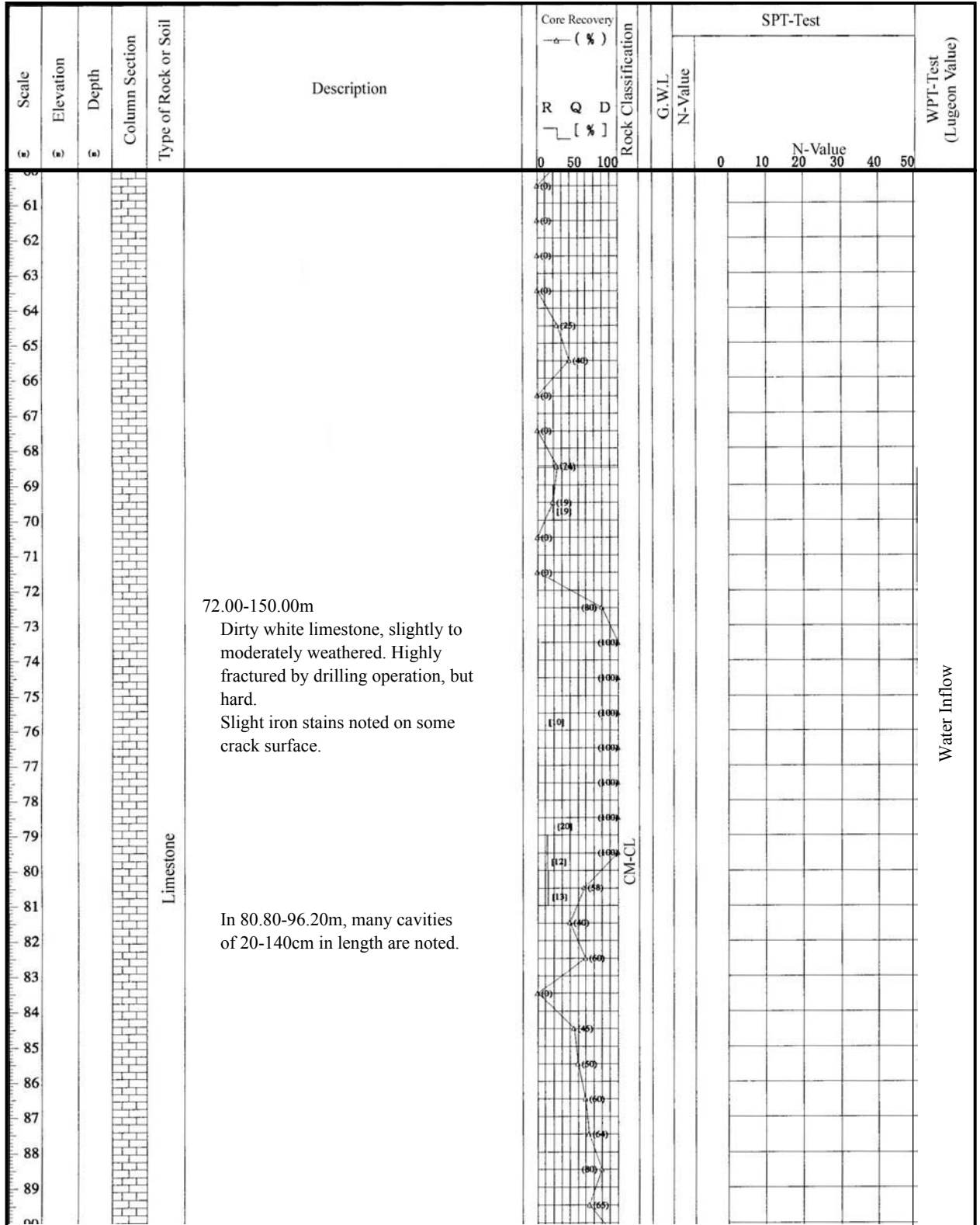


DRILL LOG

HOLE NO. LD-1

SHEET NO. 3 OF 5

PROJECT	Study on Water Resources Development for Metro Manila		DEPTH	150.00m	ELEVATION	393.00m	
SITE	Daraitan Limestone Area	COORDINATE	N 14°35'13.2"; E 121°26'07.2"	INCLINATION	Vertical	DRILL RIG	LY 38
CASING DEPTH	72.00m	DATE		DRILLED	M.Mabitazan		



PROJECT	Study on Water Resources Development for Metro Manila		DEPTH	150.00m	ELEVATION	393.00m
SITE	Daraitan Limestone Area	COORDINATE	N 14°35'13.2"; E 121°26'07.2"		INCLINATION	Vertical
CASING DEPTH	72.00m	DATE		DRILLED	M.Mabitazan	

