

SCALE 0 100m

**LEGEND**

- Residual soil and alluvial deposit
- Conglomerate and gritty sandstone (Classification : CH ~ CL)
- Sandstone and gritty sandstone (Classification : CH ~ CL)
- Alternation of conglomerate and gritty sandstone (Classification : CH ~ CM)

Br. No

Boundary of strata

Boundary of seismic velocity

Seismic velocity (km/sec)

Strongly weathered zone

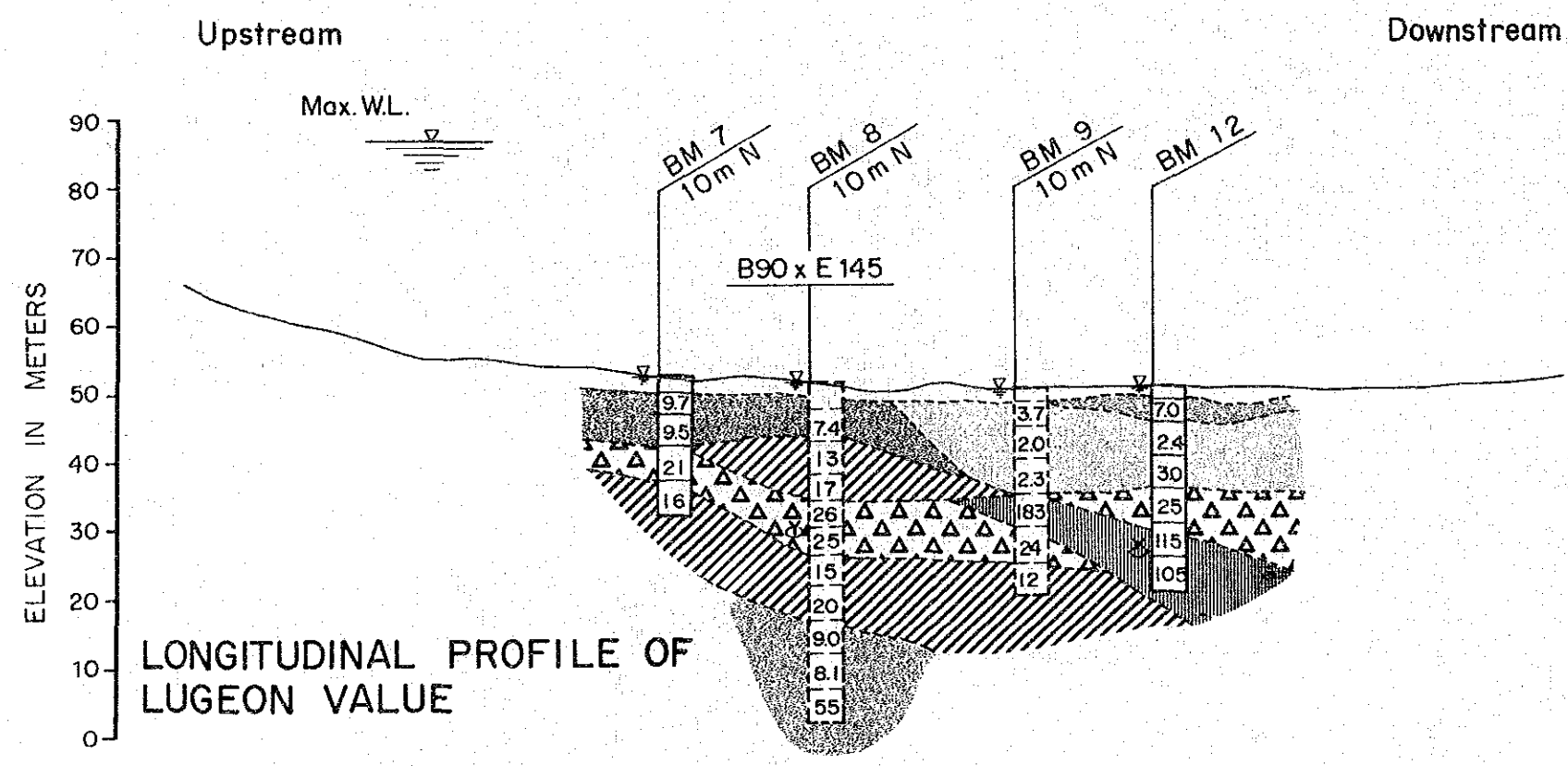
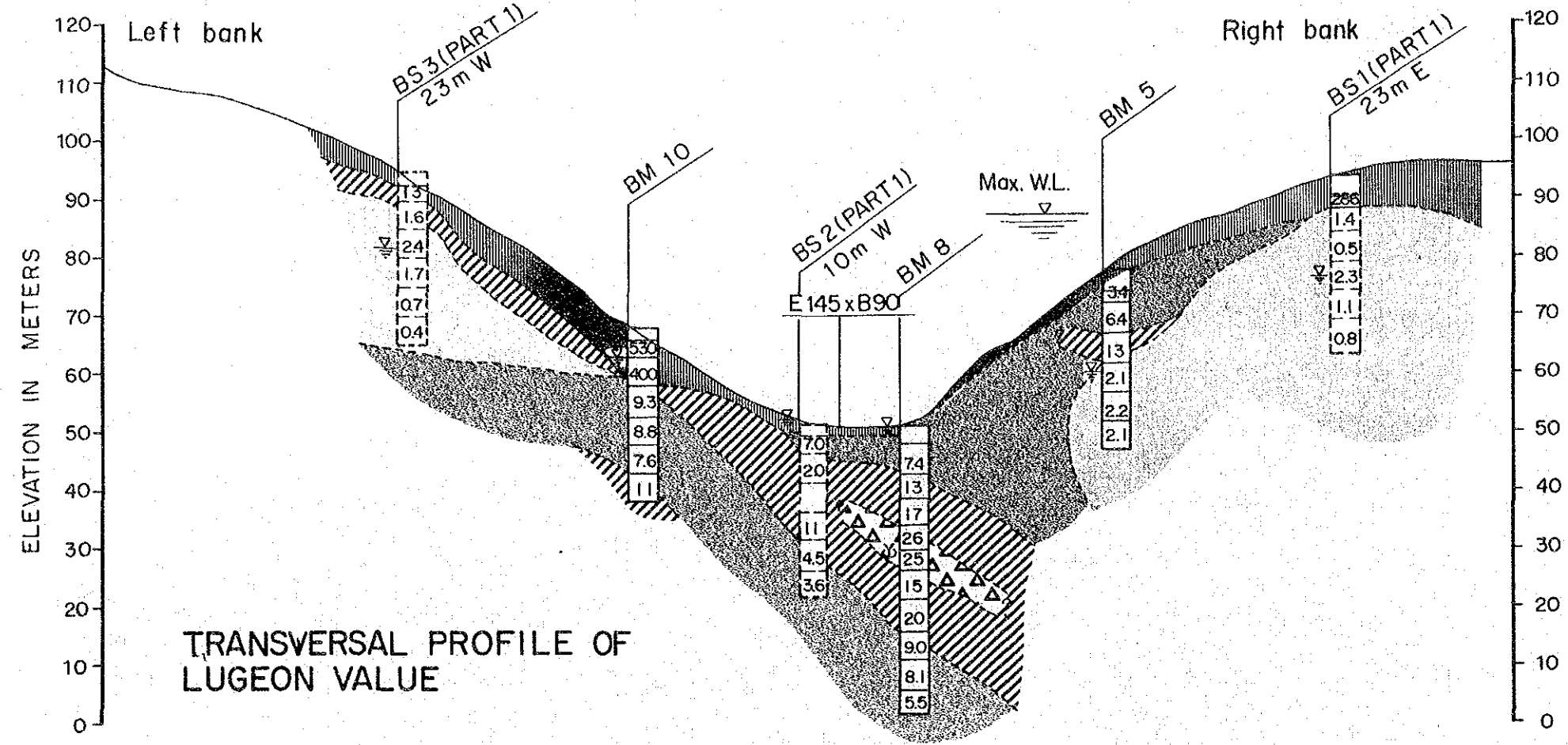
Weakly weathered zone

Location of spring in bore hole

Groundwater level in bore hole

Remark ;  
As for Rock Classification, see Table 4

**Detailed Geological Profile of Main Damsite (2/2)**



**LEGEND**

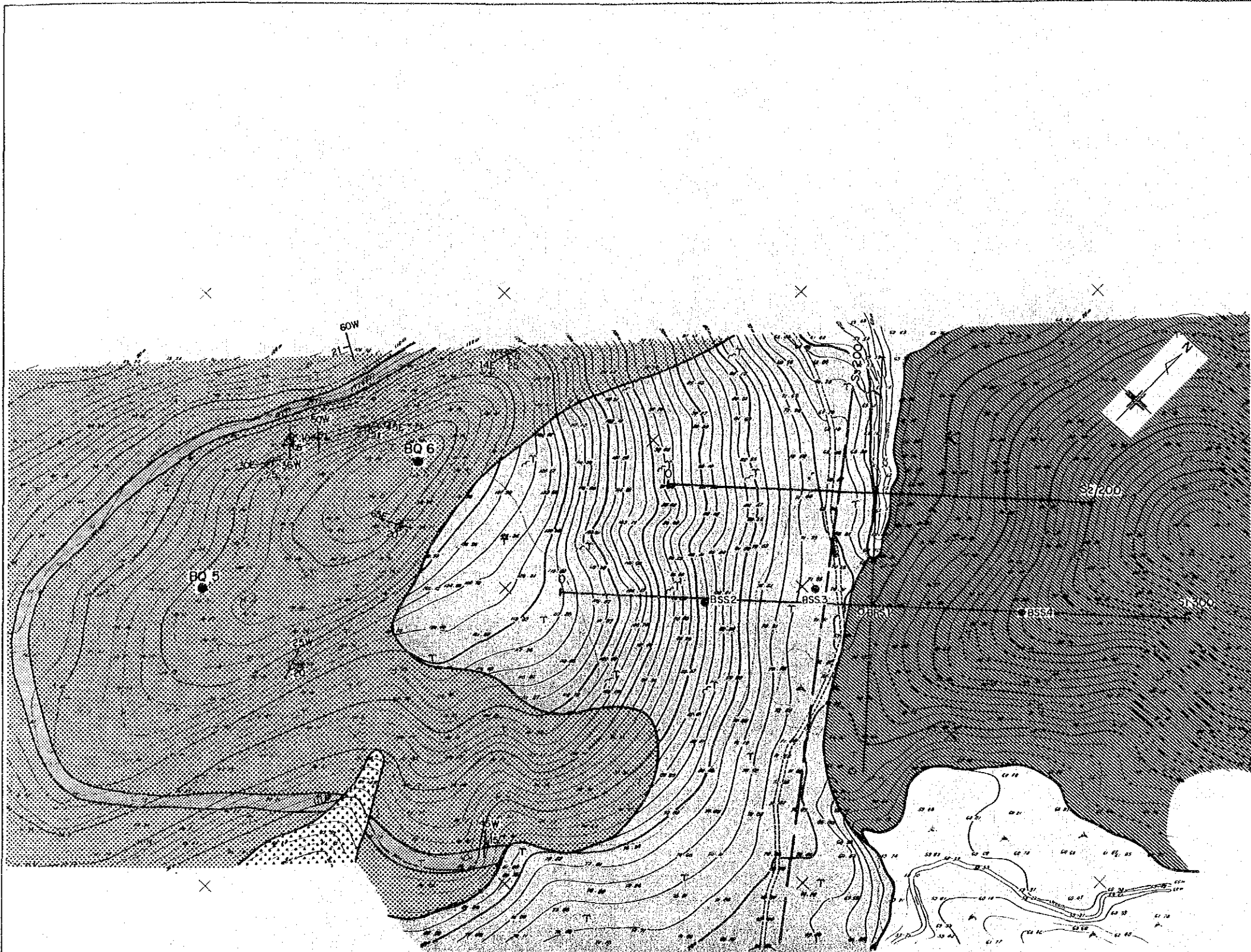
Br. No.

10	LUGEON VALUE (at Max. Pressure)
54	
12	
[White box]	$5 \geq Lu$
[Diagonal lines]	$10 \geq Lu > 5$
[Cross-hatch]	$20 \geq Lu > 10$
[Triangle pattern]	$40 \geq Lu > 20$
[Square pattern]	$100 \geq Lu > 40$
[Solid black]	$Lu > 100$

▽ Groundwater level in bore hole  
 ⊕ Location of spring in bore hole

SCALE 0 100m

Detailed Lugeon Map of Main Damsite



Stratigraphic sequence of Beris dam Area

Geologic Age	Formation	Symbol	Lithology
Ceno-zoic	Quaternary	Alluvial deposit	Present river deposit
			Talus
			Topsoil and residual soil with 5-10m in thickness
Meso-zoic	Triassic	Semanggol Formation	Alternation of shale and fine grained sandstone
			Sandstone
			Gritty sandstone and conglomerate

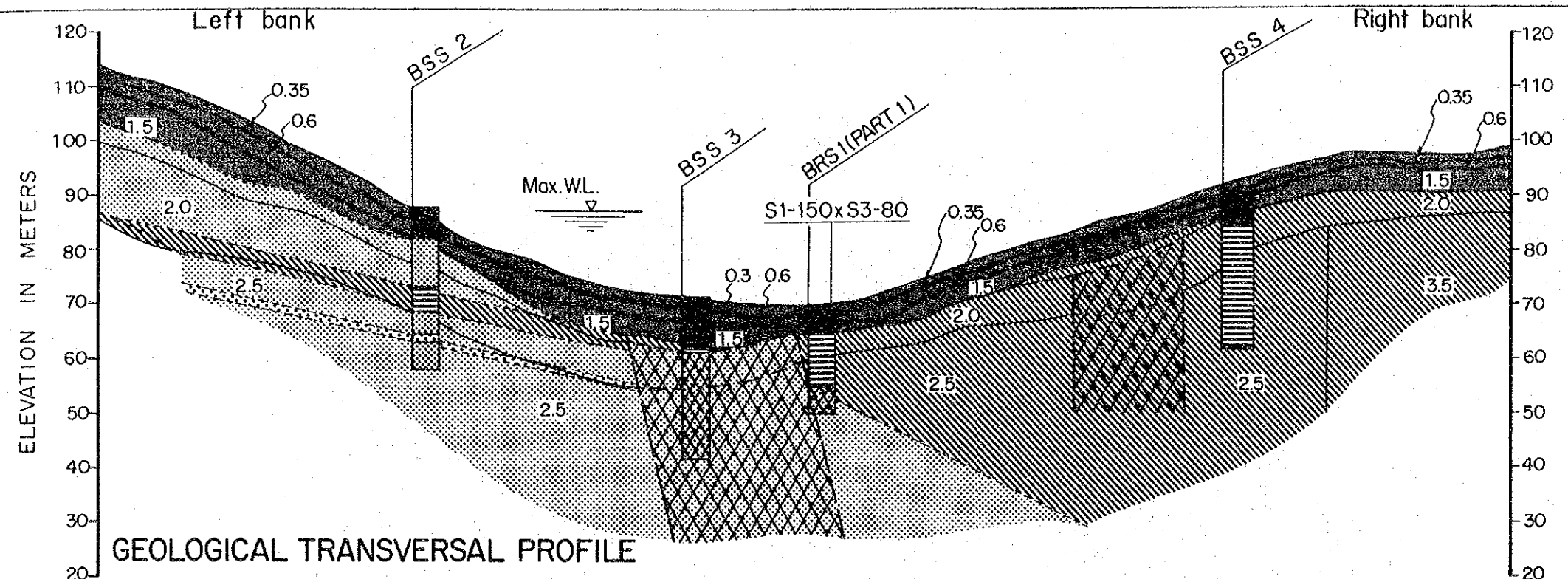
Legend

	Fault		Seismic exploration line
	Geologic contact		Core drilling (PART 1)
	Bedding		Core drilling (PART 2)
	Jointing		
	Outcrop		

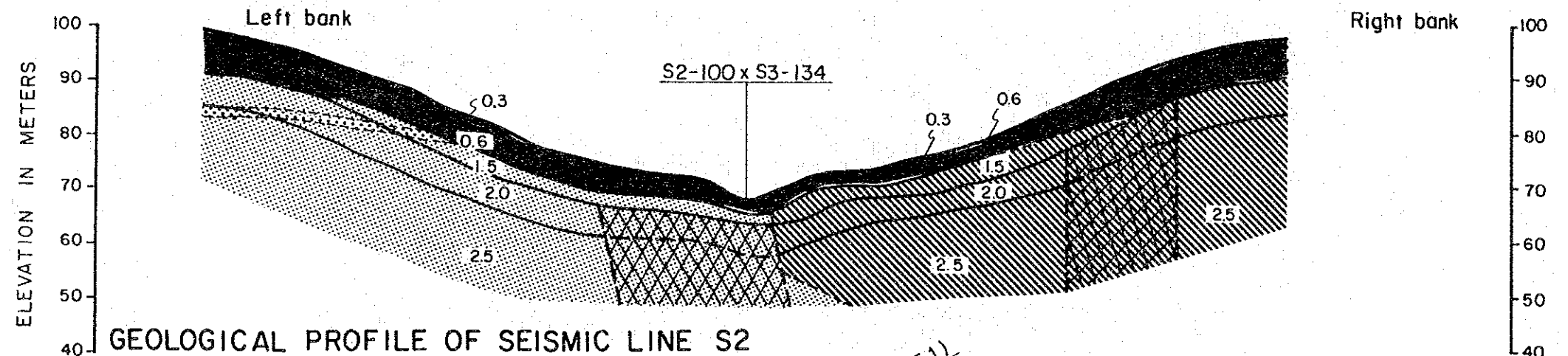
SCALE 0 100m

Detailed Geological Map of Saddle Damsite including Quarry Q2 Site

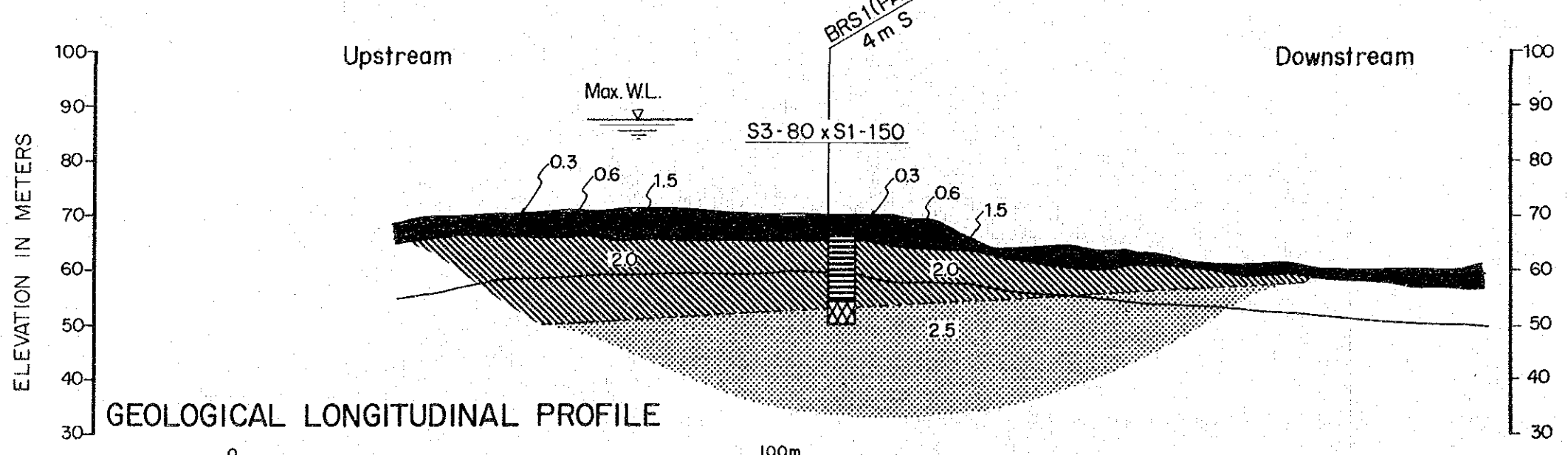
GOVERNMENT OF MALAYSIA  
 NATIONAL WATER RESOURCES STUDY, MALAYSIA  
 PERLIS-KEDAH-PULAU PINANG  
 REGIONAL WATER RESOURCES STUDY PART 2  
 JAPAN INTERNATIONAL COOPERATION AGENCY



GEOLOGICAL TRANSVERSAL PROFILE



GEOLOGICAL PROFILE OF SEISMIC LINE S2



GEOLOGICAL LONGITUDINAL PROFILE

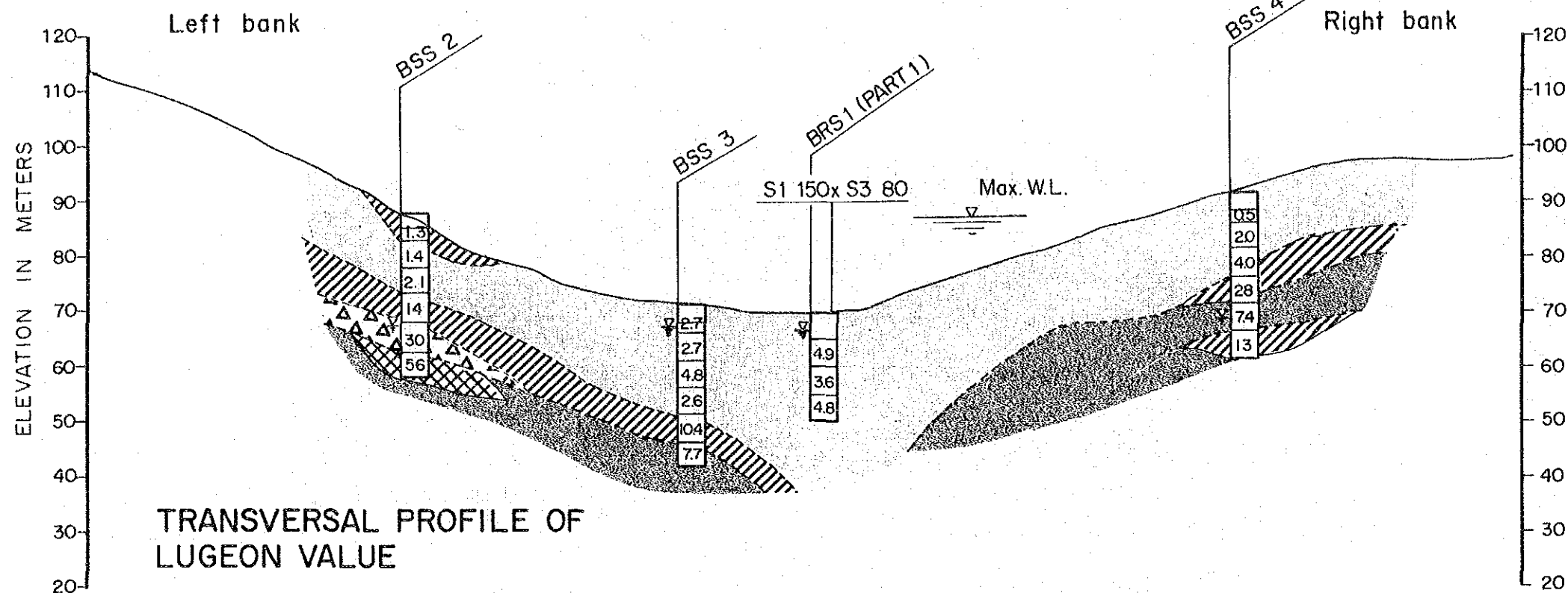


Detailed Geological Profile of Saddle Damsite

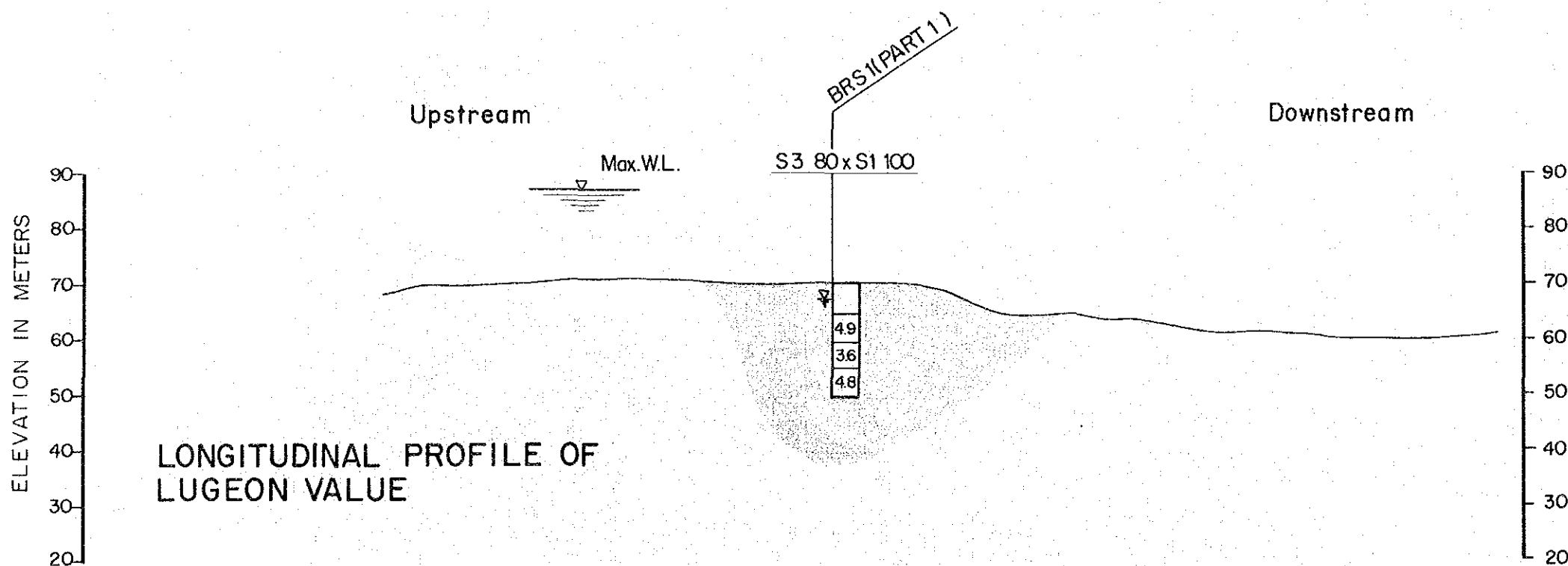
**LEGEND**

- Topsoil and residual soil
- Alternation of shale and fine sandstone (Classification; CM~D)
- Conglomerate (Classification; CM~CL)
- Sandstone (Classification; CM~D)
- Fractured zone (Classification; CL~D)

Remark ;  
As for Rock Classification, see Table 4



TRANSVERSAL PROFILE OF LUGEON VALUE



LONGITUDINAL PROFILE OF LUGEON VALUE

**LEGEND**

Br. No.

5.3  
19

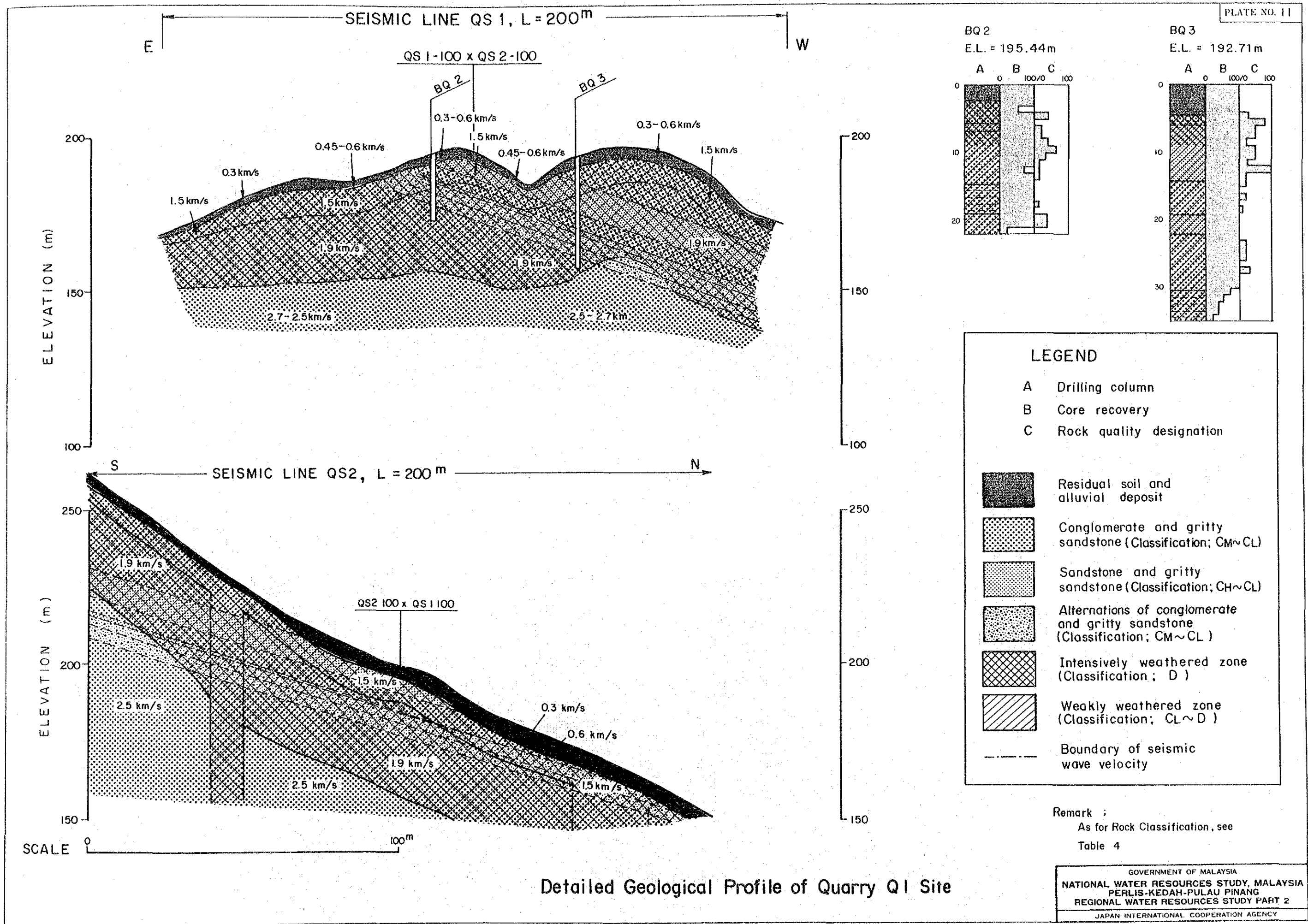
LUGEON VALUE (at Max. Pressure)

▽ Groundwater level in bore hole

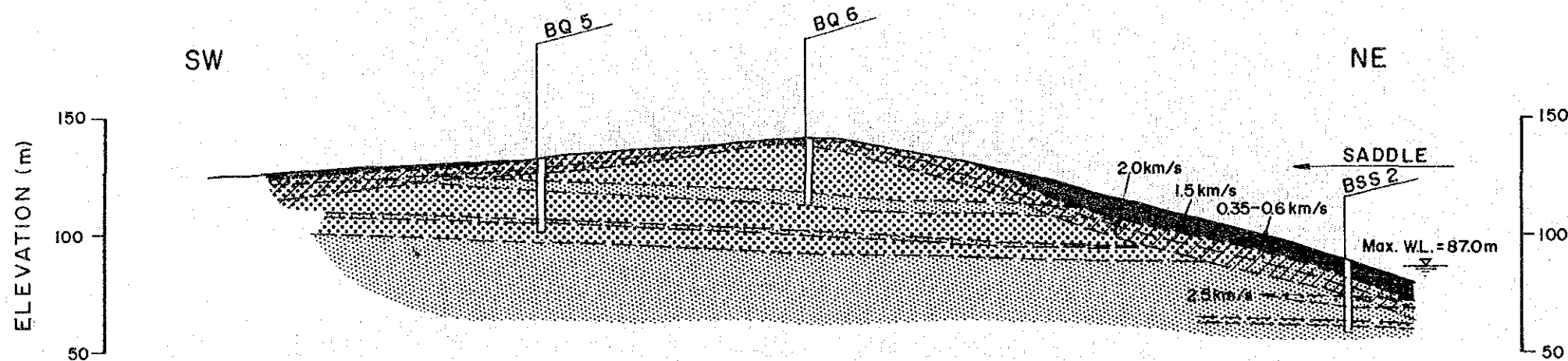
[White box]	$5 \geq Lu$
[Dotted box]	$10 \geq Lu > 5$
[Diagonal lines box]	$20 \geq Lu > 10$
[Triangle pattern box]	$40 \geq Lu > 20$
[Cross-hatch box]	$100 \geq Lu > 40$
[Vertical lines box]	$Lu > 100$

SCALE 0 100m

Detailed Lugeon Map of Saddle Damsite



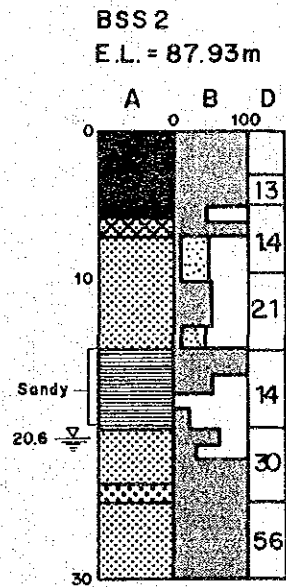
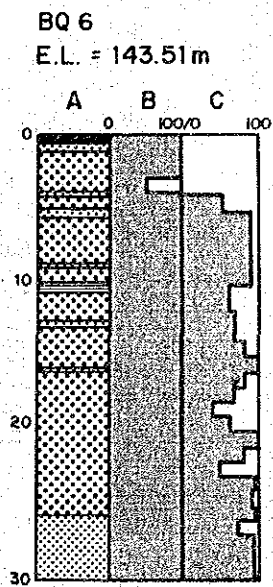
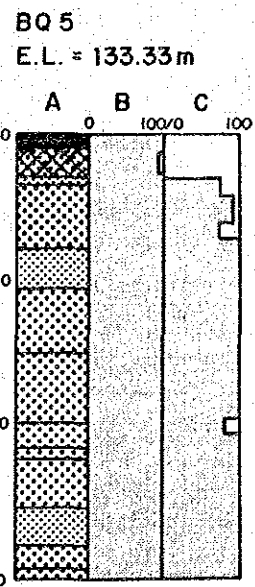
Detailed Geological Profile of Quarry Q1 Site



**LEGEND**

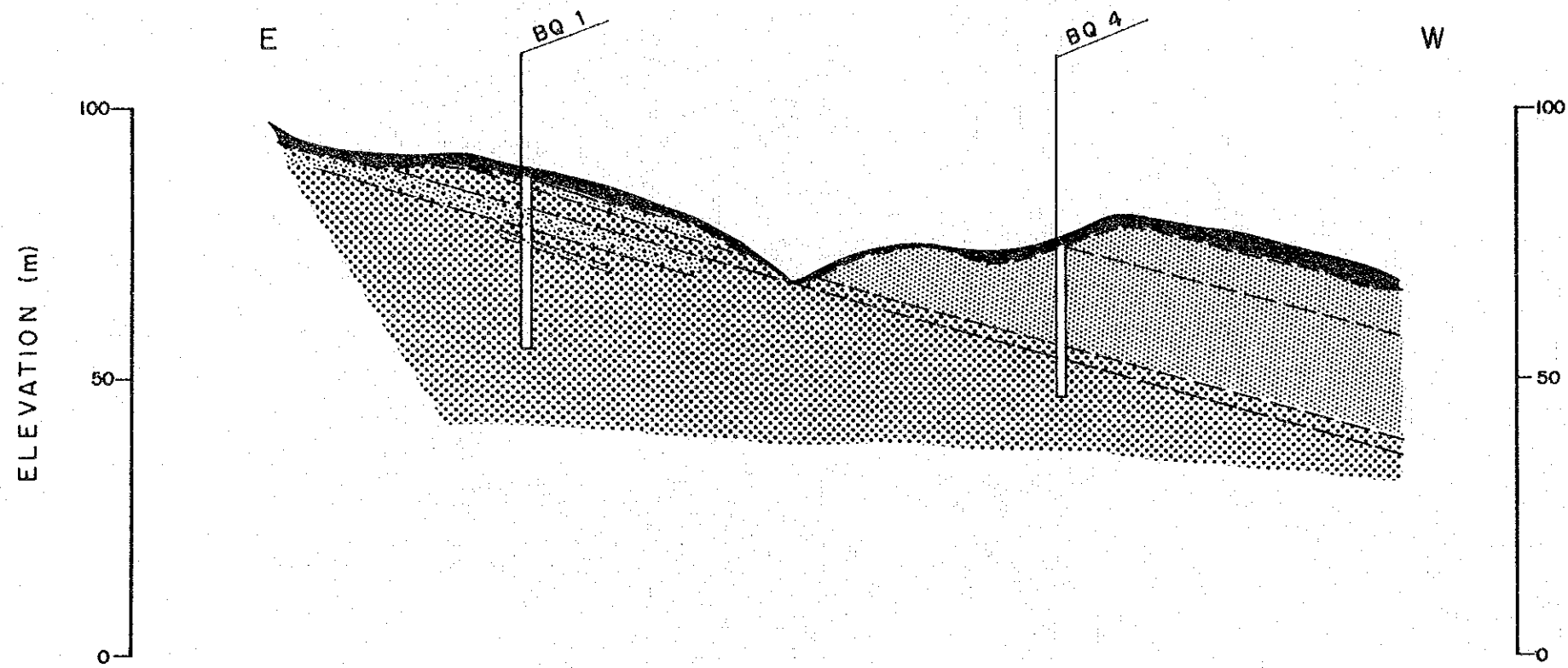
- A Drilling column
- B Core recovery
- C Rock quality designation
- D Permeability in Lugion value

- Residual soil and alluvial deposit
- Conglomerate and gritty sandstone (Classification; CH~CM)
- Sandstone and gritty sandstone (Classification; CH~CM)
- Alternations of shale and sandstone (Classification; CH~CM)
- Intensively weathered zone (Classification; D)
- Weakly weathered zone (Classification; CL~D)



Remark ;  
As for Rock Classification, see  
Table 4

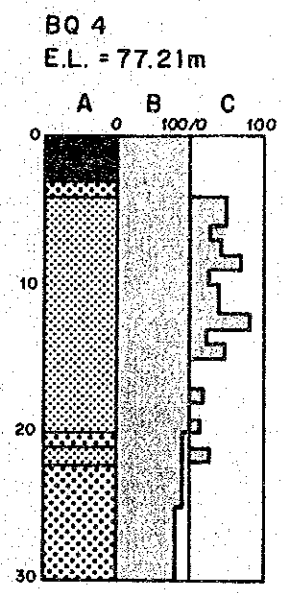
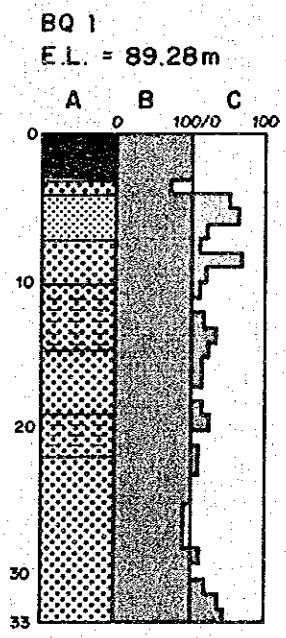
Detailed Geological Profile of Quarry Q2 Site



**LEGEND**

- A Drilling column
- B Core recovery
- C Rock quality designation

- Residual soil and alluvial deposit
- Conglomerate and gritty sandstone (Classification; CM ~ CL)
- Sandstone and gritty sandstone (Classification; CM ~ CL)
- Alternations of conglomerate and gritty sandstone (Classification; CM ~ CL)
- Strongly weathered zone (Classification; D)
- Weakly weathered zone (Classification; CL ~ D)



Remark :  
As for Rock Classification, see  
Table 4



Detailed Geological Profile of Quarry Q3 Site





**APPENDIX A**  
**DRILL LOG**



## LIST OF FIGURES

- A-1. Summary of Drill Log, Main Damsite, Hole No. BS-1 (1/2)
- A-2. Summary of Drill Log, Main Damsite, Hole No. BS-1 (2/2)
- A-3. Summary of Drill Log, Main Damsite, Hole No. BS-2 (1/2)
- A-4. Summary of Drill Log, Main Damsite, Hole No. BS-2 (2/2)
- A-5. Summary of Drill Log, Main Damsite, Hole No. BS-3 (1/2)
- A-6. Summary of Drill Log, Main Damsite, Hole No. BS-3 (2/2)
- A-7. Summary of Drill Log, Main Damsite, Hole No. BM-4
- A-8. Summary of Drill Log, Main Damsite, Hole No. BM-5
- A-9. Summary of Drill Log, Main Damsite, Hole No. BM-6
- A-10. Summary of Drill Log, Main Damsite, Hole No. BM-7
- A-11. Summary of Drill Log, Main Damsite, Hole No. BM-8 (1/2)
- A-12. Summary of Drill Log, Main Damsite, Hole No. BM-8 (2/2)
- A-13. Summary of Drill Log, Main Damsite, Hole No. BM-9
- A-14. Summary of Drill Log, Main Damsite, Hole No. BM-10
- A-15. Summary of Drill Log, Main Damsite, Hole No. BM-11
- A-16. Summary of Drill Log, Main Damsite, Hole No. BM-12
- A-17. Summary of Drill Log, Saddle Damsite, Hole No. BRS-1
- A-18. Summary of Drill Log, Saddle Damsite, Hole No. BSS-2 (1/2)
- A-19. Summary of Drill Log, Saddle Damsite, Hole No. BSS-2 (2/2)
- A-20. Summary of Drill Log, Saddle Damsite, Hole No. BSS-3 (1/2)
- A-21. Summary of Drill Log, Saddle Damsite, Hole No. BSS-3 (2/2)
- A-22. Summary of Drill Log, Saddle Damsite, Hole No. BSS-4 (1/2)
- A-23. Summary of Drill Log, Saddle Damsite, Hole No. BSS-4 (2/2)
- A-24. Summary of Drill Log, Quarry-3 Site, Hole No. BQ-1 (1/2)
- A-25. Summary of Drill Log, Quarry-3 Site, Hole No. BQ-1 (2/2)

- A-26. Summary of Drill Log, Quarry-1 Site, Hole No. BQ-2
- A-27. Summary of Drill Log, Quarry-1 Site, Hole No. BQ-3 (1/2)
- A-28. Summary of Drill Log, Quarry-1 Site, Hole No. BQ-3 (2/2)
- A-29. Summary of Drill Log, Quarry-3 Site, Hole No. BQ-4 (1/2)
- A-30. Summary of Drill Log, Quarry-3 Site, Hole No. BQ-4 (2/2)
- A-31. Summary of Drill Log, Quarry-2 Site, Hole No. BQ-5
- A-32. Summary of Drill Log, Quarry-2 Site, Hole No. BQ-6

In the following Summary of Drill Logs, following remarks are adopted.

Remarks;

1. RQD is Rock Quality Designation and calculated as follows:

$$\text{RQD} = (\text{Total length of cylindric cores longer than} \\ 10 \text{ cm} / \text{Total core length}) \times 100 (\%)$$

2. Lugeon value is /min/m under injection water pressure of 10 kg/cm<sup>2</sup>.

3. Depth and elevation are in meter.

4. Diameter is in millimeter.



Fig. A - 1

PROJECT Main dam site

# SUMMARY OF DRILL LOG

HOLE NO. BS-1(1/2)

DEPTH	ELEVATION	THICKNESS	COLUMN SECTION	ROCK TYPE OR FORMATION	DESCRIPTION	C. W. L.	CORE RECOVERY	R. Q. D.	WATER PRESSURE TEST (LUGEON VALUE)										
									50	25	50	25	10	20	30	40	50		
0.90	93.86	0.90		Soil	Brown sand with clay and plant root.														
2.00	92.76	1.10		Conglomerate	Brown completely weathered soft														
					Grey (as a whole), partially reddish brown Moderately to slightly weathered Very hard Dark grey, greyish white Grey and reddish brown subangular gravel, Max 2.5cm mostly 2mm to 10 mm in size Crack surface yellowish brown brown and black														
7.60		5.60		Conglomerate	7.00-7.15 Grey shale, hard														
7.95		0.35		C. Sandstone	whitish grey V. hard														
					Reddish grey (as a whole) partially grey Moderately to slightly weathered Very hard Partly crack with yellow to brownish yellow clay  9.50 - 9.80 whitish grey m. loc. sandstone, partly with small subangular gravel Very hard Hydrothermally altered.  16.2 - 16.40 Dark grey shale, m. hard														

LOG FORM-A



Fig. A - 2

PROJECT Main damsite

# SUMMARY OF DRILL LOG

HOLE NO. BS-1(2/2)

DEPTH	ELEVATION	THICKNESS	COLUMN SECTION	ROCK TYPE OR FORMATION	DESCRIPTION	G. W. L.	CORE RECOVERY	R. Q. D.	WATER PRESSURE TEST (LUGEON VALUE)								
									50 %	50 %	10	20	30	40	50		
22.70	72.06	14.75		Conglomerate													
23.40	71.36	0.7		M. to C. Sandstone	Gray, Very hard												
					Dark) Grey, partially reddish brown Very hard Fresh												
29.00		5.6		Conglomerate													
30.00	64.76	1.0		Conglomerate	Reddish grey (as a whole) Very hard												

LOG FORM-A

Fig. A - 3

PROJECT Main dam site

# SUMMARY OF DRILL LOG

HOLE NO. BS-2(1/2)

DEPTH	ELEVATION	THICKNESS	COLUMN SECTION	ROCK TYPE OR FORMATION	DESCRIPTION	G. W. L.	CORE RECOVERY	R. Q. D.	WATER PRESSURE TEST (LUGEON VALUE)									
									50	50	10	20	30	40	50			
0.60		0.60		Soil	Greyish brown sand with clay and plant root													
1.05	50.87	0.45		Soil	Greyish yellow sand with gravel													
					Grey. Very hard 2.50-3.50 Moderately weathered Composed of angular to subangular gravels (dark grey, greyish white and grey) Max. 4 cm, mostly 5mm to 2cm													
7.20	44.72	6.15		Conglomerate	Water seeps out at 7.8 m													
8.15	43.77	0.95		M. to F. Sandstone	Grey. Very hard 0.25 kg/cm <sup>2</sup> with quartz vein (5.0l/min)													
					Grey. Very hard Composed of angular gravels Max. 5mm, mostly 1mm to 4mm													
10.30	41.62	2.15		Grit														
					Grey. Very hard 10.5 to 10.7 pyrite vein													
12.10	39.82	1.80		M. sandstone														
					Grey. Very hard Composed of angular gravels (dark grey, greyish white) and grey matrix Mostly 1mm to 5mm in size													
14.70	37.22	2.60		Grit														
					Grey. Very hard with quartz vein													
15.60	36.32	0.90		M. sandstone														
					Grey. Very hard. Severely fractured. Fresh. Mostly 1mm to 3mm in size.													
16.50	35.42	0.90		Grit														
					Grey. Very hard Moderately to severely fractured Partly with grit thin layer													
20.60	31.32	4.10		M. sandstone														
					Grey. Very hard Mostly 2mm to 5mm in size Max. 8mm													

LOG FORM - A

Fig. A - 4

PROJECT Main dam site

# SUMMARY OF DRILL LOG

HOLE NO. BS-2(2/2)

DEPTH	ELEVATION	THICKNESS	COLUMN SECTION	ROCK TYPE OR FORMATION	DESCRIPTION	G. W. L.	CORE RECOVERY	R. Q. D.	WATER PRESSURE TEST (LUGEON VALUE)									
									50	30	10	20	30	40	50			
22.50		1.90	△△△△△	Grit														
23.40		0.90	△△△△△	Grit	Grey. Very hard Mostly 3mm to 8mm Max. 1cm													
			○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○		Grey. Very hard Composed of Gravel (subangular dark grey, greyish white, grey and yellowish grey) Mostly 7mm to 2cm in size Max. 11cm													
27.30	24.62	3.90	○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	Conglomerate														
			Py Py △ △ △ △ △ △ Py		Grey. Very hard Partly with grit (2mm to 5mm in size) and pyrite veinlet													
30.00	21.92	2.70	△ △ △ Py	M. to C. sandstone														

LOG FORM-A

Fig. A -5

PROJECT Main dam site

# SUMMARY OF DRILL LOG

HOLE NO. BS-3(1/2)

DEPTH	ELEVATION	THICKNESS	COLUMN SECTION	ROCK TYPE OR FORMATION	DESCRIPTION	G. W. L.	CORE RECOVERY		R. Q. D.	WATER PRESSURE TEST (LUGEON VALUE)							
							50 %	50 %		10	20	30	40	50			
0.60	92.30	0.60		Soil	Yellowish brown (partially dark brown) sand with clay and plant root												
2.70	90.20	2.10		Conglomerate	Multicolored (yellowish brown, brown, brownish yellow); yellowish brown (as a whole) Completely weathered. Soft												
3.65		0.95		Conglomerate	Brownish grey, M. hard Intensively weathered												
4.65	88.25	1.00		Conglomerate	Pinkish grey Hard Slightly weathered												
5.80	87.10	1.15		M. to C. Sandstone	Grey. Very hard Slightly weathered												
6.50	86.40	0.70		Grit	Grey. Very hard gravel (subangular) Mostly 1mm to 3mm in size												
7.75		1.25		Conglomerate	Grey, partially reddish brown Dark grey and white gravel (subangular) mostly 4mm to 20mm Matrix M.to C. sandstone												
8.00		0.25		Shale	Grey. Hard												
					Yellowish brown. M. hard Intensively weathered												
					11.30 - 11.50 Grey m. sandstone V. hard												
					11.70 - 12.10 Grey. M. to C. sandstone V. hard												
14.20		6.2		Conglomerate	Hard												
					Reddish grey (as a whole) Dark grey, grey, greyish white and reddish brown gravel (subangular) mostly 5mm to 10mm in size Max. 3cm Stained with hematite Slightly weathered 15.50 - 17.50 Moderately weathered Hard to very hard												

LOG FORM--A

Fig. A - 6

PROJECT Main dam site

# SUMMARY OF DRILL LOG

HOLE NO. BS-3(2/2)

DEPTH	ELEVATION	THICKNESS	COLUMN SECTION	ROCK TYPE OR FORMATION	DESCRIPTION	G. W. L.	CORE RECOVERY	R. Q. D.	WATER PRESSURE TEST
									(LUGEON VALUE)
							50 %	50 %	10 20 30 40 50
					25.05 - 25.10 Dark grey shale				0.7
					25.60 - 28.10 Intensively weathered				0.4
30.00	62.90	15.80		Conglomerate					

LOG FORM - A

Fig. A-7

PROJECT Main dam site

# SUMMARY OF DRILL LOG

HOLE NO. BM-4

DEPTH	ELEVATION	THICKNESS	COLUMN SECTION	ROCK TYPE OR FORMATION	DESCRIPTION	G. W. L	CORE RECOVERY	R. Q. D	WATER PRESSURE TEST (LUGEON VALUE)									
									50	50	10	20	30	40	50			
1.40	57.53	1.40		Soil residual soil	0 to 1 <sup>m</sup> Dark brown clay silt with plant roots and congo. cobbles 1.0 to 1.4m residual soil, cobble.													
4.45	54.48	3.05		Hard Conglomerate	Multi coloured by weathering, moderately fractured, coarse grained													
5.25	53.68	0.80		Hard sandstone	Grey, reddish brown slightly fractured and weathered. f.g.													
5.80	53.13	0.55		Gritty sandstone	Grey, poorly fractured fresh medium grained													
5.05	52.88	0.25		Conglomerate	fresh coarse grained													
7.20	51.73	1.15		Hard sandstone	Grey, poorly fractured fresh fine grained sandstone													
7.80	51.13	0.60		Conglomerate	Multi coloured, fresh, coarse grained													
11.15	47.75	3.35		Hard Sandstone	Bluish grey, poorly fractured, fresh, fine grained sandstone													
12.17	46.73	1.02		Gritty Sandstone	Bluish grey, fresh, medium grained													
14.07	44.83	1.90		Hard Sandstone	Grey, fresh, fine grained. partly brownish weathered along cracks (dip 45° to 60°)													
15.07	43.93	1.00		Sandstone and Gritty Sandstone	Grey, poorly fractured, fresh, fine grained. 14.10 to 14.35m medium grained, Gritty sandstone, Fresh.													

LOG FORM-A

Fig. A - 8

PROJECT Main dam site  
HOLE NO. BM - 5

# SUMMARY OF DRILL LOG

DEPTH	ELEVATION	THICKNESS	COLUMN SECTION	ROCK TYPE OR FORMATION	DESCRIPTION	G. W. L	CORE RECOVERY	R. Q. D	WATER PRESSURE TEST (LUGEON VALUE)				
									50	25	50	25	10
				Top soil & Residual soil	Dark brown soft clay, little traces of plant roots. Completely weathered residual soil, sandy silt.				N/A				
2.45	74.28	2.45							N/A				
4.77	71.96	2.32		Hard Conglomerate	Multicoloured, fresh, coarse grained.				3.4				
5.90	70.83	1.13		Sandstone & Conglomerate	Grey, Very hard, fresh Coarse grained, non crack.				5.4				
					Multicoloured, fresh, 1 - 2 cm diameter of fragments Very hard and cylindrical core. 7.10 to 7.25 m moderately fractured, slightly weathered along cracks.				18.7				
14.43	62.30	8.53		Hard Conglomerate					2.1				
16.10	60.63	1.67		Gritty sandstone Conglomerate	Multicoloured, moderately fractured, slightly weathered.				2.1				
18.30	58.43	2.20		Hard Conglomerate	Grey, poorly fractured, fresh coarse grained conglomerate.				2.1				
21.30	55.43	3.00		Hard Sandstone	Grey, poorly fractured, fresh fine grained sandstone cylindrical core.				2.1				
					Multicoloured, poorly fractured, fresh coarse grained conglomerate, 25.30 - 25.50 m and 29.70m slightly fractured and weathered conglomerate. Altered to brown along cracks.				2.1				
29.70	46.73	8.40		Hard conglomerate					2.1				

LOG FORM-A

Fig. A - 9

PROJECT Main dam site

# SUMMARY OF DRILL LOG

HOLE NO. BM-6

DEPTH	ELEVATION	THICKNESS	COLUMN SECTION	ROCK TYPE OR FORMATION	DESCRIPTION	C. W. L.	CORE RECOVERY	R. Q. D.	WATER PRESSURE TEST (LUGEON VALUE)									
									50	50	10	20	30	40	50			
0.69	57.26	0.69		Top soil & residual soil	Light brown compacted clayey silt													
					0.69 - 5.50 m Multicoloured, faintly weathered along fractures conglomerate Pyrite is found in the fissures (fractures)													
					5.50 - 9.90 m Light bluish grey, fresh, coarse grained, moderately fractured conglomerate.													
					Interbedded with dark grey clay at 4.6 m, 5.62 m and 5.88 m. Cracks and fractures dip 60°- 70°.													
9.90	48.05	9.21		Hard conglomerate														
					Light bluish grey, fresh, coarse grained, slightly fractured gritty sandstone.													
11.80	46.15	1.90		Gritty sandstone														
					Light bluish grey, fresh, coarse grained conglomerate Spotted with dark grey clay and stiff whitish sandy silt. Fractured dip 70°.													
15.00	42.95	3.20		Hard conglomerate														

LOG FORM-A





Fig. A - II

PROJECT Main dam site

# SUMMARY OF DRILL LOG

HOLE NO. BM-8(1/2)

DEPTH	ELEVATION	THICKNESS	COLUMN SECTION	ROCK TYPE OR FORMATION	DESCRIPTION	G. W. L	CORE RECOVERY		WATER PRESSURE TEST (LUGEON VALUE)					
							50 %	50 %	10	20	30	40	50	
2.80	47.47	2.80		Aluvial Conglomerate	0 - 0.3 m core lost, Aluvial cobbles or gravels. 0.3 - 2.8m Yellowish brown moderately fractured, coarse.									
4.20	46.07	1.40		Conglomerate	Bluish dark grey, poor fractured, fresh conglomerate.									
6.20	44.07	2.00		Sandstone & Gritty sandstone	Dark grey, partly fractured fine grained sandstone.									
7.75	42.52	1.55		Gritty sandstone	Grey, moderately fractured Bedding plane dips 10 to 20°									
10.00	40.27	2.25		Conglomerate	Grey, severely fractured, coarse grained Max. fragment is 10 mm.									
19.45	30.82	9.45		Hard sandstone & Gritty sandstone	Dark grey to grey, moderate to poorly fractured. 10.00 - 12.50 m: cracky core Interbedded with grey conglomerate 10.30 m, 14.30 m, 15.00 to 17.60 m. Medium to fine grained stable sandstone and gritty sandstone.									
25.82	24.45	6.37		Conglomerate	Grey, blackspot, fresh conglomerate. Partly fractured (19.70 - 20.00 m, 22.50 - 23.70 m, 24.00 - 24.30 m, 24.80 - 25.60 m)									
28.60	21.67	2.78		Hard sandstone	Dark grey to grey, moderately fractured, fresh fine grained sandstone.									
34.30	15.97	5.70		Hard conglomerate	Grey, moderately fractured, fresh conglomerate. 33.00 - 33.60 m: Vertical crack and fractured.									
				Alternation of sandstone and conglomerate	Grey to bluish grey, poorly fractured (cylindrical) fresh core. Partly (34.50 m, 35.70 m) cracky core.									

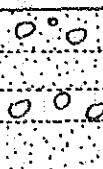


LOG FORM-A

Fig. A - 12

PROJECT Main dam site

# SUMMARY OF DRILL LOG

HOLE NO. BM-8(2/2)

DEPTH	ELEVATION	THICKNESS	COLUMN SECTION	ROCK TYPE OR FORMATION	DESCRIPTION	G. W. L.	CORE RECOVERY	R. Q. D.	WATER PRESSURE TEST (LUGEON VALUE)						
									50 %	50 %	10	20	30	40	50
48.50	1.77	14.20		Alternation of sandstone and conglomerate	Bedding plane dips 10° to 20°. 47.50 m : Crack dip 60°, fractured.										
50.00	0.27	1.50		Conglomerate	48.00 - 49.00 m fractured. From 49.00 m, cylindrical stable conglomerate.										

LOG FORM-A

Fig. A - 13

PROJECT Main dam site

# SUMMARY OF DRILL LOG

HOLE NO. BM-9

DEPTH	ELEVATION	THICKNESS	COLUMN SECTION	ROCK TYPE OR FORMATION	DESCRIPTION	G. W. L.	CORE RECOVERY	R. Q. D.	WATER PRESSURE TEST (LUGEON VALUE)									
									50 %	50 %	10	20	30	40	50			
0.80	50.49	0.80		Sand, Gravels	Fine to medium sand, Gravels.													
10.10	41.19	9.30		Hard conglomerate	Bluish grey, hard, fresh conglomerate. 0.30 m, 2.30 - 3.00 m, 3.30 m crack dip 20 to 45°. As a whole, poorly fractured fresh, coarse gravels included conglomerate.													
23.30	27.99	13.20		Gritty sandstone & conglomerate alternation	Bluish grey, medium to fine grained, hard sandstone, gritty sandstone with thin layers of conglomerate. Conglomerate have white and black spotted fragments. Its maximum diameter are 15 mm. Bedding plane dips 20°. 16.70 to 17.00 m, 17.70 to 21.20 m, 22.20 to 22.70 m are fractured.													
25.48	25.81	2.18		Gritty sandstone	Light grey, moderately fractured, cracky sandstone.													
30.00	21.29	4.02 0.50		Sandstone	Whitish grey, poorly fractured, fine grained sandstone 28 - 30 m; Very hard, cylindrical core.													

LOG FORM - A

Fig. A-14

PROJECT Main dam site

# SUMMARY OF DRILL LOG

HOLE NO. 8M-10

DEPTH	ELEVATION	THICKNESS	COLUMN SECTION	ROCK TYPE OR FORMATION	DESCRIPTION	G. W. L	CORE RECOVERY	R. Q. D	WATER PRESSURE TEST (LUCEON VALUE)								
									50 %	50 %	10	20	30	40	50		
2.16	68.71	2.16	X	Top soil & Residual soil	0 - 0.55 m silty clay with plant roots. 0.55 - 2.16 m Residual soil and completely weathered conglomerate.												
9.58	61.29	7.42	○	Conglomerate	Multicoloured, moderately fractured and weathered coarse grained conglomerate. Vertical to 60° open cracks with severely weathered zone exist at 4 to 6 m in depth.												
12.10	58.77	2.52	●	Sandstone & Gritty sandstone	Light grey, fresh sandstone. Reddish planes along cracks develop in 0.5 to 1.0 interval.												
18.54	52.33	6.44	○	Conglomerate	Light grey to grey fresh conglomerate. 12.6 - 13.1 m and 17.0 m, fractured with thin band grey shale. As a whole, cylindrical core, stable conglomerate.												
30.00	40.87	11.46	●	Sandstone & Gritty sandstone	Bluish grey, partly reddish, fresh sandstone and gritty sandstone. Brown to reddish weathered planes develop along 0.3 m to 1.0 m interval cracks. Cracks dip 45° to 60°.												

LOG FORM-A