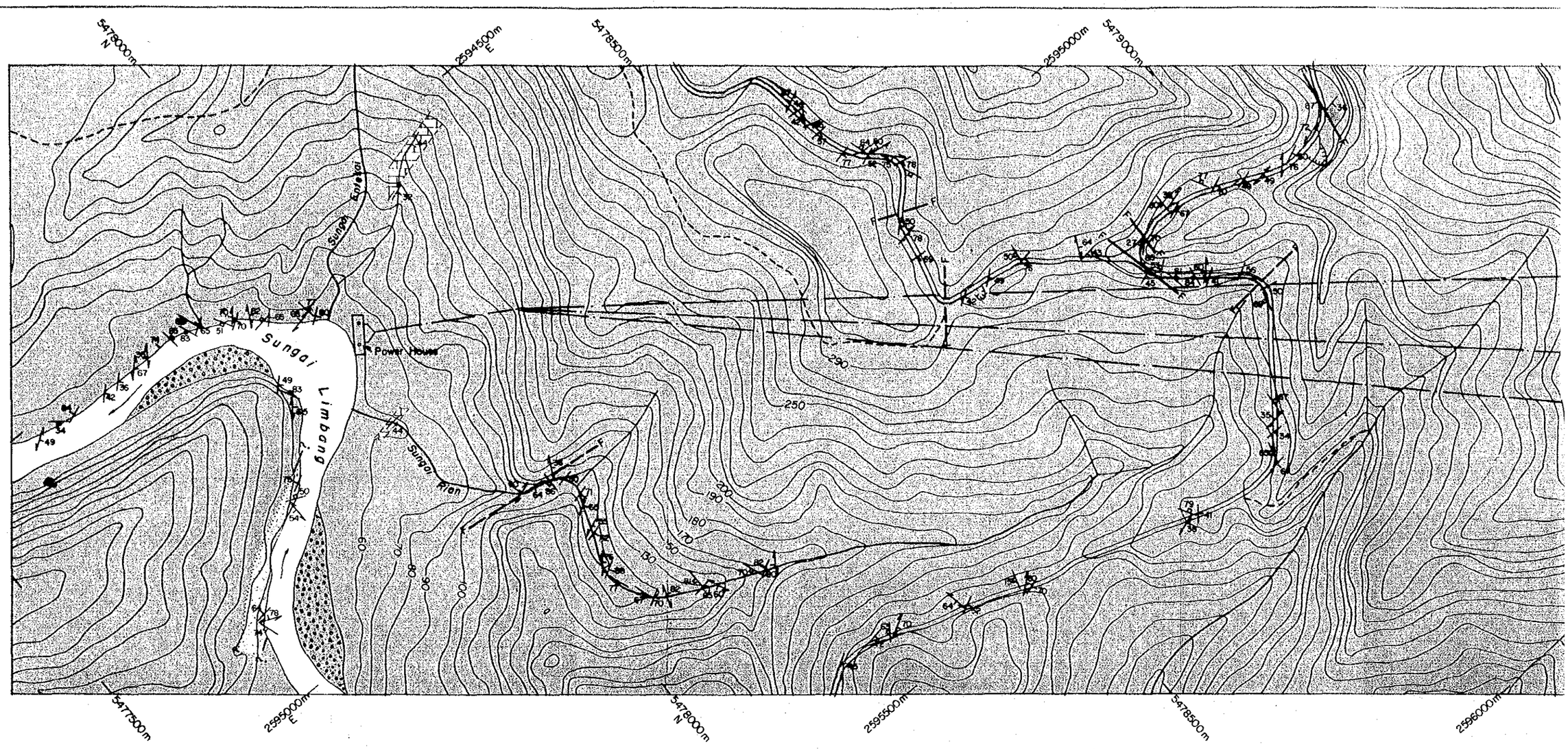


L E G E N D

RECENT

Riverine Deposit : Consisting mainly of boulders of fine grained sandstone and shale in a matrix of sand. Found mainly along rivers and side streams.

OLIGOCENE - MIOCENE

Setap Shale

Shale Unit : Consisting mainly slaty hard shale with very little amount of sandstone intercolation (3%). Thinly bedded (2 to 3 cm thick), regionally metamorphosed, folded, faulted and fractured with infilling quartz veins.

Sandstone Unit Consisting of hard, fine grained, dark grey sandstone. Thickly bedded, slightly metamorphosed, faulted, fractured and slightly folded. Quartz veins are commonly infill cracks within the sandstone. Occurs as thick lenses (about 30 m) at the proposed dam site. Friable soft, light yellow, fine grained sandstone lenses (10-20 m thick) found in the central part of the area.

EOCENE – MIOCENE

Melinau Limestone : Argillaceous, fossiliferous, thickly bedded (about 1 m), faulted and fractured with infilling calcite veins.

- Attitude of beds
- Attitude of cleavages
- Attitude of joints
- Attitude of faults, inferred fault
- Geological boundary; defined, infe
- Fault zone
- Landslide
- Contour at 10 m interval
- Logging road

SP3794/8/87 RM/AA

5479500m 2596500m 5480000m 2596000m 5480500m 2596500m

2596000m 5479000m 2596500m 5479500m 2597000m 5480000m

- Attitude of beds
- Attitude of cleavages
- Attitude of joints
- Attitude of faults, inferred fault
- Geological boundary; defined, inferred
- Fault zone
- Landslide
- Contour at 10m interval
- Logging road
- River flow direction
- Timber tracks

N

114°00 E 115°00

Scale 1:1,000,000

0 10 20 30 40 Kilometres

Area described

LAUT CHINA SELATAN

BRUNEI DARUSSALAM

MIRI

LIMBANG

LAWAS

SABAH

BRUNEI

S. Limbang

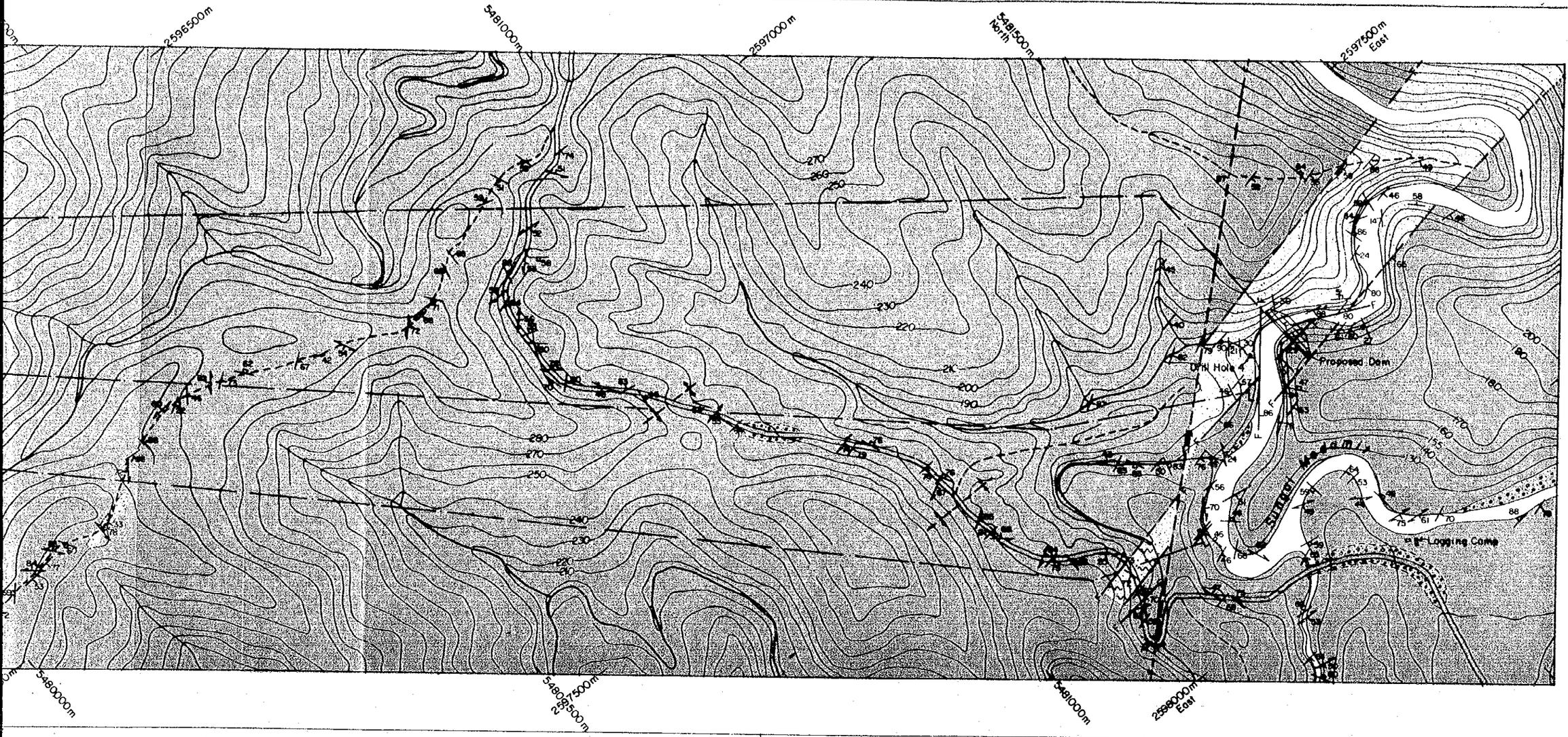
Medamit

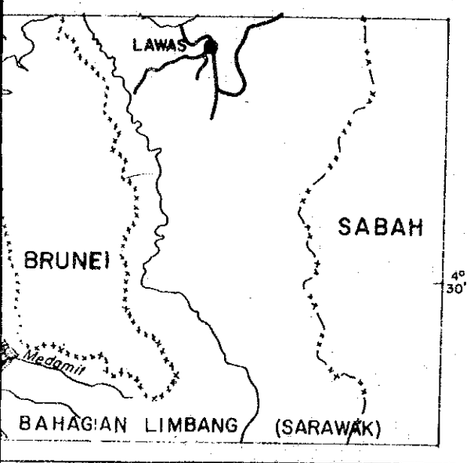
BAHAGIAN LIMBANG (SARAWAK)

4° 30' N

114°00

115°00E





0 250 m 500 m 750 m 1000 m (1 km)

SCALE 1 : 5,000

Fig. I - 2 GEOLOGICAL MAP OF MEDAMIT - 2 AREA, PROPOSED SITE FOR SMALL SCALE HYDROELECTRIC PROJECT.

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FEASIBILITY STUDY
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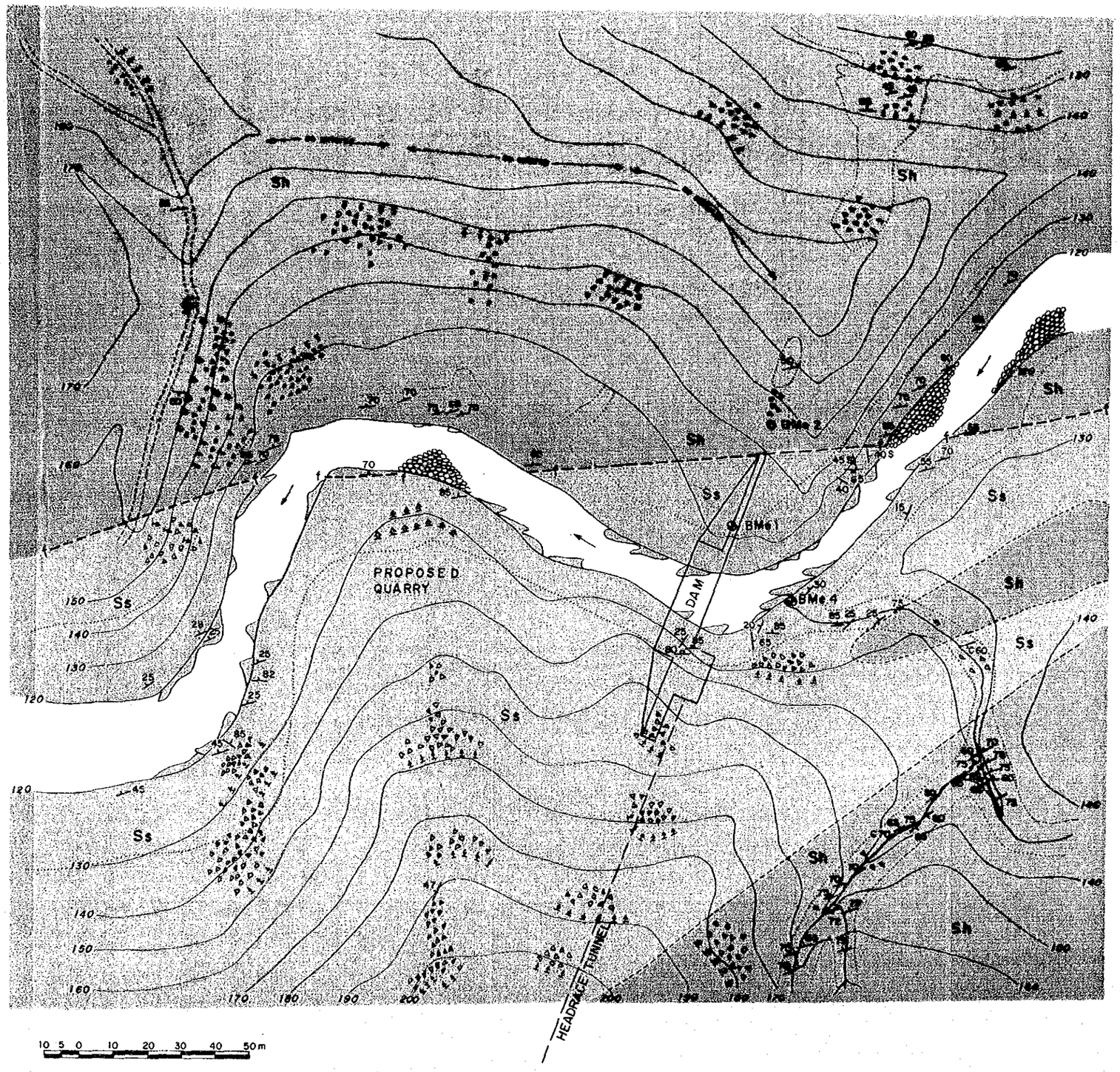
JAPAN INTERNATIONAL COOPERATION AGENCY



LEGEND

- Ss — Sandstone, fine to medium grained, slightly metamorphosed faulted, fractured and slightly folded Quartz veins are common
- Sh — Shale (Setap Shale - Consisting mostly slaty shale with very little (thin bed) amount of sandstone intercolation 3 %)
- Slopwash deposit, angular to subangular sandston pebbles predominent.
- Slopwash deposit, angular to subangular shale pebbles predominent.
- Riverbank gravel deposit, mostly well rounded from 1 cm to 50 cm diameter sandstone origin predomident.
- Slopwash material moving direction (Collapse Area)
- Landslide
- Cave
- Strike & dip. (65)
- Joint orientation & dipping angle. (70)
- Cleavage orientation and dipping angle. (70)
- Fault
- Timber track
- Geological boundary
- Area of outcrop
- River flow direction
- Borehole location

CONTOUR IN 10m INTERVALS

Fig. 1-3 (1/2) GEOLOGICAL MAP OF MEDAMIT - 2

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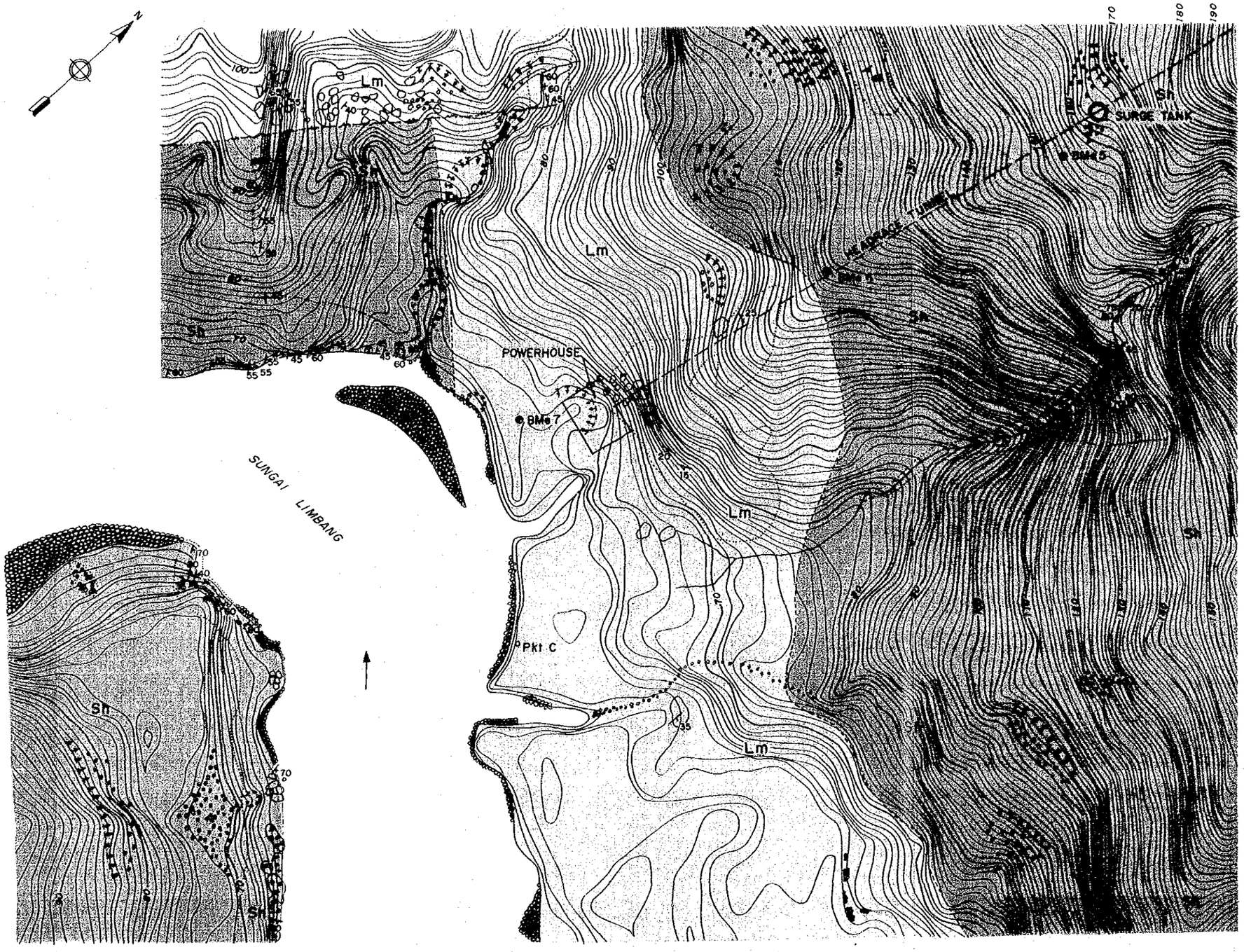

Fig.1-3(2/2) GEOLOGICAL MAP OF MEDAMIT-2 PROPOSED POWERHOUSE SITE

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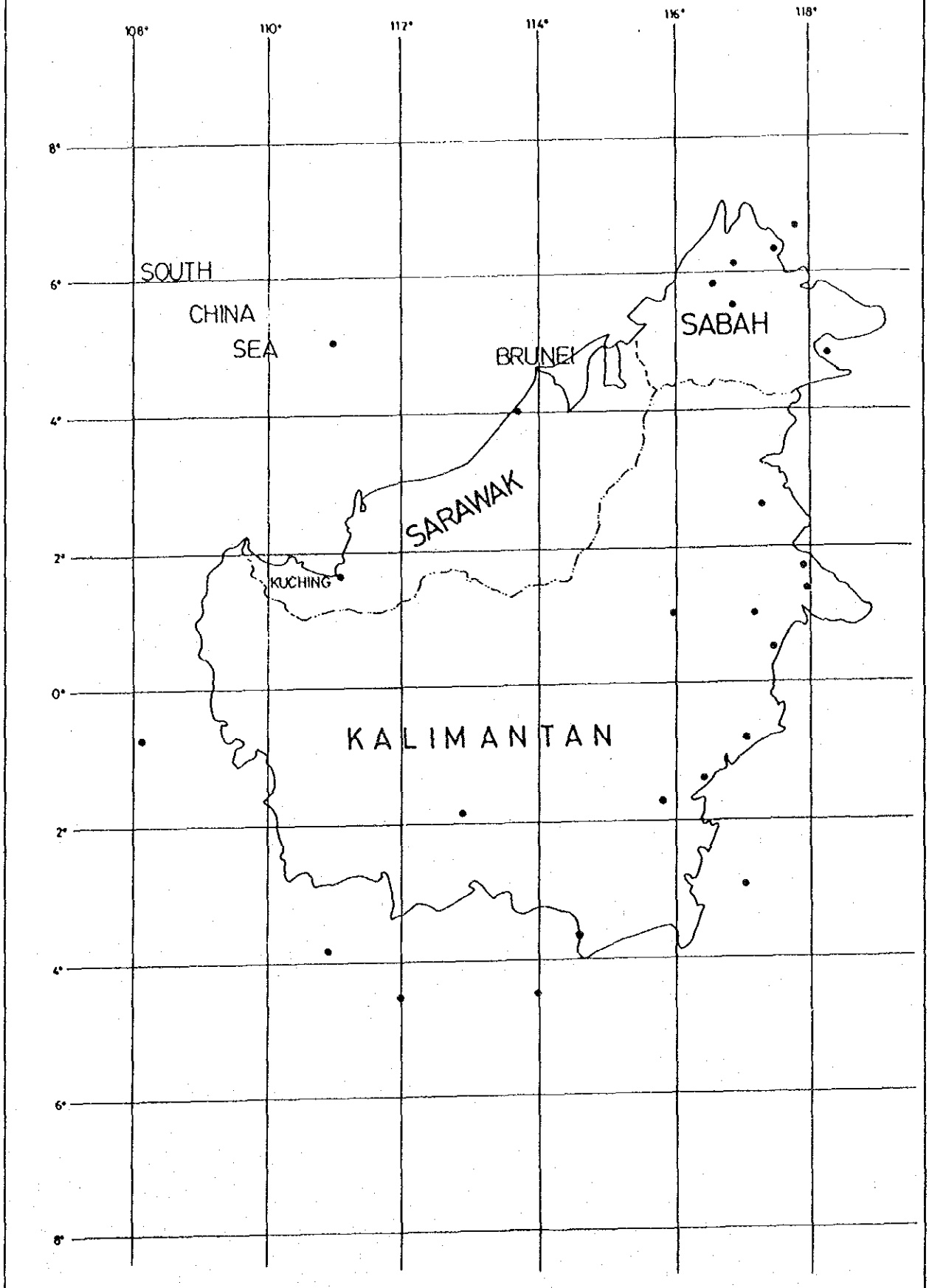

Fig. I-4 Epicentres of Seismic Events in Sarawak and Sabah 1896 - 1976

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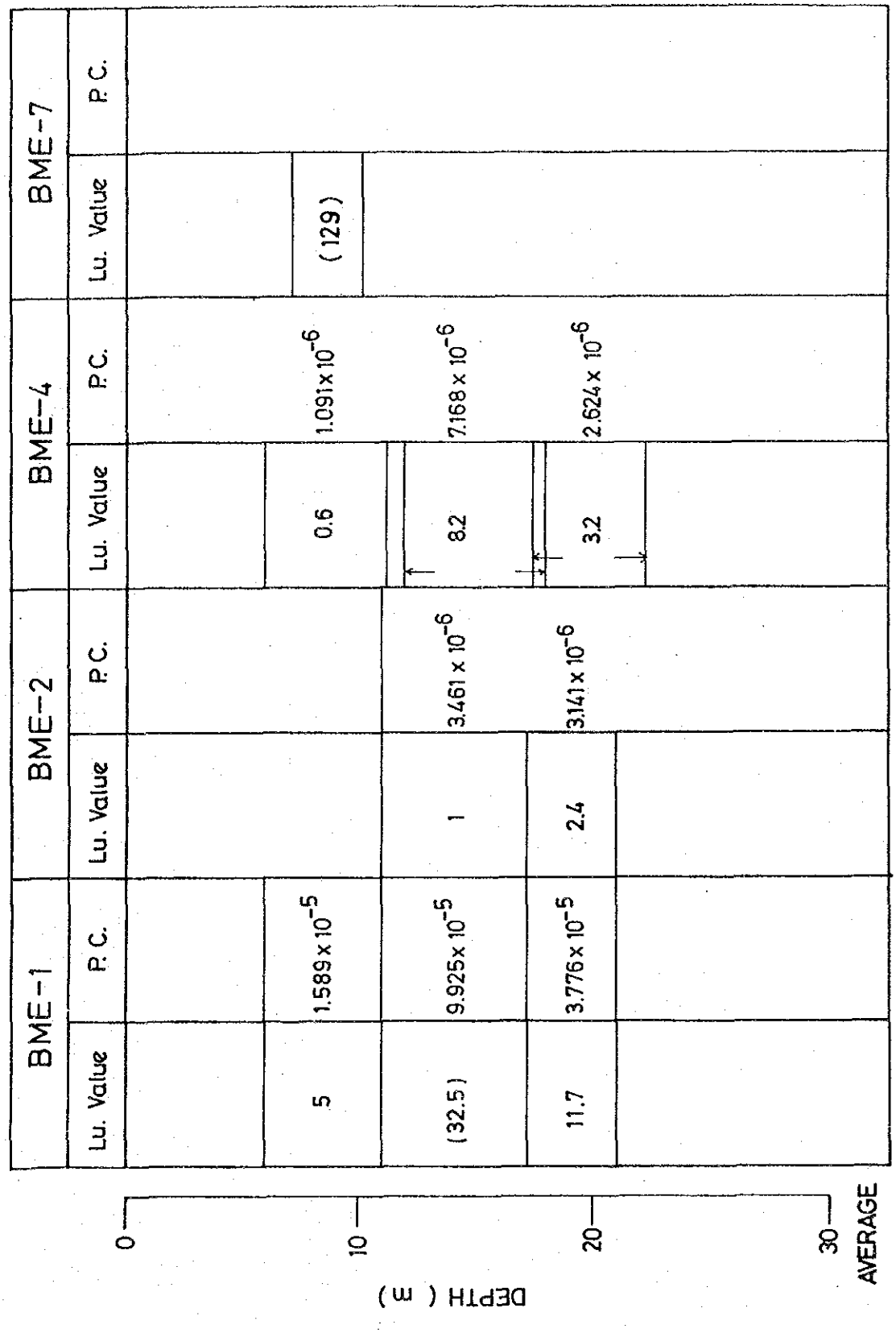

Fig. I-5 LUGEON TEST RESULTS at MEDAMIT-2 SITE

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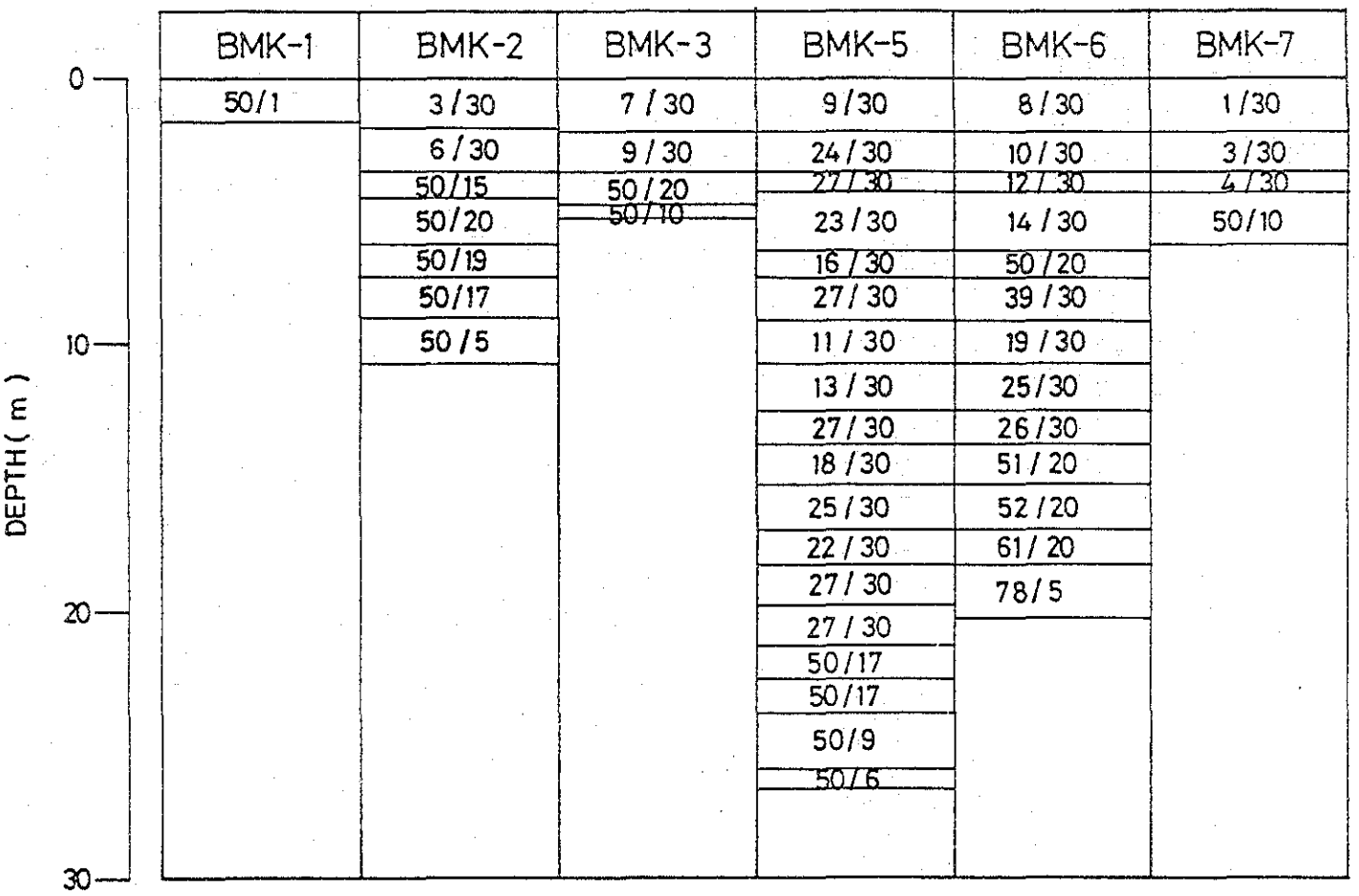

NOTE: 1) S.P.T. is the abbreviation of Standard Penetration Test.

2) Figures before and after slash are shown in the number of blows (times) and the penetrated length (cm) respectively.

Fig.I-6 S.P.T. N-VALUES at MEDAMIT-2

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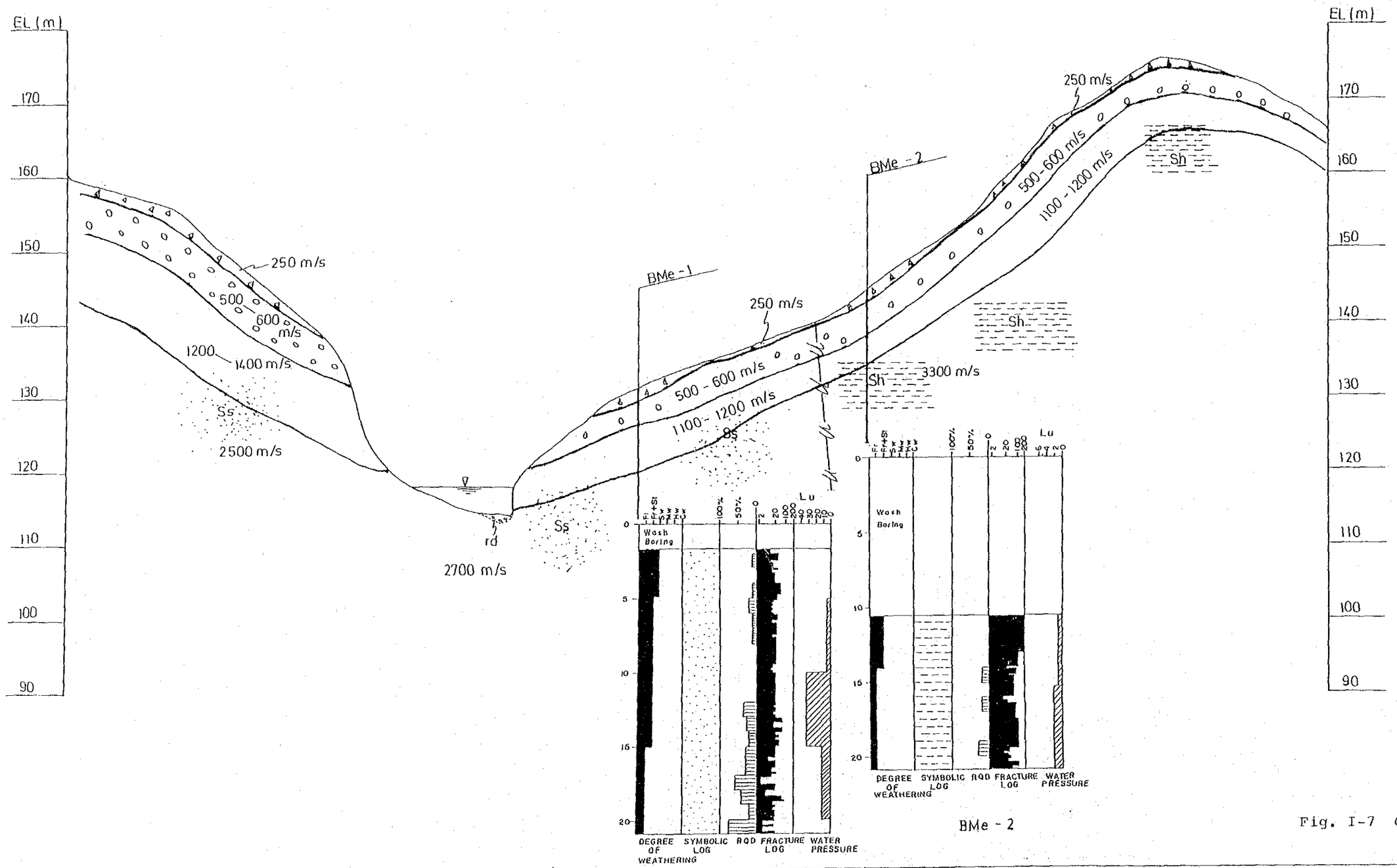
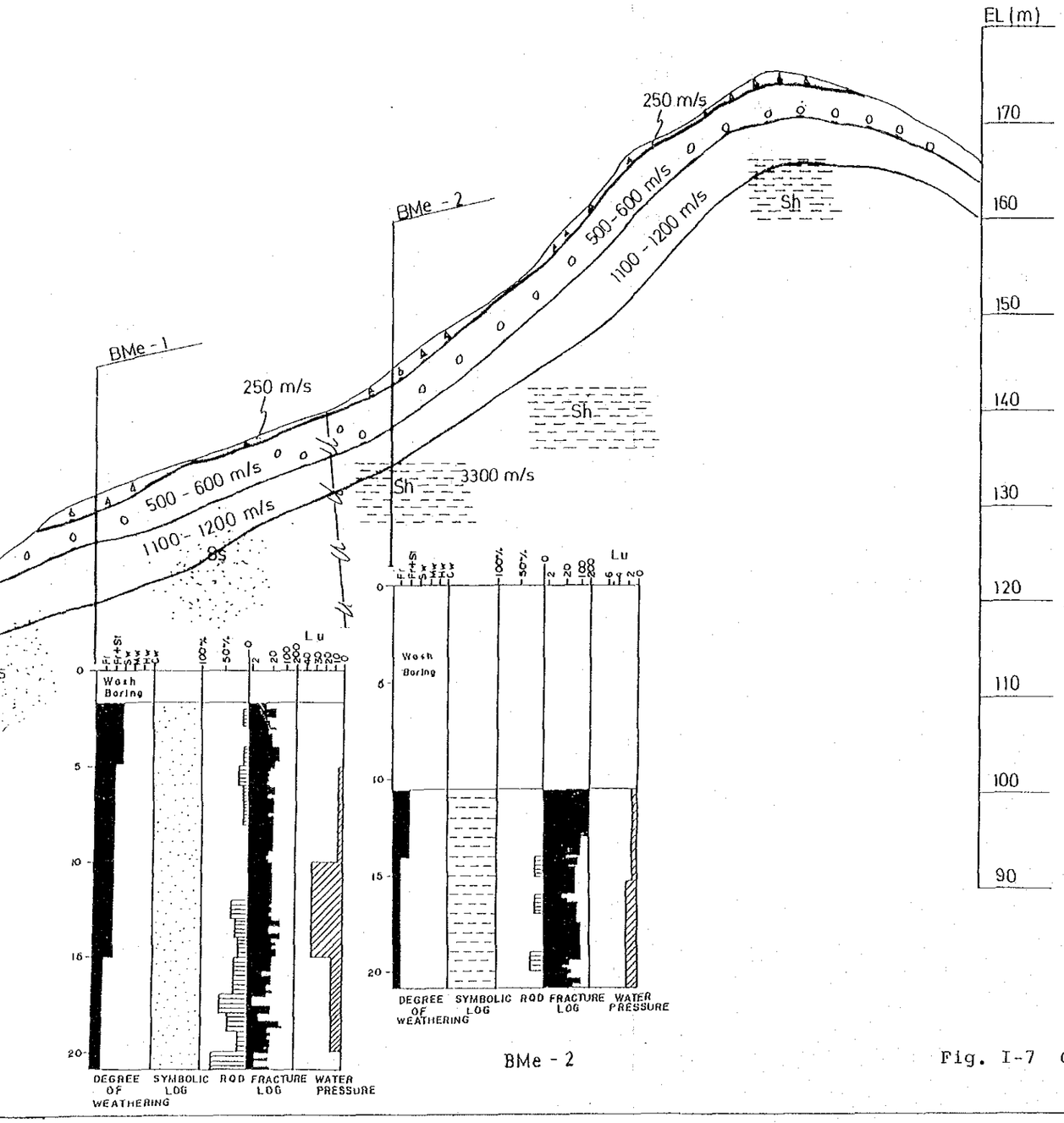


Fig. I-7 Geological Profile



LEGEND

- Slopewash deposit
- Terrace deposit
- Sh — Shale (Setap Shale)
- Ss — Sandstone
- Rock / Soil refractor (seismic velocity boundary)
- Ground profile
- Geological boundary
- Unconformity

Fig. I-7 Geological Profile of the Dam Axis

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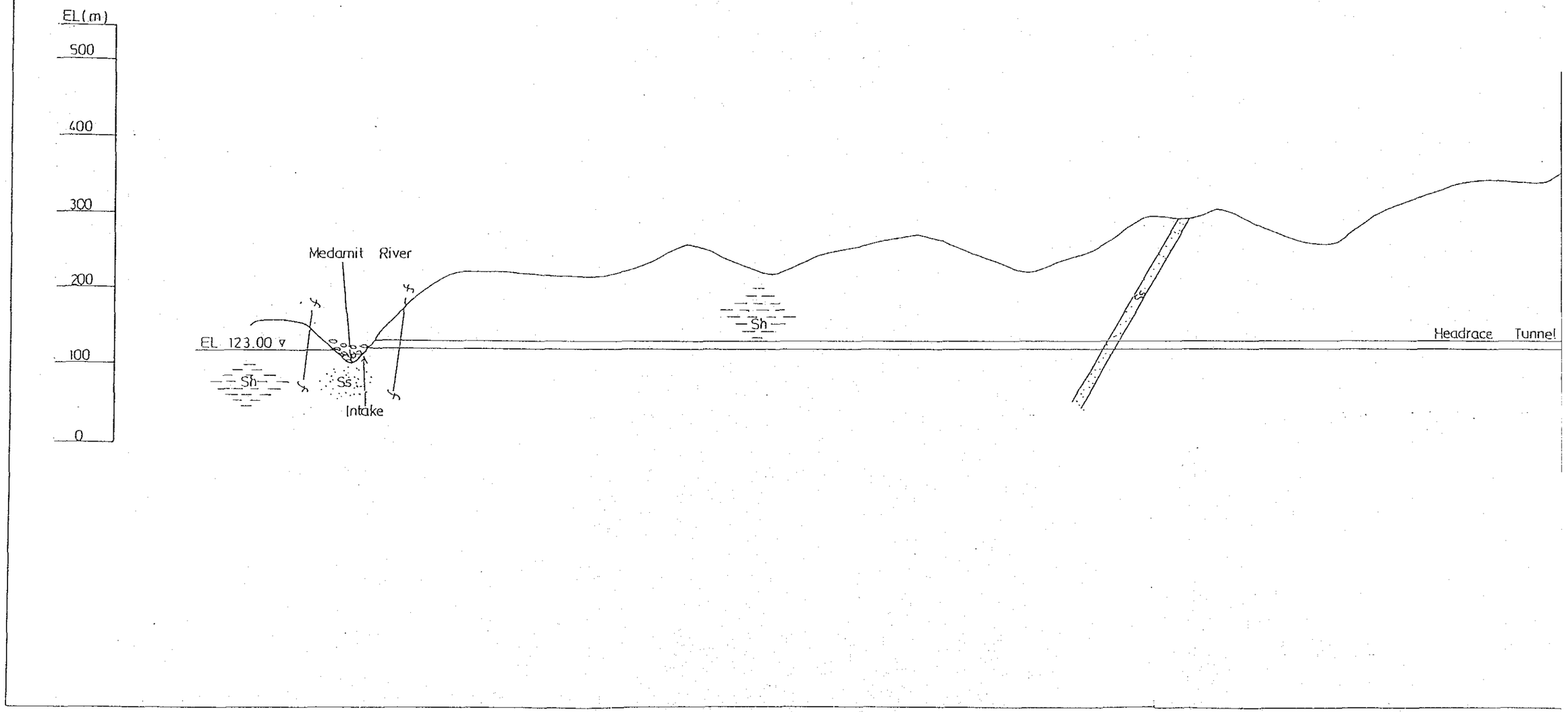
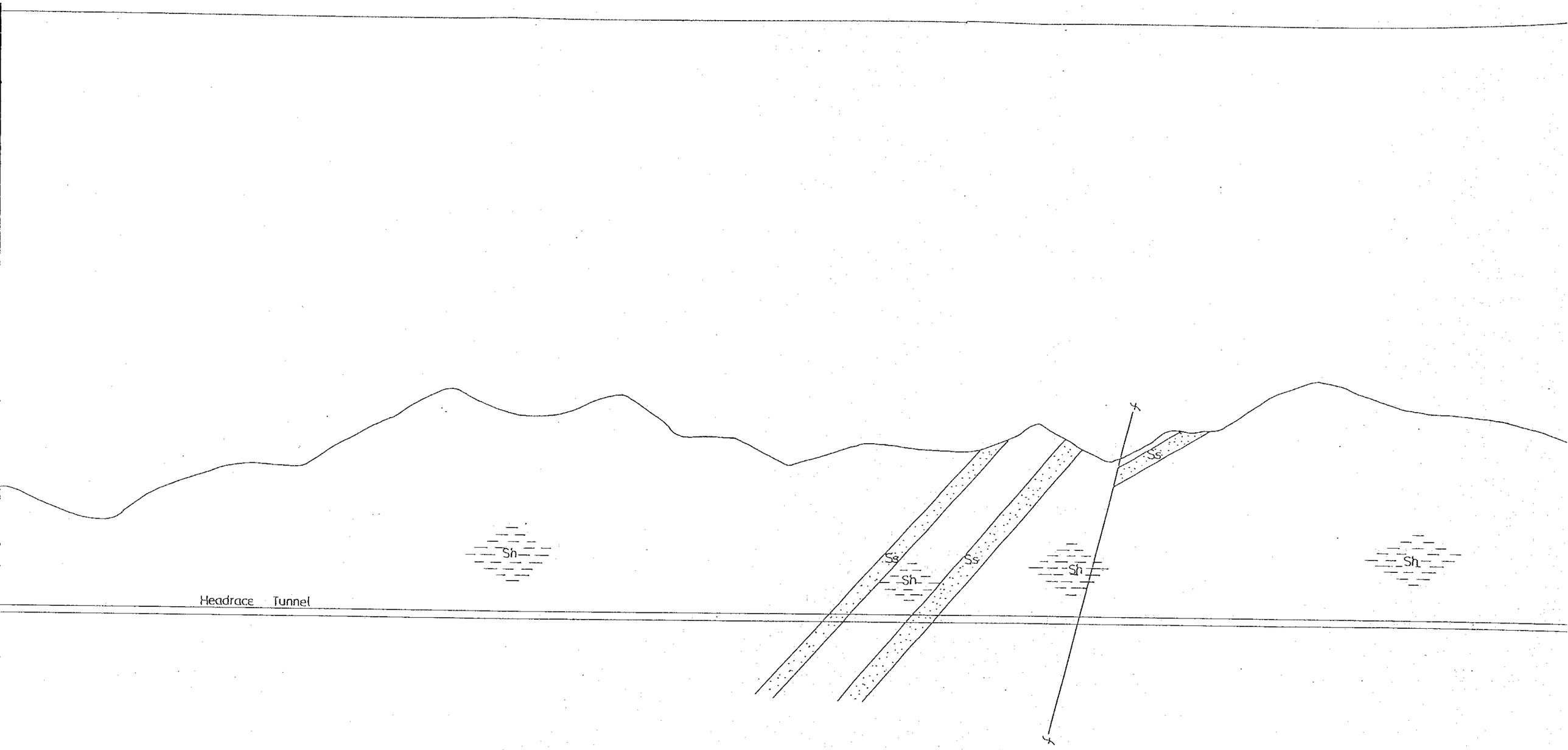
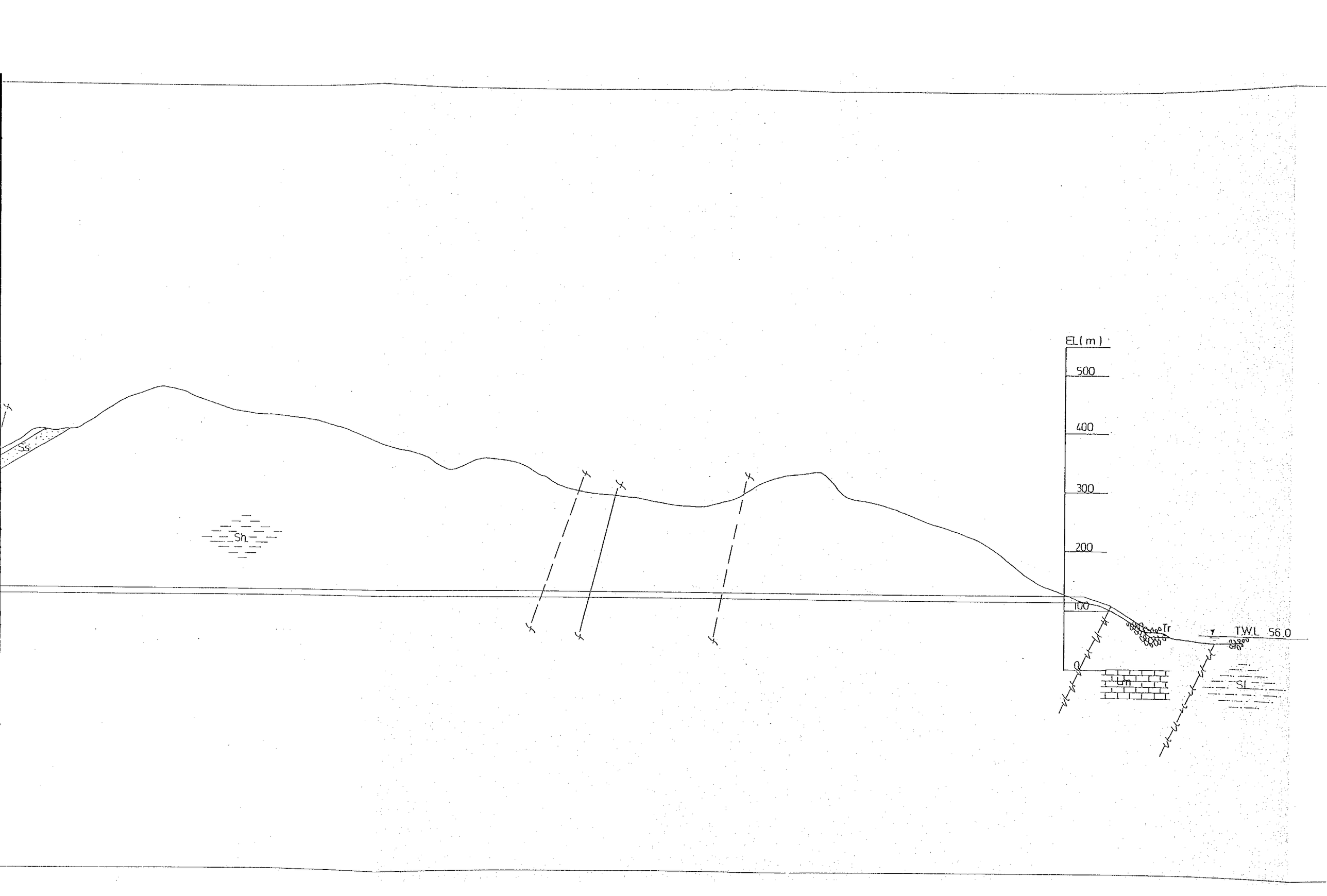
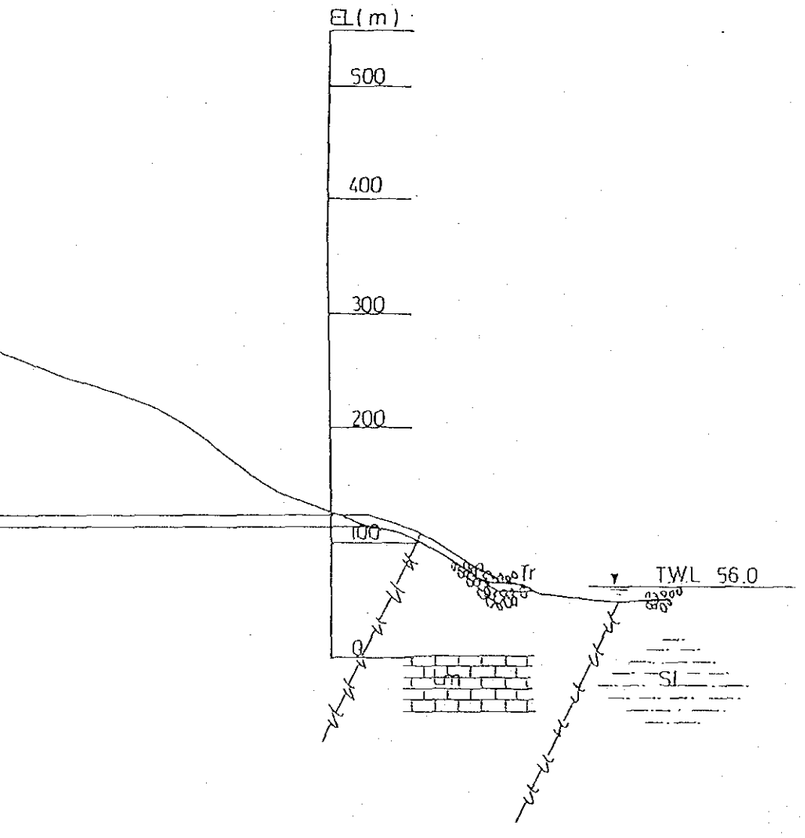

EL.(m)
500
400
300
200
100
0
Medamit River
EL. 123.00
Sh
Ss
Intake
Sh
Ss
Headrace Tunnel


Sh
Ss
Sh
Ss
Ss
Sh
Sh
Headrace Tunnel
f
f


EL(m)
500
400
300
200
100
Ss
Sh
Tr
TWL 56.0
Q
Ls
Sl



LEGEND

- Tr — Terrace deposit
- Sh — Shale (Setap shale) - consisting mostly slaty shale with very little (thin bed) amount of sandstone intercolation 3%
- Ss — Sandstone , hard , fine to medium grained slightly metamorphosed faulted fractured and slightly folded . Quartry veins are common .
- Lm — Limestone (Melinau Limestone)
- Sl — Slate - shale
- Fault
- Interred fault
- Unconformity

100 0 100 200 300 400 500m

Fig. I-8 Geological Profile along Headrace Tunnel

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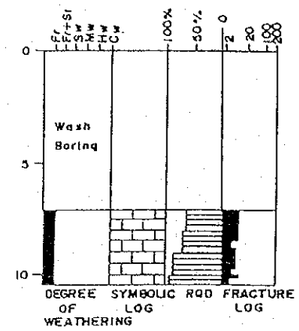
EL.(m)

170
160
150
140
130
120
110
100
90
80
70
60
50

120
110
90
80
70
60
50
40



Cross Me E Line

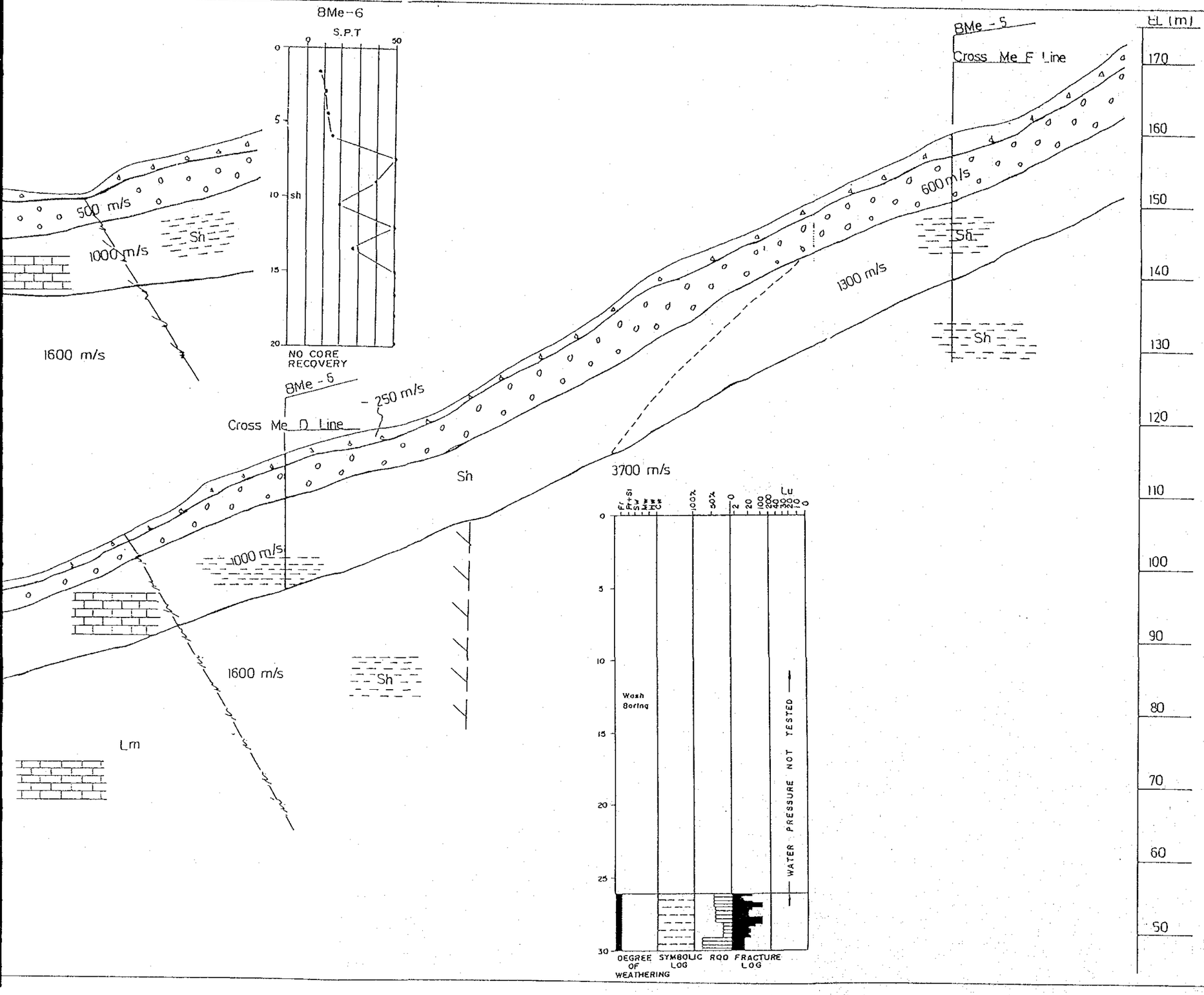
BMe -1

Me D LINE PROFILE

250 m/s
500 m/s
1000 m/s
Sh
Lm
1600 m/s
600 m/s
1300 m/s
Lm
3500 m/s
250 m/s
Slope wash
Terrace
600 m/s
Lm
1300 m/s

Me G LINE PROFILE

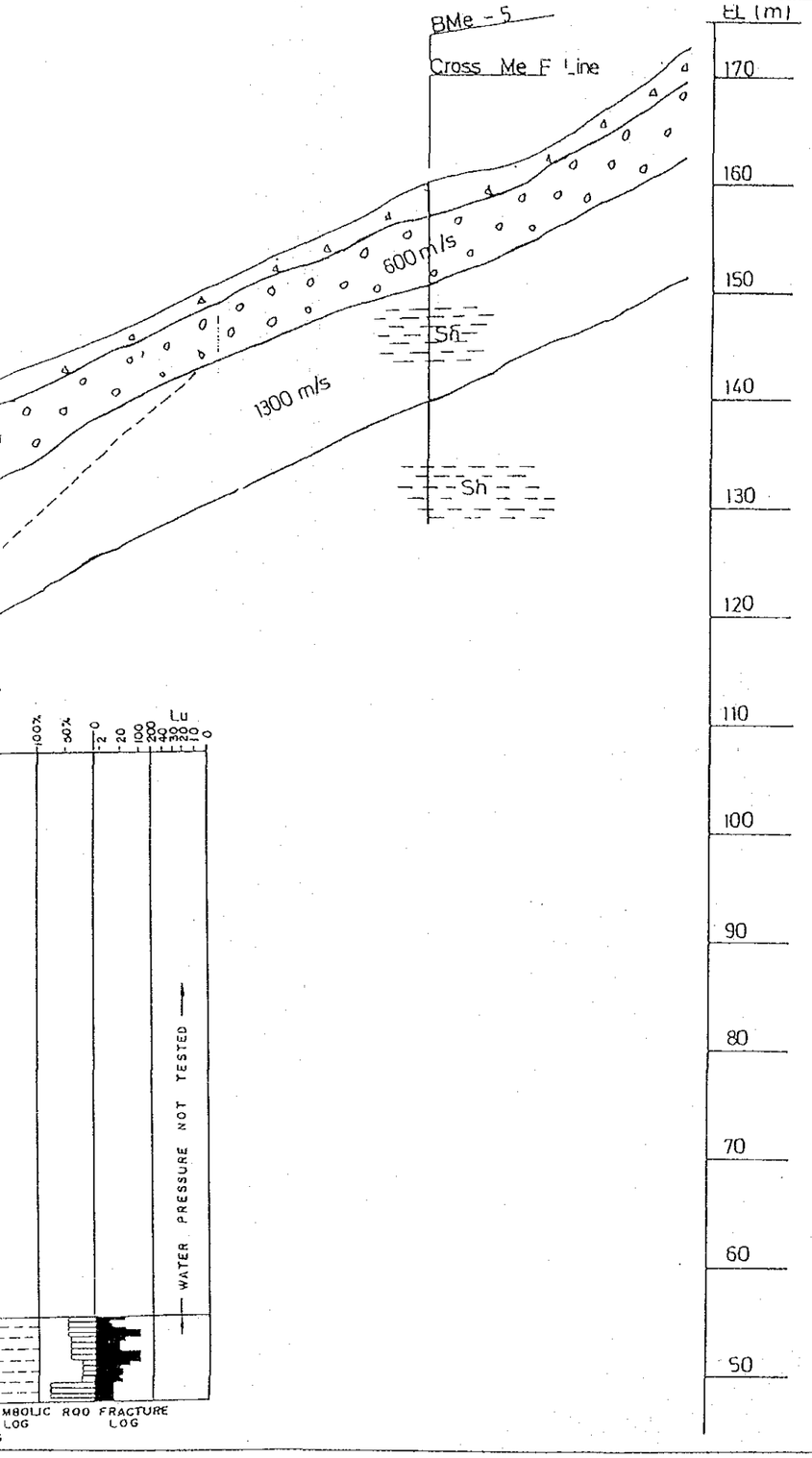
600 m/s
Lm
Me E Line
Slope wash
250 m/s
600 m/s
Terrace
1300 m/s
Lm
Lm
3500 m/s



LEGEND

- Slopewash deposit
- Terrace deposit
- Low velocity zone
- Shale (Setap Shale)
- Limestone
- Rock / Soil refractor (seismi
- Velocity boundary within b
- Ground profile
- Unconformity

Fig. I-9 Geological Profile from Surge Tank to Powerhouse



LEGEND

- Slopewash deposit
- Terrace deposit
- Low velocity zone
- Sh — Shale (Setap Shale)
- Lmst — Limestone
- Rock / Soil refractor (seismic velocity boundary)
- Velocity boundary within bedrock
- Ground profile
- Unconformity

Fig. I-9 Geological Profile from Surge Tank to Powerhouse

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