

No. 5

マレーシア

テカイ河水力発電開発計画調査

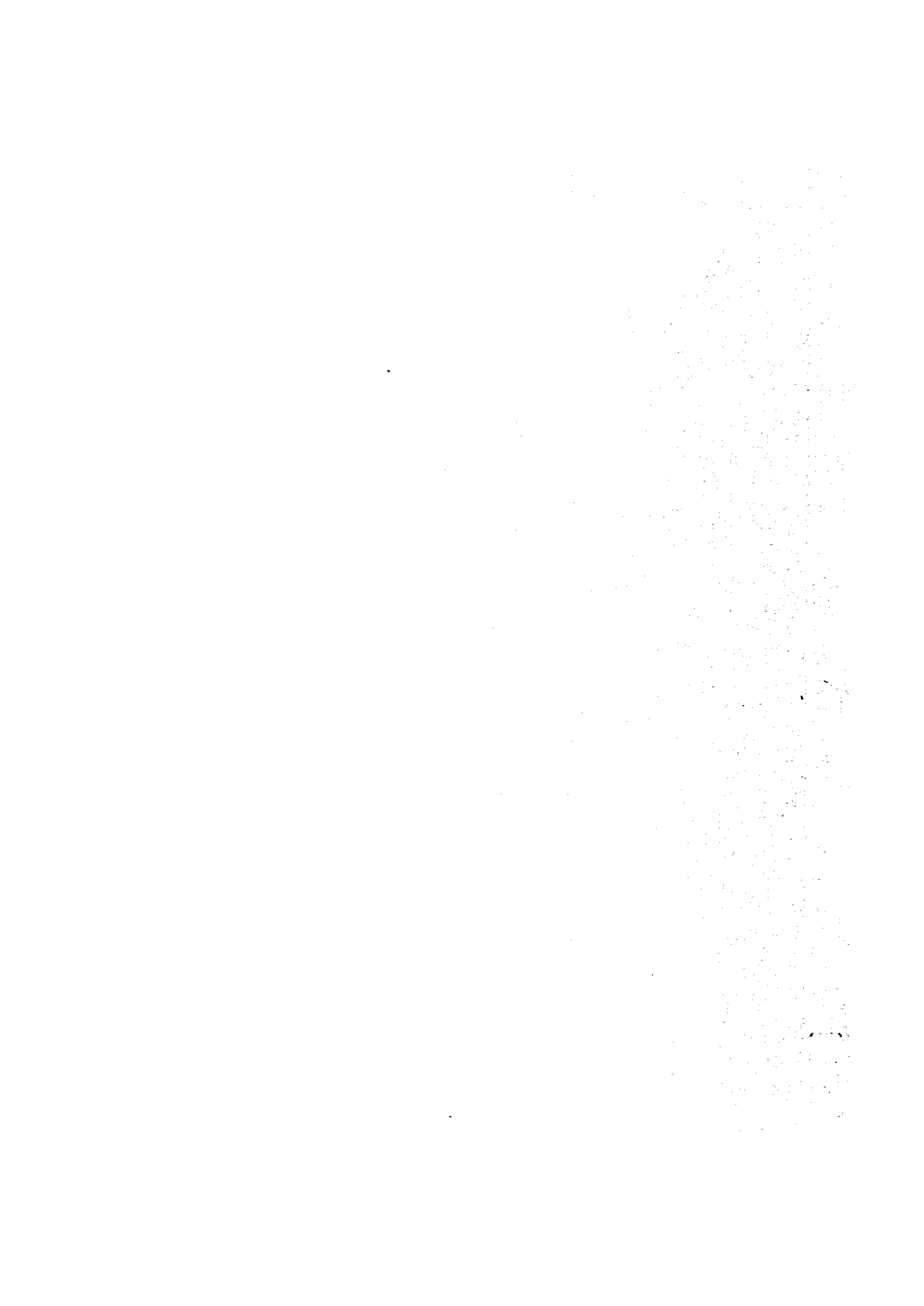
報告書

第IV巻 地質図面集

1983年9月

国際協力事業団

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マレーシア

テカイ河水力発電開発計画調査

報告書

第IV巻 地質図面集

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は し が き

日本国政府は、マレーシア国政府の要請に基づき、同国パハン州において早急に開発することが望まれているテンプリン川支流テカイ川の水力発電開発計画のフィージビリティ調査を行うこととなり、その実施を国際協力事業団に委託した。事業団はこの水力発電計画の重要性を考慮し、1981年3月1日から1982年12月15日まで、高比良敬一氏を団長とする各分野の専門家から成る調査団をマレーシアに派遣し、同国政府関係機関の協力を得て現地調査を実施した。

本報告書は、現地調査及び収集した資料に基づき、帰国後調査検討を行い、その成果を取りまとめたものである。本報告書が、マレーシアの電源開発に寄与するとともに、同国と日本との経済交流及び友好親善の一助となれば誠に喜ばしい次第である。

終わりに、今回の調査の実施に当たられた団員各位に謝意を表するとともに、熱意ある支援と協力を戴いたマレーシア国政府関係機関の方々、ならびに外務省、通商産業省及び在マレーシア日本国大使館の関係者各位に対し、この機会に心より感謝の意を表わすものである。

1983年8月

国際協力事業団

総裁 有田 圭 輔

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1. The first part of the document discusses the importance of maintaining accurate records of all transactions. This is essential for ensuring the integrity of the financial data and for providing a clear audit trail. The records should be kept up-to-date and should be accessible to all relevant parties.

2. The second part of the document outlines the procedures for handling incoming payments. It is important to ensure that all payments are recorded promptly and accurately. This includes verifying the amount and the source of the payment, and ensuring that the appropriate accounting entries are made in a timely manner.

3. The third part of the document describes the process for issuing invoices. Invoices should be generated and sent to customers in a timely and professional manner. It is important to ensure that all invoices are accurate and that they clearly state the amount due and the terms of payment.

4. The fourth part of the document discusses the process for reconciling bank statements. This involves comparing the bank's records of transactions with the company's internal records. Any discrepancies should be investigated and resolved promptly to ensure the accuracy of the financial statements.

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6. The sixth part of the document describes the process for reviewing and approving financial statements. This involves a thorough review of the statements by management and the board of directors. It is important to ensure that all financial statements are approved and signed off by the appropriate authorities.

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8. The eighth part of the document outlines the procedures for handling tax matters. This includes ensuring that all tax obligations are met in a timely and accurate manner. It is important to keep up-to-date with changes in tax law and to seek professional advice where necessary.

9. The ninth part of the document describes the process for conducting an internal audit. This involves a regular review of the company's financial processes and controls to ensure that they are effective and efficient. It is important to identify any weaknesses and to take corrective action where necessary.

10. The tenth part of the document discusses the process for preparing the annual financial statements. This involves a comprehensive review of all financial data and the preparation of the final financial statements. It is important to ensure that all financial statements are prepared accurately and in accordance with the relevant accounting standards.

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12. The twelfth part of the document describes the process for conducting a financial review. This involves a regular review of the company's financial performance and the identification of areas for improvement. It is important to ensure that the review is conducted objectively and that any weaknesses are addressed.

13. The thirteenth part of the document discusses the process for preparing a financial forecast. This involves making an estimate of the company's future financial performance based on historical data and market trends. It is important to ensure that the forecast is based on realistic assumptions and that it is updated regularly.

14. The fourteenth part of the document outlines the procedures for handling financial risks. This involves identifying and assessing the risks associated with the company's financial activities and taking steps to mitigate those risks. It is important to have a clear risk management process in place and to review it regularly.

15. The fifteenth part of the document describes the process for conducting a financial audit. This involves an independent review of the company's financial statements and the underlying transactions. It is important to ensure that the audit is conducted by a qualified and objective auditor and that the results are reported accurately.

16. The sixteenth part of the document discusses the process for preparing a financial report. This involves summarizing the company's financial performance and the key findings of the audit. It is important to ensure that the report is clear and concise and that it provides a comprehensive overview of the company's financial position.

17. The seventeenth part of the document outlines the procedures for handling financial compliance. This involves ensuring that the company's financial activities comply with all relevant laws and regulations. It is important to have a clear compliance program in place and to review it regularly.

18. The eighteenth part of the document describes the process for conducting a financial analysis. This involves a detailed review of the company's financial data and the identification of trends and patterns. It is important to ensure that the analysis is based on accurate data and that it provides valuable insights into the company's financial performance.

19. The nineteenth part of the document discusses the process for preparing a financial budget. This involves setting out the company's financial goals and the resources required to achieve them. It is important to ensure that the budget is realistic and that it is updated regularly.

20. The twentieth part of the document outlines the procedures for handling financial reporting. This involves ensuring that all financial reports are prepared accurately and in a timely manner. It is important to have a clear reporting process in place and to review it regularly.

21. The twenty-first part of the document describes the process for conducting a financial review. This involves a regular review of the company's financial performance and the identification of areas for improvement. It is important to ensure that the review is conducted objectively and that any weaknesses are addressed.

22. The twenty-second part of the document discusses the process for preparing a financial forecast. This involves making an estimate of the company's future financial performance based on historical data and market trends. It is important to ensure that the forecast is based on realistic assumptions and that it is updated regularly.

23. The twenty-third part of the document outlines the procedures for handling financial risks. This involves identifying and assessing the risks associated with the company's financial activities and taking steps to mitigate those risks. It is important to have a clear risk management process in place and to review it regularly.

24. The twenty-fourth part of the document describes the process for conducting a financial audit. This involves an independent review of the company's financial statements and the underlying transactions. It is important to ensure that the audit is conducted by a qualified and objective auditor and that the results are reported accurately.

25. The twenty-fifth part of the document discusses the process for preparing a financial report. This involves summarizing the company's financial performance and the key findings of the audit. It is important to ensure that the report is clear and concise and that it provides a comprehensive overview of the company's financial position.

4. GEOLOGY OF THE UPPER SITE

UNIVERSITY OF MICHIGAN

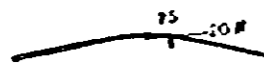


Fig. 4.1 LITHOLOGIC MAP OF UPPER TEKAI BORROW AREA (SITE.A)

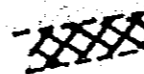
LEGEND


GEOLOGICAL AGE		COLOR	SYMBOL	FORMATION	LITHOLOGY
CENOZOIC	QUATERNARY		r	River Bed Deposits	Mainly quartz sand including gravel and silt.
			II	Talus Deposits	Mainly breccia including sand and clay.
			Qtr.2	Terrace Deposits	Mainly quartz sand including gravel and silt containing organic material.
			Qtr.1		Mainly clayey sand and silt including gravel.
MESOZOIC	LOWER CRETACEOUS		TSh	Termus Redbeds	Reddish/Purplish-red shale interbedded with mudstone.
			Tss		Fine quartzose sandstone.
	UPPER JURASSIC		MSh.3	Mongking Sandstone	Purplish shale and Purplish red shale interbedded with greyish shale and yellow ocher mudstone.
			MSs.3		Mainly quartzose sandstone and sandstone interbedded with shale.
			MMs		Mainly yellow ocher mudstone. interbedded with light grey shale or siltstone.
			MSh.2		Mainly greyish shale and greenish shale interbedded with siltyshale and mudstone.
			MsS.2		Shaly sandstone and fine sandstone.
			MSs.2		Predominantly quartzose sandstone and sandstone interbedded with shaly sandstone and shale.
			Mfs		Mainly fine sandstone interbedded with shaly sandstone and shale.


 Strike and dip of stratum.


 Strike and dip of fault.

 Landslide concavity.

 Fractured zone.

 Anticline and folding fault.

 UB-1 ~ UB-6 Borehole point and borehole No. carried out in 1982.

 P-1 ~ P-9 Test pitting point and pit No. carried out in 1982.

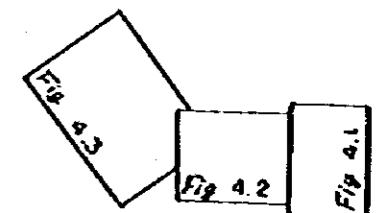
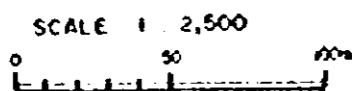
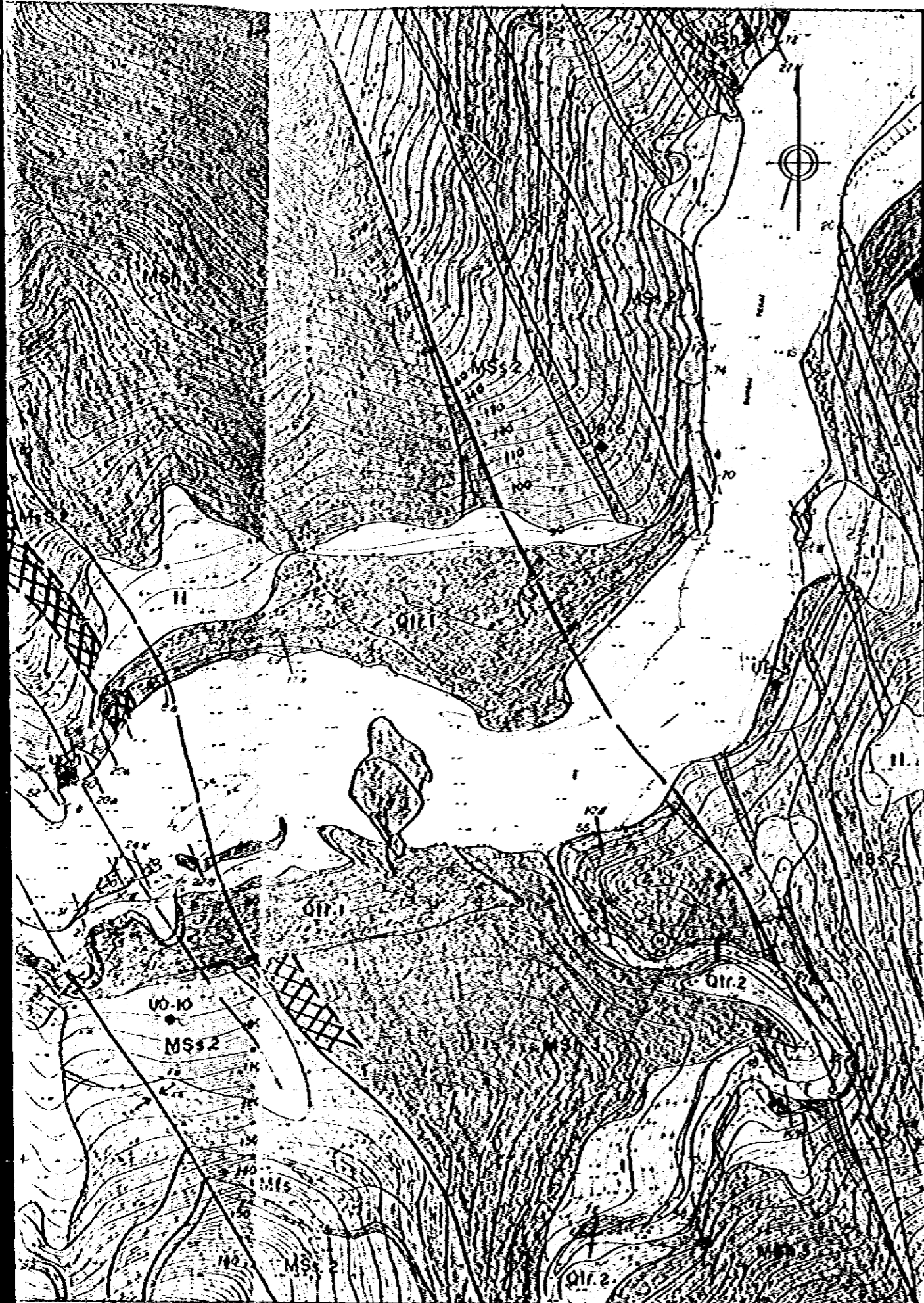




Fig. 4.2 LITHOLOGIC MAP OF UPPER TEKAI DAM SITE



LEGEND

GEOLOGICAL AGE		COLOR	SYMBOL	FORMATION	LITHOLOGY
CENOZOIC	QUATERNARY		r	River Bed Deposits	Mainly quartz sand including silt and
			II	Talus Deposits	Mainly breccia including sand and c
			Qtr.	Terrace Deposits	Mainly fine sand. including silt and g containing organic material.
	Qtr.1	Mainly gravel and sand containing organic material.			
MESOZOIC	UPPER JURASSIC		MSh.3	Mangking Sandstone	Purplish shale interbedded with grey and yellow ocher mudstone.
			MMs		Mainly yellow ocher mudstone interbedded with greyish shale.
			MSh.2		Mainly greyish shale interbedded with silty shale and m
			MsS.2		Shaly sandstone.
			MfS		Mainly fine sandstone interbedded with shaly sandstone c
			MSs.2		Predominantly quartzose sandstone and interbedded with shale, silty shale on
			MsS.1		Shaly sandstone interbedded with s
			MSh.1		Dark grey shale.
	MaI.1	Alternation of sandstone and shale			
	MSs.1	Predominantly quartzose sandstone and interbedded with shale			

Strike and dip of stratum.

Fractured zone.

Anticline (→ plunging)

Landslide concavity.

Syncline.

UD-1 ~ UD-18
● Borehole point and borehole

Fault.

U-1 ~ U-5
■ Borehole point and borehole

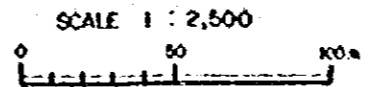


Fig. 4.2 LITHOLOGIC MAP OF UPPER TEKAI DAM SITE

LEGEND

GEOLOGICAL AGE		COLOR	SYMBOL	FORMATION	LITHOLOGY
CENOZOIC	QUATERNARY	[Stippled]	r	River Bed Deposits	Mainly quartz sand including silt and gravel.
		[Horizontal lines]	II	Talus Deposits	Mainly breccia including sand and clay.
		[Dotted]	Qir.	Terrace Deposits	Mainly fine sand. Including silt and gravel containing organic material.
		[Cross-hatched]	Qir.1		Mainly gravel and sand containing organic material.
MESOZOIC	UPPER JURASSIC	[Horizontal lines]	MSh.3	Mangking Sandstone	Purplish shale interbedded with greyish shale and yellow ocher mudstone.
		[Cross-hatched]	MMs		Mainly yellow ocher mudstone interbedded with greyish shale.
		[Vertical lines]	MSh.2		Mainly greyish shale interbedded with silty shale and mudstone.
		[Horizontal lines]	MsS.2		Shaly sandstone.
		[Vertical lines]	MfS		Mainly fine sandstone interbedded with shaly sandstone and shale.
		[Horizontal lines]	MSs.2		Predominantly quartzose sandstone and sandstone interbedded with shale, silty shale and conglomerate
		[Vertical lines]	MsS.1		Shaly sandstone interbedded with shale.
		[Cross-hatched]	MSh.1		Dark grey shale.
		[Cross-hatched]	MaI.1		Alternation of sandstone and shale.
		[Horizontal lines]	MSs.1		Predominantly quartzose sandstone and sandstone interbedded with shale.

Strike and dip of stratum.

Fractured zone.

Anticline (→ plunging)

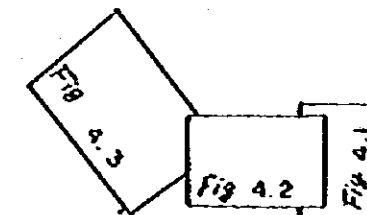
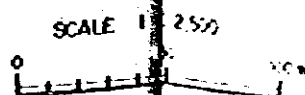
Landslide concavity.

Synclinal.

UD-1 ~ UD-18
● Borehole point and borehole No. carried out in 1982.

Fault.

U-1 ~ U-5
■ Borehole point and borehole No. carried out in 1982.



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Mol. I

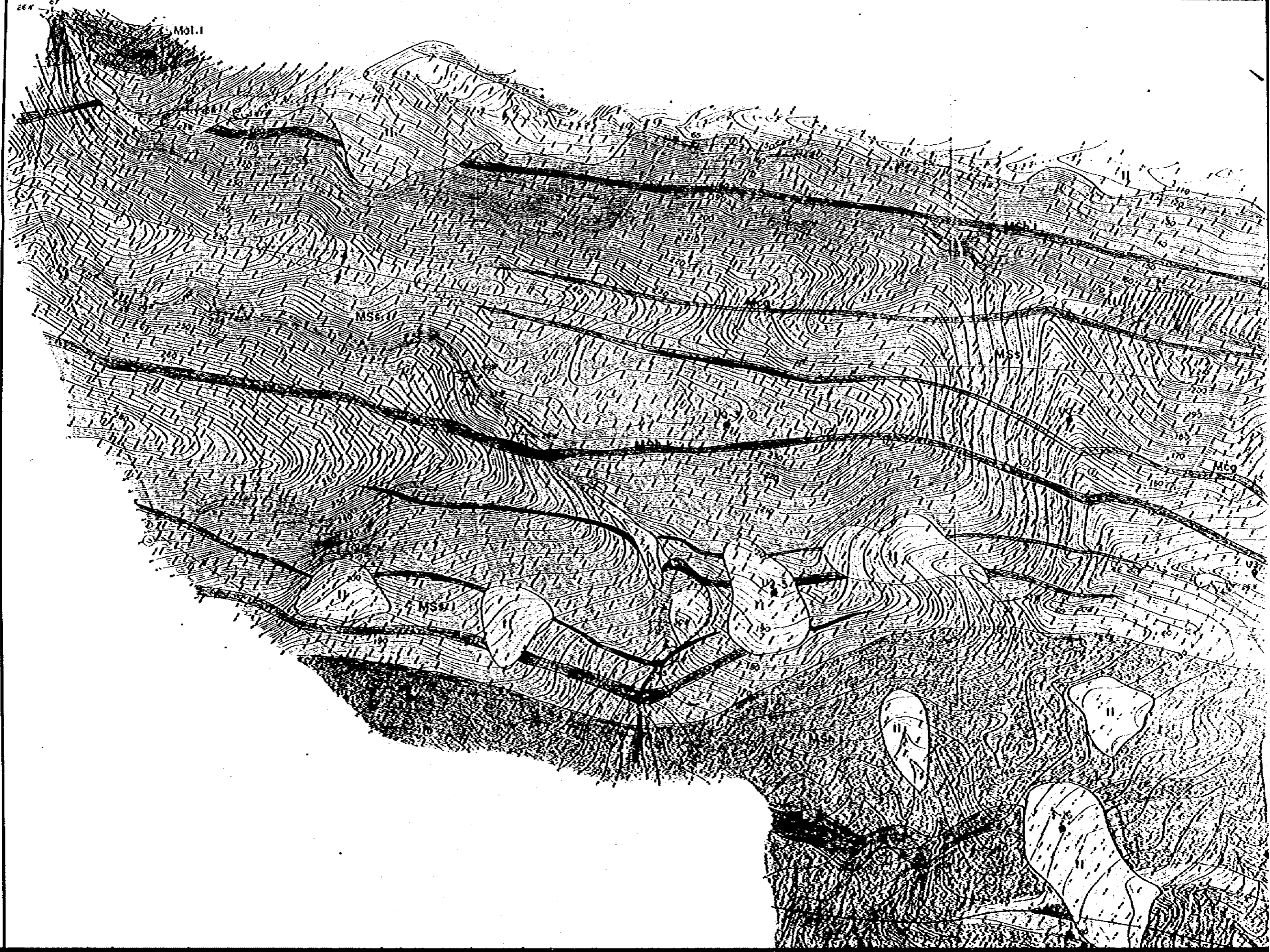




Fig. 4.3 LITHOLOGIC MA

GEOLOGICAL AGE		COLOR	SYM
CENOZOIC	QUATERNARY		r
			tl
			Qir
			Qir
MESOZOIC	UPPER JURASSIC		MS
			MS
			Ms
			Mo
			MS
			Mc
			MS

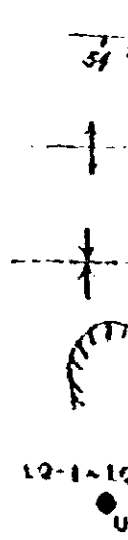
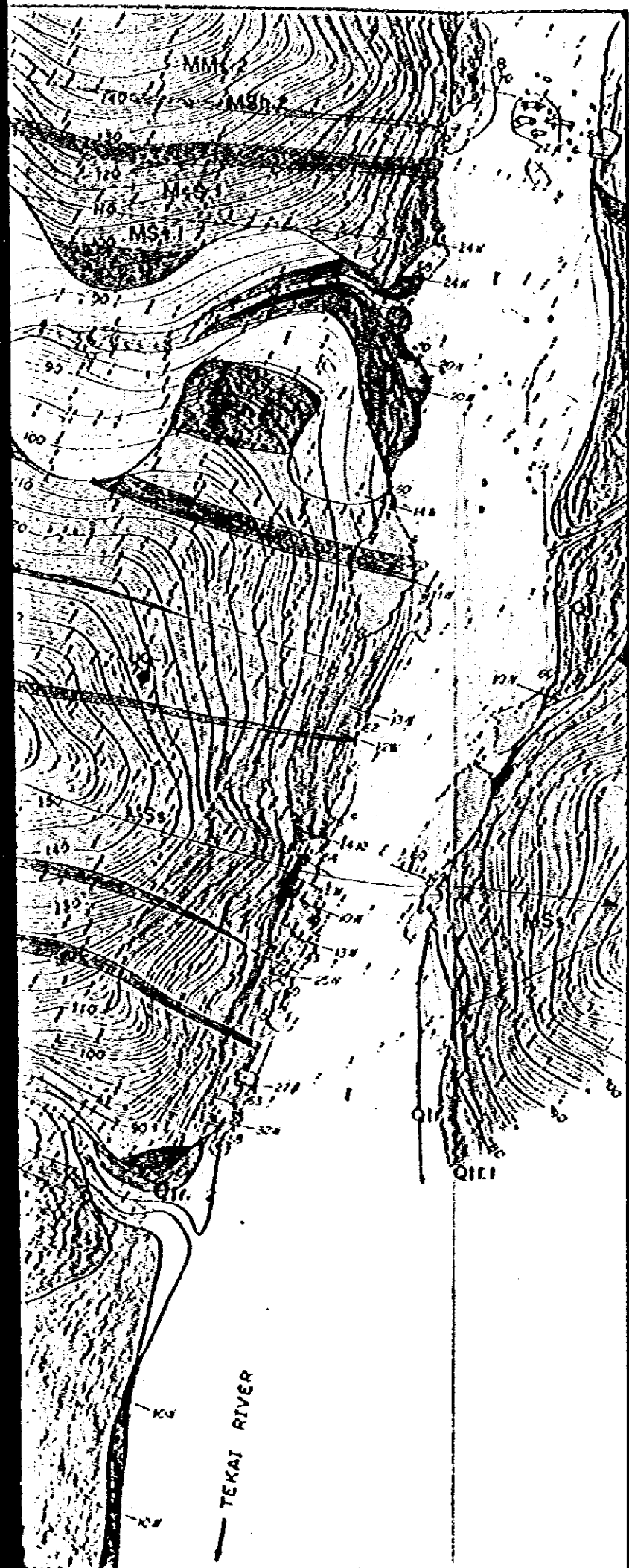


Fig. 4.3 LITHOLOGIC MAP OF UPPER TEKAI QUARRY AND BORROW AREA (SITE. B)



LEGEND

GEOLOGICAL AGE		COLOR	SYMBL	FORMATION	LITHOLOGY
CENOZOIC	QUATERNARY		r	River Bed Deposits	Mainly quartz sand including silt and gravel.
			tl	Talus Deposits	Mainly breccia including clay and silty sand.
			Qtr. 2	Terrace Deposits	Mainly fine sand and clayey sand containing organic material.
			Qtr. 1		Sand and clayey sand with basal gravel.
MESOZOIC	UPPER JURASSIC		MSh.2	Mangkok Sandstone	Greyish shale.
			MSs.2		Predominantly quartzose sandstone and sandstone. Interbedded with shale.
			MSs.1		Shaly sandstone interbedded with shale.
			Ma.1		Alternation of sandstone and shale.
			MSh.1		Dark grey shale interbedded with sandstone.
			Mcg		Conglomerate and coarse quartzose sandstone
			MSs.1		Predominantly quartzose sandstone and sandstone interbedded with conglomerate and shale.

Strike and dip of stratum

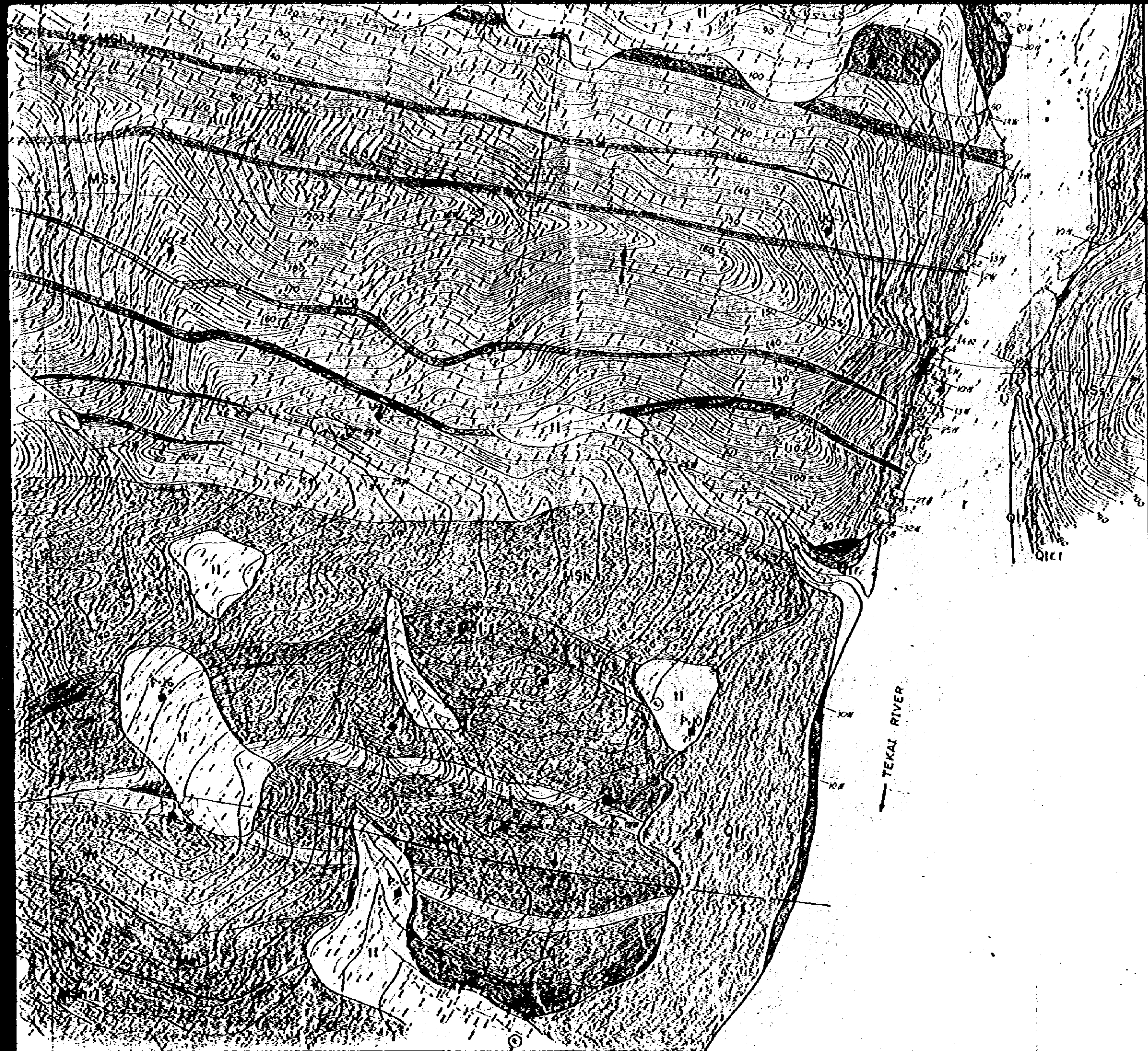
Anticline (—> plunging)

Syncline

Landslide concavity

Borehole point and borehole No. carried out in 1982

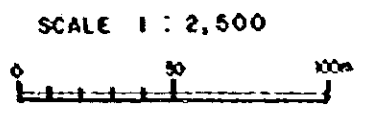


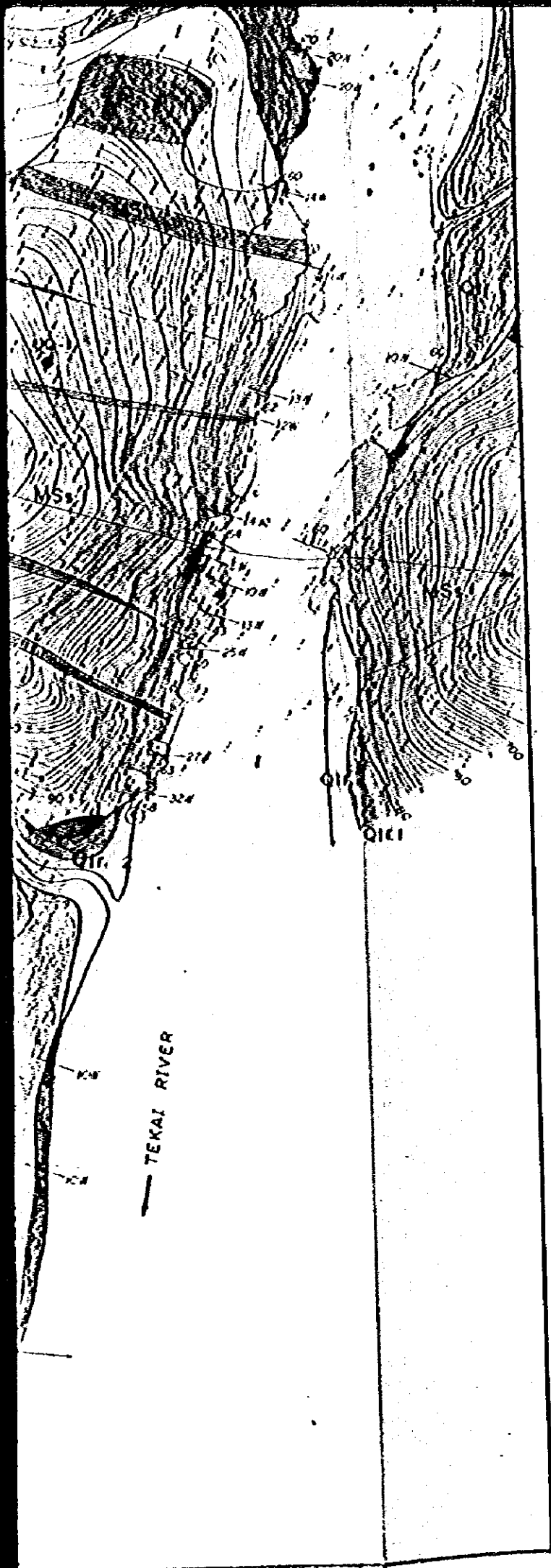


LEGEND

GEOLOGICAL AGE		COLOR	SYMBL	FORMATION
GENOZOIC	QUATERNARY		r	River Bed Deposit
			II	Talus Depos
			Qlr. 2	Terrace Deposit
			Qlr. 1	Terrace Deposit
MESOZOIC	UPPER JURASSIC		MSh.2	Mangking Sandstone
			MSs.2	
			MSs.1	
			MoI.1	
			MSh.1	
			Mcg	
	MSs.1			

- Strike and dip 34° 25'
- Anticline
- Syncline
- Landslide
- Borehole p. 12-1 ~ 19-5 UC-13
- Test pit p. 10-10 ~ P-17





LEGEND

GEOLOGICAL AGE	COLOR	SYMBL	FORMATION	LITHOLOGY
CENOZOIC		r	River Bed Deposits	Mainly quartz sand including silt and gravel.
	QUATERNARY	tl	Talus Deposits	Mainly breccia including clay and silty sand.
		Qir. 2	Qir. 1	Terrace Deposits
	Sand and clayey sand with basal gravel.			
MESOZOIC	UPPER JURASSIC	MSh.2	Mongking Sandstone	Greyish shale.
		MSs.2		Predominantly quartzose sandstone and sandstone, interbedded with shale.
		MSs.1		Shaly sandstone interbedded with shale.
		Ma.1		Alternation of sandstone and shale.
		MSh.1		Dark grey shale interbedded with sandstone.
		Mcg		Conglomerate and coarse quartzose sandstone
		MSs.1		Predominantly quartzose sandstone and sandstone interbedded with conglomerate and shale.

- Strike and dip of stratum
- Anticline (—→plunging)
- Syncline
- Landslide concavity
- LQ-1~LQ-5 Borehole point and borehole No. carried out in 1982
UD-18
- P-10~P-17 Test pitting point and pit No. carried out in 1982

