JIKIA

# MASTER PLAN STUDY REPORT ON NAM YUAM RIVER BASIN HYDROELECTRIC DEVELOPMENT PROJECT

APPENDIX

**MARCH 1987** 

JAPAN INTERNATIONAL CORPORATION AGENCY

M P N
C R (3)
87 - 58

#### KINGDOM OF THAILAND

# MASTER PLAN STUDY REPORT ON NAM YUAM RIVER BASIN HYDROELECTRIC DEVELOPMENT PROJECT

#### APPENDIX

JIGA LIBRARY 1030814[6] 16579

**MARCH 1987** 

JAPAN INTERNATIONAL CORPORATION AGENCY

国際協力事業団 受入 '87. 6. 22 /22 月日 養録 16579 MPN

#### APPENDIX

		Page
A-1.	GEOLOGY	
[1]	Microscopic Observation of Rock Samples (Nam Mae Ngao No. 2 and Nam Mae Rit Dam Site)	. A-1-1
[2]	Chemical Analysis of Rock Samples (Nam Mae Ngao No. 2 and Nam Mae Rit Dam Site)	. A-1-11
[3]	Geologic Log of Drill Hole	A-1-13
A-2.	HYDROLOGICAL DATA	
[1]	Discharge	A-2-1
[2]	Sedimentation	
[3]	Precipitation	
<b>[4]</b>	Evaporation	. A-2-233
[5]	Relative Humidity	. A-2-277
[6]	Temperature	. A-2-317
A-3.	IMPACT ON IRRIGATION	
[1]	General	. A-3-1
[2]	Description of Investigation Area	. A-3-2
[3]	Impact and Agriculture Benefit	. A-3-7

•

#### A-1. GEOLOGY

- [1] Microscopic Observation of Rock Samples
  (Nam Mae Ngao No. 2 and Nam Mae Rit Dam Site)
- [2] Chemical Analysis of Rock Samples
  (Nam Mae Ngao No. 2 and Nam Mae Rit Dam Site)
- [3] Geologic Log of Drill Hole Nam Mae Ngao No. 2 Upper Mae Yuam 1 Upper Mae Yuam 2 Nam Mae Rit

[1] Microscopic Observation of Rock Samples
(Nam Mae Ngao No. 2 and Nam Mae Rit Dam Site)

#### [1] Microscopic Observation of Rock Samples

Thin sections were prepared from 4 samples obtained in drill hole DL-2 at Nam Mae Ngao No.2 dam site, and drill hole DR-2 and DL-2 at Nam Mae Rit dam site.

The results of the microscopic observation are shown in Table 1 through 4 with the microscopic photographs.

Table 1 Petrographic Description of Rock

Project:	Nam Yuam River Basin Hydroelectric Development				
Locality:	Nam Mae Nga	o No.2 Drill Hole DL-2	, 75.20 - 75.30 m		
Sample No.:	1	Slice No.:	1		
Rock name:	Dolomitic 1	imestone			
Texture:	Sedimentary depositional structure Non-particulate texture: Crystalline texture				

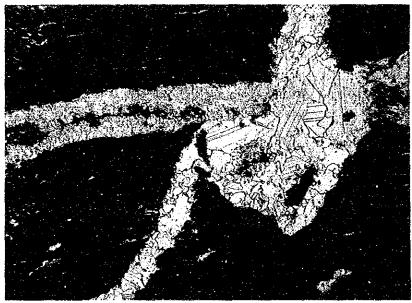
	Na	me	Characteristics
		ents: with dolomite: ey colored zone:	Generally composed of three layered zones  15 mm., in wide. Cryptocrystalline calcite micrite matrix, including some microcrystalline dolomite sparites, that are euhedral rhombohedral and singled crystals, 0.015 - 0.06 mm.,
Forming Mineral	Clear zo	one:	in size.  2 - 4 mm., in wide.  Halloysite clay matrix, including some microcrystalline dolomite and few microcrystalline silty grade quartz-feldspar grains, 0.01 - 0.075 mm., in size.
Rock Formin	Grey col	ored zone:	about 7 mm., in wide.  Dark grey colored cryptocrystalline calcite micrite matrix, including some microcrystalline calcite sparite, clear halloysite shelly clasts and blackish carbonaceous matters.
	Calcite	stringers:	0.3 - 2 mm., in wide. Cutting across and intruding to parallel in layered matrix, composing of largely anhedral mozaic calcite crystals, 0.01 - 0.025 mm., and up to 0.1 mm., in size.
Descrip- tion	This rock was determined by the crystalline calcite and including some dolomite, as the dolomitic limestone.		
Degree of Carbonatization: Intermediate grade, forming calcite alteration stringers.			

#### Macroscopic observation;

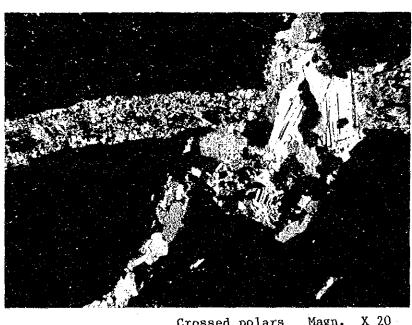
This rock is the light grey colored, massive and fine grained limestone, cutting by the networks, consisting of the whitish colored calcite hair veins, and associating with the light buff bands.

#### Microscopic Photograph

Nam Mae Ngao No.2 Nam Yuam River Basin Drill Hole DL-2 Hydroelectric Development Project: Locality: 75.20-75.30 m Sample No.: 1 Slice No.: \_\_1\_\_\_ Rock Name: Dolomitic limestone

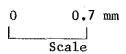


Cryptocrystalline calcite micrite matrix in grey colored zone with calcite stringers.



Magn. X 20 Parallel polars

Magn. X 20 Crossed polars



.

#### Microscopic Photograph

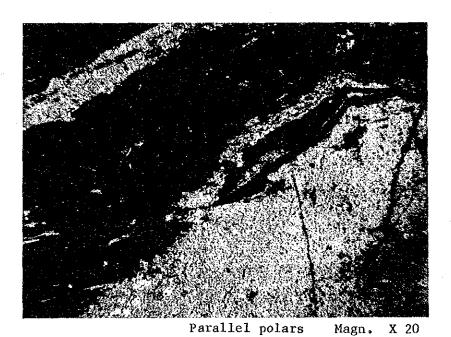
Nam Yuam River Basin Project: Hydroelectric Development

Nam Mae Ngao No.2 Drill Hole DL-2 Locality: 75.20-75.30 m.

Sample No.: \_\_\_1

Slice No.: 1

Rock Name: Dolomitic limestone



colored zone.

Upper left side: grey

Lower right side: clear

zone.



Crossed polars Magn. X 20

0.7 mm

Table 2 Petrographic Description of Rock

Project:	Nam Yuam River Basin Hydroelectric Development			
Locality:	Nam Mae Rit Drill Hole DR-2, 49.70 m			
Sample No.:	2 Slice No.: 2			
Rock name:	Cordierite - biotite spotted pelitic hornfels			
Texture:	Sedimentary depositional structure. Particulate texture: Grain Packing: Mudstone texture.			
	Porphyroblastic and granoblastic fabrics by thermal metamorphism.			

	Name	Characteristics
	Constituents:	
k Forming Mineral	Porphyroblastic cordierite:  Granoblastic groundmass:	0.2 - 0.8 mm., in diameter. Aboundant. Consisting of ill-defined assembled round grains, including few poikiloblastic biotite.  Consisting of crypto- to micro-crystalline equigrano blastic very aboundant euhedral biotite with muscovite-commonly anhedral interstitual kaolin - some clastic quartz-feldspar grains, biotite granules are 0.005 - 0.025 mm., in size, greenish brown to brown
Rock		colored, and strongly pleochroism, and laminated orientation is survived by biotite granules, arranged to parallel, as relicts of lamination texture in original mudstone.
Descrip- tion	This rock was determined be cordierite and granoblasti spotted pelitic hornfels.	by the presence of the porphyroblastic c biotite groundmass, as the cordierite
•	gree of	

### Macroscopic observation:

This rock is the darkish grey, crystalline mudstone, including the much cordierite spotted patches.

#### Microscopic Photograph

Nam Yuam River Basin

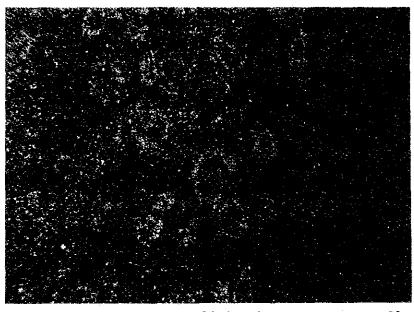
Nam Mae Rit Drill Hole DL-2

Project:

Hydroelectric Development Locality: 49.70 m

Sample No.: 2 Slice No.: 2

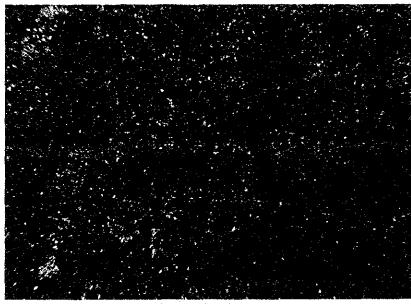
Rock Name: Cordierite - biotite spotted pelitic hornfels



Granoblastic biotite groundmass with porphyroblastic cordierite patches.

Parallel polars

Magn. X 20



Magn. X 20 Crossed polars

0.7 mm Scale

Table 3 Petrographic Description of Rock

Project:	Nam Yuam River Basin Hydroelectric Development			
Locality: Nam Mae Rit Drill Hole DR-2, 57.80 m				
Sample No.:	3 Slice No.: 3			
Rock name:	Cordierite spotted pelitic hornfels			
Texture:	Sedimentary depositional structure. Particulate texture: Grain Packing: Mudstone texture and Lamination texture. Porphyroblastic and granoblastic fabrics by thermal metamorphism.			

	Name	Characteristics
Rock Forming Mineral	Constituents: Porphyroblastic cordierite:  Granoblastic groundmass:	O.1 - 0.4 mm., up to 0.8 mm., in size.  Aboundant. Consisting of ill-defined assembled round grains, often showing sector shapes, concentric arrangements of inclusions, and hexagonal outlines.  Consisting of cryptocrystalline to microcrystalline, aboundant carbonaceous matters - commonly anhedral kaoline - some clastic quartz-feldspar silty grains - some granular biotite with muscovite. Quartz-feldspar grains are arranged very much to parallel along lamination bands, with carbonaceous matters, and grains are 0.01 - 0.03 mm., in size.
Descrip- tion		by the porphyroblastic cordierite and s the cordierite spotted pelitic hornfels.
Deg	ree of	

## Marcoscopic observation;

This rock is the dark grey, cystalline mudstone, with cordierite spotted patches.

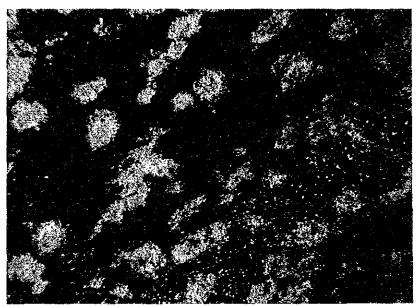
· · ·

#### Microscopic Photograph

Nam Yuam River Basin
Project: Hydroelectric Development Locality: 57.80 m

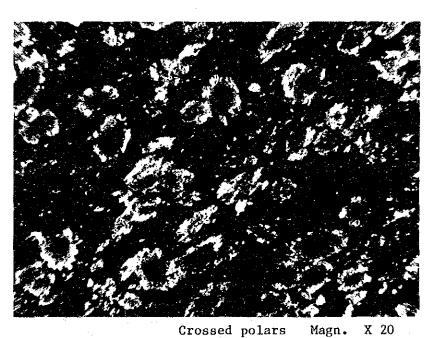
Sample No.: 3 Slice No.: 3

Rock Name: Cordierite spotted pelitic hornfels



Parallel polars

Granoblastic groundmass with porphyroblastic cordierite patches. Lower right hand: intercarating with the lamination band rich in quartz-feldspar particles.



Magn. X 20

Table 4 Petrographic Description of Rock

Project:	Nam Yuam River Basin Hydroelectric Development				
Locality:	Nam Mae Rit Drill Hole DL-2, 39.80 m				
Sample No.:	4	Slice No.:	4		
Rock name: Cordierite spotted pelitic hornfels					
Texture: Sedimentary depositional structure.  Particulate texture:  Grain Packing: Mudstone texture.  Porphyroblastic and granoblastic fabrics by the morphism.			ics by thermal meta-		

	Name	Characteristics	
	Constituents: Porphyroblastic cordierites:	0.1 - 0.4 mm., up to 0.8 mm., aboundant. Consisting of two types: ill-defined round grains, and clear tabular euhedral rec- tangular well-crystallized grains.	
Forming Mineral	Granoblastic groundmass:	Consisting of crypto- to micro- crystalline, very aboundant blackish banded carbonaceous matters - aboundant anhedral kaolin clays - very few clastic quartz-feldspar silty grains, and par- tially including biotite and tourmaline granules.	
Rock F	Quartz veins:	2 - 8 mm., in wide. Consisting of polycrystalline mozaic quartz crystals (0.02 - 0.20 mm., in size) and cutting across hornfels.	
Descrip- tion	This rock was determined be noblastic groundmass, as to appear to be crystallized	by the porphyroblastic cordierites and gra- he cordierite spotted pelitic hornfels, and higher than the other samples.	
1 -	ree of eration		

#### Macroscopic observation;

This rock is the dark grey, crystalline mudstone, including cordierite spotting patches, and cutting across the rocks by the quartz veins.

#### Microscopic Photograph

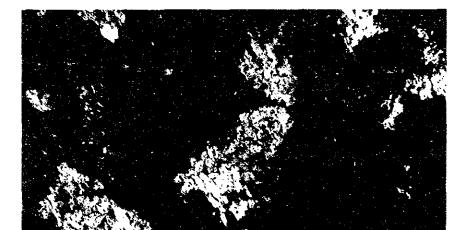
Nam Yuam River Basin
Project: Hydroelectric Development Locality: 39.80 m

Sample No.: 4

Rock Name: Cordierite spotted pelitic hornfels

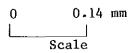
Cordierite porphyroblasts in granoblastic groundmass.

Nam Mae Rit



Parallel polars

Crossed polars Magn. X 100



Magn. X 100

[2] Chemical Analysis of Rock Samples
(Nam Mae Ngao No. 2 and Nam Mae Rit Dam Site)

#### [2] Chemical Analyses of Rock Samples

Quantitative chemical analyses of rocks were carried out aiming at knowing the carbonate contents of rocks distributed at Nam Mae Ngao No.2 dam site and in the reservoir area of Nam Mae Rit.

Samples analyzed are as follows:

Limestone 4 pieces
Argillaceous band in limestone 1 piece
Calcareous sandstone 1 piece

The components analyzed are CaO, MgO,  $SiO_2$  and  $Al_2O_3$ . The results of analyses are shown in Table 5.

The limestone (Drill hole DR-1) distributed at right-bank ridge of Nam Mae Ngao No.2 dam site contains the large content of  $CaCO_3$  and  $CaMg(CO_3)_2$ , being 85.9 to 93.6%.

The argillaceous band interbedded with limestone (Drill Hole DL-2) which is distributed at the left-bank ridge of Nam Mae Ngao No.2 dam site has the large content of  $SiO_2$  and  $Al_2O_3$ , being 59.7%.

The limestones distributed at the upstream of Nam Mae Ngao No.2 dam axis and Nam Mae Rit dam axis have the large content of  $$\rm SiO_2$$  and  $$\rm Al_2O_3$$ , being 28.8 to 31.9%.

The calcareous sandstone (Drill hole DR-3) distributed at the right-bank side of Nam Mae Ngao No.2 dam site has the large content of  $\rm SiO_2$  +  $\rm Al_2O_3$ , being 81.6%.

As described above, rocks other than limestone distributed at the right-bank ridge of Nam Mae Ngao No.2 dam site contain the larger content of  $\rm S_1O_2$  and  $\rm Al_2O_3$ , so that they have strong resistance against solution.

Table 5 Quantitative Chemical Analysis of Rock

	<u> </u>	·	<del> </del>	1/ Result	2/ Result	<del> </del>
			Result of	of Norm	of Norm	A 20 A 40
Sample	Locality	Rock Name	Analysis	Calculation	Caculation	Remarks
No.	,		Composition	Composition	Composition	l 1
·			%(Wt)	Z(Wt)	%(Wt)	
					77.00	
	Nam Mae Ngao		Ca0 45.10	CaCO <sub>3</sub> 80.49	CaCO <sub>3</sub> 74.09	ļ
_ '	No.2	1 .	MgO 2.58	MgCO <sub>3</sub> 5.40	J. 2	
5	Drill Hole	Limestone	sio <sub>2</sub> 9.93	\$10 <sub>2</sub> 9.93	SiO <sub>2</sub> 9.93	
	DR-1		A1203 2.40	$A1_20_3$ 2.40	$A1_20_3$ 2.40	
	(Depth: 18.85 - 18.95 m)		Total 60.01	Total 98.22	Total 98.22	
į	- 10.33 111)		<u></u>			
	No. Man None		CaO 51.89	CaCO <sub>2</sub> 92.60	CaCO <sub>3</sub> 91.43	
	Nam Mae Ngao		MgO 0.47	MgCO <sub>3</sub> 0.98	· · · · · · · · · · · · · · · · · · ·	
	No.2	7.1	SiO <sub>2</sub> 3.37	SiO <sub>2</sub> 3.37	$\sin(603)$ 2.13 $\sin(603)$ 3.37	j
6	Drill Hole	Limestone			A1203 1.30	
]	DR-1	1	$\frac{\text{A1}_2\text{O}_3}{\text{A1}_2\text{O}_3}$			,
	(Depth: 83.2 - 83.25 m)		Total 57.03	Total 98.25	Total 98.25	
			0.0 1.11	7.22	CaCO <sub>3</sub> 0.26	
1	Nam Mae Ngao		Ca0 4.11	CaCO <sub>3</sub> 7.33		1
_	No.2		MgO 2.85	MgCO <sub>3</sub> 5.96	3. 2	
7	Drill Hole	Calcareous	S10 <sub>2</sub> 69.25	SiO <sub>2</sub> 69.25		į
	DR-3	Sandstone	$11_2\bar{0}_3$ 12.32	$A1_20_3$ 12.32	$A1_2\bar{0}_3$ 12.32	l e a
	(Depth: 45.9 - 46.0 m)		Total 88.53	Total 94.86	Total 94.86	
	·			<del> </del>		
	Nam Mae Ngao	1.	Ca0 18.41	CaCO <sub>2</sub> 32.85	CaCO <sub>3</sub> 29.52	
	No.2		MgO 1.34	MgCO <sub>3</sub> 2.80	$CaMg(CO_3)_2$ 6.13	Argillaceou
1	Drill Hole	Argilla-	\$102 53.53	S10 <sub>2</sub> 53.53	S10 <sub>2</sub> 53.53	band in
	DL-2	ceous Band	$A1_2\tilde{0}_3$ 6.19	$A1_2\tilde{0}_3$ 6.19	$A1_2\tilde{0}_3$ 6.19	limestone
	(Depth: 75.2		Total 79.47	Total 95.37	Total: 95.37	
	– 75.3 m)		10tal /9.4/	10tar 93.37	Tucaj. 95.57	
j	Nam Mae Ngao	1	CaO 38.29	CaCO <sub>3</sub> 68.33	CaCO <sub>3</sub> 66.07	
	No.2		MgO 0.91	MgCO <sub>3</sub> 1.90	CaMg(CO <sub>3</sub> ) <sub>2</sub> 4.16	[
8	Right Bank	Limestone	SiO <sub>2</sub> 26.96	SiO <sub>2</sub> 26.96	SiO <sub>2</sub> 26.96	
	Upstream of		$A1_{2}0_{3}$ 1.86	A1203 1.86	$A1_20_3$ 1.86	
	Dam Axis		Total 68.02	Total 99.05	Total 99.05	
				ing the second	na Gorge e Mark	
	Nam Mae Rit		CaO 39.39	CaCO <sub>2</sub> 70.30	CaCO <sub>3</sub> 67.30	
9	Left Bank	Limestone	MgO 1.21		CaMg(CO3)2 5.53	
"	Upstream of	TITHESCORE	SiO <sub>2</sub> 22.22	510 <sub>2</sub> 22.22		
- 1	Dam Axis		$A1_20_3$ 9.67	$A1_2O_3$ 9.67		1
ļ	Pam uvro					1
- 1		1	Total 72.49	Total 104.72	Total 104.72	!

[3] Geologic Log of Drill Hole

Nam Mae Ngao No. 2

### GEOLOGIC LOG OF DRILL HOLE

	-	Nam							Mae Ngao No.2 HOLE			-0	(\$	HEET		OF	2 )	lac
LOCATION Dam right										OMMENCE				ED	D 18 _ Mar _ '86			
ELEVATION 271, 906 COORDINATE 393, 859, 171					658	N u	1		PTH OF OVERBURDEN								27 - Mar - '86 Surin	
									NGTH OF ROCK DRILLING _3									
				ZONTAL		10	÷ :		<del></del>	18,4		Ĺ	OG	3ED	В		K. Ishi	Kawa
BEA	RIN	G OF	ANGL	E HOLE						52,6_	36						·	
	¥			1 d 7 k		T~			RVATION OF CORE	<sub>v</sub>	VATE	RTAE	3LE		<b>-4Λ</b>	<b>,</b>		Ō N
ОЕРТН	<u> </u>	0		CEMENT TION KIND OF BIT CASING	COLOR	Ëφ	638	35	DESCRIPTION	i		R PRE		RE TE	ST		ОЕРТН	ELEVATION
8	ROCK NAME	-		9 2.29	8	WEATHER	HARD NESS	CUTTING	DESCRIPTION			AGE C				ATER	°	7
Om		$\vdash$	0 <del>↔</del> 100	<del> </del>	<del> </del>	-		Ť		<del> </del>			L.UGE				40 0m	en e
		$\vdash$	ıllıllı	<b> </b>	+					Ť	Τ		T	Ţ	Т	-T-	Ē	
1 =	e e	$ \Delta $		]]	Pra Pra		]		0.0 ~2.4m	1			Ì	1	1		Ē	
1/100 Junio	Overburden				4.				Overburden								<b>₽</b> 1	
[ - ]	5	$ \Delta $			ž		ĺ		clayey silt.					Į		-		
2-4	õ			-											1	-	2	
4					-	-	<u> </u>			+	-	$\vdash$		-+	-1		ŧ-	
3 <u>-</u>				<b> </b>	<b>\</b>				2.4 ~ 12.3m :	-				- }			3	
] =		١. ١							Fine to medium grained	1.						- 1 -		
4-					1				SANDSTONE: intercalated with SHALE Non calcareou				- }	-			Ē.4	
╽ `∄								.	WINI SMALL, NON CORDIFOR	'".					-	1		
1 ]		•							Completely to highly					- 1			-5	
"									weathered.					- 1	İ	1	ŧ I	
2 8 0 10 10 10 10 10 10 10 10 10 10 10 10 1				11					Almost soil like cores.	1				- 1	1	1		
6-3		• •							Rock fragments broken	-						-	-6	
=	:	•			g	5	5	5	by hands.	- (				- 1		-		
7	Ш.	• •		] ]	±			1	<i>D</i> , 1101103.						Ì		· [ 7	
4	Z	•			1											:		
8-3	ANDSTONE	••			\$				Sheared and clayey at 11.2 ~12.3m.		-	-			.		8	
=	2	.			Ę				01 11.2 ~12.5m.				1			-		
9.4	SA				"						١						E 9	
		۱. ۱		{ }		<u> </u>	<u> </u>	E .			N	0	}	6	S	t	<u></u>	
[ارا	o O					4	4	5 ~4			1		}				10	
``_	ne r	۱. ا											1					
Ē, (	Weathered					Ì _				1		1	1		<b>\</b>	- }	E 1	
'=	3			•		5	5	5				İ	1			- 1	E.	
										- [			Į				E.2	
2-4		<b>A A</b>			-	1 7	<u> </u>	-	<u> </u>								Ē	
				S S		3	4	3 4 ∼ 5	12.3~15.0m:	_			ļ		l	-	E ,	
3-3		•		ς,	Z S		-	- 5	Fine to medium grained S.S. Non calcareous.	5.						- }	3	
]	1			ν V			4	5	Weathered and cracks		Ì		ļ					
4-		•			ğrax	3	1	1	stained.							.	4	
1		AA			1	}	5	4	Sheared and clayey		1	1				- }		
5-3		╒┈┤			$\vdash$			_	at 14.3~15.0m.								5	
4		·   •		<u> </u>			5	5	15.0~17.7m : Almost cuttings.									
6-	Ш° 2	•		}			<u>l</u> _		Fragmental cores at 16.2	-]	] G.	L-1	6.5	m ]	1		6	
-	ō	·   •				1	3	4-5	~16.5m and 17.45 ~17.65m		†′	γ\	-	┝▐	ļ			
8 7 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	SANDSTONE	•		1		1	5	5	No stained.		-				l	-	7	
	AN	.		1	Ş		3	4	Some parts clayey.								-	
8	S	<b> </b>	WW	}   1	Ťě.		,		17.9~21.0m:								-8	
1		\	WW	}					Obtained only cuttings,	- }	}					- {	E	
9-1		//		# # # # # # # # # # # # # # # # # # #				:	Drilled by Tricone Bit.								E-9	
"		//	MM	Tricone					· · · · · · · · · · · · · · · · · ·								Ē,	
20		// h		Ĭ													20	
·		ł	Z N			1	1	1	> driller's note €									
		. [					1	1 (5	tick), 2 (substick), 3 (piece), 4 (fragment), 5 gr	rain								
	core foss						1 (hard) ~ 5 (soft)											
			L	- RQD		1(	fresh)	~ 5 (d	ecomposed)									

20m 20m 20m 20m 20m 20m 20m 20m 20m 20m	CEMENTA TION	COLOR	ex.		OBSE	RVATION OF CORE	6.%
2 0m	0 → 100		WEATHER	HARD.	CORE	DESCRIPTION	WATER PRESSURE TEST
1 m. 1		-   -	3	Ī.	031		LEAKAGE OF DRILLING WATER LUGEON 40 20m m
3 ANDSTONE		Tricone Bit Tricone Tricone dark grey		4	5 - 4	21.0~28.2m: Fine to medium grained SANDSTONE. Non calcareous. Almost cuttings. Gravelly cares at 21.0~23.2m, 23.8~24.0m, 26.9~27.0m and 27.5~28.0m. Fragments are fresh and hard. Sheared and clayey cores at 21.4~21.7m and 22.8~23.0m.  28.2~35.0m: Obtained only cuttings. Drilled by Tricone Bit.	NOTES 1 Standard Mark 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	core foss	•			tard) ~	b driller's note 4 tick), 2 (substick), 3 (piece), 4 (fragment), 5 grain - 5 (soft) recomposed)	

		Nam	Yua	ım	PRO	)JE(	CT	Nan	Mae Ngao No.2 HOLE N	D. DR = 1 (SHEET 1 OF 5 )
roc	ATI	NC	Da	m right l	o <u>an</u> k		-	DE		0 m COMMENCED 18 Feb 86
ELE	VAT	ION		271	25	K) n	<u>i</u>	DE	PTH OF OVERBURDEN 3	2 m COMPLETED 14 -Mor - 86
COC	RDII	NATE		967. 248. 6 193. 919. 8	129	Ë_		LE	NGTH OF ROCK DRILLING <u>86</u>	8 m DRILLED BY Surin
ANG	iLE	FROM	HORE	ZONTAL	1	90	• · · ·	·TO	TAL LENGTH OF CORE 87	m LOGGED BY K. Ishikawa
BEA	RIN	G OF	ANGL	E HOLE	_			co	RE RECOVERY 96	8_%
	ш			4 .				OBSI	RVATION OF CORE	2
I	NAME	9		CEMENTA TION KIND OF BIT CASING	œ	WEATHER -ING	SS	ý		WATER TABLE  WATER PRESSURE TEST  WATER PRESSURE TEST
ЭЕРТН	ŠČ	ا د ا	1	KING	COLOR	A ×	HARD.	CORE	DESCRIPTION	WATER PRESSURE TEST
	\ X		0 ⇒ 100			3	T	- 5		LUGEON m
Om										LUGEON 40 Om T
1								l	0.0~3.2m : Overburden.	
								İ	Silty clay with	
	de			<b>\</b>	Ę				few rock fragments.	
1 2 minutes	Overburden	4			χp		:			ահասերակը 2
"	Š				-			] ;		
		$ \Delta $		] ]	1			1		
3.7	-	<b>  </b>			$\vdash$		<u> </u>	4		<del>-++++</del> - <b>E</b> °
1				.		3	3.	4 3~2	3.2~20.0m:	
5 6 7 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	1	1-7		11 .	9.7			4	LIMESTONE Massive.	
					,	4	4	2~3	3.2~3.8m	
5 -		/30 <del>.</del>			<u> </u>		_	4	Hard. Cracks stained.	
4	LIMESTONE	ĽΪ			ļ				3.8~5.0m	
6-3	15	┞┈┪						_	Highly wind. Cores broken	
	Ä							5	by hands.	
7	5	┟╌┸┨					. :	5	Brownish clay at 4.15~	No Test 7
	٠,				E		5	4	4.3m.	
	Weathered			<b>1</b> .	=	5	ş	"	Argillacecus band at	
8	5					Ĭ			4.1m, Dip of bedding	<u>E</u>
=	×	<del> </del> -		] [			4	5	plane is 60~70°.	
9-7				}	١			5	5.0~10.0m	
=				တ				5	Decomposed, Almost soil like cores.	
10-3		$\forall$		<u>Z</u>	H	-		4	Partially substicky cores.	
)		$\cap$		δ. Θ.	-				10.5~17.0m	
1-	ш			Ü		3			Highly to moderately	┝╌┼╌┼╌┼╌┼╌┼╌╁╌╂╸╸
	Ž.	<b></b>				١,	3	2	weathered.	
111111111111111111111111111111111111111	ST		HHH	1.1:	1	4	<u> </u>	ļ	Rock itself discolored	
	IMESTONE	μ		]	26			3	and broken by light	Lu =48.8
, 1				{	1	l			hammer blow.	(Pmbx=2.56kg/cm4) = 3
	g g			11	ž				Some cracks filled with	
	je i			1		4	4	2	brownish clay.	
3 4 days	Weathered	الم		1 .					Solution cracks at	
1	₹			11	1				11.0m, 11.7m and 12.1m (60°).	
6-	-	1		1	_		-	3_	Clayey at 16.4 ~16.55m.	5
4		[X]	<b>                                 </b>	1	1				17.0~18.4m	
6-3	<del>  -</del>	k:: }			>	4	ļ	ļ	Dips of cracks are	Leakage of Drilling 6
4	Wthd S	厂川			brx gry		4	4	generally 20~30° and 60°	Water   E
7-	≥ -	<u>                                     </u>		}	<u>a</u>	~ 5 4	-		Cracks stained.	7
=	1			]				3	18,4 ~20.0m	Lu'-35.2
8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	N N	<u> </u>	ЩЦ			3	3	5	Fresh and hard.	Pmbx=2.99 kg/cm²) = 8
) 1	2	1760	HHHH	<b>i</b> .	\ <u>`</u>	<b></b> -	<u> </u>	2	Good rock.	
]	LIMESTONE	70			Š				Intercalated with	
9~	2		MARK		1	2	2	2	argillaceous band.	
20		ĽŢ	HHH	1			·	. '	Dips of bedding planes are 60~70°.	20
<u> </u>	i	<u>ч</u>	A N	<del> </del>	<b>4</b>	1	T	1	▶ driffer's note ◀	·
		E						1 (s	tick), 2(substick), 3(piece), 4(fragment), 5 grain	
		Ð	A M	- core loss			1 (	hard)	- 5 (soit)	
			t	- RQD		1 (1	resh)	~ 5 (d	composed)	•

					_			Van		DR-1 (SHEET 2 OF 5 )
LOCATI		Da	m rig							O m COMMENCED 18 Feb 186
ELEVAT			967. 393.	71.2 248		N n			PTH OF OVERBURDEN 3	the first transfer transfer to the property of
COORDI							•		NGTH OF ROCK DRILLING 86	- III BIII BIII BII
ANGLE BEARIN						90	-		TAL LENGTH OF CORE 87 RE RECOVERY 96	1 111
	3 Or	ANGL		· E					RVATION OF CORE	
NAME	0		A So	ي		œ			ERVATION OF CORE	WATER PRESSURE TEST
DEPTH OCK NAI	2		NO THE	CASING	or So	WEATHER ING	HARD NESS	CORE	DESCRIPTION	WATER PRESSURE TEST
<u>§</u>			0 -		Ö	WE	E .	69		LEARAGE OF DRILLING WATER
50W		0 →100 กนายนี้								LUGEON 40 20m
1 -3	-			- [					20.0~40.0m:	
1 1		Ш	N.						LIMESTONE.	
1 4			AS	Ì					Intercalated with argittaceous	
2-4			lì						bonds.	Lu = 13.9
1	1								Dips of bedding planes	(Pmux=3.49kg/cm²)
3-1						2	2	2	are generally 60~70°	<u> </u>
4						-	-	-		
4	<del> </del>								20.0 ~ 25.6m	F4
<del> </del>			Į	. •	grey				Fresh and hard.	
2 Luduml STON					Ď		ŀ	_	Good rock.	
udur EST		]		1		ļ	3	Few cracks stained.		
6-3 2							<b>!</b> .	Brownish clay at 21.6m.		
] = ] -							Ì	3	Solution crack at 23.9m.	Lu = 2.7
7-					3	3	5	25.6 ~ 28.1m		
-								2	Cracks stained.	(Pmbx=B.03 kg/cm²) E
8-3	<b>A</b> =			Ì		9	4-5	4	Rock itself somewhat	
4									discolored Dips of cracks are	
9-	1	MMII			,	2	2	2	generally 60°.	9
4		WIII							Solution cracks at 26.2m,	
30		////III	]					2	26.6m and 27.4m.	- - - - - - - - - -
4	-							3	Sheared and clayey at 28.0	-28.lm
1		MIIII					2		28.1~29.8m	
			Ì			3	3	2	Some cracks stained.	Lu' = 24.6
2	1			.				3	Generally fresh and hard.	(Pmax=5.53kg/cm²) = 2
-									Good rock. Solution aracks at 28.9m	
3									and 29.8m.	
4	$F^{+}$					2		2	29.8 ~30.0m	
4-			}	]			١.		Core loss. 30.0 ~32.3m	
7 1 13					9	3	:	3	Cracks stained.	
5-1 N					97.6	~2		-	Rock itself somewhat discolored	
T S			1	- 1			٠	2	Browish clay on cracks	
8-1 E	厂	WW					S		ot 30.4m, 31.0m, 31.5m,	
4	口图			]					32.0m and 32.1m.	Lu'=8.2
1]	M 1			- {		2			32.3 ~35.1m Cracks stained.	IPmpx=8.99kg/pm3
4 8 2 2 2 8 4 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	900			ļ					Crack filled with brownish	-8
8-1		WWI I	1	1	Ì		İ	2	clay at 34.9m (70°).	
e mulu						[	35.1~40.0m			
9 1							Generally, fresh and hard. Good rock.			
40				_ {					Some cracks stained.	40
							1	1	▶ driller's note 4	
							1		tick); 2 (substick), 3 (piece). 4 (tragment), 5 grain	
	core loss								- 5 (soft)	
	RQD						. esn)	- 0 (01	composed)	

	m	PRC	JE(	T	Nam		O. DR-1 (SHEET 3 OF 5 )
	n rìght			_		TH OF HOLE 90	O m COMMENCED 18-Feb 86
ELEVATION	271. 267. 248.	. 25 685	N I	_		· · · · ·	2 m COMPLETED 14-Mar - 86
						NGTH OF ROCK DRILLING 86	WILLELD DI
ANGLE FROM HORIZ BEARING OF ANGLE			90			TAL LENGTH OF CORE 87 RE RECOVERY 96	I m LOGGED BY K. Ishikawa 8 %
	HOLE		w.i	نوسشس		RE RECOVERT	
DEPTH ROCK NAME LOG	A SO OF	_	Œ			RVATION OF CORE	WATER TABLE  WATER PRESSURE TEST  WATER PRESSURE TEST
DEPTH ICK NA	CEMENTA TION KIND OF BIT CASING	ő	WEATHER	HARD. NESS	CUTTING	DESCRIPTION	WATER PRESSURE TEST
	00	0	<u> </u>	ì	69		CEARAGE OF DRILLING WATER
40m 0 →100 %				3	2		LUGEON 40 40m m
	ļ	•	3	2	3	40.0~60.0m:	
			<b>-</b> -	-	.	LIMESTONE.	
		ļ			2	Intercalated with argillaceous	Lu'=23.1
2	ar i				3	bands.	(Pmax=5.47kg/cm²) = 2
				ŀ	2	Dips of bodding planes	
3-	'			2	3	are generally 70.°	
					2	40.0 ~40.8m	
4-	. i			·	3		
					2	Cracks stained and rock itself somewhat	
5-3 11	İ				L	discolored.	1
T O I				2 ~ 3	3 ~4	Calcite vug at 40.4m	
6- L					-	(80°).	
7- N 7- N				2	2	Solution cracks at	Lu-12.4
77 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		grey	2			40.5m and 40.8m.	(Pri ax=14.0 9kg/cn²) = 7
dunbudruhudunbudunbudunbudunbudunbudunbudunbudu	•	6		}		40.8~51.4m	E
						Some cracks stained.	
	:	į	<u> </u>	2		Brownish clay on cracks	
				5	3	at 43.75 44.0m, 45.9	
1 1 1 11/1/10/11			ĺ	3.		~ 46.0m and 48.0~48.3m, Solution crack at 42.8m(80)	9   1   1   1   F · I
50-						Generally cracks along	
1-1						bedding planes.	
				-	ļ	51.4 ~52.2m	
						Core loss.	Lu + 0.8
					3	52.2~60.0m	(Pmax=15.51kg/cm²)
3_					4	<del></del>	-3
				1	,	Few cracks stained.	
		1			2	Generally fresh and hard	
							V 6.1 - \$4.0m
5 L		ļ			3	Hair cracks developed at 57.9 ~ 59.6m.	5
				2	~ 4	2. 0 00,0	
LIMESTON		rey	2	-		Brownish clay on cracks	
I = ü = HMM		5	٦		,	at 59.6m and 59.7m.	Lu =17.8 = =
] 7 ] 3 [ ] [ [ ] [ ]	•			•	2	∱	(Pmax=7.66kg/cm²) = 7
Limestone Limestone							
8-				<u> </u>			8
		1			3		
9-]				3	s		9
	1		3		3		60
		ـــنـــا		-	1	▶ driller's note ◀	1 1 1 1 2 3 3 1
					1 (1	tick), 2 (substick), 3 (piece), 4 (fragment), 5 grain	
IN VI	Core loss					- 5 (soli)	
<u></u>	RQO		1 (	(resh	~ 5 (d	composed)	

		Nam	Yuc	am	PRO	JE	СТ	Nan	Mae Ngao No.2 HOLE N								
LOC				m right t	onk	· ·	_	DE	PTH OF HOLE90	<u>0 m</u>	(	СОМ	ME	NCE	ا_ د	8 Fel	<u>- '86 .</u>
			1.	271. 967. 248. 393. 919.	25 685	Ŋ n	1	DE	PTH OF OVERBURDEN 3	.2_ m	. (	COM	PLI	ETED		4 -MQ	r - '86
									NGTH OF ROCK DRILLING 86								kawa
				ZONTAL . E HOLE	-				TAL LENGTH OF CORE 87 RE RECOVERY 96	. I_m 3.8.%	'	_06	GE.	וסכ	. :	K. 13(i)	RONG
654			ANGL	T					RVATION OF CORE	A						1 1	
Į.	OCK NAME	U		A SO O	-	18	<del>,</del>			WAT	ER T	BLE		-₩		ОЕРТН	ELEVATION
ОЕРТН	Š	10	:	CEMENTA TION KIND OF BIT CASING	COLOR	FATHERNG	HARD. NESS	CORE	DESCRIPTION	•		ESSU	100			8	LE V
	8		0 ⇒ 100	Ų	0	3	ì	្តក្		LEA		OF DI		NG WAT	· · · · · ·		
60m		1	กราเกล้า เมษาราชา	ļ	ļ		-			<u> </u>	т	1 1			T 7	to 60m	
1 4								2	60~80m:								
) 14		1		]			}		LIMESTONE.  Intercalated with orgitlaceous		Ì		}			<u> </u>	
Too Trucker							ĺ	2	bands.		Lu	20	.8			E	
2~								5				1 1	· 1	kg/cn	ni)	2	
2			KKIII	ļ.		-		3	ranger of the second second						1	E I	
3-						ĺ	.3	4								3	
1 4	ш		halli						60.0~67.55m				Ì			H:	
4-4	MESTONE	1	W		ļ	2			Few cracks stained.							4	
	ESI							2	Hair cracks developed							Ė	
5-	<u>≅</u>		XXIII	]	8		1		and somewhat brittle.			†			+-	5	. }
1	_				20			4	67.55 ~70.0m Cracks stained.	-		ĺ					
6-		<del>                                     </del>	74 III					2	Rock itself somewhat	] ]						E 6 '	
4						ļ	2	4~3	discolored.		-				1	Ē.,	. [
7-		1	ШШ				-	2	Generally cracks filled	1 1						£ 7	
4		1		<b>\</b> .	1			3	with brownish clay.							E .	
8-			М	7	ļ .	3	3	4	Core loss at 68.7~	] [						F 8	·
4 5 6 7 8 9 9 9 10 10 10 10 10 10 10 10 10 10 10 10 10				//	<u> </u>		-	-	69.85m.							E-9	
9-1		XI				ļ										<u>E</u> "	·
1 1		$\langle \lambda \rangle$		//	<u> </u>	3	-3	3	70.0 ~72.0m							E 70.	
70-				<b>/</b> .		T	-				1				. }	Ē.,	
11			<b>//</b> //////////////////////////////////					2	Some cracks stained.							E 1	
1 1 2			(M)	ē	]	5		2	72.0 ~73.65m		16	-	۱- e	s	t	E	
2			<b>[M</b> ]]]]	to 15	ļ				Cracks stained, and rock itself somewhat		•		Ì		٦	2	
1		T-4		Ë					discolored.							E	
3.			<i>[</i> ]	ပို		3	_	3	Crack filled with							E-3	
		, 1		//			s		whitish clay at 72.lm (30°).					.	1	<u>-</u>	
4	LLI		ИШ					2	Brownish clay on cracks at 73.0m, 73.1~73.3m(80°).							4	
4	NO	1	и	<b>/</b> /		1	[	4~3	and 73.5m (90°).		-					E	'
5-3	LIMESTON		иШ	/_	grey	1			73.65~76.0m							E 5	
4	Σ				٦			3	Fresh and hard rock.	)	1					F	]
6-4	~			1	]				76.0 ~77.75m							-6	[ [
=	-	7-1					<u> </u>	2	Cracks stained and							Ė.	
7-3	ľ	$\Box$	WIII			3	3	<u> </u>	rock itself somewhat discolored.		1	1		-		E-7	:
1		1				<u> </u>	ļ	3	Brownish clay on cracks						.	£	
8-3		1							of 77.0m, 77.15m, 77.3~	-				.		F 8	
=	l		WAIII		ļ	ļ			77.55m(80°) and 77.6~77.7m								[ . [
9-3						2	2	2	77.75 ~ 80.0m							F 9	
80	ł					1			Some cracks stained							80	
	است	<del></del>	N N	<del></del>	<b>L</b>	•	1	+	▶ driller's note 4								
		1				1	1.		tick), 2 (substick), 3 (piece), 4 (fragment), 5 grain	٠ .				- 4.5	:	. :	
		,,	i	- core loss		1			- 5 (soit)								
			L—	- RQO	•	1 (	rresh)	~ 5 (dı	composed)								

LOCATION ELEVATION COORDINA ANGLE FRO		ight bank 271, 25 7, 248, 685 3, 919, 829 ITAL 9	DE DE N E LE O * TC	PTH OF OVERBURDEN 3 NGTH OF ROCK DRILLING 86 OTAL LENGTH OF CORE 87	COMMENCED COMPLETED COMPLE	18_Feb_'86 14 -Mar - '86 Surin
BEPTH ROCK WAME	CEMENTA-			ERVATION OF CORE	WATER TABLE	
80m	1		2 2 2	80.0~90.0m:  LIMESTONE. Intercalated with argillaceous bands.  Dips of bedding planes are approximately 70°.	O LUGEON	40 00m W
2-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1		9169	3 3 2 3 1 2 2 3 2	Generally, fresh and hard. Good rock.  Some cracks stained.  Rock itself somewhat discolored at 83~84.2m and 86.1~86.3m.	Notest	3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
7-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1			2 2 2	Brownish clay on cracks at 83~83.4m (80°), 84.2m (45°) and 86.1m (60°,		8 10 10 10 10 10 10 10 10 10 10 10 10 10
90						90
3 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						14 4 4 5 5
6 7 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
9-1	ZZ			> driller's note 4 stick), 2 (substick), 3 (piece), 4 (fragment), 5 grai		9
	ROO	e loss	1	~ 5 (soft)	· ·	

Į.	Nam Yuc	am ·	PRO	JE(	CT.	Nam	Mae Ngao No.2 HOL	~ <del>~~~~~</del>										
LOCATIO		om right					PTH OF HOLE				C	ОМ	ME	NCE	D	3 - Ma	<u>186.</u>	_
ELEVATI	ON	223. 1.967.208 393.792	. 83 . [3]				PTH OF OVERBURDEN						5 5				<u>r - <sup>1</sup>86</u> Ing	
					•		NGTH OF ROCK DRILLING	-								K. Ish		-
	FROM HOR G OF ANGI			90	-		TAL LENGTH OF CORE RE RECOVERY	16. 46.			ı,	UGU	7 E L	) DT		N. 1511	ivawo	
	J OF ANGI	T.	<del></del> -				RVATION OF CORE			'n	·	4 -		<del></del>			<del></del>	7
DEPTH POCK NAME	lo l	F SQ &	~	8			INVATION OF CORE		W	ATE	₹ TA	BLE		~		ОЕРТН	ELEVATION	1
DEPTH CK NA	2	CASING	COLOR	VEATHER ING	HARD. NESS	CORE	DESCRIPTION			100		ESSUI	111			, g	LFV	-
8	10 - 100		O	3	ì	.o3			LE	AKA	GE (	)F DR	_	ig wa	ER			-
Om	0 → 100	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	<b>_</b>				00 00 0 1 1-	<u> </u>	т.				Т	-	<del></del>	do Om	<del></del>	4
OB		11	<u> </u>				0.0 ~ 0.5m Overburden.					-+	+	_	+			- }
1 3 6	• •		pra		5	5	0.5~20.0m:	l		ĺ						=1		1
- 1 1 13 · S	•		•	5			Fine to medium graine	a				\			1			-{
2 1 pu	• •		Å		4	4	SANDSTONE.									2		
3 3	•	<u> </u>			5		Calcareous to non		Ī	- }						1		
3-4		3   [					calcareous.	: 1								3		1
]	$\Delta$	3			_	4	0.5~9.0m		İ				-{			Ē	1.	1
4-3		3	d Xb	5	4 5	5	Decomposed.									-4		1
		3)	٣		7	3	Almost fragmental core	s.		İ			١	1.		5		١
0 6		4	_		_		Rock fragments broken	,					ļ	ı	l	F. 3	+1 :	
Wrhd S·S			D.C	5	5 5	4	by hands.		Ì							E-6		Ì
6 <del>-</del> P4 <del>-</del> N			pale		4		10.6 ~11.65m	l		٠.						E .		
		11					Highly to mederately w	thd.								- 7		1
7-	XIIII	1					Sheared and clayey		ı	N	0	1	·e	s	t	E.		Ì
8						_	at 11.0 ~11.3m.	]		'	٦	1	٦	٦	1	8		
S.S S.S		11	brn	5	5	4		Į	ĺ	. [						Ē.		
ه ≩و			pale	Ľ	4		Core loss at 2.7 ~	.								9		٠
1		]					3.65m, 4.5~5.05m, 6.5 7.9m and 9.0~10.6m.	,3~	Į	l						<b>E</b>	:	
10-	$X \parallel \parallel \parallel \parallel$						1. 5/11 (1/4 5.5	]					ľ			E- 10		-
4 4		3			_ i			1						-   -				ļ
1-		3	pale bra	4	5	3~4 5							- }			<u>-</u> 1		
1 1 11		1	ğ n	3		4~5		- 1	. [							E .	٠.	
DSTONE	•						11.65 ~ 20.0m								-	2		
and an asset of the second	• •	1	gry		3	1	Cracky, but cracks			Ą	Λ.		_ {				- N	
3-B SAN	• ]	2	ľ			4	no stainea.			G	L-,	2.7	,			E-3		
-		∏ V V Si	-		4	$\vdash \vdash$	Sheared at 13.3 ~ 13.65m , 14.0 ~ 14.1m	}								<u>.</u>		
4 0		O O	>-		_		and 17.7~18.0m.	. ]								E.	1	
Š	• •	11 1	979	'	3	4						[	}			E		1
5	概数トフ	<b>1</b>			:		Core loss at 13.65~	.								TILL 3		
	KMI X	<b>H</b>	]				14.0m, 15.0~16.45m, 16.8~17.0m and i8.2~	. }					- }			E 6		1
6.7		1 1					19.5m.	]										-
7		<b>}</b>			3	3~4	$  x  _{L^{2}(\mathbb{R}^{n})} \leq e^{-c}$					]	- {			7	] .	
	·:-	1	ح		3											- 1		
8.8 S.S	<b>Ā</b> Ā]]]]]	Ĕ Ì	gry	1	4	4							Ì			8		
	機関トフ	<b>1</b>								ļ						F		
9-1	WWIX	1 18					• •	Ì								-9		
-		#			3	4	. *		- (	ļ			Į					-
E 05	. Thinki	4	L	L <u>'</u> _	4	5.1	▶ driller's note ¶					ᆜ	. !		٠	£ 20	<u> </u>	ز_
		3		Ī	Ī	] (5	tick), 2 (substick), 3 (piece), 4 (fragment), 5	5 grain							· .			
	in ki	core loss			110	hard) -	- 5 (soit)			٠.			٠.		4 · * *			
	<u> </u>	— вор		1 (1	resh)	~ 5 (de	composed)							: -				

		NC	Da	m ri	ght b	PRC ank	JEC	:T	Nam DEI	Mae Ngao No.2 HOLE N	o. O	DR m	- 2 CC	MMC	ENC	ED -	3 -Mar	~ <sup>'86</sup>
		ION NATE		967. 393	223.E 208. 792.	138 138 266	N N	Ī		PTH OF OVERBURDEN <u>0</u> NGTH OF ROCK DRILLING <u>34</u>				SILLE			19 -Mar Samar	
			1 HORI				00:	-		TAL LENGTH OF CORE 16				GGE			K. Ishik	awa
BEA	RIN	G OF	ANGL	E HO	OLE			-	co	RE RECOVERY 46	.7_	%		-	·		·	· · · · · · · · · · · · · · · · · · ·
ОЕРТН	ROCK NAME	106		CEMENTA-	KIND OF BIT CASING	COLOR	WEATHER		CORE CUTTING	RVATION OF CORE DESCRIPTION	w	ATER		LE SSURE F DRILI		VATER	ревтн	ELFVATION
2 Om			0 <b>→</b> 100				>		Ť					UGEO			40 20m	m ¥
117	S					grey	1	4	4	20.0~35.0m: Fine to medium grained							1	
2-1	·			ASING		Ď.			4~3	SANDSTONE. None colcareous.							ا ا	
3		X		3					3	Generally sheared and cracky.						-	3	
4	S.S	<b>A</b>				grey	ı	3	3 <sub>~ 4</sub>	20.0~22.0m Almost cuttings.					:		4	
2	s·s	A A · ·				grey	1	4	3 1	22.0~25.5m Sheared at 22.0~22.25m, 23.0~23.7m, 24.3~24.4m and 24.65~25.5m,							20 6	
7-1		X						-		Sheared plane 80° 25.5~28.45m		N	0	1	e s	t	7	
8			<u> </u>					3	4	Cracky and fragmental cores.							8	
9							 	4	5 5 4	Slickenside in parts.  28.45~29.9m  Cuttings. Gravelly cores						<b>!</b>	mapanta S	
30-					Tricone	Λé		3	4	in ports. 29.9∼30.7m							30 1	
2	TON	<b>i</b> i			¥¥.	grey	-	3	4	Fragmental cores.  30.7~31.3m  Cuittings, Drilled by tricone l	o t.						2	
3	SAND			7	ne Bit					31.3 ~31.7m Fragmental cores Sheared at 31.7m.							3	
4					Trico					31.7~35.0m  Obtained only cuttings.  Drilled by tricone bit.							4	
35				-	<u> </u>						-						35	
6																	-6 7	•
8-								:									8	
9					-												9	
0 =	core loss					L`				h driller's note 4  tick), 2 (substick), 3 (piece), 4 (fragment), 5 grain	1	<b></b>	ليسبيا	<u> </u>		<u></u>		A
	L RQD						1 (tresh) ~ 5 (decomposed)											

Nam Yuam				Mae Ngao No.2 HOLE N	O, DR - 3 (SHEET I OF 3 )
LOCATION Dam right				PTH OF HOLE 55	O_m COMMENCED_I2_Feb_'86
ELEVATION 180	), 65 11 193 N	<u>m</u> .			7 m COMPLETED 22 Feb - 86
COORDINATE 1.967.05					3 m DRILLED BY Samana
ANGLE FROM HORIZONTAL	90			TAL LENGTH OF CORE 52	
BEARING OF ANGLE HOLE				RE RECOVERY 95 RVATION OF CORE	
NAME O G G G G G G G G G G G G G G G G G G	2 . (%			RVATION OF CORE	WATER TABLE 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
DERTH COCK NAME LOG LOG LOG STION KIND OF BIT	COLOR	HARD- NESS	CORE	DESCRIPTION	WATER PRESSURE TEST
Ι Ια Ι1 -	<u>, o s</u>	<u> </u>	65		LEARAGE OF DRILLING WATER
0m 0 → 100					LUGEON 40 Om
			٠. ا	0.0 ~1.7m : Overburden.	
1-1 o A				Silty clay.	
	5 -				
2-1 00 · · · · · · · · · · · · · · · · · ·	ž		<u>3~4</u>	1.7~20.0m:	2
	<sup>2</sup> 5	5	4	Medium grained SANDSTONE.	
3 With d			5	Non calcareous.	-
Wind Wind Ca Sin N G	<del> </del>	+		3 C - 3 5m	
] 4-]  X     N  3				1.6 ~ 3.5m Decomposed	
1 100	u 4		4 3	Rock fragments crushed	
S:S			~4	by finger pressure.	No test 5
1 1	8 3 9 3		4	3.5~4.4m	
				Core loss. 4.4~5.9m	
			3	Weathered . Cracks	
77 6				stained.	
ANDS TON	2 2	, 3	2	Rock fragments broken	
SANDSTONE SANDSTONE	grey		_	by hands	
			3	5.9~10.0m	
		4	4	Cracks stained up to 6.8m	
10		4	5	Dips of cracks are	
				10 ~ 30°, 60 ~70°.	
				Somewhat sheared at	
		3	3	9.1~10.0m.	Lu=3.8 E
2				10.0 ~11.5m Core loss.	
			2		
3			İ	11.5~20.0m	
		2	3	Generally fresh and	
4-1   • •		1 }	2	hard.	
			Ť	Dips of cracks are	
5 U		4	ļ	10~30° and 60°.	111111111111111111111111111111111111111
SANDS TONE	2			Cracks no stained.	
ST	grey			Many calcite veinlets are found,	
SANDSTON SANDSTON			2	WIE IVERTO	Lu' = 0.2
1 3 5 1		2	Į	Cores of	(Pmax=3.89kg/cm²)
				15.0~15.5m are soft	8
8				and crushed by hands.	
		3	3		
20		لبا		:	1
以以	•	<b>†</b>	1	b driller's note 4	
core loss		10	-	lick), 2 (substick), 3 (piece), 4 (fragment), 5 grain 5 (soft)	The state of the s
ROD	΄,			composed)	

# GEOLOGIC LOG OF DRILL HOLE PROJECT Nam Mae Ngao No.2 HOLE No. DR - 3 (SHEET 2 OF 3

	-		Nam	Yuc	ım	PRO	JE(	T	-		0. DR = 3 (SHEET 2 OF 3 )
	LOC				m right l			• • •	DE		O m COMMENCED 12 Feb 186
	ELE	VAT	ION		180. 967.051.	65. 193	-N.T	<u>.</u>	DE	PTH OF OVERBURDEN	7 m COMPLETED 22 Feb - 186
	COC	RDI	NATE		393, 227	917	E_	_			
					IZONTAL	-		٠.,			.6 m LOGGED BY K.Ishikawa
r	BCA		G Or	ANGL	E HOLE			<del>-</del>		RE RECOVERY 95  RVATION OF CORE	<u>.6 %</u>
-	I	OCK NAME	ی		A ZO D		<u>e</u>			RVATION OF CORE	WATER TABLE WATER PRESSURE TEST
ı	ОЕРТН	ž	2		CEMENTA TION KIND OF BIT CASING	970	WEATHER	SÄ	ORE ₹	DESCRIPTION	WATER PRESSURE TEST
-		8	ļ		0 250	0	<u>}</u>	Ì.	03	· · · · · · · · · · · · · · · · · · ·	LEAKAGE OF DRILLING WATER
	20m			0 <b>⇒ 100</b> ภษาเป็		<u> -</u>					LUGEON 40 20m m
	-1		1.5	<b>X</b>		1		2	2	20.0~40.0m	
1	1		• <del>[ ]</del>	<b>/////////////////////////////////////</b>	1 10				3	Medium grained	
1	فاستطساسة		1	雅		· ·				SANDSTONE.	Lu'=0. 1     <u>E</u>
Ì	2	. A			erra e e				4	Calcareous.	(Pmax=4.89kg/cm²) = 2
]	3		-					3	2	Fresh, but somewhat	
l	3-		7			Į			3	brittle.	
	بطيب		.)						Ť	Many calcite veinlets	
	4 -								2	are found.	
1			ŀΉ	HHH				-	-	Dips of cracks are	
	5-1							2	,	generally 30° and 60~	
	dan.		$ \cdot $			İ			Ŀ	80°	
-	6		./-						-	and the second of the second	
1			一)						2	Sheared and clayey at 21.1m,	(Pmox=5.83 kg/cm²) -7
1	/1									21.6~22.0m, 22.1~22.3m, 33.95m, 34.25m, 36.1m	
-	, 1	1							3	and 39.85~40.25m.	
1	۰		$ \cdot $					١.	-		
ı	1		.Д				١,		2	Dips of shear planes	
	, 1		门门			Ì . :				are 70~80° at 34.25m, 60° at 33.95m, 30° at	
	30-	E Z	$ \cdot $			grey			3	36.1m.	30
	, , , , , , , , , , , , , , , , , , ,	STONE	5			"		3	2		
	1-4	SON	1	##III		ļ			Ļ		
1	19	SAN	$ \cdot $						3	Interbedded with SHALE	Lu =0.3     E
1	2		(			ļ			L.,	ot 32.6 ~32.7m.	(Pmbx=6.9\$kg/cm²) =-2
	الالتلا		D	1141III					2	Dip of bedding is 45°.	
- [	3	sna	45°	123IIII		}.			3	orb or bedomy to to.	
1	بالب	9.10	[·)	11X					2	Calcite vug at 39.75m.	
1	بالمغيانيية	Calcareb	~ 🐴	<b>113</b> 1111		ľ	1		3		
1	-	U	·(-	<b>77</b> 1					ľ		
1	5-1	, ,	$ \cdot $			1			-		
	1								2	•	
	6-		_~	111		1			1		
l	The second		1.7					L	3		Lu' =0.
	7-								2		(Pmpx=7.85kg/cm²) 7
	7	. :	ŀH			l			3		
	8-1		A	ИШ		:		2			
			:汨	<b>1111</b>	Ì			-	2		
	9-		I.∖∐						3		
Į	40	L		<b>XX</b>				4	4		1
							İ	1	1	b driller's note 4	
			:{		_ core loss			1,0		tick), 2 (substick), 3 (piece), 4 (fragment), 5 grain - 5 (soft)	•
				t	- RG0		1 (			composed)	

Charles Tire States and Control							Mae Ngao No.2 HOLE N				
LOCATION		ım right l 180.				DEI	PTH OF HOLE 55	O_m COMME	NCED.	22 -Fe	<u>0 – 86 –</u> h – 86
ELEVATION COORDINATE						DEI	PTH OF OVERBURDEN LING 53	Z.m. COMPL	EIEU	Samo	ina
ANGLE FROM							TAL LENGTH OF CORE 52				ikawa
BEARING OF					-		RE RECOVERY 95				
	r	1					RVATION OF CORE				Į.
NAME O C		CEMENTA TION KIND OF BIT CASING	ūξ	E S				WATER YABLE -	,	ОЕРТН	ELEVATION
DEPTH POCK NAM		XIND KIND BIT CAS	COLOR	WEATHER-ING	HARD- NESS	CUTTING	DESCRIPTION	WATER PRESSURE 1	tin til til samme		E.F.
<del></del>	0 +100	0		3	Ι	05		LEAKAGE OF DRILLI LUGEON	NG WATER	1	m
40m	สหหาก็			}	4		400 SE 0			40 40m	
-   [.5-					3	4	40.0 ~ 55.0m Medium to coarse grained			TT-1	
'-   ' (	HHHI	·				3	SANDSTONE.			E 1	
						2	Calcareous.	Lu'=1.8		F	
2 .						2	Fresh and hard.	(Pmax=8.8	≥kg (cm²)	2	
-     -   -   -					ļi		Generally good rock.			Ē	
3-						3				E-3	
		1		Ì			Many calcite veinlets.			E ,	+ *
Calcareous SANDSTONE		1					Dips of cracks are			1	
							generally 30° and 60°				
°										Ě	
			)	}			Sheared at 40.0 ~		1 1 1	E 6	
"]   ;-			grey	,	2	2	40.25m.	Lu'=0.0			
			5					(Pmpx=9.9	Ska (cm²)	Ę,	
<u>                                   </u>	MM		1				Cracky at 40.25~40.65m			<b>F</b>	].
8-10 NO 1-8							and 54.8~55.0m. Some cracks filled with clay.			E-8	
	HHH						ordens rinks min etaj.			E	
SAND	MAH									E <sub>9</sub>	
S S										Ē-	
50-						1				50	
Calcareous						١				E	
14 8.2										<u></u> 1	
클립:)-	y Aki							Lu FO.2	{		
2-4 0 5								(Pmax= 0.8	B kg/cm²	) 2	
	HHH									F	
3 4				1	:	2				E-3	
-   .≔										Ē	
										<b>E</b> 4	
		]		1						F.,	
55	<b>1111111</b>		<u> </u>		3	4				55	
1		1								E	[ .
8-7										E.	]
										E-7	
'4										E	
										E <sub>8</sub>	
ا											
31										Ę.,	1 : 1
7 1										<b>F</b> .	
0	<u> </u>					لــا				F 0	لــــا
						<b>†</b>	> driffer's note 4  lick), 2 (substick), 3 (piece), 4 (fragment), 5 grain	-, 's			
	Care lass						-5 (soft)				
	RQO						composed)			٠	

		Nam	Yuc	ım	PRO	JE(	or,	Nam	Mae Ngao No.2 HOLE N	
LOC	OCATION Dom right bon							DE	TH OF HOLE 90	O m COMMENCED 12 - Jon - '86
ELE	VAT	ION		161.	05	o Ki	Ţ	DE	TH OF OVERBURDEN	5 m COMPLETED 12-Feb-86
coo	RDII	VATE		1. 967. 131 393.520	21	7 E	-		NGTH OF ROCK DRILLING 88	the state of the s
				ZONTAL	_9	0	-			8 m LOGGED BY K. Ishikawa
BEA	RING	G OF	ANGL	E HOLE			-			6_%
	λ. 2	ن		NTA. ON OF		· œ	- 1		RVATION OF CORE	WATER TABLE
DEPT H	POCK NAME	ò		CEMENTA TION KIND OF BIT CASING	COLOR	WEATHER -ING	HARD. NESS	CUTTING	DESCRIPTION	WATER TABLE WATER PRESSURE TEST
	Š.			Ω. <u>×</u> αΩ	.8	¥. E.	¥_	85	·	LEAKAGE OF DRILLING WATER
0m			0 ⇒100							LUGEON 40 Om m
		0					· · ·		0.0~1.5m: Terrace Deposit.	
1-1	<u>j</u>	o							Consits of rounded gravel	G.4-0.5m E
']		O							of 0,5×10cm in diameter. Gr, S·S. Chert and Ls.	G.L - 0.5m
2						3		3	1.5 ~20.0m:	
"						2	3	4	Alternating beds of	
		/					ł	3	SHALE and SANDSTONE.	3
3-4	H.	/600		[	black		<b> </b>	2	SHALE predominant.	
	ഗ	/60°			۵				Thickness of SANDSTONE	4
4-]							İ	3	beds are l∼lO <sup>my</sup> m in general.	
[		• •						1	m general.	
5-		<del>                                     </del>	1111111						Generally SANDSTONE	No test 5
وساسساس	S.S	1.7			أج				is calcareous.	
6-3	Sefe	-(-1			grey		ĺ	3	Dips of bedding planes	
1	8	口	KWIII						are approximately 60°	
8								2		
1			94HII					3	Fissility along bedding	
8		•••		2			:	2	planes are not	
9,4			<b>Ж11111</b>	SI				3	remarkable.	
9-7				V C V				4	Cracks stained up to	
=	) LE				black	,	2	3	2.2m.	1
	SHALE			·	ā		-	2		10
			WW	.				3	Deeper than 2.7m,	
				] ]				2	fresh and hard	Lu'=0.2
2-		••	HHH					3	good rock.	(Pmax=3.41kg/cm²)2
2-								-	Thick bed of calcareous.	
1 1		•	MMI	] ]	-				SANDSTONE at 5.15~	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
3-	SS		HHH I		gre		ļ	2	6.7m and 12.7~13.3m.	
=	·			<u> </u>				3		
1 4-3				j				Ť		
=		• •		[				1		
5-	:							2		<u> </u>
4		• •		1						
6					ا ا	l		2		
8 2 2 14 14 14 14 14 14 14 14 14 14 14 14 14	ĹĒ				black			1	Somewhat sheared	
7-4	SHALE			}	֝֡֝֞֞֞֞֞֞֞֞֞֞֞֞֞֞֞֞֞		1	<b> </b>	at 19.2m. Cracks (45°)	(Pmax=3.4) kg/cm <sup>2</sup> )
4	٠,			1				а	filled with clay.	
8-			WH	1				ű		
=				<u> </u>				<u> </u>		
9-4								3		
_ =								2		
[ <u>20 ]</u>							1	4	driller's note 4	4 L L L J-whent E-fixel
								1 (1	tick), 2 (substick), 3 (piece), 4 (fragment), 5 grain	
		17	ያ ለ <u>የ</u> ኒ	- care loss		ļ			~ 5 (soft)	
	RQO						(resh)	~ 5 (d	composed)	

Nam	بيستنيب فللمورث والمتال أعطوه كالمناط عيبي					Mae Ngao No.2 HOL	-		-4 (SHEE	τ 2 ο	F 5 )	r Tagʻillar
LOCATION	Dam right					PTH OF HOLE		<u>. O</u> m	COMMI	NCED	13 - Jai	<u>1 86 _ r</u>
ELEVATIONCOORDINATE _	1.967.13	05	2 N	<u>n</u>		PTH OF OVERBURDEN		.5 m			Phoc	b - 86 lung
ANGLE FROM I						NGTH OF ROCK DRILLING TAL LENGTH OF CORE		.5 m	DRILLE LOGGE	7 · 7 · · · ·		hikawa
BEARING OF A				-		RE RECOVERY		.6 %	COGGL	U U i		
	1022	7				RVATION OF CORE					T	z
DEPTH SOCK NAME LOG	A NO A	2 0	Ē,	Ţ					1. 2. 16. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	₩	H1430	ELEVATION
DEPTH SCK NAM LOG	CEMENT TION KIND OF BIT	COLOR	WEATHER-	HARD. NESS	CORE	DESCRIPTION		1	ER PRESSURE			# CF
	•100	+-	₹	-	05		 	LEAK	AGE OF DRILL			m
20m	ranni			-		20.0~41.9m:		1	TTT		40 20m	<del>-</del>
						Alternating beds of SHA	ALE.					
						and SANDSTONE.			Lu = 0.3			
			'			SHALE prodominant.		.	(Pmox=4.4	kg/cm <sup>2</sup> )	: E	
2						Thickness of SANDSTO	NE				E 2	
					2	beds are 1∼5m/m						
3 ш					2	in general.					E-3	•
SHALE		¥		2		Generally , SANDSTONE						
4-   °   -		black	'	-		is calcareous.					<b>E</b> *	
3 HALE				1				\		1 1 1	E_5	
5-					3	Fresh and hard,					E	
					~ 4	good rock.				$\{\ \}$	E 6	
			1	<u> </u>	-3.				Lu = 0.8			
SHALE					4				(Pmox=5.3	9 kg cm <sup>4</sup> l	) <u>[</u> 7	
SHALE				١.	}—				1 1		<u> </u>	1
		출	1	2	,						E 8	
					3		•				E	
			<del> </del>	<del> </del> -	<del> </del>	Thick bed of calcareou			1 1 1		E-9	
		-	+			SANDSTONE at 30.3					Ē	
30-3 H		충	1		3	31.0m.			<del></del>		- 30	1
1 - 1 of the			-{		2						Ē	
1 3 6 1		gry	_								- E	
					3	•			Lu = 0.3		E	
2-				ļ					(Pmax=6.3	/kg/cm	2	
					2						F	
3-4											<b>E</b> -3	
			1	2	2	Clayey at 34.6m.						<b>]</b> :
4		Dlack		-	L		•				Ē	
4 - 1		ă					•			1 1 5		<b>∖</b> .
5-3 8	<del>/ </del>					Thick bed of calcareo	us	十	+++	1	<u></u> 5	
					3	SANDSTONE at 37.7 ~						
						39.7m.	ν				F 6	
									Lu = 0. 9			
<b>│</b>					4				(Pmax=7.3	5kg/cm	≀ <b>E</b> 7	
<u>                                   </u>		-	+		<u> </u>	Many slicken sides					E,	• • • [
8 8 5 5		gry			3	at 39.0 ~ 40.0m.					E 8	
<del>      /  </del>		-	-	3	4	Sheared at 39.5 ~39.85	m					1 - 1
9 = =				2							E a	
40 \$ \$ ~		م		3 2	3						E 40	
M	Ŋ		1	1	1	> driffer's note ◀		1				
Ø	core loss			1		tick), 2 (substick), 3 (piece), 4 (fragment),	5 grain			11		
•	RQD		10		,	~ 5 (sofi) :composed)	-		•	2		
					-							

# GEOLOGIC LOG OF DRILL HOLE PROJECT Nam Mae Ngao No.2 HOLE No. DR-4 (SHEET 3 OF 5

		Mae Ngao No.2 HOLE N	10. DR-4 (SHEET 3 OF 5 )	log.
LOCATION Dam right		· · · · · · · · · · · · · · · · · · ·	O m COMMENCED 13 Jan - 5 m COMPLETED 12 Feb -	86 80
ELEVATION 161 COORDINATE 393,520	. <u>05 m</u> DE . 422 N . 317 F	PTH OF OVERBURDEN <u>1</u> NGTH OF ROCK DRILLING <u>88</u>		
		TAL LENGTH OF CORE 87	«« O(«EEEEO O (	
BEARING OF ANGLE HOLE		The state of the s	.6 %	·
W   4 14	OBS	ERVATION OF CORE	WATER TABLE	ž
DEPTH CEMENTAL TION KIND OF BIT	OR OR OR CONTROL OR CO	DESCRIPTION	WATER TABLE	ELEVATION
A A A A A A A A A A A A A A A A A A A	COLOR WEATHER -ING HARD- NESS CORE	DESCRIPTION	LEAKAGE OF DRILLING WATER	3
40m 0 ⇒ 100			LUGEON 40 40m	. m
	3	٠.		
SHALE	x 3 4	410.000	Lu'=1.0	
SHAL	3 4	41.9~60.0m: Alternating beds of	[Lu'=1.0   ]   #	
2 )	4	SHALE and SANDSTONE.	(Priax=8.35 kg/cm²) = 2	- [
1 - 1 : - 1		SANDSTONE predominant.	= 3 = 3	
3-	3	SANDSTONE is medium		
		grained and calcareous		
<sup>4</sup>		Fresh and hard,		1
	4	good rock.	5	<b>1</b>
SANDSTON E	3	Dips of bedding		].
SAN ()	2 2 3	planes are 60°.		ŀ
	p = ==			
7-4 8		Calcite veinlets	No Test = 7	
7-10 00 00 00 00 00 00 00 00 00 00 00 00 0		in parts.	1	1
8 3 8 .	3			
Calcareous SANDSTONE		·		1
9-1 .	1 2			
50		,	50	l
<del>3   </del>	4			
1-1 E	를 ,			ļ
3 -4 1 301111111111	3		Lui O.9	1
2 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	$\frac{1}{3}$		(Pmox=10.32 kg/cm²) = 2	-
3 S S	\$\frac{3}{4}	1		- 1
3-1-1-1		<u>.</u>		
	× 4	Core loss at 59.0		- [
1 5 60°	3	~ 59.5m.		
5 7 7		Somewhat sheared at	5	
,	2	59,75~60.25m. Slicken-		
6-1 S )	8   "	side are found.		
			Lu 10.4	1
7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	<u>×</u> 4		(Pmox=11.35kg/cm²)	
# # # # # # # # # # # # # # # # # # #			8	
8 s s s s s s s s s s s s s s s s s s s	È 3			]
9 0 1				
				1
60 15.5	1 3 3	h dellare note d	E60	
	ŢŢ <sup>†</sup> ,,	b driffer's note 4 stick) 2 (substick), 3 (piece), 4 (fragment), 5 grain	n	
Core loss	•	~ 5 (soft)		
L Rgo	I (Iresh) ~ 5 (c	ecomposed)	•	

	Nam Yu	lam	PRO	)JE	CT		Mae Ngao No.2 HOLE N					
LOCATIO	ON D	am right			_		TH OF HOLE		COMMENC	ED _13	_ Jai	<u>1 '86 -</u>
ELEVAT	ION	161.	05	- N	-		TH OF OVERBURDEN 1					
		1.967.131 393.520					NGTH OF ROCK DRILLING 88					ung
			_9	0	-		TAL LENGTH OF CORE 87.		LOGGED B	Υ	K, Ish	ikawa
BEARING	G OF ANG	LE HOLE			_		RE RECOVERY _97	.6_ %				
7TH NAME		<u>.</u>		·			RVATION OF CORE	WATE	RTABLE	\I		ELEVATION
DEPTH CK NAI	0	CEMENTA TION KIND OF BIT CASING	COLOR	EATHER-ING	ESS	32	DESCRIPTION	<b>(</b> )	R PRESSURE TEST	- F	ЭЕРТН	- K
SOCK DEP	٠.	원 출발장	ğ	A P	HARD. NESS	CORE	Descrit (10)		AGE OF DRILLING	1	6	3
60m	0 -100		-	-		-			LUGEON	40	60m	m w
	<u>A</u> <b>A</b>	Ì		-	3	4						
- T	• •		ă,			3	60,0~80.0m				<sup>-</sup> .	
1-1 8			۵				Alternating beds of				'	
-	7		<b> </b>			2	SHALE and SANDSTONE,		Lu 1.3			
5_ N	7		gry			3	SHALE GIR SANDSTONE,		(Pmax=)2.26kg	/cm²)	2	. ]:
1 1 S						2	SANDSTONE is medium					
3-	• • •					3	to coarse grained and				-3	
1 4						2	calcareous.				·	
ole S. S. SHALE	· · ·		×			3	SANDSTONE predominant				- 4	
H H S			춫				up to 73.55m.					
5-	· ;#				ļ	4	Dips of bedding planes		1 1 1		-5	
=	<b>/</b> 50°						are 45~60°				_	
6-	)-}			ĺ	:	3	Fresh and hard.		1.03 1.4		6.	
3.S	<b> </b>		grey			2	Good rock.		(Pmox=13.41 kg	/cm²)	-	
7 3 8 8	·(-		5			3	3000 10ck.				~7	
1 4 8	-Z-JJJ		1	1	2	4	÷ .	1 1			-	
8-						3					-8	8 1
1 4			}			2			1 1 1			
hALE	J	11	×			H					-9	
J HS			black			3		1			~	
70-3 "						$\lceil - \rceil$		$\vdash$	<del>                                      </del>		<del></del> 70	1
-=			ļ.									
1_			$\vdash$			2					-1	
1	· 1744								Lu = 1. 5		~	
2 1000 1000 1000 1000 1000 1000 1000 100	. : [M]]]		٥			3			(Pmax=14.41k	/cm²)	-2	
1,	· (		grey		[	4					-	. : .
3-1 5						3					-3	}
4	2		<u> </u>			2					-	. ]
4-	· · 1211	Ħ		.	1	3					- 4	[ ]
1 1		al l		[							<u>.                                    </u>	
5		AI .	×			2			╀═┼═┼═	<del>├─</del> ┤ <del>┈</del> ┥	- 5	
SHALE			black			3					_	
6-1 N		<b>  </b>	] "			3					- 6	
							•		Lu = 2.1		-	
7			-			2			(Pmax= 4.36 kg	/cm²)	<b>–</b> 7	
7 1 8.8		'	Ş	]		3				]	-	
8-						$reve{}$					- 8	
o mhunhun SHALE	Z45°HHH	H	×		]						<u> </u>	] }
տևան SHALE		A	black			<u> </u>		.   .			- 9	
3 45		ti i	٦			2					<u>.                                    </u>	} }
80		H	L,	L	<u> </u>	لبا				لللا	80	لـــا
		3		ŧ	1	1	► driller's note 4					***
		core loss			1.		tick), 2 (substick), 3 (piace), 4 (fragment), 5 grain - 5 (soft)			44.5		
		RQD		1			- 5 (sorr)		*	:		
		4n		•	-	• • •			3.4			

4.5	ON	Da	m right t	on k			DEI	Mae Ngao No.2 HOLE   9	0,0	m	CC	ММЕ	NC	ED -	13 _ Jar	_ '86 - '86
COORDI	NATE		1. 967 131 393,520	422	ă.			PTH OF OVERBURDEN NGTH OF ROCK DRILLINGB				MILLE			Phodu	ing
						-		TAL LENGTH OF CORE8				GGE				ikawa
								RE RECOVERY9								
# 3 M	J		7.A. OF G		( dž			RVATION OF CORE		WATE	R TABL	E -	V	<b></b> -	_   _	, oi
DEPTH ROCK NAME	۲٥		CEMENTA- TION KIND OF BIT CASING	COLOR	WEATHER-ING	HARD	CORE	DESCRIPTION	1		AGE OF	SURE I		VATER	DEPT	ELEVATION
80m	0	⊶100 ਯਗਜ਼					2		1	Ţ	L.	UGEON			40 8 Om	m ¥
HS			4 1 (	black			1	80.0~90.0m : Alternating beds of						-	ulumum.	
S:S				gry			2	SHALE and SANDSTONE.			L,U F	1. 3				. 1
2							3	SHALE predominant. Thickness of SANDSTONE beds are 1~30m/m.			ł I	x=16.4	2 kç	∕cm <sup>2</sup> )	F	
3-1			·				3 <sub>2</sub>	SANDSTONE is medium grained and calcareous.							11 3 Line 1 4	
oning of the standard of the	Z.			÷	1	2	3	Dips of bedding planes are 45~60.							5	
IALE				black				Fresh and hard. Good rock,							-6	
6 H S								Good Tock,			Lu	1.3			<u>н</u> .	
2-1								Sheared at 82.5 ~ 82.9m and 89.6 ~			(Pmo	x=17.4	l kg	/cm²)		
8 1						1.	3	89.8m. Dips of sheared planes							8	
9								are 60°. Slickensides are found.							9	
90-		Щ				_		·	$\downarrow$			_	.			·
			·		ļ								ļ			
2												Ì				
2															2	
4																
3.7															E-3	
4															E-4	
1																
5-3			1												E 5 ·	
6-1															£ 6	
"															<u></u>	
7 1															E-7	
1 1															E-8	
8.1																
9 0															1-9 1-9 1-0	
<u> </u>		шш И [	<del></del>		•	+	1	▶ driller's note ◀							<u>-</u>	
			– core lass					tick), 2 (substick), 3 (piece), 4 (fragment), 5 gra - 5 (solt)	iin							
		<u> </u>	- 800 - 800		1 (			composed)								

Nam	Yuam	PRO	JE	ĊT_	Nam	Mae Ngao No.2 HOLE I	No.	DL	<u>- j</u>	(\$	HEE	y	0	r 4 )	
LOCATION _	Dam left b		···	-			<u>0.0</u>		C	ŎΜ	ME	NÇ	ED	24_Fe	b '86 '96
ELEVATION	220. 1.967. 08: 393. 344	38 . 846	n			PTH OF OVERBURDEN					- 1	7		8 - Ma Kana	
COORDINATE ANGLE FROM H			<u> </u>	•		NGTH OF ROCK DRILLING _6: TAL LENGTH OF CORE6:				RILI OG(					hikowa
BEARING OF AN			<u> </u>				6.3			901			٠.		
	<del></del>	T				ERVATION OF CORE	Τ								z
DEPTH POCK NAME	CEMENTA TION KIND OF BIT CASING	œ	Ä.,				1 :		RTA	11.				) DEPTH	ELEVATION
DEPTH OCK NAM	KING SHT CAS	COLOR	/EATHER	HARD	CORE	DESCRIPTION	1	100	R PRI				5		ELF.
0m 0			3	-	9		<del>                                     </del>			LUGE	_			40 Om	- m
						0.0~1.5m;	Ť			T			7	-	
		r.q				Overburden.		1		.				F.	
11 0 Q		rđ				Clayey silt.	1_								
						1.5~20.0m :		1						E 2	
2 1					5	SANDSTONE.	.	1						<b>E</b>	
				ţ		Fine to medium grained.								-3	
						Non calcareous.								<b>E</b>	
4								-						4	
Weathered SANDSTONE				5	4	1.5 ~ 7.0m and 10.0 ~ 11.0m								E	.
5-1						Decomposed Soft.								Ē-5	
			\ 			Rock fragments crushed by finger pressure.	1								
6					-			١.						6	
		}			5	7.0~10.0m, 11.0~12.5m	1	1			İ				
7 - 1			5			Decomposed Soft.								E-7	
					4	Rock fragments can not be crushed by finger					-			Ē.	
8 8 9 9 9 9	ž is					pressure.	ĺ	.			es.			E-8	
ANDSTON	A S			4	3	12.5~18.9m		N	0		e	S	t	: E	
					4	Highly weathered.									
SAN		E G				Cracky.					•			E 10	
l "] _   .		1 '		5	5	Cracks stained, and								E	
Weathered		pale		<u> </u>	Ĺ.	rock itself stained.								<u>-</u> 1	}
ath.				4	4	Cores broken by hands.	1	1						E	]
2 8				5	5	0								2	
4   . #						Core loss at 16.75						,			
3					3	18.6m.								<u> </u>	
							1								
4-		]			]									E-4	
-     -			4	4	4			1.							
<b>1</b> □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □						18.9~20.0m						1		5	
						Cracks stained, but									
6-3     • •					3	rock itself fresh.									
<del>           </del>		-		<del> </del>	4	Piece to substicky	1							= 7	
						cores.						:			
8-144		e Pd o	4	4	3		_	h	1					-8	
* S S S S S S S S S S S S S S S S S S		eybd.			4			'	G.L	- 18	.0	n			
		F	4	4	4	· .								-9	
S:S		grey	2	.3	3									<b>E</b>	
20 =	Щ		ــــِــا	<u> </u>	<u> </u>	h delilate and a	4	_	1		-			= 20	<u> </u>
	<b>6</b>		1	•	]	▶ driller's note 4 tick), 2 (substick), 3 (piece), 4 (fragment), 6 grain	in .							: "	
· 1/3	N core loss		-	1,		- 5 (soli)									
Ł	RQO		1 (	(resh)	~ 5 (đ	ecomposed)									

Nam Yuam			Mae Ngao No.2 HOLE I	No.DL - 1 (SHEET 2 OF	4 ) 1 – Feb – '86
ELEVATION DOIN I			PTH OF OVERBURDEN		3 - Mar - '86
COORDINATE 1.967	. 083. 846 . 344. 150	N LE	NGTH OF ROCK DRILLING 68	the state of the s	Kanchana
ANGLE FROM HORIZON	4.5		TAL LENGTH OF CORE 6	7.4 m LOGGED BY	K. Ishikawa
BEARING OF ANGLE H	OLE	co	RE RECOVERY 96	<u>6.3</u> %	essi e
NAME O G ENTA.	<u>u</u> .a		RVATION OF CORE	WATER TABLE	ı Ş
DEPTH OCK NA LOG CEMENT	KIND OF BIT CASING	WEATHER -ING HARD. NESS CORE	DESCRIPTION	WATER PRESSURE TEST	DEPTH ELEVATION
PEF COEMI	≥≅0   8	A 1 8 9		LEAKAGE OF DRILLING WATER	
20m 0 → 100 %				LUGEON 1	20m *
		4	20.0~40.0m:		_
1-3		3 (	SANDSTONE.		-1
		'	Fine to medium grained.	Packer could	-
2-3	· · · } ].	3	Non calcareous.	not be set.	2
			20.0 ~30.5m	Water loss 581/min	
3	1 1		Cracks stained.		-3
SANDSTONE			Cracks 20~30°, 60~80°		
4 <del>1</del> 2 · W		2 3	Core loss at 28,45		-4
S	grey	2	~29.0m and 30.5 ~		
5-1	٥		30.75m.		-5
SANDSTONE SANDSTONE					-6
6 4		3 4		Packer could	6
		3		not be set.	7
				Worer loss 601/min	
8.1 8. 8.		2	•		8
° die die die die die die die die die die		4	30.75~40.0m		
			Cracks no stained.		9
- I σ		3 4	La protection		
30-30	grey	2 3 3	Fresh & hard.	<b></b>	- 30
			Cracks 30~60°		
			Sheared at		1
		3	36.55 ∼36.9m.	Packer could	
2				not be det.	E-2
			:	Water loss 601/min	
3 - 1		2 3			E,
		4			<b>E</b> _
13  · ·					E '
N N	2				5
SANDS TONE	grey	3			
O Z			:		6
° ¶ S				Lu'=9.	<u> </u>
7		4 4		(Pmox = 9.1 kg/cm²	7
		3	·		
8		.   :			8
		2 2			E- '
0-					E-9
		3			40
40 <u>                                     </u>		1 1 1	▶ driffer's nate ◀		<u>r</u>
		1 10	stick), 2 (substick), 3 (piece), 4 (fragment), 5 gra	sin ·	
IVA KIN core	loss	•	~ 5 (soft)		
L RQÓ		1 (fresh) - 5 (d	ecomposed)		

ELEVATION	220, 3 . 967, 983, . 393, 344,	nk 8 846 150	n		DE: DE: LE	PTH OF HOLE	10.DL-1 (SHEET 3 OF 4 )  1.0 m COMMENCED 24 Feb 86  1.5 m COMPLETED 8 Marchana  1.5 m DRILLED BY Kanchana  1.4 m LOGGED BY K.1shikawa
BEARING OF ANGL				§	СО	RE RECOVERY 90	
DEPTH ROCK NAME LOG	CEMENTA. TYON KIND OF BIT CASING	COCOR	WEATHER -ING	HARD. NESS	CORE CUTTING	RVATION OF CORE	WATER TABLE WATER PRESSURE TEST
40m 0 → 100							LUGEON 40 40m
SANDSTONE SANDST		grey grey	]	2	2 3 4 3 2 3 4 3 2 3 4	40.0 ~ 60.0 m :  SANDSTONE.  Fine to medium grained.  Fresh and hard.  Good rock.  Partially cracky.  Cracks 30~45°, 70~80?  Calcite veinlets at some parts.  Somewhat sheared at 45.3 ~ 45.6 m.  Core loss at 51.15 ~ 51.5 m and 53.9 ~ 54.2 m.	Lu = 2.8   CPmax =   12.04kg/cm²   Lu = 2.8   CPmax =   12.04kg/cm²   CPmax =   13.1 kg/cm²   CPmax
60	core loss		•		hard) -	▶ driller's note 4 tick), 2 (substick), 3 (piece), 4 (fraqment), 5 gra - 5 (soft) composed)	

Transport Statement Statem	Yuam Dam left t		Mae Ngao No.2 HOLE N	The second secon	
<b>ELEVATION</b>	220	0.38 m ne	PTH OF OVERBURDEN		8 -Mar - 86
COORDINATE	1.967.083 393.344	3. 846 N	NGTH OF ROCK DRILLING 68		Kanchana
ANGLE FROM	A HORIZONTAL		TAL LENGTH OF CORE 67		K. Ishikawa
	ANGLE HOLE		RE RECOVERY 96		*. * *. <u>* *.</u>
l w	1 d 1		ERVATION OF CORE	4.	₹.
DEPTH ROCK NAME	CEMENTA TION KIND OF BIT CASING	COLOR	: -	WATER TABLE	DEPTH
	XIN XIN CEM	COLOR WEATHER ING HARD. NESS CORE CUTTING	DESCRIPTION	WATER PRESSURE TEST LEAKAGE OF DRILLING WATER	96
	0 +100	<del>                                     </del>			0 60m
	<b>ซล</b> เกโป	<del> </del>	<del> </del>	<del>ໍ່າ                                    </del>	-
	<b>*************************************</b>	2	10.0 ~ 70.0m : SANDSTONE.		<u>-</u>
1   1	1411111		Fine to medium grained.	Lu = 0,2	E 1
	######################################	3	Non calcoreous.		Ē
2-				(Pmax=14.21kg/cm²)	2
			Fresh and hard.		Ē l
3			Good rock.		3
		2			Ē
4-4			Cracks 60~80.°		4
_ <b>∃</b>			Calcite veinlets at		
3 SANDSTONE	12/14/1		some parts.	<del></del>	5
S ST		\$ 1 2 3			<b>F</b>
6-1 C	2 <b>1</b>	5 3			6
m 8	<b>/</b>	2		Lu 2 2	<b>₽</b>  .
74		3		(Pmax=15.03kg/cm²)	7
4   [	ШШ	4 3	1		<b>F</b>
8=		$\frac{1}{1}$	1		8
					<u> </u>
9		2			9
			-		-
70				<del>                                     </del>	70
14   1					1
1 min 2 min					E-2
3.3					Е_3
1			-		
4					E-4
, 1		1 1 1			E-5
8-3					E 6
~ <u></u>					<u>.</u>
, ]					-7
					-8
°					
					- 0
					0
<u>*</u>	7 N	1 1 1	▶ driller's note ◀	· · · · · · · · · · · · · · · · · · ·	
			stick), 2 (substick), 3 (piece), 4 (fræqment), 5 grain	· · · · · · · · · · · · · · · · · · ·	
1/	core loss	•	~ 5 (*oft)	ı	
	RQD	1 (fresh) ~ 5 (c	ecomposed)		

diame			Yu						Mae Ngao No.2 HOLE	100								
LOC		ON :	Dar	n left bo 302					TH OF HOLE 9		) —		MOS	ME	NÇ ETE	ED	15 ~Fe	n_ '86 b - '86
		VATE	I.	967 051. 393, 227.			_	l FI	NGTH OF ROCK DRILLING 8	8.0	_ m ) m	'n	JRII I	F	) B	7	Kanci	iana
				ZONTAL		00			TAL LENGTH OF CORE 5									
BEA	RIN	G OF	ANGL	E HOLE					RE RECOVERY 5				. 4	ď.				
	ñ			¥ .				OBSI	RVATION OF CORE						مـــــــ ۸ د			ह
DEPTH	NAME	90		CEMENTA TION KIND OF BIT CASING	ĕ	H O	ESS.	ž.	DESCRIPTION			ER TA ER PR	ufer.	0.7		V	DEPTH	ELEVATION
2	SOCK SOCK	1		S SEQ	ខ្ល	WEATHER	HARD- NESS	CUTTING	DESCRIPTION		1	AGE	1.00			/ATE		ELE
Om			0 → 100				-			d			LÜĞE	ON			40 Om	φ.
			MIIIK						0.0~4.0m : Overburden	Ţ		T					in i	
1		Δ			ļ. i				Silty clay.	1				-			E,	
1 1																		
2	Overburden	Δ			ě.				and the second of the second			1		ं			E 2	
	ing	Δ			redx				\$ 1 P									
3	Ove			<b>i</b>	5					1		1						:
3-1		Δ					-			Į					1,		<u> </u>	
4-		ļ.,	HHH		<u> </u>	<u> </u>	<u> </u>			+	+	-		$\dashv$	-	-	4	
.   -		X		<b>!</b> [					4.0 ~ 5.0m : Core loss	Ţ	l						Ē.	
5-		$\swarrow$				_			COIR 1055.								5	
4				1					5.0 ~ 20.0m			-						
6-3						4 3	3	5 ~ 4	Mostly cuttings. Supposedly highly weathered		ľ						6	
1		j		1 1	1			, ·	SHALE. Siliceous.	1	1.		1 1					:
7 3			ШШ					İ	5.0~12.0m	-							[ '	
1 1				11					Cutting size 0.5~2 <sup>m</sup> /m.	١			1				8	
8-		i							Not crushed by finger nail.								E °	
9-		ii	$\mathcal{H}\mathcal{H}\mathcal{H}$	<u>ပ</u>				}	Gravelly cores of Qz vein					١.			<u> </u>	
l "T		11		Z S			[		ot 6.0∼6.4m. ø l~3cm.								<b>E</b>	
				5						1		-					: = 10	
"]		ij					•		12.0~20.0m	1	N	Ϊο	1 +	r e	S	t	. <u>E</u>	
1-3				}	l				Cutting size $0.5 \sim 4$ m/m.								. E-1	
4		ii.	WWW	} }	١.				Not crushed by finger nail.	1			1 1				<u> </u>	
2-				] [				l		l							<u>2</u>	
4		ij.		1 1	}		1		Gravelly cores of Qz vein	ĺ			1 1				<u>                                   </u>	
3.4	ш	!!	MM		br.				in local at 16.0∼17.0m, øl~5cm.	}							E-3	1 1
4	SHALE				2				F ) = QVIIII		•		] ]				Ė	
4	က်				bra 1				IE 0 040-								E-4	
=	Ď			1	i .				0514ad by NW agains								Ē	] 1
8 2 ակուդիուկո	Weathered	ļ		}	yelx				Drilled by NW casing shae.		-						E-5	
=	/eat			}													E.	
6-7	*	İ		]	}	4		5							"			
4				Shoe		3	3	4									E.	] : 4
7-3			WW	1 1							: }		1					
्रा				Casing													E a	
6.4			AHAR		) .		1											
			HHH	<u>6</u>						-							9	
"ill				Dri I led														
20			MM H	<u>ā</u>		L_	Ļ	لـــا				1,	لــــــــــــــــــــــــــــــــــــــ			لبنا	50	لــــا
			K, N			f	•	<b>أ</b> ل	b driller's note 4 tick), 2 (substick), 3 (piece), 4 (fragment), 5 gra	ir						: 1	4.	
		ŀ	网络	– car <del>e</del> lass			1		- 2 (soft) - 5 (soft)	eril .	•					zi		
			t	- ROO		1 (			composed)		. •			< 9				

	302.41 302.41 967.051.1937 393.227,917 IZONTAL 9	m DEPTH OF OVERBURDEN 4.0 m COMPLETE LENGTH OF ROCK DRILLING 88.0 m DRILLED BY	D 17-Jan-'86 D 15-Feb-'86 Kanchana
		OBSERVATION OF CORE	
DEPTH ROCK NAME LOG	CEMENTA TION KIND OF BIT CASING	WATER TABLE — WA	DEPTH ELEVATION
20m 0 → 100		LUGEON	40 20m m
Sweathers and supplied and supp	Drilled by Casing Shoe Pelx brn to brn	20.0~41.0m:  Mostly cutting, Supposedly highly weathered SHALE. Siliceous.  20.0~22.0m Cutting size 0.5~2m/m. Not crushed by finger noil. 22.0~23.0m Core loss. 23.0~27.0m Cutting size 0.5~2m/m. Flaky.  27.0~28.0m Gravelly cores in local. \$0.5~3cm. Siliceous. Whitish cldy at some parts. 28.0~33.0m Gravelly core in local. \$0.2~1cm  4 4 5 5 3 3.0~41.0m Fine to medium grained Sand size cuttings. Somewhat flaky. Particles are hard.	kuluuluuluuluuluuluuluuluuluuluuluuluulu
MINI E OA	g		40
TO T INNE	core loss	b driller's note 4  1 (stick), 2 (substick), 3 (piece), 4 (fragment), 5 grain  1 (hard) ~ 5 (solt)  1 (frash) ~ 5 (decomposed)	· ·

LÕÕ	ATK		n Yu Da		eft be		JEC	<u>:T</u>	DE	m Mae Ngao No.2 HOLE No. DL-2 (SHEET 3 OF 5 ) EPTH OF HOLE 92.0 m COMMENCED 17 Jon 1	
ELE	VAT	ION		067	302.		NO M	<u>)</u> .	DE	EPTH OF OVERBURDEN 4.0 m COMPLETED 15 - Feb -	86
COC	RDII	NATE	:	393	. 05 I. 1. 227.	917	E	-		ENGTH OF ROCK DRILLING 88.0 m DRILLED BY Konchan	1.0
ANG	LE	FRON	A HOR	ZON	TAL	9	0	•		OTAL LENGTH OF CORE 53.9 m LOGGED BY K. Ishika	Wd
BEA	RIN	G OF	ANGL	E H	OLE			- 2	CO	ORE RECOVERY 58.6 %	
	¥.			;st	L .				OBSI	SERVATION OF CORE WATER TABLE	ğ
DEPTH	POCK NAME	0		EN	KIND OF BIT CASING	6	WEATHER -!NG	583	E ING	DESCRIPTION WATER PRESSURE TEST	ELEVATION
ä	Š	٦		30	Z 2 2	COLOR	EAT	HARD.	CORE	DESCRIPTION WATER PRESSURE LEST	E.F.
-	α	<del>                                     </del>	0 → 100	<del> </del>			3	-	0	LUGEON	
40m		7,	ห้นเหน							i i i i i i i i i i i i i i i i i i i	- $+$
1 4		1//	RAM		1	١					
1-3		//		<b>Y</b> /							
				//	.					41.0~60.0m: Leakage of Limestone. Drilling Water	
2	S	Π	<b>}</b>		Ì	5	3	3	3		1
3	Ľ,		ИШШ			yelx				Interbedded with argillaceous band at some	·
1 3		<del>                                     </del>			1	8		'	i	parts.	: .}
3-7		X		<u>√.</u> 6							
1			TIIIIIII	Ϋ́E	. [	χ.			3		
4-	S	┟╌╢		l e		çış :	3	3	$\vdash$	Moderately weathered.	
1 4		$\Box$		5		yelx			4		
5-3	<b></b>							<del>                                     </del>		Crocky in general. Water loss 551 min = 5	
								-	3	Cracks stained, and	
6~3	တ	<u> </u>		4	1	gry	,	١,	-	some cracks filled with	
4	ű	╟╌┧				yek	3	3	4		- 1
7					ļ			—		Solution cracks at 42.75~43.0m	
'=		77,			- 1				4	Dip of bedding 45~60°	-
1 3	'			O.							, I
8-3				N I		Pr.	-			Most cracks olong	· l
		!-;		AS		i	5	5	5		
9-1						pale				Some cracks 20 30°	1
-				1	-						.
50-				H						Calcite vugs at	
-											7
1-3		$\Gamma$							4		
		世出							_	43.0m, 43.9m, 46.2m,	
2				1	İ					46.9m, 55.9m and 56.45m. Packer could	.
		<u>  </u>	<b>7</b>	1				3	3	not be set.	1
,	ω	厂计					İ		L	47.1~49.9m   Worter loss 601/min 3	
1 3	LIMESTON		3111111		1						1
] ]	ST	$\Box$	71111111				۱.,		4	Pale brn. sill size soil included fragments of	
1 4-3	∑	<u> </u>	ЩЩ		ļ	.	3	<u> </u>	-		· [
-	ڗ	W_				الح		2	2	0.5~3cm. Filling	
5-		(60)				gry.			<u> </u>	materials of cave	, [
-		<del>∐</del> -┰╊			1	×		:	_		
6-					ł	yelx			3	Cole 1033 Of	:
4	,	┟╌┸╏	KKKIII	l		1		3		43.0~43.45m, 44.9~   Packer dould	1
7-	1		XXIII							45.35m and 46.9 ~	
1 =		╟╌┰┠		1					2		1
8-		二								Water loss 551/min E 8	
[		╁╌┸	AAAAIII		Į		İ				· [
				H	ļ						in.
9 7		╙╌╢			ĺ		2	2	'		
60		[二]		H	1		•			60	
<u> </u>		<u> </u>	// N				1	1	1	▶ driller's note ◀	
		Į						1	10	(slick) 2 (substick) 3 (piece). 4 (fragment), 5 grain	
		1.	(4 )	- core	loss		Ì	., 10	hard) -	)~5(soft)	
			Ĺ	- eço			1 (1	iresh)	- 5 (đ	decomposed)	

		Non	ı∵Yü	am I					Mae Ngao No.2 HOLEN	0. DL = 2 (SHEET 4 OF 5 )
Loc	ATIO	NC	Do	m left b	nk				كالمستحدث والمستحدث والمستحدث والمستحدث والمستحدث والمستحدث والمستحدث والمستحدث والمستحدث والمستحدث والمستحدث	0 m COMMENCED 17 Jan 186
ELE	VAT	ON.		302. 967 051	41	N n	<u>1</u>	DE	TH OF OVERBURDEN 4	O m COMPLETED 15-Feb - 86
									NGTH OF ROCK DRILLING 88	
				ZONTAL E HOLE						9 m LOGGED BY K. Ishikawa
רבי		101	ANGL	E HOLE					RE RECOVERY 58 RVATION OF CORE	6_%
Ŧ	SOCK NAME	O		NO ON	œ	8			NATION OF GORE	WATER PRESSURE TEST
ОЕРТН	ŏ	LO.		CEMENTA TION KIND OF BIT CASING	COLOR	TA'S	ARD.	CORE	DESCRIPTION	WATER PRESSURE TEST
ļ	· · ·		0 - 100			3	<u> </u>	9.5		LEAKAGE OF DRILLING WATER USE OF DRILLING WA
60m			राममार्भे						60.0~80.0m:	
1						2	2		LIMESTONE. Interbedded with	
1-4					4			,	argillaceous bands.	
								'	yelx grey to grey.	
2-									And the second second	
	ш	凸								
3,1	2	μ					3	4	Thickness of argillaceous bands about 5~10 <sup>m</sup> /m.	
5 6 7	LIMESTONE	1			grey				dulles about 5'-10"ym.	
1	×							2	Dips of bedding plane	Packer could
5-4	<u>ب</u>			]	yelx	3			are 70 ~ 90°.	not be set.
1 1				·			2	]		Water loss \$51 min
6-			AMIII						Most cracks along	
1								3	bedding plane, 70 to 90°	
7-							3	2		
udu		<del> </del>	XXIII					3	Cracks stained	
8 =				<b>,</b>			$\vdash$	Ť	up to 90.5m.	
	÷	$\Gamma_{\Gamma}$					3	3 ~ 4		
9-	:	1	441111				4	4	Some cracks filled with brownish fine	
1		广						3	meterials.	70
70-	1	1	73				١	-		
1-7			######################################		l	[	3	2		] [ ]
1110					- :			. 3	Calcite vugs at 61.1m and 64.8m.	
2	:		焩		· ' .	_	<u> </u>	4		(Pmax= 17.76kg/cm²) = 2
] =			Ж		<u>چ</u>	3	2	2		
3.	. :	Нг			p		3	4	Core loss at	
					yelx		ĺ		68.0 ~ 68.4m.	
4-					~		2	2		
1	LL1						<u> </u>	$\vdash$		
5-	LIMESTONE	<b> </b>								5
9 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	ES	$\Box$	##III				3	3		
6-3	W I				İ					
	-	٢			(		2	2		Lu 4.3
7-		1								(Pmbx=22.08kg/cm²)
, ,	2				.					
8 7	1	<u>                                    </u>			ڇ					
9		世			grey	2	2	2		
	1	<del>                                     </del>								
80			THAN	<u> </u>		<u> </u>	Ļ.	نــاِ		
								.t.,	b driller's note 4 tick), 2 (substick), 3 (piece), 4 (freqment), 5 grain	; ,
	•		N 6/1	- Cole long			1,,		- 5 (soft)	
			<u> </u>	∽ RQD		1 (	tresh)	5 (d	ecomposed)	ear of the second of the secon

		Yuc				T.		Mae Ngao No.2 HOLE N				
LOCATION		Do	m left i						<u>O</u> m C	OMMENCED OMPLETED	15 -Fa	h - 86
COORDI			302 969 051 393, 227	ខ្លែន	<u> </u>	<u>.</u>		TH OF OVERBURDEN 4.	<u>0</u> m C	OMPLETED =	Konc	hana
ANGLE					0					OGGED BY _		
BEARIN					<u>~</u>			RE RECOVERY 58.				
								RVATION OF CORE			1	7
DEPTH ROCK NAME	0		CEMENTA TION KIND OF BIT CASING	οx	ů,	SS			WATER TAE		T T	ELEVATION
DEPTH DCK NAM	-		CEMENTA TION KIND OF BIT CASING	COLOR	WEATHER	HARD. NESS	CORE	DESCRIPTION	14 d ( ) w	SSURE TEST F DRILLING WATER	5	919
<b> </b>		<b>→</b> 100	<del>-</del>		3	<u> </u>	~ 5				40 80m	
80m	-	กหหา้						77.0 ~ 89.0m :		1111	Ë	<del> </del>
4						,	2	LIMESTONE.				
1-4		14411					4	Interbedded with	Lu		<b>E</b> '	
=		#IIII	·			2,		argillaceous band.		0x=22,04kg/cm²)	E 2	
2 3	╙┷И	<b>/</b>					2	Cracks stained.			E	
		ЯШІ						Most cracks 70~90.°			Ē.3	
3-3		<b>)</b>		ļ		3	3		<sub>1</sub> ,		Ē	
		<b>/</b>				-	2	Generally rock itself fresh, and hard.			Ë <sub>4</sub>	
	$H \rightarrow H$	<b>1</b>	  -		2		3				E	
5 -	F - H	ШШ		grey	-		Ľ	Good rock.			₽5	
Y H		##III					2	Core loss at 89.0				
1 4 2 2			٠.				3	~90.5m.	Packer		<b>E</b> 6	
2 2 2 2 3 4 4 5 7 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8						2		90.5~92.0m :		e spt.		
7-4 -							2	SANDSTONE.	1 1 1	loss 52L/min	7	
-			ļ	,			-	Fine to medium grained.		of cosing)	-	
8 1							3	Calcareous.	5i Om	or cosing)	- 8	
1	-						2	Somewhat argillaceous.			The second	
9 -					<del>                                     </del>	-	3	No stained.	-17 Y Y	L 89.0m	E 9	
1	IXII						ļ	Somewhat sheared.			E 90	
90-	M						L	Clayey at 90.7 ~	Pocker			1
	3.							90.9m.	not be	set. loss 501/min	<u></u>	
17m1	口				1	3	4			of casing	E	
92	:\d					<u> </u>	<u> </u>		\51.0m			1
								,			<u></u>	,
3_							ļ				<b>E</b> -3	· .
l di												1
4-4							} :				E-4	
1											F	
5				·				·			F 5	
ग्ना												F
6 m											F 8	
1						2					E.	
7-1												
			}								E R	
8-1							1					
mi			}	ł							E 0	
			ļ								-	
<u> </u>				L	<u>L_</u>	Ļ.	ــــــــــــــــــــــــــــــــــــــ				<u> </u>	
	E	R. R			1	1	<b>†</b>	b driller's note 4			1	
	. !	3 1 <u>7</u>	- core loss			Ι,,		tick), 2 (substick), 3 (piece), 4 (fragment), 5 grain. 5 (soft)		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	1	
			- пор		10			composed)	1	1		
								•				•

Upper Mae Yuam 1

#### per Mae Yuam 1

Nam Yu		in the state of the		-	-	r Mae Yuam No.1HOL			OMMENCED		
								. <u>7</u> m C	OMPLETED	30 -Jui	- '86
COORDINATE						NGTH OF ROCK DRILLING			RILLED BY		
					TO	TAL LENGTH OF CORE	26.	.6 m L0	GGED BY		
								2 %			
( <del></del>	Ta . T				OBSE	RVATION OF CORE					ž
DEPTH OCK NAME	CEMENTA TION KIND OF BIT CASING	8	HE E	:58	ψ. Z			WATER TAB		DEPTH	ELFVATION
N S S I	CEN CATE	согов	TA X	AA.	SOL	DESCRIPTION	[		F DRILLING WATE		ELF
Om 0 → 100	1		-						UGEON	40 Om	m,
						0.0~2.7m: Overburden.	j			E	
		prn				Silty soil.				E 1	ļ
Overburden		. 1	- 1			9				E'	
arbit (7)		ř								E 2	·
Overburden											4
1 4	pt	ole by	'n			27 200				- [ 3 ]	•
3 dentiered of the state of the			- 1			2.7~20.8m: SHALE					{
		-	į		-					4	
		bra	/			2.7 ~7.7m				· [-	[
5-3		ا ق		_	_	Decomposed, Soft.				E-5	-
		š	5	5	5	Rock fragments scratch with finger nails.	ed			[ <u> </u>	
8-						with thider units.				<u>E</u> 6	
		- 1	į			and the state of the state of		[			
7-				-		7.7~10.0m				E 7	
						Highly weathered.  Gravelly ~ fragmental				Ē.	
8		ន្ត			_	cores.				E 8	
		÷			5	. *					
9-1		yelx	4	4	1			No	Te s t	-9	
Weathered SHALE	9 7	*			4						
SHAIL	N N		1			10.0 ~ 20.8m	•			E-10	ļ
	ν V					Highly weathered.					
	<u> </u>	:				Mostly cultings.					
Weathered			١		١.	Flaky cuttings.		1 1 1		E2	
3 10	#									l E °	
	<b>#</b>	pr.				Gravelly cores		]		E.a	
3-1		×	ļ			Gravelly cores of \$0.5~3cm in		1 1 1			
		purpx				local.				E4	
	1   1			-							
					}					<u> </u>	
										E	
	<b>#</b>									<u>Ε</u> -6	
	<b>                                     </b>		ļ							[-	
7	<b>1</b>   .   :									-7	
	<b>}</b>	قا								<u> </u> -	
E-8	)	1								E-8	
	1	pale									
			İ	:						9	
	<b>]</b>	: (			ļ					20	ļ
56 4 1 11111111	/ }	1		1	1	→ driller's note 4				<u> </u>	<del></del>
	4				. 10	tick), 2 (substick), 3 (piece), 4 (fragment), 5	grain	•			
NA PE	— core loss		l.		1.0	- 5 (soft)					
1	— яор		1 (i	resh) ·	~ 5 (d	ecomposed)					

Nam	Yuam	PROJECT UP		10. DR - 1 (SHEET 2 OF 3 )
LOCATION	Dam right			O m COMMENCED 16 Jun 186
ELEVATION	344.7	<u>'85 m</u> DE	PTH OF OVERBURDEN 2	7 m COMPLETED 30 -Jun - 186
COORDINATE		<b></b>	NGTH OF ROCK DRILLING 47.	3 m DRILLED BY P. Samang
ANGLE FROM	HORIZONTAL	90 ° T(	TAL LENGTH OF CORE 26	.6 m LOGGED BY K. Ishikawa
BEARING OF	ANGLE HOLE	C	ORE RECOVERY 53	.2_%
[ w		OBS	ERVATION OF CORE	WATER TARIE
DEPTH COCK NAME	CEMENTA TION XIND OF BIT CASING	# E S S		WATER PRESSURE TEST
DEPTH OCK NAN	EME T T SIT CASI	COLOR ING HARD- NESS CORE	DESCRIPTION	
		0 × ± 00		LEARAGE OF DRILLING WATER
20m	0 - 100			LUGEON 40 20m
		1. 1. 1 1	20.8~22.0m:	
,   /		4 4~3 4	SANDSTONE.	
Withd S.S.		X     E     3     3     3       I     I     4     4     4	Fine grained.	
¥ o ·	CASING	1 1 1 1	Non calcareous.	
2 20	MM &	2 4 4 4		No Test
<u> </u>   <u> </u>   <u> </u>   <u> </u>	##### Y	3 3 2		
3-7		4 4 4	22.0 ~ 40.0m :	
		1 1 1	LIMESTONE.	
		2 3	Massive.	
		2 3	22.0 ~ 22.9m	
diminuluuluuluuluuluuluuluuluuluuluuluuluulu	ШШП	3 3 3 4	Weathered. Cracks	
"		1   7	stained. Rock itself	
		2 3 3	somewhat stained.	
6   ≥		2 2	1	
			23.75~27.5m	Leakage of E
[ 74] F		3	Cracks stained.	Drilling water
		3 4	Some cracks filled with	Drilling water
8 11 1			brownish clay	
1 <u>4</u> [X [			Dips of cracks are	Lu = 85.4
			generally IO~30°	
<u>*</u>			4	(Pmax =4.1K9/cm2)
-		3 4	Calcite yugs at 24.65m, 25.9m and 27.0m.	30
30 <del> </del> 3   -		0 2 3	25.9m and 27.0m.	
2-1		1 1 1	29.4~30.5m	
			Cracks stained.	
2-	KKKK		Some cracks filled with	
4  / \1			brownish clay.	
3 1		> 5 5 5	Dips of cracks are	
	MMM	£ 2 2 2	generally 30° and 60°	
		2 2 3	32.9~33.15m	
		1 1 5 1 7	Brownish clay (limy)	
		1 1 1	includes SHALE fragments.	No Test E
5-		<del></del>	<u>33.15 ~ 33.5m</u>	
			Solution crack at	
6-1 v		s 2 2 3	33.15m	1 1 1 1 E 1
			35.1~36.7m	
7-		<del>}                                    </del>	Cracks stained.	7
			Dips of cracks are	
8 N		2 2 3	generally 10~30.	1
		5 2	Interculated with	
		<b> </b>	argillaceous bands.	
["     [\]			Dips of bedding planes are 30°.	
		}	Calcite vug. at 37.4m.	E 40
K	A N	1 1 1	▶ driller's note ◀ 100 H = 100	
E	8/2	1 1 4.	stick) 2 (substick), 3 (piece), 4 (fragment), 5 grain	
Đ	N KIA core joss	i (harð	~ 5 (soft)	and the second section of the
	L RQD	I (fresh) ~ 5 (	fecomposed)	

		**********		_		PRC	JE(		lppe	er Mae Yuam No. 1 HOLE N	o. DR - 1 (s)			
100		NC			ight b			• .		and the second of the second o	Om COM	MENCED PLETED	16 <u>Jur</u> 30 Jur	- '86
		11.	-	1.0						TH OF OVERBURDEN				iong
ANIC	KUII LE	EDO!		701		<del></del>		•	LE	NGTH OF ROCK DRILLING 47 TAL LENGTH OF CORE 26		ED BY		
											<u>.6</u> m LOGG <u>.</u> 2_%	EDBY	K, Ishi	KOWO
DEA	7 IIV	a or	ANGL	T	OLE						75 ~ 4/		Т	
	OCK NAME	ی		1 2 3	(ö <u>ö</u>		œ	<u>:</u> در	***	RVATION OF CORE	WATER TABLE	<b>W</b>	-  <u> </u>	ELEVATION
ОЕРТИ	×	0,1	3	X.	KIND OF BIT CASING	COLOR	TY	SES.	CORE	DESCRIPTION	WATER PRESSUR	E TEST	DE P1	A
"	ğ				× a O	8	WEATHER	Ť	ชลู		LEAKAGE OF DRI			
40m	÷	3 SEC.	0 → 100		14.0			L			LUGE	0N	40 40m	m.
							4	4:	4 ~ 5	40.0 ~ 46.6m :				
		$\bigvee$		1						SHALE Brownish grey.			E,	
'	_	$\Lambda$						:		Weathered.			E	
	a IS			N			4	3 <sub>4</sub>	4	Cracky, Cracks stained.			E 2	
2 3		$\nabla$		}								1	£	
		X				]					] ] ] ] ]		E. 1	
3 -	ם			N		× >	-	-	5 -	47.5 ~ 50.0m:			F-3	:
1	Wfhd			(		מיק קיק	4	4.	(4)	SHALE, Block,			E I	
4 3		$\sqrt{2}$		1			_			Calcareous.	Not	est	- 4	
1		IV								Cracky. Cracks no stained.		771	E	
5		١٨		N						1 1			5	
1		VΝ		1				'		Sheared and clayey			E	
6-3	-			Ŋ		××	_			ot 47.4~47.9m.			E 6	٠.
	SH		II WW	1	-	X A	3	3	4	Slickensides are found			Ę	
7/		$\bigvee$	i IKK	N						at 47.9~50.0m.			<u> </u>	
1		$\triangle$		1	•			<u> </u>			No Grout	dwoter	7 سلسبيليو	1
1	SR	$\parallel \mid -$	ШИЙ	1		滋	ı	4 3	5	Core loss at 40.4 ~	Table		E-8	
ľ	3	<b>K</b> 7	ШМ	H				'	-	41.5m, 42.0 ~ 43.0m, 43.8~45.8m, 46.6~47.5m			E	
1		X	W.	I					' '	and 48.2 ~49.0m.			E 9	1
9.7	بہ ن		ШЖ	Y	: .	· ×		1	4	und india	1   1		E.	
	S (2)		N	1		ξ	1	3	(3)				E-50	
50-		1		1		1	t	1						
1								-		·				
1				1		ŀ							E'	İ
1											1 1 1 1		Ē.	
2-				1	. :		١.					1 1 1	F-3	].
1														ĺ
3-	1									-			F-3	
1				1						•			E	<b>\</b>
4					- 1								E-4	
													<u>-</u>	
5 4				$\  \cdot \ $						and the second second	1 1 1 1		<u>Ę.</u> . 5	
1				1									E	]
8.3													- 6	1
	. 						ĺ				]		<u></u>	
7							•		1				7	1
1													<u>E</u>	· ·
100				-					1.		] ] ] ] ]		E 8	]
8			!!!!!!!!	i		} !	ĺ						£. *	
7				1									<u> </u>	
9-7						Ι΄.							E 9	
1					, i					and the state of t				
<u> </u>	<u> </u>			<del>"</del> -		•	1	4	1	> driller's note €	<del> </del>		<del></del>	
			8 K	)		•			10	tick), 2 (aubstick), 3 (piece), 4 (fragment), 5 grain	1		•	
		l	ZA N	- 50/6	loss			10	(bard)	S (soft)		i.		
				- RQC	,		1 (	(dest	- 5 (d	ecomposed)				

Nam Yu	am ·	PRO.	IFC	T II	ทุกส	er Mae Yuam No.1HOLE N	o. E	)L	- •1.	(SF	IEE1	11	OF	3 )	
Name and Address of the Owner, where the Person of the Owner, where the Person of the	am left b					PTH OF HOLE 50	0	m	C	ОМІ	ИE	NCE	ن نہ o	23 – Ap	<u>r_ '86</u>
			m		DE	PTH OF OVERBURDEN 2									y-'86
COORDINATE	<u> </u>	<u> </u>		1. 2.	LE	NGTH OF ROCK DRILLING : 47	<u>5</u> ı	m	D	ผาก	ΕC	BY			<u>nono</u>
ANGLE FROM HOR	IZONTAL		0 .	• :	τo	TAL LENGTH OF CORE 35	05	n	L	ogc	Εľ	ВУ		K. Ish	kawa
BEARING OF ANGI	LE HOLE				CO	RE RECOVERY 70	<u>.                                    </u>	8							
u u	٠ <u>٠</u> .					RVATION OF CORE	<u>.</u> ا	ATF	D TA	BLE		-11			ğ
CK NAME	CEMENTA TION KIND OF BIT CASING	COLOR	풀힞	ESS.	w E	DESCRIPTION		5 . F .	- 31	SSUF	1.1			ОЕРТН	ELEVATION
aga XX	A 5 2 2 2	ខ្ល	WEATHER	HARD	CORE	DESCRIPTION	1.7		11.10	F DR			TER	ο .	<u> </u>
Om 0 +100		1 1	-							LUGE	ON			40 Om	m
	1	1	7			0.0~2.5m: Overburden									
	l	n a	- 1			silty sand with some					Ī			Ε.	
'a e   ,	1			Ì		rock fragments.		.						E	
Overburden  \[ \sum_{\text{in}} \frac{1}{\sum_{\text{in}}} \]	1	ž	İ											2	P 75 T
2 3 8		1	- {	- }	i									E *	
			一	``										Ē.	
3-	∭.		5	5	5	2.5~20.0m:					-	- [:		3	į
4-3						SHALE: interbedded with			: . l					Ē	
4-						SANDSTONE. Dips of cracks are								E 4	-
SHALE SHALE		1		. }		generally 10°~30° and 60°.					Ì	1		E	
SHALE		<u>ا</u> م												5	
1 3 H		1 1		.	4									E	
6-1	}	yelx	4	.4	·	2.5 ~ 3.65m Decomposed.					٠			F 6	12 0
	Ħ	1 1		Į		Soil like core. Soft.				-	- (			Ē.	
7-	1			- 1	٠							1		-7	
				ŀ	3 ^	3.65 ~ 7.7m Highly weathered.									1 1
8. 8.8	Ą)				~ 2	Cores broken by hands.		. '				1		E 8	
	$\mathbb{H}$			.								- [		į.	
P=	)	}		- 1		7.7~8.0m, 9.55~9.65m Medium grained S·S.				1	. [		1	E-9	** *
15.5/ VI	1		4	4	4			Ν	0	+	e	s	t	F	. 11
	1		- [			Rock fragments crushed			-			1	1	E- 10	1.0
		-			·	by finger pressure.								F	
ı ∄ <sub>sH</sub> □	1	Ā	4	4	4						ļ	İ		<u> </u>	
	<b>}</b>	충		$\dashv$		10.6~11.5m, 12.0~12.5m, 14.2~	0.53	m	1					Ē.	
2					<u> </u>	Highly weathered.  Rock fragments can not be								E 2	
SH	Ą		4	4	4	crushed by finger			}			1		:	<b>\</b>
] 3_3 \	1		.			pressure.								<u>-</u> 3	
	1			I							- {			E	
3 my 1 my 4-1	1										ļ	ı		E-4	
1 3 ILINIII	7	Ę				15.55 ~ 19.75m					į			F	
5 =		1 1	4	4	4	Highly to moderately wind.								5.	
		Xe X			3	Cracks stained and rock itself discolored.							.	-	
6 -					_	Somewhat brittle	.		1					E 6	
SHALE SHALE	1			Ī	4										
1 7 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	III	<b>\</b>	4		3	19.75~20.0m		}			•	-    -		E-7	
SHALE		grey		3	4	Medium grained S.S Rock fragments crushed					•		í		1
[ ] " [ ] [		1 1	1	٠	3	by finger pressure.					.			8	
		۱ă	3				1 1				ı			E	
	$\mathbb{H}$				,	Core loss at 8.0~9.55m,					٠			9	
			1	: 1	4	9.65 ~10.6m; 11.5 ~12.0m and 12.5 ~14.2m.						Ì		E	1 1
20 5.5	<u> </u>		4	4		VIIV - 1.00 1 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Ļ	L	لخا				20	<u>L </u>
<b>1</b> /2	1		•	1	<u> </u>	e deiller's note d	1	1.				:		Ų.	
	١					tick), 2 (substick), 3 (piece), 4 (fragment), 5 grain						٠.	٠.		
, '	- core loss		1			- 5 (soli) ecomposed)	Der y		•			v	/:		
· ·	— RQD		. ("	/	5.0										

			er Mae Yuam No.1HOLE N		) \nr \ \ \186 \
	Dam left bank 330 606		OTH OF HOLE	5 m COMPLETED 9 N	Noy - '86_
COORDINATE	Test ( to s) List.	LEI	NGTH OF ROCK DRILLING 47.	5 m DRILLED BY P. Se	amang
	the state of the s	_	TAL LENGTH OF CORE 35.		
	IGLE HOLE				
<u> </u>	i I	OBSE	RVATION OF CORE		1
OEPTH CK NAL	CEMENTY TION TION BIT CASING	ES SE		WATER PRESSURE TEST	ELEVATION
DEPTH ROCK NAME	SO CENT	WEATHER ING HARD. NESS CORE	DESCRIPTION	LEAKAGE OF DRILLING WATER	13 13
20m 0 -		<del>-</del>		LUGEON 40 20	m m
	เหม่				
			22.0~33.7m:		1
			SANDSTONE.  Medium to coarse grained.	1	
			Massive.	2	
2		4 4 4 3	Ding of prophs are		
] w 7			Dips of cracks are generally 20%-30° and 60°.		
	brn				1 1
SANDSTONE	Pale		22.0~25.0m		
SANDSTONE		4 4 4	Highly weathered.		
5 1		4 5 5	Almost cuttings. Piece to fragmental cores	5	
			In local.		
6 -		.3.	25.0~33.7m		
1		4	Moderately weathered		1
7-   -		3	Cracks stained and		
		4	rock itself somewhat discolored.		1 1
8-J   • J		4   3   4	Somewhat brittle	No Test 8	
STONE	grey	3 3			
of St.			Rock fragments crushed by finger pressure at		
AND	brux	3	31,75~32.0m and 33.0~		
30- 0 .		/ 1 1 Y	33.3m.	- 3	0
1 1 1 1			34.0~40.0m:		
'-		4~3	LIMESTONE.	Leakage of	
		4 4~5 4	Massive.	Drilling water 2	1 1
2 1			Dips of cracks are	H-1           E'	
			generally 10°~30° and		
3 s.s.	grux	4 4 4	60°~70°		
		3 3 3	Cracks somewhat stained.		
Ls	È	2 2 4 3			
			Solution cracks at 38.65m (30°), 38.75 ~	5	1
1 1 5		2 2 4	38.85m (90°) and 39.15m.		
6-1 <sub>LS</sub>	<u>8</u>	2 2 3	SHALE intercolated		
		=   =   3	at 37.4 ~ 37.5m. Flaky		
7	À.	2 2 3	core. Soft,	-7	
LS	i o	2 2 3			
8			Core loss at 20.0~22.0m,		
Ls	grey	2 2	25.0~25.4m, 32.0~33.0m, 33.7~34.0m, 34.7~35.0m,		
9-1	5	2	35.2~35.8m, 36.4 ~ 36.8m,		
		3	37.5~37.8m and 39.6~		40
40 1 VI	N MM		39.9m, ▶ driller's note 4	<u> </u>	لـــــــــــــــــــــــــــــــــــــ
Ø	K)	1 10	tick), 2 (substick), 3 (piece), 4 (fragment), 5 grain	•	
	Core loss	I (hard)		* + +	
τ.	RQD	1 (fresh) ~ 5 (de	(com posed)		

		Nan	n Yud	am	PR	OJE			er Mae Yuam No. 1HOLE		1 (SHEET			
	ATK	. *		m left bo					PTH OF HOLE 5			ICED _2	23 <u>-</u> 89	<u>r — 86     </u>
	VAT			330.60					PTH OF OVERBURDEN	2.5_m	COMPLE			
COC	KUII	NA I	L	ZONTAL	· ·	~~			NGTH OF ROCK DRILLING 47					mang
									TAL LENGTH OF CORE 35	0.05 m = 0.1 _ %	LOGGED	BY	K, Isl	ilcawa
DEA		3 06	MNGL	E HOLE					RE RECOVERY	<u>'.'</u>		<del> </del>	,	
ı	OCK NAME	U		NO ON		<u> </u>			RVATION OF CORE	WATE	R TABLE	<b>W</b>	· x	δ
ЭЕРТН	Σ. Ϋ́	0		CEMENTA TION KIND OF BIT CASING	၂ ဗွီ	WEATHER	HARD, NESS	CUTTING	DESCRIPTION	WATE	R PRESSURE TE	\$T	ОЕРТИ	ELEVAT
	8			5 8 20	ğ	¥ ₩	Ĩ	ਹਿੰਨੂ		LEAKA	GE OF DRILLING			
40m			0 → 100			ļ				 	LUGEON	4	0 40m	<u> </u>
1 4		1	<b>#</b>	1	_				40.0~50.0m:					ľ
1 1 4	S	Ι.,	111111	<b>∤</b> ·	grey	2	2	3	LIMESTONE.				E 1	
=				{					Massive.				1	
2-		\ /							Dips of cracks are				2	
4		M							generally 10~30°					
3 = 3		ΛI		1					Cracks somewhat stained.				3	
1		$/ \setminus$							Whitish clay on cracks				<u> </u>	V 1
4-	LS				_	2	2	4	at 40.0m (30°), 40.45m(30°),				Ē.4	
=		\ /	$\mathcal{M}\mathcal{M}$				l		40.8m (10°),	N	0 6	s t		
5-3		M		·					Solution cracks at 47.0m (20°) and 47.2m (30°).				5	
2 ohnsturdin		ΧI							Brownish clay on cracks				-	
6-		/\							at 48.65m (30°) and 48.8m				-6	
4							ļ	4	(10°).				E	
7								3~4	Calcite vugs at 40.9m				7	
հանուկակավայի	ш		71		i				and 41.65m.	N <sub>0</sub>	Groundwate		Ē	
8-	MESTONE	┸┰╢	ЛШ		_				Core loss at 41.65 ~	Tal	le	3 3	E-8	1 1
=	ES		ИШИ		grey	2	2	3	43.9m and 44.1~46.6m.					
9.4	<u> </u>		ИШИ	·					interest of the state of the st				9	, A
1 4	- }	г.Н	<b>[]</b>											
50-		7											50	
1 , 3													Ē. ∤	i
']					:									į
2 -														
						j								
3_3					l								E	
		ļ										132		
4.4				]									4	1
1							-			· :[ · .]			₽ I	
5 - 3		l			. [	İ							<u> </u>	
					[	ſ							- [	
6-4						.							-6	
4						-	:						- 1	
7-				1	-	. }	-:	-					7	
4				- [			:							
8-				ĺ		1							-8	
1														44. 9
9-1				ĺ									9	
				İ										
<u></u>		Ľ	/ N			•	1	<b>4</b>	▶ driller's note 4		<del> </del>	لبطسية	· · ·	1
			KA E						ck) 2 (substick) 3 (piece) 4 (fragment), 5 grain				•. •	
			1	core loss		"			5 (soft)	3 4	100			
				ROD		. 110	e \$14) ~-	21065	omposed)					

Upper Mae Yuam 2

NOTELEVATION COORDINATE ANGLE FROM BEARING OF	Dan 2 M HORI	n right bo 352.33 2.051.680 385.181 ZONTAL	onk 32 912 438	m		DEI DEI LE	PTH OF HOLE 60 PTH OF OVERBURDEN 0 NGTH OF ROCK DRILLING 59 TAL LENGTH OF CORE 58	O. DR-1 (SHEET 1 OF 3 )  O m COMMENCED 13 -Mar - 86  3 m COMPLETED 23 -Mar - 86  7 m DRILLED BY Vichaen  1 m LOGGED BY K. Ishikawa  8 %
DEPTH ROCK NAME		CEMENTA. TION KIND OF BIT CASING	COLOR	WEATHER -ING	HARD. NESS		RVATION OF CORE  DESCRIPTION	WATER TABLE
SILTSTONE SILTST			light grey	5	5 4 3 4	5 3 2 3 2 3	O.O.—O.3m: Overburden. Clayey silt.  O.3~20.0m: SILTSTONE. It grey. Massive. Dip of cracks 10~30° and 60~70°.  O.3~4.8m Decomposed to highly weathered. Soft. Rock tragments crushed by finger pressure.  4.8~10.4m Highly to moderately weathered. Piece to fragmental core. Cracks stained remarkably. Slaking phenomena are found. Clayey part at 5.8m IO.4~18.0m Moderately weathered. Piece to substicky core. Cracks stained remarkably. Slaking phenomena are found. Brownish clay on cracks at 14.4m (70°).  18.0~20.0m Substicky core. Cracks stained. Few slacking phenomena.	NO TEST
		– core loss – RQD		1(		(hard)	stick), 2 (substick), 3 (pisce), 4 (fragment), 5 gráf - 5 (soft) ecomposed)	, · · · · · · · · · · · · · · · · · · ·

Nam Yu	am PF	ROJEC		er Mae Yuam No.2HOLE N		
	m right ba			PTH OF HOLE60	O m COMMENCED	13 _Mor 86
·				PTH OF OVERBURDEN		
COORDINATE			LE	NGTH OF ROCK DRILLING 59	··· · · ·	Vichaen
ANGLE FROM HORE				TAL LENGTH OF CORE 58 RE RECOVERY 96	· <del></del>	K. IShikowa
	E HOLE				1	
I A S	4 4 9 9	Te I		ERVATION OF CORE	WATER TABLE	-   I   Š
DEPTH ROCK NAME	CEMENTA TION KIND OF BIT CASING	FATHER -ING	NESS CORE	DESCRIPTION	WATER PRESSURE TEST	DEPTH DEFYATION
lL	2 × 20 5	S W	🕻 ပီဥ		LEAKAGE OF DRILLING WATER	
20m 0 → 100					LUGEON	40 20m W
			4 5 4	20.0~32.4m		
		.	3	SILTSTONE: Interbedded		<b>E</b> 1
	9	χ δ	: -	with dk grey SHALE.	Lu'=48	
SILTSTONE		1 1	3 2	Massive.	(Pmax 5.2kg/cm²)	E2
1	+40:	5   1		Dips of cracks generally		[E. ]
3-1" -			3	20~30° and 60 ~70°.		<u></u>
				Cracks somewhat		
	-			stained.		<u>E</u> 4
الان <sup>45</sup> ال	5		2	Brittle.		<b>-</b>
SILTS	. 6	2	3		<del>╏╶┧╶┧┈╏╶</del> ╂╌╂╌╂╌╂	E 5
Annual Strict	<u> </u>	ξ Sug	4	Sheared at		
				20.0 ~ 20.5m, 25.7 ~		£ 6
Sillation in the state of the s			4 3	25.8m , 26.0 ~ 26.5m.	Lu'=1.\$	
7-		틱	3	28.25~28.9m(30°),29.9~	(Pmax=6.26kg/cm²	7
			3 3	30.05m and 32.1~		. <b>[</b>
8-			2	32.2m (60°),	1 1 1 1 1 1 1	8
# A ~		918	4 4 ~ 5			
9465	1 1	1 4 1		Cole loss di 20.0		E-9 \
LTSTON	1 3	ggrk	3 2	23.8m, 25.85 ~ 26.0m and 32.2 ~ 32.4m.		
	'	١ ١	4 4			
mlundani						
	<u> </u>	,	3 3		Lu'=5.2	
		S S		A 17	(Pmax = 7.26kg/cm3)	2
2-	]	=	5 5	32.4~40.0m:		
				SHALE, dk grey		E
3	1		3 2	Cracks no stained.		Ē.
			3	Generally fresh		
	]			and hard. Good rock.		
				Dips of cracks generally		5
	]			10°~30° and 60°~70°.		
		ا ا اچ				
HALE		gież			Lu =2 4	
SHALE	ڊ ا	ااع	2 2		(Pmax=6.27 kg/cm²	) [-7 ]
	4346	8				
						E a
						<b>E</b> •
40	<u> </u>	لجل				<u> </u>
		1	† † , ,	b driller's note €		
网络	– core loss		l l	rtick), 2 (substick), 3 (piece), 4 (fragment), 5 grain ~ 5 (solt)		\$J
	- ROD	1 (1		acomposed)		

Nam Yuam			per Mae Yuam No. 2HOLE	No. DR - 1 (SHEET 3 OF	3 )
LOCATION Dam			EPTH OF HOLE 60	D.O m COMMENCED	3 <u>-Mor - 186</u>
ELEVATION3				0.3 m COMPLETED 2	
			ENGTH OF ROCK DRILLING 59		<u>Vichaen</u>
ANGLE FROM HORIZON			OTAL LENGTH OF CORE 58	<del></del>	C. ISNIKOWO
	TOLE		ORE RECOVERY 96 SERVATION OF CORE	i.8_%	
DEPTH BOCK NAME LOG	हुठ ध			WATER TABLE	DEPTH ELEVATION
CK NAM	TION KIND OF BIT CASING	WEATHER ING HARD- NESS CORE	DESCRIPTION	WATER PRESSURE TEST	DEPTH LEVATIC
<u>8</u> 0 →100	240 0	X E O	3	LEAKAGE OF DRILLING WATER LUGEON	
40m				COGEON 4	40m #
		3	40.0~51.3m;		-
		2	SHALE, dk grey.	Lu'=14	-
		3	Mossive.		
2-		2	Dips of cracks generally	(Pmax=9.24kg/cm²)	2
			_ 10~30° and 60~70°		
3-		3			3
		Ž	Fresh and hard.		
4-3		3	Good rock.		4
	<u> </u>		Many calcite veinlets.		<del>-</del>
5-			Stickenside at 43,3m		5
	2		(60°).		
ALE MALE	grey		,		6
I THE THINK	z z			Lu = 0.5	<u> </u>
7¶"	0 0			(Pmax =10.21 kg/cm²)	7
					E. I
8					8
9		1 2	A MERCHANICAL PROPERTY.		E 9
			51.3 ~60,0m :		E 50
50			SICISTONE. IT grey.		
			Dk grey SHALE interbedded at 57.0		<b>E</b> ,
			~ 59.3m.	Lu=04	
				(Pmox=11.26kg/cm²)	2
			Fresh and hard.		<b>[</b>
3			Good rock.		E-3
1 3 W 1 — 1X111111111		.	Many calcite veinlets.		
	grey				<b>E</b> 4
SILTSTON			-		<u> </u>
	Light			<del>}</del>	£ 5
					6
				Lu 0.3	
				(Pmox= 2.24 kg/cm²)	E-7
					<b>F</b>
	25				8
SHALE	¥				E-
9		-	-		-9
	Six				60
	104	1 1	▶ driller's note 4	<u> </u>	<u> </u>
			(stick), 2 (substick), 3 (piece), 4 (fragment), 5 gra	ia ·	
M KIN CO	re losa	i 1	f) ~ 5 (soft)		
RQ	0	1 (fresh) ~ 5	(decomposed)		

LÕŒ		-			PRC	JE	et l	Jppe	er Mae Yuam No.2HOLE N	lo DR	- 2 (SHEE			
ELEV	VATI	ON					ĵ.	DE	PTH OF OVERBURDEN 7	. 8 m	COMPL	ETED	B-Ma	<u>r '86 </u>
COO	RDIN	AT	Ε	2.051.73	5,5	52E								
ANG	LEF	RO	M HORE	ZONTAL .		90			TAL LENGTH OF CORE 48			D BY	K. Ish	i kawa
BEA	RING	OF	ANGL	E HOLE					RE RECOVERY 97	.4. %			-	4-15). <del> </del>
	NAME			<b>₹</b> 25 (5					RVATION OF CORE	WATE	RTABLE	W		Ŏ Ž
DEPTH	X X	0		CEMENTA TION KIND OF BIT CASING	COLOR	¥ S	HARD. NESS	FE TE	DESCRIPTION	1.	R PRESSURE		ОЄРТН	ELEVATION
*	Š			CEME TH KIND BIT CASH	Š.	WEATHER	HAR	CORE CUTTING		LEAK	AGE OF DRILL	NG WATER		3
Om		:	0 →100			-				,	LUGEON	7.73	10 Om	m ₩
	1								0,0~7,8m : Overburden.				E	
] ]		Δ.			٤								E,	
']		Δ							0.0~2.4m				Little	
1 1 1	\ 	<i>L</i> .			redx				Sandy silt.				-2	
[]					ļ				<u>2.4 ~ 6.2 m</u>				1	
1 3					1		·		Silty sand. Fine grained.		1		E-3	
["				1.										
													-4	
ع م م و و دران المنظمية المنظمية المنظمية المنظمية المنظمية المنظمية المنظمية المنظمية المنظمية المنظمة المنظمة					_				6.2 ~7.8m					
[ ]		• • • •			brn			İ	Gravel of CHERT and				E 5	( <sub>2</sub>
[ [					yelx				SANDSTONE, Rounded, Size about 5~100 m/m.					
6 4	į	•		į i	×				5126 Upon 5 ~100 7111.	-			6	
[ ]		<u> </u>			Ì								<u> </u>	
] , =	[	O							·	$\vdash \vdash $	$M_{\perp}$		E-7	
] =		0									G.L - 7	Om	그탈	
8-3									7.8 ~10.1m :	1-1-			8	
	STONE			]	_~	3		4	SILTSTONE, It gray.		111		-	
9.	STC	_	WIII		grey				10.1~20.0m	N	0   6	St	<u>E</u> 9	
0 0 9 phonlumbach	5		ЖШ	i -	±			3	SHALE; interbedded with fine to medium grained				<u>-</u>	1
10-	S	12 1	И		Ĺ.,			Ĭ	SANDSTONE.	<b>-</b>	+++	╂╌╂╼╂	- E- 10	
			[[4]		1			<u> </u>	Dip of bedding about 20°				F	
1-1								4	Dip of cracks generally				<b>-</b>  -	
ملسلسلسا	Ì	• •	жж				<b>!</b>	3	30° and 60~70°		Lu =22.9		E.	
2-3			ШиШ					ب	Few cracks stained		(Pmax=3.9	5kg/cm²l	-2	
4	ł	• •	ИИIII					2	up to 18.5m.				E	İ
3 -			(40)						Crocky and somewhat				-3	
-	ł	• •	WIIIIII	ĺ		2	3		brittle up to 18.5m.					
4-			<b>/</b>		rey								4	
=			ЯШИ		5			3	Sheared at					
5-	Ì		#IIIIII		*				16.65 ~ 16.95m.	1	<del>                                     </del>		- 5	
2 8 2. 2 ակուդիուկումուկուհյուն	-	-			dark			4					Ē-	. :
6-3	İ	• •			1			3	Sheared plane 70.º : Somewhat sheared at				: [ 6° :	. Zust
=	ļ							4 4~5	18.0~18.5m.		Lu =16.0	- kakam		
7념	Į	= ~			1	•	,	1	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		(Pmgx= 4.0	o valcuit	/ [-7·	}
=	-	• •	<b>/</b> 1	:			1	3						
8-4	ţ							4					8	
=	1					_	<del> </del>							
9-	ļ	20	WWII				,	3	·				₹ 9	
, =	ļ	• •	KKIII		1	'	2	2					E 20	<u>.</u>
20 1	1		N N	L	l	<u> </u>	1	4	) driller's nate €	<u> </u>	·	56		The state of the s
								ļ (e	dick), 2 (substick), 3 (piece), 4 (fragment), 5 grain					
			ያ የተ	- core loss		1.			- 5 (soit)			v 1		
			Ĺ	— яор		1 (	frash)	~ 5 (d	ecomposed)				1	

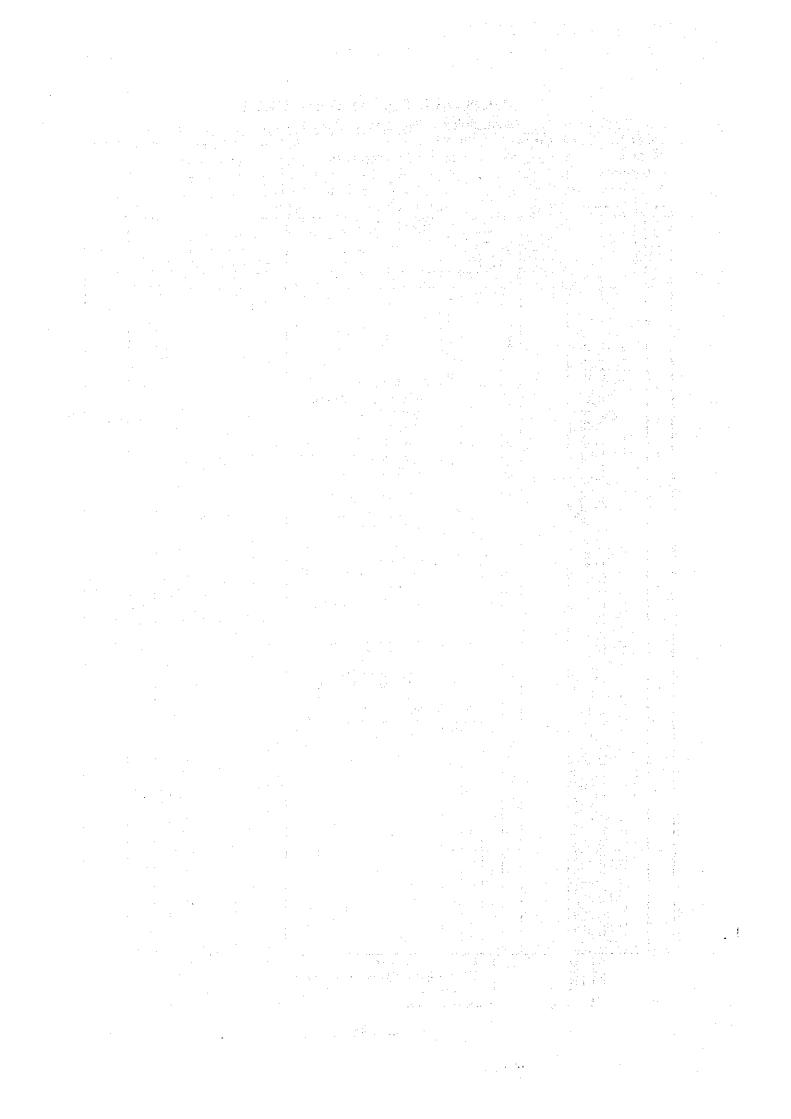
LOCATION DO ELEVATION COORDINATE	am right b 337, is	ank 92 9	m 00 °	DEF DEF LEN TOT COL	TH OF HOLE TH OF OVERBURDEN IGTH OF ROCK DRILLING TAL LENGTH OF CORE RE RECOVERY	E No. DR - 2 (SHEET 2 OF 3 )  50.0 m
ROCK NAME		80102	WEATHER ING	CORE CUTTING	RVATION OF CORE	WATER TABLE
SHALE SHALE		dk grey 1t dk grey dk grey		3 2 3 2 3 2 3 2 3 4 4 4 4 4 4 2 2 3 3 2 3 2	20.0 ~40.0m:  SHALE: interbedded with fine to medium grained SANDSTONE.  Dip of bedding about 30°.  Dips of cracks general 10~30° and 60~80°.  Cracks no stained.  Fresh and hard.  Generally good rock.  Some parts cracky and sheared.  Sheared and clayey at 29.8~30.0m, 30.9~31.75m and 33.65 ~34.6m shear plane 60~80°.  Core loss at 30.0 ~30.9m and 34.6~35.0m.	y  Lu'= 0. 6 {Pmax=6.1kg/cm²}  Lu'= 0. 6 {Pmax=6.1kg/cm²}
40	core loss	Lt gry	100	1 (s 1 (hard) ~ ssh) ~ 5 (de	the second secon	grain

,		n Yu						r Mae Yuam No.2HOL			- 2 (sн	<b>еет 3</b> о	F /,3 ,11	- loc
	TION		m right					TH OF HOLE	400	0 m	COMM	MENCED LETED	20 - FE	nr - <sup>1</sup> 86
73.5	ATION			92	n	<u>.</u> .		PTH OF OVERBURDEN NGTH OF ROCK DRILLING		8 m	COMP	ED BY	Phodu	IDO
			ZONTAL		90	•		TAL LENGTH OF CORE				ED BY		
			E HOLE			- :.				m _4_ %	LOGG			***************************************
		ANGL	EHOLE					RVATION OF CORE		- '- '8			<del>'T''</del>	
1 =	NAME 0 0		F KP 5		TX.			WAY LOW OF COME		WATE	RTABLE	W	- E	ELEVATION
ОЕРТН	ROCK P	' 	CEMENTA TION XIND OF BIT CASING	COLOR	WEATHER -ING	HARD. NESS	CORE	DESCRIPTION		english and	R PRESSUR		DEPTH	١
	_		Ω × ω Ω	ğ	3	Ť	ŏΞ			LEAK		LING WATE		
40m		<b>0</b> → 100	1.0								LUGEO	)N	40 40m	- <del>-</del>
							4	40.0~50.0m:	4				<b>E</b>	
[.]		<i>[</i> 2]]]]					3	SHALE: interbedded with				1 1	E,	
'=	• •	ИШ						fine to medium grained			Lu : 12.1	F F 1	<b>E</b>	
1 4		X				•		SANDSTONE.	.		(Pmax=8.	8kg/om )	F-2	
2	• •						2	Fresh and hard.	1				<u> </u>	
	[				ļ	2.		Generally good rock					E 3	
3-		[][[[]					3	Some parts cracky and	, 1				Ĕ.	
1	<b> </b>		ļ	1			2	sheared.	'			1   1	E.	
10 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -		rillill					4	Calcite veinlets in					E 1	
=	ш	1,,,,,,,,,,		ļ			3	some parts.	- 1					: 1
5-1	HAL	<del>//</del>		grey			L						- E	4 1
	HS ~			0		3	3	Sheared and clayey at 4					· E .	
6-	"  ~	111		dark		٦	١ <u> </u>	~46.0m (shear plane 8	0~.		Lu'=0.8	1 1 1	<b>⊢</b> 6	
4	• •	runii		ช			2	90°) and 49.1~49.7m (shear plane 60~70°).			lPmbx=Ð.	91kg/dm 1	E	
7~		(MI	1 E					tshedi plane co ro r.					7	1
-	• •	11111				2	3						<u> </u>	
8-		rurii			ļ.								₽8	
1 4				١.			2	:	٠.				Ē	
9-	<u></u>			]			4						Ē9	
4	~ 🛦	וווווו				3	3						F	i.
50-			<u> </u>	-		2					1 1		E- 50	
-d.									3.					
ى باسىلىسلامىلىسلا				-									E-1	
						١.				* .			Ē	
2-				-							] ] ]		_ <mark>}_2</mark>	
. 4														
3_3				1		1	]				111		<u>E</u> 3	]
177													<u> </u>	
4_1				1				, ´ ·					<u>F</u> 4	1, 1
4													F	
5 7			]	1		:	1				1 1 1		E-5	
1									4 1		1   [		<b>E</b>	1
6-3						1							E-8	
1			İ										<u>-</u>	i i i
, ]				1		:		•	ν.				E-7	1:
7									2					
<u>, 1</u>					{								E 8	
8-3									- 1				Ē.	
				}		2							E-9	
9-1						;	<u> </u>							
91														<u>,                                    </u>
_ <u></u>					1	1	1	≱ driller's note ◀		7 0				
			}		1			tick) 2 (substick) 3 (piece), 4 (frequent).	5 grain	1 1		19 A 4		
		" / '\ <u>\</u>	core loss		1			- 5 (soli)	191					
		L	RQO		1 (	mark)	~ 5 (d	composed)	1000	100				

						r Mae Yuam No.2HOLE			-1	(\$1	неет	1 0	F 3.)	<b>-</b>
						The state of the s		) m	C	ОМ	MEN	ĊED	29_Ma	<u>- 86</u>
COORDINATE	354.39 2.051.807	4 835	m N		UL			3_ m					8 - Api	
and the second s			_			NGTH OF ROCK DRILLING					LED I		Vicha	4
ANGLE FROM HORI BEARING OF ANGL			90	-				35 m	L	oge	GED !	ЗY	K. Ish	Kowa
BEAKING OF ANGL	E HOLE			• • • • •	- 2		97.	75 %			· ·		<del>-                                    </del>	
OEPTH ROCK NAME	NTA NO NG NG		<u>8</u>			ERVATION OF CORE		WAŢ	ER TAI	BLE		<b>/</b>	- [	NO.
OEPTH CK NA	CEMENTA TION KIND OF BIT CASING	COLOR	WEATHER ING	HARD.	CORE	DESCRIPTION	: [	WAT	ER PRE	ssu	RE TES	T ·	DEPTH	ELEVATI
8 0 ≠100	0 100	٥	WE	7	60		_	LEAR		F DR		WATE		
um , e	<del> </del>					0.0~0.3m : Overburden	<del>-</del>	<del></del>		LUGE		т-т	40 Om	m Y
10·B △		brn	5	5	5	Silty sand.	7		+	$\exists$	_	11		
1 3 0 -		Ω Φ						1			}	1	Ę,	
TS		βg	4	4	4	0.3~12.0m:					ĺ			-
2	Section 1994					SILTSTONE. It grey. Massive.							E 2	
						Dips of cracks generally	,	ĺ					E	
3 9 5		pro	4.	4	4	30° and 60°							E 3	
TS	N .	pale	5	5	5		. \	1			-			
4-	y.				4	0.3~4.2m							E 4	
					3	Decomposed to highly							<u> </u>	. }
5-1 _ 4		brn			4	wthd.	•	N	llo	-	re	s t	5	
				3	_	Fragmental core.	.							
6-3		pale	4		3	Clayey at 3.4~3.85m.	ŧ						E 6	
				4	4	Core loss at 2.1~2.6m and 3.85~4.2m.		. •					E.	
'd		brux		3	3	4.2~8.0m	- 1						E7	
8 July No To				3	3	Highly weathered.			ĺ				E 8	
8 TST						Rock itself discolored.							E.°	1
						Brittle.							والح	
9-10		چ ا			2	Brownish clay on cracks	5				1 1			]
		grey	3		1	at 7.5m (60°) and 7.7m (3	30°).			ļ	$oxed{oxed}$	_	[ E 10	
10]  -		Light			'	8.0~12.0m								
	<b> </b>	:5	.	İ	4	Moderately weathered.				İ	[ ]	ļ	1	
					2	Cracks stained remarka	Dły.		Lu	= 12	2.9			
					-	Rock itself fresh and hard.	: 1		(Pr	nax:	4.62	kg/cm	2) = 2	1
		l.		2	3	12.0 ~ 24.0m	1					- 1	[	25
3 -	]].	ŀ			2	SHALE: intebedded with	h	-  -				1	3	
		1			3	SILTSTONE. dk grey. Massive.			ļ			-	l 🖡	
					2					١.			4	· .
					-	12.0~21.2m							<b> </b>	
		rey	2		3	Cracks stained. 15.9~18.8m somewhat			+-			+-	5	1
	1	<u>~</u>	•			brittle.				1			<u> </u>	1
SHAL		dark		<del> </del>	-	Sheared at 19.2			1,	_	7.Qn		F 6	
) "   Think		Ĭ.			4	~ 19.4m (60°).		,	۷ ا <sup>۷</sup>		۱٬۰۳°	*	<u> </u>	]
7-						Greyish clay on cracks	ź		Υ'	T			[-7	
		j ;		3	3	at 18.5m (80°).	:					1	-	
8-4			'			0. 1 100							8	
	<b>1</b>				<u> </u>	Core loss at 18.8 ~ 19.2m	٠.			'= 9	1 1	100	J. E.	
9-	N .	}		4	4	10.611			) (Pr	ijox =	)   	kg/cm	(\$) [= 9   E_	ľ
20			2	2	3					L			20	<u> </u>
	3		1	1	1	▶ driller's note 4					_	_	, –	
20 00	1					stick), 2 (substick), 3 (piece), 4 (fragment), 5	grain						•	
1	— core loss		1			- 5 (soft) ecomposed)								
	дор		. , (	anj	J (6			_						

N	am Yuc						er Mae Yuam No.2HOL			1 (SHE	ET 2 OF	3 )	
LOCATION		am left					PTH OF HOLE		0_m	COMM	ENCED.	29 <u>M</u> C	ir <u>- '86</u>
ELEVATIO		354.					PTH OF OVERBURDEN				ETED -		
COORDINA	ATE						NGTH OF ROCK DRILLING					Vicho	
ANGLE F							TAL LENGTH OF CORE			LOGGE	D BY	K. Ish	kawa
BEARING	OF ANGL	E HOLE						97.	7 <u>5</u> %	N 42			31-1-31-1
W X		اغيي .		· ·			RVATION OF CORE		WATE	RTABLE	1/\	_	Š
DEPTH OCK NAME	0	CEMENTA TION KINO OF BIT CASING	COLOR	ΞÃ	ESS	3 E	DESCRIPTION			R PRESSURE		DEPTH	ELEVATION
o S	"	పై కైఖర్	ő	WEATHER	HARD. NESS	CORE	become from		LEAKA	GE OF DRILL	ING WATER	4	2
20m	0 - 100							- : }		LUGEO	v .	40 20m	\$
-   t						4	21.2~24.0m					E	
			1	2		3	<del> </del>	1			1	E.	1
'-						2	Cracks no stained. Fresh and hard.					<b>E</b> '	
1 1 4 1			1				resir ond nord.		1 1	Lu'=104			
SHALE		1	27			3	04.0 47.0			(Pmax=6.3	ekg/cm²)	5.5	
			grey		2		24.0 ~ 43.2m : SHALE interbedded with	. :[				·E	
3-			d K	]	-	4	SANDSTONE.					E-3	
3 1			"	1		3	grey to dk grey.					E .	
4		1				4	Dip of bedding 45°.	. }				E-4	
		ď				2						F	
5	<u>~</u>	}		-	2	4 4~3		.		├─┼─┼	╅╼╁╍╂	E 5	
				-	Ë	1	Generally, fresh and		.			) <b>[-</b> 4]	
6 -		(				4	hard. Good rock.	- 1				E-8	
					3	3	Some parts cracky			Lu'= 3. 3			
7.3 6						_	and sheared.			(Pmax=6.9	kg/cm²	E,	
												Ę.	
	±₩III					2						E-8	
6-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	KXIIII						Sheared and clayey a				1 1		
							24.65 ~24.9m, 34.55 ~ 34.65m and 36.0 ~					E <sub>9</sub>	
	454	1				3	36.3m.				1 1 1	<u>-</u>	
30-			-			_	30.3111.				$\downarrow \downarrow \downarrow$	E_ 30	
1 1 1			l		ļ	ļ	Citatian alda a lang				111	E	
	[//]					2	Slickensides are found at 26.0m (45°).					Ē.,	
']			l				26.5m (70°), 26.7 ~					E	
1 1 1	<b>-</b>		1		}	<b>}</b>	34.55m and 36.45m (6	O°).		Lu"=0.3		E_2	]
2 3 4	<b></b>		_	1	2					(Pmax=8.0	)lkg/cm²)	Ē	
1 -34 -			grey		-	3					1 1	1 E . 1	
3 H S	(1111111	' '	ļ		ĺ	ا ا		•				[ °	1 4 7
1	<u> </u>	1	dark									F .	
4-3  -			۱ĕ	•		2						E <sup>4</sup>	
= -						۴						E	
5-3	- <b> </b> #					3	and the second of the second o		$\vdash \uparrow \lnot$		1-1-1	5	7
4	<b>∴</b> }					<u></u>							
8-				1		4	in Browshill			Lu = 3.0	1 1 1	F-8	
4	_]]		1			3				(Pmax=9.0	4 ka/cm²	F	
吊着片	<u>-</u> :1	·	1			4				["		E-7	} }
] ] [				i .	ľ								
8-3   E			1									-8	
			1.			3						<u>E</u>	
<u> </u>   [_e						4						- 9	
-		1		1		2		2				<b>F-</b>	
			<u>L</u> .	<u> </u>	<u> </u>	ــــبــا					1-1-1	F 40	
	N. N			1	4	1		e une	ď.				
		. core lec-			١.		stick), 2 (substick), 3 (piece), 4 (fragment), (	o grain	:			\$4E	
	}	→ core loss		1/			~ 5 (soft) ecomposed)						
	·	~ RQD		. (		5,0					100		

LOCATION Dam left bank DEPTH OF HOLE 60.0 m COMMENCED 29_Mar86 ELEVATION 354.394 m DEPTH OF OVERBURDEN Q.3 m COMPLETED 8 - Apr - 86 COORDINATE LENGTH OF ROCK DRILLING 59.7 m DRILLED BY Vichaen  ANGLE FROM HORIZONTAL 90 TOTAL LENGTH OF CORE 68.35 m LOGGED BY K. Ishikawa BEARING OF ANGLE HOLE CORE RECOVERY 97.75 %  OBSERVATION OF CORE  WATER TABLE 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
LENGTH OF ROCK DRILLING 59.7 m DRILLED BY Vichaen  ANGLE FROM HORIZONTAL 90 TOTAL LENGTH OF CORE 68.35 m LOGGED BY K. Ishikowa  BEARING OF ANGLE HOLE CORE RECOVERY 97.75 %  OBSERVATION OF CORE
ANGLE FROM HORIZONTAL 90 TOTAL LENGTH OF CORE 68.35 m LOGGED BY K. Ishikowo BEARING OF ANGLE HOLE CORE RECOVERY 97.75 %  USBERVATION OF CORE
BEARING OF ANGLE HOLE CORE RECOVERY 97.75 %  USE OBSERVATION OF CORE
OBSERVATION OF CORE
A S O O WATER PRESSURE TEST O DESCRIPTION WATER PRESSURE TEST O D O O O O O O O O O O O O O O O O O
1 1 6 1 1 7 × 40 1 8 10 14 18 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
40m 0 → 100 0 LUGEON 40 40m
1-3 <sub></sub>
2- 0 KPmax = 9.95kg/cm²) = 2
3 43.2 - 48.5m: 3 SUITSTONE interhedded
with dk grey SHALE.
4 Massive.
2 Fresh and hard.
5- u Intercalated SANDSTONE
5   2   Intercalated SANDSTONE at 43.48~43.56m.  Dip of bedding 30°.
6
1 3 -   KINNIII   3   14 3   Sheared and clayey     KPMax=11.0Bkg/cm3   E 2
7 at 47.65~48.0m
8 4 48.5~60.0m:
8-3 48.5 ~ 60.0m : SHALE: interbedded with.
SANDSTONE.
1 3 Dip of bedding 10~20°
50- Fresh and hard.
3 Some parts cracky
1 and sheared.
Many slickensides are
2- 4 found at 51.3 ~53.0m. (Pmax=1.95kg/cm²) = 2
3 Sheared at
3_3
1 4-1 to Food (MV)
7   Pmax=13.15kg/cm²)   7   7   7   7   7   7   7   7   7
8 8 8 8
60   F 60
1 (stick). 2 (substick). 3 (pisce). 4 (fragment). 5 grain
Core loss 1 (hard) ~ 5 (soft)
RQD I (Iresh) - 5 (decomposed)



Nam Mae Rit

LOCATION	D(	am rìght	ban	ķ		DE	PTH OF HOLE 49.	0. DR - 1 (SHEET 1 OF 3 )  8 m COMMENCED 19 Apr - '86  1 m COMPLETED 8 - May - '86
COORDINATE		334. 1.981.54 394.16	894 3. Q	m '9 N	<u>l</u>		PTH OF OVERBURDEN 5.	
ANGLE FROM					-		NGTH OF ROCK DRILLING 44	. III ORICED DI TERRITORI
BEARING OF				90			TAL LENGTH OF CORE 34	<u> </u>
<del></del>	AINGL	E HOLE						3_%
DEPTH ROCK NAME LOG		A LE O		<u>.</u>			RVATION OF CORE	WATER TABLE - 1 0
DEPTH XCK NAN		CEMENTA TION KIND OF BIT CASING	g	WEATHER	HARD. NESS	CORE	DESCRIPTION	WATER TABLE 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
° 00 00 00 00 00 00 00 00 00 00 00 00 00	1.5	<u>8</u> 299	8	SEA.	HAH	85		LEAKAGE OF DRILLING WATER
Om	0 → 100		_	_	:			LUGEON 40 Om
	mmň	1					0.0~5.lm : Overburden.	
							Silty clay.	
					,			
<u> </u>			ž	ļ	١.			
3 7 2			ž					
Overburden			ř	1		1		
\$ E.								1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
			-					
						ĺ		
"			<del> </del>		$\vdash$		5.1~11,8m:	
						1	Pelitic HORNFELS.	<u> </u>
6-							Decomposed.	
HORNFELS					:			
7					Ì		5.1~8.8m	
- 1 &			dr.				Rock fragments crushed	
8 = = =				5	5	5	by finger pressure.	
المحال الما			yelx				8.8~10.8m	
Weathered		O N	^				Rock fragments somewhat	
<u> </u>		SING	ĺ				hord.	
Weathered HORNFELS  Weathered HORNFELS		CA					Core loss at 10.8~11.8m.	10
							11.8~16.0m:	
1						T	Brecciated rock.	
							Siliceous matrix	
2	MM		$\models$	3	.3	5	including SHALE fragments.	No Test
		8		[	Į		Moderately weathered.	No Test
3.4	WW		1	'			Cracks stained remarkably.	
3 3 -			97.9	3	3	4	Qz yugs in some parts.	
4-1	HUKU	<b>N</b>					Most parts no core.	]
	WW	<b>∦</b> [.					Core loss at 12.0 ~ 13.2m,	
5-3			}	1			13.8~15.4m and 15.65	
]/_/	<i>M</i> M	H		3	9	4	~16.0m.	
6						<u> </u>	16.0~20.15m:	
° 3 5			δ	3	2	3 4	CHERT: interbedded	]
	HHH						with argillaceous bands.	
7	WW.	<b>8</b> l			١.		Dip of bedding about 60°	
	WW	Ŭ					Mostly no cores.	8
8	HHH	8			] .		Core loss at 16.5 ~	
=		<b>y</b> 1	<b>\</b>	}	1	1	19.35m and 19.55 ~	
9-4 / \	HARK	<b>}</b>				L	20.15m.	
	ИШ		F	3	3	3		
20 🖣 🔀	iiии	<u> </u>	<u> </u>	1	1	1	▶ driller's nota ◀	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	<b>%</b> (S				Ī	Ι,	stick), 2 (substick), 3 (piece), 4 (fragment), 5 grain	
K	(1 K	core loss			1		~ 5 (solf)	
		— RQD		1 (	(fresh)	~ 5 (0	ecomposed)	

N	am Yuc	ım	PRO	)JE(	CT	: No	m Mae Rit HOLE	No.	DR		(SHEE	т 2	OF	: - , <b>3</b> ,,√∴)	1 . 	
LOCATION		m right				DE	TH OF HOLE 4	9.8	m	CO	ИМЕ	NCE	D.	19 - Ap	<u>r '86</u>	
ELEVATIO	N	334. 1.981.543	894 . 07	1 <u>n</u> 9 N	1	DEI	TH OF OVERBURDEN	<u>5. l</u> .	m	COI	MPL	ETEC	) .	8 -Ma	<u>y - 86</u>	
COORDINA	AIE	394,165	97	9 E		LE	NGTH OF ROCK DRILLING 4	<u>4. 7</u>	m	DRI	LLE	DBY		Leor	CHOI	•
ANGLEF	KOW HOKI	ZOM LAL		90_	-, ··	, IO	TAL LENGTH OF CORE 3	4.0	m	FOC	3 U.E.	זמ ט	·/-	. K. 181	IINUWU	•
	OF ANGL	E HULE		<del></del>	<del>- 1</del>	CO	RE RECOVERYG	0.5.	6		1 1 1 1 1 1				4, 1 2 2 10 10 10	٦
NAME	ا	A ZO O	-	18	N	Uusi Lõl	RVATION OF CORE	-  w	VATE	RTABLE	-	W		-   E	ELEVATION	
	0	CEMENTA TION KIND OF BIT CASING	00 OS	EATHER	HARD.	CORE	DESCRIPTION	٧,	VATE	R PRESS	URE T	EST		) 0€РТН	FVA	
L Š		n x 20	8	3	¥.	ឋភូ				GE OF		<u>i.</u>	TER		ăi .	
20m	0 → 100									ίŪ	GEON			40 20m	V	4
							20.15~27.0m:				1		1	E	1	1
1 1 1	-4  1999				3		LIMESTONE: interbedded with SHALE.	]	N	0	† e	S	ŧ	Ēι		
1					1	3			' '				٦	E	1.1	
2 2 2 7					4		Brecciated and reconsolidate	`-			-		$\dashv$	_ <del>_</del> _2	F 1	
STONE			grey	4			SHALE breccia size I ~	'						E		
3 # T		ပ	6		4	2	20m/m included into			Lu'=2	7			Ę-3		
		2			5	H	LIMESTONE matrix. Highly to moderately		1 1	(Pmax	1	3ko∕c	mP)	E		
143 1	-444411111	AS			3	3	weathered. Brittle.						-	E4		1
nimbrolunkudundundundundundundundundundundundundun	芸三	Ö		ļ	-		Calcite vugs at 22.3m							E		
5 1	/    W						(60°), 23.7m (60°) and							<u>E</u> 5	3. 1.	
4 /	<b>/</b>				1		26.0m (60°).	1						E		1
6						-	Core loss at 24.4 ~						1	E-8	1.5	
I SI I	-1		gry	4	.*		25.8m.	'					1	F		1
7-1-1	$\Box \Box \Box B$	1		Ĺ	} :		27.0~32.25m:	-			-		+	7		
	(-WIIIII						Calcareous SHALE:							Ē.		
L E E						3	interbedded with CHERT.	-						E-8	1	1
SHALE			grey	3	4.		Brecciated and reconsolidate			Lu'=€	1					
اا را ا	<b>)- HIMIII</b>	]		3	4		CHERT breccia size   ~	ľ		(Pmox	<b>=</b> 18.2!	9kg (c	mj.	) : [ 9 :		
6. Calc.		}	dark				5077m included into SHALE	1					١			1
30-						2	matrix.		1				i	- 30	].	
1".				<u> </u>	<u> </u>	3	SHALE is calcareous.  LIMESTONE preccia at							E	1	
1 48						3	28.0 ~ 28.2m.		1	.				- 1		ŀ
Calc. SH			20		4	3	Moderately weathered.							E	1 :	
Sele.			쓩	2		4	Brittle.	-			<del> </del>		-	<u> </u>	}	1
<b>│</b>						3	Slickenside and clayey							F		
3.4	-!!!!!!!				3	2	of 32.25m (60%).				İ			<b>E</b> -3		
1 7 5-			2		<u> </u>	4~5	32.25 ~ 35.lm :			Lu = 2	4			_		1
1 4 S L		'	grey		4		LIMESTONE: interbedded with CHERT and SHALE.			(Pmox	=6.6	kg/¢i	m²	E-4		
1	-1441				_	3	Brecciated and reconsolidate						.	. E.	1	-
	-		L		:	2	SHALE and CHERT breccia	1:						E-5	] :	
							included in LS motrix.									-
6 = =		}	'			2	Moderately withd Brittle.  Calcite vug at 33.9m (70°).							eβ		
					;	3	Clayey at 33.4~33.7m,							F		
1 7 3 5		<b>[</b>		3	3			-	ļ	-	-	<b> </b>  -	$\dashv$	7		
6-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1			grey	:			35.1~40.6m : Pelitic HORNFELS, Non breco	idled	.					E		
#] #			Į.			S.	Moderately wind.			Lu'=2	9.5			E-8		
╽╶┋╴╞			dork			.	Many calcite veinlets	.		(Pmox	-4.8	kgr	m	) <u> </u>	1	1
9-4						3	Dip of bedding about 30°	'			-			E 9	1 :	1
	-14411				4	5	Sheared zone at 39.15 ~									1
40		<u> </u>		<u> </u>	3	3	39.5m.			Щ	1	1	_		1	_
	K. N			1	1	1	b driffer's note 4		1	* *** *		- 5				
	网络	core loss			$A_{i}$		tick), 2 (substick), 3 (piece), 4 (fragment), 5 gre - 5 (soft)					. 5		pet Politica		
	<u> </u>	- RQO		1 (			composed)						:			

ELEVATION	right bank DE 334.894 m DE 181.543.079 N 94.165.979 E LE NTAL 90 TO	PTH OF HOLE 49 PTH OF OVERBURDEN 5 NGTH OF ROCK DRILLING 44 OTAL LENGTH OF CORE 34	
POCK MAME LOG	8 9 4 8 9 9 9	ERVATION OF CORE DESCRIPTION	WATER TABLE WATER PRESSURE TEST
Turlindian landing the state of	TOTAL STATE OF THE	38.7~40.6m Somewhat brecciated. Reconsolidate. 40.6~49.8m: LIMESTONE. Massive. Moderately to slightly withd. Cracks stained remarkably up to 45.2m. Deeper than 45.2m, few cracks stained. Generally hard, but cracky. Calcite was at 40.9m and 42.2m. Solution cracks at 41.05 ~41.2m(80°) and 42.8m. Some parts interbedded with thin SHALE beds. Core loss at 41.2~41.5m,	Lugeon 40 40m m
on the state of th			
	ere loss i (#ard	<ul> <li>driller's note 4</li> <li>(stick): 2 (substick): 3 (piece): 4 (fragment): 5 graf)</li> <li>5 (soft)</li> <li>decomposed)</li> </ul>	•

								am Mae Rit HOLE N											
			am right				DE	PTH OF HOLE 70	.0.	m	Ç	OM	ME	ŊÇ	ED		3Fet ìMa	- 86 - '86	
COORDU	NATE		237 1.981.46 394.24	1. 5	ag h		UE	PTH OF OVERBURDEN 6 NGTH OF ROCK DRILLING 64	.U.	m m	· · · ·	UM Ibli	I F	:	A A	L	eark	chai	
			ZONTAL					TAL LENGTH OF CORE 64											
			A CONTRACTOR OF THE PARTY OF TH					RE RECOVERY 91											
<u> </u>			T.	<u> </u>	<del></del>		OBSI	RVATION OF CORE	Γ					4	A.			耆	1
DEPTH DCK NAME	0	i	CEMENTA TION KIND OF BIT CASING	8	WEATHER	SS	m Z			1.31		11	RE T	3 T.			ОЕРТН	ELFVATIC	
ă Š	-		Cen Cen	COLOR	Ž.	HARD.	CORE	DESCRIPTION	)	5.7		3	RELLI	100		R	ō	3	
Om	- (	) <b>→ 10</b> 0		<del>                                     </del>	-	_	Ť		ļ			LUG	EON			40	Om	, m	
								0.0~6.0m: Overburden.							7:1	1			1
	$ \Delta $			•				Silty sand with					'	٠			-1		l
1 1				'				rock fragments size						·	: 1				
2-3	Δ							2~100 <sup>m</sup> /m.									-2		
				5										٠.,			-		
dundundun. Overburden				brown					ŀ								- 3		
The state of	$\triangle$			l		,													
ove Lt				redx		. '			·								4	2.4	
1	$\Delta$		]														_	3	
5-1	١. ١١																-5		1
1 1	$\Delta$																		
HR HR Overburden	$\langle \gamma  $	144		ļ				6.0~7.0m:									-6		l
l diam	X							Core loss.	'								- 7		-
7					5	5	5	7.0~20.lm:											
<u> </u>	$\geq \leq$					-	5	Pelitic HORNFELS grey.									-8		1
] ¥				Y gry	4	4	5	Non calcareous.											
9-			'	₹	<del> </del>		4	7.0~7.4m									- 9		
*	$\mathbb{N}$		6					Decomposed.									-		-
10-11	$ \Lambda $		Z 					Rock fragments crushed by finger pressure.		-			:				- 10		
1 -			SAS	gry		-		7.7~8.9m							ľ		_		١
1 = 4 & #			ľ	å g	3	4	4	Highly weathered.	l						İ		-1		
	$\sqrt{\Lambda}$		1					Clayey. Rock fragments	]					'					
2-	ΙX		} [					broken by hands.				-	_				-2		
			11	<u> </u>	3	4	4	10.4 ~ 20. lm		IN	0		Ге	S	I		2		
3	$ \bigcirc $			<del>                                     </del>	Ť		<b>–</b>	Moderately wind. Brittle and cracky.											
4 HR			<b>1</b>		3	4	4	Cracks stained remarkably.		}							4	1 22	1
" <u> </u> <u>+</u>					۲		-	Dip of bedding about 30°									-		
5			1	<u> </u>													- 5	1	
1 1				ž													_		
6 Junhulli HR				퓽	3	4	4	Core loss of 7.4 ~7.7m,	:								-6		
1 1				-				8.9~10.4m, 11.35~12.7m,											1
7-1111 A.P.		MM)	}	-		-	-	13.05 ~13.65m,14.25 ~14.8m,									7		
HR HR				y S	3	4	4	16.45~17.0m, 18.1~18.8m		1	1				1			1 : -	1
8-		ЩЩ		₹				and 18.95 ~19.1m.									8		
4	X		<b>}</b>		12		4												1
9	35			<u>7</u>	<del>                                     </del>	4	4										E 9		١
20 1 4	200		ļ .	dk gry	3	3	3		L	L							- 20	1	
L-55_3	<u></u> V	/ N			1	1	+	≱ driller's note 4	,								·. — <del>-</del> -	2 <del>- 1</del>	•
		8	4615 12					tick), 2 (substick), 3 (piece), 4 (fragmasi), 5 grain											
		<u> </u>	- core loss		1			- 5 (soft)		,					1.				
			- RQO		. ,		- 14							٠.					

						0. DR - 2 (SHEET 2 OF 4 )
LOCATION Dom righ						O m COMMENCED 28 Feb 86
ELEVATION 2: COORDINATE 1.984	461.9	<u>и</u> 0	ī		PTH OF OVERBURDEN <u>6.</u> NGTH OF ROCK DRILLING <u>64</u>	O m COMPLETED 18 -Mar - '86 O m DRILLED BY Learkchai
ANGLE FROM HOLIZONTA			_			05 m LOGGED BY K. Ishikawa
BEARING OF ANGLE HOL			_			5 %
A G					RVATION OF CORE	WATER TABLE
DEPTH 30CK NAME LOG CEMENTA-TION ATT	COLOR	WEATHER ING	D. FESS	CORE CUTTING	DESCRIPTION	WATER PRESSURE TEST
Q 7 7 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	<b>်</b>   ဦ	WEA	HARD.	S.D	DESCRIPTION	LEAKAGE OF DRILLING WATER
20m 0 → 100			_	7		LUGEON 40 20m m
				v	20.1~22.7m :	
	. ₩			2	CHERT, greyish white.	
1-1 LW - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	gryx		2	3	Moderately wind. Cracks stained remarkably.	
2 3 0	16	:		3	Substicky core.	
	-				22.7~28.4m:	(Pmlox=5.5\$kg/cm²)
3-3			1		Pelitic HORNFELS: interbed	ed
					modium grained S·S.	
					Moderately wind.	
Horning Horn Fels	_			3	Cracks stained remarkably.  Dip of bedding about 30.°	
1 2 E	grey		3	ş		
			[	4	Sheared zone at 22.7	
			.		~22.8m, 27.2m(60°) and 28.2~28.4m (60°)	
7-					5.00 25.2 25. 111 155 7.	(Pmpx=7.66kg/cm²) = 7
					00.4 70.45 m. t	
8-3 200					28.4 ~ 30.45m : CHERT: interbedded with	
		3		5.4	SANDSTONE. It grey.	
9 1 2 1 1	Ş. Ş.			3	Moderately wind.	
CHERT CHERT	=			ĭ	Cracks stained remarkably.	
1 3 1444111111111		1		2	Dip of bedding 30-40°	Lu 23 6
1, 1 <u>F</u> : 1	. }	-		3	Sheared of 28.4 ~	(Pmpx=8.55kg/cm²) = 1
					28.85m. 30.45~30.9m:	
2-4			`		Pelitic HORNFELS, grey.	
					Siliceous.	
3	-			\_	70.0 - 70.76m ·	
	.			3	30.9 ~ 39.75m : CHERT: interbedded	
	2		2	1	Sondy SHALE It grey.	
CHERT	grey			4	Moderately wind.	
1 3 5 1 1 1 1 1 1	light				Cracks stained.	
8 4 11 11 11	≝				Hard, but somewhat	Lu 52.3   E 6   (Pmax=3.54kg/cm²)   E
					cracky.	
CHERT			'		· .	
			1	1	٠.	
8-3	-			.		
		_		-		
		2		3		
40 1 10 11 11	上	1_	<u> </u>		A dillere solo 4	1 1 1 E 40
		1		1	b driller's note 4 stick) 2 (substick) 3 (piece) 4 (fragment) 5 grain	
KN core foss			1		~ 5 (soft)	
RQO		1 (	(fresh)	~ 5 (d	ecomposed)	

Nam Yu			-		Na	m Mae Rit HOLE N	0. DR - 2 (SHEET 3 OF 4 )				
LOCATION D	am right	<u>bank</u>	<del>!                                    </del>	DEPTH OF HOLE 70.0 m COMMENCED 28 Feb 96 m DEPTH OF OVERBURDEN 6.0 m COMPLETED 18 -Mar = 86 LENGTH OF ROCK DRILLING 64.0 m DRILLED BY Learkchal							
COORDINATE	1.981.461	980	Δī, w	L., .*	DEI	ALH OF DAFKRAKAFA F	O DOULED BY Learkchal				
ANGLE FROM HOL	334.Z46. 334.Z46.	ठ इ.स	 	05m LOGGED BY K. Ishikawa							
BEARING OF ANGL			- :			RE RECOVERY 91	200111				
	1				-	RVATION OF CORE	ž.				
DEPTH OCK NAME LOG	CEMENTA TION KIND OF BIT CASING	a	£.				WATER TABLE				
DEPTH C O G	KIND XIND BIT CASI	2010R	WEATHER -ING	HARD. NESS	CORE	DESCRIPTION	WATER PRESSURE TEST				
	ļ		3	I	 		LIGEON				
40m   0 1100							40 40m				
			. ]			39.75~52.6m : Pelitic HORNFELS dark grey					
111111111111111111111111111111111111111						Non calcareous.	Lu 12.4				
						Few cracks stained	(Pmax=10.68kg/cm <sup>2</sup> )				
2-			•			Dips of cracks generally					
			.		3	30° and 60°.					
3-		<u> </u>			ς.,	Fresh and hard.					
		grøy				Generally good rock.					
HORNFELS		dark		. :	2						
		8				4375 ELO					
5-						47.35~51.9m Purplish grey.	E-5				
				. :		Non calcareous.	Lu 18				
1 6 7						Cracks almost no stained.	(Prinax=11.5/3kg/cm²) = 6				
			2			Fresh and hard, but					
7-1 2			ļ			somewhat cracky.					
HORNFELS				2		Pyrite on cracks of					
8						51.75m					
		ъ.			3						
9-		grey	·			51.9~5 <u>2.6m</u>					
		چ ا	- 7		5	Fresh and hard.	50				
50-		purplish			4	Pyrite on cracks.					
		n d				y y me on crooks.					
	-		1				Lu43.3				
2						52.6~55.6m:	(Pmax=12.63kg/cm²)				
		송성			3.	CHERT. It grey.					
3		-	į		3	Fresh and hard.					
					4	Pyrite on cracks at					
		grey	1		-	52.8m (90°).					
CHERT		=	ļ			55.6~59.15m:					
5				1		Pelitic HORNFELS dk grey.	<u> </u>				
			ļ		3	Non calcareous.					
						Dips of cracks generally					
			1		3	45° and 60°	Luild				
		اچ			2	Cracks filled with calcite	(Pmox=)3.6/2kg/cm²) = 7				
		grey		;		film.					
HORNFELS		충		1		59.15~59.8m :	<b>-8</b>				
			ľ	2		CHERT: interbedded with.					
9-	·					LIMESTONE and SHALE.  Dip of bedding about 60%					
- E 15		Š	ļ		2	S.p of bodoing good oo.					
60 3 V V	<u>                                     </u>			1	戸	driller's note 4	L				
			1		1 (\$	lick), 2 (substick), 3 (piece), 4 (fragment), 5 grain					
kwi kG	_ core loss			1 (	hard) ~	3 (soft)					
	нос		I (fi	resh) -	- 5 (de	composed)					

		****			CT.			10; DR - 2 (SHEET 4 OF 4 ) 2.0 m COMMENCED 28-Feb 186
LOCATION ELEVATION		237.9			-			2.0 m COMMENCED 28-Feb 86 5.0 m COMPLETED 18-Mar - 86
COORDINATE		1.981.46 394.24	. 98 5. 57	PΝ			NGTH OF ROCK DRILLING 64	
ANGLE FROM				90			· · · · · · · · · · · · · · · · · · ·	1.05m LOGGED BY K. Ishikawa
BEARING OF A	NGL	E HOLE			_	co		1.5 %
		خ.يد ه					RVATION OF CORE	WATER TABLE
DEPTH ROCK NAME		CEMENTA TION KIND OF BIT CASING	ő	퓼츄	SS ESS	ir Sign	DESCRIPTION	WATER TABLE — W I NO I NO I NO I NO I NO I NO I NO I
90 80		A NEO	COLOR	WEATHER ING	HAR S S	CORE	DESCRIPTION	LEAKAGE OF DRILLING WATER
60m 0	<b>→</b> 1000							LUGEON 40 60m "
<b>A</b> ~					2	4	59.8 ~70.0m :	
			:		` '	- 1	Pelitic HORNFELS, dk grey.	
1								Lu 0.2
1 2	,				•		Fresh and hard.	(Priax = 14.68kg/cri <sup>2</sup> ) = 2
							Good rock.	
3 3		en en en en Notae					Dine of oracle constally	
	***					2	Dips of cracks generally 30° and 60~70°.	
3 HORNFELS HORNFELS HORNFELS			اج ا	,	,	S		
			grey				Cracky at 59.8~60.3m.	
HORNFELS			dark			3	Somewhat sheared and	5
	ЯШ		ō				clayey at 60.25m.	
	ΉIII				<u> </u>	,	Quartz vein at 64.4 ~	Lu = 0.8
	<b>X</b>						64.7m	(Pmax=15.6kg/cm²) = 7
17	WIII	:					<b>4</b>	
	Ш							
	$ \mathcal{Y}  $						:	
	ЖШ							
	ИШ							
70	ИШ					<u> </u>	·	70
uli uli								
] -								
2-5		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		ļ				
3-4								
							•	
1 4 3 1 11		:	]				•	
5-1								
			:		l ·			
"]								
			]		) :	]	•	
		ž.	ļ					
8-3					1			
		4.			:			
9-1								
				]		1		
	ШШ		<u></u>	1	_	-	▶ driller's note 4	
	1/3					1	tick), 2 (substick), 3 (piece), 4 (fragment), 5 gral	n
K Core less			ı			- 5 (soft)		
•	ROS			1 (	fresh)	~ 5 (d	ecomposed)	•

	٠	Nam	Yuc	im		PRC	JE(	OT.	N	am Mae Rit HOLE N	o. D	<u>L -</u>	<u>i                                      </u>	(SHEE	r I	. 0	F	4 )	_	
	ATK	100	Da	m r	ight	ban	k	•	DE	PTH OF HOLE 60	.5 n	n	CO	MME	ENC	ED	. 2	3 _ Mo	r 86	
	VAT			ı. <u>9</u> 8	193. 1.408 4.326	697 . 52	m DEPTH OF OVERBURDEN 2.9 m COMPLETED 8N LENGTH OF ROCK DRILLING 57.6 m DRILLED BY									Kanci	1000 :			
		NATE	HOLI	19.00				÷ · ·			4								ikawa	
			ANGL					- · · ·		TAL LENGTH OF CORE 60 RE RECOVERY 100	.O %		CO			•				
				<u> </u>	• • • • •					ERVATION OF CORE	<u> </u>						٦		z z	}
Į į	NAME	ů,		NO N	g å	œ	ŧĒŖ	<u> </u>				100	1111	F -	· •	V		DEPTH	ELEVATION	l
DEPTH	ŏ	-		DE T	KIND OF BIT CASING	COLOR	WEATHER-ING	HARD	CUTTING	DESCRIPTION			14.7	ORILL	16	VATE	,	ă	7	١
On	«		0 → 100				₹		0				-	IGEON	-		40	Om	ŵ	1
ļ			ııııııııı	1	<del></del>			<del></del> -	_	0.0~2.9m : Overburden.	ÍΤ	1		T			1			ĺ
1	_	$ \Delta $								Silty sand.		1	1					_		l
1 1-	rde																		·	
1-	Overburden						'							1				-2		
"	ð			1					ŀ							,		_		
	3			2					-			┵	4	;.L-				3	V 4	١
			<b>X</b>	CASIN			,	3	4	2.9~15.2m:			-   `	<u>'</u>						l
4			ЩЩ	ان			3	2	3	CHERT, light grey.		.						4	- 1	
5										Some parts interbedded										
5-		[[[]]							<u> </u>	with LIMESTONE.								5		
-			ИШ				2	2	3	2.9~4.15m					١.			ılı.		Ì
6-			2	-				ĺ	3 4								19.1 1	-6		l
1 -	]					1			3	Cracky and cracks		N  c	)	Ţε	S	t				١
7		-		Ì		-	-	-		stoined.								7	٠.	ĺ
						l			2	4.15~7.1m	}	1	ļ					8		١
8-			###						3	Few cracks stained,				1				1		
9-									4	.71.15.0		.						- 9		
9-	 	$\mathbb{H}$	枷			grey	. :			7.1~15.2m Fresh and hard.										1
10-	HERT					:				Cracks no stained.		-	_		$oxed{oldsymbol{oldsymbol{oldsymbol{eta}}}$		_	- 10		1
"_	5		Ш		-	igh.			3	Dips of cracks generally								Ē	} .	١
1			ИШ							30° and 60°			- [			l		<u>-</u> 1:		
		<u> </u>	И. И					1				- 1	J) = (	- 1		1		Ē.,		١
2-			<del> </del>									[6	Pma	x=3.5	5 kg	/cm	۴)	2		
-				}					2			-	ļ					<u> </u>		١
3									3									F3		
1 -					÷			,	2	15.2~20.0m:								<u> </u>	Į .	
4			H##				ı		3	Fine grained SANDSTONE.								<b>F</b> ⁴	1	
1										dark grey.								F.		
5-3			##						2	Non colcareous.		1	1		Π			E,		١
								3	3	Fresh and hard.	]							E 4		
6-			ИШ					2	~ 4 4~5	Cracky of 15.2 ~				,   <sub>-</sub>	1	1		E.	1	1
7-	Ψ,		ИШИ		İ				2	16.45m.		- 1	1 -	24.3 x=3.6	!	/cm		E, 7		
'	ě		KHIIII		ļ	grey		2	3	Quartz vag at 16.45		['		-	۸,		.	Ē.		-
7	SANDSTON		MMIII						Ľ	~17.0m								8	3	
	SA	h	ИШ			dark												<u> </u>		
9		.						Ì	2			1						9 :		]
		l	KIIIII		l															
20		<u> </u>		<u> </u>	لـــــــــــــــــــــــــــــــــــــ		ليا	1	3	≯ driller's note 4	لبل				<u></u>	L.,	ــــا	20	<u> </u>	_1
							Î	Ī	Ţ, (s	itick), 2 (substick), 3 (piece), 4 (fragment), 5 grain								.[		
	Core loss							1		- 5 (soll)								d.		
	AQD						1 (1	resh)	~ 5 (de	ecomposed)	٠.									

ELEVAT COORDI ANGLE	ON ION NATE FROM	0 	m right 1 981 408 394 326 ZONTAL E HOLE	597 528 509	k m		DEI DEI LEI TO	PTH OF OVERBURDEN 28 NGTH OF ROCK DRILLING 57 TAL LENGTH OF CORE 60	0. 5 2. 9	m COMMENCED 23- m COMPLETED 1- m DRILLED BY KO m LOGGED BY K.1	Mar - '86
f T iii	Ī							RVATION OF CORE	T		Z
DEPTH ROCK NAM	, O.G.		CEMENTA TION KIND OF BIT CASING	COLOR	WEATHER ING	HARD. NESS	CUTTING	DESCRIPTION	\	VATER TABLE VATER PRESSURE TEST	<u>u</u>
20m		→ 100 **							<u> </u>	LUGEON 1 2	)m m
1 marian						_	2 4	20.0~40.4m: Fine grained SANDSTONE, dark grey.		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
1 Transferration				- ::		2	3	Non calcareous.		Lu' = 2.5   (Pmax = 4.64kg/cm²)	
3		Ť						Some parts cracky, but generally		3 d d	
3 4 5 5 6 7 7 7 7 7 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9			- 1 - 1				3	good rock.		5	
9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						:	4	Dips of cracks generally 10-30° and 60°		120 E 6.	
2 minutes							3 2 4	Some cracks filled with calcite film.		(Pmpx=5.59kg/cm²) = 7	
					1	1	3 4 3			tutulutus.	
SANDSTONE		7.7		grey			4 2	and the second of the second o			30
SAND SAND				dark g						Lu' = 0.7 E	
3							3				
4							4				,
9 14 14 14 14 14 14 14 14 14 14 14 14 14							3				
2 1 1 1 1							3	· ·		Lu' : 0.	,
8				:			2	-			В
40 1						1	3	▶ driffer's note 4			40
					Ī	Ī	)   (s	p critier's note 4 lick), 2 (substick), 3 (piece), 4 (fragment), 5 grain	a		
	r/	F	- core loss - RQO		10			· 5 (soft) campased)			

		Nam	Yua	 Im i					am Mae Rit HOLE	1 - 1		4 )	
LOC				ım right		<u>k</u>	_	DEI	PTH OF HOLE 6	).5_m	COMMENCED	23 - Ma	<u>ır — '86 —</u>
ELE	VAT	ON		193. 1.981.408 394.326	697 528	9 N			PTH OF OVERBURDEN			1 -Ma	<u>ıy - '86</u>
									NGTH OF ROCK DRILLING <u>5</u> TAL LENGTH OF CORE <u>6</u>				
				E HOLE					RE RECOVERY 10		LOGGED BY	11.1271	107114
									RVATION OF CORE	T		T	ž
DEPTH	NAME	00		TON TON TON TON	οκ	Ë,	×	υ		1	ER TABLE	DEPTH	ELEVATION
H	ğ	٠٠		CEMENTA TION KIND OF BIT CASING	8	WEATHER	A PR	CORE	DESCRIPTION		ER PRESSURE TEST: KAGE OF DRILLING WATER	E	33
40m	-		0 → 100		-	3_	-		The two tests of the contract	1	LUGEON	40 40m	, m
	s·s	• •	WWIII					3	40,4~42.75m:	TT		E	
1		!  -	MAII		-				CHERT: interbedded			E,	
]	or				are.		1	]	with LIMESTONE.		Lu'=Ol		
2	CHERT				≒			2	Fresh and hard.		(Pmpx= 8.57 kg/cm²)	2	
			nuu KKA		ļ ·				Good rock		1 1 2 3 1 1 9 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	<u> </u>	
3.		***			*		-	4 ~ 3	42.75~44.25m :			E 3	] ]
=	8.8	•			grey		2	3	Fine groined SANDSTONE			1	
4-	٠,				ě			4	Fresh and hard, but			<b>E</b> 4	
			MH	)					cracky.				
5									44.25~60.5m:			E.	
1		200	MM					2	CHERT: interbedded			6	
6-1									with LIMESTONE.	1 )	Lu' 1.1		
7	S		HHH				İ				(Pmpx = 9.63 kg/cm²)	E 7	
1	STO		HHH					3	Fresh and hard.			<u> </u>	'
7 1 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	MESTONE								Good rock.	1		E-8	
	Ξ.							١.	Some parts sheared.			E	
9,11	with		WW					1.	Dip of bedding 30~40°			E 9	
	3		KAKA			1.		1	Dip of beduing of to.	1 1		E.	
50-3	ded		lym						Dips of cracks generally	-		50 E	
	ped		WIII					2	10~30° and 45~60°			E,	
سئسناستاس	nterbedded	<b>▼▼</b>	WIII		<u></u>		3	4 ~ 3	Ob				
2-1	. <del>-</del>	114	WIII		grey			3	Sheared at 51.1~51.7m (shear		Lu t O B	2	
4	<u>_</u>		HIII		=		1	2	plane 60°) and		(Pmax=)0.77kg/cm²)		
3-4	T m				ligh		3	5	52.8 ~ 53.4m (shear	1 1		3	
-	ō	ļЩ	HIIII					7	plane 45°).			E	
4-					. ;			2				4	
-	1							3	•			F.	
5-			ИЩ					-				TE"	
												6	
6-7	1	峃	HH								Lu=OB		
7-		淵	WW.	·							(Pmax=II.56kg/cm²)	-7	1
-		出						2	,			Ē	
8-		肥					4					E-8	
=		iΨ											
9-		山					:		•			E-9	
60	-	山口										60	,]
	····	7	N	<del></del>		1	1	1	▶ driller's note ◀	:			As par a s
		K		- core loss			١.,		tick), 2 (substick), 3 (piece), 4 (fragment), 5 gra	n :			
			ŧ	- 800		[   1 (1			- 5 (soft) camposed)	4		:	
				•									

LOCATION ELEVATION COORDING ANGLE	ON <u>Do</u> ION NATE FROM HOLI	m right ban 193.69 1.981.408.52 394.326.50	k 7 m 8 N 9 E 90 °	DEI DEI LE	PTH OF OVERBURDEN NGTH OF ROCK DRILLING	60. 2. 57. 60.	5 m ( 9 m ( 6 m ( 5 m (	(SHEET 4 OF COMMENCED - COMPLETED - DRILLED BY - LOGGED BY	23 <u>Mar '86</u> 1 <u>May - '86</u> Kanehana
DEPTH ROCK NAME	900			OBSI	RVATION OF CORE  DESCRIPTION		WATER TA	RESSURE TEST OF DRILLING WATER	·
60m	0 - 100 11 - AMMI						·	LUGEON	40 60m W
60.5 1 2 3 4 5 6 6 1 7 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				2					բայանունուն անունականականական ունականականականականականականականականականակ
on 9 minulum 8 minulum					b driller's note 4				8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		– core lass – RQO	•	(hard) -	tick), 2 (substick), 3 (piece), 4 (freqment), 5 ~ 5 (soft) rcomposed)	5 grain			

								am Mae Rit HOLE N				(S	HEET	1	OF	4	loc	
LOCATIO			om left 224					PTH OF HOLE			(	COM	ME	NCE	D 🕹	2 -Ju	n'86 n - '86	<u>}.</u> .
COORDIN	JATE		. 98 [. 386 394, 360	, 9 <u>7</u>	<u>. 4</u> §	<u>n</u>		PTH OF OVERBURDEN 2 NGTH OF ROCK DRILLING 68				JUM Juli	የኒር ነርሶ	DV.	, =	Phadu	ina	-
			ZONTAL					TAL LENGTH OF CORE 60										
BEARING								RE RECOVERY 87					- ,					
l A		**********	· .	T				RVATION OF CORE	Г			11 11 1 11			•		Z	٦
DEPTH SOCK NAME	9.		CEMENT TION KIND OF BIT CASING	ĸ	H S	SS	ÿ							-₩		DEPTH	ELEVATION	4
ğ ğ	~		CEN	COLOR	WEATHER	HARD. NESS	CORE	DESCRIPTION	1 -		. "	ESSU OF DE	-	±S1 łG WA	TEO	30	E-FE	۱
Om .	<del> </del> 0	→ 100		<u> </u>	3	├		<u> </u>	-			LUG				40 Om		m
} <u>}</u>		ıřım	1		-	<del> </del>		0.0~2.0m : Overburden.	Ĭ-	T	1	П	T	Т	Т	Ě		1
de l	$\Delta   $			Ę				Silty sand with rock										
Overburden				ğ				fragments.					.			E 1		
18	$\Delta \parallel$					1				-					1	E		- [-
2 3 2 4 2 2 4 2 4 2 4 2 4 2 4 2 4 2 4 2				-				2.0~20.0m:					Ţ			2		
HORNFELS				<u>ک</u>				Pelitic HORNFELS.								-3		ı
1 ° 1 E		$\parallel\parallel$		grey			5	Massive.			-					E,		1
				Drnx	4	5	\$						- [			E.4 .	7. Y	-
Weathered				1			4	2.0~5.0m								Ē.		-
S S		$\mathcal{M}$						Highly weathered.		-						5	:	
"	A	WW						Soft.								Turn.		
6-3	18	m						5.0 ~ J1.3m								E 6		
								Core loss.										
7	1/183	WW	ဗ				1									7		
	VB	MM	2					11.3~11.65m		'						1		-
8	VN	WW	AS					Moderately weathered.								E-8		
	A Bi	m	O I			1 .		Cracks stained remarkably.	٠	N	0	†	e	s 1	t			
9		m		ı			-	Rock itself somewhat		'			-	- [-		9		
1 4	$\mathbb{N}$							discolored.					1				: .	
10-3		MM					-	Gravelly to fragmental core:					1			- 10		
-		WW					.	11.65~14.0m	1									
	.	MM					ľ	Core loss.		İ						E-1		
<u>-                                   </u>	=	MM			3	3	<del>-</del> 5-	14.0~14.7m	ŀ					-		ıılıı		
2-3	////	MM						Highly weathered.								E-2		İ
	V/III	MM						Rock itself discolored.								<u>.</u>		
3-=	ΛIII	WW	<u> </u>		j			Rock fragments broken					Ì			3		
-     /		MM						by hands.										-
4		****	<b>.</b>				1-5	<u>14.7~15.0m</u>								4		
] H			<u>-</u> I		4	4	3	Core loss.					ı		}			
5		M	}				4	15.0 ~ 20.0m	$\vdash$			$\Box$		7	1	E-5		
			ŀ				3 4	Moderately weathered.										
§				1		ļ	4	Cracks stained remarkably.			1					F B		
THE	$\exists \parallel$						3 ~ 4	Rock itself somewhat		L	=4	7.4						
HORNFE				grey		:	4	discolored.	٠.				,kh			F 7	1.	
<u> </u>					3	3	3	Cracky in general.	. 1	۲Pn	]ax	-2	יןיו	c h²	1			
				dark				Dips of cracks generally 60°								F 8		
			1				4	Sheared zone at 19.45 ~19.55m with clay							1::	-9		
] j			.				3	gouge.								<u> </u>	\$ ****** \$ ******	
20		ЩЩ					4		ا .	نـــا		للل	╧		L	20		
		1			•	1		▶ driller's note ◀					•			1 11	17 m 2	. /
		12	core loss				1 (stig (rd) ~ !	k), 2 (substick), 3 (piece), 4 (fragment), 5 grain								:	-	
ROD								omposed)		1				:	. ;			٠.

·	Nan								No.DL - 2 (SHEET 2 OF 4 )
LOCAT			om left b			•			0.0 m COMMENCED 6 _Jun _ '86 2.0 m COMPLETED 22 _Jun - '86
COORI			224. 1. 981. 386 394. 360	992 992	БЙ	_		PTH OF ÖVERBURDEN NGTH OF ROCK DRILLING	and the second s
			ZONTAL		90				0.9 m LOGGED BY K. Ishikawa
			E HOLE			- -			7.0 %
	=		4 a					RVATION OF CORE	WATER TABLE -4\(\sigma\) I \(\overline{5}\)
DEPTH CK NAME	0		CEMENTA TION KIND OF SIT CASING	80	WEATHER ING	ESS.	CORE	DESCRIPTION	WATER TABLE V
ga Ge	§		CEME TR KIND SIT CASH	COLOR	₩EA	HARD- NESS	85	DESCRIPTION	LEAKAGE OF DRILLING WATER
20m		0. + 100							O LUGEON 40 20m m
				1414	3	3	2	20.0~40.0m:	
1-3					4	· -	4.~5	Pelitic HORNFELS	
4						4	3	Mossive.	
2-							4	Non calcareous.	
1 4						Ì :		20.0~29,5m	No Test
3-							3 4	Moderately weathered.	<del>[</del> 3
3							3	Cracks stained remarkably	
4-3								Rock itself somewhat	
1 1				: .		.3		discolored.	
4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1								Somewhat brittle and	
6 Juni							_ :	cracky.	G.L - 26.6m E-6
					3		3	Dips of cracks generally	
7-3								20~30° and 60~90°	<sup>V</sup>
								Clay gouge at 27.15m	1 1 39.7
8-							4	(20°), 27.3m (60°) and	(Pmax=3.02 <sup>kg</sup> /cm²) = 8
2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		表		·			2	27.9m (30°).	
9- 5	3 ===	4		grey				29.5~33.6m	
20 minimininh HORNEELS		##					3	Cracks stained slightly.	
30-7				dark		٠.		Dips of cracks generally	30
-   -				ם ם				60°	
'-									
2 3			1		2			33.6~40.0m	
			1				2	Fresh and hard.	( Pmpx = 9. 0 2kg/cm²)
3-1								Good rock.	
1 1								Dips of cracks generally	
4-							,	60° and 80°.	
						2	<u>'</u>		
o 7									
1			54 E						
0			2.2	. :	·		2.		6
					1		. !	,	
']						Ė			Lu = 1.1
			119.00						(Pmax=9.96 <sup>kg</sup> /cm²) = 8
1		###					2		
9-1			·	·					
4							3	† •	
40 =			لسسا			<u></u>		▶ driller's note ◀	111   1   1   40
					1.		1 (1	tick), 2 (substick), 3 (piece), 4 (fragment), 5 gr	in .
core loss					1			5 (solt)	
RQO						resh)	~ 5 (đ	ecomposed)	•

			СТ		Date	o. DL-2 (SHEET 3 OF 4 )
LOCATION	om left bo 224.9		m			O m COMPLETED 22 -Jun - '86
COORDINATE	1. 981. 386. 394. 360.				NGTH OF ROCK DRILLING 66	
ANGLE FROM HORE	and the second second	90	•			9 m LOGGED BY K. Ishikawa
BEARING OF ANGL	E HOLE		:	со	RE RECOVERY 87	0_%
NAME O G	٠, ١, ١				RVATION OF CORE	WATER TABLE
DEPTH CK NAM	CEMENTA TION KIND OF BIT CASING	COLOR	HARD.	CORE CUTTING	DESCRIPTION	WATER PRESSURE TEST
SOCK DEP	8 299	S W	-   ₹ °	SS		LEAKAGE OF DRILLING WATER
40m 0 → 100 %						LUGEON 40 m
				_3_	40.0~60.0m	
	].				Pelitic HORNFELS	
				3	Massive.	
2-				2	Fresh and hord.	Lu= 8.9
				3	Generally good rock	
3 5		grey		2		(Pmax = 11.03kg/cm <sup>2</sup> )=3
HORNFELS	ત્ર ા	Ł	2	2	Many calcite and	
4-1 5		do x			quartz veinlets.	
		] 1		3	Dips of cracks generally	
5 rhudin				2	30~45° and 60~70°	5
		1	-	3		-6
6 4 ~			3	4	Sheared zone at 41.85m with slickenside	
7 -		Ì	2	3	(70°).	Lu = 14.9
			4	4	Sheared zone at 45.7	(Pmax=70.4kg/cm2)
8- 4~			4	4	~46.65m and 47.75	Ē-8
				2	~48.2m with clay	
9				3	gouge.	وينا
		.		}		
50				2		50
				3	•	
				-		Lu=0.2
FELS				3		
1 H					•	(Pmax=12.95 <sup>kg</sup> /cm²)
HORNI 13		grey				
	1 1		2	2		
		dor A				
	-	-		3		5
			1			
6	]		'		e salah salah salah salah salah salah salah salah salah salah salah salah salah salah salah salah salah salah s	[
│ <b>┦</b>	1		-			Lu = 0.2
				2		(Pmax=14.02kg/cm2)
8-3			'			
9						
						60
[60 ] [10]		•	4	1	b driller's note 4	
					tick), 2 (substick), 3 (piece), 4 (fragment), 5 grafi	그 그 그 그는 사람이 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그
	- core loss	1			- 5 (soft)	
	RQD	•	(17855)	~ ə (dı	composed)	