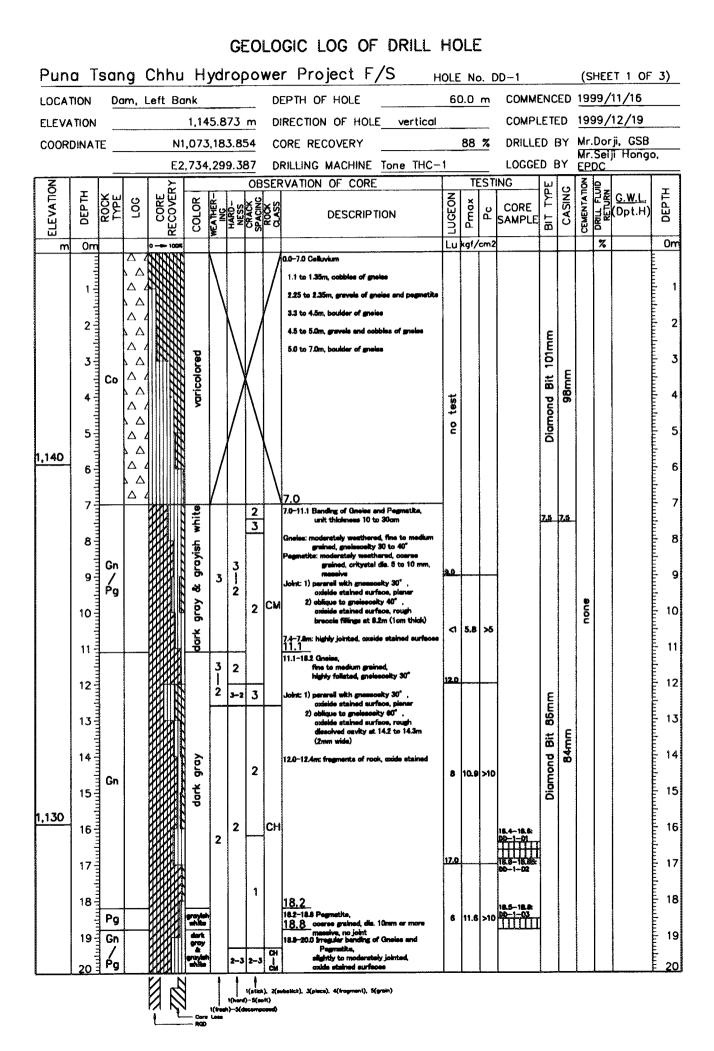
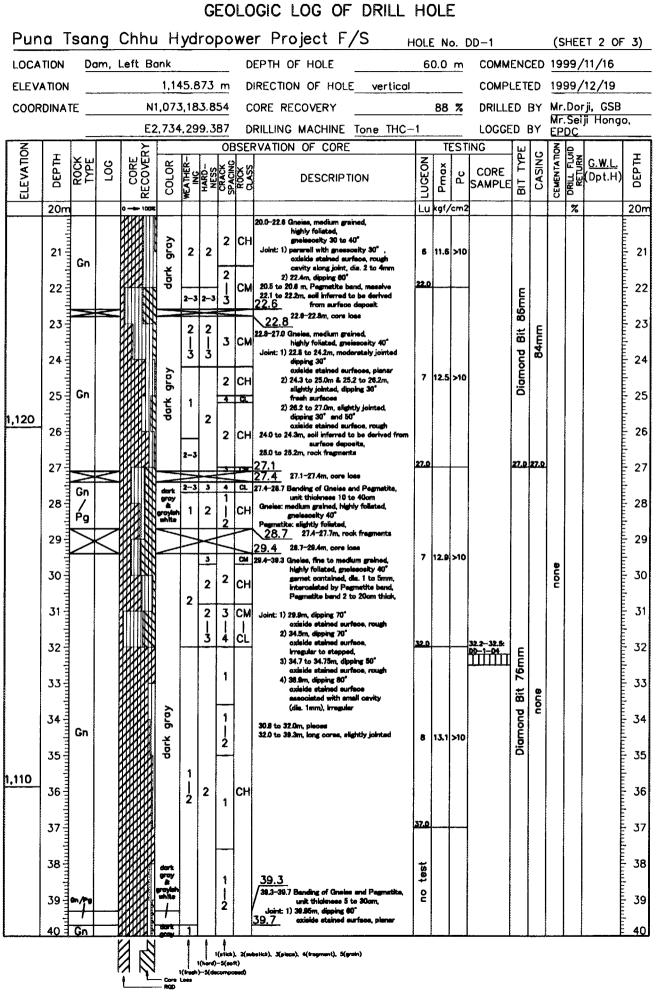
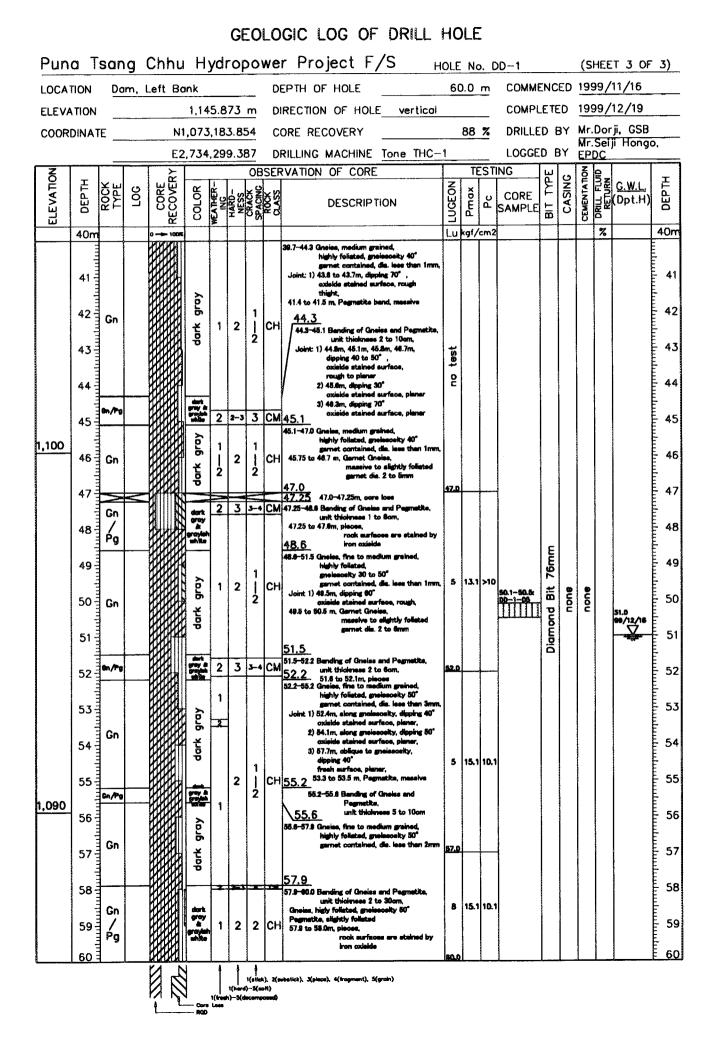
CHAPTER 7 GEOLOGY

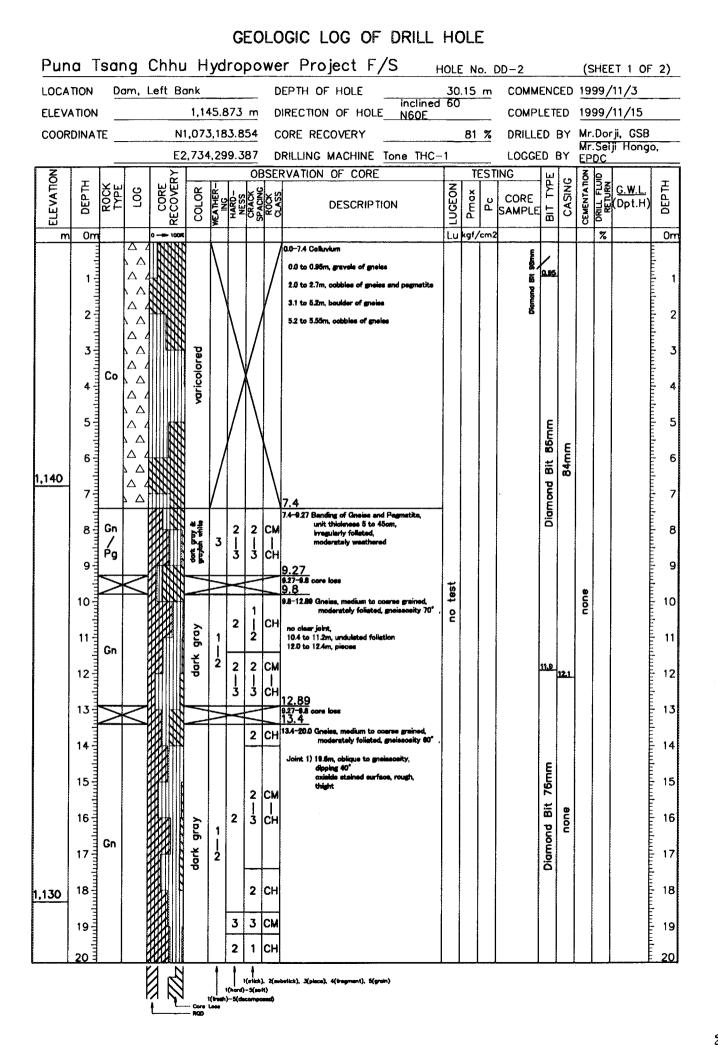
GEOLOGY

Geologic Logs of Drill Holes Photographs of Cores Result of Permeability Test Geologic Logs of Pits Result of Seismic Prospecting Result of Water Level Measurement in Drill Holes Result of Laboratory Tests Photographs of Rock Core Samples Photographs of Soil Samples Results of Petrographic Examination **Geologic Logs of Drill Holes**







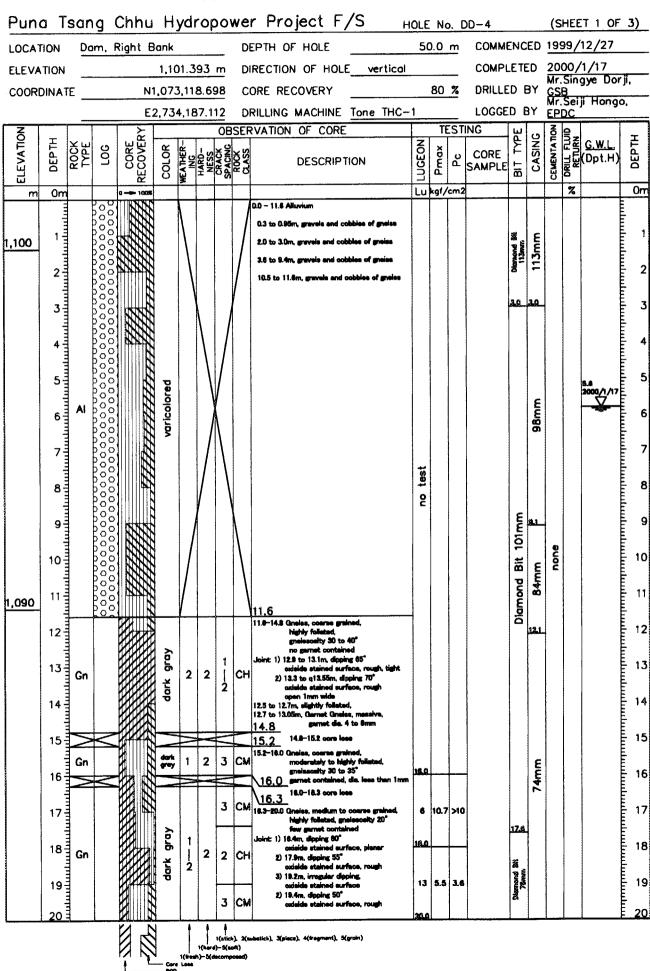


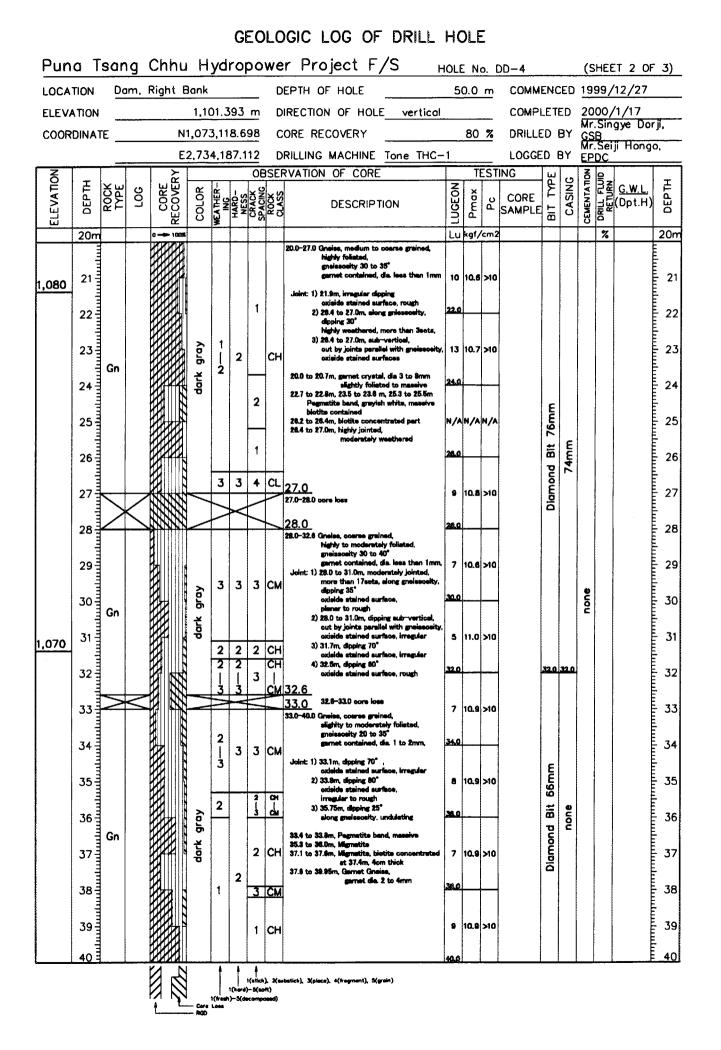
							G	EC	DLC	GIC LOG OF DRILL	н	DLE	-							
Pun	a T	sar	ng	Chh	u ł	lyc	dro	рс	we	er Project F/S	HOLE	E No	<u>.</u>	D-2			(S	HEE	T 2 OF	2)
LOCA	TION	Do	ım,	Left I	3ank				D	EPTH OF HOLE		.15	m	COMMI	ENC	ED	199	99/	11/3	
ELEV	ATION				1,1	45.	873	5 m	D	IRECTION OF HOLE NGOE				COMPL						
COOR	DINAT	E			N1,07	/3,11	B3.	854		ORE RECOVERY			%				Mr	Seli	ji, GSB i Honge	D.
·	rr				2,73	4,2	99.			RILLING MACHINE Tone THC	-1		ST	LOGGE	<u> </u>	3Y	EP	DC		
ELEVATION	DEPTH	ROCK TYPE	LOC	CORE RECOVERY	COLOR	NEATHER-	ING	CRACK	NOON NOON	DESCRIPTION	UCEON	Pmax	0		віт түре	CASING	CEMENTATION	DRILL FLUID RETURN	<u>G.W.L</u> . (Dpt.H)	DEPTH
<u> </u>	20m			0 10		X	╉								•		ŭ	۵ %		20m
	20m 21 22 23 24 25 26 27 28 30	/ Pg Gn		1		1 2 2 1 1 2 2 2		1 	C+	Joint: 1) 24.95m, 2 sets, dipping 45" oxiside stained surface, plane tight 2) 25.1m, irregular oxiside stained surface, rough 25.7–27.0 Banding of Gnaiss and Pegmetita, unit thioinese 1 to 10cm, Gnaiss, course grained, adjustly to moderately foliated, 27.0–31.15 Gnaiss, medium grained, highly foliated, grainscatty 50", oxiside stained surface, planer, tight 2) 28.3 to 29.7m, dipping 60" oxiside stained surface, rough, 28.1 to 29.7m, slightly weathered	test				Diamond Bit 76mm	BUOU	e coc	—		20m 21 22 23 24 25 26 27 28 29 30
I			<u>]</u>			1(fm are Los 20	nah)—:	l ê 1(sti srd)-5(i(discon	(Hen	wbelich), J(pizce), 4(fregment), 5(gruh)		<u> </u>	<u> </u>	<u> </u>	<u> </u>	L	<u> </u>		<u> </u>	E

										GIC LOG OF DRILL										
Pun	a T	sar	ng	Chhu	H	yd	ro	ро	we	r Project F/S	HOLE	E No). [D-3			(S	HEE	T 1 OF	3)
LOCA	TION			Left Bo						EPTH OF HOLE		0.0		COMM						
ELEVA										IRECTION OF HOLE vertical				COMPI						
COORI	DINAT	Έ															Mr.	Sei	ji, GSB i Hongo	,
z			<u> </u>			1,25	6.5			RILLING MACHINE Tone THC- RVATION OF CORE	-1						EP Z	_		
ELEVATION	DEPTH	ROCK TYPE	LOG	CORE RECOVERY	0R	ĒR-	12%	1	×х		NO		0	NG CORE SAMPLE	TYPI	CASING	CEMENTATION	DRILL FLUID RETURN	<u>G.W.L.</u>	ОЕРТН
ELEV	В	8 2 2		L C C	COLOR	WEATHER- ING	HAR	SPAC	a ₽ 2 2 2 3	DESCRIPTION	LUCEON	Pmax	Рс	SAMPLE	BIT	С С	CEME	DRILL	(Dpt.H)	DE
	0m					-				00.000 AB- 1	Lu	kgf/a	cm2					%		Om
1,100	$\begin{array}{c} 1 \\ 1 \\ 2 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 10 \\ 11 \\ 12 \\ 13 \\ 14 \\ 15 \\ 16 \\ 17 \\ 18 \\ 17 \\ 18 \\ 17 \\ 18 \\ 17 \\ 18 \\ 17 \\ 18 \\ 17 \\ 18 \\ 10 \\ 11 \\ 12 \\ 13 \\ 14 \\ 15 \\ 16 \\ 17 \\ 18 \\ 10 \\ 11 \\ 12 \\ 13 \\ 14 \\ 15 \\ 16 \\ 17 \\ 18 \\ 10 \\ 11 \\ 12 \\ 13 \\ 14 \\ 15 \\ 16 \\ 17 \\ 18 \\ 10 \\ 11 \\ 12 \\ 13 \\ 14 \\ 15 \\ 16 \\ 17 \\ 18 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10$	AI		the full full full full full full full for the full full for the full full for the full full for the full full	varicolored					0.0-20.0 Allovium 0.0 to 2.45m, gravele and ookblee of greiss and pagmeths 2.45 to 3.9m, boulder of greiss 5.7 to 6.2m and 6.35 to 7.9m, boulder of sugar-greiss 7.3 to 7.9m, gravels of greiss 8.8 to 10.5m, gravels and ookblee of greise 10.5 to 10.9m, boulder of greise 10.9 to 20.0m, gravels and ookblee of greise and pagmethe	no test				Diamond Bit 76mm 🕅 Diamond Bit 86mm 👷 Diamond Bit 86mm	84mm 54mm	JOUE	no water return		$\begin{array}{cccccccccccccccccccccccccccccccccccc$
	19																			19
	20					Ļ	Ļ	L_												20
					Cons RQD	1(frash Loss	1(hard))-S(m	H)	bstick), X(place), 4(fragment), 5(grain)										

							GE	EOI	_0	GIC LOG OF DRILL	НС)L{	-							
Pun	a T	sar	ng (Chhu	Н	ydi	rop	oov	ve	r Project F/S 📊	HOLE	E N	<u>o. [</u>	D-3			(SI	HEE	T 2 OF	3)
LOCA	TION	Do	ım, L	eft Bo	ink				D	EPTH OF HOLE	6	0.0	m	COMM	ENC	ED	200	00/	1/14	
										RECTION OF HOLE vertical										
COOR	DINAT	Έ								ORE RECOVERY							Mr.	Seij	ji, GSB i Honga),),
					,734	,25	6.50	_		RILLING MACHINE Tone THC-	-1 T						560	<u>)</u>		
OL	Ħ	ጽሥ	ပ	К К К	ĸ	<u>к</u>	1.0	×9		VATION OF CORE	Z	T		0005	LYPE	CASING	TATIO	L L L L L L L L L L L L L L L L L L L	<u>G.W.L.</u>	DEPTH
ELEVATION	DEPTH	ROCK TYPE	LOG	CORE RECOVERY	COLOR	EATHE ING	HARD NESS	CRAC SPACIN	Q AS	DESCRIPTION	LUGEON	Ĕ	Pc	NG CORE SAMPLE	Tie	CAS	CEMENTATION		<u>G.W.L</u> . (Dpt.H)	Ē
Ē	20m			022 0 1005	0	M] /cm2				0	~		20m
			200							20.0-40.0 Alkrium										
	21									20.0 to 22.0m, gravels and cobbles of gnales and pegmetite		ĺ								- 21
										23.0 to 40.0m, gravels and cobbles of gnoise, pagmetite and metasodimentary rooks						Ę	eu			22
	22									metabolinentary room						84mm	anon			- 22
	23-																			- 23
																24.0				
	24-																			21 22 23 24 24
	25-																			25
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1,080	26																			- 26
1,000	27-																			27
	21																			
	28-																			- 28
	20														76mm			ε		- 29
	29-				per						t,							return		
	30	AI			ricolored						o test				d Bit			ater		- 30
					varj						2	ĺ			puou	ε	-	no wo		- 31
	31														Diamo	74mm	snter	Ē		
	32																cemented			- 32
		1															-			
	33						$\ \ $													- 33
	34-																			- 34
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1.070																				
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	38					$\ $														- 38
																				u du
	39-																39.2			39 40
	40																Nou Pou			40
				88		1				obstick), 3(place), 4(fragmant), 5(groin)										
					Care		r(hard) r)—5(di)5(soi ecompo	n.) 1999()											

										GIC LOG OF DRILL										
Pun	a T	sar	ng	Chhu	I H	yd	ro	ро	we	r Project F/S	HOL	EN	<u>o. (</u>	DD-3			(S	HEE	T 3 OF	3)
LOCA	TION	Do	ım,	Left Bo	ank				D	EPTH OF HOLE	6	0.0	<u></u>	COMM	ENC	ED	20	00/	′1/14	
ELEVA										RECTION OF HOLE vertical										- <u>-</u>
COOR	DINAT	Έ														3Y	Mr. Mr.	Dor Sei	ji, GSB Ji Hongo	,
Z					<u>, 734</u>	4,23	0.0			RILLING MACHINE Tone THC-	-1 T		EST				_	1		
ELEVATION	DEPTH	ROCK TYPE	LOG	CORE RECOVERY	COLOR	WEATHER-	HARD- NFSS	CRACK	ROCK	DESCRIPTION	LUGEON	-	0	CORE SAMPLE	BIT TYPE	CASING	CEMENTATION	DRILL FLUI RETURN	<u>G.W.L</u> . (Dpt.H)	DEPTH
	40m		, o						-	40.0-60.0 Alkıvium	Lu	kgf,	/cm2					%		40m
	41									40.0 to 44.25m, gravels of gnoise and pagnetite 44.25 to 48.0m, boulder of gnoise										41
	42									46.9 to 53.8m, gravels, cobbies and boulders o grades	f					ε	8			42
	43									53.8 to 80.0m, gravels and cobbles of gnoiss and pagmetite						74mm	anon			- 43
	44															45.D	48.0			- 44
	45 mini														76mm	<u> 2001/</u>				45
1,060	47 m														ä					47
	48														Diamond					- 48
	49 11				g										٥		cemented	return		49
	50 mil	AI		W.	varicolored						no test						cem	woter re		50
	51				>													o C		- 51
	52															anon				- 52
	53			1111											53.7		53.7			- 53
	54																			- 54
	55														E					- 55
1,050	56								$\left \right $						66mm					- 56
,,	57		00000						$\left \right $						ond Bit		anon			- 57
	58 111														Diamond					58
	59																			59
	60					Ļ	1			·										60
					- Core - RQD	1(freeh Loos	l(hard))-5(se	H)	belick), J(piace), 4(frogment), 5(grain)										





Puna Tsang Chhu Hydropower Project F/S HOLE No. DD-4 (SHEET 3 OF 3) 50.0 m COMMENCED 1999/12/27 DEPTH OF HOLE LOCATION Dam, Right Bank COMPLETED 2000/1/17 DIRECTION OF HOLE vertical 1,101.393 m ELEVATION Mr.Singye Dorji, 80 % DRILLED BY N1,073,118.698 CORE RECOVERY <u>GSB</u> Mr.Seiji Hongo, COORDINATE LOGGED BY DRILLING MACHINE Tone THC-1 E2,734,187.112 EPDC OBSERVATION OF CORE CEMENTATION DRILL FLUID RETURN DF(T) TESTING CORE RECOVERY TYPE CASING ELEVATION DEPTH DEPTH WEATHER-HARD-HARD-NESS CRACK SPACING ROCK CLASS LUGEON ROCK Pmax LOG COLOR CORE å DESCRIPTION 40m Lu kgf/cm2 % 40m 40.0–48.0 Gnoise, medium graine moderately foliated, gnoissocity 40 to 50° 1 CH 2 1 41 7 10.9 >10 41 1,060 2 CH nt- 1) 40 ilm and 40.9m, dispins 55 3 3 2 12.0 42 Ċм 2) 41.2m. display 80 42 - htly weat 3) 43.65m and 44.6m, deping 50" 43 43 44 8 11.0 >10 4.7m. along gnie ing 40 oxiside stained sur 66mm to roug ռուսուսունունուն 44 44.0 4.7 to 44.9m. su б б d auni 6) 48.5 to 48.9m, along gnt Seets, dipping 40° aviaida stained surface Gn Diamond Bit none none 1 dark 1 10.9 >10 45 45 Ē 2 | 2 СН 8 12 Grack 1) 41.5 to 41.8m, sub-ver iside stained, irregular 46.0 46 46 -42 5 to 42.6 m. pieces Pagmatite, biotite concentrated part to 43.1m, F 47 3 10.9 >10 47 - is obse rved egnatite band te cono ad pert 3 ĩ Ĩ d 5 to 10o IA.O 48 48 🗄 2 2 CF 3 3 CM 49.0 49 5 10.9 >10 49 49.0-49.5 core loss 49.5 49.5-50.0 Gneiss, course gra dark gray 2 2-3 2-3 01-0 moderately foliated, projected 50.0m, bottom of hole Gn 50 50 ÷ فتع أنتبي المتنا المتنا ميتنا لمتنا أنديد أنديم أنديم أيمينا بمينا ميتا ميما متمامين أمير فيترفي بشيم فيتريش A 1(stick), 2(substick), 3(piece), 4(frogment), 5(grain) d)-5(soft) 1(% sh)--5(decomposed)

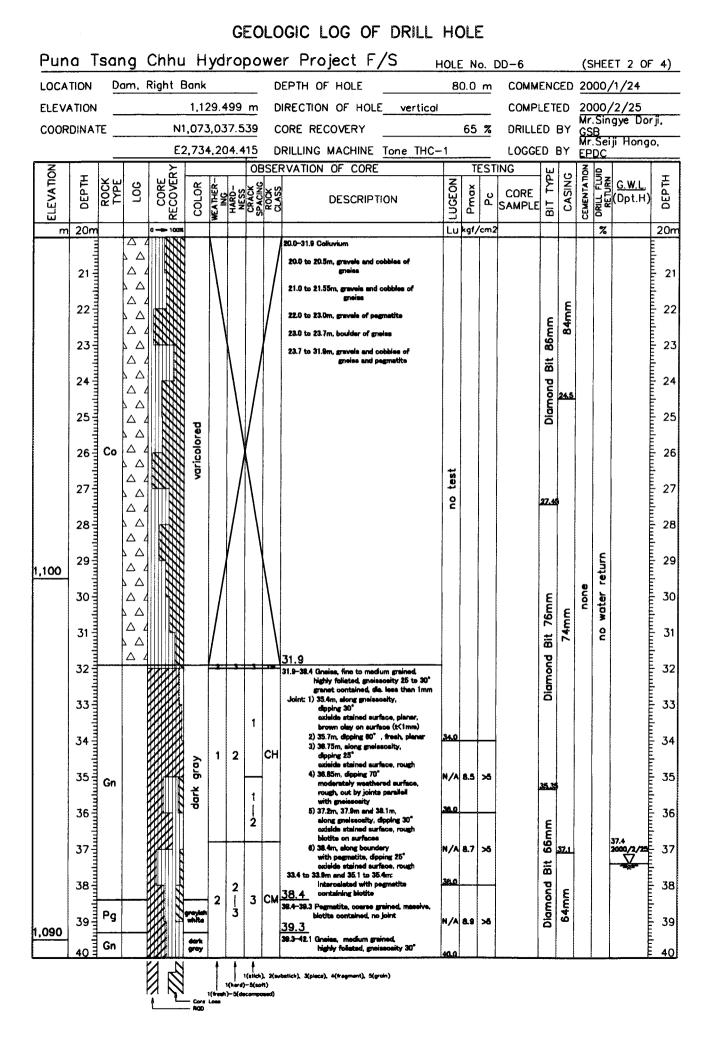
1(free Care Loss RQD

							G	ΕO	LC	GIC LOG OF DRILL	н	DLE	Ξ							
Pun		sar	ng l	Chhu	ı H	yd	ro	00	we	r Project F/S +	HOLE	E N	o. [DD-5			(S	HEE	T 1 OF	3)
LOCAT	FION			Right E						EPTH OF HOLE	6	0.0	m	COMM						
ELEVA										IRECTION OF HOLE NOOE							Mr.	.Sin	'12/24 gye Dor	ji,
COORI	DINAT	E _								ORE RECOVERY				LOGGE			GS Mr. EP	B Seij	ji Hongo	0,
S	-				1		1	_		RVATION OF CORE	1	T					-	_		+
ELEVATION	DEPTH	ROCK TYPE	LOG	CORE RECOVERY	COLOR	MEATHER- ING	HARD- NESS	CRACK	×S SSA	DESCRIPTION	LUGEON	Pmax	Pc	NG CORE SAMPLE	ТЗ	CASING	CEMENTATION	EURI SETURI	<u>G.W.L</u> . (Dpt.H)	DEPTH
	0m			ы В С С С С С С С С С С С С С С С С С С	<u> </u>	¥⊒ M	Ξz	SPA	° ਰ			1	/cm2		ō	С С	N U U	ж Ж		Om
m							-			0.0 — 50.8 Alluvium		(a.)						/0		- 1
	1									0.0 to 12.0m, gravels of gneles and pegnetite gravel dia. 3 to 30cm										1
1,100	n ar le									12.0 to 13.8m, boulder of gneiss 14.5 to 18.8m, boulder of gneiss										
	1 2 1									17.2 to 19.5m, boulder of gnelse						c				2
	3															113mm				- 3
	4															-				4
	5														F					- 5
	6														101mm	<u>6.1</u>				6
	1		0000												Bit 1					
	7										ł									7
	8														Diamond					8
	9 11 11															98mm				9
	, in the second s				ored						test					98,	e			
	10	AI			varicolorec						no te						none			10
	11		0000		2															
	12															12.1				12
1,090	13			L. L.																13
	141														13.8					14
	15-		0000												ε	c				15
	16														B6mm	84mm				16
	15														Bit	J				17
			0000												Diamond					
	18														Dia					18
	19																			19
	20				<u> </u>	L	Ŀ	L												20
			-	86		Î		4 1(utick)—5(80		obstick), 3(piace). 4(fragment), 5(grain)										
					1 Core RQD	1(free) : Loss	n)-5(d													

Pun	a T	sar	ng (Chhi	<u>I</u> I	lyd	ro	ро	we	r Project F,	/S н	IOLE	N	o. C	D-5			(S	HEE	T 2 OF	3)
LOCA	TION	Do		Right						EPTH OF HOLE	inclined	60 60	0.0	m	СОММ			-			
ELEVA	TION				1,	101	393	m	D	RECTION OF HOLE	- <u>N60E</u>				COMPL			Mr.	Sind	ave Do	· ii.
COORI	DINAT	Έ		1	11.0	73,1	18.6	98						%	DRILLE			GS Mr.	B Seij	i Hong	,
					2,7	34,1	87. ⁻			RILLING MACHINE		1		ST	LOGGE		3Y	EP			
ELEVATION	DEPTH	ROCK TYPE	90J	CORE RECOVERY		WEATHER-	HARD-	CRACK SPACING II		RVATION OF CORE		LUGEON	Pmax	0	CORE SAMPLE	BIT TYPE	CASING	CEMENTATION		<u>G.W.L</u> , (Dpt.H)	
	20m		200	0 100	*		-	-		20.0-40.0 Alluvium		Lu	kg1/	′cm2					%		20m
	21 22 23									20.0 to 23.5m, bouider of gn 23.5 to 24.5m, builder of gne 25.4 to 27.0m, bouider of gn 27.0 to 27.6m, gravele and o 28.3 to 30.2m, gravele and o	iss eise sobbles of gnaiss sobbles of gnaiss										21 22 23 24 25 26 27 28 29 30 30 31
1.080	24		000000000000000000000000000000000000000	HHH.	tititirre					31.0 to 32.7m, boulder of gn 33.5 to 34.9m, cobbles and l 34.46m, soil 38.0 to 37.9m, boulder of gn	boulders of gneles reise										24
	26		000000							39.0 to 39.45m, gravels of g	nelec										26
	27		000000	111	<i>H</i> H H H											ε					27 1
	28		000000		tt tt											Bit 86mm	84mm				28
	29 30	AI	00000		<i>w</i> ricolorad			Y				test				Diamond		none			1 29 1 30
	31		00000		wric			Λ				02				ō		c			
	32		0000000		111-1																32 1
	33																				1 32 33 34 35 36 37 38 37 38 39 40
	34 35		0000																		34 - 35
1,070	36		00000																		36
	37-		00000		111111												36.5				37
	38		00000		11111											37.8 1192	74mm				18 18
	39 40		000000													Diamond Sti					39 40
						T(fr ore Las QD	wh)-5(4 1(atic rd)-5(s decomp	oft)	ubstich), Xpiace), 4(fragment), 3(grain)										

										OGIC LOG OF DRILL										
Pun	a T	sar	ng	Chhi	J H	yd	ro	ро	we	er Project F/S	HOL	ΕN	o. (DD-5			(S	HEE	ET 3 OF	- 3)
LOCA	TION									EPTH OF HOLE	60			COMM						
ELEV										IRECTION OF HOLE NOOE							19 Mr	99/ .Sin	12/24 gye Do	rii.
COOR	DINA	TE _								ORE RECOVERY							<u>GS</u> Mr	B Sei	ji Hong	,, o,
<u> </u>	1		1		2,73	4,1	87.1	_		RILLING MACHINE Tone THC- RVATION OF CORE	-1		EST			BY	<u>EP</u>	DC		
ELEVATION	DEPTH	웃찐	LOG	CORE RECOVERY	ĸ	<u>ا</u>	I.,	y y			Z		1		BIT TYPE	CASING	CEMENTATION	LUID IRN	<u>G.W.L</u> . (Dpt.H)	Ŧ
ΓΕŃ	DEF	ROCK	2	ខដ្ឋ	COLOR	MEATHER- ING	HARD	CRAC	Poor Coor	DESCRIPTION	LUGEON	Pmax	ရှိ	CORE SAMPLE	Ξ	CAS	EMEN	RET	(Dpt.H)	DEPTH
<u> </u>	40m			0		3						_	 /cm2				ပ ၂	- %		40m
										60.0-50.8 Alluvium										E
	41									40.0 to 40.3m, gravels of gneiss 42.8 to 43.3m, boulder of gneiss										41
	1 1									46.4 to 46.85m, boulder of gnelss										
	42									47.5 to 48.05m, gravele of gneise										42
	43-									48.8 to 49.75m, boulder of gneles										43
										50.3 to 50.8m, boulder of gneiss										
	44														٤					44
					g l										76mm					
	45	AI			- Se										Bit	74mm				45
	46-				varicolored										Diamond	74				46
															jam					
	47														٥					47
1,060																				
	48																			41 42 43 44 45 46 47 48 49 50
	49																			49
	in the										test									
	50										no te						none			50
	51-									50.8	ſ				50.6	50.A			2	
	51-	\geq	\leq			\geq	\geq	\leq		50.8-51.6 core loss 51.6										
	52				gray	2	2	2	1	51.8-53.55 Grieses, coarse grained, moderately foliated, graiseceity 40° Joint: 1) 51.9m and 52.55m, dipping 40°										52
	1111	Gn				2		3	CM	oxiside stained surface, plener 2) 52.9m, dipping 80°										
	53-				dork		3	4	CL	oxiside stained surface, planar 52.5 to 53.55 m, piece to fragment										- 53
	54	\ge	\leq			Ď				<u>53,55</u> 54,0 53,55-54.0 core loss					c					54
				1	gray			3		51.5-53.55 Gnoice, medium to coarse grained, moderately foliated, gnolesceity 45°					66mm					
	55	Gn		1 🔬	N	3	3		CL	gamet contained, die less than 1mm rock fragments, oxielde stained, 54.5m, cley, 2mm thick on rock fragment					Bit 6	•				55
	1111				dark	<u> </u>		-		55.7						none				
	56	\mathbf{N}	\langle							55.7-57.0 core loss 57.0					Diamond					- 56
	57-	\angle	\geq							57.0-60.0 Gneise, coerse grained, moderately foliated, gneisecelty 40°					ğ					57
										garnet contained, die. 1 to 2mm piece to rook fragment, oxiside stained										
	58				gray	2		3		Joint: 1) along gnelseceity, dipping 40" exiside stained surface, plener to rough										- 58
	111	Gn		1		3	3	Ā	CL	2) 57.0m, irregular dipping exciside stained surface									Ē	
1,050	59			1	dark					3) 58.1m, dipping 80° slightly weathered, planar										59
	60				<u> </u>	Ļ	Ļ	Ļ		4) 58.3 to 58.9m, sub-vertical oxiside stained surface, irregular										60
				36		Ţ.	1(herd)			batich), 3(piece), 4(tregment), 5(grain)										
			ł	\sum	Core ROD	1(freeh			-											

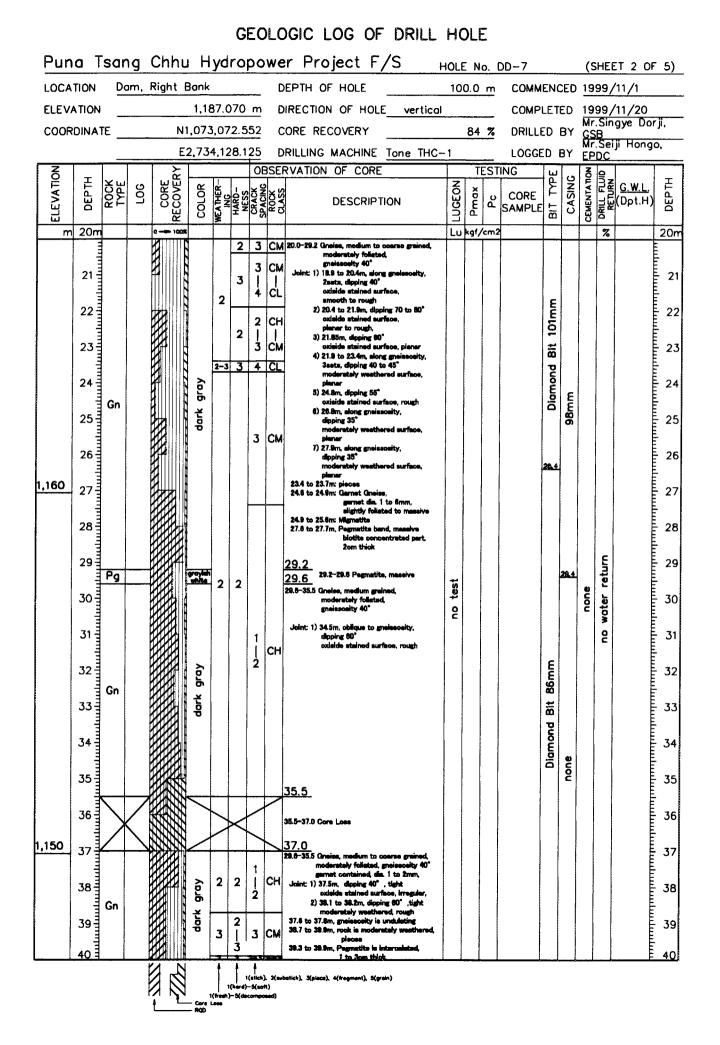
Pun	a Te	san	ig (Chhu	H	yd	rop	00	we	r Project F/S +	IOLE	E No	<u>.</u> C	D-6			(S	HEE	<u>T 1 OF</u>	4)
LOCA	ION	Do	im, F	Right E	Bank				D	EPTH OF HOLE	8	0.0	m	COMME						
ELEVA	TION				1,12	29.4	99	m	D	RECTION OF HOLE vertical				COMPL	E TE	D	200 Mr	00/ Sin/	2/25 gye Doi	<u> </u>
COORI	DINAT	E	.	N	,07	3,03	7.5	39		ORE RECOVERY		<u>65</u>	%	DRILLE	DE	3Y	GSI Mr	3 Seii	i Hong	<u>.</u>
,,					2,73	4,20)4.4			RILLING MACHINE Tone THC-	-1			LOGGE		3Y	EPI	<u>)</u> C		
NOL	F	жш	0	CORE RECOVERY	~	4	Ι. Ι			RVATION OF CORE	Z		EST		ТҮРЕ	ы NG	CEMENTATION		<u>G.W.L</u> . (Dpt.H)	ОЕРТН
ELEVATION	DEPTH	ROCK	LOG		COLOR	ATHE	HARD- NESS	ACK	ROCK	DESCRIPTION	LUGEON	Pmax	ရှိ	CORE SAMPLE	BIT 1	CASING	EMEN	Red File	(Dpt.H)	DEF
	 0m	_		0	Ō	¥	I -	0 %					/cm2		ш		8	%		Om
m			$\Delta 2$			\mathbf{T}	\mathbf{T}			0.0-18.9 Colluvium			Γ		٤					
	1									1.0 to 1.85m, gravies and cobbies of graiss					113mm					
	111									1.85 to 3.35m, gravels, cobbles and boulders of grains	F				Bit 1					
	2									5.0 to 6.0m, bouider of gneise					Shoe					2
	211111									6.0 to 6.55m, grevels and cobbles of greiss										
	3									7.0 to 11.0m, gravies and cobbies of gnaies and pegmatita					Casing					E 3
	2									11.0 to 11.4m, boulder of gneles			1		0 40					4
	+								I	11.4 to 12.55m, gravels and cobbles of gneise 14.0 to 15.55m, gravels and cobbles of gneise										
	5									17.0 to 18.0m, gravels and cobbles of										E 5
										gneles and pagmatite						Ē				Ē
	6															113mm				6
	7															-				Ē7
	8-																			8
				4														e		
1,120	9				l v													return		E 9
	10-		\land		varicoloreo			Y			test				101mm		none			Ē 10
	1 3	1						Å			2						č	woter		
	11			4 \$	N ≥										đ			ê		Ē 11
	12-			4											Diamond					Ē
	12				H										m	12.1	1			E 12
	1 -																			Ē 13
	13																			
	14				Ħ															E 14
					Ŋ				I							ε				E _
	15			41112	1											98mm				E 15
							ĺ		١							5				E 16
	16																			Ē
	17	-					!													E 17
				41111	ł															
	18				1										181	18.1	1			E 18
																E			1	19
1,110	19 20														Diamond Bit	B4mm				Ē
	20				8		Ļ	Ļ							ō		1			Ē 20
				86	9	Î	10~	ة 1(e1i d)=5(i		substick), 3(piace), 4(fragment), 5(grain)										
				r/ N		re Los	nah)-5(
						-														



Pun	a T	sar	ig (Chl	hu	H	ydr	op	00	ve	r Project F/S н	OLE	No	<u>b. D</u>	D-6			(Sł	HEE	T 3 OF	4)
LOCA	TION	Do	ım, f	Righ	t B	lank				D	PTH OF HOLE	8	0.0	m	COMME	INC	ED	200	00/	1/24	
ELEVA	TION					1,12	9.4	99	m	DI	RECTION OF HOLE vertical				COMPL	E TE	D	200 Mr. 3	00/ Sind	2/25 jye Doi	· II.
COOR	DINA	TE			N1	,073	,03	7.5	<u>39</u>	C	DRE RECOVERY		65	7	DRILLE		IY	<u>GS</u> E Mr.	3 Sei j	Hong	<u>,,</u>
		·				,734	,20	4 .4'			RILLING MACHINE Tone THC-	1			LOGGE		Y	EPC	<u>)C</u>		
ELEVATION	Ŧ	×ш	0	CORE	ERY	N	1				VATION OF CORE	z	l	ESTI		TYPE	NC	CEMENTATION	NN U	<u>G.W.L</u> . (Dpt.H)	Ŧ
EVA	DEPTH	ROCK	LOG	COR	<u>S</u>	COLOR	AEATHER- ING	ARD- NESS	ACIN	ROCK	DESCRIPTION	UCEON	Pmax	с Р	CORE SAMPLE	BIT	CASING	OMENI	J'	(Dpt.H)	ОЕРТН
				0		Ö	¥ ¥	I-	0 %			╷┛		cm2		<u>a</u>		8	۵ %		40m
m	40m		 		8	_					39.3-42.1 Gneies, modium greinod, highly foliated, gneiseosity 30°										E 1
					111	gray	2	2	3	СМ	gamet contained, die. less than 1mm Joint: 1) 40.3m, siong gaalssosity, dipping 30°	N /A	8.2	25							Ë 41
	41	Gn		I		dark	_	3			moderately weathered surface, 4mm thick										
	42			1.		P	3	3	4	CL	2) 41.2 to 42.1m, along gneiseosity. highly jointed, dipping 30° \ 4.2,1 moderataly weathered surface	42.0									41 42 43 44 45 46 47 48 49 50 51
	-	\geq	\leq				\square	Y	\leq		42.7 42.1-42.7 core ices										E E
	43-	Gn			$\Delta \lambda$	dark	2	3	3	СМ	42.7-44.0 Gnoise, fine to medium grained, highly foliated, gnoisecelty 40° Joint: 1) 42.7m, along gnolecosity, dipping 35°	5.9	7.3	*							E 43
		on		Đ		ð.aA	2	3	J	Care	moderately weathered surface, 6mm thick, planar	44.0									E 44
	44	$\overline{\mathbf{N}}$	1							\square	2) 42.9m and 43.0m, dipping 55 to 60° moderately weathered surface,										
	45-		\mathbf{k}					K			filled with block-colored mineral, planar 3) 43.8m, along gneiseceity, dipping 40°		8.5	X							Ē 45
			$\left \right\rangle$				\checkmark		ert		oxiside stained surface, 44.0 planar to rough										
	46	i Gan /Pro		14	R	groy 8	2	3	3	СМ	<u>45.9</u> 44.0-45.9 core loss 45.9-48.45 Bending of Gneles and Pegmatite, Gneles: fine grained, highly foliated,	46.0	4	-							46
	-					Sale				\succ	gneissoaity 30°, no garnet. Pagmetita: coarse grained, massive,										E 47
	47-		K				\triangleright	\vdash			biotits and homblende are contained (Sgeol; 1) 48.1m, moderately weathered,										E */
	48	\angle	\square	8			Ĺ		\square	K	<u>140.40</u> irreguler <u>48.0</u> 46.45-48.0 core iose										E 48
				1		dark		-	3	СМ	48.0-48.45 Gnalas, medium grained, highly foliated, gnalasceity 30 to 40" Joint: 1) 48.5m, doping 70°					٤					
	49-	Gn		1		groy	2	3	4	CL.	oxiaids stained surface, rough to planar					66mm			return		E 49
1,080	-	\mathbf{k}			W	\mathbf{k}	t			\succ	2) 48.7 to 49.3m, dipping 80° axiside stained surface, rough					Bit 6	٤	e	1.		
	50-		K				\triangleright	\vdash	K		3) 48.85m, along gneissosity, dipping 30° 49.45 fresh, slickensided surface, plenar						64mm	none	water		E 50
	51-	\mathbb{K}	\vdash				[50.8 49.45-50.8 core loss 50.8-61.45 Gneles, medium grained,	test				puome			3		Ē 51
	51	Gn	ļ.,		Щ	aroy	2	3	3	СМ	highly foliated, grainsonity 50° Joint: 1) 50.9m, dipping 20°	2				Dio			2		L !
	52-		\checkmark				\triangleright	\vdash	\mathbf{F}	T	fresh, slickensided surface, planar 51,45 50.8 to 51.0m, pagmetits intercelation	•									Ê 52
		arproductorial	ert				F		\square	\succ	52.6 51.45-52.6 core loss 52.5-54.0 Greise, medium to coarse grained,										
	53	Gn			h	dark	2	3	3	СМ	moderately foliated, gnalesosity 40°										E 53
						gray	-				stickensided surface, planar 2) 53.1m, 53.5m and 53.9m,										E 54
	54		\checkmark		M				\square	\square	dipping 60 to 65° 54.0 oxiside stained surface										Ē
	55	\geq	\square				\vdash	\Box	\vdash	⊨	55.0 54.0-55.0 core loss										E 55
		Gn		XX		dark gray	2	3	3	СМ	55.0-58.0 Graius, fine to medium grained. highly foliated, graissosity 40° Joint: 1) 55.3m, dipping 70°										սորո
	56		\models		Щ		\models	╞	\models	-	codeide stained surface, planar 2) 55.5m, dipping 50°, froeh, planar	36.0	<u>}</u>	+							E 56
			+>	H	H		1				56.0 56.4 58.0-58.4 core loss										Ē
	57			Ħ	犷				2	СМ	56.4-50.0 Graiss, medium grained, highly failated, graissosity 40°		A 13.7	7 >10							E 57
	58	TITI		Ĥ		gray	2	3		СН	gamet contained, dis. less than 1mm Joint: 1) 56.5m, 58.4m and 58.5m,	581									E 58
	50	Gn		H		dark ç					dipping 60 to 70" oxiside stained aurface, planar to rough 2) 56.7m, 58.0m, 58.7m and 58.8m,	10									E
	59	TTT I				Ъ		\vdash	1	+	along gnoiseosity, dipping 30 to 40° moderately weathered,	te									Ē 59
1,070	-			H			1	2	12	Сн	2 to 20mm thick, rough Fault: 1) 57.3m, dipping 60°	2									52 53 54 55 56 57 58 57 58 59 60
L	60	<u> </u>			<u>Indra</u>	۲	1	•	ł		frech, sückensided eurface	_			J		L	.		L	<u> </u>
				8]	1/4	 1(hard h)—5(d	()-5(1	oft)	ubetick), S(piece), 4(fragment), 5(grain)										
				Ł	ť	Corri R00	E LOBE														

							G	EC)LC	OGIC LOG OF DRILL	H	DLI	-							
Pun	a T	sar	ng	Chh	u H	lyd	ro	ро	we	er Project F/S +	IOLI	ΞN	<u>o. (</u>	D-6			(S	HEE	T 4 OF	4)
LOCA	TION	Do	am,	Right					-	EPTH OF HOLE	8	0.0	<u>m</u>	COMM						
ELEV						29.4				RECTION OF HOLE vertical				COMP			Mr	Sin	gye Dor	· ji,
COOR	DINA	TE _			1,07		······	·····		ORE RECOVERY			~	DRILLI			<u>GS</u> Mr	B .Sei	ji Hong	0,
		r	<u> </u>		2,73	4,2()4.4			RILLING MACHINE <u>Tone THC-</u> RVATION OF CORE		_	ĒST		_	BY	~	DC		
ATIO	DEPTH	ROCK TYPE	С С С	NER NER	K	ER-	1.	Le			N	1	r	CORE	TYPE	CASING	TATIO	LUI RN	<u>G.W.L.</u>	DEPTH
ELEVATION	DE	ՁԷ	2	CORE RECOVERY	COLOR	MEATHER ING	HARD-	CRAC		DESCRIPTION	LUGEON	Pmax	P C	SAMPLE	BIT	S	CEMENTATION	DRILL FLUID RETURN	(Opt.H)	DE
 m	60m			0							+	kgf/	1 /cm2					%		60m
	1						2	1	СН	50.0-55.0 Gineses, modium grained, highly foliated, gnelseosity 40° garnet contained, da. less than 1mm										
	61			H		1	2	2		Joint: 1) 60.4m, 62.6m, 63.5m and 64.5m, along gnalssosity,	N/A	13.4	>10							61
				Ħ	×			3	См	dipping 40 to 45° oxiside stained surface,	62.0									
	62	Gn			gray			F	СМ	2) 61.8 to 62.0m, dipping 70*					66mm					62
	63-				dark	2	2	2	1	3) 62.9m, along gneiseceity, dipping 40° moderately weathered, rough						64mm				63
	-			H			3	-	СН	4) 63.5m, dipping 70° fresh, stopped 5) 64.6m, along gnaissosity, dipping 50°					s Bit	õ				
	64-									silokensided surface Crack: 1) 62.1m, dipping 40 to 50°					Diamond					62 63 64 65
	65-							3	СМ	adalde stained surface, irregular 65.0					Dia					65
		Pg		H	vish te					65.0-68.5 Pegmetita, ocarse grained, messive, biotite contained Joint: 1) 65.7m dipping 55*										
	66	гy		Ha	grayish white					freeh, rough, tight 66.5 ^{66.0} to 66.2m, gneise						66.0				66
						1		2		66.5-72.5 Gasies, fine to medium grained, highly foliated, gasiesosity 40°					67.05					66 67
	67							-		garnet contained, da. less than 2mm										67
	68			110						Joint: 1) 70.1 m, along gneissosity, dipping 40° oxiside stained surface.										
	in the			1992				1		planer to rough 2) 70.35m, dipping 55°			-							68 69 70
1,060	69 -				gray					slightly weathered. slickensided surface, plenar								return		69
	70	Gn			r Y			┝	1	 70.4m, along gneissosity, dipping 45° moderately weathered, 23mm thick, rough 							none			70
					ס			2		66.5 to 67.3m, biotite concentrated	st						č	water		
	71									68.5 to 69.4m, gneiseoeity is unduleted 70.7 to 71.1m, biotite concentrated	e te							ê		71
	1							1	1		Ĕ									
	72					1	2			72.5					56mm					72
	73						-		сн	72.5-78.7 Banding of Greles and Pegmetite, unit thickness: gneiss: 50 to 130cm,						one				73
	i di ti							2		pegmetita: 10 to 150cm, pegmetita: 10 to 150cm Gneise: medium to coarse grained,					ā	2				
	74									moderately to highly foliated, gnoissocity 40°, no garnet					Diamond					- 74
	75				ay & white					Pegnetits: coerse grained, massive to alightly foliated, biotite is concentrated occasionally					Dian					75
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Gn /						1		Joint 1) 72.8m and 76.6m, along gneiseosity,										
	76	ŕg			1.4			2		dipping 40" oxiside stained surface, planar to rough										76
	nten				darl gra)			<u> </u>		Crack 1) 78.2m, oxiside stained surface,		-								
	77							1		krreguler 78.3 to 78.5m, gernet (die. 2 to 4mm) is										77
	78							[contained in pegnatite										78
) 11111				1					<u>78.7</u>										
1,050	79	Gn						2		78.7-80.0 Gneiss, fine to međum grained, highly foliatad, gneissosity 40°										79
	80				groy					no gamet, no joint										80
				3 2	3	1				batick), Upiace), 4(Kagment), 5(grain)										
				ŅŔ) core	1(Weah	1(herd))—5(di													
					ROD															

Pune	a T	san	ig (Chhi	ı H	yd	rop	00	we	r Project F/S н	OLE	No	. D	D-7			(S	HEE	T 1 OF	5)
LOCAT	ION	Do	ım, F	Right	Bank				D	EPTH OF HOLE	100	0.0	m							
ELEVA	TION	_			1,1	87.0	70	m		IRECTION OF HOLE vertical			_	COMPL			Mr.	Sind	gye Dor	ſį,
COOR	DINAT	Έ			1,07			_		ORE RECOVERY		84	<u>%</u>	DRILLE			GSI Mr.	B Seij	i Hong	, ,
					2,73	4,12	8.1			RILLING MACHINE <u>Tone THC-</u> RVATION OF CORE	1		STI		r		EPI	_		
ELEVATION	DEPTH	ROCK TYPE	LOG	CORE RECOVERY	COLOR	HER-	-SS	0			LUGEON		0	CORE	T TYPE	CASING	CEMENTA TION	LL FLUI	<u>G.W.L</u> . (Dpt.H)	DEPTH
		2 F				WEATHER- ING	HARD- NESS	°. S	<u>م</u> ع			a kg1/a		SAMPLE	BIT	U U	CEM	%		Om
m	Om						-			0.0-18.9 Colluvium						-		/8		E
	1									2.4 to 3.8m, boulder of gneiss 4.0 to 4.8m, boulder of gneiss					۶					1 2 3 4 5 6 7 8 9 10 11
	untu.									5.0 to 6.0m, boulder of gneise					113mm					2
	2									7.9 to 9.5m, bouider of gneise					Bit 1					
	3									11.7 to 12.6m, boulder of gnelss										Ē 3
															Shoe					
	4				8										Casing					E 4
	5-								l						ပိ					Ē 5
							N									Ę				
	6				1										<u>60</u>	113mm				E 6
1,180	7-																			E 7
					ł															
	8-			888																E 8
					8													ε		L 9
	9	Co			varicolored						t:							return		
	10				N N			A			o test						none	water		Ē 10
											6							1		E 11
	11		⊾ ∆		Ħ										۶			0 C		
	12-				3										101mm	12.0				Ē 12
															Bit 1(Ē,
	13																			E 13
	14								l						Diamond	ļ				E 14
							I								ð					12 13 14 15 16 17 18 19 20
	15						[]													E 15
	16															98mm				E 16
																98				Ē
1,170	17-			5555																E 17
	10																			18
	18-																			
	19-					-	+	+	┼╌	18.9-20.0 Gasiss, medium grained,	4									Ē 19
	20				970		2	3	CN	A Joint: 1) along gnelescelty, dipping 40° oxidelde stained surface, emooth										Ê 20
.	<u> </u>			И г	Ŋ	1	1			substick), 3(piace), 4(fragment), 5(grain)										
				N N		re Loss	1(her eh)—5(e)-5(: decom												
					RC	D														



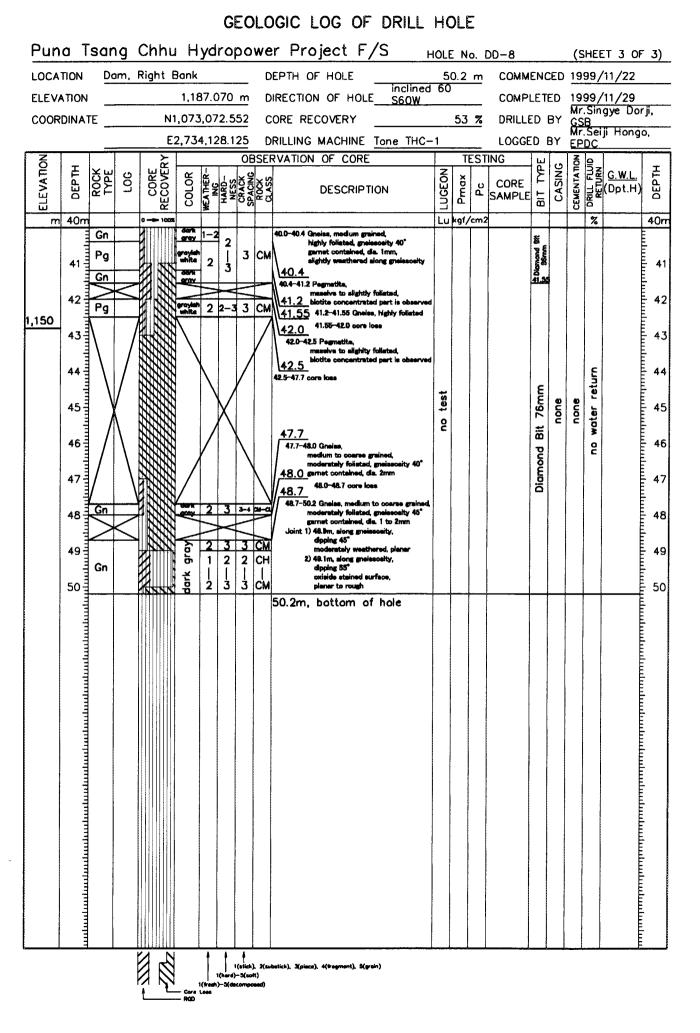
Pun	a T	san	g	Chhu	H	yd	rop	00	we	r Project F/S _r	IOLE	E N	o. [D-7			(S	HEE	1 3 OF	5)
LOCA	FION	Da	im, i	Right E	Bonk					EPTH OF HOLE		0.0	m	СОММІ						
ELEVA	TION				1,18			_		RECTION OF HOLE vertical				COMPL			Mr.	Sind	ave Dor	rji,
COORI	DINAT	E			,073					DRE RECOVERY		84	~ %	DRILLE		3Y	GS Mr.	B Seij	i Hong	0,
					2,734	4,12	8.1			RILLING MACHINE Tone THC-	-1		EST			5 T	<u>EPI</u>			
ELEVATION	DEPTH	ROCK TYPE	POC	CORE RECOVERY	COLOR	WEATHER-	HARD- NESS	10	ROCK	DESCRIPTION	LUGEON	Pmax	Рс	CORE SAMPLE	BIT TYP	CASING	CEMENTATION		<u>G.W.L</u> . (Dpt.H)	
m	40m			0				<u> </u>		40.0-45.5 Gnoice, medium to coerce grained,	Lu	kgf	/cm2					%		40m E
	41 42 43 43	Gn			dark gray	2		2 3	СН СМ	moderataly foliated, greissoelty 40 to 50° garnet contained, die. 1 to 2mm, Joint: 1) 40.4m, slong greissoelty, disping 40° oxiside stained eurface, planar 2) 41.7m, slong greissoelty, disping 40° oxiside stained eurface, irregular 3) 45.5m, slong greissoelty, disping 45° moderately weathered, planar										41 42 43 44 45 46 47 48 49 50 51
	45							1		<u>45.6</u> 45.8-53.1 Bending of Gneiss and Pegmetite,										45 1
1,140	46							_		pegnatite thickness 1 to 10cm. Gnoise: coarse grained, moderately foliated, gnaiseceity 40° garnet contained, dia. 1 to 2mm										46 1 1 47
	48				ite E			2		Pagmatita: massive to eligitity folieted, Joint: 1) 47.5m, 47.75m, 47.85m, 48.2m and 48.4m, along greiseosity, dipping 30 to 40° moderately weathered,					F					1994 1994 1994 1994 1994 1994 1994 199
	49	Gn / Pg			dark gray grayish whi	1	2			rough to plenar 2) 47.1 to 47.4m, dipping 65° moderately weathered, rough 3) 50.65m, dipping 50° oxiside stained surface, rough, tight	test				Bit 86mm	none	none	er return		49 50
	50 51				85		2		сн	45.8 to 48.2m, 47.3 to 47.6m, 48.25 to 48.9m, gneissosity is undulating	2				Diamond	ů	č	no water		F 2.1
	52							1							D					52 1
	53							2		53.1 53.1-56.9 Gnelse, medium to coerse grained, moderstally foliated, gnelssocity 40° gernet contained, die. 1 to 2mm,										53
	54	Gn			k gray					Joint: 1) 55.1 to 55.3m, dipping 80 to 70" oxiside stained surface, open 1mm wide, rough										54 55
	56				dark					<u>56.9</u>										56 1
1,130	57		<u> </u>		-				 	56.9-00.0 Bending of Gneiss and Pegmetite thickness of pegmetite 2 to Bom Gneiss: medium to coarse grained,	•									57
	58				dark gray & aravish white	2		2	сн См	Gneles: medurately foliated, gnelesoaity 30 to 40" garnet contained, die. 1 to 2mm, Pegmatika: slightly foliated Joint: 1) 57.2m, 57.85m, 57.85m, 59.9m and 39.95m, along gnelesoaity, dipping 40"										52 53 54 55 56 57 58 59 60
	60									apping 40 adeide stained surface, rough to glener										Ē 60
						e Loss	1(her 1(her h)-5(d	d)- 5(a	oft)	obalich), X(piace), 4(fragment), S(grain)										

										OGIC LOG OF DRILL	H(CL	Ε							
Pun	a T						ro	ро	we	r Project F/S +	IOLI	EN	lo.	DD-7			(5	SHEE	et 4 of	- 5)
LOCA		-	om,	Right						EPTH OF HOLE		0.0	<u>m</u>	COMM						
ELEV					1,18					RECTION OF HOLE vertical			~				Mr	Sin	/11/20 gye Doi	rji,
COOR	UINA	·E			1,073 2,73					ORE RECOVERY	- 1		~ %	DRILLE				Sei	ji Hong	0,
R	-	<u> </u>						_		RVATION OF CORE	Ė		ËST		<u> </u>	r		DC ₽		
ELEVATION	DEPTH	ROCK TYPE	LOG	CORE RECOVERY	COLOR	WEATHER-	HARD- NESS	CRACK	ROCK	DESCRIPTION	LUGEON	Pmax	Pc	CORE SAMPLE	BIT TYP	CASING	CEMENTATION	DRIUL FLU RETURN	<u>G.W.L</u> (Dpt.H)	DEPTH
m	60m			0	x dark	-				80.0-61.2 Banding of Gneiss and Pegmatite,	Lu	kgf	/cm2	ļ				%		60m
	61	Gn / Pg			groy groyter white			2	СМ	thickness of pagmatite 1 to 12cm, Joint: 1) 60.5m and 60,15m, along gnelescelty, dipping 30°										61
	62					2	2	3	СН	<u>61.2</u>										62
	63-				5		2			81.2—69.1 Groiss, medium grained, highly to moderately foliated, gneissosity 30 to 40° genest contained, dia. 1 to 2mm Joint: 1) 81.5m, along gneissosity,										63
	64				×	3	13	3	СМ	dipping 30° moderately weathered, planar 2) 62.5 to 63.9m, sub-vertical, oxiside stained surface, rough										61 62 63 64
	65	Gn			dark gray					 63.7m, dipping 60° oxiside stained surface, planar 64.0 to 65.0m, subvertical oxiside stained surface, rough 										65
	66				ŏ	2	2	2	СН	5) 65,55m, along gnalasosity, dipping 30° moderately weathered, planar, tight										66
1,120	67				~~~~			1		6) 68.45 to 88.75m, Nghly jointed, oblique to gnoissosity, dipping 55 to 85° moderately weathered, rough to undulating										67
	68 1					2		2	СН	7) 67.5m, along gneiseosity, dipping 30° moderstely weathered, plener 68 45 to 68 75m, plenen					Ē					68
	69 70	Pg			rayish white	2				69.1 86.55 to 86.78m, pegmetite band 88.1-70.5 Pegmetite, measive to sighty folieted, biolitie is partially concentrated Joint: 1) sub-vertical, invegular surface,	test				Bit 86mm	e	e	r return		69
	70				<u>5</u> 3	3		-		oxieide stained 2) dipping 80° oxieide stained surface, rough 70.5	ou				Pug	none	none	o water	E	
	72							3	СМ	70.5 70.5-80.0 Gneias, medium to coerse grained, highly foliated, gneissoeity 30 to 40° few garnet					Diamo			c		72
	73					1	2			Joint: 1) 70.6m, along gneissosity, dipping 30° freeh surface, planar, tight 2) 76.45m, sub-vertical,										73
	74							1	сн	iron oxiside and chlorite on surface, irregular 3) 75.7m, dipping 65° iron oxiside and chlorite on surface,										- 74
	75	Gn			gray					rough, open 1mm wide 4) 78.0m, disping 60° oxielde stained surface, rough open 1mm wide										75
	76				dark			2 3	СМ [СН	5) 77.7m, along gnalasoaity, dipping 30° chlorits on surface, planar, tight 6) 78.8 to 78.7m, highly jointed,										- 76
1,110	77					1		1		elong gnolescelty, dipping 35° moderataly westhered, planer to rough, open 1mm wide 7) 78.0m, elong gnolescelty,										- 77
	78					 2		 2	СН	dipping 35° moderately weathered, planer to elickensided 73.9m and 74.7m, pegmatita, 2 to 4cm thick										78
	79						2	3	СМ	75.9 to 78.0m and 78.65 to 79.4m, ohiorite motified along greisessity 78.6 to 78.4m, slightly to moderately										79
	80						2	2	СН	weathered										80
				86	1	Î,	(herd)			astick), 3(piace), 4(fragment), 5(grain)										
				r V		i(freeh)		-	-											

Pun	a T	san	g	Chhu	H	ydı	rop	0	ve	Project F/S	IOLE	EN	<u>.</u> C	00-7		_	(Si	HEE	T 5 OF	5)
LOCA1	TION	Do	m, I	Right E	ank				DE	PTH OF HOLE	10	0.0	m	COMM						
ELEVA	TION				1,18	7.0	70	m	DI	RECTION OF HOLE vertical			_	COMPL			Mr.	Sind	ave Dor	'i.
COOR	DINAT	Έ		N1	,073	,07	2.55	52	C	DRE RECOVERY		84	%	DRILLE			GSI Mr.	3 Sei j	i Hong	0,
					2,734	1,12	8.12	_		RILLING MACHINE Tone THC-	-1			LOGGE		IY	EPI	20		
ELEVATION	DEPTH	ROCK TYPE	гос	CORE RECOVERY	COLOR	MEATHER-	HARD- NESS		SER XOOR VSSAD	DESCRIPTION	LUGEON	-	est å	CORE SAMPLE	BIT TYPE	CASING	CEMENTATION	DRILL FLUID RETURN	<u>G.W.L</u> . (Dpt.H)	DEPTH
m	80m			0							Lu	kg1/	′cm2					%		80m
1,100	81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96	Gn Gn			dark gray & grayish white dark gray	1 2 2	2 3	2 3 1	CH CL CH CH CH	 80.0-85.6 Grains, modum to ocerne grained, moderately to highly foliated, grainsosity 50 + 40° no garnet Johr 1) 81.2m, dopg grainsosity, dipsing 50° oxiside stained surface, planar 2) 83.1m, elong grainsosity, dipsing 40° oxiside stained surface, rough to tregular, open 1mm wide 5) 85.3 to 85.8m, dipping 70 to 80° oxiside stained surface, rough to tregular, tight 83.5m, dipting of Gnelias and Pagmetita, grains is dominant. 85.6 discrime motified sourface, 20 to 40mm 85.5m, dipting of Gnelias and Pagmetita, grains is dominant. Gnelias, augen dia. 20 to 40mm, 81.1 to 100.0m, no garnet, alghtly to moderately foliated, graiseosity 30 to 40° garnet contained, dia. 3 to 10mm, 83.1 to 100.0m, no garnet are observed Joint 1) 86.8 to 88.7m, dipping 70 to 80° oxiside stained surface, include a surface, i	no test				Diamond Bit 86mm	none	none	no water return		80 81 82 83 84 85 86 87 88 87 88 89 90 91 92 93 94 95 96 97 98 99 100
	97 98 99 100							1												98 99 99
L		<u>-</u>	<u></u>			e Loos	-i 1(her h)-5(d	s)-5(s	ofi)	l ubesick), Xipiace), 4(fragment), 3(grain)							-			

							G	EO	LC	GIC LOG OF DRILL	HC	DLI	Ξ							
Pun	a T	sar	ng	Chhu	<u>н</u>	yd	ro	po	we	r Project F/S 💡	HOLE	E N	<u>o.</u> [D-8			(S	HEE	<u>ET 1 OF</u>	3)
LOCA	TION	Do	om, I	Right I						EPTH OF HOLE			m	COMM	ENC	æD	199	99/	11/22	
ELEVA		_			1,10					IRECTION OF HOLE SOOW				COMP			Mr	Sin	'11/29 gye Dor	rji,
COOR	DINAT	Ε			1,073 2,73			_		ORE RECOVERY			~	DRILLE			GS Mr. EPI	Sei	ji Hong	0,
Z			<u> </u>							RVATION OF CORE			ĘST)		_	,		_
ELEVATION	DEPTH	ROCK TYPE	LOG	CORE RECOVERY	COLOR	MEATHER-	22%	ACK	× S	DESCRIPTION	UCEON	Pmax	Pc	CORE	BIT TYPE	CASING	CEMENTATION	ETURS ETURS	<u>G.W.L</u> . (Dpt.H)	DEPTH
		<u> </u>	ļ	· · · · · · · · · · · · · · · · · · ·	<u> </u>	WEV	H	۳ ۵	ě				ł	SAMPLE	ā	U U	CEM			
m	0m							+		0.0-20.0 Colluvium		kgi/	/cm2					%		0m
	1									0.0 to 1.65m, gravels and cobbies of gnelas, die. 2 to 16cm										1 2 3 4 5 6 7 8 9 10 10 10 10 10 10 10 10 10 10 10 10 10
	с 111111									2.6 to 3.15m, gravels and cobbies of graiss and pagnetite, die, 6 to 14om										2
	2									4.0 to 4.5m, boulder of greiss										
	2		$\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $							6.3 to 6.7m, boulder of gnelas 9.0 to 9.3m, boulder of gnelas					98mm					- 3
	4									12.0 to 12.3m, grevels of grains										4
	ndur								I	15.0 to 15.7m, gravels and cobbles of gnoiss and pogmetite,					oe Bit					
	5100									die. 2 to 10om 16.5 to 16.9m, gravels of gneiss					g Shoe					5
	6 7 7									18.9 to 20.2m, boulder of gneiss					Casing					6
	J Lutu														0					
	71111																			
1,180	8																			8
	9 11111															98mm		Ē		9
	, mtm				ored			V			test				8.3	86	e	return		
	10	Co			aricolored			Å			ٽد 20						none	water		10
	11				3													õ		
	12																			12
	.4																			
	13														B6mm					- 13
	14																			14
	14 15														nd Bit					11 12 13 14 15 16 17 18 19 20
	, , , , ,														Diamond					
	16														۵					- 16
	17																			- 17
	18															18.0				18
	utu															Ð				
1,170	19											1 1 1				anon				19
	20				ļ	Ļ	-	•					L							20
				88		1(free		1(stici i)-5(sc iecomp	sit)	ubstich), Lipiaca), 4(fragment), 6(grain)										
				<u>د</u>	Core ROD	Loss	-													

	ATION		im, r	Right B	1,18				DI	PTH OF HOLE Inclined		0.2 53		COMPL	ETE	D	199 Mr.	99/ Sin	ave Do	rji,
COOF	RDINA	IE			.073 2,734					RILLING MACHINE Tone THC-	1	33	<u></u>	LOGGE			Mr. EPI	5 Sei DC	ji Hong	0,
ELEVATION	DEPTH	ROCK	гос	RECOVERY	COLOR	WEATHER-	HARD- NESS	CRACK SPACING III	×х	DESCRIPTION	LUGEON			NG CORE SAMPLE	BIT TYPE	CASING	CEMENTATION		<u>G.W.L</u> . (Dpt.H)	2
1,160	21 22 23 24 25 26 27 28 29 30	Co Gn Fg Gn			Image: State dark gray & dark gray Image: State dark gray varicolored		2	3	СН	 23.4 Collevium 21.0 to 21.8m, gravele of greies and pagnetite de. 3 to 8 cm 21.9 to 24.0m, boulder of greies 24.5 to 24.9m, gravele and oubbles of greies and pagnetite, de. 1 to 8 cm 24.9 to 25.45m, boulder of greies 25.7 to 27.4m, boulder of greies and basic rock 28.7 to 27.4m, boulder of greies and basic rock 28.9 to 25.45m, boulder of greies and basic rock 28.9 to 27.4m, boulders of greies and basic rock 28.9 to 27.4m, boulders of greies and basic rock 28.9 to 27.4m, boulder of greies and basic rock 28.9 to 27.4m, boulder of greies and basic rock 28.9 to 27.4m, boulder of greies and basic rock 28.9 to 27.4m, boulder of greies and basic rock 28.9 to 27.4m, boulder of Pagnetite, 8 cm thick 30.5 to 30.8m; Mgmethe 32.8m; intercalation of Pagnetite, 5 cm thick 32.8m; intercalation of Pagnetite, 5 cm thick 30.5 to 30.8m; Mgmethe 32.8m; intercalation of Pagnetite, 5 cm thick 34.8 to 38.0 m diphing 50° codelds stand greies and pagnetite is irregular 37.8 to 38.15m; boundery of greies and pagnetite is irregular 37.8 to 38.15m; boundery of greies and pagnetite is irregular 37.8 to 38.0m; biolite concentrated part 39.0 30.0 Craise, medum greined, highly foliated, biotite concentrated part 39.0 	no test				Diamond Bit 86mm	none	evou	no water return		



GEOLOGIC LOG OF DRILL HOLE Puna Tsang Chhu Hydropower Project F/S HOLE No. DB-1 (SHEET 1 OF 3) DEPTH OF HOLE 50.05 m COMMENCED 1999/12/27 LOCATION Intoke inclined 60 COMPLETED 2000/1/9 DIRECTION OF HOLE ELEVATION 1,147.473 m N82E DRILLED BY Mr.Dorji, GSB N1,073,270.738 CORE RECOVERY 86 % COORDINATE Mr.Seiji Hongo, EPDC LOGGED BY E2,734,251.427 DRILLING MACHINE Tone THC-1 OBSERVATION OF CORE TESTING TYPE G.W.L. MJUL Dpt.H) CEMENTATION RECOVERY ELEVATION CASING DEPTH DEPTH ROCK TYPE WEATHER-ING HARD-NESS CRACK SPACING ROCK CLASS CORE LUGEON Pmax LOG COLOR CORE å DESCRIPTION 811 SAMPLE Lu kg1/cm2 % Orr 0m m 0.0-20.0 Colluvium Δ \triangle 2.4m. grevels of gr es and p Δ 1 1 = Con boulder of a يعتم \triangle Δ 2 2 \triangle Δ 3 31 Δ Δ 4 5 6 7 8 9 Δ 4 12.0m Δ \triangle 13.0m. monda 5 Δ Δ 14.1m. gm Δ 6 17.2m, b Δ 17.2 to 20.0m, boulder of g Δ 7 \triangle Δ 8 Δ Δ 1,140 \triangle 9 Δ varicolored test Δ none 10 10 -C٥ Δ ê Δ Δ 11 = 11 \triangle Δ 12 12 Δ \triangle Δ 13 13 -Δ Δ 14 14 Δ \triangle 15 15 -Δ Δ Δ 16 16 - \triangle Δ 17 17 \triangle Δ Δ 18 18 Δ 1911 Δ 19 Δ \triangle 20 20 \$ 1(atick), 2(substick), 3(piece), 4(fregment), 5(grain) 104 rd)-S(soft) Y -5(decompos 1(9e

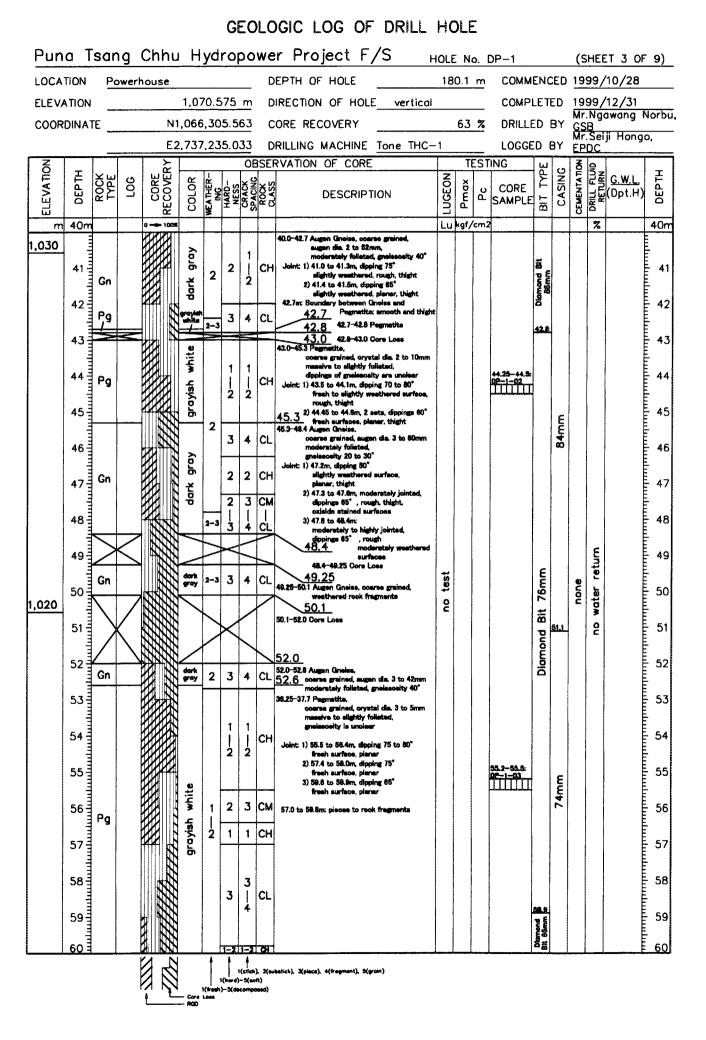
Core ROD

Pun	αT	sar		Chi	าเเ	н	vd	ror	-0		r Project F/S		/ <u>.</u>	-				10	ure	T 2 05	· • • • • •
			take				yu		50			<u>10LE</u> 50.					FD			T 2 OF	
ELEVA			UNE	· · · ·		1,14	7.4	73	 m	-	IRECTION OF HOLE N82E			<u></u>	COMPL						
COOR		те —			N1	,073	,27	0.7	38		ORE RECOVERY		86	%				Mr.	Dor	ji, GSB	
					E2	2,734	,25	1.4	27	D	RILLING MACHINE Tone THC-	-1			LOGGE	DE	łΥ	Mr. EPI	Sei DC	ji Hongo	0,
NOL	Ŧ	×ω		ω	ERΥ	~~~~	1		OE	BSE	RVATION OF CORE	z	· · · · ·	EST	NG	ΡE	ç	NOIL	FLUID URN	<u>G.W.L.</u>	Ξ
ELEVATION	рертн	ROCK TYPE	LOG	CORE	200	COLOR	NEATHER ING	ARD-	ACINC	SSCK	DESCRIPTION	LUGEON	Pmax	Ъ С	CORE SAMPLE	віт түрЕ	CASING	CEMENTATION	RETUR	(Dpt.H)	DEPTH
<u> </u>						ŏ	<u>B</u>	I -	08			+		cm2		æ	-	ម	5 %		20m
1,130	2011	Co		أأأأأ	T	hored				\succ	20.0–21.0 Colluvium 20.0 to 21.5m, gravels and cobbles of gneiss								/8		-
	21	Co				vortex			\square		21.0	-									21
	utu										21.0–30.8 Gneizz, coarse grained, moderately foliated, gneizzoaity 50 to 60"	ĺ									
	22						1				gemet contained, 1 to 4mm Joint: 1) 21.2m, 21.8m, 22.3m and 22.5m,										22
	23						2	2	2	СН	along gressosity, dipping 50* oxiside stained surface, rough										23
	1										cevity along joint, dia. 2 to 4mm 2) 24.1 to 27.0m, Seets, along gneiascaity, dipping 50 to 60°										
	24				Ph						outside stained surfaces, planar to rough										24
	25										 25.3m, and 25.4m, disping 30 to 40° oxiside stained surface, rough 25.95m, 26.2m and 26.9m, 										25
	2 1111	_		7		gray	2	2	3	CM I	dipping 50 to 60" oxiside stained surfaces,										
	26	Gn		H		Å,		3		Сн	planar to rough 5) 28.2 to 28.3m, dipping 65° pale bluelsh gray colored clay										- 26
	2			H		σ					on surface, less than 1mm thick, planer										27
	27				3						6) 29.0 to 29.7m, 2sets, dipping 70 to 80° oxiside stained surface,										21
	28						1	2	1	СН	plener to rough										- 28
	1111				1						Crack: 1) 24.2 to 24.4m, sub-vertical, oxiside stained surface, irregular 2) 28.7m, dipping 25°							-			
	29			Ħ			2	3	3	СМ	oxiside stained surface, irregular 3) 30.2 to 30.8m, sub-vertical,	+									29
	30									<u>}</u>	oxiside stained surface, irregular 24.1 to 27.0 m, moderately jointed	test						one			- 30
	ulu.			Ħ							28.7 to 29.7m, moderately jointed 30.8	02						C			
	31							2	3	СН	30.8-35.6 Banding of Gneiss and Pegmatits, unit thickness 1 to 12cm, Gneiss: coarse grained,										
1,120	32							Ī	J	I CM	moderately foliated, gnaizeosity 50 to 60*										32
						ay & white		3		CM	few gamet. Pegmetita: elightly foliated to messive Joint: 1) 35.2m, dipping 80°										
	33	Gn /				<u> </u>					pale greenish grey olay on surface, less than 1mm thick										- 33
	34	Ρg				dark g grayish			1	<u> </u>	Minor Fault: 1) 33.8m, dipping 65" aliokansidad surface, mixture of pale yellowish green										34
	34			7		00	2	3	3	CL	and white clays on surface, less than 1mm thick										
	35			20	N				4		32.0 to 32.6 m, biotite concentrated part, spart along greissocity 33.8 to 34.0m, biotite concentrated part										35
	1				s. 4. a.						<u>35.6</u> 35.5-40.0 Gasies, coares grained,										70
	36				Ð			2	3	СН	moderately foliated, gneissocity 50 to 80° gamet contained, die. 1mm										- 36
	37					>		3		См	Joint: 1) 38.7m and 37.4m,										37
	u lu	Gn				gray					dipping 60 to 70° oxiside stained surface, rough 2) 22.4m, dipping 80°										
	38	Un			\$	da t	5	5	5	٥	Minor Fault: 1) 37.85 to 38.6m, dipping 82*										- 38
	391				弦	-		~	_		oxisids stained aurface, pale blusish gray clay on surface, less then 2mm thick										39
	, nhu				1		1	2		СН	39.0 to 39.4 m, Pegnetite band,										
	40 =		<u> </u>	1/1			L †	ł	ŧ	C.	slightly foliated	1								F	40
				0	Ņ			 1(hard))−5(de)- 5(se	#)	balick), Upisce), 4(fregment), 2(grain)										
				Ł	Ľ	Core RQD		•		•											

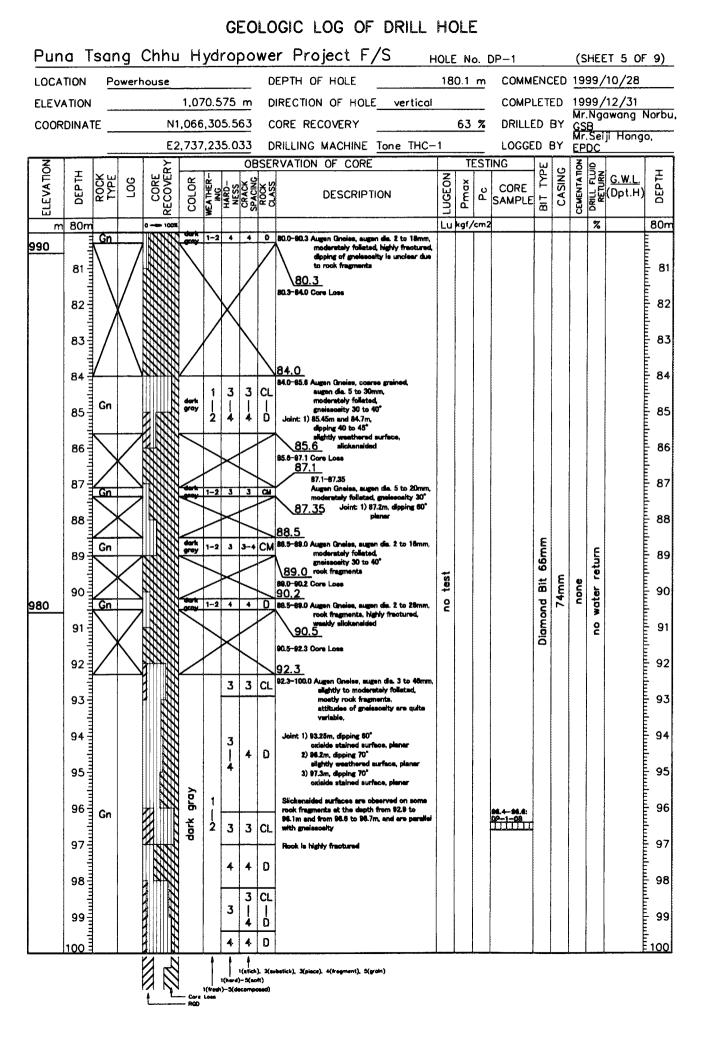
Pun	a T	san	g (Chh	u	H	ydr	op	00	ve	r Project F/S _H	IOLE	: N	o. D	B-1			(S	HEE	T_3 OF	3)
LOCA	TION	Int	ake							D	EPTH OF HOLE		05	m	COMME	ENC	ED	199	99/1	2/27	
ELEVA	TION					1,14	7.4	73	m	D	RECTION OF HOLE N82E				COMPL						
COOR	DINAT	Έ			N1,	073	,27(0.7	38	C	ORE RECOVERY		86	%	DRILLE	DE	ΒY	Mr.	Dorj Seli	i, GSB Honge	<u></u>
						,734	,25	1.4			RILLING MACHINE Tone THC-	-1			LOGGE	_	3Υ	EP			
NOL	Ŧ	Ч		CORE		~	1				VATION OF CORE	z	Г	ESTI		TYPE	NG	CEMENTATION	UND N.N.	<u>G.W.L</u> . Dpt.H)	Ŧ
ELEVATION	DEPTH	ROCK TYPE	LOG	NOS SOS	3	COLOR	NEA THER ING	ARD- MESS	ACIN	ROCK	DESCRIPTION	LUGEON	Pmax	ЪС	CORE SAMPLE	BIT T	CASING	MENT	L L L L L	Dpt.H)	DEPTH
	40m					ŏ	N.	I -	აფ			+		/cm2		8		ö	∩ %		40m
	40m			BIII						<u></u>	40.0-42.9 Gasies, coarse grained, slightly to modetately foliated,										
	41					gray		3	<u>з</u>	СМ	gnelssoeity 50 to 55° gemet contained, die lees then 1mm									-	41 42 43 44 45 46 47 48 49 50
		Gn			33						Minor Fault: 1) 40.3 to 40.7m, dipping 80° slickensided surface,										
	42					dark					pale blueish gray play on surface, 2mm thick										42
	-										42.9_									:	43
1,110	43-	Pg		H	Î	areyladı Tabba			1		429-43.8 Pegnatite, massive to slightly foliated biotite concentrated part from 43.2 to 43.4m										
	44			H.					2		Creacic 1) 43.2m, disping 15° 43.8 addide stained surface, rough	h									44
							1				43.8-50.05 Gnelss, oceres greined, moderstely foliated, gnelssoulty 50 to 55°	test						•			
	45							2		СН	gemet contained, die. 1 to 2mm,	0						ě			E 45
	46			111							Joint: 1) 46.4m, dipping 35° alighty weathered surface, rough 2) 47.0m, dipping 40°	c									46
	40					gray					2) 47.0m, apping 40 oxisids stained surface, planar 3) 47.5m, dipping 50										a a la constante da
	47	Gn		Ŧ₽					1		adside stained surface, planar to rough										E 47
				B		dark			2		4) 49.0 to 49.4m, dipping 80 oxiside stained surface, rough 5) 49.4m, dipping 80°										
	48-										oxisido stained surface, planar										- 48
	49										49.0 to 49.4 m, moderately jointed 49.6m, Pegmatite band, 7cm thick										49
							2	3	2	CM CH	1										
	50-						<u> </u>		3		50.05m, bottom of hole		+	+		-	+		\vdash	v.	E 50
	-																				
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				Ø	2		Î	1			wbatich), 3(place), 4(fregment), 5(grain)										
				1	N] corr	LOBE	1(her h)-5(decom												
				L		RGD	•														

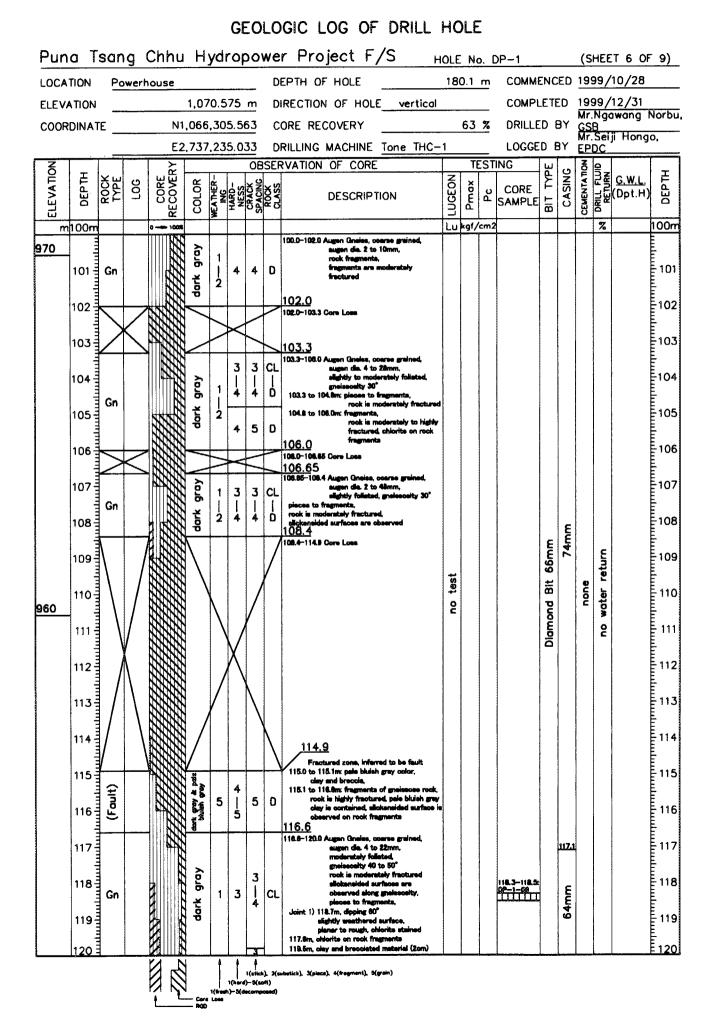
MOLEEATION m On 1.070 1 2 3 3 4	S TYPE		CORE		WEATHER-	HARD- NESS		RILLING MACHINE <u>Tone THC-</u> RVATION OF CORE DESCRIPTION		TE	_ LOO STING	GED		Y	<u>EP</u> Z	DC e	i Hong	<u> </u>
m On 1,070 1 2 3	ŋ				WEATHER-	HARD- NESS	ACING	2	S		STING		۳	ទ	Ő,	8-		
1,070 1 2 3					\square		_	3		xo E d kg1/c		PLE	BIT TYPE	CASING	CEMENTATION		<u>G.W.L.</u> (Dpt.H)	DEPTH
-	Co Co			_		ΙŢ	1	0.0-3.35 Colluvium					-			~		Ē
6- 7- 8- 9- 10- 11- 12- 13- 14- 15- 16-	Pg GG Pg GG Pg GG GG GG			■출발 dark gray <u>통</u> 을 경화 물을 varicolored	3 2 2 3 2 3 2 2 3 2 2 3 2	3 2 2 3 2 3 2 3 2 2 3 2 3	 4 CL 2 CM 3 CH 4 CL 2 CH 4 CL 3 CM 2 CM 1	0.0 to 1.Bm, Decomposed soil 1.8 to 3.35m, Core loss 3.35-5.5 Pegmatita, coarse grained, crystal dia. 5 to 8mm elightly foilated, grainsosity unclear rock fragments stained by iron oxiside 5.5 5.5-60 Augen Gneise, 0.0 augen dia. 10 to 25mm, greissosity 40° 8.0-8.2 Pegmatita, coarse grained, crystal dia. 3 to 12mm moderntaly foilated, grainsosity 60° Joint 6.3m, oblique to gneissosity 70°, elightly weathered surface, coarse grained, augen dia. 10 to 30mm greissosity 25 to 30° Joint 1) 8.1 to 8.3m, deping 70° frash surface, rough 2) 8.4m, deping 60° 9.8m, dipping 60° 10.9 alightly weathered surfaces, planar 10.9-12.0 Pegmatita, coarse grained, sugan dia. 10 to 30mm greissosity 25 to 30° Loint: 1) 8.1 to 8.3m, deping 70° frash surface, rough 2) 8.4m, dipping 60° 10.9 alightly weathered surfaces, planar 10.9-12.0 Pegmatita, coarse grained, sugan dia. 5 to 40mm elightly weathered surfaces, rough to planar 2) 14.4m, dipping 85° alightly weathered surfaces, rough to planar 2) 14.4m, dipping 85° alightly weathered surface, rough to planar 3) 15.6 to 15.85m, high jointed 2 asa, dipping 80° alightly weathered surface, rough to planar 3) 15.8 to 15.85m, high jointed 2 asa, dipping 80° alightly weathered surface, rough to planar 4) 18.8 to 15.85m, dipping 70 to 80° alightly weathered surface, rough to planar 4) 18.8 to 15.85m, dipping 70 to 80° alightly weathered surface, rough to planar 4) 18.8 to 15.85m, dipping 70 to 80° alightly weathered surface, alightly weathered surface, alightly weathered surface, rough to planar 4) 18.8 to 15.85m, dipping 70 to 80° alightly weathered surface, alightly	no test				Diamond Bit 101mm	113mm	none	no water return		$\begin{array}{c} 1 \\ 1 \\ 2 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 10 \\ 11 \\ 12 \\ 13 \\ 14 \\ 15 \\ 16 \\ 16 \\ 11 \\ 12 \\ 13 \\ 14 \\ 15 \\ 16 \\ 16 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10$
17- - 18-	Pg			ercylati white	•		3 CH	Pegnetita: massive to elightly foliated 17.6 17.9-18.5 Core Loss						98mm				17
	Gn	$\boldsymbol{\lambda}$		dark gray	2	3	3 CM	18.5 18.5-22.1 Banding of Augon Gnoiss and Pegmatita, unit thickness 20 to 50cm Joint: 19.8 to 20.2m, disping 80° Joint: 19.8 to 20.2m, disping 80°										19
20	ŕg			eroydda white		2-3 2	2-3 0-0	oxiside stained surface, rogh to plenar										20

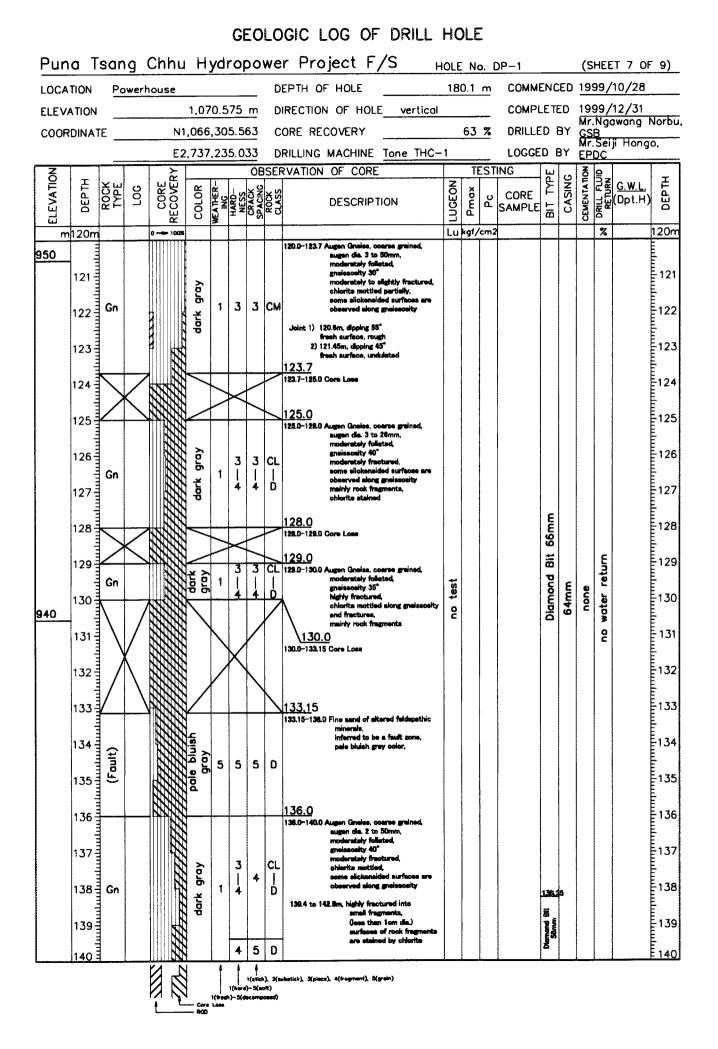
Puna Tsang Chhu Hydropower Project F/S HOLE No. DP-1 (SHEET 2 OF 9) DEPTH OF HOLE 180.1 m COMMENCED 1999/10/28 LOCATION Powerhouse COMPLETED 1999/12/31 1,070.575 m DIRECTION OF HOLE vertical ELEVATION Mr.Ngawang Norbu, DRILLED BY N1,066,305.563 CORE RECOVERY 63 % GSB Mr.Selji Hongo, COORDINATE LOGGED BY DRILLING MACHINE Tone THC-1 EPDC E2,737,235.033 TESTING TYPE OBSERVATION OF CORE CEMENTATION ELEVATION RECOVERY CASING DEPTH DEPTH ROCK TYPE WEATHER-ING HARD-NESS CRACK SPACING CORE LUGEON 200 COLOR Pmax CORE Dpt.H) å DESCRIPTION BIT SAMPLE % 20m Lu kgf/cm2 20m m 8.5-22.1 Banding of Augen Gneiss and .050 2 CL te, unit thiokn ± 1) 20.55m, dipping 55" planar to allokenald Gn |3 2 1 gray gray k rayla 21 21 Cł 2) 21.6 to 21.8m, dipping 70 ŕg 4 č. la stain d au CH 22.1 2 2 101mm 22 22 2 22.1-24.2 A 3 coarse grained, au moderately foliated СМ 3 23 231 dark gray exerty 40 to 50 B Gn 4 CL vi: 1) 23.2 to 23.5m, dipping 70° oxisida stained surface, pi Diamond 2 1-2 СН 24 24 24.2 24.2-25.8 Core Loss 25 25 <u> 25.6</u> CH 22.1-24.2 A 2 2 26 26 se greined, a dark gray 2 98mm Gn di di 3 3-4 ity 30 to 40° 28.8 27 27 nt: 1) 28.3 to 28.8m, dipping 70° in stained surf ortei 26.8 28 26.8-31.0 Core Loss 28 - 29 return 29 test none 30 water 30 E 2 1,040 31.0 ê 31 31 CL 31.0-36.0 A 3 4 n Gn coarse arei taly foliated, main 3 CM t: 1) 33.2m, dipping 45° fruch surface, rough to pi 2-1 32 B6mm 32 = 2) 32.8 to 33.1m, dip gray ping 75 fresh surface, rough 3) 33.3 to 33.8m, dip 33 2 33.1 Gn 33 E B dark freeh surface, rough, th CM 2 31.0 to 31.45m: rock frag 2 13 Diamond 31.45 to 32.3m: pieces 34 CH 32.3 to 35.0m: mainly short 34 35.0 35 35 35.0-36.25 Core Loss 36 36 36.25 84mm 10.75-37.7 Au n Gnei coarse grained, au moderately foliated, 37 2 3 4 CL 37 -Gn ity dips 30 to 40 37.7 37.7-38.15 Core Loss 38 38.15 38 38.15-42.7 A CL 3 4 coarse grained, a a. 2 to 52 -39 39∃ dark gray 2 Gn 3 2-3 CM 38.15 to 38.85m: rook frag 1-2 CH 38.85 to 39.8m: pieces 2 <u>4</u>0 40 1(11ich), 2(1 batick), 3(piace), 4(tregment), 5(grain) , unch) | 1(hard)=5(aoft 1(frash)=5(decompos - Core Loss - ROD d)-5(aoft) Y



Puna Tsang Chhu Hydropower Project F/S HOLE No. DP-1 (SHEET 4 OF 9) DEPTH OF HOLE 180.1 m COMMENCED 1999/10/28 LOCATION Powerhouse 1,070.575 m DIRECTION OF HOLE vertical COMPLETED 1999/12/31 ELEVATION Mr.Ngawang Norbu, 63 % DRILLED BY COORDINATE N1,066,305.563 CORE RECOVERY GSB Mr.Seiji Hongo, E2,737,235.033 DRILLING MACHINE Tone THC-1 LOGGED BY EPDC TESTING OBSERVATION OF CORE CEMENTATION GUN C.W.L. JING Dpt.H) ш EVATION. CASING CORE RECOVERY μ 臣 DEPTH ROCK TYPE WEATHER-ING HARD-NESS CRACK SPACING ROCK CLASS LUCEON COLOR LOG Pmax DEPT CORE DESCRIPTION Ч ВЦ SAMPLE Ш Lu kg1/cm2 7 60m m 60m - 1003 • 00.0-62.3 Pegmetite, coerce grain orysital da. 3 to 5mm, massive to slightly foll grainsolity 40 to 45* white .010 1-2 1-2 CH 61 61 = Pg Joint: 1) 60.6 to 61.2m, dipping 80° freeh surface, undulated, th grayish 1 3 3 СМ |2 82 3 62 62 62.3 Gn 62.3-62.5 09-1-04 CM 62.3-63.3 Thin bands of Gneise and Peg Gn 2 2 mit thick I 1 1 / 63Ē 63 mately foliate Ŕg CH 63.3 63.3-64.0 Core L 64.0 64 64 -4 CL 64.0-66.0 Thin bends of Gasies and Pe unit thick Gn 2 CM 40 moderately foliated, maineo dark gray k yrayla white 1 65 / Pg 65 3 2 64.0 to 64.4m, 65.0 to 66.0m: rock fra 4 CL 66.0 66 66-66.0-66.5 Core La 66.5 4 CL 66.5-75.1 Thin bends of Gr 3 unit thickness is slightly foliated, 67 a less then 4cm. 67 E 2 1 СН elty 30 to 40* 1 ومعتا ومعاونا والمعالين والمعالين augum of feldepar, dia. 5 to 48 3 CM 2-3 2 68 68 68.4-68.7: 69-1-09 1111111 1) 58.1 to 59.6m de aine 70 to 80 Diamond Bit 66mm 1-2 1 CH white return 69¹¹ 2) 70.0 to 70.5m, display 65 69 2 3) 70.8 to 71.0m. displace 50 74mm test none 2 | 3 3 CM ce, planer, thig grayish water 70 703 4) 71.85 to 72.2m. disping 80 1,000 e, p ê Gn 5) 72.8 to 72.8m. dipping 60 1 e, pi / Pg 2 71 71 2 2 CH 71.8 to 72.2ml 尚 12 gray rock freements 72 3 3 4 CL 72 참망 73 73 -1 1 СН 12 |2 74 74 -74.7-74.8: 19-1-08 1111111 75.1 75 75 75.1-79.3 Auren Gr 1 augen dia. 2 to 26m moderately foliated, 2 76 76 -30 to 35 Joint: 1) 77.1m, dipping 45 gray 2 3 CM 77 77 -Gn 4 |3 78.4 to 78.8m, dipping 60 to 80' ark Aork d. thinht 78 78 79 79-79.3 79.3-80.0 Core Loss 80.0 80 80 A 1(atich), 2(substich), 3(piece), 4(frogr ent), 5(grain) 1(herd)-5(soft) Q | 1(the - Core Loss - RQD n)-5(decomp

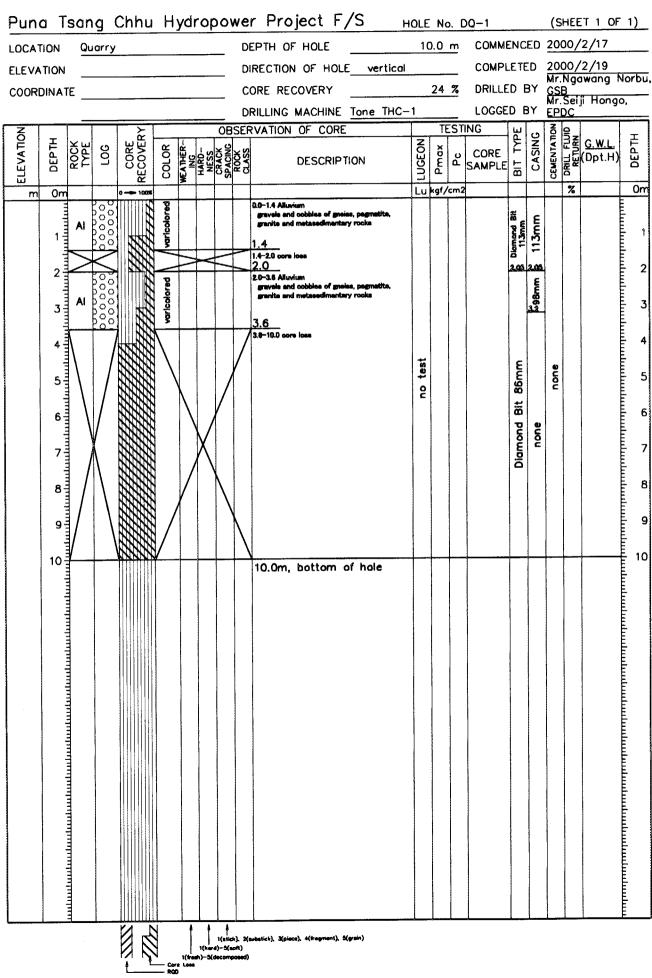






Pun	a T	sar	ng	Ch	h	u	H	ydı	rop	00	we	r Project F/S н	IOLE	E N	o. C)P-1			(S	HEE	T 8 OF	9)
LOCA	TION	Po	owert	nou	se						D	EPTH OF HOLE	18	0.1	m	COMME	ENC	ED	<u>199</u>	99/	10/28	
ELEVA	TION	_				1	.07	0.5	75	m	D	RECTION OF HOLE vertical			_	COMPL	E TE	D			12/31 Iwang I	Norbu.
COOR	DINAT	Έ						,30		_		ORE RECOVERY		63	%	DRILLE			GS Mr.	B Seij	THong	0,
			<u> </u>	<u> </u>			'37	,23	5.0			RILLING MACHINE <u>Tone THC-</u> RVATION OF CORE	·1	TI	EST			3 Y	EP			
ELEVATION	DEPTH	ROCK TYPE	LOG	L L	RECOVERY		ж С	- - -	70				Z	1	1	CORE	TYPE	CASING	CEMENTA TION	LUID URN	<u>G.W.L.</u> (Dpt.H)	DEPTH
ELEV	DEI	8 F		12	S S S S S S S S S S S S S S S S S S S		COLOR	WEATHER- ING	HAR	SPAC	ROCK	DESCRIPTION	LUGEON	Pmax	Pc	SAMPLE	BIT	A C	CEME	DRILL	(Upt.m)	Ы
	140m												Lu	kgf/	/cm2					%		140m
930	1111											140.0–142.8 Augen Gneiss, coarse greined, augen die. 4 to 22mm, moderstely folleted,										
	141								4	5	D	rock fragments, highly fractured, surfaces of fragments are										141
	142				777							stained by chlorite,						64mm				E 142
	Lista				777													õ				
	143						_					142.8-145.05 Augen Gneise, ocerse greined, augen die. 2 to 30mm, moderately foliated, gneissonity 30°										143 144 145 146
	144	•					gray		3	3	См	moderately fractured, chilorite motified along greissouity, some slickensided surfaces are						144.1				E144
		Gn					4 Ž Q					observed Fracture 1) 143.45m, dipping 25°										
	145-						J		4	5	D	filled with chlorits, 2mm thick 145.05–145.6 highly fractured into fragments, no chlorite contained										
	146								3	4	CL	145.8–148.4 moderately to highly fractured into pieces, coin-like shape no chlorite contained										E 146
				Ħ					ļ,			146.4-148.5 Augen Gneise, coarse grained, augen dia. 2 to 22mm,		ļ								Ē
	147											moderately foliated, grainsseity 30° alightly fractured, gamet contained, Joint 1) 147.8m, disping 80°										Ē
	148											freeh surface, rough 2) 148.35m, disping 80"										E148
			+							3	См	148.5 freeh surface, plener 148.5-154.7 Banding of Augen Gnoise and Peamatite.					56mm			F		Ē
	149											unit thickness 2 to 28cm, rocks are slightly fractured	ta				1			return		149 150
	150							1				ohlorite mottled along greissosity Augen Gneiss: coarse greined,	o tes				g Bit		none	water		E150
920				11111111111		4	يد ع		3	┝─		augen die. 4 to 40mm, slightly to moderately foliated, gneissoeity 30°	C				puoma		-			151
	151	Gn					white					Pegnetits: measive to slightly foliated					Dig			02		
	152	Ρg								4	CL	Joint 1) 148.8m, dipping 50° filled with phiorite, 1mm thick 2) 151.45m, dipping 45°						none				E152
) Č	5					chiorite stained, planar 3) 151.6m, dipping 45° chiorite stained, planar										E 157
	153-											150.8 to 153.6m, piecee										Ē
	154											some silokensided surfeces are observed along gneissosity										Ē154
	165							-	<u> </u>			154.7 154.7-180.0 Augen Gneiss, coarse grained,				154.7-155.0 09-1-10						152 153 154 155
	155-			B								augen die. 2 to 24mm. moderately folieted, zywiasoeity 30°										
	156			P								not fractured except the pert from 156.7 to 157.2m, chlorite mottled pertially,										E156
	157]			gray			3	СМ	Joint 1) 158.6m, dipping 40*										E 157
	157-	Gn							2			filled with chiorite, Zmm thick, 2) 150.3m, dipping 65° fresh surface, planar									112/31	Ē
	158						dark					3) 159.85m, dipping 20° filled with chicrite, 1mm thick,				159.5-159.8					*	E158
	159-			H	1																	E 159
	109																					158 159 160
	160	<u> </u>	<u> </u>		<u> </u>	IIL N		1 1	l †	†	<u> </u>		1	1	1	1		<u>i</u>	L	L	L	<u> </u>
				9		2		1(free		i)- 5(s	oft)	ubstick), 3(piace), 4(fragment), 3(grain)										
				Ł		<u> </u>	ROD	LOBS														

Pun	ια Τ	sar	חמ	Chhu	ı H	vd				GIC LOG OF DRILL r Project F/S)P-1			(5	HEE	ET 9 OF 9)
LOCA				house		<u> </u>	. –			EPTH OF HOLE		0.1	,						/10/28
	ATION				1,07	70.5	575	m	-	IRECTION OF HOLE vertical				COMP			19	99/	/12/31
COOR					1,066				с	ORE RECOVERY		63	%	DRILLE	ED I	BY	Mr. GS	Nga B	awang Norbu, Ji Hongo,
					2,737	7,23	5.0	<u>33</u>	D	RILLING MACHINE Tone THC-	-1			LOGGE	D	ЗY	Mr. EP	Sei DC	ji Hongo,
NOIT	Ξ	×ω	0	CORE RECOVERY	~	1	1.	1		RVATION OF CORE	z	r	EST	ING	TYPE	NG	NOIT &	RN R	
ELEVATION	ОЕРТН	ROCK	LOG	NO NO NO NO	COLOR	MEATHER. ING	HARD-	PACK	ROCK	DESCRIPTION	LUGEON	Pmax	4	CORE		CASING	CEMENTATION	REL F	G.W.L. (Dpt.H)
	160m			0	<u> </u>	¥		69	i - 0			kg1/			8	F	8	5 %	160m
910					1	1				180.0-162.2 Augen Gnoies, coarse grained, augen die. 3 to 40mm,				•			-		Ē
	161							3	СМ	moderately foliated,									E 161
				I						161.1 to 162.2m, elightly foliated									
	162									182.2–183.7 Augen Gneise, coaree grained,									E162
	163							2	сн	augen dia. 2 to 36mm,									163
	164									163.7–168.7 Augen Gneise, ocerse greined, augen die. 2 to 22mm, moderately foliated, gneissosity 20°									164
	165							3	См	chlorits stained surface, highly to moderately jointed 2) 166.5m, dipping 60°									-165
	167						2			frosh surface, rough 196.7–171.1 Augen Gneiss, coarse grained, sugen die. 2 to 40mm,									-167
	168									slightly to moderately foliated, gneissoelty 10 to 20°									-168
								1	_	Joint 1) 167.4 to 168.0m, dipping 75° freeh surface, rough to planar thight				168.6-168.8 19-1-12				~	
	169				Ϋ́			2	СН						56mm			return	169
	170	Gn			k gray	1					o test				J Bit	none	none	water r	170
900	171				dark						0c				mond		_	0 10	E 171
	171							2		171.1-173.9 Augen Gneiss, coarse greined, augen die, more then 5mm,					Diam			2	171 172 173
	172							3	СМ	slightly foliated, gneissoelty 20°									172
	173								СН	Joint 1) 172.2m, dipping 40° freeh surface, rough, thight									-173
								2											
	174						ļ			173.9–178.0 Augen Gneiss, coarse grained, augen dia. 3 to 16mm,									174
	175						3	3	См	Joint 1) 174.1m and 174.2m, dipping 40° freeh aufface, pielsocity 20 to 25° Joint 1) 174.1m and 174.2m, dipping 40° freeh aufface, pienar, thight 2) 174.35m, dipping 30° Gilded with zeolite, less then 1mm									175
	176									3) 174.85m, disping 40° freeh surface, planar, thight 174.8 to 175.7m, slightly fractured 175.0m, graissoaity is undulated									176
	177						2	1	сн	176.0-178.9 Augen Gneise, coarse grained, augen dia. 2 to 18mm, silgetty to moderately foliated,									177
	178									gneissoeity 25° Joint 1) 178.0m, dipping 70° freeh surface, rough, thight									178
	179- 180						3	3 2-3	СМ	176.0-180.0 Augen Gneise, coarse grained, augen die. 2 to 26mm, moderately foliated, graissoaity 20° Joint 1) 180.0m, dipping 65° freeh, rough									179 180
				88		1	l 1(hard			belick), S(piece), 4(fragmant), S(grain)									
] — Core — R00		1(hard) 1)-5(di												
					- +00														



_											GIC LOG OF DRILL										
Pun	a T										r Project F/S										1)
LOCAT				,							EPTH OF HOLE										
ELEVA											IRECTION OF HOLE <u>vertica</u> ORE RECOVERY							Mr.	.Nac	awana l	Norbu,
COORI	JINA	·							-		RILLING MACHINE Tone THC				LOGGE		BY	GS Mr.	B Sei DC	ji Hongi	o,
S	 	_		۲. ۲		- 17			08		RVATION OF CORE		T	EST							
ELEVATION	DEPTH	ROCK	POC	CORE RECOVERY			UNC NO	NESS	SPACING	ROCK	DESCRIPTION	LUGEON	Pmax	Pc	CORE SAMPLE	BIT TYPE	CASING	CEMENTATION	DRILL FLI	<u>G.W.L</u> . (Dpt.H)	DEPTH
m	0m						_				0.0-1.0 core loss	Lu	kgf,	/cm2					%		0m =
	1	>	К			\square	>	\triangleleft	\square	/	1.0					a mu					
	1										1.0-10.0 Alluvium					Bit Bi	ž				1
	2										1.0 to 4.5m: gravels, cobbies and boulders of gnales and pegnatits,				•	Diamond Bit 86mm	113mm				2
	3				<u>HTTTTT</u>	5					with suboridinate amount of fine sand 4.5 to 10.0m;					Diam					- 3
	, 1010										fine gained cand					3.35	3.35				
	4																				4
	5											test					98mm	anon			5
		AI										5				76mm	6	č			
	61															Bit 76	63				6
	6 7 8 8																				7
	mu				ioht /											Diamond					
	81				¶ =											ă	none				8
																					9
	91111				8																
	10				1						10.0m, bottom of hole										10
	IIIII																				
	ntin																				
	Int																				
	m									Ì											_
	ulu																				-
	duud																				
	T T T																				-
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	Trift																				
	IIII																				
	uhuu																				
	huuh					1															
<u> </u>				N K	7		ł	11-		2/1	betick), Xpiece), 4(tregment), 5(grain)	.1		<u> </u>	l					F	i
			1		1 = :	we Las	ien)-	iard)-1 5(dece	i(soft))											

Pun	a T	sar	ng (Ch	hu	н	ydı				GIC_LOG_OF_DRILL r Project_F/S _F				00-3			(S	HEE	T 1 OF	1)
LOCA			Jorry								EPTH OF HOLE										
ELEVA	TION									D	RECTION OF HOLE vertical				COMP	LETE	ED	20	00/	2/9	
COOR	DINAT	Έ								С			31	%	DRILLE	ED B	ΞY	Mr.	Nga B	wang M	Nordu,
										U	RILLING MACHINE TONE THU-	-1			LUGGE	DE	3Y	EP	UC .		
N	Ţ	~			RECOVERY						VATION OF CORE	Z		EST	NG	ΡE	ÿ	NOL	S NO	<u>G.W.L</u> . (Dpt.H)	Ξ
ELEVATION	DEPTH	R S C K C K	LOG	CORI	COM	COLOR	WEATHER-	HARD- NESS	ACINO	ROCK CLASS	DESCRIPTION	LUGEON	Pmax	ъ Ч	CORE SAMPLE	BIT TYPE	CASING	CEMENTATION		(Dpt.H)	DEPTH
						8	WEA	ĨZ	28	∝ Ω						B		ษี			 0m
m		×			X					>	0.0-1.7 core lose	Lu	kgt/	/cm2					%		
	1		\mathbf{V}													Diamond Bit 28mm	Ę				,
			\backslash	R					\backslash		1.7					lomon 20m	113mm				
	2										0.0-10.0 Alkvium					0	2.25				2
					H						1.7 to 6.0m: gravels and cobbles of					1.0					
	3-		Pool			P					gneise and pegmatite wood fegment is observed at 3.3m										3
	4					varicolored					6.0 to 10.0m: fine gmined send						E				4
						vari						test					98mm				
	5					ł						1				76mm		none			5
		AI	200									0 2									6
	6															d Bit	83				
	7															Diamond					7
	7 8 9					gray										Dig					
	8																none				8
						light											-				9
	9																				
	10			411		 	<u> </u>				10.0m, bottom of hole	+	-	-		<u> </u>					Ē 10
											io.om, bottom of note										
																					1 2 3 4 5 6 7 8 9 10
L	L	1	<u> </u>		шш Д_	<u> </u>	ł	<u>ب</u>	4				ı	L		<u> </u>		<u>ا</u> ــــــ	L		i
				1	Ķ		1(West	1 1(hard) 1)-5(de	- 5(160	A)	batick), 3(piece), 4(fregment), 3(grain)										
				Ł		Core RQD	Less														

Pun	a T	sar	ng	Ch	hu	н	yd	roj	20	we	er P	roje	ct F	/S	н	OLE	<u>N</u>	<u>o. [</u>)Q4			(5	SHEE	ET 1 OF	⁷ 1)
LOCA			Jarry								EPTH								СОММ						
ELEVA	TION	_								D	IRECT	ION C	OF HOL	.E <u>ver</u>	ticol				COMP	LETI	ED	20	00/	'1/27 wang 1	lorbu
COOR	DINA	re _								С	ORE	RECO	VERY				25	%	DRILLI	ED I	ΒY	GS	B Sei	ji Hong	<u></u>
			r	<u>,</u>										Tone	THC-	1	_		LOGGE		BY	<u>C</u> P	<u>.</u>		
ELEVATION	표	Χw	0	CORE	ÆRΥ	8	ų.		6			ON O	COR	<u> </u>		Z	r	EST		BIT TYPE	NG	CEMENTATION	IRN B	<u>G.W.L</u> . (Dpt.H)	Ŧ
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