Figure 1.11 (1/4) GEOLOGIC LOG OF DRILL HOLE

PROJECT HOLE No. Bs - 1 (SHEET 1 OF 4)

LOCATION	Sabacuante (left)	DEPTH OF HOLE	80 m	COMMENCED	26-IV-
ELEVATION	1096.21 m	DEPTH OF OVERBURDEN	___ m	COMPLETED	01-V-2000
COORDINATE	___	LENGTH OF ROCK DRILLING	___ m	DRILLED BY	___
ANGLE FROM HOLIZONTAL	-90°	TOTAL LENGTH OF CORE	___ m	LOGGED BY	___
BEARING OF ANGLE HOLE	—	CORE RECOVERY	___ %	W.L. - 46.2 m	

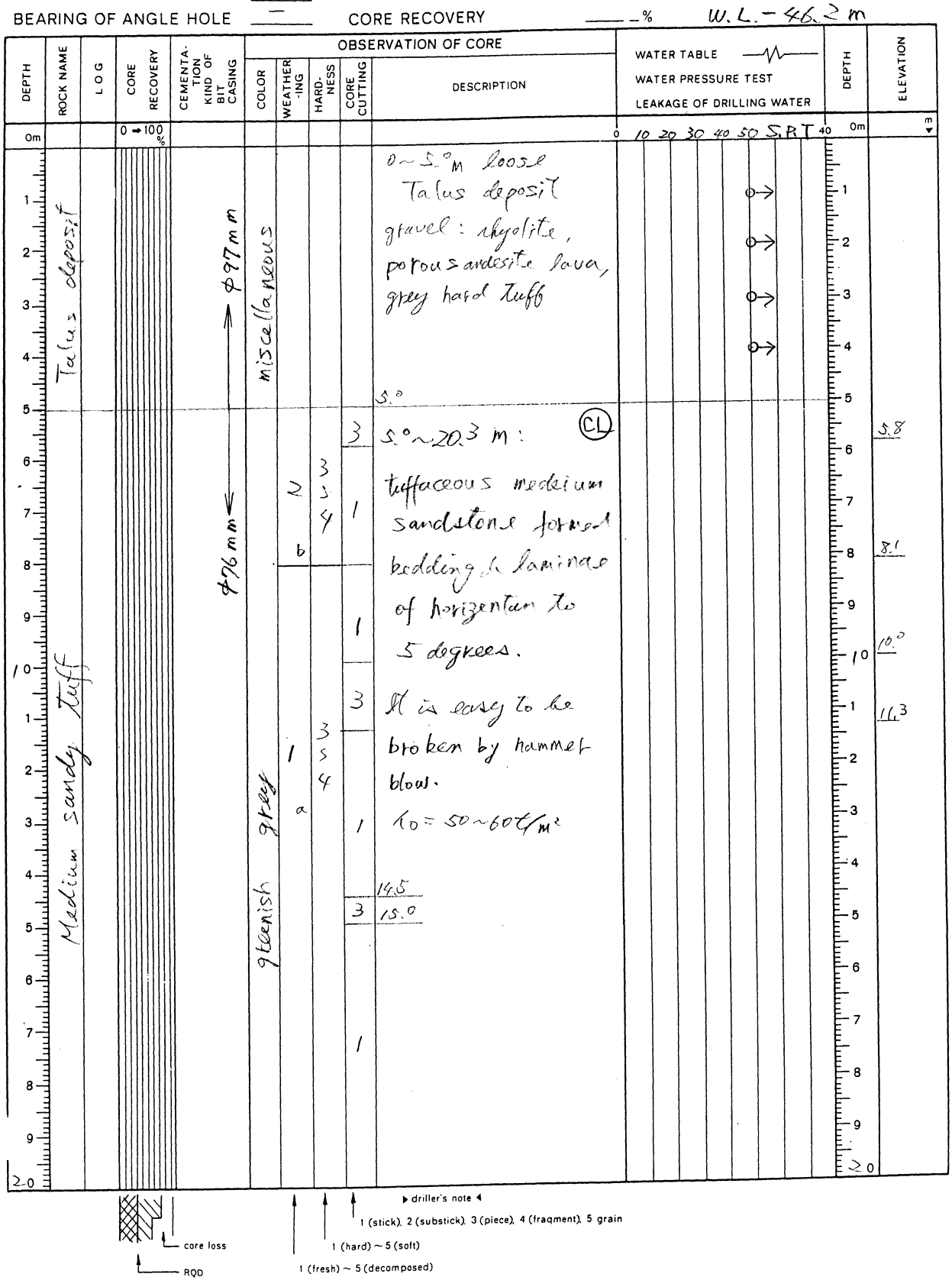


Figure 1.11 (2/4) **GEOLOGIC LOG OF DRILL HOLE**

PROJECT HOLE No. BS-1 (SHEET 2 OF 4)

LOCATION	Sabacuanto	DEPTH OF HOLE	80 m	COMMENCED	– –
ELEVATION	m	DEPTH OF OVERBURDEN	m	COMPLETED	– –
COORDINATE		LENGTH OF ROCK DRILLING	m	DRILLED BY	
ANGLE FROM HOLIZONTAL	°	TOTAL LENGTH OF CORE	m	LOGGED BY	
BEARING OF ANGLE HOLE		CORE RECOVERY	%		

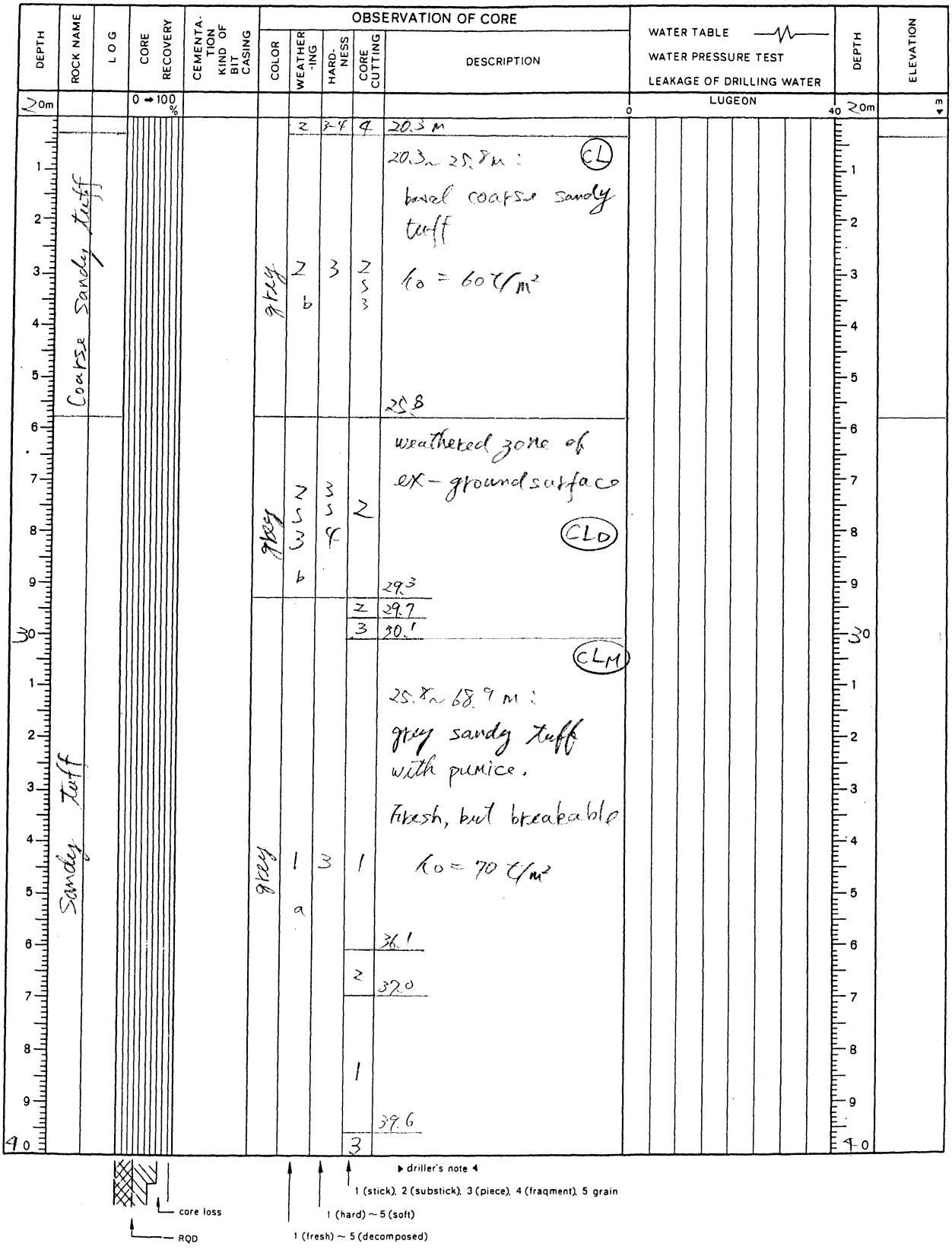


Figure 1.11 (3/4) GEOLOGIC LOG OF DRILL HOLE

PROJECT HOLE No. BS-1 (SHEET 3 OF 4)

LOCATION	Sabacerant.e	DEPTH OF HOLE	80 m	COMMENCED	– –
ELEVATION	m	DEPTH OF OVERBURDEN	m	COMPLETED	– –
COORDINATE		LENGTH OF ROCK DRILLING	m	DRILLED BY	
ANGLE FROM HOLIZONTAL	°	TOTAL LENGTH OF CORE	m	LOGGED BY	
BEARING OF ANGLE HOLE		CORE RECOVERY	%		

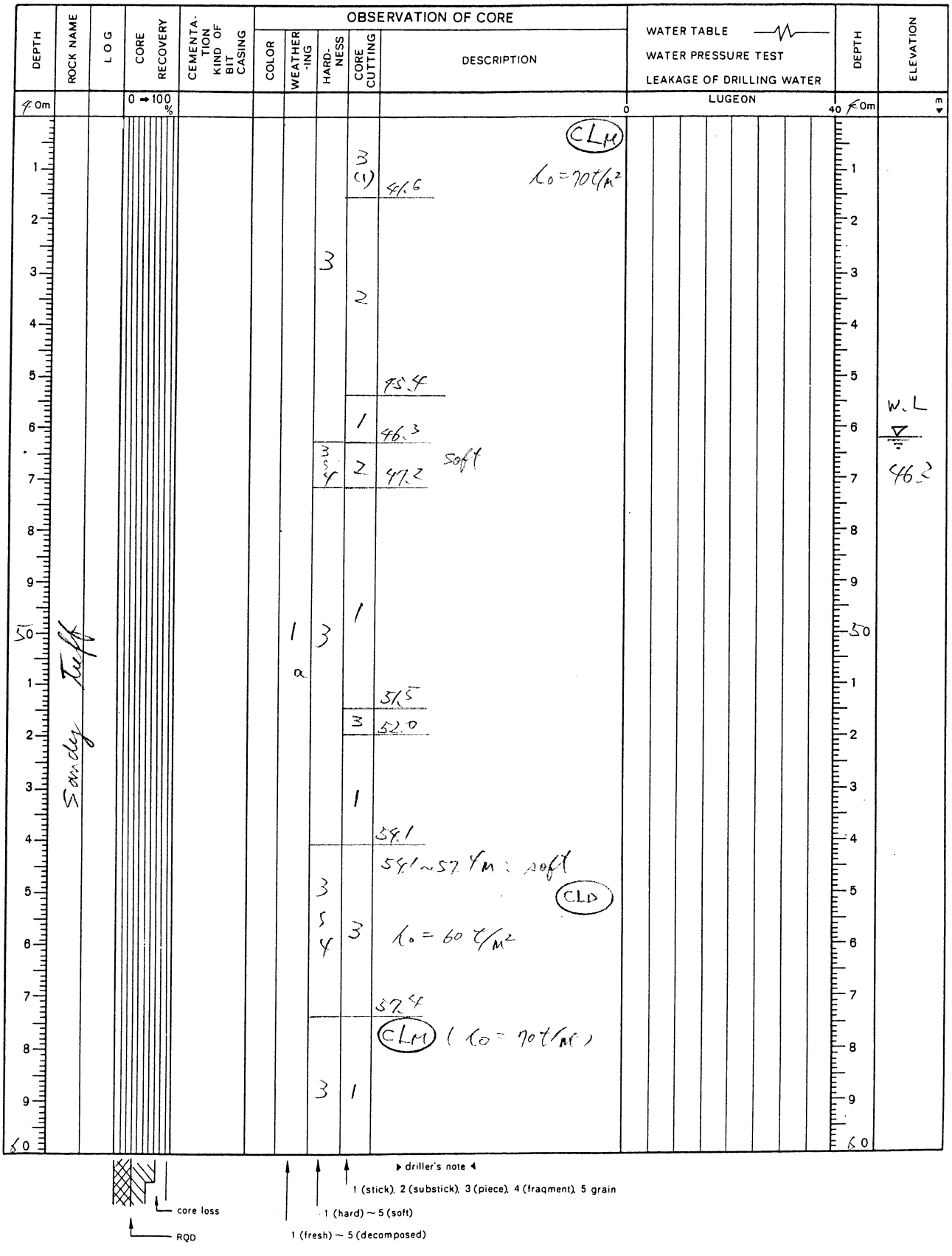


Figure 1.11 (4/4) GEOLOGIC LOG OF DRILL HOLE

PROJECT HOLE No. BS-1 (SHEET 4 OF 4)

LOCATION	Sabacuante	DEPTH OF HOLE	80 m	COMMENCED	- -
ELEVATION	m	DEPTH OF OVERBURDEN	m	COMPLETED	- -
COORDINATE		LENGTH OF ROCK DRILLING	m	DRILLED BY	
ANGLE FROM HOLIZONTAL	°	TOTAL LENGTH OF CORE	m	LOGGED BY	
BEARING OF ANGLE HOLE		CORE RECOVERY	%		

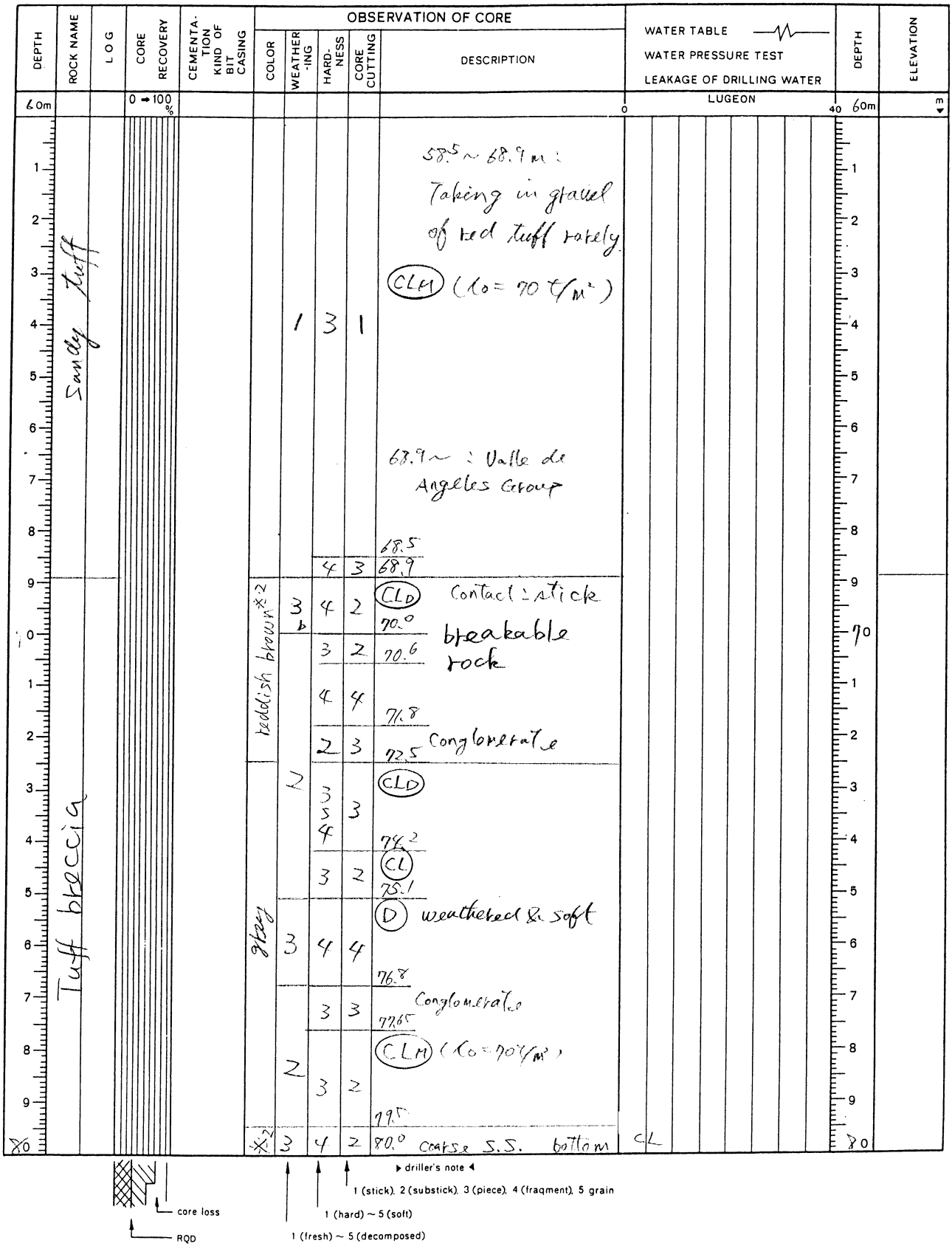


Figure 1.12 (1/4) GEOLOGIC LOG OF DRILL HOLE

PROJECT HOLE No. BS-2 (SHEET 1 OF 4)

LOCATION	Sabacuante	DEPTH OF HOLE	80 m	COMMENCED	12-IV-
ELEVATION	4081.26 m	DEPTH OF OVERBURDEN	___ m	COMPLETED	25-IV-2000
COORDINATE	___	LENGTH OF ROCK DRILLING	___ m	DRILLED BY	___
ANGLE FROM HOLIZONTAL	-90°	TOTAL LENGTH OF CORE	___ m	LOGGED BY	___
BEARING OF ANGLE HOLE	~	CORE RECOVERY	___ %	W.L.-30.1 m	

DEPTH	ROCK NAME	LOG	CORE RECOVERY	CEMENTATION KIND OF BIT CASING	OBSERVATION OF CORE: COLOR	WEATHERING	HARDNESS	CORE CUTTING	DESCRIPTION	WATER TABLE / WATER PRESSURE TEST / LEAKAGE OF DRILLING WATER	DEPTH	ELEVATION
0m			0 → 100 %							0 LUGEON 40	0m	m
				φ86 mm					0.5m Talus deposit			
1	coarse sand				Miscellaneous color				(CL) coarse sand layer		1	
2						2	3	4	tuffaceous sand with miscellaneous gravel		2	
3											3	
4									4.50		4	
5									(CL)		5	
6						2	3	2	loozened sandy tuff		6	
					b				6.70			
7									slightly weathered		7	
8						2	4	4	soft sandy tuff		8	
9								(3)	(D)		9	
					c				9.80			
10							4		(CL)		10	
1	Sandy Tuff					2	5	2	a little breakable		1	
					b		3		11.50			
2					grey				(CLM)		2	
3									medium hard without joint.		3	
4						2	3	1			4	
5							(4)		14.3~16.9m : test		5	
					b				16.00			
6									(CLM) (Ro=60°/m²)		6	
7									fresh & sound rock		7	
8						1	3	1			8	
					a				18.90			
9							3		(CL)		9	
					1	3~4		3	17.80			
20											20	

Laboratory test ① ~ ⑤

core loss
RQD
▶ driller's note ◀
1 (stick), 2 (substick), 3 (piece), 4 (fragment), 5 grain
1 (hard) ~ 5 (soft)
1 (fresh) ~ 5 (decomposed)

Figure 1.12 (2/4) GEOLOGIC LOG OF DRILL HOLE

PROJECT HOLE No. BS-2 (SHEET 2 OF 4)

LOCATION		DEPTH OF HOLE	80 m	COMMENCED	- -
ELEVATION	m	DEPTH OF OVERBURDEN	m	COMPLETED	- -
COORDINATE		LENGTH OF ROCK DRILLING	m	DRILLED BY	
ANGLE FROM HOLIZONTAL	°	TOTAL LENGTH OF CORE	m	LOGGED BY	
BEARING OF ANGLE HOLE		CORE RECOVERY	%		

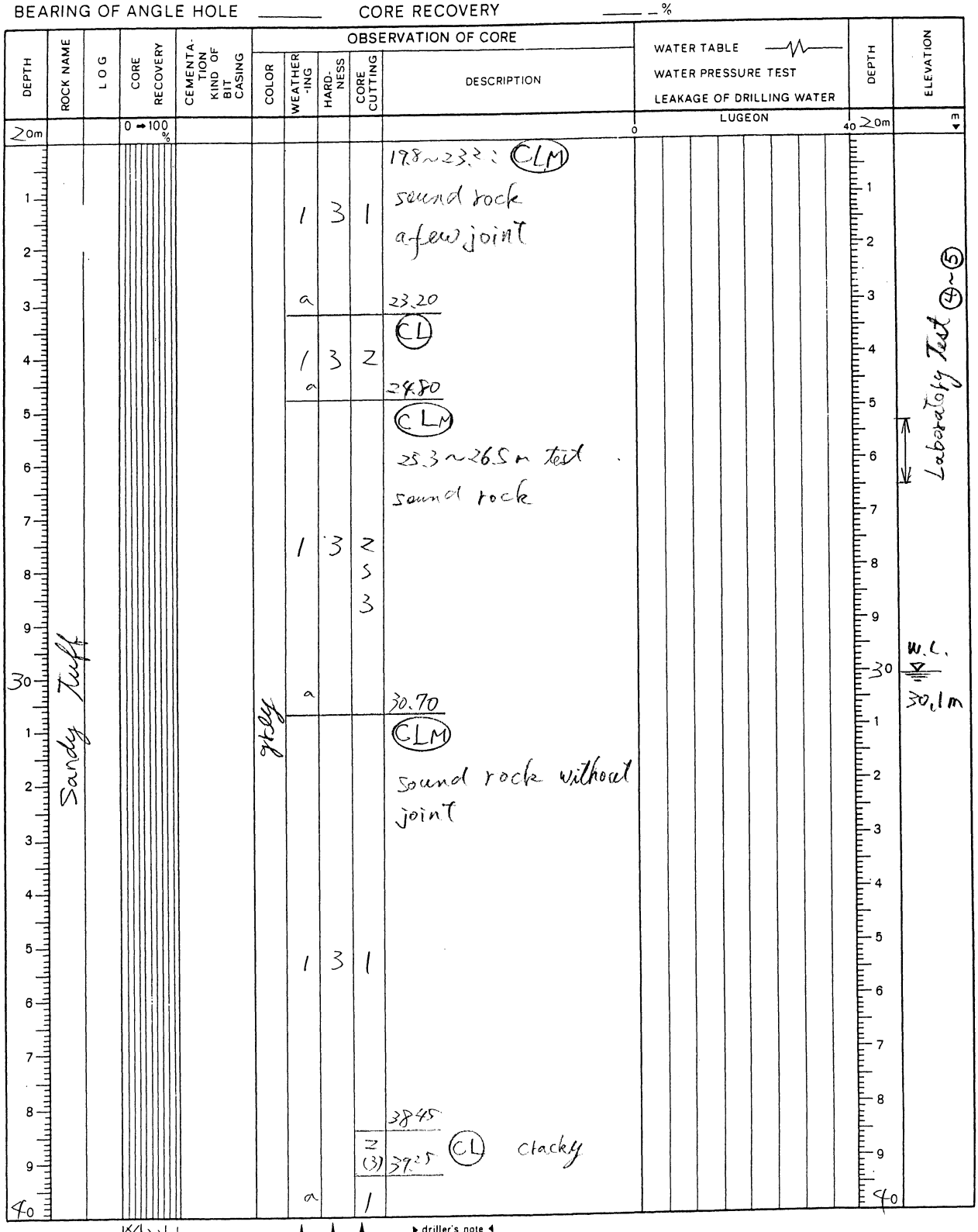


Figure 1.12 (3/4) **GEOLOGIC LOG OF DRILL HOLE**

PROJECT HOLE No. BS-2 (SHEET 3 OF 4)

LOCATION		DEPTH OF HOLE	80 m	COMMENCED	– –
ELEVATION	m	DEPTH OF OVERBURDEN	m	COMPLETED	– –
COORDINATE		LENGTH OF ROCK DRILLING	m	DRILLED BY	
ANGLE FROM HOLIZONTAL	°	TOTAL LENGTH OF CORE	m	LOGGED BY	
BEARING OF ANGLE HOLE		CORE RECOVERY	%		

DEPTH	ROCK NAME	LOG	CORE RECOVERY	CEMENTATION KIND OF BIT CASING	OBSERVATION OF CORE: COLOR	WEATHERING	HARDNESS	CORE CUTTING	DESCRIPTION	WATER TABLE / WATER PRESSURE TEST / LEAKAGE OF DRILLING WATER	DEPTH	ELEVATION
0m			0 → 100 %							0 LUGEON 40	0m	m
1						1	3	1	(CLM) 39.25 ~ 48.60m Sound rock a few crack and joint		1	
2											2	
3											3	
4											4	
5											5	
6											6	
7											7	
8						a			48.60		8	
9									(CL) (CLM) Boulder of conglomerate of Valle de Angeles Group. It is difficult to drill such rocks CLM-class in the field.		9	
50	Sandy Tuff										50	
1						1	3	2			1	
2							(4)				2	
3											3	
4						a			54.50		4	
5									(CLM) 54.90 ~ 62.50m Sound rock a few joint		5	
6											6	
7						1	3	1			7	
8											8	
9											9	
60						b					60	

core loss

RQD

▶ driller's note ◀

1 (stick), 2 (substick), 3 (piece), 4 (fragment), 5 grain

1 (hard) ~ 5 (soft)

1 (fresh) ~ 5 (decomposed)

Figure 1.12 (4/4) GEOLOGIC LOG OF DRILL HOLE

PROJECT HOLE No. BS-2 (SHEET 4 OF 4)

LOCATION		DEPTH OF HOLE	80 m	COMMENCED	– –
ELEVATION	m	DEPTH OF OVERBURDEN	m	COMPLETED	– –
COORDINATE		LENGTH OF ROCK DRILLING	m	DRILLED BY	
ANGLE FROM HOLIZONTAL	°	TOTAL LENGTH OF CORE	m	LOGGED BY	
BEARING OF ANGLE HOLE		CORE RECOVERY	%		

DEPTH	ROCK NAME	LOG	CORE RECOVERY	CEMENTATION KIND OF BIT CASING	OBSERVATION OF CORE: COLOR	WEATHERING	HARDNESS	CORE CUTTING	DESCRIPTION	WATER TABLE / WATER PRESSURE TEST / LEAKAGE OF DRILLING WATER	DEPTH	ELEVATION
60m			0 → 100 %							0 LUGEON 40	60m	m
1–2	S. tuff					1	3	1	CLM 62.50		1–2	
3								2	~62.6 weathered zone 63.5		3	
								1	CLM 64.5			
4–9	Tuff breccia				reddish brown	1	3	2 5	This rock may be lapilli tuff to tuff breccia because of tuffaceous matrix and angular gravel of basalt/andesite.		4–9	
70								4	But it is exposed "Conglomerate" on the basis of 'Geological Map of Tegucigalpa.		70	
1–9											1–9	
80									80.0 bottom		80	

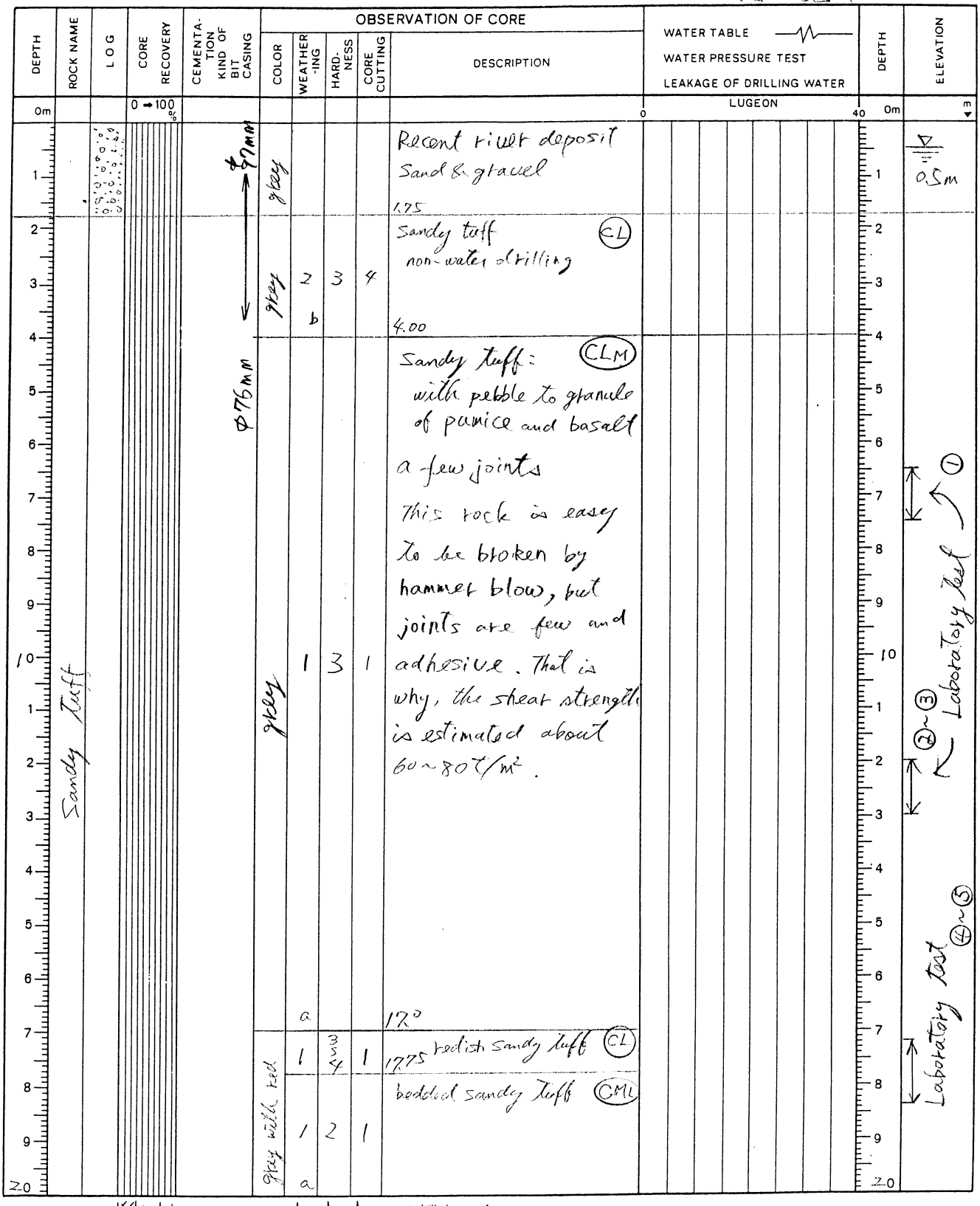
core loss
RQD

▶ driller's note ◀
1 (stick), 2 (substick), 3 (piece), 4 (fragment), 5 grain
1 (hard) ~ 5 (soft)
1 (fresh) ~ 5 (decomposed)

Figure 1.13 (1/4) GEOLOGIC LOG OF DRILL HOLE

PROJECT HOLE No. Bs-3 (SHEET 1 OF 4)

LOCATION	Sabacuante	DEPTH OF HOLE	80 m	COMMENCED	04-IV-
ELEVATION	1,050.92m	DEPTH OF OVERBURDEN	1.75 m	COMPLETED	10-IV-2000
COORDINATE		LENGTH OF ROCK DRILLING	m	DRILLED BY	
ANGLE FROM HOLIZONTAL	-90°	TOTAL LENGTH OF CORE	m	LOGGED BY	
BEARING OF ANGLE HOLE	—	CORE RECOVERY	%	W.L. -0.5m	



core loss
RQD
driller's note
1 (stick), 2 (substick), 3 (piece), 4 (fragment), 5 grain
1 (hard) ~ 5 (soft)
1 (fresh) ~ 5 (decomposed)

Figure 1.13 (2/4) **GEOLOGIC LOG OF DRILL HOLE**

PROJECT HOLE No. BS-3 (SHEET 2 OF 4)

LOCATION		DEPTH OF HOLE	m	COMMENCED	- -
ELEVATION	m	DEPTH OF OVERBURDEN	m	COMPLETED	- -
COORDINATE		LENGTH OF ROCK DRILLING	m	DRILLED BY	
ANGLE FROM HOLIZONTAL	°	TOTAL LENGTH OF CORE	m	LOGGED BY	
BEARING OF ANGLE HOLE		CORE RECOVERY	%		

DEPTH	ROCK NAME	LOG	CORE RECOVERY	CEMENTATION KIND OF BIT CASING	OBSERVATION OF CORE: COLOR	WEATHERING	HARDNESS	CORE CUTTING	DESCRIPTION	WATER TABLE / WATER PRESSURE TEST / LEAKAGE OF DRILLING WATER	DEPTH	ELEVATION
20m			0 → 100 %							0 LUGEON 40	20m	m
1	Sandy Tuff					1	2	1	21° (CHL)		1	
2						2	3	4	21°~23° boulder (reddish conglomerate: Valle de Angeles Group)		2	
3						3		5	23°		3	
4					grey with reddish patch	b			Sandy Tuff with reddish patch		4	
5											5	
6											6	
7						1	3	1			7	
8											8	
9											9	
30											30	
1											1	
2						a			31.85		2	
3						3	4	5	32.30 weathered zone		3	
4	Tuff breccia				reddish brown				• Conglomerate of Valle de Angeles Group		4	
5									• tuff breccia is Beter name		5	
6						2	3	2	• characteristics Matrix: sandy Tuff ~ Tuffacious sand		6	
7							(4)	(3)	Gravel: basalt, andesite angular ~ sub-angular		7	
8									32.3~45.50 (CL)		8	
9									Slightly weathered		9	
40											40	

core loss
RQD
driller's note
1 (stick), 2 (substick), 3 (piece), 4 (fragment), 5 grain
1 (hard) ~ 5 (soft)
1 (fresh) ~ 5 (decomposed)

Figure 1.13 (3/4) GEOLOGIC LOG OF DRILL HOLE

PROJECT HOLE No. BS-3 (SHEET 3 OF 4)

LOCATION		DEPTH OF HOLE	m	COMMENCED	- -
ELEVATION	m	DEPTH OF OVERBURDEN	m	COMPLETED	- -
COORDINATE		LENGTH OF ROCK DRILLING	m	DRILLED BY	
ANGLE FROM HOLIZONTAL	°	TOTAL LENGTH OF CORE	m	LOGGED BY	
BEARING OF ANGLE HOLE		CORE RECOVERY	%		

DEPTH	ROCK NAME	LOG	CORE RECOVERY	CEMENTATION KIND OF BIT CASING	OBSERVATION OF CORE: COLOR	WEATHERING	HARDNESS	CORE CUTTING	DESCRIPTION	WATER TABLE / WATER PRESSURE TEST / LEAKAGE OF DRILLING WATER	DEPTH	ELEVATION
40m			0 → 100 %							0 LUGEON 40	40m	m
1						2	3	2	slightly weathered conglomerate		1	
2							3		core length :		2	
3							4	(3)	fragment ~ 10 cm		3	
4											4	
5						b			45.5		5	
6									(CH)		6	
7									fresh and sound rock		7	
8	Tuff breccia				reddish purple	1	3	1			8	
9							2				9	
50						a			49.80		50	
1									(CL)		1	
2											2	
3									49.80 ~ 65.0		3	
4									fresh but breakable comparing with sound conglomerate		4	
5											5	
6						1	3	1			6	
7							5	(4)	bad consolidation		7	
8							4				8	
9											9	
60											60	

core loss
RQD

▶ driller's note ◀
1 (stick), 2 (substick), 3 (piece), 4 (fragment), 5 grain
1 (hard) ~ 5 (soft)
1 (fresh) ~ 5 (decomposed)

Figure 1.13 (4/4) GEOLOGIC LOG OF DRILL HOLE

PROJECT HOLE No. BS-3 (SHEET 4 OF 4)

LOCATION		DEPTH OF HOLE	m	COMMENCED	– –
ELEVATION	m	DEPTH OF OVERBURDEN	m	COMPLETED	– –
COORDINATE		LENGTH OF ROCK DRILLING	m	DRILLED BY	
ANGLE FROM HOLIZONTAL	°	TOTAL LENGTH OF CORE	m	LOGGED BY	
BEARING OF ANGLE HOLE		CORE RECOVERY	– %		

DEPTH	ROCK NAME	LOG	CORE RECOVERY	CEMENTATION KIND OF BIT CASING	OBSERVATION OF CORE: COLOR	WEATHERING	HARDNESS	CORE CUTTING	DESCRIPTION	WATER TABLE / WATER PRESSURE TEST / LEAKAGE OF DRILLING WATER	DEPTH	ELEVATION
60m			0 → 100 %							0 LUGEON 40	60m	m
	Tuff breccia				reddish purple	1	3 4	1 (a)	CL fresh but breakable comparing with sound conglomerate			
									65.00			
						1	3	4	CL			
									66.80			
									CM · Well consolidated rock · fresh and sound core length > 100cm			
						1	2	1				
80									80.00 bottom		80	

driller's note

1 (stick), 2 (substick), 3 (piece), 4 (fragment), 5 grain

1 (hard) ~ 5 (soft)

1 (fresh) ~ 5 (decomposed)

core loss

RQD

Figure 1.14 (1/4) GEOLOGIC LOG OF DRILL HOLE

PROJECT HOLE No. BS-4 (SHEET 1 OF 4)

LOCATION	Sabacuante (right)	DEPTH OF HOLE	80 m	COMMENCED	12-IV-
ELEVATION	1084.77 m	DEPTH OF OVERBURDEN	___ m	COMPLETED	27-IV-2000
COORDINATE	___	LENGTH OF ROCK DRILLING	___ m	DRILLED BY	___
ANGLE FROM HOLIZONTAL	−90°	TOTAL LENGTH OF CORE	___ m	LOGGED BY	___
BEARING OF ANGLE HOLE	___	CORE RECOVERY	___ %	W.L.	−30.7 m

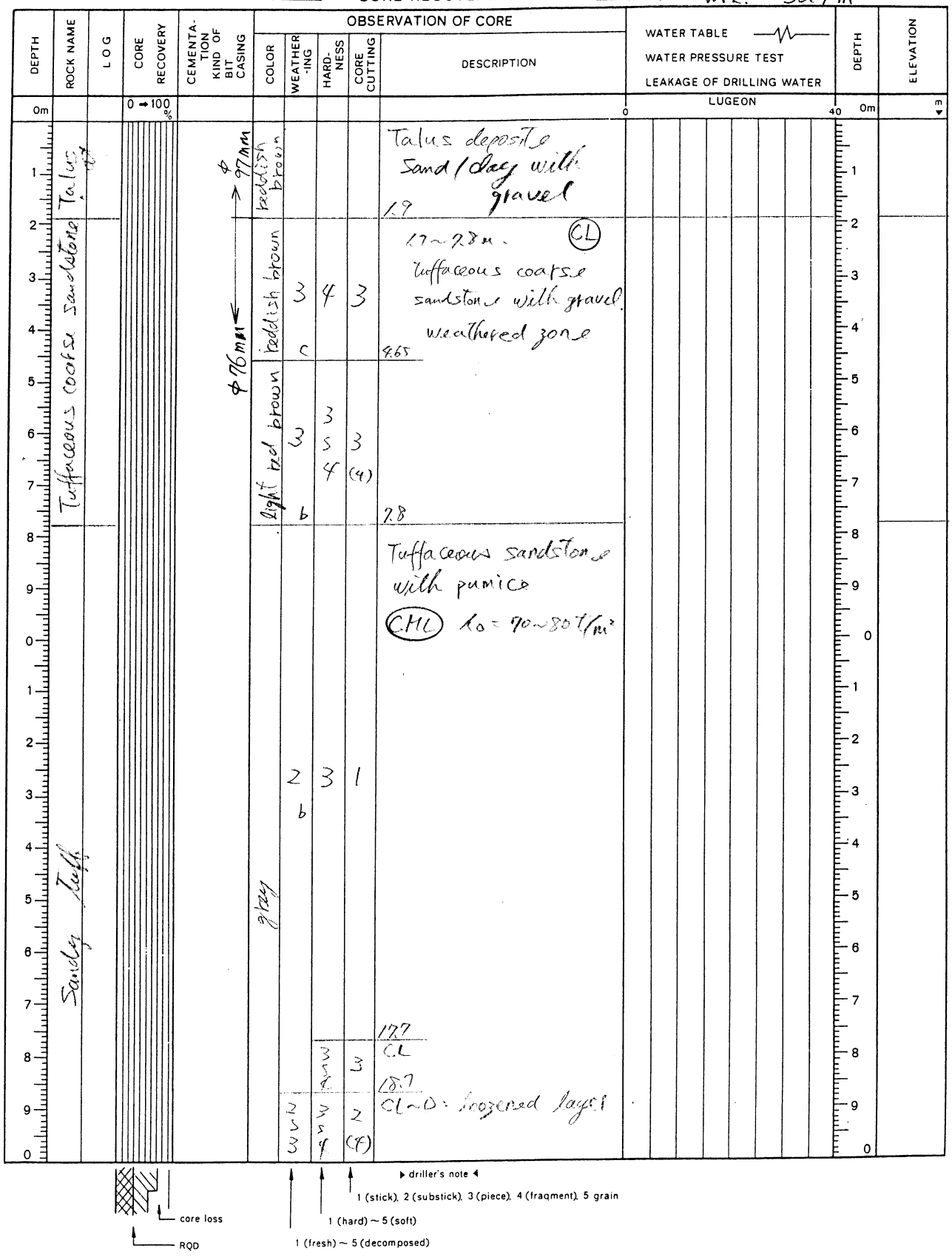


Figure 1.14 (2/4) GEOLOGIC LOG OF DRILL HOLE

PROJECT HOLE No. BS-4 (SHEET 2 OF 4)

LOCATION	Sabacuante	DEPTH OF HOLE	80 m	COMMENCED	– –
ELEVATION	m	DEPTH OF OVERBURDEN	m	COMPLETED	– –
COORDINATE		LENGTH OF ROCK DRILLING	m	DRILLED BY	
ANGLE FROM HOLIZONTAL	°	TOTAL LENGTH OF CORE	m	LOGGED BY	
BEARING OF ANGLE HOLE		CORE RECOVERY	%		

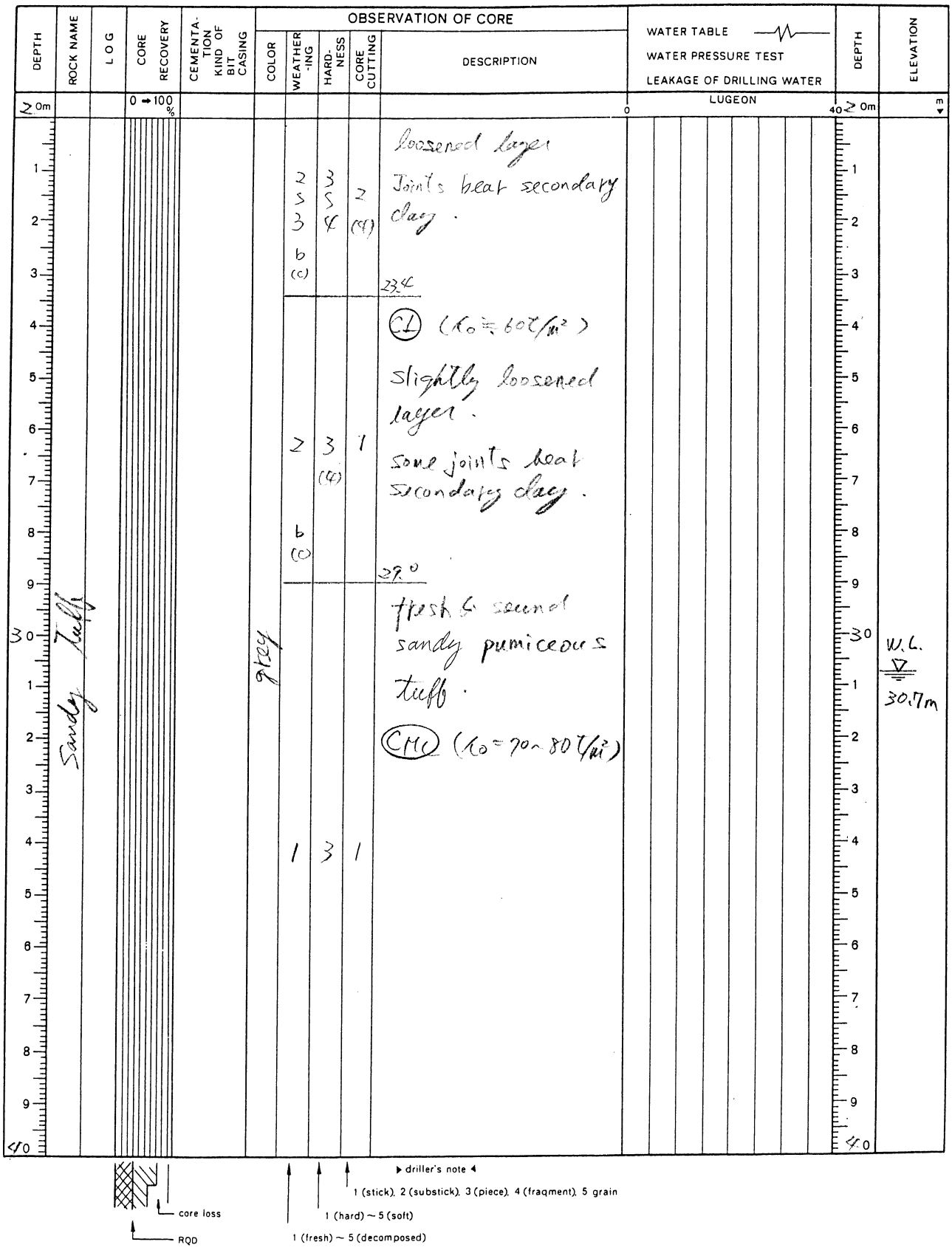


Figure 1.14 (3/4) GEOLOGIC LOG OF DRILL HOLE

PROJECT HOLE No. BS - 4 (SHEET 3 OF 4)

LOCATION	Sabacuanto (right)	DEPTH OF HOLE	80 m	COMMENCED	– –
ELEVATION	____ m	DEPTH OF OVERBURDEN	____ m	COMPLETED	– –
COORDINATE	____	LENGTH OF ROCK DRILLING	____ m	DRILLED BY	____
ANGLE FROM HOLIZONTAL	____ °	TOTAL LENGTH OF CORE	____ m	LOGGED BY	____
BEARING OF ANGLE HOLE	____	CORE RECOVERY	____ %		

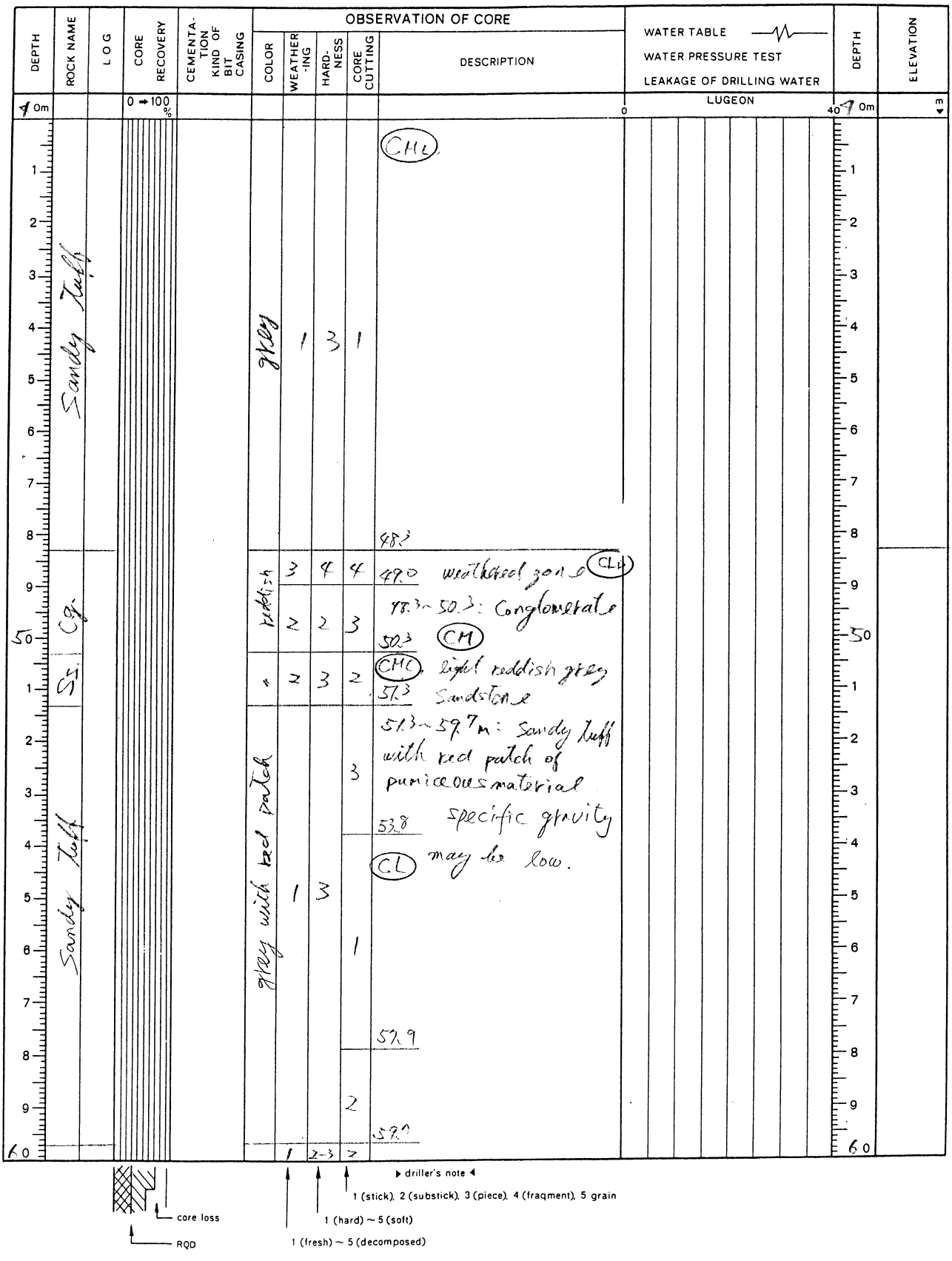


Figure 1.14 (4/4) GEOLOGIC LOG OF DRILL HOLE

PROJECT HOLE No. BS-4 (SHEET 4 OF 4)

LOCATION	Sabacuantc	DEPTH OF HOLE	80 m	COMMENCED	– –
ELEVATION	m	DEPTH OF OVERBURDEN	m	COMPLETED	– –
COORDINATE		LENGTH OF ROCK DRILLING	m	DRILLED BY	
ANGLE FROM HOLIZONTAL	°	TOTAL LENGTH OF CORE	m	LOGGED BY	
BEARING OF ANGLE HOLE		CORE RECOVERY	–%		

DEPTH	ROCK NAME	LOG	CORE RECOVERY	CEMENTATION KIND OF BIT CASING	OBSERVATION OF CORE: COLOR	WEATHERING	HARDNESS	CORE CUTTING	DESCRIPTION	WATER TABLE / WATER PRESSURE TEST / LEAKAGE OF DRILLING WATER	DEPTH	ELEVATION
60m			0 → 100 %							0 LUGEON 40	60m	m

Tuff breccia

reddish brown

1 3 2 2 (3)

Drilling cores are substick, but this conglomerate has a few joint in the field.

Drilling is difficult for like rock composed of soft matrix and hard gravel.

Consequently, rock soundness classification will be classified into

(CML) ~ (CM)

$k_0 = 60 \sim 80$ kg/m²

80.0 bottom

▶ driller's note ◀
1 (stick), 2 (substick), 3 (piece), 4 (fragment), 5 grain

core loss

RQD

1 (hard) ~ 5 (soft)

1 (fresh) ~ 5 (decomposed)

Figure 1.15 (1/2) **GEOLOGIC LOG OF DRILL HOLE**

PROJECT — HOLE No. BS-5 (SHEET 1 OF 2)

LOCATION	Sabacuant.o	DEPTH OF HOLE	40.00 m	COMMENCED	06-IV-
ELEVATION	1,050.45 m	DEPTH OF OVERBURDEN	____ m	COMPLETED	10-IV-2000
COORDINATE	____	LENGTH OF ROCK DRILLING	____ m	DRILLED BY	____
ANGLE FROM HOLIZONTAL	−90°	TOTAL LENGTH OF CORE	____ m	LOGGED BY	____
BEARING OF ANGLE HOLE	____	CORE RECOVERY	____ %	W.L.	−0.5m

DEPTH	ROCK NAME	LOG	CORE RECOVERY	CEMENTATION KIND OF BIT CASING	OBSERVATION OF CORE: COLOR	WEATHERING	HARDNESS	CORE CUTTING	DESCRIPTION	WATER TABLE / WATER PRESSURE TEST / LEAKAGE OF DRILLING WATER	DEPTH	ELEVATION
0m			0 → 100 %							0 LUGEON 40	0m	m
1				φ97mm	grey				Recent river deposit. sand & gravel 1.50		1	0.5m
2						2	4	4	1.95 (CL)~(D) weathered		2	
						2	3	3	2.70 (CL)			
3						1	3	1	(CML) fresh & sound without joint.		3	
4				φ76mm		a			4.60		4	
5						1	4	4	(CL)~(D) bad consolidated rocks		5	
6									6.55		6	
7						1	3	1	(CML) partly including reddish gravel (8.8m)		7	
8						a			9.05		8	
9									(GL)		9	
10	Sandy Tuff					1	3	4	sandy tuff with pumice (6.55~13.5)		10	
1					grey		4	(2)	slightly soft rock		1	
2									12.30		2	
3						1	(3) (4)	1	(CL) 13.5		3	
4									(CLM)		4	
5						1	3	1	fine~medium sandy tuff		5	
6						a			16.90		6	
7									16.9~20.70 boulder (reddish conglomerate)		7	
8									It may be old ground surface.		8	
9											9	
N0											N0	

core loss
RQD

▶ driller's note ◀
1 (stick), 2 (substick), 3 (piece), 4 (fragment), 5 grain
1 (hard) ~ 5 (soft)
1 (fresh) ~ 5 (decomposed)

Figure 1.15 (2/2) GEOLOGIC LOG OF DRILL HOLE

PROJECT HOLE No. BS-5 (SHEET 2 OF 2)

LOCATION		DEPTH OF HOLE	40 m	COMMENCED	- -
ELEVATION	m	DEPTH OF OVERBURDEN	m	COMPLETED	- -
COORDINATE		LENGTH OF ROCK DRILLING	m	DRILLED BY	
ANGLE FROM HOLIZONTAL	°	TOTAL LENGTH OF CORE	m	LOGGED BY	
BEARING OF ANGLE HOLE		CORE RECOVERY	-%		

DEPTH	ROCK NAME	LOG	CORE RECOVERY	CEMENTATION KIND OF BIT CASING	OBSERVATION OF CORE: COLOR	WEATHERING	HARDNESS	CORE CUTTING	DESCRIPTION	WATER TABLE / WATER PRESSURE TEST / LEAKAGE OF DRILLING WATER	DEPTH	ELEVATION
20m			0 → 100 %							0 LUGEON 40	20m	m
20									boulder 20.90		20	
21	Sandy Tuff				reddish gray	1	4	2 5 4	(CL) 20.9~22.0 m bedded tuff matrix is supplyed by valle de Angeles conglomerate and rhyolitic ash		21	
22									26.05		22	
23	T.b.				grey	W	4	4	(CL) weathered zone 27.30		23	
24	sandstone					N	3	4	28.00		24	
25						1	W S N	1	(CLH) reddish tuffacious sandstone 30.50		25	
30											30	
1	Tuff breccia				reddish brown	1	3	3 5 4	(CL) b 30.50~36.20 Sandy Tuff with gravel.		1	
6									36.20		6	
7						1	3	4	(CL) tuff breccia		7	
40									40 bottom		40	

▶ driller's note ◀

1 (stick), 2 (substick), 3 (piece), 4 (fragment), 5 grain

core loss

RQD

1 (hard) ~ 5 (soft)

1 (fresh) ~ 5 (decomposed)