U.T.P = Unable to Penetrate.

TONKIN & TAYLOR LTD.
ENVIRONMENTAL & ENGINEERING CONSULTANTS

ENGINEERING LOG TERMINOLOGY

DRILLING OR EXCAVATION

WATER

Water level on date shown

Water Inflow

Water Outflow

CORE RECOVERY

Core recovered expressed as percentage of the length of the core run

METHOD/CASING

Shows drilling method and depth of casing

Common types:
- OB – open barrel
- W – wash
- HQ3 – HQ triple tube coring
- PQ3 – PQ triple tube coring

SAMPLE TYPE

(The length of the sample is indicated by the length of symbol)

- OPEN BARREL
- DOUBLE OR TRIPLE TUBE
- STANDARD PENETRATION TEST
- LARGE DIA. THIN WALLED TUBE
- SMALL DIA. THIN WALLED TUBE
- BULK SAMPLE

GRAPHIC LOG

The graphic log shows soil and rock substances, significant defects, and core loss. Soil and rock substances represented clear contrasting symbols consistent for each project.

TYPICAL SYMBOLS:

- ORGANIC MATERIAL
- CLAY
- SILT
- SAND
- GRAVEL
- MUDSTONE
- SILTSTONE
- SANDSTONE
- VOLCANIC ROCK
- NO CORE

TESTS

N=22	SPT uncorrected blow count for 300mm
⊙ 75kPa	Undrained shear strength as measured by field vane
⊠	Pressuremeter Test
*	Laboratory test(s) carried out:

Common types:
- LV – Laboratory vane
- AL – Atterburg limits
- UU – Undrained trioxial
- PSD – Particle size
- C' Ø' – Effective stress
- CONS – Consolidation
- DS – Direct Shear
- COMP – Compaction
- UN – Unconfined Compression
- IS – Point Load

SOIL DESCRIPTIONS

CLASSIFICATION SYMBOL

Based on USBR Unified Soil Classification System Visual Method for field identification. Classification symbols based on Laboratory Method may differ.

Soil and rock descriptions generally follow the "Guidelines for the field descriptions of Soils and Rocks in Engineering Use" by the NZ Geomechanics Society (1985). Particular in-house abbreviations are given below.

MOISTURE CONTENT

- D – Dry, looks and feels dry
- M – Moist, no free water on hand when remoulding
- W – Wet, free water on hand when remoulding

Moisture content may be compared to the plastic limit (PL) eg M > PL = moist, moisture content greater than the plastic limit

UNDRAINED SHEAR STRENGTH

		Cu (kPa)
VS	Very Soft	<10
S	Soft	10 to 25
F	Firm	25 to 50
St	Stiff	50 to 100
VSt	Very Stiff	100 to 200
H	Hard	>200
Fb	Friable	

RELATIVE DENSITY

		SPT – Uncorrected
VL	Very Loose	0 to 4
L	Loose	4 to 10
MD	Medium Dense	10 to 30
D	Dense	30 to 50
VD	Very Dense	>50

ROCK DESCRIPTIONS

WEATHERING

UW	Unweathered
SW	Slightly Weathered
MW	Moderately Weathered
HW	Highly Weathered
CW	Completely/Extr. Weathered
RW	Residual Soil

FIELD STRENGTH

		UCS (MPa)	Point Load Index (MPa)
R0	Extremely Weak	0.25–1	N/A
R1	Very Weak	1 to 5	N/A
R2	Weak	5 to 25	N/A
R3	Moderately Strong	25 to 50	1–2
R4	Strong	50 to 100	2–4
R5	Very Strong	100 to 250	4–10
R6	Extremely Strong	>250	

P.T.O.

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ENGINEERING LOG TERMINOLOGY

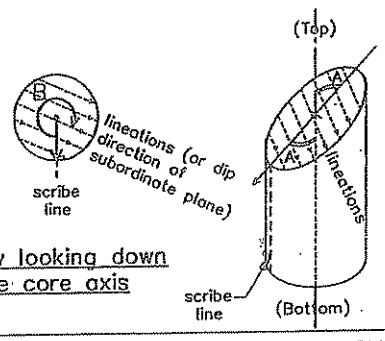
ROCK DESCRIPTIONS

(Continued)

DEFECTS

Significant defects are shown graphically

B	BEDDING
J	JOINT
SZ	SHEARED ZONE
CZ	CRUSHED SEAM/ZONE
IF	INFILLED SEAM/ZONE
XD	EXTREMELY WEATHERED SEAM



View looking down the core axis

CODING

Typical Example:

2J60°, PL, SL, T, CV, stiff green CLAY

- 2 — No. in defect set
- J — Type
- 60° — Angle to core axis
- PL — Shape
- SL — Roughness
- T — Apeture
- CV — Infilling/Coating Type
- stiff green CLAY — Infilling Description (as per Soil Description)

Where possible, the relative angle between the defect and the bedding (B) is given, where B = angle from the dip direction of the bedding, to the dip direction of the defect, in a clockwise direction when looking down the core axis.

SHAPE

TERM	CODE
Planar	PL
Slightly curved	SC
Curved	CV
Irregular	IR
Stepped	ST
Wavy	WV

ROUGHNESS

DESCRIPTION OF JOINT SURFACE	CODE
Slickensided	SL
Smooth	SM
Defined Ridges	DR
Small Steps	ST
Rough	R
Very Rough	VR

After Piteau (1973)

APERTURE

TERM	SYMBOL	DESCRIPTION (Separation)
Very Tight	VT	less than 0.1mm
Tight	T	0.1mm to 1.0mm
Open	O	1.0mm to 10.0mm
Very Open	VO	more than 10mm

After Bienowski (1973)

INFILLINGS AND COATINGS

Clay Gouge	CG	Joints have openings between opposing faces of intact rock substance in excess of 1mm filled with clay gouge. Clay is generally described in terms of soil properties.
Clay Veneers	CV	Joints contain clay coating whose maximum thickness does not exceed 1mm. Note: Describe clay in terms of soil properties.
Penetrative Limonite	PL	Joint traces are marked in terms of well defined zones of slightly to moderately weathered ferruginised rock-substance within the adjacent rock.
Limonite Stained	FeSt	Joint surfaces are stained or coated with limonite, although the rock substance immediately adjacent to the joints is fresh.
Coated	CT SC	Joints exhibit Coatings other than clay or limonite, eg. Carbonate (CT) or silica (SC).
Cemented	CL CS CC	Joints are cemented with limonite (CL), silica (CS), or carbonates (CC).
Clean	CN	Joint surfaces show no trace of clay, limonite, or other coatings.