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ENGINEERING BORELOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM BQF 075:191/95

BOREHOLE No : 231

SHEET : 1 OF 2

REFERENCE No : H8169

: SOUTH EAST TRANSIT BUS LANE PROJECT-SECTION 2 PROJECT LOCATION : 4117.9E 162077.9N PROJECT No : C60117 SURFACE R.L. : 20.73 DRILLER : DALY BROTHERS PTY LTD : 650302CN DATUM : AHD DATE DRILLED : 26/11/97 RQD DEFECT R.I. Ε ADDITIONAL DATA STRENGTH SPACING ()% (m) MATERIAL (mm) AND CORE DESCRIPTION TEST RESULTS REC% 20.73 Red-brown to brown, moist stiff to very stiff; sandy to gravelly in parts; low Driller's log only. to medium plasticity. (Probable residual soil from tuff). 19.73 XW TUFF 4,20,30/85 SPT N = > 5019.34 MW TUFF (47)White to grey white medium to coarse grained massive; rich in feldspar; frequent pyroclasts; porphyritic texture 2 angular to subangular quartz grains; frequent subhorizontal fractures (<25 Is(50) = 0.33MPadegrees). Is(50) = 0.29MPa(73)100 Broken zone. At 3.55, pale grey to orange brown, fine to coarse grained massive; frequent sub-horizontal fractures(<10degrees). Broken zone. (85) Is(50) = 0.17MPa100 Is(50)=0.38MPa MW Is(50) = 0.21MPa14.49 (8.5)26/11/97 94 Is(50) = 0.64 MPa(100)100 15.60MPa UCS Is(50) = 0.54 MPa(88) Is(50) = 0.25MPa10.73 LOGGED BY REMARKS : *See attached list for defect descriptions. DISS



REMARKS:

ENGINEERING BORELOG

BOREHOLE No : 231
SHEET : 2 OF 2

LOGGED BY

FOR GEOTECHNICAL TERMS AND REFERENCE No : H8169 SYMBOLS REFER FORM BQF 075:191/95 : SOUTH EAST TRANSIT BUS LANE PROJECT-SECTION 2 **PROJECT** : 4117.9E 162077.9N PROJECT No: C60117 SURFACE R.L.: 20.73 DRILLER : DALY BROTHERS PTY LTD : 650302CN DATUM : AHD DATE DRILLED : 26/11/97 JOB No INTACT DEFECT E ADDITIONAL DATA WEATHERING
WEATHERING STRENGTH SPACING ()% (m) MATERIAL AND SRAPHIC CORE DESCRIPTION TEST RESULTS REC% 10 10.73 Pink brown, medium to coarse grained, 8.08MPa massive; frequent pyroclasts; porphyri-tic texture; quartz sub-angular to (95) angular; frequent subhorizontal fract -ures (<10 degrees). 100 Is(50) = 0.38MPa14.90MPa TICS (100)100 MW Is(50)=0.82MPa 10.50MPa TICS (100) 100 Is (50) = 0.98MPa 5.85 (100) Weathered zone. 100 HW Grey green to black grey, fine to medium pyroclatic rock (TUFF). Black baked zone throughout. Is(50) = 0.38MPaIs(50) = 0.75MPa(100) (100) Broken zone 3.83 100 END OF HOLE



DEFECT DESCRIPTIONS OF BORELOGS

[FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM BQF 075:191/95]

BOREHOLE NO :	231
SHEET :	1 of 3
REFERENCE NO :	H8169

PROJECT SOUTH EAST TRANSIT PROJECT - SECTION 2

LOCATION : 4118.433E 162077.128N

PROJECT NO : C60117 SURFACE R.L : 20.71 DRILLER : DALY BROTHERS PTY LTD

JOB NO : 650302CN DATUM : AHD DATE DRILLED : 26/11/97

DEPTH	DEFECT	DIP	PLANARITY	ROUGHNESS	APERTURE	WALL	OTHER
	TYPE					ALTERATION	
0.05							HFZ
1.48	J	40					Cn
1.49	J	10					P,CI
-1.5	J	10					
1.58	J	55		R			P,CI
1.8	J	62		R			P,CI
2.2	J	27		R		PFeSt	P,CI
2.32	J	27		R	Т	FeSt	CI
2.5	J	27		R	Т	FeSt	CI
2.6	J	27		, R	Т	FeSt	CI
2.68	J	27		R	Т	FeSt	CI
3.12	J	20			Т		H,Cn
3.25	J	45		R			Cn
3.33	J	50					HFZ
3.5	J	40		R	0		Cn
3.68	J			R			H,Cn
3.78	J	20		R		FeSt	V
4.08	J	85		R		FeSt	V
4.5	J	50	Ir		Т		
4.65	J	35	Ir		Т		Cn
6.18	J	25	Īr		Т		Cn

ABBREVIATIONS

	ROUGHNESS		WALL ALTERATIONS		ТҮРЕ		OTHER
R	Rough	FeSt	Iron Stained	J	Joint	P	Partly
Sm	Smooth	w	Weathered	В	Bedding	QZ	Quartz Vein
SL	Slickensided				Bedding Parting	Co	Completely
				F	Folliation	In	Incipient
	PLANARITY		APERTURE		Sheared Zone	SI	Sand Infill
Pl	Planar	С	Closed	WS	Weathered Seam	Н	Horizontal
St	Stepped	0	Open	CZ	Crushed Zone	V	Vertical
Un	Undulating	F Filled		SM	Secondary Mineralisation	Cl	Clay Infill
Cu	Curved	T	Tight	BZ	Broken Zone	Cn	Clean
lr	Irregular			HFZ	Highly Fractured Zone		

NOTE: This sheet should be read in conjunction with appropriate Engineering Borelog.



DEFECT DESCRIPTIONS OF BORELOGS

[FOR GEOTECHNICAL TERMS AND SYMBOLS

REFER FORM BQF 075;191/95]

BOREHOLE NO :	231
SHEET :	2 of 3
REFERENCE NO :	H8169

PROJECT SOUTH EAST TRANSIT PROJECT - SECTION 2

LOCATION : 4118.433E 162077.128N

PROJECT NO : C60117 SURFACE R.L : 20.71 DRILLER : DALY BROTHERS PTY LTD

JOB NO : 650302CN DATUM : AHD DATE DRILLED : 26/11/97

DEPTH	DEFECT TYPE	DIP	PLANARITY	ROUGHNESS	APERTURE	WALL ALTERATION	OTHER
6.23	J	25	Ir		Т		Cn
6.3	J	25	Ir		Т		Cn
6.57	J		Ir	R	Т		H,Cn
-6.78	J	20					
6.95	J	20					-
7.04	J		Ir				H,Cn
7.2	HFZ		Ir	R			Н
7.25	J	75	Ir	R			_
7.38	HFZ	15	Ir	R			Н
7.98		10		`			Н
8.8		65		R			Cn
8.83		65		R			Cn
9.33			Ir		_		Н
9.4	J	40		R		FeSt	Cn
9.47	J	_	Ir	R		FeSt	Н
9.74	J		Ir	R	Т	FeSt	
10.15	J		Ir	R		FeSt	Н
10.45	J	45	Ir			CoFeSt	
10.77		10	Ir				CI

ABBREVIATIONS

	ROUGHNESS		WALL ALTERATIONS		TYPE		OTHER
R	Rough	FeSt	Iron Stained	J	Joint	P	Partly
Sm	Smooth	W	Weathered	В	Bedding	QZ	Quartz Vein
SL	Slickensided			BP	Bedding Parting	Co	Completely
				F	Folliation	In	Incipient
	PLANARITY APERTURE		APERTURE	SZ	Sheared Zone	SI	Sand Infill
Pl	Planar	С	C Closed		Weathered Seam	Н	Horizontal
St	Stepped	0	O Open		Crushed Zone	V	Vertical
Un	Undulating	F	F Filled		Secondary Mineralisation	CI	Clay Infill
Cu	Curved	Т	T Tight		Broken Zone	Cn	Clean
Ir	Irregular			HFZ	Highly Fractured Zone		

NOTE: This sheet should be read in conjunction with appropriate Engineering Borelog.



DEFECT DESCRIPTIONS OF BORELOGS

[FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM BQF 075:191/95]

BOREHOLE NO :	231
SHEET :	3 of 3
REFERENCE NO :	H8169
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PROJECT SOUTH EAST TRANSIT PROJECT - SECTION 2

LOCATION : 4118.433E 162077.128N

PROJECT NO : C60117 SURFACE R.L : 20.71 DRILLER : DALY BROTHERS PTY LTD

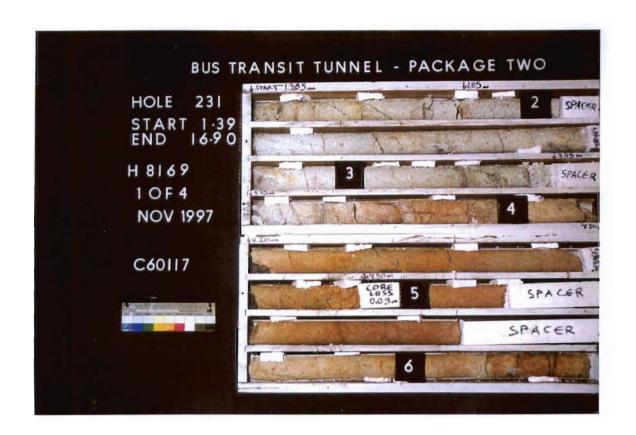
JOB NO : 650302CN DATUM : AHD DATE DRILLED : 26/11/97

DEPTH	DEFECT TYPE	DIP(Degrees)	PLANARITY	ROUGHNESS	APERTURE	WALL ALTERATION	OTHER
11.1	J		Ir	R			PSI,H
11.22	J		Ir		T		Н
12.17	J	85	Ir	R			Cn
-12.5	J	85	Ir	R	_		Cn
13.7	J	25		R			CI
14.2	J	75	Ir	R			Cn
14.4	J	40			T	FeSt	Cn
14.51	J		Ir		Т		H,Cn
15.37	J	42		Sm			Cn
16.3	J		Ir	' R			Н
16.4	J	-	Ir	R			Н
16.51	J		Ir	R			Н
16.62	J	-	Ir	R			Н
				_			

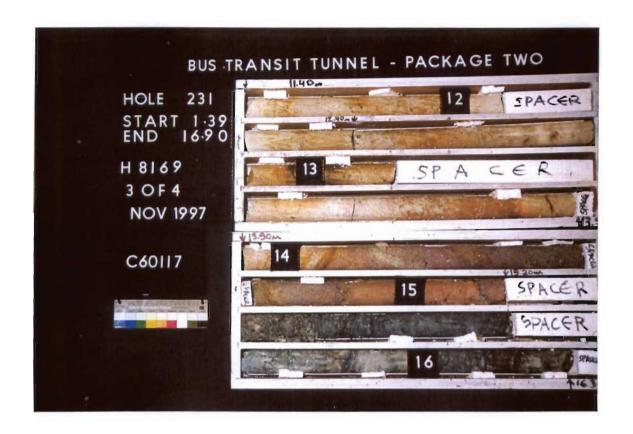
ABBREVIATIONS

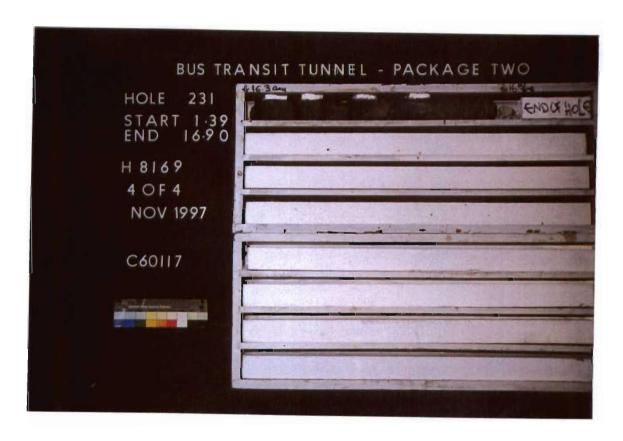
	ROUGHNESS		WALL ALTERATIONS		TYPE		OTHER
R	Rough	FeSt	Iron Stained	J	Joint	P	Partly
Sm	Smooth	W	Weathered	В	Bedding	QZ	Quartz Vein
SL	Slickensided			BP	Bedding Parting	Co	Completely
-				F	Folliation	ln	Incipient
	PLANARITY APERTURE		SZ	Sheared Zone	SI	Sand Infill	
PI	Planar	С	Closed	ws	Weathered Seam	Н	Horizontal
St	Stepped	0	Open	CZ	Crushed Zone	V	Vertical
Un	Undulating	F	Filled	SM	Secondary Mineralisation	CI	Clay Infill
Cu	Curved T Tight		BZ	Broken Zone	Cn	Clean	
Ir	Irregular			HFZ	Highly Fractured Zone		

NOTE: This sheet should be read in conjunction with appropriate Engineering Borelog.

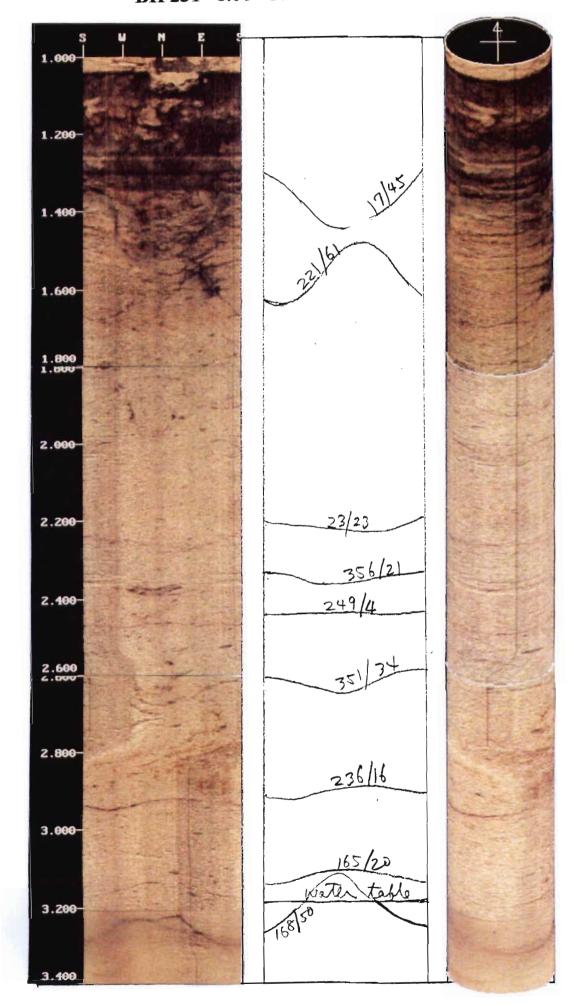




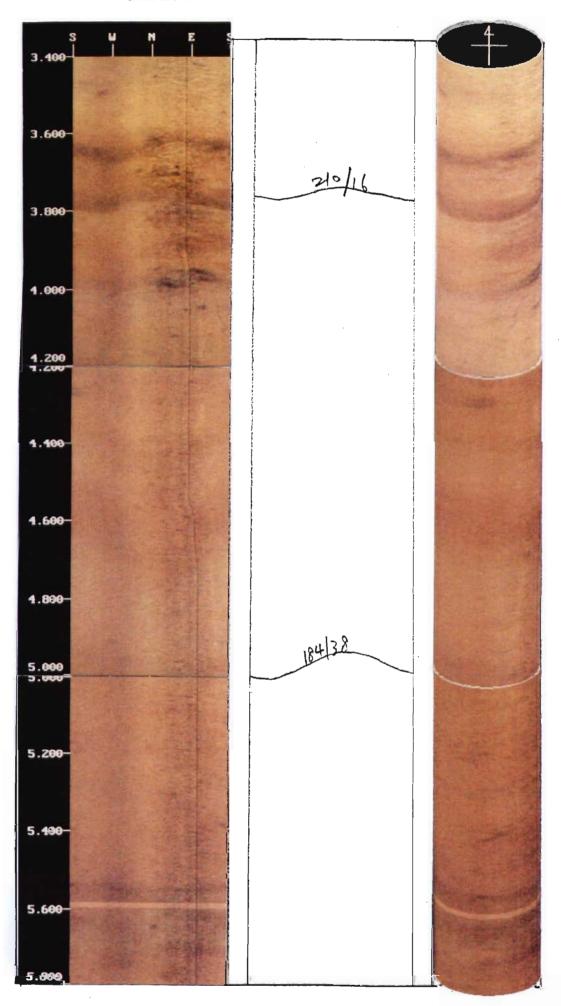




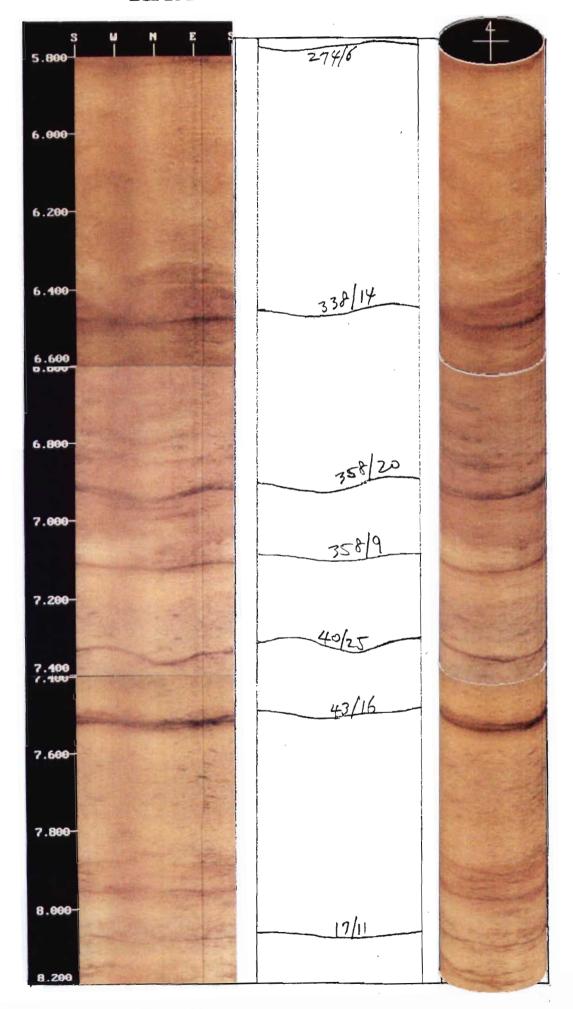
SOUTH EAST TRANSIT PROJECT BH 231 1.00 - 3.40 M



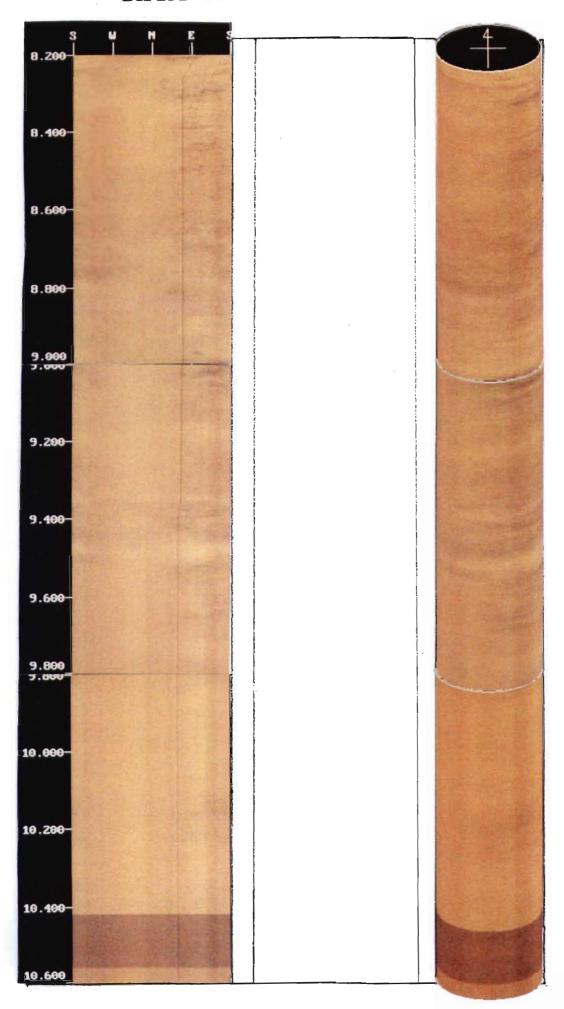
SOUTH EAST TRANSIT PROJECT BH 231 3.40 - 5.80 M



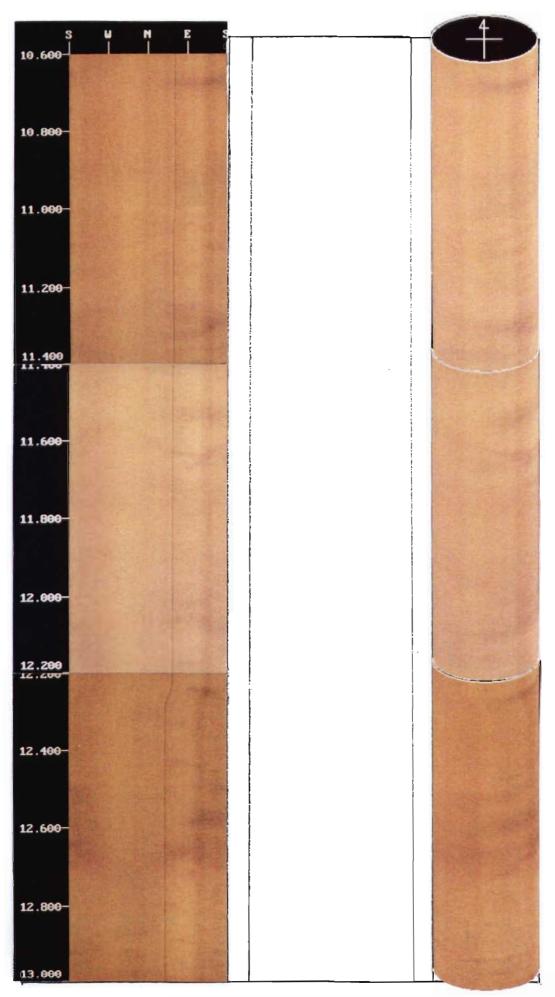
SOUTH EAST TRANSIT PROJECT BH 231 5.80 - 8.20 M



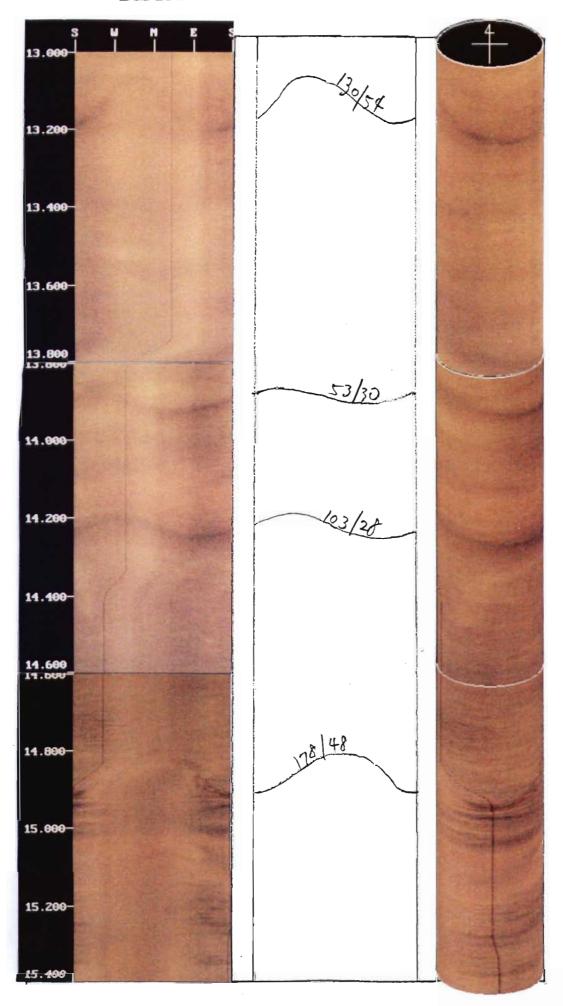
SOUTH EAST TRANSIT PROJECT BH 231 8.20 - 10.60 M



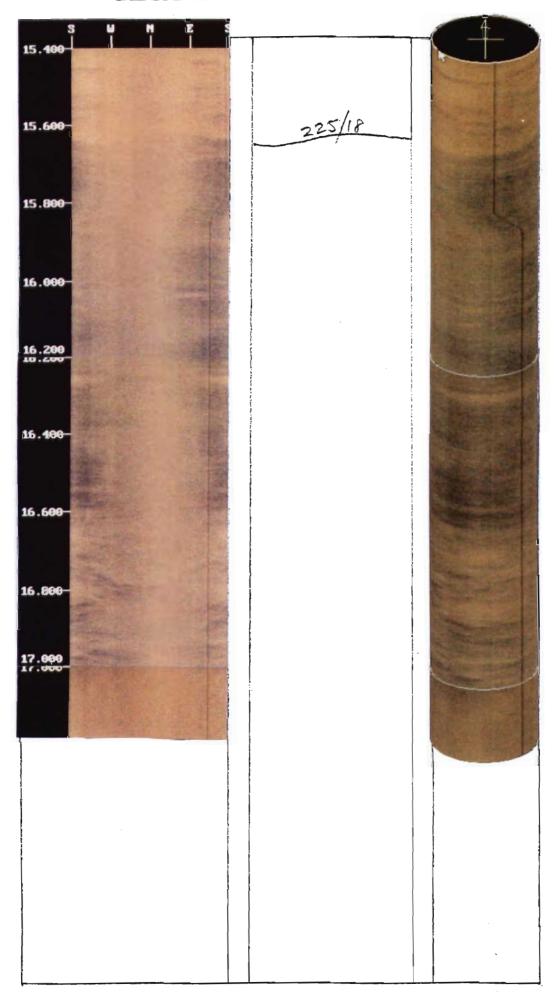
SOUTH EAST TRANSIT PROJECT BH 231 10.60 - 13.00 M



SOUTH EAST TRANSIT PROJECT BH 231 13.00 - 15.40 M



SOUTH EAST TRANSIT PROJECT BH 231 15.40 - 17.20 M





SOUTH EAST TRANSIT PROJECT, SECTION 2

WATER PRESSURE TEST RESULTS

0 Lug**e**ons

Drill Hole:

231 1 Date: 27/11/97

Test No:

From (m)

To (m)

Length (m)

Test Section:

13.00

16.90

3.90

Groundwater Depth (m):

6.24

Gauge Height (m):

1.85

Hydrostatic Head (kPa):

80.9

Gauge Pressure (kPa)	Effective Pressure (kPa)	Test Duration (min)	Meter Start (litres)	Meter End (litres)	Water Loss (litres)	Leakage (1/m/min)	Lugeons
50	130.9	5	24	24	ō	0.00	0.00
80	160.9	5	24	24	0	0.00	0.00
180	260.9	5	24	24	0	0.00	0.00
80	160.9	5	24	24	0	0.00	0.00
50	130.9	5	24	24	0	0.00	0.00