

Client Auckland Transport

Project

Eastern Busway

Project number 60644113

HOLE IDENTIFICATION

DH-CPT315

Co-ordinates 412015.64mE 794969.47mN

Orientation -90° Elevation 11.261m

Location

30 Heathridge

30 Heathridge

Feature Ground conditions near Burswood Station

roject number 00044						F	Feature Ground conditions near Bu	rswood Static
GEOLOGICAL DESCRIPTION Weathering, Colour, Fabric, ROCK NAME. Strength, Discontinuities, Lithological Features (bedding, foliation, mineralogy, cement, etc).	Test Records Shear SPT Vane/ N Values SPT 0-50	ΪŬΙ	Ws Crenative W Strength SW Rock WW Weathering Depth	Graphic Log	TCR [RQD] (%)	F 100 Spacing of 100 Matural 100 Defects	SOIL PROPERTIES Subordinate MAJOR minor; colour, structure. Strength, moistur grading, bedding, plasticity, sensitivity, major fraction description information, etc DEFECT DESCRIPTION (Joints, Bedding Seams, Shatter, Shear and Crush Zor Schistosity, Attitude, Spacing, continuity, roughness, in	on, subordinate tures, additional
0.1m: Alluvium comprising silty clay	нс	3 			25 100		<u> </u>	sticity.
	87/22	3		<u> </u>	100		1.6 to 1.75m: Mottled orange.	
2.0m: Slightly weathered, dark grey, BASALT. Moderately strong, moderately vesicular.	ss 1,1,1, 3,3 for 67mm N>50 	3 			100 [37]		1.75m: Silty CLAY; light grey. Stiff, moist, high plasticity. Contains basalt fragments. 1.8m: End of basalt fragments.	
 3.25m: Slightly weathered, dark grey, BASALT. Strong, slightly vesicular. 		3 		4	100 [65]			
							DH-CPT315 terminated at 4.4m Depth Criteria Achieved	
				3				
For explanation of symbols and of FLUID DEPTHS AND DRILI Date Time Drilled Dept		et R) Depth	ELATIVE STREN S - Strong S - Strong MS - Moderately str W - Weak WW - Very weak EW - Extremely weat Remarks	UW - SW - MW - HW - CW -	WEATHE Unweathe Slightly we Moderatel Highly we Completel	red eathered y weather athered	Checked MC 18/10 Finish	lillan d 0/2022 ed
			Log of CPT			ام دا	Drill R	0
Hand Held Shear Vane GEOVANE1712: 19mm blade: Calibra	ted 08/22: Correction factor: 1	.450	No Groundw Horizontal / 1 2000 / New 2	Vertical S	urvey [Datum	s: NZGD2000 / Mount Eden	
vane shear strength per NZGS g	uideline				Gruodi	Datul	Page	1 of 2

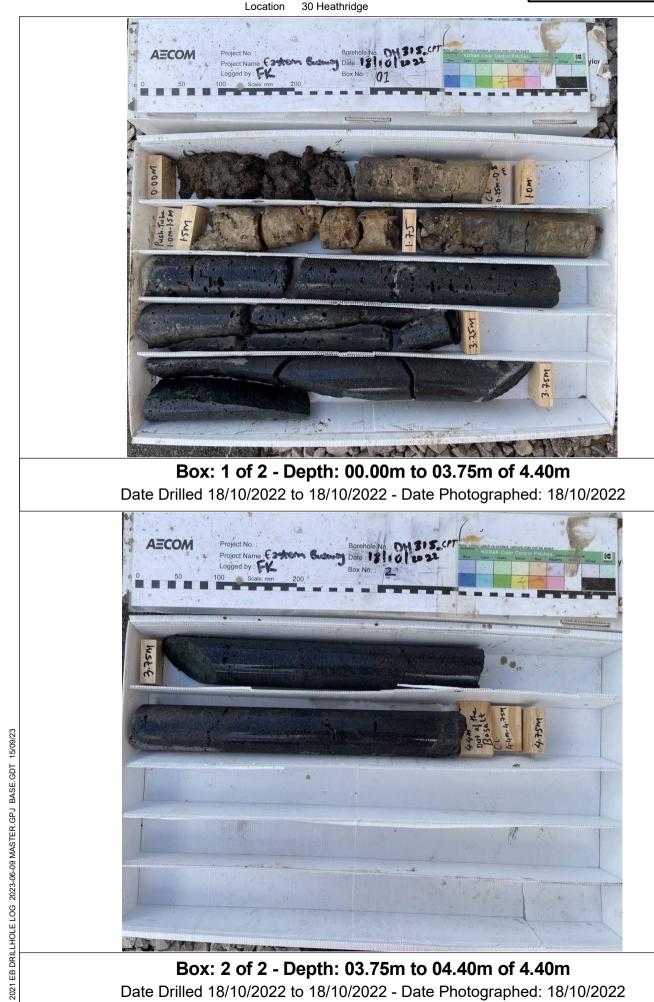


PHOTOGRAPHIC LOG OF DRILLHOLE

Project Eastern Busway

HOLE IDENTIFICATION

DH-CPT315





Client Auckland Transport

Project

Eastern Busway

Project number 60644113

HOLE IDENTIFICATION

DH316

Co-ordinates	412143	3.54mE	794924.72mN
Orientation	-90°	Elevation	11.52m
Location	14 Hea	thridge Pl	ace, Burswood

Feature Noise wall and cycleway

D v	EOLOGICAL ESCRIPTION Veathering, Colour, Fabric, ROCK NAME. Strength, Discontinuities, Lithological Features bedding, foliation, mineralogy, cement, etc).	Test Records Shear SPT Vane/ N Values SPT 0-50		Core Loss/Lift	s Relative W Strength	wwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwww	Depth	Graphic Log	TCR [RQD] (%)	Feon Spacing of Natural 100 Defects	SOIL PROPERTIES Subordinate MAJOR minor; colour, structure. Stren grading, bedding, plasticity, sensitivity, major fractic fraction description, minor fraction description, addi information, etc DEFECT DESCRIPTION (Joints, Bedding Seams, Shatter, Shear and Schistosity, Attitude, Spacing, confinulty, ro	on description, subordin itional structures, additio d Crush Zones, Foliation	ate strument
	0.0m: VAC EX		VAC EX				- 1		0		0.0m: Vacuum excavation not witnes	ssed.	1.27
ANIC FIELD	1.3m: Moderately weathered dark grey highly vesicular BASALT. Moderately strong. Vesicles are 2-20mm and iron stained.		HQ3 114 HWT HQ3				2		100 [55] 55 [35]		1.73 to 1.83m: J, 60°, Ud, Ro, P, Cl 1.88 to 2.02m: J, 60°, Ud, Ro, P, Cl 2.02 to 2.24m: Becomes brown CLAY w cobbles. 2.24 to 2.7m: Core Loss: 2.7 to 3m: J, 85°, Ud, Ro, VN, C, Cl, - 2mm		▼ 1.62 ↓ 1.80 ▼
AUCKLAND VOLCANIC FIELD	2.7m: Slightly weathered dark grey moderately vesicular BASALT. Strong. Vesicles 2-20mm 3.5m: Slightly weathered dark grey slightly vesicular BASALT. Very strong. Vesicles 1-5mm		HQ3				3		100 [94]		2.76m: J, 0°, Ud, Ro, Vn, Fe 2.81m: J, 0°, Ud, Ro, Vn, Fe 2.9m: J, 0°, Ud, Ro, Vn, Fe 3.0 to 3.5m: J, 75°, Ud, Ro, P, Cl, Blu infill 3.65 to 3.95m: J, 70°, Ud, Ro, P, Cl, I infill 3.7 to 3.95m: J, 65°, Ud, Ro, P, Cl, B infill 4.28 to 4.41m: J, 60°, Ud, Sm	Bluish grey clay	
	4.5m: ALLUVIUM comprising clay, sand, organics, and peat.		HQ3				- - - - - - - - - - - - - - - - - - -		100		 4.33 to 4.48m: J, 60°, Ud, Ro, Cg, Qt coating 4.5m 24 2Hm J 60°, Ud, Sm, Possibl 4.5m 24 2Hm J 60°, Ud, Sm, Possibl brown. Firm, moist, high plasticity. 4.7m: Becomes orangish brown. 5.1m: Becomes light bluish grey and wit specks. 	le handling Id; Dark	
RANGA GROUP		41/6 ss 0,0,0, 0,0,1 N=1 	PT SPT				6	70 70 70 70 70 70 70 70 70 70 70 70 7 70 7	100 100 100		6.6m: Spongy/plastic PEAT; Black. S high plasticity.	Soft, moist,	
TAURANG		ss 0,0,0, 0,0,0 N=0 SUOW	SPT				8	6 APP APP APP APP APP APP APP APP APP AP	100		7.5 to 7.95m: Partially decomposed woo	od.	
		35/3 ss 0,0,0, N=0 SliDW	PT					7. 77. 77. 77. 7. 77. 77. 77. 7. 77. 77. 77. 7. 77. 77. 77. 77. 77. 77. 77. 77. 77.	100 100		9.0m: Becomes firm.		
F Da 21 22	For explanation of symbols and ol For explanation of symbols and ol LUID DEPTHS AND DRILLIN ate Time Drilled Depth /11/2022 15:20 22.95 /11/2022 09:45 22.95 /11/2022 12:00 28.50	bservations, see l	S (m)	pth 7 3	RELAT VS-V S-S MS-P W-V VW-V EW-E	/ery stro Strong Aoderate	ely strong ik y weak	UW - 1 SW - 3 MW - 1 HW - 1	WEATHE Jnweathe Slightly we Moderatel Highly we Completel	red eathered y weather athered	Checked CP	Driller McMillan Started 18/10/2022 Finished 22/11/2022	
	Hand Held Shear Vane DR2272: 19mm blade: Calibrated 02/22 rane shear strength per NZGS gu		= 1.595		Hol All s Hor	e bac shear izonta	kfilled vane al / Ve	reading	s are f irvey [rom th Datums	s: NZGD2000 - Mount Eden	Drill Rig N119 Core Boxes Page 1 o	10 f 3



Client Auckland Transport

Project

Eastern Busway

Eastern Busway Project number 60644113

HOLE IDENTIFICATION

DH31

Co-ordinates	412143	3.54mE	794924.72mN
Orientation	-90°	Elevation	11.52m

14 Heathridge Place, Burswood Location

Feature Noise wall and cycleway

D	EOLOGICAL ESCRIPTION Veathering. Colour, Fabric, ROCK NAME. tirength, Discontinuities, Lithological Features bedding, foliation, mineralogy, cement, etc).	Shear	Records SPT N Values	Drilling Method Casing remarks	Core Loss/Lift	^S Relative ^W Strength	sw Rock	Depth		Graphic Log	TCR RQD] (%)	-500) Spacing of -500 a Natural -10 (Defects	SOIL PROPERTIES Subordinate MAJOR minor; colour, structure. Stren grading, bedding, plasticity, sensitivity, major fractic information, etc DEFECT DESCRIPTION (Joints, Bedding Seams, Shatter, Shear an Schistelyt, Attlude, Spacing, continuity, co	ion description, subordinate ditional structures, additiona nd Crush Zones, Foliation,	
		ss 0,0,0, 0,0,0	0 - 50	HQ3 SPT				-		58 58 578 5 58 58 58 58 58 58 58 58 58 58	100		6.6m: Spongy/plastic PEAT; Black. Soft, m plasticity. (continued)	noist, high	
		N=0 SUOW						- - - 1'	22 22	: 77 7 77 77			11.05 to 11.25m: With some sand, brow		
		48/6		HQ3				_			100		11.25m: Silty fine punice SAND with organics (decomposed wood); Light moist, uniformly graded. 11.6m: Organic CLAY with trace fine	th some t grey. Dense,	
		ss 0,0,1, 2,7,10		SPT						<u></u>	100		Firm, moist, high plasticity.		
		N=20		HQ3					0 0 0 0	ç (0 0	100		12.25m: Silty fine pumice SAND with organics and trace obsidian; Light gi dense, moist, uniformly graded.	h some jrey. Very	
		ss											13.1m: Organic CLAY with trace woo Soft, moist, high plasticity.	ood; Black.	
		0,0,0, 1,0,0 N=1		SPT						- <u></u>	100				
GROUP				HQ3				- 14 - - - -			100		14.05m: Silty CLAY with trace organ grey. Stiff, moist, high plasticity.	nics; Bluish	
TAURANGA GROUP		ss 0,0,0, 0,0,0 N=0 SUOW		SPT							100				
		140/29		HQ3				= ``			100	 	16.0 to 16.95m: Becomes very stiff.		
		ss 0,1,2, 1,1,2 N=6		SPT					<u> </u>	×	100				
				HQ3							100		16.95m: Organic CLAY with decomp laminations; Dark brown. Soft, moist plasticity. 17.35m: Silty CLAY with some fine t	it, high	
		ss								×			sand and trace organics; Bluish grey high plasticity.		
		ss 2,1,1, 2,2,3 N=8		SPT						× ×	100		18.2m: Becomes stiff		
				HQ3							100		18.75 to 19.6m: Sand ceases.		
		ss 0,0,0, 0,1,1 N=2		SPT					6 76 7 76 77	21 24	100		19.6m: Spongy PEAT with some wo Firm, moist, low plasticity.	ood; Black.	
F	or explanation of symbols and ob		ons, see k	ey she	1111	RELAT	Liii		GTH	r	/EATHE		Date logged 22/11/2022	Driller	
	LUID DEPTHS AND DRILLIN ate Time Drilled Depth				epth	S-S MS-I W-V VW-V	Neak √eryw	ately stro	ong N F	SW - S 1W - N HW - H	lighly wea	eathered y weathe	red Logged SK	McMillan Started 18/10/2022 Finished	
						Hol		ckfille					npletion. ne end of the core barrel.	22/11/2022 Drill Rig N119	
	land Held Shear Vane R2272: 19mm blade: Calibrated 02/22	Corroati	on Factor -	1 505									s: NZGD2000 - Mount Eden n 2016	Core Boxes	10
	ane shear strength per NZGS gu		on actor =	1.585										Page 2 of	3



Client Auckland Transport

Project

Eastern Busway

Eastern Busway

Project number 60644113

HOLE IDENTIFICATION

DH316

Co-ordinates 412143.54mE 794924.72mN Orientation -90° Elevation 11.52m

Location 14 Heathridge Place, Burswood

Feature Noise wall and cycleway

D v s	EOLOGICAL ESCRIPTION Veathering, Colour, Fabric, ROCK NAME. trength, Discontinuities, Lithological Features bedding, foliation, mineralogy, cement, etc).	Test Records Shear SPT Vane/ N Values SPT 0-50	Drilling Method Casing remarks	Core Loss/Lift	s Relative W Strength	ww Rock ww Weathering	Depth	Graphic Log	TCR [RQD] (%)	-500 Spacing of -100 A Natural -10 Defects	SOIL PROPERTIES Subordinate MAJOR minor; colour, structure. Stru grading, bedding, plasticity, sensitivity, major frac fraction description, minor fraction description, ac information, etc. DEFECT DESCRIPTION (Joints, Bedding Seams, Shatter, Shear a Schistosity, Attitude, Spacing, continuity,	tion description, subordinate dditional structures, additional and Crush Zones, Foliation,	Instrumentation
TAURANGA GROUP	23.6m: Highly weathered, brownish grey, fine to medium grained, massive SANDSTONE. Extremely	SPT 0-50 I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I SS I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I <	HQ3 SPT HQ3 SPT HQ3				22		100 100 100 100		23.25m: Organic silty CLAY; Dark I moist, high plasticity. 23.45m: Becomes with some sand and 23.45m: Becomes with some sand and 23.6m: Silty fine to medium SAND organics; Brownish grey. Medium o poorly graded.	brown. Firm, d banded,	
EAST COAST BAYS FORMATION	24.47m: Moderately weak. 24.47m: Moderately weathered, grey, fine to coarse, massive SANDSTONE. Very weak. Well cemented. Trace shell flecks. 25.0 to 26.2m: Extremely weak 26.2m: Slightly weathered, grey, indistinctly bedded SILTSTONE. Extremely weak. 27.24m: Slightly weathered, grey, fine to coarse, moderately thinly bedded SANDSTONE. Weak.	7,10,12 N=35 5,9,10, 13,20,7 for 25mm N>50 11,31,42, 8 for 15mm N>50 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	SPT HQ3 SPT HQ3 SPT HQ3				25		100 100 [71] 100 100 [100] 0 100 [100]		23.7m: Becomes bluish grey. 24.3m: Becomes dense. 24.55 to 24.68m: J, 60°, Ud, Sm 25.0 to 25.05m: J, 45°, Ud, Ro 25.0 to 25.3m: Very weakly cemented. 25.2 to 25.29m: J, 60°, Ud, Ro 25.3m: weakly cemented. 25.78m: DB 25.95m: DB 26.95m: DB 26.95m: DB 26.34m: DB 26.95 to 27.0m: Some calcareous ban 27.65m: DB 28.09m: DB 28.09m: DB 28.16m: DB 28.16m: DB 28.33m: DB		
F	or explanation of symbols and ot LUID DEPTHS AND DRILLIN	IG PROGRESS	5 (m)		RELAT	III IIII IIII	- - - - - - - r RENGT	UW - I	VEATHE Jnweathe	red	28.42m: DB DH316 terminated at 28.5m Depth Criteria Achieved Date logged 22/11/2022 Logged SK	Driller McMillan	
F	ate Time Drilled Depth Hand Held Shear Vane R2272: 19mm blade: Calibrated 02/22 ane shear strength per NZGS gu			epth	Rer Hole	Veak /ery wea Extreme marks e bac shear izonta	kfilled vane al / Ve	with gro	oderatel Highly wea Completel Dut upo s are f Irvey [y weather athered y weather on con from th Datum:	npletion. e end of the core barrel. s: NZGD2000 - Mount Eden	Page 3 of	10 <u>3</u> /03/2023

2021 EB DRILLHOLE LOG 2022-08-23 MASTER.GPJ BASE.GDT 07/03/23



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PHOTOGRAPHIC LOG OF DRILLHOLE

Date : 21/11/22

Box No

Project Eastern Busway

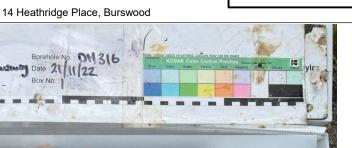
Location

Eadres S

Project No

HOLE

DH316





Box: 1 of 10 - Depth: DH316 00.00m to 04.50m of 28.50m Date Drilled 18/11/2022 to 22/11/2022 - Date Photographed: 21/11/2022



Box: 2 of 10 - Depth: DH316 04.50m to 07.70m of 28.50m Date Drilled 18/11/2022 to 22/11/2022 - Date Photographed: 21/11/2022

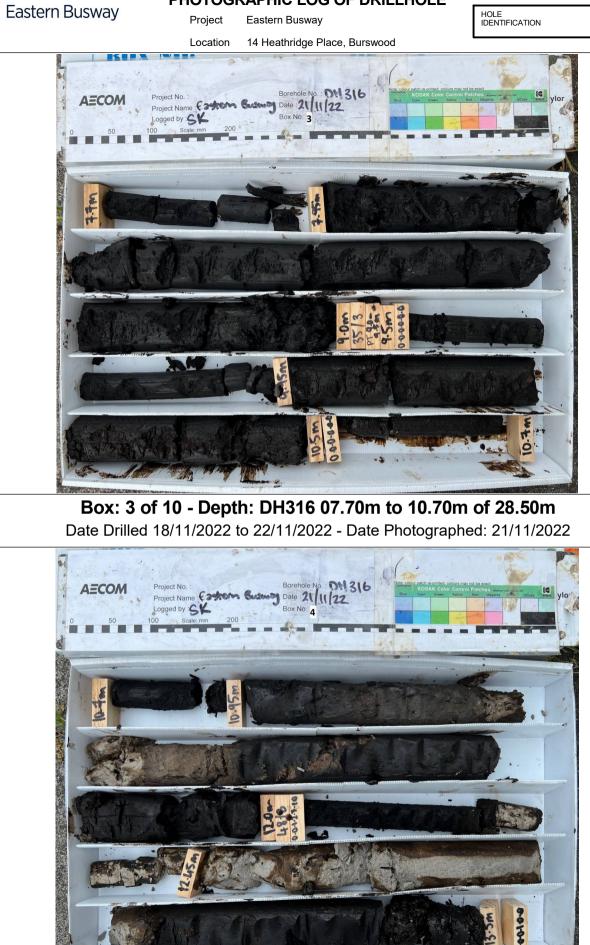


PHOTOGRAPHIC LOG OF DRILLHOLE

Eastern Busway

HOLE IDENTIFICATION

DH316



Box: 4 of 10 - Depth: DH316 10.70m to 13.50m of 28.50m Date Drilled 18/11/2022 to 22/11/2022 - Date Photographed: 21/11/2022



PHOTOGRAPHIC LOG OF DRILLHOLE

Project Eastern Busway

HOLE IDENTIFICATION

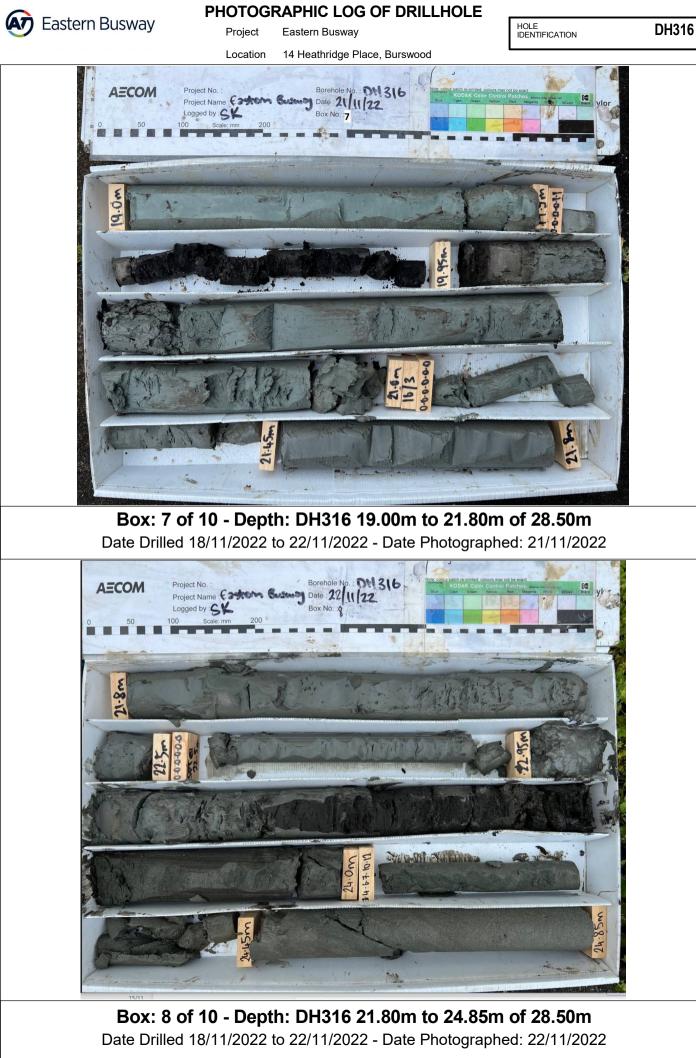
DH316



Box: 5 of 10 - Depth: DH316 13.50m to 16.30m of 28.50m Date Drilled 18/11/2022 to 22/11/2022 - Date Photographed: 21/11/2022



Box: 6 of 10 - Depth: DH316 16.30m to 19.00m of 28.50m Date Drilled 18/11/2022 to 22/11/2022 - Date Photographed: 21/11/2022



2021 EB DRILLHOLE LOG 2022-08-23 MASTER.GPJ BASE.GDT 30/11/22





Client Auckland Transport

Project

ect Eastern Busway

Project number 60644113

HOLE IDENTIFICATION

Co-ordinates 412237.66mE 794896.33mN

DH318

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Orientation -90° Elevation 10.82m

Location 26 Burswood Drive

Feature Retaining Walls

D vs	EOLOGICAL ESCRIPTION Veathering, Colour, Fabric, ROCK NAME. trength, Discontinuities, Lithological Features bedding, foliation, mineralogy, cement, etc).	Test Shear Vane/ SPT	SPT N Values 0 - 50	Drilling Method Casing remarks	Core Loss/Lift	s Relative W Strength	sw Rock ^{MW} Weathering	Depth	Graphic Log	TCR [RQD] (%)	-500 Spacing of -100 J Natural -10 Defects	SOIL PROPERTIES Subordinate MAJOR minor; colour, structure. Str grading, bedding, plasticity, sensitivity, major frac fraction description, minor fraction description, ari information, etc DEFECT DESCRIPTION (Joints, Bedding Seams, Shatter, Shear Schistosity, Attitude, Spacing, continuity,	tion description, subordina Iditional structures, additio and Crush Zones, Foliatior	istrume
	0.0m: TOPSOIL 0.3m: Alluvium comprising clay, silt, sand and organic soil	83/19		НQ3				- - - - - - - - - - - - - - - - - - -		100		0.0m: Silty CLAY with trace rootlet moist, high plasticity. 0.3m: Silty CLAY with some fine to and minor fine to coarse gravels; E orange and blue mottling. Stiff, mo plasticity.	coarse sand Brown with	•
		ss 0,0,0, 1,0,1 N=2		SPT				2	x x x x x x x x x x x x x x x x x x x	100		1.8m: Silty CLAY with trace organic Firm, moist, high plasticity.		1.7 文
		00/0		HQ3				-		100				2.92 卫
		29/3		РТ				- 3	* * * * * * * * * * * *	90				
		ss 0,0,0, 1,0,1 N=2		SPT				- 4	***** ****** *****	100	₋ 	3.6m: Plastic PEAT with some woo Black. Very soft, moist, high plastic		
۵.				HQ3				-	6 76 76 76 76 76 76 76 76 7 6 76 76 76 76 76 76 76 76 76	100				
TAURANGA GROUP				НQ3				- 5	70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 7	100		5.75 to 6.0m: Silty clay band, brownish organics, soft.	n grey, trace	
				HQ3				- 7	6 70 70 70 70 70 70 70 70 6 70 70 70 70 70 70	100				
		ss 0,0,0, 0,0,0 N=0 SUOW		SPT				-	6 37 37 37 37 37 37 37 37 6 37 37 37 27 37 37 37 37 37 37 37	100				
		3000		HQ3				- 8 - - - - - -	700 700 700 70 700 700 700 70	100		7.9 to 7.91m: Pumice band.		
		ss 1,3,7, 6,4,3 N=20		SPT				- 9 -	<u> 10 10 10 10 x x x x x x x x x x x x x </u>	100		9.0m: Silty fine to medium SAND; Medium dense, moist, uniformly gr		
									6 96 96 96 96 86 86 86 86 76 86 86 86 76 86 86 86 77 87 96 96 77 87 96 96 77 87 96 96 77 87 96 80 80 80 80 80 80 80 80 80 80 80 80 80 80 8			9.55m: Spongy PEAT; Black. Firm plasticity.	, moist, high	
FI Da	ior explanation of symbols and ol LUID DEPTHS AND DRILLIN ate Time Drilled Depth /02/2023 16:15 24.20 /02/2023 11:30 24.20		OGRESS	; (m)	et epth 92	RELAT VS - V S - S MS - M W - V VW - V EW - E	IVE STI /ery stror Strong /oderate Veak /ery weal Extremely marks	ng Iy strong k	"H \ UW - I SW - S MW - I HW - I	lighly we	ERING ered eathered ly weathered	Checked CP	Driller McMillan Started 20/02/2023 Finished 20/02/2023	
	land Held Shear Vane	: Correcti	ion Factor =	1.595		end Hori	of the izonta	e barr ıl / Ve	el.	ırvey [Datums	ear vane readings are from the s: NZGD2000 - Mount Eden o 2016	Drill Rig N119 Core Boxes	9
	ane shear strength per NZGS gu												Page 1 of	f 8



Client

Project

Project number 60644113

Auckland Transport

Eastern Busway

LOG OF DRILLHOLE

HOLE IDENTIFICATION

Co-ordinates 412237.66mE 794896.33mN

Orientation -90° Elevation 10.82m

Location

26 Burswood Drive

DH318

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Feature	Retaining Wall
	5

C	GEOLOGICAL DESCRIPTION Weathering, Colour, Fabric, ROCK NAME. Strength, Discontinuities, Lithological Features (bedding, foliation, mineralogy, cement, etc).	Test Shear Vane/ SPT	SPT N Values	Drilling Method Casing remarks	Core Loss/Lift	S Relative W Strength	ww Rock WW Weathering	Depth	ی ا	[RQD] (%)	500 Spacing of 100 J Natural 10 Defects	Solic PROPERTIES Subordinate MAJOR minor; colour, structure. Stru grading, bedding, plasticity, sensitivity, major frac fraction description, minor fraction description, ad information, etc DEFECT DESCRIPTION (Joints, Bedding Seams, Shatter, Shear a Schistosity, Attitude, Spacing, continuity,	tion description, subordinate ditional structures, additional and Crush Zones, Foliation,	Instrumentation
		ss 4,10,13, 15,17,5 for 25mm		HQ3 SPT				- - - - - - - - - - - -	10 34 34 34 3 1 34 34 34 3 1 34 34 34 34 3 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	100 100		10.2m: Silty, fine to medium pumic grey. Very dense, moist, uniformly 10.93m: Plastic PEAT with some w	graded.	
		N>50 16/3		НQ3					6 579 579 579 578 579 579 57 5 579 579 579 579 579 579 57 579 579 579 57 579 579 579 57 5 579 579 579 57	100		fragments; Black. Soft, moist, high		
		ss 0,0,0, 0,1,1 N=2		PT				- 12 - - -	8	100		12.25m: Silty CLAY with minor orga Brownish grey. Soft, moist, high pla		
				SPT				 13	* * * * * * * * * * * *	100		(Changed in tube)	ionory.	
		ss 0.0.0,		HQ3				- - - -	s s s	100				
UP		0,0,0 N=0 SUOW		SPT HQ3				- 		100		13.6 to 16.5m: Becomes bluish grey a become trace.	nd organics	
TAURANGA GROUP		ss 0,0,0, 0,1,2 N=3		SPT				- - - - 15 -		100		15.0 to 15.7m: Some fine sands.		
TAL				HQ3				 16	F _ K _ K	100				
		ss 0,1,1, 2,1,2 N=6		SPT				 17	짜 짜 짜 자 7 재 재 재 재 짜 ጥ ጥ ጥ 7 7 재 재 재 재 8 <u>- * -</u>	100		16.5m: Spongy PEAT; Black. Firm, plasticity.	moist, high	
				HQ3		1 2 2 2 2 2	iii	_	F F_ F	100		17.15m: Silty CLAY; Bluish grey. S plasticity.	tiff, moist, high	
		ss 0,0,0, 0,0,0 N=0 SUOW		SPT				- 18 - - - - - -	F _ X _ X	100				
				HQ3				19 		100				
		ss 1,2,2, 2,2,4 N=10		SPT				- - - -	× · · · × · · · × · · · × · · · × · · · × · · · × · · · × · · · · × ·	100		19.5m: Silty fine to coarse SAND; (dense, moist, well graded.	Grey. Medium	
F	For explanation of symbols and of FUID DEPTHS AND DRILLIN ate Time Drilled Depth	IG PR	OGRESS	5 (m)		RELAT VS-\ S-S MS-M W-\ VW-\	/ery str Strong Moderat Weak /ery we	tely strong	UW - 1 SW - 1 MW - 1 HW - 1	lighly we	ERING red eathered y weather	Checked GP	Driller McMillan Started 20/02/2023 Finished	
						Star end	of th	pe piez ne barr	el.			ear vane readings are from the	20/02/2023 Drill Rig N119	
[Hand Held Shear Vane DR2272: 19mm blade: Calibrated 02/22		tion Factor =	1.595					rtical Su aland V			s: NZGD2000 - Mount Eden n 2016	-	9
_	vane shear strength per NZGS gu	iideline											Page 2 of	8 7/04/20



Client

Project

Auckland Transport

Eastern Busway

LOG OF DRILLHOLE

HOLE IDENTIFICATION

Co-ordinates 412237.66mE 794896.33mN

DH318

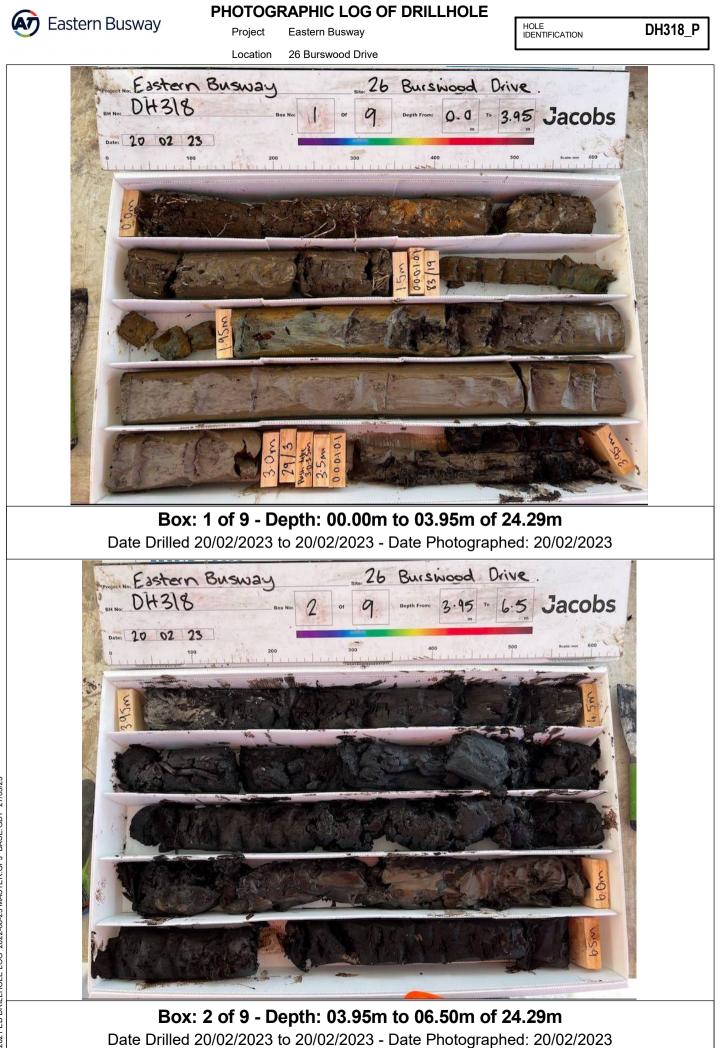
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Orientation -90°

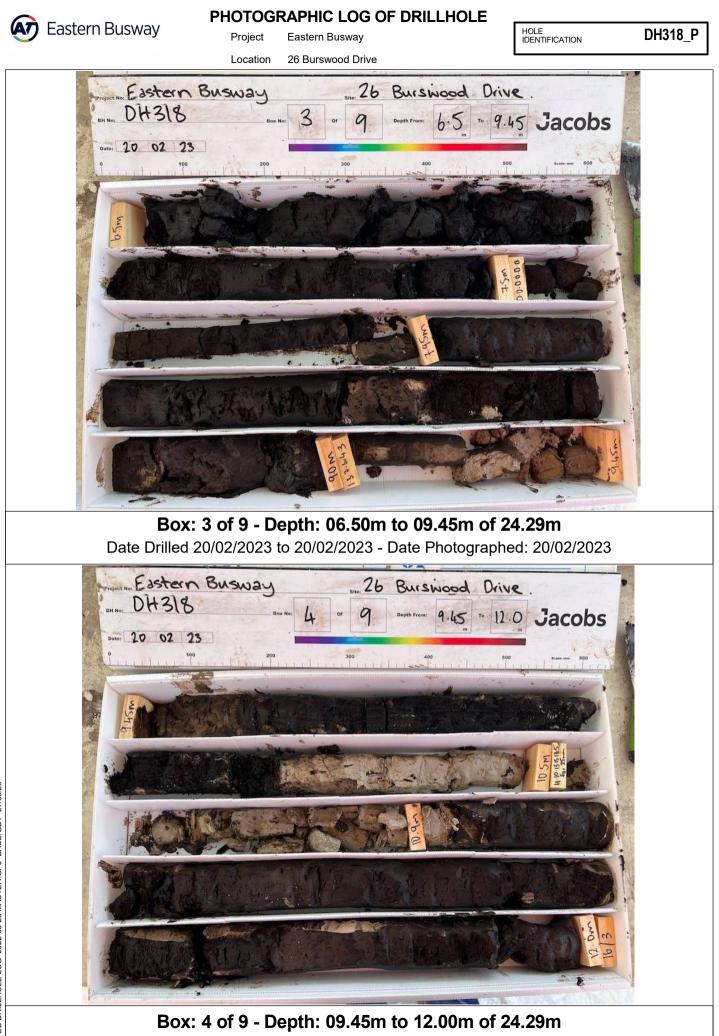
Elevation 10.82m Location

26 Burswood Drive

Project number 606441	13			Feature Retaining Walls	
GEOLOGICAL DESCRIPTION Weathering, Colour, Fabric, ROCK NAME. Strength, Discontinuities, Lithological Features (bedding, foliation, mineralogy, cement, etc).	Test Records Shear SPT Vane/ N Values SPT 0-50	Strength Ware Strength Ware Rock Www Weathering Depth	Graphic Log (%) Graphic Log [[DDb] [] (%) (%) Spacing of Natural	m) DEFECT DESCRIPTION	and Crush Zones, Foliation,
20.0m: Highly weathered, grey, fine to coarse SANDSTONE. Extremely weak.	ССССССССССССССССССССССССССССССССССССС	-21	100	11 20.0m: Recovered as silty, fine to of Grey. Very dense, moist, well grad 11 20.3 to 20.5m: Light brown. 12 20.5 to 20.7m: With trace organics; br	led.
	8,10,13, 14,18,5 for 25mm		100	11	
EASI	N>50	- 22	100 		
	sc 10,22,27, 23 for		0	11	
	45mm		100 		
	4,7,22, 28 for		0 11	11	°°°°
	60mm			III III III III	
		1 1 1 - 28 1 1 1 - 28 1 1 1 - 28 1 1 1 - 1 1 1 1 - 1 1 1 1 - 29 1 1 1 - 29 1 1 1 - 29 1 1 1 - 1 1 1 1 - 1 1 1 1 - 1 1 1 1 - 1 1 1 1 - 1 1 1 1 - - 1 1 1 - - 1 1 1 - - 1 1 1 - - 1 1 1 - - 1 1 1 - - 1 1 <td< td=""><td></td><td></td><td></td></td<>			
For explanation of symbols and ob FLUID DEPTHS AND DRILLIN Date Time Drilled Depth		MS - Moderately strong W - Weak VW - Very weak EW - Extremely weak	WEATHERIN UW - Unweathered SW - Slightly weather MW - Moderately wea HW - Highly weather CW - Completely wea	Tred athered ed Checked CP	Driller McMillan Started 20/02/2023 Finished
		end of the barrel		Shear vane readings are from the ums: NZGD2000 - Mount Eden	20/02/2023 Drill Rig N119
Hand Held Shear Vane DR2272: 19mm blade: Calibrated 02/22 vane shear strength per NZGS gu		2000 / New Zeal	and Vertical Da	tum 2016	Core Boxes 9 Page 3 of 8



2021 EB DRILLHOLE LOG 2022-08-23 MASTER.GPJ BASE.GDT 27/03/23



Date Drilled 20/02/2023 to 20/02/2023 - Date Photographed: 20/02/2023

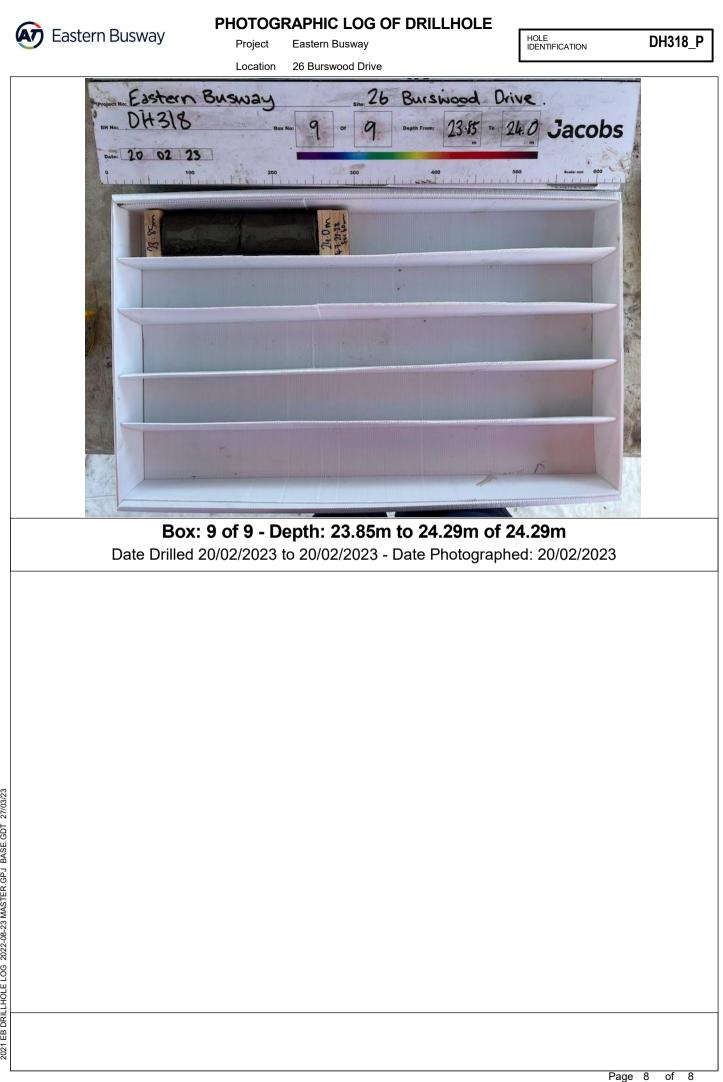


2021 EB DRILLHOLE LOG 2022-08-23 MASTER.GPJ BASE.GDT 27/03/23

Page 6 of 8



Date Drilled 20/02/2023 to 20/02/2023 - Date Photographed: 20/02/2023





Client Auckland Transport

Project

Eastern Busway

Project number 60644113

HOLE IDENTIFICATION

Co-ordinates 412289.50mE 794690.06mN

DH319

Ρ

Orientation -90° Elevation 6.67m

Location Reserve: 1R Burswood Drive

Feature Retaining Wall

											-eature Retaining				
D	EOLOGICAL ESCRIPTION Jeathering, Colour, Fabric, ROCK NAME. trength, Discontinuities, Lithological Features pedding, foliation, mineralogy, cement, etc).	Test Records Shear SPT Vane/ N Values SPT 0-50	Drilling Method Casing remarks	Core Loss/Lift	s Relative W Strength	>	Depth	Graphic Log	TCR [RQD] (%)	500 Spacing of 50 J Natural 10 Defects	SUbdrdinate MAJOR minor; colour grading, bedding, plasticity, sensiti fraction description, minor fraction information, etc DEFECT DESCI (Joints, Bedding Seams, SI Schistosity, Attlude, Spaci	, structure. Strer vity, major fraction description, add RIPTION hatter, Shear an	ion description, subordir ditional structures, additi nd Crush Zones, Foliatio	nate ional m,	Instrumentation
	0.0m: FILL comprising clay, silt, sand, gravel and cobbles.						-				0.0m: Fine sandy SILT wit cobbles; dark brown. Soft				
			HA						0		0.5m: Silty CLAY with som and minor basalt gravel; b mottling. Stiff, moist, high	rown with o		0.9 ¥	
FIL		ss 777	HQ3	111			-		100						
		2,2,2, 3,4,3 N=12	SPT		 		- 2		100						
			HQ3						100					2.94	
	2.8m: ALLUVIUM comprising clay, silt, sand, organics and peat.	99/32 ss 1,0,1, 2,1,2 N=6	HWT SPT				- 3	s s s	100		2.8m: Silty CLAY with min with orange mottling. Stiff,	moist, high		∑ ∑ 3.1 ∑	
	pour	N=6					-				3.0m: 114mm diameter H	HWT casing to	o 3.0m.		
			HQ3				- 4	<u> </u>	100		3.6 to 4.1m: Becomes with	some fine to i	medium sand.		
		78/3					-	× · · · × · · · × ·			4.1m: Silty fine to medium orange mottling. Loose, w				
		ss 1,1,1, 1,1,0	SPT				-	e ve ve ve <u>ve ve ve v</u> ×···×··	100		4.3m: Organic CLAY; blac	k. Stiff, moi	ist, high		
		N=3			!!!!		5	6 86 86 86 86 86 86 8			4.5m: Silty fine SAND; ligh wet, uniformly graded.	nt grey. Med	dium dense,		
							-	×× ××. <u>46.76.76.7</u>	100	1111	4.6m: Spongy PEAT; blac	k. Soft, moi	ist, high		
			HQ3				-	× × ×	100		5.2m: Silty fine SAND with				
SOUF		ss					6	× · · × · · × ·			grey. Very dense, moist, v 5.8 to 6.45m: Sand become coarse black grains.				
TAURANGA GROUP		13,15,13, 8,5,3 N=29	SPT				-	× × ×	100						
JRAN							-				6.45m: Spongy PEAT; bla plasticity.				
TAL			HQ3				- 7		100		6.6m: Organic CLAY; brow plasticity.	wn. Soft, mo	oist, high		
		67/24				1 1	-				6.8m: Silty CLAY with trac Firm, moist, high plasticity		bluish grey.		
		0,0,2,	SPT				-		100		7.3 to 9.0m: Stiff.				
							- 8								
			HQ3				-		100						
							-				8.5 to 8.8m: Contains minor	r fine sand lei	nses		
		110/18 ss 0,0,0, 0,0,1	SPT				9		100						
		N=1							100						
							-				9.6m: Becomes soft 9.8 to 10.45m: With some c	organics and	brownish grey.		
F	or explanation of symbols and obs	ervations, see ke	y sheet		RELAT	TIVE STR	RENGTI	H V	NEATHE	ERING	Date logged 28/04	4/2022	Driller		
	LUID DEPTHS AND DRILLIN ate Time Drilled Depth	IG PROGRES Casing Depth I		epth	S-	Very stror Strong	-	SW - 3	Unweathe Slightly w	eathered	Logged SK		McMillan Started		
	/04/2022 16:45 15.45	3.0	3.12	-	W-1 VW-1	Moderate Weak Very wea	k	HW - 1	Moderatel Highly we Complete	athered	Checked GP		26/04/2022		
	/04/2022 07:55 15.45 /04/2022 13:40 28.50	3.0 3.0	0.9 2.94			Extremely marks							Finished 27/04/2022		
								pe piez	omete	r insta	alled on completion.		Drill Rig		
					Hor	rizonta	al / Ve	rtical Su	urvey I	Datum	ns: NZGD2000 - Mount I m 2016	Eden	N118		
	land Held Shear Vane R2272: 19mm blade: Calibrated 02/22:	Correction Factor =	1.595		200	JU / INE	∍w ∠e	aland V	erucal	Datu	111 2010		Core Boxes	ç	9
	ane shear strength per NZGS guid												Page 1 c	of	8

2021 EB DRILLHOLE LOG 2022-05-23 MASTER.GPJ BASE.GDT 23/05/22



Client Auckland Transport

Project

Eastern Busway

Project number 60644113

HOLE IDENTIFICATION

Co-ordinates 412289.50mE 794690.06mN

DH319

Ρ

Orientation -90° Elevation 6.67m

Reserve: 1R Burswood Drive Location

EOLOGICAL ESCRIPTION Weathering, Colour, Fabric, ROCK NAME. Strength, Discontinuities, Lithological Features bedding, foliation, mineralogy, cement, etc).	Test Reco Shear SF Vane/ N Va	illing N Casing re	Core Loss/Lift		Weathering Depth	Graphic Log	TCR [RQD] (%)	-500) Spacing of -100 J Natural -10 (Defects	DEFECT DESCRIPTION
		- <u>50</u> HQ3 	0 - 100%	 ∞≋≥≋ §§	;≩£ 	F F	100		6.8m: Silty CLAY with trace organics; bluish grey.
	37/5 				<u>-</u> - -		100		10.45m: Organic CLAY; Dark brown. Soft, moist,
	ss 0,0,0, 0,0,0 N=0	 SPT					100		11.15m: Silty CLAY with minor fine sand; bluish
	SUOW 	HQ3				x x x	100		11.5 to 12.9m: Firm. 11.5m: Fine sand ceases.
	ss 1,1,2, 2,2,2 N=8	II SPT			- 12 - - -		100		
					 - - - 13	× · · · ×	100		12.85m: Becomes with some fine to medium sond
	ss 2,3,4,								12.9m: Silty fine to coarse SAND; bluish grey. Medium dense, moist, well graded.
	4,3,3 N=14	SPT 			<u>-</u> <u>-</u> <u>-</u> 14	· · × · · × · × · × · × · × · × · × · ×	100		13.95m: Organic CLAY; brown. Firm, moist, high
		 _{HQ3}			_ <u>-</u> - -	×_×_× ×_×_×	100		14.25m: Silty CLAY; bluish grey. Firm, moist, high plasticity.
	61/13 ss 0,0,0, 0,1,0 N=1	 SPT			_ _ _ _	\$X \$X \$X \$X \$X \$X	100		
15.6m: Completely weathered, fine to coarse SANDSTONE. Extremely		 HQ3					86		15.6m: Silty fine to coarse SAND; grey. Loose, moist, well graded.
weak. 16.1m: Highly weathered, grey, SILTSTONE. Extremely						× × × ×			16.1m: Clayey SILT; grey. Very stiff. 16.17m: J, 45°, Ud, Sm
weak.	2,2,4, 4,8,7 N=23	II SPT			- - - - 17	* * * *- * * * * * * * *	100		
17.2 to 17.35m: Highly weathered fine SANDSTONE bed.		 HQ3				× ×	100		17.2 to 17.35m: Fine SAND. Medium dense.
	ss 3,3,3, 4,5,7				- - - - - - - - -	× × × × × × × × × × × × × × × × × × ×	100		
18.45m: MW, grey, fine to medium SANDSTONE. EW	N=19					× × × × × × × × × · · · × · · · · × · · · × · · · ×			18.45m: Silty fine to medium SAND; grey. Medium dense.
18.75m: Moderately weathered, grey, SILTSTONE. Extremely weak.		HQ3 				××× ××× **××_ **××_ **××_	100		
	ss 3,5,6, 7,8,9 N=30	SPT				× × × × ×	100		
or explanation of symbols and o		-		RELATIVE VS - Ver	E STRENGT		WEATH		Date logged 28/04/2022 Driller McMillan
ate Time Drilled Depti			epth	S - Stro MS - Moo W - We VW - Ver	ong derately strong ak	SW - MW - HW -	Slightly we Moderatel Highly we Completel	eathered y weathe athered	ered Logged SK Started

Remarks

Hand Held Shear Vane

vane shear strength per NZGS guideline

DR2272: 19mm blade: Calibrated 02/22: Correction Factor = 1.595

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of

Drill Rig

N118

Page 2

Core Boxes

27/04/2022



Client Auckland Transport

Project

Eastern Busway

Project number 60644113

HOLE IDENTIFICATION

Co-ordinates 412289.50mE 794690.06mN

DH319

Orientation -90° Elevation 6.67m

Location Reserve: 1R Burswood Drive

Feature Retaining Wall

GEOLOGICAL DESCRIPTION Weathering, Colour, Fabric, ROCK NAME. Strength, Discontinuities, Lithological Features (bedding, foliation, mineralogy, cement, etc).	Test Records Shear SPT Vane/ N Values SPT 0.50	- - -	ws Relative W Strength	ww Rock Ww Weathering	Depth	ŭ	TCR [RQD] (%)	500 Spacing of 100 Natural 10 Defects	SOIL PROPERTIES Subordinate MAJOR minor; colour, structure. Str grading, bedding, plasticity, sensitivity, major frac fraction description, minor fraction description, at information, etc DEFECT DESCRIPTION (Joints, Bedding Seams, Shatter, Shear Schistosity, Attitude, Spacing, continuity,	tion description, subordinate Iditional structures, additional	Instrumentation
20.0m: Slightly weathered, grey, SILTSTONE. Very weak.	IIII IIII IIII IIII IIII IIII IIII IIII I					X X X X X X X X X X X X X X X X X X X	100 [95]				
20.7m: Slightly weathered, grey, fine to coarse SANDSTONE. Very weak.	ss 8,11,16, 22,12 for				21		100				
21.5m: Slightly weathered grey SILTSTONE. Very weak.	N>50				 22 	X X X X X X X X X X X X X X X X X X X	100 [100]				
23.4m: Slightly weathered, grey, fine to medium SANDSTONE. Very weak. 23.9m: Slightly weathered, grey, SILTSTONE. Very weak. Indistinct thick bedding.	sc 7,14,20, 24,6 for				23 23 23 23 23 24 24 24	(X X X X X X X X X X X X X X X X X X X	100				
	20mm	: 1/2					100 [100]				
	SC 11,21,40, 10 for 25mm						× 100				
	N>50				25 25 	X X X X X X X X X X X X X X X X X X X			25.27m: J, 30°, Ud, Sm		
		1			26 26 	X X X X X X X X X X X X X X X X X X X	100 [100]				
				 	27 28 	(*************************************	100 [100]		27.26 to 27.41m: Fine to medium SANI 27.66 to 27.71m: Fine to medium SANI		
					29 29 				DH319_P terminated at 28.5m Target Depth		
For explanation of symbols and observations, see key sheet FLUID DEPTHS AND DRILLING PROGRESS (m) Date Time Drilled Depth Casing Depth Fluid Depth			VS-\ S-S MS-M W-V VW-\	/ery stro Strong Aoderate	- ely strong ak	UW - 1 SW - 5 MW - 1 HW - 1	lighly we	red eathered y weathere	Checked CP	Driller McMillan Started 26/04/2022 Finished	
Hand Held Shear Vane DR2272: 19mm blade: Calibrated 02/22: Correction Factor = 1.595				izonta	tandp al / Ve ew Ze	27/04/2022 Drill Rig N118	9				
vane shear strength per NZGS guideline										Page 3 of	8



Date Drilled 26/04/2022 to 27/04/2022 - Date Photographed: 26/04/2022

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