BOREHOLE LOG

CLIENT: Stamford Property Services Pty Ltd
PROJECT: Macquarie Village
LOCATION: 110-114 Herring Road, Macquarie Park

SURFACE LEVEL: 72.3 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 103
PROJECT No: 72138
DATE: 14/12/2010
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
72	0.05	ASPHALT - 50mm							A/E			
	0.4	FILLING (ROADBASE) - grey blue metal gravel filling							A/E			
		SANDSTONE - extremely low strength, extremely weathered, orange and grey sandstone						Note: Unless otherwise stated, rock is fractured along rough planar bedding planes dipping between 0°- 10°	A/E			
71	1								S			11,17,22 N = 39
	1.61							1.5m: CORE LOSS: 110mm				
70	1.95	SANDSTONE - very low to low strength, highly weathered, slightly fractured, orange, medium grained sandstone										
	2.4	SANDSTONE - medium strength, fresh and moderately weathered, slightly fractured, light grey, medium grained sandstone with distinct laminations						2.38m: Cs, 10mm 2.52m: J70°- 85°, pl, ro, cln 2.84m: J55°, pl, ro, he 2.95m: Cs, 20mm	C	96		PL(A) = 0.6 PL(A) = 0.9
69	3.3	SANDSTONE - high strength, slightly and moderately weathered then fresh, slightly fractured and unbroken, light orange and light grey, medium grained sandstone - siltstone laminations from 4.0m										
68												PL(A) = 1.3
67									C	100		PL(A) = 1.8
66								5.85m: J70°, pl, ro, fe				PL(A) = 1.8
65												PL(A) = 1.6
64								7.81m: Cs, 8mm				PL(A) = 1.1
									C	100		
63												PL(A) = 1.5

RIG: DT 100 **DRILLER:** SY **LOGGED:** PGH **CASING:** HW to 1.50m

TYPE OF BORING: Solid flight auger (TC-bit) to 1.50m; NMLC-Coring to 14.08m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: Standpipe installed to 14.0m; Groundwater measured at 4.3m on 20/12/10, 4.7 on 22/12/10 and 4.6m on 11/1/11

SURVEY DATUM:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Stamford Property Services Pty Ltd
PROJECT: Macquarie Village
LOCATION: 110-114 Herring Road, Macquarie Park

SURFACE LEVEL: 72.3 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 103
PROJECT No: 72138
DATE: 14/12/2010
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
62		SANDSTONE - high strength, slightly and moderately weathered then fresh, slightly fractured and unbroken, light orange and light grey, medium grained sandstone *(continued)*										PL(A) = 2
	11											
61												PL(A) = 1.4
	12								C	100		
60												PL(A) = 1.5
	13											
59									C	100		PL(A) = 1.5
	14											
	14.08	Bore discontinued at 14.08m										
58												
	15											
57												
	16											
56												
	17											
55												
	18											
54												
	19											
53												

RIG: DT 100 **DRILLER:** SY **LOGGED:** PGH **CASING:** HW to 1.50m

TYPE OF BORING: Solid flight auger (TC-bit) to 1.50m; NMLC-Coring to 14.08m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: Standpipe installed to 14.0m; Groundwater measured at 4.3m on 20/12/10, 4.7 on 22/12/10 and 4.6m on 11/1/11

SURVEY DATUM:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U,	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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MACQUARIE VILLAGE

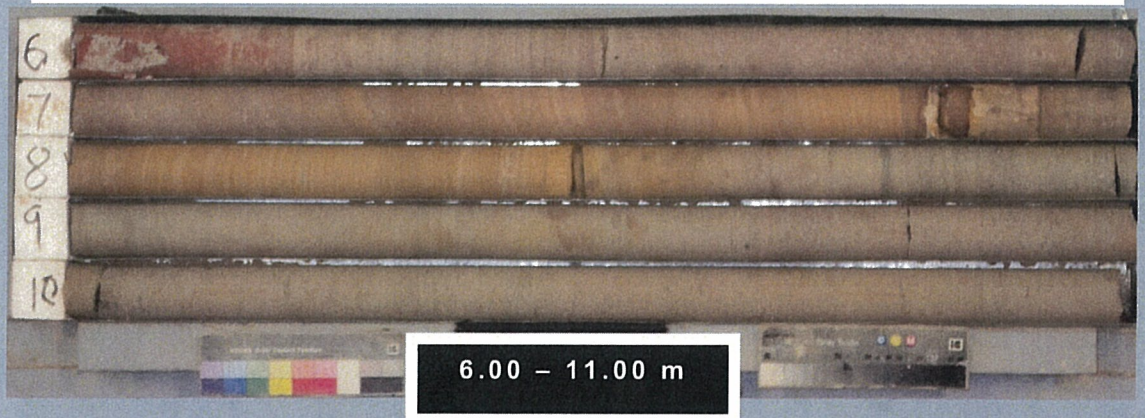
BORE 103 PROJECT 72138 14 DECEMBER 2010

1.50 – 6.00 m

DOUGLAS PARTNERS PTY LTD

MACQUARIE VILLAGE

BORE 103 PROJECT 72138 14 DECEMBER 2010



6.00 – 11.00 m

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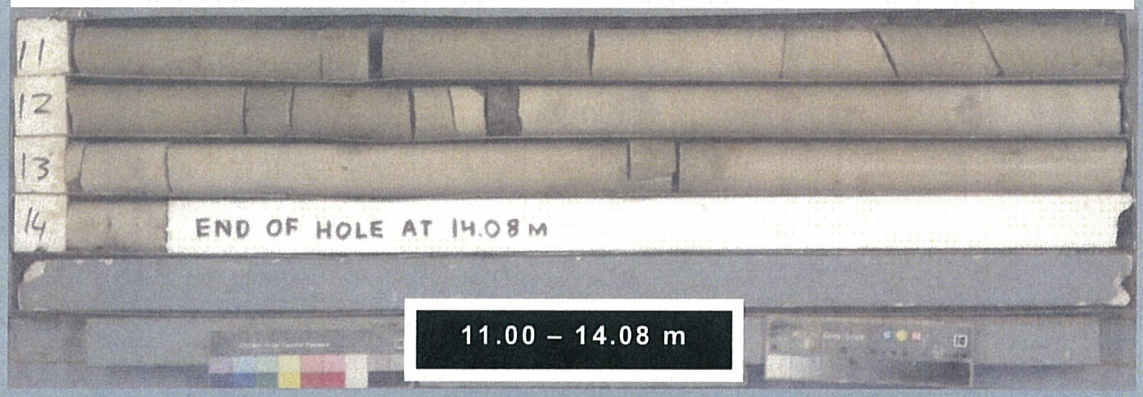
MACQUARIE VILLAGE

BORE 103 PROJECT 72138 14 DECEMBER 2010



11.00 – 14.08 m

BOREHOLE LOG

CLIENT: Stamford Property Services Pty Ltd
PROJECT: Macquarie Village
LOCATION: 110-114 Herring Road, Macquarie Park

SURFACE LEVEL: 73.6 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 104
PROJECT No: 72138
DATE: 20/12/2010
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
73	0.05	ASPHALT - 50mm thick							A/E			
	0.3	FILLING - roadbase gravel filling							A/E			
	1	SANDSTONE - extremely low strength, red grey sandstone with clay						Note: Unless otherwise stated, rock is fractured along rough planar bedding planes dipping between 0°- 10°	A/E			
									S			10,16,21 N = 37
72	1.6	CLAY - apparently very stiff, grey clay with some sand										
	2											
	2.1	SANDSTONE - medium to high strength, highly and moderately weathered, fractured, grey and purple red, medium to coarse grained sandstone with distinct laminations										PL(A) = 0.9
71	3								C	100	71	PL(A) = 1.9
	3.1	SANDSTONE - medium to high strength, highly and moderately weathered, fractured then slightly fractured, grey and purple red, medium to coarse grained sandstone										PL(A) = 1.3
	3.46							3.45m: Cs, 9mm				
70	4	SANDSTONE - high strength, highly and slightly weathered then fresh, slightly fractured and unbroken, red purple then light grey, medium to coarse sandstone										PL(A) = 1.5
	5											PL(A) = 1.4
69												
68	6	- siltstone laminations from 5.7m to 7.4m						5.68m: Cs, 20mm	C	100	91	PL(A) = 1
		6.55-6.6m: very low strength, black carbonaceous band						6.65m: J85°, pl, ro, fe				PL(A) = 1
67	7											
		7.30-7.35m: very low strength, black carbonaceous band						7.72m: J82°, pl, ro, cln				PL(A) = 0.1
66	8											
												PL(A) = 1
65									C	100	98	
	9											
64												PL(A) = 1.4

RIG: DT 100 **DRILLER:** SS **LOGGED:** PGH **CASING:**

TYPE OF BORING: Solid flight auger (TC-bit) to 1.0m; Rotary (water) to 1.5m; NMLC-Coring to 14.70m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS:

SURVEY DATUM:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▽	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Stamford Property Services Pty Ltd
PROJECT: Macquarie Village
LOCATION: 110-114 Herring Road, Macquarie Park

SURFACE LEVEL: 73.6 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 104
PROJECT No: 72138
DATE: 20/12/2010
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
63		SANDSTONE - high strength, highly and slightly weathered then fresh, slightly fractured and unbroken, red purple then light grey, medium to coarse sandstone *(continued)*										PL(A) = 1.1
	11											
62									C	100	99	PL(A) = 2.2
	12											
61		12.72-12.74m: very low strength, laminite band										PL(A) = 3.2
	13											
60									C	100	100	PL(A) = 2.2
	14											
59	14.7	Bore discontinued at 14.7m										
	15											
58												
	16											
57												
	17											
56												
	18											
55												
	19											
54												

RIG: DT 100 **DRILLER:** SS **LOGGED:** PGH **CASING:**

TYPE OF BORING: Solid flight auger (TC-bit) to 1.0m; Rotary (water) to 1.5m; NMLC-Coring to 14.70m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS:

SURVEY DATUM:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▽	Water level	V	Shear vane (kPa)

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MACQUARIE VILLAGE

BORE 104 PROJECT 72138 14 DECEMBER 2010

1.60 – 6.00 m

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MACQUARIE VILLAGE

BORE 104 PROJECT 72138 14 DECEMBER 2010

6.00 – 11.00 m

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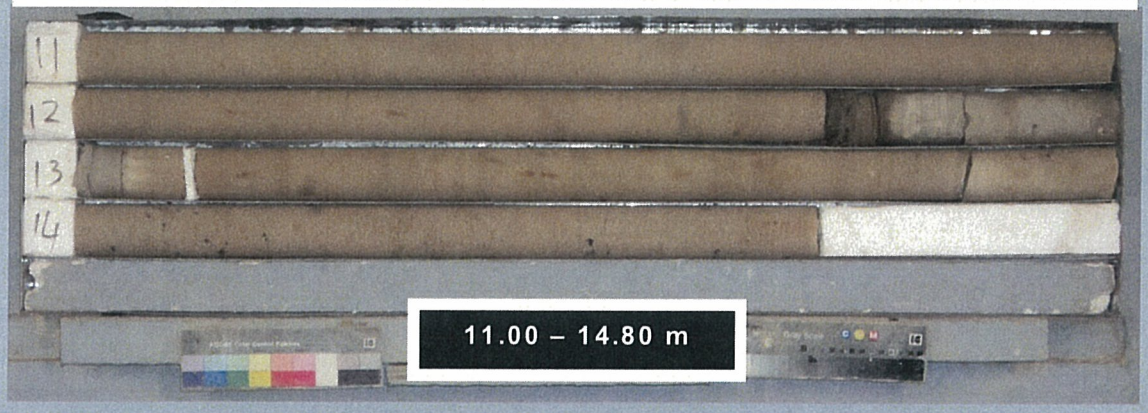
MACQUARIE VILLAGE

BORE 104 PROJECT 72138 14 DECEMBER 2010



11.00 – 14.80 m

BOREHOLE LOG

CLIENT: Stamford Property Services Pty Ltd
PROJECT: Macquarie Village
LOCATION: 110-114 Herring Road, Macquarie Park

SURFACE LEVEL: 73.9 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 105
PROJECT No: 72138
DATE: 14/12/2010
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
73	0.04	ASPHALT						Note: Unless otherwise stated, rock is fractured along rough planar bedding planes dipping between 0°- 10°	A/E			
	0.2	FILLING - crushed sandstone gravel filling with some sand							A/E			
		CLAY - red and grey clay							A/E			
73	1 1.0	SHALY CLAY - hard, grey shaly clay with some high strength ironstone bands										
72	2 2.44	LAMINITE - high strength, highly to slightly weathered, slightly fractured, light grey and red, medium to coarse grained sandstone							C	100	51	PL(A) = 1.5
71	3 3.6	SANDSTONE - high strength, slightly weathered and fresh, slightly fractured, light grey, medium to coarse grained sandstone						3.45m: Cs, 10mm				PL(A) = 1.6
70	4											PL(A) = 1.3
69	5								C	100	93	PL(A) = 1.5
68	6							6.18m: Ds, 10mm				
								6.43m: Cs, 10mm				PL(A) = 1.4
67	7	- siltstone laminations from 6.7m to 7.8m										PL(A) = 2.7
66	8								C	100	100	PL(A) = 1.5
65	9											
64												PL(A) = 3

RIG: Scout **DRILLER:** RKE **LOGGED:** PGH **CASING:** HW to 1.0m

TYPE OF BORING: Solid flight auger (TC-bit) to 1.0m; NMLC-Coring to 15.0m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS:

SURVEY DATUM:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Stamford Property Services Pty Ltd
PROJECT: Macquarie Village
LOCATION: 110-114 Herring Road, Macquarie Park

SURFACE LEVEL: 73.9 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 105
PROJECT No: 72138
DATE: 14/12/2010
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
63	11	SANDSTONE - high strength, slightly weathered and fresh, slightly fractured, light grey, medium to coarse grained sandstone *(continued)*										PL(A) = 1.7
								11.26m: J45°, pl, ro, cly	C	100	100	PL(A) = 1.6
62	12											PL(A) = 1.6
61	13							13.18m: Cs, 3mm				PL(A) = 2
60	14								C	100	100	PL(A) = 1.9
59	15 15.0	Bore discontinued at 15.0m										
58	16											
57	17											
56	18											
55	19											
54												

RIG: Scout **DRILLER:** RKE **LOGGED:** PGH **CASING:** HW to 1.0m

TYPE OF BORING: Solid flight auger (TC-bit) to 1.0m; NMLC-Coring to 15.0m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS:

SURVEY DATUM:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▽	Water level	V	Shear vane (kPa)

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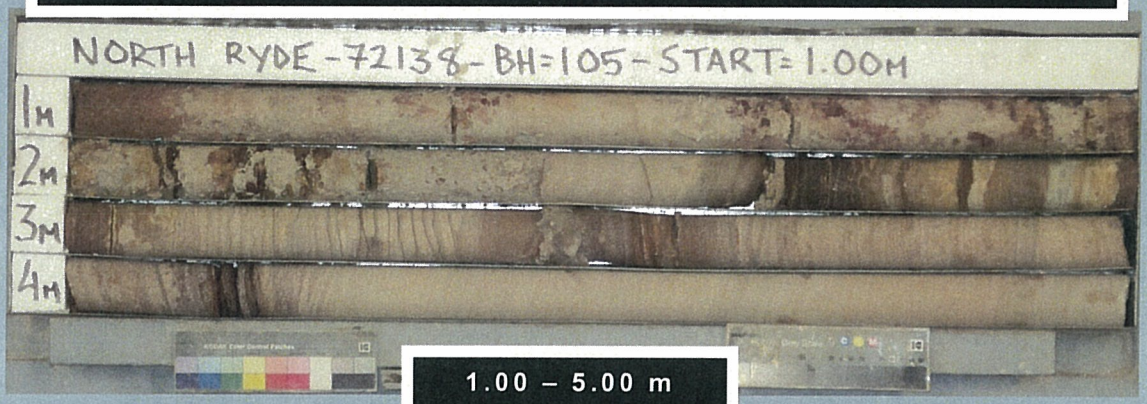
DOUGLAS PARTNERS PTY LTD

MACQUARIE VILLAGE

BORE 105 PROJECT 72138 14 DECEMBER 2010



1.00 – 5.00 m

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MACQUARIE VILLAGE

BORE 105 PROJECT 72138 13 DECEMBER 2010

5.00 – 10.00 m

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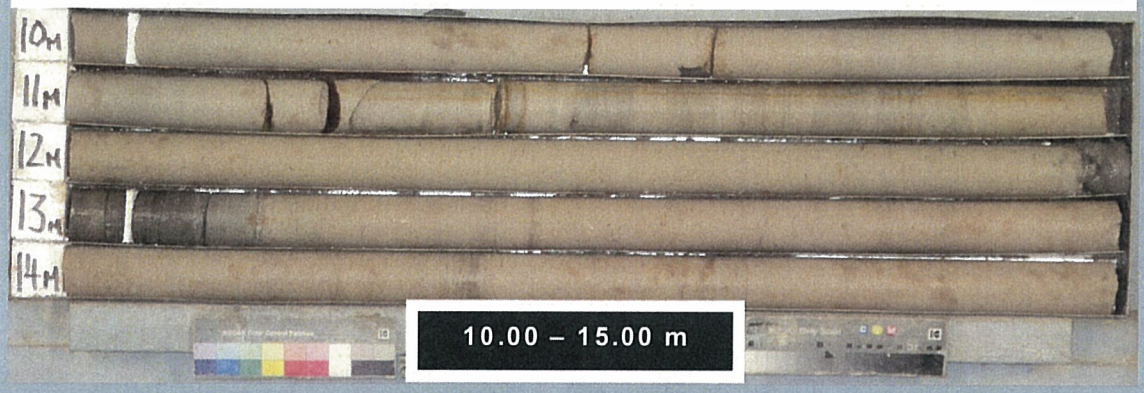
MACQUARIE VILLAGE

BORE 105 PROJECT 72138 14 DECEMBER 2010



10.00 – 15.00 m

BOREHOLE LOG

CLIENT: Stamford Property Services Pty Ltd
PROJECT: Macquarie Village
LOCATION: 110-114 Herring Road, Macquarie Park

SURFACE LEVEL: 73.2 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 106
PROJECT No: 72138
DATE: 16/12/2010
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
73	0.05	ASPHALT						Note: Unless otherwise stated, rock is fractured along rough planar bedding planes dipping between 0°- 10°	A/E			
	0.2	FILLING - crushed sandstone filling with some sand							A/E			
	0.7	CLAY - red grey clay							A/E			
72	1.0	LAMINITE - extremely low strength, extremely and highly weathered laminite										
		LAMINITE - extremely low and very low strength, extremely and highly weathered, slightly fractured, grey laminite with clay bands										
71	1.88	LAMINITE - medium to high strength, moderately to highly then slightly weathered, slightly fractured, purple-red and grey, medium to coarse grained laminite							C	100	71	PL(A) = 0.8
70												PL(A) = 0.9
	3.61	SANDSTONE - high strength, moderately to highly weathered, slightly fractured, purple-red and grey, medium to coarse grained sandstone						3.38m: B110°, pl, ro, cly 3.6m: Cz, 10mm				PL(A) = 1.5
69												
68												
67								5.58m: Cz, 30mm	C	100	97	PL(A) = 1.2
												PL(A) = 1.5
66	6.81	SANDSTONE - medium to high and high strength, moderately and slightly weathered, slightly fractured, orange and light grey, medium to coarse grained sandstone with indistinct cross-beds						6.77m: Cs, 30mm				PL(A) = 0.7
65									C	100	100	PL(A) = 1.3
64												PL(A) = 1.3

RIG: Scout **DRILLER:** KKE **LOGGED:** PGH **CASING:** HW to 1.0m

TYPE OF BORING: Solid flight auger (TC-bit) to 1.0m; NMLC-Coring to 15.0m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: 30% Water loss at 7.30m

SURVEY DATUM:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Stamford Property Services Pty Ltd
PROJECT: Macquarie Village
LOCATION: 110-114 Herring Road, Macquarie Park

SURFACE LEVEL: 73.2 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 106
PROJECT No: 72138
DATE: 16/12/2010
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
63		SANDSTONE - medium to high and high strength, moderately and slightly weathered, slightly fractured, orange and light grey, medium to coarse grained sandstone with indistinct cross-beds *(continued)*						10m: J85°, pl, ro, fe				PL(A) = 1.2
62	11							10.72m: J80°, pl, ro, he 10.87m: J85°, pl, ro, he 11.04m: J75°, pl, ro, fe 11.15m: J85°, pl, ro, fe				
61	11.45	SANDSTONE - high strength, slightly weathered and fresh, slightly fractured, light orange and grey, medium to coarse grained sandstone						11.45m: J80°, pl, ro, fe	C	100	100	PL(A) = 1
	12							12.14m: B, cly				PL(A) = 1.1
60	13							12.95m: J80°, pl, ro, fe				PL(A) = 1
59	14							13.8m: B, cly	C	100	100	
58	15 15.0	Bore discontinued at 15.0m							C	100	100	PL(A) = 1
57	16											
56	17											
55	18											
54	19											

RIG: Scout **DRILLER:** KKE **LOGGED:** PGH **CASING:** HW to 1.0m

TYPE OF BORING: Solid flight auger (TC-bit) to 1.0m; NMLC-Coring to 15.0m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: 30% Water loss at 7.30m

SURVEY DATUM:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▽	Water level	V	Shear vane (kPa)

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