

APPENDIX K
COMPILATION OF BOREHOLE LOGS

Coffey & Partners Pty. Ltd.



borehole no:

5

sheet 1 of 3

engineering log - borehole

office and job no Sydney 6063

project: TAYLOR THOMSON WHITTING
DEPARTMENT OF PUBLIC WORKS
HAYMARKET REDEVELOPMENT
borehole location: S.W. CORNER, NO. 6 MARKET

hole commenced: 11th May 1978
hole completed: 12th May 1978
supervised by: RJL
log checked by: JPM

drill model and mounting: Gemco + Truck slope: 90 deg. R.L. surface: m
hole diameter: 100 mm bearing: — deg. datum:

method	penetration	support	water	notes samples, tests, etc.	R.L. depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency, rel. density	100 kPa hand penetro- meter	structure and additional observations
DT	123							ASPHALT CONCRETE				FLOOR SLAB
AD							CH	GRAVELLY SANDY CLAY, high plasticity, grey-brown — FILL				
T							SC	GRAVELLY CLAYEY SAND, fine to medium grained, mottled orange, grey and black, gravel of ash fragments — FILL	M	MD		FILL
				3, 7, 5 N* = 12	1		CH	GRAVELLY CLAY, high plasticity, red, white mottled, gravel to 10 mm of strongly iron- cemented shale — FILL	M < PL	VSt/ H		400 kPa
				1, 0, 2 N* = 2	2			SANDY CLAY, high plasticity, black, occasional layers of shell fragments		S		MARINE & ESTUARINE DEPOSITS
					3			CLAY, high plasticity, black, trace of sand				
				U50	4			CLAY, high plasticity, yellow-grey mottled				No sample
				U50	5							No sample
				U50	6							
				U50	7					St		250 kPa
					8							

key
method

AS auger screwing*
AD auger drilling
R roller/tricone
W washbore
CT cable tool
DT die tube
* bit shown by suffix:
B — blank bit
V — "V" bit
T — TC bit
e.g. ADT

support

C casing
M mud

penetration

123 no resistance
ranging to
refusal

water

10 Oct, 73 water level
on date shown
water inflow
water outflow

notes — samples and tests
U50 — undisturbed sample
50 mm diameter
D — disturbed sample
N — standard penetration
test: figure = result
N* — SPT + sample
Nc — cone penetrometer

classification symbols
and soil description
based on unified
classification system

moisture

D — dry
M — moist
W — wet

consistency/relative density

VS — very soft
S — soft
F — firm
St — stiff
VSt — very stiff
H — hard
Fb — friable
VL — very loose
L — loose
MD — moderately dense
D — dense
VD — very dense

Coffey & Partners Pty. Ltd.



borehole no:

5

sheet 2 of 3

engineering log - borehole

office and job no. Sydney 6063

project: TAYLOR THOMSON WHITTING
DEPARTMENT OF PUBLIC WORKS
HAYMARKET REDEVELOPMENT
borehole location: S.W. CORNER, NO. 6 MARKET

hole commenced: 11th May 1978
hole completed: 12th May 1978
supervised by: RJL
log checked by: JPM

drill model and mounting: Gemco + Truck
hole diameter: 100 mm

slope: 90 deg.
bearing: — deg.

R.L. surface: m
datum:

method	penetration	support	water	notes samples, tests, etc.	R.L. depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency, rel. density	100 x hand 200 x penetrometer 300 x penetrometer 400 x penetrometer	structure and additional observations
AD	1	2	3		8		CH	CLAY, as above	M	PL	St	MARINE & ESTUARINE DEPOSITS
T							SC	CLAYEY SAND, fine to medium grained	W		MD	RESIDUAL SOIL E.W. SANDSTONE
					9			CONTINUED ON SHEET 3				

key method AS auger screwing* AD auger drilling R roller/tricone W washbore CT cable tool * bit shown by suffix: B — blank bit V — "V" bit T — TC bit e.g. ADT	support C casing M mud penetration 1 2 3 no resistance ranging to refusal water 10 Oct, 73 water level on date shown water inflow water outflow	notes — samples and tests U50 — undisturbed sample 50 mm diameter D — disturbed sample N — standard penetration test: figure = result N* — SPT + sample Nc — cone penetrometer	classification symbols and soil description based on unified classification system moisture D — dry M — moist W — wet	consistency/relative density VS — very soft S — soft F — firm St — stiff VSt — very stiff H — hard Fb — friable VL — very loose L — loose MD — moderately dense D — dense VD — very dense
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Coffey & Partners Pty. Ltd.



borehole no:

5

sheet 3 of 3

engineering log — cored borehole

office and job no: Sydney 6063

project: TAYLOR THOMSON WHITTING
DEPARTMENT OF PUBLIC WORKS
HAYMARKET REDEVELOPMENT
borehole location: S.W. CORNER, NO. 6 MARKET

hole commenced: 11th May 1978
hole completed: 12th May 1978
supervised by: RJL
log checked by: JPM

drill model and mounting: Gemco + Truck slope: 90 deg.
barrel type and length: T.T. 3.0 m fluid Water bearing: — deg.

R.L. surface: m
datum:

drilling information				rock substance				rock mass defects			
method	case-lift	water	pressure test lugeons	R.L. depth metres	graphic log core loss	substance description rock type: grain characteristics, colour, structure, minor components.	weathering	strength ls (50)	defect spacing mm	defect description thickness, type, inclination, planarity, roughness, coating particular general	
				8		CONTINUED FROM SHEET 3					
				9		NO CORE 0.24 m					
				9		SANDSTONE, medium to coarse grained, brown-white, poorly developed bedding	HW			Joint and vesicle 45°, clean	
				10							
				11		SANDSTONE, as above, but white	MW			Decomposed seam 0°, planar, EW rock, clay to 10 mm	
				11		SHALE, fine grained, dark grey, well developed laminations at 0°	EW			Soil properties	
				12		SANDSTONE, as above	MW			Joint, 45°, planar smooth	
				12		NO CORE 0.11 m				Soil Properties Clayey Sand very stiff to hard	
				12		SANDSTONE, medium grained, white, poorly developed bedding, occasional flakes of mudstone	SW			Decomposed seam 0°, planar, clay to 5 mm	
				13							
				14		END OF HOLE AT 13.20 m					
				15							

key

method
AS auger screwing
AD auger drilling
R roller/tricone
W washbore
NMLC NMLC core drilling

case-lift

casing used
 barrel withdrawn
 10 Oct, 73 water level date shown
 water inflow
 partial drilling water loss
 complete drilling water loss

pressure test

(350) maximum effective pressure in test (kPa)

graphic log/core loss

core recovered (hatching indicates material)
 no core recovered

weathering

Fr — fresh
 SW — slightly weathered
 MW — moderately weathered
 HW — highly weathered
 EW — extremely weathered

strength

(indirect tensile strength)

EL — extremely low
 VL — very low
 L — low
 M — medium
 H — high
 VH — very high
 EH — extremely high

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borehole no

7

sheet 1 of 3

engineering log - borehole

office and job no Sydney S6269

DEPT. OF PUBLIC WORKS, NSW		hole commenced 28th June 1979	
project HAYMARKET REDEVELOPMENT, PARKING STATION		hole completed 29th June 1979	
borehole location Refer to Drawing G6269/1-1		supervised by GS	
		log checked by RJL	
drill model and mounting: Gemco 210A + Truck		slope 90 deg.	
hole diameter 100 mm		bearing - deg.	
		R.L. surface 1.459 m	
		datum AHD	

method	penetration	support	water	notes samples, tests, etc.	R.L. depth metres	log graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency, rel. density	hand penetro meter	structure and additional observations
1	2	3										
AS								ASPHALTIC CONCRETE	M	L		FILL RIPPED SANDSTONE
AD					1		SC	CLAYEY GRAVELLY SAND, coarse grained, yellow, fines of medium plasticity, gravel is coarse grained		VL		
				1 N* = 0			SP	GRAVELLY SAND, medium grained, brown and yellow mottled. Some concrete, asphalt and sandstone fragments				SPT fell 0.70m under own weight
AS					2							ESTUARINE SEDIMENTS & SLOPEWASH
AD							CH	SANDY CLAY, high plasticity, dark grey, fine grained sand, some organic matter	W	VS		
							SC	CLAYEY SAND, medium grained, grey-yellow, fines of low plasticity		VL		shell horizon
				1, <1, 0 N* = 1			CH	CLAY, high plasticity, dark grey, trace of fine grained sand		St		No SPT sample recovered
					4			SANDY CLAY, high plasticity, yellow-brown mottled, some fine grained sand				
				2, 4, 6 N = 10			SC	CLAYEY SAND, fine grained, yellow, fines of medium to high plasticity		MD		
					6		CH	CLAY, high plasticity, grey, trace fine grained sand		VSt	X	
							SC	CLAYEY SAND, fine grained, grey and yellow mottled, fines of high plasticity		MD		
				3, 4, 7 N* = 11			CH	CLAY, high plasticity, yellow brown mottled, some fine grained sand		VSt		
					8							

key method	support	notes	classification symbols and soil description	consistency/relative density
AS auger screwing*	C casing	U50 - undisturbed sample 50 mm diameter	based on unified classification system	VS - very soft
AD auger drilling	M mud	D - disturbed sample	moisture	S - soft
R roller/tricone	penetration	N - standard penetration test: figure = result	D - dry	F - firm
W washbore	1 2 3 no resistance ranging to refusal	N* - SPT + sample	M - moist	St - stiff
CT cable tool	water	Nc - cone penetrometer	W - wet	VSt - very stiff
* bit shown by suffix	10 Oct, 73 water level on date shown			H - hard
B - blank bit	water inflow			Fb - friable
V - "V" bit	water outflow			VL - very loose
T - TC bit				L - loose
e.g. ADT				MD - moderately dense
				D - dense
				VD - very dense

Coffey & Partners Pty. Ltd.



borehole no

7

sheet 2 of 3

engineering log - borehole

office and job no: Sydney S6269

DEPT. OF PUBLIC WORKS, NSW

hole commenced: 28th June 1979

hole completed: 29th June 1979

supervised by: GS

log checked by: RJL

project:

HAYMARKET REDEVELOPMENT, PARKING STATION

borehole location:

Refer to Drawing 6269/1-1

drill model and mounting: Gemco 210A + Truck

slope: 90 deg.

R.L. surface: 1.459 m

hole diameter: 100 mm

bearing: — deg.

datum: AHD

method	penetration	support	water	notes samples, tests, etc.	R.L. depth metres	graphic log	classification symbol	material soil type, plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency, rel. density	hand penetro- meter	structure and additional observations
AS V	1 2 3				8		CH	CLAY, as above, trace fine grained sand		VSt	X	ESTUARINE SEDIMENTS & SLOPEWASH
				4, 6, 8 N* = 14	9		SC- CH	CLAYEY SAND, medium grained, yellow and brown. Layers of SANDY CLAY, sand fine grained	M > PL	MD/D		
					10		CH	CLAY, high plasticity, dark grey, some organic matter		VSt	X	← trace shells
				4, 9, > 7 N* > 16	11		SC	SANDY CLAY, high plasticity, grey brown mottled, sand fine grained		MD/D		RESIDUAL SOIL SPT bouncing after 350mm
					12			Refusal at 11.40m — continued on Sheet 3				

key

method

AS auger screwing*
AD auger drilling*
R roller/tricone
W washbore
CT cable tool

* bit shown by suffix:
B — blank bit
V — "V" bit
T — TC bit
e.g. ADT

support

C casing

M mud

penetration

1 2 3
no resistance
ranging to
refusal

water

10 Oct, 73 water level
on date shown
water inflow
water outflow

notes — samples and tests

U50 — undisturbed sample
50 mm diameter
D — disturbed sample
N — standard penetration
test: figure = result
N* — SPT + sample
Nc — cone penetrometer

classification symbols

and soil description
based on unified
classification system

moisture

D — dry
M — moist
W — wet

consistency/relative density

VS — very soft
S — soft
F — firm
St — stiff
VSt — very stiff
H — hard
Fb — friable
VL — very loose
L — loose
MD — moderately dense
D — dense
VD — very dense



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borehole no:

7

sheet 3 of 3

engineering log — cored borehole

office and job no: Sydney S6269

DEPT. OF PUBLIC WORKS, NSW

project: HAYMARKET REDEVELOPMENT, PARKING STATION
borehole location: Refer to Drawing 6269/1-1

hole commenced: 28th June 1979

hole completed: 29th June 1979

supervised by: GS

log checked by: RJL

drill model and mounting: Gemco 210A + Truck slope: 90 deg.

R.L. surface: 1.459 m

barrel type and length: T.T. 3.0m fluid Water bearing: — deg.

datum: AHD

drilling information				rock substance		rock mass defects					
method	case-lift	water	pressure test lugeons	depth metres	graphic log core loss	substance description rock type: grain characteristics, colour, structure, minor components.	weathering	strength Is (50)	defect spacing mm	defect description thickness, type, inclination, planarity, roughness, coating particular general	
			3 5 10 20 30 40 50 60 70 80 90 100			Continued from Sheet 2 Note change in depth scale					
N M L C				11							
				12		SANDSTONE, medium to coarse grained, grey, massive to poorly bedded	MW HW			decomposed seam, 0°, 30mm clayey sand. decomposed seam, 0°, 30mm clayey sand crushed zone, 0°, iron stained, clay coated. Joint, 80°, planar, rough, clay coated.	
						MUDSTONE, fine grained, dark grey	MW				
				13		NO CORE 0.20m					
						SANDSTONE, medium to coarse grained, yellow-white, massive	HW			Joint, 75°, planar, rough, limonite staining Joint, 50--80°, planar, rough, limonite staining Joint, coating of clay 5m	
				14							
				15						Joint, 80°, planar, rough, limonite & clay cover	
				16			MW SW			Partings, 5°, planar, rough, clay infilled	
				17			HW MW			clay inclusion. Joint, 85°, planar, rough, clean. Decomposed zone, 20°, 100mm sandy clay	
					18		End of Borehole 7 at 17.60m				
key method AS auger screwing AD auger drilling R roller/tricone W washbore NMLC NMLC core drilling				case-lift casing used barrel withdrawn water 10 Oct, 73 water level date shown water inflow partial drilling water loss complete drilling water loss		pressure test (350) maximum effective pressure in test (kPa) graphic log/core loss core recovered (hatching indicates material) no core recovered		weathering Fr — fresh SW — slightly weathered MW — moderately weathered HW — highly weathered EW — extremely weathered		strength (indirect tensile strength) EL — extremely low VL — very low L — low M — medium H — high VH — very high EH — extremely high	

Partings, 0-5°, planar, rough, clean, unless noted otherwise.

key

method
AS auger screwing
AD auger drilling
R roller/tricone
W washbore
NMLC NMLC core drilling

case-lift

casing used
 barrel withdrawn
 water
 10 Oct, 73 water level date shown
 water inflow
 partial drilling water loss
 complete drilling water loss

pressure test
(350) maximum effective pressure in test (kPa)

graphic log/core loss
 core recovered (hatching indicates material)
 no core recovered

weathering

Fr — fresh
 SW — slightly weathered
 MW — moderately weathered
 HW — highly weathered
 EW — extremely weathered

strength (indirect tensile strength)

EL — extremely low
 VL — very low
 L — low
 M — medium
 H — high
 VH — very high
 EH — extremely high

Engineering Log - Borehole

Client: **Sydney Harbour Foreshore Authority**

Principal:

Project: **Sydney International Convention & Entertainment Centre**Borehole Location: **Lackey Street, Haymarket, NSW**Borehole No. **BH5**

Sheet 1 of 4

Project No: **GEOTLCOV24303AA**Date started: **14.6.2011**Date completed: **15.6.2011**Logged by: **LJG**Checked by: **SS**

drill model and mounting: Ausroc 4000 Truck Easting: slope: -90° R.L. Surface: 2.4
 hole diameter: 100 mm Northing bearing: N/A datum: mAHD

drilling information					material substance										
method	penetration			support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material	moisture condition	consistency/ density index	pocket penetro- meter kPa	structure and additional observations
	1	2	3												
ADT				C							FILL: BRICK PAVERS: FILL: SAND: Coarse sand, brown, trace of roots. 0.3m - Medium to coarse sand with some clay, trace of gravel. 0.5m - Brown, yellow.	D			FILL
					SPT 8,4,4 N*=8		-1	1			FILL: Clayey SAND: Medium to coarse, brown mottled yellow, medium to high plasticity clay, with some fine gravel. FILL: CLAY: Medium to high plasticity, pale grey, red brown, trace of fine rounded ironstone gravel and sand. (shale fill) 2.0m - Red brown mottled pale grey, grey.				
					SPT 1,2,5 N*=7		-0	2			2.50m - With some fine shale gravel.				
							-1	3			FILL: Sandy CLAY: Low to medium plasticity, pale grey, brown, coarse sand, trace of gravel.	M			
							-1		SM		Silty SAND: Coarse grained, black with some shells.	W	L		ALLUVIUM
							-1		SC		Clayey SAND: Coarse grained, brown, medium plasticity clay, trace of shells and fine gravel.				
WB					SPT 2,1,2 N*=3		-2	4							
							-2		CL-CH		Sandy CLAY: Low to medium plasticity, dark brown to dark grey, fine to medium sand, with some organic fibrous materials.	>Wp	S-F		
							-3	5							
					SPT 2,1,2 N*=3		-4	6			Clayey SAND: Coarse grained, dark brown to black, low plasticity clay, trace of fine gravel.		L		
							-4		SC						
							-5	7		CH	CLAY: High plasticity, red brown, pale grey, trace of ironstone and sand.	>Wp	VSt-H		
					SPT 7,8,12 N*=20		-5				7.20m - Yellow, brown mottled. 7.40m - Pale grey with some fine sand.				
							-5								
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method
AS auger screwing*
AD auger drilling*
RR roller/tricone
W washbore
CT cable tool
HA hand auger
DT diatube
B blank bit
V V bit
T TC bit
*bit shown by suffix
e.g., ADT

support
M mud
C casing
penetration
1 2 3 4
no resistance
ranging to
refusal
water
10/1/98 water level
on date shown
water inflow
water outflow

notes, samples, tests
U₅₀ undisturbed sample 50mm diameter
U₆₃ undisturbed sample 63mm diameter
D disturbed sample
N standard penetration test (SPT)
N* SPT - sample recovered
Nc SPT with solid cone
V vane shear (kPa)
P pressuremeter
Bs bulk sample
E environmental sample
R refusal

classification symbols and
soil description
based on unified classification
system
moisture
D dry
M moist
W wet
Wp plastic limit
W_L liquid limit

consistency/density index
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable
VL very loose
L loose
MD medium dense
D dense
VD very dense

Engineering Log - Borehole

Client: **Sydney Harbour Foreshore Authority**

Principal:

Project: **Sydney International Convention & Entertainment Centre**Borehole Location: **Lackey Street, Haymarket, NSW**Borehole No. **BH5**

Sheet 2 of 4

Project No: **GEOTLCOV24303AA**Date started: **14.6.2011**Date completed: **15.6.2011**Logged by: **LJG**Checked by: **SS**

drill model and mounting: Ausroc 4000 Truck		Easting:		slope: -90°		R.L. Surface: 2.4	
hole diameter: 100 mm		Northing		bearing: N/A		datum: mAHD	
drilling information				material substance			
method	penetration	support	notes	depth	graphic log	classification	material
1	2	3	samples, tests, etc	RL	metres	symbol	soil type: plasticity or particle characteristics, colour, secondary and minor components.
WB		C		-6		CH	
			SPT 4,6,6 N*=12	9		CS	Sandy CLAY: Low to medium plasticity, pale grey, medium sand, with some silt.
				-7			
			SPT 7,9,13 N*=22	10		CH	CLAY: High plasticity, dark grey, trace of silt.
				-8			
			SPT 4,3,2 N*=5	12		SC	Clayey SAND: Medium to coarse, brown, grey, trace of gravel.
				-10			
			SPT 4,7,14 N*=21	13			13.0m - Fine to coarse, dark grey, grey, trace of organics.
				-11			
			SPT 3,5,9 N*=14	15		CL	Silty CLAY: Low plasticity, dark brown, black, with some organic material (wood), very light.
				-12			
				-13		SC	Clayey SAND: Coarse grained, pale grey, dark grey, low plasticity clay, trace of silt.
				-14			
				-15			
				-16			
11.50m - No sample recovered							
WEATHERED BEDROCK							
method		support		notes, samples, tests		classification symbols and soil description	
AS auger screwing*		M mud N nil		U ₅₀ undisturbed sample 50mm diameter		based on unified classification system	
AD auger drilling*		C casing		U ₆₃ undisturbed sample 63mm diameter			
RR roller/tricone				D disturbed sample			
W washbore				N standard penetration test (SPT)			
CT cable tool				N* SPT - sample recovered			
HA hand auger				Nc SPT with solid cone			
DT diatube				V vane shear (kPa)			
B blank bit				P pressuremeter			
V V bit				Bs bulk sample			
T TC bit				E environmental sample			
*bit shown by suffix e.g. ADT				R refusal			
		penetration				moisture	
		1 2 3 4				D dry	
		no resistance ranging to refusal				M moist	
						W wet	
						Wp plastic limit	
						W _L liquid limit	
		water					
		10/1/98 water level on date shown					
		water inflow					
		water outflow					
						consistency/density index	
						VS very soft	
						S soft	
						F firm	
						St stiff	
						VSt very stiff	
						H hard	
						Fb friable	
						VL very loose	
						L loose	
						MD medium dense	
						D dense	
						VD very dense	

Engineering Log - Borehole

Client: **Sydney Harbour Foreshore Authority**

Principal:

Project: **Sydney International Convention & Entertainment Centre**Borehole Location: **Lackey Street, Haymarket, NSW**Borehole No. **BH5**

Sheet 3 of 4

Project No: **GEOTLCOV24303AA**Date started: **14.6.2011**Date completed: **15.6.2011**Logged by: **LJG**Checked by: **SS**

drill model and mounting: Ausroc 4000 Truck Easting: slope: -90° R.L. Surface: 2.4
 hole diameter: 100 mm Northing bearing: N/A datum: mAHD

drilling information						material substance															
method	penetration			support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa				structure and additional observations			
	1	2	3											100	200	300	400				
WB								-14			SANDSTONE: Extremely weathered, pale grey, brown, coarse grained, estimated to be very low strength, remoulds to SAND. (continued) Borehole BH5 continued as cored hole										
								17													
								-15													
								18													
								-16													
								19													
								-17													
								20													
								-18													
								21													
								-19													
								22													
								-20													
								23													
								-21													
								24													
method AS auger screwing* AD auger drilling* RR roller/tricone W washbore CT cable tool HA hand auger DT diatube B blank bit V V bit T TC bit *bit shown by suffix e.g. ADT						support M mud N nil C casing penetration  water  10/1/98 water level on date shown  water inflow  water outflow				notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone V vane shear (kPa) P pressuremeter Bs bulk sample E environmental sample R refusal				classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit				consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense			

Engineering Core Borehole

Client: **Sydney Harbour Foreshore Authority**

Principal:

Project: **Sydney International Convention & Entertainment Centre**Borehole Location: **Lackey Street, Haymarket, NSW**Borehole No. **BH5**

Sheet 4 of 4

Project No: **GEOTLCOV24303AA**Date started: **14.6.2011**Date completed: **15.6.2011**Logged by: **LJG**Checked by: **SS**

drill model & mounting: Ausroc 4000 Truck		Easting:		slope: -90°		R.L. Surface: 2.4	
hole diameter: 100 mm Drilling fluid:		Northing:		bearing: N/A		datum: mAHD	
Core description		Rock description		Estimated strength		Defect spacing	
method	core-lift	water	RL	depth metres	graphic log	core recovery	rock type; grain characteristics, colour, structure, minor components
						weathering alteration	
						estimated strength	
						Is ₅₀ MPa	
						D-diam- A-axial	
						RQD %	
						defect spacing mm	
						particular	
						general	
NMLC			-14				Continued from non-cored borehole
							LA Coarse grained, pale grey, with dark grey laminations, distinctly bedded at 5°-15°, with some black carbonaceous flecks
							At 16.85m - Indistinctly bedded at 10°-30°
			-15				
			-16				
			-17				
			-18				
			-19				
			-20				
			-21				
			-22				
			-23				
			-24				

CORED BOREHOLE GEOTLCOV24303AA_REV2.GPJ COFFEY.GDT 4.8.11

Form GEO 5.5 Issue 3 Rev. 3



drawn	DB	 coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	Sydney Harbour Foreshore Authority
approved	SS		project:	Sydney International Convention and Entertainment Centre
date	23.6.11		title:	CORE PHOTOGRAPH
scale	NTS		project no.:	GEOTLCOV24303AA
original size	A4		figure no.:	BH5 – 1 OF 1



Engineering Log - Borehole

Client: **Sydney Harbour Foreshore Authority**

Principal:

Project: **Sydney International Convention & Entertainment Centre**

Borehole Location: **Back of House of Sydney Entertainment Centre**

Borehole No. **BH6**

Sheet **1 of 4**

Project No: **GEOTLCOV24303AA**

Date started: **9.6.2011**

Date completed: **9.6.2011**

Logged by: **LJG**

Checked by: **SS**

drill model and mounting: Ausroc 4000 Truck		Easting: slope: -90°		R.L. Surface: 2.6	
hole diameter: 100 mm		Northing bearing: N/A		datum: mAHD	
drilling information			material substance		
method	penetration	notes	depth	material	structure and additional observations
1	2	3	RL	soil type: plasticity or particle characteristics, colour, secondary and minor components.	
ADT				FILL: ASPHALT: Dark grey, 0.02m	PAVEMENT
DT			2	FILL: GRAVEL: Medium to coarse, subangular to subrounded, black, grey, trace of sand and clay.	
			1	FILL: CONCRETE: Grey, 0.08m	
				FILL: GRAVEL: Medium to coarse grained, angular to subangular, grey-brown, trace of fine gravel and sand.	FILL
ADT			1	FILL: CONCRETE: Grey, 0.16m	
		SPT 2,3,3 N*=6	2	FILL: GRAVEL: Medium to coarse grained, angular to subrounded, trace of fine gravel and cobbles.	
				FILL: SANDSTONE BOULDER: Coarse grained, yellow/orange, rounded.	
			2	FILL: CLAY: High plasticity, mottled, red-brown, pale-grey, and grey, trace of fine gravel, ironstone and shale. (shale fill)	
			3	1.80m - Grey, with some fine shale angular gravel.	
		SPT 5,2,2 N*=4	4	FILL: SAND: Coarse grained, grey-brown, trace of silt and rubber.	
			5		
			6	SC Clayey SAND: Coarse grained, brown-grey, low plasticity clay.	ALLUVIUM
			7	CL Sandy CLAY: Low plasticity, brown-black, coarse sand, trace of silt.	
		SPT 0,2,3 N*=5	8	CL CLAY: Low to medium plasticity, red-brown, with some fine sand.	
			9	CH Sandy CLAY: High plasticity, red, brown, pale grey, medium to coarse sand.	
			10	SC Clayey SAND: Coarse grained, pale grey, red-brown, medium plasticity clay.	
			11	CL Sandy CLAY: Low to medium plasticity, pale grey.	
		SPT 5,3,5 N*=8	12	CH CLAY: High plasticity, red-brown, pale grey, micaceous.	
			13	CL-CH Sandy CLAY: Medium to high plasticity, grey, pale grey, coarse grained sand.	
			14		
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			100		



Engineering Log - Borehole

Client: **Sydney Harbour Foreshore Authority**

Principal:

Project: **Sydney International Convention & Entertainment Centre**

Borehole Location: **Back of House of Sydney Entertainment Centre**

Borehole No. **BH6**

Sheet 2 of 4

Project No: **GEOTLCOV24303AA**

Date started: **9.6.2011**

Date completed: **9.6.2011**

Logged by: **LJG**

Checked by: **SS**

drill model and mounting: Ausroc 4000 Truck Easting: slope: -90° R.L. Surface: 2.6
hole diameter: 100 mm Northing bearing: N/A datum: mAHD

drilling information					material substance				
method	penetration	support	notes	depth	graphic log	classification	material	moisture	consistency/density index
1	2	3	samples, tests, etc	metres			soil type: plasticity or particle characteristics, colour, secondary and minor components.	condition	index
W		C	U ₅₀			CL-CH	Sandy CLAY: Medium to high plasticity, grey, pale grey, coarse grained sand. (continued)	W	VSt
			SPT 0,4,5 N*=9	-6		SC	Clayey SAND: Medium to coarse grained, grey, pale grey.		MD
			SPT 5,6,9 N*=15	-7		CH	CLAY: High plasticity, red-brown, pale grey, grey, trace of coarse sand and fine grained.		VSt-H
			SPT 5,6,7 N*=13	-8		CH	Silty CLAY: High plasticity, dark grey, brown, black, micaeous.		VSt-H
			SPT 5,8,10 N*=18	-9		SP	SAND: Coarse grained, grey, dark grey, with some clay.		MD
			SPT 0,5,7 N*=12	-10			14m - Dark grey, black, trace of organics.		
			SPT 9,R N*=R	-11			15m - With some silt and organic material.		
				-12					
				-13			SANDSTONE: Extremely weathered, coarse grained, black, dark grey, estimated low strength, with some organic matter.		
				-14					
				-15					
				-16					

method	support	penetration	water	classification symbols and soil description	consistency/density index
AS auger screwing*	M mud	1 2 3 4	10/1/98 water level on date shown	U ₅₀ undisturbed sample 50mm diameter	VS very soft
AD auger drilling*	C casing			U ₆₃ undisturbed sample 63mm diameter	S soft
RR roller/tricone				D disturbed sample	F firm
W washbore				N standard penetration test (SPT)	St stiff
CT cable tool				N* SPT - sample recovered	VSt very stiff
HA hand auger				Nc SPT with solid cone	H hard
DT dialube				V vane shear (kPa)	Fb friable
B blank bit				P pressuremeter	VL very loose
V V bit				Bs bulk sample	L loose
T TC bit				E environmental sample	MD medium dense
*bit shown by suffix e.g. ADT				R refusal	D dense
					VD very dense

Client: **Sydney Harbour Foreshore Authority**
Principal:
Project: **Sydney International Convention & Entertainment Centre**
Borehole Location: **Back of House of Sydney Entertainment Centre**

Form GEO 5.5 Issue 3 Rev. 3

Sheet 4 of 4

Client: **Sydney Harbour Foreshore Authority**

Date started: **9.6.2011**

Principal:

Date completed: **9.6.2011**

Project: **Sydney International Convention & Entertainment Centre**

Logged by: **LJG**

Borehole Location: **Back of House of Sydney Entertainment Centre**

Checked by: **SS**

Form GEO 5.5 Issue 3 Rev. 3



drawn	DB	 coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	Sydney Harbour Foreshore Authority
approved	SS		project:	Sydney International Convention and Entertainment Centre
date	23.6.11		title:	CORE PHOTOGRAPH
scale	NTS		project no.:	GEOTLCOV24303AA
original size	A4		figure no.:	BH6 – 1 OF 1

Form GEO 5.3 Issue 3 Rev.2

Borehole Location: **Back of House of Sydney Entertainment Centre**

Form GEO 5.3 Issue 3 Rev.2

Engineering Log - Borehole

Client: **Sydney Harbour Foreshore Authority**

Principal:

Project: **Sydney International Convention & Entertainment Centre**Borehole Location: **Back of House of Sydney Entertainment Centre**Borehole No. **BH7**

Sheet 3 of 6

Project No: **GEOTLCOV24303AA**Date started: **15.6.2011**Date completed: **17.6.2011**Logged by: **RC**Checked by: **SS**

drill model and mounting: Hydrapower Scout Truck Easting: slope: -60° R.L. Surface: 2.6
 hole diameter: 100 mm Northing bearing: 213.5° datum: mAHD

drilling information						material substance											
method	penetration			support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa	structure and additional observations		
	1	2	3														
WRR				C							SANDSTONE: Medium to coarse grained, pale grey to white, extremely weathered to highly weathered. (continued)						
											Borehole BH7 continued as cored hole						
								-12									
								17									
								-13									
								18									
								19									
								-14									
								20									
								-15									
								21									
								-16									
								22									
								-17									
								23									
								-18									
								24									
method AS auger screwing* AD auger drilling* RR roller/tricone W washbore CT cable tool HA hand auger DT diatube B blank bit V V bit T TC bit *bit shown by suffix e.g. ADT						support M mud N nil C casing penetration 1 2 3 4  no resistance ranging to refusal water  10/1/98 water level on date shown  water inflow  water outflow			notes, samples, tests U ₆₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone V vane shear (kPa) P pressuremeter Bs bulk sample E environmental sample R refusal			classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit			consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense		

Borehole Location: **Back of House of Sydney Entertainment Centre**

Form GEO 5.5 Issue 3 Rev. 3



Engineering Core Borehole

Client: **Sydney Harbour Foreshore Authority**

Principal:

Project: **Sydney International Convention & Entertainment Centre**Borehole Location: **Back of House of Sydney Entertainment Centre**Borehole No. **BH7**

Sheet 5 of 6

Project No: **GEOTLCOV24303AA**Date started: **15.6.2011**Date completed: **17.6.2011**Logged by: **RC**Checked by: **SS**

drill model & mounting: Hydrapower Scout Truck				Easting:		slope: -60°		R.L. Surface: 2.6					
hole diameter: 100 mm Drilling fluid:				Northing:		bearing: 213.5°		datum: mAHD					
Borehole Information					Rock Description								
method	core-lift	water	RL	depth metres	graphic log core recovery	rock type; grain characteristics, colour, structure, minor components	weathering alteration	estimated strength	IS ₅₀ MPa D- diam- etral A- axial	RQD %	defect spacing mm	description type, inclination, planarity, roughness, coating, thickness	
NQ												particular	general
			-19	25		Medium grained, pale grey, distinctly bedded at 40°(continued)	FR					PT, 20°, UN, RO, CN JT, 40°, PL, RO, CN	
						0.10m						JT, 20°, PL, RO, CO, Clay, 3mm JT, 70°, PL, RO, CN PT, 30°, PL, RO, CO, Clay, 2mm	
			-20	26		Medium to coarse grained, pale grey, indistinctly bedded at 40°	FR					JT, 60°, PL, RO, CN	
						Coarse grained, pale grey, massive.						JT, 60°, PL, RO, CN	
			-21	27								JT, 60°, PL, RO, CN	
						Medium grained, pale grey, indistinctly bedded at 20°						SM, 20°, PL, RO, XW, 40mm JT, 50°, PL, RO, CN JT, 60°, PL, RO, CN JT, 80°, PL, RO, CN JT, 70°, PL, RO, CN	
			-22	28								JT, 75°, PL, RO, CN JT, 85°, UN, RO, VN	
			-23	29		28.90m - Interface angle = 30° Coarse grained, pale brown, grey, speckled white and green.	HA					PT, 30°, PL, RO, VN JT, 30°, PL, RO, CO, Clay JT, 30°, PL, RO, CO, Clay SM, 30°, PL, RO, Clay, 40mm, pp = 100kPa	
						0.40m						JT, 45°, PL, RO, CN SM, 35°, PL, RO, Clay, unknown thickness	
			-24	30		Coarse grained, pale brown, grey, speckled green.	HA					SM, 30°, PL, RO, Clay, 12mm	
												JT, 60°, PL, RO, CN JT, 50°, PL, RO, CN	
			-25	31		Coarse grained, dark grey, speckled green.	FR					JT, 25°, PL, RO, VN, Calcium JT, 35°, PL, RO, CN, Calcium	
						0.10m						JT, 30°, PL, RO, SN JT, 30°, PL, RO, SN JT, 15°, IR, RO, CN JT, 15°, IR, RO, CN	
				32		Coarse grained, dark grey, speckled green.	FR						

DT diatube

AS auger screwing

AD roller/drilling

RR auger/tricone

CB claw or blade bit

NMLC NMLC core

NQ, HQ, PQ wireline core

casing used

barrel withdrawn

core recovered

graphic symbols

indicate material

no core recovered

10/1/98 water level on date shown

water inflow

partial drill fluid loss

complete drill fluid loss

water pressure test result (lugeons) for depth interval shown

FR fresh

SW slightly weathered

MW moderately weathered

HW highly weathered

XW extremely weathered

DW distinctly weathered (covers MW and HW)

VL very low

L low

M medium

H high

VH very high

EH extremely high

PL planar

CU curved

UN undulating

ST stepped

IR irregular

VR very rough

RO rough

SO smooth

SL slickensided

JT joint

PT parting

SM seam

SZ sheared zone

SS sheared surface

CS crushed seam

PL planar

CU curved

UN undulating

ST stepped

IR irregular

VR very rough

RO rough

SO smooth

SL slickensided

Unless noted defects are: PT, 10°-40°, PL, RO, CN

Unless noted defects are: JT, 10°-40°, PL, RO, CN

Unless noted defects are: PT, 10°-40°, PL, RO, CN

Unless noted defects are: JT, 10°-40°, PL, RO, CN

Form GEO 5.5 Issue 3 Rev. 3

DT diatube
AS auger screwing
AD auger drilling
RR roller/tricone
CB claw or blade bit
NMLC NMLC core
NQ, HQ, PQ wireline core

Core
casing used
barrel withdrawn
core recovered
- graphic symbols
indicate material
no core recovered

10/1/98 water level
on date shown
water inflow
partial drill fluid loss
complete drill fluid loss
water pressure test result
(lugeons) for depth
interval shown

FR fresh
SW slightly weathered
MW moderately weathered
HW highly weathered
XW extremely weathered
DW distinctly weathered
(covers MW and HW)
VL very low
L low
M medium
H high
VH very high
EH extremely high

joint
parting
seam
sheared zone
sheared surface
crushed seam
planar
curved
undulating
stepped
irregular

very rough
rough
smooth
slickensided
clean
stained
vener
coating



Engineering Core Borehole

Client: **Sydney Harbour Foreshore Authority**

Principal:

Project: **Sydney International Convention & Entertainment Centre**Borehole Location: **Back of House of Sydney Entertainment Centre**Borehole No. **BH7**

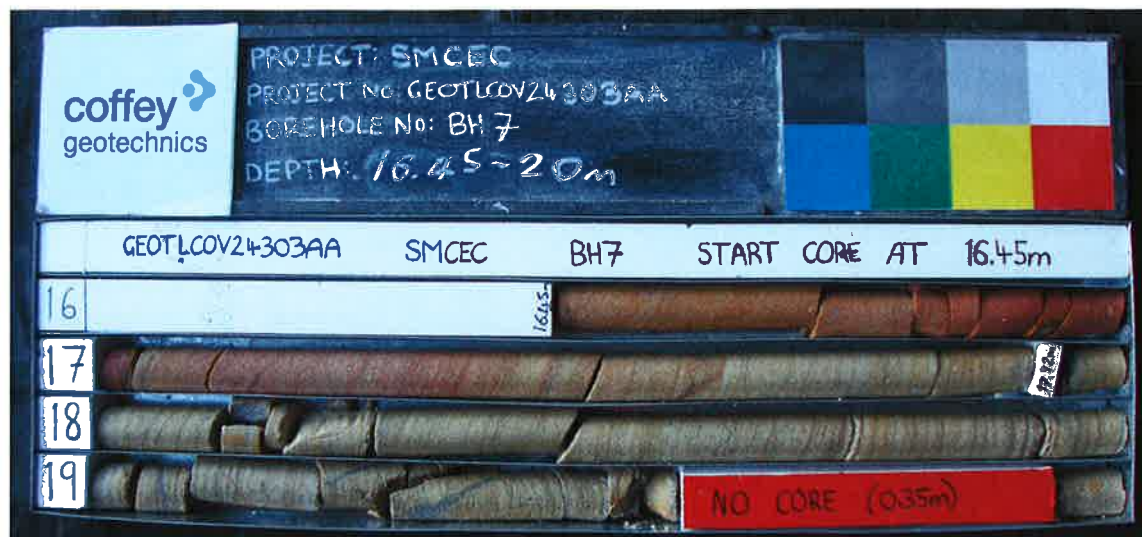
Sheet 6 of 6

Project No: **GEOTLCOV24303AA**Date started: **15.6.2011**Date completed: **17.6.2011**Logged by: **RC**Checked by: **SS**

drill model & mounting: Hydrapower Scout Truck					Easting:		slope: -60°		R.L. Surface: 2.6																				
hole diameter: 100 mm Drilling fluid:					Northing:		bearing: 213.5°		datum: mAHD																				
Core description					Rock description																								
method	core-lift	water	RL	depth metres	graphic log	core recovery	rock type: grain characteristics, colour, structure, minor components	weathering alteration	estimated strength	Is ₅₀ MPa	D- diam- A- axial	RQD %	defect spacing mm	particular	general														
NQ							Coarse grained, dark grey, speckled green (continued) From 32.95, with bands of pale brown, pale grey. 33.65m - Becoming pale grey, pale brown bands of dark grey.	SA MA						JT, 20°, PL, RO, VN JT, 45°, PL, RO, VN, Calcium 32.65m - 33.03m - Highly fractured rock															
			-26	33										JT, 20°-40°, PL, RO, VN JT, 55°, PL, RO, CN JT, 55°, PL, RO, CN JT, 55°, PL, RO, CN JT, 60°, PL, RO, VN JT, 30°, PL, RO, VN JT, 40°, PL, RO, VN 33.80m - 33.94m - Highly fractured rock															
			-27	34										JT, 30°, PL, RO, VN JT, 30°, PL, RO, VN 34.20m - 35.10m - Highly fractured rock															
				35																									
			-28				0.90m																						
				36			Pale grey	HA						SM, 30°, IR, RO, Clay, 20mm															
			-29	37			37m - Interface angle = 60°	XA																					
			-30	38			Medium grained, dark grey to black, distinctly bedded at 40°.	FR						JT, 70°, PL, RO, SN JT, 80°, PL, RO, SN JT, 70°, PL, RO, SN SM, 20°, PL, RO, XA, 10mm JT, 65°, PL, RO, CO Clay, 5mm JT, 30°, PL, RO, SN JT, 30°, PL, VR, CN															
			-31	39			0.35m																						
				40			Medium to coarse grained, pale grey, grey, indistinctly bedded at 40°.	FR						JT, 30°, PL, VR, CN															
			-32				BH7 terminated at 40m																						
Legend					Legend					Legend					Legend														
DT diatube AS auger screwing AD auger drilling RR roller/tricone CB claw or blade bit NMLC NMLC core NQ, HQ, PQ wireline core					Casing used Barrel withdrawn Core recovered - graphic symbols indicate material no core recovered					10/1/98 water level on date shown water inflow partial drill fluid loss complete drill fluid loss water pressure test result (lugeons) for depth interval shown					FR fresh SW slightly weathered MW moderately weathered HW highly weathered XW extremely weathered DW distinctly weathered (covers MW and HW) s _{ren} VL very low L low M medium H high VH very high EH extremely high					JT joint PT parting SM seam SZ sheared zone SS sheared surface CS crushed seam PL planar CU curved UN undulating ST stepped IR irregular					VR very rough RO rough SO smooth SL slickensided CN clean SN stained VN veneer CO coating				

Unless noted defects are: JT, 10°-40°, PL, RO, CN

Unless noted defects are: PT, 40°, PL, RO, SN



drawn	DB	 SPECIALISTS MANAGING THE EARTH	client:	Sydney Harbour Foreshore Authority
approved	SS		project:	Sydney International Convention and Entertainment Centre
date	23.6.11		title:	CORE PHOTOGRAPH
scale	NTS		project no.:	GEOTLCOV24303AA
original size	A4		figure no.:	BH 7 – 1 OF 3



drawn	DB	 SPECIALISTS MANAGING THE EARTH	client:	Sydney Harbour Foreshore Authority
approved	SS		project:	Sydney International Convention and Entertainment Centre
date	23.6.11		title:	CORE PHOTOGRAPH
scale	NTS		project no.:	GEOTLCOV24303AA
original size	A4		figure no.:	BH7 – 2 OF 3



drawn	DB	 coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	Sydney Harbour Foreshore Authority
approved	SS		project:	Sydney International Convention and Entertainment Centre
date	23.6.11		title:	CORE PHOTOGRAPH
scale	NTS		project no.:	GEOTLCOV24303AA
original size	A4		figure no.:	BH7-3 OF 3

Engineering Log - Borehole

Client: **Sydney Harbour Foreshore Authority**

Principal:

Project: **Sydney International Convention & Entertainment Centre**Borehole Location: **Back of House of Sydney Entertainment Centre**Borehole No. **BH8**

Sheet 1 of 1

Project No: **GEOTLCOV24303AA**Date started: **14.6.2011**Date completed: **14.6.2011**Logged by: **RC**Checked by: **SS**

drill model and mounting: Hydrapower Scout Truck		Easting:		slope: -90°		R.L. Surface: 2.5			
hole diameter: 100 mm		Northing		bearing: N/A		datum: mAHD			
drilling information				material substance					
method	penetration	support	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.		
ADT	1 2 3	C		2			FILL: ASPHALT: Dark grey, 70mm thickness sandy gravel: medium grained, grey sand, fine grained, grey gravel		
				1			FILL: SAND: Fine to medium grained, dark brown, with some clay and fine gravel.		
NMLC		▲		1			FILL: ASPHALT: Dark grey, 250mm. FILL: CONCRETE: Pale grey, 410mm. 1m - With some dark grey gravel aggregate and steel.		
				0			VOID:		
				3			Borehole BH8 terminated at 3m		
				-1					
				4					
				-2					
				5					
				-3					
				6					
				-4					
				7					
				-5					
				8					
method AS auger screwing* AD auger drilling* RR roller/tricone W washbore CT cable tool HA hand auger DT diatube B blank bit V V bit T TC bit *bit shown by suffix e.g. ADT				support M mud N nil C casing penetration  1 2 3 4 no resistance ranging to refusal water  10/1/98 water level on date shown  water inflow  water outflow		notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone V vane shear (kPa) P pressuremeter Bs bulk sample E environmental sample R refusal		classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit	consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense



Engineering Log - Borehole

Client: **Sydney Harbour Foreshore Authority**

Principal:

Project: **Sydney International Convention & Entertainment Centre**

Borehole Location: **Back of House of Sydney Entertainment Centre**

Borehole No. **BH9**

Sheet 1 of 1

Project No: **GEOTLCOV24303AA**

Date started: **15.6.2011**

Date completed: **15.6.2011**

Logged by: **RC**

Checked by: **SS**

drill model and mounting: Hydrapower Scout Truck		Easting: slope: -90°		R.L. Surface: 2.75							
hole diameter: 100 mm		Northing bearing: N/A		datum: mAHD							
drilling information				material substance							
method	penetration	support	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa	structure and additional observations
ADT	1 2 3	Not Observed		2			FILL: ASPHALT: Dark grey 70mm, overlying sandy gravel, medium grained, brown sand, dark grey gravel. FILL: SAND: Medium to coarse grained, yellow, with some fine to coarse sandstone gravel. 0.60m - Becoming brown, with some coarse dolerite gravel. FILL: ASPHALT: Grey, 150mm FILL: CONCRETE: Pale grey, 50mm. Borehole BH9 terminated at 0.85m	D			PAVEMENT SUB BASE FILL PREVIOUS PAVEMENT BH9 was terminated at shallow depth due to obstructions after many attempts.
				1							
				0							
				-1							
				-2							
				-3							
				-4							
				-5							
				-6							
				-7							
				-8							
method AS auger screwing* AD auger drilling* RR roller/tricone W washbore CT cable tool HA hand auger DT diatube B blank bit V V bit T TC bit *bit shown by suffix e.g. ADT				support M mud N nil C casing penetration 1 2 3 4 no resistance ranging to refusal water 10/1/98 water level on date shown water inflow water outflow		notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone V vane shear (kPa) P pressuremeter Bs bulk sample E environmental sample R refusal		classification symbols and soil description based on unified classification system moisture D dry M moist W wet Wp plastic limit W _L liquid limit		consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense	

Borehole Location: **Sydney Entertainment Centre, Haymarket, NSW**

Form GEO 5.3 | Issue 3 Rev.2



Engineering Log - Borehole

Client: **Sydney Harbour Foreshore Authority**

Principal:

Project: **Sydney International Convention & Entertainment Centre**

Borehole Location: **Sydney Entertainment Centre, Haymarket, NSW**

Borehole No. **BH11**

Sheet 2 of 3

Project No: **GEOTLCOV24303AA**

Date started: **1.6.2011**

Date completed: **1.6.2011**

Logged by: **RH**

Checked by: **SS**

drill model and mounting: Ausroc 4000 Truck Easting: slope: -90° R.L. Surface: 2.9
hole diameter: 100 mm Northing bearing: N/A datum: mAHD

drilling information					material substance							
method	penetration	support	water	notes samples, tests, etc	depth metres	graphic log	classification symbol	material	moisture condition	consistency/density index	pocket penetrometer kPa	structure and additional observations
1	2	3			RL			soil type: plasticity or particle characteristics, colour, secondary and minor components.			100 200 300 400	
Borehole BH11 continued as cored hole												
					-6	9						
					-7	10						
					-8	11						
					-9	12						
					-10	13						
					-11	14						
					-12	15						
					-13	16						

method

AS auger screwing*

AD auger drilling*

RR roller/tricone

W washbore

CT cable tool

HA hand auger

DT dialube

B blank bit

V V bit

T TC bit

*bit shown by suffix e.g. ADT

support

M mud

C casing

penetration

1 2 3 4

no resistance ranging to refusal

water

10/1/98 water level on date shown

water inflow

water outflow

notes, samples, tests

U₅₀ undisturbed sample 50mm diameter

U₆₃ undisturbed sample 63mm diameter

D disturbed sample

N standard penetration test (SPT)

N* SPT - sample recovered

Nc SPT with solid cone

V vane shear (kPa)

P pressuremeter

Bs bulk sample

E environmental sample

R refusal

classification symbols and soil description

based on unified classification system

moisture

D dry

M moist

W wet

W_p plastic limit

W_L liquid limit

consistency/density index

VS very soft

S soft

F firm

St stiff

VSt very stiff

H hard

Fb friable

VL very loose

L loose

MD medium dense

D dense

VD very dense



Engineering Core Borehole

Client: **Sydney Harbour Foreshore Authority**

Principal:

Project: **Sydney International Convention & Entertainment Centre**Borehole Location: **Sydney Entertainment Centre, Haymarket, NSW**Borehole No. **BH11**

Sheet 3 of 3

Project No: **GEOTLCOV24303AA**Date started: **1.6.2011**Date completed: **1.6.2011**Logged by: **RH**Checked by: **SS**

drill model & mounting: Ausroc 4000 Truck		Easting:		slope: -90°		R.L. Surface: 2.9					
hole diameter: 100 mm		Drilling fluid:		Northing:		bearing: N/A					
datum: mAHD											
Core Information method: NMLC core-lift: water RL: depth metres graphic log: core recovery		Rock Description rock type; grain characteristics, colour, structure, minor components Continued from non-cored borehole 0.30m		Weathering weathering alteration VL M H VH EH		Strength estimated strength Is ₅₀ MPa D- diam- A- axial		Defect defect spacing mm 30 100 300 1000 3000		Core Description type, inclination, planarity, roughness, coating, thickness particular general	
-6 9		A Medium to coarse grained, red brown, indistinct laminations at 5°-15°. 8.7m colour change to orange brown		MW		D 0.39 A 0.37		25		JT, 80°, PL, RO, CN	
-7 10		9.8m colour change to pale grey and orange		SW		D 0.16 A 0.33		97			
-8 11		HA Pale grey, with distinct dark grey laminations at 10°-15°		FR		D 0.03 A 0				SM, 0°-10°, clay filled, 70mm	
-9 12		A Coarse grained, pale grey and orange, indistinct laminations at 5°-15°		SW		D 0.47		50		PT, 5°, CU, RO, CN PT, 5°-10°, PL, RO, Clay CO (1mm) JT, 85°, PL, RO, CN	
-10 13		A Coarse grained, pale grey and orange, indistinct laminations at 5°-15°. 12.7m becoming fine grained		SW		D 0.43				SM, 5°-15°, clay filled, 80mm SM, 10°-20°, clay filled, 30mm SM, 10°, clay filled, 70mm	
-11 14		13.3m becoming massively bedded		FR		D 2.15 A 1.14		82		JT, 25°, PL, RO, CN	
-12 15		14.6m sandstone becoming indistinctly laminated with some iron staining		MW/SW		D 0.56 A 0.92				SM, 0°-5°, clay filled, 30mm JT, 85°, PL, RO, FeSN PT, 5°, PL, RO, FeSN PT, 5°, PL, RO, FeSN	
-13 16		15.45m laminations becoming increasingly distinct		SW/FR		D 1.46				PT, 5°-10°, PL, RO, CN PT, 5°-10°, PL, RO, CN	
		BH11 terminated at 15.9m									

All defects are: JT, 0°-15°, PL, RO, CN, unless noted otherwise

Form GEO 5.5 Issue 3 Rev. 3
 CORED BOREHOLE GEOTLCOV24303AA_REV2.GPJ COFFEY.GDT 4.8.11

Legend
 DT diatube
 AS auger screwing
 AD auger drilling
 RR roller/tricone
 CB claw or blade bit
 NMLC NMLC core
 NQ, HQ, PQ wireline core
 casing used
 barrel withdrawn
 core recovered - graphic symbols indicate material
 no core recovered
 10/1/98 water level on date shown
 water inflow
 partial drill fluid loss
 complete drill fluid loss
 water pressure test result (lugeons) for depth interval shown
 FR fresh
 SW slightly weathered
 MW moderately weathered
 HW highly weathered
 XW extremely weathered
 DW distinctly weathered (covers MW and HW)
 VL very low
 L low
 M medium
 H high
 VH very high
 EH extremely high
 JT joint
 PT parting
 SM seam
 SZ sheared zone
 SS sheared surface
 CS crushed seam
 PL planar
 CU curved
 UN undulating
 ST stepped
 IR irregular
 VR very rough
 RO rough
 SO smooth
 SL slickensided
 CN clean
 SN stained
 VN veneer
 CO coating



Engineering Log - Borehole

Client: **Sydney Harbour Foreshore Authority**

Principal:

Project: **Sydney International Convention & Entertainment Centre**

Borehole Location: **Sydney Entertainment Centre, Haymarket, NSW**

Borehole No. **BH13**

Sheet 1 of 3

Project No: **GEOTLCOV24303AA**

Date started: **9.6.2011**

Date completed: **9.6.2011**

Logged by: **RC**

Checked by: **SS**

drill model and mounting: Hydrapower Scout Truck		Easting:		slope: -90°		R.L. Surface: 3.15	
hole diameter: 100 mm		Northing		bearing: N/A		datum: mAHD	
drilling information				material substance			
method	penetration	support	notes	depth	graphic log	classification	material
1 2 3			samples, tests, etc	RL			soil type: plasticity or particle characteristics, colour, secondary and minor components.
ADT				3			FILL: Rectangular, red-brown concrete pavers (50mm) overlying medium grained pale brown sand (50mm)
ADV				1			FILL: Sandy GRAVEL: Medium to coarse grained, grey, fine to medium grained gravel.
			SPT 10,8,2 N*=10	2			FILL: Gravelly SAND: Fine to medium grained, brown, fine to coarse angular to subrounded gravel.
				2			FILL: SAND: Medium grained, pale brown.
				1		CH	1.8m - With some brown gravel.
			SPT 1,1,1 N*=2	3			Silty CLAY: High plasticity, dark grey.
			U ₅₀	0			
				4			
			SPT 3,6,6 N*=12	-1			
				5		CL	Sandy CLAY: Low plasticity, pale grey mottled, orange-brown, fine to medium grained sand with some fine to medium grained subangular ironstone gravel.
			SPT 5,4,4 N*=8	-3			
				6			
				7			6.5m - Becoming red.
			SPT 6,6,7 N*=13	-4			6.8m - One rootlet.
				8			
method		support		notes, samples, tests		classification symbols and soil description	
AS auger screwing*		M mud		U ₅₀ undisturbed sample 50mm diameter		VS very soft	
AD auger drilling*		C casing		U ₆₃ undisturbed sample 63mm diameter		S soft	
RR roller/tricone				D disturbed sample		F firm	
W washbore				N standard penetration test (SPT)		St stiff	
CT cable tool				N* SPT - sample recovered		VSt very stiff	
HA hand auger				Nc SPT with solid cone		H hard	
DT dialtube				V vane shear (kPa)		Fb friable	
B blank bit				P pressuremeter		VL very loose	
V V bit				Bs bulk sample		L loose	
T TC bit				E environmental sample		MD medium dense	
*bit shown by suffix				R refusal		D dense	
e.g. ADT						VD very dense	

Engineering Log - Borehole

Client: **Sydney Harbour Foreshore Authority**

Principal:

Project: **Sydney International Convention & Entertainment Centre**Borehole Location: **Sydney Entertainment Centre, Haymarket, NSW**Borehole No. **BH13**

Sheet 2 of 3

Project No: **GEOTLCOV24303AA**Date started: **9.6.2011**Date completed: **9.6.2011**Logged by: **RC**Checked by: **SS**

drill model and mounting: Hydrapower Scout Truck		Easting:		slope: -90°		R.L. Surface: 3.15	
hole diameter: 100 mm		Northing		bearing: N/A		datum: mAHD	
drilling information				material substance			
method	penetration	support	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.
ADV	1 2 3						
			SPT 4,5,3 N*=8	-5		CL	Sandy CLAY: Low plasticity, pale grey mottled, orange-brown, fine to medium grained sand with some fine to medium grained subangular ironstone gravel. (continued)
				-6		SP	SAND: Medium to coarse grained, dark grey to grey, with some high plasticity clay.
				-7			
NMLC			SPT R,30/140,R N*=R	-7			
				-8			
				-9			
				-10			
				-11			
				-12			
				-13			
				-14			
				-15			
				-16			
Borehole BH13 continued as cored hole				SPT hammer bouncing			
method				support			
AS auger screwing*				M mud N nil			
AD auger drilling*				C casing			
RR roller/tricone				penetration			
W washbore				1 2 3 4			
CT cable tool				no resistance ranging to refusal			
HA hand auger				water			
DT dialtube				10/1/98 water level on date shown			
B blank bit				water inflow			
V V bit				water outflow			
T TC bit							
*bit shown by suffix e.g. ADT							
notes, samples, tests				classification symbols and soil description			
U ₅₀ undisturbed sample 50mm diameter				based on unified classification system			
U ₆₃ undisturbed sample 63mm diameter							
D disturbed sample							
N standard penetration test (SPT)							
N* SPT - sample recovered							
Nc SPT with solid cone							
V vane shear (kPa)							
P pressuremeter							
Bs bulk sample							
E environmental sample							
R refusal							
moisture				consistency/density index			
D dry				VS very soft			
M moist				S soft			
W wet				F firm			
Wp plastic limit				St stiff			
WL liquid limit				VSt very stiff			
				H hard			
				Fb friable			
				VL very loose			
				L loose			
				MD medium dense			
				D dense			
				VD very dense			

Engineering Core Borehole

Client: **Sydney Harbour Foreshore Authority**

Principal:

Project: **Sydney International Convention & Entertainment Centre**Borehole Location: **Sydney Entertainment Centre, Haymarket, NSW**Borehole No. **BH13**

Sheet 3 of 3

Project No: **GEOTLCOV24303AA**Date started: **9.6.2011**Date completed: **9.6.2011**Logged by: **RC**Checked by: **SS**

drill model & mounting: Hydrapower Scout Truck				Easting:		slope: -90°		R.L. Surface: 3.15	
hole diameter: 100 mm				Drilling fluid:		Northing:		bearing: N/A	
datum: mAHD									
method core-lift water RL depth metres graphic log core recovery rock type; grain characteristics, colour, structure, minor components weathering alteration estimated strength VL L M H VH EH IS₅₀ MPa D- diam- A- axial RQD % 10 100 300 1000 defect spacing mm 10 100 300 1000 type, inclination, planarity, roughness, coating, thickness				particular general					
Continued from non-cored borehole									
Full water return				XW SW		SW-MW		pp= 100kPa PT, 10°, PL, RO, UN, Clay JT, 80°, PL, RO, VN, Clay PT, 20°, PL, RO, VN, Clay JT, 30°, PL, RO, VN, Clay JT, 80°, UN, RO, VN, Clay JT, 75°, PL, RO, VN, Clay SM, 35°, PL, RO, Clay, 50mm, 50kPa JT, 80°, UN, RO, SN JT, 75°, PL, RO, CN JT, 85°, PL, RO, VN PT, 15°, PL, RO, SN JT, 80°, UN, RO, VN PT, 15°, PL, RO, CO, Sandy Clay, 2mm PT, 15°, PL, RO, SN SM, 10°, PL, RO, Sandy Clay, 12mm, pp = 20kPa PT, 5°, PL, RO, SN JT, 85°, UN, RO, SN JT, 65°-85°, CU, RO, SN PT, 5°, PL, RO, SN PT, 10°, PL, RO, SN PT, 10°, PL, RO, CO, Sandy Clay, 1mm PT, 15°, IR, VR, CO, fine gravel	
12.40m to 13.0m - Distinctly bedded						D A 1.38 2.01		47	
14.43m to 14.50m - with some fine grained quartz gravel						D A 1.04 1.18			
BH13 terminated at 14.7m						D A 1.53 2.25			
15									
16									

DT

AS

AD

RR

CB

NMLC

NQ, HQ, PQ

diatube

auger screwing

auger drilling

roller/tricone

claw or blade bit

NMLC core

wireline core

casing used

barrel withdrawn

core recovered

graphic symbols

indicate material

no core recovered

10/1/98 water level on date shown

water inflow

partial drill fluid loss

complete drill fluid loss

water pressure test result (lugeons) for depth interval shown

FR

SW

MW

HW

XW

DW

fresh

slightly weathered

moderately weathered

highly weathered

extremely weathered

distinctly weathered (covers MW and HW)

VL

L

M

H

VH

EH

very low

low

medium

high

very high

extremely high

JT

PT

SM

SZ

SS

CS

joint

parting

seam

sheared zone

sheared surface

crushed seam

PL

CU

UN

ST

IR

planar

curved

undulating

stepped

irregular

VR

RO

SO

SL

very rough

rough

smooth

slickensided

CN

SN

VN

CO

clean

stained

veneer

coating

Engineering Log - Borehole

Client: **Sydney Harbour Foreshore Authority**

Principal:

Project: **Sydney International Convention & Entertainment Centre**Borehole Location: **Harbour Street, Haymarket, NSW**Borehole No. **BH17**

Sheet 1 of 4

Project No: **GEOTLCOV24303AA**Date started: **16.6.2011**Date completed: **16.6.2011**Logged by: **LJG**Checked by: **SS**

drill model and mounting: Edson 3000 Truck		Easting:		slope: -90°		R.L. Surface: 3.2	
hole diameter: 100 mm		Northing		bearing: N/A		datum: mAHD	
drilling information				material substance			
method	penetration	support	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.
ADT	1 2 3	C		3			FILL: BRICK PAVERS: Brown, 0.08m
				1			FILL: Clayey Gravelly SAND: Medium to coarse grained, brown, grey, fine gravel, medium plasticity clay.
			SPT 6,7,4 N*=11	2			FILL: SAND: Coarse grained, grey, brown, yellow, red mottled, with some fine sandstone gravel, trace of clay.
				2			
				1			
			SPT 2,0,0 N*=0	3			FILL: Silty CLAY: Low plasticity, black, with some organic material, trace of sand and fine gravel.
				0			3.10m - With some sand.
				4		CH	CLAY: High plasticity, red, brown, grey, trace of fine grained ironstone gravel.
			SPT 2,3,5 N*=8	-1			
				5			
				-2		CH	CLAY: High plasticity, grey, red, brown, yellow, with some coarse sand, trace of fine to medium grained sandstone and ironstone gravel.
			SPT 2,5,6 N*=11	6			
				-3		CL	Gravelly CLAY: Low plasticity, brown, grey, red, fine angular sandstone and ironstone gravel.
				7		CH	CLAY: High plasticity, pale grey, red brown mottled, trace of sand.
			SPT 4,7,8 N*=15	-4			
				8			
method				support		notes, samples, tests	
AS auger screwing*				M mud N nil		U ₅₀ undisturbed sample 50mm diameter	
AD auger drilling*				C casing		U ₆₃ undisturbed sample 63mm diameter	
RR roller/tricone				penetration		D disturbed sample	
W washbore				1 2 3 4		N standard penetration test (SPT)	
CT cable tool				no resistance ranging to refusal		N* SPT - sample recovered	
HA hand auger				water		Nc SPT with solid cone	
DT diatube				10/1/98 water level on date shown		V vane shear (kPa)	
B blank bit				water inflow		P pressuremeter	
V V bit				water outflow		Bs bulk sample	
T TC bit						E environmental sample	
*bit shown by suffix e.g. ADT						R refusal	
						classification symbols and soil description based on unified classification system	
						moisture	
						D dry	
						M moist	
						W wet	
						Wp plastic limit	
						WL liquid limit	
						consistency/density index	
						VS very soft	
						S soft	
						F firm	
						St stiff	
						VSt very stiff	
						H hard	
						Fb friable	
						VL very loose	
						L loose	
						MD medium dense	
						D dense	
						VD very dense	



Engineering Log - Borehole

Client: **Sydney Harbour Foreshore Authority**

Principal:

Project: **Sydney International Convention & Entertainment Centre**

Borehole Location: **Harbour Street, Haymarket, NSW**

Borehole No. **BH17**

Sheet 2 of 4

Project No: **GEOTLCOV24303AA**

Date started: **16.6.2011**

Date completed: **16.6.2011**

Logged by: **LJG**

Checked by: **SS**

drill model and mounting: Edson 3000 Truck		Easting:		slope: -90°		R.L. Surface: 3.2					
hole diameter: 100 mm		Northing		bearing: N/A		datum: mAHD					
drilling information				material substance							
method	penetration 1 2 3	support water	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa 100 200 300 400	structure and additional observations
ADT		C		-5		CH	CLAY: High plasticity, pale grey, red brown mottled, trace of sand. (continued) 8.10m - With some coarse sand.	W	St-VSt		
			SPT 4,12,10 N*=22	9		SC	Clayey SAND: Coarse grained, pale grey, grey.		MD	*	RESIDUAL SOIL
				-6		CH	Sandy CLAY: High plasticity clay, grey, pale grey, coarse sand.		St-VSt		
			SPT 4,16 N*=R	10			SANDSTONE: Extremely weathered, coarse grained, pale grey, remoulds to a sandy clay. 10.30m - Highly weathered.			*	WEATHERED BEDROCK
				-7							
				11			Borehole BH17 continued as cored hole				
				-8							
				12							
				-9							
				13							
				-10							
				14							
				-11							
				15							
				-12							
				16							
method			support		notes, samples, tests			classification symbols and soil description		consistency/density index	
AS auger screwing*			M mud N nil		U ₅₀ undisturbed sample 50mm diameter			based on unified classification system		VS very soft	
AD auger drilling*			C casing		U ₆₃ undisturbed sample 63mm diameter					S soft	
RR roller/tricone					D disturbed sample					F firm	
W washbore					N standard penetration test (SPT)					St stiff	
CT cable tool					N* SPT - sample recovered					VSt very stiff	
HA hand auger					Nc SPT with solid cone					H hard	
DT diatube					V vane shear (kPa)					Fb friable	
B blank bit					P pressuremeter					VL very loose	
V V bit					Bs bulk sample					L loose	
T TC bit					E environmental sample					MD medium dense	
*bit shown by suffix e.g. ADT					R refusal					D dense	
										VD very dense	

Form GEO 5.3 Issue 3 Rev.2

BOREHOLE GEOTLCOV24303AA_REV2.GPJ COFFEY.GDT 4.8.11

SCORED BOREHOLE GEOTLCOV24303AA_REV2.GPJ COFFEY.GDT 4.8.11

Coffey & Partners Pty. Ltd.

engineering log borehole



borehole no.:

HY 45

sheet 1 of 3

CO-ORDINATES 8657.7 E, 49763.3 N

office and job no: S7769/1

Client: GUTTERIDGE HASKINS & DAVEY PTY. LTD.

hole commenced: 25/3/86

project: DARLING HARBOUR LIGHT MONORAIL - PART A

hole completed: 25/3/86

borehole location: HAY STREET CH. 1222m approx.

supervised by: M.A.B.

checked by: P.K.W.

drill model and mounting: MOBILE TRUCK

slope: 90 deg.

R.L. surface: 3.14 m

hole diameter: 100 mm

bearing: - deg.

datum: A.H.D.

method	penetration	support	water	notes samples, tests, etc.	depth R.L. metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics colour, secondary and minor components	moisture condition	consistency/ density index	hand penetro- meter kPa	structure and additional observations
A D V	123											
					0		SP	SAND, ranging from coarse to medium grained, black	M	S		FILL
					1							
					2		SC	CLAYEY SAND, fine to medium grained, dark brown, low to medium plasticity clay (≈50-40%)	M	L		ALLUVIAL
					3		CL	SANDY CLAY, low plasticity grading to CLAY, dark grey.	M	F		
					4		CL	CLAY, medium plasticity, light brown & light grey.	M	St		
					5		SP	SAND, medium grained, brown				
					6		CH	CLAY, high plasticity, light brown & light grey Red streaks occurring at 6m - predominant at 6.4m.	M	St		
					7							
					8		SC	CLAYEY SAND, medium-fine grained, light grey.	W	F		Residual

method

AS auger screwing*
AD auger drilling*
R roller/tricone
W washbore
CT cable tool
*bit shown by suffix:
B blank bit
V "V" bit
T TC bit
e.g. ADT

support

C casing
M mud
penetration 1 2 3

no resistance
ranging to
refusal

water

10 Jan 78 water level on date shown
water outflow
water inflow

notes

U50 undisturbed sample 50 mm diameter
D disturbed sample
N standard penetration test: figure = result
N* SPT + sample
Nc cone penetrometer

classification symbols

and soil description
based on unified
classification system

moisture

D dry
M moist
W wet

consistency/density index

VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable
VL very loose
L loose
MD medium dense
D dense
VD very dense

Coffey & Partners Pty. Ltd.



borehole no.:

HY 45

sheet 2 of 3

engineering log borehole

CO-ORDINATES 8657.7 E, 49763.3 N

office and job no: S7769/1

Client: GUTTERIDGE HASKINS & DAVEY PTY. LTD.

project: DARLING HARBOUR LIGHT MONORAIL - PART A

borehole location: HAY STREET. CH. 1222m approx.

hole commenced: 25/3/86

hole completed: 25/3/86

supervised by: M.A.B.

checked by: P.K.W.

drill model and mounting: MOBILE TRUCK

slope: 90 deg.

R.L. surface: 3.14 m

hole diameter: 100 mm

bearing: - deg.

datum: A.H.D.

method	penetration	support	water	notes	depth	graphic log	classification	material	moisture	consistency/density index	hand penetrometer	structure and additional observations
123				samples, tests, etc.	metres		symbol	soil type: plasticity or particle characteristics colour, secondary and minor components	condition		kPa	
AD					8		SL	Clayey Sand, as above				Residual
V					9			Coring commenced @ 8.4m Continued on sheet 3 of 3				Near V-Bit refusal
					10							
					11							
					12							
					13							
					14							
					15							

method AS auger screwing* AD auger drilling* R roller/tricone W washbore CT cable tool *bit shown by suffix: B blank bit V "V" bit T TC bit e.g. ADT	support C casing M mud penetration 1 2 3 no resistance ranging to refusal water 10 Jan 78 water level on date shown water outflow water inflow	notes samples and tests U50 undisturbed sample 50 mm diameter D disturbed sample N standard penetration test: figure = result N* SPT + sample Nc cone penetrometer	classification symbols and soil description based on unified classification system moisture D dry M moist W wet	consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense
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Coffey & Partners Pty. Ltd.
Incorporated in Queensland.



borehole no:

HY 45

sheet 3 of 3

engineering log — cored borehole

CO-ORD 8657.7E, 49763.3 N.

office and job no: S7769/1

client: GUTTERIDGE HASKINS & DAVEY PTY. LTD.
principal:
project: DARLING HARBOUR LIGHT MONORAIL - PART A
borehole location: HAY STREET - CH. 1223m approx.

hole commenced: 25/3/86
hole completed: 25/3/86
supervised by: M.A.B.
log checked by: P.K.W.

drill model and mounting: MOBILE TRUCK slope: 90 deg. R.L. surface: m
barrel type and length: fluid WATER bearing: - deg. datum: A.H.D.

drilling information				rock substance				rock mass defects			
method	case-lift	water	*CLASS	depth metres	graphic log core loss	substance description rock type: grain characteristics colour, structure, minor components	weathering	Est. Strength MPa	Is(50) MPa	defect spacing mm	defect description thickness, type, inclination planarity, roughness, coating particular general
NMLC				8		See non cored borehole log. Coring commenced at 8.4m.					
				9		CORE LOSS 0.6m.					
			SST III/III	10		SANDSTONE, medium to coarse grained, brown with red staining, massive to very poorly developed bedding at 5 to 10°.	MW -HW	D=0.17 A=0.21			Clayey Sand 15mm
				11		As above, becoming light grey to brown with red staining.	MW	D=0.47 A=0.93			Sugary sandstone 30mm parting with clay coating.
			SST V	12		CORE LOSS 0.38m					
				13		SANDSTONE, as above.	SW	D=0.75 A=0.7			Joint 70°, planar, rough, clean.
				14		SANDSTONE, fine to medium grained, light grey, massive to poorly developed bedding at 20°, very thin, black lamination.	EW	D=0.33 A=0.28			Sandy clay pocket, 20mm.
			SST II	15		As Above, massive.	SW Fr	D=1.8 A=3.1			Sugary Sandstone, 20mm.
				16		HY 45 terminated at 13.88m.					Sandy clay, 40mm, slightly carbonaceous.
				17							Completely decomposed to sand and clayey sand, 160mm.
				18							Joint 85-90°, planar, rough & irregular, clean.

KEY
method
AS auger screwing
AD auger drilling
R roller/tricone
W washbore
NMLC NMLC core drilling
NQ,HQ Wireline core drilling
* REFER TO TEXT

case-lift
casing used
barrel withdrawn
10 Oct. 63 water level date shown
water inflow
partial drilling water loss
complete drilling water loss

pressure test
(350) maximum effective pressure in test (kPa)
graphic log/core loss
core recovered (hatching indicates material)
no core recovered

weathering
Fr - fresh
SW - slightly weathered
MW - moderately weathered
HW - highly weathered
EW - extremely weathered

strength
EL - extremely low
VL - very low
L - low
M - medium
H - high
VH - very high
EH - extremely high

Engineering Log - Borehole

Client: **Infrastructure NSW**

Principal:

Project: **SICEEP**Borehole Location: **See Figure 1**Borehole No. **NBH27**

Sheet 1 of 1

Project No: **GEOTLCOV24303AC**Date started: **27.4.2012**Date completed: **27.4.2012**Logged by: **ACM**Checked by: **DS**

drill model and mounting: XP60 Truck		Easting:		slope: -90°		R.L. Surface: 2.7	
hole diameter: 100 mm		Northing		bearing: N/A		datum: AHD	
drilling information				material substance			
method	penetration 1 2 3	support water	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.
ADT			E	1			ASPHALT: (0.15m)
			E	2			FILL: Gravelly SAND: Fine grained, dark brown, mottled dark grey, fine to medium grained, subangular to angular gravel
				3			CONCRETE: (0.4m)
			SPT 2,2,4 N*=6	1		CL	CLAY: Medium plasticity, pale brown, mottled orange-brown, red-brown
				2			
			SPT 2,1,2 N*=3	3		SP	SAND: Coarse grained, dark grey, mottled black, with some fine grained, subangular gravel
				4		SC	Clayey SAND: Fine to medium grained, dark grey, mottled black, with some organics
			SPT 3,3,3 N*=6	5		CH	CLAY: Medium to high plasticity, pale brown, mottled dark grey
				6			Borehole NBH27 terminated at 5m
				7			
				8			
method				support		notes, samples, tests	
AS auger screwing*				M mud N nil		U ₅₀ undisturbed sample 50mm diameter	
AD auger drilling*				C casing		U ₆₃ undisturbed sample 63mm diameter	
RR roller/tricone				penetration 1 2 3 4		D disturbed sample	
W washbore				no resistance ranging to refusal		N standard penetration test (SPT)	
CT cable tool						N* SPT - sample recovered	
HA hand auger						Nc SPT with solid cone	
DT diatube						V vane shear (kPa)	
B blank bit						P pressuremeter	
V V bit				10/1/98 water level on date shown		Bs bulk sample	
T TC bit						E environmental sample	
*bit shown by suffix e.g. ADT						R refusal	
				water		classification symbols and soil description based on unified classification system	
				10/1/98 water level on date shown		moisture	
				water inflow		D dry	
				water outflow		M moist	
						W wet	
						Wp plastic limit	
						WL liquid limit	
						consistency/density index	
						VS very soft	
						S soft	
						F firm	
						St stiff	
						VSt very stiff	
						H hard	
						Fb friable	
						VL very loose	
						L loose	
						MD medium dense	
						D dense	
						VD very dense	

