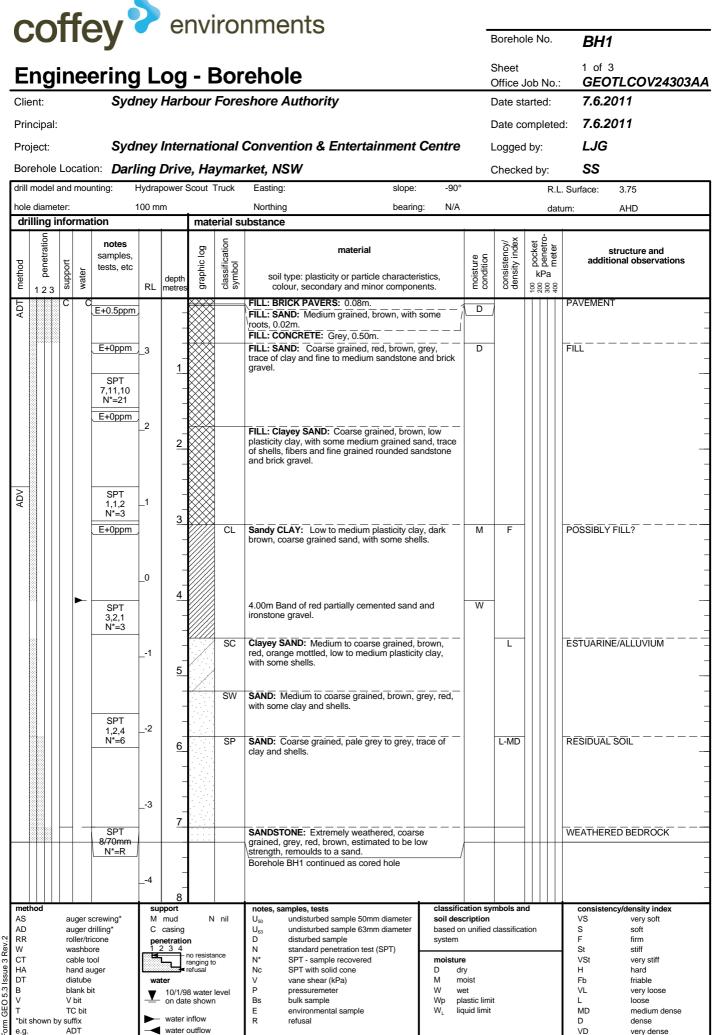
Site Specific Remedial Action Plan Haymarket, Sydney NSW

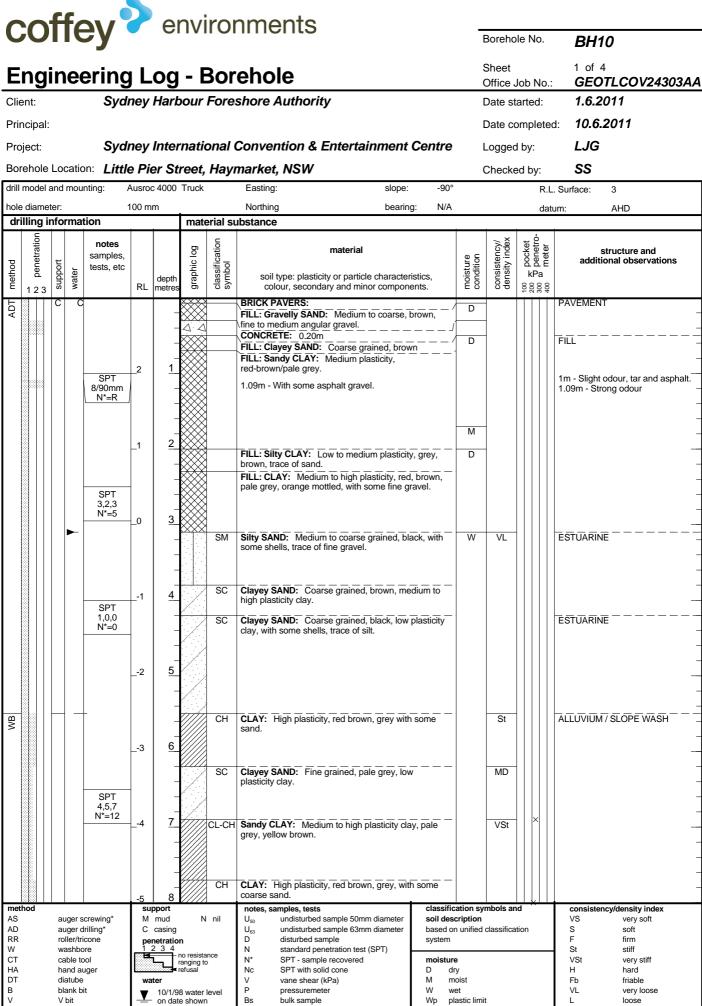
# Appendix C Borehole Logs

Site Specific Remedial Action Plan Haymarket, Sydney NSW

Coffey Environments ENAURHOD04498AA-R04 7 June 2013



Rev.2



environmental sample

refusal

Е

R

water inflow

water outflow

Ŵ

liquid limit

MD

VD

D

medium dense

dense

verv dense

30REHOLE GEOTLCOV24303AA.GPJ COFFEY.GDT 19.8.11

GEO 5.3 Issue 3 Rev.2

Т

e.q.

TC bit

ADT

\*bit shown by suffix



Client:

### Sydney Harbour Foreshore Authority

Principal:

Project:

Sydney International Convention & Entertainment Centre

	nodei	and	mou	nting:	Ausro	c 4000	I FUCK		Easting: slo	pe: -90°				R.L.	Surface: 3
	diame				100 m	m			Northing be	aring: N/A				datu	ım: AHD
dri	lling i	nfo	rma	tion			mate	erial su	Ibstance						
Illeriloa	5 penetration	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle chara colour, secondary and minor com	cteristics, ponents.	moisture condition	consistency/ density index	100 A pocket	a	structure and additional observations
				SPT 6,7,9 N*=16	6	- - - - 9		СН	CLAY: High plasticity, red brown, grey, coarse sand. (continued)		W	VSt St/VSt	××		
				SPT 5,5,7 N*=12	_	-		CH	CLAY: High plasticity, red, brown, dark orange mottled, trace of ironstone grave sand. Clayey SAND: Coarse grained, grey, k	l and fine		MD	×		RESIDUAL SOIL
					7	1 <u>0</u>   _   _			medium clay.						
		-			-8	11	/		Borehole BH10 continued as cored hole						
					9	- - 1 <u>2</u>									
					10	_ _ _ _ 13									
					10	-									
					11	1 <u>4</u> - -									
					12	1 <u>5</u>   1 <u>5</u>   _									
eth S D R / T A T	nod	ai rc w ca hi di bl		ore ool uger	M C pe 1	ter 10/1/9		level	notes, samples, tests           U <sub>50</sub> undisturbed sample 50mm diame           U <sub>63</sub> undisturbed sample 63mm diame           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	er soil des based o system D d M m W w	cation sys scription on unified re Iny noist vet vet vet islastic limi	classifica			consistency/density index           VS         very soft           S         soft           F         firm           St         stiff           VSt         very stiff           H         hard           Fb         friable           VL         very loose           L         loose

Borehole No.

Office Job No.:

Date completed:

Date started:

Logged by:

Sheet

**BH10** 

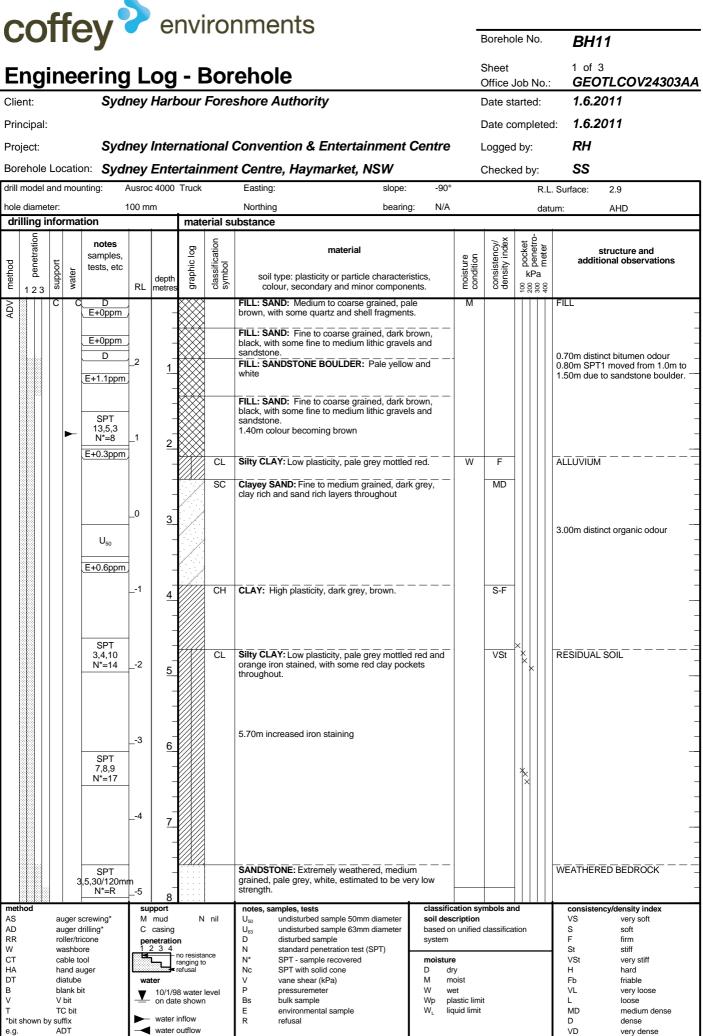
2 of 4

LJG

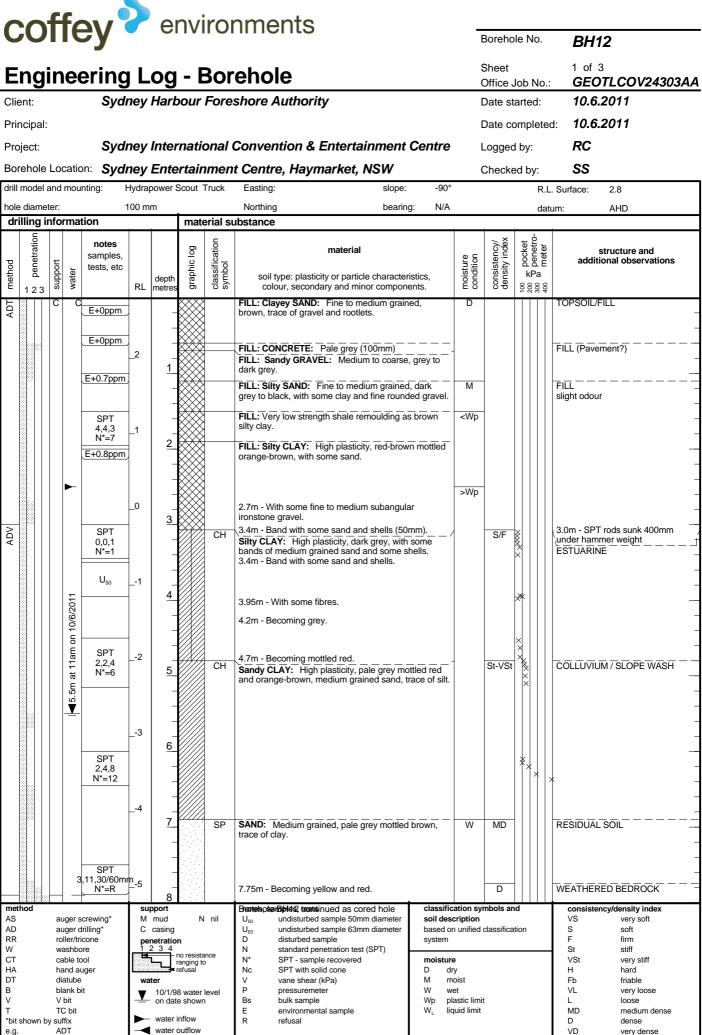
1.6.2011

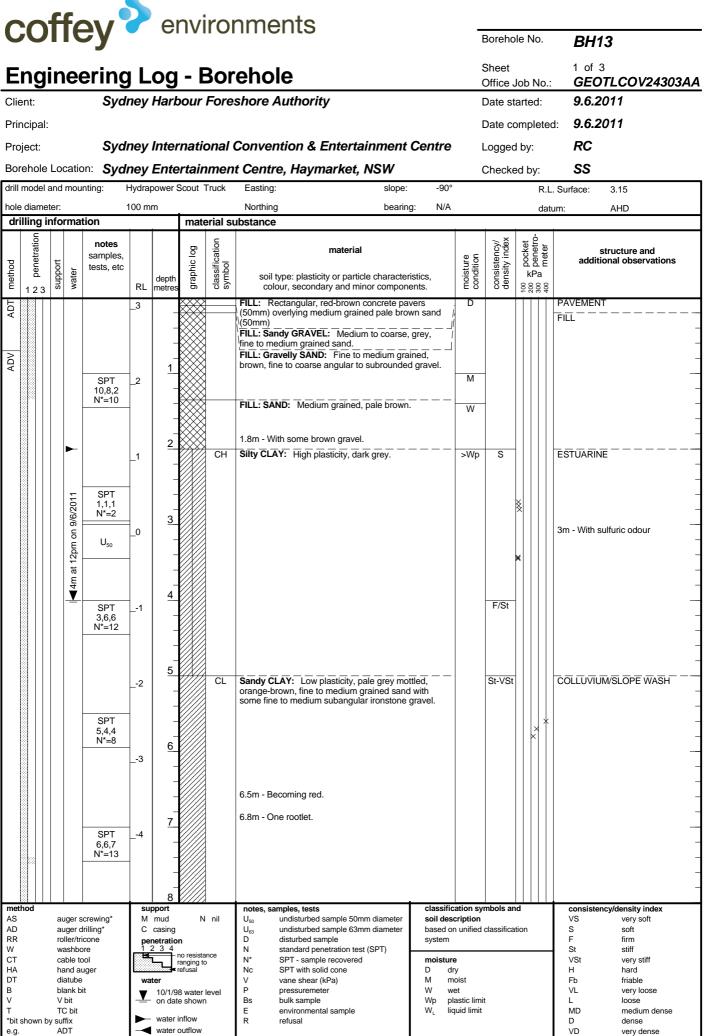
10.6.2011

GEOTLCOV24303AA

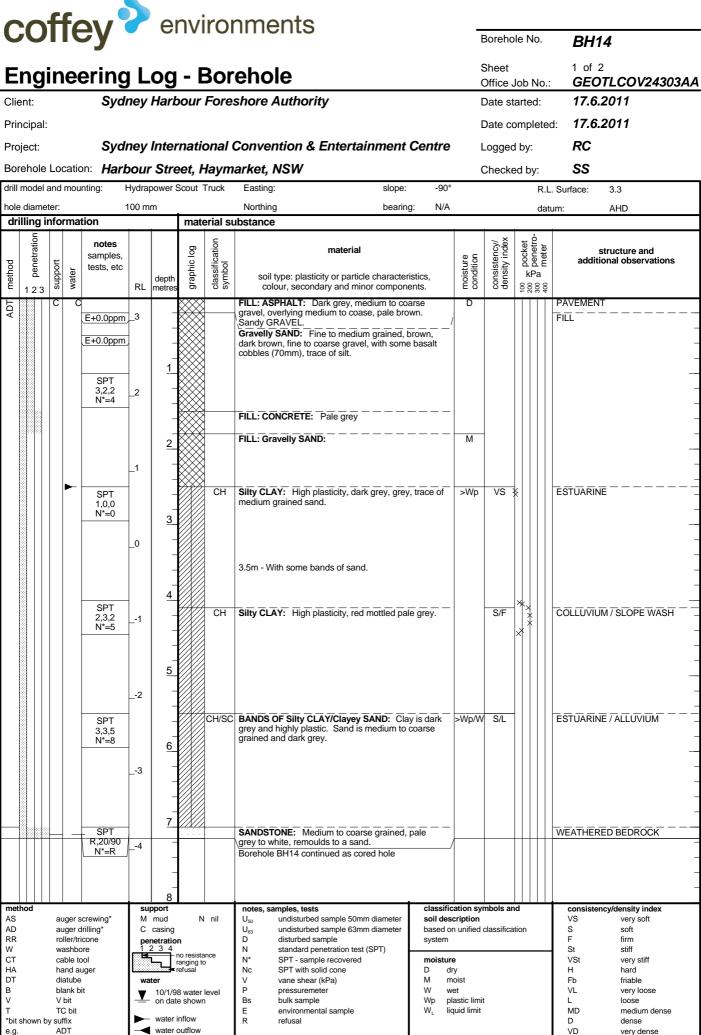


С	;C	<b>)</b> f											Boreho	ole No	).	BH11		
Е	nc	iir	ne	erino	зL	.oa	- E	Bor	ehole				Sheet	lah N		2 of 3	LCOV2430	12 A A
Clie		<u>,</u>			-				shore Authori	417			Office . Date st			1.6.201		JAA
				Syu	пеу	i iai L	Jour	1010	Shore Authori	<i>ly</i>								
Pri	ncipa	1:							_		_	I	Date co	omple	eted:	1.6.201	11	
Pro	ject:			Syd	ney	Inter	rnati	onal	Convention &	Entertainment	Centre	l	_oggeo	d by:		RH		
Boi	ehol	e Lo	catio	on: <b>Syd</b>	ney	Ente	ertair	nmen	t Centre, Hayı	narket, NSW		(	Checke	ed by	:	SS		
drill	mode	l and	l mou	nting:	Ausro	c 4000	Truck		Easting:	slope:	-90°				R.L. Sı	urface: 2	2.9	
	diam				100 m	m	<b>i</b> .		Northing	bearin	g: N/A				datum:		AHD	
ar	illing	inic	ma		1	1	mat		ubstance				. ×	6				
_	penetration			notes samples,			<u>log</u>	classification symbol		material		e C	consistency/ density index	pocket penetro-	ieter		ucture and al observations	-
method	bene	support	water	tests, etc		depth	graphic log	assifie	soil type: plasti	city or particle character	ristics,	moisture condition	nsist	kPa	a	addition		5
Ĕ	12	3 3	Š		RL	metres	g	sy cla		dary and minor compon		ĔS	ဗဗ	200	400			
	0000000					-			Borehole BH11 con	inued as cored hole								
						-												-
																		_
					6	9												
						-												-
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					-7	_												_
					- ·	10												
																		_
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					8	_												_
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						_												-
					9	12												-
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																		-
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						_												-
						-												_
					-11													_
						1 <u>4</u>												
						-												-
																		_
					12													_
						1 <u>5</u>												
																		_
						_												_
					13	16												-
met AS	hod	~		crewing*		pport mud	<u>،</u>	l nil	notes, samples, tests	s I sample 50mm diameter	classific soil deso	-	mbols ar	nd		consistency VS	/density index very soft	
AS AD RR		а	uger o	frilling*	С	casing		• 111	U <sub>63</sub> undisturbed	d sample 63mm diameter	based or	-	classifica	ition		vs S F	soft	
w		v	oller/tr /ashbo	ore	1 1		no resista		N standard pe	enetration test (SPT)	system				-	St	firm stiff	
CT HA		h	able to and a	uger		Ŀ¦	ranging t refusal		Nc SPT with se		D dr	у				VSt H	very stiff hard	
DT B V		b	liatube Iank b / bit		wa		8 water		V vane shear P pressureme Bs bulk sample	eter	W we					Fb VL	friable very loose	
Т	oberri	Т	C bit			- on dat - water i	e showi inflow	1	Bs bulk sample E environmer			astic limi uid limit	·			L MD	loose medium dense	
*bit	shown		xittix TD			water			R refusal							D	dense verv dense	





coffey <pre>env</pre>	vironments	Borehole No.	BH13
Engineering Log -	Borehole	Sheet Office Job No.:	2 of 3 GEOTLCOV24303AA
	ur Foreshore Authority	Date started:	9.6.2011
	a roreshore Authority		9.6.2011
Principal:	tional Convertion & Entertainment Contro	Date completed:	
	ational Convention & Entertainment Centre	Logged by:	RC
	ainment Centre, Haymarket, NSW	Checked by:	SS
drill model and mounting: Hydrapower Scou hole diameter: 100 mm	ut Truck Easting: slope: -90° Northing bearing: N/A	R.L. Su datum:	rface: 3.15 AHD
	naterial substance	datum.	АПО
uction to the second se	b b b b b b b b b b b b b b b b b b b	condition consistency/ density index 200 Å pocket 300 å meter	structure and additional observations
AGY SPT 4,5,3 N*=8 9 -6 -6 -6 -	CL       Sandy CLAY: Low plasticity, pale grey mottled, orange-brown, fine to medium grained sand with some fine to medium subangular ironstone gravel. (continued)       >W         SP       SAND: Medium to coarse grained, dark grey to grey, with some high plasticity clay.       W	/ L-MD	
SPT     -7       R,30/140,R     -7       N*=R     -       11     -       -8     -       -8     -       -1     -       12     -9       -9     -       -9     -       -9     -       -12     -	Borehole BH13 continued as cored hole	SP	T hammer bouncing/ 
			 - - - - - - - - - - - - - - - - - -
method         support           AS         auger screwing*         M mud           AD         auger drilling*         C casing           RR         roller/tricone         penetration           W         washbore         1 2 3 4	N nil     U <sub>50</sub> undisturbed sample 50mm diameter U <sub>63</sub> soil description based on unifi system       D     disturbed sample disturbed sample     based on unifi system       Asistance ing to sai     N     standard penetration test (SPT)       N*     SPT - sample recovered     moisture       V     vane shear (kPa)     M       Ater level nown     P     pressuremeter       B     bulk sample     Wp plastic I       W     R     refusal	on ied classification	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





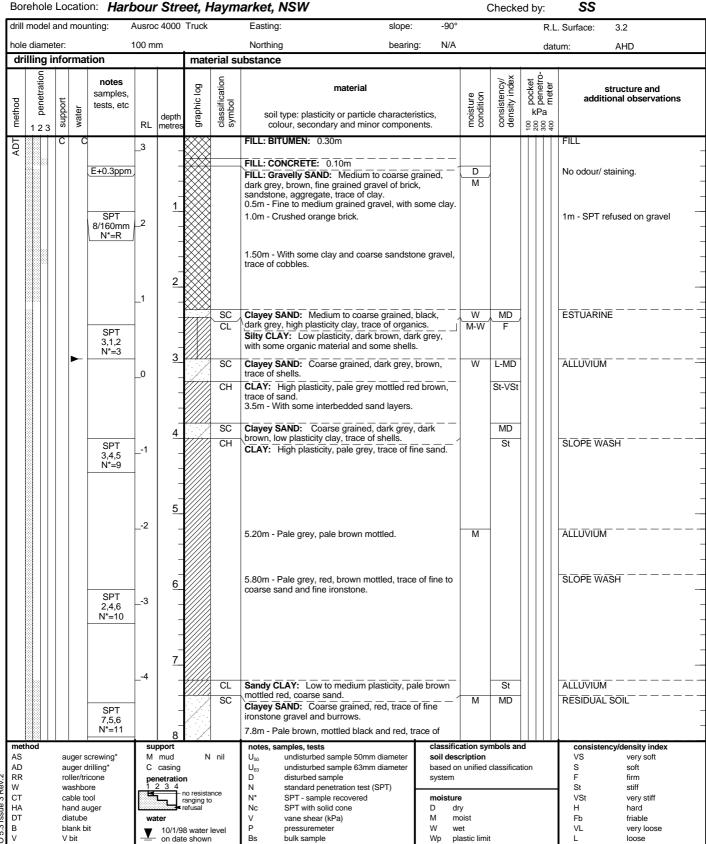
### Client

### Sydney Harbour Foreshore Authority

#### Principal:

Project:

Sydney International Convention & Entertainment Centre



Wp

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liquid limit

Borehole No.

Office Job No .:

Date completed:

Date started:

Logged by:

Sheet

**BH15** 

1 of 3

LJG

21.6.2011

21.6.2011

GEOTLCOV24303AA

loose

dense

verv dense

medium dense

MD

VD

D

30REHOLE GEOTLCOV24303AA.GPJ COFFEY.GDT 19.8.11

Rev.2 5.3 V 0 E O Т \*bit shown by suffix

e.q.

V bit

ADT

TC bit

Bs

Е

R

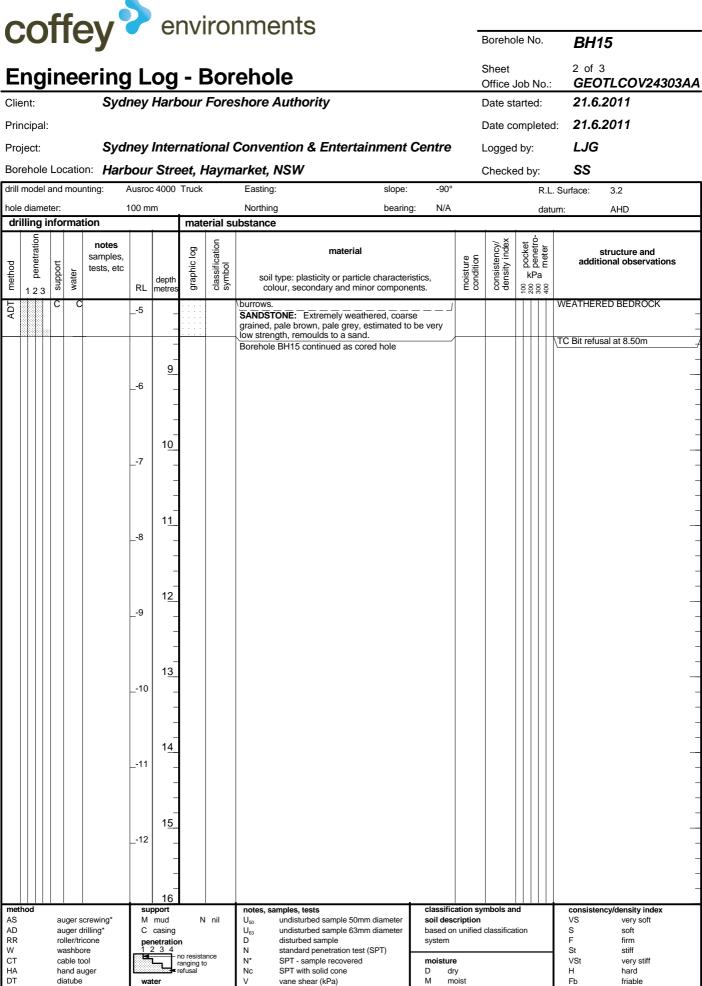
environmental sample

refusal

on date shown

water inflow

water outflow



Rev.2 5.3 B V 0 E O Т \*bit shown by suffix

e.q.

blank bit

V bit

TC bit

ADT

10/1/98 water leve

on date shown

water inflow

water outflow

Р

Bs

Е

R

pressuremeter

environmental sample

bulk sample

refusal

W wet

Wp

Ŵ

plastic limit

liquid limit

VL

MD

VD

L

D

very loose

very dense

medium dense

loose

dense



21.6.2011

LJG

SS

Date completed:

Logged by:

Checked by:

### Principal: Project:

#### Sydney International Convention & Entertainment Centre

Borehole Location: Harbour Street, Haymarket, NSW

drill	model	and	mou	nting: I	Iydra	power \$	Scout T	ruck	Easting:	slope:	-75°	,		R.	L. Surface: 3.30
	e diame				100 m	m			Northing	bearing	j: 177	.5°		da	atum: AHD
dri	illing i	info	rma	tion			mate	erial su	ubstance						
method	5 penetration	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	soil type: plasticity	material or particle characteri y and minor compone		moisture condition	consistency/ density index	100 × pocket 200 × penetro- 300 meter	
WB AD PH		c			_3 _2				BRICK PAVERS: 0.06 FILL: Gravelly SAND: brown, fine to rounded trace of medium to coa piping, concrete, bricks FILL: SAND: Medium with some clay and fine	Fine to coarse, brow gravel with some clay rse gravel, roots, glas	/ and ss, metal	M			- FILL -
M					_0			CL/SC	Sandy CLAY/Clayey S medium to coarse grair some organic material.	AND: Low plasticity ned sand, grey, brown	clay, — — n, with				ESTUARINE
				U <sub>50</sub>	2	- 5 - - - - 6		СН	CLAY: High plasticity, sand.	red, brown, grey, trad					SLOPE WASH
					3			CH	Sandy CLAY: High pla						ALLUVIUM
AS AD RR W CT HA DT B V T	shown t	a ro k ca h di b b V T T	uger d oller/tri ashbc able to and au atube ank bi bit C bit	ore ool uger	M C <b>pe</b> 1	ter 10/1/9	n no resista ranging to refusal 8 water I e shown inflow	evel	U <sub>63</sub> undisturbed sa D disturbed samp	tration test (SPT) recovered cone Pa)	soil des based o system <b>moistur</b> D d M n W w Wp p	cation system cription in unified re ry noist vet lastic limit quid limit	classifica		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



Client:

#### Sydney Harbour Foreshore Authority

Principal:

Project:

Sydney International Convention & Entertainment Centre Borehole Location: Harbour Street, Haymarket, NSW

Boi	rehole	Lo	catio	on: Hark	oour	Stre	et, H	laym	arket, NSW			0	Checke	ed by	/:	SS	
drill	model	and	mou	nting: I	lydra	power S	Scout 1	Fruck	Easting:	slope:	-75°				R.L	Surface:	3.30
hole	e diame	eter:			100 m	m			Northing	bearing:	177.	5°			dat	um: /	AHD
dr	illing i	info	rma	tion			mate	erial su	Ibstance								
method	5 penetration	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle colour, secondary and mine	or componen	ts.	moisture condition	consistency/ density index	200 A pocket	Pa		ucture and al observations
MB		C	C		5 6 7 8 9	9 9 10 11 11 12 13		SP SC	SAND: Coarse grained, grey, br (continued) Clayey SAND: Medium to coars red, brown, high plasticity clay. SAND: Coarse grained, grey, pa clay. SANDSTONE: Extremely weath grained, pale grey to red brown, o strength. Remoulds to a sand.	e sand, pale	e of			1	8	RESIDUAL SO	
				-	10				13.45m - Highly weathered. Borehole BH16 continued as core	ed hole							-
AS AD RR W CT HA DT B V T	shown b	au ro va ca di bl V T T oy su	uger d Iler/tri ashbc able to and au atube ank bi bit C bit	ore ool uger	M C	ter 10/1/98	n no resista anging to refusal 8 water l e shown nflow	evel	notes, samples, tests         Uso       undisturbed sample 50mm         Uso       undisturbed sample 63mm         D       disturbed sample         N       standard penetration test (         N*       SPT - sample recovered         Nc       SPT with solid cone         V       vane shear (kPa)         P       pressuremeter         Bs       bulk sample         E       environmental sample         R       refusal	n diameter	soil des based or system <b>moisture</b> D dr M m W w Wp pl	e ry voist	classifica			consistency VS F St VSt H Fb VL L MD D VD	/density index very soft soft firm stiff very stiff hard friable very loose loose medium dense dense very dense

Borehole No.

Office Job No.:

Date completed:

Date started:

Logged by:

Sheet

**BH16** 

2 of 6

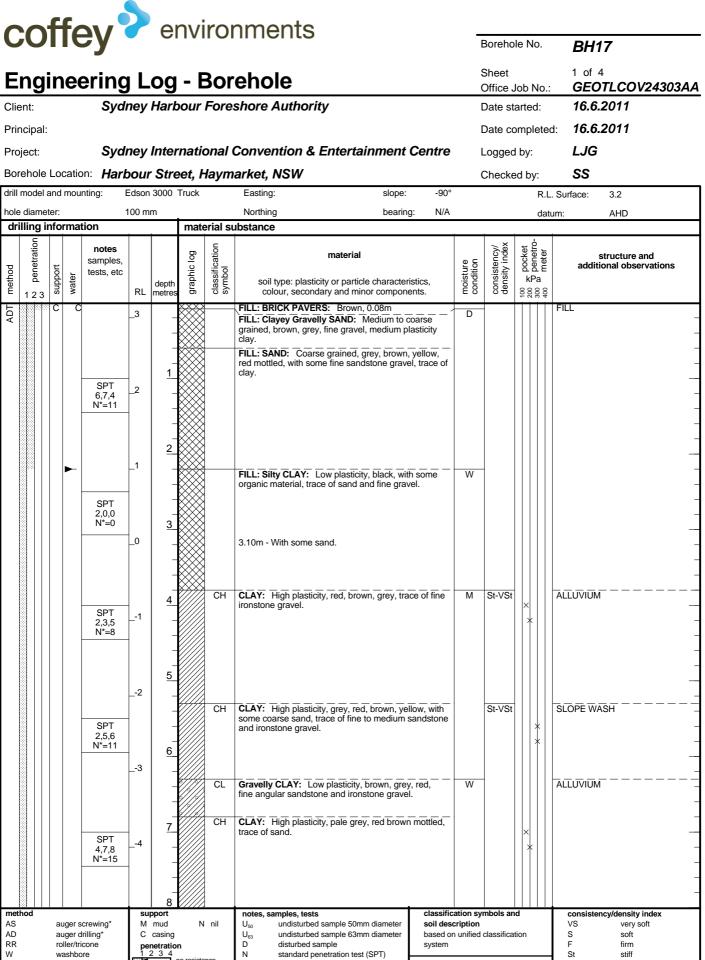
LJG

20.6.2011

21.6.2011

GEOTLCOV24303AA

BOREHOLE GEOTLCOV24303AA.GPJ COFFEY.GDT 19.8.11



Rev.2 5.3 0 E O

СТ

HA

DT

в

V

Т

e.q.

cable tool

hand auge

diatube

blank bit

V bit

TC bit

ADT

\*bit shown by suffix

ranging to

N'

Nc

v

Р

Bs

Е

R

SPT - sample recovered

SPT with solid cone

environmental sample

vane shear (kPa)

pressuremeter

bulk sample

refusal

moisture

moist

plastic limit

liquid limit

D dry

М

W wet

Wp

Ŵ

VSt

н

Fb

VL

MD

VD

D

L

very stiff

very loose

verv dense

medium dense

hard

friable

loose

dense

no re

10/1/98 water leve

on date shown

water inflow

water outflow

wato



Client:

#### Sydney Harbour Foreshore Authority

Principal:

Project:

BOREHOLE GEOTLCOV24303AA.GPJ COFFEY.GDT 19.8.11

ADT

e.g.

Sydney International Convention & Entertainment Centre

water outflow

VD

dense very dense

Irill m	nodel	and	mou	inting:	Edson	3000	Truck		Easting:	slope:	-90°				R.I	L. Surface: 3.2
ole d	diame	eter:			100 m	m			Northing	bearing:	N/A				dat	tum: AHD
drill	ing	info	rma	tion			mate	erial su	ubstance							
IIIeIII00	5 penetration	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	soil type: plasticity colour, secondary	naterial or particle characteris and minor componer	nts.	moisture condition	consistency/ density index	kF	300 b penetro- 400 meter	
		С	C		5	_		СН	CLAY: High plasticity, p trace of sand. (continue	ale grey, red brown r d)	mottled,	W	St-VSt			
				SPT 4,12,10 N*=22	6	- - 9_		SC CH	8.10m - With some coar Clayey SAND: Coarse Sandy CLAY: High pla coarse sand.	se sand. grained, pale grey, g			MD St-VSt	*	:	RESIDUAL SOIL
				SPT		- - 1 <u>0</u>								*		
				4,16 	7	-   -			SANDSTONE: Extreme grained, pale grey, remo 10.30m - Highly weathe	ely weathered, coarse ulds to a sandy clay. ed.	)					WEATHERED BEDROCK
	0000					-			Borehole BH17 continue	d as cored hole						
						1 <u>1</u> _										
					8	-										
						-	-									
						-										
						12										
					9											
						_										
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						1 <u>3</u>										
					10	-										
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						14_										
					11	-										
						-	-									
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						15										
					12	_										
						-										
						-	-									
						-	1									
etho	<u>d</u>				su	16_ pport			notes, samples, tests	i	classific	ation sv	mbols an	d		consistency/density index
S C R T A		a ro w c	uger o	loo	M C pe	mud casing netratio 2 3 4		nil	U <sub>50</sub> undisturbed san	ation test (SPT) covered	soil deso based or system moisture	t <b>ure</b> dry				VS very soft S soft F firm St stiff VSt very stiff H hard
Г		d	iatube		wa	iter			V vane shear (kPa		M m	oist				Fb friable
			lank b bit	DIL	⊥		8 water e showr		P pressuremeter Bs bulk sample		W we Wp pla	et astic limit	t			VL very loose L loose
	nown		C bit		L_	water			E environmental s R refusal	ample	W <sub>L</sub> liq	uid limit				MD medium dense

Borehole No.

Office Job No.:

Date completed:

Date started:

Logged by:

Sheet

**BH17** 

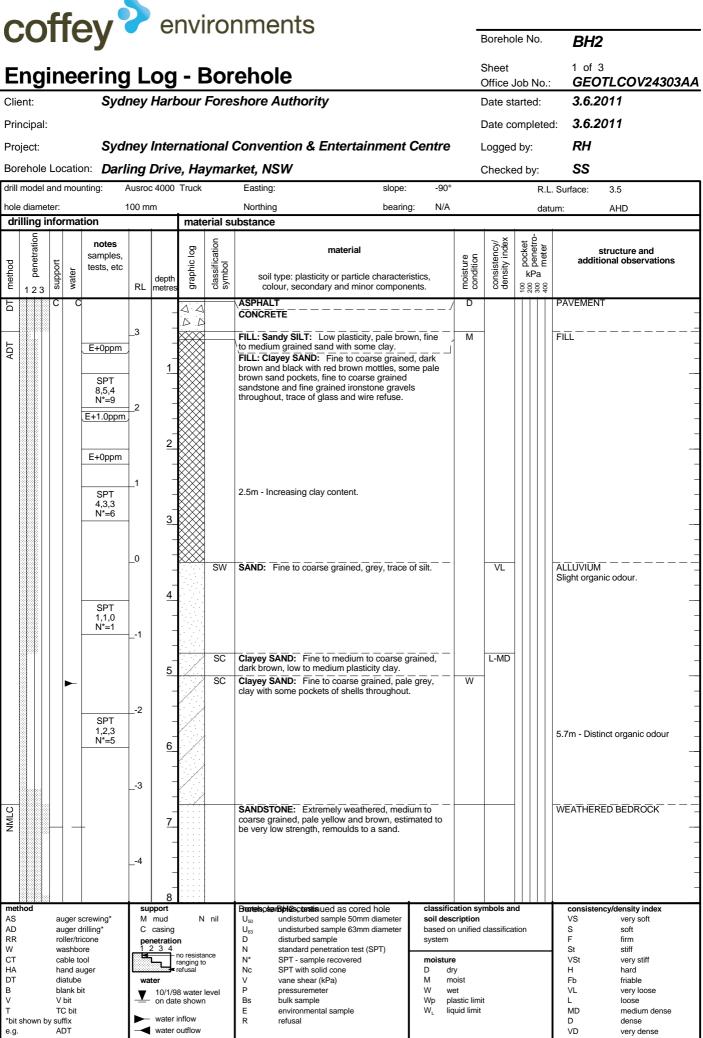
2 of 4

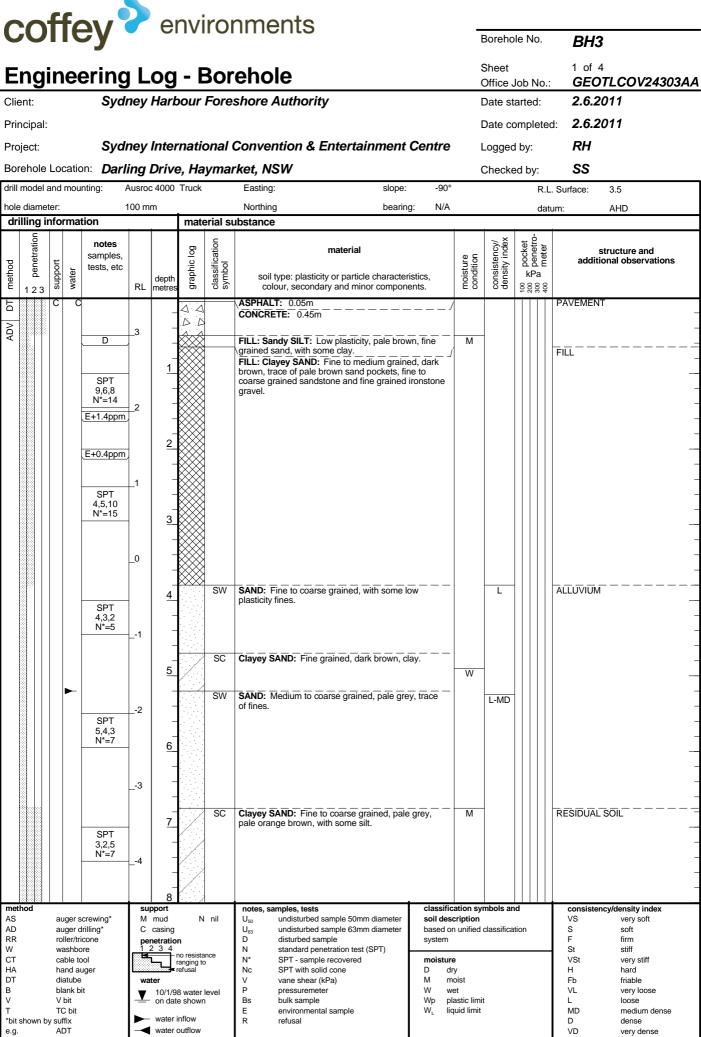
LJG

16.6.2011

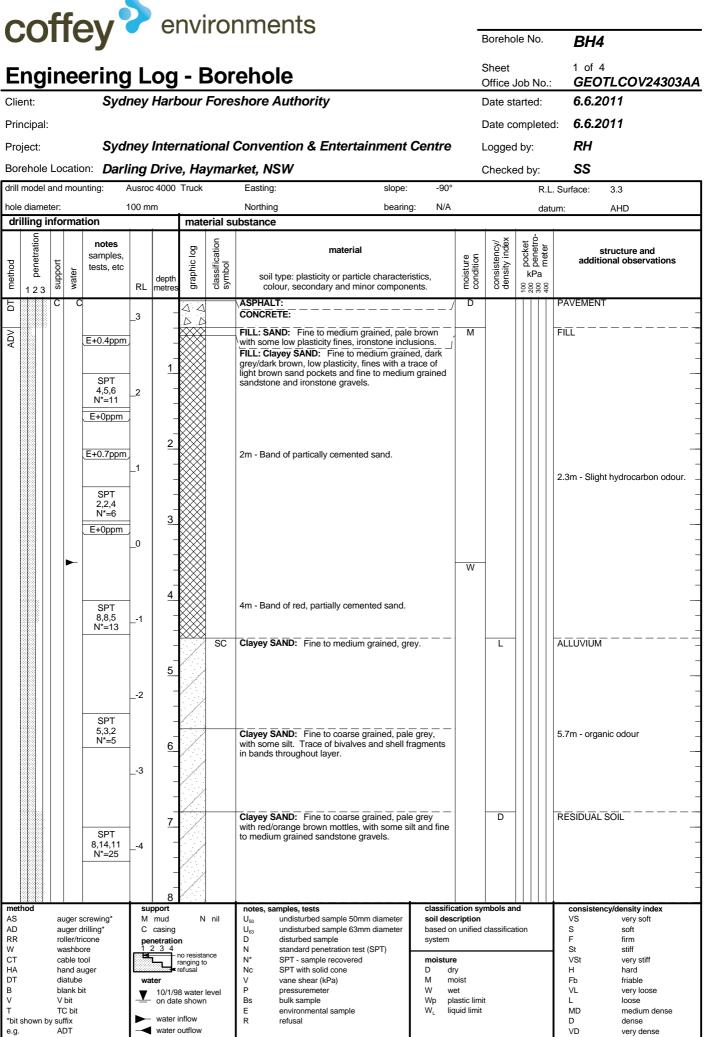
16.6.2011

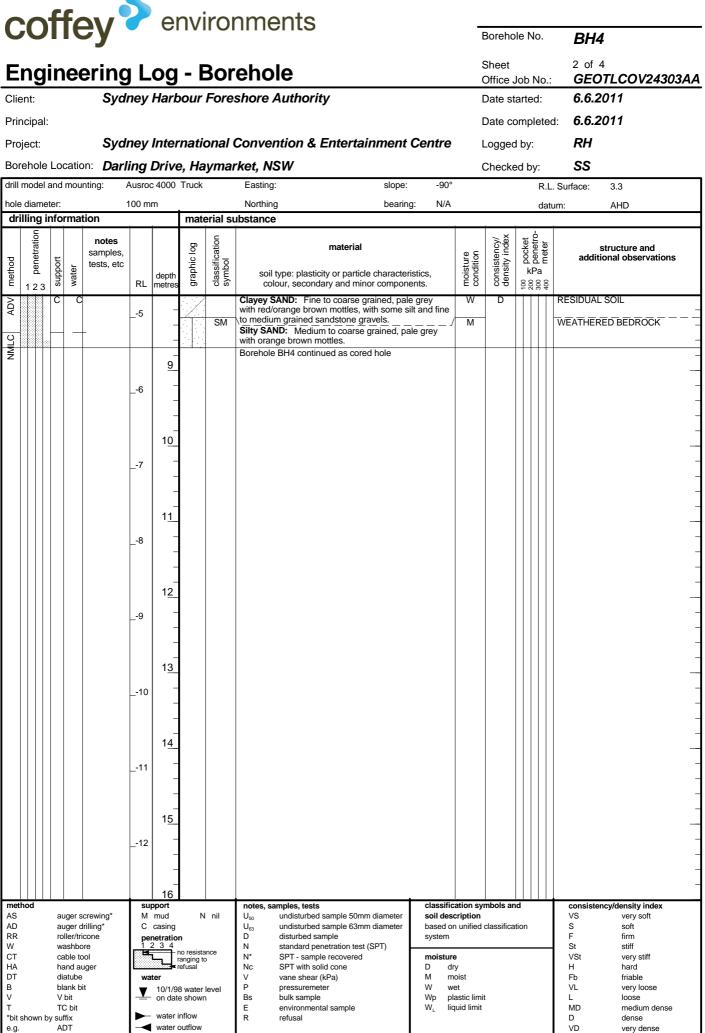
GEOTLCOV24303AA

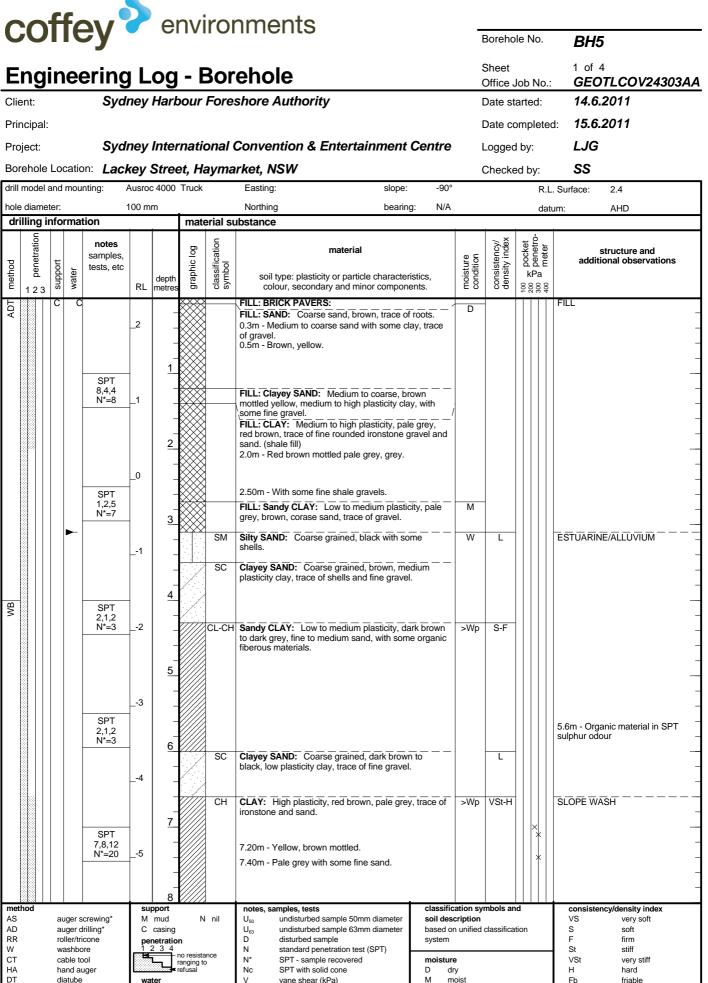




C		)	Π	IE	ЭУ		e	nv	Iro	nments			-	Boreho	le N	lo.		BH3	}	
Е	in	ai	'n	ee	erinc	ιL	.oa	- E	Bor	rehole				Sheet Office 、	lah	No		2 of 4		V24303A
-	ent:	-								shore Authori	<i>t</i> v/			Date st		-	•	2.6.2		VZ4303A
					Syu	пеу	i lai L	oui	1010	Shore Author	Ly .									
	ncip						• .			•		•		Date co	•		ea:	2.6.2	011	
	ojec				•	-					Entertainment	Centre	l	Loggeo	d by:			RH		
_						-			-	rket, NSW				Checke	ed b	y:		SS		
				moui	0		c 4000	Truck		Easting:	slope:						L. Sur	face:	3.5	
	e dia <b>'illin</b>			mat		100 m	Im	mat	erial s	Northing ubstance	bearin	g: N/A				da	tum:		AHD	
method		-	support	water	notes samples, tests, etc		depth	graphic log	classification symbol	soil type: plastic	material	ristics.	moisture condition	consistency/ density index		u penetro- meter			structure onal obse	
	12	23				RL	metres	gra			lary and minor compon				200 200	400				
ADV		1000	С	С					SC	SANDSTONE: Extre	emely to highly weather	red, fine	M	L-MD	╎╷╷		WF	ATHER		оск — —
					_	5	-			to coarse grained, pa	ale orange brown, estin	nated to be	ļ							
										Borehole BH3 contir		/								
							9_													
							-													
						6														
							10_													
						-7														
						-'	-													
						8	-													
							-													
							12													
							-													
						9														
							1 <u>3</u>													
						10	_													
							14													
						11	-													
							-													
							1 <u>5</u>													
							-													
						12	-													
me	thod					su	16_ pport			notes, samples, tests	;	classific	ation sy	 mbols an	 nd			consister	ncy/density	index
AS AD RR W CT HA DT B V			au rol wa cal ha dia bla V t	ger d ler/tri shbo ble to nd au atube ank bi pit	re ol uger	M C pe 1	mud casing netratio	n no resista ranging t refusal 8 water	o level	U <sub>80</sub> undisturbed U <sub>63</sub> undisturbed D disturbed sa N standard pe N* SPT - samp Nc SPT with sc V vane shear P pressureme Bs bulk sample	I sample 50mm diameter sample 63mm diameter ample netration test (SPT) de recovered lid cone (kPa) ter e	soil des based ou system D du M m W w Wp pl	e ry e lastic limi	unified classification				VS S F St VSt H Fb VL L	very s soft firm stiff very s hard friable very l loose	soft stiff e oose
T *bit	show	vn by	/ suff				water i			E environmen R refusal	tal sample	W <sub>∟</sub> lio	quid limit					MD D	medi dens	um dense e
e.g		1	AD			-◀	water	outflow					oist ret lastic limit quid limit					VD		dense







Р

Bs

Е

R

pressuremeter

environmental sample

bulk sample

refusal

W wet

Wp

Ŵ

plastic limit

liquid limit

VL

MD

VD

D

very loose

verv dense

medium dense

loose

dense

10/1/98 water leve

on date shown

water inflow

water outflow

30REHOLE GEOTLCOV24303AA.GPJ COFFEY.GDT 19.8.11

5.3 Issue 3 Rev.2

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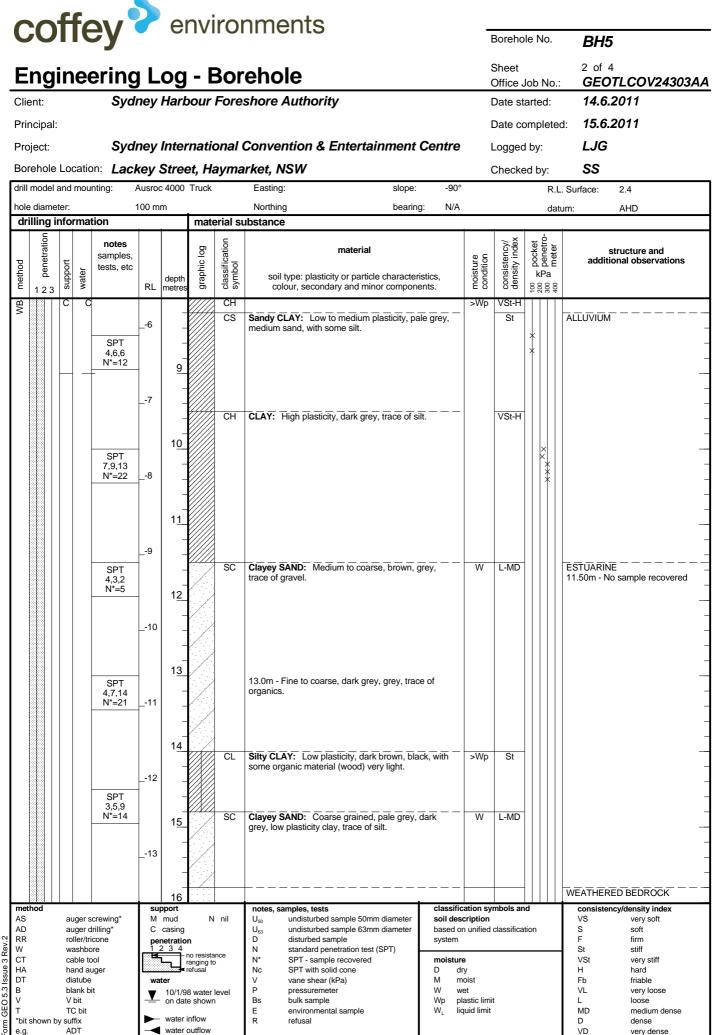
blank bit

V bit

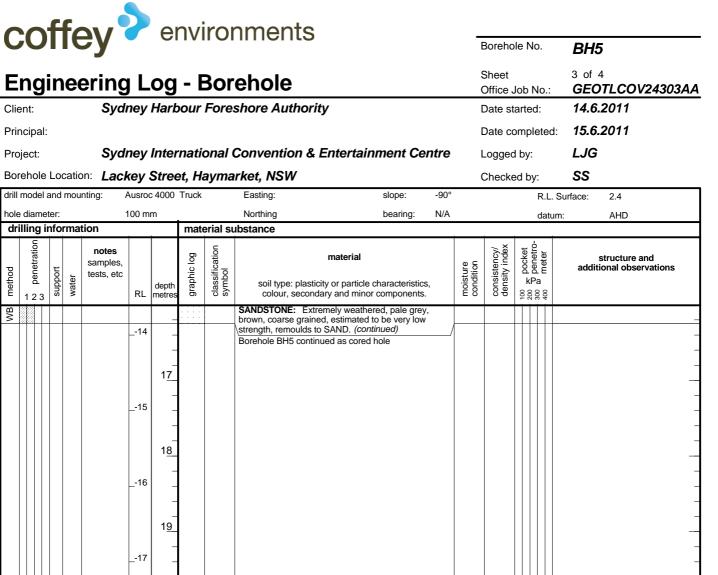
ADT

\*bit shown by suffix

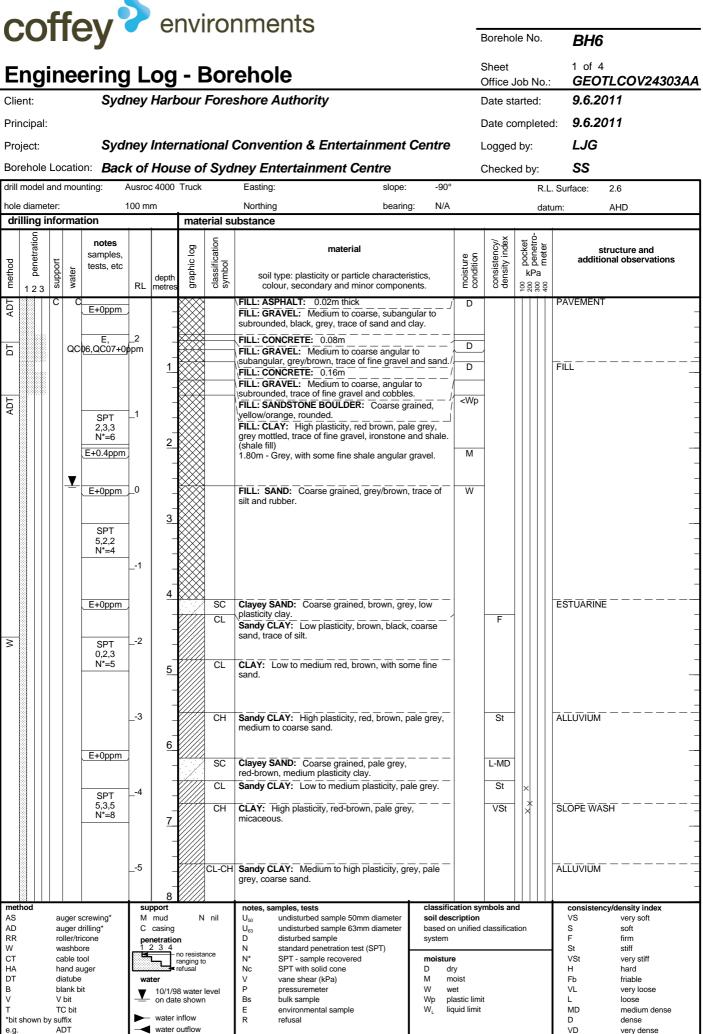
TC bit



Rev.2 5.3



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3EO 5.3 Issue 3 Rev.2 1 < 8 2 H 2 & 3 2 S	auger dri roller/trice washbore cable too hand aug diatube blank bit V bit TC bit t shown by suffix	rewing* M Iling* C one per e 1 I I I	24 mud N nil casing netration 2 3 4 no resistance refusal ter 10/1/98 water level on date shown water inflow water outflow	notes, samples, tests         U <sub>50</sub> undisturbed sample 50mm diameter         U <sub>63</sub> undisturbed sample 63mm diameter         D       disturbed sample 63mm diameter         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         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



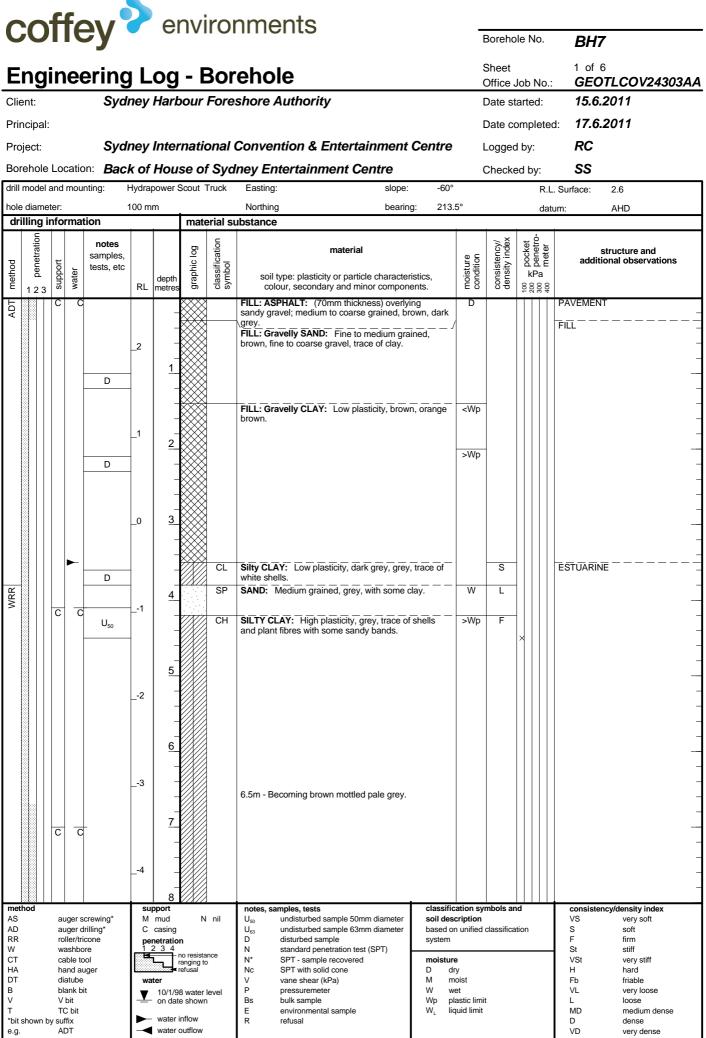


verv dense

30REHOLE GEOTLCOV24303AA.GPJ COFFEY.GDT 19.8.11

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U	J,	/		⊃y		0						E	Boreho	le N	0.	BH7	
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Prir	ncipal	l:		-	-							i	Date co	ompl	lete	d: <b>17.6.2011</b>	
Pro	ject:			Syd	dney	Inte	rnati	onal	Convention & E	Entertainment C	entre	I	Loggec	d by:		RC	
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	model			nting:	, ,	•	Scout 7	Truck	Easting:	slope:	-60°				R.L	Surface: 2.6	
_	e diame i <b>lling</b>			tion	100 m	ım	mat	erial s	Northing substance	bearing:	213.5	5°			dat	um: AHD	
	ation	$\square$		notes			D <sub>D</sub>	tion		material			cy/ dex	ket	penetro- meter	structure and	
method	penetratior	support	er	samples tests, etc			ہ ۔ graphic log	classification symbol			•	moisture condition	consistency/ density index	bod kF	net met	additional observations	\$
	123	·			RL	depth metres	graf		soll type: plasticit colour, seconda	ty or particle characteristi ary and minor component				кг 00 00 00 02			
WRR		С	С		$\square$	-		CH CH		y, red brown, orange brow	wn,	>Wp	F	$\square$			
						-			pale grey, with some f								-
					5	9					I						_
						<u> </u>					I						
			$\triangleleft$			-		SC		um to coarse grained, gre							
						-			with bands of clay.		·						-
					6	10_					I						
						-		1			I						-
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						-		· 	SANDSTONE: Medi	um to coarse grained, pa			<u> </u>			WEATHERED BEDROCK	
					11	-				ely weathered to highly							_
meth	hod			<u> </u>		16 upport			notes, samples, tests			-	mbols an	 1d		consistency/density index	
AS AD RR		au		screwing* drilling* ricone	С	mud casing	1	N nil		sample 50mm diameter sample 63mm diameter		•	classifica	ition		VS very soft S soft F firm	
W CT		Wa	ashbc able to	ore		234	- no resista	ance		netration test (SPT)	system moisture					St stiff VSt very stiff	
HA DT		ha	and au iatube	uger	wa		ranging to refusal	)	Nc SPT with solid V vane shear (k	id cone	D dr M mo					H hard Fb friable	
BV		V	lank bi bit	it	⊥		98 water ate showr		P pressuremete Bs bulk sample			lastic limit				VL very loose L loose	
T *bits e.g.	shown	by suf	C bit Iffix DT				inflow outflow		E environmenta R refusal	I sample	W <sub>L</sub> liq						

С		f	f¢	עב		e	nvi	irol	nments			_					
													Boreho	le No	).	BH7	
Ε	ng	jin	e	ering	J L	og	- E	Bor	ehole				Sheet Office 、	Job N	lo.:	3 of 6 <b>GEO</b>	, TLCOV24303AA
Clie	ent:			Syd	ney	Hark	our	Fore	shore Authorit	y		[	Date st	arted	l:	15.6.	2011
Prir	ncipa	l:										[	Date co	omple	eted:	17.6.	2011
Pro	ject:			Syd	ney	Inter	nati	onal	Convention & E	Entertainment	Centre	L	_oggeo	l by:		RC	
		e Lo	catio	-	-				ney Entertainn				Checke	-		SS	
	mode					power \$		-	Easting:	slope:	-60°			,		urface:	2.6
hole	diam	eter:			100 m	m			Northing	bearing	g: 213.5	5°			datum	1:	AHD
dri	lling _	info	rma	tion		i	mate		Ibstance				İ				
method	5 penetration	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol		material ty or particle character ry and minor compone		moisture condition	consistency/ density index	100 A pocket	a		structure and onal observations
WRR		С	С 	-		_			SANDSTONE: Media grey to white, extreme weathered. (continued	ely weathered to highly							-
						-			Borehole BH7 continu	ied as cored hole							-
					12	1 <u>7</u>											-
						-											-
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						2 <u>0</u>											
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						2 <u>1</u>											-
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					16												-
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					17	-											-
						2 <u>3</u>											
						-											-
						-											-
					18	24											-
met AS	hod		ider s	crewing*		pport mud	N	nil	notes, samples, tests U <sub>50</sub> undisturbed s	sample 50mm diameter	classifica soil desc	-	mbols an	d		consister	very soft
AD RR		a		rilling*	С	casing netratio				sample 63mm diameter	based on system	-	classifica	tion		S F	soft firm
W CT		W Ca	ashbo able to	ore			no resista ranging te		N standard pen N* SPT - sample	etration test (SPT) recovered	moisture					St VSt	stiff very stiff
HA DT		h: di	and av atube	lger	wa	<u>:::::::=</u> =	refusal		Nc SPT with soli V vane shear (k	d cone (Pa)	D dry M mo	/				H Fb	hard friable
B V		V	ank b bit	it	⊻		8 water e showr		P pressuremeter Bs bulk sample			astic limit	t			VL L	very loose loose
T *bit e.g.	shown	by su	C bit ffix DT			water i water	inflow outflow		E environmenta R refusal	ai sampie	W <sub>L</sub> liq	oist Fb friable et VL very loose					

C		0	f	fe	ЭУ		e	nvi	ro	nments			-	Boreho	le N	0.	BH8	
Е	'n	a	in	e	erinc	ιL	.oa	- E	Bor	rehole				Sheet Office 、	loh I		1 of 1 : <b>GEOTLCOV24303</b>	200
	ent	-				-				shore Authority	/			Date st			14.6.2011	
		pal:			-,	,					,			Date co				
	oje				Svd	nev	Inter	rnati	onal	Convention & E	Intertainment	Centre			•		RC	
				catic	-	-				Iney Entertainm		<b>O</b> ena e			-		SS	
							power S		-	Easting:	slope:	-90°		Checke	ea by		Surface: 2.5	
		ame			Ū	100 m				Northing	bearing						tum: AHD	
dr	-	-	nfo	rma	tion	1	i	mate	erial s	ubstance							1	
method		benetration	support	water	notes samples, tests, etc	RL	depth	graphic log	classification symbol	soil type: plasticit	material y or particle characteriny and minor compone	istics, ents.	moisture condition	consistency/ density index	100 A pocket	Pa	structure and additional observations	
ADT		23	С	С						FILL: ASPHALT: Date overlying sands grave			D		Ñ Ŧ	₩ 0 4	PAVEMENT	
Ĉ.						2				grained.		/	М					-
				_	-	_2	- - 1_			FILL: SAND: Fine to with some clay and fin FILL: ASPHALT: Da FILL: CONCRETE: F 1m - With some dark (	ne gravel rk grey Pale grey to grey	′	D					
						1				VOID:								_
						[-·												-
							-											_
				•		_0	-											_
							3			Borehole BH8 termina	ited at 3m					++	BH8 was terminated at 3m, due	e to
						1	-										obstructions.	_
							<u>4</u>											_
						2	-											_
							-											-
							5											
							-											-
						3												_
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							-											_
						5	_											_
							8											-
SDR/ TAT		E	au ro wa ca ha di bl	uger d Iler/tri ashbc able to and au atube ank b	ore ool uger	M C pe	mud casing metratio 2 3 4 ater 10/1/9	n no resista ranging to refusal 8 water	level	U <sub>63</sub> undisturbed s           D         disturbed sam           N         standard penn           N*         SPT - sample           Nc         SPT with solit           V         vane shear (k           P         pressuremete	etration test (SPT) recovered d cone (Pa)	soil dese based or system D dr M m W w	cription in unified e y oist et	ified classification		<u> </u>	consistency/density index       VS     very soft       S     soft       F     firm       St     stiff       VSt     very stiff       H     hard       Fb     friable       VL     very loose       L     loose	
/ - hit	cha	woh	т	bit C bit			- on dat - wateri	e showr inflow	I	Bs bulk sample E environmenta R refusal	I sample		astic limi juid limit	L			L loose MD medium dense D dense	
°bit e.g		wn b		ttix DT			water			R refusal						D dense VD very dense		

C	;C	f	fe	ЭУ		e	nvi	roi	nments		Ē	Boreho	le No.	BH9			
Ε	ng	jin	<b>)e</b> (	ering	L	og	- E	Bor	ehole			Sheet Office J	lob No.:	1 of 1 <b>GEOTLCOV24303AA</b>			
Clie	ent:			Sydı	ney	Harb	our	Fore	shore Authority		[	Date st	arted:	15.6.2011			
Pri	ncipa	l:									[	Date co	mplete	d: <b>15.6.2011</b>			
Pro	oject:			Sydı	ney	Inter	natio	onal	<b>Convention &amp; Entertainment</b>	Centre	L	_oggec	l by:	RC			
Bo	rehole	e Lo	catio	on: <b>Bacl</b>	k of	Hou	se of	<sup>r</sup> Svd	ney Entertainment Centre		(	Checke	ed by:	SS			
	mode					power S		-	Easting: slope:	-90°			,	. Surface: 2.75			
	e diam				00 m	m			Northing bearin	g: N/A			dat	um: AHD			
dr	illing	info	rma	tion			mate		Ibstance			ž	Å				
method	5 penetration	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle character colour, secondary and minor compon		moisture condition	consistency/ density index	100 × pocket 200 × penetro- 400 meter	structure and additional observations			
ADT			Not Observed	E+0.0ppm E+0.0ppm	2				FILL: ASPHALT: Dark grey, grey, (70mm) overlying sandy gravel, medium, brown, dai FILL: SAND: Medium to coarse grained, y with some fine to coarse sandstone gravel. 0.60m - Becoming brown, with some coarse	rk grey ellow,	D			PAVEMENT SUB BASE FILL FILL PREVIOUS PAVEMENT			
						 			gravel. FILL: ASPHALT: Grey. FILL: CONCRETE: Pale grey. Borehole BH9 terminated at 0.85m	/. 				BH9 was terminated at shallow depth due to obstructions after many attempts.			
					_1	2								-			
					_0	3								-			
					1												
					2												
					3	       6											
					4												
						 7								-  - -			
met	hod				5 su	pport			notes, samples, tests	classific	ation sy	nbols an	d	 consistency/density index			
AS AD RR W CT HA DT B V T	shown	a rc w ca h di b V T T by su	uger co oller/tri vashbc able to and au iatube lank b bit C bit	ore ool uger e	M C pe	mud casing netratio 2 3 4 ter 10/1/9	n no resista anging to refusal 8 water 8 water e shown nflow	level	Uso       undisturbed sample 50mm diameter         Uso       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	soil dese based or system D dr M m W we Wp pla	e cription n unified e cy coist	ription     VS     very soft       unified classification     S     soft       F     firm       St     stiff       VSt     very stiff       H     hard       ist     Fb       t     VL       stic limit     L					



Client:

#### Sydney Harbour Foreshore Authority

Principal:

Sydney International Convention & Entertainment Centre

Project:

Borehole Location: Sydney Entertainment Centre, Haymarket, NSW

drill model and mounting: Truck							Easting:	slope:	-90°			R	.L. Surface:	
	hole diameter: mm						Northing	bearing:				d	atum:	AHD
	informat	ion			mate		Ibstance						_	
method 5 7 L penetration	support water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle colour, secondary and mino	characteristic or components	S, io	condition	consistency/ density index	200 A pocket 300 b penetro-		structure and onal observations
		E+0.0ppm E+0.0ppm E+0.0ppm E+0.6ppm					ASPHALT Gravelly SAND: Medium to coars brown, fine to medium grained gravitation Sandy CLAY: Low plasticity, red to medium grained. Sandy CLAY: Low plasticity, dark fine to medium grained. Sandy CLAY: Medium plasticity, g grained. Borehole EB1 terminated at 3.1m	o brown, fine t brown to brow	To [				Sandstone Mild organic	
method AS AD RR W C C T B C B C V T *bit shown e.g.	auger di roller/trid washbo cable to hand au diatube blank bi V bit TC bit	cone re ol ıger	M C per 1 W wat	ter 10/1/9	n no resista anging to refusal 8 water l e shown nflow	evel	notes, samples, tests         U <sub>50</sub> undisturbed sample 50mm         Uaisturbed sample famm       D         D       disturbed sample         N       standard penetration test (         N'       SPT - sample recovered         Nc       SPT with solid cone         V       vane shear (kPa)         P       pressuremeter         Bs       bulk sample         E       environmental sample         R       refusal	diameter diameter SPT)	classificatio soil descrip based on ur system moisture D dry M moist W wet Wp plasti W <sub>L</sub> liquid	nified cla			Consister VS F St VSt H Fb VL L MD D VD	- - - - - - - - - - - - - - - - - - -

Borehole No. EB1 Sheet 1 of 1 GEOTLCOV24303AA Office Job No.: 10.6.2011 Date started: 10.6.2011 Date completed:

AN Logged by:

Checked by:



Client:

### Sydney Harbour Foreshore Authority

Principal:

Sydney International Convention & Entertainment Centre

Project:

Borehole Location: Sydney Entertainment Centre, Haymarket, NSW

drill model a	ind mounting:	: Tr	ruck		Easting:	slope:	-90°			R.L	Surface:
hole diamete		mr	m		Northing	bearing:				dat	tum: AHD
	formation			material s	ubstance						
method 5 7 penetration	_ sam	otes nples, ts, etc F	depth RL metres	graphic log classification symbol	ma soil type: plasticity or colour, secondary a			moisture condition	consistency/ density index	<sup>100</sup> A pocket <sup>200</sup> d penetro- <sup>300</sup> w meter	
	E+0. E+0. E+0. E+0. E+0.	.0ppm, .0ppm, .3ppm, .0ppm, .0ppm, .0ppm E,			ASPHALT GRAVEL: Road base, gre Sandy CLAY: Low plastic fine grained. Sandy CLAY: Low to med grained. Sandy CLAY: Medium pla fine grained. Sandy CLAY: Low plastic fine to medium grained. Silty SAND: Fine to mediu Sandy CLAY: Medium to brown, medium to coarse grained, angular gravel (s Borehole EB2 terminated	ity, dark brown to bl dium plasticity, grey, asticity, red mottled t ity, brown, red to ora um grained, grey to high plasticity, yello grained. Trace of co iltstone flecks).	fine fine brown,	M M W W	S S F F St		S0mm Asphalt.
method AS AD CT HA DT B HA DT S B V V T T *bit shown by e.g.	auger screwin auger drilling* roller/tricone washbore cable tool hand auger diatube blank bit V bit TC bit rsuffix ADT		water ▼ 10/1/98	no resistance anging to efusal 8 water level e shown nflow		ion test (SPT) overed ne		ription unified c			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 No. EB2 Sheet 1 of 1 GEOTLCOV24303AA Office Job No.: 10.6.2011 Date started: 10.6.2011 Date completed:

AN Logged by:

Checked by:

coffey	environments
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Client:

#### Sydney Harbour Foreshore Authority

Principal:

Project:

Sydney International Convention & Entertainment Centre Borehole Location: Sydney Entertainment Centre, Haymarket, NSW

drill model and mounting: Truck					Truck	K			Easting: slope:	-90°			R.L	. Surface:
	hole diameter: mm						Northing bearing:						dat	um: AHD
dr	drilling information							erial su	ubstance	<u> </u>				
method	5 penetration	support	water	<b>notes</b> samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characte colour, secondary and minor compor	ristics, contraction for the second s	condition condition	density index	<sup>100</sup> A pocket <sup>200</sup> A penetro- <sup>300</sup> b meter	structure and additional observations
				E+0.0ppm E+0.1ppm E+0.0ppm		- - - 1_			ASPHALT Sandy GRAVEL: Medium to coarse grained to red, fine grained sand. Trace of angular, grained gravel.	d, brown	D	L		50mm Asphalt. FILL, 5% glass and brick fragments.
				E+3.7ppm E+2.6ppm					Sandy CLAY: Medium plasticity, grey, fine SAND: Fine grained, yellow to brown.			F		 Residual Mild hydrocarbon odour 
			•	E+7.6ppm					SAND: Fine grained, grey to brown.	W	1/\\\	F		  Mild hydrocarbon odour.
				E+1.1ppm		 4 			Sandy CLAY: Medium plasticity, yellow to t fine grained.	jrown,	W S	St		Residual clays
				E+0.0ppm		5			Sandy CLAY: Medium to high plasticity, ye mottled grey, fine grained.	low	M	St		
				E+0.0ppm		<u>6</u> - - 7_			Borehole EB3 terminated at 6.1m					
met	hod								notes, samples, tests	classificatio	-	Is and		_ _ _ consistency/density index
Form GEO 5.3 Issue 3 Rev.2 a M M M M M M M M M M M M M M M M M M M	shown b	au ro ka di di bl V T	iger c ller/tri ashbc ble to ind au atube ank b bit bit bit fix	ool uger	M C pe 1 W Wa Wa	mud casing netratio 2 3 4 ter 10/1/9	n no resista ranging to refusal 8 water l e shown inflow	evel	U <sub>50</sub> undisturbed sample 50mm diameter         U <sub>63</sub> undisturbed sample         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	soil descrip based on un system D dry M moist W wet Wp plastic W <sub>L</sub> liquid	nified class	sificati	ion	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

GEO 5.3 Issue 3 Rev. 2

EB3 Sheet 1 of 1 GEOTLCOV24303AA Office Job No.: 10.6.2011 Date started: 10.6.2011 Date completed:

AN Logged by:

Checked by:

Borehole No.

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C		)	3		<b>Jy</b>		3	90			E	Boreho	le No.	NBH23
E	ng	ji	n	e	erin	g L	.og	- 6	Зоі	ehole		Sheet Project	No:	1 of 1 GEOTLCOV24303A
Clie	ent:				Infr	astr	uctui	re NS	SW		C	Date st	arted:	17.4.2012
Prin	ncipa	al:									D	Date co	omplete	ed: 24.4.2012
	ject:					EEP					L	.ogged	l by:	JW
				_	n: See	XP60		1		Fasting 200707 always 000	C	Checke		DS
	diam			nou	nung:	100 m	8.8			Easting: 333727 slope: -90° Northing 6249937 bearing: N/A				L. Surface: 2.7 tum: AHD
dri	lling	-	for	mat	tion			mate	erial s	ubstance			uai	tum: AHD
method	Denetration		support	water	notes samples, tests, etc		depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	condition	consistency/ density index	200 × pocket 200 × pocket 400 × meter	
ā			N				_				D M		-464	PAVEMENT
HA					E		-			vellow-brown, with some shell fragments	D M			CONCRETE SLAB
						_2				FILL: Sandy GRAVEL: Fine grained, subangular, dark grey, fine to medium grained sand	IVI			FILL No Odour, PID = 0.4ppm
_							-			FILL: Clayey SAND: Fine grained, pale brown,         mottled red-brown         FILL: CLAY: High plasticity, dark grey, mottled				
				-	SPT	1				orange-brown, pale grey, trace fine grainedsand, and medium grained, subangular sandstone gravel	Wp			
					3,2,4 N*=6	-'	2							No Odour, PID = 0.8ppm
				-		_0	-		CL	Sandy CLAY: Low plasticity, dark grey, mottled >\	Wp	VS	<	
					SPT 1,0,1 N*=1		3					ĺ		No Odour, PID = 0.3ppm
8			+	-	IN = I	-1				Borehole NBH23 terminated at 3.45m	-			
						1	4							-
						2	-							-
							5							
							-							-
						3	_							-
							6							_
							-							-
						4	-							-
							7							-
							-							-
						5	_		• 1					-
							8							-
etho S C T A T it sh	od Iown b	a r c h d V T T y su	auge oller vash able and liatu blank / bit	r dri /trico bore too aug be t bit	e I	M C pen 12 Wat wat	ra re	o resistan nging to fusal water le shown flow	ce	notes, samples, tests         classification           U <sub>50</sub> undisturbed sample 50mm diameter         soil description           D         disturbed sample 63mm diameter         based on unifinity           D         disturbed sample 63mm diameter         based on unifinity           N         standard penetration test (SPT)         moisture           N*         SPT - sample recovered         moisture           V         vane shear (kPa)         M         moist           P         pressuremeter         W         wet           Bs         bulk sample         Wp plastic I         Wp lastic I           R         refusal         wet         Wp         laquid ling	on îed cla			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

Form GEO 5.3 Issue 3 Rev.2

-			26	~ ~	5			oto	obbios						
C	;C			ey	C	Ű,	je	Ole	chnics		-	Boreho	le No	).	NBH24
Ε	ng	jir	າຍ	ering	g L	.og	-	Boi	ehole			Sheet Project	No:		1 of 1 GEOTLCOV24303AC
Clie	ent:			Infr	astr	uctur	re NS	SW			-	Date st		:	24.4.2012
Prin	ncipa	d:									ļ	Date co	mple	eted:	24.4.2012
Pro	ject:			SIC	EEP	)					1	Logged	by:		JW
_	-			on: See	e Fig	ure 3	}				(	Checke	d by		DS
1.00 C.200	mode diam			nting:	Ausro	ock 3000	) Truc	k	Easting: 333604 slope:	-90°					Surface: 3.9
0.04592	illing			tion	100 1		mat	erial s	Northing 6249930 bearing: Ibstance	N/A				datur	n: AHD
method	Denetration 50	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	200 pocket	1	structure and additional observations
ЧA		N		E	1	_			FILL: Red Brick (0.08m) FILL: SAND: Fine to medium grained, pale brow		D M			TU	
				E					trace fine to medium grained, subangular sandsto gravel FILL: Gravelly Sandy CLAY: Low plasticity, dark	one <	Wp				-ILL No Odour, PID = 1.9ppm
ADT			•		_3				FILL: Gravely CLAY: Low plasticity, dark sand and fine to medium grained, subangular gra FILL: CLAY: High plasticity, pale grey, mottled orange-brown, dark grey, trace fine grained sand FILL: Gravelly CLAY: Low plasticity, dark grey, mottled red-brown, medium to coarse grained.		Wp				-
				SPT 5/20,_,_ N*=R	_2				subangular gravel FILL: Clayey GRAVEL: Fine to medium grained subangular, dark grey, mottled black, low plasticity clay, with some medium to coarse grained sandst gravel	ty	N			r	- No Odour, PID = 6.9ppm
				SPT	1	- - 3		CL	CLAY: Low plasticity, dark grey, mottled black, trace of organics	>	Nр	VS		A	
				0,0,1 N*=1				CL	Sandy CLAY: Low plasticity, dark grey, mottled black, fine grained sand, with some shell fragmer	nts		×××		c	Drganic Odour, PID = 18.2ppm
					_0	4			Borehole NBH24 terminated at 3.45m						-
					1	5									
					2	- 6 -									
					3	- - 7_									- - -
					4	- - - 8									
metho AS AD RR W CT HA DT B V T *bit sh e.g.	od nown by	au rol ca ha dia bla V I TC	ger dr ler/tric shbor ble too nd aug stube ink bit bit bit ix	one e I	M C per 12 wat	ra re	o resistan nging to fusal water le shown flow		U <sub>50</sub> undisturbed sample 50mm diameter         soi           U <sub>63</sub> undisturbed sample 63mm diameter         bas           D         disturbed sample         sys           N         standard penetration test (SPT)		on ied cli		n		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 - Piezometer** Sheet 1 of 1 Project No: GEOTLCOV24303AC Infrastructure NSW Client: Date started: 18.4.2012 Principal: 18.4.2012 Date completed: SICEEP Project: Logged by: JW Borehole Location: See Figure 3 Checked by: DS drill model & mounting: XP60 Ute Easting: 323628 -90° slope: R.L. Surface: 33 hole diameter: 100 Northing: 6249852 bearing: N/A datum: AHD drilling information material substance classification symbol consistency/ density index notes penetratio 8 material structure and samples moisture condition additional observations method support graphic tests, etc water soil type: plasticity or particle characteristics, colour, secondary and minor components. well depth RL details 123 metre CONCRETE: (0.4m) with 10mm reinforcement DT CONCRETE SLAB .0 D 1 Ď D Ď D FILL: Sandy CLAY: Low plasticity, pale brown, fine grained sand, trace fine to medium grained, AA <Wp FILL No Odour, Dup 2 + Dup 2a, PID = 8.3ppm subangular gravel M FILL: Clayey SAND: Fine grained, dark grey, with some fine to medium grained, subangular sandstone ADT 1 gravel SPT 12/120, N\*=R No Odour, PID = 5.9ppm 2 2m - Becoming dark grey, mottled red-brown 3 FILL: Gravelly Sandy CLAY: High plasticity, dark grey, fine to medium grained, angular gravel, fine to medium grained sand SPT <Wp 4,2,10/80 No Odour, PID = 1.2ppm N\*=R 4 SPT 11,13,7 N\*=20 No Odour, PID = 4.5ppm 0 5 CH Sandy CLAY: High plasticity, dark grey/grey, fine F-St ALLUVIUM 0 grained sand 0 >Wp 6 SPT 2,2,3 N\*=5 No Odour, PID = 1.0ppm \_ 0 0 H۰ 0 7 St SPT 7.5m - Becoming dark grey/grey, mottled yellow-brown 4,7,11 N\*=18 No Odour, PID = 1.0ppm method support notes, san plesh determinated at 7.95m classification symbols and consistency/density index AS auger screwing\* C casing N nil undisturbed sample 50mm diameter U50 soil description based on VS verv soft AD auger drilling\* D disturbed sample unified classification system s soft GEO 5.10 Issue 3 Rev.0 RR W CT roller/tricone N N\* standard penetration test (SPT) penetration F firm SPT - sample recovered SPT with solid cone washbore moisture St stiff no resistance No P W cable tool dry wet VSt verv stiff ranging to refusal DT pressure meter bulk sample diatube M moist Wp plastic limit н hard Bs B V blank bit WL liquid limit wate Fb friable R E PID refusal V bit 10/1/98 water level environmental sample well details VL very loose т TC bit on date shown loose PID measurement betonite TBX Tubex WS MD medium dense water sample sand water inflow \*bit shown by suffix

piezomete

air lift test

PZ

water outflow

Borehole No.

NBH25

dense

verv dense

D

VD

slotted PVC

uno-

e.g

ADT

	coffey seotechni																
C	;(			ey	0	ç	Je	Ole	CHINCS			1	Boreho	le No		NBH26	
Ε	n	qiı	ne	erin	a L	<b>_0</b> 0	-	Boi	rehole				Sheet	N			12420240
Clie					_	uctu	_						Project Date st			GEOTLCO 24.4.2012	124303AC
Prir													Date co			24.4.2012	
Pro				si	EEF	2									teu.	24.4.2012 ACM	
	5		ocati	on: See									_ogged				
				unting:		rill Trac	_		Easting:	slope	ə: -90°		Checke			DS urface: 3.3	
		meter		U.	100 r		90		Northing	bear					datum		
dri	_	-	orma	tion			mat		ubstance								
method	<ul> <li>Denetration</li> </ul>	1 3	water	notes samples tests, et		depth metres	graphic log	classification symbol	soil type: plasticity o colour, secondary a	aterial r particle characte and minor compo	eristics, nents.	moisture condition	consistency/ density index	200 A pecket 300 a penetro-		structure a additional obse	
ADT		N	Observed		3	-			ASPHALT: (0.3m)						P	AVEMENT	
			Vone Obs	E		_			FILL: Silty GRAVEL: Fin subangular, pale grey, mo fine to medium grained sa	ottled pale brown and and red brick	, with some	М			N	LL o Odour, PID = 2.7p EDROCK	pm
			ž			1			SANDSTONE: Fine to m to orange-brown, highly w	edium grained, p veathered, low to	ale grey medium						
					2	-			strength Borehole NBH26 termina	ted at 0.8m	]						-
						-											-
						2											-
						-											
					_1	8-											
																	-
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						8											
metho AS AD RR W CT HA DT B V T *bit sh e.g.	ethod auger screwing* auger drilling* roller/tricone washbore cable tool hand auger diatube blank bit ∨ bit TC bit t shown by suffix support M mud N nil C casing penetration 1 2 3 4 no resistance refusal 0/1/98 water level water inflow			ce	notes, samples, tests       U <sub>50</sub> undisturbed sampl       U <sub>63</sub> undisturbed sample       D     disturbed sample       N     standard penetratic       N*     SPT - sample reco       Nc     SPT with solid con       V     vane shear (kPa)       P     pressuremeter       Bs     bulk sample       E     environmental sam       R     refusal	le 63mm diameter on test (SPT) vered e		iption unified cla st				consistency/density in           VS         very so           S         soft           F         firm           St         stiff           /St         very stift           H         hard           Fb         friable           /L         very loc           MD         medium           O         dense           /D         very loc	f se dense				

BOREHOLE GINTGEOTLCOV24303AC\_COMBINED WITH AA GINT.GPJ COFFEY.GDT 24.5.12

C	20	h	ff		9	0	ae	ote	echnics								
C				Cy								1	Boreho	ole No.	NB	H27	
E	ng	gir	1e	ering	g L	.og	-	Boi	rehole				Sheet Project	No	1 of <b>GE(</b>	1 DTLCOV2430	340
-	ent:					uctu							Date st	2702000-00		.2012	JAO
Pri	ncipa	al:										1	Date co	omplete	d: <b>27.4</b>	.2012	
Pro	ject:			SIC	EEP	r.							Logged	l by:	ACI	1	
Bo	rehol	le Lo	ocatio	on: See	Fig	ure 3	}						Checke	ed by:	DS		
				inting:	XP60	Truck			Easting:	slope	: -90°			R.L	Surface:	2.7	
_	e dian illing				100 m	nm	mat	erial s	Northing ubstance	beari	ng: N/A			dat	um:	AHD	
	ation			notes				ы.		material			y/ lex	et tro-	1		
method	penetration	support	fer	samples, tests, etc			graphic log	classification symbol		material	viation	moisture condition	consistency/ density index	a pocket b penetro- meter		structure and ional observations	
	12	H	water		RL	depth metres	gra	clai	colour, seconda	ry and minor compo			con den	200 200 300 500 500 500 500 500 500 500 500 5			
ADT		382		E	7	-			ASPHALT: (0.15m) FILL: Gravelly SAND: mottled dark grey, fine	Fine grained, dark	brown,	D M			FILL	IT	-
				E	2	-			to angular gravel	to mediani grainea,	subangulai				No Odour		1
						1											-
						-		1	CONCRETE: (0.4m)			D			CONCRET	E	_
		335		SPT			////	CL	CLAY: Medium plasti orange-brown, red-bro		tled	<wp< td=""><td>F</td><td></td><td>ALLUVIUN</td><td></td><td></td></wp<>	F		ALLUVIUN		
				2,2,4 N*=6	_1	_			orange-brown, red-bro	WIT					No Odour,	PID = 2.1ppm	_
						2											-
																	_
					_0												-
				SPT	-	3		SP	SAND: Coarse graine with some fine grained	d, dark grey, mottled, subangular gravel	I black,	М	L				
			<u> </u>	2,1,2 N*=3		8						w			No odour, I	PID = 2.8ppm	-
					-1							vv					_
						4											-
						-	1	SC	Clayey SAND: Fine to mottled black, with som	medium grained, da	ark grey,		VL		Organia Or		
				CDT		8 <del></del>	in	СН	CLAY: Medium to hig			>Wp	St		Organic Od	our	-
				SPT 3,3,3 N*=6	2	_		011	mottled dark grey	n plasticity, pale brow	vii,	-wh	51		No Odour,	PID = 0.4ppm	1
-						5			Borehole NBH27 termi	nated at 5m							
						-											
					3	-											_
						6											
						-											-
					-4	_											
						7											-
						-											
						-											-
					5	_											
meth	od					8 port			notes, samples, tests		classifica	tion sym	bols and		consisten	cy/density index	
AS AD		au	ger dr		Co	mud casing		nil	U <sub>50</sub> undisturbed sau U <sub>63</sub> undisturbed sau	mple 50mm diameter mple 63mm diameter	soil descr based on	iption			VS S	very soft soft	
RR W		wa	ler/tric ishbor	е	pen 1 2	etration	o resistan	ce		ration test (SPT)	system				F St	firm stiff	
CT HA DT		ha	ble too nd au atube			ra re	inging to		N* SPT - sample r Nc SPT with solid of V vane shear (kP	cone	moisture D dry	ot			VSt H	very stiff hard	
в		bla	ank bit			10/1/98		evel	P pressuremeter	a)	M moi W wet Wp plas				Fb VL	friable very loose	
V     V bit     Image: Constraint of the shown     Bs     bulk sample       T     TC bit     E     environmental sample       *bit shown by suffix     Image: Constraint of the shown     R     refusal						id limit			L MD D	loose medium dense dense							
e.g.		AD			-	water ou	utflow								VD	very dense	

5

-		-	FF.	$\sim$	5			ote	chnics								
C	)(	וכ		ey		5	Jec	JIE	crimes			-	Boreho	le No		NBH29	
	'n	nir	٦O	orina		00	<b>K</b>	2~	ehole				Sheet			1 of 1	
-	-	JII	IC						enole				Project			GEOTLCOV2430	3AC
	ent:			Intr	astr	uctui	re NS	VV					Date st			17.4.2012	
	ncip			610		n.							Date co		ted:	17.4.2012	
	oject		ti	SIC									Loggeo			JW	
_			_	on: See	XP60				Easting: 333735	slope:	-90°		Checke			DS Inface: 3	
1		neter		-	100 m				Northing 6249927	bearing:					atum:		
dr	-		orma	tion	1		mate		ubstance			1			-		
method	Not the second secon	15	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	mate soil type: plasticity or p colour, secondary and	article characteris	tics, nts.	moisture condition	consistency/ density index	<sup>100</sup> A pocket <sup>200</sup> A penetro-		structure and additional observations	5
ADT		N				_			FILL: Red Brick (0.08m) FILL: SAND: Coarse grain	od vollow brown		D		- 0.6	PA	VEMENT	
				E	-	-			some shell fragments and q	uartz grains	5-0611949 B	м			FIL	-L • Odour, PID = 1.7ppm	-
ADT DT		8				-			angular, dark grey, fine to co Concrete: (0.2m) with 10m	parse grained san	d	D				NCRETE SLAB	
AC				E	2	1			FILL: Clayey SAND: Fine plasticity clay						Sto	ng Hydrocarbon Odour, Pl 3ppm	_ D =
			p	SPT 2,2,4 N*=6	1	2			FILL: CLAY: High plasticity orange-brown with some iro	, pale grey, mottle n oxide staining	ed	<wp< td=""><td></td><td></td><td></td><td></td><td>5</td></wp<>					5
			None Observed	E					2m - Becoming dark grey.						No	Odour, PID = 35.2ppm	-
				SPT 1,2,1 N*=3	_0	3		СН	CLAY: High plasticity, pale orange-brown	grey, mottled —			F-St		AL		-
				E	1	4								××	No	Odour, PID = 3.4ppm	-
				SPT 3,4,6 N*=10		-								××			-
					2	<u> </u>			Borehole NBH29 terminated	at 4.95m							
																	_
						-											-
					3	6											
						-											-
						-											-
					4	7											-
						-											
																	-
					5	8											-
AS AD RR W CT HA DT B V T	AD auger drilling* C casing penetration V washbore V washbore T cable tool AA hand auger DT diatube b blank bit V bit T C bit bit shown by suffix C casing penetration 12 3 4 no resistance ranging to water 10/1/98 water level water inflow					port mud casing etration 3 4 nc ra er 10/1/98 on date water in	o resistanc nging to fusal water le shown flow	e	notes, samples, tests       U <sub>60</sub> undisturbed sample 5       U <sub>63</sub> undisturbed sample 6       D     disturbed sample 6       N     standard penetration 1       N*     SPT - sample recover       Nc     SPT with solid cone       V     vane shear (kPa)       P     pressuremeter       Bs     bulk sample       E     environmental sample       R     refusal	3mm diameter est (SPT) ed		ription unified cl			V S F S V H F V L	soft firm t stiff St very stiff hard b friable L very loose loose ID medium dense dense	



		<b>Cy</b>		•						Borehol	e No.	NBH30
Ena	ine	erin	a Lo	od -	. Pi	ez	on	neter		Sheet	2.5	1 of 1
Client:			astruc							Project	- 24 <sup>- 1</sup>	GEOTLCOV24303A 27.4.2012
Principal:			00000	cur e i						Date sta		
89	•	510								Date co		
Project:			EEP	-						Logged	by:	ACM
Borehole				e 3						Checke	d by:	DS
drill model			Truck				sting:	slop	e: -90°		R.I	Surface: 2.7
hole diame drilling i		100 tion					rthing:	bea substance	ring: N/A		dat	tum: AHD
method benetration	t	notes samples, tests, etc	:			graphic log	classification			moisture condition	consistency/ density index	structure and additional observations
<sup>0</sup> 123	suppo		well details		depth metres	gra	clas		nor components.	moi	con	
TGMH	N	E		2	- - 1_		CL	ASPHALTIC CONCRETE: (0. FILL: Clayey GRAVEL: Mediu subangular to angular sandston medium plasticity clay fines FILL: SAND: Fine to medium mottled pale brown, cement stal Sandy CLAY: Medium to low p mottled orange-brown, fine to m	m to coarse grained e, pale brown, grained, pale grey, blized lasticity, pale brown	/ / <wp< td=""><td>VS</td><td>PAVEMENT FILL No Odour, PID = 0.3ppm ALLUVIUM No Odour, Dup 12 + Dup 12a</td></wp<>	VS	PAVEMENT FILL No Odour, PID = 0.3ppm ALLUVIUM No Odour, Dup 12 + Dup 12a
ADT		SPT 1,0,0 N*=0			2		CH	Sandy CLAY: Medium to high brown, mottled red-brown, medi sand Silty CLAY: Medium plasticity,	um to coarse graine	d	F	No Odour, PID = 0.9ppm
	<u>¥</u>	SPT 1,3,1 N*=4		0	- - 3 - - - 4			black		>Wp		No Odour, PID = 1.7ppm
		SPT 0,0,1 N*=1		2			CL	CLAY: Medium plasticity, pale g Borehole terminated at 5m	rey	_	VS	No Odour, PID = 1.8ppm
				3	- - 6 -							
				4	- - 7 -							
nethod			support		- 8			mples, tests	classification syn			consistency/density index
T T BX bit shown by s	auger sc auger dri roller/trice washbord cable too diatube blank bit V bit TC bit Tubex suffix ADT	illing* one e	<ul> <li>on d</li> <li>wate</li> </ul>	ion 1 no resis ranging refusal /98 wate ate show	to er level vn	D N N P B R E P S P	I Ic ID /S	undisturbed sample 50mm diameter disturbed sample standard penetration test (SPT) SPT - sample recovered SPT with solid cone pressure meter bulk sample refusal environmental sample PID measurement water sample piezometer air lift test		on system / wet /p plastic / <sub>L</sub> liquid li		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

C	<b>:</b> C	f	fe	γç "		e	nvi	ro	nments		30-						
												Boreho	le N	۱o.		CBH5	
E	ng	ļir	<b>le</b>	ering	j L	og	- E	<b>Bor</b>	ehole			Sheet Office 、	Job	No		1 of 1 GEOTLCOV	24303AD
Cli	ent:			INS	N						[	Date st	arte	ed:		25.7.2012	
Pri	ncipa	l:									ŗ	Date co	omp	lete	ed:	25.7.2012	
Pro	ject:			SICE	EEP	, Dar	ling	Harb	our, Sydney NSW		L	oggeo	l by:			PD	
Bo	ehol	e Lo	catio	on: SICE	EEP	Darl	ing I	larbo	our, Sydney NSW		(	Checke	ed b	y:		ML	
			mou				DRILL	TRAC	K Easting: slope	: -90°				R.	L. Surf	ace:	
_	diam illing	-	orma		120 m	m	mate	erial su	Northing beari	ng:				da	tum:		
method	5 penetration	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle character colour, secondary and minor compo	eristics, hents.	moisture condition	consistency/ density index		300 b penetro- 400 meter		structure an additional observ	
N							~~~~		BRICK: SAND: Yellow brown, medium grained.		D	F			No c	odour or staining.	
ADV						-			ROADBASE:								-
ADT				E+-3.1ppm		0.5			FILL: Gravelly clayey sand, grey brown, fin gravel dark grey rock material.	e grained					Dup	4	
																	-
						1.0											-
				E+-4.2ppm		-											-
						-											-
				E+-5.8ppm		1. <u>5</u>			White gravel fragments.								_
						-			FILL: Gravelly clay, low plasticity, dark grey glass/shell fragments.	gravel,							-
						2.0											-
				E+-6.2ppm		-											-
						-			Borehole CBH5 terminated at 2.2m					T			_
						2. <u>5</u>											
						-											1
						3.0											-
						<u></u> –											_
						-											-
						3. <u>5</u>											-
						-											-
						_											-
						4. <u>0</u>											-
						-											-
						4.5											
						-											-
						-											-
meth	od				sup	5.0 port			notes, samples, tests	classificati	ion sym	ools and				nsistency/density ind	-
AS AD RR W CT HA DT B V T		aug rolle was cab har diat blar V b TC	ger dri er/trici shbor ole toc nd aug tube nk bit it bit	one e	M r C c pena 1 2 wate	nud estration 3 4 raf raf er 10/1/98 v on date s	water lev shown	æ	U <sub>50</sub> undisturbed sample 50mm diameter           U <sub>53</sub> 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	soil descri based on u system moisture D dry M mois W wet Wp plast	ption Inified cla				VS S F St VS H F b VL L MD	soft firm stiff t very stiff hard friable very loose loose	
*bit sh e.g.	TOLD										D VD	dense very dense					

coffey P environments	coffey 🔷	environments
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				- <b>)</b>							1	Boreho	ole N	10.	CBH5A
E	ng	ļir	<b>ie</b>	ering	j L	.og	- E	Bor	ehole			Sheet Office -	Job	No.:	1 of 1 GEOTLCOV24303AD
Clie	ent:			INS	W						1	Date s	tarte	ed:	27.7.2012
Pri	ncipa	l:									J	Date co	omp	lete	d: <b>27.7.2012</b>
Pro	ject:			SIC	EEP	, Dar	ling	Harb	our, Sydney NSV	V	1	_oggeo	d by:		PD
Bo	ehol	e Lo	cati	on: SICE	EEP	Darl	ing l	Harbo	our, Sydney NSV	/	(	Checke	ed b	y:	ML
drill	mode	land	mou	inting:	B80 M	OBILE	DRILL	TRAC	K Easting:	slope: -90°	2			R.L	. Surface:
1.1.25.000	diam Illing	1000			120 m	nm			Northing	bearing:				dati	um:
						<u> </u>	mate		ubstance					1	
method	5 penetration	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	soil type: plasticity c colour, secondary	a <b>terial</b> or particle characteristics, and minor components.	moisture condition	consistency/ density index	200 pocket		structure and additional observations
ABADV						_		_	BRICK. SAND: Medium grained,	vellow and brown	D	F			No odour, No staining observed.
A				E + 0 7 ====	-	_			ROADBASE:		_				
				E+ 0.7ppm		-			FILL: GRAVELY CLAYE brown. Gravel fine to me	YSAND, fine grained, grey dium grained, dark grey.					-
				E+ 1.9ppm		1									_
						-									-
				E+ 5.0ppm	1				Some white gravel fragm						-
				E+ 3.0ppm	-	2			rockpieces, some white s	plasticity, dark grey, 1-5 cm hell fragments.					-
															-
				E+ 1.3ppm					Becoming brown, minor s	hell and shell fragments	М				-
				E+ 2.0ppm		3			Orange brick fragments,	shells and shell fragments.					
						_				(3)					_
				<u>E+1.1ppm</u>					Increasing sand content.		W				ASS1
				E+ 0.6ppm		4			Becoming grey.						_
				E+0.9ppm		-									-
				E+ 1.3ppm		5									-

Ironstone band, red grey.

Borehole CBH5A terminated at 6m

 notes, samples, tests

 U<sub>50</sub>
 undisturbed sample 50mm diameter

 U<sub>63</sub>
 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

6

7

N nil

- no resistance ranging to refusal

10/1/98 water level on date shown

water inflow

water outflow

support M mud

water

D

C casing

penetration 1 2 3 4 no

E+ 1.9ppm

auger screwing\*

cable tool

hand auger

SAND, Highly weathered. Sandstone, medium to fine grained, red.

D

classification symbols and

system

moisture D drv

M W

Wp WL

dry moist

wet

plastic limit liquid limit

soil description based on unified classification

н

F

ASS2

VS

S F

St

VSt

H Fb VL

L MD

D

VD

consistency/density index

very soft

very stiff

very loose

very dense

medium dense

hard friable

loose

dense

soft

firm

stiff

AS auge AD auge RR roller, W wash CT cable HA hand DT diatul B blank V V bit T TCbi \*bit shown by suffix e.g. ADT auger drilling\* roller/tricone washbore diatube blank bit TC bit

Form GEO 5.3 Issue 3 Rev.2

method

AS

# coffey environments

## **Engineering Log - Piezometer**

INSW

Client: Principal:

Project:

## SICEEP, Darling Harbour, Sydney NSW

#### Borehole Location: SICEEP Darling Harbour, Sydney NSW

drill model & mounting: B80 MOBILE DRILL TRACK		slope: -90°	R.	L. Surface:
hole diameter:	Northing:	bearing:	da	tum:
drilling information	material s	substance		
120	graphic log classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition consistency/ density index	structure and additional observations
AQ       E+-9.0ppm         E+-9.0ppm       E+-9.0ppm         E+-9.0ppm       E+-8.6ppm         E+-10.0ppm       E+-10.0ppm         E+-9.7ppm       E+-9.6ppm         E+-9.6ppm       E+-9.7ppm         E+-9.7ppm       E+-10.0ppm         E+-9.7ppm       E+-9.7ppm         E+-10.0ppm       E+-9.7ppm         E+-10.0ppm       E+-10.0ppm	4	BRICK:         SAND: Yellow brown, medium grained.         ROADBASE:         FILL:Gravelly clayey sand, fine grained, dark grey, fine gravel.         GRAVELLY SANDY CLAY: Low-medium plasticity, brown, coarse grey, cream, white gravel, igneous rocks and sandstone.         CLAY: Medium plasticity, red-grey.         Becoming slightly paler in colour.         GRAVELLY CLAY: medium plasticity, red. Coarse grey and orange gravel.         CLAYEY SAND: Fine grained, dark grey, shell fragments.         SANDY CLAY: Medium plasticity, dark grey, shell fragments.         CLAY: High plasticity, dark grey.         CLAYEY SAND: Medium grained, dark grey.         Orange grey mottled.	D S F M W H	No odour or staining.
E+-15.8ppm		Borehole terminated at 5.6m		
method     support       AS     auger screwing*       AD     auger drilling*       RR     roller/tricone       W     washbore       CT     cable tool       DT     diatube       B     blank bit       V     V bit       T     TC bit       TBX     Tubex       *bit shown by suffix     water outflow       e.g.     ADT	N nil U <sub>50</sub> D N N* istance Nc f Bs R er level E wm PID WS PZ	mples, tests     classification symbol       undisturbed sample     soil description       disturbed sample     soil description       standard penetration test (SPT)     system       SPT - sample recovered     system       SPT with solid cone     moisture       pressure meter     D     dry       bulk sample     M     moist       environmental sample     W     wet       PID measurement     Wp     plastic limit       water sample     wt     liquid limit       piezometer     air lift test     liquid limit		consistency/density indexVSvery softSsoftFfirmStstiffVStvery stiffHhardFbfriableVLvery looseLlooseMDmedium denseDdenseVDvery dense

Form GEO 5.10 Issue 3 Rev.0

1 of 1 Office Job No .: GEOTLCOV24303AD 25.7.2012 Date started: 25.7.2012 Date completed:

Logged by: Checked by:

Borehole No. CBH6/MW6 Sheet

PD

ML

С	C	f	fe	ev		е	nvi	ro	nments			-	Porcha		
													Boreho Sheet	DIE NO.	<b>CBH7</b> 1 of 1
E	ng	ir	<b>ie</b>	ering	j L	og	- E	301	rehole					Job No.	
Clie	nt:			INS	W							1	Date st	arted:	25.7.2012
Prin	cipal	:										i	Date co	omplete	ed: 25.7.2012
Proj	ect:			SICI	EEP	, Dar	ling	Harb	our, Sydney N	SW		I	_oggeo	l by:	PD
Bore	ehole	e Lo	catio	on: SICI	EEP	Darl	ing H	larb	our, Sydney NS	SW		(	Checke	ed by:	ML
drill n	nodel	and	mou	nting:	KOMA	TSU 0	5 TRA	СК	Easting:	slope	: -90°	5		R.I	L. Surface:
	diame I <b>ling</b>		-	Internet and the second	120 m	m	mate	viel e	Northing	beari	ng:			dat	tum:
un	_			notes				_	ubstance			1	<u> </u>	t 6	
method	5 penetration	support	water	samples, tests, etc	RL	depth metres	graphic log	classification symbol	soil type: plastici colour, seconda	material ty or particle characte ary and minor compo	ristics, nents.	moisture condition	consistency/ density index	200 H pocket 200 H pocket 300 W penetro- 400 meter	
ADV							~~~~		ASPHALT:						
V-BIT /				E+-8.7ppm	-	- - 0. <u>5</u>			ROADBASE: GRAVELLY CLAYEY medium gravel, dark			D	F		FILL. No odour or staining.
520				E+-9.6ppm E+-9.3ppm		- 1. <u>0</u> - 1. <u>5</u>			GRAVELLY SAND: Lo medium shale gravel.	ow plasticity, grey, gra					 Dup 3 Dup 3A. 
						_	~~~~		Borehole CBH7 termin	nated at 1.6m					
						- 2. <u>0</u> -									
						- 2. <u>5</u> - - - -									
metho AS AD RR W CT HA DT B V T *bit sho		aug roll was cat har diat bla bla V b TC	ger dr er/tric shbor ole too nd aug tube nk bit it bit x	one e bl ger	peni 1 2 wate	mud asing etration 3 4 no ra re re 10/1/98	n D disturbed sa n D disturbed sam no resistance N standard pane N SPT - sample Nc SPT with solid V vane shear (ki 8 water level P pressuremete e shown Bs bulk sample E environmental inflow R refusal			tration test (SPT) recovered cone Pa)	1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -	ription unified cla v vist			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

С	0	f	fe	ev		e	nv	iroi	nments		-	<b>-</b>	1- 11-	
				-					ehole			Sheet	ble No. Job No.:	CBH7A 1 of 1 GEOTLCOV24303AD
Clier	nt:			INSV	N							Date si	tarted:	27.7.2012
Princ	cipal											Date co	omplete	d: <b>27.7.2012</b>
Proj∉	ect:			SICE	EP	, Dar	ling	Harb	our, Sydney NSW		Ì	Logged	l by:	PD
Bore	hole	Lo	catio	on: SICE	EP	Darl	ing l	Harbo	our, Sydney NSW			Checke	ed by:	ML
drill m	nodel and mounting: KOMATSU 05 TRACK Easting: slope: -90°										R.L	. Surface:		
-	diameter: 120 mm Northing bearing:								ring:			dat	um:	
anii		nto	rma	tion			mat		Ibstance			1		5 e C
	5 penetration	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle charact colour, secondary and minor compo		moisture condition	consistency/ density index	<sup>100</sup> × pocket <sup>200</sup> v penetro- 400 meter	structure and additional observations
ADADV				E+ 1.3ppm E+ 1.1ppm E+ 5.4ppm E+ 7.0ppm E+ 7.0ppm					ASPHALT: ROADBASE: FILL: Gravelly sandy CLAY, ow plasticity, brown. 1mm - 3 cm Gravel, dark grey and crushed stones/ rock pieces Becoming dark grey. GRAVELLY CLAY: Low plasticity, yellow gravel (1-5cm), dark grey rock. GRAVELLY SAND CLAY: Low plasticity, (1-5mm), grey.	f cream	D	F		No odour, no staining observed.

.

		►- E+, 8.0ppm		GRAVELLY SAND CLAY: Low plasticity, (1-5mm), grey.	dark grey S	   
JT 15.8.12		E+ 9.7ppm E+ 9.9ppm	4	Becoming grey brown, medium plasticity, r shale gravel.		
GEOTLCOV24303AD.GPJ COFFEY.GDT 15.8.12		E+ 9.2ppm E+ 9.3ppm	5 CL	CLAY: Redish brown, gravel (1-5cm), red grey sandstone. GRAVELLY SANDY CLAY: Medium plastic grey, medium grained gravel.		ASS1
		E+ \11.4ppm / E+ \12.1ppm /	6	CLAY: Less sandy, white shell and shell fr Borehole CBH7A terminated at 6m	agments.	- 
	method	auger screwing*	- - - 7 Support M mud N nil	notes, samples, tests U <sub>so</sub> undisturbed sample 50mm diameter	classification symbols and soil description	consistency/density index VS very soft
m GEO 5.3 Issue 3 Rev.2	AD RR W CT HA DT B V V T T tit shown b e.g.	auger drilling* roller/tricone washbore cable tool hand auger diatube blank bit V bit TC bit y suffix ADT	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	U <sub>33</sub> 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	based on unified classification system D dry M moist W wet Wp plastic limit W <sub>t</sub> liquid limit	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 🍫	environments
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U				- y								I	Boreho	ole No.	CBH8
Ε	ng	ir	e	ering	<u> </u>	.og	- E	3or			Sheet Office .	Job No.	1 of 1 GEOTLCOV24303AD		
Clie	ent:			INS	N							[	Date st	tarted:	24.7.2012
Prir	cipal:											[	Date co	omplete	d: <b>24.7.2012</b>
Pro	Project: SICEEP, Darling Harbour, Sydney NSW												oggeo	l by:	PD
Bor	Borehole Location: SICEEP Darling Harbour, Sydney NSW												Checke	ed by:	ML
drill I	drill model and mounting: KOMATSU 05 TRACK Easting: slope: -90°													R.L	Surface:
	hole diameter: 120 mm Northing bearing:													dat	um:
dri	lling i	nfo	rma	tion	-	î	mate		ubstance						
method	5 penetration	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	colour, second	material ity or particle characteristics, ary and minor components.		moisture condition	consistency/ density index	100 A pocket 200 d penetro- 400 meter	structure and additional observations
V-BIBS				E+9.9ppm					ASPHALT: FILL: Gravelly clayey grey gravel.	silt, dark grey, medium dark		D	F		No odour or staining.
				E+10.9ppm E+11.2ppm		- - - 2			crushed shale gravel	ow plasticity, grey, medium some orange fragments. CLAY: Low-medium plasticity,					
				E+11.1ppm E+11.3ppm					Becoming orange in o	colour.		M			Organic matter odour, no staining.

Borehole No.

		E+11.3ppm E+14.6ppm	3	Becoming orange in colour.	<pre> </pre>	Organic matter odour, no staining.				
		E+12.9ppm		Increasing clay content, some white shell fr	Increasing clay content, some white shell fragments.					
T 15.8.12		E+12.5ppm	4							
COFFEY.GD		E+11.8ppm	- 2			ASS4				
GEOTLCOV24303AD.GPJ COFFEY.GDT 15.8.12		E+12.8ppm		GRAVELLY SANDY CLAY: Medium plastic brown, medium dark yellow grey gravel.	ity, yellow					
EOTLCOV24		E+11.8ppm E+12.7ppm								
BOREHOLE G			- - - 7	Borehole CBH8 terminated at 6m						
Form GEO 5.3 Issue 3 Rev.2	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 <sub>k0</sub> undisturbed sample 50mm diameter         U <sub>k3</sub> 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	consistency/density index         VS       very soft         S       soft         F       firm         St       stiff         VSt       very stiff         H       hard         Fb       friable         VL       very loose         L       loose         D       dense         VD       very dense				

# coffey environments

# **Engineering Log - Piezometer**

Client: Principal:

Project:

INSW

drill model & mounting: B80 MOBILE DRILL TRACK

#### SICEEP, Darling Harbour, Sydney NSW

Easting:

#### Borehole Location: SICEEP Darling Harbour, Sydney NSW

GEOTLCOV24303AD 26.7.2012 Date started: 26.7.2012 Date completed: PD Logged by: Checked by: ML -90° slope: R.L. Surface:

Borehole No.

Office Job No.:

Sheet

CBH9 / MW9

1 of 1

hole diar			ig. 200 Mic				Northing: bearing:					R.L. Surrace:			
drilling	-	mat	ion						substance	ig.		dat	um.		
method 1 5 penetration	upport		notes samples, tests, etc	well details	RL	depth metres	aphic log	classification symbol	material soil type: plasticity or particle colour, secondary and mine	e characteristics, or components.	moisture condition	consistency/ density index	structure and additional observations		
E       12.3       Z       S       details       RL metree         0       0       0       0       0       0       0       0         0       0       0       0       0       0       0       0       0         0 </td <td></td> <td></td> <td></td> <td>BRICK: SAND: GRAVELLY CLAYEY SAND: Find grey. Fine, dark grey gravel, mir shards. Some yellow coarse grained sand clayey sand, fragments of orange increasing clay content, orange b ceramic pieces. CLAY:&lt;<b> Medium plasticity, y Becoming grey-red. SANDY CLAY: Medium plasticity, Minor white shell fragments. White shells and shell fragments ( CLAY: Medium plasticity, red. slig mottled. Grey, red mottled. Borehole terminated at 5.8m</b></td> <td>d, plus dark grey</td> <td>M W D</td> <td>F</td> <td>FILL. No odour, no staining observed. Dup 5A ASS1 ASS2 ASS3 ASS5 ASS6</td>									BRICK: SAND: GRAVELLY CLAYEY SAND: Find grey. Fine, dark grey gravel, mir shards. Some yellow coarse grained sand clayey sand, fragments of orange increasing clay content, orange b ceramic pieces. CLAY:< <b> Medium plasticity, y Becoming grey-red. SANDY CLAY: Medium plasticity, Minor white shell fragments. White shells and shell fragments ( CLAY: Medium plasticity, red. slig mottled. Grey, red mottled. Borehole terminated at 5.8m</b>	d, plus dark grey	M W D	F	FILL. No odour, no staining observed. Dup 5A ASS1 ASS2 ASS3 ASS5 ASS6		
AS AD RR W CT DT B V T TBX	support       AS     auger screwing*       AD     auger drilling*       AR     roller/tricone       V     washbore       CT     cable tool       DT     diatube       B     blank bit       V     V bit       TC bit     10/1/98 water level       on date shown     water inflow				UD N N N P B R U P S P	s ID Z	mples, tests undisturbed sample 50mm diameter disturbed sample standard penetration test (SPT) SPT - sample recovered SPT with solid cone pressure meter bulk sample refusal environmental sample PID measurement water sample piezometer air lift test	classification symbols soil description based on unified da system moisture D dry M moist W wet Wp plastic limit W <sub>L</sub> liquid limit		ir I	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 🍫 e	nvironments
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CONC	y	Borehole No.	CBH10
Engineer	ring Log - Borehole	Sheet Office Job No.:	1 of 1 <b>GEOTLCOV24303AD</b>
Client:	INSW	Date started:	26.7.2012
Principal:		Date completed:	26.7.2012
Project:	SICEEP, Darling Harbour, Sydney NSW	Logged by:	JG
Borehole Location:	SICEEP Darling Harbour, Sydney NSW	Checked by:	MI

Project:	SICEEP, Darling Harbour, Sydney NSV
Troject.	orocer, burning narbour, byuney Nov

### Borehole Location: SICEEP Darling Harb

_	mode		_	ntina:		AOBILE		Checked by: ML								
	e diam		mou	U	120 n		DIVILL	. 11040				R.L. Surface;				
-	illing	-	rma		12011		mate	Northing bearing: material substance						datur	m:	
method	5 penetration	notes samples, samples, tests, etc 1 2 3 8 RL metres						classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.			consistency/ density index 100 pocket 200 dppenetro- modor		a	structure and additional observations	
				E+2.4 ppm E+2.3 ppm E+7.4 ppm E+7.4 ppm E+7.3 ppm E+6.3 ppm E+6.1 ppm E+6.1 ppm					<ul> <li>BRICK: GRAVELLY SAND: Medium to coarse graph of the second proving pale grey, fine to medium grained graph of the second proving the seco</li></ul>	ravel ( dark grey ace of d, grey e of fine to nedium ned gravel. d. ale yellow	Wp				Brick pavement.	
AS AD RR W CT HA DT B V T	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 C casing penetration 1 2 3 4 T cable tool 1 2 3 4 1 1 1 2 3 1 1 1 1 2 3 1 1 1 1 2 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1								notes, samples, tests       Upoil     undisturbed sample 50mm diameter       Usoil     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	soil desc based or system D dr M mo W we Wp pla	unified da				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 Ŷ	environments

Engineering	Log - Borehole	

INSW

Client:

#### Principal: Project:

### SICEEP, Darling Harbour, Sydney NSW

#### Borehole Location: SICEEP Darling Harbour, Sydney NSW

drill model and mounting:	<b>B80 MOBILE DRIL</b>	L TRACK Easting:	slope: -90°	R.L. Surface:				
hole diameter:	120 mm	Northing	atum:					
drilling information	ma	terial substance						
pottania pottania pottania pottania pottania pottania pottania pottania pottania sample tests, e tests, e	s, j	Solic type: plasticity colour, secondary	material or particle characteristics, y and minor components.	moisture condition density index 200 x pocket				
Image: Provide state     Image: Provide state       Image: Provide state     Ima		BRICK: SAND: medium grained ROADBASE: FILL: Gravelly sandy cl gravel, some orange cl CONCRETE: FILL: Gravelly sand, fin with grey rock pieces. GRAVELLY SAND: Me gravel, some red-brown GRAVELLY CLAY: Low grey-brown rock pieces Increasing clay content, some stone pieces, yell	d, yellow brown. ay, low plasticity, dark grey, ay brick fragments. e grained, dark grey gravel dium grained, yellow-brown fragments. r plasticity gravel, some	D F S F M	FILL. No odour or staining.			
E+12.1pp E+11.4pp		Increase sand content, Borehole CBH11 termin		w	ASS1 Dup6, Ass2			
method AS auger screwing* AD auger drilling* RR roller/tricone W washbore	support M mud C casing penetration 1 2 3 4 moresisti	N nil U <sub>50</sub> undisturbed sam D disturbed samples N standard penetra	nple 50mm diameter ple 63mm diameter e ation test (SPT)	unified classification	consistency/density index VS very soft S soft F firm St stiff			
CT cable tool HA hand auger DT diatube B blank bit V V bit T TC bit *bit shown by suffix e.g. ADT	water anging transition refusal water 10/1/98 water on date shown water inflow water outflow	NC SPT - sample re Nc SPT with solid or V vane shear (kPa level P pressuremeter	one D dry a) M mo W we Wp pla	ist	VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense			

Borehole No.

Office Job No .:

Date completed:

Date started:

Logged by:

Checked by:

Sheet

**CBH11** 

25.7.2012

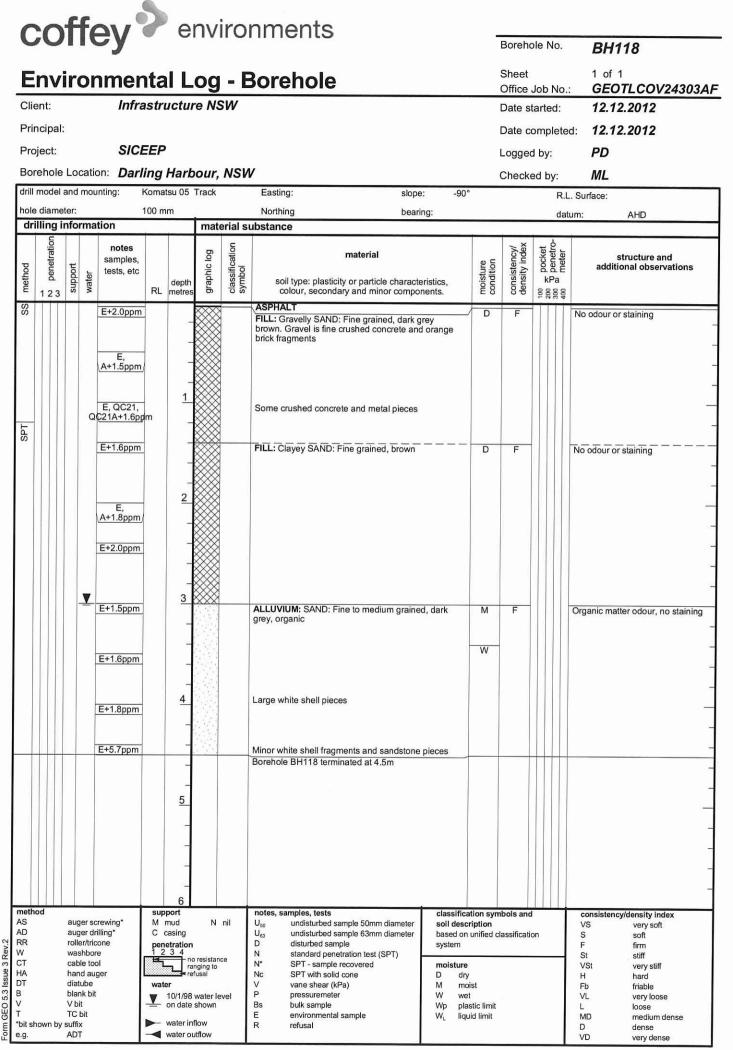
25.7.2012

GEOTLCOV24303AD

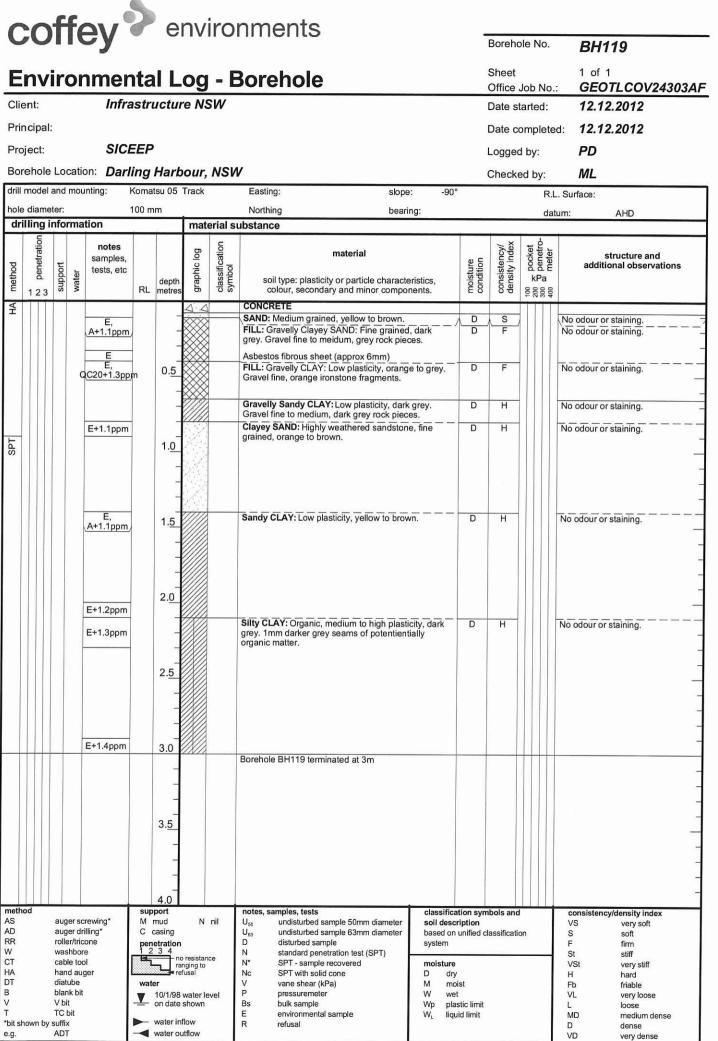
1 of 1

PD

ML



GEO 5.3 Issue 3 Rev.2



GEO 5.3 Issue 3 Rev.2

C	C	)]	T	e	<b>y</b> `		er	vir	or	m	ents	Borehol	le No.	BH120/MW120	
Eı	nv	'ir	<b>°O</b>	nn	ner	ntal	L	bg ·	- P	iez	ometer	Sheet Office J	ob No.	1 of 1 : <b>GEOTLCOV24303A</b>	
Clie	10.24							NSV				Date sta		18.12.2012	
Prin	cipa	I:										Date co	mplete	d: <b>18.12.2012</b>	
Proj	ect:				SICI	EEP						Logged		PD	
Bore	ehole	e L	оса	tion:	Darl	lina H	larbo	our, N	ISW			Checke		ML	
				Auto-Constant	1. · · · · · · · · · · · · · · · · · · ·					sting:	333679.383 slope: -90°	Onecker		Surface: 2.710	
hole	drill model & mounting: Komatsu 05 Track hole diameter: 115 drilling information									rthing:	6249893.26 bearing:		dat		
dril										1	substance		-	1	
method	Denetration 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	ellipoort	support	sa	notes mples, sts, etc	well detail	s RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	structure and additional observations	
E, (A+2.3ppm/						7_		×	ASPHALT FILL: Silty GRAVEL: Fine to medium grained, grey	D	F	No odour or staining			
				E+	0.9ppm	_	_2	-			FILL: Gravelly SAND: Fine to medium grained, cream, crushed sandstone	D	F	No odour or staining	
	E+5.6ppm 1						1			Sandstone becoming more brown in colour, orange brick fragments	•	Н			
						_1	-			Material turns grey and becomes slightly clayey					
	<u>E+6.6ppm</u>				2										
	E+7.3ppm					ALLUVIUM: Clayey SAND: Fine grained, yellow brown	w	F	No odour or staining						
				Q <u>C34</u>	E, +6.8pp)	m		3			Clayey SAND: Alluvial, fine grained, dark grey	W	F	No odour or staining	
				E+	i.5ppm		1	-						organic matter odour, no staining	
				E+f	.9ppm			4	2		Abundant white shells				
					.oppm			-			Borehole terminated at 4m				
							2	1							
								_ 5							
								-							
	3						3	-							
netho NS ND RR V CT DT BX DT BX Dit sho	own b	a w ci bi V Ti Ti y su	uger oller/t able iatub lank bit C bit ubex	tool e bit			ration 4 no r rang refu	vater leve hown ow	L L L L L L L L L L L L L L L L L L L	J₅₀ ) 1 1* 4c 3s 3s	mples, tests     moisture       undisturbed sample 50mm diameter disturbed sample standard penetration test (SPT) SPT - sample recovered SPT with solid cone pressure meter     M     moist W       SPT with solid cone pressure meter     U     Wp     Jestic limit       bulk sample refusal environmental sample PID measurement water sample     Iiquid limit     Iiquid 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	

		f	f	עב		e	nvi	iro	nments								
U	U		10	∋у								Ē	Boreho	le No.		BH121	
Ε	nv	ir	or	nmer	nta	۱L	og	- E	Borehole				Sheet Office .	Job No.	.:	1 of 1 GEOTLCOV24303/	٩F
Clie	nt:			Infra	stru	ıctur	re NS	W				I	Date st	arted:	: <b>18.12.2012</b>		
Prir	icipal											[	Date co	omplete	ed:	18.12.2012	
Pro	ect:			SICI	EEP							L	ogged	l by:		PD	
Bor	ehole	Lo	catio	on: <b>Darl</b>				NSV	/			0	Checked by:			ML	
			mou	5		su 05	Track		Easting:	slope				R.I	L. Su	rface:	
-	diame		rma		100 m	m	Northing bearing: material substance							da	tum:	AHD	-
method	5 penetration	support	notes samples, tests, etc av poddo RL metres							material ity or particle characte ary and minor compo		moisture condition	condition consistency/ density index 100 pocket 300 d penetro- 400 meter			structure and additional observations	
SST	RL metres b 0					- - 1. <u>0</u> -			ASPHALT FILL: Silty GRAVEL: is fine to medium gre grey. Gravel is fine to brown rock fragments Oncrete Slab Borehole BH121 term	D	F			odour or staining			
AS AD RR W CT HA DT S V T	D auger drilling* C R roller/tricone V washbore T cable tool A hand auger T diatube blank bit V bit T C bit tshown by suffix						N o resistance nging to fusal water le shown flow utflow	ce	U <sub>63</sub> undisturbed s D disturbed san	etration test (SPT) recovered d cone Pa) r		iption unified cla			CC V S F S V H F t V L M D V	soft firm st stiff St very stiff hard o friable - very loose loose D medium dense dense	

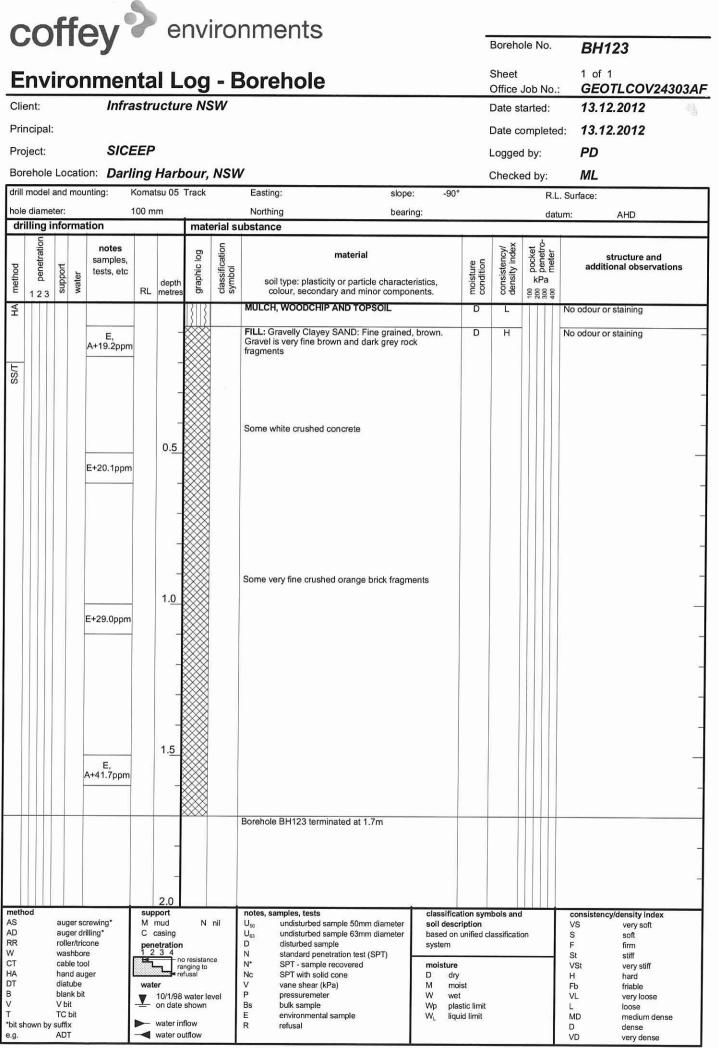
9

0	$\sim$	f	F	<u></u>		e	nvi	iro	nments								
U	U			-у								1	Boreho	le No	<b>)</b> .	BH121A	
E	nv	irc	or	nmer	nta	IL	og	- E	Borehole				Sheet Office	Job N	lo.:	1 of 1 GEOTLCOV24303	AF
Clie	ent:			Infra	astri	uctur	re NS	SW				1	Date st	arted	:	18.12.2012	
Prin	icipal	:											Date co	omple	eted:	18.12.2012	
Proj	ject:			SIC	EEP							I	_oggeo	l by:		PD	
Bor	ehole	e Loc	atio	on: <b>Dari</b>	ing	Harb	our,	NSV	V			0	Checke	ed by:		ML	
	model		nou	5		tsu 05	Track		Easting:	slope					R.L. S	Surface:	
_	diame I <b>ling i</b>		ma		100 m	im	mate	erial s	Northing ubstance	bearir	ng:			6	datum	n: AHD	
	ation			notes			5	noi		atorial			iex	et etro-	L.		
method	<pre>c penetration</pre>	support	water	samples, tests, etc	RL	depth metres	graphic log	classification symbol	soil type: plasticity o colour, secondary	naterial or particle characte and minor compor	eristics, nents.	moisture condition	consistency/ density index	100 × pocket	3	structure and additional observations	
SST				E+3.1ppm		-			ASPHALT FILL: Gravelly Clayey S/ grained, dark grey. Grav Dark grey rock pieces	AND: Fine to media el is fine to mediar	um n grained,	D	F			lo odour or staining	-
				E+9.0ppm	-	0. <u>5</u> –			FILL: Gravelly SAND: Fi fine to medium grey brow crushed red brick fragme	wn rock pieces with	. Gravel is n some	D	F		N	lo odour or staining	
				E, A+12ppm	-	- 1. <u>0</u> -			FILL: Gravelly Sandy CL grey. Gravel is fine grey concrete and orange brid rusted metal pieces	rock pieces and cru	ushed	D	F		N	o odour or staining	
			QÇ	E, QC35, 35A+11.3p	pm	- 1. <u>5</u> - - -			White ceramic piece and red/orange brick pieces	more metal pieces	s and						
				E+8.0ppm		2. <u>0</u> - -			More white ceramic/porc	elain pieces							
			<b>V</b>	E, A+8.0ppm		- 2. <u>5</u> -			ALLUVIUM: Clayey SAN brown	D: Fine grained, ye	ellow — — -	М	F		N	o odour or staining	
				E+4.6ppm					Sandy CLAY: Medium pl	asticity, dark grey		М	F		N	o odour or staining	
				E+5.2ppm		3.5			Some white shells			W					-
						- - 4.0			Borehole BH121A termin	ated at 3.5m							-
metho AS AD RR W CT HA DT B V T *bit sh e.g.	A ger screwing* auger drilling* roller/tricone washbore cable tool hand auger diatube blank bit V bit TC bit t shown by suffix M mud N nil C casing penetration 12 3 4 10/1/98 water level water inflow						e resistand nging to fusal water le shown flow	ce		ion test (SPT) overed ne	classification symbols and soil description based on unified classification system moisture D dry M moist W wet Wp plastic limit W <sub>L</sub> 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

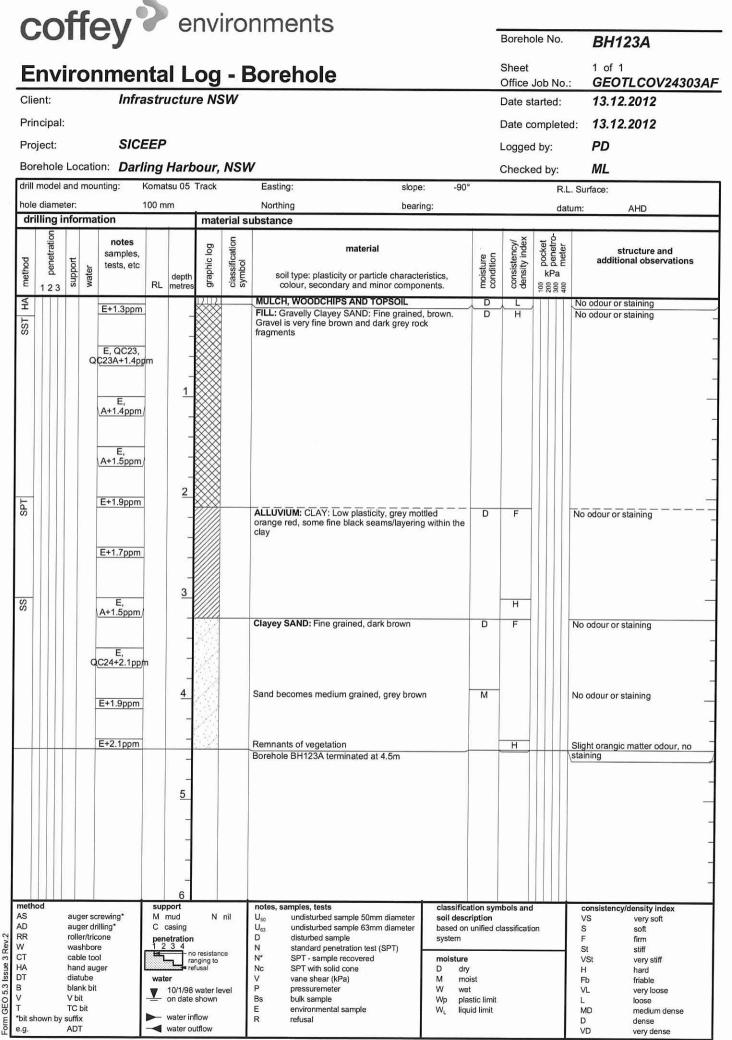
-			£	ç,	~	5	0	nv	iro	nments							
C	7(			16	Эу		C	110	10	IIIIeiils		-	Boreho	le No.	li -	BH122	
E	n	v	ir	or	nmer	nta	I L	og	- E	Borehole			Sheet Office	Job No	o.:	1 of 1 GEOTLCOV24303	BAF
Cli	ent:				Infra	astr	uctui	re NS	SW				Date st	arted:		13.12.2012	
Pri	ncip	bal	8										Date co	omplet	ed:	13.12.2012	
Pro	ojec	:t:			SIC	EEP	)						Logged	by:		PD	
Bo	reh	ole	Lo	cati	on: Dari	ling	Harb	our,	NSV	V			Checke	ed by:		ML	
drill	mod	del	and	mou	unting:	Koma	tsu 05	Track		Easting:	slope: -90°	5		R	.L. Su	rface:	
hole						100 m	ım	<del></del>		Northing	bearing:			da	atum:	AHD	
ar	-	-	nto	rma	tion	1	1	mat	-	ubstance				4			
method	1	s penetration	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle colour, secondary and minor	characteristics, r components.	moisture condition	consistency/ density index	100 × pocket 200 × penetro- 300 × meter		structure and additional observations	
НA					E,	-	_			MULCH, SAWDUST AND TOPSO		D	L		No	odour or staining	
				E	Ç22+12.9p	9m	-			FILL: Gravelly SAND: Fine grained very fine brown and dark grey rock	t, brown. Gravel is αpieces	D	S		No	odour or staining	-
SS	6 0. <u>5</u> E. <u>A+19.9ppm</u> , –									Crushed grey sandstone noted			н				-
	=1.0									Ssandstone and dark grey igneous concrete noted							
SS SPT					E+19.9ppm	-	 1. <u>5</u>			Occassional orange crushed brick Borehole BH122 terminated at 1.7							-
							2. <u>0</u> - 2. <u>5</u>										
							-										-
							3. <u>0</u> 										_
							3. <u>5</u>										-
							-										1
	4.0																-
Method     support       AS     auger screwing*       AD     auger drilling*       RR     roller/tricone       CT     cable tool       HA     hand auger       DT     diatube       B     blank bit       V     V bit       T     T C bit       *bit shown by suffix     water inflow       e.g.     ADT					mud casing etration 3 4 no ra re er 10/1/98 on date water in	o resistan nging to fusal water le shown flow	ce	notes, samples, tests       U <sub>50</sub> undisturbed sample 50mm di       U <sub>50</sub> undisturbed sample 63mm di       D     disturbed sample       N     standard penetration test (SF       N*     SPT - sample recovered       Nc     SPT with solid cone       V     vane shear (kPa)       P     pressuremeter       Bs     bulk sample       E     environmental sample       R     refusal	symbols and on ed classification			onsistency/density index S very soft firm t stiff St very stiff hard b friable L very loose loose D medium dense dense D very dense					

~		ſ	2		5		2	iro	nments							
C	C		16	ЭУ		e		IO	Innents		-	Boreho	le No.	9	BH122A	
E	nv	ir	or	nmer	nta	IL	og	- E	Borehole			Sheet Office 、	Job No	o.:	1 of 1 GEOTLCOV24303	AF
Clie	nt:			Infr	astri	uctur	e NS	SW				Date st			13.12.2012	
Prin	cipa	:										Date co	nmnlei	ed.	13.12.2012	
Proj				SIC	EEP									.cu.	PD	
-								NOIA	,			Logged				
		_		on: Dar		tsu 05		NSV				Checke			ML	_
hole				nung.	100 m		TIACK		Easting: slop Northing bear						Irface:	
11000	ling			tion	100 11		mate	erial s	ubstance	ing.			a	atum:	AHD	
method	5 penetration	support	water	notes samples, tests, etc		depth metres	graphic log	classification symbol	material soil type: plasticity or particle charact colour, secondary and minor compo		moisture condition	consistency/ density index	200 bocket		structure and additional observations	
HA				E,			$\times\!\!\times\!\!\times$		MULCH, SAWDUST AND TOPSOIL	D				odour or staining		
SS/T				E+1.5ppm E+1.6ppm E, A+1.6ppm	- - - - -				FILL: Gravelly SAND: Fine grained, grey f Gravel is very fine brown and dark grey ro fragments Sandstone and ballast and orange brick p fragments	ock	D	Н		No	odour or staining	
SPT			Q	E, QC25, C25A+1.4p E+2.0ppm E, A+1.5ppm E+1.9ppm	-	3			ALLUVIUM: Sandy CLAY: Low plasticity, or grey		D	F			odour or staining	
				E+2.5ppm		- - - - - - - - - - - - - - - - - - -			Borehole BH122A terminated at 4m					Slig	i <u>ht organic matter odour, no</u> ning	
AS AD RR W CT HA DT B V T	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				M C pen 1 2 Watu	ra re	shown flow	ce	notes, samples, tests           U <sub>50</sub> undisturbed sample 50mm diameter           U <sub>51</sub> 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	soil describased on u system D dry M moi: W wet Wp plas	ription unified c	ed classification S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose mit L loose				



GEO 5.3 Issue 3 Rev.2

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GEO 5.3 Issue 3 Rev.2



U	U			≠y		CI	1111	U	1111	ents	Borehol	e No.	BH124/MW124	
E	nv	iro	on	mer	ntal	Lo	- pc	·P	iez	ometer	Sheet Office Jo	nh No	1 of 1 : <b>GEOTLCOV24303A</b>	
Clie	64						NSV				Date sta		14.12.2012	
Prin	cipal	:									Date co	mplete	d: <b>14.12.2012</b>	
Proj	ect:			SIC	EEP						Logged	by:	PD	
Bore	ehole	Loc	atic	n: <b>Dari</b>	ing H	larbo	our, N	sw			Checke		ML	
drill r	nodel	& mo	ounti	ng:Komats	u 05 Tr	ack		Ea	sting:	333566.149 slope: -90°		-	Surface: 4.465	
	diame	49-59,107,972		115				1		6249900.057 bearing:		dat	um: AHD	
dril	ling i	Infor	mat					ma	1	substance		~		
method	5 penetration	support	water	notes samples, tests, etc	well detail	s RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	structure and additional observations	
SSTSPT SST HA				E, A+31.7ppn E+86.1ppn E+42.3ppn			- - 1 -		****	MULCH, SAWDUST AND TOPSOIL FILL: Gravelly Clayey SAND: Fine grained, brown. Gravel is fine crushed sandstone and orange brick fragments and some rootlet pieces	_/ D	н	No odour or staining	
				E+43.4ppm		c	_		*	Fine to medium sized orange brick pieces and some glass shards				
SPT				E+41.3ppm E+40.4ppm			2		~ ~ ~ ~ ~	FILL: CLAY: Low plasticity, grey, orange mottled yellow	D	Н	No odour or staining	
				E, A+117ppm E+45.5ppm	0/10	_1	3			Some crushed grey sandstone Some red ironstone, darker grey seams/layers of cla			Slight HC odour and sligh black staining in the crushed sandstone	
				E+107ppm			-			SAND: Fine grained, dark grey. Reworked natural?	y D	н	Moderate HC odour, no staining	
						0	4						black staining Very slight HC odour. no staining	
			F	E+25.8ppm E, A+45.7ppm	I H		- 5			Some wood/vegetation within sand. Alluvial matter? ALLUVIUM: Sandy CLAY: Low plasticity, dark brown slightly mottled orange grey	D	н	Very slight HC odour, no staining Moderate HC odour	
							<u>5</u> -			Back into grey sand	D	н	Very slight HC odour, no staining	
			-00	E, QC27, 27A+4.6pg	m E	1				SANDSTONE: Highly weathered, medium grained,				
				Е, <u>А+4.9ppm</u>		2	- - - 7 - - -			pale grey Borehole terminated at 5.6m	D	VH	No odour or staining	
							8							
metho AS AD RR W CT DT B V T T BX T BX T BX *bit sh e.g.	own by	aug rolle was cabl diate blan V bi TC I Tub	er dri er/trice hbore le too ube ube k bit t pit ex	one e	1 2 : water ↓ 1/ ↓ 0/	ration 3 4 no r rang refu	N nil resistance ging to usal vater level hown		notes, sa U <sub>50</sub> D N N N N C P B S S S S S S S S S S S S S S S S S S	mples, tests     moisture       undisturbed sample 50mm diameter     D     dry       disturbed sample     M     moist       standard penetration test (SPT)     SPT     Wet       SPT with solid cone     Wp     plastic limit       pressure meter     bulk sample     Iquid limit       bulk sample     environmental sample     HD       PID measurement     water sample     if ilt test			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	

Environmental Log - Borehole       Sheet       1 of 1         Clien:       Infrastructure NSW       Date started:       11.12.2012         Principal:       Date started:       11.12.2012         Project:       SICEEP       Logged by:       PD         Borehole Location:       Darling Harbour, NSW       Checked by:       ML         dill model and mounting:       Konatsu 05 Track       Easting:       slope:       -90'       RL. Surface:         folde diameter:       100 mm       Northing       bearing:       datum:       AHD         drilling information       material substance       material       give by give	CC	f	f€	Эу		е	nvi	iro	nments		-	Borehc	le N	lo.	BH125
Principal: Date complete: 11.12.2012 Project: SICEP Dation NSW Checked by: PD Borchole Location: Dating Harbour, NSW Checked by: ML drill model and mounting: Komaisu 05 Track Easting: slope: -90° RLL: Surface: hole diameter: 100 mm Northing bearing: datu: AHD drilling information material substance tests, etc RL metres 8 8 9 8 8 8 10 10 0 mm Attributer and another structure and additional observations drilling information Attributer and another structure and additional observations and structure and additional observations drilling information Attributer and another structure and additional observations and structure and additional observations drilling information Attributer and another structure and additional observations and grap tructure and additional observations and structure and additional observations and structure and additional observations and grap tructure and additional observations and structure and asserve additional observations and structure and additional observations and structure additional observations are proved by additional observations and structure additional observati													Job I	No.:	
Project:     SICEP     Logged by:     PD       Borehole Location:     Darling Harbour, NSW     Checked by:     ML       Indimodel and mounting:     Komatsu 05 Track     Easting:     slope:     -90°     R.L. Surface:       hole diameter:     100 mm     Northing     bearing:     datum:     AHD       drilling information     material substance     additional observations     AHD       in 23 ds     in and single states, etc.     in additional observations     in additional observations       in 23 ds     in additional observations     in additional observations     in additional observations       in 23 ds     in additional observations     in additional observations     in additional observations       in 23 ds     in additional observations     in additional observations     in additional observations       in 24 ds     in additional observations     in additional observations     in additional observations       in 23 ds     in additional observations     in additional observations     in additional observations       in 24 ds     in additional observations     in additional observations     in additional observations       in 24 ds     in additional observations     in additional observations     in additional observations       in 24 ds     in additional observations     in additin additional observations     <	Client:			Infra	stri	ıctur	re NS	SW			)	Date st	arte	d:	11.12.2012
Borehole Location:       Darling Harbour, NSW       Checked by:       ML         drill model and mounting:       Komatsu 05 Track       Easting:       slope:       -90*       R.L. Surface:         hole diameter:       100 mm       Northing       bearing:       datum:       AHD         drilling information       material substance       adatum:       AHD         drilling information       material substance       adatum:       AHD         drilling information       samples, samples, itests, etc.       grip track       grip track       grip track       soil type: plasticity or particle characteristics, colour, secondary and minor components.       grip track       grip track       grip track       additional observations         50       12.3 drs       grip track       depth track       grip track       grip track       material       grip track       grip track       additional observations         53       Hold track       grip track <td< td=""><td>Principa</td><td>l:</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td><td>Date co</td><td>omp</td><td>leteo</td><td>d: <b>11.12.2012</b></td></td<>	Principa	l:									1	Date co	omp	leteo	d: <b>11.12.2012</b>
drill model and mounting:       Komatsu 05 Track       Easting:       slope:       -90*       R.L. Surface:         hole diameter:       100 mm       Northing       bearing:       datum:       AHD         drilling information       material substance       material substance       structure and additional observations         isst, etc.       notes       samples, tests, etc.       group of the structure and additional observations       soil type: plasticity or particle characteristics.       group of the structure and additional observations         ics       12.3 drs       group of the structure and additional observations       soil type: plasticity or particle characteristics.       group of the structure and additional observations         ics       12.3 drs       group of the structure and additional observations       group of the structure and additional observations         ics       FLL: Gravely Sandy CLAY: Low plasticity or particle characteristics.       group of the structure and additional observations         ics       FLL: Gravely Sandy CLAY: Low plasticity, dark brown. Gravel is fine unidentified frown and grey rock places and some places of concrete and orange brick fragments       No odour or staining         ico       0.5       Ico       Ico       Ico       Ico       Ico       Ico         ico       1.0       Ico       Ico       Ico       Ico       Ico	Project:			SICE	EP						1	_oggeo	l by:		PD
Note diameter:     100 mm     Northing     bearing:     datum:     AHD       drilling information     material substance     aterial     generation     AHD       difficult     notes samples, 1 2 3     notes samples, 1 2 3     generation     generation     aterial     generation       00 mm     AHD       01 modes     samples, samples, 1 2 3     notes     notes     generation     generation     generation       02 mode     10 mm     RL     modes     generation     generation     generation     generation       03 mode     10 mm     RL     modes     generation     generation     generation     generation       04 million     10 mm     RL     modes     generation     generation     generation     generation       05 million     10 mm     RL     modes     generation     generation     generation     generation       06 million     10 mm     10 mm     10 mm     Modes     Generation     Generation     Generation     Generation     Generation       07 million     10 mm     10 mm     10 mm     10 mm     10 mm     Modes     Modes     Modes <th< td=""><td>Borehole</td><td>e Lo</td><td>catio</td><td>on: <b>Darl</b>i</td><td>ing</td><td>Harb</td><td>oour,</td><td>NSN</td><td>/</td><td></td><td>(</td><td>Checke</td><td>ed by</td><td>y:</td><td>ML</td></th<>	Borehole	e Lo	catio	on: <b>Darl</b> i	ing	Harb	oour,	NSN	/		(	Checke	ed by	y:	ML
drilling information     material substance       value     notes samples, tests, etc     notes samples, tests, etc     notes samples, tests, etc     notes semples, tests, etc     notes semples, tes			mou	U			Track		Easting:	slope: -90°				R.L	. Surface:
Determinant       Determinant <thdeterminant< th=""> <thdeterminant< th=""></thdeterminant<></thdeterminant<>			rma	18	00 m	m	mate	erial si		bearing:	_		_	dati	um: AHD
B       E+6.2ppm       FILL: Gravelly Sandy CLAY: Low plasticity, dark provements       D       H         B       FILL: Gravelly Sandy CLAY: Low plasticity, dark provements       D       H         B       FILL: Gravelly Sandy CLAY: Low plasticity, dark provements       D       H         B       FILL: Gravelly Sandy CLAY: Low plasticity, dark provements       D       H         B       FILL: Gravelly Sandy CLAY: Low plasticity, dark provements       D       H         B       FILL: Gravelly Sandy CLAY: Low plasticity, dark provements       D       H         B       FILL: Gravelly Sandy CLAY: Low plasticity, dark provements       D       H         B       FILL: Gravelly Sandy CLAY: Low plasticity, dark provements       D       H         B       FILL: Gravelly Sandy CLAY: Low plasticity, dark provements       D       H         B       FILL: Gravelly Sandy CLAY: Low plasticity, dark provements       D       H         B       FILL: Gravelly Sandy CLAY: Low plasticity, dark provements       D       H         B       FILL: Gravelly Sandy CLAY: Low plasticity, dark provements       D       H         B       FILL: Gravelly Sandy CLAY: Low plasticity, dark provements       D       H         B       FILL: Gravelly Sandy FILL: Gravelly Sandy FILL: Gravelly Sandy FILL: Gravelly Sandy FILL: Gravelly San	nethod penetration	upport		notes samples,	RL	depth metres	aphic log		material		moisture condition	consistency/ density index	kF	Pa	
E+25.1ppm				E+25.6ppm		- - - - - - - - - - - - - - - - - - -			FILL: Gravelly Sandy CLAY: Low p brown. Gravel is fine unidentified b pieces and some pieces of concret	rown and grey rock	D	Н			No odour or staining

		E+25.1ppm		No concrete brick fragments		_
2				Very hard surface, potentially concrete Borehole BH125 terminated at 1.1m		
			_			
			1.5			_
						_
			_			-
			-			-
			2.0			-
	method		support	notes, samples, tests	classification symbols and	consistency/density index
	AS	auger screwing*	M mud N nil	U <sub>so</sub> undisturbed sample 50mm diameter	soil description	VS very soft
N	AD RR	auger drilling* roller/tricone	C casing	U <sub>63</sub> undisturbed sample 63mm diameter D disturbed sample	based on unified classification	S soft
3 Rev.	W	washbore	penetration	N standard penetration test (SPT)	system	F firm St stiff
	CT	cable tool	no resistance ranging to	N* SPT - sample recovered	moisture	VSt very stiff
GEO 5.3 Issue	HA DT	hand auger	refusal	Nc SPT with solid cone	D dry	H hard
3 Is	B	diatube blank bit	water	V vane shear (kPa) P pressuremeter	M moist W wet	Fb friable
0 5.	v	V bit	10/1/98 water level on date shown	Bs bulk sample	Wp plastic limit	VL very loose L loose
Ш	т	TC bit	12	E environmental sample	W <sub>L</sub> liquid limit	MD medium dense
Form (	*bit shown b		water inflow	R refusal		D dense
Ľ.	e.g.	ADT	- water outflow			VD very dense

		<b>.</b>	£,		5		nvi	iro	nments								
C	;(	)	16	Эy		e		10	IIIIeiiis		-	Boreho	le No.		BH125A		
E	n٧	/ir	or	nmer	nta	IL	og	- E	Borehole			Sheet Office 、	Job No	.:	1 of 1 GEOTLCOV24303A	١F	
Clie	ent:			Infra	astr	uctur	re NS	SW				Date st	arted:		17.12.2012		
Pri	ncipa	al:										Date co	mplete	ed:	17.12.2012		
Pro	oject:			SIC	EEP	)					1	Logged	l by:		PD		
Bor	rehol	e Lo	cati	on: <b>Dar</b>	lina	Harb	our.	NSV	V			Checke	•		ML		
_		_	-		2.000	e B80 1			Easting: slope	e: -90°		R.L. Surface:					
hole	e dian	neter:			100 m	ım			Northing bear	ring:			da	atum:	AHD		
dri	illing	info	rma	tion	-	1	mate		ubstance								
method	5 penetration	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle charact colour, secondary and minor compo		moisture condition	consistency/ density index	200 × pocket 300 × penetro- 400 meter		structure and additional observations		
SS				E13 Jaam					ASPHALT				4 3 6 4				
				E+3.2ppm E, A+1.2ppm					FILL: Gravelly SILT: Dark grey. Gravel is t rock fragments FILL: Gravelly SAND: Medium grained, ye brown. Gravel is fine to medium crushed s	/	D	H			odour or staining		
						1	$\sim$							E=	===========	_	
				E+1.6ppm					Gravelly SAND: Fine grained, dark grey. very fine to fine dark grey and brown rock and asphalt pieces CONCRETE		D	<u>н</u> н		_	odour or staining odour or staining		
-				E+1.9ppm					FILL: Gravelly Sandy CLAY: Low plasticity	y, yellow						-	
SPT						2			brown. Gravel is medium crushed red bric yellow brown sandstone and grey rock pie \IRONSTONE: Fine grained, red CLAY: Low to medium plasticity, grey mot orange		D	F		No			
				E, A+2ppm	/	-			FILL: SAND: Fine grained, yellow brown		м	F		No	odour or staining	-	
			<b>Y</b>	E+2.0ppm E, QC31,					Becoming more grey	-	W	F		No	odour or staining	-	
			Q	231A+2.1pp E+2.3ppm		-			ALLUVIUM: Sandy CLAY: Alluvial, mediur plasticity, dark grey, white shell fragments		w	F		No	odour or staining	-	
				E+2.3ppm		4			Decomposed vegetation/rootlets		W	F		Stro	ong organic matter odour, no		
						5 6			Borehole BH125A terminated at 4m					\ <u>stai</u>	ning		
AS AD RR W CT HA DT B V T	ethod S auger screwing* D auger drilling* R roller/tricone T cable tool A hand auger T diatube blank bit V bit TC bit wit shown by suffix S auger screwing* S auger screwing* M mud N nil C casing penetration 1 2 3 4 no resistance ranging to M mud N nil C casing Penetration 1 2 3 4 no resistance Penetration Penetration Penetration N mud N nil C casing Penetration 1 2 3 4 no resistance Penetration Penetration N mud N nil C casing Penetration Penetration N mud N nil C casing Penetration N mud N nil C casing Penetration Penetration Penetration N mud N nil C casing Penetration Penetration N mud N nil C casing Penetration N mud N nil N mu						o resistan nging to fusal water le shown flow	ce	notes, samples, tests       U <sub>50</sub> undisturbed sample 50mm diameter       U <sub>83</sub> undisturbed sample 63mm diameter       D     disturbed sample 63mm diameter       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		iption unified cl			V S F S	soft firm t stiff St very stiff hard b friable L very loose loose D medium dense dense		

Form GEO 5.3 Issue 3 Rev.2



**Environmental Log - Borehole** Sheet 1 of 1 Office Job No .: GEOTLCOV24303AF Client: Infrastructure NSW 12.12.2012 Date started: Principal: 12.12.2012 Date completed: SICEEP Project: PD Logged by: Borehole Location: Darling Harbour, NSW ML Checked by: drill model and mounting: Komatsu 05 Track Easting: slope: -90° R.L. Surface: hole diameter: 100 mm Northing bearing: datum: AHD drilling information material substance pocket penetro-meter classification symbol consistency/ density index notes log material structure and penetra samples, moisture condition additional observations method support graphic tests, etc water kPa soil type: plasticity or particle characteristics, colour, secondary and minor components. depth RL 100 200 400 123 metre CONCRETE Б 1 1 D.D 4 4 E, QC19, QC19A+11.5ppm SS/T FILL: Sandy GRAVEL: Fine grained, dark grey to D н No odour or staining black. Gravel is dark grey and pale grey sandstone and igneous rock pieces. Potential ash noted 0.5 F A+10ppm FILL: Sandy CLAY: Low plasticity, yellow brown E+20.5ppm D Н No odour or staining 1.0 Material becomes more brown to dark grey, piece of E+14.1ppm 1.5 orange brick FILL: CLAY: Medium to high plasticity, grey mottled D н No odour or staining A+17.2ppm vellow 2.0 ALLUVIUM: Sandy CLAY: Organic, medium D Н SPT E+19.3ppm Slight organic matter odour, no 2.5 plasticity, dark grey staining Very sandy E+12.1ppm 3.0 Borehole BH126 terminated at 3m 3.5 4.0 method notes, s support amples, tests classification symbols and consistency/density index AS auger screwing' M mud N nil U50 undisturbed sample 50mm diameter soil description VS very soft AD auger drilling\* C casing U<sub>63</sub> undisturbed sample 63mm diameter based on unified classification s soft RR roller/tricone D disturbed sample penetration system F firm W CT washbore Ν standard penetration test (SPT) St stiff no resistance cable tool N\* SPT - sample recovered moisture VSt very stiff ranging to refusal HA hand auger SPT with solid cone No D dry hard н DT diatube ν vane shear (kPa) M moist water Fb friable B V blank bit P pressuremeter W VL 10/1/98 water leve wet very loose V bit on date shown Bs bulk sample Wp plastic limit loose Т TC bit medium dense Е environmental sample W. liquid limit MD \*bit shown by suffix water inflow R refusal D dense

Borehole No.

**BH126** 

VD

very dense

30REHOLE GEOTLCOV24303AF.GPJ COFFEY.GDT 16.1.13

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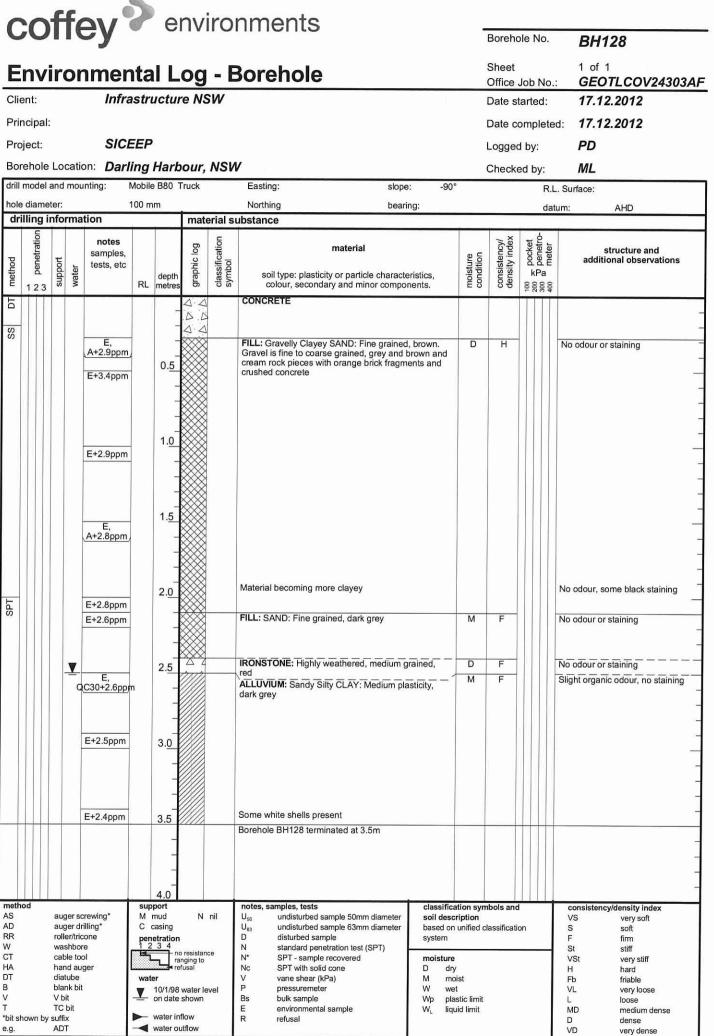
e.g

ADT

water outflow

6		2	f	Fc	עב		е	nvi	ro	nments			_				
U					∋у									Boreho	ole No.	BH127	
E	n	vi	ir	or	nmer	nta	IL	og	- E	Borehole				Sheet Office 、	Job No.:	1 of 1 <b>GEOTLC</b>	OV24303AF
Clie	ent:				Infra	astri	uctur	re NS	SW				1	Date st	arted:	10.12.201	12
Prir	ncip	oal:											I	Date co	omplete	d: 10.12.201	2
Pro	jec	t:			SICI	EEP							I	_ogged	l by:	PD	
Bor	eho	ole	Lo	catio	on: <b>Darl</b>	ing	Harb	our,	NSV	/			(	Checke	ed by:	ML	
drill	mod	del a	and	mou	nting:	Koma	tsu 05	Track		Easting:	slope	: -90°			R.L	. Surface:	
hole				ma	tion	100 m	m	mate		Northing ubstance	beari	ng:			dat	um: AHD	
		-		ma	notes					ubstance			1	×	+ 6		
method	nonotration	perietrat	support	water	samples, tests, etc		dopth	graphic log	classification symbol		naterial or particle characte	ristics	moisture condition	consistency/ density index	a pocket benetro- meter	structu additional ol	
-	12	23	Ins	wa		RL	depth metres		_		and minor compor		or 10	cor	100 200 300 400		
S DT					E+6.5ppm		_	44		SAND: Fine grained, ye	llow brown		D	S		No odour or stainir	1a –
SS					E, A+8.2ppm		-			FILL: Gravelly Clayey S grey. Gravel is fine, darl	k grey ballast		D	Н		No odour or stainir	
	E+9.3ppm									FILL: Gravelly SAND: F Gravel is fine dark grey	ine grained, dark g and orange brick fr	rey. agments	D	Н		No odour or stainir	ng
	E+3.5ppm																_
	E,									Old metal bolt and oran	ne brick pieces with	in fill					-
					A+4.6ppm		-										-
					E+5.4ppm		2			Sandy CLAY: Low to me	adium plasticity, gre		D	F		No odour or stainin	ig
					E+6.0ppm E+6.3ppm		-			Clay becomes more pal	e grey and slightly	nottled		-		Marcal and the second sec	_
					E+4.4ppm		-			CLAY: Low to medium p	lasticity, grey slight	ly mottled	D	F		No odour or stainin Slight organic matter staining	
				<u>▼</u> .			3			SAND: Fine grained, ye	low brown	/	м	F		Stanning	_
							-										-
				Q	E, QC17, 217A+5.7pp	m	-			Sandy CLAY: Low to me minor white shell fragme sandstone fragments			W	F		Organic matter odo	our, no staining _
					E+4ppm		4			Borehole BH127 termina	ated at 4 m						
																	-
							-										9 <u>-</u>
							-										-
							5										-
																	-
meth	nethod 6						_			notes, samples, tests		alassifias	tion our	halo and			to be down
AS AD							mud	Ν	nil	U <sub>50</sub> undisturbed sam	ple 50mm diameter ple 63mm diameter	classifica soil descr based on	iption				y soft
RR W			roll	er/tric	one	pen	etration 3 4			D disturbed sample N standard penetra	9	system	unneu ci	assilicatio		F firm	r i
CT HA			cab	le too Id au	bl	E.	ra ra	o resistan Inging to Ifusal	ce	N* SPT - sample red Nc SPT with solid co	covered	moisture D dry					y stiff
DT B			diat	ube nk bit		wat	er		vel	V vane shear (kPa P pressuremeter		M moi W wet	st			Fb friat	ble
V T			V b TC	it			10/1/98 on date		Vei	Bs bulk sample	imple	Wp plas	stic limit L loose				
*bit sh e.g.	nowr			x			water in water o	nflow R refusal							D den		

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GEO 5.3 Issue 3 Rev.2 HA DT в V

C	;C	)t	te	Эу		е	nvi	ro	nments		-	Boreho	le No.	BH129
E	n١	/ir	or	nmer	nta	IL	og	- E	Borehole			Sheet Office 、	Job No.	1 of 1 GEOTLCOV24303AF
Clie	ent:			Infra	astri	uctui	re NS	W			1	Date st	arted:	10.12.2012
Prir	ncipa	al:									)	Date co	omplete	d: <b>10.12.2012</b>
Pro	ject:			SICI	EEP	0						Logged	l by:	PD
	2		catio	on: Darl			our	NSM	/			Checke	0010 <b>-</b> 01-1	ML
_						tsu 05			Easting: slope	e: -90°		CHECKE		Surface:
0.0000000	diam			U	100 m				Northing bear					um: AHD
14921-2243	illing		rma	tion			mate	erial s	ubstance				uat	
method	5 penetration	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characte colour, secondary and minor compo	eristics, inents.	moisture condition	consistency/ density index	200 × pocket 200 v peretro- 400 meter	structure and additional observations
DT							<b>A A</b>		CONCRETE: Grey, pebbly on sides					
DT SS HA				E, A+4.1ppm E +8.2ppm E+23.7ppm	1	-			Sandy GRAVEL: Fine grained, dark grey t FILL: Sandy Clayey GRAVEL: Fine to mer grained, dark grey CONCRETE SLAB		D D	H H		No odour or staining No odour or staining –
SPIRS	- 1								FILL: Sandy Clayey GRAVEL: Gravel orar crushed sandstone	nge	D	н		No odour or staining
	E+31.6ppm								Crushed glass and orange brick pieces an fragments					No odour or staining
				E, C18+86.7pp E, A+33.4ppm		2			Brick fragments present, no glass noted. S ash type material and cream crushed sand fragments	ome black Istone		F		No odour or staining
				E+51.7ppm		<u>3</u>			Material becoming more sandy clay. Very I	ess gravel				No odour or staining
				E+53.9ppm		-			Piece of buried wood reminants and glass white shell fragments with crushed cream s	shards and sandstone	-			No odour or staining
				E+53.3ppm					Same fill material, white shell fragments (por reworked natural material)	ossibly				No odour or staining
	<u>E+54.1ppm</u>					5			Very minor white shell fragments, some wo vegetation piece	od/				-
	45.2ppm -								ALLUVIUM: CLAY: Medium plasticity, dark very minor dark grey damp wood piece and shell fragments. Clay turns orange mottled	grey, I white	M			No odour or staining 
									Borehole BH129 terminated at 5.5m					
method     support       AS     auger screwing*     M     mud     N     nil       AD     auger drilling*     C     casing     penetration       RR     roller/tricone     1     2     3       W     washbore     1     2     3       CT     cable tool     1     2     3       HA     hand auger     no resistance     ranging to       DT     diatube     water     water       B     blank bit     10/1/98 water leve       V     V bit     1     on date shown       T     T C bit     +     water inflow       e.g.     ADT     -     water outflow						etration 3 4 refration 7 ref er 10/1/98 on date	o resistano nging to fusal water le shown flow	ce	notes, samples, tests     classification syr       U₅₀     undisturbed sample 50mm diameter       U₅₀     undisturbed sample 63mm diameter       D     disturbed sample       N     standard penetration test (SPT)       N*     SPT - sample recovered       Nc     SPT with solid cone       P     pressuremeter       Bs     bulk sample       E     environmental sample       R     refusal					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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