coffey 🍫 e	nvironments
------------	-------------

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
rioject.	orocer, burning narbour, byuney Nov

## Borehole Location: SICEEP Darling Harb

_	drill model and mounting: B80 MOBILE DRILL TRACK Easting: slope:											-90° BL Surface:						
	e diam		mou	U	120 n		Northing bearing:						N.E. Odnače.					
-	illing	-	rma		12011		mate	erial s	ubstance	ng.			-	datur	m:			
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	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.			
meth AS AD RR W CT HA DT B V T *bit sh e.g.	od	au roll wa cat har dia bla V b TC	ger dri er/trico shbore ole too nd aug tube nk bit it bit x	one e I	M C 1 2 Pen 1 2 Wat	rai rei	resistano nging to fusal water le shown	œ	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				
E+-4.2p           E+-4.2p           E+-7.1pc           E+-10.9p           E+-11.7p           E+11.8p		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				
				Auto-Constant	1. · · · · · · · · · · · · · · · · · · ·	u 05 Tr				sting:	333679.383 slope: -90°	Onecker		.L. Surface: 2.710		
hole	e diameter: 115 illing information								No	rthing:	6249893.26 bearing:			um: AHD		
dril									ma	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		
SS				<u>A+</u>	E, 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			Sandstone becoming more brown in colour, orange brick fragments	•	Н			
	E, \A+10ppm/1					_1	-			Material turns grey and becomes slightly clayey						
	<u>E+6.6ppm</u>						2									
	<u>E+6.6ppm</u> <u>E+7.3ppm</u> 0				_			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	-								
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	e NS	W				I	Date st	arted:		18.12.2012		
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	Checke	ed by:		ML		
			mou	5		su 05	Track		Easting:	slope			R.L. Surface:					
-	diame		rma		100 m	m	mate	erial s	Northing ubstance	beari	ng:			da	tum:	AHD	-	
method	<pre>c penetration</pre>	support	water	notes samples, tests, etc	RL	depth	graphic log	classification symbol		material ity or particle characte ary and minor compo		moisture condition	consistency/ density index	<sup>100</sup> X pocket 300 B penetro- 400 meter		structure and additional observations		
SST				E+7.3ppm		- - - - - - - - - - - - - - - - - - -			is fine to medium gre FILL: Gravelly Clayer grey. Gravel is fine to	Medium grained, bro y igneous rock pieces medium dark grey ar s with some crushed c	ned, dark d orange	D	F			odour or staining		
metho AS AD RR W CT HA OT 3 / / F bit sh 2.g.	od	aug rolle was cab har diat blar V b TC	ger dr er/tric shbor ole too nd aug tube nk bit it bit x	e N	vate	nud casing etration 3 4 no rai rai rai rai rai rai rai no rai rai on date	nt     notes, samples, tests     classification       d     N nil     U <sub>50</sub> undisturbed sample 50mm diameter     soil descripti       undisturbed sample     U <sub>50</sub> undisturbed sample 63mm diameter     soil descripti       d     D     disturbed sample     based on unif       d     no resistance     N     standard penetration test (SPT)     based on unif       d     no resistance     N*     SPT - sample recovered     moisture       rendemation     Nc     SPT with solid cone     D     dry       vane shear (kPa)     M     moist       V1/98 water level     P     pressuremeter     W     wet       date shown     Bs     bulk sample     Wp     plastic       ter inflow     R     refusal     Wt     uiquid ling								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>		е	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	SW o							ML				
	model		nou	5		tsu 05	Track		Easting: slope: -90°						R.L. Surface:					
_	diame I <b>ling i</b>		ma		100 m	im	mate	erial s	Northing bearing:					datum: 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				
			E, QC35, QC35A+11.3ppm -						White ceramic piece and more metal pieces and red/orange brick pieces											
				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		- 3. <u>0</u> - -			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.	ethod auger screwing* auger drilling* R roller/tricone washbore cable tool hand auger diatube blank bit V bit TC bit shown by suffix B uger screwing* auger drilling* M mud penetration 1 2 3 4 resistance ranging to water 10/1/198 water level water inflow								notes, samples, tests       classification sy         U <sub>s0</sub> undisturbed sample 50mm diameter         U <sub>s0</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							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

~	coffey environments																				
C	7(	U			ey		G	110	10	IIIIeiits			-	Boreho	le No		BH122				
E	n	v	'ir	0	nmei	nta	al L	og	- E	Borehole				Sheet Office	Job Ne	o.:	1 of 1 GEOTLCOV243	03AF			
Cli	ent	:			Infr	astr	uctu	re NS	SW					Date st	arted:		13.12.2012				
Pri	ncij	pa	I:											Date co	omple	ted:	13.12.2012				
Pro	jec	ct:			SIC	EEP	)							Logged	by:		PD				
Во	reh	ole	e Lo	oca	tion: Dar	ling	Hark	our.	NSI	V				Checke			ML				
	_	_		_	ounting:	100	itsu 05	_		Easting:	slope	: -90°		R.L. Surface:							
hole				-		100 n	nm			Northing	bearir	ng:		datum: AHD							
dr										ubstance			1		4						
method	l	N penetration	support	water	notes samples, tests, etc		depth	graphic log	classification symbol	materi soil type: plasticity or par colour, secondary and r	ticle characte	ristics, nents.	moisture condition	consistency/ density index	<sup>100</sup> A pocket <sup>200</sup> A penetro-	5	structure and additional observatior	IS			
HA					E,	-	_		-	MULCH, SAWDUST AND TO FILL: Gravelly SAND: Fine gr		Gravalia	D		TT	No	odour or staining				
					EÇ22+12.9p	pm	-			very fine brown and dark grey	rock pieces	Gravel is	D	S		No	odour or staining	-			
SS					E, A+19.9ppr	n,	0. <u>5</u>			Crushed grey sandstone note	d			н				-			
	A+19.9ppm									Ssandstone and dark grey igr concrete noted											
SS SPT					E+19.9ppn	n	1. <u>5</u>			Occassional orange crushed b		is						-			
meth	B       E+19.9ppm         2.0									Borehole BH122 terminated at 1.7m											
							mud casing 2 3 4 nr 2 3 4 nr re re 10/1/98 on date	o resistan inging to fusal water le shown	ice	notes, samples, tests     classification sym       U <sub>50</sub> undisturbed sample 50mm diameter       U <sub>63</sub> undisturbed sample 63mm diameter       D     disturbed sample 63mm diameter       D     standard penetration test (SPT)       N*     SPT - sample recovered       Nc     SPT with solid cone       V     vane shear (kPa)       P     pressuremeter       Bs     bulk sample       R     refusal						V S F S	soft firm t stiff St very stiff hard b friable L very loose loose ID medium dense dense				

~		<b>.</b>	c.		5		2	iro	nments							
C	C		Ie	ЭУ		e		IO	nments		-	Boreho	le No.	4	BH122A	
E	nv	ir	or	nmer	nta	IL	og	- E	Borehole			Sheet Office 、	Job No	).:	1 of 1 GEOTLCOV24303	AF
Clie	nt:			Infr	astri	uctur	e NS	SW				Date st			13.12.2012	
Prin	cipa	I:										Date co	mnlet	ed.	13.12.2012	
Proj				SIC	FFD								•			
								NOIA	,			Logged			PD	
		_	_	on: <b>Dar</b>		tsu 05		NSV				Checke	-		ML	
1	diam		mou	nung.	100 m		TIACK		Easting: slop Northing bear						irface:	
1000	ling		rma	tion	100 11		mate	erial si	ubstance	ing.			da	atum: AHD		
method	<pre>c c c c c c c c c c c c c c c c c c c</pre>	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 v penetro-		structure and additional observations	
HA				E,			$\times\!\!\times\!\!\times$		MULCH, SAWDUST AND TOPSOIL	hrouwn	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	E, QC25, QC25A+1.4ppm E+2.0ppm 4 E+2.0ppm 3 E, A+1.5ppm								ALLUVIUM: Sandy CLAY: Low plasticity, or grey	F			odour or staining			
	E+1.9ppm E+2.5ppm 4 5 5 6 ethod support								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	method     support       AS     auger screwing*       AD     auger drilling*       AR     roller/tricone       V     washbore       CT     cable tool       HA     hand auger       DT     diatube       B     blank bit       V     Vbit       T     TC bit       bit shown by suffix     water inflow							ce	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	iption	ibols and		V S S V H F V L	firm stiff (St very stiff hard b friable L very loose loose 1D medium dense dense		



GEO 5.3 Issue 3 Rev.2

-orm



GEO 5.3 Issue 3 Rev.2



COTTEY • environments								Borehol	e No.	o. BH124/MW124				
Environmental Log - Piezometer									ometer	Sheet Office J	nh No	1 of 1 o.: <b>GEOTLCOV24303AF</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+31.7ppm E+86.1ppm E+42.3ppm			- - 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, o o <u>3</u> A+117ppm c					_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 4				-			within the clay SAND: Fine grained, dark grey. Reworked natural?	- D	н	Moderate HC odour, no staining			
					<u>4</u> 						black staining Very slight HC odour. no staining			
	E+25.8ppm E, A+45.7ppm						-			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	
		5								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 *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 ran ran	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 sample recovered     W       SPT with solid cone     Wp     plastic limit       pressure meter     bulk sample     Iquid limit       PID measurement     water sample     V       PID measuremet     air lift test     V			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 structure and additional observations are pieces of concrete and orange brick and															
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     additional observations       in 23 ds     in attrait all substance     in additional observations     in additional observations       in 23 ds     in attrait all substance     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 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 additional observations     in additiona	Client:	lient: Infrastructure NSW Date started:													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 colspan="13">rincipal: Date con</td><td>d: <b>11.12.2012</b></td></td<>	Principa	rincipal: Date con													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	15	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		- - 0. <u>5</u> - - - - - - - - - - - - -			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		
			-			
2			_			_
			1. <u>5</u>			_
						_
			-			-
			-			-
			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	D disturbed sample 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	;C	)	16	Эу		e		10	IIIIeiiis		-	Boreho	le No.		BH125A	
E	n٧	/ir	or	nmer	nta	l L	og	- E	Borehole			Sheet Office 、	Job No	.:	1 of 1 GEOTLCOV24303A	F
Clie	ent:			Infra	astri	uctur	re NS	SW				Date st	arted:		17.12.2012	
Pri	ncipa	al:										Date co	mplet	ed:	17.12.2012	
Pro	oject:			SIC	EEP	)					1	Logged	by:		PD	
Bor	rehol	e Lo	cati	on: <b>Dar</b>	lina	Harb	our.	NSV	V			Checke	•		ML	
_		_			1.75	e B80 T			Easting: slope	e: -90°				L. Su	rface:	
hole	e diarr	neter:			100 m	nm	•		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 x pocket 300 b penetro-		structure and additional observations	
SS				E12 2000			~~~		ASPHALT				4 3 5 4			-
				E+3.2ppm E, A+1.2ppm					FILL: Gravelly SILT: Dark grey. Gravel is f rock fragments FILL: Gravelly SAND: Medium grained, ye brown. Gravel is fine to medium crushed s	/	D	H		1.1	odour or staining	
						1	$\sim$		ASPHALT	,				E=		_
				E+1.6ppm					Gravelly SAND: Fine grained, dark grey. C very fine to fine dark grey and brown rock and asphalt pieces CONCRETE		D	<u>н</u> н		_	odour or staining	
-				E+1.9ppm					FILL: Gravelly Sandy CLAY: Low plasticity, yellow brown. Gravel is medium crushed red bricks and							-
SPT						2			Vellow brown sandstone and grey rock pie Vellow brown sandstone and grey rock pie VIRONSTONE: Fine grained, red CLAY: Low to medium plasticity, grey moti orange		D	F		No		-
				E, A+2ppm	)	1			FILL: SAND: Fine grained, yellow brown		м	F		No	odour or staining	-
			<b>Y</b>	E+2.0ppm E, QC31,	-		3			Becoming more grey	W	F		No	odour or staining	-
			Q	C31A+2.1pp E+2.3ppm		-			ALLUVIUM: Sandy CLAY: Alluvial, medium plasticity, dark grey, white shell fragments		w	F		No odo	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						ning	
AS AD RR W CT HA DT B V T	nethod     support       NS     auger screwing*       ND     auger drilling*       RR     roller/tricone       V     washbore       CT     cable tool       IA     hand auger       DT     diatube       V     blank bit       V bit     TC bit       DT     TC bit       DT     TC bit       DT     water level						o resistan nging to fusal water le shown flow	ce	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	iption	bols and		V S F V H F V L	firm t stiff St very stiff hard b friable L very loose loose ID 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

GEO 5.3 Issue 3 Rev.2

-orm

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 GEOTLCO	V24303AF
Clie	ent:				Infra	astri	uctur	re NS	SW .				]	Date st	arted:	10.12.2012	
Prir	ncipal: Date complete												omplete	d: 10.12.2012			
Pro	roject: SICEEP Logged by:										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				××	+ 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	structure additional obse	
-	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 staining	
SS					E, A+8.2ppm		-			grey. Gravel is fine, darl	L: Gravelly Clayey SAND: Fine grained, dark D y. Gravel is fine, dark grey ballast					No odour or staining	-
					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 staining	
					E+3.5ppm		<u>1</u> _										
					E,		_			Dld metal bolt and orange brick pieces within fill							-
					A+4.6ppm		-										_
					E+5.4ppm		2			Sandy CLAY: Low to me	adium plasticity, gre		D	F		No odour or staining	
					E+6.0ppm E+6.3ppm		-			Clay becomes more pal	e grey and slightly	nottled		-		N	_
					E+4.4ppm		-			CLAY: Low to medium p	lasticity, grey slight	ly mottled	D	F		No odour or staining Slight organic matter of staining	odour, no
				<u>▼</u> .			3			SAND: Fine grained, ye	low brown	/	м	F		Stairing	_
							-										÷
				Q	E, QC17, 217A+5.7pp	m	-			Sandy CLAY: Low to me minor white shell fragme sandstone fragments			W	F		Organic matter odour,	no staining _
					E+4ppm		4			Borehole BH127 termina	ated at 4 m						
											au fill						-
							-										-
							-										-
							5										-
																	_
																	-
																	-
meth						eun	6 port			notes, samples, tests		alassifias	tion our	hala and			
AS AD	ou				rewing* illing*	М		Ν	nil	U <sub>50</sub> undisturbed sam	ple 50mm diameter ple 63mm diameter	classifica soil descr based on	iption			Consistency/density in VS very so S soft	
RR W			roll	er/tric	one	pen	etration 3 4			D disturbed sample N standard penetra	9	system	unneu ci	assilicati		F firm	
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				St stiff VSt very sti H hard	ff
DT B			diat	ube nk bit		wat	er		vel	V vane shear (kPa P pressuremeter		M moi W wet	st			Fb friable	
V T			Vb	it			10/1/98 on date		Vei	Bs bulk sample E environmental sa	imple	Wp plas	stic limit id limit			L loose	n dense
T TC bit *bit shown by suffix e.g. ADT water ou water ou										R refusal		L "du	a contraction			D dense	

0



GEO 5.3 Issue 3 Rev.2 HA DT в V

C	coffey environments													BH129	
E	n١	vir	or	nmer	nta	IL	og	- E	Borehole			Sheet Office 、	Job No.	1 of 1 : <b>GEOTLCOV24303AF</b>	
Clie	ent:			Infra	stri	uctui	re NS	W			1	Date st	arted:	10.12.2012	
Prir	псіра	d:									)	Date co	te completed: 10.12.2012		
Pro	Project: SICEEP													PD	
	-													ML	
_	drill model and mounting: Komatsu 05 Track Easting: slope: -90°												ed by:	Surface:	
0.0000000	hole diameter: 100 mm Northing bearing:													um: AHD	
14461-0045	illing		rma	tion			mate	erial s	ubstance				ua		
method	benetration	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	100 × pocket 200 × pecket 400 meter	structure and additional observations	
DT							Q . A		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 med grained, dark grey CONCRETE SLAB			H H		No odour or staining	
SPIRS				Е, А+20.6ppm					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, 218+86.7pp E, A+33.4ppm	m	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		3			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	
				E+54.1ppm		5			Very minor white shell fragments, some wo vegetation piece					-	
			Ē	45.2ppm =+35.3ppm		-			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	
						_ _ 6			Borehole BH129 terminated at 5.5m					-	
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 no resistance ranging to ranging to ranging to tranging to a definition 1 2 3 4 1 2 1 4 1 2 3 4 1 2 3 4 1 2 1 1 4 1 2 1 1 4 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1						o resistano nging to fusal water le shown flow	ce	notes, samples, tests     classification sy soil description       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       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	

-