DRAFT FINAL REPORT on GEOTECHNICAL ASSESSMENT

PROPOSED THIRD TERMINAL PORT BOTANY

VOLUME 2 APPENDIX F - BORE LOGS

Prepared for SYDNEY PORTS CORPORATION

Project 35224 OCTOBER 2002

APPENDIX F Relevant Bore Logs

Bore	Easting	Northing	RL	Depth	Description	Top of dens	e sands	Top of peat	s & clavs	Top of bed	ock	Terminate
	¥		(ISLW)	(m)	•	Depth	RL ·	Depth	RĹ	Depth	RL	at RL
124	333870	6239215	-7.3	16.8	August 1968	Dredged to	-16.6	8.2	-15.5	15.2	-22.5	-24.1
132	334123	6239613	-5.9	22.6	July 1968	0.0	-5.9					-28.5
207	333395	6238790	-7.00	18.56	February 1969	Dredged to	-18.2	10.5	-17.5	16.5	-23.5	-25.6
208	333455	6239260	-7.16	13.24	February 1969	Dredged to	-13.7	9.3	-16.5	11.7	-18.9	-20.4
209	333155	6239300	-6.86	15.21	February 1969	1.0	-7.9	10.3	-17.2	13.5	-20.4	-22.1
210	332855	6239345	-6.40	15.90	February 1969	0.0	-6.4	12.0	-18.4	14.5	-20.9	-22.3
211	333825	6239660	-7.00	19.60	March 1969	Dredged to	-20.8	18.3	-25.3			-26.6
212	333523	6239703	-6.86	19.84	March 1969	0.0	-6.9	11.9	-18.8			-26.7
213	333230	6239745	-6.55	20.73	February 1969	0.0	-6.6	14.5	-21.1			-27.3
214	332925	6239790	-6.10	17.00	February 1969	1.5	-7.6	11.4	-17.5	15.4	-21.5	-23.1
215	332650	6239635	-5.79	14.30	January 1969	0.0	-5.8	12.2	-18.0	12.2	-18.0	-20.1
217	333845	6240106	-3.35	21.40	March 1969	Dredged to	-10.0	16.8	-20.2			-24.8
218	333595	6240153	-4.27	20.20	March 1969	0.0	-4.3	12.2	-16.5			-24.5
219	333293	6240197	-5.41	20.00	March 1969	1.9	-7.3	14.0	-19.4	18.2	-23.6	-25.4
220	332990	6240245	-5.41	18.00	1969	0.0	-5.4	12.1	-17.5	16.5	-21.9	-23.4
221	332690	6240290	-5.33	13.30	January 1969	0.0	-5.3	10.4	-15.7	11.6	-16.9	-18.6
223	332760	6240740	-3.65	12.20	January 1969	0.9	-4.6	4.6	-8.3	10.5	-14.2	-15.9
224	334230	6240230	-3.20	20.90	April 1969	1.7	-4.9	12.3	-15.5	19.5	-22.7	-24.1
225	333655	6240528	-2.36	22.20	May 1969	0.0	-2.4					-24.6
226	333360	6240682	-1.83	22.90	May 1969	0.0	-1.8	17.0	-18.8	21.3	-23.1	-24.7
227	333080	6240825	-2.59	22.90	January 1969	0.0	-2.6	12.3	-14.9			-25.5
338	333875	6239235	-7.50	21.0	May 1974	Dredged to	-16.8	9.5	-17.0	18.0	-25.5	-28.5
339	333810	6239070	-6.75	13.0	April 1974	Dredged to	-15.0	10.0	-16.8	12.0	-18.8	-19.8
341	333680	6239315	-7.25	17.5	May 1974	Dredged to	-15.0	11.5	-18.8	14.5	-21.8	-24.8
342	333620	6239150	-6.75	13.0	April 1974	Dredged to	-15.7	9.5	-16.3	12.0	-18.8	-19.8
343	333598	6239103	-7.25	15.0	Apr 1974	Dredged to	-15.5	11.0	-18.3	13.5	-20.8	-22.3
344	333500	6239395	-7.25	18.0	April 1974	0.0	-7.3	9.5	-16.8	13.0	-20.3	-25.3
345	333425	6239230	-7.23	13.0	April 1974	Dredged to	-15.0	11.0	-18.0	11.5	-18.5	-20.0
346	333420	6239185	-7	15.0	May 1974	Dredged to	-16.2	11.5	-18.5	12.0	-10.0	-22.0
420	334435	6239575	-4.25	59.1	April 1975	7.3	-11.6	29.5	-33.8	56.7	-61.0	-63.4
420	334340	6239575	-4.25	45.45	May 1975		-11.6	29.5	-33.6		-01.0	-63.4
422	334340			40.40		Dredged to	-15.6	30.0	-32.1	62.5	60.7	-50.1
424	334240		-6.15 -7	16.35	February 1975 August 1975	Dredged to Dredged to	-15.0	13.9	-36.2	63.5	-69.7	-72.2
605	334420	6239630	-4.7	47.7	February 1975	0.0	-4.7	31.0	-35.7	46.8	-51.5	-52.4
901	334157	6239565	-6.4	57.75	November 1975	2.0	-8.4	27.5	-33.9	55.2	-61.6	-64.2
901	334067	6239505	-6.6	68.75	November 1975	2.0	-8.6	27.5	-33.9	66.9	-73.5	-04.2

Bore	Easting	Northing	RL	Depth	Description	Top of dens	e sands	Top of peat		Top of bedr		Terminates
			(ISLW)	(<i>m</i>)		Depth	RL	Depth	RL	Depth	RL	at RL
903	333975	6239650	-6.7	59.62	December 1975	Dredged to	-15.0	15.2	-21.9	56.0	-62.7	-66.3
904	.333885	6239690	-6.7	47	January 1976	Dredged to	-22.0	19.0	-25.7	43.9	-50.6	-53.7
905	333795	6239735	-6.6	38	January 1976	Dredged to	-20.5	18.0	-24.6	35.0	-41.6	-44.6
906	333615	6239820	-6.45	46.5	February 1976	2.0	-8.5	15.8	-22.2	44.1	-50.6	-53.0
907	333435	6239900	-6.25	36.5	February 1976	3.0	-9.3	18.1	-24.3	33.8	-40.1	-42.8
908	333350		-6.2	32.5	February 1976	2.5	-8.7	19.6	-25.8	29.7	-35.9	-38.7
909	333240		-6.1	29.3	March 1976	2.0	-8.1	16.7	-22.8	25.6	-31.7	-35.4
910	333327	6240650	-2.1	26.25	March 1976	1.8	-3.9	16.9	-19.0	22.9	-25.0	-28.4
911	333610		-2.55	45.5	March 1976	1.5	-4.1	20.6	-23.2	42.4	-44.9	-48.1
912	333890		-7.55	55.5	March 1976	2.0	-9.6	18.6	-26.2	52.4	-60.0	-63.1
913	333845	6240115	-3.6	35	April 1976	Dredged to	-15.6	18.2	-21.8	32.5	-36.1	-38.6
914	333970	6239990	-3.9	54	May 1976	1.8	-5.7	19.4	-23.3	50.8	-54.7	-57.9
915	334198	6239645	-4.7	43	July 1976	2.0	-6.7	20.2	-24.9	38.8	-43.5	-47.7
916	334110		-5	57	July 1976	1.3	-6.3	16.8	-21.8	54.1	-59.1	-62.0
917	334020		-5.4	58.6	June 1976	2.0	-7.4	19.6	-25.0	58.5	-63.9	-64.0
918	333932	6239780	-5.7	68.1	June 1976	Dredged to	-15.0	29.3	-35.0	65.0	-70.7	-73.8
919	333840	6239825	-5.85	55	May 1976	Dredged to	-21.9	22.0	-27.9	51.5	-57.4	-60.9
0.0	000010					<u></u>						
DM2	332780	6240696	-4.21	10.35	Dames & Moore Jan 1991	0.00	-4.2	10.2	-14.4	10.15	-14.4	-14.6
DM3	332843		-4.76	13.5	Dames & Moore Jan 1991	0.0	-4.8	13.0	-17.8			-18.3
DM4	332900		-5.47	15.65	Dames & Moore Jan 1991	0.0	-5.5	11.4	-16.9			-21.1
DM5	332963		-5.85	19.22	Dames & Moore Feb 1991	0.0	-5.9	11.2	-17.1	18.7	-24.6	-25.1
DM6	333019	6239673	-6.07	17.01	Dames & Moore Feb 1991	0.0	-6.1	10.3	-16.4	16.9	-22.9	-23.1
DM7	333075	6239425	-6.35	13.54	Dames & Moore Feb 1991	0.0	-6.4	10.7	-17.1	13.4	-19.7	-19.9
DM8	333133	6239184	-6.35	14.4	Dames & Moore Feb 1991	2.6	-9.0	10.7	-17.1	14.2	-20.6	-20.8
DM20	332839	6239109	-7.15	15.11	Dames & Moore Feb 1991	3.2	-10.3	11.2	-18.4		·	-22.3
DM46	333860	6239460	-7.13	15.32	DP March 1992	0.0	-7.1	12.3	-19.4			-22.5
DM67	333780	6240865	-2.88	13.69	Dames & Moore May 1991	4.2	-7.1	9.0	-11.9	13.3	-16.2	-16.6
DM68	332849	6240560	-4.54	11.54	Dames & Moore May 1991	0.0	-4.5	10.6	-15.1	11.3	-15.8	-16.1
DM69	332912	6240311	-5.14	14.06	Dames & Moore May 1991	0.0	-5.1	12.1	-17.2	13.9	-19.0	-19.2
DM71	333033	6239826	-5.99	20.15	Dames & Moore May 1991	3.3	-9.2	8.9	-14.8	20.1	-26.1	-26.1
DM73	333138	6239343	-6.45	13.15	Dames & Moore May 1991	2.5	-9.0	9.7	-16.2	13.0	-19.5	-19.6
CP1	333527	6240705	-1.65	37.00	Coffey 1998 - cored bore	2.0	-3.7	19.8	-21.5	34.0	-35.7	-38.7
CP2	333580	6240571	-2.46	35.90	Coffey 1998 - cored bore	1.0	-3.5	19.6	-22.1	35.7	-38.1	-38.4
CP3	333627	6240433	-15.10	33.20	Coffey 1998 - cored bore	1.5	-16.6	7.8	-22.9	31.8	-46.9	-48.3
CP4	333672	6240285	-18.35	38.70	Coffey 1998 - cored bore	0.4	-18.8	7.5	-25.9	36.6	-54.9	-57.1
CP5		6240149	-18.40	43.47	Coffey 1998 - cored bore	3.2	-21.6	4.0	-22.4	41.9	-60.3	-61.9
CP6	333753		-19.75	42.05	Coffey 1998 - cored bore	0.8	-20.6	0.8	-20.6	40.4	-60.2	-61.8
CP7	333797		-21.80	41.60	Coffey 1998 - cored bore	4.0	-25.8	4.0	-25.8	40.6	-62,4	-63.4
CP8		6239711	-21.95	24.65	Coffey 1998 - cored bore	0.7	-22.7	2.0	-24.0	23.0	-45.0	-46.6
CP9			-21.25	14.85	Coffey 1998 - cored bore	0.5	-21.8	4.0	-25.3	13.5	-34.8	-36.1
CP10	333945		-15.95	26.15	Coffey 1998 - cored bore	0.8	-16.8	4.0	-20.0	23.5	-39.5	-42.1
CP10 CP11			-11.40	54.75	Coffey 1998 - cored bore	0.3	-11.7	8.2	-19.6	53.3	-64.7	-66.2
	534000	6239463	-11.40	54.75	Colley 1990 - Coleu Dole	0.0	-11.7	0.4	0.01		1 07.1	

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Bore	Easting	Northing	RL	Depth	Description	Top of den		Top of peat		Top of bedr		Terminate
	g		(ISLW)	, (m)		Depth	RL	Depth	RL	Depth	RL	at RL
CP12	334175	6239508	-11.70	63.80	Coffey 1998 - cored bore	0.6	-12.3	11.5	-23.2	62.1	-73.8	-75.5
CP13	333879	6240590	-6.05	21.60	Coffey 1998 - washbore	6.0	-12.1	17.5	-23.6			-27.7
CP14	333991	6240248	-2.95	27.55	Coffey 1998 - washbore	3.3	-6.3	26.0	-29.0		•	-30.5
CP15	334049	6240063	-3.30	24.75	Coffey 1998 - washbore	6.0	-9.3	23.5	-26.8			-28.1
CP16	334094	6239898	-0.20	33.60	Coffey 1998 - washbore	4.7	-4.9	32.5	-32.7			-33.8
CP17	333702	6240676	-1.55	22.30	Coffey 1998 - washbore	0.5	-2.1	20.8	-22.4			-23.9
CP18	333757	6240492	-15.00	9.45	Coffey 1998 - washbore	0.5	-15.5	9.0	-24.0			-24.5
CP19	333817	6240305	-14.75	11.20	Coffey 1998 - washbore	0.4	-15.2	9.7	-24.5			-26.0
CP20	333448	6240465	-2.80	18.70	Coffey 1998 - washbore	2.0	-4.8	17.2	-20.0			-21.5
CP21	333534	6240191	-4.35	18.50	Coffey 1998 - washbore	0.5	-4.9	17.0	-21.4			-22.9
CP22	333635	6239893	-6.45	17.15	Coffey 1998 - washbore	3.7	-10.2	15.0	-21.5			-23.6
CP23	333730	6239587	-10.27	11.42	Coffey 1998 - washbore	1.4	-11.7	10.2	-20.5			-21.7
CP24	333265	6240595	-2.30	17.40	Coffey 1998 - washbore	2.0	-4.3	16.0	-18.3			-19.7
CP25	333370	6240257	-4.75	17.05	Coffey 1998 - washbore	0.5	-5.3	14.5	-19.3			-21.8
CP26	333535	6239755	-6.70	17.65	Coffey 1998 - washbore	0.5	-7.2	16.5	-23.2			-24.4
CP27	333635	6239446	-7.05	13.75	Coffey 1998 - washbore	0.5	-7.6	8.5	-15.6			-20.8
S1	333378	6240823	-2.0	0.3	Coffey 1998 - surface sample							-2.3
S2	333565	6240783	-2.2		Coffey 1998 - surface sample							-2.5
\$3 \$3	333440	6240620	-3.0		Coffey 1998 - surface sample							-3.3
S4	333638	6240575	-3.0		Coffey 1998 - surface sample							-3.3
S5	333503	6240415	-4.9		Coffey 1998 - surface sample							-5.2
S6	333716	6240365	-4.2		Coffey 1998 - surface sample	1						-4.5
S7	333570	6240208	-6.0		Coffey 1998 - surface sample							-6.3
 S8	333760	6240170	-6.0		Coffey 1998 - surface sample							-6.3
	333630	6240015	-6.5		Coffey 1998 - surface sample							-6.8
S10	333804	6239960	-8.0		Coffey 1998 - surface sample							-8.3
S11	333690	6239820	-7.0	0.3								-7.3
S12	333850	6239750	-10.5	0.3	Coffey 1998 - surface sample	_						-10.8
S13	333760	6239612	-7.0		Coffey 1998 - surface sample							-7.3
CW7	334513	6239645	3.65	60.15	Connell Wagner Dec 2000	Filled	-16	40.5	-36.9	60.15	-56.5	-56.5
CW8	334710	6239718	3.65	44.7	Connell Wagner Dec 2000	Filled	?	37.7	-34.1	43.5	-39.9	-41.1

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-20		19'6" Scaled, Lease gray silly Idra SAND w 23'0" shell (approx. 10'1 to (").	ж.				 	<u> </u>					· · · · · · · · · · · · · · · · · · ·				an a	Ane Trea 37° 49'
		23'0" shell (approx. 10'1 to 1").															र करे के के कि	Bunnereng Waler Tower
-30					· · · · · · · · · · · · · · · · · · ·							· ····································						
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-50		SAND.	50'-57'6"							10000000000000000000000000000000000000					The Local Difference of the lo		3.4.10	
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The Ma	illin•	Services Board of N.S.W. Preservoiton & Rosenrch Sub-Branch	Engineering Bran	clı		•••			S	ORD	0, 40,						North, Sheet No.: 2. 68	Fid.Yean C.L.M. Lob Test P.Z.C. Chocked A. J. T. T.
Depth In			Test of	5	oii 5ia	U.	tnde	x, Pro	p⊈,	Density			Mux Sl Unconfine	iear Streng d Compr.	ili Ibezeq. Triaxi		S,P.T.	Romarks
1001	Prolite A State	Description	Somple Depth	Sand	5111	Cloy	P.L.	L.L.	P.I.	Dıy Ibs/c.f.		M.C. %	Und at.	Remould		E .	Blows for 61ns, of Penetrution	
-70	S 24		The second second		-						7 <u></u>		1.1.1	- 4 4 KY	7		7449 (a. 148 8	无法就是一些不能要要是我们是不是不可能要是
	2 A.A.	Lerie to compared brown for	lo		113574444	******					<u>ः २</u>	- 4 ²	1. Sec. 10		11 12 127	Cr	1. 2. M. 2. 2. 7. 1. 2. 1. 1.	了。我们在我们们的时候,我们是他们的人的人。" 人名法布雷尔
		SAND												-				
2.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	91 F.E		ser the reaction		4.	c-25	1	化公众		<u> </u>	સંદર્ભક	18	1.343	18:58		<u> </u>	生物的研究和发展	MARKEN CONTRACTOR OF THE
1914	「「「「		1992年,省北南京大学			·	83 (r. 3	3		1. 1	10.1			14164	1	一方	视为检查和容易	Statistics and statistics and the state
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212.24	1999 i 19	Compact to dense brown site	1	-	7.571.667		· · · ·					1.7		1			3-1-5-1-1.35% ##1045	· · · · · · · · · · · · · · · · · · ·
1.2		for SAND with pieces												-				
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- 90	15	Contraction of the second second second									. <u>.</u>	÷:					 1.1.1.1.4%起来。 	
- 2. 66. 8.	R	1 With the second second second second	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1				12			т. Т	12.5		11.1.1.1.1.1.1	-3, 3, 8 V.			一次市场建造委	· 我们的是你,我们就是你们的你?""你?""你们的?"
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						i				a de la compañía de l Transmission de la compañía de la com	<u> </u>		$z \in \mathbb{R}^{2n}$				THE PARTY &	1. 小常報報報, 学行, 1998年
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The Ma	ritime	Services Board of N.S.W. Preservation & Research Sub-Branch	Engineering Brans	:h				ORE		ORD Series N	•41	ر 	Loc Borr Dote	ation: 80 No.: 20 of Boring	tany Ba 7 : 19-2-	y No 68	rth Sheet No.: /	Fid.Test J. Lab Tost P. Checked R.J
pth in	Profile	Deserted	Test or		oil Siz		Inde	ex. Pro	ps.	Density	Densit; Wet	м.с.	Max Si Unconfine	near Streng d Compr.	th Ibs/sq. Triaxi		·S.P.T. Blows for 6 ins.	Remarks
eet.	70111	e Description	Somple Depth	Sand	Silt	Cley	P.L.	L.L.	P.I.	Dry 1bs/c.í.	ibs/c.í.	%	}	Remould		C.II P.S.I.	of Penetration	
-20																		Depiths below 1.52.W.
		-23'0' Seabed															·	Bore Coordinates
	•	•			 				• .									Best 1 1 100 m
-30	• • •	•		+	\vdash					 		<u> </u>	<u> </u>			<u> </u>		Back Lead 65°11 Boral Flare
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	• • •			1	1	[i										
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-40	· · ·	silty fine & medium SAND			<u> </u>	ļ					ر سهروندر اسرو	.		· ·-		· · · ·		
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	••••	57'6"					<u> </u>				<u> </u>			1		· ·		
-60	//	iStiff_grey_organic_sandy silvy_CLAY_with_lenses ofclayey_sand	59'0"	20	44	36	17	51	34	96.5	123.0	27.7	3,000 2,300	700				
	///	stly CLAY with lenses	62'0"	9	38	53	20	72	52	98.9	123.9	25.3	2,300	850	1,800	20		
	11	of clayey sand	63.9-		<u> </u>	<u> </u>	83	160	77	<u> </u>	 	<u> </u>	· · · · · · · · · · · · · · · · · · ·		ļ			
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	÷	<u>4 67'0"</u>	68'0"	86	3	//	<u> </u>	<u> </u>			ļ			.		<u> </u>		•
-70								I	!					·	ļ	 		
		DENSE Grey Clayey Time and		<u> </u>			<u> </u>		<u> </u>			 		 		·		
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-80		Medium hand aroud brown		·				1	<u> </u>					╂				
_00		Iedium hard grey & brown med. SINDSTONE with numerous 883'II' weathcred joints				1		1					-	1	1		· · ·	
		3.83'Il weathered joints													<u> </u>			Drilling Ceased -83'11"
																		Drilling Coosed -83'11" Core drilling 78'11- 83'11"
						{	1			1				1	1			Recovered 4'9"

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The Mor	time S	Services Boud of N.S.W. Preservation & Research Sub-Branch	Engineering Bronc	:h				BORE		UKD Series N	10.4/		Locc Bore Dat	e No.: 208 No.: 208	stany E 8 9:24-2	30y N <u>:-68 ·</u>	North Sheet No.1/	•	Fid.Test J.S. Lob Test P.C. Checked A.J.T.
epth in	,	[Testor		Soil Siz		Ind	lex, Prop	.ps.	Density	Density	ر ا		hear Streng					
foet	Profile	Description	Somple Depth	Sand	Sile	Clay	P.L.	L.L.	P.I.	Dry Ibs/c.1	Wet	м.с. %	Unconfined Undist.	Remould	Triaxi I Undrain.		Blowe for 6the f	Re	emarks
		· · · · · · · · · · · · · · · · · · ·		<u>.</u>		<u> </u>	— '			, 		<u> </u>	ļ				·'	Depths below	1 <u>1. S. L. W.</u>
-20	. 1	· · · · · · · · · · · · · · · · · · ·		<u> </u>							<u> </u>	 		<u> </u>	<u> </u>		·	Bore Coordin	oles
	ľ				'	Į'	<u> </u>	<u> </u>	<u> </u> '	├ ──'	$\int $	<u>ا</u> ا	<u> </u> '	· · · · ·			'	D t l t l	
ł	·····	23'6 Seabed			·+'	 '	+'	\vdash	<u> </u>	t'	<u>+</u> /	\square	f	+'			·'	Back Lead	34"05'
	· · _ '	280 with some fine shell					'			/		[†]					′	Front Lead	65'40'
-30					'	Į'	['	<u> </u> '	f'	t'	{'	t'	t'	'			· ['	Borel Flore	<u>.</u>
				<u> </u>	'	<u> </u> '	/	l	<u> </u>	[<u> </u>			<u> </u>	<u> </u>		·		<u> </u>
	• • •	Consider to a statistic		+	<u> </u> '	['	'	 '	⊢-'	<u>+</u> '	<u> </u>	t'	 '			+	'	<u> </u>	
-40	• •	Compact brown slightly			- <u> </u>		<u> </u>		<u> </u>				/					· · ·	
						'	'	<u> '</u>	! '	 '	'	t'	·{'						· · · · · · · · · · · · · · · · · · ·
		· · · · · · · · · · · · · · · · · · ·		-		<u> </u>	<u> </u>	<u> </u> '	<u> </u>	<u> </u> '	<u> </u>	ſ'	('	<u> </u>			······································		
				—		'	<u> </u>	- <u>-</u> '	<u> </u> '	<u> </u>	·['	<u>⊢</u> '	· ['			<u> </u>			
-50					-	'	·'	<u>+</u>		t'		E'	<u> </u> '						•
		540 Very stiff block_sondy 550 chorcool_PFAT	54'9"		10	120	1 20	100		<u> </u>	1000	<u>−</u>	2500						
		53 O Charcool PLAI		28	44	130	36	00	44	<u> </u> '	102.2	<u> </u>	3.500	800	-		-		·
-60	.,,	Grey silry fine & med SAND		\square	\square			· ['	'	·[]	'	<u>↓</u> ′	·['						
k	aver	620 Very still grey sandy CLAY		+		'	+'	-{'	⊢'	<u>+'</u>	 '	t'				+			
		SANDSTONE with occ. weathered	65'10"				·'	/ /	.['	123.5	; 139.0	12.5	6,900						·
	<u> </u>	620 Very stift grey sandy CLAY Medium hard grey g brown med SANDSTONE with occ. weathered 671 joints						'	<u></u> <u> </u>	·['	<u> </u>	·['						Drilling ceas	sed at -67'1"
-70	,					'		′	<u> '</u>		· · · · · · · · · · · · · · · · · · ·	· · ····'		<u> </u>				Core drilling	<u> 62'1" 67'1" </u> 3'6"
	,				1	-		·	<u> </u>	-['	- <u> </u> '	<u> </u> '						Recovered	3'6"
	,	· · · · · · · · · · · · · · · · · · ·			+		· '	├ ──'	<u> </u>	<u> </u>	· '	[+			-		
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'he Marit	ime S	ervices Board of N.S.W. Preservation & Rosearch Sub-Branch	ngineering Brond	:h						ORD	o.41		Loc Bor Doi	e No.: 20 e of Boring	13-2-	y Nor - 6 9	Sheet No.: /	Fid.Test Lab Test Checked	
oth in Pr	ofile	Description	Test or Somple Depth	5	oil Siz	•	Inde	ox, Pro	ps. '	Density Dry Ibs/c.f.	Density Wet	м.с.	Unconfine		Triaxi	ol	S.P.T. Blows for 6 ins.	Remarks	
			Sample Depth	Sand	Silt	Cloy	P.L.	<u>L.L.</u>	P.1.	lbs/c.f.	lbs/c.f.	%	Undist.	Remould	Undroin.	P. <u>\$.</u> .	of Penetrotion	Depits below 1.5	. Z. M.
-20				<u> </u>														Bore Coordinates	
<u> </u>		22'6" Seabed 26'0" Loose from fine & med. SAND																Back Lead 43's	<u>Z'</u>
	:- <u>-</u> -	260" Loose form fine & med. SAND			<u> </u>													Front Lead 47'3	29'
-30	• • •		_						 			· · ·						Boral Flare	
·		Compact foun silty fine and medium SAND with peat lens of 26'0"																	
·		or 26'0"	35'4"	8/	11	<i>¥</i> 8									<u> </u>		· · · ·		
	• :• :						/1					ļ	<u> </u>		· · · · ·				
-40		42'0"							•									• •	
l .	• . • .											-							
·	••••	Compact brown slightly silty						<u> </u>		· · ·					·				
-50		Compact brown slightly silty	_			ļ		ļ											•
·	•	· · · · · · · · · · · · · · · · · · ·					<u> </u>			·								· · · · · · · · · · · · · · · · · · ·	
<u>-</u> :	•••																		
		566" Very stiff black sandy charcool 576" PEAT	56'8"	5	50	45		<u> </u>		103:5	125.6	21·3 51·2		400	3,250	15			
<u>-00</u> .		610" Compact ov silty fam SAMP	62'4"	53	25	22				1243	1396	12:3	5,750 5,200		5250	20			
		with seems of org silty clay Very still orey d brown sand 14	61'8'	6.3	25_ 22_	15				125.1	141:0	12:Z	\$200			ļ	·	· · · · · · · · · · · · · · · · · · ·	
—Ľ	[]]	Very still grey of brown sand 11_										·	-	·		-			
-70		brown fine & med. SANDSTO:									ļ								,
¥	### 第二章	510 FERI 61'0" Compact qy silty Fam SAM? with seems of org silty clay Very stift grey of brown sand' 1Y 67'0" Weathered to med hard grey brown fine a med SANDSTOP with occ seems of weathered 72'5" silistone to 69'6"						 										Drilling ceased of	-72'5
									_─								-		
							ļ								1			Care drilling 67'3"- Recovered 5'1"	

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Locolian: BOSANY Bay North Bore No.1210 Shee Date of Boring: 5-2-69 Max Shear Strength 15: 744.11 .5.1 Fld.Test J.S. BURE RECORD Engineering Brench Lab Tesi P.C. The Moritime Services Bourd of N.S.W. Shees No.:/ Laboratory Test Series No.4/ Checked A. J.T. Preservation & Research Sub-Branch S.P.T. Density Density Soil Size Index. Props. Unconfined Compr. Testor Trioxic Remarks L.L. P.I. Ibs/c.f.bs/c.f. % Depth in Blows for óins, 1M.C. Description. Profile Remould Undroin, PS Somple Depth Sand Silt Clay P.L. Undist. of Penetrotion feat Depths_below 1.S.L.W. Bore Coordinates ۷ . -20 Cool Wht. Tower 64° 16' 210" Seabed La Perouse Monument 24°07 Kurnell Flag Staff . . -30 . Loose to compost grey slightly sitty fine g med SAND with numerous lenses • * -40 of sandy peat . ۰. -50 . . . -60 1210 1380 140 7400 61'6" 606" Very still grey & brown silly CLAY Drilling ceased at -73'2" Core drilling 68'6 - 13'2 Recovered 4'5"

1. · · · · ·

The Ma	oritime	Services Boon	d of N.S.W. Preservation & Research Sub-Branch	Engineering Brond	:h						ORD Series N	10 <i>4</i> /		Loc Bor Daj	e No.:2/ e No.:2/ e of Borin	otony B 1 1: 15-3-	oy N 69	orth Sheat No.:/	Fld, Test Lab Test Checked	P.C.
epth in	Profil	*	Description	Test or		of I Stz		· ·	x. Pro	ps	Density Dry	Density Wet	м.с.	Unconfine	d Compr.	gth Ibs/sq Triox	iot	·S.P.T. Blows for 6 ins.	Remarks	
feet		1		Sample Depth	Sond	Silt	Clay	P.L.	<u>L.L.</u>	F.1.	Dry Ibs/c.f.	bs/c.f.	%	Undisi.	Remould	Undrain.	P.\$1	of Penetration		
-20			•									 		<u> </u>					Depths below ISKIN	<u></u>
		23'0"	Seabed		<u> </u>										·				Bore Coordinates	
	1		Loose orey silvy form																	
] · [·	270 .	Loose grey silry f # m SAND with Shell																Coal Whi. Tower 7	72°06
-30	l. • . •				<u> </u>	<u> </u>	<u> </u>				ļ	ļ	<u> </u>	· · ·	·				0	
	l. • • •		· · · · · · · · · · · · · · · · · · ·		 		· · · -					<u> </u>								<u>9'38'</u>
			oose to compact brown	· · · · · · · · · · · · · · · · · · ·	-	<u> </u>					·					-			La Perouse Monumen	21
	ŀ. •.	·	Loose to compact brown hightly silty fine & med. AND																	
-40	ł. [.] .	· 4									·									·
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	1	43'	· · · · · · · · · · · · · · · · · · ·																	
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-60	· · .	· \$	Compact to dense lovn o grey line & med SAND													-				<u> </u>
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-80	•	·		·····	1	1				[1		1	- <u> </u>					<u> </u>
	1. · .			83'//"								119.3		[<u> </u>
	·			<u>84'5"</u> 86'6"	3 15 2	43	<u>54</u> 36	25 13 21	80	55	109.7							·		
	V/	A St	iff dark grey silty CLAY	86'6"	15	49	36	13	45	32		132.1				5551				

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The Mo	nitime	e Services Board of N.S.W. Preservation & Research Sub-Branch	Engineering Brond	:h		<u> </u>				CORD Series I	10.4.1		Loc Bor Dot	:=1ion:8 = No.:2/ = of Bori	otony Bo 2 no: 12-3-		sheat No.:/	Fid.Toss J.S. Lob Toss P.C. Checked A.J.T.
Depth in	Profil	Description	Test or		oil Sia	. 0	ind	ex. Pr	ops.	Density	Densit	1	Mox 5 Unconfine	hear Stre	ngth lbs/sq	.ft.	• S.P.T.	
feet		le Description	Somple Depth	Sand	Sile	Cloy	P.L.	L.L.	P.I.	Dry Ibs/c.f	Wei lbs/c.i	м.с. . %			d Undrain.		Blows for 6 ins. of Penetration	Remarks
-20	-	· · · · · · · · · · · · · · · · · · ·	·····	. 							ļ							Depths below I.S.L.N.
		. 22'6" Seobed			[-			Bore Coordinate
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-30	1.	Loose to compact grey		ļ		ļ	 	_				ļ	ļ	ļ				Gog/ Whf. 81'21'
-30		Loose to compost grey Slightly silv fine (med SAND								·							· · · · · · · · · · · · · · · · · · ·	
	·.·.		· · · · ·	1														Le Perouse Norment 24'08' Kurnell Flag Staff
	, . 	35'0'			1.			· ·			1	<u> </u>						KURNEIL Mag Stall
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		. tine I med SHYD				<u> </u>		<u> </u>						<u> </u>		ļ	······	·····
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	77	6/6						<u> </u>	<u> </u>							ļ		
-	//													<u> </u>				
	//	Stiff tovery stiff dark	68'9"	16	64_	20		<u> </u>					+ · · ·		-		<u> </u>	
-70		Still tovery still dark grey silry CLAY	007		24	<u>~~</u>					· · · · ·	•		1	-	1		
	///						<u> </u>											
	///	1	73'9"	3	66	31	25	76	51		<u> </u>							
		· · · · · · · · · · · · · · · · · · ·							<u> </u>									
	11	()	78'3"			20	<u> </u>	<u> </u>	<u> </u>	123.7	133.8	8.2		<u> </u>			ļ	
-80	[]]	/	79'0"	14	51	35	<u> </u>	<u> </u>	 		130-2				3.750	25	· · · · · · · · · · · · · · · · · · ·	
	[]]	183'0" Compart anou aiku clausu					<u> </u>	 			i	ł	-]	ļ	_	<u> </u> '		
	· · · ·	A 83'0" Compact grey silty clayey Line greed SAMD with 87'0" shall	86'9'	82	12	6							+				ł	
	· · ·	- 87'0" shall		-95-	. <u>/.</u>	<u> </u>				· · · · · · · · · · · · · · · · · · ·	ł					<u> </u>		Drilling concol at - 87'4"

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The Mo	ritime (Services Board of N.S.W. Preservation & Research Sub-Branch	Engineering Bronc	h						ORD Series N	₀. <i>41</i>		Loc- Bore Dote	otion: Ba No.: 2/3 of Boring	stony B 3 27-2-6	oy No 59	Sheel No.: /		Lo	d. Tost b Tost cked	J. S. P.C. I.J.T.
epth In- feet	Profile	Description	Test or Sample Depth	\$ Sond	oil Siz Sili	e Clay	Inde P.L.	. Pro	P.I.	Density Dry Ibs/c.f.	Densit Wei Ibs/c.f.	м.с. %	Mox St Unconfine	d Compr.	th Ibs/sq. Trioxi Undroin.	.tt. ol	S.P.T. Blows for 6 ins. of Penetration		Remark	•	
																		Depths	below 1	1.S.L.W.	
													 		 			Bore	Coordino	tes	
-20		······································													-			Cool	Whl. Tore	er 17	°43'
-20		216 Seabed															•	Front	Leod I Flore	24	<u>as'</u>
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-30	 																				
	· . ,	Loose to comport grey slightly silty fine & med. SAND			;;							-								••••••	
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·		· · · · · · · · · · · · · · · · · · ·	<u>44</u> 4"							92.8	1/8-3	27:4	700.						·		*:
-50		3.00						······													
		Compact to dense grey													<u> </u>	<u> </u>			·····		
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<u>r</u>	time \$	ervices Board of N.S.W. Proservation & Research Sub-Branch	Engineering Brond				Lob	oratory		Series N			Loc Bor Dai	e No.: 21 o of Boring	1011 B	ay N. 69	Sheet No.: 2	Fld,Test Lab Test Chocked
ihin pet	rolile	Description	Test or Sample Depth	Sond	Sili	Clay	P.L.	L.L.	P.I.	Density Dry Ibs/e.f.	Denzity Wet Ibs/c.f.	м.с. %	Unconfine	ed Compr. Remould	Triax	ial	·S.P.T. Blows for 6 ins. of Penetration	Remarks
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-60	· · ·	Compact to dense grey fine & med SAND						<u> </u>					<u> </u>				· · · · ·	
ľ	· ·	tine (med SHNV									<u> </u>							
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<u>-</u> 227	7.77	690" 720" Still dark grey silvy CLAY Dense arey silvy clavey	.	<u> </u>	·	1	<u> </u>	+					·	+	· 	· {·····	· · · · · · · · · · · · · · · · · · ·	
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<u> </u>		Deese arey silvy clayer							├							•	·	
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{;		84'0"			†													
ť	17	Still acque sande silve		<u> </u>							[<u> </u>						
—ľ	<i>i</i> / .	<u>Still grey sondy stilty</u>																
-904	[]]	89'6"					<u> </u>					· · · · · ·			·	-		Drilling ceosed at -89'6
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Location: Botony Bay North Bare No.: 214 Sheet N. Date of Baring: 3-2-69 Fld.Test J. S. BORE RECORD The Maritime Services Board of N.S.W. Engineering Branch P.C. Lob Tesi Sheet No.: / Laboratory Test Series No. 41 Preservation & Research Sub-Branch Checked A.J.T. Max Shear Strength Ibs/sq.ft. Soil Size Index. Props. Density Density ·\$.P.T. Test or Depth in Unconlined Compr. Triaxial P.L. L.L. P.I. Ibs/c.f.bs/c.f. % M.C. Remorks Profile Description Blows for 6 ins. Somple Depth feet . Sond Sili Clay Remould Undrain. PS Undist. of Penetration V Depths below 1.S.L.W. Bore Coordinates -20 200 Seobed Loose orey line & med SAND with shell frogments lapprox 5% to £ Bock Lead 81º01 .250 Boral Flore 4558 Kurnell Flag Staff -30 Loose to compoct Favn slightly silry fine g medium SAND -40 420 436 Stiff bk sondy chorcool 92.8 118.3 27.4 432 446 90 6 4 PFAT <u>آ ا</u> 97 0 1.5.8 -50 Compost four slightly silty fine & med. SAND

57'6" Very stiff block sondy -60 59'6" charcool PEAT 48.2 85.8 78.0 48.3 86.5 79.0 **3.000** 2.000 58'11" 6200 20 58 31 592 11 Dense grey clayey fine & medium SAND 63'2" 49 11 1230 1383 126 2,400 10 1.1.1.676 4 68'3" 118-1 1361 150 Very still grey silty 70'6" CLAY 68'6" -71 119.0 136.8 14.8 8,000 10'6" CZAI Medium hard grey 12:10 75'9" Interlominated SILTSTONE and shale with numerous Drilling ceosed of -75'9" Core drilling 70'9"-75'9" Recovered 43 Henthorod inints

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The Ma	ritime	Servicos Board of N.S.W. Preservation & Research Sub-Branch	Engineering Brom	ch					RECO		o.41		La Ba Da	icolion: Ba ire No.: 24 ile of Buring	prony B 5 . 20-1-	69 69	orth Sheet No.: /	· [Fld. Tess J.S. Lab Tess P.C. Checked A.J. 7
pih in eet	Beatil	Description	Testor		oil Siz		inde	x. Pro	. ps, D	Density	Density	м.с.	Mox.	Shear Streng and Compr.	gth Ibs/sq. Trioxi	. <u>6</u>	• S.P.T.	Rema	
eet		- Description	Somple Dopth	Sand	Sili	Cloy	P.L.	L.L.	P.1. 11	Dry bs/c.f.	Wet bs/c.f.	, %		Remould			Blows for 6 ins. of Penetrotion		
-10		·																Depths below	1.S.L.W.
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-20		- 19'0" Seabe.d																<u>}</u>	
		· · · · · · · · · · · · · · · · · · ·		<u>. </u>			[-						ł		·	Front Lead	52'09
		•						·· ·· —			·	·						Back Lead	
·····		Loose to compact orey		<u> </u>	1														
-30	ľ	loose to compact grey slightly silty fine & med. SAND with acc. shell									*****							· · · ·	
	Į. •. •	SAND with occ. shell							-			ļ			•				
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-40		39'0" Soft to firm black org.												-			· · · · · · · · · · · · · · · · · · ·		
	1	390" Soft to firm block org. sondy silty CLAY	<u> 40'0"</u>	37	32	3/	19	64	45	76.6	111.0	451	1150	400					
				81	12	Z				<u>834</u>	1/3.0	355	300	-		<u> </u>			
		Causant annu aliabthi													<u> </u>		·	· ·	
-50	•••	Compoct grey slightly silty fine & med. SAND		+											• • • • • • • • • • • • • • • • • • • •			·····	
	• • • •	With peot lens 55' to 56'		l.											·				
		/																	
		· · · · · · · · · · · · · · · · · · ·												_				<u> </u>	
-60	• • •	59'0" Wegthered grey brown							┝───┡			<u> </u>	┨────				<u> </u>	· · · · · · · · · · · · · · · · · · ·	
_00		Weathered arey brown							<u>├</u> ──├				1	· ·			<u> </u>		· · ·
	žΤ.	Interlominoted SHALF ond			<u> </u>														
	1.1	Wegthered grey brown interlominored SHALE ond 65'10 silistone with numerous																Drilling ceoseo	ot -65'1
		frootured joints							┝──┤				ļ		<u> </u>				
-70		-	· ·						╏━╌─╂								, <u>, , , , , , , , , , , , , , , , , , </u>	Core drilling e	<u> 1'2' - 65' 10</u>
		· · · · · · · · · · · · · · · · · · ·		1					├ ───- <u></u> ╏-						·{			Recovered 32	
				1								1	1		· · · ·			Lacovered 34	×

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The M□	ritime S	ervices Board of N.S.W. Preservation & Research Sub-Branch	Engineering Branc	h			Labo	roloty	r	eries K			Loca Bora Date	ntion: 80 No.: 2/6 of Boring	rany Bo <u>14-1-</u>	17 NO <u>69</u>	Sheet No.1	Fid. Test J. S. Lob Test P. C. Checkod A. J. T.
Depth in feet	Profile	Description	Test or Sample Depth		ioil Siz		Inde	x. Pro	ps. C	Density Dry Ibs/c.f.	Density Wet	м. С.	Uncontined	iear Streng d Compr.	Triaxi	al	S.P.T. Blows for 6 ins.	Remarks
	<u> </u>			Sond	Silı	Cloy	P.L.	L,L.	P.I.	bs/c.t.	bs/c.l.	70	Undisı.	Remould	Undrain.	<u>P.S.I.</u>	of Penetration	Durke hele i citi
	{															<u> </u>		Depths below I.S.L.W.
-/0																		Bore Coordinates
																		Rear Lead 40'11'
-20] 	18'5" Seabed																Front Lead 29'02'
- 20	ľ.	Loose greyfine & med																- Honument La Perouse
		100 Second Loose greyfine & med 130 SAND with shell (gppcox 20% to 1% Composet grey sl. silty 280 line & med SAND	236-250-														N= 2.3.5	
	ŀ	280" fine & med SAND		 													·	•
3 0	1.1.1										·		-					· · · · · · · · · · · · · · · · · · ·
]///												-					
	111	Compact to dense grey																· · · · · · · · · · · · · · · · · · ·
-40	111	Compost to dense grey	38'6-40'0'														N= 7.13.21	
	11.				•													· · · · · · · · · · · · · · · · · · ·
	111																·	a ann a tha ann an tha an
-50	1.1.		/								·····							······································
	77	5/0*		 	12	57				14	124 1	174	5,800					
	<i>\//;</i>	very stift grey tissured	<u>52'4"</u> _56'9"	9	71	57 20					1542	1.2.0	0,000					
	ſД	57'0" Grey Interlominated SHALE	57'/"							1350	1460	8.2	4.900					
-60		and silistone with we othered		-												. 		· · · · · · · · · · · · · · · · · · ·
·····		510" Very_stiff_grey_fissured silty_CLAY 57'0" Grey_interlaminated_SHALE and_silistone_vith_weathered and_fractured_joints 62'3"		·		. .	 	· · · · · ·				· · · · · ·	···	-			-	Drilling_ceosed_at_62'3"
	-														-	<u> </u>	·	Core drilling 573-623
-70	-				-					<u> </u>		·						Recovered 3'8"
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The Ma	ritime !	s Services Board of N.S.W.	Engineering Brene	ch					REC					Location: A Bare No.: , Date of Ba	Boti 217	ony B	ay N	lorth Sheel No.:/	Fid. Test J. S. Lob Test P.C.
	r	Preservation & Research Sub-Branch]	L					Series No	. <u></u> ,		$\frac{1}{1}$	Date of Ba Max Shear St	oring:	19-3-6			Checked A. J. T.
Depth in feet	Profile	le Description	Test or Sample Depth		Soil Size		Inde	x. Proj	р51] П. 1	Density Dry Ibs/c.f.I	Density Wet	м.с.	Uncor	onfined Comp	pr.	Triaxia	1	S.P.T. Blows for 6 ins.	Remarks
	ſ			2000	l Silt	Clay	^{1.}	<u> </u>	<u>, P.I.</u>	ibs/c.i.	.b\$/c.1.	<u>~</u>	Undi	list. Remo		Undroin. F	<u></u>	of Penetration	Depths from I.S.L.W.
	ŀ			<u> </u>	\square	['	\square	\square	\square		'	f	<u> </u>		1		_		Bore Coordinates
-10	l					<u> </u>				<u> </u>	[]	'				<u> </u>			· ·
	 				+'	<u>+'</u>	$\left - \right $	<u>├</u> ──┘	<u></u> +'	↓ '	t'	<u> </u>			<u> </u>				Cool Wht. Tower 58'45'
		LOUSE TO COMPOCE GIEV V.		 	 '	F		<u> </u>	\square	-['			+					· · · ·	Boral Flore 25'57'
-20	1				<u> </u> '	<u> </u>	<u> </u>	[]	[]	<u> </u>									Manument La Perouse
	· . · .	. <u>401 to 1° at seaberd</u>			'	— ′	<u> </u>	\vdash	<u> </u>	·['	<u> </u>		+		-+				
		25'0" Very stiff bk. sondy chor. PEr	FAT 25'0"	<u> </u>	 '	_ '	\square	['	 '	<u> </u>	79.0	4			-				·
-30								[<u> </u> '			<u> </u>	······					· · · · · · · · · · · · · · · · · · ·
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		. Compact grey time a med.		-	— '	— ′	<u> </u>	<u>–</u> '	<u> </u>	'		—	<u> </u>	<u>_</u>	-+				· · · · · · · · · · · · · · · · · · ·
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Location: Botony Bay North Bore No.: 217 SI Date of Baring: 19-3-69 Fld.Test BORE RECORD The Maritime Services Board of N.S.W. Engineering Branch Lab Test Sheet No.:2 Laboratory Test Series No.41 Preservation & Research Sub-Branch Checked Max Shear Strength Ibs/sq.ft. Index. Props. Density Density Soll Size ·\$.P.T. Testor Depth In Unconfished Compr. Trioxial Sand Silt Clay P.L. L.L. P.I. Ibs/c.f. bs/c.f. % Remarks Profile Description Blows for 6 ins. feet Sample Depili Cell Undist. Remould Undroin, of Penetration . . ١. • • Compoct grey fine & med. SAND -60 . . • . • • . 66'0' 66'5" 17 58 41 3250 20 . 3,250 20 67'8 99.2 125.9 23 73 50 22 69 47 -70 7/9 . 96:2 122:4 27:3 122:9 72'0 1350 25 Stiff dork grey silty 72'4 77'3" 114.8 139.8 21.8 3,550 25 77'7 3 19 68 18 68 50 121.3 -80 80'11' 107.9 1297 202 4,100 30 81'3" 138.1 Drilling Ceased at -81'4" . ۰. -90 . . (.

The Ma	rilime S	ervices Board of N.S.W. Preservation & Research Sub-Branch	Engineering Brond	:h						ORD Sories N	o.41		Lo Bo Do	cotion: 80 ire No.:2/8 ite of Boring	rony Bay :: 25-3-69	North Sheet No.:/	•	Fld.Tess J.S. Lob Tess P.C. Checked A.J.T.
epih in	Profile	Description	Test or	s	oil Siz 1	e	Ind	ex. Pro		Density Drv	l' nsity Wet	м.с.	Unconfin	ed Compr.	th Ibs/sq.ft. Triaxial	S.P.T. Blows for 6 ins.		Romarks
feet	101112		Sample Depth	Sand	Sili	Clay	P.L.	L.L.	P.I.	Dry Ibs/c.f.	1-5/c.f.	%	Undi st.	Remould	Undrain. P.S	, of Penetrotion		
				<u> </u>					ļ								Depihs	below I.S.L.W.
					<u> </u>				<u> </u>				-	.	<u> </u>		·	Coordinates
					1							<u> </u>	+				Dore	Coorgingies .
-10				1													Front	Legd 48'35'
								<u> </u>										
		14'0" Seobed							 	ļ		<u> </u>				· · · ·	600/	Whf. Tower 34'4'
				+									-				Water	Tank
-20		Loose to compact grey fine & med SAWD with shell fragments /opprox. 201/ to 2 of seebed								·							· · · · · ·	
<u></u>	·	Shell frooments (opprox					1											
		201 to 2 of seabed																
	·	26'0" ¹⁰				 		ļ	 	 	<u> </u>		1		<u> </u>		<u> </u>	· · · · · · · · · · · · · · · · · · ·
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	۰. · . ·	Compact Foun fine		<u> </u>		ļ		<u> </u>			ļ		-				h	
40	•••	4 medium SAND			-	<u> </u>	<u> </u>											
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	· . · . ·							<u> </u>					_	•			·	
	1.1.1	54'0"	56'3'	32		8									<u>+</u>			· · · · · · · · · · · · · · · · · · ·
		Compact indense are:		-126-	60													
-60	1.1.1	slightly clovey line a med				1	1	1	1	1		1		_				· · · · · · · · · · · · · · · · · · ·
	111	SAND with occasional Deat															_	
	1.	Compost to dense grey slightly clayey fine a med SAND with occasional peat and charcoal fragments				<u> </u>	ļ. <u></u>	_	1	1		<u> </u>			<u> </u>		ļ:	· · · · · · · · · · · · · · · · · · ·
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		bervices Board of N.S.W.		Engineering Bronch	. T			B	ORE	REC	ORD			Loci	stion: Be	srony E	Bay.	North		Fld.Test	
The we	finne -		Research Sub-Branch								Series N	o. <u>4</u> .1		Bore Dote	No.:218	р : <u>25</u> -3-	69	<i>North</i> Sheet No.:2		Lab Test Checked	
	1	······		Test or	S.	oil Size		Inde	ex. Pro	ps	Density	Density	· • • •••	Max Sh	neor Strong	ih lbs/sq.				·· • • • • • • • • • • • • • • • • • •	
epth in feet	Profile	Descr	ription	Somple Depth	Sand	Silt	Clay	P.L.	L.L.	P.I.	Dry lbs/c.f.	Wot bs/c.í.	₩.С. %	Unconfined Undist.		Triaxi Undrain,	ि हुगु	·S.P.T. Blows for 6 ins. of Penetration		Remorks	
	:11	· · · · · · · · · · · · · · · · · · ·			·												<u>r.s.ı.</u>				
-40	11.11	Compact to	dense grey			\square									[[]	[•		
		Stightly cloye	dense.grey ey fined med occosional peat pol fragments		 	\vdash				 								·			
	111	and chores	pol frogments																·		
	1.1.	69'0" Stiff black cle ond silty cla											<u></u>	!		!	_			·	
		690	· · · · · · · · · · · · · · · · · · ·	70'3"								92.3							· · · · · · · · · · · · · · · · · · ·		
	V#/	Stiff black de and silty cla	iyey PEAT											i	['		 		·		
	Y/A	and silty cla	Y	77'7"					├			118:2		¹							
-80	XXX			79'10"	7	56	37					83.0					ļ			·····	
	-	80'2			 		<u> </u>	<u> </u> '						.		 			Drilling_c	ceased at -80	0'2"
	-														<u> </u>		<u> </u>	·	•		
-90	4					┨──┦	\square											·			•.
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The Mor	ilime S	Services Board of N.S.W. Preservation & Research Sub-Branch	Engineering Branc	:h				ORE		ORD Series N	•.41		Loc Borr Dote	otion: Bo e No.:2/9 e of Boring	ptany L 27-3-	З _{ау} , 69	North Sheet No.: 1		Fld.Test Lob Test Checked	J.S. P.C. A.J.T.
epth in	Profile	Description	Test or	5	oil Siza	·	Inde	x. Pro	ps	Density Drv	Density Wel	м.с.	Mox S Unconline	d Compr,	ih ibs/sq. Triaxi	.ft. ol	·S.P.T. Blows for 6 ins.		Remorks	
feet	ronne		Sample Depth	Sand	Silı	Cloy	P.L.	L.L.	P.1.	Dry ibs∕c.i.	lbs/c.f.	%	Undi st.	Remould	Undroin.	Cell P.S.I.	of Penetration ·			
			··	<u> </u>								<u> </u>						Depths be	<u>61 [.S.</u>]	<u> </u>
/0		· · · · · · · · · · · · · · · · · · ·																Bore Coord	linotes	
												ļ				<u> </u>		Cool Whi	1	10001
		17'9" Seabed		+										·				<u> </u>	lower 4	04
-20	••••	Loose arey silly fine d																Front Lead		46
	· • • •	Loose grey silty fine f med. SAMD with fine										 			 		·	Kurnell Flog	Stoff	
	·	240° shell frogments																· · · · · · · · · · · · · · · · · · ·		
								<u> </u>					-							
-30	••••											<u> </u>	ļ				<u></u>		<u>.</u>	•
	••••	Loose to compact grey fine & med. SAMD with occ. peat fragmants											<u>-</u>	-				· ··· ··· · · · ·	<u> </u>	
		tine of med Of MID with											· · · · · · ·						-	•
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-40	•								- <u>-</u>						<u> </u>	<u> </u>			<u></u>	
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-50	••••							<u> </u>	1						-			<u></u>		· .
	· · · ·	Compact Form fine (med SAND										1		-						
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	· · · ·				.						 					-				· .
60	· · ÷	600 Connect and Color SAND														·		1		
	• • •	64.0 Lompoct grey f. 4m SAND 64.0 with occ. peot frogments							<u> </u>		1					-				
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Location: Botany Bay North Bore No.: 219 She Date of Boring: 27-3-69 Fld.Test BORE RECORD Engineering Branch The Maritime Services Board of N.S.W. Lob Test Sheet No.: 2 Laboratory Tast Series No. 4/ Checked Preservation & Research Sub-Branch Max Shear Strength Ibs/sq.ft. S.P.T. Blows for 6 ins. Soil Size Index. Props. Density Density . Test or Unconfined Compr. Triaxial Depth in Sand Silt Clay P.L. L.L. P.I. tbs/c.f.bs/c.f. % Remarks Description Profile Somple Depth feet Remould Undrain. P.S. Undist. of Penetrotion . . 60'0" -60 . Compact grey fam SAND. with acc. peat fragments 65'6" 98.9 Stiff grey silty CLAY hecoming shelly below 73" -70 52 7/'9" 41 126.9 7 Weothered grey & brown medium SANDSTONE Drilling ceased of -83'3" Core drilling 79'9" - 83'3" Recovered 2'0" ٠. -90 ----... .

The Ma	ritime	Services Board of N.S.W. Preservation & Research Sub-Branch	Engineering Brond	:h					REC	ORD Series N	o.41			• No.: 22 • No.: 22 • of Borin			shoei No.: 1	· .	Fld.Test Lob Test Checked	J.S. P.C. A.J.T.
epth in fect			Test or		oil Siz			x. Pro	p s.	Density	Density			hear Stren ed Compr.	gth Ibs/sq. Trioxi		·S.P.T.		marks	.
fect	Profile	Description /	Sample Depth	Sand	Sili	Clay	P.L.	L .L.	P.I.	Dry Ibs/c.f.	Wei lbs/c.f.	м.С. %		Remould			Blows for 6 ins. of Penetration		morxs	
-10				<u> </u>	ļ													Depths below	·	<u></u>
							· · ·								<u>.</u>		•	Bore Coord	inotes	
- 20	• • • •	- 17'9" Seobed	20'6" -22'	95	3	2			i								N= 2.2.2.	Bock Legd	59*	06'
-20		Loose to compact arey and	206 -22	10	<u> </u>	<u> </u>		1	[N * L.L.L.	Cool Whf. 7	Tower 22	•21'
	· · ·	Loose to compoct grey and brown silty fine & medium																Front Lead		
	•	. SAND (peoty)						·	 _			 			<u> </u>		· · · · · · · · · · · · · · · · · · ·	· ·		
-30	• • •	30'0"																		
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	· · ·	·																		
	· · · ·	•			<u> </u>								·}					· · · · · · · · · · · · · · · · · · ·		
-40	• • •	Compact arey fine and																		
	• •	Compact grey fine and medium SAND with some															-			
	••••	peot and charcool						<u> </u>	<u> </u>								<u> </u>		······································	· •.
	•	trogments																-		<u>,</u>
-50																				
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	•••••••••••••••••••••••••••••••••••••••	•			-												· · · ·			
	••••	576 Very stiff block sondy	58'8"	1			·			35.6	78.8	121.5		-	5300	20				
-60		576 Very still block sondy 590 chorcool PEAT	58.9	5	40	55	86	98	12						ļ					
	[:].j	Compost grey cloyey fine	58'11"							68.5	1023	<u>49.7</u> 3.8			1 1 1 1 1	00	·	· · · · · · · · · · · · · · · · · · ·		
	<u>;;;;</u>	<u>164.0 ond medium SHNP</u>	<u>65'11"</u> 66:2	6.3	13	21				121.2	137.8 138.0	13.8			4,800	20				<u> </u>
	111	Very stiff orey sondy															•			
-70	[]]	Very still grey sondy		43	31	26				123.8	141.0	14.0	6,400	2						
	11	12'0"			<u> </u>		. <u> </u>					· · · · ·		-				Core drilling Recovered		-76:10
	<u>, ifi</u>	120 Medium hard grsy & brown med SANDSTONE with veothered		1	·		····-	<u> </u>								+	1	recovered	<u>4'10"</u>	<u>.</u>

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The Mai	ritime S	Servicos Board of N.S.W. Preservation & Research Sub-Branch	Engineering Branc		l		Lapo	orotory		Scries No			Loc Bor Dai	otion: Bo re No.:22/ te of Borin	tony Boj 1:22 <u>-1-1</u>	y Nor. 69	Sheet No.:/	Fid.Test J. J. Lob Test <u>P.C.</u> Chockod A. J. J.
epth in	Profile	Doscription	Test or	S	oil Siz	¢	inde	:x. Pro	,ps}	Density Dry Ibs/c.f.	Density	м.с.	Mox S Uncontine	Shear Strengt and Compr.	gth Ibs/sq.f Triaxic	i.ft. i.i.a.l	S.P.T.	
leet			Somple Depth	Sond	Silt	Clay	P.L.	L.L.	P.I.	lbs/c.f.	ibs/c.f.	%	Undist.	Remould	Undroin.	Cell P,S	of Penetration .	· · · · · · · · · · · · · · · · · · ·
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	1 1			'					<u> </u>			/		· [+H	Bore Coordinates
-10	1 1			<u> </u>				'	<u> </u>	[]		'		+'	┨───┤	-	<u> </u>	Back Lead 31'19'
-10	1 1					<u> </u>	<u> </u>					[/		′	t	<u> </u>	· · · · · · · · · · · · · · · · · · ·	
	1 !			'			<u>[</u> '	['	<u> </u>	<u> </u>	Į	<u> </u>	ļ	'				Goal Whit. Tower 24'29'
'	1 1			'		<u> </u>]	∤ !	'	<u>+'</u>	<u> </u> '	t'	I'	1 · ····	'				Front Lead
-20	[····	175 Seobed		<u> </u>	 	 	<u> </u>	<u> </u> '			\square'	'		·				
	{ ∵ ∴'			'	<u> </u> '	\vdash]	<u> </u> '	<u> </u>	<u> </u>	<u> </u>	ŀ'	<u> </u>	']	<u> </u>	·	· · · · · ·
	<u> </u>	Loose_to compoct_grey line_f_medium_SAND_with			<u> </u>				['	\square'		[/			(<u> </u>	· · · · · · · · · · · · · · · · · · ·	//	
,	<u>[·.''</u>	some fine shell and acc.				<u> </u>	\Box'		<u> </u>			<u> </u>			<u> </u>			
-30	$1 \cdot \cdot \cdot$	lenses of peot & chorcool			- '	' ــــــا	<u> '</u>	<u> </u> '	 '	↓′	 '	 '		_	- '		'	
!	·∵∵·!			'			'	'	<u>+</u>	⁻ '	<u> '</u>	<u> </u>		-	<u> </u>		'	· ·
	<u>, · . · </u> !	· · · · · · · · · · · · · · · · · · ·			<u> </u> '	\square	\square		[]	\square'	\square	·	ļ			<u> </u>	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
'	(11)	37'0"			+'	{'	<i>├−−−</i> ′	 '	+	├ ───′	<u> '</u>	 '	 		<u> </u>	<u> </u>	·'	· · · · · · · · · · · · · · · · · · ·
		Compoct grey cloyey fine				<u> </u>	!		<u> </u>	[!]	[[[]			•
	1.1.1	4430			<u> </u>		<u> </u>		'		Į'	.			,		· · · · ·	· · · · · · · · · · · · · · · · · · ·
′	<i>[.⁺.∶.</i> !	Compoct grey fine & med SAND with occ. Janses of		'	'		<u> </u>		·'	{ ¹	<u> </u> '	·			·'		- '	
	$\{\cdot,\cdot\}$	OHIVI with oce lenses of		'	'	·[/	<u> </u> '		·['	{·'	<u> </u> '				'	+		· · · · · · · · · · · · · · · · · · ·
-50	(<u> </u>	SHIW with oce, lenses of	52'6"			<i>!</i>	f/		+	1012	125.1	23.6		-	2,250	15	<u> </u>	
	VI	Stiff grey sondy silty CLAY Stiff grey sondy silty CLAY SS'6 vith decoyed roots Med hord grey fine SANDSTONE interloningted	<u> </u>	28	27	45	.['			1010	1260	24.5	1.950	1100	,			· · · · · · · · · · · · · · · · · · ·
	-	556 with decoyed roots			·		ĺ'	_	<u> </u>	<u> </u>	,				'			
'	翩翩	Med hord grey fine		'	- <u> </u> '	<i>↓</i> ′	·[·'		'	{ '	<u> </u>				'			
60	感到	SANDSTONE interlominated			·+'		 '		<u>+'</u>	['			<u> </u>		{'		-	Drilling reased of -615
	1 /			1	1				!	[1	-	Drilling ceased of -61'3 Core drilling 562-61'3" Recovered 5'1"
	1 '					1			'									Core drilling 562-613
	1 '				′	<u> </u>	<u> </u>		<u> </u>	<u> </u>					·			Recovered 5'1"

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The Mo	ritime 1	Services Boord of N.S.W. Preservation & Research Sub-Branch	Engineering Bron	ch						ORD Series N	10.41		Dot	ailon: <i>Bo</i> • No.:22. • of Boring	: <i>24-1-</i> 6	69	Vili Sheel No.:/	Fid. Test J. S. Leb Test P. C. Checked A. J. T.
Depth in Fact	Profile	Description	Test or Somple Depth		Soil Sia Silt		Inda P.L.	L.L.	ρs. ΄ P.1.	Densíty Dry Ibs/c.f.	Densit Wet Ibs/c.f.	ж.С. . %	Unconfine	hear Streng d Compr. Remould	Triax	[a]	S.P.T. Blows for 6 ins of Penotrotion	Remarks
				<u> .</u>														Depths belov 1. S. L. W.
																		Bore Coordinates
-10		12'0" Seabed																Coal Whit Tover 27:30'
	· · -	160 Geoped Loose grey fine 1 medium 15'0" SAND with shell (gpprox 5] 10-8]	1001 101 10															Front Lead 17°01' Kurnell Flog Stoff
-20		Compact grey silty fine	<u>15'-/6'6'</u>														N= 3.3.4.	
		of peot and arg silly clay																
30		270*	<u>28'0"</u> 28'3"	77	18_	15				//62 //8:0	<u>/33-9</u> /350	15:2 14:6	1.500		2,750	10		
	/// /// ///	Dense grey slightly cloyey line & medium SAND with accuseoms of	33'-34'6*														N= <u>A.10.18</u>	
-40	,,,, ,,,, ,,,,	SHAD with acc. seams of organic_silty_clay										· · ·						
			<u>43'2'</u> <u>43'//</u>	35 86	35 6	30 .8				83:3 //3:8	<u>113:4</u> 13/8	<u>36:3</u> 15:8	1400 300					· · · · · · · · · · · · · · · · · · ·
-50		466" Highly veothered grey a brown SILTSTONE and shale with numerous decomp. 52'2" zones																
	<u>en e</u>	<u>shale with numerous decomp</u> 52'2" zones																Drilling ceased of -52'2"
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Location: Botony Boy North Bore No.: 224 Sheet N Date of Boring: 30-4-69 Fld.Test J. S. BORE RECORD The Maritime Services Board of N.S.W. Engineering Bronch Lob Test PC Sheet No.:/ Laboratory Test Sories No. 4/ Preservation & Research Sub-Branch Checked A.J.T. Max Sheer Strength Ibs/sq.it. Soil Size Index. Props. Density Density ·\$,P.T. Blows for 6 ins. Test or Depth in Unconfined Compr. Trioxial Sand Silt Clay P.L. L.L. P.I. Ibs/c.f. bs/c.f. % Profile Description м.с. Remarks feet Sample Depth Remould Undroin. PE Undist. of Penetration Depits below I.S.L.W. Bore Coordinates . · Back Lead 59:51 Seobed -10 10'5" Cool Why Tower 89:46 Loose grey fine & med SAND with shell fragments 16'0" and some vood libre Lone Pine Tree . -20 . -30 Compost grey fine & med. SAND with Some frequents of peot •. -40 • . • -50 51'0" 532 17 65 48 123.8 Very stiff dork grey silty CLAY with lenses of 59'0" 73 51 -60 22 114.8 . •• peaty_clay_

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t P	rofile	Description	Sample Depth	Sond	Silt	Ciey	P.L.	L.L.	P.1.	Dry 16\$/c.f.	Density Wet Ibs/c,f.	M.C. %		Removid	Undente	<u>ि</u> ताः	Blows for 6 ins. of Penetrotion	Remarks
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<u></u> 30	6	490" Stiff block_sondy_chorcool PEAT 560"	505	18	62	20	0	123	72	17.5	88.0	87.0	1600	550	1000	1.27		
·	10000	PEAT		10-	<u></u>		µ~	<u> </u>	<u> </u>			<u> </u>	1 Kere			1	1	
<u>.</u>	1997 - 14 1997 -	560"	58'0"	1	[97.8	123.3	26.7	1	1	4,100	25		
	177	1	56'4"				/3	34	21	<u> </u>			1				1	
-60	\$//)	Stiff grey silty CLAY	583	43	28	29	15	41	29	100.1	125.7	250	1750	800	1			
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The Marili	ne Services Boord ai Pri	í N.S.W. osarvation & Research Sub-Branch	Engineering Brand	:h					REC	ORD	o.41		Loc Bore Date	ation:80 • No.:227 • of Boring	rony Bu	sy Noi 19	sheet No.: 2		Fld.Test Lab Test Checked	-
epth in			Test or	s	oil Sia	re	Ind	ex, Pro		Density	Density			hear Streng			·S.P.T. Blows for 6 ins.	•.	-	
feet Pro	filo	Description	Somple Depth	Sand	Silt	Clay	P.L.	L.L.	P.I.	Dry bs/c.l.	Wet Ibs/c.f.			d Compr.	Triaxi		Blows for 6 Ins. of Penetration	· F	lemarks	
-60/	Stil	T grey silty CLAY												Indingung		<u></u>	of t children off			
		3-11				<u> </u>					1000						-	· · · · · ·		
<u> </u>	64'0"		<u>64'7"</u> 64'10"	-	10	177	.	ļ		113.3	/33-2	<u>//4</u>	0.60		3350	30		•		
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/	·/Stiff	grey_sondy_silty_CLAY		· [┨────	<u> </u>	<u> </u>					<u> </u>	<u> </u>	 		l		
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ľ.	Dens Dens	e light grey clovey and medium SAND						-						<u> </u>						
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lme S	ervices Board of N.S.W. Preservation & Research Sub-Branch	Ingineering Brand	sh						CORD Series			Bor	ation: E e No.: e of Boring	338	BAY	Sheet No.s	Fid. Test AE Lab Test RH Checked BP
ofile	Description	Test or Sample R.L.		Solt Siz	1	f	lex. Pr	1	K	nsity g/M3 y/Wet	M.C.	Unconfin	ed Compr.	KP Tria	3	s.p.t. N Value	Remarks
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	7.5 Seabed, dark brown organic	1	-							1							
	medium and fine SAND								<u> </u>				1	l			
<u>.</u>		9.5	100														
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::•[13.5	100			_										•	
÷-[14.5 Brown medium and fine SAND																
;::[15.5	100									·····					
	17.0 Grey silty clayey SAND																
$\langle \rangle$		17.5	100							1	ļ]				<u> </u>		·
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	·	19.5	85	15						ļ						······································	
	20.5 Grey clayey SAND	20.5	93	7													· · · · · · · · · · · · · · · · · · ·
-1	21.3 Brown, medium & fine silty SANI	21.5	97	3						 	 		ļ		╞╌╺╷┨		-
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	23.5 Firm grey CLAY	1 ·								<u> </u>	 				 	<u></u>	
2	24.0 Grey silty clayey SAND 25.5 Soft grey SANDSTONE										↓				 		
1	23.3 BOIL GREY SANDSTONE									.	····		ļ				· · · · · · · · · · · · · · · · · · ·
	27.3 Hard grey SANDSTONE	<u> </u>	 							 .			 				
	27.3 Hard grey SANDSTONE 28.5	·			<u> </u>					<u> </u>	∤ ₿		<u> </u>		├ 		
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time S	arvices Board of N.S.W.	Engineering Branc	h			E	ORE	RE	CORD)				OTANY	BAY		Fid. Test AE
	Preservation & Research Sub-Branch					Ĺ	barata	ry Tes	t Series	No.			e No.t 3	38A		Sheet No.1	Lab Test RH
	1	1	ril			1					1		e of Boring Ir Strength		.5.7		Checked BP
rafile	Description	Test or		Soli Si	ze ,	Inc	lex, Pr	opt, 、		nsity g/M ³	м.с.		ed Compr.	Tria		S.P.T.	
4G144		Sample R.L	Sand	sut	Clay	P.L.		P.I.		y/m≃ y/Wat	*		Remould	c	1.1	N Value	Remarks
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	8.0 Seabed, brown medium & fine																
	organic SAND																
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		12.0-12.5			L				ļ	ļ	ļ					1,2,3,5,7,8	
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								· · · · · ·	ļ								
		16.0-16.5								<u> </u>					.	4,8,9,9,10,11	
	17.0 Grey, medium & fine silty SAN 18.5 Grey sandy CLAY		·						ļ	+							
	10 E Crow condu CLAY	18.0-18.5			·					<u> </u>						2,3,5,6,5,6	
7:7.3	10.5 Grey Sandy Char								· .	 	╏────┤			·····			
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Fid. Test AE BORE RECORD BOTANY BAY Locations Engineering Branch :Ime Services Board of N.S.W. RH Lab Test Sheet No.c Bore No.: 339 Laboratory Test Series No. Date of Boring: 27.4.74 Preservation & Research Sub-Branch Checked BP Max Shear Strength KPa Density S.P.T. Sch Size Index, Props. Test or M.C. Triaxial Kg/M³ Unconfined Compr. Remarks Description rafila Sample R.L. N Value * Sand Slit Clay P.L. P.I. C ۰ø أجانا Dry/Wet Undist. Remould Depths from I.S.L.W. . . 6.75 Dark brown, medium & fine sand 1-3-4-3-6-7 with traces of peat 8.75-7.25 • 10.75-11.25 2-4-5-6-8-8 3-5-9-10-10-1 12.75-13.25 13.25 Light brown, medium & fine 1.... 14.75-15.25 6-8-12-13-13-15 sand layers of peat 2-3-4-4-5-6 16.75 Grey silty sand with thin / 16.75-17.25 1200 2100 75.B 0 30.5 18,25 Grey, clayey sand 17.75-18.10 . 18.75 Soft sandstone with thin clay Drilling ceased 19.75 seams .

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Fid. Test AE BORE RECORD daime Services Board of N.S.W. Engineering Branch Location: BOTANY BAY RH Lab Test Sheet No.1 Bore No.: 340 Laboratory Test Series No. Preservation & Research Sub-Branch Date of Boring: 29.4.74 Bb Checked Max Shear Strength KPa Soll Size Density Index. Props. S.P.T. Test or M.C. Unconfined Compr. Triaxial Kg/M³ Profile Description Remarks Sample R.L. N Value Sand Silt Clay P.L. ᇉᆬ ٠, · P.I. Dry/Wet Undist. Remould C . Depths from I.S.L.W. . 7.25 Seabed, brown medium and fine sand 7.25-7.75 1-2-3-4-4-5 •• * 11.25-11.75 2-3-5-6-7-7 13.25-13.75 3-5-8-9-10-11 15.25-15.75 3-6-8-9-10-12 17.25-17.75 4-8-9-10-11-13 19.25-19.75 18.75 Grey silty sand 3-2-3-3-2-3 20.25 Soft sugary sandstone 20.75-20.81 9-50 with layers of clay Hard sandstone 21.75 22.75 Drilling ceased

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Fid. Test AE Location: BOTANY BAY BORE RECORD Engineering Branch sime Services Board of N.S.W. Lab Test RH Bore No.: 341 Sheet No.1 Laboratory Test Series No. Preservation & Research Sub-Branch Date of Borings 20.5.74 Checked BP Max Shear Strength KPa Soll-Size Index. Props. . Density 5.P.T. Test or M.C. Unconfined Compr. Telaxial Kg/M³ Description Remarks Yofile Sample R.L. 16 N Value Sand Slit Clay ۳.۱. ւել P.I. Dry/Wet C 16 Undist. Remould Depths from I.S.L.W. . . . 7.25 Seabed, dark grey and brown organic silty sand . 12.75 Brown, medium and fine SAND with traces of peat ·... 18.75 Grey silty SAND with layers of peat . £ . 21.75 Soft grey SANDSTONE 22.75 Grey and brown SANDSTONE with soft layers 24.75 Drilling Ceased

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Fid. Test AE BORE RECORD BOTANY BAY Locations Engineering Branch time Services Board of N.S.W. Lab Test RM Sheet No.: Bore No.: 342 Laboratory Test Series No. Preservation & Research Sub-Branch BP Date of Borings 26.4.74 Checked Max Shear Strength KPa S.P.T. Soll Size Index, Props. Density Test or M.C. Unconfined Compr. Triaxial Kg/M3 Remarks Description vofile Sample R.L. N Value 16 Send Silt Clay تا.٩ ւե P.1. Dry/Wet Undist. Remould C 4 Depths from I.S.L.W. . Seabed brown medium and 6.75 fine SAND with thick seams of peat Brown medium and fine 8.25 sand with traces of peat8.75-9.25 3-5-6-2-3-3 10.75-11.25 4-5-8-6-8-9 . ಳ್ಳೆ. 1.0 12.75-13.25 3-4-3-6-6-8 • • 4-4-5-6-7-7 14.75-15.25 . . 16.75-17.25 6-8-6-5-8-7 Grey silty SAND with 16.25 1 thin layers of peat and -.... grey sandy clay '4**^**, SANDSTONE 18.25-18.75 4-3-3-4-3-3 18.75 Drilling ceased 19.75 •

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irltime	Services Board of N.S.W. E	ngineering Bran	ch						CORD L Series			- F	Location: E Nore No.1 3	43		Sheet No.:		Fid. Test Lab Test	
T	· · · · · · · · · · · · · · · · · · ·	1 .		50H SI		· · · · ·			т <u> </u>		· · · ·		Date of Borin hear Strength			T		Checked	
Prafile	Description	Test or	ļ	1	1	11	dex, Pr	ops,		nsity g/M ³	м.с.	Uncon	fined Compr.	Tria	_	\$.P.T.	{		
1		Sample <u>A.L.</u>	Send	Sitt	Clay	P.L	<u> </u>	P.I.	1	y/Wet	*		t. Remaula			N Value		Remarks	•
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	7.25 Seabed brown medium and		<u> </u>	<u> </u>	 	<u> </u>	<u> </u>							ļ		<u> </u>			
	fine SAND with traces of		┨────	┨────			-	<u> </u>			}		···	<u> </u>		·····			
	peat		+	ļ			<u>├</u>			·/=	İ			<u> </u>					
		9.25-9.	75	†	<u> </u>						I			· ·		2 2 2 2 4 4	·		
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•••••		11.25-1	1.75		 					+			· · · · · ·			3-4-4-5-6-8			
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		13.25-1	3.75				<u> </u>			<u> </u>		·		·		1-4-3-5-6-6			
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	18.25 Grey medium and fine	17.25-1	7.75													4-6-8-9-9-10	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
	silty SAND																		
	20.75 Soft SANDSTONE with clay	19.25-1	9.75													2-3-3-4-3-4	······································		
	silty SAND 20.75 Soft SANDSTONE with clay seams 21.75 Hard SANDSTONE																		
****	22.25	21.25-2	L.50													5-25-50			
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BORE RECORD Location: BOTANY BAY Fid. Test AE time Services Board of N.S.W. Engineering Branch Lab Test RH Bore No.: 344 Sheet No.: Preservation & Research Sub-Branch Laboratory Test Series No. Date of Boring: 15.4.74 Checked BP Max Shear Strength KPa -Soli Size Index. Props. . Density S.P.T. . Test or M.C. Unconfined Compr. Triaxial Kg/M³ Description rafile Remarks Sample R.L. N Value 16 Send Slit Clay P.L. ا بهاما : P.I. Dry/Wet Undist. Remould С 1 Depths from I.S.L.W. . . 7.25 Seabed, dense brown medium and fine SAND E Contraction of the second se 16.75 Grey, Silty medium & fine SAND 18.75 Grey clayey SAND with traces of peat 120.25 Soft grey SANDSTONE 1 23.25 Grey & brown SANDSTONE with seams of soft grey sandstone 1 Drilling ceased .

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ervices Board of N.S.W. E Preservation & Research Sub-Branch	ngi neering Branc	h						CORD Series			Bor		OTANY 45 • 24		Sheet No.:			AE RH
Description	Test or Sample R.L.		Solt Si	<u>1</u>	<u> </u>	lex. Pr	1	ĸ	e/M ³	M.C.	Max Shea Unconfin	r Strength ed Compr.	KP. Triax	e (izi	S.P.T.	R	+marks	DP
· · · · · · · · · · · · · · · · · · ·		Sand	SII	Clay	P.L	<u> </u>	P.I.	Dr	y/Wet	*	Undist.	Remould	С	<u>`</u> .	N Value	Depths fro		
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7.0 Seabed, dark brown medium &						·			1									
fine SAND with traces of peat	9.0-9.5		[3-4-5-6-6-7			
	5.0-5.5								·						3-4-5-6-6-/			
	11.0-11.5												·		3-6-8-8-9-12			
									1									
	13.0-13.5				_				<u> </u>						6-8-9-9-11-12	2		<u> </u>
15.0 Brown medium and fine SAND	10 0 10 0								ļ	[·	
15.0 Brown medium and rine SAND	15.0-15.5								<u> </u> -		:				5-6-7-8-9-11			· · · · · ·
· · · · · · · · · · · · · · · · · · ·	17.0-17.5	·····													6-7-8-10-11-1	1	· · · · · · · · · · · · · · · · · · ·	
18.0 Grey silty clayey SAND	18.0-18.5		<u> </u>												4-5-5-5-4-4			
18.5 Soft SANDSTONE within seams of																		
20.0 clay															·	Drilling ce	eased	
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Fld, Test AE BORE RECORD Location: BOTANY BAY Engineering Branch Isime Services Board of N.S.W. Lab Test RH Bore No.: 346 Sheet No.: Laboratory Test Series No. BP Preservation & Research Sub-Branch Date of Boring: 13.5.74 Checked Max Shear Strength KPa S.P.T. Soll Size Index, Propi, . Density Triaxiai M.C. Unconfined Compr. Test or Kg/M³ Remarks -Description Profile N Value Sample R.L. Υ. Ciay P.L. LĻ Undlet, Remould C ÷. Sand Slit P.I. Dry/Wet Depths from I.S.L.W. . 7.0 Seabed, dark brown organic medium & fine SAND 1-4-5-5-6-8 9.0-9.5 . 3-2-3-4-5-5 11.0-11.5 ÷. . <u>.</u>.... 5-6-8-9-9-10 12.5 Brown medium & fine SAND 13.0-13.5 6-7-8-9-9-9 15.0-15.5 5-6-6-8-8-8 17.0-17.5 18.5 Dark Grey med. & fine SAND, traces 8-35-36 \of Peat 19.0-19.25 19.0 Soft Grey SANDSTONE 19.0 20.0 22.0 20.0 Grey soft and hard SANDSTONE Drilling ceased

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engineering log -



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borehole office and job no: Sydney 5515/3 hole commenced 4th April, 1975 Maritime Services Board of N.S.W. 14th April, 1975 hole completed: Botany Bay North Development project: GHD supervised by: **Botany Bay** borehole location: RW log checked by: drill model and mounting; Pioneer - Barge slope: 90 -4.25 deg. R.L. surface a. hole diameter: 100 mm · bearing:-deg. datum: ISLW classification symbol hand penetro-meter penetratior notes graphic log material consistency, rei. density moisture condition method structure and weter samples, oil type: plasticity or particle characteristics, additional observations tests, etc colour, secondary and minor components. depth A Pa a metres SSS 0 SHELL AND SAND, shell to coarse gravel sized fragments. SAND, fine to medium SP w L à grained, brown. ÷ Percentage of shell decreasing with depth. 0.4 D 1.0 Ь 5 à 0 <u>.</u>... 2,0 : D SP ä SAND, fine to medium grained, dark brown, MD with finely divided carbonaceous material and some shell fragments to fine gravel size. 8 -3.0 Decrease in shell fragments, 17,35,-N*>50 4.0 ΜR Pt PEAT, black, fibrous. s 5.0 14,37,-N*>50 SP SAND, fine to medium grained, brown. VD 6,0 SAND, as above, with bands of soft, black, fibrous peat at approximately 30-50 cm intervals, occasional pieces of carbonaceous material. ORGANIC CLAY, low plasticity, black, with some fibrous material. SAND, fine to medium grained, black, with some carbonaceous material. OL S 7.0 2,17,44 N*>50 SP D SAND, as above, brown. VD 8.0 key support notes samples and tests classification symbols and soil description consistency frelative decisit, method CM casing VS S F U50 undisturbed sample VERY Set: AS AD B mud based on unified classification system auger screwing* auger drilling* roller/tricone 50 mm diameter soft 2014) 5541 penetration D disturbed sample St VSt H Fb moisture ŵ CT 2 washbore standard penetration test:figure = result cery suft hard friable no resistance N --cable tool D - dry M - moist W - wet ranging to shown by suffix: blank bit "V" bit " hit M* SPT*+ sample Vι very locar loose B V T ter 10 Oct, 73 water level on date shown water inflow water outflow L MD D Nc --cone penetrometer moderately de Le TČ bit densu Very densu ADT e.g.

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engineering log – borehole

	ject ehole	e luc	atic	Bo	aritime Se otany Bay otany Bay	Nort	s Boai th Dev	rd of N.S.V relopment	ν.			office hole co hole co superv log che	ommer omplei ised by	nc+1 iea -	Sydney 5515/3 4th April, 1975 14th April, 1975 GHD RW
	E trick e diai			mounting 100	Pic mm	Dieer	– Bar	ge		stope: 90 ·bearing:	ില്യ deg.	RL si datum			LW
herhod -	the restaned 3	ueddns	water	notes samples tests, etc.	∹ deµth ⊄ metres	geaphre og	crassification symbol	soil type: p colour, sec	olasticit ondary	material y or particle ch and minor con	iaracteristics, iponents	moist ats condition	consistents. Tet derest.	201 - Nand 201 - Nand 301 - Henrico-	structure and edumonal observation
T	1- 1			-	-		SP	SAND, as	above, v	with some laye	rs of peat.	w	VD		na an an an an an an an an an an an an a
5			ĺ					SAND; pre	domina	antly fine grain	ed, brown.				
	÷			24,40,- N≥50	9.0			SAND, fin	e to me	dium grained,	pale brown.	-			
,														1	
					10.0								-		
	• •														
				27,45,- N≥50	 11.0										· .
		ן ט			-										
		1			12.0									, ,	
	- ; -				-									ļ	
				19,44,-	- 13.0										
				N>50	-										
					 14.0				·					i t	
					-								,	· · · · · · · · · · · · · · · · · · ·	
				23,45,- N≥50	15.0										
					16.0										
ineth S D S S S S S S S S S S S S S S S S S	aug aug roli was cab	er o ler/t shbo ile t vn b	rilli ricc ore ool y su	ving" ny me	Suppor C M <u>penetra</u> 1 2 3	casing mud ition	istance g to		10tes - 150 - 0 N -		sample b eter b mple m result D	oisture dry	escrip unifier ion sy	t sterr	Consistency (consistency (consistency (consistency (cons))) S soft F true S soft S soft VS cervision H hard H hard H horize VS cervicase
g.	~~v	" bi bit	t		1-71	Oct, 7 er infl er out	3 wate on da ow flow	r level ite shown	NC · ·	cone penetro	ometer				L Prose MD moderation serve PD dense VD very doub



office and job no:

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sheet **3** of **9**

Sydney 5515/3

engineering log – borehole

	ojeci rehc	t: ole lo	catio	Bo	tany Bay tany Bay	North D	ard of N.S.V avelopment	۷.	<u> </u>		hole c superv	ommer omplet rised by ecked l	ed: /: oy:	GHD RW	il, 1975 ril, 1975
				mounting: 100	Pio mm	neer — B	arge		lope: 9 earing: -	90 deg. deg.	A.L. s datum	urface I:		l.25 ∷r LW	,
method	L Spenetration	د. support	water	notes samples, tests, etc.	j depth Œmetres	graphic log classification evenhol	soil type: r colour, sec	olasticity c	naterial or particle c d minor co	haracteristic: nponents.	moisture condition	consistency, rel density	IOC / hand 200 / Denetro- 300 D renetro-	s additi	structure and ional observations
				- 35,−,−- _N≥50	- 	SP	SAND, a	s above.	-		W	VD			
	 A second sec second second sec	And a second second second second second second second second second second second second second second second		-35 N≥50											-
WT				-40, N≥50.	20.0			·	· .						
				-31 N≥50	22.0 - - - - - - - - - - - - - - - - - - -										• .
A A R W C	eitho S D T bit s	aug aug rolle was cab	nbor e to n by ik bi ''bit bit	ol suffix: it		casing mud ration no resist ranging t refuse	o vater level in date shown	U50 D N Nt Nc	50 mm di disturbed	ed sample ameter sample penetration a = result nple	Classifi and so based classifi Moistu D - c M - r W - v	f descr on unif cation re iry noist	ied	VS S F VSI H Fb VL D	Istenny (1914) vertensity verv solt soft fire suff very stiff hand frable very loose moderately (fease ense very dense

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sheet 4 of 9

engineering log -borehole

									<i>i</i> .•	· ·		office a			Sydney		
-	ject: ehole	101	catio	Bo		Nor		d of N.S.V elopment			•	hole co hole co . supervi log che	mpiet sed by	edi:		il) 1975 pril, 1975	
	l mod e dian			mounting: 100	Pic mm	neer	- Bar	98		slope: 90 bearing:	deg. deg.	R.L. su datum:			.25 n _W		
	C penetration	support	water	notes samples, tests, etc.	–Ìdepth c⊂metres	graphic log	classification symbol	soil type: colour, sec	plasticit: ondary	material y or particle chan and minor comp	acteristics, onents.	moisture condition	consistericy, rel. density	201 × hand 201 × hand 3000 h tenetro 4000 meter	t addit	structure and ional observ	
f		T			-		SP	SAND, as	above.			w	VD			<u> </u>	derhalten te i der ein ser styrft
	1 : 1				-				-					::			
				-31~~ N≥50	25.0 —												
					-												
			:		-												
					26.0												
	••••			36	 27.0												
		b I		<u> </u>	-									. •			
					-												
	•				28.0 <u>-</u>												
	: • :				-				,								
	· :			-33	- 29.0 —					•							
	ļ			-33,-, N≥50	-												
				U75		99	- Pt	РЕАТ, Ы				M	H.		> 500	Lignite	~
				U75	30.0		сн	CLAY, h	igh plast	icity, dark grey.			VSt	×			
	•			U75			Pt	РЕАТ, Ы	ack, fibi	าวนร.		M	н	1.	>500 >500	Lignite	
	:		ĺ	U75	31.0		Сн	CLAY . h	ioh olast	icity, dark grey	to black		VSt-				
	:	8		U75		\mathbb{V}			.a p.aat	and a gray		PL	H				
	÷ .			U75				CLAY, as	above,	with numerous s	and lenses.			×	>500		
e				U75	32.0 suppo	<u>V</u>	{		notes	samples and	toste	classifica		1		etario e sala	
	thod	(119)		ewina*	C M	casii mud	ng		U50	 undisturbed 50 mm diam 		and soil based or	descri 1 unifi	ed	VS	very soft Sett	
ŏ	au 70	ige illei ash	r dri r/tri bor	rewing* illing icone e	penet		-	- 0	D N	 disturbed sar standard pen 	nple -	classific: moisture	· _	ystem		fum shit sterv shit	
ŧ	ca	bie	e to		22		resistano jing to isal	5el	N*	 standard pen test:{igure = SPT + sempli 	result	D dr M - m W we	DIST		H Fb Vl	Paro friahis very loose	
,	, h	anl	k bi bit	t			on	ter level date shown	Nc	cone penetro					MD D	orione contense nense	Derlig Se
g.	-	DT			W	ater in eter o	nflow		<u> </u>						: Vo	very danse	

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engineering log – borehole



borehole 420

sheet 5 of 9

-	oject: reholi	e lo	catio	Bo	aritime S otany Bay otany Bay	y No	es Boa rth Den	rd of N.S.W. velapment			hole co hole co superv log che	omplet ised by	ted: /		oril, 1975 April, 1975	
	li mo le dia			mounting: 100	: Pione mm	.	Barge	-	siope: 90 · bearing:	deg. deg.	R.L. sı datum			4.25 SLW	rt.	
method	Npenetration	support	water	notes samples, tests, etc.	-i depth ∝metres	graphic tog	classification symbol	soil type: plasticit colour, secondary	materiał y or particle char and minor compo	acteriatics, onents.	moisture condition	consistency. rel. density	100 = hand 200 = hand 300 = her stro- 401 - heter	Adai	structure a tional obser	
Π	Ţ	Ĩ	Ī	075	-	\mathbb{Z}	СН	AS ABOVE			M>PL	VSt	2064]		
	•			U75	_		он	ORGANIC CLAY brown.	high plasticity,	dark	1					
			ļ	U75			СН	CLAY, high plast	icity dark and b							
				U75	33.0		0.,	oran y mgn pidat	icity, daik grey-p	rown.			1			
			Γ	U75	_					-			-1			
			┢	U75		\square		CLAY, as above,	with light horizon					>500		
			ł		34 .0 —	$\langle \rangle$						н	÷ ,	> 500		
			╞	U75	-	\square								> 500		
				U75	-	\square		CLAY, as above, o						> 500		
			ſ	U75	- 35.0 —			CLAY, as above, o	lark grey-brown.			<u>н</u> Ер Н		> 500	•	
			ŀ	U75	-	Ø		trace of shell frage					<u>.</u> н			
5			ŀ	075	_			SHELLY CLAY, I shell fragments to	high plasticity, da 80 mm.	ark grey.			-+			
				U75	36.0											
				U75	-	$\langle \rangle$		SANDY CLAY, hi sand consists of fi	igh plasticity, dan ne shell fragment	rk grey, s.	1			1 500		
Ì		ä	F	U75		$\langle \rangle$								> 500		
			┢		37.0	Ż		CLAY, high plasti occasional shell fra	city, dark grey, w agments.	vith			-1			
			ŀ	U75							.		• н			
				U75		1		Shall fragmants to								
				U75 [·]	-			Shell fragments les	ss trequent.				-			·
			Γ	U75	38.0	A			·				٦			
	1		┢		-	$\langle \rangle$		CLAY, as above, d					-			
			┢	U75		H	"							> 500		
				U75	39.0	X		CLAY, as above, w	vith black mottlin	ng.			1			
				U75	Ŧ									> 500		
			F	U75	. 1	1	ľ	CLAY, as above, d	lark grey-brown.			VSt-	i	> 500		
ey		Ц.	<u></u>		40.0 support	<u>77</u>		notes -	· samples and te	te I -		н			Tylinn nin may average	
ieth S		er «	cree	vina*	C d	: casing mud	I	U50	undisturbed sai	mole	<u>ssificati</u> d soil di sed on u	escript	ion	VS	ster-ly fre ap. I very soft	e densit
D	roti	er/ 1	trico	ving* ng* me	penetra			D –	50 mm diamete disturbed samp	ie cla	ssificati	on sys	tem		sott • firm • Soff	
T	was ¢ado	le t	ool		12 m	angir	iistance 19 to	N -	standard peneti test:figure = res	ration D	– dry			US1 H	very and: hard	
bit 	show blai	nk k	` 1†	ffix:	water	eruse		N* -	SPT + sample cone penatrom	W	- móis - wet	Ĩ		FL/ VL	friable - veryfinose - loose	
	TC	bit	L.			Det, 7 Br infi	3 water on dat	teshown	ະະາດຊີ່ (ຈາກສາເດຍໃນ	6121				MD D	moderately: dense	. I tt i voer

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sheet 6 of 9

engineering log borehole

													01	ffice a	and jol	b no:	Sydney 5515/3
•	ojec oreh	t: oie li	ocati	Be	aritime So otany Bay otany Bay	/ Nor							ha su	ole ca iperví	ommer omplet ised by icked b	ied /:	4th April, 1975 14th April, 1975 GHD RW
				mounting 1 00	: Pie mm	Dineen	r —Bar	ge			be: 90 ring:—	deg. deg.		L su	ırface :		4.25 , ₁₇ . :LW
method	L Monetration	support	water	notes samples, tests, etc.	i depth ⊈metres	graphic log	classification symbol	soil type: colour, se	plastici condary	ty or p	terial particle cha ninor comp	racteristic ionents.	cs,	moisture condition	consistency. rel. density	IGO A hand 200 A hand 300 a penetro- 41 meter	structure and additional observations
				U75 U75	- 		СН	CLAY,	as abov	e.				M> PL	н		> 500 > 500
				22,29,28 N*= 67	- 42.0		SP	SAND, fi some har	ne to m d, fibro	nedium ous, car	ı grained, b bonaceous	lack, with material.		~	VD	· · · · · · · · · · · · · · · · · · ·	
				U50	43.0 		СН	SANDY predomir carbonac	uantiy f	ine gra	lasticity, b lined, some	lack, sand fibrous		м> ₽L	VSt	×	
		Σ			44.0 45.0		SP- SC SP	layers of	ne to m carbor lignite.	sand. nedium naceou	grained, b grained, b smatter ar				VD		
				<u>16,25</u> <u>N≥50</u>	45.0		сн	SANDY black, say more san	nd fine :	to med	lasticity, d dium graine 1.	ark grey t d, becom	o. P líng f	- N> N>	St		
					47.0		CL SC	to mediu	m grain	ed, cla	(EY SAND y of media sized shell t	m plastic	ity,		St– D		
AS AD R W	it st	auge auge rolle wash cable	r dri r/tria bore toc by k bit bit bit	lt Suffix:	water 10 wa	casin mud ation ration rangi refus Oct, tter in	esistanc ing to al 73 wate on d		notes U50 D N N* Nc	ur 50 di - sta te - Sf	mples and ndisturbed and 0 mm diam sturbed sar andard pen sturbed sar andard pen sturbed sar 2T + semple one penetro	sample eter nple etration result e	and base class moi D M	soil c id on	unifie tion sy	ed	Consistency relative tensity VS very soft S soft F firm St - stift VSI very stift H - hard Fb firable VL - very loose L touse MD moderately dense VD - very dense

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sheer 7 of 9

engineering log – borehole

-	oject rehoi		cati	Во	ritime Se tany Bay tany Bay	Nort							hole super	comme comple vised b necked	ted [.] Y	4th April, 1975 14th April, 1975 GHD RW
				mounting: 100	Pio mm	neer	- Bar	ge		siope . beari	:: 90 ng:	deg. deg.	R.L. datur	surface n.		4.25 ₁ . :LW
DOLLIAN	L N penetration	support	water	notes sampies, tests, etc.	-! depth 또 metres	graphic log	classification symbol	soil type: colour, se	plastic condar	mate ity or pa y and mi	rticle cha	racteristic ionents.	ro moisture condition	consistency, rei density	100 + hand 20 + hand 300 - henetro-	1
							CL- SC	SANDY	CLAY-	-CLAY	Y SAND	, as above.	M> PL	St– D		na na na na na na na na na na na na na n
				13,23, N*>50	49.0 50.0		SP	SAND, p with som sand size	ne silty -	clay fine	ine graine is and som ts.	d, grev, ne fine	w	VD		
					 51.0	Ú		SAND, a clayey sa varying b	ind and	sandy c	– 10 cm l lay, at int d.7 m.	ayers of ervais				
		 			- 		•									
					- 53.0 - - -	0000		SHELLE grey, she gravel siz	ill fragm	ID, fine : nents rar	o mediun ge up to :	n grained, fine				
					 54.0 	100 B	SP- SC		, CLA		ve, with la ND, clay	ayers of of medium				
	•				55.0 - -	a a a	, 				<u></u>		M>	VSt		
	•	•		U50	56.0		CH SP	CLAY, h SAND, f				ellow-bro	PL,			
	thod an an rr w cu t sho ~ b " · T	uger oller vashi abie own	dril /tric bore too by s bit bit	l autfix:	M <u>penetr</u> 123	casing mud ation no re rangin refus	sistanci ng to al 73 wate on d		N* Nc	- und 50 - dist - star test	ples and t isturbed s mm diame urbed san idard pen figure = i f sample e penetro	sample eter nple etration result	classific and soi based o classific D - d M - m W - w	descript n unification s re ry loist	ed .	Consistency/relative during VS very suft S suft F firm SI stiff VSI very stiff H haid Fb frable VL very loose L foose MD - moderately brose D dense VI very delse

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sheet 8 of 9

engineering log borehole

_						·					office	and jo	b no:	Sydney 5515/3
	oject		cati	Bo	aritime So otany Bay otany Bay	/ Nor	s Boar th Dev	rd of N.S.W. velopment			hole c hole c .superv log che	ised by	teci.	4th April, 1975 14th April, 1975 GHD RW
	ill mo Ne dia			mounting 190	: Pia mm	oneei	' — Bai	rge	slope: 90 ·bearing:	deg. deg.	R.L. sı datum		-4.29 ISLW	•
method	N penetration	support	water	notes samples, tests, etc.	-i depth ∝metres	graphic tog	classification symbol	soil type: plastic colour, secondari	Inaterial ity or particle cha y and minor comp	racteristics, ponents.	moisture condition	consistency, rel. density	10C = hand 20C = hand 30C = peretro- 40° meter	structure and additional observations
WT		M					SP	SAND, fine to m	nedium grained, gr	ſeγ.	٣	VD	- (UP: N	Extremely weathered sandstone.
								See Engineering Sheet 9	Log – Cored Bore	ehole -				
										-				
					1 1 1 1 1									
					: 									· · ·
eth SD D	aug	er o er/t hbo le t n b vk t bit	(rilli pre ool y su yit t		M n penetrat 123 n rr water	asing nucl tion to resi angina efusal	water	D - N - N* -	 samples and te undisturbed sa 50 mm diamet disturbed samp standard penet test:figure = re: SPT + sample cone penetrom 	mple bas er cla de <u>mo</u> ration D sult M W	ssificati I soil de ed on u ssificatio isture - dry - mois - wet	scripti nified on syst	on	Consistency relative density VS very soft S soft F time St stift Vot very soft H - hard FL frable VL - very toose L - toose MD - moderandly densit D - dense VD - very dense



borehole no 420

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engineering log cored borehole

project: borehole	Bot		es Board of N.S.W. rth Development	hole . hole supe	commenced: completed: rvised by: hecked by:	Sydney 5515/3 4th April, 1975 14th April, 1975 GHD RW	
	al and mounting: e and length: TT	Pioneer - NMLC 3.05		R. L datu		-4.25 m ISLW	<u> </u>
drilling i	nfermation		rock substance		rock mas	s defects	
method case-lift water		Lidepth rimetres	substance description rock type: grain characteristics, colour, structure, minor components.	Bitrengi Is (50 Is strengi Is strengi Is strengi		defect descript hickness, type, inclination hughness, coating. particular	
		-	See Pages 1—8, Engineering Log Borehole				
		67.0	SANDSTONE, medium grained, pale gray, poorly developed bedding.			joints, 20 ⁰ , planar, clean to rough	30 ⁰ , generalfy юте clay seams
NMLG		58.0				clay seams to 25mm joints, 10 ⁰ , planar rough, clean	Partings from 0 ⁰ –30 ⁰ , planar and clean, some
		59.0				Broken, coated with carbonaceous materia	Par
			END OF BOREHOLE 420 @ 59.10 m				
key method AS AD R W NMLC	auger screwing auger drilling roller/tricone washbore NMLC core drilling	water Vater Water	, 73 water level	ered ndi- HW -	 fresh slightly weathered moderately weathered highly weathered 	M – medium	ely low v h





of 6

sheet 1

engineering log boreho

		~ L	~ ~		•	Ŭ							
De	Dre	31	IL	le					•	office a	and jot	ono.	Sydney 5515/4
•	oject: orehol		catio	on:		3ay N		pard of N.S.W. Development		hole co hole co supervi log che	mplet sed by	ed:	23rd May, 1975 31st May, 1975 GHD RW
	il) mo de dia			mounting 100	: Pic mm	oneer	— Bar	ge slope: 90 bearing:	-	R.L. su datum:		-4.65 I.S.L.	•
method	N penetration	ží support	water	notes samples, tests, etc.	-∹ depth ⊄metres	graphic log	classification symbol	material soil type: plasticity or particle ch colour, secondary and minor com	eracteristics, ponents.	moisture condition	consistency. rel. density	2001 Strend 2001 Strend 3001 Strenetro	structure and additional observations
						6.000 000 000 0000	GP	SHELL AND SHELL FRAGI coarse gravel size, with some grained sand.		W	VL		
ст					1.0 — 	0.00	SP GP	SAND AND SHELL FRAGM fine to medium grained, brow fragments to fine gravel size.			Ļ	•	
					 2.0 - -		SP	SAND, fine to medium graine with high percentage of finely carbonaceous matter.			MD- D		· · .
				SPT N*= 28	3.0		Pt- SP	PEAT, black with interlayers	of sand.	м	н		Lignite
				4,13,15	- - 4.0 —		SP	SAND, fine to medium graine		W	D	· · · · ·	
					-			lignite.			, ,		
- HW -				N* = 18 3,8,10	5.0							-	
					6.0			SAND, as above with a trace aceous material.	of carbon-	-		1	
				N*>50 14,49,-	7.0			SAND, as above, fine to med pale brown.	ium grained,	- - -	VD		
TW -	:				8.0								

LM :	8.0			
key method AS auger screwing* AD auger drilling* R roller/tricone W washbore CT cable tool * thi shown by suffix: B - blank bit Y - "Y" bit	support C casing M mud penetration 12.3 ranging to ranging to water 10 Oct, 73 water level	notes - samples and tests U50 - undisturbed sample 50 mm diameter - D - disturbed sample N - standard penetration test:figure = result N* - SPT + sample Nc - cone penetrometer	classification symbols and soil description based on unified classification system mosture D - dry M - moist W - wet	consistency triative den dy VS very soft S soft F tirm St suff VSt very stift H hard FL friable VL very toose I. loose MD moderately detage
T TC bit e.g. ADT	water inflow water outflow			D dense VD very dense



boreholis n. 422

sheet 2 of 6

engineering log – borehole

ce and job no Svdnev 5515/4

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borehole nc 422

sheer 3 of 6

engineering log – borehole

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engineering log – borehole

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borehole

engineering log -

borehole (v) 422 sheet 5 of 6

office and job no: Sydney 5515/4 23rd May, 1975 hole commenced. Maritime Services Board of N.S.W. hole completed: 31st May, 1975 project: Botany Bay North Development supervised by; GHD **Botany Bay** borehole location: log checked by: MAA Pioneer - Barge drill model and mounting: slope: 90 -4.65 deg. **R.L. surface** m 100 hole diameter: mm bearing:deg. datum: 1.S.L.W. classification symbol penetration notes hard penetro-8 consistency, rel. density material rajerer nethod moisture nppor structure and water samples. grauhic soil type: plasticity or particle characteristics, additional observations tests, etc colour, secondary and minor components. -Ìdepth kPu a metres СН CLAY, high plasticity, brown to dark M) PL VSt brown. н 33.0 U75 >500 34.0 SHELLY SANDY CLAY, medium to high plasticity, dark grey, sand is fine grained, fine sand sized shell fragments, some сн M> PL н 35.0 shell fragments to medium gravel size. U75 >500 36.0 SANDY CLAY, as above, shell content decreasing with depth. ₹ 37.0 CLAY, high plasticity, grey to dark grey. U75 38.0 39.0 U75 CLAY, as above, dark grey, with occasional lenses of calcareous matter. 40.0 key support notes samples and tests classification symbols and soil description ---consistency relative dense method C M casing U50 undisturbed sample 50 mm diameter VS very soft soft AS AD R auger screwing* auger drilling* roller/tricone mud based on unified classification system S F S1 V51 penetration tion D disturbed sample very stift hard W CT moisture washhore standerd penetration test:figure = result no resistance Ν cable tool – dry – moist – wet D M W н Fb ranging to refusal friable very toose loose shown by suffix: blank bit "V" bit * bit N* SPT + sample ٧Ī. B V T ter 10 Oct, 73 water level on dete shown water inflow water outflow cone constrometer Nc TC bit ΜÜ moderaters sterilar D VD dense very dense ADT e.g

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office and job no.

borehole no 422

sheet 6 of 6

Sydney 5515/4

engineering log – borehole

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					- - - 41.0		СН Sp	CLAY, as before. SAND, fine to medium grained, dark gray	M> PL /, W	H VD		
				N*>50 25,,	42.0			with some silty fines.				
- WT		W			- - 43.0 —		сн	SAND, as above, with layers of clayey sand and sandy clay. CLAY, high plasticity, grey to dark grey, with some fine grained sand.	M> PL	VSt		
				U 7 5	- - - 44.0			SANDY CLAY, high plasticity, dark grey to black, sand is fine grained and increas- ing content with depth.		H	· >	
				N* = 32	- - - 45.0		SM- SC	SILTY CLAYEY SAND, fine to medium grained, grey, silty clay, fines of low plasticity, some shell fragments.	W	D VD	:	
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T74-00

engineering **log** borehole

barshole no: 455

sheet 1 of 3

	oject: rehole		utio	I		Bay I		oard of N Developm				h si	ole co "pervi	immer ised by icked t	and: /:	2 F	21st August, 1975 25th August, 1976 RW MAA
	ill mo He dia			mounting 100	; Pioneer mm	— Ве	irge			slope: 9 bearing:	10 deg. — deg.		.L. su ntum:	irface:			7.00 m ISLW
method	L penetration	Land		ngitas samples, tastil, etc.	⊶idepth ⊄metres	graphic log	classification symbol	soil type: calour, sea	plasticity condery (meterial / or particle (and minor co	haracteristic mponents.	7.	moisture condition	consistency. rel. density	200 F hand	r 1	structure and additional observation
					-		CL – Pt	Sandy (fine gra	Clay of to ined. Pe	& PEAT BA w plasticity, at is slightly ne shells to 2	grey, sand i fibrous, som	s 10	w	F			
5					1.0		SP	SHELL grey, sh	Y SAND elis to 1). Fine to mi Omm, some s	dium graine ilt.	d	-				
					2.0 - -	0 2		SAND.	Predom	inantly fine	prained, pale			VD			
				5, 8, 10 4* = 18	3.0 _			grey bra bands.	wn, occ	asional thin	clayey send	i T					
T		0			4.0		-	SAND. grey bro		medium grai	ned, pale	, 					
			1786	15, 30,> 80 v*≥50	5.0					·						-	-
			Ĩ		6.0			SAND.	As abov	ve, fine grain							
				17, >30,- N > 50	7.0 _						·						
key			f	00	8.0								-				
Mel AS AD R W CT	thod au au ro wa	iller/t 2shbo ibie to	rici Sre Dol		Support C M 123	ration	l esistano sing to	18	notes U50 D N	testifigure	ed sample imeter sample censtration = result	bas clas mo D M	ed on sifica isture - dry - mo	/ hist	d	•	consistency/relative den VS -very soft S -soft F - firm St -stiff VSt -very stiff H - hard Pb - frimble VI - serve leade
v	- 04 - "\ ~ T(ank.b V‴bi	nt t	4FTX:) Oct, ater is	73 wat	er løvel late shown	NC ·	- SPT + san - cone pene	- 1	vv	- we	τ			VL very loose L loose MD moderately dense D dense VD very dense

engineering log borehole



borshole no: 435

3 2 of

project: borehole loca	E		ices Boerd of R Iorth Developm			hole co supervi	mmenced: mpleted: led by: cked by:		ugust, 1975 Jugust, 1975
drill model ar hole diameter	-	Pic mm	oneerBarge	slope: beering:	90 deg. deg.	R.L. su detum:		7,00 ISLW	m
method penetration support	notas samples, tests, etc.		5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	meterial plasticity or pertic condary and minor	e characteristics.	moisture condition	consistency, rel. density 200 g hand		structure and itional observation
		-		. As before		w	VD		<u>,</u>
		- - 9.0				-			
	16 ≥ 30- N ≥ 50	-							
		10.0			•				·
					1				
	>30-,- N*>50	11.0			•				
					•				
Σ		12.0							
		13.0							
	25, >30, N > 50								
		14.0							
				•					
	28, >30, N* >50	15.0							
		1							
key method	<u></u>	16.0 Support C casil	1 <u></u>		alomes body	and soil	tion symbol		nsistancy/relative d 5 — vary soft
AS auger AD auger R rotter/ W weshb CT cable		M muc penetration	esistance	D - disturi N - standa	n diemeter ned sample rd penetration	based or classifica moisture D — dr	~	St	— soft firm stiff St very stiff hard
* bit shown B blank	y wiffix:	222 rang	ing to	1	na de la caracter de	M – m W – w	oist	Ft	

engineering log – borehole

borehole no 425 sheet 3 of 3

-	ject: ehole	lac	atio	1	Maritime Botany B Botany B	ay I	rices B North	oard of N.S.W. Development	hole c superv	ommer omplet rised by ecked t	ed: /:	21st August, 1975 25th August, 1975 RW MAA
•	ll mac le dier			mounting. 100			Ріоле	r — Barge slopa: 90 dag. bearing: — dag.	R.L. s datum	urface: 1.		-7.00 m ISLW
method	2 penetration	Mpport	water	notes samples, tests, etc.	⊥į́depth ⊄metres	graphic log	classification symbol	material soil type. plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency, rel. density	00 m hand 200 m hand 300 m penetro-	
		ł		0 =	-		SP	SAND. As before	W	VD		
			-		-							
				21, >30,- N* >50	17.0				Ī			
					-			· · ·				
					18.0							
					-							
WT _		Ē		21, > 30,- N* > 50	19.0							
					20.0 _						1	· · · · · · · · · · · · · · · · · · ·
					21.0	9	Pt CH	PEAT, black CLAY, High Plasticity, grey	M	<u>л</u> н >		>500 KPa
				U75		V			PL			
	Ş				22.0 _	Ĭ	Pt Pt	PEAT, Black PEAT & CLAY BANDED. Peat & Clay a		ñ .		Lignite
	<u>م</u>					V	сн	above CLAY, High plasticity, grey	M			
				 	23.0	V		PEATY SAND. fine grained black	PL			
		-	-	U75			SP - Pt SP	SAND, Fine, gray, some clay,			- : : 	
								Hole terminated at 23.35m.				
A A R W C	enthod B a D a r V T c	abli	ibor e toi	oł –	Supp C M pene 123	ces mu tratio		notes - samples and tests U50 - undisturbed sample 50 mm diameter D - disturbed sampla N - stendard penetration test:figure = result N* - SPT + sample	based	on unit ication are dry moist	symbol ription fied system	S - soft F - firm St - stiff VSt - very stiff H - hard Fb - friable VL - very loose
B V T e.	- 1	'V''	bit bit	suffix: t	1 2		t, 73 w oi inflow outflou	ater level Nc - cone penetrometer				L - loose MD ~ moderately de D ~ dense VD very dense

engineering log – borehole



borehole no. 605

sheet 1 of 7

office and job no: Sydney 5515

Maritime Ser project: Botany Bay borehole location: Botany Bay											hote co hote co supervi log che	omplet ised by	ed: 24 r: RC	ћ Feb, 1975 ћ Feb, 1975 НD А			
	li moo le diai			iounting: 75		tan	Barge			slope. bearing:		eg. eg.	R.L. su datum		4 IS1		
method	L Npenetration	support	s t	notes amples, ests, etc.	⊣ depth ⊄metres	graphic fog	classification symbul	soil type: colour, se	plasticit condary	materia y or partic and minor	l cle characte r compone	eristics, nts.	moisture condition	consisten: y, rel. density	100 x hand 200 x hand 300 a penetro- 400 meter	' structure and additional observations	
- M			<u>-</u>	., 5, 6 J = 11 0,18,20 J* = 38	1 - - - - - - - - - - - - - - - - - - -		SP	browi	n, some s	o medium shell fragm	grained, lig	ht	w	vD			
			1	7, 20, N*≥50	5		Pt SP	SANI brow	n. 		grained, lig grained, bi		W	s VD MD			
AS AD W CT B V	hod au au rei wa	10k b /"bid	re bol y sut			casing mud ation no re rangin refus	sistanco ng to al 73 wate op d		U50 D N N*	 undistu 50 mm disturb standar test:fig SPT + 	s and tests urbed samp diameter ed sample rd penetrat ure = resul sample enetromete	ion D t W	– mó	descrip unifie tion sy	tion d	consistency/relative densit VS very soft S soft F firm St stiff VSt very stirt H harn Fb firable VL very toose L doose MD moderately dense D dense VD very dense	

ENG. 528 Fid. Test CDernot Location: Botany Bay Bore No.s SOI BORE RECORD The Maritime Services Board of N.S.W. Engineering Branch Sheet No.i 1 of 2 Lab Test JP & JO Checked JP & RH Preservation & Research Sub-Branch . . Laboratory Test Series No. 57 Date of Borings 20.11.75 Max Shear Strength KPa S.P.T. Soll Size Index. Props. Density Depth in Profile Test or M,C. Unconfined Compr. Triaxial Description Kg/M³ Remarks Sample Depth Sand Silt Clay Metres 56 N Value P.L. بياسا P.I. Undist. Remould c | Dry/Wet ø . 0 -2 -1 -5.4 Seabed -6 Shell & Sand • 9 -7.4 Peaty Medium Sand -7.65 95 Ġ. -~ -8.4 -8.4 99 - -24 300ca ~:0 Medium Dense Sand -10.4 300mm -10.4 61 14 -12 -12.4 65 300ng -14 36R 150aæ -14.4 -16 -16.4 98 - -50R 150sta -15 Very Dense Sand -18.4 50R 150mm -20 -20.4 30R 1500m -22 -22.4 50R 15000 99 --- 24 -34R 150ma -24.4 -26 508 150mm -26.4 -28 -28.4 31R 15008 99 . . . -30 -30,4 50R 150mm -32 150mm 448 -32.4 -98

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The Maritime Services Roard of N.S.W. Engineering Branch Preservation & Research Sub-Branch							B اما	ORE	REC 77 Test	CORD	No. 57		Dat	ation: Boi • No.: 901 • of Boring	20.11	75	Sheet No.: 2 of 2	2	Fid. Test McDermot
Depth In Matres	ſ		Test or Sample Depth		Solt SI	Zê Clay	+	LL	r	- к о	nsity /M ³ /Wet	м.с.	Unconfin	sconfined Compr.		itai Ø	s.p.t. N Value	Remarks	
34	14.5	5 -33.9 Peat			1			<u> </u>				<u> </u>	01.0120	rivi().build	c'	<u> </u>	1	+	· · · · · · · · · · · · · · · · · · ·
		-34.2 to 34.4 Stiff fissured clay					[· · · ·	1		1						
-35		34.4 to -35.9 Pezt					1				1								
	III).					1	Γ—		1	1									
-35	1111					1	T	<u> </u>										1	
	1111	Gray very stiff fissured clay					<u> </u>	1					1	1					
40	////	N					<u> </u>					28	1		70	24			
	Alli					1	1			1	· · ·		1			· .		- <u> </u>	
42	UU	8	-41_4	2	-	1-	22	60	38	1.47	1.91	34	· · · ·		32	21		Fissure in	lex 13
		-42.4 Non plastic silt -43.55 Dense clayey sand	~42.4		<u> </u>	[-NP	NP	'NP''	1 70			1			<u> </u>			
4 4		U -43.55 Dense clayey sand	-43.65		<u> </u>	1							1		· · · · ·	<u> </u>		Fissure in	lex 15
	بمنجع	tith shall				<u> </u>	1	· · · ·		1	† 			[
10		8	-45.4	94	-	- 1					<u> </u>						358	15025	
	1.1					· · ·	[· · - · ·			
48		v/dense sand	-47.4										1	<u>├ </u>			408	150mm	······
	141				<u> </u>						· · ·						· · · · · ·		
50			-49.4			· · ·											40R	150mm	······
		· · · · · · · · · · · · · · · · · · ·									• • •							1-13000	
	- ¹ 6 - 1	V/dense sand + 12%														· · ·			
;2 <u>}</u>		limastons nodules	-52.4	93	~	-											54	.300mm	
1		1			-													1	· · · · · · · · · · · · · · · · · · ·
1		1-54.9			-							• · · ·						·	
i5	1.25	Dense clayey sand with shell	-55.4													-	30	300nm	<u></u>
	19.1	-56.9									· · · · ·								
3	XU.											• • • • •						· · · · · · · · · · · · · · · · · · ·	
	UH)	Grey clay with some shall	-58.8					- 1										E2	
30	181	2-59.9																Fissure ind	Ş <u>X.15.</u>
1	H	Grey silty sand and clay		- 1				·							·		· · · · · · · · · · · · · · · · · · ·		
52 J	地田	-51.55- 61.65 soft weathered sandstone							·									<u> </u>	·····
									···									<u> </u>	
s		Ned,-Hard sandstone						ŀ											
		-64,15 Finish			{													 ··- · · ·	· · ··· · ····
25										·							· · · · · · · · · · · · · · · · · · ·	·	
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The Maritime Services Board of N.S.W. Engineering Branch Preservation & Research Sub-Branch						•				CORD Series			Dá	cation: Bots re No.: 902 te of Boring	any 8ay : 28.11.	75	Sheet No.1 1 of 3		Lab Test	JP & JG RH & JP
Depth in Matres	Drofile	Description	Test or		Solf Size		Index, Pr		ops		Density Kg/M ³			ar Strength ned Compr.	KPa Triaxial		- S.P.T.	Barradia		
Metres			Sample Depth	Sand	Silt	Clay	P.L.	եե	P.I.		/Wet	*		Remould		\$	N Value	Remarks		
0																	}			
-2						<u> </u>	<u> </u>													
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-4				<u> </u>				ļ												
-6	į										<u> </u>	·								
-8	8	6.6 Sozbad Silty Sand with Shell 8.6 Medium Sand 10.35	-7.5	99								 								
	90	8.6																		
-10		Medium Sand H0.35	-9.6	99 ·	-	-										<u> </u>	12	300nm		
-12	8. S		-11.6														49	300вл	,	
-14			-13.6	99	···												36R	150mg		·
			-																	
-15		•	-15.6					<u> </u>			· · ·			<u> </u>			35R	150aa		
-18			-17.6														44R	150an		
-20		Dense Sand	-19.6	99											. .		45R	150am		
											·									
-22		<u> </u>	21.6											 			32R	150=		
-24	83		-23.6		_												328	150mm		
-26		· · · · · · · · · · · · · · · · · · ·	-25.6	99				[┨┦			238	150me		
-28		······															·	ļ	•	
			-27.6														30R	150mm	-	
-30			-29.6	99																
-32		31.5 ta-31.8 Fissured Peat	-31.6											<u> </u>				Fissure Index	13	
	978																			

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The Maritime Services Board of N.S.W.			Engineering Branc		Laboratory Test Series No. 57 Bore No Date of								ocation: Botany Bay ore No.: 902 bate of Boring: 28,11,75			Sheet No.1 2 of 3	•	Fid. Test McD Lab Test JP & KG Checked RH & JP	
Depth in		le Description	Test or		Soli Sla	C 0	Inc	lex. Pr	ops	ps. Density Kg/M ³	sity			lax Shear Strength Inconfined Compr.		ial	S.P.T.	1	Remarks
Metres	in Profile		Sample Depth	Sand	Slit	Clay	P.L.	ււ	P.I.	Rg,	/M= /Wet	*		Remould	c'	\$°	N Value	Katharks	
-34	SU -	Oroanic Fissured Clay	-33.6															Eissura Index	13
-36	99	-35.6 Clavey Silt	~35.6				<u>† </u>											Fissure-Inde:	. 12
	(l)	N		•		[Horizontal F	
-38			-37.6	12		_	26	41	15			.34			50	250	<u> </u>	C' 1.0' (off)	ective_stress)
	111	N	-37.6	23	-		15	39	24		3	22	•		10	18,5 25		Failed on Els	sure .
-40	Ŵ	Clay	-39.6	5		. -	21	57	36			33			50	25°		No fissures	
-42	(ll)	41.6 Medjum Sand	-41.6	95			<u> </u>	 									278	150mm	
-14	-	42.6	-91.0	83	-	-					•-	<u> </u>			·		<u> </u>		
-44		Sand with	-43.6					-			<u> </u>						28R	150mm	
		Ligestane nodules			+		┢										201		
-48	Зл	Cinestalis Hasules	-45.6									<u> </u>					25R ·	150mm	
- 10	30	-47.1			1		<u> </u>												
-49	11		-47.8	51	-		12	27	15								38	300mm	
	1	9			†		F												
50		§																1	
1	1	Clayey sand & shell	-50.8	62	-	-	12	24	12		•	•					25R	150mm	
-52	1.						Ė												
	c Se						L												
	181	-53.6	-53,6	13	-		18	57	39								29	300aa .	
1	ŰĿ	Silty clay												ļ					
-55	3.	-55.1												[]					
		Kedlum Sand	-56.6	98			L										27R	150mp	,
-58	1	**************************************			ļ														
-50														├ ··· 				300mm	
	11%	-59.6 Peaty Clay	-59.6	25			18	36	18					 			. 30		
-62	N		·	-							-	·						+	
	M.	-62.6	-62.6	94	-	-			·								25R	150 m	
-64	1	3																1	•
	1	8		. ···											-				
-65	1	4	-65.6						-		[238	150mm	······································
{	Č,	Kedium Clayey Sand															• • • · · · · · · · · · · · · · ·	1	
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ENG, 528

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The Ma	î li me	e Sér	irvices Board at N.s.w. Protopreservalidit & Reveilth Bub-Branch		ngindering i	iranci t			, , , ,	abrillat	orato	y Têsi		No. 5		1 1 1	Loca Bore Date	tion: Bo No.1 90 of Borin	tany Ba 2 9 ¹⁻¹ 28	, 11.75		Sheet No.13 of	f 3	Lab Test JP & JG Checked RH & JP
eth (n	Profil	1.	Description		Sample L	1	: nii :		T:	""" Int	1- 1	F	"" "К	insity, , s/M ³	M.C.	C N	ax Shéar nconfina	Strengt	1	(Pa axial		S.P.T.	1	
CILOY	50/35	_			Sampie L	ieb (u	Sand	SHL	Clay.	P.L_	البه البه	P.I.	Dr	y/Wet	*	U	indist,	Remoul	a c	4		N Value		
Q	//	3					<u> </u>							·	- <u> </u>	+				+-	+			· · · · · · · · · · · · · · · · · · ·
	15	Ĵ٦	Medium Clayey Sand & Charcoal				<u> </u>		<u>†</u>							-{-				-				
2	\mathcal{A}				-71.6		65	• -	-	12	21	9		1.	1							29		300mm
		4	-73.5 Soft Weathered Sandstone							L								_						
4		4	-74,1 Grey Sandstone				ļ	—	 	L	ļ					1					_			
6	::::	<u>-</u> -	-75.35		 											+				_	-[-			
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													1		11-				<u> </u>	Ħ	-+		<u>† </u>	· · · · · · · · · · · · · · · · · · ·
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		Preservation & Research Sub-Branch		۱ ا	<u> </u>			orator	ry Test 5	Series No.		. <u> </u>	Date	te of Boring:	a 10.12		,	Checked	J.P. & R.H.					
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-14			-13.2	+'	<u>+'</u>	<u>+'</u>		┌──┤	╆━━╋			+	لـــــا	 	l'		24R	150am	·····			·	۰.	
8			-15.2	99 '	-		1		\square		<u> </u>		t		[]		12R	150mm		•				
-16		Medium to Dense SAND	-17.2	+'	+_'	+'	+-+		+-+			+	_	<u>⊢</u>	<u>'</u>	+-	23R	150mm						
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-24	翻	Medium Sand & Peat	-25.2	<u> </u>	\square	\square	—	$ \rightarrow $	$\overline{+}$					·	·!		27R	150mm		•				
-26	一	-25, 9		<u> </u>		<u></u>	<u> </u>	\exists	\Box			1	 +		/					. ·				
HY	111 L	Nedium Peaty Sand	-27.2	<u>[99</u>]	-		F	\rightarrow	H				=	<u> </u>		\square	23R	150am		•				
-28		-28,0 Clay	-29,2	<u>+</u>	<u> </u>				\Box			105	_					Non fissurad	·					
-10		-29.5530.1 Peat		\square		\square	F- +	\neg	<u>↓</u>						!									
-32		Ron Plastic Clay	-31.2	2	-	- 1	N.P. 1	N.P.	N.P.		6	65	ł		25	20 ⁰								
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The Ma	ritime S	Services Baard of N.S.W. Preservation & Research Sub-Brench	ingineering Branci	h						ORD Series P	10. 57		Bore Date	No.1 90 1 of Boring:	10.	12.75	Sheet No.: 2 of 2	Fid. Test #cDermo Lab Test J.P. & Checked J.P. &
Depth in Metres	Profile	Description	Test or Sample Depth		Soft Sh	1		tox. Pri		K9	nsity /M ³	м.с.′ %	Max Shear Unconfine	ed Compr.	KP Trias C'	dal	s.p.t. N Value	Remarks
-34	iiii	Non plastic fissured clay	-33.2	2	Silt			<u>ь</u> ң N.P.		Dry	/Wet		Undist.	Remould	<u> </u>	9 .	N VALUE	Large vert. fissure
- 24	IIII)	<u>Non plastic tissured clay</u>	-35.2		<u>+</u>	<u> </u>						24				┼──		Fissure Index 14
-36	AIII	-36.2				<u> </u>						67		[+		
-10		Hedium Sand	-37.2	96	-					<u> </u>		·					29R	150mm
-38				20	1	-				<u> </u>		<u> </u>		<u>├ </u>		1	6.214	
-32		-38.7	-39.2									<u> </u>		 			23R	150ap
-40	1		-33.4	<u> </u>	<u> </u>					 				 		 	4.0*1	1.2000
-40	//	Medium Sand with traces of clay	-41,2	93	<u> </u>	-		i	·				 ∙ · · ·	 			24	30Dnn
-42		BEGIUM Sang RITH TREES OF CLAY	-41.2	[. <u>a</u> 2	<u>⊢</u>									<u> </u>			24	30000
-42	1.	-43.7		ļ				[<u> </u>		<u> </u>	· 24R	150nn
	14		-43.2	ļ													<u>240</u>	1 3 5/10 11
44	1111	4.43.7		ļ	1		L					<u> </u>		<u> </u>		I		· · · · · · · · · · · · · · · · · · ·
	UXI.	Silty Clay	-45.0		ļ					ļ		13				<u> </u>		
46	\overline{m}	-45.7		[ļ	<u> </u>	L					[
	183		-47.2	ļ	<u> </u>						L			<u> </u>			25R	150mm
-48	$\langle e^{-iQ} \rangle$	· · · · · · · · · · · · · · · · · · ·			İ											<u> </u>		
		Medium Sand														<u> </u>		
-50	10		-49.2	94	-	-											26R	150mm
	(1924) (1924)		-51.2		l · ·												28R	150mm
52																		
	(a)																	
-54	<u></u> (-53.7																
E C	///	Sandy Liay	-54.2	30	- 1	*	15	39	24								278	150mm
56	././.	-56.0												-				
F	IIII		-56.7	5	-	-	25	60	35			40		· · ·	18	210		Fissure Index 13
-58	(III)	Fissured Clay				-									••••••			
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-50	IIII		-60.2									12						
<u> </u>	1111	-61.0	-60.3		· · · ·							30						Fissure Index 14
-52	1111	Sand	-61.0	96														
<u></u>	1	-52.7. ³	<u> ="0"+0"</u>	30	- .													
.54		<u>_64.32Soft Weathered Sandstone</u>	<u> </u>	i												<u> </u>		· · · · · · · · · · · · · · · · · · ·
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	::::}	Grey Sandstone	{ 															
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..... . . ENG, 528 Fid. Test Cornett BORE RECORD The Maritime Services Board of N.S.W. Engineering Branch Location: Botany Bay LAD Test JP & JG Sheet No.1 1 of 2 Bore No.: 901 Date of Boring: 8.1.76 Laboratory Test Series No. 57 Preservation & Research Sub-Branch Checked UP & RH Max Shear Strength KPa Soli Size Index. Props. . Density S.P.T. Depth In Profile Test or м.с. Triaxial Unconfined Compr. Description K9/M³ Remarks Metzes Sample Depth Sand Slit Clay P.L. L.L. P.J. 56 N Value Undist. Remould c 4 Dry/Wet 0 -2 -4 -6 Seabed -5.7 Silty clayey Sand and shell • . 2/25 7.7 -8 -9.2 Grey silty sand -10 -9,7 300an 11 Nedium sand 24R 150mm -12 -11.7 -14 -13.7 19R 150ee -16 -15.7 488. 150ea Very dense to dense sand -18 -17.7 508 150mm. -20 -19.7 99 -12R 150nm -22 -21.7 41R 150nm -24 -23.7 38R 150mm -25.7 Stiff Peat -26 -26.0 -25.7 35R 150mm Very dense peaty sand -27.8 Clay -27.7 -23 38 -15 28 13 32 300 --28.1 Peat . -28.2 Stiff fissured CLAY -30 -29.7 -31.0 Grey sandy clay and shell - ?? 4-31.7 -31.7 22 -16 44 28 - 1 Grey clay

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The Marilime	Services Board of I Pres	N.S.W. servation & Research Sub-Branch	Engineering Branci	'n			B	ORE	REC y Test	ORD	vo. 57		Bore	ition: Bot No.: 9 of Boring	04		Sheet No.1 2 of	2	Fid. Test ScDermi Lab Test JP & Checked JP &
eath in Attres		Description	Test or Sampla Dapth		5011 Si	Clay	F	16X. Pr	T	K R	nsity /M ³	M.C.	Max Shea Unconfine	r Strength ed Compr.	KP: Triax	lat .	s.p.t. N Value		Remarks
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		services Board of N.S.W.			<u> </u>				DE	ORD				cation: 8	171UV 21				Fid, Test	McDernott		
1 10 16	riçime 3	Preservation & Research Sub-Branch	Engineering Bran	cn	ĺ.						No. 5	7	E e	re Nasi 9	05		Sheet No.1 1 of	2	Lab Test	JP&JG] ! ·	
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-4						[<u> </u>							·				
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-6		-6.6 Seabed SAND & SHELL																				
8	0 Q Q	-8.6				<u> </u>				·	· · · ·	1	-				<u>.</u>					
-10		MEDIUM SAND	-9.6		-					 					ļ		17	<u>300mm</u>		- <u>1</u>	-	
		=10,03	-11.6										-				34R	150mm			- -	e de la construcción de la construcción de la construcción de la construcción de la construcción de la constru
-12		· · · · · · · · · · · · · · · · · · ·		98							<u> </u>	 						450				
-14				90				<u> </u>					<u> </u>				30R	15000				
-16		,		┼──							<u> </u> .						<u>188</u>	<u>150mp</u>				
		NEDIVE TO DENSE SAND	-17.6														22R	150mg			1.	
-18			-19.6								<u> </u>						27R	150mm			4.	
-20		· · · · · · · · · · · · · · · · · · ·											<u> </u>					· · · · ·			1 .` ·	
-22			-21.6												· ·	<u> </u>	328	<u> 150mm.</u>				- -
-21	關		-23.6	98	-	-											25R	150an			1.	
		-24.6 Grey Clay		<u> </u>								-			. <u> </u>						-	
-26	<u>}}</u>	25.8 Peat 26.3	_								<u> </u>		ļ			ļ					1.	
-28	ITT							-													4.	
		FISSURED ORGANIC SILT	-29.6	3	-		N.P.	<u>И. Р.</u>	N.P.	97	1.56	69			240	24		FISSURE_INDEX	X 11	•	.	
-30	Ш	30.8	-31.6	53		_	-17	27	10				·				24R	150ma]	
-32		ZEDIUM CLAYEY SAND & SHELL														•					- - -	
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ENG. 528 Fid. Test McDermott BORE RECORD Location: Botany Bay The Maritime Services Board of N.S.W. Engineering Branch Lab Test JP & JG Bore No.: 905 Date of Boring: 20.1.76 Sheet No.1 2 of 2 Preservation & Research Sub-Branch Laboratory Test Suries No. 57 Checked JP & RH Max Shear Strength KP. Soli Size Index. Props. . Density 5.P.T. Septh in Metres Test or M.C. Unconfined Compr. Triaxial Description Kg/M³ Remarks Sample Depth Sand Sill Clay P.L. L.L. P.I. * C' \$' N Value Dry/Wet Undist, Remould -34 -33.4 -36 Stiff fissured clay -37.6 Fissure index 9 -38 3-37.95 . Fissured sandy clay -39.6 37 -- 17 36 19 1.59 1.87 29 36 34 Flssure index 17 -40 -42 2-41.6 Suft seathered sandstone -42.6 Soft and hard weathered sandstone -44 -14.6 -46 .

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Fid. Test M. DernaH BORE RECORD Location: Botany Bay The Maritime Services Board of N.S.W. Engineering Branch Lab Test JP . JG Bore No.: 906 Sheet No.1 1 of 2 Laboratory Test Series No. 57 Preservation & Research Sub-Dranch Date of Boring: 5.2.76 Checked 10 2 24 Max Shear Strength KPa Soli Size Index, Props, Density S.P.T. Depth in Profile Test or M.C. Unconfined Compr. Triaxial Description Kg/M³ Remarks Sample Ospth ч. Sand Slit Clay P.L. L.L. P.J. N Value Dry/Wet Undist, Remould ¢' 4'

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-2 -4 -6 -6.45 Seabed Silty Sand & Shell -8 -8.45 -10 Silty Sand -10,45 42 300an -11.8 Soft Peat -12.15 -12 -12,45 95 - -29R 150 -14 -14.45 26R 150 -16 Dense fine sand -16,45 33R 150 -18 30R -18.45 99 150 -20 -20,45 - 89 150 22K --22.2 Peat -22 -21 -24.35 -23.45 99 --Organic fissured Silt 27 40 13 -24.85 6 -- | 38 20 29 Fissure Index 13 -26 **Fissured** Clay 2 330 -24.90 9 - - 19 40 21 1.49 1.96 29 Fissure Index 13 -28.85 37 Fissure Index 11 -28 -27.95 Shell with Clay -29.70 Fissured Clay -30 -30.70 Sandy Clay with some shell -30,65 Fissure Index 14 -31.20 Clavey Sand -32.35 32 Stiff fissured Clay -32.45 10 -- 24 50 32 1.59 1.98 32 15 270 Fissure Index 17

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Depth in			Tent or		Soli Si	28 .	inc	iex. Pre			isity /M3	M.C.		ed Compr.			S.P.T.	Rémarks
Depth in Metrei	Profile	Description	Sample Dopth	Sand	SU	Clay	P,L	եեր	P.1.		/Wet	*		Remould	c'	\$'	N Value	
-34	111	3 -33,95																
	8 S.	Clayey Sand				I						<u> </u>						
-36		-36.3 Stiff Clay	-36.45	<u> </u>			L	L	L	L	ļ	15.6				ļ		
	جخجا	4 -36.3 Stiff Clay -36.7 Clayey Sand -37.45	-36.5				L.		<u> </u>	<u> </u>	<u> </u>	. 11.7	1					
-38		3 -37.45								<u> </u>								
	1	Slightly clayey Sand	-38.45	91	-	-							-	<u> </u>			15R	150ma
-40	\geq	-39.5									L	<u> </u>				İ		
	وستعريب	S 01 Cand	-40.45	68	-		10	29	19	L		<u> </u>			<u> </u>		30R	150mm
-42		-42.2 Stiff fissured Clay								1		I	1		.	I		
	inn.	-43.2 Clayey Sand	-42,45	8	-	-	22	72	50	1.65	2.02	26			32	18		Fissure Index 12
-44.	\rightarrow		-44,45															Fissure Index 17
	<u>IIII</u>	8	·						[·
6	1111	Stiff fissured Clay	~46.45									<u> </u>		1				Fissure Index 16
	1111						•			<u> </u>				1		ļ		
-48	VIII	-47.95 Dense Silty Sand				1	1					I						
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-28 -	29.2 Sandy CLAY with some seaas of sand	-20.2	<u> </u>	<u> </u>														•
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International properties and of N.S.W. Engineering Branch BORE RECORD Location: Botany Bay Sheet No.: 2 of 2 Fid. Test Nr. Dependent Preservation 4. Research Sub-Branch Test or Sample Depth Soit Size Index, Props. Density Mr.C. Mr.C. Description S.P.T. Checked JP + Rit 34 C. Laboratory SAND SAND Sand Sit Clay P.L. Lie Pril. Drevine Second Remarks 35.9 Weathered SANOSTONE SANDSTONE Sand Site Sample Depth Sample																					
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-23	14	Dense clay s y sand			ļ.,		<u> </u>											ļ		Ι.		
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	1	-31.65 Soft weathered sandstone	-31.1								-						20 R	150mm				
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ENG. 528 Fid, Test McDermott BORE RECORD The Maritime Services Board of N.S.W. Location: Botany Bay Engineering Branch Sheet No.s 2 of 2 Lab Test JP & JG Bore No. 909 Laboratory Test Series No. 57 Checked JP & RH Preservation & Research Sub-Branch Date of Boring: 8/3/76 Max Shear Strength KP4 Soll Size Index, Props. Density 5.P.T. Depth in Profile Test or M.C. Unconfined Compr. Triaxial Description Kg/M3 Remarks Metres Sample Depth N Value Sand Silt Clay P.L. L.L. P.I. * Undist. Remould Ory/Wet C 🖸 -34 Weathered sandstone with -35.4 clay coated joints -36 .

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The Mar	lime Se	rvices Board of N.S.W. Preservation & Research Sub-Branch	Engineering Brand	h					REC	ORD	10. 57		Bore	No.: 910	12/3/76		Sheet No.1 of		Fid. Test McDermott Lab Test JP & JG Checked JP & RH
T				5	ioli Siz	• •	ind	ax, Pro	ps	Der	sity	M,C.		r Strength ed Compr.	KPa Triax		S.P.T.	1	Remarks
Depth in Metres	ailtor	Description	Test or Sample Dapth	Sand	Slit	Clay	P,L.	L.L.	P.I.	Kg, Dry	/Wat	*		Remould		¢1	N Value		
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-2		-2.1 Seabed			i														
		-3.85 Shell & Sand															38	300na	
-1		Medium to dense sand			1		<u> </u>											300mm	
-6	(§:4)	-6.1	-6.1	1	1								ļ				17	300000	
	111											<u> </u>					42	300mm	
<u> </u>	(S. 1977)		-8.1	98	-	-	L			ļ		ļ	ļ				12		
	愛聞	Dense sand		<u> </u>	<u> </u>		<u> </u>	L				<u> </u>					42	300am	
-10	12.63	-10.65 Slightly indurated sand	-10.1		<u> </u>	<u> </u>	ļ	 					. - -						
	<u></u>	Dense sand -10.65 Slightly indurated sand -11.2	-12.1	99		-		<u> </u>						· {		<u> · · · · · · · · · · · · · · · · · · ·</u>	20 R	150na	
-12	0	· · · ·		33		<u> </u>	<u> </u>												
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-14	6	RECTUM SANC HIGH SOME SHETT		1			<u> </u>					T							
	0 0 0 V	· · · ·	-16.1	99	-	-					-					ļ	<u>6 R</u>	150ga	
-16	6 S.	······································			L											┼	12 8	150mm	
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	$J_{1,\infty}$	-18.95 Peat					<u> </u>					50			32	260		-	
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	UU	-21.1 Clay							<u>├</u> ──		··	1		1					
-22	llll	-22,25					╀							-					
·{	<u> </u>	Dense clayey sand with seams of clay	-24,1	94	1-	- 1	+		†								34	300am	·····
-24		-24.95 Soft weathered sandstone		<u> </u>		1										<u> </u>	· .		
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-20	*****	Reathered sandstone					ļ		ļ	ļ					<u>-</u>				
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The Ma	ritime :	Services Board of N.S.W.	Engineering Branc	Ъ						CORD			Bor	ation: Bo e No.: 91	1		Sheet No.i 1 of 2		LAD Test JP & J	IG
		Preservation & Research Sub-Branch	· · · · · · · · · · · · · · · · · · ·		Solt Si	<u>_</u> .		lax. Pr			nsity	г		a of Boring r Strangth	<u>16/3/7</u> КР		5.P.T.		Checked JP & R	8
Depth in Matres	Profile	Description	Test or Sample Depth	}	Υ 	Clay	P.L.	L.4	F	- K9	/M3 //Wet	M.C.'		ed Compr. Remould	Tria) C	ciai • # *	N Value		Remarks	
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-9		·	~8.55													ļ	56	300mm		
-10			-10.55	99						ļ!					· · · · ·		37 R	150aa		
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	25.63		-10.00																	
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-22	58) 1		-22,55	100		-					-						11 R	150an		
		-23.15 Peat								l			[. <u>.</u>					
-24	,,,, ,	-23.8	-24.55				-—					31					,,	Fissure In	dex 16	
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-30	~ † *}	-29.05 Peaty clay -29.35 Organic fissured silt		4	-			49	10		1.52	00			113	20		I ISSUE H	067 0	
-32	हु त	-31.05 Redium slightly silty sand with	-32.55	80	-		15	17	2			_				-	17	300en		
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. Maritime :	Services OG	Preservation & Research Sub-Branch	Engineering Brand	n.	Ì					Series		,		ocations Bol ore No.s 911 ate of Boring			Sheet No.s 2 of	
<u> </u>	1			<u> </u>	5olt \$I	7.8		dex, Pr			nsity			ate of Boring ear Strength			S.P.T.	Checked JF &
in Profile		Description	Test or Sample Dapth		-	Clay	P.L.	T	P.1.	- K	/M ³ //Wet	M.C.	Sector Se	Remould		xiai d /	1	Remarks
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_7.7.7	-36.55	Clayey sand					Ľ											
	-37.3			<u> </u>	<u> </u>			Ľ										
-11/1	1	Slightly sandy fissured clay with	-38.55	16	<u> -</u>	-	26	56	30	1:43	1.86	40			36	24	• •	Fissure Index 11
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-/////	J	Fissure clay with traces of shell	-42.55	[<u> </u>	Į			ļ	Į_ <u>,,</u> ,			•			
-1111	-43.55	Sandy clay with shell	-12.33			<u> </u>	 					34	[· · ·				Fissure Index 14
-777	-44.9	Soft weathered sandstone	44.55	27	-		21	43	22			 	·				30 8	150ma
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	-7.55 Silty sand with shell																
6483	-8.8 Black marine silt - -9,55																
	Silty sand -11.05	-11.55	99	-						_					41.	300mg	
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δ	Redium sand with shells	-15,55	98.	-											32 R	150aa	
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	-22.45 Peat . -22.55	-23.55	97	-	<u> </u>					_					30 R	150aa	
	Dense sand with some peat	-25.55													30 R	150mm	
	-26.15 Peat -26.45 Fissured peaty clay	-27.55	 							<u> </u>							二 :
	-26.25 Peat	-21.00							35	<u>+</u>			• • • • • • •			Fissure Index 13	
	-28,45 Stiff clay					\square				-							
-	-31.95 -32.05 Peat	-31.55				1				_					16	150ma	
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All Fissured party clay -35.8 -35.8 -35.8 -35.8 -35.8 -35.8 -35.8 -35.8 -35.8 -35.8 -35.8 -35.8 -35.8 -35.8 <		·····	Tast or	! !	5011 512	:• `				Del	sity	<u> </u>	Date Max Shea	r Strength	23/3/7		5.P.T.	Checked JP & RH
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Medium to dense slightly clayey sand Image: Constraint of the state of the slightly clayey sand 18 -59,45 Very dense sand -59,55 10 -59,95 150mm 12 Sandstone 1 -52,05 1 1	- 1201		55 55												· · · ·			
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-59.45 Very dense sand -59.55 5 50 50 8 150mm	- 22																	
50 -59,95 -59,95 2 Sandstone -53,05		SO IE Vany days and	E0 55														ca 6	150
Z Sandstone R.O.D. 845 63.05 63.05 63.05	50-ZZ		-39.33														20 8	10000
-63.05																	·	
-63.05	5Z	Sandahara .												·				50 0 0 G
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	إنتينية والمستك														ł		····	· · · · · · · · · · · · · · · · · · ·
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ne Ma	ritime :	e Services Board of N.S.W.	Engineering Branci	h			В	ORE	REC	ORD	ļ		- Lu	eations Be	ntany Bay	,		Fid	Test McDernot
		Preservation & Research Sub-Branch					Lat	orato	y Test	Series	No. 57		B	are No.t 91 ate of Boring	13 1 23/4/1	76	Sheet No.: 1 of 2		Prest JP & JG
	[· •	Soli Si	ze -	Ind	ex. Pro	op\$	D	Insity	<u> </u>	Max Sh	ear Strength	KP	N	5.P.T.		or e nu
oth In latres	Profile	le Description	Test or Sample Depth	<u> </u>	Slit	1	<u> </u>	LĻ	r7	к	9/M ³	M.C. %		Ined Compr.	Trias		N Value	Rema	ris
				SANG	501	6149	P.L.		P.1.	Di	y/Wet		Undist	, Remould	c	4	T ANTRO		
0	1										+								
							L												
-?		-3.6 Seabed					┝				·		·			<u> </u>			
.4		-3.6 Seabed Sand with shell			 	<u> </u>					+							· · · ·	
	モデ	-5.1	-5.6	·													10	300mm	
8	1	Loose to medium sand	-510			•				• •	+								
		-7.15 Peat	-7.6	99	-	-						-					55	300mm	
8	10	-7.3 Very dense sand with seams of peat																	
10	<u>111</u>	-9.1 Dense sand -10.6 Peat	-9.6								<u> </u>						<u>39 R</u>	150mm	
	5.77		-11.6	- 98	-						- <u> </u> -						50 R	150an	
-12	8 S.							-										1.3000	
	的感		-13.6														50 R	150mm	4
14	<u>,</u> 0										<u> </u>							•	
16		with some shell	-15.6	97		[]						, .		-		<u> </u>	50 R	150mm	
10	0	<u></u>	-17.6														50 R	150mm	······
18											1							1.7500	
			-19.5	98	+	-											50 R	150mm	
20		04 26 B. I														L.		•	
22	10年	-21.75 Peat -22.7	-21.6				[55	<u>300aa</u>	
	11	Stiff peaty clay									+ - +								
24	1992	-23.9 Peat	1						†		1			-					
		-24.6																	
26	IIII	Soft clay						·										· · · · · · · · · · · · · · · · · · ·	
23	<i>771</i>	-27.0 fissured peaty clay.	-27.6									70				ļ		Fissure_Index 18	
└── }	なお	-27.85 Stiff peat -28.2 Pesty clay	-29.6								┨───┨							Fissure Index 12	
in S	ECH	-29.1 Fissured clay	~43*0								<u> </u>							1199010 INGEX 15	······
		_30.35 Hedium to dense	-31.6			.		··· [-			25	300mm	
	- 1. A. I.																		

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he Ma	rilime S	iervices Bas	rd of N.S.W.	Engineering Branc	h			E	ORE	REC	ORD			Loc	etion: Boi No.1 913 of Boring	any Bay		A - (A	Fid. Test McDermott Lab Test JP & JG
			Preservation & Research Sub-Branch									No. 5	i7	Bor Dat	e No.1 91. e of Boring	s = 23/4	/76	Sheet No.1 2 of 2	Checked JP & RH
	T	1			T i	5o1i Si		1.10	dex. Pr	ops, ,	De	nsity	I	Max Shee	r Strength	KP	2	5.P.T.	· · · · · · · · · · · · · · · · · · ·
ath In atres	Profile		Description	Test or Sample Depth					եե			nsity 7/M ³ 9/Wet	M.C.		ad Compr. Remould	Tria: C	xial	N Value	Remarks
34	4		Peaty sand with shell					+				1	<u> </u>	- Children	-	<u> </u>	┉		
		-34.35	Dense silty sand	-35,6														31 R	150mm
36							·	·			<u> </u>		<u> </u>				╉		0.0.0.057
38		-38.6	Sandstone			<u> </u>	┼	┼	-		<u> </u>	+	1	· · · · · ·	+	ļ			R.Q.D. 95\$
10						†		+	+			1			<u> </u>		1	·	
10	1					·													
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		. <u> </u>	······································				 		ļ	┣—	ļ			l					
					 		<u> </u>	<u>+</u>		<u> </u>				<u>†</u>					
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The Ma	dtime S	Services Board of N.S.W.	Engineering Branc				 P	ORE	REC	ORD			Lec	tion: 8	otany Ba			· · ·	Fid. Test McDarmott
	•	Preservation & Research Sub-Branch		•						Series			Bor	No.1	14	•	Sheet No.1 1 of 2		Lab Test JP & JG Checked JP & RH
oth in		1	- Test or	· · · ·	Soll SI	28	In	lex, Pr	ops, ,		nsity			r Strength		4	\$.P.T.		
Aatres	Profile	e Description	Sample Depth	Sand	Silt	Çlay	P.L.	եե	P.I,		y/W3 V/Wet	*		Remould	¢,		N Value		Rémarks
0								<u> </u>											
				<u> </u>	1	ļ	 					ļ				<u> </u>			
2		-3.9 Sezbed			+		┼	 				1							
1	a 85	Sand with shell -5.65				ļ	[
ŝ			-5.9	97	-	-	<u>† </u>										33	300mm	
3			-7.9			ļ	<u> </u>					<u> </u>		<u> </u>		+	70	300mm	
							<u>† </u>												
10	\mathbf{D}	A Dense to very dense	-9.9	97	<u> -</u>	-	<u> </u>				<u> </u>				: 		41	300an	
12		sand with shell	-11.9	97	1		_										48 R	150aa	
n		· · · · · · · · · · · · · · · · · · ·	-13.9						-								50 R	150mm	
16	- 0		-15.9	<u>99</u>													. 48 R	150na	
					ļ					·									•
18		<u></u>	-17.9														50 R	<u>150mm .</u>	· · · · · · · · · · · · · · · · · · ·
20			-19.9			—		<u> </u>									<u>50 R</u>	150mm	
22	0		-21,9	99	-	-	<u> </u>										48 R	150an	
24		-23.25 Dense sand with some peat	-23,9			 							····, ···	·			42 R		
	翻	-25.4					<u> </u>										· ·		· · · · · · · · · · · · · · · · · · ·
6	科	Densepeaty_sand Peat	-25,9	.97	-										·		41 R	150am	
29	111	-27.3 Fissured clay	-27.9									29				· ·		Fissure	Index 17
30		-29,05 Pest -29.4 Fissured pesty clay	-29.9								<u> </u>	31						Fissure	Index 12
32	111	-30.15	-31.9	7	<u> </u>		18	18	30	450	1.95	28			35	200 .			
<u>**</u> _{		Fissured clay	-31.3		<u> </u>	<u> </u>		10		1.24	1.42				03	<u> </u>			

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			<u> </u>															ENQ, 528
The Mar	itime S	Services Board of N.S.W. Er Presarvation & Research Sub-Branch	iginearing Branc	h						CORD	•	57	Loi Boi Dai	cation: Bol ra No.(914 te of Boring	any Bay , 3/5/78	5	Sheet No.1 2 OF 2	Fid, Test McDeraott Lab Test JP & JG Checked JP & RH
Depth in Metres	Profile	Description	Test or Sample Depth		T	zə Clay			ops.	ł ×.	nsity /M ³ //Wet	м.с. *	Unconflu	ar Strength ned Compr. Remould	Trias		s.p.t. N Value	Remarks
-34	M	-35.0	-33.9	2	-	-			N. P.		1.52	62			18	130		Fissure Index 9
-36			359		-	+					<u> </u>						7i	300##
-38	///	Fissured sandy clay	_37,9		-							23						Fissure Index 13
-40		Slightly sandy_clay_with some_shell -41.65					21	54	33			27						
-42		Fissured clay	-41.9 -43.9	<u>.</u>					 			25						Fissure Index 14
		-45,4	-45.9		[40					· 	Fissure Index 11
-48		Sandy clay with some shell	-47.9									32						
-50	//	-50.9	-49.9		<u> </u>							27						· · · · · · · · · · · · · · · · · · ·
-52		Clay _53.4 Dense slity sand				<u> </u>												
-54		-54,65	-53.9														33 R	150an
~56		Sandstone																R.Q.D. 71\$
-58		-57.9																
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	F																	
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a Mariti	me Ser	rvices Board of N.S.W.	Engineering Branci	.]			В	ORE	REC	ORD				stions B	otany Bay	ý.			Fid. Test McDarm	in tt
		Preservation & Research Sub-Branch			. •					Series N	ia, 5'	7	Bori Dati	No,: 0	15 • 29/7/76		Sheet No.1 0f	2	Checked JP & R	
n ini		•	Test or		soli Siz	2.B	Ind	lex, Pro		Den Kg/	sity M3	м.с.	Max Shea	r Strength ad Compr.	KPa Triax		S.P.T.		j Remarks	
h in res	eflue	Description	Sample Depth	Sand	sut	Clay	P.L.	ււ	P.1.		/Wat	*		Remould	С	\$	N Value			_
	-																			_
	Ľ																		· · · · · · · · · · · · · · · · · · ·	-
	-				Ĺ	<u> </u>							· · · ·							_
	r	_4.7 Seabed Sand with shells															·			-
		-6.2 <u>Clay</u>			 														· · · · · · · · · · · · · · · · · · ·	
		-6.65	-6.7	97	-							· · · ·					17	300mm		_
	ØĽ.		-8.7														<u> </u>	<u>300.pm</u>	· · · · · ·	
	βĽ	· · · · · · · · · · · · · · · · · · ·	10.7	97	-	-											45 R	150ma		_
2	5-	Dense sand with some shells	-12,7	<u> </u>													48 R	150aa		
	ĝĿ			- 00													50 R	150mm		_
6	影-		-14.7	96	-	-														
	31		-16.7														50 R	150nm		-
8	ð 🗖		-18.7	97	-	-											50 R	150aa		_
0	-		-20.7												·		50 R	150na		\exists
2	š.		-22.7	96	[50 R	15000		
		-24.85 Pest		30	•	-														
- <u>11</u>	2 I T	-25.6 Clay	-24.7														46	300=		
	\mathbb{N}^{-}	-27.7 Peaty clay with seams of peat	-26.7			· · ·						37						1		
		-28.6			 , _										ļ			<u> </u>	•	
TĨ	TE		-30.7									32		ļ				Fissure In	dex 12	
		Fissured organic silt	-32,7									50						Fissura_la	ler 11	
	11-					· · · ·							1	1				1		7

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		iervices Board of N.S.W. E	ingineering Branch		•	·	BC	RE	REC	ORD			1.07	ation: Bo	otany Bay	,			Fid. Test McDermott			
тпе из	nume a		ngineering branci	" 1						Series N				ANO. 9	15		Sheet No.: 2 of 2		Lab Test JP & JG			
<u> </u>		Preservation & Research Sub-Branch		I			-							e of Boring or Strength			· · · · · · · · · · · · · · · · · · ·	F	Checked JP & RH	۰.		
Depth in	Sea 11	Description	Test or		ioH Siz		Inde	x, Pro	ps	Der	nsity /M ³			ed Compr.			S.P.T.		Remarks			
Metres	FOILE		Sample Depth	Sand	Silt	Clay	P.L.			Dry	/Wet	*		Remould			N Value					
-34	ШТ		-34.7	1		-	33	48_	_15	1.11	1.68	53			0	240		Fissure 1	ndex_8			
		Elssuced organic silt									<u> </u>		<u> –</u>		 		·			•		
-36															<u> </u>				······	ľ.		
		-38,95	-38.7		 					<u></u>		34			<u> </u>						-	
		Dense silty sand with some shell.																•				
_ <u>40</u>	3		-40.7							-	Ļ				ļ		34 R	150mm		·.		
	5 C.	-11.45								,							10 D	450				
-42 -	12.5	Dense sand ~43.5 Soft weathered sandstone	-42.7				`									····	<u>39 R</u>	150mm				
-44	<u></u>	-43.5 Soft weathered sandstone -43.7 Sandstone															• .					
		-44.0 Soft clayey sandstone																				
-46		-45.15 Weathered sandstone with some															· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·			
,		-47.45 seams of shale										 								ł .		
-48		-47.45-47.7 Sendstone			┝━┉┦							 		-				├── ──				
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The Ma	ritima S	Services Board of N.S.W. Proservation 4, Research Sub-Branch	Engineering Stand	h			B	ORE	REC	ORD	_{No} , 57		Loc Bor Dat	ation: Bi No.:	ntany 8ay 316 • 20/7/1	/ 76	Sheet No.s 1 of 2	Fid. Test #CDermo Lab Test JP & JG Checked JP & RH
epth in	Profile	Description	Test or		Soli Sli		L	ex. Pr			nsity J/M ³	M.C.	Max She	er Strength	KP/ Triax	•	\$.P.T.	Rémarks
Matres			Sample Depth	Sand	Silt	Clay	P.L	եե	P.I.		//Wat	*	Undist.	Remould	c'	#1	N Value	
0					:			<u> </u>						-				
<u> </u>		· · · · · · · · · · · · · · · · · · ·		<u> </u>	<u> </u>	<u> </u>	<u> </u>						<u> · · · · ·</u>					
-2	Í .			<u> </u>		<u> </u>	<u> </u>				1		1			1		
		· · · · · · · · · · · · · · · · · · ·			1		<u>† </u>		—	[•			· · · · · · · · · · · · · · · · · · ·
-4		Seabed									·		1					
		-5.0 Shell and sand																
-6	d o	-6.25 Sand			ļ								.[ļ		· · · · · · · · · · · · · · · · · · ·
		-7.4 Peat																
-8		-7.5	-7.75	98	-							<u> </u>	1	<u> </u>		<u> </u>	39	300ma
-10	33	· · · · · · · · · · · · · · · · · · ·	-10.0				┣					<u> </u>					42 R	150mm
			-1010					· · · ·										1 J Okim
-12	ó	Dense sand with some shell	-12.0	99	-						1		1				50 R	150mm
						<u> </u>							1					
-14			-14-0						-								50 R	150mm
	-8-8																	
-16	2	· · · · · · · · · · · · · · · · · · ·	-16.0	96	-	-					· ·		L				50 R	150ma
							_						-			[·
-13	-38		-18.0								_						50 R	150ma
-20	感傷		-20.0	99										···	<u> </u>		50 8	150mm
-20	8. S	-21.8 Peat	-20.0	- 99							<u> </u>						<u> </u>	
-22		-21.9	-22.0									30					····· · · ·	Fissure Index 14
<u> </u>	ŪĨĪ.	Fissured clay				—						<u> </u>						
-24	IIII	······································	-24.0						-			168						Fissure Index 11
	<u>TTT</u>	-24.2 Peat																<u> </u>
-25		-25.0 Fissured clay	-26.0									_34						Fissure Index 11
5	7777)	-26.7									·		1					
-29	傳聞	Fissured organic slightly	-28.0	15		-	N.P.	N. P.	N.P.	·84	1.44	86			45	<u>49</u> 0		
[拘損	sandy silt									ļ		ļ					<u> </u>
-30	谢博		-30.0	3	-		_41	60	19	1.01	1.53				0	160		Fissure Index 9
	德斜	-31.7 Fissured peat	-30.7	3			27	52	25		1:66	42		<u> `</u>	17	410		Fissure Index 14
32		-32.0 Clay -33.0	-32.0	0.2	-	-	N. P.	n.r.	π.r.	.70	1.37	105		1	90	210		ISSURE INCEX 14

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						•	•										·		ENG, 528
The Mar	itime	Services Board of N.S.W. Preservation & Research Sub-Branch	Engineering Branc	h						ORD Series I		•	Loc Bor Dat	ations Bol No.s 916 a of Borings	any Bay 20/7	/76	sheet No.1 2 of 2	2	Fid. Test McDermott Lab Test JP & JG Checked JP & RH
Depth in Metres	Profile	Description	Test or Sampla Depth		oH St	-	╂────	16X. P7		Ка	nsity /M ³	м.с. *	Unconfin	ed Compr.	KPi Trlax		s.p.t. N Value	. R	emarks .
_34i			-34.0	34110					P.1.		/Wat	68	Undist.	нопоша			1. TALUG	Flssure Index	
		Fissured organic silt					╞							·				I ISSULE INCEX	
-36		· · · · · · · · · · · · · · · · · · ·	-35.0	0.2	-	<u> </u>	37	52	15	1.04	1.63	59		1	14	260		Fissure Index	7
		-37,0	-																
-38	8111		-38.0					·				34							
È	////	Fissured clay with shell			1														
-40	114	and seams of sandy clay	-40.0	· .								33						Fissure Index 1	3
L	IIII	· · · · · · · · · · · · · · · · · · ·														l			
-42	11Iî	-42.45 -Clayey sand with shell	-42.0				I			•		16		 		[、
		-42.5				ļ	<u> </u>					ļ							
-44			-44.0				 				<u> </u>	<u> </u>					· 42	300mm	
		Silty sand									ļ	<u> </u>	<u></u>			ļ			
-46	5	-47.0	-46.0	91			<u> </u>							<u> </u>		<u> </u>	39 R '	150mm	
	<u> </u>	4 -47.0		·		<u> . </u>	<u> </u>					Į	<u> </u>				50 R	150	
-48	o R	Dense sand with shell	48_Q			<u> </u>							<u> </u>	<u> </u>	·		<u> 30 K</u>	150 <i>m</i> m	
	a H	·		· ·								ļ					55	300mm	
-30 17	0	-51.5										<u> </u>						000mm	
-52	5.67.5	Dense silty sand with some shell	-52.0	89		·											46	300mm	
	8	-53,25 Clay		-67-		. <u>.</u> -			· · · ·										
-54	7777	-54.2 Sandy clay																·	
<u>}</u>	<i>}};</i>	-54.75 Clayey sand with shell																· · · · · ·	
56	3/4	-54.75 Clayey sand with shell -56.35	-56.0											[35	300mm	
K	ŤĤ	Fissured clay																	
-58	III	-59.5 Silty sand with shell	-58.0									18	†					Fissure Index 1	4
		-59,1 Soft weathered sandstone																	
-60 7	<u>,</u>	-59.5																	
l:	::::	Weathered sandstone																	
-62	::::	-62.0																	
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ho Mai	itime Se	ervices Board of N.S.W. Preservation & Research Sub-Branch	Engineering Branci	۰. ۱			E Lu	ORE	REC	ORD	No.	57	Loi Boi	cation: re No.: te of Boring	Botany B 917 28/6/	ay 76	Sheet No.1 1 of 2		Fid. Test McDermot Lab Test JP & JG Checked JP & RH
ta In	Profile		Test or		Soli Siz	za .	In	dax, Pr	ops, ,	- De	nsity /M ³	м.с.	Max She	ar Strength ned Compr.	KP Tria:	a Kial	5.P.T.		Remarks
ttres		· · · · · · · · · · · · · · · · · · ·	Sample Depth	Sand	şiit	Clay	P.L.	나누	P.I.	Dr	/Wet	*	Undist.	Remould	c'	#1	N Value		
<u>n</u>	t						1												·····
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	ł						┼∸	\vdash	\vdash			╄━━	·	+					······································
	þ	Seabed					1	<u> </u>				1							
		-5.4 Sand and shell			ļ	ļ	<u> </u>			ļ	<u> </u>	ļ	ļ	1		 			
	50	6.9 Peaty sand	~7.65				+									+	31	300,00	······
	7.1	- Dense sand	-1103									1		-					······································
- 1										· · ·			·				35 R 31 R	150mm 150mm	
	Ε.	_9,2 Peat	-9.4	98					<u> </u>			<u> </u>		-			<u> </u>	13000	
2										1		1					50 R	150om	
			-13.4	99	-	-													
	<u>義務</u> -		-15.4				<u> </u>						<u> </u>			- <u>-</u> -	<u>50 R</u>	150mm	
5	8 (§†	···· · · · · · · · · · · · · · · · · ·	-10.9				╆							•	·		50 R	150mm	
	9 SE	Dense sand	-17.4	98	-	-						1				<u> </u>			
Ľ,	33) 1																50 R	150em	
5	影 新-		-19.4			<u> </u>		<u> </u>		<u> </u>		<u> </u>	<u> </u>				46 R	150mm	
	診樹 -	· · · · · · · · · · · · · · · · · · ·	-21.4	99	-	-							·						
												<u> </u>					40 R	150am	
, Î	<u> </u>	· · · · · · · · · · · · · · · · · · ·	-23.4										i	· [· · · · · · ·]			20	300a	
		-25.0 Medium stilty sand	-25.4											- [<u> </u>				
	111	-25.55																<i></i>	
-	1111-	Fissured clay -28.0	-27.4				15	31	16	<u> </u>		29						Fissure In	Uf X91
	1111	-28.U Fissured peaty clay	-29.4		<u> </u>					L		28		<u> </u>				Fissure Too	lex 9
<u>,</u>	<u> []]</u>																		
	III.	-31.55 Peat	-31.4	3		-	N.P.	N. P.	X.F.	•73	1.39	80			172	250			
7	111-	-32.15.														·			

																				ENQ. 52
The Ma	ritime :	Services Board of N.S.W. Preservation & Research Sub-Branch	Engineering Branci	h.						ORD			Lec Bor Dat	ation: { No.: {	lotany B 17 28/6/	ay 76	Sheet No.s 2 of 2		Fid. Test 1 Lab Test . Checked	McDermot JP & JG
Depth in Matres	Prafile	Description	Test or	s	ioH SI	K O `	Ind	ex. Pr		Dei	nsity /M ³	M.C.		r Strength ed Compr.	KP. Tria		5.P.T.		Remarks	
,,,			Sample Depth	Sand	Silt	Clay	P.L	ւե	P.I.		/Wet	*	Undist.	Remould	c'	1	N Value			
-34	M	Clay																		
	1111	-35.15 Dense silty sand	-35,4	87	-	-											38 R	150nm		
-35		-36.1		· .							.									
	///	Fissured slightly sandy clay		14		-	18	48	30	1.64	2.01	26	<u> </u>		37	270		Fissure Index	17	
-38	///																			
	111	-39.0 Dense clayey sand with shell	-39.4	87	-	-											50	300mm		
~40	121 Y	-40.4											·	·						
			-41.4										I				34 R	150mm		
-42		<u>.</u>											· ·					1		· .
	- 19 - 19	Dense sand	-43.4	98	~	-											44 R	150mm		
-44																·	•			
	17	-44.9 Medium clayey sand	-45.4									· · · ·					29 R	150mm		
-46	11	-46.4															•			
			-47.4	83	-	-							[50	300mm		
-48		2 ·																		
	8	Vory dense sand with shell	-49.4														61	300mm		
-50	- a)																			
}	28.4		~51.4	97	-	-											52	300ла		
-52	08.4																			
		-53.15	-53,4							•							35 R	150mm ,		
-54	1.1	Dense clayey sand																10000		
	/ /	1-55.15																		
-56	1.1.																			
	[]/A	Sandy clay	-57.4									17					50. R	150mm		
-58										<u> </u>							<u>20:</u>			
ť	///	-58,9	-59.4														50_R	150ma		··
-60	1.6.3									·										
	尋問	Dense sand with traces	-51.4	99														150mm		
-62	331	of peat		-11	- -												JO N			
	注目	wr poat	-63.4															[.	
-67		-63.9 Sandstone																		
 	us ci d	-64.0		· · ·										┝━━━━┣				 		
<u> </u>	ł				-									-				Unable to core	<u>any turth</u>	<u>er</u>
	ŀ	<u> </u>]								due to caving	hole	
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The Ma	ritime S	iervices Board of N.S.W. Er Preservation & Research Sub-Branch	iginsering Branci	۳.						ORD			Eo Da				sheet No.s 1 of	3	Fid. Test McBernott Leb Test JP & JG Checked JP & RH
Depth in Metres	~~!?!		Test or	1	oli Siz	• •	Ind	ex. Pro	, ieqo	Der	nsity /M3			ar Strength ned Compr.			S.P.T.		Remarks
Metres			Sample Depth	Sand	Silt	CIAY	P. L.	ււ	P.I.	Dry	/Wet	*	Undist.	Remould	¢	+	N Value		· · · · ·
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		· · · · · · · · · · · · · · · · · · ·											· · ·					1	· · · · · · · · · · · · · · · · · · ·
-2											1	-							
	ľ					•													
-4		Seabed													<u> </u>				
		_5.7 Sand with shall								<u> </u>		.	·						
6	0 <u>3</u> 2	-6.7				 					<u> </u> .		· · · ·					+	
-8			-8.7													+	54	300mm	· · · ·
															· · · · · · ·	·	· ·		
_10			-10.7	99	-	-											80	300mm	
												·	ļ				39 R	150am	
-12	(933) 		-12.7														<u>59 R</u>		
-14		Danse to very dense sand	-14.7	100							┨───				ļ		41 R	150mm	
	(9) A	Uansa to vary dense sallu		195													•		
-16			-16.7									ľ				[. 42 R	150am	
							_					ļ	<u> </u>			 	50 R	150mm	
-18		······	-18.7	97						·	 -						20 %		
			-20,7										+				39 R	150mm	
	·秦南		-1011																
~22	1334	-22.7	-22.7	97	_	-							ļ				12 R	150mm	· · · · ·
	<u>-938</u>	Nedium sand					·			ļ	 	┟───		<u>.</u>		ļ	45.0	150mm	
-24	(1994) 1994	-24.7	-24.7									 	·				15 R		·
-26		Dense sand	-26.7	95							<u> </u>				L	<u> </u>	46 R	150am	
	31		-20.1			- .							[
-28		•	-28.7														50 R	150mm	•
	NØ.	· · · · · · · · · · · · · · · · · · ·										ļ					· · · · · · · · · · · · · · · · · · ·		
-30	2004 -	-30.45	m									ļ		-{	· :	·			
-32	784	Slity sand														· · ·			
	: [] 카	ality sanu										<u> </u>		-					

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he tA	ritime	Services Board of N.S.W.	Engineering Brand	h						ORD			0.000	No.1 918	1		Sheet No.: 2 of	3 Lab Test JP & JG
		Preservation & Research Sub-Branch		ļ			Lab	oratory	y Test	Series N	io. 5	7	Date	of Boring:	7/6/76			Checked JP & RK
	<u> </u>	· · ·	Test or	1	OH SIZ		Ind	IX. Pro	1 15	Den		м.с.	Max Shea		KPi Triax		5.P.T.	
epth In Actres	Profile	Description	Sample Depth	end	Silt	Chrv	0.1	LĻ	P.1.	Kg/	M3 /Wet	*	Unconfin Undist.	Remould	C'		N Value	Remarks
-34	1.11	Silty send	-34.7	80				R. P.				20	- Ondrike	literingung	15	360		
-34	擦撩		-97.1							7.62	1.72		+			<u> </u>		
-35	2		-36.7	10	-		22	51	29	1.59	2.00	29	† -		28	240		Fissure Index 16
<u></u>	16	Fissured slightly sandy clay		9			21	51	30	1.69	2.07	27	1		19	22 ⁰		Fissure Index 16
-38	<i>\.</i> //	-38.3 Clayey sand with shell		┢			┝┈─┤			بدمخ	2:01	- <u>-</u>	<u>+</u>					
-00	<u>(.//</u> .	-39.7		<u> </u>	<u>├</u>													
40		Dense sand	-40.7	95						<u> </u>							50 R	150ng
7 0		-41.8 Sandy clay		1				· ·					+	<u>} </u>		†		
<u>42</u>	19.10				<u> </u>							<u> </u>		·	<u> </u>			
<u>72</u>	277	/			—												· · · · · · · · · · · · · · · · · · ·	
	Q.	Medium to dense sand with shell		-													, 50	300nm
44	1888 - N	Medium to dense sand with sheri	-44.7	98	-								.{				<u>2U</u>	<u></u>
75	83	×	-46.7	<u> </u>													28	300mm
-46	646		-10.7														<u> </u>	
		-16.85 Clayey sand		<u> </u>												<u> </u>	30	300mm
-48	Alli	-47.05 Clay	-48.7				_ <u>`</u>						+		·			1300mm
~		-48.3 Medium clayey sand			ļ									<u> </u>				
50	///	-48.8 Sandy clay		 	 								<u> </u>	<u> </u>				
	1./.)	-51.7		 	ļ									 		\leftarrow		
-52	Kŕi			ļ														
		Fissured silt		·			-12-	48	45			53	<u> </u>	╞╼╍╧┼				Fissure Index 9
54			-54.7	ļ			33	- 10	-13			- 33	 			<u> · · · </u>		1132016 11052 2
		[]		<u> </u>								43	<u> </u>	 		├		Fissure Index 17
-56			-56,7	<u> </u>				{				-13	<u> </u>	┟╌┈╍╼┟		-		
		-57.7			[[<u> </u>	<u> </u>				
-58	L.L.			<u> </u>										├			<u> </u>	
	11991	Fissured clay with some shell		L								ļ	 					Etanuar ladar de
-60	1111	N	-60.7	<u> </u>								ļ	ļ					Fissure Index 14
	1133	8										<u>.</u>	<u>}</u> .	·			04	200
-52	\overline{UU}	-51.95	-62.7										<u> </u>	┞┣			21	300mm
	~/·/.	Clay with some sand											L					
54	11/	XX		I	Ĺ			· · ·					ļ					
	(//	-64.95 Sand with some clay											ļ <u> </u>	l				
56		-66.2	-66.7]						L					300mm
	1155	Dense to very dense clayey											L					
	XŰ	sand with some peat	68.7					T									50 R	150mm

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The Mar	itime S	ervices Board of N.S.W. Preservation & Research Sub-Branch	Engineering Brand	'n						CORD		57	Loc Bos Dai	re No.: te of Boring	Botany B: 918 11 7/6/7	ay S	Sheet No.; 3 of	3 Lab Test McDermott 3 Lab Test JP & JG Checked JP & RH
Depth in Metres	Profile	Description	Test or		5oH 51:		inc	lex. Pr	DDS	De	nsity /M3	M.C.	Max She	ar Strength ted Compr.	K P	a	S.P.T.	Barnaulus .
Metres			Sample Dapth	Sand	sin	Clay	P.L.	나누	P.1.	Or	//w- //Wat	*		Remoute			N Value	. Remarks
	4.2	-70.7 Soft clayey weathered -71.7 sandstone Soft weathered sandstone -73.8		<u> </u>		ļ	\bot	·		ļ					I			
-70 -	14.3	-70.7 Soft clayey weathered			ļ.,		ļ	<u> </u>	ļ	<u> </u>		1					L	
		-/], / sandstone	····	<u>├</u> ──	· · · · ·	 	┝	 				 			ļ	ļ		
-72		Soft weathered sandstone			ļ		<u> </u>	 	ļ	<u> </u>	1						<u> </u>	
		-73.8			ļ	<u> </u>	┞	[ļ			ļ	ļ	· · · ·	ļ		
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The M	rit(me :	Services Board of N.S.W. Preservation & Research Sub-Branch	Engineering Branc	h						CORD t Series		57	Bor Dát	ations Bo e No.s 91 e of Boring	9 14/5/	76	Sheet No.1 1 Of 1	2	Fid. Test Sciernot Lob Test JP & JG Checked JP & RH
Depth In			Test or		sok Si	ze	In	dex. Pr	ops	De	nsity /M ³	M.C.		ed Compr.	KP: Telax		S.P.T.		.
Metres	Profile	Description	Sample Depth	Sand	Slit	Clay	P.L.	եե	P.1,		i/M⇒ γ/Wet	*	h	Remould	¢'	a'	N Value		Remarks
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0	4					<u> </u> .	┢	 		+			· · · · · · · · · · · · · · · · · · ·						
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-4	1			1		<u> </u>	<u> </u>	1											
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-6	2002	-5.85 Seabed		<u> </u>	ļ	ļ	ļ	 	Į	<u> </u>						<u> </u>			
8	0.0	Sand with shell		 		ļ			<u> </u>		<u> </u>					<u> </u>			
-0	1000	<u>-8.1</u> Loose to medium silty sand	-8.85			<u> </u>	┼──	1	 				<u> </u>				10	300mm	
-10	國憲	Loose to medium silty sand					┢	·····			1	-							
	12.0		-10.85	98	-	-											67	300mm	
-12	Q: 4									<u> </u>									
				<u> </u>		<u> </u>	 	<u> </u>	ļ	 	<u> </u>	·					43_R	150mm	
-14	1993			99	<u> </u>		<u> </u>									 	50 8	150mm	· · · · · · · · · · · · · · · · · · ·
40		Dense to very dense sand		99.		- <u>-</u>		+	· · ·	· · · · · ·				∤				12088	
_1 6		with some shell	16,85		<u> </u>	<u> - </u>		†				1		<u> · · - · </u>			50 R	150mm	
-18																			
	8		-18.85	98	-				<u> </u>								50 R	150mm	
-20	1.151				Į	<u> </u>			<u> </u>		[44 B	150mm	
-?2	-44 e		-20.85							<u> </u>			·				44 K	12009	
	的话		-22.85	100						<u> </u>		<u> </u>					41 R	150mm	
-24											ļ	1							
	0		-24.85	[<u> </u>						50 8	150mm	
-26					 					 						·			
-28) (-27.85 Peaty sand	-26.85	98	-	-					<u> </u>	+		<u>├ · </u> }			<u>50 R</u>	150mm	<u> </u>
40	11	-27.00 Featy sand -28.75 Clay			<u> </u>					<u> </u>								1	
-30	7772	-30.3 Peat						1		1	<u> </u>	<u> </u>		<u> </u>			· · · · · · · · · · · · · · · · · · ·	1	······
	NN	-30.7 Featy clay																	
-37	1990	04.05																<u> </u>	
		Silty sand with shells	-32_85	66	-	-	15	18	3	1.64	2.10	1				37		J	

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hé Ma	ritine S	ervices Board	d of N.S.W. Preservation & Research Sub-Branch	Engineering Branci	'	·····					ORD	10,	57	Bor	ation: e No.: e of Boring	otany 8a 19 14/5/		Sheet No.s 2	of 2 Checked JP & RH	
th In	Profile		Description	Test or		OH SIZ	_	Ind	ex, Pro	ips, , ,	Der Kg,	isity /M ³		Max Shea Unconfin	ed Compr.	KPa Triax	i Int	S,P,T,	Remarks	
etres.	A. 1.9.5			Sample Depth	Sand 27	501						/Wet 2.06	. *	Undist.	Romould	с' 58	4' 290	N Value		
34	D: 5	-34.6	Sandy clay	-34.85	28		-	13	37	20	1.15	2.02	22		1	50	270			
36	$\mathcal{I}\mathcal{I}$	-34.0	28007 6194	-33.03	20				<u> </u>		1.03	2.02			1		<u> </u>			
in.,	14	-30,1	Dense clayey sand	-36.85	•													45 R	150aa	
39	1.9																<u> </u>			
	1.9	-39.35		-38-85	93	-	-								1 ·			50 R	150nm	•
10	1117		Fissured clay		·										ļ		1.0		El anno 15	
	IIII	10.00	10 11 1	-40,85	3	-		2Z	75	53	1.43	1.90	32			17	21"		Fissure Index 15	
42	IIII	-42.35	Medium clayey sand						L						 			28	300mm	
	144	-42,95	Sandy clay	-42.85														<u><u><u> </u></u></u>		
.44	54-1	-44.1		-44.85								<u> </u>			+			50 R	150cm	
46	30	}	Dense to very dense silty										-							
	劇授	}	sand with some shell	-46.85											1			65	300nm	
48	9.1														1					
	-t. B	-49.1	· · · · · · · · · · · · · · · · · · ·	-48,85		[51	300mm	
50	iiin		Clay																· · ·	
	IIII	-51.6																		
52	HHH.]										
	UM.			-52.85								· ·							Fissure Index 13 Fissure Index 12	
54	IIB		Fissured clay with some shell	-53,85		┝				[·			<u> </u>				1155012 10027 12	
<u>Б</u>	UIG.					┝╼╍╸┥				{					<u> </u>	·				
	(114)	~58,95	Silty sand with traces of peat												<u> </u>		<u>├</u>	- <u></u>		
55	<u>zric</u> ,	-57,35	Soft weathered sandstone												· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·		
ił		-57.8	Rectioner Condition												1					
n (Weathered sandstone							-1										
		-60.85																		
52															· · · · · · · · · · · · · · · · · · ·					
	ļ		· · · · · · · · · · · · · · · · · · ·			· .									ļ					
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Engineering	Log
3orehole	

ñ5	en	t :	1	FED	ER/	AL AIRPORTS CORPORATION					•	
		ect tior				RUNWAY PROJECT Y (KINGSFORD-SMITH) AIRPORT			امه	Na s	1057	4 007 70
Da	te l	Drill	ed : 2	2-1		Drill Type : GEMCO 210 B Bore Size : 100mm			_	INO. :		4-007-70 AHD
		1	y : M(οî.	Driller : ENG. EXPL. Drilling Fluid : BIOG						240696N
	rillin _ t	<u> </u>	Ê,	eted	60 - 0	Soil Description	θΩ	tency ensity		omples/Te	sts	Field
Method	Casing	Water	Depth 1:51	Interpreted Profile	Graphic		oistu ondit	Consistency Rel. Density		Somple Type & No.	Depth (m)	Records
N	0		<u> </u>	<u> </u>	0	SAND (SP), grey to dark grey, fine	ΣŪ	U e VL			ă	
			-			SAND (SP), grey to dark grey, fine to medium grained, some broken shell fragments. Occasional wood				60 7	[.5	
			•	1		fragments and peaty clay layers to 20mm thick.				SPT Sample	[1,0,1 N=1
			-							1	-95	
				ļ	 						-	
											[
	ΜH		2.0-							SPT	-2.2	٦ 0,1,1
							.			No rec.	2,65	N=2
			-								2.05	
			3.3							D	3.3	
					Ø	Clayey SAND (SC), dark brown to light grey, fine to medium grained.		MD- D		Sample 30	¤[3.5	5,16,16
ING			4.0						12	SPT Sample 3	3.95	N=32
WASHBORING				-							ŀ	
IHS				4							-	
1						-				SPT	5.0	∏ 4,6,6
B I	ł									Sample 4		N=12
1	 			-							5,45	
BUT	Ì		6.0								-	
					V						6.5	
					V					SPT Sample 5	Ę	6,7,7 N=14
					V				<u> </u>	5	6.95	
				-								
			7.6	ł		SAND (SP), grey, fine to medium grained.		MD- D		SPT	7.8	10,11,26
			8.0	H						Sample	8.25	N=37
											10.20	
											ŀ	
											9.3	
				-						SPT Sample 7	C	22,18,8 N=26
	1		10.0			Peat fragments in borehole risings.				7	9.75	

Borehole No.: BH2 Sheet 2 of

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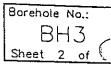
6 3). 11			ole									IOOIG	Sh	$\frac{\text{DITZ}}{\text{eet 2 of}}$
		ent			FED	ER	AL AIRPORTS CORPOR	ATION							
		oje cat		: n :	SYD	RD NE	RUNWAY PROJECT Y (KINGSFORD-SMITH)	AIRPORT				Joh	No.	1853	4-007-70
1	Dai Log	te î gger	Drill d b	ied:2 y:Mi	22-1	-9	1 Drill Type : GEMCO 210 B Driller : ENG. EXPL.	Bore Size : Drilling Fluid	100mn : BIO0	n SEL		RL S	urface : -	5.15m	
	Dr	illini	ġ	Ê	ed	۲٥ð	Soil Description	<u></u>				· · · · ·	amples/Te		2700301
		. bu	2	th (m) :50	pret ile	híc.	· ,			lure	ister Dens		Sample		Field
	Mernod	Casing	Water	Depth 1:5	Interpreted Profile	Grap				Mois	Consistency Rel. Density		Type & No.	Depth (m)	Records
				10.15	{		SILTSTONE, grey, highly weothered, low strength	to extrem			[SPT	.10.15 10.35	7 19,30
					ł		weothered, low strength END OF BOREHOLE AT	10 35m					Sample		for 50mm (N=180)
				-	4			0.0011							
en et					-									F	
€ ≪ 				12.0-											
				-										_	
					-									ŀ	
				14.0-										-	
				_										-	
				_								1		}	
														► ►	; r
				16.0-										ŀ	, ⁻
					1.									l	
					{								1		
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					1									Ļ	
	1										.		ŀ	L	
				18.0										\mathbb{F}	
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				.									1	-	
														ŀ	
۱				20.0										F	

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Borehole No.: BH3 Sheet 1 of 2

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								Sh	eet 1 of 2
Whent Project			AL AIRPORTS CORPORATION RUNWAY PROJECT						
Locatio	n : S	YDNE	Y (KINGSFORD-SMITH) AIRPORT			Job	No. :	1853-	4-007-70
Date Dri Logged 1						RL S	urface : -	5.70m	AHD
Drilling	1								E 240400N
	(m) 0 reted	Profile Grophic Log	Soil Description	8.0	Consistency Rel. Density		amples/Te	sts	Field
Method Casing Water	Depth 1:5(Interor	hqo		oistu ondit	nsis I. D.		Somple Type	Depth (m)	Records
∑ U ≩		0.0		žŭ	ນ VL		& No.	De De	
			SAND (SP), grey, fine to medium grained, trace of silt, some broken		ΥĽ				
			shell fragments, occasional decomposed wood fragments.				SDT	[.7	
							SPT Sample	[1,1,1 N=2
						22	1	-1.15	
€?>≫								-	
	2.0-						-D.T	-2.0	
	-		SAND (SP), dark brown, fine to medium grained, slightly orgonic.		MD		SPT Somple	2.0	−5,11,13 N=24
			medium grained, slightly orgonic, occasional peat lenses to 20mm Decomposed wood fragments in peaty				2	2.45	
	3.0-		sand, 2.0-2.1m					-	
			SAND (SP), light brown becoming light grey with depth, trace of		MD			-	
			carbonaceous frogments				COT	- - 3.6	
92	4.0-						SPT Sample 3		5,11,17 N=28
JIT WASHBORING							3	4.05	
H								Ē	
MAS								[
					VD		SPT	-5.0	9,22,30
				;	VU.	μ	Sample 4	5.45	N=52
								-	
BU	6.0-							-	
								[6.5	24,30 blows for
							SPT Sample 5	6.77	blows for 120mm (N=75)
							5	-	(14=75)
								ŀ	
									31.30
	8.0-						SPT	8.0	blows for 65mm
						μZ	Sample 6	8.215	(N=138)
							S	ŀ	
								Ļ	
									13,27,30
							SPT Sample 7	9.4	blows for 100mm
	10.0					Ľ	7	9.8	(N=72)



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	ro je		:	THI	20 20	AL AIRPORTS CORPORATION RUNWAY PROJECT					
Lc	bca	tio	n :	SYD	NE	Y (KINGSFORD-SMITH) AIRPORT			Job No. :	18534	-007-70
Do	ite	Drill	ed:1 y:M	8-1 rw/	-91	Drill Type : GEMCO 210 B Bore Size : 100mr Driller : ENG. EXPL. Drilling Fluid : BIO	n		RL Surface :	-5.70m	AHD
	rillin	· · · · ·						22	Ch/Coords :		240400N
	·	r l	(E) _	etec		Soil Description	9 6	Consistency Rel. Density	Somples/	Tests	Field
Method	Casing	Water	Depth 1:5(erpr	hq		stur	nsist De	Sample Type	50	Records
Ĭ	ပီ	ž	Depth (m) 1:50	ΞÅ	5		οŭ NO	Cor Rel	& No.	Depth (m)	
			•		••••	SAND (SP) As sheet 1		vD		-	
0			•							-	
NN N										[]	
l₿ 1			-	1							
ASH				{		·					
X) Å			1							((
B WASHBORING			12.0-	-		Occasional dark wisps in barehale				-	
						risings,11–13m.					
BUTTON				-							
BU			13.0-	1							
						SAND (SP), light grey, fine to medium grained, with occasional fragments of black peaty clay.					
-				1 1		fragments of black peaty clay.	\vdash			<u>}</u>	
						END OF BOREHOLE AT 13.5m				-	
			14.0-								
				-						-	
			.	-						- I	
											· · ·
				-							(
	1		16.0							E	
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				$\left\{ \right.$			-			[
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				1						-	
			18.0	-						-	
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				-		•				F	
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				1							
1.	1		20.0				1				(
۰	<u> </u>			4	<u>. </u>	······································		<u> </u>	<u> </u>		

Engineering	Log	
Borehole		

Borehole No.: BH4

Sheet 1 of 2

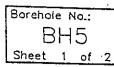
-Cin	t :	· · ·	FED	ER.	AL AIRPORTS CORPORATION						
Proje		:	THIF	RD	RUNWAY PROJECT						
Loco					Y (KINGSFORD-SMITH) AIRPORT 1 Drill Type : GEMCO 210 B Bore Size : 100mm						4-007-70
Logge	d by	y : M	CW (5	Driller : ENG. EXPL. Drilling Fluid : BIOG				urface : — loords : 33		240160N
Drillin	9	ເ	ed	Log	Soil Description				amples/Te:		
Po 5		ћ (г	pret le	hic		lion	ister Den:	5	Somple	·	Field
Method Cosing	Woter	Depth 1:5(Interpreted Profile	Grop		Voist	Consistency Rel. Density		Type & No.	Depth (m)	Records
		<u> </u>			SAND (SP), grey to dark grey, fine	20	VL		· · · · · · · · · · · · · · · · · · ·		
					to medium grained, some shell fragments. Occasional black clayey						
					sond layers to 30mm thick.			$\langle \rangle$	SPT Sample	.5	1,1,0 N=1
								124	1	_95	
			4	••••							
). 			1				[
		2.0-								-	
		2.2	· [SPT No rec.	-2.0	7 3,4,6 N=10
					SAND (SP), brown to dark brown, fine to medium grained, trace of peat	-	MD	ĮΖ		2.45	
]		and decomposed wood fragments, organic adour.						
		-	-							-	
]							Ę	
				- • • •					SPT	3.5	□ 5,4,8 N=12
NG		4.0-	-					1//	Sample 3	- _3.95	
N NOR										-	
WASHBORING HW		4.6]			ļ			SPT	-4.6	110 29 20
WA		_	1	••••	SAND (SP), light grey, fine to medium grained, occasional bands of		D		Sample	-	19,28,20 N=48
BIT		-			dark grey sand with clay laminae to 20mm thick. Occasional peat			[22]	4	5.05	
i Z					lenses.	·				ŀ	
11]							[
BU		6.0 6.1	-		C (1) (00)	<u> </u>				-	
			1.		SAND (SP), brown to dark brown, fine to medium grained.		MD		SPT Sample	.6.15	□ 3,7,9 N=16
			$\left\{ \right.$					γZZ	Sample 5	-6.6	
]							Ĺ	
			4							+	
					· · · · · · · · · · · · · · · · · · ·					ļ	
		7.7	1		SAND (SP), light grey, fine to	Ì	VD	\overline{V}	SPT Sample 6	7.7	14,26,32
		8.0]		medium grained.			γZ	6	8.11	for 110mm
			1				1		1	ł	N (N=66)
]							ţ	
		-	1						ł	╞	
]						SPT	9.2	18,30
				{					Sample 7	9.46	for 115mm
		10.0	1	{			1			ŀ	∛ (N=81)

Engi	in	eer	rine	q	Log 📻	- D ADA	TO	0. X	10050	Bo	rehole No.:
<u>3</u> ar (0		F DAM	5. E.S	∞ N	IOORE	St	$\frac{BH4}{1000}$
Cilen Proje Loca	ct	:	THI	RD	AL AIRPORTS CORPORATION RUNWAY PROJECT Y (KINGSFORD-SMITH) AIRPORT	-		Jol	b No. :	1853	4-007-70
Date Logge	Dril d b	led : :	23-1	1 → 9	1 Drill Type : GEMCO 210 B Bore Size : Driller : ENG. EXPL. Drilling Fluid	100mm d : BlOGE	EL	RL S Ch/0	Surface : -	6.41m	· · · · · · · · · · · · · · · · · · ·
Oriilin	g.	Ξ.	ted	601	Soil Description		n ncy	alty	Samples/Te:	sts	
Method Casing	Water	Depth (1:50	Interpreted Profile	Graphic			Moisture Condition Consistency	Kel. Uen	Sample Type & No.	Depth (m)	Field Records
WASHBOR		11.4 11.5 12.0			SAND (SP), As sheet one Organic CLAY (OH), black Sandy CLAY (CH), grey, interbedd clayey sand and peaty clay lamin to 20mm thick.	ded tae	St	=	SPT Sample 8 U50 Sample 9	10.7 -10.96 11.5 -11.8	20,30 for 110mm (N=70)
UTTON BIT WAS		13.2			Sand band, 13.0—13.2m Sandy CLAY (CL), grey, sand fine medium grained.	e to	St	st	U50 Sample 10 SPT	13.0 13.3 13.7	☐ 4,9,16

BUTT	14.0-	SPT Sample 11 14.15 SPT 13.7 4,9,16 N=25
	15.2	CLAY (CL), grey with quartz pebbles and ironstone fragments (RESIDUAL SOIL).
	16.0	END OF BOREHOLE AT 15.65m
	18.0-	
	20.0	

Engineering Log

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F Cli	ient	t :		FED	ER	AL AIRPORTS CORPORATION			· · · · · · · · · · · · · · · · · · ·			eet 1 of 2
	o je		:	THI	RD	RUNWAY PROJECT]
						Y (KINGSFORD-SMITH) AIRPORT 910rill Type : GEMCO 210 B Bore Size : 100mm						4-007-70
٥	gge	dр	y : M	cw	-					urface : —I oords : 33		AHD E 239913N
	illin	g	Ê	ted	Log	Soil Description				omples/Te:		
Method	бu	ษ	th (rpre 11e	Grophic		fura filio	Den	Ş	Sample	£	Field Records
Met	Casing	Water	Depth (m) 1:50	Proi	5 S		Moisture Condition	Con: Rel.		Type & No.	Depth (m)	Records
						SAND (SP), grey to dark grey, fine to medium grained, trace of silt, trace of shell fragments		VL		SPT No rec.	35	Rods sank under self weight N=0
	17. 17.		2.0-								- - - -	
			-			SAND (SP), grey-brown becoming lighter with depth, fine to medium grained	•	MD		SPT No rec.	2.3]10,14 (N=28)
IT WASHBORING			4.0-			Occasional thin organic CLAY bands indicated by small particles in drill risings from 3.6—4.6m.				SPT Sample 1	-4.0	8,11,11 N=22
	МН		6.0			SAND (SP), as abave, light grey ta grey				SPT Sample 2	5.1]7,8,5 N=13
B				· · · · · · · · · · · · · · · · · · ·		Thin interbedded bands of black, silty SAND, organic from 5.7 to 7.6m		VD		SPT Sample 3	6.75	16,34 for 120mm (N=85)
			8.0						ZZ 2	SPT Sample 4	8.1 8.25	↓40 for 150mm (N=80)
 .(10.0							SPT Sample 5	9.7 9.92	21,30 for 70mm (N=128)

Borehole No.: BH5 Sheet 2 of

Eller Eller Eller	ient				CÖ						<u></u>	eet 2 of 1
	ro jec		:	THI		AL AIRPORTS CORPORATION RUNWAY PROJECT					_	
L	ocat	ion	i : 3	SYD	NE	Y (KINGSFORD-SMITH) AIRPORT			Job	No. :	1853-	4-007-70
Do	ite D)rille	ed : 4 / : M0	1-5,	/2/	91Drill Type : GEMCO 210 B Bore Size : 100m			RL S	urface : -	6.79m	AHD
	rilling	· 1		_	তা	Driller : ENG EXPL. Drilling Fluid : BIC			$\frac{Ch}{r}$			E 239913N
			<u>َ</u> ٤	Interpreted Profile	60j o	Soil Description	6	enc) nsity	S	amples/Te	sts	
Method	Cosing	Woter	Dep.th 1:5(erpr	Graphic		stur	sist		Sample Type	£	Field Records
Me	ပီး	\$	De	E Z	Ğ		Noi	Consistency Rel. Density		& No.	Depth (m)	
						SAND (SP), as sheet 1						
			-			SAND (Sr), US Sheet I						
			-									
			1.20.								-	
]	<u>ч</u> ч	PEAT (Pt), black, becoming clayey		St		SPT	11.2	4,6,7
			-		<u>ж</u> ч	PEAT at 11.45m				Sample 6	11.65	N=13
			-		<u> </u>							
			2.10			SAND (SP), dark grey, fine to medium grained, trace of silt		MD	\square	U50 Sample	-12.0 [12.25]	
			-			medium grained, trace of silt				7	12.20	
			-									
			-		••••						-	
9							E					
JRIN		1	3.60			Clayey SAND (SC), light grey, fine to medium grained, interbedded with		MD		U50	13.6	
WASHBORING			14.0-			medium grainèd, interbedded with SAND (SP) light grey, fine to medium			Ρ.	No rec.	13.9	
IAS			-			grained					14 75	
- 1									\square	U50 Sample	.14.35	
BIT			-	1				ł		8	14.65	
N			-	ł								
UTTON			-									
()			-									(~
Ì			16.0-		\square				\square	U50 Sample	15.85	
				1	\square					Sample 9	16.15	
					R						- ·	
		ł	17.0-		\square						ŀ	
				{		CLAY (CL),grey with orange mottles, some sond, fine to medium grained		VSt]		F	
			-	1		some sond, me to mediam gramed				U50	-17.4	
					Ш				22	Sample	17.7	
			18.0-]	III						-	
			-	ł				ł			ļ	
				1							ŀ	
			18.7]		SANDSTONE, white, moderately to			-		ŀ	
F		-				extremely weathered		1	ŻŻ	SPT	$\begin{bmatrix} 19.1 \\ 19.22 \end{bmatrix}$	30 blows
				1		END OF BOREHOLE AT 19.22m				Sample	19.22	for 110mm (N=81)
í r			20.0								[
6	<u></u>			<u> </u>	<u> </u>			<u> </u>	L	!	[

DAMES & MOORE

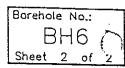
Borehole No .:

BH6 Sheet 1 of 2

Project : THIRD RUNWAY PROJECT	
Location : SYDNEY (KINGSFORD-SMITH) AIRPORT Job N	b. : 18534–007–70
Date Drilled : 13/14-2-91 Drill Type : GEMCO 210 B Bore Size : 100mm RL Surfa	e : -7.01m AHD
Logged by : MCW Driller : ENG. EXPL. Drilling Fluid : BIOGEL Ch/Coord Drilling C C C C C	s: 333019E 239673N
Drilling (B B Soil Description Samp	les/Tests Field
Method Method Method Moter Mot	e 5 Records
SAND (SP), brown, fine to medium	
grained, trace of shell fragments	
	rec. Rods sank
	1.1 weight
	N=0
2.0- SF	
	rec. N=14
3.0	
SAND (SP), brown, fine to medium	T 3.15 3,5,8
	mple N=13
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	
	T 4.9 3,9,15
medium grained, trace to some silt.	mple N=24
interbedded with layers of PEAT, black, stiff with wood fragments and	
6.0- 6.0-	
	T 6.45 7
SF Sc	$n_{\text{mple}} \begin{bmatrix} 6.45 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ $
	6.9
8.0 8.1 SAND (SP) grey to light grey, fine to VD	T ^{8.1} 11,27,36
medium grained. Petrified wood layer, 10mm thick @ 8.3m.	mple N=63
	8.55
10.0 SF	T [^{9.6}] 12,25,35 mple N=60

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DAMES & MOORE



Client Projec	:t: -	THIRD	RAL AIRPORTS CORPORATION RUNWAY PROJECT				·	
Locati Date Di			EY (KINGSFORD-SMITH) AIRPORT -91 Drill Type : GEMCO 210 B Bore Size : 1001	<u></u>	<u> </u>	Job No. : RL Surface : -		4-007-70
Logged	<u>.</u>	W	Driller : ENG. EXPL. Drilling Fluid : Bl	OGEL		Ch/Caords : 3	33019	E 239673N
Drilling	-Ê.	reted to Loo	Soil Description	0	tenc) ensity	Samples/Te	ests	Field
Method Cosing	Depth 1:5	Interpreted Profile Graphic Loc		Moistu	Consistency Rel. Density	Somple Type & No.	Depth (m)	Records
BUTTON BIT WASHBORING	10.3		SAND (SP), grey to dark grey, fine to medium grained, interbedded with PEAT, black, layers to 100mm thick. Clayey SAND (SC), light grey with dark grey mottles (decreasing with depth), sand fine to medium grained		MD	SPT Sample 6 SPT Sample 7 Sept Sample 8	10.05	5,11,11 N=22 7,10,14 N=24 8,13,10 N=23
	15.4		CLAY (CL), grey with orange mottles, some sand. SILTSTONE, extremely weathered. END OF BOREHOLE AT 17.01m		V. St	Sample 9 Sample 10	19-85	
	20.0							

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Borehole No.: BH7

Sheet 1 of 2

3 3 3 3 3 4 No. 8 5 3 3 3 4 No. 8 5 4 No. 8 5 4 No. 8 5 5 4 No. 8 5 4 1		<u></u>	- 1		ccn		AL AIRPORTS CORRORATION						teet 1 of 2
Location : SYDNEY (KINGSFORD-SMITH) AIRPORT Job No. : 18534-007- Date Drilled : 18-2-91 Drill Type : GEMOD 210 B Bore Size : 100mm toged by: MCW Rt. Surface : -7.29m AHD Drilling Fluid : BIOCEL Rt. Surface : -7.29m AHD Network Size : 100mm Rt. Surface : -7.29m AHD Network Size : 100mm Drilling G: Size : Size : 00 miller : INC. Surface : Size : 100mm Rt. Surface : -7.29m AHD Network Size : 100mm Somples/Tests Drilling G: Size : Size : 00 miller : INC. Surface : INC. Surface : Size : 00 miller : INC. Surface : Size :	- 1												•
Date Dilled : 18-2-91 Drill Type : CEMCO 210 B Bore Size : 100mm RL Surface : -7.29m AHD Ch/Cordst : 333075E 239425 Dorilling : Gripping : G										Jot	No. :	1853	4-007-70
Dritting E B Soli Description E Somple transmit of the second se	D	ate	Dril	iled : 1	8-2		1 Drill Type : GEMCO 210 B Bore Size : 100mr			RL S	urface : —	7.29m	AHD
v b c s o s o s o s o s o s o s o s o s o s						6	Driller : ENG. EXPL. Drilling Fluid : BIO				Coords : 30	33075	E 239425N
SAND (SP), grey, fine to medium groined, some shell. 2.0 Possibly interbedded organic CLAY layers from 1.95 to 3.2m. 3.4 ORGANIC CLAY (OH), black, interbedded with PEAT, black with wood fragments. SAND (SP), grey becoming light brown to light grey @ 5.2m, fine to medium groined. Interbedded with organic CLAY, black from 4.1 to 4.4m D SPT Sample 5.2 Somple 4.13 N=27 Sample 4.13 N=27 Sample 4.13 N=27 Sample 5.2 Somple		T-	ing T	Ê.	sted	Ĕ	Soil Description	. 5	ency sit)	s	omples/Te:	sts	
SAND (SP), grey, fine to medium groined, some shell. 2.0 Possibly interbedded organic CLAY layers from 1.95 to 3.2m. 3.4 ORGANIC CLAY (OH), black, interbedded with PEAT, black with wood fragments. SAND (SP), grey becoming light brown to light grey @ 5.2m, fine to medium groined. Interbedded with organic CLAY, black from 4.1 to 4.4m D SPT Sample 5.2 Somple 4.13 N=27 Sample 4.13 N=27 Sample 4.13 N=27 Sample 5.2 Somple	poq	j p		th : 50	rpre file	phic		ditio	siste Der			÷.	Field Records
SAND (SP), grey, fine to medium groined, some shell. 2.0 2.0 3.2 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4	Met	S S	Vat	Dep	Pro Pro	S.		Mois	Rel.			(J g b	
2.0 Possibly interbedded organic CLAY layers from 1.95 to 3.2m. SPT L 1.5 Sample 1.5 Low rec. 4.3.3 N=6 3.2 ORGANIC CLAY (OH), black, interbedded with PEAT, black with wood fragments. F SPT Sample 2.75 D 9.15,18 N=33 3.4 ORGANIC CLAY (OH), black, interbedded with PEAT, black with wood fragments. F SPT Sample 4.13 3.68 N=27 5AND (SP) grey becoming light brown to light grey @ 5.2m, fine to medium grained. Interbedded with organic CLAY, black from 4.1 to 4.4m MD SPT Sample 5.52 3.68 J,11,14 6.0 SPT Sample 5.2 Sample 7,11,14 N=25 0 SPT Sample 5.2 Sample 7,11,14 N=25 0 SPT Sample 6.7 Sample 8,14,22 N=36 0 SPT Sample 6.7 Sample 8,14,22 N=36							SAND (SP), grey, fine to medium grained, some shell.		٧L				
2.0 Possibly interbedded organic CLAY layers from 1.95 to 3.2m. 1.2 for 0.7, 1.2 3.2 ORGANIC CLAY (OH), black, interbedded with PEAT, black with wood fragments. 9,15,18 3.4 ORGANIC CLAY (OH), black, interbedded with PEAT, black with wood fragments. F SAND (SP), grey becoming light brown to light grey @ 5.2m, fine to medium grained. Interbedded with organic CLAY, black from 4.1 to 4.4m MD SPT 4.13 SAND (SP), grey becoming light brown to light grey @ 5.2m, fine to medium grained. Interbedded with organic CLAY, black from 4.1 to 4.4m MD SPT 5.0 5.25 7,11,14 N=25 Sample 5.65 N=25 8,14,22 Somple 6.7 8,14,22 N=36 Sample 6.7 Somple 5.7 8,14,22 N=36 N=36 N=36				-						77		[.5	
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$										\langle / \rangle	Somple	-	for 0.7m
2.0Possibly interbedded organic CLAY layers from 1.95 to 3.2m. $I.5$ Sample Low rec. $I.5$ Sample Low rec. $I.5$ I.95 I.95 I.95 I.95 I.95 I.95 I.95 I.95 I.95 I.95 I.95 I.95 I.95 I.95 I.95 I.95 I.95 I.95 I.915,18 IN a 33 IN a 34 IN a 34IN A 34 IN A 34 IN A 34 IN A 34Interbedded with IN a 34 IN a 34IN A 34 IN A 34 IN A 34 IN A 34 IN A 34 IN A 34IN A 34 IN A 34 IN A 34 IN A 34 IN A 34IN A 34 IN A 34 IN A 34 IN A 34 IN A 34IN A 34 IN A 34 IN A 34IN A 34 IN A 34 IN A 34IN A 34 IN A 34 IN A 34 IN A 34 IN A 34 IN A 34 IN A 34 IN A 34 IN A 34 IN A 34 IN A 34 IN A 34 IN A 34 IN A			ŀ							ΥĹ		-1.2	∐N=0
2.0 Possibly interbedded organic CLAY layers from 1.95 to 3.2m. Low rec. 1.95 3.2 3.4 ORGANIC CLAY (OH), black, interbedded with PEAT, black with wood fragments. D SPT Sample 2.75 9,15,18 3.8 SAND (SP), grey becoming light brown to light grey @ 5.2m, fine to medium grained. Interbedded with organic CLAY, black from 4.1 to 4.4m MD SPT Sample 3.68 4,14,13 SAND (SP), grey becoming light brown to light grey @ 5.2m, fine to medium grained. Interbedded with organic CLAY, black from 4.1 to 4.4m MD SPT Sample 5.2 7,11,14 8.0 SPT Sample 5.2 7,11,14 N=25 8,14,22 N=36 SPT Sample 6.7 8,14,22 N=36 8.0 SPT Sample 6.7 8,14,22 N=36							· · · ·			~~~	SPT	-	
Image: Second state in the se							- · ·	ļ		\mathbb{V}	Sample	[N=6
3.2 3.4 ORGANIC CLAY (OH), black, interbedded with PEAT, black with wood fragments. F SPT 3.2 3.4 ORGANIC CLAY (OH), black, interbedded with PEAT, black with wood fragments. F SPT 3.68 4,14,13 3.8 SAND (SP), grey becoming light brown to light grey @ 5.2m, fine to medium grained. Interbedded with organic CLAY, black from 4.1 to 4.4m MD SPT 3.68 6.0 6.0 SPT 5.2 7,11,14 8.0 6.0 SPT 5.2 7,11,14 8.0 8.0 SAND SPT 8.14,22 8.0 8.0 SPT 8.14,22 10,17,2 8.0 SPT 8.2 10,17,2 N=38				2.0-			Possibly interhedded ereanic CLAY				1		
3.2 3.4 ORGANIC CLAY (OH), black, interbedded with PEAT, black with wood fragments. F 3.2 3.68 4.14.13 3.8 SAND (SP), grey becoming light brown to light grey @ 5.2m, fine to medium grained. Interbedded with organic CLAY, black from 4.1 to 4.4m MD SPT 3.68 4.14.13 000000000000000000000000000000000000				-			layers from 1.95 to 3.2m.						
3.2 3.4 ORGANIC CLAY (OH), black, interbedded with PEAT, black with wood fragments. 3.2 3.2 3.2 3.8 SAND (SP), grey becoming light brown to light grey @ 5.2m, fine to medium grained. Interbedded with organic CLAY, black from 4.1 to 4.4m MD SPT 3.68 4.14,13 SAND (SP), grey becoming light brown to light grey @ 5.2m, fine to medium grained. Interbedded with organic CLAY, black from 4.1 to 4.4m MD SPT 5.2 7.11,14 Sector 6.0 SPT 5.2 7.11,14 Sector 5.65 7.11,14 Sector 6.0 Sector Sector Sector 5.65 7.11,14 Sector Sector Sector Sector Sector 8.14,22 Sector Sector Sector Sector Sector 8.14,22 Sector Sector Sector Sector Sector Sector Sector Sector Sector Sector Sector Sector Sector Sector Sector Sector Sector Sector Sector Sector Sector Sector Sector Sector Sector Sector Se										77	SPT	2.75	9,15,18
3.4 ORGANIC CLAY (OH), black, interbedded with PEAT, black with wood fragments. F SPT 3.68 \$3.8 SAND (SP), grey becoming light brown to light grey @ 5.2m, fine to medium grained. Interbedded with organic CLAY, black from 4.1 to 4.4m MD SPT 3.68 6.0 SPT 5.2 7,11,14 SWM F SPT 5.65 6.0 SPT 5.65 8.0 SPT Sept 8.0 Sept Sept 8.1 Sept <td></td> <td></td> <td></td> <td>- 3.2-</td> <td></td> <td></td> <td><u> </u></td> <td></td> <td></td> <td></td> <td>No rec.</td> <td>-</td> <td>∐ N=33</td>				- 3.2-			<u> </u>				No rec.	-	∐ N=33
Vertical and the second sec		╂──	$\left\{ \right\}$				ORGANIC CLAY (OH), black,		F			.2	
SAND (SP), grey becoming light brown to light grey @ 5.2m, fine to medium grained. Interbedded with organic CLAY, black from 4.1 to 4.4m 6.0 HIN 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0							wood fragments.		'	77	SPT	3.68	4,14,13
ONE brown to light grey @ 5.2m, fine to medium grained. Interbedded with organic CLAY, black from 4.1 to 4.4m SPT 5.2 6.0 5.65 6.0 5.65 8.0 8.0 8.0 8.0				¥:Ğ-			SAND (SP), grey becoming light	\uparrow	MD		Sample	4 13	N=27
Organic CLAY, black from 4.1 to 4.4m SPT SPT Somple 5.0 6.0 6.0 8.0			$\left\{ \right\}$				brown to light grey @ 5.2m, fine to				_		
ONINORHSY 6.0- 6.0- 5.65 N=25 N=25 N=25 N=25 N=25 N=25 N=25 N=25 Sample Sample Sample N=36 N=36 N=36 N=36 N=36 N=36 N=38							organic CLAY, black from 4.1 to 4.4m						
ONINOGHSYM 6.0- 6.0- 5.65 N=25 A 5.65 N=25 N=25 N=25 Sample 5.65 N=25 N=36 N=36 N=36 N=36 N=36 N=38				-								-	
NOILLON 8.0- 8.0- 8.0- 8.0- SPT 8.14,22 N=36 7.15 N=36 N=38										$\overline{\mathcal{T}}$		5.2	7,11,14
Line - - 6.7 8,14,22 N=36 - - - - N=38 - - - - N=38 - - - -	NS NS									Y Z		5.65	
Line - - 6.7 8,14,22 N=36 - - - - N=38 - - - - N=38 - - - -	N N N N N			6.0-								Ļ	
Lim - - 6.7 8,14,22 N=36 - - - - N=38 - - - - N=38 - - - -	풍			-								ł	
Im - </td <td>WA</td> <td></td> <td></td> <td>]</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	WA]									
NOLD 8.0- 8.0- 8.2 SpT 8.2 N=38	Ē			-						\overline{V}	SPT	6.7	8,14,22
8.0- SPT 8.2 10,17,2 Sample N=38		1								μĹ	5	7.15	
8.0- SPT 8.2 10,17,2 Sample N=38	<u>[</u>]			-					•			ŀ	
8.0- SPT 8.2 10,17,2 Sample N=38	1 2 2											t i	
Semple 8.2 8.65 N=38				8.0-								-	
					1					1	SPT	18.2	10,17,21
				-						μZ	6	8.65	μ
	ľ											Ĺ	
												ł	
SPT 9.65 10.21 3				-							507		
10.0 SPT 9.65 10,21,3 Sample 7 N=56				10.0							Sample	9.00	10,21,35 N=56

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Borehole No .: BH7 Sheet 2 of

	lien roje					AL AIRPORTS CORPORATION RUNWAY PROJECT						
Lo		itio	n :	SYD)NE	Y (KINGSFORD-SMITH) AIRPORT			Jot	» No. :	1853	4-007-7(
Do Lo	ote ogge	Dril ed b	ied:1 by:M	18-2 CW	_	1 Drill Type : GEMCO 210 B Bore Size : 100mr Driller : ENG. EXPL. Drilling Fluid : BIO	GEL		Ch/C	oords :		AHD E 239425N
- H	rillir	ng	Ê	ted	Log	Soil Description		ncy sity	S	iomples/Te	sts	
Method	Casing	Water	Depth (m) 1:50	Interpreted Profile	Graphic		Moisture	Consistency Rel. Density		Somple Type & No.	Depth (m)	Fleld Records
BUTTON BIT WASHBORING Metho		Water	± 9 10.7 11.15 12.0- 13.35 14.0- 16.0-		Graphi	PEAT (Pt), black, with wood fragments, and organic CLAY, black, interbedded with SAND, grey, fine to medium grained. SANDY CLAY (CL), grey, fine to medium grained sand. CLAY (CL), light grey with yellow orange mottles, some sand fine to medium grained. SANDSTONE, brown, highly weathered. END OF BOREHOLE AT 13.54m	Moistu	Consis E F Ref. De		Type & No. SPT Sample 8 U50 Sample 9	.10.15 - 11.05 - 11.5 - - - - - - - - - - - - - - - - - - -	Records
			18.0- - - - 20.0									

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Borehole No.: BH8 Sheet 1 of

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Bor	'eh	ole	•								์ Sh	eet 1 of 2
10.0	nt :				AL AIRPORTS CORPORATIO	N						
Proj Loca		: h : 1	SYD	NE	RUNWAY PROJECT Y (KINGSFORD-SMITH) AIF	PORT			Job	No. : '	18534	4-007-70
Date Loggi	Drill ed b		9-2		1 Drill Type : GEMCO 210 B Bore	Size : 100mm ng Fluid : BIOGE		F C	RL SU	urface : -)	7.29m	
Drilli				5	Soil Description	•		<u>کچ</u>		omples/Tes		- 239184N
Method Casing	,	Depth (m) 1:50	Interpreted Profile	Graphic				Dens	S	iample		Field
Method Casing	Water	Dep	Inte Pro	Grad	· · · · · · · · · · · · · · · · · · ·		Con	Consistency Rel. Density		Type & No.	(m) (m)	Records
		- - - - 2.0-			SAND (SP), grey, fine to m grained, trace of shell, troc interbedded with layers of f black, soft with wood and a fragments and organic CLA soft.	e of silt, PEAT, organic		VL MD		Sample	.5 .95 1.1 .1.55	0,0,2 N=2 2,6.5 N=11
		2.6 - - -			SAND (SP), light brown to brown, fine to medium grain			VD- VD		SPT Somple 3	2.6 3.05	7,8,10 N=18
		4.0-									-	
									\square	SPT Sample	4.05	8,19,30 N≕49
		4.8 ⁻								4	4.5	
									\mathbb{Z}	SPT Sample 5 Low rec.	-4.8 - - 5.25	15,23,30 for 135mm (N=56)
્રિ		6.0-									-	
BIT WASHBORING										SPT Sample 6	.6.35 -6.8 -	6,10,13 N=23
BUTTON E		8.0-								SPT Sample 7	-7.8 8.25	_8,15,25 _N=40
		10.0	- - - - - -							SPT Sample 8	- 9.35 - 9.8	12,17,32 for 130mm (N=53)

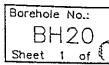
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Borehole No.: BH8 Sheet 2 of (

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Bo	or	eł	nole	÷			141 1		C I	MOORE	Sh	
	en			FED	ER	AL AIRPORTS CORPORATION				<u></u>		
	ro je		:	THI	RD	RUNWAY PROJECT						
			n :			Y (KINGSFORD-SMITH) AIRPORT						4-007-70
	igge		у: M	<u> </u>	 ,	1 Drill Type : GEMCO 210 B Bare Size : 100m Driller : ENG. EXPL. Drilling Fluid : BIC	GEL		Ch/	Surface : Coords : 3		AHD E 239184N
	rillin	-	Ê.	Interpreted Profile	Log	Sail Description		Consistency Rel. Density		Somples/Te	sts	
Po	p	5	ћ (e Pre	:9: 1:	ч.	erie	Ster		Sample		Field
Method	Casing.	Vate	Depth 1:5(rof	Graphic.		oist	el. 1	[Type & No.	Depth (m)	Records
F		-				SAND (SP), As sheet 1	20) () () () ()		1	à	
			-		[-	
			10.7								[
0				1	19	Sandy CLAY/Clayey SAND (CH/SC), olive green to black, trace of organics		F	-	1050	10.85	
SHBORING					IB	sand fine to medium grained	•	St	\bowtie	Sample	- -11.15	
B B O B			-							9.		- 1
H				1							-	ŧ
() 	Y I		12.0-		11							
BIT	1 1			ļ.	111						F	
- 1			12.4	1		Sandy CLAY (CL), grey, sand fine to		St			-	
BUTTON						medium groined.			<u> </u>	1050	- -12.75	
E			12.9_	1		CLAY (CL), light grey with orange mottles, same sand, fine to medium	+	St	\square	Sample	13.05	
m				ļ	目	grained.				10	- 10.00	
ļ						<u>g. a.r.a.</u>					ŀ	
								-			-	
 			14.0- 14.2									
·					:::	SANDSTONE, light grey with thin			\mathbb{Z}	7 SPT	-14.2	23,30
					·	orange layers extremely weathered. END OF BOREHOLE AT 14.4m	-1			Sample	•	blows for 50mm
			-								-	N=180)
						-						
			-			· .					-	
- 1 2	1										È i	15
	í		16.0-								- -	
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	'		20.0	1							F	
L .		<u>ــــــــــــــــــــــــــــــــــــ</u>		<u>.</u>	<u>L</u>				<u> </u>	1	<u> </u>	

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		t:				AL AIRPORTS CORPORATION RUNWAY PROJECT						
		ect Itio				Y (KINGSFORD-SMITH) AIRPORT			Jah		1857	4-007-70
	_					1 Drill Type : GEMCO 210 B Bore Size : 100mr	<u></u> ກ			urfoce : -		
Lo	gge	d b	y : M	CW		Driller : ENG. EXPL. Drilling Fluid : BIO	GEL					N 239109E
	rillir	ng	Ê	ted	,Log	Soil Description		ncy	S	amples/Te	sts	
poq	- 6ui	er I	Depth (m) 1:50	rpre []e	Graphic		lilio	Der		Sample	ų	Field Records
Method	Casing	Water	Dep	Interpreted Profile	С. С		Mois	Consistency Rel. Density		Type & No.	Depth (m)	Records
						SAND (SP) grey, fine to medium	1	L				
			-			grained trace of shell.					.5	
										SPT	[Sonk 450mm
			.95.	1		SAND, (SP) black to grey	+	MD		Sample	-95	under self weight 5.9.6
				1		interbedded with organic CLAY, black ond PEAT, black with arganic matter					- 1.4	N=15
						and silty SAND.					-	i l
	4		2.0-								-	
						PEAT layer 100mm thick @ 0.95m				SPT Somple	2.1	9,11,9
							.			2	-	N=20
	[1					
			3.15	1		SAND (SD) brown to second brown	- <u> </u>		~	SPT		9,15,22
						SAND, (SP), brown to orange brown, fine to medium grained becaming		D VD		Sample	+	N=37
				1		light grey at 8.0m.			<u> </u>	3 '	-3.6	
			4.0-	-							F	
·											ŀ	
			[L	COT	4.7	
			-]						SPT Sample	L	11,20,30 in 130mm
				-					KZ.	4	5.12	↓ (N=55)
ING			ļ								ţ	
- C				{								
WASHE			6.0].			1				F	
MA				-						SPT	6.45	7 9.16.27
BIT										SPT Sample 5	ļ.	N=43
	1		.	-						5	6.9	
BUTTON		ŀ]							ļ	
BUI				4			1					
			8.0]					\overline{V}	SPT Sample	.7.75	☐ 10,16,30 N=46
				-					1/2	Sample 6	8.2	
			ļ.								ţ	
]	1							+	
				1				•	-		F	
			1	+							9.5	7 11 27 70
1	}			1						SPT sample	19.0	11,27,30 for 90m.
	1	1	10.0		••••	<u></u>			$\underline{\mathcal{H}}$	17	9.89	↓(N=77)

porei	lote							Sh	eet 2 of 2
Chent			AL AIRPORTS CORPORATION						
Project			RUNWAY PROJECT						
Locatio			Y (KINGSFORD-SMITH) AIRPORT				The second second second second second second second second second second second second second second second s		4-007-70
	uea:∠i− by:MCW		Drill Type : GEMCO 210 B Bore Size : 100 Driller : ENG. EXPL. Drilling Fluid : Bl		L	RL Ch	Surface : - /Coords : 3	8.09m 32839	AHD N 239109E
Driiling	·····	L ST	Soil Description			2	Samples/Te	·····	2001032
	Depth (m) 1:50 Interpreted			e	Condition Consistency	ensi	Sample		Field
Method Casing Water	Depth 1:5i			istu	nsis		Type	Depth (m)	Records
× S ×	De De	ک ک		No	ပီပိ	8	& No.	Del Del	
			SAND (SP), As sheet 1				1	-	
								-	
								-	
	11.2					7		11.0	113,17,10
10	11.2		Sandy CLAY (CL), dark grey, interbedded with SAND, light grey and Clayey SAND, light grey, fine to medium grained		F S		Sample 8	11.45	N=27
			and Clayey SAND, light grey, fine to					1.45	
	12.0-	E	medium grained					Ĺ	
BIT WASH								ł	
≯							U50	12.5	
B	12.9					4_	₩ No rec. SPT	12.7	6,7,10
Z	,2		CLAY (CL), light grey, with orange mottles some sand, fine ta medium		S	it [Sample	-	N=17
BUTTON			grained.					13.2	[
E E								ł	
	14.0-							[
						Γ	U50 Sample	14.1	
						ĥ	10	14.4	
								-	
	15.0-	- 53	SILTSTONE, grey, extremely weathered	∃. }		-	ZSPT	15.01 15.11	30 blows
			END OF BOREHOLE AT 15.11m				Sample	ŀ	for 110mm
N press				ł				-1	110mm (N=82)
	16.0							Ļ	
								ł	
								F	
								ł	
								Ľ	
						ĺ		-	
						ŀ		} ·	
	18.0-							[
								ŀ	
								ŀ	
			1				1	ŀ	
								}	
								ŀ	
<u><u><u></u></u></u>	20.0		<u> </u>						

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Borehole No.:

DAMES & MOORE

BH20 Sheet 2 of 2 İ

TEST BORE REPORT

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Γ				Log		ohes	Soi	1	ion- nesive		Roc	:k		-7.1 Sampli	• • •	n Situ Testing
ľ	Depth ⁻ m	Description of Strata		Graphic I	Very Saft Saft	Sur	Very Stilf Hard	Nerv Loose	Mod. Dense	Ex. Low	Medium	High Very High	mple	Core Rec. %	RQD %	Test Result & Comments
	0.00	SEA BED SAND - brown fine to medium grained sand with														
Ē		some shell fragments up to 5mm				-										
Ē	2.0	-											s			$1.87 \div 2.23$ 12,17,31
Ē																N=48
Ē	4.0												5			3.87 - 4.17
Ē																13,31/150
Ē			din e													
	5.87 6.0	SAND - dense to very dense light grey brown fil											s			5.87 - 6.23
Ē		to medium grained sand														13,22,35 N≃57
•	8.0															
Ē	0.0												s			7.87 - 8.1 22,50/150
					•								U75	5		8.87 - 9.1
ŧ	10.0		ņ						-							
ŧ			·										s			10.87 - 11.
r L	12.0	· · · · · · · · · · · · · · · · · · ·								1						18,41/150
- F	12.27	PEAT - stiff black peat	<u></u>	V V V V												
ŀ	12.97	SAND - very dense grey medium grained sand, dark grey silty clay in parts				1							S			12.87 - 13. 26,47/150
F	14.0		:													
Ŀ	14.57 15.32	SILTY CLAY - stiff dark grey silty clay with some organic fragments		11									S			14.87 - 15. 7,10,12
Ē	16.0	BORE DISCONTINUED AT 15.32 METRES														N=22
-												:				
Ē				• .												
Ē	18.0															
Ē																
Ē																
R	IG	Pioneer P160 DRILLER Lamb			LO	GG	ΞEC)	Cur	rra	n			CA	SINC	HW to 3.3
		BORING Rotary drilling with mud girculat	ion f	rom s	ea	be	d to	01	5.3	2m						
		OBSERVATIONS														
н	EMARK	${igsisma} {igsisma}$ Sea bed level to hydrographic datum														

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DAMES & MOORE

Borehole No.: BH67 Sheet 1 of

		C I	IUIE								Sh	eet 1 of (
	Sient : FEDERAL AIRPORTS CORPORATION Project : THIRD RUNWAY PROJECT												
						RUNWAY PROJECT Y (KINGSFORD-SMITH) AIRPORT			Joh	No. •	18534	4-007-70	
-			ed : 1			Drill Type : GEMCO 210 B Bore Size : 100r			RL Sur	face : —	3.82m	AHD.	
			y : M0			Driller : ENG. EXPL. Drilling Fluid : Bi	OGEL					nE 240865mN	
	Drilli	ing	ر س	ted	Graphic .Log	Soil Description	0	Consistency Rel. Density	— ·	nples/Te:	sts	Field	
Mathod	Casina	вг	Depth (1:50	srpre file	phic	,	stur	nsist De		mple Type	50	Records	
Nat		Water	Dep	Interpreted Profile	S		Moistu	_ <u>`</u>		No.	Depth (m)		
			-			Shelly SAND (SP), :rey, fine to medium grained, snell in fragments to >50mm		VL	~	-	0.5	Sunk Tunder	
	ł]				1	HA.	SPT	0.8	self wt to	
			-	4						Sample		1,1,0	
										ſ		N=1 Overdriv	
				1		·					1.7	to 1.7m	
			2.0-						14		2.1	1 blow at 1.7m	
			2.4			SAND (SP), black, fine to medium		MD		SPT	2.4	∖for]400mm	
		≥ I	2.85			grained, some silt, organic odaur				Sample 2	2.85	3,6,6	
			2.05			Clayey SAND (SC), black to brown, fine to medium grained, organic odour at 2.85m		MD			-	⁻ N=12	
			ł								ŀ		
			4.0		V		1			SPT Sample	_3.9	12,8,22 N=30	
			. 4.2			SAND (SP), light grey, fine to		MD	14	3	4.35		
ī			ļ	1		medium grained					t		
	UII WASHBURING			-							F		
	Ξ									SPT	5.3	8,10,15	
	N N									Sample 4	5.75	N=25	
N	BUT		6.0	h							-		
				ł							ł		
						Becoming SAND (SP), light grey, fine	2		Ľ.	~ ~ ~	- 		
						to medium grained, with some clay, at 6.75m			\square	SPT Sample	L6,75	9,11,9 N=20	
					}				14	5	7.2	H	
				1							F		
			8.0	1							Ł		
				1							ŀ		
									\square	SPT Sample	8.7	3,2,3 N=5	
••			9.0	7	\prod	CLAY (CH), dark grey, with some sand and interbedded sand layers		VS	<u>i</u> rzą	6	9.15		
						sand and interbedded sand idyers					ŀ		
			10.0	5							-		

Engi Bore		ole		_og Dai	ME	S &	M	OORE		ehole No.: BH67 eet 2 of 2
Dote	ct tior Drill	: THI n : SY(ed : 16.5	RD DNE	AL AIRPORTS CORPORATION RUNWAY PROJECT Y (KINGSFORD-SMITH) AIRPORT Drill Type : GEMCO 210 B Bore Size : 100m Driller : ENG. EXPL. Drilling Fluid : BIO	m		RL Su	rface : -	3.82m	4-007-70 AHD. nE 240865mN
Orillin	· I	Depth (m) : f 1:50 M Interpreted AD	Grophic Log	Soil Description		Consistency Rel. Density	Sc	iamples/Tes iample Type & Na.	·	Field Řecords
	_			CLAY (CH), As sheet 1 Sand layer, grey at 10.5m			X	U50 Sample 7	10.2	
BUTTON BIT		11.6 12.0		CLAY (CL), light grey, low plasticity, trace of sand, fine to medium grained	5	VSt		U50 Sample 8	11.85	1 1
BUT		13.3		SANDSTONE, light grey to white, highly to extremely weathered. END OF BOREHOLE AT 13.69m			-	SPT Sample 9	- 13.6 -13.69	30 blows for 90mm (N=100)
		16.0								
		18.0-							ورجاري والمستحد والمراجع والمراجع والمراجع والمراجع والمراجع والمراجع والمراجع والمراجع والمراجع والمراجع والم	

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Engineering Log

DAMES & MOORE

Borehole No.: BH68

Sheet 1 of 2

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Client :	FEDER	AL AIRPORTS CORPORATION				
Project	: THIRD	RUNWAY PROJECT				
Locatio		Y (KINGSFORD-SMITH) AIRPORT		Job No. : RL Surface : -		4-007-70
	lled : 18.5.91 by.: MCW	Drill Type : GEMCO 210 B Bore Size : 100mm Driller : ENG. EXPL. Drilling Fluid : BIOC				mE 240560mN
Drilling	(pg	· Soil Description	Moisture Condition Consistency	Samples/Te	sts	· ·
	1:50 1:50 aphic 1		itior ister	Sample	.e	Field Records
Method Casing Water	Depth (m) 1:50 Interpreted Profile Graphic Log		Const	Type & No.	Depth (m)	Records
		SAND (SP), grey, fine to medium arained, some shell fragments to 20mm	VL		.5	Sunk under self wt.
		Black SAND layers with some silt at 1.1-1.5m		SPT Sample	1.1 1.55 1.75	to 1.1m 1,0,2 N=2
	1.75. 2.0- 2.45	SAND (SP), brown, fine to medium grained		2 2	1	N=2 Overdriven to 2.5m in 7 blows
MH		SAND (SP)/Organic CLAY (OH). Interbedded layers of SAND, grey to black and organic CLAY, black, trace of SAND	M		- 3.4	
RING	4.0-	SAND (SP), light grey, fine to medium grained	D- V	SPT Sample 3]9,15,22 N=37
N BIT WASHBORING				SPT Sample 4	4.88	for
BUT	6.0-			SPT Sampl 5	- [6.7 e -6.97	16,30 far 120mm N (N=75)
	8.0-			SPT Sampl	e 8.9	5 27,30 for 100mm (N=90)

Ingineering Log

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Barehole No.: BH68 Sheet 2 of 2

P٢	ent oie	ct	: 7	FHIR	D	AL AIRPORTS CORPORATION RUNWAY PROJECT							
La	cat	ior	n : S	SYD	NE	Y (KINGSFORD-SMITH) AIRPORT							4-007-70
			ed:1 y:MC		91	Drill Type : GEMCO 210 B Bare Size : 100r Driller : ENG. EXPL. Drilling Fluid : Bl	OG	EL	(rfoce : pords : 3.		_AHD mE_240560mN
D	illin	g	(m) 0	ted	Log	Soil Description		e ۲	ency		mples/Te	sts	- Field
poq	Casing	er	Depth (1:50	Interpreted Profile	aphic			Istur	Consistency Rel. Density		ample Typ e	Depth (m)	Records
Method	S S	Water	Dep	Inte Pro	S		_	ŝ	Rel O		& No.		
NG			-			SAND (SP), As sheet 1							
BOR			10.5			Organic CLAY, black 10.5-10.6m						ŀ	
SHE			-			CLAY (CH), light grey with orange mottles, some sand, fine to medium grained, high plasticity						11.2	
J.WASHBORING			11.3	1	ļIJ	SILTSTONE, grey-brown, moderately t	0			T	0 Somple 7A	115	30 blows for 40mm
				1		Lextremely weathered	/				SPT No.Rec	11.54	<u>(N=225)</u>
1.50	S I		12.0			END OF BOREHOLE AT 11.54m]		L	-	
				1									
				-		· · ·						ļ	
				-								-	
				4				ļ			1	ŀ	
				-								ŀ	
			14.0	h				}				-	
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			18.	.o-								ŀ	
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			20	1 10.								F	

Borehole No.: BH69

Sheet 1 of

		<u> </u>	0.0					_					
		t :	_			AL AIRPORTS CORPORATION						·	
r		ect Itior				RUNWAY PROJECT Y (KINGSFORD-SMITH) AIRPORT				lob	No 1	1853	4-007-70
			ed : 2			Drill Type : GEMCO 210 B Bore Size : 100					ríace : —		
			у: МС			Driller : ENG. EXPL. Drilling Fluid : E	BIOGE	EL	(nE 240311mN
D	illir	ng	2	ed	бо-1	Soil Description			Consistency Rel. Density	Sa	mples/Te	sts	
2	6	Γ.	n (m) 50	oret e	12	· .	1		ister Den:		ample		Field
Mathod	Casing	Water	Depth 1: 50	Interpreted Profile	Graphic		1	ond	ons el.		Type & No.	Depth (m)	Records
12		3	<u> </u>	5 6	0	SAND (SP), grey, fine to medium		ΣO				<u> </u>	
			-	1		grained, some shell fragments.			• -				
						(Based an remnants in SPT sample)					-	F	Sank
												Ĺ	under self wt.
]			1				SPT	-1.2	to 1.2m
				1							No rec.	 	N=4
									ļ			1.65	
			20	-							SPT	2.1	3,2,7
				1		SAND (SP), brown, fine to medium grained, interbedded with organic			L-C		Sample		N=9
	MH			$\frac{1}{2}$		CLAY layers, black with some sand,			ļ	22	1	2.55	
				1		fine to medium grained Orgonic CLAY layer at 2.3m, 100mn						Ĺ	
				-		thick						ł	
				1		Clayey SAND layers 3.5-4.0m, black	,				SPT	3.55	12,19,20
C			-]		organic rich.	''				Sample	3	N=39
NIZ		1	4.0	4		-				KZ4	2	-4.0	
Č	5				[:::							[
WASHRORING				-	[:					ł	
M					 							[
ПЦ			5.1	1		SAND (SP), grey, fine to medium			MD		SPT Sample	5.1	9,12,11 N=23
	1					grained, with occasional interbeddec organic CLAY layers, black	1			42	3	5.55	1
(-		1	1								ŀ	, ,
ā			6.0	۲ <u>.</u>								F	
			6.4	۶ <u>۰</u>	$\overline{\mathbb{P}}$	Clayey SAND (SC), dark grey, fine			MD			ŀ	
				1		medium grained			D.			Ļ	
					V				ł		SPT	7.05	13,18,21
			7.	3]	Ķ	CAND (SD) light grow to dork grow			MD	_///	Sample	= [N=39
				-		SAND (SP), light grey to dark grey fine to medium grained	,		VD		14	7.5	F
		1										Ę	
			8.0	7								ŀ	
			1	-								ł	
				1				1				Ę	
				-							SPT	9.05	15,12,11
				1		Organic CLAY layer, black at 9.4-9).5m			1	Sampl 5	e [N=23
				-						ŕ	13	9.5	F ⁴
÷.,			10,	01					1				

Engineering Log DAMES & MOORE BH69 Borehole Sheet 2 of 2													
	: THIF 1 : SYD	RD NE	AL AIRPORTS CORPORATION RUNWAY PROJECT Y (KINGSFORD-SMITH) AIRPORT						4-007-70				
Date Drille Logged by	ed : 20.5. y : MCW		Drill Type : GEMCO 210 B Bore Size : 100mr Driller : ENG, EXPL, Drilling Fluid : BIOC	SEL	(rface : -6 oords : 33		AHD . nE 240311mN				
Method Casing Water	Depth (m) 1:50 Interpreted Profile	Graphic Log	Soil Description	Moisture Condition	Consistency Rel. Density	S	amples/Tes ample Type & No.	Depth (m) st	Field Records				
BUTTON BIT W JRING			SAND (SP), As sheet 1 Organic CLAY (OH), black with peaty fragments CLAY (CH), grey with orange mottles, some sond; fine to medium grained, high plasticity SANDSTONE, light grey with thin yellow-brown ironstained layers, fine to coarse grained, highly to extremely weathered END OF BOREHOLE AT 14.06m				SPT Sample 6 U50 Sample 7 Sample 8	11.05	130mm (N=69) UCS= V 400kPa				

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B	7	eh	ole								Sh	eet 1 of
1	ien					AL AIRPORTS CORPORATION			<u></u>			
		ect tior				RUNWAY PROJECT Y (KINGSFORD-SMITH) AIRPORT			Job	No. :	18534	+-007-70
			ed : 2			Drill Type : GEMCO 210 B Bore Size : 100m	m		RL SU	irface : —	6.93m	AHD
	ogge	db	у : MC			Driller : ENG. EXPL. Drilling Fluid : BIC			· · · · ·		"T	nE 239826mN
	rillir	9.	Ê	Interpreted Profile	Бо-i	Soil Description	08	Consistency Rel. Density		mples/Te	sts	Field
Method	Casing	er	Depth (1:50	irpre (ile	phic		stur	nsist . De		iample Type	Depth (m)	Records
Met	Cos	Water	Dep	Pro	ŝ		NO NO			& No.	Def Def	
			-			Clayey SAND (SC), dark grey, fine to medium grained with interbedded layers of clayey SILT, dark grey, with some sand, fine to medium groined, to 200mm thick		VL		SPT Sample 1	4	Sank under self wt. to 0.9m. 1,1,0 N=1 Overdriven 450mm. 5 blows
- Qara			2.0-		\square	Silty CLAY, brown, with wood			\mathbb{Z}	SPT	-1.8 1.9 2.1	Sank to` 2.1m
			2.3			frogments and organic matter at 1.9n	n, /			Sample	7	6,7,3 N=10
	M		-			SAND (SP), brown, with organic CLAY layers, black				2	-2.6	N Overdriven 100mm
	MHI		3.25			SAND (SP), light grey, fine to		D-	17	SPT	3.25	11,20,22
				-		medium grained				Sample 3	3.7	N=42
1	NINUALICAN 119		4.0			SAND (SP), grey, fine to medium grained with a troce of clay and occasional interbedded clayey SAND and organic CLAY bands to 6.8m				SPT Sample 4	4.8	9,10,17 N=27
	AULION		6.0			SAND (SP), brown to dark brown, fine to medium grained				SPT Sample	6.8	10,22,30 for 120mm (N=60)
			8.8			SAND (SP), black to grey, fine to medium grained with interbedded PEAT (PT)/organic CLAY bands		M		SPT Sampl 6	e 9.3	9,10,8 N=18
· (1		10.	0		и <u> </u>]			<u> </u>	1	<u> </u>

Borehole No.: BH71 Sheet 1 of §

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Borehole No.: BH71

Sheet 2 of 3

	3
Client : FEDERAL AIRPORTS CORPORATION	
Project : THIRD RUNWAY PROJECT	
Location : SYDNEY (KINGSFORD-SMITH) AIRPORT Job No. : 18534-007-	70
Date Drilled : 24.5.91 Drill Type : GEMCO 210 B Bore Size : 100mm RL Surface : -6.93m AHD.	
Logged by : MCW Driller : ENG. EXPL. Drilling Fluid : BIOGEL Ch/Coords : 333033mE 2398	26mN
Drilling E Soil Description	
Field Somple + C Record Record	is
Method Method Method Water Method Vater Method Depth Depth Depth Difficience Profile Samples/Lests Samples/Lests Method Method Method Profile Method	
SAND (SP), As sheet 1	
PEAT/organic CLAY layer, black at	
10.2m, 300mm thick	
Sandy PEAT, black at 10.8–10.9m	7
$D = \begin{bmatrix} Sample \\ 7 \end{bmatrix} N=32$	
12:8 USO 12.0	
Sample 12.3	
12.7 Clayey SAND (SC)/Sandy CLAY (CL), MD	
- grey, sand fine to medium grained,	
U50 13.5	
S No.Rec 13.8	
Z 14.0 SPT 14.0 4,12,1 Sample N=26	6
Clayey SAND at 14.2-14.45m	
ONUM 14.0 14.0 14.0 14.0 14.0 14.0 14.12,1 N=26 9 14.45 N=26	
Z SAND (SP), grey, fine to medium VD grained with trace to some silt	
grained with trace to some silt	
SPT 16.0 18,30	for
^m Sample 16.29 140m 10	m 4)
	.,
18.0- SPT 18.0 116,27	/ ጚ ጚ
19.0 III CLAY (CH), light grey with orange St-	
mottle's, some sand, fine to medium VSt	
groined.	
20.0	

Engineering Log

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Ciler	nt :		FED	ER	AL AIRPORTS CORPOR	ATION			<u> </u>	<u> </u>	
Proj	ect	:	THIF	RD	RUNWAY PROJECT				1 L L 1 4 7		
Loco				_	Y (KINGSFORD-SMITH)		_		· · · · · · · · · · · · · · · · · · ·		-007-70
		ed:2 y:M(91	Drill Type : GEMCO 210 B Driller : ENG. EXPL.	Drilling Fluid : BIOG	' SEL		RL Surfoce : -6.9 Ch/Coords : 333		
Drilli			F	Log					Samples/Tests		
	, 	í Ú	ele	تر د	, Soil Description		e u	ensi	Sample		Field
Method Casing	Water	Depth 1:5(Interpreted Profile	ophi			olstu Indi	Consistency Rel. Density	Туре =		Records
S K	ž	Ď	<u> </u>	Š			žŭ	ပိၕိ			
	+	20.1			SANDSTONE, light grey brown, fine to coorse	to yellow			Sample 2	20.1	30 blows for 50mm
					to extremely weothered	grained, highly I	1		12.	M	for 50mm (N=180)
			-		END OF BOREHOLE AT	20.15m	"				
			1								
]								
N. A.			1								(
		22.0	1						[-		
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			1								
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			-								
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		27.0	í	1					 		
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		26.0	7.							-	
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Borehole No .: 🐲 Dames & Moore

BH71

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Borehole No.: BH73

Sheet 1 of 2

Sent: FEDERAL AIRPORT IS CORPORATION Project: THIRD RUNWAY PROJECT Location: SYDNEY (KINCSFORD-SMITH) AIRPORT Lagge by: Dot miler: Lagge by: Diff. Lagge by: Diff. Lagge by: Diff. Diff. ESON 300 Bore Size: Diff. Sol Description Diff. Diff. Diff. Sol Description Sol Description Sol Description Sol Description Sol Description Diff. Sol Description Diff. Sol Description Diff. Sol Description Diff. Sol Description Diff. Sol Description Diff. Sol Description <th>Joren</th> <th>016</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>[Sh</th> <th>eet 1 of 2</th>	Joren	016									[Sh	eet 1 of 2
Location : SYDNEY (KINGSFORD-SMITH) AIRPORT Job No. : 18534-007-70 Date Drilled : 29,5.91 Drill Type : EDSON 3000 Sere Size : 100mm Rt. Surface : -7.36m, AED. Location : SyDNEY (KINGSFORD-SMITH) AIRPORT Rt. Surface : -7.36m, AED. School : 18534-007-70 Logad by : TDM Drilling : ENG. EXPL. Drilling Fluid : BIOGEL Ch/Coards : 333138mE 239343mN Drilling : gig gig gig gig gig gig gig gig gig	lient :	F	ED	ER/	AL AIRPORTS CORPORATION				•			
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				E	CLAY (CL), As sheet 2		-	<u> -</u> }	1	<u> </u>	<u> </u>	<u> </u>

Bore	hole	Log	DAN	AES &	MOORE		BH73 Beet 2 of
	t: THIRD	AL AIRPORTS CORPOR RUNWAY PROJECT Y (KINGSFORD-SMITH) Drill Type : EDSON 3000) AIRPORT	n	Job No. : RL Surface : —		
Logged	by: TDM	Driller : ENG. EXPL.	Drilling Fluid : 8100	GEL	Ch/Coords : 33	33138	mE 239343mN
Drilling Casing Water		Soil Description		Moisture Condition Consistency Rel. Density	Somples/Tes Somple Type & No.	ts Depth (m)	Field Records
WAC/BORING M		CLAY (CL), grey, some sand	fine to medium		U50 Sample	11.0] UCS= _ 400kPa
WACHE	12.0- 12.8- 13.0-	Sandy CLAY (SC), brow high plasticity SANDSTONE, orange, b			SPT Sample	13.0	11150mm
	14.0-	Extremely weothered END OF BOREHOLE AT					(N=80)
	15.0-						
	20.0						

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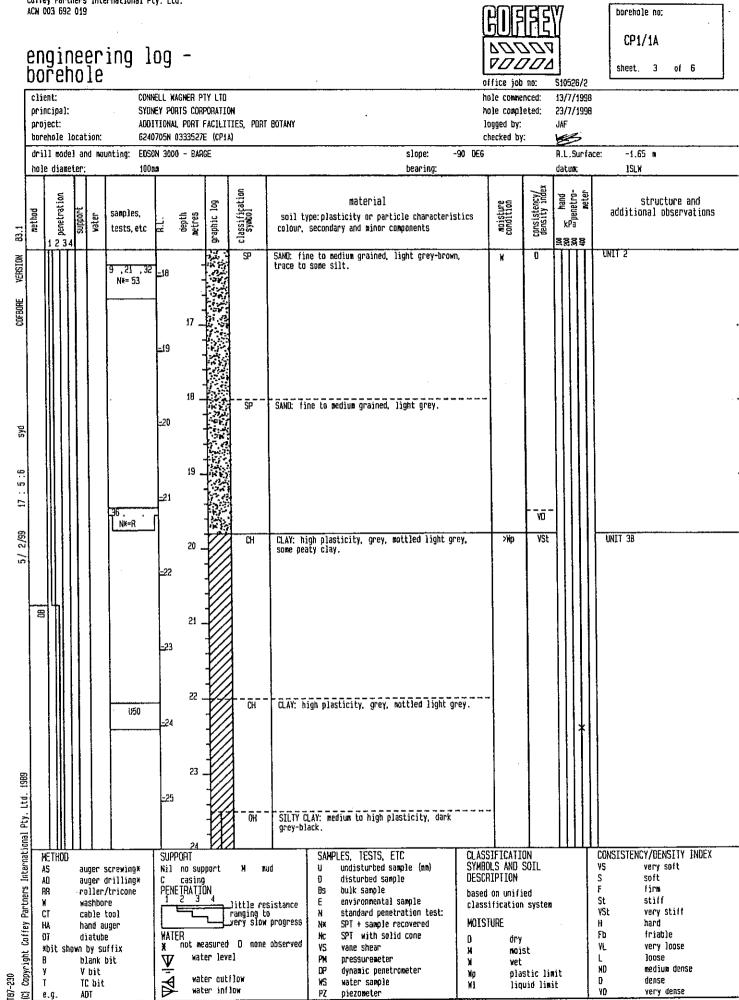
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Coffey Partners International Pty. Ltd. ACN 003 592 019 borehole no; **CP1/1A** engineering log -borehole *∇ΩΩΩ*Λ sheet of 5 1 office job no: S10526/2 client CONNELL WAGNER PTY LTD hale commenced: 13/7/1998 principal: SYDNEY PORTS CORPORATION hole completed: 23/7/1998 project: ADDITIONAL PORT FACILITIES, PORT BOTANY lagged by: J&F borehole location: 6240705N 0333527E (CP1A) checked by: 1 drill model and mounting: EDSDN 3000 - BARGE -90 OEG _slope: R.L.Surface: ~1.65 m hole diameter 100ma bearing; datu**a**: ISLN consistency/ density index 5 Zpenetro-meter 5 classificatio symbol material ĝ structure and moisture condition penetrat method samples, additional observations depth Betres Water graphic soil type:plasticity or particle characteristics tests, etc colour, secondary and minor components B3.1 23 8888 ςρ SAND: fine to medium grained, brown, trace of silt. UNIT 1C VERSION ¥ L -2 COFBORE -3 2 22,15,17 SP SAND: fine to medium grained, brown, trace of silt. D UNIT 2 M N¥= 32 4 Syd ι, Έλ 3 SILTY SAND: fine to medium grained, dark brown, some SM peat fragments. ;5 5 10,25,26 ٧Ď N¥= 51 2/99 5 -6 8,15,22 5 N¥= 37 -7 5P SAND: fine to medium grained, light brown, trace of ¥Ľ, silt. 6,25m: SPT possible disturbance of base of borehole. ,1 <u>,1</u> N¥= 2 **2**8 1989 Ľťd. -9 Ρtγ. D , 12 , 18 International N¥= 30 METHOD SUPPORT CLASSIFICATION SYMBOLS AND SOIL SAMPLES, TESTS, ETC CONSISTENCY/DENSITY INDEX AS auger screwing* Nil no support undisturbed sample (mm) X mud U VS very soft AÐ auger drilling* disturbed sample DESCRIPTION casing Ð S soft Partners RA roller/tricone PENETRATION Øs bulk sample F firm based on unified ¥ washbore _little resistance ranging to _very slow progress environmental sample Е St stiff classification system CT cable tool standard penetration test: N VSE very stiff Coffey HA hand auger MOISTURE N¥ SPT + sample recovered н hard WATER * not measured O none observed 0T diatube SPT with solid cone NC Fb friable п dry *bit shown by suffix ٧5 vane shear VL. very loose Copyright н noist B water level blank bit V PM pressuremeter loose L М wet Y V bit 0P dynamic penetrometer KD medium dense TB7-230 Wp plastic limit R water outflow Ŧ TC bit WS water sample B dense MI. liquid limit O e.g. ADT water inflow PZ piezometer ¥0 very dense

barehole no: CP1/1A

	cli pri pro	ent: ncipal: ject:			SYDN Addi	ELL N EY PO TIONA	AGNER P RTS CORI 1. Port i	PORATIO Facilit	IES, PORT	BOTANY					1	office ju nole com nole com logged b	menced: pleted: /:	5105 13/7	/1998 /1998	sheet	2 (of 6	
	dri		el an		6240 nting: EDSO i00a	N 300	0333527 0 - BAR		}					slope: - bearing:	-90 DEG	checked i	J¥.		Surface	: -1.6 Islw			
B3.1	thod	e diam 5 benetration 2 1	support	water	samples,	₿.L.	dep th metres	graphic log	classification symbol				rial	e characteris	stics	moisture condition	consistency/ density index	T	arpenetro- meter		structur	e and ervations	
					30,30 NX=R 23,33, NX> 60 9,40 NX> 80		14 . 15		SP	silt.	ne to m some s	edium gr ilt.	`	oht grey-brow						UNIT 2	CY/DENSI	TY INDEX	
T87-230	Copyright Coffey Partners Inter	METHOD AS AD RR W CT HA DT *bit s 8 V T e.g.	at an rt va ca hi di bown bi V T	iger aller ashbo able and a iatub	tool uger e offix bit	Nil C	not m		little ranging ranging very slow D nom el flow	nud esistance o e progress e observed	U D Bs E N NC VS PM DP VS PZ	undistu disturb bulk sa enviror standar SPT + s SPT wi vane si pressu	irbed samp ped sample smple imental sa rd penetra sample rec ith solid hear remeter t penetrom sample	3e (mm) Imple Ition test: covered cone	SYM DES base clas	BOLS AN CRIPTID Sificati STURE d W P) SOIL V	iait		VS S St VSt H F b VL L MD D VD 	very soft firm stiff very sti hard friable very loc loose medium dense very de	t iff ise iense	

Coffey Partners International Pty. Ltd. ACN 003 692 019



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5/5/39 17:5				Ψ	8 , 11 , Nx= 24	=29 -30 -31 -32	30		CH	SAND' I	edium t	to coarse	orained	jht grey-gre ragments. light grey.	Sope		- v c				No recovery of (sand?). UNET 4A UNET 4A		
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187-230 An Aramisti faffan Bantnans Taternational Ptu fri 1989		<u>111</u> METHOE AD AR AD CT HA DT Xbit s B Y F e.g.	a ז ע נ אסאה נ ו נ	uger (oller, ashbo able ' and a iatub	tool uger e ffix bit		r wa		Jittle re ranging t very slow D none el flow	ud sistance progress observed	SAM U D BS E N NX NC YS PM DP WS PZ	undist distur bulk s enviro standa SPT + SPT w vane s pressu dynami	nmental s rd penetr sample re jith solid hear remeter c penetro sample	ple (mm) e ample ation test: covered cone	SYM DES bas cla	n M P	D SOIL N ified	imit		9 5 5 7 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	s soft firm St stif VSt very f hard VL very L loos 40 medi O dens	soft f stiff ble loose e um dense	

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takan takan takan tak		AETHO AS Ad Fr GT	a a r w c	uger oller ashbo able	tool	Nil C	PPORT no su casin NETRATI 2 3	q	H _little ranging _very sl	mud resista	ance	U D Bs E N	undis distu bulk envir stan	irbed sa sample ronnenta lard per	sample (m mple al sample aetration	n) (test:		S AND PTION n unifi ication	SOIL	7		4 9 9 9	S it ISt	NCY/DENSIT very soft soft firm stiff very stif		
	rarrey	HA DT XNSE /	d	iand a liatut	e	WA X	TER not m	easure	_verysi i O no			NX NC VS	SPT		e recovere alid cone		MOISTU D	dry					1 55 AL	hard friable very loos	ie	
-	Jufituk	×bit s B V	b	by s)lank / bit		× ⊻	7 wa	ter lev	el		. =	ns PM DP	pres	suremetr	er etrameter		H X Xp	ndi Wet nla		∎i⊦		I		loose medium da		
107-230 1:1 2	don Ini	T e.g.	I	IC bil NDT			H wa	ter ou ter in				WS PZ	wate	r sampli ometer			мр W1 		uid lim) /D	dense very den:	58	

borehole no;

CP1/1A

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Coffey Partners International Pty. Ltd. ACN 003 692 019

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A	engil CN 003 69	2 019	• .		-		·							borehaje na: CP1/1A sheet 6 of 6
_		d bo	reħ	ole							office		S10526/2	sheet 6 of 6
	client: principal project: borehole			SYDNEY AODITI	L WAGNER PTY LID PORTS CORPORATION ONAL PORT FACILITIES, F 5N 0339527E (CP1A)	PORT BOTANY					hole co hole co logged checked	omplete by:		
	drill mod		-		3000 - BARGE				ope:	-90	DEG	•	R.L. Sunface:	+1.65 A
	barrel ty drilling			NMLC -	rock substance	fluid: MUD/WA	IEH	06	aring:		rock	mass	datum: defects	ISLM
c2.1	method case-lift water	R.L.	denth metres	graphic log core loss	Substance descri rock type: grain cha colour, structure, mi	racteristics	veathering	Est Strer	i. Igth	point load test Is (50) MPa	defe space mi sea		defec type, inclinati coating, thickn unless otherwis general descrip	t description ion planarity, roughness, ies ie noted defects follow ition below
COFCORE VEASION		-34	33											-
5		-35			Continued from non-c	core borehole								
pks	NULC	-36			NO CORE:	coarse grained, light d & banded light brown t bedding, becoming -25deg.	- īsī -						UNIT 6 34.0-37.0m bedd	ing partings
9 13:43:13		- 37	35				- HH			D A 10,54 0.75 D A	95		inn clay SM - - 7mm broken SM - 20mm EN SM	
5/ 2/33		-38	36							0.66 0.87 D A				-
		=39	- 37	-	Borehole CP1/1A	Terminated at 37.	ODm							
ACN 003 692 019		<u>-</u> 40	38 _		NOTE: 50mm P.V.C inst BHCP1A from 34.8m to capped both ends and cab. Aemoving HB cas P.V.C to 2.5m above S	alled in Im above S.B. float on top ng - lifted S.B.								-
nal Pty. Ltd. 1989		= 41	39											- - - - -
rnatio	Genera 34.00-	l Defeci 7.00m Bei	L 40 t Descr	iption:				1111	t Li I		4 ¹		I	
-229 Copyright Coffey Partners <u>International Pty. Ltd.</u>	METHOD DT	diatub auger auger roller	e screwing drilling /tricond hrilling		 water inflow none observed not measured Drilling Water 	A -axial GRAPHIC LOG/CORE core recover (hatching i		-	FR SW HW	HERING -fresh -slight -moderal		STR EL VL L H	NGTH -extremely low -very low -low -medium -high	DEFECTS JT -joint PT -parting SM -seam PL -planar CV -curved IR -irregular
TB7-229 (C) Copy	円	casing	-	1	 partial loss complete loss 	nn core reco	vered		HW EW	~highly -extrem	e]y	үн £н	-very high -extremely high	RO -rough SO -smooth SL -s)ickensided

Coffey Partners International Pty. Ltd. ACN 003 692 019

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borehole no:

sheet 1 of 6

engineering log borehole

borehole	office job no: \$10526/2
client: CONNELL WAGNER PTY LTD	hole commenced: 23/7/1998 hole completed: 28/7/1998
principal: SYDNEY PORTS CORPORATION project: ADDITIONAL PORT FACILITIES, PORT BOTANY	logged by: JAF/GAH
borehole location: 6240571N 0333580E	checked by: 2000 lone: -90 0EG B.L.Surface: -2.45 m
UPITI MEUEL AND BOOKLING. LOUDI SOUR SAINE	lope: -90 QEG H.L.Surface: -2.46 B earing: datum: ISLW
Image: solution of the soluti	characteristics
1234 SP SAND: fine to medium grained, ligh shell fragments and a trace of sil	
	It brown, some N KO UNIT 2
Similar 5,6,4 1	It. In the second se
2 SP SAND: fine to medium grained, lig	ht brown, some
shell fragments and a trace of Si	lt.
65 <u>8,20,20</u> _5 C N≭= 40	
trace black, traces of silt and s	shell fragments.
5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 -	
N×= 619	
10 Becoming light brown-brown with trace of black from 7.60m.	
a 100 .45 trace of black irom 7.50m. g N×> 85 a	
Bit Direction 20.40.45 10 Becoming light brown-brown with trace of black from 7.60m. WETHOD 20.40.45 NX> 85 R SAMPLES, TESTS, ETC WETHOD Support N mud U undisturbed sample AD auger drilling* C casing D disturbed sample R roller/tricone PENETRATION Berosing light brown-brown with trace of black from 7.60m. W Mashbore Support N mud U undisturbed sample CT cable tool 12.3.4 1ittle resistance E environmental sing to wery slow progress WATER WATER NATER NATER SPT with solid OT diatube NATER D none observed V wane shear	ple (mm) SYMBULS AND SUIL VS VERY SUIC
AD auger drilling* C casing D disturbed sample AD auger drilling* C casing D disturbed sample AD RR roller/tricone PENEIRATION Bs bulk sample AD I 2 4 little perictance E environmental si	based on unified F firm
W washbore 1 2 3 4 little resistance E environmental si CT cable tool ranging to N standard penetri W band auropa	align test: classification system vSt very stiff ation test: classification system vSt very stiff cnvered MOISTURE H hard
The source of th	cone O dry Fo friable VL very loose
B blank bit W water level PN pressuremeter	weter Vn plastic liwit WD medium dense
	mp prostic finit 0 dense wl liquid limit vD very dense
E C e.g. ADT PL piezometer	

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COFFEY	
10000 10000	
office job pp: \$10526/	5

borehole no: CP2

engineering log borehole

	ngineer Fehole	Tuð Ti	79						00			sheet 2	of 6	J
							······		ce job commen		S10526/2 23/7/1998		<u> </u>	
	ent: Incipal:		ELL WAGNER P						cospie	ted:	28/7/1998			
	nject:		TIONAL PORT		6, PORT	80TANY			ed by:		JAF/GAH			
bor	ehole location:		57JN 0333580				slope: -90 C		ked by:		R.L.Surfa	.e: -2.45 m		
- E	ill model and mo	-	N 3000 - BAR	GE			slope: -90 C bearing:	JEG			datum:	ISLN		
thod	penetration support water	100m samples, tests, etc	R.L. depth betres	graphic log classification	loguis	material soil type:plasticity or part colour, secondary and minor c	icle characteristics		moisture condition	consistency/ density index	agenetro- meter	struct additional ot	ure and oservations	
1.8 1.9	1 2 3 4			5L			11.11 Same Lange of	-	.	YD	888\$	UNIT 2		
al Pty. Ltd. 1989 5/ 2/99 14 32 56 syd COFBORE VERSION X		40 , . Nx=R 30 , 20 . Nx=R 30 , . Nx=R 40 , . Nx=R	=11 9 =12 10 =13 11 =14 12 =15 13 =15 13 =16 14 =17 15 =16 14 =17 15 =16		- 5P	SAND: fine to medium grained, trace black, traces of silt ar SAND: fine to medium grained, traces of silt and shell fra occasional traces of peat fro						SPT hammer bound SPT hammer boun	cing ancing	
187-230 (C) Copyright Caffey Partners International Pty. Ltd. 1989	AD auge RR roll W wash CT cabl HA hand OT diat *bit shown by	suffix nk bit it		ng TON 3 4	ittle r anging ery slo D non D l	Aud SAMPLES, TESTS, U undisturbed D disturbed si Bs bulk sample sistance to W progress Nx SPT + sample Nc SPT with s VS vane shear PM pressuremet DP dynamic pen NS water sampl PZ piezometer	sample (mm) ample al sample netration test: e recovered olid cone er etrometer	SYMBOL DESCR: based (URE dr' mo ve pt	SOIL ied n syste y ist	imit	S soft F firm St stif VSt very H hard FD fria VL very L Joos KO medi O dens	soft f stiff ble laose e um dense	

Coffey Partners International Pty. Ltd. ACH 003 692 019

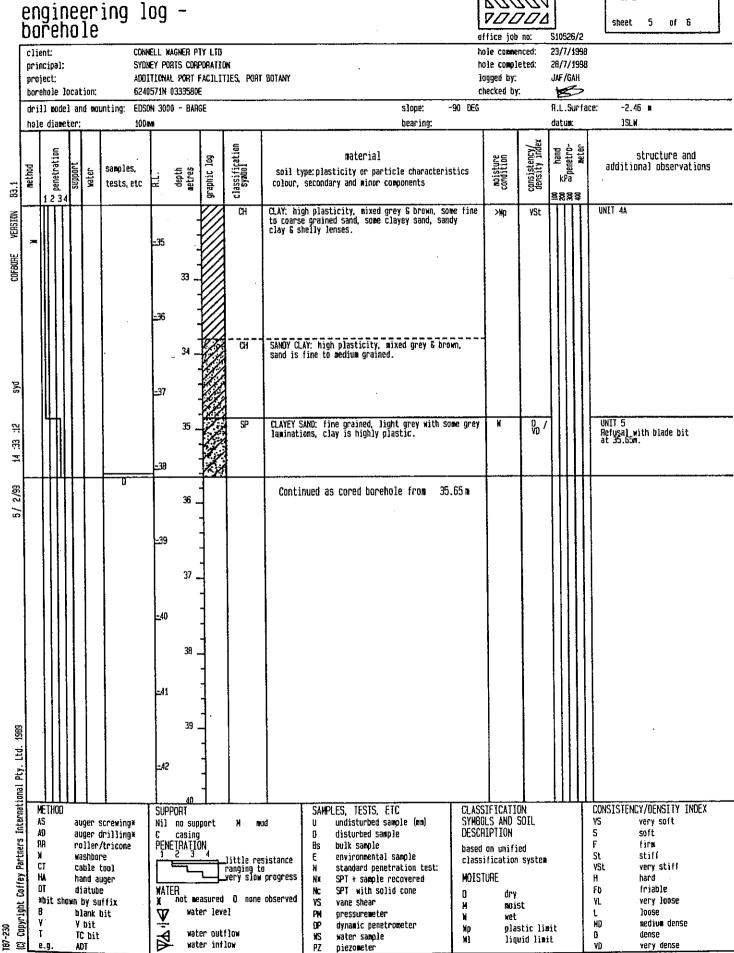
borehole no: C_D5 engineering log -borehole $\nabla \Pi \Pi \Lambda$ 3 af 6 sheet office job no: \$10526/2 client: CONNELL WAGNER PTY LTD hole commenced: 23/7/1998 principal: SYDNEY PORTS CORPORATION 28/7/1998 hole completed: project: ADDITIONAL PORT FACILITIES, PORT BOTANY logged by: JAF/GAH checked by: 6240571N 0333580E 1500 borehole location: drill model and mounting: EDSON 3000 - BARGE slope: -90 DEG R.L. Surface: -2.46 m hole diameter 100*sa* datum bearing: ISLW classification symbol consistency/ density index Mand Spenetro-meter ğ material structure and moisture condition ŝ penetrati þ additional observations samples, depth aetres Suppor yater graphic 1 soil type: plasticity or particle characteristics Шţ tests, etc 닏 colour, secondary and minor components Ш. Т. 5888 23 SAND: fine to medium grained, light grey-brown, traces of silt, shell fragments and peat UNIT 2 5 ٧D VEASION N -19 COFBORE i7 -20 18 ž Becoming grey. 21 N¥=R 19 7 8 14 -22 PEATY CLAY: low to medium plasticity, dark brown-black, some shell fragments and fine grained VSŁ UNIT 3A CI **>%p** 2/99 sand. 20 2 СH CLAY: high plasticity, grey-dark grey, some silt. UNIT 3B -23 21 -24 U50 22 -25 23 <u>1989</u> International Pty. Ltd. SILIY CLAY: high plasticity, dark grey, some peaty lenses with a trace of fine sand. ĈĤ -26 CLASSIFICATION SYMBOLS AND SOIL CONSISTENCY/DENSITY INDEX SUPPORT SAMPLES, TESTS, ETC METHOD AS auger screwing* Nil no support N 11 undisturbed sample (mm) ٧S very soft aud DESCRIPTION AD auger drilling* disturbed sample S soft D casing Partners PENETRATION 8A roller/tricone 8s bulk sample F firm based on unified M washbore E environmental sample Sŧ stiff little resistance classification system very Stiff CT cable tool N standard penetration test: YSt ranging to _very slow progress MOISTURE Coffey HA hand auger N× SPT + sample recovered hard н WATER ¥ not measured D none observed Oĭ SPT with solid cone Fð friable diatube NC D dry *bit shown by suffix ٧S vane shear ٧L very loose moist Copyright H water level loose 6 \mathbf{V} PM pressuremeter L blank bit M wet ХD medium dense ÛΡ dynamic penetrometer ¥ V hit plastic limit Жρ 230 ₽₽ water outflow D dense TC bit ΧS ī water sample хì liquid limit water inflow P7 ٧D very dense oiezometer Ξ ADT e.g

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ACN 003 692 019			

AĈI	N 003 692	2 019	ernational Pt		_					. • *					Y		borehole no: CP2
e b	oref	nole	ing l	uy									TOC fice job		S10526	/2	sheet 4 of 6
c pi p	lient: principal: project: porehole l		CDNN Sydn Addi	ELL WAG	NER PTY LTD S CORPORATIO PORT FACILI		BOTANY		•		_. . .	ho ho la	le comme le compl gged by: ecked by	nced: eted:	23/7/1 28/7/1 JAF/GA	998 H	
đ	irill mode	el and mo	unting: EDSC	N 3000 ·			<u> </u>			slo	•	HO DEG	•	·	R.L.Su	rface	: -2.46 m]SLN
<u>h</u>	nole diame	eter:	1000	170 		-				098	ring:			, ex	datum:		13F#
83.1 method	S penetration	support water	samples, tests, etc	R.L. denth	metres graphic log	classification symbol				al particle c nor componen		ics:	moisture condition	consistency/ density index	200 × hand 200 × penetro-		structure and additional observations
VERSION	=			-27		CH	SILTY CLA lenses wi	IY: high ith a tr	plastici ace of fi	ty, dark gru ne sand.	ey, some pe	eaty	>hitp	VSt			
COFBORE			U70	-28	25					۱						×	Possible sand lense 0.2m thick at 25m.
pks 6: EC:				- 29	26	SP	SAMD: fi fragment		ediun grai	ned, grey,	traces of	shell	R	٧D			UNIT 48
5/ 2/99 14 3			U63	-30 	83 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000												UG3 was attempted & 28.25m, refusal after 300 mm penetration.
				-32	29		CLAY: hi to coars clay & s	igh plas se grain shelly	ticity, m ed sand, enses.	ixed grey G some clayey	brown, sor sand, sand	ne fine dy		- v sē			- UNIT 4A
6				-33	31											×	
onal Pty. Ltd. 196				-34	1												
187-230 (c) Copyright Caffey Partners International Pty. Ltd. 1989	B	auger auger	tool auger be suffix toit		no support casing IRATION 2 3 4	_little re ranging l _very slov d D лопе rel ;flow	Rud esistance a progress e observed	SAMP U D BS E N N VS PM VS PZ	disturbe bulk sam environm standard SPT + sa SPT wit vane she pressure	bed sample d sample ple ental sampl penetratio mple recove h solid con ar meter penetromete mple	e n test: red e	SYMBO DESCR based	dry moi vet pla	SOIL ied n system st	mít		CONSISTENCY/DENSITY INDEX VS very soft S soft F firm St stiff VSt very stiff R hard FD friable VL very loose L loose NO medium dense D dense VD very dense

Coffey Partners International Pty. Ltd. ACN 003 692 019



borehole no:

CP2

Coffey Partners International Pty. Ltd. ACN 003 692 019

	en	g	ine	eer	ing	lo ole] -					L	72	70	sheet 6 of 6	
	_	_	<u></u>	<u> </u>	<u>r.eu</u>									e job n commenc		٦
	cli oci	ent: ncip	a],				L WAGNER PTY LTD / Ports corporation							complet	ted; 28/7/1998	
	, pro	ject	:			ADDITI	ONAL PORT FACILITIES, PORT BOTANY							d by: ed by:	JAF /GAH	
				ation:			2000 DUOT			slope:	-90		EG	eu by.	R.L.Sunface: -2.46 🗅	┥
				and M and le	ounting: enath:	NMLC ·	3000 - BARGE - 3m Fluid: OUICK-	AUD:		bearin		-			datum: ISLW	
				nform			rock substance						r0(k nass	s defects	_
		П				555	substance description	Ē		Est.	point load			fect	defect description	
	12	Ĕ١	_	R.L.	depth etres	graphic log core loss	rock type: grain characteristics colour, structure, minor components	veathering		Strength	test Is (50)	la:	Sp	acing M	type, inclination planarity, roughness, coating, thickness unless otherwise noted defects follow	
C2.1	nethod	case-lift	vater	Œ	고령.	grag CCO	LUIDU, SUULUUL, MINU COMPONENTS	E94	3	≠ _{→≖∞} ≆₫	1		ន	<u>erer</u>	general description below	
S		H			l —			Τ			ſ					
VERSION											ļ					1
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COFCORE						{]
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W. 21			1	 .]										-
•	L			=38		<u> </u>	Continued from non-core borehole	SW	,			A (ΰH	+++-	PT 04eg 120mm Pt 185deg PL B0 80mm UNIT 6 2 Y 15deg PL B0	
00/			<u> </u>				SANDSTONE: medium grained, light grey, some rrnss hending 0.20deg		_		0.26	-A-	-	4+-		-
5 / 3		Z			36 .	1	Borehole CP2 Terminated at 35.90m									•
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	510				10	1	Wo presing germand to 35 65m (rom									
5	ž				38		HQ casing reamed to 35.65m from 30m for geophysical logging upon completion of hole.	1								
	AUN UUS I											ļ				
1	Ş			-41		4										
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	55	ļ]							ŀ			
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	gual				10	1										- 112
	rnati	Gei	nera	l Oefe	ct Des	riptio										
	(C) Copyright Coffey Partners International Pty. Ltd.											110			STRENGTH DEFECTS	
	triers		THOD		whee		WATER POINT LOAD TEST		irr	eoular	NEATHER				JT -joint	
	Y Par	DT AS			r screw		Water level A -axial	-			FR -fr				EL -extremely low pt -parting VL -very low SM -seam	
	offe	AD Ar			er drill ler/tric		water inflow GRAPHIC LDG/COR	e loss	5			ight]		L	L -low PL -planar	
		NH	LC	000	e drilli	ng	* not measured Care recov (hatching	ered indica	ites			derat	ely		M -medium CY -curved IR -irregular K -high IR summer	
R	Inde	ак Ц	, но, Р 1		e drilli		- partial loss material)					igh 1 y			VH -very high SO -smooth	
187-229	с 3	H	1	casi bari	ing used rel with	drawn	← complete loss no core re	covered	1		EM -ex	treme	ly		EH -extremely high <u>SL -slickensided</u>	

borehole no:

. ż Coffey Partners International Pty. Ltd.

ACN 003 692 019 borehole no: CP3 engineering log -borehole 70004 νααλ sheet af 6 1 office job no: S10526/2 client: CONNELL WAGNER PTY LTD hole commenced: 30/7/98 4/8/98 SYDNEY PORTS CORPORATION hole completed: principal: ADDITIONAL PORT FACILITIES. PORT BOTANY logged by: GAH/JAF project: checked by: 6240433N 0333627E borehole location: Ke-EDSON 3000 - BARGE slope: -90 DEG **R.L.Sunface:** -15.10 a drill model and mounting: bearing: datum 1SLN 10086 hole diameter: consistency/ density index Spenetro-Meter penetration material structure and classificati symbol moisture condition graphic log additional observations method samles. netres soil type:plasticity or particle characteristics depth water colour, secondary and minor components tests, etc B3.1 234 SANDY SILT: low liquid limit, dark grey, sand is fine grained, some organics. .0 ٧L UNIT 1B Ø 6 м P VERSION N¥= D SPT attempted on seabed fell im under weight of i0m i8m of NW rods. CDFBORE -16 .18 .25 SAND: fine to medium grained, brown, with a trace of silt and shell fragments. ٧D UNIT 2 ςp ï N¥= 43 17 5 Š 18 5 .15 .19 Э N#= 34 9 ນຕ 2/99 -19 High water pressures and slow drilling resulted in U70 tube attempted & 4.55m in possible clay but with no recovery. Further drilling showed that U70 was attempted in sand. 2 -20 5 14,30,30 N#> 60 -21 6 11,40 . NX=A -22 1989 Pty. Ltd. SAND: fine to medium grained, dark brown, SP International UNIT 3A PEAT: black, some dark brown, some wood fragments. H -23 PT M U70 CLASSIFICATION SYMBOLS AND SOIL DESCRIPTION CONSISTENCY/DENSITY INDEX SAMPLES, TESTS, ETC METHOD SUPPORT auger screwing* Ð undisturbed sample (mm) ٧S very soft AS Nil no support Rud D disturbed sample 5 saft AÐ auger drilling* casing Partners AR roller/tricone PENETRATION 8s bulk sample ۶ fica based on unified environmental sample St stiff washbore Ε X _little resistance ranging to _very slow progress classification system R standard penetration test: VSt very Stiff CT cable tool MOISTURE Coffey hand auger NX SPT + sample recovered H hard HA WATER Nc SPT with solid cone ۶b friable DT diatube D dry not measured D none observed ٧L very loose Noit shown by suffix ¥ ٧S vane shear moist ight <u>v</u> water level oressuremeter loose PH я blank bit ι X vet Copyri ND medium dense DP dynamic genetrometer ۷ V bit plastic limit Χp 530 water outflow **A** Û dense УS water sample liquio limit T TC bit NI. water inflow ٧Đ very dense piezometer É PZ g e.g. ADT

Coffey Partners International Pty. Ltd. ACN 003 692 019

borehole no: CP3 engineering log -borehole VADA sheet 2 of 6 office job no: S10526/2 30/7/98 CONNELL WAGNER PTY LTD hole commenced: client: 4/8/98 principal: SYDNEY PORTS CORPORATION hole completed: GAH/JAF logged by: ADDITIONAL PORT FACILITIES, PORT BOTANY project: checked by: B 6240433N 0333627E borehole location: -90 DEG A.L. Surface: -i5.i0 a slope: drill model and mounting: EDSON 3000 - BARGE datus: ISLK bearing: hole diameter 100 ma classification symbol consistency/ density index apenetro-Beter Beter S material structure and moisture condition ğ additional observations method penetrat samples, graphic 1 soil type: plasticity or particle characteristics depth netres Nater colour, secondary and minor components tests, etc ВЭ. 2222 2.3 UNIT 3A PEAT: black, some dark brown, some wood fragments. н **p**1 M VERSION COFRORF VSt UNIT 38 >物 SILTY CLAY: high plasticity, grey-dark grey. -24 CH B q 1770 Ŵ ΪH Γ UNIT 3A PĨ PEAT: black-dark brown. -25 **{**0 5yd SILTY CLAY: high plasticity, mixed grey & dark grey, some organic clay lenses. YSt/ UNIT 38 жp СН -26 11 위 1170 몀 ម្នា 2/99 -27 PFATY CLAY: medium plasticity, dark brown-black. UNIT JA CI 2 170 -28 13 29 U70 -30 SANDY PEAT: PEATY SAND: fine to medium grained, dark grey-black, some silt and clay. H Ŵ UNIT 3C 15 SN-PT 1989 Ę International Pty. -31 16 CLASSIFICATION SYMBOLS AND SOIL CONSISTENCY/DENSITY INDEX SUPPORT SAMPLES, TESTS, ETC METHOD very soft ¥S. undisturbed sample (mm) U Nil no support AS auger screwing⊮ M aud DESCRIPTION soft S disturbed sample Ð C casing PENETRATION AD auger drilling≭ fira bulk sample F Coffey Partners ßs based on unified **HR** roller/tricone stiff Sŧ environmental sample _little resistance ranging to _very slow progress Ε X washbore classification system very stiff VSt standard penetration test: H CT cable tool MOISTURE hard SPT + sample recovered н N HA hand auger friable Fb SPT with solid cone WATER ۱ŀ DŤ diatube dry n not measured () none observed very loose vane shear ٧L ٧S *bit shown by suffix ¥ noist ight water level 30056 pressuremeter Ł 8 blank bit ∇ PM wet X aedium dense XD Copyri DP dynamic penetrometer plastic limit ¥ Y bit ¥ρ 53 23 water outflow Ð dense ₽ WS water sample liquid li∎it τ TC bit WL. very dense water inflow ٧D 6 PŽ piezometer Ø AÐT 6.0

borehale no: ACN 003 692 019 CP3 engineering log -borehole 7*000* sheet 3 of 6 office job no: \$10526/2 hole commenced: 30/7/98 client: CONNELL MAGNER PTY LTD 4/8/98 hole completed: principal: SYDNEY PORTS CORPORATION logged by: GAH/JAF ADDITIONAL PORT FACILITIES, PORT BOTANY project: \$ checked by: 6240433N 0333627E borehole location: -15.10 m drill model and mounting: EDSON 3000 - BARGE slope: ~90 DEG R.L.Sunface: datum **ISLW** 10054 bearing: hole diameter: classification symbol consistency/ density index Spenetro-Ineter 5 material structure and moisture condition penetrativ S additional observations method samples. depth metres graphic 1 soil type: plasticity or particle characteristics water colour, secondary and minor components tests, etc E B3.1 <u>5888</u> 1234 CLAY: high plasticity, light grey-grey, some sand and some 100mm bands of clayey sand, sand fine to medium grained, traces of shell fragments. UNIT 4A CH ×жр YSŁ VERSION 2 COFBORE 72 17 . 12 . 8 -33 , N#= 20 18 Syd -34 19 ដ CLAY: high plasticity, mottled light grey & light grey-green, some sand and lenses of clayey sand, sand fine to medium grained. СH Н 9 5 2/99 -35 20 CLAY: high plasticity, mottled light grey & light grey-green, some fine sand. СH 2 -36 U70 21 -37 22 38 23 <u>8</u>6 Ę. Coffey Partners International Pty. 11,12,15 N¥= 37 - 99 24 CLASSIFICATION SYMBOLS AND SOIL DESCRIPTION CONSISTENCY/DENSITY INDEX METHOD SUPPORT SAMPLES, TESTS, ETC undisturbed sample (mm) ٧S very soft Nil no support M aud U AS auger screwing* disturbed sample S soft ΔĐ ۵ auger drilling* casing PENETRATION tirm AA bulk sample F roller/tricone ₿s based on unified Ε environmental sample St stiff N. _little resistance ranging to _very slow progress vashbore classification system very still CT standard penetration test: VSł. N cable tool MOISTURE SPT + sample recovered н band HA NX hand auger SPT with solid cone Fb friable ΒT WATER NC diatube ۵ dry not measured O none observed ٧L very loose YS vane shear ¥ *bit shown by suffix moist М Copyright water level]oose L pressureaeter 8 blank bit ${f V}$ PM vet M ND medium dense DΡ ¥ ¥ bit dynamic penetrometer plastic limit Xo 187-230 ₿ water outflow 0 dense T TC bit ۲S water sample wi. liquid limit water inflow ٧D very dense P7 piezometer Q e.g ADT

A	icn oc	03 692	019		national Pl									Ŷ	. ·	borehole no; CP3
e	ene	gir ref	10 10	er: le	ing l	09	-					Office job	700		26/2	sheet 4 of 6
	clier prind proje	nt: cipal:	_		CON) Sydi Addi	VELL X VEY PO LTIONA	Agner P RTS Cor	PORATIO Facilii		IT BOTANY		hole comme hole compl logged by: checked by	eted:	30/7, 4/8/9 6AH/	98 Jaf	
	dril	l mode diame	el an			on ak	io – Bar			slope: bearing:	-90 DEG	;		R.L. datu	Surfa	face: -15.10 a ISLN
ſ	Rethod	penetration	support	vater	samples, tests, etc	R.L.	depth metres	graphic log	classification symbol	material soil type:plasticity or particle characteri colour, secondary and minor components	stics	moisture condition	consistency/ density index	ker Ker	00 alpenetro- 40 meter	4
COFBORE VERSION	筃	123	4			_40	25 _		СН	CLAY: high plasticity, mottled light grey G I grey-green, some fine sand. CLAY: medium to high plasticity, light grey-		>Hp	Н			UNIT 44
_						-41	26 .			some shells and shell fragments, some silt.						
15 :13 :25 syd					U70		27 .									
5/ 2/38						_43 _44	28		- 50	CLAYEY SAND: fine to medium grained, mottle brown & light grey, with some 50mm bands of clay.	d light sandy		- HD			- UNIT 4B
					7 .17 .2 N¥= 43	26	23 30								×	<
Ptv. 14d. 1989						-4	6 31			SANDSTONE: medium to coarse grained, mottle grey & light brown.	ed light	W	0			UNIT 5 - HIGHLY TO MODERATELY WEATHERED SANOSTONE
187-230 Pri Prevenint Prifau Dartoors International Ptv [d].		METHON AS AD AR W CT HA DT XDit S B V T e.g.	a a r t t t t t	uger oller rashbo rable rand a liatub	taal Huger He Uffix Dit	PE 1	PPORT 1 no so casin NE TRAT 3 TER not a	ipport ig ION 4	ranging _very sl d D no vel tflow	Continued as cored horehole from mud SAMPLES, TESTS, ETC mud U undisturbed sample (mm) D disturbed sample Bs bulk sample Bs bulk sample Io N standard penetration test: No SPT + sample recovered NS SPT with solid cone VS vane shear PM pressuremeter DP dynamic penetrometer MS water sample PZ piezometer	SYI DES bas cla	ASSIFICAT HBOLS AND SCRIPTION sed on unif issificatio ISTURE dr no we pl	SOIL ied in syste y ist	isit		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

			artne 692 C		ernatio	nal Pty.	Ltd.	· ·									rehole no: CP3	
	en co	g	in ed	eer bo	ing ren	lo ole] —								70		neet 5 of 6	
ĺ	cli pri pro	ent: ncip ject)a): ::	cation:		CONNEL Sydne Addit	L WAGNER PTY LTD PORTS CORPORATION ONAL PORT FACILITIES, POR ION 0333627E	T BOTANY			,		hol hol log	le commi le compi gged by: ecked b	enced: leted: :	30/7/98 4/8/98 JAF		
					ounting:		3000 - BARGE			slop		-90	DE	G			5.10 m	
				and le		NHLC	and the second	fluid: MUD		bear	ing:			rock m	ass d		LN	
	dr:		1119 1	nform	ation		rock substance substance descript	100	1			oint	\vdash	defect		defect (lescription	
C2.1	nethod	case-lift	water	R.L.	depth metres	graphic log core loss	rock type: grain chara colour, structure, mino	cteristics	¥eather ing	Est. Streng ≓≠⊣≂≖	th t J	load :est (s (50) (Pa	F	spacial spacial	9	type, inclination coating, thickness unless otherwise a general descriptio	olanarity, roughness, oted defects follow n below	
NOIS	\vdash	Π	_															4
COFCORE VERSION	Į.			-40	25 _		- -											
svd	262			-41	26.													- -
11 -3E -43	3			±42	27 .													-
5/ 3/00	n 1 5/20			=43	28													
				_44	29													
	ACN 003 692 019			±45	30									******				
	Pty. Ltd. 1989			-46	31		Continued from non-4	core borehole										
		5	╉	-47					t SW		TT	0 58.1	A 27			01.75-33.2m bedd	ing partings	
	International	<u></u>	nera		ct Des	crintio Partings	<u>r: ê 0-10deg.</u> E ê 0-10deg.	<u>nî nîşranî badindî</u>										
		31	.75-3	3.20∰ b	14003Vĝ	หลางรากผู้ร		. <u> </u>										
			THOD				WATER	POINT LOAD TEST D -diametral] _ir	regular		THEAIN				ENGTH	DEFECTS JT -joint	
	y Par	DT AS			r screw		water level	A -axial	. 11	3 - 3 - 3 - 3	FR	-fres			EL VL	-extremely low -very low	PT -parting SM -seam	
	Coffe	AD Ar			er drill er/tric		water inflow 0 none observed	GRAPHIC LOG/COR		:	SM	-51ig			L	-]0w	PL -planar CV -curved	
	ight	NH	LC I, HQ, F	core	e drilli e drilli	ng t	x not measured Drilling Water	core recovi (hatching	ered indicati	25			erate	TÂ	M H	-medium -high	IR -irregular	
53	Copyright Coffey Partners	μ			ing used		-🗙 partiāl loss	no core re	covered		HM FV	-higi -erti	hiy remei	, l	٧H	-very high	RO -rough SO -smooth	
187-229	3	F	-1		rel with		- Complete loss				EX	-57(1	EH	-extremely high	St -slickensided	******

Coffey Partners International Pty. Ltd. borehole no: ACN 003 692 019 CP3 70001 engineering log cored borehole 70004 of 6 sheet 6 510526/2 office job no: 30/7/98 hole commenced: client: CONNELL WAGNER PTY LTD hale completed: 4/8/98 SYDNEY PORTS CORPORATION principal: JAF logged by: project. ADDITIONAL PORT FACILITIES, PORT BOTANY i de la compañía de l checked by: 6240433N 0333627E borehole location: **DEG** R.L.Sunface: -15.10 . -90 drill model and mounting: EDSON 3000 - BARGE slope: ISLW datur: fluid: MVD bearing: barrel type and length: NMLC 3m rock mass defects drilling information rock substance point defect description substance description defect 522 weathering Est. load type. inclination planarity, roughness, depth metres spacing graphic | core lo rock type: grain characteristics coating, thickness unless otherwise noted defects follow Strength test method Ë case~1 colour, structure, minor components Nater Is (50) 2 ននិតិទីតិ general description below MPa SANDSTONE: medium to coarse grained, light grey, some grey banding, distinct bedding, 0-10deg. SH UNIT 6 Gûrm en sn Usma en sn VERSION NAC 70 COFCORE _JT 60deg IR RO some sand infill -49 D Å 33 33.08-33.14m broken and jointed 0.56 1.02 c 1 33.20m Borehole CP3 Terninated at -49 On completion - 36m of 50mm P.Y.C placed in borehole before puling casing (3m above seabed). Small float on im line attached to top. ·34 Syd -50 35 ដ្ឋ 8 14 2/99 -51 36 2 -52 37 619 -53 38 692 8 ACN -54 39 <u>1981</u> Pty. Ltd. [nternationa] 55 General Defect Description: 31.75-33.20m Bedding Partings

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ja ja	METHOD	WATER	POINT LOAD TEST	WEATHERING	STRENGTH	
Partners	DT diatube	V water level	D -diametral 3 -irregular	FA ~fresh	EL -extremely low	Jĭ -joint PT -parting
P P	AS auger screwing AD auger drilling	→ water inflow	A -axial		VL -very low	SX -seam
Caffey	AD auger drilling RR roller/tricone	D none observed	GRAPHIC LOG/CORE LOSS	SW -slightly	L -]ON	PL -planar
	NMLC core drilling	x not measured	core recovered	WW -moderately	N -medium	CV -curved
right	NO, HO, PO core drilling	Drilling Water	(hatching indicates	HW -highly	∦ -high	1A -irregular
229 Copyr		-🗸 partial loss	material)	um urðurð	VH -very high	RO -rough SO -smooth
87-2	Casing used		na core recovered	EW -extremely	EH -extremely high	Stslickensided

Coffey Partners International Pty. Ltd. ACN 003 692 019

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	en bo	gin reh	ee ol	ri e	ng l	og	-								Ľ	fice job	700		ne/n	sheet	i of	6	
	clie	nt:		-	CDNN	ELL X	AGNER PI								ho	le comme	nced:	4/8/	98				٦
	prin proj	icipal: ect:					rts Corf L Port F		n Ies, port	BOTANY					10	le compl gged by:		11/8, Jaf					
	L	shole lo 1 model					03336726 0 - BAR(slop	e: -90	Ch DEG	ecked by	:	<u>}</u>	Surfac	e: -18.3			
		e diapet			100a			,					bear				<u> </u>	datu		ISLN			
83.1	nethod	55 penetration	support	21	samples, tests, etc	A.L.	depth metres	graphic log	classification Symbol	soil type: colour, sed	plast condar	nateria ficity or p y and mino	article ch	aracteristic ts	cs	Munisture condition	consistency/ density index	puert kP	ado a perecru-		structure na) observ		
VEASION			c		D		-		ML	CLAYEY SILT: some fine s	: low and.	liquid lim	nit, dark g	rey to black	k,	H	VL.	ÎП	Π	UNIT 18			
VERS				ļ			-	11	SM	SILTY SAND: 6 light bro	fine wn. so	grained, r me shell i	ottled dar raoments.	k brown, bro	oxn,	¥	MO			S TINU			
COFBORE					10,19,28 N=47	-19 -20	1 _ - - 2 _			SAND: Fine							- īvī -						1
SVC	-					-21	•		5	trace of si	ilt.	91 din 91 din		n oʻj <i>2</i> 1 olini									• - -
17 - 7 -10					15,33, N> 60		3 _								,								
5/2/00	1 - 100					-22	4 _																-
	8		M		24,31, Nx=R	-23	5.																-
					6 , 12 , 1 N¥≈ 29	=24 7 =25	6.										0	-					-
	onal Pty. Ltd. 1989					-26	, ; ;		SN	SILTY SAND dark brown): fin n, som	e to mediu e peat and	m grained, peaty cla	grey, motti y fragments	•	W	0			UNIT 3C			
187-230	(C) Copyright Coffey Partners Internatio	ACT ACT AD AD AD AD AD AD AD AD AD AD AD AD AD	aug rol was cab han dia dia bla V b	er d ler/ hbor le t d au tube f su nk b nk b it	ool ger ffix	Nil C PEN 1			little re ranging wery slo O none el flow	ud Isistance I progress I observed	SAMPL U Bs E N NX NC VS PM OP WS PZ	disturbed bulk sample environmen standard (SPT + sam SPT with vane sheat pressurem	ed sample sample te htal sample benetration ble recover solid cont eter enetrometer ple	am) 1 test: red ;	SYMBO DESCR based	dry moi wet pla	SOIL ied n syster st	ait		CONSISTENC VS S F St VSt H F b VL L ND D VD	Y/OENSITY very soft firm stiff very stiff hard friable very loose loose medium den dense very dense		

borehole no:

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CP4

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engir boret	019	ing l)g	-								COLOR DE COLOR Office job	7 <i>01</i> 2 5 no:			borehole no: CP4 sheet 2 of 6
client: principal:		SYDNE	y port	NER PTY Is corpo	DRATIC		T BOTANY					hole compl logged by:	leted:	11/8/9 JAF		•
project: borehole		62402	285N 03	33672E		123, 106					-90 D	checked b		<u>¥</u> € R.L.Su		e: - 18.35 #
drill mode hole diame		unting: EDSON 100m		- BARGE						slope: bearin				datum:		191.33 W
Ha.1 Method C penetration	support Vater	samples, tests, etc	B.L.	deptn Betres	graphic log	classification symbol	soil ty colour,	pe: plas seconda	materia ticity or p ry and mino	il article char r components	acteristics ;	moisture condition	consistency/ density index	100 hand 200 dy hand 300 edpenetro-		structure and additional observations
E S T GORDONE AENSTON	4	3 , 10 , 27 N*= 37	<u>-2</u> 7			SM	SILTY SAN dark brow	D: fine n, some	to medium peat and p	grained, gre æaty clay fr	ey, mottled ragments.	N	D			UNIT 3C
syd COFB		- 1170	-29	9		OH	CLAY: high	h plast ack, co	icity. mot ntains 50-		dark grey, of woody pea	t. Mp	H			UNIT 38 U70 at 10.05m refused at 10.20m.
5/ 2/99 17 : 7 :16		U70	=30 =31	11 - 12 - -		ан -	CLAY: hi some ban peat and fragment	gh plas ds of d organi s.	ticity, lig ark brown-b c clay, tra	ht grey, ban Nack clayey Ices of fine	ded dark gre peat, black shell	y,			×	
		U70 U70		13 - - - - - - - - - - - - - - - - -												Some blocky fissuring at bottom of 070- and 17-30m.
ight Coffey Partners International Pty. Ltd. 1989 대학. 10 번 12 북 원 안 양 해 기	auger auger rolle washb cable	tool auger be suffix		no sup casing TRATIC 2 3 1 R not me	N4	ranging very si 0 no	mud tesistance to ow progress ne observed	SAMF U BS E N NX NC YS PM	disturbed bulk samp environme standard SPT + sam	ed sample {m sample le ntal sample penetration ple recovere solid cone r	n) S Di test:	nc	l SOIL l fied on syste			CONSISTENCY/DENSITY INDEX VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose
B F F F F F F F F F F F F F F F F F F F	V bit TC bi ADT	:			er out er in			DP WS PZ	dynamic p water sam piezomete		H H		lastic l iquid li			ND medium dense D dense YD very dense

borehole no: ACN 003 692 019 CP4 engineering log -borehole 70000 of 6 sheet 3 office job no: S10526/2 hole commenced: 4/8/98 CONNELL WAGNER PTY LTD client: 11/8/98 hnle comoleted: SYDNEY PORTS CORPORATION principal: logged by: JAF ADDITIONAL PORT FACILITIES, PORT BOTANY project: SS. checked by: 6240285N 0333672E horehole location: R.L. Surface: -18.35 # drill model and mounting: EDSDN 3000 - BARGE slope: -90 DEG ISLN datum: bearing: hole diameter: 100.00 consistency/ censity index Spenetro-Benetro-Beter classification symbol structure and penetration naterial moisture ŝ additional observations method samples. depth metres soil type: plasticity or particle characteristics graphic | water colour, secondary and minor components Š tests, etc B3.1 3883 123 CLAY: high plasticity, light grey, banded dark grey, some bands of dark brown-black clayey peat, black peat and organic clay, traces of fine shell fragments. TINTT 98 CH >\\D Н VERSION Possible sand lense 0.3m thick at 16.3m. 23 -36 COFBORE **1**7 -36 U70 U70 at 17,90m - damaged. 18 syd -37 19 멹 CLAY: high plasticity, dark grey, trace to some shell fragments. UNIT 4A H >\hp CH <u>~</u> 4 38 2/99 50 2/ U70 39 21 -40 22 CLAY: high plasticity, dark grey, traces of shell fragments and some 100-150mm bands of clayey fine ัฒ์ grained sand. Possible sand lense 0.2m thick at 22.5m. -45 U70 at 23.10m refused at 23.20m with no recovery. 23 686 <u>ت</u>ظ. International Pty. -42 24 CLASSIFICATION SYMBOLS AND SOIL CONSISTENCY/DENSITY INDEX METHOD SUPPORT SAMPLES, TESTS, ETC very soft ٧S undisturbed sample (mm) M U AS auger screwing* Nil no support mud DESCRIPTION saft S disturbed sample 8 ٨N auger drilling* casino c firm PENETRATION bulk sample F Coffey Partners 85 BR roller/tricone based on unified St stiff Е environmental sample _little resistance ranging to _very slow progress classification system Ж vashbore ٧St very stift standard penetration test: N CT cable tool MOTSTURF hard SPI + sample recovered н NX HA hand auger friable SPT with solid cone Fb WATER NC nt diatube Ð dry not measured D none observed very loose vane shear ٧L ¥5 *bit shown by suffix moist M Copyright water level L lonse aressuremeter PM R blank bit ∇ Ħ wet medium dease ΝÐ dynamic penetrometer DΡ ¥ ¥ bit plastic limit Жp 653 water outflow ۵ dense **₩** 15 water sample ĩ TC bit W liquid limit very dense water inflow ٧D ΡZ piezometer S e.g. ADT

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borehole no: CP4

sheet 4 of 6

i.

engineering log borehole

c I pr pr	lien rinc roje	ipal:		SYDI ADD	EY PO	IAGNER P IRTS COR IL PORT 0333672	PORATIO Facilii	in Ties, port	BOTANY				<u>,</u>	1 1 1	office job nole commo nole compl logged by: checked by	enced: leted;	S1052 4/8/9 11/8/ JAF	98 /98			
1		l model diamete		unting: EDS 100)0 - BAR	GE						ilope: Dearing:	-90 DEG			A.L.S datur			8.35 a LH	
83.1 method		tion	vater	samples, tests, etc	8.L.	depth metres	graphic log	classification symbol	colour,	seconda	ary and m	r particle inor compo			moisture condition	consistency/ density index	100 200 200 200 200 200 200 200 200 200			structure ional observ	
5/2/99 17:7.21 syd CaFBORE				U70	=44 =45 =46 =47 =48 =50	31 .		CH	grained s	40m : light b	SAND, fir	' e to æedi e Clay. ø	traces of s of clayey			H					
TB7-230 (c) Copyright Coffey Partners International Pty. Ltd. 1989	AS Ad Ra V Cĭ Ha Dt	i lit show	auger roller washbo cable hand a diatub	tool uger e lffix bit	Nil C	PORT no sup casing ETRATIO 2 3 ER not me		little re ranging t very slow C none 21 flow	ud sistance progress observed	SAMP U BS E N NX VS PM DP VS PZ	undistu disturb bulk sa environ standar SPT + s SPT wi vane sh pressur	mental sam d penetrat ample reco th solid o ear emeter penetrome ample	ple ion test: vered cone	SYM8 DESC baser class		SOIL ied n syster st	ait		CONSISTE VS F St VSt H FD VL L ND D VD	NCY/DENSITY very soft soft firm stiff very stiff hard friable very loose nedium dens dense very dense	

,	Coffey Partners International Pt ACN 003 692 019			COFFE	Ϋ́	borehole no: CP4
ļ	engineering l borehole	og –		40000 70000	IJ	sheet 5 of 6
	client: CONN principal: SYON project: ADDJ	ELL WAGNER PTY LTD EY PORTS CORPORATION TIONAL PORT FACILITIES, PORT BOTAN 205N 0333672E	łγ	office.job.no: hole commenced; hole completed; lagged by; checked by;	S10526/2 4/8/98 11/8/98 JAF	
	drill model and mounting: EDSC	N 3000 ~ BARGE	slape: -9 bearing:	O DEG	R.L.Surface datum:	n: −18.35 m 3SLN
B.1	sempler, support tests, etc	ins for the last of the last o	material il type:plasticity or particle characterist our, secondary and minor components	51 moisture condition consistency/ density index	200 Edge hand 300 Edge hand 400 Edge ter	structure and additional observations
5/2/99 17:723 syd CCFBONE VENSION		-51 CH CLAY frag grai 33 =52 34 =53	: high plasticity, dark grey, traces of she ments and some 100-200mm bands of clayey fi ned sand. DY CLAY: low to medium plasticity, light gra tled light brown, sand is fine grained.		-~~~~	UNIT 4A
l F. L B L L L L L B L L L B L B L B L B L	METHOD METHOD AS auger screwing* AD auger drilling* RR roller/tricone W washbore CT cable tool HA hand auger DT diatube *bit shown by suffix B blank bit V bit T TC bit e.g. ADT	55 - C 37 - C 37 - C 37 - C 37 - C 37 - C 39 - C 56 - C 39 - C 56 - C 56 - C 56 - C 56 - C 56 - C 56 - C 56 - C 56 - C 57 - C 58 - C 59 - C 50 - C	ress Nx SPT + sample recovered Nx SPT + sample recovered	CLASSIFICATION SYMBOLS AND SOIL DESCRIPTION based on unified classification system MOISTURE D dry M moist N wet Np plastic li N1 jiquid lim	ait it	CONSISTENCY/DENSITY INDEX VS very soft S soft F firm St stiff WSt very stiff H hard Fb friable VL very louse L louse MD medium dense D dense VD very dense

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	en co	gin red	eerin bore	g lo hole	g ~					Ŀ	ice job		sheet 6 of 6
	clie prin proj	nt: cipal: ect:	ocation;	CONNEL Sydnen Adoiti	L WAGNER PTY LTD (Ports corporation Ional Port Facilities, Pop 151 0333672E	RT BOTANY	-			hol hol log	le commen le comple gged by: ecked by:	ced: 4/8/98	
			l and mountin		3000 - BARGE	(S 1 . 1110)		slope:	-90	DEC	3	R.L.Surface: datum:	-18.35 m ISLW
			e and length: information		- 3m rock substance	f]uid: HUO	<u>. </u>	bearin	j:	1	ock nas	s defects	
c2.1		case-11ft vater	R.L. depth aetres	512	substance descrip rock type: grain chara colour, structure, mino	octeristics	veathering	Est. Strength	point load test Is (50) NDa	문	defect spacing ma #888	type, inclinati coating, thickn unless otherwis	se noted defects follow
5 / 2 / 59 14 :39 28 5 yd CDFC VERSION C			-51 -52 -53 -54 -54		Continued from non-c	ore borehole			A NPa			G Abrel of Acart 1	
100 003 000 010			-56		grey, some banded grey 0-20deg cross bedding	ed, mottled light coming light grey, indistinct bedding, ing, 0-20deg cross oarse grained, light , distinct bedding,	FR -		0.17 0. D	A .76 60 A		40mm broken SM EN SM 65mm thi TG7.39-37.45m v 45mm EN SM wit JT 60deg IR PC JT 45deg IR PC	
3	nat Pcy. Ltu. 1909		=58	39 - -	Borehole CP4 lerm 42m of 50mm PVC place im nylon line and flo	inated at 38.70/ g in BH with at on cap.							
:	Srnatio	Genera 36.55-	1 Defect De 18.70a Beddin	40 SCription G Partings	:	<u> </u>		<u> مى مەرەب مەرەب مەرەب مەرەب مەرەب مەرەب مەرەب مەرەب مەرەب مەرەب مەرەب مەرەب مەرەب مەرەب مەرەب مەرەب مەرەب مەرە</u>		••••			
-229	40 39 Borehole CP4 Terminated 42m of 50mm PvC placed in BH w 1m nylon line and float on cap 40 50mm PvC placed in BH w 1m nylon line and float on cap 40 50mm PvC placed in BH w 1m nylon line and float on cap 40 40 50 40 50 40 50 40 50 40 50 40 50 40 50 40 50 40 50 40 50 40 6 40 6 40 6 40 6 40 7 40 6 40 7 40 8 40 8 40 9 40 9 40 9 40 9 40 9 40 9 40 9 40 9 40 9 40 9 40 9 40 9 40 9 40 9 40 9 40 9 40 9 40<						1 -irr E LOSS ered indicates covered	egular 1	₩ -aoda N -higi	sh ghtly eratel	y	STRENGTH EL -extremely low VL -very low L -low M -medium H -high WH -very high EH -extremely high	DEFECTS JT -joint PT -parting SH -seam PL -planar CV -curved IR -irregular RO -rough SO -smooth SL -slickensided

AC P D C P B D C P B D C P B D C	CN 056 33 CNG 11 OPCE Client: Infincipal Infoject: Scorehole	186 186 1016 location: e) and mo	SYD. Add	NELL WAG Ney Port Itional 0149n 03	NER PTY LTD 5 CORPORATI PORT FACILI 133712E	ÓN	BOTANY	· · · · · · · · · · · · · · · · · · ·	•	offi hole hole logg	ice job n competing competing cked by:	27 <u>A</u> o: ed: ed: <u>}</u>	S10526/2 12/8/98 20/8/98 JAF B.L.Surfac	
84. method	meib alor 8 penetration	support Nater	samples, tests, etc	R.L.	uepucn metres graphic log	classification symbol	soil (colcur,	material type:plasticity or par secondary and minor	rticle characteris	itics	moisture condition	consistency/ density index	atura adv meter aeter	ISLW Structure and additional observations
COFBORE VERSION		C	0,2,4 Nx= 5	-19		CH SH	L	LAY: high plasticity, AND: fine to medium g				5 L	988 989 989 989 989 989 989 989 989 989	UNIT 18 UNIT 1A HW casing fell to 3.20m under Own weight.
8/ 2/99 14 :43 :0 syd			14,27, N> 50	=21 - - 	م من الأربي المحالية المحالية المحالية المحالية المحالية المحالية المحالية المحالية المحالية المحالية المحالية محالية من المحالية المحالية المحالية المحالية المحالية المحالية المحالية المحالية المحالية المحالية المحالية ال محالية المحالية SM PT		AND: fine to medium g EAT: dark grey-black, Sand is fine to medi			¥ N	чD		UNIT 2 UNIT 34	
	8		Nx= 23	=23 =24 ==25		- он	SILTY C Some ba	1.4Y: high plasticity, nds of woody peat.	dark grey-black,	, with	ЭХр	 H		- UNIT 38
	METHOD AS AD RR W CT HA OT ×bit shu B Y T e.g.	auger i	tcol uger e Iffix Dit	C C PENETI 1 2 WATER	o support asing TATION 3 4	:1 '10w	of clay d istance progress	Augh plasticity, grey, rey coarse sand. SAMPLES, TESTS, U undisturbed sa O disturbed san Bs bulk sample E environmental N standard peni Nx SPT + sample Nc SPT with so VS vane shear PM pressuremeter DP dynamic pene NS water sample PZ piezometer	ETC sample {mm} mple l sample etration test: recovered lid cone r trometer	CLASSIF SYMBOLS DESCRIP based on	AND SOI TION unified cation sy	sten : liai	L	CONSISTENCY/DENSITY INDEX VS very soft S soft F firm St stiff H nard Fb frjable VL very loose L loose MD medium dense D dense VD very dense

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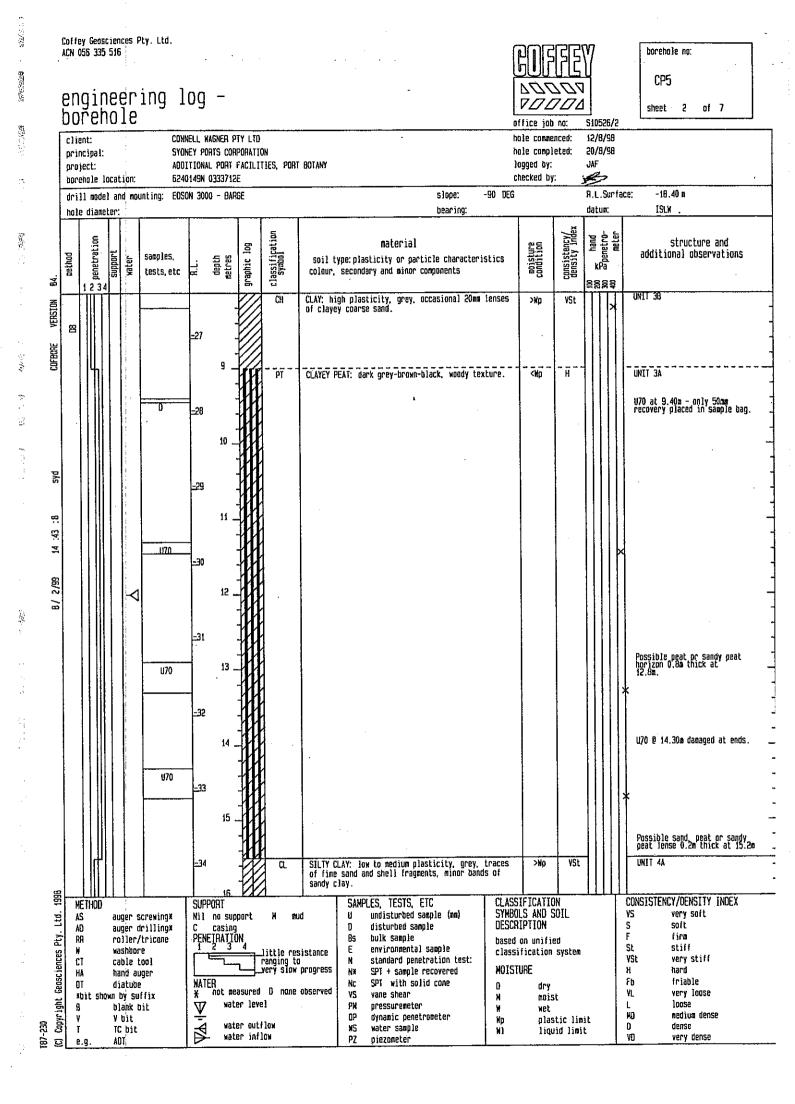
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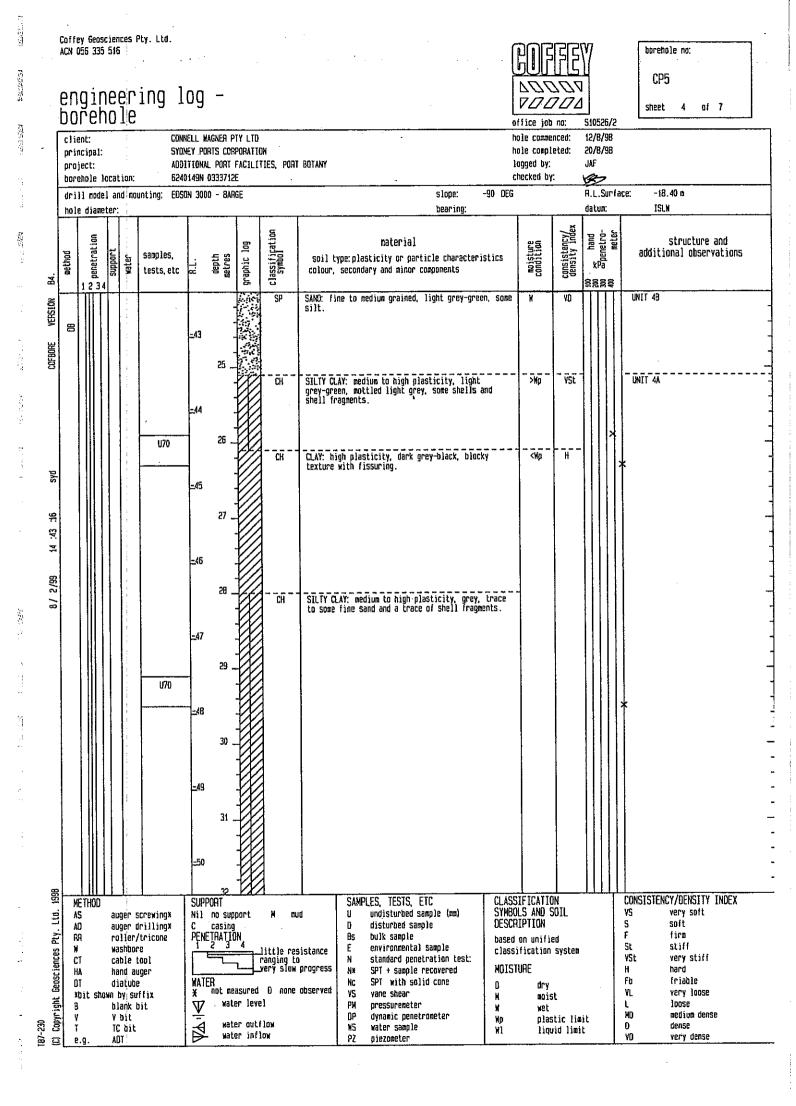
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	met hod met hod	penetration meth	support support	ter	samples, tests, etc	R.L.	depth metres	graphic log	classification Symbol			mater sticity or ary and m	ial • particl		eristics	moisture	ondition	consistency/ density index	datı Dep ki	ergenetro-	ISLM structure and additional observations	 i
8 / 2/99 14 :43 :12 syd COFBORE VEASION B4	80				U70	=35 =37 =39 =40 =41	17 17 18 19 20 21 22 22 23 23			SILTY CL of fine sandy cl	ΑΥ: lox sand an ay.	r to međiu d shell fi	a plastic 'agments,	ity, grey, minor ba	, traces nds of		Мр	YSt	200 200	88 85 85	UNIT 4A Possible sand horizon D.8m thick at 18.5m.	
107-230 frl fanvricht Generienres Płv itd 1998	Mi AS A(Ri N C Hi D Xi V T E) 7 A F Dit sh	aud rol was cat har dia dia bla V t	er di ler/ iler/ ile t ile t ile t ile t ile t ile t ile t bit bit	ool ger fix	Ni] C	not mea wate wate		M mu little rev anging tr very slow D none 1 low	silt.		SPT + sa SPT wit vane she pressure	TS, ETC bed sampl d sample ple ental sam penetrat mple reco h solid d ar meter penetromd mple	le (mm) mple tion test: overed cone	CL SY DE bas c Ja	ASSIFIC MBOLS A SCRIPTI sed on u assifica	IND S ION Inifie Ition dry mois wet plas	OIL ed system			UNIT 48 CONSISTENCY/DENSITY INDEX VS very soft S soft F firm St stiff VSt very stiff H hard FD friable VL very loose L loose HO medium dense O dense VD very dense	

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С	-51		VEY PO ITTON/ 0149N		
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ittle re anging t ery slow D none I low	요. [1355]	classification symbol			
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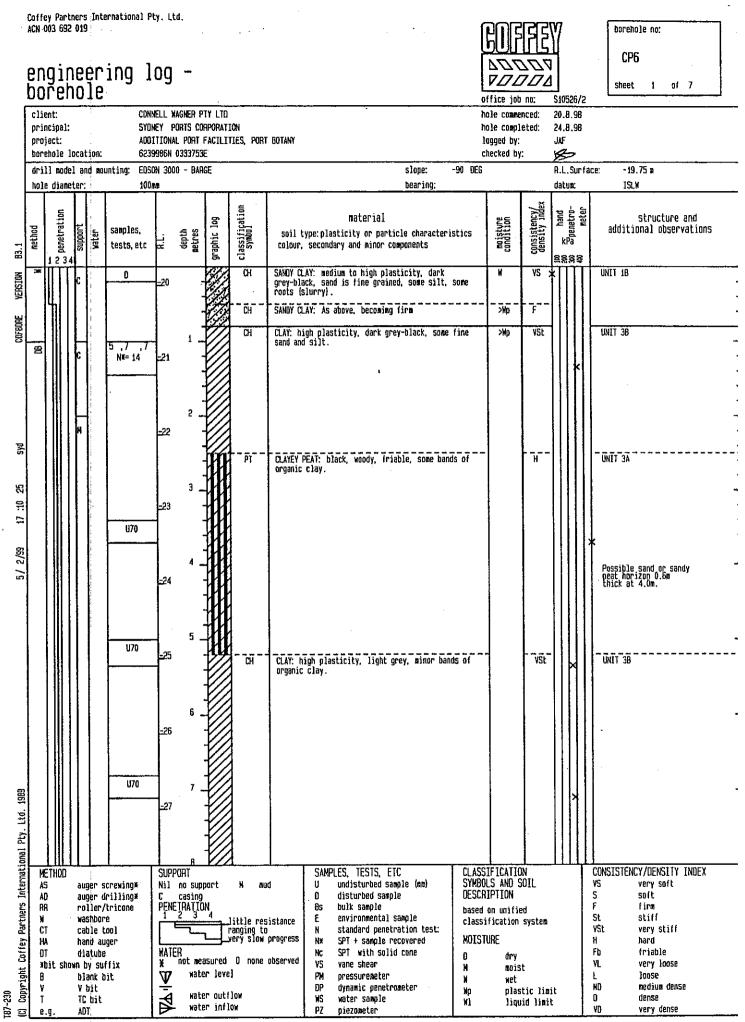
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engineering log cored borehole

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office job no: S10526/2	
hole commenced: 12/8/98	

orehole no: CP5 heet 7 of 7

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pri pro bor	inci ijec eho	pal: t: le li	ocation		Sydne: Addit	Y PORTS CORPORATION IONAL PORT FACILITIES, F 49N 0333712E	PORT BOTANY					hi 1		omplete by:				
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NAC				, 42		Continued from non-c SANOSTONE: medium to (grey, banded grey, in becoming distinct bed 0-10deg.		FR			-0	4	****					
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			-63 -65	44		Borehole CP5 Term 45m of 50mm PVC insta CP5 with nylon line a tied to top.	inated at 43.47m 1]ed in BH nd float											
y D A R	IETH It Is Is Is Is Is	00	diatu auger auger rolle core a	Screwing drilling r/tricong drilling	W E	not measured	POINT LOAD TEST D -diametral A -axial GRAPHIC LOG/CORE	LOSS	egular	WEA Fr Sn Hn	THERING -fresh -slight -modera			STRI El VL L	NGTH -extremely low -very low -low -medium	SM PL CV	joint parting seam planar curved	
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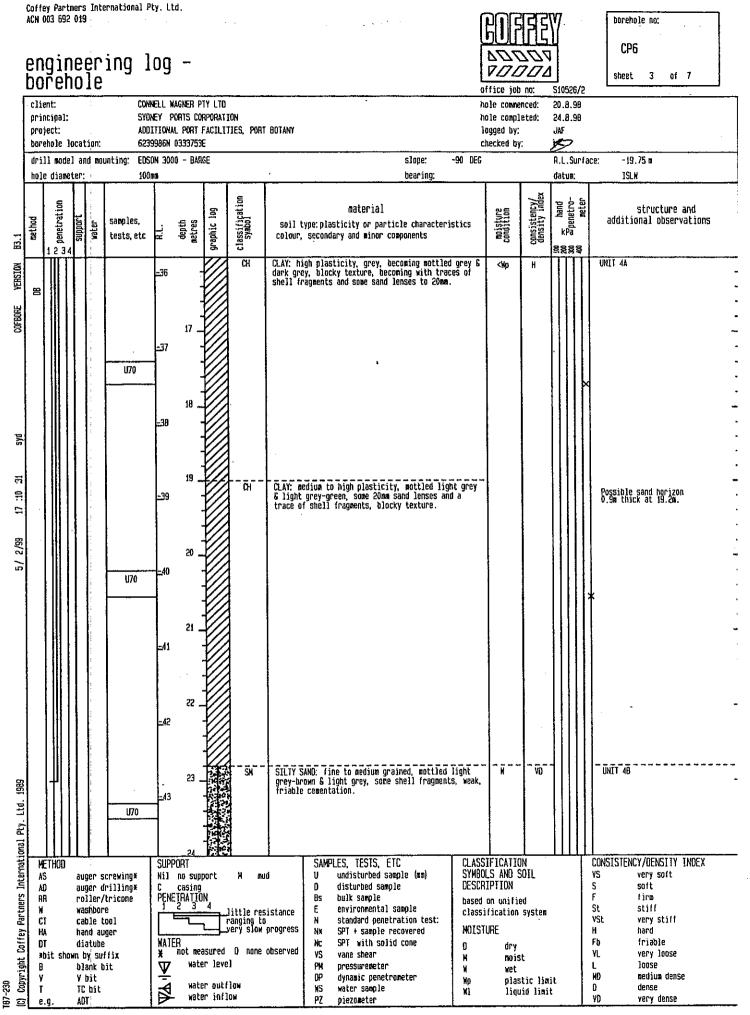
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Coffey Partners: International Pty. Ltd. ACN 003 692 019 borehole no: CP6 engineering log -borehole 70004 sheet 2 of 7 office job no: S10526/2 client: CONNELL WAGNER PTY LTD hole commenced: 20.8.98 principal: SYDNEY PORTS CORPORATION 24.8.98 hole completed: project: ADDITIONAL PORT FACILITIES, PORT BOTANY logged by: JAF 6239986N 0333753E borehole location: checked by: B drill model and mounting: EDSON 3000 - BARGE slope: -90 DEG A.L.Surface: -19.75 n hole diameter: 100ms bearing; datura ISLM consistency/ density index <u>io</u> epenetro-aeter 5 hand material structure and assificati svolol moisture condition ĝ nethod penetrat samples. additional observations depth Metres graphic . soil type: plasticity or particle characteristics water Ъ tests, etc colour, secondary and minor components ä. Ë 8888 23 Cн CLAY: high plasticity, light grey, minor bands of >#p UNIT 3B VERSION -28 organic clay. U70 8 8.4m no necovery. 穷 ĥ ĒΤ CLAYEY PEAT: black, blocky texture, friable. AE TINU COFBORE 9 -29 Possible peat or sandy peat lense 0.3m thick at 9.7m. 10 170 -30 Syd 83 11 CLAY: high plasticity, grey, blocky texture, minor peat horizons. ĨCH <\ip UNIT 3B 유 -31 Possible peat, sandy peat or sand lense 0.4m thick at 11.0m. 0 2/99 1170 12 2 -32 13 -11 1170 SILTY SAND: fine to medium grained, light grey, some shell fragments. SM YD UNIT 4B N 14 -34 CLAY: high plasticity, grey, becoming mottled grey & dark grey, blocky texture, becoming with traces of shell fragments and some sand lenses to 20mm. **้**เห **UNIT** 4A ٩ 'N U70 15 1989 35 Е. Pty. International 15 CLASSIFICATION SYMBOLS AND SOIL DESCRIPTION CONSISTENCY/DENSITY INDEX SUPPORT SAMPLES, TESTS, ETC METHOD AS auger screwing* Nil no support M mud 11 undisturbed sample (mm) ٧S very soft AD auger drilling* casing Π disturbed sample S soft Partners PENETRATION AA roller/tricone Bs bulk sample F firm based on unified X washbore 8 environmental sample St stiff _little resistance ranging to _very slow progress classification system ĊT cable tool N standard penetration test: VSŁ very stiff MOISTURE Coffey HA hand auger NX SPT + sample recovered H hard WATER ¥ not measured D none observed DT diatube SPT with solid cone friable H. Fb D dry ٧S vane shear ٧L very loose *bit shown by suffix moist Ľ water level Copyright \mathbf{v} PM pressuremeter loose ß blank bit ι ¥. wet DP dynamic penetrometer MD medium dense V bit Y plastic limit Yp 187-230 water outflow **₩** ٧S water sample ۵ dense TC bit T ж liquid limit water inflow very dense ٧D P7 **piezometer** ADT S 8.0

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Coffey Partners International Pty. Ltd. ACN 003 692 019 borehole no: CP6 ערורות engineering log -borehole VDDDA of 7 sheet 4 office job no: S10526/2 client: CONNELL WAGNER PTY LTD hole commenced: 20.8.98 principal: SYDNEY PORTS CORPORATION hole completed: 24.8.98 project: ADDITIONAL PORT FACILITIES, PORT BOTANY logged by: JAF borehole location: 6239986N 0333753E checked by: B drill model and mounting: EDSDN 3000 - BARGE slope: -90 DEG R.L.Sunface: -19.75 a hole diameter: 100mm bearing: datum ISLN consistency/ density index 5 Apenetro-Meter penetration material structure and classificati symbol Moisture condition 5 method samples, additional observations water depth metres soil type: plasticity or particle characteristics Suppor graphic tests, etc R.L colour, secondary and minor components Ξ. 23 888\$ CLAY: high plasticity, mottled grey & brown, trace of shell fragments and some cemented nodules to 20mm. CH <#p UNIT 4A VERSION H :44 8 COFBORE 25 45 26 **=**46 ž U70 斑 27 엵 •47 1 2/99 28 2 -48 CLAY: high plasticity, dark grey, trace of shell fragments becoming with some sand lenses. CH 29 -49 U70 30 -50 31 1989 -51 Ę. Pt) Coffey Partners International CLASSIFICATION SYMBOLS AND SOIL SUPPORT SAMPLES, TESTS, ETC CONSISTENCY/DENSITY INDEX METHOD ٨S auger screwing* Nil no support M aud U undisturbed sample (mm) ٧S very soft DESCRIPTION AD auger drilling* Ũ disturbed sample S soft casing PENETRATION AR roller/tricone bulk sample F fira 8s based on unified X washbore environmental sample St stiff _little resistance ranging to _very slow progress Ε classification system CT cable tool N standard penetration test: YSt very stiff MOISTURE HA hand auger N× SPT + sample recovered H hard WATER ¥ not measured D none observed ÐT diatube SPT with solid cone Fb friable No D dry ¥S vane shear ٧L very loose xbit shown by suffix moist H Capyright <u>v</u> water level 8 blank bit PN pressuremeter loose L M wet DP HD Y bit dynamic penetrometer medium dense Y plastic limit ΧD R Ā water outflow D TC bit ۲S water sample dense T พ่ liquid limit water inflow ADT PZ piezometer ٧D very dense 181 Ξ e.g

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			and li inform		NMLC	rock substance	· (1010, MOD		U	earing:		• •	rock nas	s defects		
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VERSION			 60	-		Continued from non-co	ore borehole								*******	7
COFCORE VER	NNLC		-51	- 41 _ - - 42 _		SAMOSTONE: medium to c grey, some grey bandin bedding 0 0-10deg.		FR			0 A 1.52 J.71 0 A	90		PT −PT −E¥ SM 15mm thick	y Jointed & broken lean with some EW infill some EW infills	
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ccs Copyright Coffey Partners International Pty. Ltd.	ME Dt AS AD RB NM	C	auger roller core (e screwin drillin /tricon irilling irilling	9 - 6 9 - 6		A -axial GRAPHIC LDG/CORE		-	WEA Fr Sw Xw	THERING -fresh -slight -modera	-	EL VL L	-very low -low -pedium	DEFECTS JT -joint PI -parting SM -seam PL -planar CV -curved IR -irregular	
10/-203 (C) Copyri			casing		-	☐ partial Joss ← complete loss	no core reco			HN En	-highly -extrem		H VI EF	· -	AD -rough SO -smooth SL -slickensided	

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		made	1 and		ing: EDS	ION 300			<u> </u>		slope: bearing:	-90 DEG	incoken uj	·	R.L.Su datum:	rface:	-21.80 B ISLN
D4.		penetration	support	9 9 10	100 amples, ests, etc	A.L.	depth netres	graphic log	classification symbol		aterial Ly or particle characteri	stics	moisture condition	consistency/ density index	200 Hand 200 Penetro-		structure and additional observations
VEHSION	1	234	C		0	-22			CH	SILTY CLAY: high pla to some fine sand. (sticity, dark grey-black, SLUARY).	trace	>W1	VS		UN	IT 18 T at im fell 0.20m with ight of rods and to 2.10m der weight of rods & hammer recovery.
COF80HE	B.		c	0	,0 ,0 NX< 1	-23	1.		<u>ŝ</u> c	CLAYEY SAND: dark gr grained, clay compon	ey-black, sand is fine to ent has low plasticity.	o medium		V.			IT IA
syd						<u>-2</u> 4	2.										
14 :46 :4b			C			-25	3.										0 at 3,50m - no recovery. M casing fell to 4m from 50m under own weight,
8/2/9			C			-26	4.		SP	SAND: fine to medium becoming with some p	n grained, light grey, so beat.	me silt	¥	YO		UR	HT 3C
					9.37 N¥>70	-27	5.	10 10 10 10 10 10 10 10 10 10 10 10 10 1									
						-28	6.		рт -	CLAYEY PEAT: black, thick bands of silty	woody texture, some 100- y sand and organic clay,	200mm friable.		 H		 U	VĪT 3A
			*		U70	-29	/									×	
Convright Geosciences Pty. Ltd. 1998	MET AS AD R9 H CT HA OT XD1 B	t sho	augei	r dri er/tr bore e too auge obe Suff	r ix		no sup casing TRATI 2 3		D none	Id U undi D dist BS bulk sistance E envi D rogress N¥ SPT observed VS vane	TESTS, ETC sturbed sample (am) urbed sample sample ronmental sample udard penetration test: + sample recovered with solid cone e shear suremeter	SYMBC DESCF based class MOIST D W	dry mois	SOIL ed system st		CONS VS S F St VSt H Fb VL L	SISTENCY/DENSITY INDEX very soft soft firm stiff very stiff hard friable very loose loose
(C) Copyria	с в У 5 Т 5 е.д		V D'i V D'i TC D ADT	t		>l ¶∆	wat	er out er inf	flow	DP dyna WS wate	soremeter mic penetrometer er sample gometer	W Ур W1		stic lim vid limi		HD D VD	medium dense dense very dense

	ACN 05	6 335 5	16	Pty. Ltd.													Y		borehole no: CP7	
	enq boi	reho) le	ing l	ug	-								L	VDL ffice jot	700	510526	/2	sheet 2 of 7	
	clien princ proje boren	ipal:	ation:	SYO ADD	INEY PO	AGNER P RTS COR L PORT 0333797	PORATIC Facilii	in Ins, por	IT BOTANY			-		ង រ 1	ole comp ole comp ogged by: hecked by	enced: leted:	24.8.9 27.8.9 JAF			
		nodel dianete		unting: EDS 100		io - Bar	IGE	·					slope: searing:	-90 DEG	<u>.</u>		R.L.Su datum:		: -21.80 m ISLW	
B4.	method	c penetration		samples, tests, etc	R.L.	depth metres	graphic log	classification symbol	SDil Colour	type: p1 , secon	mate asticity o Idary and m	rial r particle	character:	istics	moisture condition	consistency/ density index	200 Hand 200 Hand 200 Hand	meter	structure and additional observation	15
B / 2/99 14 :46 55 syd COFB04E VERSTON	80			u70	=30 =31 =32 =33 =34 =35	9 9 10 11 12 13		СН	thick b	ands of	ʻsilty san	,	some 100- nic clay, fine sand rganic mat	friab]e.	<¥p	H			UNIT 4A Possible sand lense 0.3m thick at 10.8m.	
182–230 CC Coveriences Ptv. Ltd. 3998	MEI AS AD RR N T HA DT XDI V T CT E S V	a r c t t shown t t l l	noer d oller/ ashbor able t and au liatube	ool ger ffix	=37 SUPF Ni1 C	no supp casing TRATIO 2 3 Not mean wate wate		ittle re anging t ery slow D none I low	Grey & SANDY Grey & Some 1	GLAY: I light 00-200m U Bs E	ow to medi brown, san m thick ba PLES, TES undistur disturbe bulk sam environm standard SPT + sa SPT wit vane she pressure	um plastic d is fine nds of cla TS, ETC bed sample d sample uple ental sample penetrati mple recov h solid co sar meter penetromet mple	ole ion test: vered one	ed light rained, SYMBOI DESCRI based	dry mois wet plas	OIL ed system		ר- כנ ג ג ג ג ג ג ג ג ג ג ג ג ג ג ג ג ג ג	soft firm stiff be very stiff hard friable very loose loose medium dense dense	

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Coffey Geosciences Pty. Ltd. ACN 056 335 516



borehole no: CP7

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engineering log -borehole $\nabla \Pi \Pi \Pi \Lambda$ office job no: \$10526/2 CONNELL WAGNER PTY LTD hole commenced: 24.8.98 principal: SYDNEY PORTS CORPORATION hole completed: 27.8.98 AUDITIONAL PORT FACILITIES, PORT SOTANY logged by: JAF B borehole location: 6239856N 0333797E checked by: drill model and mounting: EOSON 3000 - BARGE R.L.Surface: -21.00 m -90 DEG slope: 100mm ISLW datum: hole diameter: bearing: classification symbol consistency/ density index Apenetro-meter material ğ moisture condition additional observations samples. graphic l depth Øetres soil type:plasticity or particle characteristics water Suppo tests, etc 긑 colour, secondary and minor components <u>2225</u> 1234 SANDY CLAY: low to medium plasticity, mottled light grey 6 light brown, sand is fine to medium grained, some 100-200mm thick bands of clayey sand. CŁ UNIT 4A >10 Я -38 17 11 , 17 , 33 - 39 N¥=R 18 -40 **i**9 CLAY: high plasticity, mottled grey & brown, some sand and bands of dark grey clayey sand, minor thin CH <11p -41 bands of organic clay. 20 U70 42 21 43 22 44 23 u70 45 CLASSIFICATION SYMBOLS AND SOIL SAMPLES, TESTS, ETC CONSISTENCY/DENSITY INDEX SUPPORT ٧S auger screwing≭ Nil no support М trud U undisturbed sample (mm) DESCRIPTION auger drilling* casing 0 disturbed sample S PENETRATION roller/tricone 8s[.] bulk sample F based on unified St washbore E environmental sample little resistance ranging to very slow progress classification system standard genetration test: VSt cable tool N MOISTURE hand auger N× SPT + sample recovered н WATER * not measured D none observed Fh diatube NC SPT with solid cone в dry ¥Ł. *bit shown by suffix ٧S vane shear Ж aoist water level <u>¥</u> blank bit PH pressuremeter L М wet HD V dít DР dynamic penetrometer plastic limit ₩p water outflow ₽ TC bit ΝS water sample Ð ١Û liquid limit water inflow ٧D **P7** piezometer ADT

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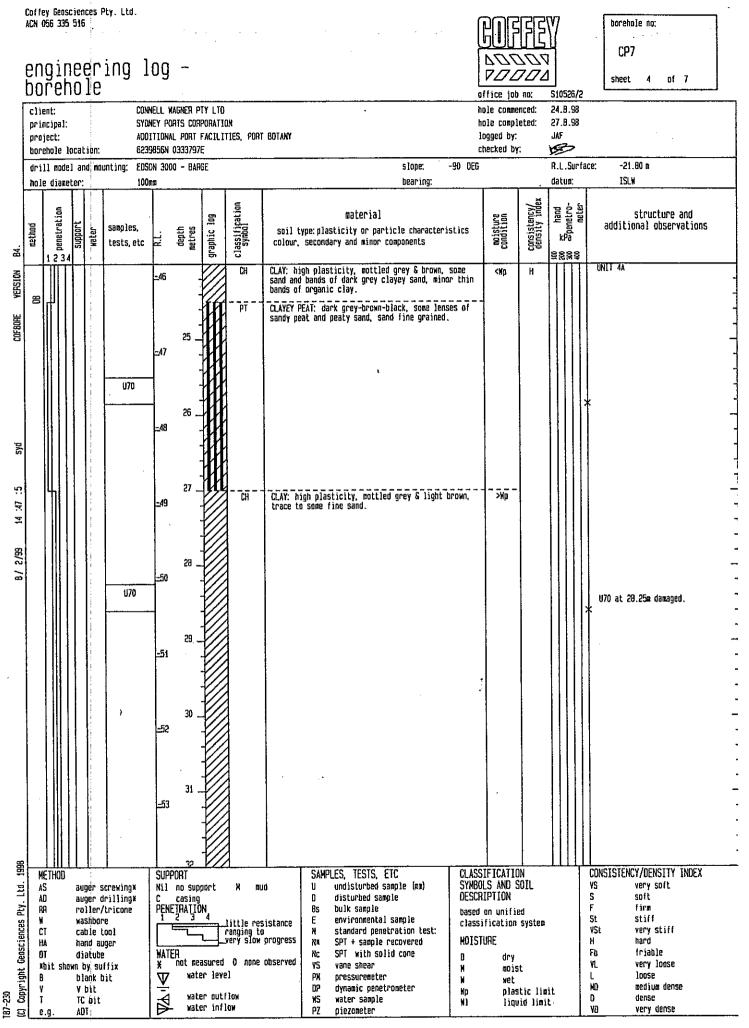
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method	2 penetration		21	samples, tests, etc	R.L.	depth metres	graphic log	classification symbol	soil t colour,	ype: pla second	sticity	erial or parti minor co	cle charac mponents	teristi	cs	anisture condition	consistency/ density index	200 Mand 200 Mand 200 Mand		additi	struct onal ot	ure an Iservat	1 ions
8				U70	-55 -55 -57 -58 -59 -59 -51	33 33 34 35 35 36 37 38 39		СН	SANGY CL Some lig	AY: mec	ium to f m mottl:	igh plas ng, sand	ticity, li is fine g	ight gre grained.	у,	- Жр	H			<u>UNIT 4A</u>			
AS AD N CT HA DT	it sho	aug rol was cab han dia dia bla ¥ b	er dr ler/t hbore ile to id aug itube y suf ink bi bit	ol er fix		ng sup casing TRATIC 2 3 not me wat wat		little ri ranging very slo D nom l low	nud esistance co e progress e observed	SAMF U D BS E N N N S PM OP VS PZ	undist distur bulk s enviro standa SPT + SPT w vane s pressu	nmental s rd penetr sample ra ith solid near remeter c penetro sample	ple (mm) e ample ration tes covered f cone	t:	SYMBOL DESCRI based o	n unifi ication RE dry mois wet plas	SOIL ed system st		Y: 5 F 51	: 5t -)	Y/DENS very si firm stiff very si hard friable very li loose medium dense very d	oft tiff e oos e dense	ULX

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ool Iger Effix			samples, tests, etc	ADD]	CON	ing l	Pty. Ltd.
Nil C	-53 -54 -55 -57 -59	-62	R.L.	ition/ 9855n On 300	ELL I	og	
ER not mea	41	-	depth metres	il port 1 0333797	Agner p Ats cor	_	
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ittle r anging ery slo O non 1 low		SC	classification symbol			·	
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soft firm t stiff St very sti hard b friable L very loo loose D medium d dense		UNIT 5	structu additional obs	: -21.60 m ISLN	·	borehole no: CP7 sheet 6	
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				ring			·	office job no: \$10526/2 sheet 7 of 7									
1	proj	nent rincipal: roject: orehole location:				CONNELL WAGNER PTY LTD SYDNEY PORTS CORPORATION ADDITIONAL PORT FACILITIES, PORT BOTANY 6239856N 0333797E			hole commenced: 24.8.98 hole completed: 27.8.98 logged by: JAF checked by:								
Ī		drill model and mounting: barrel type and length:				EDSON 3000 - BARGE NHLC - 3# fluid: MUD			slope: -90 bearing:				5.		R.L.Surface: datum:	-21.80 m ISLW	
ļ		drilling information			rock substance							rock mass defects				ct description	
62.1	nethod	case-11ft Nater	R.L.	depth Retres	graphic log core loss	SUUSCANCE DESCRIPT rock type: grain charau colour, structure, minou	characteristics	weathering	Est. Strength		load test Is (50) NPa	記	defect spacing maga호종		type, inclinati coating, thickn unless otherwis general descrip	ion planarity, roughness Ness Se noted defects follow	
VERSION			-62	-		Continued from non-cor											
COFCORE	NALC		-63	41		SANDSTONE: medium to coa grey, some brown & grey cross bedding, 0-15deg.	rse grained, light banding, distinct	EH "ŠN"			D A 19,36 0.72 D A	75		******	UNIT 6 40.60-40.80m EN PT PT Some CL SH 30mm Meaker weat 40mm weaker weat	SM with bands of HM thereof SM	-
syd			-64	42		Borehole CP7 Termina 43m of 50mm PVC installe with 1.5m nylon line & f attached to top.	ated at 41.60m d in BHCP7 loat				-11.48 - 17.31					<u> </u>	-
13 :50 :47			-65	43													-
5/2/38			-66	44 _	-												
			-67	45 _							•						
ACN 003 692 019			-68	46 _													
1ty. Ltd. 1989			-69	47				-									
nternational f	General Defect Description:																
187-229 (C) Copyright Coffey Partners International Pty. Ltd. 1989	METHOD DT diatube AS auger screwing AD auger drilling RR roller/tricone NMLC core drilling N0,H0,PD core drilling			screwin drillin r/tricon drilling drilling	9 9 0)				-irregular FR - SS SN - icates HN -			fresh Slightly moderately highly		EL VL H H VH	ENGTH -extremely low -very low -low -medium -high -very high	DEFECTS JT -joint PT -parting SN -seam PL -planar CV -curved IR -irregular R0 -rough S0 -smooth	
187- (C)	Ľ	-		l withdr	awn 7	Complete loss				EN	-extre	nc 1 Y		EH	-extremely high	SL -slickensided	

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Coffey Partners International Pty. Ltd. ACN 003 692 019 borehole no: CP8 70001 engineering log – borehole 70000 sheet 1 of 5 office job no: S10526/2 CONNELL WAGNER PTY LTO hole commenced: 27.8.98 client: 29.8.98 principal: SYDNEY PORTS CORPORATION hole completed; ADDITIONAL PORT FACILITIES, PORT BUTANY logged by: JAF groject: checked by: B 5239711N 0333850E porchole location: R.L.Surface: -21.95 s drill model and mounting: EDSON 3000 - BAAGE s lope: -90 DEG datum: **ISLN** 100pm bearing: hole diameter: consistency/ density index Hand Bonetro-meter classification symbol ē material structure and moisture condition Ē penetrati additional observations method depth aetres samples. graphic } soil type:plasticity or particle characteristics SUDDDF 5 colour, secondary and minor components ja j tests, etc ۳ B. 288¥ 1234 UNIT 18 SILTY CLAY: high plasticity, dark grey-black, trace to some fine sand (SLUAAY) ٧S ſН 281 D VERSION C COFBORE UNIT 2 ٧Ð SH SILTY SAND: fine to medium grained, grey. X 27 10.34 N> 50 2 -24 CLAY: high plasticity, dark grey, banded black & dark brown, with 200mm bands of woody peat. UNIT 3B CH >10 St ž 10 33 曽 N*> 50 ŝ 3 -25 អូ Ħ CLAY: high plasticity, mottled grey & dark grey, some peak fragments and organic clay. VSt ĈН 66/9 -26 ស U70 5 -27 ρī. CLAYEY PEAT: dark grey-black, some woody peat bands. ¥. Ъ UNIT 3A U70 δ -28 Possible sandy peat or peat lense 0.2m thick at 6.2m. 7 -29 <u>198</u> U70 Ltd. Pty. International CLASSIFICATION CONSISTENCY/DENSITY INDEX SAMPLES, TESTS, ETC METHOD SUPPORT SYMBOLS AND SOIL DESCRIPTION Nil no support M IJ undisturbed sample (mm) YS very soft ٨S auger screwing* nud 0 disturbed sample S soft AD auger drilling* C casing PENETRATION bulk sample F firm Partners RA roller/tricone θs based on unified environmental sample St stiff ¥ ε _little resistance ranging to _very slow progress washhore classification system very stiff VSE CT cable topl N standard penetration test: MOISTURE Coffey N× SPT + sample recovered н hard HÅ hand auger friable WATER SPT with solid cone Fb Dĭ Nc diatube 0 dry not measured 0 none observed VL. very loose ¥ ٧S vane shear *bit shown by suffix moist Я ight water level $\overline{\mathbf{V}}$ PH pressuremeter loose Ł 8 blank bit N wet Copyri MO medium dense ΟP dynamic penetrometer ¥ V bit ¥р plastic limit ន្ល Ā water outflow water sample Ð dense 85 TC bit Ŧ Ń liquid limit water inflow very dense ٧D 6 g P7 piezometer ADT : e.g

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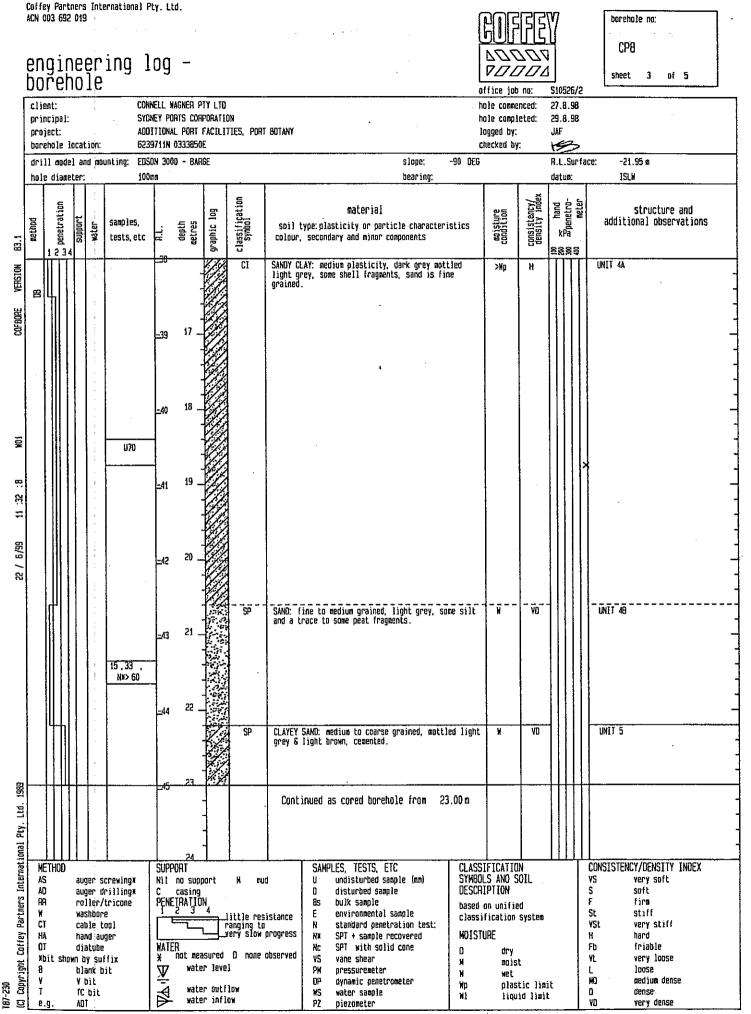
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	nole diamet		100i									aring:				datum		ISLN	
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COFBORE VEASION	8			-31	- - - - 9		PT CL	SILTY CL	_AY:]0)	w to mediv	ack, some a plasticit nd and a tr	y. light		W >Wp	H			UNIT 3A U70 8 8.7a - no recovery. UNIT 4A	-
11 :32 :7 K01			U70	-32				grey-gre	:еп, зы :S.	90 YIIL 90	Nu chù a ù:	are of an	511				×		
22 / 6/99			U70		12 13		SP -	SAND: f and a t	ine to race of	medium gra clay.	ined, light	grey, so	ne silt		- <u>H</u> O-			U70 @ 11.8m ~ no recovery - UNIT 4B	
td. 1989			6,8,1 Nx= 19 20,27, Nx> 50	- 	14 _ 15 _										- ~ <u>, </u>				
(C) Copyright Coffey Partners International Pty. Ltd. 1989	METHOD AS AO RA M CT HA OT Xbit short 8 V T E.g.	auger (roller/ washbor cable (hand au diatube	crewing* rilling* tricone e col ger ffix it	Nil C	not nei		D none 1 1ow	<u>l grained</u> Id	1.	PLES, TES undistur disturbe bulk sam environm standard SPT + sa SPT wit vane she pressure	ped sample d sample ple ental sampl penetratio aple recove h solid con ac meter penetromete mple	(mm) e n test: red e	CLASS SYMBO DESCR based	dry moi: wet pla:	SOIL ed system			UNIT 4A CONSISTENCY/DENSITY INDE YS very soft S soft F firm St stiff VSt very sliff H hard Fb friable VL very loose L loose NO medium dense D dense V0 very dense	x

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method	case-lift	vater	6 R.L.	depth setres	graphic log core loss	ro	ck type: our, str	grain	chara	cteris			veathering			t. ngth ≂≢æ	t I	oad est s (50) Pa	700 X	s	efec paci SA		ŀ	type, inclinat coating, thick unless otherwi general descri	ion pla ness se note	anarity, ed defec	raughnes	
			=39 =40 =41 =42 =44			1	inued					banded												UNIT 6				
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E # # #	DT AS AD RA VMLC), PO	auger auger rolle core (core)	e screwing drilling r/tricond drilling drilling g used		<u>₹</u>	water : water : none o not me rilling partia	inflow bserved sured Vater	1	0 - 0 A -	diametra axial HIC LDG core ((hat)	al	L055	-	ar	FR SN HM		-fresh -sligh -noder -highl	i itly iately	y		EL VL H H VH		extrepely low very low low medium high very high	J P S C I R		nt Ling Nar Ved Legular Igh	

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	cli pri pro bor	ncip ject)a]: ::	ication:		SYDNE Addit	LL WAGNER PTY LTD Y PORTS CORPORATION IONAL PORT FACILITIES, 1 11N 0333580E	PORT BOTANY	•				ho lo	le commenc le complet gged by: ecked by:				
				l and mo	ounting: enoth:	EDSON NHLC	1 3000 - GARGE - 3m	fluid: MUD			slope: bearing	-90 ::	DĘ	6	R.L.Surface: datum	-21.95 ISLW	D .	-
	_			inform			rock substance			,				rock mass	defects	· · · · · · · · · · · · · · · · · · ·		
C 2.1	method	case-lift	water	5R.L.	depth metres	graphic log core loss	substance descr rock type: grain cha colour, structure, mi	aracteristics inor components	veathering	Stı	ist. rength e = = = = =	point load test Is (50) WPa	ROD %	defect spacing ma	type, inclinat coating, thick unless otherwi general descri	ness se noted def	y, roughness,	
VERSION	NNLC			_40	1 1		SANDSTONE: medium to (light grey & light bru bedding, 0-20deg, occa 5mm.	coarse grained, banded own, distinct cross asional pebbles to	- SÑ			D A		June	LUNIT 6 JT 45deg PL SO of adjacent roc 50mm EW SM	3æm clay inf k broken.	ill with Some	
COFCORE				-47	25		§	inated at 24.65m				0:54 0.7						
					-		26a of 50mm diameter installed in BHCP8 wi nylon line & float at to top.	th'2m of tached										
				_49	26 _													-
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ccs Convoight Coffey Partners International Ptv. fd.	G	ener	raI	Defect	- 12 Descr:	iption:			<u> </u>			[_
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ev Dartner	M D A	S	UU		e screwing drilling	۲ -	ATER V water level Water inflow	A -axial	l -irri	egular	FR	THEAING -fresh	. 1	518 EL VL	ENGTH -extremely low -very low	DEFECT JT -jo PT -pa SM -se	int rting	
viaht Caff	R	R HLC		roller core d	/tricone rilling rilling		none observed not measured Orilling Water	GRAPHIC LOG/CORE			SW HW	-Slight -modera	stely	L M H	-lox -medium -hiqh	PL -p]; CV -cu IA -iri	anar rved regular	
(C) Convr		Ц		casing			 ↓ partiāl loss ↓ complete loss 	no core reco	vered		HM En	-highly -extrer		үн Ен	-very high -extremely high	RO -ro SO -sm SL -sl	ugh ooth ickensided	

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ACN 003	ineer ehole	inational Pty	· .	-			TDL o no: enced:	S10526/2 31.8.98	borehole no: CP9 sheet 1 of 3
princip project			PORTS CORPORATI		TANY	hole comp. logged by:		1.9.98 JAF	
	le location:	623958	ION 0333906E		slope:	checked b -90 DEG	ſ.	A.L.Surfa	ice: -21.25 m
hole di	·····	Incing: EUSUN 100mm	JUVU - BAHGE		bearing:			datuæ:	15LW
	benetration support vater	samples, tests, etc –	depth metres graphic log	class sy	naterial soil type:plasticity or particle charac olour, secondary and minor components	ÊĞ	consistency/ density index	100 hand 200 Appenetro- 400 meter	structure and additional observations
VERSION	T c	C		CH SI fi	LTY CLAY: high plasticity, dark grey—b) ne sand (SLUARY)	lack, some >Mp	٧S	*	UNIT 18
COFBORE VER	C	11,16,23 N≠ 39		SM SI	(LTY SAND: fine to medium grained, dark lay.		YD		- UNIT 2 - SPT at 1.00m - trace - recovery only - -
2/39 17 :15 :10 syd DB		9,24,36 N¥=60	2 2 2 2 2 2 2 2 2 2 2 2 2 2		NC: fine to medium grained, grey, some				
			-26 5 	CH C2	LAY: dark grey-black, some silt and occ DOmm thick bands of peaty clay.	asional >#p	H		UNIT 38 Possible sand lense 0.2m thick at 6.0m.
(c) Copyright Coffey Partners International Pty. Ltd. 1989 6 → ★ & 改 口 牙 13 ★ 35 含 子子 6 → ★ ★ ********************************	auger s auger o	U70 U70 friling* friling* tricone tricone tricone tricone fri	-28 7 -29 8 SUPPOAT til no support casing PENETRAJION 1 2 4 MATER * not measure * water len water out water out	flov	gress NX SPT + sample recovered NX SPT + sample recovered	MOISTURE D dry M moj W vet Vp pla	SOIL ied i system st	uit	CONSISTENCY/DENSITY INDEX VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose NO medium dense D dense VD very dense

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F	drill mode	l and mo	unting: EOS	IDN 300	0 - BAR			<u> </u>				lope: earing:	-90 DEG			R.L.S	urfaci	e: -21.25 m ISLW
	method penetration penetration	support water	iOC samples, tests, etc	 ;	depth metres	graphic log	classification Symbol	soil type colour, se	e: plast econdar	nater icity or y and mi	iəl	characteri	stics	moisture condition	consistency/ density index	A hand Benetro-	meter	structure and additional observatio
COFBORE VERSION B	8		1170	-30			<u>а</u> сн	CLAY: dark 200mm thick	grey-t t bands	olack, sn s of peat	nme silt ar ty clay.	ıd occasion	nal	< H p	Н		* *	UNIT 38
5 / 2 /99 17 :15 :15 S			U70 U70	-32 	11 12 13		а. 	SANDY CLAY shells and CLAY: high brown.						>мр - <мр -	H		**************************************	UNIT 4A
international Pty. Ltd. 1989	METHOD AD		screwing* drilling*	Ni) C	14 _ 15 _ PORT no sup casing			Continu	SAMPL U	ES, TES undisturbe	horehole TS, ETC bed sample d sample		3.50 m	H IFICATI LS AND IPTION				UNIT 5 CONSISTENCY/DENSITY IND VS very soft S soft
187-230 (C) Copyright Coffey Partners International Pty. Ltd. 1989	AD AR W CT HA DT Xbit shi 8 Y T e.g.		/tricone re taol uger e offix bit			₩ ₄	D none 2] flow	sistance progress abserved	es E N N× NC VS PM VS VS	bulk sam environm standard SPT + sa SPT wit vane she pressure	ple ental samp penetrati mple recov h solid co ar meter penetromet mple	on test: rered me	based	on unifi ification URE dry moi: wet pla:	ı system st	uit		St stiff St stiff VSt very stiff H hard Fb friable VL very Joose L Joose WD medium dense O dense VD very dense

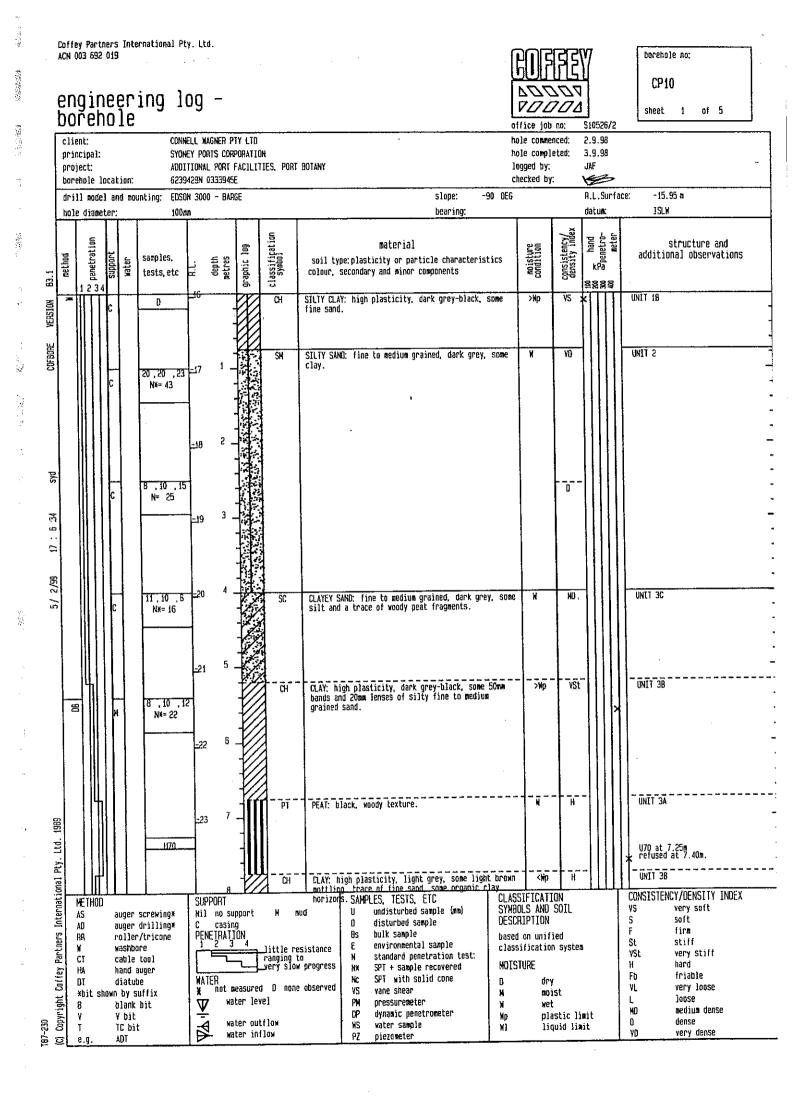
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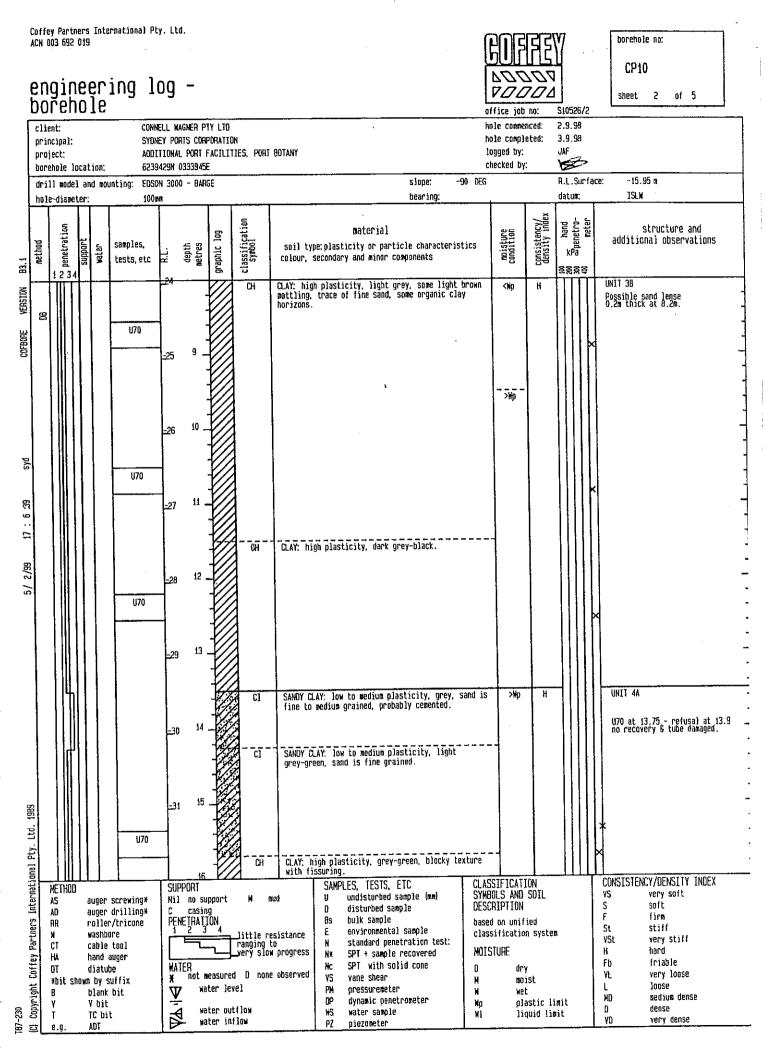
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(ene	jin red	eer bo	ning Sreb]0 0]e	g -						Ø		74	CP9 sheet 3 of 3
ſ	clie prin proje	it: ipal: ct:	ocation		CONNEL Sydney Additi	L WAGNER PTY LTD PORTS CORPORATION IONAL PORT FACILITIES, P ION 0333906E	ORT BOTANY	•		-		hold hold logi	ice job no e commence e complete ged by: cked by:	ed: 31.8.98	
	dri) barr	l model el type	l and m e and li	ounting: ength:		3000 - BARGE · 3m	fluid: MUD			lope: earing:	-90	DEG		R.L. Surface: datum: defects	~21.25 % ISLN
Ī	aethod	Ţ	inform	depth metres	graphić log core loss	rock substance substance descri rock type: grain cha colour, structure, mi	racteristics	veather ing	Es Stre		point load test Is (50)	R0D %	defect spacing mm	defec type, inclinatio coating, thickno unless otherwise	t description n planarity, roughness, ess e noied defects follow
VERSTON C2				-	ы Б			A	⊒≠₋∍	±≢ō	NPa	5	22828 2	general descrip	tion below
COFCORE VE	-		-3 0	- - 9			-								- - - -
			-31	- - 10											-
:40 :42 syd			-32	11											
5/2/99 14			-33	12 _											_
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ACN 003 692 019	NNLC		-35	14 _		Continued from non-f SANDSTONE: medium to grey, some grey bandi bedding @ 0~25deg.	coace orginad light	SH	······································		D A 6.18 0.3 D A 0.34 0.3	85 195		UNIT 5 Broken EW SM 301 JT 45deg IR RO 1 Same EM SM	
1989			-36	15 _	-	Borchole CP9 Term	linated at 14.85m							50mm EN SM JOmm broken SM	
			-37		- - -	18m of 50mm PVC insta on completion. 1.5m n float tied to top.	ylon line and								•
Internation	Ge	neral	Defec	16 t Descr	iption:	I		.1		1.1.1	1	<u> </u>	<u></u>		
-229 Copyright Coffey Partners International Pty. <u>Ltd.</u>	ME DT AS AC RP NM	LC 1, HO, PO	auger rolle core (be Screwing drilling drilling drilling	g 7 9 B e D X		POINT LOAD TEST D ~diametral 1 A -axial GRAPHIC LOG/CORE I Core recovere (hatching in material)		-	NEA Fr Sh Xh Hn	THEAING -fresh -sligh -modera -highl	ately	EL VL H H	ENGTH -extremely low -very low -Jow -medium -high	OEFECTS JT -joint PT -parting SM -seam PL -planar CV -curved IA -irregular R0 -rough
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ACN 003 592 019 borehole no: **CP10** engineering log -borehole 7*000*Δ sheet З of 5 office job no: \$10526/2 client: CONNELL WAGNER PTY LTD hole commenced: 2.9,98 SYDNEY PORTS CORPORATION 3.9.98 principal: hole completed; project: ADDITIONAL PORT FACILITIES, PORT BOTANY logged by: JAF checked by: borehole location: 6239429N 0333945E 1990 drill model and mounting: EDSON 3000 - SARGE slope: -90 DE6 R.L. Sunface: -15.95 m hole diameter: 100.88 bearing: datum: ISLW classification symbol consistency/ density index A hand Denetro-meter penetration structure and naterial moisture condition <u>[</u>] additional observations method samples, soil type:plasticity or particle characteristics graphic 1 netres depth water Supp colour, secondary and minor components tests, etc B3. <u>888</u>7 23 CLAY: high plasticity, grey-green, blocky texture with fissuring. CH >#n н VERSION 吕 COFBORE 17 -33 18 -34 57d 6 33 19 -35 ... ¢, 2/99 20 -36 2 21 Possible sand horizon im thick at 21.1m. -37 U70 at 21.45m - no recovery. 22 -38 23 -39 VD UNIT 5 CLAYEY SAND: medium to coarse grained, mottled light grey & light brown, cemented. 1989 М SC Ltd. Pty. Continued as cored borehole from 23.50 m International CONSISTENCY/DENSITY INDEX CLASSIFICATION SYMBOLS AND SOIL SAMPLES, TESTS, ETC SUPPORT METHOD ٧S very soft undisturbed sample (mm) ٨S auger screwing* Nil no support М ធរប 11 DESCRIPTION S soft disturbed sample AD auger drilling* ß casing F firm PENETRATION hulk sample Partners roller/tricone 8s based on unified RA St stiff environmental sample E classification system Ж washbore little resistance ranging to very slow progress standard penetration test: YSt very stiff ¢t cable tool N MOISTURE H hard SPT + sample recovered NX Caffey HA hand auger Fb friable SPT with solid cone WATER Nc ٥ĩ diatube D dry not measured O none observed ٧Ł very loose ٧S vane shear ¥ noist *bit shown by suffix И water level loose Copyright PM pressuremeter L \mathbf{V} B blank bit N vet medium dense NO DP dynamic penetrometer plastic limit γ ¥ bit Χр water outflow TB7-230 A R dense 115 water sample Т TC bit W1 liquid limit very dense ٧D water inflow ₽Z piezometer ADT Ξ e.g

	offey Geo CN 055 33		Pty. Ltc	i.	· '		• .	·						EY	borehole no: CP10	
{ (engi core	neer d bo	ing ren	lo ole	g —						[ice je	<u> 7</u> [74	CPIV sheet 4 of 5	
	client: principal project: borehole			SYDNEY ADDITI	L WAGNER PTY LTO PORTS CORPORATION ONAL PORT FACILITIES, P 9N 0333945E	ORT BOTANY	-				kol hol lag	e com e com ged og cked l	mence plete y:	d: 2.9.98	· · · · · · · · · · · · · · · · · · ·	
F	drill mod	el and mo	punting:	EOSON	3000 - 8AAGE				ope:	-90	DEG			R.L.Surface:	~15.95 m	-
	barrel ty drilling			NMLC -	3.0m rock substance	fluid: MUD		be	ar ing:		r	ack r	lass	datum: defects	ISLW	4
				8%	substance descri	ption			-	paint		defect	T	defec	t description	-
C4.	method case-lift vater	8.L.	depth metres	graphic log core loss	rock type: grain cha colour, structure, min	racteristics nor components	weather ing	Est Stren ಪ೯೨೫೫	gth	load test 1s (50) MPa	R00 %	spaci: MA 파일祭	1g	coaling, thickne	e noted defects follow	
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syd																
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8/2/39		-36	20													
		-37	21													
		_30	- - - - -													
		-39	- - - - - -													-
					Continued from non-	core borehole]
8	NMLC		24		SANDSTONE: medium to grey, some dark grey cross bedding at 0-25	coarse grained, light banding, distinct deg.	SW			0 A				UNIT 6 23,5-26,15m bed	ding partings	
td. 199	Genera 23.5-26	l Defeci 5.15¤ Bed	t Oescr ding Par	iotion: tings												
107-229 (C) Capyright Geosciences Ply. Ltd. 1998	METHOD DT	diatut			NTEA V water level		irr	egular	WEA FR	THERING -fresh			STRE	NGTH -extremely low	DEFECIS JI -joint PT -parting	_
Geoscier	AS AD AR	auger roller	screwing drilling /tricone		 water inflow none observed 	A -axial GRAPHIC LOG/CORE			SW	-sligh			¥L L	-very low -low	SM -seam PL -planar	
yright		core o O core o	irilling Irilling	¥	Orilling Water	core recovere (hatching in material)	d dicates		NN HN	-modera -highli	-		м Н	~øediu≊ ∽high	CV -curved IA -irregular 80 -rough	
TB7-229 (C) Cap	日	casing barre	g used 1 withdra		complete loss	no core recov	rered	·	EW	-extre			VH EH	-very high -extremely high	SO -smooth SL ~s)ickensided	

Printering Contraction (Contraction) **\$**,≤1, . . · · · · 1.12.22.21.1 11.1.1.50 E.1.2.50 -

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	client: principa project: borehole			SYONEY ADDITI	L WAGNER PTY LTO ' PORTS CORPORATION ONAL PORT FACILITIES, PC '9N 0333945E	DRT BOTANY	-			hole loggi	commence complete ed by: ked by:		· · · · · · · · · · · · · · · · · · ·	
		ode) and m	-		3000 - BARGE	fluid: NUD		slo	pe: -90 ring:) OEG		R.L.Surface: datum:	-15.95 m ISLM	
		type and 3 ng inform		NMLC -	rock substance	11010. ADD		UEG	: 119.	ro	ck mass		131.1	
C4.	method case-11ft	water R.L.	depth metres	graphic log core loss	substance descrip rock type: grain char colour, structure, min	acteristics	weather ing	Est. Streng	th test Is (50		efect pacing m 金房邕景	type, inclination coating, thickn	t description on planarity, roughness, ess e noted defects follow tion below	
COFCORE VERSION	NHTC	_40 _41 _41	25 26		SANDSTONE: medium to cc grey, some dark grey b cross bedding at 0-25de SANDSTONE: medium to cc light brown & light gr light red-brown & ligh		SM MW		D	A 1.06 85		UNIT 6 UNIT 6	nfilled trace EW SM	
byz (5 34 24		-43	27		Borehole CP10 Tern 27m of 50mm PVC placed with 2m fishing line S	ninated at 26.15 in BHCP10 float on top.	Þ							
8/2/38		-44	- 28											-
		±45	29 _ -											
		= 46	30											-
		-47	3i _											- - - -
0009	20,00	ral Defec -26.15m Bei	t Descr	iotion:						L	<u>. [</u>	l		
tt Prossinger Ote 144	AD AD AD AD AD AD AD	00 diatu auger auger rolle core	be • screwin • drillin •r/tricon drilling	g F g E g D	not aeasured	POINT LOAD TEST D -diametral A -axial GRAPHIC LOG/CORE Core recove (natching			Swi -sl	ING esh ightly iderately	EL VL L M	NGTH -extremely low -very low -low -medium	DEFECTS JT -joint PT -parting SM ~seam PL -planar CV -curved IR -irregular	
107-229	ĨШ		driffing ng used e) withdr	-	Orilling Water	no core rec				igh]y ctremely	н Ун Ен	-high -very high -extremely high	RD -rough SD -smooth SL -slickensided	

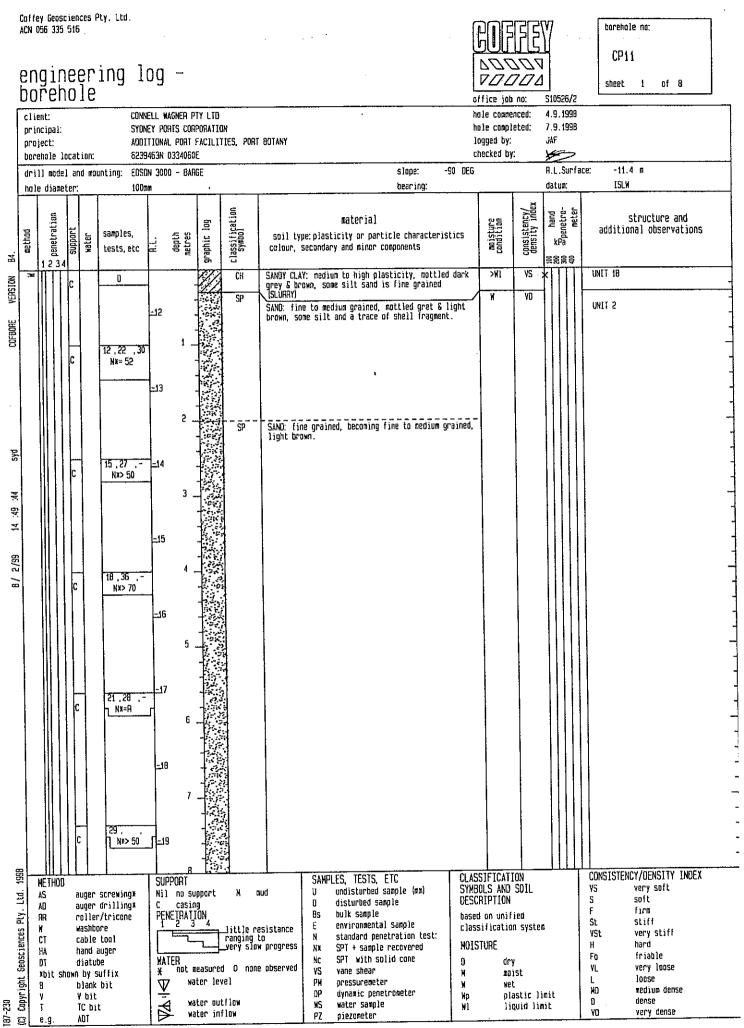
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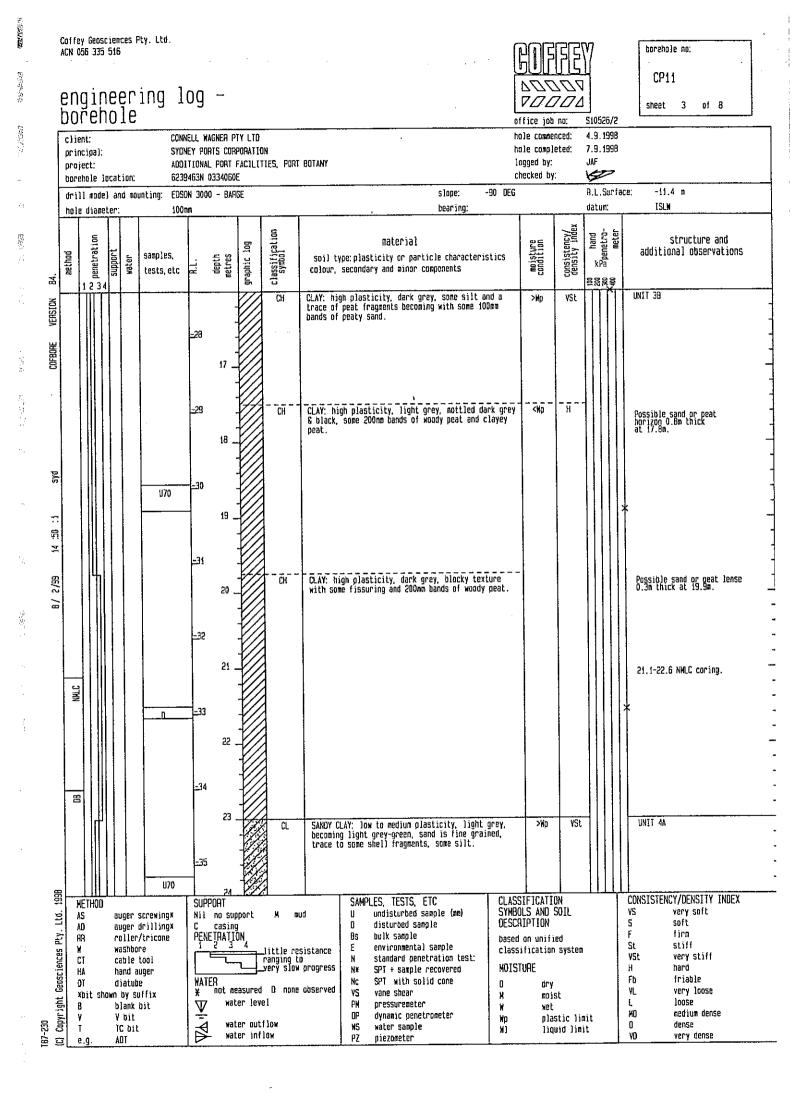
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	borel	ole l	ocati 1 and	ın: 6	239463N	0334060E 10 ~ Barg		-	<u> </u>				slope:		checked b	y:	R.L.Si		-11.4	ជា	
+	hole	diam	eter:	<u>i</u>)Omme		T		1				bearing:		T		datum:		<u>isl</u> k		
B4.	method	c penetration		samples, settests, etc	В.L.	depth metres	graphic log	classification symbol	50il colour	type:pla , secon	asticity	erial or partic: minor comp	ie characte Ionents	ristics	moisture condition	consistency/ density index	100 hand 200 A hand 300 Appenetro-			ructure and 1 observatio	INS
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COFBORE VER			c	15.36, N×>70	-20	9		Şp	SAÑO: f trace o peat.	ine to	medium g fragnen	rained, lı ts, becomi	ht grey-br ng with tra	'O¥N, ICES Of	¥	VO			IT 3C		
/ 2/99 14 :49 53 syd			c	19.42. Nx>60	22	- - - - - - - - - - - - - - - - - - -		- <u>5</u> 2	SAND: trace (fine to of cemer	medium g nted nodu	rained, gr les to 10m	ey, some si n size,	ilt and a							
/8			C	47		- - - - - -		- <u>c</u> h	CLAY: 1	high pla	asticity,	dark grey	, some sili	t and a		- vst		- _{EN}			
	88		M	6 ,B , N×= 18	10 26 27	14 - 15 -			trace to bands to	of peat	fragment y sand.	s becoming	, some sil	100mm			×				
Copyright Geosciences Pty. Ltd. 1998	AS AD RA V CT HA DT	III THOD	auge roll wash cabl hand diat wn by	e tool auger ube suffix k bit	1 с	no suppo casing TRATION 2 3 	4 		sistance progress observed	U D Bs	undist distur: bulk s enviro standa SPT + SPT w vane s pressu	nmental sa rd penetra sample rec ith solid	nple tion test: overed coné	SYMBO DESCR based	dry mais wet	50IL ed system st	<u></u>	L CONS VS S F St VSt H Fb VL L H0	ver sof sti ver har fri ver loo	m ff y stiff d able y loose	X

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	incipal: SYDNEY PORTS CORPORATION oject: ADDITIONAL PORT FACILITIES, PORT BOTANY rehole location: 6239463N 0334060E ill model and mounting: EDSON 3000 - BARGE de diameter: 100mm	ngineer prehole	
auger screwingk auger	ADDITIONAL PORT FACILITIES, PORT BOTANY location: 6239463N 0334060E el and mounting: EDSON 3000 - BARGE	neer nolt	
-36 25 -37 26 -37 26 -37 26 -38 -39 -39 -39 -39 -40 -41 -41 -41 -41 -41 -41 -41 -41	ADDITIONAL PORT FACILITIES, PORT BOTANY on: 6239463N 0334060E mounting: EDSON 3000 - 0ARGE) [[scienc 5 516
CL -36 25 -37 26 -37 26 -37 26 -38 -38 -38 -38 -38 -38 -38 -38	ADDITIONAL PORT FACILITIES, PORT BOTANY 6239463N 0334060E nting: EDSDN 3000 - BARGE	י י כ	es Pl
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ud si e p	BOTANY		
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VSt VSt H ON SOIL ed system	:	7 <i>27</i> <u>4</u> no: nced:	FE
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Difference Difference <td>METHOD AS AD RR HA DT XDIL Sho B Y</td> <td></td> <td></td> <td>ject: ehole lo 11 model e diamet</td> <td>ent:</td> <td>056 335 !</td>	METHOD AS AD RR HA DT XDIL Sho B Y			ject: ehole lo 11 model e diamet	ent:	056 335 !
ing log - Image: Superior S	auger roller washbo cable hand a diatut wn by s blank		support kater	and mo	JIE	516
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Image: Subsection of the point of the po	ed sample (mi sample le ntal sample penetration ple recovere solid cone r meter enetrometer	Y, fissured minor silty	particle char or component:			
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CP11 Sheet 5 of 8 fice job no: S10526/2 ie comenced: 4.9.1999 ie comenced: 7.9.1998 gged by: JAF R.L.Surface: -11.4 s datux: ISUM Bigged by: JAF Bigged by: JAF RL.Surface: -11.4 s datux: ISUM Bigged by: Bigged by: Jage by: Bigged by: RL.Surface: -11.4 s additional observations Bigged by: Bigged by: Jage by: Bigged by: Statistical additional observations Bigged by: Bigged by: Statistical additional observations Bigged by: Bigged by: Jage by: Bigged by: Bigged by: Bigged by: Statistical additional observations Bigged by: Jage by: Bigged by:	SYMBO DESCR based class MOIST O M W	locky nd and		lo ch 10 DEG	ho	
DN CP11 S10526/2 Incect 4.9.1938 eted 7.9.1939 JAF R.L.Surface: -11.4 m datum: ISUM View Structure and additional observations STATE KP3 SERER UNIT 4A H UNIT 4A Possible sand horizon 0.8m thick at 34.6m. SOIL YS VS very soft Soil Staff ND Bedius dense	NLS AND ON UNIF: ification NURE dry moi wet	< N p		ogged by:	le comme	
CP11 sheet 5 of 8 S10526/2 4.9.1938 7.9.1939 JAF R.L.Surface: -11.4 m datum: ISUM E 5 5 5 KP3 B Structure and additional observations SRRS UNIT 4A Possible sand horizon 0.8m thick at 34.6m. CONSISTENCY/DENSITY INDEX VS very soft S soft F fim St stiff VS very soft S soft	SOIL ied isyster st			<u>// ~</u>	nced:	
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CP11 sheet 5 of 8 			- 1	surfac n:	1998	
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dri		el and			000 - BAI						s)ope: bearin	-90 D g:		<u> </u>		Surfac	e: -11. ISLN	.4 m i	
method	to penetration		samples E tests, e	11	depth metres	graphic log	classification Symbol	soil t colour,	ype: plast secondar	materia cicity or p y and mino	l article char r components	acteristics	moisture condition	consistency/ density index	100 yand		additio	structure inal obser	and vations
B/ 2/39 14 :00 21 5y0 unounce versuon			 U70	-53 -51 -51 -51 -51 -51 -51 -51 -51 -51 -51	41 - 3 42 - 4 43 - 5 44 - 6 45 7 46 18 47		CH - CH	to mediu	m graine	d.	plasticity ight brown, led grey 6 b		e >Wp	н		X	UNIT 4A		
it Geosciences Pty. Ltd.	METHOD AS AD RR X CT HA QT Xbit sh B	auga auga roll wash cabl hanc dial own by blar	r screwing) or drilling) er/tricone bore e tool l auger sube suffix sk bit tt	Ni C PE			little re ranging t very slow D none	ud sistance progress observed	u Bis E N NX NX VS PM	disturbed s bulk sample environmen standard p	i sample (mm) sample tal sample enetration to le recovered solid cone ter	SY DE bas cli	We	SOIL ied in system y ist			S F St	CY/DENSITY very soft soft firm stiff very stiff hard friable very loose loose medium dens	

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	dri		dela	ind m	ounting		00E NC								slope: bearing:	-90 DEC		<u>, </u>		.Surfa	nce: -i1.4 m ISLW	
B4.	method	C Denetration	supaprt		samp] tests	185,	R.L.	depth metres	graphic log	classification symbol	soil colour,	type: pli , secon	asticity	erial or partic minor comp	le characti	eristics	maisture condition	consistency/ density index	bner _K	306 adjenetro-	structure and additional observations	3
COFBORE VERSION	8				U	70	-60	49 _		СН	CLAY; h	igh pla	sticity,	mottled g	rey & brow	1.	>¥p	H			URIT 4A	
syd							-61	50 _						•								
2/99 14 50 25							<u>-</u> 62	51 _														
8/		[-		16 4	53 _		SC	CLAYEY grey & cemente	light b	edium to Irown, tri	coarse gr ace of ang	ained, mot ular grave	tled light 1,	: M	YD .			UNIT 5	
							=65 =66 =57	54 _ 55 _			Çont.	inued a	IS COFED	boreho]:	e from	53.25 m						
T07-230 (C) Copyright Geosciences Pty Ltd. 1998	AS AD AR V CT HA DJ XD S S V T	it st	au au ro wa ca ba ba ba y	iger iller ble nd a atub by su ank bit bit	taol uger e uffix bit	gx		no sup casing TRATIO 2 3 R not mean wate wate		little re ranging t very slow D none 1 Jow	wd esistance a progress e observed	SAME U D 85 E N NC VS PM OP WS PZ	undistu disturb bulk sa environ standar SPT + s SPT wi vane sh pressur	mental san d penetrat ample reco th solid o ear emeter penetrond ample	le (mm) mple tion test: overed cone	SYMB DESC based	dry moi: wet pla:	SOIL ed i system st			CONSISTENCY/DENSITY INDEX VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MO medium dense O dense VD very dense	

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	cli pri pro	ent: ncip ject	nal: ::	cation		CONNEL Syoney Additi	L WAGNER PTY LID Y PORTS CORPORATION Ional Port Facilities, P 53N 0334060E	ORT BOTANY	<u> </u>				ha ho lo	le co	nmenci npleti by:	ed: 4.9.1998	
				and m and lo	conting:		3000 - BARGE - 3.0m	flvid: NUO		S10	pe: ming:	~90	OE	G		R.L.Surface: datum:	−11.40 π ISL¥
				inform		niniti -	rock substance	11010. 400		000	n mið			rock	mass	defects	13Cn
C4.	method	case-lift	water	н.	depth metres	graphic log core loss	substance descri rock type: grain chan colour, structure, min	racteristics	weathering	Est Streng	yth	point load test Is (50) MPa	R00 X	defe spac ක්කි		type, inclinat coating, thick	ect description tion planarity, roughness, kness ise noted defects follow iption below
2/39 14 ;49 ;10 syd cofcore version				-50 -51 -52													
8/				-64	- - - 53		Continued from non-c	ore borehole									- - - -
	NHLE			-65 -65	54		NO CORE: 0.3m SANOSTONE: medium to c S mottled light brown 0-20deg cross bedding.	coarse grained, bande & light grey,	שא b			0 A 0.14 0.17 0 A 0.38 0.26	30			UNIT 6 PT with inm c JT 30deg PL AC JT 60deg PL AC 54.25-54.63m E 30mm EM SM	
				=67	55		Borehole CP11 Ter On Completion of CP11 57m of 50mm dia. PVC (borehole with 2m nylor (and float) on top.	minated at 54.7 placed in n line	5m								- - - - - - - - - - - -
n 1999		enei	ral	Defect	l <u>56</u> : Descri	ption:	J		<u>l</u> .	1.4.1.1.1	• •	L	1		• : •	<u> </u>	
u ees Mi faavrinht Generioaroe Dtv tr		s O A MLC		auger roller core d core d casing	screwing drilling /tricone lrilling lrilling		water inflow none observed	POINT LOAD TEST D -diametral A -axial GRAPHIC LDG/CORE (hatching material) no core rec	ered indicates	igu lar	WEA Fr Sw MW HW EW	THERING -fresh -slight -modera -highly -extrem	tely		STR EL VL L N H VH EH	ENGTH -extremely low -very low -low -medium -high -very high -extremely high	DEFECTS JT -joint PT -parting SM -seam PL -planar CY -curved IA -irregular RO -rough SD -smooth SL -slickensided

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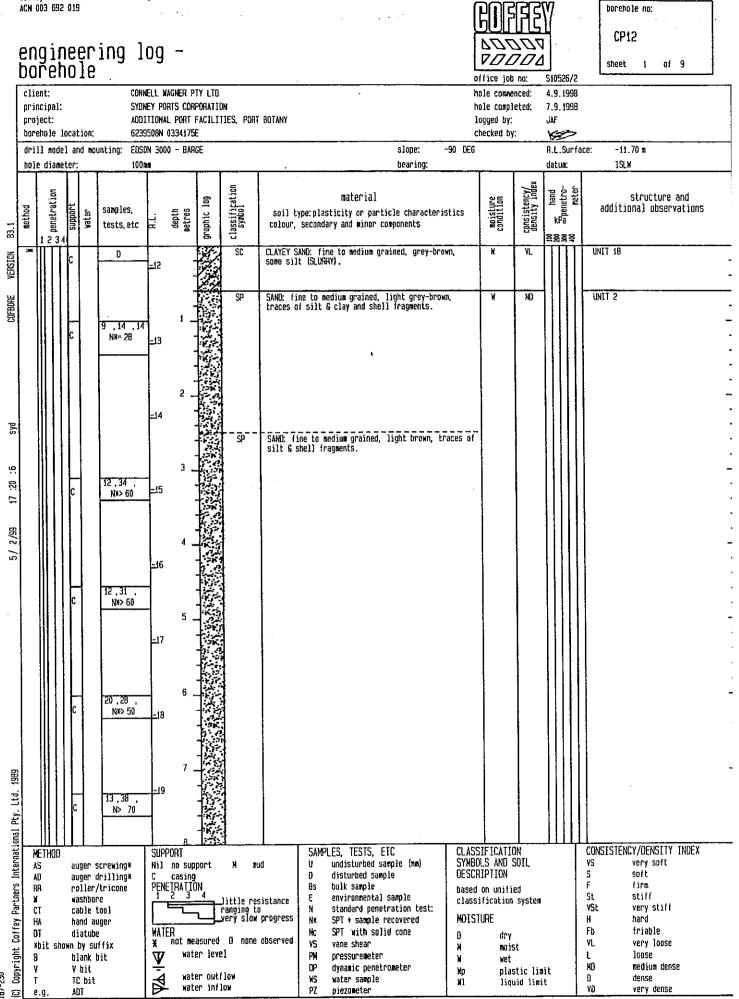
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ACN 003 6 engi bore client: principa	ne(Internatio Pring le	CONNEL SYDNET	I WAGNER S	RPORATIO				· .			office join hole comme	no: enced: leted:	S10526/ 4.9.199 7.9.199	38	borehole no: CP12 sheet 2 of 9
project: borehole			623950	EDNAL PORT DBN 033417	5E	125, PUR	DUTANT					logged by: checked by		JAF E		
hole dia		d mounting:	100mm		HGE					slope: bearing;	-90 DE	u 		R.L.Sur datum:	'face:	: -11.70 m ISLN .
method T Denetration		samp] Se tests		depth metres	graphic log	classification symbol			materia asticity or pa dary and minor	article characte	ristics	moisture condition	consistency/ density index	tion the second se		structure and additional observations
		17 .32 	90	20 9 _ 21 10 _ 22		SP	SAND: fi	ine to i	medium graine agments.	d, light brown,	traces of	Ŵ				UNIT 2
		41. 1 №		23 12 . 24 13 . 225		5Р	peaty si	and. ine to	necium oraine	grained, dark bu d, brown, becom trace of peat.		e M 	νŋ			UNIT 3C
METHOD ME	aug aug	46. N*> er screwing er drilling		14 , -26 15 . -27 50PPORT 111 no sup 2 NETRATI(2 2 3 1 2 3 3		H mi	d	U D	PLES, TESTS, undisturbed disturbed	sample (mm) ample	SYME	SIFICATIO OLS AND S RIPTION	SOIL		VS S	saft
canner RA N CT HA DT Xbit SI B V T e.g.	was cab han dia hown by bla V b	bit	, i	ATER not me V Mat	1	low	pragress	BS E N Nx VS PM DP WS PZ	bulk sample environment: standard per SPT + sample SPT with si vane shear pressuremet dynamic pen water sampl piezometer	al sample netration test: e recovered olid cone er etrometer	clas		system		F St VS H FD VL L HD D VD	it very stiff hard friable very loose loose medium dense dense

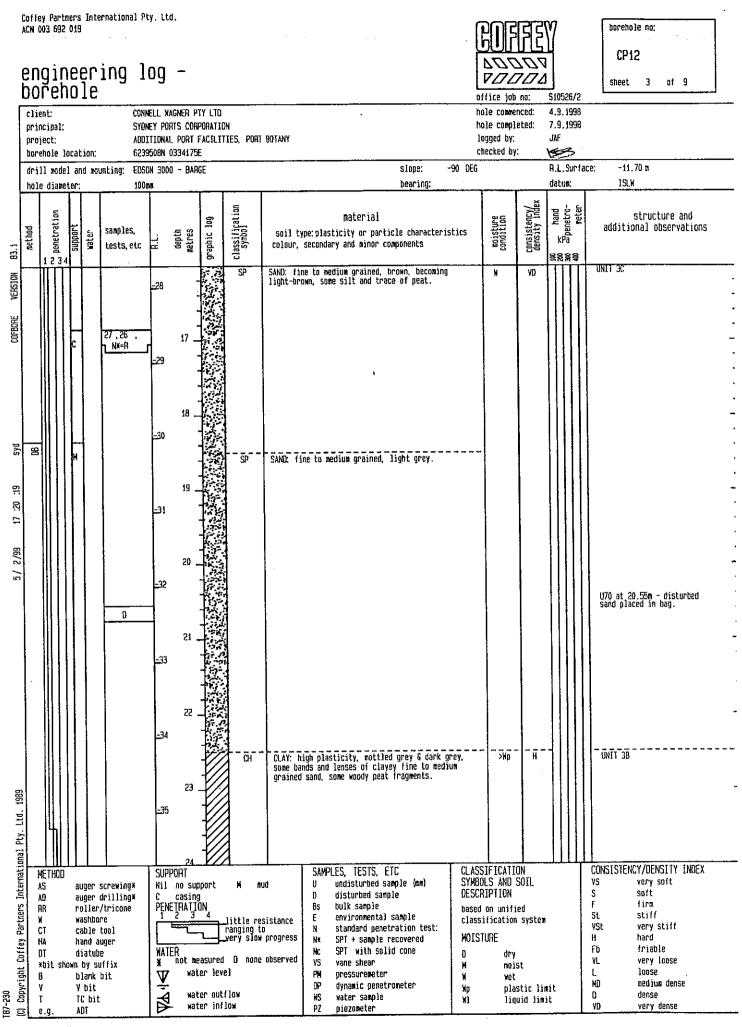
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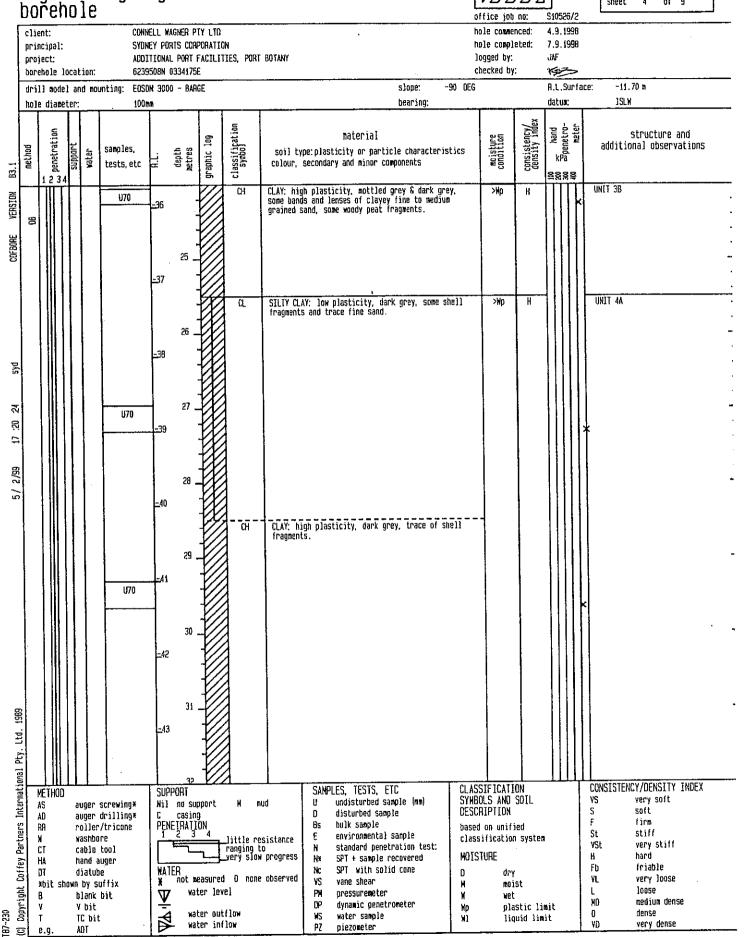
engineering log -borehole

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borehole no: CP12

sheet 4 of 9



P7

piezometer

Coffey Partners International Pty. Ltd.

ACN 003 692 019 borehole no: CP12 engineering log -borehole VDDDA sheet 5 ef 9 office job no: \$10526/2 client: CONNELL WAGNER PTY LTD hale commenced: 4.9.1998 principal: SYDNEY PORTS CORPORATION hole completed: 7.9.1998 project: ADDITIONAL PORT FACILITIES, PORT BOTANY logged by: λAF 6239508N 0334175E checked by: borehole location: 1500 drill model and mounting: EDSDN 3000 - BARGE -90 DEG A.L.Surface: -11.70 m slope: hole diameter: 100mm bearing: datum: ISLN consistency/ density index classification symbol Spenetro-meter penetration structure and material moisture condition គ្ន hod additional observations samples, Water depth metres soil type:plasticity or particle characteristics graphic 1 2000 H 별 tests, etc colour, secondary and minor components 83. <u>8883</u> 23 CLAY: high plasticity, dark grey, trace of shell fragments. UNIT 4A CH УШр Н VERSION -44 贸 COFBORE 33 45 ٦ -46 syd 35 Ę, SAND: fine to medium grained, light grey, mottled grey & dark grey, traces of silt, clay and peat. UNIT 4B SP VD Y 컶 =47 U70 -2/99 36 5 -48 37.00-38.50m probable cemented zone. 37 -49 38 -50 -Possible clay or clayey sand horizon 0.5m thick at 30.5m. 39 1989 -51 5 International Pty. CLASSIFICATION SYMBOLS AND SOIL DESCRIPTION SAMPLES, TESTS, ETC CONSISTENCY/DENSITY INDEX SUPPORT METHOD ٧S very soft AS auger screwing* Nil no support H mud ш undisturbed sample (mm) soft disturbed sample S auger drilling* п AD casing PENETRATION F firm RA roller/tricone Bs bułk sample Partners based on unified stiff environmental sample St washbore Ε X little resistance ranging to very slow progress classification system standard penetration test: ¥St very stiff CT cable tool N Cotfey F MOISTURE Н hard NX SPT + sample recovered HA hand auger friable ۶h WATER SPT with solid cone DT diatube Hc. Π dry not measured 8 none observed very loose ¥S vane shear ¥L, *bit shown by suffix moist М ight water level pressuremeter L lanse

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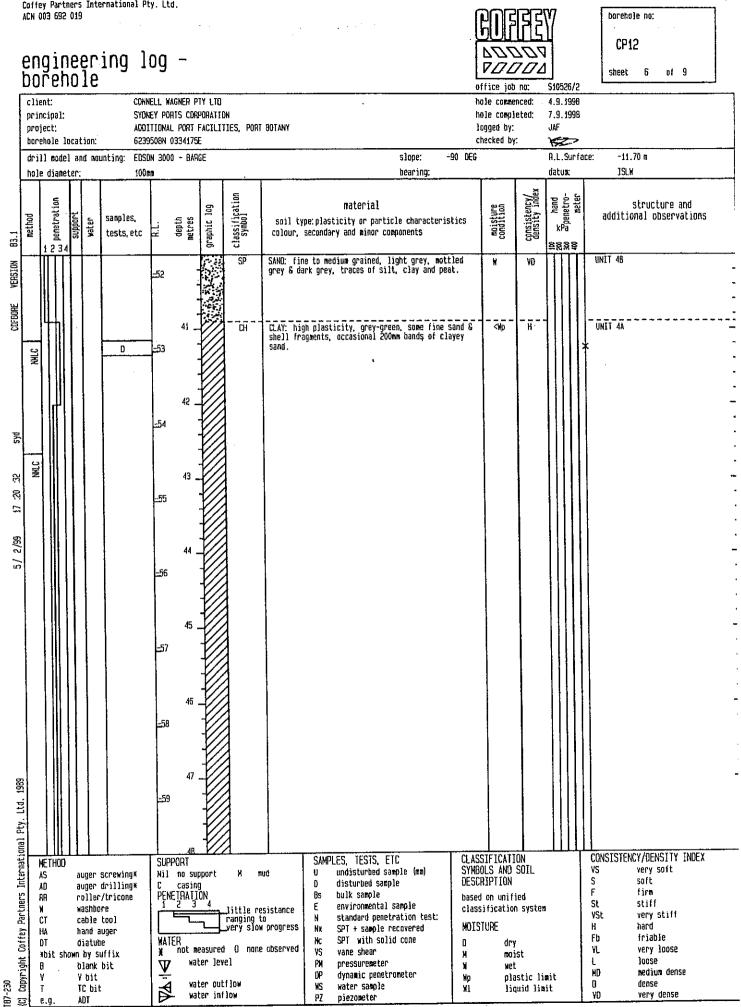
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Coffey Partners International Pty. Ltd. ACN 003 692 019



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Coffey Partners International Pty. Ltd. ACH 003 692 019 borehale no: CP12 engineering log -borehole 70000 sheet 7 of 9 office job no: S10526/2 client: 4.9.1998 CONNELL WAGNER PTY LTD hole commenced: SYDNEY PORTS CORPORATION 7.9.1998 principal: hole completed: project: ADDITIONAL PORT FACILITIES, PORT BOTANY logged by: JAF checked by: 6239508N 0334175E borehole location: 1500 -90 DEG -11.70 m R.L.Sunface: drill model and mounting: EDSON 3000 - BARGE slope: 100mm **ISL**¥ hole diameter: bearing: datus: classification symbol consistency/ density index Zpenetro-Denetropenetration structure and naterial moisture condition g additional observations method samples, depth metres soil type:plasticity or particle characteristics water graphic Supp tests, etc colour, secondary and minor components Ŕ 8273 23 CLAY: high plasticity, grey-green, some fine sand & shell fragments, occasional 200mm bands of clayey sand. UNET 4A CH <#p H VERSION -60 COFBORE U70 @ 49.25m - no recovery. Δq -61 1170 50 -62 syd 51 究 ខ្ល -63 -2/99 52 2 -64 53 -65 54 ้งี่กั **UNIT 4B** SP-PT SANDY PEAT: fine to medium grained, dark brown-black, some bands of woody peat. ñ. 54.25-59.15m NMLC coring. NHLC -66 55 6861 -67 Ltd. Pty. International 56 CLASSIFICATION SYMBOLS AND SOIL DESCRIPTION CONSISTENCY/DENSITY INDEX SAMPLES, TESTS, ETC SUPPORT METHOD ٧S undisturbed sample (mm) very soft Å5 auger screwing* Nil no support X mud IJ soft S C casing PENETRATION disturbed sample AÐ auger drilling* Ω F firm Partners roller/tricone Bs bulk sample RR based on unified St stiff Ę environmental sample X washbore _little resistance ranging to _very slow progress classification system VSŁ very stiff standard penetration test: ÇT cable tool N MOISTURE hard SPT + sample recovered Н ЯX Coffey HÁ hand auger F٥ friable SPT with solid come djatube WATER NC OT n dry not measured D none observed very loose ٧L ٧S vane shear Noit shown by suffix moist м water level Copyright laose \mathbf{V} PM pressuremeter Т blank bit X 8 wet ĸÐ nedius dense ΟP dynamic penetrometer plastic limit V hit ٧ Χр water outflow R riense ₽₽ water sample B TC bit WS Ŧ ¥1 liquid limit water inflow very dense ٧D piezometer ΡZ ADT 0 e.g.

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Coffey Partners International Pty. Ltd.

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	proj	cipal:			SYON Addi	IEY PO ITIDNA	AGNER P RTS COR L Port 1 0334175	PORATIO FACILIT	n Ies, port	BOTANY			-			h h }	ole comme ole compl ogged by: hecked by	enced: leted:	4.9. 7.9. JAF	1998 1998					
		l mode diame		nount	ing: EDSC 100a		0 - BAR	GE						slope: bearin		0 DEG			R.L.S datu	Surfa	ice: -11 ISL	.70 m		<u> </u>	1
B3.1	method	5 2 penetration	support	2	imples, ests, etc	R.L.	depth metres	graphic log	classification synbol			asticit		ticle char components	acteris	ics	moisture condition	consistency/ density index	1	e pelleuru		struct	ure and servations		
VEASION					_,	-58			SP-PT					ained, dar ody peat.			H	YD		T	UNIT 4B				
5 / 2 /99 17 :20 :38 syd	60			5), N=₽	=69 =70 =71 -73	57 50 50 59 60 61		SC		SAND: f		L	tt led lig	nt grey i	5	W	YD			UNIT 48			-	
187-230 Mcl Convnicht Cnffev Partners International Ptv. Ltd. 5989) L f bit shi	auge rol) wast cab) hanc diat	r dri) er/tr: bore e tool auger ube suffi k bit t		C	no sup casing TRATIC 2 3		M mu iitt]e re: anging tu ery slow D none j]aw	Cont	SAM U Bs E N N Nr	PLES, undis dist bulk envii stan SPT SPT vane pres dyna wate	TESTS, sturbed surbed sau sample ronmental dard gene	ample (mm mple I sample etration t recovered lid cone) est:	SYMBO DESCR based	IFICATI LS AND IPTION on unifi ification URE dry moi: wet pla:	DN SOIL ed system	ait			ICY/DENS very so soft firm stiff very st hard friable very lo loose medium dense very de	iff ose dense		

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Coffey Partners	International	Pty.	Ltd.
ACN 003 692 019			

engineering log -cored borehole client: CONNELL WAGNER PTY LTD

depth metres

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60

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SYDNEY PORTS CORPORATION

6239508N 0334175E

EDSON 3000 - BARGE

NMLC 3.0m

graphic core lo

ADDITIONAL PORT FACILITIES, PORT BOTANY

rock substance

substance description

rock type: grain characteristics

colour, structure, minor components

Continued from non-core borehole

On completion ~ 66m of 50mm diameter P.Y.C placed ip borehole with 2m of fishing line and float on top.

Borehole CP12

SANDSTONE: fine to medium grained, light grey, indistinct cross bedding @ 0-30deg.

Terminated at

fluid: MUD

	·						borehol sheet)12 ₀₁	-	
			0	ffice job no	S10526/	2					
•			h 1	ole commence ole complete ogged by: hecked by:							
	slope:	90	D	EG	A.L.Sur	face:	-11.70	ħ			
	bear ing				datum		ISLW				
				rock mass	defects						 _
veathering	Est. Strength	point load test Is (50) MPa	R00 X	defect spacing ma	coating unless o	clinati thickn therwis	t descri on planar iess ie noted d ition belo	ity, I lefects	roughi	•	

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UNIT 6

EN SM 65mm thick

63.70-63.80m EX SH

_High strength SH <10mm thick with PT _each side

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_PT

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Pty. Ltd.				<i>±7</i> 5		
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International	Ge	nei	ral I)efect	Descri	iption:

E WETHOD DT diatube AS auge screwing	WATER Water level	POINT LOAD TEST D -diametra] I -irregular	WEATHERING F8 -fresh	STRENGTH EL -extremely low	DEFECTS JT -joint
AS auger screwing AD auger drilling AD auger drilling AR roller/tricone HMLC core drilling NO, HO, PD core drilling CO Core drilling CO Core drilling CO CO Core drilling CO CO Core drilling CO CO Core drilling CO CO Core drilling CO CO Core drilling CO CO CORE CORE CORE CO CO CORE CORE CORE CORE CO CO CORE CORE CORE CORE CORE CORE CORE	water inflow none observed not measured Drilling Mater partial loss Gomplete loss	A -axial GRAPHIC LOG/CORE LOSS core recovered thatching indicates material) no core recovered	FM -nest SM -slightly HN -moderately HN -highly EM -extremely	EL -Extremely low VL -very low M -medium H -high VH -very high EH -extremely high	PT -parting SN -seam PL -planar CV -curved IR -irregular RO -rough SO -smooth SL -slickensided

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VERSION

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NHLC

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case-1 water

borehole location: drill model and mounting:

barrel type and length:

drilling information

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International Pry. Ltd. International Pry. Ltd. Indig accept ing International Pry. Ltd. International Pry. Ltd. Other All Pry. Ltd. International Pry. Ltd. Other All Pry. Ltd. International Pry. Ltd. Other All Pry. Ltd. International Pry. Ltd. Other All Pry. Ltd. International Pry. Ltd. Other All Pry. Ltd. International Pry. Ltd. Other All Pry. Ltd. International Pry. Ltd. Other All Pry. Ltd. International Pry. Ltd. Other All Pry. Ltd. International Pry. Ltd. Other All Pry. Ltd. International Pry. Ltd. Other All Pry. Ltd. International Pry. Ltd. Other All Pry. Ltd. International Pry. Ltd. Other All Pry. Ltd. International Pry. Ltd. Other All Pry. Ltd. International Pry. Ltd. International Pry. Ltd. International Pry. Ltd. International Pry. Ltd. International Pry. Ltd. International Pry. Ltd. International Pry. Ltd. International Pry. Ltd. International Pry. Ltd. International Pry. Ltd. International Pry. Ltd. International Pry. Ltd. International Pry. Ltd. <t< th=""><th>Partners International Pty. Ltd. 1989 5/ 2/99</th><th>10 :58 :10 syd COFBORE VE</th><th>VERSION B3.1</th><th>-</th><th>ľ</th><th>e</th><th></th></t<>	Partners International Pty. Ltd. 1989 5/ 2/99	10 :58 :10 syd COFBORE VE	VERSION B3.1	-	ľ	e		
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рі	roject: ADI	DNEY PORTS CORPORATION DITIONAL PORT FACILITIES, PORT BOTANY 40590N 0333879E		logged by:	28.9.98 IAF	
di	ril] model and mounting: ED	SON 3000 - BARGE	•	DEG F	R.L.Sunface:	-6.05 m
83. 5 method	Ion		bearing: material type:plasticity or particle characteristic r, secondary and minor components		annarg epenetro- neter neter	ISLN structure and additional observations
- I	1234		fine to medium grained, light brown & brown of silt and shell fragments.		1111 1111	
COFBORE VERSION	← (N×= 80 C 44 , , , N×> 80		fine to medium grained, light brown, trace			
2/99 10 :58 :14 syd	с <u>20,35</u> Nж> 70					
21	с <u>З</u> 7 с <u>І</u> мк-А	SP SAND:	fine to medium grained, light grey-brown.			
.d. 1989	C 41,					
offey Partners Inter	METHOD AS auger screwing* AD auger drilling* RR roller/tricone W washbore CT cable tool HA hand auger DJ diatube *bit shown by suffix B blank bit V bit	22 16 SUPPORT Nil no support M mud C casing PENETRATION 1 2 3 4 Ittle resistance ranging to very slow progres WATER not measured D none observer water level	U undisturbed sample (mm) S D disturbed sample D 9s bulk sample E environmental sample c N standard penetration test: N SPT + sample recovered M Nc SPT with salid come	4 moist 4 wet	COX VS S F St VSt H F V V L L WD	VSISTENCY/DENSITY INDEX very soft firm stiff very stiff hard friable very loose loose medium dense

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2/99			6		22 , 38 , N¥> 70	26	20 _											
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- nont	Har Crers		r I		/tricone pre		VE TRATI	ON	little re ranging t very slow	sistance	Bs bulk sample E environmental sample N standard penetration test:		on unifi fication		D		F St VSt	firm stiff very stiff

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bore	hole locat: 1 model ani		6240	248N	03339916 0 - BAR				slope:		checked by		R.L.Surfaci	e: -2.95 m
	diameter:		100m		•				bearing:		1	~	datum:	ISLW
nethod	5 penetration 8 support	2	samples. tests, etc	R.L.	depth metres	graphic log	classification symbol	soil type:plastic	material ity or particle character and minor components	istics	maisture condition	consistency/ density index	500 band 2000 banetro- 400 metero-	structure and additional observations
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CONNELL MAGNER PTY LTD SYONEY PORT CORPORATION ADDITIONAL PORT FACILITIES, PORT BOTANY 6240248N 0333991E nunting: EDSDN 3000 - BARGE 100mm samples, tests, etc = 9 m material soil type: plasticity or partic colour, secondary and minor colour, secondary and minor colour, secondary and minor colour, silt.	Ding log - office job no: CP14 STAREY PORT COMPORTION hole commenced: 28.8.98 MODIFICE TORMAL MARKER PTY LTD hole commenced: 28.8.98 STAREY PORT COMPORTION hole commenced: 28.8.98 MODIFICE TORMAL PORT FACILITIES, PORT BOTANY logged by: UF CONNELL MARKER PTY LTD thole commenced: 28.8.98 MODIFICE TORMAL PORT FACILITIES, PORT BOTANY logged by: UF CARABY NOTO: ON 000 - BARGE slope: -90 DE6 R.I. Surface: -2.95 * 100m bearing: datur: 151.M samples, tests, etc Sail type: platicity or particle characteristics Structure and additional observations Silt. Silt. Silt. Silt. WIT 2 20 17 Silt. Silt. WIT 2 21 10 10 Silt. Inter to medium grained, light brown, trace of W 21 10 10 Inter to medium grained, light brown, trace of W WIT 2		
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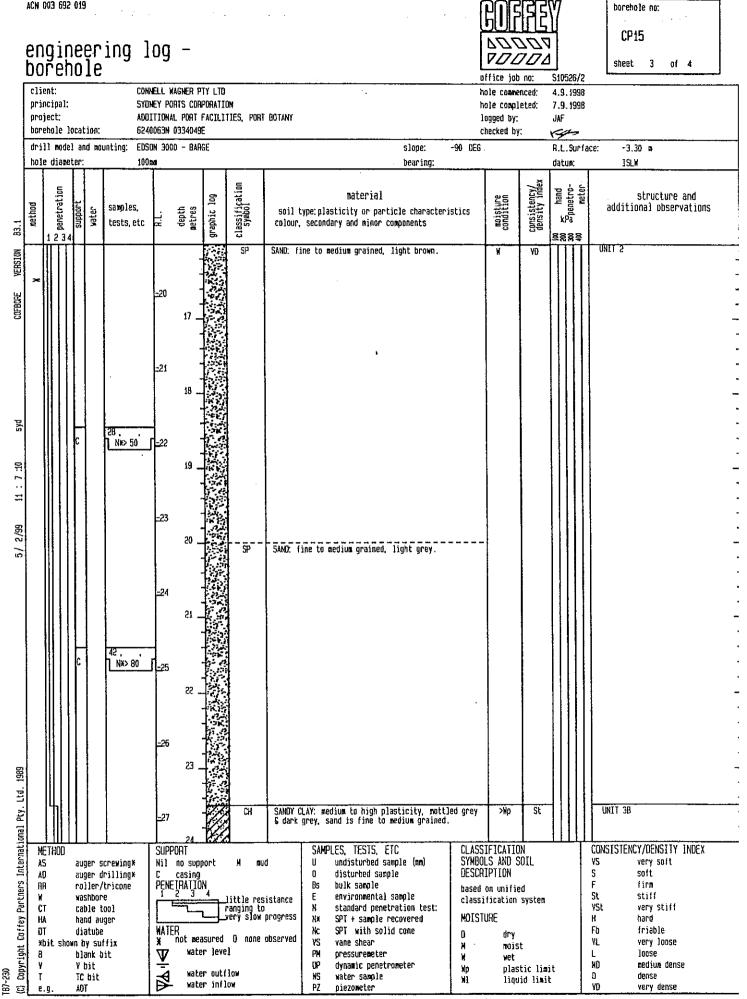
borehole no: CP15 engineering log -borehole VDDDA sheet 2 of 4 office job no: \$10526/2 client: CONNELL WAGNER PTY LTD hole commenced: 4,9,1998 principal: SYDNEY PORTS CORPORATION hole completed: 7.9.1998 project: ADDITIONAL PORT FACILITIES, PORT BOTANY logged by: JAF 6240063N 0334049E checked by: borehole location: 1555 drill model and mounting: EDSDN 3000 - BARGE -90 DEG R.L.Surface: -3 30 m slope: hole diameter: 100*m*m bearing: datum **ISLV** consistency/ density index classification symbol and Benetro-meter S structure and material ğ moisture condition method penetrat additional observations samples, depth metres graphic 1 soil type:plasticity or particle characteristics vater Sug tests, etc colour, secondary and minor components 8.1 <u> 2883</u> 123 UNIT 2 SAND: fine to medium grained, light brown, becoming with traces of shell fragments. 50 ¥ ٧D VERSION 33 N#> 60 -12 COFBORE 9 28 -13 NE> 50 {0} Syd -14 11 <u>.</u> ----72 N¥> 60 Ξ -15 2/99 12 2 38 . -16 N#> 70 13 SP SAND: fine to medium grained, light brown. -17 14 N*> 50 -18 15 1989 Ltd. Pty. 32 -19 N¥> 60 International 16 SUPPORT SAMPLES, TESTS, ETC CLASSIFICATION CONSISTENCY/DENSITY INDEX METHOD SYMBOLS AND SOIL ٧S very soft undisturbed sample (mm) AS auger screwing* Nil no support К តរបស់ D C casing PENETRATION DESCRIPTION disturbed sample S soft AD auger drilling* n Partners F firm bulk sample 9R roller/tricone ßs based on unified St stiff X washbore _little resistance ranging to _very slow progress £ environmental sample classification system VSL very stiff standard penetration test: CT cable tool N MOISTURE Coffey SPT + sample recovered hard HA hand auger NX н WATER * not measured 0 none observed friable Fb DT diatube NC SPT with solid cone 0 dry ٧L very loose *bit shown by suffix ٧S vane shear M noist Copyright V water level blank bit PM pressuremeter Ł loose Ð W vet medium dense DP dynamic penetrometer MD V bit ¥ plastic limit Хp Į. ₩ water outflow ١S water sample n dense TC bit T XÌ liquid limit water inflow ΥÐ PZ very dense ADT pjezometer \Box e.q

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engineering log borehole



borehole no: CP16

sheet 1 of 5

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83.1	method	C penetration	support	water	samples,		depth metres	graphic log	classification Symbol	soil t colour,	ype: pla second	nater sticity or ary and m	_	characteris	stics	moisture condition	consistency/ density index	200 Pand 200	meter	str	ructure and } observation	5
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borehole no: CP16 DDDDAengineering log -borehole VDDDA sheet 2 of 5 office job no: S10526/2 client: hole commenced: 4.9.1998 CONNELL WAGNER PTY LTD 7.9.1998 principal: SYDNEY PORTS CORPORATION hole completed: logged by: JAF ADDITIONAL PORT FACILITIES, PORT BOTANY project: checked by: borehole location: 623989BN 0334094E drill model and mounting: EDSDN 3000 - BARGE -90 DEG R.L. Sur face: -0,20 m slope: datum: 1SLK bearing: 100pm hole diameter: classification symbol Apenetro-Meter Meter consistency/ density index Ξ material structure and moisture graphic log additional observations penetrat þq depth metres samples. soil type:plasticity or particle characteristics water Ret colour, secondary and minor components tests, etc B. 르嵩嵩락 123 SAND: fine to medium grained, light brown, trace silt. UNIT 2 VD CC ы VERSION 12 17 ,22 N¥= 39 COFBORE -9 9 22 32 -10 N#> 60 10 ъŚ -11 11 ð 읡 27 N*> 50 Ξ 42 2/99 12 2 - 72 -13 N¥> 60 13 -14 14 38. NX> 70 -15 15 1989 Copyright Coffey Partners International Pty. Ltd. 16] N¥> 60 16 CLASSIFICATION SYMBOLS AND SOIL CONSISTENCY/DENSITY INDEX SUPPORT SAMPLES, TESTS, ETC METHOD ٧S very soft U undisturbed sample (mm) Nil na support Ж AS auger screwing* лud DESCRIPTION soft S disturbed sample 0 C casing PENETRATION AÐ auger drilling* firm bulk sample F Bs based on unified roller/tricone RA stiff environmental sample St Е Ж classification system vashbore little resistance very stiff YSt standard penetration test: ranging to very slow progress N CT cable tool MOISTURE bacd SPT + sample recovered н NX HA hand auger friable SPT with solid cone Fb NC WATER ÐT diatube 0 dry not measured O none observed very loose ٧S vane shear ٧L Noit shown by suffix ¥ moist Ħ water level loose pressuremeter L PM ۵ blank bit ∇ X vet HD medium dense dynamic penetrometer ٥P plastic limit ۷ ¥ bit Жρ TB7-230 water outflow 0 dense **₽**₿ WS TC bit water sample liquid limit W1 τ water inflow ٧D very dense piezometer P7 ADT Q e.q

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AD auge RR roll W wash CT cabl HA hand DT diat *bit shown by	r screwing* r driling* r driling* e tool auger ube suffix	water	little res ranging to very slow red D none	D disturb Bs bulk sa istance E environ N standar progress Nx SPT + s bbserved VS vane st PM pressur	rbed sample (mm) ed sample mple mental sample d penetration test: ample recovered th solid cone ear emeter menetrumeter ample	SYMB DESC based class		SOIL ied i system st		CONSISTENCY/DENSITY INDEX VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loase L loose HD medium dense G dense VD very dense	

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Coffey Partners International Pty. Ltd. borehole no; ACN 003 692 019 CP17 engineering log -borehole $\nabla \Pi \Pi \Pi \Lambda$ of 3 sheet 1 office job no: S10526/2 hole commenced: 21.9.98 client: CONNELL WAGHER PTY LTD 21.9.90 principal: SYDNEY PORTS CORPORATION hale completed: logged by: JAF ADDITIONAL PORT FACILITIES, PORT BOTANY project: Æ checked by: 6240676N 0333702E borchole location: drill model and mounting: EDSON 3000 - BARGE -90 DEG **A.L.Surface**: -1.55 m slope: datum; ISLN bearing: hole diameter 100mm classification symbol consistency/ density index apenetro-meter 5 material structure and moisture condition ខ្ម additional observations penetrat ם samples, soil type: plasticity or particle characteristics depth metres graphic ; Water colour, secondary and minor components 뒅 tests, etc E В. <u> 8883</u> 1 2 3 UNIT IC SAND: fine to medium grained, light brown, some live SP ¥ L Ð VERSION sea grass. --2 SILTY SAND: fine to medium grained, mottled light brown, dark brown & grey, some shells. H() UNIT 2 SM CDFBDAE 1 D -3 2 5,6 78 syd N#= 14 -4 ম Э ٧D SP SAND: fine to medium grained, brown, some silt. Ξ 11 28 N¥> 50 2/39 5 -6 10,15,20 5 NX= 35 -7 6 SAND: fine to medium grained, light brown, trace to Ξ**P** some silt. 2 31. N#> 60 1989 Ę. -9 Pty. International CLASSIFICATION SYMBOLS AND SOIL DESCRIPTION CONSISTENCY/DENSITY INDEX SUPPORT SAMPLES, TESTS, ETC METHOD С very soft ٧S undisturbed sample (mm) U AS auger screwing* Nil no support H nud S soft disturbed sample C casing PENEIRATION auger drilling* n AD fira Ł Partners bulk sample Bs roller/tricone based on unified ÆĤ environmental sample St stiff ε classification system N washbore little resistance very stiff VSF standard penetration test: ranging to very slow progress N CT cable tool MOISTURE hard SPT + sample recovered н ХX Coffey hand auger HA (riable Fb SPT with solid cone No WATER DT diatube ີນ dry very loose not measured D none observed ٧L YS vane shear ¥ moist whit shown by suffix н water leve) L loose Copyright $\underline{\Psi}$ pressuremeter PM vet blank bit н ß HD medium dense dynamic penetrometer DP plastic limit Y hit Хо y D dense **₽** water outflow 187-230 ₩S water sample 11 liquid limit TC bit Ŧ water inflow ٧D very dense P7 piezometer e.g. ADT O

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Coffey Partners International Pty. Ltd. borehole no: ACN 003 692 019 CP17 engineering log -borehole $\nabla \Pi \Pi \Pi \Lambda$ 2 of 3 sheet office job no: S10526/2 client: 21.9.98 CONNELL WAGNER PTY LTD hole commenced: 21.9.98 principal: SYDNEY PORTS CORPORATION hole completed; logged by: JAF ADDITIONAL PORT FACILITIES, PORT BOTANY project: checked by: B borehole location: 6240676N 0333702E drill model and mounting: EDSON 3000 - BARGE slope: ~90 DEG R.L.Sunface: -1.55 m datum ISLW bearing: 100nm hole diameter: consistency/ density index classification symbol A hand neter penetration naterial structure and moisture ğ additional observations method samples. depth metres soil type:plasticity or particle characteristics graphic] vater colour, secondary and minor components tests, etc 片 E. 켵쥖윩쪽 23 UNIT 2 SAND: fine to medium grained, light brown, trace to **TO** 32 50 Ŕ ٧D VERSION N*> 60 some silt. -10 COFBORE 9 3T N¥> 60 10 -12 Syđ 11 究 28 1 N¥> 50 Ξ Ŧ -13 2/99 12 5 N*> 60 19 -15 SANCE fine to medium grained, light brown, banded dark brown, with some 100mm layers of sandy peat. SP 14 31 N¥=Ĥ -16 **1**5 <u>1</u>980 SP SAND: fine to medium grained, light brown, trace of silt. Coffey Partners International Pty. Ltd. -17 52 N*>100 16 CONSISTENCY/DENSITY INDEX CLASSIFICATION SUPPORT SAMPLES, TESTS, ETC METHOD SYMBOLS AND SOIL DESCRIPTION undisturbed sample (mm) YS very soft ŧ Н AS auger screwing* Nil no support nud disturbed sample S Soft 0 AD auger drilling* casino PENETRATION £ firm roller/tricone 8s bulk sample RA based on unified environmental sample St stiff _little resistance ranging to _very slow progress Ε Ж washbore classification system very stiff standard penetration test: YSt N CT cable tool MOISTURE SPT + sample recovered hard N× Н HA hand auger WATER ¥ not measured D none observed F۵ friable SPT with solid cone Nr. OT diatube 0 dry ٧L very loose VS vane shear *bit shown by suffix moist н Copyright water level pressuremeter loose ٤ 8 blank bit \mathbf{V} ΡM wet х MD medium dense DP dynamic penetrometer V bit plastic limit Y Жø T87-230 water outflow **₩** D dense 95 TC bit water sample ¥1 T liquid limit water inflow ٧D very dense ΡZ piezometer adt ø e.q

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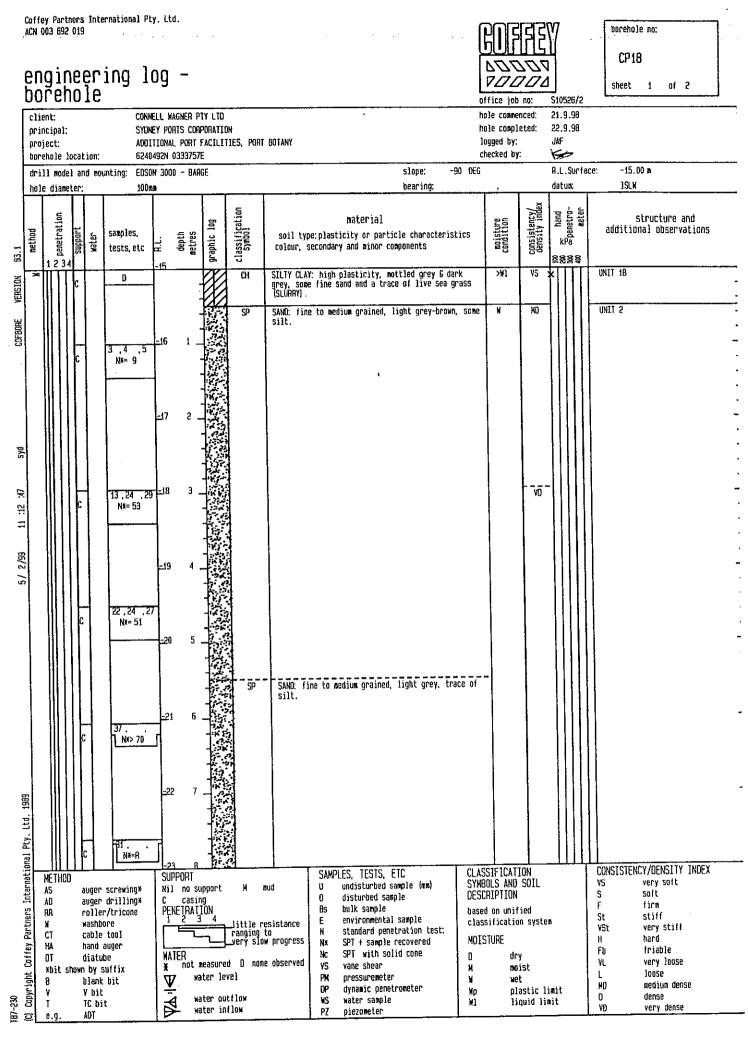
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lient: CONNE rincipal: SYDNE roject: ADDI	ELL WAGNER PTY LTD EY PORTS CORPORATION TIONAL PORT FACILITIES, PORT BOTANY 676N 0333702E	,	office job no: \$10525/2 hole commenced: 21.9.98 hole completed: 21.9.98 logged by: JAF checked by:	
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* 		fine to medium grained. light brown, trace of		UNIT 2
METHOD AS auger screwing* AD auger drilling* RR roller/tricone W washbore CT cable tool HA hand auger DT diatube xbit shown by suffix B blank bit Y bit	21frage	U undisturbed sample (mm) SY D disturbed sample DE Bs bulk sample bas ce E environmental sample cl. N standard penetration test: ess Nx SPT + sample recovered MO Nc SPT with solid rome	ASSIFICATION MBOLS AND SOIL SCRIPTION used on unified assification system DISTURE dry moist wet	UNIT 3B UNIT 3B CONSISTENCY/DENSITY INDEX VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose HD medium dense

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	construction support vater	samples, tests, etc	R.L. depth	graphic log	classification symbol	soil type:pl colour, secon	material asticity or particle cha dary and minor component	racteristics s	moisture condition	consistency/ density index	100 × hand 200 × Denetro- 300 Denetro- 400 meter	additio	structure and nal observations	ż
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	C	35, NK> 70	12 17 13											
			- - 18 - 14 - 19 - 15	10 10 10 10 10 10 10 10 10 10 10 10 10 1										
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AS AD AR V CT HA DT Xbit B Y T	auger (tool uger e ffix bit	₩ ₩		ittle res anging to ery slow D none l	istance E progress Nx	Undistored sample disturbed sample bulk sample environmental sample standard penetration I SPT + sample recovered SPT with solid cone vane shear pressuremeter dynamic penetrometer water sample piezometer	DESCR based classi	AIPTION on unific ification URE dry mois wet plas	ed system	it	S F St VSt H Fð VL L ND	very solt soft firm stiff hard friable very loose loose medium dense dense	

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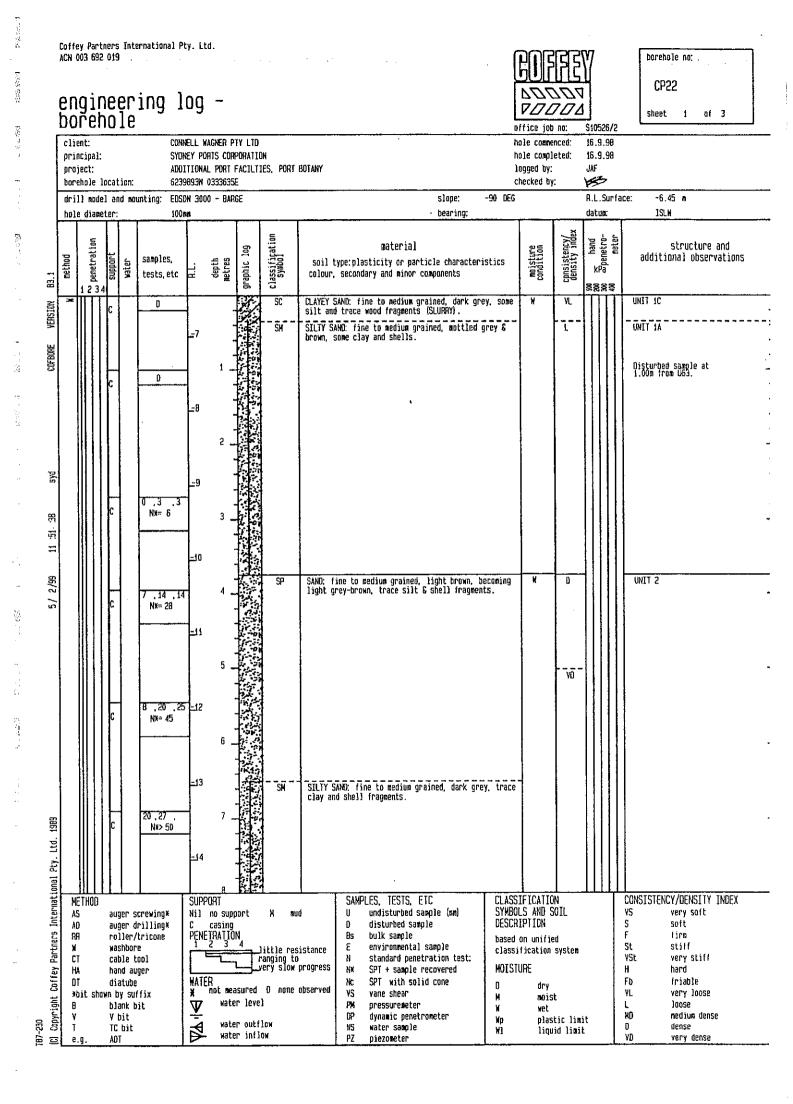
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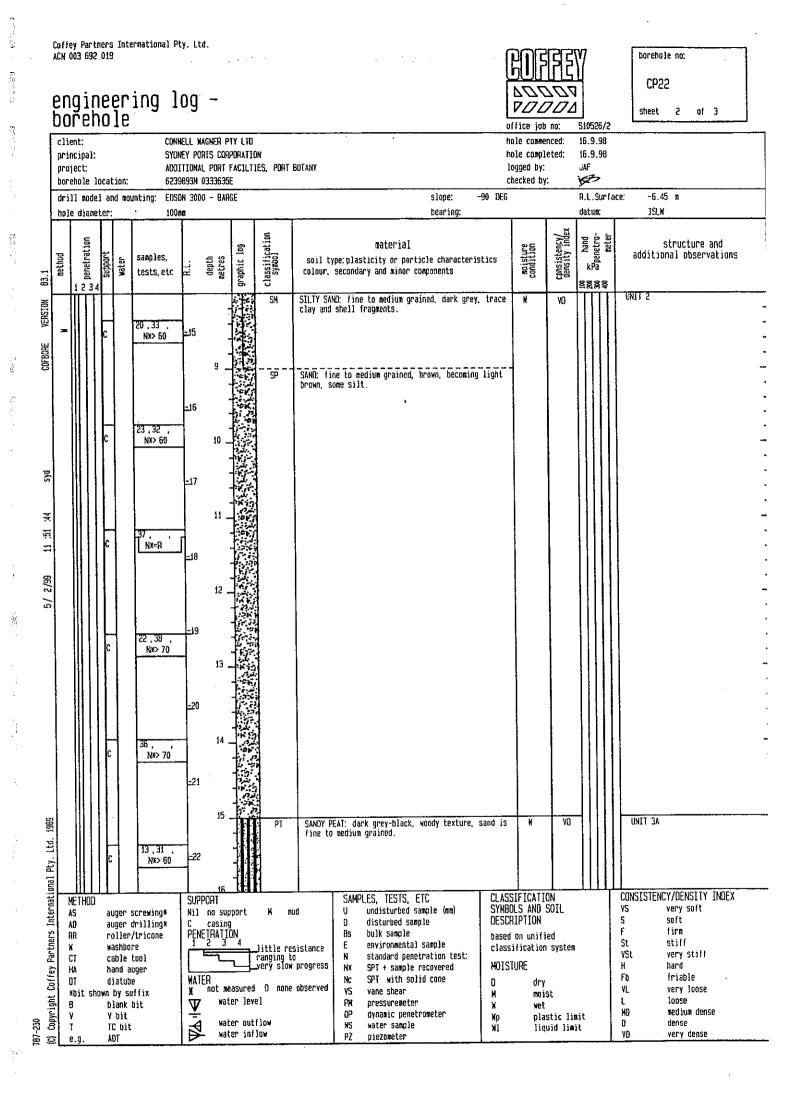
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Partners Inter D M W Y) 7	auger	tool	Nil C	PORT no sup casing ETRATI(2 3)N,		uð sistance o progress	U O Bs	undi: distu bulk envin stan	urbed sam sample ronmental dard pene	sample (mn nple	test:	SYMBOL DESCRI based	on unific fication	SOIL ed			VS ve S so F fi St st VSt ve	/DENSITY INDE Pry soft oft ira tiff ery stiff ard

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client: principa] project:	:	SYDI AQD)	NELL WAGNER Ney Ports C Itional Por	ORPORATI	DN	BOTANY	office job m hole commence hale complet logged by:	ted: 12.9.1990 JAF/LRP	
borehole drill moc hole diam	el and m		9587N 03337 ON 3000 - B			slope: -90 bearing:	checked by: DEG	R.L.Surfa datum	ace: -10.27 m ISLW
B3.1 method 2 penetration	support Water	samples,	R.L. depth Metroes	graphic log	classification symbol	material soil type:plasticity or particle characteristics colour, secondary and minor components	moisture condition	Consistency/ density index 200 Thand 200 Thand 200 Thand 200 Thand 200 Thand 200 Thand 200 Thand 200 Thand 200 Thank	
COFBORE VERSION	4 IIN	D		NAME OF THE OWNER	SM	SILTY SAND: fine to medium grained, mottled grey & brown, some clay (SLUAAY).	I H	YL	UNIT 3C
COF		5,6,8 N= 14	1	No. Contraction	SP	SAND: fine to medium grainèd, grey-brown, trace coarse grains, trace silt, trace to some shells.	W	Ю	UNIT 2 NOTE: Borehole washbored wi no recirculation. Borehole logged from SPT samples on
:56 26 syd		8 ,30 ,25 N*> 55	-13 	22 - 22 - 22 - 22 - 22 - 23 - 23 - 23 -				-vō-	SPT test: 50mm for last 25 blows.
5/2/9911		2 .5 .18 N*= 23						·	
			=15 5	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1					
		11,29,2t N*>54	-16 5 6 -17			becoming grey-brown and light brown.			SPT test: 70mm for last 25 blows.
nal Pty. Ltd. 1989		50, , LN≭=R	7 		SP 1	SAND: fine to medium grained, light grey, trace silt.	·		
-230 Copyright Coffey Partners International Pty. Ltd. 1989 A A A A W O S M O S M A B C S M A B	auger auger	tool	SUPPORT Nil no si C casil PENETRAT	ng TDN 3 4	H m little re ranging t yery slow	nd U undisturbed sample (mm) SY O disturbed sample DE B5 bulk sample ba sistance E environmental sample cl N standard menetration test:	ASSIFICATION (MBOLS AND SO (SCRIPTION (SCRIPTION (SCRIPTION) (SCRIPTION) (SCRIPTION) (SCRIPTION) (SCRIPTION) (STURE)	IL	1 CONSISTENCY/DENSITY INDEX VS very soft S soft F firm St stiff VSt very stiff H hard

principal: SY project: AD borehole location: 62 drill model and mounting: ED	WINELL WAGNER PTY LTD VONEY PORTS CORPORATION JODITIONAL PORT FACILITIES, PORT BOTANY 239567N 0333730E JSDN 3000 - BARGE JSDN 3000 - BARGE JORMA i 등 B	sheering:	P23 et 2 of 3 10.27 m SLH . structure an tional observa
→ 33, , , N×> 50 15, 18, .1 N×= 34 22, 50 N×=R	16 =20 16 =20 10 = x = 10 = x = 10 = x = 10 = x = CH QLAY: high plasticity, dark gr 11 = PT PEAT: black.	dark grey, tracę silt, D ev. >Wo St UNIT 3	r noted an increas re from approximat
METHOD AS auger screwing* AD auger drilling* RR roller/tricone % washbore CT cable tool HA hand auger DT diatube *bit shown by suffix 8 blank bit V V bit T T C bit e.g. ADT	Borehole CP23 Terminat	IC CLASSIFICATION SYMBOLS AND SOIL VS Ie DESCRIPTION S sample (mm) based on unified F sample classification system St	NCY/DENSITY IND very soft soft firm stiff very stiff

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proj bore	ncipal ject: ehole	locati		SYDNEY ADDITIC 6240595	, Wagner F Ports Cof Inal Port In 0333265	PORATI Facili E	н	I BOTANY		h] 	iole comm iole comp logged by: hecked by	leted:	19.9.98 19.9.98 JAF	
	ll mod e diam		mounting:	EDSDN 3 100mm	1000 - BAF	IGE	<u> </u>	,	slope: bearing:	-90 DEG			R.L.Suri datum:	face: -2.30 m ISNL
method	C penetration		ភ្ញុ samples Stests, e	· Li	depth metres	graphic log	classification Symbol		material plasticity or particle charac undary and minor components	teristics	moisture condition	consistency/ density index	100 hand 200 전 hand 300 전 penetro-	
*		C	Ð		·	1.1.1.1.1	SP	SAND: fine to sea-grass be fragments.	o medium grained, light brown, coming with some shells & she	, some live 11	×	L		UNIT 1C
			D		i									
				4	, 2 <u>-</u>		SP	SAND: fine t	o medium grained, light brown	,	- W	MD		UNIT 2
			8.8	.6			1							
		4	N¥= 1	4 	- t							- -		
			8,12	,13	4_		SH	SILTY SAND: traces of pe	fine to medium grained, dark at and shell fragments.	brown,				
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			10.13	-16	6		- <u>s</u> p	SAND: fine t traces of sh	o medium grained, brown, some ell fragments.	silt 6				
			N¥= 2	9 		1997 - 1999 1997 - 1999 1997 - 1999								
			12,20		7 _									
	THOD	¢	N*= 5						iples, tests, etc	CLASS	IFICATIO	VD N		CONSISTENCY/DENSITY INDEX
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HA Dt		hand diat על האו blan	auger ube suffix k bit	¥ ₩	• wate		0 none	observed VS PM	SPT + sample recovered SPT with solid cone vane shear pressuremeter	MOIST O M W	JRE dry nois wet	t		H hard Fb friable VL very loose L loose
V T e.		V bi TC b ADT		Ĩ. ₩	-	r outf) r influ		DP ₩S	dynamic penetrometer water sample	Xp X1		tic limi id limit		ND medium dense D dense

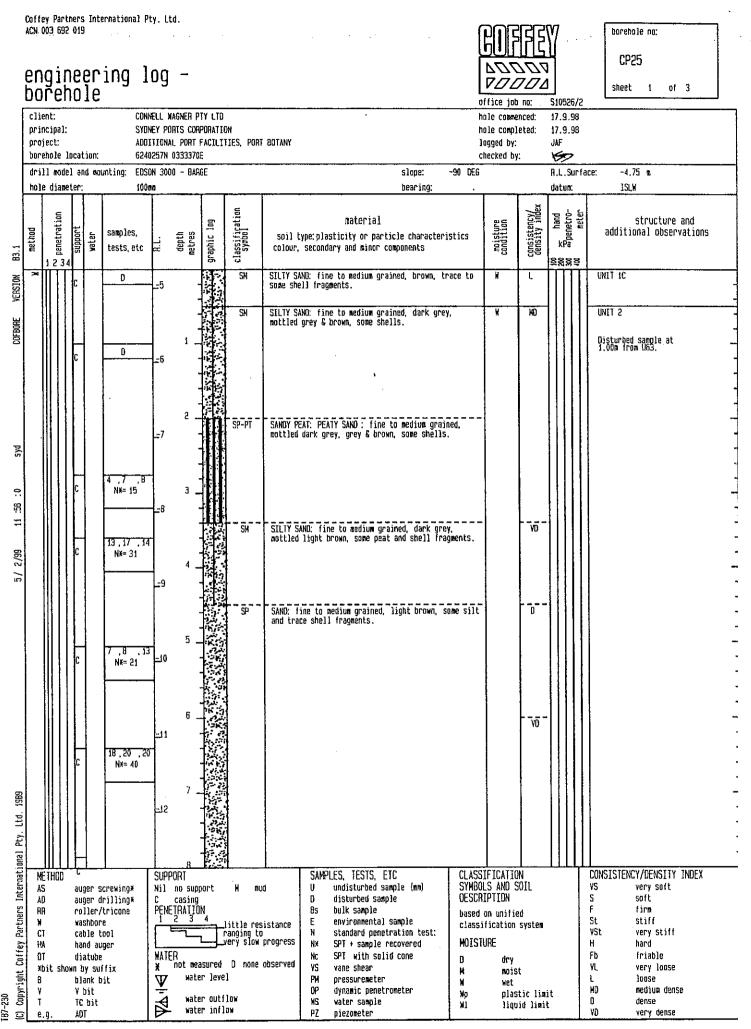
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2		Classification Symool	çation	TES, POR			
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Coffey Partners International Pty. Ltd. ACN 003 692 019 borehole no: . . . * CP25 engineering log -borehole DDDDVDDDA sheet 2 of 3 S10526/2 office job no: client: CONNELL WAGNER PTY LTD 17.9.98 hole commenced; principal: SYDNEY PORTS CORPORATION 17.9.98 hole completed: project: ADDITIONAL PORT FACILITIES, PORT BOTANY logged by: JAF JE -6240257N 0333370E borehole location: checked by: -4.75 a drill model and mounting: EDSDN 3000 - BARGE slope: -90 DEG R.L. Sunface: hole dismeter: 100pm bearing: datum **ISLN** consistency/ density index classification symbol apenetro-meter 5 structure and material moisture condition ĝ penetrat þö samples, graphic l additional observations depth netres soil type: plasticity or particle characteristics e, liat. 뒅 tests, etc ~ colour, secondary and minor components Ē 르욻욹휵 23 SAND: fine to medium grained, light brown, some silt and trace shell fragments. UNIT 2 15,20,25 SP Ň. ٧Đ VERSION N¥= 45 -13 COFBORE q 14 15,18,24 N¥= 42 10 -15 βλg N#> 70 e. 11 85 -16 Ŧ 2/99 12 5 28 -17 N*> 50 13 -18 41 N¥> 80 14 -19 SANDY PEAT: dark brown & black, sand is fine to H UNET 3A PT H medium grained. í5 1983 13 , 28 -20 N¥> 50 Ę Ę, Partners International 16 SAMPLES, TESTS, ETC CLASSIFICATION SYMBOLS AND SOIL DESCRIPTION CONSISTENCY/DENSITY INDEX SUPPORT METHOD AS auger screwing* Nil no support М aud 11 undisturbed sample (mm) VS very soft AD auger drilling* 0 disturbed sample S Soft casing PENETRATION ЯR roller/tricone Ðs bulk sample F firm based on unified Ę environmental sample Sŧ stiff ¥ washbore _little resistance ranging to _very slow progress classification system very Stiff CT cable tool N standard penetration test: ٧St Coffey I MOISTURE NX SPT + sample recovered H hard HA hand auger WATER SPT with solid cone Fb friable DT diatube Nc 0 dry not measured O none observed ٧S vane shear ٧L very loose *bit shown by suffix ¥ moist М Copyright water level ∇ PM pressuremeter Ł]cose blank bit B X wet MD medium dense CΡ dynamic penetrometer ٧ ¥ bit plastic limit Xo ₹ -230 water outflow dense 0 WS water sample TC bit T м́. . liquid limit water inflow ٧Ø very dense P7 piezometer Ē ADT e.g $\overline{\Box}$

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187-230 (C) Copyright Coffey Partners International Pty. Ltd. 1989	onal Pty. Ltd. 1989 51 2/39 11 58 :14 syd	COFBORE VERSION	83.1		[• •
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auge roll wash cabl hanc diat		*	1.1	locati el and		2 019
r dr er/t bore e to aug suff suff k bi t			-		е	
ol er fix		13 ,20 ,20 №¥= 40	samples, tests, etc	ADD) 6240	CON	rnational P
Nil C	=22 =23 =24 =25 =26 =27	-21	<u>н.с.</u>	ETION D257N DN 301	ELL 1	2
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on unific fication URE dry mois wet plas		>Hp	moisture condition	ogged by: hecked by	ffice job ole comme ole compl	
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Coffey Partners International Pty. Ltd. borehole an: ACN 003 692 019 CP26 engineering log -borehole 70004 VDDDS sheet f of 3 office job no: S10526/2 client: CONNELL WAGNER PTY LTD hole commenced: 14.9.98 15.9.99 principal: SYDNEY PORTS CORPORATION hole completed; project: ADDITIONAL PORT FACILITIES, PORT BOTANY logged by: JAF 180 borehole location: 6239755N 0333535E checked by: -90 DEG R.L.Surface: -6.70 m drill model and mounting: EDSDN 3000 - BARGE slope: hole diameter: 100mm bearing; datum; ISHL consistency/ density index 5 A hand Apenetro-meter 5 structure and material classificati symbol moisture condition 8 penetrat. additional observations aethod samples. depth Metres soil type:plasticity or particle characteristics graphic iater tests, etc F colour, secondary and minor components 83. 23 SILTY SAND: fine to medium grained, brown, becoming dark brown, some clay and trace shell fragments. UNIT IC SM H L D VERSION -7 UNIT 2 SM SILTY SAND: fine to medium grained, brown, becoming dark brown, some clay and trace shell fragments. ΗÛ ¥. COFBORE Disturbed sample at 1.00m from UG3. D чA 2 SAND: fine to medium grained, light brown, trace silt & shell fragments. ŜΡ 0 -9 syd 3 资 .9 .14 q -N¥= 23 -10 \simeq 2/99 2 VD -11 14,15,18 N¥= 33 5 12 45 N¥> 90 Б -13 6861 22.36 -14 Coffey Partners International Pty. Ltd. N*> 70 CLASSIFICATION CONSISTENCY/DENSITY INDEX SUPPORT SAMPLES, TESTS, ETC METHOD SYMBOLS AND SOIL AS AD undisturbed sample (nm) ٧S very soft Nil no support M nud U auger screwing* Ð disturbed sample DESCRIPTION S soft auger drilling* casing C PENETRATION bulk sample F firm BA Ðs roller/tricone based on unified environmental sample St stiff £ M Ct washbone little resistance classification system N standard genetration test: VSt very stiff cable tool ranging to very slow progress MOISTURE HA hand auger NX SPT + sample recovered н hard WAJER * not measured 0 none observed SPT with solid cone Fb triable NC DT diatube ۵ dry ٧L very loose ٧S vane shear *bit shown by suffix moist М Copyright water level loose Ψ pressuremeter L PM B blank bit X wet dynamic penetrometer ND medium dense DP ۷ V bit plastic limit ¥е **₽** -230 water outflow 0 dense WS water sample T TC bit W1 liquid limit water inflow ٧D very dense P7 piezometer ĹBL g e.g ADT

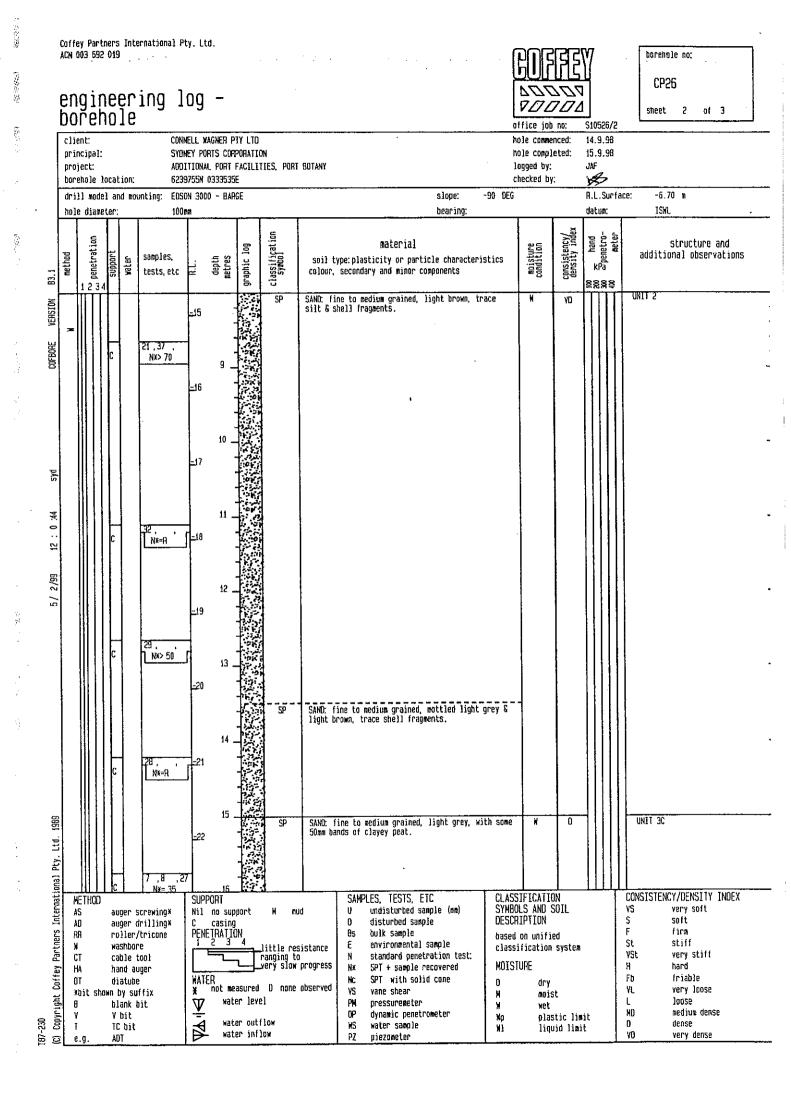
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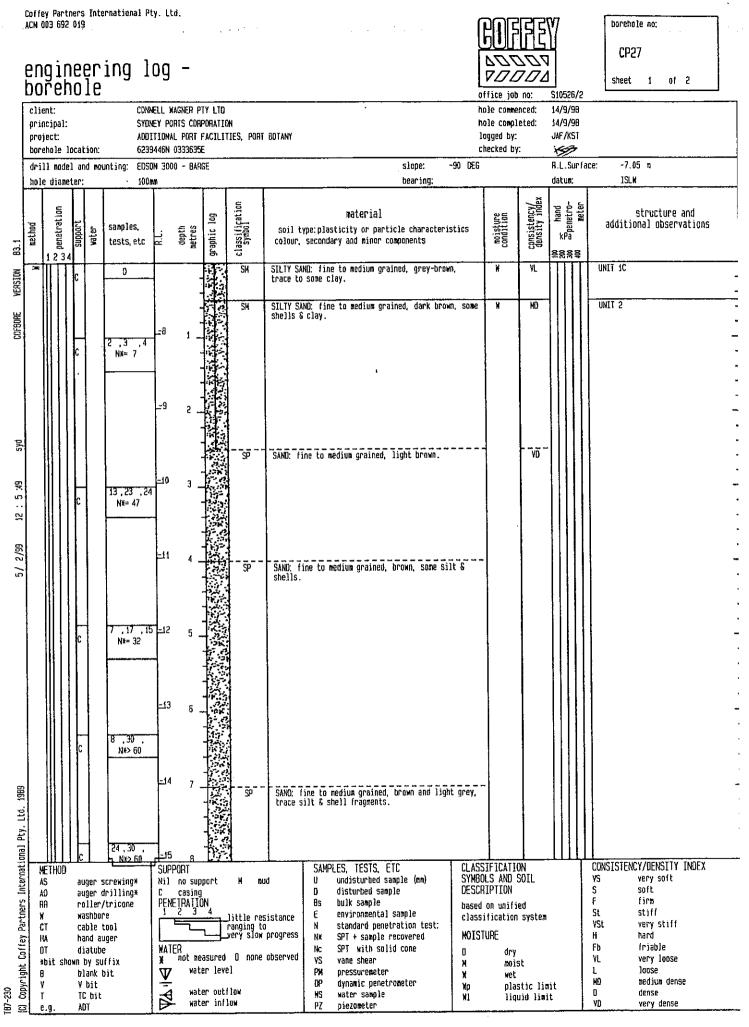
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83.1	method	5 nonetration	34	Support	8	samples, tests, etc	R.L.	dep th me tres	graphic log	classification symbol			naterial ticity or pa ry and minor	rticle chara	cteristics	moisture condition	consistency/ density index	100 hand 200 ad penetro-	- 1		ructure and 1 observation
VEASION		$\left \right $	Π		7		23		2.2	SP	SAND: f 50mm ba:	ine to me nds of cl	dium grained, ayey peat.	, light grey	, with some	W	D			UNIT 3C	
	=									сн ~	CLAY: h	igh plast	icity, black				- VSt			- UNIT 30	
COFBORE								17 _					~								
				4		5,9,12 N¥= 21	2 -24						۱							<u>-</u>	
			T	T	Τ		T	18			8oreho.	le CP26	Ternin	ated at	17.65 m					<u> </u>	
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Copyright Coffey Partners International Pty. Ltd. 1989	ME As Ad Ra		i	augei	r dr	rewing* illing* ricone	Nil C	24 PORT no sup casing		1 M m	ud	U Ø	ES, TESTS, undisturbed s disturbed sam bulk sample	sample (mm)	SYHE	SIFICATION SIFICATION	50IL	111			
/ Partner) א CT		1	washi cabli	bore e to	e 101		EIRATIO		ittle re anging t	sistance o progress	E N	epvironmenta standard pen	etration tes	t: clas	d on unifi sification crupe				St sti VSt ver	iff ry stiff
t Coffey	HA Dt Xd		1	diat	່ aug ບ່ວຍ suf f		HATI X	not mea	asuced	D none	observed	NC	SPT + sample SPT with so vane shear		D MUL:	iTURE dry mois	•		1		rð iable ry loose
righ	B		1		k bi		<u></u> ₩	wate	er leve	1			pressuremeter dynamic pene		Ж Ир	vet	itic lim			L loo ND med	ise tium dense



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l I I	clie			le		NELL)	(Agner P)rits cor										office jo hole com	venced:	S10	526/2 9/90 9/98	shee	t 2 of 2
	proj	•		ion:	ADD	ITION/		FACILI	IES, POR	i 80tany							logged by checked b	r.	JAF	/kst		
] mod e diam		մ տնւ	unting: EDSI 100		00 - BAR	GE							lope: earing:	~90 DE	G		R.L dat	Surf ชด:		'.05 a l.¥
83.1	method	2 penetration	support	water	samples, tests, etc	A.L.	depth metres	graphic log	classification Symbol			astici			character ents	istics	reoisture condition	consistency/ density index		300 alpenetro- 400 meter		structure and ional observations
VERSION			4				u.	/	SP	SANO: f trace s	ine to s ilt & sl	nedium hell 1	n graine Fragment	d, brawn s.	n and ligh	at grey,	۲.	V0			UNIT 2	
COFBORE VER	7		L C		8 ,31 , N¥>60	-16 - -	9 _ - - 10 _		PT	SANDY P grained		rk gre	ey-b]ack	, sand i	is fine to) medium					UNET 3A	
12 : 5 56 syd			c		9 ,6 ,11 NX=17	-18	11 _		<u>s</u> c	CLAYEY dark br	SĂND: F own.	ine ti	o medium	graine	d, dark g	rey and	-	- MO	1		בינא <u>ת ב</u>	
5/ 2/38			C		13,13,12 N¥= 25	-20	12 _ 13 .		- <u></u> -	CLAY: 1 100-200	igh pla mw banc	astici 1s of	ty, gre clayey :	y, Some sand.	fine sand	, some		VŠt			- UNIT JE	
nal Pty. Ltd. 1989					N¥≂ 29	-21 -22	15 .			8oreho	ole CP	27	Termi	inated	at 1	i3.75 m						
187-230 (C) Copyright Caffey Partners International Pty. Ltd. 1989	H/ 01 Xt 8 Y T	D R T A Dit sl	au au ro wa ca ba di wow N bl	ger d ller/ shbor ble t nd au atube by su ank b bit bit	iool Iger ffix pit	SUP Nil C	PORT no sup casing ETRATIO 2 3 ER not me		little re ranging t very slow D none l l	ud sistance o progress observed	U D Bs E N N×	und dis bul env sta SPT SPT Van pre dyn wat	turbed s k sample ironmeni ndard pe + sampl with s e shear ssurement	l sample sample cal samp enetrati le recove solid co ter netromet	le on test: ered ne	SYM DES base clas	wei pla	SOIL ied n system y ist	nit		CONSISTE VS S F St VSt H Fb YL L L ND D VD	NCY/DENSITY INDEX very soft soft firm stiff very stiff hard friable very loose loose medium dense dense very dense

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Sheet 1 of 7

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S	tart	ed D	rilling		02.C 29.C	05.00 N Slop		Chẹo 90			II Rig
С	omp	letec	I Drilli	ng	1.06	.00 E Bea	ring				ound Level
<u> </u>	DR1	LLIN	3		Т	SOIL CH	ARACT	ERIS	STIC	S	
Method	Water Table	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity, colour, other components)	Moisture Cond'n		Consistency	Samples and tests	Additional Comments
A			ŧ 0.2	×	SP	Pavement Materials					Hydraulic Fill
			- - - - - -			SAND: brown, fine to medium grained, trace shells	м				
			2	$\bigotimes_{}$		· · ·		м	40	SPT 3,4,6 N=10	
¥	Ā										
						trace of organics				SPT 4,6,10 N=16	
			L5 - - -			becoming grey, with shell fragments	= w				
			-6 -			Decoming grey, with sher in agments				SPT 2,2,1 N=3	
			- - 7 		~ ~ ~ ~ ~		-	L	/VL	Dilatometer Testing	
					****	contains a 0.05m layer of black sandy clay, very soft, medium plasticity, with trace organics				SPT 3,2,3 N=5	
					XXXXX					Dillatometer Testing	
		arks:	- 10	×		with fine shell fragments				SPT 3,3,6 N=9	

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Sheet 2 of 7

Borehole No: BH 07

5	itar	ted D			29.0		lope	90	hecke		II Rig
C)omp	oletec	i Drilli	ng	1.06	3.00 E E	Bearing				ound Level
	DR	ILLING	3			SOIL	CHARA	CTE	RISTIC	S	
Method	Water Table	RL (m)	Depth (m)	Graphic Log	ଜ୍ୟ Classification	Description of Soil (soil type: plasticity, colour, other components) as above		Moisture Cond'n	Consistency	Samples and tests	Additional Comments
			-11		Sr	trace thin fibrous material				SPT 3,2,3 N=5 Dilatometer	
			13			becoming light grey, trace of black organics, no shells				Testing 	
			15			becoming light grey, trace of shell fragment "Containing 30mm of dary grey silty clay medium to high plasticity, with black organic inclusions and trace of sand	у,	Ψ	L/VL	Dilatometer Testing SPT 3,3,4 N=7 Dilatometer Testing	
			-18		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	sand, grey, fine to medium grained, tra of shell fragments, with organic inclusio , containing 20mm clay, black soft, media plasticity, with fine fibres containing 20mm clay as above sand, as above, trace of silt, fine fibre clay lumps	JM .			SPT 1,2,3 N=5 SPT 1,1,1 N=2 SPT 1,0,0 N=0	

Sheet 3 of 7

Borehole No: BH 07

Р	lien roje roje		Pa	atric	y Po k Te 02.C	orts Corporation :rminal, Sydney P		Ļ¢	oggeo	le Location se 1 By DS ed By SY	
			rilling			15.00 N	Slope	90)	Dri	ll Rig
<u> </u>			I Drilli	ng	1.06	.00 E	Bearing	-			ound Level
——r		LLING	3 1 1		-		SOIL CHAR		RISTI	CS	
Method	Water Table	(m) RL (m)	Depth (m)	Graphic Log		Description of Soil (soil type: plasticity, colo other components)	υr,	Moisture Cond'n	Consistency	Samples and tests	Additional Comments
			22		SP	sand,light brown, fine to medium g	grained	W	٧O	SPT 14,21,15/70mm N>50 SPT 20,30/110mm	in situ
			-26 -27 -28 -29 -30			sand, light brown-grey				SPT 26,24/70mm	no sample recovery
F	Rem	arks:	1.30	<u>.1.</u>	<u></u>	I		!	<u> </u>	. !	
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Sheet 4 of 7

Borehole No: BH 07

		ed D		32.0		D5.00 N	Slope	90	necke		II Rig
(Comp	leted	Drilli	ng	1.06	3.00 E	Bearin	g		Gro	ound Level
	DR	ILLING	;				SOIL CHAR	ACTER	RISTIC	S	
Method	Water Table	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity, col other components)	our,	Moisture Cond'n	Consistency	Samples and tests	Additional Comments
			31		SP	as above		W	٧D		SPT 24/70mm
			36							SPT 8,30/90mm	
-	Per		<u>140</u>		.	<u></u>				1	L
	кеп	larks:									

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Borehole No: BH 07

Sheet 5 of 7

	P P		ct ct No	Pa 5. 58	atric 332.0	k Te 02.C		Li C	oggeo heicke	l By ed By	see Figure 2 DS SY
				rilling I Drilli			05.00 N Slope 6.00 E Bearin	90 0			Drill Rig Ground Level
ŀ			LLING				SOIL CHAF	_	RISTIC		
	Method	Water Table	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity, colour, other components)	Moisture Cond n	Consistency	Samples and tests	Additional Comments
				41		SP	Clayey SAND: fine, black, trace of brown 20mm size organic matter	W	νο		
N. 19				43		СН	Silty CLAY: light grey to grey, high plasticity, very stiff to hard, some sand, trace of black organic matter			U50 U50	
				45			becoming dark grey	м	н	SPT 6,11,15 N=26	
				48		SM	Silty SAND: fine, light grey, dense, interlayered with grey clay, high plasticity	W	MD/V(<u>m</u>

Borehole No: BH 07

Sheet 6 of 7

			rilling			05.00 N Sia		0		Drill Rig
 С			1 Drilli	ng	1.06		aring			Fround Level
 	נאט		5 			SOIL C	HARACTE	RISTI	CS	
Method	Water Table	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity, colour, other components)	Moisture Cond'n	Consistency	Samples and tests	Additional Comments
			51 52 53 54 55 66 77 58		S H	some coarse sand Clay, dark grey, high plasticity, some shell fragments and organics clayey sand, grey, fine grained, high plasticity clay clayey sand, grey, fine grained, some shells	W	MO/VE	SPT 16,14,21 N=35	push tube refusai
		arks:	59							

Sheet 7 of 7

	P P		ct ct Ni	Pa 58	atric 332.0	k Te 02.C		L C	ogged necke	dBy Sy	
				rilling			05.00 N Slope				III Rig
				1 Drilli	ng F	1.06					ound Level
	, 		LLIN			- 1	SOIL CHAI	1. <u></u> 1	15110	·5 	
	Method	Water Table	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity, colour, other components)	≍ Moisture Cond'n	Consistency	Samples and tests	Additional Comments
				ج 		SC	Auger refusal, end of borehole (target depth)	<u> </u>	MO7VD		
				-61							
			-	62							
				- L63							
1				64							
				66							
				67							
				68							
				_69 -							
				170						<u> </u>	
			iarks nome	:	sing	insta	alled to 60.1			-	

Sheet 1 of 5

			o. 58: rilling		CP 06.00 N	Slope	00 90	hecke		r ill Rig
Co	mp	letec	l Drillin			Bearin				ound Level
	DRI	ILLING	3		· · · · · · · · · · · · · · · · · · ·	SOIL CHAF	RACTE	RISTIC	S	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Method	Water Table	שר (ש)	Depth (m)	Graphic Log Classification		our,	Moisture Cond'n	Consistency	Samples and tests	Additional Comments
A			0.2	X si	Pavement Materials					Hydraulic Fill
	Ţ	1			SAND: brown, fine to medium gra	ined	м	МО	SPT 3,1,11 N=18	
W	7		- 2.5		becoming light brown, with shell fragments	and shell			SPT 1,3,3 N=6	
			5		trace shell fragments	2	W	L/ VL	SPT 1,0,1 N=1 Dilatometer Testing	
					containing 0.15m thick clay, dari black, medium plasticity, soft, w organics and fine fibre, elsewha sand is light brown, fine to med grained	ith ere the			SPT 2,3,4 N=7 SPT 1,1,1 N=2 Dilatometer Testing	
W	ash		g below		m & 4,85m		<u> </u>	<u> </u>		

Borehole No: BH 08

Sheet 2 of 5

				rilling			5.00 N Slope			d By SY	ill Rig
	С			Drilli	ng	6.0					ound Level
-		DR:		; 	 		SOIL CH	····	RISTIC	:S	
	Method	Water Table	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity, colour, other components)	Moisture Cond'n	Consistency	Samples and tests	Additional Comments
				* • • •	\bigotimes	SP				SPT 1,3,3	
			I	L11	\bigotimes		trace of shells			N=6	
					\bigotimes					SPT 2,3,3 N=6	
				_12	\bigotimes					Cilatometer Testing	- from 11.6m to 12.2m test were parallel to wall
				- - 13	\bigotimes						from 12.4m to 13.2m tests were perpendicular to wall
				- - - - - - -						SPT 4,5,7 N=12	
				-	\bigotimes					SPT 2,3,4 N=7	
				L15				W	L/VL	Dliatometer Testing	from 14.6m to 15.4m tests were parallel to wall
				-16		XXXXX				Dilatometer Testing	from 15.4m to 16.2m tests were perpendicular to wall
				4. .	\otimes	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	becoming dark grey, with organic inclusion and fine fibre			SPT 3,3,4 N=7	
				17 - 17							tests were parallel to wall
				- - - 		XXXX				Oilatometer Testing	
											-
							becoming clayey sand, brown grey, and dark grey, fine grained, clay is high plasticity			U75	
		<u> </u>	narks:	E20	_ X	8					<u> </u>

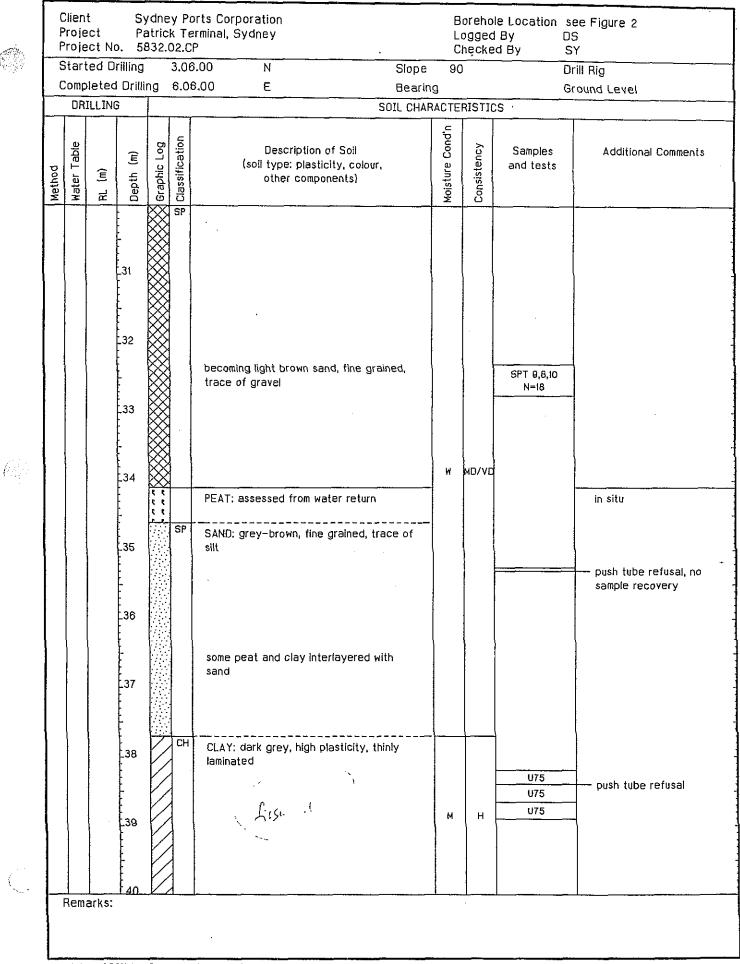
Borehole No: BH 08

Sheet 3 of 5

	Star	ted D	irilling		3.00	3.00 N Slop			ed By SY Dril	I Rig
(d Drilli	ng	6.0	6.00 E Bea	ring		Gro	ound Level
 		ILLIN	G T			SOIL C	HARACTE	RISTI	CS	
Method	Water Table	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity, colour, other components)	Moisture Cond n	Consistency	Samples and tests	Additional Comments
				\bigotimes	SP	Silty CLAY/Clayey SAND: dark grey,			U75	
				\bigotimes		sand is fine to medium grained, clay is medium plasticity, with fine organic fibre				
			L21	\bigotimes			м		U75	
			- - -	\bigotimes						
			22			SAND: grey, fine grained, some medium gravel (rock fill?, may have fallen from 21.45m				
			23							
			-24						SPT 20,40/150mm N>50	
			-25	\bigotimes						
			-26			sample contains approx. 70% gravel	W	MDZVE	SPT 30/150mm	
			27							
			-28							
			-29			gravel at bottom end of sampler			<u>SPT 30/130mm</u>	
			130	\otimes						

Borehole No: BH 08

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Template: BOSCTEMP Rev 1, File: PATRIKO2

Borehole No: BH 08

Sheet 5 of 5

		ect No ted D			02.C 3.06	3.00 N Slope		hecke		SY Irill Rig
			l Drilli	ng	6.0			<u></u>		iround Level
	DR	ILLINO) 		-	SOIL CHA	T	RISTIC	S	T
Method	Water Table	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity, colour, other components)	Moisture Cond'n	Consistency	Samplas and tests	Additional Comments
		· · · · · · · · · · · · · · · · · · ·	 [СН				<u>. </u>	
			41				} .			
			[- [M I	н Н	U50	-
			42							
			- - 43			becoming sandy on water return				
			44			SANDSTONE: brown and grey, medium grained, 5 to 10 degree joints extremely weathered, estimated low strength				- Joint, 1-2mm clay, 10 degrees - RQD=0%, CR=98% - RQD=91%, CR=100%
						becoming light grey to white, slightly weathered to fresh, estimated high				Joint, clean; 0 degree
			L45			ristrength 10 to 20mm clay at 43.68m and 43.89m				
						End of Coring at 44.7m				
			-46 -							
			47							
			L48							
			-49							
		arks: nence	150	<u> </u>		<u>.</u>		<u> </u>	J	<u>,</u>