Installation of Submarine Gas Pipelines and Associated Facilities from To Kwa Wan to North Point for Former Kai Tak Airport Development Consultancy Services for Feasibility Study and Detailed Design Environmental Impact Assessment Report



Appendix C1

Vibrocore Records



t'igintwilibrary/11/uly2008.glbtdrillhole (1 may 05)

Gammon Construction Limited

of 1

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SHEET

Ground Engineering & Substructure Department

VIBROCORE RECORD

Ground Investigation Works for Submarine Gas Main Alignment from To Kwa Wan to North Point. **Project Title**

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222
MACHINE & No. G29	E 837850.20 N 819314.60	DATE from 24/07/2008 to 24/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL -5.60 mPD

_			1	-	_							_						
	Progress	Casing depth/size	Wate Deptr (m)	1 2	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests			iples	8 Reduced 8 Level		ε ω	Legend	Grade	Description
	07/2005		08:00		33						*	0.00 0.05 0.05 1.00				- - - - - - - - - - - - - - - - - -		Very SOFL dark grey and black, silty CLAY. (CONTAMINATED MARINE DEPOSIT)
<u> ا</u>											•	1.95 200	<u>-7.60</u>		2.00			Very soft, dark grey and black, slightly sandy silty CLAY. (CONTAMINATED MARINE DEPOSIT)
سيبينا					198					2		2.95	-8.60		.00			Soft, grey, sandy CLAY/SILT. (MARINE DEPOSIT)
يداند بدرست											V100	3.95 4.00	-9.60		00 			Firm, light grey, mottled brown, sandy CLAY/SILT. (MARINE DEPOSIT)
	8008		18:00								•	4.95 5.00	-10.60		00			Light grey, clayey silty fine to coarse SAND. (ALLUVIUM)
ليبيديد والمعا												0.00						End of hole at 6.00m depth.
والمتعالية والمتعالية														-				
<u></u>																		
ł	Large		ed sampl ed sampl			Piezo	er samp meter y Jard pe	stand	pipe tip on test	LOGG		JAS		<u>10.0</u>	REI	MARK	ŝ	
	U76 u U100 Mazie	ndisturb	rbed samp rbed sam e		I I I V	Wate Perm Impro		otion (test acker	Packer) test test	DATE CHEC DATE	KED	KEN	7/2008 MA 7/2008					



Ground Engineering & Substructure Department

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VIBROCORE RECORD

Ground Investigation Works for Submarine Gas Main Alignment from To Kwa Wan to North Point Project Title

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222
MACHINE & No. G29	E 837950.20 N 819309.10	DATE from 22/07/2008 to 22/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL -4.70 mPD

Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %		Solid core Recovery %	R.Q.D.	Fracture Index	Tests	No.		iples	A Reduced 22 Level	are (m)	Legend	Grade	Description
22/07/2008		08:00		98							0.05	-4,75	- 0,05		-	Grey and light grey, slightly silty fine to medium SAND. (FILL) Light grey, subangular to subrounded fine to coarse GRAVEL sized concrete fragments. (FILL)
										00/	[-6.70	2,00			Firm, grey, sandy CLAY/SILT. (MARINE DEPOSIT)
									2			-7.70	3.00			Firm, grey, sandy CLAY/SILT with some broken shell fragments. (MARINE DEPOSIT)
		-		100							3.00	-8.70	4.00			Firm, dark grey, CLAY/SILT. (MARINE DEPOSIT)
										•	3.95	-9.70				Firm, grey, mottled brown, clayey SILT. (ALLUVIUM)
72/07/2008		18;00								•	4.95 5.00	-10.70	5,00			Firm, yellowish brown, SILT. (ALLUVIUM)
											5,95		6.00			End of hole at 6.00m depth.
-												[
-																
i Large	disturbe disturbe ner samp ndisturbe	d sample Die	1		Piezor Standa	ard per	standp retratio		LOGG DATE			DN LAU /2008	10.00 RE	MARK	S	
U100 Mazier	undisturt sample sample		ple	I V			acker t		CHEC DATE		KEN 24/07					

Gammon Construction Limited

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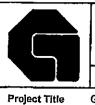
Ground Engineering & Substructure Department

VIBROCORE RECORD

Ground Investigation Works for Submarine Gas Main Alignment from To Kwa Wan to North Point **Project Title**

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222
MACHINE & No. G29	E 838032.20 N 819295.40	DATE from 12/07/2008 to 12/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	SEABED LEVEL -7.10 mPD

	Drilling Progress		Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	No.		pies	1	ë Level	e Depth (m)	Legend	Grade	Description
	12/07/200	8	08:00									e De 0.05		10	1,00			Brown and dark brown, silty fine to medium SAND. (FILL) Brown, clayey silty fine to coarse SAND with some fine to coarse gravel sized brick fragments. (FILL)
	-																	Firm, grey, CLAY. (MARINE DEPOSIT)
												1.95	10					
						1				2		2.95	-10.	1111111	_3.00			Stiff, brown, mottled light grey, CLAY/SILT. (ALLUVIUM)
											•	3.95 4.00	-11.	- I I I I I I I I I I I I I I I I I I I	4,00			Stiff, brown, mottled light grey, sandy CLAY/SILT. (ALLUVIUM)
	2407/2005		18:00								•	4.95	-12.1		5,00			Light grey, clayey silty fine to coarse SAND, (ALLUVIUM)
												5.95 8.00	-13.1		6.00			End of hole at 6.00m depth.
يتنبعتنا														<u></u>				
theinwultbrary/tjuty2008.glb/driihole (1 may 06)														للاللالالالالالالالا				
ily2008.glb/drilt	i.arg	ill disturbe le disturbe liner samp	d sample		 ≛ ↓	Piezo			olpe tip In test	LOGG				.u	ooo RE	MARK	s	
Vibrary/1jul	U76 U10	undisturb 0 undistur	ed samp bed sam		I I I	Wate Perme	r absor eability	ption (F test	ocker) test	DATE			7/2008 MA					
L'Aginhwuli	Mazi Pisto	ier sample in sample			I V			acker t shear t		DATE		15/0)	//2008					



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Ground Engineering & Substructure Department

VIBROCORE RECORD

Ground Investigation Works for Submarine Gas Main Alignment from To Kwa Wan to North Point

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222
MACHINE & No. G29	E 838087.50 N 819210.20	DATE from 10/07/2008 to 10/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Ventical	SEABED LEVEL -7.70 mPD

	m	Water	. 8	_ %	_ %				1_			1.0			[
Dritting Progress	Casing depth/size	Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests		iample Type		o Level	S Depth 8 (m)	Legend	Grade	Description
-10/07/200e		08:00								Type	105					Stiff, grey and light grey, CLAY/SILT. (CONTAMINATED MARINE DEPOSIT)
										•	95 .00	-8.70	1.00			Soft, grey, slightly sandy CLAY/SILT. (MARINE DEPOSIT)
										• 12	.95 00	-9.70	2.00			Soft to firm, grey, CLAY/SILT. (MARINE DEPOSIT)
				100					2	- 3.	55 55	-10.70	3.00			Grey and brown, clayey silty fine to coarse SAND. (ALLUVIUM)
										• 34	85	-11.70	4.00			
												-12.70	5.00			Light brown, silty fine to coarse SAND. (ALLUVIUM)
										• 4.5	55					Light orangish brown, silty fine to coarse SAND. (ALLUVIUM)
10/07/2008		18:00					-			5.9	5	- <u>13.70</u> - - -	6.00			End of hole at 6.00m depth.
												ب ب ب				
													0.00			
Large	disturbe disturbe	d sample		▲ ≞ ↓	Piezor		stand	pipe tip on test	LOGGI	=D <u>J/</u>	ASO	N LAU	RE	MARK	S	
076 υ	iner samj Indisturb Undisturi	ed sampi		Ĭ	Water		tion (l	Packer) test	DATE	_		2008				
Mazie	r sample sample			Ĭ V	Impre In-situ	ssion p	icker i		CHECK DATE	_		A				



Ground Engineering & Substructure Department

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Project Title

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VIBROCORE RECORD

Ground Investigation Works for Submarine Gas Main Alignment from To Kwa Wan to North Point

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222
MACHINE & No. G29	E 838141.60 N 819127.30	DATE from 10/07/2008 to 10/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	SEABED LEVEL -7.80 mPD

			-	1	r										· ·		······································
Drilling		Wate Depti (m)	1 2	Total core Recovery %	Salid core Recovery %	R.Q.D.	Fracture	Tests			iples <u>pe</u> De	Reduced Level		Ê.	Legend	Grade	Description
.10/07/20 - - - -	08	08:00								Ţ		-7.85	_	0.05			Stiff, grey and dark grey, slightly sandy dayey SILT. (CONTAMINATED MARINE DEPOSIT) Stiff, grey, slightly sandy CLAY. (MARINE
											9.85	-8.80		1.00			DEPOSIT) Stiff, grey, slightly sandy CLAY with occasional shell fragments. (MARINE DEPOSIT)
		•								MIN							shell fragments. (MARINE DEPOSIT)
				\square						•	1.95	<u>-9.80</u>		2.00			Grey, silty clayey fine to coarse SAND. (MARINE DEPOSIT)
				1907					2		2.95 3.00						
															-1-		
يىيە بىلىر بىيە بىلىر										•	3.95 4.00	-11.80_		00		_	Light grey, silty fine to coarse SAND, (ALLUVIUM)
ا معد م										V100	4.95 5.00	-12.80	- 5	.00			
											5.00		-				Stiff, light grey, slightly sandy SILT. (ALLUVIUM)
- C10407/2008		18:00	-{	2	\square		_				5.95	-13.80	6.	00			
																	End of hole at 6.00m depth.
			ļ										-				
-	ļ																
									}				-				
							-										
			İ										•				
• Sm	all distur	bed sampl	 e		Wate	r sampi	 e		 	. <u> </u>	_	F	10.0 		MARK	s	
l Lan		bed sampl		å	Piezo Stand	meter / ard pe	stanc tetrati	dpipe tip ion test	LOGG			ON LAU					
2 U76	undistu	rbed samp urbed sam		I		abson ability		(Packer) test	DATE CHEC			7/2008 MA	•				
	ier samp on samp			Î V		ssion p	acker		DATE			//2008					



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Ground Engineering & Substructure Department

VIBROCORE RECORD

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222						
MACHINE & No. G29	E 838250.30 N 818960.10	DATE from 09/07/2008 to 09/07/2008						
FLUSHING MEDIUM WATER	ORIENTATION Vertical	SEABED LEVEL -9.50 mPD						

	Progress	Casing depth/siz	Depth (m)	Water Recovery	Total core Recovery	Solid core Recovery	R.Q.D.	Fracture	Tests			iples × Dep	e 6 8 1evel	e Depth		Legend	Grade	· Description
أبينيينية			08:00									2 Dep 0.05	-10.50	1. 0. 1. 1. 1. 1.	.05			Soft, brownish grey, clayey SILT. (MARINE DEPOSIT) Soft, grey, CLAY/SILT. (MARINE DEPOSIT)
											MM							Soft, grey, slightly sandy CLAY/SILT. (MARINE DEPOSIT)
حيريبينينا											•	1.95	-11.50			-]		Firm to stiff, light brown, slightly sandy CLAY/SILT. (ALLUVIUM)
Le creacer					3					2		2,95	-12.50	<u>3.</u>				Firm to stiff, light brown, mottled light grey, CLAY/SILT. (ALLUVIUM)
La sa											• M00	3.95						
L	17/2008		18:00								•	4.95 5.00	<u>-14,50</u>	5.0				Light grey, silty fine to coarse SAND. (ALLUVIUM)
											₽	- <u>585</u>	-15.50	6.00	01:			End of hole at 6.00m depth.
أيت بين بين أين ب																		
بليب بيبيا																		
		1																
F			ed sample				r sampl		pipe tip	LOGG	ED			<u>10.00</u> R		/ARK	s	
	Large disturbed sample SPT liner sample U76 undisturbed sample U100 undisturbed sample			↓ I	Standard penetration test Water absorption (Packer) test						10/07	2008						
	Mazier sample Piston sample			Impression packer test					CHECI DATE	KED	KEN							



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Ground Engineering & Substructure Department

VIBROCORE RECORD

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222
MACHINE & No. G29	E 838316.80 N 818885.60	DATE from 07/07/2008 to 07/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	SEABED LEVEL -9.20 mPD

Г			[T-1						7	_		F	
	Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D,	Fracture Index	Tests			pies	k Reduced		g (m)	Legend	Grade	Description
المعدد ومعددا	/07/2008		08:00							1		0.95	-10.20	****	1.00	- -		Stiff, grey and dark grey, CLAY/SILT. (CONTAMINATED MARINE DEPOSIT)
لويتنافيه											81		-11.20		2.00			Soft, grey, CLAY/SILT with some broken shell fragments. (CONTAMINATED MARINE DEPOSIT)
* . ? * ? * ? *												2.85	-12.20		3.00			Soft, grey, CLAY with some broken shell fragments. (MARINE DEPOSIT)
					100					2		3.05	<u>12.20</u>		-		-	Stiff, yellowish brown and brown, CLAY/SILT. (ALLUVIUM)
يدينين											• Al0	3.95						
			18:00								•	4.95 5.00	-14.20					Firm, brown, CLAY/SILT with some to much subangular fine quartz gravel. (ALLUVIUM)
	7/2005		10.00								_ .	<u>5,95</u> 8,00	-15.20	6	.00 -	_ ~		End of hole at 6.00m depth.
														-				
بر ال مر بر بر																		
														• • •				
靇													F	10.0	10			
108-80 •		disturbe disturbe			▲ 5	Piezo	r sampl meter /	standg	ipe tip	LOGG	ED	JAS	ON LAU		RE	MARK	S	
wijuy20	SPT lü	ner samp ndisturb	ple		‡ I	Stand	ard per	iebatic	on test Packer) test	DATE			//2008					
Mibrary S	U100	undisturi	bed sam;		Ŧ	Perme	ability	test		CHEC	KEO	KEN	MA					
t:\gintwit		sample			I V	Impre In-silu	ssion p			DATE		09/07	/2008	-				



Ground Engineering & Substructure Department

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Project Title

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VIBROCORE RECORD

Ground Investigation Works for Submarine Gas Main Alignment from To Kwa Wan to North Point

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222
MACHINE & No. G29	E 838388.30 N 818817.20	DATE from 07/07/2008 to 07/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	SEABED LEVEL -8.00 mPD

		_	1															
	2	R	Water	8	Total core Recovery %	Solid core Recovery %			1	5	Sam	ples	ęq		T			
Drilling	Gres	Casing depth/size	Depth	Water Recovery %			R.O.D.	Fracture	Tesis				Reduced Level	Depth	, P		þ	Description
Ē	B 6	ê ç	(m)	Red	[호문	Sol 1	6	Frai			-			0,00		,	Grade	
,07 <i>1</i> 077	2008	-	08:00		199		-	1	1	No.	Ť	B Dep 0.00 0.05		E 0.00	in the second se	<u>e</u>		Grey, angular coarse GRAVEL sized rock
F						1						[Ē	5	-1		\fragments with some broken shell fragments. /
F														Ē	Ē	ż		Firm, grey, very sandy CLAY with some broken shell fragments. (MARINE DEPOSIT)
F						1					•	0.95	-9.00_	<u>- 1,0</u>		्रम		
E												Į			Ē	_		Soft to firm, grey, CLAY with some shell fragments, (MARINE DEPOSIT)
Ē			:			1					8	1				7		
E-						1						1.95		-	E	5		
Ē						1								-	5	-1		
E														-		Ċ		
E												795	-11.00	- 3.04	<u>ح</u> اً,	-		
È					100					2		2.95 3.00	-11.00	-	1	5		Stiff, brown, mottled light brown, CLAY/SILT.
E									[-				(ALLUVIUM)
È]					-				
Ē											•	3,95 4,00	-12.00	<u>4.00</u>			-+	Stiff, grey, mottled brown, CLAY/SILT.
				ļ				ĺ			8				臣			(ALLUVIUM)
Ē				ļ							7					1		
-				Į							•	4.95 5.00		<u>.</u>				
Ē				ĺ											<u> </u>	-		
Ē				ł												-		
02/02/20/			18:00	_								595	-14.00	6.00		- 1		
Ē																		End of hole at 6.00m depth.
-					ļ								Ē					
-						ŀ							, L					
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-													F					
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	1												Ē					
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													Ē	10.00				
			d sample		A ±		er samj							R	EMAI	R	3	
		isturbe er samp	iqmsə ba	e	≛ L		ometer darđ po	/ star शाहरूट	ndpipe tip Ition test	LOGG	εD	JASC	ON LAU					
🔰 U	76 итс	disturb	ed samp		Ì	Wate	er abso	rption	(Packer) test	DATE	/2008							
📕 U.			bed sam	ple	Ŧ						KED	KEN	MA					
3	Mazier sample Piston sample				Γ Impression packer test V In-situ vane shear test					DATE		09/07	/2008					
-														1				



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Gammon Construction Limited

Ground Engineering & Substructure Department

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Project Title

VIBROCORE RECORD

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222
MACHINE & No. G29	E 838464.30 N 818755.60	DATE from 08/07/2008 to 08/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	SEABED LEVEL -9.20 mPD

Г			T				T		T				1	7	7	
	Progress	CasIng depth/size	Water Depth (m)	1 2	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture	x Tests	Sa	Imples	Reduced	Depth (m)	Legend	Grade	Description
		ပ်ခိ		₹Å	μĕ	ΝÅ	с.	Ľ.	č	No.	Type De	oth -9,20	0.00	. w	5	
<u>3.111111111</u>	07/2008		08:00								• 0.95 1,00	5				Soft, grey and dark grey, sandy CLAY/SILT. (CONTAMINATED MARINE DEPOSIT)
إنعنيتي											MIN					Soft to firm, grey, sandy CLAY/SILT. (MARINE DEPOSIT)
<u></u>											• 1.95					
											- 3.85					Firm to stiff, dark brown, mottled light grey, CLAY/SILT. (ALLUVIUM)
										Mat		<u>13.20</u>	<u>4.00</u>			Soft to firm, light grey, CLAY/SILT. (ALLUVIUM)
	12008		18:00								5.00	-14,20	5.00			Stiff, light grey, mottled brown, CLAY/SILT. (ALLUVIUM)
											- <u>5.55</u> -		<u>600</u>			End of hole at 6.00m depth.
	Small disturbed sample Large disturbed sample SPT liner sample U76 undisturbed sample U100 undisturbed sample Mazier sample					Image: Standard penetration test Image: Water absorption (Packer) test Image: Permeability test				LOGGE DATE CHECKI	09/0	ON LAU 7/2008 MA	R	EMARK	S	
		sample		V	T Impression packer test					10/07	7/2008					



of 1

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SHEET

Ground Engineering & Substructure Department

Project Title

RECORD

Ground Investigation Works for Submarine Gas Main Alignment from To Kwa Wan to North Point

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222
MACHINE & No. G29	E 838546.70 N 818702.60	DATE from 08/07/2008 to 08/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	SEABED LEVEL -9.40 mPD

	Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests			ples		è Reduced	8 Depth (m)	Legend	Grade	Description
19 1	v07/2008		08:00							<u>No.</u> 1	146		5	-9,45	0.00			Grey, silly fine SAND. (CONTAMINATED MARINE DEPOSIT) Soft, grey and dark grey, sandy CLAY/SILT. (CONTAMINATED MARINE DEPOSIT)
											•	9.9 1.0	8 -	-10.40	1.00			Firm, grey, very sandy CLAY/SILT with some to much broken shell fragments. (MARINE DEPOSIT)
						-					•	1.96 2.00	3					
ta se la ca					100					2		2.95 3,00		-12.40	3.00			Firm, light brown, sandy CLAY/SILT. (ALLUVIUM)
ب با ب و ب م											•	3.95 4.00		13.40	4.00			Light yellowish brown, silty fine to medium SAND. (ALLUVIUM)
<u>د</u>	-										• VI0	4,95						SAND. (ALLUVIUM)
	7/2008		18:00									5.95 8.00		15.40	6.00			
												6.00						End of hole at 6.00m depth.
با با بالاستان														<u> </u>				
وربيعان																		
may 08)														يون برايد برو				
tigintwultbrary/tjuty2008.glbbdrithtole (1 may 03)														Ē	10.00			
uty2008.glb	Large SPT li	disturbe disturbe ner samj	id sampli ple	e	▲ 	Piezo Stanc	lard pe	l stand netrati	lpipe lip on test	LOGG					RE	MARK	s	
wilbrary/1j	U 100	indisturb undistur r sample	bed sam		I I I	Perm	r absor eability ession p	test	Packer) test test	DATE CHEC		09/0						
t: Igintw/lk		sample			Ī		t vane			DATE		10/0	7/20	008				



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Ground Engineering & Substructure Department

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VIBROCORE RECORD

┢		METHOD Vibrocore CO-ORDINATE E 838632																
	MET	HOD	Vib	roco	re												PF	ROJECT No. J3222
	MAC	HINE	& No.	G	29					N				57.60			D/	ATE from 02/07/2008 to 02/07/2008
	FLU	SHING	MED	IUM	W	ATER				OR	EN	ITAT		N Ve	ertica	t	SE	EABED LEVEL -12.10 mPD
	Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture	c Tests			ampli Type	Depi		0.0	<u>ت</u> ہ	Grade	Description
والمتحديين			08:00										0.95	-12.15				Very soft, grey and dark grey, CLAY/SILT. (CONTAMINATED MARINE DEPOSIT) Soft, grey, CLAY/SILT. (CONTAMINATED MARINE DEPOSIT)
يدينيني		4 										•	1,95	-14.10	2			Firm, brownish grey, clayey fine to coarse SAND. (ALLUVIUM) Stiff, brown, clayey sandy SILT. (ALLUVIUM)
					100					2		~ 3	95	<u>-15.10</u>	3			Light grey, fine to coarse SAND. (ALLUVIUM)
						, , , , , , , , , , , , , , , , , , ,					With	AIM	95.00 00	-17,10	.5.0			Light grey, fine to coarse SAND. (ALLUVIUM)
	7/2004		18:00										95	-18 10	6.0			Firm to stiff, light grey, sandy CLAY/SILT with occasional subangular fine quartz gravel. (ALLUVIUM)
												6.			10,00			End of hole at 6.00m depth.
•	Large disturbed sample SPT liner sample SPT liner sample										LOGGED JASON LAU						S	
	U100	undisturt	xed sam		Ŧ	Perm	eabllity	test				∸ ЕD <u>К</u>						
												0	4/07/	2008				



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Ground Engineering & Substructure Department

VIBROCORE RECORD

Ground Investigation Works for Submarine Gas Main Alignment from To Kwa Wan to North Point **Project Title**

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222
MACHINE & No. G29	E 838725.60 N 818619.30	DATE from 02/07/2008 to 02/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	SEABED LEVEL -10.75 mPD

Drilling		_N I	Water Depth (m)	1 2	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture	Tests			nples pe Day	4 Reduced 52 Level	S Depth		Legend	Grade	Description
.92/07/2	204	- 1	08:00		191	1		1		1	T,	0.00	-10.80	- 10.1	05	÷1-,		Grey, slightly slity fine to medium SAND.
			00.00											<u></u>	1,11,1			(MARINE DÉPOSIT) Soft, grey, sandy CLAY/SILT. (MARINE DEPOSIT)
											•	0.95	-11,75	<u>- 1.0</u>	<u>»</u>			Soft, grey, sandy CLAY/SILT with some broken shell fragments. (MARINE DEPOSIT)
											S.				2111			Shen naginenis, (MARINE DEPOSIT)
F											•	1,95	-12.75	2.0	<u>- 10</u>			Brownich arow your down for the same at the
																		Brownish grey, very clayey fine to coarse SAND. (ALLUVIUM)
E												205	-13.75	3.0	: <u>ا</u>			
										2		2.55	<u></u>	 		i 		Light grey, slightly silty fine to coarse SAND. (ALLUVIUM)
Ē																		
											•	3,95 4,00		-				
				ĺ							00M							
				ł	$\langle \rangle$						•	4,9\$ 5,00	-15.75	5,00	÷		+	Stiff, light grey, mottled yellowish brown, sandy CLAY/SILT. (ALLUVIUM)
					\square													CLAY/SILT. (ALLUVIUM)
E. 02/02/2000		1	8:00		\square							5.95 5.00	-16.75	6.00	F			
Ē												5.00						End of hole at 6.00m depth.
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-													È					
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										ļ			<u> </u>	10.00				
			i sample I sample		 ₫		r samp meter		dpipe tip	LOGO	GED	JAS	DN LAU		EM.	ARK	S	
] SP	7 liner	sampl	le		↓ Ŧ	Stan	larđ pe	netrat	ion test									
្រ៍ ប្រ			d samp ed sam		I I		r absoi eability		(Packer) test									
🖉 ма	izier sau	mple		• •	I	Ітра	ession	acker		CHECKED KEN MA								ļ
2 Pis	ton sample V In-situ vane shear test						test	DATE 04/07/2008										



Gammon Construction Limited

Ground Engineering & Substructure Department

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VIBROCORE RECORD

Ground Investigation Works for Submarine Gas Main Alignment from To Kwa Wan to North Point Project Title

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222
MACHINE & No. G29	E 838821.10 N 818578.10	DATE from 03/07/2008 to 03/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	SEABED LEVEL -11.00 mPD

	Casing depth/size	Water Depth (m)	Water Recovery %		Solid core Recovery %	R.Q.D.	Fracture Index	Tesis	\$ No,		ples	A Reduced	00 Depth (m)	Legend	Grade	Description
53/07/2008		08:00		3						•	C.95					Very soft, grey and dark grey, CLAY/SILT. (CONTAMINATED MARINE DEPOSIT)
										•	1.95 2.00	-13.00	<u>2.0(</u>			Very soft, grey, very sandy CLAY/SILT. (MARINE DEPOSIT)
		, , ,		100					2		3.55	-14.00	3.00			Grey, clayey silty fine to medium SAND. (MARINE DEPOSIT)
		1								• 100	3,95 4,00	-15.00	<u>4.00</u>			Grey, silty fine to medium SAND. (ALLUVIUM)
		18:00								•	4.95	-17.00	6.00			
											<u>5.95</u> 6.00					End of hole at 6.00m depth.
-												والمتعادين والمتعادين والمتعالية و				
- Course	distantia	d sample			1							Ê	10.00	MARK		
Large	disturbe ner samp	d sample	•	▲ さ ↓ T	Piezor Stand	sampi neter / ard per	standp letratio	pipe tip n test Packer) test	LOGG DATE	ED		ON LAU			3	
U100 -		bed sam;		I I I		ability	test		CHEC	KED	KEN	MA				



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Gammon Construction Limited

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Ground Engineering & Substructure Department

Project Title Ground I

VIBROCORE RECORD

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222
MACHINE & No. G29	E 838904.50 N 818533.20	DATE from 03/07/2008 to 03/07/2008
FLUSHING MEDIUM WATER		SEABED LEVEL -11.00 mPD

Γ				S	8	8	Ì	Ţ	<u> </u>					1		1	
	Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture	Tests			iples	peonpeq Fevel -11.08	Depth 0.00		Grade	Description
			08:00	28		S M M	Ľ			2		2.00 0.05 0.05 0.05 0.05 0.05 0.05 0.05		0.00	┍╴╎┍┥╛┥┇┝┥╝┝┿╎┙╎┙╎┙╎┙╵┙╵┙╎┙╎┙┝┙╵ ╴╎┝┥╛┥┇╿┽╿╼╿┿╿╼╎┾╎┍╎┿╎╼╎┶╎┿╎┾╎┝┥		Very soft, grey and dark grey, CLAY/SILT. (CONTAMINATED MARINE DEPOSIT) Very soft, grey, sandy CLAY/SILT. (MARINE DEPOSIT)
4444	7/2008		15:00								•	4.95 5.00	-16.00	<u>5.00</u>			Firm, light grey, sandy CLAY/SILT. (ALLUVIUM)
												<u>6.03</u>					End of hole at 6.00m depth.
101	Large SPT H U76 u	e disturbe iner samj indisturb	ed samp	e le		Piezo Stand Water	ard per absorp	stand letrati btion (ipipe tip on test 'Packer) test	LOGG DATE			2008	10.00	EMARI	ks i	
	Mazie	undistur r sample ı sample		ple	I V		ssion p vane s	acker		CHEC DATE			MA			.	



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Ground Engineering & Substructure Department

VIBROCORE RECORD

Ground Investigation Works for Submarine Gas Main Alignment from To Kwa Wan to North Point

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222								
MACHINE & No. G29	E 838981.50 N 818478.60	DATE from 04/07/2008 to 04/07/2008								
FLUSHING MEDIUM WATER	ORIENTATION Vertical	SEABED LEVEL -11.00 mPD								

	Progress	Casing depth/size	Wate Depti (m)		Total core Recovery %	Solid core Recoverv %	R.o.D.	Fracture	Tests			iples	Feduced Level	Cepth		Legend	Grade	Description
<u></u>	07/2008		08:00		100							De De 0.03 0.05	-11.05		.05			Very soft, grey and dark grey, CLAY/SILT. (CONTAMINATED MARINE DEPOSIT) Soft, grey, sandy CLAY/SILT. (MARINE DEPOSIT)
متنعينات											•	0.95 1.00	<u>-12.00</u>	1 1 1 1 1 1	.00	 		Grey, clayey fine to medium SAND with some broken shell fragments. (MARINE DEPOSIT)
ببيلبية				-							•	1.95	<u>-13,00</u>	~ ~	<u>بر ان کار ا</u>	1-1-1-0-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1		Soft, brownish grey, sandy CLAY/SILT. (MARINE DEPOSIT)
					198					2		2.95 3.00						
											• 100	鹅	-15.00	4.0				Soft to firm, grey, sandy CLAY/SILT. (MARINE DEPOSIT)
									1		•	\$.85 \$.80	-16.00	5.0				Yellowish brown, silty fine to coarse SAND with some angular fine gravel sized rock fragments. (ALLUVIUM)
	/2004		18:00									5.55	-17.00	<u>6.0</u>	0			End of hole at 6.00m depth.
يديد ويونيا وم																		
-													Ē	10.00				
•	Large SPT i	e disturt iner san		le	▲ ₫ ↓ Т	Piez Stan	darđ pe	/ stan netral	dpipe tip tion test	LOGG			ON LAU	F	REN	ARK	s	
	U100 Mazie				I I V	Pern Impr	er absor neability ression p tu vane	test backe		CHECH		KEN						



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Ground Engineering & Substructure Department

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VIBROCORE RECORD

Ground Investigation Works for Submarine Gas Main Alignment from To Kwa Wan to North Point Project Title

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222
MACHINE & No. G29	E 839055.30 N 818420.20	DATE from 04/07/2008 to 04/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	SEABED LEVEL -10.10 mPD

Dulling		Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests			ples	B B B B B B B B B B B B B B B B B B B	e Depth 8 (m)	Legend	Grade	Description
		08:00							1		0.05		- 0.05 - - - - - - -			Light grey, slightly silty fine SAND. (MARINE DEPOSIT) Soft, grey, very sandy CLAY. (MARINE DEPOSIT)
										8						Grey, clayey fine to coarse SAND with much broken shell fragments. (MARINE DEPOSIT)
										•	1.95					
				100					2		2.95 3.00					
										• 00M	3.95 4.00	-14.10	4.00			Firm, light grey and greyish brown, clayey SILT. (ALLUVIUM)
-										•	4.95 5.00	-15.10	5.00			Firm, yellowish brown, slightly sandy SILT. (ALLUVIUM)
04/07/200	28	18:00									<u>595</u>	-16.10	6.00			End of hole at 6.00m depth.
· • • •																
-																
-																
Sr La SF U SF U U	mali distorbe				11/21-	r samp							10.00	MARK	9	
Sr La SF SF U	arge disturbe PT liner sam 76 undisturb	ed sample ple	2		Plezo Stanc	meter lard pe	/ standp netratio	pipe tip In test Packer) test	LOGO DATE			ON LAU		WI-11\J\	5	
	100 undistur azier sample ston sample	bed samj		Ĭ I V	Perm	eability ession p	test	est	CHEC DATE			MA				



Project Title

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Ground Engineering & Substructure Department

Ground Investigation Works for Submarine Gas Main Alignment from To Kwa Wan to North Point

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222
MACHINE & No. G29	E 839122.20 N 818352.40	DATE from 21/06/2008 to 21/06/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	SEABED LEVEL -11.00 mPD

_		·			1	7=:											
	Progress	Casing depth/size	Water Depth (m)	1 2	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	No.		ples		e Depth (m)	Legend	Grade	
Ē			08:00		1//					1	1	0.00	-11.05	- 0,0;			Grey, silty fine to coarse SAND with some broken shell fragments. (MARINE DEPOSIT)
F			1	1	1//							1		Ľ	Ę.		Firm, grey, sandy silty CLAY with some shell
E				[1		F		ł	Firm, grey, sandy silty CLAY with some shell fragments. (MARINE DEPOSIT)
Ē	ļ		ļ									0.95		-			
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E	Í		}		\langle / \rangle						8			_			
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Ē											•	1.95 2.00		-	·		
ŧ						1					İ			-	ΞĘ		
E														-			
Ē		ĺ										2.95	-14.00	3.00			
Ł	1									2		2,95 3.00		-			Firm, grey, silty CLAY. (MARINE DEPOSIT)
Ē					\square									-			
Ē			1			[
F			Í								•	3,95 4,00			- <u>, -</u>		
Ę				t											-1-1		
F				t	\square						8		Ē			[
Ē		- 1		ł			ł										
Ē				E							٠	4.95 5.00	•16.00_	5.00		_	Light brownish grey, silty fine to coarse SAND
Ę				F									Ē		月前		Light brownish grey, silty fine to coarse SAND. (ALLUVIUM)
Ē				F									Ę		분성		
21/06	2005		18:00	ĺ								5.85	-17.00	_6.00			
Ē				T		T						6.05				1	End of hole at 6.00m depth.
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F										1			Ę				
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													È.	10.00			
•			ed sampl		Å		r samp							RE	MARK	S	
l n			edi sampi	le	₫				ipipe tip ion test	LOGO	ĕËD	JASC	N LAU	ſ			
		iner sam Indisturt	iplė ced samį	ole	i					DATE		23/06	2008				
			rbed san		Ī		sability		1	CHEC	KEC	KEN	MA				
		r sampi			I	Impre	ession p	acker	test								
e	Piston	sample			V	In-sih	ј уале	shear	test	DATE		24/06	2008				



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VIBROCORE RECORD

Ground Investigation Works for Submarine Gas Main Alignment from To Kwa Wan to North Point Project Title

MACHINE & No. G29 E 839180.30 N 818281.60	DATE from 21/06/2008 to 21/06/2008
FLUSHING MEDIUM WATER ORIENTATION Vertice	SEABED LEVEL -10.80 mPD

	Drilling Progress	Casing depth/size	Water Depth (m)	1 2	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	No.		ples » . Dep	Reduced b Level			,	Grade	Description
<u></u>	106/2008		08:00							1		0.95	-11.80	0.				Grey, silty fine to coarse SAND with some broken shell fragments. (MARINE DEPOSIT) Firm, grey, sandy SILT with some broken shell fragments. (MARINE DEPOSIT)
											- V100		-12.80	2.0		<u>1111-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1</u>		Soft to firm, grey, silty CLAY with some broken shell fragments. (MARINE DEPOSIT)
بلانيتينان										2		2.95	-13.80	30				Firm, grey, sandy SILT with some broken shell fragments. (MARINE DEPOSIT)
يليدين يعيل											•	3.95 4.00	-14.80		<u> - - - - -</u>			Soft to firm, grey, sandy CLAY/SILT. (MARINE DEPOSIT)
بليبيبين						-					. VI00	4.95 5.00	-15,80	5.0		<u></u>		Firm, brownish grey, sandy CLAY/SILT, (ALLUVIUM)
11111111111	6/2003		18:00									5.95 5.00	-16.80	6.0				Light brown, slightly silty fine to coarse SAND. (ALLUVIUM)
والاستعاد														-				End of hole at 6.00m depth.
يديد بريديد														· - - - - - - - - - - - - - - - - - - -				
														-				
												ŀ		10.00	EMA			
•	Large SPT (e disturb iner sam		e	▲ 古 ↓ T	Piezo Stano	fard pe	stano netrat	dpipe tip ion test	LOGO			ON LAU	-		πN	3	
	U100 Mazie				I I V	Perm Impri	r absor eability ession (u vaлe	test backer			KEC	KEN		-				



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Ground Engineering & Substructure Department

VIBROCORE RECORD

Ground Investigation Works for Submarine Gas Main Alignment from To Kwa Wan to North Point

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222
MACHINE & No. G29	E 839233.10 N 818203.50	DATE from 20/06/2008 to 20/06/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	SEABED LEVEL -10.20 mPD

- 1	Drilling Progress	Casing depth/size	Wates Depth (m)	Water Recovery %	Total core Recovery %	Solid care Recovery %	R.Q.D.	Fracture	Tests			iples	Peduced Level	Depth (m)	שיו	,	Grade	Description
3	0/06/2008		08:00									De: De: 0.05 0.05	-10.25					Grey, silty fine to coarse SAND with some broken shell fragments. (MARINE DEPOSIT) Grey, clayey silty fine to coarse SAND with some shells. (MARINE DEPOSIT)
							Ì					[-12.20	2.0				Soft to firm, grey, CLAY/SILT with some shell fragments. (MARINE DEPOSIT)
عليمينين			-		190					2		2.95	-13.20	3.00			-	Grey, silty fine to medium SAND with some shells. (MARINE DEPOSIT)
للمهمية والمع	-										•	3.95 4.00	-14.20	4.00				Firm, grey, CLAY. (MARINE DEPOSIT)
											. 100	4.95 5,00	-15,20	5.00				Firm, grey, sandy SILT. (ALLUVIUM)
	6/2015		18:00									5.95 6.00	-16.20	6.00				End of hole at 6.00m depth.
•	Small	disturbe	ed sample	2		Water	sampl				<u> </u>			10.00	EMAR	RKS		
	Large SPT II U76 u	: disturbe iner samj indisturb	ed sampl	e le		Piezo Stand Water	neter / ard per	stand Ietrati Ition (fpipe tip ion test (Packer) test	LOGO		23/00	ON LAU					
	Mazie	r sample i sample	<u>1</u>		Ĭ V		ssion p	acker		CHEC DATE			MA /2008					



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Ground Engineering & Substructure Department

VIBROCORE RECORD

Ground Investigation Works for Submarine Gas Main Alignment from To Kwa Wan to North Point Project Title

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222
MACHINE & No. G29	E 839276.60 N 818123.50	DATE from 23/06/2008 to 23/06/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	SEABED LEVEL -10.10 mPD

		-	, ,														
Drilling Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture	Tests			nples	Reduced			Legend	Grade	Description
23/06/2000	8,	·[]	1-1	7007		-	<u> </u>	┼─────	No.	- <u>1</u>	20 De	oth -10.10	0.00	<u>-</u>	/		
		08:00									0.05						Grey, dayey silty fine to coarse SAND with some broken shell fragments. (MARINE DEPOSIT)
E		i i		//						•	0.95	-11.10	<u>[. 1.0</u>	<u>xor</u> 12.7	-		Firm, grey, sandy CLAY/SILT with some bretten
ملي و و مريد م										NIN .	1.85	-12.10	- 20				Firm, grey, sandy CLAY/SILT with some broken shell fragments. (MARINE DEPOSIT)
											295	-13.10	3.0			:	Grey, clayey fine to medium SAND with some broken shell fragments. (MARINE DEPOSIT)
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				100					2		3.00						Soft to firm, brownish grey, sandy CLAY/SILT. (ALLUVIUM)
										• 101A	3.95	<u>14,10</u>	4.0				Firm, brown, sandy CLAY/SILT. (ALLUVIUM)
-		18:00								•	5.95 5.00	-15.10	5.00				Firm, brown, slightly sandy SILT. (ALLUVIUM)
											5.00		10.00				End of hole at 6.00m depth.
	li disturbe			A.		r sampi							R	EM/	ARKS	3	
	e disturb		à	- 5 -				lpipe tip	LOGG	ED	JAS	ON LAU					
	liner sam undisturb		la	Ť				ion test (Packer) test	DATE		24/08	2008					
	undisturb) undistui	-		Ī		ability		(rauter) test									
~	er sample	-	•	Ī		ssion p		test	CHEC	NEU	nen	MA					
Plsto	n sample			V		vane			DATE		25/06	/2008		-			



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VIBROCORE RECORD

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222						
MACHINE & No. G29	E 839313.00 N 818036.50	DATE from 18/06/2008 to 30/06/2008						
FLUSHING MEDIUM WATER	ORIENTATION Vertical	SEABED LEVEL -10.20 mPD						
Water % au au au au au au au au au au au au au	Samples Samples Samples							

	Dritting Progres	Casing depth/si	Depih (m)	Water Recover	Total co Recover	Solid co Recover	R.Q.D.	Fracture	Tests	N). T	ype De	- Reduc	evel 620	(m) 0.00 0.00	Legend	Grade	Description
	18/06/2005	1	08:00		88		-				Ţ	0.0	5					Grey, silty fine to coarse SAND. (MARINE DEPOSIT)
	-											0.50		0.80	- <u>06(</u> - - <u>1.0(</u>	9		Grey, silty fine to coarse SAND with some angular fine gravel sized rock fragments and broken shell fragments. (MARINE DEPOSIT)
											MM							Grey, clayey slity fine to medium SAND. (MARINE DEPOSIT)
	-								:		•	1.95 2.00	-12	2.20	2.00			Grey, slity fine to medium SAND with some broken shell fragments. (MARINE DEPOSIT)
1	6/06/2008		18:00 08:00		100					2	-	3.85	-13	20	3.00			Soft to firm, brownish grey, CLAY/SILT with
			U.U.U									395	.14	.20	4.00			much broken shell fragments. (MARINE DEPOSIT)
											M	3.95 4.00			4,00			Soft to firm, brownish grey, CLAY/SILT. (MARINE DEPOSIT)
L. L. L. L. L. L. L. L. L. L. L. L. L. L							1				•	4.93 5.00	-15.	20	5.00			Dark brownish grey, very silty fine to coarse SAND. (ALLUVIUM)
					100					З	- 100JA	5.95 6.00	<u>•16.</u>	20 -	6.00			Orangish brown, silty fine to coarse SAND with occasional subangular coarse gravel sized rock fragments. (ALLUVIUM)
					100					4		6.95 7.00	-17.3		7.00	0 1 0	_	Light brown dightly offer to some days
											0	7.05	-18.2	1 • • • • • • • • • • • •	8.00			Light brown, slightly slity fine to coarse SAND with occasional subangular fine gravel sized rock fragments. (ALLUVIUM)
											091	7.95 8.00	-19.2		0.00	0		Light brown, slightly silty fine to coarse SAND with occasional subangular fine quartz gravel. (ALLUVIUM)
	6/2008		8:00					-		! 	▲	8 55 9.00	<u>-19.2</u>	or.	9.00	<u>. p</u>	-	End of hole at 9.00m depth.
															0.00			
• 	Large		ed sample ed sample ole		▲ 亡 ↓	Piezo		stand	lpipe tip on test	LOG	GED	JAS		10	RE	MARK	5	
2	U76 u	ndisturb	ed samp bed samp		Ĭ Ŧ	Water	•	tion (Packer) test	DATE		<u>02/0</u> KEN	7/2008 MA	<u> </u>				
		r sample sample			I V		ssion pa vane s		test	DATE			7/2008					



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Gammon Construction Limited

of 1

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SHEET

Ground Engineering & Substructure Department

Project Title Ground Investigation Works for Submarine Gas Main Alignment from To Kwa Wan to North Point

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222
MACHINE & No. G29	E 839343.60 N 817948.40	DATE from 19/06/2008 to 20/06/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	SEABED LEVEL -10.50 mPD

_					~													
	Progress		Water Depth (m)	1 2	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture	Tests	No		nples	Peduced 1.0.50		uidan (j) 0.00	Legend	Grade	Description
F.	10012000	ï	08:00		////					1	1	8.8	-10.5	2	0.05	7		Brownish grey, silty fine to medium SAND.
																		(MARINE DEPOSIT) Grey, clayey fine to medium SAND with some broken shell fragments. (MARINE DEPOSIT)
											•	0.95	.=11.50	Ē	_1.00		<u> </u>	Soft to firm, grey, sandy CLAY. (MARINE DEPOSIT)
											MN							
È					$//\lambda$					1		1.95	-12,50	F	2.00			
E					\square							2.00		È	ŀ	<u>-1-</u>		Firm, brown and light brown, sandy CLAY/SILT. (ALLUVIUM)
Ē	·						ĺ				1	1		Ē	Į	-1		
E				F		:								Ē				
ŧ		ĺ			100					2	-	3.00		F	ŀ	<u></u>		
È				ł	\square							[Ē	Ē	<u></u>		
F		i	[ĺ	\square					1				E		1		
E					\square							3.95		È	ŀ	- <u>1-</u>		
F	ŀ	1		ľ	\square							4.00		F	ļ	- 	1	
Ē		Ì		ł					-		8			Ē	Ē	····		
Ē				ł	\square			1			-			-	F	· · · ·		
F											•	4.95 5.00	-15.50	F -	5.00 			Firm, grey, clayey SILT. (ALLUVIUM)
E				E										È	Ī	ŦŦ		A CONTRACT SILT. (ALLOVIDIN)
Ę				F			[E	Ī	부구분	1	
Ë.				É			ĺ			з		5.95 6.00	-16.50	- (Ī	구리		
Ē				ľ		ĺ	[6.00		1		1		Brown, slightly silty fine to coarse SAND. (ALLUVIUM)
Ē					A									=				
Ē				ľ										1 1	-			
F		Į	ļ								•	6.95 7.00	-17.50	7	<u>,001:</u>	<u>통합</u>		Light grey slightly silly fine to coarro SAND
E				Ľ										-				Light grey, slightly silty fine to coarse SAND. (ALLUVIUM)
Ē			1	ľ							ŝ			-				
-	2005		18:00	P			1					7.95 8.00		-				
	2008		08:00	ľ								8.00		-		6		
Ē				Ľ														
È				P										-				1
20050	2008		18:00	Ť	-4-			┿				8.95 9.00 -	-19.50	<u>9</u>	<u>.</u> 00	비누	-	End of hole at 9.00m depth.
Ē						ļ				1					1			and or hole at provin deput.
F			ĺ					ļ					-					
F													F	10	00			
٠		l disturbe			Ą		er samp								RE	MARK	5	
 		e disturbe		e	₫ 1				ipipe tip ion test	LOG	GED	JAS	ON LAU	-				
		liner samj undisturb		le	Ť				(Packer) test	DAT	Ξ	21/0	6/2008					
	U100) undistur	bed sam		Ŧ	Perm	eability	test		CHE	CKEL) KEN	MA					
		er sample n sample			IV		ession p			DATE			6/2008	-				
	71510	a southte			<u></u>	10-51	u vane	SREBT	lest	6/1/4	-			-				



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Ground Engineering & Substructure Department

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VIBROCORE RECORD

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222				
MACHINE & No. G29	E 839372.00 N 817858.00	DATE from 18/06/2008 to 30/06/2008				
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL -10.70 mPD				
Progress Progress Casing depth/size Mater Recovery % R. O.D. R. O.D. R. O.D. R. O.D. R. O.D.	Samples Paral Line Parad Line Par	କୁ Description ଓ				
1606/2002 08:00 999		with some broken shell fragments. (MARINE DEPOSIT)				

18:00 300063005 08:00			2	•	1.85 1.85 1.85	-11,70 -12,70 -13,70	<u> </u>		UEPOSIT) Grey, silty fine to medium SAND with some broken shell fragments. (MARINE DEPOSIT) Brown and grey, clayey silty fine to medium SAND. (ALLUVIUM) Firm, brown, CLAY/SILT with some angular fine quartz gravel. (ALLUVIUM) Firm to stiff, dark brown and grey, sandy CLAY/SILT with some angular fine gravel sized rock fragments. (ALLUVIUM) Firm, brown, CLAY/SILT. (ALLUVIUM)
				• 45		15.70	<u>5.00</u> 6.00		Firm, brown, sandy SILT. (ALLUVIUM)
			3		.00	17.70	7.00		Firm to stiff, grey, sandy SILT. (ALLUVIUM)
				• 24	55 -	18.70 -	8.00		(ALLUVIUM) Light orangish brown, slightly silty fine to coarse SAND. (ALLUVIUM)
				<u>. 89</u> 9,0	15 -1 NJ	9.70 F	9.00		End of hole at 9.00m depth.
Small disturbed sample Large disturbed sample SPT liner sample U76 undisturbed sample U100 undisturbed sample Mazier sample Piston sample	I ↓ I I V V	Water sample Piezometer / standpipe tip Standard penetration test Water absorption (Packer) test Permeability test Impression packer test In-situ vene shear test	LOGG DATE CHEC DATE	<u>0</u> KED <u>k</u>	2/07/2	1 LAU 2008 A	10 00 RE	MARKS	



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Ground Engineering & Substructure Department

VIBROCORE RECORD

Ground Investigation Works for Submarine Gas Main Alignment from To Kwa Wan to North Point Project Title

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METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222
MACHINE & No. G29	E 839402.30 N 817760.10	DATE from 28/06/2008 to 28/06/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	SEABED LEVEL -12.60 mPD

· · · · ·			T	7														
Drilling		Casing depth/size	Wate Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Nc		nples	Reduced		0.0 (m)	Legend	Grade	Description
28/06/	8005		08:00		193/	1				1			-12.6	_	0.05		-	Brownish grey, slightly silty fine SAND. (MARINE /
			08:00															Firm to stiff, brown, mottled grey, CLAY/SILT with some to much schangular fine quarty
											•	1.00				9- - - - - - - - -		gravel. (ALLUVIUM)
-											WIN							
Ē					\square						•	1.95	-14,60	<u>}</u>	_ 2.00			Firm, brown, CLAY/SILT with much subangular
							2							1011		-1		fine quartz gravel. (ALLUVIUM)
Ē					400.4					2		2.95		E				
Ē												1 3.00		Ē		<u>, i</u>		1
Ē					\square										ŀ			
E				t	\square	ľ				Ì		3.95	-16,60	F	4.00		_	
Ē					\square						0			Ē	ŀ			Firm, greyish brown, sandy CLAY with some broken shell fragments. (ALLUVIUM)
Ē														Ē		5		}
Ē				ľ							•	\$.85	-17.60	ŀ	5.00		-	Firm, grey, sandy CLAY/SILT. (ALLUVIUM)
Ē				ł										Ē				
Ē														Ē				
Ē					97					3		5.95 6.00	-18.60	Ē	6.00			Light grey, very silty fine to coarse SAND. (ALLUVIUM)
Ē				ł			Í											
Ē				ľ							•	8.95 7.00	-19.60	-	7.00			Í
												7.00						Light grey and white, slightly slity fine to coarse SAND. (ALLUVIUM)
				ľ							8							
-											•	7.95 8.00		-				
Ē				ľ										_				
				Ľ										-				Í
2 <u>8/06/200/</u>	1	1 1	8:00	+						<u>+</u>		8,95 9.00	-21.60	 	<u>.00</u>	211		End of hole at 9.00m depth.
-												i						
-																		
• 5	mall o	disturbe	d sample	e			s samp			<u> </u>					RE	MARK	s	
-		disturbe er samj	ed sampli ple	e	ţ				ipipe tip ion test	LOG		JAS	ON LAU	-				
2 U	76 un	ndisturb	ed samp		I I				Packer) test	DATI			6/2008	-				
~		sample	bed sam	pie	ľ		eability ession p		test			D KEN	MA	-				
Pi	ston :	sample			<u> </u>	In-sit	ensv u	shear	test	DATE	: 	02/0	7/2008	-				



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Ground Engineering & Substructure Department

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Project Title

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VIBROCORE RECORD

Ground Investigation Works for Submarine Gas Main Alignment from To Kwa Wan to North Point

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222
MACHINE & No. G29	E 839462.70 N 817568.50	DATE from 24/06/2008 to 15/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	SEABED LEVEL -12.60 mPD

	Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture	Tests		Sam,	-	pacific Reduced	Depth (m)		regeno	Grade	Description
N. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	06/2005		08:00		100							C.05	-12.65					Very soft, dark grey and black, sandy dayey SILT with much broken shell fragments. (CONTAMINATED MARINE DEPOSIT) Firm, brown and grey, CLAY/SILT with some angular fine quartz gravel. (ALLUVIUM)
بيبيبينا											001/	0.95	-13.60	-6.1.1.1.1.1.1	-1			Stiff, brown, mottled grey, CLAY/SILT with some subangular fine quartz gravel. (ALLUVIUM)
مبيدينيا			12:00								-	1.95	<u>-14.60</u>	2.0				Stiff, light yellowish brown, sandy SILT. (ALLUVIUM)
	167200A 1772008		12:00 08:00		100					2	- 80M	2.95 3.00	-15.60	3.0				Stiff, light grey, mottled brown, slightly sandy CLAY/SILT. (ALLUVIUM)
31.61.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4	17/20/1A		18:00								<u>, .</u>	3.95	-16.60	4.0		1		End of hole at 4.00m depth.
ليبينين																		
المتنابية والم																		
<u>.</u>															[
<u></u>																		
	Large SPT 1	e disturbe iner sam		9		Piezo: Stand	ard per	'stano Netrat	ipipe tip ion test	LOGG			N LAU	1		RKS mat cated		encountered at 4.00m depth. /C33A,
	U100 Mazie				I V	Perme Impre	absorp ability ssion p vane s	test acker		CHEC	KED						_	



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Ground Engineering & Substructure Department

Ground Investigation Works for Submarine Gas Main Alignment from To Kwa Wan to North Point Project Title

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222
MACHINE & No. G29	E 839447.30 N 817569.20	DATE from 23/07/2008 to 23/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL -12.40 mPD

Dritting Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture	Tests	N		mpies	epth	evel 5 Level	8 Depth 8 (m)	Legend	Grade	Description
23/07/2008		08:00									0.0	5	3.40	1.00			Grey, slightly silty fine to medium SAND. (FILL) Grey, silty fine to coarse SAND with much broken shell fragments. (MARINE DEPOSIT)
										Will	ANIA						Stiff, brown, mottled grey, clayey very sandy SILT. (ALLUVIUM)
										•	2.00		4.40	2 <u>.00</u>			Stiff, brown, mottled grey, very sandy CLAY/SILT. (ALLUVIUM)
				100					2		300						
										•	3.95	<u> -16</u>	140 - - - - - -	_4,00			Firm, grey, CLAY/SILT. (ALLUVIUM)
										•	4.55 5.00	-17	40 -	5.00			Firm to stiff, grey, slightly sandy clayey SILT. (ALLUVIUM)
									э	4 00 H	5.95 6.00	-18	40 -	6.00			Brown, silty fine to coarse SAND. (ALLUVIUM)
				8					4		5.95 7.00	-19		7.00			Brown, silty fine to coarse SAND with clayey silty matrix. (ALLUVIUM)
										99A	7.95 8.00	-20.	40 - 1 - 1 - 1 - 1	8.00			Light grey and light brown, silty clayey fine to coarse SAND. (ALLUVIUM)
23/07/2008	•	8:00		4							8.95 9.00	-21.4		9009			End of hole at 9.00m depth.
itarge SPT K	disturbe disturbe iner sam indisturb	od sample ple	2		Piezo Stano	lard pe	/ stand netrat	lpipe tip ion test (Packer) test	LOG	GED		50N L	AU	0.00 RE	MARK	s s	
U100	undistur r sample i sample		ble 	I V	Impre	eability ession p u vane	acker	,	CHE DATE		25/0	1 MA 7/200	 3				



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Ground Engineering & Substructure Department

Project Title

VIBROCORE RECORD

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222
MACHINE & No. G29	E 839492.00 N 817473.00	DATE from 17/06/2008 to 14/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	SEABED LEVEL -12.20 mPD

Drilling	Progress	casing depth/size	Water Depth (m)		Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests			mpi		Reduced Level	Depth (m)	Legend	Grade	Description
_37/06/ 			08:00		88					- 1	<u>o. T</u>	•	Depth 0.05 0.35 0.40	-12.20 -12.60	0.00 0.40			Greyish brown, silty fine to coarse SAND with much broken shell fragments and some angular fine to coarse gravel sized rock fragments.
عبطيب											,	•	0.95 1.00	-13.20	1.00		_	(FILL) Grey, silty clayey fine to coarse SAND with some broken shell fragments. (MARINE DEPOSIT) Stiff, brown, clayey SILT. (ALLUVIUM)
											-		1.95	-14,20	2,00		_	
1													200					Firm to stiff, brown, CLAY/SILT with occasional angular fine quartz gravel, (ALLUVIUM)
. <u>17/08/21</u> .14/07/21	008 008		<u>18:00</u> 08:00		100					2	-	3	95	<u>•15.20</u>	3.00		_	Firm, brown, SILT. (ALLUVIUM)
	1										•	14	.95	-16.20	4.00		_	firm, dark brown, CLAY/SILT with some angular
											WW							fine gravel sized rock fragments. (ALLUVIUM)
											•	3	8	<u>17.20 </u>	5,00			Firm, dark grey, CLAY/SILT. (ALLUVIUM)
										3	-	<u>5.</u>	- 85	18.20 F	<u> </u>			Brown, silty fine to coarse SAND. (ALLUVIUM)
											•	8.9 7.0	5	19,20 -	7.00			Grey, clayey sility fine to coarse SAND.
											001A							(ALLUVIUM)
<u></u>											•	7.9 8.0	s <u>-</u> 2	20.20 -	8.00			Orangish brown, silty fine to coarse SAND. (ALLUVIUM)
(0)		_ 18	8:00	+-	_							<u>8 95</u> 9.00		1.20 E	9.00			End of hole at 9.00m depth.
Share a	arge di		l sample I sample Ie		▲ む ↓	Piezon		standy	pipe tip on test	1.0G			ASON		0.001 REI	MARKS	;	
	76 und	isturbe disturb	d sample ed samp		I I I		absor; ability (bion (i test	Packer) test	DATE		-	5/07/20 EN M/					
	ston sa					In-situ				DATE		16	3 107/2 0	008				



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Ground Engineering & Substructure Department

Project Title

VIBROCORE RECORD

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222
MACHINE & No. G29	E 839523.40 N 817377.20	DATE from 27/06/2008 to 27/06/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	SEABED LEVEL -12.40 mPD

Drilling Protress		Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D,	Fracture Index	Tests	No		nples			600 Depth	Legend	Grade	Description
	ios	08:00		38						WIN	0.95	-12.		0.05			Very soft, grey and dark grey, sandy clayey SILT with some angular fine to coarse gravel sized rock fragments. (CONTAMINATED MARINE DEPOSIT) Firm to stiff, brown, mottled grey, CLAY/SILT. (ALLUVIUM)
<u></u>										•	2.00	-14.4		2,00			Firm, grey, CLAY/SILT. (ALLUVIUM)
•] • • • • • • • • •		ļ		00					5		3.00		11111111				
- <u> </u>					1					• 00/	3.95						
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1										-	4,95 5.00		سيسيابه				
						-			3		5.95 6.00	18.40		6.00			Light grey, silty fine to coarse SAND with some subangular fine quartz gravel. (ALLUVIUM)
										• 001	5.95 7.00	-19.40		7.00			White and light yellowish brown, clayey silty fine to coarse SAND with some subangular fine guartz gravel. (ALLUVIUM)
	1	8:00									7.95 8.00	-20,40		8.00			Light brown, silty fine to coarse SAND. (ALLUVIUM)
A contract of the second solution of the seco										┉┻╍╌┖	895 9.00	<u>21.40</u>		200	<u></u>		End of hole at 9,00m depth.
EPAGE Smi	all disturbe ge disturbe Fliner samp	d sample Ne	1		Piezon Standa	ard pen	standp etratio	n best	LOGO		-	ON LAL		REI	<u> </u>	3	
U76 U10 Maz	5 undisturbe 20 undisturt tier sample on sample	bed samp		I	Water Perme Impres In-situ	ability t islon pa	est Icker b	est i	CHEC	KEC	KEN		-				



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Ground Engineering & Substructure Department

Project Title

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RECORD

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222
MACHINE & No. G29	E 839552.60 N 817281.30	DATE from 17/06/2008 to 05/07/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	SEABED LEVEL -12.10 mPD

		·,	,				-										
Drillting Progress	Casing depth/size	Water Depth (m)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests			npies	ł	Reduced Level	(m) (m)	Legend	Grade	Description
.17/06/2008	,	08:00							T			8	-12.10	0.00		-	Soft, grey and dark grey, CLAY/SILT. (CONTAMINATED MARINE DEPOSIT)
				\int						100			- <u>12,60</u> -13.10	1.00			Grevish brown and dark grey, clayey silty fine to coarse SAND with some angular fine to coarse gravel sized rock fragments. (ALLUVIUM)
		18;00							i	=				-			Stiff, grey and brown, silty CLAY. (ALLUVIUM)
17/06/2008 205/07/2008		08:00		100					2			3	. <u>14,10</u>	2.00			Firm, brown, CLAY/SILT. (ALLUVIUM)
		1								·	2.95						
										•	3.95 4.00	ŀ	16.10 F	4.00			Stiff, greyish brown, CLAY/SILT. (ALLUVIUM)
				8					3	-	4.95 5.00		17.10	_5,00			Firm, grey and greyish brown, sandy CLAY/SILT. (ALLUVIUM)
										0 81A	5.95 6.00	-1		6.00			Firm, grey, sandy SILT. (ALLUVIUM)
				8					4		6.95 7.00	1	9.10 F	7.00			Firm to stiff, light grey, CLAY/SILT with occasional subangular fine quartz gravel.
										V180	7.95 8.00	-20	0,10	- - - - -			(ALLUATOM)
D5/07/2004		8:00									8.95 9.00	-21	.10	9.00			Orangish brown, slightly silty fine to coarse SAND. (ALLUVIUM)
											900						End of hole at 9.00m depth.
Large	li disturbe e disturbe liner samj undisturb	ed sample ple	÷		Piezon Standa	ind pen	standy etratic	pipe tip on test Packer) test	LOG	iged E		SON 07/20	LAU	RE	MARKS	_L S	
U100) undistur er sample n sample	bed sam		Î I V	Permei Impres In-situ	ability t sion pa	est Icker t	test	CHE: DATE		D <u>KEN</u> 08/0						



ilihole (1 may 06)

Gammon Construction Limited

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SHEET

Ground Engineering & Substructure Department

VIBROCORE RECORD

Ground Investigation Works for Submarine Gas Main Alignment from To Kwa Wan to North Point

METHOD Vibrocore	CO-ORDINATES	PROJECT No. J3222
MACHINE & No. G29	E 839582.20 N 817186.40	DATE from 16/06/2008 to 26/06/2008
FLUSHING MEDIUM WATER	ORIENTATION Vertical	SEABED LEVEL -12.00 mPD

Prograss	1	Water Depth (m)	Water Recovery %	Tolal core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	N		nples	Reduc			Legend	Grade	Description
		08:00		B ^B						- With	1.0	Ş	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	8			Soft, grey, CLAY. (MARINE DEPOSIT)
- - - - - - - - - - - - - - - -		18:00 08:00		100					2					-111111			Stiff, grey and brown, silty CLAY. (ALLUVIUM) Stiff, light yellowish brown, mottled light grey, sandy SILT. (ALLUVIUM)
										•	3.95 4.00 4.95 5.00		<u> </u>				
				8					3	•	5.95 6.00 5.95 7.00	<u>-16.00</u> -19.00	<u> </u>				Stiff, grey, clayey SILT. (ALLUVIUM) Firm to stiff, grey, sandy SILT. (ALLUVIUM)
										00)A	7.95 8.60	-20,00	<u>8.00</u>				Firm to stiff, grey, slightly sandy clayey SILT. (ALLUVIUM)
25/06/2009	<u> </u>	18:00									8.95 9.00	-21.00	9.00				End of hole at 9.00m depth.
Large SPT I U76 1 U100	e disturbe iner samp undisturb	ed sample bed samp	e e		Piezor Standa Water Perme	absorp absorp ability (ssion pa	stand etratio tion (i est ocker		LOG DATI CHEC DATE	E	27/0 Ken	0N LAU 6/2008 MA 5/2008	10.00	EM	LARKS	5	