



FUGRO
GEOTECHNICAL
SERVICES LTD

VIBROCORE RECORD

HOLE No. **VC1a**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoreing**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **832652.40**
 N **816956.50**

DATE from: **25/09/2006** to **25/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-9.30** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
25/09/2006	SW			97					1		0.00	-9.30	0.00			No recovery, assumed to be MARINE DEPOSIT.
1									2		0.90					Very soft to soft, greensih grey (10GY/5/1) to grey (10YR/6/1), silty CLAY with occasional fine gravel size shell fragments. (MARINE DEPOSIT)
2									3		1.90					
3									4	VICO	2.90					
4									5		3.90					
5									6		4.90					
6	SW 6.00			99					7		5.90	-15.30	6.00			
7									8		6.00	-15.46	6.16		6.00 - 6.16m: With some lenses (<5mm) of silty clayey, fine to coarse sand and a gravel size ceramic fragment.	
8									9		7.00					
9									10	VICO	7.90					
10									11		8.80					
									12		9.90	-18.60	9.30		9.30 - 12.00m: Soft to firm.	
											10.00	-19.30	10.00			

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocure sample
- Vibrocure sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
 DATE 26/09/2006
 CHECKED S.C. Wong
 DATE 28/09/2006

REMARKS

1. 7.5L of water samples were collected.
2. Two 4L grab samples were collected.
3. Vibrocure sub-samples were taken for toxicity testing from 0.00 - 0.90m, 0.90 - 1.90m, 1.90 - 2.90m, 4.90 - 5.90m, 7.90 - 8.90m and 10.90 - 11.90m.



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HOLE No. **VC1a**

CONTRACT No.: **GE/2005/28**

SHEET: **2** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **832652.40**
N **816956.50**

DATE from: **25/09/2006** to **25/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-9.30** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
11									13	V100	-10.90	-20.20	10.90			As sheet 1 of 2. Below 10.90m: Soft.
12									14		-11.90	-21.30	12.00			End of investigation hole at 12.00m.
13																
14																
15																
16																
17																
18																
19																
20																

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
DATE 26/09/2006
CHECKED S.C. Wong
DATE 28/09/2006

REMARKS



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VIBROCORE RECORD

HOLE No. **VC1b**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoreing**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **832653.90**
N **816957.10**

DATE from: **25/09/2006** to **25/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-9.40** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
25/09/2006	SW			94					1		0.00	-9.40	0.00			No recovery, assumed to be ANTHROPOGENIC MUD / MARINE DEPOSIT.
1									2		0.90	-10.10	0.70			Very soft to soft, grey (10YR/6/1), slightly sandy SILT / CLAY with occasional angular, fine to coarse gravel. Strong organic odour. (ANTHROPOGENIC MUD / MARINE DEPOSIT)
2									3		1.80					Very soft to soft, greenish grey (10GY/5/1) to grey (10YR/6/1), silty CLAY with trace fine gravel size shell and shell fragments. (MARINE DEPOSIT)
3									4	VICO	2.90					
4									5		3.90					
5									6		4.90					
6	SW 6.00								7		5.90	-15.40	6.00			At 6.00m: With occasional organic debris.
									8		6.00	-15.65	6.25			At 6.25m: With an angular, coarse gravel size brick fragment.
												-16.74	6.34			At 6.34m: With a subrounded to rounded cobble of moderately strong rock.
7									9		7.00	-16.52	7.12			At 7.12m: With a gravel size ceramic fragment.
8									10	VICO	7.90					
9									11		8.90					
10									12		9.90	-19.40	10.00			

	Small Disturbed Sample		Standard Penetration Test
	Piston sample		In-situ Vane Shear Test
	U76 Undisturbed Sample		Permeability Test
	Vibrocore sample		Impression Packer Test
	Vibrocore sub-sample		Packer Test
	SPT Liner Sample		Piezometer Tip
	Water Sample		Standpipe

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VIBROCORE RECORD

HOLE No. **VC1b**

CONTRACT No.: **GE/2005/28**

SHEET: **2** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **832653.90**
N **816957.10**

DATE from: **25/09/2006** to **25/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-9.40** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
11									13	VICO	-10.00	10.00				As sheet 1 of 2.
12									14	T	-11.00	-21.40	12.00			End of investigation hole at 12.00m.
13																
14																
15																
16																
17																
18																
19																
20																

- | | |
|--------------------------|-----------------------------|
| ↑ Small Disturbed Sample | ↓ Standard Penetration Test |
| ▨ Piston sample | ∇ In-situ Vane Shear Test |
| ▩ U76 Undisturbed Sample | ⊥ Permeability Test |
| ▧ Vibrocore sample | ⋮ Impression Packer Test |
| ▧ Vibrocore sub-sample | ⋮ Packer Test |
| ▩ SPT Liner Sample | ▲ Piezometer Tip |
| ▲ Water Sample | ⊕ Standpipe |

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DATE 26/09/2006
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REMARKS



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VIBROCORE RECORD

HOLE No. **VC2a**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833170.70**
 N **817533.80**

DATE from: **18/09/2006** to **18/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-12.10** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
18/09/2006	SW			92					1		0.00	-12.10	0.00			No recovery, assumed to be MARINE DEPOSIT.
1									2		0.90	-12.64	0.54			Very soft to soft, greenish grey (10GY/5/1) to grey (10YR/6/1), slightly sandy to sandy (fine to medium), silty CLAY with some gravel size shell fragments. (MARINE DEPOSIT)
2									3		1.90					
3									4	WCC	2.90	-15.00	2.90			2.90 - 3.30m: Slightly sandy (fine). 3.15 - 3.30m: An oyster shell.
4									5		3.90	-15.25	3.15			Soft, grey (10YR/6/1), slightly sandy SILT / CLAY with occasional fine gravel size shell fragments. (MARINE DEPOSIT)
5									6		4.80	-15.40	3.30			
6	SW 6.00			100					7		5.90					
7									8		6.00					
8									9		7.00	-19.10	7.00			Soft to firm, grey (10YR/6/1), slightly sandy, clayey SILT with occasional wood and plant fragments. (ESTUARINE DEPOSIT)
9									10	WCC	7.90					
10									11		8.90					
									12		9.90	-21.90	9.80			Grey (10YR/6/1), clayey silty, fine to medium
											10.00	-22.10	10.00			

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
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REMARKS

1. 7.5L of water samples were collected.
2. Two 4L grab samples were collected.
3. Vibrocore sub-samples were taken for toxicity testing from 0.00 - 0.90m, 0.90 - 1.90m, 1.90 - 2.90m, 4.90 - 5.90m, 7.90 - 8.90m and 10.90 - 11.30m.



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VIBROCORE RECORD

HOLE No. **VC2a**

CONTRACT No.: **GE/2005/28**

SHEET: **2** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833170.70**
N **817533.80**

DATE from: **18/09/2006** to **18/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-12.10** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
11																SAND. (ESTUARINE DEPOSIT) Stiff, light grey (10YR/7/1), mottled yellowish brown and occasional reddish brown, silty CLAY with occasional black organic debris. (ALLUVIUM)
12																End of investigation hole at 11.40m.
13																
14																
15																
16																
17																
18																
19																
20																

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

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VIBROCORE RECORD

HOLE No. **VC2b**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833169.10**
N **817534.10**

DATE from: **18/09/2006** to **18/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-12.20** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
18/09/2006	SW			85												No recovery, assumed to be ANTHROPOGENIC MUD.
1												-12.95 -13.10	0.75 0.90			Very soft, dark grey (10YR/4/1) and black (10YR/2/1), SILT / CLAY with occasional shell fragments and angular, fine to coarse gravel. Strong organic odour. (ANTHROPOGENIC MUD)
2																Very soft to soft, greenish grey (10GY/5/1) to grey (10YR/6/1), slightly sandy (fine to medium), silty CLAY with some gravel size shell fragments. (MARINE DEPOSIT)
3												-14.60	2.40			Very soft to soft, greenish grey (10GY/5/1) to grey (10YR/6/1), silty CLAY with occasional shell fragments. (MARINE DEPOSIT)
4												-15.30	3.10			3.10 - 4.95m: Soft to firm.
5																
6	SW 6.00															
7				100												
8																
9																
10																
11																
12												-21.45 -22.20	9.25 10.00			Soft to firm, dark grey (10YR/4/1), silty CLAY with occasional black organic debris. (ESTUARINE DEPOSIT)

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
DATE 26/09/2006
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REMARKS



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VIBROCORE RECORD

HOLE No. **VC2b**

CONTRACT No.: **GE/2005/28**

SHEET: **2** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833169.10**
N **817534.10**

DATE from: **18/09/2006** to **18/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-12.20** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
												-22.20	10.00			As sheet 1 of 2.
												-22.66	10.46			Soft to firm, light grey (10YR7/1), sandy clayey SILT with occasional wood fragment. (ESTUARINE DEPOSIT / ALLUVIUM)
												-22.93	10.73			
11												-10.90				Stiff to firm, light grey (10YR7/1), mottled brown and occasional reddish brown, silty CLAY with some black organic debris. (ALLUVIUM)
												-11.30	11.40			
																End of investigation hole at 11.40m.
12																
13																
14																
15																
16																
17																
18																
19																
20																

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
DATE 26/09/2006
CHECKED S.C. Wong
DATE 28/09/2006

REMARKS



FUGRO
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VIBROCORE RECORD

HOLE No. **VC3a**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **1**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoreing**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833349.30**
 N **817640.10**

DATE from: **15/09/2006** to **15/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-12.90** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
15/09/2006				100								-12.90	0.00			Very soft to soft, grey (10YR/6/1), slightly sandy (fine), silty CLAY with occasional shell and shell fragments. (MARINE DEPOSIT)
1																
2																
3												-15.30	2.40			Firm, pale grey (10YR/6/2), mottled orange brown, sandy clayey SILT with occasional subangular, fine gravel of quartz. (ALLUVIUM)
15/09/2006												-15.90	3.00			Yellowish brown (10YR/5/6), mottled grey, silty clayey, fine to coarse SAND. (ALLUVIUM)
4												-16.10	3.20			
5																End of investigation hole at 3.20m.
6																
7																
8																
9																
10																

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
 DATE 15/09/2006
 CHECKED S.C. Wong
 DATE 20/09/2006

REMARKS
 1. 7.5L of water samples were collected.
 2. One 4L grab sample was collected.
 3. Vibrocore sub-samples were taken for toxicity testing from 0.00 - 0.90m, 0.90 - 1.90m and 1.90 - 2.90m.



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VIBROCORE RECORD

HOLE No. **VC3b**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **1**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoreing**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833349.90**
N **817641.60**

DATE from: **15/09/2006** to **15/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-13.00** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples		Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type					
15/09/2006				100					1	VICO	-13.00	0.00			Very soft to soft, greenish grey (10GY/5/1) to grey (10YR/6/1), slightly sandy (fine), silty CLAY with occasional shell and shell fragments. (MARINE DEPOSIT)
1									2						
2									3						
3									4		-15.90	2.90			Firm, light grey (10YR/7/1), mottled brown to pink, slightly sandy, clayey SILT. (ALLUVIUM)
15/09/2006									5		-16.38	3.38			Firm, pale grey (10YR/6/2), mottled orange brown, clayey silty, fine to coarse SAND with occasional subangular, fine gravel of quartz. (ALLUVIUM) End of investigation hole at 3.50m.
4															
5															
6															
7															
8															
9															
10												10.00			

- | | |
|------------------------|---------------------------|
| Small Disturbed Sample | Standard Penetration Test |
| Piston sample | In-situ Vane Shear Test |
| U76 Undisturbed Sample | Permeability Test |
| Vibrocore sample | Impression Packer Test |
| Vibrocore sub-sample | Packer Test |
| SPT Liner Sample | Piezometer Tip |
| Water Sample | Standpipe |

LOGGED W.S. Tsang
DATE 15/09/2006
CHECKED S.C. Wong
DATE 20/09/2006

REMARKS



**FUGRO
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VIBROCORE RECORD

HOLE No. **VC4a**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoreing**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833504.30**
N **817790.70**

DATE from: **12/09/2006** to **12/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-11.90** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
12/09/2006	ZW			83								-11.90	0.00			No recovery, assumed to be MARINE DEPOSIT.
1									1		0.90	-12.92	1.02			Very soft to soft, greenish grey (10GY/5/1) to grey (10YR/6/1), slightly sandy silty CLAY with occasional coarse sand size shell fragments. (MARINE DEPOSIT) 4.00 - 4.60m: Soft to firm. At 4.40m: With a fragment of wood. 7.20 - 7.90m: Soft to firm. 8.60 - 10.20m: Soft to firm.
2								2		1.90						
3								3	VCO	2.90						
4								4		3.90	-15.90	4.00				
5								5		4.90	-16.30	4.40				
6								6		5.90	-16.50	4.60				
7								7		6.00						
8								8		7.00	-19.10	7.20				
9								9	VCO	7.90	-19.80	7.90				
10								10		8.90	-20.50	8.60				
11								11		9.90	-21.80	10.00				

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
DATE 15/09/2006
CHECKED S.C. Wong
DATE 20/09/2006

REMARKS
1. 7.5L of water samples were collected.
2. Two 4L grab samples were collected.
3. Vibrocore sub-samples were taken for toxicity testing from 0.90 - 1.90m, 1.90 - 2.90m, 4.90 - 5.90m, 7.90 - 8.90m and 10.90 - 11.90m.



**FUGRO
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VIBROCORE RECORD

HOLE No. **VC4a**

CONTRACT No.: **GE/2005/28**

SHEET: **2** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833504.30**
N **817790.70**

DATE from: **12/09/2006** to **12/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-11.90** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
11									12	VCO	-10.50	-22.10	10.20			As sheet 1 of 2.
12	ZW 12.00								13		-11.50 -12.00	-23.40	11.50			Firm, grey (10YR/6/1), slightly sandy SILT / CLAY with occasional to some wood fragments. (ESTUARINE DEPOSIT)
13												-23.90	12.00			Firm, pale grey (10YR/6/2), sandy (fine), silty CLAY with occasional subangular, fine gravel of quartz. (ALLUVIUM)
14																End of investigation hole at 12.00m.
15																
16																
17																
18																
19																
20																

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
DATE 15/09/2006
CHECKED S.C. Wong
DATE 20/09/2006

REMARKS



**FUGRO
GEOTECHNICAL
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VIBROCORE RECORD

HOLE No. **VC4b**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833505.60**
N **817789.80**

DATE from: **12/09/2006** to **12/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-11.70** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
12/09/2006	ZW			97								-11.70	0.00			No recovery, assumed to be ANTHROPOGENIC MUD / MARINE DEPOSIT.
1												-12.30	0.60			Very soft to soft, grey (10YR/6/1), slightly sandy SILT / CLAY with occasional shell fragments. (ANTHROPOGENIC MUD / MARINE DEPOSIT)
												-12.50	0.80			
2																Very soft to soft, greenish grey (10GY/5/1) to grey (10YR/6/1), slightly sandy (fine) silty CLAY with occasional coarse sand size shell fragments. (MARINE DEPOSIT)
3																3.90 - 4.80m: Locally firm.
4																6.00 - 6.18m: No recovery, assumed to be MARINE DEPOSIT.
5																8.90 - 9.80m: Brownish grey (10YR/5/2).
6																
7																
8																
9																
10																

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
DATE 15/09/2006
CHECKED S.C. Wong
DATE 20/09/2006

REMARKS



**FUGRO
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VIBROCORE RECORD

HOLE No. **VC4b**

CONTRACT No.: **GE/2005/28**

SHEET: **2** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoreing**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833505.60**
N **817789.80**

DATE from: **12/09/2006** to **12/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-11.70** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	F I	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
																As sheet 1 of 2.
11									13	VICO	-10.90					Soft to firm, grey (10YR/6/1), slightly sandy SILT / CLAY with occasional plant and wood fragments. (MARINE DEPOSIT / ESTUARINE DEPOSIT)
																11.45 - 11.90m: With many wood fragments.
12	ZW 12.00								14		-11.80					Firm, pale grey (10YR/6/2), mottled yellowish brown, clayey silty, medium to coarse SAND with much subangular, fine gravel of quartz. (ALLUVIUM)
																End of investigation hole at 12.00m.
13																
14																
15																
16																
17																
18																
19																
20																

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
DATE 15/09/2006
CHECKED S.C. Wong
DATE 20/09/2006

REMARKS



FUGRO
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VIBROCORE RECORD

HOLE No. **VC5a**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833870.60**
 N **818135.20**

DATE from: **07/09/2006** to **07/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-8.70** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
07/09/2006	ZW			90								-8.70	0.00			No recovery, assumed to be ANTHROPOGENIC MUD / FILL.
1												-9.30	0.60			Very soft to soft, grey (10YR/6/1), silty CLAY with occasional coarse sand and fine gravel size shell fragments. (MARINE DEPOSIT)
2																
3																
4																
5																4.90 - 6.00m: Soft.
6																6.00 - 6.85m: No recovery, assumed to be MARINE DEPOSIT.
7																At 7.00m: Soft, slightly sandy (medium to coarse).
8																Grey (10YR/6/1), slightly silty, slightly clayey, fine to medium SAND. (MARINE DEPOSIT)
9																Yellowish brown (10YR/5/6), slightly silty, slightly clayey, fine to coarse SAND with occasional pockets (<100mm) of soft, grey, silt / clay. (MARINE DEPOSIT)
10																Very soft to soft, greenish grey (10GY/5/1) to grey (10YR/7/1), slightly sandy SILT / CLAY with occasional shell fragments. (MARINE DEPOSIT)
11																
12																

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
 DATE 15/09/2006
 CHECKED S.C. Wong
 DATE 20/09/2006

REMARKS
 1. 7.5L of water samples were collected.
 2. Two 4L grab samples were collected.
 3. Vibrocore sub-samples were taken for toxicity testing from 0.00 - 0.90m, 0.90 - 1.90m, 1.90 - 2.90m, 4.90 - 5.90m, 7.90 - 8.90m and 10.90 - 11.90m.



**FUGRO
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VIBROCORE RECORD

HOLE No. **VC5a**

CONTRACT No.: **GE/2005/28**

SHEET: **2** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833870.60**
N **818135.20**

DATE from: **07/09/2006** to **07/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-8.70** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
11	ZW 10.80															As sheet 1 of 2.
12																End of investigation hole at 12.00m.
13																
14																
15																
16																
17																
18																
19																
20																

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
DATE 15/09/2006
CHECKED S.C. Wong
DATE 20/09/2006

REMARKS



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VIBROCORE RECORD

HOLE No. **VC5b**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833870.30**
 N **818136.50**

DATE from: **08/09/2006** to **08/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-8.70** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
08/09/2006	ZW			84								-8.70	0.00			No recovery, assumed to be ANTHROPOGENIC MUD / FILL.
1									1			-9.84	1.14			Grey (10YR/6/1), spotted white, silty, fine to coarse SAND with occasional pockets (<130mm) of very soft, black, slightly sandy silt / clay. (FILL?)
2									2			-10.42	1.72			1.72 - 1.84m: Yellowish brown (10YR/5/6). Very soft to soft, greenish grey (10GY/5/1) to grey (10YR/6/1), silty CLAY with occasional coarse sand and fine gravel size shell fragments. (MARINE DEPOSIT)
3									3	VICO		-11.54	1.84			
4									4			-12.66	2.90			
5									5			-13.60	4.90			4.90 - 12.00m: Soft to firm.
6									6			-14.70	6.00			6.00 - 7.02m: No recovery, assumed to be MARINE DEPOSIT.
7									7			-15.72	7.02			
8									8	VICO		-16.84	7.90			
9									9			-17.96	8.80			
10									10			-18.70	10.00			

- Small Disturbed Sample
- Piston sample
- U75 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
 DATE 15/09/2006
 CHECKED S.C. Wong
 DATE 20/09/2006

REMARKS



**FUGRO
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VIBROCORE RECORD

HOLE No. **VC5b**

CONTRACT No.: **GE/2005/28**

SHEET: **2** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833870.30**
N **818136.50**

DATE from: **08/09/2006** to **08/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-8.70** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
11	ZW 10.70								11	WCO	-10.80	11.15				As sheet 1 of 2.
											-19.85	11.15				11.15 - 11.85m: With occasional wood fragments.
12									12		-20.55	11.85				End of investigation hole at 12.00m.
											-20.70	12.00				
13																
14																
15																
16																
17																
18																
19																
20																

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
DATE 15/09/2006
CHECKED S.C. Wong
DATE 20/09/2006

REMARKS



FUGRO
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VIBROCORE RECORD

HOLE No. **VC6a**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **1**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833420.60**
 N **817709.70**

DATE from: **14/09/2006** to **14/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-12.40** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
14/09/2006	SW											-12.40	0.00			No recovery, assumed to be MARINE DEPOSIT.
1									1			-13.30	0.90			Very soft to soft, greenish grey (10GY/5/1) to grey (10YR/6/1), silty CLAY with occasional subangular, fine gravel size shell fragments. (MARINE DEPOSIT)
2									2			-14.30	1.90			At 1.90m: Slightly (fine)-sandy.
3									3	VICO		-2.90				
4									4			-16.30	3.90			3.90 - 6.12m: Soft to firm.
5									5			-4.90				
6	SW 6.00								6			-5.90				
7									7			-18.52	6.12			Soft, grey (10YR/6/1), slightly sandy SILT / CLAY with occasional lenses (<2mm) of grey, fine to medium sand and occasional wood fragments. (ESTUARINE DEPOSIT)
8									8			-18.83	6.43			Soft to firm, yellowish brown (10YR/5/6), mottled pale grey, slightly sandy (fine), silty CLAY with occasional subangular to subrounded, fine to coarse gravel. (ALLUVIUM?)
9									9	VICO		-19.88	7.48			Firm to stiff, light grey (10YR/7/1), mottled brown, spotted white, sandy (fine), very silty CLAY. (ALLUVIUM)
14/09/2006									10			-8.90				
									11			-21.50	9.10			End of investigation hole at 9.10m.
10													10.00			

- | | |
|------------------------|---------------------------|
| Small Disturbed Sample | Standard Penetration Test |
| Piston sample | In-situ Vane Shear Test |
| U76 Undisturbed Sample | Permeability Test |
| Vibrocore sample | Impression Packer Test |
| Vibrocore sub-sample | Packer Test |
| SPT Liner Sample | Piezometer Tip |
| Water Sample | Standpipe |

LOGGED W.S. Tsang
 DATE 15/09/2006
 CHECKED S.C. Wong
 DATE 20/09/2006

REMARKS

- 7.5L of water samples were collected.
- Two 4L grab samples were collected.
- Vibrocore sub-samples were taken for toxicity testing from 0.90 - 1.90m, 1.90 - 2.90m, 4.90 - 5.90m and 7.90 - 8.90m.



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VIBROCORE RECORD

HOLE No. **VC6b**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **1**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoreing**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833421.70**
 N **817710.30**

DATE from: **14/09/2006** to **14/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-12.50** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples		Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type					
14/09/2006	SW			8%							-12.50	0.00			No recovery, assumed to be MARINE DEPOSIT.
1									1		-13.40	0.90			Very soft to soft, grey (10YR/6/1), silty CLAY with occasional subangular, fine gravel size shell fragments. (MARINE DEPOSIT)
2									2		-14.40	1.90			At 1.90m: Slightly (fine) sandy.
3									3	VICO	-2.90				
4									4		-16.40	3.90			3.90 - 5.57m: Soft to firm.
5									5		-4.90				
6	SW 6.00								6		-18.07	5.57			Soft to firm, yellowish brown (10YR/5/6), mottled pale grey, slightly sandy silty CLAY. (ALLUVIUM?)
7				9%					7		-18.40	5.90			Very soft to soft, grey (10YR/6/1), silty CLAY with occasional subangular, fine gravel size shell fragments. (MARINE DEPOSIT)
8									8	VICO	-19.35	6.85			Soft to firm, light brown (7.5YR/6/3), mottled pale grey, slightly sandy (fine), silty CLAY. (ALLUVIUM?)
9									9		-20.22	7.72			Firm, yellowish brown (10YR/5/6), mottled pale grey, sandy (fine), very silty CLAY. (ALLUVIUM)
10									10		-21.06	8.59			Firm, yellowish brown (10YR/5/6), mottled light grey, very sandy (fine to coarse), silty CLAY. (ALLUVIUM)
14/09/2006											-21.50	9.00			End of investigation hole at 9.00m.

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
 DATE 15/09/2006
 CHECKED S.C. Wong
 DATE 20/09/2006

REMARKS



FUGRO
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VIBROCORE RECORD

HOLE No. **VC7a**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833270.50**
 N **817569.60**

DATE from: **16/09/2006** to **16/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-12.50** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
16/09/2006	SW			93								-12.50	0.00			No recovery, assumed to be MARINE DEPOSIT.
1												-12.98	0.48			Grey (10YR/6/1), silty clayey, fine to medium SAND with some coarse sand and fine gravel size shell fragments. (MARINE DEPOSIT)
2												-13.90	1.40			Soft, grey (10YR/6/1), sandy (fine to medium), silty CLAY with occasional fine gravel size shell fragments. (MARINE DEPOSIT)
3												-14.90	2.40			Very soft to soft, greenish grey (10GY/5/1) to grey (10YR/6/1), silty CLAY with occasional fine gravel size shell fragments. (MARINE DEPOSIT)
4												-14.90	2.40			
5												-14.90	2.40			
6	SW 6.00											-18.50	6.00			At 6.00m: With some partings of greyish brown, silty fine to medium sand.
7												-19.10	6.60			Very soft, grey (10YR/6/1), slightly sandy (fine), silty CLAY with occasional fine gravel size shell fragments. (MARINE DEPOSIT / ESTUARINE DEPOSIT?)
8												-19.98	7.38			At 7.38m: With a piece of wood fragment.
9												-20.05	7.55			Soft, light bluish grey (10B/7/1), sandy clayey SILT with occasional lenses (<3mm) of silty clayey fine to medium sand and occasional wood fragments. (ESTUARINE DEPOSIT)
10												-21.50	9.00			Soft, brownish grey (10YR/5/2), slightly sandy, clayey SILT with much wood fragments. (ESTUARINE DEPOSIT)
11												-22.00	9.50			Soft to firm, yellowish brown (10YR/5/6), mottled grey, slightly sandy clayey SILT with occasional plant and wood fragments. (ALLUVIUM)
12												-22.00	9.50			Firm to stiff, light grey (10YR/7/1), dappled

- | | |
|------------------------|---------------------------|
| Small Disturbed Sample | Standard Penetration Test |
| Piston sample | In-situ Vane Shear Test |
| U76 Undisturbed Sample | Permeability Test |
| Vibrocore sample | Impression Packer Test |
| Vibrocore sub-sample | Packer Test |
| SPT Liner Sample | Piezometer Tip |
| Water Sample | Standpipe |

LOGGED W.S. Tsang
 DATE 26/09/2006
 CHECKED S.C. Wong
 DATE 28/09/2006

REMARKS
 1. 7.5L of water samples were collected.
 2. Two 4L grab samples were collected.
 3. Vibrocore sub-samples were taken for toxicity testing from 0.00 - 0.90m, 0.90 - 1.90m, 1.90 - 2.90m, 4.90 - 5.90m and 7.90 - 8.90m.



**FUGRO
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VIBROCORE RECORD

HOLE No. **VC7a**

CONTRACT No.: **GE/2005/28**

SHEET: **2** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoreing**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

E **833270.50**
N **817569.60**

DATE from: **16/09/2006** to **16/09/2006**

MACHINE & No.: **LAM - 4**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-12.50** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
												-22.50	10.00			
												-22.90	10.40			brown and reddish brown, slightly sandy clayey SILT. (ALLUVIUM) End of investigation hole at 10.40m.
11																
12																
13																
14																
15																
16																
17																
18																
19																
20													20.00			

- | | |
|--------------------------|-----------------------------|
| ↓ Small Disturbed Sample | ↓ Standard Penetration Test |
| ▢ Piston sample | ∇ In-situ Vane Shear Test |
| ▣ U76 Undisturbed Sample | ∩ Permeability Test |
| ▤ Vibrocore sample | ⊖ Impression Packer Test |
| ▥ Vibrocore sub-sample | ⊗ Packer Test |
| ▦ SPT Liner Sample | ⊕ Piezometer Tip |
| ▲ Water Sample | ⊙ Standpipe |

LOGGED W.S. Tsang
DATE 26/09/2006
CHECKED S.C. Wong
DATE 28/09/2006

REMARKS



FUGRO
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VIBROCORE RECORD

HOLE No. **VC7b**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **1**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833271.80**
 N **817570.80**

DATE from: **16/09/2006** to **16/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-12.50** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
16/09/2006	SW			89								-12.50	0.00			No recovery, assumed to be MARINE DEPOSIT.
1												-13.16	0.66			Soft to firm, grey (10YR/6/1), sandy (fine to medium), silty CLAY with occasional coarse sand and fine gravel size shell fragments. (MARINE DEPOSIT)
												-13.28	0.78			
2																Very soft to soft, greenish grey (10GY/5/1) to grey (10YR/6/1), silty CLAY with occasional coarse sand size shell fragments. (MARINE DEPOSIT)
3																
4																
5																
6																Soft, greyish brown (10YR/5/2), sandy to very sandy (fine), silty CLAY with occasional organic debris. (ALLUVIUM)
6	SW 6.00			94												6.00 - 6.17m: No recovery, assumed to be ALLUVIUM. 6.17 - 7.40m: With some lenses (<6mm) of brown, silty clayey, fine to medium sand.
7																
8																Firm, greyish brown (10YR/5/2), mottled grey, sandy (fine), silty CLAY with occasional root. (ALLUVIUM)
8																Stiff, yellowish brown (10YR/5/6), mottled grey, slightly sandy (fine), silty CLAY with occasional subangular, fine to coarse quartz gravel. (ALLUVIUM)
16/09/2006																7.95 - 8.36m: Light grey (10YR/7/1), mottled brown.
9																End of investigation hole at 8.90m.
10																

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
 DATE 26/09/2006
 CHECKED S.C. Wong
 DATE 28/09/2006

REMARKS



**FUGRO
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VIBROCORE RECORD

HOLE No. **VC8a**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **832875.80**
N **817045.20**

DATE from: **22/09/2006** to **22/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-11.10** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
22/09/2006	SW			99					1			-11.10	0.00			No recovery, assumed to be ANTHROPOGENIC MUD.
1									2			-11.52	0.42			Very soft, grey (10YR/6/1), sandy (fine), clayey SILT with some subangular to subrounded gravel and much shell fragments. (ANTHROPOGENIC MUD)
2									3			-12.60	1.50			Very soft to soft, greenish grey (10GY/5/1) to grey (10YR/6/1), silty CLAY with occasional gravel size shell fragments. (MARINE DEPOSIT)
3									4	WOC		-2.90				
4									5			-3.90				
5									6			-4.90				
6	SW 6.00								7			-5.90				
				99					8			-6.00	-17.20	6.10		At 6.10m: With a fragment of wood.
7									9			-7.00				
8									10	WOC		-7.90				
9									11			-8.90	-20.00	8.90		8.90 - 9.40m: Soft to firm.
												-20.50	9.40			9.40 - 12.00m: Firm.
10									12			-9.90	-21.10	10.00		

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
DATE 26/09/2006
CHECKED S.C. Wong
DATE 28/09/2006

REMARKS
1. 7.5L of water samples were collected.
2. Two 4L grab samples were collected.
3. Vibrocore sub-samples were taken for toxicity testing from 0.00 - 0.90m, 0.90 - 1.90m, 1.90 - 2.90m, 4.90 - 5.90m, 7.90 - 8.90m and 10.90 - 11.90m.



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VIBROCORE RECORD

HOLE No. **VC8a**

CONTRACT No.: **GE/2005/28**

SHEET: **2** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **832875.80**
N **817045.20**

DATE from: **22/09/2006** to **22/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-11.10** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
11																As sheet 1 of 2.
12																At 12.00m: Occasional organic debris. End of investigation hole at 12.00m.
13																
14																
15																
16																
17																
18																
19																
20																

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
DATE 26/09/2006
CHECKED S.C. Wong
DATE 28/09/2006

REMARKS



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VIBROCORE RECORD

HOLE No. **VC8b**

CONTRACT No.: **GE/2005/28**

SHEET: **2** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoreing**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **832876.70**
N **817046.60**

DATE from: **22/09/2006** to **22/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-11.20** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
11									13	VCO	-10.90	10.00				As sheet 1 of 2.
12									14	I	-11.90	-23.20	12.00			End of investigation hole at 12.00m.
13																
14																
15																
16																
17																
18																
19																
20																

- | | |
|--------------------------|-----------------------------|
| ↑ Small Disturbed Sample | ↓ Standard Penetration Test |
| ▨ Piston sample | ∇ In-situ Vane Shear Test |
| ▩ U76 Undisturbed Sample | ⊥ Permeability Test |
| ▧ Vibrocore sample | ⊥ Impression Packer Test |
| ▧ Vibrocore sub-sample | ⊥ Packer Test |
| ⊥ SPT Liner Sample | ⊥ Piezometer Tip |
| ▲ Water Sample | ⊥ Standpipe |

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DATE 26/09/2006
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DATE 28/09/2006

REMARKS



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VIBROCORE RECORD

HOLE No. **VC9a**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **832557.70**
 N **816917.50**

DATE from: **26/09/2006** to **26/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-10.00** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
26/09/2006	SW											-10.00	0.00			No recovery, assumed to be MARINE DEPOSIT.
1												-10.78	0.78			Very soft to soft, greenish grey (10GY/5/1) to grey (10YR/6/1), silty CLAY with occasional coarse sand and fine gravel size shell fragments. (MARINE DEPOSIT)
2																
3																
4																
5																
6	SW 6.00															
7																6.00 - 6.54m: No recovery, assumed to be MARINE DEPOSIT.
8																
9																
10																
11																
12																

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
 DATE 26/09/2006
 CHECKED S.C. Wong
 DATE 28/09/2006

REMARKS
 1. 7.5L of water samples were collected.
 2. Two 4L grab samples were collected.
 3. Vibrocore sub-samples were taken for toxicity testing from 0.00 - 0.90m, 0.90 - 1.90m, 1.90 - 2.90m, 4.90 - 5.90m, 7.90 - 8.90m and 10.90 - 11.90m.



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VIBROCORE RECORD

HOLE No. **VC9a**

CONTRACT No.: **GE/2005/28**

SHEET: **2** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoreing**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **832557.70**
N **816917.50**

DATE from: **26/09/2006** to **26/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-10.00** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
11									13	VCO	-10.50	10.75				As sheet 1 of 2. 10.75 - 10.83m: With a pocket (<80mm) of very soft, grey, slightly sandy silt / clay. 10.90 - 12.00m: Soft.
12									14		-11.50	12.00				End of investigation hole at 12.00m.
13																
14																
15																
16																
17																
18																
19																
20																

- | | |
|---|---|
| <ul style="list-style-type: none"> Small Disturbed Sample Piston sample U76 Undisturbed Sample Vibrocore sample Vibrocore sub-sample SPT Liner Sample Water Sample | <ul style="list-style-type: none"> Standard Penetration Test In-situ Vane Shear Test Permeability Test Impression Packer Test Packer Test Piezometer Tip Standpipe |
|---|---|

LOGGED W.S. Tsang
DATE 26/09/2006
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DATE 28/09/2006

REMARKS



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VIBROCORE RECORD

HOLE No. **VC9b**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **832559.50**
 N **816918.90**

DATE from: **26/09/2006** to **27/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-9.90** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	F.I.	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
26/09/2006	SW			92					1		0.00	-9.90	0.00			No recovery, assumed to be ANTHROPOGENIC MUD.
1									2		-0.90	-10.20	0.30	[Symbol]		Very soft, dark grey (10YR/4/1) to black (10YR/2/1), SILT / CLAY with organic ordour. (ANTHROPOGENIC MUD)
									3		-1.90	-10.36	0.46			
									4		-2.90					
2									5		-3.90	-13.80	3.90	[Symbol]		3.90 - 12.00m: Soft.
									6		-4.90					
									7		-5.90					
26/09/2006	SW	6.00		97					8		6.00	-15.90	6.00	[Symbol]		6.00 - 6.12m: No recovery, assumed to be MARINE DEPOSIT.
27/09/2006								9		-7.00	-16.02	6.12				
10		-7.90														
7									11		-8.90			[Symbol]		
									12		-9.90	-19.90	10.00			

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
 DATE 27/09/2006
 CHECKED S.C. Wong
 DATE 28/09/2006

REMARKS



**FUGRO
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VIBROCORE RECORD

HOLE No. **VC9b**

CONTRACT No.: **GE/2005/28**

SHEET: **2** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **832559.50**
N **816918.90**

DATE from: **26/09/2006** to **27/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-9.90** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
11									13	VICO	-10.00	10.00				As sheet 1 of 2.
12									14		-11.00	11.40				11.40 -12.00m: With occasional wood fragments.
13											-21.30	12.00				End of investigation hole at 12.00m.
14											-21.90					
15																
16																
17																
18																
19																
20																

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
DATE 27/09/2006
CHECKED S.C. Wong
DATE 28/09/2006

REMARKS



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VIBROCORE RECORD

HOLE No. **VC10a**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **832770.70**
 N **816999.80**

DATE from: **23/09/2006** to **23/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-10.90** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
23/09/2006	SW			99								-10.80	0.00			Very soft to soft, greenish grey (10GY/5/1) to grey (10YR/6/1), silty CLAY with occasional coarse sand and fine gravel size shell fragments. (MARINE DEPOSIT)
1									2			-0.90	-11.90	1.00		At 1.00m: Slightly sandy (fine).
2									3			-1.90				
3									4	VICO		-2.90				
4									5			-3.90				
5									6			-4.90				
6	SW 6.00								7			-5.90				
7				100					8			-6.00				
8									9			-7.00				
9									10	VICO		-7.90				7.50 - 7.60m: With occasional wood fragments.
10									11			-8.90				
									12			-9.90	-20.80	9.90		

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
 DATE 26/09/2006
 CHECKED S.C. Wong
 DATE 28/09/2006

REMARKS
 1. 7.5L of water samples were collected.
 2. Two 4L grab samples were collected.
 3. Vibrocore sub-samples were taken for toxicity testing from 0.00 - 0.90m, 0.90 - 1.90m, 1.90 - 2.90m, 4.90 - 5.90m, 7.90 - 8.90m and 10.90 - 11.90m.



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VIBROCORE RECORD

HOLE No. **VC10a**

CONTRACT No.: **GE/2005/28**

SHEET: **2** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoreing**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **832770.70**
 N **816999.80**

DATE from: **23/09/2006** to **23/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-10.90** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
11									13	WCO	-10.90					9.90 - 12.00m: Soft to firm.
12									14		-11.90 -12.00	-22.90	12.00			At 12.00m: Occasional organic debris. End of investigation hole at 12.00m.
13																
14																
15																
16																
17																
18																
19																
20																

- | | |
|--------------------------|-----------------------------|
| ↓ Small Disturbed Sample | ↓ Standard Penetration Test |
| ▨ Piston sample | ∨ In-situ Vane Shear Test |
| ▩ U76 Undisturbed Sample | ⊥ Permeability Test |
| ▧ Vibrocore sample | ⊗ Impression Packer Test |
| ▦ Vibrocore sub-sample | ⊙ Packer Test |
| ▤ SPT Liner Sample | ▲ Piezometer Tip |
| ▲ Water Sample | ⊕ Standpipe |

LOGGED W.S. Tsang
 DATE 26/09/2006
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 DATE 28/09/2006

REMARKS



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VIBROCORE RECORD

HOLE No. **VC10b**

CONTRACT No.: **GE/2005/28**

SHEET: **2** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoreing**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **832772.10**
N **817001.10**

DATE from: **23/09/2006** to **23/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-11.00** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
11									13	VICO	-40.90					9.90 - 12.00m: Firm, with occasional wood fragments.
12									14		-23.00	12.00				
13																End of investigation hole at 12.00m.
14																
15																
16																
17																
18																
19																
20																

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
DATE 26/09/2006
CHECKED S.C. Wong
DATE 28/09/2006

REMARKS



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VIBROCORE RECORD

HOLE No. **VC11a**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **832755.30**
 N **817329.40**

DATE from: **19/09/2006** to **20/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-12.30** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
19/09/2006	SW			87					1		0.00	-12.30	0.00			No recovery, assumed to be ANTHROPOGENIC MUD.
1									2		0.90	-13.08	0.78			Black (oxidize to brown) (10YR/2/2), slightly silty, fine to coarse SAND with some subangular, fine to medium gravel of moderately strong rock. (ANTHROPOGENIC MUD)
2									3		1.90	-13.70	1.40			Very soft to soft, greenish grey (10GY/5/1) to grey (10YR/6/1), silty CLAY with occasional coarse sand size shell fragments. (MARINE DEPOSIT) At 1.90m: Slightly sandy (fine).
3									4	VICO	2.90	-14.20	1.90			
4									5		3.90					
5									6		4.90					
6	SW	6.00							7		5.90	-18.30	6.00			6.00 - 6.20m: Black (10YR/2/1), silty, clayey, fine to coarse SAND with occasional cobble size wood fragments.
19/09/2006 20/09/2006				100					8		6.00	-18.50	6.20			
7									9		7.00					7.50 - 12.00m: Soft to firm.
8									10	VICO	7.90					
9									11		8.90					
10									12		9.90	-22.30	10.00			

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
 DATE 26/09/2006
 CHECKED S.C. Wong
 DATE 28/09/2006

REMARKS
 1. 7.5L of water samples were collected.
 2. Two 4L grab samples were collected.
 3. Vibrocore sub-samples were taken for toxicity testing from 0.00 - 0.90m, 0.90 - 1.90m, 1.90 - 2.90m, 4.90 - 5.90m, 7.90 - 8.90m and 10.90 - 11.90m.



**FUGRO
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VIBROCORE RECORD

HOLE No. **VC11a**

CONTRACT No.: **GE/2005/28**

SHEET: **2** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoreing**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **832755.30**
N **817329.40**

DATE from: **19/09/2006** to **20/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-12.30** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
11									13	VICO	10.00					As sheet 1 of 2.
12									14		11.90 12.00	-24.30	12.00			At 12.00m: Firm to soft, with some organic debris. End of investigation hole at 12.00m.
13																
14																
15																
16																
17																
18																
19																
20													20.00			

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
DATE 26/09/2006
CHECKED S.C. Wong
DATE 28/09/2006

REMARKS



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VIBROCORE RECORD

HOLE No. **VC11b**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoreing**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **832756.70**
 N **817334.60**

DATE from: **20/09/2006** to **20/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-12.70** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples		Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type					
20/09/2006	SW			93					1		-12.70	0.00			No recovery, assumed to be ANTHROPOGENIC MUD.
1									2		-13.12	0.42			Very soft to soft, grey (10YR/6/1) and black (10YR/2/1), slightly sandy SILT / CLAY with occasional shell fragments. (ANTHROPOGENIC MUD)
2									3		-14.07	1.37			Very soft to soft, greenish grey (10GY/5/1) to grey (10YR/6/1), silty CLAY with occasional shell fragments. (MARINE DEPOSIT)
3									4	VCO	-2.50				
4									5		-16.30	3.60			3.60 - 9.90m: Soft to firm.
5									6		-3.80				
6	SW 6.00								7		-18.45	5.75			5.75 - 10.65m: With occasional pockets (<60mm) of stiff, light grey, clayey silt.
									8		-18.70	6.00			6.00 - 6.60m: No recovery, assumed to be MARINE DEPOSIT.
7									9		-19.30	6.60			6.60 - 7.20m: Soft, grey (10YR/6/1), slightly sandy SILT / CLAY with some shell fragments and a subangular cobble of reddish brown coral fragments.
8									10	VCO	-7.80				
9									11		-19.90	7.20			
10									12		-22.60	9.90			

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
 DATE 26/09/2005
 CHECKED S.C. Wong
 DATE 28/09/2005

REMARKS



**FUGRO
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VIBROCORE RECORD

HOLE No. **VC11b**

CONTRACT No.: **GE/2005/28**

SHEET: **2** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoreing**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **832756.70**
N **817334.60**

DATE from: **20/09/2006** to **20/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-12.70** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
												-22.70	10.00			
11												-23.35	10.65			9.90 - 10.65m: Firm to stiff.
12												-40.90				Firm, grey (10YR/6/1), SILT / CLAY with some wood fragments. (MARINE DEPOSIT / ESTUARINE DEPOSIT)
14												-41.90				
												-24.70	12.00			End of investigation hole at 12.00m.
13																
14																
15																
16																
17																
18																
19																
20													20.00			

- ↓ Small Disturbed Sample
- ▨ Piston sample
- ▩ U76 Undisturbed Sample
- ▧ Vibrocore sample
- ▧ Vibrocore sub-sample
- ▧ SPT Liner Sample
- ▲ Water Sample
- ↓ Standard Penetration Test
- ∨ In-situ Vane Shear Test
- ⊥ Permeability Test
- ⊙ Impression Packer Test
- ⊙ Packer Test
- ▲ Piezometer Tip
- ⊙ Standpipe

LOGGED W.S. Tsang
DATE 26/09/2006
CHECKED S.C. Wong
DATE 28/09/2006

REMARKS



**FUGRO
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VIBROCORE RECORD

HOLE No. **VC12a**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoreing**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833148.60**
N **817065.20**

DATE from: **21/09/2006** to **21/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-13.00** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
21/09/2006	SW			87								-13.00	0.00			No recovery, assumed to be ANTHROPOGENIC MUD.
1									1			-14.00	1.00			Grey (10YR/6/1), coarse sand and fine GRAVEL of shells and occasional coral in a matrix of grey, sandy (fine) silt. (ANTHROPOGENIC DEPOSIT? / SUBMERGED RELIC REEF)
2									2			-15.40	2.40			Very soft to soft, grey (10YR/6/1), silty CLAY with occasional fine gravel size shell fragments. (MARINE DEPOSIT)
3									3	VICO		-2.50				
4									4			-3.80				
5									5			-4.90				
6	SW	6.00							6			-5.90				
7									7			-6.00				
8									8			-7.00				
9									9	VICO		-7.90				
10									10			-8.90				
												-22.60	9.60			9.60 - 9.80m: With occasional lenses (<3mm) of grey, silty clayey, fine to medium sand.
												-22.60	9.80			
									11			-9.90	10.00			

- ↑ Small Disturbed Sample
- ▨ Piston sample
- ▩ U76 Undisturbed Sample
- ▧ Vibrocore sample
- ▧ Vibrocore sub-sample
- ▧ SPT Liner Sample
- ▲ Water Sample
- ↓ Standard Penetration Test
- ∇ In-situ Vane Shear Test
- ⊥ Permeability Test
- ⊥ Impression Packer Test
- ⊥ Packer Test
- ⊥ Plezometer Tip
- ⊥ Standpipe

LOGGED W.S. Tsang
DATE 26/09/2006
CHECKED S.C. Wong
DATE 28/09/2006

REMARKS

1. 7.5L of water samples were collected.
2. Two 4L grab samples were collected.
3. Vibrocore sub-samples were taken for toxicity testing from 0.90 - 1.90m, 1.90 - 2.90m, 4.90 - 5.90m, 7.90 - 8.90m and 10.90 - 11.90m.



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VIBROCORE RECORD

HOLE No. **VC12a**

CONTRACT No.: **GE/2005/28**

SHEET: **2** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833148.60**
 N **817065.20**

DATE from: **21/09/2006** to **21/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-13.00** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
11									12	VICO	10.90	10.00				Soft, grey (10YR/6/1), slightly sandy, clayey SILT with occasional coarse sand sized quartz. (MARINE DEPOSIT?) 9.80 - 10.20m: Sandy. 10.20 - 12.00m: With some lenses (<10mm) of grey, silty clayey, fine to coarse sand.
12									13		11.90 12.00	-25.00	12.00			At 12.00m: Sandy (fine to coarse), some subrounded, fine gravel and some organic debris. End of investigation hole at 12.00m.
13																
14																
15																
16																
17																
18																
19																
20																

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
 DATE 26/09/2006
 CHECKED S.C. Wong
 DATE 28/09/2006

REMARKS



FUGRO
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VIBROCORE RECORD

HOLE No. **VC12b**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoreing**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833149.30**
 N **817063.70**

DATE from: **21/09/2006** to **21/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-12.90** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
21/09/2006	SW			94								-12.90	0.00			No recovery, assumed to be ANTHROPOGENIC MUD.
1												-13.26	0.35			Very soft to soft, greenish grey (10GY/5/1) to grey (10YR/6/1), slightly sandy SILT / CLAY with much shell fragments and coral fragments. (DISTURBED MARINE DEPOSIT)
2												-13.60	0.70			
3												-14.80	1.90			Very soft to soft, greenish grey (10GY/5/1) to grey (10YR/6/1), silty CLAY with some fine gravel and coarse sand size shell fragments. (MARINE DEPOSIT)
4												-16.10	3.20			At 1.90m: Sandy (fine) with cobble sized oyster shell fragments.
5																3.20 - 6.55m: Firm.
6																
7	SW	6.00		100								-19.45	6.55			Very soft to soft, grey (10YR/6/1), SILT / CLAY with occasional shell fragments. (MARINE DEPOSIT)
8																9.50 - 10.00m: With occasional pockets (<50mm) of grey, silty clayey, fine to coarse sand.
9																
10																
11																
12																

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
 DATE 26/09/2006
 CHECKED S.C. Wong
 DATE 28/09/2006

REMARKS



FUGRO
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VIBROCORE RECORD

HOLE No. **VC12b**

CONTRACT No.: **GE/2005/28**

SHEET: **2** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - investigation**

METHOD: **Vibrocoreing**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833149.30**
 N **817063.70**

DATE from: **21/09/2006** to **21/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-12.90** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
11									13	V100	10.90	10.00				At 9.90m: Parting of grey, silty fine SAND. Grey (10YR/6/1), silty clayey, fine to coarse SAND with much pockets (<50mm) of soft to firm, grey, slightly sandy, silt / clay. (MARINE DEPOSIT) Firm, grey (10YR/6/1), slightly sandy SILT / CLAY. (MARINE DEPOSIT) 10.60 - 11.10m: With some pockets or lenses (<30mm) of grey, silty clayey, fine to coarse sand.
12									14		11.90	11.75				At 10.90m: Very sandy (fine to coarse) 11.75 - 12.00m: With occasional wood fragments. End of investigation hole at 12.00m.
13																
14																
15																
16																
17																
18																
19																
20																

- ↓ Small Disturbed Sample
- ▨ Piston sample
- ▩ U76 Undisturbed Sample
- ▧ Vibrocore sample
- ▦ Vibrocore sub-sample
- ▤ SPT Liner Sample
- ▲ Water Sample
- ↓ Standard Penetration Test
- ∇ In-situ Vane Shear Test
- ⊥ Permeability Test
- ⊕ Impression Packer Test
- ⊙ Packer Test
- ▲ Piezometer Tip
- ⊕ Standpipe

LOGGED W.S. Tsang
 DATE 26/09/2006
 CHECKED S.C. Wong
 DATE 28/09/2006

REMARKS



FUGRO
GEOTECHNICAL
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VIBROCORE RECORD

HOLE No. **VC13a**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **1**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833569.30**
 N **817850.00**

DATE from: **11/09/2006** to **11/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-11.00** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples		Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type					
11/09/2006	ZW			88							-11.00	0.00			No recovery, assumed to be MARINE DEPOSIT.
1									2		-11.72	0.72			Very soft to soft, greenish grey (10GY/5/1) to grey (10YR/6/1), silty CLAY with occasional coarse sand size shell fragments. (MARINE DEPOSIT)
2									3		-1.90				
3									4	VICO	-2.90				
4									5		-3.90				
5									6		-4.90				
6									7		-16.50	5.50			Grey (10YR/6/1), silty, fine to coarse SAND with occasional lenses of soft, grey, silty clay. (MARINE DEPOSIT?)
6				89					8		-17.00	6.00			
7									9		-17.50	6.50			Very soft to soft, greenish grey (10GY/5/1) to grey (10YR/6/1), silty CLAY. (MARINE DEPOSIT) At 6.50m: With a piece of pottery.
8									10	VICO	-18.70	7.70			At 7.70m: Occasional fine gravel sized shell fragments.
											-19.25	8.25			
											-19.80	8.80			Firm to soft, yellowish brown (10YR/5/6), mottled pale grey, silty CLAY. (ALLUVIUM)
11/09/2006	ZW 8.80								11		-8.70	8.80			End of investigation hole at 8.80m.
10												10.00			

Small Disturbed Sample	Standard Penetration Test	LOGGED <u>W.S. Tsang</u>
Piston sample	In-situ Vane Shear Test	DATE <u>15/09/2006</u>
U76 Undisturbed Sample	Permeability Test	CHECKED <u>S.C. Wong</u>
Vibrocore sample	Impression Packer Test	DATE <u>20/09/2006</u>
Vibrocore sub-sample	Packer Test	
SPT Liner Sample	Piezometer Tip	
Water Sample	Standpipe	

REMARKS
 1. 7.5L of water samples were collected.
 2. Two 4L grab samples were collected.
 3. Vibrocore sub-samples were taken for toxicity testing from 0.00 - 0.90m, 0.90 - 1.90m, 1.90 - 2.90m, 4.90 - 5.90m and 7.70 - 8.70m.



FUGRO
GEOTECHNICAL
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VIBROCORE RECORD

HOLE No. **VC13b**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **1**

PROJECT: **Agreement No. GE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833570.90**
 N **817850.10**

DATE from: **11/09/2006** to **11/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-11.10** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	F.I.	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
11/09/2006	ZW			95					1		0.00	-11.10	0.00			No recovery, assumed to be ANTHROPOGENIC MUD.
1									2		0.00	-11.40	0.30			Very soft to soft, black (10YR/2/1), slightly sandy SILT / CLAY. (ANTHROPOGENIC MUD)
												-11.65	0.55			Very soft to soft, grey (10YR/6/1), sandy SILT / CLAY with occasional shell fragments. (MARINE DEPOSIT / ANTHROPOGENIC MUD)
												-11.95	0.85			Very soft to soft, greenish grey (10GY/5/1) to grey (10YR/6/1), silty CLAY with occasional coarse sand sized shell fragments. (MARINE DEPOSIT)
2									3		1.80					4.20 - 5.90m: Soft to firm.
									4	VICO	2.80					
3									5		3.90					
									6		4.80					
4									7		5.80	-17.00	5.90			Grey (10YR/6/1), silty, fine to coarse SAND with occasional subangular, fine gravel. (MARINE DEPOSIT)
									8		6.00	-17.20	6.10			
5									9	VICO	6.70					Yellowish brown (10YR/5/6), silty clayey, fine to coarse SAND. (ALLUVIUM)
												-18.20	7.40			
6									10		7.70	-18.30	7.20			Very stiff, yellowish brown (10YR/5/6), mottled pale grey, silty CLAY. (ALLUVIUM)
												-18.90	7.80			
11/09/2006	ZW	7.80									7.80					End of investigation hole at 7.80m.

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

LOGGED W.S. Tsang
 DATE 15/09/2006
 CHECKED S.C. Wong
 DATE 20/09/2006

REMARKS



**FUGRO
GEOTECHNICAL
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VIBROCORE RECORD

HOLE No. **VC14a**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833935.40**
N **818214.70**

DATE from: **06/09/2006** to **06/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-7.20** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	F I	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth (m)					
06/09/2006	ZW			92								-7.20	0.00			No recovery, assumed to be MARINE DEPOSIT.
1												-7.68	0.48			Dark grey (2.5Y/4/1), silty, fine SAND with some coarse sand size shell fragments. (MARINE DEPOSIT)
2												-9.60	2.40			Very soft to soft, greenish grey (10GY/5/1) to dark grey (2.5Y/4/1), silty CLAY with occasional coarse sand and fine gravel sized shells and shell fragments. (MARINE DEPOSIT)
3												-13.10	5.90			At 5.90m: Soft to firm.
4												-13.20	6.00			6.00 - 6.30m: No recovery, assumed to be MARINE DEPOSIT.
5												-13.50	6.30			
6												-16.10	8.90			8.90 - 12.00m: Soft to firm.
7												-17.20	10.00			
8																
9																
10	ZW 10.00															

- | | |
|---|---|
| <ul style="list-style-type: none"> Small Disturbed Sample Piston sample U76 Undisturbed Sample Vibrocore sample Vibrocore sub-sample SPT Liner Sample Water Sample | <ul style="list-style-type: none"> Standard Penetration Test In-situ Vane Shear Test Permeability Test Impression Packer Test Packer Test Piezometer Tip Standpipe |
|---|---|

LOGGED W.S. Tsang
DATE 07/09/2006
CHECKED S.C. Wong
DATE 11/09/2006

REMARKS
1. 7.5L of water samples were collected.
2. Two 4L grab samples were collected.
3. Vibrocore sub-samples were taken for toxicity testing from 0.00 - 0.90m, 0.90 - 1.90m, 1.90 - 2.90m, 4.90 - 5.90m, 7.90 - 8.90m and 10.90 - 11.90m.



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VIBROCORE RECORD

HOLE No. **VC14a**

CONTRACT No.: **GE/2005/28**

SHEET: **2** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833935.40**
N **818214.70**

DATE from: **06/09/2006** to **06/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-7.20** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
11									13	V100	-10.80					As sheet 1 of 2.
12									14		-11.80	-19.20	12.00			At 12.00m: Soft to firm with occasional organic debris. End of investigation hole at 12.00m.
13																
14																
15																
16																
17																
18																
19																
20													20.00			

- | | |
|--------------------------|-----------------------------|
| ↓ Small Disturbed Sample | ↓ Standard Penetration Test |
| ▨ Piston sample | ∇ In-situ Vane Shear Test |
| ▩ U76 Undisturbed Sample | ∩ Permeability Test |
| ▧ Vibrocore sample | ∪ Impression Packer Test |
| ▦ Vibrocore sub-sample | ∩ Packer Test |
| ▤ SPT Liner Sample | ▲ Piezometer Tip |
| ▲ Water Sample | ⊞ Standpipe |

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REMARKS



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VIBROCORE RECORD

HOLE No. **VC14b**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoreing**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833933.70**
 N **818216.30**

DATE from: **06/09/2006** to **06/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-7.10** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
06/09/2006	ZW			89					1		0.00	-7.10	0.00			No recovery, assumed to be ANTHROPOGENIC MUD.
1									2		0.90	-7.76 -7.90 -8.05	0.66 0.80 0.95			Very soft to soft, dark grey (10YR/4/1), slightly sandy SILT / CLAY with organic odour. (ANTHROPOGENIC MUD)
2									3		1.90	-8.70 -9.00	1.60 1.90			Very soft to soft, greenish grey (10GY/5/1) to grey (10YR/6/1), silty CLAY with occasional fine gravel sized shells and shell fragments. (DISTURBED MARINE DEPOSIT) 0.80 - 0.95m: With occasional lenses (<3mm) of grey, silty, fine sand. 1.60 - 1.90m: With occasional pockets (<30mm) of very soft, dark grey and black, slightly sandy silt / clay with much shell fragments.
3									4	VICO	2.90					Very soft to soft, greenish grey (10GY/5/1) to grey (10YR/6/1), SILT / CLAY with occasional shell fragments. (MARINE DEPOSIT) At 1.90m: Slightly sandy (fine).
4									5		3.90					
5									6		4.90					
6									7		5.90					
6				92					8		6.00	-13.10	6.00			6.00 - 6.48m: No recovery, assumed to be MARINE DEPOSIT.
7									9		7.00	-13.58	6.48			
8	ZW 7.80								10	VICO	7.90					
9									11		8.90					
10									12		9.90	-17.10	10.00			

- ↓ Small Disturbed Sample
- ▨ Piston sample
- ▩ U76 Undisturbed Sample
- ▧ Vibrocore sample
- ▧ Vibrocore sub-sample
- ▨ SPT Liner Sample
- ▲ Water Sample
- ↓ Standard Penetration Test
- ∇ In-situ Vane Shear Test
- ⊥ Permeability Test
- ⊥ Impression Packer Test
- ⊥ Packer Test
- ▲ Piezometer Tip
- ⊕ Standpipe

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 DATE 11/09/2006

REMARKS



**FUGRO
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VIBROCORE RECORD

HOLE No. **VC14b**

CONTRACT No.: **GE/2005/28**

SHEET: **2** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoring**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833933.70**
N **818216.30**

DATE from: **06/09/2006** to **06/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-7.10** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
11									13	VICO	-10.50	10.00				As sheet 1 of 2.
12									14		-11.50 -12.00	-19.10	12.00			11.05 - 12.00m: With some organic debris including highly decomposed rootlets and timber fragments.
13																End of investigation hole at 12.00m.
14																
15																
16																
17																
18																
19																
20													20.00			

- | | |
|--------------------------|-----------------------------|
| ↑ Small Disturbed Sample | ↓ Standard Penetration Test |
| ▨ Piston sample | ∇ In-situ Vane Shear Test |
| ▩ U76 Undisturbed Sample | ⊥ Permeability Test |
| ▧ Vibrocore sample | ⊕ Impression Packer Test |
| ▦ Vibrocore sub-sample | ⊙ Packer Test |
| ▤ SPT Liner Sample | ▲ Piezometer Tip |
| ▲ Water Sample | ⊕ Standpipe |

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REMARKS



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VIBROCORE RECORD

HOLE No. **VC15a**

CONTRACT No.: **GE/2005/28**

SHEET: **2** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoreing**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833642.30**
N **817911.70**

DATE from: **09/09/2006** to **09/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-9.30** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
11									13	VICO	-10.50	10.00				As sheet 1 of 2.
12	ZW 11.80								14	T	-11.50 -12.00	-21.30	12.00			End of investigation hole at 12.00m.
13																
14																
15																
16																
17																
18																
19																
20													20.00			

- ┆ Small Disturbed Sample
- ▨ Piston sample
- ▩ U76 Undisturbed Sample
- ▧ Vibrocore sample
- ▦ Vibrocore sub-sample
- ▤ SPT Liner Sample
- ▲ Water Sample
- ↓ Standard Penetration Test
- ∇ In-situ Vane Shear Test
- ┆ Permeability Test
- ⋮ Impression Packer Test
- ⋮ Packer Test
- ▲ Piezometer Tip
- ⊞ Standpipe

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DATE 15/09/2006
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DATE 20/09/2006

REMARKS



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VIBROCORE RECORD

HOLE No. **VC15b**

CONTRACT No.: **GE/2005/28**

SHEET: **1** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoreing**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833641.50**
 N **817913.00**

DATE from: **09/09/2006** to **09/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-9.40** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
09/09/2006	ZW			99					1		0.00	-9.40	0.00			No recovery, assumed to be ANTHROPOGENIC MUD.
1									2		-0.90	-9.82	0.42			Very soft to soft, dark grey (10YR/4/1), slightly sandy SILT / CLAY with occasional shell fragments and organic orduur. (ANTHROPOGENIC MUD) At 0.90m: Slightly sandy (fine) with occasional coarse gravel sized clam shell.
											-10.30	-10.50	0.90	1.10		
2									3		1.90	-11.30	1.90			Very soft to soft, grey (10YR/6/1), silty CLAY with occasional fine sand and fine gravel sized shell fragments. (MARINE DEPOSIT) At 1.90m: Slightly sandy (fine).
3									4	VICO	2.90					
4									5		3.90					
5									6		4.90					
6									7		5.90	-15.40	6.00			6.00 - 6.24m: No recovery, assumed to be MARINE DEPOSIT.
									8		6.00	-15.64	6.24			
7									9		6.90					
8									10	VICO	7.90					
9									11		8.90					
10									12		9.90	-19.40	10.00			

- Small Disturbed Sample
- Piston sample
- U76 Undisturbed Sample
- Vibrocore sample
- Vibrocore sub-sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe

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REMARKS



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VIBROCORE RECORD

HOLE No. **VC15b**

CONTRACT No.: **GE/2005/28**

SHEET: **2** of **2**

PROJECT: **Agreement No. CE 42/2005 (WS) Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun - Investigation**

METHOD: **Vibrocoreing**

CO-ORDINATES:

WORKS ORDER No. **GE/2005/28.7**

MACHINE & No.: **LAM - 4**

E **833641.50**
 N **817913.00**

DATE from: **09/09/2006** to **09/09/2006**

FLUSHING MEDIUM: **Water**

ORIENTATION: **Vertical**

SEABED LEVEL **-9.40** mPD

Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type	Depth					
11	ZW 17.60								13	VCO	10.90	-20.30	10.90			As sheet 1 of 2. 10.90 - 12.00m: Soft to firm, with occasional wood fragments.
12									14		11.90	-21.40	12.00			End of investigation hole at 12.00m.
13																
14																
15																
16																
17																
18																
19																
20																

<ul style="list-style-type: none"> ↑ Small Disturbed Sample ▨ Piston sample ▩ U76 Undisturbed Sample ⊞ Vibrocore sample ⊞ Vibrocore sub-sample ⊞ SPT Liner Sample ▲ Water Sample 	<ul style="list-style-type: none"> ↓ Standard Penetration Test ∨ In-situ Vane Shear Test ⊞ Permeability Test ⊞ Impression Packer Test ⊞ Packer Test ▲ Piezometer Tip ⊞ Standpipe 	<p>LOGGED <u>W.S. Tsang</u></p> <p>DATE <u>15/09/2006</u></p> <p>CHECKED <u>S.C. Wong</u></p> <p>DATE <u>20/09/2006</u></p>
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REMARKS