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TEST REPORT

WO HING – PENTA-OCEAN JOINT VENTURE

**CONTRACT NO. 9/WSD/08
LAYING OF WESTERN CROSS
HARBOUR MAIN AND ASSOCIATED
LAND MAINS FROM WEST
KOWLOON TO SAI YING PUN**

**MONTHLY EM&A REPORT
NO.14**

(JUNE 2011)

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ENVIRON

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13th Jul 2011

Water Supplies Department
Sha Tin Office
6/F Sha Tin Government Offices
1 Sheung Wo Che Road
Sha Tin, NT

By Post

Attention: Ms. Candy Wong

Dear Ms. Wong

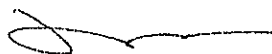
Re: Contact No. 9/WSD/08
Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun
Monthly Environmental Monitoring and Audit Report No. 14

Reference is made to Environment Team's submission of the Environmental Monitoring and Audit Report No. 14 by Email on 13th Jul 2011 (entitled "9/WSD/08 - Draft Monthly Report (Jun 11)") and the subsequent revision of the report by Email on 13th Jul 2011.

We are pleased to inform you that we have no comment on the revised captioned report.

Thank you very much for your kind attention and please do not hesitate to contact the undersigned should you have any queries.

Yours sincerely,



David Yeung
Independent Environmental Checker

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EXECUTIVE SUMMARY

Under the requirements of "Environmental Monitoring & Audit Manual – Agreement No. CE42/2005(WS) Laying of Western Cross Harbour Main and Associated Land Main from West Kowloon to Sai Ying Pun" (the EM&A Manual), impact noise monitoring and water quality monitoring is required to be implemented for the "Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Main from West Kowloon to Sai Ying Pun" (the Project).

This monthly Environmental Monitoring and Audit (EM&A) report No.14 was prepared by ETS-Testconsult Ltd (ET) for the Project. This report documented the findings of EM&A Works conducted during the Project in June 2011.

Site Activities

As informed by the Contractor, the site activities in this reporting month were as below:

- Pipe pulling by bottom pull method from West Kowloon to Sai Ying Pun (Portion J);
- Erection of noise barriers (Portion H2);
- Transfer the stored pipes to the flattop pontoon (Portion I); and
- Pipe pulling works, including welding of the field joint, apply external coating, install steel wire mesh, install steel jacket to the field joint, concrete coating of the field joint, internal lining of the field welded joint and pipe pulling (Portion I).

Environmental Monitoring Progress

The summary of the monitoring activities in this monitoring month is listed below:

- Day-time Noise Monitoring (0700-1900 on normal weekday): 5 Occasions at KS6 and 5 Occasions at CGa, RWM and KY3
- Evening-time Noise Monitoring (1900-2300): 4 Occasions at KS6, CGa, RWM and KY3
- Night-time Noise Monitoring (2300-0700 of next day): 4 Occasion at KS6
- Holiday-time Noise Monitoring (0700-1900 on Holiday): 4 Occasions at KS6, CGa, RWM and KY3
- Marine Water Quality Monitoring: 13 Occasions at 9 monitoring stations and 4 control stations
- Weekly-site inspection: 4 Occasions

Noise Monitoring

No exceedances of Action Level of noise monitoring were recorded in this reporting month since no complaint on noise issue was received.

Six exceedances in Limit Level were recorded according to the results from night-time noise monitoring on 19 and 26 June 2011 (0000-0100) at KS6. All of the exceedances were considered to be invalid (not project related) and hence no further actions were required. Interim notifications of exceedance (NOEs) for all exceedances were issued to EPD, ER, IEC and the Contractor by ET. The details of NOEs present in Appendix K.

Water Quality Monitoring

Water quality monitoring scheduled on 23 June 2011 (mid-flood) was cancelled due to bad weather (Typhoo No.3).

No exceedances of Action and Limit levels were recorded for water quality monitoring in the reporting month.

Site Inspection

Environmental site inspections conducted in this reporting month are presented as follows:

Concerned Parties

ET Weekly site inspection
Monthly Joint site inspection

Dates of Audit / Inspection

08, 14, 22 and 28 June 2011
22 June 2011

In general, performance on environmental mitigation measures implemented was found to be satisfactory in this reporting month. The major findings observed during site inspections are presented in the Section 6.0.



Environmental Complaints, Notification of summons and successful prosecutions

One complaint received on 23 June 2011 was forwarded by the Engineer's Representatives on 08 July 2011 through internet from a citizen against urinating into the sea from the Launching Barge which caused by site workers. The complainant complained that that caused an environmental nuisance. Refer to the ET weekly site inspection on 08 July 2011, the Contractor had provided portable chemical toilet and warning notice on the Launching Barge. As a result, it concluded that the situation was noted improved. Complaint Investigation report of this event has been prepared and submit to RE, IEC and Contractor by ET.

No notification of summons and prosecutions with respect to environmental issues were received in this reporting month.

Change in Environmental Aspect in this Reporting Month

No change on environmental aspect was reported in this reporting month.

Future Key Issues

Based on the forecast of engineering works in the coming month, key issues to be considered are as follows:

- *Noise and dust impact due to construction works;*
- *Use and maintain silt curtain and silt screen properly;*
- *Clean up the fill material along the barge frequently;*
- *Implement all necessary preventive measures to avoid oil leakage. In the event an oil leakage happens, the Contractor should properly remove the leaked oil and handle the contaminated soil and all materials using for this cleaning works as chemical waste; and*
- *Maintain good site practice to minimize environmental impacts at the site.*



1.0 INTRODUCTION

Wo Hing – Penta-Ocean Joint Venture (WHPOJV) appointed Environmental Team of ETS-Testconsult Limited (ETL) to undertake the Environmental Impact Monitoring for “Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Main from West Kowloon to Sai Ying Pun” (the Project) under the requirements of “Environmental Monitoring & Audit Manual – Agreement No. CE42/2005(W) Laying of Western Cross Harbour Main and Associated Land Main from West Kowloon to Sai Ying Pun” (the EM&A Manual).

This report documented the findings of EM&A Works conducted in June 2011.

2.0 PROJECT INFORMATION

2.1 Scope of the Project

The construction works of the Project are located in West Kowloon, across the Victoria Harbour and in Sai Ying Pun.

The construction works under this Project are briefly described, without limitation, as follow:

- Laying of about 1.5km of 1200mm diameter steel fresh water mains at West Kowloon;
- Laying of about 2.1km of 1200mm diameter steel submarine pipeline from West Kowloon to Sai Ying Pun including dredging, cathodic protection system and other associated works;
- Laying of about 0.4km of 1200mm diameter steel fresh water main at Sai Ying Pun;
- Laying of about 0.5km of 800mm diameter steel salt water main at West Kowloon;
- Construction of motorized butterfly valve (MBV) and the associated facilities in the vicinity of Sun Yat Sen Memorial Park at Sai Ying Pun;
- Construction of all chambers associated with pipeworks;
- Making service connections;
- Ancillary works including but not limited to reinstatement of roads, landscaping works.

Areas of the Project present in Appendix H. Locations of environmental monitoring stations and sensitive receivers are shown in Figures 1, 2, 3, 1.2a, 1.2b and 1.2c

2.2 Work Programme

Details of work programme are shown in Appendix E.

2.3 Project Organization and Management Structure

The organization chart and lines of communication with respect to the on-site environmental management and monitoring program are shown in Appendix A.

2.4 Contact Details of Key Personnel

The key personnel contact names and telephone numbers are shown in Table 2.1.

Table 2.1 Contact Details of Key Personnel

<i>Project Role</i>	<i>Organization</i>	<i>Name of Key Staff</i>	<i>Tel. No.</i>	<i>Fax No.</i>
<i>Engineer's Representative</i>	<i>Mott MacDonald</i>	<i>Mr. Kelvin Ho</i>	<i>2377 2823</i>	<i>2377 2900</i>
<i>IEC</i>	<i>Environ</i>	<i>Mr David Yeung</i>	<i>3743 0788</i>	<i>3548 6988</i>
<i>Contractor's Agent</i>	<i>WHPOJV</i>	<i>Mr. Danny Ho</i>	<i>2695 8318</i>	<i>2957 8213</i>
<i>ET Leader</i>	<i>ET (ETL)</i>	<i>Mr C. L. Lau</i>	<i>2946 7791</i>	<i>2695 3944</i>

3.0 WORK PROGRESS IN THIS REPORTING MONTH

As informed by the Contractor, the activities in the reporting month include:

- *Pipe pulling by bottom pull method from West Kowloon to Sai Ying Pun (Portion J);*
- *Erection of noise barriers (Portion H2);*
- *Transfer the stored pipes to the flattop pontoon (Portion I); and*
- *Pipe pulling works, including welding of the field joint, apply external coating, install steel wire mesh, install steel jacket to the field joint, concrete coating of the field joint, internal lining of the field welded joint and pipe pulling (Portion I).*



4.0 IMPACT NOISE MONITORING

4.1 Monitoring Requirements

As the requirement in the EM&A Manual, impact noise monitoring was conducted for a weekly basis at designated monitoring locations.

4.2 Monitoring Equipment

Integrating Sound Level Meters used for impact noise monitoring were Type 1 sound level meters capable of giving a continuous readout of the noise level reading including equivalent continuous sound pressure level (L_{eq}) and percentile sound pressure level (L_x). They complied with International Electro technical Commission Publications 651:1979 (Type1) and speed in m/s was used to monitor the wind speed. Table 4.1 summarized the noise monitoring equipment model used during the impact monitoring. Copies of calibration certificates and Calibration Summary for noise meters and calibrators used are attached in Appendix B1.

Table 4.1 Noise Monitoring Equipment

Equipment	Model	Equipment No.	Serial No.	Calibration Date.	Expired Date
Sound Level Meter	Rion NL-31 Sound Level Meter	ET/EN/003/06	00110024	15/04/11	14/04/12
		ET/EN/003/13	00593620	14/09/10	13/09/11
		ET/EN/003/12	00773032	08/12/10	07/12/11
Sound Level Calibrator	Rion NC-73 Sound Level Calibrator	ET/EN/002/01	10196943	12/11/10	11/11/11
Anemometer	AZ Instrument AZ 8908	EN/001/04	9101231	10/11/10	09/11/11

4.3 Monitoring Parameters, Duration and Frequency

Impact noise monitoring for the A-weighted levels L_{eq} , L_{10} and L_{90} were recorded once per week. Data obtained from impact noise monitoring was processed and presented as below:

- Daytime: three sets of 30-minute noise level monitored between 0700-1900 hrs on normal weekdays;
- Evening-time*: three sets of 5-minute noise level monitored between 1900-2300 hrs ;
- Night-time*: three sets of 5-minute noise level monitored between 2300-0700 hrs of next day; and
- Holiday*: three sets of 5-minute noise level monitored between 0700-1900 hrs on holiday.

(*): Noise monitoring to be conducted only when there is construction work.

Duration, frequencies and parameters of noise measurement are presented in Table 4.2.

Table 4.2 Duration, Frequencies and Parameters of Noise Monitoring

Time period	Duration/min	No. of Set(s)	Parameters
Day-time: 0700-1900 hrs on normal weekday	30	1	L_{eq} , L_{10} , L_{90}
Evening-time: 1900-2300 hrs	5	3	L_{eq} , L_{10} , L_{90}
Night-time: 2300-0700 hrs of next day	5	3	L_{eq} , L_{10} , L_{90}
Holiday-time: 0700-1900 hrs on holiday	5	3	L_{eq} , L_{10} , L_{90}

4.4 Monitoring Locations

In accordance with the EM&A Manual, the proposed noise monitoring station at the Harbourside (KS4) was cancelled since the owner of the Harbourside and nearby NSRs rejected to perform baseline and impact noise monitoring at their property. As a result, there was one noise monitoring location KS6 (The Cullinan) selected at West Kowloon to conduct impact environmental monitoring. At Sai Yung Pun, the location at the noise station CG (Connaught Garden) was unavailable for impact noise measurement because the building repairing and maintenance works was carrying out in the Connaught Garden and will be finished in June 2011. Hence, noise monitoring at noise station CG was moved to another noise station CGa (pavement in front of Connaught Garden) temporally until the completion of repairing and maintenance works at Connaught Garden) since CGa locates close to the major site activities which are likely to have noise impacts and low disturbance to the



occupants was observed during the noise monitoring. As a result, there were three noise monitoring locations, CGa (Pavement in front of Connaught Garden), RWM (Roof at Richwealth Mansion) and KY3 (Roof at Kwan Yik Building Phase 3) selected to conduct impact environmental monitoring.

Beside, the locations at the noise stations, RWM (Roof at Richwealth Mansion) and KY3 (Roof at Kwan Yik Building Phase 3), were unavailable for impact evening-time and night-time noise measurement because the building owners reject ET to carry out noise monitoring during such two periods due to security. Hence, evening-time and night-time noise monitoring at noise stations, RWM and KY3 were moved to pavement in front of Richwealth Mansion and Kwan Yik Building Phase 3. The details of noise monitoring stations are summarized in Table 4.3.

Table 4.3 Noise Monitoring Stations

<i>Daytime and Holiday-time Noise monitoring station</i>	<i>Description of location</i>	<i>Type of Measurement</i>
KS6	Podium at the Culliman	Façade
CGa	Pavement in front of Connaught Garden	Façade
RWM	Roof at Richwealth Mansion	Free Field
KY3	Roof at Kwan Yik Building Phase 3	Free Field
<i>Evening-time and Night-time Noise monitoring station</i>	<i>Description of location</i>	<i>Type of Measurement</i>
KS6	Podium at the Culliman	Façade
CGa	Pavement in front of Connaught Garden	Façade
RWM	Pavement at Richwealth Mansion	Façade
KY3	Pavement at Kwan Yik Building Phase 3	Façade

4.5 Monitoring Methodology

Instrumentation

Integrating Sound Level Meters were employed for noise monitoring.

Operation/Analysis Procedures

- Sound Level Meter was set on a tripod at a height of 1.2m above the ground;
- For free field measurement, the meter was positioned away from any nearby reflective surfaces.
- The battery condition was checked to ensure the correct functioning of the meter;
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
 - Frequency weighting : A
 - Time weighting : Fast
 - Time measurement : 30 mins
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94 dB at 1000HZ. If the difference in the calibration level before and after measurement was more than 1.0 dB(A), the measurement would be considered invalid and repeat measurement would be required after re-calibration or repair of the equipment;
- During the monitoring period, the L_{eq} , L_{10} and L_{90} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet;
- 3dB(A) correction had been added to the results if noise measurements were free-field;
- Noise measurement may be paused during periods of high intrusive noise (e.g. dog barking directly towards the receiver of noise level meter). If noise measurement was paused during high intrusive noise, the noise level meter would be resumed and continued the noise measurement and the observations would also be recorded. Any pause intervals were not included in the measurement time; and
- Noise monitoring would be cancelled in the presence of fog, rain, storm, wind with a steady speed exceeding 5m/s, or wind gusts exceeding 10m/s.

Maintenance and Calibration

- The microphone head of the sound level meter and calibrator are cleaned with soft cloth at quarterly intervals; and
- The meters are sent to supplier or HOKLAS laboratory to check and calibrated at yearly intervals.



4.6 Actions and Limit Levels

The Action and Limit Levels (AL Levels) were established in accordance to the Table 4.2 of the EM&A Manual. Table 4.4 presents the AL levels for noise monitoring.

Table 4.4 Action and Limit Levels for Noise Monitoring

Time Period	Action	Limit
0700 –1900 hrs on normal weekday (Day-time)	When one documented complaint is received	75 dB(A) *
1900-2300 hrs (Evening-time)		70 dB(A)
0700-1900 hrs on Holiday (Holiday-time)		70 dB(A)
Restricted hours (2300-0700 hrs of next day) (Night-time)		55 dB(A)

* reduce to 70dB(A) for school and 65dB(A) during school examination periods

4.7 Event-Action Plans

Should the results of the monitoring parameters at any designated monitoring stations indicate that the noise level criteria are exceeded, the actions in accordance with the Event and Action Plan that summarized in Appendix D should be carried out.

4.8 Results

Totally 5 occasions at KS6 and 5 occasions at CGa, RWM and KY3 of day-time noise monitoring, 4 occasions of evening-time noise monitoring at KS6, CGa, RWM and KY3, 4 occasions of night-time noise monitoring at KS6 and 4 occasions of holiday-time noise monitoring at KS6, CGa, RWM and KY3 were carried out in this reporting month.

No exceedances of Action Level of noise monitoring were recorded in this reporting month since no complaint on noise issue was received. Besides, six exceedances in Limit Level were recorded according to the results from night-time noise monitoring on on 19 and 26 June 2011 (0000-0100) at KS6. All of the exceedances were considered to be invalid (not project related) and hence no further actions were required. Interim notifications of exceedance (NOEs) for all exceedances were issued to EPD, ER, IEC and the Contractor by ET. The details of NOEs present in Appendix K.

Table 4.5 summaries the noise daytime monitoring results in the reporting period.

Table 4.5 Summary of Noise Daytime Monitoring Results

Monitoring Parameter	Date	KS6		
		Time	Result	Exceed*
Day-time	03/06/11	09:50	63.5	X
	10/06/11	16:20	62.4	X
	17/06/11	13:00	63.0	X
	24/06/11	16:55	63.2	X
	27/06/11	14:40	65.8	X
Evening-time	04/06/11	22:00	62.4	X
	04/06/11	22:05	62.0	X
	04/06/11	22:10	61.6	X
	11/06/11	20:25	62.6	X
	11/06/11	20:30	62.9	X
	11/06/11	20:35	62.4	X
	18/06/11	09:45	65.5	X
	18/06/11	09:50	64.1	X
	18/06/11	09:55	64.3	X
	25/06/11	21:00	64.1	X
	25/06/11	21:05	64.7	X
	25/06/11	21:10	64.4	X



Monitoring Parameter	Date	KS6			
		Time	Result	Exceed*	
Night-time	04/06/11	23:20	54.6	X	
	04/06/11	23:25	54.9	X	
	04/06/11	23:30	54.7	X	
	12/06/11	00:25	55.0	X	
	12/06/11	00:30	55.0	X	
	12/06/11	00:35	54.9	X	
	19/06/11	00:10	59.8	L	
	19/06/11	00:15	59.9	L	
	19/06/11	00:20	59.0	L	
	26/06/11	00:45	58.0	L	
	26/06/11	00:50	58.1	L	
Holiday-time	05/06/11	12:10	62.9	X	
	05/06/11	12:15	62.3	X	
	05/06/11	12:20	62.4	X	
	12/06/11	14:45	63.0	X	
	12/06/11	14:55	62.8	X	
	12/06/11	15:00	62.7	X	
	19/06/11	09:15	62.6	X	
	19/06/11	09:20	60.5	X	
	19/06/11	09:25	60.4	X	
	26/06/11	11:50	64.0	X	
	26/06/11	11:55	63.7	X	
Monitoring Parameter	Date	CGa			
		Time	Result	Exceed*	
	Day-time	01/06/11	13:00	74.3	X
		08/06/11	13:40	72.0	X
		15/06/11	10:25	74.2	X
		24/06/11	13:30	70.8	X
		30/06/11	10:15	74.1	X
	Evening-time	04/06/11	20:15	69.5	X
		04/06/11	20:20	69.9	X
		04/06/11	20:25	69.8	X
		11/06/11	21:40	69.9	X
11/06/11		21:45	69.6	X	
11/06/11		21:50	69.9	X	
18/06/11		21:45	67.8	X	
18/06/11		21:50	68.2	X	
18/06/11		21:55	68.5	X	
25/06/11		22:00	70.0	X	
25/06/11		22:05	70.0	X	
Holiday-time	05/06/11	10:25	69.8	X	
	05/06/11	10:30	69.6	X	
	05/06/11	10:35	69.9	X	
	12/06/11	13:00	69.6	X	
	12/06/11	13:05	68.6	X	
	12/06/11	13:10	70.0	X	
	19/06/11	10:20	68.9	X	
	19/06/11	10:25	69.2	X	
	19/06/11	10:30	69.5	X	
	26/06/11	11:00	68.7	X	
	26/06/11	11:05	69.5	X	
Monitoring Parameter	Date	RWM			
		Time	Result	Exceed*	
	Day-time	01/06/11	13:35	66.6	X
		08/06/11	14:15	61.4	X
		15/06/11	11:00	61.5	X
		24/06/11	14:05	62.0	X
30/06/11	10:50	65.4	X		



Monitoring Parameter	Date	RWM		
		Time	Result	Exceed*
Evening-time	04/06/11	20:35	69.2	X
	04/06/11	20:40	69.5	X
	04/06/11	20:45	69.3	X
	11/06/11	22:00	69.2	X
	11/06/11	22:05	69.8	X
	11/06/11	22:10	69.4	X
	18/06/11	22:05	67.3	X
	18/06/11	22:10	67.9	X
	18/06/11	22:15	67.6	X
	25/06/11	22:20	68.8	X
	25/06/11	22:25	68.5	X
	25/06/11	22:30	68.6	X
Holiday-time	05/06/11	10:45	63.8	X
	05/06/11	10:50	63.4	X
	05/06/11	10:55	63.3	X
	12/06/11	13:20	64.3	X
	12/06/11	13:25	64.1	X
	12/06/11	13:30	63.8	X
	19/06/11	10:50	60.2	X
	19/06/11	10:55	60.8	X
	19/06/11	11:00	61.1	X
	26/06/11	10:40	63.4	X
	26/06/11	10:45	63.7	X
	26/06/11	10:50	63.1	X
Monitoring Parameter	Date	KY3		
		Time	Result	Exceed*
Day-time	01/06/11	14:10	64.1	X
	08/06/11	14:50	60.9	X
	15/06/11	11:35	60.0	X
	24/06/11	14:40	61.4	X
	30/06/11	11:25	63.2	X
Evening-time	04/06/11	20:55	66.3	X
	04/06/11	21:00	65.4	X
	04/06/11	21:05	65.8	X
	11/06/11	22:20	67.6	X
	11/06/11	22:25	67.1	X
	11/06/11	22:30	66.9	X
	18/06/11	22:25	68.6	X
	18/06/11	22:30	68.1	X
	18/06/11	22:35	68.0	X
	25/06/11	22:40	64.8	X
	25/06/11	22:45	65.0	X
	25/06/11	22:50	64.4	X
Holiday-time	05/06/11	11:05	60.8	X
	05/06/11	11:10	61.3	X
	05/06/11	11:15	61.6	X
	12/06/11	13:40	60.2	X
	12/06/11	13:45	60.5	X
	12/06/11	13:50	60.5	X
	19/06/11	11:10	60.1	X
	19/06/11	11:15	59.9	X
	19/06/11	11:20	60.4	X
	26/06/11	10:20	62.3	X
	26/06/11	10:25	61.8	X
	26/06/11	10:30	62.0	X

Remark (*): L = Limit Level exceedance, A = Action Level exceedance and X = not an Exceedance
 (*): Since daytime and holiday-time noise measurements at monitoring stations RWM and KY3 were free-field, 3dB(A) correction had been added to the results



The summary of noise exceedances is shown in Table 4.6.

Table 4.6 Summary of Impact Noise Exceedances in this reporting month

<i>Exceedance Level</i>	<i>Daytime</i>	<i>Evening-time</i>	<i>Night-time</i>	<i>Holiday-time</i>
<i>Action</i>	0	0	0	0
<i>Cumulative</i>	0	0	0	0
<i>Limit</i>	0	0	6	0
<i>Cumulative</i>	0	0	155	0

5.0 WATER QUALITY MONITORING

5.1 Monitoring Requirements

In accordance with the EM&A Manual, impact water quality monitoring was conducted three days per week during the course of the marine construction works.

5.2 Monitoring Locations

In accordance with the EM&A Manual, the proposed water quality monitoring station R8 – Macau Ferry Terminal was cancelled since it is located inside the restricted area. Another monitoring location R8a was proposed to replace R8 for impact water quality monitoring. As a result, totally four control stations and nine impaction stations were selected to conduct impact water quality monitoring for the Project. Table 5.1 shows the water quality monitoring stations of the Project.

Table 5.1 Water Quality Monitoring Stations

<i>ID</i>	<i>Station</i>	<i>Easting</i>	<i>Northing</i>
R5	Green Island	830 175.979	816 179.217
R6	Prince Philip Dental Hospital	833 437.625	816 747.640
R7	Tsan Yuk Hospital	833 461.092	816 744.773
R8a	Macau Ferry Terminal	833 573	816 885
R15 *	Kowloon South Pumping Station	833 982.630	818 282.101
R16	Kowloon Government Offices Building	834 335.800	817 769.145
R17	Canton Road Government Offices Building	834 364.658	817 802.847
R28	WSD Kennedy Town Salt Water Pumping Station	830 707	815 983
R29	WSD Sheung Wan Salt Water Pumping Station	833 414	816 745
C1	Control Station	830 797.729	819 163.377
C2	Control Station	836 350.628	817 135.218
C3	Control Station	829 495.126	817 228.312
C4	Control Station	836 638.773	816 686.030

Remark (*): Station R15 = WSD Seawater Intake

Control stations, C2 and C4, should be the upstream control station for all impact monitoring stations at mid-flood and Control Stations, C1 and C3, should be the upstream control station for all monitoring stations at mid-ebb.

5.3 Monitoring Parameters

Monitoring parameters listed in Table 5.2 shall be monitored by the ET to ensure that any deteriorating water quality could be readily detected and timely action be taken to rectify the situation. Table 5.3 shows the other relevant water quality data recorded during the impact water quality monitoring.

Table 5.2 Water Quality Monitoring Parameters

<i>In-situ measurement</i>	<i>Laboratory analysis</i>
<i>Dissolved Oxygen (DO) (mg/L)</i>	<i>Suspended solids (SS) (mg/L)</i>
<i>Turbidity (NTU)</i>	



Table 5.3 Other relevant water quality parameters

Water Quality Parameters	
Tidal stages	Water depth (m)
Dissolved Oxygen saturation (%)	Salinity (ppt)
Temperature (°C)	Weather Condition

5.4 Monitoring Frequency

The frequency of impact water quality monitoring of water quality is summarized in Table 5.4.

Table 5.4 Monitoring Frequency of Impact Water Quality Monitoring

Frequency	Monitoring Depth
3 days/week, 2 tides/day	For water depth greater than 6m: Three water depths (1m below Surface, mid-depth and 1m above bottom). For water depth less than 6m but greater than 3m: Two water depths: (1m below Surface and 1m above bottom). For water depth less than 3m: One water depth (Mid-depth)

5.5 Monitoring Methodology and Equipment Used

Refer to the requirement in Appendix D2 "General Technical Requirements of Environmental Monitoring" (TM) in the Environmental Monitoring and Audit Guidelines for Development Projects in Hong Kong published by EPD, water samples for all monitoring parameter were collected, stored, preserved and analysed according to the Standard Method APHA 19ed.. In-situ measurements at monitoring locations including DO, turbidity, salinity and water depth were collected by equipment with the characteristic and functions listed as below:

Location of the monitoring stations

A hand-held digital Global Positioning System (GPS) was used to identify the designated monitoring stations prior to water sampling.

Water Depth measurement

A portable, battery-operated echo sounder was used for the determination of water depth at each designated monitoring station.

In-situ Water Quality Monitoring Equipment

All in-situ monitoring instruments shall be checked, calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals or sometimes longer throughout all stages of the water quality monitoring. Responses of sensors and electrodes should be checked with certified standard solutions before each use. Wet bulb calibration for a DO meter shall be carried out before measurement at each monitoring location.

Dissolved Oxygen, salinity and temperature measuring equipment

A portable, weatherproof dissolved oxygen & salinity measuring instrument, which complete with cable, sensor and DC power source (e.g. YSI 85 or equivalent) was used for measuring:

- a dissolved oxygen level in the range of 0-20 mg/L and 0-200 % saturation;
- a salinity in range 0-40 ppt; and
- a temperature of 0-45 degree Celsius

A membrane electrode with automatic temperature compensation complete with a cable was installed.

Turbidity Measurement Instrument

A portable, weatherproof turbidity-measuring instrument with DC power source was used. It has a photoelectric sensor capable of measuring turbidity between 0-1000 NTU and be complete with a cable (e.g. HACH model 2100P or equivalent)



Water Sampling and Sample Analysis

In-situ monitoring was carried out at three depths: 1 meter below water surface, at mid-depth and 1 meter above the seabed. If the water depth is less than 6 m, the mid-depth station shall be omitted and if the water depth is below 3 m, only the mid depth station shall be monitored.

A water sampler comprising a transparent PVC cylinder, with a capacity of not less than 2 litres, was lowered into the water body at the predetermined depth. The opening ends of the sampler were then closed accordingly and water samples were collected.

The sample container, made by high-density polythene, was rinsed with a portion of the water sample. The water sample was then transferred to the container, labelled with a unique sample ID and sealed with a screw cap. The water samples were stored in a cool box maintained at 4°C. The water samples were then delivered to Environmental Laboratory of ETS-Testconsult Ltd (HOKLAS Registration No. 022) on the same day for analysis.

5.6 Details of site Equipment used for In-situ Measurement

All in-situ monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals or sometimes longer throughout all stages of the water quality monitoring. Wet bulb calibration for a DO meter was carried out before measurement at each monitoring location.

Table 5.5 shows the equipment used for in-situ monitoring of water quality. The calibration certificates are attached in Appendix C1.

Table 5.5 Details of Monitoring Equipment (In-site measurement)

Parameter	Model	Date of Calibration	Due Date	Equipment No.	Serial No.
Coordinate of Monitoring stations	Magellan GPS Navigator	-----	-----	ET/EW/005/03	211836B
Dissolved Oxygen (Saturation), Temperature and Salinity	YSI Dissolved Oxygen, Salinity & Temperature Meter, YSI 85	21/05/11	20/08/11	ET/EW/008/002*	06C1998AD
Turbidity	HACH Model 2100P Turbid Meter	14/04/11	13/07/11	ET/0505/007*	08060C030281
Water Depth	Speedtech Instrument SM-5A	-----	-----	ET/EW/002/04	56657

Remark: (*) indicates the instrument should be calibrated on use.

5.7 Quality Assurance (QA) / Quality Control (QC) results and Determination Limits

At each measurement/sampling depth, two consecutive measurements of dissolved oxygen (DO), dissolved oxygen saturation (DOS), turbidity and salinity were taken. The probes were retrieved out of the water after the first measurement and then re-deployed for the second measurement. If the difference between the first and second measurement is greater than 25% the reading was discarded and the measurements were repeated.

At the laboratory analysis of water sample, test method of test parameter as required by the EM&A Manual, with the QA/QC results in accordance with the requirement of HOKLAS or international accredited scheme is shown in Table 5.6. For the QA/QC procedures, one QC sample, one duplicate sample and one sample spike of every batch of 20 samples were analysis. The QA/QC results are summarized in Appendix C4

Table 5.6 Summary of test method

Laboratory Analysis	Testing Procedure	Method Detection Limit
Total suspended solids	In house method based on APHA 19 th ed 2540D	1.0 mg/L



5.8 Action and Limit Level

The water quality criteria, namely Action and Limit (A/L) levels are presented in the table below.

Table 5.7 Water Quality Action and Limit Levels

Parameter	Action Level	Limit Level
DO (mg/L) (Surface, Middle & Bottom)	<u>Surface, Middle & Bottom</u> WSD Seawater Intakes 2 mg/L (For R15) Other Impact Monitoring Stations 5.65 mg/L (For R5, R6, R7, R8a, R16, R17, R28 and R29)	<u>Surface & Middle</u> WSD Seawater Intakes 2 mg/L (For R15) Other Impact Monitoring Stations 5.51 mg/L (For R5, R6, R7, R8a, R16, R17, R28 and R29) <u>Bottom</u> 5.11 mg/L (For R15, R5, R6, R7, R8a, R16, R17, R28 and R29)
SS (mg/L) (Depth-averaged)	WSD Seawater Intakes 10 mg/L (For R15) Other Impact Monitoring Stations 12.7 mg/L (For R5, R6, R7, R8a, R16, R17, R28 and R29)	WSD Seawater Intakes 10 mg/L (For R15) Other Impact Monitoring Stations 12.7 mg/L (For R5, R6, R7, R8a, R16, R17, R28 and R29)
Turbidity (NTU) (Depth-averaged)	WSD Seawater Intakes 10 NTU Other Impact Monitoring Stations 6.48 NTU (For R5, R6, R7, R8a, R16, R17, R28 and R29)	WSD Seawater Intakes 10 NTU Other Impact Monitoring Stations 6.82 NTU (For R5, R6, R7, R8a, R16, R17, R28 and R29)

- Notes: 1. "depth-averaged" is calculated by taking the arithmetic means of reading of all three depths.
2. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
3. For turbidity and SS, non-compliance of water quality limits occurs when monitoring result is higher than the limits.
4. All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered as necessary.

5.9 Event and Action Plan

Please refer to the Appendix D for details.

5.10 Monitoring Duration and Period In this reporting month

Water quality monitoring scheduled on 23 June 2011 (mid-flood) was cancelled due to bad weather (Typhoon No.3).

Daily water quality monitoring duration are detailed in Appendix C2. Below is the time schedule for the water quality monitoring conducted in this reporting month:

Table 5.8 Schedule for Impact Water Quality Monitoring

June 2011						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
				▼		▼
5	6	7	8	9	10	11
		▼		▼		▼
12	13	14	15	16	17	18
		▼		▼		▼
19	20	21	22	23	24	25
		▼		▽		▼
26	27	28	29	30		
		▼		▼		

- Remarks: (▼) = Marine water quality monitoring carried out by ET.
(▽) = Water quality monitoring scheduled on 23 June 2011 (mid-flood) was cancelled due to bad weather (Typhoon No.3).



5.11 Results

The impact water quality measurement results are detailed in Appendix C2. Appendix C3 presents the water quality monitoring data and graphical presentations of monitoring results respectively. The summary of marine water quality exceedances is shown in Table 5.9.

Table 5.9 Summary of Impact Marine Water Quality Exceedances in this reporting month

Exceedance Level	DO		Turbidity		SS		Cumulative	
	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb
Action	0	0	0	0	0	0	0	0
Limit	0	0	0	0	0	0	0	0

According to the summary of marine water monitoring results, no exceedances of Action and Limit levels were recorded for this reporting month.

6.0 ENVIRONMENTAL SITE INSPECTION

During this reporting month, weekly site inspections were undertaken on 08, 14, 22 and 28 June 2011 by ET. Monthly joint site inspection at 22 June 2011 was carried out by Engineer's Representative, IEC, WHPOJV and ET. A summary of implementation status of mitigation measures on site inspections is presented in Appendix G.

6.1 Summary of the ET weekly site inspection findings

According to the summary of the ET weekly site inspections carried out in June 2011, it indicated that site practices of the Contractor were generally undertaken in an environmentally acceptable manner and the overall site environmental performance was satisfactory. Summary of the site inspection findings in this reporting month is shown in Table 6.1.

Table 6.1 Summary of Site Inspection Findings

Item	Aspect	Finding	Action(s) taken by the Contractor	ET Verification	Status of finding
1	Water	Follow up action to outstanding finding in the previous month, no water leakage was observed from an air-conditioner at the Launching Barge since water outlet of the air-conditioner was connected with a hose to a container during the weekly site inspection on 08/06/11.	The water outlet of the air-conditioner was connected to an appropriate container. (Photo Ref. 3 & 4 of the Contractor Follow-up Action – 08/06/11)	---	Closed
2	Water	Rainy water was found in most drip trays during weekly site inspection on 28/06/11.	The rainy water was drained away from the drip trays. (Photo Ref. No.1 of the Contractor Follow-up Action – 02/07/11.	Since the finding was observed in the last weekly site inspection on 28/06/11, it will be verified in the first weekly site inspection in the coming month.	Follow-up
3	Chemical	Follow up action to outstanding finding in the previous month, oil/paint cans found on the Launching Barge were collected during the weekly site inspection on 08/06/11.	The oil/paint cans were removed from the Launching Barge. (Photo Ref.1 of the Contractor Follow-up Action – 08/06/11)	---	Closed
4	Chemical	Follow up action to outstanding finding in the previous month, the engine of crawler crane on the Launching Barge was found placed in a drip tray during the weekly site inspection on 08/06/11.	Drip tray was provided for the engine of crawler crane to prevent chemical leakage. (Photo Ref.2 of the Contractor Follow-up Action – 08/06/11)	---	Closed

Item	Aspect	Finding	Action(s) taken by the Contractor	ET Verification	Status of finding
5	Chemical	Follow up action to outstanding finding in the previous month, lubricant placed on the access to the Launching Barge had been removed during the weekly site inspection on 08/06/11.	Lubricant was removed from the access of the Launching Barge. (Photo Ref.5 of the Contractor Follow-up Action – 08/06/11)	---	Closed
6	Site Practice	Rubbish was noted near the sea-shore in Portion J during the weekly site inspection on 08/06/11.	Rubbish was removed from Portion J near the sea-shore (Photo Ref.1 of the Contractor Follow-up Action – 08/06/11)	During the subsequent weekly site inspection on 14/06/11, rubbish near the sea-shore in Portion J was collected.	Closed
7	Site Practice	Rubbish was noted inside the silt screen at the sea water intake at Kowloon South Salt Water Pumping Station during the weekly site inspection on 28/06/11.	Rubbish was removed from the silt screen (Photo Ref.2 and 3 of the Contractor Follow-up Action – 06/07/11)	Since the finding was observed in the last weekly site inspection on 28/06/11, it will be verified in the first weekly site inspection in the coming month.	Follow-up

6.2 Recommendations on site inspection findings in Site Inspections of this month

Based on the site inspection findings, the recommendations are as below:

- Minimize noise and dust impact due to construction works;
- Use and maintain silt curtain and silt screen properly;
- Adequate environmental control measures shall be provided to prevent / avoid dropping of dredged materials into the sea during the transfer;
- Implement all necessary preventive measures to avoid oil leakage. In the event an oil leakage happens, the Contractor should properly remove the leaked oil and handle the contaminated soil and all materials using for this cleaning works as chemical waste;
- Checking and maintaining all the site machines to prevent black smoke emission;
- Providing briefing to the concerned site staff on remedial actions, such as handling method of chemicals and chemical waste;
- Remove all stagnant water;
- Apply proper treatment facilities to wastewater before discharge; and
- Maintain good waste management at the site.

7.0 STATUS OF ENVIRONMENTAL PERMITS

Permits/licenses valid in this reporting month are summarized in Table 7.1.

Table 7.1 Summary of Environmental Licensing and Permit valid in this reporting month

Description	Permit No.	Valid Period		Remarks
		From	To	
Environmental Permit	EP-273/2007	31/07/07	End of Project	Whole Project
Water Discharge Licence (West Kowloon)	WT00005347-2009	07/01/10	31/01/15	Effluent and all other wastewater arising from the construction site through Screen & Sedimentation Tank
Water Discharge Licence (Sai Yung Pun)	WT00005800-2010	14/01/10	31/01/15	Effluent arising from the construction site through Sedimentation Tank
Chemical Waste Producer	5213-217-W3086-01	13/10/09	End of Project	Spent oil, surplus flammable liquid, surplus paint, soil, rags & containers contaminated with lubricating oil, diesel, flammable liquid & paint, & used batteries



Description	Permit No.	Valid Period		Remarks
		From	To	
Construction Noise Permit (West Kowloon)	GW-RE0257-11	19/04/11	04/10/11	<p>Group A One Air Compressor, air flow $\leq 10\text{m}^3/\text{min}$ (CNP 001) (Zone A) One Crane, mobile (diesel) (CNP 048) (Zone A) One Generator, silenced, $\leq 75\text{dB(A)}$ at 7m (Zone A) One Generator, standard (CNP 101) (Zone B)</p> <p>Group B One Concrete lorry mixer (CNP 044) (Zone A) One Crane, mobile (diesel) (CNP 048) (Zone A) One Air compressor, air flow $\leq 10\text{m}^3/\text{min}$ (CNP 001) (Zone B) Two Crane, mobile (diesel) (CNP 048) (Zone B) One Derrick barge (CNP 061) (Zone B) Four Generator, silenced, $\leq 75\text{dB(A)}$ at 7m (Zone B) Six Grinder, hand-held (electric) (CNP065) (Zone B) Two Guard boats (Zone B) Two Poker, vibratory, external (electric) (Zone B) One Tug boat (CNP 221) (Zone B)</p> <p>Group C One Generator, silenced, $\leq 75\text{dB(A)}$ at 7m (Zone A) One Air compressor, air flow $\leq 10\text{m}^3/\text{min}$ (CNP 001) (Zone B) One Grinder, hand-held (electric) (CNP065) (Zone B) One Generator, silenced, $\leq 75\text{dB(A)}$ at 7m (Zone B)</p> <p>Group D One Derrick barge (CNP 061) (Zone B) One dredger, grab (CNP 063) (Zone B) One Generator, standard (CNP 101) (Zone B) Two Guard boats (Zone B) One Tug boat (CNP 221) (Zone B)</p>
Construction Noise Permit (Sai Ying Pun)	GW-RS0352-11	26/04/11	10/10/11	<p>Group A One dredger, grab (CNP 063) Two Guard boats One Tug boats (CNP 221) One Hopper barge One Air compressor with Noise Emission Label showing a sound power level of $\leq 98\text{dB(A)}$ One Generator, silenced, 108dB(A) (CNP 101) One Derrick barge (CNP 061)</p> <p>Group B One Crane, mobile (diesel) (CNP 048) One Air compressor with Noise Emission Label showing a sound power level of $\leq 98\text{dB(A)}$ One Generator, silenced, 108dB(A) (CNP 101)</p> <p>Group C Two Derrick barge (CNP 061) Three Guard boats One Tug boat (CNP 221) One Air compressor with Noise Emission Label showing a sound power level of $\leq 98\text{dB(A)}$ Two Generator, silenced, 108dB(A) (CNP 101)</p> <p>Group D One Derrick barge (CNP 061) Two Guard boats One Tug boat (CNP 221) One Crane, mobile (diesel) (CNP 048) One Air compressor with Noise Emission Label showing a sound power level of $\leq 98\text{dB(A)}$ One Generator, silenced, 108dB(A) (CNP 101)</p> <p>Group E One Derrick barge (CNP 061) Two Guard boats One Tug boat (CNP 221) One Crane, mobile (diesel) (CNP 048) Two Generator, silenced, 108dB(A) (CNP 101) One Winch (electric) (CNP 262)</p> <p>Group F One Air compressor with Noise Emission Label showing a sound power level of $\leq 98\text{dB(A)}$ One Generator, silenced, 108dB(A) (CNP 101)</p>
Notification under APCO	Application had been submitted to EPD on 25/09/09 and approved from 29/09/09.			



8.0 WASTE MANAGEMENT

8.1 Monthly Waste Summary

The quantities of waste generated from the Project in this month are summarized in Table 8.1.

Table 8.1 Summary of Quantities of Waste for Disposal in this reporting month

Type of Waste		Quantity	Disposal Location	Cumulative Quantity
Inert C&D Materials	Total Quantity Generated (in m ³)	217.85		13440.52
	Broken Concrete (in m ³)	0	---	0
	Reused in the Contract (in m ³)	0	---	0
	Reused in other Projects (in m ³)	0	---	0
	Disposal as Public Fill (in m ³)	217.85	SENT Landfill	13440.52
C&D Waste	Metals (in kg)	0	---	0
	Paper/Cardboard Packaging (in kg)	0	Collected by recycling company	117
	Plastics (in kg)	0	---	0
	Chemical Waste (in kg)	0	---	0
	Other, e.g. General Refuse (in m ³)	2.80	SENT Landfill	78.90
Dredged Materials*	Type 1 (in m ³)	0	East Ninepin Mud Disposal Ground	160500
	Type 2 (in m ³)	0	The East Sha Chau	104990

Remark (*): Daily Dredging Summary for this reporting month presents in Appendix J

8.2 Advice on the Solid and Liquid Waste Management Status

The Contractor should provide sufficient preventive measures during equipment maintenance works so as to avoid oil leakage on the ground. In the event of any oil leakage, the Contractor should clean up the polluted soil and handle all the materials used for this cleaning works as chemical waste.

Besides, pre-cast drip trays were provided for oil drums at several areas, such as barge and chemical storage area. The Contractor should collect and dispose of any stagnant water accumulated in the drip trays and handle them as chemical waste.

The Contractor should use suitable containers with proper labels to store chemical wastes in accordance with Code of Practice on the Packaging, Labeling and Storage of Chemical Waste. The Contractor should also advise their workers of the proper procedures in handling the chemical waste.

All the trip tickets for chemical waste disposal were properly kept in the site office. No chemical waste disposal was undertaken in the reporting month.

The Contractor was reminded to increase the frequency of inspection and cleaning of the site drainage system, including desilting facilities. Moreover, the Contractor should apply approved pesticides in the stagnant water.

9.0 ENVIRONMENTAL NON-CONFORMANCE

9.1 Summary of Noise and Water Quality

No exceedances of Action and Limit Level of marine water quality monitoring results were recorded during the reporting month.

No exceedances of Action Level of noise monitoring were recorded in this reporting month since no complaint on noise issue was received. Six exceedances in Limit Level were recorded according to the results from night-time noise monitoring on 19 and 26 June 2011 (0000-0100) at KS6. All of the exceedances were considered to be invalid (not project related) and hence no further actions were required.



9.2 Summary of Environmental Complaints

One complaint received on 23 June 2011 was forwarded by the Engineer's Representatives on 08 July 2011 through internet from a citizen against urinating into the sea from the Launching Barge which caused by site workers. The complainant complained that that caused an environmental nuisance. Refer to the ET weekly site inspection on 08 July 2011, the Contractor had provided portable chemical toilet and warning notice on the Launching Barge. As a result, it concluded that the situation was noted improved.

9.3 Summary of Notification of Summons and Prosecution

There was no notification of summons respect to environmental issues registered in this reporting month.

10.0 IMPLEMENTATION STATUS

10.1 Implementation Status of Environmental Mitigation Measures

An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is presented in Appendix G. Most of the necessary mitigation measures were implemented properly. Any deficiencies were noted in the remarks of the schedule.

10.2 Implementation Status of Event and Action Plan

No exceedances of Action and Limit Level of water quality monitoring results were recorded during the reporting month.

No exceedances of Action Level of noise monitoring were recorded in this reporting month since no complaint on noise issue was received. Six exceedances in Limit Level were recorded according to the results from night-time noise monitoring on 19 and 26 June 2011 (0000-0100) at KS6. All of the exceedances were considered to be invalid (not project related) and hence no further actions were required. Interim notifications of exceedance (NOEs) for all exceedances were issued to EPD, ER, IEC and the Contractor by ET. The details of NOEs present in Appendix K.

10.3 Implementation Status of Environmental Complaint, Notifications of Summons and Successful Prosecutions Handling

One complaint received on 23 June 2011 was forwarded by the Engineer's Representatives on 08 July 2011 through internet from a citizen against urinating into the sea from the Launching Barge which caused by site workers. The complainant complained that that caused an environmental nuisance. Refer to the ET weekly site inspection on 08 July 2011, the Contractor had provided portable chemical toilet and warning notice on the Launching Barge. As a result, it concluded that the situation was noted improved. Complaint investigation report of this event has been prepared and submit to RE, IEC and Contractor by ET (Appendix M).

No notifications of summons and successful prosecutions were received in this reporting month. A summary of environmental complaints, notifications of summons and successful prosecutions was given in Table 10.1.

Table 10.1 Summary of Environmental Complaints and Prosecutions

<i>Complaints logged</i>		<i>Summons served</i>		<i>Successful prosecution received</i>	
<i>June 2011</i>	<i>Cumulative</i>	<i>June 2011</i>	<i>Cumulative</i>	<i>June 2011</i>	<i>Cumulative</i>
1	1	0	0	0	0

11.0 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Impact monitoring of noise and water quality were carried out at designated locations in accordance with the EM&A Manual in this reporting month.



No exceedances of Action and Limit Level of water quality monitoring results were recorded during the reporting month.

No exceedances of Action Level of noise monitoring were recorded in this reporting month since no complaint on noise issue was received.

Six exceedances in Limit Level were recorded according to the results from night-time noise monitoring on 19 and 26 June 2011 (0000-0100) at KS6. All of the exceedances were considered to be invalid (not project related) and hence no further actions were required. Interim notifications of exceedance (NOEs) for all exceedances were issued to EPD, ER, IEC and the Contractor by ET. The details of NOEs present in Appendix K.

According to the ET weekly site inspections carried out in this reporting month, the Contractor generally implemented sufficient environmental mitigation measures.

One complaint received on 23 June 2011 was forwarded by the Engineer's Representatives on 08 July 2011 through internet from a citizen against urinating into the sea from the Launching Barge which caused by site workers. The complainant complained that that caused an environmental nuisance. Refer to the ET weekly site inspection on 08 July 2011, the Contractor had provided portable chemical toilet and warning notice on the Launching Barge. As a result, it concluded that the situation was noted improved.

No prosecutions or notifications of summons were received in this reporting month.

Recommendations

According to the environmental site inspections performed in the reporting month, the following recommendations were provided:

Air Quality

- Ensure the frequency of water spraying on unloading areas and stockpiles to be sufficient to suppress the dust sources;
- Provide proper maintenance for the powered mechanical equipment and barges to avoid emission of dark smoke; and
- Implement the dust mitigation measures for the site activities.

Noise

- Conduct noisy activities at a farther location from the NSRs.

Water Quality

- Maintain the drainage system regularly;
- Operate and maintain the silt curtains and silt screen regularly;
- Operate the cleaning vessel regularly;
- Provide proper treatment for the wastewater discharge;
- Clean up the fill material on the barge frequently; and
- Remove the stagnant water or provide approved pesticides for the stagnant water, if any.

Chemical and Waste Management

- Remove waste materials from the site to avoid accumulation regularly;
- Handle and store chemical wastes properly;
- Remove unwanted material in the existing stockpiles and avoid further dumping of such material;
- Provide and maintain sufficient drip trays for diesel drums, chemical containers, chemical waste storage drums and diesel operated generator set;
- Maintain good housekeeping at the works area;
- Avoid soil being polluted during oil filling and equipment maintenance; hence, properly remove and store the contaminated soil, if any.



12.0 FUTURE KEY ISSUES

12.1 Work Programme for the Coming Month

As informed by the Contractor, the activities to be conducted by them in the next month included:

- Pulling of the submarine pipe from West Kowloon to Sai Ying Pun (Portion J)
- Transfer the stored pipes to the flattop pontoon in Portion "I" (Portion H1 & H2);
- Pipe pulling works, including welding of the field joint, apply external coating, install steel wire mesh, install steel jacket to the field joint, concrete coating of the field joint, internal lining of the field welded joint and pipe pulling (Portion I);
- Dismantle buoyancy tanks (Portion I); and
- Construction of cofferdam in West Kowloon, including installation of strutting system and excavation.

12.2 Key Issues for the Coming Month

Key issues to be considered in the coming month include:

- Noise and dust impact due to construction works;
- Use and maintain silt curtain and silt screen properly;
- Adequate environmental control measures shall be provided to prevent / avoid dropping of dredged materials into the sea during the transfer;
- Implement all necessary preventive measures to avoid oil leakage. In the event an oil leakage happens, the Contractor should properly remove the leaked oil and handle the contaminated soil and all materials using for this cleaning works as chemical waste; and
- Maintain good site practice to minimize environmental impacts at the site.

Mitigation measures to be required in the coming month:

Air Quality Impact

- To ensure implementation of the dust mitigation measures for the site activities;
- To provide proper maintenance for vehicles and machines on site; and
- To investigate any other dust sources around the air sensitive receivers

Noise

- To switch off equipment if not in use;
- To operate silent equipment; and
- To re-schedule the work activities in the event of valid noise exceedance.

Water Quality Impact

- To maintain the drainage system;
- To repair, inspect and maintain the silt curtains and site screen regularly;
- To provide covers for the drip trays to avoid stagnant water due to rainfall;
- To provide proper treatment for wastewater from the area;
- To deploy a cleaning vessel to remove floating rubbish;
- To avoid dredged materials on the barge from being washed into the sea; and
- To avoid any stagnant water or provide insecticide to avoid mosquito breeding.

Chemical and Waste Management

- To remove waste from the site regularly;
- To properly store and handle chemical wastes on site;
- To implement trip ticket system for all the imported public fill and general refuse disposal;
- To provide and manage sufficiently sized drip trays for diesel drums or chemical containers;
- To maintain proper housekeeping;
- To remove the oil stains in the event of leakage and handle all materials using for this cleaning works as chemical waste; and
- To identify C&D material by packaging, labeling, storage, transportation and disposal in accordance with statutory regulations.

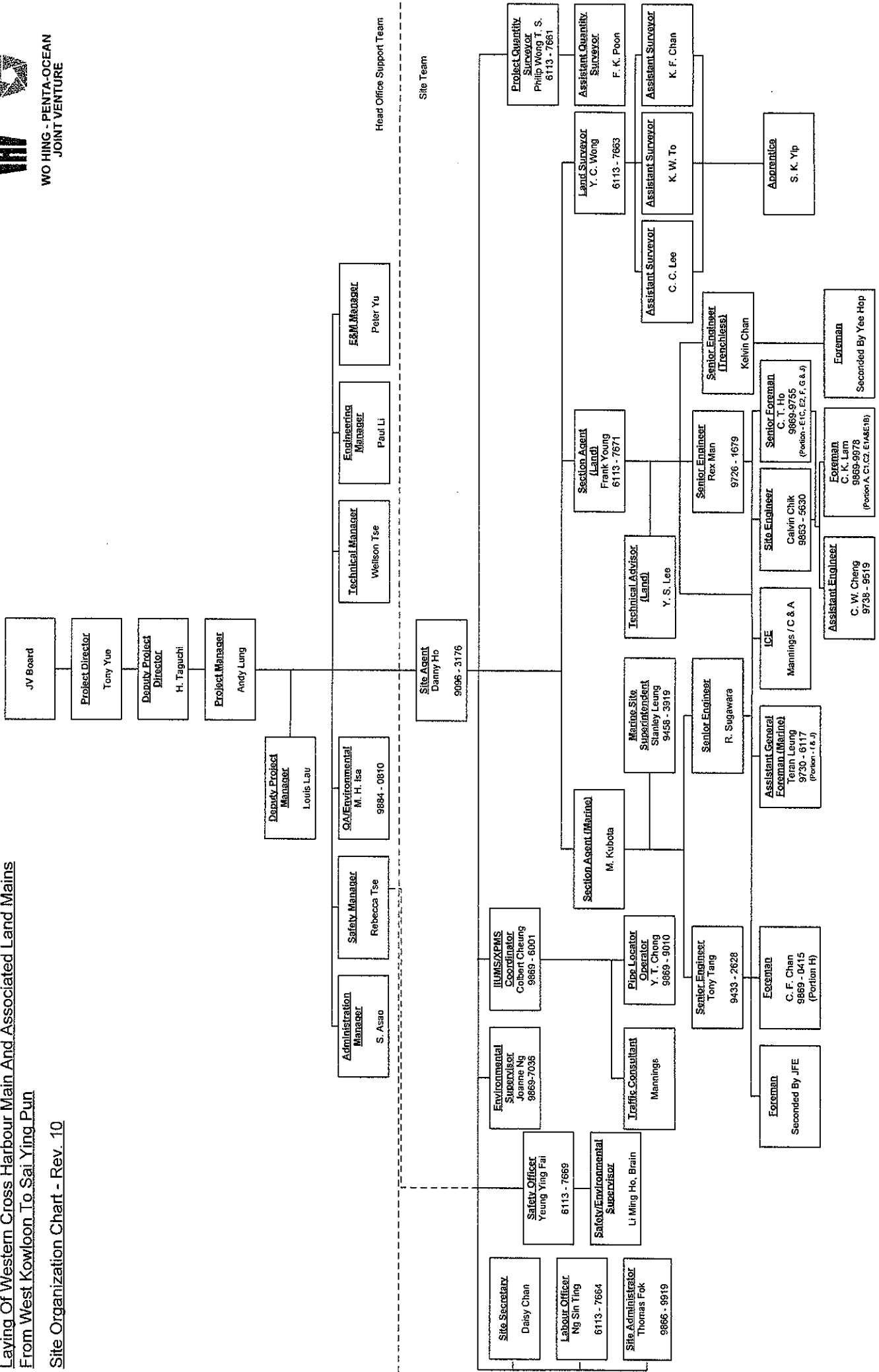
12.3 Monitoring Schedule for the Coming Month

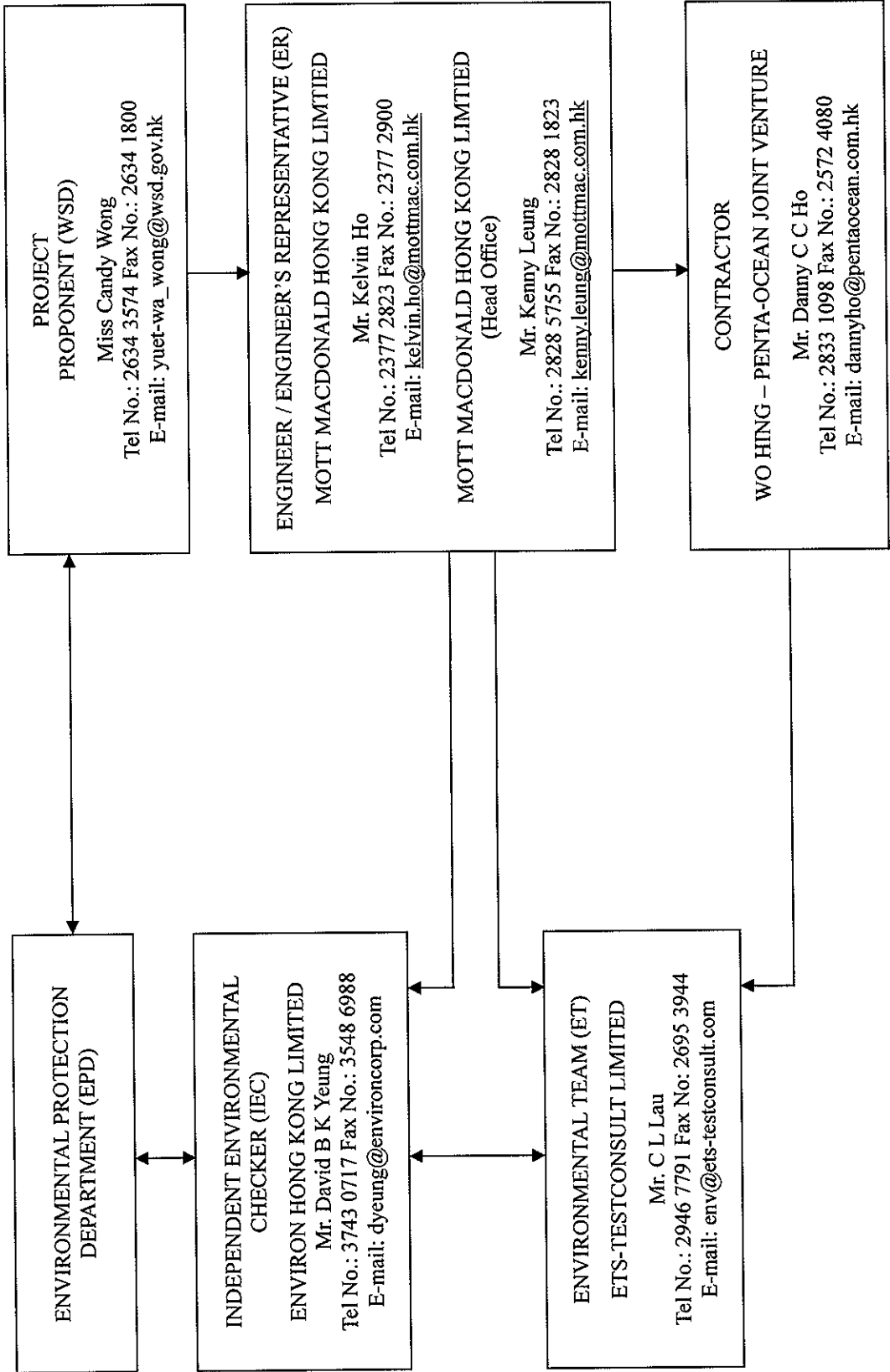
The proposed EM&A program of the coming month is attached in Appendix I.



Appendix A

Organization Chart and Lines of Communication





Project Laying of Western Cross Harbour Main and Associated Land Mains From West Kowloon to Sai Ying Pun - Investigation

Title Project Organization and Line of Communication

Date Dec 2009

Figure 1.3a



Appendix B1

Calibration Certificates for Impact Noise Monitoring Equipment



Calibration Certificate

Certificate No. **12016**

Page 1 of 3 Pages

Customer : ETS-Testconsult Limited

Address : 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

Order No. : Q10853

Date of receipt : 11-Apr-11

Item Tested

Description : Precision Integrating Sound Level Meter

Manufacturer : Rion

Model : NL-31

Serial No. : 00110024

Test Conditions

Date of Test : 15-Apr-11

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : Z01.

Test Results

All results were within the IEC 651 Type 1 & IEC 804 Type 1 specification.

The results are shown in the attached page(s).

Main Test equipment used:

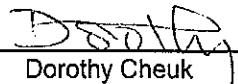
<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S017	Multi-Function Generator	C101623	SCL-HKSAR
S024	Sound Level Calibrator	04062	NIM-PRC & SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).

The test results apply to the above Unit-Under-Test only

Calibrated by : 
P. F. Wong

Approved by : 
Dorothy Cheuk

Date: 18-Apr-11



Calibration Certificate

Certificate No. 12016

Page 2 of 3 Pages

Results :

1. SPL Accuracy

UUT Setting			Applied Value (dB)	UUT Reading (dB)
Level Range (dB)	Weight	Response		
20 - 100	L _A	Fast	94.0	94.2
		Slow		94.2
	L _C	Fast		94.2
		L _p		Fast
30 - 120	L _A	Fast	94.0	94.1
		Slow		94.1
	L _C	Fast		94.1
	L _p	Fast		94.2
30 - 120	L _A	Fast	114.0	114.0
		Slow		114.0
	L _C	Fast		114.0
	L _p	Fast		114.1

IEC 651 Type 1 Spec. : ± 0.7 dB

Uncertainty : ± 0.2 dB

2. Level Stability : 0.0 dB

IEC 651 Type 1 Spec. : ± 0.3 dB

Uncertainty : ± 0.1 dB

3. Linearity

3.1 Level Linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec. (Primary Indicator Range)
130	114.0	114.2	+0.1	± 0.7 dB
130	104.0	104.2	+0.1	
120	94.0	94.1(Ref.)	--	
110	84.0	84.0	-0.1	
100	74.0	74.2	+0.1	
90	64.0	64.1	0.0	
80	54.0	53.9	-0.1	

Uncertainty : ± 0.1 dB



Calibration Certificate

Certificate No. 12016

Page 3 of 3 Pages

3.2 Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	84.1	0.0	± 0.4 dB
	94.0	94.1 (Ref.)	--	
	95.0	95.1	0.0	± 0.2 dB

Uncertainty : ± 0.1 dB

4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-40.0	- 39.4 dB, ± 1.5 dB
63 Hz	-26.6	- 26.2 dB, ± 1.5 dB
125 Hz	-16.5	- 16.1 dB, ± 1 dB
250 Hz	-8.9	- 8.6 dB, ± 1 dB
500 Hz	-3.4	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+1.6	+ 1.2 dB, ± 1 dB
4 kHz	+1.5	+ 1.0 dB, ± 1 dB
8 kHz	-0.7	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	-6.3	- 6.6 dB, + 3 dB ~ - ∞

Uncertainty : ± 0.1 dB

5. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	40.0	40.0	--
1/10	40.0	40.0	± 0.5 dB
1/10 ²	40.0	39.9	
1/10 ³	40.0	40.0	± 1.0 dB
1/10 ⁴	40.0	39.9	

Uncertainty : ± 0.1 dB

Remark : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. Atmospheric Pressure : 1 010 hPa.

----- END -----



Calibration Certificate

Certificate No. **07049**

Page 1 of 3 Pages

Customer : ETS-Testconsult Limited

Address : 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

Order No. : Q02790

Date of receipt : 7-Dec-10

Item Tested

Description : Precision Integrating Sound Level Meter(ET/EN/003/12)

Manufacturer : Rion

Model : NL-31

Serial No. : 00773032

Test Conditions

Date of Test : 8-Dec-10

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : Z01.

Test Results

All results were within the IEC 651 Type 1 & IEC 804 Type 1 specification.

The results are shown in the attached page(s).

Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S017A	Multi-Function Generator	00804	SCL-HKSAR
S024	Sound Level Calibrator	04062	NIM-PRC & SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).
The test results apply to the above Unit-Under-Test only

Calibrated by : P.F. Wong

Approved by : Dorothy Cheuk

Date: 9-Dec-10



Calibration Certificate

Certificate No. **07049**

Page 2 of 3 Pages

Results :

1. SPL Accuracy

UUT Setting			Applied Value (dB)	UUT Reading (dB)
Level Range (dB)	Weight	Response		
20 - 100	L _A	Fast	94.0	93.9
		Slow		93.9
	L _C	Fast		93.9
	L _p	Fast		94.0
30 - 120	L _A	Fast	94.0	93.9
		Slow		93.9
	L _C	Fast		93.9
	L _p	Fast		93.9
30 - 120	L _A	Fast	114.0	113.7
		Slow		113.7
	L _C	Fast		113.7
	L _p	Fast		113.7

IEC 651 Type 1 Spec. : ± 0.7 dB

Uncertainty : ± 0.1 dB

2. Level Stability : 0.0 dB

IEC 651 Type 1 Spec. : ± 0.3 dB

Uncertainty : ± 0.1 dB

3. Linearity

3.1 Level Linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec. (Primary Indicator Range)
130	114.0	114.0	+0.1	± 0.7 dB
130	104.0	104.0	+0.1	
120	94.0	93.9 (Ref.)	--	
110	84.0	83.9	0.0	
100	74.0	73.9	0.0	
90	64.0	64.0	+0.1	
80	54.0	54.0	+0.1	

Uncertainty : ± 0.1 dB



Calibration Certificate

Certificate No. **07049**

Page 3 of 3 Pages

3.2 Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	83.9	0.0	± 0.4 dB
	94.0	93.9 (Ref.)	--	
	95.0	94.9	0.0	± 0.2 dB

Uncertainty : ± 0.1 dB

4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-40.1	- 39.4 dB, ± 1.5 dB
63 Hz	-26.8	- 26.2 dB, ± 1.5 dB
125 Hz	-16.8	- 16.1 dB, ± 1 dB
250 Hz	-9.2	- 8.6 dB, ± 1 dB
500 Hz	-3.6	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+1.6	+ 1.2 dB, ± 1 dB
4 kHz	+1.6	+ 1.0 dB, ± 1 dB
8 kHz	-0.6	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	-6.2	- 6.6 dB, + 3 dB ~ ∞

Uncertainty : ± 0.1 dB

5. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	40.0	40.0	--
1/10	40.0	40.0	± 0.5 dB
1/10 ²	40.0	40.0	
1/10 ³	40.0	40.1	± 1.0 dB
1/10 ⁴	40.0	40.1	

Uncertainty : ± 0.1 dB

Remark : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. Atmospheric Pressure : 1 008 hPa.

----- END -----



Calibration Certificate

Certificate No. **05083**

Page 1 of 3 Pages

Customer : ETS-Testconsult Limited

Address : 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

Order No. : Q02020

Date of receipt : 8-Sep-10

Item Tested

Description : Precision Integrating Sound Level Meter (ET/EN/003/13)

Manufacturer : Rion

Model : NL-31

Serial No. : 00593620

Test Conditions

Date of Test : 14-Sep-10

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : Z01.

Test Results

All results were within the IEC 651 Type 1 & IEC 804 Type 1 specification.

The results are shown in the attached page(s).

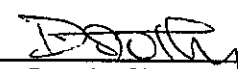
Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S017A	Multi-Function Generator	00804	SCL-HKSAR
S024	Sound Level Calibrator	04062	NIM-PRC & SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).
The test results apply to the above Unit-Under-Test only

Calibrated by : 
P. F. Wong

Approved by : 
Dorothy Cheuk

Date: 14-Sep-10



Calibration Certificate

Certificate No. **05083**

Page 2 of 3 Pages

Results :

1. SPL Accuracy

UUT Setting			Applied Value (dB)	UUT Reading (dB)
Level Range (dB)	Weight	Response		
20 - 100	L _A	Fast	94.0	93.7
		Slow		93.7
	L _C	Fast		93.7
		L _p		Fast
30 - 120	L _A	Fast	94.0	93.7
		Slow		93.7
	L _C	Fast		93.7
		L _p		Fast
30 - 120	L _A	Fast	114.0	113.5
		Slow		113.5
	L _C	Fast		113.5
		L _p		Fast

IEC 651 Type 1 Spec. : ± 0.7 dB

Uncertainty : ± 0.1 dB

2. Level Stability : 0.1 dB

IEC 651 Type 1 Spec. : ± 0.3 dB

Uncertainty : ± 0.1 dB

3. Linearity

3.1 Level Linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec. (Primary Indicator Range)
130	114.0	113.9	+0.2	± 0.7 dB
130	104.0	103.9	+0.2	
120	94.0	93.7(Ref.)	- -	
110	84.0	83.6	-0.1	
100	74.0	73.7	0.0	
90	64.0	63.7	0.0	
80	54.0	53.7	0.0	

Uncertainty : ± 0.1 dB



Calibration Certificate

Certificate No. **05083**

Page 3 of 3 Pages

3.2 Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	83.6	-0.1	± 0.4 dB
	94.0	93.7 (Ref.)	--	
	95.0	94.7	0.0	± 0.2 dB

Uncertainty : ± 0.1 dB

4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-40.2	- 39.4 dB, ± 1.5 dB
63 Hz	-26.8	- 26.2 dB, ± 1.5 dB
125 Hz	-16.7	- 16.1 dB, ± 1 dB
250 Hz	-9.2	- 8.6 dB, ± 1 dB
500 Hz	-3.6	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+1.5	+ 1.2 dB, ± 1 dB
4 kHz	+1.5	+ 1.0 dB, ± 1 dB
8 kHz	-0.6	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	-0.6	- 6.6 dB, + 3 dB ~ ∞

Uncertainty : ± 0.1 dB

5. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	40.0	40.0	--
1/10	40.0	40.0	± 0.5 dB
1/10 ²	40.0	40.1	
1/10 ³	40.0	40.2	± 1.0 dB
1/10 ⁴	40.0	40.2	

Uncertainty : ± 0.1 dB

Remark : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. Atmospheric Pressure : 1 004 hPa.

4. The internal calibration reference of UUT was drifted from 94.0 dB to 94.5 dB

----- END -----



Calibration Certificate

Certificate No. **06467**

Page 1 of 2 Pages

Customer : ETS-Testconsult Limited

Address : 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

Order No. : Q02516

Date of receipt : 8-Nov-10

Item Tested

Description : Sound Level Calibrator (ET/EN/002/01)

Manufacturer : Rion

Model : NC-73

Serial No. : 10196943

Test Conditions

Date of Test : 12-Nov-10

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : F21, Z02.

Test Results

All results were within the manufacturer's specification.

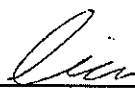
The results are shown in the attached page(s).

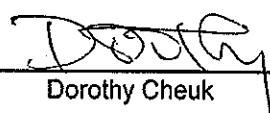
Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S014	Spectrum Analyzer	03926	NIM-PRC & SCL-HKSAR
S024	Sound Level Calibrator	04062	NIM-PRC & SCL-HKSAR
S041	Universal Counter	04461	SCL-HKSAR
S206	Sound Level Meter	04462	SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).
The test results apply to the above Unit-Under-Test only

Calibrated by : 
P. F. Wong

Approved by : 
Dorothy Cheuk

Date: 15-Nov-10

This Certificate is issued by:

Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-78, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 6801 Fax: 2425 6646

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Calibration Certificate

Certificate No. 06467

Page 2 of 2 Pages

Results :

1. Level Accuracy (at 1 kHz)

UUT Nominal Value	Measured Value		Mfr's Spec.
	Before Adjust.	After Adjust.	
94 dB	93.52 dB	93.82 dB	± 1 dB

Uncertainty : ± 0.1 dB

2. Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's Spec.
1 kHz	0.988 kHz	± 2 %

Uncertainty : ± 0.1 %

3. Level Stability : 0.0 dB

Uncertainty : ± 0.01 dB

4. Total Harmonic Distortion : < 0.3 %

Mfr's Spec. : < 3 %

Uncertainty : ± 2.3 % of reading

Remark : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. Atmospheric Pressure : 1 006 hPa

----- END -----



Calibration Certificate

Certificate No. 06466

Page 1 of 2 Pages

Customer : ETS-Testconsult Limited

Address : 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

Order No. : Q02516

Date of receipt : 8-Nov-10

Item Tested

Description : Anemometer (EN/001/04)

Manufacturer : AZ Instrument

Model : AZ 8908

Serial No. : 9101231

Test Conditions

Date of Test : 10-Nov-10

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure: T03, Z04.

Test Results

All results were within the manufacturer's specification.


The results are shown in the attached page(s).


Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S223	Std. Thermometer	01631	NIM-PRC
S155	Std. Anemometer	NSC20104025	NIM-PRC

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).
The test results apply to the above Unit-Under-Test only

Calibrated by : 
S. K. Tang

Approved by : 
Alan Chu

Date: 10-Nov-10



Calibration Certificate

Certificate No. 06466

Page 2 of 2 Pages

Results :

1. Velocity

Applied Value (m/s)	UUT Reading (m/s)	Mfr's Spec.
2.50	2.5	± 3 % f.s. (f.s. = 35 m/s)
5.00	4.9	
10.00	9.5	
15.00	14.3	
20.00	19.1	

2. Temperature

Applied Value (°C)	UUT Reading (°C)	Mfr's Spec.
3.10	3.0	± 1 °C
23.98	24.0	
48.20	47.8	

Remark : 1. UUT: Unit-Under-Test

2. Uncertainty : ± 1.3 % or ± 0.05 m/s, whichever is greater for Velocity, ± 0.25 °C for Temperature, for a confidence probability of not less than 95%.

3. Atmospheric Pressure : 1 011 hPa

----- END -----



Appendix B2

Impact Noise Monitoring Results



Day-time Noise Monitoring

Monitoring Station: KS6 (Podium at the Culliman)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
03/06/11	Sunny	09:50	10:20	63.5	66.1	62.1	0.4
10/06/11	Sunny	16:20	16:50	62.4	64.3	59.6	0.2
17/06/11	Drizzle	13:00	13:30	63.0	63.9	61.5	1.3
24/06/11	Fine	16:55	17:25	63.2	64.9	62.1	0.3
27/06/11	Fine	14:40	15:10	65.8	66.9	62.4	0.3

Monitoring Station: CGa (Pavement in front of Connaught Garden)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
01/06/11	Sunny	13:00	13:30	74.3	76.2	68.2	0.4
08/06/11	Fine	13:40	14:10	72.0	73.4	68.1	0.1
15/06/11	Fine	10:25	10:55	74.2	76.3	68.0	0.3
24/06/11	Fine	13:30	14:00	70.8	71.7	67.2	0.9
30/06/11	Cloudy	10:15	10:45	74.1	77.6	67.5	0.1

Monitoring Station: RWM (Roof at Richwealth Mansion)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
01/06/11	Sunny	13:35	14:05	66.6	68.0	61.7	0.6
08/06/11	Fine	14:15	14:45	61.4	62.3	59.3	0.2
15/06/11	Fine	11:00	11:30	61.5	64.7	58.2	0.4
24/06/11	Fine	14:05	14:35	62.0	64.1	58.9	1.6
30/06/11	Cloudy	10:50	11:20	65.4	67.2	62.3	0.3

Monitoring Station: KY3 (Roof at Kwan Yik Building Phase 3)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
01/06/11	Sunny	14:10	14:40	64.1	66.8	60.8	0.6
08/06/11	Fine	14:50	15:20	60.9	61.5	58.9	0.2
15/06/11	Fine	11:35	12:05	60.0	62.4	57.3	0.4
24/06/11	Fine	14:40	15:10	61.4	63.6	58.5	1.8
30/06/11	Cloudy	11:25	11:55	63.2	66.8	61.3	0.4



Evening-time Noise Monitoring

Monitoring Station: KS6 (Podium at the Culliman)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
04/06/11	Fine	22:00	22:05	62.4	64.7	59.9	0.8
04/06/11	Fine	22:05	22:10	62.0	64.2	59.7	0.8
04/06/11	Fine	22:10	22:15	61.6	63.5	58.9	0.8
11/06/11	Cloudy	20:25	20:30	62.6	64.3	61.4	0.2
11/06/11	Cloudy	20:30	20:35	62.9	64.5	61.7	0.2
11/06/11	Cloudy	20:35	20:40	62.4	64.2	61.3	0.2
18/06/11	Fine	09:45	09:50	65.5	68.4	59.3	2.6
18/06/11	Fine	09:50	09:55	64.1	66.9	59.0	1.7
18/06/11	Fine	09:55	10:00	64.3	67.1	59.1	2.3
25/06/11	Fine	21:00	21:05	64.1	67.2	62.1	0.3
25/06/11	Fine	21:05	21:10	64.7	67.5	62.1	0.3
25/06/11	Fine	21:10	21:15	64.4	67.3	62.4	0.3

Monitoring Station: CGa (Pavement in front of Connaught Garden)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
04/06/11	Fine	20:15	20:20	69.5	73.8	63.1	0.3
04/06/11	Fine	20:20	20:25	69.9	74.7	63.8	0.3
04/06/11	Fine	20:25	20:30	69.8	74.3	63.4	0.3
11/06/11	Cloudy	21:40	21:45	69.9	73.4	63.5	0.2
11/06/11	Cloudy	21:45	21:50	69.6	73.1	63.0	0.2
11/06/11	Cloudy	21:50	21:55	69.9	73.2	63.0	0.2
18/06/11	Fine	21:45	21:50	67.8	69.9	63.4	0.9
18/06/11	Fine	21:50	21:55	68.2	70.5	64.1	1.1
18/06/11	Fine	21:55	22:00	68.5	70.7	64.4	1.2
25/06/11	Fine	22:00	22:05	70.0	73.3	62.8	0.2
25/06/11	Fine	22:05	22:10	70.0	73.1	62.5	0.2
25/06/11	Fine	22:10	22:15	69.9	72.2	62.4	0.2

Monitoring Station: RWM (Roof at Richwealth Mansion)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
04/06/11	Fine	20:35	20:40	69.2	73.1	61.7	0.3
04/06/11	Fine	20:40	20:45	69.5	73.6	62.0	0.3
04/06/11	Fine	20:45	20:50	69.3	73.0	61.9	0.3
11/06/11	Cloudy	22:00	22:05	69.2	72.9	62.7	0.1
11/06/11	Cloudy	22:05	22:10	69.8	73.0	62.9	0.1
11/06/11	Cloudy	22:10	22:15	69.4	72.8	62.7	0.1
18/06/11	Fine	22:05	22:10	67.3	69.1	62.7	1.3
18/06/11	Fine	22:10	22:15	67.9	69.4	62.9	1.1
18/06/11	Fine	22:15	22:20	67.6	69.3	62.5	1.0
25/06/11	Fine	22:20	22:25	68.8	71.6	62.4	0.1
25/06/11	Fine	22:25	22:30	68.5	71.3	62.1	0.1
25/06/11	Fine	22:30	22:35	68.6	71.5	61.9	0.1

Monitoring Station: KY3 (Roof at Kwan Yik Building Phase 3)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
04/06/11	Fine	20:55	21:00	66.3	69.6	60.7	0.3
04/06/11	Fine	21:00	21:05	65.4	68.5	59.8	0.3
04/06/11	Fine	21:05	21:10	65.8	69.3	60.2	0.3
11/06/11	Cloudy	22:20	22:25	67.6	70.5	61.3	0.2
11/06/11	Cloudy	22:25	22:30	67.1	70.3	61.1	0.2
11/06/11	Cloudy	22:30	22:35	66.9	69.8	60.9	0.2
18/06/11	Fine	22:25	22:30	68.6	70.4	64.8	1.1
18/06/11	Fine	22:30	22:35	68.1	69.8	64.2	1.0
18/06/11	Fine	22:35	22:40	68.0	69.6	63.9	0.9
25/06/11	Fine	22:40	22:45	64.8	68.1	60.3	0.2
25/06/11	Fine	22:45	22:50	65.0	68.3	60.5	0.2
25/06/11	Fine	22:50	22:55	64.4	68.0	60.1	0.2



Night-time Noise Monitoring

Monitoring Station: KS6 (Podium at the Culliman)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
04/06/11	Fine	23:20	23:25	54.6	55.7	51.9	0.6
04/06/11	Fine	23:25	23:30	54.9	56.2	52.0	0.6
04/06/11	Fine	23:30	23:35	54.7	55.9	51.9	0.6
12/06/11	Cloudy	00:25	00:30	55.0	56.7	53.8	0.3
12/06/11	Cloudy	00:30	00:35	55.0	56.5	53.7	0.3
12/06/11	Cloudy	00:35	00:40	54.9	56.3	53.7	0.3
19/06/11	Fine	00:10	00:15	59.8	61.2	57.8	1.6
19/06/11	Fine	00:15	00:20	59.9	61.2	57.9	1.5
19/06/11	Fine	00:20	00:25	59.0	59.6	57.6	1.4
26/06/11	Fine	00:45	00:50	58.0	60.2	55.4	0.3
26/06/11	Fine	00:50	00:55	58.1	60.4	54.8	0.3
26/06/11	Fine	00:55	01:00	57.9	60.1	55.0	0.3



Holiday-time Noise Monitoring

Monitoring Station: KS6 (Podium at the Culliman)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (5min)	L10	L90	
05/06/11	Fine	12:10	12:15	62.9	64.8	60.7	0.5
05/06/11	Fine	12:15	12:20	62.3	63.6	60.2	0.5
05/06/11	Fine	12:20	12:25	62.4	63.9	60.2	0.5
12/06/11	Cloudy	14:45	14:50	63.0	65.1	61.9	0.3
12/06/11	Cloudy	14:55	15:00	62.8	65.0	61.7	0.3
12/06/11	Cloudy	15:00	15:05	62.7	64.8	61.6	0.3
19/06/11	Fine	09:15	09:20	62.6	65.2	59.6	1.7
19/06/11	Fine	09:20	09:25	60.5	61.8	59.1	1.8
19/06/11	Fine	09:25	09:30	60.4	61.6	58.8	1.6
26/06/11	Cloudy	11:50	11:50	64.0	65.5	62.8	0.2
26/06/11	Cloudy	11:55	12:00	63.7	65.1	62.6	0.2
26/06/11	Cloudy	12:00	12:05	63.5	65.2	62.5	0.2

Monitoring Station: CGa (Pavement in front of Connaught Garden)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (5min)	L10	L90	
05/06/11	Fine	10:25	10:30	69.8	74.1	65.4	0.3
05/06/11	Fine	10:30	10:35	69.6	74.0	64.9	0.3
05/06/11	Fine	10:35	10:40	69.9	74.6	66.6	0.3
12/06/11	Cloudy	13:00	13:05	69.6	72.1	62.4	0.1
12/06/11	Cloudy	13:05	13:10	68.6	71.6	62.1	0.1
12/06/11	Cloudy	13:10	13:15	70.0	73.7	62.9	0.1
19/06/11	Fine	10:20	10:25	68.9	69.7	64.3	1.3
19/06/11	Fine	10:25	10:30	69.2	70.5	65.4	1.2
19/06/11	Fine	10:30	10:35	69.5	70.9	65.6	1.1
26/06/11	Cloudy	11:00	11:05	68.7	71.8	64.0	0.1
26/06/11	Cloudy	11:05	11:10	69.5	72.9	64.9	0.1
26/06/11	Cloudy	11:10	11:15	68.9	72.0	64.5	0.1

Monitoring Station: RWM (Roof at Richwealth Mansion)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (5min)	L10	L90	
05/06/11	Fine	10:45	10:50	63.8	65.1	59.8	0.4
05/06/11	Fine	10:50	10:55	63.4	64.7	59.3	0.4
05/06/11	Fine	10:55	11:00	63.3	64.5	59.1	0.4
12/06/11	Cloudy	13:20	13:25	64.3	66.8	62.2	0.2
12/06/11	Cloudy	13:25	13:30	64.1	66.5	61.5	0.2
12/06/11	Cloudy	13:30	13:35	63.8	66.1	61.3	0.2
19/06/11	Fine	10:50	10:55	60.2	61.5	56.7	1.5
19/06/11	Fine	10:55	11:00	60.8	62.0	57.2	1.6
19/06/11	Fine	11:00	11:05	61.1	62.7	57.8	1.7
26/06/11	Cloudy	10:40	10:45	63.4	64.9	61.8	0.2
26/06/11	Cloudy	10:45	10:50	63.7	65.1	62.0	0.2
26/06/11	Cloudy	10:50	10:55	63.1	64.8	61.8	0.2

Monitoring Station: KY3 (Roof at Kwan Yik Building Phase 3)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (5min)	L10	L90	
05/06/11	Fine	11:05	11:10	60.8	61.9	57.9	0.4
05/06/11	Fine	11:10	11:15	61.3	62.2	58.1	0.4
05/06/11	Fine	11:15	11:20	61.6	62.7	58.4	0.4
12/06/11	Cloudy	13:40	13:45	60.2	61.9	58.6	0.4
12/06/11	Cloudy	13:45	13:50	60.5	62.1	58.8	0.4
12/06/11	Cloudy	13:50	13:55	60.5	62.3	58.8	0.4
19/06/11	Fine	11:10	11:15	60.1	61.8	57.0	1.5
19/06/11	Fine	11:15	11:20	59.9	61.2	56.6	1.4
19/06/11	Fine	11:20	11:25	60.4	62.0	57.4	1.8
26/06/11	Cloudy	10:20	10:25	62.3	64.0	60.2	0.2
26/06/11	Cloudy	10:25	10:30	61.8	63.8	59.9	0.2
26/06/11	Cloudy	10:30	10:35	62.0	64.0	60.1	0.2



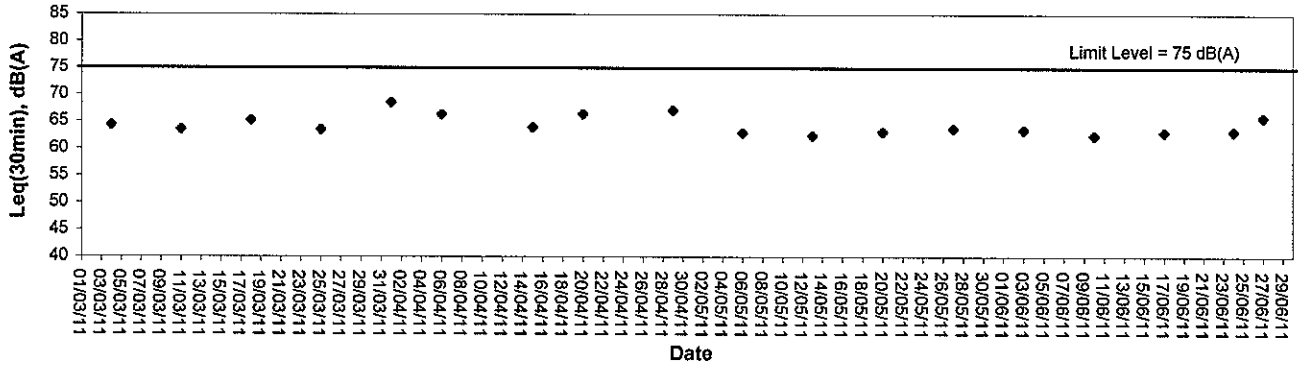
Appendix B3

Graphical Plots of Impact Noise Monitoring Data

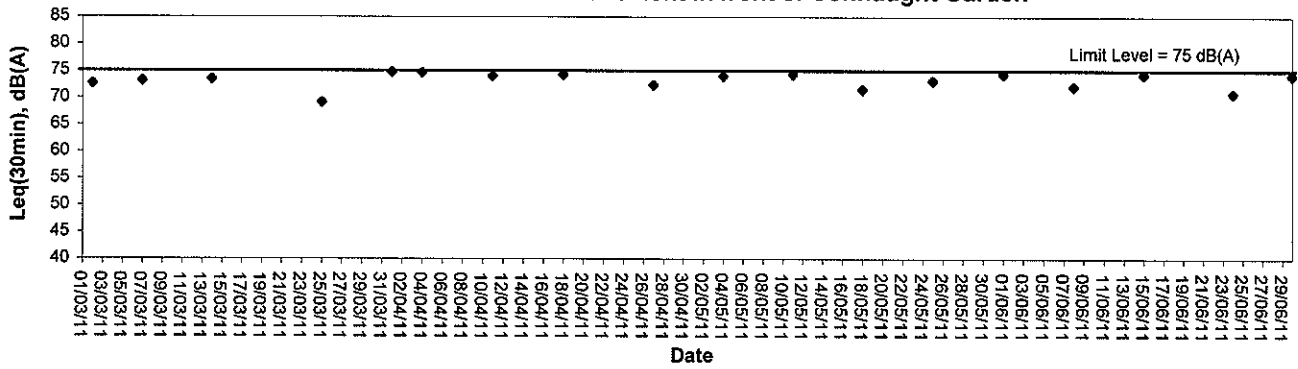


Noise Monitoring (Day-time)

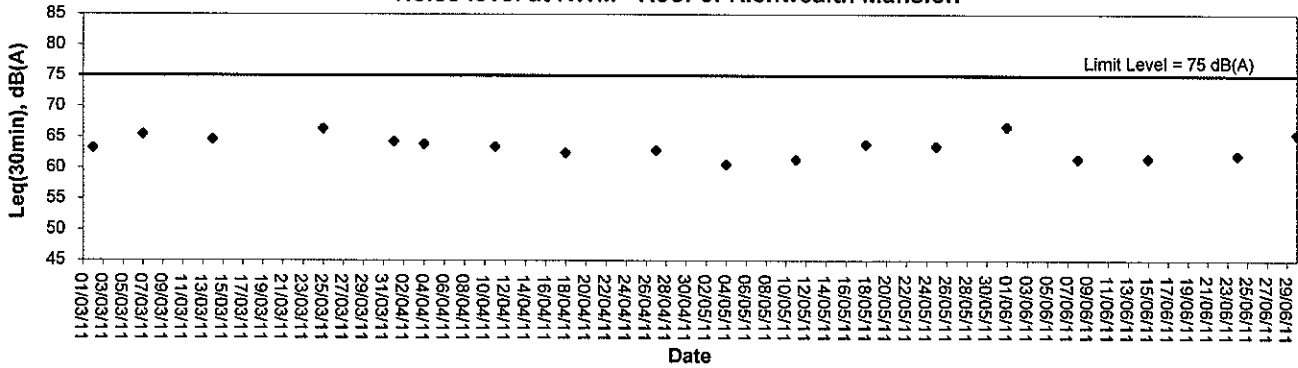
Noise level at KS6 - Podium at the Culliman



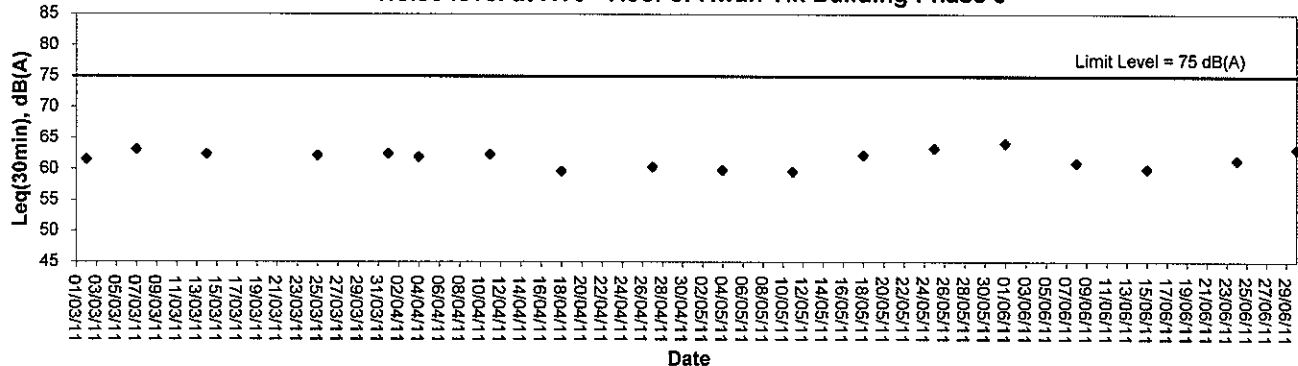
Noise level at CGA - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



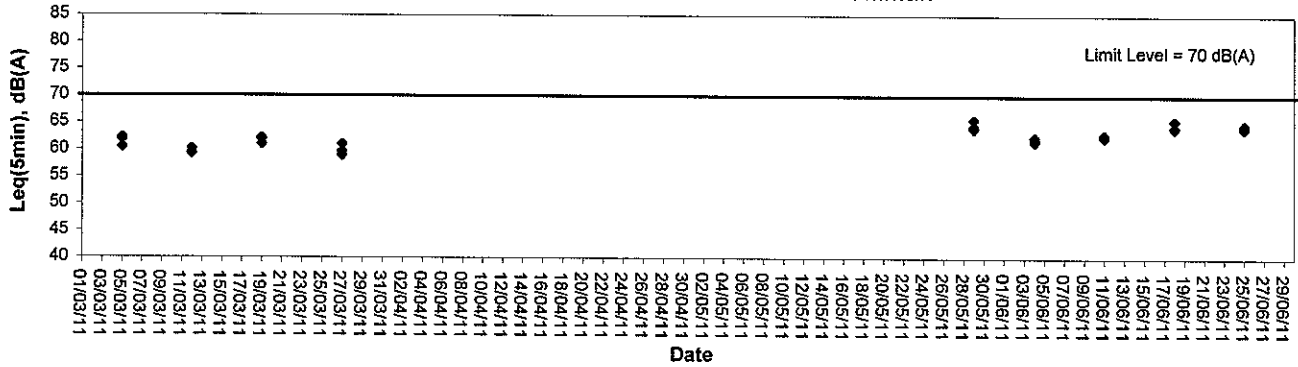
Noise level at KY3 - Roof of Kwan Yik Building Phase 3



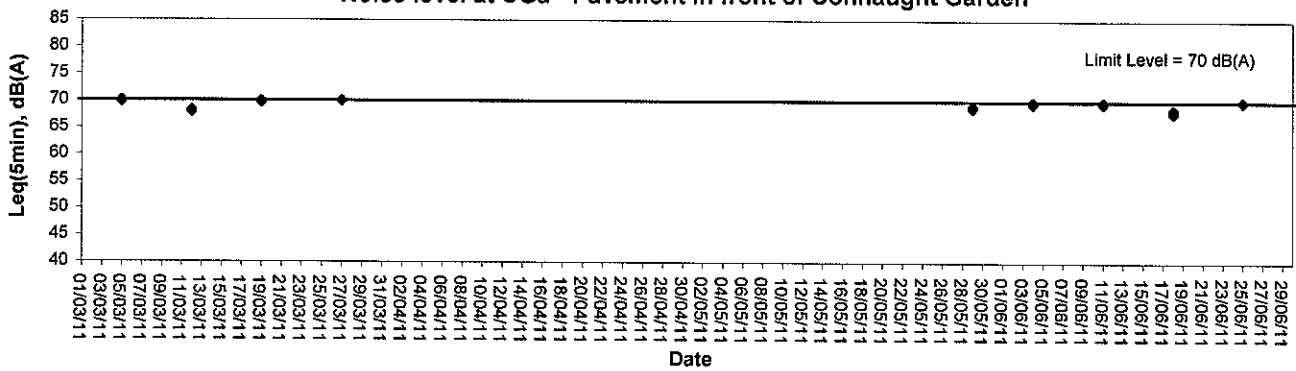


Noise Monitoring (Evening-time)

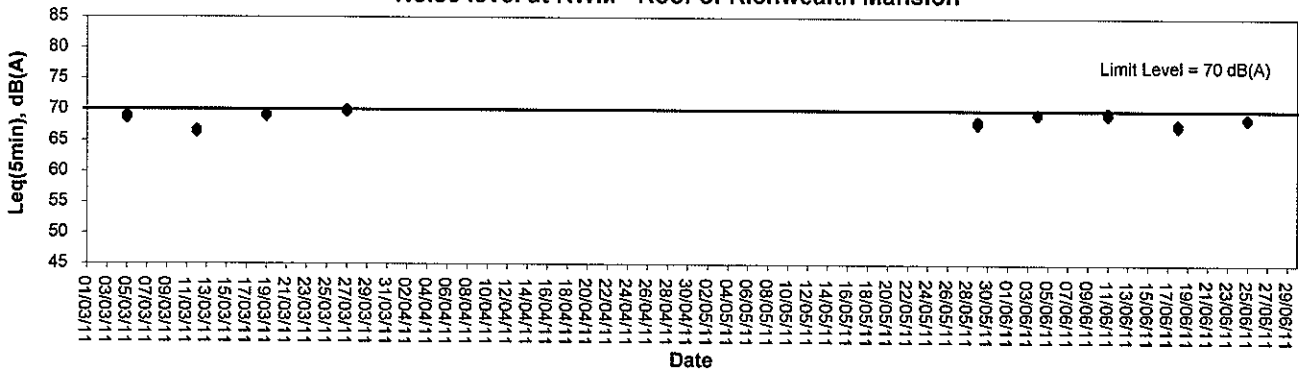
Noise level at KS6 - Podium at the Culliman



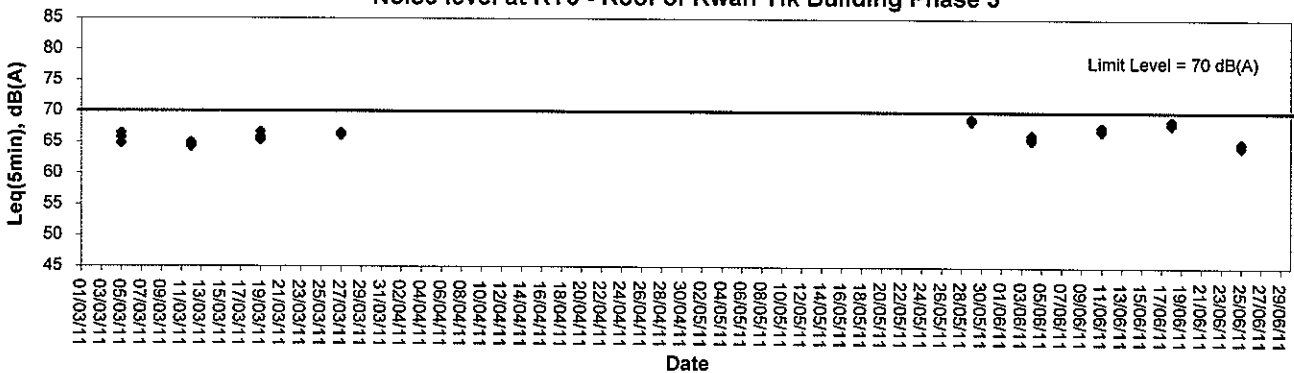
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



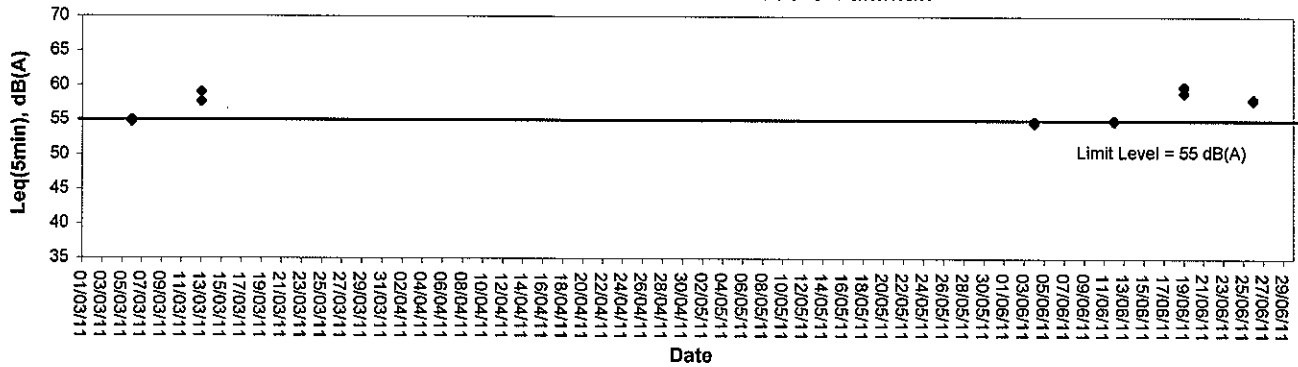
Noise level at KY3 - Roof of Kwan Yik Building Phase 3



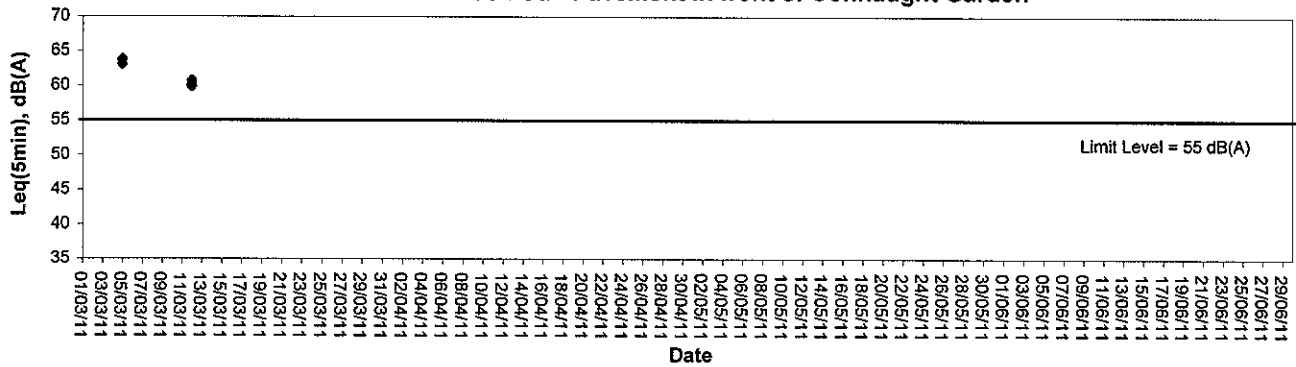


Noise Monitoring (Night-time)

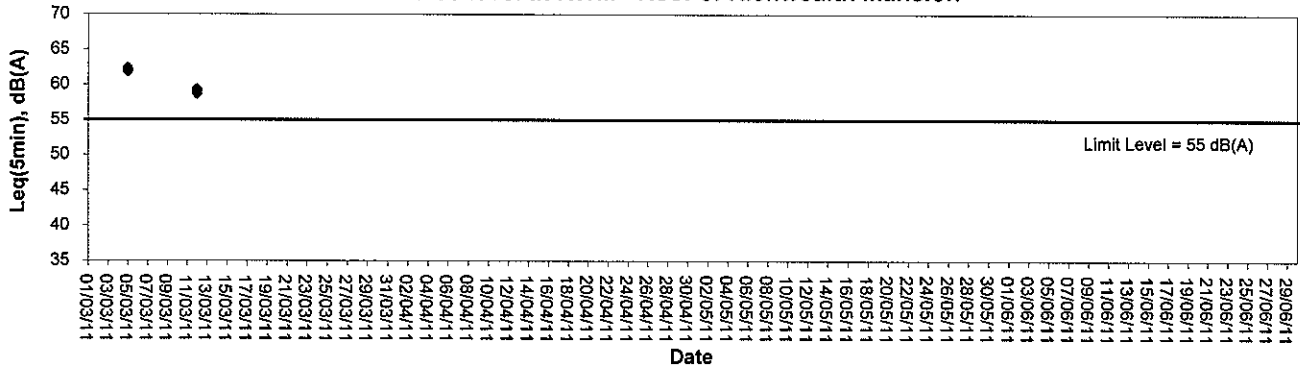
Noise level at KS6 - Podium at the Culliman



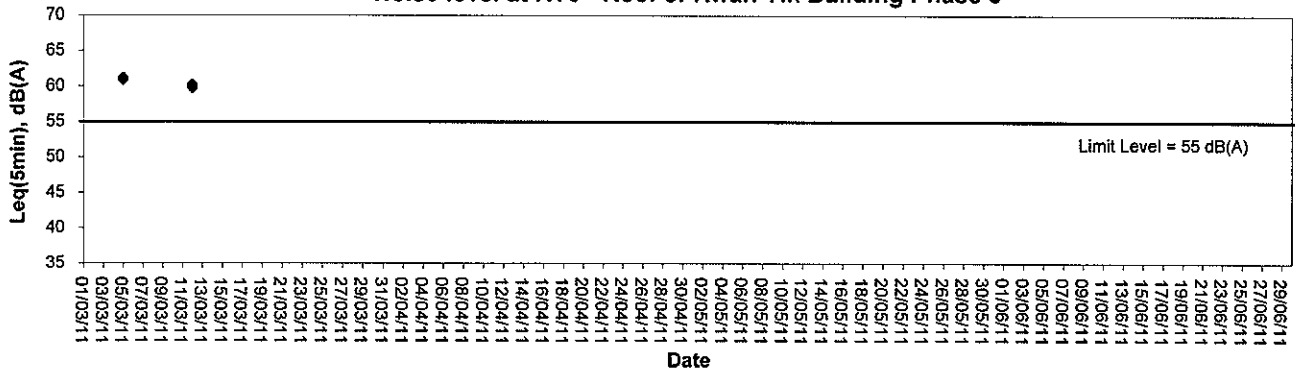
Noise level at CGA - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



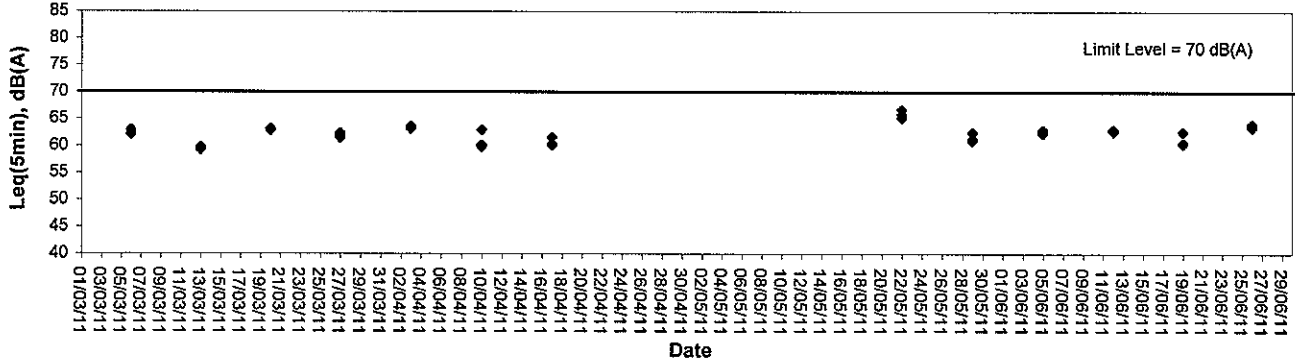
Noise level at KY3 - Roof of Kwan Yik Building Phase 3



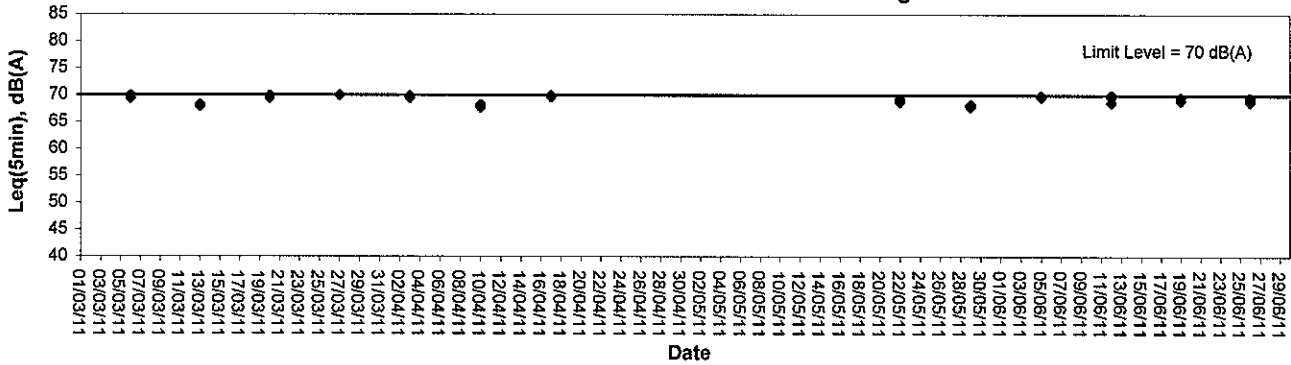


Noise Monitoring (Holiday-time)

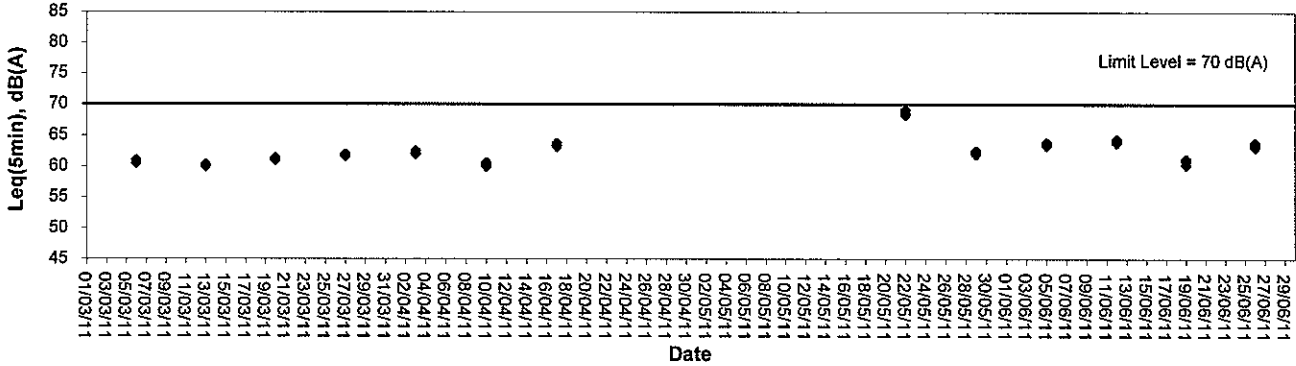
Noise level at KS6 - Podium at the Culliman



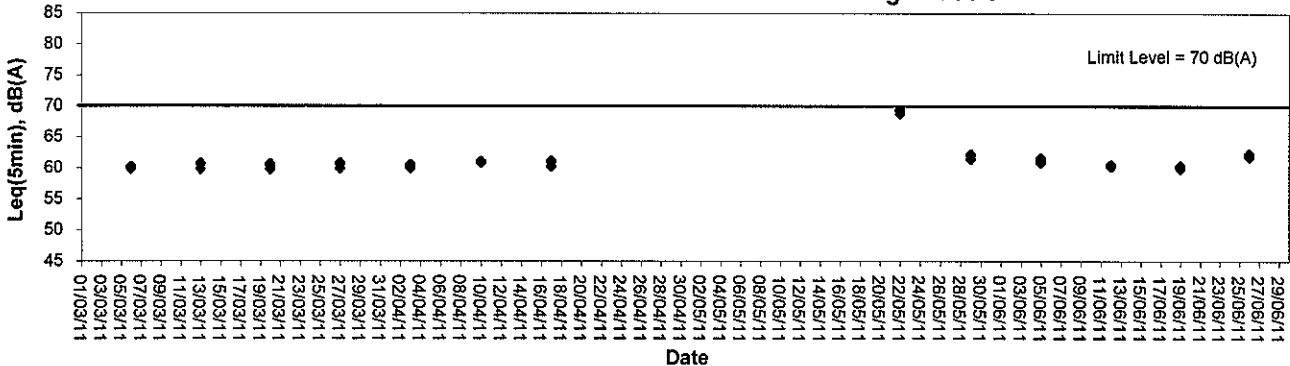
Noise level at CGA - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



Noise level at KY3 - Roof of Kwan Yik Building Phase 3





Appendix C1

Calibration Certificates for Impact Water Quality Monitoring Equipments



Performance Check of Salinity Meter

Equipment Ref. No. : ET/EW1008102 Manufacturer : YSI
Model No. : 85 Serial No. : 060 1998 AD
Date of Calibration : 2/15/11 Due Date : 2018/1/1

Ref. No. of Salinity Standard used (30ppt)

215/11
~~QE-1012/4.8/1001/2~~ S/0011

Salinity Standard (ppt)	Measured Salinity (ppt)	Difference %
30	30.2	0.67

Acceptance Criteria

Difference : <10 %

The salinity meter complies * / ~~does not comply~~ * with the specified requirements and is deemed acceptable * / ~~unacceptable~~ * for use. Measurements are traceable to national standards.

Checked by : z Approved by : g



Internal Calibration Report of Dissolved Oxygen Meter

Equipment Ref. No. : E7/EW 1008/002 Manufacturer : YSI
 Model No. : 85 Serial No. : 0601998 AD
 Date of Calibration : 21/5/11 Calibration Due Date : 20/8/11

Temperature Verification

Ref. No. of Reference Thermometer : E7 10521 / 001
 Ref. No. of Water Bath : E7 10533 / 001

		Temperature (°C)	
Reference Thermometer reading	Measured	21.0	Corrected
			210.1
DO Meter reading	Measured	20.9	Difference
			0.1

Standardization of sodium thiosulphate (Na₂S₂O₃) solution

Reagent No. of Na₂S₂O₃ titrant : CPE/012/43/001/1 Reagent No. of 0.025N K₂Cr₂O₇ : CPE/012/44/001/2

	Trial 1	Trial 2
Initial Vol. of Na ₂ S ₂ O ₃ (ml)	0	0
Final Vol. of Na ₂ S ₂ O ₃ (ml)	40.1	40.1
Vol. of Na ₂ S ₂ O ₃ used (ml)	40.1	40.1
Normality of Na ₂ S ₂ O ₃ solution (N)	0.02494	0.02494
Average Normality (N) of Na ₂ S ₂ O ₃ solution (N)	0.02494	
Acceptance criteria, Deviation	Less than ± 0.001N	

Calculation: Normality of Na₂S₂O₃, N = 1 / ml Na₂S₂O₃ used

Linearity Checking

Determination of dissolved oxygen content by Winkler Titration *

Purging Time (min)	2		5		10	
Trial	1	2	1	2	1	2
Initial Vol. of Na ₂ S ₂ O ₃ (ml)	0	11.70	0	9.85	0	6.50
Final Vol. of Na ₂ S ₂ O ₃ (ml)	11.70	23.40	9.85	19.75	6.50	13.05
Vol. (V) of Na ₂ S ₂ O ₃ used (ml)	11.70	11.70	9.85	9.90	6.50	6.55
Dissolved Oxygen (DO), mg/L	7.83	7.83	6.59	6.63	4.35	4.39
Acceptance criteria, Deviation	Less than + 0.3mg/L		Less than + 0.3mg/L		Less than + 0.3mg/L	

Calculation: DO (mg/L) = V x N x 8000/298

Purging time, min	DO meter reading, mg/L			Winkler Titration result *, mg/L			Difference (%) of DO Content
	1	2	Average	1	2	Average	
2	7.86	7.84	7.85	7.83	7.83	7.83	0.26
5	7.58	6.52	6.55	6.59	6.63	6.61	0.91
10	4.43	4.41	4.42	4.35	4.39	4.37	1.14
Linear regression coefficient							0.9991



Internal Calibration Report of Dissolved Oxygen Meter

Zero Point Checking

DO meter reading, mg/L	0.00
------------------------	------

Salinity Checking

Reagent No. of NaCl (10ppt)	CPE/012/4.7/00/12	Reagent No. of NaCl (30ppt)	CPE/012/4.8/00/12
-----------------------------	-------------------	-----------------------------	-------------------

Determination of dissolved oxygen content by Winkler Titration **

Salinity (ppt)	10		30	
	1	2	1	2
Trial				
Initial Vol. of Na ₂ S ₂ O ₃ (ml)	0	11.65	0	11.00
Final Vol. of Na ₂ S ₂ O ₃ (ml)	11.65	23.25	11.00	22.00
Vol. (V) of Na ₂ S ₂ O ₃ used (ml)	11.65	11.60	11.00	11.00
Dissolved Oxygen (DO), mg/L	7.80	7.77	7.36	7.36
Acceptance criteria, Deviation	Less than + 0.3mg/L		Less than + 0.3mg/L	

Calculation: $DO (mg/L) = V \times N \times 8000/298$

Salinity (ppt)	DO meter reading, mg/L			Winkler Titration result**, mg/L			Difference (%) of DO Content
	1	2	Average	1	2	Average	
10	7.92	7.88	7.90	7.80	7.77	7.79	1.40
30	7.30	7.30	7.30	7.36	7.36	7.36	0.82

Acceptance Criteria

- (1) Difference between temperature readings from temperature sensor of DO probe and reference thermometer : < 0.5 °C
- (2) Linear regression coefficient : > 0.99
- (3) Zero checking: 0.0mg/L
- (4) Difference (%) of DO content from the meter reading and by winkler titration : within ± 5%

The equipment complies [#] / does not comply [#] with the specified requirements and is deemed acceptable [#] / unacceptable [#] for use.

[#] Delete as appropriate

Calibrated by : _____

Approved by : _____



Performance Check of Turbidimeter

Equipment Ref. No. : ET105051007 Manufacturer : HACH
Model No. : 2100P Serial No. : C806 000 30281
Date of Calibration : 14/4/11 Due Date : ~~27/8/11~~ 27/7/11
13/7/11

Gelex Vial Std	Theoretical Value (NTU)	Measured Value (NTU)	Difference %
0-10 NTU	5.34	5.38	0.75%
10-100 NTU	52.5	53.1	1.14%
100-1000 NTU	543	539	0.74%

Acceptance Criteria

Difference : <5 %

The ^{Turbidimeter} ~~salinity meter~~ complies * / does not comply * with the specified requirements and is deemed acceptable * / unacceptable * for use. Measurements are traceable to national standards.

Checked by :

Approved by :



Appendix C2

Impact Water Quality Monitoring Results

Mid-Flood Tide

Monitoring Station : R7

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/06/11	2005-2017	31/Sunny	Surface	1.0	27.6	31.5 31.4	31.5	6.22 6.17	6.20	88.3 87.6	88.0	4.97 5.03	5.00	8.0 8.1	8.1	8.1	
				9.3	25.7	32.0 31.9	32.0	6.04 6.07	6.06	85.7 86.1	85.9	5.04 5.08	5.06	8.0 7.8	7.9		
			Bottom	17.6	25.4	32.5 30.7	32.5	5.87 5.90	5.89	82.7 83.1	82.9	5.15 5.10	5.13	8.4 8.5	8.5		
04/06/11	2055-2108	29/Cloudy	Surface	1.0	27.7	30.7 30.8	30.8	6.19 6.15	6.17	86.7 86.1	86.4	5.08 5.11	5.10	8.2 8.0	8.1	8.3	
				9.1	26.7	31.5 31.6	31.6	6.09 6.15	6.12	85.3 86.1	85.7	5.09 5.04	5.07	8.2 8.2	8.2		
			Bottom	17.2	25.8	32.2 32.1	32.2	6.03 5.98	6.01	84.4 83.7	84.1	5.26 5.30	5.28	8.6 8.8	8.7		
07/06/11	1104-1117	30/Sunny	Surface	1.0	26.8	30.9 30.9	30.9	6.42 6.40	6.41	88.5 88.3	88.4	4.87 4.91	4.89	7.6 7.8	7.7	8.0	
				9.2	25.9	31.7 31.7	31.7	6.29 6.26	6.28	86.8 86.3	86.6	5.05 5.10	5.08	8.1 8.0	8.1		
			Bottom	17.4	24.9	32.3 32.3	32.3	6.11 6.15	6.13	84.3 84.8	84.6	5.24 5.30	5.27	8.2 8.2	8.2		
09/06/11	1314-1328	30/Fine	Surface	1.0	28.5	30.6 30.7	30.7	6.19 6.16	6.18	87.9 87.5	87.7	5.06 5.09	5.08	7.9 8.0	8.0	8.3	
				9.2	26.7	31.6 31.5	31.6	6.08 6.06	6.07	86.3 86.1	86.2	5.14 5.17	5.16	8.2 8.2	8.2		
			Bottom	17.4	25.4	32.3 32.2	32.3	5.98 5.94	5.96	84.9 84.3	84.6	5.26 5.23	5.25	8.7 8.5	8.6		
11/06/11	1617-1631	33/Fine	Surface	1.0	26.6	30.0 30.0	30.0	6.44 6.40	6.42	88.8 88.3	88.6	4.77 4.81	4.79	7.6 7.7	7.7	8.0	
				9.3	25.7	31.1 31.1	31.1	6.31 6.27	6.29	87.0 86.5	86.8	4.94 4.99	4.97	8.1 7.8	8.0		
			Bottom	17.6	24.8	32.1 32.2	32.2	6.08 6.12	6.10	83.9 84.4	84.2	5.17 5.21	5.19	8.2 8.4	8.3		
14/06/11	1855-1906	30/Cloudy	Surface	1.0	27.1	30.7 30.7	30.7	6.07 6.11	6.09	84.9 85.5	85.2	4.86 4.83	4.85	7.5 7.8	7.7	7.9	
				9.0	25.7	31.8 31.9	31.9	5.97 5.92	5.95	83.6 82.9	83.3	4.97 4.92	4.95	8.0 7.8	7.9		
			Bottom	17.0	25.0	32.2 32.3	32.3	5.88 5.84	5.86	82.3 81.8	82.1	5.07 5.04	5.06	8.4 8.1	8.3		
16/06/11	1933-1944	29/Cloudy	Surface	1.0	27.3	29.7 29.8	29.8	6.04 6.05	6.05	84.6 84.7	84.7	4.90 4.87	4.89	7.6 7.8	7.7	8.2	
				9.2	26.2	30.8 30.7	30.8	5.96 5.91	5.94	83.4 82.7	83.1	5.14 5.16	5.15	8.5 8.6	8.6		
			Bottom	17.2	25.3	31.7 31.6	31.7	5.70 5.79	5.75	79.8 81.1	80.5	5.06 5.08	5.07	8.2 8.2	8.2		
18/06/11	1952-2004	29/Drizzle	Surface	1.0	27.2	29.7 29.6	29.7	6.35 6.31	6.33	90.1 89.6	89.9	5.07 5.13	5.10	8.0 8.0	8.0	8.4	
				9.2	26.2	31.1 31.1	31.1	6.17 6.21	6.19	87.6 88.1	87.9	5.22 5.30	5.26	8.4 8.3	8.4		
			Bottom	17.4	25.4	31.7 31.7	31.7	6.05 6.08	6.07	85.9 86.3	86.1	5.44 5.40	5.42	9.0 8.8	8.9		
21/06/11	1044-1058	30/Fine	Surface	1.0	27.4	30.3 30.4	30.4	6.20 6.24	6.22	86.8 87.4	87.1	4.92 4.96	4.94	7.5 7.8	7.7	7.9	
				9.2	26.6	31.2 31.2	31.2	6.14 6.11	6.13	86.0 85.5	85.8	5.02 5.06	5.04	8.1 8.0	8.1		
			Bottom	17.4	26.1	31.9 31.8	31.9	6.02 6.00	6.01	84.3 84.0	84.2	5.18 5.14	5.16	8.1 7.9	8.0		
23/06/11	---	---	Surface	---	---	---	---	---	---	---	---	---	---	---	---	---	
				Middle	---	---	---	---	---	---	---	---	---	---	---		---
			Bottom	---	---	---	---	---	---	---	---	---	---	---	---		---
25/06/11	1601-1617	31/Fine	Surface	1.0	25.8	30.8 30.9	30.9	6.40 6.45	6.43	88.9 89.6	89.3	4.77 4.81	4.79	7.8 8.0	7.9	7.9	
				9.2	25.1	31.7 31.7	31.7	6.34 6.28	6.31	88.1 87.2	87.7	4.90 4.96	4.93	7.9 7.6	7.8		
			Bottom	17.4	24.5	32.2 32.3	32.3	6.00 6.04	6.02	83.4 83.9	83.7	5.16 5.21	5.19	8.2 8.0	8.1		
28/06/11	1832-1845	26/Rainy	Surface	1.0	26.1	29.5 29.6	29.6	6.03 6.01	6.02	84.4 84.1	84.3	5.07 5.02	5.05	8.1 8.0	8.1	8.4	
				9.2	25.7	29.9 29.8	29.9	6.11 6.14	6.13	85.5 85.9	85.7	5.32 5.36	5.34	8.7 8.5	8.6		
			Bottom	17.4	25.2	30.0 30.1	30.1	5.88 5.90	5.89	82.3 82.6	82.5	5.47 5.44	5.46	8.6 8.5	8.6		
30/06/11	1859-1911	29/Rainy	Surface	1.0	27.2	29.7 29.6	29.7	6.22 6.28	6.25	87.1 87.9	87.5	4.73 4.79	4.76	7.8 8.0	7.9	7.9	
				9.2	26.4	30.6 30.7	30.7	5.96 6.07	6.02	83.4 84.9	84.2	4.93 4.90	4.92	7.9 7.8	7.9		
			Bottom	17.4	26.1	31.7 31.7	31.7	6.04 6.06	6.05	84.6 84.8	84.7	5.05 5.09	5.07	8.1 8.0	8.1		

Mid-Flood Tide



Monitoring Station : R8a

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)								
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average						
02/06/11	2024-2036	31/Sunny	Surface	1.0	27.5	31.5	31.5	6.30	6.32	89.4	89.6	5.34	5.31	5.36	8.7	8.6	8.7						
				6.7		31.5		6.33		89.8		5.28			8.5								
				12.4		31.8		6.11		86.7		5.39			8.5								
			04/06/11	2130-2142	28/Cloudy	Surface	1.0	27.7	31.7	31.8	6.07	6.09	86.1	86.4	5.35	5.37	4.98	8.6	8.1	8.2			
							6.6		31.8		5.95		83.3		4.95			8.0					
							12.2		31.8		5.97		83.6		5.01			8.2					
						07/06/11	1122-1135	30/Sunny	Surface	1.0	26.7	32.2	32.2	5.90	5.92	82.6	82.9	5.26	5.24	5.01	8.5	7.5	8.0
										6.5		30.8		6.37		87.9		4.81			8.2		
										12.0		30.8		6.41		88.4		4.85			8.2		
09/06/11	1337-1349	30/Fine							Surface	1.0	28.4	31.3	31.3	6.30	6.28	86.9	86.6	4.97	5.00	5.13	8.1	8.1	8.2
										6.7		31.3		6.25		86.2		5.02			8.1		
										12.4		31.8		6.10		84.1		5.18			8.5		
			11/06/11	1638-1652	32/Cloudy				Surface	1.0	26.5	32.2	32.2	6.03	6.06	85.6	86.0	5.21	5.22	4.87	8.5	7.5	7.9
										6.6		30.6		6.45		88.3		4.73			7.4		
										12.2		30.6		6.37		89.0		4.78			7.5		
						14/06/11	1918-1930	30/Cloudy	Surface	1.0	27.2	31.1	31.8	6.16	6.14	87.3	85.9	5.19	5.22	5.21	8.0	8.1	8.3
										6.6		31.1		6.19		85.4		5.05			8.1		
										12.2		31.8		5.98		83.7		5.29			8.2		
16/06/11	1955-2009	29/Cloudy							Surface	1.0	27.2	31.7	31.7	6.03	6.05	85.6	85.8	5.07	5.11	5.21	8.3	8.1	8.4
										6.8		31.0		6.06		86.0		5.15			8.3		
										12.6		31.7		5.91		83.3		5.43			8.7		
			18/06/11	2011-2023	29/Drizzle				Surface	1.0	27.2	31.0	31.1	6.03	6.05	85.6	85.8	5.07	5.11	5.00	8.0	7.9	8.0
										6.7		31.0		6.06		86.0		5.15			8.3		
										12.4		31.7		5.91		83.3		5.43			8.8		
						21/06/11	1107-1119	30/Fine	Surface	1.0	27.4	31.7	31.7	6.09	6.09	85.3	85.2	5.07	5.09	5.00	8.3	8.3	8.0
										6.9		31.0		6.18		86.5		5.01			8.0		
										12.8		31.1		6.15		86.1		4.99			7.8		
23/06/11	---	---							Surface	---	---	---	---	---	---	---	---	---	---	---	---	---	
										6.8		---		---		---		---		---			
										12.6		---		---		---		---		---			
			25/06/11	1622-1636	32/Fine				Surface	1.0	25.9	31.7	30.9	6.05	6.28	84.7	87.3	5.06	4.72	4.87	8.3	7.5	7.9
										6.7		30.9		6.01		84.1		5.09			8.5		
										12.4		31.5		6.12		85.7		5.29			8.7		
						28/06/11	1858-1911	25/Rainy	Surface	1.0	26.1	31.6	29.4	6.12	6.18	85.7	86.6	5.29	5.34	5.32	8.2	8.4	8.2
										6.9		30.7		6.17		86.4		5.30			8.5		
										12.8		31.6		6.17		86.4		5.30			8.8		
30/06/11	1926-1938	28/Rainy							Surface	1.0	27.2	31.6	30.7	6.08	6.07	85.1	85.0	5.10	4.83	4.98	8.1	7.5	7.9
										6.8		31.6		6.05		84.7		4.86			8.0		
										12.6		31.5		5.79		81.1		5.09			8.1		

Monitoring Station : R16

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/06/11	1715-1726	31/Sunny	Surface	1.0	28.4	31.3 31.4	31.4	6.27 6.24	6.26	89.0 88.6	88.8	4.67 4.73	4.70	7.4 7.5	7.5	8.1	
			Middle	6.6	26.3	31.9 32.0	32.0	6.10 6.14	6.12	86.6 87.1	86.9	5.15 5.07	5.11	8.0 8.3	8.2		
			Bottom	12.2	25.4	32.4 32.3	32.4	5.98 5.95	5.97	84.3 83.8	84.1	5.34 5.28	5.31	8.7 8.6	8.7		
04/06/11	1823-1835	30/Sunny	Surface	1.0	27.8	30.8 30.7	30.8	6.09 6.12	6.11	85.3 85.7	85.5	4.80 4.85	4.83	7.6 7.6	7.6	8.0	
			Middle	6.4	26.9	31.6 31.7	31.7	6.10 6.14	6.12	85.4 85.9	85.7	4.98 5.04	5.01	8.0 8.2	8.1		
			Bottom	11.8	26.1	32.1 32.2	32.2	6.02 5.93	5.98	84.3 83.0	83.7	5.16 5.20	5.18	8.4 8.2	8.3		
07/06/11	0824-0838	29/Fine	Surface	1.0	26.6	30.7 30.8	30.8	6.41 6.37	6.39	88.4 87.9	88.2	4.90 4.95	4.93	7.8 8.0	7.9	8.1	
			Middle	6.5	26.2	31.3 31.3	31.3	6.30 6.27	6.29	86.9 86.5	86.7	5.01 5.05	5.03	8.2 8.2	8.2		
			Bottom	12.0	25.2	31.8 31.9	31.9	6.11 6.15	6.13	84.3 84.8	84.6	5.17 5.21	5.19	8.1 8.4	8.3		
09/06/11	1046-1057	30/Fine	Surface	1.0	28.6	30.7 30.7	30.7	6.16 6.14	6.15	87.5 87.2	87.4	5.10 5.07	5.09	8.2 8.0	8.1	8.4	
			Middle	6.7	26.7	31.4 31.5	31.5	6.08 6.05	6.07	86.3 85.9	86.1	5.18 5.15	5.17	8.4 8.1	8.3		
			Bottom	12.4	25.3	32.2 32.1	32.2	5.97 5.95	5.96	84.8 84.5	84.7	5.24 5.27	5.26	8.6 8.8	8.7		
11/06/11	1337-1350	32/Fine	Surface	1.0	26.5	29.9 29.8	29.9	6.35 6.31	6.33	87.6 87.0	87.3	4.90 4.86	4.88	7.7 7.6	7.7	8.0	
			Middle	6.5	25.8	30.5 30.6	30.6	6.20 6.25	6.23	85.5 86.2	85.9	5.01 5.05	5.03	7.8 8.0	7.9		
			Bottom	12.0	25.0	31.8 31.9	31.9	6.13 6.08	6.11	84.5 83.9	84.2	5.20 5.25	5.23	8.6 8.5	8.6		
14/06/11	1624-1636	30/Cloudy	Surface	1.0	27.2	30.8 30.9	30.9	6.08 6.05	6.07	85.1 84.7	84.9	4.97 4.92	4.95	7.9 8.0	8.0	8.3	
			Middle	6.4	26.1	31.7 31.7	31.7	5.86 5.89	5.88	82.0 82.5	82.3	5.16 5.18	5.17	8.1 8.2	8.2		
			Bottom	11.8	25.1	32.0 32.1	32.1	5.95 5.90	5.93	83.3 82.6	83.0	5.33 5.30	5.32	8.8 9.0	8.9		
16/06/11	1654-1706	29/Cloudy	Surface	1.0	27.3	29.8 29.7	29.8	6.12 6.19	6.16	85.7 86.7	86.2	5.08 5.01	5.05	8.5 8.7	8.6	8.3	
			Middle	6.4	26.6	30.4 30.5	30.5	6.06 6.03	6.05	84.8 84.4	84.6	5.17 5.13	5.15	8.1 8.0	8.1		
			Bottom	11.8	25.5	31.6 31.7	31.7	5.78 5.86	5.82	80.9 82.0	81.5	5.10 5.11	5.11	8.0 8.3	8.2		
18/06/11	1713-1723	29/Drizzle	Surface	1.0	27.6	29.7 29.8	29.8	6.15 6.11	6.13	87.3 86.7	87.0	5.15 5.18	5.17	8.1 8.0	8.1	8.3	
			Middle	6.6	26.4	30.9 30.9	30.9	6.07 6.04	6.06	86.1 85.7	85.9	5.09 5.15	5.12	8.2 8.2	8.2		
			Bottom	12.2	25.8	31.5 31.6	31.6	5.88 5.84	5.86	82.9 82.3	82.6	5.37 5.42	5.40	8.6 8.4	8.5		
21/06/11	0816-0827	30/Fine	Surface	1.0	27.2	30.2 30.3	30.3	6.19 6.23	6.21	86.7 87.0	86.9	4.98 4.95	4.97	7.7 8.0	7.9	8.1	
			Middle	6.9	26.7	31.1 31.2	31.2	6.11 6.14	6.13	85.5 86.0	85.8	5.00 5.04	5.02	8.1 8.0	8.1		
			Bottom	12.8	26.3	31.7 31.7	31.7	6.05 6.06	6.06	84.7 84.8	84.8	5.09 5.12	5.11	8.4 8.2	8.3		
23/06/11	---	---	Surface	---	---	---	---	---	---	---	---	---	---	---	---	---	
			Middle	---	---	---	---	---	---	---	---	---	---	---	---		---
			Bottom	---	---	---	---	---	---	---	---	---	---	---	---		---
25/06/11	1304-1320	31/Fine	Surface	1.0	25.7	30.5 30.5	30.5	6.47 6.41	6.44	89.9 89.0	89.5	4.81 4.86	4.84	7.9 8.0	8.0	7.9	
			Middle	6.6	25.4	31.2 31.2	31.2	6.30 6.35	6.33	87.5 88.2	87.9	4.98 5.03	5.01	8.1 7.8	8.0		
			Bottom	12.2	24.9	31.8 31.8	31.8	6.24 6.20	6.22	86.7 86.1	86.4	5.17 5.22	5.20	7.6 7.8	7.7		
28/06/11	1552-1606	28/Rainy	Surface	1.0	26.0	29.7 29.8	29.8	6.20 6.22	6.21	86.8 87.1	87.0	5.11 5.16	5.14	8.2 8.2	8.2	8.4	
			Middle	6.4	25.6	29.9 30.0	30.0	6.10 6.13	6.12	85.4 85.8	85.6	5.09 5.14	5.12	8.0 8.3	8.2		
			Bottom	11.8	25.1	30.4 30.5	30.5	5.99 6.07	6.03	83.8 84.9	84.4	5.36 5.30	5.33	8.9 8.6	8.8		
30/06/11	1624-1636	29/Rainy	Surface	1.0	27.3	29.6 29.7	29.7	6.14 6.11	6.13	85.9 85.5	85.7	4.97 4.90	4.94	7.9 8.0	8.0	8.1	
			Middle	6.5	26.7	30.7 30.7	30.7	5.96 6.03	6.00	83.4 84.4	83.9	5.06 5.01	5.04	8.5 8.2	8.4		
			Bottom	12.0	26.0	31.3 31.4	31.4	5.71 5.76	5.74	79.9 80.6	80.3	5.11 5.10	5.11	8.1 8.0	8.1		

Mid-Flood Tide



Monitoring Station : R17

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/06/11	1700-1712	31/Sunny	Surface	1.0	28.2	31.2 31.1	31.2	6.30 6.27	6.29	89.4 89.0	89.2	4.49 4.55	4.52	5.00	7.6 7.8	7.7	8.3
			Middle	6.2	26.2	31.8 31.9	31.9	6.07 6.04	6.06	86.1 85.7	85.9	5.27 5.34	5.31		8.5 8.8	8.7	
			Bottom	11.4	25.4	32.3 32.4	32.4	5.95 5.91	5.93	83.8 83.3	83.6	5.15 5.22	5.19		8.5 8.7	8.6	
04/06/11	1800-1815	30/Sunny	Surface	1.0	27.9	30.8 30.9	30.9	6.17 6.20	6.19	83.4 86.8	85.1	4.98 4.92	4.95	5.05	7.8 7.6	7.7	7.9
			Middle	6.2	26.8	31.7 31.6	31.7	6.07 6.02	6.05	84.9 84.3	84.6	5.07 5.11	5.09		8.1 8.0	8.1	
			Bottom	11.4	26.0	32.0 32.1	32.1	5.93 5.95	5.94	83.0 83.3	83.2	5.09 5.14	5.12		8.1 8.1	8.1	
07/06/11	0805-0820	29/Fine	Surface	1.0	26.7	30.8 30.8	30.8	6.38 6.35	6.37	88.0 87.6	87.8	4.88 4.89	4.88	5.00	7.6 7.8	7.7	8.0
			Middle	6.6	26.2	31.3 31.4	31.4	6.29 6.25	6.27	86.8 86.2	86.5	4.94 4.99	4.97		8.0 7.8	7.9	
			Bottom	12.2	25.1	31.8 31.8	31.8	6.13 6.16	6.15	84.5 85.0	84.8	5.13 5.16	5.15		8.5 8.1	8.3	
09/06/11	1030-1042	30/Fine	Surface	1.0	28.6	30.6 30.7	30.7	6.21 6.23	6.22	88.2 88.5	88.4	5.08 5.12	5.10	5.17	8.1 8.5	8.4	8.3
			Middle	6.2	26.8	31.5 31.6	31.6	6.12 6.15	6.14	86.9 87.3	87.1	5.14 5.17	5.16		8.1 8.0	8.1	
			Bottom	11.4	25.3	32.1 32.2	32.2	6.05 6.03	6.04	85.9 85.6	85.8	5.23 5.26	5.25		8.5 8.2	8.4	
11/08/11	1320-1333	32/Fine	Surface	1.0	26.5	29.9 29.9	29.9	6.30 6.26	6.28	86.9 86.3	86.6	4.94 4.98	4.96	5.07	7.6 7.5	7.6	8.0
			Middle	6.7	25.8	30.4 30.5	30.5	6.19 6.23	6.21	85.4 85.9	85.7	5.04 5.09	5.07		8.2 8.0	8.1	
			Bottom	12.4	25.1	31.8 31.9	31.9	6.10 6.05	6.08	84.1 83.4	83.8	5.17 5.22	5.20		8.5 8.2	8.4	
14/06/11	1600-1615	30/Cloudy	Surface	1.0	27.1	30.9 30.8	30.9	6.19 6.15	6.17	86.7 86.1	86.4	5.02 5.09	5.06	5.14	8.1 8.0	8.1	8.1
			Middle	6.2	26.0	31.7 31.6	31.7	6.01 5.98	6.00	84.1 83.7	83.9	5.12 5.16	5.14		8.4 8.2	8.3	
			Bottom	11.4	25.1	32.1 32.0	32.1	5.76 5.83	5.80	80.6 81.6	81.1	5.19 5.24	5.22		8.0 8.1	8.1	
16/06/11	1630-1643	29/Cloudy	Surface	1.0	27.2	29.6 29.7	29.7	6.08 6.02	6.05	85.1 84.3	84.7	4.96 4.99	4.98	5.06	7.7 7.6	7.7	7.9
			Middle	6.3	26.5	30.4 30.5	30.5	6.07 6.09	6.08	84.9 85.3	85.1	5.08 5.10	5.09		8.5 8.2	8.4	
			Bottom	11.6	25.6	31.5 31.6	31.6	5.90 5.93	5.92	82.6 83.0	82.8	5.12 5.09	5.11		7.5 7.8	7.7	
18/06/11	1700-1710	29/Drizzle	Surface	1.0	27.6	29.8 29.8	29.8	6.20 6.24	6.22	88.0 88.6	88.3	5.07 5.15	5.11	5.00	8.0 8.2	8.1	7.9
			Middle	6.2	26.3	30.7 30.8	30.8	6.05 6.03	6.04	85.9 85.6	85.8	4.97 4.92	4.95		7.8 8.0	7.9	
			Bottom	11.4	25.7	31.5 31.4	31.5	5.91 5.94	5.93	83.3 83.7	83.5	4.92 4.97	4.95		7.5 7.8	7.7	
21/06/11	0800-0812	30/Fine	Surface	1.0	27.2	30.3 30.4	30.4	6.24 6.21	6.23	87.4 86.9	87.2	4.93 4.96	4.95	5.03	7.7 7.8	7.8	7.9
			Middle	6.4	26.7	31.1 31.0	31.1	6.15 6.13	6.14	86.1 85.8	86.0	5.02 5.05	5.04		8.2 8.5	8.4	
			Bottom	11.8	26.3	31.7 31.8	31.8	6.08 6.06	6.07	85.1 84.8	85.0	5.11 5.13	5.12		7.5 7.8	7.7	
23/06/11	---	---	Surface	---	---	---	---	---	---	---	---	---	---	---	---	---	---
			Middle	---	---	---	---	---	---	---	---	---	---		---		
			Bottom	---	---	---	---	---	---	---	---	---	---		---		
25/06/11	1245-1300	31/Fine	Surface	1.0	25.8	30.5 30.6	30.6	6.44 6.40	6.42	89.5 86.9	89.2	4.89 4.94	4.92	5.09	7.5 7.8	7.7	8.1
			Middle	6.5	25.4	31.2 31.1	31.2	6.32 6.29	6.31	87.8 87.4	87.6	5.06 5.10	5.08		8.4 8.2	8.3	
			Bottom	12.0	24.9	31.8 31.9	31.9	6.13 6.15	6.14	85.2 85.4	85.3	5.24 5.29	5.27		8.5 8.4	8.5	
28/06/11	1530-1544	28/Rainy	Surface	1.0	26.1	29.6 29.7	29.7	6.24 6.17	6.21	87.4 86.4	86.9	5.01 5.05	5.03	5.13	8.3 8.1	8.2	8.2
			Middle	6.2	25.6	29.9 29.8	29.9	6.03 6.09	6.06	84.4 85.3	84.9	5.17 5.12	5.15		8.2 8.2	8.2	
			Bottom	11.4	25.0	30.3 30.2	30.3	6.05 6.02	6.04	84.7 84.3	84.5	5.19 5.23	5.21		8.0 8.4	8.2	
30/06/11	1600-1615	29/Rainy	Surface	1.0	27.2	29.7 29.8	29.8	6.10 6.04	6.07	85.4 84.6	85.0	5.02 4.93	4.98	5.08	8.2 8.1	8.2	8.2
			Middle	6.3	26.6	30.8 30.7	30.8	5.80 5.88	5.84	81.2 82.3	81.8	5.12 5.09	5.11		8.4 8.5	8.5	
			Bottom	11.6	26.1	31.4 31.5	31.5	5.95 5.91	5.93	83.3 82.7	83.0	5.17 5.14	5.16		7.7 8.1	7.9	

Mid-Flood Tide

Monitoring Station : R28

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/06/11	1911-1922	31/Sunny	Surface	1.0	27.9	31.6	31.6	6.18	6.16	87.7	87.4	5.12	5.15	8.1	8.1	8.3	
				6.1	25.7	31.5		6.14		87.1		5.17		8.0			
			Middle	6.1	25.7	31.8	31.9	6.08	6.06	86.3	86.0	5.17	5.14	8.2	8.3		
11.2	25.4	31.9		6.04	85.7	5.10		8.4									
04/06/11	2010-2023	29/Cloudy	Surface	1.0	27.8	30.8	30.8	6.09	6.08	85.3	85.1	4.87	4.90	7.5	7.5	8.0	
				6.2	26.7	30.7		6.06		84.8		4.92		7.4			
			Middle	6.2	26.7	31.7	31.8	5.96	5.94	83.4	83.2	5.08	5.09	8.1	8.2		
11.4	25.9	31.8		5.92	82.9	5.10		8.2									
07/06/11	1005-1018	30/Sunny	Surface	1.0	26.7	30.8	30.9	6.35	6.38	87.6	88.0	4.87	4.90	7.7	7.8	8.1	
				6.0	26.2	30.9		6.40		88.3		4.93		7.8			
			Middle	6.0	26.2	31.3	31.3	6.22	6.24	85.8	86.1	5.00	5.03	8.2	8.1		
11.0	25.4	31.3		6.26	86.3	5.05		8.0									
09/06/11	1218-1230	30/Fine	Surface	1.0	28.6	30.6	30.6	6.18	6.19	87.8	87.9	5.09	5.07	8.1	8.1	8.3	
				6.3	26.8	30.6		6.20		88.0		5.05		8.0			
			Middle	6.3	26.8	31.4	31.4	6.14	6.13	87.2	87.1	5.13	5.15	8.2	8.2		
11.6	25.3	31.4		6.12	86.9	5.16		8.2									
11/06/11	1520-1533	33/Fine	Surface	1.0	26.6	29.9	29.9	6.33	6.32	87.3	87.1	4.84	4.82	7.3	7.5	7.8	
				6.1	25.8	29.9		6.30		86.9		4.79		7.6			
			Middle	6.1	25.8	30.5	30.6	6.22	6.24	85.8	86.0	4.93	4.96	8.0	7.9		
11.2	25.1	30.6		6.25	86.2	4.98		7.8									
14/06/11	1810-1823	30/Cloudy	Surface	1.0	27.2	30.9	30.9	6.13	6.15	85.8	86.1	5.13	5.16	8.2	8.2	8.2	
				6.2	26.0	30.8		6.17		86.4		5.19		8.2			
			Middle	6.2	26.0	31.6	31.6	6.02	6.04	84.6	84.7	5.08	5.11	8.0	8.0		
11.4	25.2	31.6		6.06	84.8	5.13		7.9									
16/06/11	1843-1856	29/Cloudy	Surface	1.0	27.3	29.8	29.8	6.01	6.03	84.1	84.4	5.06	5.09	8.0	8.0	8.3	
				6.3	26.5	29.7		6.04		84.6		5.12		7.9			
			Middle	6.3	26.5	30.6	30.7	5.88	5.84	82.3	81.8	5.01	4.99	8.7	8.6		
11.6	25.8	30.7		5.80	81.2	4.97		8.5									
18/06/11	1900-1912	29/Drizzle	Surface	1.0	27.3	29.5	29.5	6.33	6.31	89.8	89.6	4.97	5.02	8.0	8.0	8.3	
				6.1	26.4	29.4		6.29		89.3		5.06		7.9			
			Middle	6.1	26.4	31.0	31.1	6.07	6.06	86.1	85.9	5.21	5.19	8.7	8.6		
11.2	25.6	31.1		6.04	85.7	5.17		8.5									
21/06/11	0948-0959	30/Fine	Surface	1.0	27.3	30.2	16.6	6.23	6.21	87.2	87.0	4.92	4.94	7.9	7.8	7.9	
				5.9	26.8	3.0		6.19		86.7		4.95		7.6			
			Middle	5.9	26.8	31.0	31.1	6.13	6.12	85.8	85.6	5.02	5.03	8.0	8.0		
10.8	26.3	31.1		6.10	85.4	5.04		8.0									
23/06/11	---	---	Surface	---	---	---	---	---	---	---	---	---	---	---	---		
				6.1	---	---		---		---		---		---		---	
			Middle	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11.2	---	---		---	---	---		---		---							
25/06/11	1455-1512	31/Fine	Surface	1.0	25.9	30.8	30.8	6.30	6.33	87.5	87.9	4.74	4.77	7.7	7.8	8.0	
				6.0	25.4	30.8		6.35		88.2		4.80		7.8			
			Middle	6.0	25.4	31.3	31.3	6.21	6.23	86.3	86.5	4.93	4.96	8.0	7.9		
11.0	24.9	31.2		6.24	86.7	4.99		7.8									
28/06/11	1743-1756	26/Rainy	Surface	1.0	26.2	29.6	29.7	5.96	5.97	83.4	83.6	5.14	5.17	8.1	8.1	8.6	
				6.1	25.7	29.7		5.98		83.7		5.19		8.0			
			Middle	6.1	25.7	29.9	29.9	5.82	5.82	81.5	81.4	5.24	5.22	8.4	8.6		
11.2	25.2	29.9		5.81	81.3	5.20		8.8									
30/06/11	1812-1824	29/Rainy	Surface	1.0	27.2	29.7	29.7	6.23	6.22	87.2	87.0	4.97	4.97	8.0	8.1	8.1	
				9.0	26.4	30.2		6.19		86.7		4.95		7.9			
			Middle	9.0	26.4	31.8	30.7	5.93	5.96	83.0	83.5	5.18	5.19	8.3	8.2		
17.0	26.1	30.7		5.99	83.9	5.20		8.1									
Bottom	17.0	26.1	31.8	31.8	6.02	6.05	84.3	84.7	5.01	5.04	8.0	8.0					
	---	---	31.7		6.08		85.1		5.07		7.9						

Mid-Flood Tide



Monitoring Station : R29

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/06/11	1936-1947	31/Sunny	Surface	1.0	27.8	31.6	31.6	6.27	6.28	89.0	89.2	4.95	4.97	5.18	8.0	7.9	8.4
				8.7	25.8	32.0	32.0	6.06	6.05	86.0	85.9	5.30			7.8		
			16.4	25.3	31.9	32.5	6.04	5.95	85.7	83.8	5.25	8.6			8.5		
04/06/11	2026-2038	29/Cloudy	Surface	1.0	27.8	30.7	30.7	6.13	6.13	85.8	85.8	4.99	5.02	5.11	8.2	8.2	8.3
				8.8	26.7	31.7	31.7	6.07	6.07	84.9	84.9	5.12			8.1		
			16.0	25.8	31.6	32.1	6.06	6.04	84.8	84.6	5.15	8.0			8.8		
07/06/11	1028-1040	30/Sunny	Surface	1.0	26.8	30.8	30.9	6.20	6.18	85.5	85.2	5.04	5.06	5.21	8.1	8.1	8.3
				8.9	25.9	30.9	31.7	6.15	6.02	84.8	83.1	5.08			8.0		
			16.8	24.9	31.6	32.2	6.00	5.85	82.8	80.7	5.16	8.2			8.6		
09/06/11	1234-1248	30/Fine	Surface	1.0	28.5	30.8	30.8	6.21	6.19	88.2	87.9	5.07	5.09	5.17	8.0	7.9	8.1
				8.9	26.7	30.7	31.6	6.17	6.11	87.6	86.7	5.10			7.8		
			16.8	25.4	31.6	32.3	6.12	6.02	86.9	85.5	5.15	8.1			8.5		
11/06/11	1541-1556	33/Fine	Surface	1.0	26.7	30.0	30.0	6.19	6.21	85.4	85.7	5.03	5.06	5.22	8.0	8.0	8.3
				8.9	25.8	31.1	31.1	6.08	6.07	85.9	83.7	5.18			8.0		
			16.8	24.9	31.1	32.1	6.05	5.86	83.4	80.8	5.24	8.3			8.8		
14/06/11	1826-1837	30/Cloudy	Surface	1.0	27.1	30.8	30.9	6.20	6.18	82.8	84.5	4.95	4.94	5.11	8.2	8.1	8.5
				8.8	25.9	30.9	31.7	6.16	6.14	86.2	86.0	4.93			8.0		
			16.6	25.0	31.7	32.2	6.12	5.93	85.7	83.0	5.15	8.4			8.8		
16/06/11	1859-1913	29/Cloudy	Surface	1.0	27.4	29.8	29.8	6.12	6.15	85.7	86.1	4.97	4.98	5.04	8.6	8.7	8.4
				8.9	26.3	29.8	30.7	6.18	6.01	86.5	84.1	4.98			8.8		
			16.8	25.4	30.7	31.6	5.98	5.79	83.7	81.1	5.02	8.1			8.4		
18/06/11	1924-1934	29/Drizzle	Surface	1.0	27.3	29.5	29.5	6.41	6.40	91.0	90.9	5.20	5.17	5.20	8.6	8.7	8.4
				8.8	26.3	31.0	31.0	6.39	6.16	90.7	87.4	5.14			8.8		
			16.6	25.5	30.9	31.6	6.17	5.96	87.1	84.0	5.17	8.1			8.4		
21/06/11	1004-1018	30/Fine	Surface	1.0	27.4	30.3	30.3	6.16	6.18	86.2	86.5	4.95	4.97	5.07	7.6	7.7	8.2
				8.9	26.7	30.3	31.2	5.98	6.09	84.3	85.3	5.21			8.3		
			16.8	26.2	31.1	31.8	6.07	5.98	85.5	83.8	5.09	8.2			8.6		
23/06/11	---	---	Surface	---	---	---	---	---	---	---	---	---	---	---	---	---	
				---	---	---	---	---	---	---	---	---	---	---	---		
			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25/06/11	1520-1535	31/Fine	Surface	1.0	25.9	30.7	30.8	6.12	6.14	85.0	85.3	4.83	4.85	5.09	7.6	7.7	8.2
				8.9	25.2	30.8	31.7	6.16	6.01	85.6	83.5	4.87			7.8		
			16.0	24.6	31.6	32.3	6.03	5.73	83.8	79.6	5.06	8.2			8.7		
28/06/11	1759-1813	26/Rainy	Surface	1.0	26.2	29.5	29.6	6.18	6.14	86.5	86.0	4.91	4.95	5.19	7.5	7.7	8.2
				8.9	25.7	29.6	29.8	6.10	6.04	85.4	84.6	4.98			7.8		
			16.8	25.1	29.8	30.2	6.05	5.97	84.7	83.6	5.06	8.1			9.0		
30/06/11	1827-1839	29/Rainy	Surface	1.0	27.2	29.7	29.7	6.23	6.22	87.2	87.0	4.97	4.97	5.07	8.0	7.9	8.0
				9.0	26.4	29.7	30.7	6.20	5.96	86.8	83.5	4.96			7.8		
			17.0	26.1	30.6	31.8	5.93	6.05	83.0	84.7	5.18	8.3			8.0		

Mid-Ebb Tide



東業德测试顾问有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : C2

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/06/11	1510-1522	31/Cloudy	Surface	1.0	27.7	31.4	31.5	6.49	6.47	91.5	91.2	4.89	4.92	5.03	7.7	7.9	8.1
			Middle	8.3	25.8	31.5		6.44		90.8		4.94			8.1		
			Bottom	15.6	25.3	31.9	6.36	89.7	5.06	8.1							
04/06/11	1617-1629	30/Sunny	Surface	1.0	27.5	32.0	31.7	6.40	6.32	90.2	89.1	4.98	5.01	5.01	7.5	7.4	8.0
			Middle	8.0	26.6	32.3		6.25		88.8		4.98			8.0		
			Bottom	15.0	25.1	31.6	6.34	88.7	5.03	8.2							
07/06/11	1803-1815	30/Fine	Surface	1.0	27.1	32.1	31.7	6.23	6.18	87.8	86.6	5.11	5.07	5.05	7.5	7.8	8.0
			Middle	7.4	26.2	32.0		6.26		88.3		5.19			8.0		
			Bottom	13.8	25.1	31.7	6.19	87.5	4.96	8.1							
09/06/11	2008-2018	31/Cloudy	Surface	1.0	28.2	32.1	31.4	6.30	6.28	88.2	89.1	4.93	5.24	5.17	8.5	8.7	8.3
			Middle	8.4	26.2	32.0		6.25		88.2		5.15			8.8		
			Bottom	15.8	25.4	31.4	6.26	88.3	5.21	8.2							
11/06/11	1126-1138	30/Fine	Surface	1.0	26.4	32.1	30.5	6.12	6.23	86.9	86.6	5.10	5.14	5.12	8.2	8.1	8.3
			Middle	8.2	25.7	32.0		6.08		87.0		5.17			8.2		
			Bottom	15.4	25.1	31.9	6.26	87.7	5.10	8.0							
14/06/11	1354-1410	30/Cloudy	Surface	1.0	26.5	32.0	30.9	6.09	6.11	84.7	85.0	5.22	5.25	5.00	8.6	7.6	7.9
			Middle	7.9	25.6	31.9		6.13		85.2		5.27			8.4		
			Bottom	14.8	24.8	31.7	6.02	87.0	5.16	8.2							
16/06/11	1510-1522	30/Rainy	Surface	1.0	28.8	31.8	30.5	6.05	6.04	83.4	83.2	5.12	5.14	5.04	8.0	8.0	8.2
			Middle	8.4	26.7	31.8		6.07		86.5		5.06			8.1		
			Bottom	15.8	26.0	30.5	6.07	86.1	5.12	8.2							
18/06/11	1556-1608	31/Fine	Surface	1.0	27.5	31.9	31.9	6.03	6.09	85.6	85.9	5.11	5.09	5.08	8.0	8.0	8.2
			Middle	8.1	26.8	31.8		6.07		86.7		5.12			8.6		
			Bottom	15.2	25.4	31.8	6.07	86.1	5.06	8.5							
21/06/11	1750-1805	29/Fine	Surface	1.0	27.5	31.8	30.9	6.21	6.23	88.2	88.5	5.26	5.23	5.04	8.0	7.5	8.0
			Middle	7.4	26.7	31.8		6.25		88.8		5.19			8.5		
			Bottom	13.8	26.2	30.1	6.10	85.4	4.83	8.4							
23/06/11	1840-1852	28/Drizzle	Surface	1.0	27.1	30.9	30.9	5.82	5.86	81.5	82.1	5.16	5.15	5.20	8.2	8.0	8.3
			Middle	8.0	26.0	31.6		5.76		80.6		5.15			8.3		
			Bottom	15.0	25.3	31.1	6.13	87.0	5.19	8.6							
25/06/11	1155-1202	30/Fine	Surface	1.0	25.8	31.5	31.2	5.91	5.91	83.9	82.8	5.28	5.06	5.02	7.5	7.6	7.8
			Middle	7.4	25.5	31.5		5.96		84.6		5.33			8.2		
			Bottom	13.8	25.1	30.3	5.92	82.9	5.07	7.7							
28/06/11	1330-1346	27/Cloudy	Surface	1.0	25.6	31.2	31.5	5.92	6.00	82.9	85.2	5.07	5.30	5.04	7.5	7.6	8.1
			Middle	8.0	24.7	31.5		5.97		82.9		5.32			8.6		
			Bottom	15.0	24.2	30.3	6.43	89.3	4.77	8.5							
30/06/11	1421-1436	27/Cloudy	Surface	1.0	27.4	31.5	30.7	6.38	6.20	86.6	88.0	4.94	4.96	5.09	7.5	8.0	8.1
			Middle	8.1	26.7	31.5		6.32		87.6		5.13			8.0		
			Bottom	15.2	26.1	31.8	6.05	86.5	5.22	8.2							

Mid-Ebb Tide

Monitoring Station : C4

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/06/11	1451-1502	31/Cloudy	Surface	1.0	27.7	31.4	31.4	6.42	6.45	90.5	90.9	4.86	4.84	4.94	7.5	7.6	7.9
				8.2	25.9	31.4	32.0	6.47	6.34	91.2	89.4	4.82					
			15.4	25.3	32.0	32.4	6.31	6.22	89.0	87.6	4.96	7.6			8.0		
04/06/11	1558-1609	30/Sunny	Surface	1.0	27.5	30.8	30.8	6.37	6.35	89.8	90.2	4.89	4.93	5.08	7.7	7.9	8.2
				8.2	26.7	30.7	31.6	6.42	6.21	89.7	88.2	4.97			8.0		
			15.4	25.1	31.6	32.2	6.18	6.12	86.5	86.9	5.06	8.1			8.2		
07/06/11	1740-1753	30/Fine	Surface	1.0	27.2	30.8	30.9	6.09	6.21	87.8	87.0	5.24	4.84	4.95	7.6	7.6	7.9
				8.2	26.2	30.9	31.8	6.23	6.04	87.2	84.5	4.66			7.5		
			15.4	25.2	31.7	32.3	6.05	5.82	84.7	81.4	4.99	7.9			8.1		
09/06/11	1951-2001	31/Cloudy	Surface	1.0	28.2	30.8	31.4	6.12	6.25	81.2	88.8	5.04	5.12	5.22	8.0	8.0	8.4
				8.4	26.2	32.3	32.1	6.19	6.16	87.6	87.4	5.02			8.0		
			15.8	25.6	31.4	32.4	6.26	6.08	86.6	86.3	5.15	8.1			8.6		
11/06/11	1108-1119	30/Fine	Surface	1.0	26.4	29.8	29.8	6.14	6.45	88.5	89.0	5.09	5.01	5.16	7.5	7.5	8.0
				8.1	25.8	29.8	30.4	6.41	6.29	87.1	86.9	4.97			7.5		
			15.2	25.1	30.4	32.0	6.25	6.16	86.3	85.0	5.14	7.8			8.5		
14/06/11	1333-1347	30/Cloudy	Surface	1.0	26.5	29.8	29.7	6.33	6.32	87.4	87.1	5.19	4.90	5.05	7.7	7.9	8.1
				8.1	25.6	29.7	30.9	6.30	6.24	86.9	86.1	4.91			7.7		
			15.2	24.7	30.9	31.7	6.27	6.12	85.4	84.4	5.06	8.0			8.3		
16/06/11	1451-1502	30/Rainy	Surface	1.0	28.8	30.6	30.6	6.45	6.43	84.0	91.3	5.18	4.77	4.97	7.7	7.9	8.1
				8.4	26.8	30.6	30.5	6.41	6.22	91.0	88.3	4.80			7.7		
			15.8	26.0	30.5	32.0	6.20	5.92	88.0	83.4	4.92	8.0			8.5		
18/06/11	1538-1549	31/Fine	Surface	1.0	27.4	30.4	29.7	6.24	6.34	88.6	90.0	5.30	4.99	5.12	7.5	7.9	8.1
				8.0	26.7	30.6	30.6	6.36	6.30	90.3	89.4	5.02			7.7		
			15.0	25.4	30.6	31.9	6.28	6.20	89.2	88.0	5.08	7.7			8.5		
21/06/11	1734-1742	29/Fine	Surface	1.0	27.5	31.8	30.3	6.17	6.14	87.6	86.0	5.22	4.94	5.02	8.0	8.1	8.2
				8.0	26.7	31.9	30.9	6.22	5.98	88.3	83.7	5.29			7.7		
			15.0	26.2	31.7	31.7	6.16	5.76	86.2	80.6	5.01	8.0			8.0		
23/06/11	1821-1832	28/Drizzle	Surface	1.0	27.0	31.2	29.7	6.32	6.38	80.4	89.9	5.05	5.10	5.22	8.1	8.1	8.4
				8.1	26.1	31.7	31.0	6.36	6.12	89.7	86.3	5.12			8.1		
			15.2	25.4	29.7	31.5	6.39	5.93	90.1	83.7	5.08	8.0			8.9		
25/06/11	1133-1145	30/Fine	Surface	1.0	25.9	31.5	30.2	6.05	6.08	87.6	85.1	5.17	4.91	5.06	7.6	7.7	8.0
				8.1	25.4	31.2	31.2	6.10	6.01	85.4	84.1	4.90			7.8		
			15.2	25.1	31.2	31.9	6.02	5.80	83.9	81.2	5.12	8.2			8.3		
28/06/11	1308-1324	27/Cloudy	Surface	1.0	25.7	31.9	29.1	5.79	6.43	81.1	89.3	5.19	4.83	5.11	7.6	7.7	8.1
				8.1	24.8	31.9	30.4	5.81	6.23	81.3	86.5	5.14			7.6		
			15.2	24.3	30.1	31.5	6.05	6.02	89.0	83.7	4.85	7.8			8.5		
30/06/11	1357-1410	27/Cloudy	Surface	1.0	27.3	31.4	29.3	6.00	6.30	86.8	90.1	5.11	5.02	5.13	8.1	8.1	8.1
				8.3	26.7	31.5	29.3	6.27	6.17	89.7	87.6	5.00			8.0		
			15.6	26.1	30.7	31.8	6.20	6.06	88.0	86.6	5.13	8.1			8.1		

Mid-Ebb Tide

Monitoring Station : R5

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/06/11	1252-1304	30/Cloudy	Surface	1.0	27.6	31.5	31.5	6.16	6.19	87.5	87.9	5.22	5.20	5.32	8.5	8.6	8.6
				8.3	25.8	31.9	32.0	6.11	6.10	88.2	86.6	5.18			8.6		
			15.6	25.3	32.0	32.4	6.08	5.98	86.3	84.9	5.29	5.43			8.2		
04/06/11	1355-1407	31/Sunny	Surface	1.0	27.4	30.8	30.8	6.27	6.28	89.0	89.2	5.14	5.11	5.21	8.2	8.3	8.6
				8.2	26.6	30.7	31.7	6.29	6.18	89.3	87.8	5.07			8.4		
			15.4	25.1	31.7	32.2	6.15	6.10	87.3	86.6	5.18	5.32			8.6		
07/06/11	1554-1606	31/Fine	Surface	1.0	26.9	30.8	30.9	6.24	6.22	87.4	87.1	5.34	5.02	5.11	7.7	7.9	8.1
				8.4	26.2	30.9	31.8	6.20	6.02	86.8	84.2	5.29			5.11		
			15.8	25.1	31.8	32.1	6.02	5.85	84.1	81.8	5.09	5.20			8.4		
09/06/11	1752-1804	31/Cloudy	Surface	1.0	28.7	31.4	31.4	6.07	6.27	86.1	88.9	5.25	5.21	5.26	8.5	8.5	8.6
				8.4	26.5	31.3	32.1	6.28	6.06	89.1	85.9	5.24			5.23		
			15.8	26.0	32.0	32.3	6.04	5.96	85.7	84.0	5.20	5.35			8.3		
11/06/11	0915-0927	29/Fine	Surface	1.0	26.2	29.7	29.7	5.93	6.21	83.6	86.3	5.39	5.20	5.31	8.5	8.7	8.8
				8.4	25.7	30.5	30.5	6.07	6.09	82.3	84.7	5.16			5.30		
			15.8	25.0	30.5	32.0	6.11	5.99	84.9	83.3	5.27	5.42			8.6		
14/06/11	1132-1145	30/Cloudy	Surface	1.0	26.4	29.5	29.5	5.96	6.15	82.8	84.8	5.46	5.13	5.27	8.0	8.1	8.3
				8.2	25.7	30.7	30.8	6.02	6.04	83.7	83.3	5.38			5.29		
			15.4	24.8	30.8	32.0	6.06	5.90	85.1	81.4	5.30	5.40			8.2		
16/06/11	1252-1304	30/Rainy	Surface	1.0	28.6	30.4	30.4	5.92	6.11	81.6	86.7	5.42	4.77	4.97	8.0	8.0	8.4
				8.4	26.9	30.4	30.8	6.12	6.02	83.0	84.9	5.27			4.96		
			15.8	26.1	31.9	32.1	6.08	5.86	83.6	82.5	5.30	5.19			8.4		
18/06/11	1345-1357	32/Fine	Surface	1.0	27.4	29.7	29.7	5.84	6.25	81.1	88.7	5.38	5.13	5.25	7.8	8.0	8.4
				8.3	26.6	29.6	30.6	6.22	6.12	83.7	86.9	5.16			5.26		
			15.6	25.4	30.6	31.8	6.15	6.03	86.5	85.6	5.28	5.38			8.4		
21/06/11	1555-1605	29/Fine	Surface	1.0	27.5	30.1	30.1	6.04	5.99	85.3	83.9	5.42	5.11	5.22	7.5	7.7	8.2
				8.3	26.7	31.8	30.9	6.04	6.07	84.3	85.0	5.13			5.25		
			15.6	26.2	30.1	31.8	6.09	5.77	86.4	80.7	5.28	5.30			8.8		
23/06/11	1622-1634	28/Drizzle	Surface	1.0	27.3	29.8	29.8	5.76	6.25	80.8	88.7	5.29	5.33	5.34	8.4	8.7	8.6
				8.3	26.2	31.8	31.1	6.22	6.08	83.2	86.4	5.36			5.41		
			15.6	25.6	29.7	31.5	6.07	5.94	86.2	84.4	5.37	5.29			8.6		
25/06/11	0945-0957	29/Fine	Surface	1.0	25.6	30.3	30.3	5.91	6.16	83.9	86.2	5.31	4.96	4.98	7.5	7.5	7.8
				8.4	25.3	31.1	31.2	6.27	6.10	84.7	85.4	5.30			5.12		
			15.8	24.8	31.2	31.9	6.04	5.92	85.1	82.9	5.44	5.11			7.8		
28/06/11	1103-1115	27/Drizzle	Surface	1.0	25.8	29.1	29.2	6.12	6.17	85.7	85.7	4.90	5.13	5.30	8.0	8.1	8.4
				8.2	25.1	30.3	30.3	6.19	6.02	86.0	83.6	5.15			5.31		
			15.4	24.6	31.1	31.2	6.00	5.85	83.4	81.3	5.28	5.45			8.4		
30/06/11	1200-1213	27/Cloudy	Surface	1.0	27.3	29.2	29.2	5.82	6.22	81.7	89.0	5.42	4.95	5.04	8.0	8.2	8.2
				8.3	26.7	31.2	30.7	5.97	6.12	83.8	86.9	5.34			5.05		
			15.6	26.1	31.8	31.8	6.03	6.01	85.7	85.9	5.48	5.11			8.2		

Mid-Ebb Tide

Monitoring Station : R15

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average		
02/06/11	1134-1145	29/Cloudy	Surface	1.0	27.5	31.5	31.5	6.23	6.26	88.5	88.9	5.14	5.12	5.22	8.2	8.2	8.5		
			Middle	5.7	25.6	31.8	31.9	6.14	6.16	87.2	87.4	5.21			5.23			8.6	8.6
			Bottom	10.4	25.4	32.2	32.2	6.17	6.08	87.6	86.3	5.24			5.31			8.5	8.6
04/06/11	1237-1248	30/Sunny	Surface	1.0	27.2	30.8	30.9	6.28	6.31	89.2	89.5	5.09	5.22	5.33	8.2	8.5	8.8		
			Middle	5.7	26.5	31.6	31.6	6.23	6.22	88.2	88.4	5.32			5.34			8.7	8.7
			Bottom	10.4	25.1	32.1	32.1	6.12	6.14	86.9	87.1	5.47			5.44			9.0	9.1
07/06/11	1448-1501	32/Sunny	Surface	1.0	27.1	30.8	30.9	6.04	6.03	84.6	84.5	4.93	4.95	5.08	7.6	7.8	8.0		
			Middle	5.3	26.1	31.8	31.8	6.07	6.04	84.9	84.5	5.08			5.11			8.1	8.1
			Bottom	9.6	25.2	32.1	32.1	5.82	5.81	81.5	81.4	5.19			5.18			8.2	8.3
09/06/11	1634-1645	31/Cloudy	Surface	1.0	28.6	31.4	31.4	6.35	6.33	90.1	89.9	4.53	4.56	4.82	7.4	7.5	7.7		
			Middle	5.6	26.4	31.9	32.0	6.08	6.06	86.3	86.0	4.87			4.90			7.9	7.7
			Bottom	10.2	26.0	32.2	32.2	5.98	5.96	84.3	84.0	4.95			5.01			8.0	7.9
11/06/11	0803-0814	28/Fine	Surface	1.0	26.2	29.8	29.9	6.24	6.26	86.7	87.0	5.11	5.14	5.23	8.2	8.1	8.4		
			Middle	5.6	25.5	30.3	30.4	6.15	6.17	85.5	85.7	5.21			5.23			8.5	8.5
			Bottom	10.2	25.1	31.9	31.9	6.17	6.15	85.8	85.5	5.36			5.33			8.8	8.7
14/06/11	1030-1044	29/Drizzle	Surface	1.0	26.3	29.4	29.5	6.09	6.11	84.0	84.3	5.03	5.05	5.18	8.1	8.1	8.2		
			Middle	5.6	26.0	30.4	30.4	6.15	6.11	84.8	84.2	5.14			5.16			8.2	8.1
			Bottom	10.2	25.3	31.5	31.5	5.94	5.92	81.9	81.7	5.31			5.32			8.5	8.5
16/06/11	1134-1145	30/Rainy	Surface	1.0	28.5	30.4	30.4	6.19	6.17	87.8	87.6	4.09	4.08	4.73	8.0	8.1	8.4		
			Middle	5.6	26.4	30.6	30.6	6.02	6.04	84.8	85.1	4.84			4.87			8.4	8.5
			Bottom	10.2	26.0	32.0	32.1	5.79	5.78	81.6	81.4	5.21			5.24			8.7	8.6
18/06/11	1233-1244	30/Drizzle	Surface	1.0	27.2	29.8	29.8	6.26	6.29	88.9	89.3	5.09	5.12	5.23	8.0	8.1	8.4		
			Middle	5.5	26.6	30.5	30.5	6.21	6.20	88.2	88.1	5.26			5.23			8.4	8.5
			Bottom	10.0	25.4	31.7	31.7	6.11	6.13	86.8	87.1	5.31			5.33			8.7	8.6
21/06/11	1445-1458	30/Fine	Surface	1.0	27.6	30.1	30.2	5.99	6.01	83.9	84.2	5.09	5.13	5.21	8.2	8.3	8.4		
			Middle	5.4	26.8	31.2	31.2	5.84	5.87	81.8	82.2	5.23			5.22			8.7	8.6
			Bottom	9.8	26.5	31.6	31.6	5.93	5.92	83.0	82.8	5.29			5.30			8.4	8.5
23/06/11	1504-1515	28/Drizzle	Surface	1.0	27.3	29.6	29.7	6.22	6.20	88.3	88.1	5.07	5.03	5.17	8.2	8.2	8.2		
			Middle	5.5	26.3	30.9	30.9	6.01	6.03	85.3	85.6	5.29			5.28			8.4	8.3
			Bottom	10.0	25.8	31.3	31.3	5.90	5.92	83.8	84.1	5.17			5.21			8.0	8.0
25/06/11	0830-0843	28/Fine	Surface	1.0	25.7	30.4	30.4	6.02	6.04	84.3	84.5	5.07	5.08	5.13	7.9	8.0	8.2		
			Middle	5.3	25.4	31.0	31.0	5.94	5.97	83.2	83.6	5.15			5.13			8.2	8.2
			Bottom	9.6	24.9	31.9	32.0	5.77	5.78	80.8	81.0	5.19			5.18			8.4	8.4
28/06/11	0958-1013	27/Drizzle	Surface	1.0	25.8	29.1	29.1	6.13	6.12	85.2	85.0	5.18	5.20	5.31	8.2	8.1	8.5		
			Middle	5.6	25.4	29.7	29.8	6.02	6.04	83.6	83.9	5.28			5.31			8.7	8.6
			Bottom	10.2	24.9	30.4	30.4	5.86	5.88	81.4	81.6	5.42			5.44			8.9	8.8
30/06/11	1104-1116	27/Cloudy	Surface	1.0	27.2	29.1	29.2	6.23	6.25	89.1	89.3	5.09	5.11	5.20	8.5	8.5	8.5		
			Middle	5.6	26.7	30.6	30.7	6.19	6.17	87.9	87.6	5.18			5.21			8.2	8.3
			Bottom	10.2	26.2	31.6	31.7	6.14	6.04	87.2	86.4	5.23			5.29			8.4	8.7

Mid-Ebb Tide



英華檢驗測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : R29

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/06/11	1336-1347	30/Cloudy	Surface	1.0	27.6	31.4	31.5	6.20	6.23	88.0	88.5	5.13	5.10	5.21	8.2	8.2	8.5
				8.8	25.8	32.0		6.12		86.9		5.26			8.4		
			16.6	25.3	31.9	6.16	87.5	5.18	8.5								
04/06/11	1440-1451	31/Sunny	Surface	1.0	27.3	30.7	30.8	6.30	6.26	89.5	88.9	5.10	5.07	5.19	8.2	8.1	8.3
				8.7	26.5	31.6		6.12		86.9		5.22			8.4		
			16.4	25.1	32.1	6.17	87.6	5.17	8.5								
07/06/11	1626-1638	31/Fine	Surface	1.0	27.2	30.8	30.9	6.21	6.20	86.9	86.7	4.73	4.77	4.93	7.5	7.5	7.8
				8.5	26.1	31.8		6.04		84.6		4.99			7.8		
			16.0	25.2	32.0	6.01	84.1	5.03	8.1								
09/06/11	1836-1847	31/Cloudy	Surface	1.0	28.5	31.5	31.5	6.27	6.26	89.0	88.8	5.09	5.06	5.19	8.0	8.1	8.1
				8.4	26.2	32.2		6.15		87.3		5.15			8.1		
			15.8	25.8	32.1	5.97	84.1	5.44	8.2								
11/06/11	0956-1007	29/Fine	Surface	1.0	26.3	29.8	29.8	6.23	6.26	86.6	87.0	5.07	5.10	5.25	7.9	8.0	8.4
				8.5	25.6	30.5		6.18		85.9		5.20			8.4		
			16.0	25.1	32.0	6.04	84.0	5.42	8.9								
14/06/11	1212-1225	30/Cloudy	Surface	1.0	26.5	29.6	29.6	6.19	6.22	85.4	85.8	5.06	5.08	5.20	8.0	7.9	8.2
				8.6	25.6	30.7		6.13		84.5		5.16			8.1		
			16.2	24.8	31.9	6.10	84.1	5.21	8.1								
16/06/11	1336-1347	30/Rainy	Surface	1.0	28.7	30.5	30.5	6.29	6.28	89.3	89.1	4.83	4.87	5.24	8.1	8.2	8.7
				8.4	26.8	30.7		6.10		86.6		5.37			8.2		
			15.8	26.0	32.0	6.07	86.1	5.31	8.9								
18/06/11	1426-1437	32/Fine	Surface	1.0	27.4	29.6	29.7	6.26	6.25	88.9	88.7	5.23	5.19	5.32	8.1	8.2	8.7
				8.7	26.7	30.7		6.10		86.6		5.29			8.7		
			16.4	25.3	30.7	6.17	87.6	5.34	8.9								
21/06/11	1625-1636	29/Fine	Surface	1.0	27.5	30.0	30.1	6.19	6.20	86.7	86.8	4.92	4.94	5.04	7.5	7.5	8.0
				8.5	26.6	31.0		6.11		85.5		5.09			8.2		
			16.0	26.1	31.7	6.15	86.1	5.06	8.0								
23/06/11	1706-1717	28/Drizzle	Surface	1.0	27.3	29.8	29.8	6.23	6.24	88.5	88.7	5.02	5.07	5.19	8.0	8.0	8.4
				8.4	26.2	31.0		6.01		85.3		5.30			8.8		
			15.8	25.7	31.0	6.03	85.6	5.21	8.5								
25/06/11	1019-1030	29/Fine	Surface	1.0	25.7	30.2	30.3	6.25	6.27	87.5	87.8	5.06	5.07	5.03	7.7	7.9	8.1
				8.6	25.3	31.0		6.29		88.1		5.08			8.0		
			16.2	25.1	30.9	6.01	85.3	4.93	8.2								
28/06/11	1140-1155	27/Drizzle	Surface	1.0	25.7	29.2	29.2	6.22	6.20	86.4	86.1	5.07	5.10	5.31	8.7	8.4	8.7
				8.6	25.0	30.3		6.17		85.7		5.12			8.0		
			16.2	24.4	30.4	6.05	84.0	5.30	8.4								
30/06/11	1235-1248	27/Cloudy	Surface	1.0	27.3	31.3	31.4	5.81	6.02	80.7	83.6	5.49	5.33	5.16	8.6	8.5	8.5
				8.8	26.6	31.4		5.86		81.4		5.54			9.0		
			16.6	26.0	30.7	6.24	81.4	5.54	8.8								

Mid-Ebb Tide

Monitoring Station : C3

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/06/11	1225-1237	29/Cloudy	Surface	1.0	27.5	31.6	31.6	6.39	6.42	90.0	90.5	4.85	4.89	5.00	7.6	7.7	8.0
				6.3	25.7	31.6	31.8	6.45	6.30	90.9	88.8	4.93			7.8		
			11.6	25.4	31.8	32.3	6.32	6.21	89.1	87.5	5.01	4.97			8.1		
04/06/11	1328-1340	30/Sunny	Surface	1.0	27.3	30.8	30.9	6.28	6.37	88.5	90.1	4.97	4.94	5.03	8.0	8.2	8.0
				6.5	26.5	32.2	31.6	6.19	6.27	87.3	89.0	5.08			4.99		
			12.0	25.2	32.3	32.1	6.22	6.16	87.7	87.5	5.13	5.17			8.2		
07/06/11	1531-1542	32/Sunny	Surface	1.0	27.2	30.8	30.9	6.40	6.24	90.2	87.4	4.91	4.89	4.99	7.9	7.6	7.8
				6.3	26.2	30.9	31.8	6.33	6.01	89.9	84.1	4.96			4.98		
			11.6	25.1	31.6	32.2	6.24	6.05	88.6	84.6	5.03	5.17			8.2		
09/06/11	1725-1737	31/Cloudy	Surface	1.0	28.6	32.1	31.5	6.27	6.45	87.8	91.6	4.90	5.05	5.09	8.0	8.0	8.2
				6.4	26.2	31.5	32.0	6.43	6.19	86.9	87.9	5.01			5.14		
			11.8	26.0	32.0	32.2	6.02	6.05	84.3	85.8	4.98	5.17			8.2		
11/06/11	0850-0902	28/Fine	Surface	1.0	26.2	32.2	29.8	6.01	6.45	87.9	89.6	5.17	5.09	4.98	8.2	7.9	7.9
				6.3	25.6	31.8	30.4	6.21	6.38	88.1	88.7	5.08			4.97		
			11.6	25.2	32.0	31.9	6.17	6.31	87.6	87.6	5.14	5.06			8.2		
14/06/11	1110-1124	29/Drizzle	Surface	1.0	26.3	30.4	29.6	6.29	6.28	88.4	86.6	5.12	4.99	5.01	8.1	8.1	8.0
				6.3	25.7	30.4	30.7	6.37	6.11	89.8	84.2	4.84			4.95		
			11.6	24.9	31.8	31.7	6.09	5.99	86.2	82.6	5.02	5.17			8.2		
16/06/11	1225-1237	30/Rainy	Surface	1.0	28.7	31.7	30.3	6.01	6.27	88.2	88.9	5.16	4.82	4.70	8.2	7.5	7.9
				6.4	26.4	30.3	30.6	6.25	6.12	86.9	86.9	4.84			4.80		
			11.8	26.0	30.6	32.0	6.14	5.92	87.7	83.4	4.80	4.97			8.0		
18/06/11	1320-1332	30/Drizzle	Surface	1.0	27.3	31.9	29.8	6.28	6.36	88.7	90.3	5.17	5.06	5.00	8.2	8.1	7.9
				6.3	26.6	31.8	30.6	6.32	6.27	87.8	89.1	4.84			4.99		
			11.6	25.5	30.7	31.8	6.09	6.24	84.4	88.6	5.06	5.08			8.0		
21/06/11	1528-1540	30/Fine	Surface	1.0	27.6	31.8	30.3	6.21	6.13	88.2	85.7	5.06	4.86	4.98	8.0	8.1	8.2
				6.4	26.7	31.8	31.0	6.11	5.99	85.5	83.9	4.87			4.93		
			11.8	26.3	30.2	31.8	6.14	5.76	83.6	80.6	4.85	5.12			8.6		
23/06/11	1555-1607	28/Drizzle	Surface	1.0	27.4	31.7	29.7	6.29	6.32	88.8	89.7	5.17	5.17	5.15	8.1	8.5	8.1
				6.2	26.3	31.0	31.0	6.34	6.15	87.5	87.4	5.19			5.02		
			11.4	25.8	30.9	31.3	6.14	5.90	87.2	83.8	5.02	5.21			8.3		
25/06/11	0917-0930	28/Fine	Surface	1.0	25.7	31.3	30.4	6.16	6.08	89.3	85.1	5.17	4.91	5.01	8.1	7.9	7.8
				6.3	25.3	31.3	31.1	6.34	5.93	87.5	83.0	5.19			5.02		
			11.6	25.1	30.9	31.9	6.29	5.78	88.2	80.9	5.02	5.13			7.9		
28/06/11	1042-1055	27/Drizzle	Surface	1.0	25.9	31.9	29.1	6.16	6.33	88.2	87.9	5.15	4.96	5.19	8.0	8.3	8.0
				6.3	25.2	31.3	30.0	6.30	6.20	87.5	86.2	5.00			5.23		
			11.6	24.7	29.1	30.9	6.22	6.05	86.4	84.1	5.28	5.34			8.4		
30/06/11	1140-1152	27/Cloudy	Surface	1.0	27.2	30.9	29.2	6.07	6.41	85.9	91.6	5.32	5.00	5.09	8.5	8.2	8.3
				6.4	26.8	30.9	30.8	6.03	6.31	88.3	89.6	5.36			5.07		
			11.8	26.2	29.2	31.7	6.43	6.19	89.1	88.5	5.16	5.20			8.0		

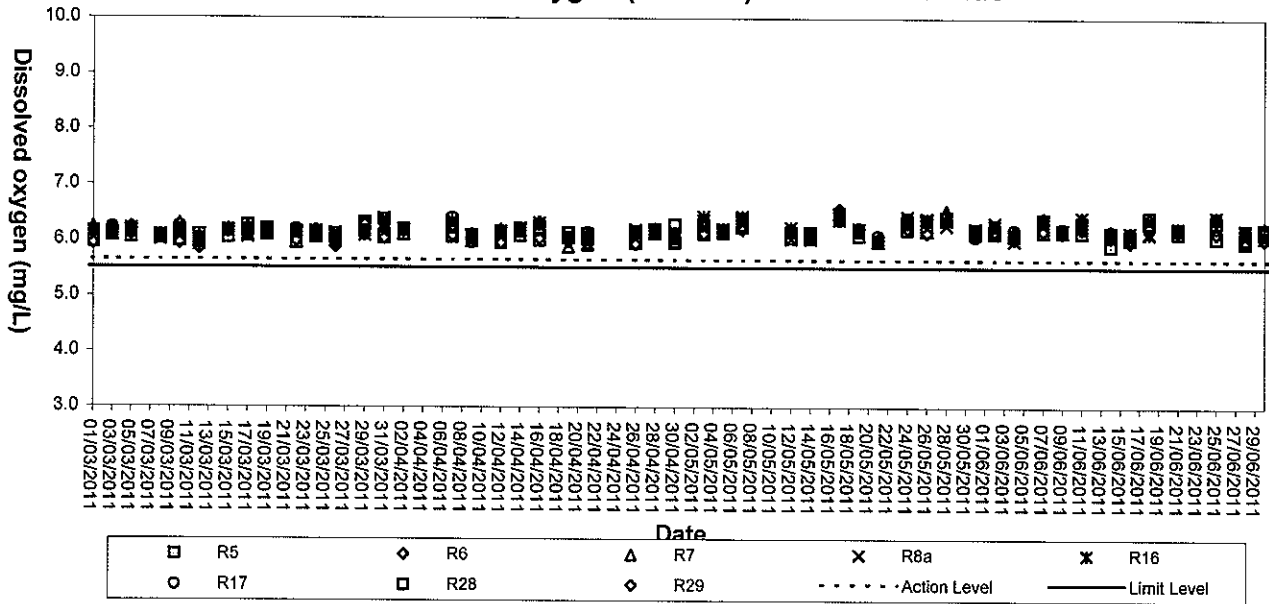


Appendix C3

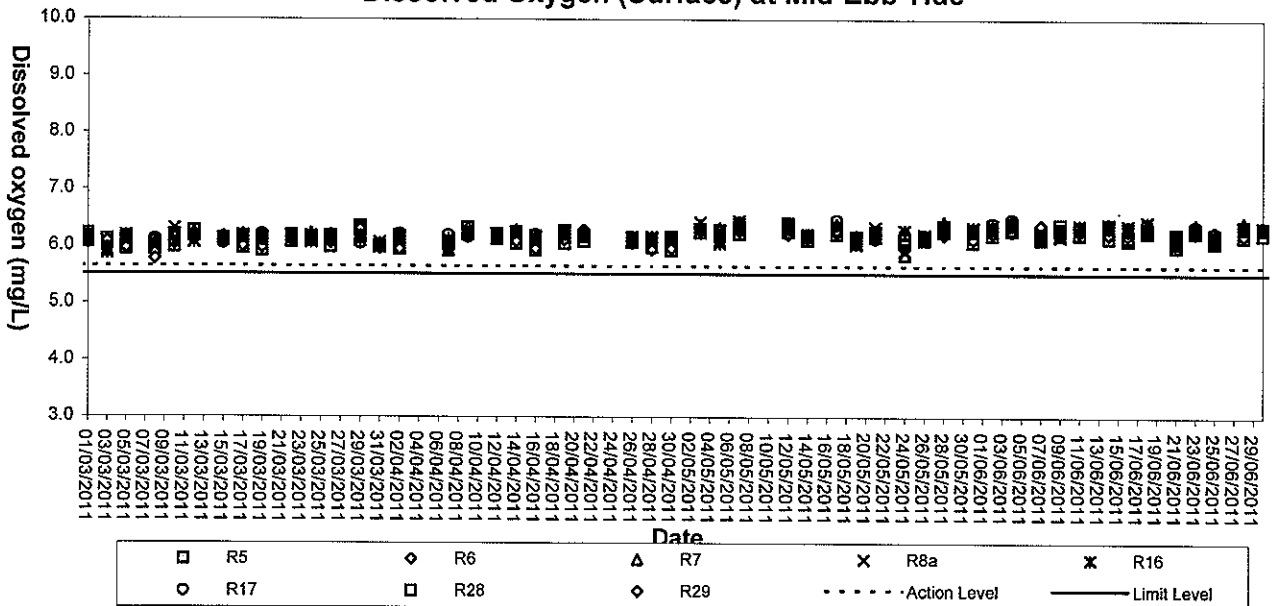
Graphical Plots of Impact Water Quality Monitoring Data



Dissolved Oxygen (Surface) at Mid-Flood Tide

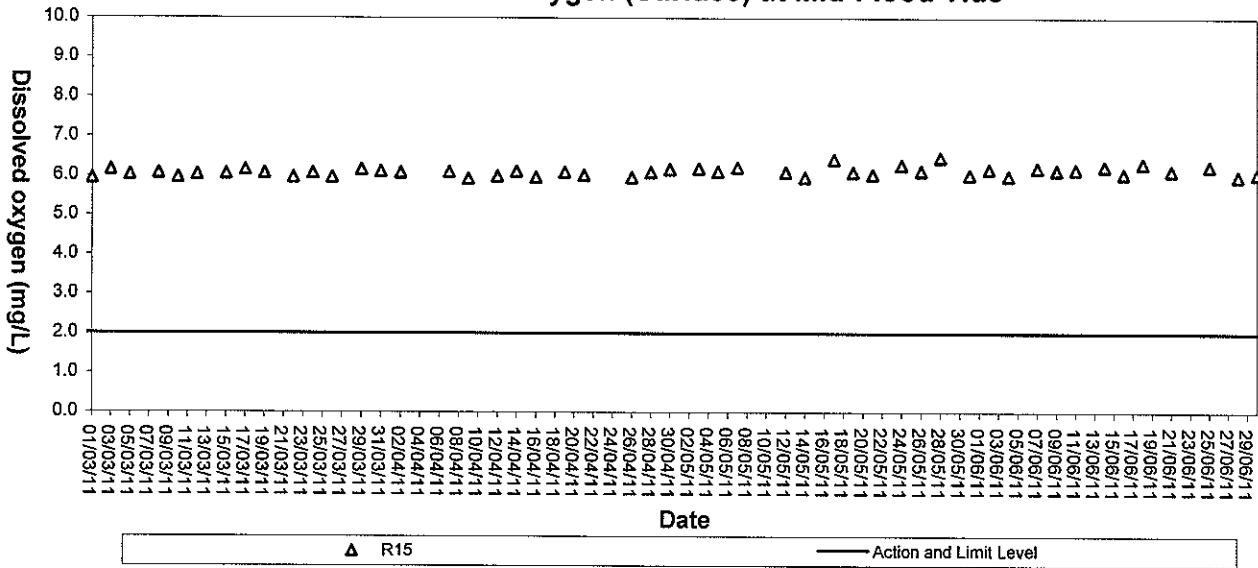


Dissolved Oxygen (Surface) at Mid-Ebb Tide





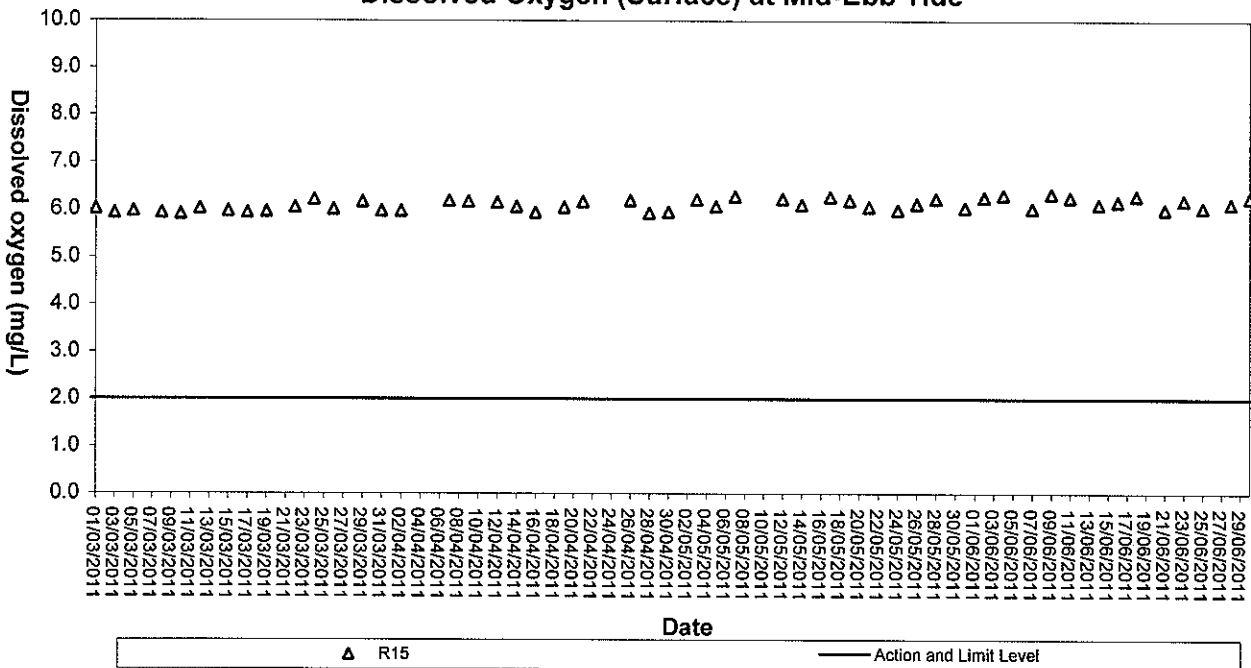
Dissolved Oxygen (Surface) at Mid-Flood Tide



△ R15

— Action and Limit Level

Dissolved Oxygen (Surface) at Mid-Ebb Tide

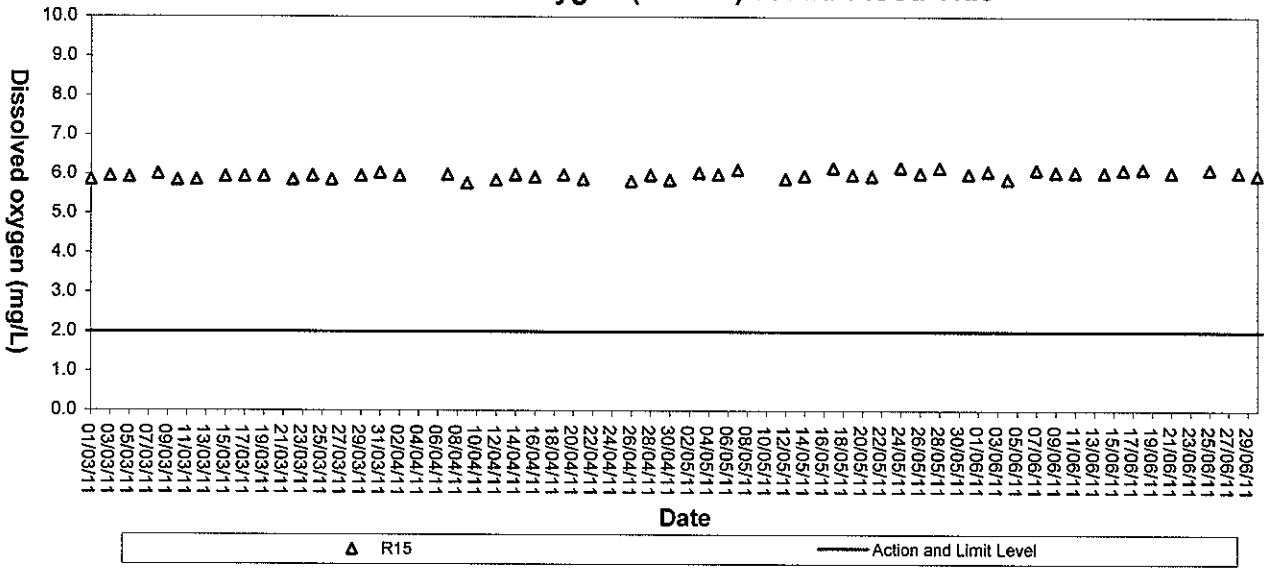


△ R15

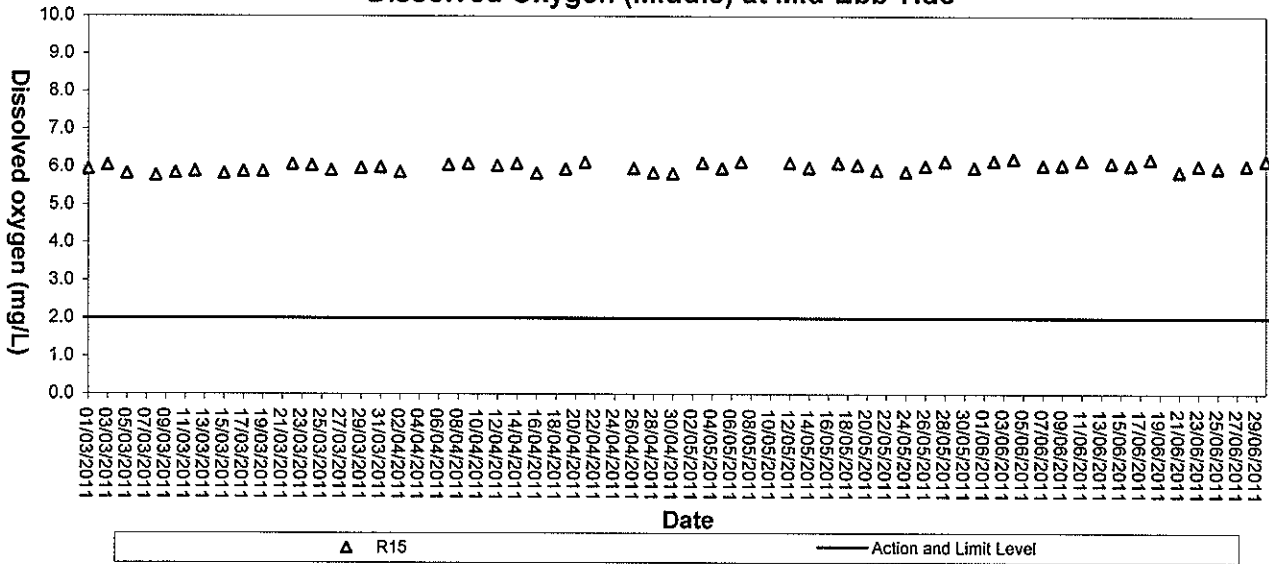
— Action and Limit Level



Dissolved Oxygen (Middle) at Mid-Flood Tide

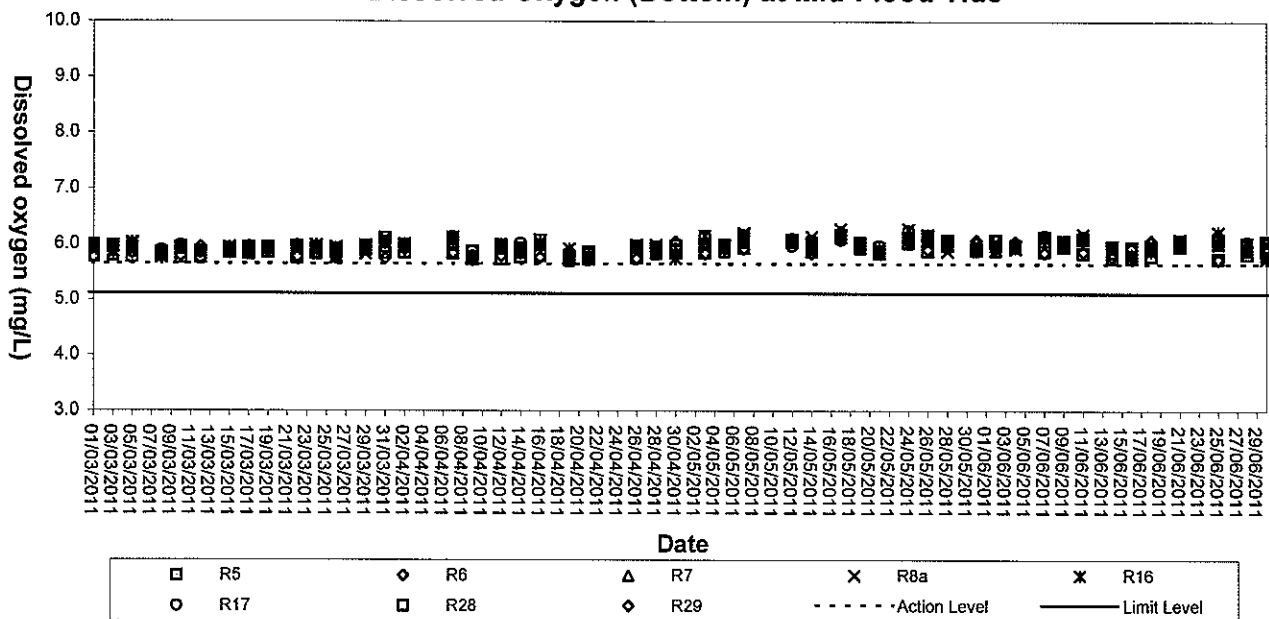


Dissolved Oxygen (Middle) at Mid-Ebb Tide

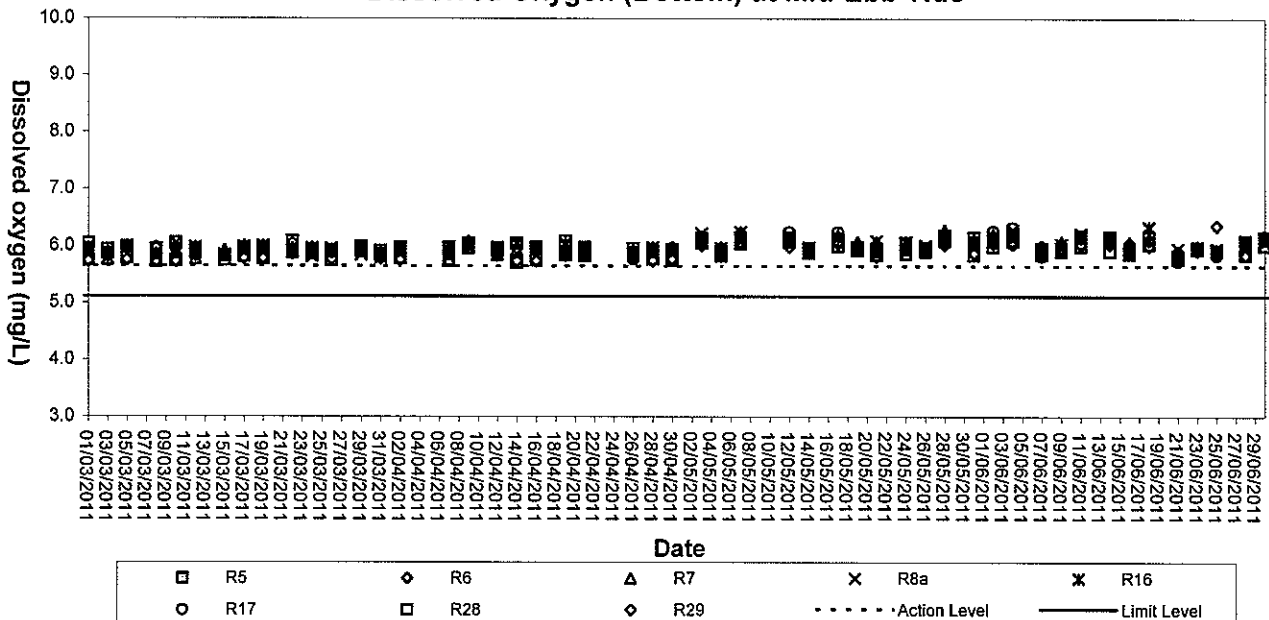




Dissolved Oxygen (Bottom) at Mid-Flood Tide

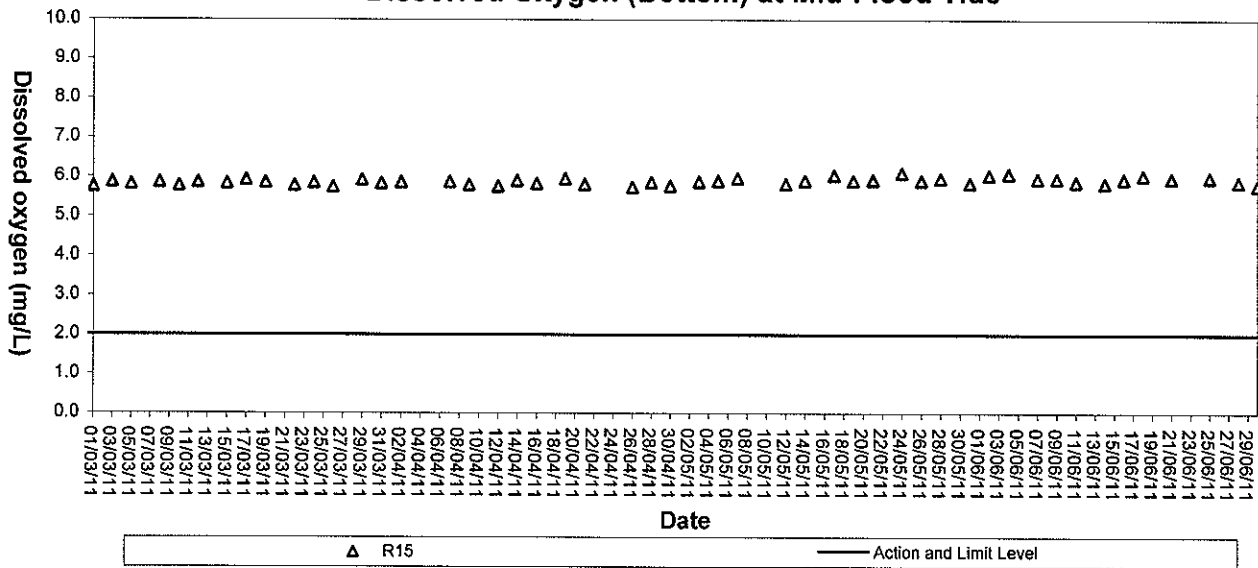


Dissolved Oxygen (Bottom) at Mid-Ebb Tide





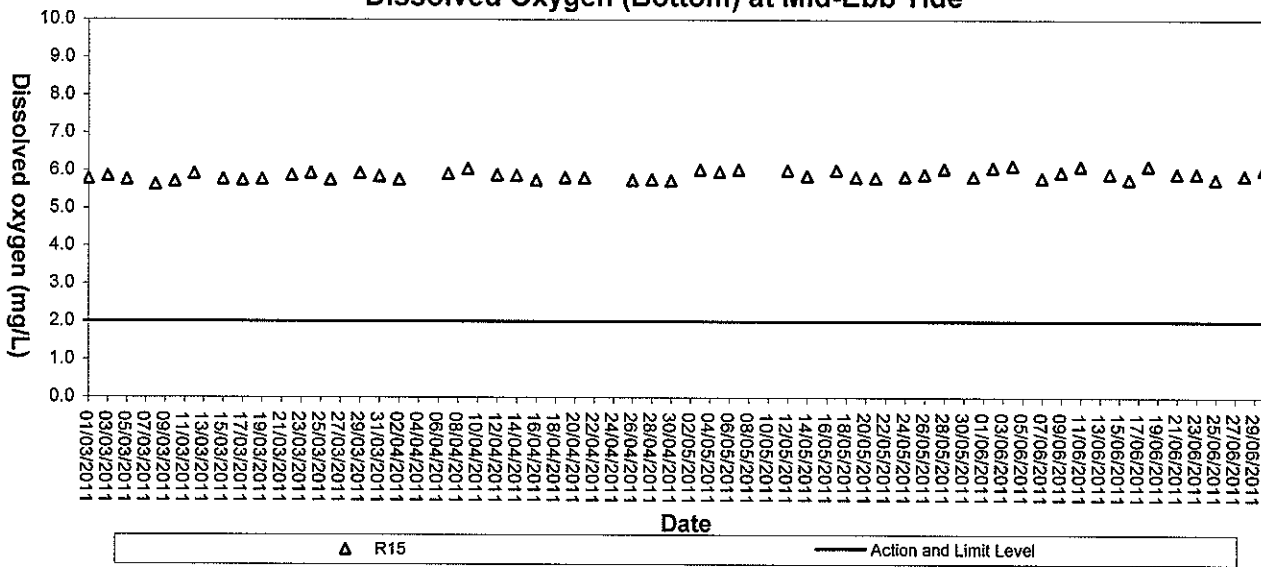
Dissolved Oxygen (Bottom) at Mid-Flood Tide



△ R15

— Action and Limit Level

Dissolved Oxygen (Bottom) at Mid-Ebb Tide

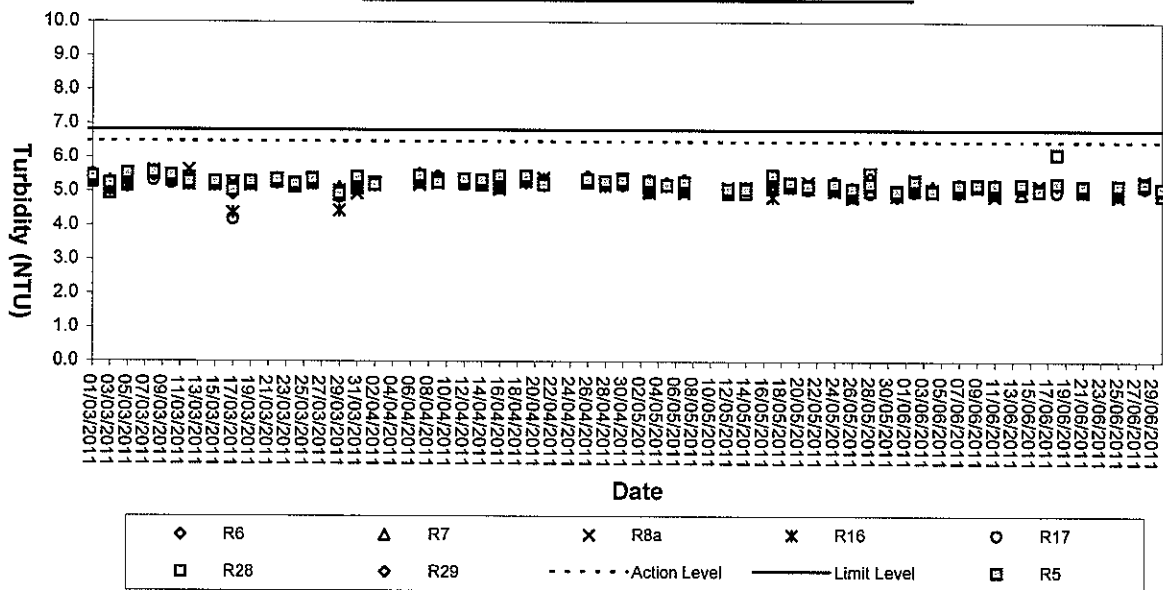


△ R15

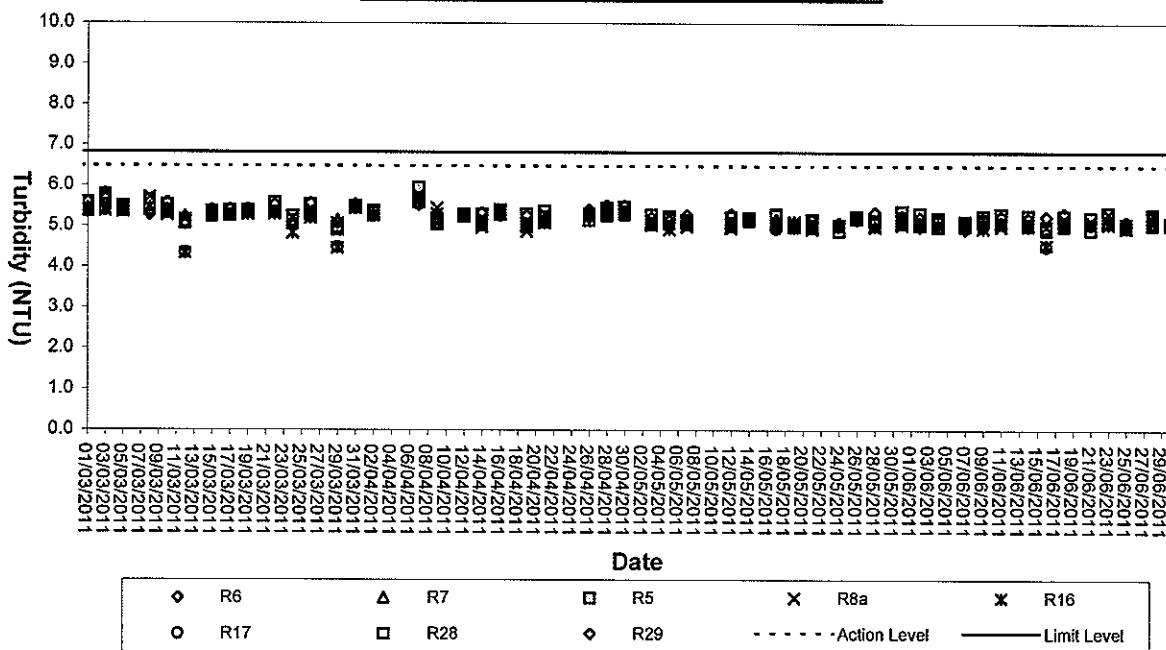
— Action and Limit Level



Turbidity (Depth-average) at Mid-Flood Tide

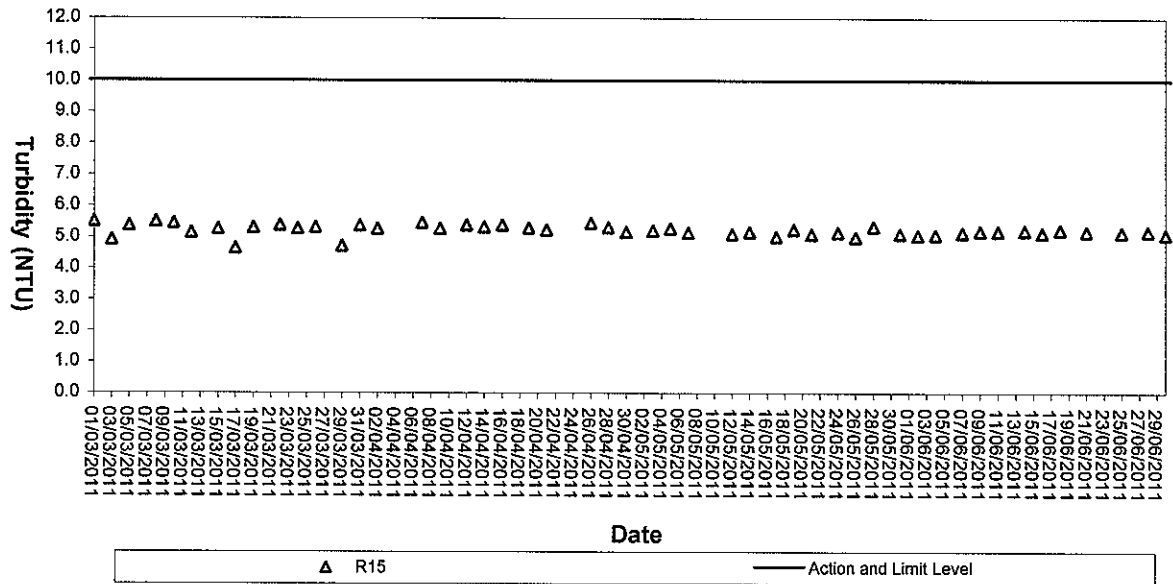


Turbidity(Depth-average) at Mid-Ebb Tide

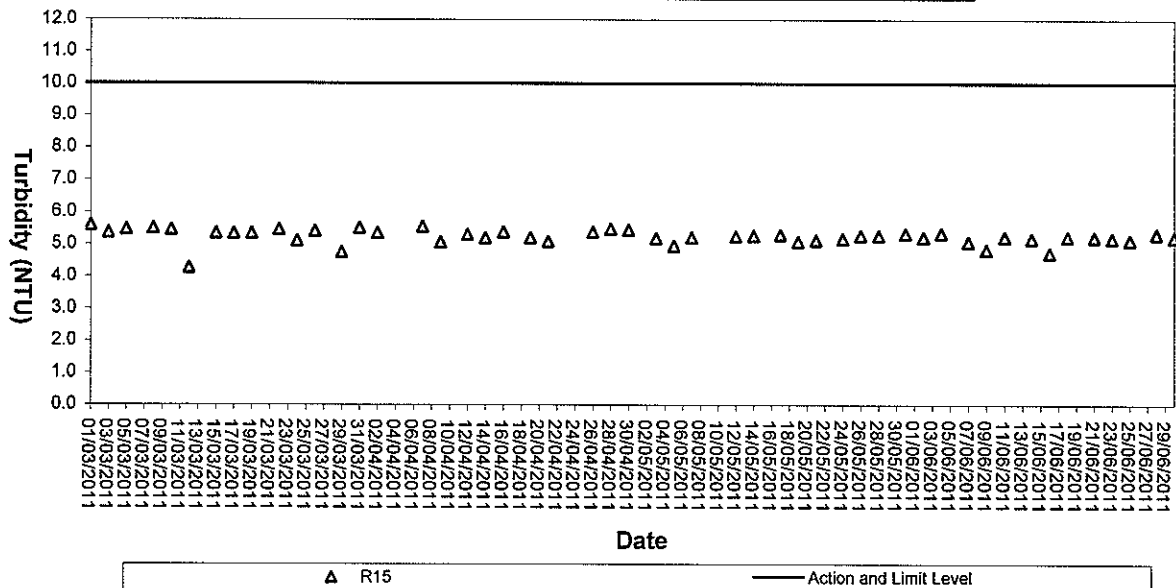




Turbidity (Depth-average) of R15 at Mid-Flood Tide

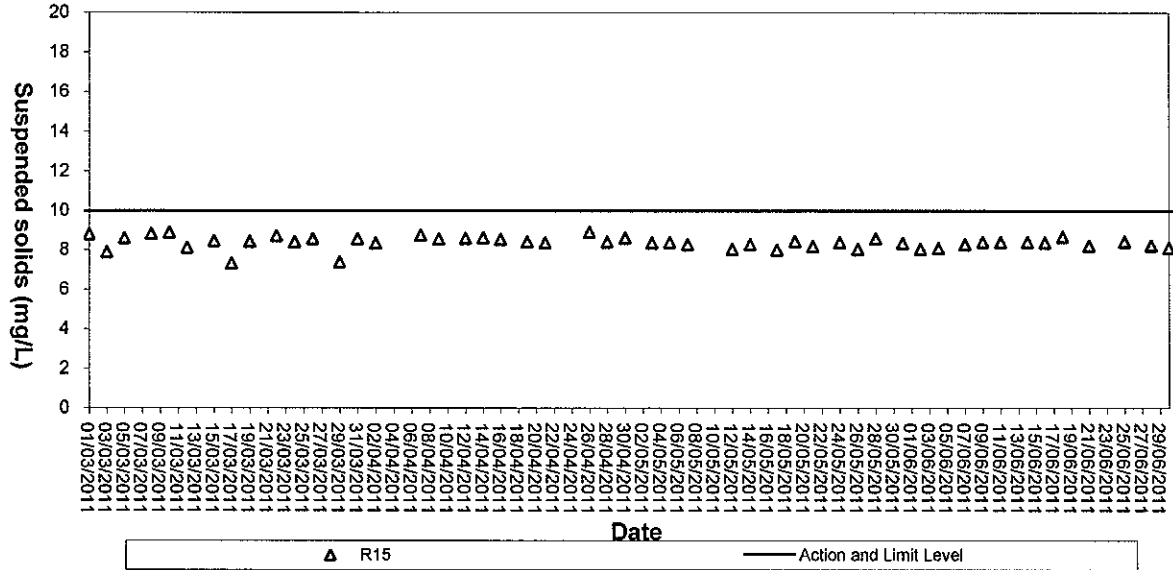


Turbidity (Depth-average) of R15 at Mid-Ebb Tide

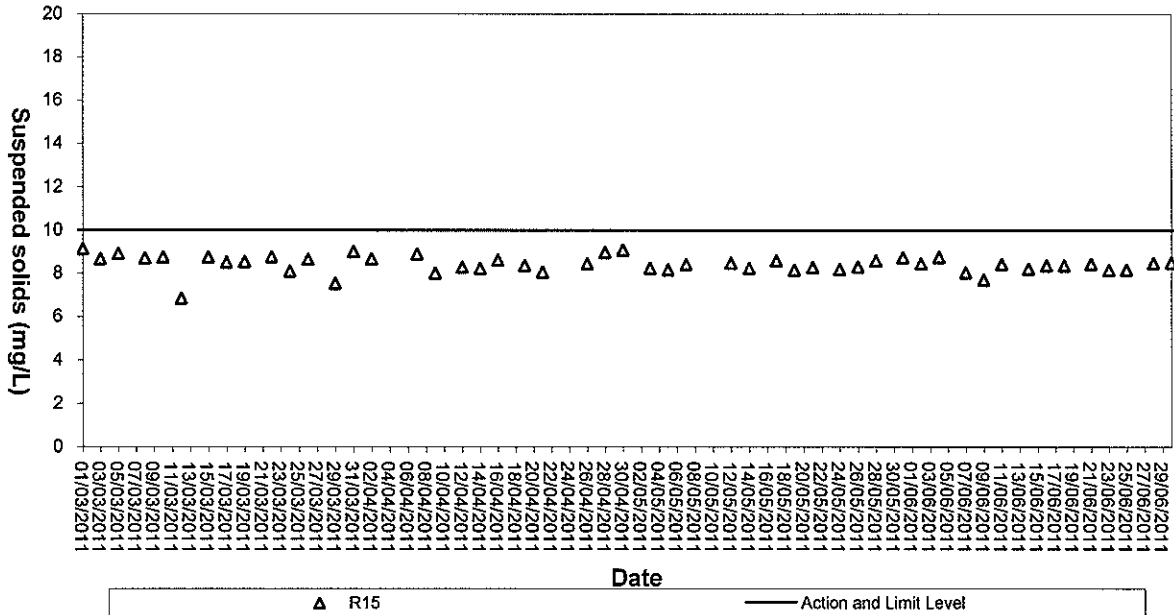




Suspended solids (Depth-average) of R15 at Mid-Flood Tide



Suspended Solids (Depth-average) of R15 at Mid-Ebb Tide





Appendix C4

QA/QC Results of Laboratory Analysis for Water Samples



QA/QC Results of Laboratory Analysis of Total Suspended Solids

Sampling Date	QC Sample	Sample Duplicate		Sample Spike	
	% Recovery *	Sample ID	% Error #	Sample ID	% Recovery ©
02/06/11	92.1	R5FS	3.1	R8FS	90.2
	104.5	R8FM	2.9	R17FM	99.6
	96.2	R17FB	0.0	C1FB	102.1
	93.3	C2FS	3.0	C4FB	97.9
	95.6	R5ES	5.7	R8ES	96.0
	95.1	R8EM	3.2	R17EM	114.6
	104.2	R17EB	6.1	C1EB	112.5
	98.4	C2ES	6.3	C4EB	98.1
04/06/11	93.5	R5FS	3.0	R8FS	94.1
	102.4	R8FM	2.5	R17FM	100.0
	98.7	R17FB	0.0	C1FB	92.3
	97.5	C2FS	3.2	C4FB	92.3
	100.2	R5ES	3.0	R8ES	94.1
	93.9	R8EM	6.3	R17EM	114.3
	101.0	R17EB	6.1	C1EB	101.9
	103.3	C2ES	4.0	C4EB	104.2
07/06/11	98.8	R5FS	3.1	R8FS	102.0
	104.8	R8FM	6.3	R17FM	106.1
	101.0	R17FB	3.0	C1FB	93.8
	92.6	C2FS	6.1	C4FB	100.0
	93.2	R5ES	3.2	R8ES	98.0
	98.3	R8EM	0.0	R17EM	98.3
	102.7	R17EB	5.7	C1EB	116.7
	99.6	C2ES	3.3	C4EB	106.1
09/06/11	98.1	R5FS	3.0	R8FS	94.0
	98.1	R8FM	3.1	R17FM	106.0
	99.4	R17FB	2.9	C1FB	103.9
	93.6	C2FS	3.2	C4FB	100.0
	101.5	R5ES	3.0	R8ES	90.6
	101.9	R8EM	0.0	R17EM	119.1
	96.9	R17EB	5.7	C1EB	107.8
	99.6	C2ES	2.9	C4EB	104.2
11/06/11	93.2	R5FS	3.2	R8FS	100.0
	101.8	R8FM	3.1	R17FM	96.0
	95.0	R17FB	2.9	C1FB	98.1
	92.7	C2FS	3.3	C4FB	100.0
	105.4	R5ES	5.7	R8ES	102.0
	101.2	R8EM	0.0	R17EM	116.7
	103.7	R17EB	2.8	C1EB	110.0
	99.0	C2ES	3.1	C4EB	96.2
14/06/11	93.4	R5FS	3.1	R8FS	95.8
	94.4	R8FM	6.1	R17FM	105.9
	96.7	R17FB	3.2	C1FB	106.1
	96.6	C2FS	3.0	C4FB	103.8
	100.2	R5ES	6.5	R8ES	96.1
	98.2	R8EM	0.0	R17EM	117.0
	98.4	R17EB	3.0	C1EB	107.8
	102.9	C2ES	3.3	C4EB	106.2

Note: (*) % Recovery of QC sample should be between 80% to 120%.
 (#) % Error of Sample Duplicate should be between -10% to 10%.
 (©) % Recovery of Sample Spike should be between 80% to 120%.



QA/QC Results of Laboratory Analysis of Total Suspended Solids

Sampling Date	QC Sample	Sample Duplicate		Sample Spike	
	% Recovery *	Sample ID	% Error #	Sample ID	% Recovery ®
16/06/11	96.5	R5FS	6.5	R8FS	88.5
	100.8	R8FM	2.9	R17FM	92.2
	107.8	R17FB	3.1	C1FB	97.9
	103.3	C2FS	3.4	C4FB	106.1
	104.0	R5ES	3.1	R8ES	104.2
	100.0	R8EM	3.0	R17EM	117.0
	99.4	R17EB	3.3	C1EB	105.9
	101.4	C2ES	3.2	C4EB	104.2
18/06/11	100.6	R5FS	3.2	R8FS	94.1
	101.2	R8FM	3.1	R17FM	107.8
	103.2	R17FB	3.3	C1FB	96.2
	94.8	C2FS	2.8	C4FB	96.2
	94.4	R5ES	6.3	R8ES	96.2
	95.0	R8EM	3.0	R17EM	119.1
	96.5	R17EB	5.9	C1EB	112.5
	98.6	C2ES	6.5	C4EB	98.0
21/06/11	103.6	R5FS	6.1	R8FS	98.5
	93.0	R8FM	3.1	R17FM	95.7
	102.7	R17FB	3.3	C1FB	102.0
	106.7	C2FS	3.1	C4FB	104.0
	107.7	R5ES	6.5	R8ES	92.3
	99.4	R8EM	3.0	R17EM	110.2
	95.4	R17EB	3.2	C1EB	110.2
	102.9	C2ES	3.3	C4EB	108.3
23/06/11	93.7	R5ES	2.8	R8ES	90.6
	103.1	R8EM	5.7	R17EM	106.2
	100.0	R17EB	3.2	C1EB	104.3
	104.2	C2ES	3.1	C4EB	102.0
25/06/11	99.0	R5FS	6.5	R8FS	96.2
	96.0	R8FM	3.1	R17FM	98.0
	103.3	R17FB	3.0	C1FB	107.5
	100.5	C2FS	3.2	C4FB	104.3
	99.4	R5ES	3.3	R8ES	98.0
	97.8	R8EM	3.0	R17EM	110.0
	100.6	R17EB	3.2	C1EB	90.6
	94.7	C2ES	6.5	C4EB	108.3
28/06/11	101.2	R5FS	3.1	R8FS	90.2
	101.8	R8FM	2.9	R17FM	102.0
	106.2	R17FB	0.0	C1FB	97.9
	103.0	C2FS	2.9	C4FB	96.1
	100.4	R5ES	3.2	R8ES	102.1
	96.4	R8EM	3.1	R17EM	110.2
	97.1	R17EB	2.7	C1EB	112.5
	97.8	C2ES	6.5	C4EB	102.0

Note: (*) % Recovery of QC sample should be between 80% to 120%.
 (#) % Error of Sample Duplicate should be between -10% to 10%.
 (®) % Recovery of Sample Spike should be between 80% to 120%.



QA/QC Results of Laboratory Analysis of Total Suspended Solids

Sampling Date	QC Sample	Sample Duplicate		Sample Spike	
	% Recovery *	Sample ID	% Error #	Sample ID	% Recovery ®
30/06/11	105.9	R5FS	3.2	R8FS	100.0
	96.9	R8FM	6.1	R17FM	94.3
	100.4	R17FB	6.3	C1FB	103.8
	92.6	C2FS	3.3	C4FB	92.3
	105.6	R5ES	0.0	R8ES	92.3
	94.0	R8EM	3.0	R17EM	107.7
	102.5	R17EB	3.1	C1EB	107.7
	99.0	C2ES	3.2	C4EB	108.3

Note: (*) % Recovery of QC sample should be between 80% to 120%.
(#) % Error of Sample Duplicate should be between -10% to 10%.
(®) % Recovery of Sample Spike should be between 80% to 120%.



Appendix D

Event-Action Plans



Event and Action Plan for Construction Noise

Event	Action			
	ET Leader	IEC	ER	Contractor
Action Level	<ol style="list-style-type: none"> 1. Notify IEC and the Contractor. 2. Carry out investigation. 3. Report the results of investigation to IEC and the Contractor. 4. Discuss with the Contractor and formulate remedial measures. 5. Increase monitoring frequency to check mitigation measures. 	<ol style="list-style-type: none"> 1. Review with analysed results submitted by ET. 2. Review the proposed remedial measures by the Contractor and advise ER accordingly. 3. Supervise the implement of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC. 2. Implement noise mitigation proposals.
Limit Level	<ol style="list-style-type: none"> 1. Identify the source. 2. Notify IEC, ER, EPD and the Contractor. 3. Repeat measurement to confirm findings. 4. Increase monitoring frequency. 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented. 6. Inform IEC, ER, and EPD the causes & actions taken for the exceedances. 7. Assess effectiveness of the Contractor's remedial actions and keep IEC, EPD and ER informed of the results. 8. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET Leader and the Contractor on the potential remedial actions. 2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise ER accordingly. 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 5. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial actions to IEC within 3 working days of notification. 3. Implement the agreed proposals. 4. Resubmit proposals if problem still not under control. 5. Stop the relevant activity of works as determined by the ER until the exceedance is abated.



Event and Action Plan for Water Quality for Construction Phase

Event	Action			
	ET Leader	IEC	ER	Contractor
Action Level				
Exceedance for one sample	<ol style="list-style-type: none"> 1. Repeat in-situ measurement to confirm finding; 2. Identify source(s) of impact; 3. Inform IEC and Contractor; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC and Contractor; and 6. Repeat measurement on next day of exceedance. 	<ol style="list-style-type: none"> 1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; and 3. Assess the effectiveness of the implemented mitigation measures. 	<ol style="list-style-type: none"> 1. Discuss with IEC on the proposed mitigation measures; and 2. Make agreement on the mitigation measures to be implemented. 	<ol style="list-style-type: none"> 1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET and IEC and propose mitigation measures to IEC and ER; and 6. Implement the agreed mitigation measures.
Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Repeat in-situ measurement to confirm finding; 2. Identify source(s) of impact; 3. Inform IEC and Contractor; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC and Contractor; 6. Ensure mitigation measures are implemented; 7. Prepare to increase the monitoring frequency to daily; and 8. Repeat measurement on next day of exceedance. 	<ol style="list-style-type: none"> 1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; and 3. Assess the effectiveness of the implemented mitigation measures. 	<ol style="list-style-type: none"> 1. Discuss with IEC on the proposed mitigation measures; 2. Make agreement on the mitigation measures to be implemented; and 3. Assess the effectiveness of the implemented mitigation measures. 	<ol style="list-style-type: none"> 1. Inform the Engineer and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET and IEC and propose mitigation measures to IEC and ER within 3 working days; and 6. Implement the agreed mitigation measures.



Event and Action Plan for Water Quality for Construction Phase

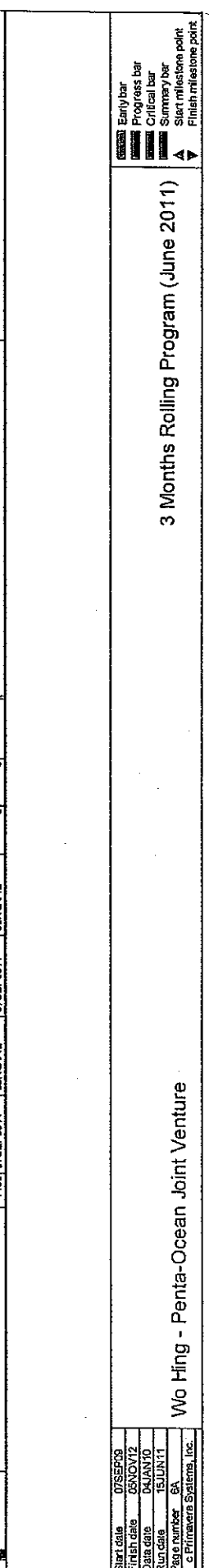
Event	Action			
	ET Leader	IEC	ER	Contractor
Limit Level				
Exceedance for one sample	<ol style="list-style-type: none"> 1. Repeat in-situ measurement to confirm finding; 2. Identify source(s) of impact; 3. Inform IEC, Contractor and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; and 7. Increase the monitoring frequency to daily until no exceedance of Limit level. 	<ol style="list-style-type: none"> 1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; and 3. Assess the effectiveness of the implemented mitigation measures. 	<ol style="list-style-type: none"> 1. Discuss with IEC, ET and Contractor on the proposed mitigation measures; and 2. Request Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented; and 4. Assess the effectiveness of the implemented mitigation measures. 	<ol style="list-style-type: none"> 1. Inform the Engineer and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET and IEC and ER and propose mitigation measures to IEC and ER within 3 working days; and 6. Implement the agreed mitigation measures.
Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Repeat in-situ measurement to confirm finding; 2. Identify source(s) of impact; 3. Inform IEC, Contractor and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; and 7. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days. 	<ol style="list-style-type: none"> 1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; and 3. Assess the effectiveness of the implemented mitigation measures. 	<ol style="list-style-type: none"> 1. Discuss with IEC, ET and Contractor on the proposed mitigation measures; and 2. Request Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented; 4. Assess the effectiveness of the implemented mitigation measures; and 5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit Level. 	<ol style="list-style-type: none"> 1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with ET and IEC and ER and propose mitigation measures to IEC and ER within 3 working days; 6. Implement the agreed mitigation measures; and 7. As directed by the Engineer, to slow down or to stop all or part of the marine work or construction activities.



Appendix E

Work Programme

Act ID	Description	Orig Dur	Early Start	Early Finish	Late Start	Late Finish	Total Float	Proc Float	2009	2010	2011
S1-9050	Portion K Kiosk for RTU & Connect To SCADA	30	02MAY11	31MAY11	03AUG11	07SEP09 A	0	0			
S1-9050B10	Portion K Kiosk for RTU & Connect To SCADA	30	24AUG11	23SEP11	17SEP11	07SEP09 A	24d	0			
S1-9060	Area K Constructed MBV Testing	90	01JUN11	30JUL11	02SEP11	17SEP11	93d	93d			
S1-9060B10	Area K Constructed MBV Testing	90	23SEP11	21NOV11	17OCT11	17OCT11	24d	24d			
M1000	Permit Application & Advance Notification	120	07SEP09 A	20FEB10	07SEP09 A	09APR10	48d	0			
M1010	Submission & Approval - MS & Temp Works Design	120	07SEP09 A	20FEB10	07SEP09 A	11MAY10	80d	0			
M1010A10	Preparation & Submission of Risk Assessment	217	07SEP09 A	11APR10	07SEP09 A	21APR10	10d	0			
M1010A20	Preparation & Submission of Method Statement	217	07SEP09 A	11APR10	07SEP09 A	21APR10	10d	0			
M1010A30	Preparation & Submission of Temp. Works	217	07SEP09 A	11APR10	07SEP09 A	21APR10	10d	0			
M1020	Bathymetric Survey	120	22FEB10 A	27FEB10 A	22FEB10 A	27FEB10 A	0	0			
M1030	Material Procurement & Delivery	180	06NOV09 A	04MAY10	06NOV09 A	23JUL10	80d	0			
M1040	Submission & Approval of EM&A Manual	90	07SEP09 A	17JAN10 A	07SEP09 A	17JAN10 A	0	0			
M1050	EM&A - Monitoring & Update	640	06DEC09 A	23AUG11	06DEC09 A	15NOV11	64d	36d			
M1060A10	Portion H1 Coating Yard Set-up	60	02APR10 *	04MAY10	29MAY10	23JUL10	80d	0			
M1070	Portion H1 Pipe Material On-site Coating	34	05MAY10	02AUG10	04MAY10	23JUL10	80d	0			
M1080	West Kowloon Cofferdam for Landfall (H1)	180	21FEB10	19AUG10	10APR10	06OCT10	48d	0			
M1080A10	Set-up for Cofferdam at Landfall (H1 & J)	10	02APR10	11APR10	12APR10	21APR10	10d	0			
M1080B10	Solder Pipe Wall Construction	280	12APR10	27DEC10	22APR10	05JAN11	10d	0			
M1090B20	Excavation of Cofferdam	90	28DEC10	17MAR11	07JAN11	27MAR11	10d	0			
M1090	Sai Ying Pun Cofferdam for Landfall (J)	180	21FEB10	19AUG10	10APR10	06OCT10	48d	0			
M2060	Set-up For Pipe Pulling	60	21JUL10	18SEP11	07SEP10	05NOV10	48d	0			
M2060A10	Mobilization of Plants & Mechanisms	8	27JAN11	03FEB11	08FEB11	13FEB11	10d	0			
M2070	Dredging Works	150	22APR10	18SEP10	09JUN10	05NOV10	48d	0			
M2080	Portion I Submarine Pipe Pulling	130	19SEP10	20JAN11	08NOV10	15MAR11	46d	0			
M2080B10	Portion I Submarine Pipe Pulling	85	05MAY11	28JUL11	15MAY11	07AUG11	10d	0			
M2090	Portion H1&J Tie-in With Submarine Pipe Line	30	27JAN11	29FEB11	16MAR11	14APR11	48d	0			
M2090A10	Portion H1&J Tie-in With Submarine Pipe Line	20	29JUL11	17AUG11	08AUG11	27AUG11	10d	0			
M2100	Portion I Submarine Pipe Pressure Testing & CCTV	30	26FEB11	27MAR11	15APR11	14MAY11	48d	0			
M2100A10	Portion I Submarine Pipe Pressure Testing & CCTV	20	18AUG11	06SEP11	28AUG11	16SEP11	10d	0			
M2110	Portion H1&J Seawall Replenishment	120	28MAR11	25JUL11	28MAY11	23SEP11	52d	22d			
M2110A10	Portion H1&J Seawall Replenishment	90	18AUG11	18NOV11	17SEP11	15DEC11	30d	30d			
M2120	Portion I Submarine Pipeline Backfilling	185	28MAR11	28SEP11	15MAY11	15NOV11	48d	0			
M2120A10	CP Test Box Installation (On Land)	150	30MAY11	26OCT11	19JUL11	15DEC11	50d	50d			
M2130	CP Test Box Installation (On Land)	60	28MAR11	26MAY11	02SEP11	31OCT11	166d	125d			
M2130A10	CP Test (Close Internal Potential Survey)	90	29SEP11	28OCT11	16NOV11	15NOV11	10d	0			
M2140	CIP Test (Close Internal Potential Survey)	30	29SEP11	28OCT11	16NOV11	15DEC11	48d	48d			
M2140A10	CIP Test (Close Internal Potential Survey)	30	06NOV11	05DEC11	18NOV11	15DEC11	10d	10d			
M2150	Completion of Section 1 Works	0		15DEC11 *	15DEC11 *	15DEC11 *	0	0			
*Section 2		448	07SEP09 A	28NOV10	07SEP09 A	28NOV10	0	0			
*Section 4		578	07SEP09 A	03APR11	07SEP09 A	03APR11	0	0			
*Section 6		1156	07SEP09 A	03NOV12	07SEP09 A	03NOV12	0	0			



3 Months Rolling Program (June 2011)

Contract No. 94MSD108
Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun

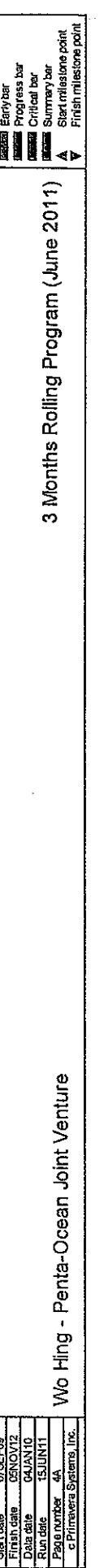
Act ID	Description	Orig Dur	Early Start	Early Finish	Latest Start	Latest Finish	Total Float	Free Float	Free Float
S1-8020A10	Portion F DN800 SWM Works CH432.0-464.7	120	12NOV10	11MAR11	20JUN11	17OCT11	220d	71d	149d
S1-8030	Area F Portional Pipe Testing	14	22MAY11	04JUN11	18OCT11	31OCT11	149d	0	149d
Portion H1									
S1-7010	Portion H1 Temporary Access Road	80	26DEC09 A	31JAN10	26DEC09 A	05MAR10	33d	2d	2d
S1-7020	Portion H1 Pipe Works CH1466.5-1516.5 (C)	40	20JUL11	29AUG11	20JUL11	29AUG11	0	0	0
S1-7030	Portion H1 Pipe Works CH1516.5-1544.7 (C-S well)	50	29AUG11	17OCT11	29AUG11	17OCT11	0	0	0
S1-7040	Area H1 Portional Pipe Testing	14	18OCT11	31OCT11	18OCT11	31OCT11	0	0	0
Portion J									
S1-8010	Portion J Pipe Works CH10.0-48.0 (C-S Wall)	40	20JUL11	06SEP11	06SEP11	17OCT11	41d	0	41d
S1-8020	Portion J Pipe Works CH140.0-339.0 (C)	300	02OCT10	28JUL11	12NOV10	07SEP11	41d	0	41d
S1-8020B10	Stage 1 Excavation & Shoring CH250-290 S1	55	22JUN10*	15AUG10	29AUG10	22OCT10	66d	0	66d
S1-8020B20	Pipe Laying & Connection (Welding)	20	18AUG10	04SEP10	23OCT10	11NOV10	66d	0	66d
S1-8020B30	Associated Chamber Construction	30	05SEP10	04OCT10	12NOV10	11DEC10	66d	0	66d
S1-8020B40	Backfilling & Reinstatement	15	05OCT10	19OCT10	12DEC10	26DEC10	66d	0	66d
S1-8020B50	Stage 1 Excavation & Shoring CH250-290 S2	20	27FEB11	18MAR11	06MAY11	29JUN11	66d	0	66d
S1-8020B60	Associated Chamber Construction	30	18MAR11	17APR11	26MAY11	24JUN11	66d	0	66d
S1-8020B70	Backfilling & Reinstatement	15	18APR11	02MAY11	25JUN11	09JUL11	66d	0	66d
S1-8020C10	Stage 2 Excavation & Shoring CH180-250	55	20OCT10	13DEC10	27DEC10	19FEB11	66d	0	66d
S1-8020C20	Pipe Laying & Connection (Welding)	30	14DEC10	12JAN11	20FEB11	21MAR11	66d	0	66d
S1-8020C30	Associated Chamber Construction	30	13JAN11	1FEB11	22MAR11	20APR11	66d	0	66d
S1-8020C40	Backfilling & Reinstatement	15	12FEB11	27APR11	21MAY11	09MAY11	66d	0	66d
S1-8020D10	Stage 3 Excavation & Shoring CH140-180	35	11OCT10*	14NOV10	10JUL11	13AUG11	272d	0	272d
S1-8020D20	Pipe Laying & Connection (Welding)	20	18NOV10	04DEC10	14AUG11	02SEP11	272d	0	272d
S1-8020D30	Associated Chamber Construction	30	09DEC10	03JAN11	03SEP11	02OCT11	272d	0	272d
S1-8020D40	Backfilling & Reinstatement	15	04JAN11	18JAN11	18JAN11	17OCT11	272d	0	272d
S1-8020E10	Stage 4 Excavation & Shoring CH46-CH140	50	30MAY11	18JUL11	10JUL11	28AUG11	41d	0	41d
S1-8020E20	Pipe Laying & Connection (Welding)	20	18JUL11	07AUG11	29AUG11	17SEP11	41d	0	41d
S1-8020E30	Associated Chamber Construction	10	28AUG11	27AUG11	18SEP11	07OCT11	41d	0	41d
S1-8020E40	Backfilling & Reinstatement	10	28AUG11	08SEP11	08OCT11	17OCT11	41d	0	41d
S1-8020F10	Stage 5 Excavation & Shoring CH280-340	50	03MAY11	21JUN11	10JUL11	28AUG11	66d	0	66d
S1-8020F20	Pipe Laying & Connection (Welding)	30	22JUN11	21JUL11	10AUG11	28SEP11	66d	0	66d
S1-8020F30	Associated Chamber Construction	20	22JUL11	20AUG11	18NOV10	17OCT11	51d	10d	10d
S1-8030	Portion J Kiosk for RTU & Connect To SCADA	30	20OCT10	18NOV10	18SEP11	17OCT11	333d	292d	292d
S1-8040	Portion J Pipe Works CH339.0-388.4 (TL-D)	209	17MAR10	11OCT10	27APR10	21NOV10	41d	0	41d
S1-8040A10	Preparation & Submission of Method Statement	28	03MAR10	30MAR10	05OCT10	01NOV10	216d	0	216d
S1-8040A20	Preparation & Submission of Method Statement	28	03MAR10	30MAR10	05OCT10	01NOV10	216d	0	216d
S1-8040A30	Preparation & Submission of Temp. Works	0	01SEP10*	02OCT10	02NOV10	28NOV10	55d	0	55d
S1-8040A40	Grading of Excavation Permit	25	08SEP10	02OCT10	02NOV10	28NOV10	55d	0	55d
S1-8040B10	Access Shaft Fabrication	65	20OCT10	26DEC10	17DEC10	14FEB11	53d	0	53d
S1-8040B20	Heading Tunnel Excavation (Hard Shield)	70	27DEC10	06MAR11	20FEB11	30APR11	55d	0	55d
S1-8040B30	Pipe Installation Inside Heading Tunnel	40	07MAR11	15APR11	01MAY11	08MAY11	55d	0	55d
S1-8040B40	Backfilling & Reinstatement	10	16APR11	25APR11	10JUN11	18JUN11	55d	0	55d
S1-8050	Portion J Pipe Works CH336.4-386.4 (O)	40	28APR11	20JUN11	20JUN11	20JUL11	55d	0	55d
S1-8060	Portion J Pipe Works DN1000 CH100-22.7 (C)	80	05JUN11	23AUG11	30JUL11	17OCT11	55d	14d	14d
S1-8070	Area J Portional Pipe Testing	14	07SEP11	20SEP11	18OCT11	31OCT11	41d	0	41d
Portion K									
S1-9010	Within 365 Days Commencement of Portion K	265	07SEP09 A	03SEP10	07SEP09 A	10DEC10	93d	0	93d
S1-9020	Portion K Initial Survey	15	06SEP10	23SEP10	11DEC10	23DEC10	93d	0	93d
S1-9030	Portion K Utilities Detection & Trial Pit	20	24SEP10	13OCT10	26DEC10	14JAN11	93d	0	93d
S1-9030B10	Portion K Utilities Detection & Trial Pit	10	16MAY11*	29MAY11	18MAY11*	29MAY11*	0	0	0
S1-9040	Portion K Pipe Works (Construction of MBV)	200	14OCT10	01MAY11	15JAN11	02AUG11	83d	0	83d
S1-9040B10	MBV Installation & Associated Duct Works	95	28MAY11	23AUG11	18JUN11	18SEP11	24d	0	24d

Start date 07SEP09
Finish date 06NOV12
Date 04JAN10
Run date 15JUN11
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3 Months Rolling Program (June 2011)

Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

Act ID	Orig Dur	Early Start	Early Finish	Late Start	Late Finish	Total Float	Free Float	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
S1-5040		60	09NOV09	14NOV09	09NOV09	0	0												
S1-5050		15	21FEB10	07MAR10	21FEB10	0	0												
S1-5060		15	21FEB10	07MAR10	21FEB10	0	0												
S1-5070		80	27MAR11	14JUN11	30JUN11	85d	31d												
S1-5070B10		60	20MAY11	14AUG11	17SEP11	41d	0												
S1-5080		60	15JUL11	14AUG11	18SEP11	41d	23d												
S1-5080A		30	08AUG11	08SEP11	17OCT11	41d	0												
S1-5090		70	28JUL10	09OCT10	20SEP10	64d	0												
S1-5090A10		60	06FEB10	06MAY10	09OCT10	209d	0												
S1-5090A20		60	06FEB10	06MAY10	09OCT10	209d	0												
S1-5090A30		60	06FEB10	06MAY10	09OCT10	209d	0												
S1-5090B10		40	07APR10	02NOV10	11DEC10	209d	94d												
S1-5090B20		10	19AUG10	28AUG10	12DEC10	115d	0												
S1-5090C10		20	28AUG10	17SEP10	20OCT10	115d	0												
S1-5095		50	02DEC10	20JUN11	15JUL11	64d	0												
S1-5095B10		50	02DEC10	20JUN11	15JUL11	64d	0												
S1-5095B20		10	21JAN11	29APR11	09MAY11	95d	0												
S1-5095B30		30	31JAN11	01MAY11	06MAY11	95d	0												
S1-5100		25	21JUN11	15JUL11	24AUG11	64d	0												
S1-5100A		25	03MAR11	28MAR11	05JUN11	95d	0												
S1-5110		120	04OCT10	31JAN11	07DEC10	64d	0												
S1-5110A10		60	06FEB10	06APR10	12MAY10	95d	0												
S1-5110A20		60	06FEB10	06APR10	12MAY10	95d	0												
S1-5110B10		60	06FEB10	06APR10	12MAY10	95d	0												
S1-5110B20		60	06FEB10	06APR10	12MAY10	95d	0												
S1-5110C10		30	30MAY10	28JUN10	02SEP10	95d	0												
S1-5110C20		42	28JUN10	09AUG10	02OCT10	95d	0												
S1-5115		9	10AUG10	18AUG10	13NOV10	95d	0												
S1-5115B10		25	23MAR11	18APR11	28MAY11	64d	0												
S1-5115B20		30	08OCT10	08NOV10	11JAN11	95d	0												
S1-5115B30		10	07NOV10	10APR11	10APR11	145d	0												
S1-5115B30A		30	17NOV10	16DEC10	11APR11	145d	0												
S1-5120		25	17APR11	11MAY11	20JUN11	64d	0												
S1-5120A		25	17DEC10	10JAN11	11MAY11	145d	50d												
S1-5130		142	05MAR10	25JUL10	06MAR10	0	0												
S1-5130A10		60	05FEB10	03APR10	03DEC10	305d	0												
S1-5130A20		60	06FEB10	06APR10	06DEC10	305d	194d												
S1-5130A30		60	06FEB10	06APR10	06DEC10	305d	194d												
S1-5130B10		14	18SEP10	01OCT10	06FEB11	141d	28d												
S1-5130C10		30	18SEP10	17OCT10	11JAN11	155d	20d												
S1-5135		50	01FEB11	22MAR11	06APR11	64d	0												
S1-5135B10		25	07NOV10	01DEC10	10FEB11	95d	0												
S1-5135B20		10	02DEC10	11DEC10	09AUG11	290d	0												
S1-5135B30		30	12DEC10	10JAN11	18AUG11	250d	0												
S1-5140		14	07SEP11	20SEP11	19OCT11	41d	41d												
S1-5140B10		14	07APR11	14APR11	18OCT11	200d	200d												
S1-5140B20		180	23NOV10	21MAY11	23NOV10	0	0												
S1-6010		100	24MAR10	01JUL10	02MAY11	343d	0												
S1-6010B10		10	02JUL10	10JUN11	19JUN11	343d	0												
S1-6010B20		30	12JUL10	10AUG10	20JUN11	343d	0												
S1-6010B30		50	11AUG10	29SEP10	20JUL11	343d	63d												
S1-6010C10		40	02DEC10	10JAN11	08SEP11	280d	131d												
S1-6020		120	28JUL10	22NOV10	26JUL10	0	0												



3 Months Rolling Program (June 2011)

Wo Hing - Penta-Ocean Joint Venture

Act ID	Description	Orig		Early		Late		Total		Frcs
		Dur	Start	Start	Finish	Start	Finish	Float	Float	
S1-3040850	Concrete of Pipe Trough	3	13OCT10	13OCT10	15OCT10	28APR11	01MAY11	186d	0	0
S1-3040810	Excavation & Shoring For Watermain	15	18OCT10	30OCT10	02MAY11	16MAY11	16MAY11	198d	0	0
S1-3050	Portion C1 Pipe Works CH237.5-280 (PT)	50	05MAY10	23JUN10	22DEC10	29FEB11	09MAY11	231d	0	0
S1-3050810	Pipe Laying & Connection (Welding)	10	31OCT10	09NOV10	17MAY11	29MAY11	09MAY11	198d	0	0
S1-3050820	Concrete Surround for Installed Watermain	6	10NOV10	15NOV10	27MAY11	01JUN11	01JUN11	186d	0	0
S1-3050830	Backfilling of Pipe Trough	5	16NOV10	20NOV10	02JUN11	08JUN11	08JUN11	186d	0	0
S1-3050840	Backfilling & Reinstatement	10	21NOV10	30NOV10	07JUN11	15JUN11	15JUN11	198d	0	0
S1-3050	Portion C1 Pipe Works CH280.0-325.5 (O)	83	02DEC10	21FEB11	17JUN11	07SEP11	07SEP11	198d	0	0
S1-3070	Area C1 Portional Pipe Testrig	30	22FEB11	23MAR11	02OCT11	31OCT11	31OCT11	223d	223d	0
WATERMAIN										
S1-4020	Portion E1A Pipe Works CH387.5-576.9 (O)	180	17MAR10	12SEP10	24AUG10	19FEB11	16FEB11	160d	0	0
S1-4020A30	Preparation & Submission of Risk Assessment	40	03MAR10	11APR10	11APR10	18SEP10	18SEP10	160d	0	0
S1-4020A30	Preparation & Submission of Method Statement	40	03MAR10	11APR10	10AUG10	18SEP10	18SEP10	160d	0	0
S1-4020A40	Preparation & Submission of Temp. Works	40	03MAR10	11APR10	10AUG10	18SEP10	18SEP10	160d	0	0
S1-4020B10	Stage 1 U/D & Trial Pit (CH380-420)	52	03MAY10	23JUN10	10OCT10	30NOV10	30NOV10	160d	0	0
S1-4020B20	Fabrication of Access Shaft	30	12SEP10	11OCT10	18FEB11	20MAR11	20MAR11	160d	0	0
S1-4020B30	Excavation & Support for Trenchless Works	45	12OCT10	26NOV10	21MAR11	04MAY11	04MAY11	160d	0	0
S1-4020B40	Pipe Laying & Joint Connection	20	26NOV10	15DEC10	05MAY11	24MAY11	24MAY11	160d	0	0
S1-4020B50	Backfilling & Reinstatement	7	15DEC10	22DEC10	25MAY11	31MAY11	31MAY11	160d	160d	0
S1-4020C05	Existing Trees Relocation	4	19AUG10*	29AUG10	03JUN11	06JUN11	06JUN11	288d	0	0
S1-4020C10	Stage 2 U/D & Trial Pit (CH420-CH480)	10	23AUG10	01SEP10	07JUN11	18JUN11	18JUN11	288d	0	0
S1-4020C20	Excavation & Shoring	53	02SEP10	21OCT10	17JUN11	05AUG11	05AUG11	288d	0	0
S1-4020C30	Pipe Laying & Connection (Welding)	25	22OCT10	16NOV10	06AUG11	30AUG11	30AUG11	288d	0	0
S1-4020C40	Backfilling & Reinstatement	28	16NOV10	22NOV10	31AUG11	08SEP11	08SEP11	288d	288d	0
S1-4020D10	Stage 3 U/D & Trial Pit (CH480-576.9)	6	01JUN11*	03JUN11	01JUN11	05JUN11	05JUN11	0	0	0
S1-4020D20	Excavation & Shoring	82	07JUN11	06SEP11	07SEP11	08SEP11	08SEP11	0	0	0
S1-4020D30	Pipe Laying & Connection (Welding)	25	07SEP11	01OCT11	07SEP11	01OCT11	01OCT11	0	0	0
S1-4020D40	Backfilling & Reinstatement	18	02OCT11	17OCT11	02OCT11	17OCT11	17OCT11	0	0	0
S1-4030	Portion E1A Pipe Works CH576.9-585.9 (TL-B)	108	23FEB11*	10JUN11	02JUL11	17OCT11	17OCT11	129d	129d	0
S1-4030B10	Fabrication of Access Shaft	55	07SEP10*	20NOV10	12MAR11	05MAY11	05MAY11	166d	0	0
S1-4030B20	Excavation & Support for Trenchless Works	50	21NOV10	09JAN11	09MAY11	24JUN11	24JUN11	166d	0	0
S1-4030B30	Pipe Laying & Joint Connection	15	10JAN11	24JAN11	23JUN11	09JUL11	09JUL11	166d	0	0
S1-4030B40	Backfilling & Reinstatement	8	25JAN11	01FEB11	10OCT11	17OCT11	17OCT11	258d	258d	0
S1-4050	Area E1A Portional Pipe Testrig	14	18OCT11	31OCT11	18OCT11	31OCT11	31OCT11	0	0	0
PORTION E1B SWM										
S1-4010	Portion E1B Diversion of Existing Storm Drain	50	13SEP10	01NOV10	06MAY11	24JUN11	24JUN11	235d	0	0
S1-4010A10	Trees Transplanting (LCSO Consent Required)	3	09SEP10*	13SEP10	26JAN11	30JAN11	30JAN11	196d	0	0
S1-4010A20	Temporary Relocation of Irrigation Pipe	60	14SEP10	12NOV10	31JAN11	31MAY11	31MAY11	196d	0	0
S1-4010A30	Temporary Relocation of Existing Storm Drain	60	14SEP10	12NOV10	31JAN11	31MAY11	31MAY11	196d	0	0
S1-4010A50	Excavation for Irrigation Pipe Perm. Diversion	20	11MAR11	30MAR11	24AUG11	12SEP11	12SEP11	166d	0	0
S1-4010A60	Irrigation Pipe Installation	10	31MAR11	09APR11	28SEP11	07OCT11	07OCT11	191d	191d	0
S1-4010A70	Excavation for Storm Drain Diversion	20	11MAR11	30MAR11	24AUG11	12SEP11	12SEP11	166d	0	0
S1-4010A80	Pipe Laying & MH Construction	25	31MAR11	24APR11	18SEP11	07OCT11	07OCT11	166d	0	0
S1-4010A90	Backfilling & Reinstatement	10	25APR11	04MAY11	19OCT11	17OCT11	17OCT11	166d	27d	0
S1-4040	Portion E1B Pipe Works CH585.9-650.5 (O)	115	02NOV10	24FEB11	25JUN11	17OCT11	17OCT11	235d	37d	0
S1-4040B10	Excavation & Shoring For Pipe Trough (Stage 1)	40	13NOV10	22DEC10	01APR11	10MAY11	10MAY11	138d	0	0
S1-4040B20	F.W. & Reinforcement for Pipe Trough	15	23DEC10	08JAN11	25JUN11	09JUL11	09JUL11	194d	18d	0
S1-4040B30	Pipe Laying & Support Casting	28	25JAN11	18FEB11	10JUL11	03AUG11	03AUG11	166d	0	0
S1-4040B40	Backfilling & Reinstatement	20	18FEB11	10MAR11	04AUG11	23AUG11	23AUG11	166d	0	0
S1-4410	Portion E1D DN600A SWM Works CH71-437.7 (UC)	50	05MAR10	23APR10	03SEP10	23OCT10	23OCT10	182d	0	0
S1-4410A10	Preparation & Submission of Risk Assessment	28	19FEB10	18MAR10	27FEB11	26MAR11	26MAR11	373d	0	0
S1-4410A20	Preparation & Submission of Method Statement	28	19FEB10	18MAR10	27FEB11	26MAR11	26MAR11	373d	0	0
S1-4410A30	Submission & Approval of Temp. Work	28	19FEB10	18MAR10	27FEB11	26MAR11	26MAR11	373d	382d	0
S1-4410B10	Installation & Connection of DN600A SWM	8	14FEB11*	21FEB11	03APR11	03APR11	03APR11	41d	0	0

Start date 07SEP09
 Finish date 05NOV12
 Data date 04JAN10
 Run date 15JUN11
 Page number 2A
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3 Months Rolling Program (June 2011)

Legend:
 Early bar
 Progress bar
 Critical bar
 Summary bar
 Start milestone point
 Finish milestone point

Act ID	Description	Orig Dur	Early Start	Early Finish	Late Start	Late Finish	Total Float	Free Float	Proc	2011														
										JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC			
General Information:																								
Key Dates																								
KD-1010	Contract Commencement Date	0	07SEP09A	05NOV12	07SEP09A	05NOV12	0	0		Commencement Date														
KD-1020	Contract Completion	0	07SEP09A	05NOV12*	07SEP09A	05NOV12*	0	0																
KD-1030	Works Period of Section 1 Works (791Days)	830	07SEP09A	06NOV11	07SEP09A	15DEC11	594	384																
KD-1040	Works Period of Section 2 Works (426Days)	449	07SEP09A	06NOV10	07SEP09A	29NOV10	234	234		Works Period of Section 2 Works (426Days)														
KD-1050	Works Period of Section 4 Works (549Days)	578	07SEP09A	06NOV11	07SEP09A	05APR11	274	274		Works Period of Section 4 Works (549Days)														
KD-1060	Works Period of Section 5 Works (1156Days)	1156	07SEP09A	06NOV12	07SEP09A	05NOV12	0	0																
Preliminaries:																								
B1-1000	Mobilization	90	07SEP09A	06DEC09A	07SEP09A	06DEC09A	0	0		Mobilization														
B1-1110	Site Office	60	16NOV09A	16JAN10	16NOV09A	16JAN10	0	0		Site Office														
B1-1120	Maintenance/Service of Preliminary Utilities	938	17JAN10	09AUG12	17JAN10	09AUG12	0	0																
B1-1130	Cleanance & Demobilisation	89	10AUG12	05NOV12	10AUG12	05NOV12	184	184																
B1-1140	Environmental Monitoring	1028	28DEC09A	18OCT12	28DEC09A	05NOV12	184	184																
B1-1150	Material Approval For Water Mains & Accessories	100	07SEP09A	18FEB10	07SEP09A	04JUL10	1564	144		Material Approval For Water Mains & Accessories														
B1-1160	Material Procurement & Delivery Start	60	28DEC09A	01FEB10	28DEC09A	03JUN10	1224	0		Material Procurement & Delivery Start														
B1-1160B	Delivery of Valve, Actuators, Flow Meter & E&M	403	14JUN10	18JUL11*	14JUN10	18JUL11*	0	0		Delivery of Valve, Actuators														
B1-1170	CCTV & Monitoring Of Existing DSD Drainage	610	16JAN10	15SEP11	16JAN10	15DEC11	874	874		CCTV & Monitoring Of Existing DSD Drainage														
B1-1180	Monitoring of HYD Structure	610	16MAR10	06NOV11	16MAR10	15DEC11	404	404		Monitoring of HYD Structure														
Section 1																								
B30	07SEP09A	15DEC11	07SEP09A	05NOV12	07SEP09A	05NOV12	0	0																
Liquid Works																								
General																								
S1-1010	Approval & Consent - XP, TTA, MS & Temp Works	180	07SEP09A	05MAR10	07SEP09A	28APR10	520	110		Approval & Consent - XP, TTA, MS & Temp Works														
S1-1020	Trial PH & Utilities Detection (Except E2 & K)	120	01DEC09A	16MAR10	01DEC09A	28APR10	400	0		Trial PH & Utilities Detection (Except E2 & K)														
S1-1030	Portion H2 Cycle Track & Footpath Proposal	40	07SEP09A	08OCT09A	07SEP09A	08OCT09A	0	0		Portion H2 Cycle Track & Footpath Proposal														
S1-1040	Portion H2 Diversion Route For Cycle Track	60	07OCT09A	28NOV09A	07OCT09A	28NOV09A	0	0		Portion H2 Diversion Route For Cycle Track														
S1-1050	Portion H2 Submission For Hoarding Mural Design	60	07SEP09A	17FEB10	07SEP09A	06OCT12	9624	9624		Portion H2 Submission For Hoarding Mural Design														
S1-1060	Portion H2 Set Up For Hoarding Approved Design	30	18FEB10	19MAR10	18FEB10	05NOV12	416	0		Portion H2 Set Up For Hoarding Approved Design														
S1-1080	Initial & Utilities Survey (Except E2 & K)	120	05OCT09A	04MAR10	05OCT09A	44APR10	0	0		Initial & Utilities Survey (Except E2 & K)														
S1-2010	Final Pipe Testing & Reinstatement	45	01NOV11	15DEC11	01NOV11	15DEC11	0	0		Final Pipe Testing & Reinstatement														
S1-2020	Commission of Section 1 Works	0	15DEC11*	15DEC11*	15DEC11*	15DEC11*	0	0		Commission of Section 1 Works														
Portion C1																								
S1-3010	MTRCL Consent For Works Commencement	180	07SEP09A	05MAR10	07SEP09A	44APR10	400	0		MTRCL Consent For Works Commencement														
S1-3020	MTRCL Structure Stability Monitoring	270	28MAY10	21FEB11	03JAN11	01OCT11	224	0		MTRCL Structure Stability Monitoring														
S1-3030	Portion C1 Pipe Works CH195.0-237.5 (O)	60	24JUN10	21SEP10	16MAY11	16JUN11	2864	704		Portion C1 Pipe Works CH195.0-237.5 (O)														
S1-3030A10	Preparation & Submission of Risk Assessment	40	22FEB10*	02APR10	02NOV10	11DEC10	2534	0		Preparation & Submission of Risk Assessment														
S1-3030A20	Preparation & Submission of Method Statement	40	22FEB10	02APR10	02NOV10	11DEC10	2534	0		Preparation & Submission of Method Statement														
S1-3030B10	Excavation & Shoring	80	28MAY10	15AUG10	12DEC10	01MAY11	1964	0		Excavation & Shoring														
S1-3030B20	Pipe Laying & Welding	50	17JUL10	04SEP10	31JAN11	21MAR11	1994	0		Pipe Laying & Welding														
S1-3030B30	Backfilling & Reinstatement	10	03SEP10	14SEP10	22MAY11	31MAR11	1894	0		Backfilling & Reinstatement														
S1-3040	Portion C1 Trough Construction CH237.5-280.0	60	08MAY10	04MAY10	15APR10	13JUN10	400	0		Portion C1 Trough Construction CH237.5-280.0														
S1-3040A20	Preparation & Submission of Risk Assessment	28	17JUL10	13AUG10	15MAY11	11APR11	2410	0		Preparation & Submission of Risk Assessment														
S1-3040A30	Preparation & Submission of Method Statement	28	17JUL10	13AUG10	15MAY11	11APR11	2410	0		Preparation & Submission of Method Statement														
S1-3040A40	Preparation & Submission of Temp. Works	28	17JUL10	13AUG10	15MAY11	11APR11	2410	0		Preparation & Submission of Temp. Works														
S1-3040B10	Installation of Settlement Marker	3	31JUL10	02AUG10	29MAR11	31MAR11	2410	484		Installation of Settlement Marker														
S1-3040B20	Excavation & Shoring For Pipe Trough (Slags 1)	15	15SEP10	02OCT10	01APR11	15APR11	1884	0		Excavation & Shoring For Pipe Trough (Slags 1)														
S1-3040B30	Formation & Blinding For Trough	3	30SEP10	02OCT10	16APR11	16APR11	1984	0		Formation & Blinding For Trough														
S1-3040B40	Formwork & Reinforcement For Trough	10	03OCT10	12OCT10	19APR11	28APR11	1884	0		Formwork & Reinforcement For Trough														

3 Months Rolling Program (June 2011)

Start date	07SEP09	Early bar
Finish date	05NOV12	Progress bar
Date date	04JAN10	Critical bar
Run date	15JUN11	Summary bar
Page number	1A	Start milestone point
		Finish milestone point

Wo Hing - Penta-Ocean Joint Venture
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Appendix F

ET Weekly Site Inspection Records

WEEKLY SITE INSPECTION CHECKLIST

Inspection Date	8 June 2011	Inspected by	RE <i>[Signature]</i>	IEC	Contractor	ET
Time	09:40	Name	<i>[Signature]</i>		<i>[Signature]</i>	C. L. Lau

Weather Condition Wind : Sunny / Fine / Cloudy / Drizzle / Rain / Storm / Hazy
: Calm / Light / Breeze / Strong
Temperature : 30°C
Humidity : High / Moderate / Low

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs	
Fugitive Dust Emission				
<ul style="list-style-type: none"> Dust control / mitigation measures shall be provided to prevent dust nuisance. Any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading. The working area of excavation should be sprayed with water immediately before, during and immediately after the operations so as to maintain the entire surface wet. The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle Where a site boundary adjoins a road, streets or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length except for a site entrance or exit. The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcore. Every main haul road should be sealed with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet. The portion of road leading only to a construction site that is within 30m of a designated vehicle entrance or exit should be kept clear of dusty materials. All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet. Vehicle speed should be limited to 10 kph except on completed access roads. Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites. The public road around the site entrance should be kept clean and free from dust. Vehicle and equipment should be switched off while not in use. All plant and equipment should be well maintained e.g. without black smoke emission. Open burning should be prohibited. 				



Environmental Checklist		Implementation Stages*			Remark
		Yes	No	Not Obs	
Noise Impact					
<input checked="" type="checkbox"/>	The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.				
<input checked="" type="checkbox"/>	The constructions works should be scheduled to minimize noise nuisance. Concurrent noisy works should be carried out at different time slots or spread around the construction sites in order to help to reduce the cumulative noise effect produced in the construction process.				
<input checked="" type="checkbox"/>	Noisy equipment and mobile plant shall always be site away from NSRs.				
<input checked="" type="checkbox"/>	Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.				
<input checked="" type="checkbox"/>	Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.				
<input checked="" type="checkbox"/>	Mobile or movable noise barriers should be erected near to the construction plants to reduce the noise levels from stationary items of PME whenever practicable.				
<input checked="" type="checkbox"/>	Quality Powered mechanical equipment (Quality PME), which are construction plants and equipments that are notably quieter, more environmental friendly and efficiently, recognized by the Noise Control Authority for the purpose of CNP application should be used to reduce the noise generated from the construction plants effectively. The Contractor shall note the required procedures involved in application of the QPME.				
<input checked="" type="checkbox"/>	Well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.				
<input checked="" type="checkbox"/>	Air compressors and hand held breakers should have noise labels.				
<input checked="" type="checkbox"/>	Compressors and generators should operate with door closed.				
<input checked="" type="checkbox"/>	Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.				
Water Quality					
Mitigation Measures for Dredging					
<input checked="" type="checkbox"/>	Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m ³ per day.			<input checked="" type="checkbox"/>	No dredging work was observed.
<input checked="" type="checkbox"/>	Deployment of frame type silt curtain should be fully enclosed the grab while dredging works are in progress.			<input checked="" type="checkbox"/>	No dredging work was observed.
<input checked="" type="checkbox"/>	Deployment of silt screen should be at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress				
<input checked="" type="checkbox"/>	Tight-closing grabs should be used to minimize the loss of sediment to suspension during dredging works. For dredging of any contaminated mud, closed watertight grabs must be used.				
<input checked="" type="checkbox"/>	All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash				
<input checked="" type="checkbox"/>	The decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard				
<input checked="" type="checkbox"/>	Adequate free board shall be maintained on barges to ensure that decks are not washed by wave action.				
<input checked="" type="checkbox"/>	All barges used for the transport of dredged materials should be fitted with tight bottom seals to prevent leakage of material during loading and transport				
<input checked="" type="checkbox"/>	Dredging activities should not cause foam, oil, grease, soun, litter or other objectionable matter to be present in the water within the site or dumping grounds				
<input checked="" type="checkbox"/>	Loading of barges should be controlled to prevent splashing of material into the surrounding waters. Barges should not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation				
<input checked="" type="checkbox"/>	The speed of vessels should be controlled within the works area to prevent propeller wash from stirring up the seabed sediments				
					No dredging work was observed.

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	Not Obs N/A	
Water Quality					
Mitigation Measures for other Construction Activities					
▪	Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m ³ capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity should be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped	✓			
▪	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the storm runoff being directed into foul sewers	✓			
▪	Construction activities should not cause foam, oil, grease, solum, litter or other objectionable matter to be present in the water within the site or dumping grounds	✓			
▪	Fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour and Western Harbour W CZs	✓			
▪	Portable chemical toilets should be used to handle construction workforce sewage prior to discharge to the existing trunk sewer. Sufficient numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers. The Contractor shall also be responsible for waste disposal and maintenance practices.	✓			
▪	Construction site runoff should be prevented or minimised in accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the Victoria Harbour W CZ under the TM-DSS.	✓			
▪	Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	✓			
▪	An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process.			✓	
▪	The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfill toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains			✓	
Waste Management					
C&D Materials					
▪	Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable.			✓	
▪	C&D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses.			✓	
▪	A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed			✓	
▪	A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.			✓	
Chemical Waste					
▪	Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.	✓			
▪	Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc.	✓			
▪	The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility.	✓			

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	Not Obs	
Waste Management					
General Refuse					
<input checked="" type="checkbox"/>	General refuse should be stored in enclosed bins or compaction units separate from C&D material.				
<input checked="" type="checkbox"/>	A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material.				
<input checked="" type="checkbox"/>	An enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.				
Marine Dredged Sediment (During transportation and disposal)					
<input checked="" type="checkbox"/>	Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material. Excess material shall be cleaned from the decks and exposed fittings of barges and dredgers before the vessel is moved			<input checked="" type="checkbox"/>	No dredging work was observed.
<input checked="" type="checkbox"/>	Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the EPD			<input checked="" type="checkbox"/>	No dredging work was observed.
<input checked="" type="checkbox"/>	Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation.			<input checked="" type="checkbox"/>	No dredging work was observed.
Site Practices					
<input checked="" type="checkbox"/>	Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site				
<input checked="" type="checkbox"/>	Training of site personnel in proper waste management and chemical handling procedures				
<input checked="" type="checkbox"/>	Provision of sufficient waste disposal points and regular collection of waste				
<input checked="" type="checkbox"/>	Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.		<input checked="" type="checkbox"/>		Item 5
<input checked="" type="checkbox"/>	Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers				
Waste Reduction Measures					
<input checked="" type="checkbox"/>	Sort C&D material from demolition and decommissioning of the existing facilities to recover recyclable portions such as metals				
<input checked="" type="checkbox"/>	Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal				
<input checked="" type="checkbox"/>	Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force				
<input checked="" type="checkbox"/>	Proper storage and site practices to minimise the potential for damage or contamination of construction materials				
<input checked="" type="checkbox"/>	Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste				


Environmental Checklist		Implementation Stages*			Remark
		Yes	No	Not Obs	
Marine Ecology					
■	Use of one grab dredger only with a maximum production rate of 4,000m ³ per day for dredging.			√	No dredging work was observed.
■	Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress.			√	No dredging work was observed.
■	Deployment of silt screen at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress.	√			
■	Good site practices to avoid silt runoff from construction works associated with the construction of the submarine watermain.	√			
Good Site Practices					
●	The Environmental Permit should be displaced conspicuously on site.	√			
●	Construction noise permits should be posted at site entrance or available for site inspection.	√			
■	Chemical storage area provided with lock and located on sealed areas.	√			
■	All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank).	√			
■	Any unused chemicals or those with remaining functional capacity should be recycled.	√			
■	All generators, fuel and oil storage are within bundle areas.	√			
■	Oil leakage from machinery, vehicle and plant should be prevented.	√			
■	Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	√			
■	A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be bunded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	√			

Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Status of the item (closed / continue follow-up)	Proposed Follow Up Action (if required)	Photo Ref.	Target Completion Date
1	Follow up action to item 1 on 31/05/11, oil/paint cans were not found on the Launching Barge.	---	---	110608_001	---
2	Follow up action to item 2 on 31/05/11, the water outlet of the air-conditioner was connected with a hose to an container.	---	---	110608_002	08/06/11
3	Follow up action to item 3 on 31/05/11, the large engine on the Launching Barge was placed a container under the engine.	---	---	110608_003	08/06/11
4	Follow up action to item 4 on 31/05/11, the lubricant was removed from the access to the Launching Barge.	---	---	110608_004	08/06/11
5	Rubbish was noted near the sea-shore in Portion J.	Follow-up	To collect the rubbish in appropriate container.	110608_005	08/06/11

Remark

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Inspected by	Name C. L. Lau
	Signature 
	Date 08 June 2011

Photos

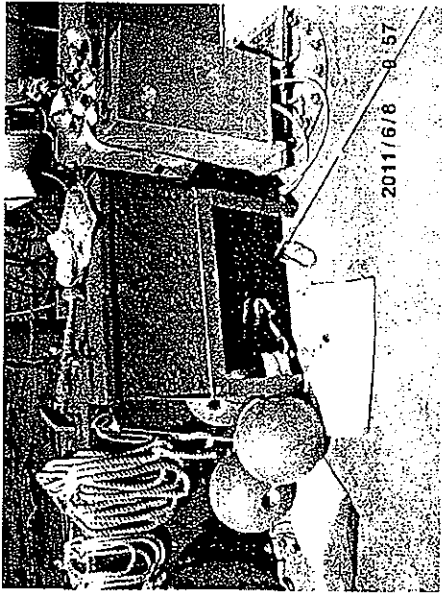


Photo 110608_001 (Oil/paint can on the Launching Barge)

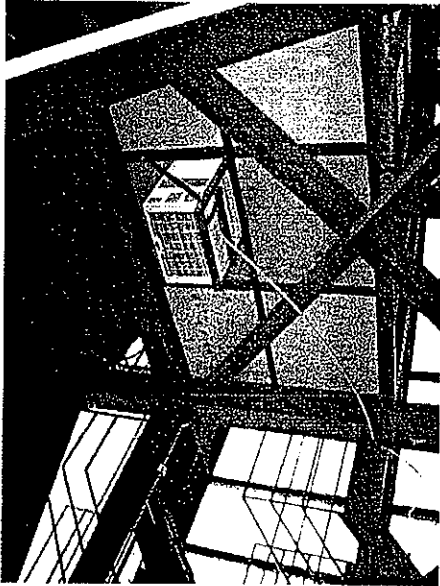


Photo 110608_002 (Water leakage on Launching Barge)

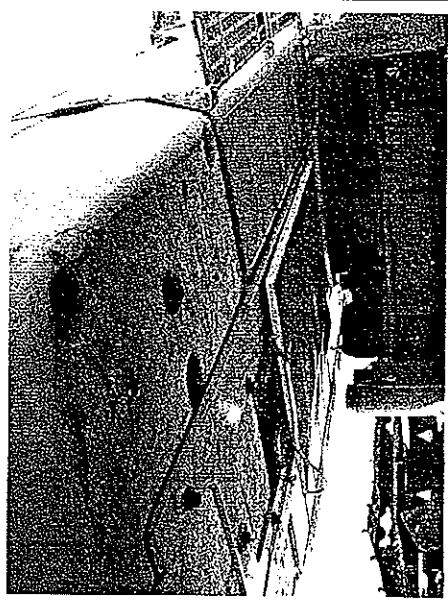


Photo 110608_003 (Engine on Launching Barge)



Photo 110608_004 (Lubricant noted before the access to the Launching Barge)



Photo 110608_005 (Rubbish noted in Portion J)

WEEKLY SITE INSPECTION CHECKLIST

Inspection Date	14 June 2011	Inspected by	RE	IEC	Contractor	JMC	ET	C.L. Lau
Time	09:30	Name	Wai Yik Wai Tin					

Weather Condition Wind : Sunny / Fine / (Cloudy) Drizzle / Rain / Storm / Hazy
: Calm / Light / Breeze / Strong
Temperature : 30°C
Humidity : High / (Moderate) / Low

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs / N/A	
Fugitive Dust Emission				
<ul style="list-style-type: none"> Dust control / mitigation measures shall be provided to prevent dust nuisance. Any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading. The working area of excavation should be sprayed with water immediately before, during and immediately after the operations so as to maintain the entire surface wet. The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle Where a site boundary adjoins a road, streets or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length except for a site entrance or exit. The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcore. Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet. The portion of road leading only to a construction site that is within 30m of a designated vehicle entrance or exit should be kept clear of dusty materials. All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet. Vehicle speed should be limited to 10 kph except on completed access roads. Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites. The public road around the site entrance should be kept clean and free from dust. Vehicle and equipment should be switched off while not in use. All plant and equipment should be well maintained e.g. without black smoke emission. Open burning should be prohibited. 				

		Implementation Stages*			Remark
		Yes	No	Not Obs N/A	
Environmental Checklist					
Noise Impact					
	The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	√			
	The constructions works should be scheduled to minimize noise nuisance. Concurrent noisy works should be carried out at different time slots or spread around the construction sites in order to help to reduce the cumulative noise effect produced in the construction process.	√			
	Noisy equipment and mobile plant shall always be site away from NSRs.	√			
	Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	√			
	Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	√			
	Mobile or movable noise barriers should be erected near to the construction plants to reduce the noise levels from stationary items of PME whenever practicable.	√			
	Quality Powered mechanical equipment (Quality PME), which are construction plants and equipments that are notably quieter, more environmental friendly and efficiently, recognized by the Noise Control Authority for the purpose of CNP application should be used to reduce the noise generated from the construction plants effectively. The Contractor shall note the required procedures involved in application of the QPME.	√			
	Well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	√			
	Air compressors and hand held breakers should have noise labels.	√			
	Compressors and generators should operate with door closed.	√			
	Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	√			
Water Quality					
Mitigation Measures for Dredging					
	Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m ³ per day.		√		No dredging work was observed.
	Deployment of frame type silt curtain should be fully enclosed the grab while dredging works are in progress.		√		No dredging work was observed.
	Deployment of silt screen should be at the sea water intake at Kowloon South Water Pumping Station while dredging works are in progress	√			
	Tight-closing grabs should be used to minimize the loss of sediment to suspension during dredging works. For dredging of any contaminated mud, closed watertight grabs must be used.	√			
	All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash	√			
	The decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard	√			
	Adequate free board shall be maintained on barges to ensure that decks are not washed by wave action.	√			
	All barges used for the transport of dredged materials should be fitted with tight bottom seals to prevent leakage of material during loading and transport	√			
	Dredging activities should not cause foam, oil, grease, scurm, litter or other objectionable matter to be present in the water within the site or dumping grounds			√	No dredging work was observed.
	Loading of barges should be controlled to prevent splashing of material into the surrounding waters. Barges should not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation	√			
	The speed of vessels should be controlled within the works area to prevent propeller wash from stirring up the seabed sediments	√			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
Water Quality				
Mitigation Measures for other Construction Activities				
<ul style="list-style-type: none"> Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m³ capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity should be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the storm runoff being directed into foul sewers Construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present in the water within the site or dumping grounds Fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour and Western Harbour WCs Portable chemical toilets should be used to handle construction workforce sewage prior to discharge to the existing trunk sewer. Sufficient numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers. The Contractor shall also be responsible for waste disposal and maintenance practices. Construction site runoff should be prevented or minimised in accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the Victoria Harbour WCZ under the TM-DSS. Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding. An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfill toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains 	√			
Waste Management				
C&D Materials				
<ul style="list-style-type: none"> Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable. C&D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses. A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods. 	√		√	
Chemical Waste				
<ul style="list-style-type: none"> Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility. 	√			

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	Not Obs N/A	
Waste Management					
General Refuse					
	General refuse should be stored in enclosed bins or compaction units separate from C&D material.	√			
	A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material.	√			
	An enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	√			
Marine Dredged Sediment (During transportation and disposal)					
	Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material. Excess material shall be cleaned from the decks and exposed fittings of barges and dredgers before the vessel is moved			√	No dredging work was observed.
	Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the EPD			√	No dredging work was observed.
	Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation.			√	No dredging work was observed.
Site Practices					
	Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site	√			
	Training of site personnel in proper waste management and chemical handling procedures	√			
	Provision of sufficient waste disposal points and regular collection of waste	√			
	Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	√			
	Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers	√			
Waste Reduction Measures					
	Sort C&D material from demolition and decommissioning of the existing facilities to recover recyclable portions such as metals	√			
	Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal	√			
	Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force	√			
	Proper storage and site practices to minimise the potential for damage or contamination of construction materials	√			
	Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste	√			


Implementation Stages*	Remark		
	Yes	No	Not Obs
Environmental Checklist			
Marine Ecology			
Use of one grab dredger only with a maximum production rate of 4,000m ³ per day for dredging.	√		
Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress.	√		
Deployment of silt screen at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress.	√		
Good site practices to avoid silt runoff from construction works associated with the construction of the submarine watermain.	√		
Good Site Practices			
The Environmental Permit should be displaced conspicuously on site.	√		
Construction noise permits should be posted at site entrance or available for site inspection.	√		
Chemical storage area provided with lock and located on sealed areas.	√		
All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank).	√		
Any unused chemicals or those with remaining functional capacity should be recycled.	√		
All generators, fuel and oil storage are within bundle areas.	√		
Oil leakage from machinery, vehicle and plant should be prevented.	√		
Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	√		
A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be banded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	√		

Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Status of the item (closed / continue follow-up)	Proposed Follow Up Action (if required)	Photo Ref.	Target Completion Date
1	Follow up action to item 1 on 08/06/11, rubbish noted near the sea-shore in Portion J was collected.	---	---	---	---

Remark

No new item was noted during the weekly site inspection on 14 June 2011.

Inspected by	Name	Signature	Date
	C. L. Lau		14 June 2011

Photos

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WEEKLY SITE INSPECTION CHECKLIST

069
 Inspection Date: 22/07/2011
 Time: 15:40
 Inspected by: AE
 Name: Edward Yip
 IEC: AE
 Contractor: JING
 ET: C.L. Lam

Weather Condition: Sunny / Fine / Cloudy / Drizzle / Rain / Storm / Hazy
 Wind: Calm / Light / Breeze / Strong
 Temperature: 29°C
 Humidity: High / Moderate / Low

Environmental Checklist

Fugitive Dust Emission

- Dust control / mitigation measures shall be provided to prevent dust nuisance.
- Any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading.
- The working area of excavation should be sprayed with water immediately before, during and immediately after the operations so as to maintain the entire surface wet.
- The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle
- Where a site boundary adjoins a road, streets or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length except for a site entrance or exit.
- The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.
- Every main haul road should be sealed with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.
- The portion of road leading only to a construction site that is within 30m of a designated vehicle entrance or exit should be kept clear of dusty materials.
- All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet.
- Vehicle speed should be limited to 10 kph except on completed access roads.
- Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.
- The public road around the site entrance should be kept clean and free from dust.
- Vehicle and equipment should be switched off while not in use.
- All plant and equipment should be well maintained e.g. without black smoke emission.
- Open burning should be prohibited.

Implementation Stages*	Remark		
	Yes	No	Not Obs
			N/A

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	Not Obs N/A	
Noise Impact					
▪	The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	✓			
▪	The constructions works should be scheduled to minimize noise nuisance. Concurrent noisy works should be carried out at different time slots or spread around the construction sites in order to help to reduce the cumulative noise effect produced in the construction process.	✓			
▪	Noisy equipment and mobile plant shall always be site away from NSRs.	✓			
▪	Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	✓			
▪	Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	✓			
▪	Mobile or movable noise barriers should be erected near to the construction plants to reduce the noise levels from stationary items of PME whenever practicable.	✓			
▪	Quality Powered mechanical equipment (Quality PME), which are construction plants and equipments that are notably quieter, more environmental friendly and efficiently, recognized by the Noise Control Authority for the purpose of CNP application should be used to reduce the noise generated from the construction plants effectively. The Contractor shall note the required procedures involved in application of the QPME.	✓			
▪	Well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	✓			
▪	Air compressors and hand held breakers should have noise labels.	✓			
▪	Compressors and generators should operate with door closed.	✓			
▪	Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	✓			
Water Quality					
Mitigation Measures for Dredging					
▪	Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m ³ per day.			✓	No dredging work was observed.
▪	Deployment of frame type silt curtain should be fully enclosed the grab while dredging works are in progress.			✓	No dredging work was observed.
▪	Deployment of silt screen should be at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress	✓			
▪	Tight-closing grabs should be used to minimize the loss of sediment to suspension during dredging works. For dredging of any contaminated mud, closed watertight grabs must be used.	✓			
▪	All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash	✓			
▪	The decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard	✓			
▪	Adequate free board shall be maintained on barges to ensure that decks are not washed by wave action.	✓			
▪	All barges used for the transport of dredged materials should be fitted with tight bottom seals to prevent leakage of material during loading and transport	✓			
▪	Dredging activities should not cause foam, oil, grease, scurm, litter or other objectionable matter to be present in the water within the site or dumping grounds			✓	No dredging work was observed.
▪	Loading of barges should be controlled to prevent splashing of material into the surrounding waters. Barges should not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation	✓			
▪	The speed of vessels should be controlled within the works area to prevent propeller wash from stirring up the seabed sediments	✓			



Environmental Checklist		Implementation Stages*			Remark
		Yes	No	Not Obs N/A	
Water Quality					
Mitigation Measures for other Construction Activities					
▪	Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m ³ capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity should be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped	√			
▪	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the storm runoff being directed into foul sewers	√			
▪	Construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present in the water within the site or dumping grounds	√			
▪	Fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour and Western Harbour WCZs	√			
▪	Portable chemical toilets should be used to handle construction workforce sewage prior to discharge to the existing trunk sewer. Sufficient numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers. The Contractor shall also be responsible for waste disposal and maintenance practices.	√			
▪	Construction site runoff should be prevented or minimised in accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the Victoria Harbour WCZ under the TM-DSS.	√			
▪	Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	√			
▪	An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process.			√	
▪	The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfill toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains			√	
Waste Management					
C&D Materials					
▪	Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable.			√	
▪	C&D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses.			√	
▪	A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed			√	
▪	A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.			√	
Chemical Waste					
▪	Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.	√			
▪	Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc.	√			
▪	The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility.	√			

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	Not Obs	
Waste Management					
General Refuse					
	General refuse should be stored in enclosed bins or compaction units separate from C&D material.	√			
	A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material.	√			
	An enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	√			
Marine Dredged Sediment (During transportation and disposal)					
	Bottom opening of barges shall be fitted with light fitting seals to prevent leakage of material. Excess material shall be cleaned from the decks and exposed fittings of barges and dredgers before the vessel is moved			√	No dredging work was observed.
	Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the EPD			√	No dredging work was observed.
	Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation.			√	No dredging work was observed.
Site Practices					
	Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site	√			
	Training of site personnel in proper waste management and chemical handling procedures	√			
	Provision of sufficient waste disposal points and regular collection of waste	√			
	Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	√			
	Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers	√			
Waste Reduction Measures					
	Sort C&D material from demolition and decommissioning of the existing facilities to recover recyclable portions such as metals	√			
	Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal	√			
	Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force	√			
	Proper storage and site practices to minimise the potential for damage or contamination of construction materials	√			
	Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste	√			


Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
Marine Ecology				
▪ Use of one grab dredger only with a maximum production rate of 4,000m ³ per day for dredging.			√	No dredging work was observed.
▪ Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress.			√	No dredging work was observed.
▪ Deployment of silt screen at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress.	√			
▪ Good site practices to avoid silt runoff from construction works associated with the construction of the submarine watermain.	√			
Good Site Practices				
▪ The Environmental Permit should be displaced conspicuously on site.	√			
▪ Construction noise permits should be posted at site entrance or available for site inspection.	√			
▪ Chemical storage area provided with lock and located on sealed areas.	√			
▪ All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank).	√			
▪ Any unused chemicals or those with remaining functional capacity should be recycled.	√			
▪ All generators, fuel and oil storage are within bundle areas.	√			
▪ Oil leakage from machinery, vehicle and plant should be prevented.	√			
▪ Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	√			
▪ A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be bunded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	√			

Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Status of the item (closed / continue follow-up)	Proposed Follow Up Action (if required)	Photo Ref.	Target Completion Date

Remark

No new item was noted during the weekly site inspection on 22 June 2011.
 The Contractor was reminded to maintain the drainage system properly to prevent flooding and overflow, especially after rain storms.

Inspected by	Name	Signature	Date
	C. L. Lau		22 June 2011

WEEKLY SITE INSPECTION CHECKLIST

Inspection Date	28/06/2011	Inspected by	RE [Signature]	IEC	Contractor	JUC	ET	C.H. Lau
Time	09:40	Name	[Signature]	28°C				

Weather : Sunny / Fine / Cloudy / Drizzle / Rain / Storm / Hazy
 Condition : Calm / Light / Breeze / Strong
 Temperature : 28°C
 Humidity : (High) Moderate / Low

Environmental Checklist

Fugitive Dust Emission

Implementation Stages*	Implementation Stages*			Remark
	Yes	No	Not Obs	
<ul style="list-style-type: none"> Dust control / mitigation measures shall be provided to prevent dust nuisance. Any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading. The working area of excavation should be sprayed with water immediately before, during and immediately after the operations so as to maintain the entire surface wet. The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle Where a site boundary adjoins a road, streets or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length except for a site entrance or exit. The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcore. Every main haul road should be sealed with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet. The portion of road leading only to a construction site that is within 30m of a designated vehicle entrance or exit should be kept clear of dusty materials. All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet. Vehicle speed should be limited to 10 kph except on completed access roads. Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites. The public road around the site entrance should be kept clean and free from dust. Vehicle and equipment should be switched off while not in use. All plant and equipment should be well maintained e.g. without black smoke emission. Open burning should be prohibited. 			N/A	

		Implementation Stages*			Remark
		Yes	No	Not Obs N/A	
Environmental Checklist					
Noise Impact					
▪	The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	✓			
▪	The constructions works should be scheduled to minimize noise nuisance. Concurrent noisy works should be carried out at different time slots or spread around the construction sites in order to help to reduce the cumulative noise effect produced in the construction process.	✓			
▪	Noisy equipment and mobile plant shall always be site away from NSRs.	✓			
▪	Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	✓			
▪	Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	✓			
▪	Mobile or movable noise barriers should be erected near to the construction plants to reduce the noise levels from stationary items of PME whenever practicable.	✓			
▪	Quality Powered mechanical equipment (Quality PME), which are construction plants and equipments that are notably quieter, more environmental friendly and efficiently, recognized by the Noise Control Authority for the purpose of CNP application should be used to reduce the noise generated from the construction plants effectively. The Contractor shall note the required procedures involved in application of the QPME.	✓			
▪	Well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	✓			
▪	Air compressors and hand held breakers should have noise labels.	✓			
▪	Compressors and generators should operate with door closed.	✓			
▪	Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	✓			
Water Quality					
Mitigation Measures for Dredging					
▪	Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m ³ per day.			✓	No dredging work was observed.
▪	Deployment of frame type silt curtain should be fully enclosed the grab while dredging works are in progress.			✓	No dredging work was observed.
▪	Deployment of silt screen should be at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress	✓			
▪	Tight-closing grabs should be used to minimize the loss of sediment to suspension during dredging works. For dredging of any contaminated mud, closed watertight grabs must be used.	✓			
▪	All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash	✓			
▪	The decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard	✓			
▪	Adequate free board shall be maintained on barges to ensure that decks are not washed by wave action.	✓			
▪	All barges used for the transport of dredged materials should be fitted with tight bottom seals to prevent leakage of material during loading and transport	✓			
▪	Dredging activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present in the water within the site or dumping grounds				No dredging work was observed.
▪	Loading of barges should be controlled to prevent splashing of material into the surrounding waters. Barges should not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation	✓			
▪	The speed of vessels should be controlled within the works area to prevent propeller wash from stirring up the seabed sediments	✓			

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	Not Obs	
Water Quality					
Mitigation Measures for other Construction Activities					
▪	Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m ³ capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity should be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped	✓			
▪	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the storm runoff being directed into foul sewers	✓			
▪	Construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present in the water within the site or dumping grounds	✓			
▪	Fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour and Western Harbour WQZs	✓			
▪	Portable chemical toilets should be used to handle construction workforce sewage prior to discharge to the existing trunk sewer. Sufficient numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers. The Contractor shall also be responsible for waste disposal and maintenance practices.	✓			
▪	Construction site runoff should be prevented or minimised in accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the Victoria Harbour WQZ under the TM-DSS.	✓			
▪	Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	✓			
▪	An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process.				✓
▪	The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfill toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains				✓
Waste Management					
C&D Materials					
▪	Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable.			✓	
▪	C&D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses.			✓	
▪	A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed			✓	
▪	A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.			✓	
Chemical Waste					
▪	Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.	✓			
▪	Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc.	✓			
▪	The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility.	✓			

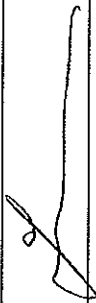
Environmental Checklist		Implementation Stages*			Remark
		Yes	No	Not Obs N/A	
Waste Management					
General Refuse					
	General refuse should be stored in enclosed bins or compaction units separate from C&D material.	√			
	A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material.	√			
	An enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	√			
Marine Dredged Sediment (During transportation and disposal)					
	Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material. Excess material shall be cleaned from the decks and exposed fittings of barges and dredgers before the vessel is moved			√	No dredging work was observed.
	Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the EPD			√	No dredging work was observed.
	Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation.			√	No dredging work was observed.
Site Practices					
	Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site	√			
	Training of site personnel in proper waste management and chemical handling procedures	√			
	Provision of sufficient waste disposal points and regular collection of waste	√			
	Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.		√		Item 2
	Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers	√			
Waste Reduction Measures					
	Sort C&D material from demolition and decommissioning of the existing facilities to recover recyclable portions such as metals	√			
	Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal	√			
	Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force	√			
	Proper storage and site practices to minimise the potential for damage or contamination of construction materials	√			
	Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste	√			

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	Not Obs	
Marine Ecology					
	Use of one grab dredger only with a maximum production rate of 4,000m ³ per day for dredging.			√	No dredging work was observed.
	Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress.			√	No dredging work was observed.
	Deployment of silt screen at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress.	√			
	Good site practices to avoid silt runoff from construction works associated with the construction of the submarine watermain.	√			
Good Site Practices					
	The Environmental Permit should be displaced conspicuously on site.	√			
	Construction noise permits should be posted at site entrance or available for site inspection.	√			
	Chemical storage area provided with lock and located on sealed areas.	√			
	All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank).	√			
	Any unused chemicals or those with remaining functional capacity should be recycled.	√			
	All generators, fuel and oil storage are within bundle areas.	√			
	Oil leakage from machinery, vehicle and plant should be prevented.	√			
	Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	√			
	A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be bundled and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	√			

Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Status of the item (closed / continue follow-up)	Proposed Follow Up Action (if required)	Photo Ref.	Target Completion Date
1	Standing water was noted in most drip trays during raining.	Follow-up	The Contractor was reminded to clean up all drip trays after raining to prevent mosquito breeding and oil floating out when oil leakage was happened.	110628_001	08/07/11
2	Rubbish was noted on the marine water surface inside the silt curtain.	Follow-up	To collect the rubbish from the water surface and keep clean regularly	110628_002	08/07/11

Remark

Inspected by	Name	Signature	Date
	C. L. Lau		28 June 2011

Photos

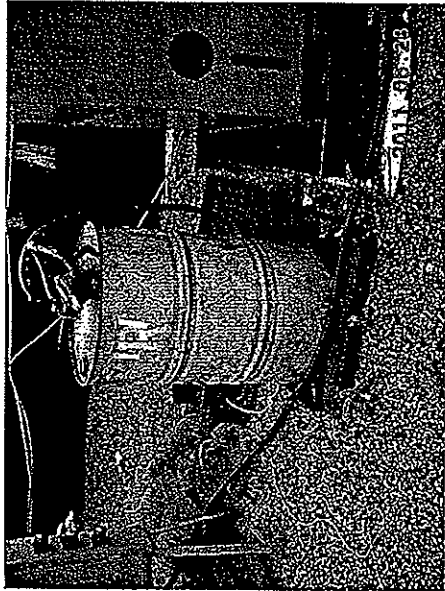


Photo 110628_001 (Standing water in drip tray during raining)



Photo 110628_002 (Rubbish inside the silt curtain)



Appendix G

Implementation Schedule of Mitigation Measures



Environmental Mitigation Implementation Schedule

	Location	Implementation Status		
		Implemented	Partially implemented	Not implemented
Air Quality				
<ul style="list-style-type: none"> Dust control / mitigation measures shall be provided to prevent dust nuisance. Any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading. The working area of excavation should be sprayed with water immediately before, during and immediately after the operations so as to maintain the entire surface wet. The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle Where a site boundary adjoins a road, streets or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length except for a site entrance or exit. The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores. Every main haul road should be sealed with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet. The portion of road leading only to a construction site that is within 30m of a designated vehicle entrance or exit should be kept clear of dusty materials. All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet. Vehicle speed should be limited to 10 kph except on completed access roads. Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites. The public road around the site entrance should be kept clean and free from dust. Vehicle and equipment should be switched off while not in use. All plant and equipment should be well maintained e.g. without black smoke emission. Open burning should be prohibited. 	√			
Noise Impact				
<ul style="list-style-type: none"> The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted. The constructions works should be scheduled to minimize noise nuisance. Concurrent noisy works should be carried out at different time slots or spread around the construction sites in order to help to reduce the cumulative noise effect produced in the construction process. Noisy equipment and mobile plant shall always be site away from NSRs. Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum. Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials. Mobile or movable noise barriers should be erected near to the construction plants to reduce the noise levels from stationary items of PME whenever practicable. Quality Powered mechanical equipment (Quality PME), which are construction plants and equipments that are notably quieter, more environmental friendly and efficiently, recognized by the Noise Control Authority for the purpose of CNP application should be used to reduce the noise generated from the construction plants effectively. The Contractor shall note the required procedures involved in application of the QPME. 	√			



		Location	Implementation Status		
			Implemented	Partially implemented	Not implemented
Environmental Protection Measures					
Noise Impact					
	Well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	All areas	√		
	Air compressors and hand held breakers should have noise labels.	All areas	√		
	Compressors and generators should operate with door closed.	All areas	√		
	Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	All areas	√		
Water Quality					
Mitigation Measures for Dredging					
	Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m ³ per day.	Marine			√
	Deployment of frame type silt curtain should be fully enclose the grab while dredging works are in progress.	Marine			√
	Deployment of silt screen should be at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress	Marine	√		
	Tight-closing grabs should be used to minimize the loss of sediment to suspension during dredging works. For dredging of any contaminated mud, closed watertight grabs must be used.	Marine			√
	All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash	Marine	√		
	The decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard	Marine	√		
	Adequate free board shall be maintained on barges to ensure that decks are not washed by wave action.	Marine	√		
	All barges used for the transport of dredged materials should be fitted with tight bottom seals to prevent leakage of material during loading and transport	Marine			√
	Construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present in the water within the site or dumping grounds	Marine	√		
	Loading of barges should be controlled to prevent splashing of material into the surrounding waters. Barges should not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation	Marine	√		
	The speed of vessels should be controlled within the works area to prevent propeller wash from stirring up the seabed sediments	Marine	√		
Mitigation Measures for other Construction Activities					
	Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m ³ capacities, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity should be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped	All areas	√		
	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the storm runoff being directed into foul sewers	All areas	√		
	All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads.	All areas			√
	An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process.	All areas			√
	The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfill toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains	All areas			√
	Fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour and Western Harbour WCZs	All areas	√		



	Location	Implementation Status		
		Implemented	Partially implemented	Not implemented
Environmental Protection Measures				
Water Quality				
Mitigation Measures for other Construction Activities				
<ul style="list-style-type: none"> Portable chemical toilets should be used to handle construction workforce sewage prior to discharge to the existing trunk sewer. Sufficient numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers. The Contractor shall also be responsible for waste disposal and maintenance practices. Construction site runoff should be prevented or minimised in accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the Victoria Harbour WCZ under the TM-DSS. Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding. 	All areas	√		
Waste Management				
C&D Materials				
<ul style="list-style-type: none"> Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable. C&D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses. A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed. A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods. 	All areas			√
Chemical Waste				
<ul style="list-style-type: none"> Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility. 	All areas	√		
General Refuse				
<ul style="list-style-type: none"> General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. An enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material. 	All areas	√		
Marine Dredged Sediment (During transportation and disposal)				
<ul style="list-style-type: none"> Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material. Excess material shall be cleaned from the decks and exposed fittings of barges and dredgers before the vessel is moved. Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the EPD. Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation. 	Marine			√
Good Site Practices				
<ul style="list-style-type: none"> Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site. Training of site personnel in proper waste management and chemical handling procedures. Provision of sufficient waste disposal points and regular collection of waste. 	All areas	√		
	All areas	√		
	All areas	√		



Environmental Protection Measures	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
Waste Management					
Good Site Practices					
<ul style="list-style-type: none"> Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment. Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers 	All areas	✓			
Waste Reduction Measures					
<ul style="list-style-type: none"> Sort C&D material from demolition and decommissioning of the existing facilities to recover recyclable portions such as metals Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force Proper storage and site practices to minimise the potential for damage or contamination of construction materials Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste 	All areas All areas All areas All areas All areas	✓ ✓ ✓ ✓ ✓			
Marine Ecology					
<ul style="list-style-type: none"> Use of one grab dredger only with a maximum production rate of 4,000m³ per day for dredging. Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress. Deployment of silt screen at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress. Good site practices to avoid silt runoff from construction works associated with the construction of the submarine watermain. 	Marine Marine Marine Marine	✓ ✓ ✓ ✓		✓ ✓	
Good Site Practices					
<ul style="list-style-type: none"> The Environmental Permit should be displaced conspicuously on site. Construction noise permits should be posted at site entrance or available for site inspection. Chemical storage area provided with lock and located on sealed areas. All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank). Any unused chemicals or those with remaining functional capacity should be recycled. All generators, fuel and oil storage are within bundle areas. Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors. A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be banded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system. 	All areas All areas All areas All areas All areas All areas All areas	✓ ✓ ✓ ✓ ✓ ✓ ✓		✓	



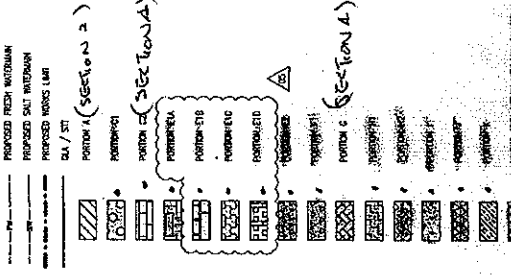
Appendix H

Site General Layout plan

NOTES :

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LEGEND :



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1	1/4"	SECTION 4	SECTION 4
2	1/4"	SECTION 4	SECTION 4
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4	1/4"	SECTION 4	SECTION 4
5	1/4"	SECTION 4	SECTION 4
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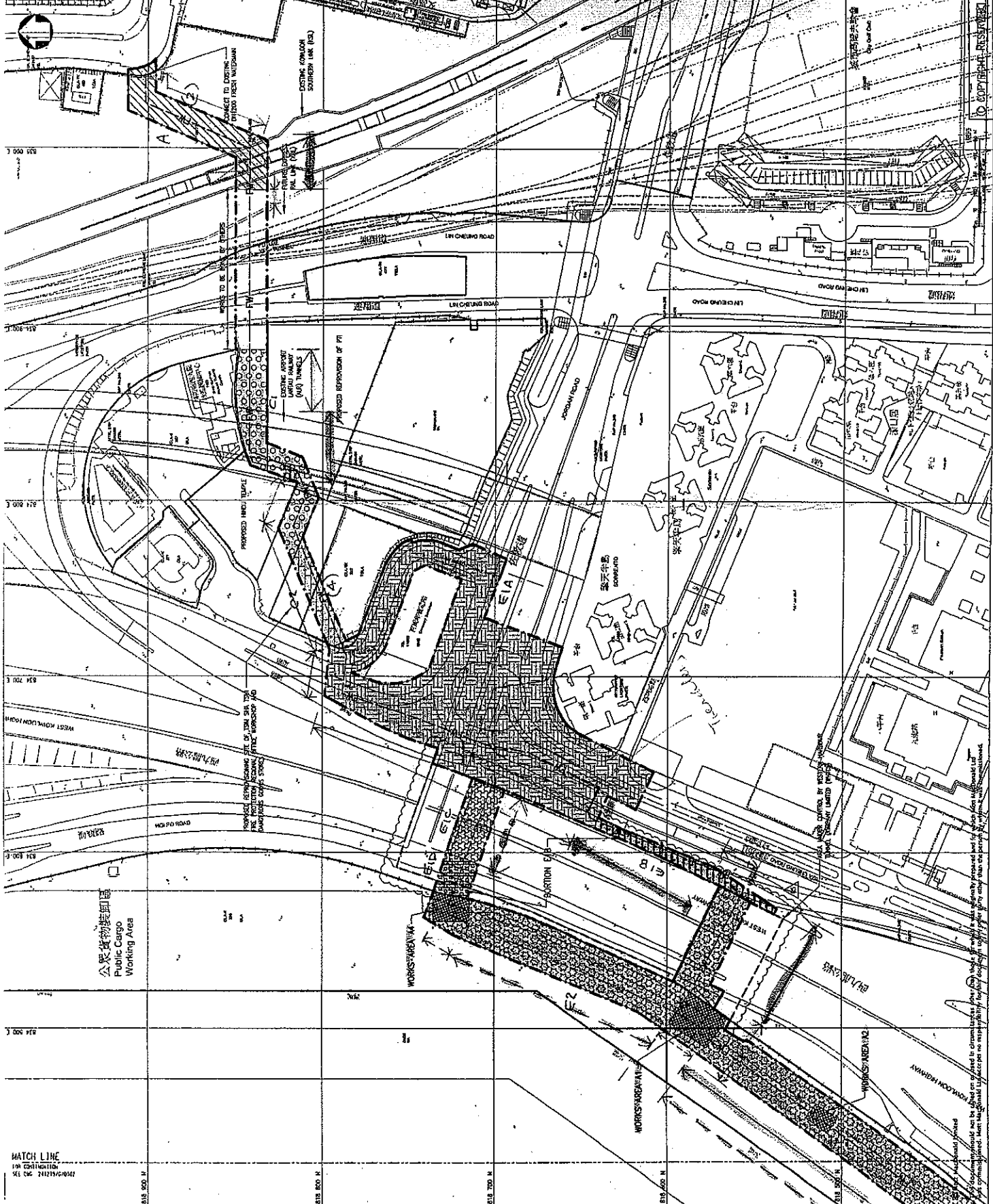
THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION WATER SUPPLIES DEPARTMENT

9/MSD/08

LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SAU YING PUN

POSSESSION OF SITE (SHEET 1 OF 5)

REVISION	NO.	DESCRIPTION	BY	CHECKED	DATE
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MATCH LINE IN CONTINUATION SEE CD 241239/16/0301

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 2. THE LEGEND SHALL REFER TO DRAWING NO. 241239/G/0301

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01	10/01/08	ISSUED FOR TENDER
02	10/01/08	ISSUED FOR TENDER
03	10/01/08	ISSUED FOR TENDER
04	10/01/08	ISSUED FOR TENDER
05	10/01/08	ISSUED FOR TENDER

THE HONG KONG
 SPECIAL ADMINISTRATIVE REGION
 WATER SUPPLIES DEPARTMENT

9/MSD/08

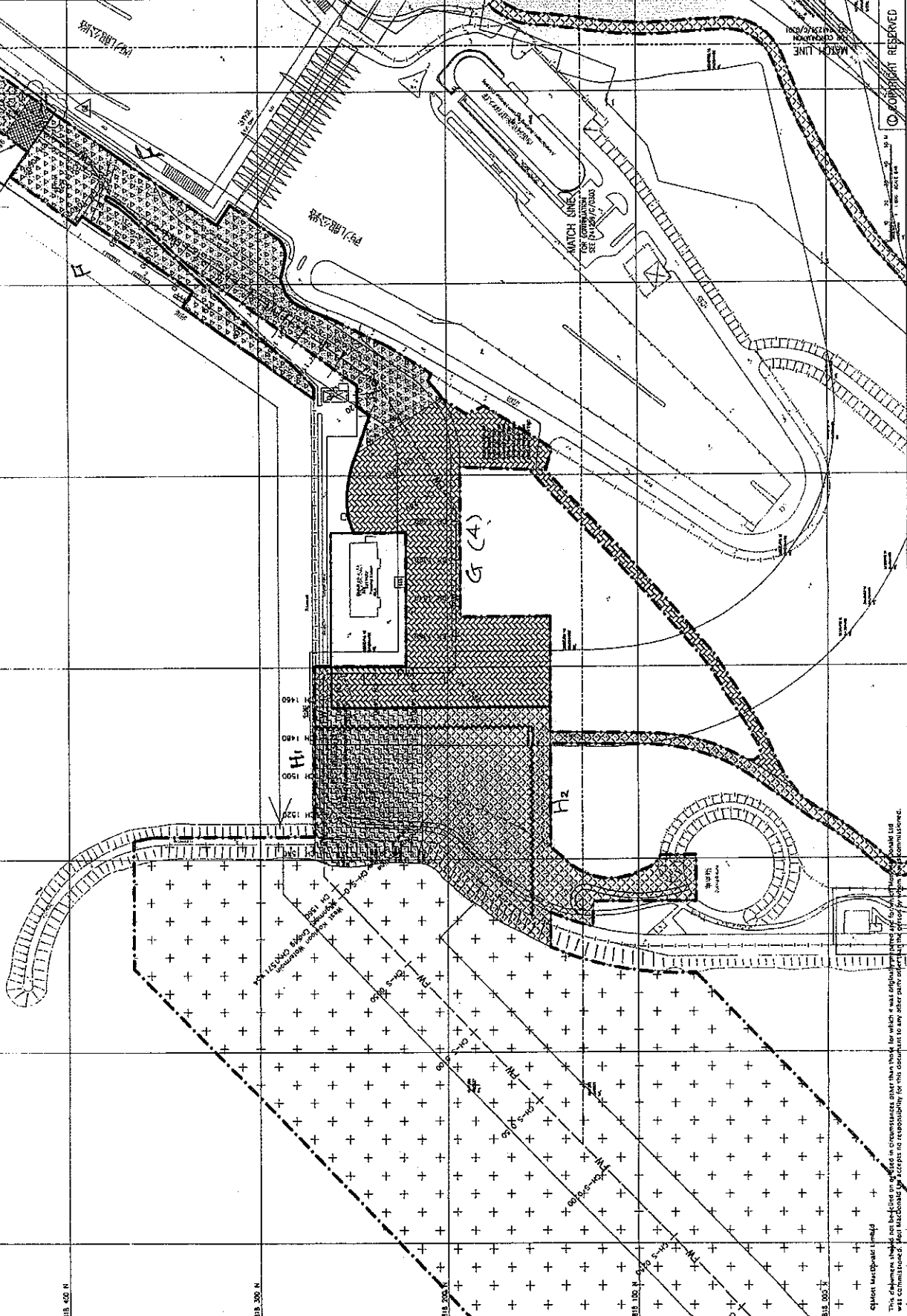
LAYING OF WESTERN CROSS HARBOUR MAIN
 AND ASSOCIATED LAND MARKS FROM WEST
 KOHLOON TO SU YING PUN

POSSESSION OF SITE
 (SHEET 2 OF 5)

SCALE	1:1000 @A1
DATE	21/03/08
DRAWN BY	...
CHECKED BY	...
APPROVED BY	...

241239/G/0302

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- THE USER SHALL REFER TO DRAWING NO. 241239/02/0201.

01	DATE	09	TRIGGER APPROVAL NO.	3
02	DATE	08	SCALE FOR TENDER	1:1
03	DATE	08	SCALE FOR TENDER	1:1
04	DATE	08	SCALE FOR TENDER	1:1
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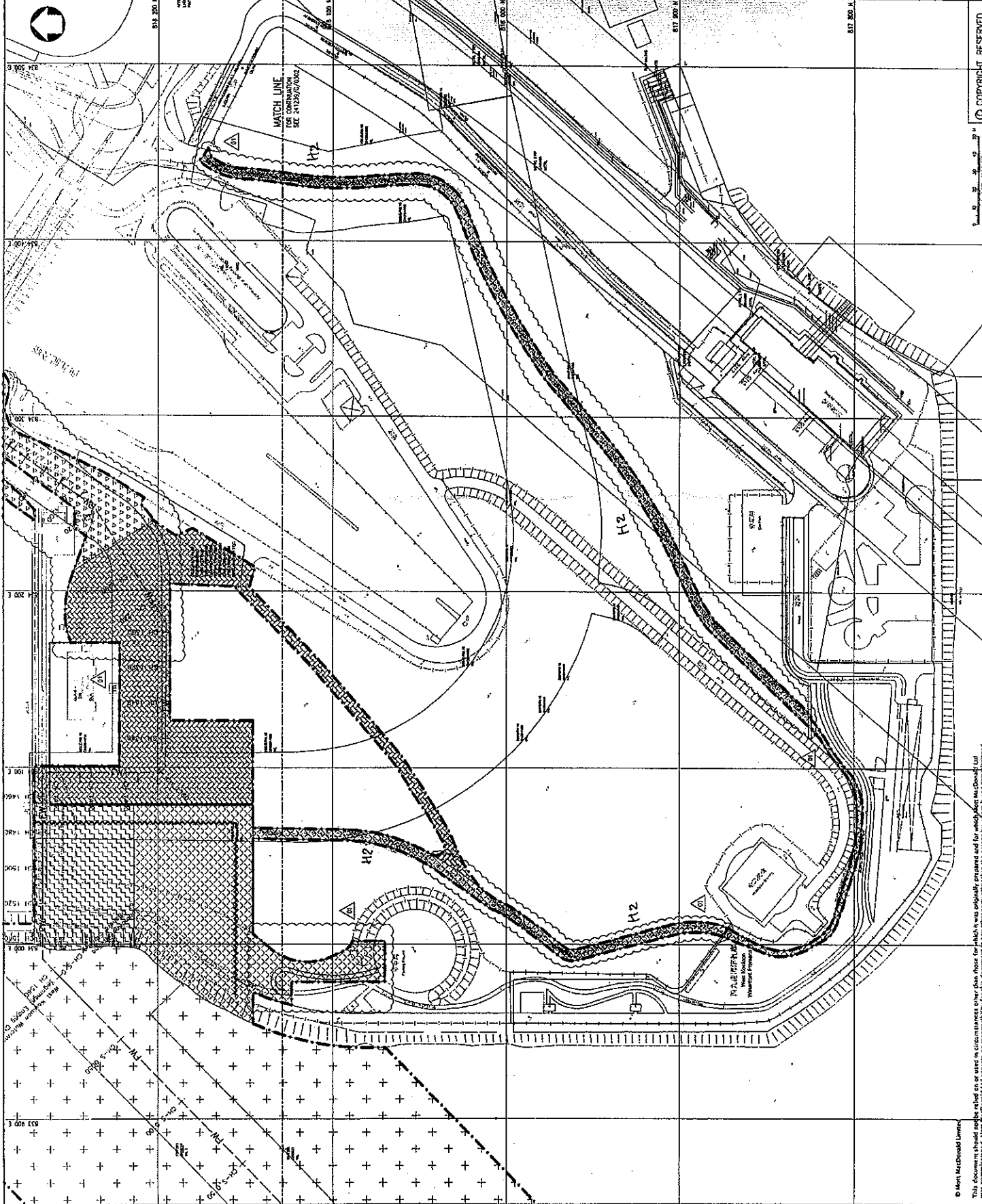
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THE GOVERNMENT OF THE HONG KONG
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9/WS2/06
 LAYING OF WESTERN CROSS HARBOUR MAIN
 AND ASSOCIATED LAND MAINS FROM WEST
 KOWLOON TO SAI YING PUN

POSSESSION OF SITE
 (SHEET 3 OF 5)

Author	CHK	CHK	CHK	CHK
Drawn	CHK	CHK	CHK	CHK
Checked	CHK	CHK	CHK	CHK
Scale	1:1000	0/A1	Project	241239
Sheet No.	TEN			
Drawing No.	241239/G/0303			



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NO.	DATE	BY	REVISION/REASON
1	24/03/2004	JH	ISSUE FOR TENDER
2	14/12/2003	JH	FINAL DESIGN
3	14/12/2003	JH	FOR PERMITS
4	14/12/2003	JH	FOR PERMITS



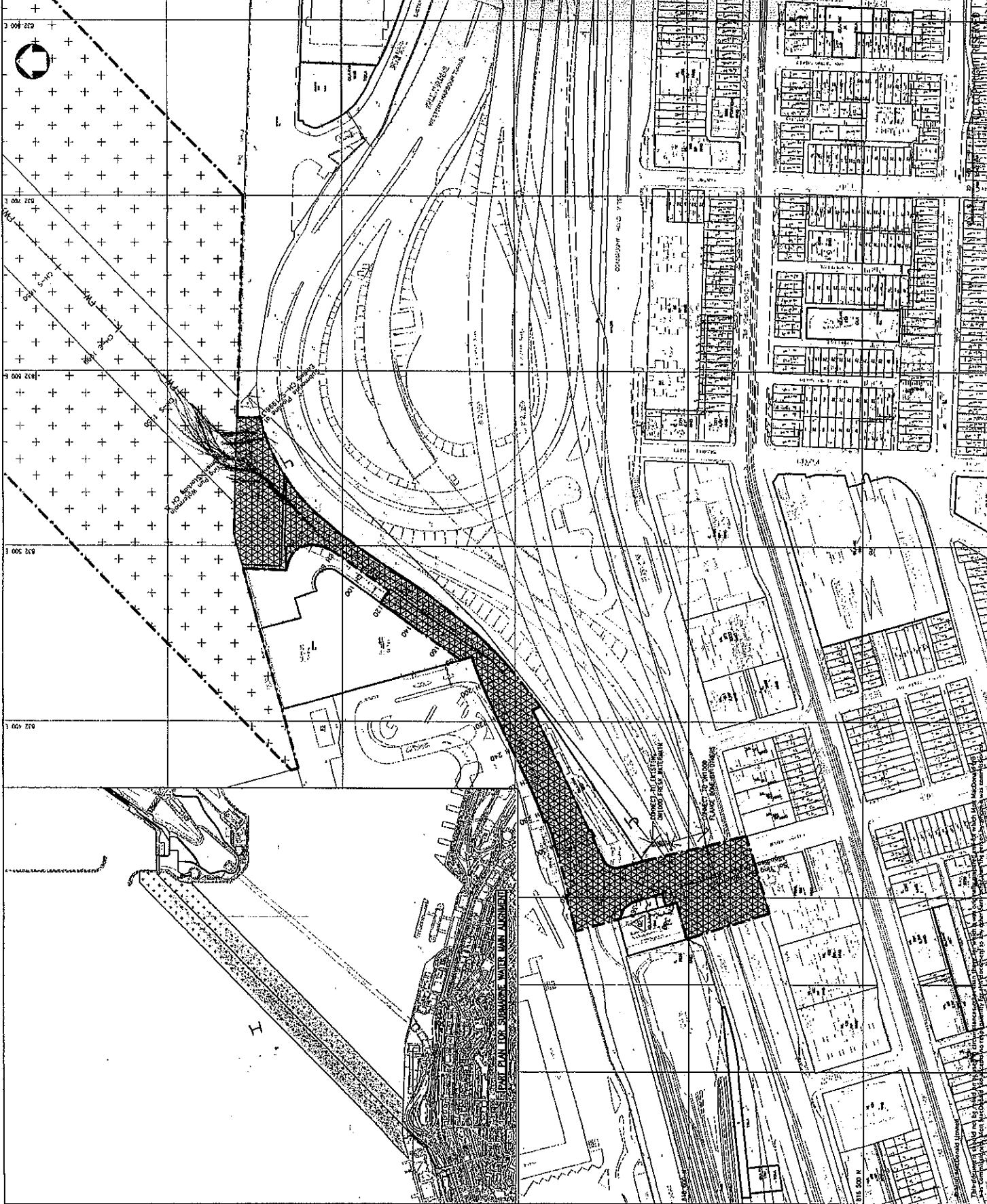
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9/MSD/08

LAYING OF WESTERN CROSS HARBOUR MAIN
AND ASSOCIATED LAND MAINS FROM WEST
KOWLOON TO SAU YING PUN

POSSESSION OF SITE
(SHEET 4 OF 5)

Scale	1:1000	Drawn	YF	Checked	JH	Appr'd	JH
Author	YF	Drawn	YF	Checked	JH	Appr'd	JH
Date	14/12/2003	Drawn	YF	Checked	JH	Appr'd	JH
Project Name							241239
Drawing No.							04
Drawing Title							TEN
Drawing Date							02



NOTES

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CD / FEED / DB	1 / 1	TRUNK	ADDITIONAL NO. 2	SCALE
DC / SAN / DB	1 / 1	TRUNK	ADDITIONAL NO. 1	SCALE
B / DC / DB	1 / 1	DCS	FOR TOWER	SCALE
Rev	Date	Description	Checked By	Date

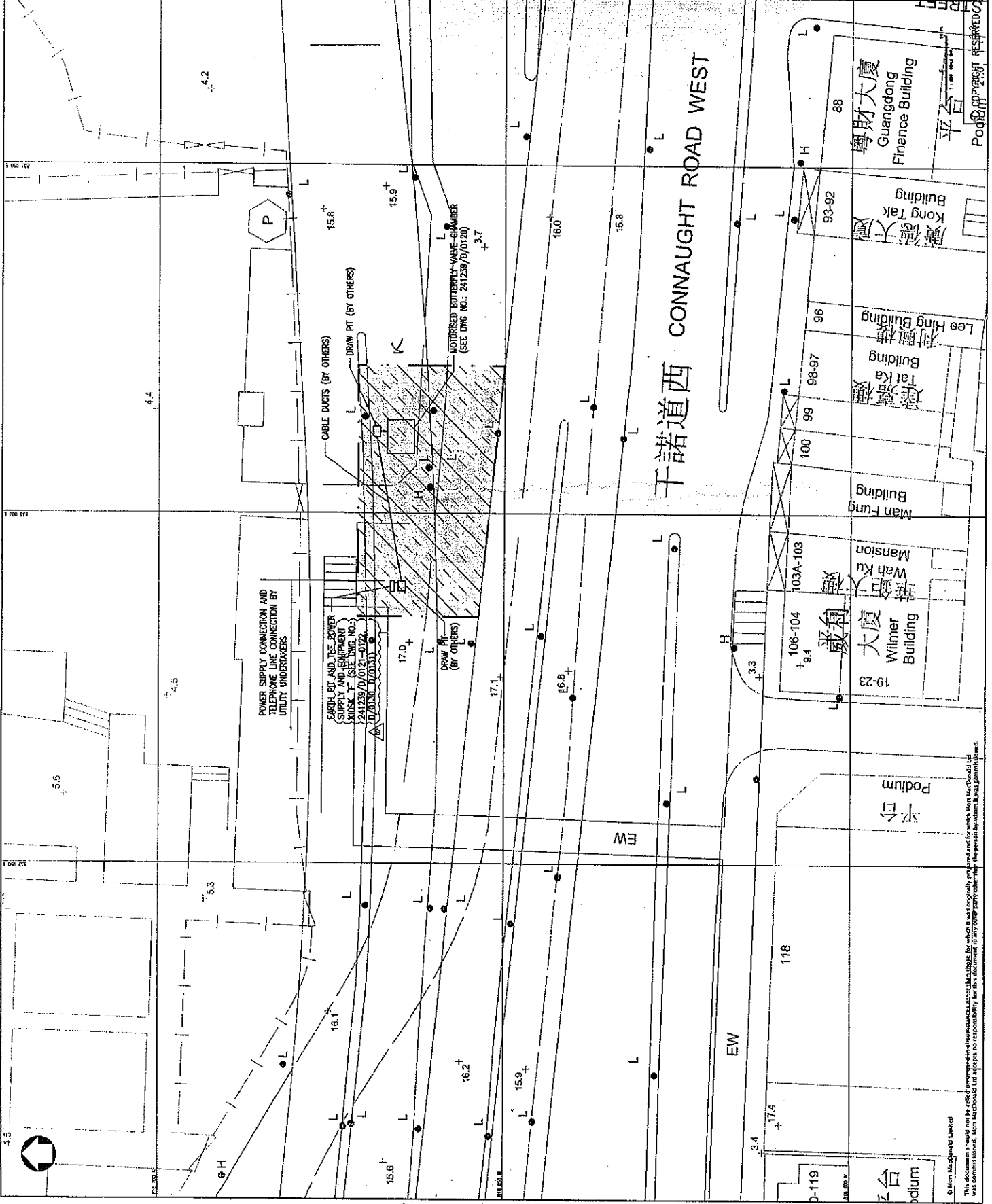
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LAYING OF WESTERN CROSS HARBOUR MAIN
 AND ASSOCIATED LAND MAINS FROM WEST
 KOWLOON TO SAU YING PUN

POSSESSION OF SITE
 (SHEET 5 OF 5)

Project	241239_03A1	Scale	AS SHOWN
Client	Water Supplies Dept.	Drawn	YF
Contract No.	9/MSD/08	Checked	YF
Sheet No.	5 OF 5	Date	24/12/08



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Appendix I

Monitoring Schedule for this Month and Coming Month

Contract No. 9/WSD/08
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun
Time Schedule for Impact Marine Water Quality Monitoring (WQM), Noise Monitoring (NM) and Weekly Site Inspection (SI)
June 2011

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			01-Jun NM (SYP-Daytime)	02-Jun WQM Mid-Ebb 11:00 - 15:00 Mid-Flood 17:00 - 21:00	03-Jun NM (WK-Daytime)	04-Jun WQM Mid-Ebb 12:00 - 16:00 Mid-Flood 18:00 - 22:00 NM Evening-time (West Kowloon) (Sai Ying Pun) NM Night-time (West Kowloon)
05-Jun NM Holiday (West Kowloon) (Sai Ying Pun)	06-Jun	07-Jun WQM Mid-Flood 08:00 - 12:00 Mid-Ebb 14:00 - 18:00	08-Jun NM (SYP-Daytime) SI	09-Jun WQM Mid-Flood 10:30 - 14:30 Mid-Ebb 16:00 - 20:00	10-Jun NM (WK-Daytime)	11-Jun
12-Jun NM Night-time (West Kowloon) NM Holiday (West Kowloon) (Sai Ying Pun)	13-Jun	14-Jun WQM Mid-Ebb 10:00 - 14:00 Mid-Flood 16:00 - 20:00 SI	15-Jun NM (SYP-Daytime)	16-Jun WQM Mid-Ebb 11:00 - 15:00 Mid-Flood 16:30 - 20:30	17-Jun NM (WK-Daytime)	18-Jun
19-Jun NM Night-time (West Kowloon) NM Holiday (West Kowloon) (Sai Ying Pun)	20-Jun	21-Jun WQM Mid-Flood 08:00 - 12:00 Mid-Ebb 14:00 - 18:00	22-Jun NM (SYP-Daytime) SI	23-Jun WQM Mid-Flood 09:00 - 13:00 Mid-Ebb 14:30 - 18:30	24-Jun NM (WK-Daytime)	25-Jun
26-Jun NM Night-time (West Kowloon) NM Holiday (West Kowloon) (Sai Ying Pun)	27-Jun	28-Jun WQM Mid-Ebb 09:00 - 14:00 Mid-Flood 15:30 - 19:30 SI	29-Jun	30-Jun WQM Mid-Ebb 10:30 - 14:30 Mid-Flood 16:00 - 20:00 NM (SYP-Daytime)		

Contract No. 9WSD/08

Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun
 Time Schedule for Impact Marine Water Quality Monitoring (WQM), Noise Monitoring (NM) and Weekly Site Inspection (SI)
 July 2011

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
03-Jul	04-Jul	05-Jul	06-Jul	07-Jul	08-Jul	09-Jul
		WQM Mid-Flood 07:45 - 11:45 Mid-Ebb 13:15 - 17:15 SI	NM (SYP-Daytime)	WQM Mid-Flood 09:00 - 13:00 Mid-Ebb 14:30 - 18:30	NM (WK-Daytime)	WQM Mid-Ebb 11:00 - 15:00 Mid-Flood 17:00 - 21:00
10-Jul	11-Jul	12-Jul	13-Jul	14-Jul	15-Jul	16-Jul
		WQM Mid-Ebb 08:30 - 12:30 Mid-Flood 14:00 - 18:00 SI	NM (SYP-Daytime)	WQM Mid-Ebb 10:30 - 14:30 Mid-Flood 16:00 - 20:00	NM (WK-Daytime)	WQM Mid-Ebb 11:30 - 15:30 Mid-Flood 17:00 - 21:00
17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul	23-Jul
		WQM Mid-Flood 07:00 - 11:00 Mid-Ebb 12:30 - 16:30 SI	NM (SYP-Daytime)	WQM Mid-Flood 08:00 - 12:00 Mid-Ebb 13:30 - 17:30	NM (WK-Daytime)	WQM Mid-Flood 09:00 - 13:00 Mid-Ebb 14:30 - 18:30
24-Jul	25-Jul	26-Jul	27-Jul	28-Jul	29-Jul	30-Jul
		WQM Mid-Ebb 09:00 - 13:00 Mid-Flood 14:30 - 18:30 SI	NM (SYP-Daytime)	WQM Mid-Ebb 09:30 - 13:30 Mid-Flood 15:00 - 19:00	NM (WK-Daytime)	WQM Mid-Ebb 10:30 - 14:30 Mid-Flood 16:00 - 20:00
31-Jul						



Appendix J

Daily Dredging Summary

Wo Hing – Penta-Ocean Joint Venture

Contract No. 9/WSD/08
Laying of Western Cross Harbour Main and Associated Land Mains
From West Kowloon to Sai Ying Pun

Dredging Location of GD "Shun Tat 20" during Overtime Hours 19:00 ~ 07:00 (next day)

Date	Working Hour fm 07:00 to 23:00 or 07:00 to 07:00 (next day)						Working Hour for overtime fm 19:00 to 23:00 or 19:00 to 07:00 (next day)														
	W Hours fm	W Hours to	Chainage fm	Chainage to	Offset fm	Offset to	OT Hours fm	OT Hours to	Chainage fm	Chainage to	Offset fm	Offset to									
12-10-2010	7:00	7:00	640	646	+7.5	-7.5	19:00	7:00	496	512	+5	+20									
			512	520	+5	+20															
			496	512	+5	+20															
			508	520	-5	-20															
			500	508	-5	-20															
			492	500	-5	-20															
			492	500	+7.5	-7.5															
13-10-2010	7:00	7:00	480	492	+7.5	-7.5	21:15	4:00	480	492	+7.5	-7.5									
			472	480	-5	-20															
			472	480	-5	-20															
			472	496	+5	+20															
			476	480	+7.5	-7.5															
14-10-2010	7:00	7:00	460	472	-5	-20	19:00	7:00	476	480	+7.5	-7.5									
			456	460	-5	-20															
			468	472	+5	+20															
			472	476	+7.5	-7.5															
			448	456	-5	-20															
			462	468	+5	+20															
15-10-2010	7:00	7:00	452	462	+5	+20	20:55	1:50	452	462	+5	+20									
			448	452	+5	+20															
			436	472	+7.5	-7.5															
			424	436	+7.5	-7.5															
			436	448	-5	-20															
			444	452	+5	+20															
			420	436	-5	-20															
16-10-2010	7:00	7:00	420	432	+20	+5	19:00	6:30	412	420	-5	-20									
			412	420	-5	-20															
			416	424	+7.5	-7.5															
			436	444	+20	+5															
			432	436	+20	+5															
			400	412	+7.5	-7.5															
			404	420	+5	+20															
			392	404	+5	+20															
			404	436	-5	-20															
18-10-2010	7:00	7:00	440	460	+7.5	-7.5	0:45	5:15	440	460	+7.5	-7.5									
			436	440	+7.5	-7.5															
			396	400	+7.5	-7.5															
			376	396	+7.5	-7.5															
			368	392	+20	+5															
			376	404	-5	-20															
			436	460	+5	+20															
			372	376	-5	-20															
			360	376	+7.5	-7.5															
			348	360	+7.5	-7.5															
19-10-2010	7:00	7:00	356	372	-5	-20	19:00	20:05	356	372	-5	-20									
			360	368	+5	+20															
			456	480	-5	-20															
			436	456	-5	-20															
			356	360	+5	+20															
			340	348	+7.5	-7.5															
			336	340	+7.5	-7.5															
			348	356	+5	+20															
			340	348	+5	+20															
			340	348	+5	+20															
21-10-2010	7:00	19:00	-	-	-	-	-	-	-	-	-										
			22-10-2010	7:00	19:00	-						-	-	-	-	-	-				
24-10-2010	7:00	7:00	336	356	-5	-20	19:00	22:40	336	356	-5	-20									
			430	460	+7.5	-7.5															
			320	336	+5	+20															
			328	336	+7.5	-7.5															
			296	320	+20	+5															
			316	336	-5	-17.5															
			480	500	-5	-20															
			460	500	+5	+20															
			320	328	+7.5	-7.5															
			284	316	-5	-17.5															
			284	304	+7.5	-7.5															
			280	284	+7.5	-7.5															
			260	296	+5	+17.5															
			276	280	+7.5	-7.5															
25-10-2010	7:00	23:00	264	276	+7.5	-7.5	19:00	23:00	264	276	+7.5	-7.5									
			260	284	-5	-17.5															
			252	264	+7.5	-7.5															
			248	252	+7.5	-7.5															
			188	260	+5	+17.5															
			240	248	+7.5	-7.5															
			256	260	-5	-17.5															
			240	256	-5	-17.5															
			216	240	0	-12.5															
28-10-2010	7:00	23:00	236	240	+12.5	0	22:45	23:00	236	240	+12.5	0									
			204	236	0	+12.5															
			180	216	0	-12.5															
			176	204	+12.5	0															
29-10-2010	7:00	23:00	172	180	0	-12.5	19:00	22:55	180	216	0	-12.5									
			30-10-2010	7:00	23:00	176							204	+12.5	0	19:00	21:50	176	204	+12.5	0
			172	180	0	-12.5							172	180	0	-12.5					

Wo Hing – Penta-Ocean Joint Venture

Contract No. 9AWS08
 Laying of Western Cross Harbour Main and Associated Land Mains
 From West Kowloon to Sai Ying Pun

Dredging Location of GD "Shun Tat 20" during Overtime Hours 19:00 - 07:00 (next day)

Date	Working Hour fm 07:00 to 23:00 or 07:00 to 07:00 (next day)						Working Hour for overtime fm 19:00 to 23:00 or 19:00 to 07:00 (next day)					
	W Hours fm	W Hours to	Chainage fm	Chainage to	Offset fm	Offset to	OT Hours fm	OT Hours to	Chainage fm	Chainage to	Offset fm	Offset to
28-12-2010	7:00	19:00	1744	1780	0	-12.5	19:00	7:00	1744	1780	0	-12.5
			1744	1752	0	+12.5			1744	1752	0	+12.5
			1752	1780	0	+12.5			1752	1780	0	+12.5
29-12-2010	7:00	19:00	1780	1788	0	+12.5	19:00	7:00	1780	1788	0	+12.5
			1788	1816	0	+12.5			1788	1816	0	+12.5
			1780	1804	0	-12.5			1780	1804	0	-12.5
30-12-2010	7:00	7:00	1804	1812	0	-12.5	19:00	7:00	1804	1812	0	-12.5
			1812	1832	-12.5	0			1812	1832	-12.5	0
			1832	1844	-12.5	0			1832	1844	-12.5	0
31-12-2010	7:00	7:00	1816	1828	0	+12.5	19:00	7:00	1816	1828	0	+12.5
			1836	1852	0	+12.5			1836	1852	0	+12.5
			1844	1852	0	-12.5			1844	1852	0	-12.5
01-01-2011	7:00	7:00	1852	1872	0	+12.5	19:00	7:00	1852	1872	0	+12.5
			1852	1856	0	-12.5			1852	1856	0	-12.5
			1856	1888	0	-12.5			1856	1888	0	-12.5
02-01-2011	7:00	7:00	1872	1916	0	+12.5	19:00	7:00	1872	1916	0	+12.5
			1916	1924	0	+12.5			1916	1924	0	+12.5
			1924	1948	0	+12.5			1924	1948	0	+12.5
03-01-2011	7:00	7:00	1888	1956	0	-12.5	19:00	7:00	1888	1956	0	-12.5
			1948	1952	0	+12.5			1948	1952	0	+12.5
			1952	1972	+2.5	-12.5			1952	1972	+2.5	-12.5
04-01-2011	7:00	7:00	1200	1440	+7.5	-7.5	19:00	7:00	1200	1440	+7.5	-7.5
			1560	1640	+7.5	-7.5			1560	1640	+7.5	-7.5
			255	290	+10	-10			255	290	+10	-10
05-01-2011	7:00	7:00	175	255	+10	-10	19:00	7:00	175	255	+10	-10
			165	175	+10	0			165	175	+10	0
			80	165	+10	-10			80	165	+10	-10
06-01-2011	7:00	7:00	70	80	+10	-10	19:00	7:00	70	80	+10	-10
			10	70	+10	-10			10	70	+10	-10
			0	10	+5	-5			0	10	+5	-5
07-01-2011	7:00	22:30	10	70	+10	-10	19:00	22:30	10	70	+10	-10
			0	10	+5	-5			0	10	+5	-5
			0	10	+5	-5			0	10	+5	-5

Wo Hing - Penta-Ocean Joint Venture					
Contract no. 9/WSD/08					
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun					
Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)					
Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty.	Permit No.	Mud Disposal Ground
	(bulk volume)		(bulk volume)		
30-Apr-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
01-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
02-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
03-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
04-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
05-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
06-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
07-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
08-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
09-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
10-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
11-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
12-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
13-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
14-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
15-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
16-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
17-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
18-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
19-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
20-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
21-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
22-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
23-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
24-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
25-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
26-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
27-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
28-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
29-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
30-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
31-May-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
01-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
02-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
03-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
04-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
05-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
06-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
07-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
08-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
09-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
10-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
11-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
12-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
13-Jun-2010	0	0	0	EP/MD/10-085	East Ninepin Mud Disposal Ground
14-Jun-2010	1,400	2	1,400	EP/MD/10-085	East Ninepin Mud Disposal Ground
15-Jun-2010	1,400	2	2,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
16-Jun-2010	2,100	3	4,900	EP/MD/10-085	East Ninepin Mud Disposal Ground
17-Jun-2010	2,800	4	7,700	EP/MD/10-085	East Ninepin Mud Disposal Ground
18-Jun-2010	2,100	3	9,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
19-Jun-2010	2,700	4	12,500	EP/MD/10-085	East Ninepin Mud Disposal Ground
20-Jun-2010	2,800	4	15,300	EP/MD/10-085	East Ninepin Mud Disposal Ground
21-Jun-2010	2,100	3	17,400	EP/MD/10-085	East Ninepin Mud Disposal Ground
22-Jun-2010	2,800	4	20,200	EP/MD/10-085	East Ninepin Mud Disposal Ground
23-Jun-2010	2,100	3	22,300	EP/MD/10-085	East Ninepin Mud Disposal Ground
24-Jun-2010	2,100	3	24,400	EP/MD/10-085	East Ninepin Mud Disposal Ground
25-Jun-2010	2,100	3	26,500	EP/MD/10-085	East Ninepin Mud Disposal Ground
26-Jun-2010	2,100	3	28,600	EP/MD/10-085	East Ninepin Mud Disposal Ground
27-Jun-2010	700	1	29,300	EP/MD/10-085	East Ninepin Mud Disposal Ground
28-Jun-2010	2,100	3	31,400	EP/MD/10-085	East Ninepin Mud Disposal Ground
29-Jun-2010	1,400	2	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
30-Jun-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
01-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
02-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
03-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground

Wo Hing - Penta-Ocean Joint Venture					
Contract no. 9/WSD/08					
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun					
Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)					
Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty.	Permit No.	Mud Disposal Ground
	(bulk volume)		(bulk volume)		
04-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
05-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
06-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
07-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
08-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
09-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
10-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
11-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
12-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
13-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
14-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
15-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
16-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
17-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
18-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
19-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
20-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
21-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
22-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
23-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
24-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
25-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
26-Jul-2010	0	0	32,800	EP/MD/10-085	East Ninepin Mud Disposal Ground
27-Jul-2010	0	0	32,800	EP/MD/11-039	East Ninepin Mud Disposal Ground
28-Jul-2010	0	0	32,800	EP/MD/11-039	East Ninepin Mud Disposal Ground
29-Jul-2010	0	0	32,800	EP/MD/11-039	East Ninepin Mud Disposal Ground
30-Jul-2010	700	1	33,500	EP/MD/11-039	East Ninepin Mud Disposal Ground
31-Jul-2010	1,400	2	34,900	EP/MD/11-039	East Ninepin Mud Disposal Ground
01-Aug-2010	2,100	3	37,000	EP/MD/11-039	East Ninepin Mud Disposal Ground
02-Aug-2010	1,400	2	38,400	EP/MD/11-039	East Ninepin Mud Disposal Ground
03-Aug-2010	700	1	39,100	EP/MD/11-039	East Ninepin Mud Disposal Ground
04-Aug-2010	700	1	39,800	EP/MD/11-039	East Ninepin Mud Disposal Ground
05-Aug-2010	700	1	40,500	EP/MD/11-039	East Ninepin Mud Disposal Ground
06-Aug-2010	0	0	40,500	EP/MD/11-039	East Ninepin Mud Disposal Ground
07-Aug-2010	0	0	40,500	EP/MD/11-039	East Ninepin Mud Disposal Ground
08-Aug-2010	0	0	40,500	EP/MD/11-039	East Ninepin Mud Disposal Ground
09-Aug-2010	0	0	40,500	EP/MD/11-039	East Ninepin Mud Disposal Ground
10-Aug-2010	0	0	40,500	EP/MD/11-039	East Ninepin Mud Disposal Ground
11-Aug-2010	0	0	40,500	EP/MD/11-039	East Ninepin Mud Disposal Ground
12-Aug-2010	1,400	2	41,900	EP/MD/11-039	East Ninepin Mud Disposal Ground
13-Aug-2010	1,400	2	43,300	EP/MD/11-039	East Ninepin Mud Disposal Ground
14-Aug-2010	2,100	3	45,400	EP/MD/11-039	East Ninepin Mud Disposal Ground
15-Aug-2010	2,100	3	47,500	EP/MD/11-039	East Ninepin Mud Disposal Ground
16-Aug-2010	2,100	3	49,600	EP/MD/11-039	East Ninepin Mud Disposal Ground
17-Aug-2010	700	1	50,300	EP/MD/11-039	East Ninepin Mud Disposal Ground
18-Aug-2010	1,400	2	51,700	EP/MD/11-039	East Ninepin Mud Disposal Ground
19-Aug-2010	1,400	2	53,100	EP/MD/11-039	East Ninepin Mud Disposal Ground
20-Aug-2010	2,100	3	55,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
21-Aug-2010	1,400	2	56,600	EP/MD/11-039	East Ninepin Mud Disposal Ground
22-Aug-2010	700	1	57,300	EP/MD/11-039	East Ninepin Mud Disposal Ground
23-Aug-2010	0	0	57,300	EP/MD/11-039	East Ninepin Mud Disposal Ground
24-Aug-2010	1,400	2	58,700	EP/MD/11-039	East Ninepin Mud Disposal Ground
25-Aug-2010	1,400	2	60,100	EP/MD/11-039	East Ninepin Mud Disposal Ground
26-Aug-2010	2,100	3	62,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
27-Aug-2010	2,100	3	64,300	EP/MD/11-039	East Ninepin Mud Disposal Ground
28-Aug-2010	0	0	64,300	EP/MD/11-039	East Ninepin Mud Disposal Ground
29-Aug-2010	1,400	2	65,700	EP/MD/11-039	East Ninepin Mud Disposal Ground
30-Aug-2010	1,400	2	67,100	EP/MD/11-039	East Ninepin Mud Disposal Ground
31-Aug-2010	2,100	3	69,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
01-Sep-2010	1,400	2	70,600	EP/MD/11-039	East Ninepin Mud Disposal Ground
02-Sep-2010	2,100	3	72,700	EP/MD/11-039	East Ninepin Mud Disposal Ground
03-Sep-2010	2,100	3	74,800	EP/MD/11-039	East Ninepin Mud Disposal Ground
04-Sep-2010	2,800	4	77,600	EP/MD/11-039	East Ninepin Mud Disposal Ground

Wo Hing - Penta-Ocean Joint Venture					
Contract no. 9/WSD/08					
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun					
Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)					
Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty.	Permit No.	Mud Disposal Ground
	(bulk volume)		(bulk volume)		
05-Sep-2010	2,100	3	79,700	EP/MD/11-039	East Ninepin Mud Disposal Ground
06-Sep-2010	1,400	2	81,100	EP/MD/11-039	East Ninepin Mud Disposal Ground
07-Sep-2010	0	0	81,100	EP/MD/11-039	East Ninepin Mud Disposal Ground
08-Sep-2010	700	1	81,800	EP/MD/11-039	East Ninepin Mud Disposal Ground
09-Sep-2010	1,400	2	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
10-Sep-2010	0	0	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
11-Sep-2010	0	0	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
12-Sep-2010	0	0	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
13-Sep-2010	0	0	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
14-Sep-2010	0	0	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
15-Sep-2010	0	0	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
16-Sep-2010	0	0	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
17-Sep-2010	0	0	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
18-Sep-2010	0	0	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
19-Sep-2010	0	0	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
20-Sep-2010	0	0	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
21-Sep-2010	0	0	83,200	EP/MD/11-039	East Ninepin Mud Disposal Ground
22-Sep-2010	700	1	83,900	EP/MD/11-039	East Ninepin Mud Disposal Ground
23-Sep-2010	0	0	83,900	EP/MD/11-039	East Ninepin Mud Disposal Ground
24-Sep-2010	0	0	83,900	EP/MD/11-039	East Ninepin Mud Disposal Ground
25-Sep-2010	0	0	83,900	EP/MD/11-039	East Ninepin Mud Disposal Ground
26-Sep-2010	0	0	83,900	EP/MD/11-039	East Ninepin Mud Disposal Ground
27-Sep-2010	0	0	83,900	EP/MD/11-039	East Ninepin Mud Disposal Ground
28-Sep-2010	0	0	83,900	EP/MD/11-039	East Ninepin Mud Disposal Ground
29-Sep-2010	0	0	83,900	EP/MD/11-039	East Ninepin Mud Disposal Ground
30-Sep-2010	0	0	83,900	EP/MD/11-039	East Ninepin Mud Disposal Ground
01-Oct-2010	500	1	84,400	EP/MD/11-069	South Cheung Chau
02-Oct-2010	500	1	84,900	EP/MD/11-069	South Cheung Chau
03-Oct-2010	1,000	2	85,900	EP/MD/11-069	South Cheung Chau
04-Oct-2010	1,000	2	86,900	EP/MD/11-069	South Cheung Chau
05-Oct-2010	500	1	87,400	EP/MD/11-069	South Cheung Chau
06-Oct-2010	1,000	2	88,400	EP/MD/11-069	South Cheung Chau
07-Oct-2010	1,500	3	89,900	EP/MD/11-069	South Cheung Chau
08-Oct-2010	1,000	2	90,900	EP/MD/11-069	South Cheung Chau
09-Oct-2010	500	1	91,400	EP/MD/11-069	South Cheung Chau
10-Oct-2010	0	0	91,400	EP/MD/11-069	South Cheung Chau
11-Oct-2010	1,500	3	92,900	EP/MD/11-069	South Cheung Chau
12-Oct-2010	1,000	2	93,900	EP/MD/11-069	South Cheung Chau
13-Oct-2010	2,000	4	95,900	EP/MD/11-069	South Cheung Chau
14-Oct-2010	2,000	4	97,900	EP/MD/11-069	South Cheung Chau
15-Oct-2010	1,500	3	99,400	EP/MD/11-069	South Cheung Chau
16-Oct-2010	2,000	4	101,400	EP/MD/11-069	South Cheung Chau
17-Oct-2010	2,000	4	103,400	EP/MD/11-069	South Cheung Chau
18-Oct-2010	2,000	4	105,400	EP/MD/11-069	South Cheung Chau
19-Oct-2010	1,500	3	106,900	EP/MD/11-069	South Cheung Chau
20-Oct-2010	1,000	2	107,900	EP/MD/11-069	South Cheung Chau
21-Oct-2010	0	0	107,900	EP/MD/11-069	South Cheung Chau
22-Oct-2010	0	0	107,900	EP/MD/11-069	South Cheung Chau
23-Oct-2010	500	1	108,400	EP/MD/11-069	South Cheung Chau
24-Oct-2010	2,000	4	110,400	EP/MD/11-069	South Cheung Chau
25-Oct-2010	1,500	3	111,900	EP/MD/11-069	South Cheung Chau
26-Oct-2010	1,000	2	112,900	EP/MD/11-069	South Cheung Chau
27-Oct-2010	1,000	2	113,900	EP/MD/11-069	South Cheung Chau
28-Oct-2010	0	0	113,900	EP/MD/11-069	South Cheung Chau
29-Oct-2010	1,000	2	114,900	EP/MD/11-069	South Cheung Chau
30-Oct-2010	500	1	115,400	EP/MD/11-069	South Cheung Chau
31-Oct-2010	1,000	2	116,400	EP/MD/11-069	South Cheung Chau
01-Nov-2010	1,000	2	117,400	EP/MD/11-069	South Cheung Chau
02-Nov-2010	500	1	117,900	EP/MD/11-069	South Cheung Chau
03-Nov-2010	1,000	2	118,900	EP/MD/11-069	South Cheung Chau
04-Nov-2010	1,000	2	119,900	EP/MD/11-069	South Cheung Chau
05-Nov-2010	500	1	120,400	EP/MD/11-069	South Cheung Chau
06-Nov-2010	500	1	120,900	EP/MD/11-069	South Cheung Chau

Wo Hing - Penta-Ocean Joint Venture					
Contract no. 9/WSD/08					
Laying of Western Cross Harbour Main & Associated Land Mains from					
West Kowloon to Sai Ying Pun					
Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)					
Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty.	Permit No.	Mud Disposal Ground
	(bulk volume)		(bulk volume)		
07-Nov-2010	500	1	121,400	EP/MD/11-069	South Cheung Chau
08-Nov-2010	0	0	121,400	EP/MD/11-069	South Cheung Chau
09-Nov-2010	500	1	121,900	EP/MD/11-069	South Cheung Chau
10-Nov-2010	300	1	122,200	EP/MD/11-069	South Cheung Chau
11-Nov-2010	0	0	122,200	EP/MD/11-069	South Cheung Chau
12-Nov-2010	0	0	122,200	EP/MD/11-069	South Cheung Chau
13-Nov-2010	0	0	122,200	EP/MD/11-069	South Cheung Chau
14-Nov-2010	0	0	122,200	EP/MD/11-069	South Cheung Chau
15-Nov-2010	0	0	122,200	EP/MD/11-069	South Cheung Chau
16-Nov-2010	0	0	122,200	EP/MD/11-069	South Cheung Chau
17-Nov-2010	0	0	122,200	EP/MD/11-069	South Cheung Chau
18-Nov-2010	1,500	3	123,700	EP/MD/11-069	South Cheung Chau
19-Nov-2010	1,000	2	124,700	EP/MD/11-069	South Cheung Chau
20-Nov-2010	1,500	3	126,200	EP/MD/11-069	South Cheung Chau
21-Nov-2010	1,000	2	127,200	EP/MD/11-069	South Cheung Chau
22-Nov-2010	1,500	3	128,700	EP/MD/11-069	South Cheung Chau
23-Nov-2010	1,000	2	129,700	EP/MD/11-069	South Cheung Chau
24-Nov-2010	2,000	4	131,700	EP/MD/11-069	South Cheung Chau
25-Nov-2010	1,000	2	132,700	EP/MD/11-069	South Cheung Chau
26-Nov-2010	1,800	4	134,500	EP/MD/11-069	South Cheung Chau
27-Nov-2010	1,000	2	135,500	EP/MD/11-069	South Cheung Chau
28-Nov-2010	1,500	3	137,000	EP/MD/11-069	South Cheung Chau
29-Nov-2010	2,000	4	139,000	EP/MD/11-069	South Cheung Chau
30-Nov-2010	1,500	3	140,500	EP/MD/11-069	South Cheung Chau
01-Dec-2010	1,000	2	141,500	EP/MD/11-069	South Cheung Chau
02-Dec-2010	1,500	3	143,000	EP/MD/11-069	South Cheung Chau
03-Dec-2010	1,000	2	144,000	EP/MD/11-069	South Cheung Chau
04-Dec-2010	1,500	3	145,500	EP/MD/11-069	South Cheung Chau
05-Dec-2010	1,000	2	146,500	EP/MD/11-069	South Cheung Chau
06-Dec-2010	500	1	147,000	EP/MD/11-069	South Cheung Chau
07-Dec-2010	1,500	3	148,500	EP/MD/11-069	South Cheung Chau
08-Dec-2010	1,000	2	149,500	EP/MD/11-069	South Cheung Chau
09-Dec-2010	1,000	2	150,500	EP/MD/11-069	South Cheung Chau
10-Dec-2010	1,500	3	152,000	EP/MD/11-069	South Cheung Chau
11-Dec-2010	500	1	152,500	EP/MD/11-069	South Cheung Chau
12-Dec-2010	1,000	2	153,500	EP/MD/11-069	South Cheung Chau
13-Dec-2010	0	0	153,500	EP/MD/11-069	South Cheung Chau
14-Dec-2010	0	0	153,500	EP/MD/11-069	South Cheung Chau
15-Dec-2010	0	0	153,500	EP/MD/11-069	South Cheung Chau
16-Dec-2010	0	0	153,500	EP/MD/11-069	South Cheung Chau
17-Dec-2010	0	0	153,500	EP/MD/11-069	South Cheung Chau
18-Dec-2010	0	0	153,500	EP/MD/11-069	South Cheung Chau
19-Dec-2010	0	0	153,500	EP/MD/11-069	South Cheung Chau
20-Dec-2010	0	0	153,500	EP/MD/11-069	South Cheung Chau
21-Dec-2010	0	0	153,500	EP/MD/11-069	South Cheung Chau
22-Dec-2010	500	1	154,000	EP/MD/11-069	South Cheung Chau
23-Dec-2010	0	0	154,000	EP/MD/11-069	South Cheung Chau
24-Dec-2010	0	0	154,000	EP/MD/11-069	South Cheung Chau
25-Dec-2010	500	1	154,500	EP/MD/11-069	South Cheung Chau
26-Dec-2010	0	0	154,500	EP/MD/11-069	South Cheung Chau
27-Dec-2010	500	1	155,000	EP/MD/11-069	South Cheung Chau
28-Dec-2010	500	1	155,500	EP/MD/11-069	South Cheung Chau
29-Dec-2010	500	1	156,000	EP/MD/11-069	South Cheung Chau
30-Dec-2010	500	1	156,500	EP/MD/11-069	South Cheung Chau
31-Dec-2010	500	1	157,000	EP/MD/11-069	South Cheung Chau
01-Jan-2011	500	1	157,500	EP/MD/11-069	South Cheung Chau
02-Jan-2011	500	1	158,000	EP/MD/11-069	South Cheung Chau
03-Jan-2011	1,000	2	159,000	EP/MD/11-069	South Cheung Chau
04-Jan-2011	0	0	159,000	EP/MD/11-069	South Cheung Chau
05-Jan-2011	500	1	159,500	EP/MD/11-069	South Cheung Chau
06-Jan-2011	500	1	160,000	EP/MD/11-069	South Cheung Chau
07-Jan-2011	0	0	160,000	EP/MD/11-069	South Cheung Chau
08-Jan-2011	500	1	160,500	EP/MD/11-069	South Cheung Chau

Wo Hing - Penta-Ocean Joint Venture					
Contract no. 9/WSD/08					
Laying of Western Cross Harbour Main & Associated Land Mains from					
West Kowloon to Sai Ying Pun					
Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)					
Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty.	Permit No.	Mud Disposal Ground
	(bulk volume)		(bulk volume)		
09-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
10-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
11-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
12-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
13-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
14-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
15-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
16-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
17-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
18-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
19-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
20-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
21-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
22-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
23-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
24-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
25-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
26-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
27-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
28-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
29-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
30-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
31-Jan-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
01-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
02-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
03-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
04-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
05-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
06-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
07-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
08-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
09-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
10-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
11-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
12-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
13-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
14-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
15-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
16-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
17-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
18-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
19-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
20-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
21-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
22-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
23-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
24-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
25-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
26-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
27-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
28-Feb-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
01-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
02-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
03-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
04-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
05-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
06-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
07-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
08-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
09-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
10-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
11-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
12-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau

Wo Hing - Penta-Ocean Joint Venture					
Contract no. 9/WSD/08					
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun					
Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)					
Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty.	Permit No.	Mud Disposal Ground
	(bulk volume)		(bulk volume)		
13-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
14-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
15-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
16-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
17-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
18-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
19-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
20-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
21-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
22-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
23-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
24-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
25-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
26-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
27-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
28-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
29-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
30-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
31-Mar-2011	0	0	160,500	EP/MD/11-069	South Cheung Chau
01-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
02-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
03-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
04-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
05-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
06-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
07-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
08-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
09-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
10-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
11-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
12-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
13-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
14-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
15-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
16-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
17-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
18-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
19-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
20-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
21-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
22-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
23-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
24-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
25-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
26-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
27-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
28-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
29-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
30-Apr-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
01-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
02-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
03-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
04-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
05-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
06-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
07-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
08-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
09-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
10-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
11-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
12-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
13-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
14-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
15-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
16-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground

Wo Hing - Penta-Ocean Joint Venture					
Contract no. 9/WSD/08					
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun					
Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)					
Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty.	Permit No.	Mud Disposal Ground
	(bulk volume)		(bulk volume)		
17-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
18-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
19-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
20-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
21-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
22-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
23-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
24-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
25-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
26-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
27-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
28-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
29-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
30-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
31-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
TOTAL =	160,500	274			

Wo Hing - Penta-Ocean Joint Venture				
Contract no. 9/WSD/08				
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun				
Summary of Dumping Qty. of Type 2 Marine Sediment				
Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty.	Permit No.
	(bulk volume)		(bulk volume)	
05-May-2010	440	1	440	EP/MD/10-086
06-May-2010	1,280	3	1,720	EP/MD/10-086
07-May-2010	0	0	1,720	EP/MD/10-086
08-May-2010	0	0	1,720	EP/MD/10-086
09-May-2010	1,400	2	3,120	EP/MD/10-086
10-May-2010	1,400	2	4,520	EP/MD/10-086
11-May-2010	1,300	2	5,820	EP/MD/10-086
12-May-2010	1,800	3	7,620	EP/MD/10-086
13-May-2010	1,200	2	8,820	EP/MD/10-086
14-May-2010	0	0	8,820	EP/MD/10-086
15-May-2010	0	0	8,820	EP/MD/10-086
16-May-2010	600	1	9,420	EP/MD/10-086
17-May-2010	1,200	2	10,620	EP/MD/10-086
18-May-2010	700	1	11,320	EP/MD/10-086
19-May-2010	2,000	3	13,320	EP/MD/10-086
20-May-2010	1,400	2	14,720	EP/MD/10-086
21-May-2010	1,400	2	16,120	EP/MD/10-086
22-May-2010	2,100	3	18,220	EP/MD/10-086
23-May-2010	1,400	2	19,620	EP/MD/10-086
24-May-2010	1,400	2	21,020	EP/MD/10-086
25-May-2010	1,300	2	22,320	EP/MD/10-086
26-May-2010	1,400	2	23,720	EP/MD/10-086
27-May-2010	1,300	2	25,020	EP/MD/10-086
28-May-2010	1,400	2	26,420	EP/MD/10-086
29-May-2010	600	1	27,020	EP/MD/10-086
30-May-2010	2,100	3	29,120	EP/MD/11-012
31-May-2010	700	1	29,820	EP/MD/11-012
01-Jun-2010	1,900	3	31,720	EP/MD/11-012
02-Jun-2010	1,220	2	32,940	EP/MD/11-012
03-Jun-2010	1,300	2	34,240	EP/MD/11-012
04-Jun-2010	1,200	2	35,440	EP/MD/11-012
05-Jun-2010	1,400	2	36,840	EP/MD/11-012
06-Jun-2010	600	1	37,440	EP/MD/11-012
07-Jun-2010	0	0	37,440	EP/MD/11-012
08-Jun-2010	500	1	37,940	EP/MD/11-012
09-Jun-2010	0	0	37,940	EP/MD/11-012
10-Jun-2010	600	1	38,540	EP/MD/11-012
11-Jun-2010	1,200	2	39,740	EP/MD/11-012
12-Jun-2010	1,400	2	41,140	EP/MD/11-012
13-Jun-2010	1,400	2	42,540	EP/MD/11-012
14-Jun-2010	0	0	42,540	EP/MD/11-012
15-Jun-2010	0	0	42,540	EP/MD/11-012
16-Jun-2010	0	0	42,540	EP/MD/11-012
17-Jun-2010	0	0	42,540	EP/MD/11-012
18-Jun-2010	0	0	42,540	EP/MD/11-012
19-Jun-2010	0	0	42,540	EP/MD/11-012

Wo Hing - Penta-Ocean Joint Venture				
Contract no. 9/WSD/08				
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun				
Summary of Dumping Qty. of Type 2 Marine Sediment				
Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty.	Permit No.
	(bulk volume)		(bulk volume)	
20-Jun-2010	0	0	42,540	EP/MD/11-012
21-Jun-2010	0	0	42,540	EP/MD/11-012
22-Jun-2010	0	0	42,540	EP/MD/11-012
23-Jun-2010	0	0	42,540	EP/MD/11-012
24-Jun-2010	0	0	42,540	EP/MD/11-012
25-Jun-2010	0	0	42,540	EP/MD/11-012
26-Jun-2010	0	0	42,540	EP/MD/11-012
27-Jun-2010	0	0	42,540	EP/MD/11-012
28-Jun-2010	0	0	42,540	EP/MD/11-012
29-Jun-2010	0	0	42,540	EP/MD/11-012
30-Jun-2010	1,200	2	43,740	EP/MD/11-024
01-Jul-2010	2,600	4	46,340	EP/MD/11-024
02-Jul-2010	2,800	4	49,140	EP/MD/11-024
03-Jul-2010	1,400	2	50,540	EP/MD/11-024
04-Jul-2010	2,100	3	52,640	EP/MD/11-024
05-Jul-2010	2,850	4	55,490	EP/MD/11-024
06-Jul-2010	1,400	2	56,890	EP/MD/11-024
07-Jul-2010	1,400	2	58,290	EP/MD/11-024
08-Jul-2010	2,700	4	60,990	EP/MD/11-024
09-Jul-2010	2,100	3	63,090	EP/MD/11-024
10-Jul-2010	2,100	3	65,190	EP/MD/11-024
11-Jul-2010	1,400	2	66,590	EP/MD/11-024
12-Jul-2010	2,150	3	68,740	EP/MD/11-024
13-Jul-2010	2,100	3	70,840	EP/MD/11-024
14-Jul-2010	700	1	71,540	EP/MD/11-024
15-Jul-2010	2,100	3	73,640	EP/MD/11-024
16-Jul-2010	2,100	3	75,740	EP/MD/11-024
17-Jul-2010	700	1	76,440	EP/MD/11-024
18-Jul-2010	700	1	77,140	EP/MD/11-024
19-Jul-2010	2,100	3	79,240	EP/MD/11-024
20-07-2010 (18 July 2010)	2,100	3	81,340	EP/MD/11-024
21-Jul-2010	700	1	82,040	EP/MD/11-024
22-Jul-2010	600	1	82,640	EP/MD/11-024
23-Jul-2010	1,400	2	84,040	EP/MD/11-024
24-Jul-2010	1,400	2	85,440	EP/MD/11-024
25-Jul-2010	1,400	2	86,840	EP/MD/11-024
26-Jul-2010	1,450	2	88,290	EP/MD/11-024
27-Jul-2010	2,200	3	90,490	EP/MD/11-024
28-Jul-2010	1,450	2	91,940	EP/MD/11-024
29-Jul-2010	1,500	2	93,440	EP/MD/11-024
30-Jul-2010	0	0	93,440	--
31-Jul-2010	0	0	93,440	--
01-Aug-2010	0	0	93,440	--
02-Aug-2010	0	0	93,440	--

Wo Hing - Penta-Ocean Joint Venture				
Contract no. 9/WSD/08				
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun				
Summary of Dumping Qty. of Type 2 Marine Sediment				
Date	Dumping qty (m ³)	Barge Load per day	Accumulated Dumping Qty.	Permit No.
	(bulk volume)		(bulk volume)	
03-Aug-2010	0	0	98,440	
04-Aug-2010	0	0	98,440	
05-Aug-2010	700	1	94,140	
(dump on 06-Aug-10)				
06-Aug-2010	1,500	2	95,640	EP/MD/11-053
07-Aug-2010	700	1	96,340	EP/MD/11-053
08-Aug-2010	2,100	3	98,440	EP/MD/11-053
09-Aug-2010	1,500	2	99,940	EP/MD/11-053
10-Aug-2010	1,500	2	101,440	EP/MD/11-053
11-Aug-2010	700	1	102,140	EP/MD/11-053
12-Aug-2010	0	0	102,140	EP/MD/11-053
13-Aug-2010	0	0	102,140	EP/MD/11-053
14-Aug-2010	0	0	102,140	EP/MD/11-053
15-Aug-2010	0	0	102,140	EP/MD/11-053
16-Aug-2010	0	0	102,140	EP/MD/11-053
17-Aug-2010	0	0	102,140	EP/MD/11-053
18-Aug-2010	0	0	102,140	EP/MD/11-053
19-Aug-2010	0	0	102,140	EP/MD/11-053
20-Aug-2010	0	0	102,140	EP/MD/11-053
21-Aug-2010	0	0	102,140	EP/MD/11-053
22-Aug-2010	0	0	102,140	EP/MD/11-053
23-Aug-2010	0	0	102,140	EP/MD/11-053
24-Aug-2010	0	0	102,140	EP/MD/11-053
25-Aug-2010	0	0	102,140	EP/MD/11-053
26-Aug-2010	0	0	102,140	EP/MD/11-053
27-Aug-2010	0	0	102,140	EP/MD/11-053
28-Aug-2010	1,400	2	103,540	EP/MD/11-053
29-Aug-2010	700	1	104,240	EP/MD/11-053
30-Aug-2010	0	0	104,240	EP/MD/11-053
31-Aug-2010	750	1	104,990	EP/MD/11-053
01-Sep-2010	0	0	104,990	EP/MD/11-053
02-Sep-2010	0	0	104,990	EP/MD/11-053
03-Sep-2010	0	0	104,990	EP/MD/11-053
04-Sep-2010	0	0	104,990	EP/MD/11-053
05-Sep-2010	0	0	104,990	EP/MD/11-053
TOTAL =	104,990	155		



Appendix K

Details of Interim Notifications of Exceedance (NOEs) in this reporting month



東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED



8/F, Block B, Veristrong Industrial Centre, 34 - 36 Au Pui Wan Street, Fotan, Shatin,
Hong Kong Tel : (852) 2695 8318 Fax : (852) 2695 3944 E-Mail : etl@ets-
testconsult.com

FAX TRANSMISSION

Your Ref :

Our Ref. :

ENV/WHPOJV/110622/001

To : Wo Hing – Penta-Ocean Joint Venture	From : Mr. C L Lau
Attn : Mr. Danny HO / Ms. Joanne Ng	Date : 22 June, 2011
Fax No. : 2957 8213	Total No. of Page (s) : 4
Subject : Contract No. 9/WSD/08 Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun Notification of Exceedances of Night-time Noise Monitoring on 19 June 2011 (0000-0100)	

If you do not receive the whole document, please contact the sender on telephone no (852) 2695 8318 for immediate help.

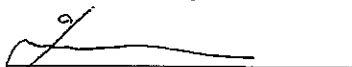
Message :

Dear Sir or Madam:

We would like to submit the night-time noise monitoring (2300-0700) results conducted at KS6 on 19 June 2011 (0000-0100). The monitoring data sheet is attached for your information. The exceedance is considered invalid to the Project and detailed information is provided in the attached Notification of Exceedances (NOE).

Should you have further queries, please do not hesitate to contact the undersigned.

Yours sincerely,


C. L. Lau

Environmental Team Leader

c.c.	EPD	Mr. C L WONG	Fax No.: 2402 8275
	EPD	Mr. S H LAW, Sean	Fax No.: 2960 1760
	Mott MacDonald	Mr. Kelvin HO	Fax No.: 2377 2900
	Environ (IEC)	Mr. David Yeung	Fax No.: 3548 6988

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Contract No. 9/WSD/08
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun
Notification of Exceedance (NOE)

Date and Time of Noise Monitoring: 19 June 2011 (0000-0100) at KS6

Construction Works carried out during the monitoring: Application of Internal Lining inside the water main at West Kowloon side

Corresponding CNP: GW-RE0257-11 (19 April 2011 to 04 October 2011)

Monitoring Location	Measured Value, dB(A)	Action Level	Limit Level, dB(A)	Possible Reason(s) for the Exceedance	Action to be taken	Remark
KS6	59.8 59.9 59.0	When one documented complaint is received	55	Application of internal lining inside the water main was carried out by using one generator and one air compressor, which fulfill the requirement described in corresponding CNP. Refer to the observation during the monitoring, main source of noise impact was due to local traffic along West Kowloon Highway. According to the summary of baseline noise monitoring, the range of background noise level from 0000-0100 * is between 54.2dB(A) and 64.7dB(A). The impact monitoring results were found within the range of baseline noise level. Hence, the exceedance recorded is considered invalid and no related to the construction works.	Nil	Nil

Remark (*): Refer to the baseline data, it shows that the range of noise level during 2300-0700 is very large (around from 52dB(A) to 67dB(A)) and noise from 2300-0100 is in high level (around 60dB(A)) at all monitoring stations. As a result, baseline noise data measured on 0000-0100 at KS6 are more suitable for being as background indicator (instead of 2300-0700 of next day).

Attachment

Night-time Noise monitoring data sheets (19 June 2011 at KS6)
 Summary of Baseline Noise Monitoring at KS6 (0000-0100)

Prepared by: _____ Date: **21 June 2011**
 Checked by: _____ Date: **21 June 2011**

(C. L. Lau) (Environmental Team Leader)
 (C. L. Lau) (Environmental Team Leader)



東英保聲測試顧問有限公司
ETS-TESTCONSULT LIMITED

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

Impact Noise Monitoring at West Kowloon during 1900-2300 / 2300-0700 / 0700-1900 (Holiday)
Data Record Sheet

Date of Monitoring		19/6/11					
Monitoring Location		KS6 - Podium at the Cullinan			KS4b - Footpath of West Kowloon Waterfront Promenade		
Sound Level Meter (Model and Serial No.)		J500 NL-31 (SN: 00593620)			→ (SN:)		
Sound Pressure Calibrator (Model and Serial No.)		J500 (SN: 10196943)			→ (SN:)		
Weather Condition		Fine			Fine		
Temperature (°C)		27			27		
Type of Measurement		Free Field (Façade)			Free Field (Façade)		
Measurement Period (min)		5			5		
Calibration before Measurement, dB(A)	Before	94.0			94.0		
	After	94.0			94.0		
Measurement Time	From	00=10	00=15	00=20	00=30	00=35	00=40
	To	00=15	00=20	00=25	00=35	00=40	00=45
Wind Strength (m/s)		1.6	1.5	1.4	1.2	1.1	1.3
L _{eq} , dB(A)		59.8	59.9	59.0	60.2	59.7	59.6
L ₁₀ , dB(A)		61.2	61.2	59.6	61.7	61.4	61.2
L ₅ , dB(A)		57.8	57.9	58.6	58.1	57.6	57.5
Major Construction Noise Source(s) During Measurement		/			/		
Other Noise Source(s) During Measurement		Vehicle passing			→		
Remarks		The result was / was not exceeded the Limit Level.			The result was / was not exceeded the Limit Level.		

Time Period	Action	Limit
0700-1900 hrs normal weekdays	When one documented complaint is received	75 dB(A)
1900-2300 hrs on normal weekdays		70 dB(A)
0700-1900 hrs on holiday		70 dB(A)
Restricted hours (2300-0700 hrs)		55 dB(A)

	Name	Signature	Date
Recorded by	Hak Tai Wan	Hak	19/6/11
Checked by	C. L. Lam		20/6/11

Summary of Baseline Noise Monitoring (Night-time:0000-0100) - KS6 (The Cullinan).

Date	28/12/09	29/12/09	30/12/09	31/12/09	01/01/10	02/01/10	03/01/10	04/01/10	05/01/10	06/01/10	07/01/10	08/01/10	09/01/10	10/01/10
Daily Average, Leq(5min)	57.0	57.1	62.3	56.8	59.2	56.6	56.3	56.3	60.6	56.7	57.4	60.1	59.0	56.8
Max Leq(5min)	58.5	58.5	63.8	59.5	60.5	58.3	57.8	57.8	61.1	68.2	58.9	61.4	64.7	58.3
Min Leq(5min)	64.7	65.7	60.4	55.2	57.6	54.2	54.7	54.7	59.6	55.1	55.7	55.2	55.0	58.0

Overall Average, Leq(5-min) 58.5 dB(A)
 Max 64.7 dB(A)
 Min 54.2 dB(A)



東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED



8/F, Block B, Veristrong Industrial Centre, 34 - 36 Au Pui Wan Street, Fotan, Shatin,
Hong Kong Tel : (852) 2695 8318 Fax : (852) 2695 3944 E-Mail : ett@ets-
testconsult.com

FAX TRANSMISSION

Your Ref :

Our Ref :

ENV/WHPOJV/110627/001

To : Wo Hing – Penta-Ocean Joint Venture	From : Mr. C L Lau
Attn : Mr. Danny HO / Ms. Joanne Ng	Date : 27 June, 2011
Fax No. : 2957 8213	Total No. of Page (s) : 4
Subject : Contract No. 9/WSD/08 Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun Notification of Exceedances of Night-time Noise Monitoring on 26 June 2011 (0000-0100)	

If you do not receive the whole document, please contact the sender on telephone no (852) 2695 8318 for immediate help.


Message :

Dear Sir or Madam:

We would like to submit the night-time noise monitoring (2300-0700) results conducted at KS6 on 26 June 2011 (0000-0100). The monitoring data sheet is attached for your information. The exceedance is considered invalid to the Project and detailed information is provided in the attached Notification of Exceedances (NOE).

Should you have further queries, please do not hesitate to contact the undersigned.

Yours sincerely,


C. L. Lau

Environmental Team Leader

c.c. EPD
EPD
Mott MacDonald
Environ (IEC)

Mr. C L WONG
Mr. S H LAW, Sean
Mr. Kelvin HO
Mr. David Yeung

Fax No.: 2402 8275
Fax No.: 2960 1760
Fax No.: 2377 2900
Fax No.: 3548 6988

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Contract No. 9/WSD/08
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun
Notification of Exceedance (NOE)

Date and Time of Noise Monitoring: 26 June 2011 (0000-0100) at KS6

Construction Works carried out during the monitoring: Internal Lining inside the water main at West Kowloon side

Corresponding CNP: GW-RE0257-11 (19 April 2011 to 04 October 2011)

Monitoring Location	Measured Value, dB(A)	Action Level	Limit Level, dB(A)	Possible Reason(s) for the Exceedance	Action to be taken	Remark
KS6	59.5 59.8 59.0	When one documented complaint is received	55	Internal lining inside the water main was carried out by using one generator and one air compressor, which fulfill the requirement described in corresponding CNP. Refer to the observation during the monitoring, main source of noise impact was due to local traffic along West Kowloon Highway. According to the summary of baseline noise monitoring, the range of background noise level from 0000-0100 * is between 54.2dB(A) and 64.7dB(A). The impact monitoring results were found within the range of baseline noise level. Hence, the exceedance recorded is considered invalid and no related to the construction works.	Nil	Nil

Remark (*): Refer to the baseline data, it shows that the range of noise level during 2300-0700 is very large (around from 52dB(A) to 67dB(A)) and noise from 0000-0100 is in high level (around 60dB(A)) at all monitoring stations. As a result, baseline noise data measured on 0000-0100 at KS6 are more suitable for being as background indicator (instead of 2300-0700 of next day).

Attachment

Night-time Noise monitoring data sheets (26 June 2011 at KS6)
Summary of Baseline Noise Monitoring at KS6 (0000-0100)

Prepared by: _____



(Linda Law) (Senior Environmental Officer)

Date: 27 June 2011

Checked by: _____



(C. L. Lau) (Environmental Team Leader)

Date: 27 June 2011



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

**Impact Noise Monitoring at West Kowloon during 1900-2300 / 2300-0700 / 0700-1900 (Holiday)
Data Record Sheet**

Date of Monitoring		26 Jun 2011					
Monitoring Location		KS6 - Podium at the Cullinan			KS4b - Footpath of West Kowloon Waterfront Promenade		
Sound Level Meter (Model and Serial No.)		RION-NC-31 (S/N: 80531142)			RION-NC-31 (S/N: 80531142)		
Sound Pressure Calibrator (Model and Serial No.)		RION-NC-73 (S/N: 10196943)			RION-NC-73 (S/N: 10196943)		
Weather Condition		Fine			Fine		
Temperature (°C)		29			29		
Type of Measurement		Free Field / Façade			Free Field / Façade		
Measurement Period (min)		5			5		
Calibration before Measurement, dB(A)	Before	94.0			94.0		
	After	94.0			94.0		
Measurement Time	From	00:45	00:50	00:55	00:25	00:30	00:35
	To	00:50	00:55	01:00	00:30	00:35	00:40
Wind Strength (m/s)		0.4	0.4	0.4	0.3	0.3	0.3
L _{eq} , dB(A)		59.5	59.8	59.0	58.0	58.1	57.9
L ₁₀ , dB(A)		61.7	62.0	60.1	60.2	60.4	60.1
L ₅ , dB(A)		56.0	56.3	56.0	55.4	54.8	55.0
Major Construction Noise Source(s) During Measurement		/			/		
Other Noise Source(s) During Measurement		Vehicles passing by			D		
Remarks		The result was / was not exceeded the Limit Level.			The result was / was not exceeded the Limit Level.		

Time Period	Action	Limit
0700-1900 hrs normal weekdays	When one documented complaint is received	75 dB(A)
1900-2300 hrs on normal weekdays		70 dB(A)
0700-1900 hrs on holiday		70 dB(A)
Restricted hours (2300-0700 hrs)		55 dB(A)

	Name	Signature	Date
Recorded by	K. M. Kwok	[Signature]	26 Jun 2011
Checked by	[Signature]	[Signature]	26/06/11

Summary of Baseline Noise Monitoring (Night-time:0000-0100) - KS6 (The Cullinan)

Date	28/12/09	29/12/09	30/12/09	31/12/09	01/01/10	02/01/10	03/01/10	04/01/10	05/01/10	06/01/10	07/01/10	08/01/10	09/01/10	10/01/10
Daily Average, Leq(5min)	57.0	57.1	62.3	59.8	56.8	59.2	55.6	56.3	60.6	56.7	57.4	60.1	59.0	56.8
Max Leq(5min)	58.5	58.6	63.6	59.5	59.5	60.5	58.3	57.8	61.1	58.2	58.9	61.4	64.7	58.3
Min Leq(5min)	54.7	55.7	60.4	55.2	55.2	57.6	54.2	54.7	59.6	55.1	55.7	59.2	56.0	55.0

Overall Average, Leq(5-min) 58.5 dB(A)
 Max 64.7 dB(A)
 Min 54.2 dB(A)



Appendix L

Contractor's Follow up Actions to ET Weekly Site Inspections

Follow-up Action of the Weekly Site Inspection by the Contractor

Inspection Date : 31 May 2011

Item	Details of defective works or observations	Follow up Action(s) taken	Date of Action taken	Photo Ref.
1	No provision of drip tray for the oil/ paint cans on the Launching barge.	The oil/ paint cans were removed from the Launching barge.	8/6/11	1
2	No provision of drip tray for the engine of crawler crane to prevent chemical leakage.	Drip tray was provided for the engine of crawler crane to prevent chemical leakage.	8/6/11	2
3	The water outlet of the air-conditioner should be connected to an appropriate container.	The water outlet of the air-conditioner was connected to an appropriate container.	8/6/11	3, 4
4	Lubricant was noted on the access of the launching barge.	Lubricant was removed from the access of the launching barge.	8/6/11	5

Contract No. 9/WSD/08

Laying of Western Cross Harbour Main and Associated Land Mains
From West Kowloon to Sai Ying Pun

Photo of Follow-up Action

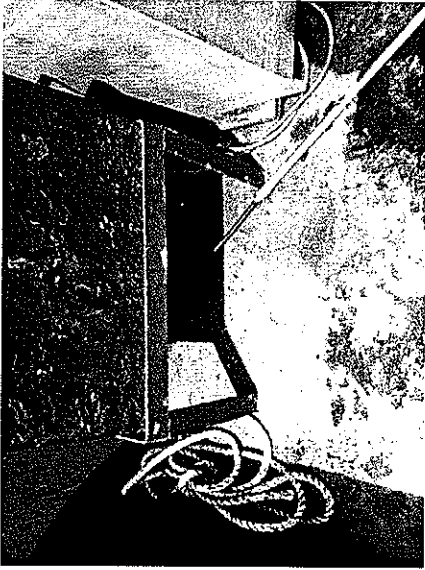


Photo ref. 1



Photo ref. 2

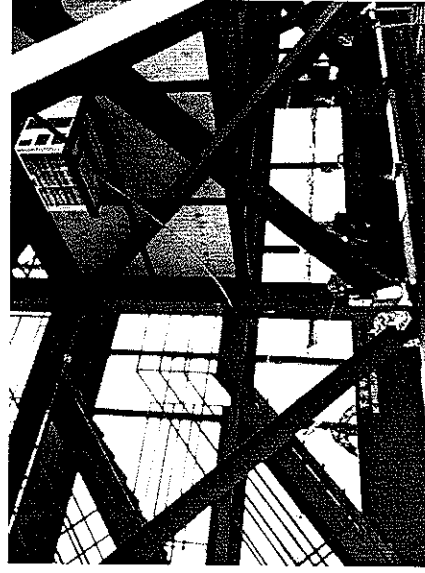


Photo ref. 3



Photo ref. 4



Photo ref. 5

Photo of Follow-up Action


 <p>Photo ref. 1</p>		

Photo of Follow-up Action



Photo ref. 1

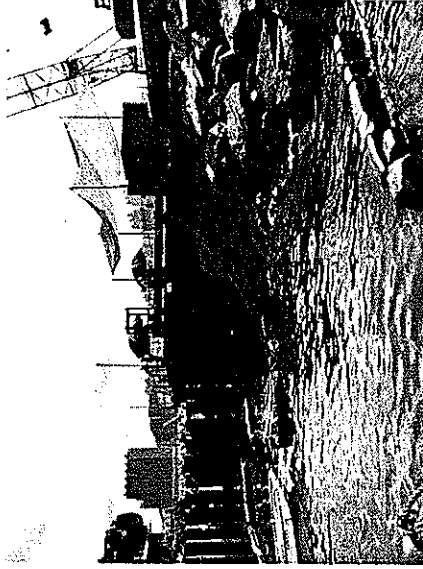


Photo ref. 2

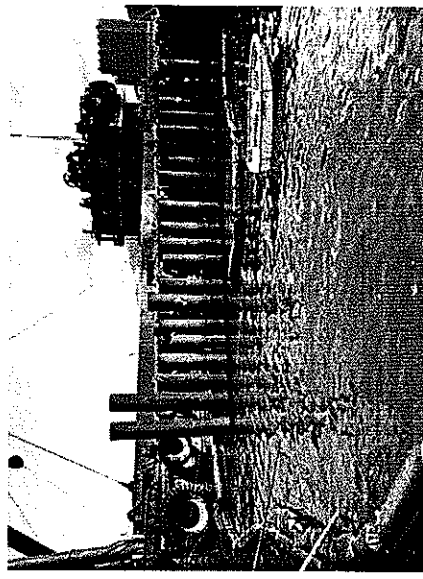


Photo ref. 3



Appendix M

Complaint Investigation Report


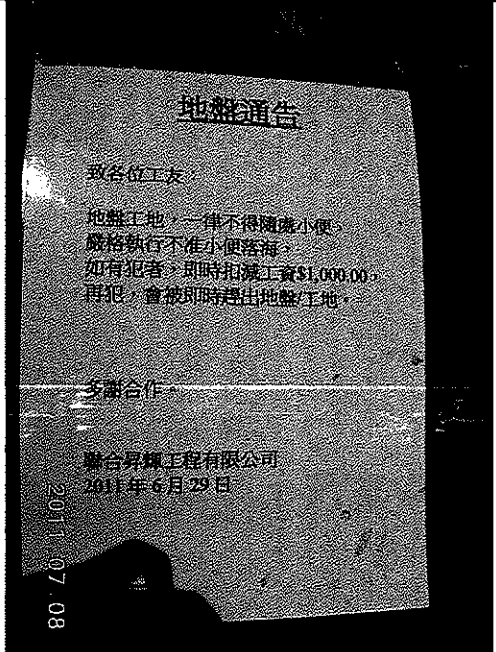
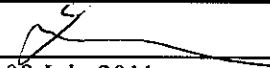


ETS-Testconsult Ltd – Environmental Team (ET)

Complaint Investigation Report

Contract No.9/WSD/08

**Laying of Western Cross Harbour Main and Associated Land Mains
from West Kowloon to Sai Ying Pun**

Details of the Complaint		Log No. : 001	
Date	23 June 2011	Time	23:48
Location			
Portion I – Launch Barge			
Circumstances:			
One complaint received on 23 June 2011 was forwarded by the Engineer's Representatives on 08 July 2011 through internet from a citizen against urinating into the sea from the Launching Barge which caused by site workers. The complainant complained that that caused an environmental nuisance.			
Follow action(s)			
Follow up by	ET	Date	08 July 2011
Details of Follow up action(s)			
During the weekly site inspection on 08 July 2010, the Contractor has provided portable chemical toilet and warning notice on the barge. No urinating was observed during the weekly site inspection.			
Photos During the Investigation			
			
Details of Action(s) Taken by the Contactor			
<ol style="list-style-type: none"> 1. Meeting has been arranged on 29 June 2011 to discuss the safety and environmental issues on launching barge. 2. New disciplinary system has been in place to prevent the same inappropriate act of workers from happening. 3. Additional sanitary facilities have been added on the barge and the nearby area to facilitate the workers need. 			
Conclusion			
The Contractor has implemented mitigation measures to prevent the same inappropriate act of workers from happening.			
Prepared by:	C L Lau	Signature:	
Designation:	Senior Environmental Officer	Date:	08 July 2011

ETL - Env & Chem

寄件者: Edwin Yip [edwinyip@biznetvigator.com]
寄件日期: Friday, July 8, 2011 10:36
收件者: 'Justin Ye'; 'ETL - Env & Chem'
副本: 'dennis'
主旨: 9/WSD/08 - public complaint regarding workers urinating at the launching barge to the sea
附件: CR - 021 preliminary report.pdf; environmental malpractice on site (348 KB)

Dear Linda and Justin,

Please find the attached pdf file on the information of the public complaint on 23 Jun 2011 regarding workers urinating at the launching barge to the sea for your information. Please also find the attached e-mail showing that similar behavior was observed on 3 Jun 2011.

As discussed, please incorporate this complaint to the upcoming EM&A report. Thanks.

Regards,

Edwin Yip
Assistant Resident Engineer,
Mott MacDonald Hong Kong Limited
Contract No. 9/WSD/08
Tel:[23772823](tel:23772823) Fax:[23772900](tel:23772900)



Important Note:

The maximum size of email delivered to this address is limited to 2MB. In case of email exceeding 2MB, please send to inwsd0908@yahoo.com.hk or contact the above undersigned at 23772823 for assistance.

CONTRACT NO. 9/WSD/08
LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS
FROM WEST KWLOON TO SAI YING PUN
ENGINEER'S REPRESENTATIVE'S
COMPLAINTS/ENQUIRIES PRELIMINARY REPORT

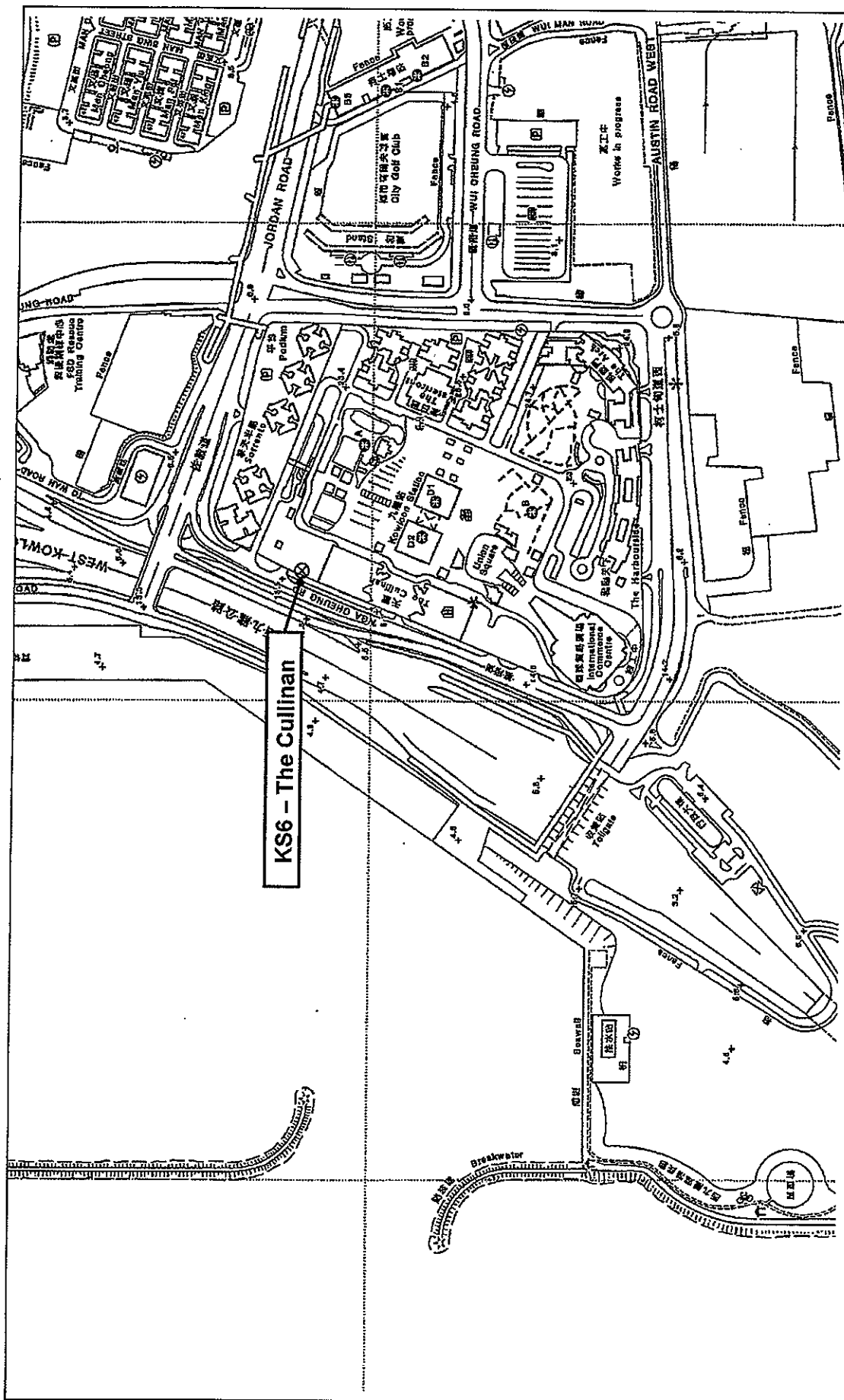
1. Complaint/Enquiry-No.:	9WSD08/CR/021	
2. Complaint/Enquiry Received:		
i) Date	23/06/2011	
ii) Time	23:48	
3. Complainant/Enquirer-Details:		
i) Name	unknown	
ii) Contact Email.	heiwan2003@yahoo.com.hk	
4. Brief details of Complaint/Enquiry:		
<p>An anonymous complainant (email address: heiwan2003@yahoo.com.hk) emailed to 1823 Government Call Centre and complaint workers were urinating into the sea from the Launching Barge at West Kowloon.</p>		
5. Location:		
i) Section of Works:	Portion I	
ii) Site:	Launch Barge	
iii) Works / Activities:	Submarine Pipe Pulling	
6. Complaint Routing:		
i) Initial		
a) From: anonymous complainant	b) To: 1823 government Call Centre	Time: 23:48, 23/06/11
b) From: 1823 Call Centre Duty Manager	c) To: WSD/PR Ms. W.C. Chan	Time: 12:18, 24/06/11
c) From: WSD/PR Ms. W.C. Chan	d) To: WSD/Region Victor Lam and WSD/PM Y.S. Wong	Time: 13:54, 24/06/11
d) From: WSD/Region Victor Lam	e) To: WSD/CM Ms. Candy Wong	Time: 14:00, 24/06/11
e) From: WSD/Region P.W. Wong	f) To: RSS Dennis Lau and WHPOJV Frank Young	Time: 14:10, 24/06/11
ii) Subsequent		
f) From: RSS Dennis Lau	g) To: WHPOJV Jimson Yeung	Time: 09:21, 25/06/11

**CONTRACT NO. 9/WSD/08
LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS
FROM WEST KWOLLOON TO SAI YING PUN
ENGINEER'S REPRESENTATIVE'S
COMPLAINTS/ENQUIRIES PRELIMINARY REPORT**

7. Initial Response:			
i) Date:	25/06/2011		
ii) Time:	9:21		
iii) Brief Details			
<p>Dennis Lau informed Jimson Yeung (WHPOJV) that workers were observed by the public urinating into the sea from the launching barge. WHPOJV arranged a talk on 25/06/2011 to the workers on launching barge to educate and prevent the workers from urinating from the launching barge again.</p> <p>Since this has been identified in previous SSEMC, a high level meeting has been arranged on 29/06/2011 to discuss the safety and environmental issues on launching barge. The sub-contractor, United Soundfair, has informed that a new disciplinary system is in place to prevent the same inappropriate act of workers from happening. Additional sanitary facilities have also been added on the barge and the nearby area to facilitate the workers need.</p>			
5. Status of Resolution: Not Known			
6. Remarks: The Contractor has been warned that such irresponsible behaviors are unacceptable. It is also unacceptable that the Contractor did not take immediate step to stop repeating of such irresponsible behaviors after being informed on 3 June 2011 of similar behaviors of workers on the barge.			
Prepared by	Authorized for issue		
Name:	Dennis Lau	Name:	Kelvin Ho
Designation:	RE	Designation:	SRE
Signature		Signature:	
Date:	30/06/2011	Date:	30/06/2011



Figures



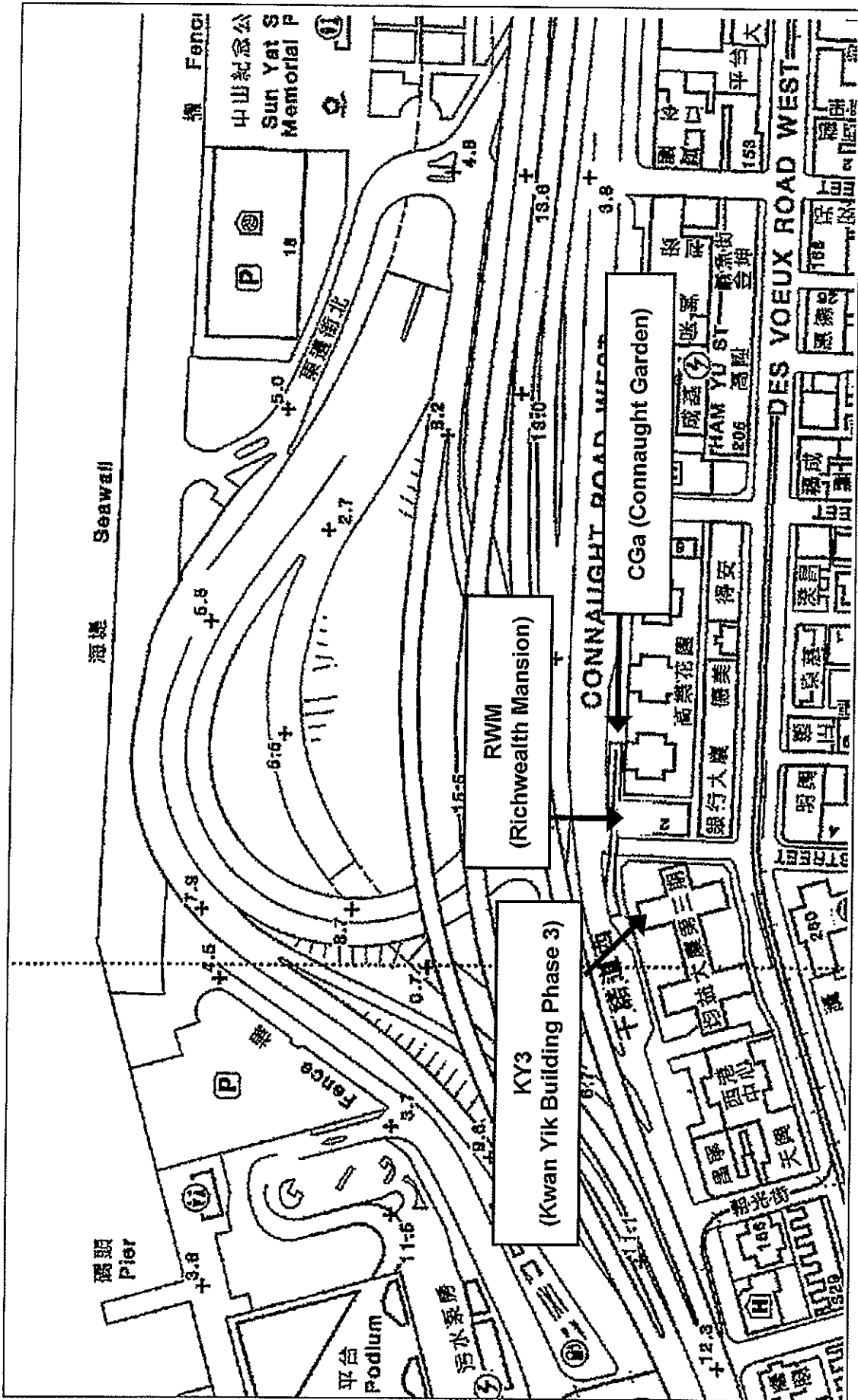
Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Mains for West Kowloon to Sai Ying Pun

Figure 1

Location of Noise Monitoring Station at West Kowloon



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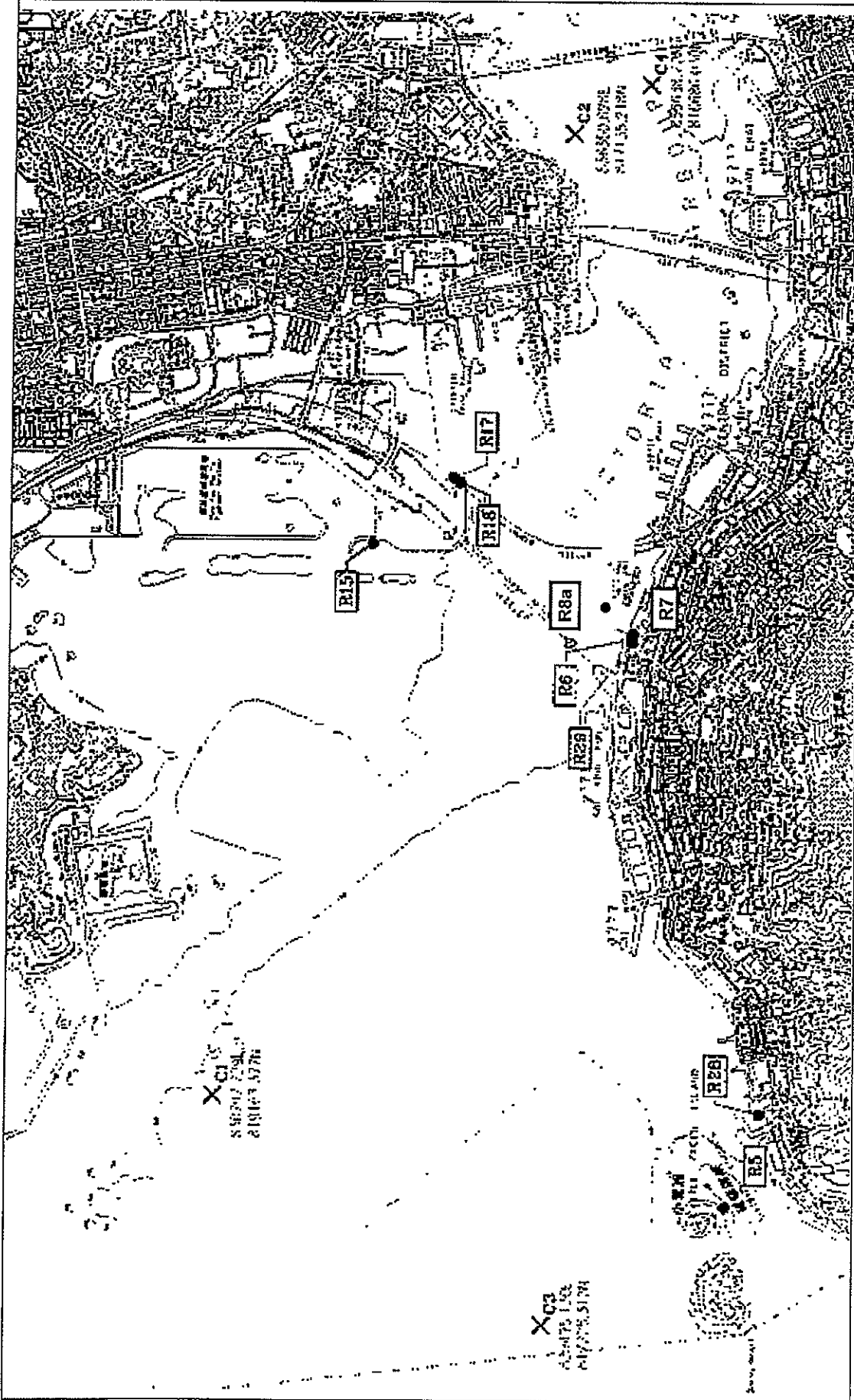
Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Mains for West Kowloon to Sai Ying Pun

Figure 2

Locations of Noise Monitoring Stations at Sai Ying Pun



英業德測測試顧問有限公司
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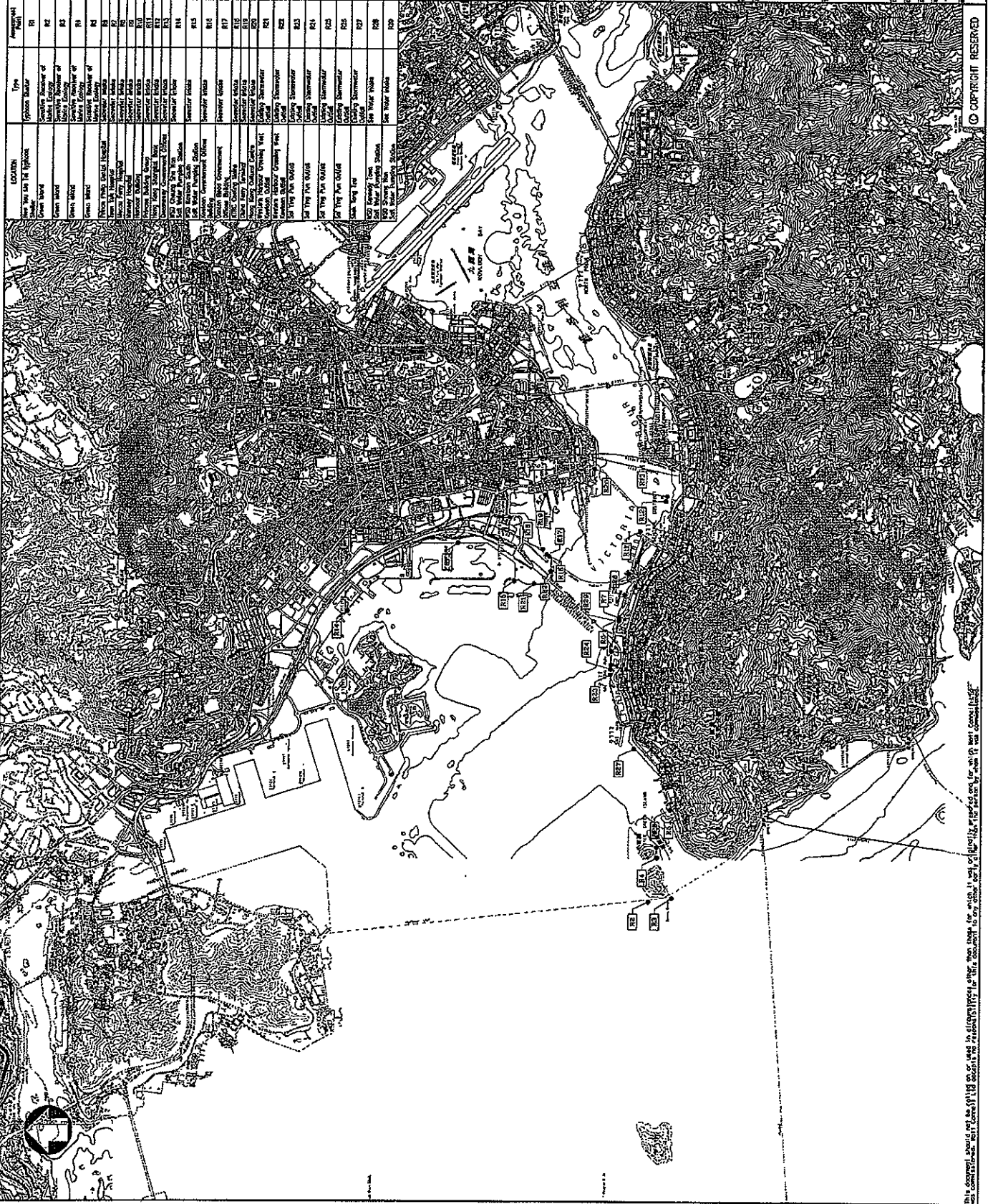
Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Mains for West Kowloon to Sai Ying Pun

Figure 3

Locations of Water Quality Monitoring Stations



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POINT NO.	LOCATION	TYPE	APPROXIMATE ELEVATION (M)
R1	NEW TIAN TAI TAI REGIONAL WATER TREATMENT PLANT	WATER TREATMENT PLANT	10
R2	WATER TREATMENT PLANT	WATER TREATMENT PLANT	15
R3	WATER TREATMENT PLANT	WATER TREATMENT PLANT	20
R4	WATER TREATMENT PLANT	WATER TREATMENT PLANT	25
R5	WATER TREATMENT PLANT	WATER TREATMENT PLANT	30
R6	WATER TREATMENT PLANT	WATER TREATMENT PLANT	35
R7	WATER TREATMENT PLANT	WATER TREATMENT PLANT	40
R8	WATER TREATMENT PLANT	WATER TREATMENT PLANT	45
R9	WATER TREATMENT PLANT	WATER TREATMENT PLANT	50
R10	WATER TREATMENT PLANT	WATER TREATMENT PLANT	55
R11	WATER TREATMENT PLANT	WATER TREATMENT PLANT	60
R12	WATER TREATMENT PLANT	WATER TREATMENT PLANT	65
R13	WATER TREATMENT PLANT	WATER TREATMENT PLANT	70
R14	WATER TREATMENT PLANT	WATER TREATMENT PLANT	75
R15	WATER TREATMENT PLANT	WATER TREATMENT PLANT	80
R16	WATER TREATMENT PLANT	WATER TREATMENT PLANT	85
R17	WATER TREATMENT PLANT	WATER TREATMENT PLANT	90
R18	WATER TREATMENT PLANT	WATER TREATMENT PLANT	95
R19	WATER TREATMENT PLANT	WATER TREATMENT PLANT	100
R20	WATER TREATMENT PLANT	WATER TREATMENT PLANT	105
R21	WATER TREATMENT PLANT	WATER TREATMENT PLANT	110
R22	WATER TREATMENT PLANT	WATER TREATMENT PLANT	115
R23	WATER TREATMENT PLANT	WATER TREATMENT PLANT	120
R24	WATER TREATMENT PLANT	WATER TREATMENT PLANT	125
R25	WATER TREATMENT PLANT	WATER TREATMENT PLANT	130
R26	WATER TREATMENT PLANT	WATER TREATMENT PLANT	135
R27	WATER TREATMENT PLANT	WATER TREATMENT PLANT	140
R28	WATER TREATMENT PLANT	WATER TREATMENT PLANT	145
R29	WATER TREATMENT PLANT	WATER TREATMENT PLANT	150

**Mott
Macdonald**

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**THE GOVERNMENT OF THE HONG KONG
SPECIAL ADMINISTRATIVE REGION
WATER SUPPLIES DEPARTMENT**

CE47/2005(W)

**LAYING OF WESTERN CROSS HARBOUR HARBOR
AND ASSOCIATED LAND MAINS FROM WEST
KOWLOON TO SHA TIN TAI TAI - INVESTIGATION**

**LOCATIONS OF WATER SENSITIVE RECEIVERS
AND STORMWATER OUTFALLS
AT WESTERN HARBOUR**

Scale: 1 : 2500000
 Date: 2005

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FIGURE 1.2a

A

LEGEND.

- PROPOSED ROUTE OF 1200# FRESH WATER MAIN
- NOISE SENSITIVE RECEIVERS
- SOIL NOISE ASSESSMENT BOUNDARY
- WORKS AREA BOUNDARY

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THE GOVERNMENT OF THE HONG KONG
 SPECIAL ADMINISTRATIVE REGION
 WATER SUPPLIES DEPARTMENT

Project: CE42/2005(W5)

LAYING OF WESTERN CROSS HARBOUR MAIN
 AND ASSOCIATED LAND MAINS FROM WEST
 KOWLOON TO SU YING PUN - INVESTIGATION

LOCATIONS OF NOISE SENSITIVE
 RECEIVERS IN SU YING PUN

Scale:	1:20000/1	Date:	11/05/06
Author:		Checked:	
Drawn:		Approved:	
Project No.:	CE42/2005(W5)	Sheet No.:	A

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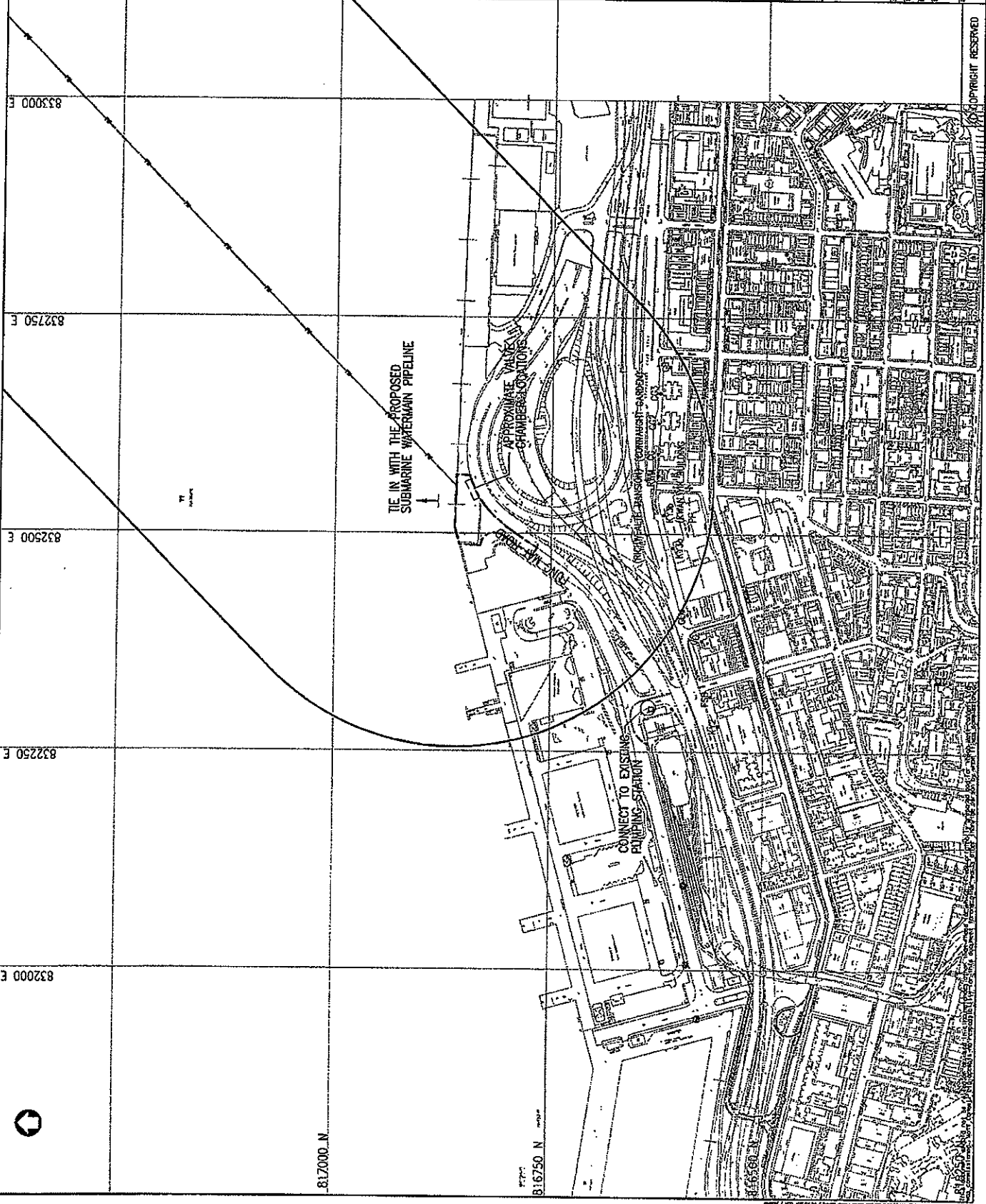


FIGURE 1.2b

LEGEND:

- PROPOSED ROUTE OF 1500m PRESSURE MAIN
- NOISE SENSITIVE RECEIVERS
- TEMPORARY PLATFORM
- 200m NOISE ASSESSMENT BOUNDARY
- WORKS AREA BOUNDARY

m Mott
Connell

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THE GOVERNMENT OF THE HONG KONG
 SPECIAL ADMINISTRATIVE REGION
 WATER SUPPLIES DEPARTMENT

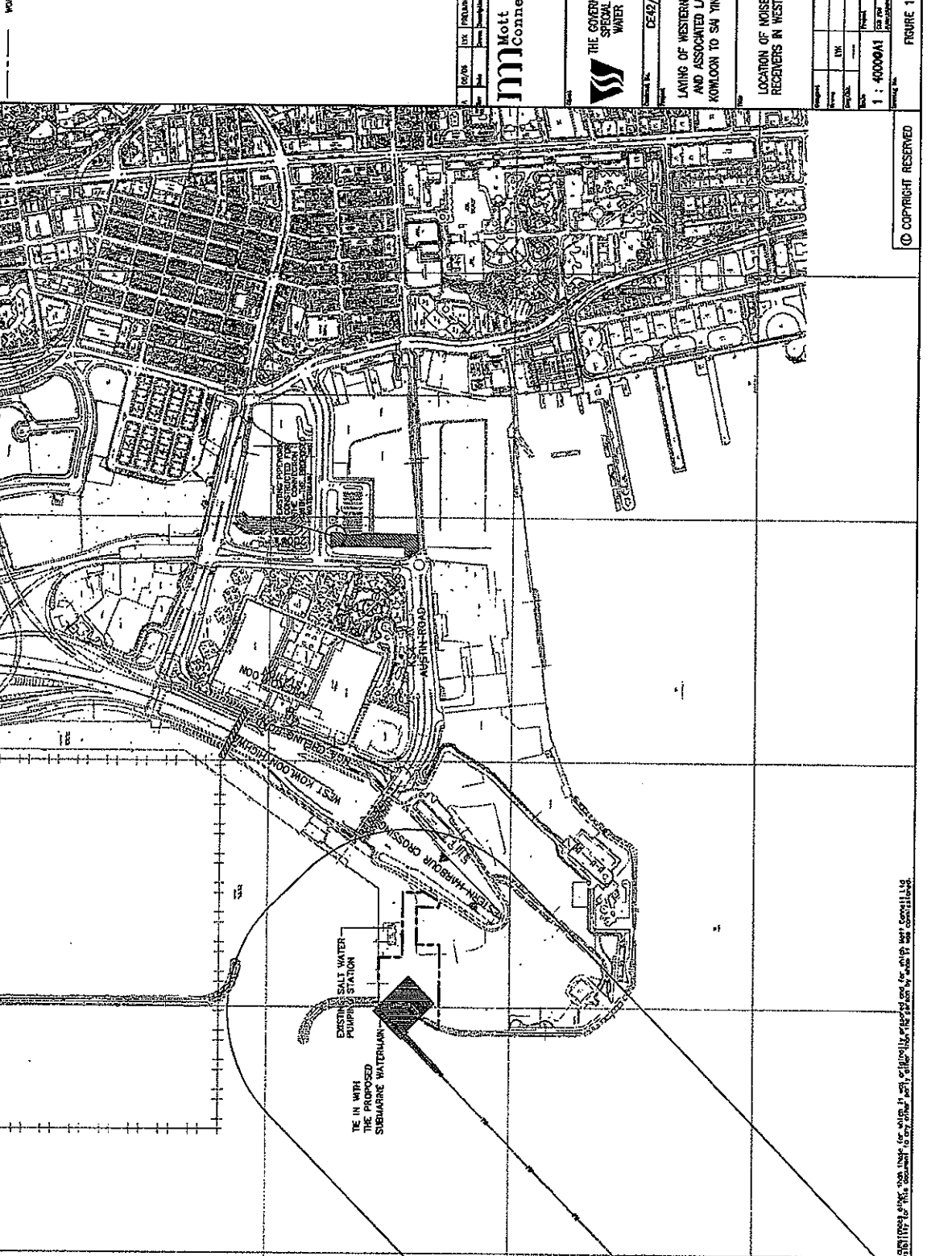
DE/42/2005(N/S)

LAYING OF WESTERN CROSS HARBOUR MAIN
 AND ASSOCIATED LAND MAINS FROM WEST
 KOWLOON TO SAU YING FUN - INVESTIGATION

LOCATION OF NOISE SENSITIVE
 RECEIVERS IN WEST KOWLOON

Scale: 1 : 40000/1
 Date: 11/05/05

FIGURE 1.2c
 A



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