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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.17**

(SEPTEMBER 2011)

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ENVIRON

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10th Oct 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. 17

Reference is made to Environment Team's submission of the Environmental Monitoring and Audit Report No. 17 by Email on 7th Oct 2011 (entitled "9/WSD/08 - Draft Monthly Report (Sept 11)").

We are pleased to inform you that we have no comment on the 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

c.c.	Mott MacDonald Hong Kong Limited	Mr. Kelvin Ho	Fax: 2377 2900
	Wo Hing – Penta-Ocean Joint Venture	Mr. Danny Ho	Fax: 2572 4080
	ETS-TESTCONSULT LIMITED	Mr. C.L. Lau	Fax: 2695 3944

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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.17 was prepared by ETS-Testconsult Ltd (ET) for the Project. This report documented the findings of EM&A Works conducted during the Project in September 2011.

Site Activities

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

- Cut / break the RC slab of the back anchor (Portion J);
- Re-installation of the vertical seawall (Portion J);
- Underwater concreting of the thrust block and external concrete coating of the submarine pipe (Portion J);
- Excavation within cofferdam (Portion H1 & H2);
- Tie-in works in West Kowloon (Portion I, H1 & H2);
- Removal of the buoyance tanks (Portion I); and
- Placing Rock Fill Material (Grade 75) for backfilling the submarine pipeline.

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, 4 Occasions at KY3, CGa and RWM
- Evening-time Noise Monitoring (1900-2300): 4 Occasions at KS6, CGa, RWM and KY3
- Night-time Noise Monitoring (2300-0700 of next day): 0 Occasion
- Holiday-time Noise Monitoring (0700-1900 on Holiday): 2 Occasions at KS6, CGa, RWM and KY3
- Marine Water Quality Monitoring: 11 Occasions at 9 monitoring stations and 4 control stations
- Weekly-site inspection: 4 Occasions

Noise Monitoring

No exceedance of Action Level of noise monitoring was recorded in this reporting month since no complaint on noise issue was received. No exceedance in Limit Level was recorded according to the noise monitoring results in this reporting month.

Water Quality Monitoring

Water quality monitoring scheduled on 29 September 2011 was cancelled due to bad weather (Typhoon Signal No.8).

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:

<u>Concerned Parties</u>	<u>Dates of Audit / Inspection</u>
ET Weekly site inspection	06, 15, 20 and 27 September 2011
Monthly Joint site inspection	20 September 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

No complaint, notification of summons and prosecution 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 September 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

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

3.0 WORK PROGRESS IN THIS REPORTING MONTH

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

- Cut / break the RC slab of the back anchor (Portion J);
- Re-installation of the vertical seawall (Portion J);
- Underwater concreting of the thrust block and external concrete coating of the submarine pipe (Portion J);

- Excavation within cofferdam (Portion H1 & H2);
- Tie-in works in West Kowloon (Portion I, H1 & H2);
- Removal of the buoyance tanks (Portion I); and
- Placing Rock Fill Material (Grade 75) for backfilling the submarine pipeline.

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/003/10	00531142	24/05/11	23/05/12
		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) temporarily 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 4 occasions at CGa, RWM and KY3 of day-time noise monitoring, 4 occasion of evening-time noise monitoring at KS6, CGa, RWM and KY3, 0 occasion of night-time noise monitoring and 2 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, no exceedances in Limit Level were recorded according to the noise monitoring results of this reporting month. 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	02/09/11	09:30	66.4	X
	09/09/11	18:05	60.7	X
	16/09/11	15:50	64.6	X
	23/09/11	18:00	64.5	X
	30/09/11	18:00	66.1	X
Evening-time	10/09/11	20:50	62.0	X
	10/09/11	20:55	61.6	X
	10/09/11	21:00	61.2	X
	17/09/11	19:25	63.1	X
	17/09/11	19:30	64.8	X
	17/09/11	19:35	62.3	X
	24/09/11	22:10	62.8	X
	24/09/11	22:15	62.5	X
	24/09/11	22:20	62.1	X
	30/09/11	19:20	63.3	X
	30/09/11	19:25	62.6	X
	30/09/11	19:30	62.4	X



Monitoring Parameter	Date	KS6		
		Time	Result	Exceed*
Holiday-time	11/09/11	09:05	62.6	X
	11/09/11	09:10	63.0	X
	11/09/11	09:15	62.4	X
	18/09/11	09:10	62.0	X
	18/09/11	09:15	61.7	X
	18/09/11	09:20	61.9	X
Monitoring Parameter	Date	CGa		
		Time	Result	Exceed*
Day-time	07/09/11	11:45	73.8	X
	14/09/11	14:30	74.7	X
	21/09/11	11:45	74.2	X
	28/09/11	10:00	73.7	X
Evening-time	10/09/11	19:00	69.4	X
	10/09/11	19:05	69.9	X
	10/09/11	19:10	69.5	X
	17/09/11	20:25	68.2	X
	17/09/11	20:30	67.7	X
	17/09/11	20:35	67.9	X
	24/09/11	21:25	70.0	X
	24/09/11	21:30	70.0	X
	24/09/11	21:35	69.9	X
	30/09/11	20:15	69.8	X
	30/09/11	20:20	69.4	X
	30/09/11	20:25	69.7	X
Holiday-time	11/09/11	09:50	69.7	X
	11/09/11	09:55	69.9	X
	11/09/11	10:00	69.4	X
	18/09/11	10:15	67.1	X
	18/09/11	10:20	67.4	X
	18/09/11	10:25	67.0	X
Monitoring Parameter	Date	RWM		
		Time	Result	Exceed*
Day-time	07/09/11	11:15	65.3	X
	14/09/11	15:05	62.3	X
	21/09/11	11:15	64.1	X
	28/09/11	10:30	64.1	X
Evening-time	10/09/11	19:20	68.7	X
	10/09/11	19:25	69.2	X
	10/09/11	19:30	69.4	X
	17/09/11	20:45	67.4	X
	17/09/11	20:50	67.2	X
	17/09/11	20:55	67.7	X
	24/09/11	21:05	69.9	X
	24/09/11	21:10	69.5	X
	24/09/11	21:15	69.7	X
	30/09/11	20:35	68.8	X
	30/09/11	20:40	69.3	X
	30/09/11	20:45	69.6	X
Holiday-time	11/09/11	10:00	63.5	X
	11/09/11	10:05	63.7	X
	11/09/11	10:10	63.1	X
	18/09/11	10:35	61.3	X
	18/09/11	10:40	60.9	X
	18/09/11	10:45	61.1	X
Monitoring Parameter	Date	KY3		
		Time	Result	Exceed*
Day-time	07/09/11	10:45	63.1	X
	14/09/11	15:40	60.1	X
	21/09/11	10:45	62.4	X
	28/09/11	11:00	62.7	X

Monitoring Parameter	Date	KY3		
		Time	Result	Exceed*
Evening-time	10/09/11	19:40	65.6	X
	10/09/11	19:45	66.1	X
	10/09/11	19:50	65.3	X
	17/09/11	21:05	67.0	X
	17/09/11	21:10	66.8	X
	17/09/11	21:15	67.3	X
	24/09/11	20:45	67.1	X
	24/09/11	20:50	67.0	X
	24/09/11	20:55	67.3	X
	30/09/11	20:55	66.6	X
	30/09/11	21:00	66.2	X
	30/09/11	21:05	65.8	X
Holiday-time	11/09/11	10:30	61.6	X
	11/09/11	10:35	60.9	X
	11/09/11	10:40	61.2	X
	18/09/11	10:55	62.2	X
	18/09/11	11:00	61.8	X
	18/09/11	11:05	61.6	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

Exceedance Level	Daytime	Evening-time	Night-time	Holiday-time
Action	0	0	0	0
Cumulative	0	0	0	0
Limit	0	0	0	0
Cumulative	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

ID	Station	Easting	Northing
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

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

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 85D	27/06/11 24/09/11	26/09/11 23/12/11	ET/EW/008/003*	082100716
Turbidity	HACH Model 2100P Turbid Meter	13/07/11	12/10/11	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 29 September 2011 was cancelled due to bad weather (Typhoon Signal No.8).

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

September 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	Holiday	21	22	23	24
25	26	27	28	29	30	

Remarks: (▼) = Marine water quality monitoring carried out by ET.
(▽) = Water quality monitoring scheduled on 29 September 2011 was cancelled due to bad weather (Typhoon Signal No.8).

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 06, 15, 20 and 27 September 2011 by ET. Monthly joint site inspection at 20 September 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 September 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 the finding on 30/08/11, standing of rain water noted in Portion J was cleaned during the weekly site inspection on 06/09/11	Standing water was removed (Photo Ref. 1 of the Contractor Follow-up Action – 30/08/11)	Since the finding was noted improved, no further verification was required.	Closed

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



Description	Permit No.	Valid Period		Remarks
		From	To	
Water Discharge Licence (Sai Yung Pun)	WT00005800-2010	14/01/10	31/01/15	Effluent arising from the construction site through Sedimentation Tank
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>



Description	Permit No.	Valid Period		Remarks
		From	To	
Construction Noise Permit (West Kowloon)	GW-RE0647-11	05/09/11	04/03/12	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, standard (CNP 101) (Zone A) Group B Two Derrick barge (CNP 061) (Zone B) Two Generator, standard (CNP 101) (Zone B) Two Guard boats (Zone B) One Tug boat (CNP 221) (Zone B)
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
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)	367.04		15197.85
	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)	367.04	SENT Landfill	15197.85
C&D Waste	Metals (in kg)	0	---	0
	Paper/Cardboard Packaging (in kg)	0	Collected by recycling company	143
	Plastics (in kg)	0	---	0
	Chemical Waste (in kg)	0	---	0
	Other, e.g. General Refuse (in m^3)	1.78	SENT Landfill	91.99
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. No exceedance in Limit Level was recorded according to the noise monitoring results in this reporting month.

9.2 Summary of Environmental Complaints

No complaint was received in this reporting month.

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

Since no exceedance of Action and Limit Level of noise and water quality monitoring results was recorded in this reporting month, no further action was required to be taken.

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

No complaint, notification of summons and successful prosecution 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>September 2011</i>	<i>Cumulative</i>	<i>September 2011</i>	<i>Cumulative</i>	<i>September 2011</i>	<i>Cumulative</i>
0	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 exceedance of Action and Limit Level of water quality monitoring results was recorded during the reporting month.

No exceedance of Action Level of noise monitoring was recorded in this reporting month since no complaint on noise issue was received. No exceedance in Limit Level was recorded according to the noise monitoring results in this reporting month.

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



No complaint, prosecution or notification of summon 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; and
- 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:

- *Re-instatement of the vertical seawall (Portion J);*
- *Re-instatement of the sloping seawall (Portion H1 & H2); and*
- *Placing backfilling material (Portion I).*

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 used 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

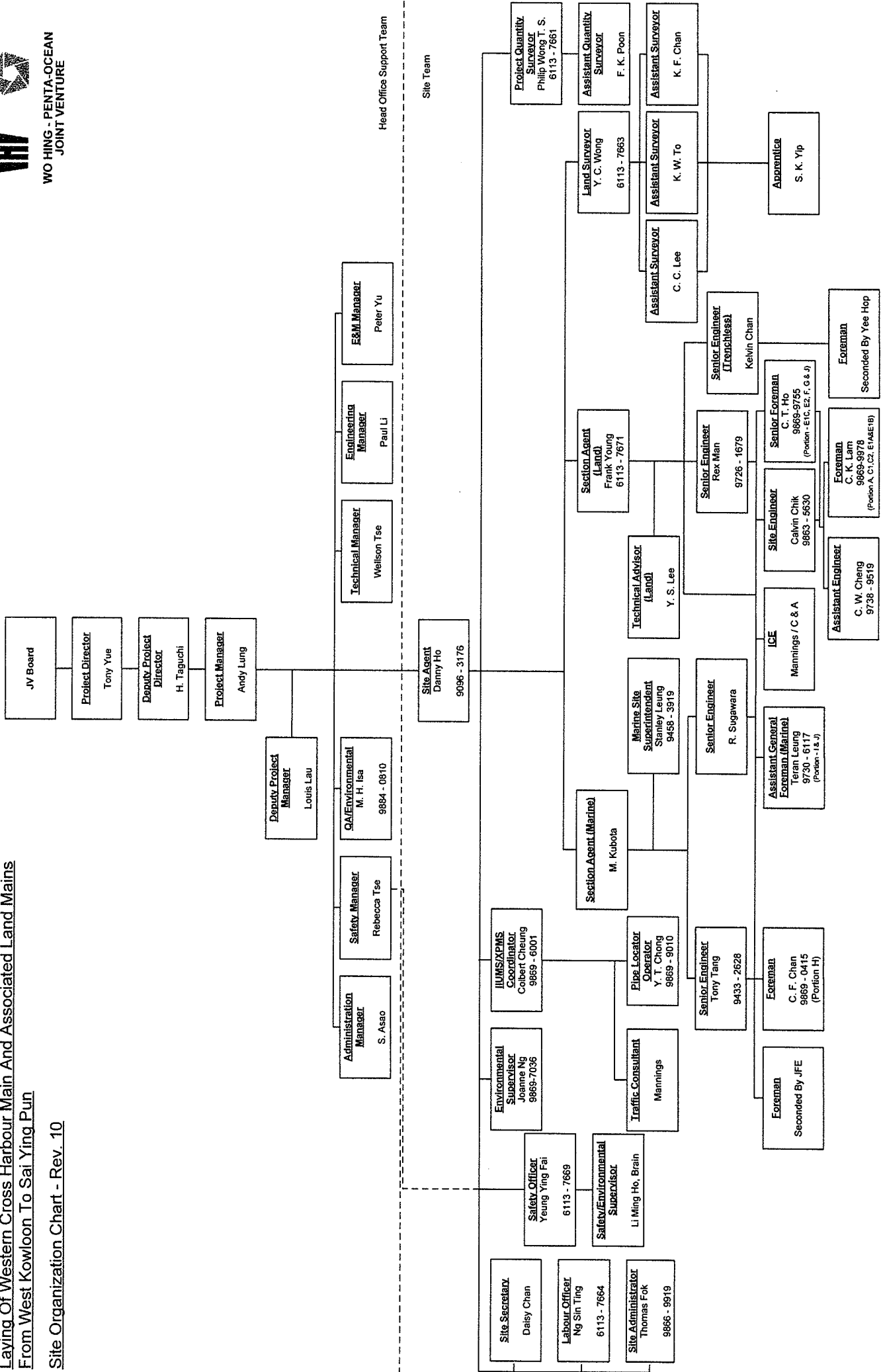
The proposed EM&A program of the coming month is attached in Appendix I.

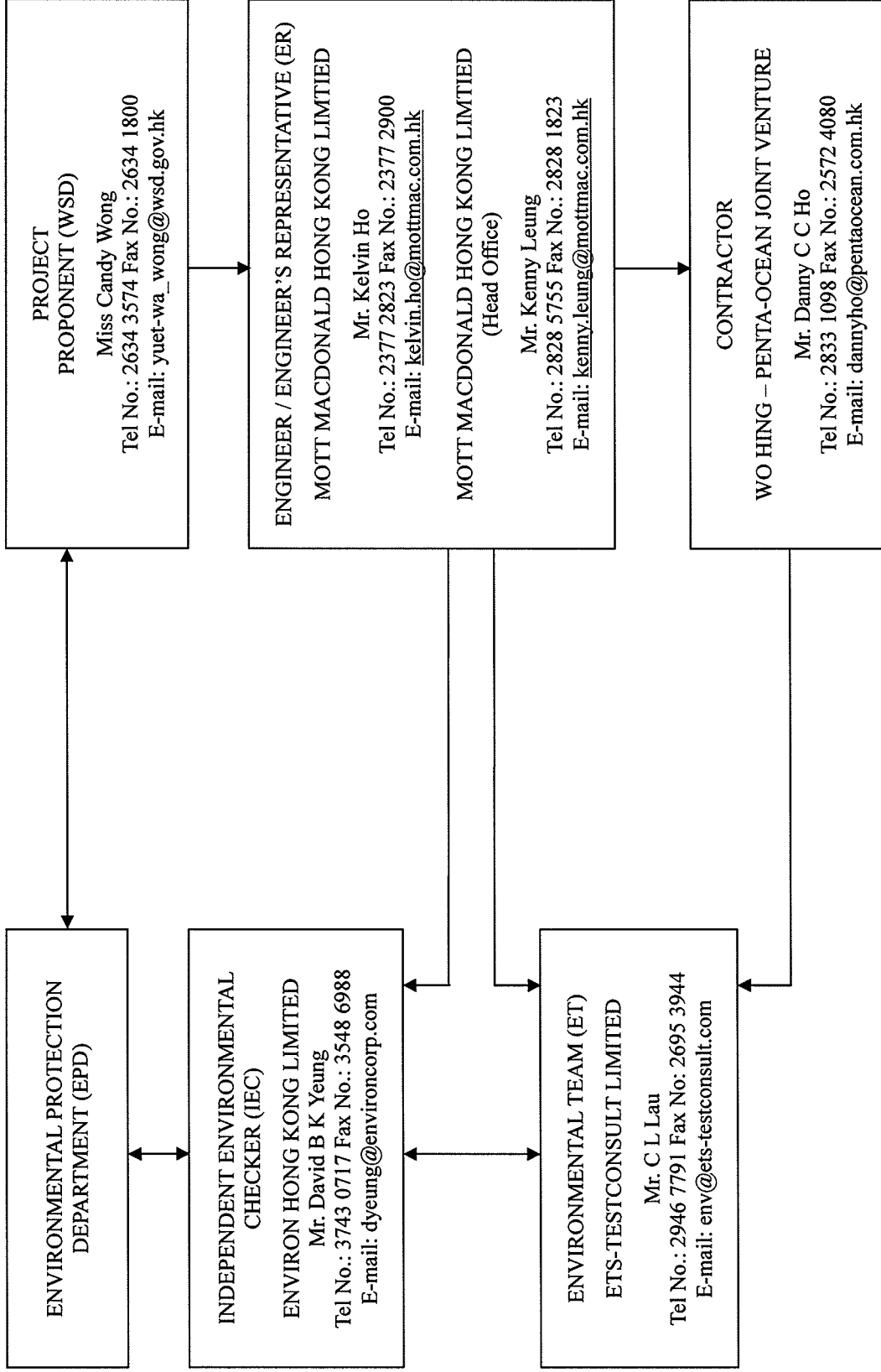
- END OF REPORT -



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



東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

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:

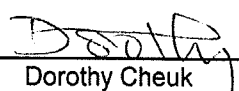
<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S017	Multi-Function Generator	C101623	SCL-HKSAR
S024	Sound Level Calibrator	04062	NIM-PRC & SCL-HKSAR

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

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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. **12737**

Page 1 of 4 Pages

Customer : ETS-Testconsult Limited

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

Order No. : Q11169

Date of receipt : 20-May-11

Item Tested

Description : Precision Integrating Sound Level Meter

Manufacturer : Rion

Model : NL-31

Serial No. : 00531142

Test Conditions

Date of Test : 24-May-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:

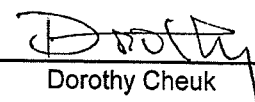
<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S017	Multi-Function Generator	C101623	SCL-HKSAR
S024	Sound Level Calibrator	04062	NIM-PRC & SCL-HKSAR

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: 25-May-11

This Certificate is issued by:

Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 8801 Fax: 2425 8846

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Calibration Certificate

Certificate No. 12737

Page 2 of 4 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	94.0
		Slow		93.9
	L _C	Fast		94.0
		L _p		Fast
30 - 120	L _A	Fast	94.0	94.0
		Slow		93.9
	L _C	Fast		94.0
	L _p	Fast		94.0
30 - 120	L _A	Fast	114.0	114.0
		Slow		113.9
	L _C	Fast		114.0
	L _p	Fast		114.0

IEC 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



Calibration Certificate

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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	0.0	± 0.7 dB
130	104.0	104.0	0.0	
120	94.0	94.0 (Ref.)	--	
110	84.0	84.0	0.0	
100	74.0	74.0	0.0	
90	64.0	64.1	+0.1	
80	54.0	54.1	+0.1	

Uncertainty : ± 0.1 dB

3.2 Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	84.0	0.0	± 0.4 dB
	94.0	94.0 (Ref.)	--	
	95.0	95.0	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	-39.6	- 39.4 dB, ± 1.5 dB
63 Hz	-26.2	- 26.2 dB, ± 1.5 dB
125 Hz	-16.2	- 16.1 dB, ± 1 dB
250 Hz	-8.7	- 8.6 dB, ± 1 dB
500 Hz	-3.2	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+1.3	+ 1.2 dB, ± 1 dB
4 kHz	+1.1	+ 1.0 dB, ± 1 dB
8 kHz	-1.1	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	-6.7	- 6.6 dB, + 3 dB ~ - ∞

Uncertainty : ± 0.1 dB



Calibration Certificate

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4. 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	39.9	± 0.5 dB
1/10 ²	40.0	39.9	
1/10 ³	40.0	39.9	± 1.0 dB
1/10 ⁴	40.0	39.8	

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 : 1 003 hPa.
4. The internal cal. Reference of UUT was drifted from 94.0 dB to 93.0 dB

----- 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).

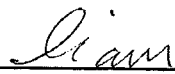
Main Test equipment used:

<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

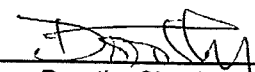
The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, 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

This Certificate is issued by:

Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 8601 Fax: 2425 8646

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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 L _p	Fast		93.9
		Fast		94.0
30 – 120	L _A	Fast	94.0	93.9
		Slow		93.9
	L _C L _p	Fast		93.9
		Fast		93.9
30 – 120	L _A	Fast	114.0	113.7
		Slow		113.7
	L _C L _p	Fast		113.7
		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**

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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. **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. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 8801 Fax: 2425 8646

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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

This Certificate is issued by:

Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 8801 Fax: 2425 8646

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	
02/09/11	Cloudy	09:30	10:00	66.4	67.2	63.5	0.3
09/09/11	Fine	18:05	18:35	60.7	63.2	58.4	1.8
16/09/11	Cloudy	15:50	16:20	64.6	65.8	63.0	1.4
23/09/11	Fine	18:00	18:30	64.5	66.1	61.2	0.4
30/09/11	Cloudy	18:00	18:30	66.1	67.5	62.4	0.4

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	
07/09/11	Cloudy	11:45	12:15	73.8	75.6	66.7	0.1
14/09/11	Sunny	14:30	15:00	74.7	76.8	68.4	0.4
21/09/11	Fine	11:45	12:15	74.2	76.5	68.3	0.2
28/09/11	Fine	10:00	10:30	73.7	77.1	65.1	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	
07/09/11	Cloudy	11:15	11:45	65.3	67.1	59.4	0.2
14/09/11	Sunny	15:05	15:35	62.3	63.5	58.6	0.6
21/09/11	Fine	11:15	11:45	64.1	66.5	60.9	0.3
28/09/11	Fine	10:30	11:00	64.1	65.3	61.4	0.5

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	
07/09/11	Cloudy	10:45	11:15	63.1	64.9	57.3	0.4
14/09/11	Sunny	15:40	16:10	60.1	62.0	58.2	0.5
21/09/11	Fine	10:45	11:15	62.4	63.8	59.2	0.5
28/09/11	Fine	11:00	11:30	62.7	64.4	60.5	0.7

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	
10/09/11	Fine	20:50	20:55	62.0	63.9	59.8	0.5
10/09/11	Fine	20:55	21:00	61.6	63.3	59.4	0.5
10/09/11	Fine	21:00	21:05	61.2	62.7	59.1	0.5
17/09/11	Fine	19:25	19:30	63.1	65.0	61.2	1.7
17/09/11	Fine	19:30	19:35	64.8	66.8	61.4	1.8
17/09/11	Fine	19:35	19:40	62.3	63.8	60.9	1.8
24/09/11	Cloudy	22:10	22:15	62.8	63.9	58.1	0.7
24/09/11	Cloudy	22:15	22:20	62.5	63.7	57.8	0.7
24/09/11	Cloudy	22:20	22:25	62.1	63.5	57.4	0.7
30/09/11	Cloudy	19:20	19:25	63.3	64.8	61.5	0.4
30/09/11	Cloudy	19:25	19:30	62.6	64.3	61.3	0.4
30/09/11	Cloudy	19:30	19:35	62.4	63.9	60.8	0.4

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	
10/09/11	Fine	19:00	19:05	69.4	73.3	66.5	0.3
10/09/11	Fine	19:05	19:10	69.9	74.1	67.0	0.3
10/09/11	Fine	19:10	19:15	69.5	73.6	66.9	0.3
17/09/11	Fine	20:25	20:30	68.2	69.9	64.2	1.2
17/09/11	Fine	20:30	20:35	67.7	69.1	63.6	1.3
17/09/11	Fine	20:35	20:40	67.9	68.8	63.2	1.4
24/09/11	Cloudy	21:25	21:30	70.0	73.9	63.1	0.3
24/09/11	Cloudy	21:30	21:35	70.0	73.7	63.0	0.3
24/09/11	Cloudy	21:35	21:40	69.9	73.2	63.0	0.3
30/09/11	Cloudy	20:15	20:20	69.8	73.1	67.1	0.4
30/09/11	Cloudy	20:20	20:25	69.4	72.5	66.4	0.4
30/09/11	Cloudy	20:25	20:30	69.7	72.8	66.9	0.4

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	
10/09/11	Fine	19:20	19:26	68.7	71.9	63	0.2
10/09/11	Fine	19:25	19:30	69.2	72.1	66.8	0.2
10/09/11	Fine	19:30	19:35	69.4	72.5	66.9	0.3
17/09/11	Fine	20:45	20:50	67.4	68.7	63.1	1.5
17/09/11	Fine	20:50	20:55	67.2	68.4	62.8	1.2
17/09/11	Fine	20:55	21:00	67.7	69.2	63.5	1.3
24/09/11	Cloudy	21:05	21:10	69.9	73.4	62.8	0.2
24/09/11	Cloudy	21:10	21:15	69.5	73.0	62.3	0.2
24/09/11	Cloudy	21:15	21:20	69.7	73.1	62.5	0.2
30/09/11	Cloudy	20:35	20:40	68.8	71.7	66.1	0.3
30/09/11	Cloudy	20:40	20:45	69.3	72.0	66.4	0.3
30/09/11	Cloudy	20:45	20:50	69.6	72.4	66.7	0.3



Evening-time Noise Monitoring

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	
10/09/11	Fine	19:40	19:45	65.6	68.4	64.4	0.3
10/09/11	Fine	19:45	19:50	66.1	68.6	64.9	0.3
10/09/11	Fine	19:50	19:55	65.3	68.3	64.1	0.3
17/09/11	Fine	21:05	21:10	67.0	68.3	62.7	1.3
17/09/11	Fine	21:10	21:15	66.8	68.1	62.3	1.1
17/09/11	Fine	21:15	21:20	67.3	68.6	63.2	1.2
24/09/11	Cloudy	20:45	20:50	67.1	69.5	61.8	0.3
24/09/11	Cloudy	20:50	20:55	67.0	69.7	61.9	0.3
24/09/11	Cloudy	20:55	21:00	67.3	69.9	61.9	0.3
30/09/11	Cloudy	20:55	21:00	66.6	68.7	65.0	0.4
30/09/11	Cloudy	21:00	21:05	66.2	68.4	64.8	0.4
30/09/11	Cloudy	21:05	21:10	65.8	67.9	64.4	0.4



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 (30min)	L10	L90	
11/09/11	Fine	09:05	09:10	62.6	64.2	60.8	0.5
11/09/11	Fine	09:10	09:15	63.0	64.9	61.4	0.5
11/09/11	Fine	09:15	09:20	62.4	63.8	60.6	0.5
18/09/11	Cloudy	09:10	09:15	62.0	63.2	60.6	1.7
18/09/11	Cloudy	09:15	09:20	61.7	63.0	60.3	1.9
18/09/11	Cloudy	09:20	09:25	61.9	63.4	60.0	1.8

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	
11/09/11	Cloudy	09:50	09:55	69.7	73.0	63.8	0.2
11/09/11	Cloudy	09:55	10:00	69.9	73.3	64.2	0.2
11/09/11	Cloudy	10:00	10:05	69.4	72.6	63.3	0.2
18/09/11	Cloudy	10:15	10:20	67.1	69.4	62.9	1.2
18/09/11	Cloudy	10:20	10:25	67.4	69.8	63.5	1.1
18/09/11	Cloudy	10:25	10:30	67.0	69.1	62.6	1.3

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	
11/09/11	Cloudy	10:00	10:05	63.5	64.8	59.9	0.4
11/09/11	Cloudy	10:05	10:10	63.7	65.2	60.3	0.4
11/09/11	Cloudy	10:10	10:15	63.1	64.4	59.7	0.4
18/09/11	Cloudy	10:35	10:40	61.3	63.0	57.7	1.7
18/09/11	Cloudy	10:40	10:45	60.9	62.4	57.3	1.6
18/09/11	Cloudy	10:45	10:50	61.1	62.8	57.5	1.8

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	
11/09/11	Cloudy	10:30	10:35	61.6	63.2	57.1	0.5
11/09/11	Cloudy	10:35	10:40	60.9	62.8	57.4	0.5
11/09/11	Cloudy	10:40	10:45	61.2	62.9	56.8	0.4
18/09/11	Cloudy	10:55	11:00	62.2	64.4	58.2	1.9
18/09/11	Cloudy	11:00	11:05	61.8	63.9	57.9	1.7
18/09/11	Cloudy	11:05	11:10	61.6	63.4	57.2	1.9



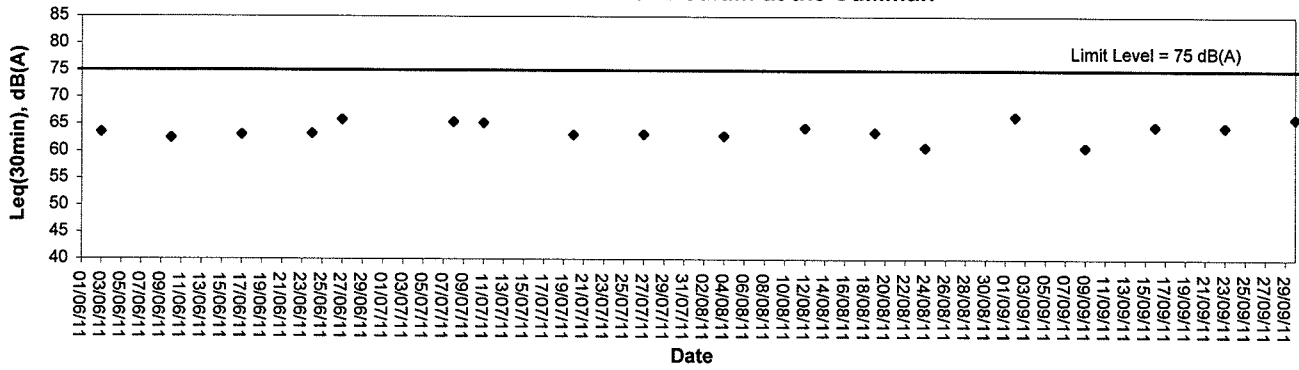
Appendix B3

Graphical Plots of Impact Noise Monitoring Data

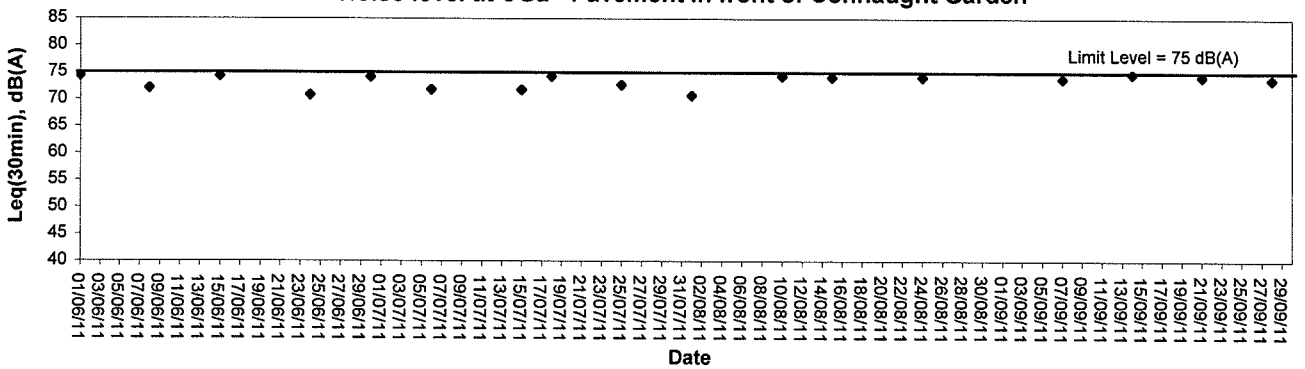


Noise Monitoring (Day-time)

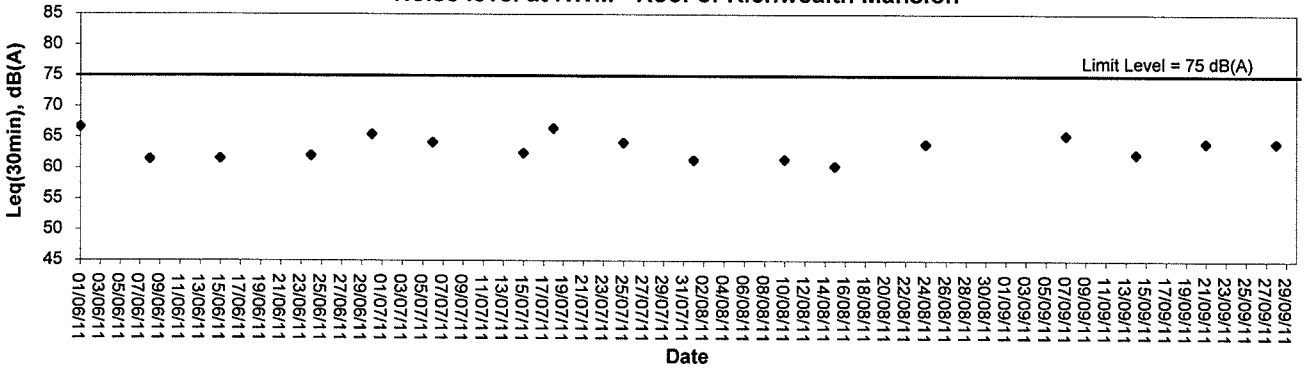
Noise level at KS6 - Podium at the Culliman



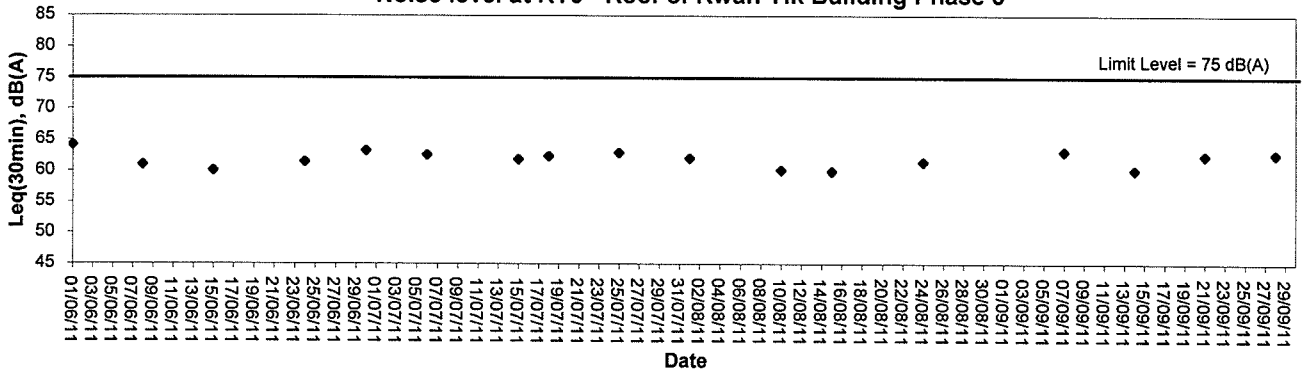
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



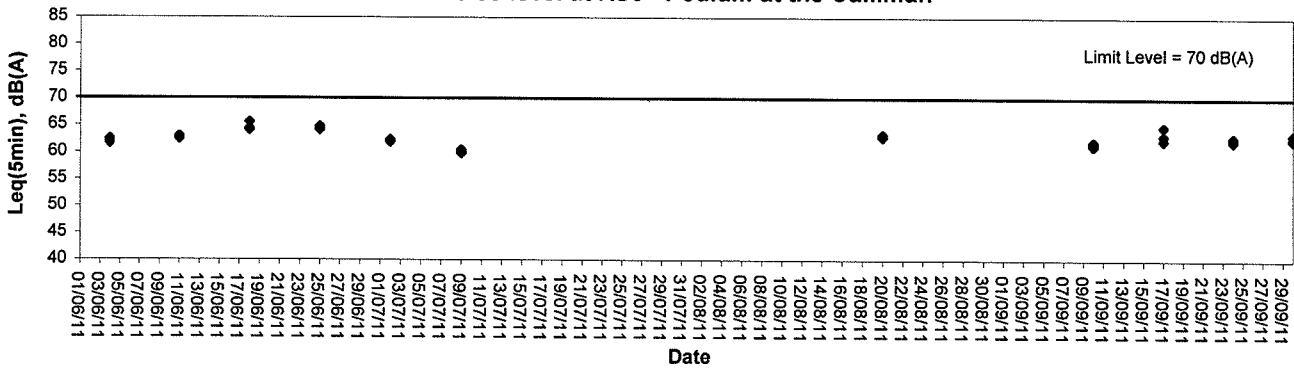
Noise level at KY3 - Roof of Kwan Yik Building Phase 3



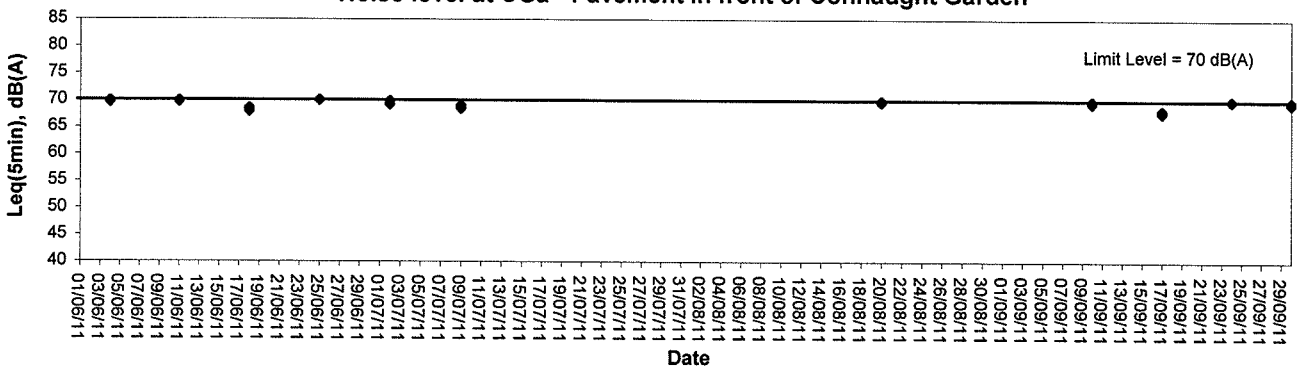


Noise Monitoring (Evening-time)

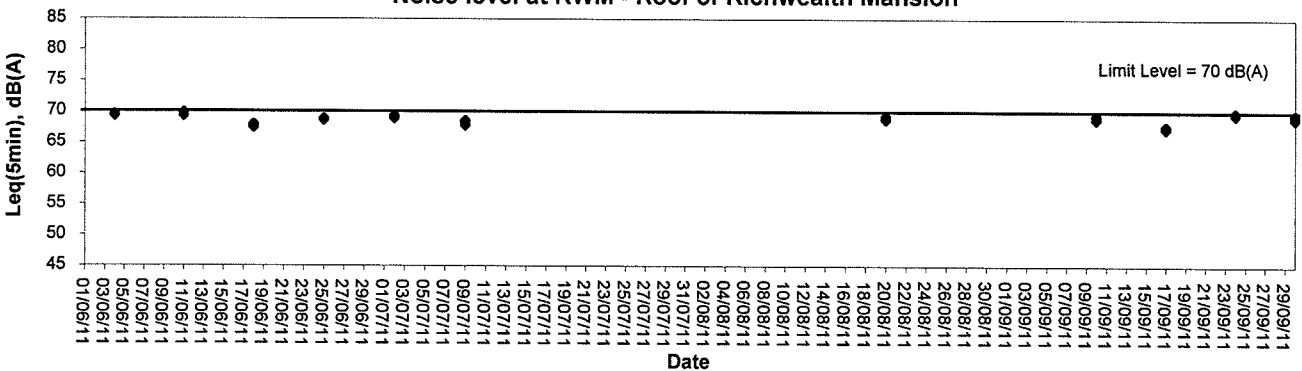
Noise level at KS6 - Podium at the Culliman



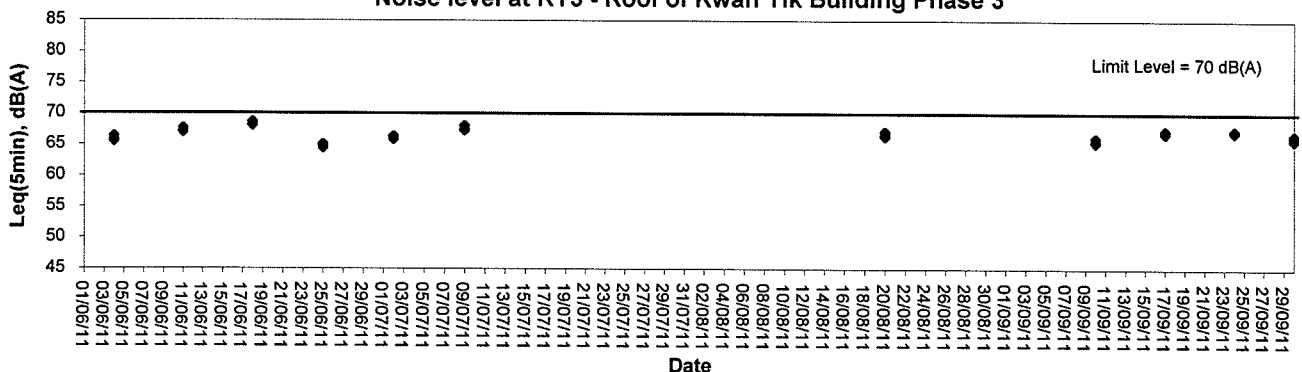
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



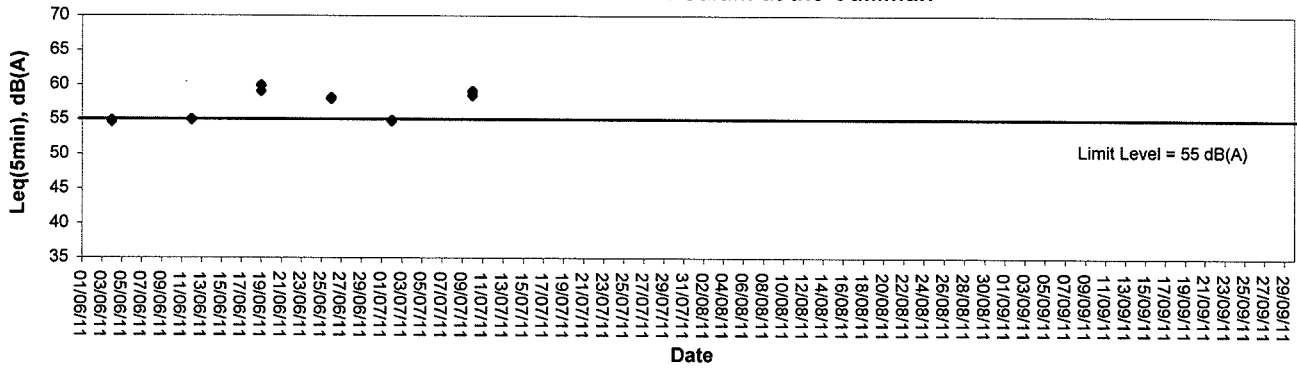
Noise level at KY3 - Roof of Kwan Yik Building Phase 3



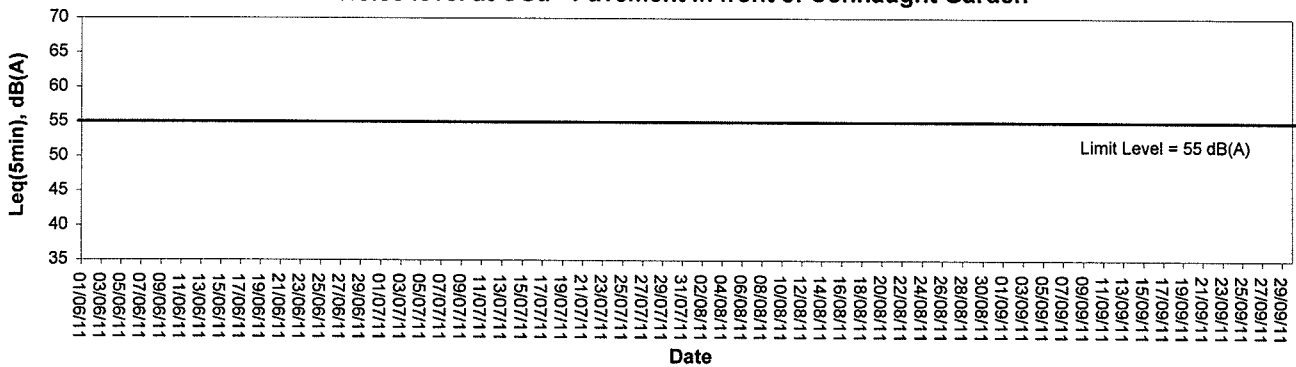


Noise Monitoring (Night-time)

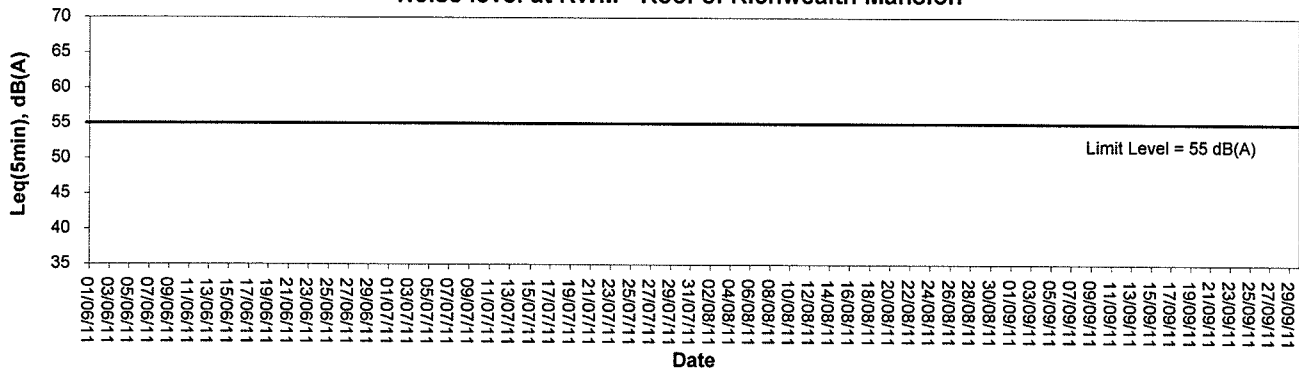
Noise level at KS6 - Podium at the Culliman



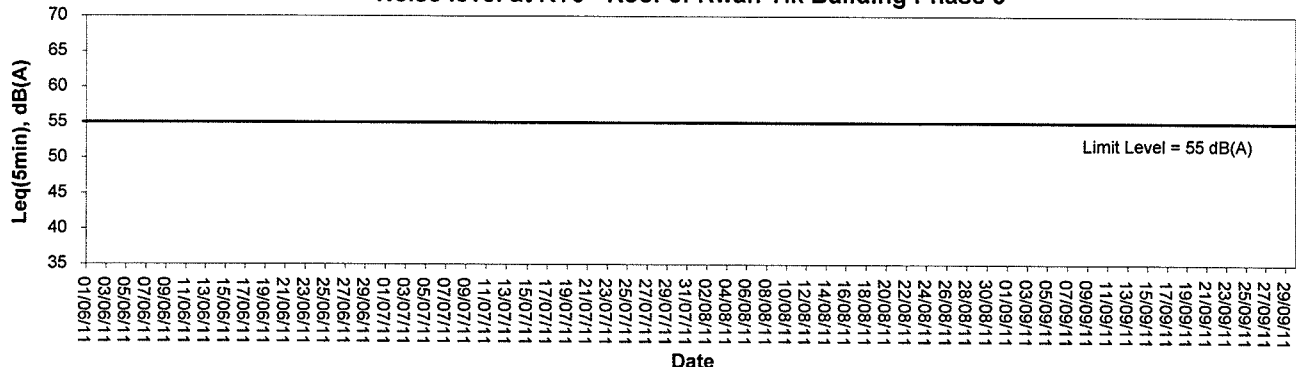
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



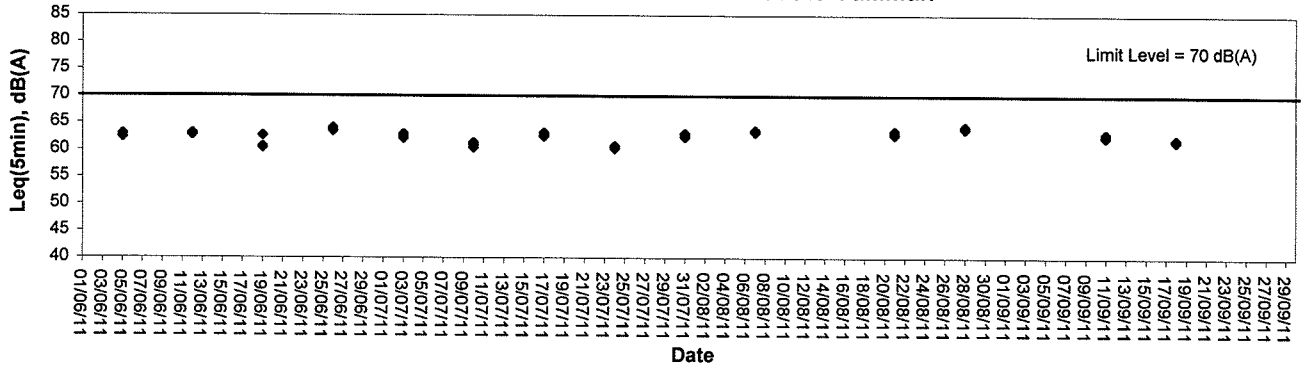
Noise level at KY3 - Roof of Kwan Yik Building Phase 3



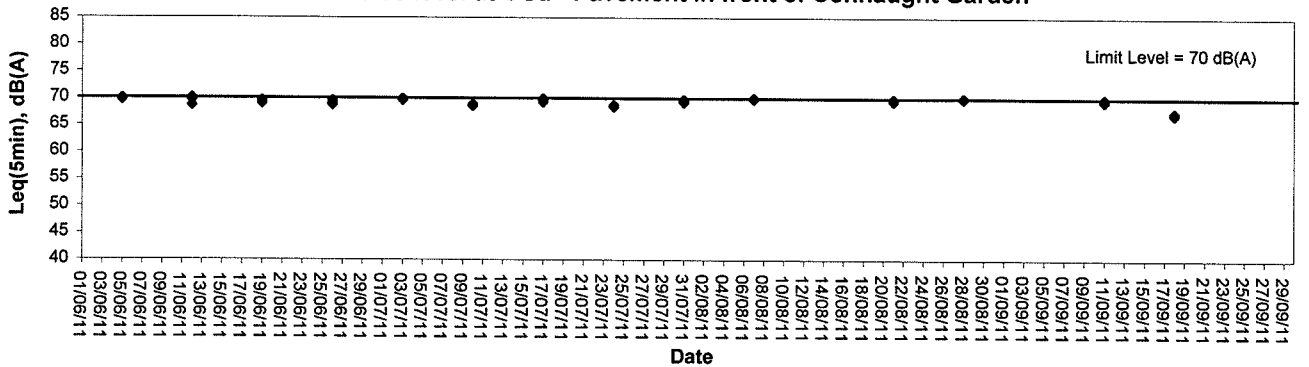


Noise Monitoring (Holiday-time)

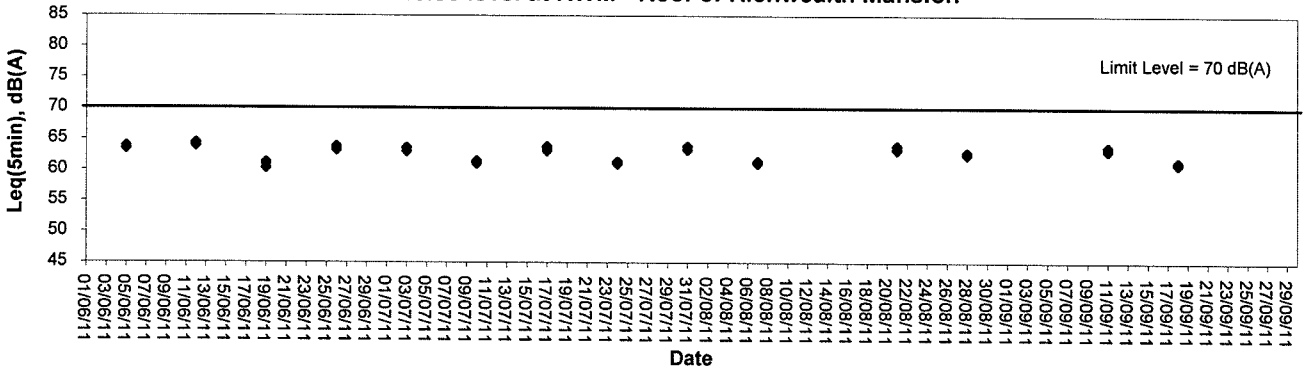
Noise level at KS6 - Podium at the Cullinan



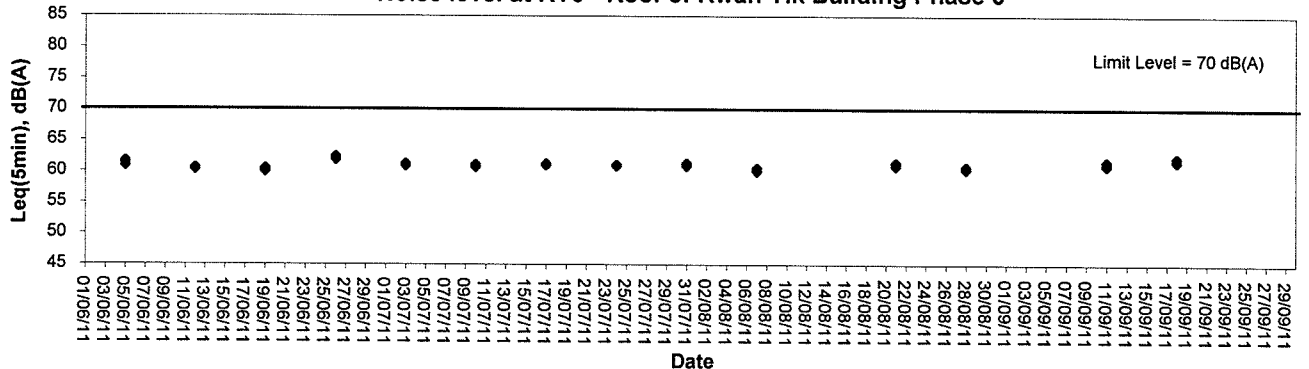
Noise level at CGa - Pavement in front of Connaught Garden



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



Internal Calibration Report of Dissolved Oxygen Meter

Equipment Ref. No. : E7/EW/008/03 Manufacturer : YSI
 Model No. : YSI 85D Serial No. : Z 0521285 0821007/16
 Date of Calibration : 27/6/11 Calibration Due Date : 26/9/11

Temperature Verification

Ref. No. of Reference Thermometer : E7/0521/003
 Ref. No. of Water Bath : E7/0533/001

Reference Thermometer reading	Temperature (°C)			
	Measured	Corrected	Difference	
DO Meter reading	21.0	20.9	0.3	
	21.2			

Standardization of sodium thiosulphate ($\text{Na}_2\text{S}_2\text{O}_3$) solution

Reagent No. of $\text{Na}_2\text{S}_2\text{O}_3$ titrant : CPE/012/45/04/12 Reagent No. of 0.025N $\text{K}_2\text{Cr}_2\text{O}_7$: CPE/012/44/001/2

	Trial 1	Trial 2
Initial Vol. of $\text{Na}_2\text{S}_2\text{O}_3$ (ml)	0	0
Final Vol. of $\text{Na}_2\text{S}_2\text{O}_3$ (ml)	40.10	40.05
Vol. of $\text{Na}_2\text{S}_2\text{O}_3$ used (ml)	40.10	40.05
Normality of $\text{Na}_2\text{S}_2\text{O}_3$ solution (N)	0.02494	0.02497
Average Normality (N) of $\text{Na}_2\text{S}_2\text{O}_3$ solution (N)	0.02496	
Acceptance criteria, Deviation	Less than $\pm 0.001\text{N}$	

Calculation: Normality of $\text{Na}_2\text{S}_2\text{O}_3$, $N = 1 / \text{ml } \text{Na}_2\text{S}_2\text{O}_3 \text{ used}$

Lineality Checking

Determination of dissolved oxygen content by Winkler Titration *

Purging Time (min)	2		5		10	
	1	2	1	2	1	2
Initial Vol. of $\text{Na}_2\text{S}_2\text{O}_3$ (ml)	0	11.45	0	9.05	0	6.60
Final Vol. of $\text{Na}_2\text{S}_2\text{O}_3$ (ml)	11.45	22.90	9.05	18.05	6.60	13.30
Vol. (V) of $\text{Na}_2\text{S}_2\text{O}_3$ used (ml)	11.45	11.45	9.05	9.00	6.60	6.70
Dissolved Oxygen (DO), mg/L	7.67	7.67	6.06	6.03	4.42	4.49
Acceptance criteria, Deviation	Less than + 0.3mg/L		Less than + 0.3mg/L		Less than + 0.3mg/L	

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

Purging time, min	DO meter reading, mg/L			Winkler Titration result *, mg/L			Difference (%) of DO Content
	1	2	Average	1	2	Average	
2	7.76	7.74	7.75	7.67	7.67	7.67	1.04
5	6.16	6.08	6.12	6.06	6.03	6.05	1.15
10	4.45	4.45	4.45	4.42	4.49	4.46	0.22
Linear regression coefficient							0.9998



Internal Calibration Report of Dissolved Oxygen Meter

Zero Point Checking

DO meter reading, mg/L	0.00
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Salinity Checking

Reagent No. of NaCl (10ppt) 2	CE/012/4.7/001/84	Reagent No. of NaCl (30ppt)	CE/012/4.8/001/84
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Determination of dissolved oxygen content by Winkler Titration **

Salinity (ppt)	10		30	
	1	2	1	2
Initial Vol. of Na ₂ S ₂ O ₃ (ml)	0	11.45	0	10.80
Final Vol. of Na ₂ S ₂ O ₃ (ml)	11.45	23.00	10.80	21.55
Vol. (V) of Na ₂ S ₂ O ₃ used (ml)	11.45	11.55	10.80	10.75
Dissolved Oxygen (DO), mg/L	7.68	7.74	7.24	7.20
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	7.70	7.60	7.65	7.68	7.74	7.71	0.78
30	7.27	7.25	7.26	7.24	7.20	7.22	0.55

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 : _____



東業德勤测试顾问有限公司
ETS-TESTCONSULT LIMITED

Performance Check of Salinity Meter

Equipment Ref. No. : ET/EW1008103 Manufacturer : YSI
Model No. : YSI 85P Serial No. : 082100716
Date of Calibration : 27/6/11 Due Date : 26/9/11

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

S100113

Salinity Standard (ppt)	Measured Salinity (ppt)	Difference %
30	30.5	1.67 %

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 : _____ 

Approved by : _____ 



Performance Check of Salinity Meter

Equipment Ref. No. : ET/EW/008/03 Manufacturer : YSI
Model No. : 85D Serial No. : 08L 100716
Date of Calibration : 24/09/2011 Due Date : 23/12/2011

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

S/001/3

Salinity Standard (ppt)	Measured Salinity (ppt)	Difference %
30	30.3	1.00

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 : h de la... Approved by : [Signature]



Internal Calibration Report of Dissolved Oxygen Meter

Equipment Ref. No. : <u>ET/EW/008/03</u>	Manufacturer : <u>YSI</u>
Model No. : <u>85D</u>	Serial No. : <u>08L 100716</u>
Date of Calibration : <u>24/09/2011</u>	Calibration Due Date : <u>23/12/2011</u>

Temperature Verification

Ref. No. of Reference Thermometer : ET/0521/001
 Ref. No. of Water Bath : ET/0533/001

		Temperature (°C)	
Reference Thermometer reading	Measured	20.8	Corrected
			20.5
DO Meter reading	Measured	20.7	Difference
			0.2

Standardization of sodium thiosulphate (Na₂S₂O₃) solution

Reagent No. of Na ₂ S ₂ O ₃ titrant	CPE/012/4.5/001/3	Reagent No. of 0.025N K ₂ Cr ₂ O ₇	CPE/012/4.4/001/4
		Trial 1	Trial 2
Initial Vol. of Na ₂ S ₂ O ₃ (ml)		0.00	0.00
Final Vol. of Na ₂ S ₂ O ₃ (ml)		40.50	40.00
Vol. of Na ₂ S ₂ O ₃ used (ml)		40.50	40.00
Normality of Na ₂ S ₂ O ₃ solution (N)		0.02469	0.02500
Average Normality (N) of Na ₂ S ₂ O ₃ solution (N)			
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	
	1	2	1	2	1	2
Trial						
Initial Vol. of Na ₂ S ₂ O ₃ (ml)	0.00	12.10	24.10	0.00	8.00	12.80
Final Vol. of Na ₂ S ₂ O ₃ (ml)	12.10	24.10	32.00	8.00	12.80	17.70
Vol. (V) of Na ₂ S ₂ O ₃ used (ml)	12.10	12.00	7.90	8.00	4.80	4.90
Dissolved Oxygen (DO), mg/L	8.07	8.01	5.27	5.34	3.20	3.27
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	8.09	8.12	8.11	8.07	8.01	8.04	0.81
5	5.38	5.42	5.40	5.27	5.34	5.31	1.77
10	3.08	3.12	3.10	3.20	3.27	3.24	4.26
Linear regression coefficient				0.99891			



Internal Calibration Report of Dissolved Oxygen Meter

Zero Point Checking

DO meter reading, mg/L	0.00
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Salinity Checking

Reagent No. of NaCl (10ppt)	CPE/012/4.7/001/9	Reagent No. of NaCl (30ppt)	CPE/012/4.8/001/9
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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	11.7	23.3	33.4
Final Vol. of Na ₂ S ₂ O ₃ (ml)	11.7	23.3	33.4	43.6
Vol. (V) of Na ₂ S ₂ O ₃ used (ml)	11.7	11.6	10.1	10.2
Dissolved Oxygen (DO), mg/L	7.81	7.74	6.74	6.77
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	7.89	7.905	7.81	7.74	7.78	1.66
30	7.09	7.13	7.11	6.74	6.8	6.77	4.9

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 :



Appendix C2

Impact Water Quality Monitoring Results

Mid-Flood Tide

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
01/09/11	1214-1230	28/Cloudy	Surface	1.0	26.6	29.8	29.9	6.22	6.24	89.5	89.8	4.28	4.31	4.46	6.5	6.7	6.9
				8.4	26.0	29.9		6.26		90.1		4.34			6.8		
			Middle	30.6	30.6	6.03	6.00	86.8	86.4	4.44	4.47	6.8					
				30.6		5.97		85.9		4.49		7.0					
			Bottom	15.8	25.3	31.4	31.5	5.86	5.84	84.4	84.1	4.57	4.61		7.0		
				31.5	5.81	83.7		4.65		7.2							
03/09/11	1238-1250	29/Cloudy	Surface	1.0	27.3	29.2	29.2	6.14	6.12	87.2	86.9	4.83	4.86	4.98	7.5	7.4	7.6
				7.9	26.4	31.4		6.11		87.4		4.96			7.2		
			Middle	31.3	31.4	6.09	6.10	88.3	87.9	4.99	4.98	7.4					
				31.9		5.72		81.2		5.10		7.8					
			Bottom	14.8	25.3	31.9	31.9	5.78	5.75	82.7	82.0	5.08	5.09		7.8		
				31.9	5.78	82.7		5.08		7.8							
06/09/11	1740-1752	31/Cloudy	Surface	1.0	27.9	30.8	30.8	6.15	6.14	85.5	85.3	4.96	5.00	5.16	7.5	7.6	7.9
				8.3	26.5	31.6		6.09		84.7		5.12			7.6		
			Middle	31.7	31.7	6.03	6.06	83.8	84.3	5.19	5.16	8.0					
				32.1		5.86		81.5		5.28		8.0					
			Bottom	15.6	25.3	32.1	32.1	5.91	5.89	82.1	81.8	5.35	5.32		8.2		
				32.1	5.91	82.1		5.35		8.2							
08/09/11	1806-1820	32/Cloudy	Surface	1.0	27.3	30.6	30.7	6.18	6.21	87.8	88.2	4.95	4.97	5.11	7.5	7.6	7.8
				8.1	26.5	31.7		6.06		86.1		5.27			8.0		
			Middle	31.6	31.7	6.13	6.10	87.0	86.6	5.25	5.26	8.2					
				32.0		5.90		83.8		5.12		7.8					
			Bottom	15.2	25.9	32.1	32.1	5.85	5.88	83.1	83.5	5.10	5.11		7.8		
				32.1	5.85	83.1		5.10		7.8							
10/09/11	1812-1823	32/Fine	Surface	1.0	27.5	30.1	30.1	6.25	6.28	90.0	90.4	5.00	5.02	5.13	7.5	7.7	7.9
				8.3	26.9	30.7		6.16		88.7		5.12			7.8		
			Middle	30.8	30.8	6.12	6.14	88.1	88.4	5.16	5.14	8.0					
				31.7		6.03		86.8		5.23		8.0					
			Bottom	15.6	26.3	31.7	31.7	6.05	6.04	87.1	87.0	5.26	5.25		8.2		
				31.7	6.05	87.1		5.26		8.2							
15/09/11	1140-1152	26/Cloudy	Surface	1.0	27.0	29.7	29.7	6.18	6.20	88.4	88.7	4.97	4.93	5.07	7.5	7.5	7.7
				8.5	26.2	30.6		6.04		86.4		5.09			7.4		
			Middle	30.6	30.6	6.11	6.08	87.4	86.9	5.04	5.07	7.8					
				31.8		5.95		85.1		5.17		7.8					
			Bottom	16.0	25.8	31.7	31.8	5.87	5.91	83.9	84.5	5.25	5.21		8.0		
				31.7	5.87	83.9		5.25		8.0							
17/09/11	1207-1216	29/Fine	Surface	1.0	26.9	30.4	30.5	6.05	6.05	85.9	85.9	4.80	4.84	5.02	7.5	7.6	7.8
				8.1	25.7	30.5		6.04		85.8		4.88			7.6		
			Middle	31.3	31.4	5.87	5.86	83.4	83.3	5.09	5.09	7.8					
				31.4		5.85		83.1		5.08		7.8					
			Bottom	15.2	25.2	32.1	32.1	5.90	5.94	84.4	84.6	5.11	5.14		7.8		
				32.1	5.97	84.8		5.17		8.0							
20/09/11	1506-1518	30/Cloudy	Surface	1.0	26.9	30.2	30.2	6.24	6.26	88.6	90.1	4.72	4.75	4.99	7.0	7.1	7.6
				8.0	25.7	30.2		6.28		91.6		4.77			7.2		
			Middle	31.6	31.6	6.16	6.17	87.5	87.7	4.96	4.97	7.6					
				31.5		6.18		87.8		4.98		7.6					
			Bottom	15.0	25.1	32.0	32.0	5.90	5.93	83.8	84.2	5.23	5.25		8.0		
				32.0	5.96	84.6		5.26		8.0							
22/09/11	1721-1735	29/Fine	Surface	1.0	27.6	30.3	30.3	6.03	6.06	85.6	86.0	4.72	4.74	5.00	7.0	7.2	7.7
				8.1	26.8	30.3		6.08		86.4		4.75			7.4		
			Middle	31.2	31.2	6.07	6.04	86.1	85.1	5.07	5.06	7.8					
				31.2		6.01		84.1		5.04		7.8					
			Bottom	15.2	26.1	31.7	31.8	5.88	5.85	82.3	81.9	5.23	5.22		8.0		
				31.8	5.82	81.4		5.20		8.0							
24/09/11	1834-1850	27/Cloudy	Surface	1.0	28.7	30.8	30.9	6.19	6.22	87.2	87.6	4.73	4.76	4.95	7.0	7.1	7.5
				8.4	27.9	30.9		6.24		87.9		4.79			7.2		
			Middle	31.5	31.5	6.01	6.03	84.7	85.0	4.87	4.91	7.4					
				31.5		6.05		85.3		4.95		7.6					
			Bottom	15.8	27.1	32.0	32.1	5.96	5.92	84.0	82.9	5.14	5.17		7.8		
				32.1	5.88	81.7		5.20		8.0							
27/09/11	1915-1926	29/Cloudy	Surface	1.0	27.4	31.1	31.1	6.15	6.13	85.4	85.2	5.19	5.22	5.25	8.0	8.1	8.3
				8.7	26.3	31.0		6.11		84.9		5.25			8.2		
			Middle	32.0	32.1	6.01	6.03	83.5	83.7	5.30	5.26	8.4					
				32.1		6.04		83.9		5.22		8.2					
			Bottom	16.4	25.3	32.5	32.5	5.97	5.96	82.9	82.8	5.26	5.28		8.4		
				32.4	5.95	82.7		5.30		8.4							

Mid-Flood 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	
01/09/11	1154-1210	28/Cloudy	Surface	1.0	26.5	29.8	29.8	6.24	6.21	89.8	89.3	4.21	4.19	4.43	6.6	6.5	6.9	
						29.8		6.17		88.8		4.17			6.4			
			Middle	8.3	26.0	30.7	30.7	6.06	6.03	87.2	86.8	4.38	4.41		6.8			6.8
						30.6		6.00		86.4		4.43			6.8			
			Bottom	15.6	25.4	31.4	31.5	5.83	5.86	83.9	84.3	4.68	4.71		7.2			7.4
						31.5		5.88		84.6		4.73			7.5			
03/09/11	1216-1230	29/Cloudy	Surface	1.0	27.4	29.3	32.0	6.19	6.18	87.3	87.7	4.62	4.61	4.78	7.2	7.2	7.4	
						29.2		6.16		88.1		4.60			7.2			
			Middle	8.3	26.4	31.2	31.3	6.02	6.02	85.5	85.1	4.83	4.82		7.4			7.4
						31.3		6.01		84.7		4.81			7.4			
			Bottom	15.6	25.4	31.2	31.6	5.92	5.94	84.1	84.4	4.92	4.91		7.6			7.6
						31.9		5.96		84.6		4.90			7.5			
06/09/11	1721-1732	31/Cloudy	Surface	1.0	27.8	30.7	30.7	6.14	6.17	85.6	85.2	4.89	4.87	5.07	7.4	7.4	7.8	
						30.7		6.14		84.7		4.85			7.4			
			Middle	8.4	26.5	31.7	31.7	6.05	6.04	83.5	83.3	5.01	5.05		7.8			7.8
						31.7		6.02		83.1		5.09			7.8			
			Bottom	15.8	25.2	32.2	32.2	5.94	5.96	82.0	82.3	5.33	5.29		8.2			8.1
						32.1		5.98		82.5		5.25			8.0			
08/09/11	1749-1800	32/Cloudy	Surface	1.0	27.2	30.6	30.6	6.07	6.11	86.2	86.7	4.93	4.96	5.09	7.4	7.5	7.7	
						30.5		6.14		87.2		4.99			7.6			
			Middle	8.5	2.5	31.5	31.6	6.08	6.05	86.9	87.1	5.30	5.27		8.2			8.1
						31.6		6.02		87.3		5.24			8.0			
			Bottom	16.0	25.9	32.1	32.1	5.95	5.93	84.5	84.2	5.02	5.03		7.6			7.6
						32.1		5.91		83.9		5.04			7.5			
10/09/11	1750-1801	32/Fine	Surface	1.0	27.4	30.1	30.1	6.28	6.31	90.4	90.8	5.02	5.00	5.09	7.6	7.6	7.8	
						30.1		6.33		91.2		4.98			7.6			
			Middle	8.2	26.9	30.8	30.8	6.20	6.18	89.3	89.0	5.08	5.10		7.8			7.8
						30.7		6.15		88.6		5.11			7.8			
			Bottom	15.4	26.3	31.8	31.8	6.09	6.08	87.7	87.5	5.17	5.19		8.0			8.0
						31.7		6.06		87.3		5.20			8.0			
15/09/11	1121-1132	26/Cloudy	Surface	1.0	27.0	29.8	29.8	6.20	6.18	89.3	89.0	4.92	4.93	5.11	7.4	7.5	7.8	
						29.7		6.15		88.6		4.94			7.6			
			Middle	8.6	26.3	30.6	30.7	6.02	6.04	86.7	87.0	5.07	5.10		7.8			7.8
						30.7		6.06		87.3		5.12			7.8			
			Bottom	16.2	25.8	31.8	31.8	5.84	5.87	84.1	84.5	5.32	5.30		8.2			8.1
						31.8		5.89		84.8		5.27			8.0			
17/09/11	1148-1159	29/Fine	Surface	1.0	26.9	30.5	30.5	6.19	6.18	87.9	88.6	4.75	4.74	5.06	7.2	7.2	7.7	
						30.5		6.16		89.3		4.72			7.2			
			Middle	8.4	25.7	31.4	31.5	6.10	6.10	86.6	86.5	5.10	5.12		7.8			7.9
						31.5		6.09		86.4		5.14			8.0			
			Bottom	15.8	25.2	31.9	31.9	5.92	5.94	84.1	84.6	5.32	5.33		8.2			8.1
						31.8		5.95		85.1		5.34			8.0			
20/09/11	1445-1456	30/Cloudy	Surface	1.0	26.9	30.1	30.2	6.19	6.18	87.9	87.7	4.96	4.94	5.06	7.6	7.5	7.7	
						30.2		6.16		87.4		4.91			7.4			
			Middle	8.4	25.8	31.5	31.5	5.99	5.97	85.1	84.8	5.08	5.06		7.8			7.7
						31.5		5.95		84.5		5.04			7.6			
			Bottom	15.8	25.2	31.9	31.9	5.93	5.95	84.2	84.5	5.15	5.17		8.0			8.0
						31.9		5.97		84.8		5.19			8.0			
22/09/11	1707-1715	29/Fine	Surface	1.0	27.8	30.3	30.3	6.19	6.21	87.8	88.2	4.59	4.63	4.88	7.0	7.1	7.5	
						30.2		6.23		88.5		4.66			7.2			
			Middle	8.4	26.7	31.2	31.3	6.10	6.08	86.6	86.3	4.96	4.95		7.6			7.6
						31.3		6.05		85.9		4.93			7.6			
			Bottom	15.8	26.0	31.8	31.8	5.92	5.94	84.0	84.3	5.06	5.08		7.8			7.9
						31.8		5.95		84.5		5.09			8.0			
24/09/11	1814-1830	27/Cloudy	Surface	1.0	28.6	30.8	30.8	6.27	6.25	88.4	88.1	4.77	4.80	4.98	7.4	7.4	7.7	
						30.8		6.23		87.8		4.82			7.4			
			Middle	8.5	27.9	31.5	31.5	6.12	6.10	86.2	86.0	4.91	4.95		7.6			7.6
						31.4		6.08		85.7		4.99			7.6			
			Bottom	16.0	27.1	32.0	32.0	5.86	5.88	82.6	82.9	5.17	5.20		8.0			8.0
						32.0		5.90		83.1		5.23			8.0			
27/09/11	1856-1907	29/Cloudy	Surface	1.0	27.4	31.1	31.1	6.12	6.10	85.0	84.8	5.17	5.21	5.22	7.4	7.4	7.8	
						31.1		6.08		84.5		5.24			7.4			
			Middle	8.7	26.3	32.0	32.0	6.02	6.04	83.6	83.8	5.15	5.13		7.8			7.8
						32.0		6.05		84.0		5.10			7.8			
			Bottom	16.4	25.4	32.4	32.4	5.85	5.83	80.7	80.4	5.29	5.32		8.2			8.1
						32.4		5.81		80.1		5.34			8.0			

Mid-Flood Tide

Monitoring Station : R6

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
01/09/11	1055-1111	28/Cloudy	Surface	1.0	26.5	29.9	29.9	6.27	6.29	90.2	90.5	4.21	4.24	4.43	6.4	6.5	6.8
						29.8		6.31		90.8		4.27			6.6		
			Middle	8.3	26.0	30.6	30.6	6.20	6.18	89.3	89.0	4.44	4.42		6.8	6.7	
						30.5		6.15		88.7		4.40			6.6		
			Bottom	15.6	25.4	31.4	31.4	6.01	6.04	86.5	86.9	4.66	4.64		7.2	7.2	
						31.3		6.06		87.3		4.61			7.2		
03/09/11	1112-1126	29/Cloudy	Surface	1.0	27.3	29.2	29.2	6.17	6.14	87.6	87.4	4.63	4.66	5.03	7.0	7.1	7.7
						29.2		6.10		87.2		4.69			7.2		
			Middle	8.3	26.3	31.2	31.2	5.87	5.86	83.4	83.2	5.19	5.18		8.0	7.9	
						31.2		5.84		82.9		5.16			7.8		
			Bottom	15.6	25.3	31.8	31.8	5.76	5.79	82.4	82.5	5.29	5.27		8.0	8.0	
						31.8		5.81		82.5		5.24			8.0		
06/09/11	1620-1632	31/Cloudy	Surface	1.0	27.9	30.7	30.7	6.25	6.24	86.3	86.1	5.15	5.13	5.29	7.8	7.8	8.1
						30.7		6.22		85.8		5.11			7.8		
			Middle	8.4	26.5	31.6	31.7	6.07	6.07	83.8	83.7	5.27	5.29		8.2	8.2	
						31.7		6.06		83.6		5.30			8.2		
			Bottom	15.8	25.2	32.1	32.1	5.97	5.94	82.4	82.0	5.43	5.46		8.4	8.4	
						32.1		5.91		81.6		5.49			8.4		
08/09/11	1642-1655	31/Cloudy	Surface	1.0	27.2	30.5	30.6	6.17	6.15	87.6	87.3	4.87	4.84	5.04	7.6	7.5	7.8
						30.6		6.13		87.0		4.81			7.4		
			Middle	8.3	26.4	31.6	31.6	5.96	5.99	84.6	85.0	5.17	5.16		8.0	8.0	
						31.5		6.01		85.3		5.15			8.0		
			Bottom	15.6	25.9	31.9	32.0	5.86	5.84	84.9	84.1	5.12	5.13		7.8	7.9	
						32.0		5.82		83.2		5.14			8.0		
10/09/11	1653-1703	32/Fine	Surface	1.0	27.5	30.2	30.2	6.28	6.26	90.4	90.2	5.03	5.01	5.12	7.6	7.6	7.8
						30.1		6.24		89.9		4.99			7.6		
			Middle	8.4	26.9	30.8	30.8	6.15	6.14	88.6	88.4	5.10	5.12		7.8	7.9	
						30.8		6.12		88.1		5.14			8.0		
			Bottom	15.8	26.3	31.7	31.8	6.00	5.99	86.4	86.3	5.20	5.22		8.0	8.0	
						31.8		5.98		86.1		5.23			8.0		
15/09/11	1020-1032	26/Cloudy	Surface	1.0	27.0	29.8	29.8	6.23	6.19	89.1	88.5	4.96	4.99	5.15	7.6	7.6	7.9
						29.7		6.15		87.9		5.01			7.6		
			Middle	8.5	26.3	30.7	30.7	6.08	6.05	86.9	86.4	5.14	5.17		8.0	8.0	
						30.6		6.01		85.9		5.19			8.0		
			Bottom	16.0	25.8	31.7	31.7	5.94	5.92	84.9	84.6	5.27	5.31		8.0	8.1	
						31.7		5.89		84.2		5.35			8.2		
17/09/11	1046-1100	29/Fine	Surface	1.0	26.9	30.4	30.5	6.02	6.06	82.3	85.3	4.76	4.75	4.92	7.2	7.3	7.5
						30.5		6.09		88.3		4.74			7.4		
			Middle	8.4	25.9	31.5	31.5	5.92	5.94	84.7	84.7	4.96	4.94		7.6	7.6	
						31.5		5.96		84.6		4.91			7.6		
			Bottom	15.8	25.3	32.0	32.1	5.85	5.83	83.1	82.8	5.07	5.09		7.6	7.7	
						32.1		5.81		82.5		5.10			7.8		
20/09/11	1339-1352	30/Cloudy	Surface	1.0	26.8	30.2	30.2	6.15	6.14	87.3	87.1	4.77	4.76	5.09	7.2	7.2	7.8
						30.2		6.12		86.9		4.75			7.2		
			Middle	8.3	25.8	31.5	31.5	5.86	5.85	84.9	83.9	5.05	5.07		7.8	7.9	
						31.5		5.84		82.9		5.09			8.0		
			Bottom	15.6	25.1	32.0	32.0	5.74	5.77	82.1	83.3	5.47	5.44		8.4	8.3	
						32.0		5.80		84.5		5.40			8.2		
22/09/11	1605-1620	29/Fine	Surface	1.0	27.7	30.2	30.2	6.10	6.10	85.4	85.3	4.12	4.14	4.49	6.2	6.3	6.9
						30.2		6.09		85.2		4.16			6.4		
			Middle	8.4	26.8	31.3	31.3	5.97	5.98	83.2	83.4	4.47	4.48		7.2	7.2	
						31.3		5.99		83.6		4.49			7.2		
			Bottom	15.8	26.1	32.0	32.0	5.70	5.71	80.9	81.1	4.87	4.85		7.4	7.3	
						32.0		5.72		81.2		4.82			7.2		
24/09/11	1713-1730	28/Cloudy	Surface	1.0	28.7	30.7	30.7	6.17	6.20	86.9	87.4	4.70	4.72	4.90	7.0	7.0	7.4
						30.7		6.23		87.8		4.74			7.0		
			Middle	8.2	27.9	31.4	31.5	6.08	6.04	85.7	85.2	4.85	4.88		7.4	7.4	
						31.5		6.00		84.6		4.90			7.4		
			Bottom	15.4	27.2	31.9	31.9	5.82	5.85	82.0	82.5	5.08	5.11		7.8	7.9	
						31.9		5.88		82.9		5.13			8.0		
27/09/11	1756-1808	29/Cloudy	Surface	1.0	27.6	31.1	31.1	6.17	6.19	85.7	86.0	5.01	5.04	5.21	7.6	7.6	8.0
						31.1		6.21		86.3		5.07			7.6		
			Middle	8.8	26.4	32.0	32.0	6.05	6.07	84.0	84.3	5.37	5.34		8.2	8.2	
						31.9		6.09		84.6		5.31			8.2		
			Bottom	16.6	25.4	32.3	32.3	5.89	5.87	81.2	81.0	5.20	5.24		8.0	8.1	
						32.3		5.85		80.7		5.28			8.2		

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
01/09/11	1115-1130	28/Cloudy	Surface	1.0	26.6	29.8 29.9	29.9	6.28 6.23	6.26	90.4 89.7	90.1	4.24 4.30	4.27	4.50	6.4 6.6	6.5	6.9
			Middle	9.3	25.9	30.6 30.7	30.7	6.13 6.08	6.11	88.3 87.6	88.0	4.48 4.52	4.50		7.0 6.8		
			Bottom	17.6	25.3	31.5 31.6	31.6	5.84 5.88	5.86	84.1 84.7	84.4	4.69 4.74	4.72		7.2 7.2		
03/09/11	1130-1143	29/Cloudy	Surface	1.0	27.4	29.3 29.3	29.3	6.16 6.11	6.14	88.1 86.8	87.5	4.94 4.96	4.95	5.04	7.6 7.6	7.6	7.7
			Middle	8.9	26.2	31.3 31.2	31.3	5.92 5.95	5.94	84.1 84.5	84.3	5.02 5.06	5.04		7.6 7.8		
			Bottom	16.8	25.4	32.0 31.9	32.0	5.84 5.80	5.82	82.9 82.4	82.7	5.15 5.11	5.13		7.8 7.8		
06/09/11	1635-1647	31/Cloudy	Surface	1.0	27.9	30.8 30.7	30.8	6.16 6.11	6.14	85.0 84.3	84.7	5.09 5.13	5.11	5.25	7.8 7.8	8.1	8.1
			Middle	9.3	26.5	31.6 31.6	31.6	6.03 6.00	6.02	83.2 82.8	83.0	5.29 5.21	5.25		8.2 8.0		
			Bottom	17.6	25.3	32.2 32.2	32.2	5.88 5.94	5.91	81.1 82.0	81.6	5.41 5.36	5.39		8.4 8.2		
08/09/11	1700-1714	31/Cloudy	Surface	1.0	27.1	30.7 30.6	30.7	5.99 6.05	6.02	85.1 85.9	85.5	4.42 4.36	4.39	4.77	6.8 6.6	6.7	7.3
			Middle	9.1	26.5	31.5 31.5	31.5	5.88 5.91	5.90	83.5 84.5	84.0	4.82 4.90	4.86		7.4 7.6		
			Bottom	17.2	26.0	32.0 32.0	32.0	5.78 5.75	5.77	83.8 81.7	82.8	5.02 5.09	5.06		7.8 7.8		
10/09/11	1706-1719	32/Fine	Surface	1.0	27.6	30.1 30.2	30.2	6.26 6.29	6.28	90.1 90.6	90.4	5.06 5.02	5.04	5.17	8.0 7.6	7.8	7.9
			Middle	9.2	26.8	30.9 30.8	30.9	6.13 6.09	6.11	88.3 87.7	88.0	5.17 5.15	5.16		7.6 8.0		
			Bottom	17.4	26.2	31.8 31.8	31.8	5.96 5.93	5.95	85.8 85.4	85.6	5.31 5.28	5.30		7.8 8.2		
15/09/11	1035-1047	26/Cloudy	Surface	1.0	27.0	29.8 29.8	29.8	6.17 6.21	6.19	88.2 88.8	88.5	4.92 4.98	4.95	5.12	7.4 7.6	7.5	7.8
			Middle	9.5	26.3	30.7 30.7	30.7	6.03 5.97	6.00	86.2 85.4	85.8	5.16 5.11	5.14		7.8 7.8		
			Bottom	18.0	25.7	31.8 31.7	31.8	5.85 5.91	5.88	83.7 84.5	84.1	5.24 5.30	5.27		8.0 8.2		
17/09/11	1104-1115	29/Fine	Surface	1.0	26.8	30.3 30.3	30.3	6.14 6.13	6.14	87.2 87.4	87.3	4.79 4.85	4.82	4.96	7.4 7.4	7.4	7.6
			Middle	9.0	25.7	31.6 31.5	31.6	5.89 5.84	5.87	83.6 82.9	83.3	4.93 4.91	4.92		7.6 7.6		
			Bottom	17.0	25.1	32.1 32.1	32.1	5.76 5.78	5.77	81.8 84.5	83.2	5.12 5.16	5.14		7.8 7.8		
20/09/11	1356-1410	30/Cloudy	Surface	1.0	26.9	30.3 30.3	30.3	6.11 6.09	6.10	86.8 85.9	86.4	4.66 4.60	4.63	4.86	7.2 7.2	7.2	7.5
			Middle	9.1	25.6	31.6 31.5	31.6	5.99 6.02	6.01	85.1 86.6	85.9	4.88 4.82	4.85		7.6 7.2		
			Bottom	17.2	25.2	32.1 32.0	32.1	5.93 5.91	5.92	84.2 84.5	84.4	5.09 5.12	5.11		7.8 7.8		
22/09/11	1623-1635	29/Fine	Surface	1.0	27.8	30.3 30.2	30.3	6.15 6.20	6.18	87.3 88.0	87.7	4.98 4.94	4.96	5.14	7.6 7.6	7.6	7.9
			Middle	9.1	26.8	31.2 31.2	31.2	5.92 5.90	5.91	84.0 83.8	83.9	5.26 5.20	5.23		8.0 8.0		
			Bottom	17.2	26.0	31.9 31.9	31.9	5.84 5.89	5.87	83.1 83.8	83.5	5.24 5.21	5.23		8.0 8.0		
24/09/11	1734-1750	28/Cloudy	Surface	1.0	28.8	30.8 30.7	30.8	6.26 6.29	6.28	88.2 88.6	88.4	4.81 4.86	4.84	5.02	7.2 7.4	7.3	7.6
			Middle	9.2	28.0	31.5 31.5	31.5	6.17 6.14	6.16	86.9 86.5	86.7	5.00 5.05	5.03		7.6 7.6		
			Bottom	17.4	27.1	31.9 32.0	32.0	6.05 5.99	6.02	85.3 84.4	84.9	5.17 5.21	5.19		8.0 8.0		
27/09/11	1811-1822	29/Cloudy	Surface	1.0	27.5	31.1 31.2	31.2	6.20 6.24	6.22	86.1 86.7	86.4	4.88 4.93	4.91	5.05	7.4 7.4	7.4	7.7
			Middle	9.4	26.4	32.0 32.0	32.0	6.12 6.15	6.14	85.0 85.4	85.2	5.07 5.01	5.04		7.6 7.6		
			Bottom	17.8	25.4	32.3 32.2	32.3	5.99 5.95	5.97	83.2 82.7	83.0	5.22 5.16	5.19		8.0 8.0		

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
01/09/11	1033-1050	28/Cloudy	Surface	1.0	26.5	29.8 29.9	29.9	6.20 6.13	6.17	89.3 88.3	88.8	4.40 4.46	4.43	4.65	6.8	6.7	6.9
			Middle	8.9	25.9	30.6 30.7	30.7	6.04 5.98	6.01	86.9 86.1	86.5	4.66 4.69	4.68		6.8 6.8		
			Bottom	16.8	25.3	31.4 31.5	31.5	5.71 5.75	5.73	82.2 82.8	82.5	4.81 4.86	4.84		7.2 7.2		
03/09/11	1055-1109	29/Cloudy	Surface	1.0	27.4	29.2 29.1	29.2	6.20 6.15	6.18	88.0 87.3	87.7	4.57 4.52	4.55	4.97	7.0	7.0	7.6
			Middle	8.7	26.3	31.3 31.2	31.3	5.96 5.90	5.93	84.6 83.8	84.2	5.09 5.04	5.07		7.8 7.8		
			Bottom	16.4	25.3	31.8 31.9	31.9	5.88 5.92	5.90	83.5 84.1	83.8	5.30 5.27	5.29		8.0 8.0		
06/09/11	1606-1617	31/Cloudy	Surface	1.0	27.9	30.8 30.7	30.8	6.17 6.10	6.14	85.8 84.8	85.3	5.22 5.18	5.20	5.35	7.8	7.9	8.2
			Middle	8.9	26.4	31.7 31.6	31.7	5.99 6.04	6.02	83.3 84.0	83.7	5.37 5.34	5.36		8.2 8.2		
			Bottom	16.8	25.3	32.2 32.1	32.2	5.82 5.87	5.85	80.9 81.6	81.3	5.45 5.51	5.48		8.4 8.6		
08/09/11	1626-1638	31/Cloudy	Surface	1.0	27.2	30.6 30.5	30.6	6.30 6.24	6.27	89.5 88.6	89.1	4.29 4.38	4.34	4.85	6.6	6.7	7.5
			Middle	8.9	26.4	31.7 31.6	31.7	5.82 5.88	5.85	82.6 83.5	83.1	4.96 4.89	4.93		7.8 7.8		
			Bottom	16.8	25.9	31.9 31.8	31.9	5.77 5.79	5.78	81.9 82.2	82.1	5.27 5.29	5.28		8.0 7.8		
10/09/11	1636-1650	32/Fine	Surface	1.0	27.5	30.1 30.1	30.1	6.33 6.29	6.31	91.2 90.6	90.9	5.01 5.05	5.03	5.13	7.4	7.5	7.8
			Middle	8.9	26.8	30.8 30.9	30.9	6.21 6.17	6.19	89.4 88.8	89.1	5.12 5.16	5.14		7.8 7.8		
			Bottom	16.8	26.2	31.7 31.8	31.8	6.10 6.07	6.09	87.8 87.4	87.6	5.22 5.24	5.23		8.0 8.0		
15/09/11	1006-1017	26/Cloudy	Surface	1.0	27.0	29.7 29.7	29.7	6.19 6.12	6.16	89.1 88.1	88.6	5.17 5.09	5.13	5.30	7.8	7.8	8.1
			Middle	8.5	26.3	30.7 30.7	30.7	5.99 6.05	6.02	86.3 87.1	86.7	5.25 5.31	5.28		8.0 8.0		
			Bottom	16.0	25.8	31.8 31.8	31.8	5.86 5.83	5.85	84.4 84.0	84.2	5.52 5.44	5.48		8.6 8.4		
17/09/11	1032-1043	29/Fine	Surface	1.0	26.9	30.3 30.4	30.4	5.97 6.04	6.01	86.6 87.6	87.1	4.52 4.48	4.50	4.86	6.6	6.8	7.4
			Middle	8.7	25.9	31.5 31.4	31.5	5.95 5.90	5.93	86.9 83.8	85.4	4.87 4.82	4.85		7.4 7.4		
			Bottom	16.4	25.1	32.1 32.1	32.1	5.74 5.79	5.77	83.8 82.2	83.0	5.25 5.20	5.23		8.0 8.0		
20/09/11	1324-1336	30/Cloudy	Surface	1.0	26.9	30.2 30.2	30.2	6.27 6.25	6.26	89.2 89.0	89.1	4.79 4.82	4.81	5.12	7.2	7.3	7.8
			Middle	8.9	25.7	31.4 31.5	31.5	5.96 5.94	5.95	84.8 84.5	84.7	5.12 5.11	5.12		7.8 7.8		
			Bottom	16.8	25.3	32.0 32.0	32.0	5.88 5.86	5.87	83.5 83.2	83.4	5.44 5.46	5.45		8.4 8.4		
22/09/11	1549-1602	29/Fine	Surface	1.0	27.7	30.2 30.3	30.3	6.19 6.14	6.17	87.9 87.2	87.6	4.49 4.52	4.51	4.70	6.2	6.3	7.0
			Middle	8.8	26.9	31.4 31.5	31.5	6.07 6.09	6.08	86.1 86.5	86.3	4.62 4.68	4.65		7.0 7.2		
			Bottom	16.6	26.0	31.9 31.9	31.9	5.76 5.78	5.77	81.8 82.0	81.9	4.93 4.96	4.95		7.4 7.6		
24/09/11	1652-1710	28/Cloudy	Surface	1.0	28.7	30.7 30.7	30.7	6.07 6.03	6.05	85.5 85.0	85.3	4.86 4.79	4.83	4.99	7.4	7.3	7.6
			Middle	8.9	27.9	31.5 31.5	31.5	5.92 5.87	5.90	83.4 82.7	83.1	4.96 5.01	4.99		7.6 7.6		
			Bottom	16.8	27.1	31.0 31.9	31.5	5.73 5.77	5.75	80.7 81.3	81.0	5.14 5.18	5.16		7.6 8.0		
27/09/11	1741-1753	29/Cloudy	Surface	1.0	27.7	31.0 30.9	31.0	6.29 6.25	6.27	87.4 86.8	87.1	4.92 5.02	4.97	5.10	7.4	7.5	7.7
			Middle	8.8	26.5	31.9 32.0	32.0	6.11 6.07	6.09	84.9 84.3	84.6	5.21 5.18	5.20		8.0 8.0		
			Bottom	16.6	25.5	32.3 32.2	32.3	5.98 5.95	5.97	83.1 82.7	82.9	5.15 5.09	5.12		7.8 7.6		

Mid-Flood Tide



Monitoring Station : C1

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
01/09/11	0908-0925	29/Cloudy	Surface	1.0	26.5	29.8 29.9	29.9	6.22 6.26	6.24	89.5 90.7	90.1	4.22 4.27	4.25	4.52	6.6 6.6	6.6	7.0
			Middle	7.4	26.1	30.4 30.5	30.5	6.15 6.10	6.13	88.5 87.8	88.2	4.45 4.51	4.48		6.8 7.0		
			Bottom	13.8	25.6	31.3 31.4	31.4	5.93 5.97	5.95	85.4 86.0	85.7	4.80 4.86	4.83		7.4 7.5		
03/09/11	0935-0949	29/Rainy	Surface	1.0	27.5	29.1 29.1	29.1	6.09 6.14	6.12	88.3 87.8	88.1	4.90 4.88	4.89	5.02	6.8 7.0	6.9	7.4
			Middle	7.4	26.3	31.2 31.3	31.3	5.95 5.91	5.93	85.1 83.9	84.5	5.02 5.06	5.04		7.4 7.6		
			Bottom	13.8	25.4	31.9 31.9	31.9	5.90 5.95	5.93	83.8 83.9	83.9	5.11 5.15	5.13		7.8 7.5		
06/09/11	1430-1442	31/Cloudy	Surface	1.0	27.8	30.9 30.8	30.9	6.21 6.18	6.20	85.7 85.3	85.5	4.87 4.95	4.91	5.07	7.6 7.6	7.6	7.8
			Middle	7.6	26.4	31.5 31.6	31.6	6.03 6.05	6.04	83.2 83.5	83.4	5.11 5.07	5.09		7.8 7.8		
			Bottom	14.2	25.4	32.1 32.1	32.1	5.97 5.94	5.96	82.4 82.0	82.2	5.18 5.24	5.21		8.0 8.0		
08/09/11	1459-1513	30/Cloudy	Surface	1.0	27.2	30.1 30.2	30.2	6.20 6.24	6.22	88.0 88.6	88.3	4.89 4.92	4.91	5.05	7.4 7.6	7.5	7.8
			Middle	7.7	26.5	31.5 31.6	31.6	5.94 5.91	5.93	84.3 83.9	84.1	5.08 5.04	5.06		7.8 7.8		
			Bottom	14.4	26.0	32.0 31.9	32.0	5.82 5.85	5.84	82.6 83.1	82.9	5.19 5.16	5.18		8.0 8.0		
10/09/11	1513-1526	32/Fine	Surface	1.0	27.6	30.2 30.1	30.2	6.31 6.27	6.29	90.9 90.3	90.6	5.06 5.03	5.05	5.15	7.8 7.6	7.7	7.9
			Middle	7.3	26.9	30.8 30.9	30.9	6.18 6.21	6.20	89.0 89.4	89.2	5.14 5.17	5.16		7.8 8.0		
			Bottom	13.6	26.2	31.8 31.7	31.8	6.08 6.04	6.06	87.6 87.0	87.3	5.23 5.26	5.25		8.0 8.0		
15/09/11	0830-0842	26/Cloudy	Surface	1.0	26.9	29.8 29.8	29.8	6.23 6.17	6.20	89.1 88.2	88.7	4.96 4.91	4.94	5.06	7.6 7.6	7.6	7.8
			Middle	7.6	26.2	30.6 30.6	30.6	6.09 6.13	6.11	87.1 87.7	87.4	5.02 5.10	5.06		7.8 7.8		
			Bottom	14.2	25.9	31.7 31.6	31.7	5.99 5.95	5.97	85.7 85.1	85.4	5.21 5.17	5.19		8.0 8.0		
17/09/11	0904-0917	29/Fine	Surface	1.0	26.8	30.3 30.3	30.3	6.23 6.21	6.22	88.5 88.2	88.4	4.80 4.82	4.81	5.03	7.4 7.4	7.4	7.7
			Middle	7.5	25.6	31.5 31.5	31.5	6.07 6.01	6.04	86.2 85.3	85.8	4.99 4.96	4.98		7.6 7.6		
			Bottom	14.0	25.2	32.0 32.0	32.0	5.70 5.74	5.72	80.9 81.5	81.2	5.32 5.28	5.30		8.2 8.0		
20/09/11	1203-1216	29/Cloudy	Surface	1.0	26.8	30.2 30.3	30.3	6.20 6.24	6.22	88.0 88.6	88.3	4.93 4.98	4.96	5.07	7.6 7.8	7.7	7.8
			Middle	7.8	25.6	31.4 31.4	31.4	6.09 6.07	6.08	86.5 86.2	86.4	5.06 5.02	5.04		7.8 7.8		
			Bottom	14.6	25.2	31.7 31.8	31.8	5.76 5.79	5.78	81.8 84.5	83.2	5.16 5.24	5.20		8.0 8.0		
22/09/11	1433-1446	29/Fine	Surface	1.0	27.9	30.3 30.3	30.3	6.09 6.14	6.12	86.5 85.9	86.2	4.36 4.32	4.34	4.91	6.2 6.4	6.3	6.8
			Middle	7.5	26.7	31.4 31.4	31.4	6.02 6.08	6.05	85.5 86.3	85.9	5.12 5.18	5.15		6.6 7.0		
			Bottom	14.0	26.0	31.7 31.8	31.8	5.84 5.86	5.85	82.9 83.2	83.1	5.26 5.24	5.25		7.2 7.5		
24/09/11	1522-1538	28/Cloudy	Surface	1.0	28.7	30.9 30.9	30.9	6.20 6.25	6.23	87.4 88.1	87.8	4.78 4.84	4.81	4.98	7.2 7.4	7.3	7.6
			Middle	7.2	27.9	31.4 31.4	31.4	6.16 6.11	6.14	86.8 86.1	86.5	4.95 5.00	4.98		7.6 7.6		
			Bottom	13.4	27.2	31.9 31.9	31.9	5.94 5.99	5.97	83.7 84.4	84.1	5.13 5.17	5.15		7.6 8.0		
27/09/11	1615-1627	29/Cloudy	Surface	1.0	27.9	31.0 30.9	31.0	6.17 6.14	6.16	85.7 85.3	85.5	4.93 4.98	4.96	5.16	7.6 7.6	7.6	7.9
			Middle	7.2	26.5	31.9 31.8	31.9	6.02 6.05	6.04	83.6 84.0	83.8	5.21 5.15	5.18		7.8 7.8		
			Bottom	13.4	25.6	32.2 32.2	32.2	5.95 5.90	5.93	82.1 81.4	81.8	5.37 5.31	5.34		8.4 8.0		

Mid-Ebb Tide

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
01/09/11	1738-1752	30/Cloudy	Surface	1.0	26.8	30.1 30.1	30.1	6.27 6.30	6.29	90.3 90.7	90.5	5.00 5.04	5.02	5.14	7.5 7.8	7.7	7.9
			Middle	8.1	26.2	30.7 30.6	30.7	6.20 6.16	6.18	89.3 88.7	89.0	5.15 5.11	5.13		7.8 8.0		
			Bottom	15.2	25.6	31.7 31.8	31.8	6.06 6.01	6.04	87.3 86.5	86.9	5.24 5.28	5.26		8.0 8.2		
03/09/11	1810-1820	30/Rainy	Surface	1.0	27.1	29.1 29.1	29.1	6.19 6.15	6.17	86.0 85.4	85.7	5.02 5.09	5.06	5.11	7.5 7.8	7.7	7.8
			Middle	8.4	26.5	31.4 31.3	31.4	6.08 6.05	6.07	84.5 84.0	84.3	4.96 4.90	4.93		7.6 7.6		
			Bottom	15.8	25.6	32.0 32.1	32.1	5.95 5.97	5.96	82.7 82.9	82.8	5.38 5.31	5.35		8.2 8.0		
06/09/11	1210-1220	30/Fine	Surface	1.0	27.2	31.1 31.1	31.1	6.07 6.04	6.06	84.3 83.9	84.1	4.88 4.95	4.92	5.15	7.5 7.6	7.6	7.9
			Middle	8.4	26.2	31.9 31.9	31.9	6.01 6.06	6.04	83.5 84.2	83.9	5.04 5.12	5.08		7.8 7.8		
			Bottom	15.8	25.5	32.1 32.0	32.1	5.85 5.81	5.83	80.7 80.1	80.4	5.41 5.47	5.44		8.2 8.4		
08/09/11	1224-1240	30/Cloudy	Surface	1.0	26.9	29.7 29.7	29.7	6.21 6.26	6.24	89.4 90.1	89.8	4.29 4.33	4.31	4.50	6.5 6.6	6.6	6.9
			Middle	7.5	26.4	30.3 30.3	30.3	6.11 6.15	6.13	87.9 88.6	88.3	4.46 4.51	4.49		6.8 7.0		
			Bottom	14.0	25.8	31.2 31.3	31.3	6.03 5.97	6.00	86.8 85.9	86.4	4.69 4.73	4.71		7.2 7.2		
10/09/11	1240-1252	28/Fine	Surface	1.0	27.4	30.1 30.1	30.1	6.33 6.35	6.34	90.5 90.8	90.7	4.97 5.01	4.99	5.21	7.5 7.6	7.6	7.9
			Middle	8.0	26.9	30.9 30.9	30.9	6.18 6.13	6.16	88.4 87.7	88.1	5.25 5.16	5.21		8.0 7.8		
			Bottom	15.0	26.1	31.7 31.7	31.7	6.06 6.03	6.05	86.7 86.2	86.5	5.39 5.45	5.42		8.2 8.4		
15/09/11	1710-1722	32/Fine	Surface	1.0	27.5	29.9 29.9	29.9	6.28 6.32	6.30	89.8 90.4	90.1	5.05 5.07	5.06	5.16	7.5 7.8	7.7	7.9
			Middle	8.1	26.7	30.7 30.7	30.7	6.19 6.14	6.17	88.5 87.8	88.2	5.14 5.18	5.16		8.0 8.0		
			Bottom	15.2	26.1	31.7 31.6	31.7	6.06 6.02	6.04	86.7 86.1	86.4	5.25 5.29	5.27		8.0 8.2		
17/09/11	1710-1720	30/Cloudy	Surface	1.0	27.6	31.2 31.2	31.2	6.13 6.10	6.12	85.2 84.7	85.0	5.10 5.05	5.08	5.15	8.0 8.0	8.0	8.0
			Middle	8.4	26.4	31.9 31.9	31.9	6.05 6.08	6.07	84.0 84.5	84.3	5.19 5.11	5.15		8.0 8.0		
			Bottom	15.8	25.3	32.3 32.3	32.3	5.98 5.94	5.96	83.1 82.5	82.8	5.24 5.20	5.22		8.0 8.0		
20/09/11	2010-2020	30/Cloudy	Surface	1.0	26.3	31.3 31.2	31.3	6.29 6.26	6.28	87.4 87.0	87.2	5.12 5.20	5.16	5.24	7.5 7.8	7.7	7.9
			Middle	8.4	25.4	32.0 32.0	32.0	6.04 6.07	6.06	83.9 84.3	84.1	5.26 5.19	5.23		8.0 8.0		
			Bottom	15.8	24.9	32.5 32.5	32.5	5.90 5.95	5.93	81.4 82.1	81.8	5.29 5.35	5.32		8.0 8.0		
22/09/11	1240-1255	27/Fine	Surface	1.0	27.0	30.9 30.9	30.9	6.20 6.26	6.23	83.7 84.5	84.1	4.04 4.09	4.07	4.25	6.0 6.4	6.2	6.5
			Middle	7.5	26.6	31.4 31.4	31.4	6.14 6.08	6.11	82.8 82.1	82.5	4.17 4.20	4.19		6.4 6.4		
			Bottom	14.0	26.1	31.9 31.9	31.9	5.95 5.88	5.92	80.3 79.3	79.8	4.47 4.52	4.50		7.0 7.0		
24/09/11	1244-1256	27/Cloudy	Surface	1.0	28.8	30.6 30.7	30.7	6.14 6.17	6.16	87.2 87.6	87.4	4.93 4.98	4.96	5.11	7.5 7.6	7.6	7.9
			Middle	8.0	27.9	31.4 31.4	31.4	6.02 5.97	6.00	85.5 84.8	85.2	5.15 5.08	5.12		7.8 7.6		
			Bottom	15.0	27.3	31.8 31.8	31.8	5.89 5.84	5.87	83.6 82.9	83.3	5.23 5.31	5.27		8.2 8.4		
27/09/11	1335-1348	28/Fine	Surface	1.0	27.0	30.6 30.5	30.6	6.28 6.22	6.25	89.8 88.3	89.1	5.12 5.14	5.13	5.23	8.0 8.0	8.0	8.2
			Middle	7.4	26.1	31.2 31.1	31.2	5.95 5.91	5.93	84.5 84.5	84.5	5.23 5.27	5.25		8.2 8.4		
			Bottom	13.8	25.3	31.8 31.9	31.9	5.79 5.73	5.76	82.8 81.9	82.4	5.31 5.28	5.30		8.4 8.4		

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
01/09/11	1516-1529	30/Cloudy	Surface	1.0	26.9	30.1	30.1	6.21	6.19	89.4	89.1	5.14	5.14	5.22	8.0	7.9	8.0
			Middle	8.3	26.1	30.8	30.8	6.10	6.09	87.8	87.6	5.21	5.22		8.0		
			Bottom	15.6	25.6	31.7	31.7	5.96	5.98	85.8	86.1	5.30	5.31		8.2		
03/09/11	1552-1604	30/Rainy	Surface	1.0	27.6	29.2	29.2	6.19	6.17	86.2	85.8	5.03	5.08	5.23	7.5	7.9	8.1
			Middle	8.4	26.3	31.1	31.1	6.04	6.06	83.9	84.2	5.34	5.31		8.0		
			Bottom	15.8	25.5	32.0	32.0	5.82	5.84	80.3	80.5	5.27	5.30		8.2		
06/09/11	0952-1004	30/Fine	Surface	1.0	27.0	31.0	31.0	6.26	6.25	87.0	86.8	4.74	4.78	5.01	7.0	7.2	7.6
			Middle	8.3	26.1	31.8	31.8	6.04	6.03	83.9	83.7	5.07	5.10		7.8		
			Bottom	15.6	25.2	32.1	32.1	5.81	5.79	80.1	79.9	5.20	5.17		8.0		
08/09/11	1002-1018	29/Cloudy	Surface	1.0	26.9	29.7	29.7	6.07	6.10	87.4	87.8	4.43	4.46	4.70	7.0	7.3	7.7
			Middle	8.2	26.3	30.5	30.5	5.98	5.96	86.1	85.7	4.68	4.71		7.8		
			Bottom	15.4	25.7	31.3	31.3	5.70	5.72	82.1	82.4	4.90	4.93		8.0		
10/09/11	1022-1034	28/Fine	Surface	1.0	27.4	30.1	30.1	6.05	6.09	87.1	87.7	5.11	5.13	5.27	7.6	7.8	8.0
			Middle	8.3	26.9	30.8	30.8	5.93	5.91	85.4	85.1	5.31	5.30		8.0		
			Bottom	15.6	26.2	31.8	31.8	5.84	5.83	84.1	83.9	5.36	5.39		8.2		
15/09/11	1452-1504	32/Fine	Surface	1.0	27.4	29.8	29.8	6.13	6.12	87.7	87.5	5.11	5.13	5.22	7.5	7.7	7.9
			Middle	8.3	26.8	30.7	30.7	6.04	6.03	86.4	86.2	5.21	5.22		8.0		
			Bottom	15.6	26.2	31.7	31.7	5.93	5.91	84.8	84.5	5.30	5.32		8.2		
17/09/11	1452-1504	30/Cloudy	Surface	1.0	27.8	30.9	30.9	6.14	6.12	85.3	85.0	5.07	5.10	5.24	7.5	7.7	8.0
			Middle	8.4	26.7	31.9	31.9	6.01	6.03	83.5	83.8	5.34	5.38		8.2		
			Bottom	15.8	25.5	32.2	32.2	5.82	5.84	80.3	80.5	5.27	5.24		8.0		
20/09/11	1752-1804	30/Cloudy	Surface	1.0	26.6	31.2	31.2	6.18	6.17	85.9	85.7	4.82	4.80	5.08	7.5	7.4	7.8
			Middle	8.4	25.7	25.6	25.7	5.95	5.97	82.7	82.9	5.24	5.22		8.0		
			Bottom	15.8	25.1	32.3	32.4	5.83	5.81	80.4	80.2	5.17	5.22		8.0		
22/09/11	1008-1025	27/Fine	Surface	1.0	26.9	30.9	30.9	5.92	5.95	79.9	80.2	4.29	4.32	4.57	6.5	6.6	7.0
			Middle	8.4	26.5	31.5	31.5	5.80	5.82	78.3	78.6	4.50	4.54		6.8		
			Bottom	15.8	25.9	32.0	32.0	5.70	5.72	76.9	77.1	4.83	4.86		7.4		
24/09/11	1024-1036	27/Cloudy	Surface	1.0	28.8	30.6	30.7	6.07	6.10	86.2	86.6	5.11	5.15	5.32	8.0	8.0	8.2
			Middle	8.2	27.9	31.3	31.4	5.95	5.94	84.5	84.4	5.32	5.34		8.2		
			Bottom	15.4	27.3	31.8	31.8	5.77	5.79	81.9	82.2	5.51	5.48		8.4		
27/09/11	1119-1132	28/Fine	Surface	1.0	26.8	30.6	30.6	6.07	6.05	84.9	84.6	4.17	4.18	4.44	6.0	6.2	6.5
			Middle	8.9	26.3	31.2	31.2	6.04	6.05	85.7	85.8	4.29	4.31		6.6		
			Bottom	16.8	25.4	31.8	31.8	5.76	5.78	82.4	82.6	4.80	4.83		6.6		

Mid-Ebb 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
01/09/11	1631-1645	30/Cloudy	Surface	1.0	26.7	30.0	30.0	6.23	6.26	89.7	90.1	5.03	5.04	5.15	7.6	7.7	7.9
			Middle	8.7	26.1	30.0	30.8	6.28	6.11	90.4	88.0	5.05			7.8		
			Bottom	16.4	25.5	30.8	31.8	6.13	5.96	88.3	85.8	5.13			8.0		
03/09/11	1705-1717	30/Rainy	Surface	1.0	27.4	30.7	29.1	6.09	6.13	87.7	85.2	5.15	5.09	5.09	7.8	7.8	7.8
			Middle	8.9	26.3	31.7	31.3	5.98	5.97	86.1	82.7	5.24			7.8		
			Bottom	16.8	25.7	31.3	32.0	5.94	5.96	85.5	82.8	5.27			8.0		
06/09/11	1105-1117	30/Fine	Surface	1.0	27.2	31.8	29.1	5.94	6.26	86.7	86.9	4.90	4.93	5.12	7.4	7.5	7.8
			Middle	8.7	26.0	31.8	31.8	6.03	6.05	87.1	84.1	4.95			7.6		
			Bottom	16.4	25.4	31.7	32.2	6.07	5.94	83.8	81.9	5.25			8.0		
08/09/11	1124-1140	29/Cloudy	Surface	1.0	26.9	32.2	29.9	5.92	6.20	82.1	89.3	5.20	4.31	4.47	8.0	6.6	7.1
			Middle	8.8	26.3	32.1	30.5	5.95	6.06	82.1	87.2	4.33			6.6		
			Bottom	16.6	25.7	31.4	31.4	6.08	5.87	86.8	84.6	4.49			7.2		
10/09/11	1135-1147	28/Fine	Surface	1.0	27.4	31.4	29.9	5.84	6.21	84.1	88.8	4.65	4.63	5.18	7.4	7.8	8.0
			Middle	8.7	27.0	31.8	30.9	5.90	6.05	85.0	86.5	4.60			7.6		
			Bottom	16.4	26.2	31.8	31.8	6.19	5.88	86.1	84.1	5.16			8.2		
15/09/11	1605-1617	32/Fine	Surface	1.0	27.5	31.8	29.9	5.87	6.29	83.9	89.9	5.29	5.09	5.19	8.2	8.0	8.0
			Middle	8.7	26.7	31.8	30.8	6.03	6.17	84.2	88.2	5.35			7.8		
			Bottom	16.4	26.2	31.6	31.7	6.27	6.05	86.2	86.5	5.32			8.2		
17/09/11	1605-1617	30/Cloudy	Surface	1.0	27.6	31.7	31.0	6.03	6.16	86.2	85.6	5.01	5.04	5.08	7.6	7.7	7.8
			Middle	8.9	26.4	31.0	32.0	6.18	6.06	89.1	84.1	5.06			7.8		
			Bottom	16.8	25.4	31.0	32.3	6.14	5.87	85.9	80.9	5.11			8.0		
20/09/11	1905-1917	30/Cloudy	Surface	1.0	26.4	31.9	31.3	6.07	6.17	81.1	85.8	5.06	5.13	5.16	7.6	7.7	7.9
			Middle	8.8	25.4	32.3	32.0	6.04	6.04	80.7	83.8	5.13			7.8		
			Bottom	16.6	25.0	32.3	32.4	6.07	5.83	84.3	80.4	5.17			8.0		
22/09/11	1134-1152	27/Fine	Surface	1.0	26.9	32.3	30.8	5.85	6.05	80.7	81.6	5.23	4.15	4.31	8.0	6.3	6.6
			Middle	8.7	26.4	32.4	31.5	6.02	5.93	80.1	80.0	5.10			6.2		
			Bottom	16.4	25.9	31.9	32.0	6.16	5.82	83.9	78.6	4.29			6.4		
24/09/11	1139-1151	27/Cloudy	Surface	1.0	28.8	31.5	30.7	5.95	6.15	79.6	86.7	4.25	4.98	5.17	6.6	7.5	7.8
			Middle	8.8	27.9	31.5	31.4	6.07	6.04	80.3	85.2	4.48			6.6		
			Bottom	16.6	27.2	31.9	31.9	6.04	5.89	83.9	83.0	4.53			7.0		
27/09/11	1229-1243	28/Fine	Surface	1.0	26.8	31.9	30.4	5.85	6.10	82.5	84.9	5.40	5.21	5.13	8.2	8.0	7.9
			Middle	8.7	26.1	31.7	31.2	6.08	5.97	81.2	84.2	4.12			7.2		
			Bottom	16.4	25.4	31.7	31.8	6.12	5.91	87.0	83.1	4.93			7.4		

Mid-Ebb 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
01/09/11	1654-1706	30/Cloudy	Surface	1.0	26.8	30.0 30.1	30.1	6.32 6.27	6.30	91.0 90.3	90.7	4.97 5.00	4.99	5.08	7.6 7.5	7.6	7.7
			Middle	6.2	26.4	30.5 30.6	30.6	6.22 6.18	6.20	89.6 89.0	89.3	5.06 5.10	5.08		7.5 7.8	7.7	
			Bottom	11.4	25.7	31.6 31.7	31.7	6.11 6.07	6.09	88.0 87.4	87.7	5.16 5.20	5.18		8.0 8.0	8.0	
03/09/11	1724-1736	30/Rainy	Surface	1.0	27.2	29.2 29.3	29.3	6.22 6.18	6.20	86.4 85.9	86.2	4.89 4.90	4.90	5.17	7.4 7.5	7.5	8.0
			Middle	6.4	26.4	31.3 31.4	31.4	6.04 6.06	6.05	83.9 84.2	84.1	5.12 5.22	5.17		8.0 8.0	8.0	
			Bottom	11.8	25.4	32.0 32.0	32.0	5.84 5.80	5.82	80.5 80.0	80.3	5.47 5.41	5.44		8.4 8.4	8.4	
06/09/11	1124-1136	30/Fine	Surface	1.0	27.2	31.1 31.1	31.1	6.10 6.06	6.08	84.7 84.2	84.5	5.03 5.08	5.06	5.21	7.6 7.5	7.6	7.9
			Middle	6.3	26.2	31.7 31.8	31.8	5.94 5.90	5.92	81.9 81.4	81.7	5.27 5.21	5.24		8.0 8.0	8.0	
			Bottom	11.6	25.4	32.2 32.1	32.2	5.83 5.78	5.81	80.4 79.7	80.1	5.29 5.35	5.32		8.2 8.2	8.2	
08/09/11	1147-1200	30/Cloudy	Surface	1.0	26.9	29.7 29.8	29.8	6.25 6.30	6.28	90.1 90.7	90.4	4.25 4.30	4.28	4.49	6.2 6.0	6.1	6.7
			Middle	6.2	26.5	30.2 30.2	30.2	6.17 6.12	6.15	88.8 88.1	88.5	4.41 4.46	4.44		6.5 6.8	6.7	
			Bottom	11.4	26.0	31.0 30.9	31.0	6.01 5.95	5.98	86.5 85.7	86.1	4.72 4.77	4.75		7.2 7.4	7.3	
10/09/11	1154-1206	28/Fine	Surface	1.0	27.4	30.2 30.2	30.2	6.26 6.25	6.26	89.5 89.4	89.5	4.98 4.92	4.95	5.13	7.4 7.5	7.5	7.9
			Middle	6.2	27.1	30.7 30.7	30.7	6.15 6.11	6.13	87.9 87.4	87.7	5.12 5.19	5.16		8.0 8.0	8.0	
			Bottom	11.4	26.4	31.6 31.7	31.7	5.92 5.98	5.95	84.7 85.5	85.1	5.31 5.26	5.29		8.2 8.2	8.2	
15/09/11	1624-1636	32/Fine	Surface	1.0	27.4	30.0 30.0	30.0	6.30 6.27	6.29	90.1 89.7	89.9	5.04 5.01	5.03	5.11	7.6 7.5	7.6	7.7
			Middle	6.2	26.8	30.5 30.6	30.6	6.22 6.19	6.21	88.9 88.5	88.7	5.09 5.12	5.11		7.5 7.8	7.7	
			Bottom	11.4	26.1	31.5 31.5	31.5	6.12 6.08	6.10	87.5 86.9	87.2	5.17 5.20	5.19		8.0 8.0	8.0	
17/09/11	1624-1636	30/Cloudy	Surface	1.0	27.6	31.1 31.1	31.1	6.17 6.14	6.16	85.7 85.3	85.5	4.96 4.90	4.93	5.19	7.6 7.5	7.6	8.0
			Middle	6.4	26.5	32.0 32.0	32.0	6.03 6.07	6.05	83.8 84.3	84.1	5.43 5.36	5.40		8.2 8.2	8.1	
			Bottom	11.8	25.4	32.4 32.4	32.4	5.92 5.89	5.91	81.6 81.2	81.4	5.27 5.21	5.24		8.0 8.0	8.1	
20/09/11	1924-1936	30/Cloudy	Surface	1.0	26.4	31.3 31.2	31.3	6.18 6.15	6.17	85.9 85.4	85.7	5.01 5.07	5.04	5.12	7.8 8.0	7.9	7.9
			Middle	6.4	25.4	32.1 32.0	32.1	6.01 6.04	6.03	83.5 83.9	83.7	5.09 5.02	5.06		7.5 7.6	7.6	
			Bottom	11.8	24.9	32.3 32.4	32.4	5.82 5.85	5.84	80.3 80.7	80.5	5.30 5.25	5.28		8.2 8.0	8.1	
22/09/11	1157-1213	27/Fine	Surface	1.0	27.0	30.8 30.9	30.9	6.22 6.17	6.20	83.9 83.2	83.6	4.08 4.13	4.11	4.25	6.4 6.5	6.5	6.6
			Middle	6.2	26.8	31.2 31.3	31.3	6.05 6.10	6.08	81.6 82.3	82.0	4.21 4.26	4.24		6.5 6.6	6.6	
			Bottom	11.4	26.3	31.6 31.6	31.6	5.91 5.94	5.93	79.7 80.1	79.9	4.38 4.46	4.42		6.8 7.0	6.9	
24/09/11	1158-1210	27/Cloudy	Surface	1.0	28.7	30.8 30.8	30.8	6.22 6.19	6.21	87.7 87.3	87.5	4.95 4.91	4.93	5.09	7.6 7.5	7.6	7.8
			Middle	6.3	27.9	31.3 31.2	31.3	6.08 6.15	6.12	85.7 86.7	86.2	5.04 5.11	5.08		7.5 7.8	7.7	
			Bottom	11.6	27.5	31.7 31.7	31.7	5.96 5.92	5.94	84.0 83.5	83.8	5.21 5.29	5.25		8.0 8.2	8.1	
27/09/11	1252-1305	28/Fine	Surface	1.0	26.8	30.7 30.6	30.7	6.09 6.13	6.11	86.5 87.0	86.8	4.92 4.95	4.94	5.09	8.0 8.0	8.0	8.1
			Middle	6.1	26.4	31.3 31.2	31.3	6.01 5.94	5.98	85.3 84.3	84.8	5.03 5.18	5.11		8.0 8.0	8.0	
			Bottom	11.2	25.6	31.8 31.9	31.9	5.71 5.75	5.73	81.1 81.7	81.4	5.20 5.24	5.22		8.2 8.2	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		
01/09/11	1420-1432	30/Cloudy	Surface	1.0	26.8	30.0	30.1	6.17	6.19	88.8	89.1	5.12	5.14	5.23	8.0	8.0	8.1		
				5.6	26.3	30.1		6.21		89.4		5.16			8.0				
			Middle	5.6	26.3	30.5	30.6	6.13	6.12	88.3	88.1	5.21	5.23		8.0				
03/09/11	1434-1445	30/Rainy	Surface	1.0	27.6	30.6	31.2	6.10	6.04	87.8	86.9	5.25	5.33		5.14	8.2		8.0	7.8
				5.6	26.4	31.5		6.02		86.7		5.31				8.2			
				10.2	25.7	31.6	6.05	87.1	5.34	8.2									
06/09/11	0834-0845	30/Fine	Surface	1.0	26.9	29.2	29.2	6.17	6.16	85.7	85.5	5.15	5.13	4.65		7.4	7.6	7.2	
				5.7	26.1	29.1		6.14		85.3		5.11				7.8			
			Middle	5.7	26.1	31.1	31.2	6.02	6.04	83.6	83.9	5.07	5.04			7.8			
08/09/11	0857-0913	29/Cloudy	Surface	1.0	26.8	31.2	31.8	6.06	5.97	84.2	82.3	5.01	5.24		4.69	8.0	8.1		7.2
				5.7	26.1	31.8		5.95		82.1		5.20				8.2			
				10.4	25.3	31.8	5.98	82.5	5.27	8.2									
10/09/11	0904-0916	28/Fine	Surface	1.0	26.9	31.8	32.0	5.95	5.97	82.7	82.9	5.06	5.04	4.65		7.8	7.8	7.2	
				5.7	26.1	31.7		6.04		83.9		4.81				7.4			
			Middle	5.7	26.1	31.7	31.8	6.04	6.06	84.3	84.1	4.86	4.84			7.4			
15/09/11	1334-1345	32/Sunny	Surface	1.0	26.8	32.0	32.0	5.95	5.97	83.1	82.9	5.01	4.53		4.69	7.8	6.9		7.2
				5.7	26.1	32.0		5.98		83.1		5.01				7.8			
			Middle	5.7	26.1	31.7	31.8	6.04	6.06	84.3	84.1	4.86	4.84			7.4			
17/09/11	1334-1345	30/Cloudy	Surface	1.0	26.8	30.9	30.9	6.19	6.17	86.0	85.7	4.04	4.08	4.65		6.2	6.3	7.2	
				5.7	26.1	31.8		6.07		84.3		4.86				7.4			
			Middle	5.7	26.1	31.7	31.8	6.04	6.06	84.3	84.1	4.86	4.84			7.4			
20/09/11	1634-1645	30/Cloudy	Surface	1.0	26.8	30.9	30.9	6.19	6.17	86.0	85.7	4.04	4.08		4.65	6.2	6.3		7.2
				5.7	26.1	31.8		6.07		84.3		4.86				7.4			
			Middle	5.7	26.1	31.7	31.8	6.04	6.06	84.3	84.1	4.86	4.84			7.4			
22/09/11	0855-0910	27/Fine	Surface	1.0	26.8	30.9	30.9	6.19	6.17	86.0	85.7	4.04	4.08	4.65		6.2	6.3	7.2	
				5.7	26.1	31.8		6.07		84.3		4.86				7.4			
			Middle	5.7	26.1	31.7	31.8	6.04	6.06	84.3	84.1	4.86	4.84			7.4			
24/09/11	0905-0916	27/Cloudy	Surface	1.0	26.8	30.9	30.9	6.19	6.17	86.0	85.7	4.04	4.08		4.65	6.2	6.3		7.2
				5.7	26.1	31.8		6.07		84.3		4.86				7.4			
			Middle	5.7	26.1	31.7	31.8	6.04	6.06	84.3	84.1	4.86	4.84			7.4			
27/09/11	1012-1026	28/Fine	Surface	1.0	26.8	30.9	30.9	6.19	6.17	86.0	85.7	4.04	4.08	4.65		6.2	6.3	7.2	
				5.7	26.1	31.8		6.07		84.3		4.86				7.4			
			Middle	5.7	26.1	31.7	31.8	6.04	6.06	84.3	84.1	4.86	4.84			7.4			

Mid-Ebb Tide

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
01/09/11	1401-1413	30/Cloudy	Surface	1.0	26.9	30.1	30.1	6.33	6.35	91.2	91.4	5.04	5.11	7.6	7.7	7.9	
			Middle	6.3	26.1	30.7	30.7	6.27	6.26	90.3	90.1	5.08		7.8			
			Bottom	11.6	25.6	31.7	31.7	6.14	6.16	88.4	88.7	5.21		8.0			
03/09/11	1415-1426	30/Rainy	Surface	1.0	27.4	29.3	29.3	6.20	6.22	86.1	86.4	5.07	5.24	7.8	8.1	8.1	
			Middle	6.3	26.3	31.1	31.1	6.04	6.06	83.9	84.1	5.29		7.8			
			Bottom	11.6	25.5	31.8	31.8	5.97	5.96	82.9	82.7	5.34		8.2			
06/09/11	0815-0826	30/Fine	Surface	1.0	26.9	30.9	30.9	6.24	6.26	86.7	86.9	3.98	4.64	6.2	6.2	7.2	
			Middle	6.4	26.0	31.7	31.7	6.12	6.10	85.0	84.8	5.01		7.6			
			Bottom	11.8	25.2	32.0	32.0	5.99	5.97	83.2	83.0	4.90		7.6			
08/09/11	0836-0852	29/Cloudy	Surface	1.0	26.8	29.7	29.7	6.10	6.13	87.8	88.3	4.38	4.54	6.6	6.9	6.9	
			Middle	6.3	26.4	29.9	29.9	5.99	6.01	86.2	86.5	4.48		6.8			
			Bottom	11.6	26.0	30.6	30.7	5.81	5.83	83.6	83.9	4.70		7.2			
10/09/11	0844-0856	28/Fine	Surface	1.0	27.2	30.2	30.2	6.19	6.22	88.5	88.9	4.96	5.10	7.6	7.9	7.8	
			Middle	6.2	26.9	30.7	30.8	6.05	6.04	86.5	86.3	5.09		7.6			
			Bottom	11.4	26.2	31.7	31.7	5.97	5.98	85.4	85.6	5.27		8.0			
15/09/11	1315-1326	32/Sunny	Surface	1.0	27.4	29.9	29.9	6.22	6.20	88.9	88.7	5.03	5.14	7.8	7.9	7.9	
			Middle	6.3	26.7	30.6	30.6	6.13	6.11	87.7	87.4	5.12		7.8			
			Bottom	11.6	26.3	31.6	31.6	6.00	5.99	85.8	85.6	5.21		8.0			
17/09/11	1315-1326	30/Cloudy	Surface	1.0	27.8	30.7	30.7	6.24	6.22	86.7	86.4	4.78	4.98	7.4	7.7	7.7	
			Middle	6.3	26.5	31.8	31.8	6.02	6.04	83.6	83.8	5.04		7.4			
			Bottom	11.6	25.5	32.0	32.1	5.90	5.92	81.4	81.7	5.15		7.8			
20/09/11	1615-1626	30/Cloudy	Surface	1.0	26.8	31.0	31.0	6.08	6.07	84.5	84.3	5.15	5.20	8.0	8.2	7.9	
			Middle	6.4	25.7	31.9	31.9	5.90	5.92	81.4	81.7	5.34		7.6			
			Bottom	11.8	25.2	32.2	32.2	5.83	5.82	80.4	80.2	5.10		8.2			
22/09/11	0835-0851	27/Fine	Surface	1.0	26.8	30.8	30.9	6.11	6.09	82.4	82.1	4.14	4.39	6.4	6.8	6.8	
			Middle	6.3	26.7	31.2	31.2	6.01	5.98	81.1	80.6	4.35		6.6			
			Bottom	11.6	26.3	31.6	31.6	5.83	5.81	78.7	78.4	4.58		7.0			
24/09/11	0846-0857	27/Cloudy	Surface	1.0	28.7	30.7	30.7	6.20	6.22	87.4	87.6	4.96	5.09	7.4	7.8	7.8	
			Middle	6.3	27.8	31.2	31.2	6.07	6.11	85.9	86.3	5.07		7.4			
			Bottom	11.6	27.4	31.8	31.8	5.91	5.94	83.3	83.7	5.26		8.2			
27/09/11	0952-1006	28/Fine	Surface	1.0	26.8	30.3	30.4	6.31	6.30	91.4	91.3	4.80	5.07	7.2	7.6	7.6	
			Middle	6.0	26.2	30.9	31.0	6.10	6.09	86.6	86.5	5.12		7.2			
			Bottom	11.0	25.5	31.7	31.7	5.99	5.98	85.1	84.9	5.26		7.6			

Mid-Ebb 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
01/09/11	1345-1357	30/Cloudy	Surface	1.0	26.8	30.0	30.0	6.31	6.30	90.9	90.7	4.97	4.99	5.09	7.6	7.7	7.9
						30.0		6.28		90.4		5.01			7.8		
			Middle	6.2	26.2	30.6	30.7	6.21	6.19	89.4	89.1	5.06	5.08		7.8		
30.7	6.17	88.8				5.10		8.0									
Bottom	11.4	25.7	31.6	31.6	6.10	6.09	87.8	87.6	5.17	5.19	8.0						
			31.6		6.07		87.4		5.20		8.0						
03/09/11	1400-1412	30/Rainy	Surface	1.0	27.4	29.3	29.4	6.12	6.11	85.0	84.8	4.97	5.00	5.37	7.4	7.5	8.1
						29.4		6.09		84.6		5.03			7.6		
			Middle	5.9	26.5	30.8	30.9	5.98	5.97	83.1	82.9	5.43	5.45		8.4		
30.9	5.95	82.7				5.47		8.5									
Bottom	10.8	25.6	31.5	31.6	5.87	5.86	81.0	80.8	5.57	5.65	8.5						
			31.6		5.84		80.5		5.72		8.4						
06/09/11	0800-0812	30/Fine	Surface	1.0	27.0	30.8	30.9	6.16	6.14	85.6	85.3	4.12	4.15	4.66	6.2	6.3	7.1
						30.9		6.12		85.0		4.17			6.4		
			Middle	5.8	25.9	31.6	31.6	6.03	6.05	83.8	84.1	4.88	4.91		7.4		
31.6	6.07	84.3				4.94		7.5									
Bottom	10.6	25.2	31.9	31.9	5.85	5.87	80.7	80.9	4.96	4.94	7.5						
			31.9		5.88		81.1		4.91		7.4						
08/09/11	0815-0832	29/Cloudy	Surface	1.0	26.9	29.6	29.7	6.05	6.08	87.1	87.5	4.42	4.44	4.49	6.8	6.8	6.8
						29.7		6.11		87.9		4.45			6.8		
			Middle	5.7	26.5	29.7	29.8	5.93	5.95	85.4	85.7	4.38	4.41		6.6		
29.8	5.97	85.9				4.44		6.5									
Bottom	10.4	26.0	30.4	30.5	5.82	5.84	83.8	84.1	4.61	4.64	7.0						
			30.5		5.86		84.3		4.66		7.2						
10/09/11	0830-0841	28/Fine	Surface	1.0	27.3	30.1	30.2	6.36	6.35	90.9	90.7	4.99	5.03	5.15	7.4	7.6	7.9
						30.2		6.33		90.5		5.06			7.8		
			Middle	5.9	26.8	30.7	30.7	6.03	6.06	86.2	86.6	5.17	5.15		7.8		
30.7	6.08	86.9				5.12		8.0									
Bottom	10.8	26.3	31.7	31.7	5.95	5.93	85.1	84.8	5.24	5.27	8.0						
			31.6		5.91		84.5		5.29		8.2						
15/09/11	1300-1312	32/Sunny	Surface	1.0	27.4	30.0	30.0	6.24	6.22	89.2	89.0	5.10	5.09	5.17	7.8	7.8	7.9
						29.9		6.20		88.7		5.07			7.8		
			Middle	6.2	26.8	30.5	30.5	6.15	6.14	87.9	87.7	5.16	5.18		8.0		
30.5	6.12	87.5				5.19		8.0									
Bottom	11.4	26.2	31.6	31.6	6.04	6.03	86.4	86.2	5.24	5.25	8.0						
			31.6		6.01		85.9		5.26		7.8						
17/09/11	1300-1312	30/Cloudy	Surface	1.0	27.6	30.8	30.8	6.12	6.11	85.0	84.8	4.62	4.66	4.80	7.2	7.2	7.4
						30.7		6.09		84.6		4.70			7.2		
			Middle	5.9	26.6	31.6	31.6	5.95	5.93	82.7	82.4	4.92	4.90		7.6		
31.6	5.91	82.1				4.87		7.5									
Bottom	10.8	25.4	31.9	31.9	5.88	5.87	81.1	80.9	4.88	4.84	7.5						
			31.9		5.85		80.7		4.80		7.4						
20/09/11	1600-1612	30/Cloudy	Surface	1.0	26.7	30.8	30.9	6.11	6.10	84.9	84.7	5.07	5.10	5.12	7.8	7.8	7.8
						30.9		6.08		84.5		5.12			7.8		
			Middle	5.9	25.9	31.7	31.8	5.95	5.97	82.7	82.9	5.24	5.22		8.0		
31.8	5.98	83.1				5.19		8.0									
Bottom	10.8	25.3	32.0	32.1	5.88	5.87	81.1	80.9	5.07	5.04	7.5						
			32.1		5.85		80.7		5.01		7.6						
22/09/11	0815-0832	27/Fine	Surface	1.0	26.9	30.8	30.8	6.04	6.06	81.5	81.7	4.26	4.28	4.45	6.6	6.6	6.9
						30.8		6.07		81.9		4.30			6.6		
			Middle	5.7	26.8	31.1	31.1	6.00	5.98	81.0	80.7	4.41	4.43		6.8		
31.1	5.96	80.4				4.45		7.0									
Bottom	10.4	26.4	31.4	31.5	5.80	5.82	78.3	78.6	4.62	4.65	7.0						
			31.5		5.84		78.8		4.68		7.1						
24/09/11	0830-0843	27/Cloudy	Surface	1.0	28.6	30.8	30.8	6.18	6.15	87.1	86.7	4.99	5.01	5.13	7.6	7.6	7.8
						30.7		6.12		86.3		5.03			7.6		
			Middle	6.0	27.8	31.2	31.3	6.05	6.06	85.3	85.5	5.16	5.13		8.0		
31.3	6.07	85.6				5.09		7.5									
Bottom	11.0	27.4	31.7	31.8	5.99	5.97	84.5	84.2	5.24	5.27	8.0						
			31.8		5.94		83.8		5.29		8.2						
27/09/11	0930-0943	28/Fine	Surface	1.0	26.9	30.4	30.5	6.23	6.22	88.5	88.3	4.96	4.95	4.98	7.6	7.6	7.7
						30.5		6.20		88.0		4.93			7.6		
			Middle	5.6	26.2	31.0	31.1	6.19	6.17	87.9	87.9	4.86	4.84		7.4		
31.1	6.14	87.8				4.82		7.5									
Bottom	10.2	25.6	31.8	31.8	5.84	5.82	83.5	83.2	5.17	5.16	8.0						
			31.7		5.80		82.9		5.14		7.8						

Mid-Ebb Tide



Monitoring Station : C1

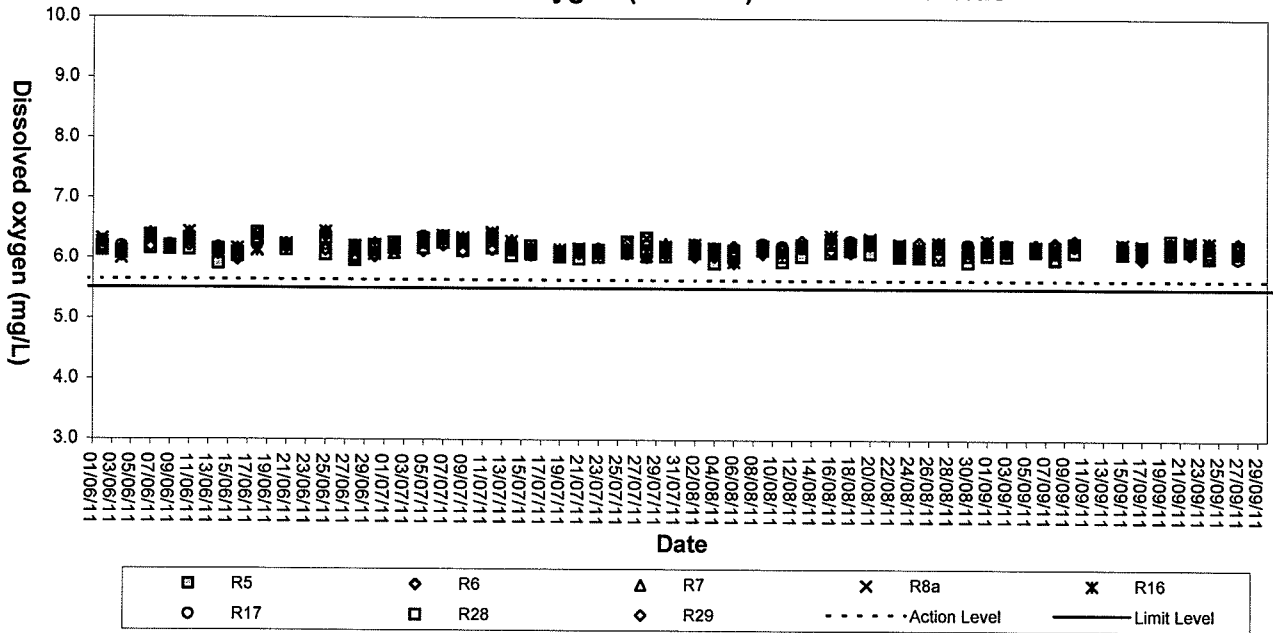
Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
01/09/11	1439-1451	30/Cloudy	Surface	1.0	26.9	30.1	30.1	6.28	6.25	6.27	90.4	90.2	4.99	5.01	5.11	7.6	7.6	7.8
			Middle	7.2	26.1	30.8	30.8	6.18	6.17	89.0	88.8	5.09	5.11	7.6				
			Bottom	13.4	25.5	30.7	31.7	6.15	6.06	88.6	87.3	5.13	5.22	7.8				
03/09/11	1500-1512	30/Rainy	Surface	1.0	27.6	29.2	29.2	6.29	6.25	6.27	87.4	87.1	5.23	5.20	5.22	8.0	8.0	8.0
			Middle	6.7	26.4	26.4	26.4	6.10	6.12	86.8	85.0	5.17	5.30	8.0				
			Bottom	12.4	25.6	25.6	25.6	6.14	5.86	84.7	80.8	5.24	5.15	8.2				
06/09/11	0900-0912	30/Fine	Surface	1.0	26.9	31.0	31.0	6.11	6.07	6.09	84.9	84.6	4.27	4.30	4.84	6.6	6.6	7.5
			Middle	6.8	26.1	31.8	31.8	5.98	5.97	84.3	82.9	5.11	5.12	6.6				
			Bottom	12.6	25.3	32.1	32.1	5.87	5.89	83.1	81.2	5.07	5.13	7.8				
08/09/11	0920-0935	29/Cloudy	Surface	1.0	26.8	29.7	29.7	6.20	6.24	6.22	89.3	89.6	4.22	4.25	4.43	6.4	6.5	6.8
			Middle	6.9	26.3	30.0	30.0	6.09	6.11	89.8	88.0	4.27	4.38	6.6				
			Bottom	12.8	25.9	30.9	30.9	6.13	5.88	88.3	84.7	4.40	4.67	6.8				
10/09/11	0931-0942	28/Fine	Surface	1.0	27.3	30.1	30.1	6.22	6.20	6.20	88.9	88.7	4.88	4.90	5.06	7.2	7.3	7.7
			Middle	6.9	26.9	30.8	30.8	6.18	6.10	88.4	87.3	4.92	5.08	7.4				
			Bottom	12.8	26.3	31.7	31.7	6.06	5.97	87.7	85.3	5.11	5.20	7.8				
15/09/11	1400-1412	32/Sunny	Surface	1.0	27.4	29.8	29.8	6.27	6.24	6.26	89.7	89.5	5.08	5.06	5.18	7.6	7.6	7.8
			Middle	7.2	26.8	30.6	30.6	6.18	6.16	89.2	88.1	5.04	5.18	7.6				
			Bottom	13.4	26.1	31.7	31.7	6.14	6.04	88.4	86.4	5.16	5.30	8.0				
17/09/11	1400-1412	30/Cloudy	Surface	1.0	27.6	30.9	30.9	6.27	6.24	6.26	87.1	86.9	4.97	5.00	4.93	7.6	7.7	7.6
			Middle	6.8	26.5	31.8	31.8	6.07	6.06	86.2	84.1	5.03	4.83	7.6				
			Bottom	12.6	25.5	32.1	32.1	6.04	5.95	86.5	82.6	4.87	4.96	7.8				
20/09/11	1700-1712	30/Cloudy	Surface	1.0	26.7	31.1	31.1	6.17	6.14	6.16	87.8	85.5	5.21	5.26	5.15	8.0	8.1	7.9
			Middle	6.8	25.6	31.9	31.9	6.09	5.96	85.1	82.7	5.22	5.06	8.2				
			Bottom	12.6	25.2	32.1	32.1	5.95	5.92	82.9	82.3	5.11	5.15	7.5				
22/09/11	0918-0935	27/Fine	Surface	1.0	26.9	30.8	30.9	6.18	6.24	6.21	83.4	83.8	4.11	4.14	4.32	6.4	6.4	6.7
			Middle	6.9	26.6	31.2	31.3	6.10	6.08	86.5	82.0	4.16	4.27	6.6				
			Bottom	12.8	26.2	31.6	31.7	6.05	5.92	81.6	79.9	4.30	4.55	6.6				
24/09/11	0931-0943	27/Cloudy	Surface	1.0	28.7	30.8	30.8	6.25	6.18	6.22	88.1	87.6	4.92	4.95	5.07	7.4	7.5	7.7
			Middle	6.8	27.7	31.3	31.3	6.07	6.05	87.1	85.3	4.97	5.07	7.6				
			Bottom	12.6	27.3	31.7	31.8	6.02	5.92	85.6	83.5	5.10	5.21	7.8				
27/09/11	1037-1049	28/Fine	Surface	1.0	26.9	30.4	30.4	6.05	6.11	6.08	83.2	86.4	5.24	4.57	4.85	7.0	6.9	7.4
			Middle	7.1	26.1	31.0	31.0	6.02	6.02	83.8	85.4	4.54	4.84	7.0				
			Bottom	13.2	25.4	31.9	31.9	6.01	5.95	85.3	84.4	4.81	5.15	7.2				

Appendix C3

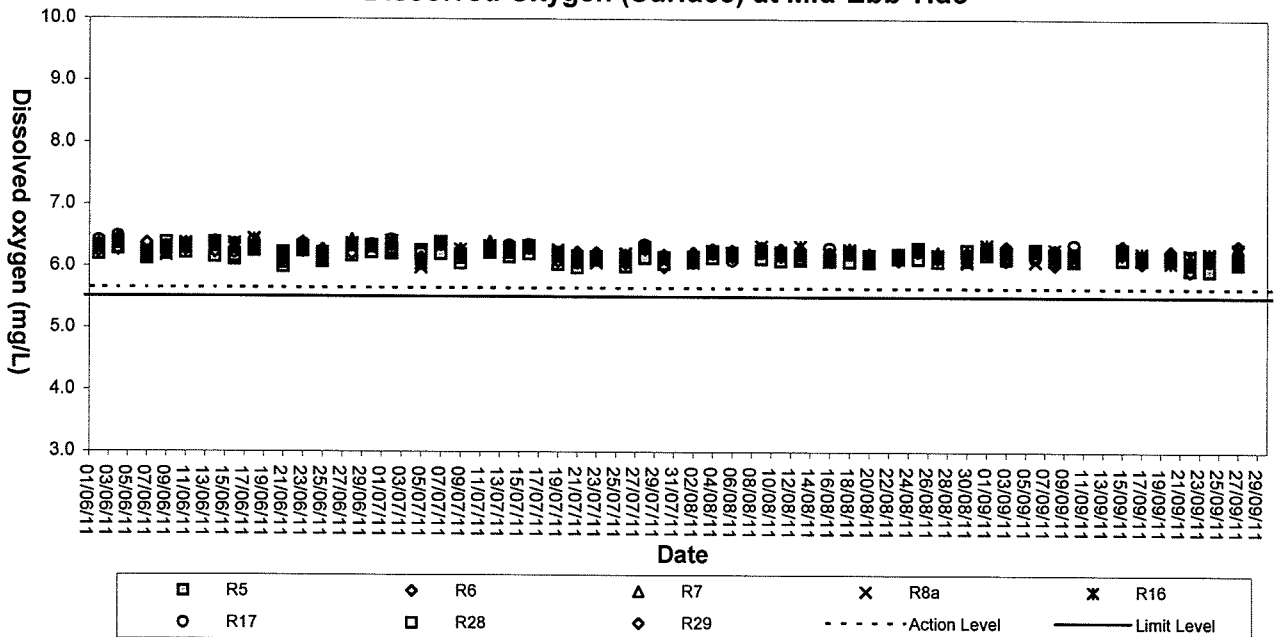
Graphical Plots of Impact Water Quality Monitoring Data



Dissolved Oxygen (Surface) at Mid-Flood Tide

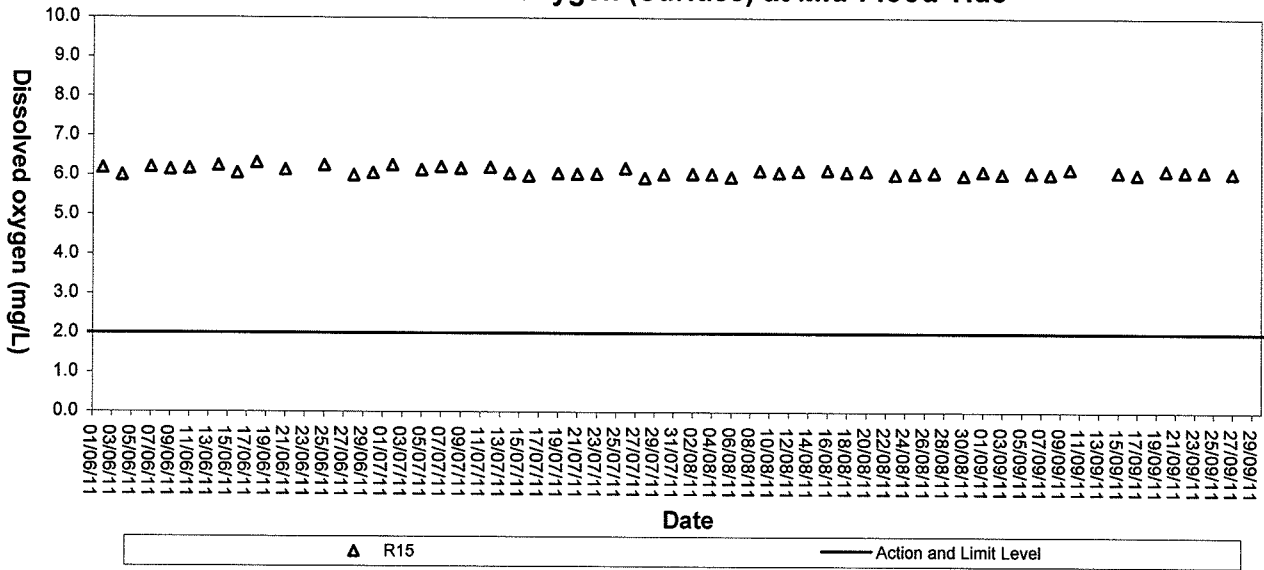


Dissolved Oxygen (Surface) at Mid-Ebb Tide

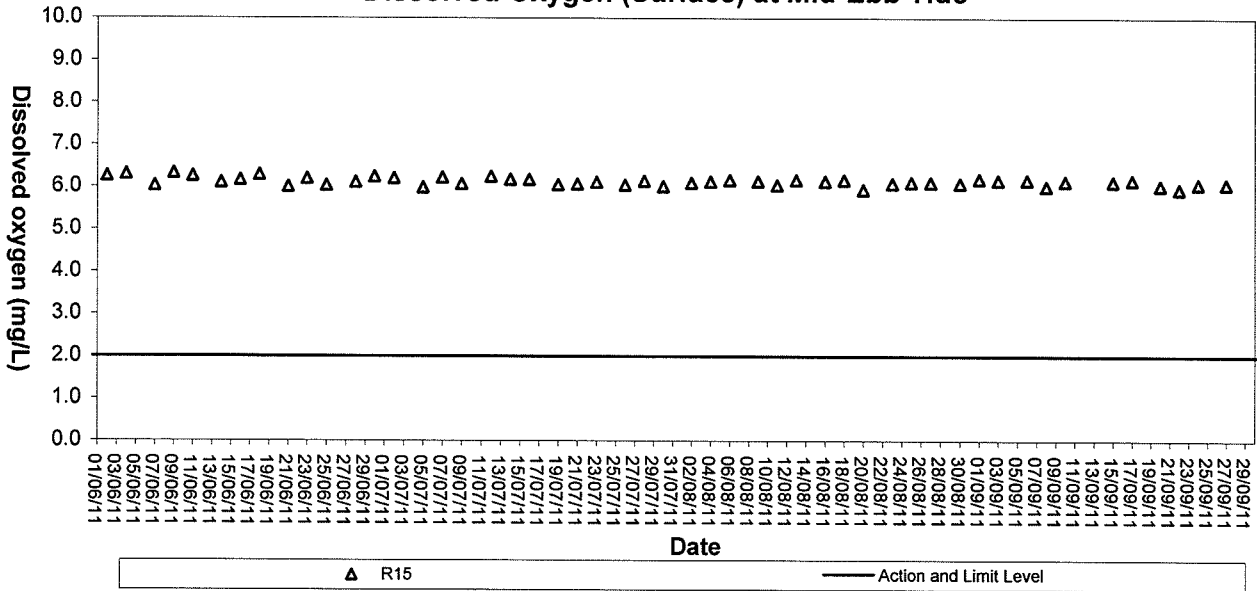




Dissolved Oxygen (Surface) at Mid-Flood Tide

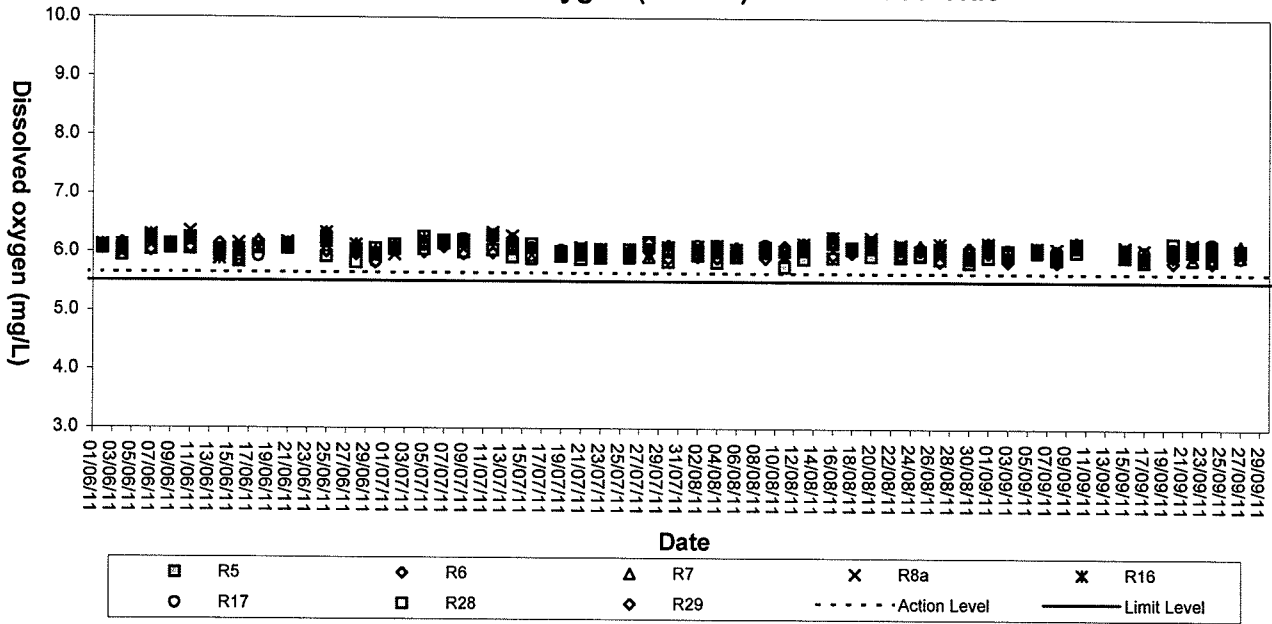


Dissolved Oxygen (Surface) at Mid-Ebb Tide

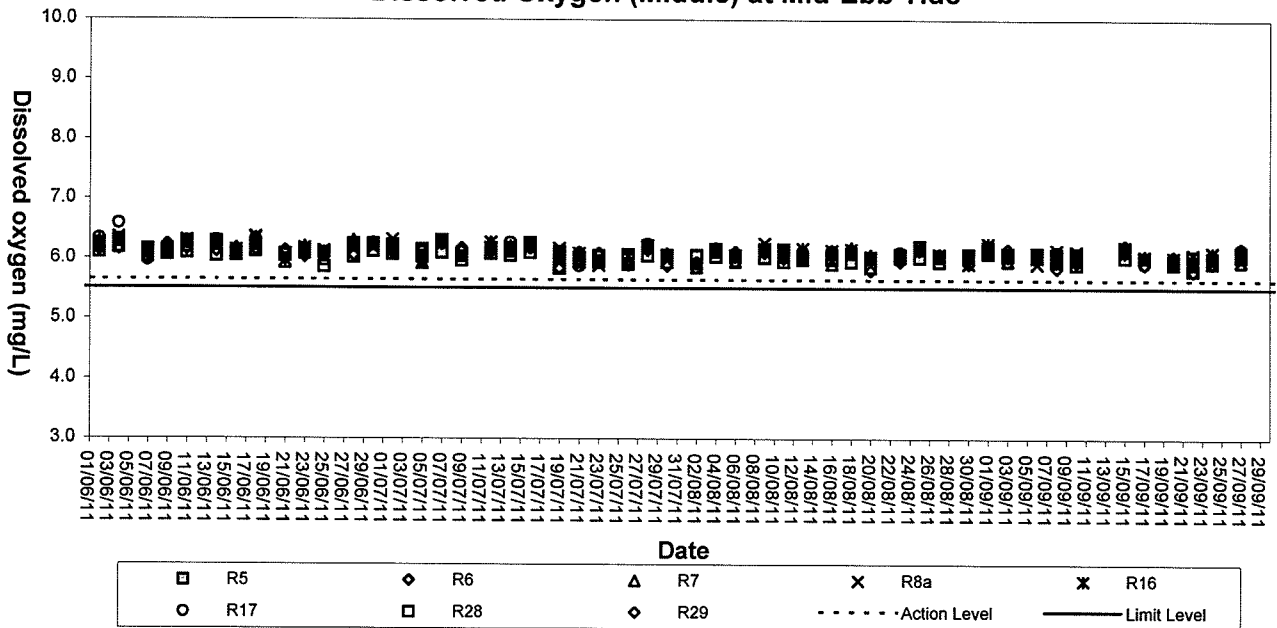




Dissolved Oxygen (Middle) at Mid-Flood Tide

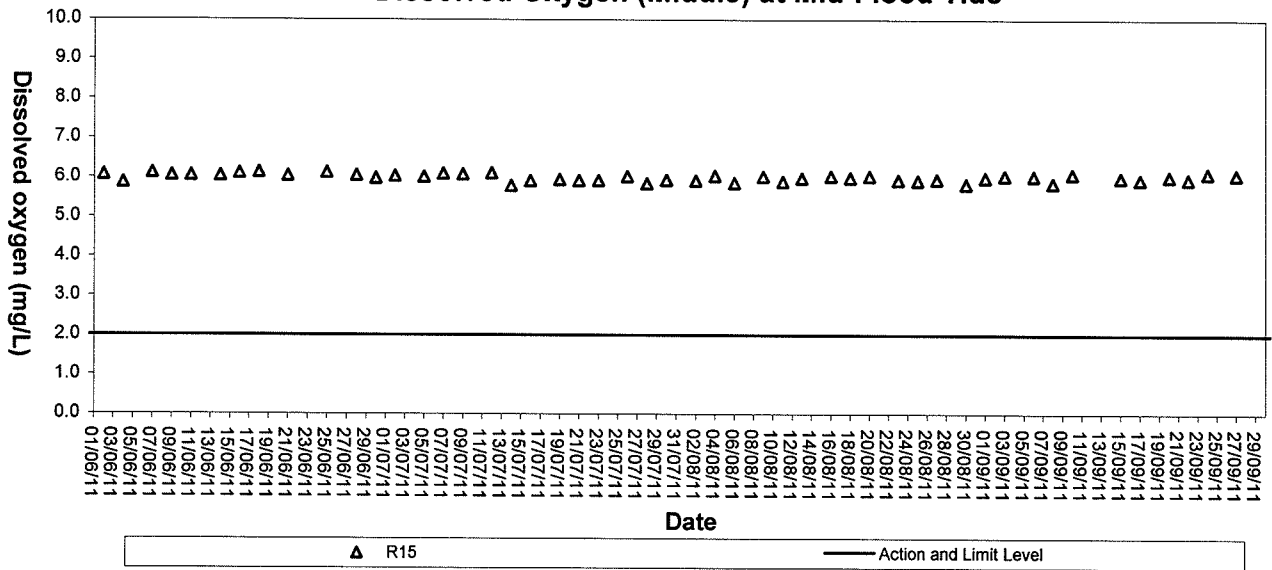


Dissolved Oxygen (Middle) at Mid-Ebb Tide





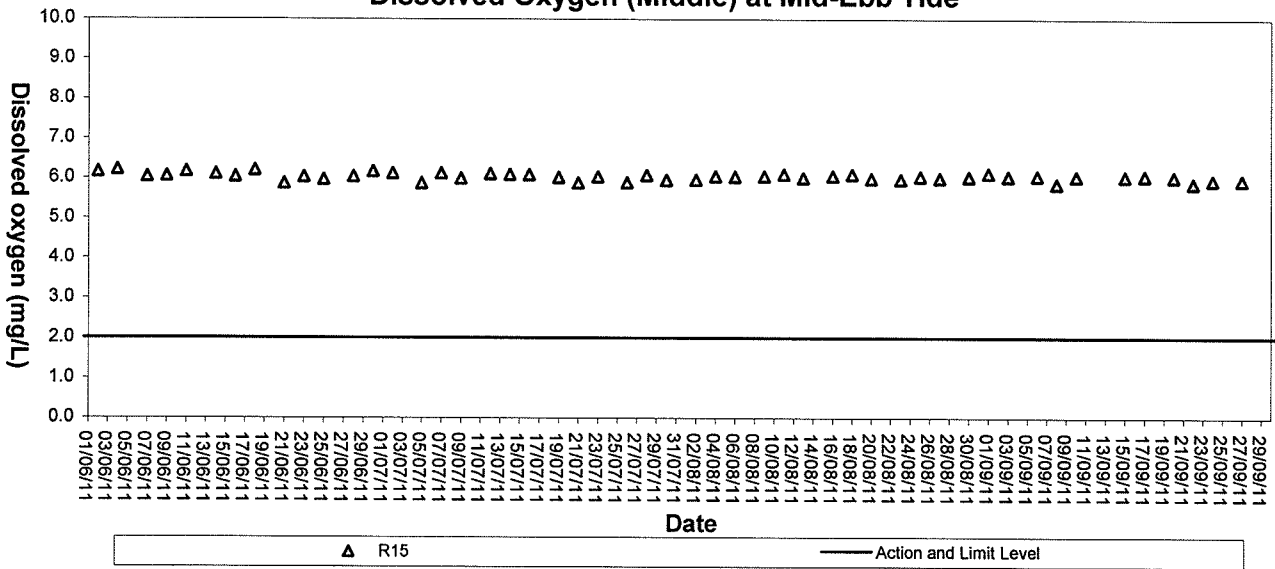
Dissolved Oxygen (Middle) at Mid-Flood Tide



▲ R15

— Action and Limit Level

Dissolved Oxygen (Middle) at Mid-Ebb Tide

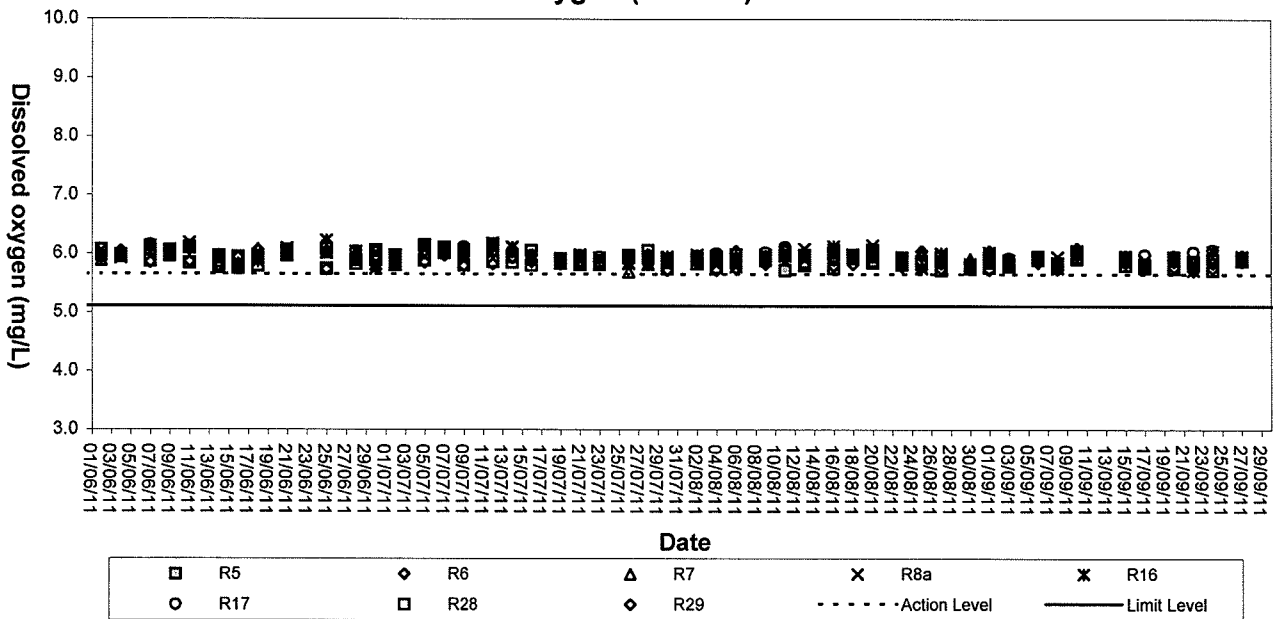


▲ R15

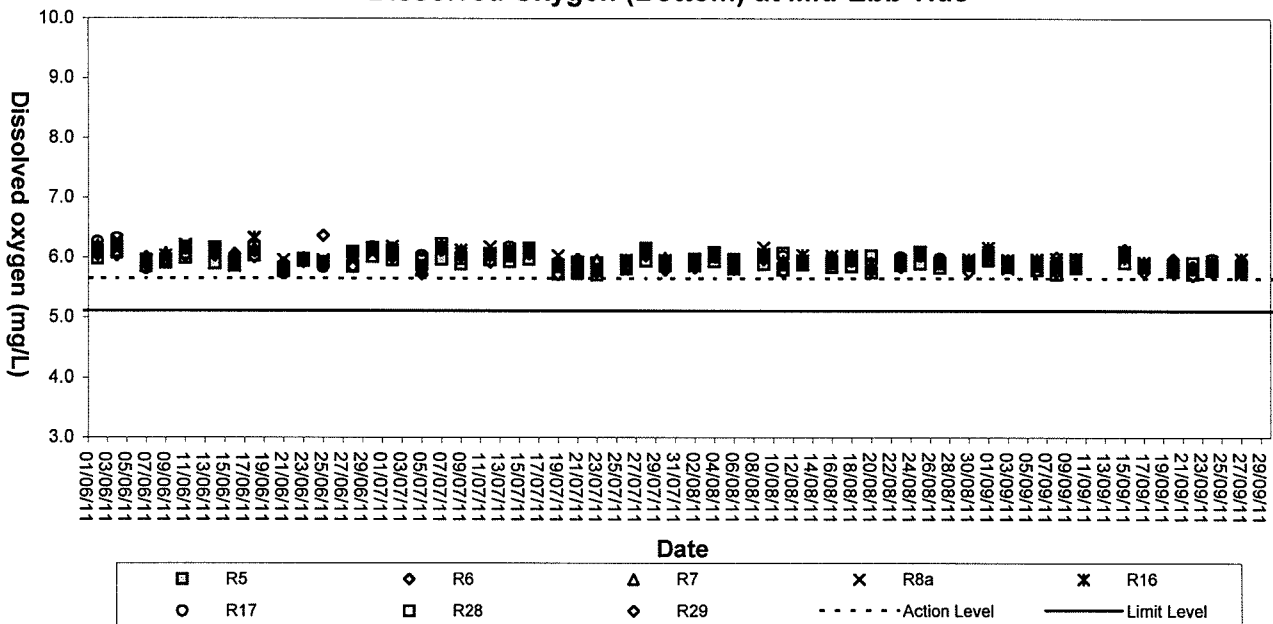
— Action and Limit Level



Dissolved Oxygen (Bottom) at Mid-Flood Tide

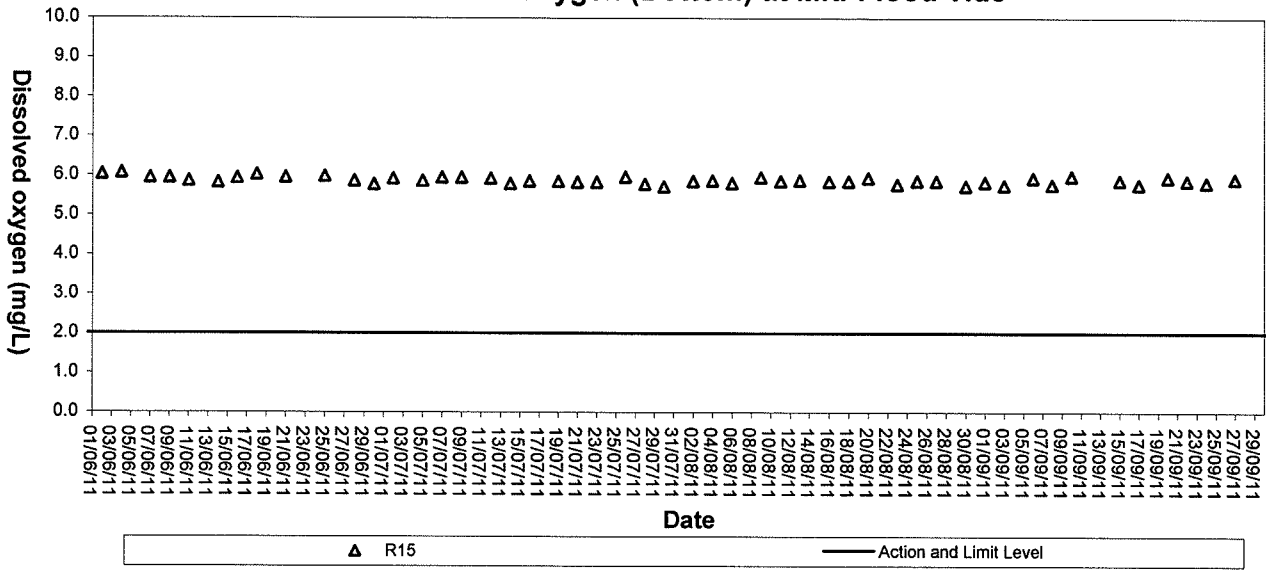


Dissolved Oxygen (Bottom) at Mid-Ebb Tide





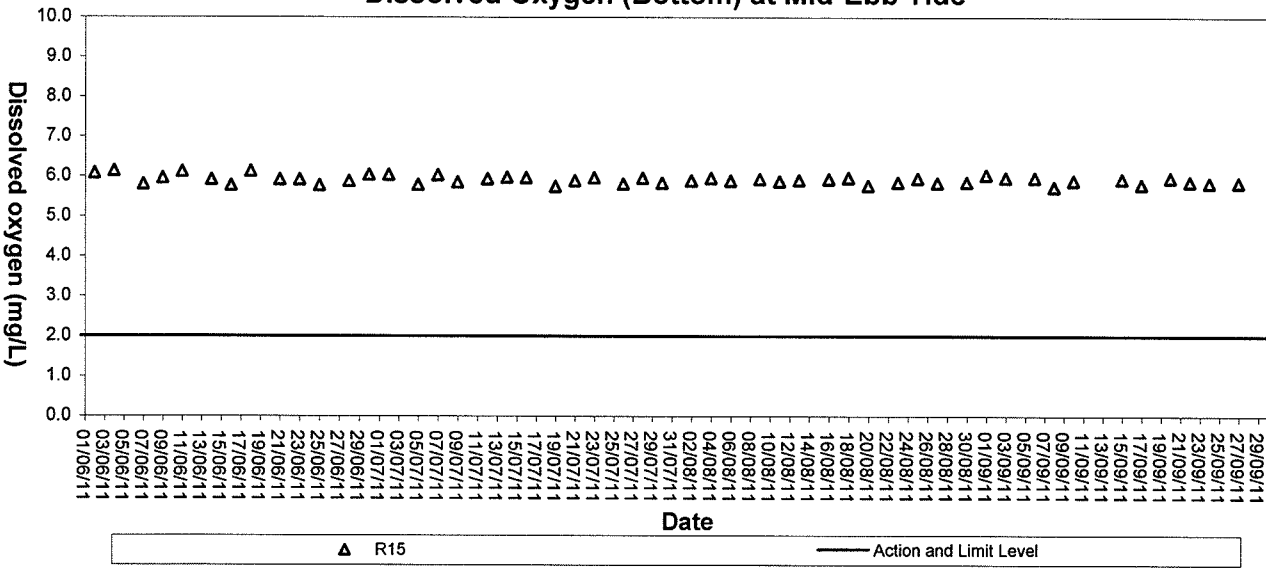
Dissolved Oxygen (Bottom) at Mid-Flood Tide



▲ R15

— Action and Limit Level

Dissolved Oxygen (Bottom) at Mid-Ebb Tide

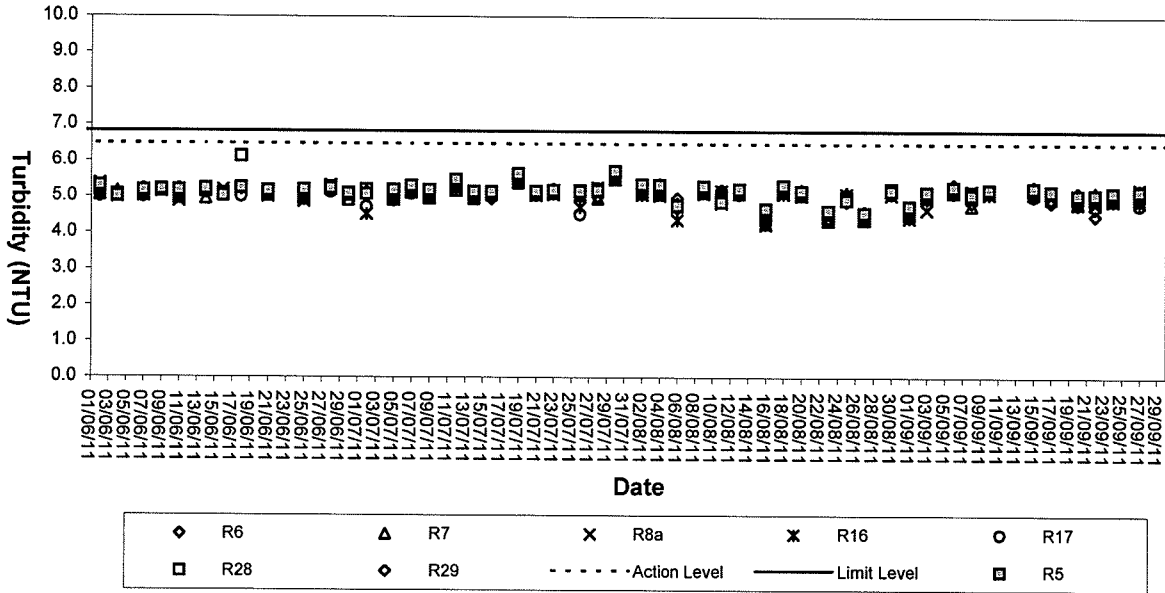


▲ R15

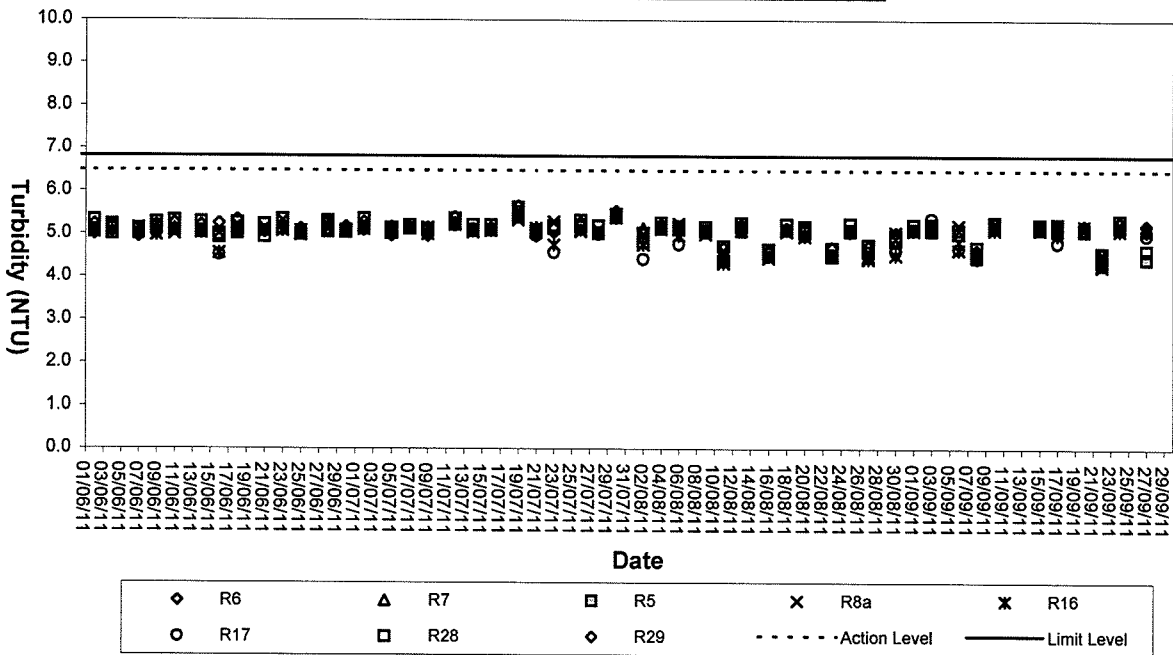
— Action and Limit Level



Turbidity (Depth-average) at Mid-Flood Tide

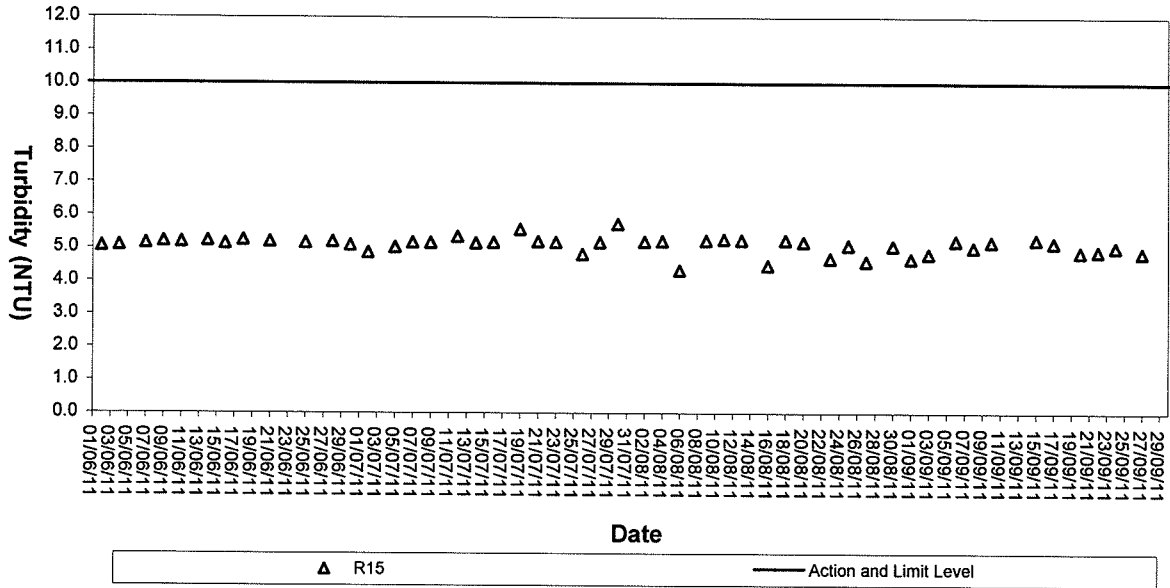


Turbidity (Depth-average) at Mid-Ebb Tide

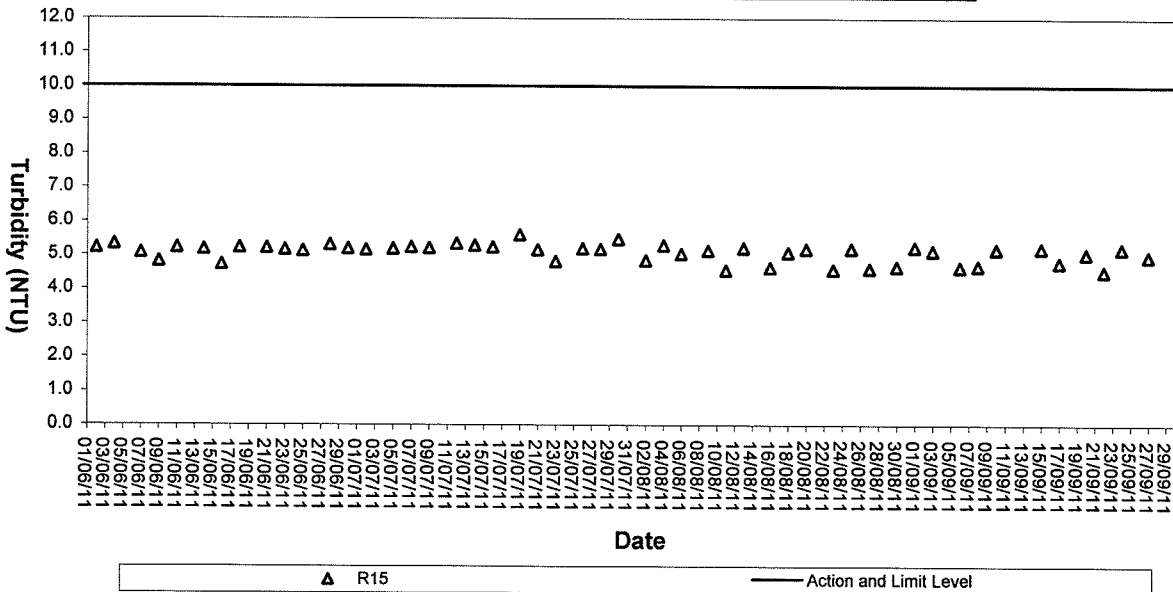




Turbidity (Depth-average) of R15 at Mid-Flood Tide

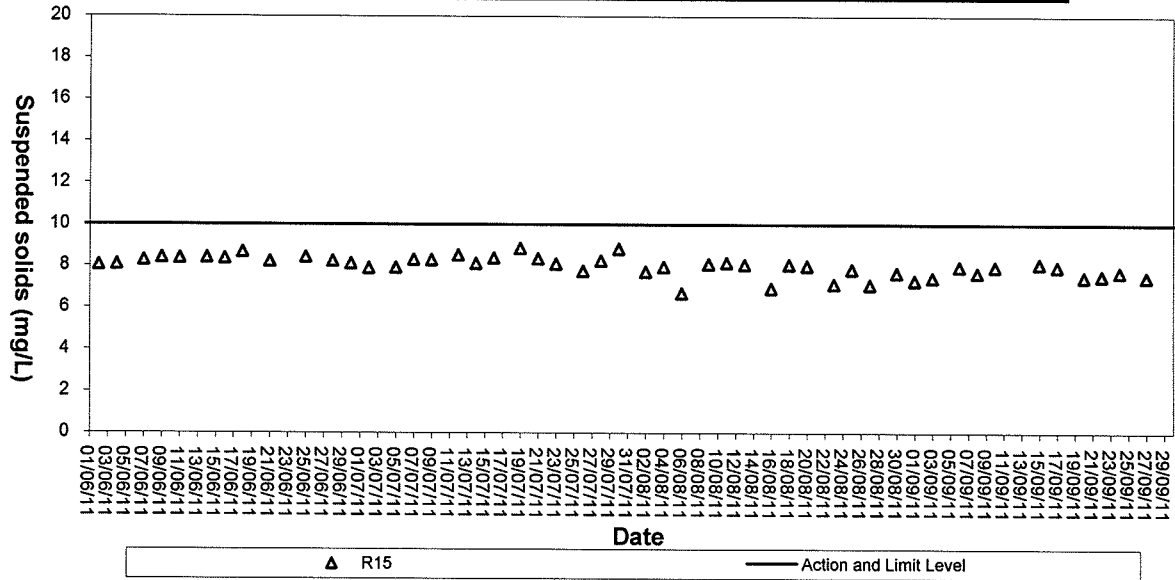


Turbidity (Depth-average) of R15 at Mid-Ebb Tide

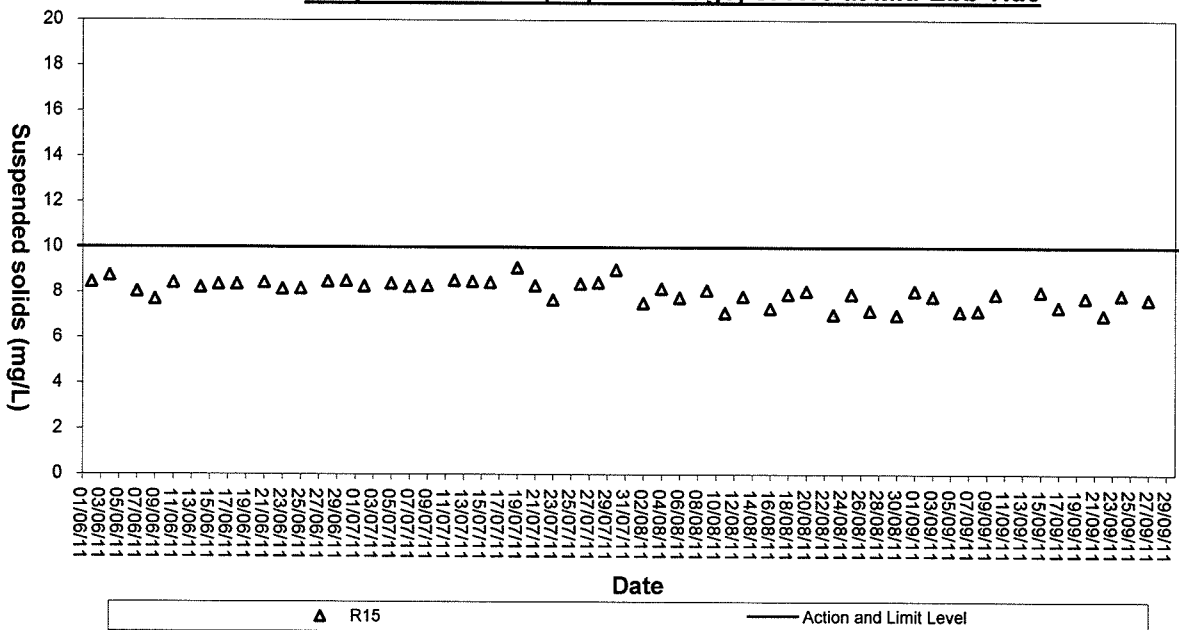




Suspended solids (Depth-average) of R15 at Mid-Flood Tide



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 @
01/09/11	98.3	R5FS	0.0	R8FS	106.0
	97.5	R8FM	0.0	R17FM	106.2
	97.9	R17FB	6.5	C1FB	95.9
	106.4	C2FS	0.0	C4FB	90.4
	94.7	R5ES	6.1	R8ES	108.3
	92.7	R8EM	0.0	R17EM	100.0
	94.7	R17EB	6.5	C1EB	102.0
	105.8	C2ES	0.0	C4EB	102.0
03/09/11	95.8	R5FS	6.9	R8FS	95.8
	95.1	R8FM	0.0	R17FM	95.8
	105.9	R17FB	6.5	C1FB	95.8
	92.5	C2FS	0.0	C4FB	108.0
	96.3	R5ES	6.5	R8ES	102.1
	107.9	R8EM	0.0	R17EM	108.0
	93.7	R17EB	5.7	C1EB	94.1
	102.0	C2ES	0.0	C4EB	103.9
06/09/11	95.9	R5FS	0.0	R8FS	100.0
	92.8	R8FM	6.1	R17FM	105.9
	93.4	R17FB	0.0	C1FB	100.0
	93.2	C2FS	6.9	C4FB	94.0
	100.0	R5ES	0.0	R8ES	98.0
	105.3	R8EM	6.1	R17EM	103.8
	104.9	R17EB	0.0	C1EB	97.9
	101.2	C2ES	0.0	C4EB	98.0
08/09/11	107.9	R5FS	6.9	R8FS	106.1
	93.5	R8FM	0.0	R17FM	94.1
	103.4	R17FB	6.1	C1FB	106.4
	102.2	C2FS	6.5	C4FB	102.0
	99.6	R5ES	0.0	R8ES	96.0
	101.0	R8EM	0.0	R17EM	92.3
	107.8	R17EB	6.9	C1EB	103.8
	103.3	C2ES	0.0	C4EB	95.9
10/09/11	100.8	R5FS	0.0	R8FS	102.1
	99.0	R8FM	0.0	R17FM	100.0
	104.8	R17FB	0.0	C1FB	98.0
	97.2	C2FS	6.9	C4FB	100.0
	97.3	R5ES	0.0	R8ES	93.8
	95.4	R8EM	6.1	R17EM	96.0
	92.2	R17EB	0.0	C1EB	94.0
	102.3	C2ES	6.5	C4EB	94.2
15/09/11	93.0	R5FS	0.0	R8FS	100.0
	93.3	R8FM	6.5	R17FM	98.1
	98.8	R17FB	0.0	C1FB	94.0
	107.7	C2FS	6.5	C4FB	98.0
	99.2	R5ES	0.0	R8ES	105.8
	104.0	R8EM	6.5	R17EM	103.8
	101.5	R17EB	0.0	C1EB	102.0
	95.4	C2ES	6.9	C4EB	102.1

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 @
17/09/11	93.7	R5FS	6.5	R8FS	98.0
	102.2	R8FM	0.0	R17FM	101.9
	94.1	R17FB	6.5	C1FB	103.8
	95.0	C2FS	0.0	C4FB	97.9
	104.0	R5ES	6.5	R8ES	94.3
	93.1	R8EM	0.0	R17EM	102.1
	98.5	R17EB	0.0	C1EB	102.0
	105.1	C2ES	6.1	C4EB	97.9
20/09/11	98.4	R5FS	6.5	R8FS	100.0
	97.5	R8FM	0.0	R17FM	98.1
	101.9	R17FB	6.1	C1FB	105.9
	97.9	C2FS	0.0	C4FB	103.9
	100.6	R5ES	6.5	R8ES	103.8
	94.7	R8EM	0.0	R17EM	107.8
	98.3	R17EB	0.0	C1EB	102.0
	92.1	C2ES	6.5	C4EB	94.2
22/09/11	100.6	R5FS	6.5	R8FS	92.0
	98.4	R8FM	0.0	R17FM	94.1
	93.7	R17FB	6.1	C1FB	95.9
	105.2	C2FS	0.0	C4FB	91.5
	98.4	R5ES	0.0	R8ES	94.0
	93.7	R8EM	0.0	R17EM	94.2
	101.2	R17EB	6.9	C1EB	102.0
	93.7	C2ES	0.0	C4EB	105.9
24/09/11	105.4	R5FS	6.5	R8FS	93.8
	107.7	R8FM	0.0	R17FM	100.0
	93.0	R17FB	0.0	C1FB	105.9
	106.4	C2FS	6.9	C4FB	92.5
	103.7	R5ES	0.0	R8ES	100.0
	104.1	R8EM	0.0	R17EM	102.0
	102.2	R17EB	6.5	C1EB	100.0
	94.1	C2ES	0.0	C4EB	107.8
27/09/11	94.8	R5FS	0.0	R8FS	96.2
	101.8	R8FM	6.5	R17FM	101.9
	100.2	R17FB	0.0	C1FB	104.0
	103.5	C2FS	6.5	C4FB	103.9
	101.6	R5ES	0.0	R8ES	104.0
	94.4	R8EM	0.0	R17EM	100.0
	103.5	R17EB	6.5	C1EB	94.1
	104.0	C2ES	0.0	C4EB	108.0

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%.

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	Start	End	Late Start	Late Finish	Total Float	Free Float
1156	07SEP09 A	05NOV12	07SEP09 A	05NOV12	07SEP09 A	05NOV12	0	0

Key Dates	1156	07SEP09 A <th>05NOV12 <th>07SEP09 A <th>05NOV12 </th></th></th>	05NOV12 <th>07SEP09 A <th>05NOV12 </th></th>	07SEP09 A <th>05NOV12 </th>	05NOV12
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Act ID	Description	Orig Dur	Start	End	Late Start	Late Finish	Total Float	Free Float
KD-1010	Contract Commencement Date	0	07SEP09 A	05NOV12	07SEP09 A	05NOV12	0	0
KD-1020	Contract Completion	0	07SEP09 A	05NOV12	07SEP09 A	05NOV12	0	0
KD-1030	Works Period of Section 1 Works (79 Days)	830	07SEP09 A	06NOV11	07SEP09 A	15DEC11	393	393
KD-1040	Works Period of Section 2 Works (426 Days)	449	07SEP09 A	06NOV10	07SEP09 A	29NOV10	236	236
KD-1050	Works Period of Section 4 Works (549 Days)	578	07SEP09 A	09MAY11	07SEP09 A	05APR11	274	274
KD-1060	Works Period of Section 5 Works (1195 Days)	1156	07SEP09 A	05NOV12	07SEP09 A	05NOV12	0	0

Act ID	Description	Orig Dur	Start	End	Late Start	Late Finish	Total Float	Free Float
BI-1000	Mobilization	80	07SEP09 A	06DEC09 A	07SEP09 A	06DEC09 A	0	0
BI-1110	Site Office	60	16NOV09 A	16JAN10	16NOV09 A	16JAN10	0	0
BI-1120	Maintenance/Service of Preliminary Items	936	17JAN10	09AUG12	17JAN10	09AUG12	0	0
BI-1130	Clearance & Demolition	88	10AUG12	05NOV12	10AUG12	05NOV12	0	0
BI-1140	Environmental Monitoring	1026	28DEC09 A	18OCT12	28DEC09 A	05NOV12	184	184
BI-1150	Material Approval For Water Mains & Accessories	100	07SEP09 A	18FEB10	07SEP09 A	04JUL10	136	144
BI-1160	Material Procurement & Delivery Start	60	28DEC09 A	01FEB10	28DEC09 A	03JUN10	122	0
BI-1160B	Delivery of Valve, Actuators, Flow Meter & ESM	400	14JUN10	18JUL11*	14JUN10	18JUL11*	0	0
BI-1170	CCTV & Monitoring of Existing DSD Drainage	610	18JAN10	19SEP11	15APR10	15DEC11	874	874
BI-1180	Monitoring of HVD Structure	610	06MAY10	05NOV11	15APR10	15DEC11	404	404

Act ID	Description	Orig Dur	Start	End	Late Start	Late Finish	Total Float	Free Float
937	07SEP09 A	31MAY12	07SEP09 A	05NOV12	07SEP09 A	05NOV12	2194	0

Act ID	Description	Orig Dur	Start	End	Late Start	Late Finish	Total Float	Free Float
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Act ID	Description	Orig Dur	Start	End	Late Start	Late Finish	Total Float	Free Float
SI-1010	Approval & Consent - XP, TTA, MS & Temp Works	180	07SEP09 A	05MAR10	07SEP09 A	26APR10	524	116
SI-1020	Trial Pit & Utilities Detection (Except E2 & K)	120	01DEC09 A	16MAR10	01DEC09 A	25APR10	404	0
SI-1030	Portion H2 Cycle Track & Footpath Proposal	40	07SEP09 A	08OCT09 A	07SEP09 A	28NOV09 A	0	0
SI-1040	Portion H2 Diversion Route For Cycle Track	60	07OCT09 A	28NOV09 A	07OCT09 A	28NOV09 A	0	0
SI-1050	Portion H2 Submission For Hoarding Mural Design	90	07SEP09 A	17FEB10	07SEP09 A	06OCT12	9624	0
SI-1060	Portion H2 Set Up For Hoarding Approved Design	30	18FEB10	19MAR10	07OCT12	05NOV12	9624	0
SI-1080	Initial & Utilities Survey (Except E2 & K)	120	05OCT09 A	04MAR10	05OCT09 A	14APR10	414	0
SI-2010	Final Pipe Testing & Reinstatement	45	16FEB12	31MAR12	01NOV11	15DEC11	-1074	0
SI-2020	Completion of Section 1 Works	0	15DEC11*	15DEC11*	01NOV11	15DEC11*	0	0

Act ID	Description	Orig Dur	Start	End	Late Start	Late Finish	Total Float	Free Float
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Act ID	Description	Orig Dur	Start	End	Late Start	Late Finish	Total Float	Free Float
SI-3010	MTRCL Consent For Works Commencement	180	07SEP09 A	05MAR10	07SEP09 A	14APR10	404	0
SI-3020	MTRCL Structure Stability Monitoring	270	28MAY10	21FEB11	05JAN11	01OCT11	2224	0
SI-3030	Portion C1 Pipe Works CH195.0-237.5 (O)	90	24JUN10	21SEP10	19MAR11	16JUN11	2684	704
SI-3030A1C	Preparation & Submission of Risk Assessment	40	22FEB10	02APR10	02NOV10	11DEC10	2554	0
SI-3030A2C	Preparation & Submission of Method Statement	40	22FEB10	02APR10	02NOV10	11DEC10	2554	0
SI-3030A3C	Preparation & Submission of Temp. Design	40	22FEB10	02APR10	02NOV10	11DEC10	2554	0
SI-3030B1C	Excavation & Shoring	80	28MAY10	15AUG10	12DEC10	01MAY11	1984	0
SI-3030B2C	Pipe Laying & Welding	50	17JUL10	04SEP10	31JAN11	21MAY11	1984	0
SI-3030B3C	Backfilling & Reinstatement	10	05SEP10	14SEP10	22MAR11	13JUN10	484	0
SI-3040A2C	Preparation & Submission of Risk Assessment	28	17JUL10	13AUG10	15MAY11	11APR11	2414	0
SI-3040A3C	Preparation & Submission of Method Statement	28	17JUL10	13AUG10	15MAY11	11APR11	2414	0
SI-3040A4C	Preparation & Submission of Temp. Works	28	17JUL10	13AUG10	15MAY11	11APR11	2414	0
SI-3040B1C	Installation of Settlement Marker	3	31JUL10	02AUG10	29MAR11	11MAY11	2414	434
SI-3040B2C	Excavation & Shoring For Pipe Trough (Stage 1)	15	15SEP10	26SEP10	01APR11	15APR11	1984	0
SI-3040B3C	Excavation & Shoring For Trough	3	30SEP10	02OCT10	16APR11	18APR11	1984	0
SI-3040B4C	Formwork & Reinforcement For Trough	10	03OCT10	12OCT10	19APR11	29APR11	1984	0
SI-3040C1C	Concrete For Pipe Trough	3	13OCT10	30OCT10	02MAY11	01MAY11	1984	0
SI-3050	Portion C1 Pipe Works CH237.5-290 (PT)	15	05MAY10	24JUN10	22DEC10	08FEB11	2314	0
SI-3050B1C	Pipe Laying & Connection (Welding)	10	31OCT10	09NOV10	17MAY11	28MAY11	1984	0
SI-3050B2C	Concrete Surround for Installed Watermain	5	18NOV10	15NOV10	02JUN11	01JUN11	1984	0
SI-3050B3C	Backfilling of Pipe Trough	10	21NOV10	30NOV10	07JUN11	16JUN11	1984	0
SI-3060	Portion C1 Pipe Works CH290.0-325.5 (O)	83	01DEC10	21FEB11	17JUN11	07SEP11	1984	0

Act ID	Description	Orig Dur	Start	End	Late Start	Late Finish	Total Float	Free Float
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Act ID	Description	Orig Dur	Start	End	Late Start	Late Finish	Total Float	Free Float
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Start date	07SEP09
Finish date	05NOV12
Run date	04JAN11
Run date	19SEP11
Page number	1A
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3 Months Rolling Program (Sept 2011)

Legend	Legend
Early bar	Early bar
Progress bar	Progress bar
Critical bar	Critical bar
Summary bar	Summary bar
Sarmlimestone point	Sarmlimestone point
Finish milestone point	Finish milestone point

Act ID	Description	Orig Dur	Start	End	Finish	Free Float	Total Float	Late Start	Late Finish
SI-4450	Portion E1B Pipe Works CH680.5-977.4 (PT)	60	10OCT10	09DEC10	11APR11	182d	0	09DEC10	09JUN11
SI-4450B1	Pipe Laying & Support Casting	25	16FEB11	12MAR11	05JUL11	139d	0	05JUL11	29JUL11
SI-4450B2	Backfilling & Reinstatement	20	13MAR11	01APR11	30JUL11	139d	0	30JUL11	18AUG11
SI-4460	Portion E1B Pipe Works CH677.4-895.9 (O)	40	22FEB11	02APR11	18SEP11	198d	0	18SEP11	17OCT11
SI-4460B1	Portion E1B Pipe Works CH677.4-895.9 (O)	30	22FEB11	02APR11	18SEP11	198d	0	18SEP11	17OCT11
SI-4470	Portion E1B Pipe Works CH695.9-698.5 (UC)	20	10DEC10	29DEC10	10JUN11	236d	0	10JUN11	29JUN11
SI-4470B1	Portion E1B Pipe Works CH695.9-698.5 (UC)	30	02APR11	01MAY11	19AUG11	182d	0	19AUG11	17SEP11
SI-4480	Portion E1B DN600B SWM Works CH0.0-7.1	30	23JUL10	21AUG10	10FEB11	202d	0	10FEB11	17OCT11
SI-4480B1	Portion E1B DN600B SWM Works CH0.0-7.1	30	23JUL10	21AUG10	10FEB11	202d	0	10FEB11	17OCT11
SI-4490	Portion E2 DN600B SWM Works CH7.1-63.7	50	23JUL10	10SEP10	21JAN11	182d	0	21JAN11	11MAR11
SI-4490B1	Portion E2 DN600B SWM Works CH7.1-63.7	66	21JUL11	24SEP11	05APR11	-107d	0	05APR11	09JUN11
SI-4500	Portion E2 DN600B SWM Works CH7.1-63.7 (O)	30	11SEP10	10OCT10	12MAR11	182d	0	12MAR11	10APR11
SI-4500B1	Portion E2 DN600B SWM Works CH7.1-63.7 (O)	10	26SEP11	14OCT11	10JUN11	-107d	0	10JUN11	29JUN11
SI-4510	Area E1B-E2 SWM Portional Pipe Testing	14	03APR11	16APR11	18OCT11	196d	305d	18OCT11	31OCT11
SI-4510B1	Area E1B-E2 SWM Portional Pipe Testing	14	23JAN12	05FEB12	18OCT11	-97d	10d	18OCT11	31OCT11

Act ID	Description	Orig Dur	Start	End	Finish	Free Float	Total Float	Late Start	Late Finish
SI-4710	Portion E1C DN300 FWM Works CH0.0-50.0 (UC)	50	05MAR10	23APR10	27SEP10	206d	0	27SEP10	15NOV10
SI-4710A1	Submission & Approval Of Risk Assessment	28	19FEB10	18MAR10	13SEP10	206d	0	13SEP10	10OCT10
SI-4710A2	Submission & Approval Of Method Statement	28	19FEB10	18MAR10	13SEP10	206d	59d	13SEP10	10OCT10
SI-4710B1	Submission & Approval Of Temp. Work	28	19FEB10	18MAR10	13SEP10	206d	59d	13SEP10	10OCT10
SI-4710B2	Installation & Connection Of DN300 FWM	50	17MAY10	05JUL10	11OCT10	147d	0	11OCT10	29NOV10
SI-4710B3	Support & Fixing Of DN300 FWM	40	06JUL10	14AUG10	30NOV10	147d	0	30NOV10	08JAN11
SI-4720	E1C DN300 FWM Diversion Main, Testing	8	24APR10	01MAY10	03APR11	344d	0	03APR11	10APR11
SI-4720B1	E1C DN300 FWM Diversion Main, Testing	8	15AUG10	22AUG10	09JAN11	147d	0	09JAN11	16JAN11
SI-4730	E1C DN300 FWM Diversion & Demolition	30	02MAY10	31MAY10	11APR11	344d	157d	11APR11	10MAY11
SI-4730A1	Issuance Of Temp. Water Supply Suspension Notice	14	22SEP10	05OCT10	16FEB11	147d	0	16FEB11	03MAR11
SI-4730A2	Shut Off Existing DN300 FWM	2	06OCT10	07OCT10	02MAR11	147d	0	02MAR11	03MAR11
SI-4730A3	DN300 Diversion Main Connect To Existing	28	08OCT10	04NOV10	04MAR11	147d	0	04MAR11	31MAR11
SI-4730A4	Removal Of Existing DN300 FWM	28	08OCT10	04NOV10	04MAR11	147d	0	04MAR11	31MAR11
SI-4740	Portion E1C DN800 SWM Works CH0.0-52.0 (UC)	120	05NOV10	03JAN11	29JUL11	187d	8d	29JUL11	17AUG11
SI-4740B1	Portion E1C DN800 SWM Works CH0.0-52.0 (UC)	80	05NOV10	03JAN11	29JUL11	187d	0	29JUL11	17AUG11
SI-4750	Portion E1C DN800 SWM Works CH52.0-90.0	80	07FEB11	21APR11	30JUL11	179d	0	30JUL11	17OCT11
SI-4750B1	Portion E1C DN800 SWM Works CH52.0-90.0	14	05MAR11	23MAY11	18OCT11	147d	0	18OCT11	13OCT11
SI-4760	Area E1C Portional Pipe Testing	14	22APR11	05MAY11	18OCT11	179d	286d	18OCT11	31OCT11
SI-4760B1	Area E1C Portional Pipe Testing	14	24MAY11	06JUN11	18OCT11	147d	254d	18OCT11	31OCT11

Act ID	Description	Orig Dur	Start	End	Finish	Free Float	Total Float	Late Start	Late Finish
SI-5010	Portion E2 Marine Dept Advance Notice	90	07OCT09	20FEB10	07OCT09	0	0	07OCT09	20FEB10
SI-5020	WHITCL Consent For Works Within Tunnel/Area	120	07SEP09	20FEB10	07SEP09	0	0	07SEP09	20FEB10
SI-5030	Chamber Modification - 180 Days of Portion E2	65	07JAN10	14MAR10	07JAN10	0	0	07JAN10	14MAR10
SI-5040	Portion E2 Trial Run	60	09NOV09	14NOV09	09NOV09	0	0	09NOV09	14NOV09
SI-5050	Portion E2 Trial Pit & Utilities Survey	15	21FEB10	07MAR10	21FEB10	0	0	21FEB10	07MAR10
SI-5060	Portion E2 Initial Pit & Utilities Survey	15	21FEB10	07MAR10	21FEB10	0	0	21FEB10	07MAR10
SI-5070	Portion E2 Pipe Works CH698.5-752.5 (UC)	80	27MAR11	14JUN11	30JUN11	95d	31d	30JUN11	17SEP11
SI-5070B1	Portion E2 Pipe Works CH698.5-752.5 (UC)	80	19OCT11	02JAN12	30JUN11	-107d	0	30JUN11	17SEP11
SI-5080	Portion E2 Pipe Works CH752.5-790.5 (O)	30	16JUL11	14AUG11	18SEP11	64d	171d	18SEP11	17OCT11
SI-5080A	Portion E2 Pipe Works CH752.5-790.5 (O)	30	03JAN12	01FEB12	18SEP11	-107d	0	18SEP11	17OCT11
SI-5090	TL-C FWM Sleeve Jacking CH790.5-977.7	70	26JUL10	03OCT10	28SEP10	64d	0	28SEP10	08DEC10
SI-5090A1	Preparation & Submission of Risk Assessment	60	08FEB10	06APR10	03SEP10	209d	0	03SEP10	01NOV10
SI-5090A2	Preparation & Submission of Method Statement	60	08FEB10	06APR10	03SEP10	209d	0	03SEP10	01NOV10
SI-5090A3	Preparation & Submission of Temp. Design	60	08FEB10	06APR10	03SEP10	209d	0	03SEP10	01NOV10
SI-5090B1	Excavation & Shoring for Jacking Pit (A3)	40	07APR10	16MAY10	02NOV10	209d	94d	02NOV10	11DEC10
SI-5090B2	Jacking Pit Set-up (TL-C)	10	19AUG10	28AUG10	12DEC10	115d	0	12DEC10	21DEC10
SI-5090C1	Sleeve Pipe Installation by Jacking	20	29AUG10	17SEP10	22OCT10	115d	0	22OCT10	10JAN11
SI-5095	TL-C FWM Pipe Installation CH790.5-977.7	40	12MAY11	23JUN11	15JUL11	156d	0	15JUL11	29AUG11
SI-5095B1	Pipe Laying & Connection	50	02DEC10	20JAN11	07MAR11	95d	0	07MAR11	25APR11
SI-5095B2	Sleeve Pipe Grouting	10	21JAN11	30JAN11	26APR11	95d	0	26APR11	05MAY11
SI-5095B3	Backfilling & Reinstatement	30	31JAN11	15JUL11	04JUN11	95d	0	04JUN11	17SEP11
SI-5100	Portion E2 Pipe Works CH977.7-995.5 (O)	25	21JUN11	15JUL11	24AUG11	64d	0	24AUG11	17SEP11
SI-5100A	Portion E2 Pipe Works CH977.7-995.5 (O)	25	02MAR11	26MAR11	05JUN11	95d	0	05JUN11	29JUN11
SI-5110	TL-E SWM Sleeve Jacking CH90.0-225.5	120	04OCT10	31JAN11	07DEC10	64d	0	07DEC10	05APR11
SI-5110A1	Preparation & Submission of Risk Assessment	60	08FEB10	06APR10	12MAY10	95d	0	12MAY10	10JUL10

SI-5110B1	Preparation & Submission of Risk Assessment	60	08FEB10	06APR10	12MAY10	95d	0	12MAY10	10JUL10
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Start date	07SEP09	Early bar
Finish date	05NOV12	Progress bar
Date date	04JAN10	Critical bar
Run date	19SEP11	Summary bar
Page number	3A	Start/finish point
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3 Months Rolling Program (Sept 2011)

Act ID	Description	Orig Dur	Early Start	Early Finish	Late Start	Late Finish	Total Float	Free Float
SI-8020F10	Stage 5 Excavation & Shoring CH290-340	50	23OCT11	11DEC11	10JUL11	28AUG11	-1056	0
SI-8020F20	Pipe Laying & C-connection (Welding)	30	12DEC11	10JAN12	28AUG11	27SEP11	-1056	0
SI-8020F30	Backfilling & Reinstatement	20	11JAN12	30JAN12	28SEP11	17OCT11	-1056	0
SI-8030	Portion J Kiosk for RTU & Connect To SCADA	30	29JUL11	27AUG11	18SEP11	17OCT11	516	1566
SI-8030B10	Portion J Kiosk for RTU & Connect To SCADA	30	20OCT10	18NOV10	18SEP11	17OCT11	3336	4386
SI-8040	Portion J Pipe Works CH339.0-386.4 (TL-D)	209	17MAR10	11OCT10	27APR10	21NOV10	416	0
SI-8040A10	Preparation & Submission of Risk Assessment	28	03MAR10	30MAR10	28APR10	25MAY10	566	0
SI-8040A20	Preparation & Submission of Method Statement	28	03MAR10	30MAR10	28APR10	25MAY10	566	0
SI-8040A30	Preparation & Submission of Temp. Works	28	03MAR10	30MAR10	28APR10	25MAY10	566	1616
SI-8040A40	Granting of Excavation Permit	0	01SEP10	30MAR10	19MAY10	19MAY10	-1056	0
SI-8040B10	TTA, UD & Trial Pit Excavation	80	08SEP10	06DEC10	26MAY10	23AUG10	-1056	0
SI-8040B20	Access Shaft Fabrication	180	27DEC10	24JUN11	13SEP10	11MAR11	-1056	0
SI-8040B30	Heading Tunnel Excavation (Hard Shield)	70	25JUN11	02SEP11	12MAR11	20MAY11	-1056	0
SI-8040B40	Backfilling & Reinstatement	40	03SEP11	12OCT11	21MAY11	29JUN11	-1056	0
SI-8050	Portion J Pipe Works CH386.4-396.4 (O)	40	23OCT11	01DEC11	18AUG11	17OCT11	-1056	0
SI-8060	Portion J Pipe Works DN1000 CH0.0-22.7 (O)	60	02DEC11	30JAN12	19AUG11	17OCT11	-1056	0
SI-8070	Area K Portional Pipe Testing	14	31JAN12	13FEB12	18OCT11	31OCT11	-1056	24
Portion K								
SI-9010	Within 365 Days Commencement of Portion K	365	07SEP09 A	08SEP10	07SEP09 A	10DEC10	93d	0
SI-9020	Portion K Initial Survey	15	09SEP10	23SEP10	11DEC10	25DEC10	93d	0
SI-9030	Portion K Utilities Detection & Trial Pit	20	24SEP10	13OCT10	26DEC10	14JAN11	93d	0
SI-9030B10	Portion K Utilities Detection & Trial Pit	10	16MAY11	25MAY11	16MAY11	25MAY11	0	0
SI-9040	Portion K Pipe Works (Construction of MBV)	200	14OCT10	01MAY11	15JAN11	02AUG11	93d	0
SI-9040B10	MBV Installation & Associated Duct Works	90	26MAY11	23AUG11	19JUN11	16SEP11	24d	0
SI-9050	Portion K Kiosk for RTU & Connect To SCADA	30	02MAY11	31MAY11	03AUG11	01SEP11	93d	0
SI-9050B10	Portion K Kiosk for RTU & Connect To SCADA	30	24AUG11	22SEP11	17SEP11	16OCT11	24d	0
SI-9060	Area K Constructed MBV Test Rig	60	01JUN11	30JUL11	02SEP11	31OCT11	93d	200d
SI-9060B10	Area K Constructed MBV Test Rig	60	23SEP11	21NOV11	17OCT11	15DEC11	24d	24d
Machine Works (Portion J)								
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	80d	0
M1030	Material Procurement & Delivery	180	06NOV09 A	04MAY10	06NOV09 A	23JUL10	80d	0
M1040	Submission & Approval of EM&A Manual	640	06DEC09 A	23AUG11	06DEC09 A	15NOV11	84d	36d
M1050	EM&A - Monitoring & Update	60	06MAR10	04MAY10	25MAY10	23JUL10	80d	0
M1060A10	Portion H1 Coating Yard Set-up	34	01APR10	04MAY10	20JUN10	23JUL10	80d	0
M1070	Portion H1 Pipe Material On-site Coating	90	05MAY10	02AUG10	19AUG10	21OCT10	80d	32d
M1080A10	Set-up for Cofferdam at Landfall (H1)	180	21FEB10	19AUG10	10APR10	06OCT10	48d	0
M1080B10	Set-up for Cofferdam at Landfall (H1 & J)	10	02APR10	11APR10	12APR10	21APR10	10d	0
M1080B20	Solder Pipe Wall Construction	260	12APR10	27DEC10	22APR10	06JAN11	10d	0
M1090	Excavation of Cofferdam	80	28DEC10	17MAR11	07JAN11	27MAR11	10d	0
M1090A10	Sai Ying Pun Cofferdam for Landfall (J)	180	21FEB10	19AUG10	10APR10	06OCT10	48d	0
M2060	Set-up For Pipe Pulling	60	21JUL10	18SEP10	07SEP10	05NOV10	48d	0
M2060A10	Mobilization of Plants & Machinery	8	27JAN11	03FEB11	10FEB11	14MAY11	10d	0
M2060A20	Set-up For Pipe Pulling	90	04FEB11	04MAY11	14FEB11	14MAY11	10d	0
M2070	Dredging Works	150	22APR10	18SEP10	09JUN10	05NOV10	48d	0
M2080	Portion I Submarine Pipe Pulling	130	15SEP10	26JAN11	06AUG10	15MAY11	48d	0
M2080B10	Portion I Submarine Pipe Pulling	85	05MAY11	28JUL11	15MAY11	07AUG11	10d	0
M2090	Portion H1 Tie-in With Submarine Pipe Line	20	27JAN11	25FEB11	16MAR11	14APR11	48d	0
M2090A10	Portion H1 Tie-in With Submarine Pipe Line	30	29JUL11	17AUG11	08AUG11	27AUG11	10d	0
M2100	Portion I Submarine Pipe Pressure Testing &	30	26FEB11	27MAR11	15APR11	14MAY11	48d	0
M2100A10	Portion I Submarine Pipe Pressure Testing &	120	18AUG11	06SEP11	28AUG11	16SEP11	10d	0
M2110	Portion H1 & J Seawall Reinstatement	120	28MAR11	25JUL11	23MAY11	23SEP11	62d	23d
M2110A10	Portion H1 & J Seawall Reinstatement	90	19AUG11	15NOV11	17SEP11	15DEC11	30d	30d
M2120	Portion I Submarine Pipeline Backfilling	185	28MAR11	28SEP11	15MAY11	15NOV11	48d	0

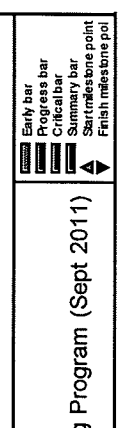


3 Months Rolling Program (Sept 2011)

Start date	07SEP09
Finish date	05NOV12
Run date	04JAN10
Run date	19SEP11
Page number	5A
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Contract No. JMWSD08
 Laying of Western Crossa Harbour Main & Associated Land Mains from WestKowloon to Sai Ying Pun

Act ID	Description	Qty	Unit	Early		Late		Total Float	Early Float	2010														
				Start	Finish	Start	Finish			NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
M2120A10	Portion 1 Submarine Pipeline Backfilling	150	30MAY11	26OCT11	19JUL11	15DEC11	50d	50d																
M2130	CP Test Box Installation (On Land)	60	28MAR11	26MAY11	02SEP11	31OCT11	158d	125d																
M2130A10	CP Test Box Installation (On Land)	60	07SEP11	05NOV11	17SEP11	15NOV11	10d	0																
M2140	CP Test (Close Internal Potential Survey)	30	29SEP11	28OCT11	16NOV11	15DEC11	48d	48d																
M2140A10	CP Test (Close Internal Potential Survey)	30	06NOV11	05DEC11	16NOV11	15DEC11	10d	10d																
M2150	Completion of Section 1 Works	0		15DEC11*		15DEC11*	0	0																
+Section 2																								
+Section 4			449	07SEP09 A	29NOV10	29NOV10	0	0																
+Section 5			576	07SEP09 A	05APR11	05APR11	0	0																
			1156	07SEP09 A	05NOV12	07SEP09 A	05NOV12	0	0															



3 Months Rolling Program (Sept 2011)

Appendix F

ET Weekly Site Inspection Records

WEEKLY SITE INSPECTION CHECKLIST

Inspection Date	06 Sept. 2011	Inspected by	RE	IEC	Contractor	ET
Time	09:30	Name	Ryker LBN		JMC S. J. J.	C.L. Lau

Weather : Sunny / Fine / Cloudy / Drizzle / Rain / Storm / Hazy
 Condition : Calm
 Wind : High (Moderate) Low
 Temperature : 30°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*	Implementation Stages*			Remark
	Yes	No	Not Obs	
	✓			
	✓			
	✓			
	✓			
	✓			
				✓
	✓			
	✓			
	✓			
	✓			✓
	✓			
	✓			
	✓			
	✓			
	✓			
	✓			
	✓			

	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 NSRRs.	√			
▪ 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 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 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	√			


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 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 2 on 30/08/11, standing of rain water noted in Portion J was cleaned.	Closed	---	110906_001	---

Remark

 No new item was found during the site inspection and audit on 06/09/11.

Inspected by	Name	Signature	Date
	C. L. Lau		06 September 2011

Contract No. 9/WSD/08

Laying of Western Cross Harbour Main and Associated Land Mains

From West Kowloon to Sai Ying Pun

Photos



Photo 110906_001 (Standing water noted in Portion J was cleaned)

WEEKLY SITE INSPECTION CHECKLIST

Inspection Date	15 Sept. 2011	Inspected by	RE	IEC	Contractor	ET
Time	09:30	Name	1519		<i>[Signature]</i>	C.L. Lau

Weather

Condition : Sunny Fine / Cloudy / Drizzle / Rain / Storm / Hazy

Wind : Calm / Light / Breeze / Strong

Temperature : 30°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 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.

Implementation Stages*	Implementation Stages*			Remark
	Yes	No	Not Obs / N/A	
	✓			
	✓			
	✓			
	✓			
	✓			
				✓
	✓			
	✓			
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	✓			
	✓			
	✓			
	✓			

	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					
<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 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 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	√			

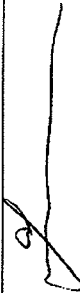
Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
Marine Ecology				
Use of one grab dredger only with a maximum production rate of 4,000m ³ per day for dredging.			√	No dredging work was observed.
Deployment of frame type silt curtain to fully enclose the grab while dredging 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
1					

Remark

No new item was found during the site inspection and audit on 15/09/11.

Inspected by	Name	Signature	Date
	C. L. Lau		15 September 2011

WEEKLY SITE INSPECTION CHECKLIST

Inspection Date	20 Sept. 2011	Inspected by	RE	IEC	Contractor	ET
Time	14:00	Name	W. J. ... 20/9/2011		J. ...	C. h. ...

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

	Implementation Stages*			Remark
	Yes	No	Not Obs	
✓			N/A	
✓				
✓				
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	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				
▪ 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	✓			No dredging work was observed.
▪ 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 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				
<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	✓			


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 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

Remark

No new item was found during the site inspection and audit on 20/09/11.
 The Contractor was reminded to replace the damaged sand bags in Portion J to avoid flooding of silty water to the sea after raining.
 The Contractor was also reminded to check and clean the standing water continuously in all areas after raining.

Inspected by	Name	Signature	Date
	C. L. Lau		20 September 2011

WEEKLY SITE INSPECTION CHECKLIST

Inspection Date	27 Sept. 2011	Inspected by	RE	IEC	Contractor	ET
Time	09:30	Name	Wong Rosa		JNC	C.L. Lau

Weather

Condition : Sunny / Fine / Cloudy / Drizzle / Rain / Storm / Hazy
Wind : Calm / Light / Breeze / Strong

Temperature : 30°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*

Yes No Not Obs N/A

Implementation Stages*	Yes	No	Not Obs	N/A	Remark
	✓				
	✓				
	✓				
	✓				
	✓				
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	✓				
	✓				



		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 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 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					
<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. 	√				
	√				
	√				
	√				



		Implementation Stages*			Remark
		Yes	No	Not Obs	
Environmental Checklist					
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
Environmental Checklist			
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 found during the site inspection and audit on 27/09/11.

The Contractor used concrete/mortar to replace the damaged sand bags in Portion J to avoid flooding of silty water to the sea after raining.

The Contractor was reminded to check and collect the drinking bottles more frequently in all areas of the site.

Name	Signature	Date
Inspected by C. L. Lau		27 September 2011

Appendix G

Implementation Schedule of Mitigation Measures



Environmental Protection Measures	Location	Implementation Status		
		Implemented	Partially implemented	Not implemented
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	✓		

Environmental Protection Measures		Location	Implementation Status				
			Implemented	Partially implemented	Not implemented	Not Applicable	
Water Quality							
Mitigation Measures for other Construction Activities							
	<ul style="list-style-type: none"> Portable chemical toilets should be used to handle construction workforce 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					√
	<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	√				
	<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	√				
	<ul style="list-style-type: none"> All areas	√					
	<ul style="list-style-type: none"> All areas	√					
	<ul style="list-style-type: none"> 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	√				
	<ul style="list-style-type: none"> All areas	√					
	<ul style="list-style-type: none"> 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					√
	<ul style="list-style-type: none"> Marine						√
	<ul style="list-style-type: none"> 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	√				
	<ul style="list-style-type: none"> All areas	√					
	<ul style="list-style-type: none"> All areas	√					



東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Appendix H

Site General Layout plan

NOTES:
 1. THE DRAWING SHALL BE READ IN CONNECTION WITH DRAWING NO. 241239/6/0302 TO 0304.

LEGEND:

- PROPOSED FRESH WATER MAIN
- PROPOSED SALT WATER MAIN
- PROPOSED MAINS LANE
- DU / ST
- SECTION A (SECTION 2)
- SECTION B
- SECTION C
- SECTION D (SEE PLAN)
- SECTION E
- SECTION F
- SECTION G
- SECTION H
- SECTION I
- SECTION J
- SECTION K
- SECTION L
- SECTION M
- SECTION N
- SECTION O
- SECTION P
- SECTION Q
- SECTION R
- SECTION S
- SECTION T
- SECTION U
- SECTION V
- SECTION W
- SECTION X
- SECTION Y
- SECTION Z

Section 1
 Section 2
 Section 4

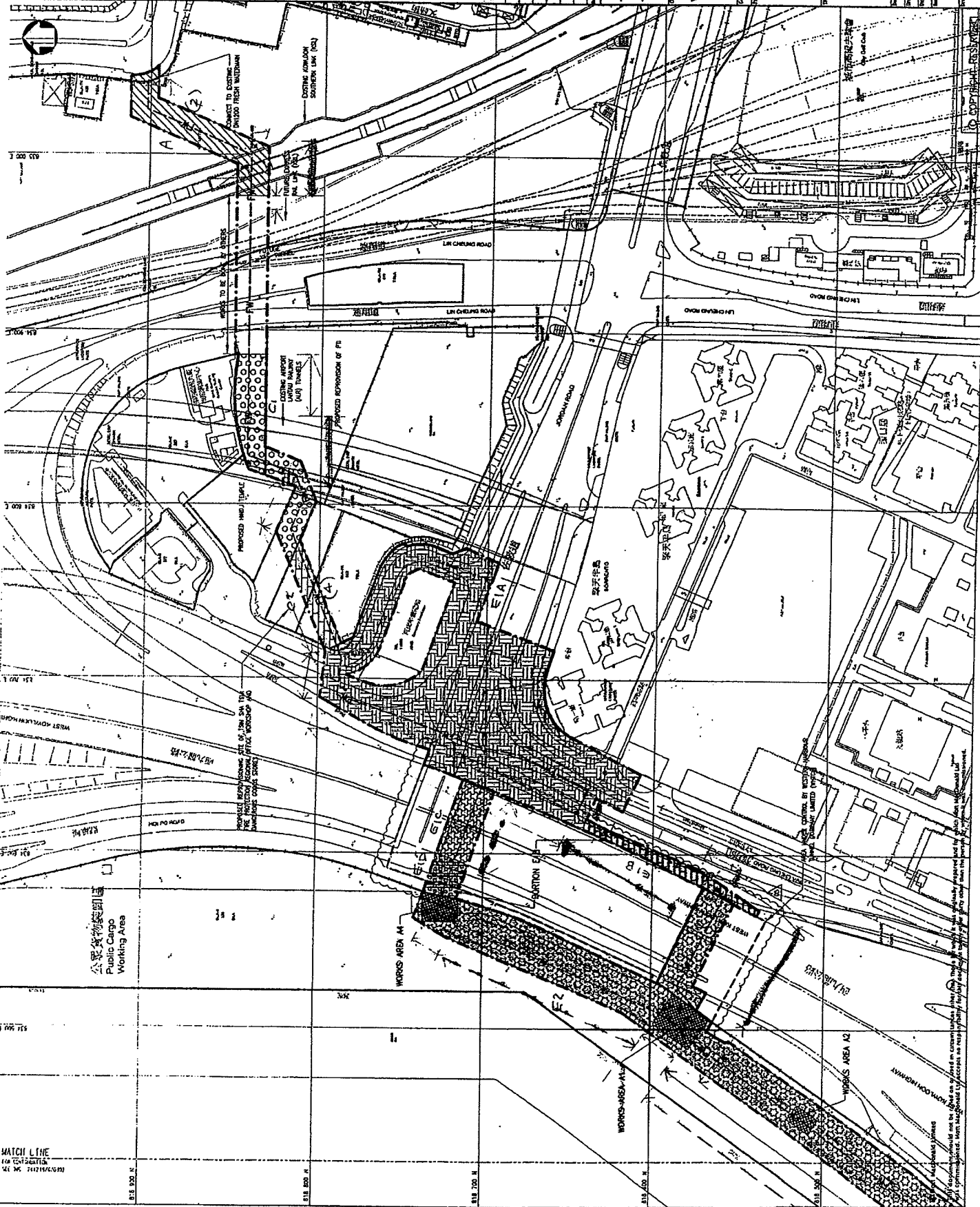
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02	LAND ON	PL	TENDER ADDENDUM NO. 5	KL	S/C
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04	LAND ON	PL	TENDER ADDENDUM NO. 3	KL	S/C
05	LAND ON	PL	TENDER ADDENDUM NO. 2	KL	S/C
06	LAND ON	PL	ESSE FOR TUNNEL	KL	S/C
07	LAND ON	PL	ESSE FOR TUNNEL	KL	S/C
08	LAND ON	PL	ESSE FOR TUNNEL	KL	S/C
09	LAND ON	PL	ESSE FOR TUNNEL	KL	S/C
10	LAND ON	PL	ESSE FOR TUNNEL	KL	S/C

Mott MacDonald
 THE HONG KONG SPECIAL ADMINISTRATIVE REGION WATER SUPPLIES DEPARTMENT

9/MS/08
 LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SA YING PUN

POSSESSION OF SITE (SHEET 1 OF 5)

SCALE	1:1000	DATE	24/12/08
PROJECT NO.	9/MS/08	DRAWN BY	KL
CHECKED BY	KL	APPROVED BY	KL
DESIGNED BY	KL	REVISIONS	KL
DATE	24/12/08	NO. OF SHEETS	10
TITLE	POSSESSION OF SITE (SHEET 1 OF 5)	PROJECT NAME	SA YING PUN



MATCH LINE
 TO SHEET 241239/6/0303

THE HONG KONG SPECIAL ADMINISTRATIVE REGION WATER SUPPLIES DEPARTMENT
 241239/6/0301 05

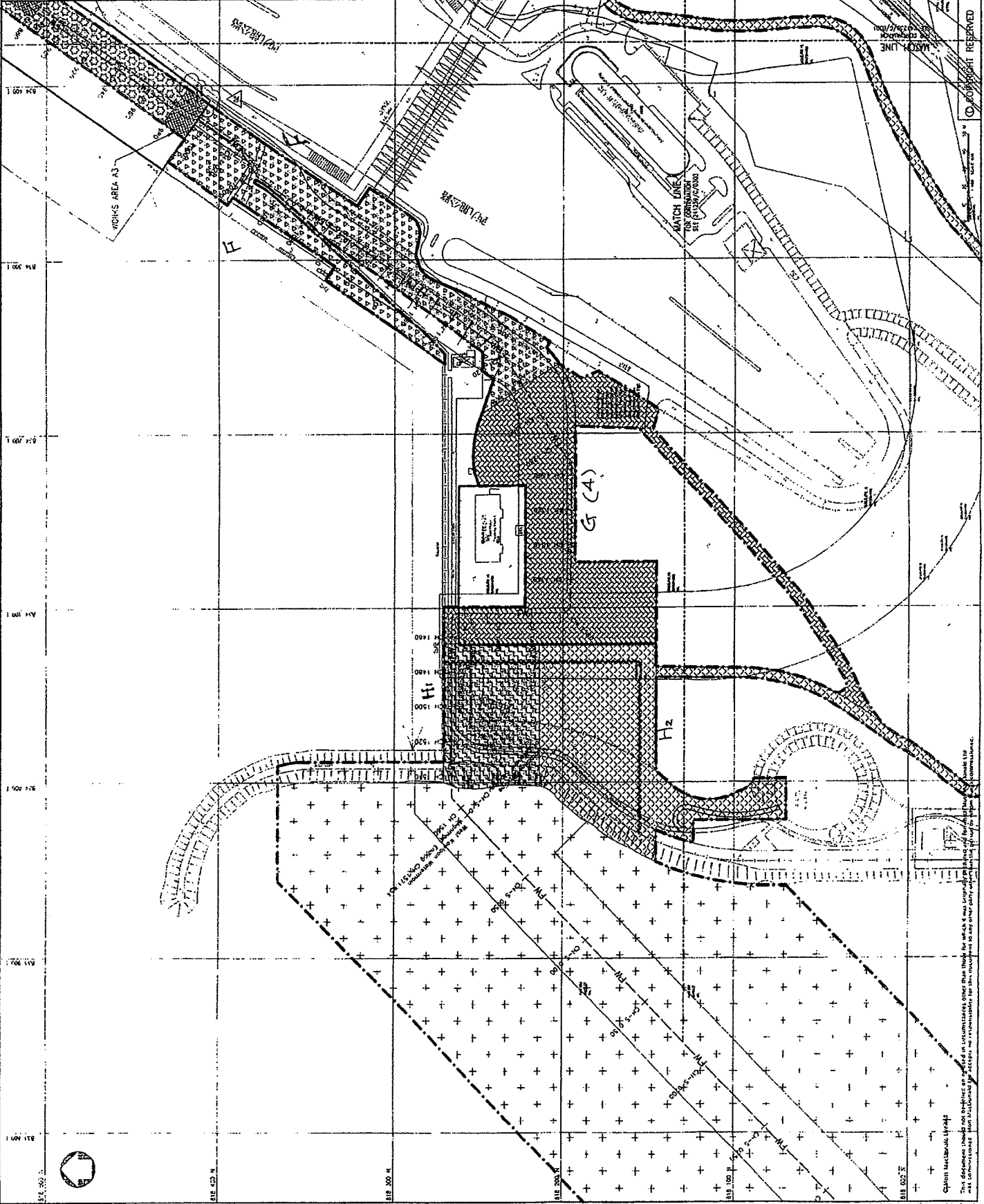
NOTES
 1. THE DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NO. 241239/03/01 AND 241239/03/02.
 2. THE LEGEND SHALL REFER TO DRAWING NO. 241239/03/01.

01	APR 09	4	REVISION ADDENDUM NO. 4	241239
02	MAR 09	3	REVISION ADDENDUM NO. 3	AL, B/C
03	DEC 08	2	ISSUE FOR TENDER	KL, B/C
04	DEC 08	1	ISSUE FOR TENDER	KL, B/C
05	DEC 08	0	ISSUE FOR TENDER	KL, B/C

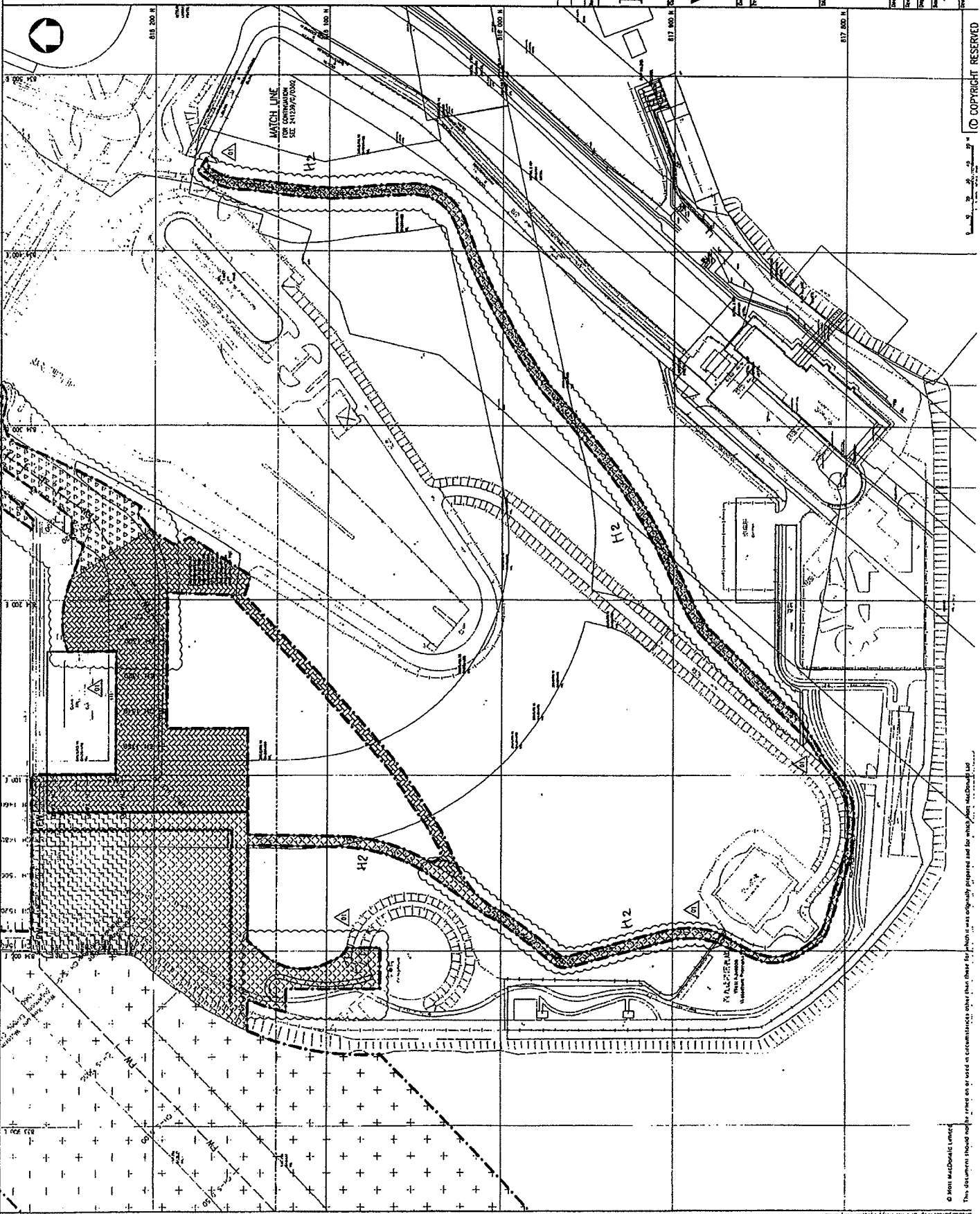
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THE GOVERNMENT OF THE HONG KONG
 SPECIAL ADMINISTRATIVE REGION
 WATER SUPPLIES DEPARTMENT

Project No.	9/NSD/08
Project Name	LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SAI YING PUN
Scale	1:1000 (0A1)
Sheet No.	10
Revision No.	02



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NOTES :

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

01	DATE OF	TENDER AND/OR NO. 3	21/1/12
02	DATE OF	PL. ISSUE FOR TENDER	21/1/12
03	DATE OF	PL. ISSUE FOR TENDER	21/1/12
04	DATE OF	PL. ISSUE FOR TENDER	21/1/12

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THE GOVERNMENT OF THE HONG KONG
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 WATER SUPPLIES DEPARTMENT

9/MSD/03
 LAYING OF WESTERN CROSS HARBOUR MAIN
 AND ASSOCIATED LAND MAINS FROM WEST
 KOWLOON TO SAI YING PUN

POSSESSION OF SITE
 (SHEET 3 OF 5)

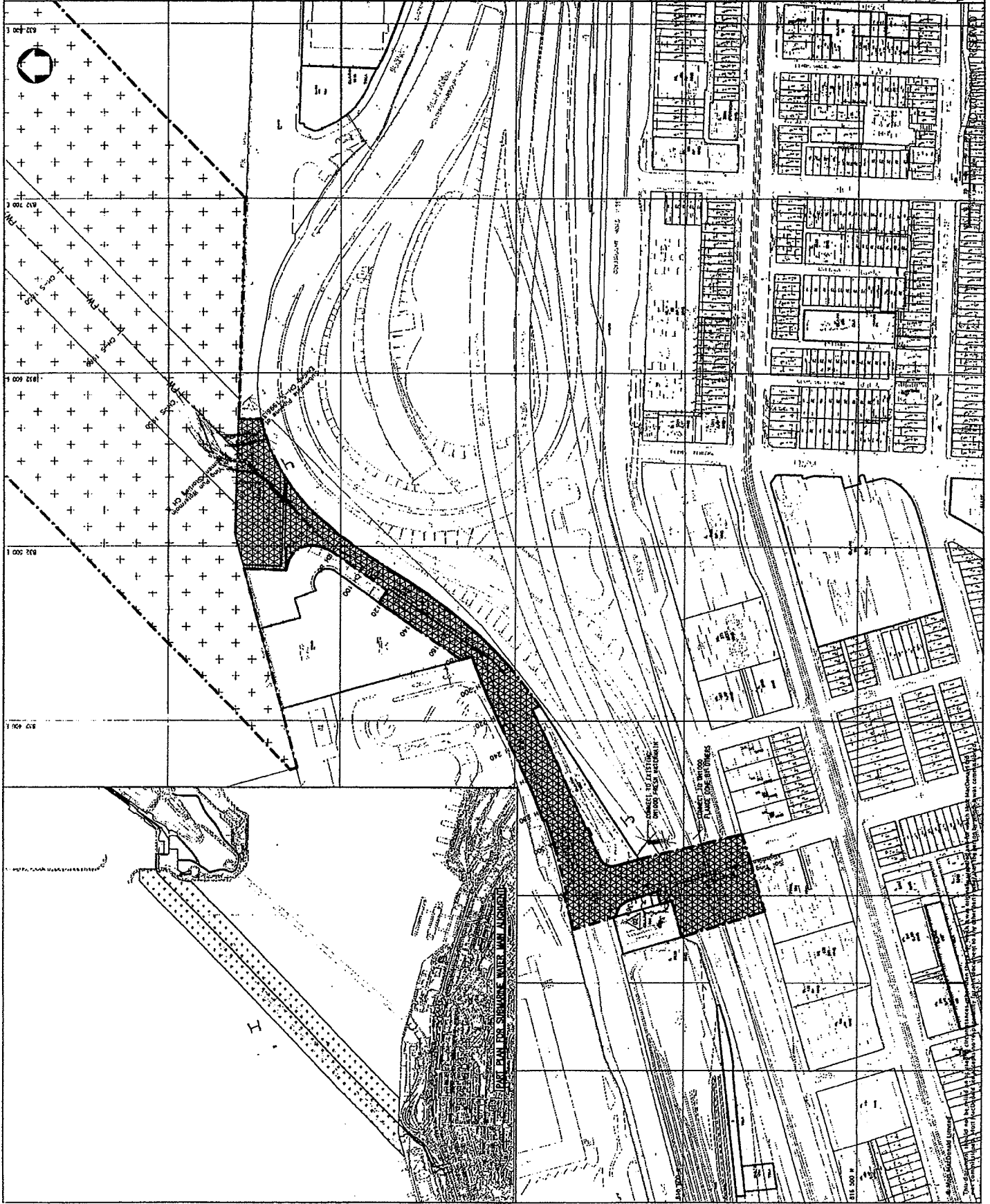
DESIGN	DATE	BY	CHK	APP
PLANNING	21/1/12	PL	PL	PL
ENGINEERING	21/1/12	EN	EN	EN
CONSTRUCTION	21/1/12	CC	CC	CC
INSPECTION	21/1/12	IN	IN	IN
REVISION	21/1/12	REV	REV	REV
SCALE	1:1000 @A1			
DATE	21/1/12			
PROJECT NO.	241239			
CONTRACT NO.	TEN			
DRAWING NO.	241239/0303			
SHEET NO.	01			

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



02	APR 08	PL	TRUCKER APPROVAL NO. 4	C-10/02
01	MAR 08	PL	TRUCKER APPROVAL NO. 3	02
00	DEC 07	PL	TRUCKER APPROVAL NO. 1	02
00	DEC 07	PL	TRUCKER APPROVAL NO. 2	02

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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 SHA TIN TUN

POSSESSION OF SITE
 (SHEET 4 OF 5)

Scale	1:1000	Sheet No.	01
Project No.	241239	Drawn By	PL
Checked By	PL	Approved By	PL
Issue No.	01	Date	02

NOTES

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 241239/G/0301 TO 0304
2. THE LEGEND SHALL REFER TO DRAWING NO. 241239/G/0301.

DATE	DESCRIPTION	BY	CHECKED
01 FEB 09	REVISION NO. 2	WJH	WJH
01 JAN 08	REVISION NO. 1	WJH	WJH
01 DEC 08	ISSUE FOR TENDER	WJH	WJH
01 DEC 08	ISSUE FOR DESIGN	WJH	WJH

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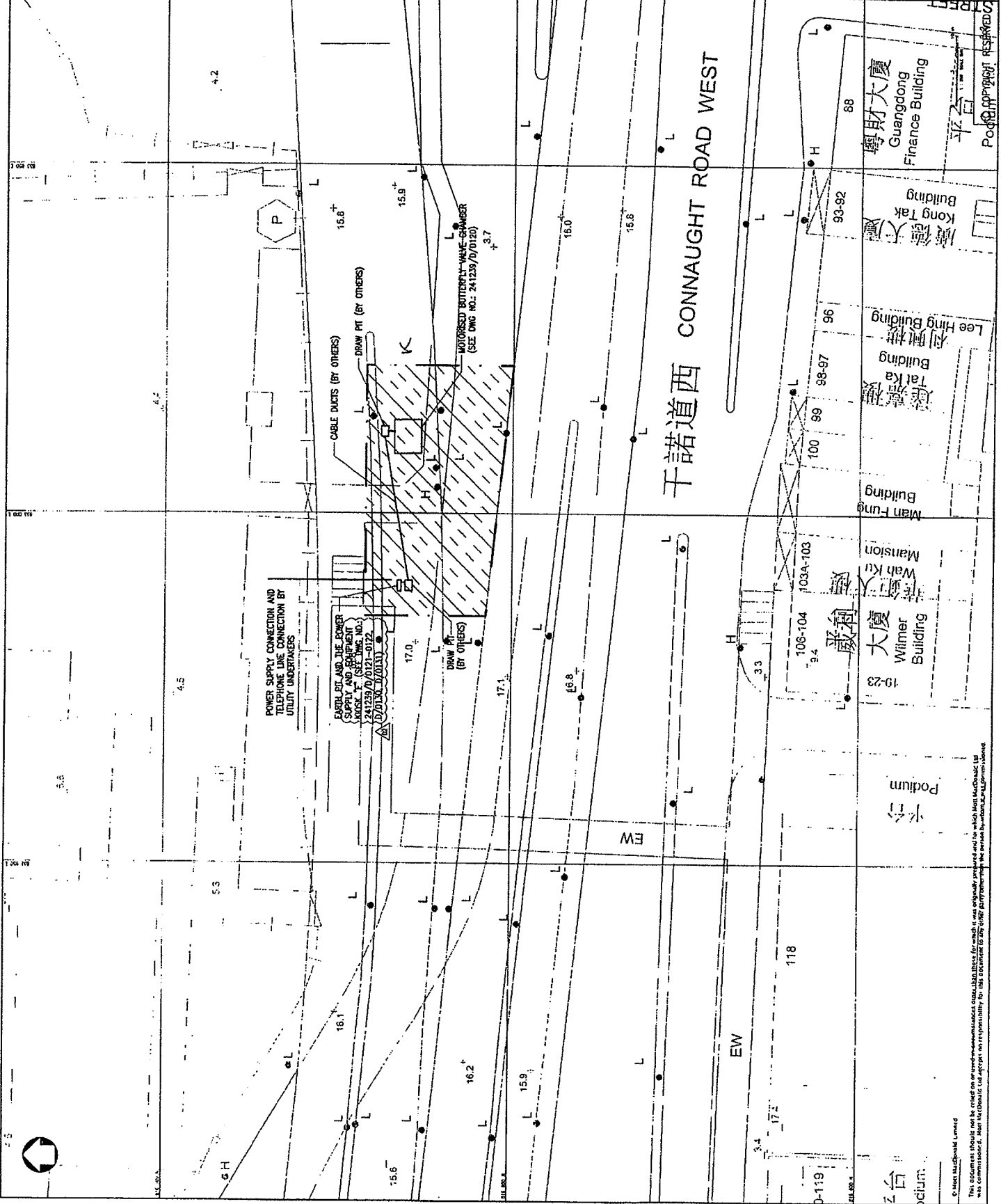
THE GOVERNMENT OF THE HONG KONG
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 WATER SUPPLIES DEPARTMENT

9/MSD/08

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

POSSESSION OF SITE
 (SHEET 5 OF 5)

Project No.	241239/G/0305
Sheet No.	02
Scale	AS SHOWN
Author	WJH
Checker	WJH
Designer	WJH
Engineer	WJH
Surveyor	WJH
Contract No.	1:250 0A1
Contract Name	241239
Contract Description	CONSTRUCTION OF WATER MAINS



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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)
September 2011

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
04-Sep	05-Sep	06-Sep	07-Sep	08-Sep	09-Sep	10-Sep
		WQM Mid-Ebb 08:00 - 12:00 Mid-Flood 13:30 - 17:30 SI	NM (SYP-Daytime)	WQM Mid-Ebb 08:30 - 12:30 Mid-Flood 14:00 - 18:00	NM (WK-Daytime)	WQM Mid-Flood 08:30 - 12:30 Mid-Ebb 14:00 - 18:00
11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep	17-Sep
NM Holiday (West Kowloon) (Sai Ying Pun)			NM (SYP-Daytime)	WQM Mid-Flood 07:00 - 11:00 Mid-Ebb 12:30 - 16:30 SI	NM (WK-Daytime)	WQM Mid-Flood 08:00 - 12:00 Mid-Ebb 13:00 - 17:00 NM Evening-time (West Kowloon) (Sai Ying Pun)
18-Sep	19-Sep	20-Sep	21-Sep	22-Sep	23-Sep	24-Sep
NM Holiday (West Kowloon) (Sai Ying Pun)		WQM Mid-Flood 11:00 - 15:00 Mid-Ebb 16:00 - 20:00 SI	NM (SYP-Daytime)	WQM Mid-Ebb 07:45 - 11:45 Mid-Flood 13:00 - 17:00	NM (WK-Daytime)	WQM Mid-Ebb 08:30 - 12:30 Mid-Flood 14:00 - 18:00 NM Evening-time (West Kowloon) (Sai Ying Pun)
25-Sep	26-Sep	27-Sep	28-Sep	29-Sep	30-Sep	
		WQM Mid-Ebb 09:30 - 13:30 Mid-Flood 15:15 - 19:15 SI	NM (SYP-Daytime)	WQM Cancelled due to bad weather (Typhoon Signal No.8)	NM (WK-Daytime) NM Evening-time (West Kowloon) (Sai Ying Pun)	

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)
October 2011

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



Appendix J

Daily Dredging Summary

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-Jul-2010	2,100	3	81,340	EP/MD/11-024
(18 July 2010)				
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	93,440	
04-Aug-2010	0	0	93,440	
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		

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/11-039	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					
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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

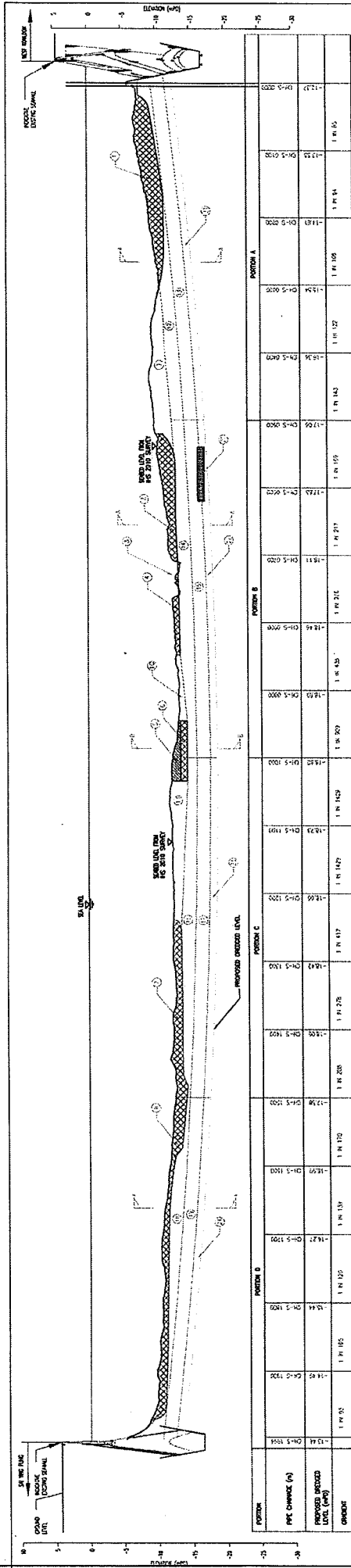
Wo Hing - Penta-Ocean Joint Venture					
Contract no. 9/WSD/08					
Laying of Western Cross Harbour Main & Associated Land Mains from					
West Kowloon to Sai Ying Pun					
Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)					
Date	Dumping 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

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)		
5-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
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			

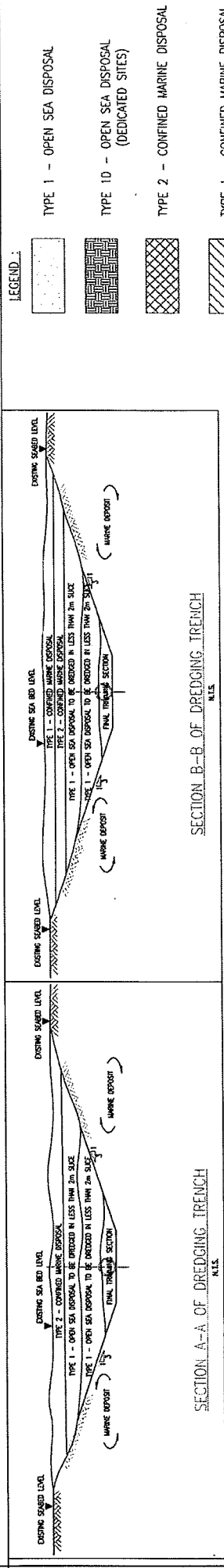
NOTE:

- LOGISTIC OF DREDGING
 STAGE 1 - TYPE 2 MARINE SEDIMENT
 ① -> ② -> ③ -> ④ -> ⑤ -> ⑥ -> ⑦ -> ⑧
 STAGE 2 - TYPE 1 MARINE SEDIMENT
 ⑨ -> ⑩ -> ⑪
 STAGE 3 - TYPE 1 MARINE SEDIMENT
 ⑫ -> ⑬ -> ⑭ -> ⑮ -> ⑯ -> ⑰ -> ⑱ -> ⑲ -> ⑳
 STAGE 4 - TYPE 10 MARINE SEDIMENT
 ㉑ -> ㉒ -> ㉓ -> ㉔ -> ㉕ -> ㉖ -> ㉗ -> ㉘ -> ㉙ -> ㉚
 STAGE 5 - TYPE 1 MARINE SEDIMENT
 ㉛ -> ㉜ -> ㉝ -> ㉞ -> ㉟ -> ㊱ -> ㊲ -> ㊳ -> ㊴ -> ㊵ -> ㊶ -> ㊷ -> ㊸ -> ㊹ -> ㊺

IF SIMILAR DISPOSAL SITE IS DEDICATED FOR TYPE 10 AND TYPE 1, MARINE SEDIMENT DREDGING LOGISTIC AT ㉑ WILL BE DELETED AND INCLUDED IN ⑮ AND ㉒



LONGITUDINAL SECTION OF DREDGING TRENCH



THE NUMBER INDICATE THE SEQUENCE OF DREDGING

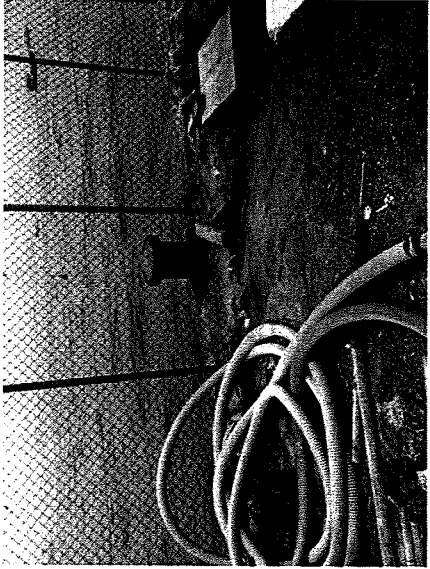
CONTRACTOR WO HING-PENTAOCEAN JOINT VENTURE 和興五洋聯營	CONTRACT NO. 91/WSD/08 Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun	DRAWING TITLE DREDGING LOGISTIC	DRAW BY TONY TANG	SCALE NTS
			CHECKED BY STANLEY LEUNG	DWG No. SK-D-002
DATE 08 Apr 2010			REVISION D	



Appendix K

Contractor's Follow up Actions to ET Weekly Site Inspections

Photo of Follow-up Action

 <p>Photo ref. 1</p>		



Appendix L

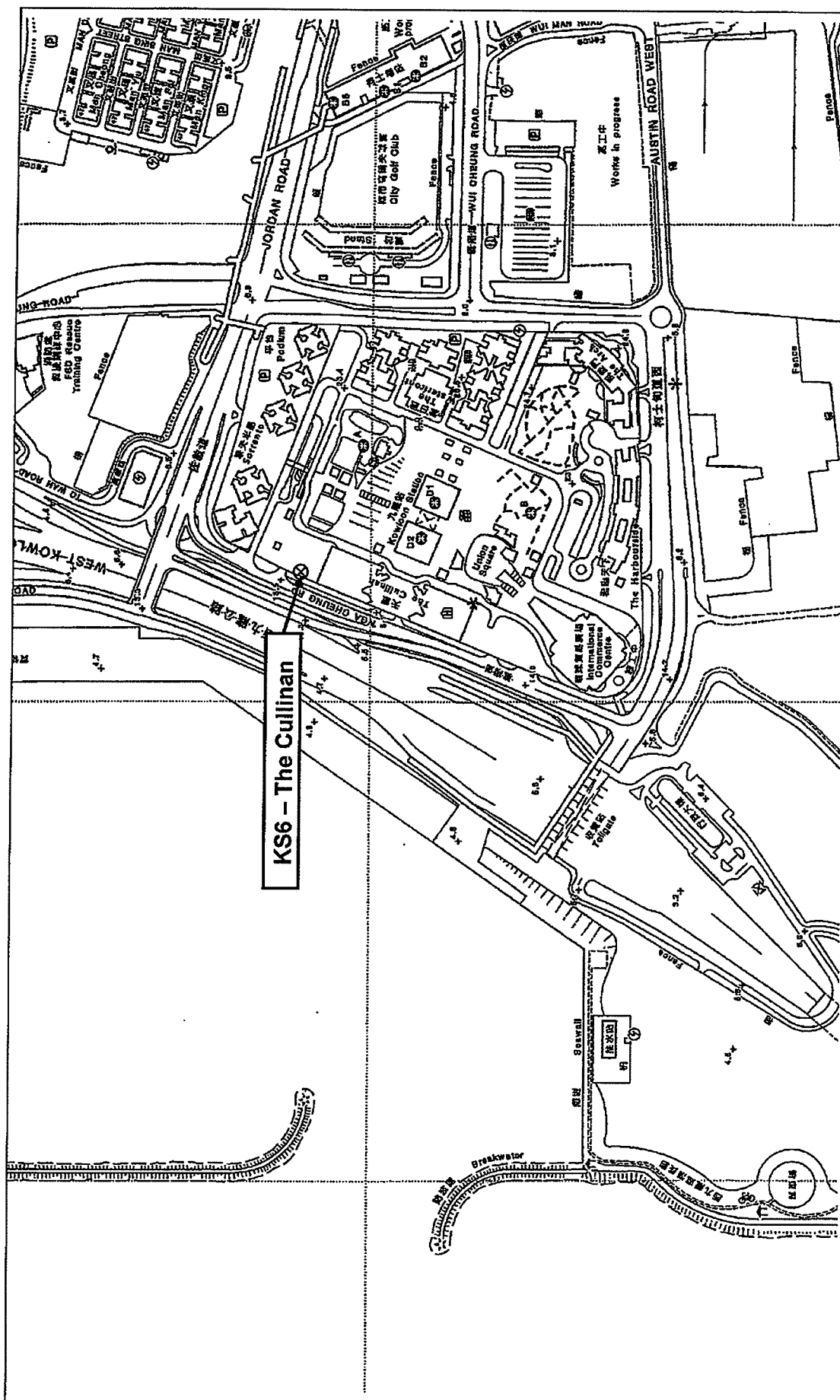
Complaint Log



Complaint Log

Log Ref.	Location	Received Date	Details of Complaint	Investigation / Mitigation Action	Status
001	Portion I – Launch Barge	08/07/2011	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.	<p><u>Details of ET Follow up Action(s):</u> 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.</p> <p><u>Details of Action(s) Taken by the Contractor:</u></p> <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. 	Closed

Figures



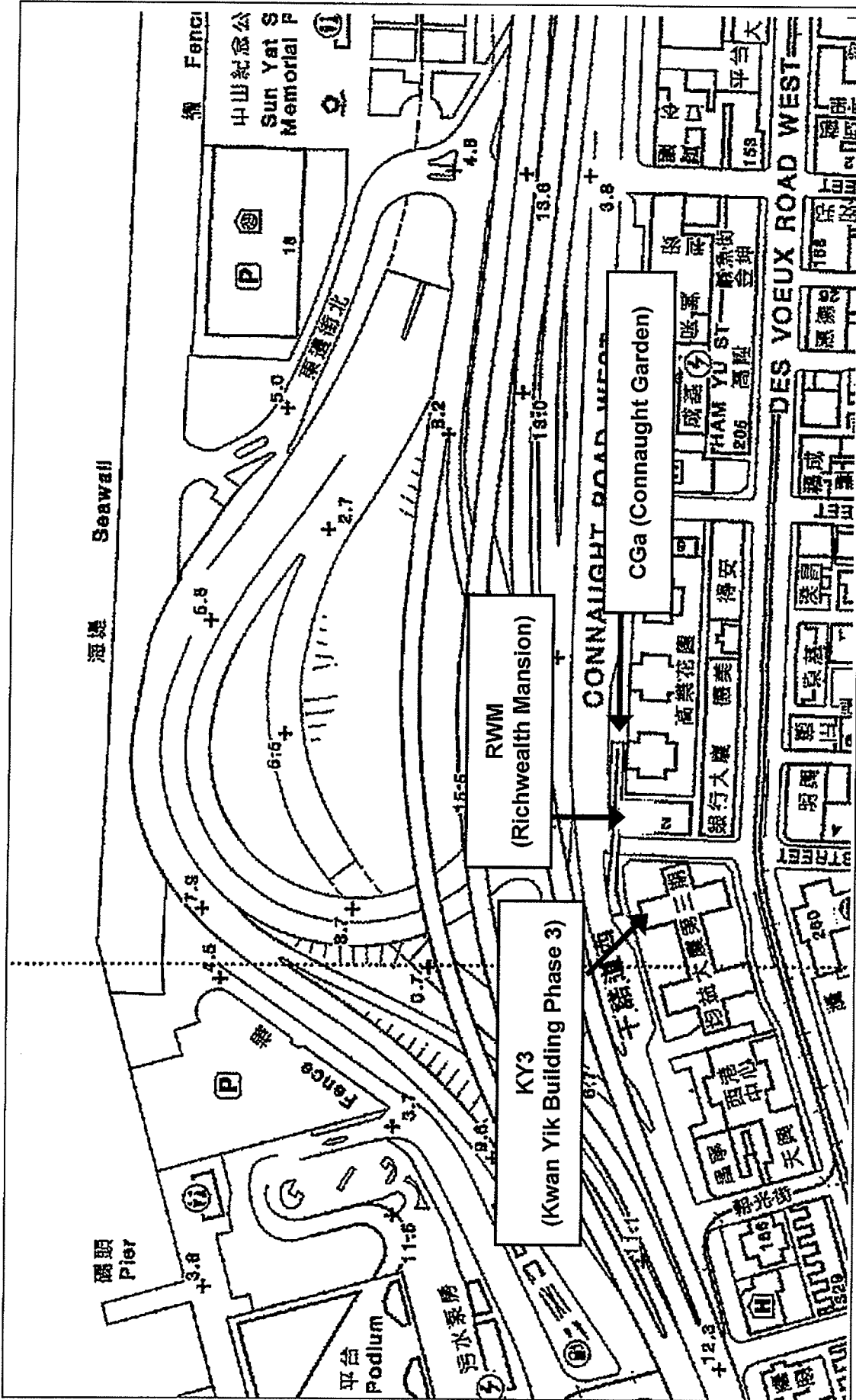
Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Mains for West Kowloon to Sai Ying Pun

Figure 1

Location of Noise Monitoring Station at West Kowloon



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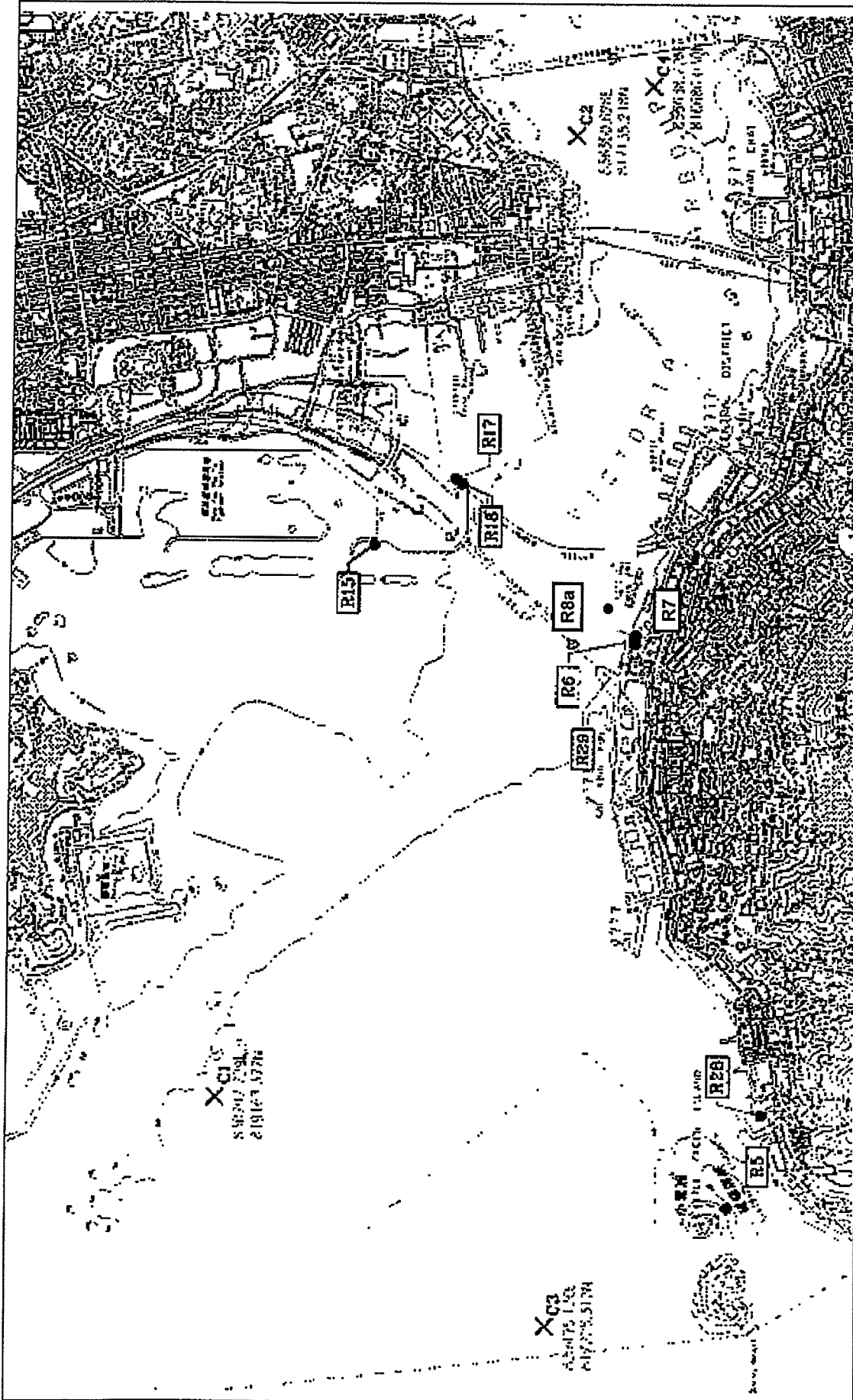
Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Mains for West Kowloon to Sai Ying Pun

Figure 2

Locations of Noise Monitoring Stations at Sai Ying Pun



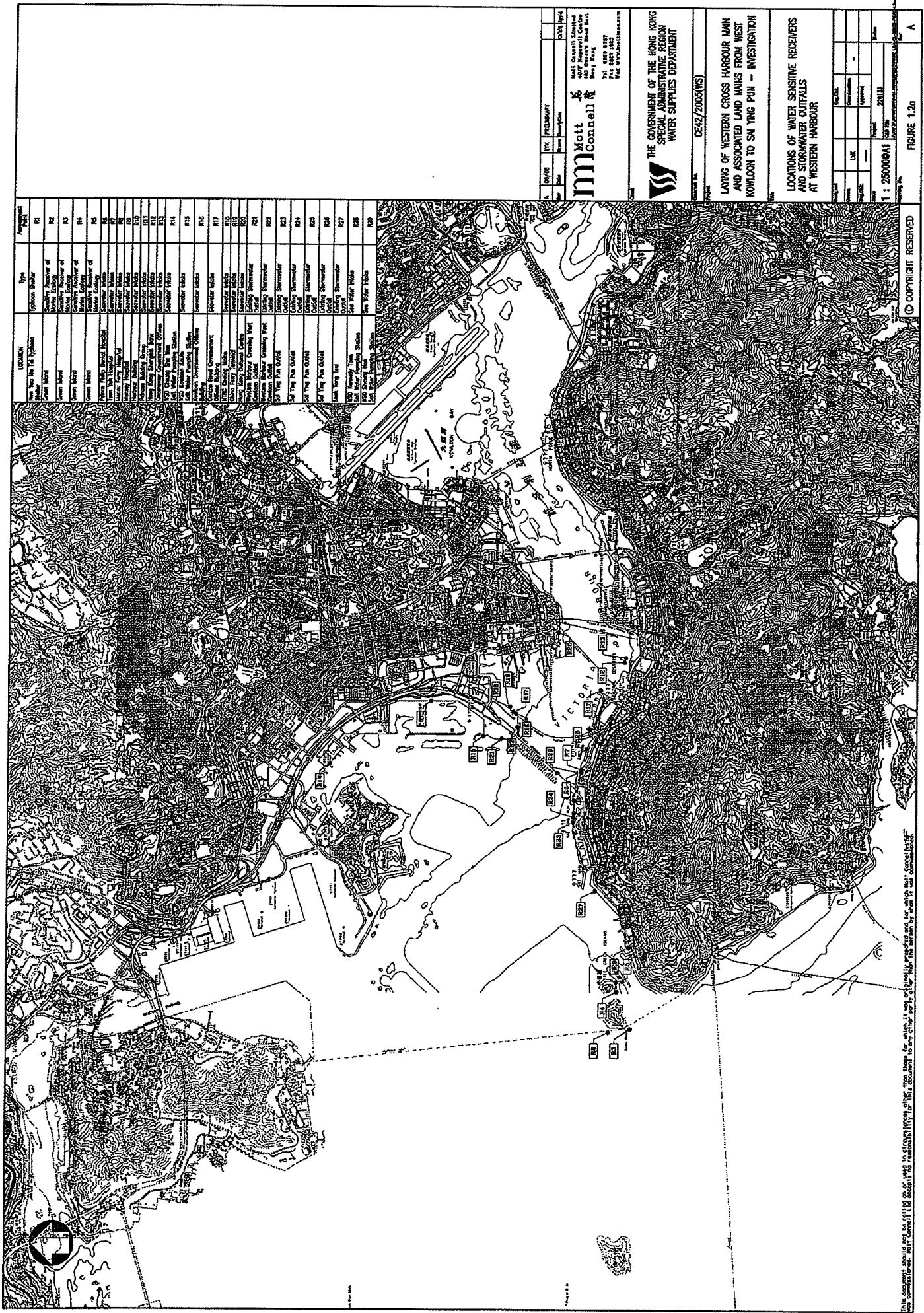
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Figure 3

Locations of Water Quality Monitoring Stations



Project	Location	Type
R1	Wai Yip Tin Typhoon Shelter	Typhoon Shelter
R2	Coaling Bay	Coaling Bay
R3	Coaling Bay	Coaling Bay
R4	Coaling Bay	Coaling Bay
R5	Coaling Bay	Coaling Bay
R6	Coaling Bay	Coaling Bay
R7	Coaling Bay	Coaling Bay
R8	Coaling Bay	Coaling Bay
R9	Coaling Bay	Coaling Bay
R10	Coaling Bay	Coaling Bay
R11	Coaling Bay	Coaling Bay
R12	Coaling Bay	Coaling Bay
R13	Coaling Bay	Coaling Bay
R14	Coaling Bay	Coaling Bay
R15	Coaling Bay	Coaling Bay
R16	Coaling Bay	Coaling Bay
R17	Coaling Bay	Coaling Bay
R18	Coaling Bay	Coaling Bay
R19	Coaling Bay	Coaling Bay
R20	Coaling Bay	Coaling Bay
R21	Coaling Bay	Coaling Bay
R22	Coaling Bay	Coaling Bay
R23	Coaling Bay	Coaling Bay
R24	Coaling Bay	Coaling Bay
R25	Coaling Bay	Coaling Bay
R26	Coaling Bay	Coaling Bay
R27	Coaling Bay	Coaling Bay
R28	Coaling Bay	Coaling Bay
R29	Coaling Bay	Coaling Bay
R30	Coaling Bay	Coaling Bay

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WATER SUPPLIES DEPARTMENT

CS2/2/2005(W/S)

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

LOCATIONS OF WATER SENSITIVE RECEIVERS AND STORMWATER CUTFALLS AT WESTERN HARBOUR

Scale	1 : 250000
Project No.	CS2/2/2005(W/S)
Sheet No.	2/113
Revision No.	1
Revision Description	
Author	
Checked	
Approved	
Date	

LEGEND:

- PROPOSED ROUTE OF 12004 FRESH WATER MAIN
- HOUSE SENSITIVE RECEIVERS
- 300m NOISE ASSESSMENT BOUNDARY
- NOISE AREA BOUNDARY

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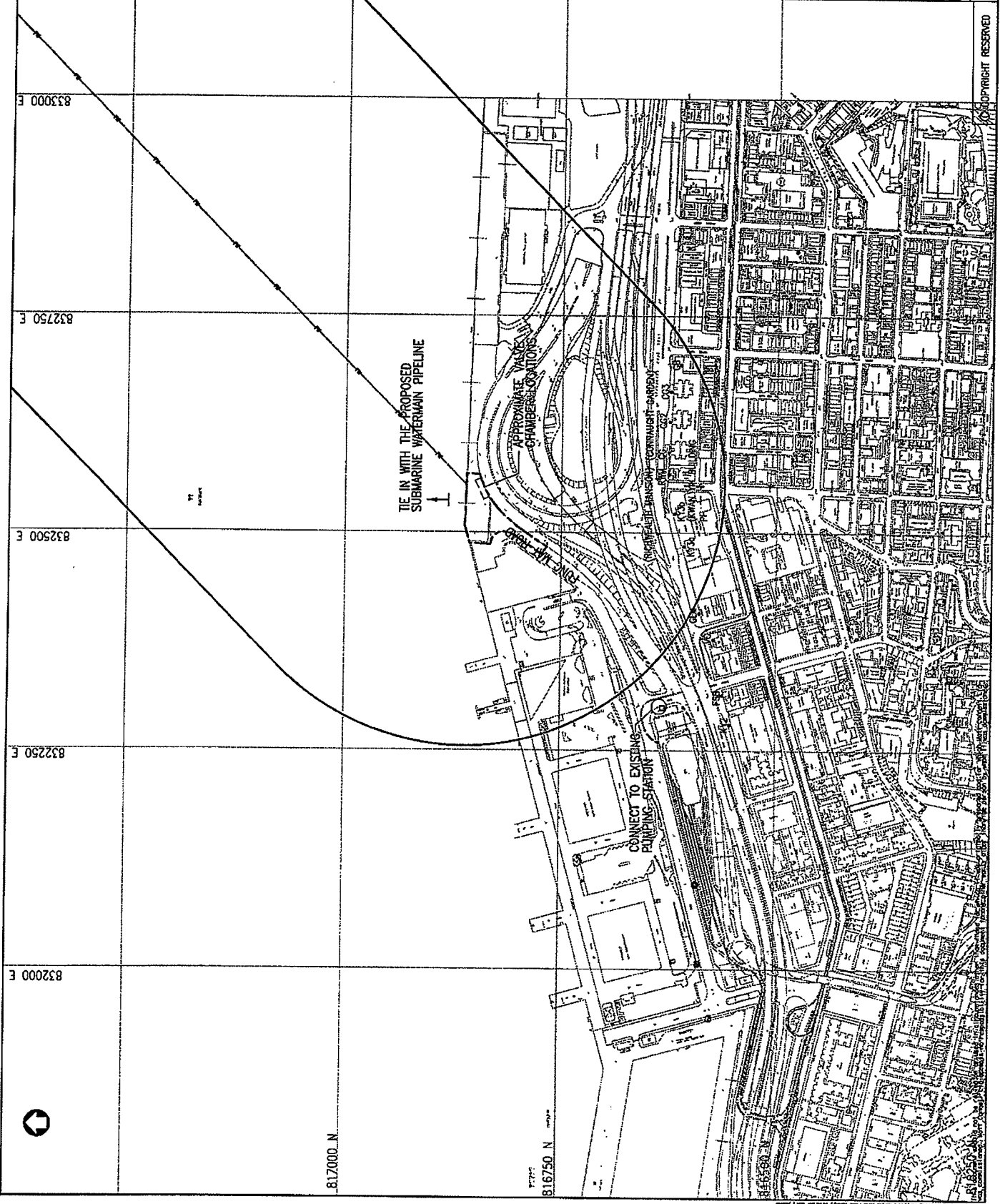
20th Floor, 200 Queen's Road East
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CE42/2008(V6)
 LAYING OF WESTERN CROSS HARBOUR MAIN
 AND ASSOCIATED LAND MAINS FROM WEST
 KOWLOON TO SHI YING PUN - INVESTIGATION

LOCATIONS OF HOUSE SENSITIVE
 RECEIVERS IN SHI YING PUN

Project No.	CE42/2008(V6)
Scale	1:20000
Date	11/08/2008
Sheet No.	A



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FIGURE 1.2b

LEGEND:

- PROPOSED ROUTE OF 12006
FRESH WATER MAIN
- HOSE SENSITIVE RECEIVERS
- TEMPORARY PLATFORM
- 300m HOSE ASSESSMENT
BOUNDARY
- WORKS AREA BOUNDARY

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DE/2/2006(W)

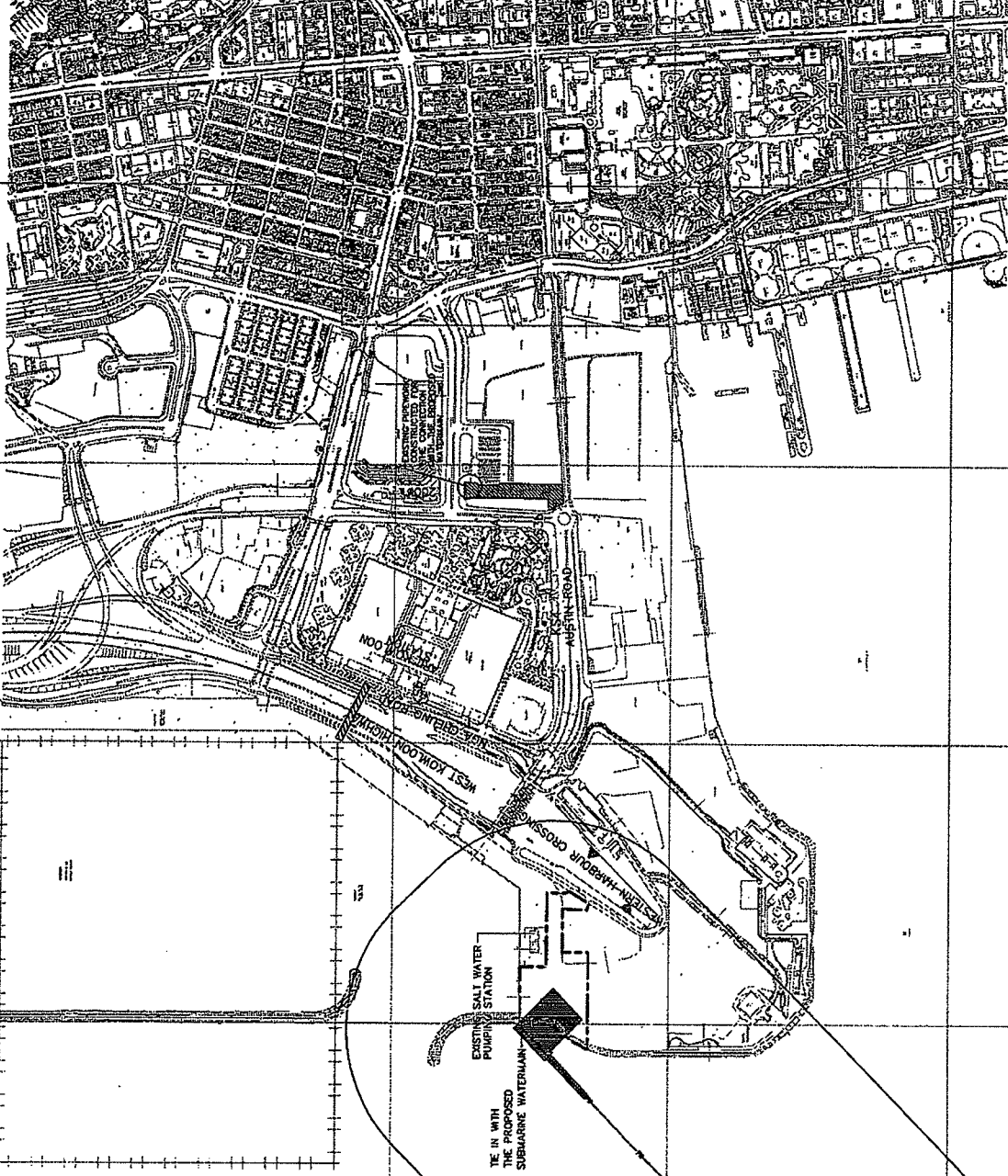
LAYING OF WESTERN CROSS HARBOUR MAIN
AND ASSOCIATED LAND MAINS FROM WEST
KOWLOON TO SHI YING FUN - INVESTIGATION

LOCATION OF HOSE SENSITIVE
RECEIVERS IN WEST KOWLOON

Project No.	1 : 40000/1
Scale	1 : 40000/1
Sheet No.	A
Revision	
Checked	
Approved	
Drawn	
Project	
Client	
Contract	
Reference	

FIGURE 12c

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