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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.16**

**(AUGUST 2011)**

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Report No.: ENA10874

**ENVIRON**

Ref.: WSDWHCMSEI00\_0\_0187L.11

6<sup>th</sup> Sep 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

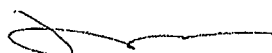
**Re: Contact No. 9/WSD/08  
Laying of Western Cross Harbour Main and Associated Land Mains from West  
Kowloon to Sai Ying Pun  
Monthly Environmental Monitoring and Audit Report No. 16**

Reference is made to Environment Team's submission of the Environmental Monitoring and Audit Report No. 16 by Email on 5<sup>th</sup> Sep 2011 (entitled "9/WSD/08 - Draft Monthly Report (Aug 11)") and the subsequent revision of the report by Email on 6<sup>th</sup> Sep 2011.

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

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

Yours sincerely,



David Yeung  
Independent Environmental Checker

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	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(W) 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.16 was prepared by ETS-Testconsult Ltd (ET) for the Project. This report documented the findings of EM&A Works conducted during the Project in August 2011.

### Site Activities

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

- Removal of turn roller A & B and back anchor (Portion J);
- Installation of the kentledge system of the dry well (Portion J);
- Tie-in works of the submarine pipe (Portion J);
- Installation of the strutting system of the cofferdam (Portion H1 & H2);
- Excavation within cofferdam (Portion H1 & H2);
- Fabrication of the riser spools (Portion H1 & H2); and
- Removal of the buoyance tanks (Portion I).

### Environmental Monitoring Progress

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

- Day-time Noise Monitoring (0700-1900 on normal weekday): 4 Occasions at KS6, CGa, RWM and KY3
- Evening-time Noise Monitoring (1900-2300): 1 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): 3 Occasions at KS6, CGa, RWM and KY3
- Marine Water Quality Monitoring: 13 Occasions at 9 monitoring stations and 4 control stations
- Weekly-site inspection: 5 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

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	02, 09, 17, 23 and 30 August 2011
Monthly Joint site inspection	17 August 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 August 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:

- Removal of turn roller A & B and back anchor (Portion J);
- Installation of the kentledge system of the dry well (Portion J);
- Tie-in works of the submarine pipe (Portion J);
- Installation of the strutting system of the cofferdam (Portion H1 & H2);



- Excavation within cofferdam (Portion H1 & H2);
- Fabrication of the riser spools (Portion H1 & H2); and
- Removal of the buoyance tanks (Portion I).

#### 4.0 IMPACT NOISE MONITORING

##### 4.1 Monitoring Requirements

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

##### 4.2 Monitoring Equipment

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

Table 4.1 Noise Monitoring Equipment

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

##### 4.3 Monitoring Parameters, Duration and Frequency

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

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

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

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

Table 4.2 Duration, Frequencies and Parameters of Noise Monitoring

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



#### 4.4 Monitoring Locations

In accordance with the EM&A Manual, the proposed noise monitoring station at the Harbourside (KS4) was cancelled since the owner of the Harbourside and nearby NSRs rejected to perform baseline and impact noise monitoring at their property. As a result, there was one noise monitoring location KS6 (The Cullinan) selected at West Kowloon to conduct impact environmental monitoring. At Sai Yung Pun, the location at the noise station CG (Connaught Garden) was unavailable for impact noise measurement because the building repairing and maintenance works was carrying out in the Connaught Garden and will be finished in June 2011. Hence, noise monitoring at noise station CG was moved to another noise station CGa (pavement in front of Connaught Garden) 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 4 occasions at KS6, CGa, RWM and KY3 of day-time noise monitoring, 1 occasion of evening-time noise monitoring at KS6, CGa, RWM and KY3, 0 occasion of night-time noise monitoring and 3 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	Time	KS6	
			Result	Exceed*
Day-time	04/08/11	16:10	62.8	X
	12/08/11	14:50	64.3	X
	19/08/11	15:45	63.5	X
	24/08/11	15:20	60.7	X
Evening-time	20/08/11	20:40	62.9	X
	20/08/11	20:45	63.3	X
	20/08/11	20:50	62.8	X
Holiday-time	07/08/11	14:40	63.3	X
	07/08/11	14:45	63.5	X
	07/08/11	14:50	63.6	X
	21/08/11	13:20	63.5	X
	21/08/11	13:25	62.8	X
	21/08/11	13:30	63.2	X
	28/08/11	14:35	64.1	X
	28/08/11	14:40	63.9	X
28/08/11	14:45	64.3	X	



Monitoring Parameter	Date	CGa		
		Time	Result	Exceed*
Day-time	01/08/11	14:25	70.7	X
	10/08/11	14:00	74.3	X
	15/08/11	14:30	74.1	X
	24/08/11	11:40	74.1	X
Evening-time	20/08/11	19:00	69.9	X
	20/08/11	19:05	69.6	X
	20/08/11	19:10	69.8	X
Holiday-time	07/08/11	16:45	69.8	X
	07/08/11	16:50	70.0	X
	07/08/11	16:55	69.9	X
	21/08/11	11:15	69.7	X
	21/08/11	11:20	69.4	X
	21/08/11	11:25	69.8	X
	28/08/11	13:35	70.0	X
	28/08/11	13:40	69.9	X
28/08/11	13:45	69.9	X	
Monitoring Parameter	Date	RWM		
		Time	Result	Exceed*
Day-time	01/08/11	15:00	61.3	X
	10/08/11	14:35	61.4	X
	15/08/11	15:05	60.3	X
	24/08/11	11:05	63.9	X
Evening-time	20/08/11	19:20	69.3	X
	20/08/11	19:25	69.0	X
	20/08/11	19:30	68.7	X
Holiday-time	07/08/11	16:20	61.2	X
	07/08/11	16:25	61.0	X
	07/08/11	16:30	61.4	X
	21/08/11	11:35	63.2	X
	21/08/11	11:40	63.4	X
	21/08/11	11:45	63.9	X
	28/08/11	13:15	62.4	X
	28/08/11	13:20	62.8	X
28/08/11	13:25	62.7	X	
Monitoring Parameter	Date	KY3		
		Time	Result	Exceed*
Day-time	01/08/11	15:35	62.0	X
	10/08/11	15:11	60.1	X
	15/08/11	15:40	59.9	X
	24/08/11	10:30	61.4	X
Evening-time	20/08/11	19:40	66.6	X
	20/08/11	19:45	67.1	X
	20/08/11	19:50	66.3	X
Holiday-time	07/08/11	16:00	60.5	X
	07/08/11	16:05	60.1	X
	07/08/11	16:10	60.0	X
	21/08/11	11:55	60.8	X
	21/08/11	12:00	61.3	X
	21/08/11	12:05	61.4	X
	28/08/11	12:55	60.3	X
	28/08/11	13:00	60.7	X
28/08/11	13:05	60.5	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 impact 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	
<i>Tidal stages</i>	<i>Water depth (m)</i>
<i>Dissolved Oxygen saturation (%)</i>	<i>Salinity (ppt)</i>
<i>Temperature (°C)</i>	<i>Weather Condition</i>

#### 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	26/09/11	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 <sup>th</sup> 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 &amp; 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 &amp; 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

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

August 2011						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
		▼		▼		▼
7	8	9	10	11	12	13
		▼		▼		▼
14	15	16	17	18	19	20
		▼		▼		▼
21	22	23	24	25	26	27
		▼		▼		▼
28	29	30	31			
		▼				

Remarks: (▼) = Marine water quality monitoring carried out by ET.



## 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 02, 09, 17, 23 and 30 August 2011 by ET. Monthly joint site inspection at 17 August 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 August 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	Standing water was observed at Portion H during the weekly site inspection on 02/08/11.	Standing water was removed (Photo Ref. 1, 2 and 3 of the Contractor Follow-up Action – 02/08/11)	During the subsequent weekly site inspection on 09/08/11, the standing water was cleaned up.	Closed
2	Water	Standing water was noted in the drip tray and somewhere of Portion H during the weekly site inspection on 17/08/11.	Standing water was drained away from the drip tray (Photo Ref. 1 and 2 of the Contractor Follow-up Action – 17/08/11)	During the subsequent weekly site inspection on 23/08/11, the standing water inside the drip tray and somewhere in Portion H was cleaned up.	Closed
3	Water	Water leakage from an air-conditioner was noted in contractor's site office during the weekly site inspection on 23/08/11.	A bucket was provided for collecting the water. (Photo Ref. 1 of the Contractor Follow-up Action – 23/08/11)	During the subsequent weekly site inspection on 30/08/11, a bucket was found provided for collecting the leaked water from the air conditioner.	Closed
4	Water	Standing water was noted at Portion J during the weekly site inspection on 30/08/11.	Standing water was removed (Photo Ref. 1 of the Contractor Follow-up Action – 30/08/11)	Since the finding was noted in the last weekly site inspection, it will be verified in the coming month.	Follow-up
5	Site Practice	Rubbish was found at Portion H during the weekly site inspection on 02/08/11.	Rubbish was removed (Photo Ref. 1, 2 and 3 of the Contractor Follow-up Action – 02/08/11)	During the subsequent weekly site inspection on 09/08/11, the standing water was cleaned up.	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
Water Discharge Licence (Sai Yung Pun)	WT00005800-2010	14/01/10	31/01/15	Effluent arising from the construction site through Sedimentation Tank
Chemical Waste Producer	5213-217-W3086-01	13/10/09	End of Project	Spent oil, surplus flammable liquid, surplus paint, soil, rags & containers contaminated with lubricating oil, diesel, flammable liquid & paint, & used batteries
Notification under APCO	Application had been submitted to EPD on 25/09/09 and approved from 29/09/09.			
Construction Noise Permit (West Kowloon)	GW-RE0257-11	19/04/11	04/10/11	<p><b>Group A</b></p> <p>One Air Compressor, air flow <math>\leq 10\text{m}^3/\text{min}</math> (CNP 001) (Zone A)</p> <p>One Crane, mobile (diesel) (CNP 048) (Zone A)</p> <p>One Generator, silenced, <math>\leq 75\text{dB(A)}</math> at 7m (Zone A)</p> <p>One Generator, standard (CNP 101) (Zone B)</p> <p><b>Group B</b></p> <p>One Concrete lorry mixer (CNP 044) (Zone A)</p> <p>One Crane, mobile (diesel) (CNP 048) (Zone A)</p> <p>One Air compressor, air flow <math>\leq 10\text{m}^3/\text{min}</math> (CNP 001) (Zone B)</p> <p>Two Crane, mobile (diesel) (CNP 048) (Zone B)</p> <p>One Derrick barge (CNP 061) (Zone B)</p> <p>Four Generator, silenced, <math>\leq 75\text{dB(A)}</math> at 7m (Zone B)</p> <p>Six Grinder, hand-held (electric) (CNP065) (Zone B)</p> <p>Two Guard boats (Zone B)</p> <p>Two Poker, vibratory, external (electric) (Zone B)</p> <p>One Tug boat (CNP 221) (Zone B)</p> <p><b>Group C</b></p> <p>One Generator, silenced, <math>\leq 75\text{dB(A)}</math> at 7m (Zone A)</p> <p>One Air compressor, air flow <math>\leq 10\text{m}^3/\text{min}</math> (CNP 001) (Zone B)</p> <p>One Grinder, hand-held (electric) (CNP065) (Zone B)</p> <p>One Generator, silenced, <math>\leq 75\text{dB(A)}</math> at 7m (Zone B)</p> <p><b>Group D</b></p> <p>One Derrick barge (CNP 061) (Zone B)</p> <p>One dredger, grab (CNP 063) (Zone B)</p> <p>One Generator, standard (CNP 101) (Zone B)</p> <p>Two Guard boats (Zone B)</p> <p>One Tug boat (CNP 221) (Zone B)</p>



Description	Permit No.	Valid Period		Remarks
		From	To	
Construction Noise Permit (Sai Ying Pun)	GW-RS0352- 11	26/04/11	10/10/11	<p><b>Group A</b> 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 <math>\leq 98\text{dB(A)}</math> One Generator, silenced, 108dB(A) (CNP 101) One Derrick barge (CNP 061)</p> <p><b>Group B</b> One Crane, mobile (diesel) (CNP 048) One Air compressor with Noise Emission Label showing a sound power level of <math>\leq 98\text{dB(A)}</math> One Generator, silenced, 108dB(A) (CNP 101)</p> <p><b>Group C</b> 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 <math>\leq 98\text{dB(A)}</math> Two Generator, silenced, 108dB(A) (CNP 101)</p> <p><b>Group D</b> 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 <math>\leq 98\text{dB(A)}</math> One Generator, silenced, 108dB(A) (CNP 101)</p> <p><b>Group E</b> 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><b>Group F</b> One Air compressor with Noise Emission Label showing a sound power level of <math>\leq 98\text{dB(A)}</math> One Generator, silenced, 108dB(A) (CNP 101)</p>

## 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 <sup>3</sup> )	645.71		14830.81
	Broken Concrete (in m <sup>3</sup> )	0	---	0
	Reused in the Contract (in m <sup>3</sup> )	0	---	0
	Reused in other Projects (in m <sup>3</sup> )	0	---	0
	Disposal as Public Fill (in m <sup>3</sup> )	645.71	SENT Landfill	14830.81
C&D Waste	Metals (in kg)	0	---	0
	Paper/Cardboard Packaging (in kg)	26	Collected by recycling company	143
	Plastics (in kg)	0	---	0
	Chemical Waste (in kg)	0	---	0
	Other, e.g. General Refuse (in m <sup>3</sup> )	4.75	SENT Landfill	90.21
Dredged Materials*	Type 1 (in m <sup>3</sup> )	0	East Ninepin Mud Disposal Ground	160500
	Type 2 (in m <sup>3</sup> )	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>August 2011</i>	<i>Cumulative</i>	<i>August 2011</i>	<i>Cumulative</i>	<i>August 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);
- Tie-in works at West Kowloon (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 using for this cleaning works as chemical waste; and
- To identify C&D material by packaging, labeling, storage, transportation and disposal in accordance with statutory regulations.

### 12.3 Monitoring Schedule for the Coming Month

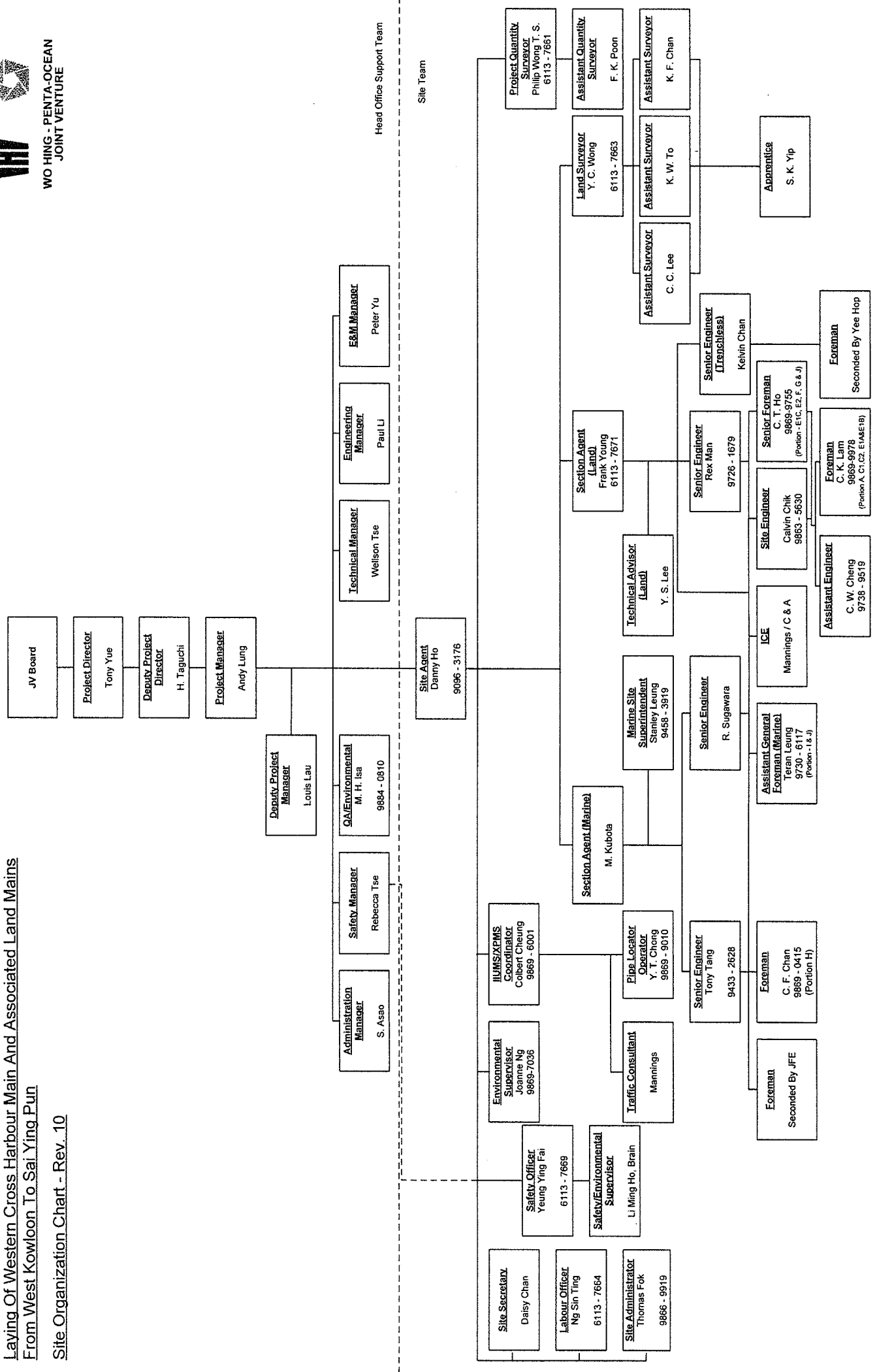
The proposed EM&A program of the coming month is attached in Appendix I.

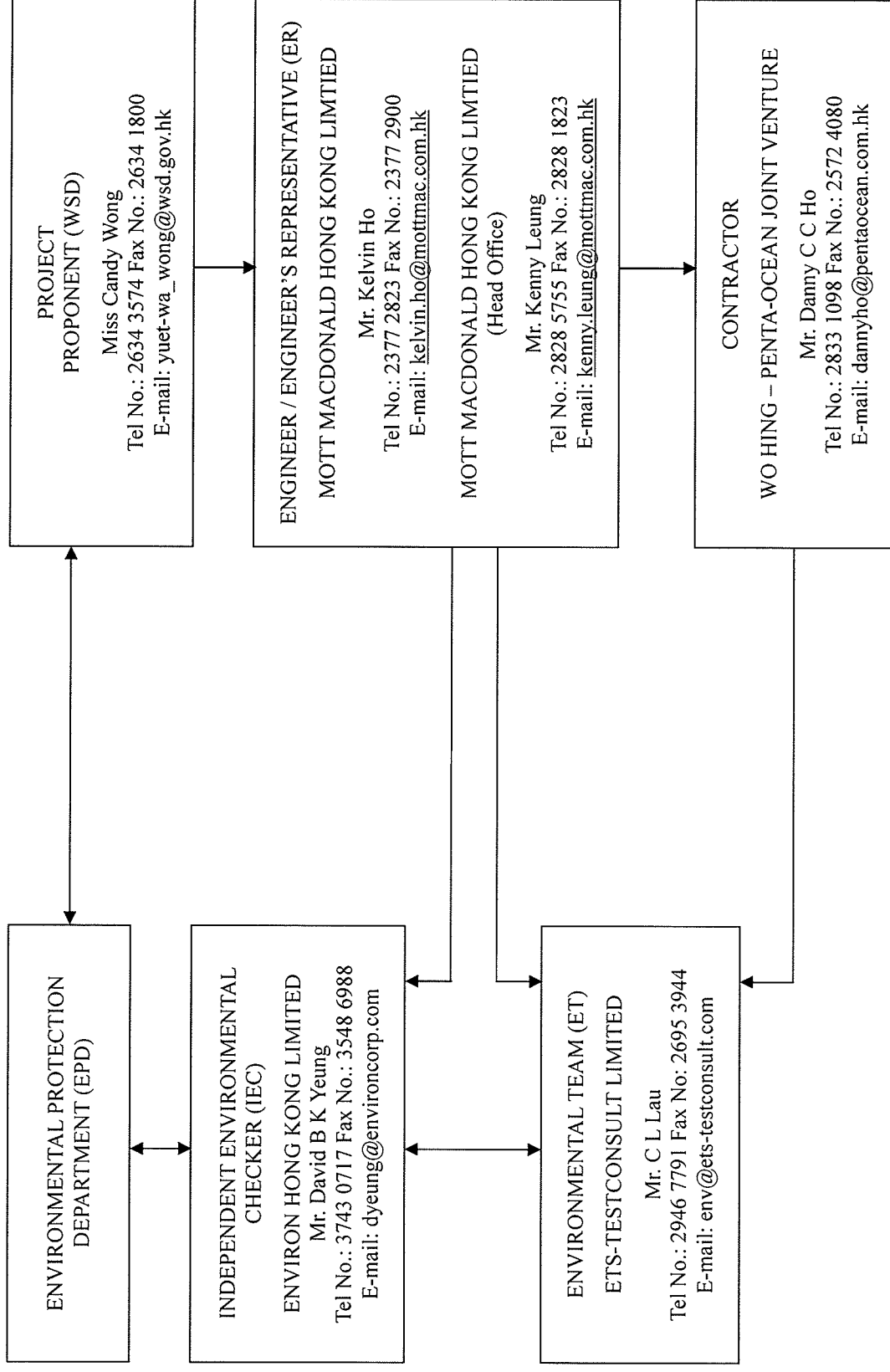
- END OF REPORT -



## **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

Date Dec 2009

Figure 1.3a



## **Appendix B1**

### **Calibration Certificates for Impact Noise Monitoring Equipment**



# Calibration Certificate

Certificate No. **12016**

Page 1 of 3 Pages

**Customer :** ETS-Testconsult Limited

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

**Order No. :** Q10853

**Date of receipt :** 11-Apr-11

## Item Tested

**Description :** Precision Integrating Sound Level Meter

**Manufacturer :** Rion

**Model :** NL-31

**Serial No. :** 00110024

## Test Conditions

**Date of Test :** 15-Apr-11

**Supply Voltage :** --

**Ambient Temperature :** (23 ± 3)°C

**Relative Humidity :** (50 ± 25) %

## Test Specifications

Calibration check.

Ref. Document/Procedure : Z01.

## Test Results

All results were within the IEC 651 Type 1 & IEC 804 Type 1 specification.  
The results are shown in the attached page(s).

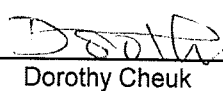
Main Test equipment used:

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

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

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

**Calibrated by :**   
P. F. Wong

**Approved by :**   
Dorothy Cheuk

**Date:** 18-Apr-11

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. 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 <sub>A</sub>	Fast	94.0	94.2
		Slow		94.2
	L <sub>C</sub> L <sub>p</sub>	Fast		94.2
		Fast		94.2
30 – 120	L <sub>A</sub>	Fast	94.0	94.1
		Slow		94.1
	L <sub>C</sub> L <sub>p</sub>	Fast		94.1
		Fast		94.2
30 – 120	L <sub>A</sub>	Fast	114.0	114.0
		Slow		114.0
	L <sub>C</sub> L <sub>p</sub>	Fast		114.0
		Fast		114.1

IEC 651 Type 1 Spec. :  $\pm 0.7$  dB

Uncertainty :  $\pm 0.2$  dB

## 2. Level Stability : 0.0 dB

IEC 651 Type 1 Spec. :  $\pm 0.3$  dB

Uncertainty :  $\pm 0.1$  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	$\pm 0.7$ 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 :  $\pm 0.1$  dB



# Calibration Certificate

Certificate No. 12016

Page 3 of 3 Pages

## 3.2 Differential level linearity

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

Uncertainty : ± 0.1 dB

## 4. Frequency Weighting

### A weighting

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

Uncertainty : ± 0.1 dB

## 5. Time Averaging

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

Uncertainty : ± 0.1 dB

Remark : 1. UUT : Unit-Under-Test

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

3. Atmospheric Pressure : 1 010 hPa.

----- END -----





# Calibration Certificate

Certificate No. 07049

Page 1 of 3 Pages

Customer : ETS-Testconsult Limited

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

Order No. : Q02790

Date of receipt : 7-Dec-10

## Item Tested

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

Manufacturer : Rion

Model : NL-31

Serial No. : 00773032

## Test Conditions

Date of Test : 8-Dec-10

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

## Test Specifications

Calibration check.

Ref. Document/Procedure : Z01.

## Test Results

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

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

Main Test equipment used:

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

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

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

Calibrated by : P.F. Wong

Approved by : Dorothy Cheuk

Date: 9-Dec-10



# Calibration Certificate

Certificate No. **07049**

Page 2 of 3 Pages

Results :

## 1. SPL Accuracy

UUT Setting			Applied Value (dB)	UUT Reading (dB)
Level Range (dB)	Weight	Response		
20 – 100	L <sub>A</sub>	Fast	94.0	93.9
		Slow		93.9
	L <sub>C</sub>	Fast		93.9
	L <sub>p</sub>	Fast		94.0
30 – 120	L <sub>A</sub>	Fast	94.0	93.9
		Slow		93.9
	L <sub>C</sub>	Fast		93.9
	L <sub>p</sub>	Fast		93.9
30 – 120	L <sub>A</sub>	Fast	114.0	113.7
		Slow		113.7
	L <sub>C</sub>	Fast		113.7
	L <sub>p</sub>	Fast		113.7

IEC 651 Type 1 Spec. :  $\pm 0.7$  dB

Uncertainty :  $\pm 0.1$  dB

## 2. Level Stability : 0.0 dB

IEC 651 Type 1 Spec. :  $\pm 0.3$  dB

Uncertainty :  $\pm 0.1$  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	$\pm 0.7$ 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 :  $\pm 0.1$  dB



# Calibration Certificate

Certificate No. **07049**

Page 3 of 3 Pages

## 3.2 Differential level linearity

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

Uncertainty : ± 0.1 dB

## 4. Frequency Weighting

A weighting

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

Uncertainty : ± 0.1 dB

## 5. Time Averaging

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

Uncertainty : ± 0.1 dB

Remark : 1. UUT : Unit-Under-Test

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

3. Atmospheric Pressure : 1 008 hPa.

----- END -----



# Calibration Certificate

Certificate No. **05083**

Page 1 of 3 Pages

**Customer :** ETS-Testconsult Limited

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

**Order No. :** Q02020

**Date of receipt :** 8-Sep-10

## Item Tested

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

**Manufacturer :** Rion

**Model :** NL-31

**Serial No. :** 00593620

## Test Conditions

**Date of Test :** 14-Sep-10

**Supply Voltage :** --

**Ambient Temperature :** (23 ± 3)°C

**Relative Humidity :** (50 ± 25) %

## Test Specifications

Calibration check.

Ref. Document/Procedure : Z01.

## Test Results

All results were within the IEC 651 Type 1 & IEC 804 Type 1 specification.  
The results are shown in the attached page(s).

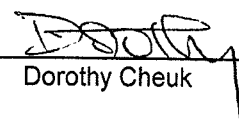
Main Test equipment used:

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

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

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

**Calibrated by :**   
P. F. Wong

**Approved by :**   
Dorothy Cheuk

**Date:** 14-Sep-10



# Calibration Certificate

Certificate No. **05083**

Page 2 of 3 Pages

Results :

## 1. SPL Accuracy

UUT Setting			Applied Value (dB)	UUT Reading (dB)
Level Range (dB)	Weight	Response		
20 – 100	L <sub>A</sub>	Fast	94.0	93.7
		Slow		93.7
	L <sub>C</sub>	Fast		93.7
	L <sub>p</sub>	Fast		93.8
30 – 120	L <sub>A</sub>	Fast	94.0	93.7
		Slow		93.7
	L <sub>C</sub>	Fast		93.7
	L <sub>p</sub>	Fast		93.7
30 – 120	L <sub>A</sub>	Fast	114.0	113.5
		Slow		113.5
	L <sub>C</sub>	Fast		113.5
	L <sub>p</sub>	Fast		113.5

IEC 651 Type 1 Spec. :  $\pm 0.7$  dB

Uncertainty :  $\pm 0.1$  dB

## 2. Level Stability : 0.1 dB

IEC 651 Type 1 Spec. :  $\pm 0.3$  dB

Uncertainty :  $\pm 0.1$  dB

## 3. Linearity

### 3.1 Level Linearity

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

Uncertainty :  $\pm 0.1$  dB



# Calibration Certificate

Certificate No. **05083**

Page 3 of 3 Pages

## 3.2 Differential level linearity

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

Uncertainty : ± 0.1 dB

## 4. Frequency Weighting

A weighting

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

Uncertainty : ± 0.1 dB

## 5. Time Averaging

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

Uncertainty : ± 0.1 dB

Remark : 1. UUT : Unit-Under-Test

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

3. Atmospheric Pressure : 1 004 hPa.

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

----- END -----



# Calibration Certificate

Certificate No. **06467**

Page 1 of 2 Pages

**Customer :** ETS-Testconsult Limited

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

**Order No. :** Q02516

**Date of receipt :** 8-Nov-10

## Item Tested

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

**Manufacturer :** Rion

**Model :** NC-73

**Serial No. :** 10196943

## Test Conditions

**Date of Test :** 12-Nov-10

**Supply Voltage :** --

**Ambient Temperature :**  $(23 \pm 3)^{\circ}\text{C}$

**Relative Humidity :**  $(50 \pm 25) \%$

## 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).

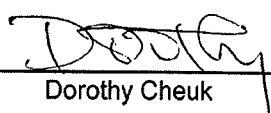
Main Test equipment used:

<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



# 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	$\pm 1$ dB

Uncertainty :  $\pm 0.1$  dB

## 2. Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's Spec.
1 kHz	0.988 kHz	$\pm 2$ %

Uncertainty :  $\pm 0.1$  %

## 3. Level Stability : 0.0 dB

Uncertainty :  $\pm 0.01$  dB

## 4. Total Harmonic Distortion : $< 0.3$ %

Mfr's Spec. :  $< 3$  %

Uncertainty :  $\pm 2.3$  % 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 :**  $(23 \pm 3)^{\circ}\text{C}$

**Relative Humidity :**  $(50 \pm 25) \%$

## 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	
04/08/11	Fine	16:10	16:40	62.8	63.9	61.6	1.6
12/08/11	Sunny	14:50	15:20	64.3	66.7	61.5	0.2
19/08/11	Sunny	15:45	16:15	63.5	65.6	59.3	0.2
24/08/11	Sunny	15:20	15:50	60.7	63.2	58.4	0.3

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

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
01/08/11	Sunny	14:25	14:55	70.7	72.4	67.5	0.9
10/08/11	Cloudy	14:00	14:30	74.3	76.8	67.9	0.3
15/08/11	Fine	14:30	15:00	74.1	76.2	68.1	0.3
24/08/11	Sunny	11:40	12:10	74.1	76.8	68.9	0.3

### 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	
01/08/11	Sunny	15:00	15:30	61.3	62.5	57.4	1.4
10/08/11	Cloudy	14:35	15:05	61.4	63.3	58.4	0.6
15/08/11	Fine	15:05	15:35	60.3	62.2	58.3	0.4
24/08/11	Sunny	11:05	11:35	63.9	65.5	61.8	0.4

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

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
01/08/11	Sunny	15:35	16:05	62.0	62.9	58.1	1.5
10/08/11	Cloudy	15:11	15:41	60.1	62.7	57.0	0.5
15/08/11	Fine	15:40	16:10	59.9	61.8	57.0	0.4
24/08/11	Sunny	10:30	11:00	61.4	63.2	59.8	0.4



## Evening-time Noise Monitoring

### Monitoring Station: KS6 (Podium at the Culliman)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
20/08/11	Fine	20:40	20:45	62.9	64.3	59.5	0.5
20/08/11	Fine	20:45	20:50	63.3	64.7	59.9	0.5
20/08/11	Fine	20:50	20:55	62.8	64.1	59.2	0.5

### 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	
20/08/11	Fine	19:00	19:05	69.9	73.9	64.5	0.3
20/08/11	Fine	19:05	19:10	69.6	73.5	64.3	0.3
20/08/11	Fine	19:10	19:15	69.8	73.7	64.7	0.3

### 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	
20/08/11	Fine	19:20	19:25	69.3	72.7	61.8	0.2
20/08/11	Fine	19:25	19:30	69.0	72.2	62.1	0.2
20/08/11	Fine	19:30	19:35	68.7	71.8	61.4	0.2

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

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
20/08/11	Fine	19:40	19:45	66.6	69.7	60.3	0.2
20/08/11	Fine	19:45	19:50	67.1	70.0	60.8	0.2
20/08/11	Fine	19:50	19:55	66.3	69.6	59.9	0.2



## 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	
07/08/11	Sunny	14:40	14:45	63.3	65.0	62.1	0.1
07/08/11	Sunny	14:45	14:50	63.5	65.4	62.3	0.1
07/08/11	Sunny	14:50	14:55	63.6	65.5	62.3	0.1
21/08/11	Cloudy	13:20	13:25	63.5	65.4	61.4	0.6
21/08/11	Cloudy	13:25	13:30	62.8	64.7	60.6	0.6
21/08/11	Cloudy	13:30	13:35	63.2	65.1	61.1	0.6
28/08/11	Fine	14:35	14:40	64.1	65.5	62.6	0.5
28/08/11	Fine	14:40	14:45	63.9	65.1	62.1	0.5
28/08/11	Fine	14:45	14:50	64.3	65.7	62.6	0.5

### 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	
07/08/11	Sunny	16:45	16:50	69.8	73.0	61.8	0.1
07/08/11	Sunny	16:50	16:55	70.0	73.4	61.9	0.1
07/08/11	Sunny	16:55	17:00	69.9	73.1	61.8	0.1
21/08/11	Cloudy	11:15	11:20	69.7	72.8	63.6	0.4
21/08/11	Cloudy	11:20	11:25	69.4	72.4	63.2	0.4
21/08/11	Cloudy	11:25	11:30	69.8	73.1	63.8	0.4
28/08/11	Fine	13:35	13:40	70.0	72.1	67.2	0.2
28/08/11	Fine	13:40	13:45	69.9	71.8	67.0	0.2
28/08/11	Fine	13:45	13:50	69.9	71.9	67.1	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	
07/08/11	Sunny	16:20	16:25	61.2	62.5	59.6	0.1
07/08/11	Sunny	16:25	16:30	61.0	62.2	59.5	0.1
07/08/11	Sunny	16:30	16:35	61.4	62.4	59.7	0.1
21/08/11	Cloudy	11:35	11:40	63.2	64.6	59.7	0.5
21/08/11	Cloudy	11:40	11:45	63.4	64.9	59.9	0.5
21/08/11	Cloudy	11:45	11:50	63.9	65.3	60.3	0.5
28/08/11	Fine	13:15	13:20	62.4	64.3	61.2	0.3
28/08/11	Fine	13:20	13:25	62.8	65.0	61.7	0.3
28/08/11	Fine	13:25	13:30	62.7	64.8	61.5	0.3

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

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
07/08/11	Sunny	16:00	16:05	60.5	61.3	58.8	0.1
07/08/11	Sunny	16:05	16:10	60.1	61.1	59.0	0.1
07/08/11	Sunny	16:10	16:15	60.0	61.1	58.9	0.1
21/08/11	Cloudy	11:55	12:00	60.8	63.2	56.7	0.5
21/08/11	Cloudy	12:00	12:05	61.3	63.6	57.1	0.5
21/08/11	Cloudy	12:05	12:10	61.4	63.8	57.3	0.5
28/08/11	Fine	12:55	13:00	60.3	62.1	58.7	0.5
28/08/11	Fine	13:00	13:05	60.7	62.4	58.9	0.5
28/08/11	Fine	13:05	13:10	60.5	62.1	58.9	0.5



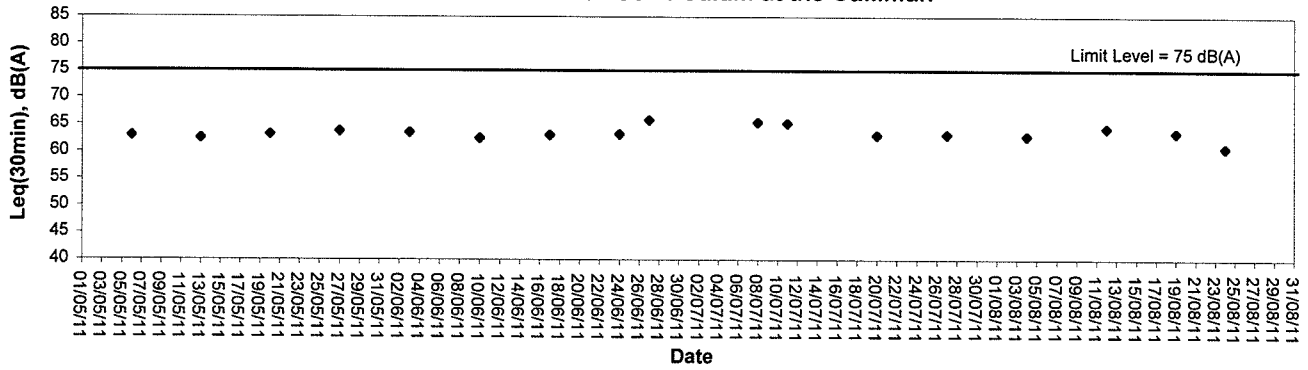
## **Appendix B3**

### **Graphical Plots of Impact Noise Monitoring Data**

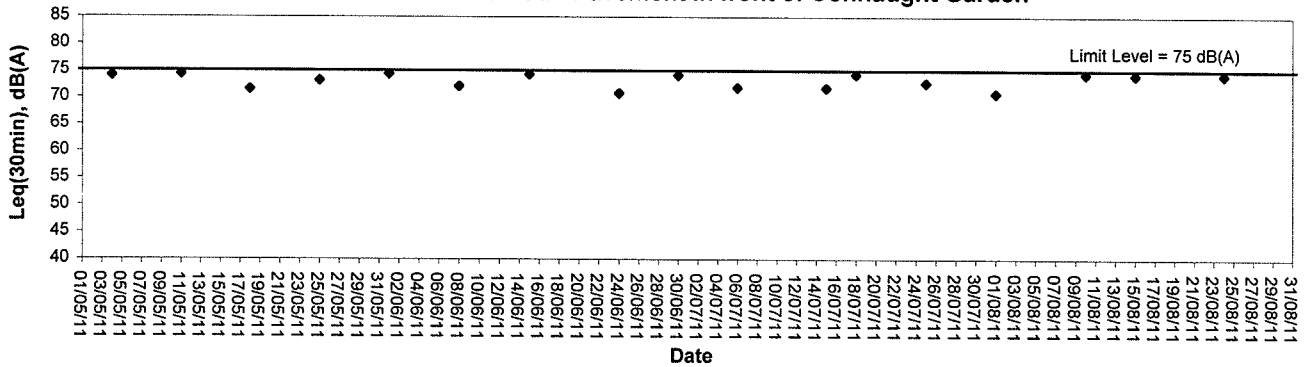


### Noise Monitoring (Day-time)

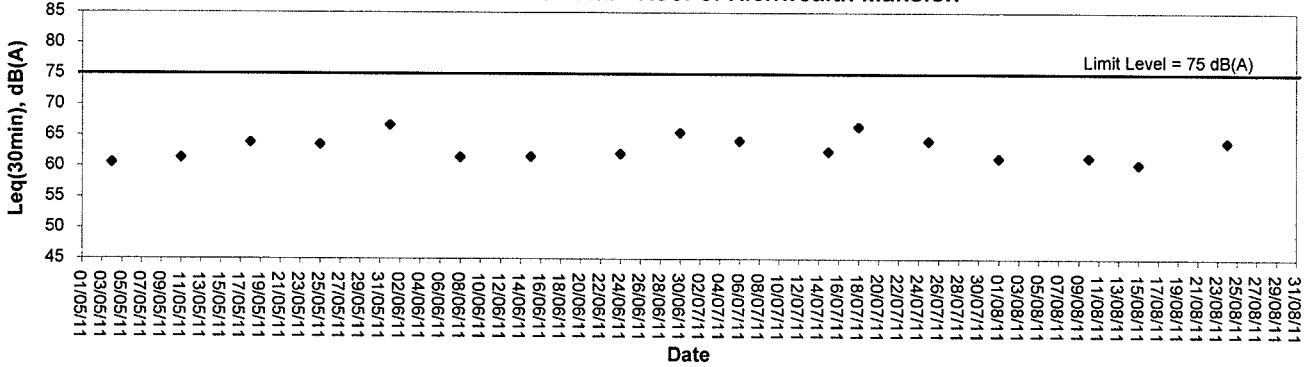
Noise level at KS6 - Podium at the Culliman



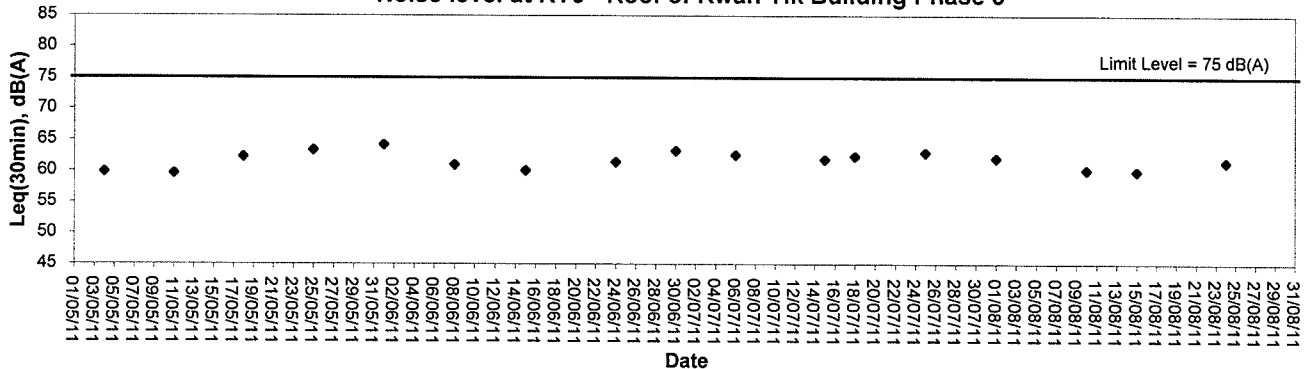
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



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

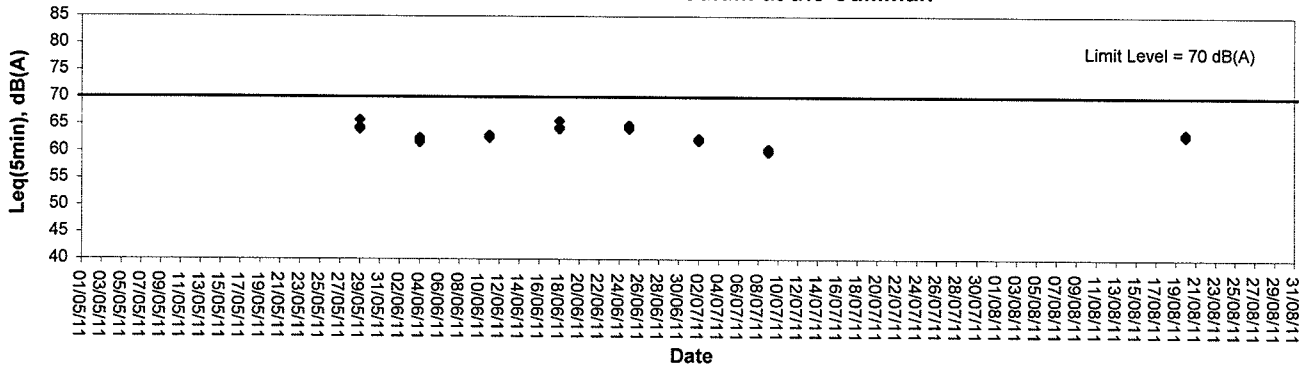




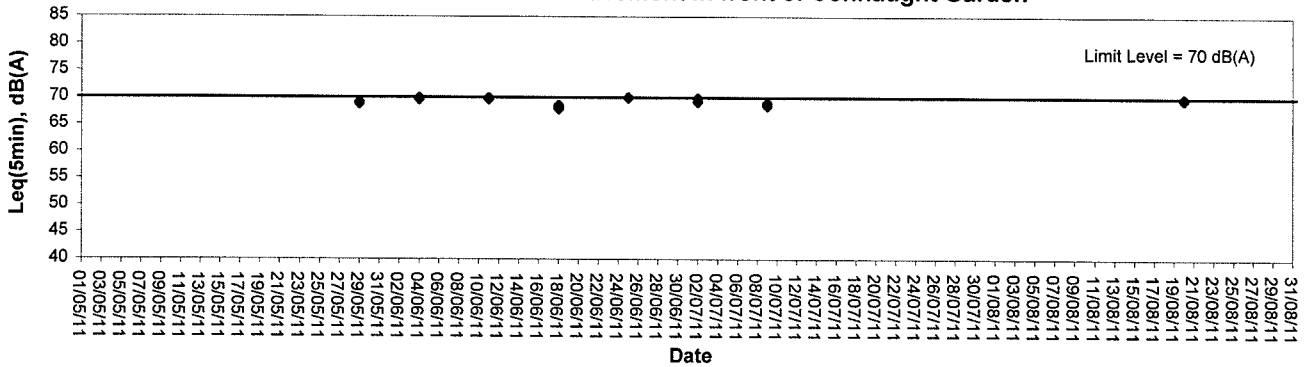


## Noise Monitoring (Evening-time)

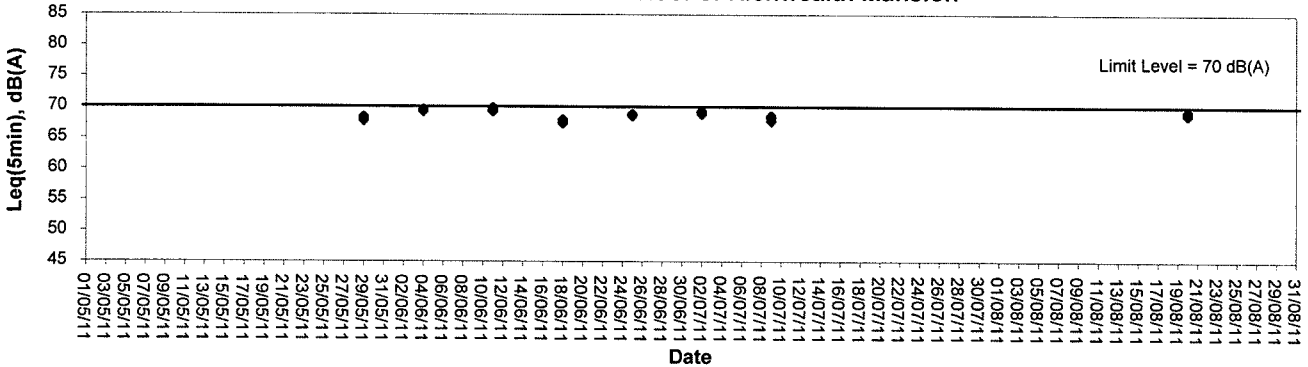
Noise level at KS6 - Podium at the Culliman



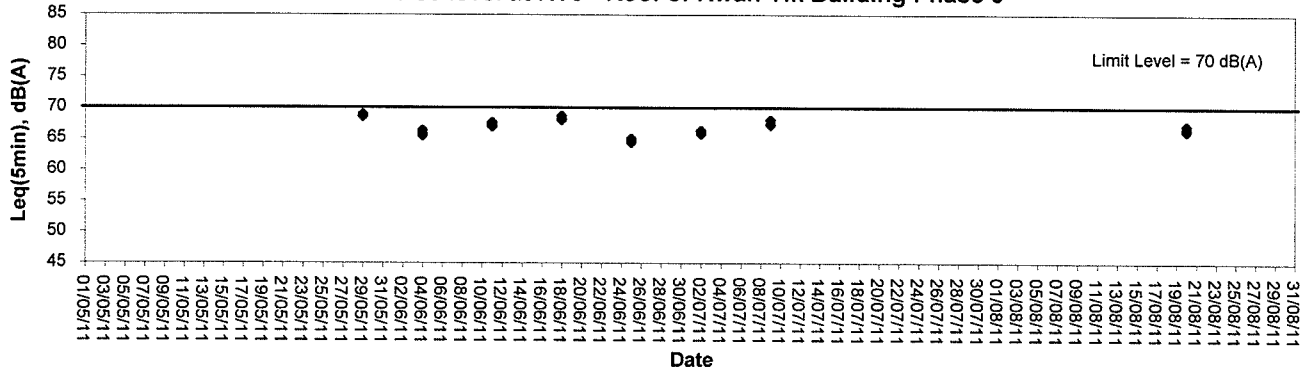
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



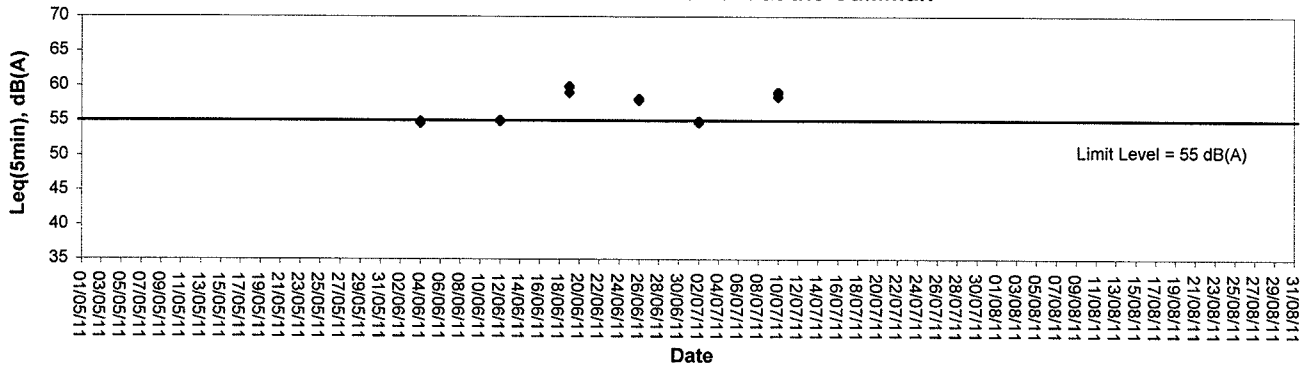
Noise level at KY3 - Roof of Kwan Yik Building Phase 3



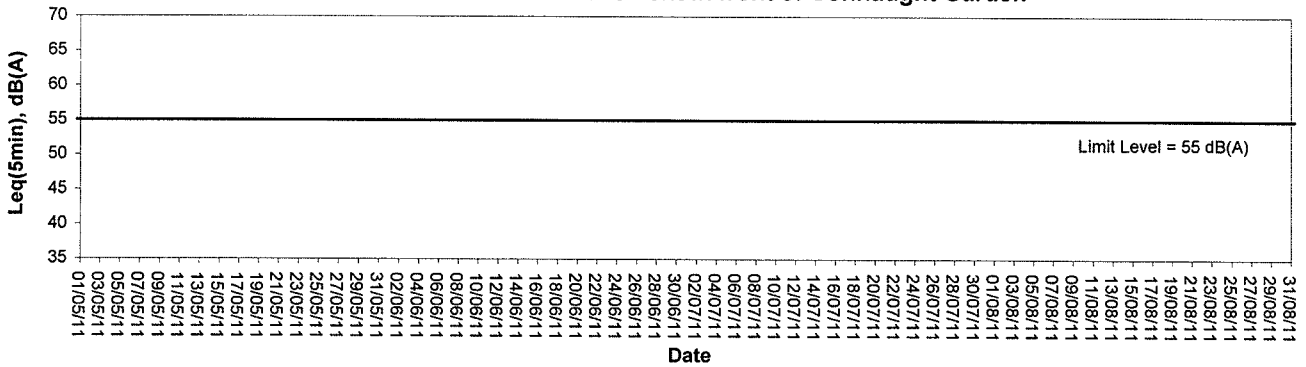


### Noise Monitoring (Night-time)

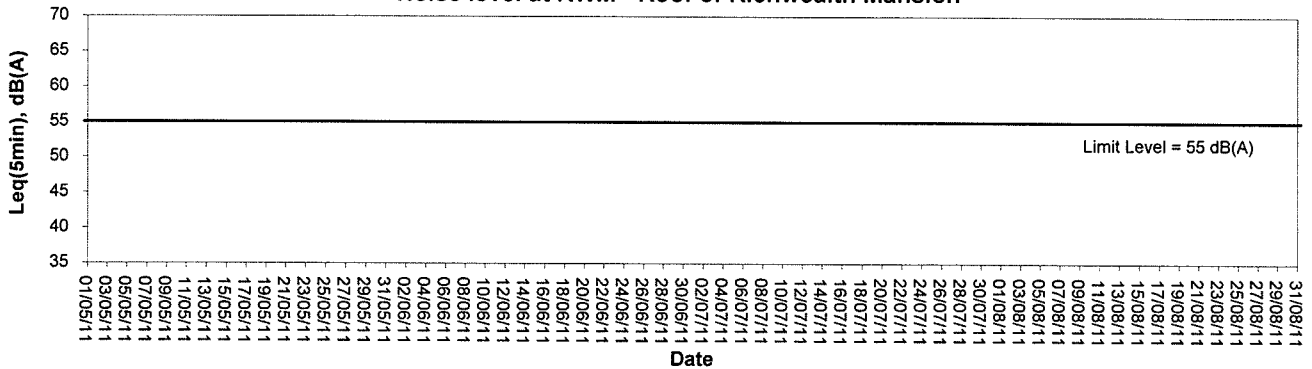
Noise level at KS6 - Podium at the Culliman



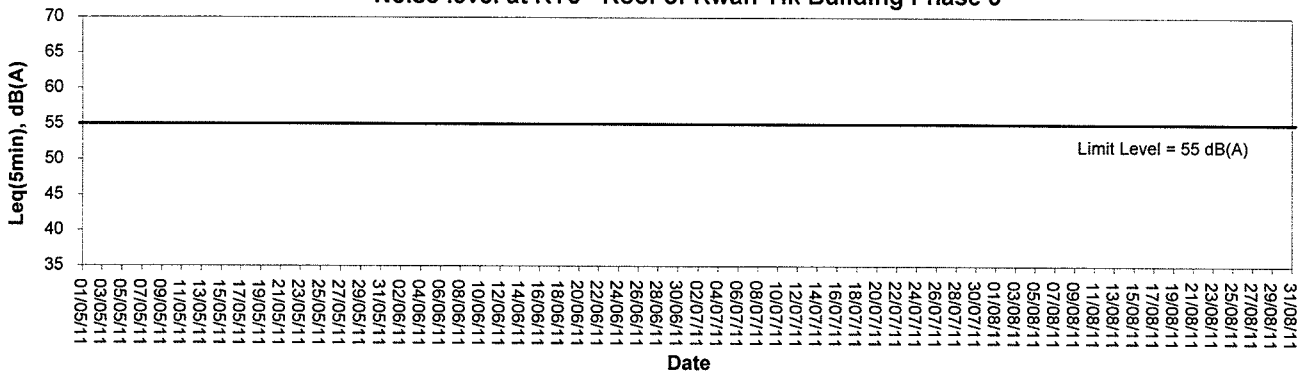
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



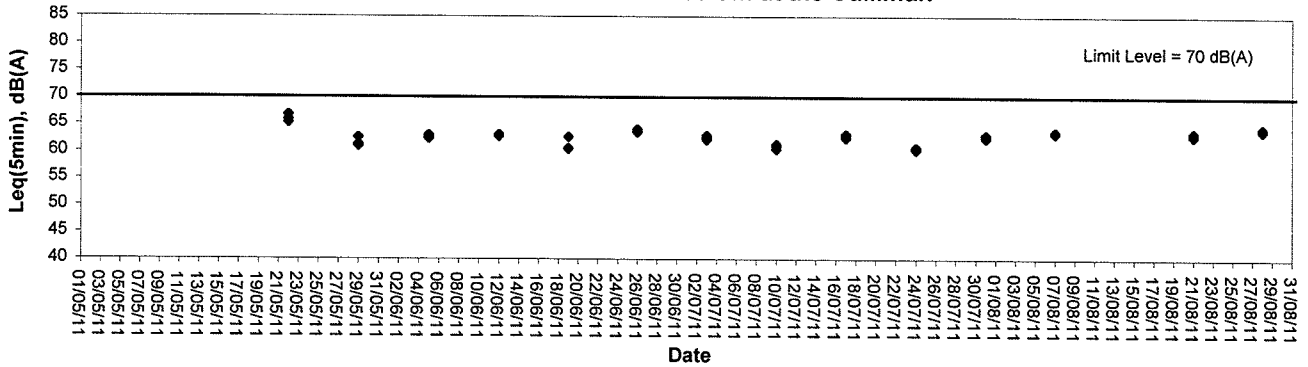
Noise level at KY3 - Roof of Kwan Yik Building Phase 3



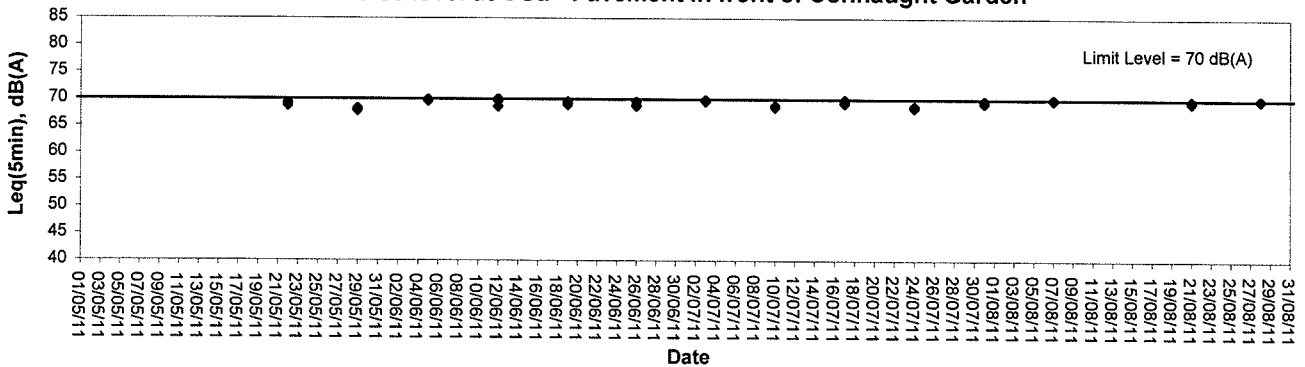


### Noise Monitoring (Holiday-time)

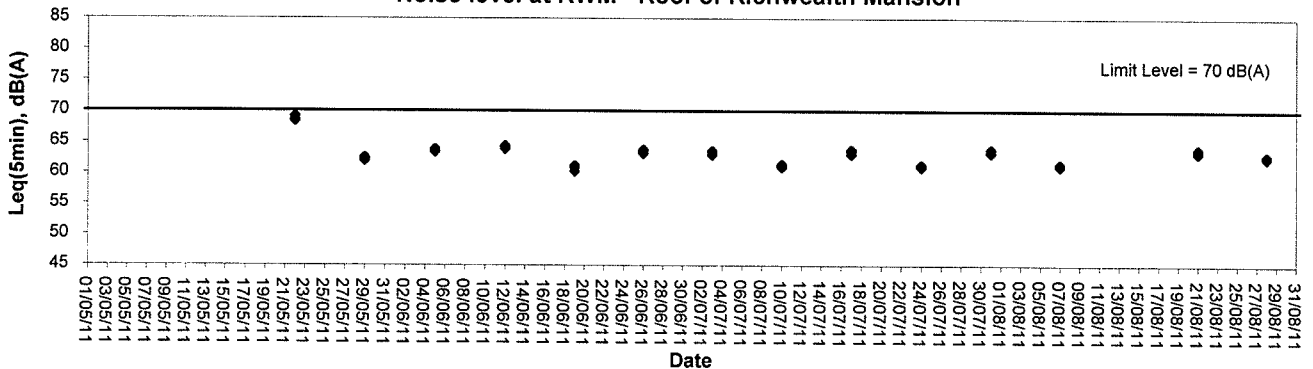
Noise level at KS6 - Podium at the Culliman



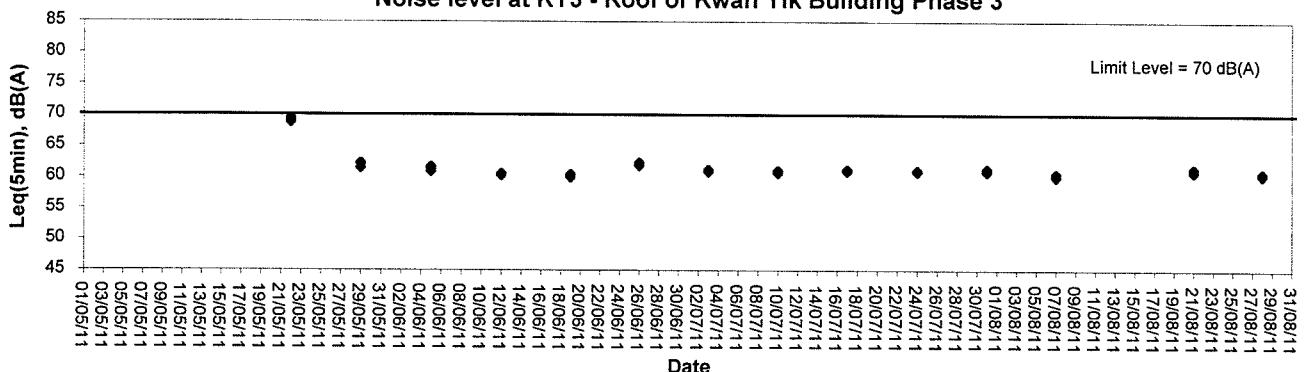
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



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





## **Appendix C1**

### **Calibration Certificates for Impact Water Quality Monitoring Equipments**



### Internal Calibration Report of Dissolved Oxygen Meter

Equipment Ref. No. : E7/EW/1008/103 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 : E7/0521/1003  
 Ref. No. of Water Bath : E7/0533/1001

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

#### Standardization of sodium thiosulphate (Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>) solution

Reagent No. of Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> titrant : CPE/012/45/04/11 Reagent No. of 0.025N K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> : CPE/012/4.4/001/12

	Trial 1	Trial 2
Initial Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)	0	0
Final Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)	40.10	40.05
Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> used (ml)	40.10	40.05
Normality of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> solution (N)	0.02494	0.02497
Average Normality (N) of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> solution (N)	0.02496	
Acceptance criteria, Deviation	Less than ± 0.001N	

Calculation: Normality of Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>, N = 1 / ml Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> 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 Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)	0	11.45	0	9.05	0	6.60
Final Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)	11.45	22.90	9.05	18.05	6.60	13.30
Vol. (V) of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> 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: DO (mg/L) = V x N x 8000/298

Purging time, min	DO meter reading, mg/L			Winkler Titration result *, mg/L			Difference (%) of DO Content
	1	2	Average	1	2	Average	
2	7.76	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
------------------------	------

**Salinity Checking**

Reagent No. of NaCl (10ppt) <span style="float: right;">2</span>	CE/012/4.71/001/84	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 <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)	0	11.45	0	10.80
Final Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)	11.45	23.00	10.80	21.55
Vol. (V) of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> 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) Differenc 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 <sup>#</sup> / ~~does not comply~~ <sup>#</sup> with the specified requirements and is deemed acceptable <sup>#</sup> / ~~unacceptable~~ <sup>#</sup> for use.

<sup>#</sup> Delete as appropriate

Calibrated by : \_\_\_\_\_

Approved by : \_\_\_\_\_



## Performance Check of Salinity Meter

Equipment Ref. No. : ET/EW1008103      Manufacturer : YSI  
Model No. : YSI 857      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 : [Signature]

Approved by : [Signature]







## **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
02/08/11	1121-1133	29/Fine	Surface	1.0	26.9	30.6	30.6	6.13	6.16	84.6	85.0	4.97	5.01	5.14	7.5	7.7	8.0
						30.6		6.19		85.4		5.05			7.8		
			Middle	8.6	26.1	31.5	31.5	6.04	6.05	83.4	83.5	5.12	5.15		8.0	8.1	
31.5	6.05	83.5				5.17		8.2									
Bottom	16.2	25.1	31.9	31.9	5.96	5.94	82.2	81.9	5.30	5.27	8.2	8.2					
			31.8		5.91		81.6		5.23		8.2						
04/08/11	1214-1230	30/Fine	Surface	1.0	26.6	29.9	30.0	6.24	6.21	87.9	87.4	4.89	4.93	5.18	8.0	7.7	7.8
						30.0		6.17		86.9		4.96			7.4		
			Middle	8.5	26.1	30.7	30.8	6.03	6.06	85.0	85.4	5.16	5.18		7.6	7.7	
30.8	6.08	85.7				5.20		7.8									
Bottom	16.0	25.5	31.6	31.7	5.81	5.84	81.9	82.3	5.39	5.43	8.0	8.0					
			31.7		5.86		82.6		5.46		8.0						
06/08/11	1408-1418	30/Fine	Surface	1.0	27.9	30.7	30.7	5.98	6.03	83.7	84.3	4.72	4.76	4.90	7.0	7.3	7.5
						30.7		6.07		84.9		4.79			7.6		
			Middle	9.5	26.7	31.6	31.6	6.02	6.04	84.3	84.5	4.92	4.95		7.6	7.7	
31.5	6.05	84.7				4.97		7.8									
Bottom	18.0	26.0	32.0	32.0	5.86	5.85	82.0	81.8	5.01	5.00	7.4	7.4					
			31.9		5.83		81.6		4.99		7.4						
09/08/11	1810-1822	29/Cloudy	Surface	1.0	27.6	29.7	29.7	6.19	6.21	87.3	87.5	4.97	4.99	5.12	7.5	7.7	7.9
						29.7		6.22		87.7		5.01			7.8		
			Middle	8.5	27.0	30.4	30.5	6.04	6.06	85.2	85.4	5.11	5.13		7.8	7.9	
30.5	6.07	85.6				5.15		8.0									
Bottom	16.0	26.3	31.6	31.7	5.89	5.90	83.0	83.2	5.24	5.23	8.2	8.1					
			31.7		5.91		83.3		5.22		8.0						
11/08/11	1859-1913	30/Fine	Surface	1.0	28.9	29.1	29.2	6.13	6.11	85.8	85.6	5.03	5.06	5.08	7.5	7.7	7.8
						29.2		6.09		85.3		5.09			7.8		
			Middle	8.1	27.6	30.8	30.8	6.02	6.00	84.3	84.0	4.95	4.99		7.6	7.7	
30.7	5.97	83.6				5.02		7.8									
Bottom	15.2	26.7	31.6	31.7	5.74	5.73	80.4	80.2	5.21	5.20	8.0	8.0					
			31.7		5.71		79.9		5.19		8.0						
13/08/11	2010-2022	31/Fine	Surface	1.0	27.6	29.8	29.8	6.30	6.28	89.5	89.2	5.00	4.98	5.11	8.0	7.8	8.2
						29.7		6.25		88.8		4.96			7.6		
			Middle	8.2	26.9	30.8	30.8	6.14	6.12	87.2	86.9	5.09	5.12		8.0	8.1	
30.8	6.10	86.6				5.14		8.2									
Bottom	15.4	25.7	31.6	31.7	5.93	5.95	84.2	84.5	5.23	5.25	8.6	8.6					
			31.7		5.97		84.8		5.26		8.6						
16/08/11	2052-2105	29/Fine	Surface	1.0	27.0	30.0	30.0	6.34	6.37	90.0	90.4	4.19	4.22	4.41	6.5	6.7	7.0
						29.9		6.39		90.7		4.24			6.8		
			Middle	8.5	26.6	30.6	30.7	6.17	6.15	87.6	87.3	4.38	4.41		7.0	7.1	
30.7	6.12	86.9				4.43		7.2									
Bottom	16.0	25.8	31.3	31.3	5.90	5.92	83.8	84.1	4.58	4.61	7.2	7.2					
			31.3		5.94		84.3		4.64		7.2						
18/08/11	1210-1222	28/Fine	Surface	1.0	26.3	30.2	30.3	6.15	6.17	86.1	86.4	4.92	4.94	5.06	7.5	7.6	7.8
						30.3		6.19		86.7		4.96			7.6		
			Middle	8.6	25.7	31.0	31.0	6.01	6.04	84.1	84.6	5.04	5.06		7.8	7.8	
31.0	6.07	85.0				5.08		8.0									
Bottom	16.2	24.7	31.8	31.8	5.95	5.92	83.3	82.8	5.20	5.18	8.0	8.0					
			31.8		5.88		82.3		5.16		8.0						
20/08/11	1213-1224	30/Fine	Surface	1.0	26.5	29.6	29.6	6.30	6.28	89.5	89.2	5.01	5.00	5.09	7.5	7.7	7.9
						29.6		6.26		88.9		4.98			7.8		
			Middle	8.2	25.8	30.8	30.8	6.13	6.16	87.0	87.4	5.09	5.11		7.8	7.9	
30.7	6.18	87.8				5.12		8.0									
Bottom	15.4	25.1	31.8	31.8	6.05	6.04	85.9	85.7	5.16	5.18	8.2	8.0					
			31.7		6.02		85.5		5.19		7.8						
23/08/11	1704-1720	31/Fine	Surface	1.0	26.8	29.9	29.9	6.12	6.14	86.2	86.5	4.43	4.45	4.60	6.5	6.8	7.1
						29.8		6.15		86.7		4.47			7.0		
			Middle	8.4	26.4	30.4	30.4	6.03	6.01	85.0	84.7	4.59	4.61		7.2	7.2	
30.3	5.99	84.4				4.62		7.2									
Bottom	15.8	25.9	31.4	31.4	5.82	5.84	82.1	82.3	4.71	4.74	7.4	7.4					
			31.4		5.85		82.5		4.76		7.4						
25/08/11	1805-1818	27/Cloudy	Surface	1.0	28.7	29.6	29.7	6.08	6.12	86.3	87.8	4.76	4.73	4.98	7.0	7.1	7.6
						29.7		6.16		89.2		4.70			7.2		
			Middle	8.2	27.7	30.7	30.7	6.08	6.06	86.8	85.6	4.95	4.97		7.6	7.6	
30.6	6.03	84.3				4.99		7.6									
Bottom	15.4	26.8	31.4	31.5	5.79	5.81	82.9	83.0	5.19	5.23	8.0	8.1					
			31.5		5.82		83.1		5.26		8.2						
27/08/11	1849-1900	30/Fine	Surface	1.0	29.9	29.9	30.0	6.18	6.20	87.1	87.4	4.25	4.28	4.44	6.5	6.6	6.9
						30.0		6.22		87.7		4.31			6.6		
			Middle	8.4	26.4	30.6	30.7	6.09	6.06	85.8	85.3	4.42	4.45		6.8	6.9	
30.7	6.02	84.8				4.47		7.0									
Bottom	15.8	25.8	31.4	31.5	5.89	5.88	83.0	82.8	4.58	4.61	7.0	7.1					
			31.5		5.86		82.6		4.63		7.2						
30/08/11	2048-2100	33/Fine	Surface	1.0	28.8	30.5	30.6	6.10	6.06	89.1	88.4	4.99	4.98	5.08	7.5	7.5	7.7
						30.6		6.01		87.7		4.96			7.4		
			Middle	8.1	26.7	31.5	31.5	5.79	5.81	82.2	84.5	5.06	5.04		7.6	7.5	
31.5	5.82	86.7				5.02		7.4									
Bottom	15.2	25.8	32.0	32.0	5.72	5.74	81.2	81.7	5.24	5.22	8.2	8.2					
			32.0		5.75		82.2		5.20		8.2						

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			
02/08/11	1103-1114	29/Fine	Surface	1.0	26.9	30.6	30.7	6.14	6.15	84.7	84.9	4.89	4.91	5.07	7.6	7.6	7.8			
						30.7		6.16		85.0		4.92			7.6					
			Middle	8.5	26.0	31.5	31.5	5.99	6.01	82.7	82.9	5.09	5.06		5.03			5.06	8.0	7.8
						31.4		6.02		83.1		5.03			7.6					
			Bottom	16.0	25.2	31.9	31.9	5.92	5.90	81.7	81.4	5.27	5.24		5.21			5.24	8.0	8.0
						31.9		5.88		81.1		5.21			8.0					
04/08/11	1154-1210	30/Fine	Surface	1.0	26.7	29.9	29.9	6.15	6.17	86.7	87.0	4.86	4.89	5.12	7.4	7.5	7.9			
						29.9		6.19		87.2		4.91			7.6					
			Middle	8.4	26.2	30.6	30.7	6.05	6.03	85.3	85.0	5.08	5.11		5.13			5.11	7.8	7.8
						30.7		6.01		84.7		5.13			7.8					
			Bottom	15.8	25.5	31.5	31.6	5.88	5.87	82.9	82.7	5.34	5.38		5.42			5.38	8.2	8.4
						31.6		5.85		82.4		5.42			8.5					
06/08/11	1348-1359	30/Fine	Surface	1.0	27.8	30.7	30.7	6.24	6.26	87.4	87.7	4.68	5.69	5.20	7.5	8.5	7.9			
						30.6		6.28		87.9		6.70			9.8					
			Middle	8.6	26.8	31.7	31.7	6.09	6.06	85.3	84.8	4.86	4.86		4.85			4.86	7.4	7.4
						31.6		6.02		84.3		4.85			7.4					
			Bottom	16.2	26.1	32.0	32.0	5.91	5.95	82.7	83.2	5.03	5.06		5.08			5.06	7.8	7.9
						32.0		5.98		83.7		5.08			8.0					
09/08/11	1751-1802	29/Cloudy	Surface	1.0	27.6	29.6	29.7	6.10	6.12	86.0	86.3	4.93	4.90	5.10	7.6	7.6	7.9			
						29.7		6.14		86.6		4.87			7.6					
			Middle	8.4	27.0	30.5	30.5	6.06	6.04	85.4	85.2	5.05	5.09		5.12			5.09	7.8	7.9
						30.5		6.02		84.9		5.12			8.0					
			Bottom	15.8	26.3	31.7	31.7	5.97	5.95	84.2	83.9	5.32	5.30		5.28			5.30	8.4	8.2
						31.7		5.93		83.6		5.28			8.0					
11/08/11	1843-1854	30/Fine	Surface	1.0	28.8	29.1	29.1	6.20	6.19	86.8	86.6	4.69	4.71	4.92	7.0	7.1	7.6			
						29.0		6.17		86.4		4.72			7.2					
			Middle	8.4	27.5	30.7	30.7	6.12	6.12	85.7	85.6	4.91	4.93		4.94			4.93	7.6	7.6
						30.6		6.11		85.5		4.94			7.6					
			Bottom	15.8	26.6	31.5	31.5	5.96	5.95	83.4	83.3	5.12	5.14		5.15			5.14	8.0	8.0
						31.4		5.94		83.2		5.15			8.0					
13/08/11	1951-2002	31/Fine	Surface	1.0	27.6	29.6	29.7	6.29	6.31	89.3	89.6	4.93	4.95	5.11	6.6	6.8	7.5			
						29.7		6.33		89.9		4.96			7.0					
			Middle	8.3	26.9	30.8	30.8	6.20	6.18	88.0	87.7	5.11	5.14		5.16			5.14	7.4	7.5
						30.7		6.15		87.3		5.16			7.6					
			Bottom	15.6	25.7	31.7	31.8	6.02	6.05	85.5	85.9	5.25	5.26		5.27			5.26	8.2	8.1
						31.8		6.07		86.2		5.27			8.0					
16/08/11	2032-2047	29/Fine	Surface	1.0	27.0	30.0	30.0	6.42	6.40	91.2	90.9	4.10	4.13	4.32	6.4	6.5	6.8			
						30.0		6.37		90.5		4.16			6.6					
			Middle	8.4	26.7	30.6	30.6	6.26	6.24	88.8	88.5	4.25	4.28		4.30			4.28	6.8	6.9
						30.6		6.21		88.1		4.30			7.0					
			Bottom	15.8	25.8	31.2	31.3	5.97	6.00	84.7	85.2	4.53	4.55		4.56			4.55	7.0	7.0
						31.3		6.03		85.6		4.56			7.0					
18/08/11	1151-1202	28/Fine	Surface	1.0	26.3	30.2	30.2	6.17	6.21	87.0	87.5	4.89	4.92	5.08	7.4	7.5	7.8			
						30.2		6.24		88.0		4.95			7.6					
			Middle	8.6	25.7	30.9	31.0	6.00	6.02	84.6	84.8	5.06	5.08		5.09			5.08	7.8	7.8
						31.0		6.03		85.0		5.09			7.8					
			Bottom	16.2	24.7	31.8	31.9	5.96	5.95	84.0	83.8	5.28	5.25		5.21			5.25	8.2	8.1
						31.9		5.93		83.6		5.21			8.0					
20/08/11	1150-1201	30/Fine	Surface	1.0	26.4	29.8	29.8	6.29	6.31	89.3	89.5	5.04	5.02	5.12	7.8	7.8	7.9			
						29.7		6.32		89.7		5.00			7.8					
			Middle	8.4	25.7	30.7	30.8	6.22	6.20	88.3	88.0	5.12	5.13		5.14			5.13	7.8	7.9
						30.8		6.17		87.6		5.14			8.0					
			Bottom	15.8	25.1	31.7	31.8	6.11	6.09	86.8	86.5	5.20	5.22		5.23			5.22	8.0	8.0
						31.8		6.07		86.2		5.23			8.0					
23/08/11	1645-1700	31/Fine	Surface	1.0	26.8	29.8	29.8	6.21	6.19	87.5	87.2	4.40	4.38	4.53	6.8	6.8	7.0			
						29.8		6.17		86.9		4.36			6.8					
			Middle	8.4	26.3	30.2	30.3	6.05	6.03	85.3	85.0	4.51	4.54		4.56			4.54	7.0	7.0
						30.3		6.01		84.7		4.56			7.0					
			Bottom	15.8	25.9	31.4	31.4	5.86	5.88	82.6	82.8	4.65	4.68		4.70			4.68	7.2	7.1
						31.3		5.89		83.0		4.70			7.0					
25/08/11	1748-1759	27/Cloudy	Surface	1.0	28.6	29.7	29.8	6.30	6.28	92.6	91.6	5.06	5.00	5.00	7.6	7.6	7.7			
						29.8		6.25		90.6		4.93			7.6					
			Middle	8.4	27.6	30.6	30.6	5.97	5.96	84.8	84.7	4.88	4.91		4.94			4.91	7.6	7.6
						30.5		5.95		84.5		4.94			7.6					
			Bottom	15.8	26.8	31.5	31.6	5.80	5.84	83.6	84.6	5.07	5.11		5.14			5.11	7.8	7.9
						31.6		5.88		85.5		5.14			8.0					
27/08/11	1831-1845	30/Fine	Surface	1.0	29.9	29.9	29.9	6.21	6.23	87.5	87.7	4.21	4.24	4.39	6.6	6.7	7.0			
						29.9		6.24		87.9		4.27			6.8					
			Middle	8.5	26.3	30.6	30.6	6.10	6.08	86.0	85.7	4.36	4.38		4.40			4.38	6.8	6.8
						30.6		6.06		85.4		4.40			6.8					
			Bottom	16.0	25.8	31.4	31.4	5.92	5.90	83.4	83.1	4.53	4.55		4.57			4.55	7.2	7.4
						31.4		5.87		82.8		4.57			7.5					
30/08/11	2032-2040	33/Fine	Surface	1.0	28.8	30.6	30.6	6.17	6.14	89.5	89.1	4.95	4.93	5.11	7.0	7.0	7.4			
						30.6		6.11		88.6		4.91			7.0					
			Middle	8.3	26.8	31.6	31.7	5.83	5.87	83.4	83.6	5.15	5.19		5.22			5.19	7.4	7.3
						31.7		5.90		83.8		5.22			7.2					
			Bottom	15.6	25.7	32.1	32.1	5.81	5.80	82.5	83.0	5.18	5.21		5.24			5.21	8.0	8.0
						32.0		5.79		83.4		5.24			8.0					

Mid-Flood Tide



Monitoring Station : R5

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
02/08/11	0910-0922	29/Fine	Surface	1.0	26.9	30.7	30.7	6.13	6.10	85.2	84.8	5.17	5.20	5.35	8.0	8.1	8.4	
						30.6		6.07		84.4		5.22			8.2			
			Middle	8.9	26.1	31.5	31.5	5.93	5.96	82.4	82.9	5.36	5.38		8.4			8.5
						31.5		5.99		83.3		5.39			8.6			
			Bottom	16.8	25.2	31.9	31.9	5.85	5.83	81.3	81.1	5.51	5.48		8.6			8.5
						31.8		5.81		80.8		5.44			8.4			
04/08/11	0957-1013	30/Sunny	Surface	1.0	26.6	29.8	29.9	5.90	5.93	82.6	83.0	5.08	5.11	5.33	7.5	7.8	8.3	
						29.9		5.95		83.3		5.13			8.0			
			Middle	8.6	26.2	30.8	30.8	5.86	5.84	82.0	81.7	5.34	5.32		8.4			8.3
						30.7		5.81		81.3		5.30			8.2			
			Bottom	16.4	25.6	31.6	31.7	5.74	5.76	80.3	80.6	5.55	5.58		8.8			8.8
						31.7		5.78		80.9		5.60			8.8			
06/08/11	1150	30/Fine	Surface	1.0	27.6	30.7	30.7	6.12	6.11	85.7	85.5	4.56	4.53	4.76	6.5	6.7	7.4	
						30.6		6.09		85.3		4.50			6.8			
			Middle	8.5	26.7	31.5	31.6	5.92	5.93	82.9	83.1	4.79	4.81		7.4			7.5
						31.6		5.94		83.2		4.82			7.6			
			Bottom	16.0	25.9	32.0	32.0	5.88	5.86	82.3	82.1	4.92	4.95		7.8			7.9
						32.0		5.84		81.8		4.98			8.0			
09/08/11	1552-1604	29/Cloudy	Surface	1.0	27.6	29.6	29.7	6.13	6.16	86.4	86.9	5.19	5.18	5.29	8.0	8.0	8.2	
						29.7		6.19		87.3		5.16			8.0			
			Middle	8.8	27.0	30.4	30.5	6.04	6.01	85.2	84.8	5.26	5.28		8.4			8.3
						30.5		5.98		84.3		5.30			8.2			
			Bottom	16.6	26.3	31.7	31.7	5.88	5.90	82.9	83.2	5.45	5.42		8.2			8.2
						31.6		5.92		83.5		5.38			8.2			
11/08/11	1656-1710	31/Fine	Surface	1.0	28.8	28.9	29.0	5.94	5.96	83.2	83.5	4.76	4.74	4.86	7.0	7.2	7.4	
						29.0		5.98		83.7		4.72			7.4			
			Middle	8.9	27.6	30.5	30.6	5.74	5.76	80.4	80.7	4.79	4.81		7.2			7.2
						30.6		5.78		80.9		4.83			7.2			
			Bottom	16.8	26.7	31.5	31.6	5.70	5.72	79.8	80.0	5.01	5.03		7.8			7.8
						31.6		5.73		80.2		5.05			7.8			
13/08/11	1750-1802	32/Fine	Surface	1.0	27.6	29.8	29.8	6.06	6.05	86.1	85.9	5.09	5.11	5.22	7.5	7.6	8.0	
						29.7		6.03		85.6		5.12			7.6			
			Middle	8.9	26.9	30.7	30.8	5.87	5.90	83.4	83.8	5.19	5.22		8.0			8.2
						30.8		5.92		84.1		5.24			8.4			
			Bottom	16.8	25.7	31.6	31.7	5.81	5.80	82.5	82.3	5.31	5.33		8.2			8.3
						31.7		5.78		82.1		5.35			8.4			
16/08/11	1833-1847	32/Fine	Surface	1.0	27.3	29.9	30.0	6.09	6.11	86.4	86.7	4.46	4.49	4.67	6.5	6.7	6.8	
						30.0		6.12		86.9		4.51			6.8			
			Middle	8.7	26.8	30.6	30.7	5.90	5.92	83.7	84.0	4.66	4.68		6.8			6.8
						30.7		5.94		84.3		4.70			6.8			
			Bottom	16.4	26.0	31.2	31.2	5.72	5.75	81.2	81.7	4.82	4.84		6.8			6.9
						31.2		5.78		82.1		4.86			7.0			
18/08/11	0952-1004	28/Fine	Surface	1.0	26.3	30.2	30.2	6.15	6.16	86.7	86.9	5.18	5.15	5.32	7.5	7.8	8.2	
						30.2		6.17		87.0		5.11			8.0			
			Middle	8.9	25.7	31.0	31.0	6.08	6.09	85.7	85.8	5.32	5.34		8.2			8.2
						30.9		6.09		85.9		5.36			8.2			
			Bottom	16.8	24.6	31.8	31.8	5.94	5.92	83.8	83.4	5.44	5.48		8.4			8.5
						31.8		5.89		83.0		5.51			8.6			
20/08/11	1004-1017	30/Fine	Surface	1.0	26.4	29.7	29.8	6.12	6.10	86.9	86.6	5.08	5.06	5.16	7.5	7.6	7.9	
						29.8		6.07		86.2		5.04			7.6			
			Middle	8.9	25.7	30.6	30.7	5.93	5.95	84.2	84.5	5.15	5.17		8.0			8.0
						30.7		5.97		84.8		5.19			8.0			
			Bottom	16.8	25.1	31.8	31.8	5.86	5.85	83.2	83.0	5.23	5.24		8.2			8.1
						31.8		5.83		82.8		5.25			8.0			
23/08/11	1442-1457	32/Fine	Surface	1.0	26.9	29.9	29.9	6.02	6.04	84.9	85.2	4.43	4.46	4.62	6.5	6.7	7.0	
						29.8		6.06		85.4		4.48			6.8			
			Middle	8.7	26.2	30.6	30.6	5.91	5.93	83.3	83.6	4.59	4.61		7.0			7.0
						30.6		5.95		83.9		4.63			7.0			
			Bottom	16.4	25.7	31.5	31.6	5.78	5.81	81.5	81.9	4.77	4.80		7.4			7.4
						31.6		5.83		82.2		4.82			7.4			
25/08/11	1552-1604	27/Cloudy	Surface	1.0	28.8	29.8	29.8	5.98	6.03	84.7	85.3	4.63	4.65	4.91	7.0	7.1	7.4	
						29.7		6.08		85.9		4.67			7.2			
			Middle	8.9	27.6	30.6	30.6	6.01	5.97	85.3	84.7	4.93	4.92		7.2			7.2
						30.5		5.92		84.1		4.90			7.2			
			Bottom	16.8	26.7	31.3	31.4	5.82	5.83	89.0	89.2	5.20	5.18		8.0			7.9
						31.4		5.84		89.4		5.15			7.8			
27/08/11	1624-1640	32/Fine	Surface	1.0	26.9	29.8	29.9	6.00	6.02	84.6	84.9	4.32	4.34	4.56	6.5	6.6	7.0	
						29.9		6.04		85.2		4.36			6.6			
			Middle	8.8	26.2	30.5	30.6	5.92	5.90	83.4	83.2	4.53	4.55		6.8			6.9
						30.6		5.88		82.9		4.57			7.0			
			Bottom	16.6	25.7	31.5	31.5	5.70	5.72	80.4	80.7	4.75	4.78		7.4			7.4
						31.5		5.74		80.9		4.80			7.4			
30/08/11	1846-1857	33/Fine	Surface	1.0	28.7	30.6	30.6	6.08	6.06	86.3	86.2	5.07	5.10	5.17	7.5	aa	8.0	
						30.5		6.04		86.1		5.12			7.8			
			Middle	8.9	26.6	31.2	31.3	5.83	5.84	82.7	82.9	5.23	5.25		8.0			8.1
						31.3		5.85		83.1		5.27			8.2			
			Bottom	16.8	25.6	32.0	32.0	5.72	5.75	80.6	80.8	5.19	5.17		8.2			8.1
						31.9		5.77		80.9		5.14			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	
02/08/11	1005-1017	29/Fine	Surface	1.0	26.9	30.6	30.6	6.10	6.11	84.2	84.4	4.98	5.01	5.17	7.8	7.8	8.1	
						30.6		6.12		84.5		5.03			7.8			
			Middle	8.5	26.1	31.5	31.5	6.07	6.06	83.8	83.7	5.15	5.17		8.0			8.1
						31.4		6.05		83.5		5.18			8.2			
			Bottom	16.0	25.2	31.8	31.8	5.96	5.97	82.2	82.4	5.31	5.34		8.2			8.3
						31.8		5.98		82.5		5.36			8.4			
04/08/11	1058-1113	30/Sunny	Surface	1.0	26.7	29.9	29.9	6.15	6.18	86.7	87.1	4.86	4.89	5.11	7.4	7.6	7.9	
						29.9		6.20		87.4		4.91			7.8			
			Middle	8.3	26.3	30.6	30.7	6.05	6.08	85.3	85.7	5.08	5.11		7.8			8.0
						30.7		6.11		86.1		5.13			8.2			
			Bottom	15.6	25.7	31.6	31.6	5.92	5.90	83.4	83.2	5.32	5.35		8.0			8.2
						31.5		5.88		82.9		5.37			8.4			
06/08/11	1243-1256	30/Fine	Surface	1.0	27.8	30.6	30.7	6.22	6.21	87.1	87.0	4.44	4.46	4.69	6.8	6.8	7.2	
						30.7		6.20		86.8		4.47			6.8			
			Middle	8.3	26.6	31.5	31.6	6.10	6.09	85.4	85.2	4.68	4.66		7.4			7.2
						31.6		6.07		85.0		4.64			7.0			
			Bottom	15.6	25.9	32.0	32.0	6.06	6.04	84.8	84.5	4.92	4.94		7.6			7.7
						31.9		6.01		84.1		4.96			7.8			
09/08/11	1650-1702	29/Cloudy	Surface	1.0	27.6	29.7	29.7	6.15	6.14	86.1	86.0	5.07	5.03	5.17	7.6	7.6	7.9	
						29.6		6.13		85.8		4.99			7.6			
			Middle	8.4	27.0	30.5	30.5	6.02	6.05	84.3	84.7	5.15	5.18		8.0			8.0
						30.5		6.08		85.1		5.21			8.0			
			Bottom	15.8	26.3	31.7	31.7	5.95	5.96	83.3	83.5	5.26	5.30		8.2			8.2
						31.6		5.97		83.6		5.33			8.2			
11/08/11	1746-1758	31/Fine	Surface	1.0	29.0	28.9	28.9	6.18	6.16	86.5	86.2	5.04	5.06	5.19	7.8	7.8	7.9	
						28.8		6.14		85.9		5.08			7.8			
			Middle	8.3	27.4	30.4	30.5	6.12	6.11	85.7	85.6	5.11	5.15		8.0			7.9
						30.5		6.10		85.4		5.18			7.8			
			Bottom	15.6	26.5	31.7	31.7	6.03	6.05	84.4	84.7	5.36	5.38		7.8			7.9
						31.6		6.07		84.9		5.39			8.0			
13/08/11	1850-1902	32/Fine	Surface	1.0	27.6	29.8	29.8	6.24	6.23	88.6	88.4	5.03	5.00	5.13	7.6	7.5	7.8	
						29.7		6.21		88.2		4.97			7.4			
			Middle	8.3	26.9	30.8	30.8	6.14	6.12	87.2	86.9	5.12	5.13		7.8			7.9
						30.7		6.10		86.6		5.14			8.0			
			Bottom	15.6	25.8	31.7	31.7	5.98	5.97	84.9	84.8	5.22	5.25		8.0			8.1
						31.6		5.96		84.6		5.27			8.2			
16/08/11	1931-1945	32/Fine	Surface	1.0	27.3	30.0	30.1	6.34	6.32	90.2	89.8	4.11	4.14	4.35	6.2	6.1	6.3	
						30.1		6.30		89.4		4.16			6.0			
			Middle	8.4	26.8	30.7	30.7	6.22	6.19	88.3	87.9	4.30	4.33		6.2			6.3
						30.7		6.16		87.4		4.36			6.4			
			Bottom	15.8	26.0	31.3	31.3	5.87	5.90	83.3	83.8	4.54	4.57		6.6			6.6
						31.3		5.93		84.2		4.60			6.6			
18/08/11	1050-1102	28/Fine	Surface	1.0	26.3	30.3	30.3	6.15	6.18	86.1	86.5	5.02	5.05	5.22	7.8	7.9	8.1	
						30.3		6.20		86.8		5.07			8.0			
			Middle	8.6	25.6	30.9	30.9	6.07	6.06	85.0	84.8	5.27	5.24		8.0			8.0
						30.9		6.04		84.6		5.20			8.0			
			Bottom	16.2	24.7	31.8	31.9	5.93	5.96	83.0	83.4	5.43	5.39		8.4			8.4
						31.9		5.98		83.7		5.35			8.4			
20/08/11	1053-1104	30/Fine	Surface	1.0	26.4	29.7	29.7	6.31	6.30	89.6	89.5	5.06	5.04	5.16	7.6	7.6	8.0	
						29.6		6.29		89.3		5.02			7.6			
			Middle	8.3	25.6	30.6	30.7	6.19	6.18	87.9	87.7	5.15	5.17		8.0			8.2
						30.7		6.16		87.5		5.19			8.4			
			Bottom	15.6	25.1	31.7	31.7	6.04	6.02	85.8	85.5	5.29	5.28		8.2			8.3
						31.7		5.99		85.1		5.26			8.4			
23/08/11	1544-1600	32/Fine	Surface	1.0	26.8	29.8	29.8	6.18	6.21	87.1	87.5	4.15	4.18	4.38	6.4	6.4	6.7	
						29.7		6.24		87.9		4.20			6.4			
			Middle	8.3	26.3	30.6	30.6	6.10	6.08	86.0	85.7	4.41	4.39		7.0			6.8
						30.6		6.06		85.4		4.36			6.6			
			Bottom	15.6	25.8	31.4	31.5	5.90	5.92	83.2	83.5	4.55	4.57		7.0			7.0
						31.5		5.94		83.7		4.59			7.0			
25/08/11	1650-1703	27/Cloudy	Surface	1.0	28.6	29.9	29.9	6.12	6.14	87.9	88.2	4.92	4.93	4.99	7.4	7.5	7.6	
						29.8		6.16		88.4		4.94			7.6			
			Middle	8.4	27.7	30.6	30.7	6.09	6.10	86.2	86.4	4.96	4.98		7.6			7.6
						30.7		6.10		86.5		4.99			7.6			
			Bottom	15.8	26.7	31.8	31.8	6.02	6.04	84.3	85.2	5.02	5.06		7.6			7.7
						31.7		6.06		86.0		5.10			7.8			
27/08/11	1730-1747	32/Fine	Surface	1.0	26.9	29.8	29.8	6.25	6.27	88.2	88.4	4.16	4.18	4.38	6.4	6.5	6.8	
						29.8		6.28		88.5		4.20			6.6			
			Middle	8.4	26.3	30.5	30.5	6.05	6.03	85.3	85.0	4.35	4.37		6.6			6.7
						30.4		6.01		84.7		4.39			6.8			
			Bottom	15.8	25.8	31.4	31.4	5.82	5.84	82.1	82.4	4.60	4.58		7.2			7.1
						31.4		5.86		82.6		4.55			7.0			
30/08/11	1935-1948	33/Fine	Surface	1.0	28.7	30.5	30.5	6.16	6.15	87.5	87.3	5.11	5.13	5.19	7.8	7.9	8.0	
						30.5		6.13		87.0		5.15			8.0			
			Middle	8.4	26.7	31.4	31.4	6.06	6.09	86.0	87.3	5.28	5.26		8.2			8.2
						31.4		6.11		86.5		5.24			8.2			
			Bottom	15.8	25.7	32.0	32.1	5.78	5.79	81.5	82.8	5.20	5.18		8.0			7.9
						32.1		5.80		84.1		5.15			7.8			

Mid-Flood Tide



Monitoring Station : R7

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/08/11	1020-1032	29/Fine	Surface	1.0	26.9	30.7	30.7	6.23	6.21	86.0	85.7	4.92	4.97	5.14	7.6	7.7	8.0
						30.7		6.19		85.4		5.01			7.8		
			Middle	9.6	26.1	31.4	31.4	6.03	6.06	83.2	83.6	5.19	5.16		8.4	8.2	
						31.4		6.09		84.0		5.13			8.0		
			Bottom	18.2	25.1	31.8	31.9	5.98	5.96	82.5	82.3	5.34	5.31		8.2	8.2	
						31.9		5.94		82.0		5.27			8.2		
04/08/11	1117-1130	30/Sunny	Surface	1.0	26.6	29.9	29.9	6.12	6.14	86.2	86.5	4.95	5.01	5.20	7.4	7.5	8.0
						29.9		6.16		86.8		5.06			7.6		
			Middle	9.2	26.2	30.7	30.7	6.04	6.02	85.1	84.6	5.16	5.19		8.0	8.1	
						30.7		6.00		84.0		5.21			8.2		
			Bottom	17.4	25.6	31.6	31.6	5.87	5.89	82.7	83.0	5.38	5.40		8.4	8.3	
						31.6		5.91		83.3		5.42			8.2		
06/08/11	1300-1313	30/Fine	Surface	1.0	27.9	30.7	30.8	6.13	6.15	85.8	86.0	4.86	4.88	4.83	7.6	7.6	7.4
						30.8		6.16		86.2		4.89			7.6		
			Middle	9.0	26.7	31.4	31.4	6.05	6.07	84.7	85.0	4.59	4.62		7.0	7.1	
						31.4		6.09		85.3		4.65			7.2		
			Bottom	17.0	25.9	31.9	31.9	5.95	5.94	83.3	83.1	4.99	5.01		7.6	7.6	
						31.8		5.92		82.9		5.02			7.6		
09/08/11	1705-1717	29/Cloudy	Surface	1.0	27.5	29.6	29.6	6.21	6.23	87.6	87.8	4.97	4.96	5.12	7.6	7.5	7.9
						29.6		6.24		88.0		4.94			7.4		
			Middle	9.5	26.9	30.5	30.5	6.05	6.04	85.3	85.2	5.18	5.15		8.0	7.9	
						30.4		6.03		85.0		5.12			7.8		
			Bottom	18.0	26.2	31.7	31.7	5.87	5.89	82.8	83.1	5.29	5.26		8.4	8.2	
						31.7		5.91		83.3		5.23			8.0		
11/08/11	1802-0814	31/Fine	Surface	1.0	29.0	28.9	29.0	6.16	6.19	86.2	86.7	5.26	5.23	5.15	7.8	7.9	8.0
						29.0		6.22		87.1		5.20			8.0		
			Middle	9.2	27.5	30.6	30.7	6.04	6.06	84.6	84.9	5.07	5.08		7.6	7.7	
						30.7		6.08		85.1		5.09			7.8		
			Bottom	17.4	26.4	31.5	31.6	6.01	5.98	84.1	83.7	5.17	5.15		8.4	8.4	
						31.6		5.94		83.2		5.12			8.4		
13/08/11	1905-1917	32/Fine	Surface	1.0	27.5	29.7	29.7	6.23	6.21	88.5	88.2	5.04	5.06	5.19	7.6	7.7	8.1
						29.7		6.19		87.9		5.07			7.8		
			Middle	9.2	26.8	30.8	30.8	6.07	6.05	86.2	85.9	5.16	5.18		8.2	8.2	
						30.8		6.03		85.6		5.20			8.2		
			Bottom	17.4	25.6	31.7	31.8	5.84	5.86	82.9	83.2	5.31	5.34		8.4	8.5	
						31.8		5.88		83.5		5.37			8.6		
16/08/11	1950-2005	32/Fine	Surface	1.0	27.2	30.0	30.0	6.38	6.36	90.5	90.2	4.10	4.08	4.27	6.0	5.9	6.2
						30.0		6.33		89.8		4.05			5.8		
			Middle	9.2	26.7	30.7	30.8	6.19	6.17	87.8	87.5	4.22	4.25		6.2	6.3	
						30.8		6.14		87.1		4.28			6.4		
			Bottom	17.4	25.8	31.4	31.4	5.94	5.92	84.3	84.1	4.47	4.49		6.4	6.4	
						31.3		5.90		83.8		4.51			6.4		
18/08/11	1105-1117	28/Fine	Surface	1.0	26.3	30.2	30.3	6.18	6.15	86.5	86.0	5.01	4.98	5.16	7.8	7.6	7.9
						30.3		6.11		85.5		4.95			7.4		
			Middle	9.6	25.7	31.0	31.0	6.03	6.06	84.4	84.9	5.13	5.15		8.0	8.0	
						31.0		6.09		85.3		5.17			8.0		
			Bottom	18.2	24.6	31.9	31.9	5.95	5.93	83.3	83.0	5.32	5.36		8.4	8.2	
						31.9		5.91		82.7		5.39			8.4		
20/08/11	1108-1121	30/Fine	Surface	1.0	26.5	29.7	29.7	6.23	6.26	88.5	88.9	5.07	5.06	5.20	7.6	7.6	8.0
						29.7		6.28		89.2		5.05			7.6		
			Middle	9.2	25.7	30.8	30.8	6.11	6.09	86.8	86.5	5.17	5.20		8.2	8.1	
						30.7		6.07		86.2		5.23			8.0		
			Bottom	17.4	24.9	31.9	31.9	5.90	5.88	83.8	83.5	5.31	5.33		8.0	8.2	
						31.8		5.86		83.2		5.35			8.4		
23/08/11	1604-1620	32/Fine	Surface	1.0	26.8	29.8	29.8	6.23	6.21	87.8	87.5	4.18	4.21	4.35	6.2	6.4	6.6
						29.8		6.19		87.2		4.24			6.6		
			Middle	9.2	26.3	30.6	30.6	6.09	6.06	85.8	85.3	4.35	4.37		6.4	6.5	
						30.6		6.02		84.8		4.39			6.6		
			Bottom	17.4	25.8	31.5	31.6	5.92	5.90	84.1	83.6	4.46	4.48		7.0	6.9	
						31.6		5.87		83.1		4.50			6.8		
25/08/11	1706-1717	27/Cloudy	Surface	1.0	28.6	29.9	29.9	6.09	6.07	89.5	89.1	4.99	5.03	5.13	7.6	7.7	7.9
						29.9		6.05		88.7		5.06			7.8		
			Middle	9.0	27.6	30.7	30.7	6.12	6.13	88.9	89.3	5.10	5.11		7.8	7.9	
						30.7		6.14		89.6		5.12			8.0		
			Bottom	17.0	26.8	31.6	31.7	6.08	6.03	88.6	88.5	5.28	5.25		8.2	8.1	
						31.7		5.97		88.4		5.22			8.0		
27/08/11	1751-1808	32/Fine	Surface	1.0	26.9	29.9	29.9	6.23	6.21	87.8	87.5	4.22	4.24	4.42	6.4	6.5	6.8
						29.9		6.18		87.1		4.26			6.6		
			Middle	9.2	26.3	30.5	30.6	6.06	6.03	85.4	85.0	4.37	4.39		6.8	6.8	
						30.6		6.00		84.6		4.41			6.8		
			Bottom	17.4	25.7	31.5	31.5	5.85	5.87	82.4	82.7	4.62	4.64		7.2	7.2	
						31.5		5.89		83.0		4.65			7.2		
30/08/11	1951-2003	33/Fine	Surface	1.0	28.8	30.6	30.6	6.20	6.21	88.0	88.5	5.17	5.19	5.21	8.0	8.0	8.2
						30.5		6.22		88.9		5.20			8.0		
			Middle	9.0	26.5	31.4	31.5	6.09	6.05	88.3	86.8	5.26	5.20		8.4	8.2	
						31.5		6.01		85.3		5.13			8.0		
			Bottom	17.0	25.6	32.1	32.1	5.93	5.91	83.6	83.6	5.23	5.24		8.4	8.4	
						32.1		5.88		83.5		5.24			8.4		

# Mid-Flood Tide

Monitoring Station : R8a

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
02/08/11	1038-1050	29/Fine	Surface	1.0	26.8	30.8	30.8	6.25	6.24	86.9	86.7	4.99	4.97	5.11	7.8	7.7	7.9	
						30.7		6.22		86.5		4.95			7.5			
			Middle	7.1	26.2	31.3	31.3	6.07	6.11	84.4	84.9	5.07	5.09		8.0			8.0
						31.3		6.14		85.3		5.10			8.0			
			Bottom	13.2	25.4	31.7	31.7	6.01	5.98	83.5	83.1	5.31	5.28		8.2			8.0
						31.7		5.94		82.6		5.25			7.8			
04/08/11	1137-1150	30/Fine	Surface	1.0	26.6	29.9	30.0	6.05	6.08	85.3	85.7	4.90	4.93	5.04	7.4	7.5	7.9	
						30.0		6.11		86.1		4.96			7.5			
			Middle	6.7	26.4	30.0	30.0	6.16	6.12	86.8	86.3	4.99	5.01		8.0			8.0
						30.0		6.08		85.7		5.03			8.0			
			Bottom	12.4	26.0	31.1	31.2	5.90	5.92	82.6	82.9	5.16	5.18		8.0			8.1
						31.2		5.94		83.1		5.20			8.2			
06/08/11	1325-1339	30/Fine	Surface	1.0	27.5	30.8	30.8	6.13	6.15	85.8	86.1	4.51	4.55	4.73	7.0	7.0	7.3	
						30.7		6.17		86.4		4.58			7.0			
			Middle	6.5	26.8	31.6	31.7	6.04	6.06	84.6	84.9	4.76	4.75		7.5			7.5
						31.7		6.08		85.1		4.74			7.4			
			Bottom	12.0	26.1	32.0	32.0	5.79	5.78	81.1	80.9	4.93	4.91		7.4			7.5
						31.9		5.76		80.6		4.88			7.6			
09/08/11	1724-1736	29/Cloudy	Surface	1.0	27.6	29.8	29.8	6.18	6.15	86.5	86.4	4.92	4.94	5.09	7.6	7.6	8.0	
						29.8		6.12		86.3		4.95			7.5			
			Middle	7.0	27.1	30.3	30.4	6.04	6.07	85.2	85.6	5.14	5.11		8.0			8.0
						30.4		6.09		85.9		5.08			8.0			
			Bottom	13.0	26.5	31.6	31.6	5.99	5.98	84.5	84.3	5.20	5.23		8.2			8.3
						31.6		5.96		84.0		5.25			8.4			
11/08/11	1824-1836	30/Fine	Surface	1.0	28.7	28.9	29.0	6.08	6.12	85.1	85.9	4.56	4.59	4.83	7.0	7.0	7.4	
						29.0		6.15		86.7		4.62			7.0			
			Middle	6.7	27.5	30.7	30.7	6.05	6.03	84.7	84.4	4.86	4.84		7.5			7.5
						30.6		6.01		84.1		4.82			7.4			
			Bottom	12.4	26.6	31.6	31.6	5.85	5.87	81.9	82.2	5.03	5.05		7.8			7.8
						31.5		5.89		82.5		5.07			7.8			
13/08/11	1924-1936	31/Fine	Surface	1.0	27.5	29.7	29.8	6.26	6.24	88.9	88.6	5.02	5.00	5.10	7.4	7.5	7.9	
						29.8		6.22		88.3		4.97			7.5			
			Middle	6.7	27.0	30.6	30.7	6.17	6.16	87.6	87.4	5.08	5.10		8.0			8.0
						30.7		6.14		87.2		5.12			8.0			
			Bottom	12.4	25.8	31.5	31.5	6.09	6.08	86.5	86.3	5.17	5.20		8.0			8.2
						31.5		6.06		86.1		5.23			8.4			
16/08/11	2012-2025	29/Fine	Surface	1.0	27.2	30.0	30.0	6.30	6.33	89.4	89.9	4.03	4.05	4.22	6.0	6.0	6.4	
						30.0		6.36		90.3		4.07			6.0			
			Middle	6.2	26.9	30.4	30.4	6.23	6.20	88.4	88.0	4.15	4.18		6.5			6.5
						30.3		6.17		87.6		4.20			6.4			
			Bottom	12.4	26.2	30.9	30.9	6.05	6.07	85.9	86.2	4.41	4.45		6.6			6.7
						30.9		6.09		86.4		4.48			6.8			
18/08/11	1124-1136	28/Fine	Surface	1.0	26.2	30.3	30.3	6.27	6.25	88.4	88.1	4.98	4.95	5.08	7.6	7.6	7.7	
						30.3		6.22		87.7		4.91			7.5			
			Middle	7.1	25.8	30.9	30.9	6.07	6.07	85.6	85.5	5.12	5.08		7.5			7.7
						30.8		6.06		85.4		5.03			7.8			
			Bottom	13.2	24.9	31.7	31.8	5.92	5.96	83.5	84.0	5.24	5.22		7.8			7.9
						31.8		5.99		84.5		5.19			8.0			
20/08/11	1130-1138	30/Fine	Surface	1.0	26.4	29.7	29.7	6.36	6.34	90.3	90.0	4.93	4.94	5.03	7.4	7.5	7.7	
						29.6		6.31		89.6		4.95			7.5			
			Middle	6.7	25.9	30.6	30.7	6.27	6.26	89.0	88.8	5.01	5.03		7.5			7.7
						30.7		6.24		88.6		5.05			7.8			
			Bottom	12.4	25.2	31.6	31.6	6.16	6.14	87.5	87.2	5.11	5.13		8.0			8.1
						31.5		6.12		86.9		5.14			8.2			
23/08/11	1627-1642	31/Fine	Surface	1.0	26.7	29.8	29.8	6.23	6.25	87.8	88.1	4.30	4.32	4.48	6.6	6.6	6.8	
						29.8		6.27		88.4		4.34			6.5			
			Middle	6.7	26.5	30.1	30.2	6.16	6.14	86.8	86.5	4.44	4.47		6.5			6.7
						30.2		6.11		86.1		4.50			6.8			
			Bottom	12.4	26.0	30.9	31.0	5.92	5.94	83.4	83.7	4.62	4.64		7.0			7.1
						31.0		5.96		84.0		4.66			7.2			
25/08/11	1730-1742	27/Cloudy	Surface	1.0	28.7	29.7	29.8	6.13	6.12	85.8	85.1	4.99	4.98	5.09	7.6	7.6	7.8	
						29.8		6.11		84.4		4.96			7.5			
			Middle	6.6	27.5	30.5	30.5	6.02	6.04	86.0	86.1	5.12	5.10		8.0			7.9
						30.4		6.06		86.1		5.08			7.8			
			Bottom	12.2	26.7	31.8	31.8	5.73	5.75	84.8	85.4	5.20	5.19		8.0			8.0
						31.7		5.76		85.9		5.18			8.0			
27/08/11	1814-1827	30/Fine	Surface	1.0	29.9	29.9	30.0	6.25	6.27	88.1	88.4	4.19	4.21	4.40	6.4	6.5	6.7	
						30.0		6.29		88.7		4.23			6.5			
			Middle	6.7	26.5	30.2	30.3	6.18	6.16	87.1	86.8	4.38	4.40		6.5			6.7
						30.3		6.14		86.5		4.42			6.8			
			Bottom	12.4	26.1	30.9	31.0	6.01	5.99	84.7	84.5	4.55	4.58		7.0			7.1
						31.0		5.97		84.2		4.60			7.2			
30/08/11	2013-2024	33/Fine	Surface	1.0	28.7	30.5	30.6	6.09	6.07	88.9	87.7	4.86	4.91	5.05	7.2	7.4	7.9	
						30.6		6.04		86.4		4.96			7.5			
			Middle	6.8	26.9	31.4	31.5	5.94	5.95	86.1	86.6	5.05	5.03		8.0			7.9
						31.5		5.96		87.0		5.01			7.8			
			Bottom	12.6	25.6	32.0	32.0	5.74	5.77	81.5	83.1	5.23	5.22		8.4			8.4
						32.0		5.80		84.7		5.21			8.4			

**Mid-Flood Tide**

Monitoring Station : R15

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/08/11	0758-0809	28/Fine	Surface	1.0	26.8	30.8	30.8	6.02	6.05	83.7	84.1	5.08	5.05	5.19	7.6	7.5	7.7
						30.7		6.07		84.4		5.02			7.4		
			Middle	6.1	26.0	31.4	5.94	5.93	82.6	82.4	5.20	5.22	7.8		7.7		
04/08/11	0850-0905	28/Fine	Surface	1.0	26.6	31.4	31.4	5.91	6.05	82.1	85.2	5.24	5.10	5.21	7.6	7.7	8.0
						31.8		5.84		81.2		5.33			8.0		
			29.9	6.06	85.4	5.16	7.8										
06/08/11	1044-1058	30/Fine	Surface	1.0	27.6	30.8	30.8	5.95	5.97	83.3	83.6	4.27	4.29	4.33	6.6	6.6	6.7
						30.7		5.99		83.9		4.30			6.6		
			Middle	5.9	26.4	31.5	5.86	5.87	82.0	82.2	4.29	4.26	6.6		6.5		
09/08/11	1434-1445	29/Cloudy	Surface	1.0	27.5	31.4	31.5	5.88	5.96	82.3	84.0	4.22	5.07	5.23	7.6	7.7	8.1
						31.2		5.86		81.5		4.49			8.2		
			29.8	6.15	86.7	5.05	8.2										
11/08/11	1545-1559	32/Fine	Surface	1.0	28.7	31.5	31.5	5.98	5.90	84.3	82.5	5.35	5.37	5.27	8.2	8.4	8.2
						29.0		6.09		85.3		5.16			8.0		
			29.0	6.07	84.9	5.13	8.0										
13/08/11	1634-1645	32/Fine	Surface	1.0	27.6	30.4	30.4	5.83	5.86	81.6	82.0	5.36	5.30	5.24	8.4	8.1	8.1
						30.3		6.02		83.4		5.25			8.2		
			30.7	5.96	84.6	5.25	8.2										
16/08/11	1730-1744	33/Fine	Surface	1.0	27.4	31.6	31.7	5.90	5.85	83.3	83.0	4.68	4.66	4.47	6.8	6.8	6.9
						31.7		5.87		83.3		5.35			7.0		
			Middle	6.0	27.1	30.3	6.01	6.04	85.3	85.7	4.44	4.42	6.8		6.9		
18/08/11	0834-0845	28/Fine	Surface	1.0	26.2	30.7	30.7	5.83	5.85	82.7	83.0	4.63	4.66	5.25	7.2	7.1	8.1
						30.4		6.07		85.6		5.08			8.0		
			30.3	6.12	86.3	5.16	8.2										
20/08/11	0848-0900	30/Fine	Surface	1.0	26.4	30.8	30.8	5.99	6.00	84.5	84.6	5.27	5.25	5.19	7.6	7.7	8.0
						30.8		6.01		84.7		5.22			7.8		
			Middle	5.6	25.9	30.6	6.03	6.04	85.6	85.8	5.20	5.19	8.0		8.0		
23/08/11	1341-1355	32/Fine	Surface	1.0	26.8	31.6	31.6	5.92	5.94	84.1	84.4	5.24	4.87	4.69	8.0	8.1	7.1
						31.5		5.96		84.7		5.28			8.2		
			Middle	5.9	26.5	30.5	5.92	5.94	85.9	85.8	5.17	5.19	8.0		8.0		
25/08/11	1444-1459	27/Cloudy	Surface	1.0	28.7	5.80	5.78	81.2	80.9	80.6	87.8	4.90	5.06	5.08	7.4	7.5	7.8
						30.5		5.76		80.6		4.90			7.6		
			Middle	5.7	27.3	30.5	5.90	5.93	84.1	84.4	4.52	4.55	7.8		7.8		
27/08/11	1515-1532	33/Fine	Surface	1.0	26.9	29.9	29.9	6.03	6.08	85.6	85.7	5.02	5.01	4.60	6.8	6.8	7.1
						29.9		6.08		89.9		5.10			7.0		
			Middle	6.0	26.6	30.0	5.98	5.96	82.9	83.2	4.63	4.66	7.0		7.0		
30/08/11	1742-1753	33/Fine	Surface	1.0	28.6	30.6	30.6	5.80	5.87	81.2	81.4	4.84	5.18	5.06	7.4	7.4	7.7
						30.8		5.88		82.2		4.77			8.0		
			Middle	5.8	26.7	31.6	5.86	5.84	83.9	83.3	5.12	5.18	8.0		8.0		



**Mid-Flood 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
02/08/11	0740-0751	28/Fine	Surface	1.0	26.7	30.7	30.8	6.19	6.18	85.4	85.3	4.96	4.94	5.06	7.6	7.6	7.7
						30.8		6.17		85.1		4.91			7.6		
			Middle	6.8	25.9	31.4	31.4	6.01	6.03	82.9	83.2	5.09	5.07		7.8	7.7	
						31.3		6.04		83.4		5.04			7.6		
			Bottom	12.6	25.3	31.7	31.7	5.96	5.93	82.2	81.8	5.13	5.17		7.8	7.9	
						31.7		5.90		81.4		5.21			8.0		
04/08/11	0829-0845	28/Fine	Surface	1.0	26.5	29.8	29.8	6.13	6.11	86.4	86.1	4.94	4.97	5.11	7.6	7.7	7.8
						29.8		6.08		85.7		5.00			7.8		
			Middle	6.5	26.4	30.0	30.1	6.02	6.06	84.8	85.4	5.06	5.09		7.6	7.7	
						30.1		6.10		86.0		5.11			7.8		
			Bottom	12.0	25.9	31.5	31.5	5.99	5.96	84.4	83.9	5.25	5.28		7.8	8.0	
						31.4		5.92		83.4		5.31			8.2		
06/08/11	1024-1037	30/Fine	Surface	1.0	27.5	30.7	30.7	5.98	5.95	83.7	83.2	4.16	4.15	4.36	6.2	6.2	6.7
						30.7		5.91		82.7		4.13			6.2		
			Middle	6.5	26.5	31.7	31.7	6.02	6.05	84.3	84.6	4.36	4.38		6.8	6.8	
						31.6		6.07		84.9		4.39			6.8		
			Bottom	12.0	25.8	32.0	32.1	5.83	5.87	81.6	82.1	4.59	4.55		7.0	7.0	
						32.1		5.90		82.6		4.50			7.0		
09/08/11	1415-1426	29/Cloudy	Surface	1.0	27.4	29.8	29.8	6.25	6.22	87.5	87.1	4.97	5.00	5.13	7.6	7.8	8.0
						29.7		6.19		86.7		5.03			8.0		
			Middle	6.7	26.9	30.3	30.3	6.08	6.10	85.1	85.4	5.10	5.13		8.0	8.1	
						30.3		6.12		85.7		5.16			8.2		
			Bottom	12.4	26.3	31.6	31.6	5.96	5.95	83.4	83.3	5.29	5.26		8.2	8.1	
						31.5		5.94		83.2		5.22			8.0		
11/08/11	1524-1538	32/Fine	Surface	1.0	28.7	28.9	29.0	6.12	6.09	85.7	85.2	5.09	5.05	5.17	8.0	7.9	8.0
						29.0		6.05		84.7		5.01			7.8		
			Middle	6.4	27.6	30.6	30.6	5.94	5.95	83.2	83.3	5.20	5.20		8.0	8.0	
						30.5		5.96		83.4		5.19			8.0		
			Bottom	11.8	26.6	31.3	31.4	5.98	5.96	83.7	83.4	5.24	5.25		8.0	8.0	
						31.4		5.93		83.0		5.26			8.0		
13/08/11	1615-1626	32/Fine	Surface	1.0	27.5	29.8	29.8	6.24	6.22	88.6	88.3	5.04	5.06	5.14	7.6	7.7	7.9
						29.7		6.20		88.0		5.07			7.8		
			Middle	6.2	26.9	30.7	30.7	6.13	6.11	87.0	86.8	5.11	5.13		7.8	7.9	
						30.6		6.09		86.5		5.14			8.0		
			Bottom	11.4	25.7	31.7	31.7	5.99	5.98	85.1	84.9	5.21	5.23		8.0	8.0	
						31.6		5.96		84.6		5.24			8.0		
16/08/11	1709-1725	33/Fine	Surface	1.0	27.3	29.9	29.9	6.41	6.39	91.6	91.4	4.08	4.11	4.27	6.4	6.4	6.5
						29.9		6.37		91.1		4.14			6.4		
			Middle	6.6	27.0	30.3	30.4	6.30	6.27	90.1	89.6	4.25	4.23		6.4	6.5	
						30.4		6.23		89.1		4.20			6.6		
			Bottom	12.2	26.1	30.8	30.8	6.10	6.12	87.2	87.5	4.44	4.47		6.4	6.6	
						30.8		6.14		87.8		4.50			6.8		
18/08/11	0815-0826	28/Fine	Surface	1.0	26.2	30.4	30.4	6.25	6.23	87.5	87.2	4.98	4.96	5.09	7.4	7.4	7.8
						30.4		6.21		86.9		4.93			7.4		
			Middle	6.9	25.6	30.9	30.9	6.09	6.07	85.3	85.0	5.13	5.10		8.0	7.9	
						30.8		6.05		84.7		5.06			7.8		
			Bottom	12.8	24.8	31.7	31.8	5.94	5.93	83.2	83.0	5.21	5.23		8.0	8.0	
						31.8		5.91		82.7		5.24			8.0		
20/08/11	0833-0837	30/Fine	Surface	1.0	26.5	29.7	29.7	6.22	6.24	88.3	88.6	5.05	5.07	5.16	7.6	7.7	7.9
						29.6		6.26		88.9		5.08			7.8		
			Middle	6.3	25.8	30.6	30.6	6.17	6.15	87.6	87.3	5.14	5.16		8.0	8.0	
						30.5		6.13		87.0		5.17			8.0		
			Bottom	11.6	25.2	31.6	31.6	6.02	6.04	85.5	85.7	5.25	5.27		8.2	8.1	
						31.6		6.05		85.9		5.29			8.0		
23/08/11	1320-1337	32/Fine	Surface	1.0	26.8	29.8	29.8	6.13	6.15	85.8	86.0	4.31	4.34	4.53	6.4	6.5	6.9
						29.8		6.16		86.2		4.36			6.6		
			Middle	6.6	26.4	30.1	30.2	6.08	6.06	85.1	84.8	4.48	4.51		7.0	7.0	
						30.2		6.03		84.4		4.53			7.0		
			Bottom	12.2	26.1	30.9	30.9	5.82	5.84	81.5	81.8	4.76	4.74		7.4	7.3	
						30.8		5.86		82.0		4.71			7.2		
25/08/11	1424-1436	27/Cloudy	Surface	1.0	28.6	29.8	29.8	6.21	6.20	88.9	88.1	4.97	4.96	4.99	7.6	7.7	7.7
						29.7		6.18		87.2		4.95			7.8		
			Middle	6.5	27.4	30.3	30.4	6.07	6.04	86.2	85.8	5.02	5.06		7.8	7.9	
						30.4		6.01		85.3		5.10			8.0		
			Bottom	12.0	26.7	31.4	31.4	5.72	5.76	82.9	83.2	4.91	4.95		7.6	7.6	
						31.3		5.80		83.5		4.98			7.6		
27/08/11	1456-1511	33/Fine	Surface	1.0	26.9	29.8	29.9	6.28	6.26	88.5	88.2	4.28	4.31	4.46	6.6	6.6	7.0
						29.9		6.23		87.8		4.33			6.6		
			Middle	6.5	26.6	30.3	30.4	6.17	6.16	87.0	86.8	4.40	4.44		6.8	6.9	
						30.4		6.14		86.6		4.47			7.0		
			Bottom	12.0	25.9	31.0	31.1	6.02	6.00	84.9	84.6	4.62	4.64		7.4	7.4	
						31.1		5.98		84.3		4.66			7.4		
30/08/11	1724-1735	33/Fine	Surface	1.0	28.5	30.4	30.4	6.19	6.14	90.4	89.4	5.09	5.04	5.17	7.8	7.7	8.0
						30.4		6.09		88.3		4.99			7.6		
			Middle	6.4	26.8	31.5	31.5	5.99	5.95	86.9	85.7	5.17	5.19		8.0	8.0	
						31.5		5.91		84.5		5.21			8.0		
			Bottom	11.8	25.8	32.0	32.0	5.82	5.83	82.6	83.9	5.29	5.27		8.4	8.4	
						32.0		5.83		85.1		5.24			8.4		

**Mid-Flood Tide**

Monitoring Station : R17

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)					
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average			
02/08/11	0725-0737	28/Fine	Surface	1.0	26.8	30.8	30.8	6.26	6.24	87.0	86.8	4.87	4.91	5.09	7.2	7.4	7.8			
						30.8		6.22		86.5		4.94			7.6					
			Middle	6.5	26.0	31.3	31.4	6.09	6.12	84.7	85.1	5.11	5.07		5.11			5.09	8.0	7.8
						31.4		6.15		85.5		5.07			7.5					
			Bottom	12.0	25.2	31.8	31.8	5.94	5.93	82.6	82.5	5.26	5.29		5.26			5.29	8.0	8.1
						31.7		5.92		82.3		5.31			8.2					
04/08/11	0810-0825	28/Fine	Surface	1.0	26.6	29.8	29.9	6.18	6.15	87.1	86.7	4.98	5.02	5.09	7.6	7.6	7.7			
						29.9		6.12		86.2		5.05			7.6					
			Middle	6.4	26.5	29.9	30.0	6.15	6.13	86.7	86.4	4.92	5.00		4.92			5.00	7.6	7.8
						30.1		6.10		86.0		5.08			8.0					
			Bottom	11.8	26.0	31.2	31.3	6.02	6.00	84.8	84.5	5.21	5.24		5.21			5.24	7.5	7.8
						31.3		5.97		84.1		5.27			8.0					
06/08/11	1000-1015	30/Fine	Surface	1.0	27.6	30.8	30.8	6.08	6.07	85.1	84.9	4.36	4.38	4.79	6.6	6.6	7.2			
						30.7		6.05		84.7		4.39			6.6					
			Middle	6.4	26.5	31.6	31.6	5.99	6.01	83.9	84.1	4.92	4.95		4.92			4.95	7.0	7.3
						31.5		6.02		84.3		4.98			7.5					
			Bottom	11.8	25.9	31.9	32.0	5.84	5.85	81.8	81.9	5.03	5.05		5.03			5.05	7.5	7.7
						32.0		5.85		81.9		5.07			7.8					
09/08/11	1400-1412	29/Cloudy	Surface	1.0	27.5	29.7	29.7	6.22	6.25	87.1	87.5	4.93	4.97	5.14	7.4	7.6	7.9			
						29.7		6.27		87.8		5.01			7.8					
			Middle	6.4	26.9	30.3	30.4	6.14	6.13	86.0	85.8	5.19	5.17		5.19			5.17	8.0	8.0
						30.4		6.11		85.5		5.14			8.0					
			Bottom	11.8	26.4	31.5	31.6	5.99	6.02	83.9	84.3	5.26	5.29		5.26			5.29	8.0	8.2
						31.6		6.05		84.7		5.32			8.4					
11/08/11	1500-1513	32/Fine	Surface	1.0	28.7	28.6	28.6	6.23	6.21	87.2	86.9	4.97	4.93	5.05	7.4	7.4	7.8			
						28.5		6.18		86.5		4.89			7.4					
			Middle	6.2	27.5	30.4	30.5	6.07	6.04	84.9	84.5	5.08	5.09		5.08			5.09	7.8	7.9
						30.5		6.01		84.1		5.10			8.0					
			Bottom	11.4	26.7	31.2	31.3	6.13	6.11	85.8	85.5	5.11	5.13		5.11			5.13	8.0	8.0
						31.3		6.08		85.1		5.14			8.0					
13/08/11	1600-1612	32/Fine	Surface	1.0	27.5	29.7	29.8	6.21	6.19	88.2	87.9	4.96	4.99	5.07	7.2	7.4	7.8			
						29.8		6.17		87.6		5.02			7.6					
			Middle	6.3	26.9	30.6	30.7	6.10	6.08	86.6	86.3	5.06	5.08		5.06			5.08	7.6	7.8
						30.7		6.05		85.9		5.09			8.0					
			Bottom	11.6	25.8	31.6	31.7	5.97	5.96	84.8	84.6	5.13	5.16		5.13			5.16	8.0	8.1
						31.7		5.94		84.3		5.18			8.2					
16/08/11	1650-1705	33/Fine	Surface	1.0	27.3	29.9	30.0	6.31	6.34	90.2	90.6	4.16	4.18	4.26	6.4	6.4	6.7			
						30.0		6.36		90.9		4.20			6.4					
			Middle	6.5	27.0	30.2	30.3	6.29	6.27	89.3	89.1	4.10	4.14		4.10			4.14	6.6	6.6
						30.3		6.25		88.8		4.17			6.5					
			Bottom	12.0	26.1	30.7	30.8	6.03	6.05	85.6	85.9	4.42	4.45		4.42			4.45	7.0	7.1
						30.8		6.07		86.1		4.48			7.2					
18/08/11	0800-0812	28/Fine	Surface	1.0	26.1	30.4	30.4	6.29	6.30	88.1	88.2	4.95	4.99	5.14	7.4	7.5	7.9			
						30.3		6.31		88.3		5.03			7.6					
			Middle	6.5	25.5	30.8	30.9	6.07	6.05	85.0	84.7	5.14	5.12		5.14			5.12	8.0	8.0
						30.9		6.03		84.4		5.10			8.0					
			Bottom	12.0	24.8	31.7	31.7	5.92	5.95	82.9	83.3	5.26	5.30		5.26			5.30	8.0	8.2
						31.7		5.98		83.7		5.33			8.4					
20/08/11	0800-0813	30/Fine	Surface	1.0	26.4	29.6	29.7	6.30	6.29	89.5	89.3	5.03	5.00	5.10	7.4	7.4	7.8			
						29.7		6.27		89.0		4.97			7.4					
			Middle	6.2	25.8	30.5	30.5	6.22	6.20	88.3	88.1	5.08	5.10		5.08			5.10	7.8	7.9
						30.5		6.18		87.8		5.11			8.0					
			Bottom	11.4	25.1	31.6	31.7	6.10	6.08	86.6	86.4	5.17	5.20		5.17			5.20	8.0	8.2
						31.7		6.06		86.1		5.23			8.4					
23/08/11	1300-1316	32/Fine	Surface	1.0	26.8	29.7	29.8	6.05	6.08	84.7	85.1	4.38	4.41	4.59	7.0	6.9	7.0			
						29.8		6.10		85.4		4.43			6.8					
			Middle	6.5	26.4	30.1	30.1	6.00	5.98	84.0	83.7	4.51	4.53		4.51			4.53	6.6	6.6
						30.1		5.96		83.4		4.55			6.5					
			Bottom	12.6	26.0	30.8	30.9	5.89	5.87	82.5	82.2	4.80	4.83		4.80			4.83	7.5	7.5
						30.9		5.85		81.9		4.85			7.4					
25/08/11	1400-1415	27/Cloudy	Surface	1.0	28.7	29.6	29.7	6.12	6.11	93.0	90.7	4.82	4.81	4.94	7.2	7.3	7.6			
						29.7		6.10		88.4		4.80			7.4					
			Middle	6.3	27.5	30.4	30.5	5.94	5.96	84.3	85.8	4.94	4.96		4.94			4.96	7.6	7.6
						30.5		5.97		87.2		4.98			7.5					
			Bottom	11.6	26.8	31.2	31.3	5.90	5.89	85.6	85.2	5.08	5.06		5.08			5.06	8.0	7.8
						31.3		5.88		84.7		5.03			7.6					
27/08/11	1435-1452	33/Fine	Surface	1.0	26.9	29.8	29.9	6.18	6.21	87.1	87.6	4.20	4.23	4.45	6.4	6.5	6.9			
						29.9		6.24		88.0		4.26			6.6					
			Middle	6.4	26.5	30.2	30.3	6.12	6.10	86.3	86.0	4.41	4.43		4.41			4.43	7.0	7.0
						30.3		6.08		85.7		4.45			7.0					
			Bottom	11.8	26.0	30.9	31.0	5.97	5.96	84.2	84.0	4.68	4.70		4.68			4.70	7.0	7.2
						31.0		5.94		83.7		4.72			7.4					
30/08/11	1700-1715	33/Fine	Surface	1.0	28.6	30.3	30.4	6.27	6.24	89.0	88.5	4.97	5.00	5.10	7.6	7.6	7.8			
						30.4		6.20		88.0		5.02			7.6					
			Middle	6.3	26.8	31.4	31.5	5.89	5.91	83.6	84.7	5.06	5.08		5.06			5.08	7.8	7.9
						31.5		5.92		85.8		5.09			8.0					
			Bottom	11.6	25.9	32.1	32.1	5.72	5.74	82.9	83.1	5.20	5.23		5.20			5.23	8.0	8.0
						32.0		5.75		83.2		5.25			8.0					

**Mid-Flood Tide**



Monitoring Station : R28

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average		
02/08/11	0928-0939	29/Fine	Surface	1.0	26.9	30.7	30.7	6.16	6.17	85.0	85.2	5.04	5.00	5.21	7.6	7.6	8.0		
						30.7		6.18		85.3		4.96			7.6				
			Middle	6.2	26.2	31.4	31.4	5.97	6.00	82.4	82.8	5.24	5.22		5.19	5.22		8.0	8.0
						31.4		6.02		83.1		5.19			8.0				
			Bottom	11.4	25.4	31.7	31.8	5.89	5.90	81.3	81.5	5.45	5.41		5.37	5.41		8.4	8.3
						31.8		5.91		81.6		5.37			8.2				
04/08/11	1018-1032	30/Sunny	Surface	1.0	26.7	29.9	29.9	6.14	6.17	86.5	86.9	5.05	5.01	5.07	7.4	7.3	7.7		
						29.9		6.19		87.2		4.97			7.2				
			Middle	6.0	26.5	29.9	30.0	6.10	6.08	86.0	85.7	4.93	4.96		4.99	4.96		7.8	7.7
						30.1		6.06		85.4		4.99			7.6				
			Bottom	11.0	26.0	31.3	31.4	5.92	5.94	83.4	83.6	5.23	5.25		5.27	5.25		7.8	8.0
						31.4		5.95		83.8		5.27			8.2				
06/08/11	1211-1225	30/Fine	Surface	1.0	27.8	30.6	30.6	6.02	6.04	84.3	84.5	4.36	4.34	4.74	6.4	6.5	7.2		
						30.5		6.05		84.7		4.32			6.6				
			Middle	5.8	26.6	31.4	31.5	5.98	5.94	83.7	83.2	4.87	4.86		4.84	4.86		7.4	7.3
						31.5		5.90		82.6		4.84			7.2				
			Bottom	10.6	26.0	32.1	32.1	5.96	5.98	83.4	83.7	5.02	5.03		5.04	5.03		7.8	7.9
						32.0		5.99		83.9		5.04			8.0				
09/08/11	1611-1622	29/Cloudy	Surface	1.0	27.6	29.7	29.7	6.17	6.19	86.4	86.7	4.96	5.00	5.14	7.4	7.5	7.9		
						29.6		6.21		86.9		5.03			7.6				
			Middle	6.1	27.1	30.4	30.4	6.07	6.08	85.0	85.2	5.13	5.11		5.09	5.11		8.0	7.9
						30.4		6.09		85.3		5.09			7.8				
			Bottom	11.2	26.5	31.5	31.6	5.95	5.93	83.3	83.0	5.28	5.31		5.34	5.31		8.2	8.2
						31.6		5.91		82.7		5.34			8.2				
11/08/11	1714-1728	31/Fine	Surface	1.0	28.8	29.1	29.1	6.02	6.05	84.3	84.7	4.93	4.95	4.93	7.6	7.6	7.6		
						29.0		6.08		85.1		4.96			7.6				
			Middle	6.2	27.6	30.7	30.8	6.01	6.03	84.1	84.4	4.80	4.83		4.85	4.83		7.4	7.4
						30.8		6.04		84.6		4.85			7.4				
			Bottom	11.4	26.5	31.4	31.4	5.94	5.97	83.2	83.6	4.99	5.02		5.04	5.02		7.6	7.7
						31.3		5.99		83.9		5.04			7.8				
13/08/11	1809-1821	32/Fine	Surface	1.0	27.6	29.9	29.9	6.17	6.21	87.6	88.1	5.00	4.98	5.09	7.6	7.5	7.8		
						29.8		6.24		88.6		4.96			7.4				
			Middle	6.3	27.0	30.6	30.7	6.11	6.09	86.8	86.5	5.07	5.09		5.11	5.09		7.6	7.6
						30.7		6.07		86.2		5.11			7.6				
			Bottom	11.6	25.8	31.6	31.6	5.95	5.97	84.5	84.7	5.18	5.21		5.23	5.21		8.2	8.2
						31.5		5.98		84.9		5.23			8.2				
16/08/11	1851-1905	32/Fine	Surface	1.0	27.4	30.0	30.0	6.27	6.25	89.0	88.7	4.20	4.23	4.60	6.4	6.5	6.6		
						30.0		6.23		88.4		4.25			6.6				
			Middle	6.0	27.0	30.4	30.5	6.14	6.17	87.1	87.5	4.13	4.66		4.13	4.66		6.2	6.3
						30.5		6.19		87.8		4.13			6.4				
			Bottom	11.0	26.4	30.9	31.0	6.04	6.02	85.7	85.4	5.38	4.91		4.44	4.91		6.8	6.9
						31.0		5.99		85.1		4.44			7.0				
18/08/11	1011-1022	28/Fine	Surface	1.0	26.2	30.3	30.4	6.26	6.25	87.6	87.4	4.98	5.00	5.15	7.6	7.7	7.9		
						30.4		6.23		87.2		5.02			7.8				
			Middle	6.1	25.8	30.8	30.8	6.05	6.08	84.7	85.1	5.15	5.17		5.18	5.17		8.0	7.9
						30.8		6.11		85.5		5.18			7.8				
			Bottom	11.2	24.9	31.7	31.7	5.99	5.98	83.9	83.8	5.30	5.28		5.25	5.28		8.0	8.0
						31.7		5.97		83.6		5.25			8.0				
20/08/11	1022-1033	30/Fine	Surface	1.0	26.5	29.8	29.8	6.33	6.31	89.9	89.6	4.93	4.95	5.05	7.4	7.4	7.7		
						29.7		6.28		89.2		4.97			7.4				
			Middle	6.3	25.8	30.6	30.6	6.21	6.20	88.2	88.0	5.04	5.06		5.08	5.06		7.8	7.9
						30.5		6.18		87.8		5.08			8.0				
			Bottom	11.6	25.2	31.5	31.6	6.07	6.06	86.2	86.0	5.11	5.13		5.11	5.13		7.8	7.9
						31.6		6.04		85.8		5.14			8.0				
23/08/11	1502-1518	32/Fine	Surface	1.0	26.8	29.9	29.9	6.20	6.23	87.4	87.8	4.26	4.28	4.43	6.4	6.5	6.8		
						29.9		6.25		88.2		4.30			6.6				
			Middle	6.0	26.4	30.2	30.3	6.13	6.11	86.4	86.1	4.37	4.40		4.43	4.40		6.6	6.7
						30.3		6.08		85.7		4.43			6.8				
			Bottom	11.0	26.0	30.9	31.0	5.95	5.93	83.9	83.6	4.58	4.61		4.63	4.61		7.2	7.2
						31.0		5.90		83.2		4.63			7.2				
25/08/11	1614-1626	27/Cloudy	Surface	1.0	28.7	29.7	29.7	6.12	6.14	87.5	87.7	4.72	4.77	4.99	7.2	7.3	7.7		
						29.6		6.15		87.9		4.81			7.4				
			Middle	6.1	27.6	30.4	30.5	5.93	5.96	84.8	86.7	5.02	5.05		5.08	5.05		7.8	7.8
						30.5		5.98		88.5		5.08			7.8				
			Bottom	11.2	26.9	31.4	31.5	5.89	5.87	85.4	86.3	5.12	5.17		5.21	5.17		7.8	7.9
						31.5		5.85		87.1		5.21			8.0				
27/08/11	1646-1702	32/Fine	Surface	1.0	26.9	29.9	29.9	6.17	6.21	86.9	87.4	4.21	4.23	4.37	6.4	6.4	6.7		
						29.8		6.24		87.9		4.25			6.4				
			Middle	6.0	26.6	30.1	30.2	6.10	6.08	86.0	85.7	4.30	4.33		4.36	4.33		6.6	6.7
						30.2		6.06		85.4		4.36			6.8				
			Bottom	11.0	26.1	31.0	31.0	5.92	5.94	83.4	83.6	4.51	4.54		4.57	4.54		7.0	7.0
						31.0		5.95		83.8		4.57			7.0				
30/08/11	1903-1916	33/Fine	Surface	1.0	28.7	30.6	30.6	5.93	5.96	84.7	84.9	5.13	5.11	5.22	7.8	7.7	8.2		
						30.6		5.99		85.0		5.08			7.6				
			Middle	6.5	26.7	31.4	31.4	5.89	5.91	83.6	84.7	5.16	5.18		5.19	5.18		8.0	8.0
						31.3		5.92		85.8		5.19			8.0				
			Bottom	12.0	25.7	31.9	31.9	5.78	5.79	82.0	82.2	5.36	5.38		5.39	5.38		8.6	8.8
						31.9		5.80		82.4		5.39			9.0				

**Mid-Flood Tide**

Monitoring Station : R29

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
02/08/11	0951-1002	29/Fine	Surface	1.0	26.8	30.7	30.7	6.05	6.04	84.1	84.0	5.08	5.10	5.26	7.8	7.9	8.2	
						30.6		6.03		83.8		5.12			8.0			
			Middle	9.1	26.1	31.4	31.5	5.94	5.93	82.6	82.5	5.28	5.25		8.2			8.1
						31.5		5.92		82.3		5.21			8.0			
			Bottom	17.2	25.2	31.8	31.9	5.86	5.85	81.5	81.3	5.41	5.44		8.4			8.5
						31.9		5.83		81.0		5.47			8.6			
04/08/11	1038-1053	30/Sunny	Surface	1.0	26.6	29.9	30.0	6.06	6.04	84.8	84.5	5.11	5.14	5.36	7.6	7.9	8.3	
						30.0		6.01		84.1		5.17			8.2			
			Middle	8.9	26.1	30.9	30.9	5.92	5.91	82.8	82.6	5.36	5.38		8.2			8.3
						30.8		5.89		82.4		5.40			8.4			
			Bottom	16.8	25.6	31.7	31.7	5.70	5.72	79.8	80.1	5.52	5.55		8.4			8.6
						31.7		5.74		80.3		5.57			8.8			
06/08/11	1228-1239	30/Fine	Surface	1.0	27.8	30.4	30.5	5.92	5.94	82.9	83.2	4.90	4.86	4.97	7.4	7.2	7.6	
						30.5		5.96		83.4		4.82			7.0			
			Middle	8.6	26.7	31.5	31.5	5.94	5.93	83.2	83.0	4.93	4.95		7.6			7.6
						31.4		5.91		82.7		4.96			7.6			
			Bottom	16.2	26.0	31.9	32.0	5.76	5.75	80.6	80.5	5.10	5.09		8.0			8.0
						32.0		5.74		80.4		5.08			8.0			
09/08/11	1636-1647	29/Cloudy	Surface	1.0	27.6	29.7	29.7	6.11	6.09	86.2	85.8	5.08	5.10	5.27	7.8	7.8	8.1	
						29.7		6.06		85.4		5.11			7.8			
			Middle	8.9	26.9	30.5	30.5	5.89	5.91	83.0	83.3	5.24	5.28		8.0			8.2
						30.4		5.93		83.6		5.31			8.4			
			Bottom	16.8	26.3	31.6	31.6	5.84	5.82	82.3	82.1	5.47	5.45		8.4			8.4
						31.6		5.80		81.8		5.42			8.4			
11/08/11	1731-1743	31/Fine	Surface	1.0	28.7	29.1	29.2	6.20	6.18	86.8	86.5	5.11	5.10	5.14	8.0	7.8	7.9	
						29.2		6.15		86.1		5.08			7.6			
			Middle	8.9	27.5	30.5	30.5	6.02	6.04	84.3	84.5	5.14	5.14		8.0			7.9
						30.4		6.05		84.7		5.13			7.8			
			Bottom	16.8	26.8	31.5	31.6	6.09	6.11	85.3	85.6	5.20	5.19		8.0			8.0
						31.6		6.13		85.8		5.17			8.0			
13/08/11	1835-1847	32/Fine	Surface	1.0	27.5	29.7	29.7	6.31	6.30	89.6	89.4	4.95	4.97	5.10	7.0	7.2	7.7	
						29.7		6.28		89.2		4.99			7.4			
			Middle	8.9	26.9	30.7	30.7	6.18	6.16	87.8	87.5	5.10	5.11		7.8			7.8
						30.7		6.14		87.2		5.12			7.8			
			Bottom	16.8	25.7	31.7	31.7	6.04	6.02	85.8	85.5	5.19	5.23		7.8			8.1
						31.7		6.00		85.2		5.26			8.4			
16/08/11	1912-1927	32/Fine	Surface	1.0	27.3	29.9	30.0	6.11	6.14	86.7	87.1	4.33	4.36	4.51	6.8	6.9	7.6	
						30.0		6.16		87.4		4.38			7.0			
			Middle	8.9	26.8	30.7	30.7	6.00	5.96	85.2	84.7	4.52	4.50		7.6			7.6
						30.7		5.92		84.1		4.48			7.6			
			Bottom	16.8	26.0	31.2	31.3	5.77	5.79	81.9	82.2	4.66	4.68		8.0			8.2
						31.3		5.81		82.5		4.69			8.4			
18/08/11	1036-1047	28/Fine	Surface	1.0	26.3	30.3	30.3	6.13	6.11	86.4	86.1	5.05	5.07	5.22	7.8	7.9	8.1	
						30.2		6.08		85.7		5.09			8.0			
			Middle	9.0	25.7	30.9	31.0	6.02	6.00	84.9	84.6	5.23	5.20		8.2			8.0
						31.0		5.97		84.2		5.17			7.8			
			Bottom	17.0	24.7	31.9	31.9	5.83	5.82	82.2	85.1	5.41	5.40		8.4			8.3
						31.8		5.81		87.9		5.38			8.2			
20/08/11	1036-1050	30/Fine	Surface	1.0	26.5	29.8	29.7	6.24	6.25	88.6	88.8	4.99	5.02	5.13	7.4	7.4	7.8	
						29.6		6.26		88.9		5.04			7.4			
			Middle	8.9	25.7	30.9	30.8	6.12	6.11	86.9	86.7	5.13	5.15		7.6			7.8
						30.7		6.09		86.5		5.16			8.0			
			Bottom	16.8	25.1	31.8	31.8	5.98	5.95	84.9	84.5	5.22	5.24		8.0			8.1
						31.7		5.92		84.1		5.26			8.2			
23/08/11	1523-1540	32/Fine	Surface	1.0	26.9	29.8	29.9	6.09	6.11	85.8	86.1	4.35	4.38	4.55	6.6	6.7	7.0	
						29.9		6.13		86.4		4.40			6.8			
			Middle	8.9	26.3	30.6	30.7	5.98	5.95	84.3	83.9	4.52	4.55		7.0			7.0
						30.7		5.92		83.4		4.57			7.0			
			Bottom	16.8	25.8	31.6	31.7	5.80	5.78	81.8	81.5	4.70	4.73		7.2			7.3
						31.7		5.75		81.1		4.75			7.4			
25/08/11	1634-1647	27/Cloudy	Surface	1.0	28.7	29.8	29.8	6.26	6.27	88.9	89.1	4.69	4.73	4.87	7.2	7.3	7.5	
						29.8		6.27		89.2		4.77			7.4			
			Middle	8.8	27.7	30.6	30.6	6.07	6.04	86.2	85.8	4.83	4.83		7.4			7.4
						30.5		6.01		85.4		4.82			7.4			
			Bottom	16.6	26.9	31.6	31.7	5.95	5.96	83.9	84.1	5.05	5.07		7.8			7.8
						31.7		5.97		84.2		5.08			7.8			
27/08/11	1709-1725	32/Fine	Surface	1.0	26.8	29.8	29.8	6.09	6.07	85.8	85.6	4.35	4.38	4.59	6.6	6.7	7.2	
						29.8		6.05		85.3		4.40			6.8			
			Middle	8.9	26.3	30.5	30.5	5.89	5.86	83.0	82.6	4.58	4.61		7.2			7.2
						30.5		5.83		82.2		4.63			7.2			
			Bottom	16.8	25.8	31.4	31.5	5.72	5.74	80.7	80.9	4.77	4.80		7.6			7.6
						31.5		5.75		81.1		4.83			7.6			
30/08/11	1920-1932	33/Fine	Surface	1.0	28.7	30.5	30.5	6.23	6.21	90.3	89.1	5.04	5.00	5.08	7.4	7.3	7.5	
						30.4		6.19		87.9		4.96			7.2			
			Middle	8.8	26.6	31.3	31.4	5.96	5.95	84.6	84.5	5.10	5.09		7.6			7.5
						31.4		5.94		84.3		5.07			7.4			
			Bottom	16.6	25.7	32.0	32.0	5.75	5.74	83.9	83.4	5.12	5.15		7.6			7.6
						32.0		5.72		82.9		5.18			7.6			



# Mid-Flood Tide



Monitoring Station : C3

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)					
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average			
02/08/11	0845-0857	28/Fine	Surface	1.0	26.8	30.7	30.8	6.16	6.19	85.0	85.4	4.93	4.96	5.12	7.8	7.8	7.9			
						30.8		6.21		85.7		4.99			7.8					
			Middle	6.9	26.0	31.4	31.4	5.99	6.00	82.7	82.8	5.13	5.09		5.05			5.30	7.8	7.7
						31.3		6.01		82.9		5.27			7.6					
			Bottom	12.8	25.3	31.8	31.8	5.96	5.95	82.2	82.1	5.27	5.33		5.33			5.30	8.2	8.3
						31.8		5.94		82.0		5.33			8.4					
04/08/11	0933-0950	28/Fine	Surface	1.0	26.6	29.9	29.9	6.15	6.13	86.7	86.4	4.91	4.95	5.13	7.4	7.3	7.9			
						29.9		6.10		86.0		4.98			7.2					
			Middle	6.9	26.2	30.4	30.4	6.00	6.02	84.6	84.9	5.09	5.12		5.14			5.32	7.8	7.9
						30.4		6.04		85.1		5.14			8.0					
			Bottom	12.8	25.8	31.6	31.6	5.88	5.90	82.9	83.2	5.29	5.34		5.34			5.32	8.4	8.4
						31.6		5.92		83.4		5.34			8.4					
06/08/11	1125-1139	30/Fine	Surface	1.0	27.6	30.8	30.8	6.05	6.08	84.7	85.1	4.17	4.16	4.45	6.4	6.4	6.9			
						30.7		6.10		85.4		4.14			6.4					
			Middle	6.6	26.5	31.5	31.5	5.91	5.92	82.7	82.9	4.59	4.57		4.54			4.62	7.2	7.1
						31.4		5.93		83.0		4.54			7.0					
			Bottom	12.2	25.7	31.9	31.9	5.73	5.76	80.2	80.6	4.63	4.60		4.60			4.62	7.0	7.2
						31.8		5.78		80.9		4.60			7.4					
09/08/11	1525-1537	29/Cloudy	Surface	1.0	27.5	29.7	29.8	6.23	6.20	87.8	87.4	4.98	4.97	5.08	7.8	7.7	7.9			
						29.8		6.17		87.0		4.95			7.6					
			Middle	6.8	26.9	30.3	30.3	6.10	6.09	86.0	85.9	5.04	5.08		5.12			5.19	7.8	7.9
						30.3		6.08		85.7		5.12			8.0					
			Bottom	12.6	26.4	31.6	31.6	5.96	5.99	84.0	84.4	5.21	5.16		5.16			5.19	8.0	8.0
						31.6		6.01		84.7		5.16			8.0					
11/08/11	1628-1642	32/Fine	Surface	1.0	28.9	29.0	29.1	6.18	6.20	86.5	86.7	4.96	4.94	5.11	7.6	7.6	7.9			
						29.1		6.21		86.9		4.92			7.6					
			Middle	6.9	27.6	30.5	30.5	6.15	6.14	86.1	85.9	5.08	5.11		5.14			5.27	8.0	7.9
						30.5		6.12		85.7		5.14			8.2					
			Bottom	12.8	26.6	31.4	31.5	5.96	5.93	83.4	83.0	5.29	5.24		5.24			5.27	8.2	8.1
						31.5		5.90		82.6		5.24			8.0					
13/08/11	1723-1735	32/Fine	Surface	1.0	27.5	29.8	29.8	6.16	6.18	87.5	87.8	5.01	4.99	5.08	7.4	7.3	8.1			
						29.7		6.20		88.0		4.97			7.2					
			Middle	6.9	26.9	30.6	30.6	6.07	6.05	86.2	85.9	5.05	5.07		5.09			5.17	8.0	8.2
						30.6		6.03		85.6		5.09			8.4					
			Bottom	12.8	25.7	31.6	31.7	5.94	5.95	84.3	84.4	5.15	5.19		5.19			5.17	8.6	8.8
						31.7		5.95		84.5		5.19			9.0					
16/08/11	1812-1825	33/Fine	Surface	1.0	27.4	30.0	30.0	6.40	6.38	90.8	90.6	4.19	4.22	4.40	6.6	6.6	6.9			
						30.0		6.36		90.3		4.24			6.6					
			Middle	7.0	27.0	30.4	30.5	6.15	6.14	87.3	87.1	4.35	4.38		4.40			4.61	6.8	6.8
						30.5		6.12		86.9		4.40			6.8					
			Bottom	13.0	26.1	30.9	30.9	5.94	5.96	84.3	84.6	4.59	4.63		4.63			4.61	7.4	7.3
						30.9		5.98		84.9		4.63			7.2					
18/08/11	0925-0937	28/Fine	Surface	1.0	26.2	30.4	30.4	6.19	6.16	86.7	86.3	4.99	4.98	5.07	7.4	7.5	7.9			
						30.4		6.13		85.8		4.97			7.6					
			Middle	7.0	25.6	30.9	30.9	6.05	6.03	84.7	84.4	5.08	5.06		5.03			5.18	8.0	7.9
						30.9		6.01		84.1		5.03			7.8					
			Bottom	13.0	24.8	31.7	31.8	5.95	5.97	83.3	83.5	5.21	5.15		5.15			5.18	8.2	8.2
						31.8		5.98		83.7		5.15			8.2					
20/08/11	0939-0952	30/Fine	Surface	1.0	26.5	29.8	29.8	6.25	6.28	88.8	89.2	4.99	5.02	5.11	7.6	7.6	7.8			
						29.7		6.30		89.5		5.04			7.6					
			Middle	6.9	25.8	30.5	30.6	6.17	6.15	87.6	87.3	5.09	5.11		5.13			5.22	7.8	7.9
						30.6		6.13		87.0		5.13			8.0					
			Bottom	12.8	25.2	31.7	31.7	6.05	6.03	85.9	85.6	5.19	5.24		5.24			5.22	8.0	8.0
						31.6		6.00		85.2		5.24			8.0					
23/08/11	1421-1435	32/Fine	Surface	1.0	26.8	29.7	29.7	6.21	6.23	86.9	87.2	4.21	4.24	4.44	6.4	6.5	6.8			
						29.7		6.25		87.5		4.26			6.6					
			Middle	6.8	26.4	30.2	30.3	6.13	6.11	85.8	85.5	4.40	4.42		4.44			4.67	6.8	6.8
						30.3		6.08		85.1		4.44			6.8					
			Bottom	12.6	25.8	30.9	31.0	5.92	5.90	82.9	82.6	4.65	4.69		4.69			4.67	7.2	7.2
						31.0		5.88		82.3		4.69			7.2					
25/08/11	1528-1541	27/Cloudy	Surface	1.0	28.6	29.7	29.7	6.07	6.05	88.6	88.4	5.11	5.10	5.10	7.8	7.7	7.6			
						29.6		6.03		88.2		5.09			7.6					
			Middle	6.9	27.3	30.5	30.5	5.82	5.86	82.6	84.4	5.06	5.05		5.04			5.14	7.0	7.1
						30.4		5.90		86.1		5.04			7.2					
			Bottom	12.8	26.5	31.5	31.5	5.94	5.93	86.5	86.4	5.13	5.15		5.15			5.14	8.0	8.0
						31.4		5.91		86.3		5.15			8.0					
27/08/11	1600-1617	33/Fine	Surface	1.0	26.9	29.9	29.9	6.21	6.24	87.6	88.0	4.20	4.22	4.43	6.4	6.5	6.8			
						29.9		6.26		88.3		4.24			6.6					
			Middle	6.9	26.4	30.4	30.4	6.10	6.12	86.0	86.3	4.41	4.43		4.45			4.65	6.8	6.8
						30.4		6.14		86.6		4.45			6.8					
			Bottom	12.8	25.8	31.2	31.2	6.01	6.03	84.7	85.0	4.63	4.66		4.66			4.65	7.2	7.2
						31.1		6.05		85.3		4.66			7.2					
30/08/11	1822-1834	33/Fine	Surface	1.0	28.6	30.4	30.5	6.09	6.11	86.4	87.9	4.86	4.85	5.04	7.4	7.4	7.6			
						30.5		6.12		89.4		4.84			7.4					
			Middle	7.0	26.5	31.6	31.6	5.84	5.87	82.9	83.4	5.05	5.06		5.07			5.22	7.4	7.5
						31.6		5.90		83.8		5.07			7.6					
			Bottom	13.0	25.9	31.9	32.0	5.81	5.80	82.5	82.7	5.24	5.19		5.24			5.22	7.8	7.9
						32.0		5.79		82.8		5.19			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	
02/08/11	1620-1630	31/Fine	Surface	1.0	27.6	31.1	31.2	6.10	6.09	84.7	84.5	4.77	4.76	5.07	7.5	7.5	7.9	
				8.4	26.4	31.2		6.07		84.3		4.74			7.4			
			Middle	8.4	26.4	31.9	31.9	5.89	5.88	81.2	81.0	5.29	5.25		8.2			8.1
				15.8	25.7	31.8		5.86		80.8		5.21			8.0			
			Bottom	15.8	25.7	32.1	32.2	5.87	5.89	81.0	81.2	5.18	5.22		8.0			8.1
				15.8	25.7	32.2		5.90		81.4		5.25			8.2			
04/08/11	1752-1807	32/Sunny	Surface	1.0	27.0	29.4	29.4	6.21	6.22	87.6	87.7	5.08	5.06	5.15	7.5	7.7	8.0	
				8.1	26.3	29.3		6.23		87.8		5.04			7.8			
			Middle	8.1	26.3	30.3	30.4	6.15	6.14	86.7	86.5	5.13	5.16		8.0			8.0
				15.2	25.4	30.4		6.12		86.3		5.16			8.0			
			Bottom	15.2	25.4	31.3	31.3	6.06	6.05	85.4	85.2	5.22	5.24		8.2			8.2
				15.2	25.4	31.3		6.03		85.0		5.25			8.2			
06/08/11	1930-1940	31/Fine	Surface	1.0	27.6	31.3	31.3	6.22	6.20	86.4	86.1	5.11	5.09	5.24	8.0	8.1	8.2	
				8.4	26.5	31.3		6.17		85.7		5.06			8.2			
			Middle	8.4	26.5	31.8	31.9	6.05	6.03	84.0	83.8	5.33	5.30		8.2			8.3
				15.8	26.2	31.9		6.01		83.5		5.27			8.4			
			Bottom	15.8	26.2	32.1	32.1	5.85	5.88	80.7	81.1	5.38	5.35		8.2			8.2
				15.8	26.2	32.0		5.90		81.4		5.31			8.2			
09/08/11	1222-1237	28/Cloudy	Surface	1.0	27.3	29.7	29.7	6.27	6.30	88.4	88.8	4.95	4.96	5.06	7.5	7.8	7.9	
				8.3	26.7	29.7		6.32		89.1		4.97			8.0			
			Middle	8.3	26.7	30.4	30.5	6.20	6.19	87.4	87.2	5.05	5.06		8.0			8.0
				15.6	26.1	30.5		6.17		87.0		5.07			8.0			
			Bottom	15.6	26.1	31.6	31.7	6.12	6.10	86.3	86.0	5.13	5.16		8.0			8.0
				15.6	26.1	31.7		6.08		85.7		5.18			8.0			
11/08/11	1401-1415	30/Fine	Surface	1.0	26.5	29.6	29.6	6.27	6.25	86.5	86.2	4.09	4.13	4.40	6.5	6.7	6.9	
				7.4	26.0	29.6		6.22		85.8		4.16			6.8			
			Middle	7.4	26.0	30.0	30.1	6.15	6.13	84.9	84.6	4.38	4.40		6.8			6.8
				13.8	25.4	30.1		6.11		84.3		4.42			6.8			
			Bottom	13.8	25.4	30.8	30.8	5.99	5.96	82.6	82.2	4.63	4.66		7.0			7.1
				13.8	25.4	30.8		5.93		81.8		4.69			7.2			
13/08/11	1440-1452	32/Fine	Surface	1.0	27.4	29.8	29.8	6.25	6.24	88.1	87.9	4.96	4.95	5.11	7.0	7.3	7.9	
				8.0	26.8	29.8		6.22		87.7		4.93			7.6			
			Middle	8.0	26.8	30.6	30.6	6.08	6.10	85.7	86.0	5.17	5.13		8.0			8.2
				15.0	25.4	30.6		6.11		86.2		5.09			8.4			
			Bottom	15.0	25.4	31.7	31.8	5.98	5.96	84.3	84.0	5.26	5.25		8.4			8.3
				15.0	25.4	31.8		5.93		83.6		5.23			8.2			
16/08/11	1525-1537	31/Fine	Surface	1.0	26.6	29.6	29.6	6.34	6.32	89.4	89.1	4.32	4.37	4.50	6.5	6.8	7.1	
				7.9	26.0	29.6		6.30		88.8		4.41			7.0			
			Middle	7.9	26.0	30.6	30.6	6.15	6.19	86.7	87.3	4.47	4.50		7.0			7.1
				14.8	25.2	30.5		6.23		87.8		4.52			7.2			
			Bottom	14.8	25.2	31.9	31.9	5.95	5.98	83.9	84.3	4.67	4.63		7.4			7.3
				14.8	25.2	31.8		6.01		84.7		4.59			7.2			
18/08/11	1741-1753	32/Fine	Surface	1.0	26.8	30.3	30.3	6.33	6.32	89.3	89.1	4.98	5.01	5.13	7.5	7.6	7.9	
				8.1	26.0	30.2		6.30		88.8		5.04			7.6			
			Middle	8.1	26.0	31.0	31.0	6.21	6.19	87.6	87.3	5.11	5.14		7.8			8.0
				15.2	24.9	31.0		6.17		87.0		5.16			8.2			
			Bottom	15.2	24.9	32.0	32.0	6.03	6.06	85.0	85.4	5.23	5.24		8.0			8.1
				15.2	24.9	32.0		6.08		85.7		5.25			8.2			
20/08/11	1738-1749	31/Fine	Surface	1.0	27.0	30.0	30.0	6.06	6.08	86.1	86.4	5.02	5.04	5.15	7.5	7.7	7.8	
				7.4	26.5	29.9		6.10		86.6		5.05			7.8			
			Middle	7.4	26.5	30.9	30.9	6.01	5.97	85.3	84.8	5.14	5.13		7.8			7.7
				13.8	25.3	30.9		5.93		84.2		5.12			7.6			
			Bottom	13.8	25.3	32.0	32.0	5.82	5.83	82.6	82.8	5.30	5.27		8.0			8.1
				13.8	25.3	31.9		5.84		82.9		5.24			8.2			
23/08/11	1140-1152	29/Fine	Surface	1.0	26.5	29.4	29.4	6.16	6.13	86.2	85.8	4.36	4.34	4.51	6.5	6.7	7.0	
				7.9	25.9	29.4		6.10		85.4		4.31			6.8			
			Middle	7.9	25.9	30.5	30.6	6.02	6.02	84.3	84.2	4.51	4.49		7.0			6.9
				14.8	25.1	30.6		6.01		84.1		4.47			6.8			
			Bottom	14.8	25.1	30.9	30.9	5.87	5.88	82.2	82.4	4.66	4.71		7.2			7.3
				14.8	25.1	30.9		5.89		82.5		4.75			7.4			
25/08/11	1221-1235	30/Cloudy	Surface	1.0	28.3	29.6	29.6	6.34	6.33	93.2	92.0	5.00	4.98	5.09	7.5	7.7	8.0	
				8.1	27.6	29.6		6.31		90.8		4.96			7.8			
			Middle	8.1	27.6	30.4	30.4	6.20	6.22	91.1	91.4	5.07	5.10		8.0			8.0
				15.2	26.7	30.4		6.23		91.6		5.12			8.0			
			Bottom	15.2	26.7	31.6	31.6	6.12	6.10	90.0	89.7	5.19	5.21		8.2			8.2
				15.2	26.7	31.5		6.08		89.4		5.22			8.2			
27/08/11	1341-1354	29/Fine	Surface	1.0	26.6	29.7	29.7	6.11	6.14	86.2	86.6	4.46	4.42	4.57	7.0	7.0	7.3	
				8.1	26.2	29.7		6.17		87.0		4.37			7.0			
			Middle	8.1	26.2	30.3	30.4	6.02	5.99	84.9	84.5	4.52	4.55		7.2			7.2
				15.2	25.6	30.4		5.96		84.0		4.57			7.2			
			Bottom	15.2	25.6	31.1	31.1	5.81	5.83	81.9	82.1	4.71	4.75		7.6			7.6
				15.2	25.6	31.1		5.84		82.3		4.79			7.6			
30/08/11	1510-1522	31/Sunny	Surface	1.0	27.9	30.9	30.9	6.11	6.09	84.9	84.6	4.98	5.02	5.14	7.5	7.8	8.0	
				8.3	26.6	30.8		6.07		84.3		5.05			8.0			
			Middle	8.3	26.6	31.6	31.6	6.05	6.07	84.0	84.3	5.15	5.19		8.0			8.0
				15.6	25.6	31.6		6.08		84.5		5.22			8.0			
			Bottom	15.6	25.6	32.2	32.2	5.81	5.79	80.1	79.9	5.24	5.22		8.2			8.2
				15.6	25.6	32.1		5.77		79.6		5.20			8.2			

**Mid-Ebb Tide**

Monitoring Station : C4

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/08/11	1601-1612	31/Fine	Surface	1.0	27.7	31.1	31.1	6.02	6.04	83.6	83.8	4.69	4.72	5.01	7.2	7.3	7.9
						31.1		6.05		84.0		4.75			7.4		
			Middle	8.4	26.5	31.7	31.8	5.81	5.79	80.1	79.9	5.12	5.16		8.4	8.2	
						31.8		5.77		79.6		5.19			8.0		
			Bottom	15.8	25.8	32.2	32.2	5.85	5.83	80.7	80.4	5.20	5.16		8.2	8.1	
						32.2		5.80		80.0		5.11			8.0		
04/08/11	1726-1741	32/Sunny	Surface	1.0	26.9	29.4	29.4	6.27	6.25	88.4	88.1	5.10	5.08	5.18	7.6	7.7	8.1
						29.4		6.22		87.7		5.06			7.8		
			Middle	8.3	26.2	30.4	30.4	6.17	6.14	87.0	86.6	5.16	5.18		8.2	8.1	
						30.3		6.11		86.2		5.19			8.0		
			Bottom	15.6	25.4	31.3	31.4	6.01	6.03	84.7	85.0	5.26	5.28		8.4	8.5	
						31.4		6.05		85.3		5.29			8.5		
06/08/11	1911-1922	31/Fine	Surface	1.0	27.6	31.2	31.2	6.13	6.16	85.2	85.6	5.08	5.11	5.26	7.8	7.8	8.1
						31.1		6.18		85.9		5.14			7.8		
			Middle	8.4	26.6	31.9	31.9	5.91	5.93	82.1	82.3	5.29	5.25		8.2	8.0	
						31.9		5.94		82.5		5.20			7.8		
			Bottom	15.8	26.2	32.1	32.1	5.95	5.97	82.7	82.9	5.40	5.44		8.2	8.4	
						32.1		5.98		83.1		5.47			8.5		
09/08/11	1158-1212	28/Cloudy	Surface	1.0	27.2	29.7	29.7	6.32	6.33	89.1	89.3	4.98	4.96	5.07	7.4	7.4	7.9
						29.7		6.34		89.4		4.94			7.4		
			Middle	8.5	26.8	30.6	30.6	6.25	6.24	88.1	87.9	5.06	5.08		8.0	8.1	
						30.5		6.22		87.7		5.10			8.2		
			Bottom	16.0	26.1	31.7	31.7	6.15	6.13	86.7	86.5	5.15	5.16		8.4	8.2	
						31.6		6.11		86.2		5.16			8.0		
11/08/11	1340-1357	30/Fine	Surface	1.0	26.4	29.5	29.6	6.25	6.28	86.3	86.6	4.15	4.18	4.45	6.4	6.6	6.9
						29.6		6.30		86.9		4.20			6.8		
			Middle	7.9	26.0	30.0	30.1	6.13	6.10	84.5	84.1	4.44	4.47		6.8	6.8	
						30.1		6.06		83.6		4.49			6.8		
			Bottom	14.8	25.4	30.8	30.8	5.95	5.92	82.1	81.7	4.68	4.71		7.2	7.4	
						30.7		5.89		81.2		4.73			7.5		
13/08/11	1421-1432	32/Fine	Surface	1.0	27.4	29.7	29.8	6.12	6.16	86.9	87.4	4.99	5.02	5.17	7.2	7.4	7.9
						29.8		6.19		87.9		5.04			7.6		
			Middle	8.1	26.7	30.7	30.7	6.04	6.05	85.8	86.0	5.22	5.19		8.0	7.9	
						30.7		6.06		86.1		5.15			7.8		
			Bottom	15.2	25.5	31.8	31.8	5.99	5.98	85.1	84.9	5.28	5.30		8.4	8.5	
						31.8		5.96		84.6		5.31			8.5		
16/08/11	1506-1517	31/Fine	Surface	1.0	26.5	29.7	29.7	6.25	6.27	88.8	89.0	4.37	4.38	4.52	6.6	6.7	7.0
						29.6		6.28		89.2		4.39			6.8		
			Middle	7.8	25.9	30.6	30.6	6.04	6.08	85.8	86.3	4.56	4.53		7.0	6.9	
						30.6		6.11		86.8		4.49			6.8		
			Bottom	14.6	25.3	31.9	31.9	5.97	5.95	84.8	84.5	4.65	4.67		7.4	7.5	
						31.9		5.92		84.1		4.68			7.5		
18/08/11	1722-1733	32/Fine	Surface	1.0	26.7	30.4	30.4	6.23	6.25	87.8	88.1	5.02	5.00	5.11	7.4	7.5	7.8
						30.3		6.27		88.4		4.97			7.6		
			Middle	8.3	25.9	31.1	31.1	6.16	6.14	86.9	86.6	5.10	5.12		7.8	7.8	
						31.0		6.12		86.3		5.14			7.8		
			Bottom	15.6	24.9	31.9	32.0	6.05	6.03	85.3	85.0	5.19	5.21		8.2	8.1	
						32.0		6.00		84.6		5.22			8.0		
20/08/11	1718-1730	31/Fine	Surface	1.0	27.0	30.0	30.0	6.17	6.15	87.6	87.3	4.97	4.98	5.11	7.8	7.9	8.2
						30.0		6.12		86.9		4.99			8.0		
			Middle	8.0	26.4	30.8	30.9	6.02	6.04	85.5	85.7	5.09	5.13		8.2	8.3	
						30.9		6.05		85.9		5.16			8.4		
			Bottom	15.0	25.2	31.9	31.9	5.88	5.88	83.5	83.5	5.20	5.22		8.4	8.5	
						31.9		5.87		83.4		5.24			8.5		
23/08/11	1121-1132	29/Fine	Surface	1.0	26.4	29.5	29.5	6.24	6.21	87.4	87.0	4.41	4.38	4.57	6.8	6.7	7.0
						29.4		6.18		86.5		4.34			6.6		
			Middle	8.0	25.9	30.6	30.6	6.05	6.08	84.7	85.1	4.63	4.59		7.0	7.0	
						30.6		6.11		85.5		4.55			7.0		
			Bottom	15.0	25.2	30.8	30.8	5.95	5.94	83.3	83.1	4.72	4.76		7.2	7.4	
						30.8		5.92		82.9		4.79			7.5		
25/08/11	1157-1211	30/Cloudy	Surface	1.0	28.3	29.6	29.6	6.30	6.29	92.6	92.4	4.95	4.94	5.04	7.6	7.5	7.9
						29.6		6.27		92.2		4.92			7.4		
			Middle	8.3	27.7	30.4	30.5	6.21	6.19	91.3	91.0	5.03	5.05		8.0	8.0	
						30.5		6.17		90.7		5.06			8.0		
			Bottom	15.6	26.8	31.6	31.6	6.04	6.06	88.8	89.0	5.13	5.15		8.2	8.1	
						31.6		6.07		89.2		5.16			8.0		
27/08/11	1322-1333	29/Fine	Surface	1.0	26.5	29.8	29.8	6.27	6.23	87.8	87.3	4.40	4.36	4.54	6.8	6.7	7.1
						29.7		6.19		86.7		4.32			6.6		
			Middle	8.0	26.2	30.4	30.4	6.09	6.11	85.3	85.6	4.54	4.57		7.0	7.0	
						30.4		6.13		85.8		4.59			7.0		
			Bottom	15.0	25.7	31.0	31.1	5.98	5.95	83.7	83.3	4.67	4.71		7.4	7.5	
						31.1		5.92		82.9		4.74			7.5		
30/08/11	1451-1502	31/Sunny	Surface	1.0	27.9	31.0	31.0	6.17	6.18	85.7	85.9	4.89	4.92	5.11	7.6	7.7	8.1
						30.9		6.19		86.0		4.95			7.8		
			Middle	8.3	26.6	31.6	31.6	5.92	5.94	82.2	82.5	4.97	5.01		8.2	8.3	
						31.6		5.95		82.7		5.04			8.4		
			Bottom	15.6	25.6	32.2	32.2	5.97	5.95	82.9	82.7	5.37	5.40		8.2	8.4	
						32.2		5.93		82.4		5.43			8.5		



Mid-Ebb Tide

Monitoring Station : R5

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/08/11	1412-1424	31/Fine	Surface	1.0	27.9	31.0	31.1	6.12	6.10	85.0	84.8	4.45	4.48	4.82	6.5	6.7	7.4
				31.1	6.08	84.5		4.51		6.8							
			Middle	8.4	26.7	31.8	31.8	6.03	6.05	83.8	84.1	5.07	5.04		5.07	5.04	
31.7	6.07	84.3		5.01	7.6												
Bottom	15.8	26.1	32.2	32.2	5.98	5.97	83.1	82.9	4.98	4.95	4.98	4.95	7.8		7.7		
	32.1	5.95	82.7		4.91		7.6										
04/08/11	1530-1543	32/Sunny	Surface	1.0	26.8	29.3	29.4	6.16	6.14	86.9	86.6	5.16	5.18	5.27	8.0	8.0	8.2
				29.4	6.11	86.2		5.20		8.0							
			Middle	8.3	26.3	30.3	30.4	6.06	6.04	85.4	85.2	5.26	5.28		5.26	5.28	
30.4	6.02	84.9		5.29	8.4												
Bottom	15.6	25.3	31.4	31.4	5.95	5.93	83.9	83.6	5.33	5.36	5.33	5.36	8.2		8.3		
	31.3	5.91	83.3		5.38		8.4										
06/08/11	1712-1724	31/Fine	Surface	1.0	27.7	31.1	31.2	6.24	6.22	86.7	86.4	5.07	5.10	5.19	7.5	7.8	7.9
				31.2	6.20	86.1		5.12		8.0							
			Middle	8.4	26.5	31.5	31.6	6.04	6.06	83.5	83.9	5.27	5.30		5.27	5.30	
31.6	6.07	84.3		5.32	8.2												
Bottom	15.8	26.2	31.9	32.0	5.99	5.97	83.2	83.0	5.14	5.17	5.14	5.17	8.0		8.0		
	32.0	5.95	82.7		5.19		8.0										
09/08/11	0959-1012	28/Cloudy	Surface	1.0	27.3	29.8	29.8	6.16	6.13	86.9	86.5	5.04	5.06	5.16	8.0	8.0	8.1
				29.7	6.10	86.0		5.08		8.0							
			Middle	8.7	26.8	30.4	30.4	6.04	6.02	85.2	84.9	5.13	5.15		5.13	5.15	
30.4	6.00	84.6		5.17	8.2												
Bottom	16.4	26.2	31.6	31.6	5.87	5.89	82.8	83.1	5.25	5.27	5.25	5.27	8.4		8.3		
	31.6	5.91	83.3		5.29		8.4										
11/08/11	1130-1148	30/Cloudy	Surface	1.0	26.4	29.4	29.5	6.11	6.09	84.3	84.0	4.44	4.47	4.72	6.5	6.9	7.4
				29.5	6.07	83.7		4.49		7.2							
			Middle	8.4	25.8	29.9	30.0	5.93	5.95	81.8	82.1	4.72	4.75		4.72	4.75	
30.0	5.97	82.3		4.77	7.6												
Bottom	15.8	25.3	30.7	30.8	5.77	5.79	79.6	79.8	4.92	4.96	4.92	4.96	7.6		7.7		
	30.8	5.80	80.0		4.99		7.8										
13/08/11	1222-1234	31/Fine	Surface	1.0	27.4	29.7	29.8	6.11	6.10	86.8	86.7	5.16	5.14	5.26	8.0	8.0	8.4
				29.8	6.09	86.5		5.12		8.0							
			Middle	8.3	26.8	30.7	30.7	5.96	5.99	84.6	85.0	5.21	5.24		5.21	5.24	
30.6	6.01	85.3		5.26	8.4												
Bottom	15.6	25.5	31.8	31.8	5.91	5.88	83.9	83.5	5.39	5.41	5.39	5.41	9.0		8.9		
	31.8	5.85	83.1		5.43		8.8										
16/08/11	1307-1319	31/Fine	Surface	1.0	26.6	29.6	29.6	6.10	6.09	86.6	86.5	4.45	4.47	4.64	7.0	7.1	7.4
				29.6	6.08	86.3		4.49		7.2							
			Middle	8.2	26.0	30.5	30.5	5.97	5.99	84.8	85.1	4.64	4.67		4.64	4.67	
30.5	6.01	85.3		4.69	7.6												
Bottom	15.4	25.3	31.9	31.9	5.85	5.84	83.1	82.9	4.82	4.79	4.82	4.79	7.8		7.7		
	31.8	5.82	82.6		4.76		7.6										
18/08/11	1522-1534	32/Fine	Surface	1.0	26.8	30.3	30.3	6.10	6.08	86.0	85.7	5.10	5.12	5.23	8.0	8.0	8.2
				30.2	6.06	85.4		5.14		8.0							
			Middle	8.2	25.9	31.1	31.1	5.93	5.95	83.6	83.9	5.22	5.24		5.22	5.24	
31.1	5.97	84.2		5.25	8.0												
Bottom	15.4	24.9	31.9	32.0	5.86	5.85	82.6	82.4	5.31	5.33	5.31	5.33	8.6		8.5		
	32.0	5.83	82.2		5.34		8.4										
20/08/11	1528-1540	31/Fine	Surface	1.0	27.0	30.0	30.1	6.17	6.18	87.6	87.2	5.06	5.10	5.18	7.5	7.8	8.0
				30.1	6.19	86.7		5.13		8.0							
			Middle	8.3	26.3	30.8	30.8	6.03	6.03	85.6	85.0	5.19	5.18		5.19	5.18	
30.7	6.02	84.3		5.16	8.2												
Bottom	15.6	25.1	31.9	31.9	6.05	6.03	84.7	85.0	5.28	5.27	5.28	5.27	8.0		8.1		
	31.9	6.01	85.3		5.25		8.2										
23/08/11	0922-0934	29/Fine	Surface	1.0	26.5	29.5	29.5	6.11	6.14	86.2	86.6	4.53	4.52	4.67	7.0	7.1	7.4
				29.4	6.17	87.0		4.50		7.2							
			Middle	8.3	25.8	30.5	30.6	6.05	6.04	85.3	85.2	4.65	4.68		4.65	4.68	
30.6	6.03	85.0		4.71	7.4												
Bottom	15.6	25.2	30.9	30.9	5.85	5.87	82.5	82.8	4.84	4.82	4.84	4.82	7.6		7.6		
	30.8	5.89	83.0		4.79		7.6										
25/08/11	0959-1012	30/Cloudy	Surface	1.0	28.2	29.5	29.6	6.16	6.13	90.6	90.2	5.12	5.14	5.24	8.0	8.1	8.3
				29.6	6.10	89.7		5.15		8.2							
			Middle	8.3	27.7	30.2	30.3	6.04	6.02	88.8	88.5	5.23	5.24		5.23	5.24	
30.3	6.00	88.2		5.24	8.4												
Bottom	15.6	26.7	31.5	31.5	5.92	5.90	87.0	86.7	5.38	5.36	5.38	5.36	8.6		8.5		
	31.4	5.87	86.3		5.33		8.4										
27/08/11	1122-1134	29/Fine	Surface	1.0	26.6	29.7	29.8	6.04	6.08	85.2	85.7	4.61	4.60	4.75	7.0	7.1	7.5
				29.8	6.11	86.2		4.59		7.2							
			Middle	8.2	26.1	30.4	30.4	5.97	5.94	84.2	83.8	4.74	4.77		4.74	4.77	
30.3	5.91	83.3		4.79	7.6												
Bottom	15.4	25.7	31.0	31.1	5.84	5.83	82.3	82.2	4.86	4.88	4.86	4.88	7.8		7.8		
	31.1	5.82	82.1		4.90		7.8										
30/08/11	1252-1304	31/Sunny	Surface	1.0	27.9	30.8	30.8	6.25	6.27	86.8	87.1	4.78	4.82	4.97	7.0	7.2	7.5
				30.7	6.29	87.4		4.85		7.4							
			Middle	8.4	26.5	31.4	31.5	6.04	6.05	83.9	84.1	4.97	4.94		4.97	4.94	
31.5	6.06	84.2		4.91	7.4												
Bottom	15.8	25.6	31.9	32.0	5.91	5.93	81.5	81.7	5.18	5.15	5.18	5.15	8.0		7.9		
	32.0	5.94	81.9		5.11		7.8										

Mid-Ebb 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		
02/08/11	1510-1512	31/Fine	Surface	1.0	27.9	31.1	31.1	6.20	6.22	86.1	86.4	4.78	4.81	5.08	7.4	7.5	7.9		
						31.0		6.24		86.7		4.83			7.6				
			Middle	8.1	26.5	31.9	31.9	5.92	5.94	81.6	81.9	5.15	5.19		5.15	5.19		8.0	8.1
						31.9		5.95		82.1		5.22			8.2				
			Bottom	15.2	25.9	32.2	32.2	5.97	5.96	82.3	82.1	5.30	5.25		5.30	5.25		8.0	8.2
						32.1		5.94		81.9		5.20			8.4				
04/08/11	1624-1637	32/Sunny	Surface	1.0	26.9	29.5	29.5	6.19	6.21	87.3	87.6	5.18	5.16	5.27	8.0	7.9	8.1		
						29.5		6.23		87.8		5.14			7.8				
			Middle	8.1	26.3	30.4	30.4	6.14	6.12	86.6	86.3	5.24	5.24		5.24	5.26		8.0	8.1
						30.3		6.10		86.0		5.28			8.2				
			Bottom	15.2	25.3	31.3	31.3	6.03	6.01	85.0	84.8	5.36	5.38		5.36	5.38		8.4	8.4
						31.3		5.99		84.5		5.40			8.4				
06/08/11	1810-1822	31/Fine	Surface	1.0	27.6	31.2	31.2	6.18	6.16	85.9	85.6	4.79	4.83	5.12	7.4	7.4	7.9		
						31.1		6.14		85.3		4.86			7.4				
			Middle	8.1	26.5	31.9	31.9	6.03	6.05	83.8	84.1	5.18	5.15		5.18	5.15		8.2	8.0
						31.8		6.07		84.3		5.11			7.8				
			Bottom	15.2	25.9	32.2	32.2	5.97	5.96	82.9	82.8	5.34	5.38		5.34	5.38		8.2	8.4
						32.2		5.95		82.7		5.41			8.6				
09/08/11	1055-1108	28/Cloudy	Surface	1.0	27.3	29.7	29.8	6.33	6.31	89.3	89.0	4.99	4.98	5.09	7.8	7.8	8.0		
						29.8		6.29		88.7		4.97			7.8				
			Middle	8.4	26.8	30.4	30.5	6.21	6.20	87.6	87.4	5.06	5.09		5.06	5.09		8.0	7.9
						30.5		6.18		87.1		5.11			8.0				
			Bottom	15.8	26.2	31.7	31.7	6.09	6.08	85.9	85.7	5.19	5.21		5.19	5.21		8.2	8.2
						31.6		6.06		85.4		5.22			8.2				
11/08/11	1237-1255	30/Cloudy	Surface	1.0	26.5	29.4	29.4	6.26	6.28	86.3	86.6	4.15	4.18	4.50	6.2	6.2	6.9		
						29.4		6.29		86.8		4.20			6.2				
			Middle	7.9	25.8	30.0	30.1	6.09	6.12	84.0	84.4	4.46	4.48		4.46	4.48		6.8	6.9
						30.1		6.15		84.8		4.50			7.0				
			Bottom	14.8	25.3	30.7	30.8	5.88	5.91	81.1	81.5	4.83	4.86		4.83	4.86		7.6	7.6
						30.8		5.93		81.9		4.88			7.6				
13/08/11	1321-1332	31/Fine	Surface	1.0	27.4	29.8	29.8	6.29	6.28	88.7	88.5	4.92	4.93	5.10	7.6	7.5	8.0		
						29.8		6.26		88.3		4.94			7.4				
			Middle	7.9	26.8	30.6	30.7	6.14	6.11	86.6	86.1	5.07	5.10		5.07	5.10		8.2	8.2
						30.7		6.07		85.6		5.13			8.2				
			Bottom	14.8	25.5	31.8	31.8	5.93	5.92	83.6	83.4	5.27	5.27		5.27	5.27		8.4	8.4
						31.7		5.90		83.2		5.26			8.4				
16/08/11	1406-1417	31/Fine	Surface	1.0	26.5	29.7	29.7	6.21	6.22	87.6	87.7	4.33	4.35	4.49	6.8	6.9	7.1		
						29.6		6.23		87.8		4.37			7.0				
			Middle	7.8	26.0	30.6	30.6	6.07	6.11	85.6	86.2	4.50	4.47		4.50	4.47		7.0	6.9
						30.6		6.15		86.7		4.43			6.8				
			Bottom	14.6	25.3	31.9	31.9	5.99	6.01	84.5	84.7	4.65	4.67		4.65	4.67		7.4	7.5
						31.9		6.02		84.9		4.68			7.6				
18/08/11	1621-1633	32/Fine	Surface	1.0	26.7	30.2	30.3	6.19	6.21	87.3	87.5	5.06	5.08	5.16	7.6	7.7	7.9		
						30.3		6.22		87.7		5.09			7.8				
			Middle	8.1	25.9	31.0	31.0	6.08	6.10	85.7	86.0	5.13	5.15		5.13	5.15		8.0	7.9
						31.0		6.12		86.3		5.16			8.0				
			Bottom	15.2	24.9	32.0	32.0	5.95	5.94	83.9	83.8	5.25	5.27		5.25	5.27		8.2	8.2
						31.9		5.93		83.6		5.28			8.2				
20/08/11	1616-1631	31/Fine	Surface	1.0	27.0	29.8	29.8	6.04	6.07	85.8	86.0	5.08	5.11	5.18	7.8	7.8	7.9		
						29.7		6.09		86.1		5.13			7.8				
			Middle	7.9	26.5	30.8	30.8	5.80	5.81	82.4	82.5	5.26	5.23		5.26	5.23		8.0	8.0
						30.7		5.81		82.5		5.20			8.0				
			Bottom	14.8	25.2	31.8	31.9	5.77	5.78	81.9	82.1	5.19	5.22		5.19	5.22		8.0	8.0
						31.9		5.79		82.2		5.24			8.0				
23/08/11	1020-1032	29/Fine	Surface	1.0	26.4	29.4	29.5	6.13	6.16	85.8	86.3	4.37	4.35	4.52	6.4	6.5	6.9		
						29.5		6.19		86.7		4.33			6.6				
			Middle	8.0	25.9	30.5	30.6	6.06	6.07	84.8	85.0	4.45	4.49		4.45	4.49		6.8	6.9
						30.6		6.08		85.1		4.53			7.0				
			Bottom	15.0	25.2	30.8	30.9	5.95	5.93	83.3	83.0	4.67	4.71		4.67	4.71		7.2	7.2
						30.9		5.90		82.6		4.74			7.2				
25/08/11	1054-1107	30/Cloudy	Surface	1.0	28.3	29.6	29.6	6.30	6.27	92.6	92.2	5.00	5.02	5.14	7.6	7.6	7.9		
						29.6		6.24		91.7		5.04			7.6				
			Middle	8.1	27.7	30.2	30.2	6.18	6.17	90.8	90.6	5.12	5.14		5.12	5.14		8.0	8.0
						30.2		6.15		90.4		5.16			8.0				
			Bottom	15.2	26.8	31.5	31.5	6.07	6.05	89.2	88.9	5.26	5.27		5.26	5.27		8.2	8.2
						31.4		6.03		88.6		5.27			8.2				
27/08/11	1220-1233	29/Fine	Surface	1.0	26.5	29.8	29.8	6.22	6.20	87.1	86.8	4.42	4.38	4.54	6.8	6.8	7.0		
						29.7		6.18		86.5		4.34			6.8				
			Middle	8.1	26.2	30.4	30.4	6.06	6.08	84.8	85.1	4.56	4.54		4.56	4.54		7.0	7.0
						30.3		6.10		85.4		4.51			7.0				
			Bottom	15.2	25.7	31.1	31.1	5.99	5.96	83.9	83.4	4.69	4.71		4.69	4.71		7.0	7.3
						31.1		5.92		82.9		4.73			7.6				
30/08/11	1350-1402	31/Sunny	Surface	1.0	27.9	30.9	30.9	6.20	6.22	86.1	86.4	4.57	4.60	4.86	6.8	6.8	7.1		
						30.8		6.24		86.7		4.63			6.8				
			Middle	8.1	26.3	31.6	31.6	6.10	6.08	84.7	84.4	4.90	4.93		4.90	4.93		7.2	7.2
						31.6		6.05		84.0		4.95			7.2				
			Bottom	15.2	25.6	32.1	32.2	5.78	5.76	79.7	79.5	5.08	5.05		5.08	5.05		7.4	7.3
						32.2		5.74		79.2		5.01			7.2				

Monitoring Station : R7

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
02/08/11	1515-1527	31/Fine	Surface	1.0	27.9	31.0	31.1	6.15	6.17	85.4	85.7	5.11	5.14	5.13	8.2	8.1	8.0	
						31.1		6.18		85.9		5.17			8.0			
			Middle	8.9	26.6	31.9	31.9	5.88	5.86	81.1	80.8	5.01	5.05		7.8			7.8
						31.8		5.84		80.5		5.09			7.8			
			Bottom		25.8	32.2	32.2	5.93	5.92	81.8	81.6	5.23	5.20		8.0			8.0
						32.2		5.90		81.4		5.17			8.0			
04/08/11	1644-1657	32/Sunny	Surface	1.0	27.0	29.5	29.5	6.25	6.23	88.1	87.9	5.09	5.11	5.20	7.8	7.9	8.1	
						29.4		6.21		87.6		5.13			8.0			
			Middle	8.7	26.2	30.4	30.4	6.10	6.13	86.0	86.4	5.17	5.19		8.0			8.1
						30.4		6.15		86.7		5.21			8.2			
			Bottom	16.4	25.3	31.4	31.4	6.00	6.02	84.6	84.9	5.27	5.29		8.2			8.3
						31.3		6.04		85.2		5.30			8.4			
06/08/11	1825-1837	31/Fine	Surface	1.0	27.6	31.1	31.1	6.20	6.22	86.1	86.4	5.01	5.04	5.17	7.8	7.9	8.0	
						31.0		6.24		86.7		5.07			8.0			
			Middle	8.9	26.6	31.9	31.9	5.97	5.96	82.9	82.7	5.24	5.27		8.2			8.1
						31.9		5.94		82.5		5.30			8.0			
			Bottom	16.8	26.0	32.3	32.3	5.90	5.92	82.0	82.3	5.15	5.19		8.0			8.1
						32.3		5.94		82.5		5.22			8.2			
09/08/11	1115-1128	28/Cloudy	Surface	1.0	27.3	29.7	29.7	6.31	6.29	89.0	88.7	5.03	5.00	5.12	7.8	7.8	7.9	
						29.7		6.26		88.3		4.97			7.8			
			Middle	9.1	26.7	30.5	30.6	6.16	6.14	86.9	86.6	5.12	5.13		8.0			8.0
						30.6		6.12		86.3		5.14			8.0			
			Bottom	17.2	26.1	31.7	31.8	6.04	6.02	85.2	84.9	5.26	5.24		7.8			7.9
						31.8		6.00		84.6		5.21			8.0			
11/08/11	1300-1316	30/Cloudy	Surface	1.0	26.6	29.4	29.5	6.23	6.20	85.9	85.5	4.10	4.13	4.41	6.4	6.4	6.8	
						29.5		6.17		85.1		4.16			6.4			
			Middle	8.8	25.9	30.1	30.2	6.08	6.05	83.9	83.5	4.37	4.39		6.8			6.8
						30.2		6.02		83.1		4.40			6.8			
			Bottom	16.6	25.2	30.8	30.9	5.90	5.88	81.4	81.2	4.68	4.71		7.2			7.3
						30.9		5.86		80.9		4.74			7.4			
13/08/11	1335-1347	31/Fine	Surface	1.0	27.4	29.7	29.7	6.21	6.20	87.6	87.5	4.96	4.92	5.08	7.2	7.1	7.6	
						29.7		6.19		87.3		4.88			7.0			
			Middle	8.7	26.8	30.6	30.7	6.05	6.08	85.3	85.8	5.09	5.06		7.6			7.5
						30.7		6.11		86.2		5.03			7.4			
			Bottom	16.4	25.4	31.7	31.7	5.97	5.94	84.2	83.8	5.23	5.26		8.0			8.1
						31.7		5.91		83.3		5.28			8.2			
16/08/11	1420-1432	31/Fine	Surface	1.0	26.6	29.7	29.7	6.19	6.16	87.9	87.4	4.38	4.35	4.51	6.6	6.6	6.9	
						29.7		6.12		86.9		4.31			6.6			
			Middle	8.6	26.0	30.5	30.6	6.03	6.00	85.6	85.1	4.55	4.54		7.0			7.1
						30.6		5.96		84.6		4.52			7.2			
			Bottom	16.2	25.3	31.8	31.9	5.91	5.92	83.9	84.0	4.67	4.65		7.2			7.1
						31.9		5.92		84.1		4.63			7.0			
18/08/11	1637-1650	32/Fine	Surface	1.0	26.7	30.4	30.4	6.30	6.29	88.8	88.6	5.04	5.03	5.13	7.8	7.8	7.9	
						30.3		6.27		88.4		5.01			7.8			
			Middle	8.7	25.9	31.0	31.1	6.21	6.19	87.6	87.3	5.15	5.13		8.0			7.9
						31.1		6.17		87.0		5.10			7.8			
			Bottom	16.4	24.8	31.9	31.9	6.06	6.04	85.4	85.1	5.21	5.24		8.0			8.1
						31.9		6.01		84.7		5.27			8.2			
20/08/11	1634-1648	31/Fine	Surface	1.0	27.0	29.8	29.9	6.19	6.21	87.9	88.2	5.01	4.98	5.15	7.8	7.7	8.1	
						29.9		6.23		88.5		4.94			7.6			
			Middle	8.7	26.4	30.8	30.8	6.09	6.07	86.5	86.2	5.16	5.17		8.0			8.1
						30.8		6.04		85.8		5.17			8.2			
			Bottom	16.4	25.0	31.9	32.0	5.81	5.85	82.5	83.1	5.29	5.31		8.4			8.5
						32.0		5.89		83.6		5.32			8.6			
23/08/11	1035-1047	29/Fine	Surface	1.0	26.5	29.4	29.5	6.17	6.20	86.4	86.8	4.48	4.45	4.58	7.0	6.9	7.2	
						29.5		6.22		87.1		4.41			6.8			
			Middle	8.7	25.9	30.6	30.6	6.04	6.02	84.6	84.3	4.62	4.59		7.2			7.2
						30.5		5.99		83.9		4.56			7.2			
			Bottom	16.4	25.1	30.9	30.9	5.89	5.91	82.5	82.8	4.70	4.72		7.2			7.4
						30.9		5.93		83.0		4.73			7.6			
25/08/11	1114-1128	30/Cloudy	Surface	1.0	28.2	29.5	29.6	6.27	6.29	92.2	92.5	4.93	4.95	5.07	7.6	7.6	7.8	
						29.6		6.31		92.8		4.96			7.6			
			Middle	8.7	27.7	30.3	30.3	6.19	6.17	91.0	90.7	5.05	5.08		8.0			8.0
						30.2		6.15		90.4		5.11			8.0			
			Bottom	16.4	26.8	31.6	31.6	6.08	6.05	89.4	89.0	5.16	5.18		7.8			7.7
						31.5		6.02		88.5		5.20			7.6			
27/08/11	1236-1248	29/Fine	Surface	1.0	26.6	29.8	29.8	6.20	6.23	86.8	87.2	4.31	4.34	4.48	6.6	6.7	6.9	
						29.8		6.25		87.5		4.37			6.8			
			Middle	8.7	26.2	30.3	30.4	6.09	6.06	85.3	84.8	4.47	4.46		6.8			6.8
						30.4		6.02		84.3		4.44			6.8			
			Bottom	16.4	25.7	31.0	31.0	5.96	5.94	83.4	83.1	4.67	4.65		7.2			7.2
						31.0		5.91		82.7		4.62			7.2			
30/08/11	1405-1417	31/Sunny	Surface	1.0	27.8	30.9	30.9	6.11	6.10	84.9	84.7	4.60	4.64	4.83	7.0	7.0	7.3	
						30.9		6.08		84.5		4.67			7.0			
			Middle	8.8	26.2	31.6	31.6	6.07	6.06	84.3	84.1	4.85	4.88		7.4			7.4
						31.5		6.04		83.9		4.90			7.4			
			Bottom	16.6	25.6	32.2	32.2	5.89	5.88	81.2	81.0	4.99	4.99		7.6			7.6
						32.2		5.86		80.8		4.99			7.6			

**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	
02/08/11	1534-1546	31/Fine	Surface	1.0	27.8	31.1	31.1	6.08	6.06	84.6	84.3	4.71	4.76	5.00	7.2	7.4	7.8	
						31.0		6.04		83.9		4.80			7.5			
			Middle	6.4	26.5	31.8	31.8	5.90	5.93	81.4	81.8	5.07	5.11		8.0			8.1
						31.8		5.95		82.1		5.14			8.2			
			Bottom	11.8	25.8	32.1	32.1	5.88	5.86	81.1	80.8	5.16	5.13		8.0			8.0
						32.1		5.84		80.5		5.10			8.0			
04/08/11	1706-1718	32/Sunny	Surface	1.0	27.0	29.3	29.4	6.24	6.22	88.0	87.7	5.03	5.04	5.12	7.8	7.9	8.0	
						29.4		6.20		87.4		5.05			8.0			
			Middle	6.2	26.4	30.3	30.3	6.16	6.15	86.9	86.7	5.09	5.12		8.0			8.0
						30.2		6.13		86.4		5.14			8.0			
			Bottom	11.4	25.5	31.2	31.2	6.07	6.06	85.6	85.4	5.18	5.20		8.0			8.1
						31.1		6.04		85.2		5.21			8.2			
06/08/11	1854-1856	31/Fine	Surface	1.0	27.6	31.2	31.2	6.19	6.18	86.0	85.8	4.92	4.94	5.25	7.4	7.5	8.1	
						31.2		6.16		85.6		4.95			7.5			
			Middle	6.4	26.7	31.8	31.9	6.04	6.06	83.9	84.2	5.40	5.42		8.5			8.4
						31.9		6.08		84.5		5.44			8.2			
			Bottom	11.8	26.1	32.0	32.1	5.97	5.96	82.9	82.7	5.35	5.39		8.4			8.4
						32.1		5.94		82.5		5.42			8.4			
09/08/11	1138-1150	28/Cloudy	Surface	1.0	27.3	29.8	29.7	6.36	6.33	89.7	89.3	4.90	4.92	5.00	7.4	7.2	7.6	
						29.6		6.30		88.8		4.93			7.0			
			Middle	6.6	26.9	30.5	30.5	6.27	6.26	88.4	88.2	4.98	5.00		7.5			7.7
						30.4		6.24		88.0		5.02			7.8			
			Bottom	12.2	26.2	31.5	31.6	6.18	6.16	87.1	86.9	5.09	5.08		8.0			7.9
						31.6		6.14		86.6		5.07			7.8			
11/08/11	1321-1336	30/Fine	Surface	1.0	26.4	29.5	29.5	6.14	6.17	84.7	85.2	4.35	4.37	4.61	6.8	6.7	7.1	
						29.5		6.20		85.6		4.39			6.5			
			Middle	6.2	26.0	29.8	29.9	6.07	6.05	83.8	83.5	4.56	4.59		7.0			7.1
						29.9		6.02		83.1		4.61			7.2			
			Bottom	11.4	25.6	30.5	30.6	5.88	5.90	81.1	81.4	4.85	4.88		7.4			7.5
						30.6		5.92		81.7		4.90			7.6			
13/08/11	1354-1406	32/Fine	Surface	1.0	27.3	29.9	29.9	6.17	6.16	87.6	87.5	4.95	4.93	5.08	7.4	7.5	7.9	
						29.8		6.15		87.3		4.91			7.5			
			Middle	6.3	26.9	30.6	30.6	6.02	6.05	85.5	85.9	5.06	5.10		7.5			7.9
						30.5		6.08		86.3		5.13			8.2			
			Bottom	11.6	25.7	31.6	31.6	5.94	5.92	84.3	84.0	5.25	5.22		8.6			8.4
						31.6		5.89		83.6		5.19			8.2			
16/08/11	1439-1451	31/Fine	Surface	1.0	26.6	29.8	29.8	6.22	6.20	87.7	87.4	4.34	4.31	4.44	6.6	6.6	6.9	
						29.7		6.17		87.0		4.27			6.5			
			Middle	6.2	26.1	30.4	30.5	6.06	6.07	85.4	85.6	4.42	4.44		7.0			7.1
						30.5		6.08		85.7		4.46			7.2			
			Bottom	11.4	25.5	31.8	31.8	5.94	5.92	83.8	83.4	4.60	4.57		7.2			7.1
						31.8		5.89		83.0		4.54			7.0			
18/08/11	1654-1707	32/Fine	Surface	1.0	26.8	30.2	30.2	6.30	6.28	88.8	88.6	4.95	4.97	5.06	7.4	7.5	7.8	
						30.2		6.26		88.3		4.99			7.5			
			Middle	6.2	26.1	31.0	31.0	6.19	6.16	87.3	86.9	5.05	5.06		7.5			7.8
						30.9		6.13		86.4		5.07			8.0			
			Bottom	11.4	25.2	31.7	31.8	6.03	6.01	85.0	84.7	5.12	5.14		8.0			8.1
						31.8		5.98		84.3		5.16			8.2			
20/08/11	1659-1713	31/Fine	Surface	1.0	26.9	29.9	29.9	6.20	6.18	88.0	87.7	4.70	4.74	4.94	6.8	6.9	7.5	
						29.9		6.15		87.3		4.77			7.0			
			Middle	6.0	26.5	30.9	30.9	6.06	6.04	86.1	85.7	4.97	4.96		7.5			7.6
						30.8		6.01		85.3		4.94			7.6			
			Bottom	11.0	25.3	31.8	31.9	5.79	5.81	82.2	82.4	5.16	5.14		8.0			7.9
						31.9		5.82		82.6		5.11			7.8			
23/08/11	1054-1106	29/Fine	Surface	1.0	26.5	29.5	29.5	6.12	6.13	85.7	85.9	4.38	4.41	4.54	6.6	6.6	7.0	
						29.5		6.14		86.0		4.43			6.5			
			Middle	6.2	26.0	30.4	30.4	6.09	6.08	85.3	85.2	4.52	4.55		7.0			7.1
						30.4		6.07		85.0		4.58			7.2			
			Bottom	11.4	25.4	30.8	30.8	5.91	5.94	82.7	83.2	4.69	4.67		7.4			7.3
						30.7		5.97		83.6		4.65			7.2			
25/08/11	1137-1149	30/Cloudy	Surface	1.0	28.3	29.6	29.7	6.24	6.26	91.7	92.0	4.93	4.96	5.06	7.6	7.6	7.8	
						29.7		6.28		92.3		4.98			7.5			
			Middle	6.2	27.8	30.3	30.3	6.19	6.18	91.0	90.9	5.05	5.07		8.0			7.9
						30.3		6.17		90.7		5.09			7.8			
			Bottom	11.4	26.9	31.4	31.4	6.10	6.09	89.7	89.5	5.15	5.16		8.0			8.0
						31.3		6.07		89.2		5.17			8.0			
27/08/11	1255-1307	29/Fine	Surface	1.0	26.6	29.8	29.9	6.12	6.14	86.3	86.5	4.35	4.37	4.47	6.8	6.9	7.0	
						29.9		6.15		86.7		4.39			7.0			
			Middle	6.3	26.3	30.2	30.2	6.07	6.06	85.6	85.4	4.46	4.44		7.0			6.9
						30.2		6.04		85.2		4.42			6.8			
			Bottom	11.6	25.9	30.9	30.9	5.94	5.91	83.8	83.4	4.58	4.61		7.2			7.2
						30.9		5.88		82.9		4.63			7.2			
30/08/11	1424-1436	31/Sunny	Surface	1.0	27.9	30.9	31.0	6.09	6.07	84.6	84.3	4.92	4.94	5.04	7.4	7.5	7.6	
						31.0		6.05		84.0		4.95			7.5			
			Middle	6.4	26.6	31.5	31.6	5.94	5.92	82.5	82.3	5.02	5.05		7.5			7.7
						31.6		5.90		82.0		5.07			7.8			
			Bottom	11.8	25.4	32.1	32.2	5.98	5.97	83.1	82.9	5.19	5.15		8.0			7.8
						32.2		5.95		82.7		5.11			7.6			

Mid-Ebb Tide



Monitoring Station : R15

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/08/11	1304-1315	31/Fine	Surface	1.0	27.7	30.9	30.8	6.12	6.07	85.0	84.3	4.21	4.30	4.85	6.4	6.6	7.5
				5.7	26.6	31.8	31.7	5.98	5.94	83.1	82.5	5.21	5.17		6.8		
			10.4	25.8	32.1	32.0	5.91	5.89	81.5	81.2	5.11	5.07	8.2				
04/08/11	1435-1446	32/Sunny	Surface	1.0	26.8	29.4	29.5	6.11	6.15	86.2	86.7	5.19	5.24	5.29	8.0	7.9	8.2
				5.6	26.4	30.2	30.2	6.03	6.07	85.0	85.6	5.27	5.31		7.8		
			10.2	25.6	31.1	31.2	5.97	5.94	84.2	83.8	5.35	5.39	8.4				
06/08/11	1604-1615	31/Fine	Surface	1.0	27.7	30.9	31.0	6.19	6.15	86.0	85.4	4.60	4.68	5.05	7.0	7.1	7.8
				5.7	26.8	31.8	31.7	6.02	6.05	83.6	84.0	5.15	5.20		8.0		
			10.4	26.0	32.1	32.2	5.92	5.87	81.6	81.0	5.34	5.30	8.2				
09/08/11	0904-0916	27/Cloudy	Surface	1.0	27.2	29.7	29.8	6.16	6.11	86.9	86.2	5.07	5.04	5.14	7.6	7.7	8.1
				5.8	26.9	30.3	30.3	6.06	6.03	85.4	85.0	5.12	5.16		8.2		
			10.6	26.2	31.5	31.5	5.95	5.92	83.9	83.5	5.21	5.24	8.6				
11/08/11	1017-1035	29/Cloudy	Surface	1.0	26.3	29.4	29.3	6.08	6.02	83.9	83.0	4.56	4.50	4.56	7.0	7.0	7.1
				5.3	26.1	29.5	29.6	6.13	6.06	84.5	83.6	4.37	4.42		6.8		
			9.6	25.7	30.5	30.5	5.86	5.89	80.8	81.2	4.73	4.78	7.4				
13/08/11	1104-1115	30/Fine	Surface	1.0	27.3	29.9	29.8	6.18	6.16	87.8	87.5	5.02	5.05	5.22	7.2	7.4	7.8
				5.5	26.7	30.5	30.5	6.04	5.98	85.8	84.9	5.24	5.19		7.6		
			10.0	25.6	31.7	31.7	5.89	5.93	83.6	84.2	5.37	5.42	8.4				
16/08/11	1149-1200	31/Fine	Surface	1.0	26.5	29.7	29.7	6.15	6.12	87.3	86.9	4.55	4.48	4.64	7.0	7.0	7.3
				5.4	25.9	30.4	30.4	6.03	6.08	85.6	86.3	4.60	4.65		7.4		
			9.8	25.4	31.7	31.8	5.92	5.96	84.1	84.6	4.73	4.81	7.6				
18/08/11	1404-1415	32/Fine	Surface	1.0	26.7	30.4	30.4	6.14	6.19	86.6	87.3	5.02	4.97	5.09	7.8	7.8	7.9
				5.6	26.1	30.8	30.9	6.12	6.08	86.3	85.7	5.06	5.10		7.8		
			10.2	25.2	31.7	31.7	5.98	5.95	84.3	83.9	5.20	5.16	8.4				
20/08/11	1427-1438	31/Fine	Surface	1.0	26.7	29.8	29.9	5.96	5.91	83.4	82.7	5.03	5.06	5.19	7.6	7.6	8.1
				5.2	26.1	30.7	30.6	6.02	5.95	85.5	84.5	5.27	5.22		8.2		
			9.4	25.4	31.7	31.7	5.82	5.73	82.6	81.4	5.28	5.26	8.4				
23/08/11	0830-0842	29/Fine	Surface	1.0	26.4	29.6	29.6	6.05	6.13	85.3	86.4	4.48	4.45	4.58	6.8	6.8	7.0
				6.9	25.8	30.4	30.5	5.95	5.98	83.9	84.3	4.59	4.53		7.0		
			12.8	25.3	30.8	30.8	5.88	5.84	82.9	82.3	4.71	4.74	7.4				
25/08/11	0904-0916	30/Cloudy	Surface	1.0	28.2	29.5	29.6	6.14	6.10	90.3	89.7	5.07	5.13	5.20	7.6	7.7	7.9
				5.6	27.8	30.0	30.0	6.06	6.02	89.1	88.5	5.17	5.22		7.8		
			10.2	26.9	31.3	31.3	5.93	5.97	87.2	87.8	5.27	5.31	8.0				
27/08/11	1004-1015	29/Fine	Surface	1.0	26.5	29.9	29.9	6.08	6.13	85.7	86.4	4.48	4.52	4.61	7.0	7.0	7.2
				5.6	26.0	30.3	30.3	5.98	6.02	84.3	84.9	4.63	4.57		7.4		
			10.2	25.8	30.9	30.9	5.86	5.82	82.6	82.1	4.75	4.69	7.6				
30/08/11	1134-1145	31/Sunny	Surface	1.0	27.8	30.7	30.7	6.10	6.07	84.7	84.3	3.98	3.91	4.67	6.0	5.9	7.0
				5.7	26.2	31.3	31.3	6.04	6.01	83.9	83.5	5.04	5.12		7.8		
			10.4	25.4	32.0	32.1	5.88	5.84	81.1	80.5	4.95	5.03	7.2				

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
02/08/11	1245-1256	31/Fine	Surface	1.0	27.7	30.8	30.8	6.10	6.09	84.7	84.5	4.07	4.09	4.75	6.4	6.4	7.4
				6.4	26.6	31.7		5.94		81.9		4.90			6.4		
			Middle	6.4	26.6	31.8	5.90	82.5	4.95	7.6							
Bottom	11.8	25.8		32.1	5.89	81.2	5.20	7.8									
						32.1	5.86	80.8	5.24	8.0	8.1	8.1	8.0				
						29.5	6.23	87.8	5.08	7.8					7.9		
						29.5	6.19	87.3	5.10	8.0	8.1	8.1					
						30.3	6.10	86.0	5.14	8.2			8.1	8.1			
						30.4	6.14	86.6	5.18	8.2	8.1	8.1					
						31.1	6.05	85.3	5.21	8.0			8.1	8.1			
						31.2	6.00	84.6	5.25	8.2	8.1	8.1					
						30.9	6.17	85.7	4.58	7.2			7.2	7.2			
						30.8	6.14	85.3	4.63	7.2	7.2	7.2					
						31.8	6.01	83.5	5.07	7.8			7.7	7.7			
						31.8	6.04	83.9	5.14	7.6	7.7	7.7					
						32.2	5.78	79.7	5.15	8.0			8.0	8.0			
						32.2	5.83	80.4	5.19	8.0	8.0	8.0					
						29.8	6.26	88.3	4.99	7.4			7.5	7.5			
						29.8	6.22	87.7	4.95	7.6	7.5	7.5					
						30.4	6.18	87.1	5.07	7.8			7.9	7.9			
						30.3	6.15	86.7	5.04	8.0	8.0	8.0					
						31.5	6.08	85.7	5.15	8.0			8.0	8.0			
						31.6	6.04	85.2	5.18	8.0	8.0	8.0					
						29.4	6.15	84.8	4.20	6.4			6.5	6.5			
						29.4	6.18	85.2	4.27	6.6	6.5	6.5					
						29.7	6.09	84.0	4.16	6.4			6.5	6.5			
						29.8	6.05	89.7	4.24	6.6	6.5	6.5					
						30.6	5.92	81.6	4.55	7.0			7.0	7.0			
						30.5	5.95	82.1	4.50	7.0	7.0	7.0					
						29.9	6.34	89.4	4.96	7.2			7.1	7.1			
						29.9	6.31	89.0	4.91	7.0	7.1	7.1					
						30.6	6.13	86.4	5.11	7.6			7.5	7.5			
						30.5	6.20	87.4	5.08	7.4	7.5	7.5					
						31.6	6.01	84.7	5.23	8.2			8.3	8.3			
						31.6	6.06	85.4	5.29	8.4	8.3	8.3					
						29.7	6.24	88.0	4.31	6.6			6.7	6.7			
						29.8	6.20	87.4	4.36	6.8	6.9	6.9					
						30.5	6.17	87.0	4.43	6.8			6.9	6.9			
						30.5	6.11	86.2	4.49	7.0	7.1	7.1					
						31.7	5.99	84.5	4.67	7.2			7.1	7.1			
						31.7	6.05	85.3	4.62	7.0	7.1	7.1					
						30.4	6.26	88.3	5.04	7.6			7.6	7.6			
						30.3	6.23	87.8	4.99	7.6	7.6	7.6					
						30.9	6.17	87.0	5.09	7.8			7.9	7.9			
						30.9	6.14	86.6	5.12	8.0	8.0	8.0					
						31.8	6.05	85.3	5.19	8.0			8.0	8.0			
						31.8	6.00	84.6	5.18	8.0	8.0	8.0					
						29.9	6.09	86.5	4.88	7.2			7.1	7.1			
						29.9	6.15	87.3	4.80	7.0	7.1	7.1					
						30.6	6.01	85.3	4.99	7.4			7.4	7.4			
						30.6	5.95	84.5	5.05	7.4	7.4	7.4					
						31.8	5.92	84.1	5.23	8.2			8.1	8.1			
						31.9	5.90	83.8	5.21	8.0	8.1	8.1					
						29.5	6.11	86.2	4.40	6.8			6.7	6.7			
						29.6	6.15	86.7	4.32	6.6	6.9	6.9					
						30.4	6.07	85.6	4.51	7.0			6.9	6.9			
						30.4	6.02	84.9	4.55	6.8	6.9	6.9					
						30.7	5.92	83.5	4.66	7.4			7.3	7.3			
						30.7	5.94	83.8	4.62	7.2	7.3	7.3					
						29.6	6.29	92.5	4.99	7.8			7.8	7.8			
						29.6	6.27	92.2	5.03	7.8	7.9	7.9					
						30.1	6.21	91.9	5.12	8.0			8.0	8.0			
						30.2	6.17	91.3	5.09	7.8	7.9	7.9					
						31.4	6.10	90.3	5.18	8.0			8.2	8.2			
						31.5	6.08	90.0	5.22	8.4	8.2	8.2					
						29.8	6.16	86.2	4.31	6.6			6.7	6.7			
						29.9	6.21	86.9	4.34	6.8	6.9	6.9					
						30.2	6.10	85.4	4.39	7.0			6.9	6.9			
						30.3	6.05	84.7	4.43	6.8	6.9	6.9					
						31.0	5.93	83.0	4.56	7.0			7.0	7.0			
						31.0	5.91	82.7	4.50	7.0	7.0	7.0					
						30.6	6.20	86.1	3.95	6.0			6.1	6.1			
						30.7	6.14	85.3	3.98	6.2	6.1	6.1					
						31.3	6.07	84.3	4.89	7.6			7.5	7.5			
						31.3	6.04	83.9	4.80	7.4	7.5	7.5					
						31.9	5.94	82.5	4.74	7.2			7.1	7.1			
						32.0	5.99	83.2	4.69	7.0	7.1	7.1					

**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		
02/08/11	1230-1242	31/Fine	Surface	1.0	27.8	30.9	30.9	6.07	6.06	84.3	84.1	3.78	3.80	4.42	6.0	6.0	6.9		
				30.8	6.04	83.9	3.82	6.0											
			Middle	5.9	26.5	31.6	31.7	5.87	5.86	81.0	80.9	4.37			4.41			7.0	7.0
				31.7	5.85	80.7	4.44	7.0											
			Bottom	10.8	26.0	32.1	32.1	5.90	5.92	81.4	81.7	5.02			5.06			7.5	7.8
				32.1	5.94	81.9	5.09	8.0											
04/08/11	1400-1412	32/Sunny	Surface	1.0	26.9	29.4	29.5	6.22	6.24	87.7	87.9	5.11	5.13	5.19	8.0	7.9	8.0		
				29.5	6.25	88.1	5.14	7.8											
			Middle	6.2	26.3	30.4	30.4	6.17	6.15	87.0	86.5	5.17			5.19			7.8	7.9
				30.4	6.13	86.0	5.20	8.0											
			Bottom	11.4	25.5	31.2	31.2	6.06	6.04	85.4	85.2	5.24			5.26			8.0	8.1
				31.1	6.02	84.9	5.27	8.2											
06/08/11	1530-1542	31/Fine	Surface	1.0	27.8	30.9	30.9	6.12	6.10	85.0	84.7	4.21	4.26	4.76	6.4	6.5	7.3		
				30.9	6.07	84.3	4.30	6.6											
			Middle	6.2	26.7	31.6	31.7	5.95	5.97	82.7	82.9	4.90			4.92			7.6	7.6
				31.7	5.98	83.1	4.94	7.5											
			Bottom	11.4	26.0	32.0	32.1	5.89	5.88	81.2	81.0	5.07			5.11			7.5	7.8
				32.1	5.86	80.8	5.14	8.0											
09/08/11	0830-0842	27/Cloudy	Surface	1.0	27.3	29.7	29.7	6.21	6.22	87.6	87.7	4.93	4.95	5.05	7.6	7.7	8.0		
				29.6	6.23	87.8	4.97	7.8											
			Middle	6.1	26.8	30.3	30.4	6.17	6.15	87.0	86.7	5.03			5.04			8.0	8.0
				30.4	6.12	86.3	5.05	8.0											
			Bottom	11.2	26.2	31.6	31.6	6.01	6.03	84.7	85.0	5.12			5.15			8.0	8.2
				31.6	6.05	85.3	5.17	8.4											
11/08/11	0935-0952	29/Cloudy	Surface	1.0	26.3	29.4	29.4	6.19	6.21	85.4	86.3	4.18	4.21	4.39	6.4	6.5	6.7		
				29.3	6.23	87.2	4.23	6.6											
			Middle	5.5	26.0	29.6	29.6	6.15	6.13	85.1	85.0	4.30			4.32			6.6	6.6
				29.6	6.10	84.8	4.34	6.5											
			Bottom	10.0	25.7	30.5	30.5	6.00	6.02	83.4	83.7	4.60			4.63			7.0	7.1
				30.5	6.04	83.9	4.66	7.2											
13/08/11	1030-1042	30/Fine	Surface	1.0	27.3	29.8	29.9	6.23	6.25	88.5	88.8	4.98	4.96	5.11	7.2	7.1	7.8		
				29.9	6.27	89.0	4.94	7.0											
			Middle	5.9	26.6	30.5	30.6	6.09	6.12	86.5	86.9	5.05			5.09			7.6	7.8
				30.6	6.15	87.3	5.13	8.0											
			Bottom	10.8	25.5	31.7	31.7	5.96	5.95	84.6	84.5	5.31			5.29			8.5	8.5
				31.6	5.94	84.3	5.27	8.4											
16/08/11	1115-1126	31/Fine	Surface	1.0	26.5	29.8	29.8	6.27	6.30	88.4	88.9	4.34	4.37	4.49	6.8	6.8	7.0		
				29.7	6.33	89.3	4.39	6.8											
			Middle	5.8	25.8	30.5	30.5	6.12	6.13	86.3	86.5	4.51			4.49			7.0	7.0
				30.4	6.14	86.6	4.46	7.0											
			Bottom	10.6	25.3	31.7	31.8	6.02	6.00	84.9	84.6	4.57			4.61			7.0	7.2
				31.8	5.97	84.2	4.64	7.4											
18/08/11	1330-1342	32/Fine	Surface	1.0	26.7	30.3	30.4	6.19	6.21	87.3	87.6	5.00	5.03	5.12	7.8	8.0	8.0		
				30.4	6.23	87.8	5.06	8.2											
			Middle	6.2	26.1	30.9	31.0	6.15	6.13	86.7	86.5	5.11			5.13			7.8	7.9
				31.0	6.11	86.2	5.14	8.0											
			Bottom	11.4	25.1	31.8	31.8	6.02	6.00	84.9	84.6	5.18			5.20			8.0	8.0
				31.7	5.98	84.3	5.22	8.0											
20/08/11	1345-1400	31/Fine	Surface	1.0	26.6	29.9	29.9	6.12	6.15	86.9	87.3	4.96	4.96	5.08	7.6	7.6	7.9		
				29.8	6.17	87.6	4.95	7.6											
			Middle	5.8	25.9	30.6	30.7	6.02	6.04	84.5	85.2	5.12			5.10			7.8	7.9
				30.7	6.05	85.9	5.08	8.0											
			Bottom	10.6	25.1	31.7	31.8	5.87	5.90	83.4	83.8	5.17			5.19			8.0	8.1
				31.8	5.92	84.1	5.20	8.2											
23/08/11	0730-0742	29/Fine	Surface	1.0	26.4	29.6	29.6	6.23	6.21	87.2	86.9	4.39	4.41	4.53	6.4	6.5	6.8		
				29.6	6.18	86.5	4.43	6.6											
			Middle	5.9	25.8	30.5	30.5	6.09	6.11	85.3	85.5	4.56			4.53			6.8	6.7
				30.4	6.12	85.7	4.49	6.5											
			Bottom	10.8	25.2	30.8	30.8	5.97	6.00	83.6	84.0	4.64			4.66			7.0	7.1
				30.7	6.03	84.4	4.68	7.2											
25/08/11	0830-0842	30/Cloudy	Surface	1.0	28.3	29.5	29.6	6.23	6.25	91.6	91.8	4.97	4.95	5.05	7.6	7.6	7.8		
				29.6	6.26	92.0	4.93	7.6											
			Middle	6.2	27.7	30.1	30.2	6.16	6.15	91.2	91.1	5.03			5.05			7.6	7.8
				30.2	6.14	90.9	5.07	8.0											
			Bottom	11.4	26.8	31.3	31.4	6.07	6.05	89.8	89.5	5.14			5.16			8.0	8.0
				31.4	6.03	89.2	5.17	8.0											
27/08/11	0930-0942	29/Fine	Surface	1.0	26.5	29.8	29.8	6.18	6.15	87.1	86.7	4.36	4.39	4.51	6.6	6.7	7.0		
				29.8	6.12	86.3	4.41	6.8											
			Middle	6.0	26.1	30.2	30.2	6.06	6.05	85.4	85.2	4.54			4.51			7.2	7.1
				30.2	6.03	85.0	4.47	7.0											
			Bottom	11.0	25.7	30.9	31.0	5.96	5.98	84.0	84.3	4.62			4.64			7.0	7.1
				31.0	5.99	84.5	4.65	7.2											
30/08/11	1100-1112	31/Sunny	Surface	1.0	27.7	30.4	30.5	6.12	6.15	85.0	85.4	4.12	4.15	4.60	6.4	6.5	7.1		
				30.5	6.17	85.7	4.18	6.6											
			Middle	5.9	26.3	31.4	31.4	6.04	6.05	83.9	84.1	4.75			4.73			7.2	7.1
				31.3	6.06	84.2	4.70	7.0											
			Bottom	10.8	25.4	31.8	31.9	5.87	5.90	81.0	81.3	4.88			4.92			7.5	7.6
				31.9	5.92	81.6	4.95	7.6											

**Mid-Ebb Tide**

Monitoring Station : R28

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)		Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average
02/08/11	1431-1442	31/Fine	Surface	1.0	27.9	31.0	31.0	6.17	6.16	85.7	85.5	4.92	4.97	5.03	7.4	7.6	7.8	
						30.9		6.14		85.3		5.02			7.8			
			Middle	5.7	26.6	31.8	31.8	6.07	6.06	84.3	84.1	5.02	5.06		7.8			7.9
						31.8		6.04		83.9		5.09			8.0			
			Bottom		26.0	32.2	32.2	5.89	5.91	81.2	81.5	5.08	5.05		7.8			7.8
						32.2		5.93		81.8		5.02			7.8			
04/08/11	1549-1601	32/Sunny	Surface	1.0	26.9	29.4	29.4	6.23	6.25	87.8	88.1	5.04	5.06	5.13	8.0	8.0	8.1	
						29.3		6.26		88.3		5.08			8.0			
			Middle	5.5	26.4	30.2	30.3	6.17	6.16	87.0	86.9	5.12	5.13		8.0			8.1
						30.3		6.15		86.7		5.14			8.2			
			Bottom	10.0	25.5	31.1	31.1	6.09	6.08	85.9	85.7	5.19	5.21		8.0			8.1
						31.0		6.06		85.4		5.23			8.2			
06/08/11	1731-1742	31/Fine	Surface	1.0	27.8	31.1	31.2	6.19	6.18	86.0	85.8	4.97	5.01	5.11	7.6	7.6	7.8	
						31.2		6.16		85.6		5.05			7.6			
			Middle	5.7	26.7	31.7	31.8	6.07	6.06	84.3	84.1	5.07	5.11		7.6			7.7
						31.8		6.04		83.9		5.15			7.8			
			Bottom	10.4	26.1	32.1	32.1	5.84	5.82	80.5	80.3	5.23	5.20		8.0			8.0
						32.1		5.80		80.0		5.17			8.0			
09/08/11	1018-1031	28/Cloudy	Surface	1.0	27.2	29.7	29.7	6.28	6.26	88.5	88.3	5.02	4.99	5.08	7.6	7.5	7.8	
						29.7		6.24		88.0		4.96			7.4			
			Middle	5.9	26.9	30.3	30.4	6.17	6.15	87.0	86.7	5.06	5.08		7.8			7.9
						30.4		6.13		86.4		5.10			8.0			
			Bottom	10.8	26.3	31.5	31.6	6.01	6.03	84.7	85.0	5.16	5.17		8.0			8.0
						31.6		6.05		85.3		5.18			8.0			
11/08/11	1153-1210	30/Cloudy	Surface	1.0	26.4	29.5	29.5	6.20	6.23	85.5	85.9	4.22	4.25	4.38	6.6	6.6	6.8	
						29.5		6.25		86.2		4.27			6.6			
			Middle	5.4	26.3	29.5	29.5	6.13	6.16	84.5	84.9	4.35	4.33		6.8			6.7
						29.5		6.18		85.2		4.30			6.6			
			Bottom	9.8	25.8	30.4	30.5	6.05	6.07	83.4	83.7	4.56	4.58		7.0			7.1
						30.5		6.08		83.9		4.60			7.2			
13/08/11	1241-1253	31/Fine	Surface	1.0	27.4	29.9	29.9	6.16	6.14	87.5	87.2	5.02	5.01	5.17	7.0	6.9	7.7	
						29.9		6.12		86.9		4.99			6.8			
			Middle	5.6	26.9	30.6	30.6	5.99	6.02	85.1	85.5	5.19	5.15		7.8			7.6
						30.6		6.05		85.9		5.10			7.4			
			Bottom	10.2	25.7	31.7	31.7	5.94	5.94	84.3	84.3	5.33	5.35		8.6			8.7
						31.6		5.93		84.2		5.37			8.8			
16/08/11	1326-1337	31/Fine	Surface	1.0	26.6	29.8	29.8	6.14	6.12	86.6	86.3	4.47	4.43	4.56	7.0	7.0	7.3	
						29.8		6.09		85.9		4.39			7.0			
			Middle	5.5	26.1	30.4	30.4	6.03	6.01	85.0	84.8	4.53	4.55		7.2			7.3
						30.4		5.99		84.5		4.56			7.4			
			Bottom	10.0	25.5	31.8	31.8	5.87	5.90	82.8	83.2	4.72	4.70		7.8			7.7
						31.7		5.93		83.6		4.68			7.6			
18/08/11	1541-1552	32/Fine	Surface	1.0	26.7	30.4	30.4	6.23	6.21	87.8	87.5	5.06	5.04	5.10	7.6	7.7	8.0	
						30.3		6.18		87.1		5.02			7.8			
			Middle	5.6	26.1	30.9	30.9	6.11	6.10	86.2	86.0	5.06	5.08		7.8			8.0
						30.8		6.08		85.7		5.10			8.2			
			Bottom	10.2	25.2	31.7	31.7	5.97	5.96	84.2	84.0	5.15	5.17		8.4			8.3
						31.6		5.94		83.8		5.19			8.2			
20/08/11	1545-1556	31/Fine	Surface	1.0	26.9	29.9	29.9	6.09	6.07	85.3	85.6	4.99	4.97	5.12	7.8	7.6	8.1	
						29.8		6.04		85.8		4.95			7.4			
			Middle	5.3	26.3	30.7	30.8	5.82	5.86	82.6	83.2	5.08	5.12		8.2			8.3
						30.8		5.90		83.8		5.16			8.4			
			Bottom	9.6	25.5	31.8	31.9	5.72	5.75	81.2	81.7	5.30	5.26		8.6			8.4
						31.9		5.78		82.1		5.21			8.2			
23/08/11	0941-0952	29/Fine	Surface	1.0	26.5	29.5	29.5	6.20	6.20	86.8	86.8	4.36	4.37	4.48	6.2	6.2	6.8	
						29.5		6.19		86.7		4.38			6.2			
			Middle	5.6	26.0	30.4	30.5	6.09	6.06	85.3	84.9	4.47	4.46		6.6			6.8
						30.5		6.03		84.4		4.44			7.0			
			Bottom	10.2	25.4	30.8	30.8	5.96	5.95	83.4	83.2	4.58	4.60		7.2			7.3
						30.8		5.93		83.0		4.62			7.4			
25/08/11	1018-1030	30/Cloudy	Surface	1.0	28.2	29.7	29.7	6.27	6.30	92.2	92.6	5.02	5.00	5.09	7.8	7.7	7.9	
						29.6		6.32		92.9		4.97			7.6			
			Middle	5.5	27.8	30.1	30.1	6.23	6.21	91.6	91.3	5.06	5.08		7.8			7.8
						30.0		6.19		91.0		5.10			7.8			
			Bottom	10.0	26.9	31.3	31.3	6.11	6.09	89.8	89.5	5.17	5.18		8.0			8.1
						31.3		6.06		89.1		5.19			8.2			
27/08/11	1141-1152	29/Fine	Surface	1.0	26.6	29.9	29.9	6.17	6.18	87.0	87.2	4.52	4.49	4.59	6.8	6.8	7.1	
						29.9		6.19		87.3		4.45			6.8			
			Middle	5.5	26.3	30.3	30.3	6.01	6.04	84.7	85.1	4.63	4.60		7.2			7.1
						30.3		6.06		85.4		4.56			7.0			
			Bottom	10.0	25.9	31.0	31.0	5.87	5.90	82.8	83.2	4.67	4.69		7.2			7.4
						30.9		5.93		83.6		4.71			7.6			
30/08/11	1311-1322	31/Sunny	Surface	1.0	27.9	30.8	30.8	6.29	6.27	87.4	87.1	4.68	4.71	4.87	7.2	7.3	7.5	
						30.7		6.25		86.8		4.74			7.4			
			Middle	5.7	26.5	31.5	31.5	6.09	6.08	84.6	84.4	4.77	4.79		7.6			7.4
						31.5		6.06		84.2		4.81			7.2			
			Bottom	10.4	25.5	32.0	32.1	5.86	5.88	80.8	81.0	5.10	5.12		8.0			7.8
						32.1		5.89		81.2		5.14			7.6			



Mid-Ebb Tide

Monitoring Station : R29

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
02/08/11	1456-1507	31/Fine	Surface	1.0	27.8	31.1	31.1	6.11	6.09	84.9	84.6	5.03	5.07	5.02	7.8	8.0	7.9	
						31.1		6.07		84.3		5.11			8.2			
			Middle	8.4	26.5	31.9	31.9	5.93	5.92	81.4	81.6	4.94	4.96		7.8			7.8
						31.8		5.90		81.4		4.98			7.8			
			Bottom	15.8	25.9	32.3	32.3	5.84	5.82	80.5	80.3	5.07	5.04		8.0			7.9
						32.2		5.80		80.0		5.01			7.8			
04/08/11	1605-1618	32/Sunny	Surface	1.0	27.0	29.4	29.5	6.30	6.28	88.8	88.6	5.11	5.13	5.22	8.0	8.0	8.2	
						29.5		6.26		88.3		5.15			8.0			
			Middle	8.8	26.3	30.4	30.4	6.19	6.18	87.3	87.1	5.21	5.22		8.2			8.2
						30.4		6.16		86.9		5.23			8.2			
			Bottom	16.6	25.3	31.4	31.4	6.06	6.08	85.4	85.7	5.28	5.31		8.2			8.3
						31.4		6.10		86.0		5.33			8.4			
06/08/11	1756-1807	31/Fine	Surface	1.0	27.7	31.2	31.2	6.27	6.26	87.1	86.9	5.10	5.08	5.05	7.8	7.6	7.7	
						31.2		6.24		86.7		5.05			7.4			
			Middle	8.4	26.6	31.8	31.8	6.10	6.12	84.7	85.0	4.98	4.95		7.6			7.6
						31.8		6.13		85.2		4.91			7.6			
			Bottom	15.8	26.0	32.2	32.2	5.82	5.80	80.3	80.0	5.15	5.13		8.0			7.9
						32.1		5.78		79.7		5.10			7.8			
09/08/11	1035-1048	28/Cloudy	Surface	1.0	27.2	29.6	29.7	6.21	6.23	87.6	87.9	4.92	4.93	5.04	7.6	7.6	7.8	
						29.7		6.25		88.1		4.94			7.6			
			Middle	8.9	26.7	30.5	30.5	6.13	6.11	86.4	86.2	5.02	5.04		7.8			7.8
						30.4		6.09		85.9		5.05			7.8			
			Bottom	16.8	26.2	31.6	31.7	5.98	5.97	84.3	84.1	5.13	5.14		8.0			8.0
						31.7		5.95		83.9		5.15			8.0			
11/08/11	1215-1233	30/Cloudy	Surface	1.0	26.5	29.4	29.5	6.18	6.17	85.2	85.0	4.39	4.41	4.69	6.8	6.8	7.2	
						29.5		6.15		84.8		4.42			6.8			
			Middle	8.3	25.7	29.9	30.0	6.04	6.01	83.3	82.9	4.65	4.68		7.2			7.1
						30.0		5.98		82.5		4.71			7.0			
			Bottom	15.6	25.2	30.7	30.7	5.73	5.76	79.0	79.4	4.96	4.98		7.6			7.7
						30.7		5.78		79.7		5.00			7.8			
13/08/11	1307-1318	31/Fine	Surface	1.0	27.3	29.8	29.8	6.18	6.21	87.8	88.2	5.05	5.07	5.21	7.2	7.3	7.9	
						29.7		6.23		88.5		5.09			7.4			
			Middle	8.5	26.8	30.7	30.7	6.09	6.06	86.5	86.1	5.17	5.20		8.0			8.1
						30.7		6.03		85.6		5.22			8.2			
			Bottom	16.0	25.5	31.7	31.8	5.95	5.97	84.5	84.7	5.41	5.38		8.4			8.3
						31.8		5.98		84.9		5.34			8.2			
16/08/11	1351-1403	31/Fine	Surface	1.0	26.6	29.6	29.7	6.13	6.16	87.0	87.4	4.41	4.43	4.61	6.4	6.6	7.0	
						29.7		6.18		87.8		4.45			6.8			
			Middle	8.3	25.9	30.6	30.6	6.05	6.06	85.9	86.1	4.67	4.63		7.2			7.1
						30.5		6.07		86.2		4.58			7.0			
			Bottom	15.6	25.2	31.8	31.9	5.96	5.93	84.6	84.1	4.74	4.77		7.4			7.4
						31.9		5.89		83.6		4.79			7.4			
18/08/11	1606-1617	32/Fine	Surface	1.0	26.8	30.4	30.4	6.26	6.24	88.3	88.0	4.98	5.01	5.13	7.6	7.6	7.9	
						30.4		6.21		87.6		5.03			7.6			
			Middle	8.8	25.9	31.1	31.1	6.15	6.13	86.7	86.4	5.11	5.13		7.8			7.9
						31.0		6.10		86.0		5.15			8.0			
			Bottom	16.6	24.8	32.0	32.0	5.92	5.95	83.5	83.9	5.23	5.26		8.2			8.3
						32.0		5.97		84.2		5.28			8.4			
20/08/11	1559-1613	31/Fine	Surface	1.0	26.9	29.9	30.0	6.11	6.12	86.8	86.3	4.80	4.82	4.95	7.0	7.1	7.3	
						30.0		6.13		85.8		4.83			7.2			
			Middle	8.6	26.2	30.9	30.9	6.02	6.04	85.5	85.7	4.92	4.95		7.6			7.5
						30.8		6.05		85.9		4.98			7.4			
			Bottom	16.2	25.1	31.9	31.9	5.82	5.83	82.6	82.8	5.10	5.08		7.4			7.4
						31.9		5.84		82.9		5.06			7.4			
23/08/11	1006-1017	29/Fine	Surface	1.0	26.5	29.4	29.4	6.14	6.10	86.6	86.0	4.49	4.53	4.69	6.2	6.4	6.7	
						29.4		6.06		85.4		4.57			6.6			
			Middle	8.4	25.9	30.6	30.6	5.92	5.96	83.5	84.0	4.69	4.71		6.6			6.7
						30.6		5.99		84.5		4.73			6.8			
			Bottom	15.8	25.2	30.9	30.9	5.87	5.84	82.8	82.4	4.81	4.84		7.0			7.1
						30.8		5.81		81.9		4.86			7.2			
25/08/11	1034-1048	30/Cloudy	Surface	1.0	28.3	29.6	29.6	6.31	6.29	92.8	92.4	4.93	4.94	5.07	7.6	7.6	8.1	
						29.5		6.26		92.0		4.95			7.6			
			Middle	8.8	27.7	30.3	30.3	6.17	6.16	90.7	90.5	5.04	5.07		8.0			8.2
						30.2		6.14		90.3		5.10			8.4			
			Bottom	16.6	28.2	31.5	31.5	6.01	6.03	88.3	88.6	5.21	5.19		8.6			8.5
						31.4		6.05		88.9		5.17			8.4			
27/08/11	1206-1217	29/Fine	Surface	1.0	26.6	29.7	29.7	6.13	6.14	86.4	86.5	4.55	4.57	4.72	7.0	7.0	7.3	
						29.7		6.14		86.6		4.58			7.0			
			Middle	8.5	26.2	30.4	30.4	6.08	6.06	85.7	85.4	4.70	4.73		7.2			7.3
						30.4		6.03		85.0		4.75			7.4			
			Bottom	16.0	25.6	31.1	31.1	5.89	5.92	83.0	83.5	4.89	4.86		7.6			7.6
						31.0		5.95		83.9		4.83			7.6			
30/08/11	1336-1347	31/Sunny	Surface	1.0	27.9	30.9	30.9	6.18	6.17	85.9	85.7	4.77	4.79	5.02	7.2	7.2	7.8	
						30.9		6.15		85.4		4.81			7.2			
			Middle	8.3	26.3	31.6	31.6	6.02	6.04	83.6	83.8	5.07	5.10		7.8			7.9
						31.5		6.05		84.0		5.12			8.0			
			Bottom	15.6	25.5	32.1	32.1	5.94	5.92	81.9	81.7	5.21	5.19		8.4			8.3
						32.1		5.90		81.4		5.16			8.2			

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
02/08/11	1330-1342	31/Fine	Surface	1.0	27.8	30.9	31.0	6.21	6.20	86.3	86.1	4.49	4.45	4.88	6.8	6.8	7.6
						31.0		6.18		85.9		4.40			6.8		
			Middle	6.8	26.6	31.8	31.8	6.01	6.03	83.5	83.7	5.17	5.14		8.2	8.1	
						31.8		6.04		83.9		5.10			8.0		
			Bottom	12.6	25.7	32.1	32.1	5.99	5.97	83.2	83.0	5.09	5.07		8.0	8.0	
						32.1		5.95		82.7		5.05			8.0		
04/08/11	1453-1505	32/Sunny	Surface	1.0	26.9	29.4	29.4	6.27	6.26	88.4	88.2	5.15	5.14	5.21	8.0	8.0	8.0
						29.3		6.24		88.0		5.12			8.0		
			Middle	7.2	26.3	30.4	30.4	6.18	6.17	87.1	87.0	5.20	5.22		8.0	7.9	
						30.4		6.16		86.9		5.23			7.8		
			Bottom	13.4	25.4	31.4	31.4	6.09	6.07	85.9	85.6	5.28	5.29		8.2	8.1	
						31.3		6.04		85.2		5.30			8.0		
06/08/11	1630-1642	31/Fine	Surface	1.0	27.7	31.0	31.0	6.10	6.12	84.7	85.0	4.74	4.78	5.11	7.4	7.4	7.9
						31.0		6.14		85.3		4.82			7.4		
			Middle	6.8	26.7	31.9	31.9	5.97	5.96	82.9	82.7	5.07	5.04		8.0	7.9	
						31.9		5.94		82.5		5.01			7.8		
			Bottom	12.6	25.9	32.3	32.3	5.86	5.85	80.8	80.6	5.52	5.50		8.4	8.5	
						32.2		5.83		80.4		5.47			8.5		
09/08/11	0923-0934	27/Cloudy	Surface	1.0	27.3	29.7	29.7	6.28	6.26	88.5	88.3	5.00	4.99	5.10	7.6	7.6	7.8
						29.7		6.24		88.0		4.97			7.6		
			Middle	7.3	26.7	30.4	30.5	6.16	6.18	86.9	87.1	5.08	5.11		7.6	7.8	
						30.5		6.19		87.3		5.13			8.0		
			Bottom	13.6	26.1	31.6	31.7	6.07	6.09	85.6	85.8	5.19	5.22		8.0	8.0	
						31.7		6.10		86.0		5.24			8.0		
11/08/11	1042-1059	29/Cloudy	Surface	1.0	26.3	29.3	29.3	6.22	6.25	85.8	86.2	4.36	4.38	4.41	6.6	6.7	6.8
						29.3		6.27		86.5		4.40			6.8		
			Middle	6.9	25.8	29.6	29.7	6.16	6.14	85.0	84.7	4.25	4.27		6.6	6.5	
						29.7		6.11		84.3		4.29			6.4		
			Bottom	12.8	25.3	30.8	30.9	5.99	6.01	82.6	82.9	4.62	4.59		7.2	7.1	
						30.9		6.03		83.2		4.56			7.0		
13/08/11	1130-1142	30/Fine	Surface	1.0	27.3	29.8	29.9	6.32	6.35	89.1	89.5	4.98	5.02	5.15	7.2	7.4	8.0
						29.9		6.37		89.8		5.06			7.6		
			Middle	6.8	26.7	30.6	30.6	6.21	6.23	87.6	87.8	5.17	5.15		8.0	8.1	
						30.6		6.24		88.0		5.13			8.2		
			Bottom	12.6	25.5	31.6	31.7	6.05	6.09	85.3	85.8	5.30	5.28		8.6	8.6	
						31.7		6.12		86.3		5.26			8.5		
16/08/11	1215-1227	31/Fine	Surface	1.0	26.5	29.8	29.8	6.34	6.35	89.4	89.6	4.44	4.45	4.58	6.8	6.8	7.1
						29.8		6.36		89.7		4.46			6.8		
			Middle	6.7	25.9	30.4	30.5	6.23	6.26	87.8	88.3	4.57	4.55		7.0	7.0	
						30.5		6.29		88.7		4.52			7.0		
			Bottom	12.4	25.4	31.8	31.8	6.14	6.11	86.6	86.1	4.71	4.75		7.4	7.5	
						31.8		6.07		85.6		4.79			7.5		
18/08/11	1430-1442	32/Fine	Surface	1.0	26.7	30.4	30.4	6.31	6.29	89.0	88.7	5.06	5.04	5.15	7.6	7.6	7.9
						30.3		6.27		88.4		5.02			7.6		
			Middle	7.2	26.0	31.1	31.1	6.18	6.20	87.1	87.4	5.12	5.15		8.0	8.0	
						31.0		6.21		87.6		5.17			8.0		
			Bottom	13.4	25.0	31.9	32.0	6.12	6.10	86.3	86.0	5.23	5.25		8.2	8.1	
						32.0		6.07		85.6		5.27			8.0		
20/08/11	1446-1458	31/Fine	Surface	1.0	26.8	29.9	30.0	6.16	6.19	87.5	87.9	4.98	4.97	5.08	7.2	7.1	7.5
						30.0		6.21		88.2		4.95			7.0		
			Middle	7.3	26.3	30.8	30.8	6.12	6.14	86.9	87.1	5.10	5.09		7.8	7.7	
						30.7		6.15		87.3		5.07			7.6		
			Bottom	13.6	25.3	31.8	31.8	6.01	6.04	85.3	85.1	5.19	5.20		7.6	7.8	
						31.7		6.06		84.8		5.20			8.0		
23/08/11	0830-0842	29/Fine	Surface	1.0	26.4	29.6	29.6	6.19	6.17	86.7	86.4	4.34	4.37	4.49	6.6	6.7	7.0
						29.5		6.15		86.1		4.39			6.8		
			Middle	6.9	25.8	30.5	30.5	6.01	6.03	84.1	84.4	4.51	4.49		7.0	7.1	
						30.5		6.04		84.6		4.46			7.2		
			Bottom	12.8	25.3	30.7	30.8	5.97	5.95	83.6	83.3	4.57	4.61		7.2	7.1	
						30.8		5.92		82.9		4.65			7.0		
25/08/11	0923-0934	30/Cloudy	Surface	1.0	28.2	29.6	29.7	6.25	6.27	91.9	92.1	5.04	5.03	5.13	8.0	7.9	8.1
						29.7		6.28		92.3		5.01			7.8		
			Middle	7.2	27.6	30.2	30.2	6.16	6.14	90.6	90.3	5.12	5.14		8.0	8.0	
						30.2		6.12		90.0		5.16			8.0		
			Bottom	13.4	26.7	31.4	31.5	6.01	6.03	88.3	88.6	5.21	5.23		8.4	8.5	
						31.5		6.05		88.9		5.25			8.5		
27/08/11	1030-1042	29/Fine	Surface	1.0	26.5	29.8	29.8	6.25	6.24	88.1	88.0	4.41	4.37	4.48	6.8	6.6	6.8
						29.8		6.23		87.8		4.33			6.4		
			Middle	6.8	26.1	30.3	30.3	6.09	6.10	85.9	86.1	4.46	4.48		6.6	6.8	
						30.3		6.11		86.2		4.49			7.0		
			Bottom	12.6	25.8	30.9	31.0	5.99	6.02	84.5	84.9	4.55	4.59		7.0	7.0	
						31.0		6.04		85.2		4.62			7.0		
30/08/11	1200-1212	31/Sunny	Surface	1.0	27.7	30.7	30.7	6.09	6.08	84.6	84.4	4.27	4.30	4.79	6.2	6.2	6.9
						30.7		6.06		84.2		4.32			6.2		
			Middle	6.6	26.1	31.3	31.4	5.98	5.97	83.1	82.9	4.97	4.94		7.0	7.0	
						31.4		5.95		82.7		4.91			7.0		
			Bottom	12.2	25.3	32.1	32.1	5.94	5.96	82.5	82.7	5.17	5.14		7.4	7.5	
						32.1		5.97		82.9		5.10			7.5		

**Mid-Ebb Tide**

Monitoring Station : C3

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
02/08/11	1345-1357	31/Fine	Surface	1.0	27.8	31.0	31.0	6.18	6.16	85.9	85.6	4.58	4.61	5.04	7.2	7.2	7.8	
						31.0		6.14		85.3		4.64			7.2			
			Middle	6.4	26.5	31.7	31.8	5.95	5.97	82.1	82.3	5.30	5.34		5.37			8.2
						31.8		5.98		82.5		5.37			8.4			
			Bottom	11.8	25.7	32.0	32.1	5.80	5.82	80.0	80.3	5.15	5.19		5.22			8.0
						32.1		5.84		80.5		5.22			8.0			
04/08/11	1511-1523	32/Sunny	Surface	1.0	26.8	29.3	29.4	6.30	6.28	88.8	88.5	5.10	5.12	5.19	7.4	7.6	7.9	
						29.4		6.25		88.1		5.13			7.8			
			Middle	6.4	26.4	30.3	30.3	6.21	6.19	87.6	87.3	5.17	5.19		5.21			8.0
						30.2		6.17		87.0		5.21			8.2			
			Bottom	11.8	25.4	31.2	31.2	6.10	6.08	86.0	85.7	5.26	5.27		5.27			8.0
						31.2		6.06		85.4		5.27			8.2			
06/08/11	1645-1657	31/Fine	Surface	1.0	27.6	31.0	31.0	6.14	6.12	85.4	85.1	4.92	4.95	5.17	7.6	7.6	8.0	
						30.9		6.10		84.7		4.97			7.6			
			Middle	6.4	26.7	31.9	31.9	5.81	5.80	80.1	79.9	5.30	5.33		5.36			8.2
						31.8		5.78		79.7		5.36			8.4			
			Bottom	11.8	26.0	32.3	32.3	5.75	5.77	79.3	79.6	5.27	5.24		5.21			8.2
						32.3		5.79		79.9		5.21			8.0			
09/08/11	0940-0952	27/Cloudy	Surface	1.0	27.2	29.6	29.7	6.31	6.29	89.0	88.7	4.91	4.94	5.04	7.6	7.6	7.9	
						29.7		6.26		88.3		4.96			7.6			
			Middle	6.2	26.9	30.5	30.5	6.22	6.20	87.7	87.4	5.02	5.04		5.05			7.8
						30.4		6.18		87.1		5.05			8.0			
			Bottom	11.4	26.2	31.5	31.6	6.13	6.11	86.4	86.2	5.12	5.14		5.16			8.2
						31.6		6.09		85.9		5.16			8.0			
11/08/11	1106-1123	29/Cloudy	Surface	1.0	26.4	29.3	29.4	6.24	6.21	86.1	85.6	4.25	4.27	4.35	6.6	6.6	6.7	
						29.4		6.17		85.1		4.28			6.6			
			Middle	6.5	25.9	29.7	29.7	6.08	6.11	83.9	84.2	4.18	4.21		4.24			6.4
						29.6		6.13		84.5		4.24			6.4			
			Bottom	12.0	25.4	30.7	30.7	6.01	5.99	82.9	82.6	4.54	4.57		4.60			7.0
						30.7		5.96		82.2		4.60			7.0			
13/08/11	1155-1207	30/Fine	Surface	1.0	27.2	29.8	29.8	6.28	6.31	88.5	89.0	4.92	4.94	5.11	7.0	7.0	7.6	
						29.8		6.34		89.4		4.95			7.0			
			Middle	6.2	26.7	30.6	30.6	6.19	6.17	87.3	87.0	5.09	5.12		5.15			7.4
						30.5		6.15		86.7		5.15			7.8			
			Bottom	11.4	25.6	31.7	31.7	6.03	6.06	85.0	85.4	5.24	5.28		5.32			8.0
						31.7		6.08		85.7		5.32			8.4			
16/08/11	1240-1252	31/Fine	Surface	1.0	26.5	29.7	29.8	6.31	6.28	89.6	89.2	4.37	4.40	4.58	6.6	6.7	7.0	
						29.8		6.25		88.8		4.42			6.8			
			Middle	6.2	25.9	30.5	30.5	6.19	6.18	87.9	87.8	4.61	4.58		4.61			7.2
						30.4		6.17		87.6		4.54			7.0			
			Bottom	11.4	25.4	31.7	31.7	6.04	6.04	85.8	85.7	4.75	4.76		4.77			7.2
						31.7		6.03		85.6		4.77			7.3			
18/08/11	1455-1507	32/Fine	Surface	1.0	26.8	30.2	30.3	6.26	6.24	88.3	88.0	4.96	4.99	5.07	7.6	7.7	7.8	
						30.3		6.21		87.6		5.01			7.8			
			Middle	6.4	26.1	30.9	31.0	6.11	6.13	86.2	86.5	5.09	5.07		5.05			7.8
						31.0		6.15		86.7		5.05			7.8			
			Bottom	11.8	25.1	31.8	31.9	6.03	6.01	85.0	84.8	5.15	5.17		5.18			8.0
						31.9		5.99		84.5		5.18			8.0			
20/08/11	1504-1515	31/Fine	Surface	1.0	26.9	29.9	30.0	6.07	6.05	84.9	85.3	4.80	4.83	5.05	6.8	6.9	7.4	
						30.0		6.03		85.6		4.86			7.0			
			Middle	6.2	26.2	30.7	30.7	6.19	6.20	86.7	87.5	4.99	5.04		5.08			7.2
						30.7		6.21		88.2		5.08			7.4			
			Bottom	11.4	25.2	31.7	31.8	6.02	6.00	84.3	84.6	5.24	5.27		5.24			8.0
						31.8		5.97		84.8		5.30			8.0			
23/08/11	0855-0907	29/Fine	Surface	1.0	26.4	29.5	29.6	6.21	6.24	86.9	87.3	4.31	4.34	4.48	6.6	6.7	6.9	
						29.6		6.26		87.6		4.37			6.8			
			Middle	6.3	25.8	30.4	30.4	6.08	6.08	85.1	85.1	4.42	4.46		4.49			6.8
						30.4		6.07		85.0		4.49			7.0			
			Bottom	11.6	25.3	30.8	30.8	5.87	5.91	82.2	82.7	4.63	4.65		4.67			7.2
						30.7		5.94		83.2		4.67			7.2			
25/08/11	0940-0952	30/Cloudy	Surface	1.0	28.2	29.6	29.7	6.33	6.31	93.1	92.7	4.94	4.96	5.07	7.6	7.7	8.0	
						29.7		6.28		92.3		4.98			7.8			
			Middle	6.4	27.7	30.2	30.2	6.23	6.21	91.6	91.2	5.05	5.07		5.09			8.2
						30.1		6.18		90.8		5.09			8.0			
			Bottom	11.8	26.8	31.4	31.4	6.05	6.08	88.9	89.3	5.15	5.18		5.20			8.2
						31.4		6.10		89.7		5.20			8.0			
27/08/11	1055-1107	29/Fine	Surface	1.0	26.5	29.9	29.9	6.16	6.15	86.2	86.0	4.37	4.40	4.53	6.6	6.7	7.0	
						29.8		6.13		85.8		4.43			6.8			
			Middle	6.2	26.1	30.2	30.3	6.07	6.07	85.0	84.9	4.52	4.55		4.57			7.0
						30.3		6.06		84.8		4.57			7.0			
			Bottom	11.4	25.8	31.0	31.0	5.92	5.93	85.9	84.6	4.64	4.65		4.66			7.2
						30.9		5.94		83.2		4.66			7.2			
30/08/11	1225-1237	31/Sunny	Surface	1.0	27.6	30.7	30.7	6.17	6.15	85.7	85.4	4.38	4.41	4.75	6.6	6.6	7.0	
						30.7		6.12		85.0		4.43			6.6			
			Middle	6.3	26.2	31.4	31.4	6.01	6.03	83.5	83.8	4.82	4.78		4.74			7.0
						31.4		6.05		84.0		4.74			7.0			
			Bottom	11.6	25.2	32.1	32.2	5.95	5.97	82.7	83.0	5.04	5.06		5.08			7.4
						32.2		5.99		83.2		5.08			7.4			



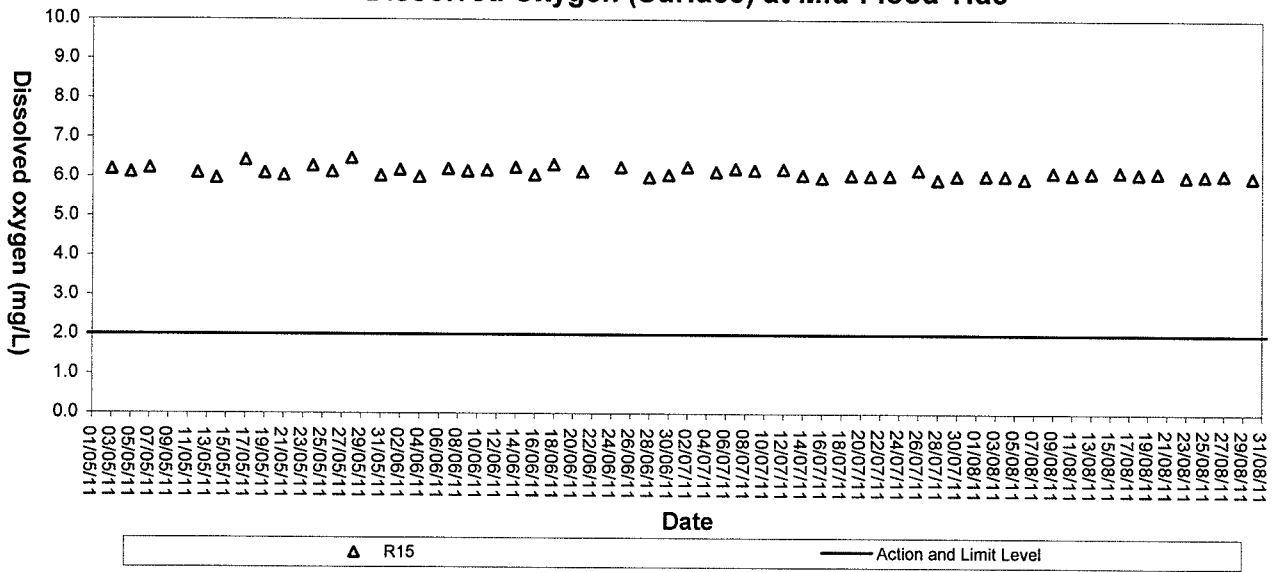
## **Appendix C3**

### **Graphical Plots of Impact Water Quality Monitoring Data**

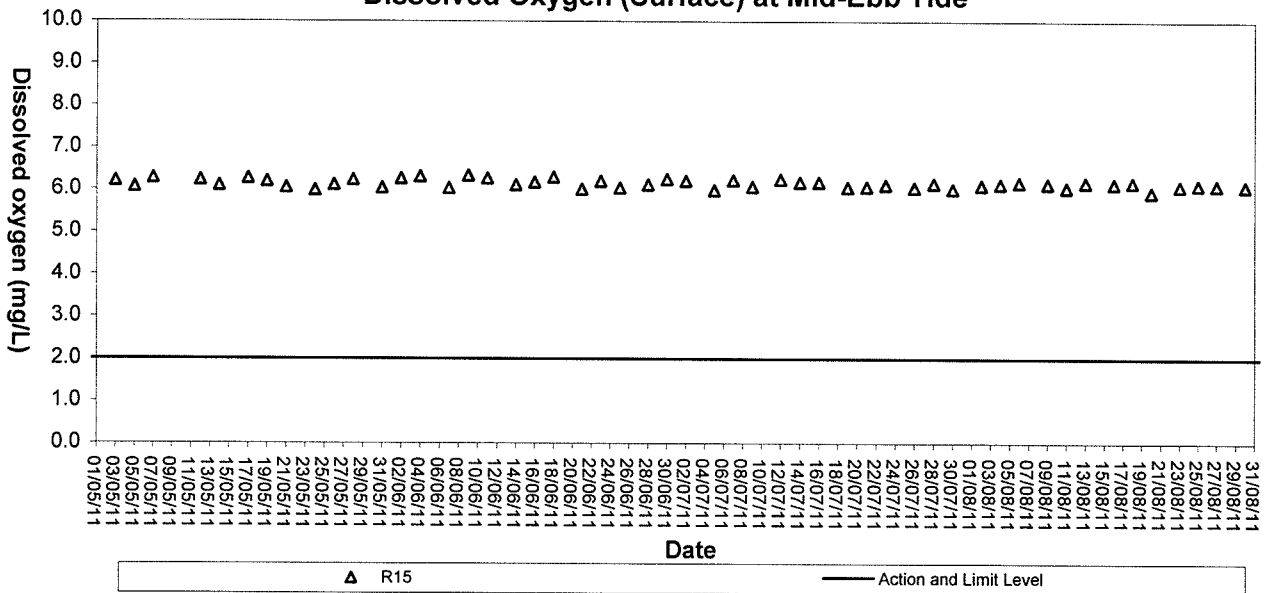




### Dissolved Oxygen (Surface) at Mid-Flood Tide



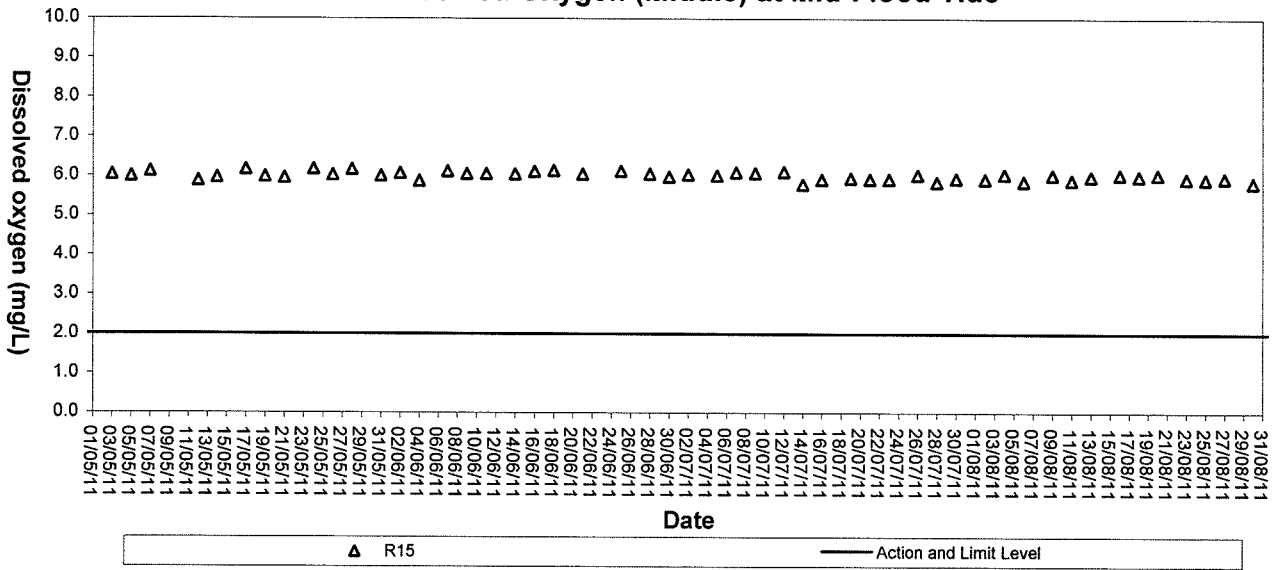
### Dissolved Oxygen (Surface) at Mid-Ebb Tide



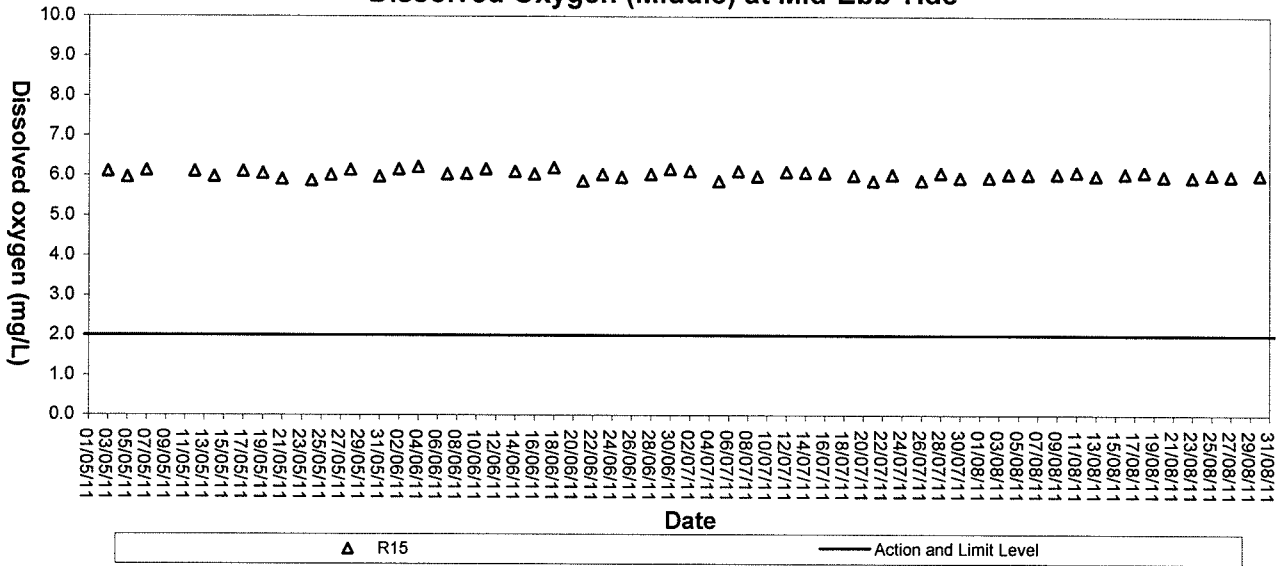




### Dissolved Oxygen (Middle) at Mid-Flood Tide



### Dissolved Oxygen (Middle) at Mid-Ebb Tide

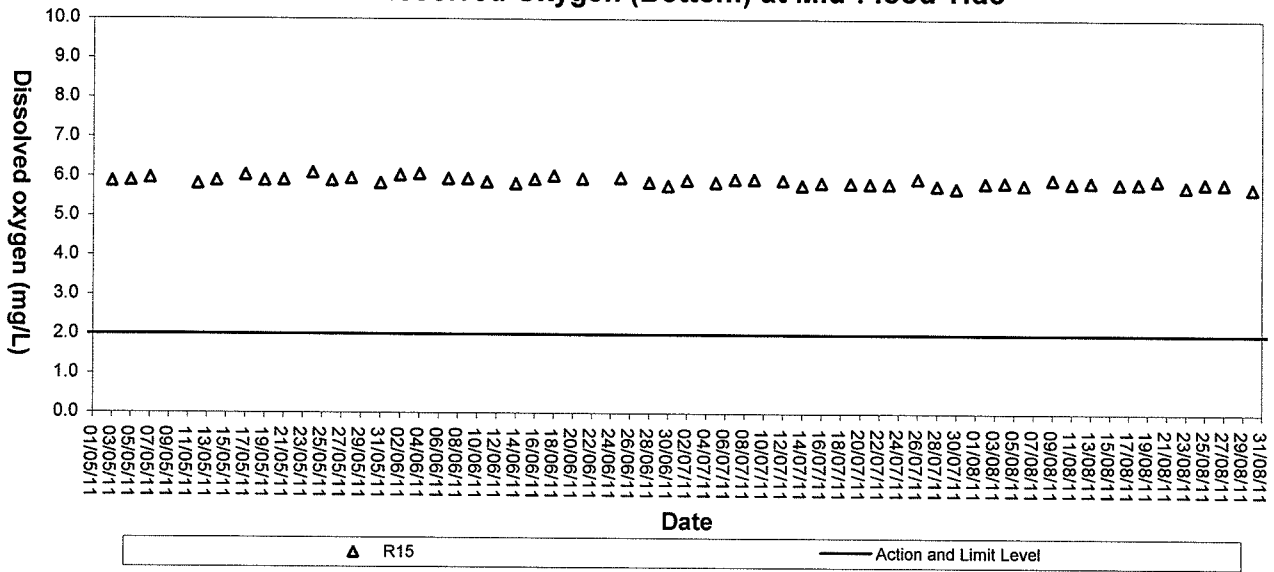




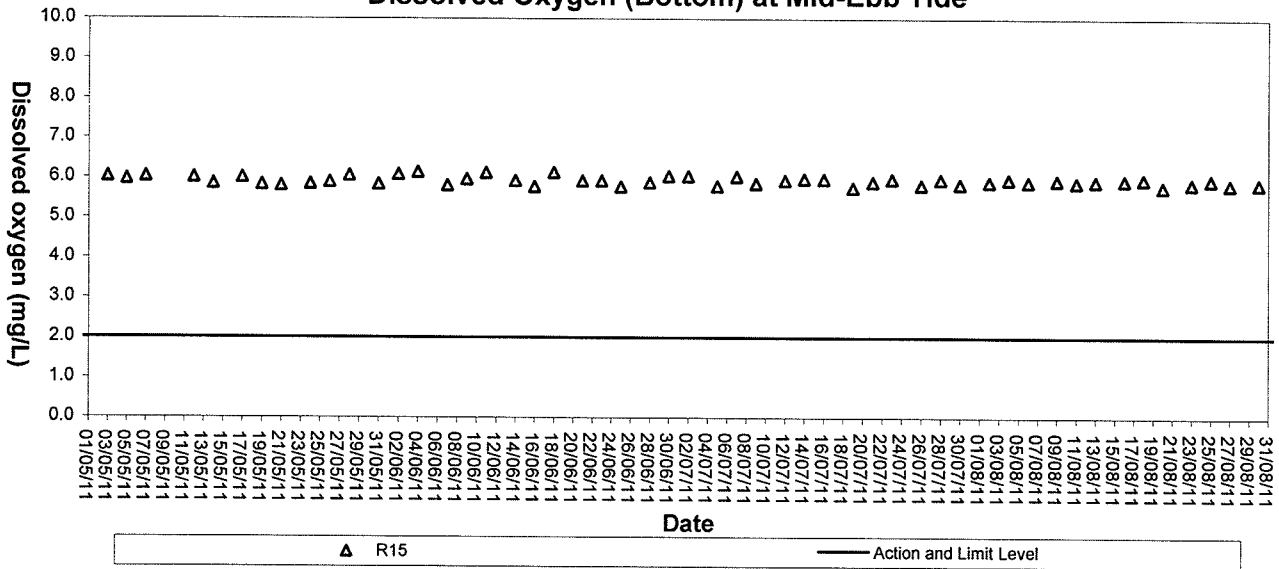




### Dissolved Oxygen (Bottom) at Mid-Flood Tide

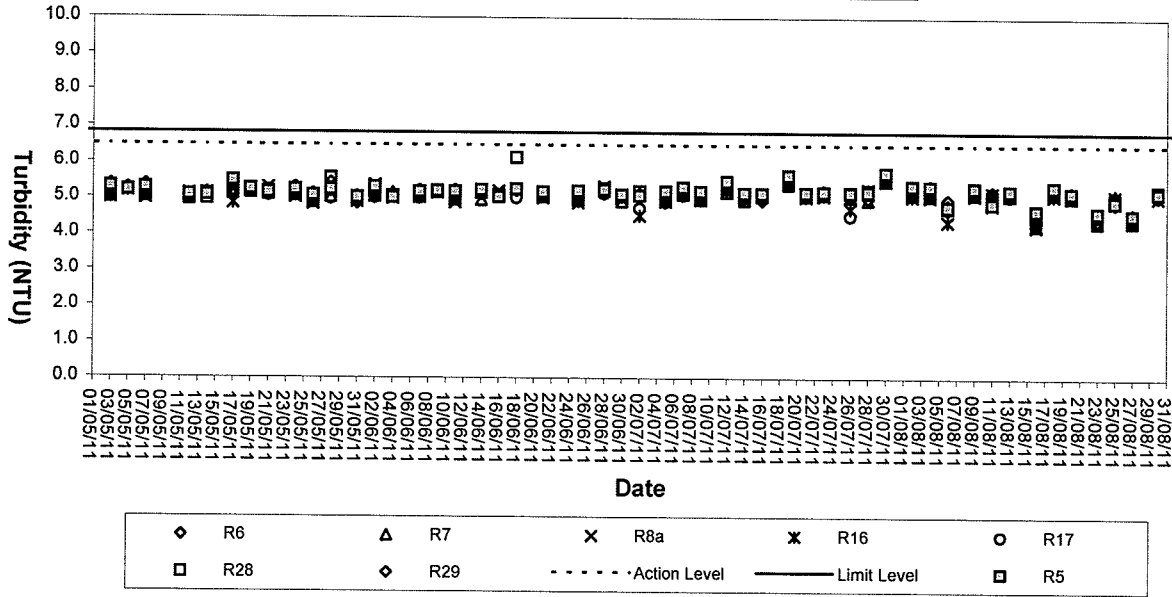


### Dissolved Oxygen (Bottom) at Mid-Ebb Tide

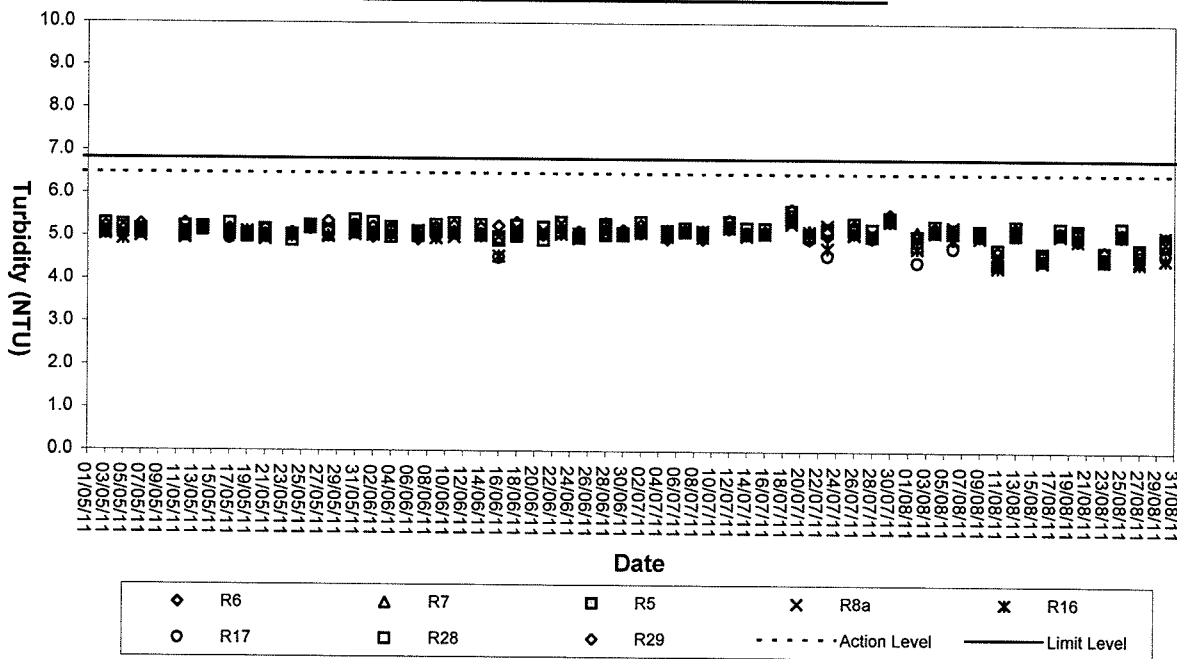




**Turbidity (Depth-average) at Mid-Flood Tide**

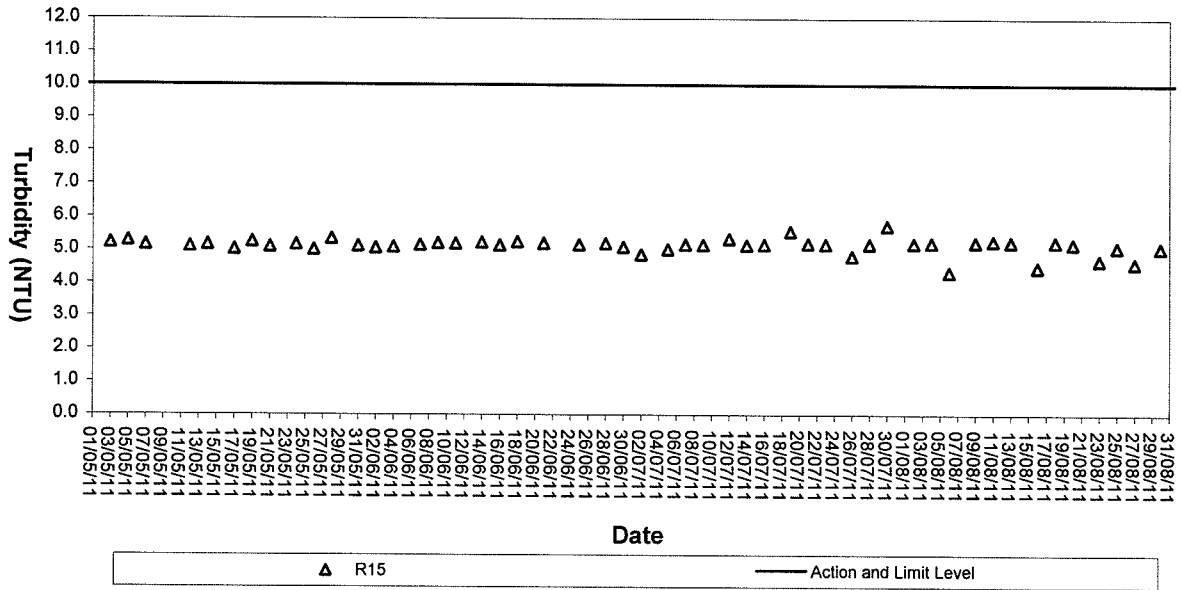


**Turbidity (Depth-average) at Mid-Ebb Tide**

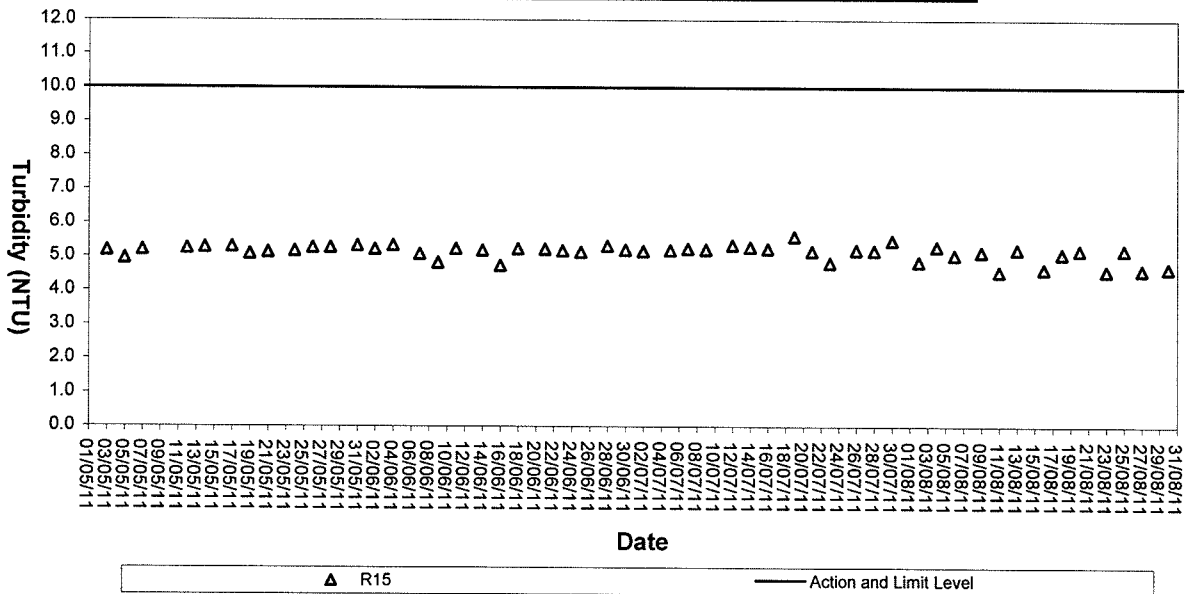




### Turbidity (Depth-average) of R15 at Mid-Flood Tide



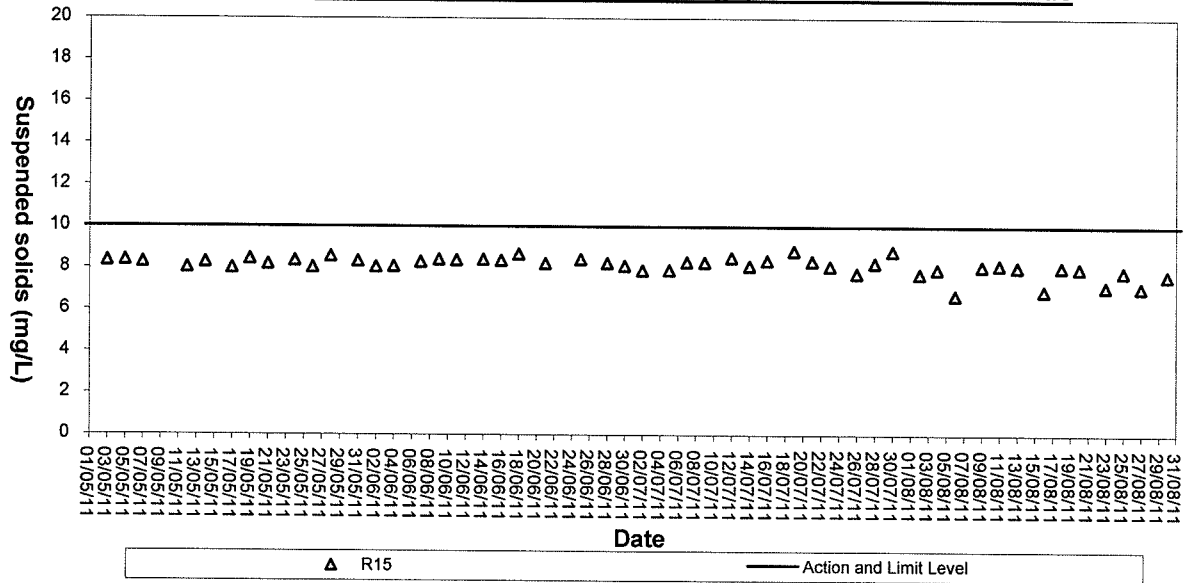
### Turbidity (Depth-average) of R15 at Mid-Ebb Tide



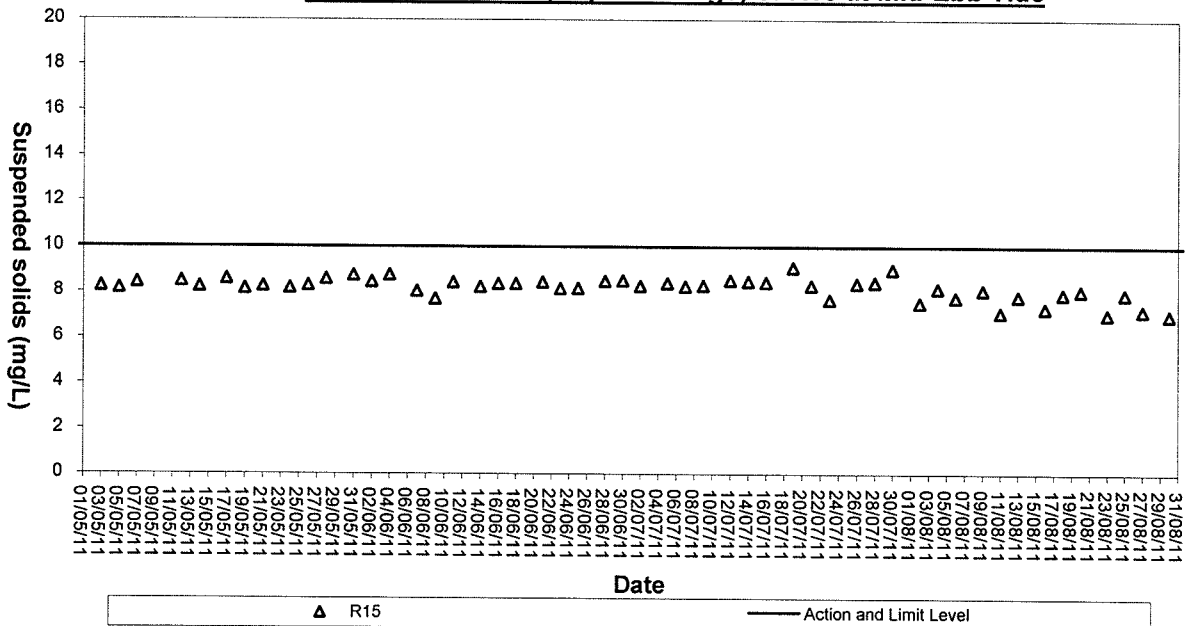




### Suspended solids (Depth-average) of R15 at Mid-Flood Tide



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





## **Appendix C4**

### **QA/QC Results of Laboratory Analysis for Water Samples**



### QA/QC Results of Laboratory Analysis of Total Suspended Solids

Sampling Date	QC Sample	Sample Duplicate		Sample Spike	
	% Recovery *	Sample ID	% Error #	Sample ID	% Recovery ©
02/08/11	106.2	R5FS	6.1	R8FS	96.2
	98.8	R8FM	0.0	R17FM	98.0
	103.5	R17FB	0.0	C1FB	104.2
	102.5	C2FS	6.5	C4FB	106.0
	99.0	R5ES	0.0	R8ES	98.0
	95.6	R8EM	6.1	R17EM	98.1
	96.5	R17EB	6.5	C1EB	98.2
	98.2	C2ES	0.0	C4EB	94.3
04/08/11	100.4	R5FS	6.5	R8FS	101.9
	92.4	R8FM	6.5	R17FM	100.0
	101.2	R17FB	0.0	C1FB	92.3
	98.1	C2FS	6.1	C4FB	103.9
	101.6	R5ES	0.0	R8ES	94.1
	107.4	R8EM	0.0	R17EM	107.5
	101.6	R17EB	0.0	C1EB	102.1
	99.4	C2ES	6.5	C4EB	104.0
06/08/11	92.6	R5FS	0.0	R8FS	101.9
	100.8	R8FM	6.5	R17FM	94.1
	97.1	R17FB	6.5	C1FB	102.0
	107.2	C2FS	6.9	C4FB	96.2
	102.9	R5ES	0.0	R8ES	106.1
	102.9	R8EM	0.0	R17EM	96.2
	94.6	R17EB	6.5	C1EB	96.2
	105.1	C2ES	6.5	C4EB	106.1
09/08/11	92.3	R5FS	6.1	R8FS	106.1
	106.8	R8FM	0.0	R17FM	107.5
	93.1	R17FB	6.1	C1FB	95.7
	104.9	C2FS	0.0	C4FB	108.2
	102.5	R5ES	0.0	R8ES	102.1
	103.2	R8EM	6.5	R17EM	100.0
	107.5	R17EB	0.0	C1EB	95.8
	94.3	C2ES	0.0	C4EB	97.9
11/08/11	95.9	R5FS	6.9	R8FS	102.1
	102.2	R8FM	0.0	R17FM	104.1
	106.4	R17FB	0.0	C1FB	98.0
	107.0	C2FS	6.5	C4FB	98.0
	102.0	R5ES	0.0	R8ES	97.9
	92.7	R8EM	0.0	R17EM	102.1
	92.2	R17EB	6.9	C1EB	102.1
	98.6	C2ES	0.0	C4EB	100.0
13/08/11	107.6	R5FS	0.0	R8FS	98.0
	101.0	R8FM	0.0	R17FM	102.0
	96.1	R17FB	6.1	C1FB	98.0
	106.1	C2FS	0.0	C4FB	102.1
	99.2	R5ES	6.1	R8ES	106.2
	104.0	R8EM	0.0	R17EM	106.4
	106.1	R17EB	6.1	C1EB	94.1
	102.2	C2ES	0.0	C4EB	100.0

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





### QA/QC Results of Laboratory Analysis of Total Suspended Solids

Sampling Date	QC Sample	Sample Duplicate		Sample Spike	
	% Recovery *	Sample ID	% Error #	Sample ID	% Recovery @
16/08/11	99.2	R5FS	0.0	R8FS	106.0
	101.0	R8FM	0.0	R17FM	102.1
	101.2	R17FB	6.9	C1FB	104.1
	107.2	C2FS	7.4	C4FB	93.8
	96.0	R5ES	6.9	R8ES	94.1
	93.6	R8EM	7.4	R17EM	96.0
	106.0	R17EB	6.9	C1EB	92.5
	93.5	C2ES	7.4	C4EB	92.0
18/08/11	102.7	R5FS	0.0	R8FS	98.0
	97.9	R8FM	0.0	R17FM	97.9
	100.6	R17FB	6.9	C1FB	96.1
	95.3	C2FS	0.0	C4FB	95.7
	101.6	R5ES	0.0	R8ES	105.8
	106.0	R8EM	6.9	R17EM	102.0
	107.2	R17EB	0.0	C1EB	100.0
	99.4	C2ES	0.0	C4EB	92.2
20/08/11	97.1	R5FS	0.0	R8FS	107.8
	95.9	R8FM	6.1	R17FM	95.8
	104.6	R17FB	6.5	C1FB	100.0
	101.7	C2FS	0.0	C4FB	102.0
	104.8	R5ES	0.0	R8ES	100.0
	106.6	R8EM	6.1	R17EM	94.0
	103.1	R17EB	0.0	C1EB	106.3
	104.6	C2ES	6.9	C4EB	96.2
23/08/11	102.9	R5FS	0.0	R8FS	106.0
	93.4	R8FM	0.0	R17FM	102.1
	105.1	R17FB	6.1	C1FB	95.8
	103.5	C2FS	6.5	C4FB	102.0
	102.9	R5ES	6.5	R8ES	94.0
	107.6	R8EM	0.0	R17EM	96.1
	94.9	R17EB	6.1	C1EB	100.0
	100.0	C2ES	0.0	C4EB	98.1
25/08/11	97.3	R5FS	6.5	R8FS	102.0
	93.2	R8FM	0.0	R17FM	96.0
	101.7	R17FB	6.1	C1FB	96.2
	95.9	C2FS	0.0	C4FB	104.3
	99.0	R5ES	6.1	R8ES	94.1
	93.9	R8EM	6.5	R17EM	96.2
	94.6	R17EB	0.0	C1EB	93.7
	95.3	C2ES	0.0	C4EB	108.3
27/08/11	98.8	R5FS	0.0	R8FS	106.3
	98.3	R8FM	7.4	R17FM	100.0
	108.0	R17FB	6.5	C1FB	100.0
	105.8	C2FS	0.0	C4FB	98.1
	104.0	R5ES	6.9	R8ES	100.0
	98.1	R8EM	0.0	R17EM	101.9
	102.1	R17EB	6.9	C1EB	103.8
	105.7	C2ES	0.0	C4EB	91.5

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



### QA/QC Results of Laboratory Analysis of Total Suspended Solids

Sampling Date	QC Sample	Sample Duplicate		Sample Spike	
	% Recovery *	Sample ID	% Error #	Sample ID	% Recovery @
30/07/11	103.6	R5FS	0.0	R8FS	100.0
	98.4	R8FM	6.1	R17FM	92.5
	97.8	R17FB	0.0	C1FB	108.2
	104.8	C2FS	6.9	C4FB	102.0
	102.0	R5ES	0.0	R8ES	103.8
	97.6	R8EM	6.5	R17EM	97.9
	97.9	R17EB	0.0	C1EB	106.3
	107.8	C2ES	0.0	C4EB	100.0

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



## Event and Action Plan for Water Quality for Construction Phase

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



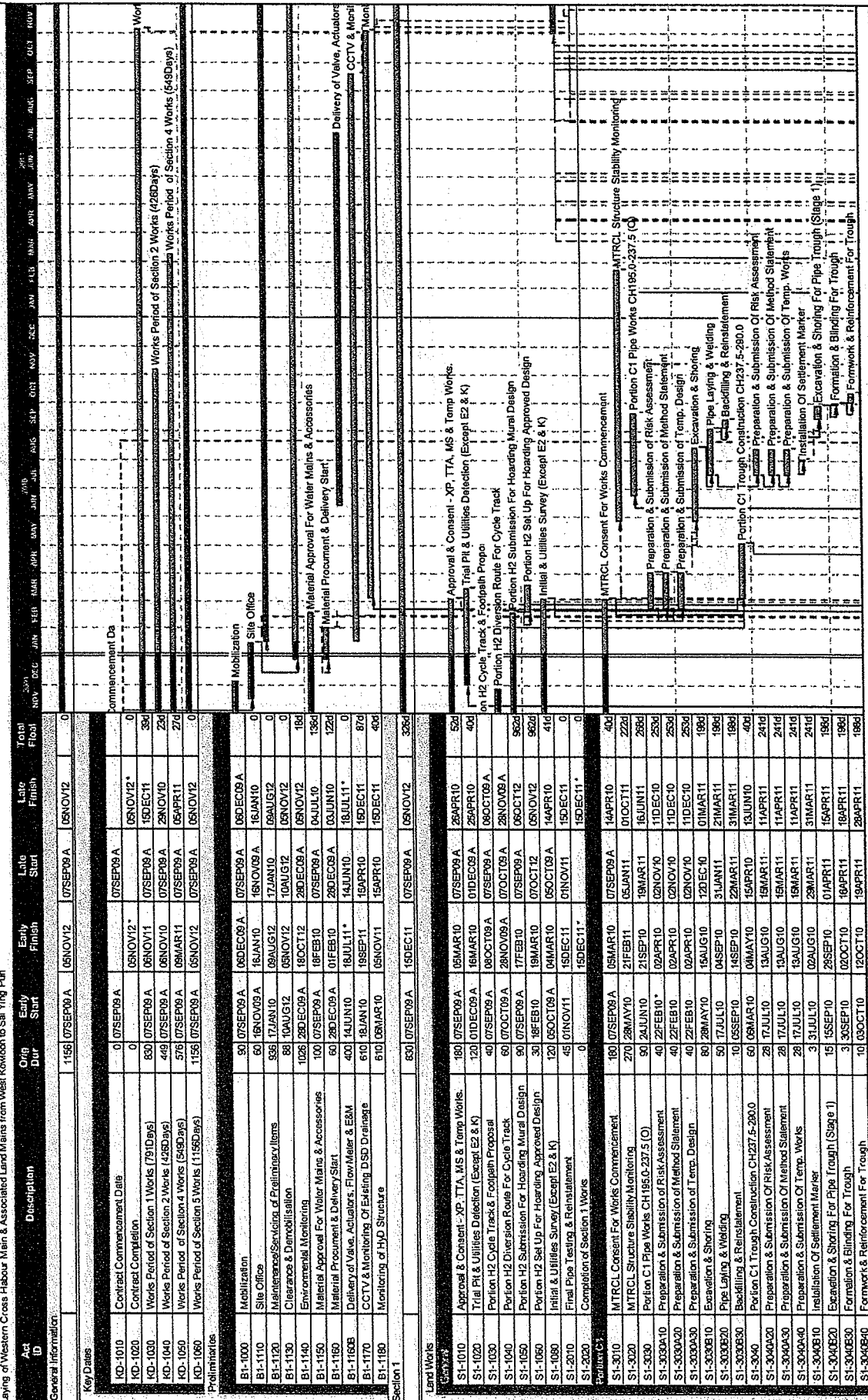
## Event and Action Plan for Water Quality for Construction Phase

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



## **Appendix E**

### **Work Programme**



Key Dates	Start	Finish	Duration	Description	Early Start	Early Finish	Late Start	Late Finish	Total Float
KD-1010	07SEP09	06NOV12	1156	Contract Commencement Date	07SEP09	06NOV12	07SEP09	06NOV12	0
KD-1020	07SEP09	06NOV12	0	Contract Commencement Date	07SEP09	06NOV12	07SEP09	06NOV12	0
KD-1030	07SEP09	06NOV12	850	Works Period of Section 1 Works (791Days)	07SEP09	06NOV12	07SEP09	06NOV12	30
KD-1040	07SEP09	06NOV12	449	Works Period of Section 2 Works (428Days)	07SEP09	06NOV12	07SEP09	06NOV12	230
KD-1050	07SEP09	06NOV12	576	Works Period of Section 3 Works (549Days)	07SEP09	06NOV12	07SEP09	06NOV12	270
KD-1060	07SEP09	06NOV12	1156	Works Period of Section 4 Works (1156Days)	07SEP09	06NOV12	07SEP09	06NOV12	0
Preliminaries									
B1-1000	07SEP09	06DEC09	90	Mobilization	07SEP09	06DEC09	07SEP09	06DEC09	0
B1-1110	16NOV09	16JAN10	60	Site Office	16NOV09	16JAN10	16NOV09	16JAN10	0
B1-1120	17JAN10	09AUG12	956	Maintenance/Service of Preliminary Items	17JAN10	09AUG12	17JAN10	09AUG12	0
B1-1130	10AUG12	05NOV12	88	Clearance & Demolition	10AUG12	05NOV12	10AUG12	05NOV12	0
B1-1140	28DEC09	18OCT12	1026	Environmental Monitoring	28DEC09	18OCT12	28DEC09	18OCT12	136
B1-1150	07SEP09	18FEB10	100	Material Approval For Water Mains & Accessories	07SEP09	18FEB10	07SEP09	18FEB10	1226
B1-1160	28DEC09	01FEB10	60	Material Procurement & Delivery Start	28DEC09	01FEB10	28DEC09	01FEB10	0
B1-1160B	14JUN10	18JUL11	400	Delivery of Valve, Actuators, Flow Meter & E&M	14JUN10	18JUL11	14JUN10	18JUL11	870
B1-1170	18JAN10	19SEP11	610	CCTV & Monitoring Of Existing DSD Drainage	18JAN10	19SEP11	18JAN10	19SEP11	400
B1-1170B	08MAR10	05NOV11	610	Monitoring of HYD Structure	08MAR10	05NOV11	08MAR10	05NOV11	326
Section 1									
B1-1010	07SEP09	15DEC11	630	Approval & Consent - XP, TTA, MS & Temp Works	07SEP09	15DEC11	07SEP09	15DEC11	520
B1-1020	01DEC09	16MAR10	120	Total PI & Utilities Detection (Except E2 & K)	01DEC09	16MAR10	01DEC09	16MAR10	400
B1-1030	07SEP09	18OCT09	40	Portion H2 Cycle Track & Footpath Prop	07SEP09	18OCT09	07SEP09	18OCT09	0
B1-1040	07SEP09	28NOV09	40	Portion H2 Diversion Route For Cycle Track	07SEP09	28NOV09	07SEP09	28NOV09	0
B1-1050	07SEP09	17FEB10	90	Portion H2 Submission For Hearing Mural Design	07SEP09	17FEB10	07SEP09	17FEB10	9020
B1-1060	18FEB10	07OCT12	30	Portion H2 Set Up For Hearing Approved Design	18FEB10	07OCT12	18FEB10	07OCT12	9020
B1-1080	05OCT09	04MAR10	120	Initial & Utilities Survey (Except E2 & K)	05OCT09	04MAR10	05OCT09	04MAR10	410
B1-2010	01NOV11	15DEC11	45	Final Pipe Testing & Reinstatement	01NOV11	15DEC11	01NOV11	15DEC11	0
B1-2020	07SEP09	15DEC11	0	Completion of Section 1 Works	07SEP09	15DEC11	07SEP09	15DEC11	0
Section 2									
B1-3010	07SEP09	05MAR10	180	MTRCL Consent For Works Commencement	07SEP09	05MAR10	07SEP09	05MAR10	40
B1-3020	28MAY10	21FEB11	270	MTRCL Structure Stability Monitoring	28MAY10	21FEB11	28MAY10	21FEB11	2220
B1-3030	24JUN10	19MAR11	50	Portion C1 Pipe Works CH195.0-237.5 (O)	24JUN10	19MAR11	24JUN10	19MAR11	2680
B1-3030A10	22FEB10	02APR10	40	Preparation & Submission of Risk Assessment	22FEB10	02APR10	22FEB10	02APR10	2530
B1-3030A20	22FEB10	02APR10	40	Preparation & Submission of Method Statement	22FEB10	02APR10	22FEB10	02APR10	2530
B1-3030A30	22FEB10	02APR10	40	Preparation & Submission of Temp. Design	22FEB10	02APR10	22FEB10	02APR10	2530
B1-3030B10	17JUL10	04SEP10	80	Excavation & Shoring	17JUL10	04SEP10	17JUL10	04SEP10	1980
B1-3030B20	04SEP10	13MAY11	10	Pipe Laying & Welding	04SEP10	13MAY11	04SEP10	13MAY11	1980
B1-3030B30	06MAR10	04MAY10	28	Backfilling & Reinstatement	06MAR10	04MAY10	06MAR10	04MAY10	400
B1-3040	17JUL10	13AUG10	28	Portion C1 Trough Construction CH237.5-280.0	17JUL10	13AUG10	17JUL10	13AUG10	2410
B1-3040A20	17JUL10	13AUG10	28	Preparation & Submission of Risk Assessment	17JUL10	13AUG10	17JUL10	13AUG10	2410
B1-3040A30	17JUL10	13AUG10	28	Preparation & Submission of Method Statement	17JUL10	13AUG10	17JUL10	13AUG10	2410
B1-3040A40	17JUL10	13AUG10	28	Preparation & Submission of Temp. Works	17JUL10	13AUG10	17JUL10	13AUG10	2410
B1-3040B10	31JUL10	26SEP10	15	Installation of Settlement Marker	31JUL10	26SEP10	31JUL10	26SEP10	1980
B1-3040B20	30SEP10	02OCT10	3	Excavation & Shoring For Pipe Trough (Stage 1)	30SEP10	02OCT10	30SEP10	02OCT10	1980
B1-3040B30	02OCT10	12OCT10	10	Formation & Blinding For Trough	02OCT10	12OCT10	02OCT10	12OCT10	1980
B1-3040B40	03OCT10	12OCT10	10	Formwork & Reinforcement For Trough	03OCT10	12OCT10	03OCT10	12OCT10	1980

3 Months Rolling Program (August 2011)

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



Act ID	Description	Orig Dur	Early Start	Early Finish	Start	Finish	Total Float
S1-3040350	Concrete of Pipe Trough	3	13OCT10	15OCT10	20APR11	01MAY11	198d
S1-3040350	Excavation & Shoring For Watermain	15	16OCT10	30OCT10	20APR11	01MAY11	198d
S1-305010	Portion C1 Pipe Works CH237.5-280 (PT)	50	08MAY10	22DEC10	22DEC10	09FEB11	231d
S1-305020	Pipe Laying & Connection (Welding)	10	31OCT10	09NOV10	27MAY11	01JUN11	198d
S1-305030	Concrete Surround for Installed Watermain	5	10NOV10	15NOV10	27MAY11	01JUN11	198d
S1-3050330	Backfilling of Pipe Trough	5	16NOV10	20NOV10	02JUN11	06JUN11	198d
S1-3050340	Backfilling & Reinstatement	10	21NOV10	01DEC10	07JUN11	16JUN11	198d
S1-3060	Portion C1 Pipe Works CH290.0-325.5 (O)	83	01DEC10	21FEB11	17JUN11	07SEP11	198d
S1-3070	Area C1 Portional Pipe Testing	30	22FEB11	23MAR11	02OCT11	31OCT11	222d
Portion E1A	Portion E1A Pipe Works CH387.5-576.9 (O)	180	17MAR10	12SEP10	24AUG10	19FEB11	162d
S1-402020	Preparation & Submission Of Risk Assessment	40	03MAR10	11APR10	10AUG10	18SEP10	162d
S1-402030	Preparation & Submission Of Method Statement	40	03MAR10	11APR10	10AUG10	18SEP10	162d
S1-402040	Preparation & Submission Of Temp. Works	40	03MAR10	11APR10	10AUG10	18SEP10	162d
S1-402050	Stage 1 U/D & Trial Pit (CH380-420)	52	03MAY10	23JUN10	10OCT10	30NOV10	162d
S1-402060	Fabrication of Access Shaft	30	12SEP10	11OCT10	19FEB11	20MAY11	162d
S1-402070	Excavation & Support for Trenchless Works	45	12OCT10	26NOV10	21MAR11	04MAY11	162d
S1-402080	Pipe Laying & Joint Connection	20	28NOV10	19DEC10	05MAY11	24MAY11	162d
S1-402090	Backfilling & Reinstatement	7	19DEC10	22DEC10	25MAY11	31MAY11	162d
S1-402095	Existing Trees Relocation	4	19AUG10	22AUG10	03JUN11	06JUN11	288d
S1-402098	Stage 2 U/D & Trial Pit (CH420-CH480)	10	23AUG10	01SEP10	07JUN11	16JUN11	288d
S1-402099	Excavation & Shoring	50	02SEP10	21OCT10	17JUN11	05AUG11	288d
S1-402099	Pipe Laying & Connection (Welding)	25	22OCT10	15NOV10	06AUG11	30AUG11	288d
S1-402099	Backfilling & Reinstatement	7	18NOV10	20NOV10	31AUG11	06SEP11	288d
S1-402099	Stage 3 U/D & Trial Pit (CH480-576.9)	6	01JUN11	06JUN11	01JUN11	06JUN11	0
S1-402099	Excavation & Shoring	25	07JUN11	06SEP11	07JUN11	06SEP11	0
S1-402099	Pipe Laying & Connection (Welding)	25	07SEP11	01OCT11	01OCT11	17OCT11	0
S1-402099	Backfilling & Reinstatement	16	02OCT11	17OCT11	02JUL11	17OCT11	128d
S1-4030	Portion E1A Pipe Works CH565.5-585.9 (TL-B)	55	25FEB11	10JUN11	12MAY11	05MAY11	166d
S1-403020	Fabrication of Access Shaft	50	21NOV10	09JAN11	26MAY11	06JUN11	166d
S1-403030	Excavation & Support for Trenchless Works	15	10JAN11	24JAN11	25JUN11	08JUL11	166d
S1-403040	Pipe Laying & Joint Connection	8	25JAN11	01FEB11	10OCT11	17OCT11	258d
S1-403050	Area E1A Portional Pipe Testing	14	18OCT11	31OCT11	18OCT11	31OCT11	0
Portion E1B & E2 SWM	Portion E1B Diversion of Existing Storm Drain	50	13SEP10	01NOV10	05MAY11	24JUN11	235d
S1-401010	Trees Transplanting (LCS Consent Required)	5	03SEP10	13SEP10	26JAN11	30JAN11	138d
S1-401020	Temporary Relocation of Irrigation Pipe	60	14SEP10	12NOV10	31JAN11	31MAY11	138d
S1-401030	Temporary Relocation of Existing Storm Drain	60	14SEP10	12NOV10	31JAN11	31MAY11	138d
S1-401040	Excavation for Irrigation Pipe Perm. Diversion	20	11MAR11	30MAR11	24AUG11	23SEP11	181d
S1-401050	Irrigation Pipe Installation	10	31MAR11	09APR11	28SEP11	07OCT11	166d
S1-401060	Excavation for Storm Drain Diversion	20	11MAR11	30MAR11	24AUG11	23SEP11	166d
S1-401070	Pipe Laying & MH Construction	25	31MAR11	24APR11	13SEP11	07OCT11	166d
S1-401080	Backfilling & Reinstatement	10	28APR11	04MAY11	09OCT11	17OCT11	166d
S1-401090	Portion E1B Pipe Works CH585.5-660.5 (O)	115	02NOV10	24FEB11	25JUN11	17OCT11	166d
S1-401090	Excavation & Shoring For Pipe Trough (Stage 1)	40	13NOV10	22DEC10	07APR11	10MAY11	138d
S1-401090	Fmk & Reinforcement for Pipe Trough	15	23DEC10	06JAN11	18JUL11	03AUG11	166d
S1-401090	Pipe Laying & Support Casting	20	19FEB11	10MAR11	10JUL11	23AUG11	166d
S1-401090	Backfilling & Reinstatement	20	19FEB11	10MAR11	04AUG11	23AUG11	166d
S1-410	Portion E2 DN600A SWM Works CH7.1-63.7 (UC)	28	19FEB10	18MAR10	20MAY11	24JUN11	463d
S1-41010	Preparation & Submission Of Risk Assessment	28	19FEB10	18MAR10	20MAY11	24JUN11	463d
S1-41020	Preparation & Submission Of Method Statement	28	19FEB10	18MAR10	20MAY11	24JUN11	463d
S1-41030	Submission & Approval Of Temp. Work	28	19FEB10	18MAR10	20MAY11	24JUN11	463d
S1-41040	Installation & Connection Of DN600A SWM	8	14FEB11	21FEB11	25JUN11	02JUL11	131d

Start date  
 Finish date  
 Run date  
 Milestone point  
 Summary bar  
 Critical bar  
 Progress bar  
 Early bar

**3 Months Rolling Program (August 2011)**

W o H i n g - P e n t a - O c e a n J o i n t V e n t u r e  
 c P r i m e v e r a S y s t e m s , I n c .

AC ID	Description	Orig Dur	Early Start	Early Finish	Late Start	Late Finish	Total Float
S1-4410820	Support & Fixing Of DN600A SWM Works CH0.0-7.1 (O)	3	24FEB11	24FEB11	03JUL11	03JUL11	131d
S1-4420810	Excavation & Shoring	6	25FEB11	02MAR11	23OCT10	21NOV10	182d
S1-4420820	Main Laying & Connection With Trough Portion	8	25FEB11	04MAR11	03JUL11	03NOV12	614d
S1-4430810	Excavation & Shoring	30	24MAY10	22JUN10	22NOV10	21DEC10	182d
S1-4430820	Main Laying & Connection With Trough Portion	8	03MAR11	12MAR11	14JUL11	21JUL11	131d
S1-4440810	Issuance Of Temp. Water Supply Suspension Notice	30	23JUN10	16MAR11	22DEC10	20AUG11	182d
S1-4440820	Shut Off Of Existing DN600 SWM	14	03MAR11	16MAR11	12JUL11	27JUL11	131d
S1-4440830	DN600A Diversion Main Connect To Existing	2	16JUL11	17JUL11	28JUL11	02AUG11	10d
S1-4440840	Removal Of Existing DN600 SWM	60	24JUN10	23AUG10	10FEB11	10APR11	231d
S1-4440850	Excavation & Shoring For Pipe Trough (Stage 2)	15	01FEB11	15FEB11	11MAY11	04JUN11	138d
S1-4450810	Backfilling & Reinforcement for Pipe Trough	20	19FEB11	09DEC10	11APR11	08JUN11	182d
S1-4450820	Backfilling & Reinforcement	25	19FEB11	09DEC10	05JUL11	29JUL11	138d
S1-4460810	Portion E1B Pipe Works CH677.4-685.9 (O)	40	02MAY11	31MAY11	18SEP11	17OCT11	186d
S1-4470810	Portion E1B Pipe Works CH685.9-693.5 (UC)	30	10DEC10	29DEC10	10JUN11	29JUN11	182d
S1-4470820	Portion E1B Pipe Works CH693.5-698.5 (UC)	30	23JUL10	21AUG10	10FEB11	11MAR11	138d
S1-4480810	Portion E1B DN600B SWM Works CH0.0-7.1 (O)	8	01AUG11	08AUG11	10OCT11	17OCT11	76d
S1-4490810	Portion E2 DN600B SWM Works CH7.1-62.7 (UC)	50	23JUL10	10SEP10	21JAN11	10MAY11	182d
S1-4500810	Portion E2 DN600B SWM Works CH7.1-62.7 (UC)	30	11SEP10	10OCT10	12MAR11	10APR11	182d
S1-4510810	Area E1B+E2 SWM Portional Pipe Testing	14	03APR11	18APR11	18OCT11	31OCT11	186d
S1-4510820	Area E1B+E2 SWM Portional Pipe Testing	14	09AUG11	22AUG11	18OCT11	31OCT11	76d
S1-4710810	Portion E1C DN300 FWM Works CH0.0-50.0 (UC)	50	03MAR10	23APR10	27SEP10	15NOV10	208d
S1-4710820	Submission & Approval Of Risk Assessment	28	19FEB10	18MAR10	13SEP10	10OCT10	208d
S1-4710830	Submission & Approval Of Method Statement	28	19FEB10	18MAR10	13SEP10	10OCT10	208d
S1-4710840	Installation & Connection Of DN300 FWM	50	17MAY10	05JUL10	11OCT10	29NOV10	147d
S1-4720810	ETC DN300 FWM Diversion Main Testing	40	06JUL10	14AUG10	30NOV10	06JAN11	147d
S1-4720820	ETC DN300 FWM Diversion Main Testing	8	15AUG10	09JAN11	09JAN11	15JAN11	147d
S1-4730810	Issuance Of Temp. Water Supply Suspension Notice	30	02MAY10	31MAY10	11APR11	10MAY11	344d
S1-4730820	Shut Off Existing DN300 FWM	14	22SEP10	06OCT10	16FEB11	01MAR11	147d
S1-4730830	DN300 Diversion Main Connect To Existing	2	06OCT10	07OCT10	02MAR11	03MAR11	147d
S1-4730840	Removal Of Existing DN300 FWM	28	08OCT10	04NOV10	03MAR11	31MAR11	147d
S1-4740810	Portion E1C DN600 SWM Works CH0.0-52.0 (UC)	80	08NOV10	23JAN11	11MAY11	28JUL11	197d
S1-4740820	Portion E1C DN600 SWM Works CH0.0-52.0 (UC)	120	08NOV10	04MAR11	01APR11	29JUL11	147d
S1-4750810	Portion E1C DN600 SWM Works CH52.0-90.0 (UC)	80	01FEB11	21APR11	30JUL11	17OCT11	179d
S1-4750820	Portion E1C DN600 SWM Works CH52.0-90.0 (UC)	80	01FEB11	23MAY11	30JUL11	17OCT11	147d
S1-4760810	Area E1C Portional Pipe Testing	14	22APR11	18OCT11	18OCT11	31OCT11	179d
S1-4760820	Area E1C Portional Pipe Testing	14	20MAY11	06JUN11	18OCT11	31OCT11	147d
S1-5010	Portion E2 Marine Dept Advance Notice	80	07OCT09 A	20FEB10	07OCT09 A	20FEB10	0
S1-5020	WHTEL Consent For Works Within Tunnel Area	120	07SEP09 A	20FEB10	07SEP09 A	20FEB10	0
S1-5030	Chamber Modification - 180 Days of Portion E2	65	07JAN10 A	14MAR10 A	07JAN10 A	14MAR10 A	0

3 Months Rolling Program (August 2011)

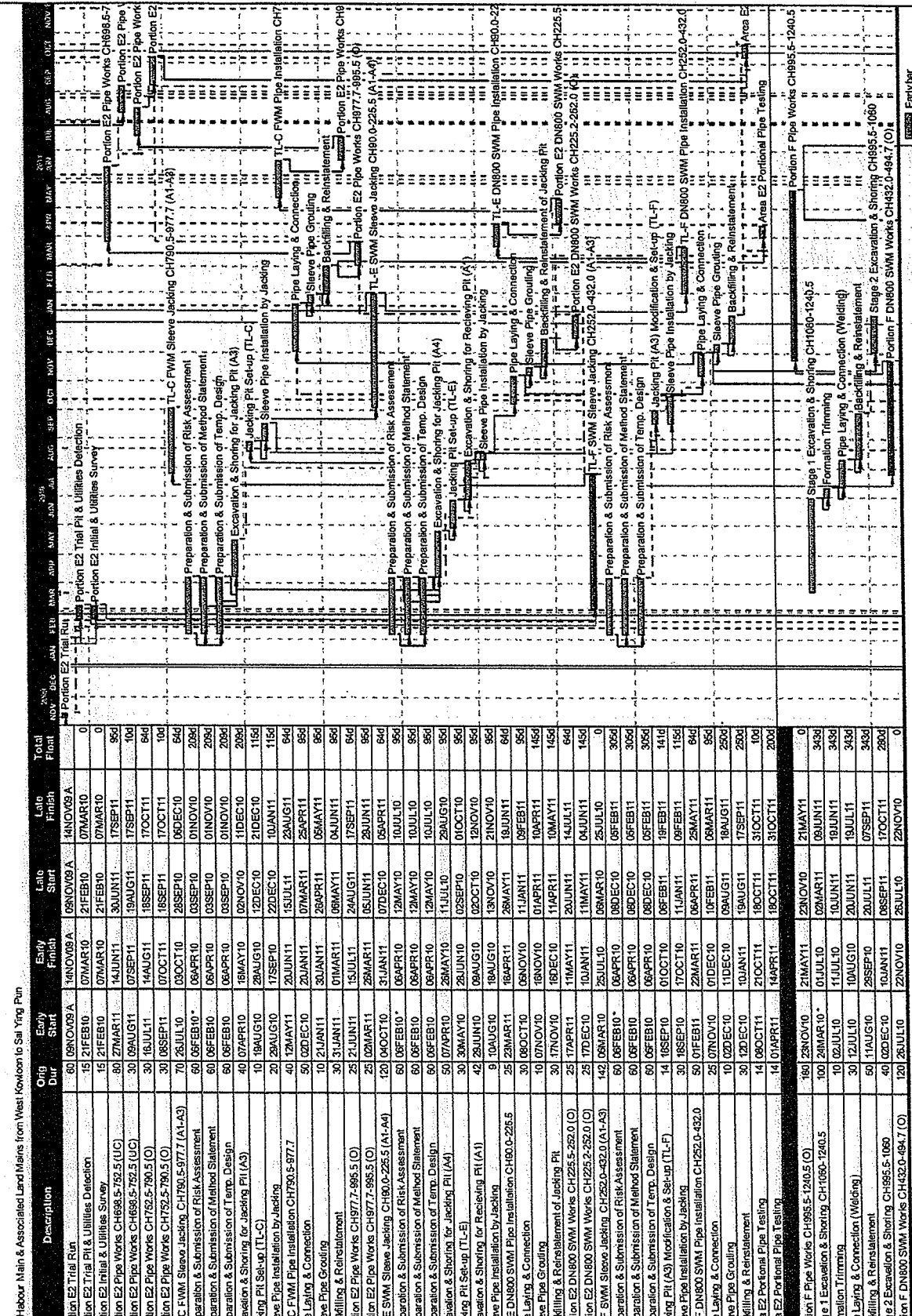
Legend:  
 - Early bar  
 - Progress bar  
 - Critical bar  
 - Summary bar  
 - Start milestone point  
 - Finish milestone point

Act ID	Description	Orig Bur	Early Start	Early Finish	Latv Start	Latv Finish	Total Float
S1-5040	Portion E2 Trial Run	60	08NOV09	14NOV09	08NOV09	14NOV09	0
S1-5050	Portion E2 Trial Pit & Utilities Detection	15	21FEB10	07MAR10	21FEB10	07MAR10	0
S1-5060	Portion E2 Initial & Utilities Survey	15	21FEB10	07MAR10	21FEB10	07MAR10	0
S1-5070	Portion E2 Pipe Works CH1695.5-792.5 (UC)	80	27MAR11	14JUN11	30JUN11	17SEP11	95d
S1-5070B10	Portion E2 Pipe Works CH1695.5-792.5 (UC)	30	09AUG11	07SEP11	19AUG11	17SEP11	10d
S1-5080	Portion E2 Pipe Works CH792.5-790.5 (O)	30	16JUL11	18SEP11	19AUG11	17SEP11	64d
S1-5080A	Portion E2 Pipe Works CH792.5-790.5 (O)	30	08SEP11	07OCT11	18SEP11	17OCT11	10d
S1-5090	TL-C FWM Sleeve Jacking CH790.5-977.7 (A1-A9)	70	26JUL10	03OCT10	28SEP10	06DEC10	54d
S1-5090A10	Preparation & Submission of Risk Assessment	60	08FEB10	06APR10	03SEP10	01NOV10	208d
S1-5090A20	Preparation & Submission of Method Statement	60	08FEB10	06APR10	03SEP10	01NOV10	208d
S1-5090A30	Preparation & Submission of Temp. Design	60	08FEB10	06APR10	03SEP10	01NOV10	208d
S1-5090B10	Excavation & Shoring for Jacking Pit (A3)	40	07APR10	19AUG10	02NOV10	21DEC10	208d
S1-5090C10	TL-C FWM Pipe Installation by Jacking	10	18AUG10	29AUG10	12DEC10	11FEB11	115d
S1-5090C20	TL-C FWM Pipe Installation by Jacking	20	29AUG10	10JAN11	23DEC10	10JAN11	115d
S1-5095	TL-C FWM Pipe Installation CH790.5-977.7	40	12MAY11	20JUN11	15JUL11	23AUG11	64d
S1-5095B10	Pipe Laying & Connection	50	02DEC10	20JAN11	07MAR11	23APR11	85d
S1-5095B20	Sleeve Pipe Grouting	10	21JAN11	01MAR11	06MAY11	05MAY11	85d
S1-5095B30	Backfilling & Reinstatement	30	31JAN11	01MAR11	06MAY11	05MAY11	85d
S1-5100	Portion E2 Pipe Works CH977.7-995.5 (O)	25	21JUN11	13JUL11	24AUG11	17SEP11	64d
S1-5100A	TL-E SWM Sleeve Jacking CH80.0-225.5 (A1-A4)	120	04OCT10	31JAN11	28MAR11	23JUN11	95d
S1-5100B10	Preparation & Submission of Risk Assessment	60	08FEB10	06APR10	12MAY10	10JUL10	95d
S1-5100B20	Preparation & Submission of Method Statement	60	08FEB10	06APR10	12MAY10	10JUL10	95d
S1-5100B30	Preparation & Submission of Temp. Design	60	08FEB10	06APR10	12MAY10	10JUL10	95d
S1-5100C10	Excavation & Shoring for Jacking Pit (A4)	50	07APR10	19AUG10	02NOV10	21DEC10	208d
S1-5100C20	TL-E SWM Sleeve Jacking CH80.0-225.5	40	28JUN10	09AUG10	02OCT10	12NOV10	95d
S1-5100C30	Excavation & Shoring for Receiving Pit (A1)	9	10AUG10	19AUG10	13NOV10	21NOV10	95d
S1-5100C40	Sleeve Pipe Installation by Jacking	30	08OCT10	16NOV10	10APR11	10APR11	64d
S1-5105	TL-E DN800 SWM Pipe Installation CH225.5-282.0 (A1-A3)	30	17NOV10	19DEC10	11APR11	10MAY11	145d
S1-5105B10	Pipe Laying & Connection	10	07NOV10	16NOV10	10APR11	10APR11	145d
S1-5105B20	Sleeve Pipe Grouting	20	17NOV10	19DEC10	11APR11	10MAY11	145d
S1-5105B30	Backfilling & Reinstatement	30	17NOV10	19DEC10	11APR11	10MAY11	145d
S1-5120	Portion E2 DN800 SWM Works CH225.5-282.0 (O)	25	17APR11	20JUN11	11MAY11	04JUN11	145d
S1-5120A	TL-F SWM Sleeve Jacking CH252.0-432.0 (A1-A3)	142	08MAY10	25JUL10	05MAR10	25JUL10	0
S1-5120B10	Preparation & Submission of Risk Assessment	60	08FEB10	06APR10	08DEC10	06FEB11	305d
S1-5120B20	Preparation & Submission of Method Statement	60	08FEB10	06APR10	08DEC10	06FEB11	305d
S1-5120B30	Preparation & Submission of Temp. Design	60	08FEB10	06APR10	08DEC10	06FEB11	305d
S1-5130B10	Excavation & Shoring for Jacking Pit (A3)	14	10SEP10	01OCT10	06FEB11	19FEB11	141d
S1-5135	TL-F DN800 SWM Pipe Installation CH252.0-432.0	30	18SEP10	17OCT10	11JAN11	09FEB11	115d
S1-5135B10	Pipe Laying & Connection	25	07NOV10	01DEC10	10FEB11	08MAR11	64d
S1-5135B20	Sleeve Pipe Grouting	10	02DEC10	11DEC10	09AUG11	18AUG11	208d
S1-5135B30	Backfilling & Reinstatement	30	12DEC10	10JAN11	19AUG11	17SEP11	208d
S1-5140	Area E2 Portional Pipe Testing	14	04OCT11	21OCT11	18OCT11	31OCT11	10d
S1-5140B10	Area E2 Portional Pipe Testing	14	01APR11	14APR11	18OCT11	31OCT11	200d
S1-6010	Portion F Pipe Works CH995.5-1240.5 (O)	160	23NOV10	21MAY11	23NOV10	21MAY11	0
S1-6010B10	Stage 1 Excavation & Shoring CH1060-1240.5	100	24MAR10	01JUL10	02MAY11	03JUN11	343d
S1-6010B20	Formation Trimming	10	02JUL10	11JUL10	10JUN11	18JUN11	343d
S1-6010B30	Pipe Laying & Connection (Welding)	30	12JUL10	10AUG10	20JUN11	19JUL11	343d
S1-6010C10	Backfilling & Reinstatement	50	11AUG10	28SEP10	20JUL11	07SEP11	343d
S1-6010C20	Stage 2 Excavation & Shoring CH995.5-1060	40	02DEC10	10JAN11	08SEP11	17OCT11	280d
S1-6020	Portion F DN800 SWM Works CH432.0-494.7 (O)	120	26JUL10	22NOV10	26JUL10	22NOV10	0

Start date	07SEP09
Finish date	08NOV12
Data date	04JAN10
Run date	10AUG11
Page number	4A
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### 3 Months Rolling Program (August 2011)

00000	Early bar
00001	Progress bar
00002	Critical bar
00003	Summary bar
00004	Start milestone point
00005	Finish milestone point



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

Act ID	Description	Onp Dur	Early Start	Early Finish	Late Start	Late Finish	Total Float
S1-600A10	Portion F DN800 SWM Works CH432.0-494	120	12NOV10	11MAR11	20JUN11	17OCT11	220
S1-6030	Area F Portional Pipe Testing	14	23MAY11	04JUN11	18OCT11	31OCT11	1480
<b>Portion H1</b>							
S1-7010	Portion H1 Temporary Assess Road	60	20DEC09A	31JAN10	20DEC09A	05MAR10	330
S1-7020	Portion H1 Pipe Works CH1466.5-1516.5 (O)	40	20JUL11	28AUG11	20JUL11	29AUG11	0
S1-7030	Portion H1 Pipe Works CH1516.5-1547.4 (O-S-well)	50	29AUG11	17OCT11	29AUG11	17OCT11	0
S1-7040	Area H1 Portional Pipe Testing	14	18OCT11	31OCT11	18OCT11	31OCT11	0
<b>Portion J</b>							
S1-8010	Portion J Pipe Works CH10.0-48.0 (O-S Well)	40	28JUL11	06SEP11	16SEP11	07OCT11	410
S1-8020	Portion J Pipe Works CH48.0-336.0 (O)	300	02OCT10	28JUL11	12NOV10	07SEP11	410
S1-8020E10	Stage 1 Excavation & Shoring CH250-290 S1	25	22JUN10*	15AUG10	29AUG10	22OCT10	680
S1-8020E20	Pipe Laying & Connection (Welding)	20	18AUG10	04SEP10	29AUG10	11NOV10	680
S1-8020E30	Associated Chamber Construction	30	05SEP10	04OCT10	12NOV10	11DEC10	680
S1-8020E40	Backfilling & Reinstatement	15	05OCT10	19OCT10	12DEC10	28DEC10	680
S1-8020E50	Stage 1 Excavation & Shoring CH250-290 S2	20	27FEB11	18MAR11	06MAY11	25MAY11	680
S1-8020E60	Associated Chamber Construction	30	19MAR11	17APR11	28MAY11	24JUN11	680
S1-8020E70	Backfilling & Reinstatement	15	18APR11	02MAY11	25JUN11	08JUL11	680
S1-8020C10	Stage 2 Excavation & Shoring CH180-250	55	20OCT10	13DEC10	27DEC10	19FEB11	680
S1-8020C20	Pipe Laying & Connection (Welding)	30	14DEC10	12JAN11	20FEB11	21MAR11	680
S1-8020C30	Associated Chamber Construction	15	12FEB11	28FEB11	21APR11	09MAY11	680
S1-8020C40	Backfilling & Reinstatement	35	11OCT10*	14NOV10	10JUL11	19AUG11	2720
S1-8020D10	Stage 3 Excavation & Shoring CH140-180	20	19NOV10	04DEC10	14AUG11	02SEP11	2720
S1-8020D20	Pipe Laying & Connection (Welding)	30	05DEC10	03JAN11	03SEP11	02OCT11	2720
S1-8020D30	Associated Chamber Construction	15	04JAN11	18JAN11	09OCT11	17OCT11	2720
S1-8020D40	Backfilling & Reinstatement	90	20MAY11	27AUG11	31MAY11	28AUG11	10
S1-8020E10	Stage 4 Excavation & Shoring CH18-CH140	20	28AUG11	18SEP11	29AUG11	17SEP11	10
S1-8020E20	Pipe Laying & Connection (Welding)	20	17SEP11	06OCT11	18SEP11	07OCT11	10
S1-8020E30	Associated Chamber Construction	10	07OCT11	16OCT11	08OCT11	17OCT11	10
S1-8020E40	Backfilling & Reinstatement	50	03MAY11	21JUN11	10JUL11	28AUG11	680
S1-8020F10	Stage 5 Excavation & Shoring CH290-340	30	22JUN11	21JUL11	29AUG11	27SEP11	680
S1-8020F20	Pipe Laying & Connection (Welding)	30	22JUN11	21JUL11	29AUG11	27SEP11	680
S1-8020F30	Backfilling & Reinstatement	20	22JUN11	10AUG11	29AUG11	17OCT11	680
S1-8030	Portion J Kiosk for RTU & Connect To SCADA	30	20OCT10	18NOV10	18SEP11	17OCT11	510
S1-8040	Portion J Pipe Works CH339.0-386.4 (TL-D)	208	17MAR10	11OCT10	27APR10	21NOV10	3330
S1-8040A10	Preparation & Submission of Risk Assessment	28	03MAR10	30MAR10	05OCT10	01NOV10	410
S1-8040A20	Preparation & Submission of Method Statement	28	03MAR10	30MAR10	05OCT10	01NOV10	2160
S1-8040A30	Preparation & Submission of Temp. Works	28	03MAR10	30MAR10	05OCT10	01NOV10	2160
S1-8040A40	Granting of Excavation Permit	0	01SEP10*		28OCT10		550
S1-8040B10	TTA, UD & Trial Pit Excavation	25	08SEP10	02OCT10	02NOV10	28NOV10	550
S1-8040B20	Access Shaft Fabrication	65	23OCT10	28DEC10	17DEC10	19FEB11	550
S1-8040B30	Heading Tunnel Excavation (Hand Shield)	70	27DEC10	08MAR11	20FEB11	30APR11	550
S1-8040B40	Pipe Installation Inside Heading Tunnel	40	07MAR11	15APR11	01MAY11	08JUN11	550
S1-8040B50	Backfilling & Reinstatement	10	16APR11	25APR11	10JUN11	18JUN11	550
S1-8050	Portion J Pipe Works CH386.4-396.4 (O)	40	28APR11	04JUN11	20JUN11	28JUL11	550
S1-8060	Portion J Pipe Works DN1000 CH0.0-22.1 (O)	60	05JUN11	22AUG11	30JUL11	17OCT11	550
S1-8070	Area J Portional Pipe Testing	14	17OCT11	30OCT11	18OCT11	31OCT11	10
<b>Portion K</b>							
S1-9010	Within 365 Days Commencement of Portion K	365	07SEP09A	08SEP10	07SEP09A	10DEC10	830
S1-9020	Portion K Initial Survey	15	08SEP10	23SEP10	11DEC10	28DEC10	630
S1-9030	Portion K Utilities Detection & Trial Pit	20	24SEP10	13OCT10	14JAN11	14JAN11	930
S1-9030B10	Portion K Utilities Detection & Trial Pit	10	16MAY11*	25MAY11	16MAY11*	25MAY11	0
S1-9040	Portion K Pipe Works (Construction of MBV)	200	14OCT10	01MAY11	15JAN11	02AUG11	930
S1-9040B10	MBV Installation & Associated Duct Works	45	28MAY11	08JUL11	12OCT11	28NOV11	1380



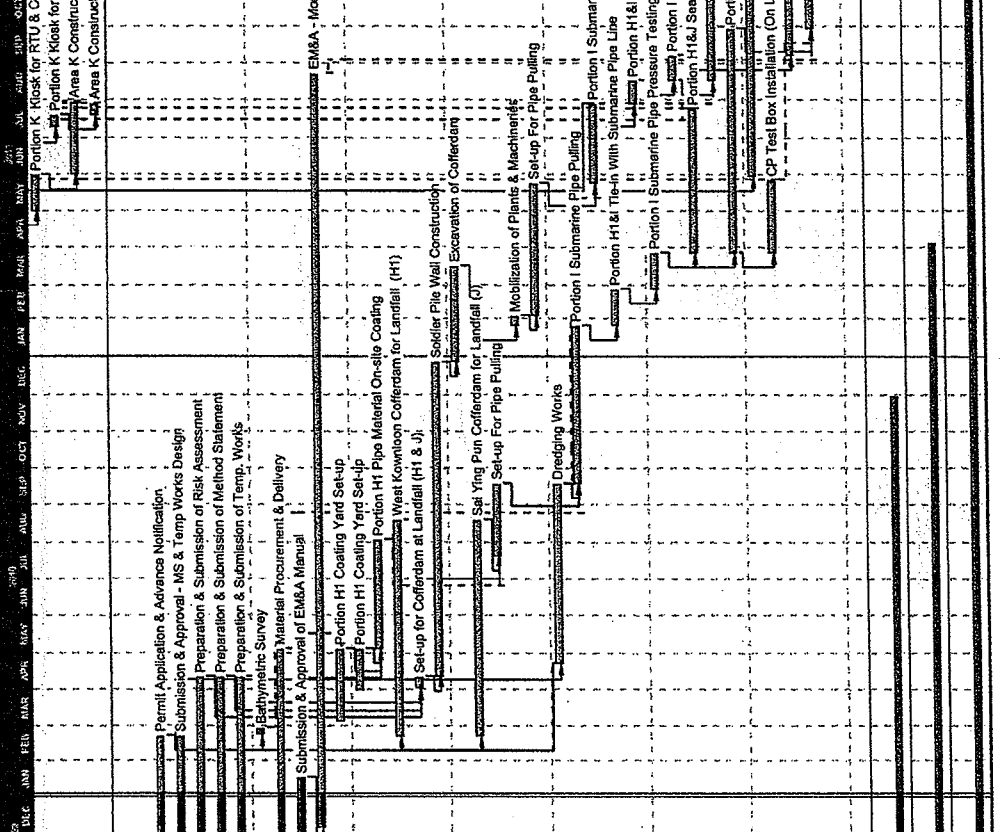
3 Months Rolling Program (August 2011)

Wo Hing - Penta-Ocean Joint Venture

Start date	07SEP09
Finish date	05NOV12
Run date	04JAN10
Run date	10AUG11
Page number	5A
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Contract No. 9WSD/08  
 Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun

Act ID	Description	Orig Dur	Early Start	Early Finish	Late Start	Early Finish	Late Finish	Total Float
S1-9060	Portion K Kiosk for RTU & Connect To SCADA	10	02MAY11	31MAY11	03AUG11	01SEP11	01SEP11	55d
S1-9060B10	Portion K Kiosk for RTU & Connect To SCADA	10	10JUL11	19JUL11	08NOV11	05DEC11	05DEC11	130d
S1-9060	Area K Constructed MBV Testing	60	01JUN11	30JUL11	02SEP11	31OCT11	31OCT11	93d
S1-9060B10	Area K Constructed MBV Testing	10	20JUL11	28JUL11	06DEC11	15DEC11	15DEC11	136d
Marine Works (Portion I)								
M1000	Permit Application & Advance Notification	120	07SEP09 A	20FEB10	07SEP09 A	08APR10	08APR10	46d
M1010	Submission & Approval - MS & Temp Works Design	120	07SEP09 A	20FEB10	07SEP09 A	11MAY10	11MAY10	80d
M1010A10	Preparation & Submission of Risk Assessment	217	07SEP09 A	11APR10	07SEP09 A	12APR10	12APR10	1d
M1010A20	Preparation & Submission of Method Statement	217	07SEP09 A	11APR10	07SEP09 A	12APR10	12APR10	1d
M1010A30	Preparation & Submission of Temp. Works	217	07SEP09 A	11APR10	07SEP09 A	12APR10	12APR10	1d
M1020	Bathymetric Survey	120	22FEB10 A	27FEB10 A	02NOV09 A	23JUL10	23JUL10	80d
M1030	Material Procurement & Delivery	180	06NOV09 A	04MAY10	07SEP09 A	17JAN10 A	17JAN10 A	84d
M1040	Submission & Approval of EM&A Manual	90	07SEP09 A	17JAN10 A	06DEC09 A	19NOV11	19NOV11	80d
M1050	EM&A - Monitoring & Update	60	06DEC09 A	23AUG11	04MAY10	23JUL10	23JUL10	80d
M1060	Portion H1 Coating Yard Set-up	34	01APR10*	04MAY10	04MAY10	20JUN10	20JUN10	80d
M1060A10	Portion H1 Coating Yard Set-up	90	03MAY10	02AUG10	04MAY10	23JUL10	23JUL10	80d
M1070	Portion H1 Pipe Material On-site Coating	180	21FEB10	19AUG10	11APR10	13APR10	13APR10	1d
M1080	West Kowloon Cofferdam for Landfill (H1)	10	02APR10	11APR10	03APR10	28DEC10	28DEC10	48d
M1080A10	Set-up for Cofferdam at Landfill (H1 & J)	260	12APR10	27DEC10	17MAR11	18MAR11	18MAR11	1d
M1080B10	Solder Pile Wall Construction	80	20DEC10	17MAR11	18AUG10	08OCT10	08OCT10	48d
M1090	Excavation of Cofferdam	180	21FEB10	18AUG10	07SEP10	06NOV10	06NOV10	48d
M1090A10	Sal. Yng Pun Cofferdam for Landfill (J)	60	21JUL10	18SEP10	07SEP10	04FEB11	04FEB11	1d
M2060	Set-up For Pipe Pulling	8	27JAN11	03FEB11	28JAN11	28JAN11	28JAN11	1d
M2060A10	Mobilization of Plants & Machinery	90	04FEB11	24MAY11	08FEB11	25MAY11	25MAY11	1d
M2070	Set-up For Pipe Pulling	190	22APR10	18SEP10	09JUN10	06NOV10	06NOV10	48d
M2080	Dredging Works	130	19SEP10	26JUL11	06NOV10	15MAR11	15MAR11	48d
M2090	Portion I Submarine Pipe Pulling	85	28MAY11 A	28JUL11	25MAY11 A	28JUL11	28JUL11	1d
M2090B10	Portion I Submarine Pipe Pulling	30	27JAN11	25FEB11	16MAR11	14APR11	14APR11	48d
M2090A10	Portion H1&J Tie-in With Submarine Pipe Line	20	29JUL11	17AUG11	08AUG11	27AUG11	27AUG11	10d
M2100	Portion I Submarine Pipe Pressure Testing & CCTV	30	26FEB11	27MAR11	15APR11	14MAY11	14MAY11	48d
M2100A10	Portion I Submarine Pipe Pressure Testing & CCTV	20	18AUG11	05SEP11	29AUG11	16SEP11	16SEP11	10d
M2110	Portion H1&J Seawall Reinstatement	120	28MAR11	25JUL11	29MAY11	25SEP11	25SEP11	30d
M210A10	Portion H1&J Seawall Reinstatement	185	28MAR11	20SEP11	15MAY11	15NOV11	15NOV11	48d
M2120	Portion I Submarine Pipeline Backfilling	150	30MAY11	26OCT11	19JUL11	15DEC11	15DEC11	50d
M2120A10	Portion I Submarine Pipeline Backfilling	60	28MAR11	29MAY11	02SEP11	31OCT11	31OCT11	156d
M2130	CP Test Box Installation (On Land)	60	07SEP11	06NOV11	17SEP11	15NOV11	15NOV11	10d
M2130A10	CP Test Box Installation (On Land)	30	28SEP11	26OCT11	16NOV11	15DEC11	15DEC11	48d
M2140	CIP Test (Close Internal Potential Survey)	30	06NOV11	05DEC11	16NOV11	15DEC11	15DEC11	10d
M2140A10	CIP Test (Close Internal Potential Survey)	0		15DEC11*		15DEC11*	15DEC11*	0
M2150	Completion of Section 1 Works	0						0
*Section 2								
		449	07SEP09 A	28NOV10	07SEP09 A	28NOV10	28NOV10	0
*Section 4								
		576	07SEP09 A	05APR11	07SEP09 A	05APR11	05APR11	0
*Section 5								
		1156	07SEP09 A	05NOV12	07SEP09 A	05NOV12	05NOV12	0



3 Months Rolling Program (August 2011)

Start date: 07SEP09  
 Finish date: 05NOV12  
 Data date: 04JUN10  
 Run date: 10AUG11  
 Page number: 6A  
 c Primavera Systems, Inc.

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



## Appendix F

### ET Weekly Site Inspection Records



### WEEKLY SITE INSPECTION CHECKLIST

Inspection Date	02 August 2011	Inspected by	RE <i>[Signature]</i>	IEC	Contractor	JNG	ET	C. L. Lam
Time	09:30	Name						

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

#### Environmental Checklist

#### **Fugitive Dust Emission**

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
• Dust control / mitigation measures shall be provided to prevent dust nuisance.	✓			
• Any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading.	✓			
• The working area of excavation should be sprayed with water immediately before, during and immediately after the operations so as to maintain the entire surface wet.	✓			
• The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle	✓			
• Where a site boundary adjoins a road, streets or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length except for a site entrance or exit;	✓			
• The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcore.			✓	
• Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.	✓			
• The portion of road leading only to a construction site that is within 30m of a designated vehicle entrance or exit should be kept clear of dusty materials.	✓			
• All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet.	✓			
• Vehicle speed should be limited to 10 kph except on completed access roads.	✓			
• Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.	✓			
• The public road around the site entrance should be kept clean and free from dust.	✓			
• Vehicle and equipment should be switched off while not in use.	✓			
• All plant and equipment should be well maintained e.g. without black smoke emission.	✓			
• Open burning should be prohibited.	✓			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
<b>Noise Impact</b>				
▪ 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.	✓			
<b>Water Quality</b>				
<b>Mitigation Measures for Dredging</b>				
▪ Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m <sup>3</sup> 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 Silt 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	
<b>Water Quality</b>					
<i>Mitigation Measures for other Construction Activities</i>					
▪	Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m <sup>3</sup> 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, scurm, 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.		✓		Item 1
▪	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			✓	
<b>Waste Management</b>					
<i>C&amp;D Materials</i>					
▪	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 recycling system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed			✓	
▪	A recycling 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.			✓	
<b>Chemical Waste</b>					
▪	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	
<b>Waste Management</b>				
<b>General Refuse</b>				
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.	√			
<b>Marine Dredged Sediment (During transportation and disposal)</b>				
Bottom opening of barges shall be fitted with light fitting seals to prevent leakage of material. Excess material shall be cleaned from the decks and exposed fittings of barges and dredgers before the vessel is moved			√	No dredging work was observed.
Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the EPD			√	No dredging work was observed.
Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation.			√	No dredging work was observed.
<b>Site Practices</b>				
Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site	√			
Training of site personnel in proper waste management and chemical handling procedures	√			
Provision of sufficient waste disposal points and regular collection of waste	√			
Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.		√		Item 1
Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers	√			
<b>Waste Reduction Measures</b>				
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	
<b>Marine Ecology</b>				
Use of one grab dredger only with a maximum production rate of 4,000m <sup>3</sup> 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.	√			
<b>Good Site Practices</b>				
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.	√			

Contract No. 9/WSD/08

Laying of Western Cross Harbour Main and Associated Land Mains

From West Kowloon to Sai Ying Pun



英泰德测试顾问有限公司  
ETS-TESTCONSULT LIMITED

**Summary of the Weekly Site Inspection:**

Item	Details of defective works or observations	Status of the item (closed / continue follow-up)	Proposed Follow Up Action (if required)	Photo Ref.	Target Completion Date
1	Standing water and rubbish were noted in Portion H.	Follow-up	To clean off standing water and collect the rubbish properly.	110802_001 and 002	09/08/11

Remark

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Inspected by	Name	Signature	Date
	C. L. Lau		02 August 2011

Photos



Photo 110802\_001 (Standing Water and Rubbish were noted in Portion H)

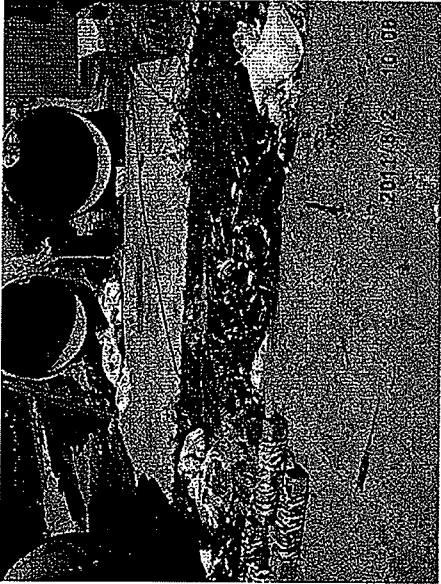


Photo 110802\_002 (Standing Water and Rubbish were noted in Portion H)

**WEEKLY SITE INSPECTION CHECKLIST**

Inspection Date	9 August 2011	Inspected by	RE <i>[Signature]</i>	IEC	Contractor	JNC	ET	C.L. Lau
Time	09:30	Name	<i>[Signature]</i>					

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

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs / N/A	
<b>Fugitive Dust Emission</b>				
• 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.	✓			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
<b>Noise Impact</b>				
• 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.	✓			
<b>Water Quality</b>				
<b>Mitigation Measures for Dredging</b>				
• Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m <sup>3</sup> per day.			✓	No dredging work was observed.
• Deployment of frame type silt curtain should be fully enclosed the grab while dredging works are in progress.			✓	No dredging work was observed.
• Deployment of silt screen should be at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress	✓			
• Tight-closing grabs should be used to minimize the loss of sediment to suspension during dredging works. For dredging of any contaminated mud, closed watertight grabs must be used.	✓			
• All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash	✓			
• The decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard	✓			
• Adequate free board shall be maintained on barges to ensure that decks are not washed by wave action.	✓			
• All barges used for the transport of dredged materials should be fitted with tight bottom seals to prevent leakage of material during loading and transport	✓			
• Dredging activities should not cause foam, oil, grease, scurm, litter or other objectionable matter to be present in the water within the site or dumping grounds				
• 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	
<b>Water Quality</b>				
<b>Mitigation Measures for other Construction Activities</b>				
<ul style="list-style-type: none"> <li>Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m<sup>3</sup> 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</li> <li>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</li> <li>Construction activities should not cause foam, oil, grease, scurm, litter or other objectionable matter to be present in the water within the site or dumping grounds</li> <li>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</li> <li>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.</li> <li>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.</li> <li>Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.</li> <li>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.</li> <li>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</li> </ul>	√			
<b>Waste Management</b>				
<b>C&amp;D Materials</b>				
<ul style="list-style-type: none"> <li>Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable.</li> <li>C&amp;D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses.</li> <li>A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed</li> <li>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.</li> </ul>			√	
<b>Chemical Waste</b>				
<ul style="list-style-type: none"> <li>Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.</li> <li>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.</li> <li>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.</li> </ul>	√			



Implementation Stages*	Remark		
	Yes	No	N/A
<b>Environmental Checklist</b>			
<b>Waste Management</b>			
<b>General Refuse</b>			
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.	✓		
<b>Marine Dredged Sediment (During transportation and disposal)</b>			
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.
<b>Site Practices</b>			
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	✓		
<b>Waste Reduction Measures</b>			
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	
<b>Marine Ecology</b>				
Use of one grab dredger only with a maximum production rate of 4,000m <sup>3</sup> 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.	√			
<b>Good Site Practices</b>				
The Environmental Permit should be displaced conspicuously on site.	√			
Construction noise permits should be posted at site entrance or available for site inspection.	√			
Chemical storage area provided with lock and located on sealed areas.	√			
All chemicals should be placed at the banded area with adequate band capacity (>110% of largest tank).	√			
Any unused chemicals or those with remaining functional capacity should be recycled.	√			
All generators, fuel and oil storage are within bundle areas.	√			
Oil leakage from machinery, vehicle and plant should be prevented.	√			
Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	√			
A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be bunded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	√			

**Summary of the Weekly Site Inspection:**

Item	Details of defective works or observations	Status of the item (closed / continue follow-up)	Proposed Follow Up Action (if required)	Photo Ref.	Target Completion Date
1	Follow-up action to item 1 on 02/08/11, standing water and rubbish noted in Portion H were cleaned and collected.	Closed	---	110809_001 and 002	---

Remark

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Inspected by	Name	Signature	Date
	C. L. Lau		09 August 2011

Contract No. 9/WSD/08

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

Photos

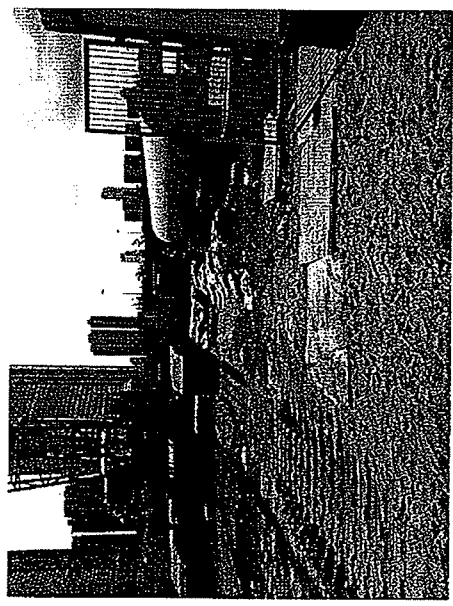


Photo 110809\_001 (Standing Water and Rubbish were cleaned in Portion H)

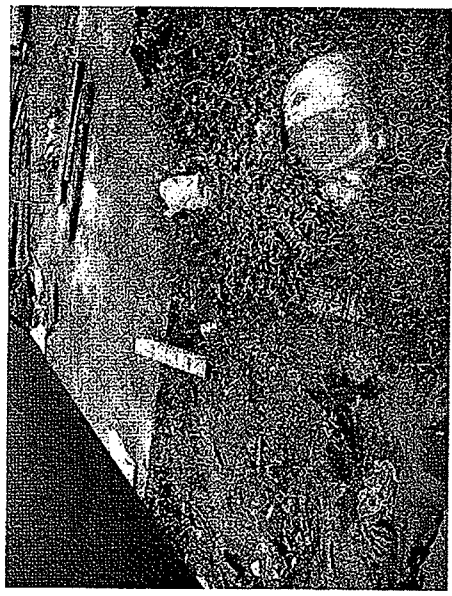


Photo 110809\_002 (Standing Water and Rubbish were cleaned in Portion H)

**WEEKLY SITE INSPECTION CHECKLIST**

Inspection Date	17 August 2011	Inspected by	RE <i>[Signature]</i>	IEC	Edward Chung	Contractor	JNG	ET	C. L. Lam
Time	14:00	Name	<i>[Signature]</i>		<i>[Signature]</i>				

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

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs / N/A	
<b>Fugitive Dust Emission</b>				
• 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.	✓			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs	
<b>Noise Impact</b>				
▪ 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.	✓			
<b>Water Quality</b>				
<b>Mitigation Measures for Dredging</b>				
▪ Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m <sup>3</sup> 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, silt 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	
<b>Water Quality</b>						
<b>Mitigation Measures for other Construction Activities</b>						
▪	Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m <sup>3</sup> 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					✓
<b>Waste Management</b>						
<b>C&amp;D Materials</b>						
▪	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.			✓		
<b>Chemical Waste</b>						
▪	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	
<b>Waste Management</b>					
<b>General Refuse</b>					
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.	√				
<b>Marine Dredged Sediment (During transportation and disposal)</b>					
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.
<b>Site Practices</b>					
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	√				
<b>Waste Reduction Measures</b>					
Sort C&D material from demolition and decommissioning of the existing facilities to recover recyclable portions such as metals	√				
Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal	√				
Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force	√				
Proper storage and site practices to minimise the potential for damage or contamination of construction materials	√				
Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste	√				




	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
<b>Environmental Checklist</b>				
<b>Marine Ecology</b>				
Use of one grab dredger only with a maximum production rate of 4,000m <sup>3</sup> 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.	√			
<b>Good Site Practices</b>				
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 surfaces 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	After raining, standing water was noted in trip trays and somewhere of Portion H.	Follow-up	The Contractor was reminded to clean all standing water to avoid mosquito breeding.	110817_001 and 002	23/08/11

Remark

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Inspected by	Name	Signature	Date
	C. L. Lau		17 August 2011



**Photos**



Photo 110817\_001 (Standing Water was noted in drip trays after raining)

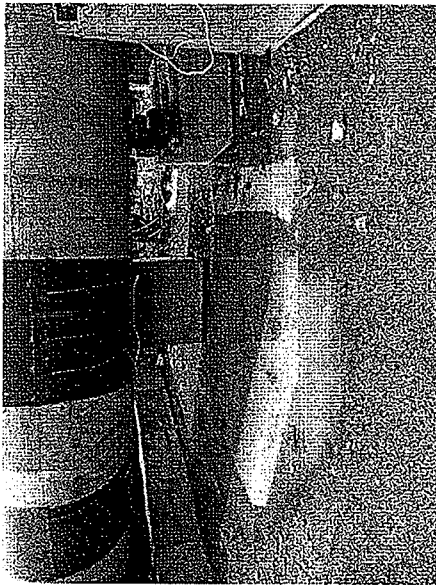
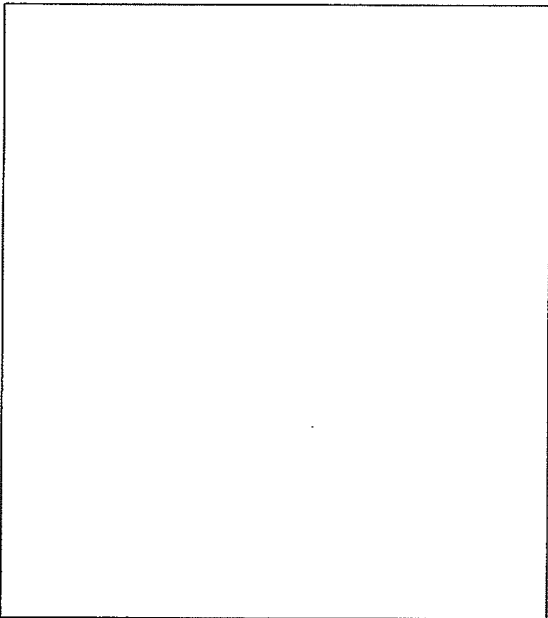


Photo 110817\_002 (Standing Water was noted in somewhere of Portion H after raining)



**WEEKLY SITE INSPECTION CHECKLIST**

Inspection Date	23 Aug. 2011	Inspected by	RE [Signature]	IEC	Contractor	JNG	ET	C.L. Lau
Time	09:30	Name	Wai Yee 2518					[Signature]

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

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs / N/A	
<b>Fugitive Dust Emission</b>				
• 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.	✓			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
<b>Noise Impact</b>				
▪ 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.	✓			
<b>Water Quality</b>				
<b>Mitigation Measures for Dredging</b>				
▪ Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m <sup>3</sup> 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	
<b>Water Quality</b>				
<b>Mitigation Measures for other Construction Activities</b>				
<ul style="list-style-type: none"> <li>Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m<sup>3</sup> 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</li> <li>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</li> <li>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</li> <li>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 WCCZs</li> <li>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.</li> <li>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 WCCZ under the TM-DSS.</li> <li>Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.</li> <li>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.</li> <li>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</li> </ul>	√			
<b>Waste Management</b>				
<b>C&amp;D Materials</b>				
<ul style="list-style-type: none"> <li>Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable.</li> <li>C&amp;D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses.</li> <li>A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed</li> <li>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.</li> </ul>	√			Item 1
<b>Chemical Waste</b>				
<ul style="list-style-type: none"> <li>Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.</li> <li>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.</li> <li>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.</li> </ul>	√			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
<b>Waste Management</b>				
<b>General Refuse</b>				
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.	√			
<b>Marine Dredged Sediment (During transportation and disposal)</b>				
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.
<b>Site Practices</b>				
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	√			
<b>Waste Reduction Measures</b>				
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	
<b>Marine Ecology</b>				
▪ Use of one grab dredger only with a maximum production rate of 4,000m <sup>3</sup> 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.	√			
<b>Good Site Practices</b>				
• 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 of 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	Water leakage from an air-conditioner was noted in Contractor's site office.	Follow-up	To clean out the dirt from the outlet of the air-conditioner to avoid water leakage.	110823_001	30/08/11
2	Follow-up action to item 1 on 17/08/11, standing water in drip trays and somewhere in Portion H were cleaned.	Closed	---	110823_001 & 002	----

Remark

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Inspected by	Name	Signature	Date
	C. L. Lau		23 August 2011

## Photos

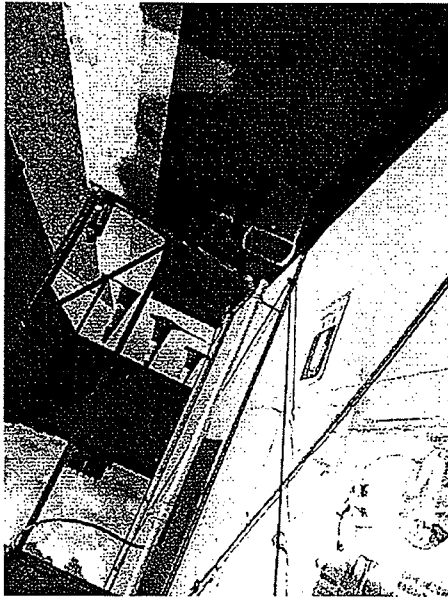


Photo 110823\_001 (Water leakage from air-conditioner was noted in site office)

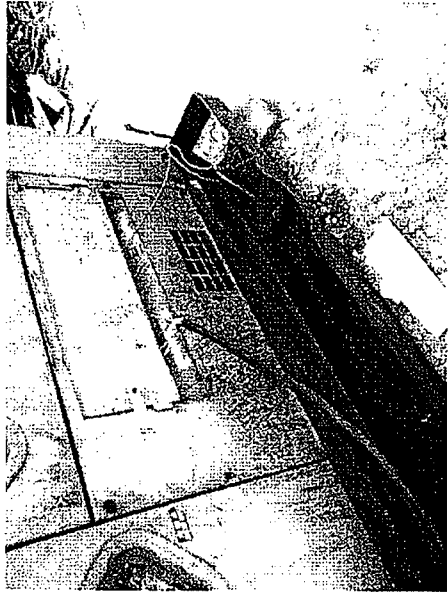


Photo 110823\_002 (No rain water was noted in drip tray)



Photo 110823\_003 (No standing rain water was noted in Portion H)

**WEEKLY SITE INSPECTION CHECKLIST**

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

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	
	✓			
	✓			
	✓			
	✓			
	✓			
			✓	
	✓			
	✓			
	✓			
			✓	
	✓			
	✓			
	✓			
	✓			
	✓			
	✓			
	✓			
	✓			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
<b>Noise Impact</b>				
▪ 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 sited 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.	✓			
<b>Water Quality</b>				
<b>Mitigation Measures for Dredging</b>				
▪ Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m <sup>3</sup> 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	
<b>Water Quality</b>				
<b>Mitigation Measures for other Construction Activities</b>				
<ul style="list-style-type: none"> <li>Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m<sup>3</sup> 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</li> <li>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</li> <li>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</li> <li>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</li> <li>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.</li> <li>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.</li> <li>Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.</li> <li>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.</li> <li>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</li> </ul>	√			
<b>Waste Management</b>				
<b>C&amp;D Materials</b>				
<ul style="list-style-type: none"> <li>Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable.</li> <li>C&amp;D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses.</li> <li>A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed</li> <li>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.</li> </ul>	√			Item 1 and 2
<b>Chemical Waste</b>				
<ul style="list-style-type: none"> <li>Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.</li> <li>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.</li> <li>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.</li> </ul>	√			

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	Not Obs	
<b>Waste Management</b>					
<b>General Refuse</b>					
	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.	√			
<b>Marine Dredged Sediment (During transportation and disposal)</b>					
	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.
<b>Site Practices</b>					
	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	√			
<b>Waste Reduction Measures</b>					
	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	
<b>Marine Ecology</b>				
Use of one grab dredger only with a maximum production rate of 4,000m <sup>3</sup> 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.	√			
<b>Good Site Practices</b>				
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 bund capacity (>110% of largest tank).	√			
Any unused chemicals or those with remaining functional capacity should be recycled.	√			
All generators, fuel and oil storage are within bundle areas.	√			
Oil leakage from machinery, vehicle and plant should be prevented.	√			
Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.	√			
A collection area should be provided where waste can be stored and loaded prior to removal from site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material. If an open area is unavoidable for the storage or loading/unloading of wastes, then the area should be bunded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	√			

**Summary of the Weekly Site Inspection:**

Item	Details of defective works or observations	Status of the item (closed / continue follow-up)	Proposed Follow Up Action (if required)	Photo Ref.	Target Completion Date
1	Follow-up action to item 1 on 23/08/11, a bucket was placed under the air-conditioner in Contractor's site office for temporary receiving the leaked water.	Closed	--	110830_001	---
2	Standing of rain water was noted in Portion J. Mosquito oil was said to be placed in the water.	Follow-up	The Contractor was reminded to remove the standing water and add mosquito oil continuously before the water was removed.	110830_002	06/09/11

Remark

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Inspected by	Name C. L. Lau	Signature 	Date 30 August 2011
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**Photos**

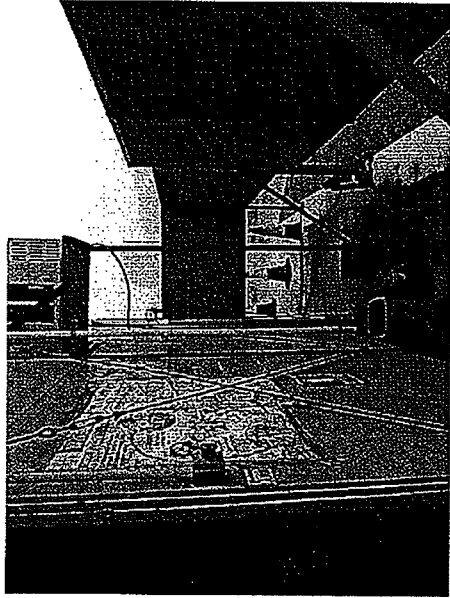


Photo 110830\_001 (Water leakage from air-conditioner was noted in site office)

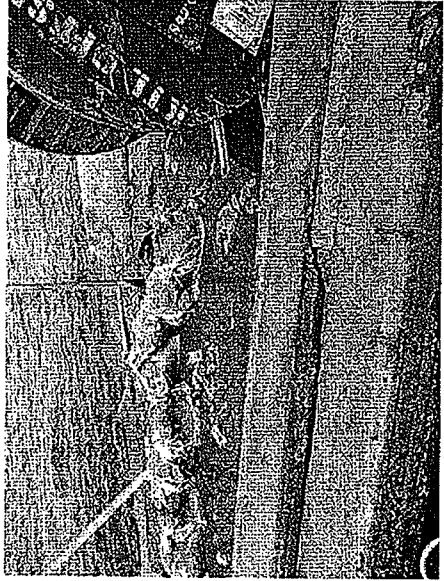


Photo 110830\_002 (Standing rain water was noted in Portion J)



## **Appendix G**

### **Implementation Schedule of Mitigation Measures**



## Environmental Mitigation Implementation Schedule

	Location	Implementation Status		
		Implemented	Partially implemented	Not implemented
<b>Environmental Protection Measures</b>				
<b>Air Quality</b>				
<ul style="list-style-type: none"> <li>▪ Dust control / mitigation measures shall be provided to prevent dust nuisance.</li> <li>▪ 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.</li> <li>▪ 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.</li> <li>▪ 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</li> <li>▪ 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.</li> <li>▪ 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.</li> <li>▪ 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.</li> <li>▪ 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.</li> <li>▪ All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet.</li> <li>▪ Vehicle speed should be limited to 10 kph except on completed access roads.</li> <li>▪ Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.</li> <li>▪ The public road around the site entrance should be kept clean and free from dust.</li> <li>▪ Vehicle and equipment should be switched off while not in use.</li> <li>▪ All plant and equipment should be well maintained e.g. without black smoke emission.</li> <li>▪ Open burning should be prohibited.</li> </ul>	√			
<b>Noise Impact</b>				
<ul style="list-style-type: none"> <li>▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.</li> <li>▪ 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.</li> <li>▪ Noisy equipment and mobile plant shall always be site away from NSRs.</li> <li>▪ Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.</li> <li>▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.</li> <li>▪ 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.</li> <li>▪ 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.</li> </ul>	√			√



	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
<b>Environmental Protection Measures</b>					
<b>Noise Impact</b>					
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	✓			
<b>Water Quality</b>					
<b>Mitigation Measures for Dredging</b>					
Dredging should be undertaken using one grab dredger only with a maximum production rate of 4,000m <sup>3</sup> 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	✓			
<b>Mitigation Measures for other Construction Activities</b>					
Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m <sup>3</sup> 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
<b>Water Quality</b>					
<b>Mitigation Measures for other Construction Activities</b>					
<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.</li> </ul>	All areas	√			
<b>Waste Management</b>					
<b>C&amp;D Materials</b>					
<ul style="list-style-type: none"> <li>Excavated materials should be reused on-site as backfilling material and for landscaping works as far as practicable.</li> <li>C&amp;D material generated from excavation works should be disposed of at public fill reception facilities for other beneficial uses.</li> <li>A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed</li> <li>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.</li> </ul>	All areas				√
<b>Chemical Waste</b>					
<ul style="list-style-type: none"> <li>Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.</li> <li>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.</li> <li>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.</li> </ul>	All areas	√			
<b>General Refuse</b>					
<ul style="list-style-type: none"> <li>General refuse should be stored in enclosed bins or compaction units separate from C&amp;D material.</li> <li>A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&amp;D material.</li> <li>An enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.</li> </ul>	All areas	√			
<b>Marine Dredged Sediment (During transportation and disposal)</b>					
<ul style="list-style-type: none"> <li>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</li> <li>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</li> <li>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.</li> </ul>	Marine				√
<b>Good Site Practices</b>					
<ul style="list-style-type: none"> <li>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</li> <li>Training of site personnel in proper waste management and chemical handling procedures</li> <li>Provision of sufficient waste disposal points and regular collection of waste</li> </ul>	All areas	√			
	All areas	√			
	All areas	√			



Environmental Protection Measures		Location	Implementation Status			
			Implemented	Partially implemented	Not implemented	Not Applicable
<b>Waste Management</b>						
<b>Good Site Practices</b>						
<ul style="list-style-type: none"> <li>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.</li> <li>Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers</li> </ul>		All areas		√		
<b>Waste Reduction Measures</b>						
<ul style="list-style-type: none"> <li>Sort C&amp;D material from demolition and decommissioning of the existing facilities to recover recyclable portions such as metals</li> <li>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</li> <li>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</li> <li>Proper storage and site practices to minimise the potential for damage or contamination of construction materials</li> <li>Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste</li> </ul>		All areas	√			
		All areas	√			
		All areas	√			
		All areas	√			
		All areas	√			
<b>Marine Ecology</b>						
<ul style="list-style-type: none"> <li>Use of one grab dredger only with a maximum production rate of 4,000m<sup>3</sup> per day for dredging.</li> <li>Deployment of frame type silt curtain to fully enclose the grab while dredging works are in progress.</li> <li>Deployment of silt screen at the sea water intake at Kowloon South Salt Water Pumping Station while dredging works are in progress.</li> <li>Good site practices to avoid silt runoff from construction works associated with the construction of the submarine watermain.</li> </ul>		Marine				√
		Marine				√
		Marine	√			
		Marine	√			
<b>Good Site Practices</b>						
<ul style="list-style-type: none"> <li>The Environmental Permit should be displaced conspicuously on site.</li> <li>Construction noise permits should be posted at site entrance or available for site inspection.</li> <li>Chemical storage area provided with lock and located on sealed areas.</li> <li>All chemicals should be placed at the banded area with adequate band capacity (&gt;110% of largest tank).</li> <li>Any unused chemicals or those with remaining functional capacity should be recycled.</li> <li>All generators, fuel and oil storage are within bundle areas.</li> <li>Regular cleaning and maintenance programme for waste storage area, drainage systems, silt traps, sumps and oil interceptors.</li> <li>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.</li> </ul>		All areas	√			
		All areas	√			
		All areas	√			
		All areas	√			
		All areas	√			
		All areas	√			
		All areas	√			
		All areas	√			
		All areas	√			
		All areas			√	



## Appendix H

### Site General Layout plan

NOTES:  
1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 241239/0301 TO 0305.

LEGEND:  
PROPOSED FRESH WATER MAIN  
PROPOSED SALT WATER MAIN  
PROPOSED WORKS LIMIT  
C/S / S/T  
PORTION A (SECTION 3)  
PORTION C  
PORTION C (SECTION 4)  
PORTION D  
PORTION E  
PORTION F  
PORTION G  
PORTION H  
PORTION I  
PORTION J  
PORTION K  
PORTION L  
PORTION M  
PORTION N  
PORTION O  
PORTION P  
PORTION Q  
PORTION R  
PORTION S  
PORTION T  
PORTION U  
PORTION V  
PORTION W  
PORTION X  
PORTION Y  
PORTION Z

WORKS ARE SHOWN AS NOT TO BE MAINTAINED OR TO BE MAINTAINED AS PART OF THE SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROVISION OF THE NECESSARY DETAILS OF THE CONSTRUCTION DETAILS TO BE SUBMITTED TO THE ENGINEER IN ACCORDANCE WITH THE STANDARD DRAWING NO.

Section 1  
Section 2  
Section 3  
Section 4

NO.	DESCRIPTION	SYMBOL
01	TENDER ADDENDUM NO. 1	[Symbol]
02	TENDER ADDENDUM NO. 2	[Symbol]
03	TENDER ADDENDUM NO. 3	[Symbol]
04	TENDER ADDENDUM NO. 4	[Symbol]
05	TENDER ADDENDUM NO. 5	[Symbol]
06	TENDER ADDENDUM NO. 6	[Symbol]
07	TENDER ADDENDUM NO. 7	[Symbol]
08	TENDER ADDENDUM NO. 8	[Symbol]
09	TENDER ADDENDUM NO. 9	[Symbol]
10	TENDER ADDENDUM NO. 10	[Symbol]
11	TENDER ADDENDUM NO. 11	[Symbol]
12	TENDER ADDENDUM NO. 12	[Symbol]
13	TENDER ADDENDUM NO. 13	[Symbol]
14	TENDER ADDENDUM NO. 14	[Symbol]
15	TENDER ADDENDUM NO. 15	[Symbol]
16	TENDER ADDENDUM NO. 16	[Symbol]
17	TENDER ADDENDUM NO. 17	[Symbol]
18	TENDER ADDENDUM NO. 18	[Symbol]
19	TENDER ADDENDUM NO. 19	[Symbol]
20	TENDER ADDENDUM NO. 20	[Symbol]

NO.	DESCRIPTION	SYMBOL
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26	TENDER ADDENDUM NO. 26	[Symbol]
27	TENDER ADDENDUM NO. 27	[Symbol]
28	TENDER ADDENDUM NO. 28	[Symbol]
29	TENDER ADDENDUM NO. 29	[Symbol]
30	TENDER ADDENDUM NO. 30	[Symbol]

NO.	DESCRIPTION	SYMBOL
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34	TENDER ADDENDUM NO. 34	[Symbol]
35	TENDER ADDENDUM NO. 35	[Symbol]
36	TENDER ADDENDUM NO. 36	[Symbol]
37	TENDER ADDENDUM NO. 37	[Symbol]
38	TENDER ADDENDUM NO. 38	[Symbol]
39	TENDER ADDENDUM NO. 39	[Symbol]
40	TENDER ADDENDUM NO. 40	[Symbol]

WORKS ARE SHOWN AS NOT TO BE MAINTAINED OR TO BE MAINTAINED AS PART OF THE SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROVISION OF THE NECESSARY DETAILS OF THE CONSTRUCTION DETAILS TO BE SUBMITTED TO THE ENGINEER IN ACCORDANCE WITH THE STANDARD DRAWING NO.

NO.	DESCRIPTION	SYMBOL
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44	TENDER ADDENDUM NO. 44	[Symbol]
45	TENDER ADDENDUM NO. 45	[Symbol]
46	TENDER ADDENDUM NO. 46	[Symbol]
47	TENDER ADDENDUM NO. 47	[Symbol]
48	TENDER ADDENDUM NO. 48	[Symbol]
49	TENDER ADDENDUM NO. 49	[Symbol]
50	TENDER ADDENDUM NO. 50	[Symbol]

WORKS ARE SHOWN AS NOT TO BE MAINTAINED OR TO BE MAINTAINED AS PART OF THE SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROVISION OF THE NECESSARY DETAILS OF THE CONSTRUCTION DETAILS TO BE SUBMITTED TO THE ENGINEER IN ACCORDANCE WITH THE STANDARD DRAWING NO.

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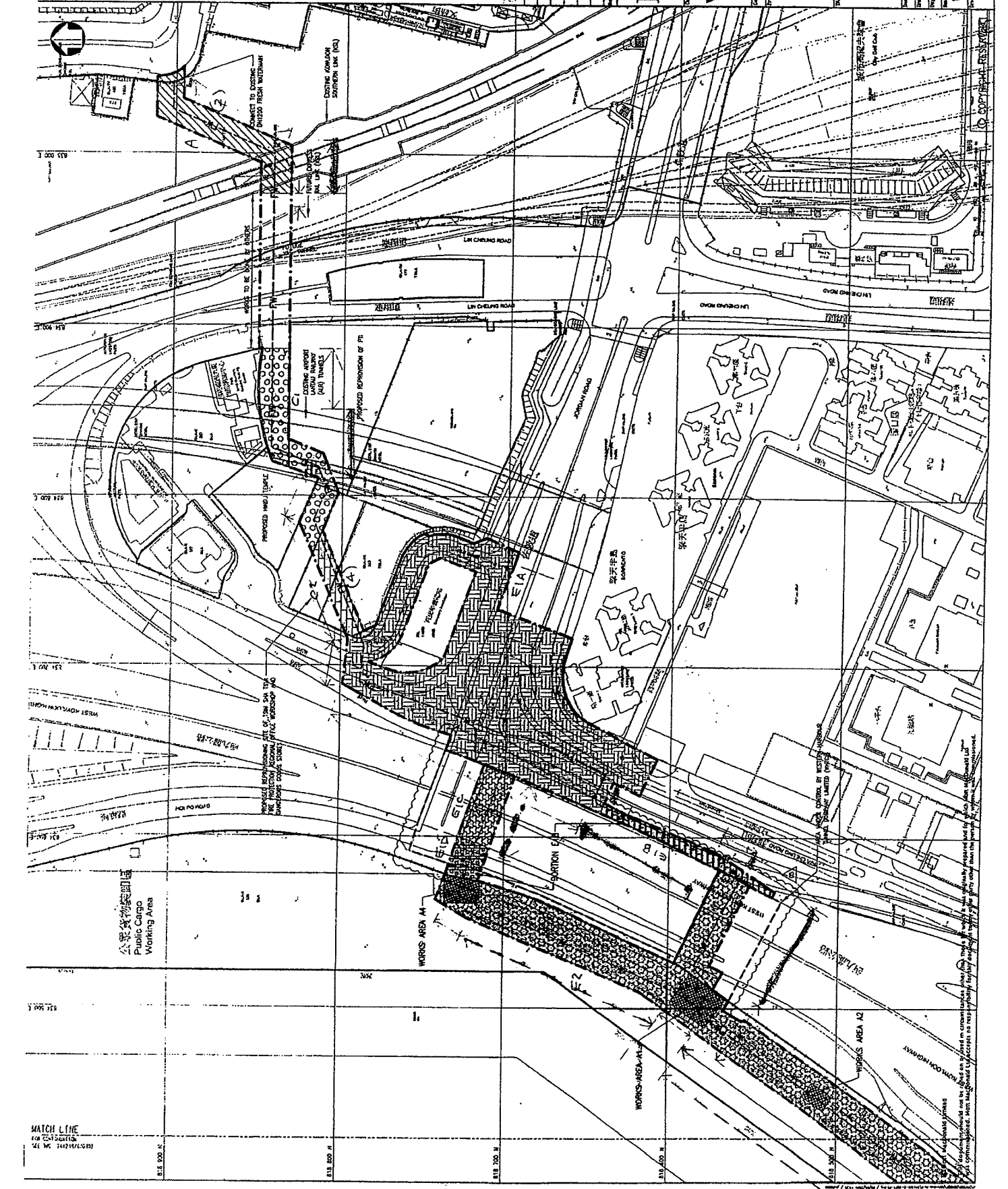
WORKS ARE SHOWN AS NOT TO BE MAINTAINED OR TO BE MAINTAINED AS PART OF THE SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROVISION OF THE NECESSARY DETAILS OF THE CONSTRUCTION DETAILS TO BE SUBMITTED TO THE ENGINEER IN ACCORDANCE WITH THE STANDARD DRAWING NO.

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MATCH LINE  
FOR ESTIMATE  
REVISIONS: 1/1

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

PROJECT NO. S/MSU/08  
Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun  
POSSESSION OF SITE (SHEET 1 OF 5)

SCALE	1:1000
DATE	241239/0301
PROJECT NO.	S/MSU/08
DRAWN BY	[Name]
CHECKED BY	[Name]
APPROVED BY	[Name]
SCALE	1:1000
DATE	241239/0301
PROJECT NO.	S/MSU/08
DRAWN BY	[Name]
CHECKED BY	[Name]
APPROVED BY	[Name]

241239/G/0301 05



NOTES  
 1. THE DRAWING SHALL BE READ IN CONJUNCTION WITH MEMORANDUM NO. 241239/S/0301 AND 241239/S/0302.  
 2. THE LEGEND SHALL REFER TO DRAWING NO. 241239/S/0301.

02	APR 09	REVISED APPROVAL NO. 4	PL	PL	PL
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00	DEC 08	PL	PL	PL	PL
00	DEC 08	PL	PL	PL	PL
00	DEC 08	PL	PL	PL	PL

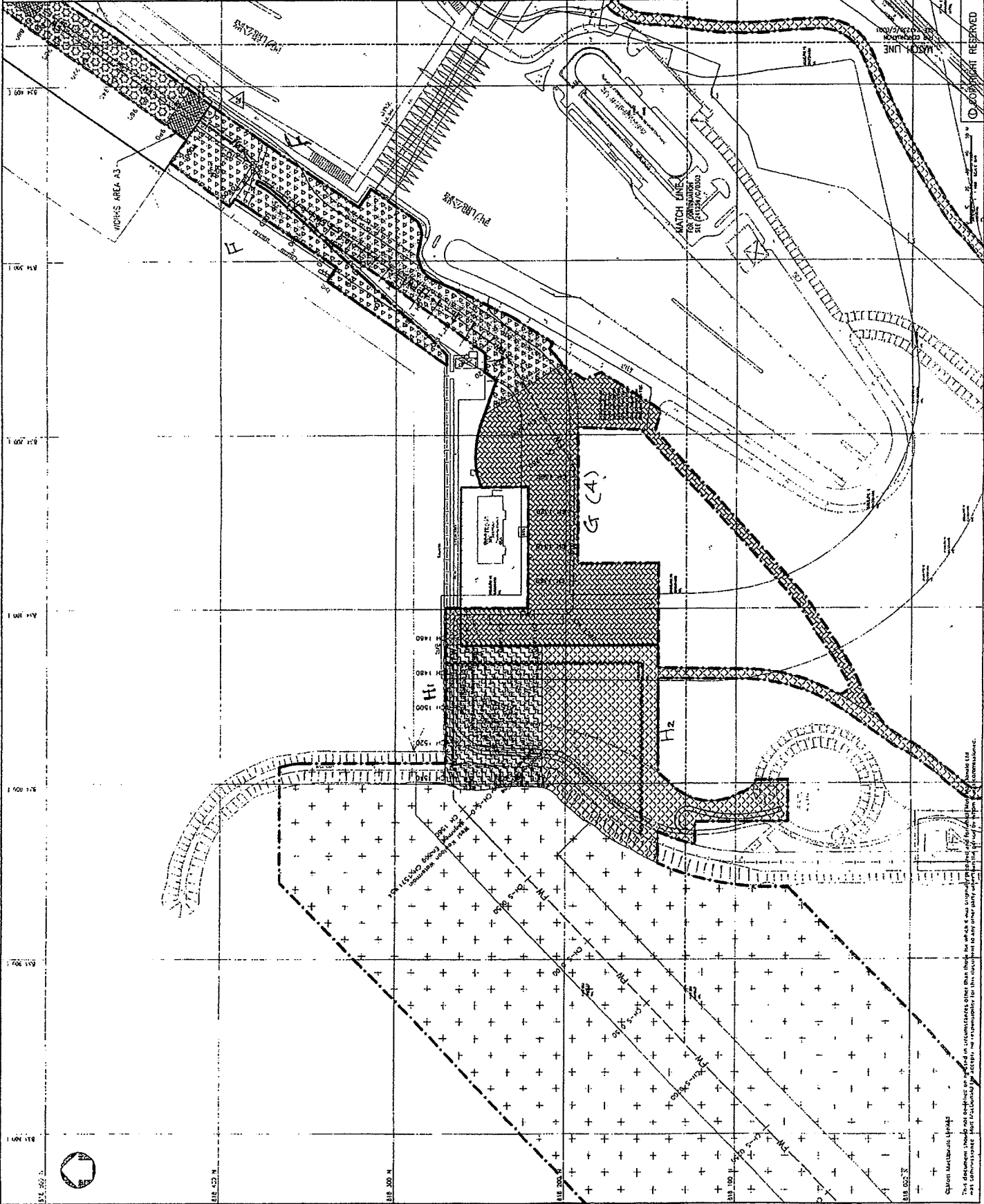
**Mott MacDonald**  
 THE HONG KONG SPECIAL ADMINISTRATIVE REGION WATER SUPPLIES DEPARTMENT

9/MSD/08

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

POSSESSION OF SITE (SHEET 2 OF 5)

PROJECT NO.	241239	DATE	24/12/08
DRAWN BY	PL	CHECKED BY	PL
SCALE	1:1000 @A1	SHEET NO.	TEN
TOTAL SHEETS	10	PROJECT NO.	241239
DATE OF ISSUE	24/12/08	PROJECT NAME	LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SHI YING PUN



This document should not be relied on as a basis for construction, other than those instances where it is specifically stated otherwise. It is the responsibility of the contractor to ensure that the design is fully understood and that all necessary precautions are taken during construction.

NOTES :

1. THIS DRAWING SHALL BE READ IN CONNECTION WITH DRAWING NO. 241239/G/0301 TO 0303 AND 0304 TO 0306.
2. THE LEGENDS SHALL REFER TO DRAWING NO. 241239/G/0301.



D1	DATE 09	TENDER REFERENCE NO. 3	21/172
D	DATE 08	PK. ISSUE FOR TENDER	01, 54C
	Scale	As shown	AS IN THIS PLAN
	Author	Checked	DATE
	Drawn	Approved	

Prepared by: Mott MacDonald Engineering Limited  
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**m Mott MacDonald**

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

Project No. 9/WSD/08

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

POSSESSION OF SITE (SHEET 3 OF 5)

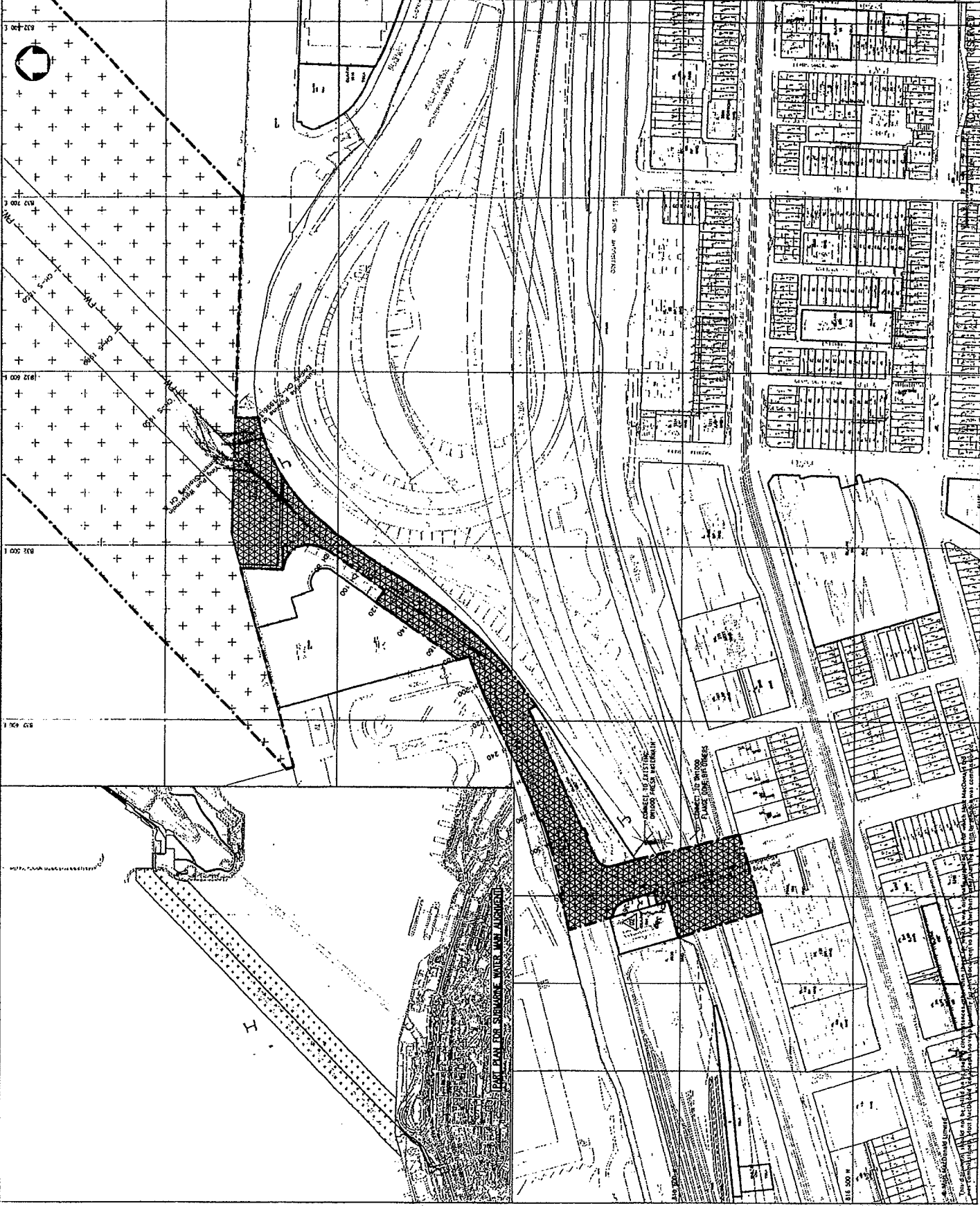
DESIGNER	SCALE	NO. OF SHEETS	NO. OF SHEETS	NO. OF SHEETS
DATE	DATE	DATE	DATE	DATE
PROJECT	PROJECT	PROJECT	PROJECT	PROJECT
SHEET NO.	SHEET NO.	SHEET NO.	SHEET NO.	SHEET NO.
1:1000 @A1	1:1000 @A1	1:1000 @A1	1:1000 @A1	1:1000 @A1
TEN	TEN	TEN	TEN	TEN
01	01	01	01	01

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241239/G/0303

01

NOTES :  
 1. THIS DRAWING SHALL BE READ IN CONNECTION WITH DRAWING NOS. 241129/G/0301 TO 0303 AND 0305.  
 2. THE LEGEND SHALL REFER TO DRAWING NO. 241129/G/0301.



DATE	DESCRIPTION	BY	CHECKED
01 APR 09	ISSUE FOR TENDER NO. 4	MM	MM
01 APR 09	ISSUE FOR TENDER NO. 3	MM	MM
01 APR 09	ISSUE FOR TENDER NO. 2	MM	MM
01 APR 09	ISSUE FOR TENDER NO. 1	MM	MM

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9/MSD/08

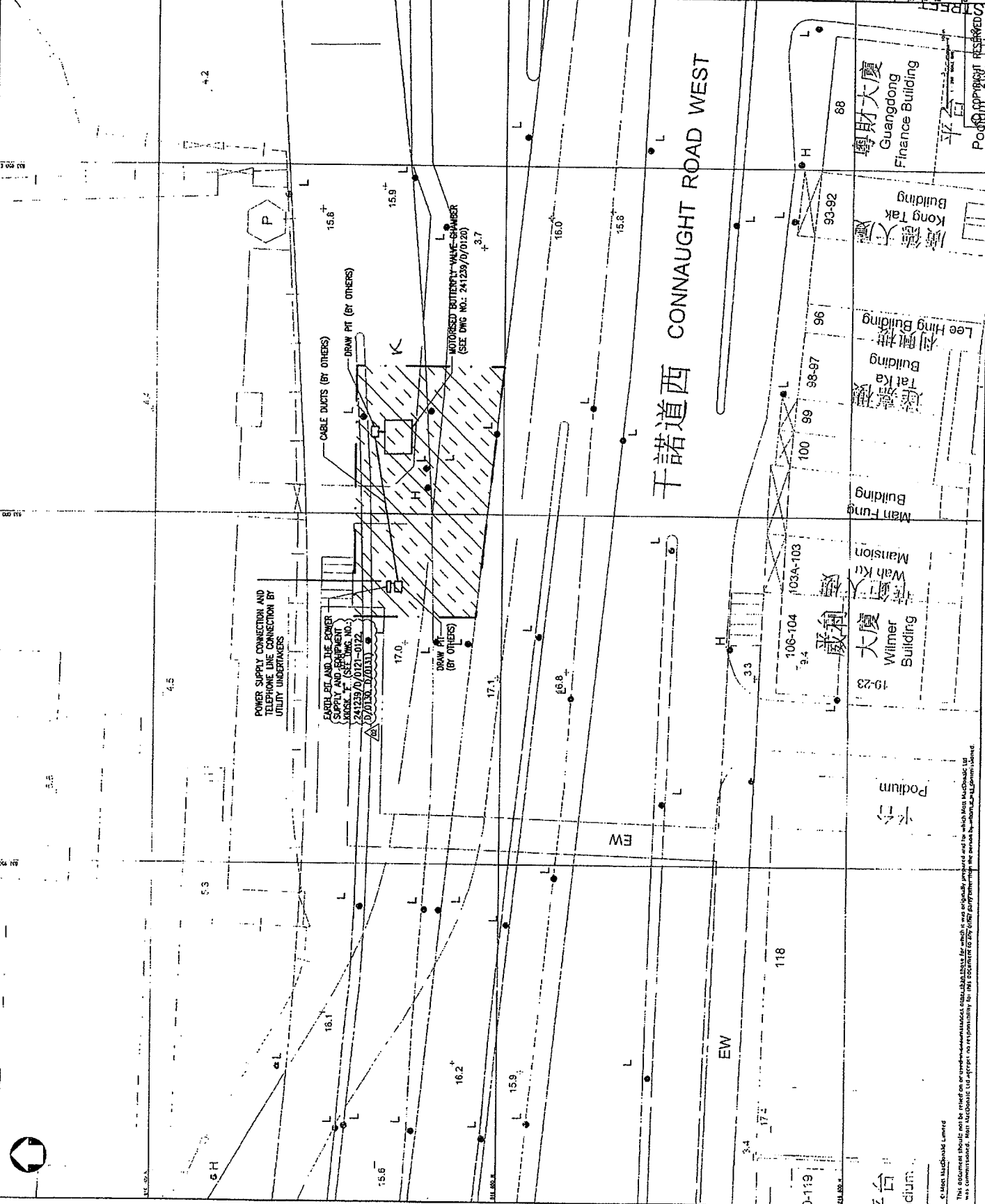
LAYING OF WESTERN CROSS HARBOUR MAIN  
 AND ASSOCIATED LAND MAINS FROM WEST  
 KOWLOON TO SAN YING PUN

POSSESSION OF SITE  
 (SHEET 4 OF 5)

PROJECT	NO.	DATE	SCALE	STATUS
241129	01	24/12/07	1:1000	ISSUED FOR TENDER
DATE	SCALE	STATUS		
24/12/07	1:1000	ISSUED FOR TENDER		

241129/G/0304 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.



02 FEB 09	✓	REVISION NO. 2	241239
01 JAN 09	✓	REVISION NO. 1	241239
00 DEC 08	✓	ISSUE FOR TENDER	241239
Rev	Date	Description	Drawn

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

Project No. 241239  
 Contract No. 9/NSD/08  
 9/NSD/08

LAYING OF WESTERN CROSS HARBOUR MAIN  
 AND ASSOCIATED LAND MAINS FROM WEST  
 KOWLOON TO SUN YING FUNG

POSSESSION OF SITE  
 (SHEET 5 OF 5)

Scale	1:250	Drawn By	10/11/08
Project	241239	Checked By	10/11/08
Sheet No.	5	Drawn By	10/11/08
Project No.	241239	Checked By	10/11/08
Contract No.	9/NSD/08	Drawn By	10/11/08

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## **Appendix I**

### **Monitoring Schedule for this Month and Coming Month**

Contract No. 9/WSD/08

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

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

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
	01-Aug	02-Aug	03-Aug	01-Sep	02-Sep	03-Sep
				WQM Mid-Flood 08:00 - 12:00 Mid-Ebb 13:30 - 17:30	NM (WK-Daytime)	WQM Mid-Flood 08:30 - 12:30 Mid-Ebb 14:00 - 18:00
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-Ebb 08:30 - 12:30 Mid-Flood 14:00 - 18:00
11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep	17-Sep
			NM (SYP-Daytime)	WQM Mid-Flood 07:00 - 11:00 Mid-Ebb 12:30 - 16:30	NM (WK-Daytime)	WQM Mid-Flood 08:00 - 12:00 Mid-Ebb 13:00 - 17:00
18-Sep	19-Sep	20-Sep	21-Sep	22-Sep	23-Sep	24-Sep
		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
25-Sep	26-Sep	27-Sep	28-Sep	29-Sep	30-Sep	01-Oct
		WQM Mid-Ebb 09:30 - 13:30 Mid-Flood 15:15 - 19:15 SI		WQM Mid-Flood 08:30 - 10:30 Mid-Ebb 12:00 - 16:00		



## **Appendix J**

### **Daily Dredging Summary**



<b>Wo Hing - Penta-Ocean Joint Venture</b>				
Contract no. 9/WSD/08				
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun				
<b>Summary of Dumping Qty. of Type 2 Marine Sediment</b>				
Date	Dumping qty (m <sup>3</sup> )	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

<b>Wo Hing - Penta-Ocean Joint Venture</b>				
Contract no. 9/WSD/08				
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun				
<b>Summary of Dumping Qty. of Type 2 Marine Sediment</b>				
Date	Dumping qty (m <sup>3</sup> )	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 (18 July 2010)	2,100	3	81,340	EP/MD/11-024
21-Jul-2010	700	1	82,040	EP/MD/11-024
22-Jul-2010	600	1	82,640	EP/MD/11-024
23-Jul-2010	1,400	2	84,040	EP/MD/11-024
24-Jul-2010	1,400	2	85,440	EP/MD/11-024
25-Jul-2010	1,400	2	86,840	EP/MD/11-024
26-Jul-2010	1,450	2	88,290	EP/MD/11-024
27-Jul-2010	2,200	3	90,490	EP/MD/11-024
28-Jul-2010	1,450	2	91,940	EP/MD/11-024
29-Jul-2010	1,500	2	93,440	EP/MD/11-024
30-Jul-2010	0	0	93,440	--
31-Jul-2010	0	0	93,440	--
01-Aug-2010	0	0	93,440	--
02-Aug-2010	0	0	93,440	--

<b>Wo Hing - Penta-Ocean Joint Venture</b>				
Contract no. 9/WSD/08				
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun				
<b>Summary of Dumping Qty. of Type 2 Marine Sediment</b>				
Date	Dumping qty (m <sup>3</sup> )	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
<b>TOTAL =</b>	<b>104,990</b>	<b>155</b>		

<b>Wo Hing - Penta-Ocean Joint Venture</b>					
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 <sup>3</sup> )	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



<b>Wo Hing - Penta-Ocean Joint Venture</b>					
Contract no. 9/WSD/08					
Laying of Western Cross Harbour Main & Associated Land Mains from					
West Kowloon to Sai Ying Pun					
<b>Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)</b>					
Date	Dumping qty (m <sup>3</sup> )	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

<b>Wo Hing - Penta-Ocean Joint Venture</b>					
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Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun					
<b>Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)</b>					
Date	Dumping qty (m <sup>3</sup> )	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

<b>Wo Hing - Penta-Ocean Joint Venture</b>					
Contract no. 9/WSD/08					
Laying of Western Cross Harbour Main & Associated Land Mains from					
West Kowloon to Sai Ying Pun					
<b>Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)</b>					
Date	Dumping qty (m <sup>3</sup> )	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

<b>Wo Hing - Penta-Ocean Joint Venture</b>					
Contract no. 9/WSD/08					
Laying of Western Cross Harbour Main & Associated Land Mains from					
West Kowloon to Sai Ying Pun					
<b>Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)</b>					
Date	Dumping qty (m <sup>3</sup> )	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



<b>Wo Hing - Penta-Ocean Joint Venture</b>					
Contract no. 9/WSD/08					
Laying of Western Cross Harbour Main & Associated Land Mains from					
West Kowloon to Sai Ying Pun					
<b>Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)</b>					
Date	Dumping qty (m <sup>3</sup> )	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

<b>Wo Hing - Penta-Ocean Joint Venture</b>					
Contract no. 9/WSD/08					
Laying of Western Cross Harbour Main & Associated Land Mains from West Kowloon to Sai Ying Pun					
<b>Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground / South Cheung Chau)</b>					
Date	Dumping qty (m <sup>3</sup> )	Barge Load per day	Accumulated Dumping Qty.	Permit No.	Mud Disposal Ground
	(bulk volume)		(bulk volume)		
15-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
16-May-2011	0	0	160,500	EP/MD/11-160	East Ninepin Mud Disposal Ground
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
<b>TOTAL =</b>	<b>160,500</b>	<b>274</b>			

**Wo Hing – Penta-Ocean Joint Venture**

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

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

Date	Working Hour fm 07:00 to 23:00 or 07:00 to 07:00 (next day)						Working Hour for overtime fm 19:00 to 23:00 or 19:00 to 07:00 (next day)					
	W Hours fm	W Hours to	Chainage fm	Chainage to	Offset fm	Offset to	OT Hours fm	OT Hours to	Chainage fm	Chainage to	Offset fm	Offset to
03-05-2010	-	-					-	-				
04-05-2010	7:00	23:00	1238	1244	0	+17	22:00	23:00	1238	1244	0	+17
05-05-2010	7:00	23:00	1244	1276	0	+17	19:00	23:00	1264	1276	0	+17
06-05-2010	7:00	23:00	1276	1280	0	+17	19:00	23:00	1252	1264	0	-17
			1238	1264	0	-17						
07-05-2010	7:00	19:00	1264	1264	0	-17	19:00	19:00				
08-05-2010	7:00	19:00	1264	1276	0	+17	19:00	19:00				
09-05-2010	7:00	23:00	1276	1304	0	-17	19:00	23:00	1284	1304	0	-17
10-05-2010	7:00	23:00	1304	1316	0	-17	19:00	23:00	1304	1316	0	-17
			1280	1316	0	+17						
11-05-2010	7:00	23:00	1316	1368	0	+17	19:00	23:00	1348	1368	0	+17
12-05-2010	7:00	23:00	1320	1368	0	-17	19:00	23:00	1348	1368	0	-17
13-05-2010	7:00	23:00	1368	1424	0	-17	19:00	23:00	1400	1424	0	-17
14-05-2010	-	-					-	-				
15-05-2010	7:00	23:00	1368	1376	0	+17	19:00	23:00	1368	1376	0	+17
16-05-2010	7:00	23:00	1376	1392	0	+17	19:00	23:00	1380	1392	0	+17
17-05-2010	7:00	23:00	1392	1416	0	+15.5	19:00	23:00	1416	1432	0	-15.5
			1416	1432	0	-15.5						
18-05-2010	7:00	23:00	1432	1468	0	+15	19:00	23:00	1452	1468	0	+15
19-05-2010	7:00	23:00	1424	1484	0	-15	19:00	23:00	1476	1484	0	-15
20-05-2010	7:00	23:00	1480	1500	0	+12.7	19:00	22:00	1480	1496	0	+14.1
			1472	1496	0	+14.1						
21-05-2010	7:00	23:00	1496	1536	0	+12.9	19:00	23:00	1496	1516	0	-12.9
			1496	1516	0	-12.9						
22-05-2010	7:00	23:00	1516	1572	0	-14.0	19:00	23:00	1564	1572	0	-14.0
			1536	1540	0	+13.1			1536	1540	0	+13.1
23-05-2010	7:00	23:00	1540	1592	0	+16.6	19:00	23:00	1580	1592	0	+16.6
24-05-2010	7:00	23:00	1572	1620	0	-17	19:00	23:00	1592	1620	0	-17
25-05-2010	7:00	23:00	1620	1656	0	+17	19:00	23:00	1608	1636	0	-17
			1608	1636	0	-17						
26-05-2010	7:00	23:00	1636	1660	0	-17	19:00	23:00	1664	1680	0	+17
			1656	1680	0	+17						
27-05-2010	7:00	23:00	1660	1708	0	-17	19:00	23:00	1680	1692	0	+16.8
			1680	1692	0	+16.8						
28-05-2010	7:00	23:00	1692	1712	0	+17	19:00	23:00	1716	1736	0	-16
			1708	1736	0	-16						
29-05-2010	7:00	23:00	1712	1752	0	+16	19:00	23:00	1748	1752	0	+16
			1736	1756	0	-16			1736	1756	0	-16
30-05-2010	7:00	23:00	1656	1800	0	-15	19:00	23:00	1752	1780	0	+16
			1752	1780	0	+16						
31-05-2010	7:00	23:00	1780	1820	0	+15	19:00	23:00	1800	1824	0	-15
			1800	1824	0	-15						
01-06-2010	7:00	23:00	1824	1848	0	-14	19:00	23:00	1820	1844	0	+14
			1820	1844	0	+14						
02-06-2010	7:00	23:00	1844	1876	0	+14	19:00	23:00	1848	1864	0	-14
			1848	1864	0	-14						
03-06-2010	7:00	23:00	1872	1908	0	+13	19:00	19:45	1864	1868	0	-13
			1864	1876	0	-13						
04-06-2010	7:00	23:00	1868	1932	0	-13	19:00	23:00	1868	1932	0	-13
05-06-2010	7:00	23:00	1908	1960	0	+12	19:00	23:00	1944	1960	0	+12
06-06-2010	7:00	23:00	1932	1960	0	-12	19:00	21:00	1960	1970	0	+12
			1960	1970	0	+12						
07-06-2010	7:00	23:00	1960	1970	0	-16	19:00	20:00	1974	1980	0	+12
			1970	1980	0	+12						
08-06-2010	7:00	14:40	1250	1300	0	+19	-	-				
09-06-2010	7:00	23:00	-	-			-	-				
10-06-2010	7:00	23:00	1300	1390	+19	-19	19:00	23:00	1300	1390	+4	+19
11-06-2010	7:00	23:00	1390	1530	+16	-16	19:00	23:00	1490	1530	+16	-16
12-06-2010	7:00	23:00	1530	1665	+18	-18	19:00	23:00	1630	1665	+18	-18
13-06-2010	7:00	23:00	1665	1780	+18	-18	19:00	23:00	1750	1780	+18	-18
	23:00	7:00	1130	1142	-4	-21	23:00	7:00	1130	1142	-4	-21
14-06-2010	7:00	7:00	1142	1174	-4.7	-20.7	19:00	7:00	1162	1174	-4.7	-20.7
15-06-2010	7:00	7:00	1130	1162	+4.7	+20.7	19:00	7:00	1142	1162	+4.7	+20.7
16-06-2010	7:00	7:00	1162	1214	+4.7	+20.7	19:00	7:00	1182	1214	+4.7	+20.7
17-06-2010	7:00	7:00	1214	1222	+4.7	+20.7						
			1174	1210	-4.7	-20.7	19:00	7:00	1186	1210	-4.7	-20.7
18-06-2010	7:00	7:00	1130	1190	+8	-8	19:00	7:00	1158	1190	+8	-8
19-06-2010	7:00	7:00	1190	1238	+8.5	-8.5	19:00	7:00	1214	1238	+8.5	-8.5
20-06-2010	7:00	7:00	1266	1210	-4.5	-20.5	19:00	7:00	1222	1210	-4.5	-20.5
			1226	1250	+4.5	+20.5			1226	1250	+4.5	+20.5
21-06-2010	7:00	7:00	1250	1282	+5.5	+20.5						
			1238	1150	+8.5	-8.5	19:00	7:00	1262	1150	+8.5	-8.5
22-06-2010	7:00	7:00	1266	1302	-5.5	-20.5	19:00	7:00	1266	1302	-5.5	-20.5
			1262	1298	+8.5	-8.5			1262	1298	+8.5	-8.5
			1150	1162	+8.5	-8.5			1150	1162	+8.5	-8.5
23-06-2010	7:00	7:00	1282	1326	+5.5	+20.5						
			1298	1338	+8.5	-8.5	19:00	7:00	1324	1338	+8.5	-8.5
			1162	1188	+8.5	-8.5			1162	1188	+8.5	-8.5
24-06-2010	7:00	7:00	1346	1358	-5.5	-20.5						
			1338	1364	+7.5	-7.5	19:00	7:00	1350	1364	+7.5	-7.5
			1188	1208	+8.5	-8.5			1188	1208	+8.5	-8.5
25-06-2010	7:00	7:00	1364	1412	+7.5	-7.5	19:00	7:00	1392	1412	+7.5	-7.5

**Wo Hing – Penta-Ocean Joint Venture**

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

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

Date	Working Hour fm 07:00 to 23:00 or 07:00 to 07:00 (next day)						Working Hour for overtime fm 19:00 to 23:00 or 19:00 to 07:00 (next day)					
	W Hours fm	W Hours to	Chainage fm	Chainage to	Offset fm	Offset to	OT Hours fm	OT Hours to	Chainage fm	Chainage to	Offset fm	Offset to
26-06-2010	7:00	23:00	1206	1250	+8.5	-8.5	19:00	23:00	1206	1250	+8.5	-8.5
			1306	1400	-7.5	-20.5			1380	1400	-7.5	-20.5
			1412	1444	+7.5	-7.5			1412	1444	+7.5	-7.5
			1362	1366	+5	+20			1362	1366	+5	+20
27-06-2010	7:00	23:00	1326	1448	+7.5	+20.5	19:00	23:00	1400	1448	+7.5	+20.5
			1400	1436	-7.5	-20.5	1400	1436	-7.5	-20.5		
28-06-2010	7:00	23:00	1448	1480	+7.5	+20	19:00	23:00	1448	1468	+7.5	-7.5
			1444	1468	+7.5	-7.5			1436	1456	-7.5	-20
			1436	1456	-7.5	-20						
29-06-2010	7:00	23:00	1456	1500	-7.5	-20	19:00	20:00	1496	1500	+7.5	-7.5
			1468	1500	+7.5	-7.5			23:00	7:00	1076	1100
30-06-2010	7:00	7:00	1076	1100	0	-16			1064	1100	0	+16
			1048	1076	0	-16	19:00	7:00	1020	1064	0	+16
01-07-2010	7:00	7:00	1064	1100	0	+16	19:00	7:00	1020	1048	0	+16
			1020	1064	0	-16	1032	1036	0	-16		
02-07-2010	7:00	7:00	1000	1032	0	16	19:00	7:00	1000	1008	0	16
			992	1020	0	+16	992	1020	0	+16		
03-07-2010	7:00	18:00	968	992	0	+16	-	-				
			04-07-2010	7:00	7:00	944	968	0	+16			
05-07-2010	7:00	7:00	956	1000	0	-16	19:00	7:00	956	1000	0	-16
			944	976	0	-16						
06-07-2010	7:00	7:00	798	850	0	+17	19:00	7:00	798	832	0	+17
			838	850	0	-17	838	850	0	-17		
07-07-2010	7:00	7:00	782	838	0	-17	20:50	7:00	782	826	0	-17
			758	782	0	-16	19:00	7:00	758	774	0	-16
08-07-2010	7:00	7:00	774	798	0	+16			774	798	0	+16
			728	774	0	+17						
09-07-2010	7:00	7:00	696	750	0	-17	19:00	7:00	696	750	0	-17
			666	710	0	+17	19:00	7:00	666	670	0	+17
10-07-2010	7:00	7:00	682	710	0	-17			682	710	0	-17
			654	682	0	-17	19:00	7:00	654	662	0	-17
11-07-2010	7:00	7:00	634	666	0	+17			634	666	0	+17
			622	654	0	-17	20:55	1:10	622	642	0	-17
12-07-2010	7:00	7:00	602	622	0	-17						
			602	634	0	+17	19:00	7:00	602	626	0	+17
13-07-2010	7:00	7:00	570	602	0	+17	19:00	7:00	570	598	0	+17
			574	602	0	-17	574	582	0	-17		
14-07-2010	7:00	7:00	558	570	0	+17	21:00	7:00	558	570	0	+17
			562	574	0	-17	562	574	0	-17		
15-07-2010	7:00	7:00	546	562	0	-17						
			530	558	0	+17	21:15	7:00	530	558	0	+17
16-07-2010	7:00	7:00	526	546	0	-17	19:00	7:00	526	538	0	-17
			526	536	0	+17	526	530	0	+17		
17-07-2010	7:00	19:00	-	-			-	-				
18-07-2010	7:00	23:00	260	300	0	-17	19:00	23:00	260	276	0	-17
19-07-2010	7:00	23:00	248	300	0	+17	19:00	21:15	248	256	0	+17
20-07-2010	7:00	23:00	232	260	0	-15						
			224	248	0	+15	19:00	23:00	224	236	0	+15
21-07-2010	7:00	19:00	216	232	0	-15	-	-				
22-07-2010	7:00	19:00	-	-			-	-				
23-07-2010	07:00	23:00	200	216	0	-15						
			208	224	0	+15						
			204	224	0	+15	19:00	23:00	204	224	0	+15
			176	184	0	-15	19:00	20:50	176	184	0	-15
24-07-2010	07:00	23:00	172	176	0	-15	21:00	23:00	172	176	0	-15
			200	204	0	+15	21:00	23:00	200	204	0	+15
25-07-2010	07:00	23:00	172	200	0	+15						
			172	192	0	+15	19:00	22:40	172	192	0	+15
26-07-2010	07:00	23:00	168	172	0	+15						
			148	172	0	-15						
27-07-2010	07:00	23:00	152	168	0	+15	19:20	23:00	152	168	0	+15
			128	152	0	+15						
28-07-2010	07:00	23:00	128	136	0	+15	19:00	21:00	128	136	0	+15
			124	128	0	+15	21:45	23:00	124	128	0	+15
29-07-2010	07:00	23:00	124	148	0	-15						
			124	136	0	-15	19:00	20:20	124	136	0	-15
30-07-2010	07:00	23:00	116	124	0	-15	20:30	23:00	116	124	0	-15
			88	116	0	-15						
31-07-2010	7:00	23:00	88	100	0	-15	19:00	20:45	88	100	0	-15
			1480	1528	+5	+20.5						
01-08-2010	7:00	23:00	1480	1528	+5	+20.5	19:00	22:45	1480	1528	+5	+20.5
			1500	1508	+7.5	-7.5	19:00	22:45	1500	1508	+7.5	-7.5
			1500	1548	-5	-20.5						
			1508	1516	+7.5	-7.5						
			1516	1540	+7.5	-7.5	19:00	20:45	1516	1540	+7.5	-7.5
01-08-2010	7:00	23:00	1540	1548	+7.5	-7.5	20:30	23:00	1540	1548	7.5	-7.5
			1528	1572	+5	+20.5						
			1548	1568	-5	-20.5						
			1548	1556	+7.5	-7.5						

**Wo Hing – Penta-Ocean Joint Venture**

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

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

Date	Working Hour fm 07:00 to 23:00 or 07:00 to 07:00 (next day)						Working Hour for overtime fm 19:00 to 23:00 or 19:00 to 07:00 (next day)					
	W Hours fm	W Hours to	Chainage fm	Chainage to	Offset fm	Offset to	OT Hours fm	OT Hours to	Chainage fm	Chainage to	Offset fm	Offset to
02-08-2010	7:00	19:00	1556	1576	7.5	-7.5	19:00	23:00	1556	1576	7.5	-7.5
			1556	1576	7.5	-7.5						
			1572	1608	+5	+20.5						
03-08-2010	7:00	23:00	1576	1596	+7.5	-7.5						
			1568	1620	-5	-20.5						
			1596	1604	-7.5	+7.5						
04-08-2010	7:00	23:00	1604	1612	-7.5	+7.5	21:10	23:00	1596	1604	-7.5	+7.5
05-08-2010	7:00	19:00	1608	1636	+7.5	+20.5	19:00	21:40	1604	1612	-7.5	+7.5
06-08-2010	7:00	23:00	112	124	0	+15						
			84	112	0	+15						
			76	84	0	+15						
07-08-2010	7:00	23:00	68	76	0	+15	19:00	23:00	84	112	0	+15
			76	84	0	+15			76	84	0	+15
			68	76	0	+15			68	76	0	+15
08-08-2010	7:00	23:00	60	68	0	+15						
			72	88	0	-15						
			56	72	0	-15						
09-08-2010	7:00	23:00	52	56	0	-15	19:00	23:00	56	72	0	-15
			36	52	0	-15			52	56	0	-15
			20	36	0	-15			20	36	0	-15
10-08-2010	7:00	19:00	56	60	0	+15						
			54	56	0	+15						
			32	49	0	+15						
11-08-2010	7:00	7:00	0	32	0	+15	19:00	22:55	0	32	0	+15
			0	20	0	-15			0	20	0	-15
			1118	1130	-5	-20			1118	1130	-5	-20
12-08-2010	7:00	7:00	1110	1118	-5	-20						
			1122	1130	+7.5	-7.5						
			1110	1122	+7.5	-7.5						
13-08-2010	7:00	7:00	1122	1130	+5	+20	19:00	7:00	1122	1130	+5	+20
			1114	1122	+5	+20						
			1086	1114	+5	+20						
14-08-2010	7:00	7:00	1102	1110	+7.5	-7.5	19:00	7:00	1086	1114	+5	+20
			1098	1110	-5	-20						
			1078	1086	-5	-20						
15-08-2010	7:00	7:00	1078	1102	+7.5	-7.5	23:30	7:00	1078	1102	+7.5	-7.5
			1070	1078	+7.5	-7.5						
			1070	1098	-5	-20						
16-08-2010	7:00	7:00	1066	1078	+5	+20	19:00	20:10	1066	1078	+5	+20
			1066	1070	+7.5	-7.5			1066	1070	+7.5	-7.5
			1058	1066	+7.5	-7.5			1058	1066	+7.5	-7.5
17-08-2010	7:00	7:00	1026	1070	-5	-17.5	3:25	7:00	1026	1070	-5	-17.5
			1046	1058	+7.5	-7.5						
			1030	1046	-7.5	+7.5						
18-08-2010	7:00	7:00	1030	1046	-7.5	+7.5	21:55	2:30	1030	1046	-7.5	+7.5
			1026	1036	-7.5	+7.5						
			1038	1066	+5	+17.5						
19-08-2010	7:00	7:00	1018	1038	+5	+17.5	19:00	23:05	1038	1066	+5	+17.5
			1018	1026	-7.5	+7.5						
			986	1018	+5	+17.5						
20-08-2010	7:00	7:00	1006	1026	-5	-17.5	20:55	2:50	1006	1026	-5	-17.5
			1010	1018	-7.5	+7.5						
			1002	1010	-7.5	+7.5						
21-08-2010	7:00	7:00	994	1002	+7.5	-7.5	19:00	7:00	994	1002	+7.5	-7.5
			978	994	+7.5	-7.5						
			966	1006	-5	-17.5						
22-08-2010	7:00	7:00	958	986	+5	+17.5	19:00	20:50	986	1018	+5	+17.5
			970	978	+7.5	-7.5						
			950	970	+7.5	-7.5						
23-08-2010	7:00	7:00	942	950	+7.5	-7.5	19:00	7:00	942	950	+7.5	-7.5
			938	942	+7.5	-7.5						
			942	966	-5	-17.5						
24-08-2010	7:00	19:00	938	958	+5	+17.5	19:00	1:35	938	958	+5	+17.5
			-	-								
			628	640	+7.5	-7.5						
25-08-2010	7:00	7:00	612	628	+7.5	-7.5	21:10	2:15	612	628	+7.5	-7.5
			596	620	+7.5	-7.5						
			580	596	+7.5	-7.5						
26-08-2010	7:00	7:00	572	580	+7.5	-7.5	22:10	3:15	572	596	+7.5	-7.5
			552	572	+7.5	-7.5						
			536	552	+7.5	-7.5						
27-08-2010	7:00	7:00	528	536	+7.5	-7.5	19:55	1:50	536	552	+7.5	-7.5
			520	528	+7.5	-7.5						
			564	572	-20	-5						
28-08-2010	7:00	7:00	588	620	+7.5	-7.5	2:30	7:00	528	536	+7.5	-7.5
			564	588	+7.5	-7.5						
			540	564	+7.5	-7.5						
29-08-2010	7:00	7:00	552	564	-5	-20	19:00	0:50	588	620	+7.5	-7.5
			520	552	-5	-20						
			564	580	+5	+20						
30-08-2010	7:00	7:00	520	564	+5	+20	0:00	7:00	552	564	-5	-20
			512	520	-7	+7						
			508	512	-7	+7						
31-08-2010	7:00	7:00	500	508	-7	-5	19:00	0:50	508	512	-7	+7
			850	870	0	+17.5						

**Wo Hing – Penta-Ocean Joint Venture**

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

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

Date	Working Hour fm 07:00 to 23:00 or 07:00 to 07:00 (next day)						Working Hour for overtime fm 19:00 to 23:00 or 19:00 to 07:00 (next day)							
	W Hours fm	W Hours to	Chainage fm	Chainage to	Offset fm	Offset to	OT Hours fm	OT Hours to	Chainage fm	Chainage to	Offset fm	Offset to		
31-08-2010	7:00	7:00	850	870	0	-17.5	1:00	6:00	850	870	0	-17.5		
			914	922	+7.5	-7.5			914	922	+7.5	-7.5		
			914	938	+5	+17.5			19:00	7:00	914	938	+5	+17.5
			910	914	+5	+17.5			910	914	+5	+17.5		
			918	938	+7.5	-7.5			918	938	+7.5	-7.5		
01-09-2010	7:00	7:00	926	938	-5	-17.5	19:00	21:15	926	938	-5	-17.5		
			910	926	-5	-17.5			910	926	-5	-17.5		
			902	918	+7.5	-7.5			22:35	3:45	902	918	+7.5	-7.5
02-09-2010	7:00	7:00	902	914	+5	-17.5	5:05	7:00	902	914	+5	-17.5		
			878	902	+5	+17.5			878	902	+5	+17.5		
			902	910	-5	-17.5			902	910	-5	-17.5		
03-09-2010	7:00	7:00	882	902	-5	-17.5	19:35	1:15	882	902	-5	-17.5		
			894	902	+7.5	-7.5			4:25	7:00	894	902	+7.5	-7.5
			870	894	+7.5	-7.5			870	894	+7.5	-7.5		
			850	878	+5	+17.5			19:35	7:00	850	878	+5	+17.5
04-09-2010	7:00	7:00	858	882	-5	-17.5	19:00	7:00	858	882	-5	-17.5		
			846	858	-5	-17.5			846	858	-5	-17.5		
			854	870	+7.5	-7.5			19:00	7:00	854	870	+7.5	-7.5
05-09-2010	7:00	6:00	822	834	+5	+17.5	19:00	6:00	822	834	+5	+17.5		
			822	834	+5	+17.5			822	834	+5	+17.5		
			834	850	+5	+17.5			834	850	+5	+17.5		
			834	854	+7.5	-7.5			19:00	6:00	834	854	+7.5	-7.5
06-09-2010	7:00	7:00	814	834	+7.5	-7.5	19:00	7:00	814	834	+7.5	-7.5		
			798	822	-5	-17.5			798	822	-5	-17.5		
			810	822	+5	+17.5			810	822	+5	+17.5		
			810	814	+5	+17.5			810	814	+5	+17.5		
			794	814	+7.5	-7.5			794	814	+7.5	-7.5		
07-09-2010	7:00	23:00	778	794	+7.5	-7.5	19:00	7:00	778	794	+7.5	-7.5		
			778	798	-5	-17.5			778	798	-5	-17.5		
			778	798	+7.5	-7.5			778	798	+7.5	-7.5		
			766	778	+7.5	-7.5			766	778	+7.5	-7.5		
			778	798	+5	+17.5			19:00	20:55	778	798	+5	+17.5
08-09-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
09-09-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
10-09-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
11-09-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
12-09-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
13-09-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
14-09-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
15-09-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
16-09-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
17-09-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
18-09-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
19-09-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
20-09-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
21-09-2010	7:00	7:00	444	452	+7.5	-7.5	20:30	4:30	444	452	+7.5	-7.5		
22-09-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
23-09-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
24-09-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
25-09-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
26-09-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
27-09-2010	7:00	23:00	440	444	+7.5	-7.5	20:35	21:00	440	444	+7.5	-7.5		
28-09-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
29-09-2010	7:00	23:00	432	444	+7.5	-7.5	19:00	23:00	432	444	+7.5	-7.5		
30-09-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
01-10-2010	7:00	23:00	429	432	+7.5	-7.5	19:00	23:00	429	432	+7.5	-7.5		
02-10-2010	7:00	7:00	440	452	+7.5	-7.5	19:00	23:30	440	452	+7.5	-7.5		
			754	778	+17.5	+5			19:00	23:30	754	778	+17.5	+5
			770	778	-17.5	-5			4:35	7:00	770	778	-17.5	-5
			746	770	-5	-17.5			746	770	-5	-17.5		
			734	754	+7.5	-7.5			19:00	22:55	734	754	+7.5	-7.5
04-10-2010	7:00	7:00	742	754	+5	+17.5	4:25	7:00	742	754	+5	+17.5		
			726	742	+5	+17.5			726	742	+5	+17.5		
			722	734	+7.5	-7.5			0:15	7:00	722	734	+7.5	-7.5
05-10-2010	7:00	7:00	718	722	+7.5	-7.5	19:00	7:00	718	722	+7.5	-7.5		
			710	746	-5	-17.5			710	746	-5	-17.5		
			702	726	+5	+17.5			702	726	+5	+17.5		
06-10-2010	7:00	7:00	706	718	+7.5	-7.5	19:00	7:00	706	718	+7.5	-7.5		
			698	710	-5	-17.5			698	710	-5	-17.5		
			690	706	+7.5	-7.5			690	706	+7.5	-7.5		
			682	690	+7.5	-7.5			682	690	+7.5	-7.5		
			666	702	+17.5	+5			666	702	+17.5	+5		
			682	698	-5	-17.5			682	698	-5	-17.5		
07-10-2010	7:00	7:00	662	682	-5	-17.5	19:00	7:00	662	682	-5	-17.5		
			654	682	+7.5	-7.5			654	682	+7.5	-7.5		
			638	662	-5	-17.5			638	662	-5	-17.5		
			646	654	+7.5	-7.5			646	654	+7.5	-7.5		
			650	666	+5	+17.5			650	666	+5	+17.5		
08-10-2010	7:00	23:00	606	650	+5	+17.5	19:00	21:55	606	650	+5	+17.5		
09-10-2010	7:00	7:00	632	650	+7.5	-7.5	19:00	19:15	632	650	+7.5	-7.5		
10-10-2010	7:00	7:00	572	638	-5	-17.5	19:00	6:00	572	638	-5	-17.5		
11-10-2010	7:00	7:00	602	606	+5	+17.5	602	606	+5	+17.5				
			580	602	+5	+17.5	580	602	+5	+17.5				

**Wo Hing – Penta-Ocean Joint Venture**

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

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

Date	Working Hour fm 07:00 to 23:00 or 07:00 to 07:00 (next day)						Working Hour for overtime fm 19:00 to 23:00 or 19:00 to 07:00 (next day)								
	W Hours fm	W Hours to	Chainage fm	Chainage to	Offset fm	Offset to	OT Hours fm	OT Hours to	Chainage fm	Chainage to	Offset fm	Offset to			
12-10-2010	7:00	7:00	640	646	+7.5	-7.5	19:00	7:00	496	512	+5	+20			
			512	520	+5	+20			508	520	-5	-20			
			496	512	+5	+20			508	520	-5	-20			
			508	520	-5	-20			492	500	-5	-20			
			500	508	-5	-20			492	500	+7.5	-7.5			
			492	500	-5	-20			480	492	+7.5	-7.5			
13-10-2010	7:00	7:00	480	492	+7.5	-7.5	21:15	4:00	480	492	+7.5	-7.5			
			472	480	-5	-20	4:00	7:00	472	480	-5	-20			
			472	496	+5	+20	19:00	7:00	476	480	+7.5	-7.5			
			476	480	+7.5	-7.5			460	472	-5	-20			
14-10-2010	7:00	7:00	460	472	-5	-20	19:00	7:00	460	472	-5	-20			
			456	460	-5	-20			456	460	-5	-20			
			468	472	+5	+20			19:00	20:50	448	456	-5	-20	
			472	476	+7.5	-7.5					462	468	+5	+20	
15-10-2010	7:00	7:00	448	456	-5	-20	20:55	1:50	452	462	+5	+20			
			462	468	+5	+20	6:30	7:00	448	452	+5	+20			
			452	462	+5	+20	19:00	23:10	424	436	+7.5	-7.5			
			448	452	+5	+20			23:15	4:15	436	448	-5	-20	
			16-10-2010	7:00	7:00	436	472	+7.5	-7.5	4:20	7:00	444	452	+5	+20
						424	436	+7.5	-7.5	19:00	6:30	412	420	-5	-20
436	448	-5				-20	416	424	+7.5			-7.5			
444	452	+5				+20	436	444	+20	+5					
420	436	-5				-20	432	436	+20	+5					
420	432	+20				+5	19:00	0:00	392	404	+5	+20			
412	420	-5	-20	404	436	-5			-20						
17-10-2010	7:00	7:00	404	420	+5	+20	0:45	5:15	440	460	+7.5	-7.5			
			392	404	+5	+20	5:25	6:30	436	440	+7.5	-7.5			
			404	436	-5	-20	7:00	7:00	396	400	+7.5	-7.5			
			440	460	+7.5	-7.5	19:00	23:30	376	404	-5	-20			
			436	440	+7.5	-7.5			0:10	5:00	436	460	+5	+20	
			18-10-2010	7:00	7:00	396	400	+7.5	-7.5	5:30	7:00	372	376	-5	-20
376	396	+7.5				-7.5	19:00	20:05	356	372	-5	-20			
368	392	+20				+5			21:20	2:45	360	368	+5	+20	
376	404	-5				-20	456	480	-5	-20					
436	460	+5				+20	436	456	-5	-20					
372	376	-5				-20	356	360	+5	+20					
19-10-2010	7:00	7:00	360	376	+7.5	-7.5	19:00	21:10	336	340	+7.5	-7.5			
			348	360	+7.5	-7.5			348	356	+5	+20			
			356	372	-5	-20	21:20	23:00	340	348	+5	+20			
			360	368	+5	+20	19:00	23:00	336	356	-5	-20			
			456	480	-5	-20			430	460	+7.5	-7.5			
			20-10-2010	7:00	23:00	436	456	-5	-20	19:00	23:00	316	336	-5	-17.5
356	360	+5				+20	0:00	2:00	480			500	-5	-20	
340	348	+7.5				-7.5	2:05	7:00	460	500	+5	+20			
336	340	+7.5				-7.5	19:00	23:00	284	304	+7.5	-7.5			
348	356	+5				+20			280	284	+7.5	-7.5			
21-10-2010	7:00	19:00				340	348	+5	+20	19:00	23:00	264	276	+7.5	-7.5
			296	320	+20	+5	260	284	-5			-17.5			
			316	336	-5	-17.5	19:00	23:00	252	264	+7.5	-7.5			
			480	500	-5	-20			248	252	+7.5	-7.5			
			22-10-2010	7:00	19:00	460	500	+5	+20	19:00	22:00	240	256	-5	-17.5
						320	328	+7.5	-7.5			216	240	0	-12.5
328	336	+7.5				-7.5	19:00	22:00	236	240	+12.5	0			
296	320	+20				+5			204	236	0	+12.5			
23-10-2010	7:00	7:00				316	336	-5	-17.5	19:00	22:55	180	216	0	-12.5
						480	500	-5	-20			176	204	+12.5	0
			460	500	+5	+20	19:00	21:50	176	204	+12.5	0			
			320	328	+7.5	-7.5			172	180	0	-12.5			
			24-10-2010	7:00	7:00	284	304	+7.5	-7.5	19:00	23:00	240	256	-5	-17.5
						280	284	+7.5	-7.5			216	240	0	-12.5
260	296	+5				+17.5	19:00	23:00	236	240	+12.5	0			
276	280	+7.5				-7.5			204	236	0	+12.5			
25-10-2010	7:00	23:00				264	276	+7.5	-7.5	19:00	22:00	240	256	-5	-17.5
						260	284	-5	-17.5			216	240	0	-12.5
			252	264	+7.5	-7.5	19:00	22:00	236	240	+12.5	0			
			248	252	+7.5	-7.5			204	236	0	+12.5			
			26-10-2010	7:00	23:00	188	260	+5	+17.5	19:00	22:55	180	216	0	-12.5
						240	248	+7.5	-7.5			176	204	+12.5	0
256	260	-5				-17.5	19:00	21:50	176	204	+12.5	0			
240	256	-5				-17.5			172	180	0	-12.5			
27-10-2010	7:00	19:00				216	240	0	-12.5	19:00	22:55	180	216	0	-12.5
						236	240	+12.5	0			176	204	+12.5	0
			204	236	0	+12.5	19:00	21:50	176	204	+12.5	0			
			180	216	0	-12.5			172	180	0	-12.5			
			28-10-2010	7:00	23:00	176	204	+12.5	0	19:00	21:50	176	204	+12.5	0
						172	180	0	-12.5			172	180	0	-12.5

Wo Hing – Penta-Ocean Joint Venture

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

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

Date	Working Hour fm 07:00 to 23:00 or 07:00 to 07:00 (next day)						Working Hour for overtime fm 19:00 to 23:00 or 19:00 to 07:00 (next day)					
	W Hours fm	W Hours to	Chainage fm	Chainage to	Offset fm	Offset to	OT Hours fm	OT Hours to	Chainage fm	Chainage to	Offset fm	Offset to
31-10-2010	7:00	23:00	168	172	0	-12.5	22:05	23:00	168	172	0	-12.5
			140	168	0	-12.5	19:00	23:00	140	168	0	-12.5
			136	176	0	+12.5			136	176	0	+12.5
01-11-2010	7:00	23:00	128	136	0	+12.5			128	136	0	+12.5
			104	128	+12.5	0						
			116	140	0	-12.5	19:00	23:00	116	140	0	-12.5
02-11-2010	7:00	23:00	112	116	0	-12.5			112	116	0	-12.5
			80	112	0	-12.5						
			84	104	0	+12.5	19:00	21:55	84	104	0	+12.5
03-11-2010	7:00	20:30	60	84	+12.5	0						
			60	80	+17.5	+15						
			48	80	0	-12.5	19:00	20:30	48	80	0	-12.5
04-11-2010	7:00	23:00	24	48	0	-12.5	19:00	23:00	24	48	0	-12.5
			48	60	0	+12.5			48	60	0	+12.5
			24	48	0	+12.5	19:00	22:45	24	48	0	+12.5
05-11-2010	7:00	23:00	4	24	0	+12.5			4	24	0	+12.5
			6	24	0	-12.5	19:00	23:00	6	24	0	-12.5
			0	4	0	+12.5			0	4	0	+12.5
07-11-2010	7:00	20:00	0	-12	0	+16						
08-11-2010	7:00	23:00	-12	-18.5	0	+16	19:00	20:00	-12	-18.5	0	+16
09-11-2010	7:00	23:00	240	256	+5	-5	19:00	23:00	240	256	+5	-5
10-11-2010	7:00	23:00	256	280	+5	-5						
11-11-2010	7:00	23:00	280	308	+5	-5	19:00	23:00	280	308	+5	-5
12-11-2010	7:00	19:00	-	-	-	-	-	-	-	-	-	-
13-11-2010	7:00	19:00	-	-	-	-	-	-	-	-	-	-
14-11-2010	7:00	19:00	-	-	-	-	-	-	-	-	-	-
15-11-2010	7:00	19:00	-	-	-	-	-	-	-	-	-	-
16-11-2010	7:00	19:00	-	-	-	-	-	-	-	-	-	-
17-11-2010	7:00	7:00	504	536	+5	-5	18:30	22:20	504	536	+5	-5
			500	504	+5	-5	0:25	5:30	500	504	+5	-5
			470	500	+15	+5			470	500	+15	+5
18-11-2010	7:00	7:00	476	500	+5	-5			476	500	+5	-5
			444	476	+5	-5						
			396	444	+5	-5	19:00	23:40	396	444	+5	-5
19-11-2010	7:00	7:00	430	470	+15	+5	0:10	4:30	430	470	+15	+5
			392	396	+5	-5	5:55	8:00	392	396	+5	-5
			364	392	+5	-5						
20-11-2010	7:00	7:00	320	364	+5	-5	19:00	22:10	320	364	+5	-5
			460	520	-5	-15	23:20	3:15	460	520	-5	-15
			304	320	+5	-5	5:00	7:00	304	320	+5	-5
21-11-2010	7:00	7:00	620	636	+5	-5						
			636	668	+5	-5	19:00	0:40	636	668	+5	-5
			668	688	+5	-5	2:55	7:00	668	688	+5	-5
22-11-2010	7:00	7:00	688	700	+5	-5						
			700	732	+5	-5	19:00	21:00	700	732	+5	-5
			732	760	+5	-5	21:50	3:00	732	760	+5	-5
23-11-2010	7:00	7:00	760	780	+5	-5	3:35	7:00	760	780	+5	-5
			780	788	+5	-5						
			788	824	+5	-5	19:00	21:40	788	824	+5	-5
24-11-2010	7:00	7:00	824	832	+5	-5	2:35	7:00	824	832	+5	-5
			808	832	+7.5	+15			808	832	+7.5	+15
			832	848	+12.5	-5						
25-11-2010	7:00	7:00	848	888	+12.5	-7.5	19:00	20:50	848	888	+12.5	-7.5
			888	920	+12.5	-7.5	21:30	2:00	888	920	+12.5	-7.5
			920	952	+7.5	-7.5	2:30	6:30	920	952	+7.5	-7.5
26-11-2010	7:00	7:00	952	988	-5	+15						
			988	1012	-7.5	+7.5	19:00	22:25	988	1012	-7.5	+7.5
			1012	1044	-7.5	+5	22:50	2:50	1012	1044	-7.5	+5
27-11-2010	7:00	7:00	1044	1084	+7.5	-7.5						
			1084	1128	+7.5	-5	21:20	2:55	1084	1128	+7.5	-5
			1128	1152	+7.5	-5	3:15	7:00	1128	1152	+7.5	-5
28-11-2010	7:00	7:00	1152	1156	+5	-12.5						
			1156	1180	+5	-12.5	19:00	20:05	1156	1180	+5	-12.5
			1180	1204	+10	-10	20:40	0:45	1180	1204	+10	-10
29-11-2010	7:00	7:00	1204	1224	+10	-10	1:30	7:00	1204	1224	+10	-10
			1224	1244	+10	0						
			1244	1328	-12.5	+7.5	19:00	23:35	1244	1328	-12.5	+7.5
30-11-2010	7:00	7:00	1200	1244	-12.5	-5	2:00	6:00	1200	1244	-12.5	-5
			1328	1340	-12.5	-5	6:45	8:00	1328	1340	-12.5	-5
			1324	1360	+5	-5						
31-11-2010	7:00	7:00	1360	1388	0	-12.5	19:00	21:00	1360	1388	0	-12.5
			1388	1400	0	-12.5	21:50	2:00	1388	1400	0	-12.5
			1150	1200	-10	0			1150	1200	-10	0
31-11-2010	7:00	7:00	1150	1200	+10	0	2:40	7:00	1150	1200	+10	0
			1412	1420	0	+7.5						
			1420	1432	+7.5	0	19:00	7:00	1420	1432	+7.5	0
30-11-2010	7:00	7:00	1432	1452	+5	-5			1432	1452	+5	-5
			1452	1492	+5	-5			1452	1492	+5	-5
			1492	1500	+5	-5			1492	1500	+5	-5
30-11-2010	7:00	7:00	1492	1516	+5	-5						



**Wo Hing – Penta-Ocean Joint Venture**

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From West Kowloon to Sai Ying Pun

**Dredging Location of GD "Shun Tai 20" during Overtime Hours 19:00 – 07:00 (next day)**

Date	Working Hour fm 07:00 to 23:00 or 07:00 to 07:00 (next day)						Working Hour for overtime fm 19:00 to 23:00 or 19:00 to 07:00 (next day)							
	W Hours fm	W Hours to	Chainage fm	Chainage to	Offset fm	Offset to	OT Hours fm	OT Hours to	Chainage fm	Chainage to	Offset fm	Offset to		
01-12-2010	7:00	7:00	1516	1548	+5	-10	19:00	7:00	1516	1548	+5	-10		
			1548	1564	+5	-10			1548	1564	+5	-10		
			1564	1568	+5	-10			1564	1568	+5	-10		
			1564	1576	-10	+5								
			1576	1620	-10	+5								
			1620	1640	-12.5	-5			19:00	7:00	1620	1640	-12.5	-5
02-12-2010	7:00	7:00	1620	1640	0	+7.5	19:00	7:00	1620	1640	0	+7.5		
			1620	1632	+5	-5			1620	1632	+5	-5		
			1632	1636	+5	-5			1632	1636	+5	-5		
			1636	1640	+5	-5								
			1640	1644	+5	-5			19:00	7:00	1640	1644	+5	-5
			1640	1664	+5	+12.5			1640	1664	+5	+12.5		
03-12-2010	7:00	7:00	1640	1644	-5	-12.5	19:00	7:00	1640	1644	-5	-12.5		
			1644	1664	-5	-12.5			1644	1664	-5	-12.5		
			1644	1656	+5	-5								
			1656	1664	+5	-5								
			1664	1680	-15	-2.5								
			1664	1680	+2.5	+15			19:00	7:00	1664	1680	+2.5	+15
04-12-2010	7:00	7:00	1644	1680	-5	+5	19:00	7:00	1644	1680	-5	+5		
			1680	1688	+15	+2.5			1680	1688	+15	+2.5		
			1688	1700	+2.5	+12.5								
			1680	1692	-2.5	-12.5								
			1692	1700	-2.5	-12.5			19:00	7:00	1692	1700	-2.5	-12.5
			1680	1696	+5	-5			1680	1696	+5	-5		
05-12-2010	7:00	7:00	1696	1700	+5	-5	19:00	7:00	1696	1700	+5	-5		
			1700	1716	+2.5	+12.5			1700	1716	+2.5	+12.5		
			1700	1708	-2.5	-12.5			1700	1708	-2.5	-12.5		
			1708	1720	-2.5	-12.5								
			1700	1704	-5	+5								
			1704	1720	+5	-5								
06-12-2010	7:00	7:00	1720	1736	+2.5	+12.5	19:00	7:00	1736	1744	+2.5	+12.5		
			1736	1744	+2.5	+12.5			1720	1744	-12.5	-2.5		
			1720	1744	-12.5	-2.5			1720	1744	-12.5	-2.5		
			1720	1732	+5	-5			1720	1732	+5	-5		
			1732	1740	-5	+5			1732	1740	-5	+5		
			1740	1744	+5	-5			19:00	7:00	1740	1744	+5	-5
07-12-2010	7:00	7:00	1744	1752	0	+12.5	19:00	7:00	1744	1752	0	+12.5		
			1752	1756	0	+12.5			1752	1756	0	+12.5		
			1744	1748	0	-12.5			1744	1748	0	-12.5		
			1748	1776	-12.5	0								
			1756	1796	0	+12.5			19:00	7:00	1756	1796	0	+12.5
			1776	1792	-12.5	0			1776	1792	-12.5	0		
08-12-2010	7:00	7:00	1792	1796	-12.5	0	19:00	7:00	1792	1796	-12.5	0		
			1796	1808	0	-12.5								
			1808	1828	0	-12.5								
			1808	1840	0	+12.5			19:00	23:00	1808	1840	0	+12.5
			1828	1836	0	-12.5			23:00	7:00	1828	1836	0	-12.5
			1836	1860	-12.5	0								
09-12-2010	7:00	7:00	1840	1860	0	+12.5	19:00	21:25	1860	1900	0	-12.5		
			1860	1900	0	-12.5			1860	1900	0	-12.5		
			1860	1868	0	+12.5			22:00	23:00	1860	1868	0	+12.5
			1868	1872	0	+12.5			23:00	7:00	1868	1872	0	+12.5
			1872	1900	0	+12.5								
			1900	1920	0	+12.5			19:00	7:00	1900	1920	0	+12.5
10-12-2010	7:00	7:00	1900	1916	0	-12.5	19:00	7:00	1900	1916	0	-12.5		
			1916	1932	0	-12.5			1900	1916	0	-12.5		
			1920	1924	0	+12.5			1914	1932	0	-12.5		
			1924	1956	0	+12.5			1920	1924	0	+12.5		
			1932	1940	-12.5	0			19:00	7:00	1932	1940	-12.5	0
			1900	1940	-12.5	0			1900	1940	-12.5	0		
11-12-2010	7:00	7:00	1900	1924	0	+12.5	19:00	7:00	1900	1924	0	+12.5		
			1924	1932	0	+12.5			1924	1932	0	+12.5		
			1932	1940	-12.5	0								
			1900	1940	-12.5	0								
			1900	1924	0	+12.5								
			1924	1932	0	+12.5								
12-12-2010	7:00	19:00	1932	1944	0	+12.5	19:00	7:00	1924	1932	0	+12.5		
			1900	1872	0	+12.5								
			1900	1872	0	+12.5								
			1900	1872	0	+12.5								
			1900	1872	0	+12.5								
			1900	1872	0	+12.5								
13-12-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
14-12-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
15-12-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
16-12-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
17-12-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
18-12-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
19-12-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
20-12-2010	7:00	7:00	330	370	+15	-15	19:00	7:00	330	380	+15	-15		
21-12-2010	7:00	7:00	370	380	+15	-15	19:00	7:00	380	575	+10	-10		
			380	575	+10	-10								
22-12-2010	7:00	7:00	575	610	+10	-10	19:00	7:00	610	930	+10	-10		
			610	930	+10	-10								
23-12-2010	7:00	7:00	950	1200	+10	-10	19:00	7:00	950	1200	+10	-10		
24-12-2010	7:00	19:00	1200	1250	+10	-10	19:00	7:00	950	1200	+10	-10		
25-12-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
26-12-2010	7:00	19:00	-	-	-	-	-	-	-	-	-			
27-12-2010	7:00	7:00	1670	1680	+5	-10	19:00	7:00	1680	1720	+10	-10		
			1680	1720	+10	-10								

**Wo Hing – Penta-Ocean Joint Venture**

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

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

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



## **Appendix K**

### **Contractor's Follow up Actions to ET Weekly Site Inspections**



Photo of Follow-up Action

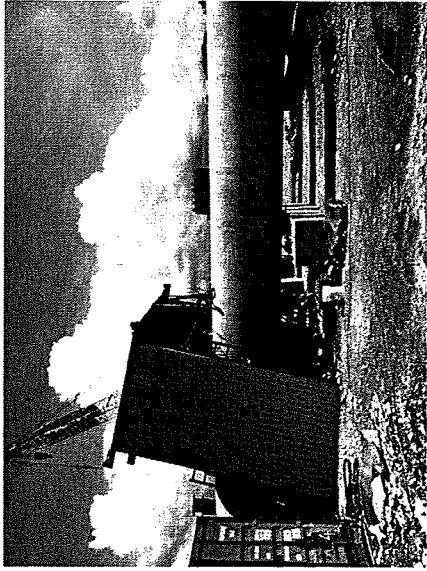


Photo ref. 1



Photo ref. 2





Photo ref. 3

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

Inspection Date : 17 August 2011

Item	Details of defective works or observations	Follow up Action(s) taken	Date of Action taken	Photo Ref.
1	Standing water in somewhere of Portion H after raining.	Standing water was drained away.	19 Aug 11	1
2	Standing water was noted in drip tray after raining.	Standing water was drained away from the drip tray.	19 Aug 11	2

Photo of Follow-up Action

 <p>Photo ref. 1</p>	 <p>Photo ref. 2</p>	

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

Inspection Date : 23 August 2011

Item	Details of defective works or observations	Follow up Action(s) taken	Date of Action taken	Photo Ref.
1	Water leakage from an air-conditioner was noted in contractor's site office.	A bucket was provided for collecting the water.	24 Aug 11	1



Photo of Follow-up Action

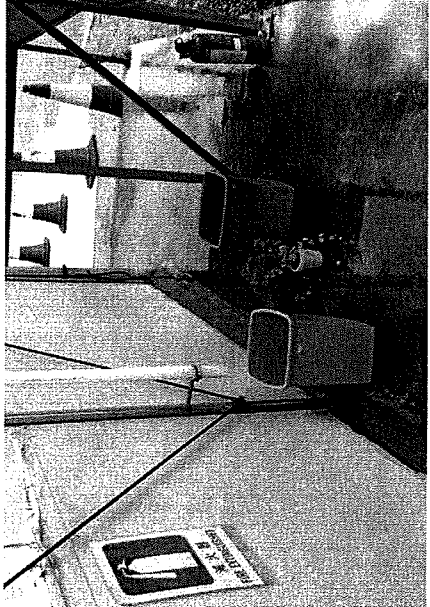
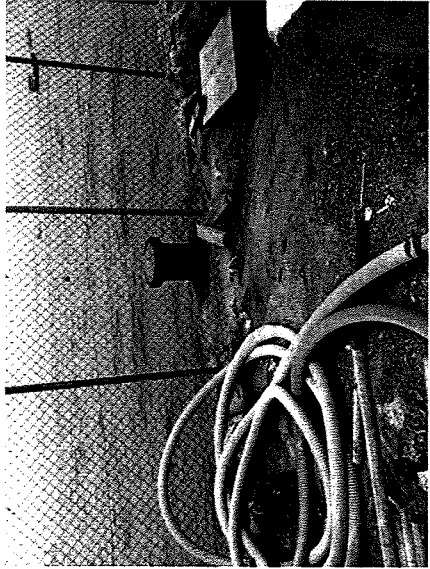
 <p>Photo ref. 1</p>		



Photo of Follow-up Action

 <p>Photo ref. 1</p>		



## Appendix L

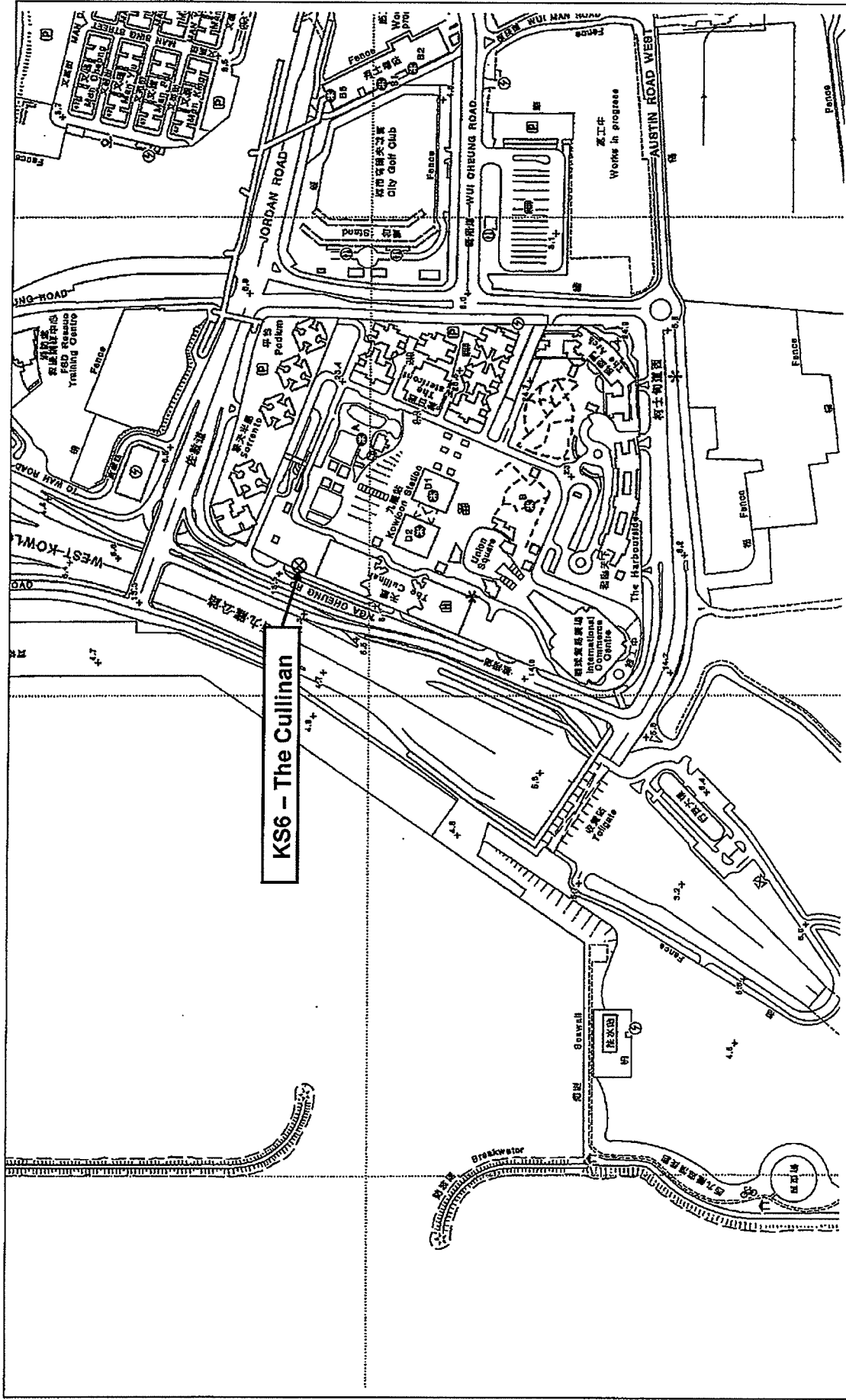
### Complaint Log

## 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"> <li>1. Meeting has been arranged on 29 June 2011 to discuss the safety and environmental issues on launching barge.</li> <li>2. New disciplinary system has been in place to prevent the same inappropriate act of workers from happening.</li> <li>3. Additional sanitary facilities have been added on the barge and the nearby area to facilitate the workers need.</li> </ol>	Closed



## Figures



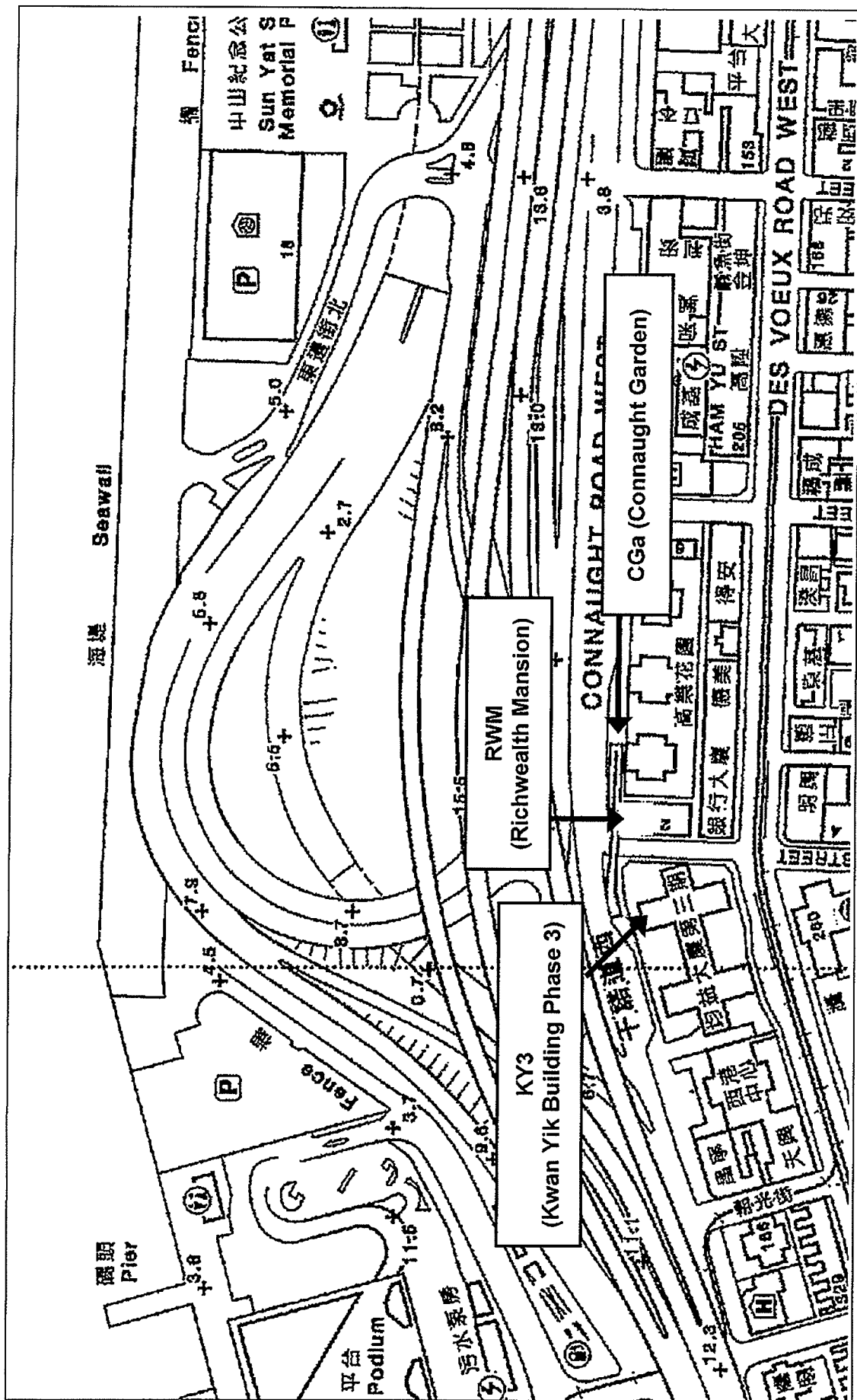
Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Mains for West Kowloon to Sai Ying Pun

Figure 1

Location of Noise Monitoring Station at West Kowloon



英業探測與試驗有限公司  
ETS-TESTCONSULT LIMITED



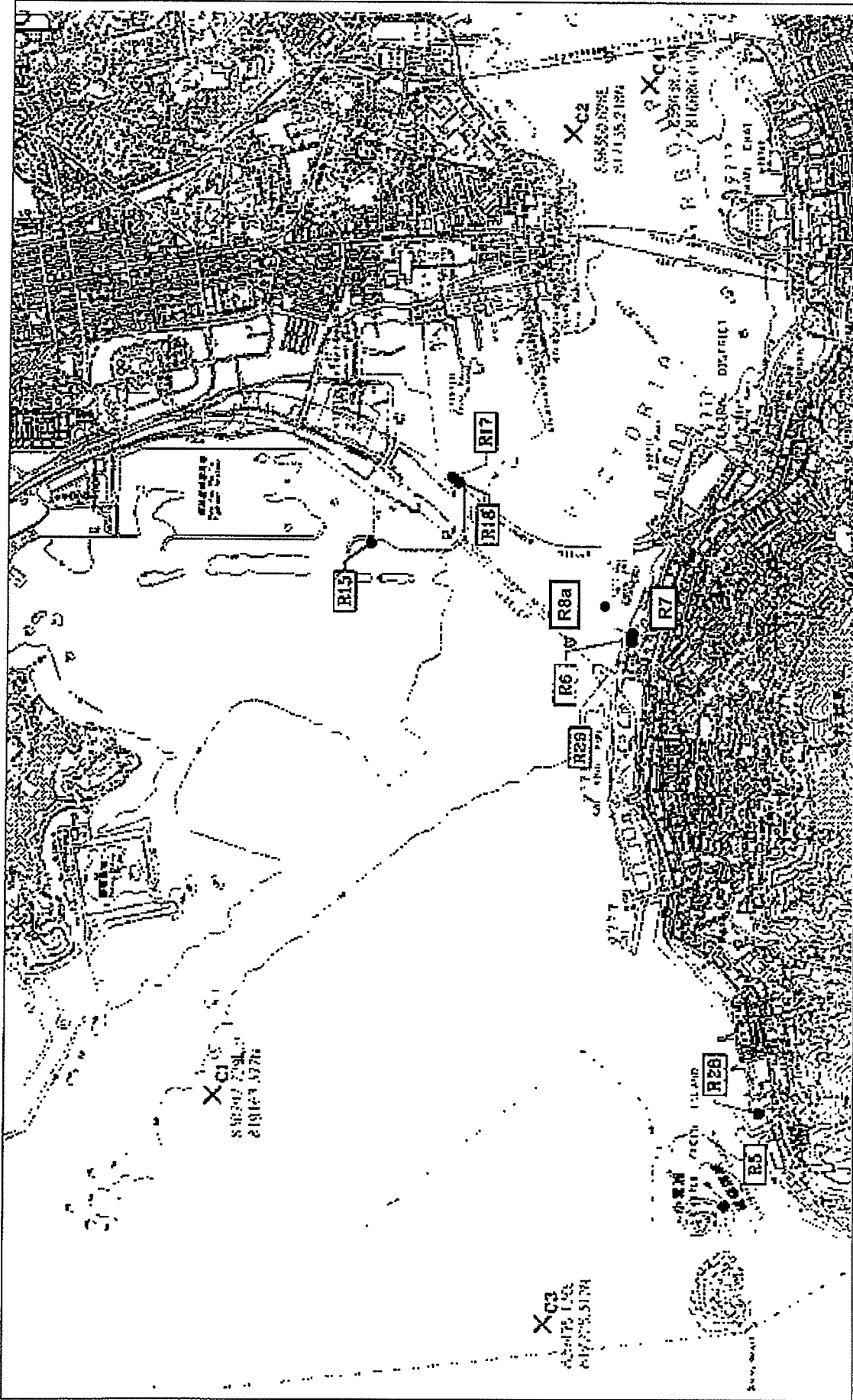
Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Mains for West Kowloon to Sai Ying Pun

Figure 2

Locations of Noise Monitoring Stations at Sai Ying Pun



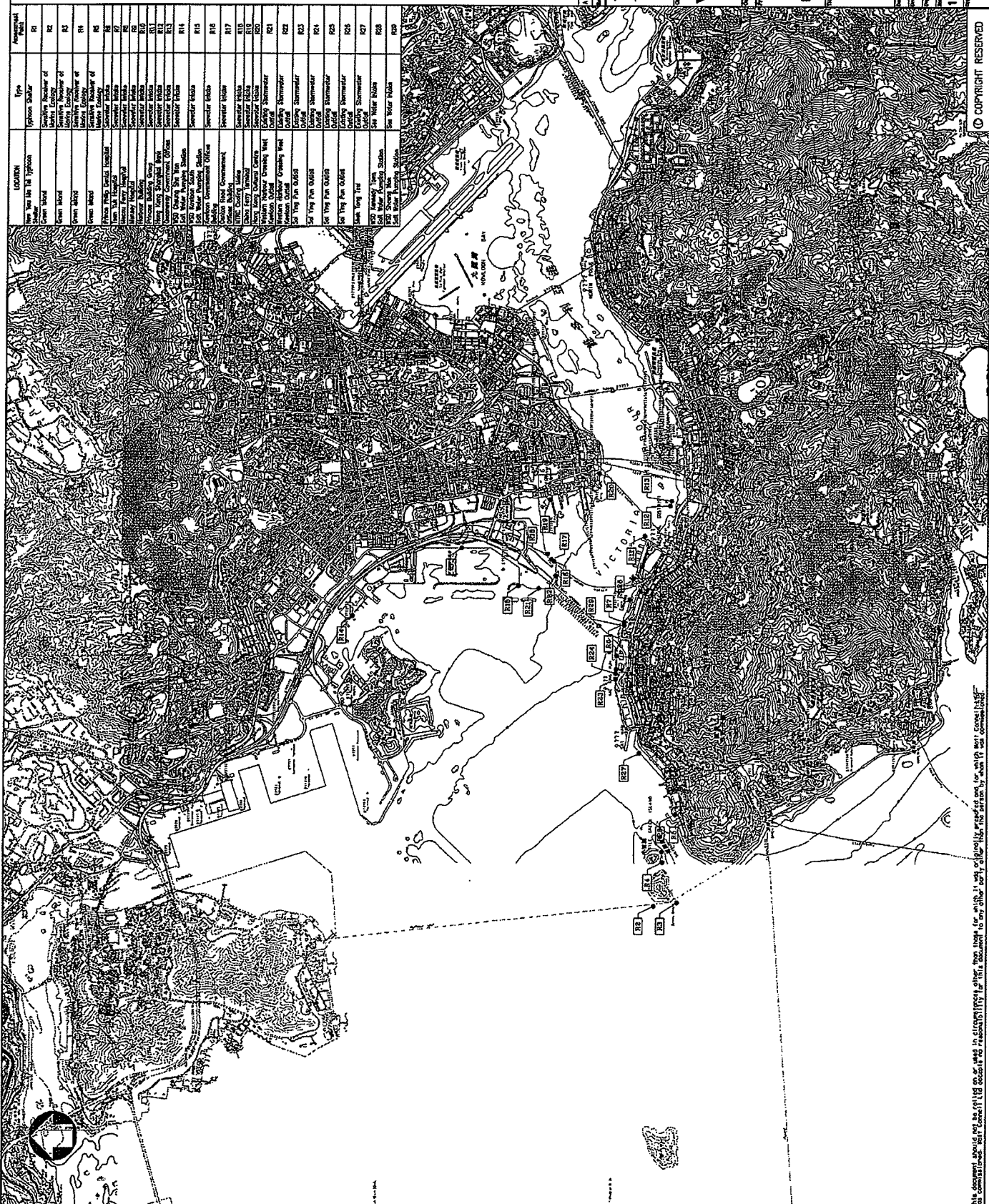




Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Mains for West Kowloon to Sai Ying Pun

Figure 3

Locations of Water Quality Monitoring Stations



Assignment No.	LOCATION	Type	Assignment No.
R1	New Shek Tin Typograph	Cyprusan Shallow	R1
R2	Chow's Shallow of	Shallow	R2
R3	Shallow of	Shallow	R3
R4	Shallow of	Shallow	R4
R5	Shallow of	Shallow	R5
R6	Shallow of	Shallow	R6
R7	Shallow of	Shallow	R7
R8	Shallow of	Shallow	R8
R9	Shallow of	Shallow	R9
R10	Shallow of	Shallow	R10
R11	Shallow of	Shallow	R11
R12	Shallow of	Shallow	R12
R13	Shallow of	Shallow	R13
R14	Shallow of	Shallow	R14
R15	Shallow of	Shallow	R15
R16	Shallow of	Shallow	R16
R17	Shallow of	Shallow	R17
R18	Shallow of	Shallow	R18
R19	Shallow of	Shallow	R19
R20	Shallow of	Shallow	R20
R21	Shallow of	Shallow	R21
R22	Shallow of	Shallow	R22
R23	Shallow of	Shallow	R23
R24	Shallow of	Shallow	R24
R25	Shallow of	Shallow	R25
R26	Shallow of	Shallow	R26
R27	Shallow of	Shallow	R27
R28	Shallow of	Shallow	R28
R29	Shallow of	Shallow	R29
R30	Shallow of	Shallow	R30

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THE GOVERNMENT OF THE HONG KONG  
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 WATER SUPPLIES DEPARTMENT

CE427/2005(NS)  
 LAYING OF WESTERN CROSS HARBOUR MAIN  
 AND ASSOCIATED LAND MAINS FROM WEST  
 KOWLOON TO SAI YING PUN - INVESTIGATION

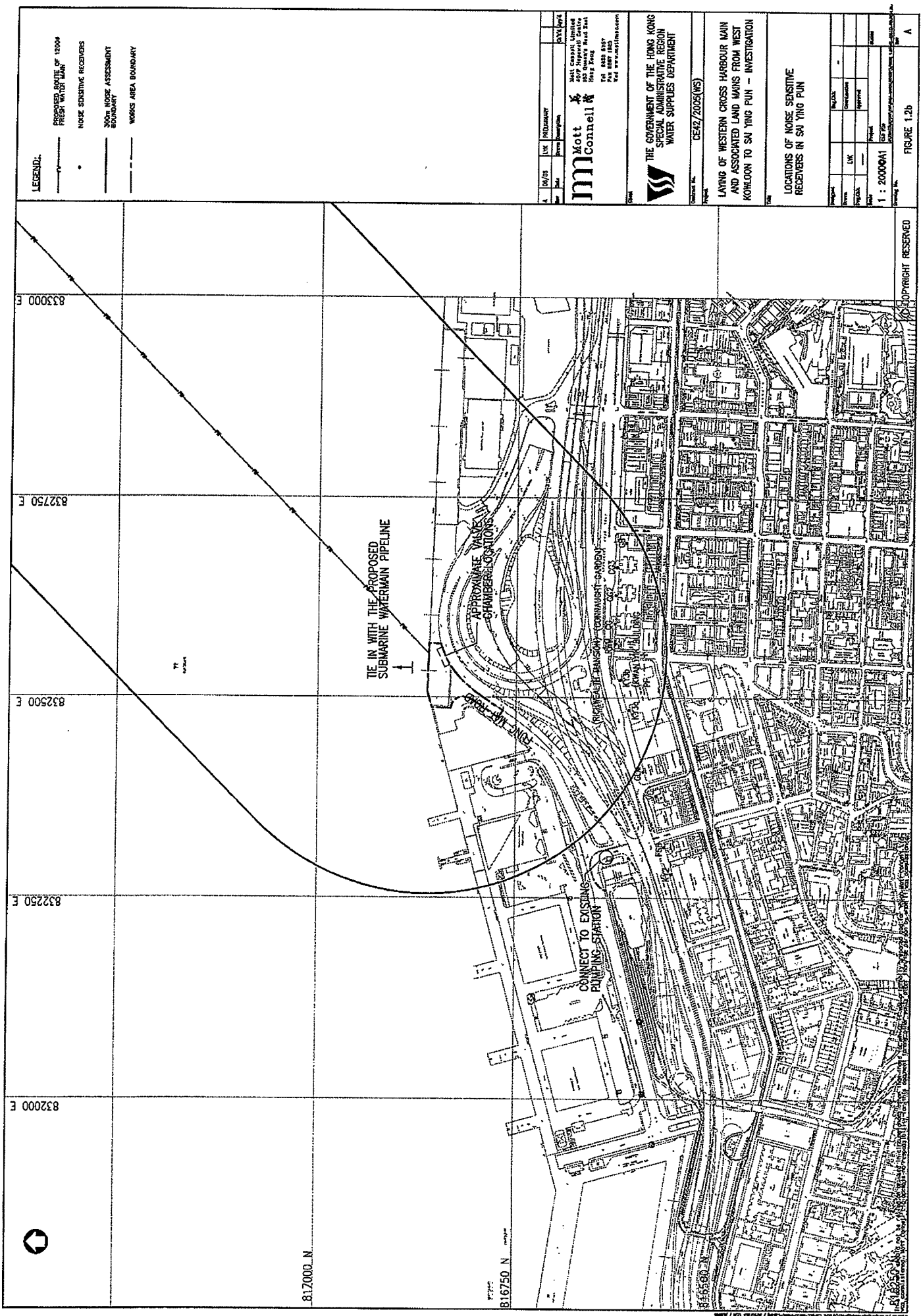
LOCATIONS OF WATER SENSITIVE RECEIVERS  
 AND STORMWATER OUTFALLS  
 AT WESTERN HARBOUR

Scale:	1 : 25000(0/1)
Project No.:	20053
Sheet No.:	1/1
Date:	2005
Author:	
Checked:	
Approved:	
Scale:	

FIGURE 1.2a

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**LEGEND:**

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

A.	NO/YES	DATE	DESCRIPTION	BY	CHKD
			PRELIMINARY		

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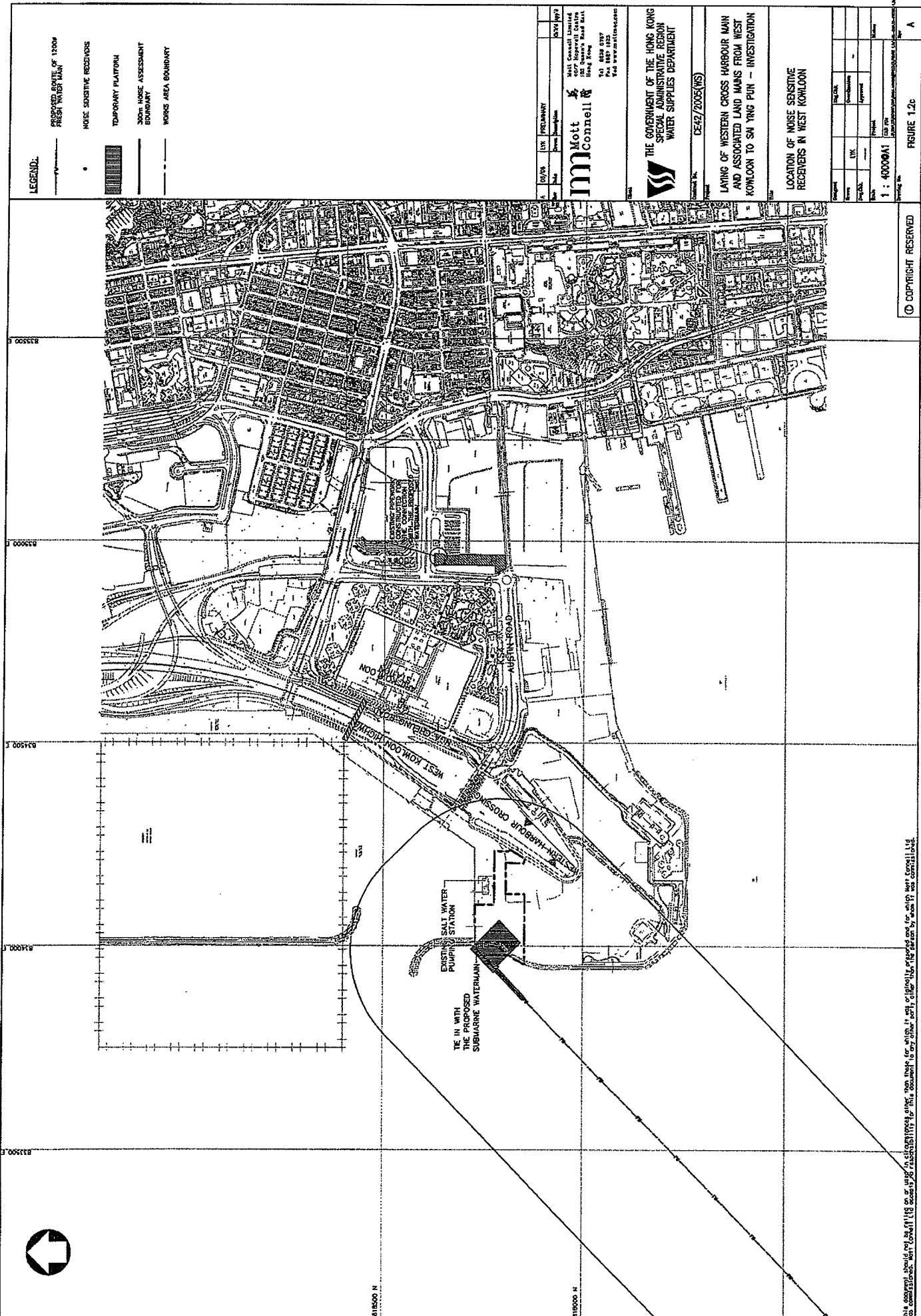
CE42/2025(NS)  
 LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SAI YING PUN - INVESTIGATION

LOCATIONS OF NOISE SENSITIVE RECEIVERS IN SAI YING PUN

Project No.	CE42/2025(NS)
Scale	1 : 2000/041
Date	11/11/2025
Author	
Checker	
Approver	
Project Manager	
Project Engineer	
Project Assistant	
Project Clerk	
Project Support	

FIGURE 1.2b

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**LEGEND:**

- PROPOSED ROUTE OF 1200P FRESH WATER MAIN
- NOISE SENSITIVE RECEIVERS
- TEMPORARY PLATFORM
- NOISE ASSESSMENT BOUNDARY
- WORKS AREA BOUNDARY

DATE: 23/11/19  
 DRAWN BY: [Name]  
 CHECKED BY: [Name]  
 Mott  
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 407 Appell Centre  
 1101 Nathan Road  
 Hong Kong  
 Tel: 852 2377 1100  
 Fax: 852 2377 1102  
 E-mail: info@mottconnell.com

THE GOVERNMENT OF THE HONG KONG  
 SPECIAL ADMINISTRATIVE REGION  
 WATER SUPPLIES DEPARTMENT  
 CE42/2005(WS)

LAYING OF WESTERN CROSS HARBOUR MAIN  
 AND ASSOCIATED LAND MAINS FROM WEST  
 KOWLOON TO SH YING PUN - INVESTIGATION  
 LOCATION OF NOISE SENSITIVE  
 RECEIVERS IN WEST KOWLOON

Contract No.	CE42/2005(WS)
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