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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.31**

**(NOVEMBER 2012)**

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**ENVIRON**

Ref.: WSDWHCMSEI00\_0\_0310L.12

17<sup>th</sup> Dec 2012

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

By Post

Attention: Mr. Johnny Ho

Dear Sir,

**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. 31**

Reference is made to Environment Team's submission of the Environmental Monitoring and Audit Report No. 31 by Email on 7<sup>th</sup> Dec 2012 (entitled "9/WSD/08 - Draft Monthly Report (Nov 12)") and subsequent submission of the revised report on 17<sup>th</sup> Dec 2012.

We are pleased to inform you that we have no comment on the captioned revised 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.31 was prepared by ETS-Testconsult Ltd (ET) for the Project. This report documented the findings of EM&A Works conducted during the Project in November 2012.

### Site Activities

As informed by the Contractor, site activity was carried out in this reporting month:

- Trimming of high spot of rock Armour (Type 2) (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, 4 Occasions at KY3, CGa and RWM*
- *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 at KS6, CGa, RWM and KY3*
- *Holiday-time Noise Monitoring (0700-1900 on Holiday): 2 Occasions at KS6, CGa, RWM and KY3*
- *Marine Water Quality Monitoring: 13 Occasions at 9 monitoring stations and 4 control stations*
- *Weekly-site inspection: 4 Occasions*

### Noise Monitoring

No exceedance of Action and Limit Level of noise monitoring was recorded in this reporting month.

### Water Quality Monitoring

No exceedance of Action and Limit levels was 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>
<i>ET Weekly site inspection</i>	<i>06, 16, 20 and 28 November 2012</i>
<i>Monthly Joint site inspection</i>	<i>28 November 2012</i>

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 was 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 November 2012.

## 2.0 PROJECT INFORMATION

### 2.1 Scope of the Project

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

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

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

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

### 2.2 Work Programme

Details of work programme are shown in Appendix E.

### 2.3 Project Organization and Management Structure

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

### 2.4 Contact Details of Key Personnel

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

Table 2.1 Contact Details of Key Personnel

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

## 3.0 WORK PROGRESS IN THIS REPORTING MONTH

As informed by the Contractor, site activity was carried out in the reporting month:

- Trimming of high spot of rock Armour (Type 2) (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 804:1985 (Type1).

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	ET/EN/003/06	00110024	16/04/12	15/04/13
		ET/EN/003/10	00531142	29/05/12	28/05/13
		ET/EN/003/12	00773032	06/12/11	05/12/12
Sound Level Calibrator	Castle GA607	ET/EN/002/07	038641	16/04/12	15/04/13

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

#### 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 and 4 occasions at 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 2 occasions of holiday-time noise monitoring at KS6, CGa, RWM and KY3 were carried out in this reporting month.

No exceedance in Limit Level was recorded in this reporting month. Besides, no exceedance of Action Level of noise monitoring was recorded since no complaint on noise issue was received in this reporting month.

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

Table 4.5 Summary of Noise Daytime Monitoring Results

Monitoring Parameter	Date	KS6			
		Start Time	End Time	Result	Exceed*
Day-time	09/11/12	14:00	14:30	64.4	X
	16/11/12	13:45	14:15	64.5	X
	21/11/12	13:40	14:10	63.6	X
	28/11/12	17:50	18:20	64.9	X
Evening-time	24/11/12	21:25	21:30	62.1	X
	24/11/12	21:30	21:35	61.8	X
	24/11/12	21:35	21:40	61.9	X
Holiday-time	04/11/12	11:00	11:05	63.8	X
	04/11/12	11:05	11:10	63.5	X
	04/11/12	11:10	11:15	63.7	X
	25/11/12	09:20	09:25	62.2	X
	25/11/12	09:25	09:30	62.8	X
	25/11/12	09:30	09:35	62.6	X



Monitoring Parameter	Date	CGa			
		Start Time	End Time	Result	Exceed*
Day-time	05/11/12	11:30	12:00	74.3	X
	14/11/12	10:30	11:00	74.3	X
	23/11/12	08:00	08:30	72.6	X
	28/11/12	10:20	10:50	74.7	X
Evening-time	24/11/12	22:05	22:10	67.4	X
	24/11/12	22:10	22:15	66.9	X
	24/11/12	22:15	22:20	67.0	X
Holiday-time	04/11/12	09:05	09:10	67.9	X
	04/11/12	09:10	09:15	69.4	X
	04/11/12	09:15	09:20	67.4	X
	25/11/12	10:05	10:10	68.4	X
	25/11/12	10:10	10:15	67.8	X
	25/11/12	10:15	10:20	68.0	X
Monitoring Parameter	Date	RWM			
		Start Time	End Time	Result	Exceed*
Day-time	05/11/12	10:55	11:25	61.3	X
	14/11/12	11:05	11:35	65.1	X
	23/11/12	08:35	09:05	59.2	X
	28/11/12	10:55	11:25	65.4	X
Evening-time	24/11/12	22:25	22:30	66.4	X
	24/11/12	22:30	22:35	66.7	X
	24/11/12	22:35	22:40	66.3	X
Holiday-time	04/11/12	09:25	09:30	60.5	X
	04/11/12	09:30	09:35	60.1	X
	04/11/12	09:35	09:40	60.9	X
	25/11/12	10:25	10:30	64.0	X
	25/11/12	10:30	10:35	64.2	X
	25/11/12	10:35	10:40	64.4	X
Monitoring Parameter	Date	KY3			
		Start Time	End Time	Result	Exceed*
Day-time	05/11/12	10:20	10:50	59.9	X
	14/11/12	11:40	12:10	64.7	X
	23/11/12	09:10	09:40	58.9	X
	28/11/12	11:30	12:00	65.1	X
Evening-time	24/11/12	22:45	22:50	64.2	X
	24/11/12	22:50	22:55	63.7	X
	24/11/12	22:55	23:00	63.3	X
Holiday-time	04/11/12	09:45	09:50	59.6	X
	04/11/12	09:50	09:55	60.0	X
	04/11/12	09:55	10:00	59.8	X
	25/11/12	10:45	10:50	65.1	X
	25/11/12	10:50	10:55	65.4	X
	25/11/12	10:55	11:00	65.0	X

Remark (\*): L = Limit Level exceedance, A = Action Level exceedance and X = not an Exceedance

(†): Since daytime and holiday-time noise measurements at monitoring stations RWM and KY3 were free-field, 3dB(A) correction had been added to the results

The summary of noise exceedances is shown in Table 4.6.

Table 4.6 Summary of Impact Noise Exceedances in this reporting month

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	227	0



## 5.0 WATER QUALITY MONITORING

### 5.1 Monitoring Requirements

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

### 5.2 Monitoring Locations

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

Table 5.1 Water Quality Monitoring Stations

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

Remark (\*): Station R15 = WSD Seawater Intake

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

### 5.3 Monitoring Parameters

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

Table 5.2 Water Quality Monitoring Parameters

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

Table 5.3 Other relevant water quality parameters

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

### 5.4 Monitoring Frequency

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



Table 5.4 Monitoring Frequency of Impact Water Quality Monitoring

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

## 5.5 Monitoring Methodology and Equipment Used

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

### Location of the monitoring stations

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

### Water Depth measurement

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

### In-situ Water Quality Monitoring Equipment

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

### Dissolved Oxygen, salinity and temperature measuring equipment

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

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

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

### Turbidity Measurement Instrument

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

### Water Sampling and Sample Analysis

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

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





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

## 5.6 Details of site Equipment used for In-situ Measurement

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

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

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

Parameter	Model	Date of Calibration	Due Date	Equipment No.	Serial No.
Coordinate of Monitoring stations	Garmin eTrex 10	-----	-----	ET/EW/005/04	2DR099626
Dissolved Oxygen (Saturation), Temperature and Salinity	YSI Dissolved Oxygen, Salinity & Temperature Meter, YSI Pro 2030	13/08/12 10/11/12	12/11/12 09/02/13	ET/EW/008/004*	10F 101978
Turbidity	HACH Model 2100Q Turbid Meter	09/10/12	08/01/13	ET/0505/009*	11060C010010
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

November 2012						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
				▼		▼
4	5	6	7	8	9	10
		▼		▼		▼
11	12	13	14	15	16	17
		▼		▼		▼
18	19	20	21	22	23	24
		▼		▼		▼
25	26	27	28	29	30	
		▼		▼		

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

## 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	48	48

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

## 6.0 ENVIRONMENTAL SITE INSPECTION

During this reporting month, weekly site inspections were undertaken on 06, 16, 20 and 28 November 2012 by ET. Monthly joint site inspection at 28 November 2012 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 finding

According to the summary of the ET weekly site inspections carried out in November 2012, it indicated that site practices of the Contractor were generally undertaken in an environmentally acceptable manner and the overall site environmental performance was satisfactory. No environmental deficiency was recorded during the weekly site inspection in this reporting month.

### 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
Chemical Waste Producer	5213-217-W3086-01	13/10/09	End of Project	Spent oil, surplus flammable liquid, surplus paint, soil, rags & containers contaminated with lubricating oil, diesel, flammable liquid & paint, & used batteries



Description	Permit No.	Valid Period		Remarks
		From	To	
Construction Noise Permit (West Kowloon)	GW-RE0818-12	08/10/12	07/04/13	<b>Group A</b> One Generator, standard (CNP 101) One Derrick barge (CNP 061) One Guard boat <b>Group B</b> Two Generator, standard (CNP 101) Two Derrick barge (CNP 061) One Guard boat One Tug boat (CNP 221) <b>Group C</b> One Generator, standard (CNP 101) One Dredger, grab (CNP 063) One Guard boat <b>Group D</b> One Generator, standard (CNP 101) One Dredger, grab (CNP 063) One Guard boat
Construction Noise Permit (Sai Ying Pun)	GW-RS1026-12	08/10/12	07/04/13	<b>Group A</b> Two Generator, silenced, ≤108dB(A) (CNP 101) Two Derrick barge (CNP 061) One Guard boat One Tug boat (CNP 221) <b>Group B</b> One Generator, silenced, ≤108dB(A) (CNP 101) One Derrick barge (CNP 061) <b>Group C</b> One Generator, silenced, ≤108dB(A) (CNP 101) One Dredger, grab (CNP 063) One Guard boat One Hopper Barge
Notification under APCO	Application had been submitted to EPD on 25/09/09 and approved from 29/09/09.			

## 8.0 WASTE MANAGEMENT

### 8.1 Monthly Waste Summary

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

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

Type of Waste		Quantity	Disposal Location	Cumulative Quantity
Inert C&D Materials	Total Quantity Generated (in m <sup>3</sup> )	442.77		18053.30
	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> )	442.77	SENT Landfill	18053.30
C&D Waste	Metals (in kg)	0	---	0
	Paper/Cardboard Packaging (in kg)	0	Collected by recycling company	169
	Plastics (in kg)	0	---	0
	Chemical Waste (in kg)	900	---	4478
	Other, e.g. General Refuse (in m <sup>3</sup> )	4.99	SENT Landfill	204.29
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



## **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 exceedance of Action and Limit Level of marine water quality monitoring results was recorded during the reporting month.

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

No exceedance of Action and Limit Level of noise monitoring was recorded in this reporting month. Hence, no further action was required.

### **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>November 2012</i>	<i>Cumulative</i>	<i>November 2012</i>	<i>Cumulative</i>	<i>November 2012</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 and Limit Level of noise monitoring was recorded 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

No site activities will propose to be conducted in the next month



## 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

Since the construction works are scheduled in the coming month, the EM&A program for the coming month is required to be carried out. The proposed EM&A program of the coming month is attached in Appendix I.

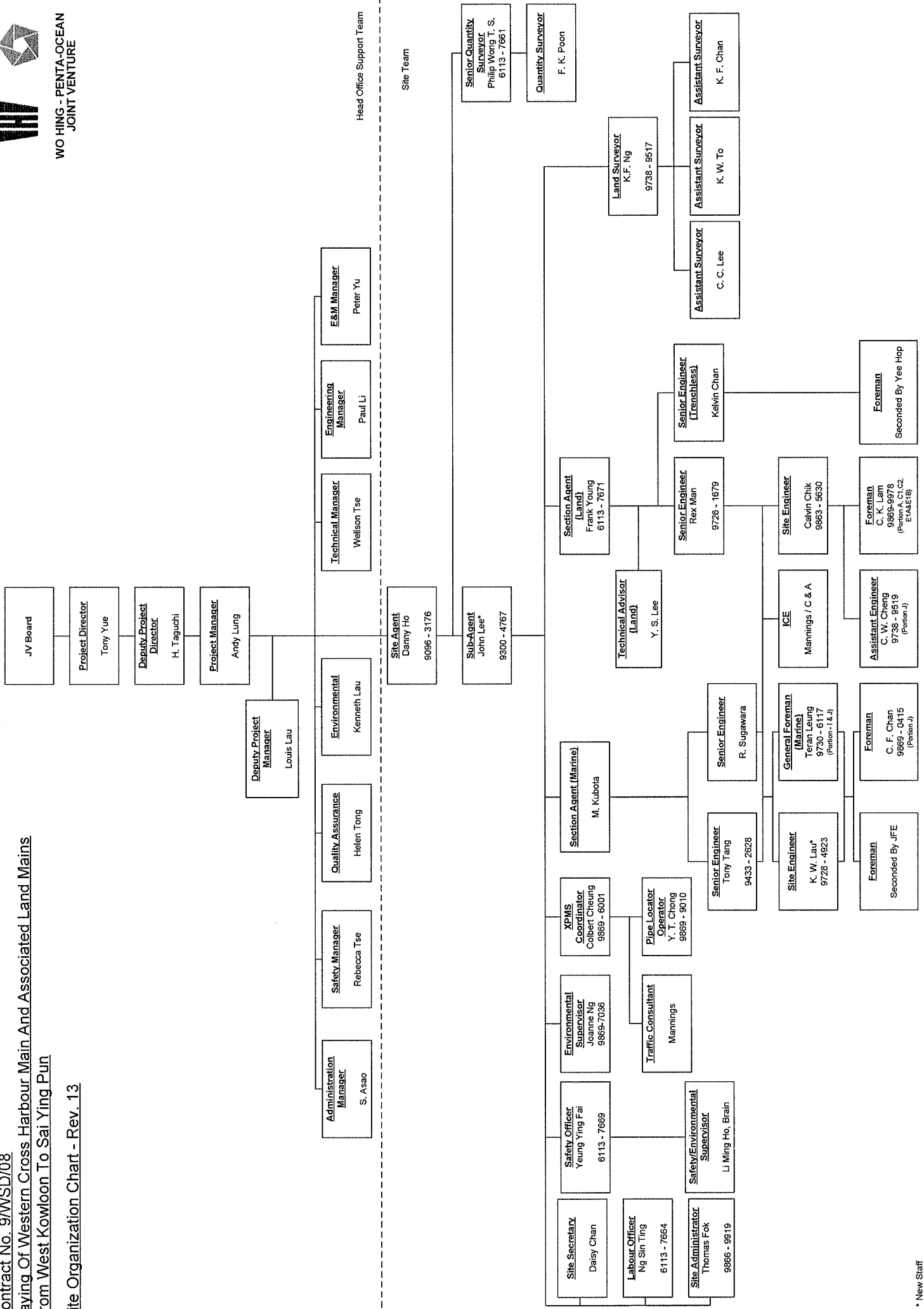
- END OF REPORT -



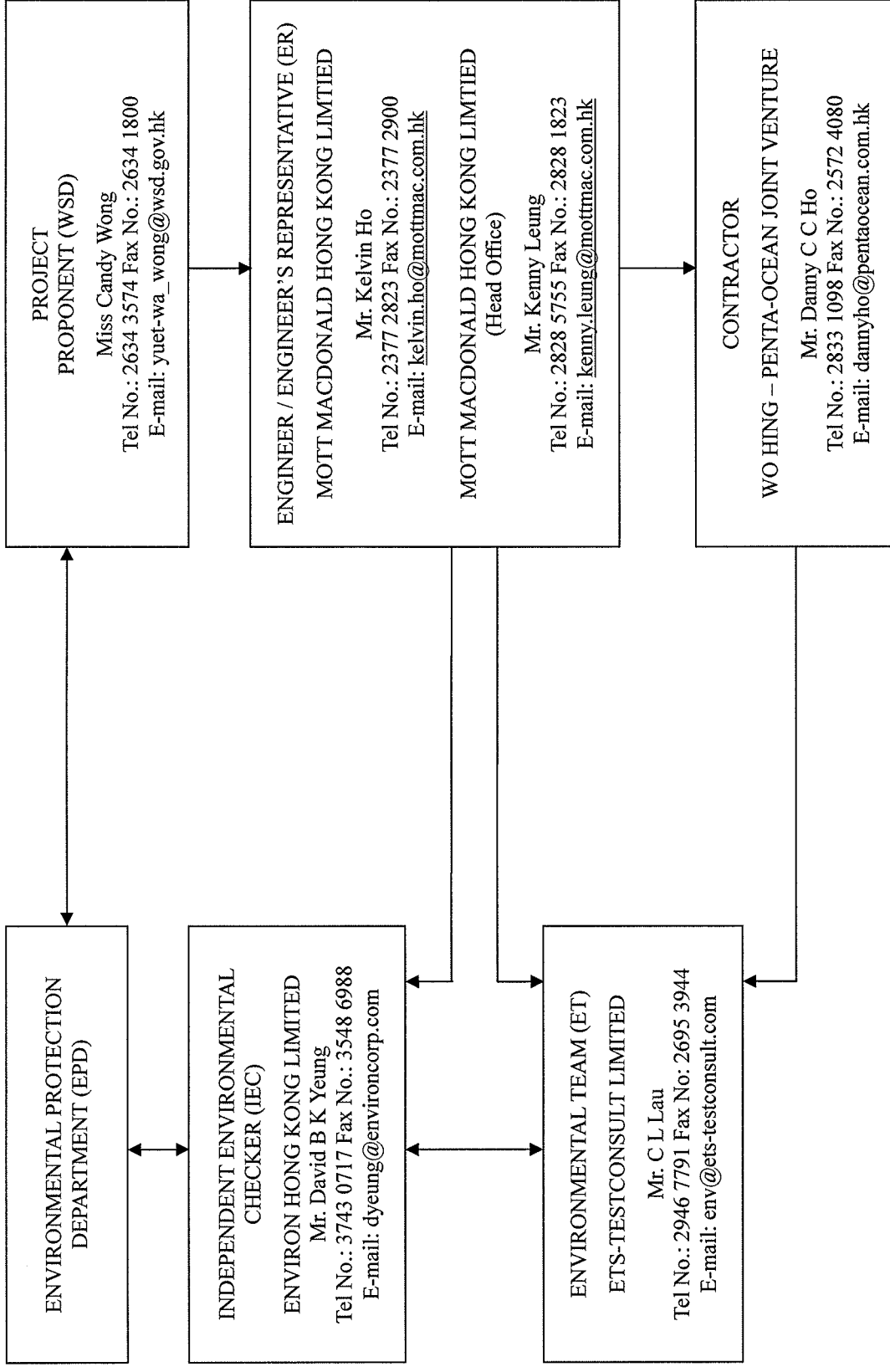
## **Appendix A**

### **Organization Chart and Lines of Communication**





\* New Staff



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. **22086**

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. :** Q20865

**Date of receipt :** 11-Apr-12

## Item Tested

**Description :** Acoustic Calibrator

**Manufacturer :** Castle

**Model :** GA607

**Serial No. :** 038641

## Test Conditions

**Date of Test :** 16-Apr-12

**Supply Voltage :** --

**Ambient Temperature :** (23 ± 3)°C

**Relative Humidity :** (50 ± 25) %

## Test Specifications

Calibration check.

Ref. Document/Procedure : F06, F20, Z02.

## Test Results

All results were within the IEC 942 Class 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>
S014	Spectrum Analyzer	13535	NIM-PRC & SCL-HKSAR
S024	Sound Level Calibrator	15136	NIM-PRC & SCL-HKSAR
S041	Universal Counter	15610	SCL-HKSAR
S206	Sound Level Meter	16338	SCL-HKSAR

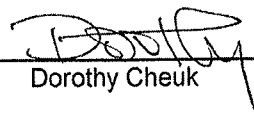
The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, 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: 16-Apr-12

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. 22086

Page 2 of 2 Pages

Results :

## 1. Level Accuracy

UUT Setting (dB)	Measured Value (dB)	IEC 942 Class 1 Spec.
94.0	94.02	± 0.3 dB

Uncertainty : ± 0.1 dB

## 2. Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	IEC 942 Class 1 Spec.
1.000	1.000	± 2 %

Uncertainty : ± 3.6 x 10<sup>-6</sup>

3. **Level Stability** : 0.0 dB  
IEC 942 Class 1 Spec.: ± 0.1 dB  
Uncertainty : ± 0.01 dB

4. **Total Harmonic Distortion** : < 2.9 %  
IEC 942 Class 1 Spec. : < 3 %  
Uncertainty : ± 2.3 % of rdg.

Remark : 1. UUT : Unit-Under-Test

2. The above measured values were the mean of 3 measurements.  
3. The uncertainty claimed is for a confidence probability of not less than 95%.  
4. Atmospheric Pressure : 1005 hPa.

----- END -----



# Calibration Certificate

Certificate No. **22085**

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. :** Q20865

**Date of receipt :** 11-Apr-12

## Item Tested

**Description :** Precision Integrating Sound Level Meter

**Manufacturer :** Rion

**Model :** NL-31

**Serial No. :** 00110024

## Test Conditions

**Date of Test :** 16-Apr-12

**Supply Voltage :** --

**Ambient Temperature :** (23 ± 3)°C

**Relative Humidity :** (50 ± 25) %

## Test Specifications

Calibration check.

Ref. Document/Procedure : Z01.

## Test Results

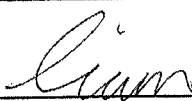
All results were within the IEC 651 Type 1 & IEC 804 Type 1 specification.  
The results are shown in the attached page(s).

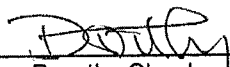
Main Test equipment used:

<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	15136	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:** 16-Apr-12

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



# Calibration Certificate

Certificate No. 22085

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

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

Uncertainty :  $\pm 0.2$  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	114.0	0.0	$\pm 0.7$ dB
130	104.0	104.0	0.0	
120	94.0	94.0 (Ref.)	--	
110	84.0	84.1	+0.1	
100	74.0	74.1	+0.1	
90	64.0	64.1	+0.1	
80	54.0	54.1	+0.1	

Uncertainty :  $\pm 0.1$  dB



# Calibration Certificate

Certificate No. **22085**

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## 3.2 Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	84.1	+0.1	± 0.4 dB
	94.0	94.0 (Ref.)	--	
	95.0	95.0	0.0	± 0.2 dB

Uncertainty : ± 0.1 dB

## 4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-39.6	- 39.4 dB, ± 1.5 dB
63 Hz	-26.0	- 26.2 dB, ± 1.5 dB
125 Hz	-16.1	- 16.1 dB, ± 1 dB
250 Hz	-8.6	- 8.6 dB, ± 1 dB
500 Hz	-3.1	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+1.4	+ 1.2 dB, ± 1 dB
4 kHz	+1.2	+ 1.0 dB, ± 1 dB
8 kHz	-1.0	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	-6.6	- 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	39.9	± 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	40.3	

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 : 1 005 hPa.

----- END -----





# Calibration Certificate

Certificate No. **23144**

Page 1 of 4 Pages

**Customer :** ETS-Testconsult Limited

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

**Order No. :** Q21311

**Date of receipt :** 23-May-12

## Item Tested

**Description :** Precision Integrating Sound Level Meter

**Manufacturer :** Rion

**Model :** NL-31

**Serial No. :** 00531142

## Test Conditions

**Date of Test :** 29-May-12

**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	15136	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:** 29-May-12

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



# Calibration Certificate

Certificate No. 23144

Page 2 of 4 Pages

Results :

## 1. SPL Accuracy

UUT Setting			Applied Value (dB)	UUT Reading (dB)
Level Range (dB)	Weight	Response		
20 - 100	L <sub>A</sub>	Fast	94.0	94.1
		Slow		94.1
	L <sub>C</sub>	Fast		94.1
	L <sub>p</sub>	Fast		94.1
30 - 120	L <sub>A</sub>	Fast	94.0	94.0
		Slow		94.0
	L <sub>C</sub>	Fast		94.0
	L <sub>p</sub>	Fast		94.0
30 - 120	L <sub>A</sub>	Fast	114.0	114.2
		Slow		114.2
	L <sub>C</sub>	Fast		114.2
	L <sub>p</sub>	Fast		114.2

IEC 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



# Calibration Certificate

Certificate No. 23144

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## 3. Linearity

### 3.1 Level Linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec. (Primary Indicator Range)
130	114.0	114.0	0.0	± 0.7 dB
130	104.0	104.0	0.0	
120	94.0	94.0 (Ref.)	--	
110	84.0	84.0	0.0	
100	74.0	74.0	0.0	
90	64.0	64.1	+0.1	
80	54.0	54.1	+0.1	

Uncertainty : ± 0.1 dB

### 3.2 Differential level linearity

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

Uncertainty : ± 0.1 dB

## 4. Frequency Weighting

### A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	- 39.6	- 39.4 dB, ± 1.5 dB
63 Hz	- 26.2	- 26.2 dB, ± 1.5 dB
125 Hz	- 16.2	- 16.1 dB, ± 1 dB
250 Hz	- 8.7	- 8.6 dB, ± 1 dB
500 Hz	- 3.2	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+ 1.3	+ 1.2 dB, ± 1 dB
4 kHz	+ 1.1	+ 1.0 dB, ± 1 dB
8 kHz	- 1.1	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	- 6.7	- 6.6 dB, + 3 dB ~ ∞

Uncertainty : ± 0.1 dB



# Calibration Certificate

Certificate No. 23144

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## 4. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	40.0	40.0	--
1/10	40.0	40.0	± 0.5 dB
1/10 <sup>2</sup>	40.0	40.0	
1/10 <sup>3</sup>	40.0	39.9	± 1.0 dB
1/10 <sup>4</sup>	40.0	39.8	

Uncertainty : ± 0.1 dB

- Remark : 1. UUT : Unit-Under-Test  
2. The uncertainty claimed is for a confidence probability of not less than 95%.  
3. Atmospheric Pressure : 1 000 hPa.

----- END -----



# Calibration Certificate

Certificate No. 17299

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. :** Q12949

**Date of receipt :** 5-Dec-11

## 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 :** 6-Dec-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 Type1 and IEC 804 Type 1 specification.

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


Main Test equipment used:

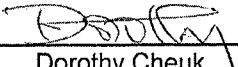
<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S017A	Multi-Function Generator	07279	SCL-HKSAR
S024	Sound Level Calibrator	15136	NIM-PRC & SCL-HKSAR

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:** 7-Dec-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



# Calibration Certificate

Certificate No. 17299

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	94.3
		Slow		94.3
	L <sub>C</sub>	Fast		94.3
		L <sub>p</sub>		Fast
30 - 120	L <sub>A</sub>	Fast	94.0	94.1
		Slow		94.1
	L <sub>C</sub>	Fast		94.0
	L <sub>p</sub>	Fast		94.0
30 - 120	L <sub>A</sub>	Fast	114.0	114.0
		Slow		114.0
	L <sub>C</sub>	Fast		114.1
	L <sub>p</sub>	Fast		114.1

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 :  $\pm 0.01$  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	114.1	0.0	$\pm 0.7$ dB
130	104.0	104.1	0.0	
120	94.0	94.1 (Ref.)	--	
110	84.0	84.2	+0.1	
100	74.0	74.1	0.0	
90	64.0	64.1	0.0	
80	54.0	54.1	0.0	
		54.2	+0.1	

Uncertainty :  $\pm 0.1$  dB



# Calibration Certificate

Certificate No. 17299

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	-39.6	- 39.4 dB, ± 1.5 dB
63 Hz	-26.3	- 26.2 dB, ± 1.5 dB
125 Hz	-16.3	- 16.1 dB, ± 1 dB
250 Hz	-8.7	- 8.6 dB, ± 1 dB
500 Hz	-3.3	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+1.2	+ 1.2 dB, ± 1 dB
4 kHz	+1.0	+ 1.0 dB, ± 1 dB
8 kHz	-1.2	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	-6.6	- 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	39.9	
1/10 <sup>3</sup>	40.0	39.9	± 1.0 dB
1/10 <sup>4</sup>	40.0	40.0	

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 : 1 012 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	
09/11/12	Cloudy	14:00	14:30	64.4	65.8	59.9	1.6
16/11/12	Cloudy	13:45	14:15	64.5	67.2	60.1	1.4
21/11/12	Cloudy	13:40	14:10	63.6	64.9	58.8	1.3
28/11/12	Drizzle	17:50	18:20	64.9	66.8	59.7	1.4

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

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
05/11/12	Fine	11:30	12:00	74.3	76.1	66.4	0.6
14/11/12	Fine	10:30	11:00	74.3	76.7	64.7	0.4
23/11/12	Cloudy	08:00	08:30	72.6	75.4	66.2	0.8
28/11/12	Cloudy	10:20	10:50	74.7	76.5	67.8	0.8

### 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	
05/11/12	Fine	10:55	11:25	61.3	62.5	59.7	0.9
14/11/12	Fine	11:05	11:35	65.1	66.6	62.4	0.6
23/11/12	Cloudy	08:35	09:05	59.2	60.8	57.8	1.0
28/11/12	Cloudy	10:55	11:25	65.4	66.8	62.8	1.1

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

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
05/11/12	Fine	10:20	10:50	59.9	61.3	58.9	1.0
14/11/12	Fine	11:40	12:10	64.7	66.5	62.7	0.6
23/11/12	Cloudy	09:10	09:40	58.9	60.2	57.2	1.1
28/11/12	Cloudy	11:30	12:00	65.1	66.8	63.1	1.2

## 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	
24/11/12	Cloudy	21:25	21:30	62.1	63.4	58.8	1.5
24/11/12	Cloudy	21:30	21:35	61.8	63.0	58.5	1.4
24/11/12	Cloudy	21:35	21:40	61.9	63.2	58.7	1.4

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

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
24/11/12	Cloudy	22:05	22:10	67.4	69.0	62.3	1.3
24/11/12	Cloudy	22:10	22:15	66.9	68.6	61.8	1.1
24/11/12	Cloudy	22:15	22:20	67.0	68.9	62.1	1.1

### Monitoring Station: RWM (Roof at Richwealth Mansion)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
24/11/12	Cloudy	22:25	22:30	66.4	67.2	60.4	1.2
24/11/12	Cloudy	22:30	22:35	66.7	67.5	60.9	1.4
24/11/12	Cloudy	22:35	22:40	66.3	67.0	60.2	1.1

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

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
24/11/12	Cloudy	22:45	22:50	64.2	65.5	59.4	1.1
24/11/12	Cloudy	22:50	22:55	63.7	64.8	59.2	1.2
24/11/12	Cloudy	22:55	23:00	63.3	64.5	58.9	1.2



## 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 (5min)	L10	L90	
04/11/12	Fine	11:00	11:05	63.8	66.6	58.9	1.1
04/11/12	Fine	11:05	11:10	63.5	65.9	58.2	1.1
04/11/12	Fine	11:10	11:15	63.7	66.1	59.1	1.1
25/11/12	Drizzle	09:20	09:25	62.2	63.7	59.4	1.6
25/11/12	Drizzle	09:25	09:30	62.8	64.0	59.6	1.5
25/11/12	Drizzle	09:30	09:35	62.6	63.9	59.3	1.5

### 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 (5min)	L10	L90	
04/11/12	Fine	09:05	09:10	67.9	71.9	61.3	0.8
04/11/12	Fine	09:10	09:15	69.4	72.9	61.9	0.8
04/11/12	Fine	09:15	09:20	67.4	71.1	62.0	0.8
25/11/12	Drizzle	10:05	10:10	68.4	69.8	63.3	1.5
25/11/12	Drizzle	10:10	10:15	67.8	69.2	62.9	1.4
25/11/12	Drizzle	10:15	10:20	68.0	69.5	63.1	1.3

### Monitoring Station: RWM (Roof at Richwealth Mansion)

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (5min)	L10	L90	
04/11/12	Fine	09:25	09:30	60.5	61.2	59.1	1.0
04/11/12	Fine	09:30	09:35	60.1	61.0	59.0	1.0
04/11/12	Fine	09:35	09:40	60.9	61.5	59.2	1.0
25/11/12	Drizzle	10:25	10:30	64.0	65.2	58.8	1.6
25/11/12	Drizzle	10:30	10:35	64.2	65.5	59.4	1.5
25/11/12	Drizzle	10:35	10:40	64.4	65.8	59.6	1.6

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

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (5min)	L10	L90	
04/11/12	Fine	09:45	09:50	59.6	60.4	58.5	1.2
04/11/12	Fine	09:50	09:55	60.0	61.1	58.8	1.2
04/11/12	Fine	09:55	10:00	59.8	60.9	58.7	1.2
25/11/12	Drizzle	10:45	10:50	65.1	66.7	59.9	1.5
25/11/12	Drizzle	10:50	10:55	65.4	66.9	60.3	1.5
25/11/12	Drizzle	10:55	11:00	65.0	66.3	59.7	1.6



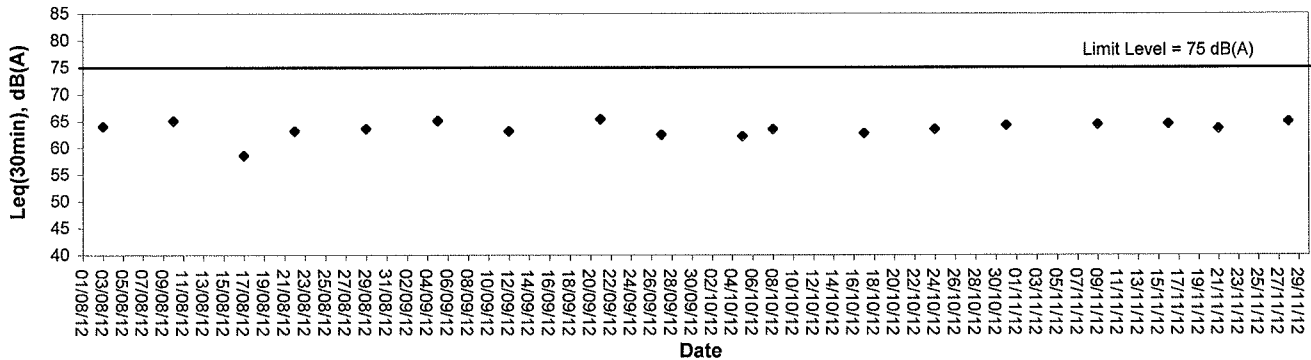
## **Appendix B3**

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

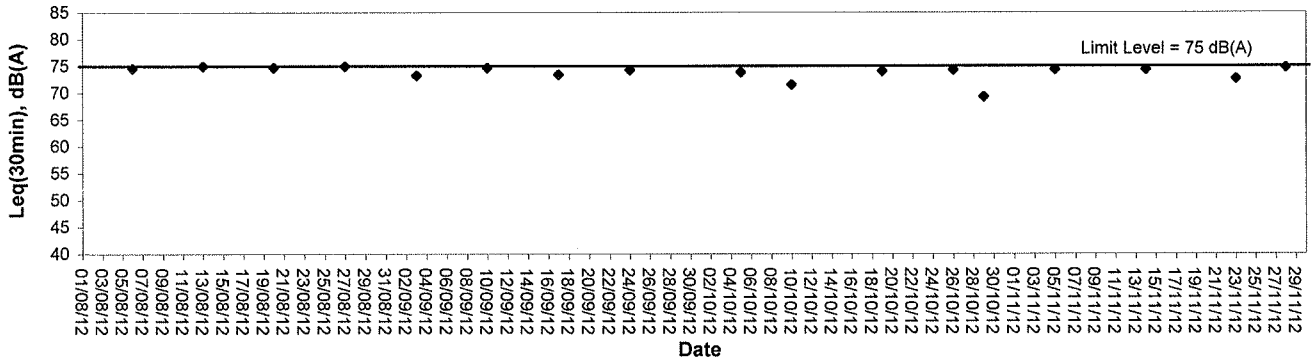


## Noise Monitoring (Day-time)

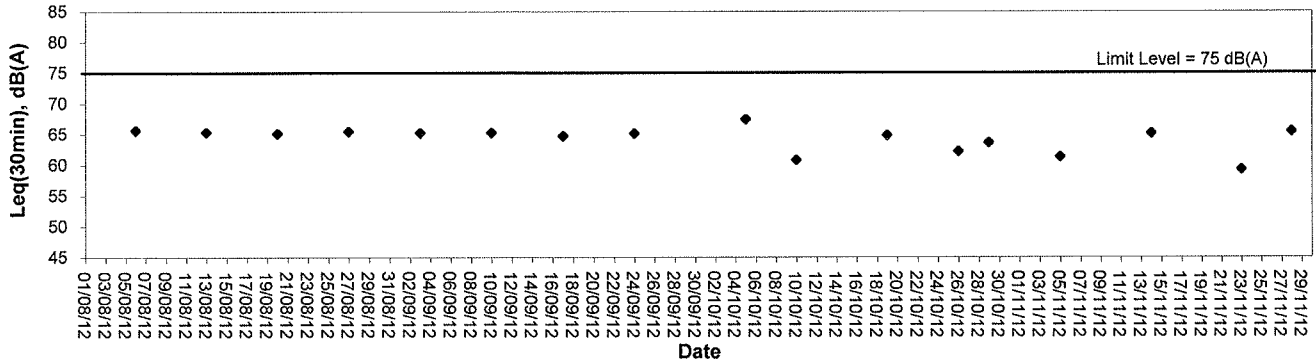
**Noise level at KS6 - Podium at the Culliman**



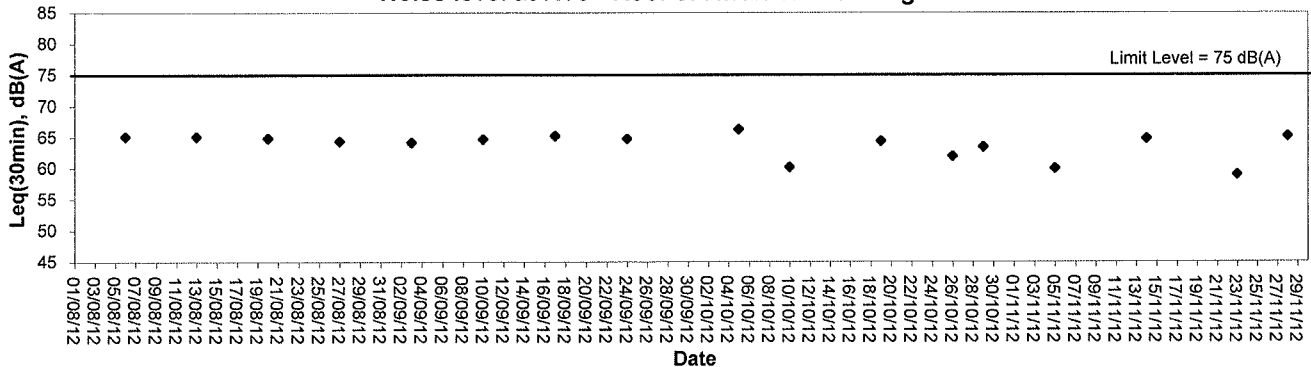
**Noise level at CGa - Pavement in front of Connaught Garden**



**Noise level at RWM - Roof of Richwealth Mansion**



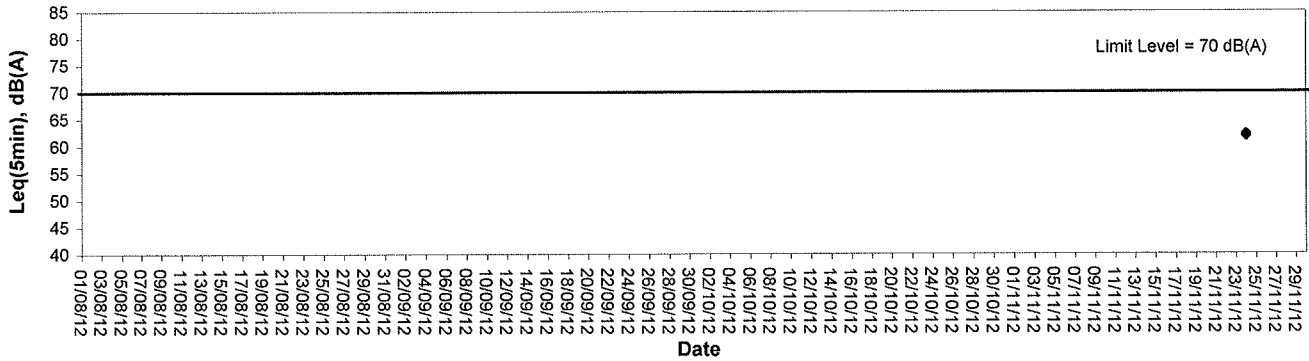
**Noise level at KY3 - Roof of Kwan Yik Building Phase 3**



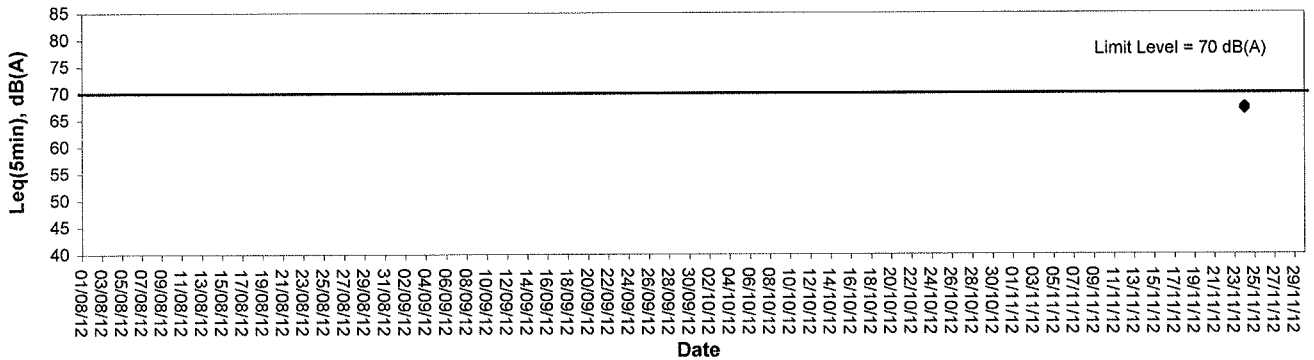


### Noise Monitoring (Evening-time)

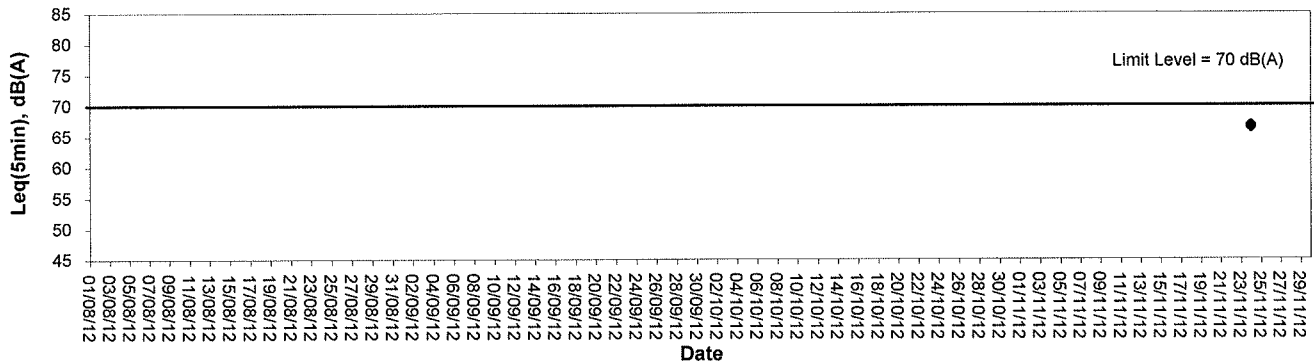
Noise level at KS6 - Podium at the Culliman



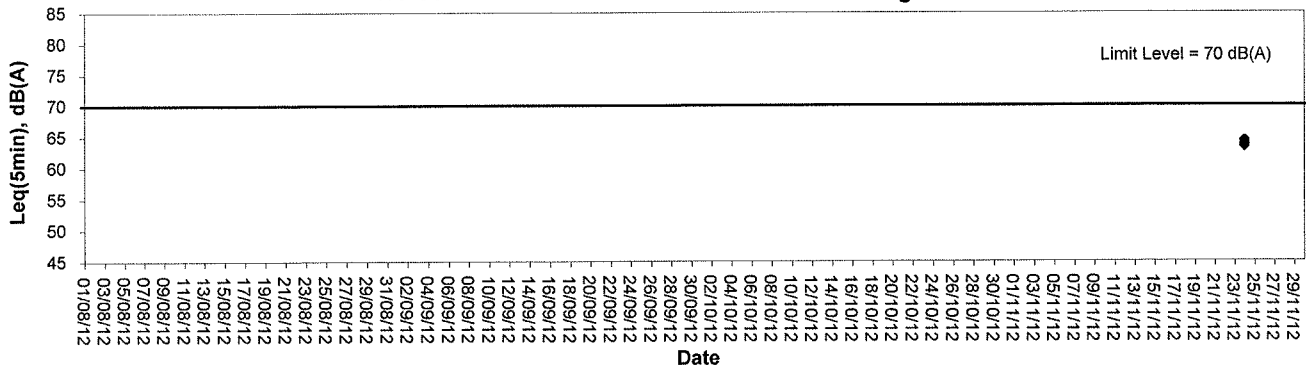
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



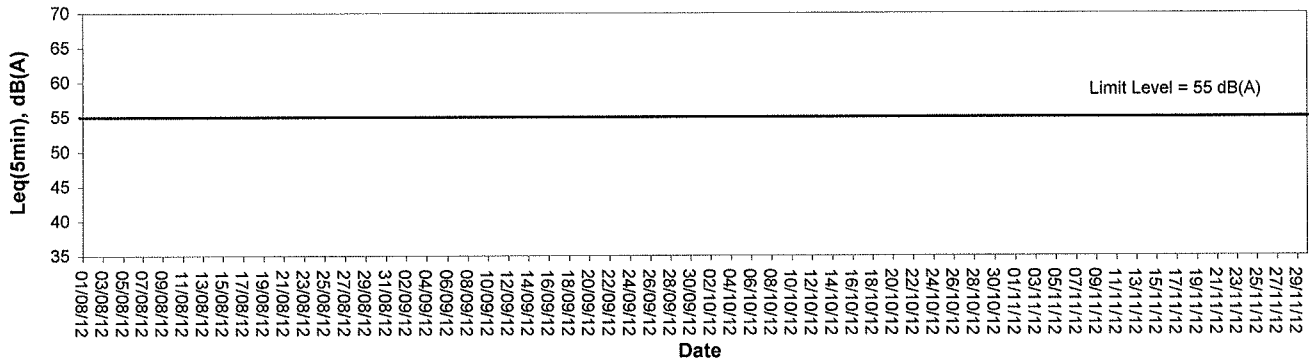
Noise level at KY3 - Roof of Kwan Yik Building Phase 3



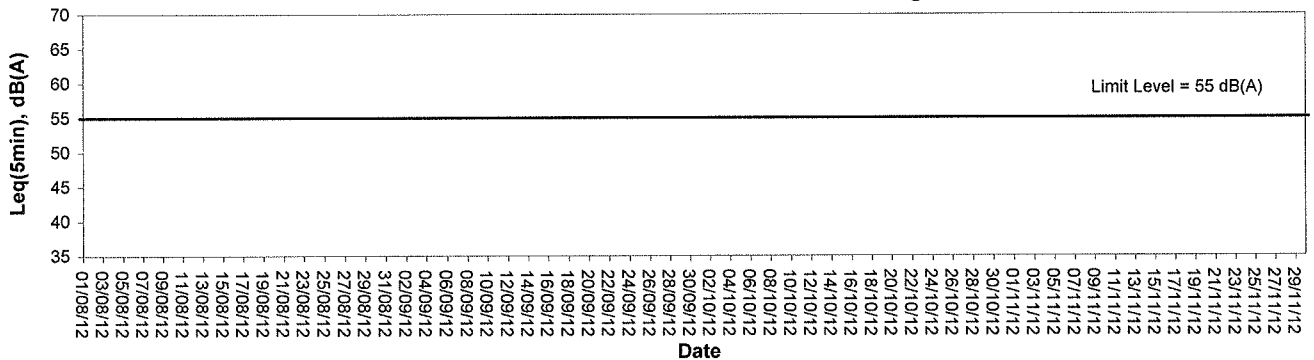


## Noise Monitoring (Night-time)

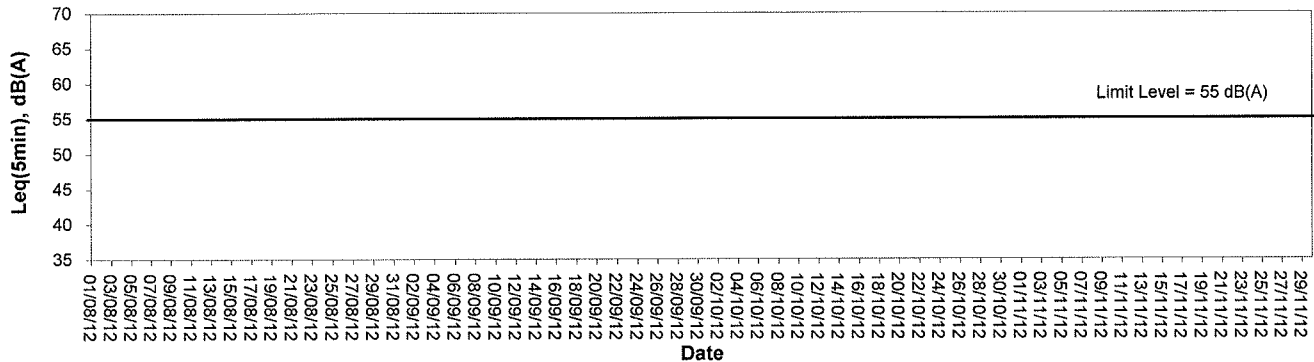
### Noise level at KS6 - Podium at the Culliman



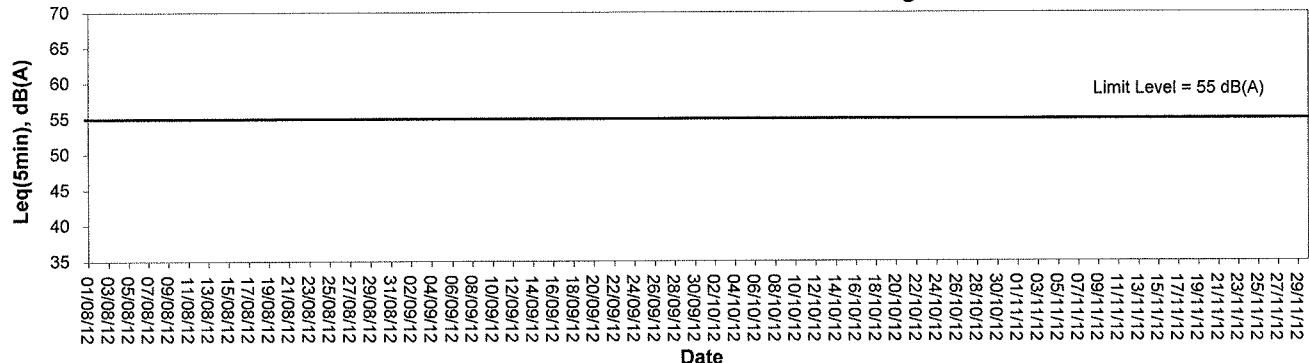
### Noise level at CGa - Pavement in front of Connaught Garden



### Noise level at RWM - Roof of Richwealth Mansion



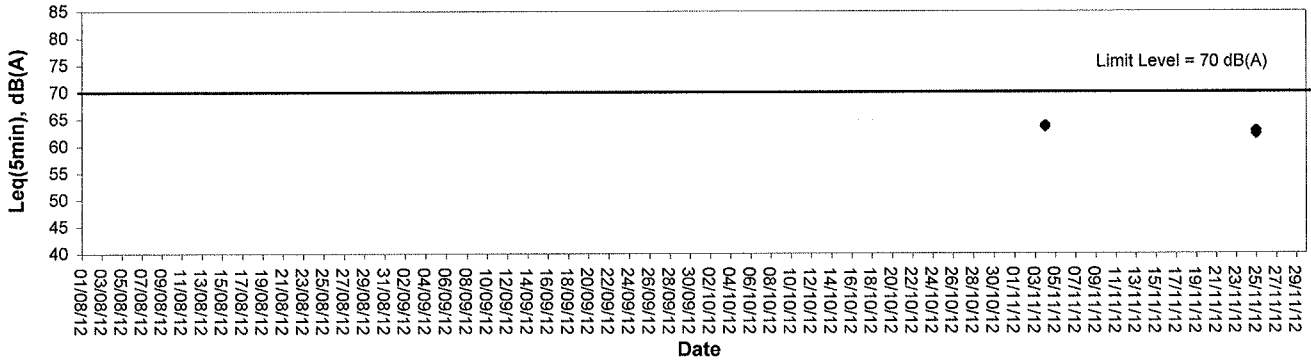
### Noise level at KY3 - Roof of Kwan Yik Building Phase 3



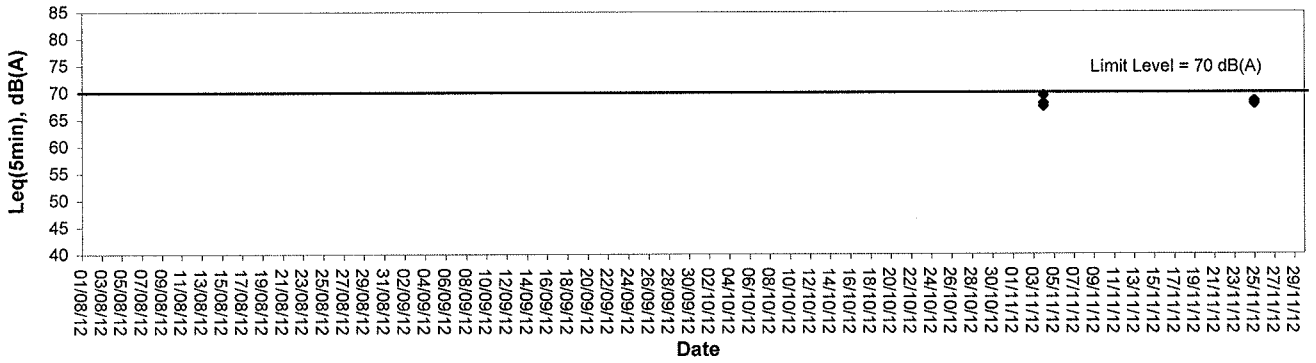


## Noise Monitoring (Holiday-time)

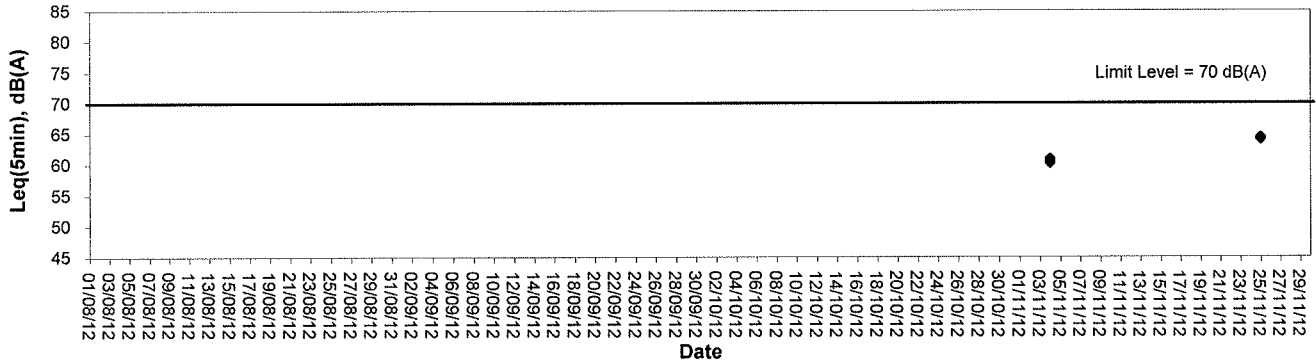
Noise level at KS6 - Podium at the Culliman



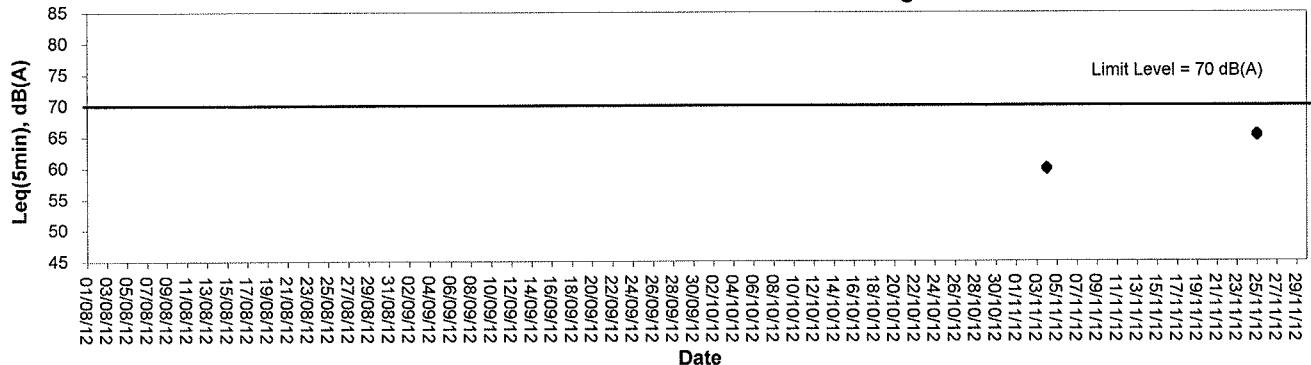
Noise level at CGa - Pavement in front of Connaught Garden



Noise level at RWM - Roof of Richwealth Mansion



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







## **Appendix C1**

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



## Performance Check of Turbidimeter

Equipment Ref. No. : ET/0505/009                      Manufacturer : HACH  
Model No. : 2100Q                                      Serial No. : 11060 C 010010  
Date of Calibration : 09/10/2012                      Due Date : 08/01/2013

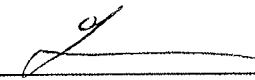
Gelex Vial Std	Theoretical Value (NTU)	Measured Value (NTU)	Difference %
0-10 NTU	5.30	5.12	0.86
10-100 NTU	52.0	51.1	0.73
100-1000 NTU	540	532	0.70

### Acceptance Criteria

Difference : <5 %

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

Checked by : 

Approved by : 



### Internal Calibration Report of Dissolved Oxygen Meter

Equipment Ref. No. : <u>ET/EW/008/004</u>	Manufacturer : <u>YSI</u>
Model No. : <u>Pro 2030</u>	Serial No. : <u>10F 101978</u>
Date of Calibration : <u>13/08/2012</u>	Calibration Due Date : <u>12/11/2012</u>

**Temperature Verification**

Ref. No. of Reference Thermometer : ET/0521/001

Ref. No. of Water Bath : ---

		Temperature (°C)		
Reference Thermometer reading	Measured	20.3	Corrected	19.9
DO Meter reading	Measured	19.9	Difference	0.0

**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/012/4.5/001/5	Reagent No. of 0.025N K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>	CPE/012/4.4/001/9
		Trial 1	Trial 2
Initial Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)		0.00	0.00
Final Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)		40.10	39.90
Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> used (ml)		40.10	39.90
Normality of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> solution (N)		0.02494	0.02506
Average Normality (N) of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> solution (N)		0.02500	
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

**Linearity 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)	0.00	10.70	21.20	0.00	7.80	12.60
Final Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)	10.70	21.20	29.10	7.80	12.60	17.40
Vol. (V) of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> used (ml)	10.70	10.50	7.90	7.80	4.80	4.80
Dissolved Oxygen (DO), mg/L	7.18	7.05	5.30	5.23	3.22	3.22
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	7.21	7.16	7.19	7.18	7.05	7.12	0.98
5	5.35	5.28	5.32	5.30	5.23	5.27	0.94
10	3.17	3.21	3.19	3.22	3.22	3.22	0.94
Linear regression coefficient				0.99880			



### Internal Calibration Report of Dissolved Oxygen Meter

**Zero Point Checking**

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

**Salinity Checking**

Reagent No. of NaCl (10ppt)	CPE/012/4.7/001/27	Reagent No. of NaCl (30ppt)	CPE/012/4.8/001/27
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**Determination of dissolved oxygen content by Winkler Titration \*\***

Salinity (ppt)	10		30	
	1	2	1	2
Trial				
Initial Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)	0.00	11.60	23.40	34.10
Final Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)	11.60	23.40	34.10	44.60
Vol. (V) of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> used (ml)	11.60	11.80	10.70	10.50
Dissolved Oxygen (DO), mg/L	7.79	7.92	7.18	7.05
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	7.8	7.84	7.82	7.79	7.92	7.86	0.51
30	7.24	7.2	7.22	7.18	7.05	7.12	1.39

**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 # / ~~does not comply~~ # with the specified requirements and is deemed acceptable # / unacceptable # for use.

# Delete as appropriate

Calibrated by

:

Approved by :



## Performance Check of Salinity Meter

Equipment Ref. No. : ET/EW/008/004      Manufacturer : YSI  
Model No. : Pro 2030      Serial No. : 10F 101978  
Date of Calibration : 13/08/2012      Due Date : 12/11/2012

Ref. No. of Salinity Standard used (30ppt)	S/001/4
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Salinity Standard (ppt)	Measured Salinity (ppt)	Difference %
30.1	30.4	0.99

Acceptance Criteria

Difference : <10 %

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

Checked by :

Approved by :



### Internal Calibration Report of Dissolved Oxygen Meter

Equipment Ref. No. :	<u>ET/EW/008/004</u>	Manufacturer :	<u>YSI</u>
Model No. :	<u>Pro 2030</u>	Serial No. :	<u>10F 101978</u>
Date of Calibration :	<u>10/11/2012</u>	Calibration Due Date :	<u>09/02/2013</u>

**Temperature Verification**

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

		Temperature (°C)		
Reference Thermometer reading	Measured	20.4	Corrected	20.0
DO Meter reading	Measured	19.8	Difference	0.2

**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	<u>CPE/012/4.5/001/5</u>	Reagent No. of 0.025N K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>	<u>CPE/012/4.4/001/13</u>
		Trial 1	Trial 2
Initial Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)		0.00	0.00
Final Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)		40.55	40.50
Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> used (ml)		40.55	40.50
Normality of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> solution (N)		0.02466	0.02469
Average Normality (N) of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> solution (N)		0.02468	
Acceptance criteria, Deviation		Less than ± 0.001N	

Calculation: Normality of Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>, N = I / ml Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> used

**Linearity 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)	0.00	10.90	21.60	0.00	8.00	12.90
Final Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)	10.90	21.60	29.70	8.00	12.90	17.70
Vol. (V) of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> used (ml)	10.90	10.70	8.10	8.00	4.90	4.80
Dissolved Oxygen (DO), mg/L	7.22	7.09	5.37	5.30	3.25	3.18
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	7.25	7.19	7.22	7.22	7.09	7.16	0.83
5	5.34	5.28	5.31	5.37	5.30	5.34	0.56
10	3.17	3.21	3.19	3.25	3.18	3.22	0.94
Linear regression coefficient				0.99980			



### Internal Calibration Report of Dissolved Oxygen Meter

**Zero Point Checking**

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

**Salinity Checking**

Reagent No. of NaCl (10ppt)	CPE/012/4.7/001/32	Reagent No. of NaCl (30ppt)	CPE/012/4.8/001/32
-----------------------------	--------------------	-----------------------------	--------------------

**Determination of dissolved oxygen content by Winkler Titration \*\***

Salinity (ppt)	10		30	
	1	2	1	2
Trial				
Initial Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)	0.00	11.80	23.50	34.40
Final Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)	11.80	23.50	34.40	45.00
Vol. (V) of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> used (ml)	11.80	11.70	10.90	10.60
Dissolved Oxygen (DO), mg/L	7.82	7.75	7.22	7.02
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	7.8	7.84	7.82	7.82	7.75	7.79	0.38
30	7.25	7.2	7.23	7.22	7.02	7.12	1.53

**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 # / ~~does not comply~~ # with the specified requirements and is deemed acceptable # / unacceptable # for use.

# Delete as appropriate

Calibrated by :

Approved by :



## Performance Check of Salinity Meter

Equipment Ref. No. : ET/EW/008/004      Manufacturer : YSI  
Model No. : Pro 2030      Serial No. : 10F 101978  
Date of Calibration : 10/11/2012      Due Date : 09/02/2013

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

S/001/4

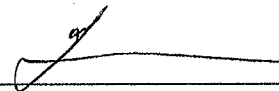
Salinity Standard (ppt)	Measured Salinity (ppt)	Difference %
30.9	30.1	2.62

Acceptance Criteria

Difference : <10 %

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

Checked by : 

Approved by : 





## **Appendix C2**

### **Impact Water Quality Monitoring Results**

Mid-Flood Tide

Monitoring Station : C2

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
01/11/12	1108-1122	21/Fine	Surface	1.0	25.3	26.9	26.9	5.97	5.96	84.2	84.0	3.17	3.20	3.41	5.0	5.1	5.4	
						26.9		5.94		83.8		3.22			5.2			
			Middle	9.0	25.2	27.0	27.0	5.83	5.85	82.2	82.5	3.39	3.43		3.41	5.4		5.4
						27.0		5.87		82.7		3.43			5.4			
			Bottom	17.0	25.0	27.2	27.2	5.76	5.78	81.2	81.5	3.60	3.65		3.63	5.6		5.6
						27.1		5.80		81.7		3.65			5.6			
03/11/12	1006-1018	20/Fine	Surface	1.0	25.5	27.0	27.0	5.95	5.97	83.8	84.1	3.47	3.50	3.68	5.5	5.5	5.6	
						27.0		5.98		84.3		3.53			5.4			
			Middle	9.4	25.3	27.3	27.3	5.81	5.79	81.8	81.5	3.72	3.67		3.70	5.6		5.6
						27.2		5.77		81.2		3.67			5.6			
			Bottom	17.8	25.1	27.4	27.4	5.78	5.76	81.3	81.0	3.86	3.82		3.84	5.8		5.8
						27.4		5.74		80.7		3.82			5.8			
06/11/12	1543-1558	24/Fine	Surface	1.0	25.3	26.8	26.8	5.95	5.95	83.3	83.3	3.48	3.51	3.75	5.5	5.5	5.7	
						26.8		5.94		83.2		3.53			5.4			
			Middle	9.3	25.2	26.9	26.9	5.86	5.86	82.0	82.0	3.76	3.72		3.74	5.6		5.6
						26.9		5.85		81.9		3.72			5.6			
			Bottom	17.6	25.1	27.0	27.1	5.75	5.74	80.5	80.4	3.95	4.06		4.01	5.8		5.9
						27.1		5.73		80.2		4.06			5.8			
08/11/12	1622-1635	25/Cloudy	Surface	1.0	25.2	26.9	26.9	5.86	5.85	82.7	82.5	3.26	3.28	3.51	5.0	5.1	5.4	
						26.9		5.83		82.2		3.30			5.2			
			Middle	9.4	25.0	27.2	27.2	5.79	5.77	81.7	81.4	3.54	3.59		3.57	5.4		5.4
						27.1		5.74		81.0		3.59			5.4			
			Bottom	17.8	24.9	27.2	27.3	5.69	5.70	80.3	80.4	3.72	3.67		3.70	5.6		5.6
						27.3		5.70		80.5		3.67			5.6			
10/11/12	1633-1645	26/Cloudy	Surface	1.0	25.5	27.0	27.0	5.88	5.86	82.4	82.2	3.30	3.28	3.57	5.5	5.6	5.8	
						27.0		5.84		81.9		3.25			5.6			
			Middle	9.1	25.3	27.1	27.1	5.75	5.74	80.6	80.4	3.60	3.68		3.64	5.8		5.8
						27.1		5.72		80.1		3.68			5.8			
			Bottom	17.2	25.1	27.4	27.4	5.70	5.72	79.9	80.2	3.82	3.77		3.80	6.0		5.9
						27.4		5.74		80.4		3.77			5.8			
13/11/12	1819-1833	26/Fine	Surface	1.0	25.3	26.8	26.8	6.06	6.05	84.9	84.8	3.41	3.40	3.55	5.0	5.1	5.4	
						26.8		6.04		84.7		3.38			5.2			
			Middle	9.6	25.1	26.9	27.0	5.93	5.93	83.1	83.1	3.58	3.54		3.56	5.4		5.5
						27.0		5.92		83.0		3.54			5.6			
			Bottom	18.1	25.0	27.1	27.2	5.87	5.86	82.3	82.2	3.71	3.70		3.71	5.6		5.6
						27.2		5.85		82.0		3.70			5.6			
15/11/12	1015-1030	24/Cloudy	Surface	1.0	24.7	26.4	26.5	5.87	5.86	82.2	82.0	4.10	4.13	4.33	6.0	6.1	6.3	
						26.5		5.84		81.8		4.15			6.2			
			Middle	9.4	24.7	26.7	26.8	5.80	5.78	81.2	80.9	4.32	4.27		4.30	6.4		6.3
						26.8		5.75		80.5		4.27			6.2			
			Bottom	17.8	24.8	26.9	27.0	5.70	5.71	79.8	79.9	4.58	4.54		4.56	6.6		6.6
						27.0		5.71		80.0		4.54			6.6			
17/11/12	1206-1219	20/Cloudy	Surface	1.0	24.3	26.5	26.5	6.04	6.03	84.6	84.4	4.20	4.24	4.42	6.0	6.1	6.3	
						26.4		6.01		84.2		4.27			6.2			
			Middle	8.9	24.4	26.8	26.8	5.86	5.85	82.0	81.8	4.39	4.42		4.41	6.4		6.3
						26.8		5.83		81.6		4.42			6.2			
			Bottom	16.8	24.4	27.1	27.1	5.81	5.83	81.3	81.6	4.60	4.65		4.63	6.6		6.6
						27.0		5.85		81.9		4.65			6.6			
20/11/12	1458-1510	22/Drizzle	Surface	1.0	24.2	26.5	26.6	6.04	6.02	84.6	84.3	4.18	4.21	4.37	6.0	6.1	6.3	
						26.6		5.99		83.9		4.23			6.2			
			Middle	8.8	24.4	26.8	26.9	5.89	5.88	82.5	82.3	4.35	4.27		4.31	6.4		6.3
						26.9		5.86		82.0		4.27			6.2			
			Bottom	16.6	24.4	27.0	27.1	5.80	5.79	81.2	81.0	4.58	4.63		4.61	6.6		6.6
						27.1		5.77		80.8		4.63			6.6			
22/11/12	2200-2215	24/Cloudy	Surface	1.0	24.3	26.7	26.7	6.16	6.17	86.2	86.4	3.54	3.55	3.76	5.5	5.6	5.8	
						26.6		6.18		86.5		3.56			5.6			
			Middle	9.7	24.5	27.0	27.0	5.95	5.97	83.3	83.6	3.76	3.80		3.78	5.6		5.7
						27.0		5.99		83.9		3.80			5.8			
			Bottom	18.4	24.5	27.0	27.1	5.83	5.82	81.6	81.4	3.95	3.97		3.96	6.0		6.0
						27.1		5.80		81.2		3.97			6.0			
24/11/12	1652-1704	19/Drizzle	Surface	1.0	24.0	26.5	26.5	6.28	6.30	88.0	88.3	3.20	3.21	3.31	5.0	5.1	5.2	
						26.5		6.31		88.5		3.22			5.2			
			Middle	8.5	24.1	26.7	26.8	6.16	6.15	86.2	86.1	3.33	3.30		3.32	5.2		5.2
						26.8		6.14		86.0		3.30			5.2			
			Bottom	16.0	24.2	26.9	26.9	6.04	6.03	84.4	84.3	3.41	3.39		3.40	5.4		5.4
						26.8		6.02		84.2		3.39			5.4			
27/11/12	1746-1800	16/Rainy	Surface	1.0	23.7	26.5	26.5	6.31	6.29	88.0	87.8	3.30	3.29	3.38	5.0	5.1	5.3	
						26.4		6.27		87.5		3.27			5.2			
			Middle	8.9	23.9	26.7	26.7	6.12	6.10	85.4	85.1	3.34	3.38		3.36	5.4		5.3
						26.7		6.08		84.8		3.38			5.2			
			Bottom	16.8	24.1	26.9	27.0	5.92	5.89	82.6	82.2	3.47	3.51		3.49	5.4		5.4
						27.0		5.86		81.7		3.51			5.4			
29/11/12	1417-1434	19/Cloudy	Surface	1.0	23.3	26.4	26.4	6.19	6.17	85.9	85.6	3.24	3.28	3.46	5.0	5.1	5.4	
						26.4		6.15		85.3		3.32			5.2			
			Middle	8.9	23.2	26.7	26.8	6.04	6.02	83.8	83.5	3.45	3.41		3.48	5.4		5.4
						26.8		6.00		83.2		3.51			5.4			
			Bottom	16.8	23.2	27.0	27.0	5.82	5.84	80.7	81.0	3.60	3.66		3.63	5.6		5.6
						27.0		5.86		81.3		3.66			5.6			

Mid-Flood Tide

Monitoring Station : C4

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
01/11/12	1049-1104	21/Fine	Surface	1.0	25.3	26.9	26.9	6.01	6.00	84.7	84.6	3.21	3.24	3.47	5.2	5.2	5.4
						26.8		5.99		84.5		3.26			5.2		
			Middle	9.3	25.1	27.1	27.1	5.85	5.83	82.5	82.2	3.44	3.47		5.4	5.4	
						27.0		5.81		81.9		3.50			5.4		
			Bottom	17.6	25.0	27.2	27.2	5.73	5.71	80.7	80.4	3.68	3.71		5.6	5.6	
						27.2		5.68		80.0		3.73			5.5		
03/11/12	1047-1059	20/Fine	Surface	1.0	25.4	27.0	27.0	5.86	5.84	82.5	82.2	3.39	3.42	3.55	5.4	5.4	5.5
						27.0		5.82		81.9		3.44			5.4		
			Middle	9.3	25.3	27.3	27.3	5.73	5.75	80.6	80.9	3.55	3.53		5.6	5.5	
						27.3		5.77		81.1		3.50			5.4		
			Bottom	17.6	25.1	27.5	27.5	5.75	5.73	80.9	80.6	3.69	3.72		5.6	5.6	
						27.4		5.71		80.3		3.74			5.5		
06/11/12	1524-1539	24/Fine	Surface	1.0	25.3	26.6	26.7	5.93	5.92	83.0	82.8	3.75	3.72	3.84	5.6	5.6	5.8
						26.7		5.90		82.6		3.69			5.6		
			Middle	9.5	25.2	26.8	26.9	5.83	5.83	81.6	81.6	3.83	3.85		5.8	5.8	
						26.9		5.83		81.6		3.87			5.8		
			Bottom	18.0	25.1	27.1	27.1	5.74	5.73	80.4	80.3	3.97	3.95		6.0	6.0	
						27.1		5.72		80.1		3.92			6.0		
08/11/12	1603-1616	25/Cloudy	Surface	1.0	25.2	26.8	26.9	5.89	5.91	83.1	83.3	3.32	3.35	3.54	5.2	5.3	5.5
						26.9		5.92		83.5		3.38			5.4		
			Middle	9.8	25.1	27.1	27.1	5.80	5.79	81.8	81.6	3.61	3.59		5.6	5.5	
						27.1		5.77		81.4		3.57			5.4		
			Bottom	18.6	25.0	27.2	27.3	5.68	5.70	80.1	80.4	3.63	3.67		5.6	5.6	
						27.3		5.72		80.7		3.70			5.5		
10/11/12	1614-1626	26/Cloudy	Surface	1.0	25.5	27.0	27.1	5.92	5.90	83.0	82.7	3.17	3.19	3.61	5.2	5.2	5.7
						27.1		5.88		82.4		3.20			5.2		
			Middle	9.2	25.2	27.2	27.2	5.81	5.79	81.4	81.1	3.73	3.75		5.8	5.8	
						27.2		5.77		80.8		3.77			5.8		
			Bottom	17.4	25.2	27.3	27.4	5.78	5.77	81.0	80.8	3.92	3.89		6.0	6.0	
						27.4		5.75		80.6		3.86			6.0		
13/11/12	1800-1815	26/Fine	Surface	1.0	25.2	26.7	26.7	6.03	6.02	84.5	84.3	3.26	3.32	3.50	5.2	5.3	5.4
						26.7		6.00		84.1		3.38			5.4		
			Middle	10.2	25.1	26.9	26.9	5.89	5.88	82.6	82.4	3.56	3.53		5.4	5.4	
						26.9		5.86		82.2		3.50			5.4		
			Bottom	19.4	25.0	27.2	27.2	5.81	5.80	81.4	81.3	3.63	3.66		5.6	5.6	
						27.2		5.79		81.2		3.69			5.5		
15/11/12	0950-1011	24/Cloudy	Surface	1.0	24.6	26.4	26.4	5.90	5.92	82.6	82.8	4.07	4.08	4.30	6.0	6.0	6.3
						26.4		5.93		83.0		4.09			6.0		
			Middle	9.8	24.7	26.6	26.7	5.81	5.80	81.3	81.1	4.18	4.22		6.2	6.2	
						26.7		5.78		80.9		4.25			6.2		
			Bottom	18.6	24.8	26.9	27.0	5.69	5.71	79.7	80.0	4.55	4.60		6.6	6.6	
						27.0		5.73		80.2		4.64			6.6		
17/11/12	1147-1200	20/Cloudy	Surface	1.0	24.3	26.6	26.6	6.07	6.06	85.1	84.9	4.12	4.15	4.50	6.2	6.2	6.5
						26.6		6.04		84.6		4.18			6.2		
			Middle	9.4	24.4	26.9	26.9	5.92	5.94	82.9	83.2	4.64	4.62		6.6	6.6	
						26.8		5.95		83.4		4.60			6.6		
			Bottom	17.8	24.4	27.1	27.1	5.95	5.97	83.4	83.6	4.75	4.73		6.8	6.7	
						27.1		5.98		83.8		4.70			6.5		
20/11/12	1439-1453	22/Drizzle	Surface	1.0	24.2	26.6	26.7	6.08	6.07	85.1	84.9	4.10	4.13	4.47	6.0	6.1	6.5
						26.7		6.05		84.7		4.16			6.2		
			Middle	9.4	24.2	26.7	26.8	5.94	5.96	83.2	83.4	4.61	4.59		6.6	6.6	
						26.8		5.97		83.6		4.57			6.6		
			Bottom	17.8	24.4	26.9	27.0	5.98	6.00	83.7	83.9	4.72	4.70		6.8	6.7	
						27.0		6.01		84.1		4.67			6.5		
22/11/12	2145-2158	24/Cloudy	Surface	1.0	24.4	26.6	26.6	6.02	6.03	84.3	84.5	3.52	3.55	3.72	5.4	5.5	5.7
						26.6		6.04		84.6		3.58			5.6		
			Middle	9.1	24.5	27.0	27.0	5.98	5.97	83.8	83.6	3.72	3.73		5.6	5.6	
						27.0		5.96		83.4		3.74			5.6		
			Bottom	17.2	24.4	27.1	27.1	5.81	5.83	81.3	81.6	3.87	3.89		5.8	5.9	
						27.1		5.85		81.9		3.90			6.0		
24/11/12	1634-1646	19/Drizzle	Surface	1.0	23.9	26.4	26.4	6.26	6.25	87.8	87.7	3.18	3.17	3.27	5.0	5.0	5.2
						26.4		6.24		87.5		3.15			5.0		
			Middle	8.9	24.1	26.7	26.7	6.12	6.13	85.7	85.8	3.27	3.27		5.2	5.2	
						26.6		6.13		85.8		3.26			5.2		
			Bottom	16.8	24.2	26.9	26.9	6.05	6.03	84.6	84.3	3.38	3.39		5.4	5.5	
						26.9		6.01		84.0		3.40			5.5		
27/11/12	1725-1738	16/Rainy	Surface	1.0	23.7	26.4	26.4	6.25	6.23	87.2	86.9	3.26	3.25	3.35	5.2	5.2	5.4
						26.4		6.21		86.6		3.24			5.2		
			Middle	9.2	23.9	26.6	26.7	6.09	6.11	85.0	85.2	3.33	3.35		5.4	5.4	
						26.7		6.12		85.4		3.36			5.4		
			Bottom	17.4	24.1	26.8	26.9	5.94	5.96	82.9	83.4	3.44	3.46		5.6	5.6	
						26.9		5.97		83.8		3.48			5.5		
29/11/12	1359-1412	19/Cloudy	Surface	1.0	23.3	26.4	26.5	6.22	6.20	86.3	86.0	3.22	3.25	3.42	5.2	5.2	5.4
						26.5		6.17		85.6		3.27			5.2		
			Middle	9.3	23.3	26.8	26.8	6.01	5.99	83.4	83.1	3.38	3.41		5.4	5.4	
						26.8		5.96		82.7		3.44			5.4		
			Bottom	17.6	23.2	27.0	27.1	5.79	5.80	80.3	80.5	3.57	3.61		5.6	5.6	
						27.1		5.81		80.6		3.64			5.5		

**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
01/11/12	0855-0909	20/Fine	Surface	1.0	25.3	26.7	26.8	5.98	5.97	84.3	84.1	3.30	3.33	3.54	5.0	5.2	5.4
				9.1	25.2	26.8		5.95		83.9		3.36			5.4		
			Middle	17.2	25.0	26.9	27.0	5.81	5.82	81.9	82.1	3.58	3.54		5.6	5.5	
				17.2	25.0	27.0		5.83		82.2		3.54			5.4		
			Bottom	17.2	25.0	27.1	27.2	5.69	5.71	80.3	80.5	3.71	3.74		5.6	5.6	
				17.2	25.0	27.2		5.73		80.7		3.76			5.6		
03/11/12	0834-0847	20/Fine	Surface	1.0	25.4	27.0	27.0	5.94	5.96	83.7	83.9	3.52	3.55	3.73	5.5	5.6	5.7
				8.8	25.2	27.2		5.87		82.7		3.75			5.6		
			Middle	16.6	25.1	27.1	27.2	5.84	5.86	82.2	82.5	3.77	3.76		5.8	5.7	
				16.6	25.1	27.4		5.73		80.5		3.91			5.8		
			Bottom	16.6	25.1	27.4	27.4	5.70	5.72	80.1	80.3	3.86	3.89		5.6	5.7	
				16.6	25.1	27.4		5.70		80.1		3.86			5.6		
06/11/12	1321-1337	24/Fine	Surface	1.0	25.3	26.8	26.8	5.98	5.97	83.7	83.6	3.62	3.60	3.79	5.5	5.5	5.8
				8.8	25.2	26.9		5.83		81.6		3.79			5.8		
			Middle	16.6	25.1	26.9	26.9	5.80	5.82	82.0	81.8	3.83	3.81		5.8	5.8	
				16.6	25.1	27.1		5.78		80.9		3.92			6.0		
			Bottom	16.6	25.1	27.1	27.1	5.75	5.77	80.5	80.7	4.03	3.98		6.0	6.0	
				16.6	25.1	27.1		5.75		80.5		4.03			6.0		
08/11/12	1412-1425	25/Cloudy	Surface	1.0	25.1	26.8	26.9	5.82	5.84	82.1	82.4	3.65	3.62	3.84	5.5	5.6	5.8
				8.9	24.9	27.1		5.70		80.4		3.77			5.6		
			Middle	16.8	24.8	27.2	27.2	5.73	5.72	80.8	80.6	3.83	3.80		5.8	5.8	
				16.8	24.8	27.3		5.68		80.1		4.08			6.0		
			Bottom	16.8	24.8	27.3	27.3	5.66	5.67	79.8	80.0	4.14	4.11		6.2	6.1	
				16.8	24.8	27.3		5.66		79.8		4.14			6.2		
10/11/12	1412-1425	26/Cloudy	Surface	1.0	25.6	26.9	26.9	5.93	5.92	83.1	82.9	3.31	3.30	3.60	5.5	5.5	5.7
				8.9	25.3	27.0		5.77		80.8		3.67			5.8		
			Middle	16.8	25.3	27.1	27.1	5.74	5.76	80.4	80.6	3.60	3.64		5.4	5.6	
				16.8	25.3	27.2		5.79		81.1		3.90			6.0		
			Bottom	16.8	25.3	27.2	27.2	5.74	5.77	80.4	80.8	3.85	3.88		5.8	5.9	
				16.8	25.3	27.1		5.74		80.4		3.85			5.8		
13/11/12	1607-1622	26/Fine	Surface	1.0	25.3	26.7	26.8	6.08	6.08	85.2	85.1	3.42	3.44	3.63	5.5	5.5	5.6
				9.4	25.2	26.8		6.07		85.0		3.46			5.4		
			Middle	17.8	25.0	27.0	27.0	5.93	5.92	83.1	82.9	3.59	3.61		5.6	5.6	
				17.8	25.0	27.0		5.90		82.7		3.63			5.6		
			Bottom	17.8	25.0	27.1	27.2	5.86	5.84	82.2	81.9	3.86	3.84		5.8	5.8	
				17.8	25.0	27.2		5.81		81.5		3.81			5.8		
15/11/12	0818-0826	24/Cloudy	Surface	1.0	24.6	26.4	26.5	5.83	5.85	81.6	81.9	3.62	3.65	3.78	5.5	5.6	5.8
				8.7	24.7	26.5		5.87		82.2		3.67			5.6		
			Middle	16.4	24.7	26.7	26.8	5.76	5.77	80.6	80.8	3.80	3.79		5.8	5.8	
				16.4	24.7	26.8		5.78		80.9		3.78			5.8		
			Bottom	16.4	24.7	26.8	26.9	5.66	5.68	79.2	79.5	3.91	3.90		6.0	5.9	
				16.4	24.7	26.9		5.69		79.7		3.89			5.8		
17/11/12	0944-0957	20/Cloudy	Surface	1.0	24.2	26.5	26.5	6.04	6.03	84.6	84.4	3.90	3.94	4.23	6.0	5.9	6.2
				8.8	24.3	26.4		6.01		84.2		3.98			5.8		
			Middle	16.6	24.4	26.7	26.8	5.95	5.97	83.4	83.6	4.24	4.32		6.2	6.3	
				16.6	24.4	26.8		5.98		83.8		4.39			6.4		
			Bottom	16.6	24.4	27.0	27.0	5.87	5.85	82.2	81.9	4.45	4.43		6.4	6.4	
				16.6	24.4	27.0		5.83		81.6		4.40			6.4		
20/11/12	1242-1256	22/Drizzle	Surface	1.0	24.1	26.4	26.5	6.05	6.05	84.7	84.7	3.90	3.93	4.20	6.0	6.0	6.2
				8.9	24.2	26.7		5.96		83.4		4.23			6.2		
			Middle	16.8	24.4	26.8	26.8	5.99	5.98	83.9	83.7	4.35	4.29		6.4	6.3	
				16.8	24.4	26.8		5.99		83.9		4.35			6.4		
			Bottom	16.8	24.4	27.0	27.1	5.87	5.86	82.2	82.0	4.42	4.40		6.2	6.3	
				16.8	24.4	27.1		5.84		81.8		4.37			6.2		
22/11/12	1952-2006	24/Cloudy	Surface	1.0	24.4	26.8	26.8	5.99	5.98	83.9	83.8	3.74	3.75	3.94	5.5	5.6	5.9
				8.9	24.4	26.7		5.97		83.6		3.76			5.6		
			Middle	16.8	24.5	26.9	26.9	5.87	5.88	82.2	82.4	3.90	3.92		5.8	5.8	
				16.8	24.5	26.9		5.89		82.5		3.94			5.8		
			Bottom	16.8	24.5	27.0	27.1	5.69	5.70	79.7	79.8	4.13	4.15		6.2	6.2	
				16.8	24.5	27.1		5.70		79.8		4.16			6.2		
24/11/12	1436-1448	19/Drizzle	Surface	1.0	23.9	26.4	26.4	6.17	6.19	86.5	86.7	3.28	3.31	3.46	5.0	5.1	5.4
				9.3	24.0	26.4		6.20		86.9		3.33			5.2		
			Middle	17.6	24.1	26.6	26.6	6.05	6.04	84.7	84.5	3.45	3.47		5.4	5.4	
				17.6	24.1	26.6		6.02		84.3		3.49			5.4		
			Bottom	17.6	24.1	26.9	26.9	5.99	5.97	83.7	83.4	3.62	3.61		5.6	5.6	
				17.6	24.1	26.9		5.94		83.0		3.60			5.6		
27/11/12	1537-1550	16/Rainy	Surface	1.0	23.7	26.5	26.5	6.20	6.19	86.5	86.3	3.27	3.29	3.47	5.0	5.1	5.4
				8.9	23.9	26.5		6.17		86.1		3.31			5.2		
			Middle	16.8	24.1	26.7	26.8	6.04	6.02	84.3	84.0	3.47	3.49		5.4	5.4	
				16.8	24.1	26.8		6.00		83.7		3.51			5.4		
			Bottom	16.8	24.1	26.9	27.0	5.95	5.93	83.0	82.7	3.62	3.64		5.6	5.6	
				16.8	24.1	27.0		5.91		82.4		3.66			5.6		
29/11/12	1212-1226	19/Cloudy	Surface	1.0	23.3	26.4	26.4	6.09	6.12	84.5	84.9	3.52	3.55	3.70	5.5	5.5	5.6
				8.8	23.4	26.4		6.15		85.3		3.57			5.4		
			Middle	16.6	23.3	26.6	26.7	6.00	5.98	83.2	83.0	3.68	3.70		5.6	5.6	
				16.6	23.3	26.7		5.96		82.7		3.71			5.6		
			Bottom	16.6	23.3	26.9	27.0	5.71	5.73	79.2	79.5	3.84	3.87		5.8	5.8	
				16.6	23.3	27.0		5.75		79.8		3.89			5.8		

**Mid-Flood Tide**

Monitoring Station : R6

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average		
01/11/12	0950-1005	20/Fine	Surface	1.0	25.3	26.9	26.9	5.93	5.91	83.6	83.3	3.19	3.21	3.42	5.0	5.1	5.4		
						26.9		5.88		82.9		3.23			5.2				
			Middle	8.4	25.2	27.0	27.0	5.79	5.78	81.6	81.4	3.40	3.43		3.40	3.43		5.4	5.4
						27.0		5.76		81.2		3.45			5.4				
			Bottom	15.8	25.0	27.1	27.2	5.68	5.70	80.0	80.3	3.61	3.63		3.65	3.63		5.6	5.6
						27.2		5.72		80.6		3.65			5.6				
03/11/12	0935-0948	20/Fine	Surface	1.0	25.5	26.9	26.9	5.87	5.86	82.6	82.4	3.49	3.51	3.66	5.4	5.4	5.6		
						26.8		5.84		82.2		3.53			5.4				
			Middle	8.1	25.3	27.2	27.2	5.81	5.80	81.7	81.5	3.69	3.72		3.75	3.72		5.6	5.6
						27.1		5.78		81.3		3.75			5.6				
			Bottom	15.2	25.1	27.4	27.4	5.75	5.77	80.9	81.2	3.77	3.76		3.74	3.76		5.8	5.7
						27.4		5.79		81.4		3.74			5.8				
06/11/12	1424-1439	24/Fine	Surface	1.0	25.3	26.7	26.7	5.93	5.92	83.0	82.8	3.53	3.51	3.69	5.4	5.4	5.6		
						26.7		5.90		82.6		3.49			5.4				
			Middle	8.1	25.2	26.9	26.9	5.83	5.83	81.6	81.6	3.66	3.67		3.68	3.67		5.6	5.6
						26.9		5.83		81.6		3.68			5.6				
			Bottom	15.1	25.1	27.1	27.1	5.73	5.72	80.2	79.9	3.91	3.89		3.87	3.89		5.8	5.8
						27.1		5.70		79.6		3.87			5.8				
08/11/12	1505-1520	25/Cloudy	Surface	1.0	25.1	26.9	26.9	6.02	6.00	84.9	84.6	3.39	3.41	3.69	5.4	5.4	5.6		
						26.8		5.98		84.3		3.43			5.4				
			Middle	8.3	25.0	27.1	27.2	5.80	5.81	81.8	82.0	3.68	3.71		3.74	3.71		5.6	5.6
						27.2		5.82		82.1		3.74			5.6				
			Bottom	15.6	24.9	27.3	27.3	5.70	5.72	80.4	80.6	3.91	3.94		3.96	3.94		5.8	5.8
						27.3		5.73		80.8		3.96			5.8				
10/11/12	1513-1525	26/Cloudy	Surface	1.0	25.6	27.0	27.0	5.85	5.87	82.0	82.2	3.37	3.39	3.63	5.2	5.3	5.7		
						27.0		5.88		82.4		3.40			5.4				
			Middle	8.4	25.2	27.1	27.1	5.80	5.78	81.3	81.0	3.72	3.70		3.67	3.70		5.8	5.8
						27.1		5.76		80.7		3.67			5.8				
			Bottom	15.8	25.2	27.3	27.4	5.71	5.73	80.0	80.3	3.83	3.82		3.80	3.82		6.0	5.9
						27.4		5.75		80.6		3.80			5.8				
13/11/12	1705-1719	26/Fine	Surface	1.0	25.2	26.8	26.8	6.06	6.05	84.9	84.7	3.72	3.74	3.89	5.6	5.7	5.9		
						26.8		6.03		84.5		3.76			5.8				
			Middle	8.1	25.1	26.9	27.0	5.94	5.93	83.3	83.1	3.89	3.90		3.91	3.90		6.0	5.9
						27.0		5.91		82.9		3.91			6.0				
			Bottom	15.2	25.0	27.2	27.2	5.85	5.85	82.0	82.0	4.06	4.04		4.01	4.04		6.0	6.0
						27.2		5.84		81.9		4.01			6.0				
15/11/12	0900-0912	24/Cloudy	Surface	1.0	24.7	26.4	26.4	5.96	5.98	83.4	83.7	3.47	3.49	3.71	5.4	5.4	5.6		
						26.4		5.99		83.9		3.51			5.4				
			Middle	8.1	24.8	26.6	26.7	5.90	5.86	82.6	82.1	3.77	3.76		3.74	3.76		5.6	5.6
						26.7		5.82		81.5		3.74			5.6				
			Bottom	15.2	24.8	26.7	26.8	5.70	5.71	79.8	80.0	3.87	3.88		3.89	3.88		5.8	5.8
						26.8		5.72		80.1		3.89			5.8				
17/11/12	1043-1057	20/Cloudy	Surface	1.0	24.1	26.6	26.6	5.99	5.98	83.9	83.7	3.99	3.95	4.16	6.0	5.9	6.2		
						26.6		5.96		83.5		3.91			5.8				
			Middle	8.3	24.3	26.9	26.9	5.90	5.89	82.7	82.5	4.19	4.21		4.23	4.21		6.2	6.2
						26.8		5.87		82.2		4.23			6.2				
			Bottom	15.6	24.4	27.0	27.1	5.81	5.83	81.3	81.6	4.28	4.31		4.33	4.31		6.4	6.4
						27.1		5.84		81.8		4.33			6.4				
20/11/12	1338-1353	22/Drizzle	Surface	1.0	24.1	26.6	26.6	5.98	5.97	83.7	83.5	3.98	3.96	4.14	6.0	5.9	6.2		
						26.6		5.95		83.3		3.93			5.8				
			Middle	8.3	24.2	26.8	26.9	5.86	5.85	82.0	81.9	4.17	4.19		4.21	4.19		6.2	6.2
						26.9		5.84		81.8		4.21			6.2				
			Bottom	15.6	24.3	27.1	27.1	5.80	5.81	81.2	81.4	4.25	4.28		4.30	4.28		6.4	6.4
						27.0		5.82		81.5		4.30			6.4				
22/11/12	2048-2103	24/Cloudy	Surface	1.0	24.5	26.6	26.7	6.08	6.09	85.1	85.3	3.60	3.62	3.88	5.6	5.6	5.8		
						26.7		6.10		85.4		3.64			5.6				
			Middle	8.7	24.4	26.8	26.9	5.95	5.95	83.3	83.3	3.86	3.85		3.84	3.85		5.8	5.8
						26.9		5.94		83.2		3.84			5.8				
			Bottom	16.4	24.5	27.1	27.1	5.70	5.72	79.8	80.1	4.17	4.18		4.19	4.18		6.0	6.1
						27.0		5.74		80.4		4.19			6.2				
24/11/12	1535-1547	19/Drizzle	Surface	1.0	23.9	26.4	26.4	6.19	6.17	86.8	86.5	3.17	3.18	3.30	5.0	5.0	5.2		
						26.4		6.15		86.2		3.19			5.0				
			Middle	8.3	24.1	26.6	26.7	6.03	6.01	84.4	84.1	3.31	3.33		3.34	3.33		5.4	5.3
						26.7		5.98		83.7		3.34			5.2				
			Bottom	15.6	24.2	26.9	26.9	5.94	5.93	83.0	82.9	3.38	3.39		3.40	3.39		5.4	5.4
						26.8		5.92		82.8		3.40			5.4				
27/11/12	1634-1647	16/Rainy	Surface	1.0	23.8	26.4	26.4	6.19	6.17	86.4	86.1	3.24	3.22	3.32	5.2	5.2	5.2		
						26.4		6.15		85.8		3.20			5.2				
			Middle	8.5	23.9	26.6	26.7	6.06	6.04	84.5	84.3	3.31	3.33		3.34	3.33		5.0	5.1
						26.7		6.02		84.0		3.34			5.2				
			Bottom	15.9	24.0	26.9	26.9	5.89	5.87	82.2	81.9	3.40	3.42		3.43	3.42		5.4	5.4
						26.9		5.85		81.6		3.43			5.4				
29/11/12	1307-1322	19/Cloudy	Surface	1.0	23.3	26.4	26.4	6.21	6.19	86.1	85.8	3.33	3.35	3.53	5.2	5.3	5.5		
						26.4		6.16		85.5		3.37			5.4				
			Middle	8.4	23.3	26.6	26.6	6.07	6.05	84.2	83.9	3.49	3.52		3.54	3.52		5.4	5.5
						26.6		6.03		83.6		3.54			5.6				
			Bottom	15.8	23.3	26.9	26.9	5.82	5.84	80.7	81.0	3.70	3.73		3.76	3.73		5.6	5.7
						26.9		5.86		81.3		3.76			5.8				

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
01/11/12	1022-1025	20/Fine	Surface	1.0	25.3	26.8	26.9	6.00	6.02	84.6	84.8	3.31	3.34	3.53	5.2	5.2	5.5
						26.9		6.03		85.0		3.36			5.2		
			Middle	9.2	25.2	27.1	27.1	5.82	5.84	82.1	82.3	3.51	3.54		5.4	5.5	
						27.0		5.85		82.4		3.57			5.6		
			Bottom	17.4	25.0	27.2	27.2	5.67	5.69	79.9	80.1	3.69	3.71		5.6	5.7	
						27.2		5.70		80.3		3.73			5.8		
03/11/12	0955-1008	20/Fine	Surface	1.0	25.4	27.0	27.0	5.99	5.97	84.4	84.1	3.75	3.73	3.79	5.8	5.7	5.7
						27.0		5.95		83.8		3.70			5.6		
			Middle	9.2	25.2	27.2	27.3	5.89	5.88	82.9	82.7	3.83	3.81		5.8	5.7	
						27.3		5.86		82.5		3.78			5.6		
			Bottom	17.4	25.2	27.4	27.4	5.80	5.78	81.6	81.3	3.80	3.84		5.6	5.7	
						27.4		5.75		80.9		3.88			5.8		
06/11/12	1444-1459	24/Fine	Surface	1.0	25.3	26.7	26.8	6.06	6.05	84.8	84.6	3.73	3.71	3.82	5.6	5.6	5.8
						26.8		6.03		84.4		3.69			5.6		
			Middle	9.2	25.2	26.9	27.0	5.83	5.82	81.6	81.5	3.83	3.84		5.8	5.8	
						27.0		5.81		81.3		3.85			5.8		
			Bottom	17.4	25.1	27.1	27.1	5.76	5.76	80.6	80.6	3.91	3.90		6.0	5.9	
						27.1		5.75		80.5		3.89			5.8		
08/11/12	1526-1540	25/Cloudy	Surface	1.0	25.1	26.9	26.9	6.00	6.03	84.6	85.0	3.41	3.44	3.67	5.4	5.4	5.6
						26.9		6.05		85.3		3.47			5.4		
			Middle	9.2	24.9	27.2	27.2	5.86	5.88	82.6	82.9	3.64	3.67		5.6	5.6	
						27.2		5.89		83.1		3.70			5.6		
			Bottom	17.4	24.8	27.4	27.4	5.78	5.79	81.5	81.7	3.88	3.91		5.8	5.9	
						27.3		5.80		81.8		3.93			6.0		
10/11/12	1532-1545	26/Cloudy	Surface	1.0	25.6	27.0	27.1	5.94	5.96	83.3	83.5	3.55	3.53	3.63	5.6	5.6	5.7
						27.1		5.97		83.7		3.51			5.6		
			Middle	9.2	25.3	27.2	27.2	5.84	5.82	81.9	81.6	3.64	3.62		5.8	5.7	
						27.2		5.80		81.0		3.59			5.6		
			Bottom	17.4	25.1	27.3	27.3	5.78	5.77	81.3	80.8	3.77	3.74		5.8	5.8	
						27.3		5.75		80.6		3.70			5.8		
13/11/12	1724-1738	26/Fine	Surface	1.0	25.2	26.7	26.8	6.09	6.09	85.4	85.3	3.52	3.58	3.77	5.4	5.5	5.8
						26.8		6.08		85.2		3.63			5.6		
			Middle	9.2	25.1	26.9	26.9	6.00	5.99	84.1	84.0	3.78	3.82		5.8	5.8	
						26.9		5.98		83.8		3.86			5.8		
			Bottom	17.4	25.0	27.1	27.2	5.83	5.82	81.7	81.5	3.91	3.93		6.0	6.0	
						27.2		5.80		81.3		3.94			6.0		
15/11/12	0917-0929	24/Cloudy	Surface	1.0	24.6	26.5	26.5	5.99	5.98	83.9	83.8	3.60	3.62	3.79	5.6	5.6	5.8
						26.4		5.97		83.6		3.63			5.6		
			Middle	8.8	24.8	26.6	26.6	5.83	5.84	81.6	81.8	3.80	3.83		5.8	5.8	
						26.6		5.85		81.9		3.86			5.8		
			Bottom	16.6	24.8	26.8	26.9	5.72	5.73	80.1	80.3	3.94	3.94		6.0	6.0	
						26.9		5.74		80.4		3.93			6.0		
17/11/12	1104-1117	20/Cloudy	Surface	1.0	24.1	26.6	26.6	6.01	6.00	84.2	84.1	3.87	3.90	4.00	5.8	5.8	6.0
						26.5		5.99		83.9		3.92			5.8		
			Middle	9.2	24.3	26.9	26.9	5.94	5.92	83.2	83.0	4.04	4.03		6.0	6.0	
						26.9		5.90		82.7		4.01			6.0		
			Bottom	17.4	24.4	27.1	27.1	5.82	5.84	81.5	81.8	4.11	4.09		6.2	6.1	
						27.1		5.86		82.0		4.07			6.0		
20/11/12	1400-1415	22/Drizzle	Surface	1.0	24.1	26.6	26.6	6.03	6.02	84.4	84.3	3.85	3.88	3.98	5.8	5.8	6.0
						26.5		6.01		84.1		3.90			5.8		
			Middle	9.2	24.2	26.8	26.8	5.95	5.94	83.3	83.1	4.00	4.00		6.0	6.0	
						26.8		5.92		82.9		3.99			6.0		
			Bottom	17.4	24.3	26.9	27.0	5.83	5.81	81.6	81.4	4.08	4.07		6.2	6.1	
						27.0		5.79		81.1		4.06			6.0		
22/11/12	2110-2125	24/Cloudy	Surface	1.0	24.4	26.6	26.7	6.04	6.05	84.6	84.7	3.69	3.71	3.87	5.6	5.6	5.8
						26.7		6.06		84.8		3.72			5.6		
			Middle	9.1	24.5	26.9	27.0	5.91	5.95	82.7	83.3	3.86	3.85		5.8	5.8	
						27.0		5.99		83.9		3.84			5.8		
			Bottom	17.2	24.5	27.1	27.2	5.79	5.81	81.1	81.3	4.05	4.06		6.0	6.0	
						27.2		5.82		81.5		4.07			6.0		
24/11/12	1554-1606	19/Drizzle	Surface	1.0	24.0	26.4	26.4	6.23	6.21	87.3	87.0	3.18	3.20	3.31	5.0	5.1	5.2
						26.3		6.18		86.6		3.22			5.2		
			Middle	9.2	24.0	26.6	26.6	6.11	6.09	85.5	85.3	3.35	3.34		5.4	5.3	
						26.6		6.07		85.0		3.32			5.2		
			Bottom	17.4	24.1	26.9	26.9	5.95	5.95	83.2	83.1	3.40	3.39		5.4	5.3	
						26.9		5.94		83.0		3.37			5.2		
27/11/12	1653-1705	16/Rainy	Surface	1.0	23.8	26.4	26.5	6.26	6.24	87.3	87.1	3.25	3.27	3.36	5.2	5.1	5.3
						26.5		6.22		86.8		3.28			5.0		
			Middle	9.2	23.9	26.7	26.7	6.11	6.09	85.2	85.0	3.33	3.35		5.2	5.3	
						26.7		6.07		84.7		3.36			5.4		
			Bottom	17.4	24.1	27.0	27.0	5.83	5.81	81.3	81.1	3.45	3.46		5.4	5.5	
						26.9		5.79		80.8		3.47			5.6		
29/11/12	1329-1333	19/Cloudy	Surface	1.0	23.3	26.4	26.5	6.24	6.26	86.6	86.8	3.28	3.31	3.54	5.2	5.3	5.5
						26.5		6.27		87.0		3.34			5.4		
			Middle	9.1	23.3	26.8	26.8	6.11	6.12	84.8	85.0	3.49	3.53		5.4	5.5	
						26.7		6.13		85.1		3.57			5.6		
			Bottom	17.2	23.2	26.9	27.0	5.90	5.88	81.8	81.5	3.77	3.79		5.6	5.7	
						27.0		5.85		81.1		3.81			5.8		

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		
01/11/12	1030-1045	21/Fine	Surface	1.0	25.3	26.9	26.9	5.90	5.92	83.2	83.5	3.24	3.27	3.50	5.2	5.1	5.4		
						26.9		5.94		83.7		3.30			5.0				
			Middle	6.8	25.3	26.9	27.0	5.87	5.86	82.7	82.5	3.48	3.50		3.48	3.50		5.5	5.5
						27.0		5.84		82.3		3.52			5.4				
			Bottom	12.6	25.1	27.1	27.1	5.79	5.77	81.6	81.4	3.70	3.73		3.70	3.73		5.6	5.7
						27.1		5.75		81.1		3.75			5.8				
03/11/12	1018-1039	20/Fine	Surface	1.0	25.4	27.0	27.0	5.84	5.82	82.2	81.9	3.58	3.56	3.73	5.4	5.5	5.6		
						27.0		5.80		81.6		3.54			5.5				
			Middle	6.2	25.3	27.2	27.2	5.70	5.72	80.1	80.4	3.74	3.71		3.74	3.71		5.6	5.6
						27.2		5.74		80.7		3.67			5.6				
			Bottom	12.4	25.2	27.4	27.4	5.74	5.76	80.7	80.9	3.89	3.92		3.89	3.92		5.8	5.9
						27.4		5.77		81.1		3.94			6.0				
06/11/12	1505-1519	24/Fine	Surface	1.0	25.3	26.6	26.6	5.89	5.88	82.5	81.9	3.41	3.39	3.66	5.4	5.5	5.6		
						26.6		5.87		81.3		3.37			5.5				
			Middle	6.7	25.2	26.8	26.8	5.77	5.77	80.8	80.8	3.60	3.64		3.60	3.64		5.6	5.6
						26.8		5.77		80.8		3.68			5.6				
			Bottom	12.4	25.0	27.1	27.1	5.68	5.67	79.5	79.4	3.92	3.95		3.92	3.95		5.8	5.9
						27.1		5.66		79.2		3.97			6.0				
08/11/12	1545-1559	25/Cloudy	Surface	1.0	25.2	26.9	26.9	5.97	5.95	84.2	83.9	3.56	3.54	3.67	5.4	5.5	5.6		
						26.9		5.93		83.6		3.51			5.5				
			Middle	6.7	25.2	26.9	27.0	5.86	5.84	82.7	82.4	3.59	3.62		3.59	3.62		5.6	5.6
						27.0		5.82		82.1		3.64			5.6				
			Bottom	12.4	25.1	27.1	27.1	5.70	5.72	80.4	80.7	3.83	3.86		3.83	3.86		5.8	5.8
						27.1		5.74		81.0		3.89			5.8				
10/11/12	1555-1608	26/Cloudy	Surface	1.0	25.6	27.0	27.1	5.78	5.77	81.0	80.8	3.21	3.20	3.57	5.0	5.0	5.5		
						27.1		5.75		80.6		3.18			5.0				
			Middle	6.9	25.3	27.2	27.2	5.69	5.67	79.7	79.4	3.68	3.67		3.68	3.67		5.5	5.6
						27.1		5.65		79.1		3.65			5.6				
			Bottom	12.8	25.2	27.3	27.3	5.73	5.72	80.3	80.1	3.86	3.84		3.86	3.84		6.0	5.9
						27.2		5.70		79.9		3.82			5.8				
13/11/12	1742-1756	26/Fine	Surface	1.0	25.3	26.7	26.7	6.11	6.10	85.7	85.5	3.38	3.40	3.62	5.4	5.5	5.6		
						26.7		6.08		85.2		3.41			5.5				
			Middle	6.8	25.1	26.9	27.0	5.93	5.93	83.1	83.1	3.62	3.64		3.62	3.64		5.6	5.6
						27.0		5.92		83.0		3.66			5.6				
			Bottom	12.6	25.0	27.1	27.1	5.83	5.82	81.7	81.6	3.83	3.81		3.83	3.81		5.8	5.8
						27.1		5.81		81.4		3.79			5.8				
15/11/12	0933-0946	24/Cloudy	Surface	1.0	24.6	26.5	26.5	5.98	5.96	83.7	83.5	3.54	3.52	3.65	5.4	5.5	5.6		
						26.5		5.94		83.2		3.49			5.5				
			Middle	6.7	24.7	26.7	26.8	5.87	5.85	82.2	81.9	3.57	3.60		3.57	3.60		5.6	5.6
						26.8		5.83		81.6		3.62			5.6				
			Bottom	12.4	24.8	26.8	26.9	5.71	5.73	80.0	80.3	3.81	3.84		3.81	3.84		5.8	5.8
						26.9		5.75		80.5		3.87			5.8				
17/11/12	1127-1140	20/Cloudy	Surface	1.0	24.3	26.6	26.6	6.12	6.10	85.8	85.5	4.07	4.06	4.31	6.0	6.0	6.4		
						26.5		6.07		85.1		4.04			6.0				
			Middle	6.9	24.4	26.9	26.9	5.95	5.97	83.4	83.6	4.37	4.34		4.37	4.34		6.5	6.5
						26.9		5.98		83.8		4.31			6.4				
			Bottom	12.8	24.4	27.0	27.0	5.85	5.87	81.9	82.1	4.52	4.55		4.52	4.55		6.6	6.6
						27.0		5.88		82.3		4.57			6.6				
20/11/12	1419-1432	22/Drizzle	Surface	1.0	24.2	26.6	26.6	6.14	6.12	86.0	85.7	4.04	4.03	4.28	6.0	6.0	6.3		
						26.5		6.09		85.3		4.01			6.0				
			Middle	6.8	24.3	26.7	26.8	5.97	5.99	83.6	83.8	4.34	4.31		4.34	4.31		6.5	6.4
						26.8		6.00		84.0		4.28			6.2				
			Bottom	12.6	24.4	26.9	27.0	5.87	5.89	82.2	82.4	4.49	4.52		4.49	4.52		6.4	6.4
						27.0		5.90		82.6		4.54			6.4				
22/11/12	2129-2142	24/Cloudy	Surface	1.0	24.4	26.7	26.8	5.99	5.95	83.9	83.3	3.59	3.60	3.74	5.6	5.6	5.6		
						26.8		5.91		82.7		3.60			5.5				
			Middle	7.0	24.5	26.8	26.9	5.82	5.85	81.5	81.9	3.74	3.75		3.74	3.75		5.6	5.6
						26.9		5.88		82.3		3.76			5.6				
			Bottom	13.0	24.5	27.0	27.1	5.73	5.74	80.2	80.4	3.86	3.88		3.86	3.88		5.8	5.8
						27.1		5.75		80.5		3.89			5.8				
24/11/12	1614-1626	19/Drizzle	Surface	1.0	23.9	26.4	26.4	6.23	6.22	87.3	87.1	3.22	3.23	3.30	5.2	5.1	5.2		
						26.4		6.20		86.9		3.24			5.0				
			Middle	6.8	24.1	26.5	26.6	6.09	6.10	85.3	85.4	3.29	3.30		3.29	3.30		5.2	5.1
						26.6		6.11		85.5		3.31			5.2				
			Bottom	12.6	24.2	26.8	26.8	6.03	6.01	84.3	84.0	3.37	3.38		3.37	3.38		5.4	5.4
						26.8		5.99		83.7		3.38			5.4				
27/11/12	1715-1718	16/Rainy	Surface	1.0	23.7	26.4	26.4	6.22	6.21	86.8	86.7	3.31	3.32	3.40	5.2	5.4	5.4		
						26.4		6.20		86.5		3.33			5.5				
			Middle	6.8	23.8	26.6	26.6	6.12	6.10	85.4	85.1	3.37	3.39		3.37	3.39		5.5	5.5
						26.6		6.08		84.8		3.40			5.4				
			Bottom	12.6	24.0	26.8	26.8	6.02	6.00	84.0	83.7	3.47	3.50		3.47	3.50		5.4	5.5
						26.7		5.98		83.4		3.52			5.6				
29/11/12	1337-1351	19/Cloudy	Surface	1.0	23.4	26.5	26.5	6.25	6.23	86.7	86.4	3.24	3.27	3.48	5.2	5.1	5.4		
						26.5		6.21		86.1		3.30			5.0				
			Middle	7.0	23.3	26.7	26.8	6.10	6.07	84.6	84.2	3.42	3.45		3.42	3.45		5.5	5.5
						26.8		6.04		83.8		3.48			5.4				
			Bottom	13.0	23.3	26.8	26.8	5.93	5.91	82.3	82.1	3.69	3.71		3.69	3.71		5.6	5.6
						26.8		5.89		81.8		3.72			5.6				

# 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			
01/11/12	0750-0805	20/Fine	Surface	1.0	25.1	26.8	26.8	5.93	5.95	83.6	83.9	3.39	3.41	3.63	5.4	5.4	5.6			
						26.8		5.97		84.1		3.42			5.4					
			Middle	6.1	25.2	26.9	26.9	5.91	5.86	83.3	83.0	3.59	3.63		5.6	5.6		5.6	5.6	5.6
						26.9		5.86		82.6		3.63			5.6					
			Bottom	11.2	25.1	27.0	27.0	5.77	5.75	81.3	81.0	3.84	3.87		5.8	5.8		5.8	5.8	5.8
						27.0		5.73		80.7		3.89			5.8					
03/11/12	0732-0746	20/Fine	Surface	1.0	25.3	26.8	26.8	5.97	5.96	84.1	83.9	3.52	3.56	3.74	5.4	5.5	5.7			
						26.8		5.94		83.7		3.60			5.6					
			Middle	5.7	25.1	27.1	27.1	5.90	5.92	83.1	83.4	3.75	3.73		5.6	5.6		5.6	5.6	5.6
						27.0		5.94		83.7		3.70			5.6					
			Bottom	10.4	25.1	27.2	27.2	5.83	5.85	82.0	82.3	3.90	3.93		5.8	5.9		5.8	5.9	5.9
						27.1		5.87		82.6		3.96			6.0					
06/11/12	1210-1225	24/Fine	Surface	1.0	25.3	26.7	26.7	5.98	5.95	83.8	83.4	3.71	3.73	3.85	5.4	5.5	5.7			
						26.7		5.92		82.9		3.75			5.6					
			Middle	5.8	25.2	26.8	26.8	5.83	5.83	82.0	81.8	3.84	3.87		5.8	5.8		5.8	5.8	5.8
						26.8		5.83		81.6		3.89			5.8					
			Bottom	10.6	25.0	27.1	27.1	5.63	5.63	78.8	78.8	3.97	3.95		6.0	5.9		6.0	5.9	5.9
						27.1		5.62		78.7		3.92			6.0					
08/11/12	1310-1324	25/Cloudy	Surface	1.0	25.2	26.9	26.9	5.79	5.81	81.6	81.9	3.74	3.77	3.92	5.6	5.6	5.8			
						26.9		5.83		82.2		3.79			5.6					
			Middle	5.7	25.1	26.9	26.9	5.81	5.79	81.9	81.7	3.86	3.89		5.8	5.8		5.8	5.8	5.8
						26.9		5.77		81.4		3.91			5.8					
			Bottom	10.4	25.0	27.1	27.1	5.65	5.67	79.7	79.9	4.07	4.10		6.0	6.1		6.0	6.1	6.1
						27.0		5.68		80.1		4.12			6.2					
10/11/12	1311-1325	26/Cloudy	Surface	1.0	25.5	26.9	26.9	5.90	5.92	82.7	82.9	3.27	3.25	3.55	5.0	5.0	5.5			
						26.8		5.93		83.1		3.22			5.0					
			Middle	6.1	25.2	26.9	26.9	5.81	5.80	81.4	81.2	3.39	3.35		5.2	5.2		5.2	5.2	5.2
						26.9		5.78		81.0		3.31			5.2					
			Bottom	11.2	25.2	27.1	27.2	5.75	5.77	80.6	80.8	4.02	4.05		6.2	6.3		6.2	6.3	6.3
						27.2		5.78		81.0		4.07			6.4					
13/11/12	1508-1523	26/Fine	Surface	1.0	25.3	26.7	26.7	6.16	6.13	86.4	85.9	3.71	3.70	3.78	5.6	5.6	5.8			
						26.7		6.09		85.4		3.68			5.6					
			Middle	6.1	25.1	26.9	26.9	5.94	5.92	83.3	83.0	3.71	3.74		5.8	5.8		5.8	5.8	5.8
						26.9		5.90		82.7		3.77			5.8					
			Bottom	11.1	25.0	27.1	27.2	5.83	5.82	81.7	81.5	3.89	3.91		6.0	6.0		6.0	6.0	6.0
						27.2		5.80		81.3		3.93			6.0					
15/11/12	0732-0744	24/Cloudy	Surface	1.0	24.7	26.4	26.5	5.80	5.82	81.2	81.5	3.72	3.75	3.90	5.6	5.6	5.8			
						26.5		5.84		81.8		3.77			5.6					
			Middle	5.7	24.7	26.7	26.8	5.82	5.80	81.5	81.2	3.84	3.87		5.8	5.8		5.8	5.8	5.8
						26.8		5.78		80.9		3.89			5.8					
			Bottom	10.4	24.8	26.8	26.8	5.66	5.68	79.2	79.5	4.05	4.08		6.0	6.1		6.0	6.1	6.1
						26.8		5.69		79.7		4.10			6.2					
17/11/12	0841-0855	20/Cloudy	Surface	1.0	24.2	26.4	26.4	6.02	6.03	84.4	84.5	3.90	3.93	4.09	5.8	5.8	6.0			
						26.3		6.04		84.6		3.96			5.8					
			Middle	6.1	24.3	26.8	26.8	5.94	5.92	83.2	83.0	4.06	4.04		6.0	6.0		6.0	6.0	6.0
						26.7		5.90		82.7		4.01			6.0					
			Bottom	11.2	24.4	27.0	27.0	5.87	5.89	82.2	82.4	4.29	4.31		6.2	6.2		6.2	6.2	6.2
						26.9		5.90		82.6		4.33			6.2					
20/11/12	1140-1155	22/Drizzle	Surface	1.0	24.1	26.4	26.5	6.01	6.02	84.1	84.3	3.89	3.92	4.07	5.8	5.8	6.0			
						26.5		6.03		84.4		3.94			5.8					
			Middle	6.2	24.2	26.6	26.7	5.95	5.93	83.3	83.0	4.04	4.02		6.0	5.9		6.0	5.9	6.0
						26.7		5.91		82.7		3.99			5.8					
			Bottom	11.4	24.3	26.9	26.9	5.89	5.91	82.5	82.7	4.27	4.29		6.2	6.2		6.2	6.2	6.2
						26.9		5.92		82.9		4.31			6.2					
22/11/12	1840-1855	24/Cloudy	Surface	1.0	24.3	26.6	26.7	6.08	6.09	85.1	85.2	3.82	3.81	4.03	5.8	5.8	5.7			
						26.7		6.09		85.3		3.80			5.8					
			Middle	6.3	24.4	26.8	26.9	5.97	5.95	83.6	83.3	3.91	3.92		5.8	5.9		6.0	5.9	6.0
						26.9		5.93		83.0		3.93			6.0					
			Bottom	11.6	24.5	27.0	27.1	5.86	5.88	82.0	82.3	4.35	4.36		5.4	5.4		5.4	5.4	5.4
						27.1		5.90		82.6		4.37			5.4					
24/11/12	1340-1352	19/Drizzle	Surface	1.0	23.8	26.5	26.5	6.19	6.22	86.8	87.2	3.38	3.37	3.39	5.4	5.4	5.4			
						26.4		6.24		87.5		3.35			5.4					
			Middle	6.2	24.1	26.6	26.6	6.11	6.10	85.5	85.3	3.34	3.34		5.2	5.2		5.2	5.2	5.2
						26.6		6.08		85.1		3.33			5.2					
			Bottom	11.4	24.2	26.8	26.9	6.01	6.00	84.0	83.8	3.47	3.48		5.4	5.5		5.4	5.5	5.5
						26.9		5.98		83.6		3.49			5.6					
27/11/12	1439-1452	16/Rainy	Surface	1.0	23.7	26.4	26.5	6.26	6.25	87.3	87.1	3.47	3.39	3.48	5.4	5.4	5.6			
						26.5		6.23		86.9		3.41			5.4					
			Middle	6.4	23.8	26.6	26.7	6.15	6.13	85.8	85.5	3.47	3.49		5.6	5.6		5.6	5.6	5.6
						26.7		6.11		85.2		3.50			5.6					
			Bottom	11.8	24.0	26.8	26.9	6.00	5.99	83.7	83.5	3.55	3.57		5.8	5.8		5.8	5.8	5.8
						26.9		5.97		83.3		3.58			5.8					
29/11/12	1111-1125	18/Cloudy	Surface	1.0	23.3	26.4	26.4	6.11	6.10	84.8	84.7	3.50	3.53	3.74	5.4	5.5	5.7			
						26.4		6.09		84.5		3.56			5.6					
			Middle	6.1	23.3	26.6	26.6	6.01	5.99	83.4	83.1	3.69	3.71		5.6	5.7		5.6	5.7	5.6
						26.6		5.97		82.8		3.72			5.8					
			Bottom	11.2	23.2	26.9	26.9	5.78	5.80	80.2	80.4	3.94	3.97		5.8	5.9		5.8	5.9	5.9
						26.9		5.81		80.6		4.00			6.0					



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		
01/11/12	0731-0745	20/Fine	Surface	1.0	25.2	26.8	26.8	6.01	6.02	84.7	84.9	3.19	3.21	3.41	5.2	5.2	5.4		
						26.8		6.03		85.0		3.23			5.2				
			Middle	6.7	25.2	26.9	26.9	5.92	5.94	83.4	83.7	3.32	3.35		3.37	3.35		5.2	5.3
						26.9		5.95		83.9		3.37			5.4				
			Bottom	12.4	25.1	27.0	27.1	5.76	5.78	81.2	81.5	3.63	3.66		3.69	3.66		5.6	5.7
						27.1		5.80		81.8		3.69			5.8				
03/11/12	0722-0725	20/Fine	Surface	1.0	25.3	26.7	26.8	5.88	5.91	82.9	83.3	3.43	3.40	3.60	5.4	5.3	5.5		
						26.8		5.93		83.6		3.37			5.2				
			Middle	6.6	25.2	27.1	27.1	5.80	5.82	81.6	81.8	3.67	3.64		3.60	3.64		5.6	5.6
						27.1		5.83		82.0		3.60			5.6				
			Bottom	12.2	25.2	27.3	27.3	5.72	5.70	80.4	80.1	3.78	3.76		3.74	3.76		5.8	5.7
						27.2		5.67		79.7		3.74			5.6				
06/11/12	1149-1205	24/Fine	Surface	1.0	25.3	26.7	26.8	5.92	5.91	83.0	82.8	3.54	3.58	3.75	5.4	5.4	5.6		
						26.8		5.90		82.6		3.61			5.4				
			Middle	6.6	25.2	26.9	26.9	5.83	5.82	81.6	81.4	3.73	3.76		3.79	3.76		5.6	5.6
						26.9		5.80		81.2		3.79			5.6				
			Bottom	12.2	25.1	27.1	27.1	5.74	5.73	80.4	80.3	3.92	3.91		3.89	3.91		5.8	5.8
						27.1		5.72		80.1		3.89			5.8				
08/11/12	1248-1303	25/Cloudy	Surface	1.0	25.1	26.8	26.9	5.87	5.89	82.8	83.1	3.60	3.64	3.82	5.6	5.6	5.8		
						26.9		5.91		83.3		3.67			5.6				
			Middle	6.7	25.1	27.1	27.1	5.85	5.84	82.5	82.4	3.77	3.80		3.82	3.80		5.8	5.8
						27.0		5.82		82.2		3.82			5.8				
			Bottom	12.4	25.0	27.3	27.3	5.73	5.74	80.8	81.0	4.00	4.03		4.06	4.03		6.0	6.0
						27.2		5.75		81.1		4.06			6.0				
10/11/12	1250-1304	26/Cloudy	Surface	1.0	25.5	26.8	26.8	5.82	5.80	81.5	81.3	3.54	3.52	3.71	5.6	5.5	5.8		
						26.8		5.78		81.0		3.49			5.4				
			Middle	6.8	25.3	27.0	27.1	5.75	5.77	80.6	80.8	3.74	3.72		3.70	3.72		5.8	5.8
						27.1		5.78		81.0		3.70			5.8				
			Bottom	12.6	25.2	27.1	27.1	5.78	5.76	81.0	80.7	3.87	3.90		3.93	3.90		6.0	6.0
						27.1		5.74		80.4		3.93			6.0				
13/11/12	1449-1504	26/Fine	Surface	1.0	25.2	26.8	26.9	6.06	6.05	84.9	84.7	3.36	3.39	3.60	5.4	5.4	5.6		
						26.9		6.03		84.5		3.41			5.4				
			Middle	7.0	25.1	27.0	27.0	5.93	5.92	83.1	82.9	3.54	3.57		3.59	3.57		5.4	5.5
						27.0		5.90		82.7		3.59			5.6				
			Bottom	13.0	25.0	27.1	27.2	5.83	5.82	81.7	81.6	3.81	3.84		3.86	3.84		5.8	5.8
						27.2		5.81		81.5		3.86			5.8				
15/11/12	0716-0727	24/Cloudy	Surface	1.0	24.7	26.5	26.5	5.88	5.90	82.3	82.6	3.58	3.62	3.80	5.6	5.6	5.8		
						26.4		5.92		82.9		3.65			5.6				
			Middle	6.8	24.7	26.5	26.6	5.86	5.85	82.0	81.8	3.75	3.78		3.80	3.78		5.8	5.8
						26.6		5.83		81.6		3.80			5.8				
			Bottom	12.6	24.8	26.7	26.8	5.74	5.75	80.4	80.5	3.98	4.01		4.04	4.01		6.0	6.0
						26.8		5.76		80.6		4.04			6.0				
17/11/12	0820-0834	20/Cloudy	Surface	1.0	24.2	26.4	26.4	5.94	5.92	83.2	83.0	3.98	3.95	4.22	5.8	5.8	6.1		
						26.4		5.90		82.7		3.91			5.8				
			Middle	6.7	24.4	26.8	26.8	5.87	5.86	82.2	82.0	4.54	4.52		4.49	4.52		6.4	6.4
						26.8		5.84		81.8		4.49			6.4				
			Bottom	12.4	24.4	27.0	27.1	5.81	5.80	81.3	81.1	4.17	4.20		4.22	4.20		6.2	6.2
						27.1		5.78		80.9		4.22			6.2				
20/11/12	1119-1134	22/Drizzle	Surface	1.0	24.1	26.5	26.5	5.95	5.93	83.3	83.0	3.96	3.93	4.20	5.8	5.8	6.1		
						26.4		5.91		82.7		3.89			5.8				
			Middle	6.8	24.2	26.7	26.8	5.88	5.87	82.3	82.1	4.53	4.50		4.47	4.50		6.4	6.4
						26.8		5.85		81.9		4.47			6.4				
			Bottom	12.6	24.3	26.9	27.0	5.83	5.82	81.6	81.4	4.15	4.18		4.20	4.18		6.2	6.2
						27.0		5.80		81.2		4.20			6.2				
22/11/12	1819-1834	24/Cloudy	Surface	1.0	24.4	26.7	26.8	6.10	6.12	85.4	85.7	3.76	3.77	3.98	5.6	5.6	5.9		
						26.8		6.14		85.9		3.78			5.6				
			Middle	6.8	24.5	26.8	26.9	5.99	6.00	83.9	84.0	3.93	3.95		3.96	3.95		5.8	5.8
						26.9		6.01		84.1		3.96			5.8				
			Bottom	12.6	24.6	27.1	27.1	5.80	5.82	81.2	81.5	4.21	4.22		4.23	4.22		6.2	6.2
						27.0		5.84		81.8		4.23			6.2				
24/11/12	1319-1331	19/Drizzle	Surface	1.0	23.9	26.5	26.5	6.23	6.21	87.3	87.0	3.29	3.31	3.43	5.2	5.3	5.4		
						26.5		6.18		86.6		3.32			5.4				
			Middle	6.8	24.1	26.7	26.7	6.10	6.09	85.4	85.2	3.43	3.42		3.41	3.42		5.4	5.3
						26.7		6.07		85.0		3.41			5.2				
			Bottom	12.6	24.2	26.8	26.8	5.98	5.96	83.6	83.3	3.55	3.57		3.58	3.57		5.6	5.6
						26.8		5.93		82.9		3.58			5.6				
27/11/12	1420-1432	16/Rainy	Surface	1.0	23.8	26.4	26.5	6.18	6.20	86.2	86.5	3.32	3.34	3.45	5.2	5.2	5.4		
						26.5		6.22		86.8		3.35			5.2				
			Middle	6.8	23.9	26.6	26.7	6.10	6.09	85.1	84.9	3.43	3.45		3.46	3.45		5.4	5.4
						26.7		6.07		84.7		3.46			5.4				
			Bottom	12.6	24.1	26.8	26.8	5.98	5.96	83.4	83.2	3.55	3.58		3.60	3.58		5.6	5.6
						26.8		5.94		82.9		3.60			5.6				
29/11/12	1050-1105	18/Cloudy	Surface	1.0	23.4	26.4	26.5	6.14	6.17	85.2	85.6	3.45	3.48	3.66	5.4	5.4	5.6		
						26.5		6.19		85.9		3.51			5.4				
			Middle	6.7	23.3	26.7	26.7	6.08	6.06	84.3	84.0	3.60	3.63		3.66	3.63		5.6	5.6
						26.7		6.03		83.6		3.66			5.6				
			Bottom	12.4	23.3	27.0	27.0	5.88	5.90	81.6	81.9	3.84	3.87		3.90	3.87		5.8	5.8
						27.0		5.92		82.1		3.90			5.8				

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
01/11/12	0713-0727	20/Fine	Surface	1.0	25.3	26.8	26.8	5.99	6.02	84.4	84.8	3.21	3.24	3.44	5.2	5.2	5.4
						26.8		6.04		85.1		3.27			5.2		
			Middle	6.3	25.2	26.8	26.9	5.90	5.89	83.2	83.0	3.36	3.38		5.4	5.5	
						26.9		5.87		82.7		3.40			5.5		
			Bottom	11.6	25.2	26.9	27.0	5.74	5.77	80.9	81.3	3.74	3.71		5.5	5.6	
						27.0		5.79		81.6		3.68			5.6		
03/11/12	0700-0715	20/Fine	Surface	1.0	25.3	26.8	26.9	5.94	5.96	83.7	83.9	3.67	3.70	3.82	5.6	5.6	5.8
						26.9		5.97		84.1		3.72			5.6		
			Middle	6.2	25.1	27.0	27.1	5.87	5.89	82.6	82.8	3.84	3.82		5.8	5.9	
						27.1		5.90		83.0		3.79			6.0		
			Bottom	11.4	25.2	27.2	27.2	5.74	5.76	80.7	81.0	3.91	3.94		6.0	5.9	
						27.2		5.77		81.2		3.96			5.8		
06/11/12	1130-1145	24/Fine	Surface	1.0	25.3	26.6	26.6	5.88	5.86	82.3	82.0	3.84	3.82	3.94	5.8	5.8	6.0
						26.6		5.83		81.6		3.79			5.8		
			Middle	6.3	25.2	26.8	26.8	5.76	5.75	80.6	80.5	3.96	3.93		6.0	6.0	
						26.8		5.74		80.4		3.90			6.0		
			Bottom	11.5	25.1	27.1	27.1	5.63	5.66	79.0	79.3	4.06	4.09		6.0	6.1	
						27.1		5.68		79.5		4.11			6.2		
08/11/12	1230-1244	25/Cloudy	Surface	1.0	25.1	26.9	26.9	5.90	5.92	83.2	83.4	3.58	3.61	3.79	5.6	5.6	5.8
						26.9		5.93		83.6		3.63			5.6		
			Middle	6.3	25.1	26.9	27.0	5.88	5.87	82.9	82.7	3.72	3.76		6.0	5.8	
						27.0		5.85		82.5		3.80			6.0		
			Bottom	11.6	25.0	27.2	27.2	5.77	5.78	81.4	81.5	3.97	4.01		6.0	6.1	
						27.2		5.79		81.6		4.04			6.2		
10/11/12	1230-1245	26/Cloudy	Surface	1.0	25.4	26.8	26.8	5.97	5.96	83.7	83.5	3.32	3.36	3.57	5.2	5.3	5.6
						26.8		5.94		83.3		3.40			5.4		
			Middle	6.2	25.2	26.9	27.0	5.90	5.92	82.7	83.0	3.74	3.71		5.8	5.7	
						27.0		5.94		83.3		3.68			5.5		
			Bottom	11.4	25.2	27.1	27.2	5.85	5.87	82.0	82.2	3.68	3.65		6.0	5.8	
						27.2		5.88		82.4		3.62			5.6		
13/11/12	1430-1444	26/Fine	Surface	1.0	25.3	26.8	26.8	6.10	6.09	85.5	85.4	3.71	3.76	3.77	5.6	5.7	5.8
						26.8		6.08		85.2		3.81			5.8		
			Middle	6.5	25.1	27.0	27.0	5.94	5.92	83.3	83.0	3.63	3.66		5.6	5.6	
						27.0		5.90		82.7		3.69			5.5		
			Bottom	12.0	25.0	27.2	27.2	5.86	5.86	82.2	82.1	3.83	3.88		6.0	6.1	
						27.2		5.85		82.0		3.92			6.2		
15/11/12	0700-0711	24/Cloudy	Surface	1.0	24.6	26.4	26.5	5.91	5.93	82.7	83.0	3.56	3.59	3.77	5.4	5.5	5.8
						26.5		5.94		83.2		3.61			5.6		
			Middle	6.2	24.7	26.6	26.7	5.89	5.88	82.5	82.3	3.70	3.74		5.6	5.8	
						26.7		5.86		82.0		3.78			6.0		
			Bottom	11.4	24.8	26.8	26.9	5.78	5.79	80.9	81.1	3.95	3.99		6.0	6.0	
						26.9		5.80		81.2		4.02			6.0		
17/11/12	0800-0815	20/Cloudy	Surface	1.0	24.2	26.4	26.4	5.97	5.96	83.6	83.5	4.07	4.04	4.19	6.0	6.0	6.2
						26.3		5.95		83.4		4.01			6.0		
			Middle	6.3	24.3	26.8	26.8	5.84	5.82	81.8	81.5	4.34	4.36		6.4	6.5	
						26.7		5.80		81.2		4.38			6.5		
			Bottom	11.6	24.4	27.0	27.0	5.80	5.78	81.2	80.9	4.12	4.16		6.0	6.1	
						26.9		5.75		80.5		4.19			6.2		
20/11/12	1100-1115	22/Drizzle	Surface	1.0	24.1	26.4	26.5	5.95	5.94	83.3	83.2	4.06	4.04	4.16	6.0	6.0	6.1
						26.5		5.93		83.0		4.02			6.0		
			Middle	6.4	24.3	26.8	26.8	5.82	5.80	81.5	81.2	4.30	4.32		6.2	6.1	
						26.7		5.78		80.9		4.34			6.0		
			Bottom	11.8	24.3	26.9	27.0	5.77	5.75	80.8	80.5	4.10	4.13		6.0	6.1	
						27.0		5.72		80.1		4.16			6.2		
22/11/12	1800-1815	24/Cloudy	Surface	1.0	24.4	26.7	26.8	6.01	6.03	84.1	84.4	3.84	3.87	4.11	5.8	5.9	6.1
						26.8		6.05		84.7		3.90			6.0		
			Middle	6.4	24.3	26.8	26.9	5.93	5.94	83.0	83.2	4.04	4.07		6.0	6.0	
						26.9		5.95		83.3		4.10			6.0		
			Bottom	11.8	24.6	26.9	27.0	5.88	5.89	82.3	82.5	4.36	4.38		6.5	6.5	
						27.0		5.90		82.6		4.40			6.4		
24/11/12	1300-1312	19/Drizzle	Surface	1.0	23.9	26.4	26.4	6.16	6.18	86.4	86.6	3.23	3.24	3.34	5.2	5.2	5.3
						26.4		6.19		86.8		3.24			5.2		
			Middle	6.3	24.0	26.6	26.7	6.05	6.06	84.7	84.8	3.35	3.34		5.4	5.2	
						26.7		6.06		84.8		3.32			5.0		
			Bottom	11.6	24.2	26.8	26.9	5.93	5.95	82.9	83.1	3.44	3.44		5.5	5.5	
						26.9		5.96		83.3		3.44			5.4		
27/11/12	1400-1413	16/Rainy	Surface	1.0	23.7	26.5	26.5	6.16	6.16	85.9	85.9	3.30	3.32	3.44	5.2	5.2	5.4
						26.5		6.15		85.8		3.34			5.2		
			Middle	6.4	23.9	26.7	26.7	6.04	6.02	84.3	84.0	3.41	3.43		5.4	5.5	
						26.7		6.00		83.7		3.45			5.5		
			Bottom	11.8	24.0	26.8	26.9	5.93	5.91	82.7	82.5	3.56	3.58		5.5	5.6	
						26.9		5.89		82.2		3.60			5.6		
29/11/12	1030-1046	18/Cloudy	Surface	1.0	23.3	26.4	26.4	6.17	6.20	85.6	86.0	3.40	3.44	3.62	5.4	5.4	5.6
						26.4		6.22		86.3		3.47			5.4		
			Middle	6.3	23.3	26.6	26.7	6.10	6.08	84.6	84.4	3.55	3.59		5.6	5.6	
						26.7		6.06		84.1		3.62			5.5		
			Bottom	11.6	23.4	26.9	27.0	5.91	5.92	82.0	82.2	3.81	3.84		6.0	5.9	
						27.0		5.93		82.3		3.87			5.8		

**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
01/11/12	0913-0927	20/Fine	Surface	1.0	25.3	26.8	26.8	6.01	6.04	84.7	85.1	3.16	3.19	3.40	5.0	5.1	5.4
						26.8		6.06		85.4		3.21			5.2		
			Middle	6.0	25.3	26.8	26.9	5.97	5.95	84.2	83.9	3.40	3.39		5.4	5.4	
						26.9		5.93		83.6		3.37			5.4		
			Bottom	11.0	25.2	27.0	27.0	5.80	5.82	81.8	82.1	3.59	3.62		5.6	5.6	
						27.0		5.84		82.3		3.65			5.6		
03/11/12	0853-0907	20/Fine	Surface	1.0	25.4	27.0	27.0	5.90	5.92	83.1	83.4	3.43	3.45	3.67	5.4	5.4	5.6
						27.0		5.94		83.7		3.47			5.4		
			Middle	6.1	25.2	27.1	27.1	5.75	5.77	80.9	81.1	3.68	3.71		5.6	5.6	
						27.0		5.78		81.3		3.74			5.6		
			Bottom	11.2	25.1	27.4	27.4	5.69	5.67	80.0	79.7	3.88	3.85		5.8	5.8	
						27.4		5.65		79.4		3.81			5.8		
06/11/12	1342-1358	24/Fine	Surface	1.0	25.3	26.6	26.6	5.72	5.71	80.1	80.0	3.43	3.47	3.70	5.4	5.4	5.6
						26.6		5.70		79.8		3.51			5.4		
			Middle	8.6	25.2	26.7	26.8	5.68	5.67	79.5	79.3	3.78	3.76		5.6	5.6	
						26.8		5.65		79.1		3.74			5.6		
			Bottom	16.2	25.1	26.9	27.0	5.59	5.60	78.3	78.4	3.86	3.88		5.8	5.8	
						27.0		5.60		78.4		3.90			5.8		
08/11/12	1429-1443	25/Cloudy	Surface	1.0	25.1	26.8	26.8	5.94	5.97	83.8	84.2	3.42	3.44	3.63	5.4	5.4	5.6
						26.8		5.99		84.5		3.46			5.4		
			Middle	6.1	25.1	27.0	27.0	5.87	5.85	82.8	82.5	3.61	3.64		5.6	5.6	
						26.9		5.83		82.2		3.66			5.6		
			Bottom	11.2	25.0	27.1	27.1	5.71	5.73	80.7	80.9	3.78	3.80		5.8	5.8	
						27.1		5.75		81.1		3.82			5.8		
10/11/12	1432-1445	26/Cloudy	Surface	1.0	25.6	26.8	26.8	5.87	5.86	82.3	82.1	3.40	3.43	3.68	5.4	5.5	5.8
						26.8		5.84		81.9		3.46			5.6		
			Middle	6.2	25.3	27.1	27.1	5.81	5.83	81.5	81.8	3.82	3.79		6.0	5.9	
						27.0		5.85		82.0		3.76			5.8		
			Bottom	11.4	25.2	27.3	27.3	5.72	5.70	80.1	79.9	3.85	3.83		6.0	5.9	
						27.3		5.68		79.6		3.80			5.8		
13/11/12	1627-1642	26/Fine	Surface	1.0	25.3	26.7	26.7	6.01	6.01	84.3	84.2	3.63	3.61	3.76	5.6	5.5	5.6
						26.7		6.00		84.1		3.58			5.4		
			Middle	6.0	25.1	26.9	27.0	5.93	5.93	82.7	82.8	3.71	3.73		5.6	5.6	
						27.0		5.92		82.9		3.75			5.6		
			Bottom	11.0	25.0	27.2	27.2	5.81	5.81	81.5	81.5	3.96	3.94		5.8	5.8	
						27.2		5.81		81.5		3.91			5.8		
15/11/12	0829-0941	24/Cloudy	Surface	1.0	24.7	26.5	26.5	5.82	5.82	81.5	81.4	3.63	3.61	3.76	5.6	5.6	5.8
						26.4		5.81		81.3		3.58			5.6		
			Middle	6.0	24.7	26.6	26.7	5.75	5.73	80.5	80.3	3.72	3.75		5.8	5.8	
						26.7		5.71		80.0		3.78			5.8		
			Bottom	11.0	24.8	26.7	26.8	5.61	5.61	78.5	78.5	3.95	3.93		6.0	6.0	
						26.8		5.60		78.4		3.90			6.0		
17/11/12	1004-1016	20/Cloudy	Surface	1.0	24.2	26.5	26.5	6.07	6.06	85.1	84.9	4.02	4.05	4.18	6.0	6.0	6.1
						26.5		6.04		84.6		4.07			6.0		
			Middle	6.2	24.3	26.8	26.9	5.98	5.96	83.8	83.5	4.17	4.14		6.2	6.1	
						26.9		5.94		83.2		4.11			6.0		
			Bottom	11.4	24.4	27.0	27.0	5.90	5.89	82.7	82.5	4.36	4.34		6.4	6.3	
						26.9		5.87		82.2		4.32			6.2		
20/11/12	1300-1314	22/Drizzle	Surface	1.0	24.1	26.5	26.5	6.08	6.08	85.1	85.1	4.01	4.04	4.16	5.8	5.9	6.1
						26.5		6.07		85.0		4.06			6.0		
			Middle	6.3	24.2	26.8	26.9	5.97	5.96	83.6	83.4	4.15	4.13		6.2	6.1	
						26.9		5.94		83.2		4.10			6.0		
			Bottom	11.6	24.3	27.0	27.1	5.91	5.90	82.7	82.6	4.34	4.32		6.4	6.3	
						27.1		5.89		82.5		4.30			6.2		
22/11/12	2010-2024	24/Cloudy	Surface	1.0	24.4	26.7	26.8	6.08	6.09	84.7	85.1	3.66	3.68	3.82	5.6	5.6	5.8
						26.8		6.10		85.4		3.70			5.6		
			Middle	6.3	24.5	24.4	24.5	5.90	5.92	82.5	82.9	3.82	3.81		5.8	5.8	
						24.5		5.94		83.2		3.80			5.8		
			Bottom	11.6	24.5	24.5	24.5	5.83	5.84	81.6	81.8	3.97	3.98		6.0	6.0	
						24.5		5.85		81.9		3.99			6.0		
24/11/12	1456-1508	19/Drizzle	Surface	1.0	23.9	26.4	26.4	6.16	6.17	86.4	86.5	3.14	3.15	3.26	5.0	5.1	5.2
						26.4		6.18		86.6		3.16			5.2		
			Middle	6.0	24.1	26.7	26.7	6.07	6.05	85.0	84.7	3.26	3.25		5.2	5.2	
						26.6		6.03		84.4		3.23			5.2		
			Bottom	11.0	24.2	26.8	26.9	5.95	5.94	83.2	83.0	3.38	3.38		5.4	5.4	
						26.9		5.92		82.8		3.37			5.4		
27/11/12	1556-1609	16/Rainy	Surface	1.0	23.8	26.4	26.4	6.15	6.13	85.8	85.5	3.24	3.26	3.37	5.2	5.2	5.4
						26.4		6.11		85.2		3.28			5.2		
			Middle	6.3	23.9	26.5	26.5	6.06	6.04	84.5	84.3	3.35	3.37		5.4	5.4	
						26.5		6.02		84.0		3.39			5.4		
			Bottom	11.6	24.0	26.7	26.7	5.93	5.92	82.7	82.5	3.46	3.47		5.6	5.5	
						26.7		5.90		82.3		3.48			5.4		
29/11/12	1230-1244	19/Cloudy	Surface	1.0	23.2	26.4	26.4	6.24	6.22	86.6	86.3	3.39	3.41	3.55	5.4	5.4	5.6
						26.3		6.20		86.0		3.42			5.4		
			Middle	6.1	23.3	26.5	26.6	6.15	6.14	85.3	85.1	3.49	3.51		5.6	5.6	
						26.6		6.12		84.9		3.53			5.6		
			Bottom	11.2	23.3	26.7	26.7	5.94	5.96	82.4	82.7	3.72	3.74		5.8	5.8	
						26.7		5.98		83.0		3.76			5.8		

Monitoring Station : R29

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
01/11/12	0931-0945	20/Fine	Surface	1.0	25.2	26.8	26.9	5.97	5.98	84.2	84.3	3.20	3.23	3.46	5.2	5.2	5.4
						26.9		5.99		84.4		3.25			5.2		
			Middle	9.2	25.2	26.9	27.0	5.89	5.88	83.0	82.8	3.46	3.49		5.4	5.4	
						27.0		5.86		82.6		3.51			5.4		
			Bottom	17.4	25.0	27.2	27.2	5.74	5.77	80.9	81.3	3.66	3.68		5.6	5.6	
						27.2		5.79		81.6		3.70			5.6		
03/11/12	0915-0928	20/Fine	Surface	1.0	25.4	27.0	27.0	5.82	5.80	81.9	81.6	3.60	3.64	3.78	5.6	5.6	5.8
						27.0		5.78		81.3		3.67			5.6		
			Middle	8.8	25.2	27.2	27.2	5.78	5.76	81.3	81.1	3.82	3.79		5.8	5.7	
						27.2		5.74		80.8		3.75			5.6		
			Bottom	16.6	25.2	27.3	27.3	5.71	5.70	80.3	80.1	3.94	3.92		6.0	6.0	
						27.3		5.68		79.9		3.90			6.0		
06/11/12	1404-1420	24/Fine	Surface	1.0	25.3	26.6	26.7	5.89	5.88	82.5	82.3	3.77	3.74	3.84	5.6	5.6	5.8
						26.7		5.86		82.0		3.71			5.6		
			Middle	8.8	25.2	26.9	26.9	5.73	5.73	80.2	80.2	3.86	3.85		5.8	5.8	
						26.9		5.72		80.1		3.84			5.8		
			Bottom	16.5	25.1	27.1	27.1	5.70	5.69	79.8	79.7	3.93	3.92		6.0	5.9	
						27.1		5.68		79.5		3.90			5.8		
08/11/12	1447-1501	25/Cloudy	Surface	1.0	25.2	26.9	26.9	5.93	5.91	83.7	83.4	3.51	3.53	3.77	5.6	5.5	5.7
						26.9		5.89		83.1		3.55			5.4		
			Middle	9.1	25.0	27.2	27.2	5.78	5.76	81.6	81.3	3.72	3.74		5.6	5.7	
						27.2		5.74		80.9		3.75			5.8		
			Bottom	17.2	24.8	27.3	27.4	5.70	5.69	80.4	80.2	4.01	4.04		6.0	6.0	
						27.4		5.67		80.0		4.07			6.0		
10/11/12	1452-1505	26/Cloudy	Surface	1.0	25.5	26.9	26.9	5.92	5.90	83.0	82.7	3.51	3.49	3.70	5.6	5.6	5.7
						26.9		5.88		82.4		3.46			5.6		
			Middle	8.8	25.3	27.1	27.1	5.89	5.87	82.6	82.3	3.79	3.75		5.8	5.7	
						27.1		5.85		82.0		3.70			5.6		
			Bottom	16.6	25.1	27.2	27.2	5.83	5.81	81.7	81.4	3.92	3.88		6.0	5.9	
						27.1		5.78		81.0		3.84			5.8		
13/11/12	1646-1700	26/Fine	Surface	1.0	25.3	26.7	26.8	6.05	6.05	84.8	84.8	3.51	3.55	3.69	5.4	5.5	5.6
						26.8		6.04		84.7		3.58			5.6		
			Middle	9.4	25.1	26.9	26.9	5.92	5.92	83.0	83.0	3.66	3.65		5.6	5.6	
						26.9		5.91		82.9		3.64			5.6		
			Bottom	17.8	25.0	27.1	27.1	5.83	5.81	81.7	81.5	3.89	3.87		5.8	5.8	
						27.1		5.79		81.2		3.85			5.8		
15/11/12	0845-0856	24/Fine	Surface	1.0	24.6	26.4	26.5	5.91	5.90	82.7	82.6	3.51	3.50	3.72	5.4	5.4	5.6
						26.5		5.89		82.5		3.48			5.4		
			Middle	8.9	24.7	26.6	26.6	5.84	5.83	81.8	81.7	3.75	3.73		5.6	5.6	
						26.6		5.82		81.5		3.70			5.6		
			Bottom	16.8	24.8	26.8	26.9	5.65	5.67	79.1	79.4	3.95	3.93		6.0	5.9	
						26.9		5.69		79.7		3.90			5.8		
17/11/12	1022-1035	20/Cloudy	Surface	1.0	24.1	26.5	26.6	6.02	6.04	84.4	84.6	4.17	4.14	4.16	6.2	6.2	6.2
						26.6		6.05		84.8		4.11			6.2		
			Middle	8.9	24.3	26.9	26.9	5.86	5.85	82.0	81.8	4.08	4.12		6.0	6.1	
						26.9		5.83		81.6		4.15			6.2		
			Bottom	16.8	24.3	27.0	27.0	5.89	5.87	82.5	82.2	4.21	4.24		6.2	6.2	
						27.0		5.84		81.8		4.26			6.2		
20/11/12	1318-1334	22/Drizzle	Surface	1.0	24.1	26.6	26.7	6.03	6.05	84.4	84.6	4.16	4.13	4.15	6.2	6.1	6.1
						26.7		6.06		84.8		4.10			6.0		
			Middle	8.9	24.3	26.9	26.9	5.87	5.86	82.2	82.1	4.07	4.11		6.0	6.0	
						26.9		5.85		81.9		4.14			6.0		
			Bottom	16.8	24.4	27.0	27.1	5.88	5.85	82.3	81.8	4.19	4.22		6.2	6.2	
						27.1		5.81		81.3		4.24			6.2		
22/11/12	2028-2044	24/Cloudy	Surface	1.0	24.4	26.7	26.8	6.05	6.03	84.7	84.4	3.62	3.65	3.85	5.6	5.6	5.8
						26.8		6.01		84.1		3.68			5.6		
			Middle	9.1	24.5	26.9	27.0	5.92	5.92	82.9	82.8	3.85	3.85		5.8	5.8	
						27.0		5.91		82.7		3.84			5.8		
			Bottom	17.2	24.6	27.1	27.2	5.75	5.74	80.5	80.4	4.09	4.05		6.0	6.0	
						27.2		5.73		80.2		4.01			6.0		
24/11/12	1516-1528	19/Drizzle	Surface	1.0	23.9	26.3	26.4	6.13	6.15	85.9	86.2	3.25	3.26	3.40	5.2	5.2	5.4
						26.4		6.17		86.5		3.26			5.2		
			Middle	9.3	24.0	26.6	26.6	6.08	6.07	85.1	84.9	3.44	3.43		5.4	5.4	
						26.5		6.05		84.7		3.41			5.4		
			Bottom	17.6	24.1	26.8	26.8	5.96	5.97	83.3	45.8	3.54	3.53		5.6	5.5	
						26.8		5.98		84.4		3.52			5.4		
27/11/12	1616-1628	16/Rainy	Surface	1.0	23.7	26.4	26.4	6.16	6.15	85.9	85.7	3.33	3.35	3.51	5.2	5.3	5.5
						26.3		6.13		85.5		3.36			5.4		
			Middle	9.1	23.9	26.5	26.5	6.04	6.03	84.3	84.1	3.54	3.56		5.4	5.5	
						26.5		6.01		83.8		3.57			5.6		
			Bottom	17.2	24.1	26.8	26.8	5.90	5.88	82.3	82.0	3.62	3.64		5.6	5.7	
						26.8		5.86		81.7		3.66			5.8		
29/11/12	1248-1303	19/Cloudy	Surface	1.0	23.3	26.4	26.5	6.17	6.15	85.6	85.4	3.40	3.43	3.56	5.4	5.4	5.6
						26.5		6.13		85.1		3.46			5.4		
			Middle	8.9	23.3	26.7	26.7	6.04	6.01	83.8	83.3	3.50	3.54		5.6	5.7	
						26.7		5.97		82.8		3.57			5.8		
			Bottom	16.8	23.4	26.9	26.9	5.78	5.81	80.2	80.6	3.73	3.70		5.8	5.7	
						26.9		5.83		80.9		3.67			5.6		

Mid-Flood Tide

Monitoring Station : C1

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
01/11/12	0813-0828	20/Fine	Surface	1.0	25.2	26.8	26.8	6.00	6.03	84.6	85.0	3.13	3.16	3.39	5.0	5.1	5.4	
						26.7		6.05		85.3		3.18			5.2			
			Middle	7.4	25.1	26.9	27.0	5.94	5.92	83.8	83.5	3.38	3.42		3.40	5.4		5.4
						27.0		5.90		83.2		3.42			5.4			
			Bottom	13.8	25.1	27.1	27.1	5.86	5.84	82.6	82.3	3.59	3.62		3.61	5.6		5.6
						27.1		5.81		81.9		3.62			5.5			
03/11/12	0754-0808	20/Fine	Surface	1.0	25.4	26.9	26.9	5.99	5.97	84.4	84.1	3.37	3.35	3.68	5.4	5.3	5.7	
						26.9		5.95		83.8		3.33			5.2			
			Middle	7.3	25.3	27.2	27.2	5.82	5.80	81.9	81.6	3.82	3.79		3.81	5.8		5.8
						27.2		5.78		81.3		3.79			5.8			
			Bottom	13.6	25.2	27.3	27.3	5.75	5.77	80.9	81.2	3.85	3.89		3.87	5.8		5.9
						27.2		5.79		81.5		3.89			6.0			
06/11/12	1229-1245	24/Fine	Surface	1.0	25.3	26.7	26.7	5.94	5.92	83.2	82.9	3.43	3.41	3.61	5.4	5.4	5.6	
						26.7		5.90		82.6		3.39			5.4			
			Middle	7.4	25.2	26.9	26.9	5.83	5.82	81.6	81.5	3.63	3.60		3.62	5.6		5.6
						26.9		5.81		81.3		3.60			5.6			
			Bottom	13.8	25.0	27.1	27.2	5.76	5.75	80.6	80.4	3.82	3.76		3.79	5.8		5.9
						27.2		5.73		80.2		3.76			6.0			
08/11/12	1331-1345	25/Cloudy	Surface	1.0	25.1	26.9	26.9	5.95	5.97	83.9	84.1	3.48	3.51	3.73	5.4	5.4	5.6	
						26.9		5.98		84.3		3.53			5.4			
			Middle	7.4	25.0	27.1	27.1	5.87	5.85	82.8	82.5	3.70	3.76		3.73	5.6		5.6
						27.0		5.82		82.1		3.76			5.6			
			Bottom	13.8	24.9	27.2	27.3	5.70	5.72	80.4	80.7	3.93	3.98		3.96	5.8		5.9
						27.3		5.74		81.0		3.98			6.0			
10/11/12	1332-1345	26/Cloudy	Surface	1.0	25.5	26.9	26.9	5.83	5.82	81.7	81.5	3.60	3.62	3.77	5.6	5.6	5.8	
						26.9		5.80		81.3		3.64			5.6			
			Middle	7.4	25.3	27.0	27.0	5.70	5.72	79.9	80.2	3.82	3.77		3.80	5.8		5.8
						27.0		5.74		80.4		3.77			5.8			
			Bottom	13.8	25.1	27.1	27.2	5.67	5.65	79.4	79.1	3.91	3.86		3.89	6.0		6.0
						27.2		5.63		78.8		3.86			6.0			
13/11/12	1528-1542	26/Fine	Surface	1.0	25.2	26.7	26.7	6.03	6.02	84.5	84.3	3.69	3.68	3.78	5.6	5.6	5.8	
						26.7		6.00		84.1		3.66			5.6			
			Middle	6.4	25.1	26.9	26.9	5.88	5.87	82.4	82.4	3.74	3.77		3.76	5.8		5.8
						26.9		5.86		82.3		3.77			5.8			
			Bottom	11.8	25.0	27.2	27.2	5.73	5.72	80.3	80.2	3.89	3.93		3.91	6.0		6.0
						27.2		5.71		80.1		3.93			6.0			
15/11/12	0748-0800	24/Cloudy	Surface	1.0	24.6	26.5	26.5	5.96	5.98	83.4	83.7	3.46	3.49	3.71	5.4	5.4	5.7	
						26.5		5.99		83.9		3.51			5.4			
			Middle	7.4	24.7	26.8	26.9	5.88	5.86	82.3	82.0	3.68	3.74		3.71	5.6		5.6
						26.9		5.83		81.6		3.74			5.6			
			Bottom	13.8	24.7	26.9	26.9	5.71	5.73	80.0	80.3	3.91	3.96		3.94	6.0		6.0
						26.9		5.75		80.5		3.96			6.0			
17/11/12	0903-0916	20/Cloudy	Surface	1.0	24.1	26.5	26.5	6.05	6.07	84.8	85.0	4.03	4.05	4.07	6.0	6.0	6.0	
						26.5		6.08		85.2		4.07			6.0			
			Middle	7.7	24.3	26.8	26.9	5.98	5.96	83.8	83.5	3.99	3.91		3.95	5.8		5.8
						26.9		5.94		83.2		3.91			5.8			
			Bottom	14.4	24.4	27.0	27.0	5.92	5.90	82.9	82.6	4.17	4.23		4.20	6.2		6.1
						27.0		5.87		82.2		4.23			6.0			
20/11/12	1202-1215	22/Drizzle	Surface	1.0	24.2	26.5	26.6	6.06	6.08	84.8	85.1	4.02	4.04	4.05	6.0	6.0	6.0	
						26.6		6.09		85.3		4.06			6.0			
			Middle	7.8	24.3	26.8	26.8	5.98	5.98	83.7	83.7	3.97	3.86		3.92	5.8		5.8
						26.8		5.97		83.6		3.86			5.8			
			Bottom	14.6	24.4	27.0	27.1	5.93	5.90	83.0	82.5	4.17	4.22		4.20	6.2		6.1
						27.1		5.86		82.0		4.22			6.0			
22/11/12	1912-1925	24/Cloudy	Surface	1.0	24.4	26.7	26.7	6.05	6.04	84.7	84.5	3.86	3.89	4.03	5.8	5.8	6.0	
						26.7		6.02		84.3		3.91			6.0			
			Middle	7.6	24.5	26.8	26.9	5.93	5.94	83.0	83.2	3.99	3.98		3.99	6.0		6.0
						26.9		5.95		83.3		3.98			6.0			
			Bottom	14.2	24.6	27.1	27.1	5.79	5.81	81.1	81.3	4.22	4.24		4.23	6.2		6.1
						27.1		5.82		81.5		4.24			6.0			
24/11/12	1359-1410	19/Drizzle	Surface	1.0	23.9	26.4	26.5	6.13	6.15	85.9	86.2	3.41	3.42	3.51	5.2	5.3	5.5	
						26.5		6.17		86.5		3.43			5.4			
			Middle	7.4	24.0	26.7	26.7	6.04	6.04	84.6	84.5	3.52	3.51		3.52	5.4		5.5
						26.6		6.03		84.4		3.51			5.6			
			Bottom	13.8	24.2	26.9	26.9	5.96	5.95	83.3	83.1	3.60	3.58		3.59	5.6		5.6
						26.9		5.93		82.9		3.58			5.5			
27/11/12	1458-1511	16/Rainy	Surface	1.0	23.7	26.4	26.4	6.20	6.19	86.5	86.3	3.40	3.42	3.55	5.4	5.4	5.4	
						26.4		6.17		86.1		3.44			5.4			
			Middle	7.9	23.9	26.6	26.6	6.05	6.03	84.4	84.1	3.52	3.56		3.54	5.2		5.3
						26.6		6.01		83.8		3.56			5.4			
			Bottom	14.8	24.1	26.8	26.8	5.89	5.88	82.2	82.0	3.67	3.70		3.69	5.6		5.6
						26.8		5.86		81.7		3.70			5.5			
29/11/12	1132-1146	18/Cloudy	Surface	1.0	23.4	26.4	26.5	6.21	6.20	86.1	85.9	3.34	3.38	3.59	5.2	5.3	5.5	
						26.5		6.18		85.7		3.41			5.4			
			Middle	7.5	23.4	26.7	26.8	6.09	6.07	84.5	84.2	3.57	3.64		3.61	5.4		5.5
						26.8		6.04		83.8		3.64			5.6			
			Bottom	14.0	23.4	27.0	27.1	5.84	5.86	81.1	81.3	3.80	3.77		3.79	5.8		5.7
						27.1		5.87		81.4		3.77			5.5			

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			
01/11/12	0833-0848	20/Fine	Surface	1.0	25.2	26.8	26.8	6.04	6.06	85.2	85.5	3.21	3.23	3.33	5.2	5.2	5.3			
						26.8		6.08		85.7		3.25			5.2					
			Middle	6.5	25.2	26.8	26.9	5.95	5.97	83.9	84.1	3.33	3.31		3.43	3.46		5.4	5.3	5.4
						26.9		5.98		84.3		3.29			5.2					
			Bottom	12.0	25.2	27.0	27.0	5.88	5.86	82.9	82.6	3.43	3.48		3.48	3.51		5.4	5.4	5.4
						27.0		5.84		82.3		3.48			5.4					
03/11/12	0814-0827	20/Fine	Surface	1.0	25.4	26.9	27.0	6.01	6.02	84.7	84.9	3.48	3.51	3.64	5.4	5.4	5.6			
						27.0		6.03		85.0		3.63			5.4					
			Middle	6.7	25.2	27.2	27.2	5.89	5.88	82.9	82.7	3.59	3.61		3.77	3.80		5.6	5.6	5.6
						27.2		5.86		82.5		3.63			5.6					
			Bottom	12.4	25.1	27.2	27.2	5.79	5.78	81.5	81.3	3.77	3.80		3.82	3.88		5.8	5.8	5.8
						27.2		5.76		81.1		3.82			5.8					
06/11/12	1250-1315	24/Fine	Surface	1.0	25.3	26.6	26.7	6.03	6.02	84.4	84.2	3.63	3.66	3.82	5.6	5.6	5.8			
						26.7		6.00		84.0		3.69			5.6					
			Middle	6.7	25.2	26.8	26.9	5.91	5.90	82.7	82.5	3.82	3.81		3.90	3.99		5.8	5.8	5.8
						26.9		5.88		82.3		3.80			5.8					
			Bottom	12.4	25.0	27.1	27.1	5.83	5.82	81.6	81.4	3.95	4.03		4.03	4.06		6.0	6.0	6.0
						27.1		5.80		81.2		4.03			6.0					
08/11/12	1350-1405	25/Fine	Surface	1.0	25.2	26.9	26.9	5.89	5.88	83.1	82.9	3.54	3.56	3.77	5.4	5.4	5.7			
						26.9		5.86		82.6		3.58			5.4					
			Middle	6.9	25.1	27.1	27.1	5.80	5.78	81.8	81.6	3.74	3.77		3.80	3.88		5.6	5.7	5.7
						27.0		5.76		81.3		3.80			5.6					
			Bottom	12.8	24.9	27.2	27.2	5.71	5.70	80.6	80.5	3.95	4.00		4.00	4.06		5.8	5.9	5.9
						27.2		5.69		80.3		4.00			6.0					
10/11/12	1352-1405	26/Cloudy	Surface	1.0	25.6	26.9	26.9	5.87	5.86	82.3	82.1	3.44	3.42	3.65	5.6	5.5	5.7			
						26.8		5.84		81.9		3.40			5.4					
			Middle	6.9	25.3	27.1	27.1	5.75	5.77	80.6	80.8	3.63	3.65		3.67	3.88		5.8	5.7	5.7
						27.1		5.78		81.0		3.67			5.8					
			Bottom	12.8	25.2	27.2	27.2	5.72	5.70	80.1	79.9	3.90	3.85		3.85	4.06		6.0	6.0	6.0
						27.2		5.68		79.6		3.85			6.0					
13/11/12	1547-1602	26/Fine	Surface	1.0	25.3	26.6	26.7	6.03	6.02	84.5	84.4	3.72	3.75	3.90	5.6	5.7	5.9			
						26.7		6.01		84.3		3.78			5.8					
			Middle	6.4	25.1	26.9	26.9	5.89	5.88	82.6	82.4	3.81	3.87		3.93	4.08		5.8	5.9	5.9
						26.9		5.86		82.2		3.93			6.0					
			Bottom	11.8	25.0	27.1	27.1	5.73	5.73	80.3	80.3	4.06	4.09		4.09	4.06		6.0	6.0	6.0
						27.1		5.72		80.2		4.09			6.0					
15/11/12	0805-0814	24/Cloudy	Surface	1.0	24.6	26.4	26.4	5.90	5.89	82.6	82.4	3.52	3.54	3.75	5.2	5.3	5.6			
						26.4		5.87		82.2		3.56			5.4					
			Middle	6.8	24.7	26.6	26.7	5.81	5.79	81.3	81.1	3.72	3.75		3.78	3.96		5.6	5.7	5.6
						26.7		5.77		80.8		3.78			5.8					
			Bottom	12.6	24.8	26.8	26.9	5.72	5.71	80.1	80.0	3.93	3.96		3.96	4.12		5.8	5.9	5.9
						26.9		5.70		79.8		3.96			6.0					
17/11/12	0923-0936	20/Cloudy	Surface	1.0	24.1	26.5	26.5	6.01	6.03	84.2	84.4	4.09	4.12	4.18	6.0	6.1	6.1			
						26.4		6.04		84.6		4.15			6.2					
			Middle	6.9	24.3	26.9	26.9	5.88	5.86	82.3	82.1	4.02	4.06		4.09	4.37		5.8	5.9	5.9
						26.9		5.84		81.8		4.09			6.0					
			Bottom	12.8	24.4	27.0	27.1	5.80	5.82	81.2	81.4	4.33	4.40		4.40	4.35		6.4	6.4	6.4
						27.1		5.83		81.6		4.40			6.4					
20/11/12	1221-1235	22/Drizzle	Surface	1.0	24.1	26.5	26.5	6.03	6.04	84.4	84.6	4.08	4.11	4.16	6.0	6.0	6.0			
						26.4		6.05		84.7		4.13			6.0					
			Middle	6.9	24.2	26.8	26.9	5.90	5.87	82.6	82.1	4.01	4.04		4.07	4.35		5.8	5.8	5.8
						26.9		5.84		81.6		4.07			5.8					
			Bottom	12.8	24.4	27.1	27.1	5.81	5.83	81.3	81.6	4.31	4.38		4.38	4.22		6.2	6.3	6.3
						27.0		5.84		81.8		4.38			6.4					
22/11/12	1931-1945	24/Cloudy	Surface	1.0	24.5	26.6	26.6	6.09	6.10	85.3	85.4	3.80	3.82	4.06	5.8	5.8	6.0			
						26.5		6.10		85.4		3.84			5.8					
			Middle	7.2	24.4	26.7	26.8	6.01	6.05	84.1	84.7	4.10	4.13		4.15	4.22		6.0	6.1	6.0
						26.8		6.09		85.3		4.15			6.2					
			Bottom	13.4	24.5	27.0	27.1	5.72	5.75	80.1	80.5	4.20	4.24		4.24	4.35		6.2	6.2	6.2
						27.1		5.78		80.9		4.24			6.2					
24/11/12	1417-1429	19/Drizzle	Surface	1.0	23.9	26.5	26.6	6.18	6.17	86.6	86.4	3.33	3.32	3.40	5.2	5.2	5.4			
						26.6		6.15		86.2		3.30			5.2					
			Middle	6.4	24.0	26.6	26.6	6.04	6.06	84.6	84.9	3.37	3.38		3.39	3.50		5.4	5.4	5.4
						26.6		6.08		85.1		3.39			5.4					
			Bottom	11.8	24.1	26.8	26.9	5.99	5.98	83.7	83.5	3.48	3.51		3.51	3.55		5.6	5.6	5.6
						26.9		5.96		83.3		3.51			5.6					
27/11/12	1518-1530	16/Rainy	Surface	1.0	23.7	26.5	26.5	6.23	6.21	86.9	86.7	3.31	3.33	3.43	5.2	5.2	5.4			
						26.5		6.19		86.4		3.34			5.2					
			Middle	7.0	23.8	26.7	26.7	6.06	6.08	84.5	84.8	3.40	3.43		3.46	3.53		5.4	5.4	5.4
						26.7		6.10		85.1		3.46			5.4					
			Bottom	13.0	24.0	26.8	26.9	5.92	5.91	82.6	82.4	3.51	3.54		3.54	3.72		5.6	5.6	5.6
						26.9		5.89		82.2		3.54			5.6					
29/11/12	1150-1205	18/Cloudy	Surface	1.0	23.3	26.4	26.5	6.23	6.20	86.4	86.0	3.40	3.43	3.56	5.4	5.4	5.6			
						26.5		6.16		85.5		3.45			5.4					
			Middle	6.8	23.3	26.7	26.7	6.07	6.09	84.2	84.5	3.51	3.55		3.58	3.72		5.6	5.6	5.6
						26.7		6.11		84.8		3.58			5.6					
			Bottom	12.6	23.3	26.9	26.9	5.87	5.89	81.4	81.7	3.74	3.70		3.70	3.72		5.8	5.7	5.7
						26.9		5.91		82.0		3.70			5.6					

Monitoring Station : C2

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
01/11/12	1601-1617	25/Fine	Surface	1.0	25.5	26.7	26.7	5.93	5.95	83.7	84.0	3.20	3.23	3.46	5.0	5.1	5.4	
						26.7		5.97		84.3		3.25			5.2			
			Middle	8.7	25.3	26.8	26.9	5.84	5.86	82.5	82.7	3.43	3.48		3.46	5.4		5.4
						26.9		5.87		82.9		3.48			5.4			
			Bottom	16.4	25.1	27.0	27.0	5.71	5.73	80.7	81.0	3.72	3.71		3.71	5.6		5.6
						27.0		5.75		81.2		3.69			5.6			
03/11/12	1614-1626	24/Fine	Surface	1.0	25.4	26.8	26.8	5.79	5.79	81.1	81.0	3.66	3.64	3.73	5.5	5.6	5.7	
						26.8		5.78		80.9		3.62			5.6			
			Middle	9.0	25.3	26.9	27.0	5.71	5.71	79.9	79.9	3.71	3.78		3.75	5.8		5.8
						27.0		5.70		79.8		3.78			5.8			
			Bottom	17.2	25.2	27.1	27.2	5.67	5.67	79.4	79.4	3.83	3.82		3.82	5.8		5.7
						27.2		5.67		79.4		3.80			5.6			
06/11/12	0835-0847	20/Fine	Surface	1.0	25.3	26.2	26.6	6.04	6.06	84.7	84.9	3.49	3.52	3.74	5.5	5.6	5.7	
						26.5		6.07		85.1		3.54			5.6			
			Middle	8.8	25.2	26.9	26.9	5.95	5.93	83.4	83.2	3.72	3.78		3.75	5.6		5.6
						26.8		5.91		82.9		3.78			5.6			
			Bottom	16.6	25.1	27.1	27.1	5.90	5.88	82.7	82.5	3.93	3.96		3.96	5.8		5.8
						27.0		5.86		82.2		3.98			5.8			
08/11/12	2155-2211	24/Cloudy	Surface	1.0	25.1	26.8	26.8	5.79	5.80	81.6	81.7	3.68	3.65	3.75	5.5	5.6	5.6	
						26.7		5.80		81.8		3.62			5.6			
			Middle	9.1	25.1	27.0	27.0	5.72	5.73	80.7	80.8	3.70	3.74		3.72	5.6		5.7
						27.0		5.73		80.8		3.74			5.6			
			Bottom	17.2	25.0	27.1	27.2	5.65	5.66	79.7	79.8	3.87	3.88		3.88	5.8		5.7
						27.2		5.67		79.9		3.89			5.5			
10/11/12	1122-1135	24/Cloudy	Surface	1.0	25.2	26.7	26.8	5.82	5.81	81.7	81.6	3.48	3.46	3.64	5.5	5.5	5.7	
						26.8		5.80		81.4		3.43			5.4			
			Middle	8.9	25.1	26.8	26.9	5.75	5.74	80.7	80.5	3.62	3.67		3.65	5.6		5.7
						26.9		5.72		80.3		3.67			5.6			
			Bottom	16.8	25.0	27.1	27.2	5.67	5.68	79.6	79.7	3.83	3.81		3.81	6.0		6.0
						27.2		5.68		79.7		3.79			6.0			
13/11/12	1319-1332	21/Fine	Surface	1.0	25.1	26.9	27.0	5.88	5.89	82.3	82.5	3.26	3.28	3.48	5.0	5.1	5.4	
						27.0		5.90		82.6		3.30			5.2			
			Middle	8.2	25.0	27.1	27.1	5.79	5.81	81.1	81.3	3.47	3.50		3.49	5.4		5.4
						27.1		5.82		81.5		3.50			5.4			
			Bottom	15.4	24.9	27.3	27.3	5.68	5.69	79.5	79.7	3.65	3.68		3.67	5.6		5.6
						27.2		5.70		79.8		3.68			5.6			
15/11/12	1519-1532	24/Cloudy	Surface	1.0	24.7	26.4	26.4	5.71	5.74	79.9	80.4	4.19	4.20	4.45	6.5	6.5	6.5	
						26.4		5.77		80.8		4.20			6.4			
			Middle	8.3	24.7	26.7	26.7	5.64	5.62	78.8	78.6	4.47	4.46		4.47	6.4		6.4
						26.6		5.60		78.4		4.46			6.4			
			Bottom	15.8	24.8	27.0	27.1	5.54	5.53	77.4	77.3	4.67	4.69		4.68	6.6		6.6
						27.1		5.52		77.1		4.69			6.6			
17/11/12	1631-1645	22/Cloudy	Surface	1.0	24.3	26.5	26.6	5.92	5.94	82.9	83.2	4.15	4.17	4.36	6.0	6.1	6.3	
						26.6		5.96		83.5		4.19			6.2			
			Middle	9.4	24.3	26.7	26.8	5.83	5.82	81.6	81.5	4.36	4.40		4.38	6.4		6.4
						26.8		5.81		81.3		4.40			6.4			
			Bottom	17.8	24.4	26.8	26.8	5.72	5.70	80.1	79.8	4.52	4.56		4.54	6.4		6.5
						26.8		5.68		79.5		4.56			6.6			
20/11/12	1933-1944	22/Drizzle	Surface	1.0	24.4	26.8	26.8	6.20	6.18	86.8	86.5	4.12	4.16	4.16	6.0	6.1	6.1	
						26.8		6.15		86.1		4.19			6.2			
			Middle	8.4	24.3	27.0	27.0	6.09	6.08	85.3	85.1	4.20	4.27		4.24	6.2		6.3
						27.0		6.06		84.9		4.27			6.2			
			Bottom	15.8	24.3	27.1	27.2	5.92	5.94	82.9	83.1	4.11	4.06		4.09	6.0		5.9
						27.2		5.95		83.3		4.06			5.8			
22/11/12	1617-1630	25/Cloudy	Surface	1.0	24.4	26.7	26.8	6.02	6.00	84.2	84.0	3.65	3.68	3.83	5.5	5.6	5.7	
						26.8		5.98		83.7		3.70			5.6			
			Middle	9.3	24.5	26.9	26.9	5.89	5.86	82.4	82.0	3.84	3.79		3.82	5.8		5.7
						26.9		5.83		81.6		3.79			5.6			
			Bottom	17.6	24.5	27.1	27.2	5.71	5.73	79.9	80.1	3.94	4.03		3.99	5.8		5.9
						27.2		5.74		80.3		4.03			6.0			
24/11/12	1118-1130	19/Drizzle	Surface	1.0	23.9	26.4	26.5	6.20	6.19	86.2	86.0	3.26	3.24	3.40	5.0	5.1	5.4	
						26.5		6.17		85.8		3.21			5.2			
			Middle	8.4	24.1	26.7	26.8	6.05	6.03	84.1	83.8	3.40	3.44		3.42	5.4		5.4
						26.8		6.01		83.5		3.44			5.4			
			Bottom	15.8	24.2	26.9	26.9	5.93	5.92	82.4	82.2	3.52	3.56		3.54	5.6		5.6
						26.9		5.90		82.0		3.56			5.6			
27/11/12	1258-1310	18/Rainy	Surface	1.0	23.9	26.5	26.6	6.26	6.25	87.3	87.1	3.28	3.27	3.36	5.0	5.1	5.3	
						26.6		6.23		86.9		3.25			5.2			
			Middle	8.7	24.0	26.7	26.8	6.11	6.10	85.2	85.1	3.38	3.35		3.37	5.4		5.4
						26.8		6.09		85.0		3.35			5.4			
			Bottom	16.4	24.1	26.9	27.0	5.99	5.97	83.6	83.3	3.46	3.44		3.45	5.6		5.5
						27.0		5.95		83.0		3.44			5.4			
29/11/12	1929-1944	20/Cloudy	Surface	1.0	23.3	26.5	26.5	6.24	6.26	86.6	86.9	3.37	3.39	3.54	5.0	5.2	5.5	
						26.4		6.28		87.2		3.40			5.4			
			Middle	8.6	23.3	26.8	26.8	6.05	6.07	83.9	84.2	3.48	3.54		3.51	5.4		5.5
						26.7		6.09		84.5		3.54			5.6			
			Bottom	16.2	23.4	27.0	27.0	5.90	5.92	81.9	82.2	3.69	3.74		3.72	5.6		5.7
						26.9		5.94		82.4		3.74			5.8			

Monitoring Station : C4

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
01/11/12	1541-1555	25/Fine	Surface	1.0	25.5	26.6	26.7	5.96	5.94	84.1	83.9	3.23	3.21	3.39	5.2	5.1	5.3	
						26.7		5.92		83.6		3.18			5.0			
			Middle	8.9	25.3	26.9	26.9	5.89	5.87	83.2	82.9	3.31	3.34		3.33	5.2		5.2
						26.8		5.85		82.6		3.34			5.2			
			Bottom	16.8	25.1	27.0	27.1	5.76	5.74	81.4	81.1	3.63	3.66		3.65	5.6		5.6
						27.1		5.72		80.6		3.66			5.5			
03/11/12	1559-1611	24/Fine	Surface	1.0	25.5	26.7	26.8	5.81	5.79	81.3	81.0	3.41	3.45	3.62	5.4	5.4	5.6	
						26.8		5.76		80.6		3.48			5.4			
			Middle	9.0	25.4	26.9	26.9	5.73	5.73	80.2	80.2	3.59	3.61		3.60	5.6		5.6
						26.9		5.72		80.1		3.61			5.6			
			Bottom	17.0	25.2	27.1	27.2	5.70	5.70	79.8	79.8	3.83	3.80		3.82	5.8		5.7
						27.2		5.70		79.8		3.80			5.5			
06/11/12	0816-0829	20/Fine	Surface	1.0	25.3	26.5	26.5	6.02	6.04	84.4	84.6	3.60	3.64	3.76	5.6	5.6	5.7	
						26.4		6.05		84.8		3.67			5.6			
			Middle	8.9	25.1	26.9	27.0	5.87	5.86	82.2	82.0	3.81	3.77		3.79	5.8		5.7
						27.0		5.84		81.8		3.77			5.6			
			Bottom	16.8	25.1	27.0	27.0	5.82	5.80	81.5	81.3	3.88	3.85		3.87	5.8		5.9
						27.0		5.78		81.0		3.85			6.0			
08/11/12	2135-2150	24/Cloudy	Surface	1.0	25.2	26.8	26.8	5.81	5.83	81.9	82.2	3.48	3.46	3.64	5.4	5.4	5.6	
						26.7		5.85		82.5		3.43			5.4			
			Middle	9.2	25.2	27.0	27.0	5.71	5.73	80.5	80.8	3.69	3.71		3.70	5.6		5.6
						27.0		5.75		81.1		3.71			5.6			
			Bottom	17.4	24.9	27.2	27.2	5.66	5.69	80.1	80.3	3.78	3.74		3.76	5.8		5.7
						27.2		5.70		80.4		3.74			5.5			
10/11/12	1103-1116	24/Cloudy	Surface	1.0	25.2	26.7	26.8	5.92	5.91	83.1	83.0	3.33	3.36	3.61	5.4	5.5	5.7	
						26.8		5.90		82.8		3.39			5.6			
			Middle	9.0	25.1	26.9	27.0	5.78	5.77	81.1	81.0	3.63	3.64		3.64	5.8		5.7
						27.0		5.76		80.8		3.64			5.8			
			Bottom	17.0	25.0	27.1	27.2	5.66	5.66	79.4	79.4	3.82	3.86		3.84	6.0		6.0
						27.2		5.65		79.3		3.86			6.0			
13/11/12	1300-1315	21/Fine	Surface	1.0	25.0	26.8	26.9	5.90	5.92	82.6	82.9	3.34	3.35	3.61	5.2	5.2	5.5	
						26.9		5.94		83.2		3.36			5.2			
			Middle	8.6	24.9	27.0	27.0	5.80	5.82	81.2	81.5	3.69	3.72		3.71	5.6		5.7
						27.0		5.84		81.8		3.72			5.8			
			Bottom	16.2	24.9	27.2	27.2	5.70	5.72	79.8	80.1	3.74	3.78		3.76	5.6		5.6
						27.1		5.74		80.4		3.78			5.5			
15/11/12	1500-1515	24/Cloudy	Surface	1.0	24.6	26.4	26.4	5.78	5.74	80.8	80.3	4.11	4.10	4.35	6.2	6.1	6.3	
						26.3		5.70		79.7		4.08			6.0			
			Middle	9.3	24.7	26.8	26.8	5.63	5.63	78.8	78.7	4.29	4.32		4.31	6.2		6.2
						26.7		5.62		78.5		4.32			6.2			
			Bottom	16.6	24.7	26.9	27.0	5.50	5.52	77.0	77.3	4.62	4.65		4.64	6.4		6.5
						27.0		5.54		77.5		4.65			6.5			
17/11/12	1612-1624	22/Cloudy	Surface	1.0	24.2	26.6	26.6	6.03	6.00	84.4	84.0	4.09	4.12	4.37	5.8	5.9	6.3	
						26.6		5.97		83.6		4.14			6.0			
			Middle	9.0	24.4	26.7	26.7	5.88	5.89	82.3	82.5	4.30	4.35		4.33	6.2		6.3
						26.7		5.90		82.6		4.35			6.4			
			Bottom	17.0	24.5	26.9	27.0	5.82	5.84	81.5	81.8	4.64	4.67		4.66	6.6		6.6
						27.0		5.86		82.0		4.67			6.5			
20/11/12	1918-1929	22/Drizzle	Surface	1.0	24.4	26.9	26.9	6.14	6.12	86.0	85.7	4.03	4.06	4.04	6.0	6.0	6.0	
						26.9		6.10		85.4		4.08			6.0			
			Middle	8.8	24.3	26.9	27.0	5.95	5.97	83.3	83.5	3.91	3.87		3.89	5.8		5.8
						27.0		5.98		83.7		3.87			5.8			
			Bottom	16.2	24.2	27.2	27.2	5.83	5.85	81.6	81.8	4.21	4.16		4.19	6.2		6.1
						27.2		5.86		82.0		4.16			6.0			
22/11/12	1558-1612	25/Cloudy	Surface	1.0	24.5	26.7	26.7	6.05	6.07	84.6	84.9	3.60	3.63	3.78	5.6	5.6	5.8	
						26.7		6.09		85.2		3.66			5.6			
			Middle	8.9	24.5	26.9	26.9	5.90	5.88	82.6	82.3	3.74	3.80		3.77	5.8		5.8
						26.8		5.86		82.0		3.80			5.8			
			Bottom	16.8	24.5	27.0	27.1	5.72	5.70	80.0	79.7	3.91	3.97		3.94	5.8		5.9
						27.1		5.67		79.3		3.97			6.0			
24/11/12	1058-1111	19/Drizzle	Surface	1.0	24.0	26.4	26.4	6.20	6.19	86.2	86.0	3.21	3.19	3.39	5.2	5.2	5.4	
						26.4		6.17		85.8		3.17			5.2			
			Middle	8.9	24.1	26.7	26.8	6.08	6.06	84.5	84.4	3.39	3.42		3.41	5.4		5.4
						26.8		6.04		84.2		3.42			5.4			
			Bottom	16.8	24.1	26.9	26.9	5.93	5.91	82.1	82.1	3.60	3.55		3.58	5.6		5.6
						26.9		5.89		82.0		3.55			5.5			
27/11/12	1239-1253	18/Rainy	Surface	1.0	23.9	26.4	26.5	6.21	6.20	86.6	86.5	3.23	3.22	3.32	5.2	5.2	5.4	
						26.5		6.19		86.4		3.20			5.2			
			Middle	9.3	24.0	26.6	26.7	6.08	6.08	84.8	84.8	3.32	3.31		3.32	5.4		5.3
						26.7		6.07		84.8		3.31			5.2			
			Bottom	17.6	24.1	26.8	26.9	6.00	5.99	83.7	83.5	3.45	3.43		3.44	5.6		5.6
						26.9		5.97		83.3		3.43			5.5			
29/11/12	1910-1925	20/Cloudy	Surface	1.0	23.3	26.5	26.5	6.27	6.29	87.0	87.2	3.45	3.43	3.57	5.4	5.4	5.6	
						26.5		6.30		87.4		3.41			5.4			
			Middle	9.0	23.3	26.7	26.8	6.10	6.08	84.7	84.4	3.53	3.56		3.55	5.6		5.6
						26.8		6.06		84.1		3.56			5.6			
			Bottom	17.0	23.4	27.0	27.0	5.93	5.96	82.4	82.7	3.77	3.72		3.75	5.8		5.9
						26.9		5.98		83.0		3.72			6.0			



Monitoring Station : R5

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
01/11/12	1356-1410	25/Fine	Surface	1.0	25.5	26.7	26.7	5.98	6.00	84.5	84.7	3.38	3.41	3.57	5.0	5.2	5.5
						26.7		6.01		84.8		3.43			5.4		
			Middle	9.1	25.3	26.8	26.9	5.87	5.89	82.8	83.1	3.52	3.55		5.4	5.5	
						26.9		5.90		83.3		3.57			5.6		
			Bottom	17.2	25.1	27.0	27.0	5.79	5.78	81.8	81.6	3.73	3.76		5.6	5.7	
						26.9		5.77		81.4		3.78			5.8		
03/11/12	1405-1419	24/Fine	Surface	1.0	25.4	26.7	26.7	5.82	5.81	81.5	81.4	3.46	3.44	3.56	5.5	5.5	5.5
						26.7		5.80		81.2		3.41			5.4		
			Middle	8.5	25.3	26.9	26.9	5.78	5.77	80.9	80.8	3.58	3.60		5.6	5.6	
						26.9		5.76		80.6		3.61			5.6		
			Bottom	16.0	25.2	27.1	27.1	5.67	5.66	79.4	79.3	3.66	3.65		5.6	5.5	
						27.1		5.65		79.1		3.63			5.4		
06/11/12	0614-0627	20/Fine	Surface	1.0	25.1	26.5	26.5	5.75	5.73	80.5	80.2	3.71	3.75	3.86	5.5	5.7	5.9
						26.5		5.71		79.9		3.78			5.8		
			Middle	8.4	25.2	26.9	26.9	5.70	5.72	79.8	80.0	3.92	3.90		6.0	6.0	
						26.9		5.73		80.2		3.87			6.0		
			Bottom	15.8	25.2	27.0	27.0	5.67	5.66	79.4	79.3	3.97	3.95		6.0	5.9	
						27.0		5.65		79.1		3.92			5.8		
08/11/12	1943-1958	24/Cloudy	Surface	1.0	25.3	26.8	26.8	5.82	5.84	82.1	82.4	3.64	3.67	3.80	5.5	5.6	5.8
						26.8		5.86		82.6		3.69			5.6		
			Middle	8.6	25.1	27.1	27.2	5.75	5.76	81.1	81.3	3.82	3.81		5.8	5.8	
						27.2		5.77		81.4		3.80			5.8		
			Bottom	16.2	24.9	27.3	27.4	5.65	5.67	79.7	79.9	3.93	3.92		6.0	6.0	
						27.4		5.68		80.1		3.91			6.0		
10/11/12	0912-0925	24/Cloudy	Surface	1.0	25.1	26.8	26.9	5.81	5.83	81.5	81.8	3.67	3.64	3.85	5.5	5.5	5.8
						26.9		5.85		82.1		3.61			5.4		
			Middle	8.8	25.0	27.1	27.2	5.68	5.70	79.7	79.9	3.78	3.80		5.8	5.8	
						27.2		5.71		80.1		3.81			5.8		
			Bottom	16.6	24.9	27.2	27.3	5.66	5.65	79.4	79.3	4.09	4.12		6.2	6.2	
						27.3		5.64		79.1		4.15			6.2		
13/11/12	1105-1120	21/Fine	Surface	1.0	25.1	26.8	26.9	5.90	5.89	82.6	82.5	3.30	3.32	3.55	5.5	5.4	5.5
						26.9		5.88		82.3		3.34			5.2		
			Middle	9.0	24.9	27.1	27.1	5.77	5.78	80.8	81.0	3.59	3.61		5.4	5.5	
						27.0		5.79		81.1		3.62			5.6		
			Bottom	17.0	24.9	27.3	27.4	5.66	5.67	79.2	79.4	3.69	3.72		5.6	5.6	
						27.4		5.68		79.5		3.74			5.6		
15/11/12	1305-1320	24/Cloudy	Surface	1.0	24.6	26.4	26.4	5.93	5.92	83.0	82.8	3.77	3.79	3.93	5.5	5.7	5.9
						26.4		5.90		82.6		3.80			5.8		
			Middle	9.0	24.7	26.7	26.7	5.82	5.81	81.5	81.4	3.89	3.90		5.8	5.9	
						26.7		5.80		81.2		3.90			6.0		
			Bottom	17.0	24.8	27.0	27.0	5.67	5.69	79.4	79.6	4.14	4.12		6.2	6.1	
						27.0		5.70		79.8		4.10			6.0		
17/11/12	1426-1439	22/Cloudy	Surface	1.0	24.2	26.5	26.5	6.00	5.98	84.0	83.8	3.93	3.95	4.17	6.0	5.9	6.2
						26.5		5.96		83.5		3.96			5.8		
			Middle	8.6	24.3	26.7	26.7	5.84	5.86	81.8	82.0	4.14	4.16		6.2	6.2	
						26.7		5.87		82.2		4.17			6.2		
			Bottom	16.2	24.4	26.9	27.0	5.76	5.75	80.6	80.5	4.37	4.40		6.4	6.4	
						27.0		5.74		80.4		4.42			6.4		
20/11/12	1742-1754	22/Drizzle	Surface	1.0	24.5	26.7	26.8	6.08	6.06	85.1	84.9	4.30	4.32	4.36	6.5	6.4	6.4
						26.8		6.04		84.6		4.34			6.2		
			Middle	8.6	24.3	26.9	26.9	5.90	5.92	82.5	82.8	4.57	4.55		6.6	6.5	
						26.9		5.94		83.0		4.53			6.4		
			Bottom	16.2	24.2	27.1	27.1	5.82	5.84	81.4	81.6	4.24	4.22		6.2	6.2	
						27.1		5.85		81.8		4.20			6.2		
22/11/12	1405-1418	25/Cloudy	Surface	1.0	24.3	26.7	26.7	5.94	5.93	83.1	82.8	3.92	3.90	4.07	5.5	5.7	6.0
						26.7		5.91		82.5		3.87			5.8		
			Middle	8.5	24.4	26.8	26.9	5.80	5.82	81.1	81.4	3.99	4.02		6.0	6.0	
						26.9		5.83		81.6		4.05			6.0		
			Bottom	16.0	24.5	27.1	27.2	5.67	5.69	79.3	79.5	4.26	4.29		6.2	6.2	
						27.2		5.70		79.7		4.31			6.2		
24/11/12	0905-0917	19/Drizzle	Surface	1.0	23.8	26.4	26.4	6.13	6.11	85.2	85.0	3.40	3.43	3.57	5.5	5.5	5.6
						26.4		6.09		84.7		3.45			5.4		
			Middle	9.1	24.0	26.6	26.7	5.97	5.95	83.0	82.7	3.57	3.59		5.6	5.6	
						26.7		5.93		82.4		3.60			5.6		
			Bottom	17.2	24.2	26.9	26.9	5.84	5.83	81.1	81.0	3.68	3.70		5.6	5.7	
						26.9		5.82		80.9		3.72			5.8		
27/11/12	1042-1056	18/Rainy	Surface	1.0	23.8	26.4	26.5	6.16	6.14	85.9	85.7	3.38	3.36	3.51	5.5	5.5	5.5
						26.5		6.12		85.4		3.34			5.4		
			Middle	8.7	23.9	26.7	26.8	6.01	6.00	83.8	83.6	3.54	3.52		5.6	5.5	
						26.8		5.98		83.4		3.50			5.4		
			Bottom	16.4	24.0	26.8	26.9	5.93	5.91	82.7	82.4	3.67	3.66		5.6	5.6	
						26.9		5.88		82.0		3.65			5.6		
29/11/12	1709-1725	20/Cloudy	Surface	1.0	23.3	26.4	26.5	6.26	6.24	86.9	86.6	3.64	3.63	3.78	5.5	5.6	5.8
						26.5		6.21		86.2		3.61			5.6		
			Middle	8.3	23.4	26.7	26.7	6.10	6.09	84.6	84.5	3.75	3.78		5.6	5.7	
						26.6		6.07		84.3		3.80			5.8		
			Bottom	15.6	23.5	26.9	27.0	5.83	5.85	81.0	81.3	3.92	3.94		6.0	6.0	
						27.0		5.87		81.5		3.95			6.0		

Monitoring Station : R6

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average		
01/11/12	1448-1501	25/Fine	Surface	1.0	25.5	26.7	26.7	5.91	5.93	83.4	83.6	3.32	3.34	3.54	5.2	5.2	5.4		
						26.7		5.94		83.8		3.35			5.2				
			Middle	8.2	25.3	26.8	26.9	5.84	5.87	82.5	82.9	3.59	3.56		5.6	5.5		5.6	5.6
						26.9		5.71		83.2		3.53			5.4				
			Bottom	15.4	25.1	27.0	27.0	5.73	5.76	80.9	81.3	3.71	3.73		5.6	5.6		5.6	5.6
						26.9		5.78		81.7		3.74			5.6				
03/11/12	1502-1516	24/Fine	Surface	1.0	25.5	26.7	26.7	5.80	5.80	81.2	81.2	3.71	3.72	3.77	5.6	5.6	5.7		
						26.7		5.80		81.2		3.73			5.6				
			Middle	7.9	25.4	26.8	26.9	5.73	5.72	80.2	80.1	3.76	3.75		5.8	5.7		5.8	5.8
						26.9		5.71		79.9		3.74			5.6				
			Bottom	14.8	25.2	27.1	27.1	5.65	5.65	79.1	79.1	3.88	3.85		5.8	5.8		5.8	5.8
						27.1		5.64		79.0		3.82			5.8				
06/11/12	0713-0726	20/Fine	Surface	1.0	25.2	26.6	26.6	5.79	5.77	81.1	80.8	3.75	3.77	3.94	5.6	5.6	5.8		
						26.6		5.75		80.5		3.79			5.6				
			Middle	8.1	25.2	26.9	26.9	5.71	5.69	79.9	79.7	3.97	3.96		5.8	5.8		5.8	5.8
						26.8		5.67		79.4		3.95			5.8				
			Bottom	15.2	25.2	27.0	27.0	5.68	5.67	79.5	79.3	4.10	4.08		6.0	6.1		6.2	6.1
						27.0		5.65		79.1		4.06			6.2				
08/11/12	2040-2055	24/Cloudy	Surface	1.0	25.2	26.8	26.8	5.95	5.97	83.9	84.1	3.49	3.51	3.73	5.4	5.5	5.6		
						26.8		5.98		84.3		3.53			5.6				
			Middle	8.0	25.1	27.2	27.2	5.89	5.85	83.0	82.5	3.79	3.78		5.6	5.6		5.6	5.6
						27.2		5.81		81.9		3.76			5.8				
			Bottom	15.0	24.8	27.3	27.3	5.68	5.69	80.1	80.3	3.89	3.90		5.8	5.8		5.8	5.8
						27.3		5.70		80.4		3.91			5.8				
10/11/12	1005-1020	24/Cloudy	Surface	1.0	25.2	26.8	26.9	6.01	5.99	84.3	84.1	3.40	3.42	3.71	5.6	5.6	5.8		
						26.9		5.97		83.8		3.44			5.6				
			Middle	8.2	25.1	26.9	26.9	5.79	5.80	81.2	81.4	3.70	3.73		5.8	5.8		5.8	5.8
						26.9		5.81		81.5		3.76			6.0				
			Bottom	15.4	25.0	27.1	27.2	5.69	5.71	79.8	80.1	3.94	3.97		6.0	6.1		6.2	6.1
						27.2		5.72		80.3		3.99			6.2				
13/11/12	1203-1218	21/Fine	Surface	1.0	25.1	26.8	26.9	5.85	5.87	81.9	82.2	3.46	3.43	3.76	5.4	5.4	5.7		
						26.9		5.89		82.5		3.40			5.4				
			Middle	7.9	25.0	26.9	27.0	5.77	5.79	80.8	81.0	3.84	3.83		5.8	5.8		5.8	5.8
						27.0		5.80		81.2		3.82			6.0				
			Bottom	14.8	24.9	27.4	27.4	5.65	5.64	79.1	79.0	4.04	4.03		6.0	6.0		6.0	6.0
						27.3		5.63		78.8		4.01			6.0				
15/11/12	1403-1418	24/Cloudy	Surface	1.0	24.7	26.4	26.4	5.90	5.89	82.6	82.5	3.59	3.61	3.85	5.6	5.6	5.8		
						26.4		5.88		82.3		3.62			5.6				
			Middle	8.1	24.8	26.7	26.7	5.81	5.80	81.3	81.2	3.85	3.84		5.8	5.8		5.8	5.8
						26.7		5.79		81.1		3.82			6.0				
			Bottom	15.2	24.8	27.0	27.0	5.79	5.81	81.1	81.3	4.08	4.10		6.0	6.0		6.0	6.0
						26.9		5.82		81.5		4.11			6.0				
17/11/12	1515-1527	22/Cloudy	Surface	1.0	24.2	26.6	26.6	6.03	6.02	84.4	84.3	3.94	3.96	4.11	5.8	5.8	6.0		
						26.6		6.00		84.1		3.98			5.8				
			Middle	8.1	24.3	26.9	26.9	5.93	5.92	83.0	82.8	4.10	4.13		6.0	6.1		6.2	6.1
						26.8		5.90		82.6		4.15			6.2				
			Bottom	15.2	24.4	27.0	27.1	5.84	5.85	81.8	81.9	4.23	4.25		6.2	6.2		6.2	6.2
						27.1		5.86		82.0		4.26			6.2				
20/11/12	1830-1842	22/Drizzle	Surface	1.0	24.4	26.8	26.8	6.24	6.22	87.4	87.1	4.21	4.19	4.18	6.2	6.2	6.1		
						26.8		6.20		86.8		4.17			6.2				
			Middle	8.1	24.3	27.0	27.0	6.06	6.04	84.9	84.6	4.08	4.12		6.0	6.1		6.2	6.1
						27.0		6.02		84.3		4.15			6.2				
			Bottom	15.2	24.3	27.2	27.2	5.94	5.92	83.1	82.8	4.29	4.25		6.2	6.1		6.2	6.1
						27.2		5.90		82.5		4.20			6.0				
22/11/12	1457-1510	25/Cloudy	Surface	1.0	24.4	26.7	26.7	6.02	6.04	84.2	84.5	3.69	3.71	3.94	5.6	5.6	5.9		
						26.6		6.06		84.8		3.73			5.6				
			Middle	8.2	24.5	26.8	26.9	5.93	5.91	82.9	82.7	3.84	3.87		5.8	5.8		5.8	5.8
						26.9		5.89		82.4		3.90			6.2				
			Bottom	15.4	24.5	27.1	27.2	5.69	5.71	79.6	79.8	4.23	4.25		6.2	6.2		6.2	6.2
						27.2		5.72		80.0		4.26			6.2				
24/11/12	1002-1014	19/Drizzle	Surface	1.0	23.8	26.4	26.4	6.09	6.10	84.7	84.8	3.28	3.31	3.44	5.2	5.2	5.4		
						26.4		6.11		84.9		3.33			5.2				
			Middle	8.2	24.0	26.5	26.6	5.98	5.97	83.1	83.0	3.40	3.43		5.4	5.4		5.4	5.4
						26.6		5.96		82.8		3.45			5.4				
			Bottom	15.4	24.1	26.8	26.8	5.90	5.88	82.0	81.7	3.57	3.59		5.6	5.6		5.6	5.6
						26.7		5.85		81.3		3.60			5.6				
27/11/12	1138-1153	18/Rainy	Surface	1.0	23.8	26.4	26.5	6.13	6.13	85.5	85.5	3.23	3.22	3.35	5.2	5.2	5.4		
						26.5		6.12		85.4		3.21			5.2				
			Middle	8.1	23.9	26.7	26.8	5.97	5.96	83.4	83.2	3.38	3.37		5.4	5.4		5.4	5.4
						26.8		5.95		83.0		3.35			5.4				
			Bottom	15.2	24.0	26.9	26.9	5.88	5.88	82.0	82.0	3.47	3.46		5.6	5.5		5.6	5.5
						26.9		5.87		81.9		3.45			5.4				
29/11/12	1807-1823	20/Cloudy	Surface	1.0	23.3	26.5	26.5	6.31	6.33	87.6	87.9	3.44	3.42	3.63	5.4	5.4	5.6		
						26.4		6.35		88.2		3.40			5.4				
			Middle	8.0	23.4	26.7	26.7	6.14	6.16	85.2	85.4	3.62	3.65		5.6	5.6		5.6	5.6
						26.7		6.17		85.6		3.67			5.6				
			Bottom	15.0	23.4	27.0	27.0	5.97	6.00	82.9	83.3	3.81	3.84		5.8	5.8		5.8	5.8
						26.9		6.02		83.6		3.86			5.8				

**Mid-Ebb Tide**

Monitoring Station : R7

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average		
01/11/12	1506-1520	25/Fine	Surface	1.0	25.5	26.7	26.8	5.90	5.93	83.2	83.6	3.54	3.52	3.71	5.4	5.4	5.7		
						26.8		5.95		84.0		3.50			5.4				
			Middle	8.9	25.3	26.9	26.9	5.80	5.82	81.8	82.1	3.72	3.75		3.78	3.75		5.6	5.7
						26.8		5.84		82.4		3.78			5.8				
			Bottom	16.8	25.1	27.0	27.0	5.77	5.76	81.5	81.3	3.84	3.87		3.84	3.87		5.8	5.9
						27.0		5.74		81.0		3.90			6.0				
03/11/12	1521-1535	24/Fine	Surface	1.0	25.4	26.8	26.8	5.79	5.80	81.1	81.2	3.51	3.53	3.66	5.4	5.4	5.6		
						26.8		5.81		81.3		3.54			5.4				
			Middle	9.0	25.4	26.9	27.0	5.73	5.72	80.2	80.1	3.66	3.64		3.62	3.64		5.6	5.6
						27.0		5.71		79.9		3.62			5.6				
			Bottom	17.0	25.2	27.2	27.2	5.69	5.67	79.7	78.8	3.84	3.83		3.81	3.83		5.8	5.8
						27.2		5.64		77.9		3.81			5.8				
06/11/12	0734-0747	20/Fine	Surface	1.0	25.2	26.5	26.5	5.84	5.82	81.8	81.6	3.68	3.67	3.79	5.6	5.6	5.8		
						26.5		5.80		81.3		3.65			5.6				
			Middle	8.9	25.2	26.9	26.9	5.80	5.82	81.3	81.5	3.79	3.77		3.75	3.77		5.8	5.8
						26.9		5.84		81.7		3.75			5.8				
			Bottom	16.8	25.1	27.0	27.0	5.72	5.74	80.1	80.3	3.96	3.94		3.91	3.94		6.0	6.0
						27.0		5.75		80.5		3.91			6.0				
08/11/12	2100-2115	24/Cloudy	Surface	1.0	25.2	26.7	26.8	5.98	5.97	84.3	84.2	3.62	3.64	3.81	5.6	5.6	5.8		
						26.8		5.96		84.0		3.65			5.6				
			Middle	8.9	25.2	27.2	27.2	5.82	5.83	82.1	82.2	3.82	3.85		3.88	3.85		5.8	5.8
						27.1		5.84		82.3		3.88			5.8				
			Bottom	16.8	24.9	27.4	27.4	5.71	5.72	80.5	80.7	3.96	3.96		3.95	3.96		6.0	6.0
						27.3		5.73		80.8		3.95			6.0				
10/11/12	1026-1040	24/Cloudy	Surface	1.0	25.1	26.9	26.9	5.99	6.01	84.0	84.3	3.47	3.48	3.70	5.6	5.7	5.8		
						26.9		6.03		84.6		3.48			5.8				
			Middle	9.1	25.0	27.0	27.1	5.84	5.86	81.9	82.2	3.68	3.70		3.72	3.70		5.8	5.8
						27.1		5.87		82.4		3.72			5.8				
			Bottom	17.2	24.9	27.2	27.3	5.75	5.76	80.7	80.8	3.89	3.92		3.95	3.92		6.0	6.0
						27.3		5.76		80.8		3.95			6.0				
13/11/12	1223-1237	21/Fine	Surface	1.0	25.2	26.7	26.8	5.83	5.84	81.6	81.8	3.57	3.58	3.87	5.4	5.5	5.8		
						26.8		5.85		81.9		3.58			5.6				
			Middle	8.9	25.1	26.9	26.9	5.80	5.79	81.2	81.1	3.90	3.92		3.94	3.92		5.8	5.8
						26.9		5.78		80.9		3.94			5.8				
			Bottom	16.8	24.9	27.3	27.3	5.68	5.69	79.5	79.6	4.14	4.12		4.10	4.12		6.2	6.1
						27.2		5.69		79.7		4.10			6.0				
15/11/12	1423-1437	24/Cloudy	Surface	1.0	24.7	26.5	26.5	5.82	5.81	81.5	81.4	3.75	3.74	3.96	5.8	5.7	5.9		
						26.5		5.80		81.2		3.73			5.6				
			Middle	9.0	24.7	26.6	26.7	5.74	5.73	80.4	80.3	3.96	3.98		3.99	3.98		5.8	5.8
						26.7		5.72		80.1		3.99			5.8				
			Bottom	17.0	24.8	26.9	26.9	5.70	5.69	79.8	79.7	4.14	4.15		4.16	4.15		6.2	6.2
						26.9		5.68		79.5		4.16			6.2				
17/11/12	1532-1544	22/Cloudy	Surface	1.0	24.2	26.5	26.5	5.92	5.94	82.9	83.2	3.91	3.92	4.03	5.8	5.8	6.0		
						26.5		5.96		83.5		3.93			5.8				
			Middle	8.9	24.3	26.8	26.9	5.86	5.84	82.0	81.8	4.02	4.04		4.06	4.04		6.0	6.0
						26.9		5.82		81.5		4.06			6.0				
			Bottom	16.8	24.4	27.0	27.1	5.77	5.75	80.8	80.5	4.12	4.14		4.15	4.14		6.2	6.2
						27.1		5.73		80.2		4.15			6.2				
20/11/12	1847-1858	22/Drizzle	Surface	1.0	24.4	26.8	26.8	6.19	6.17	86.7	86.4	4.15	4.17	4.19	6.0	6.1	6.1		
						26.8		6.15		86.1		4.19			6.2				
			Middle	8.9	24.2	27.0	27.0	5.92	5.94	82.8	83.0	4.18	4.14		4.10	4.14		6.0	6.0
						27.0		5.95		83.2		4.10			6.0				
			Bottom	16.8	24.2	27.2	27.2	5.85	5.83	81.8	81.6	4.27	4.25		4.22	4.25		6.4	6.3
						27.1		5.81		81.3		4.22			6.2				
22/11/12	1515-1530	25/Cloudy	Surface	1.0	24.4	26.7	26.7	5.96	5.98	83.4	83.7	3.70	3.73	3.93	5.6	5.6	5.8		
						26.7		6.00		84.0		3.75			5.6				
			Middle	8.9	24.4	26.9	26.9	5.88	5.87	82.2	81.8	3.91	3.93		3.95	3.93		5.8	5.8
						26.9		5.85		81.4		3.95			5.8				
			Bottom	16.8	24.5	27.2	27.2	5.70	5.72	79.7	80.0	4.09	4.13		4.16	4.13		6.0	6.0
						27.2		5.73		80.2		4.16			6.0				
24/11/12	1021-1034	19/Drizzle	Surface	1.0	23.8	26.3	26.4	6.17	6.16	85.8	85.7	3.30	3.32	3.43	5.2	5.2	5.4		
						26.4		6.15		85.5		3.34			5.2				
			Middle	9.1	24.0	26.5	26.6	6.04	6.03	84.0	83.8	3.42	3.44		3.45	3.44		5.4	5.4
						26.6		6.01		83.5		3.45			5.4				
			Bottom	17.2	24.2	26.8	26.8	5.91	5.89	82.1	81.9	3.53	3.55		3.56	3.55		5.6	5.6
						26.8		5.87		81.6		3.56			5.6				
27/11/12	1200-1215	18/Rainy	Surface	1.0	23.8	26.4	26.5	6.21	6.19	86.6	86.4	3.31	3.29	3.37	5.2	5.2	5.4		
						26.5		6.17		86.1		3.27			5.2				
			Middle	9.0	23.9	26.6	26.7	6.10	6.08	85.1	84.8	3.36	3.35		3.34	3.35		5.4	5.4
						26.7		6.06		84.5		3.34			5.4				
			Bottom	17.0	24.0	26.8	26.9	5.86	5.84	81.7	81.5	3.49	3.47		3.44	3.47		5.6	5.5
						26.9		5.82		81.2		3.44			5.4				
29/11/12	1831-1847	20/Cloudy	Surface	1.0	23.3	26.4	26.5	6.34	6.32	88.1	87.8	3.42	3.45	3.65	5.4	5.4	5.6		
						26.5		6.30		87.5		3.47			5.4				
			Middle	8.6	23.3	26.8	26.8	6.18	6.20	85.8	86.1	3.56	3.58		3.59	3.58		5.6	5.6
						26.8		6.21		86.3		3.59			5.6				
			Bottom	16.2	23.4	27.0	27.0	6.03	6.01	83.7	83.5	3.91	3.94		3.96	3.94		5.8	5.9
						27.0		5.99		83.2		3.96			6.0				

Monitoring Station : R8a

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
01/11/12	1525-1537	25/Fine	Surface	1.0	25.5	26.7	26.7	5.85	5.88	82.5	82.9	3.42	3.44	3.63	5.4	5.5	5.6
						26.6		5.90		83.3		3.46			5.5		
			Middle	6.7	25.3	26.8	26.8	5.82	5.81	82.2	82.0	3.64	3.66		5.5	5.6	
						26.8		5.79		81.7		3.68			5.6		
			Bottom	12.4	25.2	26.9	27.0	5.73	5.75	81.0	81.2	3.75	3.80		5.6	5.7	
						27.0		5.76		81.4		3.80			5.8		
03/11/12	1540-1554	24/Fine	Surface	1.0	25.4	26.6	26.7	5.79	5.77	81.1	80.8	3.59	3.57	3.67	5.6	5.6	5.6
						26.7		5.74		80.4		3.55			5.5		
			Middle	6.5	25.3	26.8	26.8	5.73	5.72	80.2	80.0	3.63	3.65		5.5	5.6	
						26.8		5.70		79.8		3.66			5.6		
			Bottom	11.9	25.2	27.0	27.0	5.69	5.69	79.7	79.7	3.79	3.81		5.8	5.8	
						27.0		5.69		79.7		3.81			5.8		
06/11/12	0756-0809	20/Fine	Surface	1.0	25.2	26.6	26.6	5.92	5.94	83.0	83.2	3.55	3.58	3.75	5.4	5.5	5.6
						26.6		5.95		83.4		3.60			5.5		
			Middle	6.4	25.2	26.8	26.8	5.89	5.88	82.6	82.4	3.75	3.70		5.5	5.6	
						26.8		5.86		82.2		3.70			5.6		
			Bottom	11.8	25.1	27.0	27.0	5.75	5.77	80.6	80.8	3.92	3.97		5.8	5.8	
						27.0		5.78		81.0		3.97			5.8		
08/11/12	2118-2132	24/Cloudy	Surface	1.0	25.3	26.9	26.9	5.90	5.92	83.2	83.5	3.62	3.64	3.77	5.6	5.6	5.7
						26.9		5.94		83.8		3.65			5.5		
			Middle	6.5	25.1	26.9	27.0	5.79	5.80	81.6	81.7	3.69	3.70		5.5	5.6	
						27.0		5.80		81.8		3.70			5.6		
			Bottom	12.0	25.0	27.1	27.1	5.77	5.77	81.4	81.3	3.97	3.99		5.8	5.9	
						27.1		5.76		81.2		3.99			6.0		
10/11/12	1045-1059	24/Cloudy	Surface	1.0	25.2	26.9	26.9	5.96	5.94	83.6	83.4	3.59	3.57	3.69	5.6	5.6	5.7
						26.9		5.92		83.1		3.54			5.5		
			Middle	6.6	25.1	26.9	27.0	5.84	5.82	81.9	81.7	3.61	3.66		5.5	5.7	
						27.0		5.80		81.4		3.66			5.8		
			Bottom	12.2	25.0	27.1	27.1	5.68	5.70	79.7	79.9	3.85	3.90		6.0	6.0	
						27.1		5.71		80.1		3.90			6.0		
13/11/12	1242-1256	21/Fine	Surface	1.0	25.2	26.9	26.9	5.99	5.98	83.9	83.6	3.46	3.48	3.62	5.4	5.5	5.7
						26.8		5.97		83.2		3.50			5.5		
			Middle	6.5	25.0	27.1	27.1	5.93	5.94	83.0	83.2	3.58	3.57		5.5	5.7	
						27.0		5.95		83.3		3.57			5.8		
			Bottom	12.0	24.8	27.2	27.3	5.86	5.87	82.0	82.2	3.78	3.80		5.8	5.9	
						27.3		5.88		82.3		3.80			6.0		
15/11/12	1442-1456	24/Cloudy	Surface	1.0	24.7	26.3	26.3	5.87	5.85	82.2	81.9	3.62	3.66	3.82	5.6	5.6	5.8
						26.3		5.83		81.6		3.69			5.5		
			Middle	6.6	24.7	26.7	26.7	5.73	5.72	80.2	80.1	3.81	3.84		6.0	5.9	
						26.7		5.71		79.9		3.87			5.8		
			Bottom	12.2	24.8	26.9	27.0	5.69	5.65	79.7	79.1	3.94	4.01		6.0	6.0	
						27.0		5.61		78.5		4.01			6.0		
17/11/12	1551-1604	22/Cloudy	Surface	1.0	24.2	26.5	26.6	6.06	6.04	84.8	84.6	4.10	4.08	4.30	6.0	6.0	6.2
						26.6		6.02		84.3		4.06			6.0		
			Middle	6.6	24.4	26.9	26.9	5.93	5.94	83.0	83.2	4.29	4.33		6.0	6.1	
						26.9		5.95		83.3		4.33			6.2		
			Bottom	12.2	24.4	27.0	27.1	5.82	5.81	81.5	81.3	4.50	4.52		6.4	6.4	
						27.1		5.79		81.1		4.54			6.4		
20/11/12	1903-1914	22/Drizzle	Surface	1.0	24.4	26.8	26.8	6.18	6.17	86.5	86.3	4.21	4.24	4.22	6.2	6.1	6.2
						26.8		6.15		86.1		4.27			6.0		
			Middle	6.4	24.2	27.0	27.1	6.04	6.06	84.6	84.8	4.34	4.30		6.5	6.4	
						27.1		6.07		85.0		4.26			6.2		
			Bottom	11.8	24.3	27.2	27.2	5.94	5.92	83.1	82.9	4.15	4.13		6.2	6.1	
						27.2		5.90		82.7		4.11			6.0		
22/11/12	1538-1553	25/Cloudy	Surface	1.0	24.4	26.6	26.7	5.95	5.99	83.2	83.8	3.68	3.71	3.84	5.6	5.6	5.7
						26.7		6.03		84.4		3.73			5.5		
			Middle	6.7	24.4	26.7	26.8	5.89	5.88	82.4	82.2	3.81	3.86		5.5	5.7	
						26.8		5.86		82.0		3.86			5.8		
			Bottom	12.4	24.5	27.0	27.0	5.80	5.79	81.1	80.9	3.95	3.99		5.8	5.9	
						26.9		5.77		80.7		3.99			6.0		
24/11/12	1041-1054	19/Drizzle	Surface	1.0	23.9	26.4	26.5	6.15	6.16	85.5	85.7	3.29	3.30	3.40	5.2	5.1	5.3
						26.5		6.17		85.8		3.31			5.0		
			Middle	6.7	24.0	26.6	26.6	6.03	6.02	83.8	83.6	3.38	3.40		5.5	5.5	
						26.6		6.00		83.4		3.42			5.4		
			Bottom	12.4	24.1	26.8	26.8	5.92	5.90	82.3	82.0	3.49	3.51		5.4	5.2	
						26.8		5.88		81.7		3.51			5.0		
27/11/12	1219-1232	18/Rainy	Surface	1.0	23.8	26.4	26.5	6.18	6.17	86.2	86.0	3.29	3.28	3.35	5.2	5.1	5.4
						26.5		6.15		85.8		3.27			5.0		
			Middle	6.7	23.9	26.7	26.8	6.06	6.05	84.5	84.4	3.34	3.35		5.5	5.5	
						26.8		6.04		84.3		3.36			5.4		
			Bottom	12.4	24.0	26.8	26.9	5.98	5.96	83.4	83.2	3.43	3.43		5.6	5.5	
						26.9		5.94		82.9		3.42			5.4		
29/11/12	1851-1905	20/Cloudy	Surface	1.0	23.3	26.5	26.6	6.29	6.31	87.4	87.6	3.39	3.41	3.59	5.4	5.5	5.6
						26.6		6.32		87.7		3.43			5.5		
			Middle	6.7	23.3	26.8	26.8	6.12	6.14	84.9	85.2	3.52	3.55		5.5	5.6	
						26.8		6.16		85.5		3.57			5.6		
			Bottom	12.4	23.4	26.9	26.9	6.01	6.03	83.5	83.8	3.78	3.81		5.8	5.8	
						26.9		6.05		84.0		3.83			5.8		

Mid-Ebb Tide

Monitoring Station : R15

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
01/11/12	1303-1315	24/Fine	Surface	1.0	25.5	26.7	26.7	5.86	5.88	82.7	82.9	3.56	3.58	3.74	5.4	5.5	5.7
						26.6		5.89		83.1		3.60			5.6		
			Middle	6.0	25.4	26.8	26.9	5.79	5.77	81.7	81.4	3.72	3.74		5.8	5.7	
						26.9		5.75		81.1		3.72			5.6		
			Bottom	11.0	25.2	26.9	27.0	5.73	5.71	81.0	80.7	3.89	3.91		5.8	5.9	
						27.0		5.69		80.3		3.93			6.0		
03/11/12	1308-1322	24/Fine	Surface	1.0	25.4	26.8	26.8	5.79	5.78	81.1	80.9	3.49	3.53	3.70	5.4	5.4	5.6
						26.8		5.76		80.7		3.56			5.4		
			Middle	5.5	25.3	27.0	27.0	5.74	5.73	80.4	80.2	3.72	3.74		5.6	5.6	
						27.0		5.72		80.0		3.76			5.6		
			Bottom	9.9	25.2	27.2	27.2	5.68	5.68	81.2	81.2	3.81	3.83		5.8	5.8	
						27.2		5.68		81.2		3.85			5.8		
06/11/12	0510-0524	20/Fine	Surface	1.0	25.0	26.4	26.4	6.01	6.02	84.3	84.5	3.59	3.62	3.80	5.6	5.6	5.8
						26.3		6.03		84.6		3.64			5.6		
			Middle	5.6	25.1	26.7	26.7	5.82	5.80	81.5	81.2	3.77	3.75		5.8	5.7	
						26.7		5.77		80.8		3.73			5.6		
			Bottom	10.2	25.2	26.9	27.0	5.79	5.78	81.1	80.9	4.01	4.05		6.0	6.0	
						27.0		5.76		80.6		4.08			6.0		
08/11/12	1854-1909	24/Cloudy	Surface	1.0	25.2	26.8	26.8	5.82	5.83	82.1	82.2	3.80	3.84	3.92	5.8	5.8	5.9
						26.8		5.84		82.3		3.87			5.8		
			Middle	5.7	25.1	26.9	26.9	5.71	5.73	80.5	80.8	3.89	3.91		5.8	5.9	
						26.9		5.75		81.1		3.93			6.0		
			Bottom	10.4	25.1	27.2	27.2	5.65	5.66	79.7	79.8	4.03	4.02		6.0	6.0	
						27.2		5.66		79.8		4.03			6.0		
10/11/12	0810-0824	24/Cloudy	Surface	1.0	25.1	26.8	26.9	5.76	5.78	80.8	81.1	3.77	3.79	3.95	5.8	5.9	6.1
						26.9		5.80		81.4		3.81			6.0		
			Middle	5.6	25.0	26.9	26.9	5.78	5.76	81.1	80.8	3.91	3.93		6.0	6.1	
						26.9		5.73		80.4		3.95			6.2		
			Bottom	10.2	24.9	27.0	27.1	5.59	5.62	78.4	78.8	4.09	4.12		6.2	6.3	
						27.1		5.64		79.1		4.14			6.4		
13/11/12	1009-1025	21/Fine	Surface	1.0	25.2	26.9	27.0	5.90	5.92	82.4	82.8	3.30	3.34	3.60	5.2	5.3	5.6
						27.0		5.94		83.2		3.38			5.4		
			Middle	5.7	25.1	27.1	27.1	5.82	5.84	81.5	81.8	3.58	3.59		5.6	5.6	
						27.0		5.86		82.0		3.60			5.6		
			Bottom	10.4	24.9	27.3	27.3	5.70	5.73	79.8	80.2	3.83	3.86		5.8	5.8	
						27.2		5.76		80.6		3.89			5.8		
15/11/12	1209-1224	24/Cloudy	Surface	1.0	24.7	26.4	26.5	5.90	5.92	82.6	82.9	3.99	4.00	4.09	6.0	6.0	6.2
						26.5		5.94		83.2		4.01			6.0		
			Middle	5.8	24.7	26.7	26.7	5.82	5.84	81.5	81.7	4.08	4.09		6.2	6.2	
						26.7		5.85		81.9		4.10			6.2		
			Bottom	10.6	24.8	27.0	27.0	5.70	5.72	79.8	80.1	4.16	4.17		6.4	6.4	
						27.0		5.74		80.4		4.18			6.4		
17/11/12	1335-1348	22/Cloudy	Surface	1.0	24.2	26.3	26.3	5.96	5.97	83.4	83.6	4.01	3.99	4.13	6.0	5.9	6.0
						26.3		5.98		83.8		3.97			5.8		
			Middle	5.9	24.3	26.7	26.7	5.89	5.87	82.5	82.2	4.10	4.09		6.0	5.9	
						26.6		5.85		81.9		4.07			5.8		
			Bottom	10.8	24.4	27.0	27.0	5.77	5.76	80.8	80.6	4.31	4.33		6.2	6.3	
						26.9		5.74		80.4		4.34			6.4		
20/11/12	1650-1701	22/Drizzle	Surface	1.0	24.4	26.5	26.6	6.17	6.16	86.4	86.2	4.09	4.06	4.10	6.0	6.0	6.0
						26.6		6.14		86.0		4.02			6.0		
			Middle	5.9	24.3	26.9	26.9	6.01	6.03	84.2	84.4	3.98	3.95		5.8	5.8	
						26.8		6.04		84.6		3.92			5.8		
			Bottom	10.8	24.3	27.0	27.0	5.97	5.95	83.5	83.3	4.33	4.31		6.4	6.3	
						27.0		5.93		83.0		4.28			6.2		
22/11/12	1308-1321	24/Cloudy	Surface	1.0	24.3	26.6	26.7	5.93	5.92	82.9	82.7	3.99	4.02	4.22	6.0	6.0	6.2
						26.7		5.90		82.5		4.05			6.0		
			Middle	6.0	24.3	26.7	26.7	5.86	5.84	81.9	81.6	4.19	4.21		6.2	6.2	
						26.7		5.81		81.2		4.23			6.2		
			Bottom	11.0	24.5	26.8	26.9	5.72	5.74	80.0	80.2	4.40	4.43		6.4	6.4	
						26.9		5.75		80.4		4.46			6.4		
24/11/12	0807-0820	19/Drizzle	Surface	1.0	23.9	26.4	26.5	6.14	6.12	85.3	85.1	3.50	3.49	3.50	5.4	5.4	5.4
						26.5		6.10		84.8		3.47			5.4		
			Middle	6.0	24.0	26.6	26.6	6.00	5.99	83.4	83.2	3.33	3.35		5.2	5.2	
						26.6		5.97		83.0		3.37			5.2		
			Bottom	11.0	24.1	26.8	26.8	5.91	5.89	82.2	81.9	3.64	3.65		5.6	5.6	
						26.7		5.87		81.6		3.66			5.6		
27/11/12	0940-0955	18/Rainy	Surface	1.0	23.7	26.5	26.5	6.22	6.20	86.8	86.5	3.40	3.39	3.43	5.4	5.4	5.5
						26.5		6.18		86.2		3.38			5.4		
			Middle	6.0	23.8	26.6	26.7	6.09	6.08	85.0	84.9	3.36	3.37		5.6	5.5	
						26.7		6.07		84.7		3.38			5.4		
			Bottom	11.0	24.0	26.8	26.9	5.99	5.95	83.6	83.0	3.50	3.52		5.6	5.6	
						26.9		5.91		82.4		3.53			5.6		
29/11/12	1608-1622	21/Rainy	Surface	1.0	23.4	26.4	26.5	6.23	6.22	86.5	86.3	3.62	3.64	3.83	5.6	5.6	5.8
						26.5		6.20		86.0		3.65			5.6		
			Middle	5.9	23.4	26.6	26.7	6.08	6.10	84.4	84.7	3.77	3.80		5.8	5.8	
						26.7		6.12		85.0		3.82			5.8		
			Bottom	10.8	23.5	26.8	26.9	5.91	5.93	82.1	82.4	4.05	4.07		6.0	6.0	
						26.9		5.95		82.7		4.09			6.0		

Monitoring Station : R16

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
01/11/12	1246-1258	24/Fine	Surface	1.0	25.5	26.6	26.7	5.90	5.92	83.2	83.5	3.41	3.40	3.60	5.4	5.4	5.6
						26.7		5.93		83.8		3.38			5.4		
			Middle	6.4	25.3	26.8	26.8	5.84	5.86	82.4	82.7	3.62	3.60		5.6	5.6	
						26.8		5.88		83.0		3.57			5.6		
			Bottom	11.8	25.2	26.9	27.0	5.70	5.72	80.5	80.8	3.77	3.80		5.8	5.8	
						27.0		5.74		81.0		3.83			5.8		
03/11/12	1249-1303	24/Fine	Surface	1.0	25.5	26.6	26.7	5.81	5.80	81.3	81.2	3.74	3.77	3.88	5.6	5.7	5.9
						26.7		5.78		81.0		3.79			5.8		
			Middle	6.5	25.3	26.8	26.9	5.73	5.73	80.2	80.1	3.93	3.92		6.0	5.9	
						26.9		5.72		80.0		3.91			5.8		
			Bottom	11.9	25.2	27.1	27.1	5.70	5.70	79.8	79.8	3.99	3.97		6.0	6.0	
						27.1		5.69		79.7		3.94			6.0		
06/11/12	0450-0503	20/Fine	Surface	1.0	25.0	26.4	26.4	5.98	5.97	83.8	83.6	3.62	3.60	3.83	5.6	5.5	5.8
						26.4		5.95		83.4		3.57			5.4		
			Middle	6.3	25.2	26.7	26.7	5.90	5.92	82.7	83.0	3.94	3.92		5.8	5.8	
						26.7		5.94		83.3		3.90			5.8		
			Bottom	11.6	25.2	26.9	26.9	5.81	5.80	81.4	81.2	3.99	3.97		6.0	6.0	
						26.9		5.78		81.0		3.94			6.0		
08/11/12	1835-1850	24/Cloudy	Surface	1.0	25.2	26.9	26.9	5.79	5.80	81.6	81.7	3.72	3.74	3.90	5.4	5.5	5.8
						26.8		5.80		81.8		3.76			5.6		
			Middle	6.6	25.1	26.9	27.0	5.74	5.77	80.9	81.4	3.79	3.80		5.6	5.7	
						27.0		5.80		81.8		3.81			5.8		
			Bottom	12.2	25.0	27.1	27.2	5.66	5.67	79.8	80.0	4.12	4.15		6.2	6.2	
						27.2		5.68		80.1		4.17			6.2		
10/11/12	0748-0803	24/Cloudy	Surface	1.0	25.1	26.8	26.9	5.78	5.80	81.1	81.3	3.62	3.66	3.84	5.6	5.7	6.0
						26.9		5.81		81.5		3.69			5.8		
			Middle	6.6	25.1	27.0	27.1	5.82	5.81	81.7	81.5	3.79	3.82		6.0	6.0	
						27.1		5.79		81.2		3.84			6.0		
			Bottom	12.2	25.0	27.1	27.2	5.74	5.73	80.5	80.4	4.02	4.05		6.2	6.2	
						27.2		5.72		80.3		4.08			6.2		
13/11/12	0950-1005	21/Fine	Surface	1.0	25.2	26.8	26.9	5.96	5.98	83.4	83.7	3.39	3.41	3.48	5.4	5.4	5.4
						26.9		5.99		83.9		3.42			5.4		
			Middle	6.6	25.1	27.0	27.1	5.79	5.81	81.1	81.3	3.30	3.33		5.2	5.3	
						27.1		5.82		81.5		3.36			5.4		
			Bottom	12.2	24.9	27.2	27.2	5.71	5.70	79.9	79.8	3.69	3.71		5.6	5.6	
						27.2		5.69		79.7		3.72			5.6		
15/11/12	1150-1205	24/Cloudy	Surface	1.0	24.7	26.5	26.5	5.85	5.84	81.9	81.8	3.90	3.92	4.02	5.8	5.9	6.0
						26.5		5.83		81.6		3.94			6.0		
			Middle	6.5	24.6	26.6	26.7	5.72	5.73	80.1	80.2	3.98	4.01		5.8	5.9	
						26.7		5.73		80.2		4.03			6.0		
			Bottom	12.0	24.8	26.9	26.9	5.65	5.67	79.1	79.3	4.14	4.13		6.2	6.2	
						26.9		5.68		79.5		4.12			6.2		
17/11/12	1317-1329	22/Cloudy	Surface	1.0	24.3	26.4	26.4	6.00	5.99	84.0	83.8	3.99	4.01	4.24	5.8	5.9	6.2
						26.3		5.97		83.6		4.03			6.0		
			Middle	6.5	24.4	26.7	26.8	5.88	5.86	82.3	82.1	4.47	4.50		6.4	6.5	
						26.8		5.84		81.8		4.52			6.6		
			Bottom	12.0	24.5	26.9	27.0	5.80	5.78	81.2	80.9	4.20	4.23		6.2	6.2	
						27.0		5.76		80.6		4.25			6.2		
20/11/12	1633-1645	22/Drizzle	Surface	1.0	24.4	26.6	26.6	6.24	6.22	87.4	87.1	3.96	3.94	4.16	5.8	5.8	6.3
						26.6		6.20		86.8		3.91			5.8		
			Middle	6.4	24.3	26.8	26.8	6.03	6.05	84.4	84.7	4.24	4.22		6.6	6.5	
						26.8		6.06		84.9		4.20			6.4		
			Bottom	11.8	24.2	26.9	27.0	5.88	5.87	82.3	82.1	4.33	4.32		6.4	6.5	
						27.0		5.85		81.8		4.30			6.6		
22/11/12	1248-1303	24/Cloudy	Surface	1.0	24.3	26.6	26.6	6.00	6.02	83.9	84.2	3.88	3.91	4.12	5.8	5.8	6.3
						26.6		6.04		84.4		3.93			5.8		
			Middle	6.4	24.4	26.7	26.8	5.98	5.97	83.7	83.5	4.07	4.09		6.6	6.5	
						26.8		5.95		83.2		4.11			6.4		
			Bottom	11.8	24.6	27.0	27.0	5.83	5.82	81.5	81.3	4.34	4.36		6.4	6.5	
						27.0		5.80		81.1		4.37			6.6		
24/11/12	0749-0801	19/Drizzle	Surface	1.0	23.8	26.4	26.4	6.20	6.19	86.2	86.0	3.41	3.43	3.56	5.4	5.4	5.6
						26.4		6.17		85.8		3.44			5.4		
			Middle	6.7	24.0	26.6	26.7	6.06	6.05	84.2	84.0	3.56	3.58		5.6	5.6	
						26.7		6.03		83.8		3.60			5.6		
			Bottom	12.4	24.2	26.8	26.8	5.92	5.90	82.3	82.0	3.65	3.67		5.6	5.7	
						26.8		5.87		81.6		3.69			5.8		
27/11/12	0919-0934	18/Rainy	Surface	1.0	23.8	26.5	26.6	6.20	6.17	86.5	86.5	3.33	3.35	3.47	5.2	5.2	5.4
						26.6		6.13		86.5		3.36			5.2		
			Middle	6.6	23.8	26.7	26.8	6.05	6.04	84.4	84.2	3.47	3.46		5.4	5.4	
						26.8		6.02		84.0		3.44			5.4		
			Bottom	12.2	24.0	26.9	27.0	5.93	5.92	82.7	82.5	3.58	3.60		5.6	5.6	
						27.0		5.90		82.3		3.62			5.6		
29/11/12	1548-1603	21/Rainy	Surface	1.0	23.4	26.5	26.5	6.22	6.24	86.4	86.7	3.60	3.58	3.78	5.6	5.5	5.8
						26.5		6.26		87.0		3.56			5.4		
			Middle	6.4	23.4	26.7	26.8	6.11	6.13	84.9	85.2	3.73	3.76		5.8	5.8	
						26.8		6.15		85.4		3.78			5.8		
			Bottom	11.8	23.5	26.9	27.0	5.97	5.99	82.9	83.1	3.98	4.01		6.0	6.0	
						27.0		6.00		83.3		4.03			6.0		

Monitoring Station : R17

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average		
01/11/12	1230-1242	24/Fine	Surface	1.0	25.5	26.7	26.7	5.95	5.97	84.0	84.3	3.44	3.46	3.62	5.4	5.4	5.5		
						26.7		5.99		84.5		3.48			5.4				
			Middle	6.0	25.4	26.8	26.9	5.78	5.80	81.6	81.8	3.60	3.63		3.60	3.63		5.6	5.6
						26.9		5.81		82.0		3.65			5.5				
			Bottom	11.0	25.2	27.0	27.0	5.67	5.69	80.1	80.4	3.74	3.77		3.74	3.77		5.5	5.7
						26.9		5.70		80.6		3.80			5.8				
03/11/12	1230-1244	24/Fine	Surface	1.0	25.4	26.7	26.8	5.83	5.82	82.2	82.1	3.62	3.67	3.82	5.6	5.6	5.8		
						26.8		5.80		82.0		3.71			5.6				
			Middle	6.0	25.3	26.9	27.0	5.77	5.76	80.8	80.7	3.80	3.82		3.80	3.82		5.8	5.9
						27.0		5.75		80.5		3.83			6.0				
			Bottom	11.0	25.2	27.2	27.2	5.71	5.71	79.9	79.9	4.02	3.99		4.02	3.99		6.0	5.9
						27.2		5.70		79.8		3.95			5.8				
06/11/12	0430-0445	20/Fine	Surface	1.0	25.0	26.4	26.4	5.92	5.91	82.9	82.7	3.52	3.55	3.78	5.4	5.4	5.7		
						26.3		5.89		82.5		3.57			5.4				
			Middle	5.9	25.2	26.6	26.6	5.87	5.86	82.2	82.0	3.74	3.72		3.74	3.72		5.6	5.6
						26.5		5.84		81.8		3.70			5.5				
			Bottom	10.8	25.1	26.8	26.8	5.80	5.82	81.3	81.5	4.04	4.06		4.04	4.06		6.0	6.1
						26.7		5.83		81.7		4.08			6.2				
08/11/12	1815-1830	24/Cloudy	Surface	1.0	25.2	26.9	26.9	5.81	5.82	81.9	82.1	3.64	3.65	3.87	5.6	5.6	6.0		
						26.9		5.83		82.2		3.66			5.6				
			Middle	6.1	25.1	26.9	26.9	5.80	5.76	81.8	81.3	3.88	3.87		3.88	3.87		5.8	5.9
						26.9		5.72		80.7		3.86			6.0				
			Bottom	11.2	25.0	27.2	27.2	5.69	5.70	80.2	80.3	4.07	4.09		4.07	4.09		6.5	6.4
						27.1		5.70		80.4		4.10			6.2				
10/11/12	0730-0744	24/Cloudy	Surface	1.0	25.1	26.9	26.9	5.88	5.90	76.7	79.9	3.60	3.63	3.81	5.6	5.7	5.9		
						26.9		5.91		83.0		3.65			5.8				
			Middle	6.2	25.0	27.0	27.1	5.86	5.85	82.2	82.0	3.74	3.78		3.74	3.78		5.8	5.9
						27.1		5.83		81.8		3.82			6.0				
			Bottom	11.4	25.0	27.2	27.2	5.75	5.76	80.7	80.9	3.99	4.03		3.99	4.03		6.0	6.1
						27.2		5.77		81.0		4.06			6.2				
13/11/12	0930-0945	21/Fine	Surface	1.0	25.1	26.9	27.0	5.88	5.89	82.3	82.5	3.54	3.55	3.75	5.4	5.4	5.6		
						27.0		5.90		82.6		3.56			5.4				
			Middle	6.0	24.9	27.0	27.1	5.81	5.83	81.3	81.6	3.71	3.74		3.71	3.74		5.6	5.6
						27.1		5.85		81.9		3.76			5.5				
			Bottom	11.0	24.9	27.3	27.4	5.74	5.75	80.4	80.5	3.96	3.95		3.96	3.95		6.0	5.9
						27.4		5.76		80.6		3.94			5.8				
15/11/12	1130-1145	24/Cloudy	Surface	1.0	24.7	26.4	26.5	5.91	5.93	82.7	83.0	3.88	3.87	3.96	5.8	5.8	6.0		
						26.5		5.95		83.3		3.85			5.8				
			Middle	6.1	24.7	26.7	26.7	5.79	5.78	81.1	81.0	3.90	3.92		3.90	3.92		6.0	6.0
						26.6		5.77		80.8		3.94			6.0				
			Bottom	11.2	24.8	26.9	27.0	5.66	5.67	79.2	79.4	4.08	4.09		4.08	4.09		6.0	6.1
						27.0		5.68		79.5		4.10			6.2				
17/11/12	1300-1313	22/Cloudy	Surface	1.0	24.3	26.3	26.4	6.03	6.01	84.4	84.2	4.00	4.02	4.17	6.0	6.0	6.1		
						26.4		5.99		83.9		4.04			6.0				
			Middle	6.1	24.4	26.7	26.7	5.87	5.85	82.2	81.9	4.30	4.31		4.30	4.31		6.0	6.1
						26.7		5.83		81.6		4.32			6.0				
			Bottom	11.2	24.4	27.0	27.0	5.72	5.74	80.1	80.4	4.21	4.19		4.21	4.19		6.0	6.1
						27.0		5.76		80.6		4.17			6.2				
20/11/12	1615-1628	22/Drizzle	Surface	1.0	24.4	26.6	26.6	6.20	6.22	86.8	87.1	4.02	4.06	4.36	5.8	5.9	6.3		
						26.6		6.24		87.4		4.09			6.0				
			Middle	6.1	24.2	26.8	26.8	5.98	5.97	83.7	83.5	4.47	4.44		4.47	4.44		6.4	6.5
						26.8		5.95		83.3		4.41			6.5				
			Bottom	11.2	24.3	26.9	27.0	5.90	5.89	82.6	82.4	4.54	4.58		4.54	4.58		6.6	6.6
						27.0		5.87		82.2		4.62			6.6				
22/11/12	1230-1244	24/Cloudy	Surface	1.0	24.3	26.6	26.7	5.97	5.99	83.5	83.8	3.97	3.99	4.20	5.8	5.9	6.1		
						26.7		6.01		84.0		4.01			6.0				
			Middle	6.0	24.4	26.7	26.8	5.90	5.89	82.5	82.4	4.15	4.18		4.15	4.18		6.0	6.0
						26.8		5.88		82.3		4.20			6.0				
			Bottom	11.0	24.6	26.9	27.0	5.76	5.78	80.6	80.8	4.41	4.43		4.41	4.43		6.5	6.5
						27.0		5.79		81.0		4.44			6.4				
24/11/12	0730-0742	19/Drizzle	Surface	1.0	23.9	26.4	26.5	6.11	6.13	84.9	85.1	3.31	3.33	3.45	5.2	5.2	5.4		
						26.5		6.14		85.3		3.34			5.2				
			Middle	6.2	24.0	26.7	26.7	6.00	5.99	83.4	83.3	3.42	3.44		3.42	3.44		5.4	5.5
						26.7		5.98		83.1		3.46			5.5				
			Bottom	11.4	24.2	26.8	26.9	5.90	5.88	82.0	81.8	3.57	3.59		3.57	3.59		5.5	5.6
						26.9		5.86		81.5		3.60			5.6				
27/11/12	0900-0915	18/Rainy	Surface	1.0	23.7	26.4	26.5	6.11	6.13	85.2	85.5	3.26	3.27	3.36	5.2	5.2	5.4		
						26.5		6.14		85.7		3.28			5.2				
			Middle	6.2	23.9	26.7	26.8	6.00	6.01	83.7	83.8	3.37	3.36		3.37	3.36		5.4	5.5
						26.8		6.01		83.8		3.34			5.5				
			Bottom	11.4	24.0	26.9	26.9	5.94	5.92	82.9	82.6	3.46	3.47		3.46	3.47		5.5	5.5
						26.9		5.89		82.2		3.47			5.4				
29/11/12	1530-1544	21/Rainy	Surface	1.0	23.4	26.4	26.5	6.25	6.27	86.8	87.1	3.51	3.53	3.73	5.4	5.4	5.7		
						26.5		6.29		87.4		3.55			5.4				
			Middle	0.1	23.4	26.7	26.7	6.18	6.16	85.9	85.6	3.68	3.70		3.68	3.70		5.6	5.6
						26.7		6.14		85.3		3.71			5.5				
			Bottom	11.2	23.5	27.0	27.0	6.03	6.05	83.8	84.0	3.94	3.96		3.94	3.96		6.0	6.0
						26.9		6.06		84.2		3.98			6.0				

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		
01/11/12	1414-1426	25/Fine	Surface	1.0	25.5	26.7	26.7	5.92	5.91	83.5	83.3	3.44	3.42	3.62	5.4	5.4	5.6		
						26.6		5.89		83.1		3.40			5.4				
			Middle	5.8	25.4	26.8	26.8	5.81	5.83	82.1	82.4	3.68	3.67		3.68	3.67		5.6	5.6
						26.7		5.85		82.6		3.65			5.6				
			Bottom	10.6	25.2	26.9	26.9	5.74	5.73	81.1	80.9	3.75	3.77		3.75	3.77		5.8	5.8
						26.9		5.71		80.7		3.79			5.8				
03/11/12	1424-1438	24/Fine	Surface	1.0	25.5	26.8	26.8	5.78	5.77	80.9	80.7	3.62	3.60	3.72	5.6	5.5	5.6		
						26.8		5.75		80.5		3.57			5.4				
			Middle	5.8	25.3	26.9	27.0	5.71	5.70	79.9	79.7	3.73	3.74		3.73	3.74		5.6	5.6
						27.0		5.68		79.5		3.74			5.6				
			Bottom	10.6	25.2	27.1	27.1	5.68	5.68	79.5	79.5	3.86	3.84		3.86	3.84		5.8	5.8
						27.1		5.67		79.4		3.81			5.8				
06/11/12	0633-0646	20/Fine	Surface	1.0	25.1	26.5	26.5	5.80	5.82	81.3	81.5	3.66	3.64	3.84	5.6	5.6	5.8		
						26.4		5.83		81.7		3.62			5.6				
			Middle	5.7	25.2	26.8	26.8	5.74	5.72	80.4	80.1	3.84	3.82		3.84	3.82		5.8	5.8
						26.8		5.70		79.8		3.80			5.8				
			Bottom	10.4	25.2	26.9	26.9	5.69	5.68	79.7	79.5	4.02	4.05		4.02	4.05		6.0	6.0
						26.9		5.66		79.2		4.07			6.0				
08/11/12	2003-2018	24/Cloudy	Surface	1.0	25.2	26.9	26.9	5.81	5.81	81.9	81.9	3.65	3.63	3.79	5.6	5.6	5.8		
						26.8		5.80		81.8		3.60			5.6				
			Middle	5.9	25.2	27.2	27.2	5.74	5.72	80.9	80.7	3.74	3.77		3.74	3.77		5.8	5.8
						27.2		5.70		80.4		3.80			5.8				
			Bottom	10.8	24.9	27.4	27.4	5.66	5.68	79.9	80.1	3.95	3.97		3.95	3.97		6.0	6.0
						27.4		5.69		80.3		3.96			6.0				
10/11/12	0929-0943	24/Cloudy	Surface	1.0	25.1	26.8	26.9	5.93	5.96	83.2	83.6	3.44	3.46	3.65	5.6	5.6	5.8		
						26.9		5.98		83.9		3.48			5.6				
			Middle	6.0	25.1	26.9	27.0	5.86	5.84	82.2	82.0	3.64	3.67		3.64	3.67		5.8	5.9
						27.0		5.82		81.7		3.69			6.0				
			Bottom	11.0	25.0	27.1	27.2	5.70	5.72	80.0	80.3	3.81	3.83		3.81	3.83		5.8	5.9
						27.2		5.74		80.5		3.85			6.0				
13/11/12	1124-1138	21/Fine	Surface	1.0	25.2	26.9	26.9	5.84	5.85	81.8	81.9	3.27	3.30	3.46	5.2	5.2	5.4		
						26.8		5.86		82.0		3.32			5.2				
			Middle	5.6	25.1	27.0	27.1	5.72	5.75	80.1	80.5	3.58	3.58		3.58	3.58		5.6	5.6
						27.1		5.78		80.9		3.57			5.6				
			Bottom	10.2	24.9	27.2	27.3	5.69	5.70	79.7	79.8	3.50	3.52		3.50	3.52		5.4	5.4
						27.3		5.70		79.8		3.54			5.4				
15/11/12	1324-1338	24/Cloudy	Surface	1.0	24.7	26.4	26.5	5.83	5.84	81.6	81.8	3.79	3.81	3.91	5.6	5.7	5.8		
						26.5		5.85		81.9		3.82			5.8				
			Middle	5.6	24.7	26.6	26.7	5.79	5.78	81.1	81.0	3.87	3.88		3.87	3.88		5.8	5.8
						26.7		5.77		80.8		3.89			5.8				
			Bottom	10.2	24.8	26.9	26.9	5.72	5.71	80.1	80.0	4.08	4.05		4.08	4.05		6.0	6.0
						26.9		5.70		79.8		4.02			6.0				
17/11/12	1443-1455	22/Cloudy	Surface	1.0	24.2	26.5	26.5	6.05	6.07	84.7	85.0	4.00	4.03	4.18	6.0	6.0	6.2		
						26.4		6.09		85.3		4.05			6.0				
			Middle	5.9	24.3	26.8	26.8	5.97	5.96	83.6	83.5	4.14	4.15		4.14	4.15		6.2	6.2
						26.8		5.95		83.3		4.16			6.2				
			Bottom	10.8	24.4	27.0	27.0	5.84	5.82	81.8	81.5	4.33	4.36		4.33	4.36		6.4	6.4
						27.0		5.80		81.2		4.38			6.4				
20/11/12	1758-1809	22/Drizzle	Surface	1.0	24.5	26.7	26.7	6.15	6.17	86.1	86.3	4.17	4.20	4.30	6.0	6.1	6.2		
						26.7		6.18		86.5		4.23			6.2				
			Middle	6.2	24.3	26.8	26.8	5.97	5.96	83.6	83.4	4.30	4.34		4.30	4.34		6.2	6.3
						26.8		5.94		83.2		4.37			6.4				
			Bottom	11.4	24.2	27.1	27.1	5.95	5.97	83.3	83.5	4.40	4.37		4.40	4.37		6.4	6.3
						27.1		5.98		83.7		4.34			6.2				
22/11/12	1422-1435	25/Cloudy	Surface	1.0	24.4	26.7	26.7	6.05	6.07	84.6	84.9	3.72	3.75	3.88	5.6	5.6	5.8		
						26.6		6.08		85.1		3.78			5.6				
			Middle	5.9	24.4	26.7	26.8	5.96	5.94	83.3	83.0	3.84	3.86		3.84	3.86		5.8	5.8
						26.8		5.91		82.7		3.88			5.8				
			Bottom	10.8	24.5	27.0	27.1	5.78	5.81	80.9	81.3	4.01	4.04		4.01	4.04		6.0	6.0
						27.1		5.84		81.7		4.06			6.0				
24/11/12	0924-0937	19/Drizzle	Surface	1.0	23.9	26.4	26.4	6.06	6.04	84.2	84.0	3.25	3.27	3.37	5.2	5.2	5.4		
						26.3		6.02		83.7		3.29			5.2				
			Middle	5.8	24.0	26.4	26.5	5.96	5.95	82.8	82.7	3.33	3.35		3.33	3.35		5.4	5.4
						26.5		5.94		82.6		3.36			5.4				
			Bottom	10.6	24.1	26.7	26.7	5.88	5.86	81.7	81.5	3.48	3.50		3.48	3.50		5.6	5.6
						26.7		5.84		81.2		3.51			5.6				
27/11/12	1100-1114	18/Rainy	Surface	1.0	23.8	26.4	26.4	6.14	6.12	85.7	85.4	3.21	3.20	3.31	5.2	5.2	5.3		
						26.3		6.10		85.1		3.19			5.2				
			Middle	6.1	23.9	26.4	26.5	6.03	6.02	84.1	83.9	3.31	3.30		3.31	3.30		5.4	5.3
						26.5		6.00		83.7		3.28			5.4				
			Bottom	11.2	24.0	26.7	26.8	5.92	5.91	82.6	82.4	3.43	3.43		3.43	3.43		5.4	5.4
						26.8		5.89		82.2		3.42			5.4				
29/11/12	1729-1743	20/Cloudy	Surface	1.0	23.3	26.4	26.4	6.27	6.30	87.1	87.5	3.50	3.48	3.65	5.4	5.4	5.6		
						26.4		6.32		87.8		3.46			5.4				
			Middle	5.9	23.4	26.6	26.6	6.20	6.19	86.1	85.9	3.58	3.61		3.58	3.61		5.6	5.6
						26.5		6.17		85.7		3.63			5.6				
			Bottom	10.8	23.4	26.7	26.8	6.08	6.06	84.5	84.2	3.84	3.87		3.84	3.87		5.8	5.8
						26.8		6.04		83.9		3.89			5.8				



**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
01/11/12	1430-1444	25/Fine	Surface	1.0	25.5	26.7	26.8	5.95	5.97	84.1	84.4	3.37	3.39	3.52	5.4	5.4	5.5
						26.8		5.99		84.6		3.41			5.4		
			Middle	9.0	25.3	26.8	26.9	5.92	5.90	83.6	83.4	3.49	3.55		5.4	5.5	
						26.9		5.88		83.1		3.65			5.6		
			Bottom	17.0	25.1	26.9	27.0	5.86	5.84	82.8	82.5	3.63	3.67		5.6	5.6	
						27.0		5.81		82.1		3.67			5.6		
03/11/12	1443-1457	24/Fine	Surface	1.0	25.4	26.6	26.7	5.89	5.87	82.5	82.2	3.55	3.57	3.71	5.4	5.5	5.7
						26.7		5.84		81.8		3.59			5.6		
			Middle	8.6	25.3	26.8	26.8	5.82	5.81	81.5	81.4	3.74	3.70		5.8	5.7	
						26.8		5.80		81.2		3.70			5.6		
			Bottom	16.1	25.2	27.1	27.1	5.77	5.74	80.8	80.4	3.83	3.86		5.8	5.8	
						27.1		5.71		79.9		3.86			5.8		
06/11/12	0654-0707	20/Fine	Surface	1.0	25.1	26.6	26.6	5.83	5.81	81.7	81.4	3.85	3.87	3.90	5.8	5.8	5.9
						26.6		5.78		81.0		3.89			5.8		
			Middle	8.6	25.2	26.9	26.9	5.78	5.77	81.0	80.8	3.94	3.97		6.0	6.0	
						26.9		5.75		80.6		3.97			6.0		
			Bottom	16.2	25.2	26.9	27.0	5.75	5.77	80.6	80.8	3.88	3.84		5.8	5.8	
						27.0		5.78		81.0		3.84			5.8		
08/11/12	2021-2036	24/Cloudy	Surface	1.0	25.2	26.8	26.9	5.90	5.89	83.2	83.1	3.53	3.52	3.74	5.4	5.4	5.6
						26.9		5.88		82.9		3.50			5.4		
			Middle	8.8	25.1	27.1	27.2	5.83	5.82	82.2	82.1	3.77	3.72		5.6	5.6	
						27.2		5.81		81.9		3.72			5.6		
			Bottom	16.6	24.9	27.3	27.4	5.84	5.66	79.5	79.8	3.97	3.92		5.8	5.8	
						27.4		5.68		80.1		3.92			5.8		
10/11/12	0947-1001	24/Cloudy	Surface	1.0	25.2	26.8	26.8	5.90	5.88	82.8	82.5	3.53	3.55	3.79	5.6	5.6	5.8
						26.8		5.86		82.2		3.57			5.6		
			Middle	8.9	25.1	26.9	27.0	5.77	5.75	81.0	80.7	3.74	3.77		5.8	5.8	
						27.0		5.73		80.4		3.77			5.8		
			Bottom	16.8	25.0	27.0	27.1	5.68	5.67	79.7	79.5	4.04	4.10		6.0	6.1	
						27.1		5.65		79.3		4.10			6.2		
13/11/12	1143-1158	21/Fine	Surface	1.0	25.2	26.8	26.8	5.91	5.93	82.7	83.0	3.46	3.45	3.74	5.4	5.4	5.7
						26.8		5.94		83.2		3.43			5.4		
			Middle	9.0	25.0	27.0	27.0	5.84	5.87	81.8	82.2	3.80	3.82		5.8	5.8	
						27.0		5.90		82.6		3.82			5.8		
			Bottom	17.0	24.9	27.3	27.3	5.77	5.78	80.8	81.0	3.96	3.94		6.0	6.0	
						27.2		5.79		81.1		3.94			6.0		
15/11/12	1343-1358	24/Cloudy	Surface	1.0	24.7	26.5	26.5	5.89	5.85	82.5	81.9	3.64	3.65	3.90	5.6	5.6	5.8
						26.4		5.81		81.3		3.66			5.6		
			Middle	9.1	24.7	26.6	26.7	5.82	5.81	81.5	81.4	3.94	3.96		5.8	5.8	
						26.7		5.80		81.2		3.96			5.8		
			Bottom	17.2	24.8	26.8	26.9	5.75	5.76	80.5	80.6	4.10	4.12		6.0	6.0	
						26.9		5.76		80.6		4.12			6.0		
17/11/12	1459-1511	22/Cloudy	Surface	1.0	24.2	26.5	26.5	5.94	5.96	83.2	83.4	4.07	4.09	4.18	6.0	6.0	6.2
						26.5		5.97		83.6		4.10			6.0		
			Middle	8.7	24.3	26.9	26.9	5.88	5.87	82.3	82.1	4.16	4.20		6.2	6.2	
						26.8		5.85		81.9		4.20			6.2		
			Bottom	16.4	24.4	27.0	27.0	5.76	5.78	80.6	80.9	4.25	4.28		6.4	6.4	
						27.0		5.79		81.1		4.28			6.4		
20/11/12	1814-1825	22/Drizzle	Surface	1.0	24.4	26.8	26.8	6.20	6.19	86.8	86.7	4.06	4.04	4.19	6.0	5.9	6.1
						26.7		6.18		86.5		4.02			5.8		
			Middle	8.4	24.2	26.9	26.9	6.03	6.06	84.4	84.8	4.17	4.23		6.0	6.1	
						26.9		6.08		85.1		4.23			6.2		
			Bottom	15.8	24.3	27.2	27.2	5.87	5.86	82.1	81.9	4.36	4.31		6.4	6.3	
						27.2		5.84		81.7		4.31			6.2		
22/11/12	1440-1453	25/Cloudy	Surface	1.0	24.4	26.7	26.7	6.03	6.01	84.4	84.1	3.77	3.79	3.97	5.6	5.7	5.9
						26.7		5.99		83.8		3.81			5.8		
			Middle	8.7	24.5	26.9	26.9	5.89	5.87	82.4	82.1	3.93	3.97		5.8	5.9	
						26.9		5.85		81.8		3.97			6.0		
			Bottom	16.4	24.5	27.1	27.1	5.79	5.78	81.0	80.8	4.13	4.18		6.0	6.1	
						27.1		5.76		80.6		4.18			6.2		
24/11/12	0943-0956	19/Drizzle	Surface	1.0	23.8	26.4	26.4	6.16	6.14	85.6	85.4	3.36	3.38	3.52	5.4	5.4	5.6
						26.4		6.12		85.1		3.40			5.4		
			Middle	9.2	24.0	26.6	26.6	6.00	5.99	83.4	83.2	3.48	3.52		5.6	5.6	
						26.6		5.97		83.0		3.52			5.6		
			Bottom	17.4	24.2	26.8	26.8	5.89	5.88	81.9	81.7	3.66	3.69		5.8	5.8	
						26.8		5.86		81.5		3.69			5.8		
27/11/12	1118-1134	18/Rainy	Surface	1.0	23.8	26.3	26.4	6.08	6.10	84.8	85.0	3.30	3.30	3.45	5.2	5.2	5.4
						26.4		6.11		85.2		3.29			5.2		
			Middle	8.8	23.9	26.5	26.6	6.02	6.01	84.0	83.8	3.49	3.46		5.4	5.4	
						26.6		5.99		83.6		3.46			5.4		
			Bottom	16.6	24.0	26.8	26.9	5.91	5.91	82.4	82.4	3.58	3.55		5.6	5.6	
						26.9		5.90		82.3		3.55			5.6		
29/11/12	1747-1803	20/Cloudy	Surface	1.0	23.3	26.5	26.5	6.23	6.26	86.4	86.8	3.57	3.59	3.71	5.4	5.4	5.6
						26.5		6.28		87.1		3.60			5.4		
			Middle	8.7	23.4	26.7	26.8	6.09	6.11	84.6	84.9	3.69	3.73		5.6	5.6	
						26.8		6.13		85.1		3.73			5.6		
			Bottom	16.4	23.4	26.9	27.0	5.90	5.93	82.0	82.4	3.79	3.85		5.8	5.8	
						27.0		5.95		82.7		3.85			5.8		

Monitoring Station : C1

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average		
01/11/12	1320-1333	24/Fine	Surface	1.0	25.4	26.7	26.8	5.93	5.95	83.7	84.0	3.43	3.45	3.64	5.4	5.4	5.6		
						26.8		5.96		84.2		3.46			5.4				
			Middle	7.2	25.3	26.9	26.9	5.83	5.82	82.3	82.1	3.66	3.69		3.71	3.69		5.6	5.6
						26.8		5.80		81.9		3.71			5.6				
			Bottom	13.4	25.1	27.0	27.0	5.70	5.73	80.4	80.8	3.78	3.80		3.82	3.80		5.8	5.9
						27.0		5.75		81.2		3.82			6.0				
03/11/12	1327-1341	24/Fine	Surface	1.0	25.5	26.7	26.8	5.86	5.84	82.0	81.8	3.59	3.61	3.76	5.6	5.6	5.7		
						26.8		5.82		81.5		3.63			5.6				
			Middle	7.1	25.3	26.9	26.9	5.77	5.74	80.8	80.4	3.79	3.77		3.74	3.77		5.8	5.7
						26.9		5.71		80.0		3.74			5.6				
			Bottom	13.2	25.2	27.1	27.1	5.67	5.67	79.4	79.3	3.89	3.90		3.91	3.90		5.8	5.9
						27.1		5.66		79.2		3.91			6.0				
06/11/12	0532-0546	20/Fine	Surface	1.0	25.0	26.5	26.5	5.97	5.95	83.7	83.4	3.87	3.90	3.88	5.8	5.8	5.9		
						26.4		5.93		83.1		3.92			5.8				
			Middle	7.2	25.2	26.7	26.7	5.78	5.77	80.9	80.7	3.90	3.88		3.85	3.88		6.0	6.0
						26.7		5.75		80.5		3.85			6.0				
			Bottom	13.4	25.3	26.8	26.9	5.72	5.70	80.1	79.8	3.85	3.87		3.89	3.87		5.8	5.9
						26.9		5.68		79.5		3.89			6.0				
08/11/12	1911-1924	24/Cloudy	Surface	1.0	25.2	26.8	26.8	5.81	5.80	81.9	81.8	3.52	3.56	3.84	5.4	5.5	5.8		
						26.8		5.79		81.6		3.60			5.6				
			Middle	7.0	25.1	27.0	27.0	5.74	5.75	80.9	81.1	3.85	3.86		3.87	3.86		5.8	5.8
						26.9		5.75		81.2		3.87			5.8				
			Bottom	13.0	25.0	27.3	27.3	5.70	5.69	80.4	80.3	4.07	4.11		4.14	4.11		6.0	6.0
						27.2		5.66		80.1		4.14			6.0				
10/11/12	0831-0845	24/Cloudy	Surface	1.0	25.2	26.8	26.8	5.92	5.94	83.1	83.3	3.54	3.56	3.77	5.6	5.6	5.8		
						26.8		5.95		83.5		3.58			5.6				
			Middle	7.3	25.1	26.9	27.0	5.81	5.80	81.5	81.3	3.74	3.77		3.80	3.77		5.8	5.8
						27.0		5.78		81.1		3.80			5.8				
			Bottom	13.6	25.1	27.0	27.1	5.67	5.69	79.6	79.8	3.96	3.98		4.00	3.98		6.0	6.0
						27.1		5.70		80.0		4.00			6.0				
13/11/12	1029-1043	21/Fine	Surface	1.0	25.1	26.8	26.9	5.89	5.90	82.5	82.6	3.36	3.35	3.52	5.4	5.3	5.5		
						26.9		5.90		82.6		3.33			5.2				
			Middle	6.9	25.0	27.0	27.0	5.76	5.78	80.6	80.9	3.54	3.55		3.56	3.55		5.6	5.5
						27.0		5.80		81.2		3.56			5.4				
			Bottom	12.8	24.9	27.3	27.4	5.68	5.69	79.5	79.7	3.67	3.66		3.64	3.66		5.6	5.6
						27.4		5.70		79.8		3.64			5.5				
15/11/12	1228-1243	24/Cloudy	Surface	1.0	24.7	26.5	26.5	5.88	5.86	82.3	82.1	3.70	3.74	3.91	5.6	5.7	5.9		
						26.4		5.84		81.8		3.78			5.8				
			Middle	7.2	24.7	26.6	26.7	5.77	5.74	80.8	80.4	3.94	3.93		3.91	3.93		6.0	5.9
						26.7		5.71		79.9		3.91			5.8				
			Bottom	13.4	24.8	27.0	27.0	5.80	5.82	81.2	81.5	4.05	4.06		4.06	4.06		6.0	6.0
						27.0		5.84		81.8		4.06			6.0				
17/11/12	1353-1405	22/Cloudy	Surface	1.0	24.2	26.4	26.5	6.07	6.06	85.0	84.9	3.96	3.98	3.98	5.8	5.8	5.9		
						26.5		6.05		84.8		3.99			5.8				
			Middle	7.4	24.3	26.7	26.8	5.95	5.94	83.3	83.1	3.83	3.85		3.86	3.85		5.6	5.7
						26.8		5.92		82.9		3.86			5.8				
			Bottom	13.8	24.4	27.0	27.0	5.86	5.85	82.0	81.8	4.10	4.13		4.15	4.13		6.2	6.1
						26.9		5.83		81.6		4.15			6.0				
20/11/12	1707-1718	22/Drizzle	Surface	1.0	24.4	26.6	26.7	6.29	6.28	88.1	87.9	4.17	4.14	4.24	6.2	6.1	6.2		
						26.7		6.26		87.7		4.11			6.0				
			Middle	7.4	24.3	26.9	26.9	6.07	6.05	85.0	84.7	4.24	4.22		4.19	4.22		6.2	6.2
						26.9		6.03		84.4		4.19			6.2				
			Bottom	13.8	24.3	26.9	27.0	5.90	5.92	82.5	82.8	4.40	4.37		4.34	4.37		6.4	6.2
						27.0		5.94		83.1		4.34			6.0				
22/11/12	1325-1340	24/Cloudy	Surface	1.0	24.4	26.6	26.6	6.04	6.06	84.5	84.7	3.82	3.85	4.06	5.8	5.8	6.0		
						26.6		6.07		84.9		3.87			5.8				
			Middle	7.2	24.3	26.7	26.8	5.93	5.92	82.9	82.7	4.04	4.07		4.09	4.07		6.0	6.0
						26.8		5.90		82.5		4.09			6.0				
			Bottom	13.4	24.5	27.0	27.1	5.78	5.80	80.9	81.2	4.25	4.28		4.30	4.28		6.2	6.1
						27.1		5.82		81.4		4.30			6.0				
24/11/12	0827-0839	19/Drizzle	Surface	1.0	23.9	26.4	26.5	6.04	6.06	84.0	84.3	3.55	3.56	3.66	5.4	5.4	5.6		
						26.5		6.08		84.5		3.57			5.4				
			Middle	7.3	24.1	26.6	26.6	5.96	5.94	82.8	82.6	3.63	3.65		3.66	3.65		5.6	5.6
						26.6		5.92		82.3		3.66			5.6				
			Bottom	13.6	24.2	26.8	26.8	5.85	5.84	81.3	81.1	3.75	3.76		3.77	3.76		5.8	5.7
						26.8		5.82		80.9		3.77			5.5				
27/11/12	1012-1015	18/Rainy	Surface	1.0	23.8	26.4	26.5	6.16	6.14	85.9	85.7	3.43	3.44	3.52	5.4	5.4	5.5		
						26.5		6.12		85.4		3.45			5.4				
			Middle	7.7	23.9	26.6	26.7	6.08	6.06	84.8	84.5	3.54	3.52		3.50	3.52		5.6	5.5
						26.7		6.03		84.1		3.50			5.4				
			Bottom	14.4	24.0	26.8	26.9	5.95	5.94	83.0	82.8	3.62	3.61		3.60	3.61		5.6	5.6
						26.9		5.92		82.6		3.60			5.5				
29/11/12	1628-1643	21/Rainy	Surface	1.0	23.4	26.5	26.5	6.29	6.27	87.3	87.0	3.49	3.52	3.71	5.4	5.4	5.6		
						26.5		6.24		86.7		3.54			5.4				
			Middle	7.3	23.4	26.8	26.8	6.13	6.12	85.2	85.0	3.74	3.72		3.70	3.72		5.6	5.6
						26.7		6.10		84.7		3.70			5.6				
			Bottom	13.6	23.5	27.0	27.0	5.96	5.94	82.8	82.5	3.86	3.88		3.90	3.88		5.8	5.9
						26.9		5.92		82.2		3.90			6.0				

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		
01/11/12	1338-1350	24/Fine	Surface	1.0	25.4	26.7	26.8	5.98	5.96	84.4	84.2	3.42	3.44	3.60	5.4	5.4	5.6		
						26.8		5.94		83.9		3.45			5.4				
			Middle	6.3	25.3	26.8	26.9	5.87	5.85	82.9	82.5	3.64	3.63		3.61	3.63		5.6	5.6
						26.9		5.82		82.1		3.73			5.6				
			Bottom	11.6	25.2	27.0	27.0	5.72	5.75	80.7	81.1	3.76	3.75		3.76	3.75		5.8	5.7
						27.0		5.77		81.5		3.38			5.8				
03/11/12	1346-1400	24/Fine	Surface	1.0	25.4	26.8	26.8	5.79	5.79	81.1	81.1	3.38	3.40	3.60	5.4	5.4	5.6		
						26.8		5.79		81.0		3.41			5.4				
			Middle	6.5	25.3	26.9	27.0	5.72	5.72	80.1	80.1	3.62	3.64		3.66	3.64		5.6	5.6
						27.0		5.72		80.1		3.81			5.8				
			Bottom	11.9	25.2	27.2	27.2	5.68	5.68	79.5	79.5	3.74	3.78		3.74	3.78		5.8	5.8
						27.2		5.68		79.5		3.81			5.8				
06/11/12	0553-0607	20/Fine	Surface	1.0	25.1	26.5	26.5	5.92	5.94	83.0	83.2	3.78	3.81	3.83	5.8	5.8	5.7		
						26.4		5.95		83.4		3.84			5.8				
			Middle	6.4	25.1	26.8	26.8	5.84	5.82	81.8	81.6	3.80	3.83		3.86	3.83		5.6	5.6
						26.7		5.80		81.3		3.86			5.6				
			Bottom	11.8	25.3	26.8	26.8	5.80	5.78	81.3	81.0	3.88	3.86		3.88	3.86		5.8	5.7
						26.8		5.75		80.6		3.83			5.6				
08/11/12	1927-1940	24/Cloudy	Surface	1.0	25.2	26.9	26.9	5.94	5.92	83.8	83.5	3.67	3.65	3.87	5.6	5.6	5.8		
						26.8		5.90		83.2		3.63			5.6				
			Middle	6.5	25.1	27.1	27.1	5.85	5.83	82.5	82.2	3.79	3.82		3.84	3.82		5.8	5.8
						27.0		5.81		81.9		3.84			5.8				
			Bottom	12.0	25.1	27.1	27.1	5.78	5.75	81.5	81.1	4.11	4.13		4.11	4.13		6.0	6.1
						27.1		5.72		80.7		4.15			6.2				
10/11/12	0850-0905	24/Cloudy	Surface	1.0	25.1	26.8	26.9	5.82	5.81	81.7	81.6	3.58	3.60	3.82	5.6	5.7	5.9		
						26.9		5.80		81.4		3.62			5.8				
			Middle	6.8	25.0	26.9	27.0	5.72	5.72	80.3	80.2	3.77	3.81		3.77	3.81		6.0	5.9
						27.0		5.71		80.1		3.85			6.0				
			Bottom	12.6	25.0	27.0	27.0	5.63	5.62	79.0	78.9	4.03	4.05		4.03	4.05		6.0	6.1
						27.0		5.61		78.7		4.06			6.2				
13/11/12	1047-1102	21/Fine	Surface	1.0	25.1	26.9	27.0	5.92	5.91	82.9	82.8	3.47	3.48	3.65	5.4	5.4	5.6		
						27.0		5.90		82.6		3.49			5.4				
			Middle	6.1	25.0	27.0	27.1	5.80	5.77	81.2	80.8	3.62	3.63		3.64	3.63		5.6	5.6
						27.1		5.74		80.4		3.64			5.6				
			Bottom	11.2	25.0	27.2	27.2	5.79	5.79	81.1	81.0	3.81	3.83		3.81	3.83		5.8	5.8
						27.1		5.78		80.9		3.85			5.8				
15/11/12	1247-1301	24/Cloudy	Surface	1.0	24.7	26.5	26.5	5.90	5.92	82.6	83.0	3.64	3.62	3.83	5.6	5.6	5.8		
						26.4		5.94		83.3		3.60			5.6				
			Middle	6.2	24.7	26.7	26.8	5.83	5.82	81.6	81.5	3.82	3.83		3.84	3.83		5.8	5.8
						26.8		5.81		81.3		3.84			5.8				
			Bottom	11.4	24.8	26.9	27.0	5.72	5.74	80.1	80.4	4.01	4.03		4.01	4.03		6.0	6.0
						27.0		5.76		80.6		4.05			6.0				
17/11/12	1409-1422	22/Cloudy	Surface	1.0	24.3	26.4	26.4	5.95	5.97	83.3	83.6	4.07	4.09	4.19	5.8	5.9	6.2		
						26.4		5.99		83.9		4.11			6.0				
			Middle	6.6	24.3	26.8	26.9	5.80	5.78	81.2	80.9	4.16	4.18		4.16	4.18		6.2	6.2
						26.9		5.76		80.6		4.19			6.2				
			Bottom	12.2	24.4	27.1	27.1	5.85	5.86	81.9	82.1	4.27	4.29		4.27	4.29		6.4	6.4
						27.0		5.87		82.2		4.31			6.4				
20/11/12	1724-1736	22/Drizzle	Surface	1.0	24.4	26.7	26.7	6.18	6.16	86.5	86.3	4.09	4.07	4.18	6.0	5.9	6.1		
						26.7		6.14		86.0		4.05			5.8				
			Middle	6.3	24.3	26.9	26.9	5.95	5.93	83.3	83.0	4.27	4.24		4.27	4.24		6.2	6.2
						26.8		5.91		82.7		4.20			6.2				
			Bottom	11.6	24.2	27.0	27.0	5.83	5.82	81.6	81.4	4.20	4.23		4.20	4.23		6.2	6.3
						27.0		5.80		81.1		4.26			6.4				
22/11/12	1344-1400	24/Cloudy	Surface	1.0	24.4	26.7	26.7	6.02	6.00	84.2	83.9	3.85	3.88	4.10	5.8	5.8	6.0		
						26.7		5.97		83.5		3.91			5.8				
			Middle	6.7	24.4	26.8	26.8	5.91	5.89	82.6	82.4	4.11	4.13		4.11	4.13		6.0	6.1
						26.8		5.87		82.1		4.14			6.2				
			Bottom	12.4	24.5	26.9	27.0	5.69	5.71	79.6	79.9	4.28	4.31		4.28	4.31		6.2	6.2
						27.0		5.73		80.2		4.33			6.2				
24/11/12	0845-0858	19/Drizzle	Surface	1.0	23.9	26.5	26.5	6.10	6.13	84.8	85.2	3.41	3.44	3.54	5.4	5.4	5.5		
						26.5		6.15		85.5		3.46			5.4				
			Middle	6.3	24.0	26.7	26.7	6.02	6.00	83.7	83.4	3.50	3.53		3.50	3.53		5.6	5.6
						26.6		5.98		83.1		3.55			5.6				
			Bottom	11.6	24.1	26.8	26.8	5.92	5.91	82.2	82.1	3.64	3.66		3.64	3.66		5.6	5.6
						26.8		5.89		81.9		3.67			5.6				
27/11/12	1021-1035	18/Rainy	Surface	1.0	23.8	26.5	26.6	6.17	6.16	86.1	86.0	3.36	3.34	3.44	5.4	5.3	5.4		
						26.6		6.15		85.8		3.32			5.2				
			Middle	6.8	23.8	26.7	26.8	6.06	6.05	84.5	84.4	3.43	3.43		3.43	3.43		5.4	5.3
						26.8		6.04		84.3		3.42			5.2				
			Bottom	12.6	23.9	26.9	26.9	5.98	5.97	83.4	83.3	3.54	3.55		3.54	3.55		5.6	5.6
						26.9		5.96		83.1		3.56			5.6				
29/11/12	1648-1702	21/Rainy	Surface	1.0	23.3	26.5	26.5	6.31	6.30	87.7	87.5	3.52	3.55	3.70	5.4	5.4	5.6		
						26.4		6.28		87.2		3.58			5.4				
			Middle	6.5	23.4	26.7	26.8	6.16	6.18	85.6	85.8	3.66	3.69		3.66	3.69		5.6	5.6
						26.8		6.19		86.0		3.72			5.6				
			Bottom	12.0	23.4	26.9	27.0	5.94	5.96	82.5	82.8	3.88	3.87		3.88	3.87		5.8	5.8
						27.0		5.98		83.1		3.85			5.8				



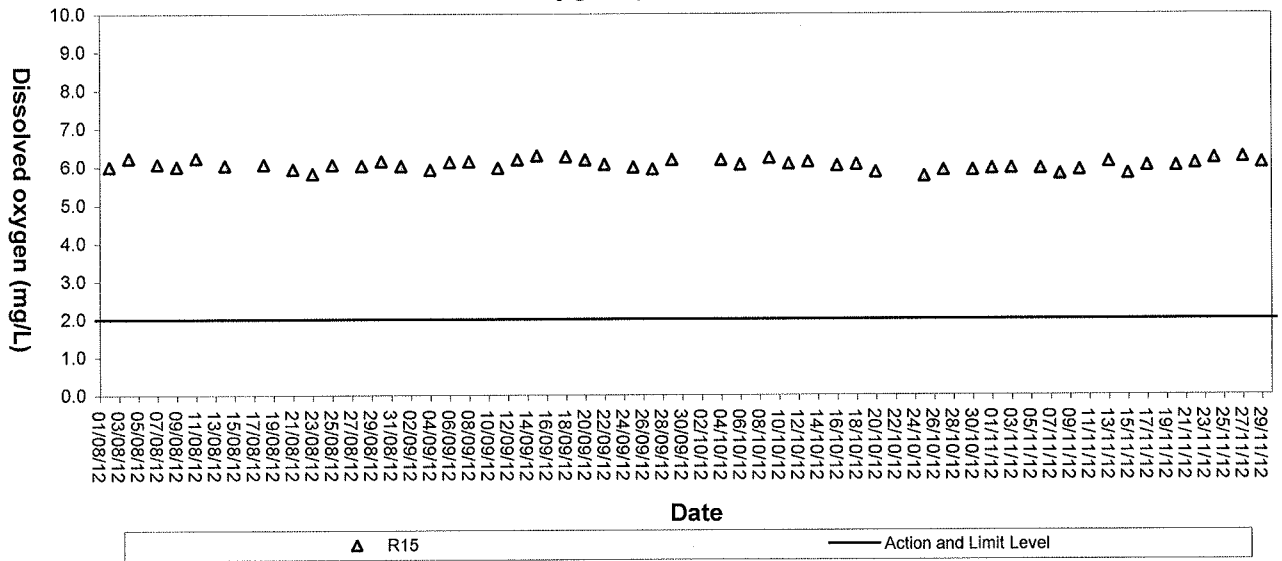
## **Appendix C3**

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





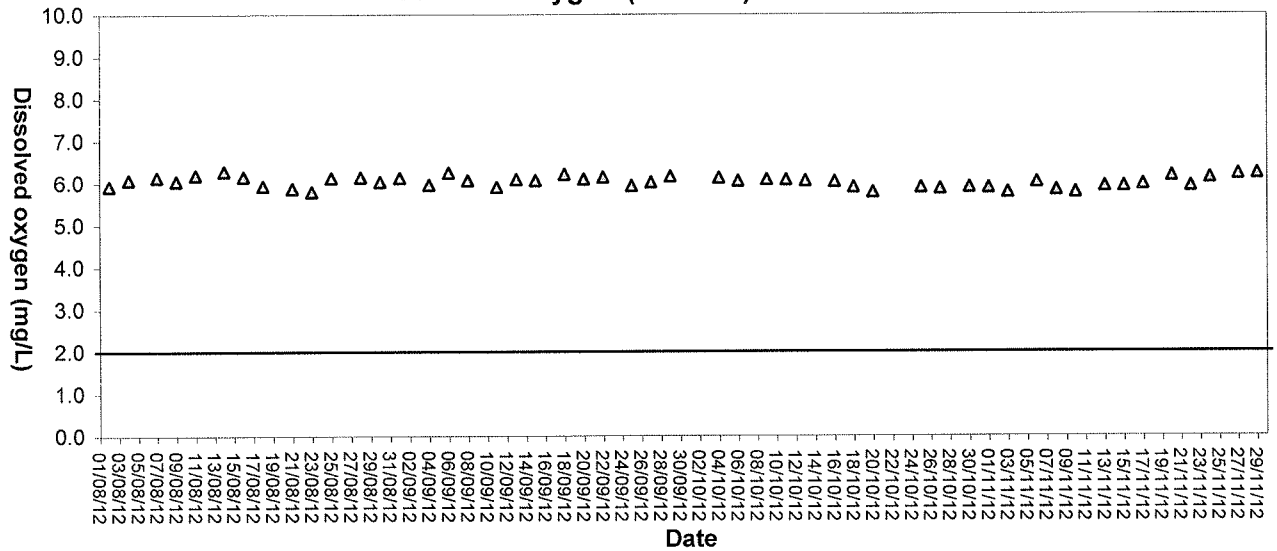
### Dissolved Oxygen (Surface) at Mid-Flood Tide



△ R15

— Action and Limit Level

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

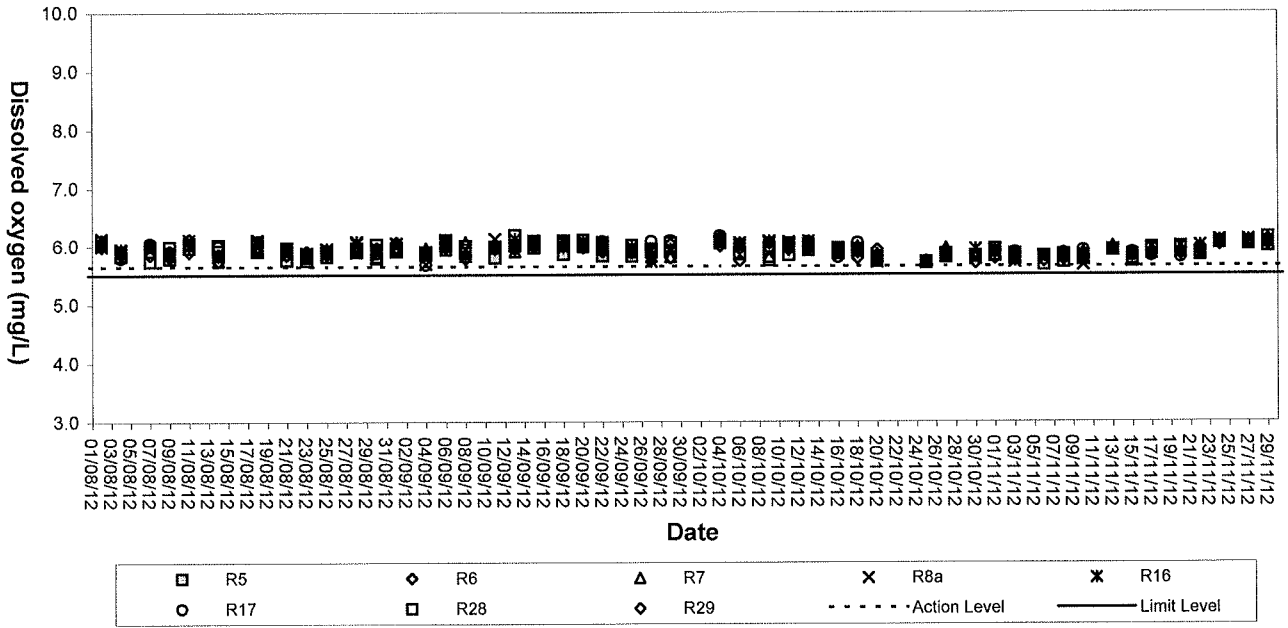


△ R15

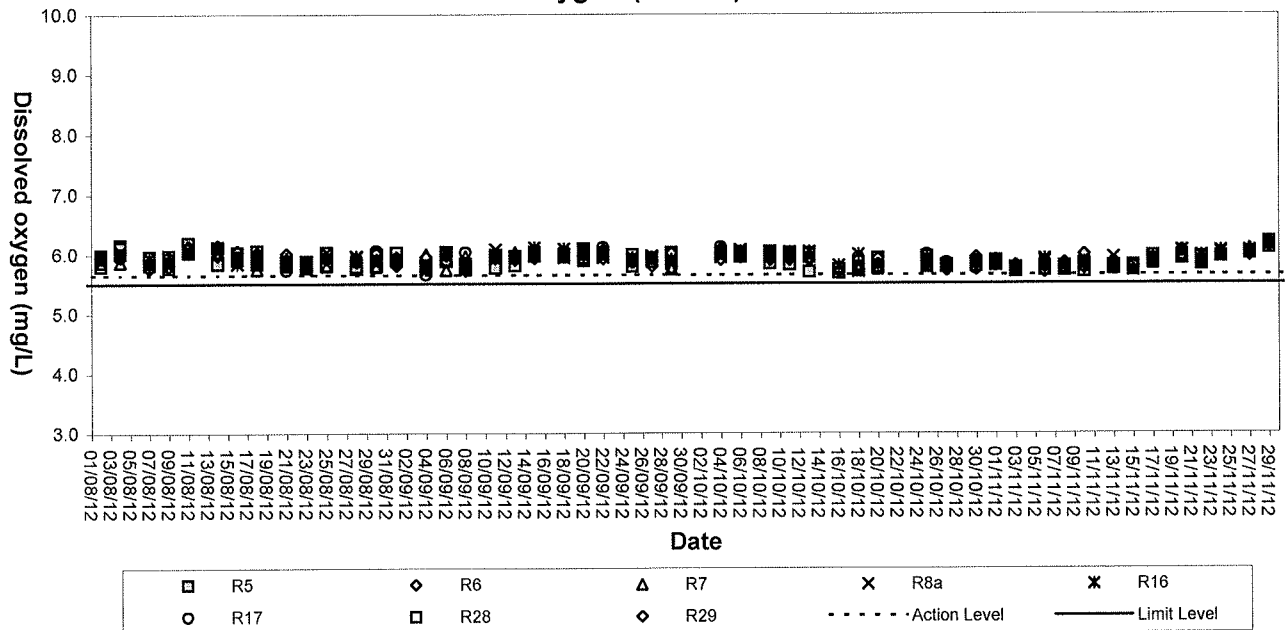
— Action and Limit Level



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

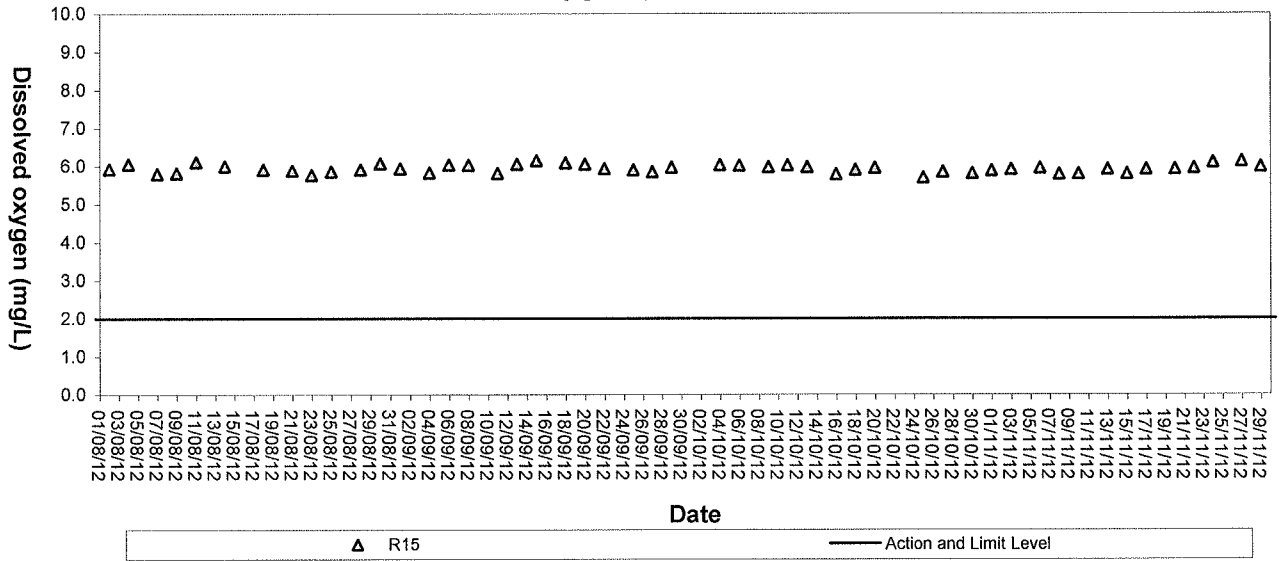


### Dissolved Oxygen (Middle) at Mid-Ebb Tide





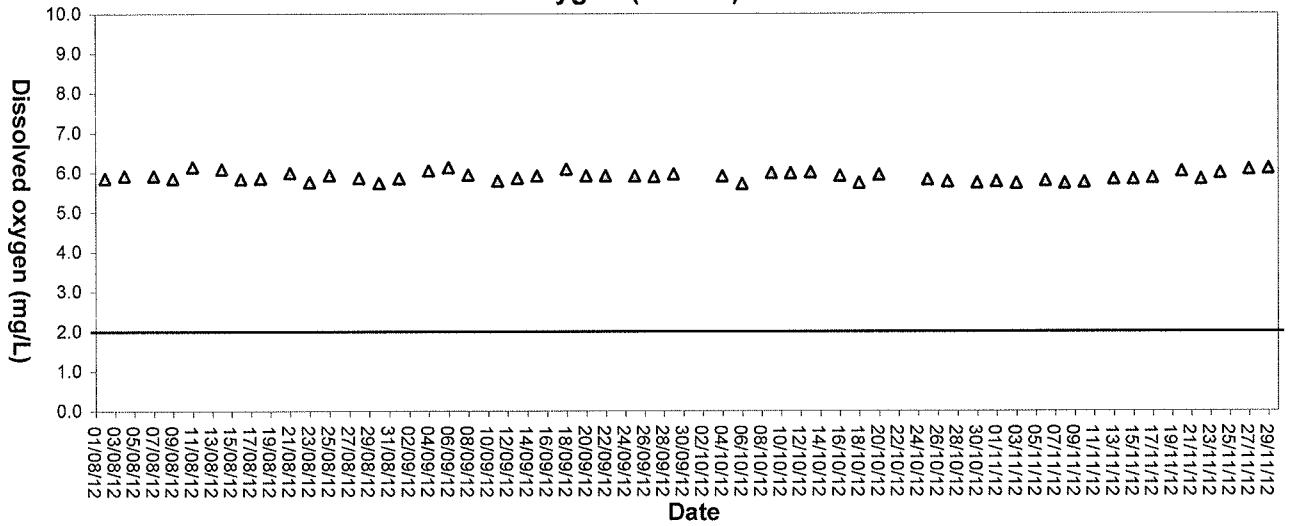
### Dissolved Oxygen (Middle) at Mid-Flood Tide



△ R15

— Action and Limit Level

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



△ R15

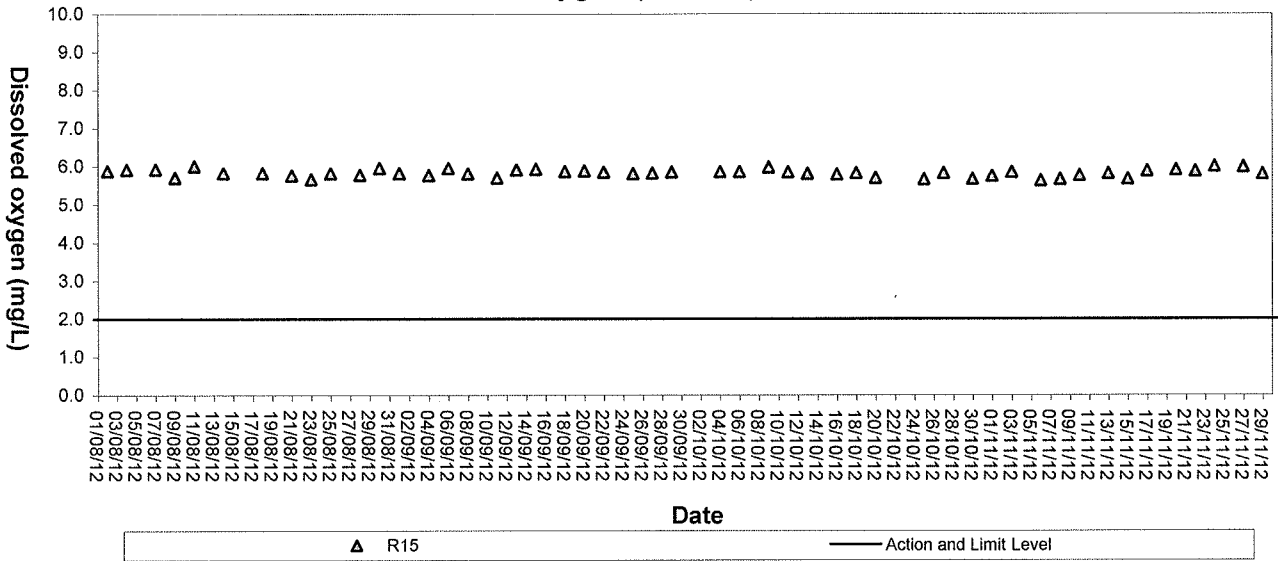
— Action and Limit Level



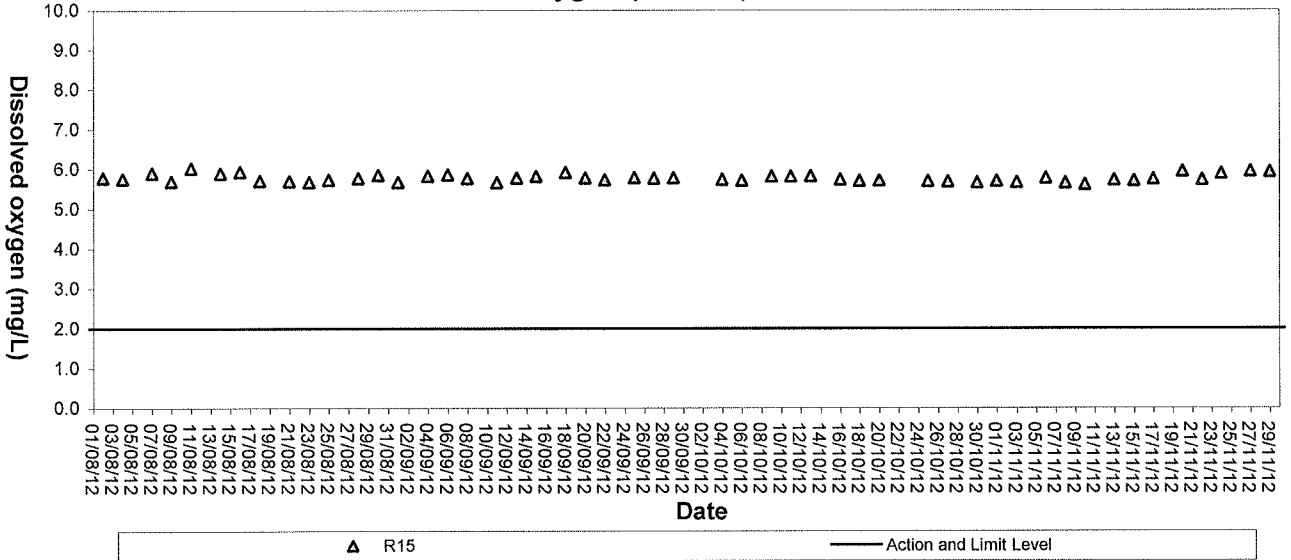




### Dissolved Oxygen (Bottom) at Mid-Flood Tide

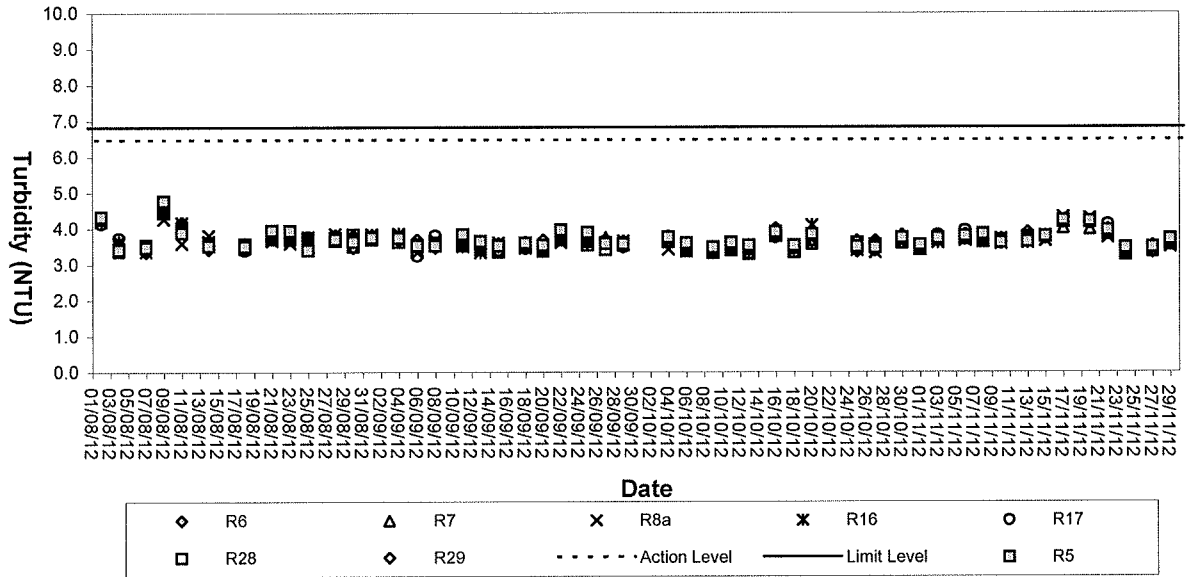


### Dissolved Oxygen (Bottom) at Mid-Ebb Tide

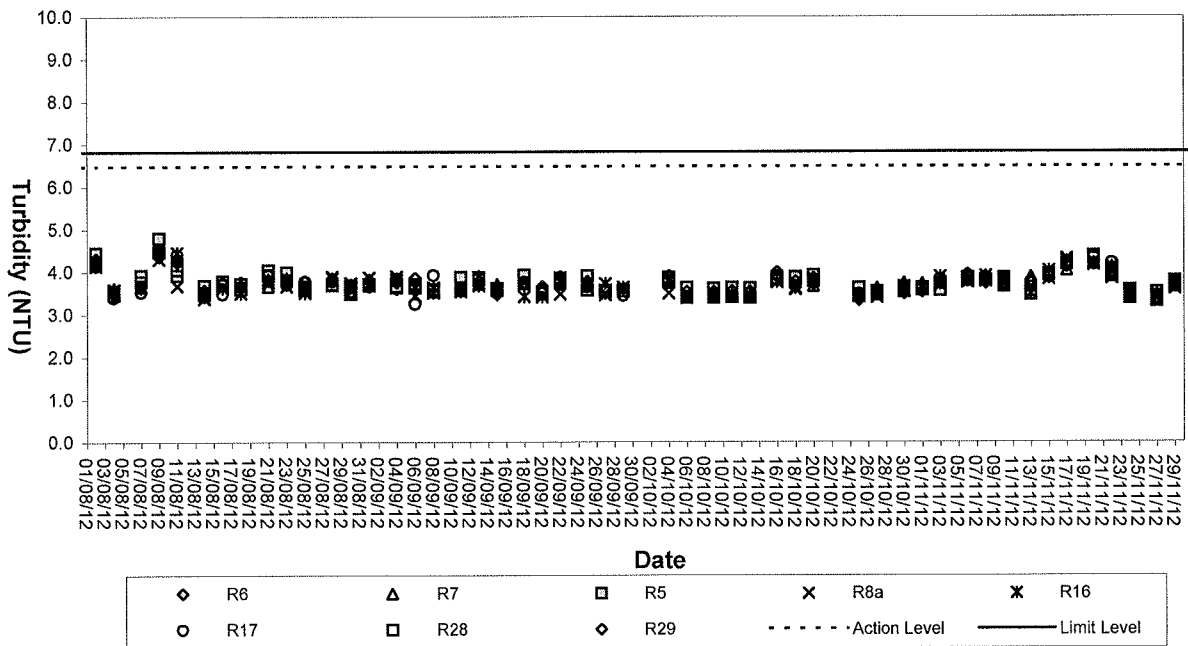




**Turbidity (Depth-average) at Mid-Flood Tide**

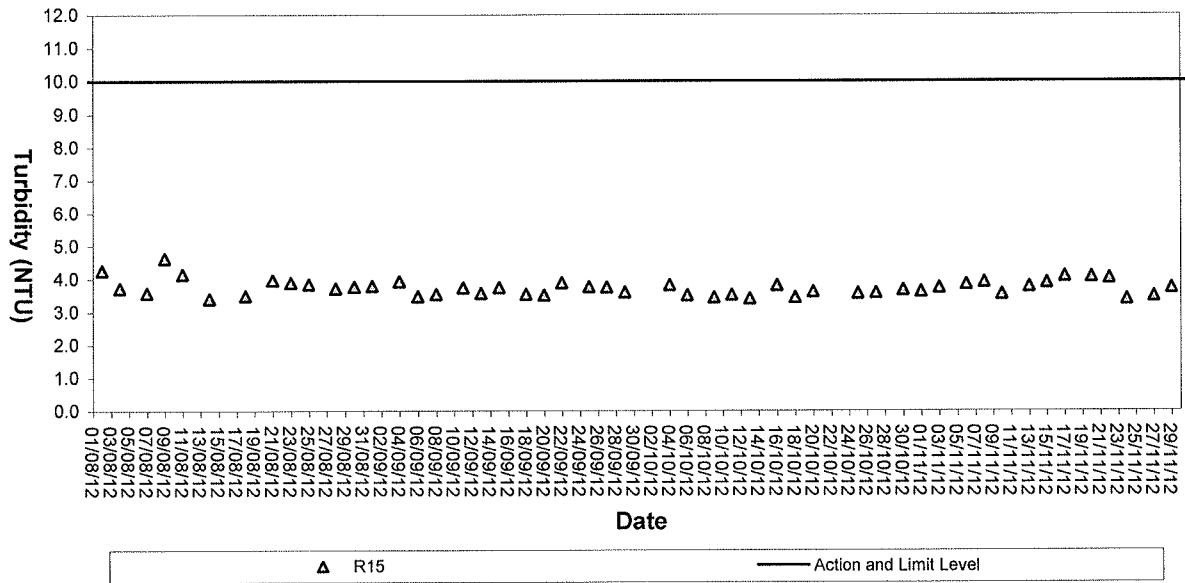


**Turbidity (Depth-average) at Mid-Ebb Tide**

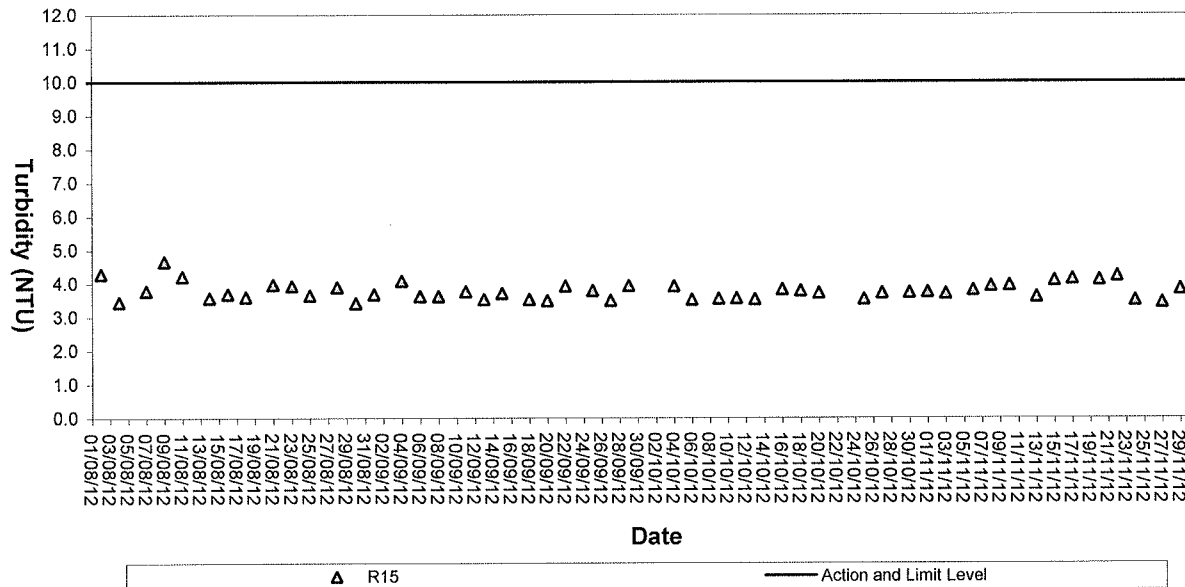




### Turbidity (Depth-average) of R15 at Mid-Flood Tide

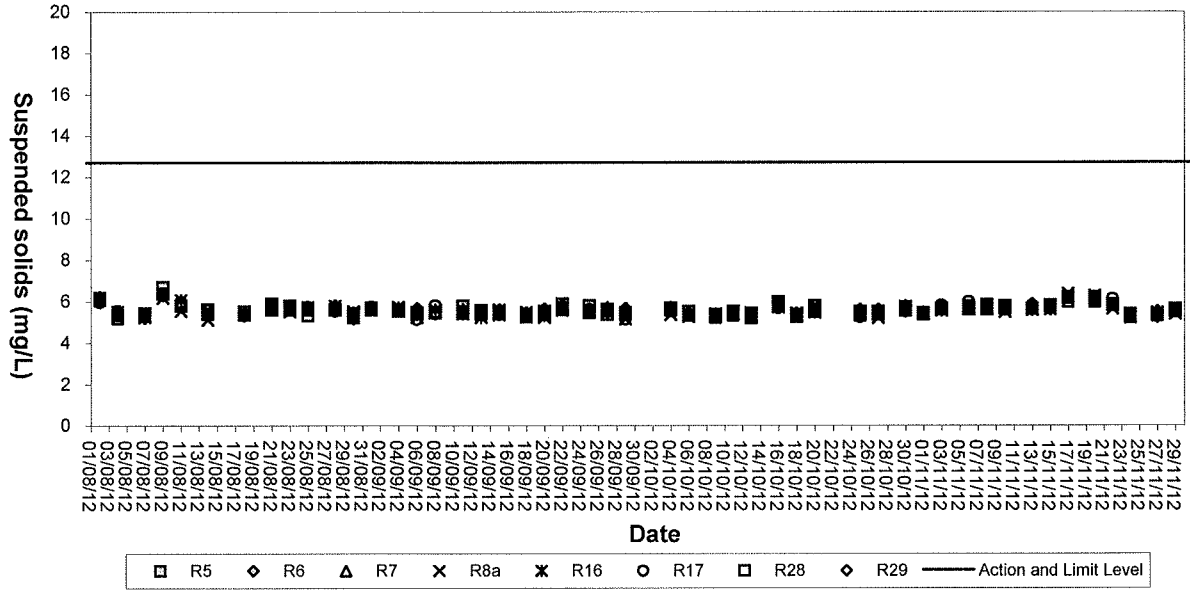


### Turbidity (Depth-average) of R15 at Mid-Ebb Tide

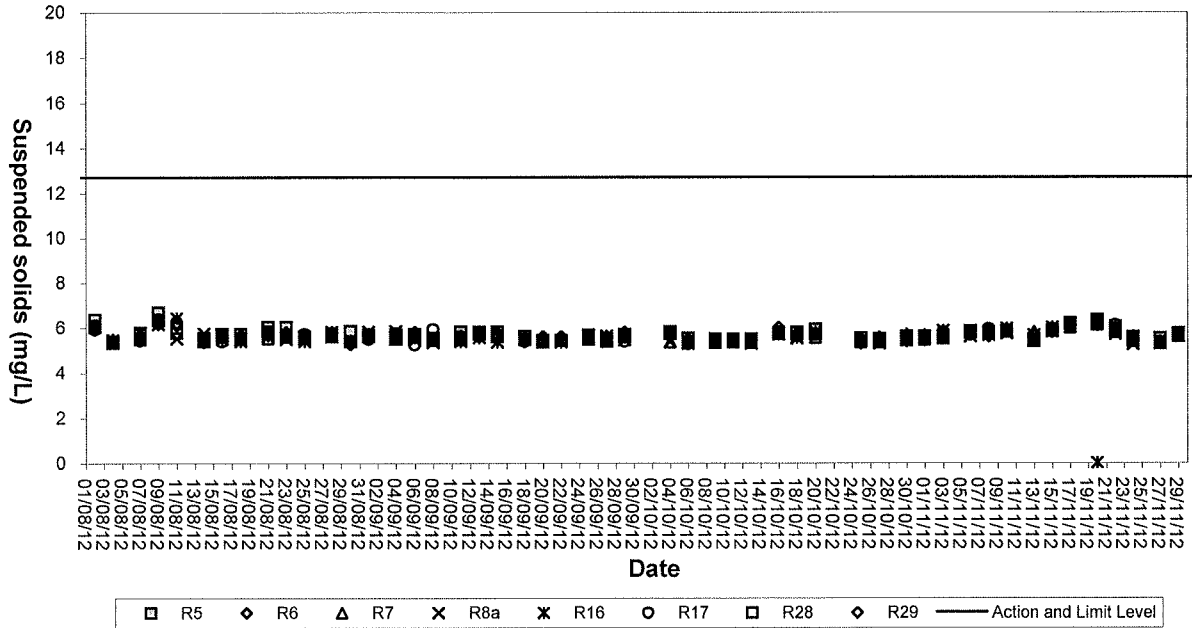




### Suspended solids (Depth-average) at Mid-Flood Tide

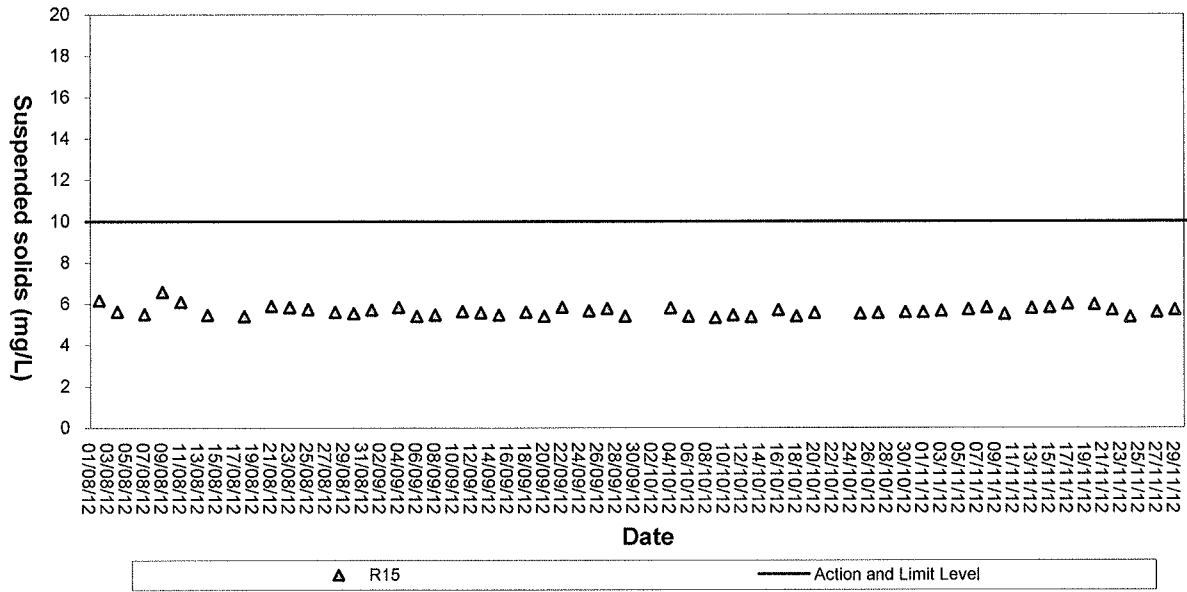


### Suspended Solids (Depth-average) at Mid-Ebb Tide

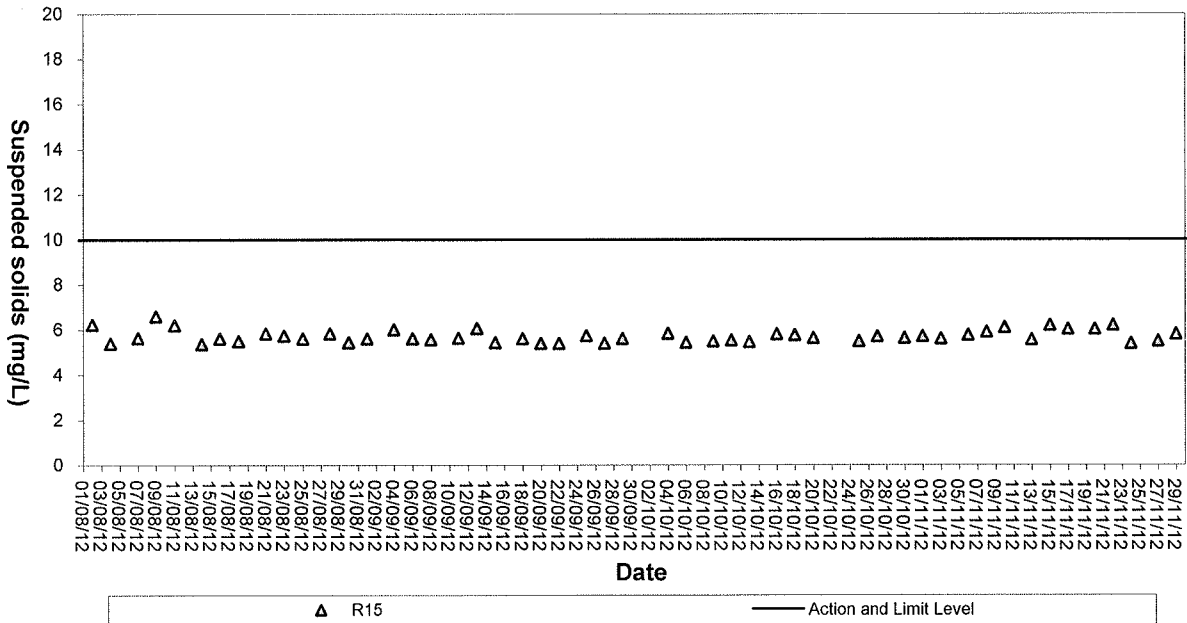




### Suspended solids (Depth-average) of R15 at Mid-Flood Tide



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





## **Appendix C4**

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

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

Sampling Date	QC Sample	Sample Duplicate		Sample Spike	
	% Recovery *	Sample ID	% Error #	Sample ID	% Recovery ©
01/11/12	101.4	R5FS	0.0	R8FS	107.7
	105.5	R8FM	0.0	R17FM	97.9
	105.6	R17FB	8.7	C1FB	96.1
	98.1	C2FS	0.0	C4FB	98.1
	103.7	R5ES	0.0	R8ES	106.0
	92.9	R8EM	8.7	R17EM	102.1
	104.2	R17EB	0.0	C1EB	104.2
	103.3	C2ES	0.0	C4EB	100.0
03/11/12	107.2	R5FS	0.0	R8FS	93.9
	102.6	R8FM	8.7	R17FM	104.1
	100.4	R17FB	0.0	C1FB	94.0
	97.7	C2FS	0.0	C4FB	100.0
	106.6	R5ES	9.5	R8ES	94.3
	94.5	R8EM	0.0	R17EM	103.8
	94.9	R17EB	0.0	C1EB	105.9
	105.3	C2ES	0.0	C4EB	98.1
06/11/12	103.8	R5FS	0.0	R8FS	103.8
	103.8	R8FM	0.0	R17FM	108.2
	99.4	R17FB	8.7	C1FB	104.2
	99.6	C2FS	0.0	C4FB	100.0
	107.4	R5ES	8.0	R8ES	90.6
	106.3	R8EM	0.0	R17EM	98.0
	106.7	R17EB	0.0	C1EB	106.0
	104.5	C2ES	0.0	C4EB	100.0
08/11/12	99.0	R5FS	0.0	R8FS	98.0
	98.6	R8FM	8.7	R17FM	106.1
	100.2	R17FB	0.0	C1FB	96.1
	96.2	C2FS	0.0	C4FB	95.9
	93.8	R5ES	8.7	R8ES	96.0
	96.5	R8EM	0.0	R17EM	100.0
	94.0	R17EB	8.0	C1EB	96.2
	105.4	C2ES	0.0	C4EB	106.3
10/11/12	96.0	R5FS	0.0	R8FS	95.7
	92.4	R8FM	8.7	R17FM	97.9
	95.1	R17FB	0.0	C1FB	106.4
	95.0	C2FS	8.7	C4FB	97.9
	92.2	R5ES	0.0	R8ES	93.8
	107.5	R8EM	8.7	R17EM	96.1
	102.9	R17EB	0.0	C1EB	97.9
	96.1	C2ES	8.7	C4EB	95.8
13/11/12	93.6	R5FS	0.0	R8FS	102.0
	93.6	R8FM	8.7	R17FM	108.2
	94.4	R17FB	0.0	C1FB	104.0
	106.4	C2FS	0.0	C4FB	101.9
	93.7	R5ES	0.0	R8ES	91.8
	104.0	R8EM	8.7	R17EM	102.1
	104.0	R17EB	8.7	C1EB	94.0
	95.0	C2ES	0.0	C4EB	92.0

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 @
15/11/12	93.0	R5FS	0.0	R8FS	107.7
	97.4	R8FM	0.0	R17FM	103.9
	97.9	R17FB	0.0	C1FB	103.8
	97.2	C2FS	0.0	C4FB	100.0
	105.4	R5ES	0.0	R8ES	105.7
	104.8	R8EM	8.7	R17EM	94.1
	96.6	R17EB	0.0	C1EB	94.1
	94.9	C2ES	8.0	C4EB	92.3
17/11/12	99.2	R5FS	0.0	R8FS	91.8
	98.1	R8FM	8.0	R17FM	102.0
	101.3	R17FB	8.0	C1FB	95.9
	98.8	C2FS	0.0	C4FB	104.2
	106.4	R5ES	0.0	R8ES	94.0
	104.8	R8EM	0.0	R17EM	102.1
	103.6	R17EB	0.0	C1EB	92.5
	98.6	C2ES	0.0	C4EB	107.7
20/11/12	107.2	R5FS	8.7	R8FS	111.0
	100.4	R8FM	0.0	R17FM	107.1
	94.0	R17FB	0.0	C1FB	106.0
	104.3	C2FS	0.0	C4FB	100.0
	99.2	R5ES	8.0	R8ES	97.9
	92.6	R8EM	0.0	R17EM	96.0
	105.3	R17EB	0.0	C1EB	107.5
	92.6	C2ES	0.0	C4EB	107.7
22/11/12	102.9	R5FS	0.0	R8FS	102.0
	103.1	R8FM	8.7	R17FM	93.9
	96.7	R17FB	0.0	C1FB	107.7
	98.2	C2FS	0.0	C4FB	97.9
	103.2	R5ES	0.0	R8ES	96.1
	98.8	R8EM	0.0	R17EM	93.8
	108.0	R17EB	8.0	C1EB	97.9
	106.0	C2ES	0.0	C4EB	104.1
24/11/12	97.0	R5FS	0.0	R8FS	93.8
	96.3	R8FM	0.0	R17FM	96.1
	103.5	R17FB	9.5	C1FB	100.0
	96.4	C2FS	0.0	C4FB	105.7
	92.3	R5ES	0.0	R8ES	96.1
	99.2	R8EM	0.0	R17EM	91.7
	98.5	R17EB	0.0	C1EB	95.7
	103.7	C2ES	0.0	C4EB	106.0
27/11/12	99.6	R5FS	0.0	R8FS	94.0
	105.5	R8FM	0.0	R17FM	93.9
	95.4	R17FB	8.7	C1FB	102.1
	104.1	C2FS	0.0	C4FB	104.0
	97.0	R5ES	0.0	R8ES	107.8
	106.0	R8EM	0.0	R17EM	102.0
	105.1	R17EB	8.7	C1EB	95.9
	101.6	C2ES	0.0	C4EB	98.0

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 @
29/11/12	96.9	R5FS	8.7	R8FS	106.0
	95.1	R8FM	0.0	R17FM	93.6
	95.1	R17FB	8.0	C1FB	101.9
	96.0	C2FS	0.0	C4FB	93.8
	96.9	R5ES	0.0	R8ES	106.0
	100.0	R8EM	0.0	R17EM	98.0
	104.2	R17EB	8.7	C1EB	96.1
	105.2	C2ES	0.0	C4EB	104.2

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



## **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>				
<b>Exceedance for one sample</b>	<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>
<b>Exceedance for two or more consecutive samples</b>	<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>				
<b>Exceedance for one sample</b>	<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>
<b>Exceedance for two or more consecutive samples</b>	<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**

Act ID	Description	Orig Dur	Early		Late		2011												2012			2013						
			Start	Finish	Start	Finish	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
<b>General Information</b>		1212	07SEP09 A	31DEC12	07SEP09 A	31DEC12																						
<b>Key Dates</b>																												
KD-1010	Contract Commencement Date	0	07SEP09 A	31DEC12 *	07SEP09 A	31DEC12																						
KD-1020	Contract Completion	0	07SEP09 A	31DEC12 *	07SEP09 A	31DEC12																						
KD-1030	Works Period of Section 1 Works (791Days)	830	07SEP09 A	06NOV11	07SEP09 A	15DEC11																						
KD-1040	Works Period of Section 2 Works (426Days)	449	07SEP09 A	06NOV10	07SEP09 A	29NOV10																						
KD-1050	Works Period of Section 4 Works (549Days)	576	07SEP09 A	09MAR11	07SEP09 A	05APR11																						
KD-1060	Works Period of Section 5 Works (1156Days)	1212	07SEP09 A	31DEC12	07SEP09 A	05NOV12																						
<b>Preliminaries</b>																												
B1-1000	Mobilization	90	07SEP09 A	06DEC09 A	07SEP09 A	06DEC09 A																						
B1-1110	Site Office	60	16NOV09 A	16JAN10	16NOV09 A	16JAN10																						
B1-1120	Maintenance/Service of Preliminary Items	990	17JAN10	02OCT12	17JAN10	02OCT12																						
B1-1130	Clearance & Demobilisation	90	03OCT12	31DEC12	03OCT12	31DEC12																						
B1-1140	Environmental Monitoring	1100	28DEC09 A	30DEC12	28DEC09 A	31DEC12																						
B1-1150	Material Approval For Water Mains & Accessories	100	07SEP09 A	18FEB10	07SEP09 A	04JUL10																						
B1-1160	Material Procurement & Delivery Start	60	28DEC09 A	01FEB10	28DEC09 A	03JUN10																						
B1-1160B	Delivery of Valve, Actuators, Flow Meter & E&M	400	14JUN10	18JUL11 *	14JUN10	18JUL11 *																						
B1-1170	CCTV & Monitoring Of Existing DSD Drainage	610	18JAN10	19SEP11	15APR10	15DEC11																						
B1-1180	Monitoring of HyD Structure	610	06MAR10	05NOV11	15APR10	15DEC11																						
<b>Section 1</b>																												
<b>Land Works</b>																												
<b>General</b>																												
S1-1010	Approval & Consent - XP, TTA, MS & Temp Works.	180	07SEP09 A	05MAR10	07SEP09 A	29APR10																						
S1-1020	Trial Pit & Utilities Detection (Except E2 & K)	120	01DEC09 A	16MAR10	01DEC09 A	25APR10																						
S1-1030	Portion H2 Cycle Track & Footpath Proposal	40	07SEP09 A	08OCT09 A	07SEP09 A	08OCT09 A																						
S1-1040	Portion H2 Diversion Route For Cycle Track	60	07OCT09 A	28NOV09 A	07OCT09 A	28NOV09 A																						
S1-1050	Portion H2 Submission For Hoarding Mural Design	90	07SEP09 A	17FEB10	07SEP09 A	01DEC12																						
S1-1060	Portion H2 Set Up For Hoarding Approved Design	30	18FEB10	19MAR10	02DEC12	31DEC12																						
S1-1080	Initial & Utilities Survey (Except E2 & K)	120	05OCT09 A	04MAR10	05OCT09 A	14APR10																						
S1-2010	Final Pipe Testing & Reinstatement	45	16FEB12	31MAR12	01NOV11	15DEC11																						
S1-2020	Completion of Section 1 Works	0		15DEC11 *		15DEC11 *																						
<b>Portion C1</b>																												
S1-3010	MTRCL Consent For Works Commencement	180	07SEP09 A	05MAR10	07SEP09 A	14APR10																						
S1-3020	MTRCL Structure Stability Monitoring	270	28MAY10	21FEB11	05JAN11	01OCT11																						
S1-3030	Portion C1 Pipe Works CH195.0-237.5 (O)	90	24JUN10	21SEP10	19MAR11	16JUN11																						
S1-3030A10	Preparation & Submission of Risk Assessment	40	22FEB10 *	02APR10	02NOV10	11DEC10																						
S1-3030A20	Preparation & Submission of Method Statement	40	22FEB10	02APR10	02NOV10	11DEC10																						
S1-3030A30	Preparation & Submission of Temp. Design	40	22FEB10	02APR10	02NOV10	11DEC10																						
S1-3030B10	Excavation & Shoring	80	28MAY10	15AUG10	12DEC10	01MAR11																						
S1-3030B20	Pipe Laying & Welding	50	17JUL10	04SEP10	31JAN11	21MAR11																						
S1-3030B30	Backfilling & Reinstatement	10	05SEP10	14SEP10	22MAR11	31MAR11																						
S1-3040	Portion C1 Trough Construction CH237.5-290.0	60	06MAR10	04MAY10	15APR10	13JUN10																						
S1-3040A20	Preparation & Submission Of Risk Assessment	28	17JUL10	15AUG10	15MAR11	11APR11																						
S1-3040A30	Preparation & Submission Of Method Statement	28	17JUL10	13AUG10	15MAR11	11APR11																						
S1-3040A40	Preparation & Submission Of Temp. Works	28	17JUL10	13AUG10	15MAR11	11APR11																						
S1-3040B10	Installation Of Settlement Marker	3	31JUL10	02AUG10	29MAR11	31MAR11																						
S1-3040B20	Excavation & Shoring For Pipe Trough (Stage 1)	15	15SEP10	29SEP10	01APR11	15APR11																						

Start date 07SEP09  
Finish date 31DEC12  
Run date 11NOV12  
Page number 1A

**Wo Hing - Penta-Ocean Joint Venture**  
c Primavera Systems, Inc.

3 Months Rolling Program (Oct 2012)

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







Act ID	Description	Orig Dur	Early Start	Early Finish	Late Start	Late Finish	2011	2012	2013						
							JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
S1-4750	Portion E1C DN800 SWM Works CH52.0-90.0 (O)	80	01FEB11	21APR11	30JUL11	17OCT11									
S1-4750B10	Portion E1C DN800 SWM Works CH52.0-90.0 (UC)	80	05MAR11	23MAY11	30JUL11	17OCT11									
S1-4760	Area E1C Portional Pipe Testing	14	22APR11	05MAY11	18OCT11	31OCT11									
S1-4760B10	Area E1C Portional Pipe Testing	14	24MAY11	06JUN11	18OCT11	31OCT11									
Portion E2															
S1-5010	Portion E2 Marine Dept Advance Notice	90	07OCT09	20FEB10	07OCT09	20FEB10									
S1-5020	WHTCL Consent For Works Within Tunnel Area	120	07SEP09	20FEB10	07SEP09	20FEB10									
S1-5030	Chamber Modification - 180 Days of Portion E2	65	07JAN10	14MAR10	07JAN10	14MAR10									
S1-5040	Portion E2 Trial Run	80	09NOV09	14NOV09	09NOV09	14NOV09									
S1-5050	Portion E2 Trial Pit & Utilities Detection	15	21FEB10	07MAR10	21FEB10	07MAR10									
S1-5060	Portion E2 Initial & Utilities Survey	15	21FEB10	07MAR10	21FEB10	07MAR10									
S1-5070	Portion E2 Pipe Works CH698.5-752.5 (UC)	80	27MAR11	14JUN11	30JUN11	17SEP11									
S1-5070B10	Portion E2 Pipe Works CH698.5-752.5 (UC)	80	19OCT11	02JAN12	30JUN11	17SEP11									
S1-5080	Portion E2 Pipe Works CH752.5-790.5 (O)	30	16JUL11	14AUG11	18SEP11	17OCT11									
S1-5080A	Portion E2 Pipe Works CH752.5-790.5 (O)	30	03JAN12	01FEB12	18SEP11	17OCT11									
S1-5090A10	Preparation & Submission of Risk Assessment	70	26JUL10	03OCT10	28SEP10	06DEC10									
S1-5090A20	Preparation & Submission of Method Statement	60	08FEB10	06APR10	03SEP10	01NOV10									
S1-5090A30	Preparation & Submission of Temp. Design	60	06FEB10	06APR10	03SEP10	01NOV10									
S1-5090B10	Excavation & Shoring for Jacking Pit (A3)	40	07APR10	16MAY10	02NOV10	11DEC10									
S1-5090B20	Jacking Pit Set-up (TL-C)	10	19AUG10	28AUG10	12DEC10	21DEC10									
S1-5090C10	Sleeve Pipe Installation by Jacking	20	29AUG10	17SEP10	22DEC10	10JAN11									
S1-5095	TL-C FWM Pipe Installation CH790.5-977.7	40	12MAY11	20JUN11	15JUL11	23AUG11									
S1-5095B10	Pipe Laying & Connection	50	02DEC10	20JAN11	07MAR11	25APR11									
S1-5095B20	Sleeve Pipe Grouting	10	21JAN11	30JAN11	28APR11	09MAY11									
S1-5095B30	Backfilling & Reinstatement	30	31JAN11	01MAR11	06MAY11	04JUN11									
S1-5100	Portion E2 Pipe Works CH877.7-995.5 (O)	25	21JUN11	15JUL11	24AUG11	17SEP11									
S1-5100A	Portion E2 Pipe Works CH877.7-995.5 (O)	25	02MAR11	26MAR11	05JUN11	29JUN11									
S1-5110	TL-E SWM Sleeve Jacking CH90.0-225.5 (A1-A4)	120	04OCT10	31JAN11	07DEC10	05APR11									
S1-5110A10	Preparation & Submission of Risk Assessment	60	06FEB10	06APR10	12MAY10	10JUL10									
S1-5110A20	Preparation & Submission of Method Statement	60	06FEB10	06APR10	12MAY10	10JUL10									
S1-5110A30	Preparation & Submission of Temp. Design	60	06FEB10	06APR10	12MAY10	10JUL10									
S1-5110B10	Excavation & Shoring for Jacking Pit (A4)	50	07APR10	26MAY10	11JUL10	29AUG10									
S1-5110B20	Jacking Pit Set-up (TL-E)	30	30MAY10	28JUN10	02SEP10	01OCT10									
S1-5110B30	Excavation & Shoring for Receiving Pit (A1)	42	29JUN10	09AUG10	02OCT10	12NOV10									
S1-5110C10	Sleeve Pipe Installation by Jacking	9	10AUG10	18AUG10	13NOV10	21NOV10									
S1-5115	TL-E DN800 SWM Pipe Installation CH90.0-225.5	25	23MAR11	16APR11	26MAY11	19JUN11									
S1-5115B10	Pipe Laying & Connection	30	08OCT10	06NOV10	11JAN11	09FEB11									
S1-5115B20	Sleeve Pipe Grouting	10	07NOV10	16NOV10	01APR11	10APR11									
S1-5115B30	Backfilling & Reinstatement of Jacking Pit	30	17NOV10	16DEC10	11APR11	10MAY11									
S1-5120	Portion E2 DN800 SWM Works CH225.5-252.0 (O)	25	17APR11	11MAY11	20JUN11	14JUL11									
S1-5120A	Portion E2 DN800 SWM Works CH225.5-252.0 (O)	25	17DEC10	10JAN11	11MAY11	04JUN11									
S1-5130	TL-F SWM Sleeve Jacking CH252.0-432.0 (A1-A3)	142	08MAR10	25JUL10	08MAR10	25JUL10									
S1-5130A10	Preparation & Submission of Risk Assessment	60	06FEB10	06APR10	08DEC10	05FEB11									
S1-5130A20	Preparation & Submission of Method Statement	60	06FEB10	06APR10	08DEC10	05FEB11									
S1-5130A30	Preparation & Submission of Temp. Design	60	06FEB10	06APR10	08DEC10	05FEB11									
S1-5130B10	Jacking Pit (A3) Modification & Set-up (TL-F)	14	18SEP10	01OCT10	06FEB11	19FEB11									
S1-5130C10	Sleeve Pipe Installation by Jacking	30	18SEP10	17OCT10	11JAN11	09FEB11									
S1-5135	TL-F DN800 SWM Pipe Installation CH252.0-432.0	50	01FEB11	22MAR11	06APR11	25MAY11									
S1-5135B10	Pipe Laying & Connection	25	07NOV10	01DEC10	10FEB11	06MAR11									
S1-5135B20	Sleeve Pipe Grouting	10	02DEC10	11DEC10	09AUG11	18AUG11									

Start date 07SEP09  
Finish date 31DEC12  
Run date 11NOV12  
Page number 4A

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

**3 Months Rolling Program (Oct 2012)**

Wo Hing - Penta-Ocean Joint Venture

c.Primavera Systems, Inc.











東業德勤測試顧問有限公司  
ETS-TESTCONSULT LIMITED

## **Appendix F**

### **ET Weekly Site Inspection Records**



**WEEKLY SITE INSPECTION CHECKLIST**

Inspection Date	06 November 2012	Inspected by	RE	IEC	Contractor	ET
Time	09:30	Name	<i>[Signature]</i>		<i>[Signature]</i>	<i>C.L. Lam</i>

Weather : Sunny / Fine / Cloudy / Drizzle / Rain / Storm / Hazy  
 Condition : Calm / Light Breeze / Strong  
 Wind : Temperature : 24°C  
 Humidity : High / Moderate / Low

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	Not Obs	
<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.	✓			



	Implementation Stages*				Remark
	Yes	No	Not Obs	N/A	
<b>Environmental Checklist</b>					
<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	√				

		Implementation Stages*			Remark
		Yes	No	Not Obs	
<b>Environmental Checklist</b>					
<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, 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 WCs	√			
▪	Portable chemical toilets should be used to handle construction workforce sewage prior to discharge to the existing trunk sewer. Sufficient numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers. The Contractor shall also be responsible for waste disposal and maintenance practices.	√			
▪	Construction site runoff should be prevented or minimised in accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the Victoria Harbour WCZ under the TM-DSS.	√			
▪	Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	√			
▪	An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process.			√	
▪	The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfill toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains			√	
<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.	√			



Implementation Stages*		Remark	
		Yes	No
<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	√		

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 bunded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	√			

Contract No. 9WSD/08

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




東業德測測試顧問有限公司  
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**Summary of the Weekly Site Inspection:**

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

Remark

No new item was noticed during the site audit on 06 November 2012.

Inspected by	Name	Signature	Date
	C. L. Lau		06 November 2012

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

**WEEKLY SITE INSPECTION CHECKLIST**

Inspection Date	16/11/12	Inspected by	PRE	IEC	Contractor	ET
Time	14:30	Name	W=1082		Jing	Wda lan

Weather Condition Wind : Sunny / Fine / cloudy / Drizzle / Rain / Storm / Hazy  
 : Calm / Light / Breeze / Strong  
 Temperature : 22°C  
 Humidity : High / Moderate / Low

	Implementation Stages*			Remark
	Yes	No	Not Obs N/A	
<b>Environmental Checklist</b>				
<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 hardcore.			✓	
▪ Every main haul road should be sealed with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.	✓			
▪ The portion of road leading only to a construction site that is within 30m of a designated vehicle entrance or exit should be kept clear of dusty materials.	✓			
▪ All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet.	✓			
▪ Vehicle speed should be limited to 10 kph except on completed access roads.	✓			
▪ Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.			✓	
▪ The public road around the site entrance should be kept clean and free from dust.	✓			
▪ Vehicle and equipment should be switched off while not in use.	✓			
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	✓			
▪ Open burning should be prohibited.	✓			



Environmental Checklist		Implementation Stages*			Remark
		Yes	No	Not Obs	
<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				✓
▪	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	✓			





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

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 WQZs</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 194). All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the Victoria Harbour WQZ under the TM-DSS.</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	Not Obs
<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	√		√
Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the EPD	√		√
Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation.	√		√
<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 banded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	√			

**Summary of the Weekly Site Inspection:**

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

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Inspected by	Name	Signature	Date
	Linda Law		16 November 2012

Contract No. 9/WSD/08

Laying of Western Cross Harbour Main and Associated Land Mains

From West Kowloon to Sai Ying Pun



專業檢測顧問有限公司  
ETS-TESTCONSULT LIMITED

**Photos**

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**WEEKLY SITE INSPECTION CHECKLIST**

Inspection Date	20 November 2012	Inspected by	RE	IEC	Contractor	ET
Time	09:30	Name	Wai Yip 20/11		ENC	C.H. Lau

Weather : Sunny / Fine / Cloudy / Drizzle / Rain / Storm / Hazy  
 Condition : Calm / Light / Breeze / Strong  
 Wind : High / Moderate / Low  
 Temperature : 22°C  
 Humidity : High / Moderate / Low

**Environmental Checklist**

**Fugitive Dust Emission**

Implementation Stages*	Remark		
	Yes	No	Not Obs
<ul style="list-style-type: none"> <li>Dust control / mitigation measures shall be provided to prevent dust nuisance.</li> </ul>	✓		
<ul style="list-style-type: none"> <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> </ul>	✓		
<ul style="list-style-type: none"> <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> </ul>	✓		
<ul style="list-style-type: none"> <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> </ul>	✓		
<ul style="list-style-type: none"> <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> </ul>	✓		
<ul style="list-style-type: none"> <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> </ul>			✓
<ul style="list-style-type: none"> <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> </ul>	✓		
<ul style="list-style-type: none"> <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> </ul>	✓		
<ul style="list-style-type: none"> <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> </ul>	✓		
<ul style="list-style-type: none"> <li>Vehicle speed should be limited to 10 kph except on completed access roads.</li> </ul>	✓		
<ul style="list-style-type: none"> <li>Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.</li> </ul>			✓
<ul style="list-style-type: none"> <li>The public road around the site entrance should be kept clean and free from dust.</li> </ul>	✓		
<ul style="list-style-type: none"> <li>Vehicle and equipment should be switched off while not in use.</li> </ul>	✓		
<ul style="list-style-type: none"> <li>All plant and equipment should be well maintained e.g. without black smoke emission.</li> </ul>	✓		
<ul style="list-style-type: none"> <li>Open burning should be prohibited.</li> </ul>	✓		



		Implementation Stages*			Remark
		Yes	No	Not Obs	
<b>Environmental Checklist</b>					
<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, 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.	√			
•	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	
<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>				
<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>	√		√	<p>No dredging work was observed.</p> <p>No dredging work was observed.</p>
<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>▪ Oil leakage from machinery, vehicle and plant should be prevented.</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>	√		√	

**Summary of the Weekly Site Inspection:**

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

**Remark**

No new item was noticed during the site audit on 20 November 2012.

Inspected by	Name	Signature	Date
	C. L. Lau		20 November 2012





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				
▪ 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	✓			
				No dredging work was observed.
				No dredging work was observed.
			✓	No dredging work was observed.





Implementation Stages*	Remark	
	Yes	No
<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.
	✓	Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the EPD.
	✓	Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation.
<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 bunded and all the polluted surface run-off collected within this area should be diverted into wastewater treatment system.	√		




**Summary of the Weekly Site Inspection:**

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

Remark

No new item was noticed during the site audit on 28 November 2012.

The Contractor was reminded to add sand bags near the sea wall in Portion J to avoid water to escape into the sea.

Name	Signature	Date
C. L. Lau		28 November 2012

Inspected by



## **Appendix G**

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



## Environmental Mitigation Implementation Schedule

		Location	Implementation Status				
			Implemented	Partially implemented	Not implemented	Not Applicable	
<b>Air Quality</b>							
	Dust control / mitigation measures shall be provided to prevent dust nuisance.	All areas	√				
	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.	All areas	√				
	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.	All areas	√				
	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	All areas	√				
	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.	All areas	√				
	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.	Site Egress					√
	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.	All haul roads	√				
	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 areas	√				
	All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain dusty material wet.	All areas	√				
	Vehicle speed should be limited to 10 kph except on completed access roads.	All areas	√				
	Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.	All areas	√				
	The public road around the site entrance should be kept clean and free from dust.	All areas	√				
	Vehicle and equipment should be switched off while not in use.	All areas	√				
	All plant and equipment should be well maintained e.g. without black smoke emission.	All areas	√				
	Open burning should be prohibited.	All areas	√				
<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.	All areas	√				
	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.	All areas	√				
	Noisy equipment and mobile plant shall always be site away from NSRs.	All areas	√				
	Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	All areas	√				
	Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	All areas	√				
	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.	All areas	√				
	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.	All areas	√				



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



	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
<b>Environmental Protection Measures</b>					
<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				✓
	All areas				✓
	All areas	✓			
	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	✓			
	All areas	✓			
	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				✓
	Marine				✓
	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	✓			





## **Appendix H**

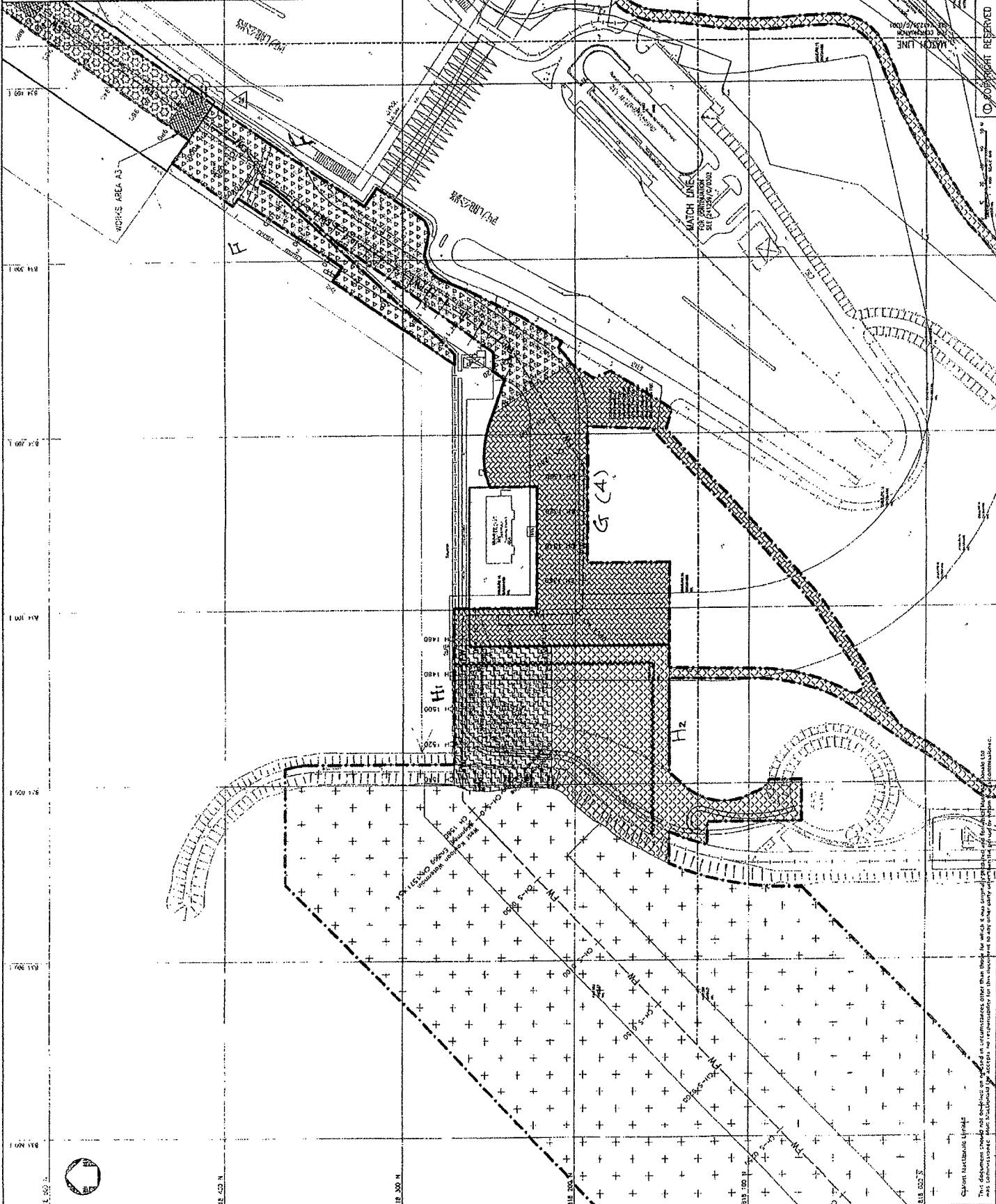
### **Site General Layout plan**





NOTES

- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 241239/G/0301 AND 241239/G/0302.
- THE LEGEND SHALL REFER TO DRAWING NO. 241239/G/0301



03	APR 09	✓	ISSUE APPROVAL NO. 4	KL	SYC
01	MAR 09	✓	ISSUE APPROVAL NO. 3	KL	SYC
00	DEC 08	✓	ISSUE FOR TENDER	KL	SYC
02	DEC 08	✓	ISSUE FOR TENDER	KL	SYC
04	DEC 08	✓	ISSUE FOR TENDER	KL	SYC

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

9/WSD/08

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

POSSESSION OF SITE  
 (SHEET 2 OF 5)

REVISION	NO.	DATE	BY	CHKD
1	1	21/03/09	KL	SYC
2	2	21/03/09	KL	SYC
3	3	21/03/09	KL	SYC
4	4	21/03/09	KL	SYC
5	5	21/03/09	KL	SYC
6	6	21/03/09	KL	SYC
7	7	21/03/09	KL	SYC
8	8	21/03/09	KL	SYC
9	9	21/03/09	KL	SYC
10	10	21/03/09	KL	SYC

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 241239/G/0302

NOTES :

1. THIS DRAWING SHALL BE READ IN CONNECTION WITH DRAWING NOS. 241239/G/03/01 TO 03/02 AND 03/04 TO 03/05.
2. THE LEGEND SHALL REFER TO DRAWING NO. 241239/G/03/01.

1) DATE OF REVISION	2) REVISION	3) REVISION	4) REVISION
01	02	03	04
14/01/03	14/01/03	14/01/03	14/01/03
14/01/03	14/01/03	14/01/03	14/01/03

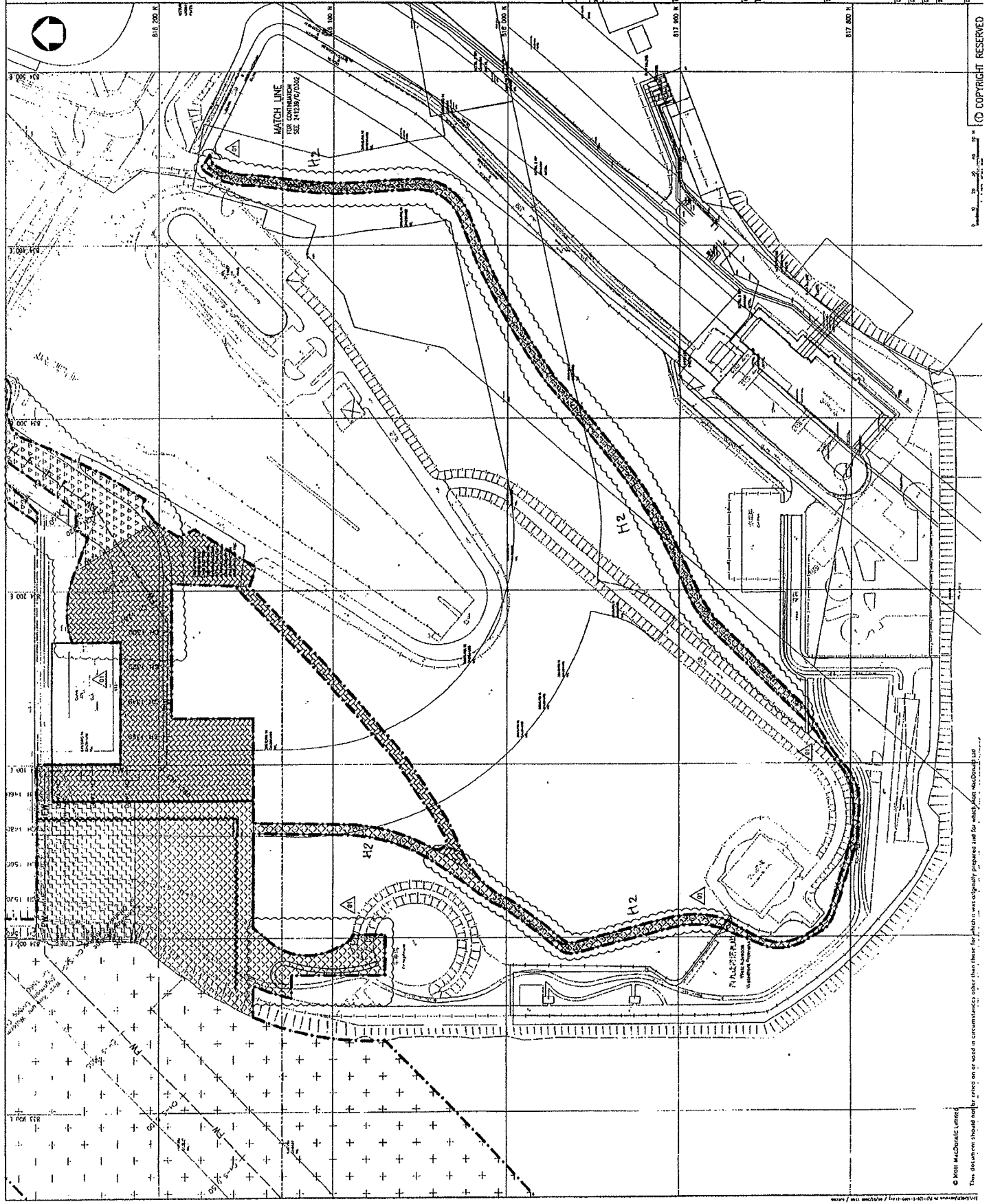
**m Mott MacDonald**  
 300 Macdonald Street, Suite 1000  
 Toronto, Ontario M5G 1S7  
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 Fax: 416 291 1422  
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THE GOVERNMENT OF THE HONG KONG  
 SPECIAL ADMINISTRATIVE REGION  
 WATER SUPPLIES DEPARTMENT

CONTRACT NO. 97/WSD/03  
 LAYING OF WESTERN CROSS HARBOUR MAIN  
 AND ASSOCIATED LAND MAINS FROM WEST  
 KOWLOON TO SAN YING PUN

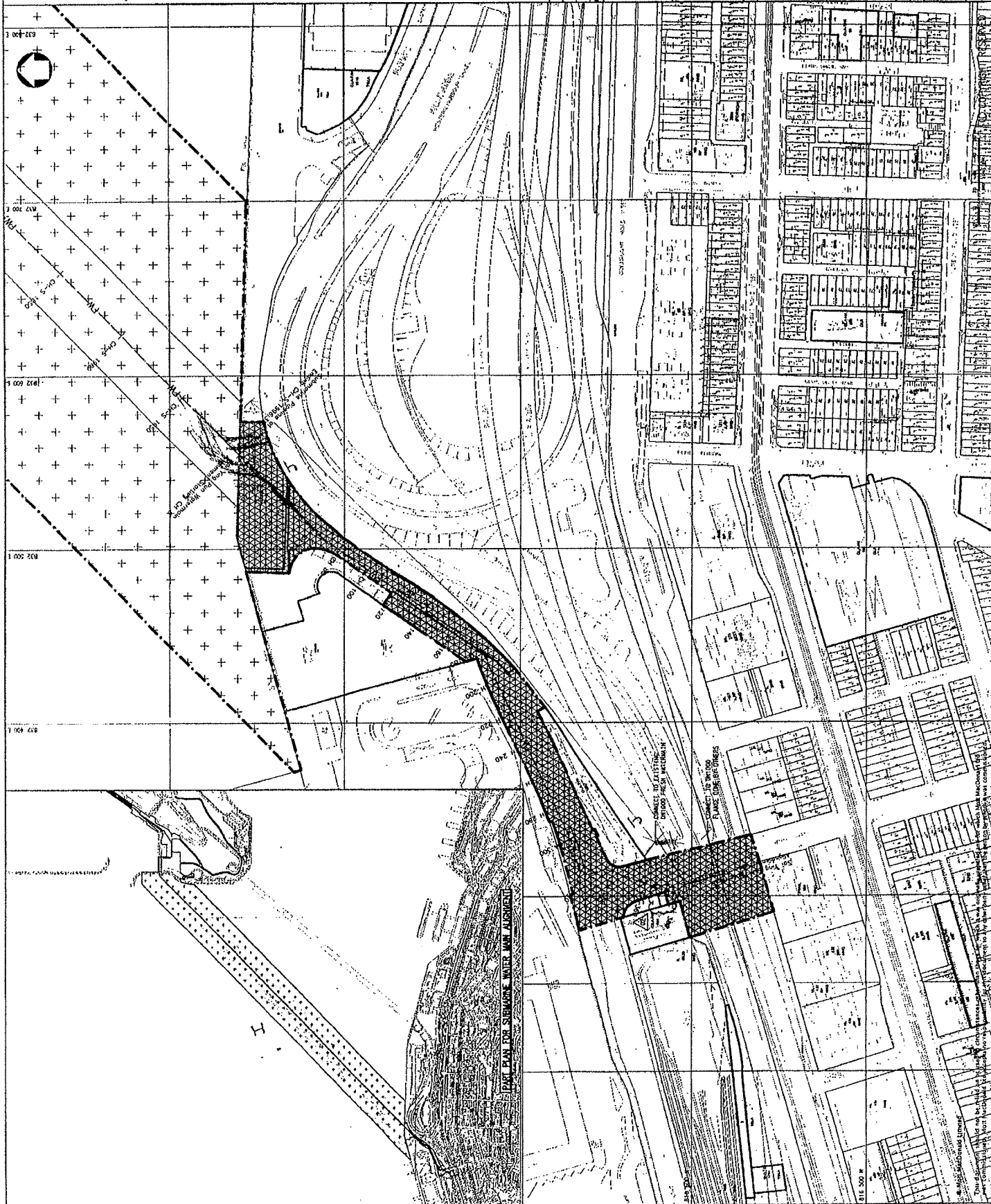
POSSESSION OF SITE  
 (SHEET 3 OF 5)

Checked	Drawn	Revised	Scale	Sheet
14/01/03	14/01/03	14/01/03	1:1000	01
14/01/03	14/01/03	14/01/03	1:1000	01
14/01/03	14/01/03	14/01/03	1:1000	01



NOTES :

- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 241239/6/0301 TO 0303 AND 0305.
- THE LEGEND SHALL REFER TO DRAWING NO. 241239/6/0301.



01	APR 09	ISSUE APPROVAL NO. 4	5/1/08
02	MAR 08	PL ISSUE ADDENDUM NO. 3	01/07/08
03	FEB 08	PL ISSUE FOR TENDER	01/07/08
04	FEB 08	PL ISSUE FOR TENDER	01/07/08

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

9/WSD/08  
 LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KWILON TO SAI YING PUN

POSSESSION OF SITE (SHEET 4 OF 5)

Project	241239/6	Rev	1.0	Scale	1:1000 @ A1	Date	01/07/08
Author	W. S. ...	Check	W. S. ...	Drawn	W. S. ...	Approved	W. S. ...
Project Manager	W. S. ...	Supervisor	W. S. ...	Checked	W. S. ...	Reviewed	W. S. ...
1:1000 @ A1    100% Plot    9/1/08							
Drawing No. 241239/6/0304    02							

**NOTES**

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

Q1	FEB 09	1	TENDER ADDENDUM NO. 2	1/14	PL	DKC
Q1	JAN 09	1	TENDER ADDENDUM NO. 1	1/14	PL	DKC
Q	DEC 08	1	ISSUE FOR TENDER	1/14	PL	DKC
REV			Description			DATE

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

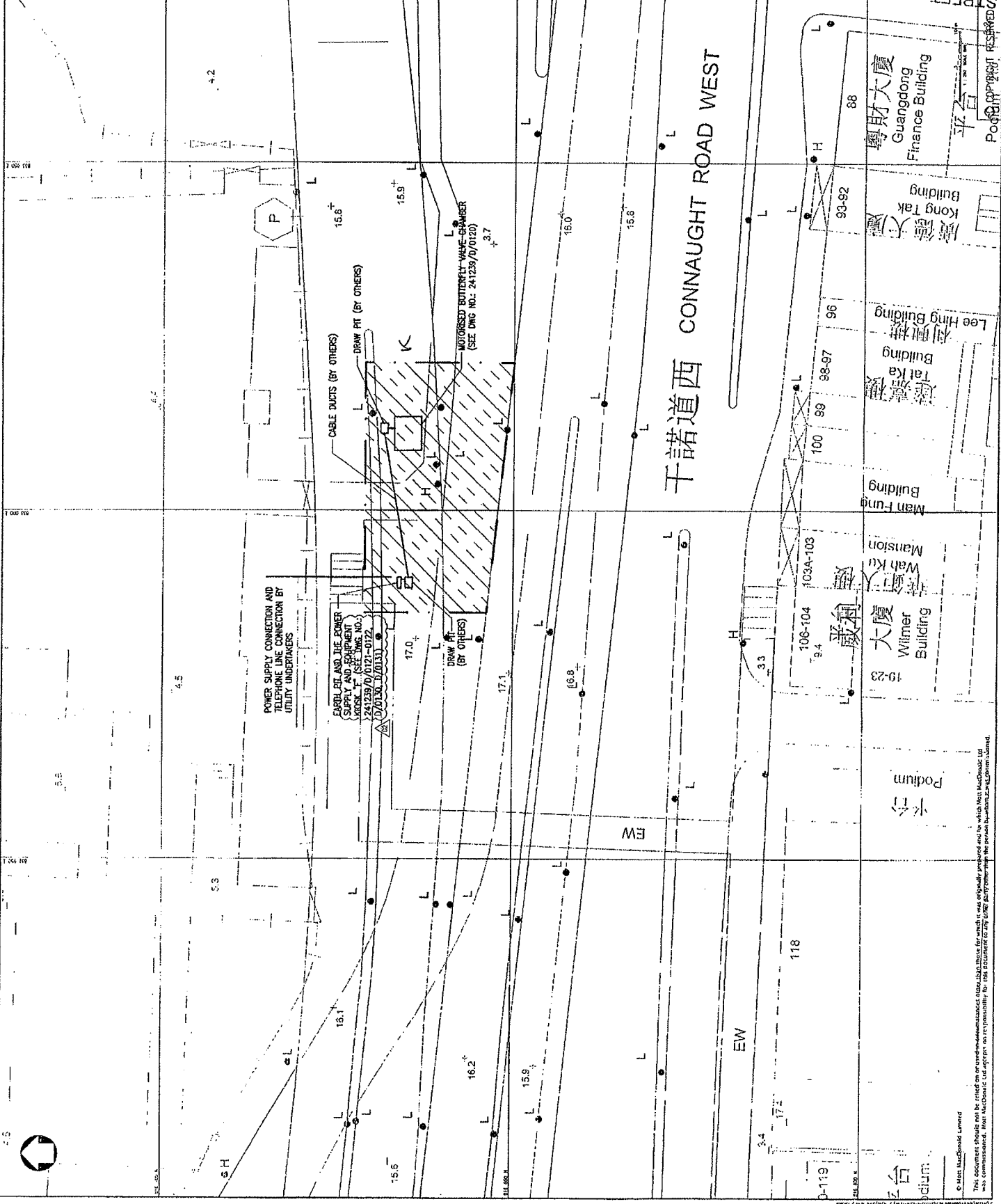
Project No. 9/HSD/08

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

POSSESSION OF SITE  
 (SHEET 5 OF 5)

NO.	DATE	BY	CHK	REV
1	24/12/08	1/14	PL	DKC
2	24/12/08	1/14	PL	DKC
3	24/12/08	1/14	PL	DKC
4	24/12/08	1/14	PL	DKC
5	24/12/08	1/14	PL	DKC
6	24/12/08	1/14	PL	DKC
7	24/12/08	1/14	PL	DKC
8	24/12/08	1/14	PL	DKC
9	24/12/08	1/14	PL	DKC
10	24/12/08	1/14	PL	DKC

Drawing No. 241239/0305



This document should not be read or used as a reference for any purpose without the prior written consent of Mott MacDonald. Mott MacDonald is not responsible for the accuracy of the information contained herein.



## **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)  
 November 2012

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

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)  
 December 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						01-Dec
02-Dec	03-Dec	04-Dec	05-Dec	06-Dec	07-Dec	08-Dec
	<b>WQM</b> Mid-Flood 09:00 - 13:00 Mid-Ebb 14:15 - 17:05 <b>SI</b>	<b>WQM</b> Mid-Flood 09:00 - 13:00 Mid-Ebb 14:15 - 17:05 <b>SI</b>	<b>NM (SYP-Daytime)</b>	<b>WQM</b> Mid-Flood 11:00 - 15:00 Mid-Ebb 16:05 - 19:50	<b>NM (WK-Daytime)</b>	<b>WQM</b> Mid-Flood 12:00 - 16:00 Mid-Ebb 17:30 - 21:30
09-Dec	10-Dec	11-Dec	12-Dec	13-Dec	14-Dec	15-Dec
	<b>WQM</b> Mid-Ebb 08:30 - 12:30 Mid-Flood 13:30 - 17:30 <b>SI</b>	<b>WQM</b> Mid-Ebb 10:20 - 14:10 Mid-Flood 15:15 - 19:15	<b>NM (SYP-Daytime)</b>	<b>WQM</b> Mid-Ebb 10:20 - 14:10 Mid-Flood 15:15 - 19:15	<b>NM (WK-Daytime)</b>	<b>WQM</b> Mid-Flood 07:00 - 11:00 Mid-Ebb 12:05 - 15:45
16-Dec	17-Dec	18-Dec	19-Dec	20-Dec	21-Dec	22-Dec
	<b>WQM</b> Mid-Flood 09:30 - 13:30 Mid-Ebb 14:45 - 18:45 <b>SI</b>	<b>WQM</b> Mid-Flood 11:00 - 15:00 Mid-Ebb 16:30 - 20:30	<b>NM (SYP-Daytime)</b>	<b>WQM</b> Mid-Flood 11:00 - 15:00 Mid-Ebb 16:30 - 20:30	<b>NM (WK-Daytime)</b>	<b>WQM</b> Mid-Flood 12:30 - 16:30 Mid-Ebb 18:00 - 22:00
23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	29-Dec
				<b>WQM</b> Mid-Ebb 10:15 - 13:15 Mid-Flood 14:45 - 18:45 <b>SI</b>	<b>NM (WK-Daytime)</b> <b>NM (SYP-Daytime)</b>	<b>WQM</b> Mid-Ebb 06:00 - 10:00 Mid-Flood 11:00 - 14:35
30-Dec	31-Dec					



## **Appendix J**

### **Daily Dredging Summary**





## Wo Hing - Penta-Ocean Joint Venture

Contract no. 9/WSD/08

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

### Summary of Dumping Qty. of Type 1 Marine Sediment (Dispose to East Ninepin Mud Disposal Ground)

Date	Dumping qty (m <sup>3</sup> )	Barge Load per day	Accumulated Dumping Qty.  (bulk volume)	Target Dumping qty (m <sup>3</sup> )	Target Barge Load per day	Target Accumulated Dumping Qty.  (bulk volume)	Permit No.
6 June, 2010	0	0	0	0	0	0	EP/MD/10-085
7 June, 2010	0	0	0	0	0	0	EP/MD/10-085
8 June, 2010	0	0	0	0	0	0	EP/MD/10-085
9 June, 2010	0	0	0	0	0	0	EP/MD/10-085
10 June, 2010	0	0	0	0	0	0	EP/MD/10-085
11 June, 2010	0	0	0	0	0	0	EP/MD/10-085
12 June, 2010	0	0	0	0	0	0	EP/MD/10-085
13 June, 2010	0	0	0	0	0	0	EP/MD/10-085
14 June, 2010	1,400	2	1,400	2,100	3	2,100	EP/MD/10-085
15 June, 2010	1,400	2	2,800	2,100	3	4,200	EP/MD/10-085
16 June, 2010	2,100	3	4,900	2,100	3	6,300	EP/MD/10-085
17 June, 2010	2,800	4	7,700	2,100	3	8,400	EP/MD/10-085
18 June, 2010	2,100	3	9,800	2,100	3	10,500	EP/MD/10-085
19 June, 2010	2,700	4	12,500	2,100	3	12,600	EP/MD/10-085
20 June, 2010	2,800	4	15,300	2,100	3	14,700	EP/MD/10-085
21 June, 2010	2,100	3	17,400	2,100	3	16,800	EP/MD/10-085
22 June, 2010	2,800	4	20,200	2,100	3	18,900	EP/MD/10-085
23 June, 2010	2,100	3	22,300	2,100	3	21,000	EP/MD/10-085
24 June, 2010	2,100	3	24,400	2,100	3	23,100	EP/MD/10-085
25 June, 2010	2,100	3	26,500	2,100	3	25,200	EP/MD/10-085
26 June, 2010	2,100	3	28,600	2,100	3	27,300	EP/MD/10-085
27 June, 2010	700	1	29,300	2,100	3	29,400	EP/MD/10-085
28 June, 2010	2,100	3	31,400	2,100	3	31,500	EP/MD/10-085
29 June, 2010	1,400	2	32,800	2,100	3	33,600	EP/MD/10-085
30 June, 2010			32,800	2,100	3	35,700	EP/MD/10-085
1 July, 2010			32,800	2,100	3	37,800	EP/MD/10-085
2 July, 2010			32,800	2,100	3	39,900	EP/MD/10-085
3 July, 2010			32,800	2,100	3	42,000	EP/MD/10-085
4 July, 2010			32,800	2,100	3	44,100	EP/MD/10-085
5 July, 2010			32,800	2,100	3	46,200	EP/MD/10-085
6 July, 2010			32,800	2,100	3	48,300	EP/MD/10-085
7 July, 2010			32,800	2,100	3	50,400	EP/MD/10-085
8 July, 2010			32,800	2,100	3	52,500	EP/MD/10-085
9 July, 2010			32,800	2,100	3	54,600	EP/MD/10-085
10 July, 2010			32,800	2,100	3	56,700	EP/MD/10-085
11 July, 2010			32,800	2,100	3	58,800	EP/MD/10-085
12 July, 2010			32,800	2,100	3	60,900	EP/MD/10-085
13 July, 2010			32,800	2,100	3	63,000	EP/MD/10-085
14 July, 2010			32,800	2,100	3	65,100	EP/MD/10-085
15 July, 2010			32,800	2,100	3	67,200	EP/MD/10-085
16 July, 2010			32,800	2,100	3	69,300	EP/MD/10-085
17 July, 2010			32,800	2,100	3	71,400	EP/MD/10-085

<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)</b>							
Date	Dumping qty (m <sup>3</sup> )	Barge Load per day	Accumulated Dumping Qty.  (bulk volume)	Target Dumping qty (m <sup>3</sup> )	Target Barge Load per day	Target Accumulated Dumping Qty.  (bulk volume)	Permit No.
18 July, 2010			32,800	2,100	3	73,500	EP/MD/10-085
19 July, 2010			32,800	2,100	3	75,600	EP/MD/10-085
20 July, 2010			32,800	2,100	3	77,700	EP/MD/10-085
21 July, 2010			32,800	2,100	3	79,800	EP/MD/10-085
22 July, 2010			32,800	2,100	3	81,900	EP/MD/10-085
23 July, 2010			32,800	2,100	3	84,000	EP/MD/10-085
24 July, 2010			32,800	2,100	3	86,100	EP/MD/10-085
25 July, 2010			32,800	2,100	3	88,200	EP/MD/10-085
26 July, 2010			32,800	2,100	3	90,300	EP/MD/10-085
27 July, 2010			32,800	2,100	3	92,400	EP/MD/10-085
28 July, 2010			32,800	2,100	3	94,500	EP/MD/10-085
29 July, 2010			32,800	2,100	3	96,600	EP/MD/10-085
30 July, 2010			32,800	2,100	3	98,700	EP/MD/10-085
31 July, 2010			32,800	2,100	3	100,800	EP/MD/10-085
1 August, 2010			32,800	2,100	3	102,900	EP/MD/10-085
2 August, 2010			32,800	2,100	3	105,000	EP/MD/10-085
3 August, 2010			32,800	2,100	3	107,100	EP/MD/10-085
4 August, 2010			32,800	2,100	3	109,200	EP/MD/10-085
5 August, 2010			32,800	2,100	3	111,300	EP/MD/10-085
6 August, 2010			32,800	2,100	3	113,400	EP/MD/10-085
7 August, 2010			32,800	2,100	3	115,500	EP/MD/10-085
8 August, 2010			32,800	2,100	3	117,600	EP/MD/10-085
9 August, 2010			32,800	2,100	3	119,700	EP/MD/10-085
10 August, 2010			32,800	2,100	3	121,800	EP/MD/10-085
11 August, 2010			32,800	2,100	3	123,900	EP/MD/10-085
12 August, 2010			32,800	2,100	3	126,000	EP/MD/10-085
13 August, 2010			32,800	2,100	3	128,100	EP/MD/10-085
14 August, 2010			32,800	2,100	3	130,200	EP/MD/10-085
15 August, 2010			32,800	2,100	3	132,300	EP/MD/10-085
16 August, 2010			32,800	2,100	3	134,400	EP/MD/10-085
17 August, 2010			32,800	2,100	3	136,500	EP/MD/10-085
18 August, 2010			32,800	2,100	3	138,600	EP/MD/10-085
19 August, 2010			32,800	2,100	3	140,700	EP/MD/10-085
20 August, 2010			32,800	2,100	3	142,800	EP/MD/10-085
21 August, 2010			32,800	2,100	3	144,900	EP/MD/10-085



<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)</b>							
Date	Dumping qty (m <sup>3</sup> )	Barge Load per day	Accumulated Dumping Qty.	Target Dumping qty (m <sup>3</sup> )	Target Barge Load per day	Target Accumulated Dumping Qty.	Permit No.
			(bulk volume)			(bulk volume)	
22 August, 2010			32,800	2,100	3	147,000	EP/MD/10-085
23 August, 2010			32,800	2,100	3	149,100	EP/MD/10-085
24 August, 2010			32,800	2,100	3	151,200	EP/MD/10-085
25 August, 2010			32,800	2,100	3	153,300	EP/MD/10-085
26 August, 2010			32,800	2,100	3	155,400	EP/MD/10-085
27 August, 2010			32,800	2,100	3	157,500	EP/MD/10-085
28 August, 2010			32,800	2,100	3	159,600	EP/MD/10-085
29 August, 2010			32,800	2,100	3	161,700	EP/MD/10-085
30 August, 2010			32,800	2,100	3	163,800	EP/MD/10-085
31 August, 2010			32,800	2,100	3	165,900	EP/MD/10-085
1 September, 2010			32,800	2,100	3	168,000	EP/MD/10-085
2 September, 2010			32,800	2,100	3	170,100	EP/MD/10-085
3 September, 2010			32,800	2,100	3	172,200	EP/MD/10-085
4 September, 2010			32,800	2,100	3	174,300	EP/MD/10-085
5 September, 2010			32,800	2,100	3	176,400	EP/MD/10-085
6 September, 2010			32,800	2,100	3	178,500	EP/MD/10-085
7 September, 2010			32,800	2,100	3	180,600	EP/MD/10-085
8 September, 2010			32,800	2,100	3	182,700	EP/MD/10-085
9 September, 2010			32,800	2,100	3	184,800	EP/MD/10-085
10 September, 2010			32,800	2,100	3	186,900	EP/MD/10-085
11 September, 2010			32,800	2,100	3	189,000	EP/MD/10-085
12 September, 2010			32,800	2,100	3	191,100	EP/MD/10-085
13 September, 2010			32,800	2,100	3	193,200	EP/MD/10-085
14 September, 2010			32,800	2,100	3	195,300	EP/MD/10-085
15 September, 2010			32,800	2,100	3	197,400	EP/MD/10-085
16 September, 2010			32,800	2,100	3	199,500	EP/MD/10-085
17 September, 2010			32,800	2,100	3	201,600	EP/MD/10-085
18 September, 2010			32,800	2,100	3	203,700	EP/MD/10-085
	<b>32,800</b>	47		<b>203,700</b>	291		

## Wo Hing - Penta-Ocean Joint Venture

Contract no. 9/WSD/08

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

### Summary of Dumping Qty. of Type 2 Marine Sediment

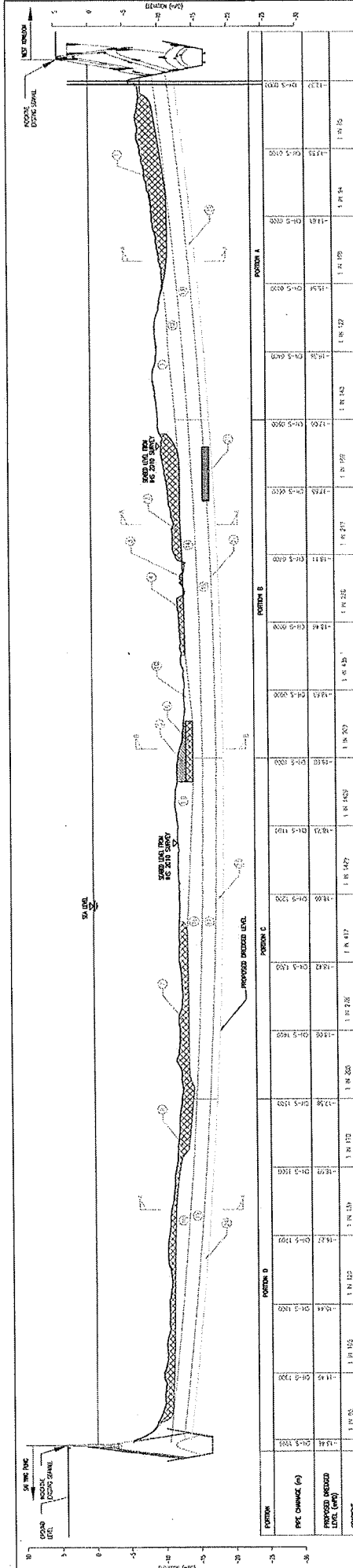
Date	Dumping qty (m <sup>3</sup> )	Barge Load per day	Accumulated Dumping Qty.  (bulk volume)	Target Dumping qty (m <sup>3</sup> )	Target Barge Load per day	Target Accumulated Dumping Qty.  (bulk volume)	Permit No.
5 May, 2010	440	1	440	1,260	2	1,260	EP/MD/10-086
6 May, 2010	1,280	3	1,720	1,260	2	2,520	EP/MD/10-086
7 May, 2010	0	0	1,720	1,260	2	3,780	EP/MD/10-086
8 May, 2010	0	0	1,720	1,260	2	5,040	EP/MD/10-086
9 May, 2010	1,400	2	3,120	1,260	2	6,300	EP/MD/10-086
10 May, 2010	1,400	2	4,520	1,260	2	7,560	EP/MD/10-086
11 May, 2010	1,300	2	5,820	1,260	2	8,820	EP/MD/10-086
12 May, 2010	1,800	3	7,620	1,260	2	10,080	EP/MD/10-086
13 May, 2010	1,200	2	8,820	1,260	2	11,340	EP/MD/10-086
14 May, 2010	0	0	8,820	1,260	2	12,600	EP/MD/10-086
15 May, 2010	0	0	8,820	1,260	2	13,860	EP/MD/10-086
16 May, 2010	600	1	9,420	1,260	2	15,120	EP/MD/10-086
17 May, 2010	1,200	2	10,620	1,260	2	16,380	EP/MD/10-086
18 May, 2010	700	1	11,320	1,260	2	17,640	EP/MD/10-086
19 May, 2010	2,000	3	13,320	1,260	2	18,900	EP/MD/10-086
20 May, 2010	1,400	2	14,720	1,260	2	20,160	EP/MD/10-086
21 May, 2010	1,400	2	16,120	1,260	2	21,420	EP/MD/10-086
22 May, 2010	2,100	3	18,220	1,260	2	22,680	EP/MD/10-086
23 May, 2010	1,400	2	19,620	1,260	2	23,940	EP/MD/10-086
24 May, 2010	1,400	2	21,020	1,260	2	25,200	EP/MD/10-086
25 May, 2010	1,300	2	22,320	1,260	2	26,460	EP/MD/10-086
26 May, 2010	1,400	2	23,720	1,260	2	27,720	EP/MD/10-086
27 May, 2010	1,300	2	25,020	1,260	2	28,980	EP/MD/10-086
28 May, 2010	1,400	2	26,420	1,260	2	30,240	EP/MD/10-086
29 May, 2010	600	1	27,020	1,260	2	31,500	EP/MD/10-086
30 May, 2010	2,100	3	29,120	1,260	2	32,760	EP/MD/11-012
31 May, 2010	700	1	29,820	1,260	2	34,020	EP/MD/11-012
1 June, 2010	1,900	3	31,720	1,260	2	35,280	EP/MD/11-012
2 June, 2010	1,220	2	32,940	1,260	2	36,540	EP/MD/11-012
3 June, 2010	1,300	2	34,240	1,260	2	37,800	EP/MD/11-012
4 June, 2010	1,200	2	35,440	1,260	2	39,060	EP/MD/11-012
5 June, 2010	1,400	2	36,840	1,260	2	40,320	EP/MD/11-012
6 June, 2010	600	1	37,440	1,260	2	41,580	EP/MD/11-012
7 June, 2010	0	0	37,440	1,260	2	42,840	EP/MD/11-012
8 June, 2010	500	1	37,940	1,260	2	EP/MD/11-012	
9 June, 2010	0	0	37,940	1,260	2	EP/MD/11-012	
10 June, 2010	600	1	38,540	1,260	2	EP/MD/11-012	
11 June, 2010	1,200	2	39,740	1,260	2	EP/MD/11-012	
12 June, 2010	1,400	2	41,140	1,260	2	EP/MD/11-012	
13 June, 2010	1,400	2	42,540	1,260	2	EP/MD/11-012	
14 June, 2010	0	0	42,540	0	0	EP/MD/11-012	
15 June, 2010	0	0	42,540	0	0	EP/MD/11-012	
16 June, 2010	0	0	42,540	0	0	EP/MD/11-012	
17 June, 2010	0	0	42,540	0	0	EP/MD/11-012	
18 June, 2010	0	0	42,540	0	0	EP/MD/11-012	
19 June, 2010	0	0	42,540	0	0	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.	Target Dumping qty (m <sup>3</sup> )	Target Barge Load per day	Target Accumulated Dumping Qty.	Permit No.
			(bulk volume)			(bulk volume)	
20 June, 2010	0	0	42,540	0	0		EP/MD/11-012
21 June, 2010	0	0	42,540	0	0		EP/MD/11-012
22 June, 2010	0	0	42,540	0	0		EP/MD/11-012
23 June, 2010	0	0	42,540	0	0		EP/MD/11-012
24 June, 2010	0	0	42,540	0	0		EP/MD/11-012
25 June, 2010	0	0	42,540	0	0		EP/MD/11-012
26 June, 2010	0	0	42,540	0	0		EP/MD/11-012
27 June, 2010	0	0	42,540	0	0		EP/MD/11-012
28 June, 2010	0	0	42,540	0	0		EP/MD/11-012
29 June, 2010	0	0	42,540	0	0		EP/MD/11-012
30 June, 2010	1,200	2	43,740				EP/MD/11-024
1 July, 2010	2,600	4	46,340				EP/MD/11-024
2 July, 2010	2,800	4	49,140				EP/MD/11-024
3 July, 2010	1,400	2	50,540				EP/MD/11-024
4 July, 2010	2,100	3					EP/MD/11-024
5 July, 2010	2,850	4					EP/MD/11-024
6 July, 2010	1,400	2					EP/MD/11-024
7 July, 2010	1,400	2					EP/MD/11-024
8 July, 2010	2,700	4					EP/MD/11-024
9 July, 2010	2,100	3					EP/MD/11-024
10 July, 2010	2,100	3					EP/MD/11-024
11 July, 2010	1,400	2					EP/MD/11-024
12 July, 2010							EP/MD/11-024
13 July, 2010							EP/MD/11-024
14 July, 2010							EP/MD/11-024
15 July, 2010							EP/MD/11-024
16 July, 2010							EP/MD/11-024
17 July, 2010							EP/MD/11-024
18 July, 2010							EP/MD/11-024
19 July, 2010							EP/MD/11-024
20 July, 2010							EP/MD/11-024
21 July, 2010							EP/MD/11-024
22 July, 2010							EP/MD/11-024
23 July, 2010							EP/MD/11-024
24 July, 2010							EP/MD/11-024
25 July, 2010							EP/MD/11-024
26 July, 2010							EP/MD/11-024
27 July, 2010							EP/MD/11-024
28 July, 2010							EP/MD/11-024
29 July, 2010							EP/MD/11-024
30 July, 2010							
31 July, 2010							
	<b>66,590</b>	101		<b>50,400</b>	70		

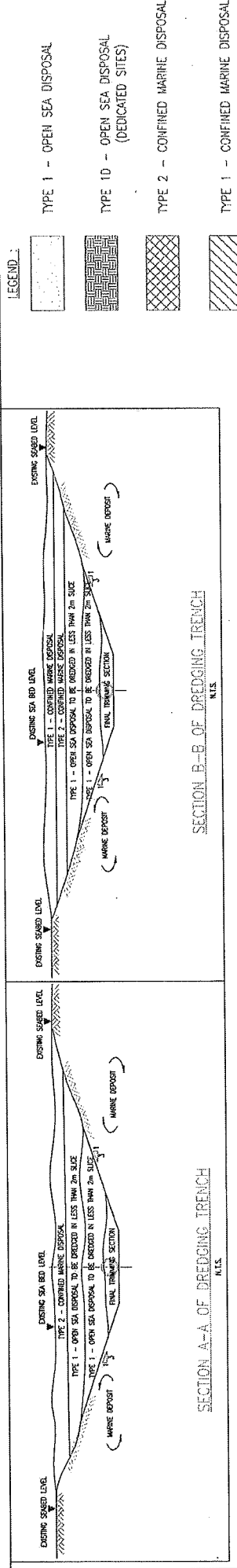
NOTE:

- LOGISTIC OF DREDGING  
 STAGE 1 - TYPE 2 MARINE SEDIMENT  
 ① → ② → ③ → ④ → ⑤ → ⑥ → ⑦ → ⑧  
 STAGE 2 - TYPE 1 MARINE SEDIMENT  
 ⑨ → ⑩ → ⑪ → ⑫  
 STAGE 3 - TYPE 1 MARINE SEDIMENT  
 ⑬ → ⑭ → ⑮ → ⑯ → ⑰ → ⑱ → ⑲ → ⑳  
 STAGE 4 - TYPE 1D MARINE SEDIMENT  
 ㉑ → ㉒ → ㉓ → ㉔ → ㉕  
 STAGE 5 - TYPE 1 MARINE SEDIMENT  
 ㉖ → ㉗ → ㉘ → ㉙ → ㉚

IF SIMILAR DISPOSAL SITE IS DEDICATED FOR TYPE 1D AND TYPE 1, MARINE SEDIMENT DREDGING LOGISTIC AT ㉚ WILL BE DELETED AND INCLUDED IN ⑬ AND ㉑



LONGITUDINAL SECTION OF DREDGING TRENCH  
 Sai Ying Pun West Kowloon



SECTION A-A OF DREDGING TRENCH  
 SECTION B-B OF DREDGING TRENCH  
 N.T.S.

LEGEND:

- TYPE 1 - OPEN SEA DISPOSAL
- TYPE 1D - OPEN SEA DISPOSAL (DEDICATED SITES)
- TYPE 2 - CONFINED MARINE DISPOSAL
- TYPE 1 - CONFINED MARINE DISPOSAL

THE NUMBER INDICATE THE SEQUENCE OF DREDGING

CONTRACTOR <b>WO HING-PENTAOCEAN JOINT VENTURE</b> 和興五洲聯營	CONTRACT NO. 9/WS/D/08 Laying of Western Cross Harbour Main and Associated Land Mains from West Kowloon to Sai Ying Pun		DRAWN BY TONY TANG	SCALE NTS
	DRAWING TITLE DREDGING LOGISTIC		CHECKED BY STANLEY LEUNG	DWG No. SK-D-002
		DATE 08 Apr 2010	REVISION	D



## **Appendix K**

### **Complaint Log**

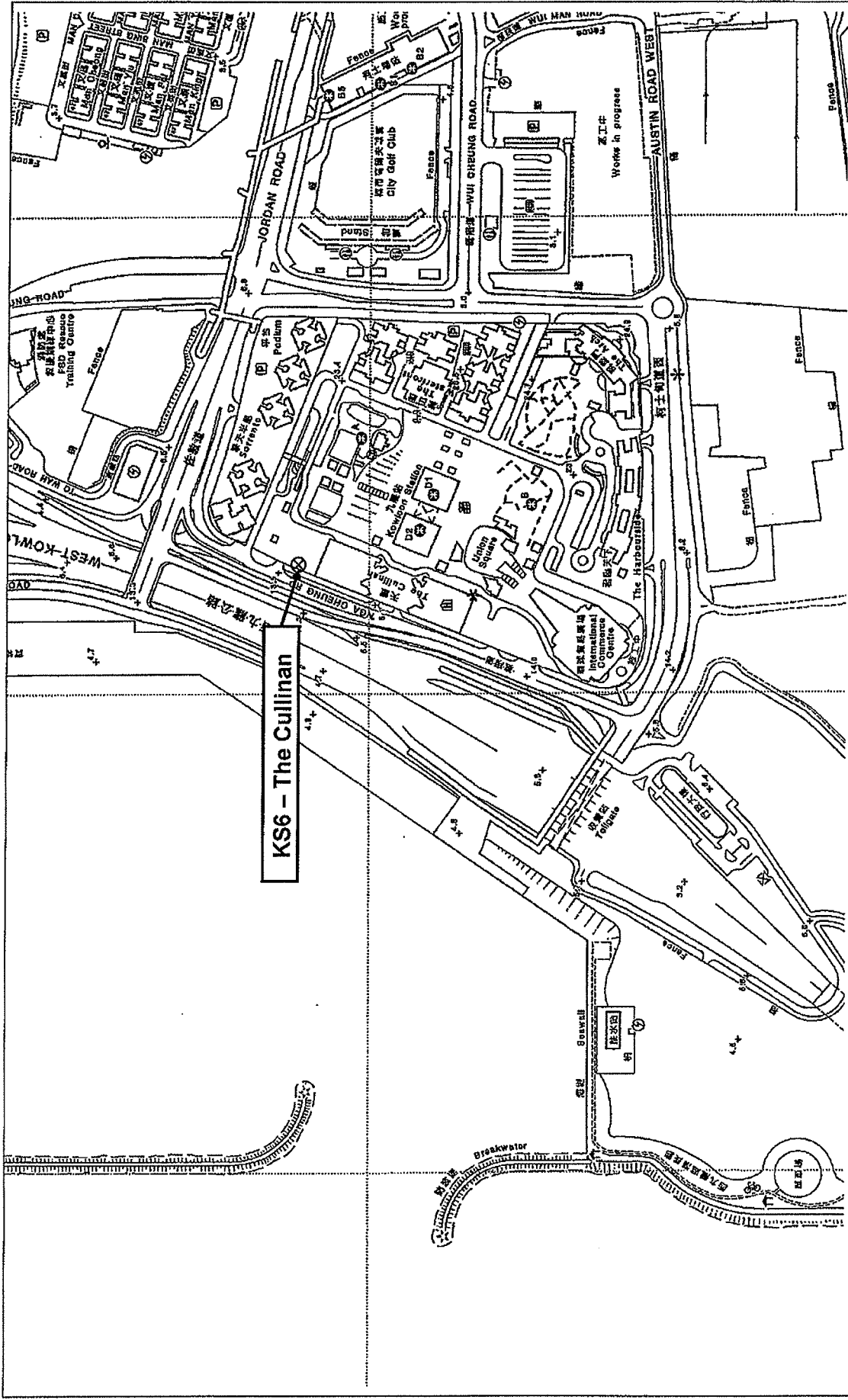


## Complaint Log

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



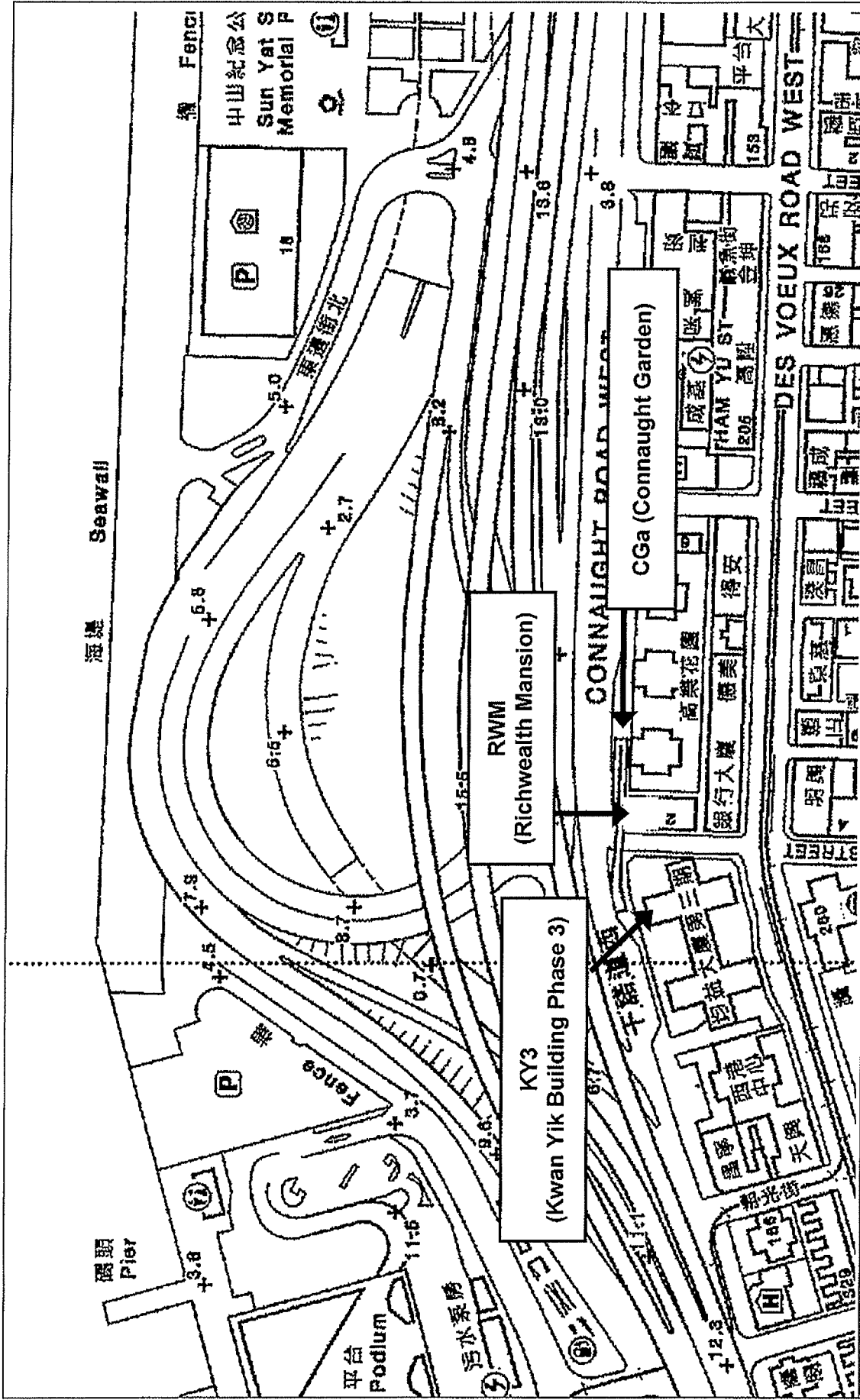
Contract No. 9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Mains for West Kowloon to Sai Ying Pun

Figure 1

Location of Noise Monitoring Station at West Kowloon



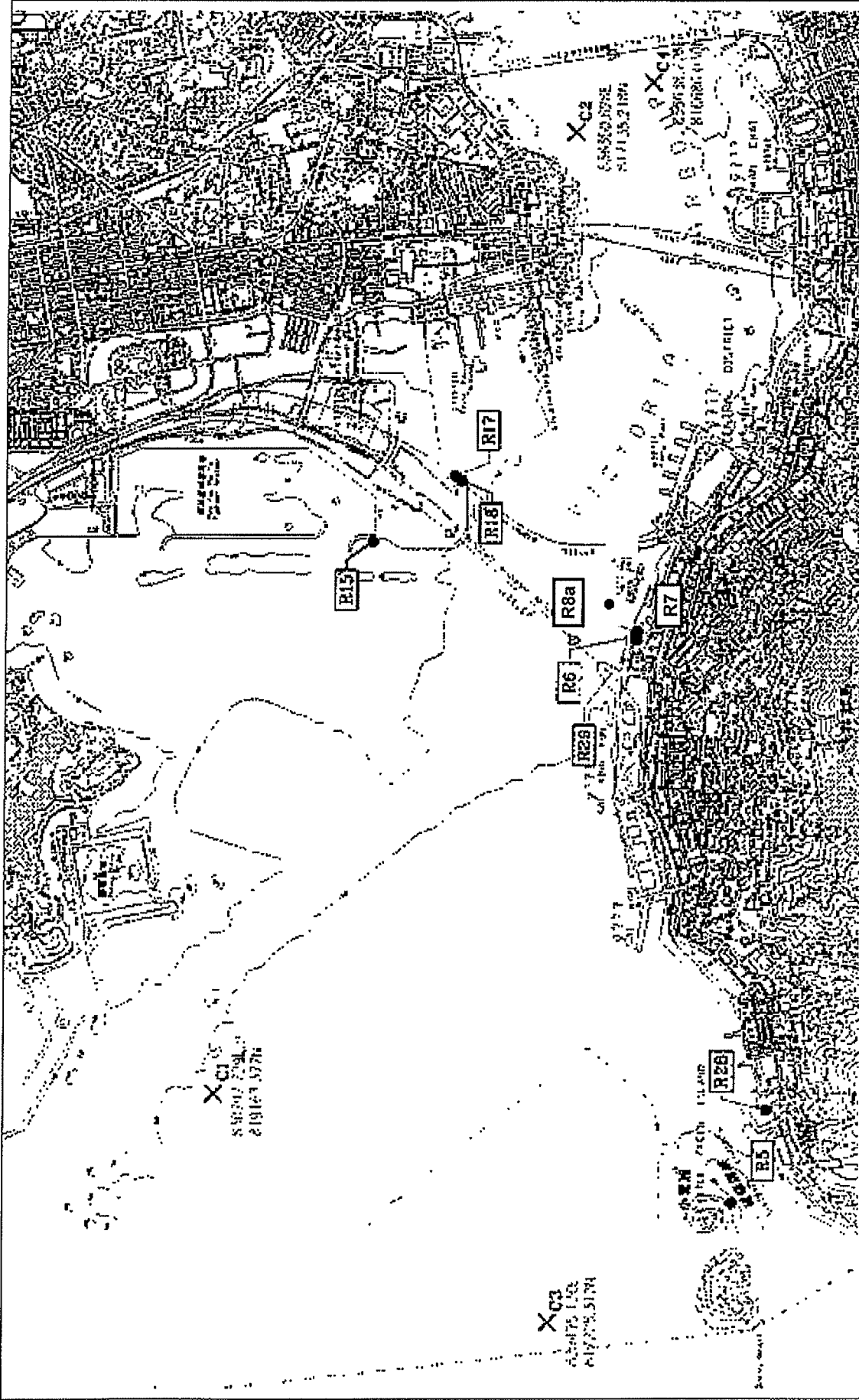
東業環境測試顧問有限公司  
ETS-TESTCONSULT LIMITED



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



DATE	10/10/08	STATUS	PRELIMINARY	SCALE	1:250000
PROJECT	LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SAI YING PUN - INVESTIGATION				
CLIENT	THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION WATER SUPPLIES DEPARTMENT				
DESIGNER	Mott MacDonald				
APPROVED BY	[Signature]				
DATE	2013				
PROJECT NO.	CE-62/2005(V5)				

THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION  
 WATER SUPPLIES DEPARTMENT  
 Mott MacDonald  
 7/F, 888 887  
 88 Queens Road West  
 Hong Kong  
 Tel: 852 2377  
 Fax: 852 2377  
 E-mail: www.mottmac.com

LAYING OF WESTERN CROSS HARBOUR MAIN AND ASSOCIATED LAND MAINS FROM WEST KOWLOON TO SAI YING PUN - INVESTIGATION  
 CE-62/2005(V5)

LOCATIONS OF WATER SENSITIVE RECEIVERS AND STORMWATER OUTFALLS AT WESTERN HARBOUR

PROJECT NO. CE-62/2005(V5)  
 DRAWING NO. WSP/08/001/01  
 SCALE 1:250000  
 DATE 2013

FIGURE 1.20  
 A

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**LEGEND:**

- Proposed route of 1200# High Pressure Main
- Noise Sensitive Receivers
- 500m Noise Assessment Boundary
- Works Area Boundary

A	DATE	BY	REVISION	DATE

**m Mott MacDonald**  
 401 Descent Limited  
 200 Descent Road  
 Hong Kong  
 Tel: 852 2327 1111  
 Fax: 852 2327 1112  
 Web: www.mottmac.com

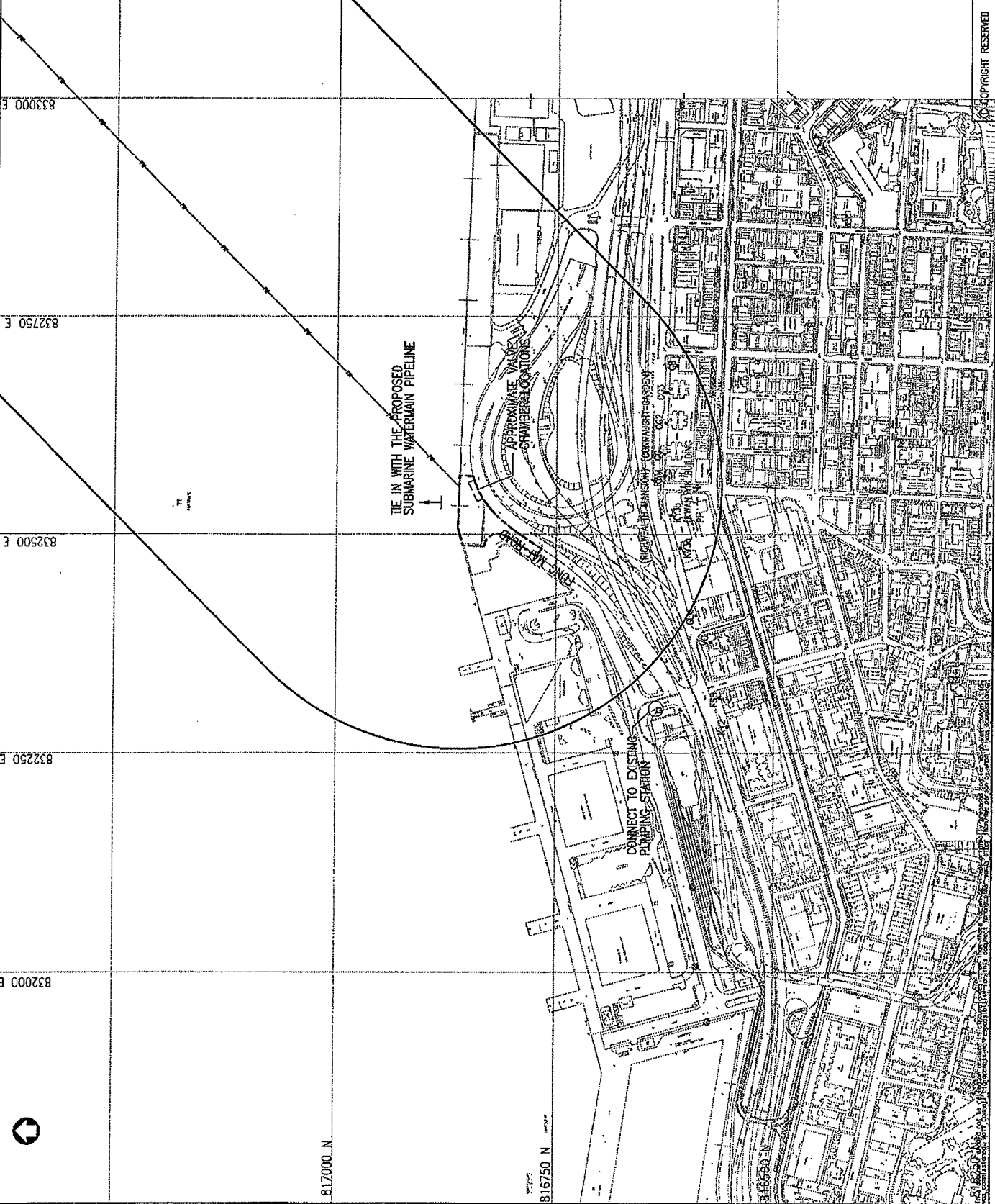
**THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION**  
**WATER SUPPLIES DEPARTMENT**

Project: DE42/2006(W5)  
 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

Scale	1 : 2000/6A1
Sheet No.	
Project No.	
Revision	

FIGURE 1.2b



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**LEGEND:**

- PROPOSED ROUTE OF 1200P FRESH WATER MAIN
- NOISE SENSITIVE RECEIVERS
- TEMPORARY PLATFORM
- 300m NOISE ASSESSMENT BOUNDARY
- WORKS AREA BOUNDARY

A	07/04	LYC	PRELIMINARY	03/04/07
<p><b>Mott MacDonald</b>          11th Floor, 110 Queen's Road East          Hong Kong          Tel: 852 2511 2222          Fax: 852 2511 2229          Web: www.mottmac.com</p>				

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

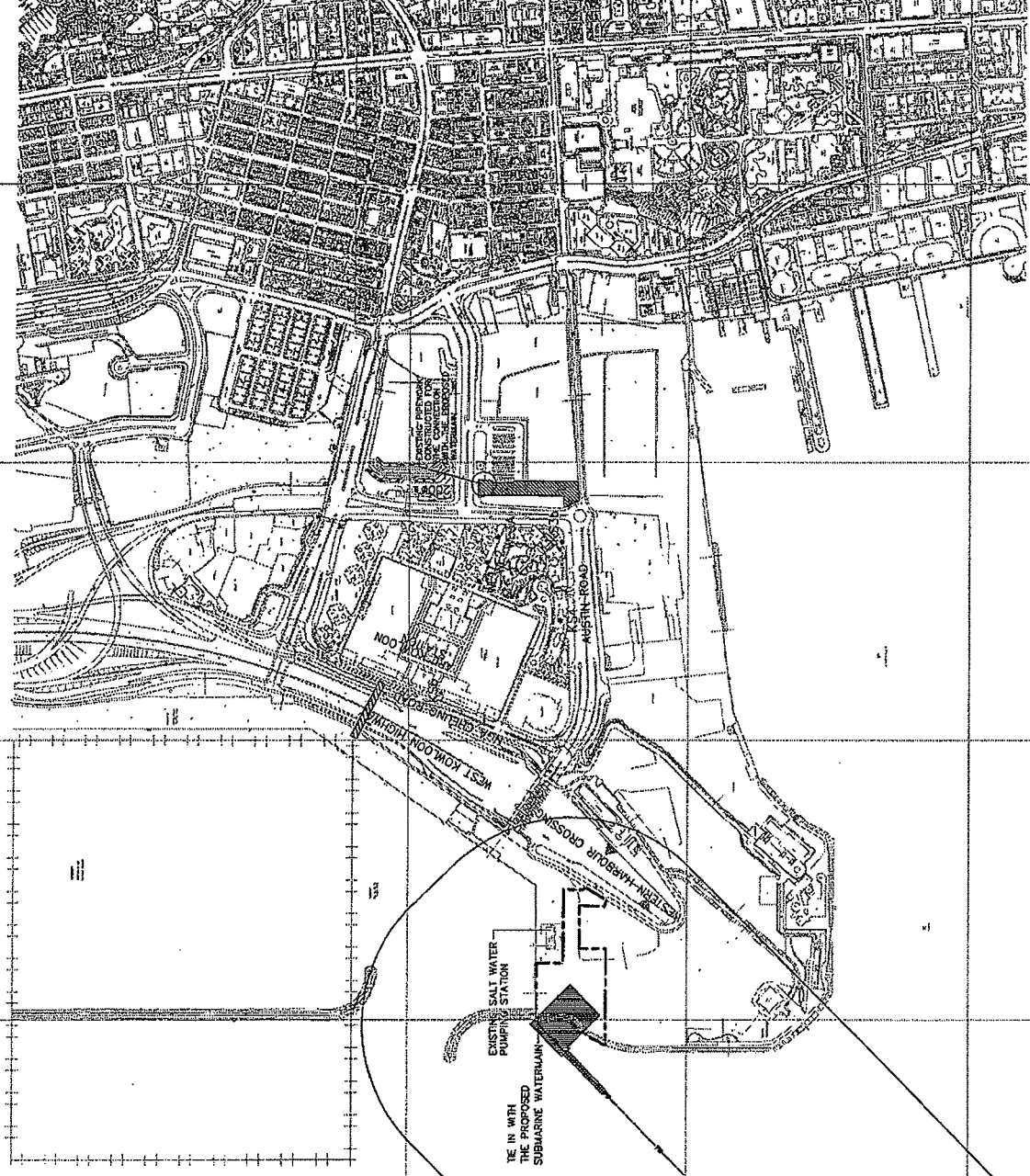
DE47/2005(W5)

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

LOCATION OF NOISE SENSITIVE RECEIVERS IN WEST KOWLOON

Project No.	DE47/2005(W5)
Scale	1 : 400000A1
Sheet No.	A
Revision	
Drawn	
Checked	
Approved	
Date	

FIGURE 1.2c



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