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港珠澳大橋香港工程管理處
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Project Management Office

Contract No. HY/2011/03

Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities

Monthly EM&A Report No.1 (October 2012)

17 December 2012

Revision 3

Main Contractor

中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

Designer

ATKINS

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Executive Summary

The Hong Kong-Zhuhai-Macao Bridge (HZMB) Hong Kong Link Road (HKLR) serves to connect the HZMB Main Bridge at the Hong Kong Special Administrative Region (HKSAR) Boundary and the HZMB Hong Kong Boundary Crossing Facilities (HKBCF) located at the north eastern waters of the Hong Kong International Airport (HKIA).

The HKLR project has been separated into two contracts. They are Contract No. HY/2011/03 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between Scenic Hill and Hong Kong Boundary Crossing Facilities (hereafter referred to as the Contract) and Contract No. HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill.

China State Construction Engineering (Hong Kong) Ltd. was awarded by Highways Department as the Contractor to undertake the construction works of Contract No. HY/2011/03. The main works of the Contract include land tunnel at Scenic Hill, tunnel underneath Airport Road and Airport Express Line, reclamation and tunnel to the east coast of the Airport Island, at-grade road connecting to the HKBCF and highway works of the HKBCF within the Airport Island and in the vicinity of the HKLR reclamation. The Contract is part of the HKLR Project and HKBCF Project, these projects are considered to be "Designated Projects", under Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance (Cap 499) and Environmental Impact Assessment (EIA) Reports (Register No. AEIAR-144/2009 and AEIAR-145/2009) were prepared for the Project. The current Environmental Permit (EP) EP-352/2009/A for HKLR and EP-353/2009/E for HKBCF were issued on 31 October 2011 and 16 October 2012, respectively. These documents are available through the EIA Ordinance Register. The Contract commenced on 17 October 2012.

BMT Asia Pacific Limited has been appointed by the Contractor to implement the Environmental Monitoring & Audit (EM&A) programme for the Contract in accordance with the Updated EM&A Manual for HKLR (Version 1.0) and will be providing environmental team services to the Contract.

This is the first Monthly EM&A report for the Contract which summaries the monitoring results and audit findings of the EM&A programme during the reporting period from 17 October to 31 October 2012.

Environmental Monitoring and Audit Progress

The monthly EM&A programme was undertaken in accordance with the Updated EM&A Manual for HKLR (Version 1.0). A summary of the monitoring activities in this reporting month is listed below:

1-hr TSP Monitoring	18, 24 and 30 October 2012
24-hr TSP Monitoring	18, 24 and 30 October 2012
Noise Monitoring	18 and 24 October 2012
Water Quality Monitoring	17, 20, 22, 25, 27 and 30 October 2012
Chinese White Dolphin Monitoring	17, 18, 25, 26 and 29 October 2012
Site Inspection	17, 24 and 30 October 2012

Breaches of Action and Limit Levels

A summary of environmental exceedances for this reporting month is as follows:

Environmental Monitoring	Parameters	Action Level (AL)	Limit Level (LL)
Air Quality	1-hr TSP	2	1
	24-hr TSP	0	0
Noise	$L_{eq\ (30\ min)}$	0	0
Water Quality	Suspended solids level (SS)	8	18
	Turbidity level	5	18
	Dissolved oxygen level (DO)	0	0

Two Action Level exceedances of 1-hr TSP and one Limit Level exceedances of 1-hr TSP were recorded at Station AMS5 on 30 October 2012. The construction activities during the sampling period included laying of geotextile and rock filling, and GI survey at works area of Kwo Lo Wan Road. These activities did not generate significant dust impact and were undertaken far away (greater than 500m) from AMS5. The general weather conditions in Tung Chung were drizzle during the dust sampling period. The drizzle would cause high readings of portable dust meter. Therefore, it was considered that the exceedances were not related to the construction activities of the Contract and caused by the weather condition.

During the reporting month, there are eight Action Level exceedances and eighteen Limit Level exceedances of suspended solids level. Five Action Level exceedances and eighteen Limit Level exceedances of turbidity level were recorded. Investigation works were undertaken and it was found that only preparation works such as geotextile laying and stone blanket laying were undertaken. These activities were unlikely to cause adverse water quality impact. Therefore, all exceedances were considered not project related.

All investigation reports for exceedances of the Contract have been submitted to ENPO/IEC for comments and/or follow up to identify whether the exceedances occurred related to other HZMB contracts.

Complaint Log

There was one environmental complaint received during this reporting month. An e-mail complaint was received from EPD on 22 October 2012 regarding the potential discharge of effluent into marine water in the vicinity of the construction site for the HZMB project. Based on the photos provided by the complainant and the information from the Contractor, the observation was not likely due to effluent discharge or oil spill. The pelican barge as shown in the photos provided on 24 Oct 2012 does not belong to this Contract. The complaint was not related to this Contract so no follow up action was required. However, the Contractor was reminded to implement necessary mitigation measures properly and undertake regular environmental inspections and maintenance of machinery to avoid environmental pollution.

Notifications of Summons and Prosecutions

There were no notifications of summons or prosecutions received during this reporting month.

Reporting Changes

This report has been developed in compliance with the reporting requirements for the first monthly EM&A report as required by the Updated EM&A Manual for HKLR (Version 1.0). There are no reporting changes.

Future Key Issues

The future key issues include potential noise, air quality, water quality and ecological impacts and waste management arising from the following construction activities to be undertaken in the upcoming month:

- Ground investigation work at Portion Y;
- Site clearing for road and drainage work at Portion Y;
- Marine site investigation at Portion X;
- Removal of armour rocks of existing seawall at Portion X;
- Installation of silt curtain at Portion X;
- Formation of temporary stone platform at Portion X;
- Reclamation at Portion X;
- Relocation of Flag Poles at Kwo Lo Wan Road;

- Site formation work for tunneling at West Portal; and
- Installation of soil nails at West Portal.

1 Introduction

1.1 Basic Project Information

1.1.1 The Hong Kong-Zhuhai-Macao Bridge (HZMB) Hong Kong Link Road (HKLR) serves to connect the HZMB Main Bridge at the Hong Kong Special Administrative Region (HKSAR) Boundary and the HZMB Hong Kong Boundary Crossing Facilities (HKBCF) located at the north eastern waters of the Hong Kong International Airport (HKIA).

1.1.2 The HKLR project has been separated into two contracts. They are Contract No. HY/2011/03 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between Scenic Hill and Hong Kong Boundary Crossing Facilities (hereafter referred to as the Contract) and Contract No. HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill.

1.1.3 China State Construction Engineering (Hong Kong) Ltd. was awarded by Highways Department (HyD) as the Contractor to undertake the construction works of Contract No. HY/2011/03. The Contract is part of the HKLR Project and HKBCF Project, these projects are considered to be "Designated Projects", under Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance (Cap 499) and Environmental Impact Assessment (EIA) Reports (Register No. AEIAR-144/2009 and AEIAR-145/2009) were prepared for the Project. The current Environmental Permit (EP) EP-352/2009/A for HKLR and EP-353/2009/E for HKBCF were issued on 31 October 2011 and 16 October 2012, respectively. These documents are available through the EIA Ordinance Register. The Contract commenced on 17 October 2012. **Figure 1.1** shows the project site boundary.

1.1.4 The Contract includes the following key aspects:

- New reclamation along the east coast of the approximately 23 hectares.
- Tunnel of Scenic Hill (Tunnel SHT) from Scenic Hill to the new reclamation, of approximately 1km in length with three (3) lanes for the east bound carriageway heading to the HKBCF and four (4) lanes for the westbound carriageway heading to the HZMB Main Bridge.
- An abutment of the viaduct portion of the HKLR at the west portal of Tunnel SHT and associated road works at the west portal of Tunnel SHT.
- An at grade road on the new reclamation along the east coast of the HKIA to connect with the HKBCF, of approximately 1.6 km along dual 3-lane carriageway with hard shoulder for each bound.
- Road links between the HKBCF and the HKIA including new roads and the modification of existing roads at the HKIA, involving viaducts, at grade roads and a Tunnel HAT.
- A highway operation and maintenance area (HMA) located on the new reclamation, south of the Dragonair Headquarters Building, including the construction of buildings, connection roads and other associated facilities.
- Associated civil, structural, building, geotechnical, marine, environmental protection, landscaping, drainage and sewerage, tunnel and highway electrical and mechanical works, together with the installation of street lightings, traffic aids and sign gantries, water mains and fire hydrants, provision of facilities for installation of traffic control and surveillance system (TCSS), reprovisioning works of affected existing facilities, implementation of transplanting, compensatory planting and protection of existing trees, and implementation of an environmental monitoring and audit (EM&A) program.

1.1.5 This is the first Monthly Environmental Monitoring and Audit (EM&A) report for the Contract which summaries the monitoring results and audit findings of the EM&A programme during the reporting period from 17 October to 31 October 2012.

1.1.6 BMT Asia Pacific Limited has been appointed by the Contractor to implement the EM&A programme for the Contract in accordance with the Updated EM&A Manual for HKLR (Version

1.0) for HKLR and will be providing environmental team services to the Contract. ENVIRON Hong Kong Ltd. was employed by HyD as the Independent Environmental Checker (IEC) and Environmental Project Office (ENPO) for the Project. The project organization with regard to the environmental works is as follows:

1.2 Project Organisation

1.2.1 The project organization structure and lines of communication with respect to the on-site environmental management structure is shown in **Appendix A**. The key personnel contact names and numbers are summarized in **Table 1.1**.

Table 1.1 Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax
Supervising Officer's Representative (Ove Arup & Partners Hong Kong Limited)	CRE	Robert Antony Evans	3968 0801	2109 1882
Environmental Protection Office / Independent Environmental Checker (Environ Hong Kong Limited)	Environmental Project Office Leader	Y. H Hui	3743 0788	3548 6988
	Independent Environmental Checker	Antony Wong	3743 0788	3548 6988
Contractor (China State Construction Engineering (Hong Kong) Ltd)	Project Manager	S. Y. Tse	3968 7002	2109 2588
	Environmental Officer	Federick Wong	3968 7117	2109 2588
Environmental Team (BMT Asia Pacific)	Environmental Team Leader	Claudine Lee	2241 9847	2815 3377

1.3 Construction Programme

1.3.1 A copy of the Contractor's construction programme is provided in **Appendix B**.

1.4 Construction Works Undertaken During the Reporting Month

1.4.1 A summary of the construction activities undertaken during this reporting month is shown in **Table 1.2.**

Table 1.2 Construction Activities During Reporting Month

Site Area	Description of Activities
WA 6	Construction of site office
Portion Y	Ground Investigation Work Site clearing for road and drainage work
Portion B	Site formation work for tunnelling at West Portal
Portion X	Marine Site investigation Installation of silt curt Removal of armour rocks of existing seawall Formation of temporary stone platform

2 Air Quality Monitoring

2.1 Monitoring Requirements

2.1.1 In accordance with the Contract Specific EM&A Manual, baseline 1-hour and 24-hour TSP levels at 2 air quality monitoring stations were established. Impact 1-hour TSP monitoring was conducted for at least three times every 6 days, while impact 24-hour TSP monitoring was carried out for at least once every 6 days. The Action and Limit Level for 1-hr TSP and 24-hr TSP is provided in **Table 2.1 and Table 2.2**, respectively.

Table 2.1 Action and Limit Levels for 1-hour TSP

Monitoring Station	Action Level, μg/m^3	Limit Level, μg/m^3
AMS 5 – Ma Wan Chung Village (Tung Chung)	352	500
AMS 6 – Dragonair / CNAC (Group) Building (HKIA)	360	

Table 2.2 Action and Limit Levels for 24-hour TSP

Monitoring Station	Action Level, μg/m^3	Limit Level, μg/m^3
AMS 5 – Ma Wan Chung Village (Tung Chung)	164	260
AMS 6 – Dragonair / CNAC (Group) Building (HKIA)	173	260

2.2 Monitoring Equipment

2.2.1 24-hour TSP air quality monitoring was performed using High Volume Sampler (HVS) located at each designated monitoring station. The HVS meets all the requirements of the Contract Specific EM&A Manual. Portable direct reading dust meters were used to carry out the 1-hour TSP monitoring. Brand and model of the equipment is given in **Table 2.3**.

Table 2.3 Air Quality Monitoring Equipment

Equipment	Brand and Model
Portable direct reading dust meter (1-hour TSP)	Sibata Digital Dust Monitor (Model No. LD-3B)
High Volume Sampler (24-hour TSP)	Tisch Environmental Mass Flow Controlled Total Suspended Particulate (TSP) High Volume Air Sampler (Model No. TE-5170)

2.3 Monitoring Locations

2.3.1 Monitoring locations AMS5 and AMS6 were set up at the proposed locations in accordance with Contract Specific EM&A Manual.

2.3.2 **Figure 2.1** shows the locations of monitoring stations. **Table 2.4** describes the details of the monitoring stations.

Table 2.4 Locations of Impact Air Quality Monitoring Stations

Monitoring Station	Location
AMS5	Ma Wan Chung Village (Tung Chung)
AMS6	Dragonair / CNAC (Group) Building (HKIA)

2.4 Monitoring Parameters, Frequency and Duration

2.4.1 **Table 2.5** summarizes the monitoring parameters, frequency and duration of impact TSP monitoring.

Table 2.5 Air Quality Monitoring Parameters, Frequency and Duration

Parameter	Frequency and Duration
1-hour TSP	Three times every 6 days while the highest dust impact was expected
24-hour TSP	Once every 6 days

2.5 Monitoring Methodology

2.5.1 24-hour TSP Monitoring

(a) The HVS was installed in the vicinity of the air sensitive receivers. The following criteria were considered in the installation of the HVS.

(i) A horizontal platform with appropriate support to secure the sampler against gusty wind was provided.

(ii) The distance between the HVS and any obstacles, such as buildings, was at least twice the height that the obstacle protrudes above the HVS.

(iii) A minimum of 2 meters separation from walls, parapets and penthouse for rooftop sampler.

(iv) No furnace or incinerator flues nearby.

(v) Airflow around the sampler was unrestricted.

(vi) Permission was obtained to set up the samplers and access to the monitoring stations.

(vii) A secured supply of electricity was obtained to operate the samplers.

(viii) The sampler was located more than 20 meters from any dripline.

(ix) Any wire fence and gate, required to protect the sampler, did not obstruct the monitoring process.

(x) Flow control accuracy was kept within ±2.5% deviation over 24-hour sampling period.

(b) Preparation of Filter Papers

(i) Glass fibre filters, G810 were labelled and sufficient filters that were clean and without pinholes were selected.

(ii) All filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ±3 °C; the relative humidity (RH) was < 50% and not variable by more than ±5%. A convenient working RH was 40%.

(iii) All filter papers were prepared and analysed by ALS Technichem (HK) Pty Ltd., which is a HOKLAS accredited laboratory and has comprehensive quality assurance and quality control programmes.

(c) Field Monitoring

(i) The power supply was checked to ensure the HVS works properly.

(ii) The filter holder and the area surrounding the filter were cleaned.

(iii) The filter holder was removed by loosening the four bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully.

(iv) The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter.

(v) The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied was sufficient to avoid air leakage at the edges.

(vi) Then the shelter lid was closed and was secured with the aluminum strip.

(vii) The HVS was warmed-up for about 5 minutes to establish run-temperature conditions.

(viii) A new flow rate record sheet was set into the flow recorder.

(ix) On site temperature and atmospheric pressure readings were taken and the flow rate of the HVS was checked and adjusted at around 1.1 m^3/min, and complied with the range specified in the Updated EM&A Manual for HKLR (Version 1.0) (i.e. 0.6-1.7 m^3/min).

(x) The programmable digital timer was set for a sampling period of 24 hrs, and the starting time, weather condition and the filter number were recorded.

(xi) The initial elapsed time was recorded.

(xii) At the end of sampling, on site temperature and atmospheric pressure readings were taken and the final flow rate of the HVS was checked and recorded.

(xiii) The final elapsed time was recorded.

(xiv) The sampled filter was removed carefully and folded in half length so that only surfaces with collected particulate matter were in contact.

(xv) It was then placed in a clean plastic envelope and sealed.

(xvi) All monitoring information was recorded on a standard data sheet.

(xvii) Filters were then sent to ALS Technichem (HK) Pty Ltd. for analysis.

(d) Maintenance and Calibration

(i) The HVS and its accessories were maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.

(ii) 5-point calibration of the HVS was conducted using TE-5025A Calibration Kit prior to the commencement of baseline monitoring. Bi-monthly 5-point calibration of the HVS will be carried out during impact monitoring.

(iii) Calibration certificate of the HVSs are provided in **Appendix C**.

2.5.2 1-hour TSP Monitoring

(a) Measuring Procedures

The measuring procedures of the 1-hour dust meter were in accordance with the Manufacturer's Instruction Manual as follows:-

(i) Turn the power on.

(ii) Close the air collecting opening cover.

(iii) Push the "TIME SETTING" switch to [BG].

(iv) Push "START/STOP" switch to perform background measurement for 6 seconds.

(v) Turn the knob at SENSI ADJ position to insert the light scattering plate.

(vi) Leave the equipment for 1 minute upon "SPAN CHECK" is indicated in the display.

(vii) Push "START/STOP" switch to perform automatic sensitivity adjustment. This measurement takes 1 minute.

(viii) Pull out the knob and return it to MEASURE position.

(ix) Push the "TIME SETTING" switch the time set in the display to 3 hours.

(x) Lower down the air collection opening cover.

(xi) Push "START/STOP" switch to start measurement.

(b) Maintenance and Calibration

(i) The 1-hour TSP meter was calibrated at 1-year intervals against a Tisch Environmental Mass Flow Controlled Total Suspended Particulate (TSP) High Volume Air Sampler. Calibration certificates of the Laser Dust Monitors are provided in **Appendix C**.

2.6 Monitoring Schedule for the Reporting Month

2.6.1 The schedule for air quality monitoring in October 2012 is provided in **Appendix D**.

2.7 Monitoring Results

2.7.1 The monitoring results for 1-hour TSP and 24-hour TSP are summarized in **Tables 2.6** and **2.7** respectively. Detailed impact air quality monitoring results are presented in **Appendix E**.

Table 2.6 Summary of 1-hour TSP Monitoring Results During the Reporting Month

Monitoring Station	Average ($\mu g/m^3$)	Range ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
AMS5	271	82 – 562	352	500
AMS6	145	101 – 178	360	500

Table 2.7 Summary of 24-hour TSP Monitoring Results During the Reporting Month

Monitoring Station	Average ($\mu g/m^3$)	Range ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
AMS5	73	46 – 94	164	260
AMS6	N/A*	N/A*	173	260

Remarks:

* The permission of HVS installation was granted at the end of October 2012. The impact monitoring at AMS6 commenced on 1 November 2012.

2.7.2 Two Action Level exceedances of 1-hr TSP (425μg/m^3 and 412μg/m^3) and one Limit Level exceedances of 1-hr TSP (562μg/m^3) were recorded at Station AMS5 on 30 October 2012. The construction activities during the sampling period included laying of geotextile and rock filling, and GI survey at works area of Kwo Lo Wan Road. These activities did not generate significant dust impact and were undertaken far away (greater than 500m) from AMS5. The general weather conditions in Tung Chung were drizzle during the dust sampling period. The drizzle would cause high readings of portable dust meter. The API levels (API levels at 2p.m., 3p.m., 4p.m. and 5 p.m. are 56, 22, 54 and 54) were high at Tung Chung Station during the last two hours of the monitoring period (1:45p.m. – 4:45p.m.). Therefore, it was considered that the exceedances were not related to the construction activities of the Contract and caused by the weather condition.

2.7.3 The event action plan is annexed in **Appendix F**.

2.7.4 The wind data is shown as **Appendix G**.

3 Noise Monitoring

3.1 Monitoring Requirements

3.1.1 In accordance with the Contract Specific EM&A Manual, impact noise monitoring was conducted for at least once per week during the construction phase of the Project. The Action and Limit level of the noise monitoring is provided in **Table 3.1**.

Table 3.1 Action and Limit Levels for Noise during Construction Period

Monitoring Station	Time Period	Action Level	Limit Level
NMS5 - Ma Wan Chung Village (Ma Wan Chung Resident Association) (Tung Chung)	0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A)

3.2 Monitoring Equipment

3.2.1 Noise monitoring was performed using sound level meter at each designated monitoring station. The sound level meters deployed comply with the International Electrotechnical Commission Publications (IEC) 651:1979 (Type 1) and 804:1985 (Type 1) specifications. Acoustic calibrator was deployed to check the sound level meters at a known sound pressure level. Brand and model of the equipment are given in **Table 3.2**.

Table 3.2 Noise Monitoring Equipment

Equipment	Brand and Model
Integrated Sound Level Meter	B&K 2238
Acoustic Calibrator	B&K 4321

3.3 Monitoring Locations

3.3.1 Monitoring location NMS5 was set up at the proposed locations in accordance with Contract Specific EM&A Manual.

3.3.2 **Figure 2.1** shows the locations of monitoring stations. **Table 3.3** describes the details of the monitoring stations.

Table 3.3 Locations of Impact Noise Monitoring Stations

Monitoring Station	Location
NMS5	Ma Wan Chung Village (Ma Wan Chung Resident Association) (Tung Chung)

3.4 Monitoring Parameters, Frequency and Duration

3.4.1 **Table 3.4** summarizes the monitoring parameters, frequency and duration of impact noise monitoring.

Table 3.4 Noise Monitoring Parameters, Frequency and Duration

Parameter	Frequency and Duration
30-mins measurement at each monitoring station between 0700 and 1900 on normal weekdays (Monday to Saturday). L_{eq}, L_{10} and L_{90} would be recorded.	At least once per week

3.5 Monitoring Methodology

3.5.1 Monitoring Procedure

(a) The sound level meter was set on a tripod at a height of 1.2 m above the podium for free-field measurements at NMS5. A correction of +3 dB(A) shall be made to the free field measurements.

(b) The battery condition was checked to ensure the correct functioning of the meter.

(c) Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:-

(i) frequency weighting: A

(ii) time weighting: Fast

(iii) time measurement: $L_{eq(30\text{-}minutes)}$ during non-restricted hours i.e. 07:00 – 1900 on normal weekdays;

(e) Prior to and after each noise measurement, the meter was calibrated using the acoustic calibrator for 94.0 dB(A) at 1000 Hz. 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 of noise measurement would be required after re-calibration or repair of the equipment.

(f) 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.

(g) Noise measurement was paused during periods of high intrusive noise (e.g. dog barking, helicopter noise) if possible. Observations were recorded when intrusive noise was unavoidable.

(h) Noise monitoring was cancelled in the presence of fog, rain, wind with a steady speed exceeding 5m/s, or wind with gusts exceeding 10m/s. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

3.5.2 Maintenance and Calibration

(a) The microphone head of the sound level meter was cleaned with soft cloth at regular intervals.

(b) The meter and calibrator were sent to the supplier or HOKLAS laboratory to check and calibrate at yearly intervals.

(c) Calibration certificates of the sound level meters and acoustic calibrators are provided in **Appendix C**.

3.6 Monitoring Schedule for the Reporting Month

3.6.1 The schedule for construction noise monitoring in October 2012 is provided in **Appendix D**.

3.7 Monitoring Results

3.7.1 The monitoring results for construction noise are summarized in **Table 3.5** and the monitoring data is provided in **Appendix E.**

Table 3.5 Summary of Construction Noise Monitoring Results During the Reporting Month

Monitoring Station	Average $L_{eq\ (30\ mins)}$, dB(A)	Range of $L_{eq\ (30\ mins)}$, dB(A)	Limit Level $L_{eq\ (30\ mins)}$, dB(A)
NMS5	56	52 – 59	75

*+3dB(A) Façade correction included

3.7.2 No Action Level and Limit Level exceedances were recorded at all monitoring stations during the reporting month.

3.7.3 Major noise sources during the noise monitoring included construction activities of the Contract and nearby traffic noise.

3.7.4 The event action plan is annexed in **Appendix F.**

4 Water Quality Monitoring

4.1 Monitoring Requirements

4.1.1 Impact water quality monitoring was carried out to ensure that any deterioration of water quality was detected, and that timely action was taken to rectify the situation. For impact water quality monitoring, measurements were taken in accordance with the Contract Specific EM&A Manual. **Table 4.1** shows the established Action/Limit Levels for the environmental monitoring works.

Table 4.1 Action and Limit Levels for Water Quality

Parameter (unit)	Water Depth	Action Level	Limit Level
Dissolved Oxygen (mg/L) (surface, middle and bottom)	Surface and Middle	5.0	4.2 except 5 for Fish Culture Zone
	Bottom	4.7	3.6
Turbidity (NTU)	Depth average	27.5 or 120% of upstream control station's turbidity at the same tide of the same day	47.0 or 130% of turbidity at the upstream control station at the same tide of same day
Suspended Solid (SS) (mg/L)	Depth average	23.5 or 120% of upstream control station's SS at the same tide of the same day	34.4 or 130% of SS at the upstream control station at the same tide of same day and 10mg/L for Water Services Department Seawater Intakes

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 limit occurs when monitoring result is lower that the limit.
(3) For SS & turbidity non-compliance of the water quality limits occur when monitoring result is higher than the limits.

4.2 Monitoring Equipment

4.2.1 **Table 4.2** summarises the equipment used in the impact water quality monitoring programme.

Table 4.2 Water Quality Monitoring Equipment

Equipment	Brand and Model
DO and Temperature Meter, Salinity Meter, Turbidimeter and pH Meter	YSI Model 6920 V2-M, 650
Positioning Equipment	DGPS – KODEN : KGP913MkII, KBG3
Water Depth Detector	Layin Associates: SM-5 & SM5A
Water Sampler	Wildlife Supply Company : 5487-10

4.3 Monitoring Parameters, Frequency and Duration

4.3.1 **Table 4.3** summarises the monitoring parameters, frequency and monitoring depths of impact water quality monitoring as required in the Contract Specific EM&A Manual.

Table 4.3 Impact Water Quality Monitoring Parameters and Frequency

Monitoring Stations	Parameter, unit	Frequency	No. of depth
Impact Stations: IS5, IS(Mf)6, IS7, IS8, IS(Mf)9 & IS10, Control/Far Field Stations: CS2 & CS(Mf)5, Sensitive Receiver Stations: SR3, SR4, SR5, SR10A & SR10B	• Depth, m • Temperature, ^{o}C • Salinity, ppt • Dissolved Oxygen (DO), mg/L • DO Saturation, % • Turbidity, NTU • pH • Suspended Solids (SS), mg/L	Three times per week during mid-ebb and mid-flood tides (within ± 1.75 hour of the predicted time)	3 (1 m below water surface, mid-depth and 1 m above sea bed, except where the water depth is less than 6 m, in which case the mid-depth station may be omitted. Should the water depth be less than 3 m, only the mid-depth station will be monitored).

4.4 Monitoring Locations

4.4.1 In accordance with the Contract Specific EM&A Manual, thirteen stations (6 Impact Stations, 5 Sensitive Receiver Stations and 2 Control Stations) were designated for impact water quality monitoring. The six Impact Stations (IS) were chosen on the basis of their proximity to the reclamation and thus the greatest potential for water quality impacts, the five Sensitive Receiver Stations (SR) were chosen as they are close to the key sensitive receives and the two Control Stations (CS) were chosen to facilitate comparison of the water quality of the IS stations with less influence by the Project/ ambient water quality conditions.

4.4.2 Three water quality monitoring stations are located within Airport Approach Restricted Areas and permit is required to enter into these areas. The application of the permit is under processing.

4.4.3 The locations of these monitoring stations are summarized in **Table 4.4** and depicted in **Figure 2.1**.

Table 4.4 Impact Water Quality Monitoring Stations

Monitoring Stations	Description	Coordinates	
		Easting	Northing
IS5	Impact Station (Close to HKLR construction site)	811579	817106
IS(Mf)6	Impact Station (Close to HKLR construction site)	812101	817873
IS7	Impact Station (Close to HKBCF construction site)	812244	818777
IS8	Impact Station (Close to HKBCF construction site)	814251	818412
IS(Mf)9	Impact Station (Close to HKBCF construction site)	813273	818850
IS10*	Impact Station (Close to HKBCF construction site)	812577	820670
SR3	Sensitive receivers (San Tau SSSI)	810525	816456
SR4	Sensitive receivers (Tai Ho Inlet)	814760	817867
SR5*	Sensitive receivers (Artificial Reef In NE Airport)	811489	820455
SR10A	Sensitive receivers (Ma Wan Fish Culture Zone)	823741	823495

Monitoring Stations	Description	Coordinates	
		Easting	Northing
SR10B	Sensitive receivers (Ma Wan Fish Culture Zone)	823686	823213
CS2*	Control Station	805849	818780
CS(Mf)5	Control Station	817990	821129

Notes:
Monitoring Stations CS2, SR5 and IS10 are located within the Airport Approach Restricted Area. Therefore, a permit is required for entering into the area. The Contractor applied the permit in October 2012 and expected to receive the permit soon.

4.5 Monitoring Methodology

4.5.1 Instrumentation

(a) The in-situ water quality parameters including dissolved oxygen, temperature, salinity and turbidity, pH were measured by multi-parameter meters.

4.5.2 Operating/Analytical Procedures

(a) Digital Differential Global Positioning Systems (DGPS) were used to ensure that the correct location was selected prior to sample collection.

(b) Portable, battery-operated echo sounders were used for the determination of water depth at each designated monitoring station.

(c) All in-situ measurements were taken at 3 water depths, 1 m below water surface, mid-depth and 1 m above sea bed, except where the water depth was less than 6 m, in which case the mid-depth station was omitted. Should the water depth be less than 3 m, only the mid-depth station was monitored.

(d) At each measurement/sampling depth, two consecutive in-situ monitoring (DO concentration and saturation, temperature, turbidity, pH, salinity) and water sample for SS. The probes were retrieved out of the water after the first measurement and then re-deployed for the second measurement. Where the difference in the value between the first and second readings of DO or turbidity parameters was more than 25% of the value of the first reading, the reading was discarded and further readings were taken.

(e) Duplicate samples from each independent sampling event were collected for SS measurement. Water samples were collected using the water samplers and the samples were stored in high-density polythene bottles. Water samples collected were well-mixed in the water sampler prior to pre-rinsing and transferring to sample bottles. Sample bottles were pre-rinsed with the same water samples. The sample bottles were then be packed in cool-boxes (cooled at $4^{o}C$ without being frozen), and delivered to ALS Technichem (HK) Pty Ltd. for the analysis of suspended solids concentrations. The laboratory determination work would be started within 24 hours after collection of the water samples. ALS Technichem (HK) Pty Ltd. is a HOKLAS accredited laboratory and has comprehensive quality assurance and quality control programmes.

(f) The analysis method and detection limit for SS is shown in **Table 4.5**.

Table 4.5 Laboratory Analysis for Suspended Solids

Parameters	Instrumentation	Analytical Method	Detection Limit
Suspended Solid (SS)	Weighting	APHA 2540-D	0.5mg/L

(g) Other relevant data were recorded, including monitoring location / position, time, water depth, tidal stages, weather conditions and any special phenomena or work underway at the construction site in the field log sheet for information.

4.5.3 Maintenance and Calibrations

(a) All in situ monitoring instruments would be calibrated by FT Laboratories Ltd. before use and at 3-monthly intervals throughout all stages of the water quality monitoring programme. The procedures of performance check of sonde and testing results are provided in **Appendix C**.

4.6 Monitoring Schedule for the Reporting Month

4.6.1 The schedule for impact water quality monitoring in October 2012 is provided in **Appendix D.**

4.7 Monitoring Results

4.7.1 Impact water quality monitoring was conducted at all designated monitoring stations during the reporting month. Impact water quality monitoring results are provided in **Appendix E**.

4.7.2 Exceedances were recorded for suspended solids during the reporting month. Numbers of exceedances recorded during the reporting month at each impact station are summarised in **Table 4.6.**

Table 4.6 Summary of Water Quality Exceedances

Station	Exceedance Level	DO (S&M)		DO (Bottom)		Turbidity		SS		Total number of exceedances	
		Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood
IS5	Action Level	--	--	--	--	--	--	17/10/2012	17/10/2012 27/10/2012 30/10/2012	1	3
	Limit Level	--	--	--	--	--	20/10/2012 25/10/2012 27/10/2012	--	20/10/2012	0	4
IS(Mf)6	Action Level	--	--	--	--	--	27/10/2012	--	27/10/2012	0	2
	Limit Level	--	--	--	--	--	20/10/2012	--	20/10/2012 22/10/2012	0	3
IS7	Action Level	--	--	--	--	--	--	--	--	0	0
	Limit Level	--	--	--	--	--	20/10/2012 27/10/2012 30/10/2012	--	20/10/2012 27/10/2012 30/10/2012	0	6
IS8	Action Level	--	--	--	--	--	17/10/2012 27/10/2012 30/10/2012	--	--	0	3
	Limit Level	--	--	--	--	--	--	--	17/10/2012 20/10/2012 30/10/2012	0	3
IS(Mf)9	Action Level	--	--	--	--	--	--	--	--	0	0
	Limit Level	--	--	--	--	--	20/10/2012 27/10/2012 30/10/2012	--	20/10/2012 30/10/2012	0	5
IS10*	Action Level	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Limit Level	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SR3	Action Level	--	--	--	--	--	22/10/2012	--	27/10/2012 30/10/2012	0	3

Station	Exceedance Level	DO (S&M)		DO (Bottom)		Turbidity		SS		Total number of exceedances	
		Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood
	Limit Level	--	--	--	--	--	20/10/2012 25/10/2012 27/10/2012 30/10/2012	--	20/10/2012 22/10/2012	0	6
SR4	Action Level	--	--	--	--	--	--	--	--	0	0
	Limit Level	--	--	--	--	--	20/10/2012 27/10/2012 30/10/2012	--	20/10/2012 27/10/2012 30/10/2012	0	6
SR5*	Action Level	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Limit Level	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SR10A	Action Level	--	--	--	--	--	--	--	--	0	0
	Limit Level	--	--	--	--	--	--	--	20/10/2012	0	1
SR10B	Action Level	--	--	--	--	--	--	--	17/10/2012	0	1
	Limit Level	--	--	--	--	--	20/10/2012	--	20/10/2012	0	2
Total	**Action**	0	0	0	0	0	5	1	7	13**	
	Limit	0	0	0	0	0	18	0	18	36**	

Notes:
S: Surface;
M: Mid-depth;
* Monitoring Stations SR5 and IS10 are located within the Airport Approach Restricted Area. Therefore, a permit is required for entering into the area. The Contractor applied the permit in October 2012 and expected to receive the permit soon. Monitoring work will commence once the permit is granted.
** The total exceedances.

4.7.3 During the reporting month, there are eight Action Level exceedances and eighteen Limit Level exceedances of suspended solids level. Five Action Level exceedances and eighteen Limit Level exceedances of turbidity level were recorded. The completed "Notification of Environmental Quality Limit Exceedances" from for all water quality exceedances are provided in **Appendix M**. Investigation works were undertaken for all exceedances and it was found that only preparation works such as geotextile laying and stone blanket laying were undertaken. These activities were unlikely to cause adverse water quality impact. Therefore, all exceedances were considered not project related.

4.7.4 Water quality impact sources during the water quality monitoring were the construction activities of the Contract, nearby construction activities by other parties and nearby operating vessels by other parties.

4.7.5 The event action plan is annexed in **Appendix F**.

5 Dolphin Monitoring

5.1 Monitoring Requirements

5.1.1 Impact dolphin monitoring is required to be conducted by a qualified dolphin specialist team to evaluate whether there have been any effects on the dolphins.

5.2 Monitoring Methodology

Vessel-based Line-transect Survey

5.2.1 According to the requirements of the Updated EM&A Manual for HKLR (Version 1.0), dolphin monitoring programme should cover all transect lines in NEL and NWL survey areas (see **Figure 1 of Appendix H**) twice per month. The co-ordinates of all transect lines are shown in **Table 5.1**.

Table 5.1 Co-ordinates of transect lines

Line No.		Easting	Northing		Line No.		Easting	Northing
1	Start Point	804671	814577		13	Start Point	816506	819480
1	End Point	804671	831404		13	End Point	816506	824859
2	Start Point	805475	815457		14	Start Point	817537	820220
2	End Point	805477	826654		14	End Point	817537	824613
3	Start Point	806464	819435		15	Start Point	818568	820735
3	End Point	806464	822911		15	End Point	818568	824433
4	Start Point	807518	819771		16	Start Point	819532	821420
4	End Point	807518	829230		16	End Point	819532	824209
5	Start Point	808504	820220		17	Start Point	820451	822125
5	End Point	808504	828602		17	End Point	820451	823671
6	Start Point	809490	820466		18	Start Point	821504	822371
6	End Point	809490	825352		18	End Point	821504	823761
7	Start Point	810499	820690		19	Start Point	822513	823268
7	End Point	810499	824613		19	End Point	822513	824321
8	Start Point	811508	820847		20	Start Point	823477	823402
8	End Point	811508	824254		20	End Point	823477	824613
9	Start Point	812516	820892		21	Start Point	805476	827081
9	End Point	812516	824254		21	End Point	805476	830562
10	Start Point	813525	820872		22	Start Point	806464	824033
10	End Point	813525	824657		22	End Point	806464	829598
11	Start Point	814556	818449		23	Start Point	814559	821739
11	End Point	814556	820992		23	End Point	814559	824768
12	Start Point	815542	818807					
12	End Point	815542	824882					

5.2.2 The survey team used standard line-transect methods (Buckland et al. 2001) to conduct the systematic vessel surveys, and followed the same technique of data collection that has been adopted over the last 16 years of marine mammal monitoring surveys in Hong Kong developed

by HKCRP (see Hung 2012). For each monitoring vessel survey, a 15-m inboard vessel (Standard 31516) with an open upper deck (about 4.5 m above water surface) was used to make observations from the flying bridge area.

5.2.3 During on-effort survey periods, the survey team recorded effort data including time, position (latitude and longitude), weather conditions (Beaufort sea state and visibility), and distance travelled in each series (a continuous period of search effort) with the assistance of a handheld GPS (Garmin eTrex Legend).

5.2.4 Data including time, position and vessel speed were also automatically and continuously logged by handheld GPS throughout the entire survey for subsequent review.

5.2.5 When dolphins were sighted, the survey team would end the survey effort, and immediately record the initial sighting distance and angle of the dolphin group from the survey vessel, as well as the sighting time and position. Then the research vessel was diverted from its course to approach the animals for species identification, group size estimation, assessment of group composition, and behavioural observations. The perpendicular distance (PSD) of the dolphin group to the transect line was later calculated from the initial sighting distance and angle.

5.2.6. Survey effort being conducted along the parallel transect lines that were perpendicular to the coastlines (as indicated in Figure 1 of Appendix H) was labeled as “primary” survey effort, while the survey effort being conducted along the connecting lines between parallel lines was labeled as “secondary” survey effort. According to HKCRP long-term dolphin monitoring data, encounter rates of Chinese White Dolphins deduced from effort and sighting data collected along primary and secondary lines were similar in NEL and NWL survey areas. Therefore, primary and secondary survey effort were both presented as on-effort survey effort in this report.

5.2.7. Encounter rates of Chinese White Dolphins (number of on-effort sightings per 100 km of survey effort) were calculated in NEL and NWL survey areas in relation to the amount of survey effort conducted during each month of monitoring survey. Only data collected under Beaufort 3 or below condition would be used for encounter rate analysis. Dolphin encounter rates were calculated using primary survey effort alone, as well as the combined survey effort from both primary and secondary lines.

Photo-identification Work

5.2.8. When a group of Chinese White Dolphins were sighted during the line-transect survey, the survey team would end effort and approach the group slowly from the side and behind to take photographs of them. Every attempt was made to photograph every dolphin in the group, and even photograph both sides of the dolphins, since the colouration and markings on both sides may not be symmetrical.

5.2.9. Two professional digital cameras (Canon EOS 7D and 60D models), each equipped with long telephoto lenses (100-400 mm zoom), were available on board for researchers to take sharp, close-up photographs of dolphins as they surfaced. The images were shot at the highest available resolution and stored on Compact Flash memory cards for downloading onto a computer.

5.2.10. All digital images taken in the field were first examined, and those containing potentially identifiable individuals were sorted out. These photographs would then be examined in greater detail, and were carefully compared to the existing Chinese White Dolphin photo-identification catalogue maintained by HKCRP since 1995.

5.2.11. Chinese White Dolphins can be identified by their natural markings, such as nicks, cuts, scars and deformities on their dorsal fin and body, and their unique spotting patterns were also used as secondary identifying features (Jefferson 2000).

5.2.12. All photographs of each individual were then compiled and arranged in chronological order, with data including the date and location first identified (initial sighting), re-sightings, associated dolphins, distinctive features, and age classes entered into a computer database. Detailed information on all identified individuals will be further presented as appendix in the quarterly EM&A report.

5.3 Monitoring Results

Vessel-based Line-transect Survey

5.3.1 During the month of October 2012, five systematic line-transect vessel surveys were conducted on the 17th, 18th, 25th, 26th and 29th, to cover all transect lines in NWL and NEL survey areas twice. The survey routes of each survey day were presented in **Figures 2-6 of Appendix H**.

5.3.2 From these surveys, a total of 306.3 km of survey effort was collected, with 90.2% of the total survey effort being conducted under favourable weather conditions (i.e. Beaufort Sea State 3 or below with good visibility) (**Annex I of Appendix H**). Among the two areas, 115.6 km and 190.7 km of survey effort were conducted in NEL and NWL survey areas respectively. In addition, the total survey effort conducted on primary lines (the vertical lines perpendicular to the coastlines) was 224.6 km, while the effort on secondary lines (the lines connecting the primary lines) was 81.6 km.

5.3.3 During the two complete surveys in October 2012, a total of 17 groups of 51 Chinese White Dolphins were sighted (**Annex II of Appendix H**). All except one of these sightings were made during on-effort search. Thirteen sightings were made on primary lines, while the other three sightings were made on secondary lines. Two groups of dolphins were associated with an operating single trawler on October 25th.

5.3.4 Distribution of these dolphin sightings made during October's survey was shown in **Figure 7 of Appendix H**. These sightings were mostly concentrated toward the northwestern end and eastern end of North Lantau waters, while only a few sightings were made in the middle section of North Lantau waters (**Figure 7 of Appendix H**).

5.3.5 Notably, no dolphin sighting was made near the HKLR03 construction site or HKBCF construction site during this month's survey (**Figure 7 of Appendix H**). A single dolphin was also found near the entrance of narrow channel between Lantau Island and Chek Lap Kok airport platform, where dolphins rarely occurred there in the past (**Figure 7 of Appendix H**).

5.3.6. During October's surveys, dolphin encounter rates deduced from survey effort and sighting data collected from primary lines only were 6.2 and 5.2 sightings per 100 km of survey effort in NWL and NEL survey areas respectively. On the other hand, dolphin encounter rates deduced from survey effort and sighting data collected from both primary and secondary lines were 6.6 and 6.6 sightings per 100 km of survey effort in NWL and NEL survey areas respectively.

5.3.7. The average group size of Chinese White Dolphins was 3.0 individuals per group during October's surveys. Moreover, the average dolphin group size in NWL and NEL were 2.9 and 3.2 individuals pre group respectively.

Photo-identification Work

5.3.8. A total of 27 re-sightings of known individual Chinese White Dolphins were made during the October surveys (**Annex III and Photo Identified Record of Appendix H**). Among these 27 re-sightings, 21 individuals were identified, with six individuals (i.e. EL01, NL18, NL33, NL118, NL295 and NL296) being re-sighted twice during the month.

5.3.9. Notably, NL18, NL295 and NL296 were sighted twice on the same day (i.e. October 25th) while they were following a single trawler moving from east to west within NEL survey area. EL01 were also sighted twice by itself on the same day (i.e. October 25th). Therefore, for encounter rate analysis and abundance estimation, the second sighting with these individuals on October 25th will be adjusted in order to avoid double-counting issue.

5.3.10. During October's surveys, two well-recognized females, NL33 and NL93, were accompanied with their calves during their re-sightings.

Conclusion

5.3.11. During this month of dolphin monitoring, no adverse impact from the activities of this construction project on Chinese White Dolphins was noticeable from general observations.

5.3.12. Due to the monthly variation in dolphin occurrence within the study area, it would be more appropriate to draw conclusion on whether any impacts on dolphins have been detected related to the construction activities of this project in the quarterly EM&A report, where comparison on distribution, group size and encounter rates of dolphins between the quarterly impact monitoring period (October-December 2012) and baseline monitoring period (3-month period) will be made.

5.4 Reference

5.4.1 Buckland, S. T., Anderson, D. R., Burnham, K. P., Laake, J. L., Borchers, D. L., and Thomas, L. 2001. Introduction to distance sampling: estimating abundance of biological populations. Oxford University Press, London.

5.4.2 Hung, S. K. 2012. Monitoring of marine mammals in Hong Kong waters – data collection: final report (2011-12). An unpublished report submitted to the Agriculture, Fisheries and Conservation Department of Hong Kong SAR Government, 120 pp.

5.4.3 Jefferson, T. A. 2000. Population biology of the Indo-Pacific hump-backed dolphin in Hong Kong waters. Wildlife Monographs 144:1-65.

6 ENVIRONMENTAL SITE INSPECTION AND AUDIT

6.1 Site Inspection

6.1.1 Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. During the reporting month, 3 site inspections were carried out on 17, 24 and 30 October 2012.

6.1.2 Particular observations during the site inspections are described below.

17 October 2012

(a) Work area at WA3 and rock fill materials on the barges in Portion X was found in dry condition. The Contractor is recommended to water the unpaved areas/designated roads to suppress dust emissions. (This observation was closed on 24 October 2012.)

(b) Mud track were found at Kwo Lo Wan Road and Emergency Vehicles Access. The Contractor should clean up the mud tracks at the Emergency Vehicles Access and to implement the wheel washing facility as soon as practical. (This observation was closed on 30 October 2012.)

(c) Dust generated during unloading on a barge. The Contractor is reminded to spray water to the rock fill materials on the barges to suppress dust emissions. (This observation was closed on 24 October 2012.)

(d) A plant was found in WA4 which do not have any labels and drip tray. The Contractor is suggested to provide label (e.g. Noise Emission Label) and drip tray to the air compressor. (This observation was closed on 24 October 2012.)

(e) Some rubbish was found in WA3 next to a tree. The Contractor should clear the rubbish and keep the tidiness of the Site. (This observation was closed on 24 October 2012.)

24 October 2012

(f) The mud trucks were still found at Kwo Lo Wan Road. The Contractor should clean up the mud trucks at Kwo Lo Wan Road and to install the wheel washing facility as soon as practical. (This observation was closed on 30 October 2012.)

(g) The unpaved road at West Portal was dry. The Contractor is recommended to water the bare soil roads to suppress dust emissions. (This observation was closed on 30 October 2012.)

(h) The stockpile of the cement was found to be partially covered at WA06. The Contractor is reminded to fully cover the stockpile of cement with a tarpaulin sheet. (This observation was closed on 30 October 2012.)

(i) Silt was found on the road outside the RE office. The Contractor is recommended to remove the silt on the road. (This observation was closed on 30 October 2012.)

30 October 2012

(a) Some debris and broken sand bags were found on the deck of the barge within the silt curtain surrounding area. The contractor was reminded that any debris and broken sand bags should be removed from the deck to avoid falling off of debris into the sea when the barge moves outside the silt curtain surrounding area. (This observation will be checked in next site inspection.)

6.1.3 The Contractor has rectified most of the observations as identified during environmental site inspections during the reporting month. Follow-up actions for outstanding observations will be inspected during the next site inspections.

6.2 Advice on the Solid and Liquid Waste Management Status

6.2.1 The Contractor had submitted application form for registration as a chemical waste producer for the Project. Sufficient numbers of receptacles were available for general refuse collection and sorting.

6.2.2 As advised by the Contract, 10m^3 of general refuse were generated and disposed of during the reporting month. Monthly summary of waste flow table is detailed in **Appendix I**.

6.2.3 The Contractor is reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practise on the Packaging, Labelling and Storage of Chemical Wastes.

6.3 Environmental Licenses and Permits

6.3.1 The valid environmental licenses and permits during the reporting month are summarized in **Appendix K**.

6.4 Implementation Status of Environmental Mitigation Measures

6.4.1 In response to the site audit findings, the Contractors carried out corrective actions.

6.4.2 A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in **Appendix L**. Most of the necessary mitigation measures were implemented properly.

6.4.3 Regular marine travel route for marine vessels were implemented properly in accordance to the submitted plan and relevant records were kept properly.

6.4.4 Dolphin Watching Plan was implemented during the reporting month. No dolphins were observed. The relevant records were kept properly.

6.4.5 A dolphin exclusion zone of 250m was implemented during the installation of silt curtains on 17, 18 and 19 October 2012. No dolphins were observed. The relevant records were kept properly.

6.5 Summary of Exceedances of the Environmental Quality Performance Limit

6.5.1 One exceedance above Limit Level and two exceedances above Action Level were recorded at AMS5 during the reporting month. The exceedances were considered as non-Contract related. .

6.5.2 For construction noise, no Action and Limit Level exceedance was recorded at the monitoring station during the reporting month.

6.5.3 During the reporting month, there are eight Action Level exceedances and eighteen Limit Level exceedances of suspended solids level. Five Action Level exceedances and eighteen Limit Level exceedances of turbidity level were recorded. Investigation works were undertaken for all exceedances and it was found that only preparation works such as geotextile laying and stone blanket laying were undertaken. These activities were unlikely to cause adverse water quality impact. Therefore, all exceedances were considered not project related.

6.6 Summary of Complaints, Notification of Summons and Successful Prosecution

6.6.1 There was one environmental complaint received during this reporting month. An e-mail complaint was received from EPD on 22 October 2012 regarding the potential discharge of effluent into marine water in the vicinity of the construction site for the HZMB project. Based on the photos provided by the complainant and the information from the Contractor, the observation was not likely due to effluent discharge or oil spill. The pelican barge as shown in the photos provided on 24 Oct 2012 does not belong to this Contract. The complaint was not related to this Contract so no follow up action was required. However, the Contractor was reminded to implement necessary mitigation measures properly and undertake regular

environmental inspections and maintenance of machinery to avoid environmental pollution. All investigation reports for exceedances of the Contract have been submitted to ENPO/IEC for comments and/or follow up to identify whether the exceedances occurred related to other HZMB contracts. The record of "Complaint Enquiry Form" is provided in **Appendix M**

6.6.2 No notification of summons and prosecution was received during the reporting period.

6.6.3 Statistics on complaints, notifications of summons and successful prosecutions are summarized in **Appendix J**.

7 FUTURE KEY ISSUES

7.1 Construction Programme for the Coming Months

7.1.1 As informed by the Contractor, the major construction for November and December 2012 are summarized in **Table 7.1**.

Table 7.1 Construction Activities for November and December 2012

Site Area	Description of Activities
Portion Y	Ground Investigation Work
Portion Y	Site clearing for road and drainage work
Portion X	Marine Site investigation
Portion X	Removal of armour rocks of existing seawall
Portion X	Installation of silt curtain
Portion X	Formation of temporary stone platform
Portion X	Reclamation
Kwo Lo Wan Road	Relocation of Flag Poles
West Portal	Site formation work for tunnelling
West Portal	Installation of Soil Nails

7.2 Environmental Monitoring Scheme for the Coming Month

7.2.1 The tentative schedule for environmental monitoring in November 2012 is provided in **Appendix D**.

8 CONCLUSION

8.1 Conclusions

8.1.1 The construction phase and EM&A programme of the Project commenced on 17 October 2012.

8.1.2 Two Action Level exceedances of 1-hr TSP (425μg/m^3 and 412μg/m^3) and one Limit Level exceedances of 1-hr TSP (562μg/m^3) were recorded at Station AMS5 on 30 October 2012. The construction activities during the sampling period included laying of geotextile and rock filling, and GI survey at works area of Kwo Lo Wan Road. These activities did not generate significant dust impact and were undertaken far away (greater than 500m) from AMS5. The general weather conditions in Tung Chung were drizzle during the dust sampling period. The drizzle would cause high readings of portable dust meter. The API levels (54) were high at Tung Chung Station during the last two hours of the monitoring period. Therefore, it was considered that the exceedances were not related to the construction activities of the Contract and caused by the weather condition. .

8.1.3 For construction noise, no Action and Limit Level exceedance was recorded at the monitoring stations during the reporting period.

8.1.4 During the reporting month, there are eight Action Level exceedances and eighteen Limit Level exceedances of suspended solids level. Five Action Level exceedances and eighteen Limit Level exceedances of turbidity level were recorded. Investigation works were undertaken for all exceedances and it was found that only preparation works such as geotextile laying and stone blanket laying were undertaken. These activities were unlikely to cause adverse water quality impact. Therefore, all exceedances were considered not project related.

8.1.5 A total of 27 re-sightings of known individual Chinese White Dolphins were made during the October surveys. Among these 27 re-sightings, 21 individuals were identified, with six individuals (i.e. EL01, NL18, NL33, NL118, NL295 and NL296) being re-sighted twice during the month.

8.1.6 No dolphin sighting was made near the HKLR03 construction site or HKBCF construction site during the October survey. A single dolphin was also found near the entrance of narrow channel between Lantau Island and Chek Lap Kok airport platform, where dolphins rarely occurred there in the past.

8.1.7 Environmental site inspection was carried out on 17, 24 and 30 October 2012. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site inspections.

8.1.8 There was one environmental complaint received during this reporting month. An e-mail complaint was received from EPD on 22 October 2012 regarding the potential discharge of effluent into marine water in the vicinity of the construction site for the HZMB project. Based on the photos provided by the complainant and the information from the Contractor, the observation was not likely due to effluent discharge or oil spill. The pelican barge as shown in the photos provided on 24 Oct 2012 does not belong to this Contract. The complaint was not related to this Contract so no follow up action was required. However, the Contractor was reminded to implement necessary mitigation measures properly and undertake regular environmental inspections and maintenance of machinery to avoid environmental pollution.

8.1.9 No notification of summons and prosecution was received during the reporting period.

FIGURES

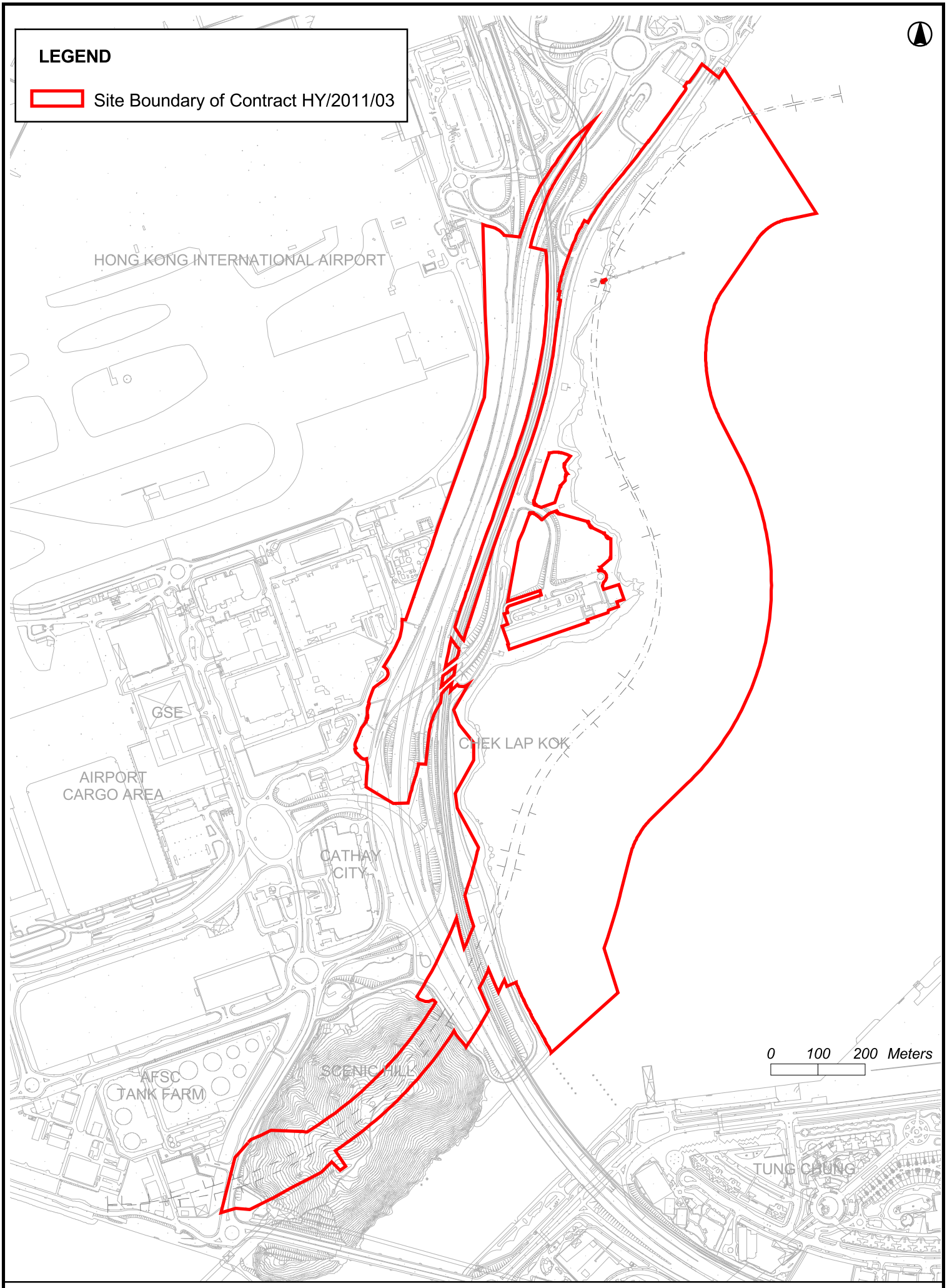
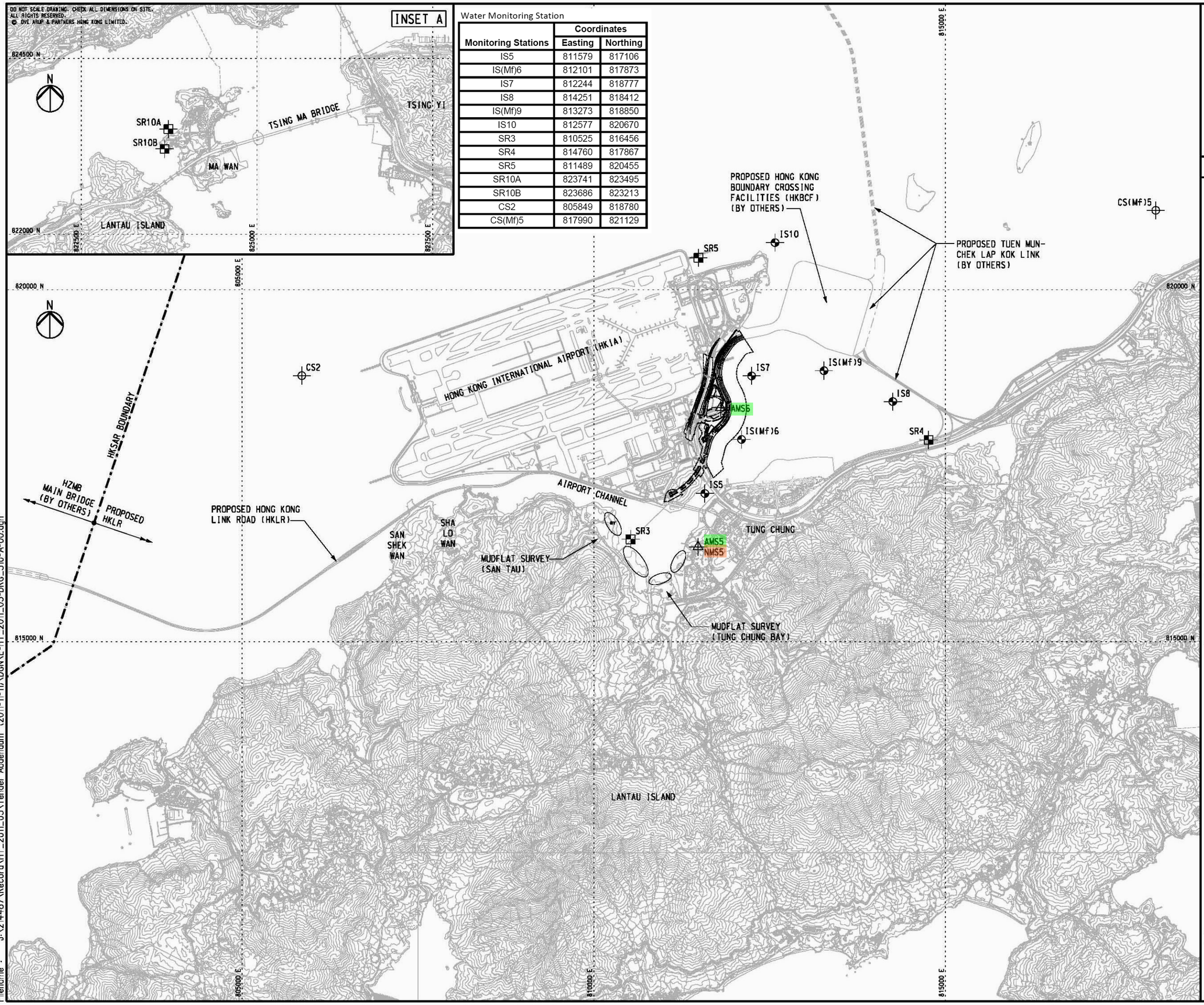


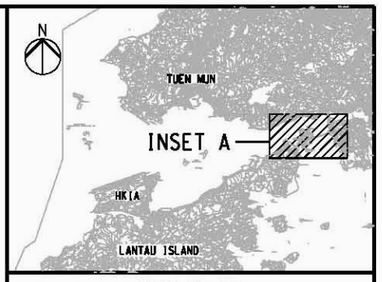
Figure 1.1 Location of the Site

INSET A

Water Monitoring Station

Monitoring Stations	Coordinates	
	Easting	Northing
IS5	811579	817106
IS(Mf)6	812101	817873
IS7	812244	818777
IS8	814251	818412
IS(Mf)9	813273	818850
IS10	812577	820670
SR3	810525	816456
SR4	814760	817867
SR5	811489	820455
SR10A	823741	823495
SR10B	823686	823213
CS2	805849	818780
CS(Mf)5	817990	821129





KEY PLAN

NOTES

1. EXACT LOCATIONS OF MONITORING STATIONS ARE TO BE DETERMINED ON SITE. THE CONTRACTOR AND ENVIRONMENTAL TEAM (ET) SHALL AGREE WITH THE INDEPENDENT ENVIRONMENTAL CHECKER (IEC) AND ENVIRONMENTAL PROJECT OFFICE (ENPO) AND APPROVED BY THE SUPERVISING OFFICER FOR THE PROPOSED LOCATION OF THE MONITORING STATIONS.
2. THE LOCATION AND EXTENT OF MUDFLAT SURVEY SHOWN ON THIS DRAWING ARE APPROXIMATE ONLY. THE CONTRACTOR AND ET SHALL DETERMINE AND AGREE WITH THE IEC, ENPO AND SUPERVISING OFFICER THE DETAILS OF THE MUDFLAT SURVEY IN ACCORDANCE WITH THE REQUIREMENTS STIPULATED IN THE EIA REPORTS AND EM&A MANUALS.
3. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS STIPULATED IN THE EM&A MANUALS TO CONDUCT THE ENVIRONMENTAL MONITORING AND AUDIT WORKS.

LEGEND

- WORKS BOUNDARY OF CONTRACT HY/2011/03
- IS — IMPACT STATIONS (WATER QUALITY)
- CS — CONTROL/FAR FIELD STATIONS (WATER QUALITY)
- SR — SENSITIVE RECEIVERS STATIONS (WATER QUALITY)
- ST — STATION FOR SENSITIVITY TEST RESULT (WATER QUALITY)
- AMS — MONITORING STATIONS (AIR QUALITY)
- NMS — MONITORING STATIONS (NOISE)
- MUDFLAT ECOLOGICAL SAMPLING LOCATION

Rev	Description	By	Date
A	TENDER ADDENDUM ISSUE	AW	11/11

Consultant
ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Contract No. and Title:
Contract No. HY/2011/03
Hong Kong-Zhuhai-Macao Bridge
Hong Kong Link Road -
Section Between Scenic Hill and
Hong Kong Boundary Crossing Facilities

Drawing title
ENVIRONMENTAL MONITORING STATIONS

Drawing			Rev.
Figure 2.1			A
Drawn: RY	Date: 11/11	Checked: AW	Approved: SK
Scale: As shown		Status:	

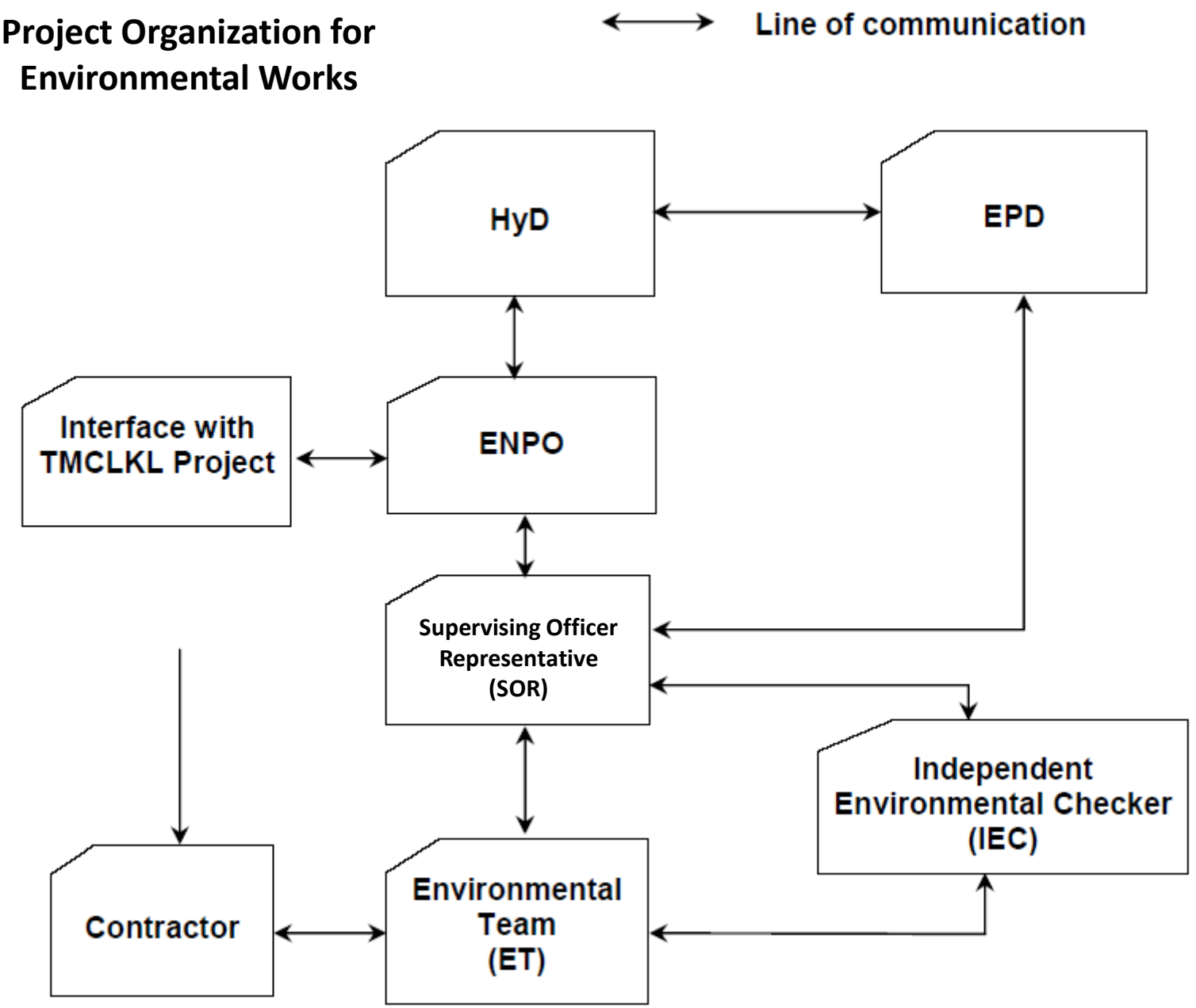
路政署 HIGHWAYS DEPARTMENT
港珠澳大橋香港工程管理處 Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

Printed by : 10/11/2011
Filename : J:\214487\Record\HY_2011_03\Tender Addendum (2011-11-11)\DGN\E-HY_2011_03-DRG_310-A-00.dgn

APPENDIX A

Environmental Management Structure

Project Organization for Environmental Works



APPENDIX B

Construction Programme

FILE: 3M06

Sheet 1 of 3

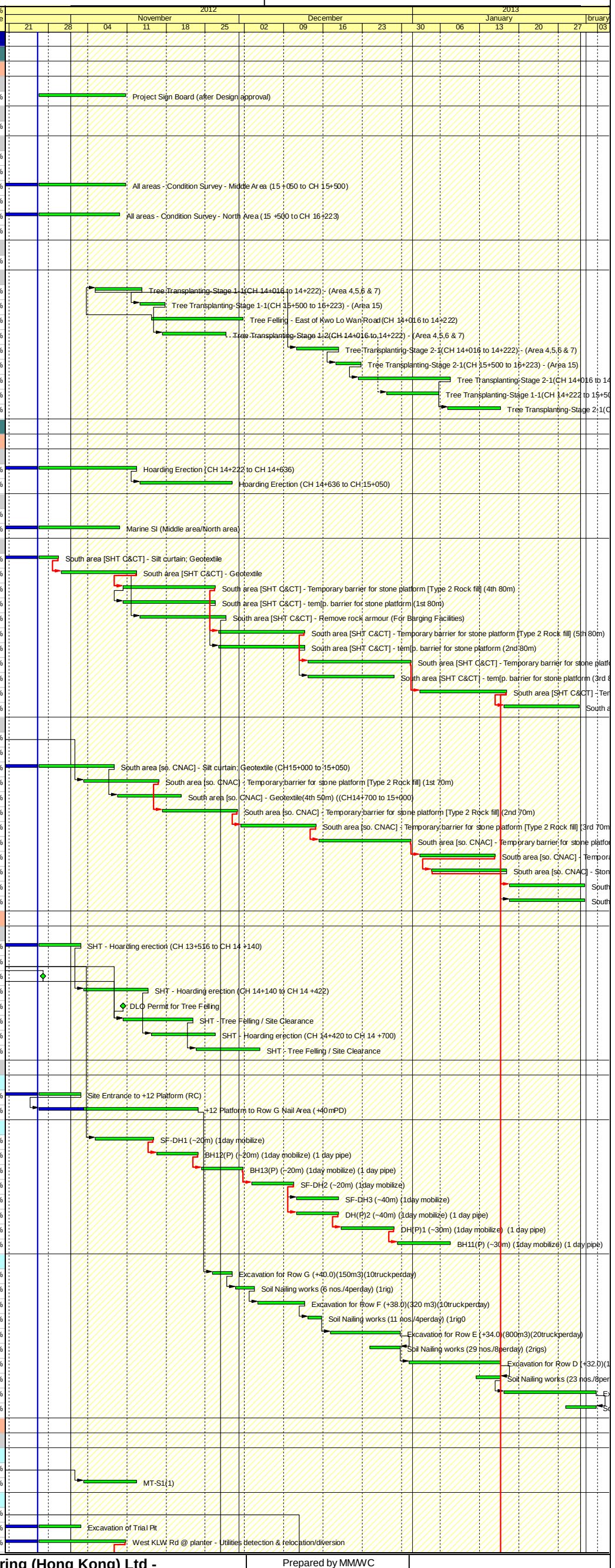
3-Months Rolling Programme (ER Part 5 & SCC 27(9))

(November 2012 to January 2013)

Layout HZMB - Layout 2 (3M05)

TASK filters: 3M06, HZMB No Level Effort.

Activity ID	Activity Name	Dur. (days)	Start	Finish	Activity % Complete
3 MONTHS PROGRAMME HY/2011/03 (NOV 2012 to JAN 2013)(Rev0)					
PRELIMINARIES (Site Establishment, Submissions, Permits & Licenses, Procurement)					
Site Estabalishment & Initial Works					
Contractors Mobilization and Site Accomodation & Sign Board					
GPS1490	Project Sign Board (after Design approval)	14	26-Oct-12*	10-Nov-12	0%
Supervising Officer's Site Accomodation					
GPS1550	S/O Site Accomodation - Electrical Installation & Finishing Works	16	15-Aug-12 A	12-Oct-12 A	100%
Initial Survey					
GPS1450	All areas - Initial Topographic Survey - South Area (13 +516 to CH 14+700)	14	27-Jul-12 A	10-Oct-12 A	100%
GPS1630	All areas - Initial Topographic Survey - Middle Area (15 +050 to CH 15+500)	14	13-Aug-12 A	10-Oct-12 A	100%
GPS1670	All areas - Condition Survey - Middle Area (15 +050 to CH 15+500)	14	20-Aug-12 A	10-Nov-12	95%
GPS1650	All areas - Initial Topographic Survey - North Area (15 +500 to CH 16+223)	14	29-Aug-12 A	10-Oct-12 A	100%
GPS1680	All areas - Condition Survey - North Area (15 +500 to CH 16+223)	14	05-Sep-12 A	09-Nov-12	95%
GPS1660	All areas - Initial Topographic Survey - South Area -south of CNAC (14 +700 to CH 1	14	14-Sep-12 A	10-Oct-12 A	100%
Environmental Monitoring					
GPS1430	Start environmental monitoring	0	15-Oct-12 A		100%
Tree Survey, Tree Felling and Transplanting					
GPS1710	Tree Transplanting-Stage 1-1(CH 14+016 to 14+222) - (Area 4,5,6 & 7)	8	05-Nov-12	13-Nov-12	0%
GPS1780	Tree Transplanting-Stage 1-1(CH 15+500 to 16+223) - (Area 15)	5	13-Nov-12	17-Nov-12	0%
GPS1700	Tree Felling - East of Kwo Lo Wan Road(CH 14+016 to 14+222)	15	15-Nov-12*	01-Dec-12	0%
GPS1740	Tree Transplanting-Stage 1-2(CH 14+016 to 14+222) - (Area 4,5,6 & 7)	10	17-Nov-12	28-Nov-12	0%
GPS1711	Tree Transplanting-Stage 2-1(CH 14+016 to 14+222) - (Area 4,5,6 & 7)	7	11-Dec-12	18-Dec-12	0%
GPS1790	Tree Transplanting-Stage 2-1(CH 15+500 to 16+223) - (Area 15)	5	18-Dec-12	22-Dec-12	0%
GPS1741	Tree Transplanting-Stage 2-1(CH 14+016 to 14+222) - (Area 4,5,6 & 7)	11	22-Dec-12	07-Jan-13	0%
GPS1720	Tree Transplanting-Stage 1-1(CH 14+222 to 15+500) - (Area 9,11,12 & 13)	8	27-Dec-12	05-Jan-13	0%
GPS1750	Tree Transplanting-Stage 2-1(CH 14+222 to 15+500) - (Area 9,11,12 & 13)	9	07-Jan-13	16-Jan-13	0%
WORKS IN SOUTH AREA - CH 13+516 to CH 15+050 (SCENIC HILL TUNNEL, MT & CCT)					
Reclamation Works					
Initial Works					
MAR1060	Hoarding Erection (CH 14+222 to CH 14+636)	15	19-Oct-12 A	12-Nov-12	20%
MAR1080	Hoarding Erection (CH 14+636 to CH 15+050)	15	13-Nov-12	29-Nov-12	0%
Marine SI					
MAR1105	Marine SI (Middle area/North area)	12	29-Sep-12 A	15-Oct-12 A	100%
MAR1106	Marine SI (Middle area/North area)	13	16-Oct-12 A	09-Nov-12	10%
Reclamation Works - Ch 14+140 to 14+700 (SHT C&CT Area, 560m)					
RSC1022	South area [SHT C&CT] - Silt curtain; Geotextile	12	12-Sep-12 A	29-Oct-12	75%
RSC1023	South area [SHT C&CT] - Geotextile	12	30-Oct-12	12-Nov-12	0%
RSC1030	South area [SHT C&CT] - Temporary barrier for stone platform [Type 2 Rock fill] (4tl	14	10-Nov-12	26-Nov-12	0%
RSC1011	South area [SHT C&CT] - tem[p. barrier for stone platform (1st 80m)	14	10-Nov-12	26-Nov-12	0%
RSC1010	South area [SHT C&CT] - Remove rock armour (For Barging Facilities)	14	13-Nov-12	28-Nov-12	0%
RSC1031	South area [SHT C&CT] - Temporary barrier for stone platform [Type 2 Rock fill] (5tl	14	27-Nov-12	12-Dec-12	0%
RSC1012	South area [SHT C&CT] - tem[p. barrier for stone platform (2nd 80m)	14	27-Nov-12	12-Dec-12	0%
RSC1032	South area [SHT C&CT] - Temporary barrier for stone platform [Type 2 Rock fill] (6tl	14	13-Dec-12	31-Dec-12	0%
RSC1013	South area [SHT C&CT] - tem[p. barrier for stone platform (3rd 80m)	12	13-Dec-12	28-Dec-12	0%
RSC1033	South area [SHT C&CT] - Temporary barrier for stone platform [Type 2 Rock fill] (7tl	14	02-Jan-13	17-Jan-13	0%
RSC1040	South area [SHT C&CT] - Stone platform	12	17-Jan-13	30-Jan-13	0%
Reclamation Works - Ch 14+700 to 15+050 (South of CNAC Tower, 350m)					
RSC1150	South area [so. CNAC] - Silt curtain; (CH14+700 to 14+850)	12	18-Sep-12 A	03-Oct-12 A	100%
RSC1151	South area [so. CNAC] - Silt curtain; (CH14+850 to 15+000)	12	04-Oct-12 A	17-Oct-12 A	100%
RSC1152	South area [so. CNAC] - Silt curtain; Geotextile (CH15+000 to 15+050)	6	18-Oct-12 A	08-Nov-12	20%
RSC1160	South area [so. CNAC] - Temporary barrier for stone platform [Type 2 Rock fill] (1st	12	03-Nov-12	16-Nov-12	0%
RSC1153	South area [so. CNAC] - Geotextile(4th 50m) ((CH14+700 to 15+000)	10	09-Nov-12	20-Nov-12	0%
RSC1161	South area [so. CNAC] - Temporary barrier for stone platform [Type 2 Rock fill] (2nd	12	17-Nov-12	30-Nov-12	0%
RSC1162	South area [so. CNAC] - Temporary barrier for stone platform [Type 2 Rock fill] (3rd	12	01-Dec-12	14-Dec-12	0%
RSC1163	South area [so. CNAC] - Temporary barrier for stone platform [Type 2 Rock fill] (4th	12	15-Dec-12	31-Dec-12	0%
RSC1164	South area [so. CNAC] - Temporary barrier for stone platform [Type 2 Rock fill] (5th	12	02-Jan-13	15-Jan-13	0%
RSC1170	South area [so. CNAC] - Stone platform	12	04-Jan-13	17-Jan-13	0%
RSC1180	South area [so. CNAC] - Stone columns	12	18-Jan-13	31-Jan-13	0%
RSC1171	South area [so. CNAC] - Stone platform	12	18-Jan-13	31-Jan-13	0%
SHT Mined Tunnel Works at Scenic Hill, Ch 13+516 to 14+016 (500m)					
Initial Works (@ Scenic Hill Road)					
SHT9690	SHT - Hoarding erection (CH 13+516 to CH 14 +140)	7	18-Oct-12 A	02-Nov-12	30%
SHT1020	AA Works Permit for Stage 2 SI	0	19-Oct-12 A		100%
SHT1040	AA Works Permit for Site Formation Works	0	27-Oct-12 A		100%
SHT9650	SHT - Hoarding erection (CH 14+140 to CH 14 +422)	10	03-Nov-12	14-Nov-12	0%
SHT1060	DLO Permit for Tree Felling	0	10-Nov-12*		0%
SHT1010	SHT - Tree Felling / Site Clearance	11	10-Nov-12	22-Nov-12	0%
SHT9680	SHT - Hoarding erection (CH 14+420 to CH 14 +700)	10	15-Nov-12	26-Nov-12	0%
SHT1011	SHT - Tree Felling / Site Clearance	10	23-Nov-12	04-Dec-12	0%
Mined Tunnel West Portal Works					
Temporary Access Road					
SHT9682	Site Entrance to +12 Platform (RC)	8	15-Oct-12 A	02-Nov-12	85%
SHT9684	+12 Platform to Row G Nail Area (+40mPD)	13	26-Oct-12 A	23-Nov-12	5%
Site Investigation					
SHT9686	SF-DH1 (~20m) (1day mobilize)	10	05-Nov-12*	15-Nov-12	0%
SHT9688	BH12(P) (~20m) (1day mobilize) (1 day pipe)	7	16-Nov-12	23-Nov-12	0%
SHT9691	BH13(P) (~20m) (1day mobilize) (1 day pipe)	7	24-Nov-12	01-Dec-12	0%
SHT9694	SF-DH2 (~20m) (1day mobilize)	7	03-Dec-12	10-Dec-12	0%
SHT9696	SF-DH3 (~40m) (1day mobilize)	7	11-Dec-12	18-Dec-12	0%
SHT9700	DH(P)2 (~40m) (1day mobilize) (1 day pipe)	7	11-Dec-12	18-Dec-12	0%
SHT9692	DH(P)1 (~30m) (1day mobilize) (1 day pipe)	7	19-Dec-12	28-Dec-12	0%
SHT9698	BH11(P) (~30m) (1day mobilize) (1 day pipe)	7	29-Dec-12	07-Jan-13*	0%
Site Formation					
SHT9702	Excavation for Row G (+40.0)(150m3)(10truckperday)	4	26-Nov-12	29-Nov-12	0%
SHT9704	Soil Nailing works (6 nos./4perday) (1rig)	3	30-Nov-12	03-Dec-12	0%
SHT9706	Excavation for Row F (+38.0)(320 m3)(10truckperday)	8	04-Dec-12	12-Dec-12	0%
SHT9708	Soil Nailing works (11 nos./4perday) (1rig0	3	13-Dec-12	15-Dec-12	0%
SHT9710	Excavation for Row E (+34.0)(800m3)(20truckperday)	10	17-Dec-12	29-Dec-12	0%
SHT9712	Soil Nailing works (29 nos./8perday) (2rigs)	4	24-Dec-12	29-Dec-12	0%
SHT9714	Excavation for Row D (+32.0)(1200m3)(20truckperday)	14	31-Dec-12	16-Jan-13	0%
SHT9716	Soil Nailing works (23 nos./8perday) (2rigs)	4	12-Jan-13	16-Jan-13	0%
SHT9718	Excavation for Row C (+28.0)(3000m3)(50truckperday)	15	17-Jan-13	02-Feb-13	0%
SHT9720	Soil Nailing works (65 nos./12perday) (3rigs)	6	28-Jan-13	02-Feb-13	0%
CCT Works across Airport Road at Ch 14+016 to 14+222 (206m)					
CCT at At Planter Area, Ch 14+031 to Ch 14+056					
Site Investigation					
SHT9798	DH(P)4, DH(P)7	10	05-Sep-12 A	13-Oct-12 A	100%
SHT9808	MT-S1(1)	8	05-Nov-12 A	12-Nov-12	50%
Initial Works (@ West Kwo Lo Wan Road Area)					
SHT1991	West KLW Rd - Mobilization	7	25-Aug-12 A	05-Oct-12 A	100%
SHT2020	Excavation of Trial Pit	7	25-Aug-12 A	02-Nov-12	70%
SHT1970	West KLW Rd @ planter - Utilities detection & relocation/diversion	14	15-Sep-12 A	10-Nov-12	30%



Works Programme

Works Programme

Works Programme

Milestone

Milestone

China State Construction Engineering (Hong Kong) Ltd -

Contract No. HY/2011/03 - HZMB, Hong Kong Link Road

, Section between Scenic Hill and HKBCF

Prepared by MMWC

Date	Revision	C...	A...
27-Oct...		H...	SYT

FILE: 3M06

Sheet 2 of 3

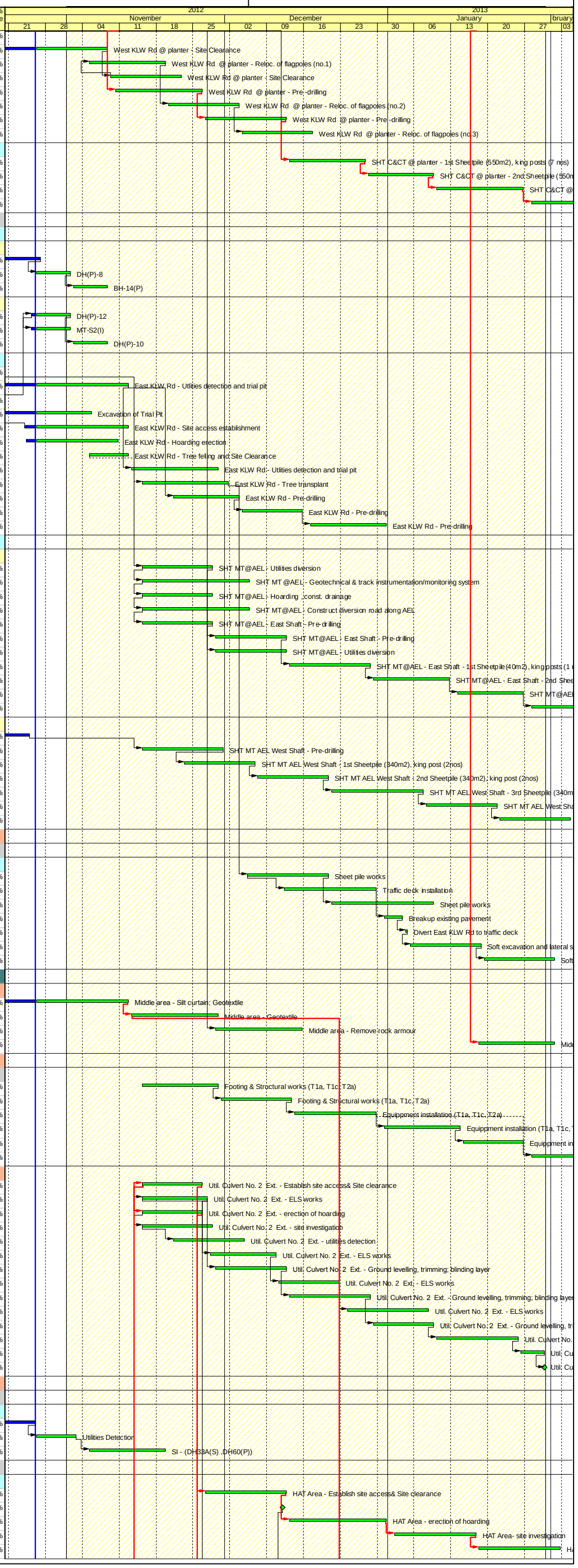
3-Months Rolling Programme (ER Part 5 & SCC 27(9))

(November 2012 to January 2013)

Layout HZMB - Layout 2 (3M05)

TASK filters: 3M06, HZMB No Level Effort.

Activity ID	Activity Name	Dur. (days)	Start	Finish	Activity % Complete
SHT1988	West KLW Rd @ planter - Site Clearance	12	05-Oct-12 A	18-Oct-12 A	100%
SHT1989	West KLW Rd @ planter - Site Clearance	12	19-Oct-12 A	08-Nov-12	30%
SHT1130	West KLW Rd @ planter - Reloc. of flagpoles (no.1)	13	05-Nov-12	19-Nov-12	0%
SHT1990	West KLW Rd @ planter - Site Clearance	12	09-Nov-12	22-Nov-12	0%
SHT2060	West KLW Rd @ planter - Pre -drilling	14	10-Nov-12	26-Nov-12	0%
SHT1131	West KLW Rd @ planter - Reloc. of flagpoles (no.2)	12	20-Nov-12	03-Dec-12	0%
SHT2061	West KLW Rd @ planter - Pre -drilling	14	27-Nov-12	12-Dec-12	0%
SHT1132	West KLW Rd @ planter - Reloc. of flagpoles (no.3)	12	04-Dec-12	17-Dec-12	0%
Civil & Structurals Works					
SHT1080	SHT C&CT @ planter - 1st Sheetpile (550m2), king posts (7 nos)	11	13-Dec-12	27-Dec-12	0%
SHT1081	SHT C&CT @ planter - 2nd Sheetpile (550m2), king posts (7 nos)	10	28-Dec-12	09-Jan-13	0%
SHT1090	SHT C&CT @ planter - ELS works (1st, 2nd Layers)	15	10-Jan-13	26-Jan-13	0%
SHT1091	SHT C&CT @ planter - ELS works (3rd, 4th Layers)	15	28-Jan-13	16-Feb-13	0%
Mined Tunnel Underneath AEL Ch 14+128 to Ch 14+175					
Site Investigation					
Near by Airport Road					
SHT2040	DH(P)-11	6	20-Oct-12 A	27-Oct-12 A	100%
SHT1980	DH(P)-8	6	26-Oct-12	01-Nov-12	0%
SHT2050	BH-14(P)	6	02-Nov-12	08-Nov-12	0%
Near by Kwo Lo Wan Road					
SHT2030	DH(P)-12	6	25-Oct-12 A	01-Nov-12	10%
SHT2090	MT-S2(I)	6	25-Oct-12 A	01-Nov-12	10%
SHT2080	DH(P)-10	6	02-Nov-12	08-Nov-12	0%
Initial Works (@ East Kwo Lo Wan Road Area)					
SHT1732	AA Works Permit for Site Establishment	0	13-Oct-12 A		100%
SHT1720	East KLW Rd - Utlities detection and trial pit	15	19-Oct-12 A	12-Nov-12	20%
SHT1722	AA Works Permit for Stage 2 SI	0	19-Oct-12 A		100%
SHT1743	Excavation of Trial Pit	7	19-Oct-12 A	05-Nov-12	15%
SHT1690	East KLW Rd - Site access establishment	7	24-Oct-12 A	12-Nov-12	35%
SHT1730	East KLW Rd - Hoarding erection	14	24-Oct-12 A	10-Nov-12	20%
SHT1710	East KLW Rd - Tree felling and Site Clearance	7	05-Nov-12*	12-Nov-12	0%
SHT1721	East KLW Rd - Utlities detection and trial pit	15	13-Nov-12	29-Nov-12	0%
SHT1712	East KLW Rd - Tree transplant	15	15-Nov-12*	01-Dec-12	0%
SHT1740	East KLW Rd - Pre-drilling	11	21-Nov-12	03-Dec-12	0%
SHT1741	East KLW Rd - Pre-drilling	11	04-Dec-12	15-Dec-12	0%
SHT1742	East KLW Rd - Pre-drilling	11	17-Dec-12	31-Dec-12	0%
Civil & Structurals Works					
ELS for East Access Shaft (Jacking Shaft)					
SHT1852	SHT MT@AEL - Utilities diversion	12	15-Nov-12*	28-Nov-12	0%
SHT1862	SHT MT @AEL - Geotechnical & track instrumentation/monitoring system	18	15-Nov-12	05-Dec-12	0%
SHT1872	SHT MT@AEL - Hoarding , const. drainage	12	15-Nov-12	28-Nov-12	0%
SHT1882	SHT MT@AEL - Construct diversion road along AEL	18	15-Nov-12	05-Dec-12	0%
SHT1892	SHT MT@AEL - East Shaft - Pre-drilling	12	15-Nov-12	28-Nov-12	0%
SHT1893	SHT MT@AEL - East Shaft - Pre-drilling	12	29-Nov-12	12-Dec-12	0%
SHT1853	SHT MT@AEL - Utilities diversion	12	29-Nov-12	12-Dec-12	0%
SHT1902	SHT MT@AEL - East Shaft - 1st Sheetpile(40m2), king posts (1 no)	12	13-Dec-12	28-Dec-12	0%
SHT1903	SHT MT@AEL - East Shaft - 2nd Sheetpile(40m2), king posts (1 no)	12	29-Dec-12	12-Jan-13	0%
SHT1904	SHT MT@AEL - East Shaft - 3rd Sheetpile(40m2), king posts (1 no)	12	14-Jan-13	26-Jan-13	0%
SHT1905	SHT MT@AEL - East Shaft - 4th Sheetpile(40m2), king posts (1 no)	12	28-Jan-13	13-Feb-13	0%
ELS for West Access Shaft (Retrieval Shaft)					
SHT1802	SHT MT AEL West Shaft - Establishment of site access	14	15-Oct-12 A	25-Oct-12 A	100%
SHT1812	SHT MT AEL West Shaft - Pre-drilling	14	15-Nov-12	30-Nov-12	0%
SHT1822	SHT MT AEL West Shaft - 1st Sheetpile (340m2), king post (2nos)	12	23-Nov-12	06-Dec-12	0%
SHT1823	SHT MT AEL West Shaft - 2nd Sheetpile (340m2), king post (2nos)	12	07-Dec-12	20-Dec-12	0%
SHT1824	SHT MT AEL West Shaft - 3rd Sheetpile (340m2), king post (3nos)	12	21-Dec-12	07-Jan-13	0%
SHT1832	SHT MT AEL West Shaft - ELS works (1st layer)	12	08-Jan-13	21-Jan-13	0%
SHT1833	SHT MT AEL West Shaft - ELS works (2nd layer)	12	22-Jan-13	04-Feb-13	0%
CCT Works over Reclaimed Area at Ch 14+222 to Ch 15+050 (828m)					
CCT Works - on New Reclamation [490m Approx.]					
Box Culvert Outfall PR10 Temporary Diversion					
BC1019	Sheet pile works	14	05-Dec-12	20-Dec-12	0%
BC1021	Traffic deck installation	14	12-Dec-12	29-Dec-12	0%
BC1020	Sheet pile works	14	21-Dec-12	09-Jan-13	0%
BC1022	Breakup existing pavement	3	31-Dec-12	03-Jan-13	0%
BC1023	Divert East KLW Rd to traffic deck	1	04-Jan-13	04-Jan-13	0%
BC1024	Soft excavation and lateral support	12	05-Jan-13	18-Jan-13	0%
BC1240	Soft excavation and lateral support	12	19-Jan-13	01-Feb-13	0%
WORKS IN MIDDLE AREA CH15+050 to 15+500 (HKLR AT GRADE, HAT MT, BRIDGE A1 & A2)					
Reclamation & Seawall Const. [other than Zone A; Portion C & D1] [450m Approx.]					
RSC1400	Middle area - Silt curtain; Geotextile	15	03-Sep-12 A	12-Nov-12	65%
RSC1401	Middle area - Geotextile	15	13-Nov-12	29-Nov-12	0%
RSC1390	Middle area - Remove rock armour	15	29-Nov-12	15-Dec-12	0%
RSC1410	Middle area - Temporary barrier for stone platform [Type 2 Rock fill] (CH15+500 - 15	13	18-Jan-13	01-Feb-13	0%
Flight Information Signs (PARDS) - Reprovisioning Works					
PARDS - Construction T1a, T1c, T2a					
PARDS100	Footing & Structural works (T1a, T1c, T2a)	13	15-Nov-12*	29-Nov-12	0%
PARDS101	Footing & Structural works (T1a, T1c, T2a)	12	30-Nov-12	13-Dec-12	0%
PARDS110	Equippment installation (T1a, T1c, T2a)	12	14-Dec-12	29-Dec-12	0%
PARDS111	Equippment installation (T1a, T1c, T2a)	12	31-Dec-12	14-Jan-13	0%
PARDS112	Equippment installation (T1a, T1c, T2a)	11	15-Jan-13	26-Jan-13	0%
PARDS120	Testing and Commissioning	10	28-Jan-13	07-Feb-13	0%
Utility Culvert No. 2 Ext. near Bridge A2 [30m Approx.]					
UC2.1000	Util. Culvert No. 2 Ext. - Establish site access& Site clearance	10	15-Nov-12*	26-Nov-12	0%
UC2.1010	Util. Culvert No. 2 Ext. - ELS works	11	15-Nov-12	27-Nov-12	0%
UC2.1002	Util. Culvert No. 2 Ext. - erection of hoarding	10	15-Nov-12	26-Nov-12	0%
UC2.1004	Util. Culvert No. 2 Ext. - site investigation	12	15-Nov-12	28-Nov-12	0%
UC2.1006	Util. Culvert No. 2 Ext. - utilities detection	12	21-Nov-12	04-Dec-12	0%
UC2.1011	Util. Culvert No. 2 Ext. - ELS works	11	28-Nov-12	10-Dec-12	0%
UC2.1020	Util. Culvert No. 2 Ext. - Ground levelling, trimming; blinding layer	12	29-Nov-12	12-Dec-12	0%
UC2.1012	Util. Culvert No. 2 Ext. - ELS works	11	11-Dec-12	22-Dec-12	0%
UC2.1060	Util. Culvert No. 2 Ext. - Ground levelling, trimming; blinding layer	12	13-Dec-12	28-Dec-12	0%
UC2.1013	Util. Culvert No. 2 Ext. - ELS works	11	24-Dec-12	08-Jan-13	0%
UC2.1070	Util. Culvert No. 2 Ext. - Ground levelling, trimming; blinding layer	9	29-Dec-12	09-Jan-13	0%
UC2.1030	Util. Culvert No. 2 Ext. - Culvert structure	14	10-Jan-13	25-Jan-13	0%
UC2.1040	Util. Culvert No. 2 Ext. - Backfilling	4	26-Jan-13	30-Jan-13	0%
UC2.1050	Util. Culvert No. 2 Extension Complete	0		30-Jan-13	0%
Works in HAT Tunnel (Mined Tunnel and West CCT w/ Emergency Pedestrian Passage					
CCT for HAT across Airport Road [200m Approx.]					
Utilities Diversion and SI Works					
HAT1531	SI - (DH46 (P), DH40(P), DH50(P), DH59A(S))	5	17-Oct-12 A	26-Oct-12 A	100%
HAT1532	Utilities Detection	7	26-Oct-12	02-Nov-12	0%
HAT1533	SI - (DH33A(S) ,DH60(P))	6	05-Nov-12	19-Nov-12	0%
Mined Tunnel for HAT underneath AEL & at East Coast Road [97m Approx.]					
Utilities Diversion, SI Works and Temp. Access Shaft					
HAT1552	HAT Area - Establish site access& Site clearance	14	27-Nov-12*	12-Dec-12	0%
HAT1540	HAT DDA and MS approved	0		12-Dec-12 A	100%
HAT1554	HAT Area - erection of hoarding	14	13-Dec-12	31-Dec-12	0%
HAT1556	HAT Area- site investigation	14	02-Jan-13	17-Jan-13	0%
HAT1558	HAT Area - utilities detection	14	18-Jan-13	02-Feb-13	0%



FILE: 3M06

Sheet 3 of 3

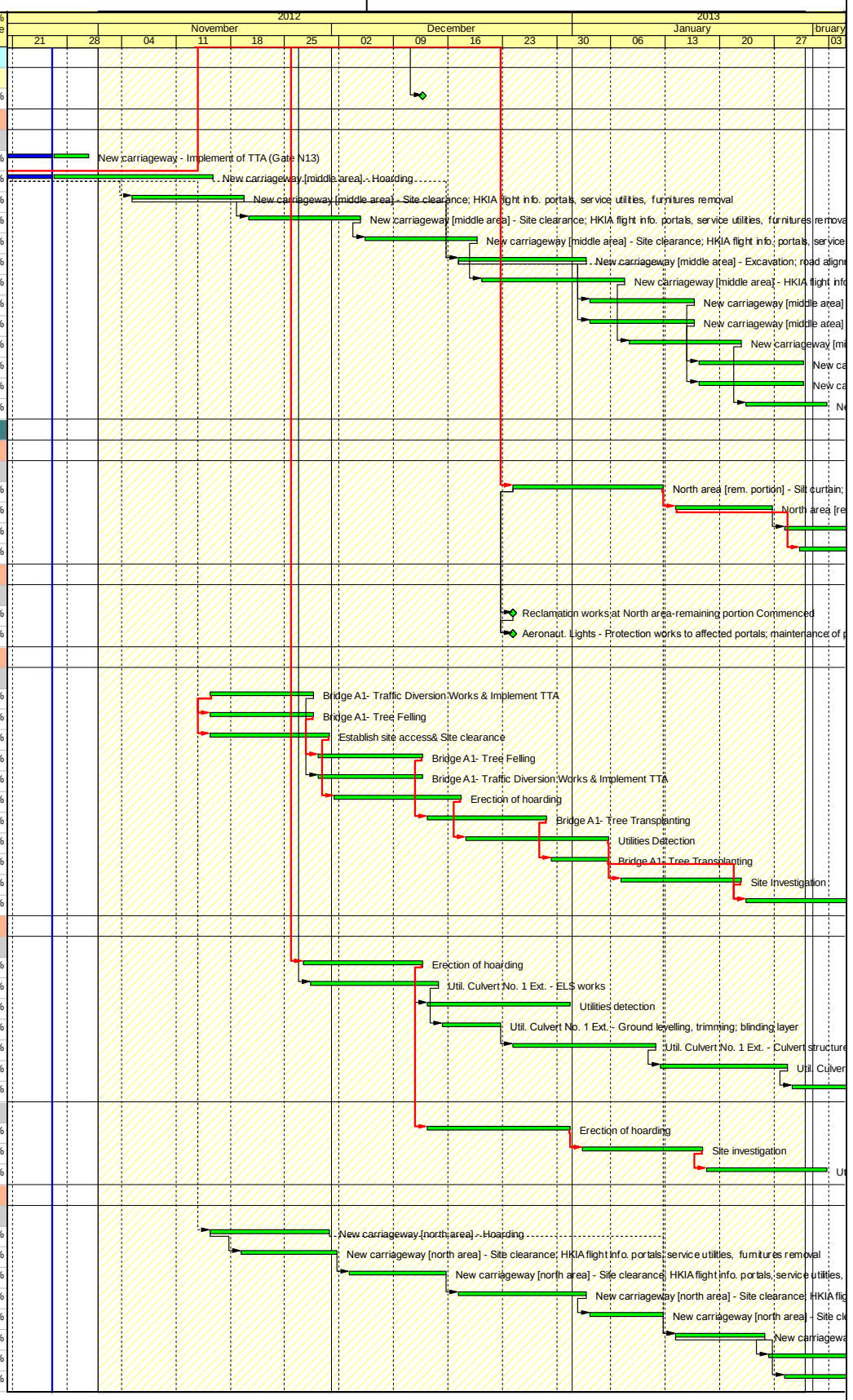
3-Months Rolling Programme (ER Part 5 & SCC 27(9))

(November 2012 to January 2013)

Layout HZMB - Layout 2 (3M05)

TASK filters: 3M06, HZMB No Level Effort.

Activity ID	Activity Name	Dur. (days)	Start	Finish	Activity % Complete
Mined Tunnel Works underneath AEL [37m Approx.]					
1st Half Heading					
HAT2000	HAT DDA, MS Approved	0		12-Dec-12 A	100%
New Carriageway & Modification of Existing Roads					
New Carriageway adjacent to HKIA [615m Approx.]					
NCW1020	New carriageway - Implement of TTA (Gate N13)	4	10-Oct-12 A	30-Oct-12	40%
NCW1030	New carriageway [middle area] - Hoarding	18	13-Oct-12 A	15-Nov-12	25%
NCW1040	New carriageway [middle area] - Site clearance; HKIA flight info. portals, service utilit	13	05-Nov-12*	19-Nov-12	0%
NCW1041	New carriageway [middle area] - Site clearance; HKIA flight info. portals, service utilit	13	20-Nov-12	04-Dec-12	0%
NCW1042	New carriageway [middle area] - Site clearance; HKIA flight info. portals, service utilit	13	05-Dec-12	19-Dec-12	0%
NCW1060	New carriageway [middle area] - Excavation; road alignment formation (1st 164m)	12	17-Dec-12	02-Jan-13	0%
NCW1043	New carriageway [middle area] - HKIA flight info. portals, service utilities, furnitures r	13	20-Dec-12	07-Jan-13	0%
NCW1061	New carriageway [middle area] - Excavation; road alignment formation (2nd 164m)	12	03-Jan-13	16-Jan-13	0%
NCW1070	New carriageway [middle area] - Sub-ground utilities, drainage works	12	03-Jan-13	16-Jan-13	0%
NCW1044	New carriageway [middle area] - HKIA flight info. portals, service utilities, furnitures r	13	08-Jan-13	22-Jan-13	0%
NCW1062	New carriageway [middle area] - Excavation; road alignment formation (3rd 164m)	12	17-Jan-13	30-Jan-13	0%
NCW1071	New carriageway [middle area] - Sub-ground utilities, drainage works	12	17-Jan-13	30-Jan-13	0%
NCW1045	New carriageway [middle area] - HKIA flight info. portals, service utilities, furnitures r	10	23-Jan-13*	02-Feb-13	0%
WORKS IN NORTH AREA - CH 15+500 to CH 16+223 (HKLR AT GRADE & ROADWORKS)					
Reclamation & Seawall Const. [723m Approx.]					
Remaining Portion [463m Approx.]					
RSC1710	North area [rem. portion] - Silt curtain; Geotextile	15	24-Dec-12	12-Jan-13	0%
RSC1720	North area [rem. portion] - Temporary barrier for stone platform [Type 2 Rock fill](1st	12	14-Jan-13	26-Jan-13	0%
RSC1721	North area [rem. portion] - Temporary barrier for stone platform [Type 2 Rock fill](2n	12	28-Jan-13	13-Feb-13	0%
RSC1730	North area [rem. portion] - Stone platform	12	30-Jan-13	15-Feb-13	0%
Reprovisioning Works					
Protection Works to Existing Aeronautical Lights & Weather Station					
AL1000	Reclamation works at North area-remaining portion Commenced	0	24-Dec-12		0%
AL1010	Aeronaut. Lights - Protection works to affected portals; maintenance of protection m	0		24-Dec-12	0%
Works in Bridge A1 & Depressed Road					
Bridge A1 - Initial Works and SI Works					
BA1.1350	Bridge A1- Traffic Diversion Works & Implement TTA	12	15-Nov-12*	28-Nov-12	0%
BA1.1370	Bridge A1- Tree Felling	12	15-Nov-12	28-Nov-12	0%
BA1.1412	Establish site access& Site clearance	14	15-Nov-12	30-Nov-12	0%
BA1.1371	Bridge A1- Tree Felling	12	29-Nov-12	12-Dec-12	0%
BA1.1351	Bridge A1- Traffic Diversion Works & Implement TTA	12	29-Nov-12	12-Dec-12	0%
BA1.1414	Erection of hoarding	14	01-Dec-12	17-Dec-12	0%
BA1.1372	Bridge A1- Tree Transplanting	12	13-Dec-12	28-Dec-12	0%
BA1.1416	Utilities Detection	14	18-Dec-12	05-Jan-13	0%
BA1.1373	Bridge A1- Tree Transplanting	6	29-Dec-12	05-Jan-13	0%
BA1.1418	Site Investigation	14	07-Jan-13	22-Jan-13	0%
BA1.1000	Bridge A1 South Abut. & Ramp - Pre-drilling works	14	23-Jan-13	07-Feb-13	0%
Utility Culvert 3					
Utility Culvert No. 1 Ext. across the road leading to Cheong Hong Road [48m Approx.]					
UC1.1062	Erection of hoarding	14	27-Nov-12	12-Dec-12	0%
UC1.1070	Util. Culvert No. 1 Ext. - ELS works	15	28-Nov-12	14-Dec-12	0%
UC1.1.066	Utilities detection	14	13-Dec-12	31-Dec-12	0%
UC1.1080	Util. Culvert No. 1 Ext. - Ground levelling, trimming; blinding layer	7	15-Dec-12	22-Dec-12	0%
UC1.1090	Util. Culvert No. 1 Ext. - Culvert structure (1st 24m)	14	24-Dec-12	11-Jan-13	0%
UC1.1091	Util. Culvert No. 1 Ext. - Culvert structure (2nd 24m)	14	12-Jan-13	28-Jan-13	0%
UC1.1100	Util. Culvert No. 1 Ext. - Backfilling	12	29-Jan-13	14-Feb-13	0%
New Utility Culvert No. 3 adjacent to HKIA [160m Approx.]					
UC3.1172	Erection of hoarding	14	13-Dec-12	31-Dec-12	0%
UC3.1174	Site investigation	14	02-Jan-13	17-Jan-13	0%
UC3.1176	Utilities detection	14	18-Jan-13	02-Feb-13	0%
New Carriageway & Modification of Existing Roads					
New Carriageway adjacent to HKIA [407.5m Approx.]					
NCW1130	New carriageway [north area] - Hoarding	14	15-Nov-12*	30-Nov-12	0%
NCW1140	New carriageway [north area] - Site clearance; HKIA flight info. portals, service utilitie	12	19-Nov-12	01-Dec-12	0%
NCW1141	New carriageway [north area] - Site clearance; HKIA flight info. portals, service utilitie	12	03-Dec-12	15-Dec-12	0%
NCW1142	New carriageway [north area] - Site clearance; HKIA flight info. portals, service utilitie	12	17-Dec-12	02-Jan-13	0%
NCW1143	New carriageway [north area] - Site clearance; HKIA flight info. portals, service utilitie	9	03-Jan-13	12-Jan-13	0%
NCW1150	New carriageway [north area] - Excavation; road alignment formation (1st 204m)	11	14-Jan-13	25-Jan-13	0%
NCW1151	New carriageway [north area] - Excavation; road alignment formation (2nd 204m)	10	26-Jan-13	06-Feb-13	0%
NCW1160	New carriageway [north area] - Sub-ground utilities, drainage works	10	28-Jan-13	07-Feb-13	0%



APPENDIX C

Calibration Certificates

Calibration Chart

Brüel & Kjær Type 4231 Serial No. 3004068

Sound Pressure Level: 94.00 or 114.00 dB ±0.20 dB
(re 20 µPa at reference conditions)

Frequency: 1000 Hz ±0.1%

Distortion: < 1%

Reference Conditions:

Temperature:	23°C
Pressure:	101.325 kPa
Humidity:	50% RH
Load:	0.25 cm^3 (½" Brüel & Kjær Mic.)

Date: 16/07/12 Signed: [signature]

Sound Calibrator Type 4231

Brüel & Kjær

Levels for Brüel & Kjær ½" Microphones:

Equivalent Free Field:	93.85 dB or 113.85 dB
Equivalent Diffuse Field:	94.00 dB or 114.00 dB
Pressure Field:	94.00 dB or 114.00 dB

Frequency: 1000 Hz

Conforms to:
ANSI S1.40–1984 and IEC 60942 (2003) Class 1 & LS

Ambient Conditions:

Temperature:	−10° to 50°C, Class LS +16° to 30°C
Pressure:	65 kPa to 108 kPa
Humidity:	25% to 90% RH

For further information refer to the User Manual

BC0210–12

MANUFACTURER'S CERTIFICATE OF CONFORMANCE

We certify that Brüel & Kjær **-2238--001-** Serial No. **2800932** has been tested and passed all production tests, confirming compliance with the manufacturer's published specification at the date of the test.

The final test has been performed using calibrated equipment, traceable to National or International Standards or by ratio measurements.

Brüel & Kjær is certified under ISO 9001:2008 assuring that all test data is retained on file and is available for inspection upon request.

Nærum 23-aug-2012

Torben Bjørn
Vice President, Operations

Please note that this document is not a calibration certificate.
For information on our calibration services please contact your nearest Brüel & Kjær office.

BA 0238 - 18

HEADQUARTERS: Brüel & Kjær Sound & Vibration Measurement A/S · DK-2850 Nærum · Denmark
Telephone: +45 7741 2000 · Fax: +45 4580 1405 · www.bksv.com · info@bksv.com
Local representatives and service organisations worldwide

Brüel & Kjær

MANUFACTURER'S CERTIFICATE OF CONFORMANCE

We certify that Brüel & Kjær **-2238--001-** Serial No. **2808432** has been tested and passed all production tests, confirming compliance with the manufacturer's published specification at the date of the test.

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Telephone: +45 7741 2000 · Fax: +45 4580 1405 · www.bksv.com · info@bksv.com
Local representatives and service organisations worldwide

Brüel & Kjær

ENVIROTECH SERVICES CO.

High-Volume TSP Sampler
5-Point Calibration Record

Location : AMS5(Ma Wan Chung Village)
Calibrated by : K.F.Ho
Date : 15/10/2012

Sampler
Model : TE-5170
Serial Number : S/N3640

Calibration Orfice and Standard Calibration Relationship
Serial Number : 1378
Service Date : 22 Feb 2012
Slope (m) : 1.99405
Intercept (b) : -0.00397
Correlation Coefficient(r) : 0.99984

Standard Condition
Pstd (hpa) : 1013
Tstd (K) : 298.18

Calibration Condition
Pa (hpa) : 1015
Ta(K) : 299

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	10.4	3.223	1.618	55	54.9
2	13 holes	8.3	2.879	1.446	50	49.9
3	10 holes	6.5	2.548	1.280	45	44.9
4	7 holes	4.1	2.023	1.017	37	36.9
5	5 holes	2.5	1.580	0.794	29	28.9

Sampler Calibration Relationship

Slope(m):31.351 Intercept(b): 4.579 Correlation Coefficient(r): 0.9992

Checked by: Magnum Fan Date: 16/10/2012

EQUIPMENT CALIBRATION RECORD

Type :	Laser Dust Monitor
Manufacturer / Brand :	SIBATA
Model No.:	LD-3B
Equipment No.:	LD-3B-002
Sensitivity Adjustment Scale Setting :	622 CPM

Operator:

Standard Equipment

Equipment :	MFC High Volume Air Sampler
Venue :	Wah Ming House, Wah Fu Estate
Model No.:	TE-5170 Total Suspended Particulated
Serial No.:	2100

Last Calibration Date 21/10/2011

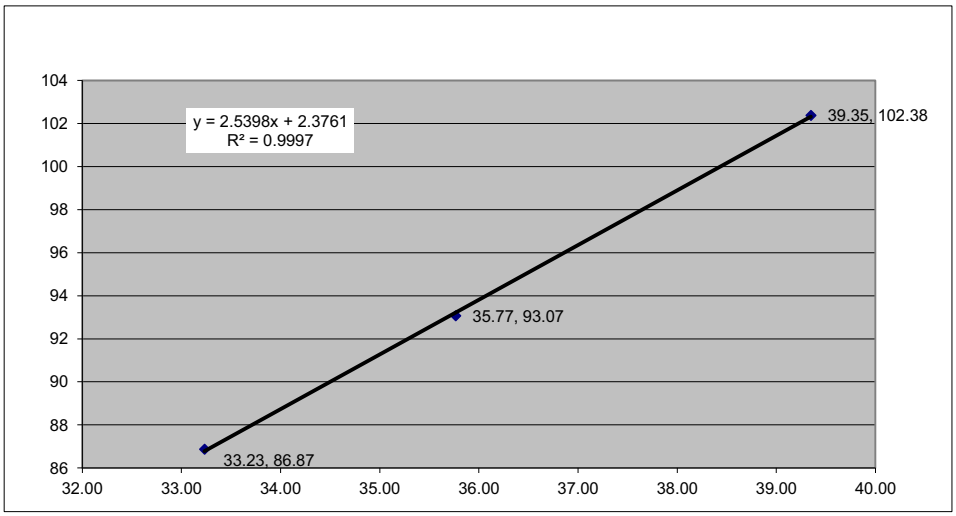
Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration) :	622 CPM
Sensitivity Adjustment Scale Setting (After Calibration) :	622 CPM

Hour	Date (dd-mmm-yy)	Time		Ambient Condition		Concentration (obtained by High Volume Sampler) (ug/m3) Y-axis	Total Count for 60mins (obtained by Laser Dust Monitor)	Count per Minute X-axis
				Temp (C)	R.H. (%)			
1	15-Oct-12	13:12	14:12	26.3	74%	86.87	1994	33.23
2	15-Oct-12	14:16	15:16	26.3	74%	93.07	2146	35.77
3	15-Oct-12	15:33	16:33	26.3	74%	102.38	2361	39.35

Be Linear Regression of Y or X
Slope (K-factor): 2.5398
Correlation coefficient : 0.9997

Remark:



Recorded by: Ruby Law Signature: Date: 21/10/2012

Checked by: Keith Chau Signature: Date: 21/10/2012

FT Laboratories Ltd.

Management System Document Control Cover Sheet

Document Name	Ref. No.	Revision No.
Performance Check of Sonde	**CHM158**	**0**

	Prepared By	Reviewed By	Approved By
Name	Fragrance Ho	Rowena R. De Jesus	W.C. Yue
Position	Senior Chemist	Senior Chemist	Director & General Manager
Signature			
Date	24/10/12	24/10/2012	24/10/2012

For Comment		For Use	

Issued To	
Name: Fragrance Ho	Signature:
Position: Sr. Chemist.	Date: 24 Oct. 2012

Please return a photocopy of signed cover sheet to QSE Dept. as evidence of receipt.

Document Control Stamp (Valid only if in red)

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REVISION STATUS

Revision No.	Effective Date	Description / Summary of Revision
0	**10 Oct 2012**	**Initial issue**

Contents

1. Introduction

1.1 This procedure is based on instrument manual, BS1427:1993 and APHA, Standard Methods for the Examination of Water & Wastewater, 19th edition

1.2 The environmental condition during the performance check should be under temperature 20 ± 5°C and humidity 45 - 80%.

2. Performance Check Interval

2.1 Parameters include temperature, pH, conductivity, turbidity and dissolved oxygen should all be checked every 3 months.

3. Temperature Check

3.1 Equipment

3.1.1 Reference thermometer, traceable to national standard

3.1.2 Liquid bath

3.1.3 Timer

3.2 Procedures

3.2.1 Prepare a liquid (distilled water) bath and equilibrium the temperature to 10, 20 and 30°C.

3.2.2 Set up the instrument to parallel with reference thermometer.

3.2.3 Compare and record the temperature with reference thermometer for the temperature 10, 20 and 30°C and the record sheet.

3.2.4 The temperature deviation should be within ± 0.15°C

4. pH Value Check

4.1 Reagent

4.1.1 Primary pH buffer solution and commercial buffer solution, traceable to national standard

4.2 Procedures

4.2.1 Use a certain amount of pH 7 buffer standard in a clean, dry or pre-rinsed calibration cup, carefully immerse the probe end of the sonde into the solution.

4.2.2 Allow at least 1 minute for temperature equilibration before proceeding.

4.2.3 From the Calibration Menu, select **ISE1 pH** to access the pH calibration choices

and then press **3-3-Point**. Press **Enter** and input the value of the buffer at the prompt.

4.2.4 After entering the correct pH value of the buffer, press **Enter** and the current values of all enabled sensors will appear on the screen and change with time as they stabilize in the solution.

4.2.5 Observe the readings under pH and when they show no significant change for approximately 30 seconds, press **Enter**. The display will indicate that the calibration is accepted.

4.2.6 Use a certain amount of an additional pH buffer standard into a clean, dry or pre-rinsed calibration cup, carefully immerse the probe end of the sonde into the solution.

4.2.7 Allow at least 1 minute for temperature equilibration before proceeding.

4.2.8 Press **Enter** and input the correct value of the second buffer for the calibration temperature at the prompt.

4.2.9 Press **Enter** and the current values of all enabled sensors will appear on the screen and will change with time as they stabilize in the solution.

4.2.10 Observe the readings under pH and when they show no significant change for approximately 30 seconds, press **Enter**.

4.2.11 Use a certain amount of a third pH buffer standard into a clean, dry or pre-rinsed calibration cup, carefully immerse the probe end of the sonde into the solution.

4.2.12 Allow at least 1 minute for temperature equilibration before proceeding.

4.2.13 Press **Enter** and input the correct value of the third buffer for the calibration temperature at the prompt.

4.2.14 Observe the readings under pH and when they show no significant change for approximately 30 seconds, press **Enter**.

4.2.15 After the third calibration point is complete, press **Enter** again, as instructed on the screen, to return to the Calibrate Menu.

4.2.16 Rinse the sonde in water and dry.

(Noted: the mV of the 1st pH buffer calibration should be within ± 30mV; and the mV between 2 buffer calibration should be within 168-180mV.)

4.2.17 Immerse a verified pH buffer solution to cross check the calibration curve. Record on the record sheet.

4.2.18 pH value difference should be within ± 0.10 pH-unit.

5. Conductivity Check

5.1 Reagent

5.1.1 Primary chemical – potassium chloride, 58.67ms/cm at 25°C, traceable to national standard

5.1.2 Primary chemical - potassium chloride, 0.20mol/L (24.80ms/cm at 25°C) should be used for performance check, traceable to national standard

5.2 Procedures

5.2.1 Place a certain amount of 58.67mS/cm conductivity standard solution into a clean, dry or pre-rinsed calibration cup.

5.2.2 Before proceeding, ensure that the sensor is as dry as possible. Ideally, rinse the conductivity sensor with a small amount of standard that can be discarded. Be certain that to avoid cross-contamination of standard solutions with other solutions. Make certain that there are no salt deposits around the oxygen and pH/ORP probes, particularly if you are employing standards of low conductivity.

5.2.3 Carefully immerse the probe end of the sonde into the solution.

5.2.4 Gently rotate and/or move the sonde up and down to remove any bubbles from the conductivity cell.

5.2.5 The probe must be completely immersed past its vent hole and insure that the vent hole is covered by solution.

5.2.6 Allow at least one minute for temperature equilibration before proceeding.

5.2.7 From the Calibrate Menu, select **Conductivity** to access the Conductivity calibration procedure and then **1-SpCond** to access the specific conductance calibration procedure.

5.2.8 Enter the calibration value of the standard used (mS/cm at 25°C) and press **Enter**.

5.2.9 The current values of all enabled sensors will appear on the screen and will change with time as they stabilize.

5.2.10 Observe the readings under Specific Conductance or Conductivity and when they show no significant change for approximately 30 seconds, press **Enter**. The screen will indicate that the calibration has been accepted and prompt you to press **Enter** again to return the Calibrate Menu.

5.2.11 Rinse the sonde with distilled water and dry the sonde.

5.2.12 Immerse a standard conductivity solution (24.80 ms/cm at 25°C) for counter check. Record on the record sheet.

5.2.13 The conductivity difference should be within ± 0.5% of reading + 0.001 ms/cm.

6. Turbidity Check

6.1 Reagents

6.1.1 Turbidity standard solution with 0, 10 and 126 NTU.

6.2 Procedures

6.2.1 Before proceeding with the calibration of the sonde has been cleaned and is free of debris. Solid particles from this source, particularly those carried over from past deployments, will contaminate the standards during calibration protocol and cause either calibration errors and/or inaccurate field data.

6.2.2 One standard must be 0 NTU and this standard must be calibrated first.

6.2.3 To begin the calibration, place the correct amount of 0 NTU standard (distilled water) into calibration cup provided with the sonde.

6.2.4 Immerse the sonde into water. Input the value 0 NTU at the prompt, and press **Enter**.

6.2.5 The screen will display real-time readings that will allow you to determine when the readings have stabilized.

6.2.6 Activate the wiper 1-2 times by pressing **3-Clean Optics** as shown on the screen, to remove any bubbles.

6.2.7 After stabilization is complete, press **Enter** to "confirm" the first calibration and then, as instructed, press **Enter** to continue.

6.2.8 Dry the sonde carefully and then place the sonde in the second turbidity standard 10 NTU using the same container as for the 0 NTU standard.

6.2.9 Input the correct turbidity value in NTU, press **Enter**, and view the stabilization of the values on the screen in real-time.

6.2.10 As above, activate the wiper with the **3-Clean Optics** key to remove bubbles.

6.2.11 After stabilization is complete, press **Enter** to "confirm" the second calibration and then, as instructed, press **Enter** to continue.

6.2.12 Dry the sonde carefully and then place the sonde in the third turbidity standard 126 NTU using the same container as for the 0 NTU standard.

6.2.13 Input the correct turbidity value in NTU, press **Enter**, and view the stabilization of the values on the screen in real-time.

6.2.14 As above, activate the wiper with the **3-Clean Optics** key to remove bubbles.

6.2.15 After the readings have stabilized, press **Enter** to confirm the calibration and then press **Enter** to return to the Calibration Menu.

6.2.16 Immerse the mid-point check of turbidity standard solution, 10.0NTU, then record

the reading on the record sheet.

6.2.17 The turbidity difference should be within ± 2% of reading or 0.3 NTU (whichever is greater).

7. Dissolved Oxygen Check

7.1 Preparation of water samples for Winkler Titration

7.1.1 Air-saturated distilled water

7.1.2 Half air-saturated distilled water

7.1.3 Zero-oxygen distilled water

7.2 Reagents for Winkler Titration

7.2.1 Manganous sulfate solution

7.2.2 Alkali-iodide-azide reagent

7.2.3 Concentrated sulphric acid

7.2.4 Diluted sulphuric acid, 6N

7.2.5 Starch solution

7.2.6 Standard potassium bi-iodate solution, approx. 0.0021M

7.2.7 Standard sodium thiosulfate solution, 0.025N

7.3 Titration Procedures

7.3.1 Place 300ml of distilled water (cl. 7.1) in the BOD bottle.

7.3.2 Add 1 ml $MnSO_4$ solution to the water sampler, and add 1 ml alkali-iodide-azide reagent thereafter.

7.3.3 Stopper carefully to exclude air bubbles. Rinse any overflow of alkali with running water and mix by inverting bottle a few minutes.

7.3.4 When the precipitate has settled sufficiently (to approximate half the bottle volume) by leaving a clear supernatant above the manganese hydroxide floc, add 2ml concentrated H_2SO_4

7.3.5 Restopper the bottle carefully. Rinse any overflow of acid with running water and mix the content by inverting several times until it is completely dissolved. If the precipitate does not dissolve completely, a little more acid should be added.

7.3.6 Measure 100ml of the solution with glass pipette and add it into 250ml Erlenmeyer flask.

7.3.7 Titrate with 0.025N $Na_2S_2O_3$ solution to a pale straw color. Add a few drops of the starch indicator and continue titration to blue color disappearance completely.

Ignore any reappearance of blue color. The titration should be carried out as quickly as possible. Otherwise the dissolved oxygen content may be changed.

7.3.8 Calculate the dissolved oxygen content by:

DO, mg/L

= [(vol. of std $Na_2S_2O_3$ used, ml) x (normality of $Na_2S_2O_3$, N) x 8 x 1000] / 100ml

7.4 Procedures

7.4.1 Place the sensor into a calibration cup containing about 1/8 inch of water which is vented by loosening the threads.

7.4.2 Wait approximately 10 minutes before proceeding to allow the temperature and oxygen pressure to equilibrate.

7.4.3 Select **ODOsat%** and then **1-Point** to access the DO calibration procedure.

7.4.4 Calibration of Optical dissolved oxygen sensor in the DO% procedure also results in calibration of the DO mg/L mode and vice versa.

7.4.5 Enter the current barometric pressure in **mm of Hg**. (Inches of Hg x 25.4 = mm Hg).

7.4.6 Press **Enter** and the current values of all enabled sensors will appear on the screen and change with time as they stabilize.

7.4.7 Observe the readings under **ODOsat%**. When they show no significant change for approximately 30 seconds, press **Enter**.

7.4.8 The screen will indicate that the calibration has been accepted and prompt you to press **Enter** again to return to the Calibrate Menu.

7.4.9 Rinse the sonde with distilled water and dry the sonde.

7.4.10 Immerse the DO sensor into the water sample (cl. 7.1) and record the reading on record sheet.

7.4.11 The dissolved oxygen deviation should be within ± 0.15 mg/L.

8. Data Recording

8.1 All analytical data should be recorded on the data sheet – H158/001.

9. Reporting Criteria

9.1 The temperature deviation should be within ± 0.15°C

9.2 pH value difference should be within ± 0.10 pH-unit.

9.3 The conductivity difference should be within ± 0.5% of reading + 0.001 ms/cm.

9.4 The turbidity difference should be within ± 2% of reading or 0.3 NTU (whichever is greater).

9.5 The dissolved oxygen deviation should be within ± 0.15 mg/L.

FT Laboratories Ltd
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Perfomance Check of Sonde

Report No. : **CHM/190 & CHM/190-1-01**

Equipment Information

Name / Description	:	Display System	Sonde
Manufacturer	:	YSI	YSI
Equipment No.	:	CHM/190	CHM/190-1
Model No.	:	YSI 650MDS	YSI 6920V2
Serial No.	:	12J101862	12J102249

Reference standard solution	:	CRM KIO3, CRM Buffer
Major measurement equipment	:	Thermometer
Performance Method	:	Refer to BS1427:1993 and APHA, Standard Methods for the Examination of Water & Wastewater, 19th edition
Date of Performance	:	12-Oct-12 to 13-Oct-12
Date of Next Performance Check	:	12-Jan-13
Location of Performance Check	:	Chemical and Environmental Laboratory

Environmental Condition

Temperature	:	20 ± 5	°C
Relative Humidity	:	45 - 80	%

Test Results

1. Temperature Check

Temperature Set (°C)	Thermometer Corrected Reading (°C)	Sonde Reading (°C)	Deviation (°C)	Compliance (Pass / Fail)
10	10.34	10.37	0.03	Pass
20	20.69	20.71	0.02	Pass
30	30.03	30.03	0.00	Pass

Note: Temperature deviation : ± 0.15°C

2. pH Value Check

Verified pH Buffer	pH value at 20°C	Sonde Reading (pH-unit)	Difference (pH-unit)	Compliance (Pass / Fail)
6.00	5.98	5.99	0.01	Pass
9.00	9.01	9.01	0.00	Pass

Note: pH value difference : ± 0.10 pH-unit

Perfomance Check of Sonde

Report No. : **CHM/190 & CHM/190-1-01**

3. Conductivity Check

KCl (mol/L)	Standard Conductivity (mS/cm at 25°C)	Sonde Reading (mS/cm at 25°C)	Difference (%)	Compliance (Pass / Fail)
0.2000	24.80	24.84	0.16	Pass

Note:

1. Conductivity difference : ± 0.5% of reading + 0.001 mS/cm
2. According to YSI Incorporated Environmental Monitoring Systems Manual, page 5-2 & 2-76, salinity is determined automatically from the sonde conductivity and temperature readings according to algorithms found in Standard Methods for the Examination of Water and Wastewater.

4. Turbidity Check

Standard Turbidity (NTU)	Sonde Reading (NTU)	Difference (%)	Difference (NTU)	Compliance (Pass / Fail)
10.0	10.0	0.0	0.0	Pass

Note: Turbidity difference : ± 2% of reading or 0.3 NTU (whichever is greater)

5. Dissolved Oxygen (DO) Check

DO from Winkler Titration (mg/L)	Sonde Reading (mg/L)	Deviation (mg/L)	Compliance (Pass / Fail)
8.75	8.74	-0.01	Pass
4.49	4.57	0.08	Pass
0.00	0.00	0.00	Pass

Note: Dissolved oxygen deviation : ± 0.15 mg/L

< End of Report >

Checked By : Yandy Chau Date : 13/10/2012

Reviewed By : Fragrance Ho Date : 15/10/12

Certified By : W C Yue Date : 15/10/2012

APPENDIX D

Monitoring Schedule

Oct-12

	Monday	Tueday	Wednesday	Thursday	Friday	Saturday	Sunday
Date	01-Oct	02-Oct	03-Oct	04-Oct	05-Oct	06-Oct	07-Oct
	Holiday	Holiday					
Date	08-Oct	09-Oct	10-Oct	11-Oct	12-Oct	13-Oct	14-Oct
Date	15-Oct	16-Oct	17-Oct	18-Oct	19-Oct	20-Oct	21-Oct
			Water Quality Monitoring 1st Dolphin Monitoring	AMS6(1-hr)* AMS5(1-hr and 24-hrs), NMS5 1st Dolphin Monitoring		Water Quality Monitoring	
Date	22-Oct	23-Oct	24-Oct	25-Oct	26-Oct	27-Oct	28-Oct
	Water Quality Monitoring	Holiday	AMS6(1-hr)* AMS5(1-hr and 24-hrs), NMS5	Water Quality Monitoring 2nd Dolphin Monitoring	2nd Dolphin Monitoring	Water Quality Monitoring	
Date	29-Oct	30-Oct	31-Oct				
	2nd Dolphin Monitoring	AMS6(1-hr)* ^ AMS5(1-hr and 24-hrs) Water Quality Monitoring					

Remarks:
Dolphin Monitoring - Two sets of dolphin monitoring for each month. Each monitoring event includes a two-day survey .
* The High Volume Sampler at AMS6 was installed on 31 Oct 2012 and the 24-hr TSP monitoring will commence in November 2012
^ It was raining in the morning of 30 October 2012. Therefore, the 1-hr dust monitoring at AMS6 was rescheduled to 2 November 2012

Nov-12

	Monday	Tueday	Wednesday	Thursday	Friday	Saturday	Sunday
Date				01-Nov	02-Nov	03-Nov	04-Nov
				NMS5 Water Quality Monitoring	AMS6 (1-hr and 24-hrs)^ AMS5(24-hrs) 1st Dolphin Monitoring	Water Quality Monitoring 1st Dolphin Monitoring	
Date	05-Nov	06-Nov	07-Nov	08-Nov	09-Nov	10-Nov	11-Nov
	AMS6(1-hr) AMS5(1-hr)+NMS5 Water Quality Monitoring			AMS6 (24-hrs) AMS5(24-hrs) Water Quality Monitoring	AMS6(1-hr) AMS5(1-hr)	Water Quality Monitoring	
Date	12-Nov	13-Nov	14-Nov	15-Nov	16-Nov	17-Nov	18-Nov
	Water Quality Monitoring 2nd Dolphin Monitoring	2nd Dolphin Monitoring	AMS6 (24-hrs) AMS5(24-hrs) Water Quality Monitoring	AMS6(1-hr) AMS5(1-hr)+NMS5	Water Quality Monitoring		
Date	19-Nov	20-Nov	21-Nov	22-Nov	23-Nov	24-Nov	25-Nov
	Water Quality Monitoring	AMS6 (24-hrs) AMS5(24-hrs)	AMS6(1-hr) AMS5(1-hr)+NMS5	Water Quality Monitoring		Water Quality Monitoring	
Date	26-Nov	27-Nov	28-Nov	29-Nov	30-Nov		
	AMS6 (24-hrs) AMS5 (24-hrs) Water Quality Monitoring	AMS6(1-hr) AMS5(1-hr)+NMS5		Water Quality Monitoring			

Remarks:
Dolphin Monitoring - Two sets of dolphin monitoring for each month. Each monitoring event includes a two-day survey .
^ It was raining in the morning of 30 October 2012. Therefore, the 1-hr dust monitoring at AMS6 was rescheduled to 2 November 2012

APPENDIX E

Monitoring Data

Water Quarterly Monitoring Data (Oct 2012)

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Time	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	IS5	11:47:21	Surface	1	1	27.39	8.13	29.3	6.0	14.4	19.6
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	IS5	11:47:59	Surface	1	2	27.38	8.13	29.1	6.0	15.8	18.4
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	IS5	11:45:39	Middle	2	1	27.37	8.13	29.3	6.0	19.2	23.1
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	IS5	11:46:39	Middle	2	2	27.38	8.13	29.3	6.0	16.6	21.8
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	IS5	11:40:34	Bottom	3	1	27.36	8.13	29.2	6.0	25.6	30.0
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	IS5	11:44:31	Bottom	3	2	27.37	8.13	29.4	5.9	21.0	31.0
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	SR3	12:01:32	Middle	2	1	27.48	8.13	28.8	6.2	11.1	16.2
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	SR3	12:03:09	Middle	2	2	27.49	8.14	28.9	6.2	11.0	16.8
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	IS(Mf)6	12:13:47	Surface	1	1	27.42	8.13	29.1	6.1	8.5	15.9
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	IS(Mf)6	12:14:33	Surface	1	2	27.40	8.13	29.4	6.0	10.3	15.1
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	IS(Mf)6	12:15:35	Bottom	3	1	27.35	8.12	29.2	6.0	14.1	16.7
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	IS(Mf)6	12:16:04	Bottom	3	2	27.35	8.12	29.2	5.9	14.9	14.0
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	IS7	12:28:45	Surface	1	1	27.54	8.14	28.0	6.5	6.2	9.2
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	IS7	12:29:26	Surface	1	2	27.60	8.14	28.9	6.5	4.2	8.3
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	IS7	12:30:23	Bottom	2	1	27.37	8.13	28.7	6.2	12.5	9.4
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	IS7	12:31:08	Bottom	2	2	27.36	8.13	29.2	6.1	13.6	25.8
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	IS(Mf)9	12:42:51	Surface	1	1	27.51	8.13	28.4	6.4	5.5	10.1
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	IS(Mf)9	12:43:28	Surface	1	2	27.52	8.13	28.5	6.4	5.5	9.3
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	IS(Mf)9	12:47:33	Bottom	2	1	27.29	8.12	29.3	6.0	18.1	17.2
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	IS(Mf)9	12:48:12	Bottom	2	2	27.32	8.12	29.3	6.0	15.9	18.4
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	IS8	12:57:20	Surface	1	1	27.65	8.13	29.0	6.5	5.4	8.6
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	IS8	12:57:50	Surface	1	2	27.65	8.13	28.9	6.4	4.8	9.8
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	IS8	12:58:53	Bottom	3	1	27.39	8.11	29.1	5.9	21.3	19.8
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	IS8	12:59:40	Bottom	3	2	27.38	8.11	29.0	6.0	17.8	19.8
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	CS(Mf)5	13:34:53	Surface	1	1	27.83	8.12	29.2	6.5	3.2	6.1
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	CS(Mf)5	13:35:43	Surface	1	2	27.82	8.12	29.3	6.3	2.9	5.9
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	CS(Mf)5	13:36:53	Middle	2	1	27.57	8.10	30.0	5.8	4.1	9.0
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	CS(Mf)5	13:38:10	Middle	2	2	27.56	8.10	30.1	5.8	3.6	9.0
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	CS(Mf)5	13:42:20	Bottom	3	1	27.51	8.09	30.3	5.6	22.3	11.9
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	CS(Mf)5	13:43:28	Bottom	3	2	27.52	8.09	30.3	5.6	17.4	13.1
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	SR10B	14:01:10	Surface	1	1	27.62	8.09	30.2	5.8	5.6	14.9
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	SR10B	14:01:49	Surface	1	2	27.61	8.09	30.2	5.8	4.3	14.5
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	SR10B	14:02:44	Middle	2	1	27.61	8.09	30.3	5.7	5.0	12.4
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	SR10B	14:03:20	Middle	2	2	27.61	8.09	30.4	5.7	4.9	13.4
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	SR10B	14:04:07	Bottom	3	1	27.61	8.09	30.5	5.6	6.0	9.5
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	SR10B	14:04:46	Bottom	3	2	27.61	8.09	30.5	5.7	5.4	10.8
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	SR10A	14:16:08	Surface	1	1	27.60	8.08	30.2	5.7	3.0	9.9
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	SR10A	14:16:48	Surface	1	2	27.61	8.08	30.2	5.7	3.0	8.8
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	SR10A	14:17:50	Middle	2	1	27.60	8.09	30.3	5.7	3.7	9.6
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	SR10A	14:18:37	Middle	2	2	27.60	8.09	30.3	5.6	3.4	11.0
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	SR10A	14:19:38	Bottom	3	1	27.59	8.09	30.3	5.6	3.5	9.2
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	SR10A	14:20:16	Bottom	3	2	27.59	8.09	30.3	5.6	4.0	10.3
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	SR4	14:47:58	Surface	1	1	27.74	8.10	28.5	6.1	8.3	11.0
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	SR4	14:48:31	Surface	1	2	27.70	8.10	29.0	6.1	8.4	9.2
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	SR4	14:49:30	Bottom	3	1	27.58	8.09	29.1	5.9	9.9	14.1
HKLR	HY/2011/03	2012-10-17	Mid-Ebb	SR4	14:49:59	Bottom	3	2	27.59	8.09	29.1	5.9	9.6	14.5
HKLR	HY/2011/03	2012-10-17	Mid-Flood	SR3	17:25:23	Middle	2	1	27.47	8.11	29.2	6.4	12.2	18.6
HKLR	HY/2011/03	2012-10-17	Mid-Flood	SR3	17:26:00	Middle	2	2	27.49	8.11	29.2	6.4	13.2	18.6
HKLR	HY/2011/03	2012-10-17	Mid-Flood	IS5	17:36:18	Surface	1	1	27.53	8.11	28.7	6.3	17.0	29.6
HKLR	HY/2011/03	2012-10-17	Mid-Flood	IS5	17:36:56	Surface	1	2	27.55	8.13	29.0	6.4	19.1	28.4
HKLR	HY/2011/03	2012-10-17	Mid-Flood	IS5	17:37:55	Middle	2	1	27.61	8.14	29.1	6.4	22.1	26.6
HKLR	HY/2011/03	2012-10-17	Mid-Flood	IS5	17:38:30	Middle	2	2	27.60	8.14	29.1	6.4	22.2	24.6
HKLR	HY/2011/03	2012-10-17	Mid-Flood	IS5	17:41:50	Bottom	3	1	27.58	8.15	29.2	6.4	32.5	29.2
HKLR	HY/2011/03	2012-10-17	Mid-Flood	IS5	17:42:33	Bottom	3	2	27.57	8.15	29.3	6.4	32.9	31.6
HKLR	HY/2011/03	2012-10-17	Mid-Flood	IS(Mf)6	17:51:22	Middle	2	1	27.60	8.14	29.2	6.5	17.1	22.8

Water Quarterly Monitoring Data (Oct 2012)

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Time	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2012-10-17	Mid-Flood	IS(Mf)6	17:52:31	Middle	2	2	27.60	8.14	29.2	6.4	18.4	23.6
HKLR	HY/2011/03	2012-10-17	Mid-Flood	IS(Mf)9	18:05:23	Surface	1	1	27.46	8.11	29.0	6.2	13.0	15.6
HKLR	HY/2011/03	2012-10-17	Mid-Flood	IS(Mf)9	18:06:02	Surface	1	2	27.45	8.11	29.0	6.2	12.9	21.3
HKLR	HY/2011/03	2012-10-17	Mid-Flood	IS(Mf)9	18:06:58	Bottom	3	1	27.50	8.11	29.2	5.9	25.1	25.8
HKLR	HY/2011/03	2012-10-17	Mid-Flood	IS(Mf)9	18:07:34	Bottom	3	2	27.51	8.11	29.3	5.9	25.0	27.4
HKLR	HY/2011/03	2012-10-17	Mid-Flood	IS7	18:17:47	Surface	1	1	27.43	8.12	28.9	6.2	11.1	15.0
HKLR	HY/2011/03	2012-10-17	Mid-Flood	IS7	18:18:47	Surface	1	2	27.42	8.12	29.0	6.2	11.2	15.4
HKLR	HY/2011/03	2012-10-17	Mid-Flood	IS7	18:19:41	Bottom	3	1	27.46	8.13	29.1	6.2	13.7	30.6
HKLR	HY/2011/03	2012-10-17	Mid-Flood	IS7	18:20:10	Bottom	3	2	27.45	8.13	29.1	6.2	13.9	28.6
HKLR	HY/2011/03	2012-10-17	Mid-Flood	IS8	18:35:16	Surface	1	1	27.45	8.12	28.9	6.4	9.6	22.6
HKLR	HY/2011/03	2012-10-17	Mid-Flood	IS8	18:35:50	Surface	1	2	27.44	8.13	28.6	6.4	9.4	21.2
HKLR	HY/2011/03	2012-10-17	Mid-Flood	IS8	18:36:58	Bottom	3	1	27.51	8.13	28.9	6.2	55.9	73.0
HKLR	HY/2011/03	2012-10-17	Mid-Flood	IS8	18:38:38	Bottom	3	2	27.51	8.13	29.1	6.2	65.9	71.4
HKLR	HY/2011/03	2012-10-17	Mid-Flood	SR4	18:48:42	Surface	1	1	27.55	8.10	28.4	6.2	14.7	23.7
HKLR	HY/2011/03	2012-10-17	Mid-Flood	SR4	18:49:09	Surface	1	2	27.55	8.11	28.9	6.2	14.9	22.4
HKLR	HY/2011/03	2012-10-17	Mid-Flood	SR4	18:50:04	Bottom	3	1	27.55	8.11	28.9	6.2	15.2	23.2
HKLR	HY/2011/03	2012-10-17	Mid-Flood	SR4	18:50:47	Bottom	3	2	27.55	8.11	28.9	6.2	15.1	24.2
HKLR	HY/2011/03	2012-10-17	Mid-Flood	CS(Mf)5	19:11:40	Surface	1	1	27.60	8.12	28.9	6.3	2.2	6.6
HKLR	HY/2011/03	2012-10-17	Mid-Flood	CS(Mf)5	19:11:59	Surface	1	2	27.60	8.12	28.8	6.3	5.0	8.0
HKLR	HY/2011/03	2012-10-17	Mid-Flood	CS(Mf)5	19:16:33	Middle	2	1	27.56	8.10	30.3	5.6	18.4	22.0
HKLR	HY/2011/03	2012-10-17	Mid-Flood	CS(Mf)5	19:17:31	Middle	2	2	27.56	8.10	30.3	5.6	18.3	21.8
HKLR	HY/2011/03	2012-10-17	Mid-Flood	CS(Mf)5	19:19:07	Bottom	3	1	27.53	8.09	30.4	5.5	62.6	54.4
HKLR	HY/2011/03	2012-10-17	Mid-Flood	CS(Mf)5	19:19:54	Bottom	3	2	27.53	8.09	30.4	5.5	72.3	93.2
HKLR	HY/2011/03	2012-10-17	Mid-Flood	SR10B	19:50:15	Surface	1	1	27.47	8.10	31.1	5.6	15.6	25.0
HKLR	HY/2011/03	2012-10-17	Mid-Flood	SR10B	20:11:07	Surface	1	2	27.45	8.09	30.9	5.8	11.3	24.1
HKLR	HY/2011/03	2012-10-17	Mid-Flood	SR10B	19:54:45	Middle	2	1	27.47	8.10	31.1	5.7	13.4	17.1
HKLR	HY/2011/03	2012-10-17	Mid-Flood	SR10B	19:55:10	Middle	2	2	27.47	8.10	31.1	5.6	12.8	25.9
HKLR	HY/2011/03	2012-10-17	Mid-Flood	SR10B	20:06:31	Bottom	3	1	27.47	8.10	31.2	5.5	13.4	24.9
HKLR	HY/2011/03	2012-10-17	Mid-Flood	SR10B	20:06:45	Bottom	3	2	27.47	8.10	31.2	5.5	12.5	27.0
HKLR	HY/2011/03	2012-10-17	Mid-Flood	SR10A	20:16:52	Surface	1	1	27.43	8.09	30.3	5.7	5.7	7.8
HKLR	HY/2011/03	2012-10-17	Mid-Flood	SR10A	20:17:03	Surface	1	2	27.45	8.09	30.4	5.7	5.9	14.8
HKLR	HY/2011/03	2012-10-17	Mid-Flood	SR10A	20:17:51	Middle	2	1	27.50	8.09	30.8	5.5	10.3	21.1
HKLR	HY/2011/03	2012-10-17	Mid-Flood	SR10A	20:18:25	Middle	2	2	27.51	8.09	30.8	5.5	10.6	21.8
HKLR	HY/2011/03	2012-10-17	Mid-Flood	SR10A	20:19:12	Bottom	3	1	27.51	8.10	30.9	5.5	18.3	22.8
HKLR	HY/2011/03	2012-10-17	Mid-Flood	SR10A	20:19:46	Bottom	3	2	27.51	8.10	30.9	5.5	20.3	23.4
HKLR	HY/2011/03	2012-10-20	Mid-Flood	IS5	08:46:31	Surface	1	1	26.01	8.12	29.9	6.3	17.7	15.1
HKLR	HY/2011/03	2012-10-20	Mid-Flood	IS5	08:46:58	Surface	1	2	26.07	8.12	29.5	6.3	14.5	15.1
HKLR	HY/2011/03	2012-10-20	Mid-Flood	IS5	08:48:15	Middle	2	1	26.12	8.16	29.8	6.2	12.7	15.8
HKLR	HY/2011/03	2012-10-20	Mid-Flood	IS5	08:48:54	Middle	2	2	26.13	8.16	29.8	6.2	10.7	15.9
HKLR	HY/2011/03	2012-10-20	Mid-Flood	IS5	08:49:26	Bottom	3	1	26.16	8.16	30.0	6.2	9.8	20.3
HKLR	HY/2011/03	2012-10-20	Mid-Flood	IS5	08:49:53	Bottom	3	2	26.15	8.16	30.0	6.2	9.1	19.1
HKLR	HY/2011/03	2012-10-20	Mid-Flood	IS(Mf)6	09:00:24	Middle	2	1	25.98	8.15	29.5	6.3	22.4	29.2
HKLR	HY/2011/03	2012-10-20	Mid-Flood	IS(Mf)6	09:01:11	Middle	2	2	25.98	8.15	29.7	6.3	24.7	30.3
HKLR	HY/2011/03	2012-10-20	Mid-Flood	IS7	09:10:20	Middle	2	1	26.10	8.14	29.3	6.2	14.0	16.0
HKLR	HY/2011/03	2012-10-20	Mid-Flood	IS7	09:10:59	Middle	2	2	26.11	8.15	29.8	6.2	13.1	17.2
HKLR	HY/2011/03	2012-10-20	Mid-Flood	IS(Mf)9	09:19:16	Middle	2	1	26.39	8.16	30.2	6.2	18.0	22.4
HKLR	HY/2011/03	2012-10-20	Mid-Flood	IS(Mf)9	09:19:45	Middle	2	2	26.38	8.16	30.1	6.2	16.2	21.6
HKLR	HY/2011/03	2012-10-20	Mid-Flood	IS8	09:30:12	Surface	1	1	26.20	8.14	29.8	6.3	4.7	9.5
HKLR	HY/2011/03	2012-10-20	Mid-Flood	IS8	09:30:41	Surface	1	2	26.21	8.15	29.0	6.3	7.9	9.9
HKLR	HY/2011/03	2012-10-20	Mid-Flood	IS8	09:31:32	Bottom	3	1	26.24	8.15	29.6	6.2	7.7	15.4
HKLR	HY/2011/03	2012-10-20	Mid-Flood	IS8	09:32:04	Bottom	3	2	26.24	8.15	29.6	6.2	7.8	16.1
HKLR	HY/2011/03	2012-10-20	Mid-Flood	SR4	09:42:14	Surface	1	1	26.23	8.13	29.6	6.0	16.8	22.8
HKLR	HY/2011/03	2012-10-20	Mid-Flood	SR4	09:42:41	Surface	1	2	26.24	8.13	29.8	6.0	17.4	22.7
HKLR	HY/2011/03	2012-10-20	Mid-Flood	SR4	09:43:19	Bottom	3	1	26.24	8.13	29.8	6.0	14.7	19.2
HKLR	HY/2011/03	2012-10-20	Mid-Flood	SR4	09:43:55	Bottom	3	2	26.25	8.13	29.8	6.0	15.1	19.7

Water Quarterly Monitoring Data (Oct 2012)

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Time	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2012-10-20	Mid-Flood	CS(Mf)5	10:01:14	Surface	1	1	26.60	8.15	30.2	6.2	3.5	7.0
HKLR	HY/2011/03	2012-10-20	Mid-Flood	CS(Mf)5	10:01:38	Surface	1	2	26.59	8.15	30.3	6.1	3.5	6.9
HKLR	HY/2011/03	2012-10-20	Mid-Flood	CS(Mf)5	10:02:57	Middle	2	1	26.54	8.16	30.3	6.1	3.8	9.9
HKLR	HY/2011/03	2012-10-20	Mid-Flood	CS(Mf)5	10:03:25	Middle	2	2	26.52	8.16	30.3	6.1	3.8	8.7
HKLR	HY/2011/03	2012-10-20	Mid-Flood	CS(Mf)5	10:04:27	Bottom	3	1	26.51	8.18	30.8	6.0	11.0	6.5
HKLR	HY/2011/03	2012-10-20	Mid-Flood	CS(Mf)5	10:04:50	Bottom	3	2	26.50	8.18	30.8	6.1	11.9	6.8
HKLR	HY/2011/03	2012-10-20	Mid-Flood	SR10B	10:30:57	Surface	1	1	26.86	8.12	30.7	5.7	12.0	17.8
HKLR	HY/2011/03	2012-10-20	Mid-Flood	SR10B	10:31:25	Surface	1	2	26.86	8.12	30.9	5.6	11.9	16.3
HKLR	HY/2011/03	2012-10-20	Mid-Flood	SR10B	10:32:16	Middle	2	1	26.85	8.12	31.0	5.6	11.9	13.9
HKLR	HY/2011/03	2012-10-20	Mid-Flood	SR10B	10:32:39	Middle	2	2	26.85	8.12	31.0	5.6	11.7	13.8
HKLR	HY/2011/03	2012-10-20	Mid-Flood	SR10B	10:33:22	Bottom	3	1	26.85	8.12	31.0	5.6	12.3	13.8
HKLR	HY/2011/03	2012-10-20	Mid-Flood	SR10B	10:33:58	Bottom	3	2	26.86	8.12	31.0	5.6	12.5	13.9
HKLR	HY/2011/03	2012-10-20	Mid-Flood	SR10A	10:50:56	Surface	1	1	26.83	8.12	30.3	5.7	4.3	10.2
HKLR	HY/2011/03	2012-10-20	Mid-Flood	SR10A	10:51:30	Surface	1	2	26.83	8.12	30.3	5.7	4.4	10.4
HKLR	HY/2011/03	2012-10-20	Mid-Flood	SR10A	10:52:41	Middle	2	1	26.85	8.12	30.8	5.6	6.9	11.1
HKLR	HY/2011/03	2012-10-20	Mid-Flood	SR10A	10:53:07	Middle	2	2	26.85	8.12	30.8	5.6	6.3	10.2
HKLR	HY/2011/03	2012-10-20	Mid-Flood	SR10A	10:53:55	Bottom	3	1	26.85	8.12	30.9	5.6	7.8	10.9
HKLR	HY/2011/03	2012-10-20	Mid-Flood	SR10A	10:54:27	Bottom	3	2	26.85	8.12	30.9	5.6	8.1	11.6
HKLR	HY/2011/03	2012-10-20	Mid-Flood	SR3	11:28:48	Middle	2	1	26.61	8.17	29.5	6.4	9.0	12.9
HKLR	HY/2011/03	2012-10-20	Mid-Flood	SR3	11:29:29	Middle	2	2	26.60	8.17	29.9	6.4	9.1	11.0
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	SR3	14:17:28	Middle	2	2	27.05	8.17	29.7	6.8	6.4	12.0
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	SR3	14:18:05	Middle	2	2	27.06	8.17	30.0	6.8	8.2	12.8
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	IS5	14:26:25	Surface	1	1	26.51	8.14	30.0	6.3	5.1	11.9
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	IS5	14:26:51	Surface	1	2	26.52	8.14	30.1	6.3	7.2	12.3
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	IS5	14:27:49	Middle	2	1	26.43	8.14	30.1	6.2	9.6	13.8
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	IS5	14:28:22	Middle	2	2	26.41	8.14	30.1	6.2	8.6	12.5
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	IS5	14:29:32	Bottom	3	1	26.37	8.14	30.1	6.1	12.0	17.1
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	IS5	14:30:10	Bottom	3	2	26.39	8.14	30.1	6.1	10.3	15.0
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	IS(Mf)6	14:42:44	Surface	1	1	26.78	8.16	28.9	6.8	3.3	13.0
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	IS(Mf)6	14:43:31	Surface	1	2	26.77	8.16	30.0	6.7	4.1	14.7
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	IS(Mf)6	14:44:13	Bottom	3	1	26.71	8.16	30.0	6.6	9.9	9.8
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	IS(Mf)6	14:44:43	Bottom	3	2	26.71	8.16	30.0	6.6	9.9	8.7
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	IS7	14:53:31	Surface	1	1	26.82	8.18	30.0	6.9	3.2	9.2
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	IS7	14:54:06	Surface	1	2	26.81	8.18	30.0	6.9	4.7	10.3
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	IS7	14:54:56	Bottom	3	1	26.79	8.18	30.0	6.7	6.3	9.3
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	IS7	14:55:27	Bottom	3	2	26.80	8.18	30.0	6.8	4.6	8.3
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	IS(Mf)9	15:04:54	Surface	1	1	26.90	8.18	30.1	6.8	4.1	9.1
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	IS(Mf)9	15:05:26	Surface	1	2	26.90	8.19	30.1	6.8	4.3	9.9
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	IS(Mf)9	15:06:34	Bottom	3	1	26.86	8.18	30.1	6.7	5.9	12.2
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	IS(Mf)9	15:07:05	Bottom	3	2	26.87	8.18	30.2	6.7	6.2	13.2
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	IS8	15:15:54	Surface	1	1	27.02	8.17	30.2	6.7	3.1	8.0
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	IS8	15:16:21	Surface	1	2	27.02	8.17	30.1	6.7	3.7	7.9
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	IS8	15:17:05	Bottom	3	1	26.94	8.18	30.2	6.6	4.7	8.1
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	IS8	15:17:28	Bottom	3	2	26.94	8.18	30.2	6.6	5.0	8.4
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	SR4	15:27:05	Surface	1	1	27.08	8.14	29.8	6.3	4.2	12.4
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	SR4	15:27:36	Surface	1	2	27.10	8.14	29.5	6.4	5.3	11.8
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	SR4	15:28:23	Bottom	3	1	26.86	8.14	29.7	6.1	6.3	13.8
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	SR4	15:28:54	Bottom	3	2	26.89	8.14	30.2	6.1	5.8	12.5
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	CS(Mf)5	15:46:58	Surface	1	1	26.93	8.14	30.5	6.1	3.7	8.5
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	CS(Mf)5	15:47:28	Surface	1	2	26.93	8.14	30.6	6.1	2.7	9.1
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	CS(Mf)5	15:48:43	Middle	2	1	26.88	8.12	30.9	5.6	2.6	9.1
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	CS(Mf)5	15:49:15	Middle	2	2	26.88	8.12	30.9	5.6	2.9	8.7
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	CS(Mf)5	15:50:27	Bottom	3	1	26.90	8.13	31.0	5.5	6.9	8.3
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	CS(Mf)5	15:52:02	Bottom	3	2	26.90	8.13	31.0	5.5	6.6	8.4
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	SR10B	16:11:50	Surface	1	1	26.97	8.12	30.7	5.7	3.6	10.7

Water Quarterly Monitoring Data (Oct 2012)

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Time	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	SR10B	16:12:12	Surface	1	2	26.97	8.12	31.1	5.6	5.4	9.3
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	SR10B	16:12:49	Middle	2	1	26.97	8.12	31.1	5.6	4.2	15.0
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	SR10B	16:13:32	Middle	2	2	26.97	8.12	31.1	5.6	4.3	14.1
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	SR10B	16:14:58	Bottom	3	1	26.95	8.13	31.1	5.6	4.6	10.0
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	SR10B	16:15:44	Bottom	3	2	26.95	8.13	31.1	5.6	5.9	10.7
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	SR10A	16:35:02	Surface	1	1	26.92	8.12	31.0	5.6	4.0	10.8
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	SR10A	16:35:28	Surface	1	2	26.92	8.12	31.1	5.6	4.7	10.2
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	SR10A	16:36:29	Middle	2	1	26.92	8.12	31.1	5.5	4.6	11.8
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	SR10A	16:36:56	Middle	2	2	26.92	8.12	31.1	5.5	4.5	11.9
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	SR10A	16:38:03	Bottom	3	1	26.93	8.13	31.1	5.5	5.2	11.0
HKLR	HY/2011/03	2012-10-20	Mid-Ebb	SR10A	16:38:35	Surface	1	1	26.93	8.13	31.1	5.5	4.2	12.0
HKLR	HY/2011/03	2012-10-22	Mid-Flood	IS5	11:36:04	Surface	1	1	26.72	8.18	29.5	6.9	12.5	5.5
HKLR	HY/2011/03	2012-10-22	Mid-Flood	IS5	11:36:50	Surface	1	2	26.72	8.18	29.5	6.9	12.3	4.0
HKLR	HY/2011/03	2012-10-22	Mid-Flood	IS5	11:37:59	Middle	2	1	26.65	8.19	29.5	6.7	13.1	8.6
HKLR	HY/2011/03	2012-10-22	Mid-Flood	IS5	11:38:30	Middle	2	2	26.66	8.19	29.5	6.7	13.6	7.5
HKLR	HY/2011/03	2012-10-22	Mid-Flood	IS5	11:39:45	Bottom	3	1	26.67	8.19	29.5	6.7	13.8	9.5
HKLR	HY/2011/03	2012-10-22	Mid-Flood	IS5	11:40:40	Bottom	3	2	26.64	8.19	29.5	6.6	13.5	9.4
HKLR	HY/2011/03	2012-10-22	Mid-Flood	IS(Mf)6	11:50:23	Middle	2	1	26.71	8.21	29.3	7.0	13.5	13.4
HKLR	HY/2011/03	2012-10-22	Mid-Flood	IS(Mf)6	11:51:05	Middle	2	2	26.72	8.21	29.4	7.0	14.9	14.1
HKLR	HY/2011/03	2012-10-22	Mid-Flood	IS7	11:57:37	Middle	2	1	26.60	8.23	29.3	7.3	10.9	4.1
HKLR	HY/2011/03	2012-10-22	Mid-Flood	IS7	11:58:13	Middle	2	2	26.91	8.21	29.2	7.1	10.5	5.2
HKLR	HY/2011/03	2012-10-22	Mid-Flood	IS(Mf)9	12:05:44	Surface	1	1	26.73	8.20	28.8	6.9	11.5	7.8
HKLR	HY/2011/03	2012-10-22	Mid-Flood	IS(Mf)9	12:06:06	Surface	1	2	26.67	8.20	28.9	6.9	11.8	6.4
HKLR	HY/2011/03	2012-10-22	Mid-Flood	IS(Mf)9	12:06:51	Bottom	3	1	26.44	8.19	29.3	6.7	13.8	6.4
HKLR	HY/2011/03	2012-10-22	Mid-Flood	IS(Mf)9	12:07:17	Bottom	3	2	26.49	8.19	29.2	6.7	13.3	6.6
HKLR	HY/2011/03	2012-10-22	Mid-Flood	IS8	12:17:19	Surface	1	1	26.91	8.25	28.0	7.5	9.1	2.6
HKLR	HY/2011/03	2012-10-22	Mid-Flood	IS8	12:17:47	Surface	1	2	26.92	8.25	27.9	7.5	8.7	3.1
HKLR	HY/2011/03	2012-10-22	Mid-Flood	IS8	12:18:28	Bottom	3	1	26.66	8.23	28.6	7.3	11.5	3.0
HKLR	HY/2011/03	2012-10-22	Mid-Flood	IS8	12:19:00	Bottom	3	2	26.67	8.23	28.6	7.3	10.5	3.4
HKLR	HY/2011/03	2012-10-22	Mid-Flood	SR4	12:26:21	Surface	1	1	27.10	8.23	27.4	7.1	11.0	3.9
HKLR	HY/2011/03	2012-10-22	Mid-Flood	SR4	12:26:55	Surface	1	2	27.08	8.22	28.0	7.1	12.4	2.4
HKLR	HY/2011/03	2012-10-22	Mid-Flood	SR4	12:28:03	Bottom	3	1	27.05	8.22	28.0	7.1	12.8	5.5
HKLR	HY/2011/03	2012-10-22	Mid-Flood	SR4	12:28:57	Bottom	3	2	27.08	8.22	28.0	7.1	12.6	5.9
HKLR	HY/2011/03	2012-10-22	Mid-Flood	CS(Mf)5	12:45:44	Surface	1	1	26.88	8.23	28.3	7.2	8.9	2.9
HKLR	HY/2011/03	2012-10-22	Mid-Flood	CS(Mf)5	12:46:15	Surface	1	2	26.90	8.23	28.6	7.2	8.9	3.3
HKLR	HY/2011/03	2012-10-22	Mid-Flood	CS(Mf)5	12:47:00	Middle	2	1	26.72	8.14	30.0	6.1	11.1	3.9
HKLR	HY/2011/03	2012-10-22	Mid-Flood	CS(Mf)5	12:47:38	Middle	2	2	26.72	8.14	30.0	5.9	12.2	4.7
HKLR	HY/2011/03	2012-10-22	Mid-Flood	CS(Mf)5	12:48:52	Bottom	3	1	26.73	8.14	30.1	5.7	20.7	12.5
HKLR	HY/2011/03	2012-10-22	Mid-Flood	CS(Mf)5	12:49:51	Bottom	3	2	26.73	8.14	30.1	5.7	19.0	12.6
HKLR	HY/2011/03	2012-10-22	Mid-Flood	SR10B	13:08:31	Surface	1	1	26.76	8.14	29.7	5.9	10.5	6.1
HKLR	HY/2011/03	2012-10-22	Mid-Flood	SR10B	13:09:07	Surface	1	2	26.76	8.14	30.5	5.9	11.8	6.3
HKLR	HY/2011/03	2012-10-22	Mid-Flood	SR10B	13:10:27	Middle	2	1	26.77	8.14	30.6	5.8	11.7	7.5
HKLR	HY/2011/03	2012-10-22	Mid-Flood	SR10B	13:10:46	Middle	2	2	26.77	8.14	30.5	5.8	12.1	5.9
HKLR	HY/2011/03	2012-10-22	Mid-Flood	SR10B	13:11:47	Bottom	3	1	26.77	8.14	30.6	5.8	13.3	6.5
HKLR	HY/2011/03	2012-10-22	Mid-Flood	SR10B	13:12:14	Bottom	3	2	26.77	8.14	30.6	5.8	12.2	7.1
HKLR	HY/2011/03	2012-10-22	Mid-Flood	SR10A	13:22:23	Surface	1	1	26.84	8.19	29.0	6.7	11.7	4.8
HKLR	HY/2011/03	2012-10-22	Mid-Flood	SR10A	13:23:09	Surface	1	2	27.00	8.21	28.7	6.9	11.3	4.9
HKLR	HY/2011/03	2012-10-22	Mid-Flood	SR10A	13:24:07	Middle	2	1	26.73	8.14	30.1	5.9	11.3	7.0
HKLR	HY/2011/03	2012-10-22	Mid-Flood	SR10A	13:24:58	Middle	2	2	26.73	8.14	30.2	5.8	12.2	5.6
HKLR	HY/2011/03	2012-10-22	Mid-Flood	SR10A	13:25:58	Bottom	3	1	26.72	8.14	30.3	5.8	12.7	6.3
HKLR	HY/2011/03	2012-10-22	Mid-Flood	SR10A	13:27:00	Bottom	3	2	26.72	8.14	30.3	5.8	12.2	5.1
HKLR	HY/2011/03	2012-10-22	Mid-Flood	SR3	14:04:50	Middle	2	1	27.57	8.17	29.3	6.6	16.3	12.1
HKLR	HY/2011/03	2012-10-22	Mid-Flood	SR3	14:05:46	Middle	2	2	27.57	8.18	29.5	6.6	16.3	11.2
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	SR3	16:39:31	Middle	2	1	27.13	8.17	28.6	6.6	5.5	7.4
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	SR3	16:40:59	Middle	2	2	27.12	8.18	29.3	6.7	4.5	5.2

Water Quarterly Monitoring Data (Oct 2012)

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Time	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	IS5	16:48:43	Surface	1	1	27.29	8.24	29.3	7.5	2.0	2.8
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	IS5	16:49:15	Surface	1	2	27.34	8.24	29.2	7.6	2.5	2.9
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	IS5	16:49:52	Middle	2	1	27.02	8.22	29.4	7.2	3.5	4.0
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	IS5	16:50:29	Middle	2	2	27.03	8.22	29.5	7.2	5.0	4.1
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	IS5	16:51:22	Bottom	3	1	26.88	8.20	29.5	6.9	8.0	6.9
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	IS5	16:51:59	Bottom	3	2	26.87	8.20	29.5	6.8	10.6	6.1
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	IS(Mf)6	17:02:05	Surface	1	1	27.51	8.28	28.1	7.7	1.5	2.7
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	IS(Mf)6	17:02:43	Surface	1	2	27.53	8.28	28.0	7.8	1.0	2.8
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	IS(Mf)6	17:03:40	Bottom	3	1	27.39	8.26	28.4	7.7	2.6	5.9
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	IS(Mf)6	17:04:03	Bottom	3	2	27.41	8.27	28.4	7.7	2.8	4.4
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	IS7	17:12:01	Surface	1	1	27.39	8.29	28.1	7.9	0.6	3.7
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	IS7	17:12:32	Surface	1	2	27.40	8.29	28.1	8.0	1.8	2.4
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	IS7	17:13:11	Bottom	3	1	27.49	8.28	29.2	7.9	5.0	3.3
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	IS7	17:13:44	Bottom	3	2	27.57	8.28	29.1	8.0	2.4	4.4
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	IS(Mf)9	17:24:04	Surface	1	1	26.93	8.29	28.2	7.9	1.7	3.3
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	IS(Mf)9	17:24:52	Surface	1	2	26.93	8.29	28.3	7.9	1.9	3.5
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	IS(Mf)9	17:25:47	Bottom	3	1	26.94	8.28	28.5	7.9	2.3	3.3
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	IS(Mf)9	17:26:14	Bottom	3	2	26.95	8.27	28.5	7.9	3.3	2.6
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	IS8	17:34:15	Surface	1	1	27.01	8.34	28.2	8.5	1.8	3.5
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	IS8	17:34:44	Surface	1	2	26.98	8.34	28.0	8.5	4.9	4.0
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	IS8	17:35:40	Bottom	3	1	26.70	8.23	28.4	7.5	5.9	6.3
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	IS8	17:36:17	Bottom	3	2	26.70	8.24	28.6	7.3	5.8	5.4
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	SR4	17:42:42	Surface	1	1	26.86	8.26	28.2	7.5	3.6	5.8
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	SR4	17:43:13	Surface	1	2	26.85	8.26	28.1	7.5	3.9	5.3
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	SR4	17:44:04	Bottom	3	1	26.82	8.26	28.1	7.5	4.4	7.1
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	SR4	17:44:34	Bottom	3	2	26.82	8.25	28.2	7.4	4.4	6.1
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	CS(Mf)5	17:59:48	Surface	1	1	26.88	8.23	29.1	7.0	1.7	3.5
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	CS(Mf)5	18:00:16	Surface	1	2	26.90	8.23	29.0	7.0	1.9	3.9
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	CS(Mf)5	18:01:11	Middle	2	1	26.75	8.15	30.4	6.0	2.5	4.1
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	CS(Mf)5	18:01:47	Middle	2	2	26.75	8.16	30.4	5.9	2.4	5.0
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	CS(Mf)5	18:04:05	Bottom	3	1	26.76	8.15	30.5	5.7	3.7	5.4
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	CS(Mf)5	18:05:32	Bottom	3	2	26.76	8.16	30.5	5.7	4.4	4.1
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	SR10B	18:24:59	Surface	1	1	26.78	8.15	30.4	6.0	2.3	4.1
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	SR10B	18:25:22	Surface	1	2	26.79	8.16	30.6	5.9	2.3	4.3
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	SR10B	18:26:00	Middle	2	1	26.80	8.16	30.6	5.8	2.7	4.8
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	SR10B	18:26:42	Middle	2	2	26.81	8.16	30.7	5.8	2.4	6.6
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	SR10B	18:28:51	Bottom	3	1	26.83	8.16	30.8	5.8	2.8	4.5
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	SR10B	18:29:20	Bottom	3	2	26.88	8.15	30.9	5.7	2.9	6.0
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	SR10A	18:40:55	Surface	1	1	26.75	8.13	30.7	5.4	2.4	3.8
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	SR10A	18:41:56	Surface	1	2	26.75	8.15	30.5	5.7	2.0	3.9
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	SR10A	18:43:04	Middle	2	1	26.75	8.14	30.6	5.4	2.3	4.5
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	SR10A	18:43:38	Middle	2	2	26.75	8.14	30.6	5.5	2.2	4.8
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	SR10A	18:44:31	Bottom	3	1	26.81	8.14	31.1	5.4	8.9	10.6
HKLR	HY/2011/03	2012-10-22	Mid-Ebb	SR10A	18:45:06	Bottom	3	2	26.81	8.14	31.0	5.4	9.2	11.2
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	SR3	08:02:30	Middle	2	1	26.60	8.32	28.7	7.3	4.0	3.2
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	SR3	08:03:21	Middle	2	2	26.58	8.33	28.7	7.4	4.3	2.8
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	IS5	08:08:42	Surface	1	1	26.59	8.27	29.1	6.8	3.5	2.9
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	IS5	08:09:17	Surface	1	2	26.58	8.28	29.1	6.8	2.7	2.9
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	IS5	08:10:37	Middle	2	1	26.61	8.21	30.0	6.1	6.2	3.5
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	IS5	08:11:07	Middle	2	2	26.61	8.22	29.8	6.1	7.0	2.9
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	IS5	08:13:07	Bottom	3	1	26.66	8.16	30.5	5.4	16.2	7.9
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	IS5	08:13:41	Bottom	3	2	26.66	8.17	30.5	5.4	16.4	7.7
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	IS(Mf)6	08:22:41	Surface	1	1	26.47	8.36	28.4	7.4	5.0	5.0
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	IS(Mf)6	08:23:16	Surface	1	2	26.49	8.36	28.6	7.4	7.3	5.2
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	IS(Mf)6	08:23:49	Bottom	3	1	26.75	8.27	29.2	6.8	5.2	4.1

Water Quarterly Monitoring Data (Oct 2012)

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Time	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	IS(Mf)6	08:24:26	Bottom	3	2	26.75	8.28	29.2	6.6	5.0	3.4
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	IS7	08:33:28	Surface	1	1	26.38	8.37	28.2	7.5	4.7	6.2
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	IS7	08:33:59	Surface	1	2	26.38	8.38	28.4	7.5	6.7	5.1
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	IS7	08:34:43	Bottom	3	1	26.43	8.34	28.6	7.3	6.1	3.5
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	IS7	08:35:17	Bottom	3	2	26.43	8.34	28.6	7.2	6.2	4.9
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	IS(Mf)9	08:42:58	Surface	1	1	26.48	8.32	28.3	7.4	3.0	4.1
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	IS(Mf)9	08:43:27	Surface	1	2	26.48	8.32	28.6	7.4	3.1	3.5
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	IS(Mf)9	08:44:24	Bottom	3	1	26.61	8.33	28.7	7.2	4.9	4.2
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	IS(Mf)9	08:45:03	Bottom	3	2	26.61	8.33	28.7	7.2	4.8	4.1
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	IS8	08:52:12	Surface	1	1	26.35	8.28	28.4	7.2	2.7	3.0
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	IS8	08:52:38	Surface	1	2	26.35	8.28	28.4	7.2	3.2	2.6
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	IS8	08:53:24	Bottom	3	1	26.39	8.28	28.5	7.1	2.6	2.4
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	IS8	08:54:06	Bottom	3	2	26.40	8.29	28.5	7.1	2.5	3.4
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	SR4	09:01:51	Surface	1	1	26.28	8.25	28.5	6.8	4.6	5.4
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	SR4	09:02:17	Surface	1	2	26.29	8.24	28.5	6.7	4.6	5.6
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	SR4	09:03:13	Bottom	3	1	26.37	8.20	28.6	6.2	7.1	6.0
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	SR4	09:03:55	Bottom	3	2	26.37	8.20	28.6	6.1	8.0	5.1
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	CS(Mf)5	09:18:18	Surface	1	1	26.57	8.25	28.2	7.1	1.8	3.8
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	CS(Mf)5	09:18:46	Surface	1	2	26.57	8.25	28.9	7.0	1.7	3.8
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	CS(Mf)5	09:20:11	Middle	2	1	26.67	8.21	30.2	6.4	1.2	3.3
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	CS(Mf)5	09:20:57	Middle	2	2	26.67	8.21	30.2	6.4	1.1	3.9
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	CS(Mf)5	09:22:29	Bottom	3	1	26.81	8.16	31.0	5.7	5.8	7.6
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	CS(Mf)5	09:23:12	Bottom	3	2	26.81	8.16	31.0	5.7	6.0	7.0
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	SR10B	09:42:28	Surface	1	1	26.71	8.19	30.6	6.2	2.2	2.3
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	SR10B	09:42:59	Surface	1	2	26.70	8.19	30.6	6.2	0.9	2.4
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	SR10B	09:44:05	Middle	2	1	26.70	8.19	30.6	6.2	1.4	2.2
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	SR10B	09:44:43	Middle	2	2	26.70	8.19	30.6	6.2	1.3	2.2
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	SR10B	09:45:47	Bottom	3	1	26.70	8.19	30.6	6.1	1.7	2.6
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	SR10B	09:46:26	Bottom	3	2	26.70	8.19	30.6	6.1	1.7	3.2
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	SR10A	09:55:58	Surface	1	1	26.71	8.20	30.5	6.3	0.1	2.4
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	SR10A	09:56:26	Surface	1	2	26.66	8.21	30.4	6.4	1.1	2.2
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	SR10A	09:57:40	Middle	2	1	26.67	8.21	30.4	6.4	0.3	3.7
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	SR10A	09:58:10	Middle	2	2	26.63	8.23	30.3	6.5	0.3	3.1
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	SR10A	09:59:40	Bottom	3	1	26.63	8.23	30.3	6.5	1.2	2.6
HKLR	HY/2011/03	2012-10-25	Mid-Ebb	SR10A	10:00:20	Bottom	3	2	26.62	8.22	30.3	6.5	1.2	2.4
HKLR	HY/2011/03	2012-10-25	Mid-Flood	SR3	15:07:57	Middle	2	1	27.55	8.42	28.6	9.0	7.1	6.3
HKLR	HY/2011/03	2012-10-25	Mid-Flood	SR3	15:08:54	Middle	2	2	27.57	8.43	29.0	9.0	8.5	5.8
HKLR	HY/2011/03	2012-10-25	Mid-Flood	IS5	15:17:01	Surface	1	1	27.33	8.46	28.8	9.1	8.6	6.3
HKLR	HY/2011/03	2012-10-25	Mid-Flood	IS5	15:17:40	Surface	1	2	27.33	8.46	28.8	9.3	10.7	5.6
HKLR	HY/2011/03	2012-10-25	Mid-Flood	IS5	15:20:44	Middle	2	1	27.38	8.47	29.0	9.3	5.6	7.2
HKLR	HY/2011/03	2012-10-25	Mid-Flood	IS5	15:21:47	Middle	2	2	27.37	8.46	29.0	9.3	6.3	7.4
HKLR	HY/2011/03	2012-10-25	Mid-Flood	IS5	15:25:53	Bottom	3	1	27.09	8.37	29.3	8.0	8.4	9.0
HKLR	HY/2011/03	2012-10-25	Mid-Flood	IS5	15:26:30	Bottom	3	2	27.08	8.37	29.4	7.9	8.7	8.1
HKLR	HY/2011/03	2012-10-25	Mid-Flood	IS(Mf)6	15:36:25	Middle	2	1	27.30	8.51	28.9	10.1	4.1	5.4
HKLR	HY/2011/03	2012-10-25	Mid-Flood	IS(Mf)6	15:37:36	Middle	2	2	27.32	8.50	28.7	10.1	3.6	5.5
HKLR	HY/2011/03	2012-10-25	Mid-Flood	IS7	15:42:58	Surface	1	1	27.26	8.36	28.5	8.0	4.5	4.8
HKLR	HY/2011/03	2012-10-25	Mid-Flood	IS7	15:43:44	Surface	1	2	27.24	8.38	28.5	8.1	4.5	5.6
HKLR	HY/2011/03	2012-10-25	Mid-Flood	IS7	15:44:43	Bottom	3	1	27.20	8.40	28.6	8.3	6.1	5.3
HKLR	HY/2011/03	2012-10-25	Mid-Flood	IS7	15:45:13	Bottom	3	2	27.21	8.40	28.5	8.3	5.8	6.5
HKLR	HY/2011/03	2012-10-25	Mid-Flood	IS(Mf)9	15:54:14	Surface	1	1	27.26	8.30	27.6	7.8	0.9	3.4
HKLR	HY/2011/03	2012-10-25	Mid-Flood	IS(Mf)9	15:55:04	Surface	1	2	27.25	8.31	27.6	7.8	0.7	4.5
HKLR	HY/2011/03	2012-10-25	Mid-Flood	IS(Mf)9	15:56:24	Bottom	3	1	27.04	8.37	28.8	8.0	3.4	5.0
HKLR	HY/2011/03	2012-10-25	Mid-Flood	IS(Mf)9	15:56:56	Bottom	3	2	27.04	8.36	28.9	8.0	3.3	4.5
HKLR	HY/2011/03	2012-10-25	Mid-Flood	IS8	16:05:37	Surface	1	1	27.20	8.26	27.5	7.4	1.4	2.4
HKLR	HY/2011/03	2012-10-25	Mid-Flood	IS8	16:06:02	Surface	1	2	27.21	8.26	27.5	7.4	1.7	3.1

Water Quarterly Monitoring Data (Oct 2012)

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Time	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2012-10-25	Mid-Flood	IS8	16:06:59	Bottom	3	1	27.00	8.35	28.5	7.8	5.9	5.1
HKLR	HY/2011/03	2012-10-25	Mid-Flood	IS8	16:07:28	Bottom	3	2	27.01	8.34	28.6	7.8	6.0	5.4
HKLR	HY/2011/03	2012-10-25	Mid-Flood	SR4	16:13:47	Surface	1	1	27.13	8.29	28.1	7.5	8.3	5.2
HKLR	HY/2011/03	2012-10-25	Mid-Flood	SR4	16:14:20	Surface	1	2	27.12	8.29	28.1	7.5	8.2	4.5
HKLR	HY/2011/03	2012-10-25	Mid-Flood	SR4	16:15:21	Bottom	3	1	27.12	8.30	28.1	7.6	5.1	7.6
HKLR	HY/2011/03	2012-10-25	Mid-Flood	SR4	16:15:58	Bottom	3	2	27.10	8.30	28.1	7.5	5.0	7.7
HKLR	HY/2011/03	2012-10-25	Mid-Flood	CS(Mf)5	16:29:29	Surface	1	1	26.92	8.30	28.8	7.5	0.8	3.0
HKLR	HY/2011/03	2012-10-25	Mid-Flood	CS(Mf)5	16:30:02	Surface	1	2	26.92	8.31	29.0	7.5	1.0	2.5
HKLR	HY/2011/03	2012-10-25	Mid-Flood	CS(Mf)5	16:30:59	Middle	2	1	26.77	8.21	30.4	6.3	4.6	6.4
HKLR	HY/2011/03	2012-10-25	Mid-Flood	CS(Mf)5	16:32:00	Middle	2	2	26.77	8.21	30.4	6.1	5.1	6.9
HKLR	HY/2011/03	2012-10-25	Mid-Flood	CS(Mf)5	16:33:42	Bottom	3	1	26.77	8.19	30.5	5.8	12.1	11.1
HKLR	HY/2011/03	2012-10-25	Mid-Flood	CS(Mf)5	16:35:37	Bottom	3	2	26.77	8.19	30.5	5.8	11.4	10.5
HKLR	HY/2011/03	2012-10-25	Mid-Flood	SR10B	16:51:16	Surface	1	1	26.82	8.19	31.2	6.0	2.4	6.6
HKLR	HY/2011/03	2012-10-25	Mid-Flood	SR10B	16:51:44	Surface	1	2	26.83	8.20	31.2	6.0	2.1	5.6
HKLR	HY/2011/03	2012-10-25	Mid-Flood	SR10B	16:53:03	Middle	2	1	26.82	8.20	31.2	5.9	2.5	3.6
HKLR	HY/2011/03	2012-10-25	Mid-Flood	SR10B	16:53:28	Middle	2	2	26.83	8.20	31.2	5.9	2.8	4.1
HKLR	HY/2011/03	2012-10-25	Mid-Flood	SR10B	16:54:16	Bottom	3	1	26.83	8.20	31.2	5.9	2.2	5.1
HKLR	HY/2011/03	2012-10-25	Mid-Flood	SR10B	16:54:49	Bottom	3	2	26.83	8.20	31.2	5.9	3.0	5.3
HKLR	HY/2011/03	2012-10-25	Mid-Flood	SR10A	17:06:26	Surface	1	1	26.88	8.24	30.1	6.5	0.7	3.0
HKLR	HY/2011/03	2012-10-25	Mid-Flood	SR10A	17:06:53	Surface	1	2	26.89	8.25	30.1	6.6	1.0	3.8
HKLR	HY/2011/03	2012-10-25	Mid-Flood	SR10A	17:08:04	Middle	2	1	26.81	8.21	30.8	6.1	2.6	5.3
HKLR	HY/2011/03	2012-10-25	Mid-Flood	SR10A	17:08:45	Middle	2	2	26.81	8.21	30.8	6.0	2.1	6.0
HKLR	HY/2011/03	2012-10-25	Mid-Flood	SR10A	17:09:47	Bottom	3	1	26.82	8.21	30.9	6.0	3.0	4.0
HKLR	HY/2011/03	2012-10-25	Mid-Flood	SR10A	17:11:26	Bottom	3	2	26.82	8.21	30.9	6.0	5.2	3.9
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS5	10:14:33	Surface	1	1	26.44	8.14	29.2	6.0	3.5	6.3
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS5	10:14:58	Surface	1	2	26.44	8.14	29.3	6.0	3.0	5.8
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS5	10:16:09	Middle	2	1	26.45	8.13	30.0	5.7	12.7	17.8
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS5	10:16:39	Middle	2	2	26.45	8.14	29.9	5.7	11.3	16.7
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS5	10:19:08	Bottom	3	1	26.46	8.13	30.6	5.5	25.8	30.3
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS5	10:20:02	Bottom	3	2	26.46	8.13	30.6	5.5	29.2	31.0
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS(Mf)6	10:27:56	Surface	1	1	26.42	8.18	28.6	6.4	3.6	10.8
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS(Mf)6	10:28:32	Surface	1	2	26.42	8.18	28.7	6.4	3.1	11.3
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS(Mf)6	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS(Mf)6	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS(Mf)6	10:29:53	Bottom	3	1	26.45	8.17	28.8	6.0	4.3	7.5
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS(Mf)6	10:30:25	Bottom	3	2	26.44	8.17	28.8	6.0	4.3	6.6
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS7	10:36:39	Surface	1	1	26.44	8.18	28.6	6.4	4.2	9.2
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS7	10:37:07	Surface	1	2	26.44	8.18	28.6	6.4	4.0	8.8
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS7	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS7	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS7	10:37:50	Bottom	3	1	26.43	8.17	28.6	6.3	4.3	9.4
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS7	10:38:12	Bottom	3	2	26.42	8.17	28.6	6.3	4.7	7.8
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS8	10:51:22	Surface	1	1	26.46	8.17	28.5	6.5	1.5	4.2
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS8	10:51:55	Surface	1	2	26.45	8.17	28.6	6.4	2.1	6.0
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS8	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS8	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS8	10:53:08	Bottom	3	1	26.48	8.14	28.7	5.9	6.4	4.0
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS8	10:53:45	Bottom	3	2	26.47	8.15	28.7	6.0	5.0	5.2
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS(Mf)9	10:41:25	Surface	1	1	26.48	8.13	28.6	6.0	3.2	6.3
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS(Mf)9	10:42:12	Surface	1	2	26.48	8.13	28.6	6.0	3.3	6.4
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS(Mf)9	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS(Mf)9	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS(Mf)9	10:43:03	Bottom	3	1	26.48	8.12	28.6	5.9	5.0	9.3
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS(Mf)9	10:43:38	Bottom	3	2	26.48	8.12	28.6	5.9	4.8	8.8
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS10	--	Surface	1	1	--	--	--	--	--	--

Water Quarterly Monitoring Data (Oct 2012)

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Time	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS10	--	Surface	1	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS10	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS10	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS10	--	Bottom	3	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	IS10	--	Bottom	3	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR3	--	Surface	1	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR3	--	Surface	1	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR3	10:08:20	Middle	2	1	26.43	8.16	28.9	6.3	4.6	9.2
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR3	10:08:46	Middle	2	2	26.41	8.16	28.9	6.3	5.0	8.3
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR3	--	Bottom	3	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR3	--	Bottom	3	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR4	11:00:03	Surface	1	1	26.32	8.08	28.2	5.7	3.8	7.5
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR4	11:00:44	Surface	1	2	26.33	8.08	28.4	5.6	4.5	7.2
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR4	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR4	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR4	11:01:40	Bottom	3	1	26.41	8.08	28.5	5.4	6.8	10.0
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR4	11:02:06	Bottom	3	2	26.38	8.08	28.4	5.5	6.5	7.7
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR5	--	Surface	1	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR5	--	Surface	1	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR5	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR5	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR5	--	Bottom	3	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR5	--	Bottom	3	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR10A	12:00:03	Surface	1	1	26.61	8.11	30.5	5.8	0.4	7.5
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR10A	12:00:53	Surface	1	2	26.60	8.11	30.6	5.8	0.4	8.8
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR10A	12:02:52	Middle	2	1	26.59	8.11	30.6	5.7	1.1	4.3
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR10A	12:03:23	Middle	2	2	26.59	8.11	30.6	5.7	1.3	3.9
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR10A	12:05:35	Bottom	3	1	26.60	8.11	30.6	5.6	1.5	7.9
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR10A	12:06:10	Bottom	3	2	26.60	8.11	30.6	5.6	1.8	3.8
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR10B	11:37:57	Surface	1	1	26.59	8.11	30.7	5.7	2.5	8.5
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR10B	11:38:18	Surface	1	2	26.59	8.11	30.7	5.7	7.3	9.3
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR10B	11:39:29	Middle	2	1	26.59	8.11	30.7	5.7	2.6	5.2
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR10B	11:39:52	Middle	2	2	26.59	8.11	30.7	5.7	2.2	4.7
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR10B	11:40:57	Bottom	3	1	26.59	8.11	30.7	5.6	2.1	6.2
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	SR10B	11:41:18	Bottom	3	2	26.59	8.11	30.7	5.6	2.1	6.7
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	CS2	--	Surface	1	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	CS2	--	Surface	1	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	CS2	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	CS2	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	CS2	--	Bottom	3	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	CS2	--	Bottom	3	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	CS(Mf)5	11:16:43	Surface	1	1	26.51	8.14	29.4	6.4	0.9	6.1
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	CS(Mf)5	11:17:05	Surface	1	2	26.51	8.14	29.4	6.3	1.0	6.5
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	CS(Mf)5	11:17:59	Middle	2	1	26.62	8.11	30.6	5.6	3.0	7.8
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	CS(Mf)5	11:18:39	Middle	2	2	26.62	8.11	30.7	5.5	3.4	5.8
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	CS(Mf)5	11:19:54	Bottom	3	1	26.61	8.10	30.8	5.4	15.0	16.2
HKLR	HY/2011/03	2012-10-27	Mid-Ebb	CS(Mf)5	11:20:27	Bottom	3	2	26.61	8.11	30.8	5.5	15.3	17.5
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS5	16:04:49	Surface	1	1	26.54	8.19	28.9	7.0	16.5	18.2
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS5	16:05:28	Surface	1	2	26.54	8.20	28.8	7.0	17.1	17.9
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS5	16:06:37	Middle	2	1	26.57	8.18	29.1	6.8	11.9	16.8
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS5	16:07:11	Middle	2	2	26.57	8.18	29.0	6.8	13.0	17.1
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS5	16:08:10	Bottom	3	1	26.58	8.17	29.2	6.6	15.3	18.8
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS5	16:08:42	Bottom	3	2	26.57	8.17	29.3	6.5	14.9	18.5
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS(Mf)6	16:19:10	Surface	1	1	26.55	8.21	28.5	7.2	11.0	15.4
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS(Mf)6	16:19:37	Surface	1	2	26.55	8.21	28.5	7.2	11.9	12.8

Water Quarterly Monitoring Data (Oct 2012)

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Time	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS(Mf)6	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS(Mf)6	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS(Mf)6	16:20:12	Bottom	3	1	26.56	8.21	28.5	7.2	12.4	22.2
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS(Mf)6	16:20:45	Bottom	3	2	26.55	8.21	28.6	7.2	13.0	23.5
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS7	16:28:56	Surface	1	1	26.62	8.19	28.5	7.1	14.0	19.9
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS7	16:29:38	Surface	1	2	26.61	8.19	28.5	7.1	15.4	18.2
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS7	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS7	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS7	16:30:06	Bottom	3	1	26.61	8.19	28.5	7.0	19.2	19.6
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS7	16:30:27	Bottom	3	2	26.62	8.19	28.5	7.1	14.7	21.2
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS8	16:47:32	Surface	1	1	26.59	8.12	28.9	6.2	11.0	14.1
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS8	16:47:55	Surface	1	2	26.59	8.12	29.0	6.1	9.9	13.1
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS8	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS8	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS8	16:48:51	Bottom	3	1	26.59	8.12	29.0	6.1	13.9	13.6
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS8	16:49:19	Bottom	3	2	26.59	8.12	29.0	6.1	12.2	13.6
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS(Mf)9	16:37:26	Surface	1	1	26.61	8.13	28.8	6.4	15.8	13.4
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS(Mf)9	16:37:59	Surface	1	2	26.62	8.14	28.8	6.4	11.3	15.2
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS(Mf)9	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS(Mf)9	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS(Mf)9	16:38:33	Bottom	3	1	26.60	8.12	28.9	6.3	16.6	18.4
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS(Mf)9	16:39:05	Bottom	3	2	26.61	8.13	28.9	6.2	16.5	18.1
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS10	--	Surface	1	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS10	--	Surface	1	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS10	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS10	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS10	--	Bottom	3	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	IS10	--	Bottom	3	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR3	--	Surface	1	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR3	--	Surface	1	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR3	15:56:22	Middle	2	1	26.60	8.16	28.4	6.9	14.3	17.8
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR3	15:56:58	Middle	2	2	26.61	8.17	29.1	6.9	15.7	19.3
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR3	--	Bottom	3	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR3	--	Bottom	3	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR4	16:55:43	Surface	1	1	26.56	8.10	28.7	5.8	18.6	23.8
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR4	16:56:12	Surface	1	2	26.57	8.09	28.6	5.8	20.5	26.0
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR4	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR4	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR4	16:56:55	Bottom	3	1	26.56	8.10	28.7	5.8	19.0	22.2
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR4	16:57:25	Bottom	3	2	26.56	8.10	28.7	5.8	19.0	19.6
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR5	--	Surface	1	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR5	--	Surface	1	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR5	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR5	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR5	--	Bottom	3	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR5	--	Bottom	3	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR10A	17:47:00	Surface	1	1	26.66	8.11	30.1	5.9	3.3	6.1
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR10A	17:47:28	Surface	1	2	26.66	8.11	30.1	5.9	4.0	4.2
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR10A	17:48:38	Middle	2	1	26.63	8.11	30.9	5.6	4.9	9.4
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR10A	17:49:07	Middle	2	2	26.63	8.11	30.9	5.6	5.0	6.8
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR10A	17:50:22	Bottom	3	1	26.63	8.11	31.0	5.6	7.9	10.2
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR10A	17:50:55	Bottom	3	2	26.63	8.11	31.0	5.6	5.5	10.4
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR10B	17:33:42	Surface	1	1	26.61	8.10	31.2	5.7	8.4	12.0
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR10B	17:34:08	Surface	1	2	26.61	8.10	31.0	5.7	8.8	13.6
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR10B	17:35:16	Middle	2	1	26.61	8.11	31.1	5.6	9.5	14.2

Water Quarterly Monitoring Data (Oct 2012)

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Time	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR10B	17:35:59	Middle	2	2	26.61	8.11	31.1	5.6	8.8	15.8
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR10B	17:36:43	Bottom	3	1	26.61	8.11	31.1	5.6	9.2	12.0
HKLR	HY/2011/03	2012-10-27	Mid-Flood	SR10B	17:37:12	Bottom	3	2	26.61	8.11	31.1	5.6	9.5	14.4
HKLR	HY/2011/03	2012-10-27	Mid-Flood	CS2	--	Surface	1	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	CS2	--	Surface	1	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	CS2	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	CS2	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	CS2	--	Bottom	3	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	CS2	--	Bottom	3	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-27	Mid-Flood	CS(Mf)5	17:09:56	Surface	1	1	26.56	8.14	29.3	6.4	1.3	6.6
HKLR	HY/2011/03	2012-10-27	Mid-Flood	CS(Mf)5	17:10:25	Surface	1	2	26.55	8.15	29.4	6.4	1.1	8.0
HKLR	HY/2011/03	2012-10-27	Mid-Flood	CS(Mf)5	17:11:34	Middle	2	1	26.62	8.10	30.3	5.6	7.0	6.0
HKLR	HY/2011/03	2012-10-27	Mid-Flood	CS(Mf)5	17:12:03	Middle	2	2	26.62	8.10	30.3	5.6	6.6	7.2
HKLR	HY/2011/03	2012-10-27	Mid-Flood	CS(Mf)5	17:13:16	Bottom	3	1	26.62	8.10	30.6	5.4	22.9	28.8
HKLR	HY/2011/03	2012-10-27	Mid-Flood	CS(Mf)5	17:13:51	Bottom	3	2	26.62	8.10	30.6	5.4	19.4	30.7
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS5	11:35:57	Surface	1	1	25.80	8.09	30.0	6.0	13.2	13.9
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS5	11:36:40	Surface	1	2	25.79	8.10	30.0	6.0	12.7	13.9
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS5	11:37:36	Middle	2	1	25.80	8.10	30.2	5.9	18.5	13.1
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS5	11:38:23	Middle	2	2	25.80	8.10	30.2	5.9	16.1	13.8
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS5	11:39:21	Bottom	3	1	25.80	8.10	30.3	5.8	23.0	21.4
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS5	11:40:36	Bottom	3	2	25.80	8.10	30.2	5.8	27.5	22.2
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS(Mf)6	11:56:56	Surface	1	1	25.69	8.10	29.4	6.3	10.8	12.9
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS(Mf)6	11:57:45	Surface	1	2	25.69	8.11	29.4	6.3	10.9	11.2
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS(Mf)6	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS(Mf)6	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS(Mf)6	11:58:24	Bottom	3	1	25.71	8.11	29.5	6.2	11.3	12.6
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS(Mf)6	11:58:56	Bottom	3	2	25.71	8.11	29.8	6.2	12.5	12.2
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS7	12:08:03	Surface	1	1	25.75	8.10	29.5	6.3	9.8	11.5
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS7	12:08:34	Surface	1	2	25.74	8.11	29.7	6.3	10.9	11.7
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS7	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS7	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS7	12:08:58	Bottom	3	1	25.74	8.10	29.8	6.2	11.5	13.4
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS7	12:09:28	Bottom	3	2	25.74	8.10	29.8	6.2	12.1	14.3
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS8	12:27:13	Surface	1	1	25.90	8.10	30.0	6.2	9.2	7.2
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS8	12:27:40	Surface	1	2	25.88	8.11	30.0	6.2	7.1	8.5
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS8	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS8	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS8	12:28:25	Bottom	3	1	25.99	8.10	30.3	5.9	14.0	16.5
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS8	12:28:59	Bottom	3	2	25.98	8.10	30.3	5.9	14.1	16.8
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS(Mf)9	12:16:10	Surface	1	1	25.90	8.11	30.0	6.2	7.6	7.1
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS(Mf)9	12:16:54	Surface	1	2	25.90	8.11	30.0	6.2	7.4	7.5
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS(Mf)9	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS(Mf)9	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS(Mf)9	12:17:32	Bottom	3	1	25.94	8.12	30.3	6.2	9.6	9.0
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS(Mf)9	12:18:03	Bottom	3	2	25.93	8.12	30.3	6.2	8.3	9.3
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS10	--	Surface	1	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS10	--	Surface	1	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS10	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS10	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS10	--	Bottom	3	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	IS10	--	Bottom	3	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR3	--	Surface	1	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR3	--	Surface	1	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR3	11:27:25	Middle	2	1	25.70	8.06	29.7	6.0	15.4	15.0
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR3	11:28:18	Middle	2	2	25.70	8.08	29.8	6.0	13.4	15.7

Water Quarterly Monitoring Data (Oct 2012)

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Time	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR3	--	Bottom	3	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR3	--	Bottom	3	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR4	12:37:15	Surface	1	1	25.66	8.05	29.4	6.0	9.9	8.1
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR4	12:37:44	Surface	1	2	25.71	8.06	29.5	5.9	10.5	7.4
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR4	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR4	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR4	12:38:15	Bottom	3	1	25.79	8.06	29.7	5.9	12.7	13.9
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR4	12:38:48	Bottom	3	2	25.75	8.06	29.7	5.8	12.9	13.3
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR5	--	Surface	1	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR5	--	Surface	1	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR5	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR5	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR5	--	Bottom	3	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR5	--	Bottom	3	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR10A	13:26:51	Surface	1	1	26.27	8.10	31.1	5.7	4.8	6.2
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR10A	13:27:36	Surface	1	2	26.27	8.10	31.2	5.6	4.7	5.4
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR10A	13:29:09	Middle	2	1	26.28	8.10	31.2	5.6	5.1	7.0
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR10A	13:29:45	Middle	2	2	26.28	8.11	31.2	5.6	5.3	7.0
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR10A	13:30:35	Bottom	3	1	26.28	8.10	31.3	5.6	5.9	7.6
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR10A	13:31:20	Bottom	3	2	26.28	8.10	31.3	5.5	5.2	8.5
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR10B	13:14:12	Surface	1	1	26.27	8.10	31.3	5.7	5.4	6.7
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR10B	13:14:42	Surface	1	2	26.27	8.11	31.3	5.7	6.0	7.9
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR10B	13:16:00	Middle	2	1	26.27	8.11	31.3	5.7	6.3	7.3
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR10B	13:16:49	Middle	2	2	26.27	8.11	31.3	5.7	6.1	7.5
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR10B	13:17:46	Bottom	3	1	26.27	8.11	31.3	5.6	6.4	7.6
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	SR10B	13:18:14	Bottom	3	2	26.27	8.11	31.3	5.6	6.2	6.8
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	CS2	--	Surface	1	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	CS2	--	Surface	1	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	CS2	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	CS2	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	CS2	--	Bottom	3	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	CS2	--	Bottom	3	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	CS(Mf)5	12:52:33	Surface	1	1	26.12	8.11	30.0	6.1	4.4	5.3
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	CS(Mf)5	12:53:07	Surface	1	2	26.10	8.11	29.9	6.1	4.1	5.3
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	CS(Mf)5	12:54:11	Middle	2	1	26.25	8.10	31.0	5.7	4.6	6.5
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	CS(Mf)5	12:54:53	Middle	2	2	26.26	8.10	31.0	5.7	4.3	5.7
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	CS(Mf)5	12:56:34	Bottom	3	1	26.30	8.10	31.3	5.5	23.3	18.0
HKLR	HY/2011/03	2012-10-30	Mid-Ebb	CS(Mf)5	12:57:01	Bottom	3	2	26.30	8.10	31.3	5.5	21.7	16.8
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS5	06:56:09	Surface	1	1	25.81	8.06	29.9	6.2	12.3	16.0
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS5	06:56:52	Surface	1	2	25.79	8.06	29.8	6.1	16.0	15.2
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS5	06:58:24	Middle	2	1	25.83	8.09	30.0	6.1	11.3	12.7
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS5	06:59:04	Middle	2	2	25.83	8.09	30.0	6.1	11.3	11.0
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS5	07:00:16	Bottom	3	1	25.88	8.09	30.3	6.0	10.2	13.9
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS5	07:01:33	Bottom	3	2	25.86	8.09	30.2	6.0	11.2	13.1
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS(Mf)6	07:14:40	Surface	1	1	25.78	8.09	30.1	6.2	11.7	11.1
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS(Mf)6	07:15:25	Surface	1	2	25.79	8.09	30.1	6.2	11.0	12.8
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS(Mf)6	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS(Mf)6	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS(Mf)6	07:16:04	Bottom	3	1	25.79	8.09	30.1	6.1	11.4	13.1
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS(Mf)6	07:16:34	Bottom	3	2	25.79	8.09	30.1	6.1	11.4	13.5
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS7	07:30:21	Surface	1	1	25.92	8.08	30.1	6.2	13.1	14.7
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS7	07:30:57	Surface	1	2	25.92	8.08	30.2	6.1	13.0	15.9
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS7	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS7	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS7	07:31:48	Bottom	3	1	25.92	8.08	30.2	6.1	15.4	16.2

Water Quarterly Monitoring Data (Oct 2012)

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Time	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS7	07:32:41	Bottom	3	2	25.92	8.08	30.2	6.1	13.8	14.8
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS8	07:52:14	Surface	1	1	26.01	8.08	30.3	6.1	11.3	15.2
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS8	07:52:58	Surface	1	2	26.00	8.08	30.3	6.1	11.5	15.1
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS8	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS8	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS8	07:53:51	Bottom	3	1	26.01	8.09	30.3	6.0	13.1	15.8
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS8	07:54:33	Bottom	3	2	26.01	8.09	30.3	6.0	12.7	14.5
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS(Mf)9	07:41:07	Surface	1	1	26.01	8.08	30.3	6.1	14.0	36.7
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS(Mf)9	07:41:40	Surface	1	2	26.01	8.08	30.3	6.1	13.4	35.7
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS(Mf)9	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS(Mf)9	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS(Mf)9	07:42:40	Bottom	3	1	26.02	8.08	30.3	6.0	34.0	42.2
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS(Mf)9	07:43:29	Bottom	3	2	26.02	8.08	30.3	6.0	31.4	41.2
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS10	--	Surface	1	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS10	--	Surface	1	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS10	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS10	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS10	--	Bottom	3	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	IS10	--	Bottom	3	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR3	--	Surface	1	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR3	--	Surface	1	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR3	06:48:47	Middle	2	1	25.81	8.04	29.1	6.1	13.3	14.5
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR3	06:49:23	Middle	2	2	25.81	8.05	29.7	6.0	14.2	13.7
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR3	--	Bottom	3	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR3	--	Bottom	3	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR4	08:02:36	Surface	1	1	26.09	8.08	30.4	6.0	21.3	24.7
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR4	08:03:06	Surface	1	2	26.09	8.08	30.4	5.9	22.4	25.8
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR4	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR4	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR4	08:04:07	Bottom	3	1	26.07	8.09	30.5	6.0	20.8	24.6
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR4	08:05:00	Bottom	3	2	26.07	8.08	30.5	5.9	21.6	25.1
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR5	--	Surface	1	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR5	--	Surface	1	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR5	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR5	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR5	--	Bottom	3	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR5	--	Bottom	3	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR10A	09:00:05	Surface	1	1	26.29	8.07	31.3	5.6	13.5	5.7
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR10A	09:00:33	Surface	1	2	26.25	8.07	31.1	5.5	5.2	6.4
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR10A	09:01:35	Middle	2	1	26.29	8.08	31.4	5.5	8.0	11.4
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR10A	09:02:09	Middle	2	2	26.29	8.08	31.4	5.5	8.4	10.2
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR10A	09:04:21	Bottom	3	1	26.29	8.09	31.5	5.5	14.5	13.5
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR10A	09:04:57	Bottom	3	2	26.29	8.09	31.5	5.5	12.4	13.3
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR10B	08:46:49	Surface	1	1	26.25	8.09	31.6	5.7	12.0	14.0
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR10B	08:47:13	Surface	1	2	26.25	8.09	31.7	5.7	12.0	13.8
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR10B	08:47:57	Middle	2	1	26.25	8.09	31.7	5.6	10.9	13.5
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR10B	08:48:32	Middle	2	2	26.25	8.09	31.7	5.6	11.2	12.1
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR10B	08:49:22	Bottom	3	1	26.25	8.09	31.7	5.6	12.7	13.1
HKLR	HY/2011/03	2012-10-30	Mid-Flood	SR10B	08:50:01	Bottom	3	2	26.25	8.09	31.7	5.6	12.8	12.9
HKLR	HY/2011/03	2012-10-30	Mid-Flood	CS2	--	Surface	1	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	CS2	--	Surface	1	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	CS2	--	Middle	2	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	CS2	--	Middle	2	2	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	CS2	--	Bottom	3	1	--	--	--	--	--	--
HKLR	HY/2011/03	2012-10-30	Mid-Flood	CS2	--	Bottom	3	2	--	--	--	--	--	--

Water Quarterly Monitoring Data (Oct 2012)

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Time	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2012-10-30	Mid-Flood	CS(Mf)5	08:19:13	Surface	1	1	26.29	8.07	31.2	5.7	4.3	6.3
HKLR	HY/2011/03	2012-10-30	Mid-Flood	CS(Mf)5	08:19:44	Surface	1	2	26.30	8.07	31.2	5.7	4.7	6.8
HKLR	HY/2011/03	2012-10-30	Mid-Flood	CS(Mf)5	08:20:38	Middle	2	1	26.31	8.08	31.3	5.6	7.0	10.8
HKLR	HY/2011/03	2012-10-30	Mid-Flood	CS(Mf)5	08:21:10	Middle	2	2	26.31	8.08	31.3	5.6	7.4	9.6
HKLR	HY/2011/03	2012-10-30	Mid-Flood	CS(Mf)5	08:22:35	Bottom	3	1	26.31	8.08	31.3	5.5	18.6	17.3
HKLR	HY/2011/03	2012-10-30	Mid-Flood	CS(Mf)5	08:23:11	Bottom	3	2	26.31	8.08	31.3	5.5	18.7	16.2

Noise Monitoring Result (Oct 2012)

Project	Works	Date (yyyy-mm-dd)	Station	Start Time	1st set 5mins		2nd set 5mins		3rd set 5mins		4th set 5mins		5th set 5mins		6th set 5mins		Overall (30mins)		Unit
HKLR	HY/2011/03	2012-10-18	NMS5	13:30	Leq:	49.4	Leq:	49.3	Leq:	49.4	Leq:	49.3	Leq:	49.3	Leq:	49.5	Leq:	52.4*	dB(A)
					L10:	51.0	L10:	51.0	L10:	51.0	L10:	51.0	L10:	51.0	L10:	51.0	L10:	54.0*	
					L90:	43.0	L90:	43.5	L90:	43.5	L90:	43.0	L90:	43.5	L90:	43.0	L90:	46.3*	
HKLR	HY/2011/03	2012-10-24	NMS5	13:30	Leq:	58.8	Leq:	53.7	Leq:	55.1	Leq:	54.0	Leq:	56.8	Leq:	55.7	Leq:	59.1*	dB(A)
					L10:	59.5	L10:	55.5	L10:	57.5	L10:	57.0	L10:	60.0	L10:	58.0	L10:	61.2*	
					L90:	52.0	L90:	51.0	L90:	50.0	L90:	50.0	L90:	51.5	L90:	51.5	L90:	54.1*	

Note: * +3dB(A) Façade correction included

1-hour and 24-hrs TSP Monitoring Result (Oct 2012)

Project	Works	Date (yyyy-mm-dd)	Station	Time	Parameter	Results	Unit
HKLR	HY/2011/03	2012-10-18	AMS5	13:10	1-hr TSP	242	ug/m3
HKLR	HY/2011/03	2012-10-18	AMS5	14:10	1-hr TSP	250	ug/m3
HKLR	HY/2011/03	2012-10-18	AMS5	15:10	1-hr TSP	269	ug/m3
HKLR	HY/2011/03	2012-10-24	AMS5	13:35	1-hr TSP	82	ug/m3
HKLR	HY/2011/03	2012-10-24	AMS5	14:35	1-hr TSP	92	ug/m3
HKLR	HY/2011/03	2012-10-24	AMS5	15:35	1-hr TSP	108	ug/m3
HKLR	HY/2011/03	2012-10-30	AMS5	13:45	1-hr TSP	425	ug/m3
HKLR	HY/2011/03	2012-10-30	AMS5	14:45	1-hr TSP	412	ug/m3
HKLR	HY/2011/03	2012-10-30	AMS5	15:45	1-hr TSP	562	ug/m3
HKLR	HY/2011/03	2012-10-18	AMS5	09:00	24-hr TSP	94	ug/m3
HKLR	HY/2011/03	2012-10-24	AMS5	09:00	24-hr TSP	79	ug/m3
HKLR	HY/2011/03	2012-10-30	AMS5	09:00	24-hr TSP	46	ug/m3
HKLR	HY/2011/03	2012-10-18	AMS6	08:45	1-hr TSP	178	ug/m3
HKLR	HY/2011/03	2012-10-18	AMS6	09:45	1-hr TSP	167	ug/m3
HKLR	HY/2011/03	2012-10-18	AMS6	10:45	1-hr TSP	171	ug/m3
HKLR	HY/2011/03	2012-10-24	AMS6	09:00	1-hr TSP	148	ug/m3
HKLR	HY/2011/03	2012-10-24	AMS6	10:00	1-hr TSP	105	ug/m3
HKLR	HY/2011/03	2012-10-24	AMS6	11:00	1-hr TSP	101	ug/m3

APPENDIX F

Event and Action Plan

Event and Action Plan for Air Quality

Event	Action			
	ET	IEC	SO	Contractor
Exceedance of Action Level for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC and SO; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Exceedance of Action Level for two or more consecutive samples	1. Identify source; 2. Inform IEC and SO; 3. Advise the SO on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and SO; 8. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Submit proposals for remedial to SO within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.

Event	Action			
	ET	IEC	SO	Contractor
Exceedance of Limit Level for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform SO, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and SO informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the SO on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Exceedance of Limit Level for two or more consecutive samples	1. Notify IEC, SO, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and SO to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and SO informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst SO, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the SO accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the SO until the exceedance is abated.

Note: ET – Environmental Team, IEC – Independent Environmental Checker, SO – Supervising Officer

Event and Action Plan for Construction Noise

Event	Action			
	ET	IEC	SO	Contractor
Exceedance of Action Level	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Notify IEC and Contractor; 3. Report the results of investigation to the IEC, SO and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the SO accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to IEC; 2. Implement noise mitigation proposals.
Exceedance of Limit Level	1. Inform IEC, ER, Contractor and EPD; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance; 5. Carry out analysis of Contractor's working procedures; 6. Discuss with the IEC, Contractor and ER on remedial measures required; 7.Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification; 3. Implement the agreed proposals; 4. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.

Note: ET – Environmental Team, IEC – Independent Environmental Checker, SO – Supervising Officer

Event and Action Plan for Water Quality

Event	Action			
	ET Leader	**IEC**	**SO**	**Contractor**
Action level being exceeded by one sampling day	1. Repeat in situ measurement on next day of exceedance to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, contractor and SO; 4. Check monitoring data, all plant, equipment and Contractor's working methods.	1. Check monitoring data submitted by ET and Contractor's working methods.	1. Confirm receipt of notification of non-compliance in writing; 2. Notify Contractor.	1. Inform the SO and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Amend working methods if appropriate.
Action level being exceeded by two or more consecutive sampling days	1. Repeat measurement on next day of exceedance to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, contractor, SO and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, SO and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Action level;	1. Check monitoring data submitted by ET and Contractor's working method; 2. Discuss with ET and Contractor on possible remedial actions; 3. Review the proposed mitigation measures submitted by Contractor and advise the SO accordingly; 4. Supervise the implementation of mitigation measures.	1. Discuss with IEC on the proposed mitigation measures; 2. Ensure mitigation measures are properly implemented; 3. Assess the effectiveness of the implemented mitigation measures.	1. Inform the Engineer and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment and consider changes of working methods; 4. Submit proposal of additional mitigation measures to SO within 3 working days of notification and discuss with ET, IEC and SO; 5. Implement the agreed mitigation measures.

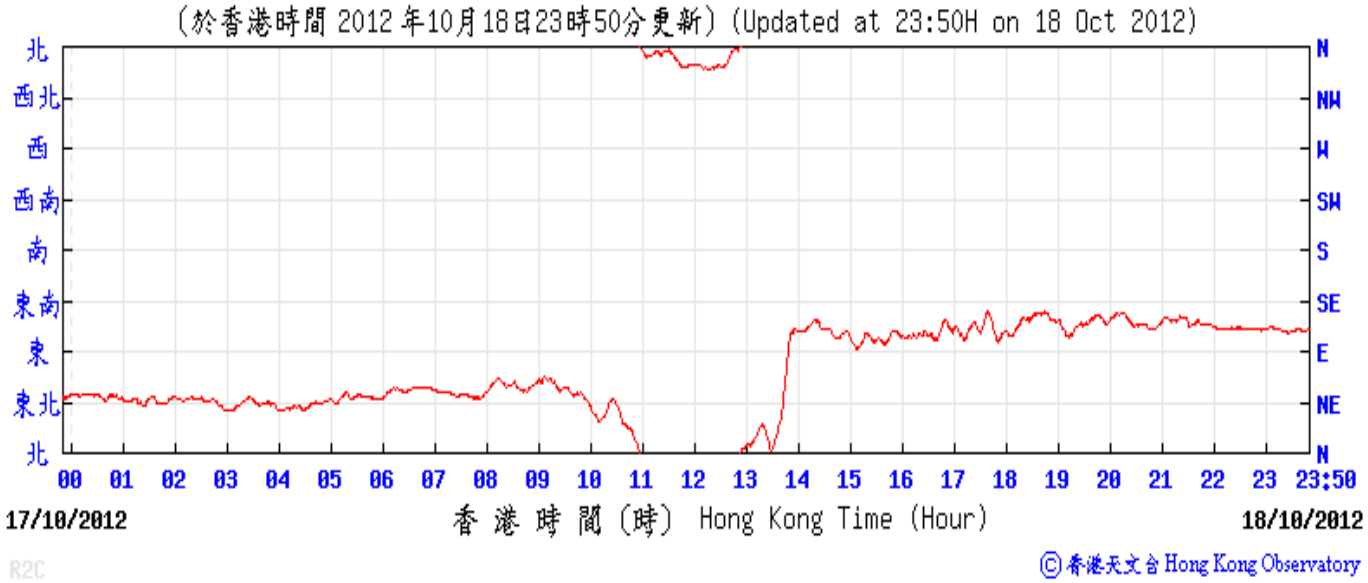
Event	Action			
	ET Leader	IEC	SO	Contractor
Limit level being exceeded by one sampling day	1. Repeat measurement on next day of exceedance to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, contractor, SO and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, SO and Contractor;	1. Check monitoring data submitted by ET and Contractor's working method; 2. Discuss with ET and Contractor on possible remedial actions; 3. Review the proposed mitigation measures submitted by Contractor and advise the SO accordingly.	1. Confirm receipt of notification of failure in writing; 2. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 3. Request Contractor to review the working methods.	1. Inform the SO and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment and consider changes of working methods; 4. Submit proposal of mitigation measures to SO within 3 working days of notification and discuss with ET, IEC and SO.
Limit level being exceeded by two or more consecutive sampling days	1. Repeat measurement on next day of exceedance to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, contractor, SO and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, SO and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days;	1. Check monitoring data submitted by ET and Contractor's working method; 2. Discuss with ET and Contractor on possible remedial actions; 3. Review the Contractor's mitigation measures whenever necessary to assure their effectiveness and advise the SO accordingly; 4. Supervise the implementation of mitigation measures.	1. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented; 4. Ensure mitigation measures are properly implemented; 5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the construction activities until no exceedance of Limit level.	1. Take immediate action to avoid further exceedance; 2. Submit proposal of mitigation measures to SO within 3 working days of notification and discuss with ET, IEC and SO; 3. Implement the agreed mitigation measures; 4. Resubmit proposals of mitigation measures if problem still not under control; 5. As directed by the Engineer, to slow down or to stop all or part of the construction activities until no exceedance of Limit level.

Note: ET – Environmental Team, IEC – Independent Environmental Checker, SO – Supervising Officer

APPENDIX G

Wind Data

20121018 Wind Direction:



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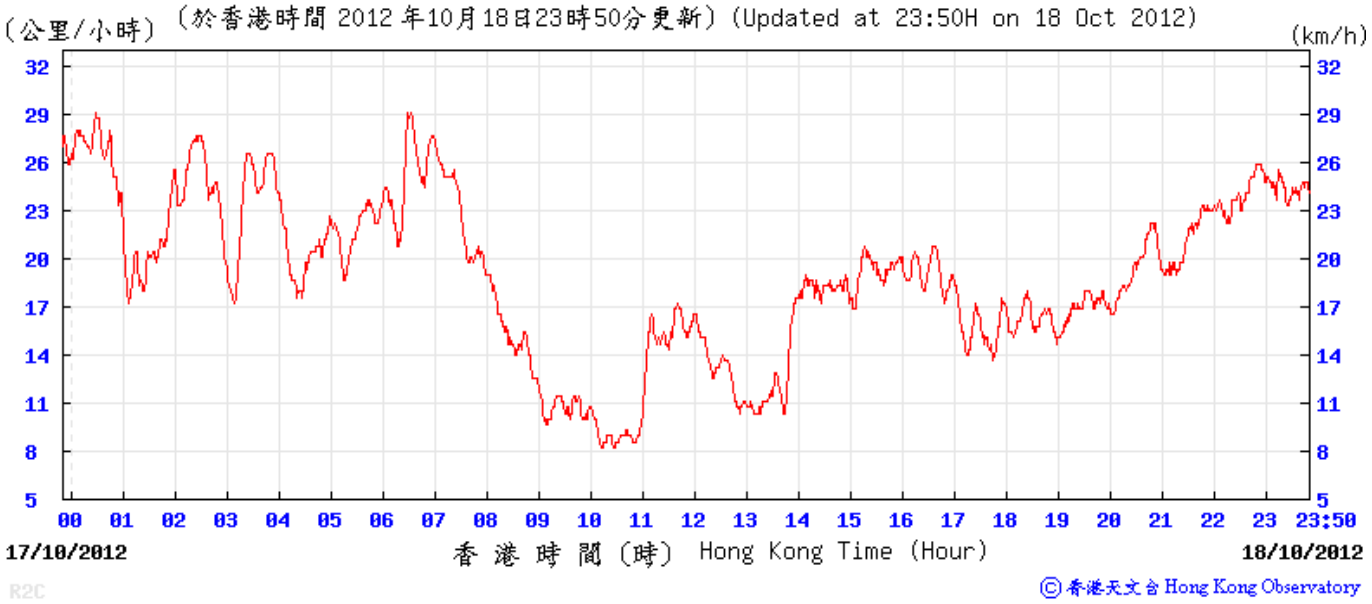

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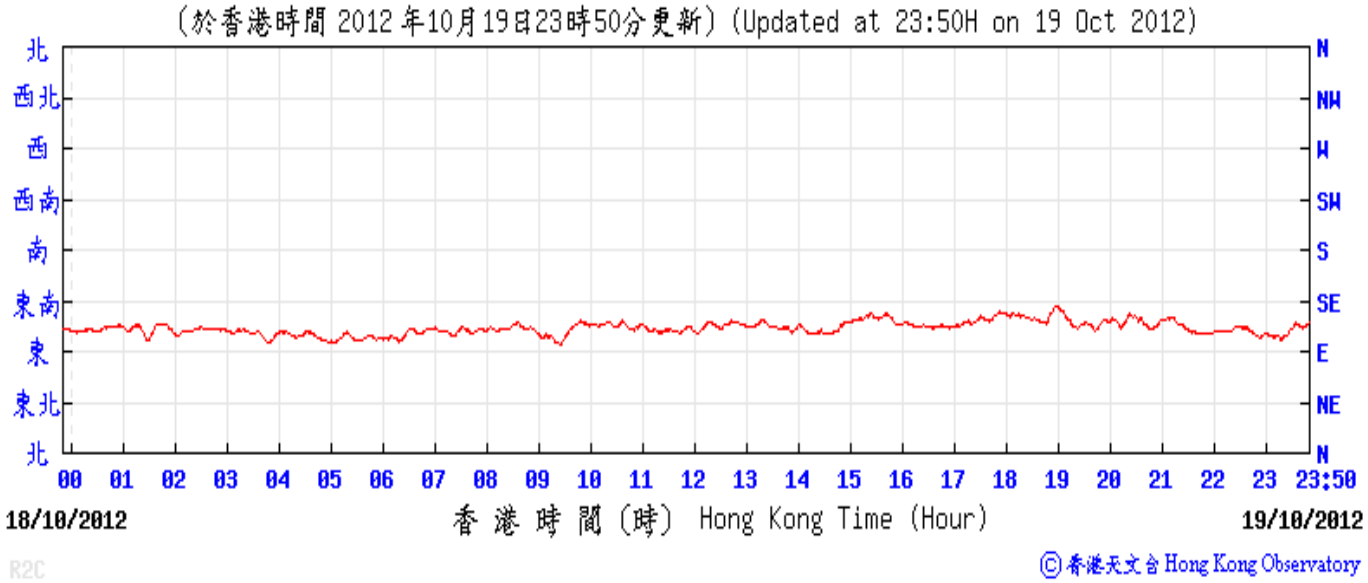

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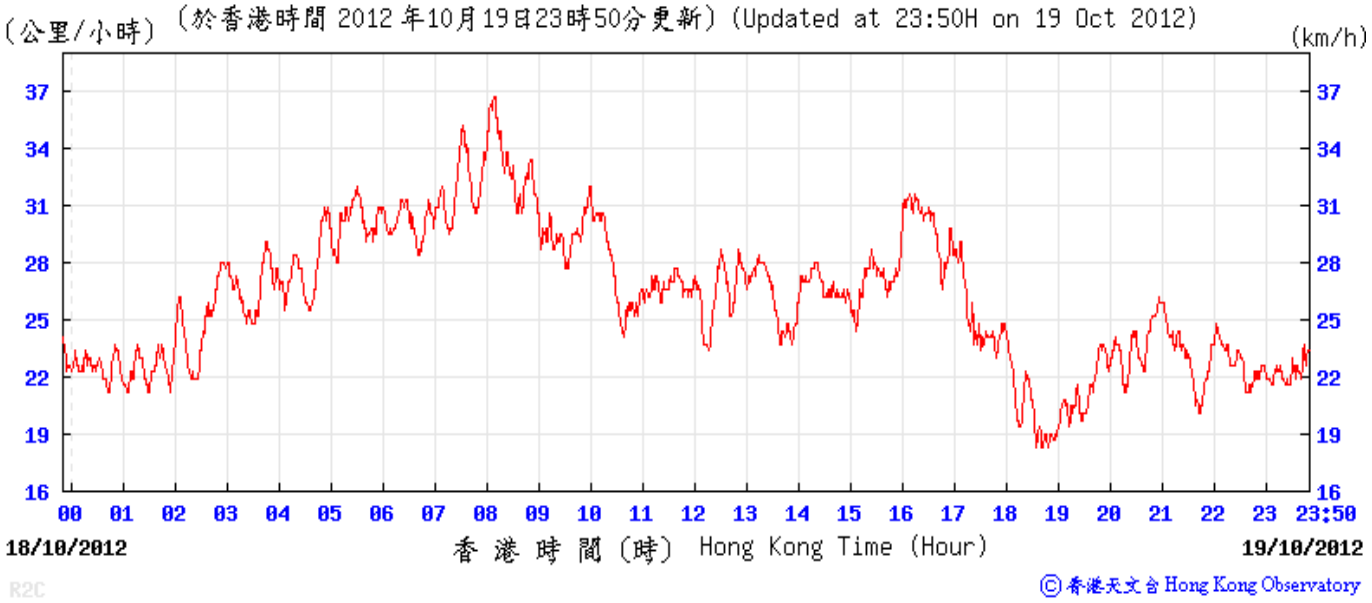
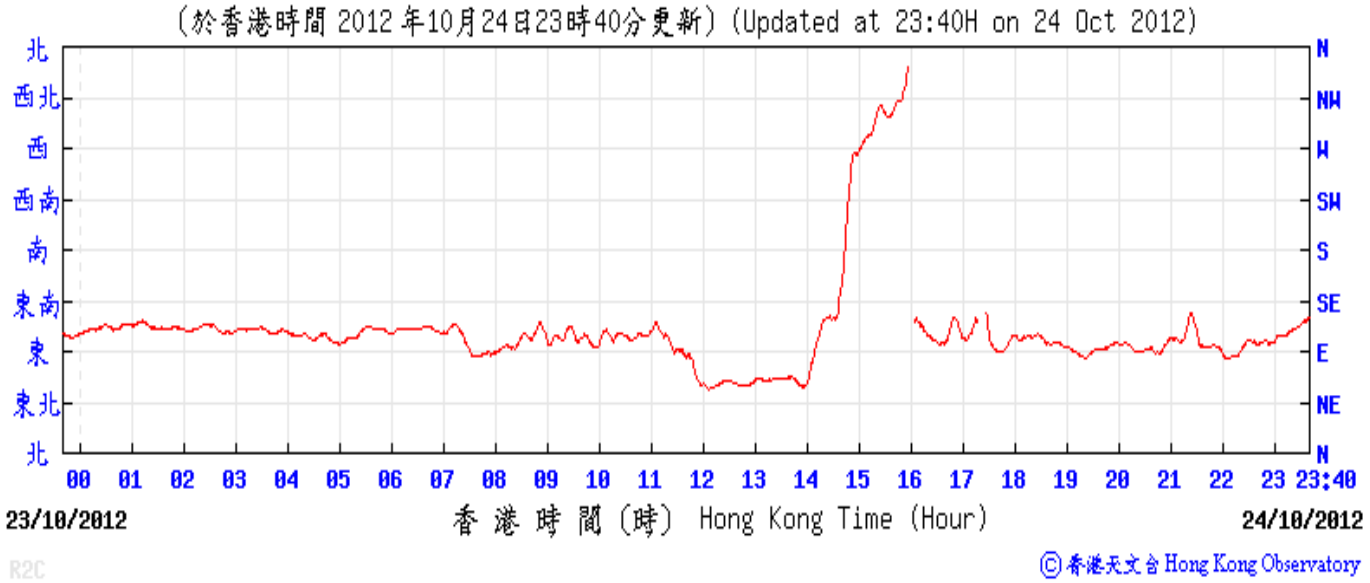
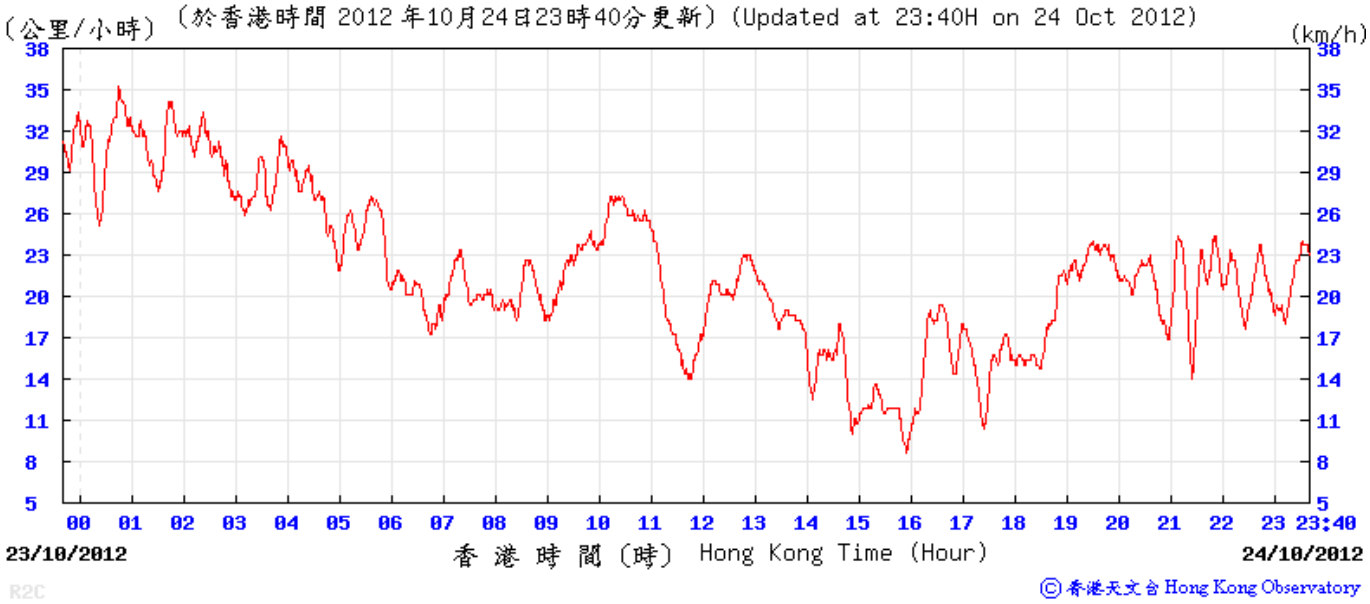


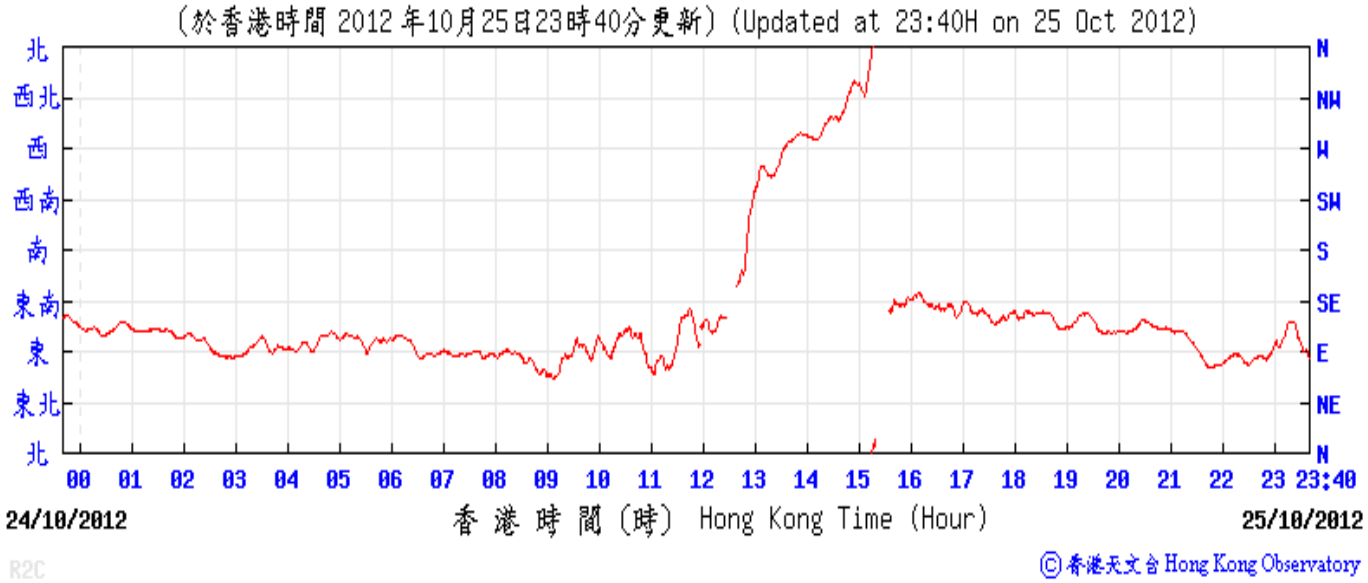
20121024 Wind Direction:



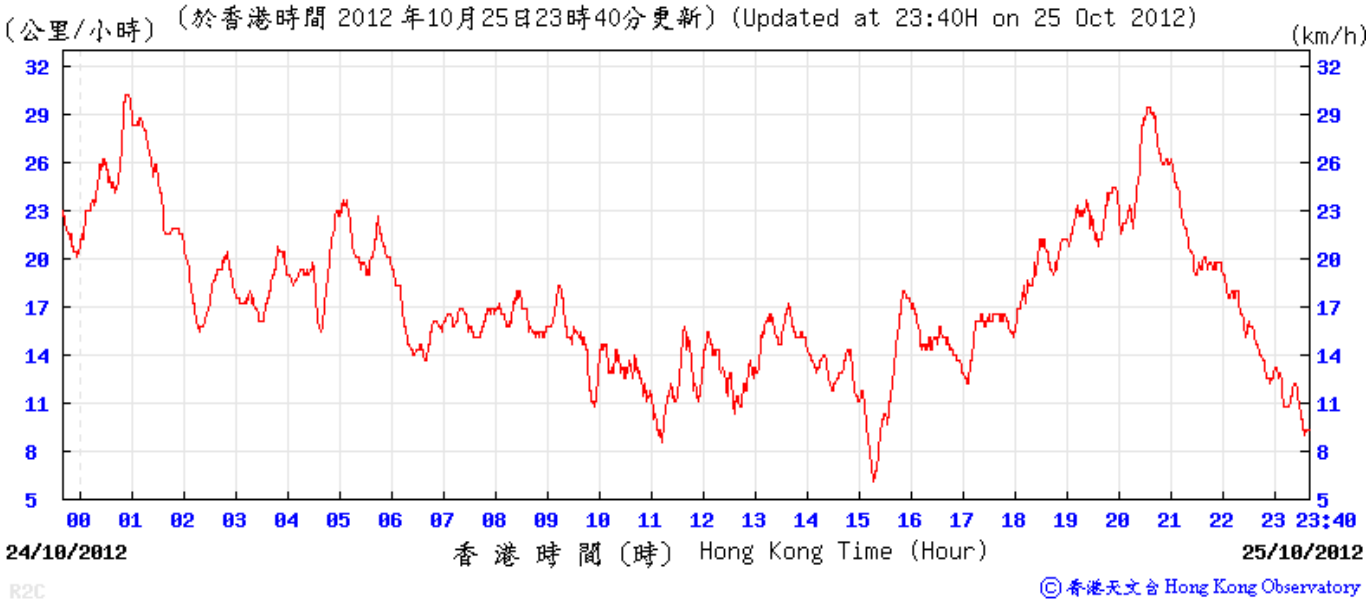
20121024 Wind Speed:



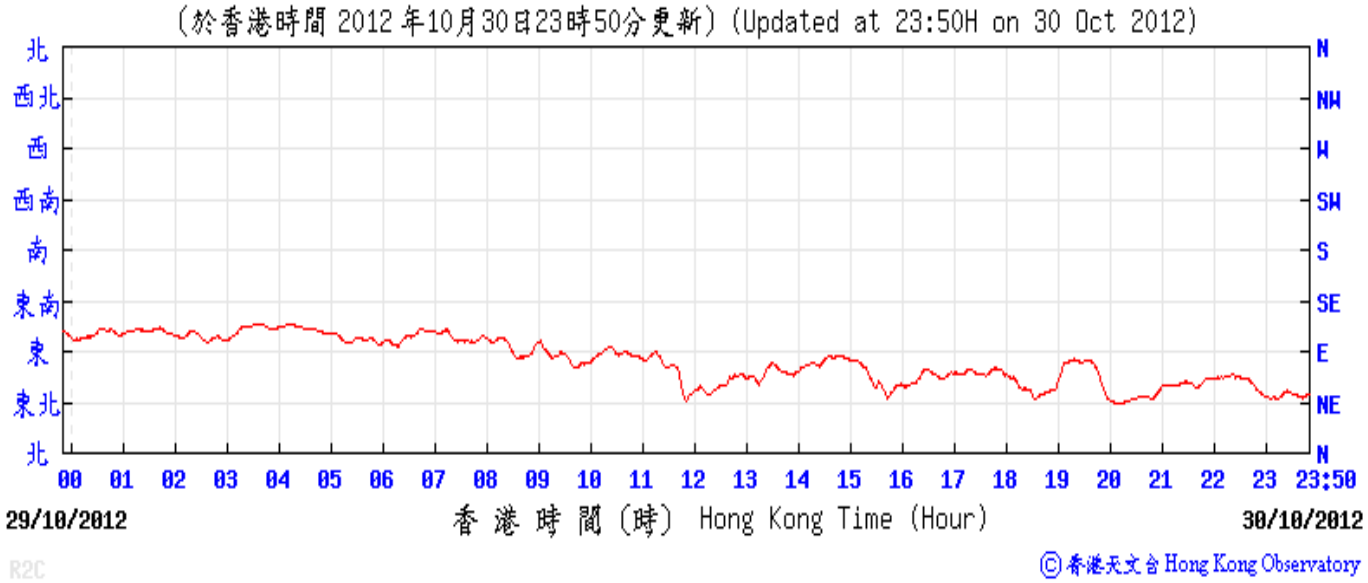
20121025 Wind Direction:



20121025 Wind Speed:



20121030 Wind Direction:



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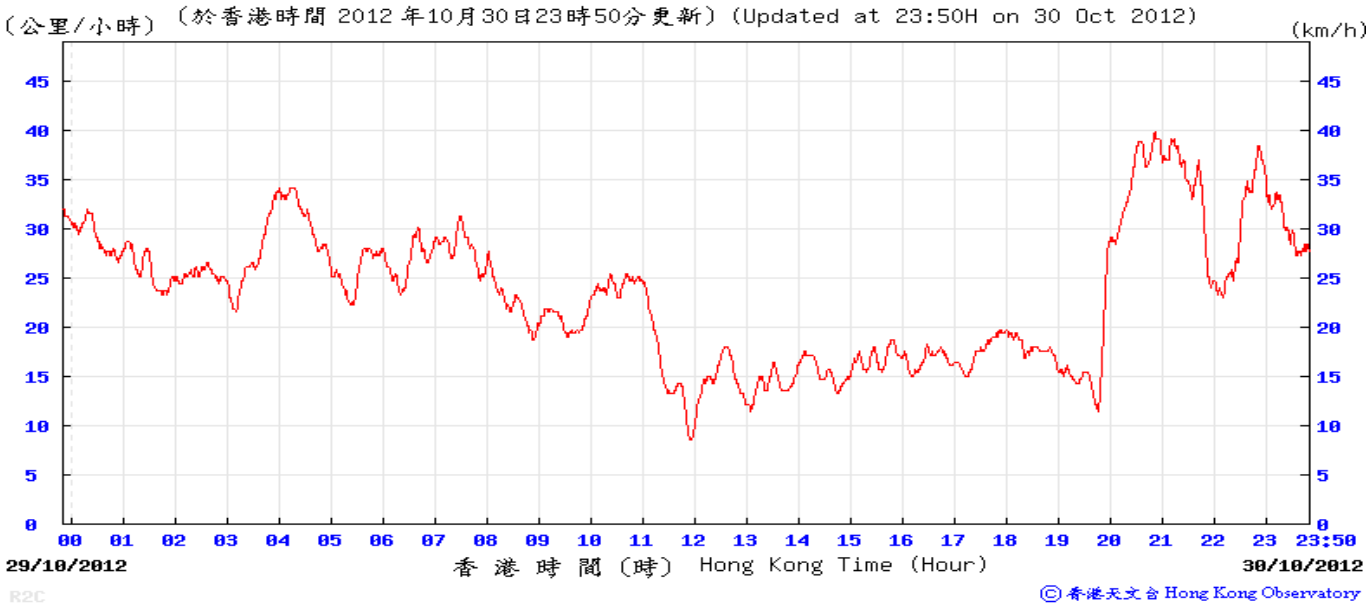
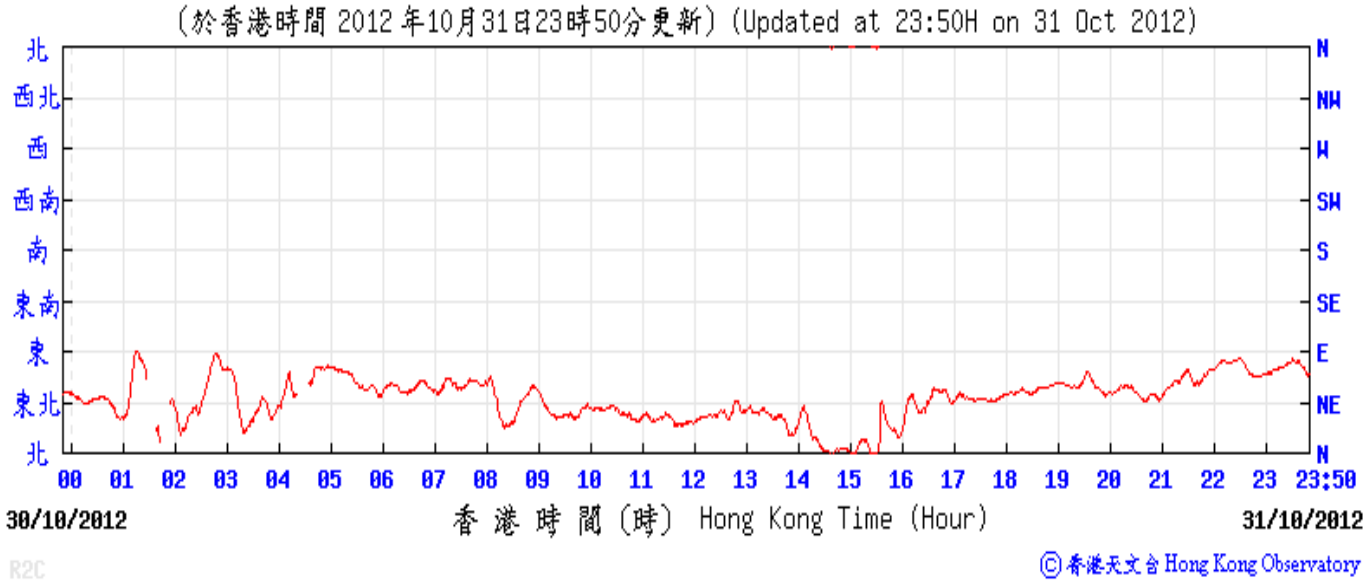
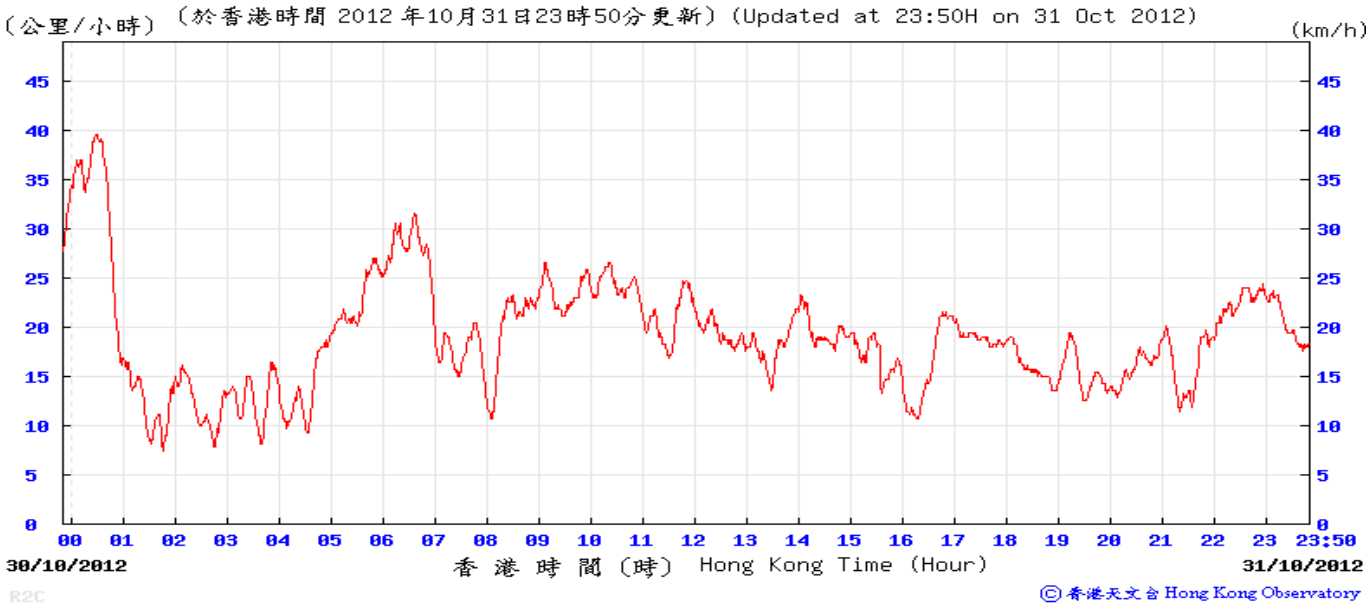


20121031 Wind Direction:



20121031 Wind Speed:



APPENDIX H

Dolphin Monitoring Results

Annex I. HKLR03 Survey Effort Database (October 2012)

(Abbreviations: BEAU = Beaufort Sea State; P = Primary Line Effort; S = Secondary Line Effort)

DATE	AREA	BEAU	EFFORT	SEASON	VESSEL	TYPE	P/S
17-Oct-12	NE LANTAU	2	9.0	AUTUMN	STANDARD31516	HKLR	P
17-Oct-12	NE LANTAU	3	8.7	AUTUMN	STANDARD31516	HKLR	P
17-Oct-12	NE LANTAU	2	8.0	AUTUMN	STANDARD31516	HKLR	S
17-Oct-12	NE LANTAU	3	2.2	AUTUMN	STANDARD31516	HKLR	S
17-Oct-12	NW LANTAU	2	11.9	AUTUMN	STANDARD31516	HKLR	P
17-Oct-12	NW LANTAU	3	8.9	AUTUMN	STANDARD31516	HKLR	P
17-Oct-12	NW LANTAU	4	20.2	AUTUMN	STANDARD31516	HKLR	P
17-Oct-12	NW LANTAU	2	3.6	AUTUMN	STANDARD31516	HKLR	S
17-Oct-12	NW LANTAU	3	7.2	AUTUMN	STANDARD31516	HKLR	S
17-Oct-12	NW LANTAU	4	2.3	AUTUMN	STANDARD31516	HKLR	S
18-Oct-12	NW LANTAU	1	3.0	AUTUMN	STANDARD31516	HKLR	P
18-Oct-12	NW LANTAU	2	21.3	AUTUMN	STANDARD31516	HKLR	P
18-Oct-12	NW LANTAU	3	7.5	AUTUMN	STANDARD31516	HKLR	P
18-Oct-12	NW LANTAU	1	0.5	AUTUMN	STANDARD31516	HKLR	S
18-Oct-12	NW LANTAU	2	5.8	AUTUMN	STANDARD31516	HKLR	S
18-Oct-12	NE LANTAU	2	19.8	AUTUMN	STANDARD31516	HKLR	P
18-Oct-12	NE LANTAU	3	0.6	AUTUMN	STANDARD31516	HKLR	P
18-Oct-12	NE LANTAU	2	10.9	AUTUMN	STANDARD31516	HKLR	S
25-Oct-12	NE LANTAU	2	10.5	AUTUMN	STANDARD31516	HKLR	P
25-Oct-12	NE LANTAU	3	7.8	AUTUMN	STANDARD31516	HKLR	P
25-Oct-12	NE LANTAU	2	10.4	AUTUMN	STANDARD31516	HKLR	S
25-Oct-12	NW LANTAU	2	31.7	AUTUMN	STANDARD31516	HKLR	P
25-Oct-12	NW LANTAU	2	7.5	AUTUMN	STANDARD31516	HKLR	S
26-Oct-12	NW LANTAU	2	20.5	AUTUMN	STANDARD31516	HKLR	P
26-Oct-12	NW LANTAU	2	6.7	AUTUMN	STANDARD31516	HKLR	S
26-Oct-12	NW LANTAU	3	1.4	AUTUMN	STANDARD31516	HKLR	S
26-Oct-12	NE LANTAU	1	0.8	AUTUMN	STANDARD31516	HKLR	P
26-Oct-12	NE LANTAU	2	18.2	AUTUMN	STANDARD31516	HKLR	P
26-Oct-12	NE LANTAU	1	2.6	AUTUMN	STANDARD31516	HKLR	S
26-Oct-12	NE LANTAU	2	6.0	AUTUMN	STANDARD31516	HKLR	S
29-Oct-12	NW LANTAU	3	16.7	AUTUMN	STANDARD31516	HKLR	P
29-Oct-12	NW LANTAU	4	7.5	AUTUMN	STANDARD31516	HKLR	P
29-Oct-12	NW LANTAU	3	6.5	AUTUMN	STANDARD31516	HKLR	S

Annex II. HKLR03 Chinese White Dolphin Sighting Database (October 2012)

(Abberviations: STG# = Sighting Number; HRD SZ = Dolphin Herd Size; BEAU = Beaufort Sea State; PSD = Perpendicular Distance; BOAT ASSOC. = Fishing Boat Association; P/S: Sighting Made on Primary/Secondary Lines)

DATE	STG #	TIME	HRD SZ	AREA	BEAU	PSD	EFFORT	TYPE	NORTHING	EASTING	SEASON	BOAT ASSOC.	P/S
17-Oct-12	1	15:08	4	NW LANTAU	3	82	ON	HKLR	828378	806490	AUTUMN	NONE	P
17-Oct-12	2	15:28	2	NW LANTAU	3	120	ON	HKLR	830417	805763	AUTUMN	NONE	S
18-Oct-12	1	10:00	1	NW LANTAU	2	ND	OFF	HKLR	817147	807571	AUTUMN	NONE	
18-Oct-12	2	11:26	6	NW LANTAU	2	156	ON	HKLR	829750	806925	AUTUMN	NONE	S
18-Oct-12	3	12:05	1	NW LANTAU	2	263	ON	HKLR	824854	807534	AUTUMN	NONE	P
18-Oct-12	4	12:16	4	NW LANTAU	2	588	ON	HKLR	823670	807511	AUTUMN	NONE	P
25-Oct-12	1	10:06	1	NE LANTAU	2	237	ON	HKLR	823483	821510	AUTUMN	NONE	P
25-Oct-12	2	10:40	4	NE LANTAU	2	576	ON	HKLR	821382	819509	AUTUMN	SINGLE	S
25-Oct-12	3	10:53	1	NE LANTAU	2	111	ON	HKLR	821791	819530	AUTUMN	NONE	P
25-Oct-12	4	11:01	1	NE LANTAU	2	99	ON	HKLR	822655	819531	AUTUMN	NONE	P
25-Oct-12	5	12:14	11	NE LANTAU	3	585	ON	HKLR	822261	815534	AUTUMN	SINGLE	P
25-Oct-12	6	12:38	1	NE LANTAU	3	117	ON	HKLR	823202	815545	AUTUMN	NONE	P
25-Oct-12	7	13:24	6	NW LANTAU	2	321	ON	HKLR	822068	811526	AUTUMN	NONE	P
25-Oct-12	8	14:43	3	NW LANTAU	2	277	ON	HKLR	825353	807535	AUTUMN	NONE	P
25-Oct-12	9	14:54	2	NW LANTAU	2	57	ON	HKLR	826715	807548	AUTUMN	NONE	P
26-Oct-12	1	13:31	1	NW LANTAU	2	110	ON	HKLR	827747	806468	AUTUMN	NONE	P
29-Oct-12	1	11:47	2	NW LANTAU	3	74	ON	HKLR	827019	804675	AUTUMN	NONE	P

Annex III. Individual dolphins identified during HKLR03 monitoring surveys in October 2012

ID#	DATE	STG#	AREA
CH34	2012-10-29	1	NW LANTAU
CH98	2012-10-18	2	NW LANTAU
EL01	2012-10-25	1	NE LANTAU
	2012-10-25	4	NE LANTAU
NL11	2012-10-18	2	NW LANTAU
NL18	2012-10-25	2	NE LANTAU
	2012-10-25	5	NE LANTAU
NL24	2012-10-25	5	NE LANTAU
NL33	2012-10-18	4	NW LANTAU
	2012-10-25	5	NE LANTAU
NL93	2012-10-18	4	NW LANTAU
NL118	2012-10-18	2	NW LANTAU
	2012-10-25	9	NW LANTAU
NL179	2012-10-25	5	NE LANTAU
NL191	2012-10-29	1	NW LANTAU
NL202	2012-10-18	3	NW LANTAU
NL226	2012-10-25	5	NE LANTAU
NL244	2012-10-18	2	NW LANTAU
NL246	2012-10-25	5	NE LANTAU
NL261	2012-10-25	5	NE LANTAU
NL262	2012-10-18	2	NW LANTAU
NL290	2012-10-25	9	NW LANTAU
NL295	2012-10-25	2	NE LANTAU
	2012-10-25	5	NE LANTAU
NL296	2012-10-25	2	NE LANTAU
	2012-10-25	5	NE LANTAU
SL35	2012-10-18	1	NW LANTAU

Photos Identification Records– Individual Dolphins Identified During HKLR03 Monitoring Surveys in October 2012

CH34_20121029_1

CH98_20121018_2

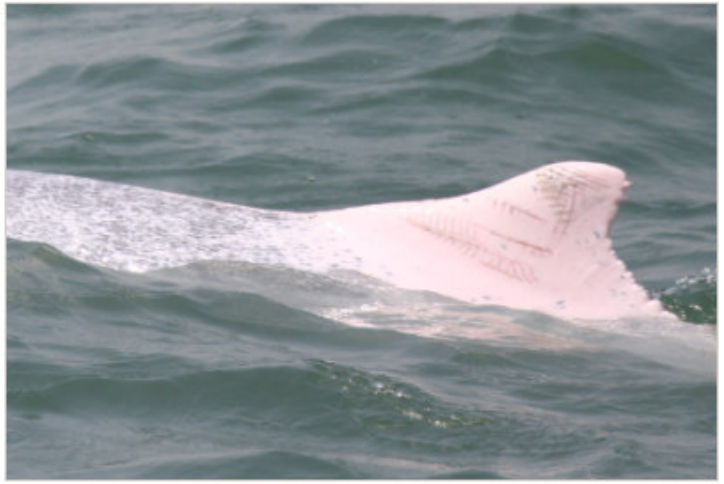
EL01_20121025_1

EL01_20121025_4

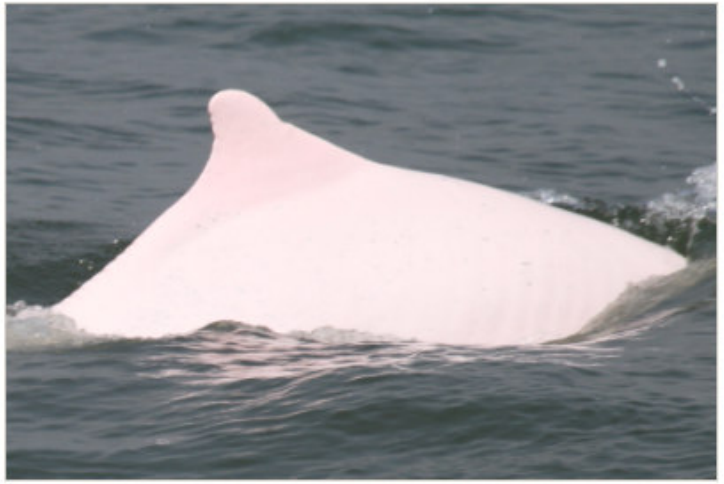
NL11_20121018_2

NL118_20121018_2

NL118_20121025_9



NL179_20121025_5



NL18_20121025_2

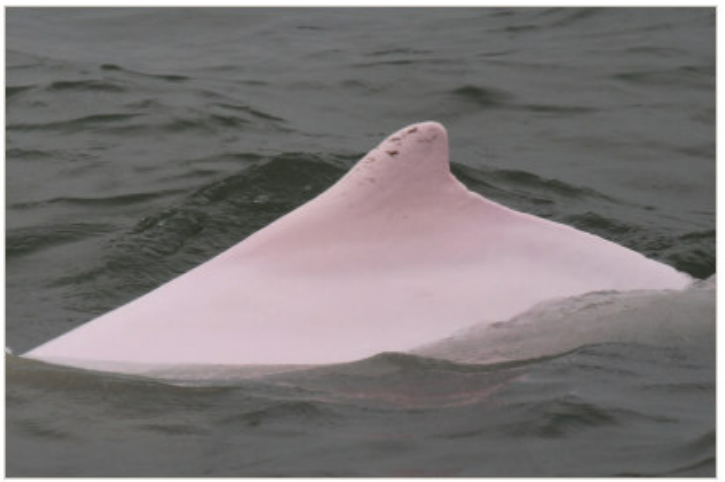
NL18_20121025_5

NL191_20121029_1

NL202_20121018_3

NL226_20121025_5

NL24_20121025_5



NL244_20121018_2

NL246_20121025_5

NL259_20121018_2

NL261_20121025_5

NL262_20121018_2

NL290_20121025_9

NL295_20121025_2

NL295_20121025_5

NL296_20121025_2

NL296_20121025_5

NL33_20121018_4

NL33_20121025_5

NL93_20121018_4

SL35_20121018_1

Remark:
Photo ID format: ID_DATE_STG
e.g. SL35_20121018_1 means Doplphin SL35 was identified on 18-Oct-212 and the sighting number is 1.

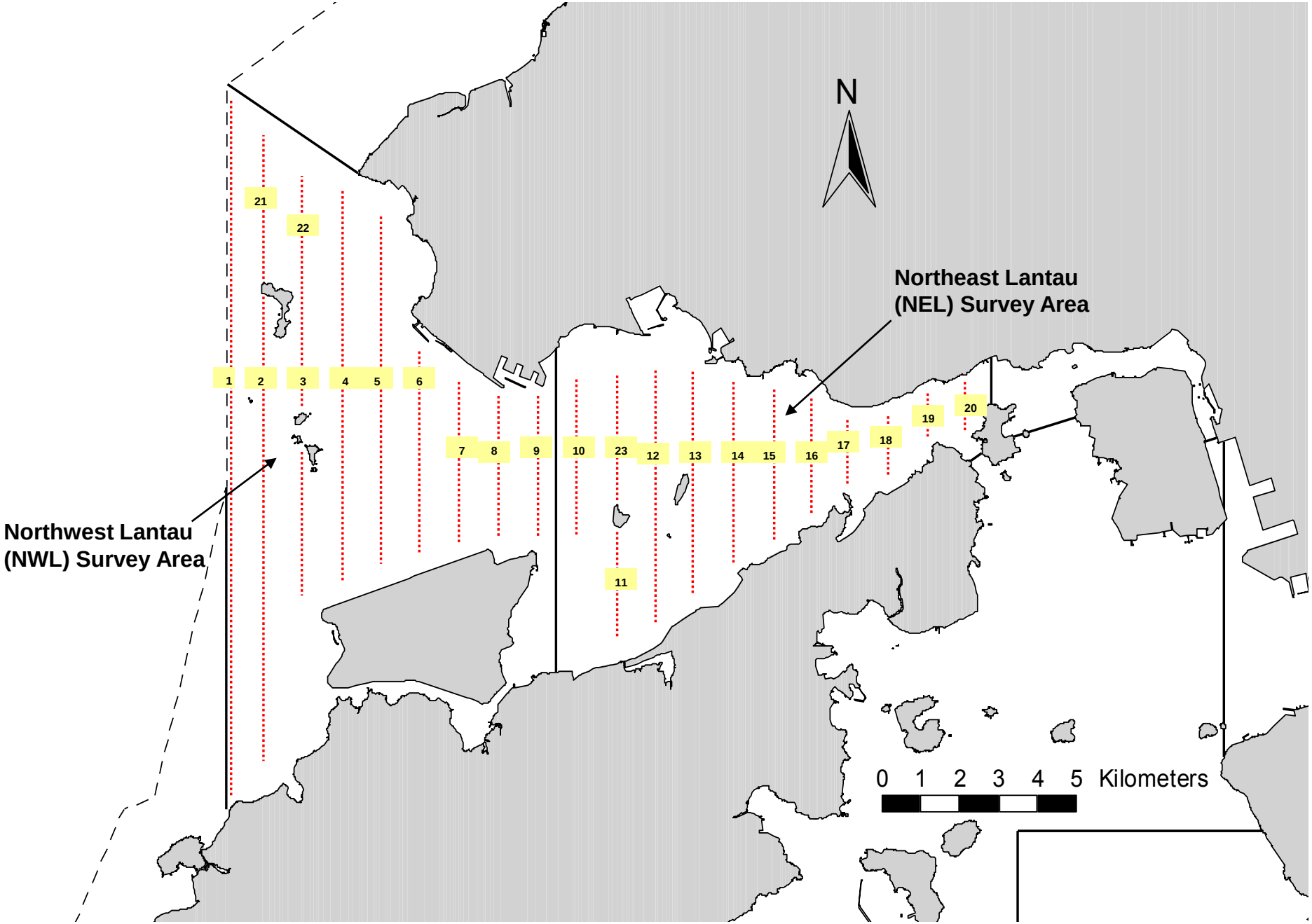


Figure 1. Transect Line Layout in Northwest and Northeast Lantau Survey Areas

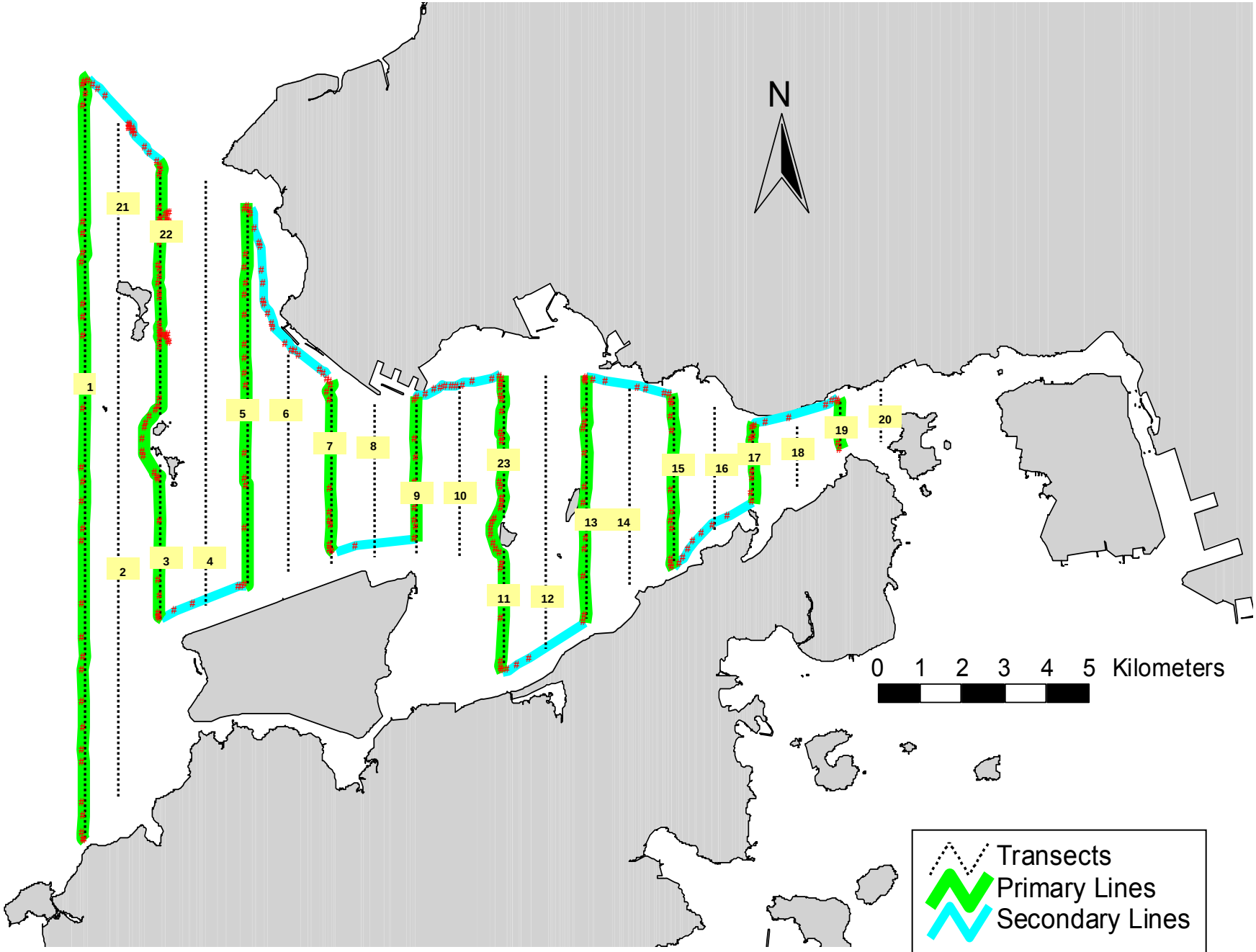


Figure 2. Survey Route on October 17th, 2012

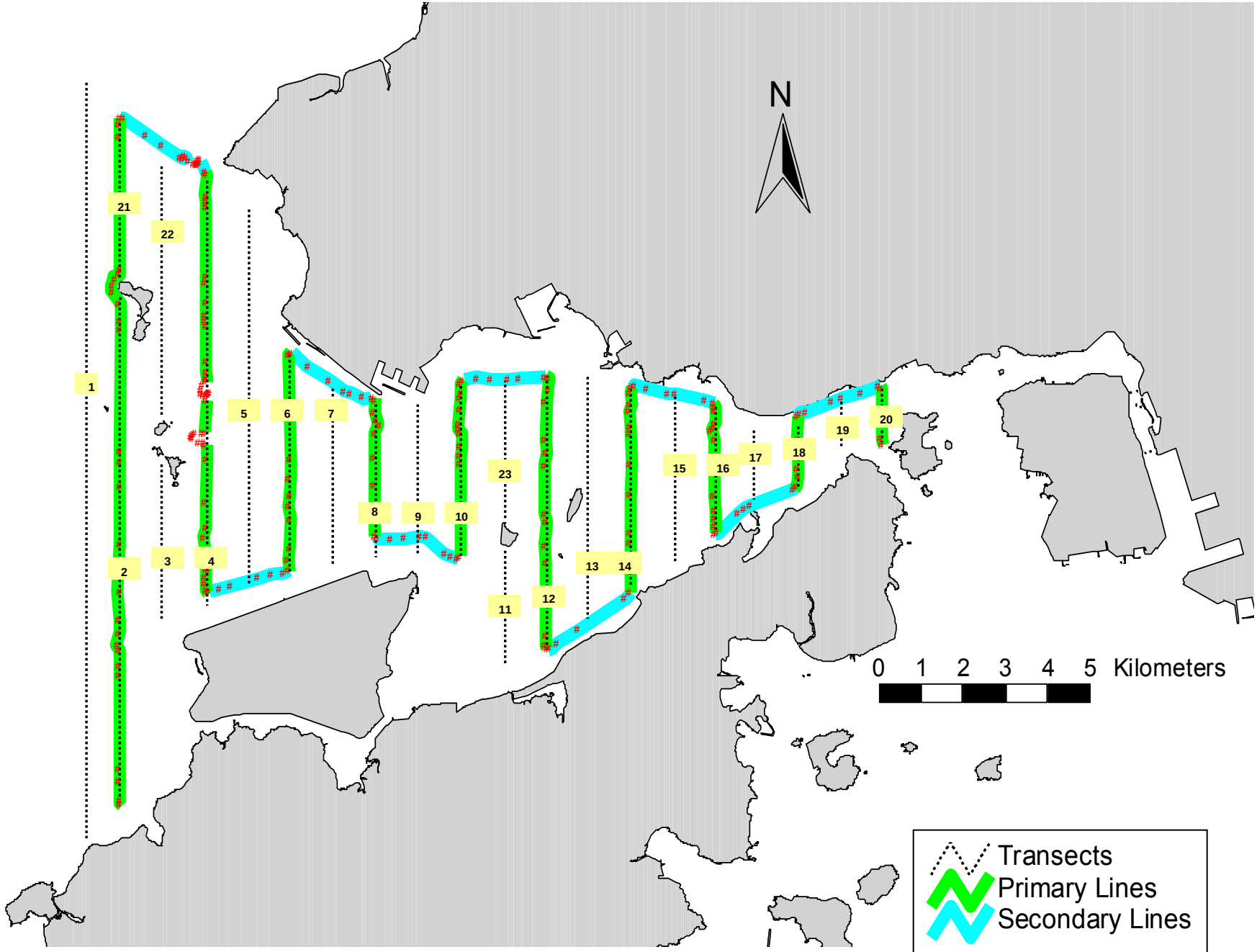


Figure 3. Survey Route on October 18th, 2012

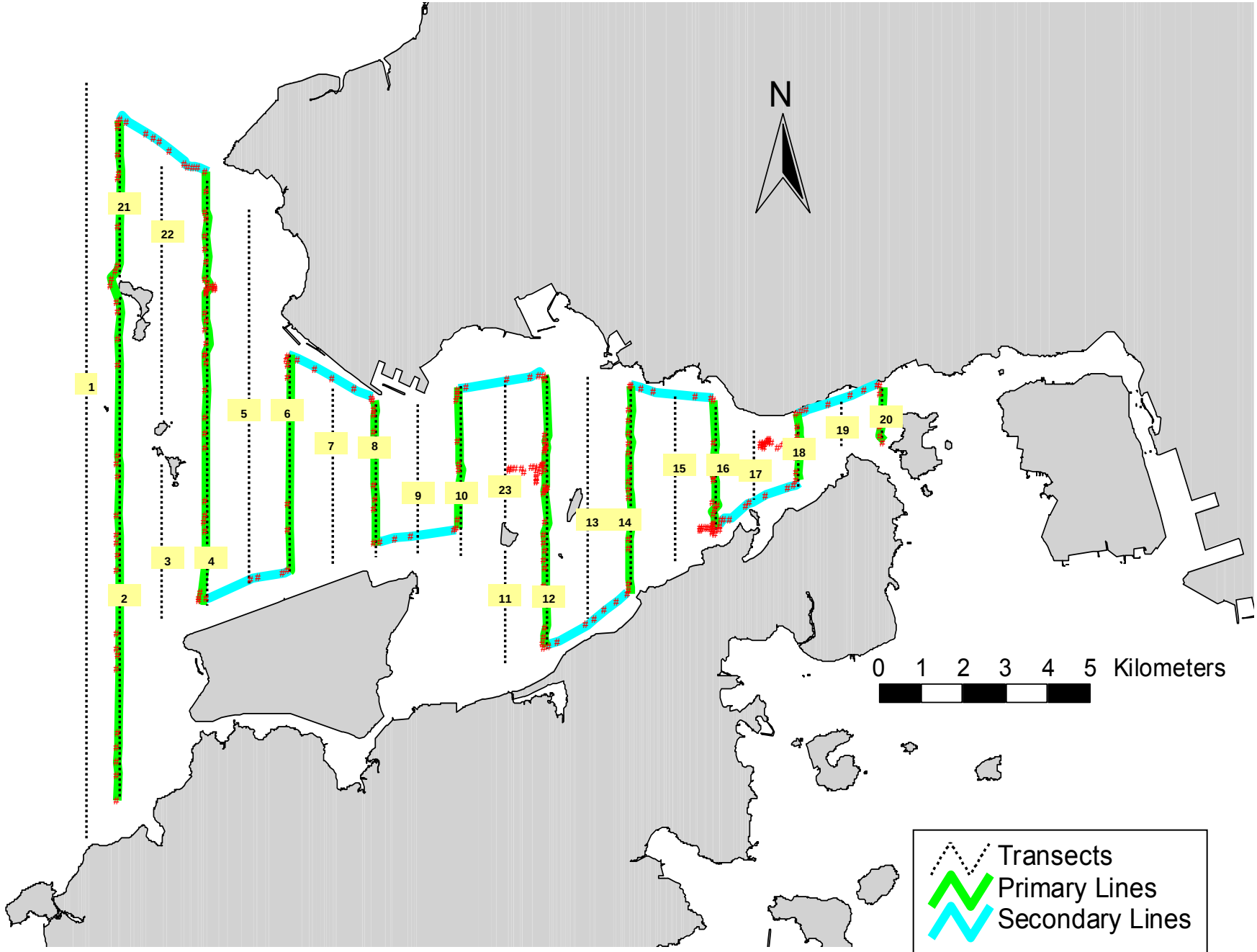


Figure 4. Survey Route on October 25th, 2012

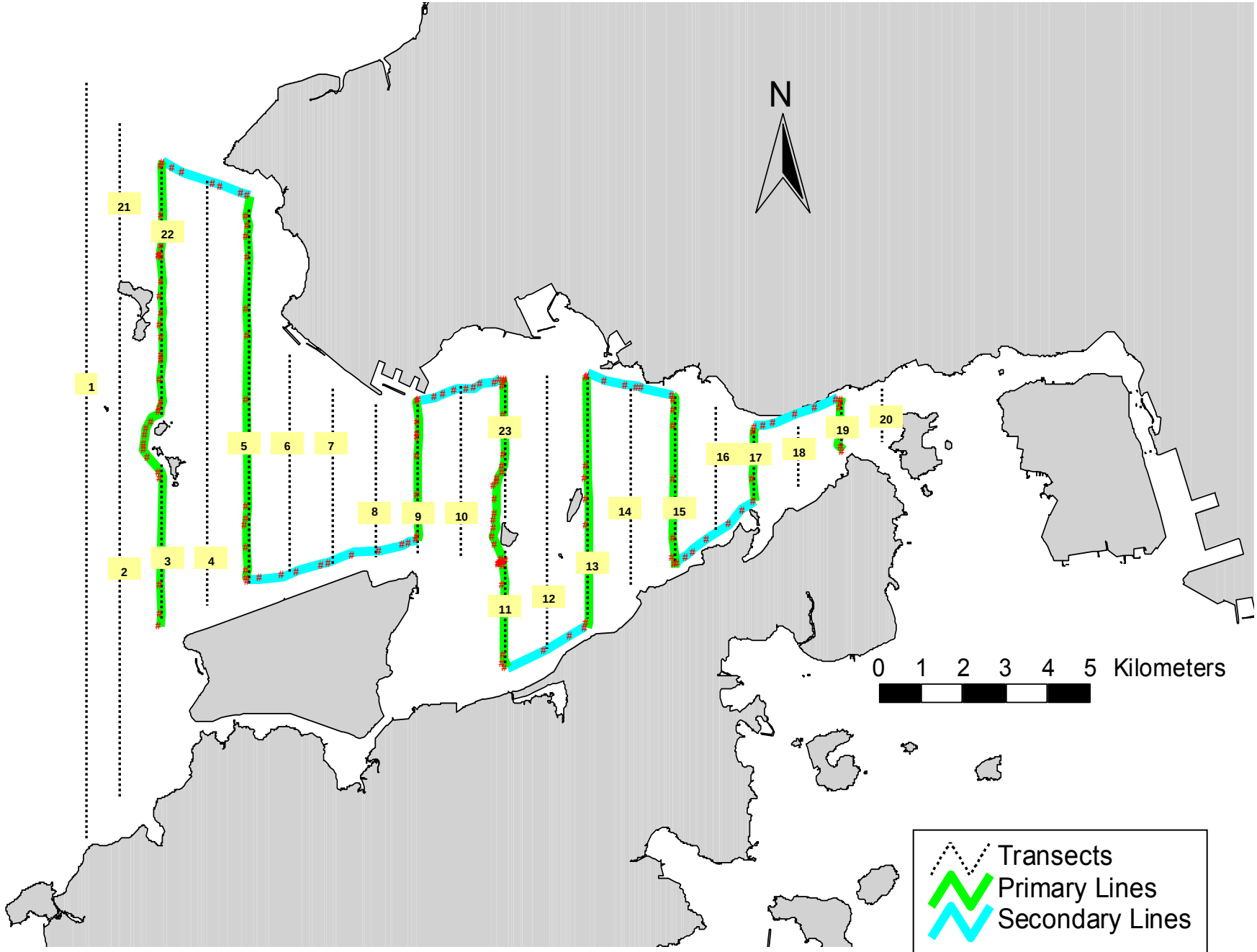


Figure 5. Survey Route on October 26th, 2012

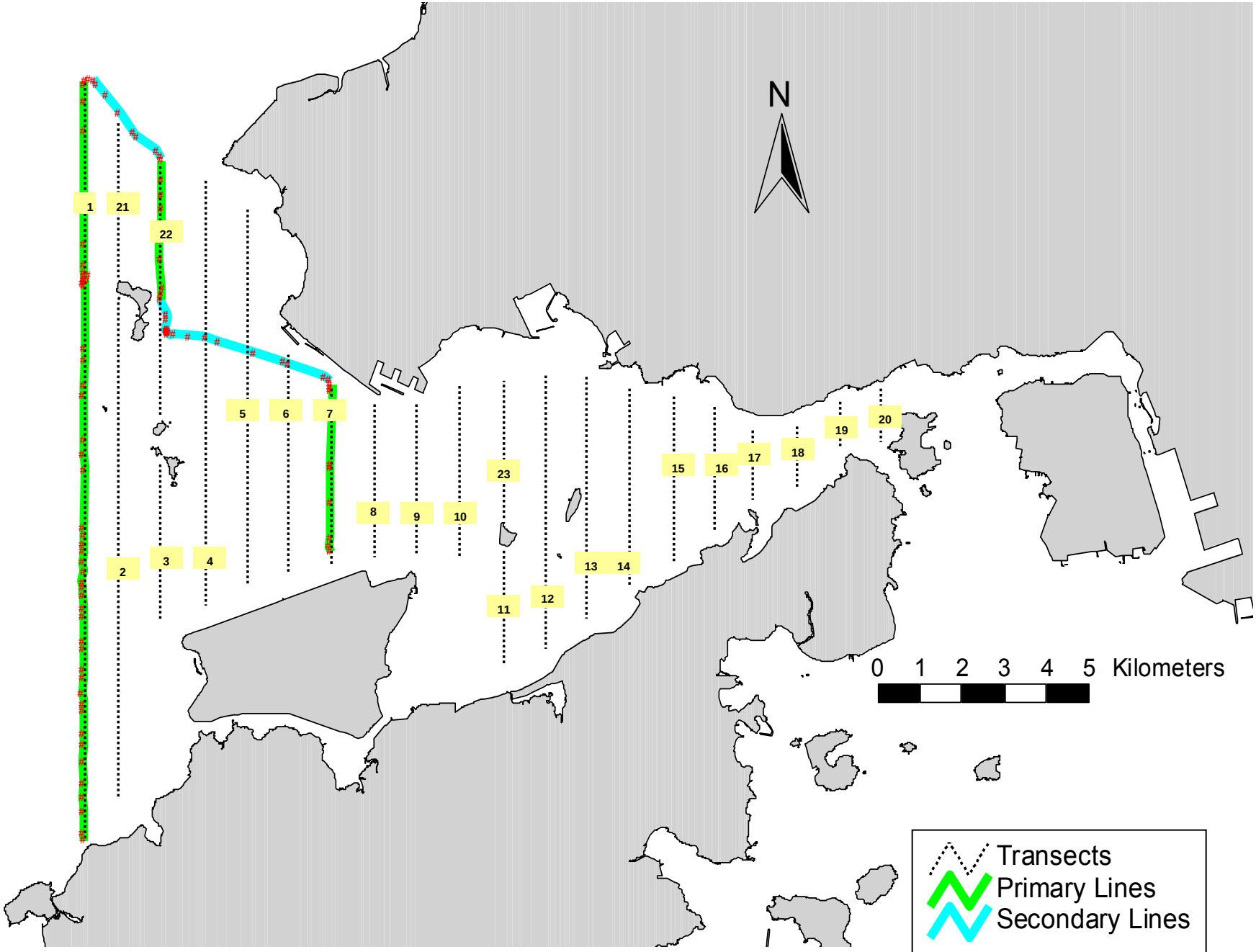


Figure 6. Survey Route on October 29th, 2012

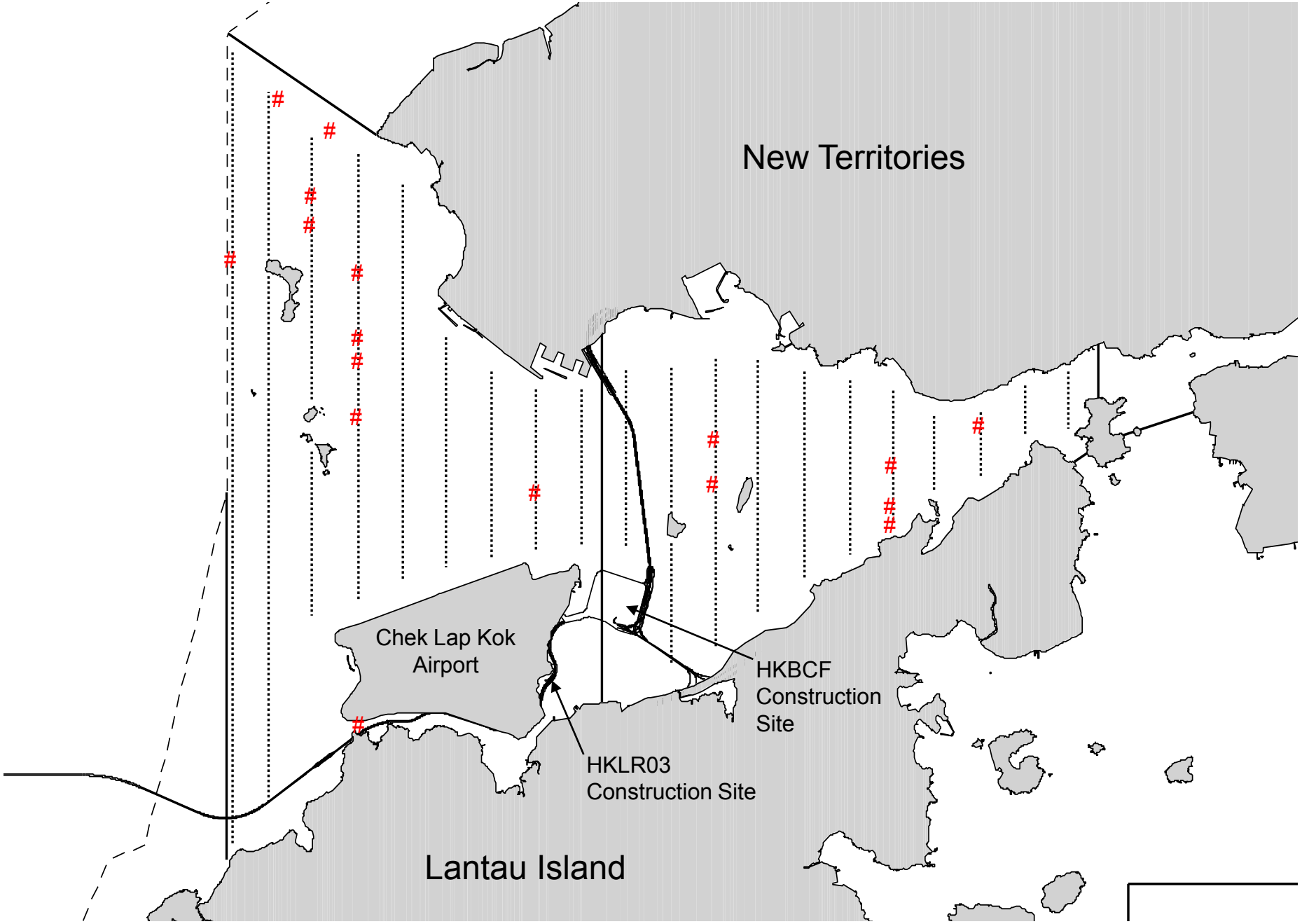


Figure 7. Distribution of Chinese White Dolphin Sightings During October 2012 HKLR03 Monitoring Surveys

APPENDIX I

Waste Flow Table

MONTHLY SUMMARY WASTE FLOW TABLE

Name of Department: HyD

Contract No.: HY/2011/03

Monthly Summary Waste Flow Table for 2012

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in Other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper / Cardboard Packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
Jan											
Feb											
Mar											
Apr											
May											
Jun											
July											
August											
September											
October	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010
November											
December											

APPENDIX J

Cumulative Statistic on Complaints

Cumulative statistics on Complaints, Notifications of Summons and Successful Prosecutions

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of summons	Successful prosecutions
This reporting month (Oct 2012)	1	0	0
From 17 Oct 2012 to end of reporting month	1	0	0

APPENDIX K

Environmental Licenses and Permits

Summary of Environmental Licences and Permits Application and Status

Environmental Permit

Date Application Submitted	Status	Date EP Issued	EP No.	EP Holder	Expiry Date
31.10.2011	VEP issued	09.11.2011	EP-352/2009/A	Highways Department	N/A
8.10.2012	VEP Issued	16.10.2012	EP-353-2009/E	Highways Department	N/A

Notification of Carrying Out Notifiable Works under Air Pollution Control (Construction Dust) Regulation

Date Notification Submitted	Notification Ref. No.	Valid Since	Expiry Date
25.05.2012	345690	01.06.2012	N/A

Billing Account for Disposal of Construction Waste

Date Application Submitted	Account No	Valid Since	Expiry Date
01.06.2012	7015313	27.06.2012	N/A

Chemical Waste Producer Registration

Date Registration Submitted	Waste Producer No.	Date Registration Issued	Major Waste Type	Expiry Date
20.06.2012	5213-950-C1169-43	12.07.2012	Spent lubricating oil, spent flammable liquid (diesel), surplus paint, spent organic solvent and their containers, spent batteries, soil containing mineral oil	N/A

Wastewater Discharge License

Application No.	Date Application Submitted	Area Applied	Status	Expiry Date
1	22.06.2012	Site Office for Supervising Officer (WA6)	Application Ref. No. 346651 Letter from the EPD (Ref: EP/RS/0000346267) dated 19.07.2012 confirming that license under WPCO is not required.	N/A
2	04.07.2012	Site Office for China States (WA6)	Application Ref. No. 346982 Water Discharge License WT00014182-2012 was granted on 20 Sep 2012, and valid until 30 Sept 2017	N/A
3.	31.07.2012	Portion B, Portion X & Portion Y	(Application Ref. No. 348019) Water Discharge License WT00014118-2012 was granted on 20 Sep 2012, and valid until 30 Sep 2017.	N/A

Construction Noise Permit

Application No.	Date Application Submitted	Works Area Applied	Description	Status	CNP No.	Validity of CNP	
						From	To
001	01.06.2012	WA6	Construction of site offices	CNP issued on 15.06.2012	GW-RS0644-12	15.06.2012 (19:00)	14.12.2012 (23:00)
002	06.09.2012	Portion X	Marine Site Investigation & Preparation Works	CNP issued on 14.09.2012	GW-RS0847-12	20.09.2012 (19:00)	16.10.2013 (23:00)
003	21.09.2012	Portion X	Marine Works	CNP issued on 15.10.2012	GW-RS1059-12	17.10.2012 (19:00)	16.04.2013 (23:00)
004	21.09.2012	Portion X	Marine Works	CNP issued on 15.10.2012	GW-RS1060-12	17.10.2012 (23:00)	16.04.2013 (07:00)

End

APPENDIX L

Implementation Schedule of Environmental Mitigation Measures

Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
Air Quality							
S5.5.6.1	A1	1) The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	√
S5.5.6.2	A2	2) Proper watering of exposed spoil should be undertaken throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones. • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	√
S5.5.6.2	A2	• When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	√

Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverized fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;					
S5.5.6.2	A2	• Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	N/A

Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.					
S5.5.6.3	A3	3) The Contractor should undertake proper watering on all exposed spoil (with at least 8 times per day) throughout the construction phase.	Control construction dust	Contractor	All construction sites	Construction stage	√
S5.5.6	A5	5) Implement regular dust monitoring under EM&A programme during the construction stage.	Monitor the 24 hr and 1hr TSP levels at the representative dust monitoring stations to ensure compliance with relevant criteria throughout the construction period.	Contractor	Selected representative dust monitoring station	Construction stage	√
S5.5.7.1	A6	The following mitigation measures should be adopted to prevent fugitive dust emissions for concrete batching plant: • Loading, unloading, handling, transfer or storage of any dusty materials should be carried out in totally enclosed system; • All dust-laden air or waste gas generated by the process operations should be properly extracted and vented to fabric filtering system to meet the emission limits for TSP; • Vents for all silos and cement/pulverised fuel ash (PFA) weighing scale should be fitted with fabric filtering system; • The materials which may generate airborne dusty emissions should be wetted by water spray system; • All receiving hoppers should be enclosed on three sides up to 3m above unloading point; • All conveyor transfer points should be totally	Monitor the 24 hr and 1hr TSP levels at the representative dust monitoring stations to ensure compliance with relevant criteria throughout the construction period.	Contractor	Selected representative dust monitoring station	Construction stage	√

Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		enclosed; • All access and route roads within the premises should be paved and wetted; and • Vehicle cleaning facilities should be provided and used by all concrete trucks before leaving the premises to wash off any dust on the wheels and/or body.					
S5.5.2.7	A7	The following mitigation measures should be adopted to prevent fugitive dust emissions at barging point: • All road surface within the barging facilities will be paved; • Dust enclosures will be provided for the loading ramp; • Vehicles will be required to pass through designated wheels wash facilities; and • Continuous water spray at the loading points.	Control construction dust	Contractor	All construction sites	Construction stage	√
S6.4.10	N1	1) Use of good site practices to limit noise emissions by considering the following: • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works • mobile plant should be sited as far away from NSRs as possible and practicable; • material stockpiles, mobile container site officer and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	Control construction airborne noise by means of good site practices	Contractor	All construction sites	Construction stage	√

Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S6.4.11	N2	2) Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites	Construction stage	√
S6.4.12	N3	3) Install movable noise barriers (typically density @ 14kg/m^2),acoustic mat or full enclosure close to noisy plants including air compressor, generators, saw.	Screen the noisy plant items to be used at all construction sites	Contractor	For plant items listed in Appendix 6D of the EIA report at all construction sites	Construction stage	√
S6.4.13	N4	4) Select .Quiet plants. which comply with the BS 5228 Part 1 or TM standards.	Reduce the noise levels of plant items	Contractor	For plant items listed in Appendix 6D of the EIA report at all construction sites	Construction stage	√
S6.4.14	N5	5) Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction stage	√
	N6	6) Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring station	Construction stage	√
Waste Management (Construction Waste)							
S8.3.8	WM1	Construction and Demolition Material	Good site practice to minimize the waste	Contractor	All construction sites	Construction stage	√

Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		The following mitigation measures should be implemented in handling the waste: • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Adopt .Selective Demolition. technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible; • Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; and • Implement an enhanced Waste Management Plan similar to ETWBTC (Works) No. 19/2005. Environmental Management on Construction Sites. to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction. • In addition, disposal of the C&D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation	generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal				
S8.3.9 - S8.3.11	WM2	<u>C&D Waste</u> • Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final	Contractor	All construction sites	Construction stage	√

Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage. • The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.	disposal				
S8.2.12 - S8.3.15	WM3	<u>Chemical Waste</u> • Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. • Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation.. • The storage area for chemical wastes should be clearly labeled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	√

Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		• Disposal of chemical waste should be via a licensed waste collector; be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD.					
S8.3.16	WM4	*Sewage* • Adequate numbers of portable toilets should be provided for the workers. The portable toilets should be maintained in a state, which will not deter the workers from utilizing these portable toilets. Night soil should be collected by licensed collectors regularly.	Proper handling of sewage from worker to avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	√
S8.3.17	WM5	*General Refuse* • General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. • A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law. • Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible. • Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor. In addition, waste separation facilities for paper, aluminum cans, plastic bottles etc., should be provided. • Training should be provided to workers about the concepts of site cleanliness and appropriate	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	√

Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		waste management procedure, including reduction, reuse and recycling of wastes.					
Water Quality (Construction Phase)							
S9.11.1 - S9.11.1.2	W1	• Mitigation during the marine works to reduce impacts to within acceptable levels have been recommended and will comprise a series of measures that restrict the method and sequencing of dredging/backfilling, as well as protection measures. Details of the measures are provided below and summarised in the Environmental Mitigation Implementation Schedule in EM&A Manual. • Construction of seawalls to be advanced by at least 100-200m before the main reclamation dredging and filling can commence. It should be noted that the protection by advanced seawall is a dynamic process depending on the progress of the construction activities and the stage when such protection could be realised is illustrated in Figure 9.2 and detailed in Appendix 9D6 of the EIA Report. The part of the works where such measures can be undertaken for the majority of the time includes the following locations: - TMCLKL northern reclamation; - TMCLKL southern reclamation (after formation of the nips); - Reclamation dredging and filling for Portion 1 of HKLR;	To control construction water quality	Contractor	During seawall dredging and filling	Construction stage	√
S9.11.1 - S9.11.1.2	W1	• Export for dredged spoils from NWWCZ avoiding exerting high demand on the disposal facilities in the NWWCZ and, hence, minimise potential cumulative impacts; • For the marine viaducts of HKLR, the bored piling will be undertaken within a metal casing; • A maximum of 30% public fill shall be used for all backfilling below -2.5mPD for the southern reclamation of TMCLKL, HKBCF and HKLR projects; • where public fill is proposed for filling below -2.5mPD, the fine content in the public fill will be	To control construction water quality	Contractor	During seawall dredging and filling	Construction stage	√

Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		controlled to 25%; • silt curtains (cage type) will be applied round all grab dredgers during the HKLR southern reclamation works; • single layer silt curtains will be applied around all works; • during the first two months of dredging work for HKLR, the silt-removal efficiency of the silt-curtains shall be verified by examining the results of water quality monitoring points. The water quality monitoring points to be selected for the above shall be those close to the locations of the initial period of dredging work. Details in this regard shall be determined by the ENPO to be established, taking account of the Contractor's proposed actual locations of his initial period of dredging work. • silt curtain shall be fully maintained throughout the works.					
S9.11.1 - S9.11.1.2	W1	In addition, dredging operations should be undertaken in such a manner as to minimize resuspension of sediments. Standard good dredging practice measures should, therefore, be implemented including the following requirements which should be written into the dredging contract. • trailer suction hopper dredgers shall not allow mud to overflow; • use of Lean Material Overboard (LMOB) systems shall be prohibited;	To control construction water quality	Contractor	During seawall dredging and filling	Construction stage	√
S9.11.1 - S9.11.1.2	W1	• mechanical grabs shall be designed and maintained to avoid spillage and should seal tightly while being lifted; • barges and hopper dredgers shall have tight fitting seals to their bottom openings to prevent leakage of material; • any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes; • loading of barges and hoppers shall be controlled to prevent splashing of dredged					√

Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		material to the surrounding water. Barges or hoppers shall not be filled to a level which will cause overflow of materials or pollution of water during loading or transportation; • excess material shall be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved; • adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action; • all vessels shall be sized such that adequate clearance is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; and • the works shall not cause foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the works site.					
S9.11.1.3	W2	<u>Land Works</u> General construction activities on land should also be governed by standard good working practice. Specific measures to be written into the works contracts should include: • wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters; • sewage effluent and discharges from on-site kitchen facilities shall be directed to Government sewer in accordance with the requirements of the WPCO or collected for disposal offsite. The use of soakaways shall be avoided; • storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal	To control construction water quality	Contractor	During seawall dredging and filling	Construction stage	√

Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks; • silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly,including specifically at the onset of and after each rainstorm; • temporary access roads should be surfaced with crushed stone or gravel; • rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system; • open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms; • manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers; • discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system;					

Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S9.11.1.3	W2	• all vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit; • wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain; • the section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel; • wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects; • vehicle and plant servicing areas, vehicle wash bays and lubrication facilities shall be located under roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor in accordance with the requirements of the WPCO or collected for off site disposal; • the contractors shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately; • waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance; • all fuel tanks and chemical storage areas should be provided with locks and be sited on sealed areas. The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank; and • surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system.	To control construction water quality	Contractor	During seawall dredging and filling	Construction stage	√
S9.14	W3	Implement a water quality monitoring programme	Control water quality	Contractor	At identified monitoring	During construction	√

Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
					location	period	
Ecology (Construction Phase)							
S10.7	E1	• Good site practices to avoid runoff entering woodland habitats in Scenic Hill • Reinstate works areas in Scenic Hill • Avoid stream modification in Scenic Hill	Avoid potential disturbance on habitat of Romer.s Tree Frog in Scenic Hill	Designer; Contractor	Scenic Hill	During construction	√
S10.7	E2	• Use closed grab in dredging works. • Install silt curtain during the construction. • Limit dredging and works fronts. • Construct seawall prior to reclamation filling where practicable. • Good site practices • Strict enforcement of no marine dumping. • Site runoff control3 • Spill response plan	Minimise marine water quality impacts	Contractor	Seawall, reclamation area	During construction	√
S10.7	E4	• Watering to reduce dust generation; prevention of siltation of freshwater habitats; Site runoff should be desilted, to reduce the potential for suspended sediments, organics and other contaminants to enter streams and standing freshwater	Prevent Sedimentation from Land-based works areas	Contractor	Land-based works areas	During construction	√
S10.7	E5	• Good site practices, including strictly following the permitted works hours, using quieter machines where practicable, and avoiding excessive lightings during night time	Prevent disturbance to terrestrial fauna and habitats	Contractor	Land-based works areas	During construction	√
S10.7	E6	• Dolphin Exclusion Zone; • Dolphin watching plan	Minimize temporary marine habitat loss impact to dolphins	Contractor	Marine works	During marine works	√
S10.7	E7	• Decouple compressors and other equipment on working vessels • Avoidance of percussive piling • Marine underwater noise monitoring	Minimise marine noise impacts on dolphins	Contractor	Marine works	During marine works	√

Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		• Temporal suspension of drilling bored pile casing in rock during peak dolphin calving season in May and June; • Handling with care for the installation of sheet piling for reclamation site					
S10.7	E8	• Control vessel speed • Skipper training. • Predefined and regular routes for working vessels; avoid Brothers Islands.	Minimise marine traffic disturbance on dolphins	Contractor	Marine traffic	During marine works	√
S10.10	E9	• Dolphin vessel monitoring • Mudflat ecological monitoring	Minimise marine traffic disturbance on dolphins	Contractor	North Lantau and West Lantau	Prior to construction, during construction, and 1 year after operation	√
Ecology (Operation Phase)							
S10.7	E10	• Preconstruction dive survey for corals	Minimise impacts on marine ecology	Contractor	The marine pier sites nearest to intertidal zone and along the shore of the HKLR reclamation site	Prior to marine construction works in these locations	√
Fisheries							
S11.7	F2	• Reduce re-suspension of sediments • Limit dredging and works fronts. • Good site practices • Strict enforcement of no marine dumping. • Spill response plan	Minimise marine water quality impacts	Contractor	Seawall, reclamation area	During construction	√
S11.7	F3	• Install silt-grease trap in the drainage system collecting surface runoff	Minimise impacts on marine water quality impacts	Designer	Reclamation area	During construction	√

Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S11.7	F4	• Maritime Oil Spill Response Plan (MOSRP); • Contingency plan.	Minimise impacts on marine water quality impacts	Management	HKLR	During operation	√
Landscape & Visual (Detailed Design Phase)							
S14.3. 3.1	LV1	General design measures include: • Roadside planting and planting along the edge of the reclamation is proposed; • Transplanting of mature trees in good health and amenity value where appropriate and reinstatement of areas disturbed during construction by compensatory hydro-seeding and planting; • Protection measures for the trees to be retained during construction activities; • Optimizing the sizes and spacing of the bridge columns; • Fine-tuning the location of the bridge columns to avoid visually sensitive locations; • Aesthetic design of the bridge form and its structural elements for HKLR, e.g. parapet, soffit, columns, lightings and so on; • Considering the decorative urban design elements for HKLR, e.g. decorative road lightings; • Maximizing new tree, shrub and other vegetation planting to compensate tree felled and vegetation removed; • Providing planting area around peripheral of HKLR for tree planting screening effect;	Minimise visual & landscape impact	Detailed designer	HKLR	Design Stage	
S14.3.3.1		• Providing salt-tolerant native trees along the planter strip at affected seawall and newly reclaimed coastline. • Providing salt-tolerant native trees along the planter strip at affected seawall and newly reclaimed coastline. • For HKLR, providing aesthetic design on the viaduct, tunnel portals, at-grade roads and	Minimise visual & landscape impact	Detailed designer	HKLR	Design Stage	

Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		reclamation (e.g. subtle colour tone and slim form for viaduct to minimize the bulkiness of the structure and to blend the viaduct better with the background environment, featured form of tunnel portals, roadside planting along at-grade roads and landscape berm on & planting along edge of reclamation area) to beautify the HKLR alignment (refer to Figure 14.4.3).					
Landscape & Visual (Construction Phase)							
S14.3.3.3	LV2	Mitigate both Landscape and Visual Impacts G1. Grass-hydroseed bare soil surface and stock pile areas. G2. Add planting strip and automatic irrigation system if appropriate at some portions of bridge or footbridge to screen bridge and traffic. G3. For HKLR, providing aesthetic design on the viaduct, tunnel portals, at-grade roads and reclamation (e.g. subtle colour tone and slim form for viaduct, featured form of tunnel portals, roadside planting along at-grade roads and landscape berm on & planting along edge of reclamation area) to beautify the HKLR alignment. G4. Vegetation reinstatement and upgrading to disturbed areas. G5. Maximize new tree, shrub and other vegetation planting to compensate tree felled and vegetation removed. G6. Provide planting area around peripheral of and within HKLR for tree screening buffer effect. G7. Plant salt tolerant native tree and shrubs etc along the planterstrip at affected seawall. G8. Reserve of loose natural granite rocks for re-use. Provide new coastline to adopt .natural-look. by means of using armour rocks in the form of natural rock materials and planting strip area accommodating screen buffer to enhance .natural-look. of the new coastline (see Figure 14.4.2 for example).	Minimise visual & landscape impact	Contractor	HKLR	Construction stage	√
S14.3.3.3	LV3	<u>Mitigate Visual Impacts</u> V1.Minimize time for construction activities during construction period.					√

Implementation Schedule of Environmental Mitigation Measures

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
		V2.Provide screen hoarding at the portion of the project site / works areas / storage areas near VSRs who have close low-level views to the Project during HKLR construction.					
EM&A							
S15.5 - S15.6	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	Perform environmental monitoring & auditing	Contractor	All construction sites	Construction stage	√

APPENDIX M

Record of "Notification of Environmental Quality Limit Exceedances" and "Complaint Enquiry Form"

Contract No. HY/2011/03 -
Hong Kong- Zhuhai- Macao Bridge
Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities

Notifications of Environmental Quality Limits Exceedances Notification No.: 004a

Date of Notification: 5 November 2012

Works Inspected: Data collected from water sampling works on 17 October 2012 and the results were issued on 20 October 2012

Monitoring Location: Water Quality Monitoring Stations

Parameter: ~~Dissolved Oxygen (DO)/ Suspended Solids (SS)/~~ Turbidity (TURB)

Action & Limit Level (AL & LL) / Measured Level:

PARAM	STATION	DEPTH	AL (NTU)	LL (NTU)	MEASURED AT MID-EBB TIDE (NTU)	MEASURED AT MID-FLOOD TIDE (NTU)
TURB	IS8	DA	**27.5** or 120% of upstream control station's turbidity at the same tide of the same day (i.e. CS(Mf)5: 29.8 x 120% = **35.8** for mid flood on 17-Oct-2012)	**47.0** or 130% of upstream control station's turbidity at the same tide of the same day ((i.e. CS(Mf)5: 29.8 x 130% = **38.7** for mid flood on 17-Oct-2012)	12.3	***35.2***

Note: ***Bold Italic*** means AL exceedance
Bold Italic with underline means LL exceedance

Possible reason for Action or Limit Level Non-compliance:

On 17 October 2012, exceedance of the AL at station IS8 was recorded during mid-flood tide. The exceedance has been investigated and is considered unlikely to be related to contract works due to the following reasons:

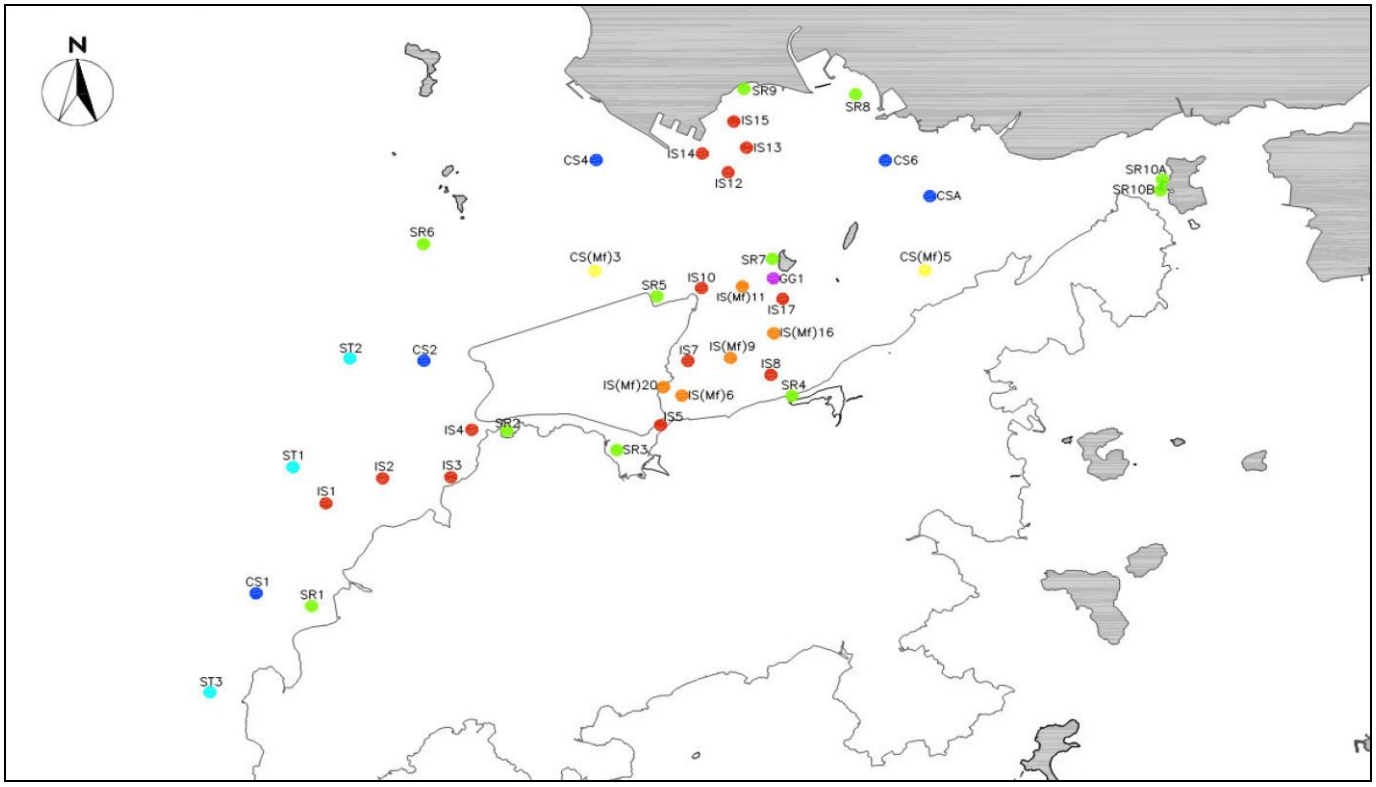
1. No major marine works but only silt curtain installation works were being carried out during the sampling period.
2. The measured turbidity level at control station CS(Mf)5 was higher than the Action Level.
3. There were no specific activities recorded during the monitoring period that would cause any significant impacts on the monitoring results.

As such, the turbidity level is considered to be attributed to other external factors, rather than the contract works.

Actions taken/ to be taken:

As the turbidity levels recorded beyond the water quality criteria were not related to contract works, no immediate actions are considered necessary.

Location Plan:



Reviewed by : Claudine Lee Title : ET Leader

Date : 5 November 2012

Copied to : Supervising Officer, IEC, EPD, Contractor

Contract No. HY/2011/03 -
Hong Kong- Zhuhai- Macao Bridge
Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities

Notifications of Environmental Quality Limits Exceedances Notification No.: 005a

Date of Notification: 5 November 2012

Works Inspected: Data collected from water sampling works on 17 October 2012 and the test report was issued on 26 October 2012

Monitoring Location: Water Quality Monitoring Stations

Parameter: ~~Dissolved Oxygen (DO)~~/ Suspended Solids (SS)/ ~~Turbidity (TURB)~~

Action & Limit Level (AL & LL) / Measured Level:

PARAM	STATION	DEPTH	AL (mg/L)	LL (mg/L)	MEASURED AT MID-EBB TIDE (mg/L)	MEASURED AT MID-FLOOD TIDE (mg/L)
SS	IS5	DA	**23.5** or 120% of upstream control station's suspended solid at the same tide of the same day (i.e. CS(Mf)5: 34.3 x 120% = **41.2** for mid flood on 17-Oct-2012)	**34.4** or 130% of upstream control station's suspended solid at the same tide of the same day ((i.e. CS(Mf)5: 34.3 x 130% = **44.6** for mid flood on 17-Oct-2012)	***24.0***	***28.3***
SS	IS8	DA			14.5	***47.1***
SS	SR10B	DA			9.8	***24.0***

Note: ***Bold Italic*** means AL exceedance
Bold Italic with underline means LL exceedance

Possible reason for Action or Limit Level Non-compliance:

On 17 October 2012, exceedances of the AL at stations IS5 (mid-ebb and mid-flood) and SR10B (mid-flood) were recorded. The exceedance of the LL at station IS8(mid-flood) was recorded. The exceedances have been investigated and are considered unlikely to be related to contract works due to the following reasons:

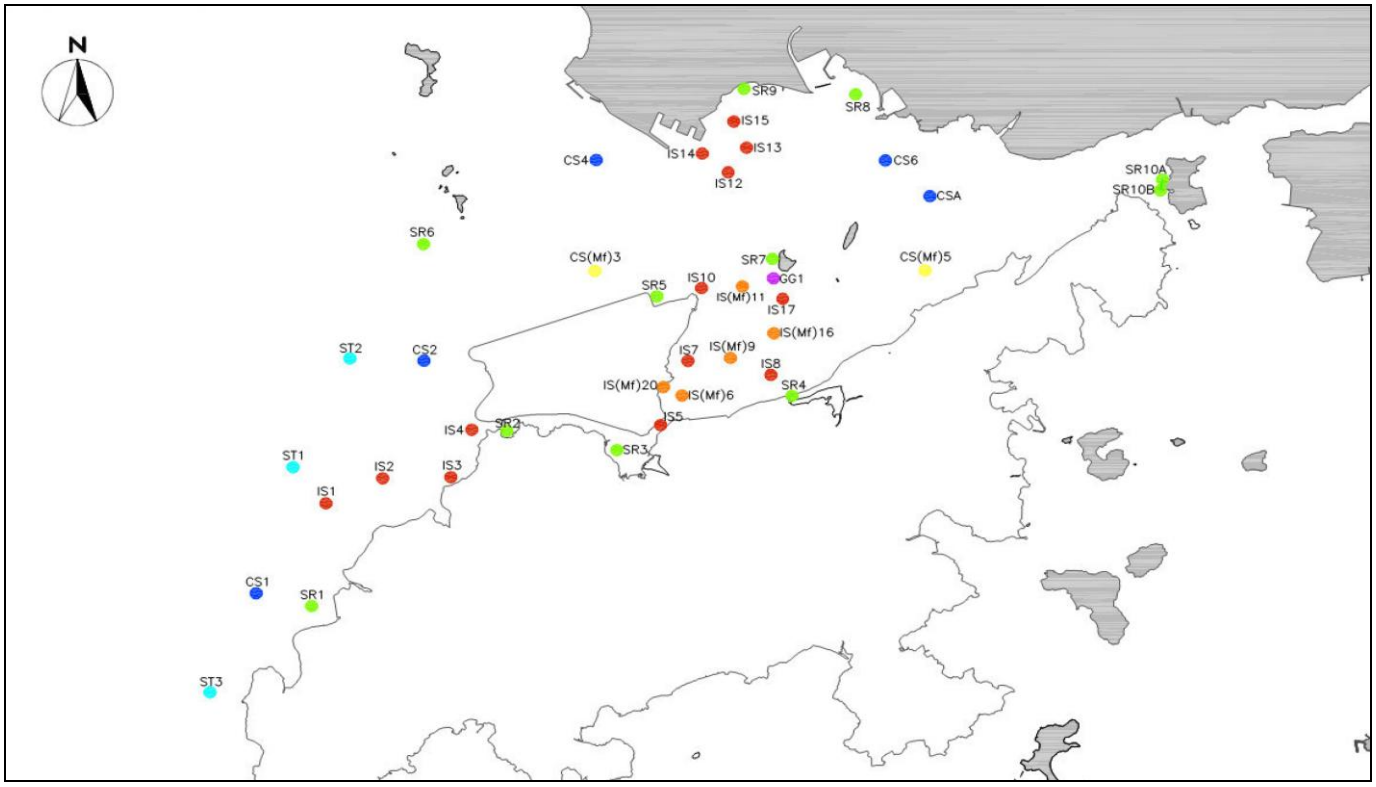
1. No major marine works but only silt curtain installation works were being carried out during the sampling period.
2. The measured suspended solid level at control station CS(Mf)5 was higher than the Action Level.
3. There were no specific activities recorded during the monitoring period that would cause any significant impacts on the monitoring results.

As such, the suspended solid levels are considered to be attributed to other external factors, rather than the contract works.

Actions taken/ to be taken:

As the suspended solid levels record beyond the water quality criteria were not related to contract works, no immediate actions are considered necessary.

Location Plan:



Reviewed by : Claudine Lee Title : ET Leader

Date : 5 November 2012

Copied to : Supervising Officer, IEC, EPD, Contractor

Contract No. HY/2011/03 -
Hong Kong- Zhuhai- Macao Bridge
Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities

Notifications of Environmental Quality Limits Exceedances Notification No.: 006a

Date of Notification: 5 November 2012

Works Inspected: Data collected from water sampling works on 20 October 2012 and the results were issued on 24 October 2012

Monitoring Location: Water Quality Monitoring Stations

Parameter: ~~Dissolved Oxygen (DO)/ Suspended Solids (SS)/~~ Turbidity (TURB)

Action & Limit Level (AL & LL) / Measured Level:

PARAM	STATION	DEPTH	AL (NTU)	LL (NTU)	MEASURED AT MID-EBB TIDE (NTU)	MEASURED AT MID-FLOOD TIDE (NTU)
TURB	IS5	DA	**27.5** or 120% of upstream control station's turbidity at the same tide of the same day (i.e. CS(Mf)5: 6.25 x 120% = **7.5** for mid flood on 20-Oct-2012)	**47.0** or 130% of upstream control station's turbidity at the same tide of the same day (i.e. CS(Mf)5: 6.25 x 130% = **8.1** for mid flood on 20-Oct-2012)	8.8	***12.4***
TURB	IS(Mf)6	DA			6.8	***23.6***
TURB	IS7	DA			4.7	***13.6***
TURB	IS(Mf)9	DA			5.1	***17.1***
TURB	SR4	DA			5.4	***16.0***
TURB	SR10B	DA			4.7	***12.1***
TURB	SR3	DA			7.3	***9.1***

Note: ***Bold Italic*** means AL exceedance
Bold Italic with underline means LL exceedance

Possible reason for Action or Limit Level Non-compliance:

On 20 October 2012, exceedance of the LL at stations IS5, IS(Mf6), IS7, IS(Mf)9, SR4, SR10B and SR3 were recorded during mid-flood tide. The exceedances have been investigated and are considered unlikely to be related to contract works due to the following reason:

1. No major marine works but only geotextile installation work and rock filling were being carried out within the silt curtains during the sampling period.
2. The ranges of turbidity at stations IS5, IS(Mf)6, IS7,IS8, IS(Mf)9, SR3, SR4 and SR10B during the baseline monitoring are shown as below:

Station	Range of Turbidity(NTU), Mid-Flood Tide		
IS5	5.3	to	20.9
IS(Mf)6	5.3	to	20.9
IS7	5.0	to	19.4
IS(Mf)9	3.4	to	22.6
SR3	7.7	to	19.7
SR4	5.0	to	20.6
SR10B	1.7	to	13.2

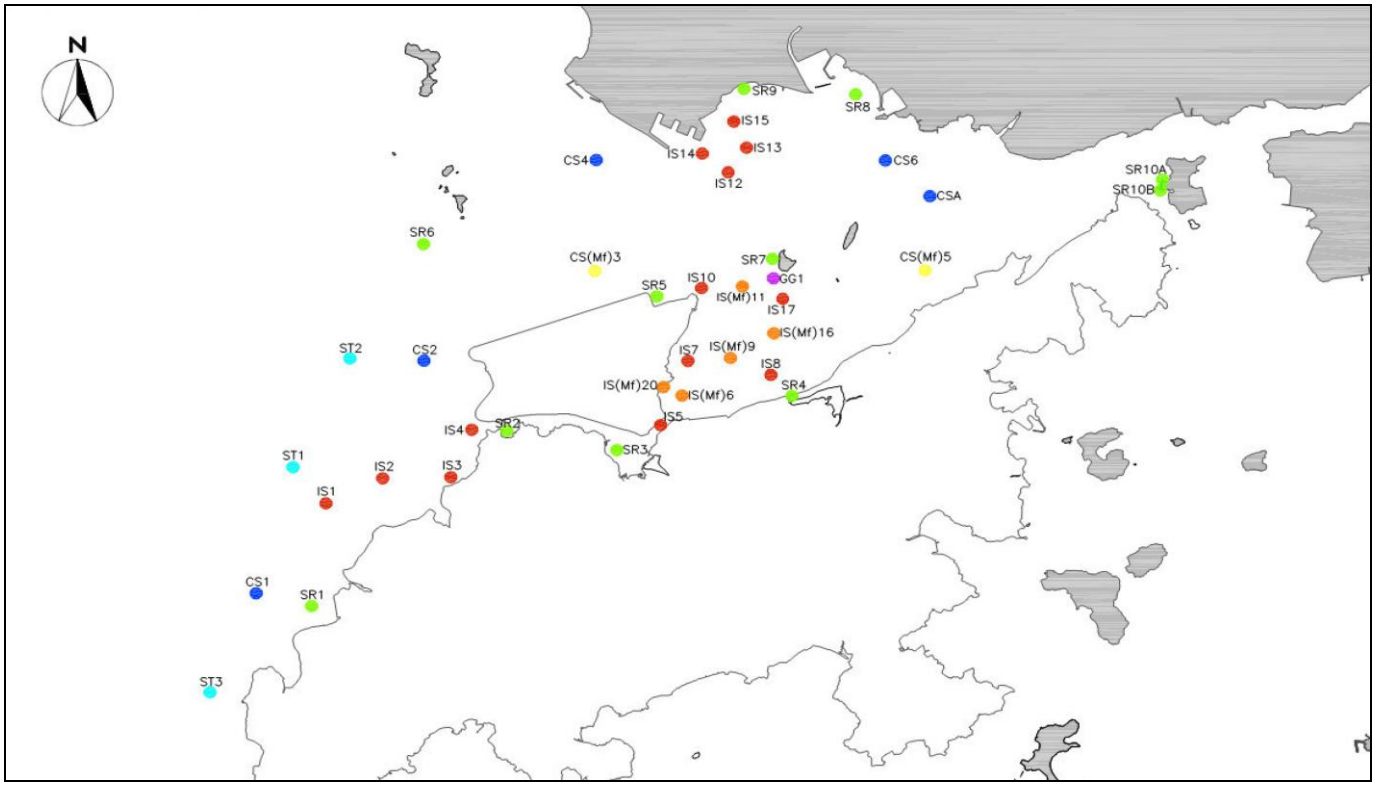
   The measured values during mid-flood tide at stations IS5, IS(Mf)6, IS7,IS8, IS(Mf)9, SR3, SR4 and SR10B were similar or within the ranges of turbidity during baseline monitoring.
3. There were no specific activities recorded during the monitoring period that would cause any significant impacts on the monitoring results.

As such, the turbidity levels are considered to be attributed to other external factors, rather than the contract works.

Actions taken/ to be taken:

As the turbidity levels recorded beyond the water quality criteria were not related to contract works, no immediate actions are considered necessary.

Location Plan:



Reviewed by : Claudine Lee Title : ET Leader

Date : 5 November 2012

Copied to : Supervising Officer, IEC, EPD, Contractor

Contract No. HY/2011/03 -
Hong Kong- Zhuhai- Macao Bridge
Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities

Notifications of Environmental Quality Limits Exceedances Notification No.: 007a

Date of Notification: 5 November 2012

Works Inspected: Data collected from water sampling works on 22 October 2012and the results were issued on 24 October 2012

Monitoring Location: Water Quality Monitoring Stations

Parameter: ~~Dissolved Oxygen (DO)/ Suspended Solids (SS)/~~ Turbidity (TURB)

Action & Limit Level (AL & LL) / Measured Level:

PARAM	STATION	DEPTH	AL (NTU)	LL (NTU)	MEASURED AT MID-EBB TIDE (NTU)	MEASURED AT MID-FLOOD TIDE (NTU)
TURB	SR3	DA	**27.5** or 120% of upstream control station's turbidity at the same tide of the same day (i.e. CS(Mf)5: 13.46 x 120% = **16.1** for mid flood on 22-Oct-2012)	**47.0** or 130% of upstream control station's turbidity at the same tide of the same day (i.e. CS(Mf)5: 13.46 x 130% = **17.5** for mid flood on 22-Oct-2012)	5.0	***16.3***

Note: ***Bold Italic*** means AL exceedance
Bold Italic with underline means LL exceedance

Possible reason for Action or Limit Level Non-compliance:

On 22 October 2012, an exceedance of the AL at station SR3 was recorded during mid-flood tide. The exceedance has been investigated and is considered unlikely to be related to contract works due to the following reason:

1. No major marine works but only geotextile installation work and rock filling were being carried out within silt curtains during the sampling period.
2. The range of turbidity at station SR3during the baseline monitoring are shown as below:

Station	Range of Turbidity(NTU), Mid-Flood Tide		
SR3	7.7	to	19.7

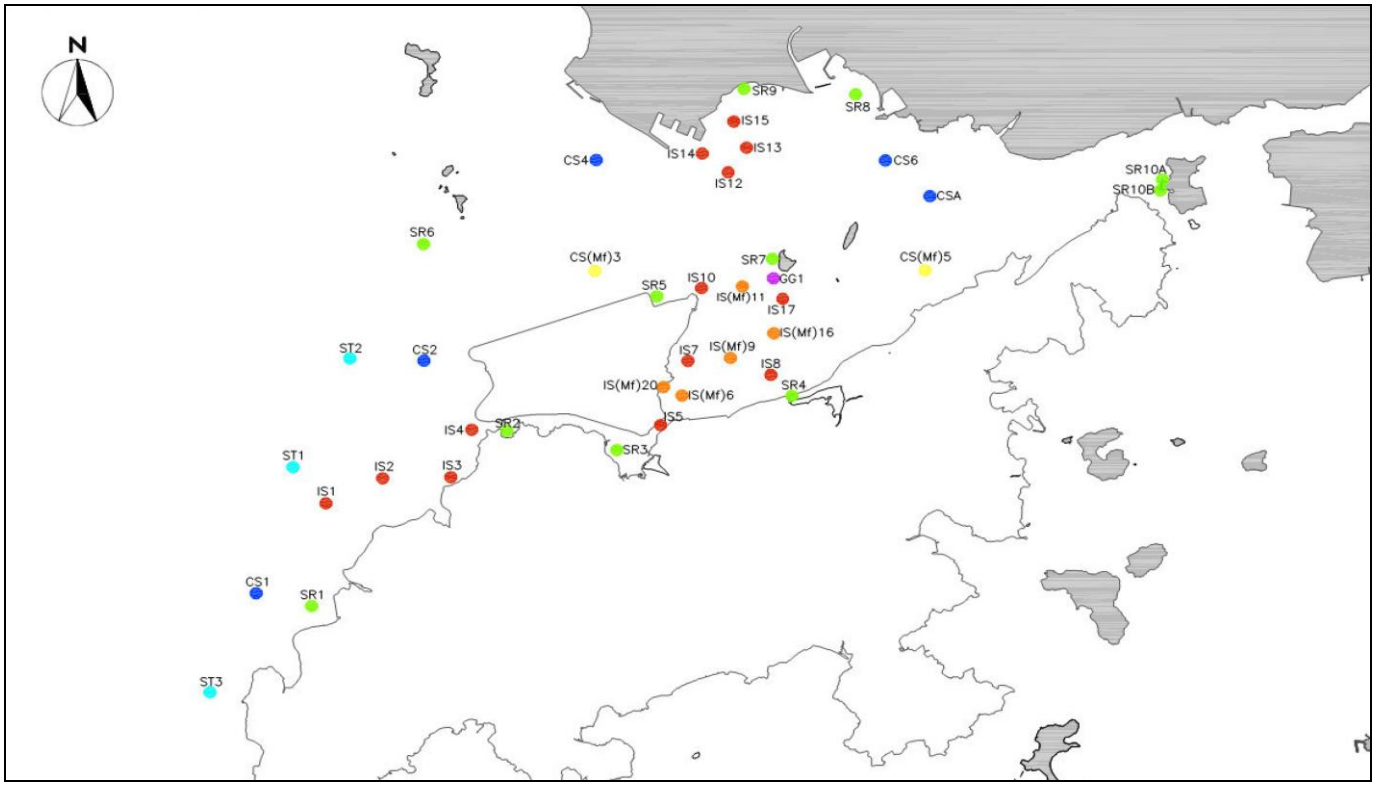
   The measured value during mid-flood tide at station SR3 was within the range of turbidity during baseline monitoring.
3. There were no specific activities recorded during the monitoring period that would cause any significant impacts on the monitoring results.

As such, the turbidity level is considered to be attributed to other external factors, rather than the contract works.

Actions taken/ to be taken:

As the turbidity levels recorded beyond the water quality criteria were not related to contract works, no immediate actions are considered necessary.

Location Plan:



Reviewed by : Claudine Lee Title : ET Leader

Date : 5 November 2012

Copied to : Supervising Officer, IEC, EPD, Contractor

Contract No. HY/2011/03 -
Hong Kong- Zhuhai- Macao Bridge
Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities

Notifications of Environmental Quality Limits Exceedances Notification No.: 008a

Date of Notification: 5 November 2012

Works Inspected: Data collected from water sampling works on 25 October 2012 and the results were issued on 26 October 2012

Monitoring Location: Water Quality Monitoring Stations

Parameter: ~~Dissolved Oxygen (DO)/ Suspended Solids (SS)/~~ Turbidity (TURB)

Action & Limit Level (AL & LL) / Measured Level:

PARAM	STATION	DEPTH	AL (NTU)	LL (NTU)	MEASURED AT MID-EBB TIDE (NTU)	MEASURED AT MID-FLOOD TIDE (NTU)
TURB	SR3	DA	**27.5** or 120% of upstream control station's turbidity at the same tide of the same day (i.e. CS(Mf)5: 5.83 x 120% =**7.0** NTU for mid flood on 25-Oct-2012)	**47.0** or 130% of upstream control station's turbidity at the same tide of the same day (i.e. CS(Mf)5: 5.83 x 130% =**7.6** NTU for mid flood on 25-Oct-2012)	4.2	***7.8***
TURB	IS5	DA			8.7	***8.1***

Note: ***Bold Italic*** means AL exceedance
Bold Italic with underline means LL exceedance

Possible reason for Action or Limit Level Non-compliance:

On 25 October 2012, exceedances of the LL at stations SR3 and IS5 were recorded during mid-flood tide. The exceedances have been investigated and are considered unlikely to be related to contract works due to the following reason:

1. No major marine works but only geotextile installation work and rock filling were being carried out within silt curtains during the sampling period.
2. The ranges of turbidity at stations IS5 and SR3 during the baseline monitoring are shown as below:

Station	Range of Turbidity(NTU), Mid-Flood Tide		
IS5	5.3	to	20.9
SR3	7.7	to	19.7

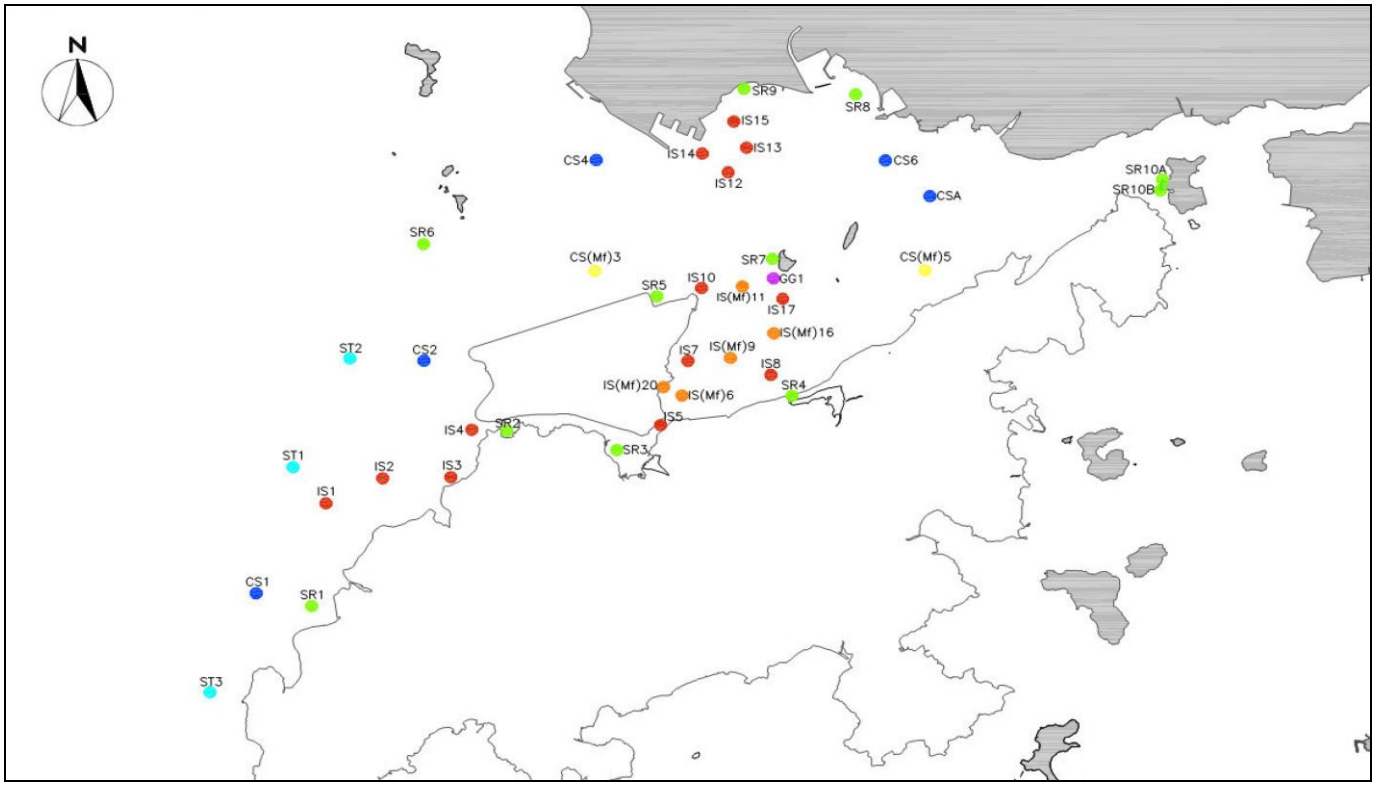
   The measured values during mid-flood tide at stations IS5 and SR3 were within the ranges of turbidityduring baseline monitoring.
3. There were no specific activities recorded during the monitoring period that would cause any significant impacts on the monitoring results.

As such, the turbidity level is considered to be attributed to other external factors, rather than the contract works.

Actions taken/ to be taken:

As the turbidity levels recorded beyond the water quality criteria were not related to contract works, no immediate actions are considered necessary.

Location Plan:



Reviewed by : Claudine Lee Title : ET Leader

Date : 5 November 2012

Copied to : Supervising Officer, IEC, EPD, Contractor

Contract No. HY/2011/03 -
Hong Kong- Zhuhai- Macao Bridge
Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities
Notifications of Environmental Quality Limits Exceedances Notification No.: 009a

Date of Notification: 5 November 2012

Works Inspected: Data collected from water sampling works on 20 October 2012 and the test report was issued on 29 October 2012

Monitoring Location: Water Quality Monitoring Stations

Parameter: ~~Dissolved Oxygen (DO)~~/ Suspended Solids (SS)/ ~~Turbidity (TURB)~~

Action & Limit Level (AL & LL) / Measured Level:

PARAM	STATION	DEPTH	AL (mg/L)	LL (mg/L)	MEASURED AT MID-EBB TIDE (mg/L)	MEASURED AT MID-FLOOD TIDE (mg/L)
SS	IS5	DA	**23.5** or 120% of upstream control station's suspended solid at the same tide of the same day ((i.e. CS(Mf)5: 7.6 x 120% = **9.1** for mid flood on 20-Oct-2012)	**34.4** or 130% of upstream control station's suspended solid at the same tide of the same day ((i.e. CS(Mf)5: 7.6 x 130% = **9.9** for mid flood on 20-Oct-2012)	13.8	***16.9***
SS	IS(Mf)6	DA			11.6	***29.8***
SS	IS7	DA			9.3	***16.6***
SS	IS(Mf)9	DA			11.1	***22.0***
SS	IS8	DA			8.1	***12.7***
SS	SR4	DA			12.6	***21.1***
SS	SR10B	DA			8.7	***14.9***
SS	SR10A	DA			11.6	***10.7***
SS	SR3	DA			12.4	***12.0***

Note: ***Bold Italic*** means AL exceedance
Bold Italic with underline means LL exceedance

Possible reason for Action or Limit Level Non-compliance:

On 20 October 2012, exceedances of the LL at station IS5, IS(Mf)6, IS7, IS(Mf)9, IS8, SR4, SR10B, SR10A and SR3 were recorded during mid-flood tide. The exceedances have been investigated and are considered unlikely to be related to contract works due to the following reasons:

1. No major marine works but only geotextile installation work and rock filling were being carried out within silt curtains during the sampling period.
2. The ranges of suspended solid at stations IS5, IS(Mf)6, IS7, IS(Mf)9, IS8, SR4, SR10B, SR10A and SR3 during the baseline monitoring are shown as below:

Station	Range of Suspended Solid(mg/L), Mid-Flood tide		
IS5	7.0	to	23.7
IS(Mf)6	8.5	to	35.0
IS7	7.8	to	34.0
IS8	5.8	to	31.3
IS(Mf)9	7.3	to	26.0
SR3	7.6	to	28.0
SR4	5.6	to	24.5
SR10A	4.8	to	19.2
SR10B	5.7	to	26.7

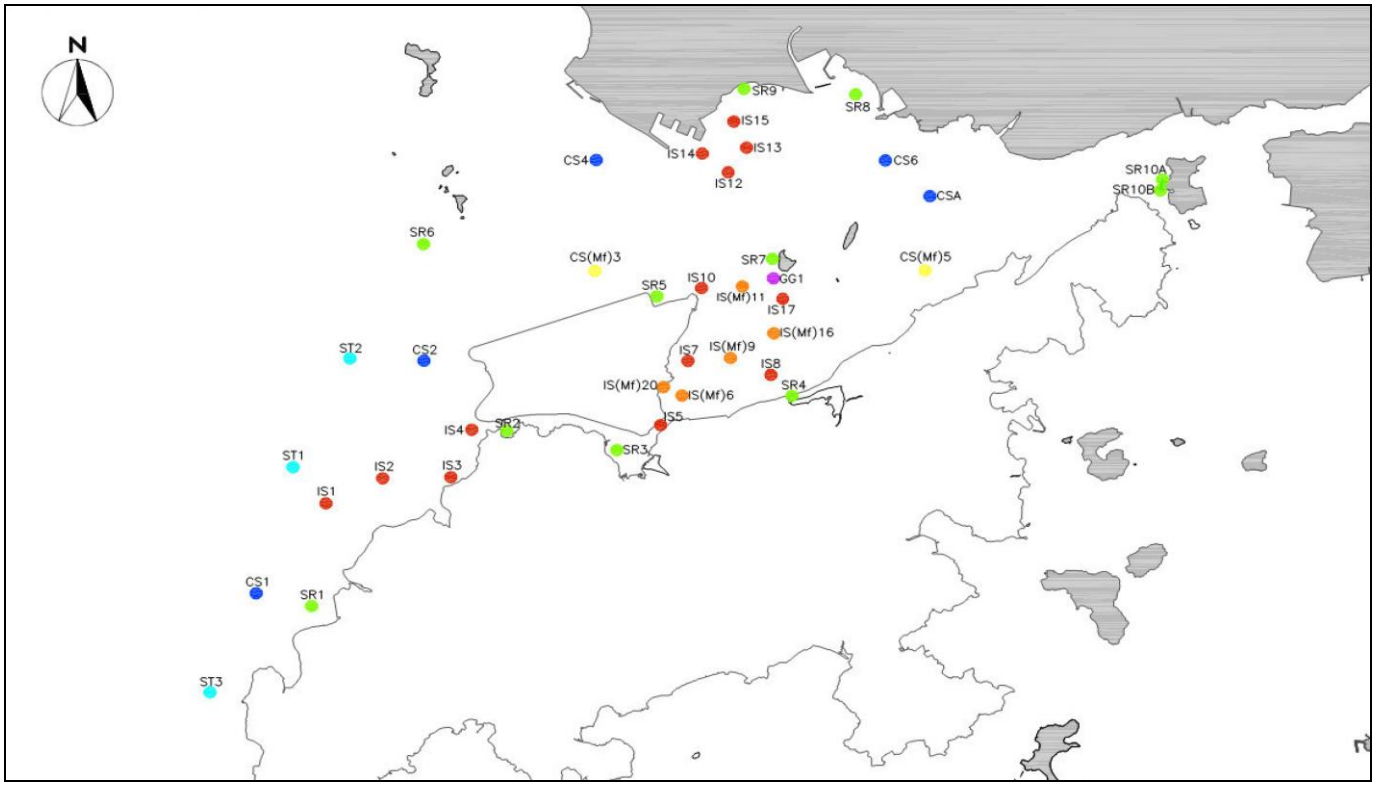
   The measured values during mid-flood tide at stations IS5, IS(Mf)6, IS7, IS(Mf)9, IS8, SR4, SR10B, SR10A and SR3 were within the range of suspended solid during baseline monitoring.
3. There were no specific activities recorded during the monitoring period that would cause any significant impacts on the monitoring results.

As such, the suspended solid level is considered to be attributed to other external factors, rather than the project works.

Actions taken/ to be taken:

As the suspended solid levels recorded beyond the water quality criteria were not related to project works, no immediate actions are considered necessary.

Location Plan:



Reviewed by : Claudine Lee Title : ET Leader

Date : 5 November 2012

Copied to : Supervising Officer, IEC, EPD, Contractor

Contract No. HY/2011/03 -
Hong Kong- Zhuhai- Macao Bridge
Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities
Notifications of Environmental Quality Limits Exceedances Notification No.: 010a

Date of Notification: 5 November 2012

Works Inspected: Data collected from water sampling works on 27 October 2012 and the results were issued on 29 October 2012

Monitoring Location: Water Quality Monitoring Stations

Parameter: ~~Dissolved Oxygen (DO)/ Suspended Solids (SS)/~~ Turbidity (TURB)

Action & Limit Level (AL & LL) / Measured Level:

PARAM	STATION	DEPTH	AL (NTU)	LL (NTU)	MEASURED AT MID-EBB TIDE (NTU)	MEASURED AT MID-FLOOD TIDE (NTU)
TURB	IS5	DA	**27.5** or 120% of upstream control station's turbidity at the same tide of the same day (i.e. CS(Mf)5: 9.7 x 120% =**11.7** for mid flood on 27-Oct-2012)	**47.0** or 130% of upstream control station's turbidity at the same tide of the same day (i.e. CS(Mf)5: 9.7 x 130% =**12.6** for mid flood on 27-Oct-2012)	14.3	***14.8***
TURB	IS(Mf)6	DA			3.8	***12.1***
TURB	IS7	DA			4.3	***15.8***
TURB	IS8	DA			3.8	***11.8***
TURB	IS(Mf)9	DA			4.1	***15.1***
TURB	SR3	DA			4.8	***15.0***
TURB	SR4	DA			5.4	***19.3***

Note: ***Bold Italic*** means AL exceedance
Bold Italic with underline means LL exceedance

Possible reason for Action or Limit Level Non-compliance:

On 27 October 2012, exceedances of the LL at stations IS5, IS(Mf)6, IS7,IS8, IS(Mf)9, SR3 and SR4 were recorded during mid-flood tide. The exceedances have been investigated and are considered unlikely to be related to contract works due to the following reason:

1. No major marine works were carried out near the monitoring stations. Geotextile installation work and rock filling were being carried out within silt curtains near the restricted area during the sampling period.
2. The ranges of turbidity at stations IS5, IS(Mf)6, IS7,IS8, IS(Mf)9, SR3 and SR4 during the baseline monitoring are shown as below:

Station	Range of Turbidity(NTU), Mid-Flood Tide		
IS5	5.3	to	20.9
IS(Mf)6	5.3	to	20.9
IS7	5.0	to	19.4
IS8	4.5	to	24.5
IS(Mf)9	3.4	to	22.6
SR3	7.7	to	19.7
SR4	5.0	to	20.6

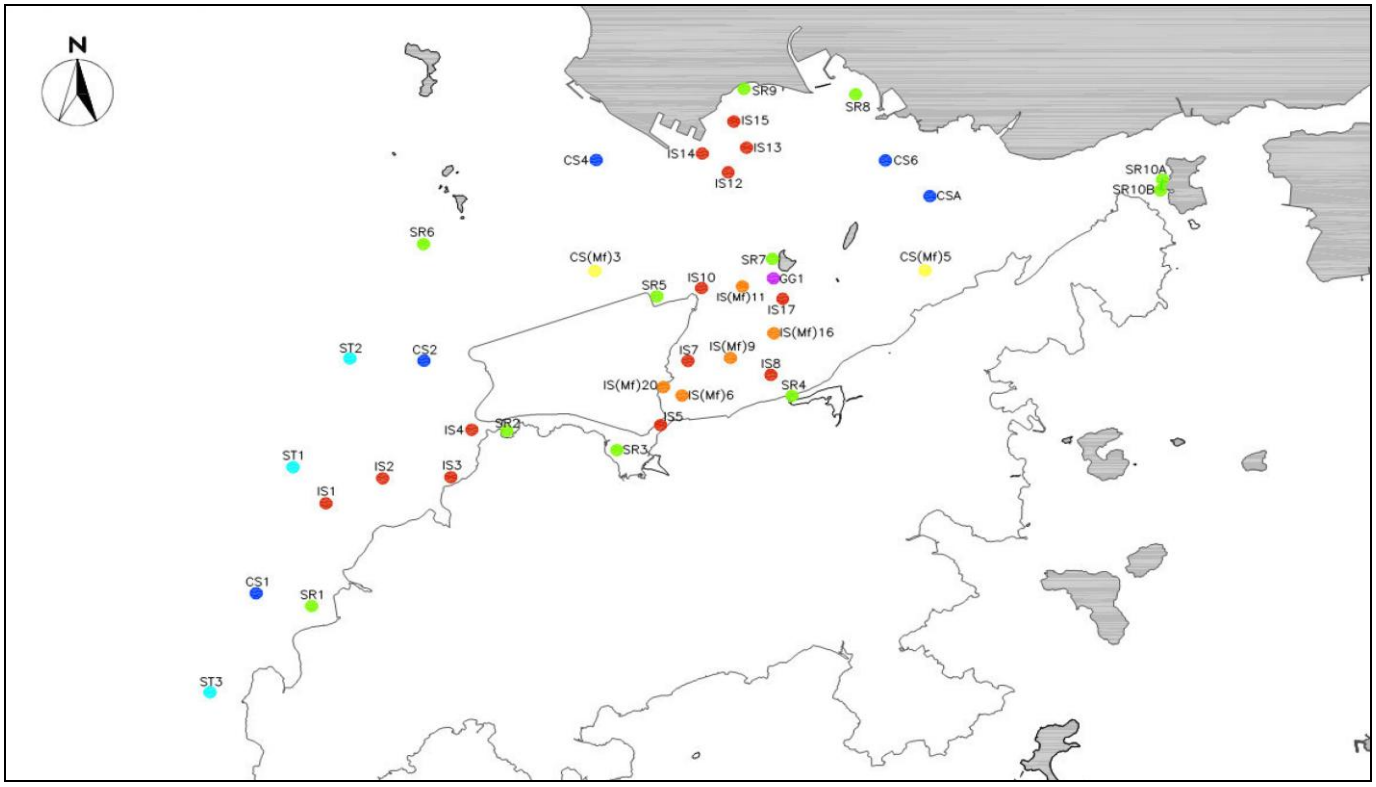
   The measured values during mid-flood tide at stations IS5, IS(Mf)6, IS7,IS8, IS(Mf)9, SR3 and SR4 were within the ranges of turbidity during baseline monitoring.
3. There were no specific activities recorded during the monitoring period that would cause any significant impacts on the monitoring results.

As such, the turbidity level is considered to be attributed to other external factors, rather than the contract works.

Actions taken/ to be taken:

As the turbidity levels recorded beyond the water quality criteria were not related to contract works, no immediate actions are considered necessary.

Location Plan:



Reviewed by : Claudine Lee Title : ET Leader

Date : 5 November 2012

Copied to : Supervising Officer, IEC, EPD, Contractor

Contract No. HY/2011/03 -
Hong Kong- Zhuhai- Macao Bridge
Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities

Notifications of Environmental Quality Limits Exceedances Notification No.: 011a

Date of Notification: 5 November 2012

Works Inspected: Data collected from water sampling works on 22 October 2012and the test report was issued on 1 November 2012

Monitoring Location: Water Quality Monitoring Stations

Parameter: ~~Dissolved Oxygen (DO)~~/ Suspended Solids (SS)/ ~~Turbidity (TURB)~~

Action & Limit Level (AL & LL) / Measured Level:

PARAM	STATION	DEPTH	AL (mg/L)	LL (mg/L)	MEASURED AT MID-EBB TIDE (mg/L)	MEASURED AT MID-FLOOD TIDE (mg/L)
SS	IS(Mf)6	DA	**23.5** or 120% of upstream control station's suspended solid at the same tide of the same day (i.e. CS(Mf)5: 6.7 x 120% =**8.0** mg/L for mid flood on 22-Oct-2012)	**34.4** or 130% of upstream control station's suspended solid at the same tide of the same day (i.e. CS(Mf)5: 6.7 x 130% =**8.7** mg/L for mid flood on 22-Oct-2012)	4.0	**<u>13.8</u>**
SS	SR3	DA			6.3	**<u>11.7</u>**

Notes: ***Bold Italic*** means AL exceedance
<u>Bold Italic with underline</u> means LL exceedance

Possible reason for Action or Limit Level Non-compliance:

On 22 October 2012, exceedance of the LL at stations IS(Mf)6 and SR3 were recorded during mid-flood tide. The exceedances have been investigated and are considered unlikely to be related to contact works due to the following reasons:

1. No major marine works were carried out near the monitoring stations. Geotextile installation work and rock filling were being carried out within silt curtains near the restricted area during the sampling period.
2. The ranges of suspended solid at stations IS(Mf)6 and SR3 during the baseline monitoring are shown as below;

Station	Range of Suspended Solid(mg/L), Mid-Flood tide		
IS(Mf)6	8.5	to	35.0
SR3	7.6	to	28.0

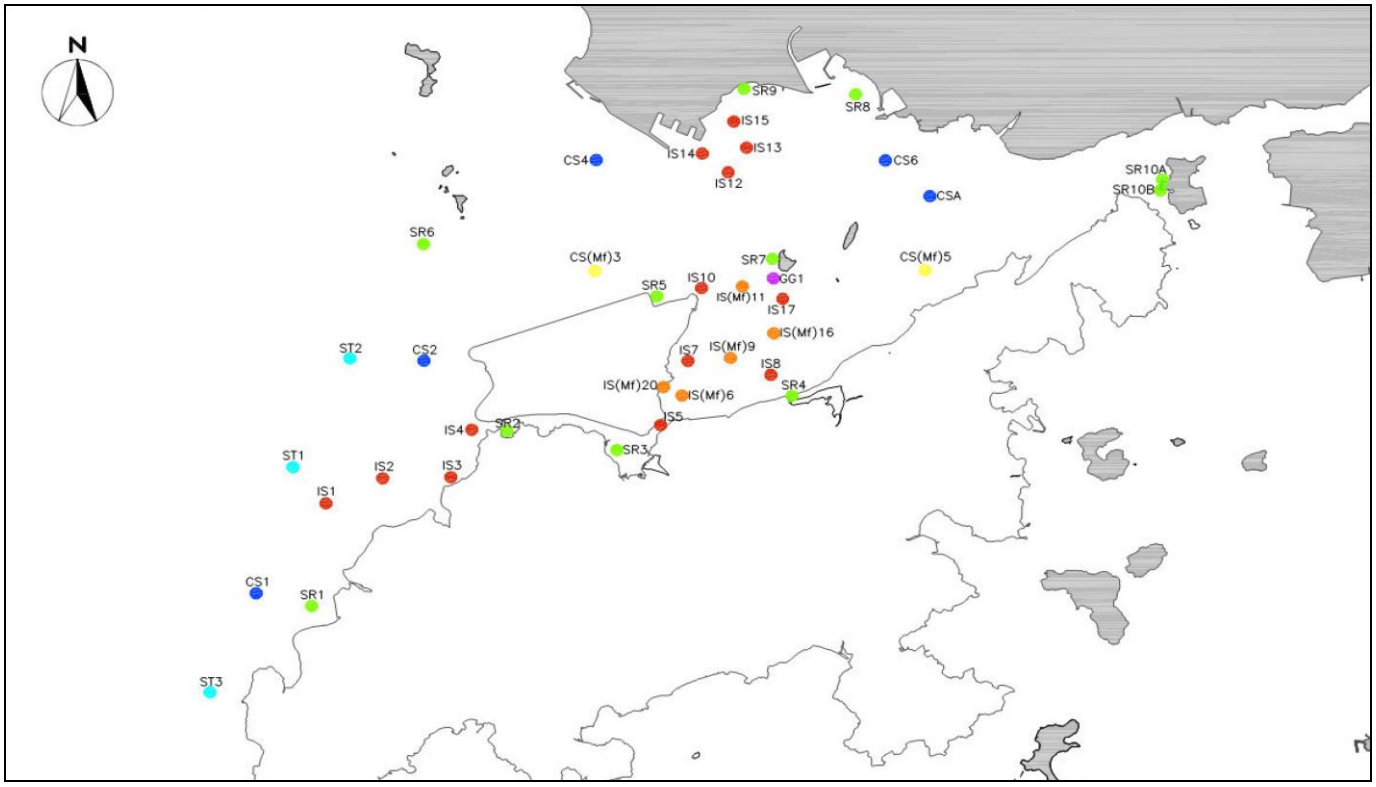
   The measured values during mid-flood tide at stations IS(Mf)6 and SR3 were within the ranges of suspended solid during baseline monitoring.
3. There were no specific activities recorded during the monitoring period that would cause any significant impacts on the monitoring results..

<u>As such, the suspended solid level is considered to be attributed to other external factors, rather than the contact works.</u>

Actions taken/ to be taken:

As the suspended solid levels recorded beyond the water quality criteria were not related to contact works, no immediate actions are considered necessary.

Location Plan:



Reviewed by : Claudine Lee Title : ET Leader

Date : 5 November 2012

Copied to : Supervising Officer, IEC, EPD, Contractor

Contract No. HY/2011/03 -
Hong Kong- Zhuhai- Macao Bridge
Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities
Notifications of Environmental Quality Limits Exceedances Notification No.: 012

Date of Notification: 5 November 2012

Works Inspected: Data collected from water sampling works on 30 October 2012and the results were issued on 31 October 2012

Monitoring Location: Water Quality Monitoring Stations

Parameter: ~~Dissolved Oxygen (DO)/ Suspended Solids (SS)/~~ Turbidity (TURB)

Action & Limit Level (AL & LL) / Measured Level:

PARAM	STATION	DEPTH	AL (NTU)	LL (NTU)	MEASURED AT MID-EBB TIDE (NTU)	MEASURED AT MID-FLOOD TIDE (NTU)
TURB	IS7	DA	**27.5** or 120% of upstream control station's turbidity at the same tide of the same day (i.e. CS(Mf)5: 10.12 x 120% =**12.1** for mid flood on 30-Oct-2012)	**47.0** or 130% of upstream control station's turbidity at the same tide of the same day (i.e. CS(Mf)5: 10.12 x 130% =**13.2** for mid flood on 30-Oct-2012)	11.1	***13.8***
TURB	IS8	DA			11.1	***12.2***
TURB	IS(Mf)9	DA			8.2	***23.2***
TURB	SR3	DA			14.4	***13.8***
TURB	SR4	DA			11.5	***21.5***

Note: ***Bold Italic*** means AL exceedance
Bold Italic with underline means LL exceedance

Possible reason for Action or Limit Level Non-compliance:

On 30 October 2012, exceedance of the AL at station IS8 and the exceedances of the LL at stations IS7, IS(Mf)9, SR3 and SR4 were recorded during mid-flood tide. The exceedances have been investigated and are considered unlikely to be related to contract works due to the following reason:

1. No major marine works were carried out near the monitoring stations. Rock filling work was being carried out within silt curtains near the restricted area during the sampling period.
2. The ranges of turbidity at stations IS7, IS8, IS(Mf)9, SR3 and SR4 during the baseline monitoring are shown as below;

Station	Range of Turbidity(NTU), Mid-Flood Tide		
IS7	5.0	to	19.4
IS8	4.5	to	24.5
IS(Mf)9	3.4	to	22.6
SR3	7.7	to	19.7
SR4	5.0	to	20.6

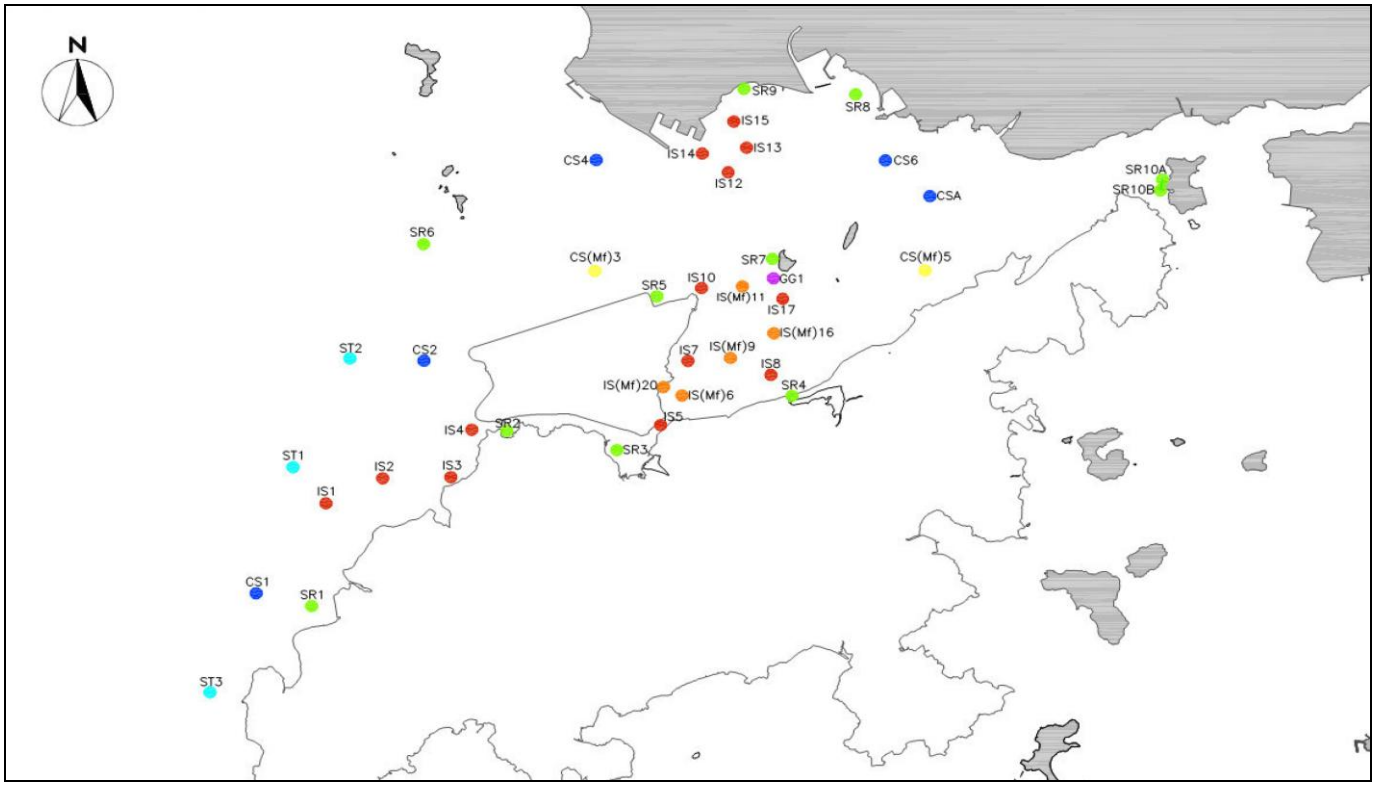
   The measured values during mid-flood tide at stations IS7, IS8, IS(Mf)9, SR3 and SR4 were similar or within the ranges of turbidity during baseline monitoring.
3. There were no specific activities recorded during the monitoring period that would cause any significant impacts on the monitoring results.

As such, the turbidity level is considered to be attributed to other external factors, rather than the contract works.

Actions taken/ to be taken:

As the turbidity levels recorded beyond the water quality criteria were not related to contract works, no immediate actions are considered necessary.

Location Plan:



Reviewed by : Claudine Lee Title : ET Leader

Date : 6 November 2012

Copied to : Supervising Officer, IEC, EPD, Contractor

Contract No. HY/2011/03 -
Hong Kong- Zhuhai- Macao Bridge
Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities
Notifications of Environmental Quality Limits Exceedances Notification No.: 013

Date of Notification: 5 November 2012

Works Inspected: Not Applicable

Monitoring Location: AMS5- Ma Wan Chung Village (Tung Chung)

Parameter: 1-hour TSP monitoring

Action & Limit Level (AL & LL) / Measured Level:

PARAMETER	STATION	AL (μg/m^3)	LL (μg/m^3)	MEASURED LEVEL, μg/m^3
1-hr TSP (13:45 – 14:45)	Tung Chung Development Pier	352	500	***425***
1-hr TSP (14:45 – 15:45	Tung Chung Development Pier	352	500	***412***
1-hr TSP (15:45 – 16:45)	Tung Chung Development Pier	352	500	***562***

Notes: ***Bold Italic*** means AL exceedance
Bold Italic with underline means LL exceedance

Possible reason for Action or Limit Level Non-compliance:

Two Action Level exceedances and one Limited Level exceedance of 1-hr TSP level were recorded at AMS5 Ma Wan Chung Village (Tung Chung) on 30 October 2012.

According to the information provided by the Contractor, the following construction activities were undertaken near AMS5 during the sampling period:

Marine Works (Portion X)

- Laying of geotextile
- Rock filling

Land-based Construction Activities (Kwo Lo Wan Road near shoreline)

- GI survey

The construction activities undertaken during the sampling period did not generate significant dust impact and these activities were undertaken far away (greater than 500m) from AMS5.

The general weather conditions on Tung Chung were drizzle during the dust sampling period. The drizzle would cause high readings of portable dust meter. Therefore, it is considered that the exceedances are not related to the construction activities of the Contract and were caused by the weather condition.

Actions taken/ to be taken:

No immediately actions are required.

Reviewed by : Claudine Lee Title : ET Leader

Date : 5 November 2012

Copied to : Supervising Officer, IEC, EPD, Contractor

Contract No. HY/2011/03 -
Hong Kong- Zhuhai- Macao Bridge
Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities

Notifications of Environmental Quality Limits Exceedances Notification No.: 014

Date of Notification: 7 November 2012

Works Inspected: Data collected from water sampling works on 27 October 2012 and the test report was issued on 2 November 2012

Monitoring Location: Water Quality Monitoring Stations

Parameter: ~~Dissolved Oxygen (DO)~~/ Suspended Solids (SS)/ ~~Turbidity (TURB)~~

Action & Limit Level (AL & LL) / Measured Level:

PARAM	STATION	DEPTH	AL (mg/L)	LL (mg/L)	MEASURED AT MID-EBB TIDE (mg/L)	MEASURED AT MID-FLOOD TIDE (mg/L)
SS	IS5	DA	23.5 or 120% of upstream control station's suspended solid at the same tide of the same day (i.e. CS(Mf)5: 14.6 x 120% =17.5 mg/L for mid flood on 27-Oct-2012)	34.4 or 130% of upstream control station's suspended solid at the same tide of the same day (i.e. CS(Mf)5: 14.55 x 130% =18.9 mg/L for mid flood on 27-Oct-2012)	18.0	***17.9***
SS	IS(Mf)6	DA			9.1	***18.5***
SS	IS7	DA			8.8	***<u>19.7</u>***
SS	SR3	DA			8.8	***18.6***
SS	SR4	DA			8.1	***<u>22.9</u>***

Notes: ***Bold Italic*** means AL exceedance
<u>Bold Italic with underline</u> means LL exceedance

Possible reason for Action or Limit Level Non-compliance:

On 27 October 2012, exceedances of the AL at stations IS5, IS(Mf)6 and SR3 and exceedances of LL at stations IS7 and SR4 were recorded during mid-flood tide. The exceedances have been investigated and are considered unlikely to be related to contact works due to the following reasons:

1. No major marine works were carried out near the monitoring stations. Geotextile installation work and rock filling were being carried out within silt curtains during the sampling period.
2. The ranges of suspended solid at stations IS5, IS(Mf)6, IS7, SR3 and SR4 during the baseline monitoring are shown as below:

Station	Range of Suspended Solid(mg/L)		
IS5	7.0	to	23.7
IS(Mf)6	8.5	to	35.0
IS7	7.8	to	34.0
SR3	7.6	to	28.0
SR4	5.6	to	24.5

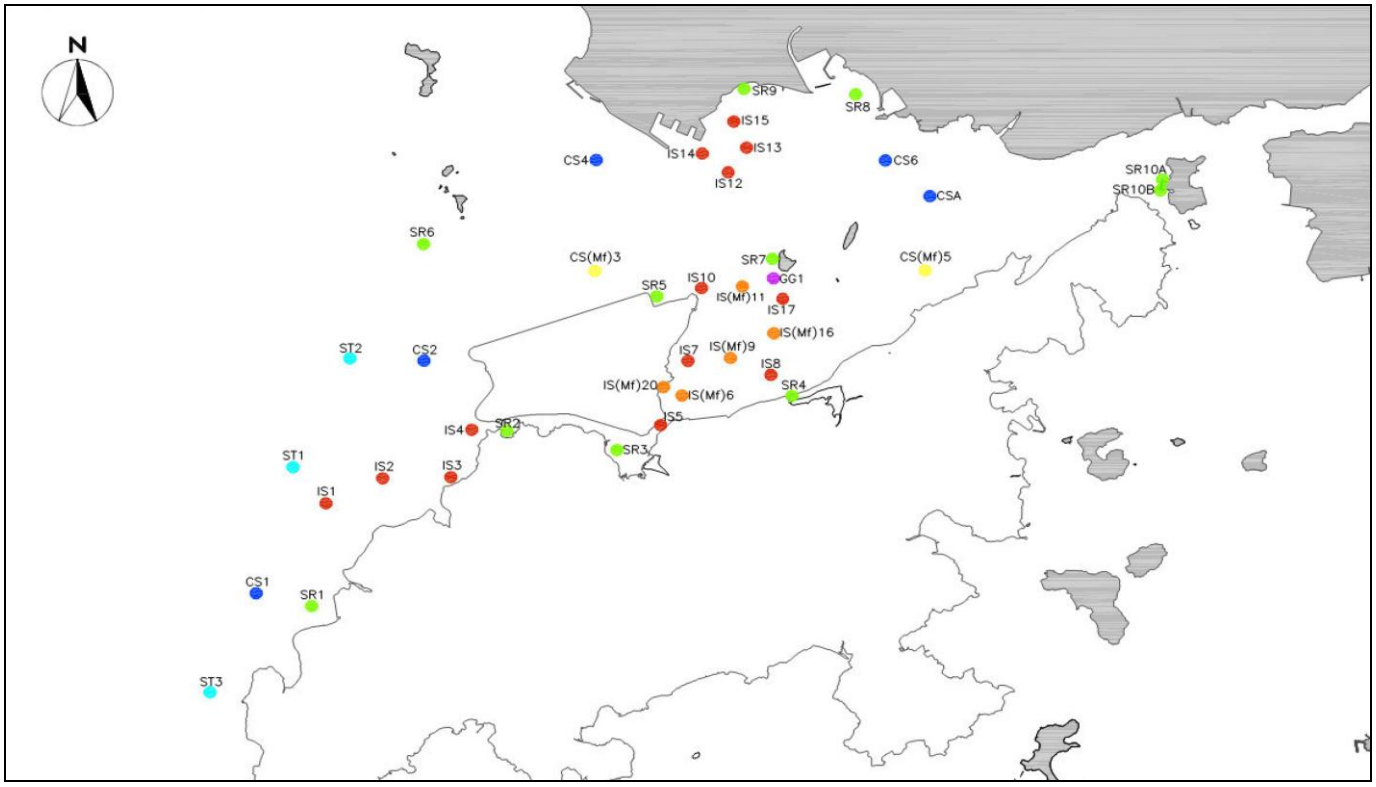
   The measured values during mid-flood tide at stations IS5, IS(Mf)6, IS7, SR3 and SR4 were within the ranges of suspended solid during baseline monitoring.
3. There were no specific activities recorded during the monitoring period that would cause any significant impacts on the monitoring results.

As such, the suspended solid level is considered to be attributed to other external factors, rather than the contact works.

Actions taken/ to be taken:

As the suspended solid levels recorded beyond the water quality criteria were not related to contact works, no immediate actions are considered necessary.

Location Plan:



Reviewed by : Claudine Lee Title : ET Leader

Date : 7 November 2012

Copied to : Supervising Officer, IEC, EPD, Contractor

Contract No. HY/2011/03 -
Hong Kong- Zhuhai- Macao Bridge
Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities

Notifications of Environmental Quality Limits Exceedances Notification No.: 017

Date of Notification: 9 November 2012

Works Inspected: Data collected from water sampling works on 30 October 2012 and the test report was issued on 6 November 2012

Monitoring Location: Water Quality Monitoring Stations

Parameter: ~~Dissolved Oxygen (DO)~~/ Suspended Solids (SS)/ ~~Turbidity (TURB)~~

Action & Limit Level (AL & LL) / Measured Level:

PARAM	STATION	DEPTH	AL (mg/L)	LL (mg/L)	MEASURED AT MID-EBB TIDE (mg/L)	MEASURED AT MID-FLOOD TIDE (mg/L)
SS	IS5	DA	**23.5** or 120% of upstream control station's suspended solid at the same tide of the same day (i.e. CS(Mf)5: 11.17 x 120% =**13.4** mg/L for mid flood on 30-Oct-2012)	**34.4** or 130% of upstream control station's suspended solid at the same tide of the same day (i.e. CS(Mf)5: 11.17 x 130% =**14.5**mg/L for mid flood on 30-Oct-2012)	16.4	***13.7***
SS	IS7	DA			12.7	***15.4***
SS	IS8	DA			12.3	***15.2***
SS	IS(Mf)9	DA			8.2	***39.0***
SS	SR3	DA			15.4	***14.1***
SS	SR4	DA			10.7	***25.1***

Notes: ***Bold Italic*** means AL exceedance
Bold Italic with underline means LL exceedance

Possible reason for Action or Limit Level Non-compliance:

On 30 October 2012, exceedances of AL at stations IS5 and SR3 and exceedances of LL at stations IS7, IS8, IS(Mf)9 and SR4 were recorded during mid-flood tide. The exceedances have been investigated and are considered unlikely to be related to contact works due to the following reasons:

1. No major marine works were carried out near the monitoring stations. The geotextile installation work and rock filling were being carried out within the silt curtains during the sampling period.
2. The ranges of suspended solid at stations IS5, IS7, IS8, SR3 and SR4 during the baseline monitoring are shown as below:

Station	Range of Suspended Solid(mg/L)		
IS5	7.0	to	23.7
IS7	7.8	to	34.0
IS8	5.8	to	31.3
IS(Mf)9	7.3	to	26.0
SR3	7.6	to	28.0
SR4	5.6	to	24.5

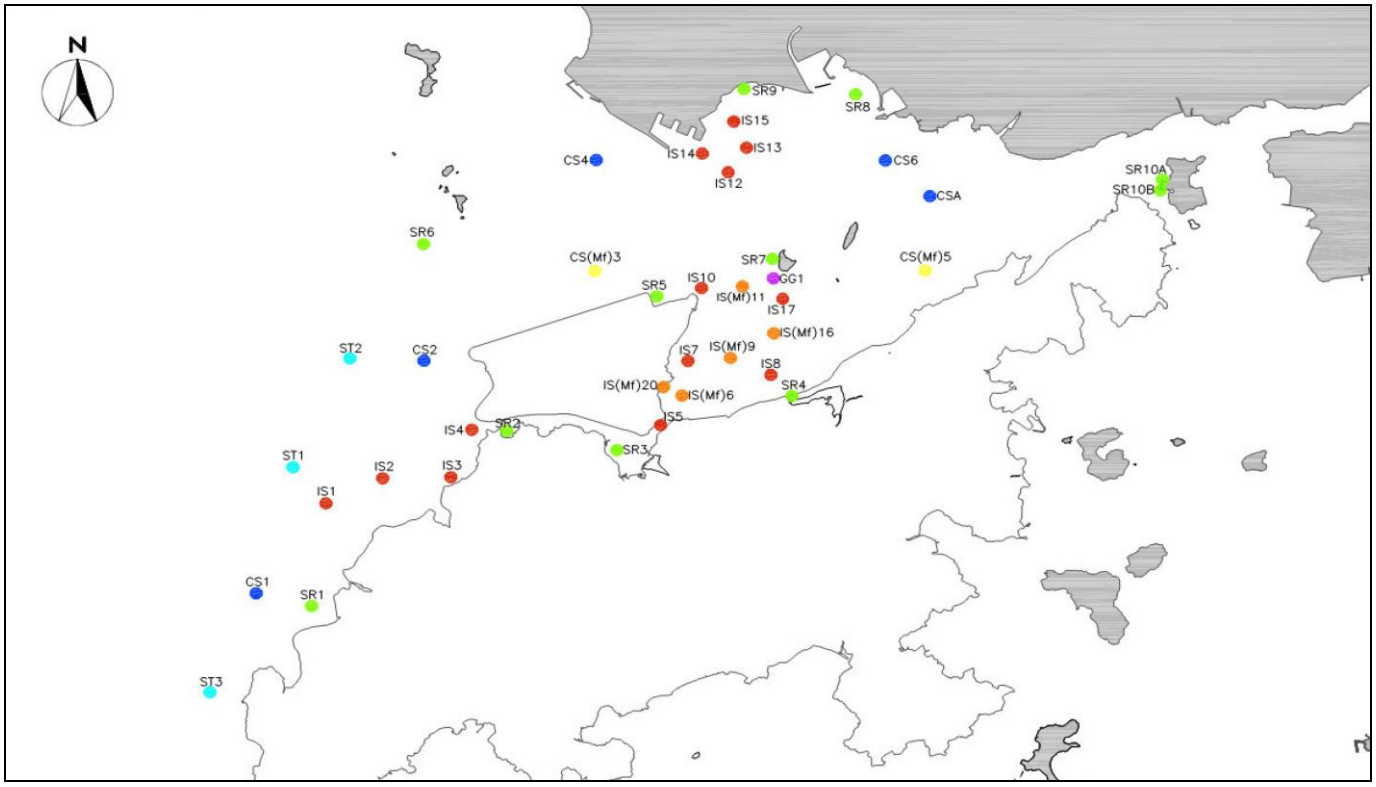
   The measured values during mid-flood tide at stations IS5, IS7, IS8, SR3 and SR4 were within the ranges of suspended solid during baseline monitoring. IS(Mf)9 is located at the upstream of the contact site area during the mid-flood tide. The high level of SS is not likely due to the contract construction activities.
3. There were no specific activities recorded during the monitoring period that would cause any significant impacts on the monitoring results.

As such, the suspended solid level is considered to be attributed to other external factors, rather than the contact works.

Actions taken/ to be taken:

As the suspended solid levels recorded beyond the water quality criteria were not related to contact works, no immediate actions are considered necessary.

Location Plan:



Reviewed by : Claudine Lee Title : ET Leader

Date : 9 November 2012

Copied to : Supervising Officer, IEC, EPD, Contractor

Contract No. HY/2011/03 -
Hong Kong- Zhuhai- Macao Bridge
Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities

Environmental Complaint/ Enquiry Form

Investigation No: 004

Complaint/ ~~Enquiry~~ Received*

Date: 22 Oct 2012 (Monday)
Time: 16:41
From: Mr T. T. NG of EPD
Via: E-mail ttng@epd.gov.hk

Complainant/ ~~Enquirer~~*:

Name: Undisclosed
Tel: Undisclosed
Address: Undisclosed
E-mail: Undisclosed

Complaint/ ~~Enquiry~~*:

Date of complaint/ enquiry:	22 October 2012 (Monday, non-public holiday / ~~public holiday~~)
Time of complaint/ enquiry:	10:25
Media:	~~Dust~~ ~~Noise~~ Water Quality ~~Other~~
Description:	An e-mail complaint was received from EPD on 22 October 2012, regarding the potential discharge of effluent into marine water in the vicinity of the construction site for the Hong Kong-Zhuhai-Macao Bridge project. The complainant also suspected that the pollutant would be oil spill.

Investigation Result & Response:

IEC and SO/SOR notified on: 22 October 2012

Result of investigation:

Based on the photos provided by the complainant and the information from the Contractor, the observation was not likely due to effluent discharge or oil spill. The pelican barge as shown in the photos provided on 24 Oct 2012 (Photos were taken at 12:00pm on 23 Oct 2012) does not belong to this Contract.

Recommendations/ mitigation measures/ actions if necessary:

As the observation is not related to this Contract. No follow up action is required. However the Contractor was reminded to implement necessary mitigation measures properly, and undertake regular environmental inspection and maintenance of machinery to avoid environmental pollution.

Reviewed by : Claudine Lee Title : ET Leader

Date : 31 October 2012

Copied to : Supervising Officer, IEC, EPD, Contractor

* Delete where appropriate