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HIGHWAYS DEPARTMENT
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.84 (September 2019)

15 October 2019

Revision 1

Main Contractor

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

Designer

ATKINS
Member of the SNC-Lavalin Group

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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/D for HKLR and EP-353/2009/K for HKBCF were issued on 22 December 2014 and 11 April 2016, respectively. These documents are available through the EIA Ordinance Register. The construction phase of Contract was commenced on 17 October 2012.

BMT Hong Kong 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 eighty-fourth Monthly EM&A report for the Contract which summarizes the monitoring results and audit findings of the EM&A programme during the reporting period from 1 to 30 September 2019.

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 during this reporting month is listed below:

1-hr TSP Monitoring	4, 10, 16, 20, 26 September 2019
24-hr TSP Monitoring	3, 9, 13, 19, 25, 30 September 2019
Noise Monitoring	4, 10, 16, 26 September 2019
Water Quality Monitoring	4, 6, 9, 11, 13, 16, 18, 20, 23, 25, 27 and 30 September 2019
Chinese White Dolphin Monitoring	4, 11, 17 and 23 September 2019
Site Inspection	4, 11, 18 and 27 September 2019
Mudflat Monitoring (Mudflat)	9, 10, 23, 25 September 2019
Mudflat Monitoring (Sedimentation Rate)	12 September 2019

As Strong Wind Signal, No. 3 /Standby Signal No.1 was hoisted on 2 September 2019. The water quality monitoring for both ebb and flood tides on 2 September 2019 were cancelled due to safety reason and no substitute monitoring was conducted.

Due to boat unavailability on 16, 25 September 2019, the dolphin monitoring on 16 September 2019 was rescheduled to 17 September 2019; and the dolphin monitoring on 25 September 2019 was rescheduled to 23 September 2019.

Due to weather condition and manpower allocation, the mudflat monitoring on 11, 12, 13 September 2019 were rescheduled to 10, 23, 25 September 2019.

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	0	0
	24-hr TSP	0	0
Noise	$L_{eq\ (30\ min)}$	0	0
Water Quality	Suspended solids level (SS)	2	0
	Turbidity level	0	0
	Dissolved oxygen level (DO)	0	0

Complaint Log

There was no complaint received in relation to the environmental impacts during this reporting month.

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 subsequent EM&A reports as required by the Updated EM&A Manual for HKLR (Version 1.0).

The proposal for the change of Action Level and Limit Level for suspended solid and turbidity was approved by EPD on 25 March 2013.

The revised Event and Action Plan for dolphin monitoring was approved by EPD on 6 May 2013.

The original monitoring station at IS(Mf)9 (Coordinate: 813273E, 818850N) was observed inside the perimeter silt curtain of Contract HY/2010/02 on 1 July 2013, as such the original impact water quality monitoring location at IS(Mf)9 was temporarily shifted outside the silt curtain. As advised by the Contractor of HY/2010/02 in August 2013, the perimeter silt curtain was shifted to facilitate safe anchorage zone of construction barges/vessels until end of 2013 subject to construction progress. Therefore, water quality monitoring station IS(Mf)9 was shifted to 813226E and 818708N since 1 July 2013. According to the water quality monitoring team's observation on 24 March 2014, the original monitoring location of IS(Mf)9 was no longer enclosed by the perimeter silt curtain of Contract HY/2010/02. Thus, the impact water quality monitoring works at the original monitoring location of IS(Mf)9 has been resumed since 24 March 2014.

Transect lines 1, 2, 7, 8, 9 and 11 for dolphin monitoring have been revised due to the obstruction of the permanent structures associated with the construction works of HKLR and the southern viaduct of TM-CLKL, as well as provision of adequate buffer distance from the Airport Restricted Areas. The EPD issued a memo and confirmed that they had no objection on the revised transect lines on 19 August 2015.

The water quality monitoring stations at IS10 (Coordinate: 812577E, 820670N) and SR5 (811489E, 820455N) are located inside Hong Kong International Airport (HKIA) Approach Restricted Areas. The previously granted Vessel's Entry Permit for accessing stations IS10 and SR5 were expired on 31 December 2016. During the permit renewing process, the water quality monitoring location was shifted to IS10(N) (Coordinate: 813060E, 820540N) and SR5(N) (Coordinate: 811430E, 820978N) on 2, 4 and 6 January 2017 temporarily. The permit has been granted by Marine Department on 6 January 2017. Thus, the impact water quality monitoring works at original monitoring location of IS10 and SR5 has been resumed since 9 January 2017.

Transect lines 2, 3, 4, 5, 6 and 7 for dolphin monitoring have been revised and transect line 24 has been added due to the presence of a work zone to the north of the airport platform with intense construction activities in association with the construction of the third runway expansion for the Hong Kong International Airport. The EPD issued a memo and confirmed that they had no objection on the revised transect lines on 28 July 2017. The alternative dolphin transect lines are adopted starting from August's dolphin monitoring.

A new water quality monitoring team has been employed for carrying out water quality monitoring work for the Contract starting from 23 August 2017. Due to marine work of the Expansion of Hong Kong International Airport into a Three-Runway System (3RS Project), original locations of water quality monitoring stations CS2, SR5 and IS10 are enclosed by works boundary of 3RS Project. Alternative impact water quality monitoring stations, naming as CS2(A), SR5(N) and IS10(N) was approved on 28 July 2017 and were adopted starting from 23 August 2017 to replace the original locations of water quality monitoring for the Contract.

The role and responsibilities as the ET Leader of the Contract was temporarily taken up by Mr Willie Wong instead of Ms Claudine Lee from 25 September 2017 to 31 December 2017.

Water quality monitoring station SR10A(N) (Coordinate: 823644E, 823484N) was unreachable on 4 October 2017 during flood tide as fishing activities were observed. As such, the water monitoring at station SR10A(N) was conducted at Coordinate: 823484E, 823593N during flood tide on 4 October 2017 temporarily.

The topographical condition of the water monitoring stations SR3 (Coordinate: 810525E, 816456N), SR4 (Coordinate: 814760E, 817867N), SR10A (Coordinate: 823741E, 823495N) and SR10B (Coordinate: 823686E, 823213N) cannot be accessed safely for undertaking water quality monitoring. The water quality monitoring has been temporarily conducted at alternative stations, namely SR3(N) (Coordinate 810689E, 816591N), SR4(N) (Coordinate: 814705E, 817859N) and SR10A(N) (Coordinate: 823644E, 823484N) since 1 September 2017. The water quality monitoring at station SR10B was temporarily conducted at Coordinate: 823683E, 823187N on 1, 4, 6, 8 September 2017 and has been temporarily fine-tuned to alternative station SR10B(N2) (Coordinate: 823689E, 823159N) since 11 September 2017. Proposal for permanently relocating the aforementioned stations was approved by EPD on 8 January 2018.

The works area WA5 was handed over to other party on 22 June 2013.

According to latest information received in July 2018, the works area WA7 was handed over to other party on 28 February 2018 instead of 31 January 2018.

Original WQM stations IS8 and SR4(N) are located within the active work area of TCNTE project and the access to the WQM stations IS8 (Coordinate: E814251, N818412) and SR4(N) (Coordinate: E814705, N817859) are blocked by the silt curtains of the Tung Chung New Town Extension (TCNTE) project. Alternative monitoring stations IS8(N) (Coordinate: E814413, N818570) and SR4(N2) (Coordinate: E814688, N817996) are proposed to replace the original monitoring stations IS8 and SR4(N). Proposal for permanently relocating the aforementioned stations was approved by EPD on 20 August 2019. The water quality monitoring has been conducted at stations IS8(N) and SR4(N2) on 21 August 2019.

There were no marine works conducted by Contract No. HY/2011/03 since July 2019. A proposal for temporary suspension of marine related environmental monitoring (water quality monitoring and dolphin monitoring for the Contract No. HY/2011/03) was justified by the ET leader and verified by IEC in mid of September 2019 and it was approved by EPD on 24 September 2019. Water quality monitoring and dolphin monitoring for the Contract will not be conducted starting from 1 October 2019 until marine works (i.e. toe loading removal works) be resumed. As discussed with Contract No. HY/2012/08, they will take up the survey works staring from 1 October 2019 and continue the dolphin monitoring.

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:

- Landscaping works at Portion X and Airport Road;
- E&M works at Portion X and Airport Road;
- Works for Diversion of Airport Road;
- Establishment of Site Access at Airport Road / Airport Express Line/ East Coast Road;

- Finishing Works for Highway Operation and Maintenance Area Building at Portion X; and
- Finishing Works for Scenic Hill Tunnel West Portal Ventilation building 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/D for HKLR and EP-353/2009/K for HKBCF were issued on 22 December 2014 and 11 April 2016, respectively. These documents are available through the EIA Ordinance Register. The construction phase of Contract was commenced on 17 October 2012. The works area WA7 was handed over to other party on 28 February 2018. **Figure 1.1** shows the project site boundary. The works areas are shown in **Appendix O**.

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 eighty-fourth Monthly EM&A report for the Contract which summarizes the monitoring results and audit findings of the EM&A programme during the reporting period from 1 to 30 September 2019.

1.1.6 BMT Hong Kong 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. Ramboll Hong Kong Limited 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)	(Chief Resident Engineer, CRE)	Jackson Wong	3968 4802	2109 1882
Environmental Project Office / Independent Environmental Checker (Ramboll Hong Kong Limited)	Environmental Project Office Leader	Y. H. Hui	3465 2888	3465 2899
	Independent Environmental Checker	Ray Yan	3465 2888	3465 2899
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 Hong Kong Limited)	Environmental Team Leader	Claudine Lee	2241 9847	2815 3377
24 hours complaint hotline	---	---	5699 5730	---

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

Description of Activities	Site Area
Loading and unloading of fill materials	Portion X
Landscaping works	Portion X and Airport Road
Works for diversion	Airport Road
Establishment of Site Access	Airport Road / Airport Express Line/ East Coast Road
E&M works	Airport Road
Finishing works for Highway Operation and Maintenance Area Building	Portion X
Finishing works for Scenic Hill Tunnel West Portal Ventilation building	West Portal

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 two 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 are 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/m³	Limit Level, µg/m³
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/m³	Limit Level, µg/m³
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 Indicator (Model No. LD-5R)
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 was provided.

(iv) No furnace or incinerator flues are 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 aluminium 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 hours, 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 September 2019 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 and relevant graphical plots are presented in **Appendix E**.

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

Monitoring Station	Average (μg/m³)	Range (μg/m³)	Action Level (μg/m³)	Limit Level (μg/m³)
AMS5	35	8 - 67	352	500
AMS6	35	11 - 84	360	500

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

Monitoring Station	Average (μg/m³)	Range (μg/m³)	Action Level (μg/m³)	Limit Level (μg/m³)
AMS5	62	22 - 113	164	260
AMS6	58	20 - 114	173	260

2.7.2 No Action and Limit Level exceedances of 1-hr TSP and 24-hr TSP were recorded at stations AMS5 and AMS6 during the reporting month. The event action plan is annexed in **Appendix F**.

2.7.3 On-site wind meter was irreparably damaged and the wind data could not be retrieved since August 2019. As the wind data could not be monitored, the wind data during this reporting month were reference to the wind data obtained from Hong Kong Observatory's Chek Lap Kok weather station. The wind data obtained from Chek Lap Kok weather station are shown in **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 hours 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 meters 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 4231

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

(d) 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.

(e) 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.

(f) 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.

(g) 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 September 2019 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 results and relevant graphical plots are 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	60	57 – 62	75

*A correction factor of +3dB(A) from free field to facade measurement was included.

3.7.2 There were no Action and Limit Level exceedances for noise during daytime on normal weekdays of the reporting month.

3.7.3 Major noise sources during the noise monitoring included aircraft/helicopter noise and nearby construction activities by other parties.

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 is detected, and that timely action is 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. The ET proposed to amend the Acton Level and Limit Level for turbidity and suspended solid and EPD approved ET's proposal on 25 March 2013. Therefore, Action Level and Limit Level for the Contract have been changed since 25 March 2013.

4.1.2 The original and revised Action Level and Limit Level for turbidity and suspended solid are shown in **Table 4.1**.

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; The action level has been amended to "27.5 ***and*** 120% of upstream control station's turbidity at the same tide of the same day" since 25 March 2013.	47.0 or 130% of turbidity at the upstream control station at the same tide of same day; The limit level has been amended to "47.0 ***and*** 130% of turbidity at the upstream control station at the same tide of same day" since 25 March 2013.
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; The action level has been amended to "23.5 ***and*** 120% of upstream control station's SS at the same tide of the same day" since 25 March 2013.	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; The limit level has been amended to "34.4 ***and*** 130% of SS at the upstream control station at the same tide of same day and 10mg/L for Water Services Department Seawater Intakes" since 25 March 2013

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) The change to the Action and limit Levels for Water Quality Monitoring for the EM&A works was approved by EPD on 25 March 2013.

4.2 Monitoring Equipment

4.2.1 **Table 4.2** summarizes 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 6820
Positioning Equipment	JRC DGPS 224 Model JLR-4341 with J-NAV 500 Model NWZ4551
Water Depth Detector	Eagle Cuda-168 and Lowrance x-4
Water Sampler	Kahlsio Water Sampler (Vertical) 2.2 L with messenger

4.3 Monitoring Parameters, Frequency and Duration

4.3.1 **Table 4.3** summarizes 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(N), IS(Mf)9 & IS10(N) Control/Far Field Stations: CS2(A) & CS(Mf)5, Sensitive Receiver Stations: SR3(N), SR4(N2), SR5(N), SR10A(N) & SR10B(N2)	• Depth, m • Temperature, °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).

Remark:
1) Original WQM stations IS8 and SR4(N) are located within the active work area of TCNTE project and the access to the WQM stations IS8 (Coordinate: E814251, N818412) and SR4(N) (Coordinate: E814705, N817859) are blocked by the silt curtains of the Tung Chung New Town Extension (TCNTE) project. Alternative monitoring stations IS8(N) (Coordinate: E814413, N818570) and SR4(N2) (Coordinate: E814688, N817996) were proposed to replace the original monitoring stations IS8 and SR4(N). Proposal for permanently relocating the aforementioned stations was approved by EPD on 20 August 2019. The water quality monitoring has been conducted at stations IS8(N) and SR4(N2) since 21 August 2019.

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 A new water quality monitoring team has been employed for carrying out water quality monitoring work for the Contract starting from 23 August 2017. Due to marine work of the Expansion of Hong Kong International Airport into a Three-Runway System (3RS Project), original locations of water quality monitoring stations CS2, SR5 and IS10 are enclosed by works boundary of 3RS Project. Alternative impact water quality monitoring stations, naming as CS2(A), SR5(N) and IS10(N) was approved on 28 July 2017 and were adopted starting from 23 August 2017 to replace the original locations of water quality monitoring for the Contract.

4.4.3 The topographical condition of the water monitoring stations SR3(N) (Coordinate: 810525E, 816456N), SR4(N) (Coordinate: 814760E, 817867N), SR10A(N) (Coordinate: 823741E, 823495N) and SR10B(N2) (Coordinate: 823686E, 823213N) cannot be accessed safely for undertaking water quality monitoring. The water quality monitoring has been temporarily conducted at alternative stations, namely SR3(N) (Coordinate 810689E, 816591N), SR4(N) (Coordinate: 814705E, 817859N) and SR10A(N) (Coordinate: 823644E, 823484N) since 1 September 2017. The water quality monitoring at station SR10B was temporarily conducted at Coordinate: 823683E, 823187N on 1, 4, 6, 8 September 2017 and has been temporarily fine-tuned to alternative station SR10B(N2) (Coordinate: 823689E, 823159N) since 11 September 2017. Proposal for permanently relocating the aforementioned stations was approved by EPD on 8 January 2018.

4.4.4 Original WQM stations IS8 and SR4(N) are located within the active work area of TCNTE project and the access to the WQM stations IS8 (Coordinate: E814251, N818412) and SR4(N) (Coordinate: E814705, N817859) are blocked by the silt curtains of the Tung Chung New Town Extension (TCNTE) project. Alternative monitoring stations IS8(N) (Coordinate: E814413, N818570) and SR4(N2) (Coordinate: E814688, N817996) were proposed to replace the original monitoring stations IS8 and SR4(N). Proposal for permanently relocating the aforementioned stations was approved by EPD on 20 August 2019. The water quality monitoring has been conducted at stations IS8(N) and SR4(N2) since 21 August 2019.

4.4.5 The locations of water quality monitoring stations during the reporting period are summarized in **Table 4.4** and shown 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(N)	Impact Station (Close to HKBCF construction site)	814413	818570
IS(Mf)9	Impact Station (Close to HKBCF construction site)	813273	818850
IS10(N)	Impact Station (Close to HKBCF construction site)	812942	820881
SR3(N)	Sensitive receivers (San Tau SSSI)	810689	816591
SR4(N2)	Sensitive receivers (Tai Ho Inlet)	814688	817996

Monitoring Stations	Description	Coordinates	
		Easting	Northing
SR5(N)	Sensitive Receivers (Artificial Reef in NE Airport)	812569	821475
SR10A(N)	Sensitive receivers (Ma Wan Fish Culture Zone)	823644	823484
SR10B(N2)	Sensitive receivers (Ma Wan Fish Culture Zone)	823689	823159
CS2(A)	Control Station (Mid-Ebb)	805232	818606
CS(Mf)5	Control Station (Mid-Flood)	817990	821129

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°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 ALS Technichem (HK) Pty 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 September 2019 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 and relevant graphical plots are provided in **Appendix E**.

4.7.2 Water quality impact sources during water quality monitoring were nearby construction activities by other parties and nearby operating vessels by other parties.

4.7.3 For marine water quality monitoring, no Action Level and Limit Level exceedances of dissolved oxygen level and turbidity level were recorded during the reporting month. No Limit Level exceedances of suspended solid level were recorded during the reporting month.

4.7.4 On 30 September 2019, an Action Level exceedance of suspended solid was recorded at station IS10(N) during mid-ebb tide and an Action Level exceedance of suspended solid was recorded at station SR5(N) during mid-flood tide.

4.7.5 Number of exceedances recorded during the reporting month at each impact station are summarized 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	--	--	--	--	--	--	--	--	0	0
	Limit Level	--	--	--	--	--	--	--	--	0	0
IS(Mf)6	Action Level	--	--	--	--	--	--	--	--	0	0
	Limit Level	--	--	--	--	--	--	--	--	0	0
IS7	Action Level	--	--	--	--	--	--	--	--	0	0
	Limit Level	--	--	--	--	--	--	--	--	0	0
IS8(N)	Action Level	--	--	--	--	--	--	--	--	0	0
	Limit Level	--	--	--	--	--	--	--	--	0	0
IS(Mf)9	Action Level	--	--	--	--	--	--	--	--	0	0
	Limit Level	--	--	--	--	--	--	--	--	0	0
IS10(N)	Action Level	30 Sep 2019	--	--	--	--	--	--	--	1	0
	Limit Level	--	--	--	--	--	--	--	--	0	0
SR3(N)	Action Level	--	--	--	--	--	--	--	--	0	0
	Limit Level	--	--	--	--	--	--	--	--	0	0
SR4(N2)	Action Level	--	--	--	--	--	--	--	--	0	0
	Limit Level	--	--	--	--	--	--	--	--	0	0
SR5(N)	Action Level	--	30 Sep 2019	--	--	--	--	--	--	0	1
	Limit Level	--	--	--	--	--	--	--	--	0	0
SR10A(N)	Action Level	--	--	--	--	--	--	--	--	0	0
	Limit Level	--	--	--	--	--	--	--	--	0	0
SR10B(N2)	Action Level	--	--	--	--	--	--	--	--	0	0
	Limit Level	--	--	--	--	--	--	--	--	0	0
Total	**Action**	0	0	0	0	0	0	0	0	2**	
	Limit	0	0	0	0	0	0	0	0	0**	

Notes:
S: Surface;
M: Mid-depth;
** The total number of exceedances

4.7.6 Land-based work including landscaping works at Zone 1 and Zone 3 were carried out on 30 September 2019. No wastewater was discharged from work areas of this Contract to the open water on 30 September 2019. It is also noted that exceedances were not recorded at stations IS5, IS(Mf)6 and IS7 which are located close to the site boundary of this Contract. As confirmed by the Contractor of this Contract, there were no marine based works and no marine transportation in the vicinity of stations IS10(N) and SR5(N) which are located far away the site boundary of this Contract (over 1.5 km).

4.7.7 Water appearance was observed clear at stations IS10(N) and SR5(N) during sampling exercise. No silt plume was observed in the vicinity of stations IS10(N) and SR5(N) during the sampling exercise. Also, no abnormity or malpractice for the contract works was observed during the sampling exercise

4.7.8 There were no specific activities recorded during the monitoring period that would cause any significant impacts on the monitoring results. As such, the exceedances of suspended solid level are considered to be attributed to other external factors such as sea condition, rather than the contract works. Therefore, the exceedances were considered as non-contract related. Records of "Notification of Environmental Quality Limit Exceedances" are provided in **Appendix N.**

4.7.9 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.

5.1.2 The Action Level and Limit Level for dolphin monitoring are shown in **Table 5.1**.

Table 5.1 Action and Limit Levels for Dolphin Monitoring

	North Lantau Social Cluster	
	NEL	NWL
Action Level	STG < 4.2 & ANI < 15.5	STG < 6.9 & ANI < 31.3
Limit Level	(STG < 2.4 & ANI < 8.9) and (STG < 3.9 & ANI < 17.9)	

Remarks:

1. STG means quarterly encounter rate of number of dolphin sightings.
2. ANI means quarterly encounter rate of total number of dolphins.
3. For North Lantau Social Cluster, AL will be trigger if either NEL **or** NWL fall below the criteria; LL will be triggered if both NEL **and** NWL fall below the criteria.

5.1.3 The revised Event and Action Plan for dolphin Monitoring was approved by EPD in 6 May 2013. The revised Event and Action Plan is annexed in **Appendix F.**

5.2 Monitoring Methodology

Vessel-based Line-transect Survey

5.2.1 According to the requirement of the updated EM&A manual, dolphin monitoring programme should cover all transect lines in NEL and NWL survey areas (see **Figure 1 of Appendix H**) twice per month throughout the entire construction period. The co-ordinates of all transect lines are shown in **Table 5.2**. The coordinates of several starting and ending points have been revised due to the presence of a work zone to the north of the airport platform with intense construction activities in association with the construction of the third runway expansion for the Hong Kong International Airport. The EPD issued a memo and confirmed that they had no objection on the revised transect lines on 28 July 2017, and the revised coordinates are in red and marked with an asterisk in **Table 5.2**.

Table 5.2 Co-ordinates of Transect Lines

Line No.		Easting	Northing		Line No.		Easting	Northing
1	Start Point	804671	815456		13	Start Point	816506	819480
1	End Point	804671	831404		13	End Point	816506	824859
2	Start Point	805476	820800*		14	Start Point	817537	820220
2	End Point	805476	826654		14	End Point	817537	824613
3	Start Point	806464	821150*		15	Start Point	818568	820735
3	End Point	806464	822911		15	End Point	818568	824433
4	Start Point	807518	821500*		16	Start Point	819532	821420
4	End Point	807518	829230		16	End Point	819532	824209
5	Start Point	808504	821850*		17	Start Point	820451	822125
5	End Point	808504	828602		17	End Point	820451	823671

Line No.		Easting	Northing		Line No.		Easting	Northing
6	Start Point	809490	822150*		18	Start Point	821504	822371
6	End Point	809490	825352		18	End Point	821504	823761
7	Start Point	810499	822000*		19	Start Point	822513	823268
7	End Point	810499	824613		19	End Point	822513	824321
8	Start Point	811508	821123		20	Start Point	823477	823402
8	End Point	811508	824254		20	End Point	823477	824613
9	Start Point	812516	821303		21	Start Point	805476	827081
9	End Point	812516	824254		21	End Point	805476	830562
10	Start Point	813525	821176		22	Start Point	806464	824033
10	End Point	813525	824657		22	End Point	806464	829598
11	Start Point	814556	818853		23	Start Point	814559	821739
11	End Point	814556	820992		23	End Point	814559	824768
12	Start Point	815542	818807		24*	Start Point	805476*	815900*
12	End Point	815542	824882		24*	End Point	805476*	819100*

Note:
Co-ordinates in red and marked with asterisk are revised co-ordinates of transect line.

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 20 years of marine mammal monitoring surveys in Hong Kong developed by HKCRP (see Hung 2017). For each monitoring vessel survey, a 15-m inboard vessel 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 Two experienced observers (a data recorder and a primary observer) made up the on-effort survey team, and the survey vessel transited different transect lines at a constant speed of 13-15 km per hour. The data recorder searched with unaided eyes and filled out the datasheets, while the primary observer searched for dolphins and porpoises continuously through 7 x 50 *Fujinon* marine binoculars. Both observers searched the sea ahead of the vessel, between 270^{o} and 90^{o} (in relation to the bow, which is defined as 0^{o}). One to two additional experienced observers were available on the boat to work in shift (i.e. rotate every 30 minutes) in order to minimize fatigue of the survey team members. All observers were experienced in small cetacean survey techniques and identifying local cetacean species.

5.2.4 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 traveled in each series (a continuous period of search effort) with the assistance of a handheld GPS (*Garmin eTrex Legend*).

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

5.2.6 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.

5.2.7 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 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, both primary and secondary survey effort were presented as on-effort survey effort in this report.

5.2.8 Encounter rates of Chinese white dolphins (number of on-effort sightings per 100 km of survey effort and number of dolphins from all 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

5.2.9 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.

5.2.10 A professional digital camera (*Canon* EOS 7D model), 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.

5.2.11 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.

5.2.12 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).

5.2.13 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.

5.3 Monitoring Results

Vessel-based Line-transect Survey

5.3.1 During the month of September 2019, two sets of systematic line-transect vessel surveys were conducted on the 4th, 11th, 17th and 23rd to cover all transect lines in NWL and NEL survey areas twice. The survey routes of each survey day are presented in **Figures 2 to 5 of Appendix H**.

5.3.2 From these surveys, a total of 267.91 km of survey effort was collected with 98.8% 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**).

5.3.3 Among the two survey areas, 99.40 km and 168.51 km of survey effort were collected from NEL and NWL survey areas respectively. Moreover, the total survey effort conducted on primary lines was 193.93 km, while the effort on secondary lines was 73.98 km.

5.3.4 During the two sets of monitoring surveys in September 2019, two groups of five Chinese White Dolphins were sighted (**Annex II of Appendix H**). Both dolphin sightings were made in NWL, while none was sighted in NEL.

5.3.5 Notably, one of the two dolphin groups was sighted on primary line during on-effort search. Both dolphin groups were not associated with any operating fishing vessel (**Annex II of Appendix H**).

5.3.6 Distribution of the dolphin sightings made in September 2019 is shown in **Figure 6 of Appendix H**. The two dolphin groups were sighted near Black Point and to the west of Sha Chau respectively (**Figure 6 of Appendix H).**

5.3.7 During the September's surveys, encounter rates of Chinese White Dolphins deduced from the survey effort and on-effort sighting data made under favourable conditions (Beaufort 3 or below) are shown in **Tables 5.3 and 5.4**.

5.3.8 The average dolphin group size in September 2019 was 2.5 individuals per group (with two groups of five animals in total), which was slightly lower than the averages in previous monitoring months. Both groups were quite small with two and three animals only respectively **(Annex II of Appendix H**).

Table 5.3 Individual Survey Event Encounter Rates

		Encounter rate (STG) (no. of on-effort dolphin sightings per 100 km of survey effort)	**Encounter rate (ANI)** (no. of dolphins from all on-effort sightings per 100 km of survey effort)
		Primary Lines Only	**Primary Lines Only**
NEL	Set 1: September 4th / 11th	0.0	0.0
	Set 2: September 17th / 23rd	0.0	0.0
NWL	Set 1: September 4th / 11th	1.6	3.3
	Set 2: September 17th / 23rd	0.0	0.0

Remark:
1. Dolphin Encounter Rates Deduced from the Two Sets of Surveys in September 2019 in Northeast Lantau (NEL) and Northwest Lantau (NWL).

Table 5.4 Monthly Average Encounter Rates

	Encounter rate (STG) (no. of on-effort dolphin sightings per 100 km of survey effort)		**Encounter rate (ANI)** (no. of dolphins from all on-effort sightings per 100 km of survey effort)	
	Primary Lines Only	**Both Primary and Secondary Lines**	**Primary Lines Only**	**Both Primary and Secondary Lines**
Northeast Lantau	0.0	0.0	0.0	0.0
Northwest Lantau	0.8	1.2	1.7	3.0

Remark:
1. Overall dolphin encounter rates (sightings per 100 km of survey effort) from the surveys conducted in September 2019 on primary lines only as well as both primary lines and secondary lines in Northeast and Northwest Lantau).

Photo-identification Work

5.3.9 Only three of the five dolphins sighted during the monitoring month were identified as known individual dolphin from the photo-identification catalogue (**Annexes III and IV of Appendix H**). Two of them (NL202 and NL286) were a mother-calf pair that have been sighted many times in previous monitoring surveys throughout the HKLR03 construction period.

Conclusion

5.3.10 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.

5.4 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. 2017. Monitoring of Marine Mammals in Hong Kong waters: final report (2016-17). An unpublished report submitted to the Agriculture, Fisheries and Conservation Department, 162 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 Mudflat Monitoring

6.1 Sedimentation Rate Monitoring

Methodology

6.1.1 To avoid disturbance to the mudflat and nuisance to navigation, no fixed marker/monitoring rod was installed at the monitoring stations. A high precision Global Navigation Satellite System (GNSS) real time location fixing system (or equivalent technology) was used to locate the station in the precision of 1mm, which is reasonable under flat mudflat topography with uneven mudflat surface only at micro level. This method has been used on Agricultural Fisheries and Conservation Department's (AFCD) project, namely Baseline Ecological Monitoring Programme for the Mai Po Inner Deep Bay Ramsar Site for measurement of seabed levels.

6.1.2 Measurements were taken directly on the mudflat surface. The Real Time Kinematic GNSS (RTK GNSS) surveying technology was used to measure mudflat surface levels and 3D coordinates of a survey point. The RTK GNSS survey was calibrated against a reference station in the field before and after each survey. The reference station is a survey control point established by the Lands Department of the HKSAR Government or traditional land surveying methods using professional surveying instruments such as total station, level and/or geodetic GNSS. The coordinates system was in HK1980 GRID system. For this contract, the reference control station was surveyed and established by traditional land surveying methods using professional surveying instruments such as total station, level and RTK GNSS. The accuracy was down to mm level so that the reference control station has relatively higher accuracy. As the reference control station has higher accuracy, it was set as true evaluation relative to the RTK GNSS measurement. All position and height correction were adjusted and corrected to the reference control station. Reference station survey result and professional land surveying calibration is shown as **Table 6.1**:

Table 6.1 Reference Station Survey result and GNSS RTK calibration result of Round 1

Reference Station	Easting (m)	Northing (m)	Baseline reference elevation (mPD) (A)	Round 1 Survey (mPD) (B)	Calibration Adjustment (B-A)
T1	811248.660mE	816393.173mN	3.840	3.817	-0.023
T2	810806.297mE	815691.822mN	4.625	4.653	+0.028
T3	810778.098mE	815689.918mN	4.651	4.660	+0.009
T4	810274.783mE	816689.068mN	2.637	2.709	+0.072

6.1.3 The precision of the measured mudflat surface level reading (vertical precision setting) was within 10 mm (standard deviation) after averaging the valid survey records of the XYZ HK1980 GRID coordinates. Each survey record at each station was computed by averaging at least three measurements that are within the above specified precision setting. Both digital data logging and written records were collected in the field. Field data on station fixing and mudflat surface measurement were recorded.

Monitoring Locations

6.1.4 Four monitoring stations were established based on the site conditions for the sedimentation monitoring and are shown in **Figure 6.1**.

Monitoring Results

6.1.5 The baseline sedimentation rate monitoring was in September 2012 and impact sedimentation rate monitoring was undertaken on 12 September 2019. The mudflat surface levels at the four established monitoring stations and the corresponding XYZ HK1980 GRID coordinates are presented in **Table 6.2 and Table 6.3.**

Table 6.2 Measured Mudflat Surface Level Results

	Baseline Monitoring (September 2012)			Impact Monitoring (September 2019)		
Monitoring Station	Easting (m)	Northing (m)	Surface Level (mPD)	Easting (m)	Northing (m)	Surface Level (mPD)
S1	810291.160	816678.727	0.950	810291.144	816678.726	1.118
S2	810958.272	815831.531	0.864	810958.295	815831.522	0.970
S3	810716.585	815953.308	1.341	810716.578	815953.313	1.486
S4	811221.433	816151.381	0.931	811221.460	816151.363	1.139

Table 6.3 Comparison of measurement

	Comparison of measurement			Remarks and Recommendation
Monitoring Station	Easting (m)	Northing (m)	Surface Level (mPD)	
S1	-0.016	-0.001	0.168	Level continuously increased
S2	0.023	-0.009	0.106	Level continuously increased
S3	-0.007	0.005	0.145	Level continuously increased
S4	0.027	-0.018	0.208	Level continuously increased

6.1.6 This measurement result was generally and relatively higher than the baseline measurement at S1, S2, S3 and S4. The mudflat level is continuously increased.

6.2 Water Quality Monitoring

6.2.1 The mudflat monitoring covered water quality monitoring data. Reference was made to the water quality monitoring data of the representative water quality monitoring station (i.e. SR3(N)) as in the EM&A Manual. The water quality monitoring location (SR3(N)) is shown in **Figure 2.1**.

6.2.2 Impact water quality monitoring in San Tau (monitoring station SR3(N)) was conducted in September 2019. The monitoring parameters included dissolved oxygen (DO), turbidity and suspended solids (SS).

6.2.3 The Impact monitoring results for SR3(N) were extracted and summarised below:

Table 6.4 Impact Water Quality Monitoring Results (Depth Average)

Date	Mid Ebb Tide			Mid Flood Tide		
	DO (mg/L)	Turbidity (NTU)	SS (mg/L)	DO (mg/L)	Turbidity (NTU)	SS (mg/L)
02-Sep-2019	(See remark 1)	(See remark 1)	(See remark 1)	(See remark 1)	(See remark 1)	(See remark 1)
04-Sep-2019	5.9	7.4	8.0	6.3	7.2	7.8
06-Sep-2019	5.4	1.5	3.7	6.4	5.5	9.7
09-Sep-2019	10.4	2.5	4.5	6.5	4.3	9.8
11-Sep-2019	8.1	5.5	4.5	6.1	1.5	3.9
13-Sep-2019	6.9	7.4	3.7	5.9	1.8	1.9
16-Sep-2019	5.4	10.2	9.5	5.9	8.4	9.2
18-Sep-2019	5.0	7.1	9.3	5.9	9.5	8.2
20-Sep-2019	5.7	5.8	12.7	6.0	5.4	11.9
23-Sep-2019	5.8	2.5	6.3	6.2	3.5	5.2
25-Sep-2019	6.7	9.2	5.9	6.3	15.5	19.6
27-Sep-2019	6.4	6.3	10.0	6.0	4.1	6.0
30-Sep-2019	5.9	2.3	9.0	6.0	2.4	6.7
Average	6.5	5.6	7.2	6.1	5.7	8.3

6.3 Mudflat Ecology Monitoring Methodology

Sampling Zone

6.3.1 In order to collect baseline information of mudflats in the study site, the study site was divided into three sampling zones (labeled as TC1, TC2, TC3) in Tung Chung Bay and one zone in San Tau (labeled as ST) (**Figure 2.1 of Appendix I**). The horizontal shoreline of sampling zones TC1, TC2, TC3 and ST were about 250 m, 300 m, 300 m and 250 m, respectively (**Figure 2.2 of Appendix I**). Survey of horseshoe crabs, seagrass beds and intertidal communities were conducted in every sampling zone. The present survey was conducted in September 2019 (totally 4 sampling days on 9th, 10th, 23th and 25th September 2019).

6.3.2 Since the field survey of June 2016, increasing number of trashes and even big trashes (**Figure 2.3 of Appendix I**) were found in every sampling zone. It raised a concern about the solid waste dumping and current-driven waste issues in Tung Chung Way. Respective measures (e.g. manual clean-up) should be implemented by responsible governmental agency units.

Horseshoe Crabs

6.3.3 Active search method was adopted for horseshoe crab monitoring by two experienced surveyors in every sampling zone. During the search period, any accessible and potential area would be investigated for any horseshoe crab individuals within 2-3 hour of low tide period (tidal level below 1.2 m above Chart Datum (C.D.)). Once a horseshoe crab individual was found, the species was identified referencing to Li (2008). The prosomal width, inhabiting substratum and respective GPS coordinate were recorded. A photographic record was taken for future investigation. Any grouping behavior of individuals, if found, was recorded. The horseshoe crab surveys were conducted on 9th, 10th, 23th and 25th September 2019, which were hot and humid days.

6.3.4 In June 2017, a big horseshoe crab was tangled by a trash gill net in ST mudflat (**Figure 2.3 of Appendix I**). It was released to sea once after photo recording. The horseshoe crab of such size should be inhabiting sub-tidal environment while it forages on intertidal shore occasionally during high tide period. If it is tangled by the trash net for few days, it may die due to starvation or overheat during low tide period. These trash gill nets are definitely 'fatal trap' for the horseshoe crabs and other marine life. Manual clean-up should be implemented as soon as possible by responsible units.

Seagrass Beds

6.3.5 Active search method was adopted for seagrass bed monitoring by two experienced surveyors in every sampling zone. During the search period, any accessible and potential area would be investigated for any seagrass beds within 2-3 hours of low tide period. Once seagrass bed was found, the species, estimated area, estimated coverage percentage and respective GPS coordinates were recorded. The seagrass beds surveys were conducted on 9th (for ST), 10th (for TC2), 23th (for TC1) and 25th (for TC3) September 2019 which were hot and humid days.

Intertidal Soft Shore Communities

6.3.6 The intertidal soft shore community surveys were conducted in low tide period on 9th (for ST), 10th (for TC2), 23th (for TC1) and 25th (for TC3) September 2019. In every sampling zone, three 100m horizontal transect lines were laid at high tidal level (H: 2.0m above C.D.), mid tidal level (M: 1.5m above C.D.) and low tidal level (L: 1.0m above C.D.). Along every horizontal transect line; ten random quadrats (0.5 m x 0.5m) were placed.

6.3.7 Inside a quadrat, any visible epifauna was collected and was in-situ identified to the lowest practical taxonomical resolution. Whenever possible a hand core sample (10 cm internal diameter × 20 cm depth) of sediments was collected in the quadrat. The core sample was gently washed through a sieve of mesh size 2.0 mm in-situ. Any visible infauna was collected and identified. Finally, the top 5 cm surface sediment was dug for visible infauna in the quadrat regardless of hand core sample was taken.

6.3.8 All collected fauna were released after recording except some tiny individuals that were too small to be identified on site. These tiny individuals were taken to laboratory for identification under dissecting microscope.

6.3.9 The taxonomic classification was conducted in accordance to the following references: Polychaetes: Fauchald (1977), Yang and Sun (1988); Arthropods: Dai and Yang (1991), Dong (1991); Mollusks: Chan and Caley (2003), Qi (2004), AFCD (2018).

Data Analysis

6.3.10 Data collected from direct counting and core sampling was pooled in every quadrat for data analysis. Shannon-Weaver Diversity Index (H') and Pielou's Species Evenness (J) were calculated for every quadrat using the formulae below,

$H' = -\Sigma (Ni / N) \ln (Ni / N)$ (Shannon and Weaver, 1963)
$J = H' / \ln S$, (Pielou, 1966)

where S is the total number of species in the sample, N is the total number of individuals, and Ni is the number of individuals of the i^{th} species.

6.4 Event and Action Plan for Mudflat Monitoring

6.4.1 In the event of the impact monitoring results indicating that the density or the distribution pattern of intertidal fauna and seagrass is found to be significant different to the baseline condition (taking into account natural fluctuation in the occurrence and distribution pattern such as due to seasonal change), appropriate actions should be taken and additional mitigation measures should be implemented as necessary. Data should then be re-assessed and the need for any further monitoring should be established. The action plan, as given in **Table 6.5** should be undertaken within a period of 1 month after a significant difference has been determined.

Table 6.5 Event and Action Plan for Mudflat Monitoring

Event	ET Leader	IEC	SO	Contractor
Density or the distribution pattern of horseshoe crab, seagrass or intertidal soft shore communities recorded in the impact or post-construction monitoring are significantly lower than or different from those recorded in the baseline monitoring.	Review historical data to ensure differences are as a result of natural variation or previously observed seasonal differences; Identify source(s) of impact; Inform the IEC, SO and Contractor; Check monitoring data; Discuss additional monitoring and any other measures, with the IEC and Contractor.	Discuss monitoring with the ET and the Contractor; Review proposals for additional monitoring and any other measures submitted by the Contractor and advise the SO accordingly.	Discuss with the IEC additional monitoring requirements and any other measures proposed by the ET; Make agreement on the measures to be implemented.	Inform the SO and in writing; Discuss with the ET and the IEC and propose measures to the IEC and the ER; Implement the agreed measures.

Notes:
ET – Environmental Team
IEC – Independent Environmental Checker
SO – Supervising Officer

6.5 Mudflat Ecology Monitoring Results and Conclusion

Horseshoe Crabs

6.5.1 In total of 42 and 8 individuals of *Carcinoscorpius rotundicauda* and *Tachypleus tridentatus* were found in present survey. The recorded individuals were mainly distributed along the shoreline from TC3 to ST. All of them were observed on similar substratum (fine sand or soft mud, slightly submerged). Photo records of the observed horseshoe crab are shown in **Figure 3.1 of Appendix I** and the present survey result regarding horseshoe crab are presented in **Table 3.1 of Appendix I**. The complete survey records are presented in **Annex II of Appendix I**.

6.5.2 For *Carcinoscorpius rotundicauda,* more individuals (32 ind.) were found in TC3 with average body size 37.02mm (prosomal width ranged 10.13 – 70.71mm). In ST, there were 9 individuals with average body size 26.81mm (prosomal width ranged 18.25 – 35.41mm). In TC2, only 1 individual with body size 20.32mm was found in present survey. The research record in TC3 was medium (5.33 ind. hr^{-1} $person^{-1}$), while that in ST was low (1.50 ind. hr^{-1} $person^{-1}$). In TC2, the research record was very low (0.25 ind. hr^{-1} $person^{-1}$). No individual of horseshoe crab, *Carcinoscorpius rotundicauda*, was recorded at TC1 in present survey.

6.5.3 For *Tachypleus tridentatus,* 8 individuals with average body size 47.62mm (prosomal width ranged 20.52 – 98.14mm) were found in TC3. The research record in TC3 was low (1.33 ind. hr^{-1}. $Person^{-1}$), No *Tachypleus tridentatus* were found in TC1, TC2 and ST in present survey.

6.5.4 No mating pair or large individual (≥100mm) was found in present survey.

6.5.5 In the survey of March 2015, there was one important finding that a mating pair of *Carcinoscorpius rotundicauda* was found in ST (prosomal width: male 155.1mm, female 138.2mm). It indicated the importance of ST as a breeding ground of horseshoe crab. In June 2017, mating pairs of *Carcinoscorpius rotundicauda* were found in TC2 (male 175.27 mm, female 143.51 mm) and TC3 (male 182.08 mm, female 145.63 mm) **(Figure 3.2 of Appendix I)**. In December 2017 and June 2018, one mating pair was of *Carcinoscorpius rotundicauda* was found in TC3 (December 2017: male 127.80 mm, female 144.61 mm; June 2018: male 139 mm, female 149 mm). In June 2019, one pair of *Tachypleus tridentatus* with large body sizes (male 150mm and Female 200mm; Male 180mm and Female 220mm) was found. Another mating pair was found in ST (male 140mm and Female 180mm). (**Figure 3.2 of Appendix I)** shows the photographic records of all mating pairs found. The recorded mating pairs were found nearly burrowing in soft mud at low tidal level (0.5-1.0 m above C.D.). The smaller male was holding the opisthosoma (abdomen carapace) of larger female from behind. These mating pairs indicated that breeding of horseshoe crab could be possible along the coast of Tung Chung Wan rather than ST only, as long as suitable substratum was available. Based on the frequency of encounter, the shoreline between TC3 and ST should be more suitable mating ground. Moreover suitable breeding period was believed in wet season (March – September) because tiny individuals (i.e. newly hatched) were usually recorded in June and September every year **(Figure 3.3 of Appendix I)**.

6.5.6 Despite of mating pair, there were occasional records of large individuals of *Carcinoscorpius rotundicauda* (prosomal width ranged 114.45 – 178.67 mm, either single or in pair) and *Tachypleus tridentatus* (prosomal width 103 mm) **(Figure 3.4 of Appendix I)**. In December 2018, one large individual of *Carcinoscorpius rotundicauda* was found in TC3 (prosomal width 148.9 mm). In March 2019, 3 large individuals (prosomal width ranged 220 – 310mm) of *Carcinoscorpius rotundicauda* were observed in TC2. In June 2019, there were 3 and 7 large individuals of *Tachypleus tridentatus* were recorded in ST (prosomal width ranged 140 – 180mm) and TC3 (prosomal width ranged 150 – 220mm), respectively. Based on their sizes, it indicated that individuals of prosomal width larger than 100 mm would progress its nursery stage from intertidal habitat to sub-tidal habitat of Tung Chung Wan. These large individuals might move onto intertidal shore occasionally during high tide for foraging and breeding. Because they should be inhabiting sub-tidal habitat most of the time. Their records were excluded from the data analysis to avoid mixing up with juvenile population living on intertidal habitat.

6.5.7 No marked individual of horseshoe crab was recorded in the present survey. Some marked individuals were found in the previous surveys of September 2013, March 2014 and September 2014. All of them were released through a conservation programme in charged by Prof. Paul Shin (Department of Biology and Chemistry, The City University of Hong Kong (CityU)). It was a re-introduction trial of artificial bred horseshoe crab juvenile at selected sites. So that the horseshoe crabs population might be restored in the natural habitat. Through a personal conversation with Prof. Shin, about 100 individuals were released in the sampling zone ST on 20 June 2013. All of them were marked with color tape and internal chip detected by specific chip sensor. There should be second round of release between June and September 2014 since new marked individuals were found in the survey of September 2014

6.5.8 The artificial bred individuals, if found, would be excluded from the results of present monitoring programme in order to reflect the changes of natural population. However, the mark on their prosoma might have been detached during moulting after a certain period of release. The artificially released individuals were no longer distinguishable from the natural population without the specific chip sensor. The survey data collected would possibly cover both natural population and artificially bred individuals

<u>Population difference among the sampling zones</u>

6.5.9 **Figure 3.5** and **3.6 of Appendix I** show the changes of number of individuals, mean prosomal width and search record of horseshoe crabs *Carcinoscorpius rotundicauda* and *Tachypleus tridentatus* in respectively in each sampling zone throughout the monitoring period.

6.5.10 To consider the entire monitoring period for TC3 and ST, medium to high search records (i.e. number of individuals) of both species (*Carcinoscorpius rotundicauda* and *Tachypleus* *tridentatus*) were usually found in wet season (June and September). The search record of ST was higher from September 2012 to June 2014 while it was replaced by TC3 from September 2014 to June 2015. The search records were similar between two sampling zones from September 2015 to June 2016. In September 2016, the search record of *Carcinoscorpius rotundicauda* in ST was much higher than TC3. From March to June 2017, the search records of both species were similar again between two sampling zones. It showed a natural variation of horseshoe crab population in these two zones due to weather condition and tidal effect. No obvious difference of horseshoe crab population was noted between TC3 and ST. In September 2017, the search records of both horseshoe crab species decreased except the *Carcinoscorpius rotundicauda* in TC3. The survey results were different from previous findings that there were usually higher search records in September. One possible reason was that the serial cyclone hit decreased horseshoe crab activity (totally 4 cyclone records between June and September 2017, to be discussed in 'Seagrass survey' section). From December 2017 to September 2018, the search records of both species increased again to low-moderate level in ST. Relatively higher population fluctuation of *Tachypleus tridentatus* was observed in TC3.

6.5.11 For TC1, the search record was at low to moderate level throughout the monitoring period. The change of *Carcinoscorpius rotundicauda* was relatively more variable than that of *Tachypleus tridentatus*. Relatively, the search record was very low in TC2. There were occasional records of 1 to 4 individuals between March and September throughout the monitoring period. The maximum record was 6 individuals only in June 2016.

6.5.12 About the body size, larger individuals of *Carcinoscorpius rotundicauda* were usually found in ST and TC1 relative to that in TC3 from September 2012 to June 2017. But the body size was higher in TC3 and ST followed by TC1 from September 2017 to March 2019. For *Tachypleus tridentatus*, larger individuals were usually found in ST and TC3 followed by TC1 throughout the monitoring period. In June 2019, all found horseshoe crabs were large individuals and mating pairs. In September 2019 (present survey), the sizes of the horseshoe crabs were decrease. It is believed that the size of horseshoe crabs would be gradually rise afterward due to the stable growth of juveniles after the spawning season.

6.5.13 In general, it was obvious that the shoreline along TC3 and ST (western shore of Tung Chung Wan) was an important nursery ground for horseshoe crab especially newly hatched individuals due to larger area of suitable substratum (fine sand or soft mud) and less human disturbance (far from urban district). Relatively, other sampling zones were not a suitable nursery ground especially TC2. Possible factors were less area of suitable substratum (especially TC1) and higher human disturbance (TC1 and TC2: close to urban district and easily accessible). In TC2, large daily salinity fluctuation was a possible factor either since it was flushed by two rivers under tidal inundation. The individuals inhabiting TC1 and TC2 were confined in small foraging area due to limited area of suitable substratum. Although a mating pair of *Carcinoscorpius rotundicauda* was once found in TC2, the hatching rate and survival rate of newly hatched individuals were believed very low.

Seasonal variation of horseshoe crab population

6.5.14 Throughout the monitoring period, the search records of horseshoe crabs were fluctuated and at moderate – very low level in June (**Figures 3.5 and 3.6 of Appendix I**). Low – Very low search record was found in June 2013, totally 82 individuals of *Tachypleus tridentatus* and 0 ind. of *Carcinoscorpius rotundicauda* were found in TC1, TC3 and ST. Compare with the search record of June 2013, the numbers of *Tachypleus tridentatus* were gradually decreased in June 2014 and 2015 (55 ind. in 2014 and 18 ind. in 2015); the number of *Carcinoscorpius rotundicauda* raise to 88 and 66 individuals. in June 2014 and 2015 respectively. In June 2016, the search record increased about 3 times compare with June 2015. In total, 182 individuals of *Carcinoscorpius rotundicauda* and 47 individuals. of *Tachypleus tridentatus* were noted, respectively. Then, the search record was similar to June 2016. The number of recorded *Carcinoscorpius rotundicauda*(133 ind.) slightly dropped in June 2017. However, that of *Tachypleus tridentatus* rapidly increased (125 ind.). In June 2018, the search record was low to moderate while the numbers of *Tachypleus tridentatus* dropped sharply (39 ind.). In March 2019, 3 individuals of *Carcinoscorpius rotundicauda* were observed in TC2. However, all of them were large individuals (prosomal width >100mm), their records are excluded from the data analysis to avoid mixing up with the juvenile population living on intertidal habitat. Throughout the monitoring period, similar distribution of horseshoe crabs population were found in March. Most of the horseshoe crabs were found in TC3 and ST.

6.5.15 The search record of horseshoe crab declined obviously in all sampling zones during dry season especially December (**Figures 3.5 and 3.6 of Appendix I**) throughout the monitoring period. Very low – low search record was found in December from 2012 to 2015 (0-4 ind. of *Carcinoscorpius rotundicauda* and 0-12 ind. of *Tachypleus tridentatus*). The horseshoe crabs were inactive and burrowed in the sediments during cold weather (<15 ºC). Similar results of low search record in dry season were reported in a previous territory-wide survey of horseshoe crab. For example, the search records in Tung Chung Wan were 0.17 ind. $hr^{-1}person^{-1}$ and 0.00 ind. hr^{-1} $person^{-1}$ in wet season and dry season respectively (details see Li, 2008). Compare with the search record of December from 2012 to 2015, which of December 2016 were much higher relatively. There were totally 70 individuals of *Carcinoscorpius rotundicauda* and 24 individuals of *Tachypleus tridentatus* in TC3 and ST. Since the survey was carried in earlier December with warm and sunny weather (~22 ºC during dawn according to Hong Kong Observatory database, Chek Lap Kok station on 5 December 2016), the horseshoe crab was more active (i.e. move onto intertidal shore during high tide for foraging and breeding) and easier to be found. In contrast, there was no search record in TC1 and TC2 because the survey was conducted in mid-December with colder and cloudy weather (~20 ºC during dawn on 19 December). The horseshoe crab activity would decrease gradually with the colder climate. In December of 2017 and 2018, very low search records were found again as mentioned above.

6.5.16 From September 2012 to December 2013, *Carcinoscorpius rotundicauda* was less common species relative to *Tachypleus tridentatus*. Only 4 individuals were ever recorded in ST in December 2012. This species had ever been believed of very low density in ST hence the encounter rate was very low. In March 2014, it was found in all sampling zones with higher abundance in ST. Based on its average size (mean prosomal width 39.28-49.81 mm), it indicated that breeding and spawning of this species had occurred about 3 years ago along the coastline of Tung Chun Wan. However, these individuals were still small while their walking trails were inconspicuous. Hence there was no search record in previous sampling months. Since March 2014, more individuals were recorded due to larger size and higher activity (i.e. more conspicuous walking trail).

6.5.17 For *Tachypleus tridentatus*, sharp increase of number of individuals was recorded in ST during the wet season of 2013 (from March to September). According to a personal conversation with Prof. Shin (CityU), his monitoring team had recorded similar increase of horseshoe crab population during wet season. It was believed that the suitable ambient temperature increased its conspicuousness. However similar pattern was not recorded in the following wet seasons. The number of individuals increased in March and June 2014 and followed by a rapid decline in September 2014. Then the number of individuals fluctuated slightly in TC3 and ST until March 2017. Apart from natural mortality, migration from nursery soft shore to subtidal habitat was another possible cause. Since the mean prosomal width of *Tachypleus tridentatus* continued to grow and reached about 50 mm since March 2014. Then it varied slightly between 35-65 mm from September 2014 to March 2017.Most of the individuals might have reached a suitable size (e.g. prosomal width 50-60 mm) strong enough to forage in sub-tidal habitat. In June 2017, the number of individuals increased sharply again in TC3 and ST. Although mating pair of *Tachypleus tridentatus* was not found in previous surveys, there should be new round of spawning in the wet season of 2016. The individuals might have grown to a more conspicuous size in 2017 accounting for higher search record. In September 2017, moderate numbers of individual were found in TC3 and ST indicating a stable population size. In September 2018, the population size was lower while natural mortality was the possible cause.

6.5.18 Recently, *Carcinoscorpius rotundicauda* was a more common horseshoe crab species in Tung Chung Wan. It was recorded in the four sampling zones while the majority of population located in TC3 and ST. Due to potential breeding in 2018, the number of *Tachypleus tridentatus became* increased TC3 and ST. Since TC3 and ST were regarded as important nursery ground for both horseshoe crab species, box plots of prosomal width of two horseshoe crab species were constructed to investigate the changes of population in details.

Box plot of horseshoe crab populations in TC3

6.5.19 **Figure 3.7 of Appendix I** shows the changes of prosomal width of *Carcinoscorpius rotundicauda* and *Tachypleus tridentatus* in TC3. As mentioned above, *Carcinoscorpius rotundicauda* was rarely found between September 2012 and December 2013 hence the data were lacking. In March 2014, the major size (50% of individual records between upper (top box) and lower quartile (bottom box)) ranged 40 – 60 mm while only few individuals were found. From March 2014 to September 2018, the median prosomal width (middle line of whole box) and major size (whole box) decreased after March of every year. It was due to more small individuals found in June indicating new rounds of spawning. Also, there were slight increasing trends of body size from June to March of next year since 2015. It indicated a stable growth of individuals. Focused on larger juveniles (upper whisker), the size range was quite variable (prosomal width 60 – 90 mm) along the sampling months. Juveniles reaching this size might gradually migrate to sub-tidal habitats.

6.5.20 For *Tachypleus tridentatus*, the major size ranged 20-50 mm while the number of individuals fluctuated from September 2012 to June 2014. Then a slight but consistent growing trend was observed from September 2014 to June 2015. The prosomal width increased from 25 – 35 mm to 35 – 65 mm. As mentioned, the large individuals might have reached a suitable size for migrating from the nursery soft shore to subtidal habitat. It accounted for the declined population in TC3. From March to September 2016, slight increasing trend of major size was noticed again. From December 2016 to June 2017, similar increasing trend of major size was noted with much higher number of individuals. It reflected new round of spawning. In September 2017, the major size decreased while the trend was different from previous two years. Such decline might be the cause of serial cyclone hit between June and September 2017 (to be discussed in the 'Seagrass survey' section). From December 2017 to September 2018, increasing trend was noted again. Across the whole monitoring period, the larger juveniles (upper whisker) usually reached 60 – 80 mm in prosomal width, even 90 mm occasionally. Juveniles reaching this size might gradually migrate to sub-tidal habitats.

Box plot of horseshoe crab populations in ST

6.5.21 **Figure 3.8 of Appendix I** shows the changes of prosomal width of *Carcinoscorpius rotundicauda* and *Tachypleus tridentatus* in ST. As mentioned above, *Carcinoscorpius rotundicauda* was rarely found between September 2012 and December 2013 hence the data were lacking. From March 2014 to September 2018, the size of major population decreased and more small individuals (i.e. lower whisker) were recorded after June of every year. It indicated new round of spawning. Also, there were similar increasing trends of body size from September to June of next year between 2014 and 2017. It indicated a stable growth of individuals. The larger juveniles (i.e. upper whisker usually ranged 60 – 80 mm in prosomal width except one individual (prosomal width 107.04 mm) found in March 2017. It reflected juveniles reaching this size would gradually migrate to sub-tidal habitats.

6.5.22 For *Tachypleus tridentatus*, a consistent growing trend was observed for the major population from December 2012 to December 2014 regardless of change of search record. The prosomal width increased from 15-30 mm to 60 – 70 mm. As mentioned, the large juveniles might have reached a suitable size for migrating from the nursery soft shore to subtidal habitat. From March to September 2015, the size of major population decreased slightly to a prosomal width 40 – 60 mm. At the same time, the number of individuals decreased gradually. It further indicated some of large juveniles might have migrated to sub-tidal habitat, leaving the smaller individuals on shore. There was an overall growth trend. In December 2015, two big individuals (prosomal width 89.27 mm and 98.89 mm) were recorded only while it could not represent the major population. In March 2016, the number of individual was very few in ST that no box plot could be produced. In June 2016, the prosomal width of major population ranged 50 – 70 mm. But it dropped clearly to 30 – 40 mm in September 2016 followed by an increase to 40 – 50 mm in December 2016, 40 – 70 mm in March 2017 and 50 – 60mm in June 2017. Based on overall higher number of small individuals from June 2016 to September 2017, it indicated another round of spawning. From September 2017 to June 2018, the major size range increased slightly from 40 – 50 mm to 45 – 60 mm indicating a continuous growth. In September 2018, decrease of major size was noted again that might reflect new round of spawning. Throughout the monitoring period, the larger juveniles ranged 60– 80 mm in prosomal width. Juveniles reaching this size would gradually migrate to sub-tidal habitats.

6.5.23 As a summary for horseshoe crab populations in TC3 and ST, there were spawning of *Carcinoscorpius rotundicauda* from 2014 to 2018 while the spawning time should be in spring. The population size was consistent in these two sampling zones. For *Tachypleus tridentatus*, small individuals were rarely found in both zones from 2014 to 2015. It was believed no occurrence of successful spawning. The existing individuals (that recorded since 2012) grew to a mature size and migrated to sub-tidal habitat. Hence the number of individuals decreased gradually. From 2016 to 2018, new rounds of spawning were recorded in ST while the population size increased to a moderate level.

6.5.24 In March to June 2019, no horseshoe crab juveniles (prosomal width <100mm) were recorded in TC3 and ST. All recorded horseshoe crabs were large individuals (prosomal width >100mm) or mating pairs which were all excluded from the data analysis. In September 2019, the population size of both horseshoe crab species in TC3 and ST gradually increased to low – moderate level while their body sizes were mostly in small to medium range (~30 – 50mm).

<u>Impact of the HKLR project</u>

6.5.25 It was the 28th survey of the EM&A programme during construction period. Based on the monitoring results, no detectable impact on horseshoe crab was revealed due to HKLR project. The population change was mainly determined by seasonal variation, no abnormal phenomenon of horseshoe crab individual, such as large number of dead individuals on the shore) had been reported.

<u>Seagrass Beds</u>

6.5.26 Only seagrass species *Halophila ovalis* was found in present survey, which was found in TC3 and ST. In ST, There were one small sized and one large sized of seagrass beds found at tidal zone 1.5 – 2.0 m above C.D nearby mangroves plantation. The larger rand had area ~1000 m^2 in high vegetation coverage (90 – 100%). At close vicinity, a small sized (~200 m^2) of *Halophila ovalis* beds in low vegetation coverage (10-20%) were observed at tidal zone 1.5 – 2.0 m above C.D. In TC3, four small patches of *Halophila ovalis* were found at tidal zone 1.5 – 2.0m above C.D. These seagrass pataches had areas ~0.25 – 9 m^2 in high vegetation coverage (90 – 100%). Another seagrass species *Zostera japonica* was not found in present survey. **Table 3.2** of **Appendix I** summarizes the results of present seagrass beds survey and the photograph records of the seagrass are shown on **Figure 3.9 of Appendix I**. The complete record throughout the monitoring period is presented in **Annex III of Appendix I**.

6.5.27 Since the commencement of the EM&A monitoring programme, two species of seagrass *Halophila ovalis* and *Zostera japonica* were recorded in TC3 and ST (**Figure 3.10 of Appendix I**). In general, *Halophila ovalis* was occasionally found in TC3 in few, small to medium patches. But it was commonly found in ST in medium to large seagrass bed. Moreover, it had sometimes grown extensively and had covered significant mudflat area at 0.5 – 2.0 m above C.D. between TC3 and ST. Another seagrass species *Zostera japonica* was found in ST only. It was relatively lower in vegetation area and co-existed with Halophila ovalis nearby the mangrove strand at 2.0 m above C.D.

6.5.28 According to the previous results, majority of seagrass bed was confined in ST, the temporal change of both seagrass species were investigated in details:

<u>Temporal variation of seagrass beds</u>

6.5.29 **Figure 3.11 of Appendix** I shows the changes of estimated total area of seagrass beds in ST along the sampling months. For *Zostera japonica*, it was not recorded in the 1st and 2nd surveys of monitoring programme. Seasonal recruitment of few, small patches (total seagrass area: 10 m2) was found in Mach 2013 that grew within the large patch of seagrass Halophila ovalis. Then, the patch size increased and merged gradually with the warmer climate from March to June

2013 (15 m^2). However, the patch size decreased and remained similar from September 2013 (4 m2) to March 2014 (3 m^2). In June 2014, the patch size increased obviously again (41 m^2) with warmer climate followed by a decrease between September 2014 (2 m^2) and December 2014 (5 m^2). From March to June 2015, the patch size increased sharply again (90 m^2). It might be due to the disappearance of the originally dominant seagrass *Halophila ovalis* resulting in less competition for substratum and nutrients. From September 2015 to June 2016, it was found coexisting with seagrass *Halophila ovalis* with steady increasing patch size (from 44 m2 to 115 m^2) and variable coverage. In September 2016, the patch size decreased again to (38 m^2) followed by an increase to a horizontal strand (105.4 m^2) in June 2017. And it did no longer co-exist with *Halophila ovalis*. Between September 2014 and June 2017, an increasing trend was noticed from September to June of next year followed by a rapid decline in September of next year. It was possibly the causes of heat stress, typhoon and stronger grazing pressure during wet season. However, such increasing trend was not found from September 2017 to September 2019 (present survey) while no patch of *Zostera japonica* was found.

6.5.30 For *Halophila ovalis*, it was recorded as 3 – 4 medium to large patches (area 18.9 - 251.7 m^2; vegetation coverage 50 - 80%) beside the mangrove vegetation at tidal level 2 m above C.D. in September 2012. The total seagrass bed area grew steadily from 332.3 m^2 in September 2012 to 727.4 m^2 in December 2013. Flowers were observed in the largest patch during its flowering period. In March 2014, 31 small to medium patches were newly recorded (variable area 1 – 72 m^2 per patch, vegetation coverage 40-80% per patch) in lower tidal zone between 1.0 and 1.5 m above C.D. The total seagrass area increased further to 1350 m^2. In June 2014, these small and medium patches grew and extended to each other. These patches were no longer distinguishable and were covering a significant mudflat area of ST. It was generally grouped into 4 large patches (1116 - 2443 m^2) of seagrass beds characterized of patchy distribution, variable vegetable coverage (40 - 80%) and smaller leaves. The total seagrass bed area increased sharply to 7629 m^2. In September 2014, the total seagrass area declined sharply to 1111m^2. There were only 3 - 4 small to large patches (6 - 253 m^2) at high tidal level and 1 large patch at low tidal level (786 m^2). Typhoon or strong water current was a possible cause (Fong, 1998). In September 2014, there were two tropical cyclone records in Hong Kong (7th-8th September: no cyclone name, maximum signal number 1; 14th - 17th September: Kalmaegi, maximum signal number 8SE) before the seagrass survey dated 21stSeptember 2014. The strong water current caused by the cyclone, Kalmaegi especially, might have given damage to the seagrass beds. In addition, natural heat stress and grazing force were other possible causes reducing seagrass beds area. Besides, very small patches of *Halophila ovalis* could be found in other mud flat area in addition to the recorded patches. But it was hardly distinguished due to very low coverage (10 - 20%) and small leaves.

6.5.31 In December 2014, all the seagrass patches of *Halophila ovalis* disappeared in ST. **Figure 3.12 of Appendix I** shows the difference of the original seagrass beds area nearby the mangrove vegetation at high tidal level between June 2014 and December 2014.Such rapid loss would not be seasonal phenomenon because the seagrass beds at higher tidal level (2.0 m above C.D.) were present and normal in December 2012 and 2013. According to Fong (1998), similar incident had occurred in ST in the past. The original seagrass area had declined significantly during the commencement of the construction and reclamation works for the international airport at Chek Lap Kok in 1992. The seagrass almost disappeared in 1995 and recovered gradually after the completion of reclamation works. Moreover, incident of rapid loss of seagrass area was also recorded in another intertidal mudflat in Lai Chi Wo in 1998 with unknown reason. Hence, *Halophila ovalis* was regarded as a short-lived and r-strategy seagrass that could colonize areas in short period but disappears quickly under unfavourable conditions (Fong, 1998).

<u>Unfavourable conditions to seagrass *Halophila ovalis*</u>

6.5.32 Typhoon or strong water current was suggested as one unfavorable condition to *Halophila ovalis* (Fong, 1998). As mentioned above, there were two tropical cyclone records in Hong Kong in September 2014. The strong water current caused by the cyclones might have given damage to the seagrass beds.

6.5.33 Prolonged light deprivation due to turbid water would be another unfavorable condition. Previous studies reported that *Halophila ovalis* had little tolerance to light deprivation. During experimental darkness, seagrass biomass declined rapidly after 3-6 days and seagrass died completely after 30 days. The rapid death might be due to shortage of available carbohydrate under limited photosynthesis or accumulation of phytotoxic end products of anaerobic respiration (details see *Longstaff et al*., 1999). Hence the seagrass bed of this species was susceptible to temporary light deprivation events such as flooding river runoff (Longstaff and Dennison, 1999).

6.5.34 In order to investigate any deterioration of water quality (e.g. more turbid) in ST, the water quality measurement results at two closest monitoring stations SR3 and IS5 of the EM&A programme were obtained from the water quality monitoring team. Based on the results from June to December 2014, the overall water quality was in normal fluctuation except there was one exceedance of suspended solids (SS) at both stations in September. On 10th September 2014, the SS concentrations measured during mid-ebb tide at stations SR3 (27.5 mg/L) and IS5 (34.5 mg/L) exceeded the Action Level (≤23.5 mg/L and 120% of upstream control station's reading) and Limit Level (≤34.4 mg/L and 130% of upstream control station's reading) respectively. The turbidity readings at SR3 and IS5 reached 24.8-25.3 NTU and 22.3-22.5 NTU respectively. The temporary turbid water should not be caused by the runoff from upstream rivers. Because there was no rain or slight rain from 1st to 10th September 2014 (daily total rainfall at the Hong Kong International Airport: 0-2.1 mm; extracted from the climatological data of Hong Kong Observatory). The effect of upstream runoff on water quality should be neglectable in that period. Moreover, the exceedance of water quality was considered unlikely to be related to the contract works of HKLR according to the 'Notifications of Environmental Quality Limits Exceedances' provided by the respective environmental team. The respective construction of seawall and stone column works, which possibly caused turbid water, was carried out within silt curtain as recommended in the EIA report. Moreover, there was no leakage of turbid water, abnormity or malpractice recorded during water sampling. In general, the exceedance of suspended solids concentration was considered to be attributed to other external factors, rather than the contract works.

6.5.35 Based on the weather condition and water quality results in ST, the co-occurrence of cyclone hit and turbid waters in September 2014 might have combined the adverse effects on *Halophila ovalis* that leaded to disappearance of this short-lived and r-strategy seagrass species. Fortunately, *Halophila ovalis* was a fast-growing species (Vermaat *et al*., 1995). Previous studies showed that the seagrass bed could be recovered to the original sizes in 2 months through vegetative propagation after experimental clearance (Supanwanid, 1996). Moreover it was reported to recover rapidly in less than 20 days after dugong herbivory (Nakaoka and Aioi, 1999).As mentioned, the disappeared seagrass in ST in 1995 could recover gradually after the completion of reclamation works for international airport (Fong, 1998).The seagrass beds of *Halophila ovalis* might recolonize in the mudflat of ST through seed reproduction as long as there was no unfavourable condition in the coming months.

<u>Recolonization of seagrass beds</u>

6.5.36 **Figure 3.12 of Appendix I** shows the recolonization of seagrass bed in ST from December 2014 to June 2017. From March to June 2015, 2 - 3 small patches of *Halophila ovalis* were newly found co-inhabiting with another seagrass species *Zostera japonica*. But the total patch area of Halophila ovalis was still very low compare with previous records. The recolonization rate was low while cold weather and insufficient sunlight were possible factors between December 2014 and March 2015. Moreover, it would need to compete with seagrass *Zostera japonica* for substratum and nutrient, because *Zostera japonica* had extended and covered the original seagrass bed of Halophila ovalis at certain degree. From June 2015 to March 2016, the total seagrass area of Halophila ovalis had increased rapidly from 6.8 m^2 to 230.63 m^2. It had recolonized its original patch locations and covered its competitor *Zostera japonica*. In June 2016, the total seagrass area increased sharply to 4707.3m^2. Similar to the previous records of March to June 2014, the original patch area of *Halophila ovalis* increased further to a horizontally long strand. Another large seagrass beds colonized the lower tidal zone (1.0 - 1.5 m above C.D.). In September 2016, this patch extended much and covered significant soft mud area of ST, resulting in sharp increase of total area (24245 m^2). It indicated the second extensive colonization of this r-selected seagrass. In December 2016, this extensive seagrass patch decreased in size and had separated into few, undistinguishable patches. Moreover, the horizontal strand nearby the mangrove vegetation decreased in size. The total seagrass bed decreased to 12550 m^2. From March to June 2017, the seagrass bed area remained generally stable (12438 - 17046.5 m^2) but the vegetation coverage fluctuated (20 - 50% in March 2017 to 80-100% in June 2017). The whole recolonization process took about 2.5 years.

Second disappearance of seagrass bed

6.5.37 In September 2017, the whole seagrass bed of *Halophila ovalis* disappeared again along the shore of TC3 and ST (**Figure 3.12 of Appendix I**). Similar to the first disappearance of seagrass bed occurred between September and December 2014, strong water current (e.g. cyclone) or deteriorated water qualities (e.g. high turbidity) was the possible cause.

6.5.38 Between the survey periods of June and September 2017, there were four tropical cyclone records in Hong Kong (Merbok in 12 - 13th, June; Roke in 23rd, Jul.; Hato in 22 - 23rd, Aug.; Pakhar in 26-27th, Aug.) (Online database of Hong Kong Observatory). All of them reaches signal 8 or above, especially Hato with highest signal 10.

6.5.39 According to the water quality monitoring results (July to August 2017) of the two closest monitoring stations SR3 and IS5 of the respective EM&A programme, the overall water quality was in normal fluctuation. There was an exceedance of suspended solids (SS) at SR3 on 12 July 2017. The SS concentration reached 24.7 mg/L during mid-ebb tide, which exceeded the Action Level (≤ 23.5 mg/L). But it was far below the Limit Level (≤ 34.4 mg/L). Since such exceedance was slight and temporary, its effect to seagrass bed should be minimal.

6.5.40 Overall, the disappearance of seagrass beds in ST has believed the cause of serial cyclone hit in July and August 2017. Based on previous findings, the seagrass beds of both species were expected to recolonize in the mudflat as long as the vicinal water quality was normal. The whole recolonization process (from few, small patches to extensive strand) would be gradually lasting at least 2 years. From December 2017 to March 2018, there was still no recolonization of few, small patches of seagrass at the usual location (**Figure 3.12 of Appendix I**). It was different from the previous round (March 2015 - June 2017). Until June 2018, the new seagrass patches with small-medium size were found at the usual location (seaward side of mangrove plantation at 2.0 m C.D.) again, indicating the recolonization. However, the seagrass bed area decreased sharply to 22.5 m^2 in September 2018. Again, it was believed that the decrease was due to the hit of the super cyclone in September 2018 (Mangkhuton 16th September, highest signal 10). From December 2018 to June 2019, the seagrass bed area increased from 404 m^2 to 1229 m^2 while the vegetation coverage is also increased. (December 2018: 5 – 85%; March 2019: 50 – 100% and June 2019: 60 – 100%). Relatively, the whole recolonization process would occur slower than the previous round (more than 2 years). In September 2019, the seagrass bed area slightly decreased to 1200 m^2 which was in normal fluctuation.

Impact of the HKLR project

6.5.41 It was the 28th survey of the EM&A programme during construction period. Throughout the monitoring period, the disappearance of seagrass beds was believed the cause of cyclone hits rather than impact of HKLR project. The seagrass bed was since there had been a gradual increase in the size and number from December 2018 to June 2019 after the hit of the super cyclone in September 2018. The seagrass bed area slightly decreased in September 2019 (present survey) which was in normal fluctuation.

Intertidal Soft Shore Communities

Substratum

6.5.42 **Table 3.3 and Figure 3.13 of Appendix I** show the substratum types along the horizontal transect at every tidal level in all sampling zones. The relative distribution of substratum types was estimated by categorizing the substratum types (Gravels & Boulders / Sands / Soft mud) of the ten random quadrats along the horizontal transect. The distribution of substratum types varied among tidal levels and sampling zones:

- In TC1, high percentages of ‘Gravels and Boulders’ (H: 90%; M: 70%) were recorded at high and mid tidal levels. Relatively higher percentages of ‘Gravels and Boulders’ (50%) and ‘Soft mud’ (40%) were recorded at low tidal level.
- In TC2, high percentages of ‘Gravels and Boulders’ (H: 80%; M: 60%) were recorded at high and mid tidal levels. Relatively higher percentages of ‘Gravels and Boulders’ (40%) and ‘Soft mud’ (40%) were recorded at low tidal level.
- In TC3, higher percentage of ‘Gravels and Boulders’ (50%) was recorded followed by ‘Sand’ (30%) at high tidal level. At mid tidal level, higher percentages of ‘Gravels and Boulders’ (40%) and ‘Sand’ (40%) were recorded. At low tidal level, the main substratum type was ‘Gravels and Boulders’ (70%).
- In ST, ‘Gravels and Boulders’ was the main substratum type (H:90%; M: 70%) at high tidal level and mid tidal level. At low tidal level, ‘Gravels and Boulders’ was the main substratum type (40%) following by ‘Sand ‘(30%) and ‘Soft Mud‘(30%).

6.5.43 There was neither consistent vertical nor horizontal zonation pattern of substratum type in all sampling zones. Such heterogeneous variation should be caused by different hydrology (e.g. wave in different direction and intensity) received by the four sampling zones.

Soft shore communities

6.5.44 **Table 3.4 of Appendix I** lists the total abundance, density and number of taxon of every phylum in this survey. A total of 11243 individuals were recorded. Mollusca was the most abundant phylum (total abundance 10594 ind, density 353 ind. m^{-2}, relative abundance 94.2%). The second and third abundant phya were Arthropoda (506 ind., 17 ind. m^{-2}, 4.5%) and Annelida (60 ind., 2 ind. m^{-2}, 0.4%) respectively. Relatively other phyla were very low in abundances (density <2 ind. m^{-2}, relative abundance ≤0.3%). Moreover, the most diverse phylum was Mollusca (40 taxa) followed by Arthropoda (9 taxa) and Annelida (7 taxa). There were 3 taxa recorded for Sipuncula and 1 taxon for other phyla.

6.5.45 The taxonomic resolution and complete list of recorded fauna are shown in **Annexes IV and V of Appendix I** respectively. As reported in June 2018, taxonomic revision of three potamidid snail species was conducted according to the latest identification key published by Agriculture, Fisheries and Conservation Department (details see AFCD, 2018), the species names of following gastropod species were revised:

- *Cerithidea cingulata* was revised as *Pirenella asiatica*
- *Cerithidea djadjariensis* was revised as *Pirenella incisa*
- *Cerithidea rhizophorarum* was revised as *Cerithidea moerchii*

Moreover, taxonomic revision was conducted on another snail species while the specie name was revised:

- *Batillaria bornii was revised as Clypeomorus bifasciata*

6.5.46 **Table 3.5 of Appendix I** shows the number of individual, relative abundance and density of each phylum in every sampling zone. The total abundance (2030 - 3412 ind.) varied among the four sampling zones while the phyla distributions were similar. In general, Mollusca was the most dominant phylum (no. of individuals: 1761 - 3360 ind.; relative abundance 86.7 – 98.5%; density 235 - 448 ind. m^{-2}). Other phyla were much lower in number of individuals. Arthropoda (28 - 216 ind.; 0.8 – 10.6%; 4 - 29 ind. m^{-2}) and Annelida (3 -28 ind.; 0.1 – 1.4%; 0 - 4 ind. m^{-2}) were common phyla relatively. Other phyla were very low in abundance in all sampling zones.

Dominant species in every sampling zone

6.5.47 **Table 3.6 of Appendix I** lists the abundant species in every sampling zone. In the present survey, most of the listed abundant species were of low to moderate densities (42-100 ind. m^{-2}). Few listed species of high or very high density (>100 ind. m^{-2}) were regarded as dominant species. Other listed species of lower density (<42 ind. m^{-2}) were regarded as common species.

6.5.48 In TC1, the substratum was mainly 'Gravels and Boulders' at high and mid tidal levels. At high tidal level, the rock oyster *Saccostrea cucullata (*mean density 66 ind. m^{-2}; relative abundance 23%), the gastropod *Batillaria zonalis* (44 ind. m^{-2}; relative abundance 15%), *Monodonta labio* (43 ind. m^{-2}; relative abundance 15%) and *Batillaria multiformis* (42 ind. m^{-2}; relative abundance 14%) were of abundant species found at low-moderate densities. At mid tidal level, the rock oyster *Saccostrea cucullata* (144 ind. m^{-2}, 33%) was of dominant species with high density. Meanwhile, the gastropod *Monodonta labio* (62 ind. m^{-2}, 14%) and *Batillaria multiformis* (59 ind. m^{-2}, 13%) were found at moderate densities. At low tidal level (main substratum types 'Gravels and Boulders' or 'Soft mud'), the Rock oyster *Saccostrea cucullata* (186 ind. m^{-2}, 29%) was dominant at high density. The gastropod *Nodilittorina radiata* (108 ind. m^{-2}, 17%) and *Monodonta labio* (99 ind. m^{-2}, 16%) were abundant at moderate densities.

6.5.49 In TC2, the substratum types were mainly ' Gravels and Boulders' at high tidal level. Gastropods *Batillaria multiformis* (73 ind. m^{-2}, 20%) and *Batillaria zonalis* (47 ind. m^{-2}, 13%), as well as the rock oyster *Saccostrea cucullata* (60 ind. m^{-2}, 17%) were of abundant species at low - moderate densities. At mid tidal level (major substratum type 'Gravels and Boulders'), rock oyster *Saccostrea cucullata* (94 ind. m^{-2}, 23%) was of dominant species at high density. Meanwhile, gastropods *Batillaria zonalis* (89 ind. m^{-2}, 22%) and *Monodonta labio* (66 ind. m^{-2}, 16%) were of abundant species at low- moderate density. Substratum types 'Gravels and Boulders; and 'Soft mud' were evenly distributed at low tidal level, rock oyster *Saccostrea cucullata* (108 ind. m^{-2}, 27%) and the gastropod *Monodonta labio* (60 ind. m^{-2}, 15%) were of abundant species at high densities.

6.5.50 In TC3, the substratum types were mainly 'Gravels and Boulders' at high tidal level. The rock oyster *Saccostrea cucullata* (86 ind. m^{-2}, 28%) and *Batillaria multiformis* (38 ind. m^{-2}, 12%) were of abundant species at low – moderate densities. At mid tidal level, the substratum types 'Gravels and Boulders' and 'Sand' were evenly distributed. The rock oyster *Saccostrea cucullata* (43 ind.m^{-2}, 18%) was of common species, and followed by gastropod *Monodonta labio* (24 ind. m^{-2}, 10%) and *Batillaria multiformis* (24 ind. m^{-2}, 10%). Both of them were at low - moderate densities. At low tidal level, the major substratum type was 'Gravels and Boulders'. There was dominated by rock oyster *Saccostrea cucullata* (74 ind. m^{-2}, 28%) and followed by two abundant species, *Balanus amphitrite* (31 ind. m^{-2},12%) and *Lunella granulate* (28 ind. m^{-2}, 11%), at low - moderate densities.

6.5.51 In ST, the major substratum type was 'Gravels and Boulders' at high tidal level. At high tidal level, gastropod *Monodonta labio* (61 ind. m^{-2}, 47%) and the rock oyster *Saccostrea cucullata* (47 ind. m^{-2}, 21%) were abundant at low – moderate densities. At mid tidal level, the main substratum type was 'Gravals and Boulders'. The rock oyster *Saccostrea cucullata* (80 ind.m^{-2}, 18%) was abundant at high density and followed by gastropods Batillaria zonalis (73 ind. m^{-2}, 16%) and *Monodonta labio* (62 ind. m^{-2}, 13%) and at low - moderate densities. At low tidal level (major substratum: 'Gravals and Boulders'), rock oyster *Saccostrea cucullata* (146 ind. m^{-2}, 30 %, attached on boulders) was dominant at high density and followed by gastropod *Monodonta labio* (65 ind. m^{-2}, 13 %) at moderate density.

6.5.52 In general, there was no consistent zonation pattern of species distribution across all sampling zones and tidal levels. The species distribution was determined by the type of substratum primarily. In general, rock oyster *Saccostrea cucullate* (1706 ind.), gastropods *Monodonta labio* (861 ind.), *Batillaria multiformis* (746 ind.) were the most common species on gravel and boulders substratum. Rock oyster *Saccostrea cucullata* (518 ind.), *Monodonta labio* (244 ind.), *Batillaria multiformis* (219 ind.) were the most common species on sandy substrata .

Biodiversity and abundance of soft shore communities

6.5.53 **Table 3.7 of Appendix I** shows the mean values of species number, density, biodiversity index *H'* and species evenness *J* of soft shore communities at every tidal level and in every sampling zone. As mentioned above, the differences among sampling zones and tidal levels were determined by the major type of substratum primarily.

6.5.54 Among the sampling zones, the mean species number was similar (6 – 13 spp. 0.25 m^{-2}) among the four sampling zones.The mean densities of TC1 (455 ind. m^{-2}) was higher than ST (389 ind. m^{-2}) followed by TC2 (384 ind. m^{-2}) and TC3 (271 ind. m^{-2}). The higher densities of TC1 and ST are due to the relatively high number of individuals in each quadrat. TC1 and TC3 were relatively higher in H' (1.90 and 1.83) and followed by TC2 (1.70) and ST (1.57). TC1, TC2 and TC3 were higher in *J* (0.80) compare with that of ST (0.77) due to their higher species number and even taxa distribution.

6.5.55 In the present survey, no clear trend of mean species number, mean density, *H'* and *J* observed among the tidal level.

6.5.56 **Figures 3.14 to 3.17 of Appendix I** show the temporal changes of mean species number, mean density, *H'* and *J* at every tidal level and in every sampling zone along the sampling months. In general, all the biological parameters fluctuated seasonally throughout the monitoring period. Lower mean species number and density were recorded in dry season (December) but the mean *H'* and *J* fluctuated within a limited range.

6.5.57 From June to December 2017, there were steady decreasing trends of mean species number and density in TC2, TC3 and ST regardless of tidal levels. It might be an unfavorable change reflecting environmental stresses. The heat stress and serial cyclone hit were believed the causes during the wet season of 2017. From March 2018 to September 2019, increases of mean species number and density were observed in all sampling zones. It indicated the recovery of intertidal community.

Impact of the HKLR project

6.5.58 It was the 28th survey of the EM&A programme during the construction period. Based on the results, impacts of the HKLR project were not detected on intertidal soft shore community. Abnormal phenomena (e.g. rapid, consistent or non-seasonal decline of fauna densities and species number) were not recorded.

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6.6.8 Li, H.Y., 2008. The Conservation of Horseshoe Crabs in Hong Kong. MPhil Thesis, City University of Hong Kong, pp 277.

6.6.9 Longstaff, B.J., Dennison, W.C., 1999. Seagrass survival during pulsed turbidity events: the effects of light deprivation on the seagrasses Halodule pinifolia and *Halophila ovalis*. Aquatic Botany 65 (1-4), 105-121.

6.6.10 Longstaff, B.J., Loneragan, N.R., O'Donohue, M.J., Dennison, W.C., 1999. Effects of light deprivation on the survival and recovery of the seagrass *Halophila ovalis* (R. Br.) Hook. Journal of Experimental Marine Biology and Ecology 234 (1), 1-27.

6.6.11 Nakaoka, M., Aioi, K., 1999. Growth of seagrass *Halophila ovalis* at dugong trails compared to existing within-patch variation in a Thailand intertidal flat. Marine Ecology Progress Series 184, 97-103.

6.6.12 Pielou, E.C., 1966. Shannon's formula as a measure of species diversity: its use and misuse. American Naturalist 100, 463-465.

6.6.13 Qi, Z.Y., 2004. Seashells of China. China Ocean Press. Beijing, China.

6.6.14 Qin, H., Chiu, H., Morton, B., 1998. Nursery beaches for Horseshoe Crabs in Hong Kong. In: Porcupine! No. 18. The School of Biological Sciences, The University of Hong Kong, in collaboration with Kadoorie Farm & Botanic Garden Fauna Conservation Department, p9-10.

6.6.15 Shannon, C.E., Weaver, W., 1963. The Mathematical Theory of Communication. Urbana: University of Illinois Press, USA.

6.6.16 Shin, P.K.S., Li, H.Y., Cheung, S.G., 2009. Horseshoe Crabs in Hong Kong: Current Population Status and Human Exploitation. Biology and Conservation of Horseshoe Crabs (part 2), 347-360.

6.6.17 Supanwanid, C., 1996. Recovery of the seagrass *Halophila ovalis* after grazing by dugong. In: Kuo, J., Philips, R.C., Walker, D.I., Kirkman, H. (eds), Seagrass biology: Proc Int workshop, Rottenest Island, Western Australia. Faculty of Science, The University of Western Australia, Nedlands, 315-318.

6.6.18 Vermaat, J.E., Agawin, N.S.R., Duarte, C.M., Fortes, M.D., Marba. N., Uri, J.S., 1995. Meadow maintenance, growth and productivity of a mixed Philippine seagrass bed. Marine Ecology Progress Series 124, 215-225.

6.6.19 Yang, D.J, Sun, R.P., 1988. Polychaetous annelids commonly seen from the Chinese waters (Chinese version). China Agriculture Press, China

7 Environmental Site Inspection and Audit

7.1 Site Inspection

7.1.1 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, four site inspections were carried out on 4, 11, 18 and 27 September 2019.

7.1.2 A summary of observations found during the site inspections and the follow up actions taken by the Contractor are described in **Table 7.1**.

Table 7.1 Summary of Environmental Site Inspections

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
30 Aug 2019	1. Waste was observed at S7. 2. Chemical container without drip tray was observed at S7. 3. Waste was observed at S7.	1. The waste was removed from S7. 2. The chemical container was removed from S7. 3. The waste was removed from S7.	4 Sep 2019
4 Sep 2019	1. A chemical drum without drip tray was observed at N4. 2. A stockpile of dusty material was observed on the ground at S7. 3. Waste was observed at LCSD Depot.	1. The chemical drum was removed at N4. 2. The stockpile of dusty material was removed from S7. 3. The waste was removed from LSCD Depot.	11 Sep 2019
11 Sep 2019	1. Waste was accumulated on the ground at N4. 2. Unused water barriers were placed near a tree at N4. 3. A chemical container was observed at LCSD Depot.	1. The waste was removed from N4. 2. The unused water barriers were removed from N4. 3. The chemical container was removed from LCSD Depot.	18 Sep 2019
18 Sep 2019	1. Chemical containers were observed without drip tray at N4. 2. Stagnant water was observed on the ground at N4. 3. Waste was observed on the ground at S7. 4. Waste was observed on the ground at LCSD Depot.	1. The chemical containers without drip tray at N4 were removed. 2. The stagnant water was removed at N4. 3. The waste was removed at S7. 4. The waste was removed at LCSD Depot.	27 Sep 2019

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
27 Sep 2019	1. Stagnant water was observed at S7. 2. Unused chemical container without drip tray was observed S7. 3. Waste was observed at S15.	The Contractor was recommended to: 1. remove the stagnant water from S7. 2. provide drip tray for the unused chemical container at S7. 3. remove the waste from S15.	Follow-up actions for the observations issued for the last weekly site inspection of the reporting month will be inspected during the next site inspection.

7.1.3 Summary of Environmental Site Inspections (Landscape works) for the Contract works area described in **Table 7.2**. The landscape work for the Contract was conducted during the reporting month. The implementation of mitigation measures for landscape and visual resources recommended in the EIA Report were monitored during the reporting period. Landscape and visual mitigation measures in accordance with the EP, EIA and EM&A Manual were implemented by the Contractor.

Table 7.2 Summary of Environmental Site Inspections (Landscape works) for the Contract works area

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
4 Sep 2019	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
18 Sep 2019	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.

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

7.2 Advice on the Solid and Liquid Waste Management Status

7.2.1 The Contractor registered as a chemical waste producer for the Contract. Sufficient numbers of receptacles were available for general refuse collection and sorting.

7.2.2 Monthly summary of waste flow table is detailed in **Appendix J**.

7.2.3 The Contractor was 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 Practice on the Packaging, Labelling and Storage of Chemical Wastes.

7.3 Environmental Licenses and Permits

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

7.4 Implementation Status of Environmental Mitigation Measures

7.4.1 In response to the site audit findings, the Contractors have 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.

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

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

7.4.4 Dolphin Watching Plan was implemented during the reporting month. No dolphins inside the silt curtain were observed. The relevant records were kept properly.

7.5 Summary of Exceedances of the Environmental Quality Performance Limit

7.5.1 For air quality, no Action and Limit Level exceedances of 1-hr TSP and 24-hr TSP were recorded at stations AMS5 and AMS6 during the reporting month.

7.5.2 For construction noise, no Action and Limit Level exceedances were recorded at station NMS5 during the reporting month.

7.5.3 For marine water quality monitoring, no Action Level and Limit Level exceedances of dissolved oxygen level and turbidity level were recorded during the reporting month. No Limit Level exceedances of suspended solid level were recorded during the reporting month.

7.5.4 On 30 September 2019, an Action Level exceedance of suspended solid was recorded at station IS10(N) during mid-ebb tide and an Action Level exceedance of suspended solid was recorded at station SR5(N) during mid-flood tide. The exceedances of suspended solid level recorded during the reporting month were considered to be attributed to other external factors such as sea condition, rather than the contract works. Therefore, the exceedances were considered as non-contract related.

7.6 Summary of Complaints, Notification of Summons and Successful Prosecution

7.6.1 There was no complaint received in relation to the environmental impacts during this reporting month.

7.6.2 The details of cumulative statistics of Environmental Complaints are provided in **Appendix K**.

7.6.3 No notification of summons and prosecution was received during the reporting period. Statistics on notifications of summons and successful prosecutions are summarized in **Appendix N**.

8 Future Key Issues

8.1 Construction Programme for the Coming Months

8.1.1 As informed by the Contractor, the major construction activities for October 2019 are summarized in **Table 8.1**.

Table 8.1 Construction Activities for October 2019

Site Area	Description of Activities
Portion X and Airport Road	Landscaping Works
Portion X and Airport Road	E&M works
Airport Road	Works for Diversion
Airport Road / Airport Express Line/ East Coast Road	Establishment of Site Access
Portion X	Finishing works for Highway Operation and Maintenance Area Building
West Portal	Finishing Works for Scenic Hill Tunnel West Portal Ventilation Building

8.2 Environmental Monitoring Schedule for the Coming Month

8.2.1 The tentative schedule for environmental monitoring in October 2019 is provided in **Appendix D**.

9 Conclusions

9.1 Conclusions

9.1.1 The construction phase and EM&A programme of the Contract commenced on 17 October 2012. This is the eighty-fourth Monthly EM&A report for the Contract which summarizes the monitoring results and audit findings of the EM&A programme during the reporting period from 1 to 30 September 2019.

Air Quality

9.1.2 For air quality, no Action Level and Limit Level exceedances of 1-hr TSP and 24-hr TSP were recorded at stations AMS5 and AMS6 during the reporting month.

Noise

9.1.3 For construction noise, no Action and Limit Level exceedances were recorded at station NMS5 during the reporting month.

Water Quality

9.1.4 For marine water quality monitoring, no Action Level and Limit Level exceedances of dissolved oxygen level and turbidity level were recorded during the reporting month. No Limit Level exceedances of suspended solid level were recorded during the reporting month.

9.1.5 On 30 September 2019, an Action Level exceedance of suspended solid was recorded at station IS10(N) during mid-ebb tide and an Action Level exceedance of suspended solid was recorded at station SR5(N) during mid-flood tide. The exceedances of suspended solid level recorded during the reporting month were considered to be attributed to other external factors such as sea condition, rather than the contract works. Therefore, the exceedances were considered as non-contract related.

Dolphin

9.1.6 During the September's surveys of the Chinese White Dolphin, no adverse impact from the activities of this construction project on Chinese White Dolphins was noticeable from general observations.

Mudflat

9.1.7 This measurement result was generally and relatively higher than the baseline measurement at S1, S2, S3 and S4.

9.1.8 The September 2019 survey results indicate that the impacts of the HKLR project could not be detected on intertidal soft shore community. Based on the monitoring results, no detectable impact on horseshoe crab was revealed due to HKLR project. The population change was mainly determined by seasonal variation, no abnormal phenomenon of horseshoe crab individual, such as large number of dead individuals on the shore) had been reported. Throughout the monitoring period, the disappearance of seagrass beds was believed the cause of cyclone hits rather than impact of HKLR project. The seagrass bed was since there had been a gradual increase in the size and number from December 2018 to June 2019 after the hit of the super cyclone in September 2018. The seagrass bed area slightly decreased in September 2019 (present survey) which was in normal fluctuation.

Environmental Site Inspection and Audit

9.1.9 Environmental site inspections were carried out on 4, 11, 18 and 27 September 2019. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site inspections.

9.1.10 There was no complaint received in relation to the environmental impact during the reporting period. No notification of summons and prosecution was received during the reporting period.

FIGURES

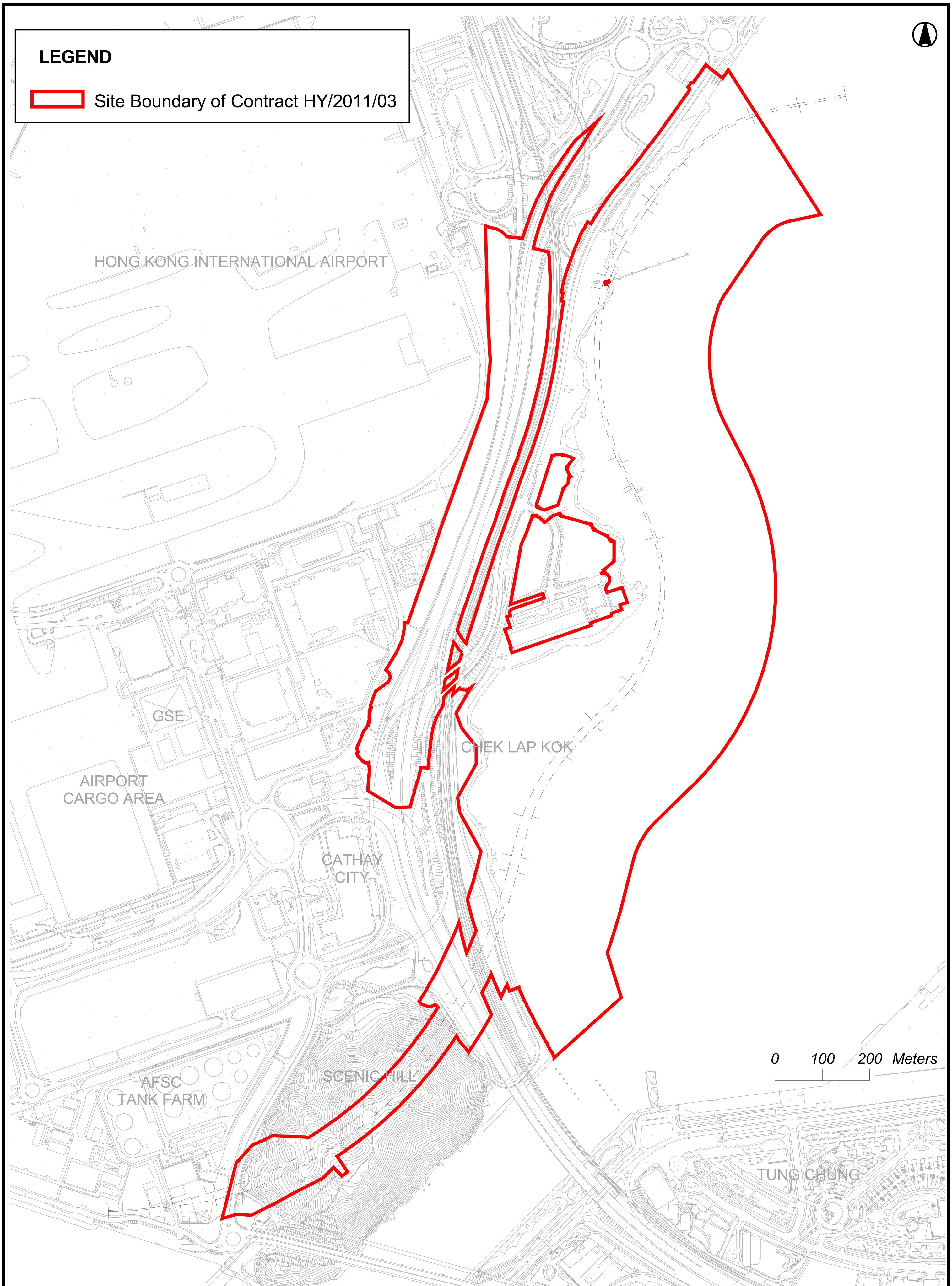
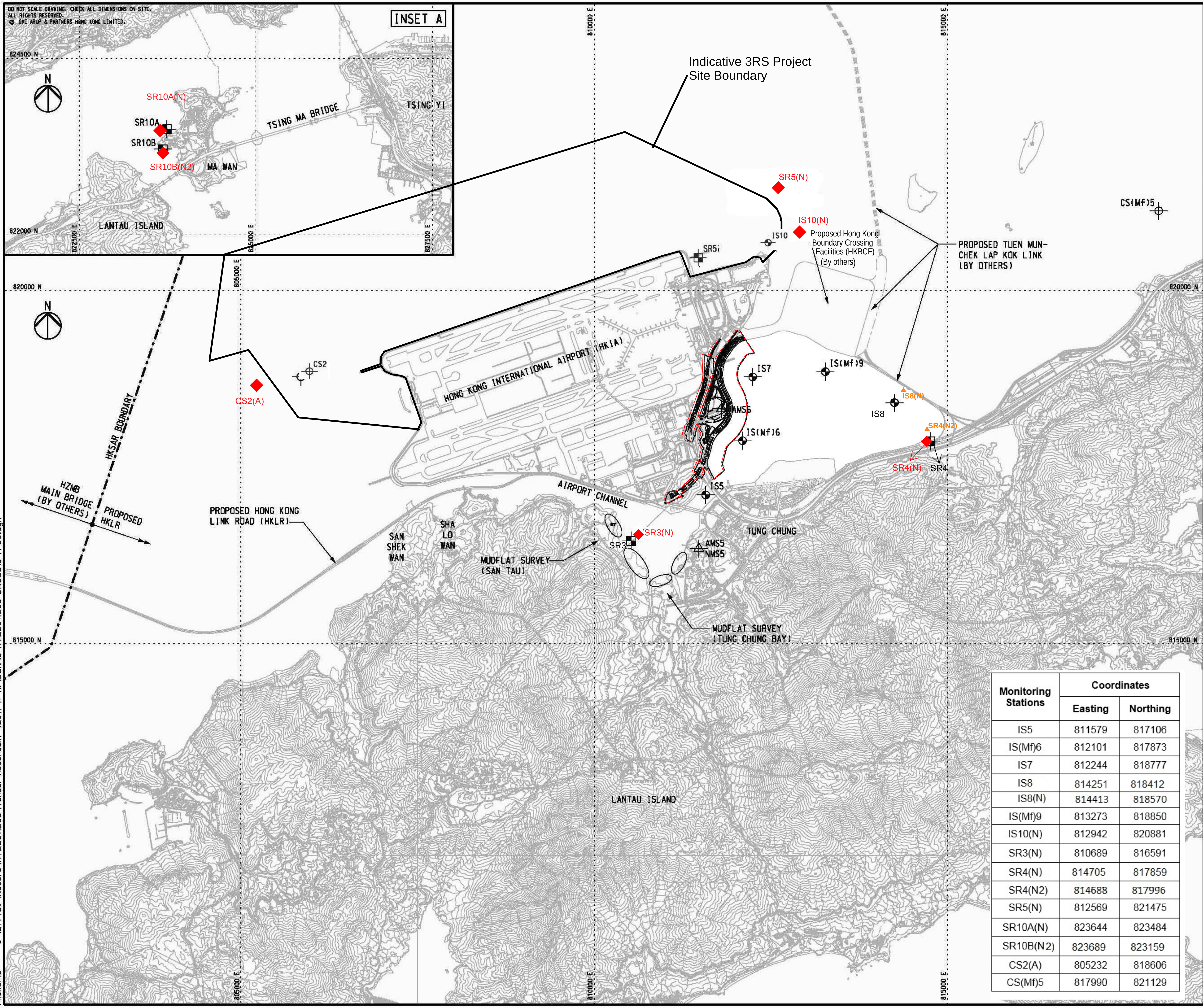


Figure 1.1 Location of the Site



Monitoring Stations	Coordinates	
	Easting	Northing
IS5	811579	817106
IS(Mf)6	812101	817873
IS7	812244	818777
IS8	814251	818412
IS8(N)	814413	818570
IS(Mf)9	813273	818850
IS10(N)	812942	820881
SR3(N)	810689	816591
SR4(N)	814705	817859
SR4(N2)	814688	817996
SR5(N)	812569	821475
SR10A(N)	823644	823484
SR10B(N2)	823689	823159
CS2(A)	805232	818606
CS(Mf)5	817990	821129

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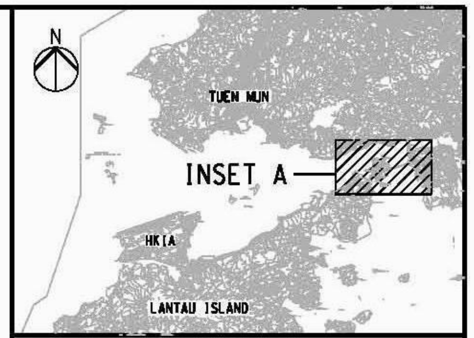
Filename : J:\214487\Record\HY_2011_03\Tender Addendum (2011-11-11)\DGN\E-HY_2011_03-DRG_310-A-00.dgn



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: 1:25000 @A1		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

	EASTING	NORTHING
S1	810291.160	816678.727
S2	810958.272	815831.531
S3	810716.585	815953.308
S4	811221.433	816151.381
SR3N	816591	810689

LEGEND:

- WORKS BOUNDARY
- SR3N WATER QUALITY MONITORING STATION
- SAMPLING ZONE
- MEASUREMENT POINT SEDIMENTATION RATE

Rev	Description	By	Date

Supervising Officer
ARUP 奥雅納工程顧問 Ove Arup & Partners Hong Kong Limited

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

Contractor's Designer
ATKINS 阿特金斯

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
MUDFLAT SURVEY AREAS

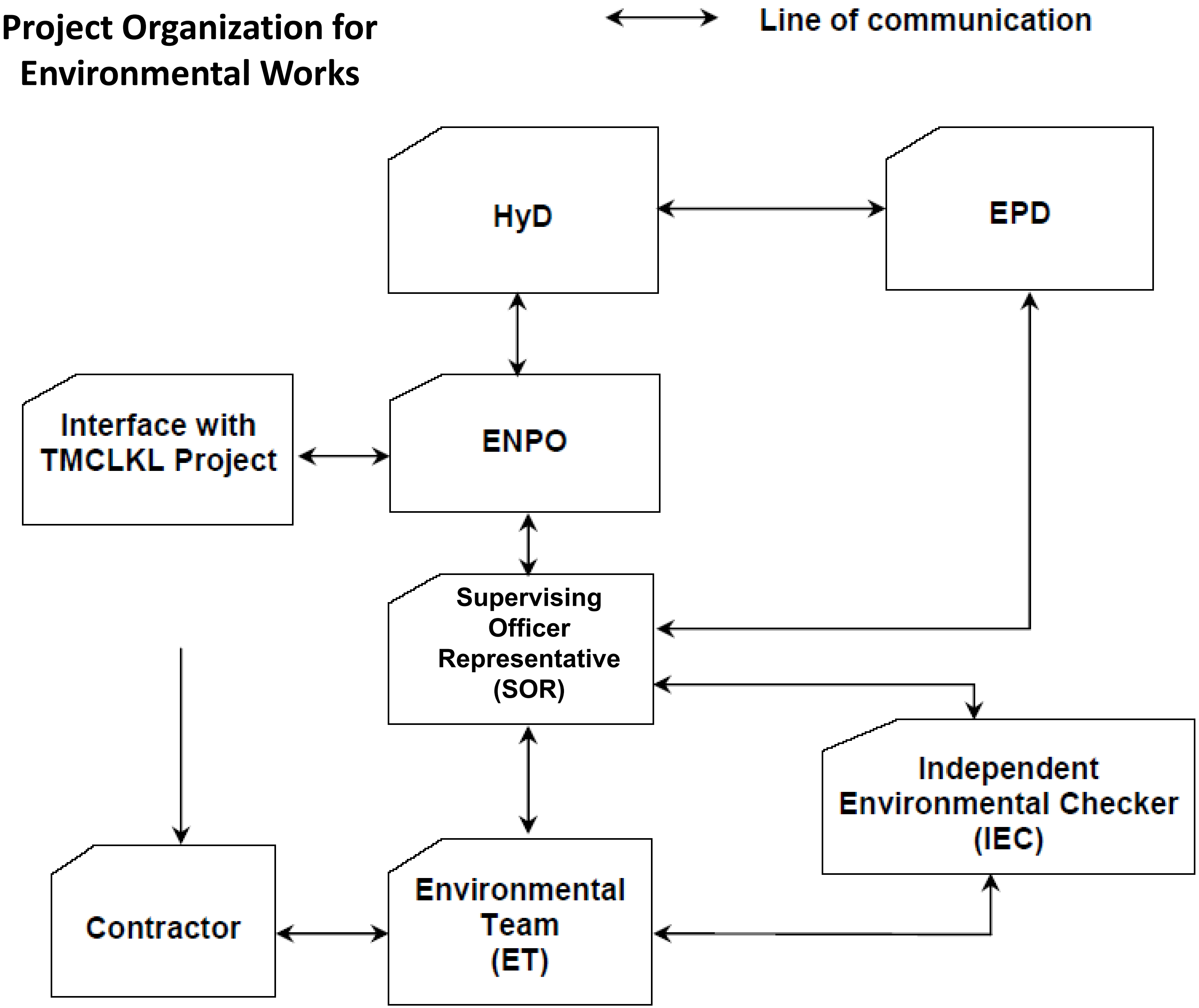
Drawing no. FIGURE 6.1		Rev. -	
Drawn ACL	Date 26 SEP 2012	Checked -	Approved -
Scale @ A1 1 : 7500		Status -	

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

APPENDIX A

Environmental Management Structure

Project Organization for Environmental Works



APPENDIX B

Construction Programme

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

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

Construction Programme (Oct to Dec 2019)

Description	Oct-19				Nov-19				Dec-19			
	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4
Works for Diversion of Airport Road												
Establishment of Site Access at Airport Road / Airport Express Line / East Coast Road / Kwo Lo Wan Road												
E&M / Landscaping works for HKBCF to Airport Tunnel West (C&C T) at Airport Road												
E&M / Landscaping works for HKBCF to Airport Tunnel West (C&C T) at Portion X												
Finishing works for Highway Operation and Maintenace Area Building at Portion X												
Finishing works for Scenic Hill Tunnel West Portal Ventilation Building at West Portal												

APPENDIX C

Calibration Certificates

輝創工程有限公司
Sun Creation Engineering Limited
Calibration & Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C185655
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC18-1966) Date of Receipt / 收件日期 : 27 September 2018

Description / 儀器名稱	:	Integrating Sound Level Meter
Manufacturer / 製造商	:	Brüel & Kjær
Model No. / 型號	:	2238
Serial No. / 編號	:	2684503
Supplied By / 委託者	:	Atkins China Limited 13/F., Wharf T&T Centre, Harbour City, Tsim Sha Tsui, Kowloon, Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (50 ± 25)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 17 October 2018

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By 測試 : K C Lee, Engineer

Certified By 核證 : H C Chan, Engineer

Date of Issue 簽發日期 : 19 October 2018

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 — 校正及檢測實驗所
c/o 香港新界屯門興安里一號四樓
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C185655
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration using laboratory acoustic calibrator was performed before the test from 6.1.1.2 to 6.3.2.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C180024
CL281	Multifunction Acoustic Calibrator	CDK1806821

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level :

6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Self-calibration

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
50 - 130	L_{AFP}	A	F	94.00	1	94.1

6.1.1.2 After Self-calibration

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L_{AFP}	A	F	94.00	1	94.0	± 1.1

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
50 - 130	L_{AFP}	A	F	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		114.0

IEC 61672 Class 1 Spec. : ± 0.6 dB per 10 dB step and ± 1.1 dB for overall different.

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 — 校正及檢測實驗所
c/o 香港新界屯門興安里一號四樓
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

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Certificate No. : C185655
證書編號

6.2 Time Weighting

UUT Setting				Applied Value		UUT	IEC 61672 Class 1
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Spec. (dB)
50 - 130	L_{AFP}	A	F	94.00	1	94.0	Ref.
	L_{ASP}		S			94.1	± 0.3

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT	IEC 61672 Class 1
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.	Reading (dB)	Spec. (dB)
50 - 130	L_{AFP}	A	F	94.00	63 Hz	67.8	-26.2 ± 1.5
					125 Hz	77.8	-16.1 ± 1.5
					250 Hz	85.3	-8.6 ± 1.4
					500 Hz	90.7	-3.2 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	95.2	+1.2 ± 1.6
					4 kHz	95.0	+1.0 ± 1.6
					8 kHz	92.9	-1.1 (+2.1 ; -3.1)
					12.5 kHz	89.7	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT	IEC 61672 Class 1
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.	Reading (dB)	Spec. (dB)
50 - 130	L_{CFP}	C	F	94.00	63 Hz	93.2	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.5
					250 Hz	94.0	0.0 ± 1.4
					500 Hz	94.0	0.0 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	93.8	-0.2 ± 1.6
					4 kHz	93.1	-0.8 ± 1.6
					8 kHz	90.9	-3.0 (+2.1 ; -3.1)
					12.5 kHz	87.8	-6.2 (+3.0 ; -6.0)

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 — 校正及檢測實驗所
c/o 香港新界屯門興安里一號四樓
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C185655
證書編號

Remarks : - UUT Microphone Model No. : 4188 & S/N : 2682524

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

94 dB	63 Hz - 125 Hz	± 0.35 dB
	250 Hz - 500 Hz	± 0.30 dB
	1 kHz	± 0.20 dB
	2 kHz - 4 kHz	± 0.35 dB
	8 kHz	± 0.45 dB
	12.5 kHz	± 0.70 dB
104 dB	1 kHz	± 0.10 dB (Ref. 94 dB)
114 dB	1 kHz	± 0.10 dB (Ref. 94 dB)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
Only the original copy or the laboratory's certified true copy is valid.

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 — 校正及檢測實驗所
c/o 香港新界屯門興安里一號四樓
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C193865
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC19-1433) Date of Receipt / 收件日期 : 12 July 2019

Description / 儀器名稱	:	Integrating Sound Level Meter
Manufacturer / 製造商	:	Brüel & Kjær
Model No. / 型號	:	2238
Serial No. / 編號	:	2800932
Supplied By / 委託者	:	Atkins China Limited 13/F., Wharf T&T Centre, Harbour City, Tsim Sha Tsui, Kowloon, Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (50 ± 25)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 21 July 2019

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By 測試 : H T Wong, Technical Officer

Certified By 核證 : K C Lee, Engineer

Date of Issue 簽發日期 : 22 July 2019

Certificate of Calibration
校正證書

Certificate No. : C193865
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration using the B & K Acoustic Calibrator 4231, S/N : 3003246 was performed before the test.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C190176
CL281	Multifunction Acoustic Calibrator	CDK1806821

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level :

6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT	IEC 61672 Class 1
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Spec. (dB)
50 - 130	L_{AFP}	A	F	94.00	1	94.1	± 1.1

6.1.2 Linearity

UUT Setting				Applied Value		UUT
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)
50 - 130	L_{AFP}	A	F	94.00	1	94.1 (Ref.)
				104.00		104.1
				114.00		114.1

IEC 61672 Class 1 Spec. : ± 0.6 dB per 10 dB step and ± 1.1 dB for overall different.

6.2 Time Weighting

UUT Setting				Applied Value		UUT	IEC 61672 Class 1
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Spec. (dB)
50 - 130	L_{AFP}	A	F	94.00	1	94.1	Ref.
	L_{ASP}		S			94.2	± 0.3

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
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Certificate of Calibration
校正證書

Certificate No. : C193865
證書編號

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L_{AFP}	A	F	94.00	63 Hz	67.9	-26.2 ± 1.5
					125 Hz	77.9	-16.1 ± 1.5
					250 Hz	85.4	-8.6 ± 1.4
					500 Hz	90.8	-3.2 ± 1.4
					1 kHz	94.1	Ref.
					2 kHz	95.3	+1.2 ± 1.6
					4 kHz	95.1	+1.0 ± 1.6
					8 kHz	92.9	-1.1 (+2.1 ; -3.1)
					12.5 kHz	89.8	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L_{CFP}	C	F	94.00	63 Hz	93.3	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.5
					250 Hz	94.0	0.0 ± 1.4
					500 Hz	94.1	0.0 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	93.9	-0.2 ± 1.6
					4 kHz	93.2	-0.8 ± 1.6
					8 kHz	90.9	-3.0 (+2.1 ; -3.1)
					12.5 kHz	87.8	-6.2 (+3.0 ; -6.0)

Sun Creation Engineering Limited – Calibration & Testing Laboratory
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Certificate of Calibration
校正證書

Certificate No. : C193865
證書編號

Remarks : - UUT Microphone Model No. : 4188 & S/N : 2791360

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

94 dB	: 63 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	12.5 kHz	: ± 0.70 dB
104 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
Only the original copy or the laboratory's certified true copy is valid.

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory
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輝創工程有限公司
Sun Creation Engineering Limited
Calibration & Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C193864
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC19-1433) Date of Receipt / 收件日期 : 12 July 2019

Description / 儀器名稱	:	Acoustical Calibrator
Manufacturer / 製造商	:	Brüel & Kjær
Model No. / 型號	:	4231
Serial No. / 編號	:	3003246
Supplied By / 委託者	:	Atkins China Limited 13/F., Wharf T&T Centre, Harbour City, Tsim Sha Tsui, Kowloon, Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (50 ± 25)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 21 July 2019

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By : H T Wong
測試 Technical Officer

Certified By : K C Lee
核證 Engineer

Date of Issue : 22 July 2019
簽發日期

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
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Certificate of Calibration
校正證書

Certificate No. : C193864
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C193756
CL281	Multifunction Acoustic Calibrator	CDK1806821
TST150A	Measuring Amplifier	C181288

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.0	± 0.2	± 0.2
114 dB, 1 kHz	114.0		

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	1.000 0	1 kHz ± 0.1 %	± 0.1

Remark : The uncertainties are for a confidence probability of not less than 95 %.

Note :
Only the original copy or the laboratory's certified true copy is valid.

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

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Sun Creation Engineering Limited
Calibration & Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. / 證書編號 : C192571

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC19-0945)

Date of Receipt / 收件日期 : 14 May 2019

Description / 儀器名稱	:	Acoustical Calibrator
Manufacturer / 製造商	:	Brüel & Kjær
Model No. / 型號	:	4231
Serial No. / 編號	:	3018753
Supplied By / 委託者	:	Atkins China Limited 13/F., Wharf T&T Centre, Harbour City, Tsim Sha Tsui, Kowloon, Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C

Relative Humidity / 相對濕度 : (50 ± 25)%

Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 19 May 2019

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By / 測試 : H T Wong, Technical Officer

Certified By / 核證 : K C Lee, Engineer

Date of Issue / 簽發日期 : 20 May 2019

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
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Certificate of Calibration
校正證書

Certificate No. : C192571
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C183775
CL281	Multifunction Acoustic Calibrator	CDK1806821
TST150A	Measuring Amplifier	C181288

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.0	± 0.2	± 0.2
114 dB, 1 kHz	114.0		

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	1.000 0	1 kHz ± 0.1 %	± 0.1

Remark : The uncertainties are for a confidence probability of not less than 95 %.

Note :
Only the original copy or the laboratory's certified true copy is valid.

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

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ENVIROTECH SERVICES CO.

High-Volume TSP Sampler
5-Point Calibration Record

Location	:	AMS5(Ma Wan Chung Village)
Calibrated by	:	P.F.Yeung
Date	:	26/08/2019

Sampler

Model	:	TE-5170
Serial Number	:	S/N3640

Calibration Orifice and Standard Calibration Relationship

Serial Number	:	2454
Service Date	:	25 February 2019
Slope (m)	:	2.07076
Intercept (b)	:	-0.02917
Correlation Coefficient(r)	:	1.00000

Standard Condition

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

Calibration Condition

Pa (hpa)	:	1006
Ta(K)	:	303

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	12.0	3.424	1.667	56	55.34
2	13 holes	9.4	3.030	1.477	51	50.40
3	10 holes	7.2	2.652	1.295	46	45.46
4	7 holes	4.5	2.096	1.027	39	38.54
5	5 holes	2.8	1.654	0.813	32	31.63

Notes:Z=SQRT{dH(Pa/Pstd)(Tstd/Ta)}, X=Z/m-b, Y(Corrected Flow)=IC*{SQRT(Pa/Pstd)(Tstd/Ta)}

Sampler Calibration Relationship

Slope(m):27.466 **Intercept(b):9.785** **Correlation Coefficient(r): 0.9991**

Checked by: Magnum Fan **Date: 29/08/2019**

ENVIROTECH SERVICES CO.

High-Volume TSP Sampler
5-Point Calibration Record

Location	**:**	**AMS6(Dragonair Building)**
Calibrated by	**:**	**P.F.Yeung**
Date	**:**	**19/07/2019**

Sampler

Model	**:**	**TE-5170**
Serial Number	**:**	**S/N3639**

Calibration Orifice and Standard Calibration Relationship

Serial Number	**:**	**2454**
Service Date	**:**	**25 February 2019**
Slope (m)	**:**	**2.07076**
Intercept (b)	**:**	**-0.02917**
Correlation Coefficient(r)	**:**	**1.00000**

Standard Condition

Pstd (hpa)	**:**	**1013**
Tstd (K)	**:**	**298.18**

Calibration Condition

Pa (hpa)	**:**	**1001**
Ta(K)	**:**	**304**

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	12.0	3.409	1.661	55	54.13
2	13 holes	9.2	2.985	1.456	50	49.21
3	10 holes	7.0	2.604	1.272	45	44.29
4	7 holes	4.6	2.111	1.033	38	37.40
5	5 holes	2.7	1.617	0.795	29	28.54

Notes:Z=SQRT{dH(Pa/Pstd)(Tstd/Ta)}, X=Z/m-b ,Y(Corrected Flow)=IC*{SQRT(Pa/Pstd)(Tstd/Ta)}

Sampler Calibration Relationship

Slope(m):29.370 **Intercept(b): 6.199** **Correlation Coefficient(r): 0.9962**

Checked by: Magnum Fan **Date: 22/07/2019**

ENVIROTECH SERVICES CO.

High-Volume TSP Sampler
5-Point Calibration Record

Location	:	**AMS6 (Dragonair Building)**
Calibrated by	:	**P.F.Yeung**
Date	:	**10/09/2019**

Sampler

Model	:	**TE-5170**
Serial Number	:	**S/N3639**

Calibration Orifice and Standard Calibration Relationship

Serial Number	:	**2454**
Service Date	:	**25 February 2019**
Slope (m)	:	**2.07076**
Intercept (b)	:	**-0.02917**
Correlation Coefficient(r)	:	**1.00000**

Standard Condition

Pstd (hpa)	:	**1013**
Tstd (K)	:	**298.18**

Calibration Condition

Pa (hpa)	:	**1007**
Ta(K)	:	**306**

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	12.0	3.408	1.660	54	53.13
2	13 holes	9.2	2.984	1.455	50	49.20
3	10 holes	6.9	2.585	1.262	45	44.28
4	7 holes	4.7	2.133	1.044	38	37.39
5	5 holes	2.5	1.556	0.765	30	29.52

Notes:Z=SQRT{dH(Pa/Pstd)(Tstd/Ta)}, X=Z/m-b ,Y(Corrected Flow)=IC*{SQRT(Pa/Pstd)(Tstd/Ta)}

Sampler Calibration Relationship

Slope(m):26.931 **Intercept(b): 9.377** **Correlation Coefficient(r): 0.9967**

Checked by: Magnum Fan **Date: 10/09/2019**

TISCH Environmental

RECALIBRATION DUE DATE:
February 25, 2020

Certificate of Calibration

Calibration Certification Information					
Cal. Date:	February 25, 2019	**Rootsmeter S/N:** 438320	**Ta:**	294	°K
Operator:	Jim Tisch		**Pa:**	762.0	mm Hg
Calibration Model #:	TE-5025A	**Calibrator S/N:** 2454			

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4400	3.2	2.00
2	3	4	1	1.0200	6.4	4.00
3	5	6	1	0.9120	7.9	5.00
4	7	8	1	0.8700	8.8	5.50
5	9	10	1	0.7180	12.8	8.00

Data Tabulation

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis)
1.0120	0.7028	1.4257	0.9958	0.6915	0.8784
1.0077	0.9880	2.0162	0.9916	0.9722	1.2423
1.0057	1.1028	2.2542	0.9896	1.0851	1.3889
1.0045	1.1546	2.3642	0.9885	1.1362	1.4567
0.9992	1.3916	2.8513	0.9832	1.3694	1.7569
QSTD	m=	2.07076	**QA**	m=	1.29667
	b=	-0.02917		b=	-0.01797
	r=	1.00000		r=	1.00000

Calculations

Vstd= ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	**Va=** ΔVol((Pa-ΔP)/Pa)
Qstd= Vstd/ΔTime	**Qa=** Va/ΔTime

For subsequent flow rate calculations:

$$Qstd = 1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right) \qquad Qa = 1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$$

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg
Key	
ΔH: calibrator manometer reading (in H2O)	
ΔP: rootsmeter manometer reading (mm Hg)	
Ta: actual absolute temperature (°K)	
Pa: actual barometric pressure (mm Hg)	
b: intercept	
m: slope	

RECALIBRATION

US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30

Tisch Environmental, Inc.
145 South Miami Avenue
Village of Cleves, OH 45002

www.tisch-env.com
TOLL FREE: (877)263-7610
FAX: (513)467-9009

EQUIPMENT CALIBRATION RECORD

Type :	Laser Dust Monitor
Manufacturer / Brand :	SIBATA
Model No.:	LD-5R
Equipment No.:	LD-5R-001
Serial No.:	640595
Sensitivity Adjustment Scale Setting :	765 CPM

Standard Equipment

Equipment :	MFC High Volume Air Sampler
Venue :	Tung Chung Pier
Model No.:	TE-5170 Total Suspended Particulate
Serial No.:	S/N3641
Previous Calibration Date:	13-Jul-2019

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration) :	764 CPM
Sensitivity Adjustment Scale Setting (After Calibration) :	764 CPM

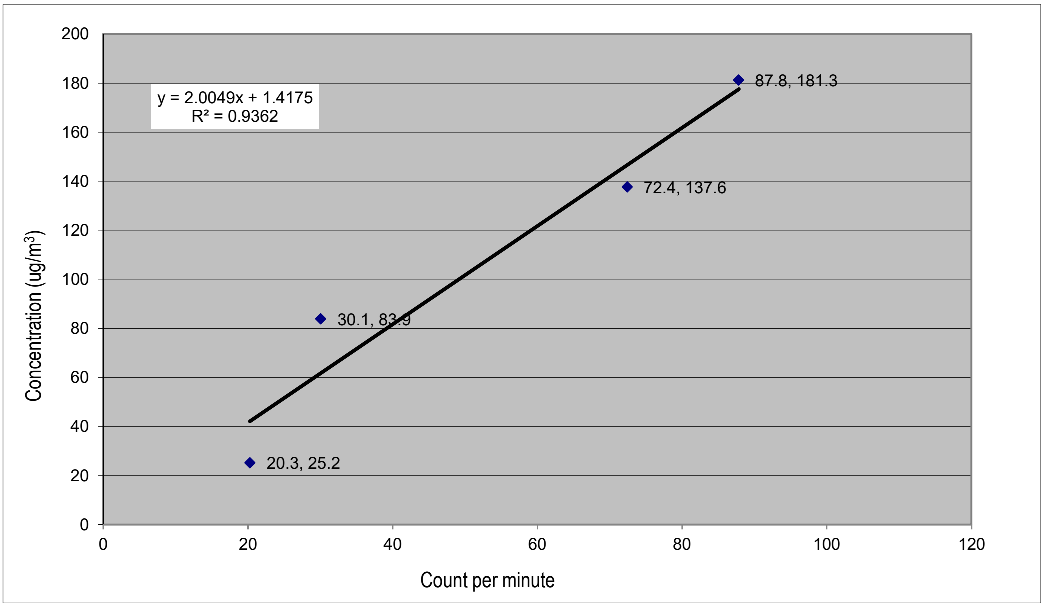
Date (dd-mmm-yy)	Time		Ambient Condition		Concentration (ug/m^3) Y-axis	Total Count	Count/Minute X-axis
			Temp (^oC)	R.H. (%)			
08-Aug-19	09:26	09:56	30.8	74%	25.2	609	20.3
08-Aug-19	10:59	11:59	30.0	74%	83.9	1805	30.1
08-Aug-19	12:25	13:55	31.8	70%	137.6	6519	72.4
08-Aug-19	14:36	16:36	34.0	63%	181.3	10540	87.8

Be Linear Regression of Y or X

Slope (K-factor): 2.0049 Intercept,b: 1.4175

Correlation coefficient (R): 0.9676

Remark: Srong Correlation (R>0.8)



Recorded by: Zion Leung Signature: Date: 21-Aug-19

Checked by: Eva Keung Signature: Eva Date: 21-Aug-19

EQUIPMENT CALIBRATION RECORD

Type :	Laser Dust Monitor
Manufacturer / Brand :	SIBATA
Model No.:	LD-5R
Equipment No.:	LD-5R-002
Serial No.:	861988
Sensitivity Adjustment Scale Setting :	621 CPM

Standard Equipment

Equipment :	MFC High Volume Air Sampler
Venue :	Tung Chung Pier
Model No.:	TE-5170 Total Suspended Particulate
Serial No.:	S/N3641
Previous Calibration Date:	13-Jul-2019

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration) :	620 CPM
Sensitivity Adjustment Scale Setting (After Calibration) :	620 CPM

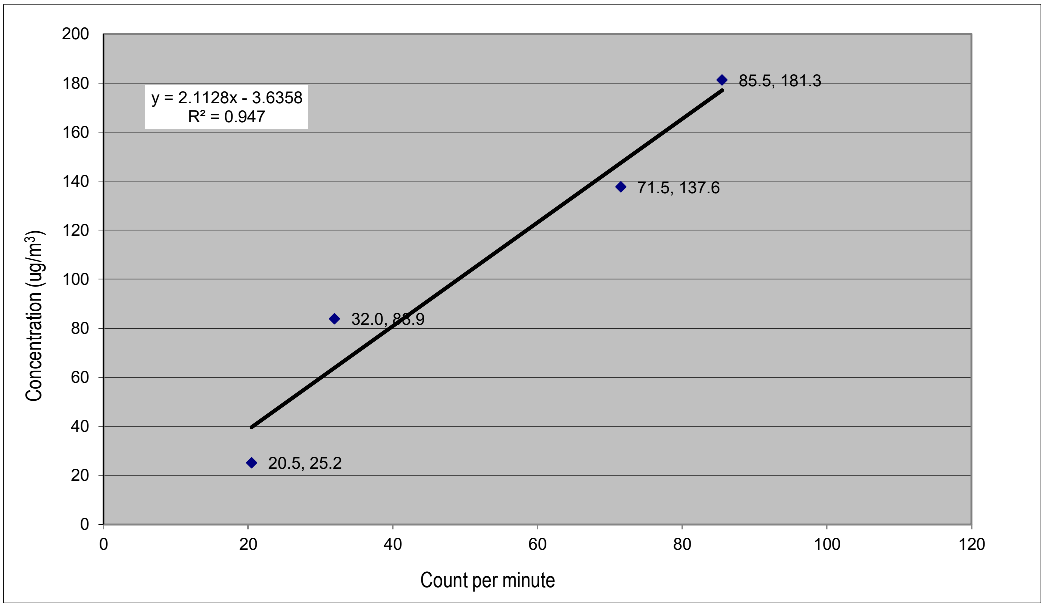
Date (dd-mmm-yy)	Time		Ambient Condition		Concentration (ug/m^3) Y-axis	Total Count	Count/Minute X-axis
			Temp (^oC)	R.H. (%)			
08-Aug-19	09:26	09:56	30.8	74%	25.2	614	20.5
08-Aug-19	10:59	11:59	30.0	74%	83.9	1917	32.0
08-Aug-19	12:25	13:55	31.8	70%	137.6	6437	71.5
08-Aug-19	14:36	16:36	34.0	63%	181.3	10263	85.5

Be Linear Regression of Y or X

Slope (K-factor): 2.1128 Intercept,b: -3.6358

Correlation coefficient (R): 0.9732

Remark: Srong Correlation (R>0.8)



Recorded by:	Zion Leung	Signature:		Date:	21-Aug-19
Checked by:	Eva Keung	Signature:	Eva	Date:	21-Aug-19

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REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT:	MR MIKE SHEK	**WORK ORDER:**	HK1929390
CLIENT:	AECOM ASIA COMPANY LIMITED		
ADDRESS:	1501-10, 15/F, TOWER 1, GRAND CENTRAL PLAZA, 138 SHATIN RURAL COMMITTEE ROAD, SHATIN, NEW TERRITORIES, HONG KONG	**SUB- BATCH:** **LABORATORY:** **DATE RECEIVED:** **DATE OF ISSUE:**	0 HONG KONG 09-Jul-2019 12-Jul-2019

COMMENTS

The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.
The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the ALS Hong Kong laboratory or quoted from relevant international standards.
The "Next Calibration Date" is recommended according to best practice principle as practised by the ALS Hong Kong laboratory or quoted from relevant international standards.

Scope of Test:	Conductivity, Dissolved Oxygen, pH Value, Turbidity, Salinity and Temperature
Equipment Type:	Multifunctional Meter
Brand Name:	YSI
Model No.:	6820 V2
Serial No.:	12A101545
Equipment No.:	W.026.35
Date of Calibration:	09-Jul-2019

NOTES

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

Iris

Ms. Lin Wai Yu, Iris
Assistant Manager - Inorganic

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER: HK1929390

SUB- BATCH: 0
DATE OF ISSUE: 12-Jul-2019
CLIENT: AECOM ASIA COMPANY LIMITED

Equipment Type: Multifunctional Meter
Brand Name: YSI
Model No.: 6820 V2
Serial No.: 12A101545
Equipment No.: W.026.35
Date of Calibration: 09-Jul-2019 Date of Next Calibration: 09-Oct-2019

PARAMETERS:

Conductivity Method Ref: APHA (21st edition), 2510B

Expected Reading (μS/cm)	Displayed Reading (μS/cm)	Tolerance (%)
146.9	148.0	+0.7
6667	6630	-0.6
12890	12800	-0.7
58670	58500	-0.3
	Tolerance Limit (%)	±10.0

Dissolved Oxygen Method Ref: APHA (21st edition), 4500- O: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.40	3.36	-0.04
5.50	5.47	-0.03
7.40	7.41	+0.01
	Tolerance Limit (mg/L)	±0.20

pH Value Method Ref: APHA (21st edition), 4500H:B

Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)
4.0	4.03	+0.03
7.0	7.03	+0.03
10.0	10.04	+0.04
	Tolerance Limit (pH unit)	±0.20

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Iris

Ms. Lin Wai Yu, Iris
Assistant Manager - Inorganic

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER: HK1929390

SUB- BATCH: 0
DATE OF ISSUE: 12-Jul-2019
CLIENT: AECOM ASIA COMPANY LIMITED

Equipment Type: Multifunctional Meter
Brand Name: YSI
Model No.: 6820 V2
Serial No.: 12A101545
Equipment No.: W.026.35
Date of Calibration: 09-Jul-2019 Date of Next Calibration: 09-Oct-2019

PARAMETERS:

Turbidity

Method Ref: APHA (21st edition), 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.0	--
4	3.9	-2.5
10	9.5	-5.0
20	19.2	-4.0
50	49.1	-1.8
100	99.3	-0.7
	Tolerance Limit (%)	±10.0

Salinity

Method Ref: APHA (21st edition), 2520B

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	--
10	10.08	+0.8
20	19.93	-0.4
30	29.91	-0.3
	Tolerance Limit (%)	±10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Iris

Ms. Lin Wai Yu, Iris
Assistant Manager - Inorganic

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER: HK1929390

SUB- BATCH: 0
DATE OF ISSUE: 12-Jul-2019
CLIENT: AECOM ASIA COMPANY LIMITED

Equipment Type: Multifunctional Meter
Brand Name: YSI
Model No.: 6820 V2
Serial No.: 12A101545
Equipment No.: W.026.35
Date of Calibration: 09-Jul-2019   Date of Next Calibration: 09-Oct-2019

PARAMETERS:

Temperature   **Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.**

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
10.0	10.94	+0.9
20.0	19.93	-0.1
40.0	39.89	-0.1
	Tolerance Limit (°C)	±2.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

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REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT:	MR MIKE SHEK	**WORK ORDER:**	HK1933819
CLIENT:	AECOM ASIA COMPANY LIMITED		
ADDRESS:	1501-10, 15/F, TOWER 1, GRAND CENTRAL PLAZA, 138 SHATIN RURAL COMMITTEE ROAD, SHATIN, NEW TERRITORIES, HONG KONG	**SUB- BATCH:**	0
		LABORATORY:	HONG KONG
		DATE RECEIVED:	08-Aug-2019
		DATE OF ISSUE:	14-Aug-2019

COMMENTS

Equipment information (Brand name, Model No., Serial No. and Equipment No.) is provided by client.
The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.
The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the ALS Hong Kong laboratory or quoted from relevant international standards.
The "Next Calibration Date" is recommended according to best practice principle as practised by the ALS Hong Kong laboratory or quoted from relevant international standards.

Scope of Test:	Conductivity, Dissolved Oxygen, pH Value, Turbidity, Salinity and Temperature
Equipment Type:	Multifunctional Meter
Brand Name/ Model No.:	6820 V2
Serial No./ Equipment No.:	00H1019/ W.026.09
Date of Calibration:	08-Aug-2019

NOTES

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

Iris

Ms. Lin Wai Yu, Iris
Assistant Manager - Inorganic

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER: HK1933819

SUB- BATCH: 0
DATE OF ISSUE: 14-Aug-2019
CLIENT: AECOM ASIA COMPANY LIMITED

Equipment Type: Multifunctional Meter
Brand Name/ Model No.: 6820 V2
Serial No./ Equipment No.: 00H1019/W.026.09
Date of Calibration: 08-Aug-2019 Date of Next Calibration: 08-Nov-2019

PARAMETERS:

Conductivity **Method Ref: APHA (21st edition), 2510B**

Expected Reading (μS/cm)	Displayed Reading (μS/cm)	Tolerance (%)
146.9	145.0	-1.3
6667	6600	-1.0
12890	12680	-1.6
58670	58500	-0.3
	Tolerance Limit (%)	±10.0

Dissolved Oxygen **Method Ref: APHA (21st edition), 4500- O: G**

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.40	3.37	-0.03
5.45	5.41	-0.04
7.50	7.47	-0.03
	Tolerance Limit (mg/L)	±0.20

pH Value **Method Ref: APHA (21st edition), 4500H:B**

Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)
4.0	4.01	+0.01
7.0	7.04	+0.04
10.0	9.98	-0.02
	Tolerance Limit (pH unit)	±0.20

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Iris

Ms. Lin Wai Yu, Iris
Assistant Manager - Inorganic

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER: HK1933819

SUB- BATCH: 0
DATE OF ISSUE: 14-Aug-2019
CLIENT: AECOM ASIA COMPANY LIMITED

Equipment Type: Multifunctional Meter
Brand Name/ Model No.: 6820 V2
Serial No./ Equipment No.: 00H1019/W.026.09
Date of Calibration: 08-Aug-2019 Date of Next Calibration: 08-Nov-2019

PARAMETERS:

Turbidity

Method Ref: APHA (21st edition), 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.0	--
4	4.1	+2.5
10	9.8	-2.0
20	19.2	-4.0
50	49.3	-1.4
100	99.0	-1.0
	Tolerance Limit (%)	±10.0

Salinity

Method Ref: APHA (21st edition), 2520B

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	--
10	9.89	-1.1
20	19.87	-0.6
30	29.60	-1.3
	Tolerance Limit (%)	±10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

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Ms. Lin Wai Yu, Iris
Assistant Manager - Inorganic

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER: HK1933819

SUB- BATCH: 0
DATE OF ISSUE: 14-Aug-2019
CLIENT: AECOM ASIA COMPANY LIMITED

Equipment Type: Multifunctional Meter
Brand Name/ Model No.: 6820 V2
Serial No./ Equipment No.: 00H1019/W.026.09
Date of Calibration: 08-Aug-2019 Date of Next Calibration: 08-Nov-2019

PARAMETERS:

Temperature

Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
10.0	10.02	+0.0
20.5	20.37	-0.1
38.0	37.89	-0.1
	Tolerance Limit (°C)	±2.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

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APPENDIX D

Monitoring Schedule

Monitoring Schedule for September 2019

Date							1-Sep
Date	**2-Sep**	**3-Sep**	**4-Sep**	**5-Sep**	**6-Sep**	**7-Sep**	**8-Sep**
	Water Quality Monitoring (See Remark 1)	AMS5/AMS6 - 24hr Dust	AMS5-1hr Dust, NMS5, AMS6-1hr Dust 1st Dolphin Monitoring Water Quality Monitoring		Water Quality Monitoring		
Date	**9-Sep**	**10-Sep**	**11-Sep**	**12-Sep**	**13-Sep**	**14-Sep**	**15-Sep**
	AMS5/AMS6 - 24hr Dust Mudflat Monitoring Water Quality Monitoring	AMS5-1hr Dust, NMS5, AMS6-1hr Dust Mudflat Monitoring (See Remark 3)	1st Dolphin Monitoring Water Quality Monitoring	Sedimentation Rate monitoring	AMS5/AMS6 - 24hr Dust Water Quality Monitoring		
Date	**16-Sep**	**17-Sep**	**18-Sep**	**19-Sep**	**20-Sep**	**21-Sep**	**22-Sep**
	AMS5-1hr Dust, NMS5, AMS6-1hr Dust Water Quality Monitoring	2nd Dolphin Monitoring (See Remark 2)	Water Quality Monitoring	AMS5/AMS6 - 24hr Dust	AMS5-1hr Dust, AMS6-1hr Dust Water Quality Monitoring		
Date	**23-Sep**	**24-Sep**	**25-Sep**	**26-Sep**	**27-Sep**	**28-Sep**	**29-Sep**
	Mudflat Monitoring (See Remark 3) 2nd Dolphin Monitoring (See Remark 2) Water Quality Monitoring		AMS5/AMS6 - 24hr Dust Mudflat Monitoring (See Remark 3) Water Quality Monitoring	AMS5-1hr Dust, NMS5, AMS6-1hr Dust	Water Quality Monitoring		
Date	**30-Sep**						
	AMS5/AMS6 - 24hr Dust Water Quality Monitoring						

Remark:

1) The water quality monitoring for both ebb and flood tides on 2 September 2019 were cancelled due to safety reasons (hoisting of Strong Wind Signal, No. 3 /Standby Signal No.1) and no substitute monitoring was conducted.

2) Due to boat unavailability on 16, 25 September 2019, the dolphin monitoring on 16 September 2019 was rescheduled to 17 September 2019; and the dolphin monitoring on 25 September 2019 was rescheduled to 23 September 2019.

3) Due to weather condition and manpower allocation, the mudflat monitoring on 11, 12, 13 September 2019 were rescheduled to 10, 23, 25 September 2019.

Monitoring Schedule for October 2019

Date		1-Oct	2-Oct	3-Oct	4-Oct	5-Oct	6-Oct
			AMS5-1hr Dust, NMS5, AMS6-1hr Dust			AMS5/AMS6 - 24hr Dust	
Date	**7-Oct**	**8-Oct**	**9-Oct**	**10-Oct**	**11-Oct**	**12-Oct**	**13-Oct**
		AMS5-1hr Dust, NMS5, AMS6-1hr Dust			AMS5/AMS6 - 24hr Dust		
Date	**14-Oct**	**15-Oct**	**16-Oct**	**17-Oct**	**18-Oct**	**19-Oct**	**20-Oct**
	AMS5-1hr Dust, NMS5, AMS6-1hr Dust			AMS5/AMS6 - 24hr Dust	AMS5-1hr Dust, AMS6-1hr Dust		
Date	**21-Oct**	**22-Oct**	**23-Oct**	**24-Oct**	**25-Oct**	**26-Oct**	**27-Oct**
			AMS5/AMS6 - 24hr Dust	AMS5-1hr Dust, NMS5, AMS6-1hr Dust			
Date	**28-Oct**	**29-Oct**	**30-Oct**	**31-Oct**			
		AMS5/AMS6 - 24hr Dust	AMS5-1hr Dust, NMS5, AMS6-1hr Dust				

The schedule is subject to change due to unforeseeable circumstances (e.g. adverse weather, etc.).

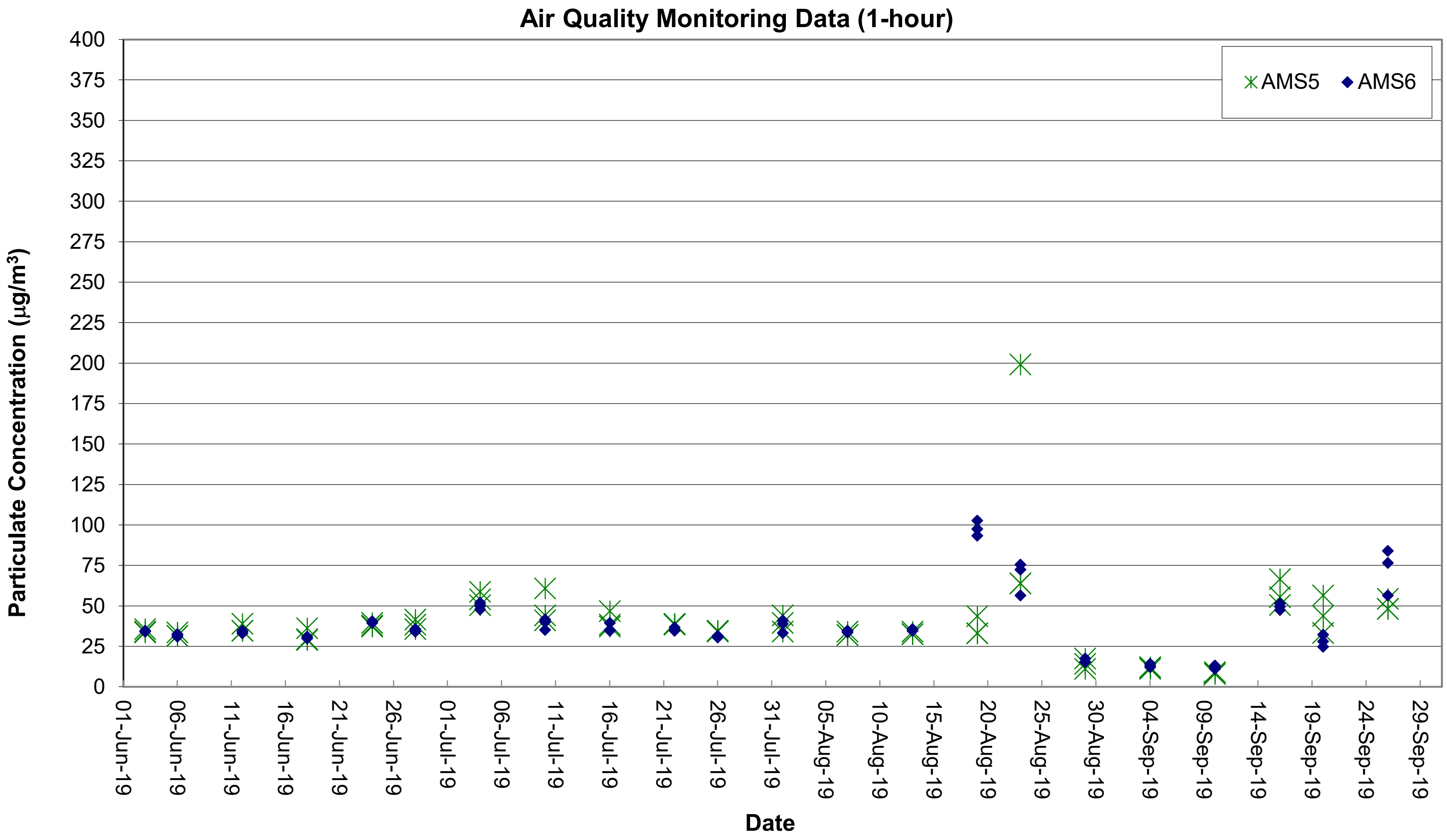
APPENDIX E

Monitoring Data and Graphical Plots

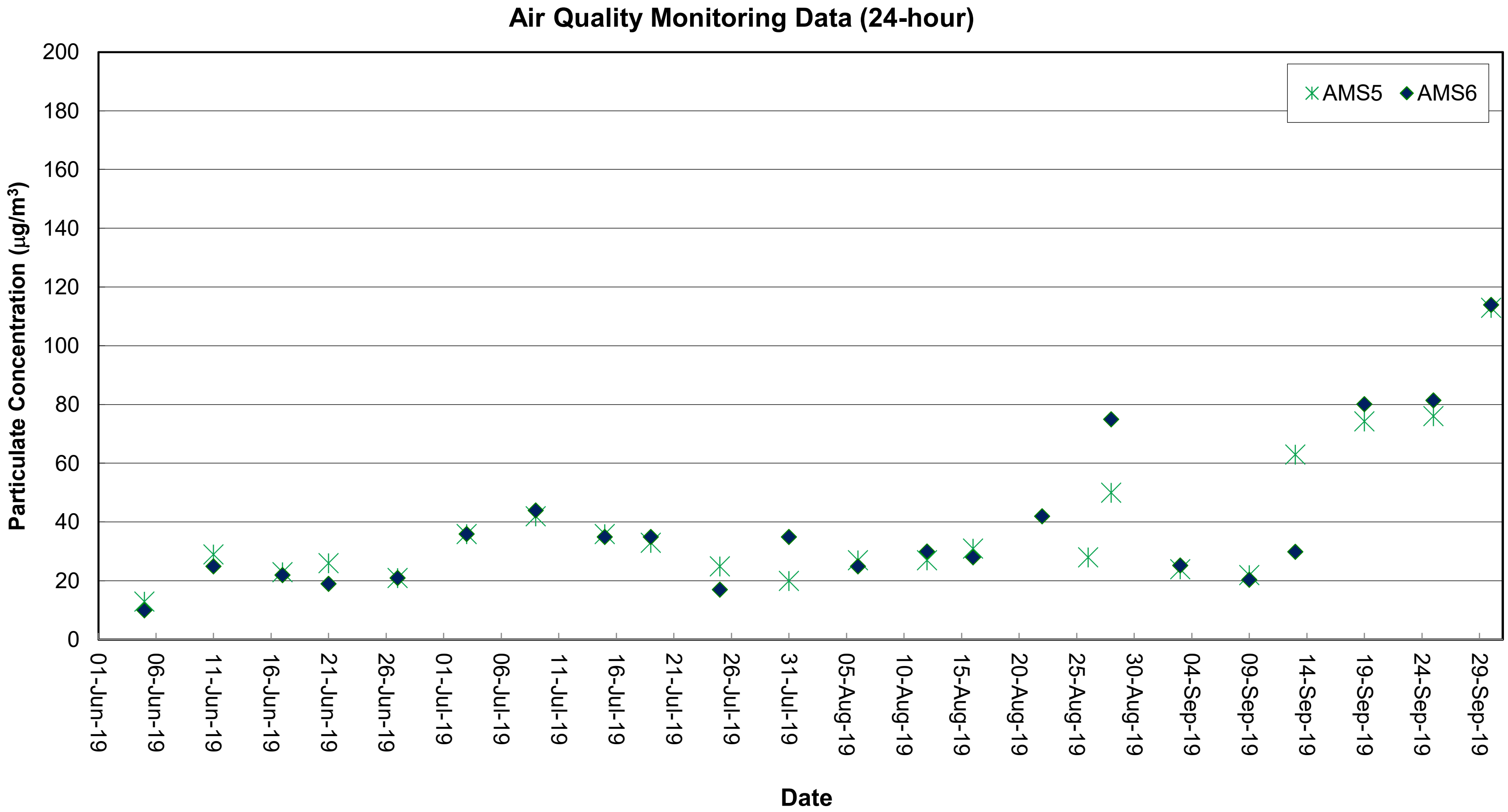
Air Quality Monitoring Data

Project	Works	Date (yyyy-mm-dd)	Station	Time	Parameter	Results	Unit
HKLR	HY/2011/03	2019-09-04	AMS5	09:00	1-hr TSP	12	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-04	AMS5	10:00	1-hr TSP	11	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-04	AMS5	11:00	1-hr TSP	12	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-10	AMS5	13:00	1-hr TSP	9	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-10	AMS5	14:00	1-hr TSP	9	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-10	AMS5	15:00	1-hr TSP	8	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-16	AMS5	08:45	1-hr TSP	67	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-16	AMS5	09:45	1-hr TSP	51	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-16	AMS5	10:45	1-hr TSP	56	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-20	AMS5	10:00	1-hr TSP	57	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-20	AMS5	11:00	1-hr TSP	44	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-20	AMS5	12:00	1-hr TSP	33	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-26	AMS5	09:00	1-hr TSP	48	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-26	AMS5	10:00	1-hr TSP	48	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-26	AMS5	11:00	1-hr TSP	54	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-03	AMS5	08:00	24-hr TSP	24	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-09	AMS5	08:00	24-hr TSP	22	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-13	AMS5	08:00	24-hr TSP	63	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-19	AMS5	08:00	24-hr TSP	74	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-25	AMS5	08:00	24-hr TSP	76	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-30	AMS5	08:00	24-hr TSP	113	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-04	AMS6	13:00	1-hr TSP	12	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-04	AMS6	14:00	1-hr TSP	13	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-04	AMS6	15:00	1-hr TSP	14	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-10	AMS6	09:00	1-hr TSP	12	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-10	AMS6	10:00	1-hr TSP	11	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-10	AMS6	11:00	1-hr TSP	13	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-10	AMS6	09:00	1-hr TSP	12	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-10	AMS6	10:00	1-hr TSP	11	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-10	AMS6	11:00	1-hr TSP	13	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-16	AMS6	13:04	1-hr TSP	48	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-16	AMS6	14:04	1-hr TSP	50	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-16	AMS6	15:04	1-hr TSP	52	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-20	AMS6	14:35	1-hr TSP	32	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-20	AMS6	15:35	1-hr TSP	28	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-20	AMS6	16:35	1-hr TSP	25	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-26	AMS6	13:00	1-hr TSP	84	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-26	AMS6	14:00	1-hr TSP	77	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-26	AMS6	15:00	1-hr TSP	57	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-03	AMS6	08:00	24-hr TSP	25	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-09	AMS6	08:00	24-hr TSP	20	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-13	AMS6	08:00	24-hr TSP	30	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-19	AMS6	08:00	24-hr TSP	80	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-25	AMS6	08:00	24-hr TSP	81	$\mu g/m^3$
HKLR	HY/2011/03	2019-09-30	AMS6	08:00	24-hr TSP	114	$\mu g/m^3$

Graphical Plot of 1-hour TSP at AMS5 and AMS6



Graphical Plot of 24-hour TSP at AMS5 and AMS6



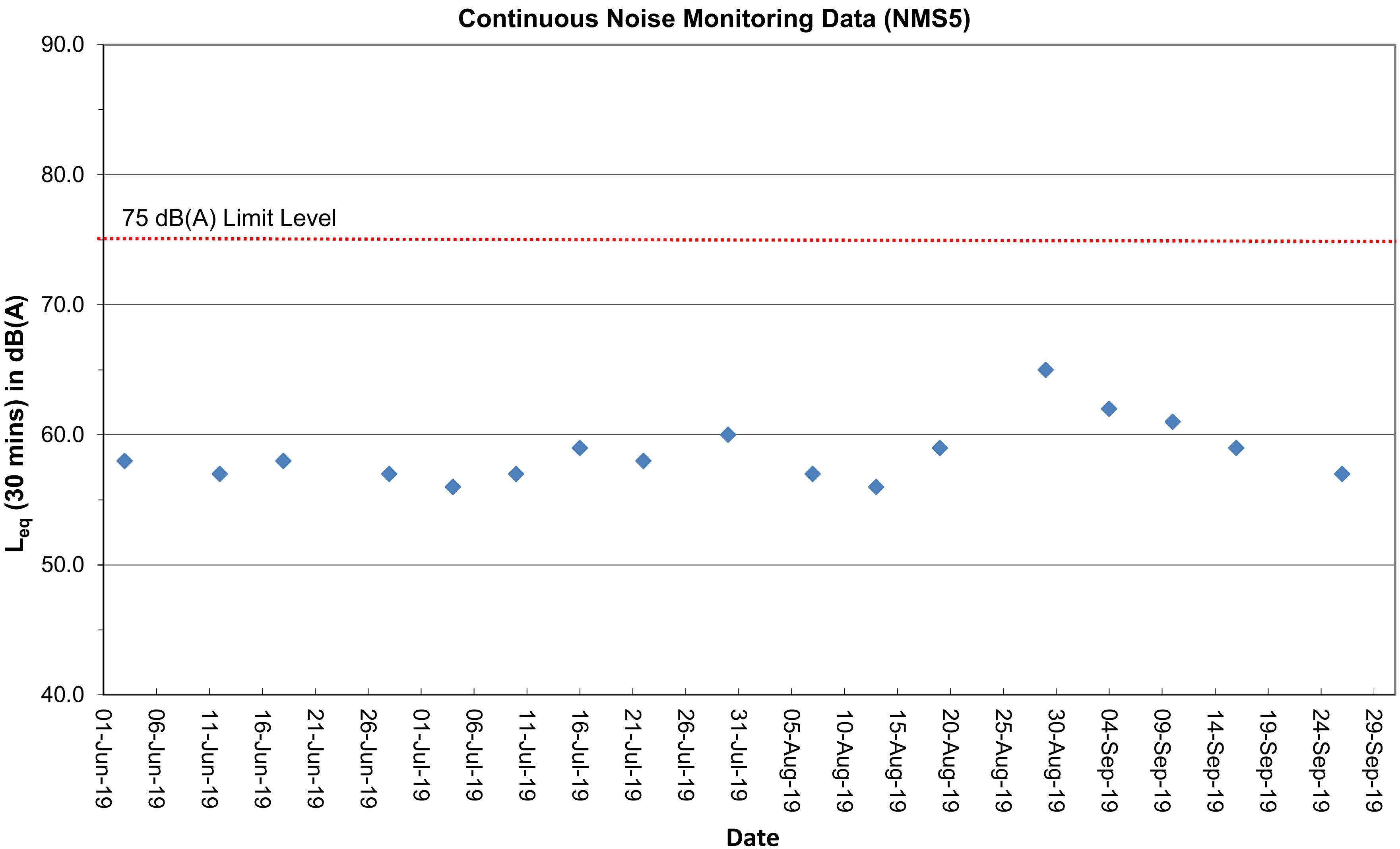
Remark:

1) Due to malfunction of the high volume sampler (HVS), monitoring time for 24-hr TSP monitoring on 22 August 2019 at AMS5 (Ma Wan Chung Village) was less than 24 hours. The 24-hr TSP monitoring on 22 August 2019 at AMS5 was rescheduled to 26 August 2019.

Project	Works	Date (yyyy-mm-dd)	Station	Start Time	Wind Speed, m/s	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	2019-09-04	NMS5	14:25	<5	Leq:	59.1	Leq:	60.4	Leq:	59.2	Leq:	59.0	Leq:	58.4	Leq:	59.4	Leq:	62	dB(A)
						L10:	60.5	L10:	62.0	L10:	60.0	L10:	60.5	L10:	60.0	L10:	61.5	L10:	64	
						L90:	56.5	L90:	58.0	L90:	58.0	L90:	57.5	L90:	56.5	L90:	57.0	L90:	60	
HKLR	HY/2011/03	2019-09-10	NMS5	13:36	<5	Leq:	59.4	Leq:	59.9	Leq:	57.1	Leq:	56.9	Leq:	57.6	Leq:	57.0	Leq:	61	dB(A)
						L10:	60.5	L10:	59.5	L10:	57.0	L10:	57.0	L10:	58.5	L10:	57.5	L10:	62	
						L90:	56.5	L90:	56.0	L90:	56.0	L90:	56.5	L90:	56.5	L90:	56.0	L90:	59	
HKLR	HY/2011/03	2019-09-16	NMS5	09:07	<5	Leq:	56.9	Leq:	58.8	Leq:	55.7	Leq:	55.4	Leq:	55.1	Leq:	54.3	Leq:	59	dB(A)
						L10:	59.0	L10:	61.5	L10:	58.0	L10:	58.0	L10:	57.0	L10:	56.0	L10:	62	
						L90:	51.0	L90:	51.5	L90:	51.5	L90:	51.0	L90:	52.0	L90:	51.5	L90:	54	
HKLR	HY/2011/03	2019-09-26	NMS5	09:20	<5	Leq:	54.7	Leq:	54.0	Leq:	54.4	Leq:	53.0	Leq:	53.3	Leq:	52.5	Leq:	57	dB(A)
						L10:	57.5	L10:	57.0	L10:	57.5	L10:	55.0	L10:	55.0	L10:	55.5	L10:	59	
						L90:	50.0	L90:	50.0	L90:	50.0	L90:	50.0	L90:	50.0	L90:	49.0	L90:	53	

Remark:
(1)* A facade correction of +3 dB(A) was applied to the measured noise level.

Graphical Plot of Noise Levels at NMS5



Remark:
(1) A facade correction of +3 dB(A) was applied to the measured noise level.

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS5	15:18	1.0	Surface	1	1	26.86	8.30	25.68	89.4	6.15	6.5	11.2
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS5	15:18	1.0	Surface	1	2	26.97	8.28	25.47	91.1	6.26	6.5	10.4
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS5	15:17	4.2	Middle	2	1	26.79	8.30	26.88	86.6	5.99	6.4	8.5
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS5	15:18	4.2	Middle	2	2	26.79	8.28	26.90	84.9	5.80	6.3	8.9
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS5	15:18	7.3	Bottom	3	1	26.78	8.28	27.04	83.9	5.77	6.5	8.3
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS5	15:17	7.3	Bottom	3	2	26.80	8.30	26.96	84.8	5.83	6.6	7.5
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS(Mf)6	15:28	1.0	Surface	1	1	26.91	8.25	25.17	81.4	5.64	4.6	7.9
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS(Mf)6	15:27	1.0	Surface	1	2	26.92	8.26	25.16	84.6	5.86	4.8	8.6
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS(Mf)6	15:28	2.2	Bottom	3	1	26.91	8.26	25.17	84.2	5.84	4.8	10.4
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS(Mf)6	15:27	2.2	Bottom	3	2	26.86	8.28	25.28	88.2	6.12	4.7	9.4
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS7	15:35	1.0	Surface	1	1	27.24	8.25	24.99	89.2	6.15	3.1	7.3
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS7	15:35	1.0	Surface	1	2	27.22	8.24	25.00	88.1	6.08	3.1	7.2
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS7	15:35	2.0	Bottom	3	1	27.12	8.24	25.10	89.0	6.15	3.2	8.4
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS7	15:34	2.0	Bottom	3	2	27.13	8.26	25.15	91.5	6.32	3.1	7.5
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS8(N)	16:03	1.0	Surface	1	1	26.93	8.26	24.97	94.9	6.58	4.8	9.3
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS8(N)	16:03	1.0	Surface	1	2	27.03	8.28	24.50	89.7	6.23	4.7	9.7
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS8(N)	16:03	2.7	Bottom	3	1	26.94	8.26	25.05	83.2	5.77	5.7	9.0
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS8(N)	16:03	2.7	Bottom	3	2	26.98	8.27	24.89	86.6	6.00	5.7	9.2
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS(Mf)9	15:43	1.0	Surface	1	1	27.11	8.25	25.14	83.5	5.77	4.4	10.0
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS(Mf)9	15:43	1.0	Surface	1	2	26.99	8.25	25.20	84.3	5.84	4.5	9.0
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS(Mf)9	15:43	2.5	Bottom	3	1	26.91	8.26	25.34	87.2	6.04	4.8	10.1
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS(Mf)9	15:43	2.5	Bottom	3	2	27.09	8.25	25.20	83.8	5.79	4.8	9.1
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS10(N)	15:52	1.0	Surface	1	1	28.00	7.69	22.32	77.4	5.35	6.7	14.0
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS10(N)	15:52	1.0	Surface	1	2	28.19	7.67	22.16	80.3	5.54	6.8	13.9
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS10(N)	15:52	5.4	Middle	2	1	27.72	7.67	25.01	76.8	5.25	7.0	13.5
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS10(N)	15:51	5.4	Middle	2	2	27.70	7.68	25.05	76.6	5.24	6.9	14.6
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS10(N)	15:52	9.7	Bottom	3	1	27.75	7.67	25.06	77.2	5.28	7.2	13.7
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	IS10(N)	15:51	9.7	Bottom	3	2	27.69	7.67	25.15	77.0	5.27	6.9	12.6
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR3(N)	15:10	1.0	Surface	1	1	27.10	8.33	24.97	84.7	5.86	7.5	8.8
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR3(N)	15:10	1.0	Surface	1	2	27.04	8.30	25.04	82.8	5.73	7.3	7.8
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR3(N)	15:09	2.3	Bottom	3	1	26.90	8.33	25.26	87.3	6.05	7.5	8.2
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR3(N)	15:10	2.3	Bottom	3	2	26.92	8.31	25.28	83.4	5.77	7.2	7.1
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR4(N2)	15:56	1.0	Surface	1	1	26.71	8.24	24.79	79.1	5.52	7.5	11.3
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR4(N2)	15:56	1.0	Surface	1	2	26.70	8.21	24.86	82.9	5.77	7.6	10.6
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR4(N2)	15:56	2.6	Bottom	3	1	26.70	8.22	24.97	75.9	5.29	7.7	12.9
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR4(N2)	15:56	2.6	Bottom	3	2	26.69	8.25	25.06	78.2	5.44	7.5	11.9
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR5(N)	15:41	1.0	Surface	1	1	28.06	7.70	21.91	78.0	5.40	5.3	13.0
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR5(N)	15:41	1.0	Surface	1	2	28.01	7.70	22.00	78.1	5.41	5.2	13.4
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR5(N)	15:41	4.1	Middle	2	1	27.73	7.68	24.78	77.2	5.29	5.3	12.9
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR5(N)	15:40	4.1	Middle	2	2	27.74	7.69	24.68	77.4	5.31	5.6	13.5
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR5(N)	15:40	7.1	Bottom	3	1	27.70	7.68	25.22	78.7	5.38	6.6	14.4
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR5(N)	15:41	7.1	Bottom	3	2	27.82	7.67	25.15	78.0	5.32	7.0	13.8
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR10A(N)	16:40	1.0	Surface	1	1	27.49	7.75	26.75	80.0	5.51	5.1	10.3
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR10A(N)	16:41	1.0	Surface	1	2	27.44	7.74	26.84	84.8	5.83	5.0	11.8
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR10A(N)	16:40	6.1	Middle	2	1	27.06	7.78	28.06	78.6	5.41	5.8	8.2
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR10A(N)	16:40	6.1	Middle	2	2	27.21	7.74	27.45	76.0	5.24	5.6	7.3
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR10A(N)	16:39	11.2	Bottom	3	1	27.12	7.80	28.01	75.6	5.21	5.7	8.0
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR10A(N)	16:40	11.2	Bottom	3	2	27.20	7.74	27.53	74.6	5.14	5.4	7.0
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR10B(N2)	16:49	1.0	Surface	1	1	27.46	7.73	26.85	75.1	5.17	5.8	9.1
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR10B(N2)	16:50	1.0	Surface	1	2	27.32	7.73	27.17	74.5	5.13	6.0	10.1
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR10B(N2)	16:49	3.3	Middle	2	1	27.23	7.73	27.38	73.7	5.08	6.5	8.2
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR10B(N2)	16:50	3.3	Middle	2	2	27.25	7.73	27.28	74.5	5.13	6.4	9.2

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR10B(N2)	16:49	5.5	Bottom	3	1	27.19	7.73	27.52	73.9	5.10	6.6	9.4
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	SR10B(N2)	16:49	5.5	Bottom	3	2	27.25	7.73	27.39	74.7	5.15	6.7	8.7
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	CS2(A)	15:01	1.0	Surface	1	1	27.95	7.76	22.28	89.2	6.11	5.2	15.3
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	CS2(A)	15:02	1.0	Surface	1	2	28.14	7.72	21.95	84.6	5.81	5.2	16.3
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	CS2(A)	15:02	3.1	Middle	2	1	27.78	7.72	24.44	80.2	5.50	5.7	15.3
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	CS2(A)	15:01	3.1	Middle	2	2	27.79	7.78	24.39	82.9	5.74	5.5	15.1
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	CS2(A)	15:01	5.1	Bottom	3	1	27.76	7.84	24.92	80.2	5.55	6.3	13.6
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	CS2(A)	15:01	5.1	Bottom	3	2	27.84	7.72	24.95	81.4	5.56	6.8	13.2
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	CS(Mf)5	16:28	1.0	Surface	1	1	26.85	8.25	25.92	75.4	5.19	5.1	5.2
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	CS(Mf)5	16:28	1.0	Surface	1	2	26.87	8.27	25.90	81.8	5.65	5.2	4.8
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	CS(Mf)5	16:27	5.8	Middle	2	1	26.13	8.25	28.03	74.7	5.16	5.1	6.1
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	CS(Mf)5	16:28	5.8	Middle	2	2	26.06	8.23	28.26	73.2	5.06	5.1	5.1
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	CS(Mf)5	16:28	10.5	Bottom	3	1	26.11	8.23	28.68	70.7	4.88	5.1	6.4
HKLR	HY/2011/03	2019-09-04	Mid-Ebb	Cloudy	CS(Mf)5	16:27	10.5	Bottom	3	2	25.97	8.27	28.88	72.2	4.99	5.2	6.0
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS5	10:56	1.0	Surface	1	1	26.66	8.12	25.06	82.6	5.74	7.9	8.5
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS5	10:56	1.0	Surface	1	2	26.64	8.15	25.14	79.2	5.51	7.5	9.5
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS5	10:56	4.4	Middle	2	1	26.62	8.10	25.47	80.4	5.59	7.8	8.7
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS5	10:56	4.4	Middle	2	2	26.62	8.14	25.43	78.4	5.45	7.9	9.6
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS5	10:56	7.7	Bottom	3	1	26.62	8.08	25.54	79.7	5.55	7.8	12.9
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS5	10:56	7.7	Bottom	3	2	26.67	8.13	25.24	78.0	5.43	7.8	11.7
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS(Mf)6	10:49	1.0	Surface	1	1	26.63	8.17	25.19	78.7	5.48	7.5	10.6
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS(Mf)6	10:48	1.0	Surface	1	2	26.63	8.15	25.25	79.5	5.54	7.6	12.0
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS(Mf)6	10:48	2.3	Bottom	3	1	26.63	8.16	25.27	78.9	5.49	7.5	13.0
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS(Mf)6	10:48	2.3	Bottom	3	2	26.63	8.15	25.22	80.2	5.59	7.5	12.3
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS7	10:34	1.0	Surface	1	1	26.63	8.14	25.20	84.1	5.85	8.8	17.3
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS7	10:34	1.0	Surface	1	2	26.63	8.12	25.21	90.4	6.30	8.6	16.0
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS7	10:34	2.2	Bottom	3	1	26.63	8.09	25.25	82.7	5.76	8.3	13.3
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS7	10:34	2.2	Bottom	3	2	26.63	8.13	25.21	81.4	5.67	8.7	12.9
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS8(N)	10:06	1.0	Surface	1	1	26.52	8.19	25.09	88.1	6.14	6.5	20.6
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS8(N)	10:06	1.0	Surface	1	2	26.52	8.20	25.11	83.4	5.82	6.8	21.3
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS8(N)	10:06	3.1	Bottom	3	1	26.52	8.19	25.29	79.5	5.55	6.8	12.3
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS8(N)	10:05	3.1	Bottom	3	2	26.52	8.22	25.18	80.2	5.59	6.7	11.2
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS(Mf)9	10:27	1.0	Surface	1	1	26.56	8.22	25.45	81.8	5.69	7.1	5.7
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS(Mf)9	10:27	1.0	Surface	1	2	26.56	8.21	25.43	83.0	5.78	6.9	6.6
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS(Mf)9	10:27	2.7	Bottom	3	1	26.56	8.21	25.45	79.9	5.56	7.5	6.2
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS(Mf)9	10:27	2.7	Bottom	3	2	26.55	8.22	25.47	80.7	5.62	7.5	7.2
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS10(N)	10:08	1.0	Surface	1	1	27.72	7.72	24.20	76.1	5.23	9.8	10.1
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS10(N)	10:07	1.0	Surface	1	2	27.72	7.73	24.22	76.2	5.24	10.6	11.4
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS10(N)	10:07	5.1	Middle	2	1	27.66	7.72	24.43	75.5	5.19	9.5	10.0
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS10(N)	10:07	5.1	Middle	2	2	27.66	7.72	24.45	75.9	5.22	10.7	11.4
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS10(N)	10:07	9.2	Bottom	3	1	27.65	7.72	24.57	75.7	5.20	10.3	9.3
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	IS10(N)	10:06	9.2	Bottom	3	2	27.68	7.72	24.45	76.3	5.24	10.8	10.6
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR3(N)	11:07	1.0	Surface	1	1	26.65	8.18	25.09	78.2	5.44	7.1	7.8
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR3(N)	11:07	1.0	Surface	1	2	26.65	8.18	25.08	78.1	5.44	7.3	8.5
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR3(N)	11:07	2.6	Bottom	3	1	26.68	8.18	25.10	78.1	5.44	7.2	7.1
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR3(N)	11:07	2.6	Bottom	3	2	26.63	8.17	25.39	78.1	5.43	7.3	7.7
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR4(N2)	10:15	1.0	Surface	1	1	26.61	8.19	24.56	88.4	6.15	3.4	6.3
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR4(N2)	10:15	1.0	Surface	1	2	26.60	8.21	24.40	83.4	5.84	3.2	5.8
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR4(N2)	10:15	2.6	Bottom	3	1	26.60	8.19	25.48	78.0	5.45	3.4	9.5
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR4(N2)	10:15	2.6	Bottom	3	2	26.57	8.21	25.54	80.2	5.58	3.4	8.5
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR5(N)	10:20	1.0	Surface	1	1	27.72	7.72	24.17	76.5	5.26	10.9	11.3
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR5(N)	10:19	1.0	Surface	1	2	27.70	7.72	24.25	75.9	5.22	11.6	10.7

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR5(N)	10:20	4.0	Middle	2	1	27.69	7.72	24.30	75.8	5.21	12.8	11.0
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR5(N)	10:19	4.0	Middle	2	2	27.66	7.73	24.47	75.7	5.20	12.7	11.9
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR5(N)	10:19	6.9	Bottom	3	1	27.65	7.73	24.62	75.5	5.19	12.5	10.9
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR5(N)	10:20	6.9	Bottom	3	2	27.66	7.72	24.56	75.7	5.20	13.0	10.7
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR10A(N)	9:19	1.0	Surface	1	1	27.73	7.73	24.22	76.2	5.23	3.9	4.6
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR10A(N)	9:18	1.0	Surface	1	2	27.71	7.73	24.25	76.1	5.23	4.0	5.6
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR10A(N)	9:19	6.2	Middle	2	1	27.62	7.72	24.64	75.6	5.19	4.3	4.5
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR10A(N)	9:18	6.2	Middle	2	2	27.63	7.72	24.60	75.8	5.21	4.2	4.8
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR10A(N)	9:18	11.3	Bottom	3	1	27.65	7.72	24.63	76.2	5.23	6.1	6.0
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR10A(N)	9:19	11.3	Bottom	3	2	27.66	7.72	24.59	76.0	5.22	5.8	5.5
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR10B(N2)	9:14	1.0	Surface	1	1	27.72	7.72	24.25	89.3	6.13	3.6	6.9
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR10B(N2)	9:13	1.0	Surface	1	2	27.72	7.71	24.24	88.0	6.04	3.8	6.0
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR10B(N2)	9:13	3.3	Middle	2	1	27.67	7.71	24.38	82.7	5.68	4.1	6.1
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR10B(N2)	9:13	3.3	Middle	2	2	27.68	7.71	24.34	79.8	5.48	3.9	6.4
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR10B(N2)	9:13	5.5	Bottom	3	1	27.68	7.69	24.45	78.1	5.36	4.6	4.9
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	SR10B(N2)	9:13	5.5	Bottom	3	2	27.63	7.72	24.55	77.0	5.29	4.3	4.6
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	CS2(A)	11:18	1.0	Surface	1	1	27.72	7.72	24.18	76.5	5.26	9.2	10.4
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	CS2(A)	11:19	1.0	Surface	1	2	27.72	7.72	24.16	76.8	5.28	8.8	9.9
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	CS2(A)	11:18	3.0	Middle	2	1	27.71	7.72	24.24	76.2	5.24	10.0	11.1
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	CS2(A)	11:18	3.0	Middle	2	2	27.71	7.72	24.21	76.1	5.23	9.9	10.9
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	CS2(A)	11:18	5.0	Bottom	3	1	27.71	7.72	24.28	76.3	5.24	9.7	13.3
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	CS2(A)	11:18	5.0	Bottom	3	2	27.71	7.72	24.25	76.1	5.23	9.6	11.8
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	CS(Mf)5	9:44	1.0	Surface	1	1	26.47	8.16	26.10	73.8	5.11	4.5	6.3
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	CS(Mf)5	9:43	1.0	Surface	1	2	26.44	8.12	26.06	75.8	5.24	4.6	5.7
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	CS(Mf)5	9:43	6.2	Middle	2	1	26.19	8.14	27.64	72.4	5.02	4.6	8.2
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	CS(Mf)5	9:43	6.2	Middle	2	2	26.14	8.08	27.92	73.1	5.05	4.5	8.6
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	CS(Mf)5	9:42	11.3	Bottom	3	1	26.06	8.03	28.28	71.1	4.91	4.5	8.0
HKLR	HY/2011/03	2019-09-04	Mid-Flood	Rainy	CS(Mf)5	9:43	11.3	Bottom	3	2	26.09	8.12	28.29	71.4	4.93	4.6	9.1
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS5	5:59	1.0	Surface	1	1	26.95	8.22	26.13	76.3	5.27	2.2	5.3
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS5	5:58	1.0	Surface	1	2	26.94	8.22	26.14	77.5	5.34	2.1	4.3
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS5	5:59	4.1	Middle	2	1	26.76	8.22	26.27	76.3	5.25	2.2	4.3
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS5	5:58	4.1	Middle	2	2	26.76	8.22	26.26	76.8	5.30	2.2	4.7
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS5	5:59	7.2	Bottom	3	1	26.76	8.21	26.45	75.4	5.20	2.3	3.5
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS5	5:58	7.2	Bottom	3	2	26.66	8.21	26.77	76.4	5.26	2.2	3.9
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS(Mf)6	5:47	1.0	Surface	1	1	27.12	8.22	26.06	81.7	5.61	2.5	3.5
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS(Mf)6	5:48	1.0	Surface	1	2	26.94	8.22	26.13	79.8	5.50	2.4	4.0
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS(Mf)6	5:48	2.2	Bottom	3	1	26.95	8.22	26.12	79.8	5.50	2.5	3.6
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS(Mf)6	5:47	2.2	Bottom	3	2	26.93	8.22	26.12	82.9	5.72	2.5	2.6
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS7	5:40	1.0	Surface	1	1	27.16	8.22	26.04	82.5	5.67	1.4	3.4
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS7	5:40	1.0	Surface	1	2	27.15	8.22	26.05	80.4	5.52	1.4	3.1
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS7	5:39	2.1	Bottom	3	1	26.99	8.22	26.05	84.2	5.80	1.5	2.8
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS7	5:40	2.1	Bottom	3	2	27.03	8.22	26.07	81.0	5.57	1.4	3.7
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS8(N)	5:11	1.0	Surface	1	1	27.10	8.23	26.12	78.1	5.37	1.5	5.0
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS8(N)	5:11	1.0	Surface	1	2	27.10	8.23	26.11	75.8	5.21	1.4	4.0
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS8(N)	5:11	2.7	Bottom	3	1	26.85	8.23	26.27	75.0	5.17	1.6	6.2
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS8(N)	5:11	2.7	Bottom	3	2	27.08	8.23	26.13	77.4	5.32	1.5	5.3
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS(Mf)9	5:33	1.0	Surface	1	1	27.05	8.22	26.11	85.0	5.85	1.3	6.0
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS(Mf)9	5:33	1.0	Surface	1	2	27.09	8.22	26.09	82.4	5.66	1.4	5.8
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS(Mf)9	5:33	2.7	Bottom	3	1	26.95	8.22	26.14	87.6	6.03	1.4	4.6
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS(Mf)9	5:33	2.7	Bottom	3	2	27.09	8.22	26.07	83.7	5.75	1.4	3.6
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS10(N)	5:39	1.0	Surface	1	1	28.15	7.82	26.08	80.6	5.44	8.6	4.8
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS10(N)	5:39	1.0	Surface	1	2	28.06	7.83	26.17	79.7	5.39	8.8	4.4

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS10(N)	5:39	5.3	Middle	2	1	27.68	7.83	28.49	79.1	5.31	10.4	3.4
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS10(N)	5:38	5.3	Middle	2	2	27.65	7.82	28.09	79.1	5.33	10.7	4.5
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS10(N)	5:39	9.6	Bottom	3	1	27.92	7.82	27.96	80.8	5.42	10.8	4.4
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	IS10(N)	5:38	9.6	Bottom	3	2	27.73	7.83	26.34	80.6	5.47	11.3	3.8
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR3(N)	6:11	1.0	Surface	1	1	27.11	8.22	26.04	79.1	5.44	1.5	3.1
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR3(N)	6:12	1.0	Surface	1	2	27.16	8.22	26.02	79.2	5.44	1.4	2.1
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR3(N)	6:12	2.2	Bottom	3	1	27.05	8.22	26.05	78.8	5.42	1.5	4.6
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR3(N)	6:11	2.2	Bottom	3	2	26.84	8.22	26.13	78.4	5.41	1.6	4.8
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR4(N2)	5:22	1.0	Surface	1	1	27.12	8.22	26.08	78.2	5.37	1.5	4.3
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR4(N2)	5:22	1.0	Surface	1	2	26.98	8.22	26.16	77.9	5.37	1.4	4.6
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR4(N2)	5:21	2.7	Bottom	3	1	26.76	8.22	26.28	77.9	5.38	1.5	5.3
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR4(N2)	5:22	2.7	Bottom	3	2	26.96	8.22	26.16	77.8	5.36	1.4	5.0
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR5(N)	5:52	1.0	Surface	1	1	28.15	7.82	26.11	80.6	5.44	7.8	4.8
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR5(N)	5:51	1.0	Surface	1	2	28.09	7.83	26.13	79.8	5.40	8.2	4.2
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR5(N)	5:51	4.0	Middle	2	1	27.84	7.84	26.99	78.9	5.33	8.2	4.7
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR5(N)	5:51	4.0	Middle	2	2	27.74	7.84	28.35	78.5	5.27	8.5	3.9
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR5(N)	5:51	6.9	Bottom	3	1	27.73	7.83	28.47	79.5	5.34	8.2	4.5
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR5(N)	5:51	6.9	Bottom	3	2	27.68	7.84	28.50	79.2	5.31	7.9	3.7
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR10A(N)	4:45	1.0	Surface	1	1	28.06	7.84	26.22	81.6	5.51	4.2	3.6
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR10A(N)	4:46	1.0	Surface	1	2	28.01	7.84	26.33	81.3	5.49	3.9	3.6
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR10A(N)	4:46	6.4	Middle	2	1	27.86	7.85	26.78	80.3	5.43	4.1	2.8
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR10A(N)	4:45	6.4	Middle	2	2	27.87	7.85	26.75	80.5	5.44	4.0	3.7
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR10A(N)	4:45	11.7	Bottom	3	1	27.69	7.85	28.53	80.6	5.41	3.8	3.5
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR10A(N)	4:46	11.7	Bottom	3	2	27.74	7.84	28.50	80.5	5.40	4.0	4.5
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR10B(N2)	4:37	1.0	Surface	1	1	28.10	7.84	26.16	86.6	5.86	3.6	3.2
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR10B(N2)	4:37	1.0	Surface	1	2	28.02	7.86	26.28	91.5	6.14	3.5	4.2
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR10B(N2)	4:37	3.2	Middle	2	1	27.83	7.86	26.75	84.4	5.65	3.5	3.2
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR10B(N2)	4:37	3.2	Middle	2	2	27.78	7.88	26.80	85.6	5.79	3.7	2.9
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR10B(N2)	4:37	5.3	Bottom	3	1	27.77	7.88	28.25	83.1	5.61	4.2	5.8
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	SR10B(N2)	4:37	5.3	Bottom	3	2	27.94	7.84	28.39	82.9	5.61	4.4	4.8
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	CS2(A)	6:53	1.0	Surface	1	1	28.13	7.81	26.22	81.6	5.51	7.9	4.9
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	CS2(A)	6:52	1.0	Surface	1	2	28.16	7.81	26.16	81.3	5.49	7.7	4.6
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	CS2(A)	6:53	3.0	Middle	2	1	27.87	7.83	26.70	80.5	5.44	8.5	5.4
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	CS2(A)	6:52	3.0	Middle	2	2	27.83	7.83	26.77	79.7	5.39	8.7	5.8
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	CS2(A)	6:52	5.0	Bottom	3	1	27.72	7.82	28.47	80.1	5.38	10.3	3.0
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	CS2(A)	6:52	5.0	Bottom	3	2	27.90	7.81	28.35	81.1	5.43	9.6	2.7
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	CS(Mf)5	4:43	1.0	Surface	1	1	26.94	8.23	26.22	74.4	5.12	2.5	3.8
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	CS(Mf)5	4:42	1.0	Surface	1	2	27.10	8.24	26.13	76.5	5.26	2.5	2.9
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	CS(Mf)5	4:42	6.1	Middle	2	1	26.64	8.23	26.49	74.3	5.11	2.8	3.8
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	CS(Mf)5	4:41	6.1	Middle	2	2	26.62	8.24	26.78	75.7	5.20	2.8	4.8
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	CS(Mf)5	4:41	11.1	Bottom	3	1	26.49	8.23	27.91	73.7	5.09	2.8	5.5
HKLR	HY/2011/03	2019-09-06	Mid-Ebb	Fine	CS(Mf)5	4:42	11.1	Bottom	3	2	26.52	8.22	27.85	73.4	5.07	2.7	4.7
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS5	11:50	1.0	Surface	1	1	27.31	8.27	26.39	83.0	5.68	4.8	3.5
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS5	11:49	1.0	Surface	1	2	27.29	8.29	26.37	87.8	6.00	5.1	4.5
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS5	11:49	4.2	Middle	2	1	27.18	8.30	26.82	83.7	5.72	6.4	3.8
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS5	11:49	4.2	Middle	2	2	27.21	8.28	26.73	81.0	5.53	6.1	4.7
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS5	11:49	7.3	Bottom	3	1	27.17	8.30	26.95	82.5	5.65	6.1	4.7
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS5	11:49	7.3	Bottom	3	2	27.19	8.27	26.88	80.9	5.53	5.9	4.4
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS(Mf)6	11:59	1.0	Surface	1	1	27.55	8.29	26.20	88.5	6.04	3.8	3.5
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS(Mf)6	11:59	1.0	Surface	1	2	27.48	8.27	26.18	84.8	5.79	3.7	2.5
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS(Mf)6	11:58	2.1	Bottom	3	1	27.48	8.31	26.13	91.2	6.23	3.8	5.0
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS(Mf)6	11:59	2.1	Bottom	3	2	27.41	8.28	26.19	86.2	5.89	3.8	4.1

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS7	12:11	1.0	Surface	1	1	27.67	8.27	26.31	82.5	5.61	2.2	3.6
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS7	12:10	1.0	Surface	1	2	27.67	8.28	26.32	83.1	5.65	2.1	4.6
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS7	12:10	2.1	Bottom	3	1	27.66	8.28	26.32	82.8	5.63	2.5	5.9
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS7	12:10	2.1	Bottom	3	2	27.69	8.30	26.32	87.5	5.95	2.5	5.6
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS8(N)	12:42	1.0	Surface	1	1	27.54	8.30	25.63	89.6	6.12	3.2	2.6
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS8(N)	12:42	1.0	Surface	1	2	27.62	8.28	25.58	87.0	5.94	3.3	2.8
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS8(N)	12:42	3.1	Bottom	3	1	27.58	8.29	25.61	87.9	6.01	3.5	3.5
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS8(N)	12:42	3.1	Bottom	3	2	27.43	8.32	25.70	91.9	6.30	3.6	3.4
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS(Mf)9	12:21	1.0	Surface	1	1	27.14	8.35	26.31	86.7	5.95	5.2	4.2
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS(Mf)9	12:22	1.0	Surface	1	2	27.20	8.32	26.21	83.4	5.72	5.5	4.9
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS(Mf)9	12:21	2.7	Bottom	3	1	27.18	8.34	26.28	85.3	5.85	5.4	5.1
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS(Mf)9	12:21	2.7	Bottom	3	2	27.11	8.32	26.46	89.3	6.12	5.5	4.4
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS10(N)	12:23	1.0	Surface	1	1	28.07	7.69	23.91	77.8	5.32	11.2	3.7
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS10(N)	12:23	1.0	Surface	1	2	28.17	7.69	23.71	79.1	5.41	10.9	4.7
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS10(N)	12:23	5.3	Middle	2	1	27.86	7.68	25.48	77.6	5.28	12.3	2.6
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS10(N)	12:23	5.3	Middle	2	2	27.88	7.68	25.46	77.7	5.29	12.8	3.6
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS10(N)	12:23	9.5	Bottom	3	1	27.99	7.68	25.42	79.1	5.38	12.8	2.8
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	IS10(N)	12:23	9.5	Bottom	3	2	27.90	7.68	25.48	78.7	5.36	13.0	2.7
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR3(N)	11:40	1.0	Surface	1	1	27.18	8.29	26.73	82.1	5.62	5.5	8.6
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR3(N)	11:40	1.0	Surface	1	2	27.18	8.31	26.72	82.9	5.67	5.3	9.5
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR3(N)	11:40	2.2	Bottom	3	1	27.13	8.30	26.84	82.3	5.63	5.7	9.9
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR3(N)	11:40	2.2	Bottom	3	2	27.12	8.33	26.86	83.8	5.73	5.5	10.9
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR4(N2)	12:36	1.0	Surface	1	1	27.14	8.33	25.84	94.4	6.50	2.1	5.8
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR4(N2)	12:36	1.0	Surface	1	2	27.06	8.33	25.94	90.4	6.22	2.1	4.8
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR4(N2)	12:36	2.8	Bottom	3	1	26.98	8.33	26.21	86.8	5.97	2.0	5.5
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR4(N2)	12:36	2.8	Bottom	3	2	27.03	8.34	26.14	85.5	5.88	2.2	5.8
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR5(N)	12:14	1.0	Surface	1	1	28.17	7.70	23.84	79.0	5.40	10.4	6.4
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR5(N)	12:14	1.0	Surface	1	2	28.12	7.70	23.87	79.1	5.41	10.6	5.8
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR5(N)	12:14	3.9	Middle	2	1	27.94	7.70	25.09	78.2	5.33	11.9	6.8
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR5(N)	12:14	3.9	Middle	2	2	27.96	7.69	25.13	78.6	5.36	11.5	5.9
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR5(N)	12:14	6.7	Bottom	3	1	28.14	7.69	25.33	79.6	5.40	11.7	5.1
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR5(N)	12:14	6.7	Bottom	3	2	27.89	7.69	25.48	79.1	5.38	12.0	4.7
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR10A(N)	13:22	1.0	Surface	1	1	27.66	7.72	27.30	80.4	5.41	5.0	4.1
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR10A(N)	13:21	1.0	Surface	1	2	27.75	7.72	27.12	79.3	5.38	5.0	5.1
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR10A(N)	13:22	6.5	Middle	2	1	27.45	7.73	28.36	75.2	5.12	4.9	3.4
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR10A(N)	13:21	6.5	Middle	2	2	27.43	7.74	28.44	76.1	5.18	5.2	8.4
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR10A(N)	13:21	11.9	Bottom	3	1	27.50	7.72	28.32	73.7	5.01	7.1	4.5
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR10A(N)	13:21	11.9	Bottom	3	2	27.54	7.73	28.34	73.9	5.04	7.2	4.1
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR10B(N2)	13:32	1.0	Surface	1	1	27.88	7.70	26.78	75.3	5.13	4.7	2.8
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR10B(N2)	13:31	1.0	Surface	1	2	27.71	7.72	27.19	74.5	5.08	4.4	2.4
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR10B(N2)	13:31	3.3	Middle	2	1	27.52	7.72	27.96	74.0	5.04	4.8	3.4
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR10B(N2)	13:32	3.3	Middle	2	2	27.51	7.71	27.99	73.7	5.02	5.0	7.0
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR10B(N2)	13:31	5.6	Bottom	3	1	27.55	7.71	28.00	74.3	5.06	5.6	3.8
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	SR10B(N2)	13:31	5.6	Bottom	3	2	27.56	7.71	27.95	74.8	5.09	5.7	3.2
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	CS2(A)	11:36	1.0	Surface	1	1	28.26	7.71	23.80	80.9	5.52	9.0	4.6
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	CS2(A)	11:35	1.0	Surface	1	2	28.23	7.73	23.78	81.8	5.59	9.1	5.5
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	CS2(A)	11:36	3.1	Middle	2	1	28.00	7.71	24.91	79.9	5.45	9.2	3.3
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	CS2(A)	11:35	3.1	Middle	2	2	28.09	7.74	24.71	81.2	5.53	9.8	4.3
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	CS2(A)	11:35	5.2	Bottom	3	1	27.93	7.71	25.47	80.9	5.50	10.0	4.6
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	CS2(A)	11:35	5.2	Bottom	3	2	27.86	7.76	25.53	82.4	5.61	10.6	3.7
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	CS(Mf)5	13:07	1.0	Surface	1	1	26.85	8.34	27.10	78.0	5.32	2.5	5.7
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	CS(Mf)5	13:08	1.0	Surface	1	2	27.14	8.30	26.91	73.9	5.05	2.5	4.8

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	CS(Mf)5	13:07	6.1	Middle	2	1	26.34	8.35	29.16	73.6	5.04	4.1	4.9
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	CS(Mf)5	13:08	6.1	Middle	2	2	26.32	8.30	29.36	73.6	5.05	4.1	3.9
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	CS(Mf)5	13:07	11.1	Bottom	3	1	26.28	8.36	29.89	72.7	4.95	4.2	4.4
HKLR	HY/2011/03	2019-09-06	Mid-Flood	Sunny	CS(Mf)5	13:08	11.1	Bottom	3	2	26.44	8.30	29.70	70.2	4.80	4.1	3.4
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS5	10:42	1.0	Surface	1	1	29.17	8.48	22.52	98.8	6.67	3.4	5.0
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS5	10:41	1.0	Surface	1	2	29.17	8.44	22.39	102.9	6.97	3.4	5.0
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS5	10:41	4.1	Middle	2	1	27.11	8.44	29.06	86.9	5.86	3.5	5.1
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS5	10:41	4.1	Middle	2	2	27.08	8.44	29.16	87.8	5.94	3.5	5.2
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS5	10:41	7.1	Bottom	3	1	27.03	8.45	29.57	78.7	5.33	3.5	5.2
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS5	10:41	7.1	Bottom	3	2	27.01	8.48	29.57	79.1	5.35	3.5	5.3
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS(Mf)6	10:32	1.0	Surface	1	1	28.99	8.44	22.19	133.3	9.07	2.2	5.9
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS(Mf)6	10:32	1.0	Surface	1	2	29.08	8.45	21.90	143.1	9.74	2.2	5.6
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS(Mf)6	10:31	2.1	Bottom	3	1	28.92	8.46	23.62	132.8	9.04	2.1	5.4
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS(Mf)6	10:32	2.1	Bottom	3	2	28.98	8.46	23.75	138.7	9.36	2.1	5.5
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS7	10:23	1.0	Surface	1	1	28.70	8.51	22.72	111.8	7.60	8.5	6.0
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS7	10:23	1.0	Surface	1	2	28.81	8.51	22.63	122.3	8.33	8.5	5.6
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS7	10:23	2.1	Bottom	3	1	28.41	8.50	24.62	99.7	6.76	8.5	4.4
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS7	10:23	2.1	Bottom	3	2	28.77	8.50	22.92	103.1	7.03	8.6	4.4
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS8(N)	9:54	1.0	Surface	1	1	28.66	8.52	20.73	111.0	7.65	3.9	5.4
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS8(N)	9:54	1.0	Surface	1	2	28.56	8.56	21.36	112.0	7.71	3.8	6.2
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS8(N)	9:54	3.1	Bottom	3	1	28.44	8.52	24.21	114.1	7.75	4.4	7.9
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS8(N)	9:53	3.1	Bottom	3	2	28.19	8.50	24.78	110.2	7.49	4.5	7.2
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS(Mf)9	10:15	1.0	Surface	1	1	28.80	8.43	21.88	136.0	9.30	3.6	5.2
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS(Mf)9	10:15	1.0	Surface	1	2	28.91	8.41	22.34	139.8	9.52	3.5	4.7
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS(Mf)9	10:14	2.6	Bottom	3	1	28.56	8.41	25.43	137.5	9.44	3.5	4.3
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS(Mf)9	10:15	2.6	Bottom	3	2	28.96	8.44	25.13	142.4	9.54	3.5	4.1
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS10(N)	10:01	1.0	Surface	1	1	29.27	7.86	20.47	89.1	6.10	2.5	4.1
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS10(N)	10:00	1.0	Surface	1	2	29.29	7.87	20.36	89.2	6.10	2.5	3.5
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS10(N)	10:00	5.2	Middle	2	1	28.89	7.81	22.92	82.5	5.60	2.5	4.7
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS10(N)	10:01	5.2	Middle	2	2	28.99	7.81	22.26	82.8	5.63	2.6	4.8
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS10(N)	10:00	9.3	Bottom	3	1	28.65	7.78	24.49	80.9	5.47	2.8	5.4
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	IS10(N)	10:00	9.3	Bottom	3	2	28.47	7.76	25.24	80.6	5.44	2.9	5.3
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR3(N)	10:51	1.0	Surface	1	1	29.49	8.44	21.17	149.0	10.11	2.6	3.6
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR3(N)	10:52	1.0	Surface	1	2	29.45	8.42	21.44	157.7	10.69	2.4	3.5
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR3(N)	10:51	2.1	Bottom	3	1	29.40	8.44	23.11	148.3	10.05	2.6	5.5
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR3(N)	10:51	2.1	Bottom	3	2	29.44	8.43	22.98	156.9	10.55	2.5	5.5
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR4(N2)	10:02	1.0	Surface	1	1	28.51	8.51	20.09	104.6	7.26	2.5	4.7
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR4(N2)	10:02	1.0	Surface	1	2	28.57	8.53	20.52	100.6	6.96	2.3	4.5
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR4(N2)	10:02	2.7	Bottom	3	1	28.44	8.49	23.03	103.0	7.04	3.3	5.5
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR4(N2)	10:02	2.7	Bottom	3	2	28.31	8.49	22.87	101.7	6.97	3.2	5.0
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR5(N)	10:12	1.0	Surface	1	1	29.31	7.86	20.25	88.9	6.08	3.7	6.8
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR5(N)	10:13	1.0	Surface	1	2	29.32	7.86	20.38	89.7	6.13	3.6	7.1
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR5(N)	10:13	3.9	Middle	2	1	28.91	7.80	22.76	82.6	5.61	4.0	8.0
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR5(N)	10:12	3.9	Middle	2	2	28.99	7.81	22.31	83.2	5.66	3.9	8.0
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR5(N)	10:12	6.8	Bottom	3	1	28.45	7.75	25.24	79.2	5.35	4.2	9.3
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR5(N)	10:11	6.8	Bottom	3	2	28.44	7.76	25.33	79.4	5.36	4.1	8.6
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR10A(N)	8:58	1.0	Surface	1	1	29.37	7.97	20.98	105.2	7.16	2.2	5.9
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR10A(N)	8:57	1.0	Surface	1	2	29.36	7.97	21.83	105.4	7.14	2.2	6.5
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR10A(N)	8:57	6.7	Middle	2	1	29.34	7.96	21.95	103.7	7.02	2.4	4.2
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR10A(N)	8:58	6.7	Middle	2	2	29.30	7.96	21.89	103.7	7.03	2.5	4.4
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR10A(N)	8:57	12.4	Bottom	3	1	29.11	7.92	24.37	103.2	6.92	2.5	4.2
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR10A(N)	8:58	12.4	Bottom	3	2	29.13	7.93	23.57	103.5	6.97	2.7	3.8

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR10B(N2)	8:42	1.0	Surface	1	1	29.30	7.97	22.12	104.8	7.10	2.3	2.8
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR10B(N2)	8:42	1.0	Surface	1	2	29.26	7.97	22.47	104.3	7.05	2.3	3.2
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR10B(N2)	8:42	3.7	Middle	2	1	29.22	7.96	22.84	103.8	7.01	2.5	3.7
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR10B(N2)	8:42	3.7	Middle	2	2	29.25	7.96	22.33	103.9	7.03	2.4	3.3
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR10B(N2)	8:41	6.4	Bottom	3	1	29.19	7.96	23.09	103.8	7.01	2.8	4.9
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	SR10B(N2)	8:42	6.4	Bottom	3	2	29.18	7.95	23.15	103.7	7.00	2.8	4.8
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	CS2(A)	11:08	1.0	Surface	1	1	28.94	7.96	22.44	84.9	5.77	5.7	5.8
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	CS2(A)	11:09	1.0	Surface	1	2	28.91	7.93	22.94	84.4	5.73	5.6	6.5
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	CS2(A)	11:09	3.7	Middle	2	1	28.39	7.87	24.75	75.8	5.14	6.1	5.7
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	CS2(A)	11:08	3.7	Middle	2	2	28.26	7.87	27.03	76.4	5.11	6.0	5.2
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	CS2(A)	11:09	6.4	Bottom	3	1	28.00	7.85	28.79	75.9	5.06	6.3	4.7
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	CS2(A)	11:07	6.4	Bottom	3	2	27.99	7.87	28.89	76.3	5.09	6.2	4.4
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	CS(Mf)5	9:24	1.0	Surface	1	1	28.37	8.49	21.13	90.2	6.25	2.2	4.2
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	CS(Mf)5	9:23	1.0	Surface	1	2	28.30	8.46	21.10	89.7	6.21	2.2	4.3
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	CS(Mf)5	9:23	5.9	Middle	2	1	27.42	8.35	27.28	83.6	5.61	2.2	3.8
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	CS(Mf)5	9:24	5.9	Middle	2	2	27.33	8.36	26.99	86.9	5.81	2.2	4.1
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	CS(Mf)5	9:23	10.8	Bottom	3	1	27.19	8.34	30.58	78.5	5.35	2.3	3.1
HKLR	HY/2011/03	2019-09-09	Mid-Ebb	Sunny	CS(Mf)5	9:23	10.8	Bottom	3	2	27.02	8.33	30.63	78.0	5.29	2.2	3.5
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS5	16:23	1.0	Surface	1	1	29.60	8.43	22.33	156.5	10.55	7.5	8.4
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS5	16:23	1.0	Surface	1	2	29.70	8.42	22.13	161.2	10.87	7.6	8.3
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS5	16:23	4.0	Middle	2	1	29.16	8.41	22.85	147.5	10.05	7.5	8.5
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS5	16:22	4.0	Middle	2	2	29.25	8.42	22.95	146.8	10.01	7.5	8.5
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS5	16:22	7.0	Bottom	3	1	28.87	8.40	23.85	125.6	8.50	7.4	7.9
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS5	16:23	7.0	Bottom	3	2	29.35	8.41	23.79	124.8	8.44	7.7	7.7
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS(Mf)6	16:32	1.0	Surface	1	1	29.56	8.43	21.47	155.8	10.58	4.8	8.0
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS(Mf)6	16:31	1.0	Surface	1	2	29.56	8.43	21.46	156.9	10.62	4.9	7.8
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS(Mf)6	16:31	2.1	Bottom	3	1	29.55	8.43	21.51	153.1	10.48	5.8	7.5
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS(Mf)6	16:31	2.1	Bottom	3	2	29.48	8.42	21.61	152.5	10.44	5.8	7.2
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS7	16:42	1.0	Surface	1	1	29.39	8.43	20.88	141.7	9.55	2.6	6.8
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS7	16:42	1.0	Surface	1	2	29.39	8.42	20.97	140.5	9.48	2.8	6.8
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS7	16:42	2.0	Bottom	3	1	29.39	8.42	20.99	138.5	9.41	2.6	8.1
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS7	16:42	2.0	Bottom	3	2	29.43	8.45	21.12	139.3	9.46	2.8	8.7
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS8(N)	17:13	1.0	Surface	1	1	29.30	8.45	19.66	147.9	10.15	4.5	8.0
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS8(N)	17:12	1.0	Surface	1	2	29.14	8.43	19.66	141.3	9.66	4.5	7.4
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS8(N)	17:12	2.9	Bottom	3	1	28.92	8.41	22.80	133.7	9.20	4.6	9.7
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS8(N)	17:12	2.9	Bottom	3	2	29.25	8.42	20.56	134.8	9.31	4.5	10.1
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS(Mf)9	16:51	1.0	Surface	1	1	28.91	8.48	20.60	128.2	8.68	9.1	15.1
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS(Mf)9	16:51	1.0	Surface	1	2	28.84	8.45	20.84	133.7	9.19	9.5	14.4
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS(Mf)9	16:51	2.6	Bottom	3	1	28.62	8.45	22.86	114.9	7.84	10.1	12.6
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS(Mf)9	16:51	2.6	Bottom	3	2	28.90	8.46	23.32	120.3	8.27	10.2	11.6
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS10(N)	16:54	1.0	Surface	1	1	29.57	7.96	18.29	99.1	6.82	3.1	8.1
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS10(N)	16:55	1.0	Surface	1	2	29.76	8.00	18.12	99.5	6.86	3.3	7.9
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS10(N)	16:55	5.5	Middle	2	1	29.14	7.84	22.84	88.6	5.99	3.6	6.9
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS10(N)	16:54	5.5	Middle	2	2	29.11	7.84	22.94	88.6	5.99	3.8	6.5
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS10(N)	16:54	9.9	Bottom	3	1	28.61	7.75	24.93	86.3	5.82	4.4	5.7
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	IS10(N)	16:54	9.9	Bottom	3	2	28.57	7.75	25.11	85.3	5.75	4.2	5.1
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR3(N)	16:14	1.0	Surface	1	1	29.65	8.42	22.62	151.9	10.46	3.2	8.3
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR3(N)	16:14	1.0	Surface	1	2	29.84	8.44	22.39	151.2	10.44	3.1	9.0
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR3(N)	16:13	2.3	Bottom	3	1	29.60	8.41	22.81	151.2	10.41	5.5	10.4
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR3(N)	16:14	2.3	Bottom	3	2	29.68	8.44	22.79	150.5	10.38	5.4	11.3
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR4(N2)	17:06	1.0	Surface	1	1	29.54	8.38	20.02	150.8	10.25	3.1	7.7
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR4(N2)	17:05	1.0	Surface	1	2	29.59	8.36	19.96	149.5	10.20	3.0	7.6

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR4(N2)	17:05	2.7	Bottom	3	1	29.60	8.33	20.04	148.8	10.14	3.3	8.6
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR4(N2)	17:05	2.7	Bottom	3	2	29.52	8.38	20.39	148.7	10.14	3.2	9.0
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR5(N)	16:45	1.0	Surface	1	1	30.94	8.17	15.14	105.1	7.10	4.2	8.0
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR5(N)	16:44	1.0	Surface	1	2	30.62	8.11	16.07	109.3	7.49	4.1	7.6
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR5(N)	16:45	4.1	Middle	2	1	29.68	7.97	21.47	85.1	5.73	4.3	6.5
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR5(N)	16:44	4.1	Middle	2	2	29.02	7.83	23.63	85.5	5.77	4.2	6.4
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR5(N)	16:43	7.2	Bottom	3	1	28.45	7.74	25.86	76.7	5.16	4.3	6.8
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR5(N)	16:44	7.2	Bottom	3	2	28.52	7.74	25.38	75.5	5.14	4.4	6.5
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR10A(N)	17:52	1.0	Surface	1	1	28.78	7.93	26.57	90.2	6.01	2.9	5.1
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR10A(N)	17:53	1.0	Surface	1	2	28.79	7.93	26.51	90.5	6.03	3.0	5.0
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR10A(N)	17:53	6.9	Middle	2	1	28.65	7.90	26.93	84.4	5.63	3.5	4.5
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR10A(N)	17:52	6.9	Middle	2	2	28.61	7.90	27.02	84.1	5.61	3.4	4.9
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR10A(N)	17:53	12.7	Bottom	3	1	28.37	7.86	28.31	80.7	5.36	3.7	4.7
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR10A(N)	17:52	12.7	Bottom	3	2	28.33	7.87	28.41	80.5	5.35	3.7	4.8
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR10B(N2)	18:03	1.0	Surface	1	1	28.79	7.92	26.52	91.7	6.11	3.1	4.8
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR10B(N2)	18:04	1.0	Surface	1	2	28.89	7.93	25.77	92.2	6.16	3.2	4.2
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR10B(N2)	18:04	4.1	Middle	2	1	28.73	7.90	26.64	85.2	5.68	3.2	4.2
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR10B(N2)	18:02	4.1	Middle	2	2	28.61	7.88	27.01	84.1	5.61	3.1	4.7
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR10B(N2)	18:02	7.1	Bottom	3	1	28.34	7.85	28.39	82.9	5.51	3.3	4.3
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	SR10B(N2)	18:04	7.1	Bottom	3	2	28.46	7.85	27.86	82.9	5.51	3.4	4.5
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	CS2(A)	16:01	1.0	Surface	1	1	28.93	7.93	23.01	88.9	6.03	6.6	3.2
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	CS2(A)	16:03	1.0	Surface	1	2	28.72	7.89	23.29	88.1	5.99	6.6	3.1
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	CS2(A)	16:02	4.0	Middle	2	1	28.61	7.86	25.28	80.5	5.42	6.7	5.8
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	CS2(A)	16:01	4.0	Middle	2	2	28.59	7.87	26.14	82.2	5.51	6.8	5.5
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	CS2(A)	16:01	7.0	Bottom	3	1	28.12	7.85	28.03	78.9	5.28	6.9	6.0
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	CS2(A)	16:02	7.0	Bottom	3	2	28.09	7.84	28.20	78.9	5.27	7.0	6.7
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	CS(Mf)5	17:37	1.0	Surface	1	1	28.57	8.48	21.97	126.2	8.66	2.4	3.9
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	CS(Mf)5	17:38	1.0	Surface	1	2	28.61	8.46	21.88	122.9	8.43	2.2	3.7
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	CS(Mf)5	17:37	5.9	Middle	2	1	27.20	8.45	29.02	89.9	6.07	2.2	3.7
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	CS(Mf)5	17:36	5.9	Middle	2	2	27.11	8.49	29.45	91.5	6.10	2.2	3.5
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	CS(Mf)5	17:36	10.8	Bottom	3	1	27.26	8.44	30.88	80.9	5.46	2.2	3.2
HKLR	HY/2011/03	2019-09-09	Mid-Flood	Sunny	CS(Mf)5	17:37	10.8	Bottom	3	2	27.14	8.44	30.98	81.5	5.52	2.2	3.1
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS5	10:03	1.0	Surface	1	1	28.35	8.22	23.71	105.1	7.11	5.7	7.0
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS5	10:03	1.0	Surface	1	2	28.36	8.22	23.57	105.7	7.21	5.8	6.6
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS5	10:03	4.2	Middle	2	1	28.02	8.16	24.53	102.0	6.96	5.8	7.2
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS5	10:03	4.2	Middle	2	2	28.00	8.17	24.71	100.8	6.88	5.9	7.2
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS5	10:03	7.4	Bottom	3	1	28.06	8.18	25.98	92.8	6.30	5.7	7.6
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS5	10:02	7.4	Bottom	3	2	27.81	8.14	26.22	92.5	6.31	5.8	7.9
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS(Mf)6	10:11	1.0	Surface	1	1	28.77	8.28	23.65	115.9	7.85	3.3	5.0
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS(Mf)6	10:12	1.0	Surface	1	2	28.83	8.30	23.60	121.8	8.25	3.4	5.2
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS(Mf)6	10:11	2.1	Bottom	3	1	28.69	8.28	23.84	119.1	8.07	3.4	6.2
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS(Mf)6	10:11	2.1	Bottom	3	2	28.37	8.24	24.14	113.1	7.66	3.3	6.6
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS7	10:21	1.0	Surface	1	1	28.78	8.34	23.25	129.3	8.78	2.8	5.1
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS7	10:21	1.0	Surface	1	2	28.71	8.33	23.32	125.1	8.50	2.6	4.8
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS7	10:21	2.0	Bottom	3	1	28.69	8.33	23.39	120.1	8.16	2.9	5.7
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS7	10:21	2.0	Bottom	3	2	28.67	8.31	23.80	119.4	8.11	2.8	6.2
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS8(N)	10:51	1.0	Surface	1	1	28.63	8.27	23.99	112.2	7.61	13.5	15.9
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS8(N)	10:51	1.0	Surface	1	2	28.54	8.25	24.29	106.8	7.24	14.4	16.7
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS8(N)	10:51	2.8	Bottom	3	1	28.45	8.23	24.64	104.4	7.07	14.5	13.9
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS8(N)	10:51	2.8	Bottom	3	2	28.49	8.25	24.55	109.2	7.40	14.6	14.3
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS(Mf)9	10:31	1.0	Surface	1	1	28.65	8.27	23.80	114.4	7.76	4.1	15.5
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS(Mf)9	10:31	1.0	Surface	1	2	28.66	8.28	23.75	113.2	7.68	4.1	14.4

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS(Mf)9	10:31	2.6	Bottom	3	1	28.67	8.27	23.76	108.4	7.35	4.1	12.5
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS(Mf)9	10:31	2.6	Bottom	3	2	28.55	8.29	23.84	103.5	7.03	4.2	12.7
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS10(N)	10:51	1.0	Surface	1	1	29.79	8.05	21.29	112.4	7.49	8.3	4.5
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS10(N)	10:51	1.0	Surface	1	2	30.15	8.11	21.07	116.6	7.83	8.2	4.2
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS10(N)	10:51	5.2	Middle	2	1	29.05	7.92	24.55	105.7	7.13	8.6	4.7
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS10(N)	10:51	5.2	Middle	2	2	29.08	7.93	24.67	112.5	7.52	8.1	4.9
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS10(N)	10:51	9.3	Bottom	3	1	29.10	7.94	25.07	102.9	6.91	8.8	5.0
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	IS10(N)	10:51	9.3	Bottom	3	2	29.29	7.97	24.94	105.5	7.07	8.5	4.9
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR3(N)	9:55	1.0	Surface	1	1	28.72	8.30	23.23	123.1	8.36	5.7	4.0
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR3(N)	9:55	1.0	Surface	1	2	28.69	8.29	23.34	125.7	8.54	5.5	4.7
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR3(N)	9:55	2.4	Bottom	3	1	28.57	8.29	23.78	110.9	7.53	5.5	4.8
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR3(N)	9:55	2.4	Bottom	3	2	28.60	8.27	23.73	119.3	8.11	5.4	4.5
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR4(N2)	10:44	1.0	Surface	1	1	28.21	8.17	24.07	95.4	6.51	8.9	7.5
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR4(N2)	10:44	1.0	Surface	1	2	28.28	8.23	23.73	97.9	6.69	8.4	8.1
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR4(N2)	10:44	2.6	Bottom	3	1	28.38	8.28	23.95	98.1	6.68	8.5	9.2
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR4(N2)	10:44	2.6	Bottom	3	2	28.22	8.19	24.14	97.6	6.66	8.4	9.4
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR5(N)	10:38	1.0	Surface	1	1	29.81	8.06	21.28	114.4	7.62	8.3	4.1
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR5(N)	10:38	1.0	Surface	1	2	29.76	8.06	21.34	119.0	7.94	7.9	3.8
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR5(N)	10:37	4.1	Middle	2	1	29.11	7.94	23.41	108.7	7.33	9.7	4.3
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR5(N)	10:38	4.1	Middle	2	2	29.20	7.96	22.82	109.2	7.37	9.5	3.9
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR5(N)	10:37	7.1	Bottom	3	1	29.17	7.97	25.15	104.4	7.04	9.3	3.6
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR5(N)	10:38	7.1	Bottom	3	2	29.35	7.99	25.00	104.2	7.04	9.9	3.8
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR10A(N)	11:36	1.0	Surface	1	1	29.21	8.01	24.09	111.4	7.39	4.8	3.1
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR10A(N)	11:35	1.0	Surface	1	2	29.24	8.01	24.75	113.3	7.57	5.0	3.1
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR10A(N)	11:35	6.2	Middle	2	1	28.96	7.95	26.35	108.5	7.22	5.2	3.0
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR10A(N)	11:36	6.2	Middle	2	2	28.94	7.95	26.44	109.8	7.37	5.5	3.2
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR10A(N)	11:35	11.3	Bottom	3	1	29.01	7.96	26.85	104.9	6.98	6.8	2.5
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR10A(N)	11:36	11.3	Bottom	3	2	28.92	7.95	26.55	108.8	7.24	6.3	3.0
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR10B(N2)	11:45	1.0	Surface	1	1	29.43	8.05	23.62	120.3	8.06	4.4	3.2
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR10B(N2)	11:45	1.0	Surface	1	2	29.36	8.04	23.57	118.2	7.88	4.1	3.6
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR10B(N2)	11:45	3.3	Middle	2	1	29.19	8.01	24.95	117.2	7.83	5.1	3.8
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR10B(N2)	11:45	3.3	Middle	2	2	29.05	7.98	25.68	114.0	7.66	5.5	3.8
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR10B(N2)	11:45	5.5	Bottom	3	1	29.18	8.01	25.41	110.2	7.35	6.3	4.3
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	SR10B(N2)	11:45	5.5	Bottom	3	2	29.05	7.98	25.72	110.3	7.35	6.2	4.3
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	CS2(A)	9:50	1.0	Surface	1	1	29.78	8.06	21.34	110.6	7.39	6.4	5.5
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	CS2(A)	9:51	1.0	Surface	1	2	30.14	8.12	21.17	119.4	8.02	6.6	5.0
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	CS2(A)	9:51	3.2	Middle	2	1	29.37	8.01	22.00	107.2	7.26	7.5	3.7
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	CS2(A)	9:50	3.2	Middle	2	2	29.28	7.97	22.36	103.6	6.99	7.7	4.3
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	CS2(A)	9:50	5.3	Bottom	3	1	29.01	7.90	24.83	93.6	6.27	7.8	2.0
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	CS2(A)	9:51	5.3	Bottom	3	2	29.35	7.99	24.58	95.0	6.43	7.7	2.2
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	CS(Mf)5	11:14	1.0	Surface	1	1	28.69	8.26	24.15	104.8	7.09	2.8	6.1
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	CS(Mf)5	11:13	1.0	Surface	1	2	28.58	8.26	24.13	100.7	6.83	2.7	5.8
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	CS(Mf)5	11:13	5.8	Middle	2	1	27.79	8.16	27.39	93.0	6.19	4.8	4.9
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	CS(Mf)5	11:13	5.8	Middle	2	2	27.74	8.13	27.24	94.1	6.27	4.5	5.3
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	CS(Mf)5	11:12	10.6	Bottom	3	1	27.58	8.16	30.55	89.2	6.02	4.8	3.7
HKLR	HY/2011/03	2019-09-11	Mid-Ebb	Sunny	CS(Mf)5	11:13	10.6	Bottom	3	2	27.50	8.11	30.62	89.7	6.06	4.8	4.4
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS5	4:48	1.0	Surface	1	1	27.85	8.27	24.22	92.7	6.16	2.4	2.2
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS5	4:48	1.0	Surface	1	2	28.06	8.30	23.78	91.5	6.23	2.5	2.8
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS5	4:48	4.2	Middle	2	1	27.52	8.20	29.86	88.0	6.03	3.3	3.5
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS5	4:47	4.2	Middle	2	2	27.53	8.20	29.66	90.4	6.09	3.4	3.1
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS5	4:47	7.4	Bottom	3	1	27.40	8.19	30.91	86.1	5.76	3.4	4.7
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS5	4:48	7.4	Bottom	3	2	27.57	8.21	30.70	86.8	5.80	3.5	4.6

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS(Mf)6	4:36	1.0	Surface	1	1	28.18	8.33	24.64	108.1	7.36	2.9	3.9
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS(Mf)6	4:37	1.0	Surface	1	2	28.18	8.33	24.77	109.9	7.48	2.8	4.2
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS(Mf)6	4:36	2.2	Bottom	3	1	28.04	8.32	25.54	106.4	7.22	2.9	4.9
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS(Mf)6	4:37	2.2	Bottom	3	2	28.06	8.32	25.47	108.7	7.38	2.8	5.2
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS7	4:29	1.0	Surface	1	1	28.20	8.34	23.32	108.3	7.42	1.8	4.8
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS7	4:29	1.0	Surface	1	2	28.21	8.33	23.75	109.4	7.47	1.8	4.5
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS7	4:29	2.1	Bottom	3	1	28.21	8.33	24.85	108.8	7.39	1.7	5.2
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS7	4:29	2.1	Bottom	3	2	28.15	8.33	25.41	106.5	7.22	1.8	5.0
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS8(N)	3:59	1.0	Surface	1	1	28.11	8.33	23.97	109.2	7.46	1.6	3.2
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS8(N)	3:59	1.0	Surface	1	2	28.10	8.33	23.88	109.8	7.51	1.6	3.2
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS8(N)	3:59	3.0	Bottom	3	1	28.04	8.31	25.90	109.4	7.41	1.5	3.0
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS8(N)	3:58	3.0	Bottom	3	2	28.03	8.31	26.01	110.0	7.45	1.6	3.3
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS(Mf)9	4:22	1.0	Surface	1	1	28.22	8.34	23.68	109.8	7.50	1.5	4.6
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS(Mf)9	4:22	1.0	Surface	1	2	28.08	8.33	23.94	108.7	7.44	1.5	4.2
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS(Mf)9	4:22	2.8	Bottom	3	1	28.04	8.32	25.90	109.0	7.38	1.6	4.3
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS(Mf)9	4:22	2.8	Bottom	3	2	28.01	8.32	25.86	108.9	7.38	1.5	3.8
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS10(N)	4:04	1.0	Surface	1	1	28.97	8.02	22.26	86.0	5.85	9.7	5.4
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS10(N)	4:05	1.0	Surface	1	2	29.09	8.04	21.97	88.4	6.01	10.1	5.2
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS10(N)	4:04	5.3	Middle	2	1	28.60	7.92	27.42	83.6	5.56	11.9	4.5
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS10(N)	4:05	5.3	Middle	2	2	28.60	7.92	27.44	83.3	5.54	12.0	4.8
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS10(N)	4:05	9.6	Bottom	3	1	28.62	7.93	27.43	87.6	5.83	11.7	4.3
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	IS10(N)	4:04	9.6	Bottom	3	2	28.59	7.93	27.43	88.5	5.89	11.6	4.4
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR3(N)	4:58	1.0	Surface	1	1	28.19	8.32	24.72	105.8	7.19	1.4	3.4
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR3(N)	4:58	1.0	Surface	1	2	28.02	8.31	25.85	107.3	7.27	1.4	3.9
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR3(N)	4:58	2.3	Bottom	3	1	28.05	8.31	25.99	106.9	7.23	1.6	4.0
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR3(N)	4:58	2.3	Bottom	3	2	27.95	8.29	26.33	101.6	6.88	1.5	4.3
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR4(N2)	4:08	1.0	Surface	1	1	28.23	8.34	23.43	111.3	7.62	1.4	4.1
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR4(N2)	4:07	1.0	Surface	1	2	28.20	8.34	23.53	111.0	7.59	1.3	4.6
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR4(N2)	4:07	2.6	Bottom	3	1	28.09	8.32	25.33	111.0	7.53	1.4	3.1
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR4(N2)	4:08	2.6	Bottom	3	2	28.17	8.32	25.31	110.8	7.51	1.3	3.0
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR5(N)	4:18	1.0	Surface	1	1	29.05	8.01	22.05	93.6	6.21	6.3	4.5
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR5(N)	4:17	1.0	Surface	1	2	29.08	8.04	22.20	89.4	6.07	6.7	4.1
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR5(N)	4:17	3.9	Middle	2	1	28.66	7.94	27.39	82.7	5.50	8.5	3.6
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR5(N)	4:17	3.9	Middle	2	2	28.67	7.94	27.39	84.2	5.60	8.7	3.7
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR5(N)	4:16	6.7	Bottom	3	1	28.60	7.92	27.47	84.0	5.59	9.1	3.2
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR5(N)	4:17	6.7	Bottom	3	2	28.73	7.96	27.40	88.7	6.04	9.8	3.2
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR10A(N)	3:11	1.0	Surface	1	1	29.22	8.08	22.00	95.2	6.33	6.0	3.2
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR10A(N)	3:11	1.0	Surface	1	2	29.17	8.05	22.27	94.6	6.42	6.1	3.5
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR10A(N)	3:11	6.1	Middle	2	1	28.58	7.92	27.41	83.3	5.61	6.8	3.4
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR10A(N)	3:11	6.1	Middle	2	2	28.55	7.88	27.39	82.5	5.50	6.7	4.0
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR10A(N)	3:11	11.2	Bottom	3	1	28.70	7.95	27.31	86.6	5.77	7.1	4.4
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR10A(N)	3:10	11.2	Bottom	3	2	28.57	7.91	27.36	85.9	5.72	7.2	3.9
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR10B(N2)	3:02	1.0	Surface	1	1	29.10	7.99	22.77	90.5	6.13	3.6	3.8
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR10B(N2)	3:02	1.0	Surface	1	2	28.88	8.00	22.46	92.3	6.13	4.0	3.8
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR10B(N2)	3:02	3.3	Middle	2	1	28.66	7.93	27.28	86.3	5.74	5.5	5.1
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR10B(N2)	3:01	3.3	Middle	2	2	28.63	7.89	27.29	82.4	5.48	5.2	5.2
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR10B(N2)	3:01	5.5	Bottom	3	1	28.57	7.89	27.36	86.6	5.77	5.3	5.1
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	SR10B(N2)	3:02	5.5	Bottom	3	2	28.75	7.94	27.23	87.1	5.93	5.5	5.4
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	CS2(A)	5:08	1.0	Surface	1	1	29.11	8.02	23.71	93.2	6.28	7.9	1.4
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	CS2(A)	5:09	1.0	Surface	1	2	29.10	8.04	22.20	94.6	6.43	7.4	1.7
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	CS2(A)	5:08	3.1	Middle	2	1	28.68	7.95	27.42	86.8	5.77	8.1	2.4
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	CS2(A)	5:09	3.1	Middle	2	2	28.74	7.96	27.30	91.2	6.06	7.8	3.0

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	CS2(A)	5:09	5.1	Bottom	3	1	28.84	7.97	27.37	94.9	6.29	7.8	3.9
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	CS2(A)	5:08	5.1	Bottom	3	2	28.64	7.94	27.49	89.6	5.95	8.6	3.8
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	CS(Mf)5	3:23	1.0	Surface	1	1	28.15	8.29	23.23	93.1	6.28	3.2	2.9
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	CS(Mf)5	3:23	1.0	Surface	1	2	28.21	8.30	23.51	92.5	6.22	3.1	3.6
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	CS(Mf)5	3:23	5.9	Middle	2	1	27.39	8.17	30.34	91.6	6.18	4.2	5.1
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	CS(Mf)5	3:22	5.9	Middle	2	2	27.43	8.14	30.31	84.0	5.57	4.1	5.2
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	CS(Mf)5	3:23	10.8	Bottom	3	1	27.45	8.18	31.24	87.4	5.84	4.0	7.1
HKLR	HY/2011/03	2019-09-11	Mid-Flood	Fine	CS(Mf)5	3:22	10.8	Bottom	3	2	27.35	8.13	31.52	78.6	5.25	4.1	7.6
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS5	12:16	1.0	Surface	1	1	28.89	8.25	24.82	98.1	6.60	6.5	9.5
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS5	12:16	1.0	Surface	1	2	28.94	8.26	24.75	96.5	6.48	6.3	8.5
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS5	12:16	4.2	Middle	2	1	28.54	8.24	25.42	97.4	6.54	6.5	9.0
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS5	12:16	4.2	Middle	2	2	28.66	8.25	25.18	95.8	6.45	6.5	8.0
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS5	12:16	7.3	Bottom	3	1	28.66	8.25	25.42	96.5	6.49	6.4	8.4
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS5	12:16	7.3	Bottom	3	2	28.46	8.24	25.69	94.5	6.36	6.5	7.6
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS(Mf)6	12:24	1.0	Surface	1	1	29.02	8.28	24.38	100.0	6.72	8.5	8.8
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS(Mf)6	12:24	1.0	Surface	1	2	28.87	8.27	24.60	100.7	6.77	8.4	7.9
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS(Mf)6	12:24	2.2	Bottom	3	1	28.74	8.27	24.91	100.3	6.75	8.5	6.4
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS(Mf)6	12:24	2.2	Bottom	3	2	28.88	8.27	24.78	100.7	6.77	8.4	6.0
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS7	12:33	1.0	Surface	1	1	29.53	8.30	23.96	105.0	7.01	2.6	5.3
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS7	12:33	1.0	Surface	1	2	29.04	8.29	24.25	106.9	7.19	2.7	4.7
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS7	12:33	2.1	Bottom	3	1	28.71	8.26	24.83	99.3	6.69	2.8	2.8
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS7	12:33	2.1	Bottom	3	2	29.02	8.29	24.41	106.4	7.15	2.9	2.8
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS8(N)	13:04	1.0	Surface	1	1	28.85	8.24	24.32	92.9	6.26	10.5	15.0
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS8(N)	13:04	1.0	Surface	1	2	28.95	8.25	24.45	95.7	6.43	10.5	17.4
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS8(N)	13:04	2.9	Bottom	3	1	28.97	8.25	24.53	95.0	6.38	10.1	13.0
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS8(N)	13:04	2.9	Bottom	3	2	28.58	8.22	25.55	93.9	6.31	10.5	12.7
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS(Mf)9	12:42	1.0	Surface	1	1	29.04	8.29	24.30	107.0	7.19	5.7	9.0
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS(Mf)9	12:42	1.0	Surface	1	2	28.99	8.28	24.36	104.0	6.99	5.5	8.0
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS(Mf)9	12:42	2.7	Bottom	3	1	28.88	8.30	24.34	102.3	6.89	5.3	9.9
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS(Mf)9	12:42	2.7	Bottom	3	2	29.07	8.29	24.28	105.6	7.09	5.4	8.9
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS10(N)	13:03	1.0	Surface	1	1	30.08	7.90	22.88	95.8	6.38	10.6	8.1
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS10(N)	13:04	1.0	Surface	1	2	30.13	7.90	22.71	95.6	6.37	10.6	8.4
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS10(N)	13:04	5.0	Middle	2	1	29.56	7.86	24.13	92.3	6.15	12.2	6.7
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS10(N)	13:03	5.0	Middle	2	2	29.54	7.86	24.16	90.8	6.06	12.7	5.7
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS10(N)	13:03	8.9	Bottom	3	1	29.78	7.88	24.14	96.0	6.38	12.8	5.2
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	IS10(N)	13:03	8.9	Bottom	3	2	29.53	7.86	24.26	91.4	6.10	13.3	6.1
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR3(N)	12:07	1.0	Surface	1	1	29.67	8.32	23.91	104.7	7.04	7.5	3.7
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR3(N)	12:07	1.0	Surface	1	2	29.48	8.30	24.04	106.6	7.12	7.4	2.7
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR3(N)	12:07	2.5	Bottom	3	1	28.87	8.30	24.68	101.9	6.79	7.1	4.4
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR3(N)	12:06	2.5	Bottom	3	2	28.57	8.32	25.06	95.6	6.45	7.5	3.8
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR4(N2)	12:56	1.0	Surface	1	1	28.70	8.24	24.21	90.2	6.10	10.5	9.9
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR4(N2)	12:56	1.0	Surface	1	2	28.73	8.21	24.52	89.0	6.00	10.9	9.2
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR4(N2)	12:56	2.6	Bottom	3	1	28.60	8.26	25.22	93.3	6.28	10.1	9.4
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR4(N2)	12:56	2.6	Bottom	3	2	28.76	8.22	24.57	90.0	6.06	10.4	10.0
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR5(N)	12:53	1.0	Surface	1	1	29.94	7.89	23.11	95.0	6.33	13.9	6.6
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR5(N)	12:53	1.0	Surface	1	2	30.03	7.89	22.94	96.4	6.42	14.2	5.6
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR5(N)	12:53	3.9	Middle	2	1	29.61	7.87	23.89	92.1	6.15	14.8	6.3
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR5(N)	12:53	3.9	Middle	2	2	29.69	7.87	23.68	91.8	6.12	15.5	5.4
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR5(N)	12:52	6.7	Bottom	3	1	29.50	7.85	24.39	90.4	6.03	15.6	3.6
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR5(N)	12:53	6.7	Bottom	3	2	29.56	7.86	24.27	93.4	6.22	16.0	4.6
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR10A(N)	13:49	1.0	Surface	1	1	30.02	7.99	24.68	102.1	6.74	4.2	2.1
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR10A(N)	13:48	1.0	Surface	1	2	30.22	8.03	24.25	104.9	6.92	4.5	2.9

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR10A(N)	13:48	6.1	Middle	2	1	29.69	8.01	25.63	99.1	6.54	4.4	2.7
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR10A(N)	13:49	6.1	Middle	2	2	29.75	7.97	25.38	99.6	6.58	4.6	2.0
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR10A(N)	13:48	11.1	Bottom	3	1	29.73	8.08	25.71	99.6	6.57	5.3	1.8
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR10A(N)	13:49	11.1	Bottom	3	2	29.63	7.96	25.68	99.3	6.56	5.7	2.1
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR10B(N2)	13:58	1.0	Surface	1	1	30.12	7.99	24.01	103.0	6.81	2.5	3.7
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR10B(N2)	13:57	1.0	Surface	1	2	30.39	8.01	23.83	104.7	6.90	2.6	3.6
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR10B(N2)	13:58	3.4	Middle	2	1	29.75	7.96	25.38	101.0	6.67	2.7	3.0
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR10B(N2)	13:57	3.4	Middle	2	2	29.61	7.95	25.75	99.5	6.57	2.9	4.0
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR10B(N2)	13:58	5.8	Bottom	3	1	29.65	7.95	25.70	101.7	6.72	5.5	3.8
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	SR10B(N2)	13:57	5.8	Bottom	3	2	29.56	7.95	25.98	101.5	6.70	5.1	3.0
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	CS2(A)	12:02	1.0	Surface	1	1	29.86	7.89	23.27	96.5	6.43	13.8	4.9
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	CS2(A)	12:01	1.0	Surface	1	2	29.88	7.90	23.30	96.2	6.41	13.5	4.5
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	CS2(A)	12:01	3.2	Middle	2	1	29.72	7.90	23.63	94.5	6.31	14.1	4.2
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	CS2(A)	12:02	3.2	Middle	2	2	29.70	7.88	23.64	95.8	6.39	14.1	3.8
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	CS2(A)	12:01	5.3	Bottom	3	1	29.67	7.94	23.98	94.8	6.32	14.7	4.9
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	CS2(A)	12:02	5.3	Bottom	3	2	29.73	7.88	23.71	96.4	6.42	15.0	4.8
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	CS(Mf)5	13:26	1.0	Surface	1	1	28.48	8.20	25.51	87.7	5.86	6.4	8.4
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	CS(Mf)5	13:26	1.0	Surface	1	2	28.56	8.22	25.42	90.2	6.04	6.5	9.0
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	CS(Mf)5	13:26	6.0	Middle	2	1	28.19	8.20	27.29	87.7	5.90	6.5	8.3
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	CS(Mf)5	13:26	6.0	Middle	2	2	28.20	8.18	27.30	86.2	5.81	6.6	7.7
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	CS(Mf)5	13:26	11.0	Bottom	3	1	28.30	8.19	27.52	85.2	5.71	6.6	7.7
HKLR	HY/2011/03	2019-09-13	Mid-Ebb	Sunny	CS(Mf)5	13:26	11.0	Bottom	3	2	28.22	8.22	27.50	86.2	5.78	6.6	8.1
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS5	6:03	1.0	Surface	1	1	28.02	8.17	26.50	83.9	5.59	2.5	1.9
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS5	6:04	1.0	Surface	1	2	28.41	8.20	26.83	87.0	5.82	2.5	2.1
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS5	6:03	4.3	Middle	2	1	27.60	8.13	29.03	82.4	5.57	2.9	2.1
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS5	6:04	4.3	Middle	2	2	27.72	8.14	28.06	81.7	5.44	2.8	3.1
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS5	6:03	7.5	Bottom	3	1	27.50	8.12	30.64	79.3	5.33	3.1	3.2
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS5	6:03	7.5	Bottom	3	2	27.45	8.12	30.68	80.8	5.42	3.2	2.7
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS(Mf)6	5:52	1.0	Surface	1	1	28.51	8.22	25.68	96.4	6.49	2.1	3.1
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS(Mf)6	5:52	1.0	Surface	1	2	28.45	8.22	26.34	96.5	6.47	2.1	2.9
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS(Mf)6	5:52	2.3	Bottom	3	1	28.15	8.20	27.38	95.1	6.38	2.1	3.1
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS(Mf)6	5:52	2.3	Bottom	3	2	28.33	8.21	26.70	96.0	6.44	2.2	2.1
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS7	5:45	1.0	Surface	1	1	28.40	8.21	26.34	94.9	6.37	1.7	2.5
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS7	5:45	1.0	Surface	1	2	28.42	8.21	26.32	94.3	6.33	1.8	2.3
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS7	5:45	2.1	Bottom	3	1	28.33	8.20	26.81	94.3	6.33	1.7	3.3
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS7	5:45	2.1	Bottom	3	2	28.08	8.19	27.60	93.9	6.30	1.8	3.4
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS8(N)	5:16	1.0	Surface	1	1	28.48	8.21	26.20	94.4	6.34	2.0	5.8
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS8(N)	5:16	1.0	Surface	1	2	28.31	8.19	26.47	91.2	6.13	2.1	4.7
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS8(N)	5:15	2.8	Bottom	3	1	28.06	8.17	27.86	90.9	6.09	2.1	2.9
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS8(N)	5:16	2.8	Bottom	3	2	28.14	8.18	27.57	91.9	6.16	2.2	3.2
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS(Mf)9	5:38	1.0	Surface	1	1	28.44	8.21	25.66	94.4	6.36	2.0	3.3
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS(Mf)9	5:37	1.0	Surface	1	2	28.21	8.20	26.02	94.6	6.38	2.1	4.2
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS(Mf)9	5:37	2.8	Bottom	3	1	28.18	8.19	27.49	95.0	6.36	2.6	5.0
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS(Mf)9	5:37	2.8	Bottom	3	2	28.28	8.19	27.44	94.0	6.29	2.6	5.3
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS10(N)	5:42	1.0	Surface	1	1	29.32	7.92	25.46	83.5	5.55	11.4	4.2
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS10(N)	5:43	1.0	Surface	1	2	29.25	7.91	25.52	83.6	5.56	11.1	4.1
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS10(N)	5:42	5.3	Middle	2	1	29.12	7.91	26.35	82.4	5.47	11.8	4.6
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS10(N)	5:43	5.3	Middle	2	2	29.12	7.90	26.38	81.8	5.43	12.0	4.2
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS10(N)	5:42	9.5	Bottom	3	1	29.15	7.91	26.26	83.9	5.57	12.5	3.9
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	IS10(N)	5:42	9.5	Bottom	3	2	29.20	7.91	26.04	83.9	5.57	12.2	3.2
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR3(N)	6:15	1.0	Surface	1	1	28.78	8.23	25.45	100.1	6.71	1.8	1.4
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR3(N)	6:14	1.0	Surface	1	2	28.34	8.21	25.93	93.7	6.31	1.8	2.2

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR3(N)	6:14	2.4	Bottom	3	1	28.41	8.21	26.16	93.3	6.27	1.8	2.2
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR3(N)	6:14	2.4	Bottom	3	2	28.34	8.20	27.18	94.2	6.30	1.7	1.6
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR4(N2)	5:27	1.0	Surface	1	1	28.32	8.20	25.92	94.6	6.37	2.6	3.9
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR4(N2)	5:27	1.0	Surface	1	2	28.42	8.21	25.72	94.6	6.38	2.7	4.4
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR4(N2)	5:26	2.8	Bottom	3	1	28.13	8.19	27.54	93.9	6.29	2.5	4.0
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR4(N2)	5:27	2.8	Bottom	3	2	28.33	8.19	27.60	94.4	6.30	2.5	3.0
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR5(N)	5:52	1.0	Surface	1	1	29.23	7.91	25.60	83.4	5.55	9.5	1.5
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR5(N)	5:52	1.0	Surface	1	2	29.24	7.91	25.56	83.1	5.53	10.0	2.3
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR5(N)	5:52	4.1	Middle	2	1	29.17	7.91	25.97	82.2	5.46	10.5	1.9
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR5(N)	5:52	4.1	Middle	2	2	29.18	7.91	25.89	82.0	5.45	10.3	1.7
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR5(N)	5:52	7.1	Bottom	3	1	29.12	7.90	26.39	81.9	5.43	12.2	1.2
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR5(N)	5:52	7.1	Bottom	3	2	29.13	7.90	26.33	82.4	5.47	11.7	1.9
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR10A(N)	4:55	1.0	Surface	1	1	29.23	7.92	25.57	83.0	5.52	3.1	2.0
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR10A(N)	4:54	1.0	Surface	1	2	29.22	7.92	25.64	83.2	5.54	3.4	2.5
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR10A(N)	4:54	6.2	Middle	2	1	29.11	7.90	26.42	83.0	5.51	3.2	3.2
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR10A(N)	4:54	6.2	Middle	2	2	29.11	7.90	26.41	81.7	5.42	3.3	3.5
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR10A(N)	4:54	11.3	Bottom	3	1	29.13	7.90	26.34	85.1	5.64	4.6	2.5
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR10A(N)	4:54	11.3	Bottom	3	2	29.13	7.90	26.34	82.9	5.50	4.5	2.1
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR10B(N2)	4:46	1.0	Surface	1	1	29.25	7.92	25.48	97.2	6.45	3.9	3.6
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR10B(N2)	4:46	1.0	Surface	1	2	29.25	7.92	25.52	93.0	6.18	4.1	3.5
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR10B(N2)	4:46	3.3	Middle	2	1	29.20	7.92	25.84	89.1	5.91	3.9	2.9
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR10B(N2)	4:46	3.3	Middle	2	2	29.22	7.92	25.75	91.4	6.08	4.4	3.3
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR10B(N2)	4:46	5.6	Bottom	3	1	29.19	7.91	26.24	87.1	5.79	5.6	3.0
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	SR10B(N2)	4:46	5.6	Bottom	3	2	29.18	7.91	26.36	87.5	5.81	5.2	3.1
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	CS2(A)	6:40	1.0	Surface	1	1	29.24	7.91	25.56	83.6	5.56	8.8	3.0
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	CS2(A)	6:39	1.0	Surface	1	2	29.23	7.91	25.59	83.4	5.55	9.0	3.9
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	CS2(A)	6:39	3.1	Middle	2	1	29.19	7.91	25.88	83.0	5.52	10.6	2.7
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	CS2(A)	6:40	3.1	Middle	2	2	29.20	7.91	25.81	83.3	5.53	10.0	2.6
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	CS2(A)	6:39	5.2	Bottom	3	1	29.14	7.90	26.22	83.0	5.51	10.6	2.8
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	CS2(A)	6:39	5.2	Bottom	3	2	29.17	7.90	26.14	83.2	5.52	9.7	2.2
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	CS(Mf)5	4:48	1.0	Surface	1	1	28.48	8.18	25.61	84.3	5.68	2.3	2.2
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	CS(Mf)5	4:49	1.0	Surface	1	2	28.43	8.19	26.20	86.1	5.78	2.3	3.2
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	CS(Mf)5	4:49	5.9	Middle	2	1	27.78	8.13	29.32	85.0	5.64	3.2	2.9
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	CS(Mf)5	4:48	5.9	Middle	2	2	27.70	8.10	29.72	78.1	5.20	3.2	2.1
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	CS(Mf)5	4:49	10.7	Bottom	3	1	27.74	8.12	30.72	82.2	5.49	3.4	2.7
HKLR	HY/2011/03	2019-09-13	Mid-Flood	Fine	CS(Mf)5	4:48	10.7	Bottom	3	2	27.38	8.07	30.88	77.6	5.17	3.3	3.0
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS5	12:39	1.0	Surface	1	1	28.89	8.04	25.70	79.5	5.32	8.4	7.8
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS5	12:40	1.0	Surface	1	2	28.96	8.03	25.69	76.9	5.15	8.6	8.7
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS5	12:39	4.2	Middle	2	1	28.74	8.05	25.88	76.0	5.08	9.8	10.0
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS5	12:40	4.2	Middle	2	2	28.73	8.03	25.89	75.4	5.05	9.5	9.0
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS5	12:39	7.4	Bottom	3	1	28.62	8.06	26.16	74.4	4.98	9.8	10.4
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS5	12:40	7.4	Bottom	3	2	28.69	8.03	26.05	73.9	4.95	9.7	11.3
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS(Mf)6	12:59	1.0	Surface	1	1	29.09	8.04	25.41	75.1	5.01	6.7	9.8
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS(Mf)6	12:59	1.0	Surface	1	2	29.12	8.05	25.41	77.1	5.14	6.6	10.9
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS(Mf)6	12:58	2.2	Bottom	3	1	28.82	8.06	25.65	79.3	5.31	6.6	8.9
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS(Mf)6	12:59	2.2	Bottom	3	2	28.98	8.04	25.52	75.8	5.06	6.5	8.4
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS7	13:07	1.0	Surface	1	1	28.83	8.04	25.38	86.7	5.83	4.8	6.7
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS7	13:07	1.0	Surface	1	2	28.85	8.05	25.34	80.6	5.40	4.8	7.2
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS7	13:06	2.1	Bottom	3	1	28.69	8.06	25.38	80.2	5.38	6.5	7.6
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS7	13:07	2.1	Bottom	3	2	28.81	8.04	25.32	78.3	5.25	6.2	8.0
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS8(N)	13:33	1.0	Surface	1	1	28.82	8.03	25.45	76.4	5.12	10.7	17.1
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS8(N)	13:33	1.0	Surface	1	2	28.84	8.03	25.43	75.2	5.04	11.1	18.1

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS8(N)	13:33	2.8	Bottom	3	1	28.77	8.03	25.51	74.3	4.98	10.8	17.8
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS8(N)	13:33	2.8	Bottom	3	2	28.67	8.03	25.64	75.1	5.04	11.1	16.4
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS(Mf)9	13:14	1.0	Surface	1	1	29.43	8.04	25.30	82.1	5.45	5.0	7.7
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS(Mf)9	13:14	1.0	Surface	1	2	29.15	8.03	25.37	84.8	5.69	5.2	8.3
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS(Mf)9	13:14	2.6	Bottom	3	1	28.76	8.05	25.38	80.5	5.39	5.5	7.8
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS(Mf)9	13:14	2.6	Bottom	3	2	28.95	8.03	25.32	79.5	5.30	5.5	8.7
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS10(N)	13:29	1.0	Surface	1	1	29.84	7.72	22.74	74.9	5.23	11.3	8.1
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS10(N)	13:29	1.0	Surface	1	2	29.95	7.72	22.70	76.8	5.36	11.5	7.4
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS10(N)	13:29	5.1	Middle	2	1	29.46	7.70	25.29	75.2	5.24	12.4	7.1
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS10(N)	13:29	5.1	Middle	2	2	29.44	7.70	25.34	73.7	5.13	12.1	8.0
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS10(N)	13:29	9.1	Bottom	3	1	29.55	7.70	25.32	75.8	5.27	12.3	8.1
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	IS10(N)	13:28	9.1	Bottom	3	2	29.39	7.70	25.58	74.3	5.17	12.5	8.2
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR3(N)	12:32	1.0	Surface	1	1	28.89	8.12	25.45	88.2	5.91	9.3	10.1
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR3(N)	12:31	1.0	Surface	1	2	28.83	8.17	25.46	81.0	5.43	9.8	11.4
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR3(N)	12:31	2.4	Bottom	3	1	28.73	8.17	25.68	78.1	5.23	10.9	7.8
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR3(N)	12:31	2.4	Bottom	3	2	28.74	8.13	25.65	76.8	5.14	10.6	8.8
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR4(N2)	13:27	1.0	Surface	1	1	28.75	8.04	25.05	80.7	5.43	5.2	4.9
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR4(N2)	13:27	1.0	Surface	1	2	28.69	8.03	25.15	84.6	5.69	5.4	3.9
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR4(N2)	13:27	2.6	Bottom	3	1	28.69	8.03	25.23	77.8	5.24	5.6	5.5
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR4(N2)	13:27	2.6	Bottom	3	2	28.65	8.05	25.31	79.4	5.34	5.5	4.8
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR5(N)	13:18	1.0	Surface	1	1	29.89	7.73	22.58	76.7	5.36	9.8	4.9
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR5(N)	13:18	1.0	Surface	1	2	29.75	7.72	23.00	78.4	5.49	9.9	4.6
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR5(N)	13:18	3.9	Middle	2	1	29.46	7.71	25.09	75.5	5.27	10.8	4.7
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR5(N)	13:17	3.9	Middle	2	2	29.47	7.71	25.03	76.2	5.32	10.6	4.8
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR5(N)	13:17	6.8	Bottom	3	1	29.39	7.71	25.82	76.5	5.32	11.9	5.6
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR5(N)	13:18	6.8	Bottom	3	2	29.48	7.70	25.62	76.3	5.30	11.3	6.1
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR10A(N)	14:12	1.0	Surface	1	1	29.88	7.80	25.62	80.3	5.56	5.0	6.5
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR10A(N)	14:13	1.0	Surface	1	2	29.52	7.77	26.41	83.7	5.78	5.2	5.6
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR10A(N)	14:12	6.1	Middle	2	1	28.93	7.80	28.00	78.8	5.51	5.8	5.1
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR10A(N)	14:12	6.1	Middle	2	2	29.26	7.82	27.22	77.8	5.41	5.6	4.1
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR10A(N)	14:12	11.1	Bottom	3	1	28.92	7.88	28.29	77.0	5.33	5.7	4.3
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR10A(N)	14:12	11.1	Bottom	3	2	29.25	7.87	27.39	74.9	5.19	5.8	3.7
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR10B(N2)	14:22	1.0	Surface	1	1	29.71	7.77	26.00	75.4	5.22	5.3	3.4
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR10B(N2)	14:21	1.0	Surface	1	2	29.54	7.77	26.11	74.9	5.19	5.5	2.8
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR10B(N2)	14:21	3.3	Middle	2	1	29.40	7.76	26.37	74.6	5.17	7.7	3.8
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR10B(N2)	14:21	3.3	Middle	2	2	29.27	7.76	27.12	74.5	5.16	7.3	3.4
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR10B(N2)	14:21	5.5	Bottom	3	1	29.29	7.75	27.40	75.2	5.21	8.5	4.1
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	SR10B(N2)	14:21	5.5	Bottom	3	2	29.23	7.76	27.28	74.7	5.17	8.3	3.5
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	CS2(A)	12:36	1.0	Surface	1	1	29.90	7.74	22.53	83.5	5.93	10.7	7.9
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	CS2(A)	12:35	1.0	Surface	1	2	30.07	7.76	22.39	85.7	6.08	10.7	7.0
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	CS2(A)	12:35	3.0	Middle	2	1	29.56	7.76	23.79	84.2	5.97	11.6	6.0
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	CS2(A)	12:36	3.0	Middle	2	2	29.65	7.73	23.75	81.9	5.80	11.9	5.3
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	CS2(A)	12:35	4.9	Bottom	3	1	29.46	7.78	25.28	85.8	6.06	12.7	4.8
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	CS2(A)	12:36	4.9	Bottom	3	2	29.78	7.73	25.08	82.5	5.81	12.2	5.2
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	CS(Mf)5	13:55	1.0	Surface	1	1	28.89	8.04	25.69	76.0	5.09	3.7	5.4
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	CS(Mf)5	13:55	1.0	Surface	1	2	28.78	8.05	26.19	76.1	5.11	3.6	6.2
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	CS(Mf)5	13:54	5.8	Middle	2	1	28.08	8.04	28.03	75.3	5.05	4.9	6.1
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	CS(Mf)5	13:55	5.8	Middle	2	2	28.12	8.02	27.95	74.9	5.02	5.2	7.1
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	CS(Mf)5	13:55	10.6	Bottom	3	1	28.24	8.02	28.03	73.0	4.87	4.8	8.0
HKLR	HY/2011/03	2019-09-16	Mid-Ebb	Fine	CS(Mf)5	13:54	10.6	Bottom	3	2	28.04	8.06	28.18	74.0	4.95	4.8	7.7
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS5	8:38	1.0	Surface	1	1	28.64	8.05	25.23	81.9	5.51	5.8	8.4
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS5	8:37	1.0	Surface	1	2	28.64	8.05	25.24	85.7	5.76	6.0	8.8

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS5	8:37	4.4	Middle	2	1	28.69	8.05	25.33	78.3	5.27	6.9	8.1
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS5	8:37	4.4	Middle	2	2	28.68	8.05	25.32	74.6	5.02	6.8	7.7
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS5	8:37	7.7	Bottom	3	1	28.69	8.05	25.40	74.8	5.02	7.5	8.0
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS5	8:37	7.7	Bottom	3	2	28.70	8.05	25.41	74.5	5.01	7.4	8.2
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS(Mf)6	8:30	1.0	Surface	1	1	28.57	8.04	25.43	84.5	5.70	6.8	6.2
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS(Mf)6	8:30	1.0	Surface	1	2	28.59	8.04	25.37	79.0	5.32	6.8	6.1
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS(Mf)6	8:30	2.1	Bottom	3	1	28.55	8.04	25.44	77.0	5.18	7.4	6.9
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS(Mf)6	8:29	2.1	Bottom	3	2	28.50	8.05	25.49	77.6	5.22	7.5	6.6
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS7	8:22	1.0	Surface	1	1	28.49	8.05	25.46	82.9	5.59	9.1	11.1
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS7	8:22	1.0	Surface	1	2	28.48	8.04	25.46	88.0	5.93	9.2	12.0
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS7	8:22	2.2	Bottom	3	1	28.47	8.06	25.47	80.6	5.43	9.5	14.6
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS7	8:22	2.2	Bottom	3	2	28.48	8.04	25.47	79.0	5.33	9.5	15.6
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS8(N)	7:55	1.0	Surface	1	1	28.56	8.05	24.76	91.2	6.17	5.0	9.0
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS8(N)	7:55	1.0	Surface	1	2	28.54	8.06	24.76	86.6	5.85	4.9	10.0
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS8(N)	7:55	3.0	Bottom	3	1	28.55	8.05	24.76	80.4	5.44	5.1	9.8
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS8(N)	7:55	3.0	Bottom	3	2	28.52	8.07	24.75	82.8	5.59	5.0	10.6
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS(Mf)9	8:15	1.0	Surface	1	1	28.54	8.06	25.20	95.8	6.46	7.9	21.0
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS(Mf)9	8:15	1.0	Surface	1	2	28.55	8.05	25.21	88.9	5.99	8.1	18.8
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS(Mf)9	8:15	2.8	Bottom	3	1	28.54	8.06	25.25	82.9	5.59	8.2	15.8
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS(Mf)9	8:15	2.8	Bottom	3	2	28.48	8.08	25.28	85.3	5.75	8.4	14.0
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS10(N)	7:48	1.0	Surface	1	1	29.55	7.81	24.49	74.9	5.22	10.3	16.0
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS10(N)	7:49	1.0	Surface	1	2	29.53	7.81	24.59	75.7	5.29	10.2	15.0
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS10(N)	7:48	5.1	Middle	2	1	29.36	7.80	25.66	74.2	5.17	12.0	24.0
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS10(N)	7:48	5.1	Middle	2	2	29.31	7.80	25.83	73.8	5.15	12.2	23.5
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS10(N)	7:48	9.2	Bottom	3	1	29.32	7.80	26.07	75.3	5.26	12.3	16.4
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	IS10(N)	7:47	9.2	Bottom	3	2	29.28	7.80	26.05	73.4	5.11	11.7	16.8
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR3(N)	8:46	1.0	Surface	1	1	28.69	8.05	25.33	88.1	5.92	8.0	9.8
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR3(N)	8:46	1.0	Surface	1	2	28.68	8.05	25.33	83.2	5.59	7.9	10.9
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR3(N)	8:46	2.4	Bottom	3	1	28.68	8.06	25.34	80.6	5.42	8.8	8.4
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR3(N)	8:46	2.4	Bottom	3	2	28.68	8.05	25.34	79.2	5.32	8.7	7.6
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR4(N2)	8:04	1.0	Surface	1	1	28.47	8.03	25.22	81.3	5.49	5.3	8.6
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR4(N2)	8:04	1.0	Surface	1	2	28.49	8.03	25.32	86.5	5.84	5.3	9.6
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR4(N2)	8:04	2.8	Bottom	3	1	28.48	8.03	25.26	77.5	5.22	5.6	10.0
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR4(N2)	8:03	2.8	Bottom	3	2	28.46	8.04	25.34	79.2	5.35	5.7	9.0
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR5(N)	8:01	1.0	Surface	1	1	29.55	7.81	24.57	74.2	5.18	10.2	14.8
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR5(N)	8:02	1.0	Surface	1	2	29.53	7.81	24.64	75.4	5.27	9.8	15.8
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR5(N)	8:02	3.9	Middle	2	1	29.38	7.81	25.44	72.9	5.08	14.7	16.3
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR5(N)	8:01	3.9	Middle	2	2	29.38	7.81	25.38	73.7	5.15	14.6	17.6
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR5(N)	8:02	6.7	Bottom	3	1	29.29	7.80	26.05	73.4	5.12	15.5	18.5
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR5(N)	8:01	6.7	Bottom	3	2	29.28	7.80	26.06	73.6	5.12	15.2	16.4
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR10A(N)	6:52	1.0	Surface	1	1	29.55	7.81	24.47	75.3	5.24	4.2	4.5
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR10A(N)	6:51	1.0	Surface	1	2	29.55	7.81	24.50	75.0	5.22	5.0	5.1
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR10A(N)	6:51	6.1	Middle	2	1	29.28	7.81	26.02	73.8	5.13	5.6	4.8
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR10A(N)	6:51	6.1	Middle	2	2	29.29	7.80	25.98	73.7	5.12	5.3	3.8
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR10A(N)	6:51	11.2	Bottom	3	1	29.31	7.80	26.10	74.4	5.16	5.5	3.9
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR10A(N)	6:51	11.2	Bottom	3	2	29.28	7.81	26.08	74.4	5.17	5.7	4.4
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR10B(N2)	6:40	1.0	Surface	1	1	29.56	7.83	24.26	81.4	5.65	4.2	5.3
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR10B(N2)	6:40	1.0	Surface	1	2	29.55	7.82	24.43	85.1	5.88	3.8	4.8
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR10B(N2)	6:40	3.3	Middle	2	1	29.40	7.82	25.33	77.0	5.36	4.1	5.1
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR10B(N2)	6:39	3.3	Middle	2	2	29.42	7.84	25.07	79.1	5.49	4.5	4.8
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR10B(N2)	6:39	5.6	Bottom	3	1	29.32	7.84	26.00	76.4	5.30	6.6	7.5
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	SR10B(N2)	6:40	5.6	Bottom	3	2	29.32	7.82	25.95	75.7	5.26	6.2	7.5

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	CS2(A)	9:13	1.0	Surface	1	1	29.51	7.81	24.72	75.7	5.29	9.9	15.2
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	CS2(A)	9:14	1.0	Surface	1	2	29.48	7.81	24.83	75.5	5.28	10.5	15.0
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	CS2(A)	9:13	3.1	Middle	2	1	29.46	7.80	25.07	75.1	5.25	11.0	14.8
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	CS2(A)	9:14	3.1	Middle	2	2	29.46	7.80	25.09	75.3	5.27	11.8	13.2
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	CS2(A)	9:13	5.1	Bottom	3	1	29.44	7.80	25.22	75.3	5.27	11.1	11.6
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	CS2(A)	9:13	5.1	Bottom	3	2	29.44	7.80	25.23	75.3	5.27	11.7	11.2
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	CS(Mf)5	7:33	1.0	Surface	1	1	28.33	8.02	26.01	75.5	5.10	5.7	4.4
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	CS(Mf)5	7:32	1.0	Surface	1	2	28.31	8.00	26.04	75.9	5.12	5.5	4.9
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	CS(Mf)5	7:32	6.0	Middle	2	1	27.82	7.96	28.91	74.9	5.05	5.5	4.7
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	CS(Mf)5	7:33	6.0	Middle	2	2	27.82	8.00	28.90	75.1	5.06	5.8	5.0
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	CS(Mf)5	7:32	11.0	Bottom	3	1	27.67	7.91	29.75	71.6	4.79	5.8	4.8
HKLR	HY/2011/03	2019-09-16	Mid-Flood	Cloudy	CS(Mf)5	7:32	11.0	Bottom	3	2	27.76	7.98	29.65	71.9	4.82	5.9	4.8
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS5	13:46	1.0	Surface	1	1	28.74	8.03	24.81	80.4	5.42	8.3	12.6
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS5	13:47	1.0	Surface	1	2	28.73	8.01	24.81	77.1	5.20	8.2	12.1
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS5	13:46	4.2	Middle	2	1	28.66	8.01	24.84	74.2	5.01	9.0	10.1
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS5	13:46	4.2	Middle	2	2	28.66	8.05	24.84	75.9	5.11	8.6	10.4
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS5	13:46	7.4	Bottom	3	1	28.65	8.02	24.85	73.2	4.93	8.5	11.4
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS5	13:46	7.4	Bottom	3	2	28.62	8.06	24.86	72.9	4.92	8.5	10.9
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS(Mf)6	13:54	1.0	Surface	1	1	28.65	7.99	24.77	79.1	5.34	12.0	12.6
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS(Mf)6	13:54	1.0	Surface	1	2	28.66	7.98	24.77	74.6	5.03	11.0	10.9
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS(Mf)6	13:54	2.1	Bottom	3	1	28.60	8.00	24.78	73.4	4.95	12.3	10.2
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS(Mf)6	13:54	2.1	Bottom	3	2	28.64	7.99	24.77	71.9	4.85	11.9	10.4
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS7	14:00	1.0	Surface	1	1	28.98	8.00	25.39	81.7	5.47	5.3	5.8
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS7	14:00	1.0	Surface	1	2	29.11	8.00	25.33	86.6	5.79	5.2	5.1
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS7	14:00	2.0	Bottom	3	1	28.95	8.00	25.40	78.4	5.23	5.5	6.2
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS7	14:00	2.0	Bottom	3	2	28.98	8.00	25.38	79.8	5.34	5.5	5.2
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS8(N)	14:27	1.0	Surface	1	1	29.05	8.05	25.22	82.5	5.52	7.7	11.6
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS8(N)	14:27	1.0	Surface	1	2	29.01	8.06	25.23	79.5	5.32	7.5	11.7
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS8(N)	14:27	2.7	Bottom	3	1	28.97	8.06	25.23	76.5	5.12	7.7	12.0
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS8(N)	14:26	2.7	Bottom	3	2	28.97	8.07	25.21	74.2	4.96	7.8	13.3
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS(Mf)9	14:08	1.0	Surface	1	1	28.66	8.00	25.07	77.9	5.25	6.2	11.4
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS(Mf)9	14:08	1.0	Surface	1	2	28.66	8.00	25.15	74.7	5.03	5.8	10.9
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS(Mf)9	14:08	2.5	Bottom	3	1	28.67	8.00	25.14	75.4	5.08	6.0	9.4
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS(Mf)9	14:08	2.5	Bottom	3	2	28.64	8.02	25.21	81.3	5.47	6.5	9.6
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS10(N)	14:33	1.0	Surface	1	1	29.71	7.70	24.15	80.6	5.70	8.3	14.3
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS10(N)	14:34	1.0	Surface	1	2	29.90	7.70	23.16	81.0	5.74	7.5	13.2
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS10(N)	14:33	5.2	Middle	2	1	29.59	7.69	24.66	79.6	5.63	7.8	13.2
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS10(N)	14:33	5.2	Middle	2	2	29.57	7.69	24.73	79.8	5.64	7.7	14.6
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS10(N)	14:32	9.4	Bottom	3	1	29.38	7.69	25.72	79.4	5.60	8.0	12.7
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	IS10(N)	14:33	9.4	Bottom	3	2	29.38	7.68	25.75	79.2	5.59	7.9	13.8
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR3(N)	13:38	1.0	Surface	1	1	28.99	8.18	24.64	75.6	5.10	7.0	9.6
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR3(N)	13:39	1.0	Surface	1	2	28.90	8.12	24.65	74.9	5.05	6.9	10.4
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR3(N)	13:38	2.5	Bottom	3	1	28.68	8.28	24.69	73.4	4.93	7.3	8.8
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR3(N)	13:38	2.5	Bottom	3	2	28.95	8.16	24.62	72.9	4.90	7.3	8.2
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR4(N2)	14:20	1.0	Surface	1	1	29.06	8.06	23.06	81.6	5.52	5.8	14.9
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR4(N2)	14:20	1.0	Surface	1	2	28.89	8.02	24.72	87.0	5.85	5.8	15.3
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR4(N2)	14:20	2.5	Bottom	3	1	28.99	8.04	24.94	76.7	5.15	6.1	9.1
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR4(N2)	14:20	2.5	Bottom	3	2	28.69	8.06	25.09	80.1	5.37	6.2	8.2
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR5(N)	14:23	1.0	Surface	1	1	30.02	7.70	23.24	83.8	5.91	7.2	14.4
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR5(N)	14:24	1.0	Surface	1	2	29.96	7.70	23.45	83.7	5.90	8.4	12.7
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR5(N)	14:23	3.9	Middle	2	1	29.55	7.69	24.90	83.1	5.85	7.4	12.2
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR5(N)	14:23	3.9	Middle	2	2	29.54	7.69	25.04	83.3	5.85	7.5	12.6

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR5(N)	14:23	6.8	Bottom	3	1	29.58	7.68	25.48	81.8	5.77	7.9	13.5
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR5(N)	14:23	6.8	Bottom	3	2	29.38	7.68	25.72	81.2	5.73	7.9	14.4
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR10A(N)	15:15	1.0	Surface	1	1	29.33	7.75	27.14	76.9	5.41	2.6	6.1
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR10A(N)	15:15	1.0	Surface	1	2	29.20	7.74	27.39	77.2	5.43	2.5	6.2
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR10A(N)	15:14	6.7	Middle	2	1	29.12	7.75	27.67	76.6	5.38	2.8	6.0
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR10A(N)	15:15	6.7	Middle	2	2	29.11	7.74	27.72	76.6	5.38	2.7	5.5
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR10A(N)	15:14	12.4	Bottom	3	1	28.92	7.75	28.28	76.3	5.37	2.8	5.3
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR10A(N)	15:15	12.4	Bottom	3	2	29.11	7.74	27.86	76.4	5.37	2.9	4.8
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR10B(N2)	15:24	1.0	Surface	1	1	29.22	7.74	26.59	75.7	5.34	2.2	5.5
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR10B(N2)	15:24	1.0	Surface	1	2	29.16	7.74	27.38	75.5	5.30	2.3	5.6
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR10B(N2)	15:24	3.7	Middle	2	1	29.00	7.74	27.95	75.1	5.29	2.4	7.2
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR10B(N2)	15:24	3.7	Middle	2	2	29.09	7.74	27.77	75.2	5.30	2.4	8.6
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR10B(N2)	15:24	6.4	Bottom	3	1	29.02	7.74	28.31	75.1	5.29	2.6	7.5
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	SR10B(N2)	15:24	6.4	Bottom	3	2	28.85	7.74	28.56	74.6	5.26	2.7	8.4
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	CS2(A)	13:32	1.0	Surface	1	1	29.43	7.79	23.43	79.8	5.69	4.6	4.6
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	CS2(A)	13:31	1.0	Surface	1	2	29.44	7.79	23.22	79.5	5.67	3.8	5.1
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	CS2(A)	13:32	3.7	Middle	2	1	29.35	7.79	24.91	77.3	5.48	4.7	4.2
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	CS2(A)	13:31	3.7	Middle	2	2	29.35	7.80	24.87	77.1	5.47	4.6	4.9
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	CS2(A)	13:31	6.4	Bottom	3	1	29.19	7.79	26.73	76.2	5.38	4.7	5.2
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	CS2(A)	13:31	6.4	Bottom	3	2	29.22	7.80	26.49	76.1	5.37	4.6	4.4
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	CS(Mf)5	14:50	1.0	Surface	1	1	28.42	8.03	27.00	75.5	5.08	2.3	8.0
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	CS(Mf)5	14:49	1.0	Surface	1	2	28.44	8.04	27.00	77.8	5.19	2.2	7.0
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	CS(Mf)5	14:50	5.9	Middle	2	1	27.85	8.02	29.01	74.2	5.01	2.3	7.2
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	CS(Mf)5	14:49	5.9	Middle	2	2	27.84	8.04	29.01	74.8	5.05	2.2	7.8
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	CS(Mf)5	14:49	10.8	Bottom	3	1	27.99	8.02	29.07	73.5	4.89	2.5	6.9
HKLR	HY/2011/03	2019-09-18	Mid-Ebb	Sunny	CS(Mf)5	14:49	10.8	Bottom	3	2	27.82	8.04	29.42	74.1	4.95	2.4	7.3
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS5	9:18	1.0	Surface	1	1	28.35	8.01	24.89	80.3	5.43	7.4	8.2
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS5	9:18	1.0	Surface	1	2	28.35	8.00	24.87	75.3	5.09	7.2	8.0
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS5	9:17	4.3	Middle	2	1	28.36	8.01	25.23	75.0	5.07	7.4	7.5
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS5	9:18	4.3	Middle	2	2	28.36	8.00	25.21	74.1	5.02	7.5	7.9
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS5	9:18	7.5	Bottom	3	1	28.36	8.00	25.16	71.5	4.84	7.6	6.7
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS5	9:17	7.5	Bottom	3	2	28.35	8.01	25.50	72.4	4.90	7.5	7.7
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS(Mf)6	9:10	1.0	Surface	1	1	28.35	8.01	25.32	79.6	5.38	9.0	14.8
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS(Mf)6	9:11	1.0	Surface	1	2	28.35	8.01	25.33	84.8	5.74	9.3	14.3
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS(Mf)6	9:10	2.1	Bottom	3	1	28.36	8.03	25.27	77.7	5.25	9.1	15.1
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS(Mf)6	9:10	2.1	Bottom	3	2	28.35	8.01	25.36	75.9	5.13	9.0	15.4
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS7	9:03	1.0	Surface	1	1	28.41	8.02	25.41	77.2	5.21	9.9	8.0
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS7	9:03	1.0	Surface	1	2	28.43	8.01	25.48	81.2	5.47	9.7	8.2
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS7	9:03	2.3	Bottom	3	1	28.37	8.02	25.81	74.0	4.99	10.2	9.4
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS7	9:03	2.3	Bottom	3	2	28.40	8.01	25.64	76.1	5.13	10.3	8.4
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS8(N)	8:37	1.0	Surface	1	1	28.39	8.02	25.12	75.4	5.10	7.2	9.9
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS8(N)	8:37	1.0	Surface	1	2	28.37	8.03	25.19	79.8	5.39	7.1	10.9
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS8(N)	8:37	3.3	Bottom	3	1	28.37	8.02	25.25	77.1	5.21	7.0	9.7
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS8(N)	8:37	3.3	Bottom	3	2	28.35	8.04	25.27	82.4	5.57	7.3	10.7
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS(Mf)9	8:56	1.0	Surface	1	1	28.34	8.02	25.49	75.9	5.13	14.4	20.8
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS(Mf)9	8:56	1.0	Surface	1	2	28.33	8.02	25.50	80.0	5.41	14.3	23.4
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS(Mf)9	8:56	2.6	Bottom	3	1	28.33	8.02	25.50	74.1	5.00	14.5	22.3
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS(Mf)9	8:55	2.6	Bottom	3	2	28.32	8.03	25.50	72.3	4.88	14.5	24.6
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS10(N)	8:53	1.0	Surface	1	1	29.45	7.77	24.72	78.9	5.59	7.9	15.8
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS10(N)	8:54	1.0	Surface	1	2	29.45	7.77	24.72	78.8	5.58	8.0	16.0
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS10(N)	8:53	5.4	Middle	2	1	29.38	7.77	25.12	78.3	5.54	8.4	15.3
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS10(N)	8:54	5.4	Middle	2	2	29.41	7.77	24.93	78.1	5.53	8.2	17.1

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS10(N)	8:53	9.8	Bottom	3	1	29.28	7.78	25.70	78.0	5.51	9.2	18.1
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	IS10(N)	8:54	9.8	Bottom	3	2	29.29	7.76	25.75	77.8	5.50	9.3	17.0
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR3(N)	9:26	1.0	Surface	1	1	28.35	8.01	24.89	83.1	5.63	9.8	6.9
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR3(N)	9:26	1.0	Surface	1	2	28.35	8.00	24.82	77.5	5.25	9.4	6.7
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR3(N)	9:26	2.5	Bottom	3	1	28.35	8.01	24.93	73.4	4.97	9.2	9.2
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR3(N)	9:26	2.5	Bottom	3	2	28.34	8.02	24.97	80.0	5.42	9.5	10.1
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR4(N2)	8:44	1.0	Surface	1	1	28.30	8.01	25.01	79.0	5.35	4.8	7.1
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR4(N2)	8:44	1.0	Surface	1	2	28.26	8.00	25.02	83.7	5.65	4.6	7.1
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR4(N2)	8:44	2.8	Bottom	3	1	28.30	8.00	25.44	76.1	5.14	4.9	6.8
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR4(N2)	8:44	2.8	Bottom	3	2	28.33	8.02	25.74	72.9	4.94	4.8	6.3
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR5(N)	9:03	1.0	Surface	1	1	29.46	7.76	24.69	78.5	5.56	9.5	15.4
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR5(N)	9:04	1.0	Surface	1	2	29.45	7.76	24.74	78.8	5.58	9.4	14.9
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR5(N)	9:03	4.0	Middle	2	1	29.41	7.76	24.89	77.9	5.52	9.5	16.1
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR5(N)	9:04	4.0	Middle	2	2	29.38	7.76	25.06	77.9	5.52	9.4	15.3
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR5(N)	9:04	7.0	Bottom	3	1	29.28	7.76	25.70	77.0	5.46	9.7	15.9
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR5(N)	9:03	7.0	Bottom	3	2	29.27	7.76	25.82	77.7	5.49	9.9	14.4
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR10A(N)	8:04	1.0	Surface	1	1	29.26	7.78	25.61	81.5	5.76	2.1	5.9
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR10A(N)	8:03	1.0	Surface	1	2	29.34	7.79	24.93	81.6	5.76	2.0	6.2
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR10A(N)	8:03	6.9	Middle	2	1	29.31	7.78	25.36	81.0	5.72	2.5	5.3
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR10A(N)	8:02	6.9	Middle	2	2	29.28	7.79	25.42	80.6	5.71	2.4	5.0
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR10A(N)	8:02	12.7	Bottom	3	1	29.30	7.78	27.23	78.6	5.54	2.7	7.2
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR10A(N)	8:03	12.7	Bottom	3	2	29.31	7.78	25.37	79.2	5.60	2.6	6.1
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR10B(N2)	7:54	1.0	Surface	1	1	29.35	7.79	25.15	81.6	5.77	2.1	7.1
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR10B(N2)	7:53	1.0	Surface	1	2	29.36	7.79	25.10	81.9	5.79	2.1	8.1
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR10B(N2)	7:53	4.0	Middle	2	1	29.29	7.79	25.45	80.5	5.69	2.5	6.2
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR10B(N2)	7:52	4.0	Middle	2	2	29.29	7.80	25.44	80.6	5.70	2.6	6.8
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR10B(N2)	7:53	7.0	Bottom	3	1	29.14	7.78	26.47	79.6	5.61	2.8	6.6
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	SR10B(N2)	7:52	7.0	Bottom	3	2	29.13	7.80	26.53	79.4	5.60	2.9	6.3
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	CS2(A)	9:53	1.0	Surface	1	1	29.39	7.81	23.33	77.8	5.56	5.4	6.4
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	CS2(A)	9:54	1.0	Surface	1	2	29.40	7.80	23.56	78.2	5.57	5.2	5.4
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	CS2(A)	9:54	4.0	Middle	2	1	29.31	7.80	25.28	76.3	5.41	6.5	6.3
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	CS2(A)	9:53	4.0	Middle	2	2	29.29	7.81	25.55	76.2	5.40	6.6	5.3
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	CS2(A)	9:53	7.0	Bottom	3	1	29.21	7.81	26.64	75.8	5.35	6.9	4.6
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	CS2(A)	9:54	7.0	Bottom	3	2	29.22	7.80	26.56	75.9	5.36	6.7	4.7
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	CS(Mf)5	8:15	1.0	Surface	1	1	28.34	8.03	25.69	75.2	5.09	3.1	6.6
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	CS(Mf)5	8:14	1.0	Surface	1	2	28.36	8.03	25.66	75.6	5.11	3.2	7.2
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	CS(Mf)5	8:15	6.0	Middle	2	1	27.92	8.01	26.74	74.2	5.01	3.4	5.8
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	CS(Mf)5	8:14	6.0	Middle	2	2	28.07	8.03	26.60	74.4	5.02	3.2	6.4
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	CS(Mf)5	8:15	11.0	Bottom	3	1	27.99	8.00	29.04	70.8	4.81	3.2	4.6
HKLR	HY/2011/03	2019-09-18	Mid-Flood	Sunny	CS(Mf)5	8:14	11.0	Bottom	3	2	27.75	8.01	29.49	71.1	4.83	3.2	5.6
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS5	15:06	1.0	Surface	1	1	28.81	8.00	26.59	81.5	5.43	5.9	10.9
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS5	15:06	1.0	Surface	1	2	28.84	8.01	26.54	83.6	5.58	6.0	12.6
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS5	15:06	4.2	Middle	2	1	28.78	8.01	26.62	81.8	5.45	6.4	11.2
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS5	15:06	4.2	Middle	2	2	28.76	7.99	26.65	78.5	5.23	6.2	12.8
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS5	15:06	7.4	Bottom	3	1	28.75	8.00	26.66	77.4	5.16	6.6	12.9
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS5	15:05	7.4	Bottom	3	2	28.63	8.02	26.73	77.4	5.16	6.5	14.8
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS(Mf)6	15:14	1.0	Surface	1	1	28.74	8.03	26.69	83.2	5.54	3.8	11.4
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS(Mf)6	15:13	1.0	Surface	1	2	28.73	8.04	26.69	87.8	5.86	3.9	10.0
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS(Mf)6	15:14	2.0	Bottom	3	1	28.73	8.03	26.69	85.6	5.70	3.9	10.6
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS(Mf)6	15:13	2.0	Bottom	3	2	28.70	8.05	26.69	92.1	6.14	4.0	10.0
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS7	15:21	1.0	Surface	1	1	28.95	8.04	26.94	87.1	5.78	3.7	11.5
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS7	15:21	1.0	Surface	1	2	28.96	8.05	26.94	90.1	5.97	3.7	12.8

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS7	15:21	2.1	Bottom	3	1	28.95	8.04	26.95	88.8	5.89	3.7	9.9
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS7	15:21	2.1	Bottom	3	2	28.95	8.06	26.94	93.8	6.22	3.7	10.9
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS8(N)	15:49	1.0	Surface	1	1	28.73	8.14	26.88	93.0	6.19	6.7	11.5
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS8(N)	15:49	1.0	Surface	1	2	28.82	8.16	26.80	92.6	6.16	6.5	11.9
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS8(N)	15:49	2.8	Bottom	3	1	28.72	8.14	26.99	92.9	6.19	6.7	11.7
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS8(N)	15:49	2.8	Bottom	3	2	28.64	8.14	27.08	96.7	6.44	6.5	12.9
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS(Mf)9	15:29	1.0	Surface	1	1	28.82	8.04	26.99	81.8	5.44	6.2	12.4
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS(Mf)9	15:28	1.0	Surface	1	2	28.78	8.05	27.01	84.1	5.59	6.5	14.2
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS(Mf)9	15:28	2.6	Bottom	3	1	28.81	8.05	27.00	82.8	5.51	6.7	13.7
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS(Mf)9	15:28	2.6	Bottom	3	2	28.73	8.05	27.04	86.6	5.76	6.5	13.1
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS10(N)	15:36	1.0	Surface	1	1	29.75	7.73	24.21	74.6	5.27	9.3	15.3
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS10(N)	15:36	1.0	Surface	1	2	29.84	7.73	24.20	75.7	5.34	9.2	14.5
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS10(N)	15:36	5.2	Middle	2	1	29.27	7.73	26.75	74.5	5.21	10.2	13.8
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS10(N)	15:35	5.2	Middle	2	2	29.25	7.73	26.69	73.6	5.15	10.2	13.9
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS10(N)	15:36	9.3	Bottom	3	1	29.37	7.72	26.79	74.9	5.23	10.6	11.4
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	IS10(N)	15:35	9.3	Bottom	3	2	29.21	7.73	26.92	74.1	5.18	10.8	11.1
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR3(N)	14:57	1.0	Surface	1	1	28.78	8.08	26.29	82.3	5.49	5.7	12.7
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR3(N)	14:57	1.0	Surface	1	2	28.79	8.10	26.28	85.7	5.72	5.9	11.5
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR3(N)	14:57	2.5	Bottom	3	1	28.81	8.14	26.36	87.9	5.86	5.8	13.9
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR3(N)	14:57	2.5	Bottom	3	2	28.79	8.09	26.28	85.1	5.68	5.9	12.6
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR4(N2)	15:41	1.0	Surface	1	1	28.92	8.07	26.51	84.7	5.63	7.5	9.5
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR4(N2)	15:41	1.0	Surface	1	2	28.65	8.04	26.87	79.7	5.32	7.4	10.5
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR4(N2)	15:41	2.7	Bottom	3	1	28.68	8.04	26.87	76.4	5.09	7.7	13.5
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR4(N2)	15:41	2.7	Bottom	3	2	28.42	8.03	27.33	75.8	5.05	7.5	14.8
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR5(N)	15:29	1.0	Surface	1	1	29.69	7.75	24.25	76.2	5.38	8.3	12.7
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR5(N)	15:29	1.0	Surface	1	2	29.72	7.73	24.31	76.4	5.40	8.9	11.0
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR5(N)	15:29	4.1	Middle	2	1	29.27	7.74	26.45	74.6	5.23	9.4	11.5
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR5(N)	15:29	4.1	Middle	2	2	29.27	7.74	26.39	76.0	5.33	9.3	12.2
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR5(N)	15:29	7.1	Bottom	3	1	29.21	7.75	27.04	77.1	5.39	10.0	10.3
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR5(N)	15:29	7.1	Bottom	3	2	29.34	7.74	26.94	75.3	5.25	9.9	11.7
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR10A(N)	16:20	1.0	Surface	1	1	29.58	7.80	27.20	78.9	5.47	4.1	6.0
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR10A(N)	16:21	1.0	Surface	1	2	29.42	7.77	27.59	81.8	5.66	4.3	5.1
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR10A(N)	16:21	6.1	Middle	2	1	28.94	7.79	28.63	76.4	5.32	4.9	6.2
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR10A(N)	16:20	6.1	Middle	2	2	29.13	7.81	28.31	75.8	5.27	4.9	5.9
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR10A(N)	16:21	11.2	Bottom	3	1	28.96	7.83	28.79	76.7	5.32	4.9	5.4
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR10A(N)	16:20	11.2	Bottom	3	2	29.16	7.84	28.71	74.3	5.15	5.1	6.4
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR10B(N2)	16:30	1.0	Surface	1	1	29.53	7.76	27.33	74.4	5.16	4.2	7.9
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR10B(N2)	16:29	1.0	Surface	1	2	29.42	7.77	27.43	74.2	5.14	4.3	7.7
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR10B(N2)	16:30	3.4	Middle	2	1	29.28	7.76	27.71	73.9	5.12	5.4	6.0
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR10B(N2)	16:29	3.4	Middle	2	2	29.21	7.76	28.10	73.8	5.11	5.3	7.0
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR10B(N2)	16:30	5.7	Bottom	3	1	29.23	7.75	28.28	74.2	5.14	6.4	7.5
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	SR10B(N2)	16:29	5.7	Bottom	3	2	29.14	7.76	28.23	73.9	5.12	6.2	6.6
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	CS2(A)	14:50	1.0	Surface	1	1	29.80	7.79	25.59	83.0	5.84	8.8	11.2
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	CS2(A)	14:50	1.0	Surface	1	2	29.83	7.81	25.50	83.4	5.87	9.1	12.1
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	CS2(A)	14:50	3.2	Middle	2	1	29.46	7.79	26.84	80.4	5.68	9.5	13.0
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	CS2(A)	14:49	3.2	Middle	2	2	29.38	7.82	26.84	82.0	5.77	9.7	12.1
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	CS2(A)	14:50	5.3	Bottom	3	1	29.48	7.79	27.57	80.8	5.66	9.9	12.8
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	CS2(A)	14:49	5.3	Bottom	3	2	29.28	7.83	27.70	83.2	5.87	10.4	13.1
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	CS(Mf)5	16:10	1.0	Surface	1	1	28.58	8.09	28.25	83.7	5.52	1.7	7.6
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	CS(Mf)5	16:11	1.0	Surface	1	2	28.73	8.07	28.14	81.5	5.44	1.6	7.4
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	CS(Mf)5	16:11	5.8	Middle	2	1	28.07	8.07	30.39	76.5	5.05	1.5	8.0
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	CS(Mf)5	16:10	5.8	Middle	2	2	28.06	8.10	30.29	76.1	5.03	1.6	7.7

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	CS(Mf)5	16:10	10.6	Bottom	3	1	28.00	8.11	30.98	74.4	4.93	1.6	8.4
HKLR	HY/2011/03	2019-09-20	Mid-Ebb	Sunny	CS(Mf)5	16:11	10.6	Bottom	3	2	28.18	8.06	30.56	74.5	4.93	1.8	8.2
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS5	11:14	1.0	Surface	1	1	28.47	8.05	26.62	75.5	5.06	5.2	15.1
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS5	11:15	1.0	Surface	1	2	28.49	8.04	26.64	82.1	5.50	5.6	14.9
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS5	11:14	4.4	Middle	2	1	28.40	8.05	26.72	79.2	5.31	6.3	15.8
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS5	11:15	4.4	Middle	2	2	28.44	8.04	26.70	74.0	4.95	6.0	15.0
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS5	11:15	7.8	Bottom	3	1	28.45	8.04	26.68	84.2	5.64	6.5	14.2
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS5	11:14	7.8	Bottom	3	2	28.38	8.06	26.73	76.9	5.15	6.5	13.1
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS(Mf)6	11:07	1.0	Surface	1	1	28.28	8.05	26.83	83.0	5.57	14.3	18.4
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS(Mf)6	11:07	1.0	Surface	1	2	28.30	8.03	26.82	87.6	5.88	14.5	16.0
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS(Mf)6	11:07	2.3	Bottom	3	1	28.24	8.06	26.85	76.2	5.11	14.0	15.6
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS(Mf)6	11:07	2.3	Bottom	3	2	28.26	8.03	26.84	73.9	4.96	14.7	14.6
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS7	10:59	1.0	Surface	1	1	28.55	8.05	27.01	86.4	5.77	7.5	10.1
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS7	10:59	1.0	Surface	1	2	28.49	8.06	27.05	81.9	5.47	7.4	9.1
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS7	10:59	2.3	Bottom	3	1	28.45	8.05	27.17	75.6	5.04	7.7	12.6
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS7	10:59	2.3	Bottom	3	2	28.40	8.07	27.20	77.8	5.20	7.8	14.5
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS8(N)	10:30	1.0	Surface	1	1	28.34	8.06	26.77	87.9	5.89	8.4	10.0
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS8(N)	10:30	1.0	Surface	1	2	28.34	8.08	26.76	83.3	5.58	8.3	10.8
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS8(N)	10:30	3.3	Bottom	3	1	28.31	8.09	26.83	79.5	5.33	8.5	10.9
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS8(N)	10:30	3.3	Bottom	3	2	28.34	8.07	26.79	78.0	5.23	8.6	10.4
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS(Mf)9	10:51	1.0	Surface	1	1	28.36	8.06	26.96	87.7	5.87	10.4	15.3
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS(Mf)9	10:51	1.0	Surface	1	2	28.38	8.07	26.94	80.9	5.41	10.4	15.4
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS(Mf)9	10:51	2.7	Bottom	3	1	28.37	8.06	26.95	75.2	5.04	10.5	17.8
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS(Mf)9	10:51	2.7	Bottom	3	2	28.36	8.09	26.95	77.6	5.20	10.2	16.0
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS10(N)	10:39	1.0	Surface	1	1	29.41	7.76	26.10	74.0	5.19	9.8	12.6
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS10(N)	10:38	1.0	Surface	1	2	29.40	7.76	26.03	73.6	5.16	10.0	12.7
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS10(N)	10:38	5.2	Middle	2	1	29.03	7.76	26.89	73.1	5.11	11.2	12.9
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS10(N)	10:38	5.2	Middle	2	2	28.98	7.76	26.97	72.9	5.10	11.0	11.9
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS10(N)	10:38	9.4	Bottom	3	1	29.07	7.76	27.08	73.7	5.16	12.4	13.0
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	IS10(N)	10:37	9.4	Bottom	3	2	29.00	7.76	27.11	72.7	5.08	12.0	12.6
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR3(N)	11:24	1.0	Surface	1	1	28.39	8.05	26.63	84.7	5.67	5.4	10.3
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR3(N)	11:23	1.0	Surface	1	2	28.46	8.06	26.63	73.8	4.94	5.6	11.8
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR3(N)	11:23	2.7	Bottom	3	1	28.42	8.06	26.64	79.3	5.32	5.2	11.8
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR3(N)	11:23	2.7	Bottom	3	2	28.40	8.07	26.67	89.7	6.01	5.2	13.7
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR4(N2)	10:39	1.0	Surface	1	1	28.33	8.04	26.98	87.2	5.84	4.5	10.6
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR4(N2)	10:39	1.0	Surface	1	2	28.34	8.05	26.91	83.4	5.59	4.3	12.3
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR4(N2)	10:39	2.7	Bottom	3	1	28.34	8.06	26.93	77.6	5.20	4.6	11.6
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR4(N2)	10:39	2.7	Bottom	3	2	28.35	8.04	26.97	75.6	5.06	4.4	12.6
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR5(N)	10:46	1.0	Surface	1	1	29.40	7.77	26.15	73.7	5.17	9.7	11.7
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR5(N)	10:45	1.0	Surface	1	2	29.42	7.77	26.12	73.1	5.13	10.3	11.4
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR5(N)	10:46	4.2	Middle	2	1	29.08	7.77	26.71	72.4	5.06	12.9	11.2
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR5(N)	10:45	4.2	Middle	2	2	29.05	7.76	26.71	72.8	5.09	12.6	11.1
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR5(N)	10:46	7.3	Bottom	3	1	29.07	7.76	27.10	72.6	5.08	13.9	12.4
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR5(N)	10:45	7.3	Bottom	3	2	28.98	7.76	27.10	72.8	5.08	13.4	14.5
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR10A(N)	9:50	1.0	Surface	1	1	29.41	7.76	26.05	73.8	5.17	3.6	6.2
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR10A(N)	9:49	1.0	Surface	1	2	29.42	7.76	26.03	73.7	5.17	3.6	6.0
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR10A(N)	9:50	6.2	Middle	2	1	28.98	7.76	27.05	72.8	5.08	4.0	4.4
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR10A(N)	9:49	6.2	Middle	2	2	28.96	7.76	27.07	73.0	5.09	4.1	5.0
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR10A(N)	9:49	11.4	Bottom	3	1	29.09	7.75	27.12	73.2	5.11	4.7	4.6
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR10A(N)	9:49	11.4	Bottom	3	2	28.96	7.76	27.12	73.3	5.12	4.9	5.6
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR10B(N2)	9:42	1.0	Surface	1	1	29.43	7.76	25.97	81.3	5.68	4.8	4.1
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR10B(N2)	9:42	1.0	Surface	1	2	29.44	7.76	25.91	81.6	5.72	5.1	4.2

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR10B(N2)	9:42	3.2	Middle	2	1	29.14	7.76	26.56	75.7	5.30	4.8	4.6
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR10B(N2)	9:41	3.2	Middle	2	2	29.21	7.76	26.42	77.5	5.43	5.2	4.4
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR10B(N2)	9:41	5.4	Bottom	3	1	29.04	7.76	27.04	75.2	5.26	6.3	5.8
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	SR10B(N2)	9:42	5.4	Bottom	3	2	29.00	7.76	26.89	75.4	5.28	6.1	4.8
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	CS2(A)	11:34	1.0	Surface	1	1	29.42	7.82	26.58	77.5	5.44	10.8	12.6
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	CS2(A)	11:35	1.0	Surface	1	2	29.39	7.81	26.64	76.9	5.40	11.0	14.0
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	CS2(A)	11:34	3.1	Middle	2	1	29.24	7.81	27.24	77.3	5.40	11.4	11.7
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	CS2(A)	11:35	3.1	Middle	2	2	29.11	7.80	27.24	76.8	5.38	11.9	11.9
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	CS2(A)	11:34	5.2	Bottom	3	1	29.04	7.82	27.31	77.8	5.45	12.3	11.5
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	CS2(A)	11:34	5.2	Bottom	3	2	29.05	7.81	27.32	77.1	5.40	12.8	12.8
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	CS(Mf)5	10:08	1.0	Surface	1	1	28.37	8.02	27.39	76.8	5.09	3.6	7.3
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	CS(Mf)5	10:07	1.0	Surface	1	2	28.25	7.99	27.47	77.2	5.10	3.8	7.6
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	CS(Mf)5	10:07	6.0	Middle	2	1	28.08	8.01	28.99	75.4	5.02	5.4	7.7
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	CS(Mf)5	10:07	6.0	Middle	2	2	28.04	7.97	29.02	75.9	5.05	5.8	7.4
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	CS(Mf)5	10:07	11.0	Bottom	3	1	28.01	7.99	30.32	74.6	4.92	5.8	7.2
HKLR	HY/2011/03	2019-09-20	Mid-Flood	Sunny	CS(Mf)5	10:06	11.0	Bottom	3	2	27.99	7.91	30.61	74.2	4.89	5.8	8.0
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS5	6:46	1.0	Surface	1	1	27.62	8.19	31.49	90.6	5.96	3.2	7.2
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS5	6:47	1.0	Surface	1	2	27.61	8.17	31.68	86.1	5.67	3.4	6.6
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS5	6:46	4.0	Middle	2	1	27.68	8.17	32.12	87.1	5.76	3.8	6.1
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS5	6:47	4.0	Middle	2	2	27.65	8.15	32.17	82.6	5.45	3.6	5.1
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS5	6:46	7.0	Bottom	3	1	27.66	8.18	32.11	86.9	5.72	3.8	5.2
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS5	6:46	7.0	Bottom	3	2	27.65	8.16	32.12	81.7	5.38	3.7	5.9
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS(Mf)6	6:35	1.0	Surface	1	1	27.64	8.22	31.35	97.0	6.41	2.7	6.3
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS(Mf)6	6:35	1.0	Surface	1	2	27.63	8.21	31.39	96.1	6.35	2.6	6.5
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS(Mf)6	6:35	2.0	Bottom	3	1	27.61	8.21	31.54	95.1	6.29	2.7	5.0
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS(Mf)6	6:35	2.0	Bottom	3	2	27.70	8.17	31.92	95.7	6.33	2.7	6.0
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS7	6:28	1.0	Surface	1	1	27.64	8.20	31.45	89.3	5.90	3.3	5.6
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS7	6:28	1.0	Surface	1	2	27.63	8.20	31.52	89.3	5.90	3.4	6.3
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS7	6:28	2.0	Bottom	3	1	27.64	8.19	31.71	89.3	5.89	3.6	5.7
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS7	6:28	2.0	Bottom	3	2	27.65	8.20	31.73	90.1	5.94	3.7	5.5
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS8(N)	6:00	1.0	Surface	1	1	27.67	8.21	31.93	93.4	6.15	1.4	6.0
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS8(N)	5:59	1.0	Surface	1	2	27.67	8.20	32.01	91.8	6.04	1.5	6.8
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS8(N)	5:59	3.0	Bottom	3	1	27.70	8.20	32.20	90.4	5.94	1.5	5.4
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS8(N)	5:59	3.0	Bottom	3	2	27.67	8.20	32.05	92.4	6.08	1.5	5.9
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS(Mf)9	6:20	1.0	Surface	1	1	27.68	8.22	31.89	96.1	6.33	2.4	7.4
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS(Mf)9	6:20	1.0	Surface	1	2	27.67	8.21	31.96	96.7	6.37	2.5	8.4
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS(Mf)9	6:20	2.4	Bottom	3	1	27.68	8.22	31.93	96.1	6.33	2.5	6.2
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS(Mf)9	6:20	2.4	Bottom	3	2	27.68	8.21	32.08	95.6	6.29	2.4	6.3
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS10(N)	6:21	1.0	Surface	1	1	28.74	7.91	29.92	91.8	6.01	4.9	4.8
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS10(N)	6:19	1.0	Surface	1	2	28.78	7.93	29.84	91.9	6.01	4.8	4.4
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS10(N)	6:21	5.4	Middle	2	1	28.80	7.88	30.41	88.0	5.74	5.2	4.1
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS10(N)	6:19	5.4	Middle	2	2	28.82	7.89	30.26	88.1	5.75	5.4	4.2
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS10(N)	6:19	9.7	Bottom	3	1	28.79	7.88	30.58	87.9	5.73	5.5	6.0
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	IS10(N)	6:20	9.7	Bottom	3	2	28.83	7.88	30.63	86.8	5.65	5.7	5.0
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR3(N)	6:58	1.0	Surface	1	1	27.61	8.18	31.55	87.9	5.81	2.4	6.7
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR3(N)	6:58	1.0	Surface	1	2	27.62	8.18	31.68	87.9	5.81	2.6	6.0
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR3(N)	6:58	2.4	Bottom	3	1	27.69	8.17	31.91	87.2	5.74	2.6	5.8
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR3(N)	6:58	2.4	Bottom	3	2	27.67	8.18	31.83	90.3	5.96	2.4	6.8
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR4(N2)	6:09	1.0	Surface	1	1	27.67	8.21	31.97	95.7	6.30	1.5	5.6
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR4(N2)	6:08	1.0	Surface	1	2	27.68	8.21	31.93	95.2	6.27	1.4	6.6
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR4(N2)	6:08	2.6	Bottom	3	1	27.68	8.21	32.09	94.2	6.20	1.4	5.5
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR4(N2)	6:08	2.6	Bottom	3	2	27.67	8.21	32.02	95.5	6.29	1.5	6.1

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR5(N)	6:30	1.0	Surface	1	1	28.83	7.91	29.83	89.6	5.86	5.2	4.9
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR5(N)	6:29	1.0	Surface	1	2	28.87	7.88	30.33	87.8	5.72	5.4	5.0
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR5(N)	6:29	3.9	Middle	2	1	28.88	7.88	30.31	86.7	5.65	5.9	4.9
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR5(N)	6:30	3.9	Middle	2	2	28.85	7.89	30.17	86.8	5.66	5.6	5.6
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR5(N)	6:30	6.8	Bottom	3	1	28.88	7.87	30.45	85.9	5.59	6.2	7.6
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR5(N)	6:29	6.8	Bottom	3	2	28.83	7.87	30.53	85.1	5.55	6.0	6.6
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR10A(N)	5:37	1.0	Surface	1	1	28.81	7.93	30.37	96.4	6.29	2.2	6.7
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR10A(N)	5:38	1.0	Surface	1	2	28.82	7.93	30.30	96.4	6.29	2.3	7.6
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR10A(N)	5:38	6.7	Middle	2	1	28.82	7.93	30.51	94.7	6.17	2.5	7.1
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR10A(N)	5:37	6.7	Middle	2	2	28.82	7.93	30.53	95.0	6.19	2.3	6.1
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR10A(N)	5:38	12.4	Bottom	3	1	28.89	7.91	30.89	93.3	6.06	2.7	6.2
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR10A(N)	5:37	12.4	Bottom	3	2	28.92	7.91	31.08	93.7	6.08	2.7	5.3
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR10B(N2)	5:28	1.0	Surface	1	1	28.81	7.94	30.28	95.1	6.21	2.2	5.5
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR10B(N2)	5:28	1.0	Surface	1	2	28.82	7.93	30.47	95.5	6.23	2.1	5.2
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR10B(N2)	5:27	3.8	Middle	2	1	28.84	7.93	30.66	94.0	6.11	2.2	5.2
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR10B(N2)	5:28	3.8	Middle	2	2	28.83	7.93	30.62	94.2	6.13	2.2	5.0
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR10B(N2)	5:28	6.6	Bottom	3	1	28.89	7.92	30.91	93.6	6.08	2.5	7.0
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	SR10B(N2)	5:27	6.6	Bottom	3	2	28.86	7.93	30.81	93.7	6.10	2.4	6.0
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	CS2(A)	7:12	1.0	Surface	1	1	28.85	7.92	29.85	97.1	6.35	4.8	8.2
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	CS2(A)	7:13	1.0	Surface	1	2	28.86	7.93	29.81	97.8	6.40	4.8	7.4
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	CS2(A)	7:12	3.8	Middle	2	1	28.85	7.91	29.99	94.1	6.15	4.9	7.8
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	CS2(A)	7:13	3.8	Middle	2	2	28.87	7.91	29.87	94.4	6.17	4.8	8.7
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	CS2(A)	7:12	6.5	Bottom	3	1	28.87	7.89	30.23	92.3	6.02	5.3	8.1
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	CS2(A)	7:11	6.5	Bottom	3	2	28.86	7.89	30.21	92.1	6.01	5.1	9.1
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	CS(Mf)5	5:32	1.0	Surface	1	1	27.70	8.18	32.17	85.0	5.59	1.9	5.6
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	CS(Mf)5	5:33	1.0	Surface	1	2	27.68	8.19	32.09	86.1	5.67	1.8	5.4
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	CS(Mf)5	5:32	6.1	Middle	2	1	27.79	8.16	32.69	84.7	5.52	2.1	5.1
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	CS(Mf)5	5:33	6.1	Middle	2	2	27.83	8.16	32.83	85.7	5.60	2.2	4.8
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	CS(Mf)5	5:32	11.1	Bottom	3	1	27.85	8.16	33.04	83.5	5.46	2.1	4.9
HKLR	HY/2011/03	2019-09-23	Mid-Ebb	Cloudy	CS(Mf)5	5:32	11.1	Bottom	3	2	27.89	8.15	33.20	82.7	5.41	2.1	4.3
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS5	19:38	1.0	Surface	1	1	27.67	8.19	31.42	87.7	5.80	3.4	5.7
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS5	19:37	1.0	Surface	1	2	27.73	8.16	31.87	89.5	5.89	3.5	5.1
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS5	19:38	4.1	Middle	2	1	27.66	8.17	31.70	85.5	5.62	3.8	6.3
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS5	19:37	4.1	Middle	2	2	27.74	8.16	32.02	86.8	5.71	3.6	6.3
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS5	19:37	7.2	Bottom	3	1	27.74	8.17	32.02	85.6	5.64	3.6	6.5
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS5	19:38	7.2	Bottom	3	2	27.73	8.16	32.00	84.4	5.57	3.8	7.5
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS(Mf)6	19:49	1.0	Surface	1	1	27.70	8.22	31.24	98.8	6.53	3.3	7.3
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS(Mf)6	19:48	1.0	Surface	1	2	27.71	8.22	31.26	96.1	6.35	3.3	7.2
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS(Mf)6	19:49	2.0	Bottom	3	1	27.71	8.21	31.42	96.6	6.38	3.5	6.7
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS(Mf)6	19:48	2.0	Bottom	3	2	27.70	8.20	31.52	95.6	6.31	3.3	6.0
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS7	19:55	1.0	Surface	1	1	27.71	8.22	31.35	99.6	6.58	3.4	5.3
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS7	19:56	1.0	Surface	1	2	27.71	8.22	31.39	99.4	6.57	3.4	5.7
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS7	19:56	2.0	Bottom	3	1	27.72	8.22	31.38	99.6	6.58	3.4	5.4
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS7	19:55	2.0	Bottom	3	2	27.71	8.22	31.34	99.1	6.55	3.5	5.5
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS8(N)	20:23	1.0	Surface	1	1	27.84	8.22	32.57	90.5	5.93	1.8	6.2
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS8(N)	20:24	1.0	Surface	1	2	27.86	8.21	32.69	90.3	5.89	1.8	6.2
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS8(N)	20:23	3.1	Bottom	3	1	27.90	8.21	33.12	90.4	5.89	2.0	5.1
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS8(N)	20:24	3.1	Bottom	3	2	27.89	8.21	33.06	89.1	5.83	2.1	4.1
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS(Mf)9	20:04	1.0	Surface	1	1	27.87	8.25	32.75	89.7	5.86	1.9	4.0
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS(Mf)9	20:04	1.0	Surface	1	2	27.86	8.27	32.71	91.7	6.00	2.0	3.9
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS(Mf)9	20:04	2.5	Bottom	3	1	27.90	8.24	33.11	90.2	5.88	2.4	6.2
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS(Mf)9	20:04	2.5	Bottom	3	2	27.90	8.29	33.07	92.5	6.03	2.5	5.2

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS10(N)	20:16	1.0	Surface	1	1	29.00	7.90	29.50	92.1	6.02	7.7	4.7
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS10(N)	20:17	1.0	Surface	1	2	28.92	7.89	29.57	92.3	6.04	7.5	4.1
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS10(N)	20:16	5.3	Middle	2	1	28.83	7.87	29.75	87.0	5.62	8.1	3.7
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS10(N)	20:17	5.3	Middle	2	2	28.83	7.86	29.75	87.2	5.71	8.1	4.7
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS10(N)	20:17	9.6	Bottom	3	1	29.12	7.85	31.18	86.2	5.57	8.7	4.4
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	IS10(N)	20:16	9.6	Bottom	3	2	29.12	7.86	31.22	86.9	5.68	8.5	5.3
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR3(N)	19:27	1.0	Surface	1	1	27.71	8.21	31.89	96.5	6.36	3.5	7.2
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR3(N)	19:26	1.0	Surface	1	2	27.65	8.19	31.46	88.7	5.86	3.4	6.6
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR3(N)	19:26	2.3	Bottom	3	1	27.68	8.17	31.75	89.0	5.87	3.5	3.4
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR3(N)	19:26	2.3	Bottom	3	2	27.68	8.18	31.71	89.4	5.90	3.4	3.4
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR4(N2)	20:15	1.0	Surface	1	1	27.84	8.23	32.53	89.8	5.88	1.5	5.7
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR4(N2)	20:15	1.0	Surface	1	2	27.85	8.23	32.64	89.1	5.83	1.4	5.5
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR4(N2)	20:15	2.6	Bottom	3	1	27.90	8.22	33.20	88.7	5.78	1.6	4.5
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR4(N2)	20:15	2.6	Bottom	3	2	27.88	8.22	33.00	90.0	5.87	1.6	4.1
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR5(N)	20:08	1.0	Surface	1	1	29.03	7.92	29.45	97.3	6.35	6.7	2.9
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR5(N)	20:07	1.0	Surface	1	2	29.00	7.92	29.48	95.7	6.25	6.6	3.9
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR5(N)	20:07	4.0	Middle	2	1	28.88	7.89	29.66	90.2	5.90	6.8	4.3
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR5(N)	20:08	4.0	Middle	2	2	28.88	7.88	29.67	90.4	5.91	6.9	4.8
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR5(N)	20:06	7.0	Bottom	3	1	28.91	7.87	30.09	89.3	5.82	7.2	4.1
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR5(N)	20:07	7.0	Bottom	3	2	28.97	7.87	30.24	89.5	5.83	7.1	4.7
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR10A(N)	21:03	1.0	Surface	1	1	29.02	7.90	31.16	90.1	5.80	2.4	5.0
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR10A(N)	21:03	1.0	Surface	1	2	29.05	7.89	31.42	89.0	5.75	2.4	4.2
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR10A(N)	21:03	6.8	Middle	2	1	29.09	7.88	31.74	88.8	5.74	2.4	4.7
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR10A(N)	21:02	6.8	Middle	2	2	29.10	7.88	31.76	88.5	5.70	2.5	5.4
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR10A(N)	21:02	12.6	Bottom	3	1	29.12	7.86	31.90	87.2	5.62	2.8	4.4
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR10A(N)	21:03	12.6	Bottom	3	2	29.11	7.88	31.88	88.3	5.69	2.7	5.4
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR10B(N2)	21:13	1.0	Surface	1	1	28.97	7.91	30.93	90.9	5.90	2.4	5.5
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR10B(N2)	21:12	1.0	Surface	1	2	28.98	7.91	30.96	89.8	5.82	2.3	4.8
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR10B(N2)	21:13	4.1	Middle	2	1	29.05	7.88	31.55	88.9	5.74	2.5	5.4
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR10B(N2)	21:12	4.1	Middle	2	2	29.07	7.88	31.65	89.3	5.75	2.4	4.4
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR10B(N2)	21:12	7.1	Bottom	3	1	29.09	7.88	31.71	88.1	5.68	2.6	5.3
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	SR10B(N2)	21:13	7.1	Bottom	3	2	29.06	7.88	31.64	87.7	5.66	2.5	4.4
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	CS2(A)	19:20	1.0	Surface	1	1	28.95	7.92	29.54	92.7	6.06	6.5	7.9
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	CS2(A)	19:21	1.0	Surface	1	2	28.95	7.91	29.51	93.0	6.08	6.4	6.9
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	CS2(A)	19:21	3.9	Middle	2	1	28.91	7.90	29.66	88.9	5.81	6.4	7.4
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	CS2(A)	19:20	3.9	Middle	2	2	28.89	7.90	29.65	88.4	5.78	6.6	7.2
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	CS2(A)	19:20	6.8	Bottom	3	1	28.94	7.88	30.18	87.4	5.69	6.6	6.4
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	CS2(A)	19:19	6.8	Bottom	3	2	28.92	7.88	30.18	86.9	5.67	6.7	5.4
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	CS(Mf)5	21:00	1.0	Surface	1	1	27.88	8.21	32.78	88.2	5.74	2.4	4.7
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	CS(Mf)5	20:59	1.0	Surface	1	2	27.86	8.21	32.70	89.0	5.82	2.3	3.9
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	CS(Mf)5	20:59	6.1	Middle	2	1	27.96	8.19	33.40	88.2	5.74	4.4	3.6
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	CS(Mf)5	21:00	6.1	Middle	2	2	27.96	8.19	33.44	86.3	5.64	4.3	3.5
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	CS(Mf)5	20:59	11.1	Bottom	3	1	27.97	8.20	33.50	85.5	5.56	4.4	4.0
HKLR	HY/2011/03	2019-09-23	Mid-Flood	Cloudy	CS(Mf)5	20:59	11.1	Bottom	3	2	27.94	8.20	33.37	86.1	5.60	4.5	4.4
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS5	10:44	1.0	Surface	1	1	27.80	8.26	31.71	98.6	6.47	4.7	7.4
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS5	10:44	1.0	Surface	1	2	27.71	8.27	31.80	99.4	6.55	4.8	7.7
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS5	10:44	4.0	Middle	2	1	27.66	8.25	32.81	96.7	6.36	6.9	8.5
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS5	10:44	4.0	Middle	2	2	27.65	8.26	32.79	96.9	6.36	6.8	8.3
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS5	10:44	7.0	Bottom	3	1	27.67	8.26	32.71	96.5	6.33	6.8	9.5
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS5	10:44	7.0	Bottom	3	2	27.65	8.26	32.93	96.4	6.32	6.8	9.9
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS(Mf)6	10:36	1.0	Surface	1	1	27.94	8.26	31.90	99.8	6.55	5.0	4.7
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS(Mf)6	10:37	1.0	Surface	1	2	27.89	8.26	31.94	100.5	6.60	5.2	5.1

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS(Mf)6	10:37	2.0	Bottom	3	1	27.72	8.25	32.43	100.1	6.57	6.4	6.0
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS(Mf)6	10:36	2.0	Bottom	3	2	27.66	8.26	32.50	99.6	6.54	6.5	5.7
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS7	10:28	1.0	Surface	1	1	27.58	8.21	31.24	91.7	6.08	7.3	6.6
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS7	10:28	1.0	Surface	1	2	27.54	8.21	31.21	91.1	6.04	7.5	6.8
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS7	10:28	2.0	Bottom	3	1	27.56	8.20	31.39	91.8	6.08	7.8	6.7
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS7	10:28	2.0	Bottom	3	2	27.56	8.19	31.46	94.4	6.25	7.5	7.0
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS8(N)	10:00	1.0	Surface	1	1	27.56	8.22	31.42	88.9	5.89	11.2	12.0
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS8(N)	10:00	1.0	Surface	1	2	27.57	8.24	31.26	91.6	6.07	11.0	12.3
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS8(N)	10:00	3.0	Bottom	3	1	27.57	8.22	31.50	89.7	5.94	11.5	14.2
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS8(N)	9:59	3.0	Bottom	3	2	27.55	8.25	31.55	97.7	6.46	11.1	14.0
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS(Mf)9	10:20	1.0	Surface	1	1	27.53	8.22	31.29	94.7	6.28	9.3	7.0
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS(Mf)9	10:20	1.0	Surface	1	2	27.57	8.23	31.27	96.8	6.41	9.4	7.4
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS(Mf)9	10:19	2.6	Bottom	3	1	27.60	8.24	31.41	97.6	6.45	9.5	8.8
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS(Mf)9	10:20	2.6	Bottom	3	2	27.52	8.22	31.34	96.0	6.36	9.9	9.0
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS10(N)	10:09	1.0	Surface	1	1	28.85	7.97	30.15	103.4	6.75	9.5	8.0
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS10(N)	10:09	1.0	Surface	1	2	28.85	7.97	30.16	102.4	6.68	9.3	7.7
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS10(N)	10:09	5.2	Middle	2	1	28.82	7.94	30.26	100.1	6.53	11.5	8.2
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS10(N)	10:09	5.2	Middle	2	2	28.82	7.94	30.27	101.5	6.62	11.7	8.4
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS10(N)	10:09	9.3	Bottom	3	1	28.83	7.96	30.25	104.1	6.79	12.1	9.7
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	IS10(N)	10:08	9.3	Bottom	3	2	28.88	7.94	30.27	101.8	6.63	12.6	10.0
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR3(N)	10:53	1.0	Surface	1	1	28.04	8.28	31.81	102.5	6.72	7.5	5.9
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR3(N)	10:53	1.0	Surface	1	2	27.98	8.28	31.86	102.4	6.71	7.6	5.7
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR3(N)	10:53	2.3	Bottom	3	1	27.92	8.27	32.44	103.0	6.74	10.7	5.9
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR3(N)	10:52	2.3	Bottom	3	2	27.93	8.28	32.41	103.3	6.76	10.9	6.2
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR4(N2)	10:08	1.0	Surface	1	1	27.64	8.16	31.08	86.9	5.76	6.1	11.7
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR4(N2)	10:08	1.0	Surface	1	2	27.63	8.18	30.92	91.8	6.09	6.0	12.0
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR4(N2)	10:07	2.6	Bottom	3	1	27.55	8.21	31.10	95.8	6.35	6.6	12.3
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR4(N2)	10:08	2.6	Bottom	3	2	27.64	8.17	31.28	89.7	5.94	6.6	12.0
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR5(N)	10:20	1.0	Surface	1	1	28.88	7.98	30.13	105.4	6.88	9.4	7.3
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR5(N)	10:21	1.0	Surface	1	2	28.83	7.97	30.18	103.9	6.78	9.7	7.0
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR5(N)	10:20	4.0	Middle	2	1	28.81	7.95	30.26	102.6	6.70	12.5	7.8
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR5(N)	10:20	4.0	Middle	2	2	28.81	7.95	30.24	101.0	6.59	12.7	8.0
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR5(N)	10:20	6.9	Bottom	3	1	28.81	7.95	30.27	104.4	6.81	14.3	8.1
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR5(N)	10:20	6.9	Bottom	3	2	28.82	7.96	30.25	105.4	6.88	13.8	8.2
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR10A(N)	9:05	1.0	Surface	1	1	28.73	7.91	31.38	86.3	5.61	2.0	4.7
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR10A(N)	9:04	1.0	Surface	1	2	28.75	7.91	31.35	87.0	5.65	1.9	4.8
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR10A(N)	9:05	6.2	Middle	2	1	28.90	7.90	31.79	85.6	5.53	2.4	4.7
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR10A(N)	9:04	6.2	Middle	2	2	28.85	7.91	31.67	87.4	5.65	2.2	5.1
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR10A(N)	9:05	11.3	Bottom	3	1	28.89	7.91	31.77	86.6	5.60	3.0	5.3
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR10A(N)	9:04	11.3	Bottom	3	2	28.84	7.91	31.64	88.1	5.70	2.8	5.1
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR10B(N2)	8:55	1.0	Surface	1	1	28.67	7.92	31.25	89.1	5.80	3.2	6.0
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR10B(N2)	8:55	1.0	Surface	1	2	28.70	7.92	31.29	93.2	6.04	3.2	5.7
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR10B(N2)	8:55	3.4	Middle	2	1	28.73	7.92	31.40	90.0	5.84	3.3	4.8
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR10B(N2)	8:55	3.4	Middle	2	2	28.75	7.92	31.40	88.2	5.73	3.2	4.5
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR10B(N2)	8:55	5.8	Bottom	3	1	28.79	7.92	31.59	88.8	5.76	3.8	5.2
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	SR10B(N2)	8:54	5.8	Bottom	3	2	28.75	7.92	31.57	89.7	5.83	3.6	4.8
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	CS2(A)	11:05	1.0	Surface	1	1	28.90	7.98	30.14	106.1	6.92	9.7	8.3
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	CS2(A)	11:05	1.0	Surface	1	2	28.85	7.98	30.18	104.6	6.83	10.5	8.0
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	CS2(A)	11:05	3.2	Middle	2	1	28.82	7.96	30.22	103.2	6.74	12.1	8.2
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	CS2(A)	11:05	3.2	Middle	2	2	28.80	7.96	30.24	103.5	6.76	12.3	8.4
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	CS2(A)	11:05	5.3	Bottom	3	1	28.77	7.97	30.28	104.5	6.82	12.0	8.3
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	CS2(A)	11:05	5.3	Bottom	3	2	28.81	7.96	30.26	104.6	6.83	12.6	8.4

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	CS(Mf)5	9:29	1.0	Surface	1	1	27.48	8.23	31.94	86.0	5.68	2.8	5.6
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	CS(Mf)5	9:29	1.0	Surface	1	2	27.49	8.22	31.91	85.3	5.63	2.6	5.5
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	CS(Mf)5	9:29	5.8	Middle	2	1	27.64	8.19	32.51	83.7	5.46	3.5	5.7
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	CS(Mf)5	9:28	5.8	Middle	2	2	27.62	8.21	32.50	85.1	5.55	3.6	5.8
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	CS(Mf)5	9:28	10.6	Bottom	3	1	27.84	8.22	33.21	84.2	5.53	3.6	5.9
HKLR	HY/2011/03	2019-09-25	Mid-Ebb	Sunny	CS(Mf)5	9:29	10.6	Bottom	3	2	27.81	8.19	33.23	82.3	5.41	3.6	5.7
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS5	15:50	1.0	Surface	1	1	28.28	8.24	31.55	105.4	6.89	14.1	11.3
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS5	15:51	1.0	Surface	1	2	28.26	8.22	31.56	106.0	6.93	13.5	11.0
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS5	15:50	4.2	Middle	2	1	28.20	8.24	31.59	104.7	6.85	15.0	12.5
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS5	15:51	4.2	Middle	2	2	28.21	8.23	31.59	105.5	6.90	14.5	12.7
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS5	15:50	7.3	Bottom	3	1	28.17	8.26	31.63	101.3	6.63	15.0	14.0
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS5	15:51	7.3	Bottom	3	2	28.27	8.23	31.56	105.1	6.87	14.4	13.8
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS(Mf)6	16:00	1.0	Surface	1	1	28.40	8.26	31.47	107.2	6.99	8.3	6.1
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS(Mf)6	16:01	1.0	Surface	1	2	28.36	8.25	31.49	109.2	7.13	8.4	6.4
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS(Mf)6	16:00	2.0	Bottom	3	1	28.13	8.27	31.55	100.5	6.59	8.6	7.4
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS(Mf)6	16:00	2.0	Bottom	3	2	28.18	8.25	31.53	107.1	7.01	8.5	7.3
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS7	16:11	1.0	Surface	1	1	27.98	8.23	31.73	100.7	6.61	10.5	21.1
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS7	16:11	1.0	Surface	1	2	27.98	8.25	31.73	101.4	6.65	10.2	21.1
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS7	16:11	2.1	Bottom	3	1	27.98	8.26	31.73	101.4	6.65	10.1	20.1
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS7	16:11	2.1	Bottom	3	2	27.98	8.24	31.73	101.5	6.66	10.4	19.9
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS8(N)	16:41	1.0	Surface	1	1	27.84	8.29	32.17	99.9	6.55	3.4	4.0
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS8(N)	16:41	1.0	Surface	1	2	27.82	8.30	32.24	97.6	6.40	3.5	4.3
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS8(N)	16:41	2.9	Bottom	3	1	27.82	8.29	32.34	99.3	6.51	3.8	5.6
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS8(N)	16:41	2.9	Bottom	3	2	27.71	8.32	32.55	97.1	6.37	3.8	5.6
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS(Mf)9	16:21	1.0	Surface	1	1	28.38	8.28	31.62	108.2	7.06	8.3	15.8
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS(Mf)9	16:21	1.0	Surface	1	2	28.37	8.28	31.62	106.7	6.96	8.5	16.0
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS(Mf)9	16:21	2.4	Bottom	3	1	28.38	8.28	31.62	107.2	6.99	8.8	17.3
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS(Mf)9	16:21	2.4	Bottom	3	2	28.34	8.29	31.61	103.7	6.77	8.6	16.9
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS10(N)	16:30	1.0	Surface	1	1	29.21	8.00	28.71	113.5	7.42	9.2	6.9
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS10(N)	16:31	1.0	Surface	1	2	29.35	8.02	28.72	115.7	7.55	9.2	7.2
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS10(N)	16:30	5.2	Middle	2	1	29.02	7.97	30.16	112.5	7.32	9.7	6.8
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS10(N)	16:31	5.2	Middle	2	2	29.02	7.97	30.16	110.4	7.19	9.4	7.0
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS10(N)	16:31	9.4	Bottom	3	1	29.01	7.97	30.20	112.7	7.34	10.7	8.1
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	IS10(N)	16:30	9.4	Bottom	3	2	29.01	7.97	30.19	114.4	7.45	11.0	8.4
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR3(N)	15:42	1.0	Surface	1	1	28.21	8.26	31.67	105.0	6.86	15.6	19.1
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR3(N)	15:42	1.0	Surface	1	2	28.21	8.28	31.67	104.0	6.80	15.8	18.9
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR3(N)	15:42	2.3	Bottom	3	1	28.19	8.27	31.67	104.4	6.83	15.4	20.4
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR3(N)	15:42	2.3	Bottom	3	2	28.17	8.32	31.68	103.2	6.76	15.2	20.1
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR4(N2)	16:35	1.0	Surface	1	1	28.08	8.24	31.42	98.8	6.49	7.5	11.1
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR4(N2)	16:35	1.0	Surface	1	2	28.03	8.24	31.51	98.1	6.44	7.5	10.9
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR4(N2)	16:35	2.7	Bottom	3	1	27.99	8.25	31.61	98.5	6.47	7.7	13.2
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR4(N2)	16:35	2.7	Bottom	3	2	28.07	8.24	31.48	98.5	6.46	7.2	13.1
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR5(N)	16:19	1.0	Surface	1	1	29.36	8.03	28.65	125.7	8.16	8.0	6.1
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR5(N)	16:20	1.0	Surface	1	2	29.37	8.03	28.63	121.9	7.96	8.6	6.1
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR5(N)	16:20	3.9	Middle	2	1	29.09	7.98	29.96	119.1	7.75	10.4	6.0
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR5(N)	16:19	3.9	Middle	2	2	29.08	7.98	30.01	120.2	7.85	10.0	5.7
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR5(N)	16:19	6.7	Bottom	3	1	29.19	7.99	30.06	119.9	7.80	9.7	5.4
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR5(N)	16:19	6.7	Bottom	3	2	29.05	7.98	30.15	114.9	7.48	10.0	5.5
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR10A(N)	17:30	1.0	Surface	1	1	29.00	7.96	31.05	93.6	6.05	3.3	4.6
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR10A(N)	17:31	1.0	Surface	1	2	28.99	7.94	31.10	96.7	6.26	3.5	5.0
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR10A(N)	17:30	6.3	Middle	2	1	28.99	7.98	31.41	90.3	5.85	3.6	5.3
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR10A(N)	17:31	6.3	Middle	2	2	28.99	7.94	31.32	88.3	5.71	3.7	5.1

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR10A(N)	17:31	11.5	Bottom	3	1	28.99	7.94	31.34	87.1	5.64	4.2	5.1
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR10A(N)	17:30	11.5	Bottom	3	2	28.94	8.00	31.44	87.5	5.67	4.5	5.3
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR10B(N2)	17:38	1.0	Surface	1	1	28.99	7.93	31.11	87.7	5.68	2.5	4.0
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR10B(N2)	17:38	1.0	Surface	1	2	29.00	7.93	31.08	87.8	5.69	2.8	4.4
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR10B(N2)	17:38	3.4	Middle	2	1	28.99	7.92	31.28	87.4	5.66	3.3	4.7
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR10B(N2)	17:38	3.4	Middle	2	2	28.99	7.93	31.29	87.2	5.64	3.5	4.6
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR10B(N2)	17:37	5.8	Bottom	3	1	28.99	7.93	31.30	87.5	5.66	5.0	5.1
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	SR10B(N2)	17:38	5.8	Bottom	3	2	28.99	7.93	31.26	87.9	5.69	4.8	4.8
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	CS2(A)	15:40	1.0	Surface	1	1	29.36	8.02	28.62	122.0	7.96	6.7	5.6
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	CS2(A)	15:39	1.0	Surface	1	2	29.40	8.00	28.73	122.0	7.92	7.0	6.1
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	CS2(A)	15:39	3.2	Middle	2	1	29.21	7.99	29.58	119.8	7.80	9.5	6.9
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	CS2(A)	15:39	3.2	Middle	2	2	29.21	7.92	29.56	117.7	7.67	9.8	6.7
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	CS2(A)	15:39	5.3	Bottom	3	1	29.20	7.98	30.00	106.2	6.91	9.2	8.1
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	CS2(A)	15:39	5.3	Bottom	3	2	29.07	7.86	30.11	109.2	7.11	9.5	8.3
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	CS(Mf)5	17:05	1.0	Surface	1	1	27.52	8.20	32.00	86.5	5.67	2.6	5.7
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	CS(Mf)5	17:05	1.0	Surface	1	2	27.49	8.22	31.88	87.0	5.75	2.6	5.8
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	CS(Mf)5	17:05	6.0	Middle	2	1	27.70	8.18	32.59	85.4	5.64	3.2	6.4
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	CS(Mf)5	17:04	6.0	Middle	2	2	27.74	8.19	32.78	86.3	5.65	3.3	6.3
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	CS(Mf)5	17:05	11.0	Bottom	3	1	27.70	8.19	32.88	84.3	5.53	3.1	6.5
HKLR	HY/2011/03	2019-09-25	Mid-Flood	Fine	CS(Mf)5	17:04	11.0	Bottom	3	2	27.63	8.19	33.25	83.8	5.49	3.3	6.7
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS5	10:21	1.0	Surface	1	1	27.74	8.28	31.44	97.1	6.41	9.5	12.0
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS5	10:21	1.0	Surface	1	2	27.73	8.27	31.44	95.5	6.30	9.5	12.2
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS5	10:20	4.1	Middle	2	1	27.72	8.28	31.43	96.2	6.35	9.5	13.3
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS5	10:21	4.1	Middle	2	2	27.73	8.27	31.44	95.2	6.28	9.4	12.9
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS5	10:20	7.1	Bottom	3	1	27.71	8.28	31.45	96.2	6.35	9.6	14.1
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS5	10:21	7.1	Bottom	3	2	27.72	8.27	31.44	93.5	6.18	9.5	14.1
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS(Mf)6	10:29	1.0	Surface	1	1	27.74	8.27	31.33	97.5	6.44	11.8	15.0
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS(Mf)6	10:30	1.0	Surface	1	2	27.73	8.27	31.32	96.9	6.40	12.5	15.4
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS(Mf)6	10:29	2.1	Bottom	3	1	27.70	8.27	31.33	98.8	6.53	12.6	18.5
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS(Mf)6	10:30	2.1	Bottom	3	2	27.72	8.27	31.32	97.2	6.42	13.1	18.6
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS7	10:38	1.0	Surface	1	1	27.81	8.26	31.42	97.3	6.42	3.3	8.1
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS7	10:38	1.0	Surface	1	2	27.82	8.26	31.43	96.6	6.37	3.4	8.0
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS7	10:38	2.1	Bottom	3	1	27.81	8.27	31.42	98.0	6.46	3.5	8.3
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS7	10:38	2.1	Bottom	3	2	27.82	8.26	31.44	96.8	6.38	3.3	8.1
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS8(N)	11:05	1.0	Surface	1	1	27.61	8.21	31.18	98.1	6.50	6.4	7.8
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS8(N)	11:06	1.0	Surface	1	2	27.61	8.22	31.16	98.1	6.50	6.7	8.1
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS8(N)	11:05	2.8	Bottom	3	1	27.61	8.22	31.20	98.5	6.52	6.8	7.9
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS8(N)	11:05	2.8	Bottom	3	2	27.60	8.20	31.25	99.1	6.56	6.8	7.6
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS(Mf)9	10:46	1.0	Surface	1	1	28.07	8.28	31.51	97.5	6.39	5.1	9.4
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS(Mf)9	10:46	1.0	Surface	1	2	28.07	8.27	31.51	97.3	6.38	5.2	9.1
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS(Mf)9	10:46	2.5	Bottom	3	1	28.07	8.28	31.51	97.4	6.39	5.5	9.8
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS(Mf)9	10:46	2.5	Bottom	3	2	28.04	8.28	31.52	97.3	6.39	5.6	9.8
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS10(N)	10:50	1.0	Surface	1	1	29.00	7.93	28.97	97.1	6.36	6.3	7.6
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS10(N)	10:50	1.0	Surface	1	2	28.94	7.93	29.06	97.2	6.37	6.7	7.8
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS10(N)	10:49	5.3	Middle	2	1	28.85	7.90	29.77	96.2	6.29	6.6	8.6
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS10(N)	10:50	5.3	Middle	2	2	28.85	7.89	29.78	94.0	6.15	6.9	9.0
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS10(N)	10:49	9.6	Bottom	3	1	28.86	7.90	29.83	97.8	6.39	8.5	10.5
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	IS10(N)	10:50	9.6	Bottom	3	2	28.86	7.89	29.89	94.7	6.19	8.8	10.9
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR3(N)	10:11	1.0	Surface	1	1	27.84	8.29	31.40	97.3	6.41	6.5	9.9
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR3(N)	10:11	1.0	Surface	1	2	27.74	8.30	31.44	96.5	6.37	6.6	9.7
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR3(N)	10:11	2.4	Bottom	3	1	27.76	8.29	31.42	97.0	6.40	6.1	10.4
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR3(N)	10:10	2.4	Bottom	3	2	27.70	8.33	31.47	97.1	6.41	6.1	10.1

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR4(N2)	10:59	1.0	Surface	1	1	27.83	8.10	30.93	99.0	6.54	3.4	6.7
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR4(N2)	10:59	1.0	Surface	1	2	27.79	7.99	30.94	101.1	6.68	3.6	7.1
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR4(N2)	10:59	2.6	Bottom	3	1	27.72	8.07	30.96	99.2	6.57	3.8	6.7
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR4(N2)	10:58	2.6	Bottom	3	2	27.67	7.98	30.99	101.4	6.72	3.8	6.9
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR5(N)	10:41	1.0	Surface	1	1	28.91	7.92	29.17	96.9	6.35	7.9	6.7
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR5(N)	10:41	1.0	Surface	1	2	28.97	7.93	29.04	97.3	6.38	8.0	6.9
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR5(N)	10:41	4.1	Middle	2	1	28.85	7.90	29.71	95.5	6.25	8.5	8.4
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR5(N)	10:41	4.1	Middle	2	2	28.85	7.90	29.71	96.6	6.32	8.6	8.1
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR5(N)	10:41	7.2	Bottom	3	1	28.87	7.91	29.77	97.7	6.39	10.0	8.8
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR5(N)	10:40	7.2	Bottom	3	2	28.86	7.90	29.86	98.6	6.44	10.7	8.9
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR10A(N)	11:34	1.0	Surface	1	1	29.06	7.87	31.01	92.7	6.00	4.5	4.9
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR10A(N)	11:34	1.0	Surface	1	2	29.06	7.88	31.03	94.8	6.14	4.5	4.6
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR10A(N)	11:33	6.1	Middle	2	1	29.06	7.88	31.03	88.9	5.76	4.7	5.9
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR10A(N)	11:34	6.1	Middle	2	2	29.03	7.87	31.01	87.9	5.69	5.0	5.6
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR10A(N)	11:33	11.2	Bottom	3	1	29.08	7.88	31.04	89.8	5.81	5.5	7.1
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR10A(N)	11:34	11.2	Bottom	3	2	29.04	7.88	31.01	88.1	5.70	5.6	7.4
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR10B(N2)	11:46	1.0	Surface	1	1	29.09	7.87	31.03	87.4	5.65	4.7	6.1
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR10B(N2)	11:47	1.0	Surface	1	2	29.08	7.86	31.02	87.2	5.64	5.0	5.7
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR10B(N2)	11:46	3.3	Middle	2	1	29.05	7.86	31.01	87.1	5.64	6.5	6.8
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR10B(N2)	11:46	3.3	Middle	2	2	29.04	7.87	31.00	87.1	5.64	6.0	6.7
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR10B(N2)	11:46	5.6	Bottom	3	1	29.06	7.86	31.00	87.1	5.64	6.2	8.9
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	SR10B(N2)	11:46	5.6	Bottom	3	2	29.03	7.87	31.01	87.1	5.64	5.9	8.5
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	CS2(A)	10:11	1.0	Surface	1	1	28.97	7.93	29.03	99.1	6.49	7.9	7.2
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	CS2(A)	10:11	1.0	Surface	1	2	28.93	7.93	29.07	98.5	6.46	7.8	6.8
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	CS2(A)	10:11	3.2	Middle	2	1	28.84	7.92	29.53	97.2	6.36	8.6	7.0
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	CS2(A)	10:10	3.2	Middle	2	2	28.84	7.91	29.55	97.4	6.38	8.8	7.0
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	CS2(A)	10:10	5.4	Bottom	3	1	28.85	7.89	29.74	98.1	6.42	10.5	8.0
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	CS2(A)	10:11	5.4	Bottom	3	2	28.85	7.91	29.70	98.3	6.43	9.6	8.3
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	CS(Mf)5	11:29	1.0	Surface	1	1	27.84	8.21	32.00	87.8	5.76	8.5	9.9
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	CS(Mf)5	11:28	1.0	Surface	1	2	27.96	8.23	31.74	90.1	5.92	8.6	10.1
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	CS(Mf)5	11:28	5.8	Middle	2	1	27.81	8.21	32.18	88.7	5.82	8.5	11.6
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	CS(Mf)5	11:29	5.8	Middle	2	2	27.80	8.20	32.16	86.2	5.66	8.4	11.9
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	CS(Mf)5	11:29	10.5	Bottom	3	1	27.82	8.21	32.21	86.1	5.66	8.6	14.7
HKLR	HY/2011/03	2019-09-27	Mid-Ebb	Sunny	CS(Mf)5	11:28	10.5	Bottom	3	2	27.82	8.21	32.20	88.1	5.78	8.5	15.0
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS5	5:00	1.0	Surface	1	1	27.64	8.23	31.50	84.2	5.54	4.4	5.0
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS5	4:59	1.0	Surface	1	2	27.70	8.22	31.50	86.4	5.65	4.4	4.6
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS5	4:59	4.2	Middle	2	1	27.78	8.20	32.70	83.7	5.52	4.8	5.5
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS5	4:59	4.2	Middle	2	2	27.79	8.20	32.73	83.8	5.51	4.6	5.7
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS5	4:59	7.3	Bottom	3	1	27.82	8.20	33.01	83.6	5.48	4.7	7.2
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS5	4:59	7.3	Bottom	3	2	27.80	8.20	32.96	82.6	5.41	4.6	7.1
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS(Mf)6	4:49	1.0	Surface	1	1	27.66	8.25	31.62	91.1	6.02	3.5	4.8
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS(Mf)6	4:49	1.0	Surface	1	2	27.64	8.25	31.58	91.1	6.02	3.6	4.5
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS(Mf)6	4:49	2.1	Bottom	3	1	27.66	8.24	31.77	91.4	6.03	3.5	4.7
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS(Mf)6	4:49	2.1	Bottom	3	2	27.74	8.23	31.98	89.9	5.91	3.5	4.8
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS7	4:42	1.0	Surface	1	1	27.66	8.25	31.62	90.8	5.99	3.8	4.3
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS7	4:42	1.0	Surface	1	2	27.66	8.25	31.61	90.9	6.00	3.8	4.2
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS7	4:42	2.1	Bottom	3	1	27.67	8.24	31.77	90.9	5.99	4.0	5.6
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS7	4:42	2.1	Bottom	3	2	27.74	8.24	31.93	91.1	6.00	3.9	5.8
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS8(N)	4:15	1.0	Surface	1	1	27.69	8.22	31.49	87.0	5.74	3.6	6.6
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS8(N)	4:16	1.0	Surface	1	2	27.65	8.23	31.51	88.1	5.82	3.8	6.9
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS8(N)	4:15	3.0	Bottom	3	1	27.67	8.22	32.35	87.9	5.78	4.4	6.9
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS8(N)	4:15	3.0	Bottom	3	2	27.75	8.21	32.45	87.9	5.77	4.5	6.7

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS(Mf)9	4:33	1.0	Surface	1	1	27.65	8.25	31.58	92.2	6.09	3.7	4.8
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS(Mf)9	4:33	1.0	Surface	1	2	27.67	8.24	31.63	91.5	6.04	4.0	4.6
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS(Mf)9	4:33	2.7	Bottom	3	1	27.66	8.24	31.74	92.2	6.08	4.5	7.2
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS(Mf)9	4:33	2.7	Bottom	3	2	27.65	8.24	31.70	93.2	6.15	4.3	7.4
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS10(N)	4:37	1.0	Surface	1	1	28.91	7.95	29.91	93.5	6.11	4.8	6.8
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS10(N)	4:38	1.0	Surface	1	2	28.94	7.95	29.80	94.6	6.18	4.9	7.0
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS10(N)	4:38	5.2	Middle	2	1	28.90	7.93	30.12	92.7	6.04	5.8	7.8
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS10(N)	4:37	5.2	Middle	2	2	28.90	7.94	30.13	92.9	6.06	5.5	7.8
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS10(N)	4:37	9.4	Bottom	3	1	28.91	7.93	30.20	93.2	6.08	5.3	7.3
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	IS10(N)	4:37	9.4	Bottom	3	2	28.91	7.93	30.20	93.5	6.09	5.6	7.4
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR3(N)	5:11	1.0	Surface	1	1	27.60	8.25	31.42	90.0	5.95	3.8	5.0
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR3(N)	5:12	1.0	Surface	1	2	27.60	8.25	31.51	91.8	6.07	3.8	5.3
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR3(N)	5:11	2.5	Bottom	3	1	27.74	8.24	31.96	90.2	5.93	4.4	6.9
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR3(N)	5:11	2.5	Bottom	3	2	27.70	8.24	31.92	90.3	5.95	4.3	6.6
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR4(N2)	4:22	1.0	Surface	1	1	27.65	8.23	31.60	87.5	5.78	3.9	5.4
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR4(N2)	4:23	1.0	Surface	1	2	27.64	8.24	31.56	89.3	5.90	3.8	5.1
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR4(N2)	4:22	2.6	Bottom	3	1	27.71	8.22	32.10	88.6	5.83	4.3	5.9
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR4(N2)	4:22	2.6	Bottom	3	2	27.75	8.21	32.31	87.5	5.75	4.5	5.6
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR5(N)	4:48	1.0	Surface	1	1	28.93	7.95	29.83	95.0	6.21	6.0	8.1
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR5(N)	4:49	1.0	Surface	1	2	28.93	7.95	29.86	95.6	6.24	5.8	8.3
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR5(N)	4:49	4.0	Middle	2	1	28.89	7.94	30.05	93.8	6.12	5.9	8.7
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR5(N)	4:48	4.0	Middle	2	2	28.88	7.94	30.02	94.0	6.14	6.2	8.5
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR5(N)	4:48	7.0	Bottom	3	1	28.90	7.94	30.16	95.6	6.23	6.8	8.8
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR5(N)	4:49	7.0	Bottom	3	2	28.91	7.94	30.17	95.1	6.20	7.1	8.6
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR10A(N)	3:41	1.0	Surface	1	1	28.92	7.96	29.88	94.5	6.16	4.2	6.6
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR10A(N)	3:41	1.0	Surface	1	2	28.91	7.95	29.95	96.4	6.28	4.4	6.6
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR10A(N)	3:41	6.4	Middle	2	1	28.91	7.94	30.16	93.9	6.13	5.0	5.8
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR10A(N)	3:41	6.4	Middle	2	2	28.91	7.94	30.22	93.6	6.11	4.9	6.3
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR10A(N)	3:41	11.8	Bottom	3	1	28.91	7.94	30.20	93.3	6.08	5.2	6.3
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR10A(N)	3:40	11.8	Bottom	3	2	28.91	7.95	30.17	92.9	6.06	5.4	6.4
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR10B(N2)	3:30	1.0	Surface	1	1	28.91	7.98	29.89	96.1	6.28	5.3	7.1
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR10B(N2)	3:31	1.0	Surface	1	2	28.93	7.97	29.85	95.7	6.25	5.2	6.9
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR10B(N2)	3:30	3.5	Middle	2	1	28.88	7.97	29.99	95.7	6.25	5.3	7.0
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR10B(N2)	3:31	3.5	Middle	2	2	28.88	7.96	29.98	94.6	6.18	5.4	7.3
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR10B(N2)	3:30	5.9	Bottom	3	1	28.89	7.98	30.13	97.7	6.37	5.9	6.4
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	SR10B(N2)	3:31	5.9	Bottom	3	2	28.90	7.96	30.09	95.8	6.25	5.6	6.0
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	CS2(A)	5:56	1.0	Surface	1	1	28.94	7.95	29.85	95.4	6.23	7.5	7.3
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	CS2(A)	5:56	1.0	Surface	1	2	28.91	7.95	29.89	95.2	6.22	7.5	7.0
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	CS2(A)	5:55	3.1	Middle	2	1	28.88	7.94	29.98	95.0	6.20	7.8	8.3
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	CS2(A)	5:56	3.1	Middle	2	2	28.87	7.94	29.98	94.3	6.16	7.5	8.0
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	CS2(A)	5:55	5.2	Bottom	3	1	28.88	7.94	30.01	95.8	6.26	8.9	8.1
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	CS2(A)	5:56	5.2	Bottom	3	2	28.89	7.94	30.03	95.4	6.22	8.6	8.3
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	CS(Mf)5	3:48	1.0	Surface	1	1	27.64	8.22	31.51	82.8	5.47	4.5	4.2
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	CS(Mf)5	3:47	1.0	Surface	1	2	27.72	8.19	31.54	81.9	5.35	4.5	4.4
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	CS(Mf)5	3:47	6.1	Middle	2	1	27.82	8.16	33.00	80.8	5.33	4.7	5.1
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	CS(Mf)5	3:48	6.1	Middle	2	2	27.82	8.17	32.99	81.6	5.33	4.6	4.7
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	CS(Mf)5	3:47	11.1	Bottom	3	1	27.82	8.16	33.06	80.2	5.24	4.6	5.0
HKLR	HY/2011/03	2019-09-27	Mid-Flood	Fine	CS(Mf)5	3:47	11.1	Bottom	3	2	27.81	8.17	33.06	80.5	5.26	4.5	5.4
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS5	13:25	1.0	Surface	1	1	28.29	8.14	30.93	84.0	5.51	3.5	9.6
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS5	13:25	1.0	Surface	1	2	28.31	8.15	30.92	87.4	5.74	3.6	9.8
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS5	13:25	4.1	Middle	2	1	28.27	8.15	30.94	83.5	5.48	3.4	9.4
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS5	13:25	4.1	Middle	2	2	28.27	8.15	30.93	87.1	5.71	3.5	9.2

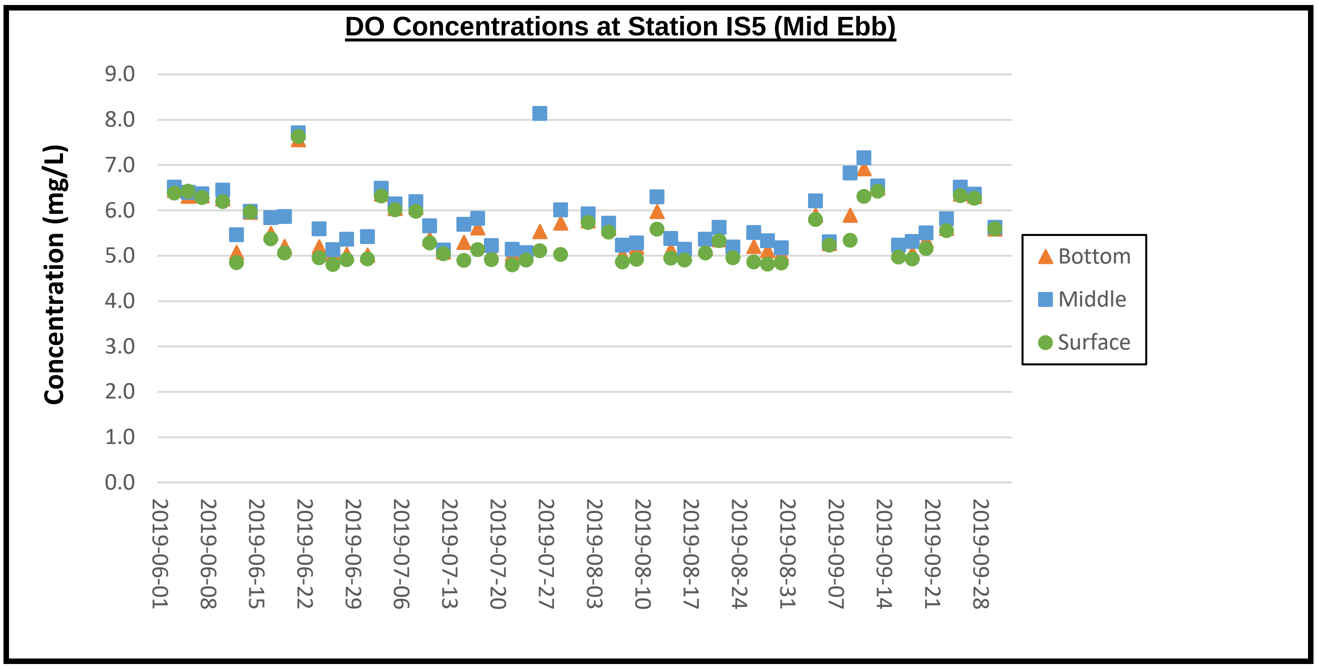
Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS5	13:24	7.1	Bottom	3	1	28.26	8.16	30.93	86.8	5.70	3.5	10
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS5	13:25	7.1	Bottom	3	2	28.27	8.15	30.94	83.4	5.48	3.3	9.7
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS(Mf)6	13:32	1.0	Surface	1	1	28.38	8.16	30.87	89.2	5.85	2.8	7.4
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS(Mf)6	13:33	1.0	Surface	1	2	28.32	8.16	30.87	86.4	5.67	2.9	7.3
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS(Mf)6	13:32	2.1	Bottom	3	1	28.23	8.16	30.85	87.3	5.74	3.1	8.5
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS(Mf)6	13:32	2.1	Bottom	3	2	28.16	8.18	30.87	91.6	6.02	3.2	8.6
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS7	13:41	1.0	Surface	1	1	28.23	8.15	30.88	91.1	5.98	2.6	5.7
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS7	13:41	1.0	Surface	1	2	28.19	8.15	30.87	89.0	5.85	2.6	5.9
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS7	13:41	2.1	Bottom	3	1	28.19	8.15	30.88	82.1	5.40	2.6	7.5
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS7	13:39	2.1	Bottom	3	2	28.23	8.17	30.88	81.6	5.36	2.6	7.7
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS8(N)	14:08	1.0	Surface	1	1	28.28	8.19	30.71	88.2	5.79	5.1	6.4
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS8(N)	14:07	1.0	Surface	1	2	28.21	8.20	30.74	89.7	5.90	5.1	6.9
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS8(N)	14:07	3.0	Bottom	3	1	28.24	8.21	30.78	92.6	6.08	4.9	8.4
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS8(N)	14:07	3.0	Bottom	3	2	28.24	8.19	30.73	88.6	5.82	4.7	8.6
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS(Mf)9	13:48	1.0	Surface	1	1	28.38	8.18	30.90	87.2	5.71	4.4	5.2
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS(Mf)9	13:48	1.0	Surface	1	2	28.31	8.18	30.91	89.2	5.85	4.6	5.4
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS(Mf)9	13:48	2.7	Bottom	3	1	28.36	8.18	30.87	87.9	5.76	4.4	7.1
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS(Mf)9	13:48	2.7	Bottom	3	2	28.24	8.18	30.88	90.4	5.94	4.5	7.4
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS10(N)	14:03	1.0	Surface	1	1	29.50	7.83	28.58	85.5	5.57	10.3	25.8
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS10(N)	14:04	1.0	Surface	1	2	29.54	7.84	28.58	85.6	5.57	10.6	25.5
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS10(N)	14:03	5.4	Middle	2	1	29.46	7.83	28.57	85.3	5.56	12.0	28.7
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS10(N)	14:03	5.4	Middle	2	2	29.46	7.83	28.56	85.2	5.56	12.0	39.1
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS10(N)	14:03	9.8	Bottom	3	1	29.46	7.83	28.56	85.4	5.57	11.6	36.2
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	IS10(N)	14:03	9.8	Bottom	3	2	29.47	7.83	28.56	85.3	5.56	11.8	35.9
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR3(N)	13:18	1.0	Surface	1	1	28.37	8.15	30.79	87.0	5.70	2.4	8.4
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR3(N)	13:18	1.0	Surface	1	2	28.38	8.17	30.77	90.3	5.92	2.3	8.1
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR3(N)	13:17	2.3	Bottom	3	1	28.27	8.24	30.76	93.5	6.14	2.4	9.6
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR3(N)	13:18	2.3	Bottom	3	2	28.32	8.16	30.78	88.3	5.79	2.2	9.7
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR4(N2)	14:01	1.0	Surface	1	1	28.40	8.19	30.65	89.7	5.88	5.7	7.6
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR4(N2)	14:01	1.0	Surface	1	2	28.34	8.20	30.67	91.7	6.02	5.8	7.7
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR4(N2)	14:01	2.6	Bottom	3	1	28.36	8.19	30.65	90.6	5.94	5.6	9.1
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR4(N2)	14:00	2.6	Bottom	3	2	28.27	8.21	30.69	93.1	6.12	5.5	9.4
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR5(N)	13:52	1.0	Surface	1	1	29.48	7.82	28.57	85.7	5.58	10.3	19.8
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR5(N)	13:52	1.0	Surface	1	2	29.49	7.82	28.56	86.0	5.60	10.1	19.6
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR5(N)	13:52	4.0	Middle	2	1	29.44	7.81	28.56	86.1	5.61	12.1	20.6
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR5(N)	13:52	4.0	Middle	2	2	29.45	7.82	28.56	85.6	5.58	11.8	20.9
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR5(N)	13:52	6.9	Bottom	3	1	29.45	7.82	28.56	85.7	5.59	12.2	20.8
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR5(N)	13:51	6.9	Bottom	3	2	29.45	7.80	28.56	86.3	5.63	12.6	21.3
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR10A(N)	14:48	1.0	Surface	1	1	29.69	7.84	29.61	87.1	5.62	5.2	12.3
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR10A(N)	14:48	1.0	Surface	1	2	29.76	7.84	29.55	87.5	5.65	5.4	12.6
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR10A(N)	14:48	6.2	Middle	2	1	29.62	7.84	29.65	86.5	5.59	5.4	13
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR10A(N)	14:48	6.2	Middle	2	2	29.46	7.83	29.96	87.6	5.66	5.4	12.8
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR10A(N)	14:48	11.3	Bottom	3	1	29.66	7.84	29.64	87.2	5.63	5.5	14.3
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR10A(N)	14:48	11.3	Bottom	3	2	29.47	7.83	29.91	90.0	5.82	5.5	14.4
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR10B(N2)	15:00	1.0	Surface	1	1	29.62	7.84	29.72	93.7	6.07	6.3	9.9
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR10B(N2)	15:01	1.0	Surface	1	2	29.64	7.85	29.67	88.9	5.74	5.9	10.2
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR10B(N2)	15:01	3.3	Middle	2	1	29.43	7.84	29.94	85.7	5.54	6.1	12
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR10B(N2)	14:59	3.3	Middle	2	2	29.57	7.84	29.79	85.4	5.52	5.9	12.4
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR10B(N2)	15:00	5.5	Bottom	3	1	29.62	7.84	29.72	85.6	5.53	6.5	13.4
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	SR10B(N2)	14:59	5.5	Bottom	3	2	29.57	7.84	29.79	86.0	5.56	6.6	13.2
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	CS2(A)	12:30	1.0	Surface	1	1	29.46	7.79	28.57	90.3	5.88	8.9	16.4
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	CS2(A)	12:30	1.0	Surface	1	2	29.49	7.77	28.55	88.6	5.78	8.8	16.1

Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	CS2(A)	12:30	3.2	Middle	2	1	29.44	7.79	28.56	87.0	5.67	10.5	17.7
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	CS2(A)	12:30	3.2	Middle	2	2	29.44	7.74	28.54	87.4	5.70	10.9	17.6
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	CS2(A)	12:29	5.4	Bottom	3	1	29.48	7.69	28.54	88.0	5.74	11.0	22.2
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	CS2(A)	12:30	5.4	Bottom	3	2	29.44	7.78	28.56	87.1	5.68	11.5	21.8
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	CS(Mf)5	14:29	1.0	Surface	1	1	28.30	8.19	30.74	86.3	5.66	8.0	15.5
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	CS(Mf)5	14:30	1.0	Surface	1	2	28.30	8.18	30.70	81.5	5.35	8.3	15.7
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	CS(Mf)5	14:29	5.8	Middle	2	1	28.14	8.17	31.08	81.3	5.34	8.6	16.6
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	CS(Mf)5	14:29	5.8	Middle	2	2	28.24	8.20	30.93	85.2	5.59	8.6	17
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	CS(Mf)5	14:29	10.6	Bottom	3	1	28.16	8.18	31.09	80.7	5.30	8.6	17.6
HKLR	HY/2011/03	2019-09-30	Mid-Ebb	Sunny	CS(Mf)5	14:28	10.6	Bottom	3	2	28.21	8.21	31.03	84.4	5.54	8.5	18.1
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS5	8:20	1.0	Surface	1	1	27.93	8.20	30.98	91.0	6.01	2.7	10.8
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS5	8:21	1.0	Surface	1	2	27.94	8.20	30.98	85.2	5.62	2.6	10.8
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS5	8:21	4.2	Middle	2	1	27.91	8.20	31.00	84.2	5.56	2.6	11.9
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS5	8:20	4.2	Middle	2	2	27.88	8.20	31.01	89.0	5.87	2.5	12
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS5	8:20	7.4	Bottom	3	1	27.87	8.20	30.99	83.8	5.53	2.6	12.8
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS5	8:20	7.4	Bottom	3	2	27.85	8.21	30.99	87.9	5.80	2.6	13.4
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS(Mf)6	8:12	1.0	Surface	1	1	27.90	8.22	31.01	90.5	5.97	3.5	13.6
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS(Mf)6	8:13	1.0	Surface	1	2	27.89	8.21	31.01	88.1	5.81	3.6	13.8
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS(Mf)6	8:12	2.1	Bottom	3	1	27.86	8.22	31.03	96.7	6.38	4.3	12.9
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS(Mf)6	8:13	2.1	Bottom	3	2	27.89	8.21	31.02	89.3	5.89	4.1	12.8
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS7	8:05	1.0	Surface	1	1	27.92	8.20	30.97	84.2	5.55	3.8	12.5
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS7	8:04	1.0	Surface	1	2	27.91	8.20	30.98	87.3	5.76	3.8	12.1
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS7	8:04	2.1	Bottom	3	1	27.91	8.20	30.98	89.2	5.88	3.8	14.1
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS7	8:04	2.1	Bottom	3	2	27.91	8.20	30.98	86.3	5.69	3.9	14.2
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS8(N)	7:37	1.0	Surface	1	1	27.95	8.19	30.75	83.1	5.49	5.6	15.6
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS8(N)	7:37	1.0	Surface	1	2	27.95	8.20	30.75	87.7	5.79	5.7	15.8
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS8(N)	7:36	3.0	Bottom	3	1	27.95	8.20	30.72	90.5	5.98	5.4	17.2
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS8(N)	7:37	3.0	Bottom	3	2	27.95	8.20	30.75	85.3	5.63	5.6	17
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS(Mf)9	7:57	1.0	Surface	1	1	27.95	8.19	30.87	85.1	5.61	8.5	13.4
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS(Mf)9	7:57	1.0	Surface	1	2	27.95	8.19	30.88	83.3	5.50	8.5	13.7
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS(Mf)9	7:56	2.7	Bottom	3	1	27.94	8.20	30.87	92.8	6.12	8.5	14.1
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS(Mf)9	7:57	2.7	Bottom	3	2	27.95	8.19	30.87	84.2	5.55	8.6	14.3
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS10(N)	7:33	1.0	Surface	1	1	29.20	7.88	29.08	84.8	5.54	12.6	20
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS10(N)	7:33	1.0	Surface	1	2	29.20	7.88	29.09	84.8	5.53	13.0	19.7
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS10(N)	7:33	5.2	Middle	2	1	29.21	7.88	29.10	84.6	5.52	13.6	19.4
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS10(N)	7:32	5.2	Middle	2	2	29.21	7.88	29.10	84.6	5.52	13.4	19.4
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS10(N)	7:33	9.3	Bottom	3	1	29.21	7.88	29.09	84.6	5.52	14.5	19.4
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	IS10(N)	7:32	9.3	Bottom	3	2	29.21	7.88	29.09	84.7	5.53	14.2	19.3
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR3(N)	8:30	1.0	Surface	1	1	27.84	8.20	30.90	87.0	5.75	2.3	6.6
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR3(N)	8:29	1.0	Surface	1	2	27.85	8.21	30.89	90.7	5.99	2.2	7
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR3(N)	8:30	2.5	Bottom	3	1	27.84	8.20	30.93	88.4	5.84	2.5	6.8
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR3(N)	8:29	2.5	Bottom	3	2	27.84	8.22	30.95	95.1	6.28	2.7	6.5
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR4(N2)	7:45	1.0	Surface	1	1	27.88	8.19	30.89	83.0	5.48	2.6	9.7
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR4(N2)	7:45	1.0	Surface	1	2	27.85	8.20	30.85	87.4	5.78	2.4	9.5
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR4(N2)	7:45	2.8	Bottom	3	1	27.87	8.19	30.90	84.1	5.55	2.5	10
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR4(N2)	7:45	2.8	Bottom	3	2	27.83	8.20	30.83	91.5	6.05	2.4	9.9
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR5(N)	7:46	1.0	Surface	1	1	29.20	7.88	29.08	84.8	5.54	14.2	31.9
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR5(N)	7:47	1.0	Surface	1	2	29.20	7.88	29.07	84.8	5.54	13.7	31.7
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR5(N)	7:46	4.0	Middle	2	1	29.20	7.88	29.08	84.6	5.52	14.8	33
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR5(N)	7:46	4.0	Middle	2	2	29.20	7.88	29.08	84.6	5.52	15.1	33.6
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR5(N)	7:46	6.9	Bottom	3	1	29.20	7.88	29.08	84.7	5.53	15.4	30.1
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR5(N)	7:46	6.9	Bottom	3	2	29.20	7.88	29.07	84.5	5.52	15.4	29.8

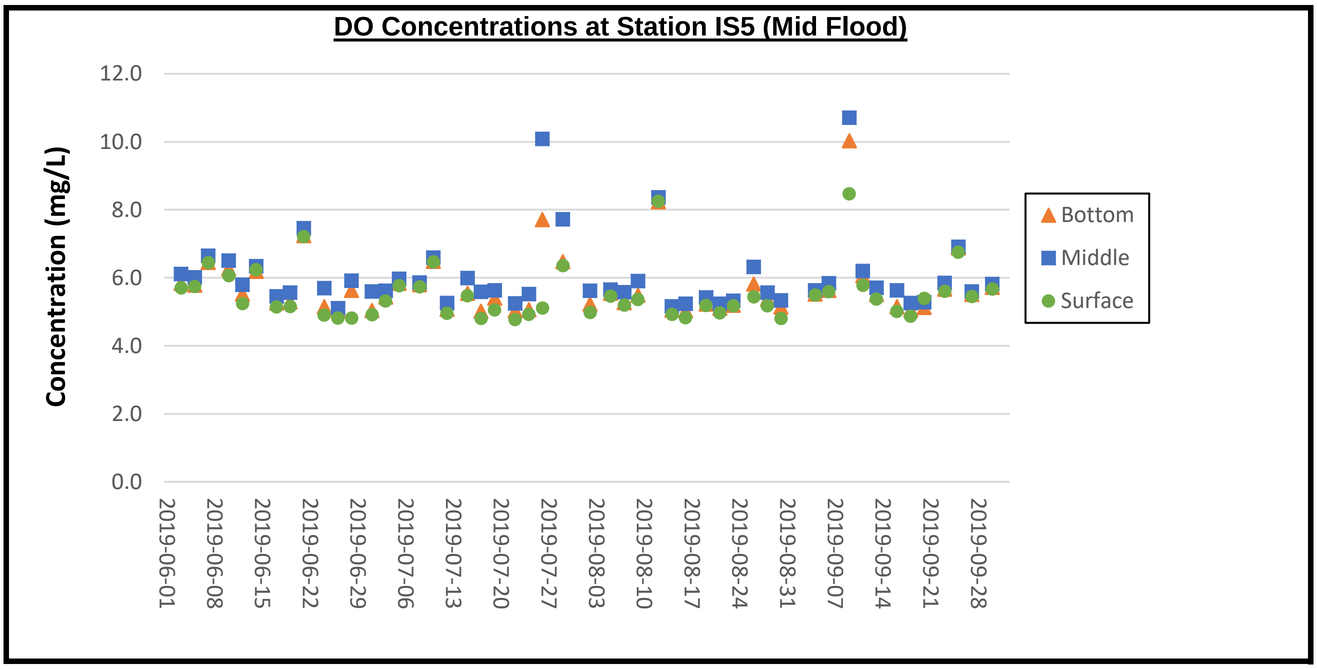
Project	Works	Date (yyyy-mm-dd)	Tide	Weather Condition	Station	Time	Depth, m	Level	Level_Code	Replicate	Temperature, °C	pH	Salinity, ppt	DO, %	DO, mg/L	Turbidity, NTU	SS, mg/L
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR10A(N)	6:34	1.0	Surface	1	1	29.20	7.88	29.07	85.0	5.55	5.0	10.2
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR10A(N)	6:33	1.0	Surface	1	2	29.20	7.89	29.09	84.9	5.54	5.0	9.8
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR10A(N)	6:33	6.2	Middle	2	1	29.21	7.89	29.09	84.8	5.53	6.2	10.7
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR10A(N)	6:34	6.2	Middle	2	2	29.21	7.89	29.09	84.7	5.53	5.8	10.8
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR10A(N)	6:33	11.3	Bottom	3	1	29.21	7.89	29.09	84.8	5.53	7.3	11.7
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR10A(N)	6:34	11.3	Bottom	3	2	29.21	7.89	29.09	84.7	5.53	6.9	11.8
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR10B(N2)	6:21	1.0	Surface	1	1	29.20	7.91	29.09	87.4	5.70	5.8	4.9
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR10B(N2)	6:21	1.0	Surface	1	2	29.20	7.90	29.09	88.5	5.77	5.4	4.9
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR10B(N2)	6:20	3.2	Middle	2	1	29.21	7.92	29.10	85.9	5.61	5.8	6.2
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR10B(N2)	6:21	3.2	Middle	2	2	29.21	7.90	29.10	85.9	5.61	5.5	6.1
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR10B(N2)	6:21	5.4	Bottom	3	1	29.20	7.91	29.10	85.6	5.59	6.1	6
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	SR10B(N2)	6:20	5.4	Bottom	3	2	29.21	7.93	29.10	86.5	5.65	6.4	6
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	CS2(A)	8:37	1.0	Surface	1	1	29.20	7.88	29.07	84.8	5.53	12.1	40.7
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	CS2(A)	8:38	1.0	Surface	1	2	29.20	7.88	29.08	85.7	5.60	12.8	40.4
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	CS2(A)	8:38	3.2	Middle	2	1	29.20	7.88	29.08	86.0	5.61	12.3	43.8
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	CS2(A)	8:37	3.2	Middle	2	2	29.20	7.88	29.08	84.6	5.52	12.6	43.4
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	CS2(A)	8:37	5.4	Bottom	3	1	29.20	7.88	29.08	84.6	5.52	14.1	44.3
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	CS2(A)	8:38	5.4	Bottom	3	2	29.20	7.88	29.08	86.6	5.65	14.0	44
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	CS(Mf)5	7:17	1.0	Surface	1	1	28.04	8.20	30.74	80.9	5.33	3.5	8.8
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	CS(Mf)5	7:16	1.0	Surface	1	2	28.05	8.19	30.75	82.6	5.41	3.7	9.1
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	CS(Mf)5	7:17	5.9	Middle	2	1	28.04	8.19	31.00	80.0	5.25	5.4	9.5
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	CS(Mf)5	7:16	5.9	Middle	2	2	28.04	8.19	31.02	80.8	5.33	5.4	9.3
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	CS(Mf)5	7:16	10.7	Bottom	3	1	28.02	8.17	31.75	80.1	5.27	5.5	12.1
HKLR	HY/2011/03	2019-09-30	Mid-Flood	Sunny	CS(Mf)5	7:17	10.7	Bottom	3	2	28.03	8.18	31.60	79.3	5.22	5.7	12.2

Remark:

1) As Strong Wind Signal, No. 3 /Standby Signal No.1 was hoisted on 2 September 2019. The water quality monitoring for both ebb and flood tides on 2 September 2019 were cancelled due to safety reason and no substitute monitoring was conducted.



Remarks:
1) As Strong Wind Signal, No. 3 was hoisted on 31 July 2019. The water quality monitoring for mid-ebb tide on 31 July 2019 was cancelled due to safety reason.
2) As Strong Wind Signal, No. 3 /Standby Signal No.1 was hoisted on 2 September 2019. The water quality monitoring for mid-ebb tide on 2 September 2019 was cancelled due to safety reason.



Remarks:
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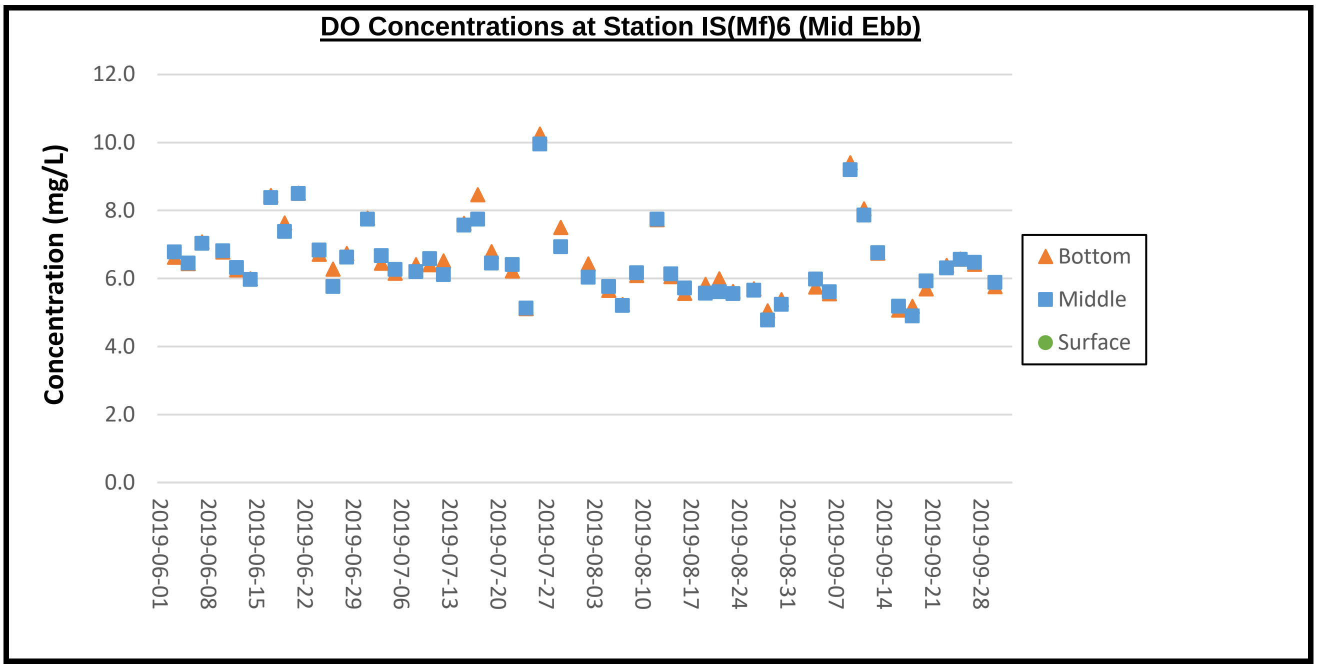
2) As Strong Wind Signal, No. 3 /Standby Signal No.1 was hoisted on 2 September 2019. The water quality monitoring for mid-flood tide on 2 September 2019 was cancelled due to safety reason.



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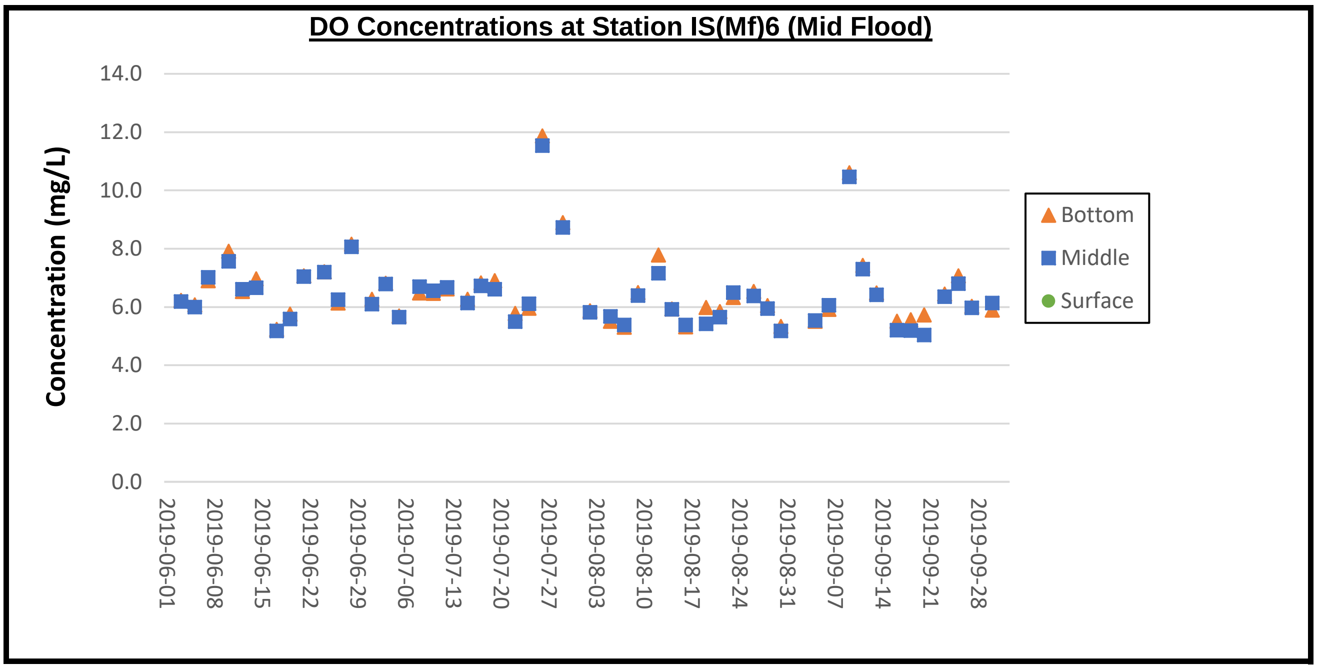

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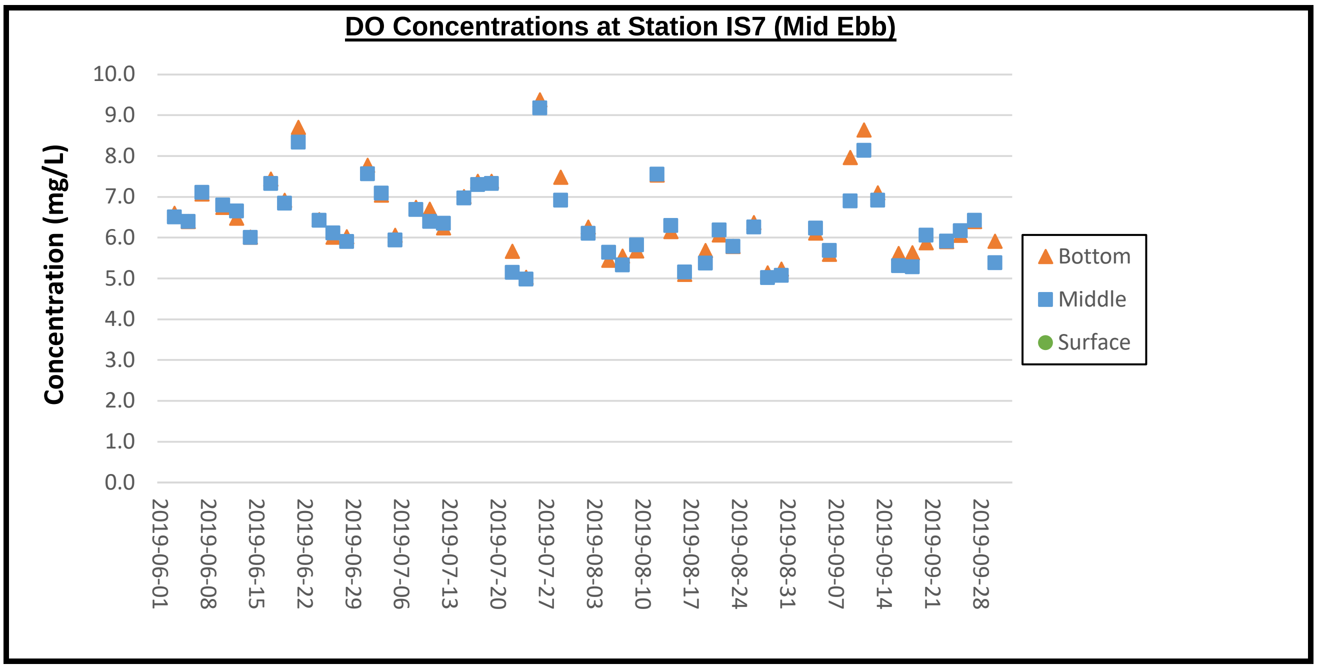

Remarks:
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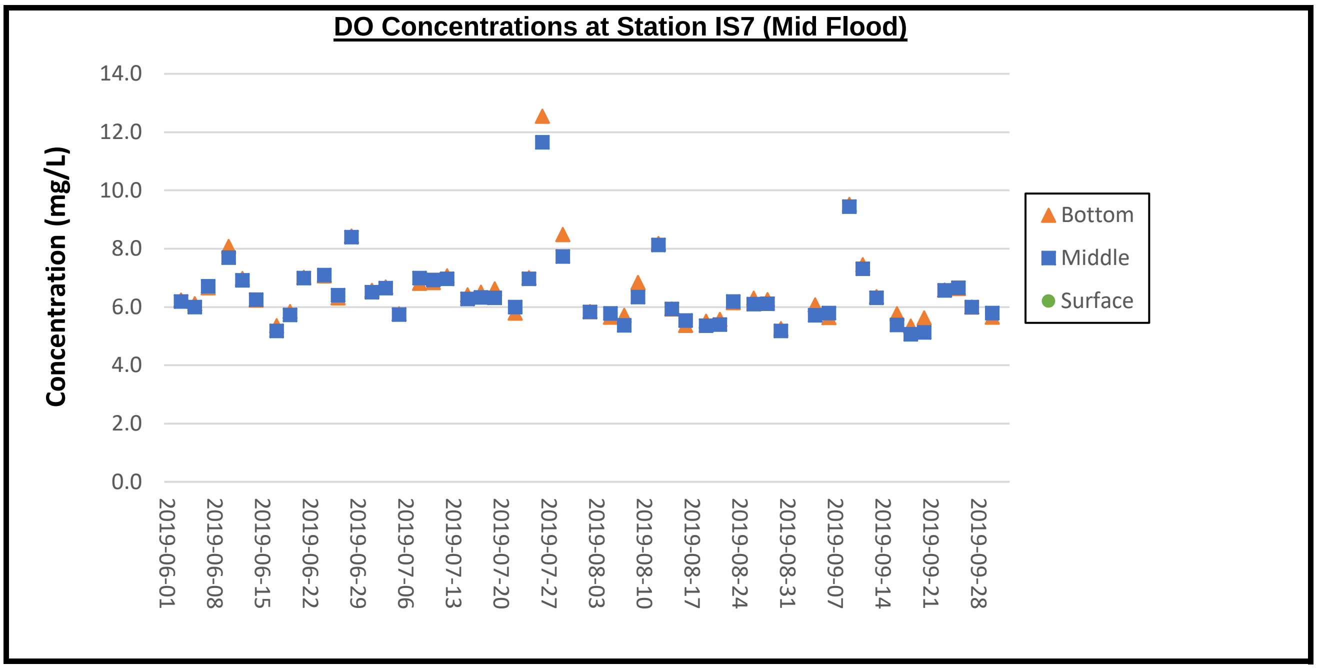

Remarks:
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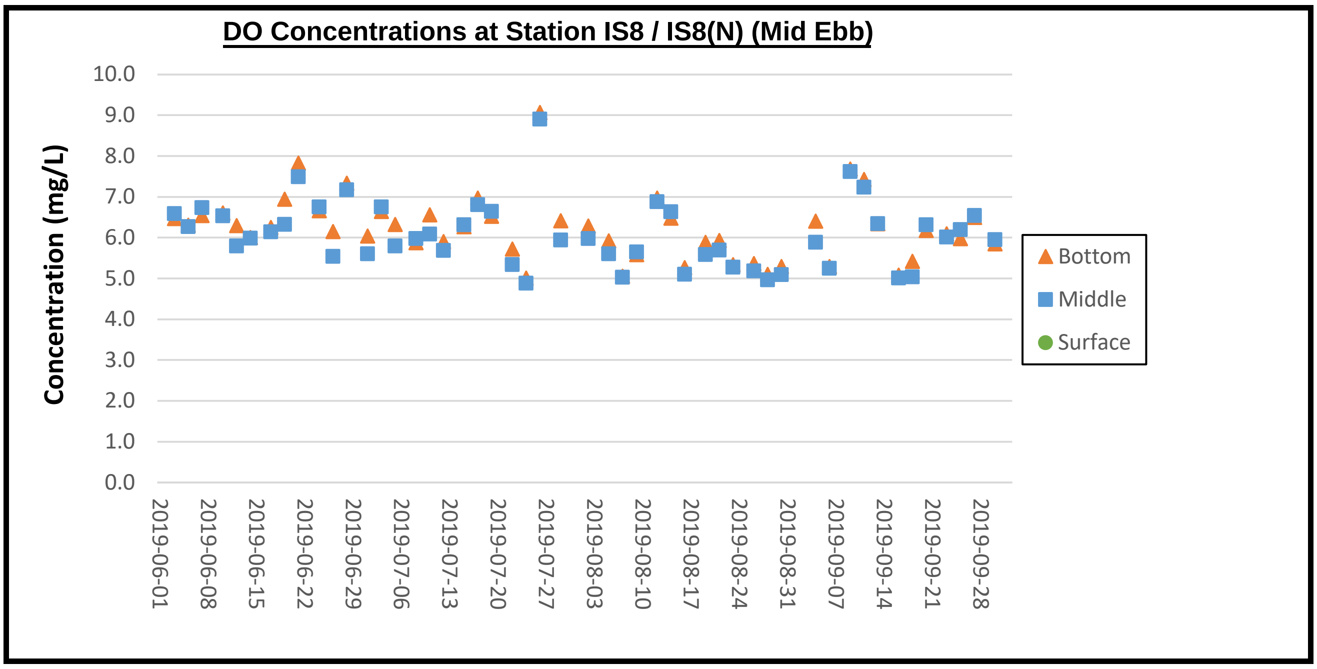

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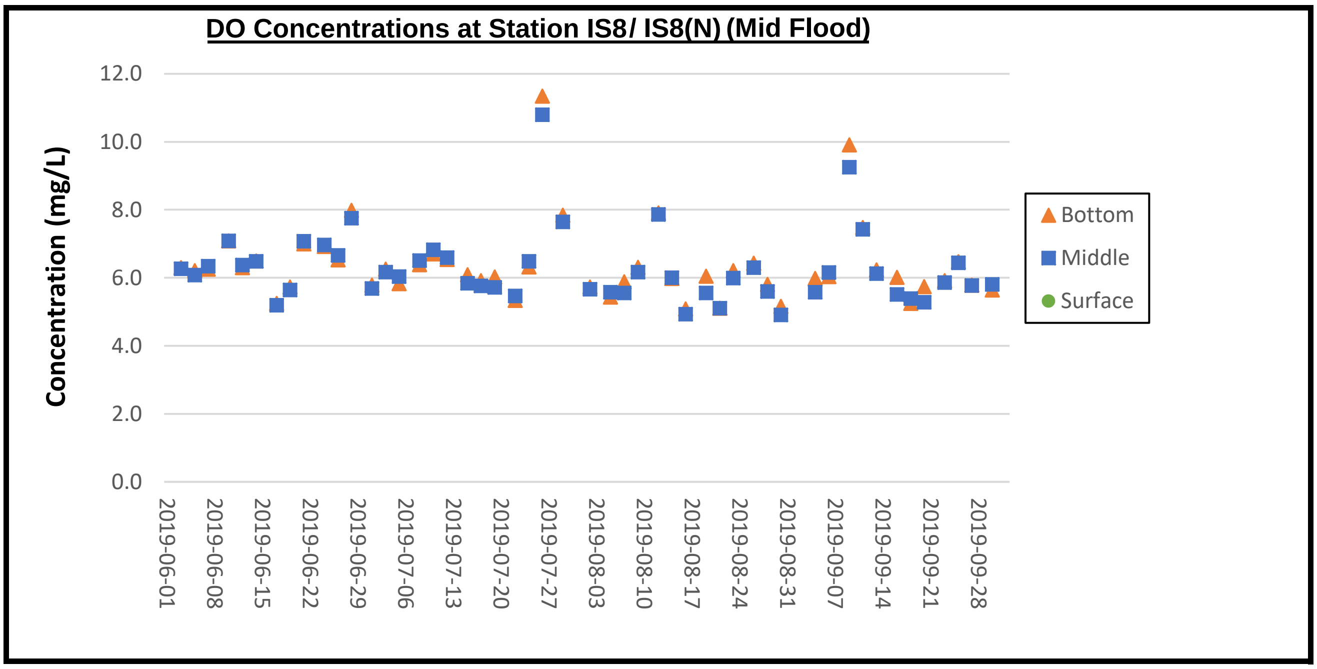

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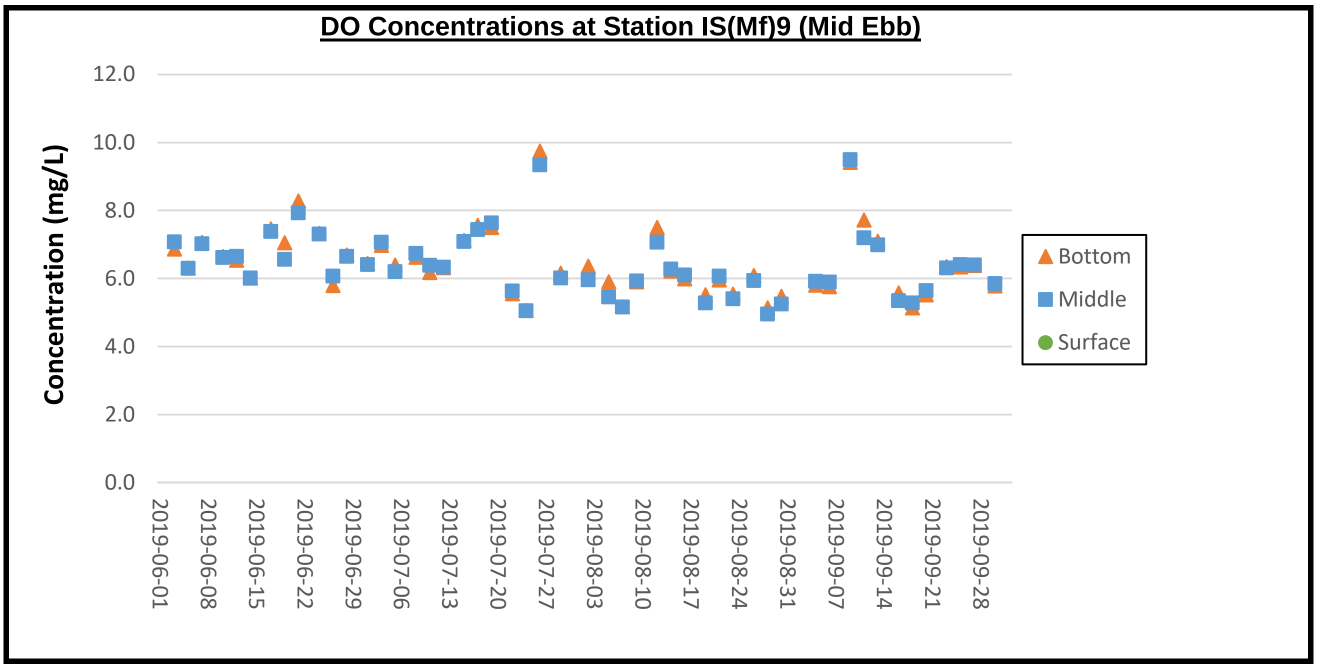

Remarks:
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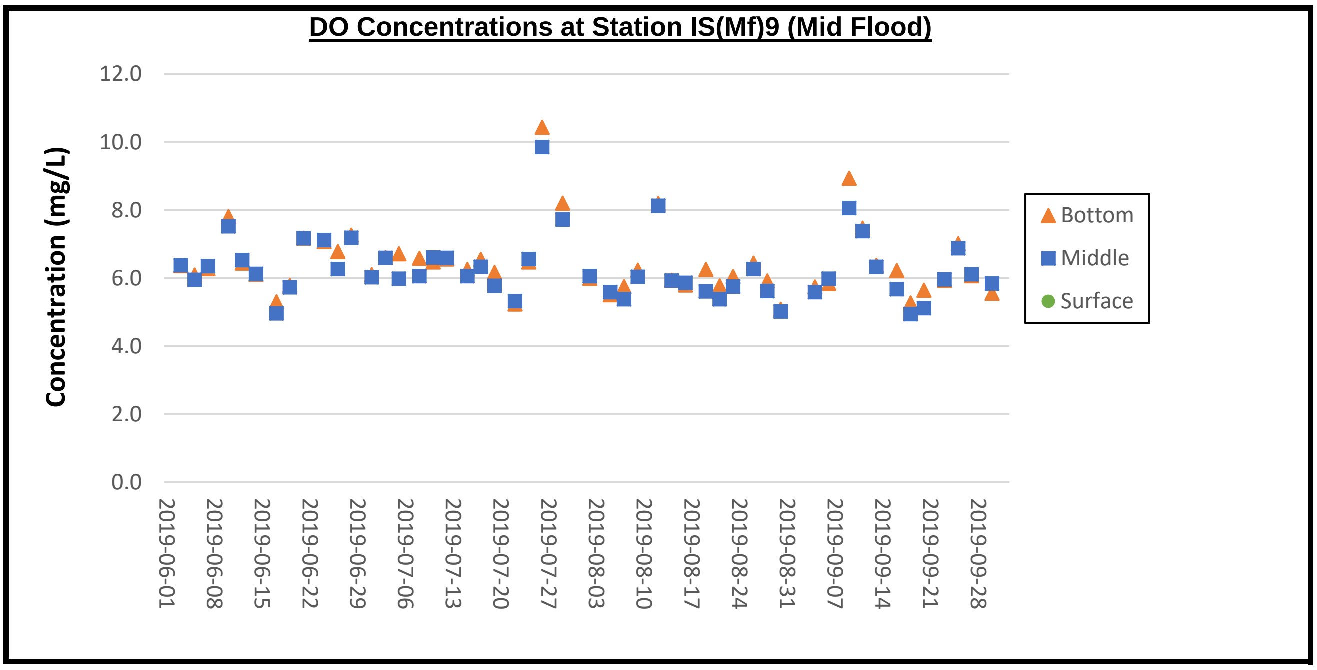

Remarks:
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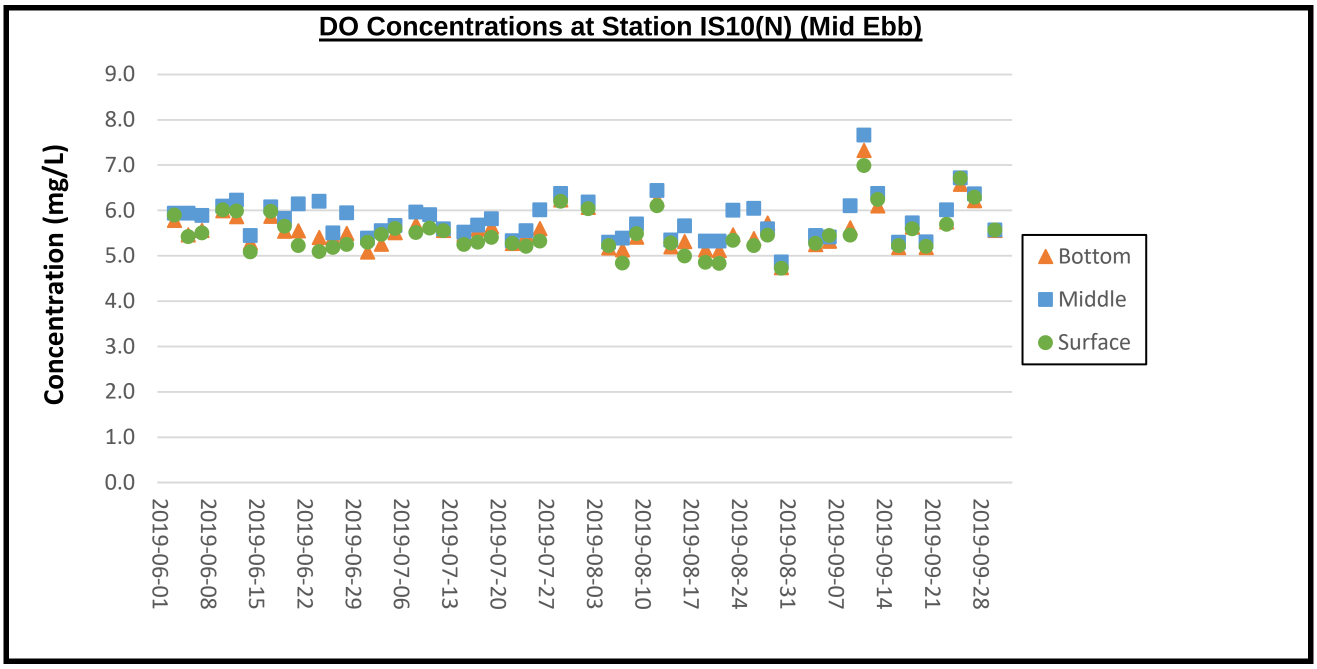

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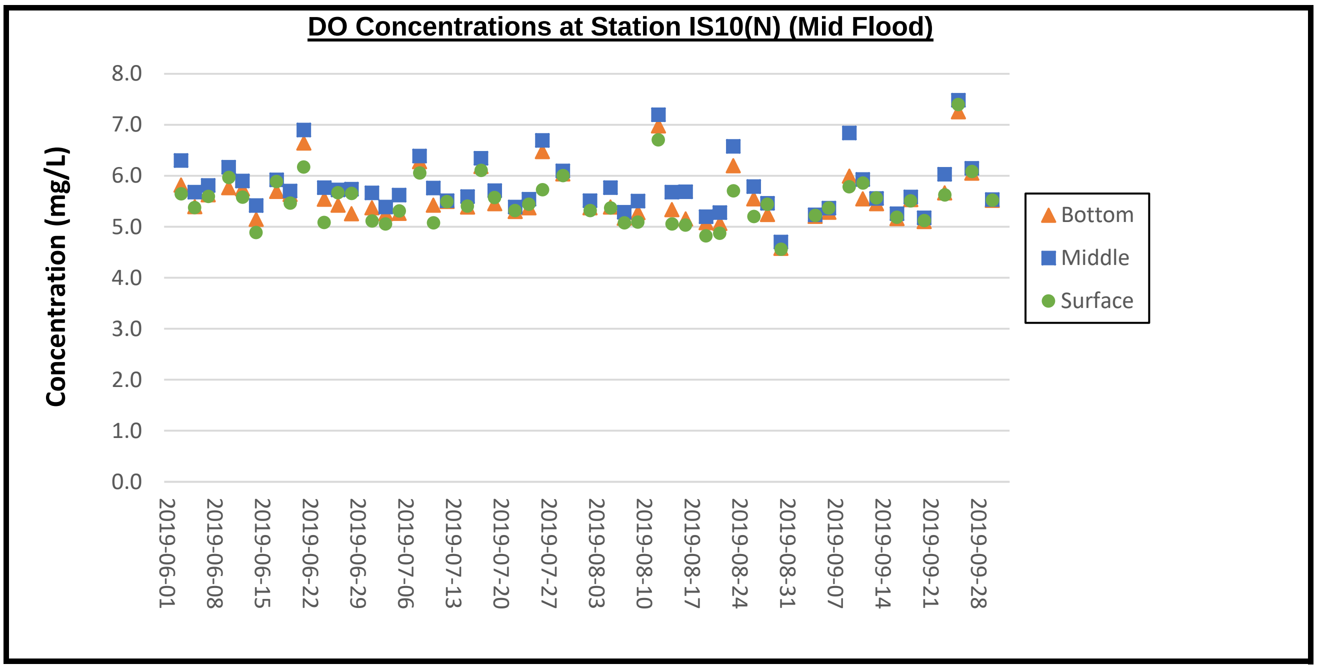

Remarks:

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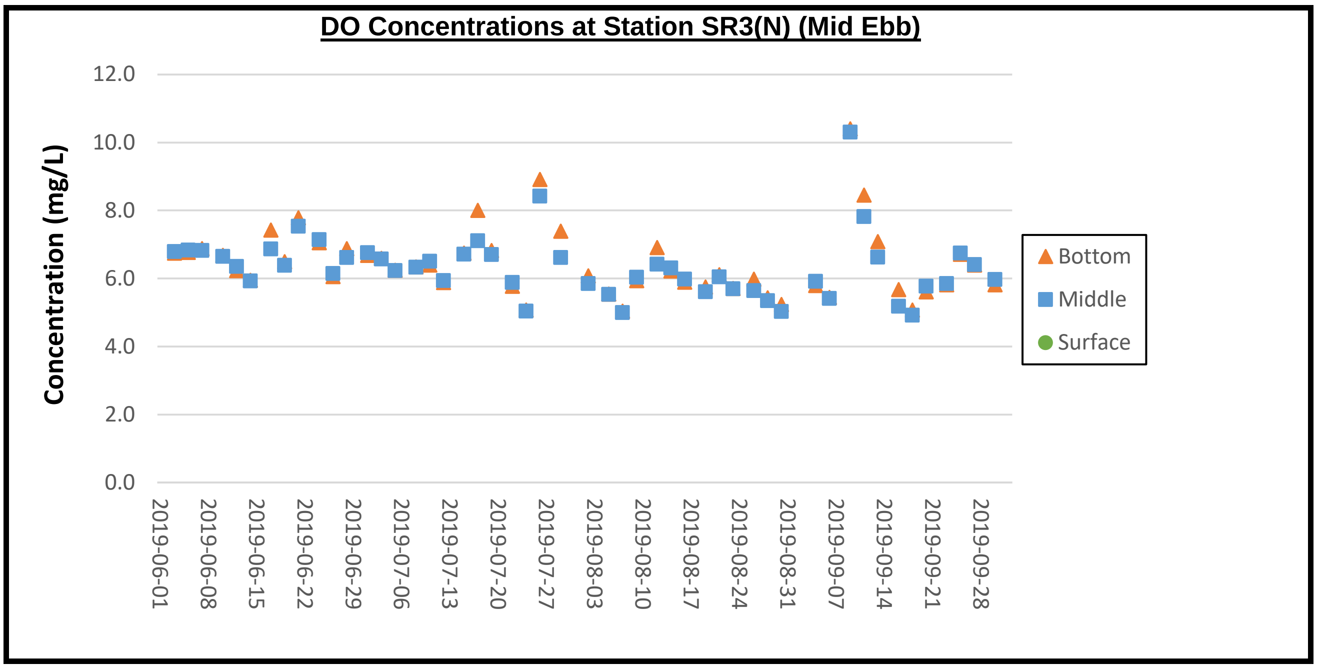

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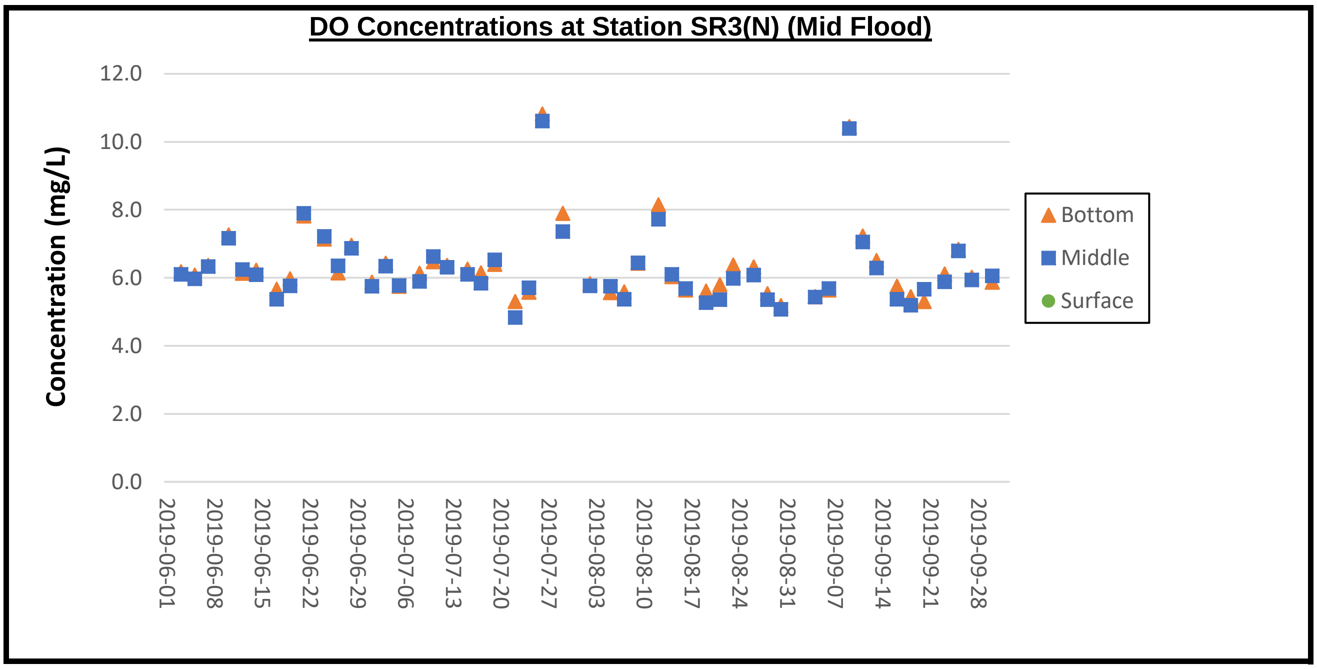

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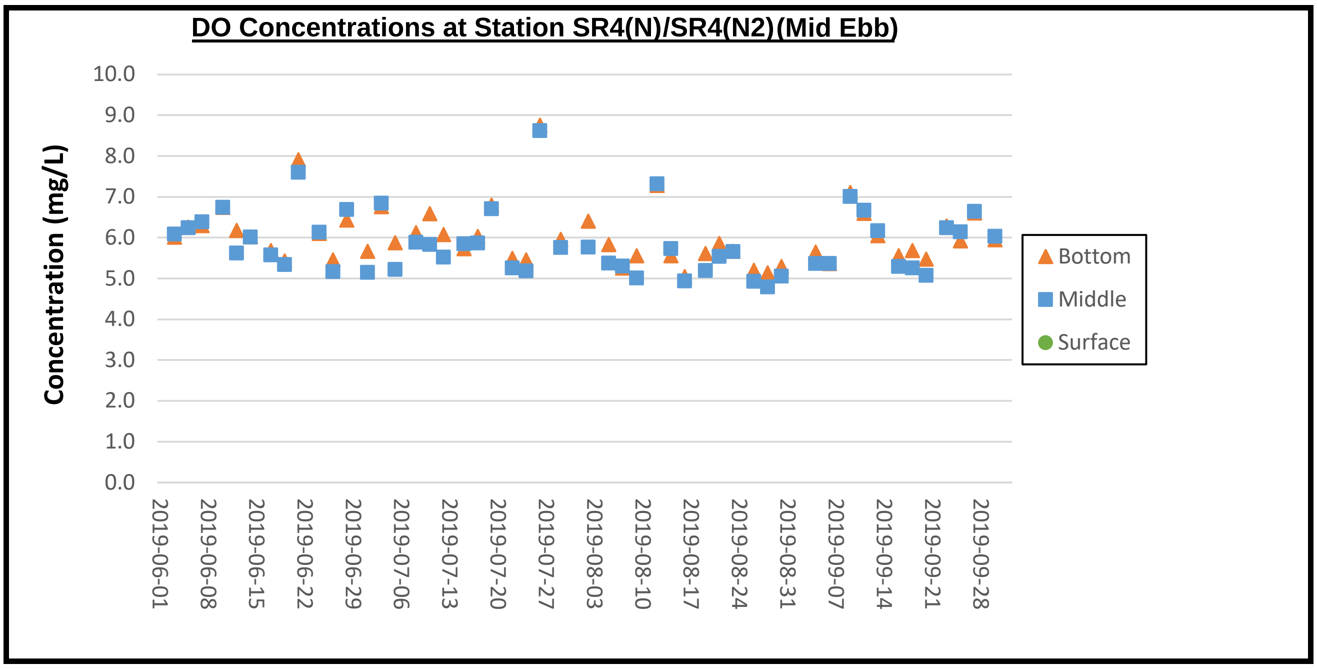

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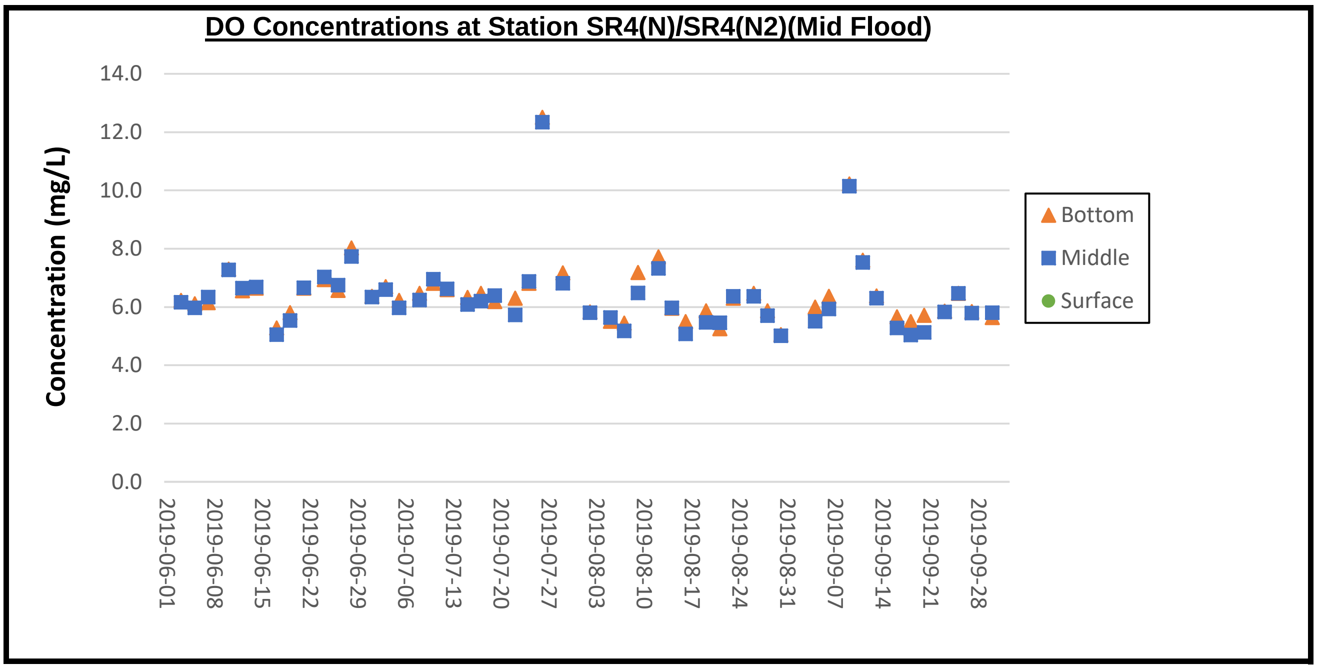

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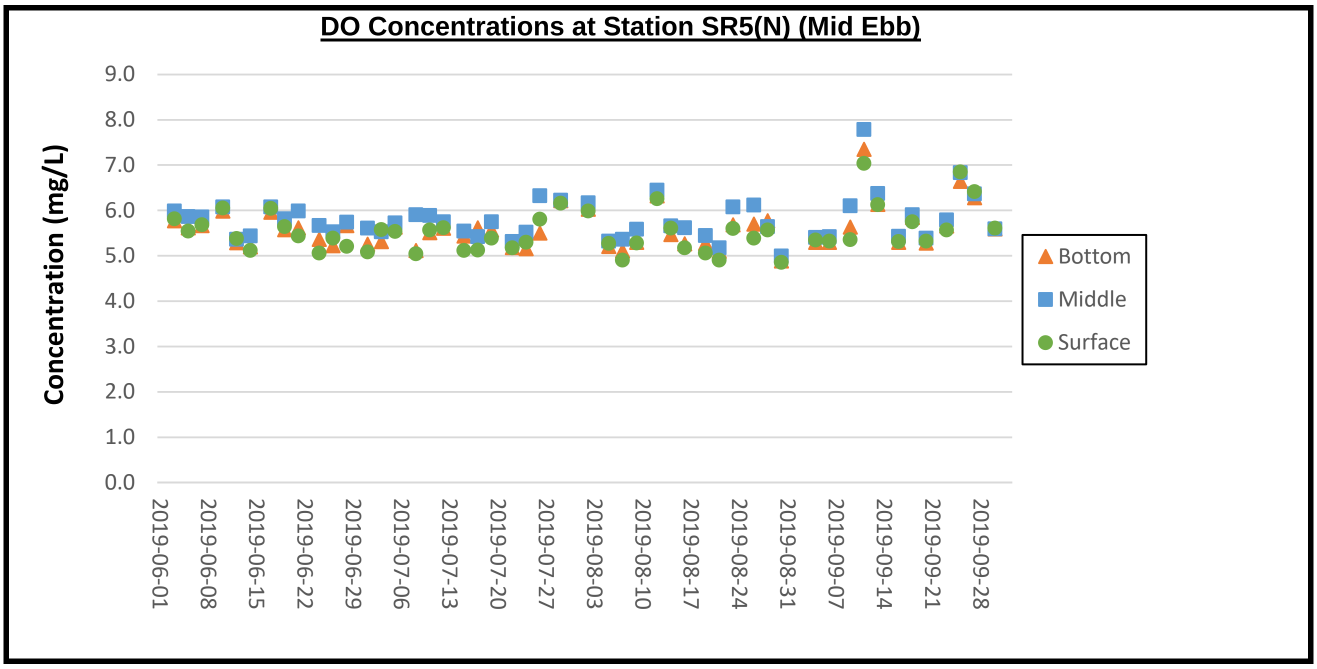

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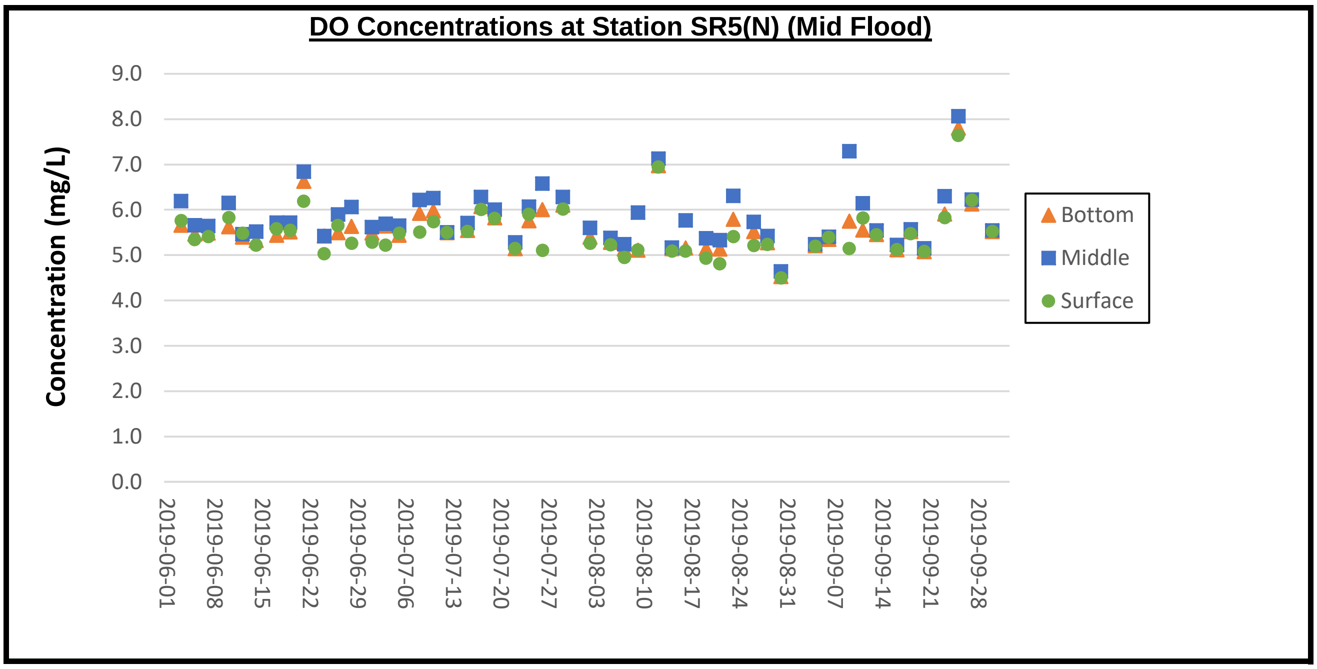

Remarks:
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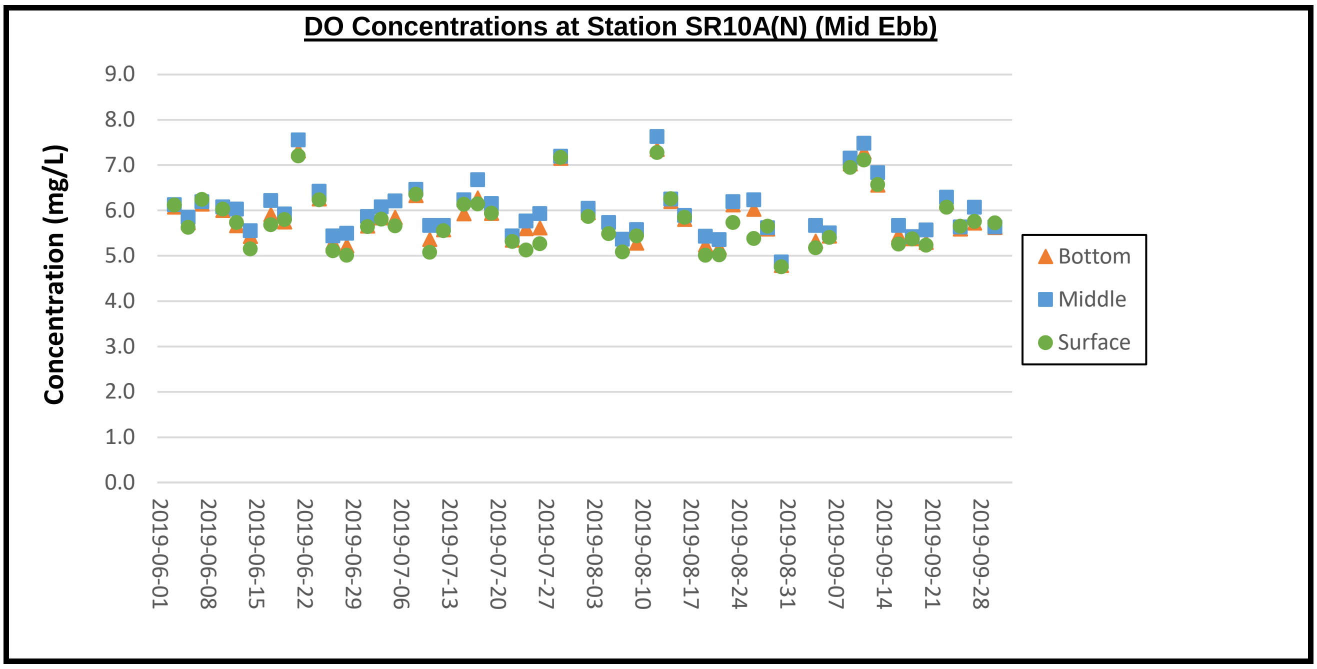

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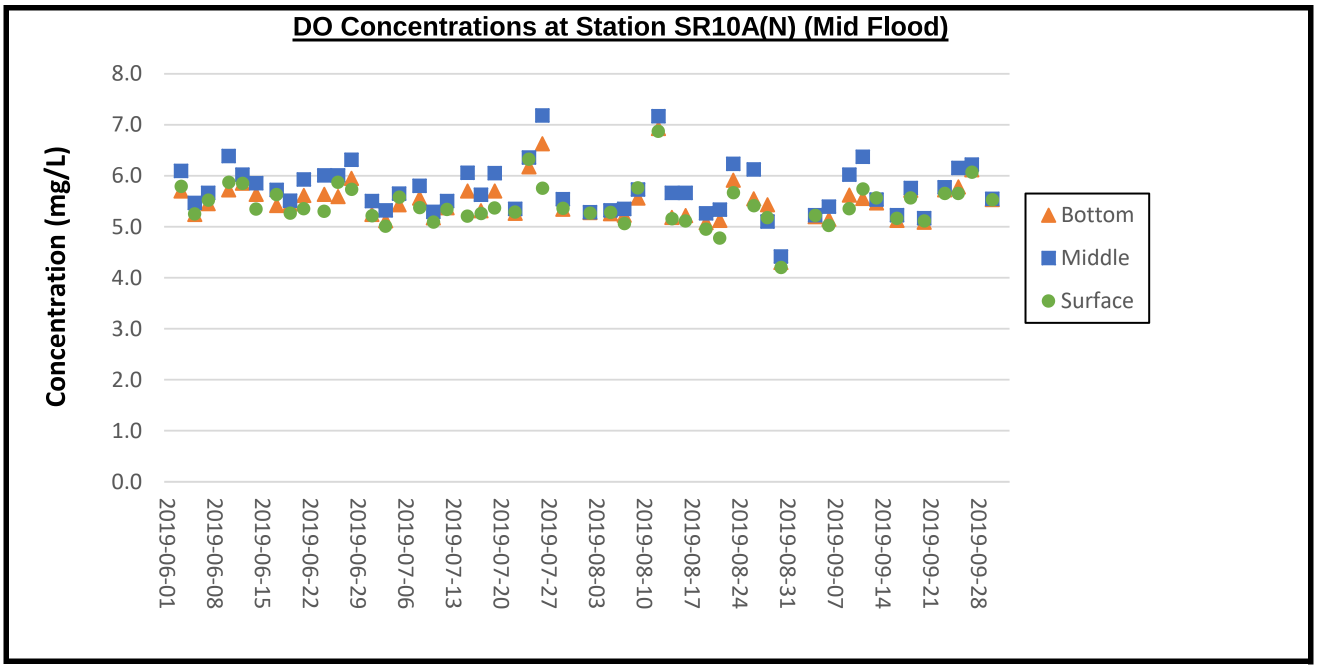

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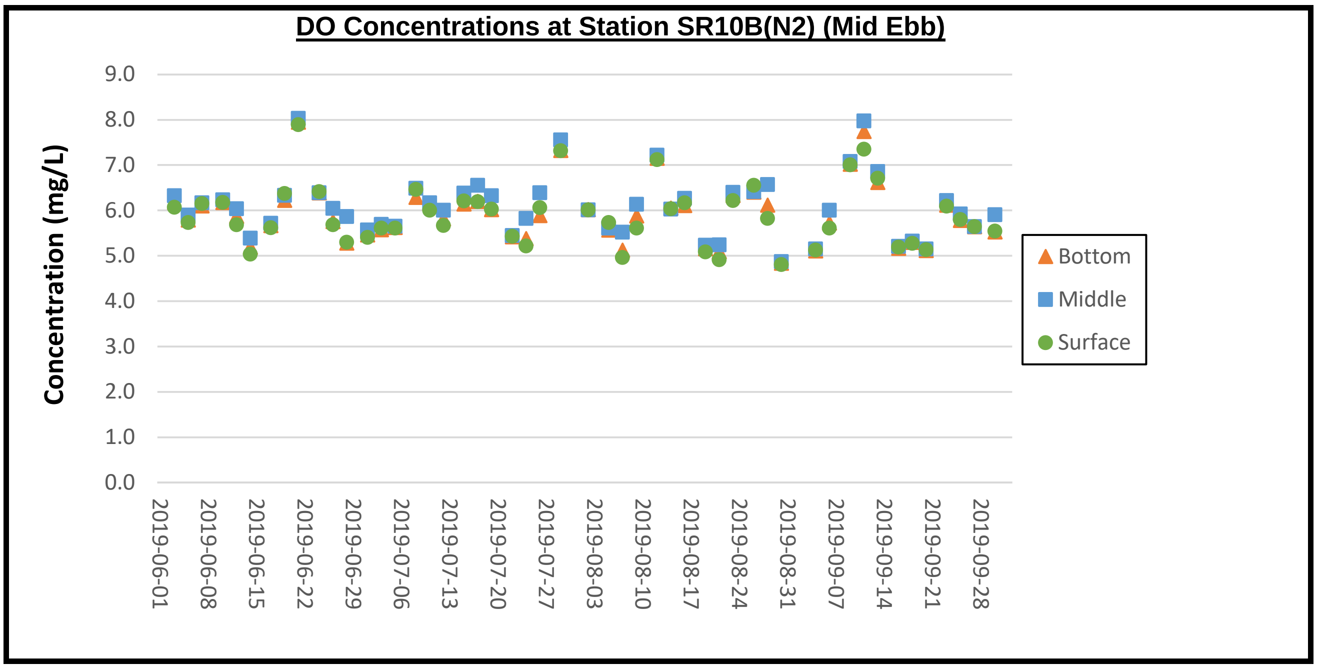

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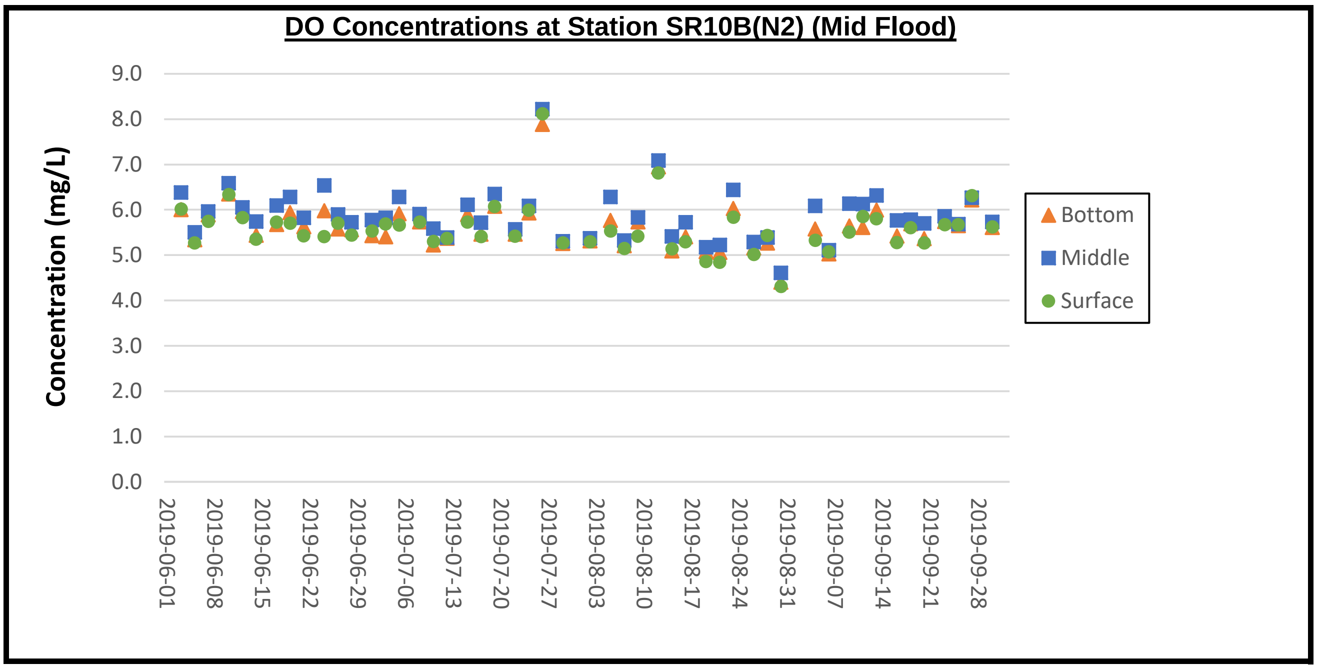

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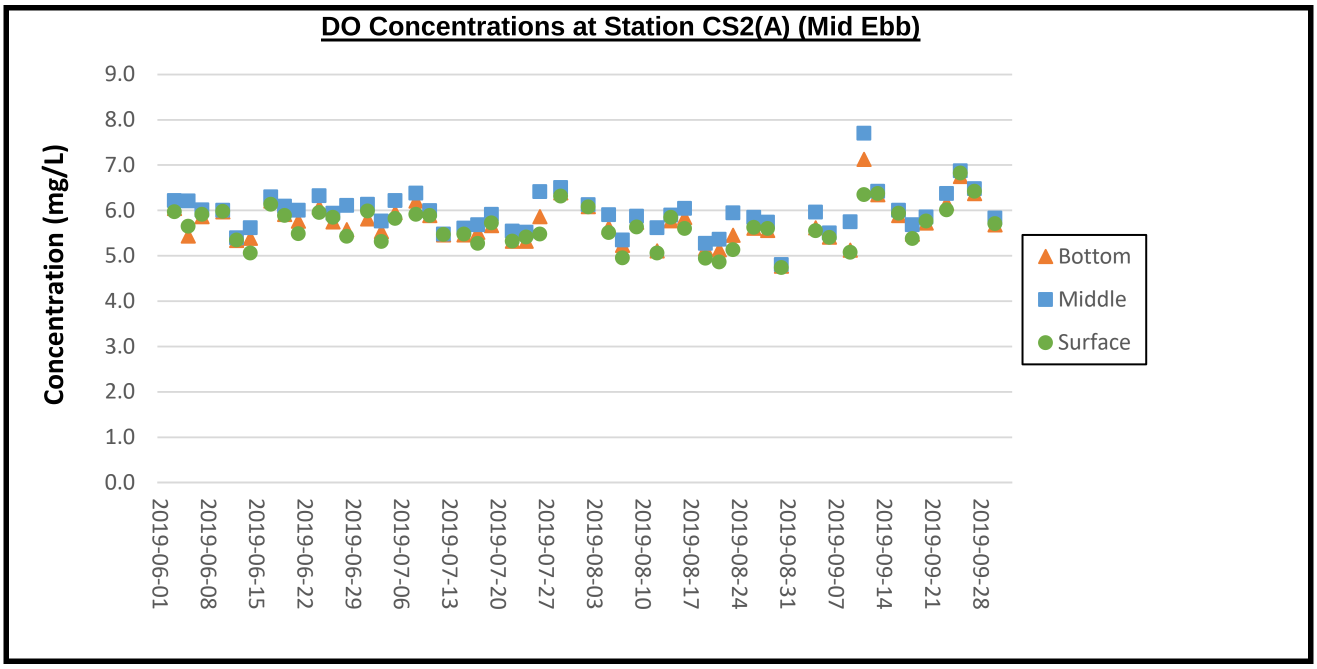

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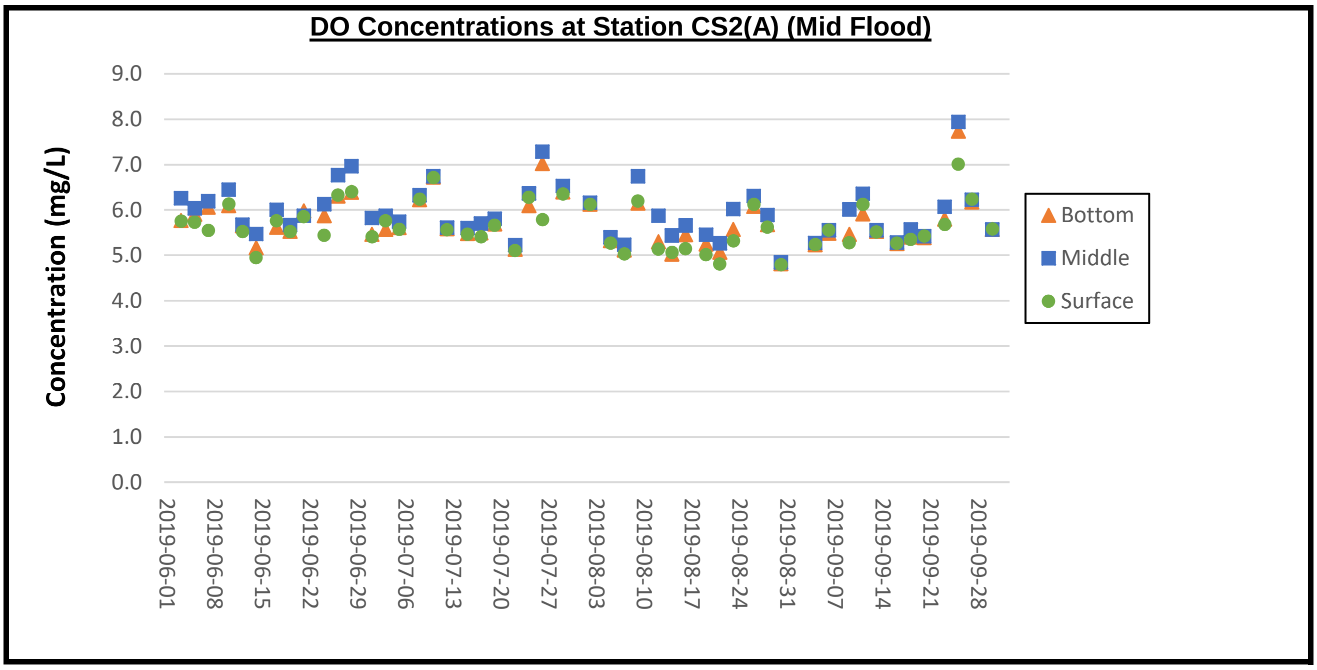

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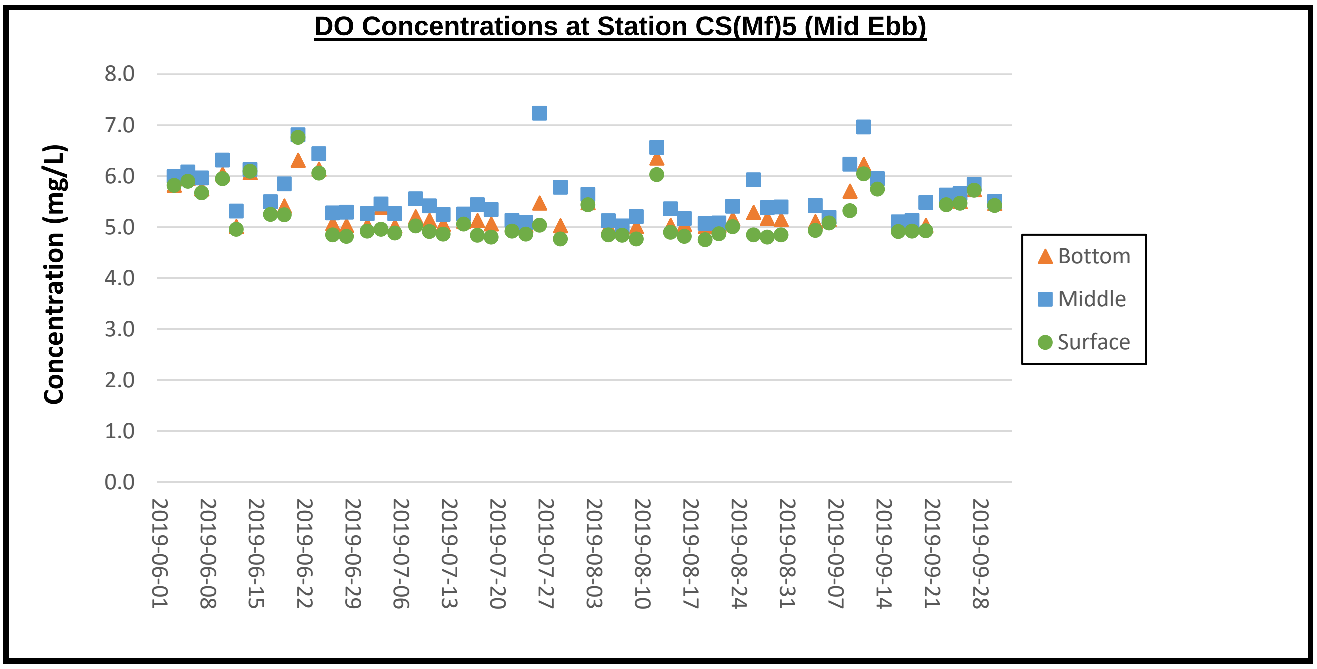

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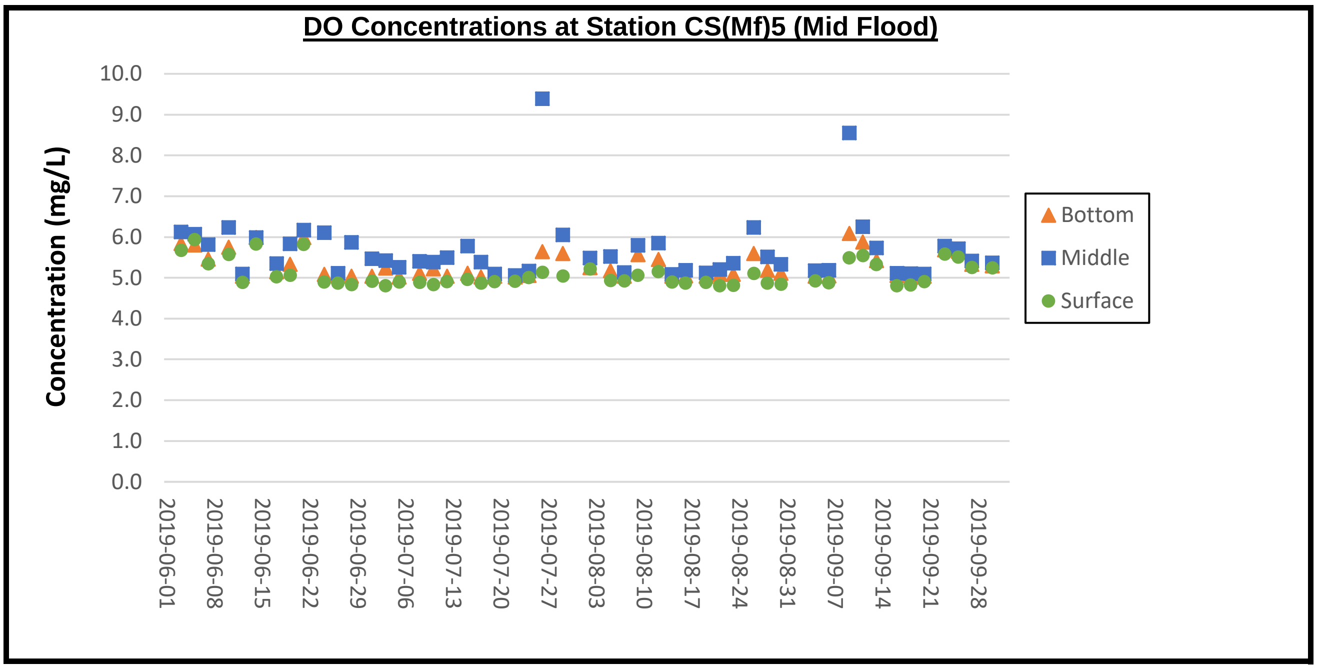

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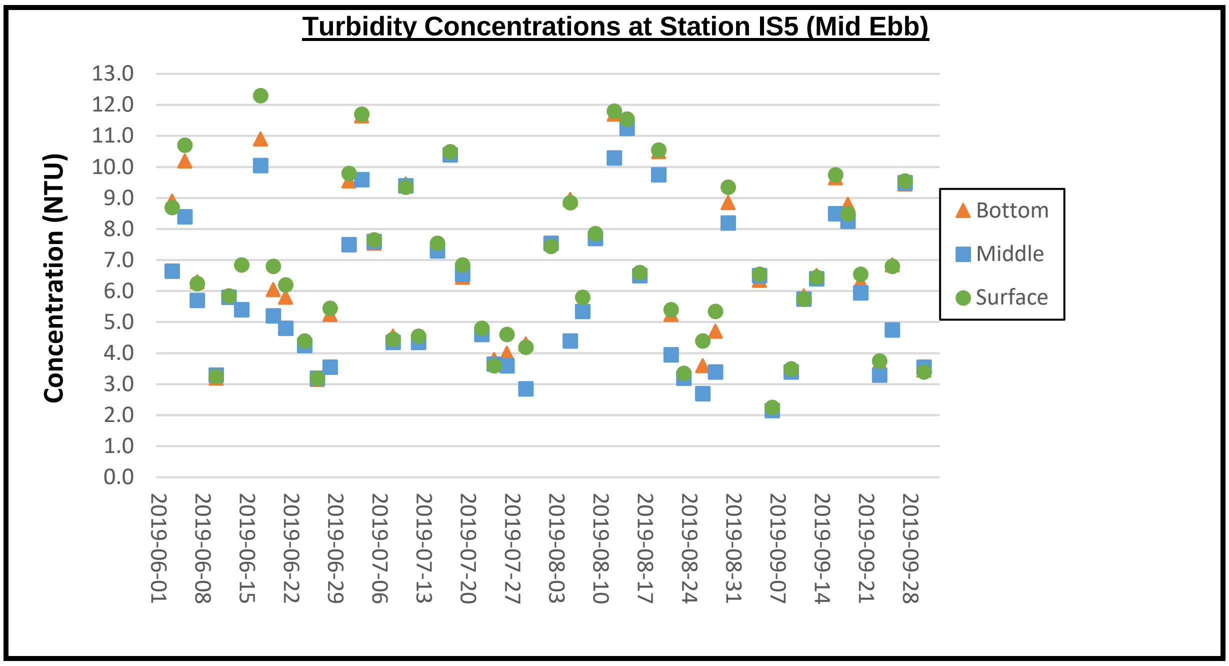

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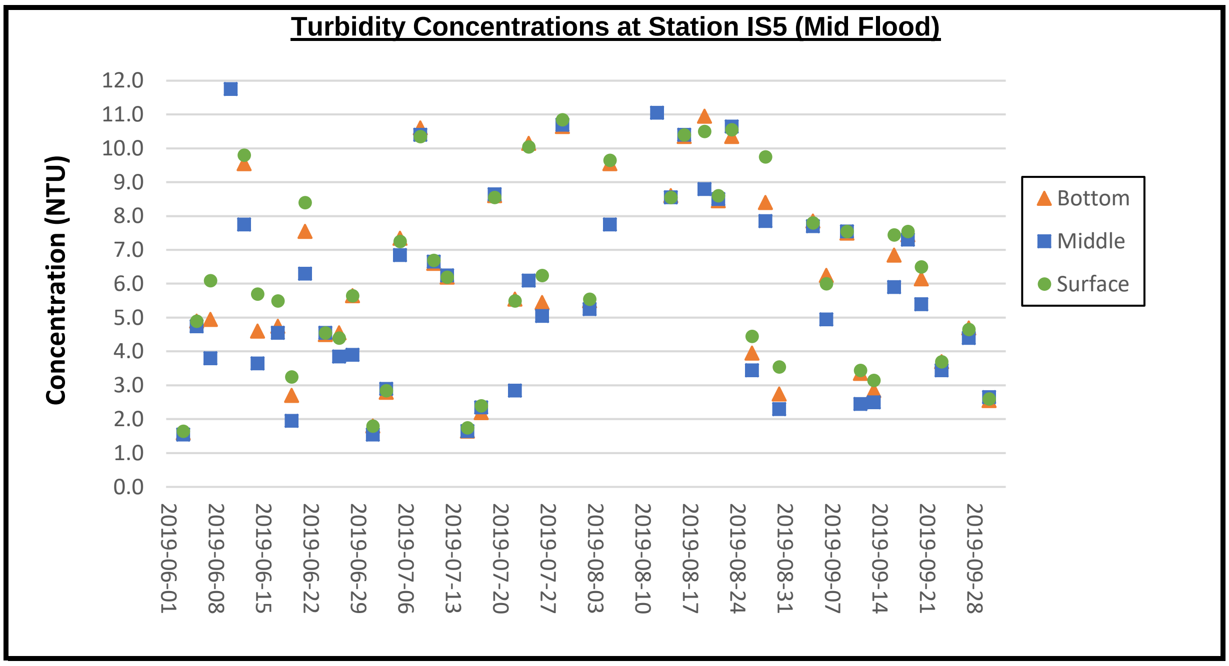

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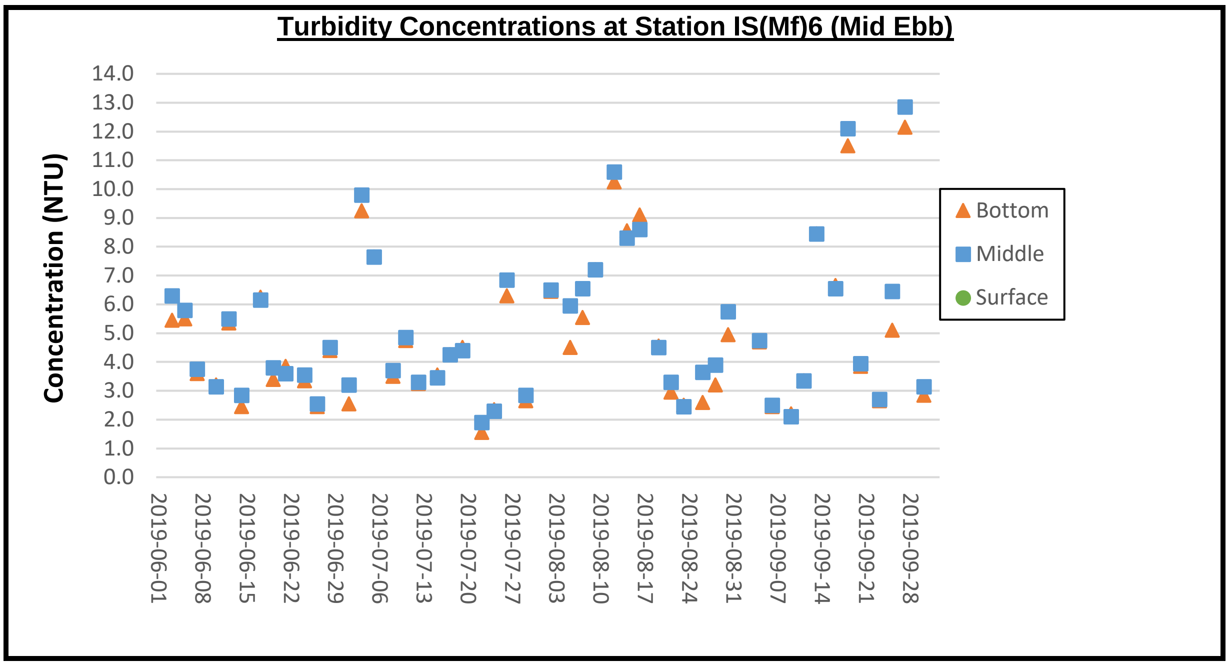

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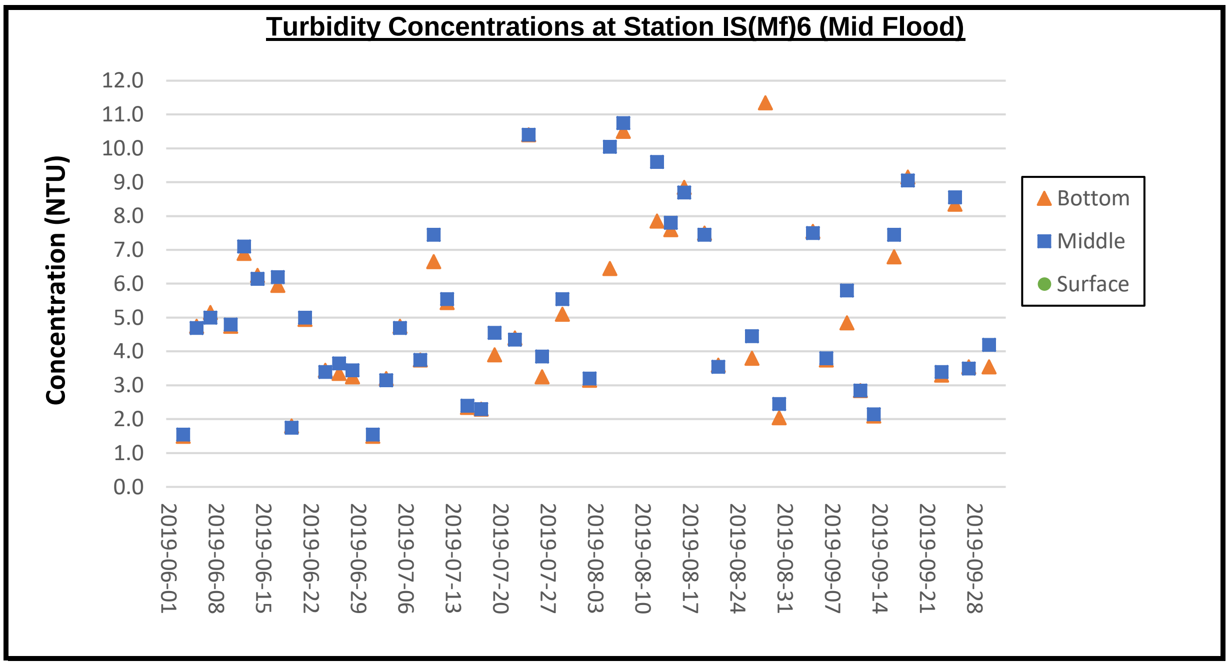

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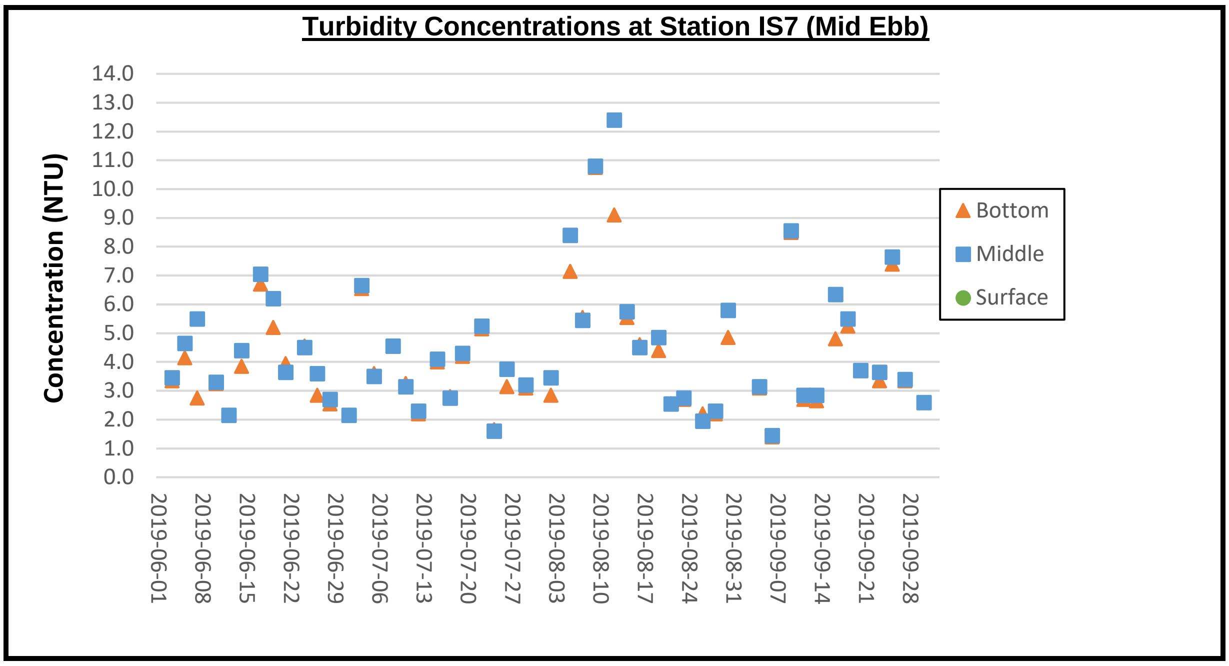

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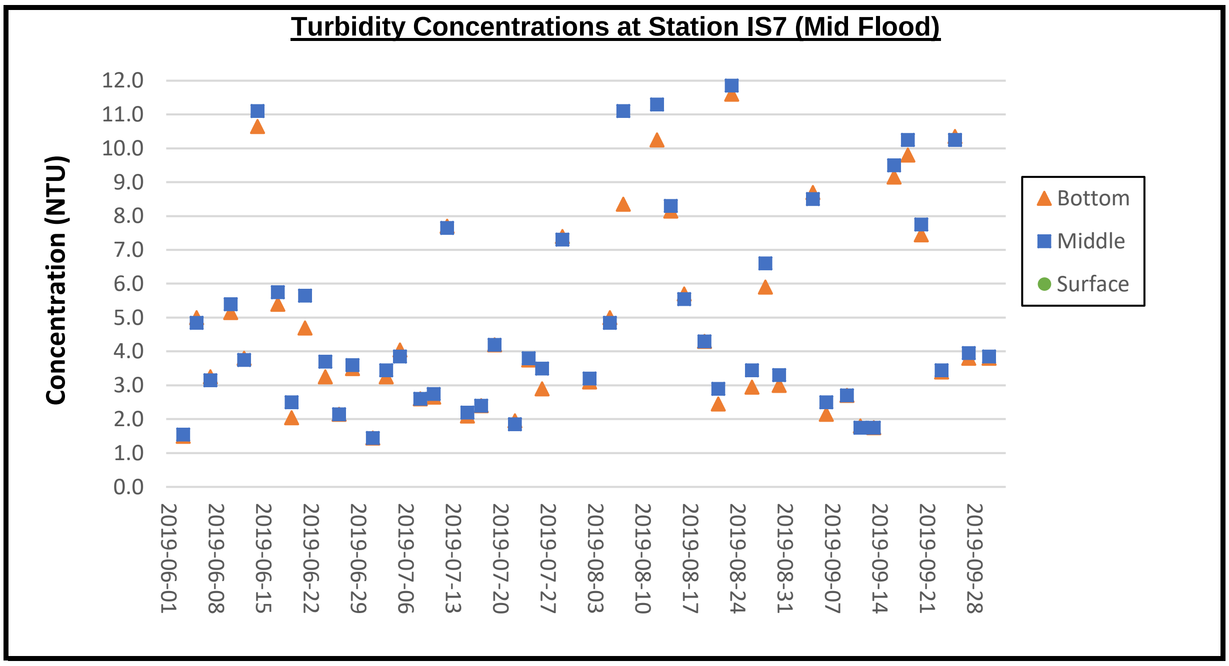

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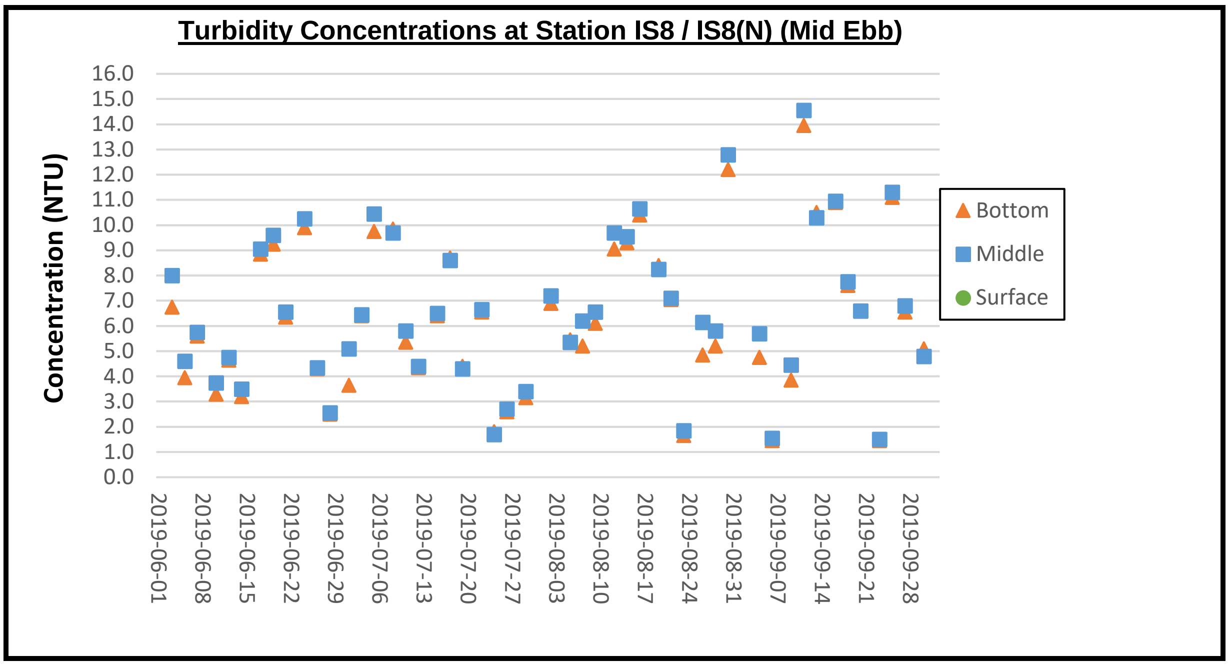

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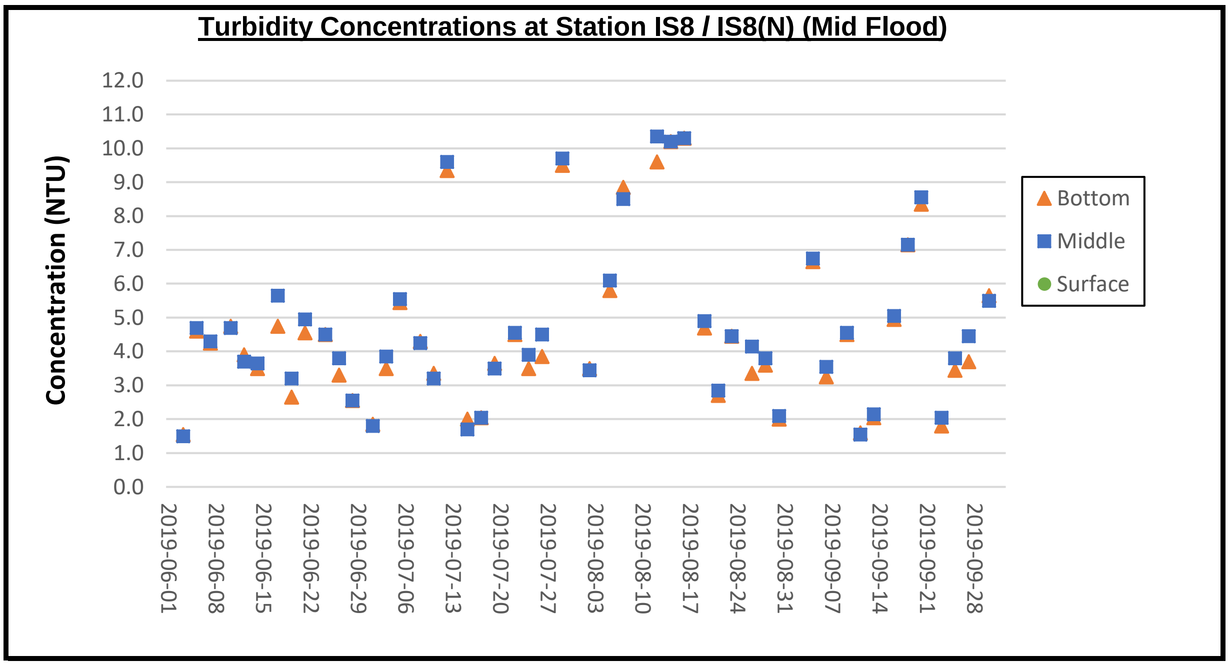

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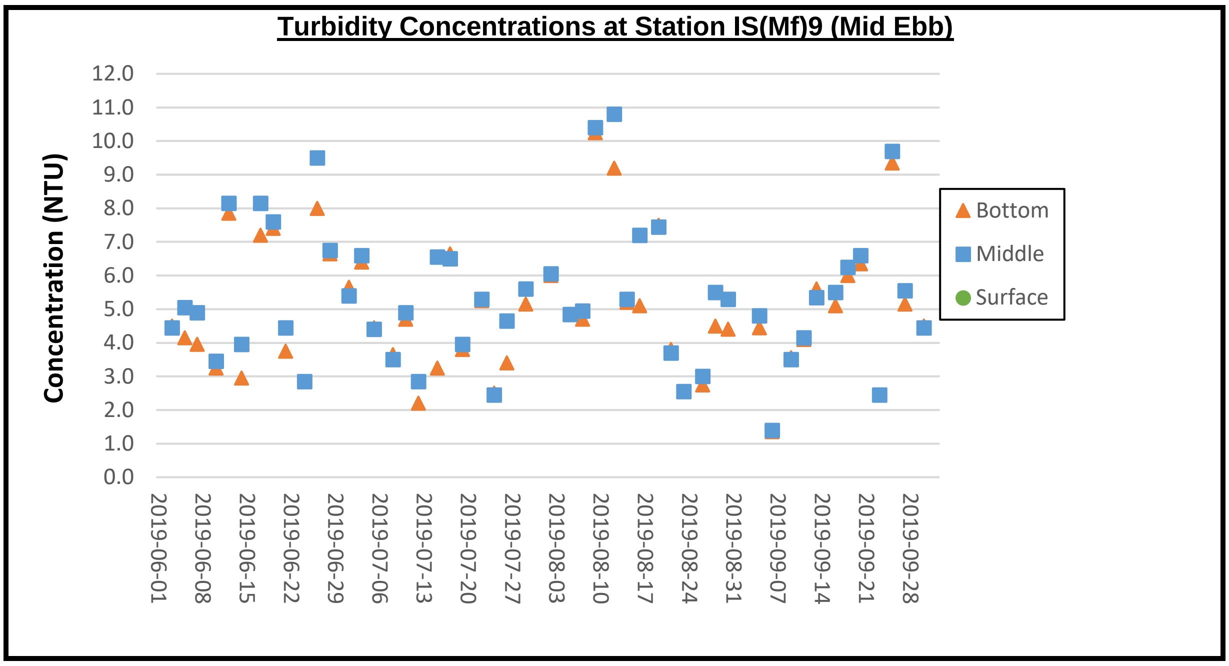

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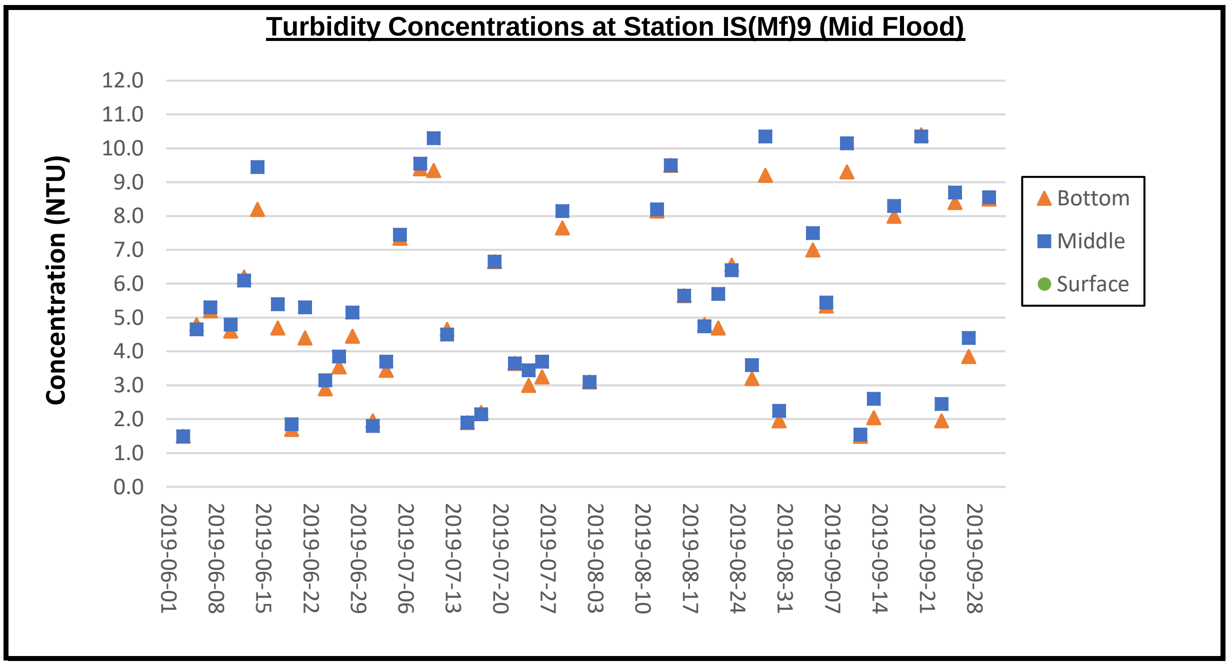

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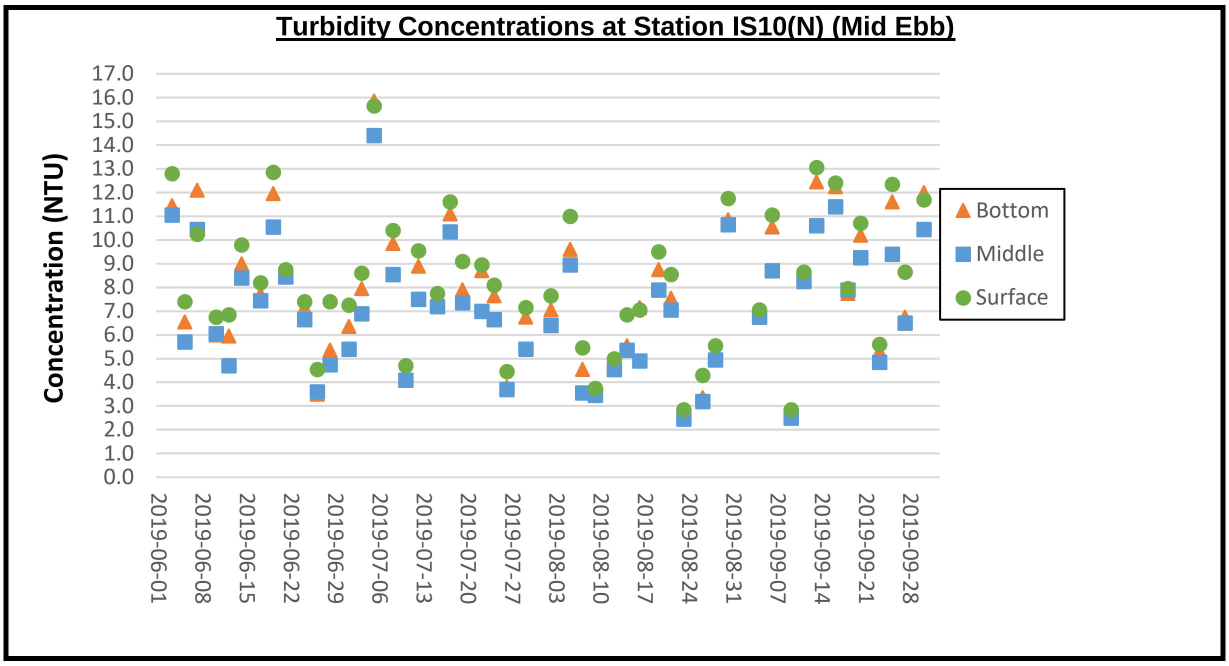

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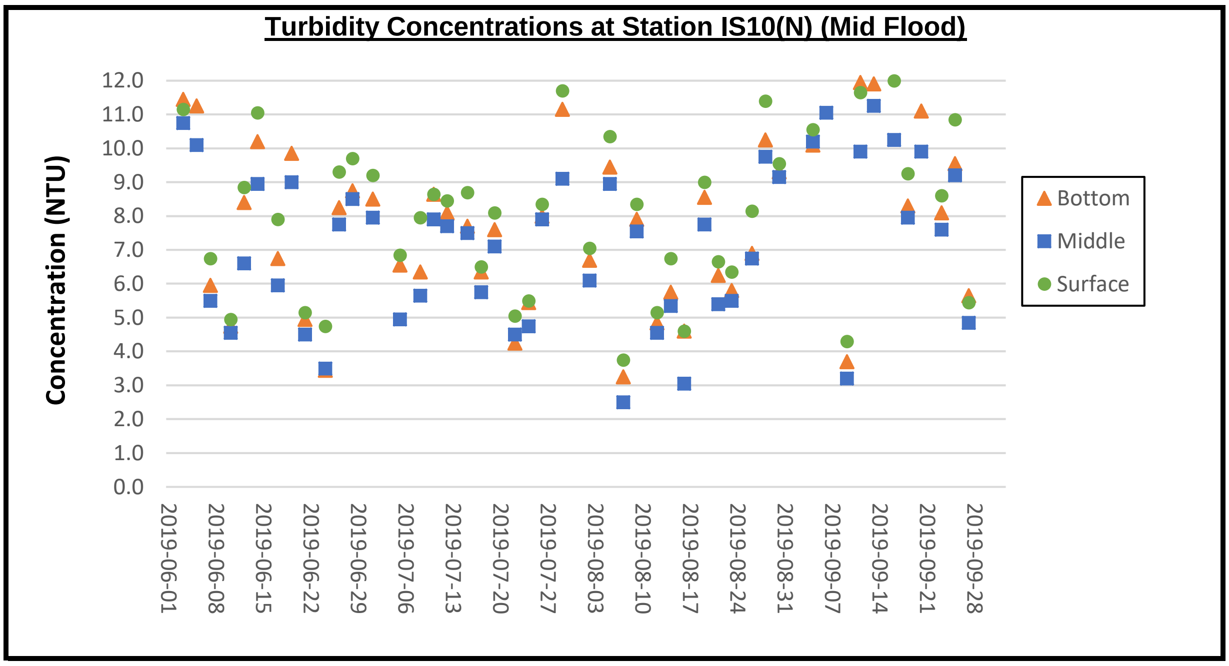

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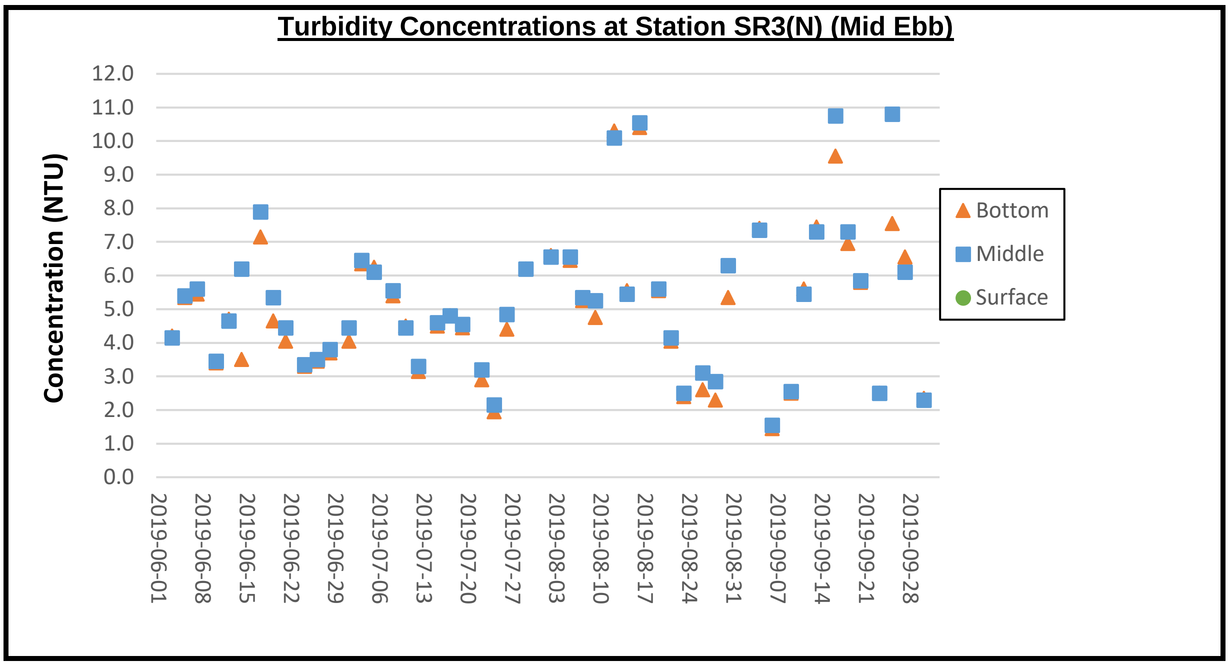

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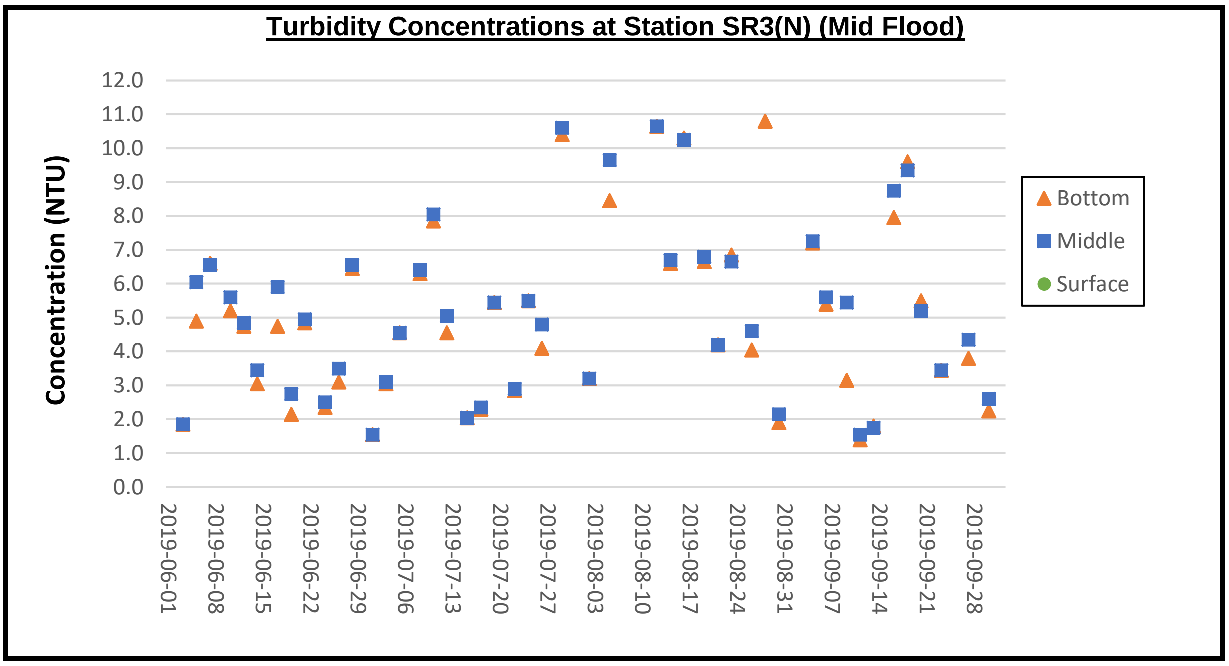

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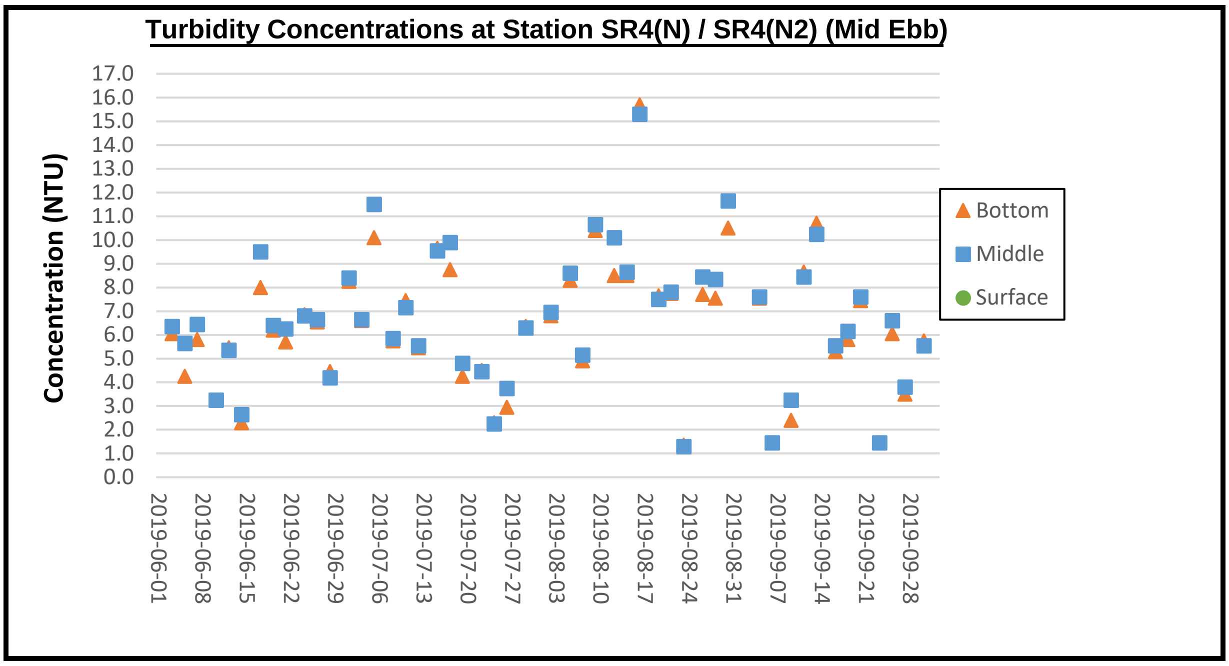

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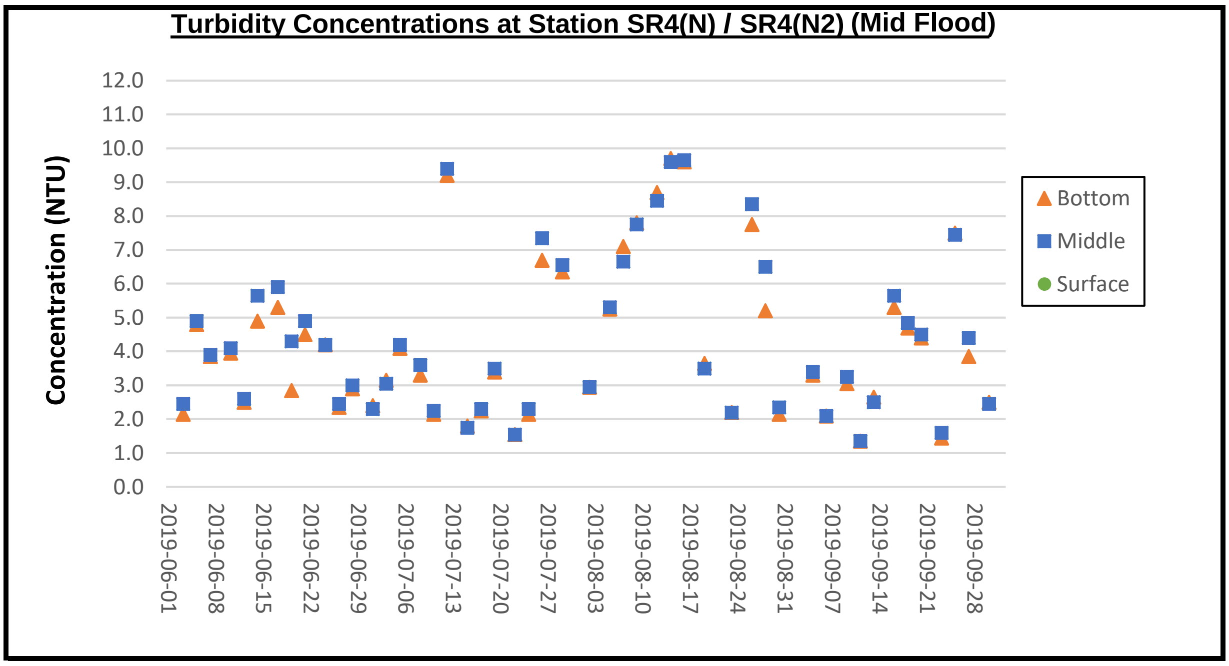

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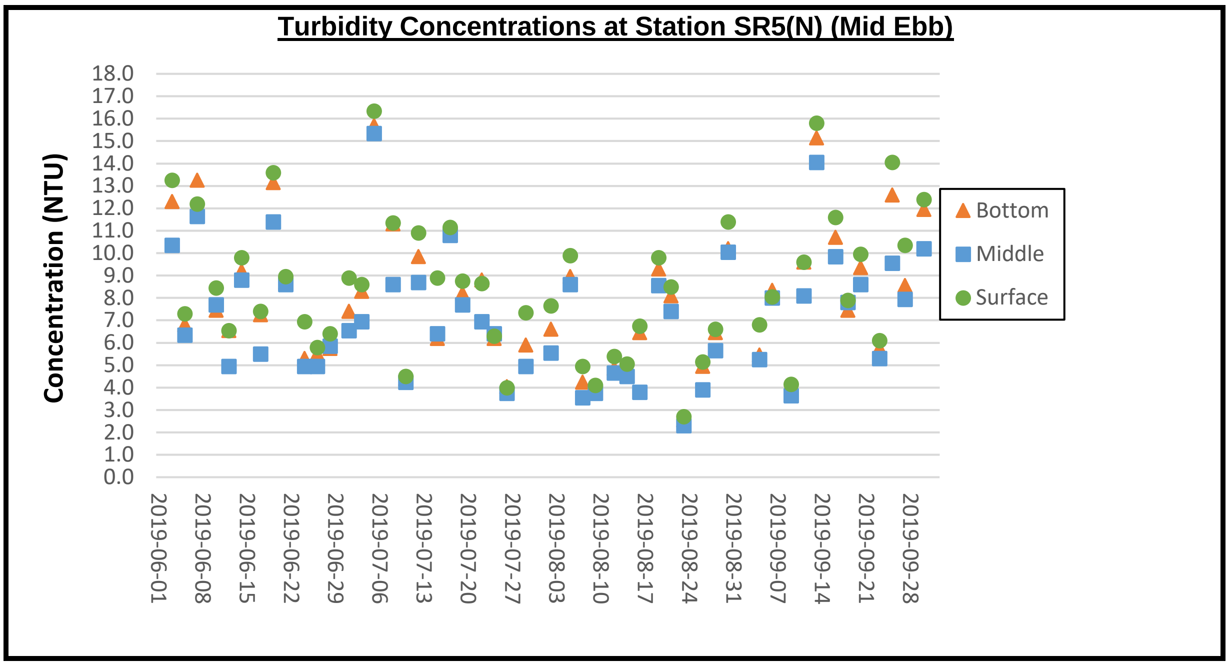

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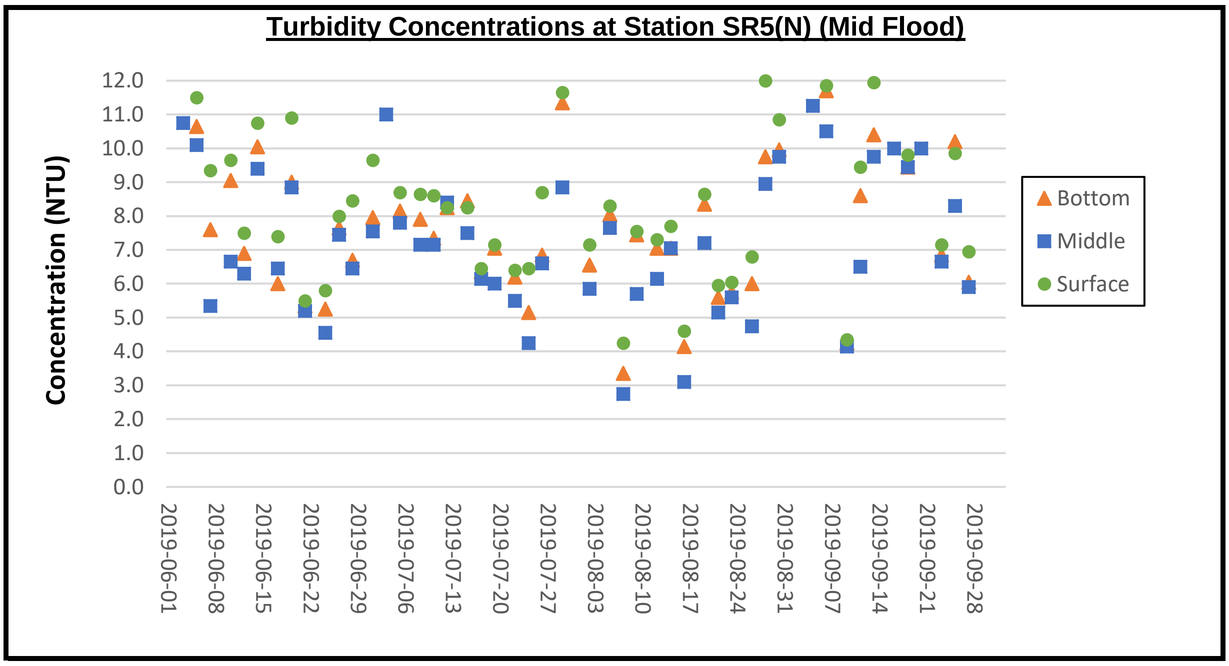

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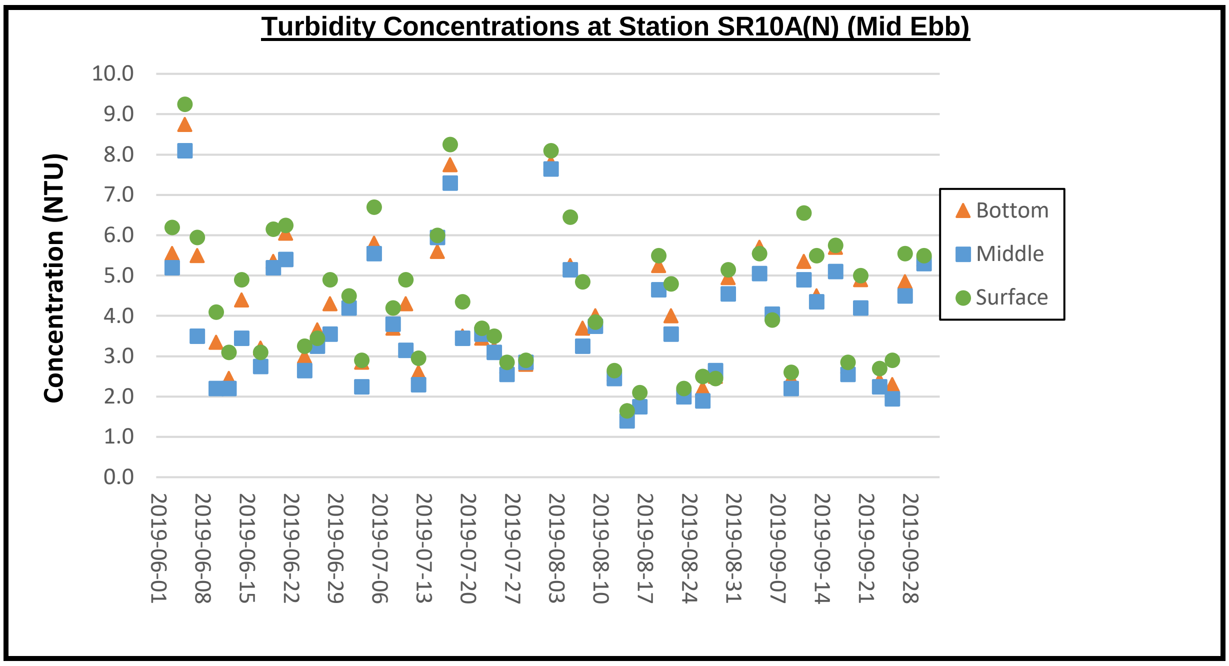

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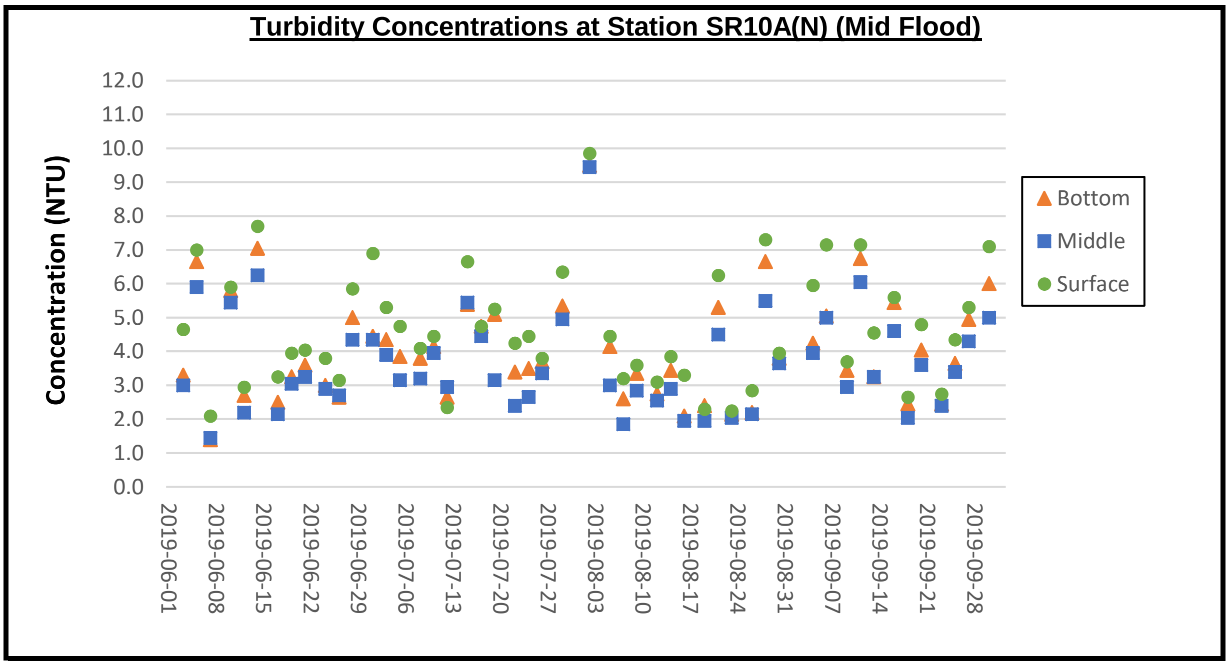

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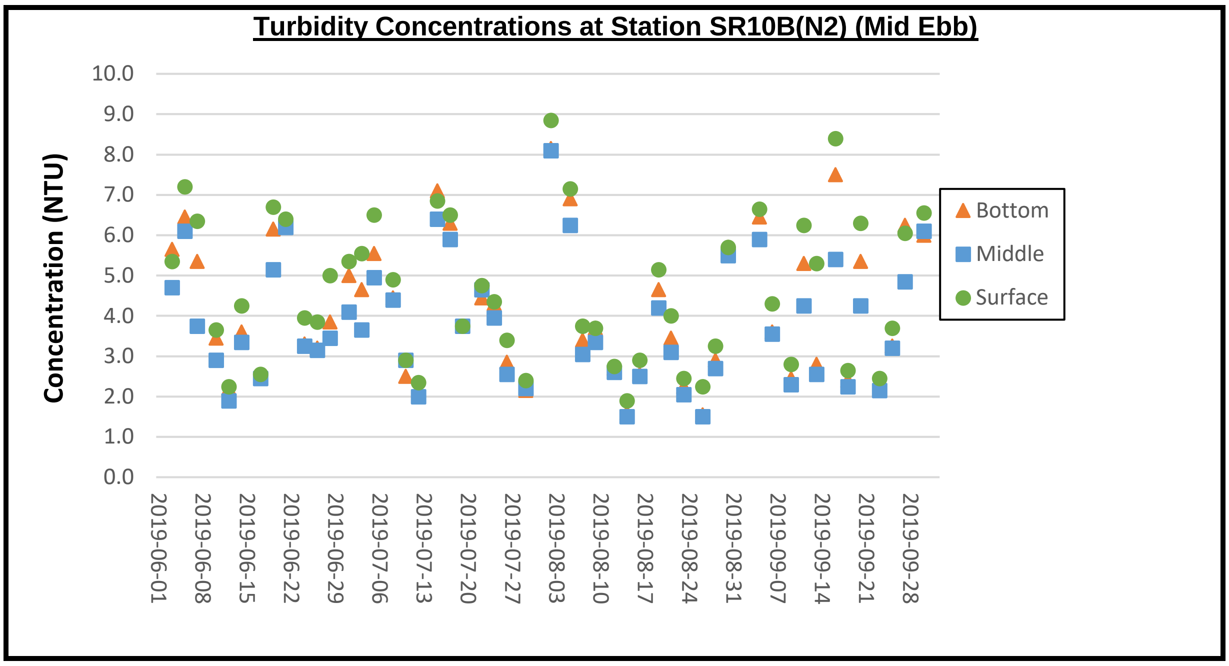

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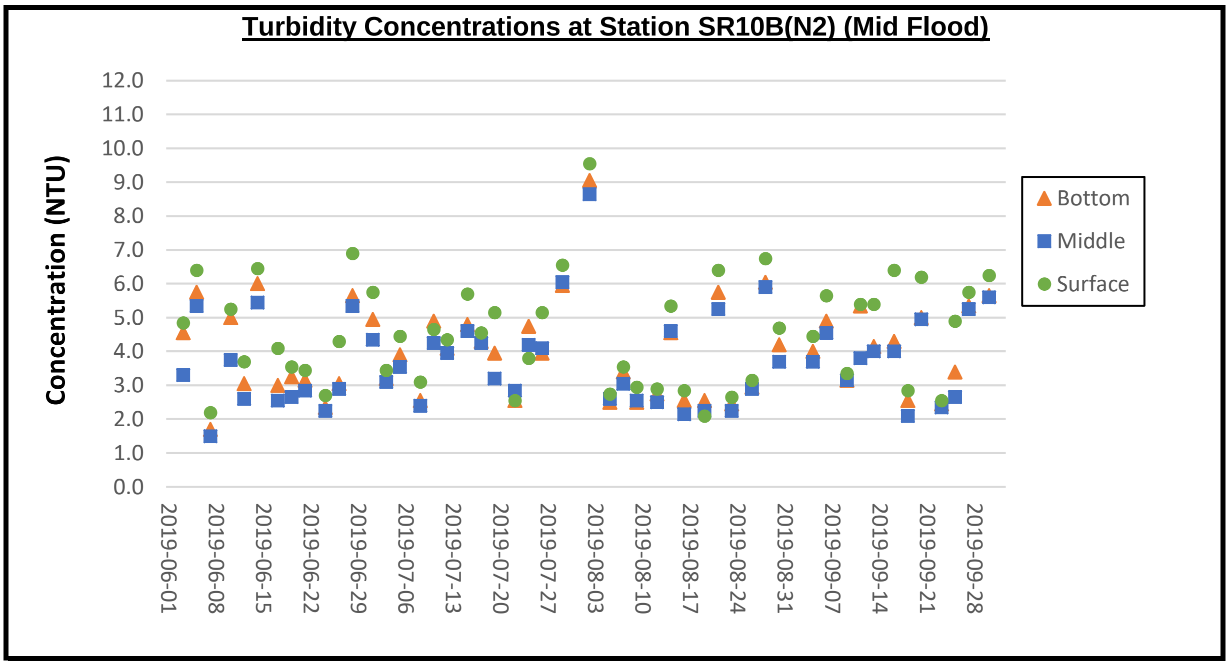

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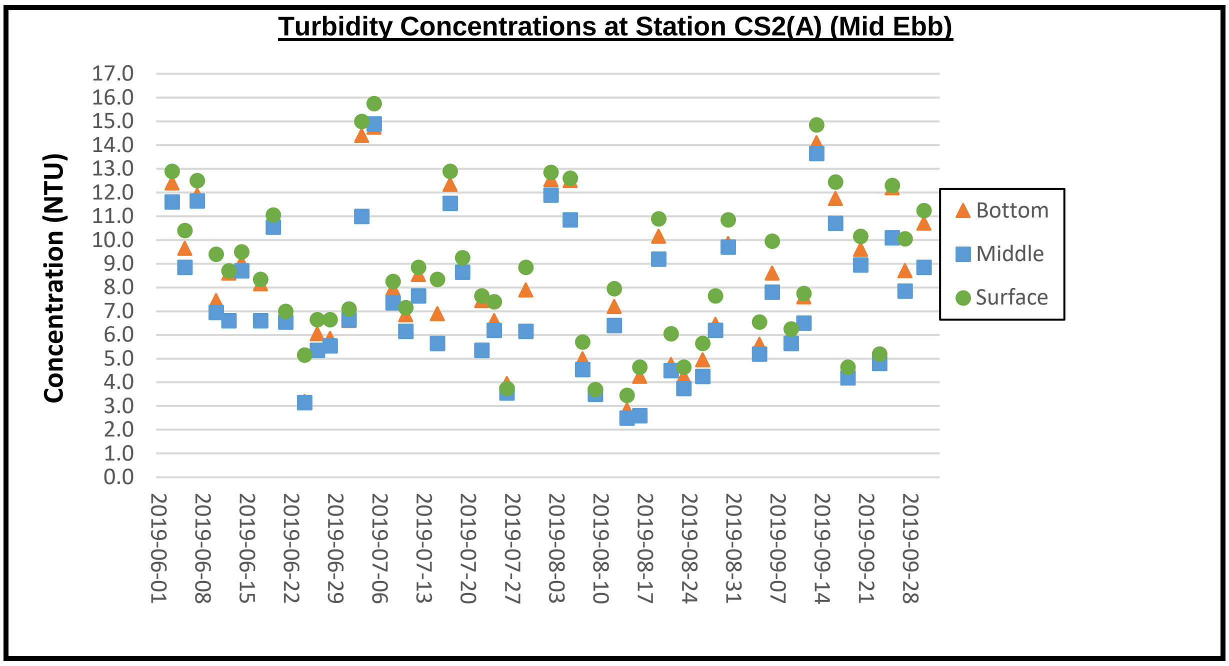

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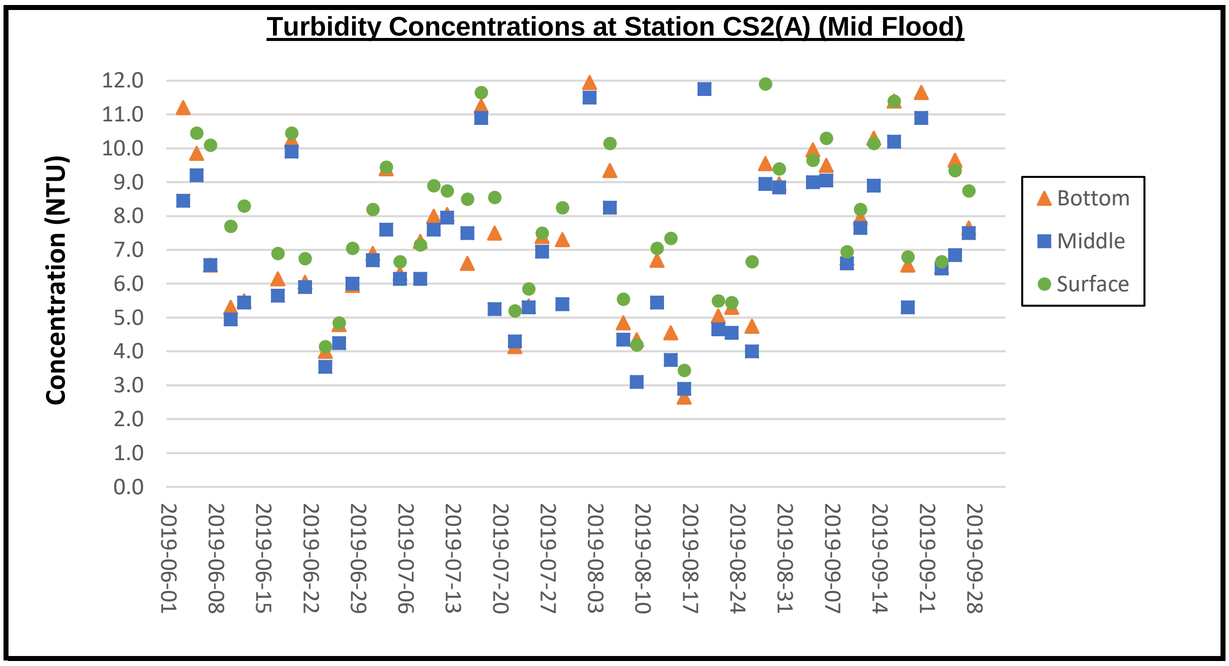

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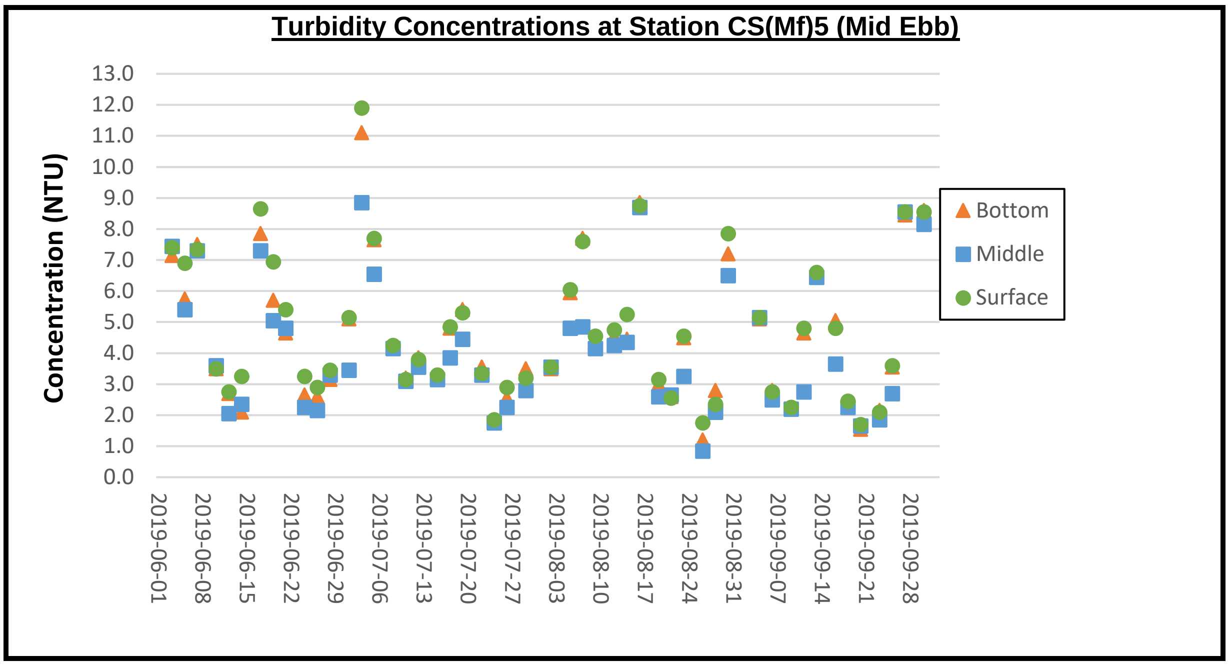

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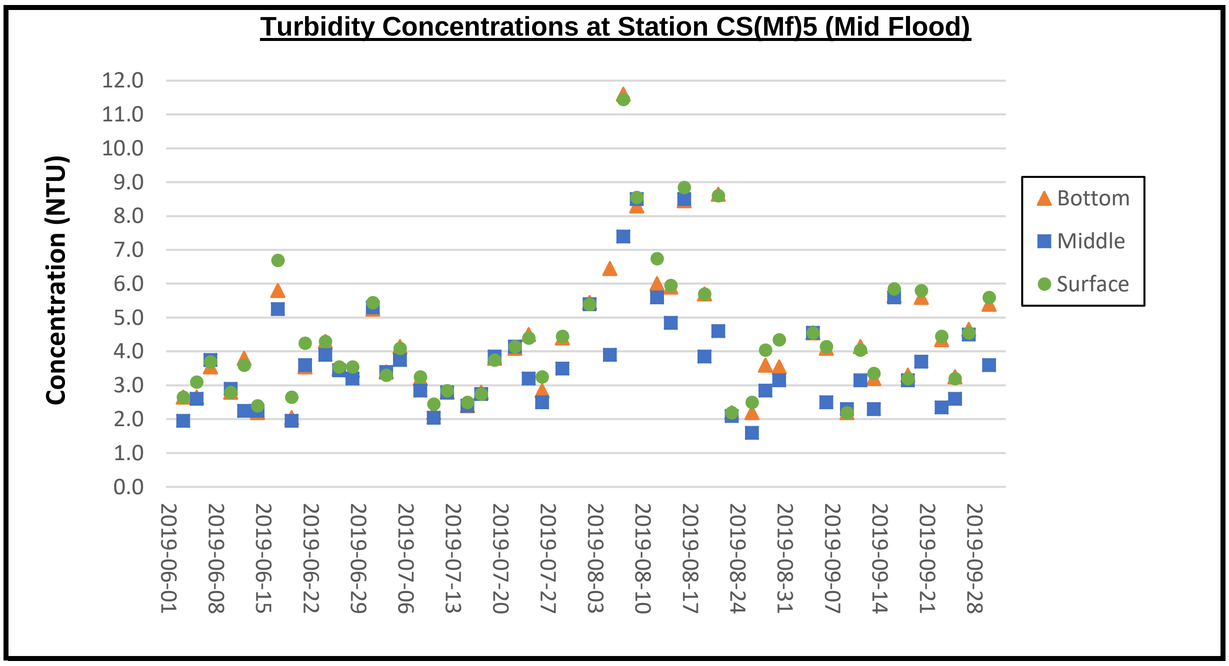

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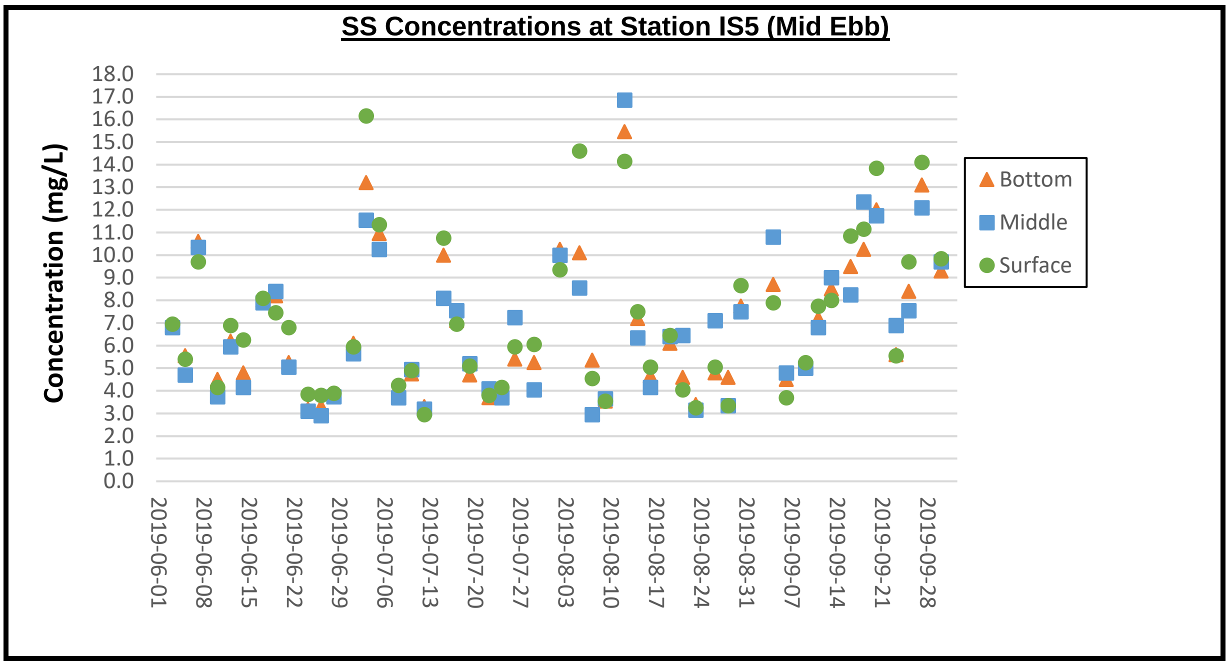

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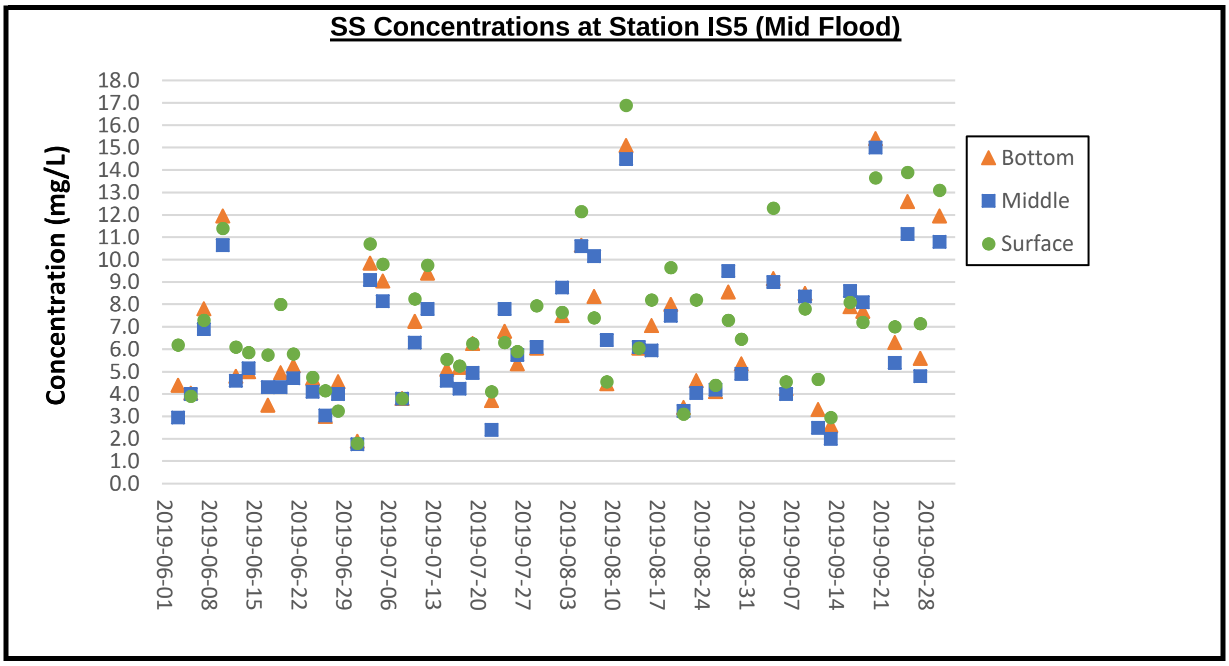

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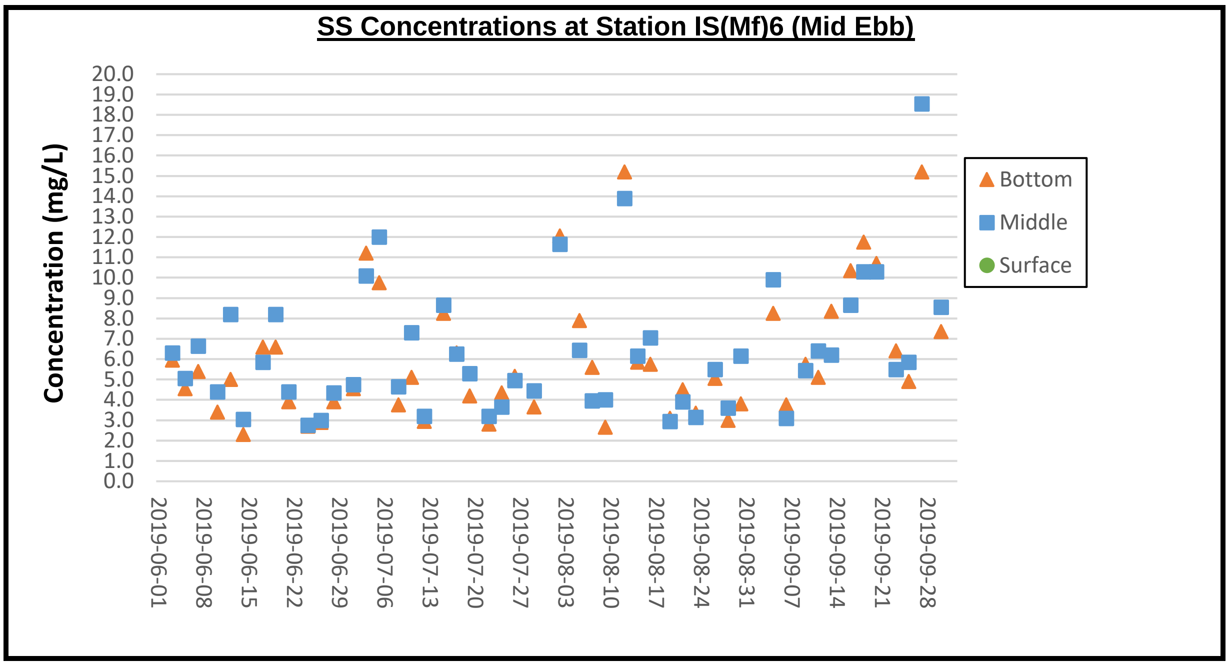

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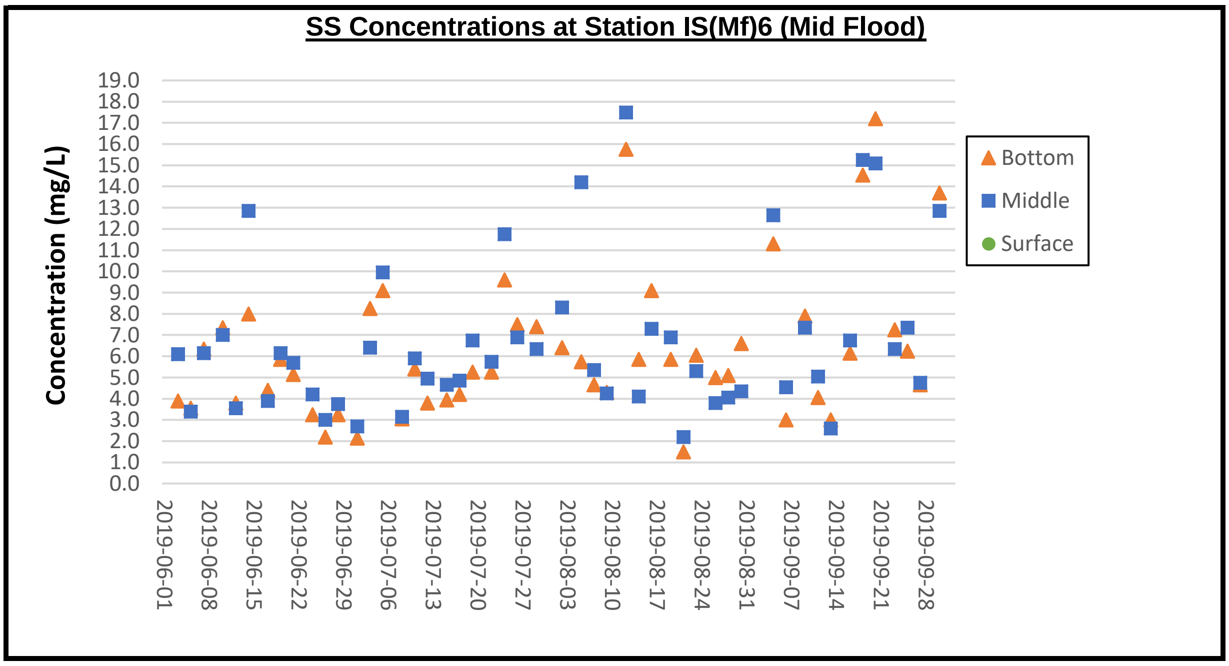

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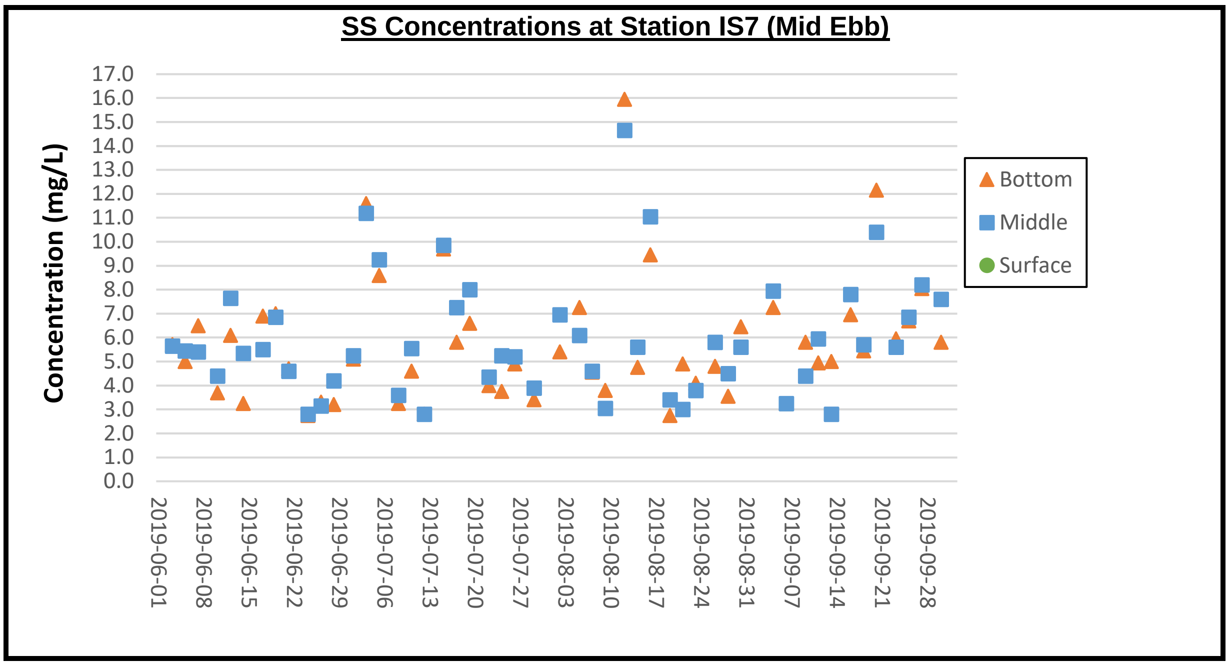

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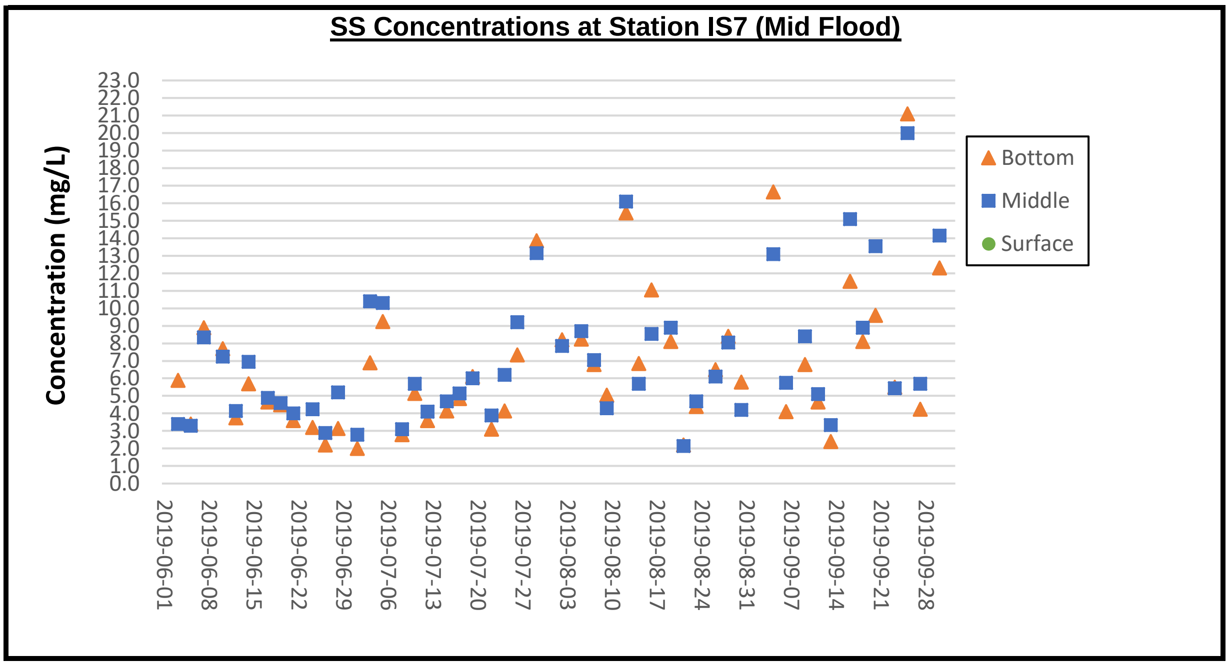

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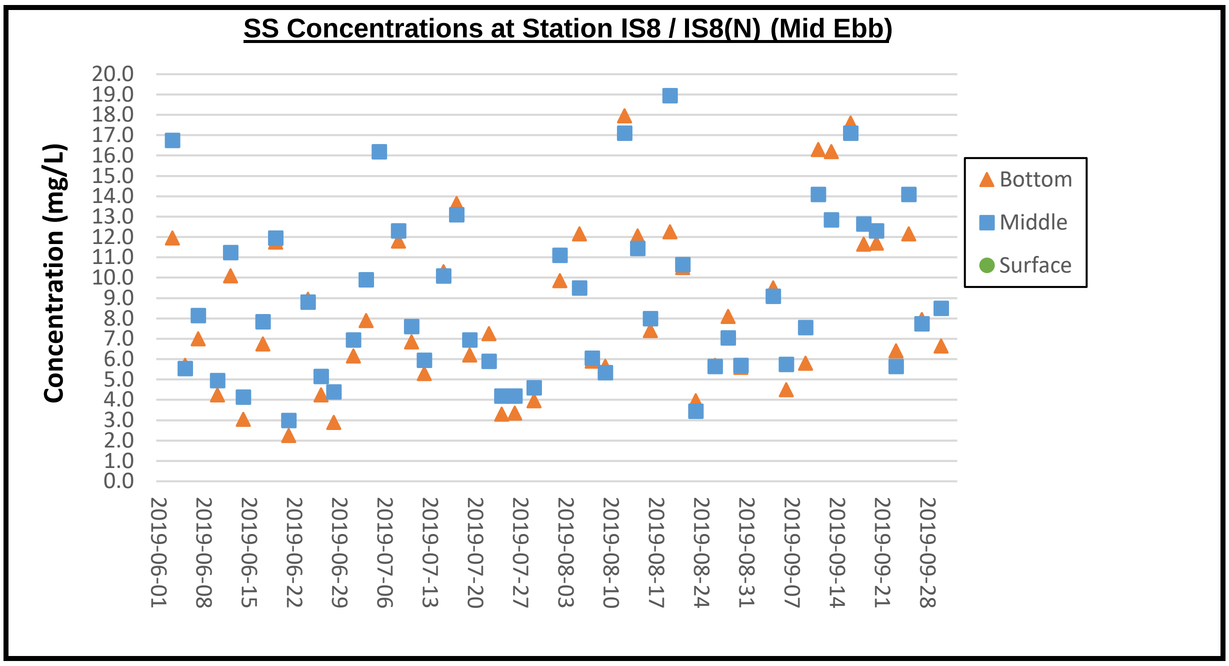

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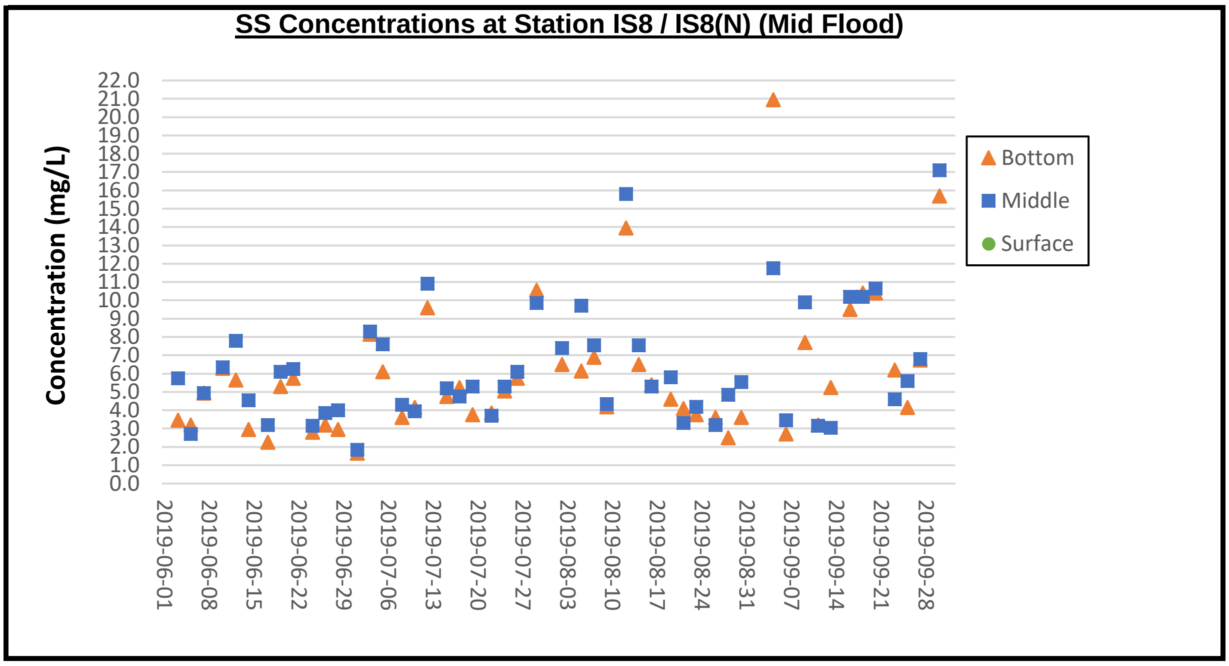

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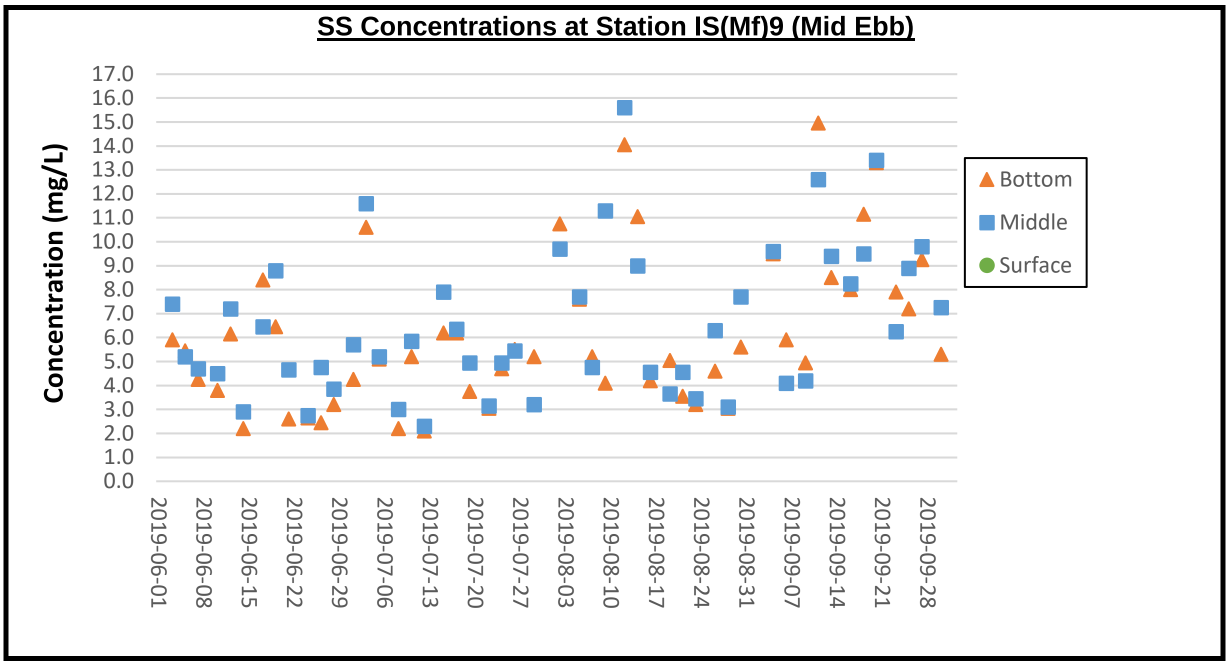

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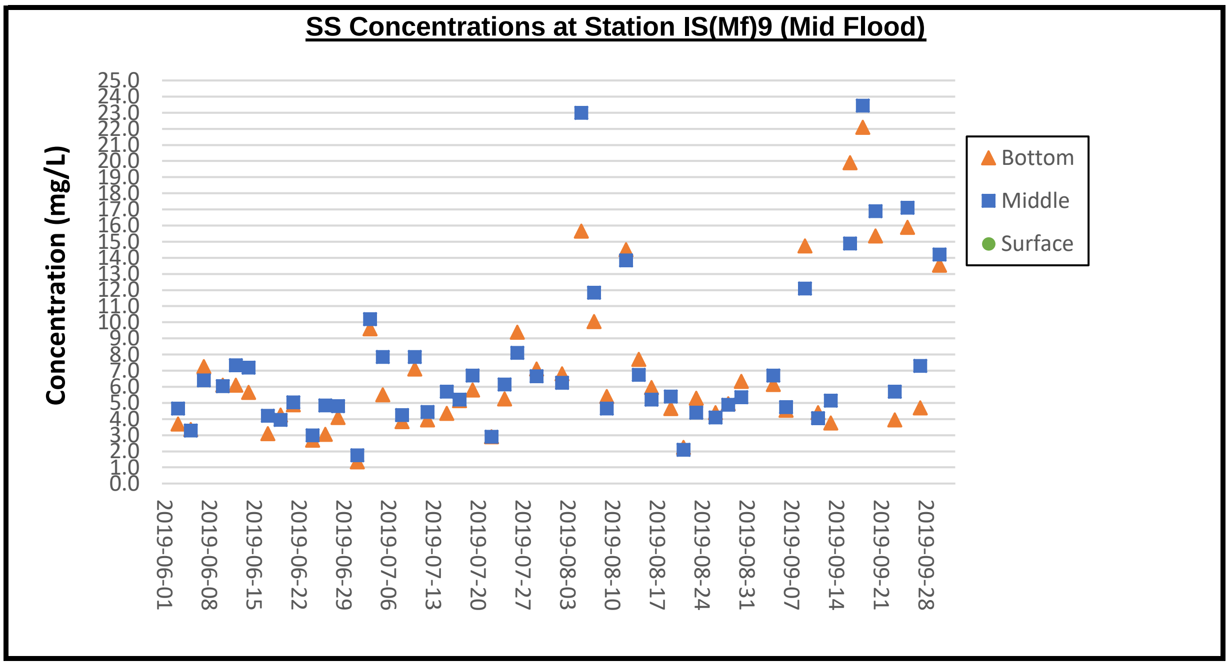

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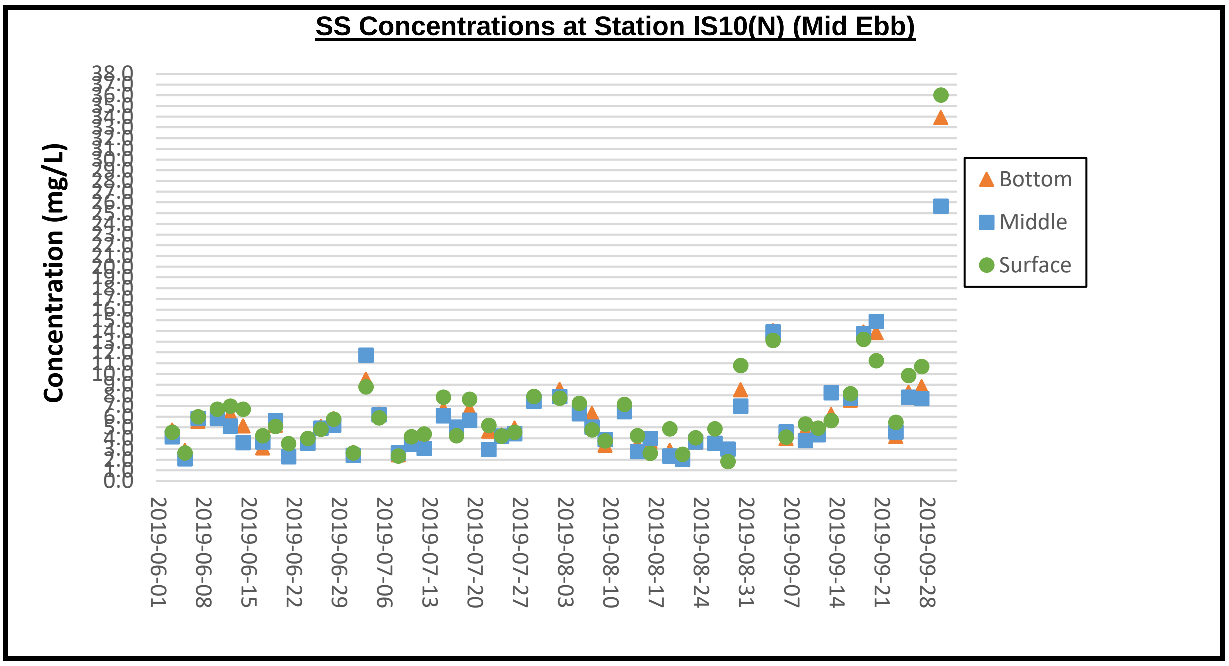

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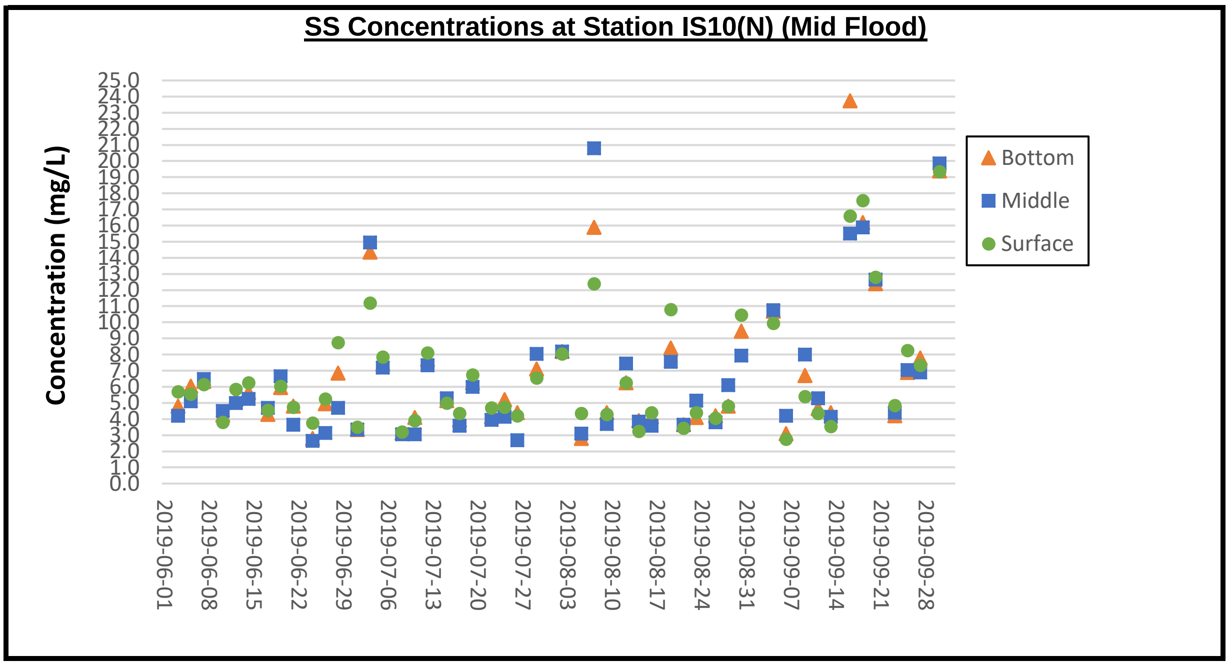

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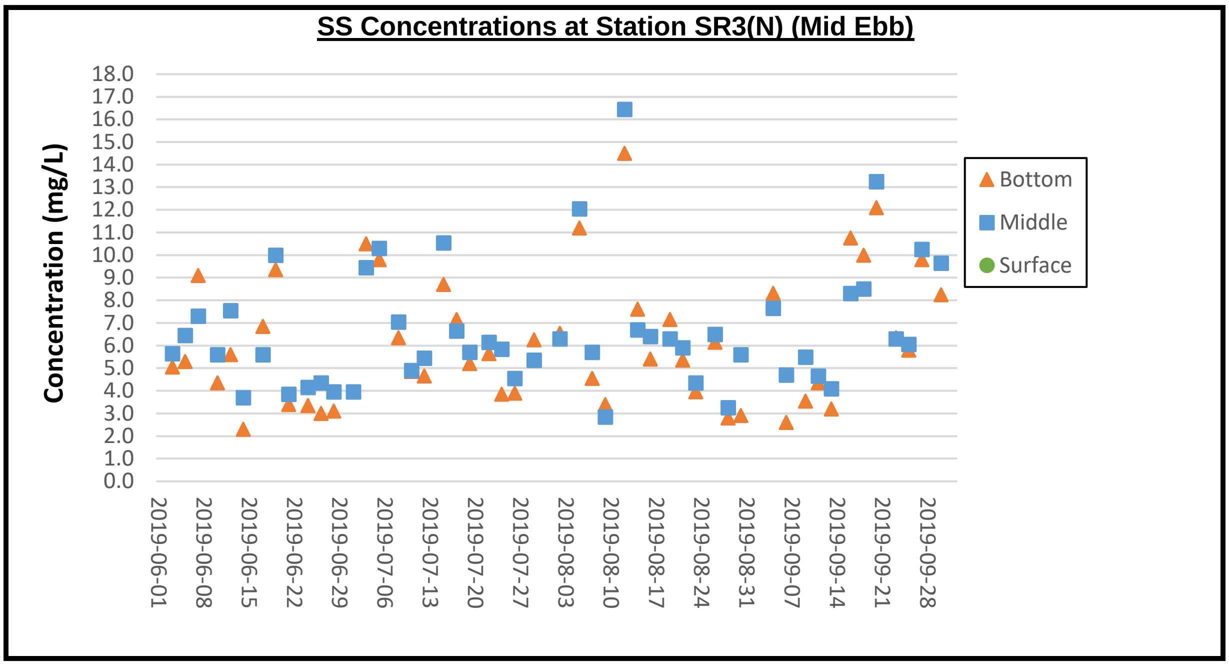

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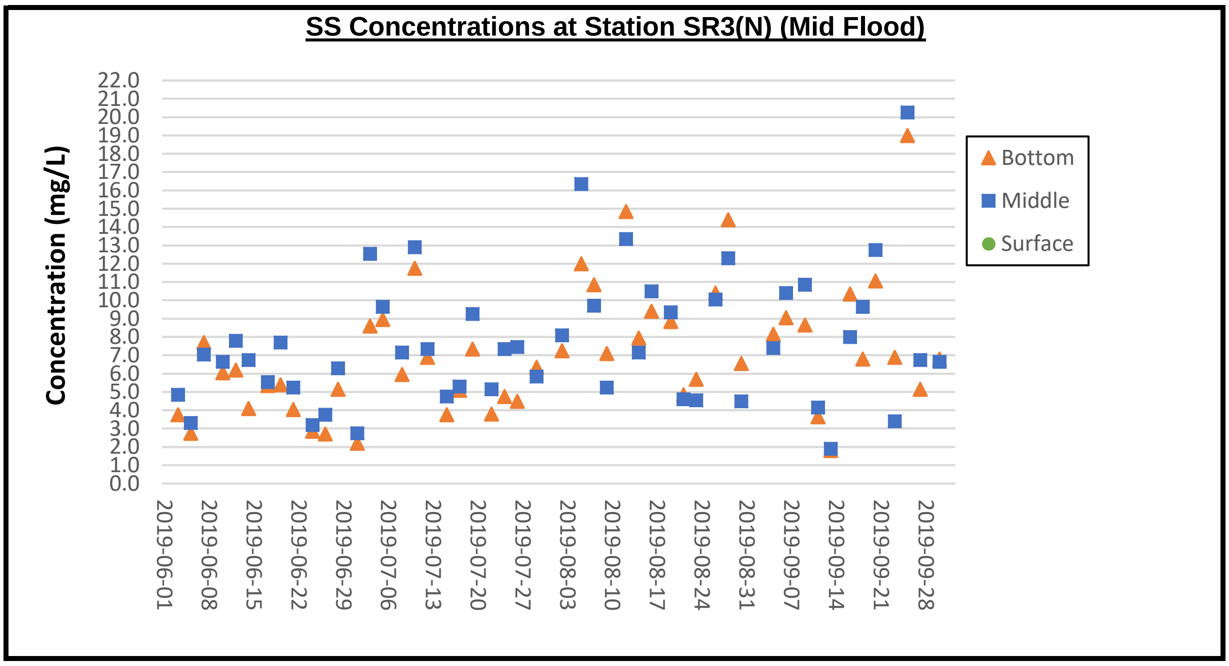

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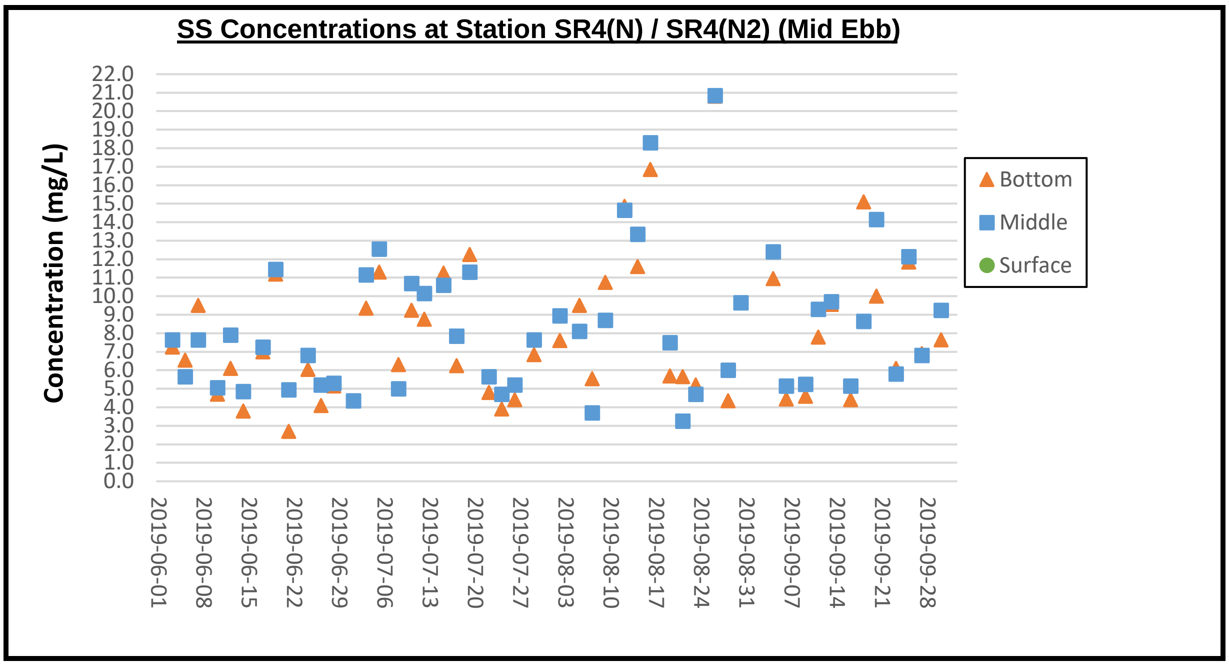

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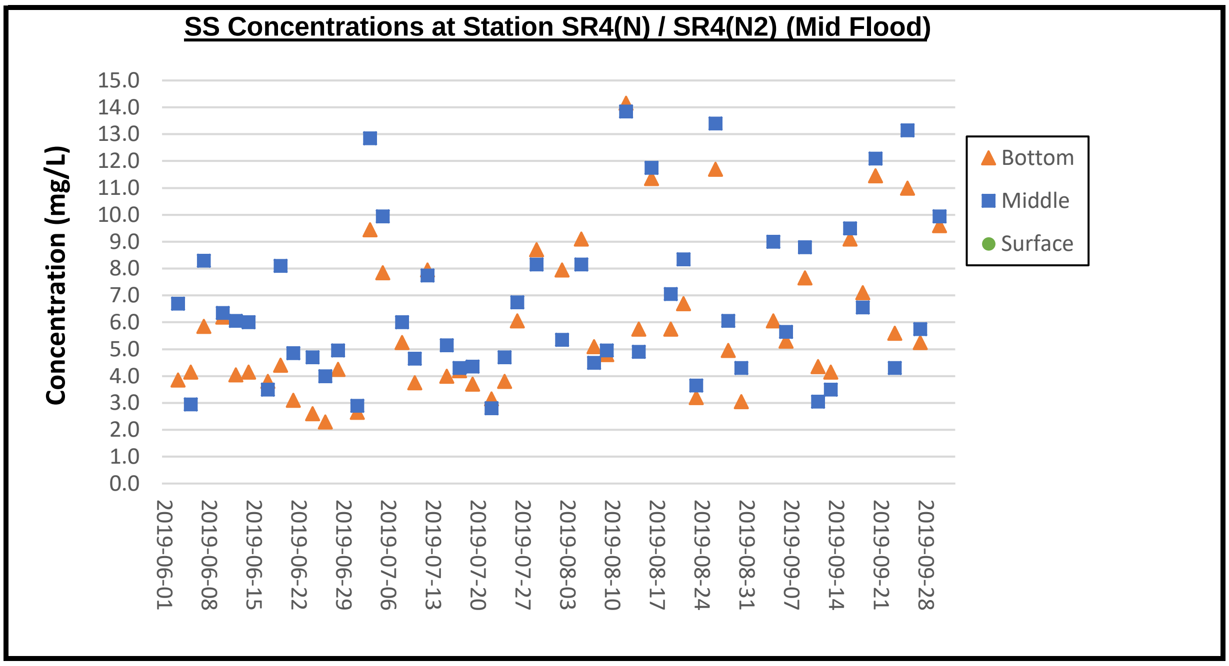

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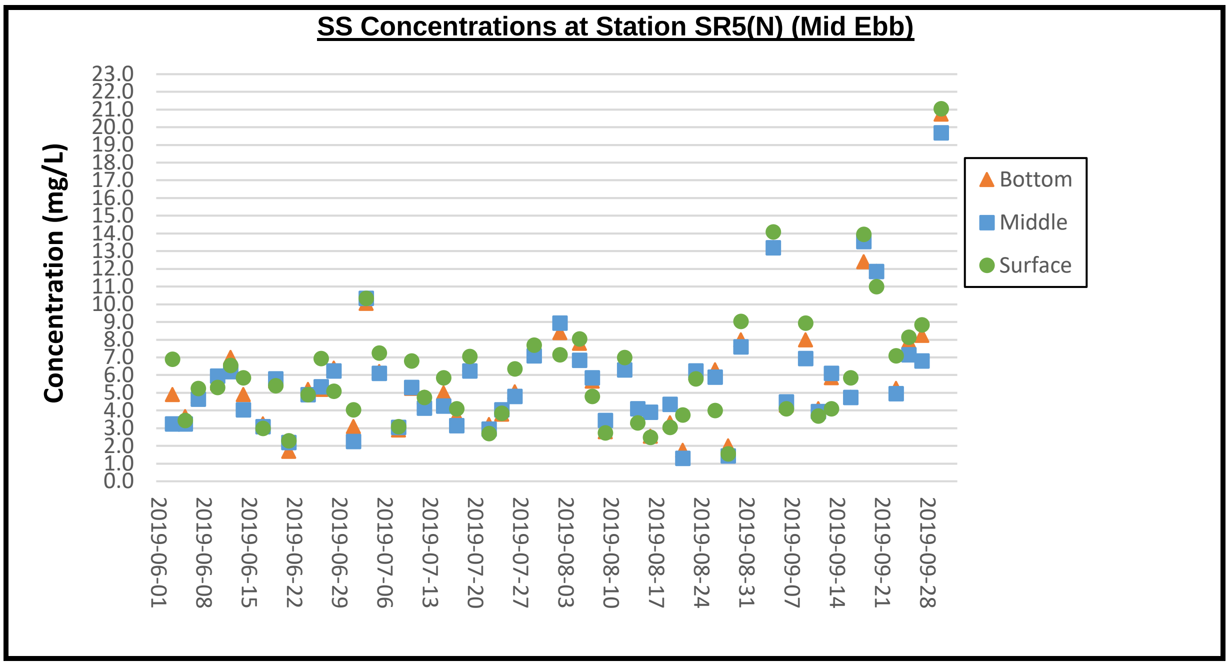

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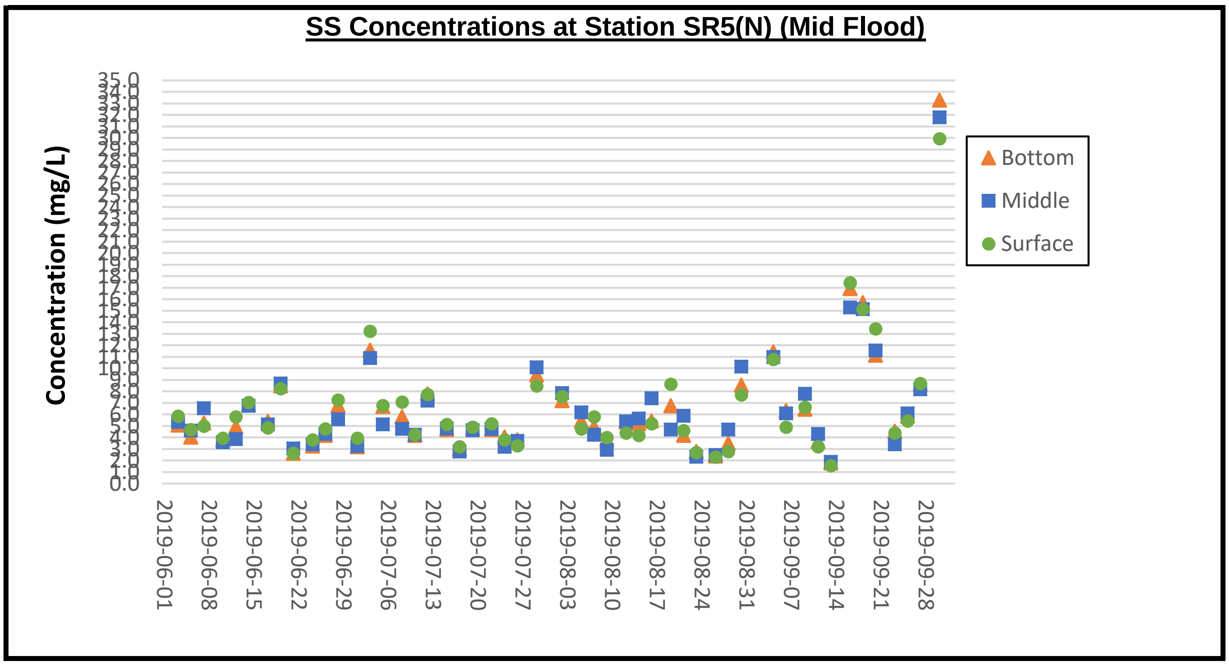

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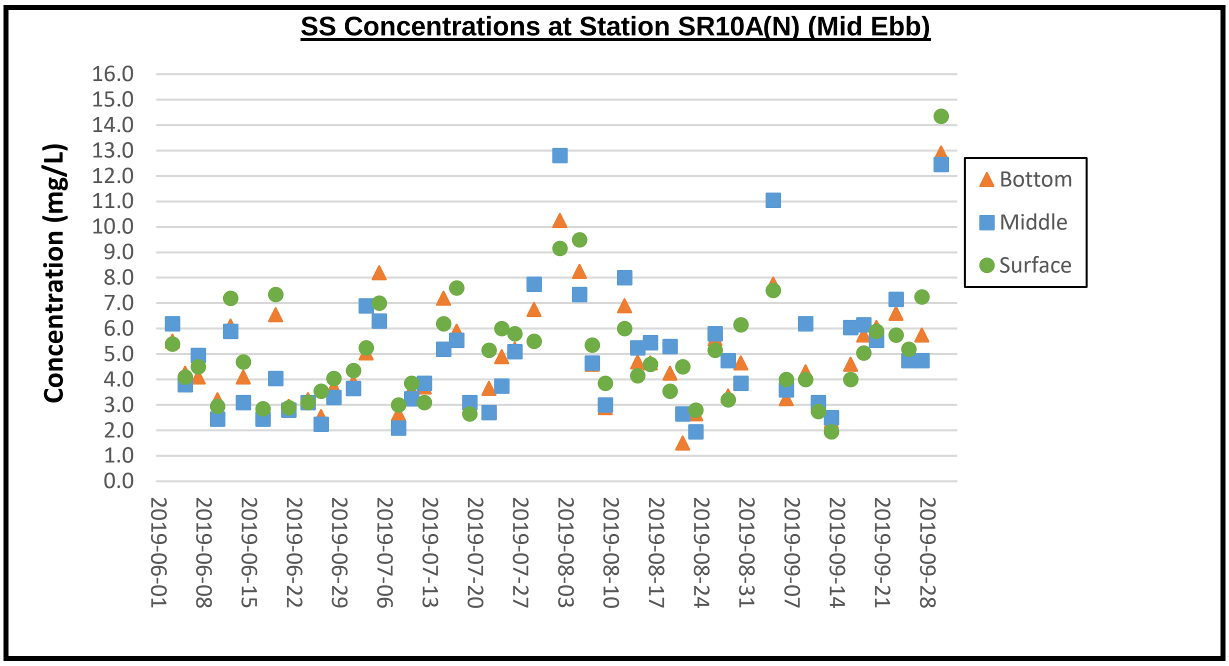

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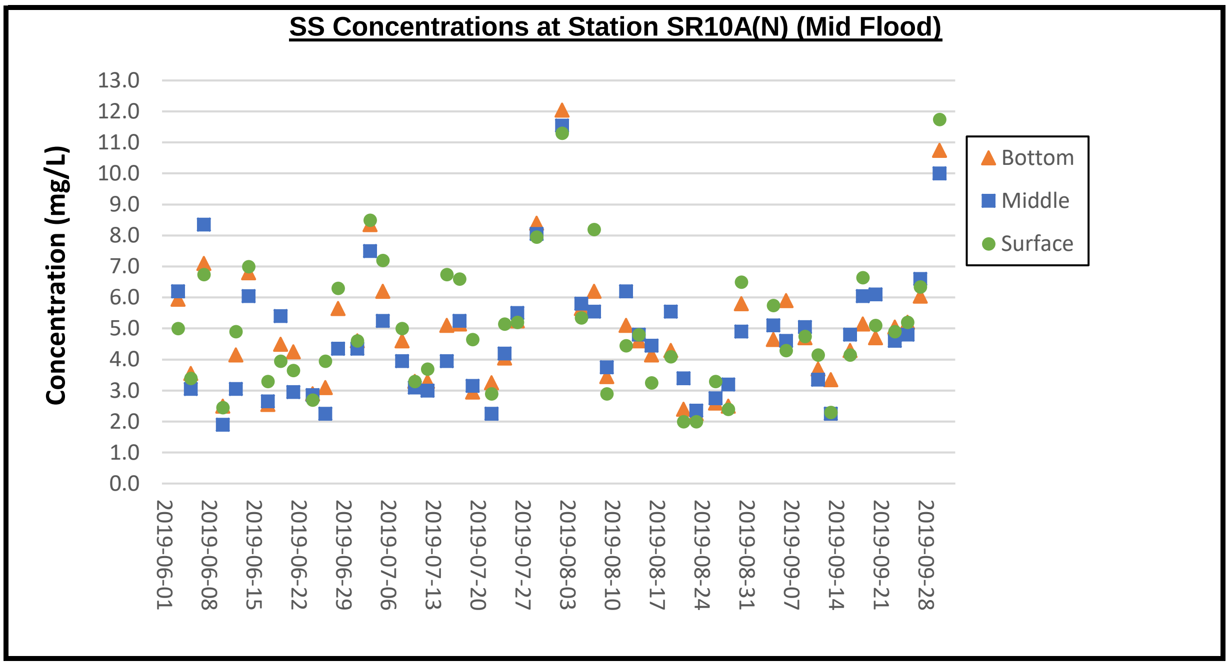

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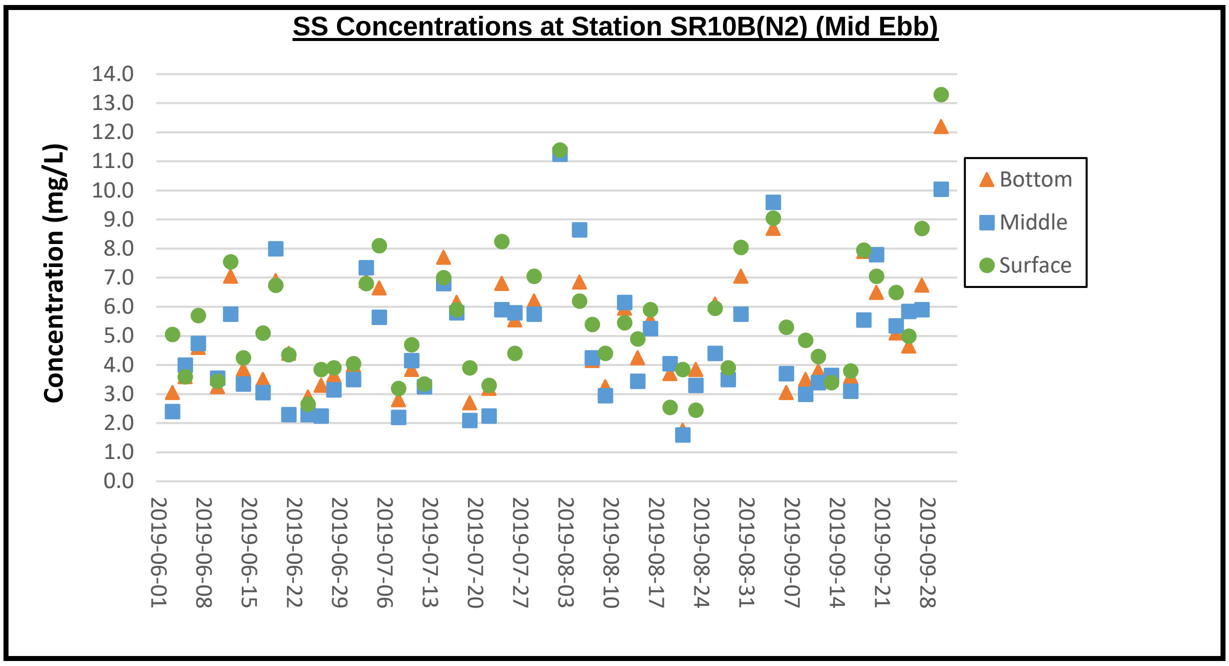

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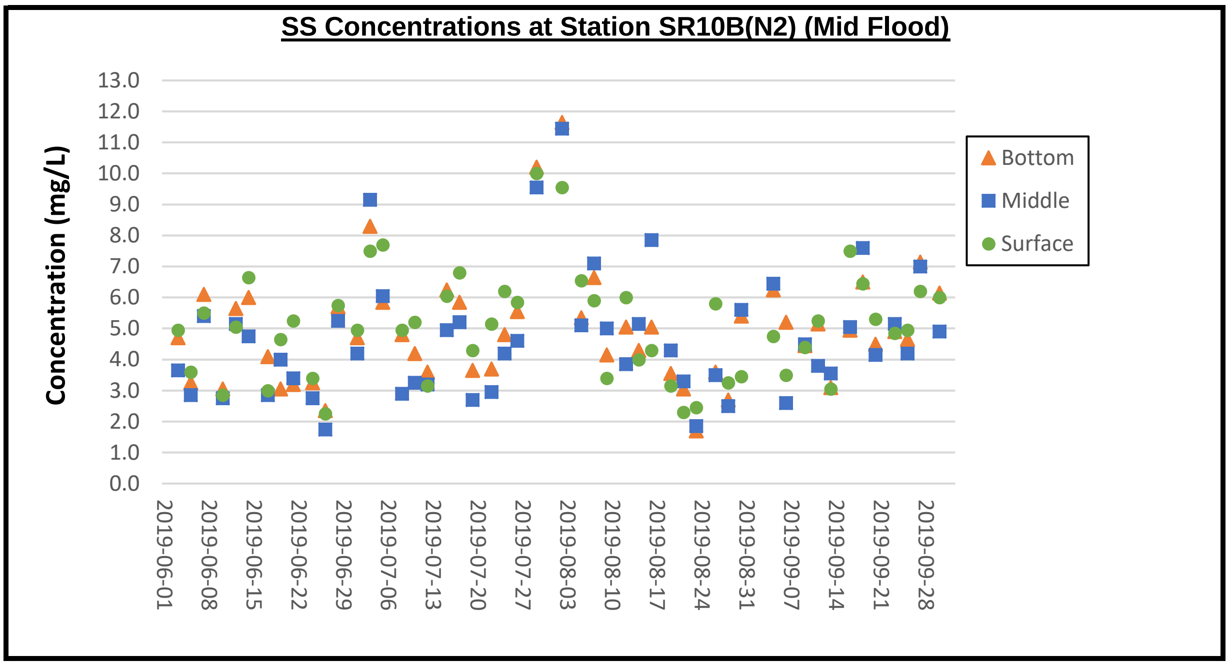

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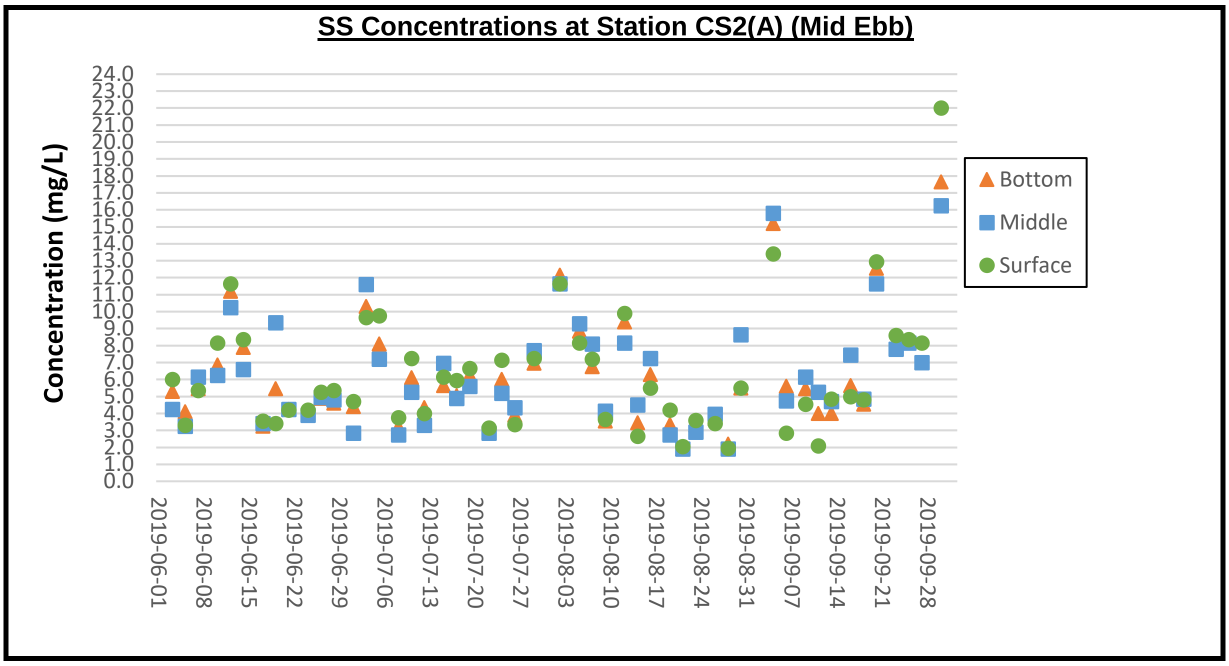

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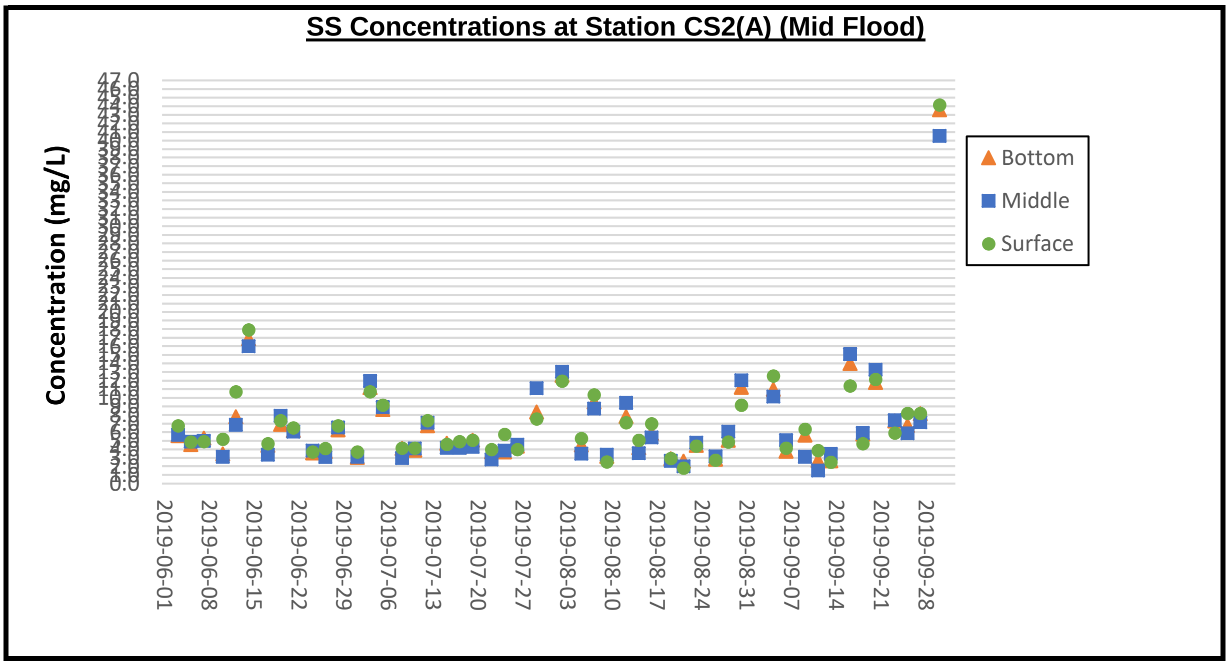

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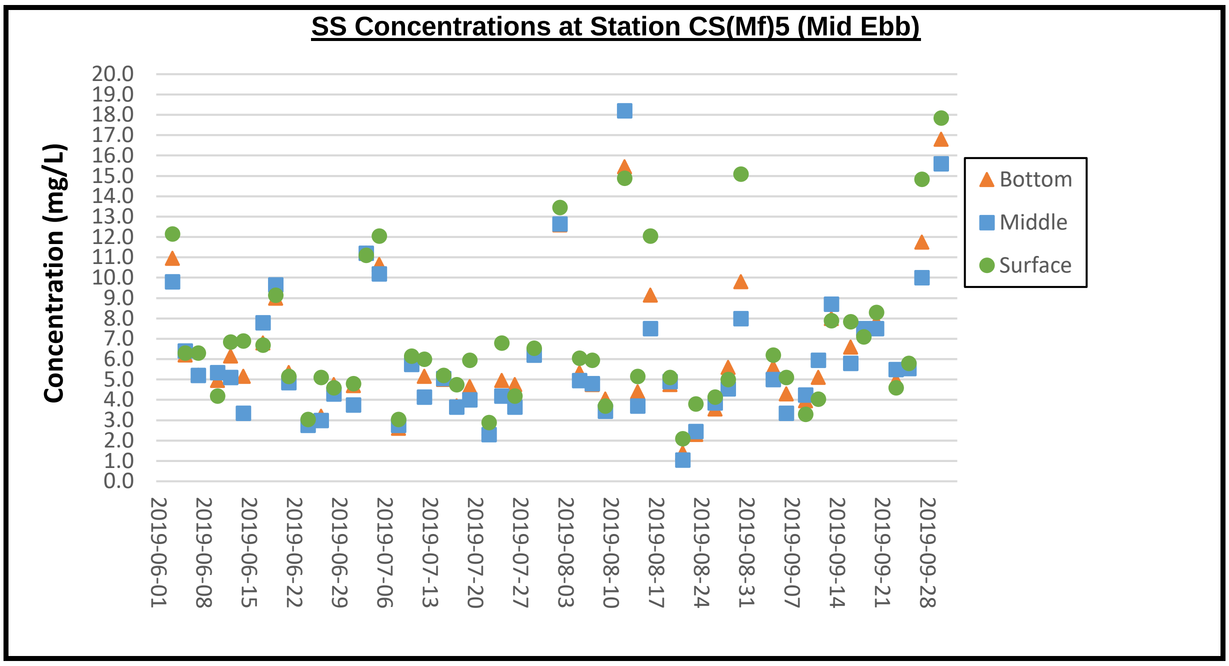

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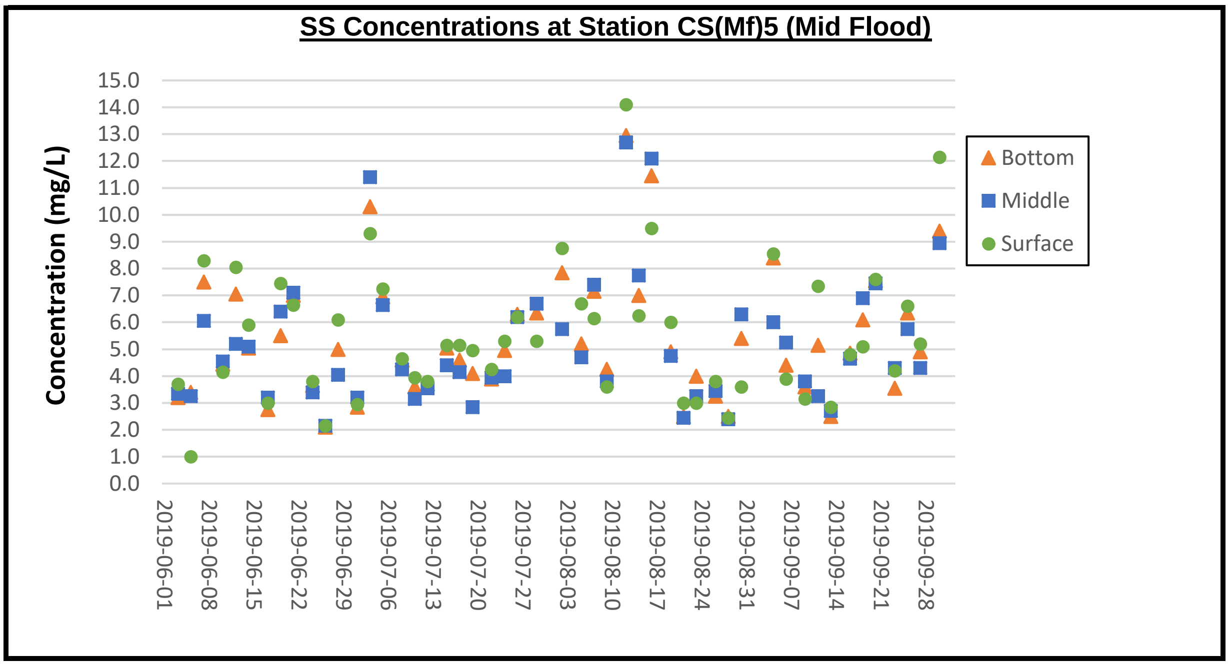

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APPENDIX F

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;	1. Submit proposals for remedial to SO within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.

<table>
<tr><th rowspan="2">Event</th><th colspan="4">Action</th></tr>
<tr><th>ET</th><th>IEC</th><th>SO</th><th>Contractor</th></tr>
<tr><td>Exceedance of Limit Level for one sample</td><td>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.</td><td>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.</td><td>1. Confirm receipt of notification of failure in writing;
2. Notify Contractor;
3. Ensure remedial measures properly implemented.</td><td>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.</td></tr>
<tr><td>Exceedance of Limit Level for two or more consecutive samples</td><td>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.</td><td>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.</td><td>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.</td><td>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.</td></tr>
</table>

Event and Action Plan for 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. Identify source; 2. Inform IEC, SO, EPD and Contractor; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Inform IEC, SO and EPD the causes and actions taken for the exceedances; 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 Contractors 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. Require Contractor to propose remedial measures for the analysed noise problem; 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.

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; Ensure mitigation measures are implemented; 6. 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.
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.

Event	Action			
	ET Leader	IEC	SO	Contractor
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;	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.

Event and Action Plan for Dolphin Monitoring

Event	ET Leader	IEC	ER / SOR	Contractor
Action Level	1. Repeat statistical data analysis to confirm findings; 2. Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences; 3. Identify source(s) of impact; 4. Inform the IEC, ER/SOR and Contractor; 5. Check monitoring data. 6. Review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary.	1. Check monitoring data submitted by ET and Contractor; 2. Discuss monitoring results and findings with the ET and the Contractor.	1. Discuss monitoring with the IEC and any other measures proposed by the ET; 2. If ER/SOR is satisfied with the proposal of any other measures, ER/SOR to signify the agreement in writing on the measures to be implemented.	1. Inform the ER/SOR and confirm notification of the non-compliance in writing; 2. Discuss with the ET and the IEC and propose measures to the IEC and the ER/SOR; 3. Implement the agreed measures.
Limit Level	1. Repeat statistical data analysis to confirm findings; 2. Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences; 3. Identify source(s) of impact; 4. Inform the IEC, ER/SOR and Contractor of findings; 5. Check monitoring data; 6. Repeat review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary;	1. Check monitoring data submitted by ET and Contractor; 2. Discuss monitoring results and findings with the ET and the Contractor; 3. Attend the meeting to discuss with ET, ER/SOR and Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures; 4. Review proposals for additional monitoring and any other mitigation measures submitted by ET and Contractor and advise ER/SOR of the results and findings accordingly; 5. Supervise / Audit the	1. Attend the meeting to discuss with ET, IEC and Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures; 2. If ER/SOR is satisfied with the proposals for additional dolphin monitoring and/or any other mitigation measures submitted by ET and Contractor and verified by IEC, ER/SOR to signify the agreement in writing on such proposals and any other mitigation measures; 3. Supervise the implementation of additional monitoring	1. Inform the ER/SOR and confirm notification of the non-compliance in writing; 2. Attend the meeting to discuss with ET, IEC and ER/SOR the necessity of additional dolphin monitoring and any other potential mitigation measures; 3. Jointly submit with ET to IEC a proposal of additional dolphin monitoring and/or any other mitigation measures when necessary; 4. Implement the agreed additional dolphin monitoring and/or any other mitigation measures.

Event	ET Leader	IEC	ER / SOR	Contractor
	7. If ET proves that the source of impact is caused by any of the construction activity by the works contract, ET to arrange a meeting to discuss with IEC, ER/SOR and Contractor the necessity of additional dolphin monitoring and/or any other potential mitigation measures (e.g., consider to modify the perimeter silt curtain or consider to control/temporarily stop relevant construction activity etc.) and submit to IEC a proposal of additional dolphin monitoring and/or mitigation measures where necessary.	implementation of additional monitoring and/or any other mitigation measures and advise ER/SOR the results and findings accordingly.	and/or any other mitigation measures.	

Event and Action Plan for Mudflat Monitoring

Event	ET Leader	IEC	SO	Contractor
Density or the distribution pattern of horseshoe crab, seagrass or intertidal soft shore communities recorded in the impact or post-construction monitoring are significantly lower than or different from those recorded in the baseline monitoring.	Review historical data to ensure differences are as a result of natural variation or previously observed seasonal differences; Identify source(s) of impact; Inform the IEC, SO and Contractor; Check monitoring data; Discuss additional monitoring and any other measures, with the IEC and Contractor.	Discuss monitoring with the ET and the Contractor; Review proposals for additional monitoring and any other measures submitted by the Contractor and advise the SO accordingly.	Discuss with the IEC additional monitoring requirements and any other measures proposed by the ET; Make agreement on the measures to be implemented.	Inform the SO and in writing; Discuss with the ET and the IEC and propose measures to the IEC and the ER; Implement the agreed measures.

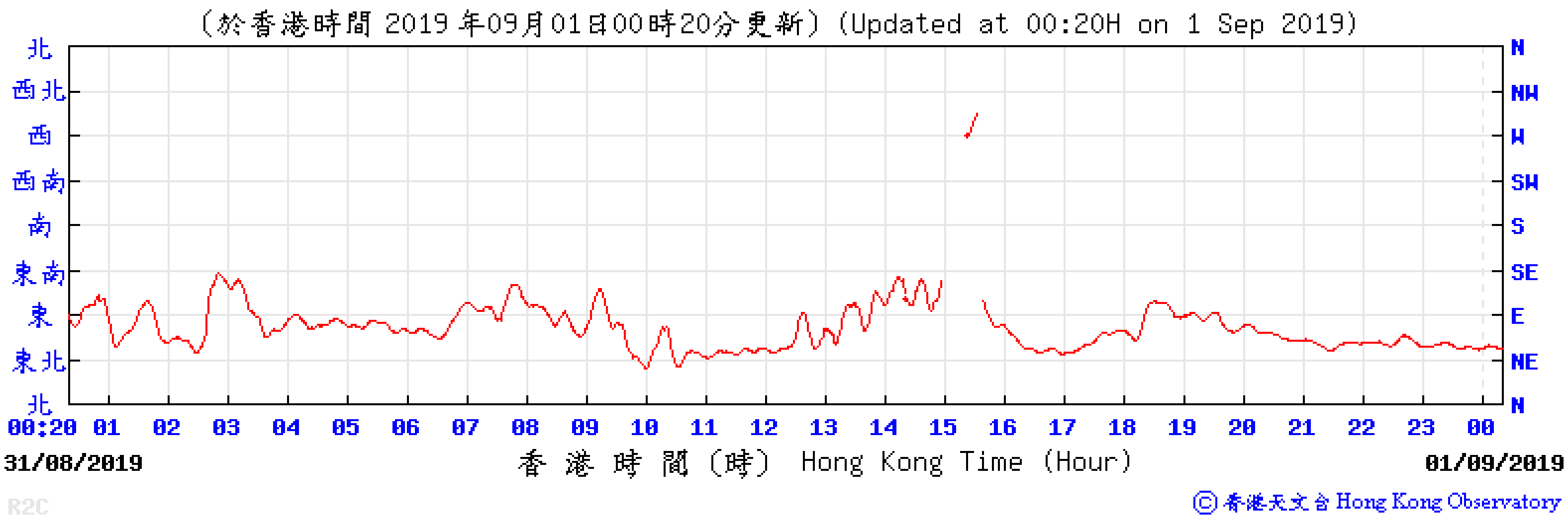
Action Plan for Landscape Works

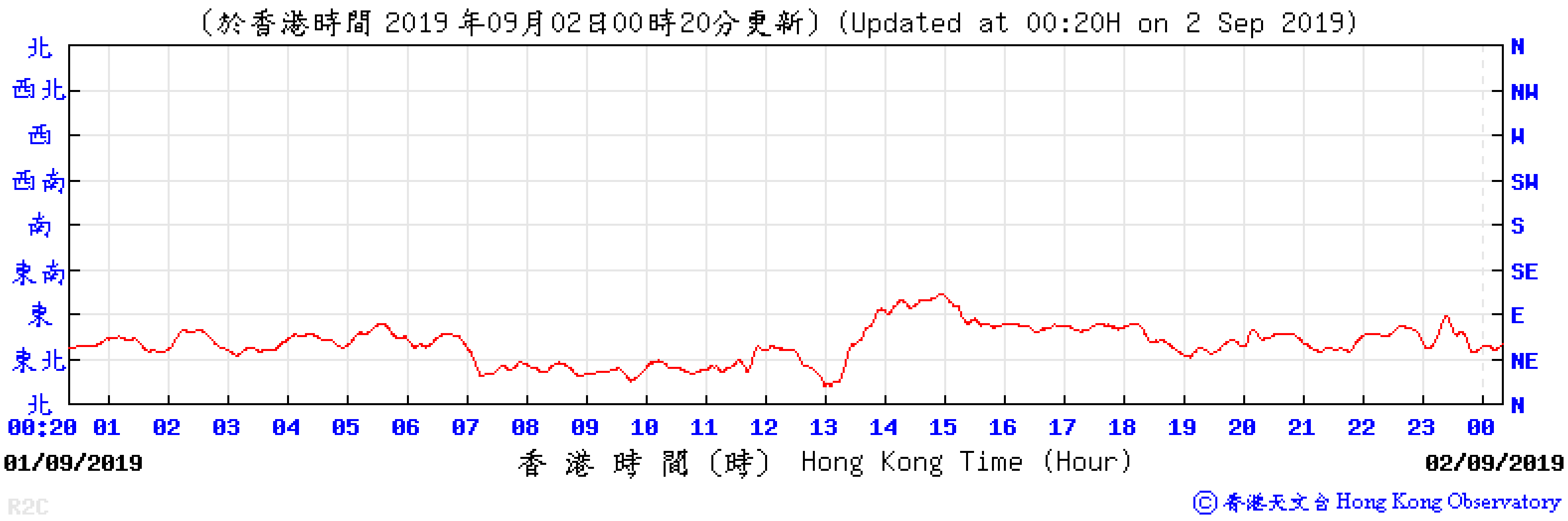
Event	ACTION			
	ET Leader	IEC	SO	Contractor
Conflicts occur	• Check Contractor's proposed remedial design conforms to the requirements of EP and prepare checking report(s)	• Check and endorse ET's report(s). • Check and certify Contractor's proposed remedial design	• Supervise the Contractor to carry out the proposed remediation work	• Propose remedial design and carry out the proposed work

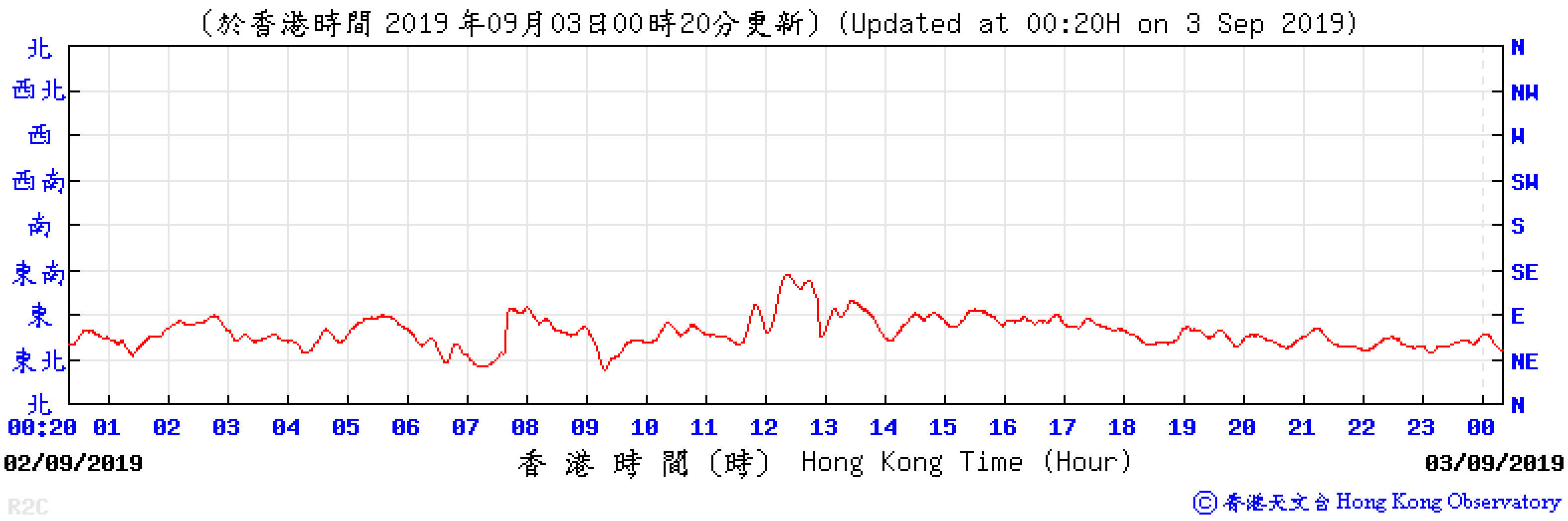
APPENDIX G

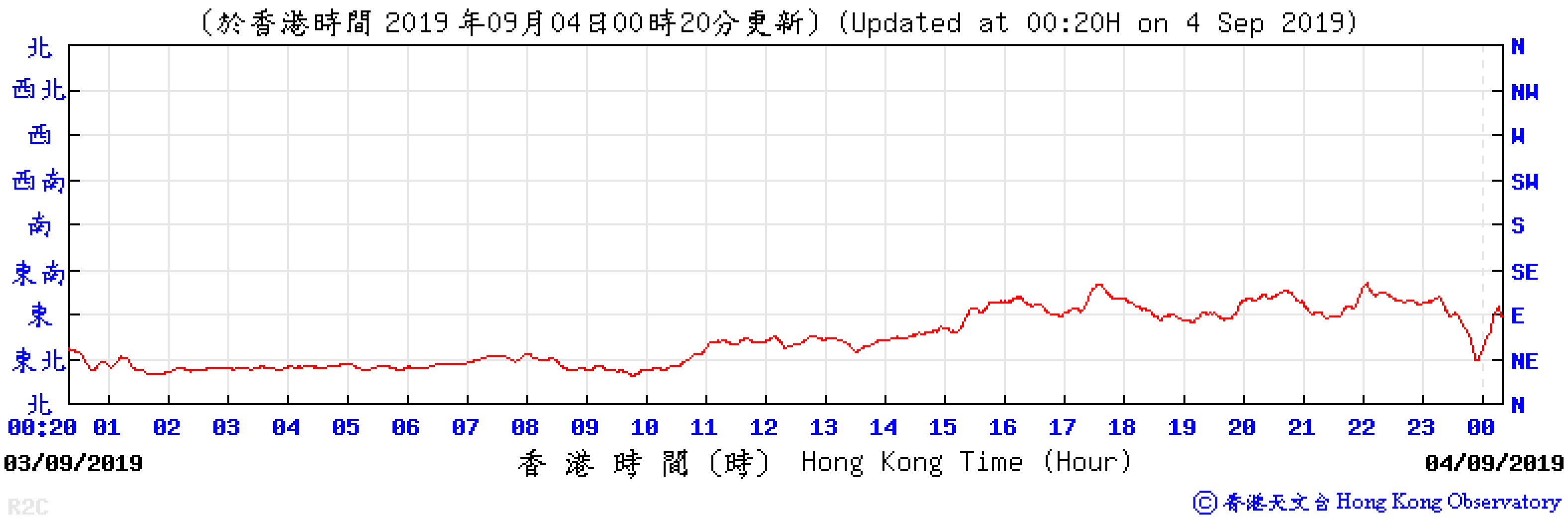
Wind Data

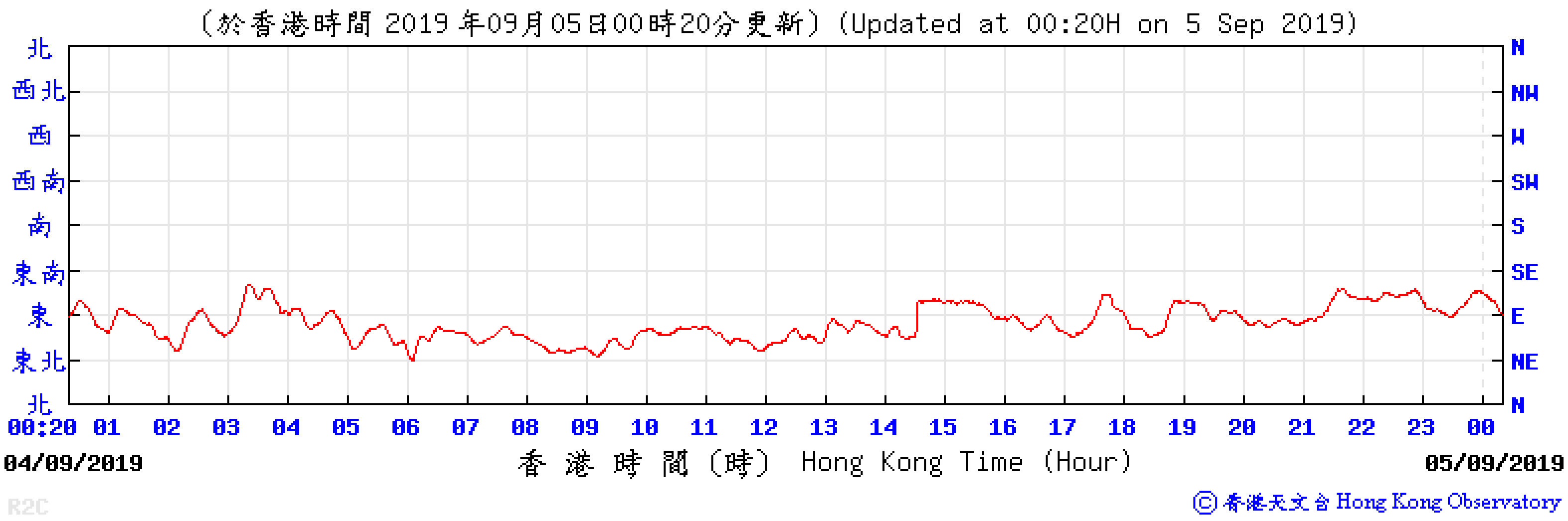
Extracted from Hong Kong Observatory's Chek Lap Kok Weather Station











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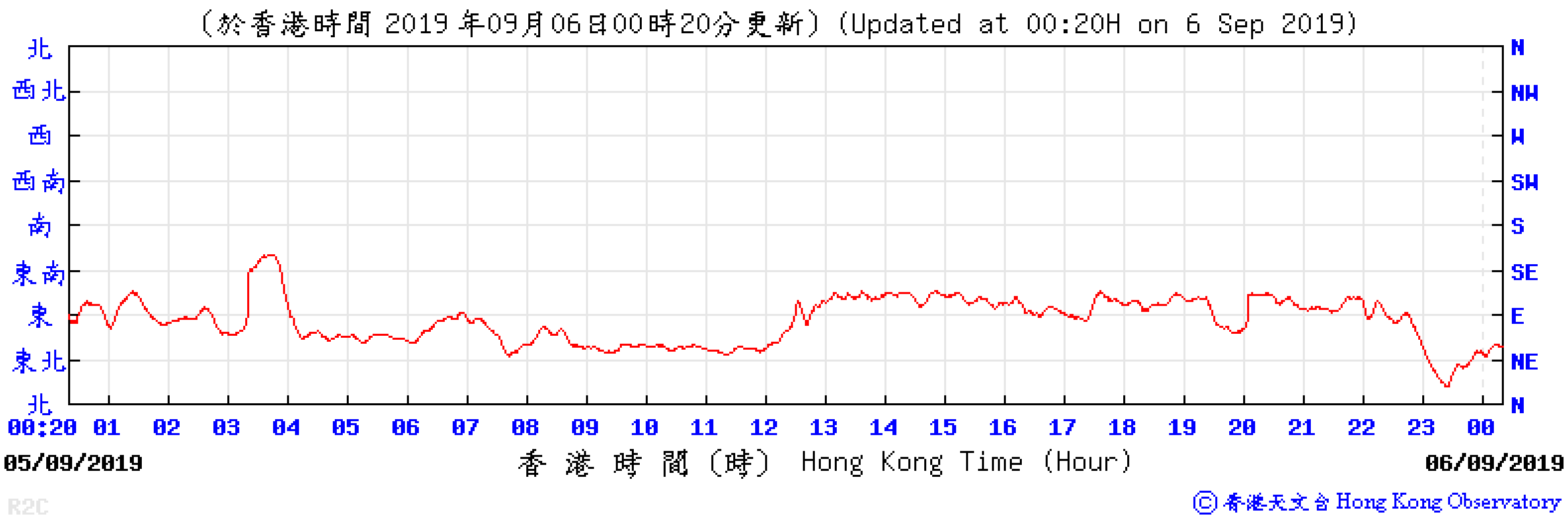
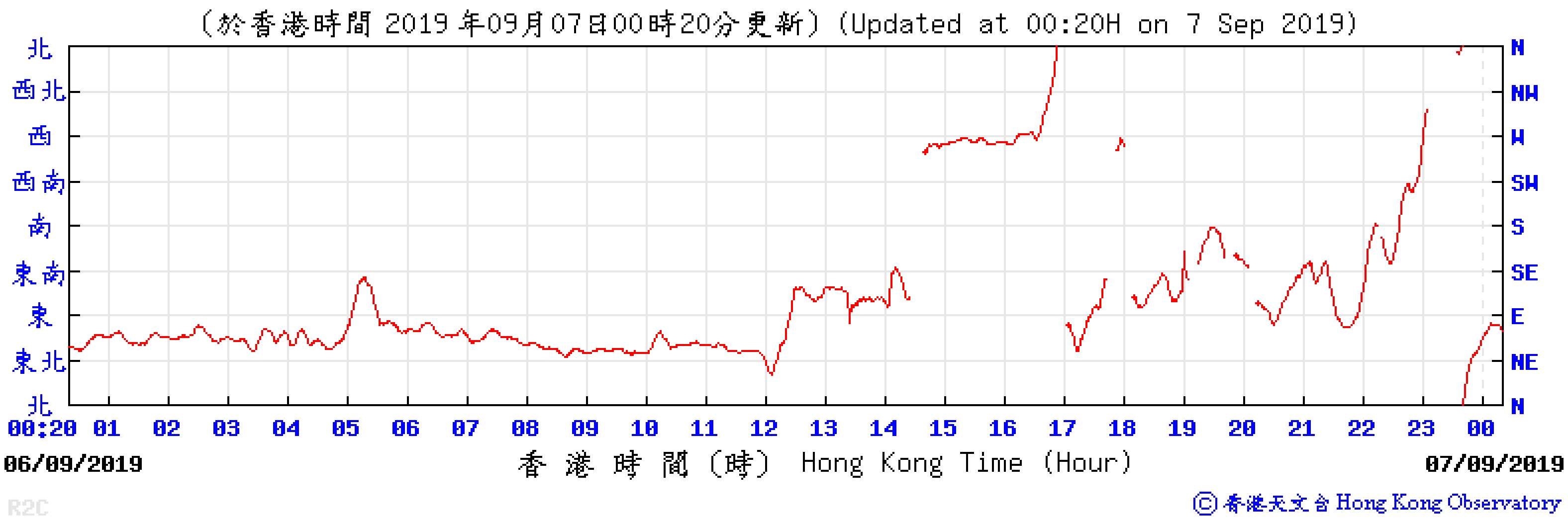
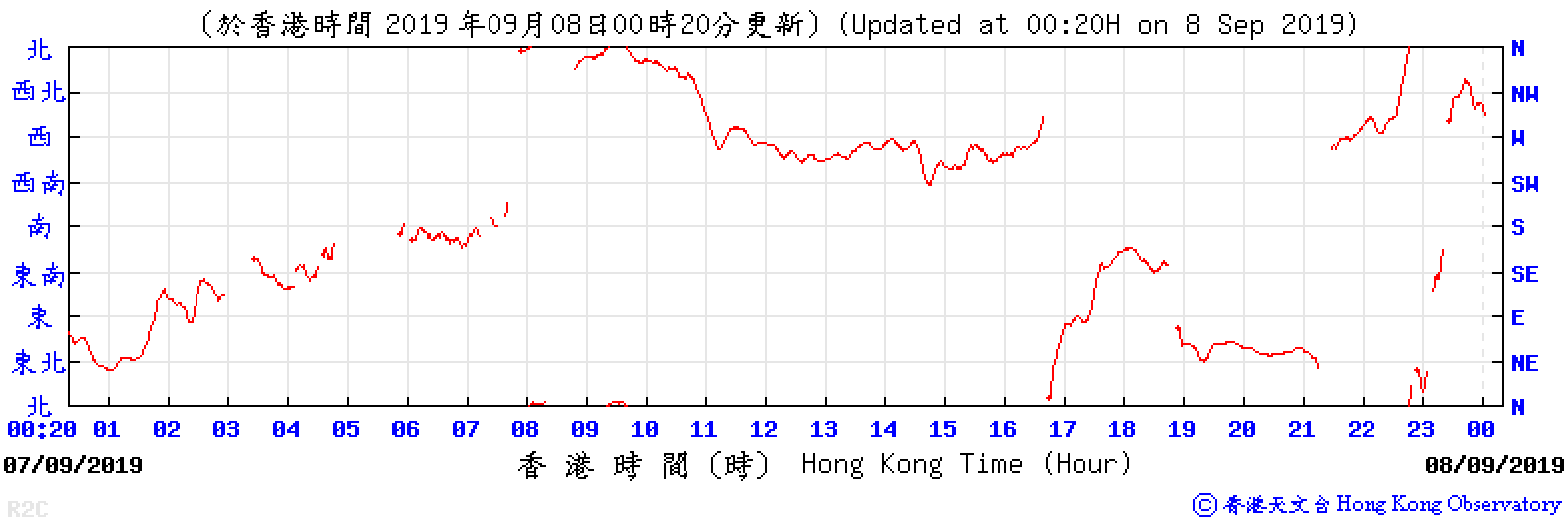
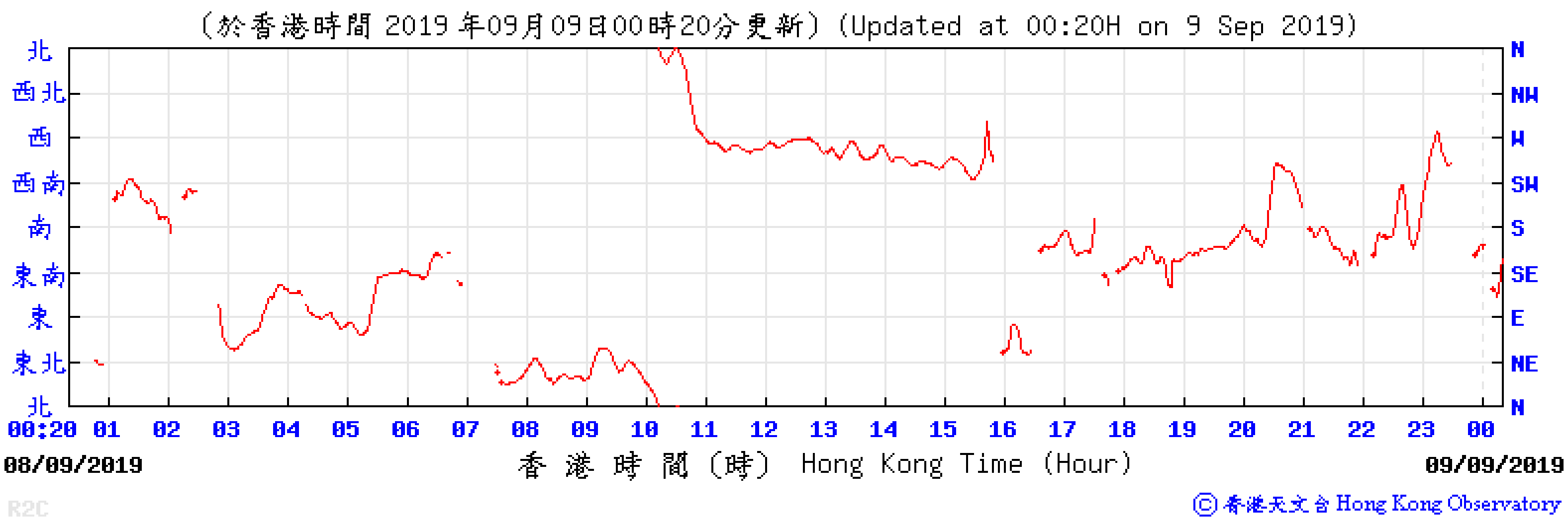
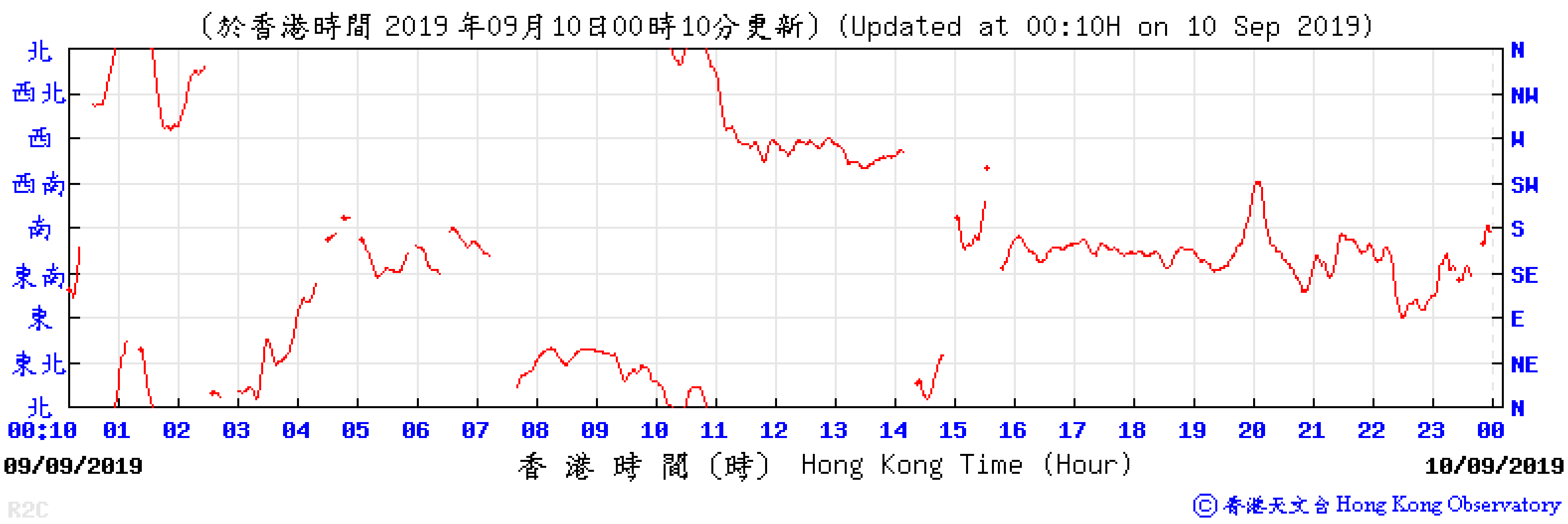


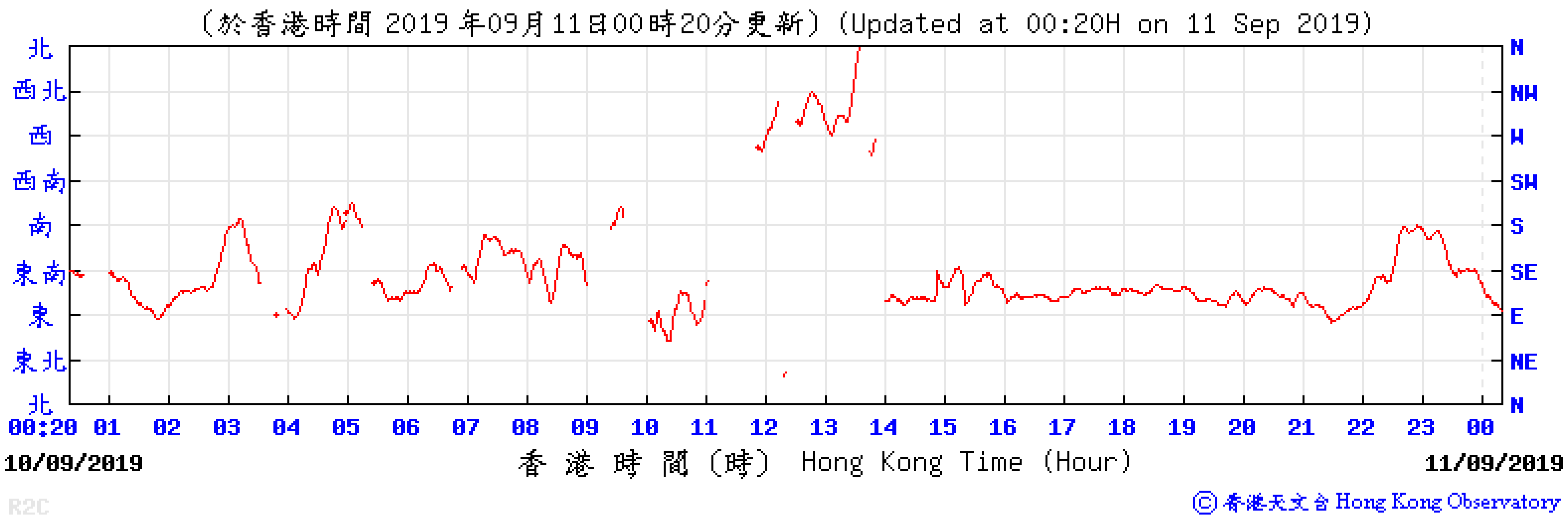


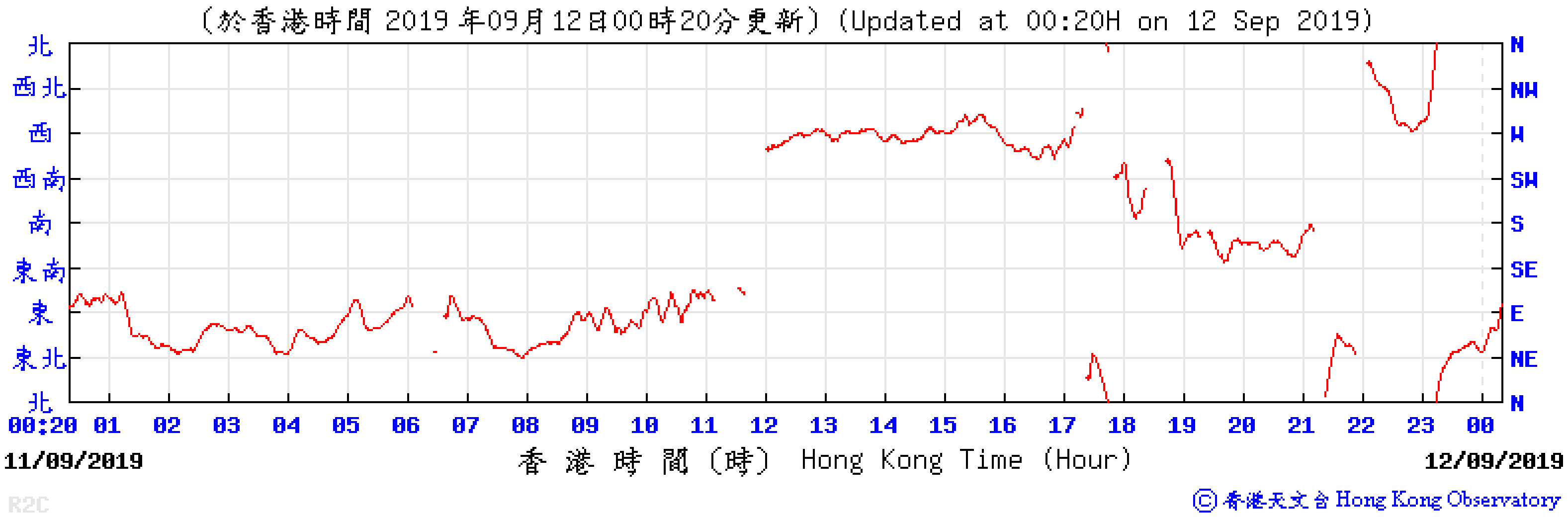


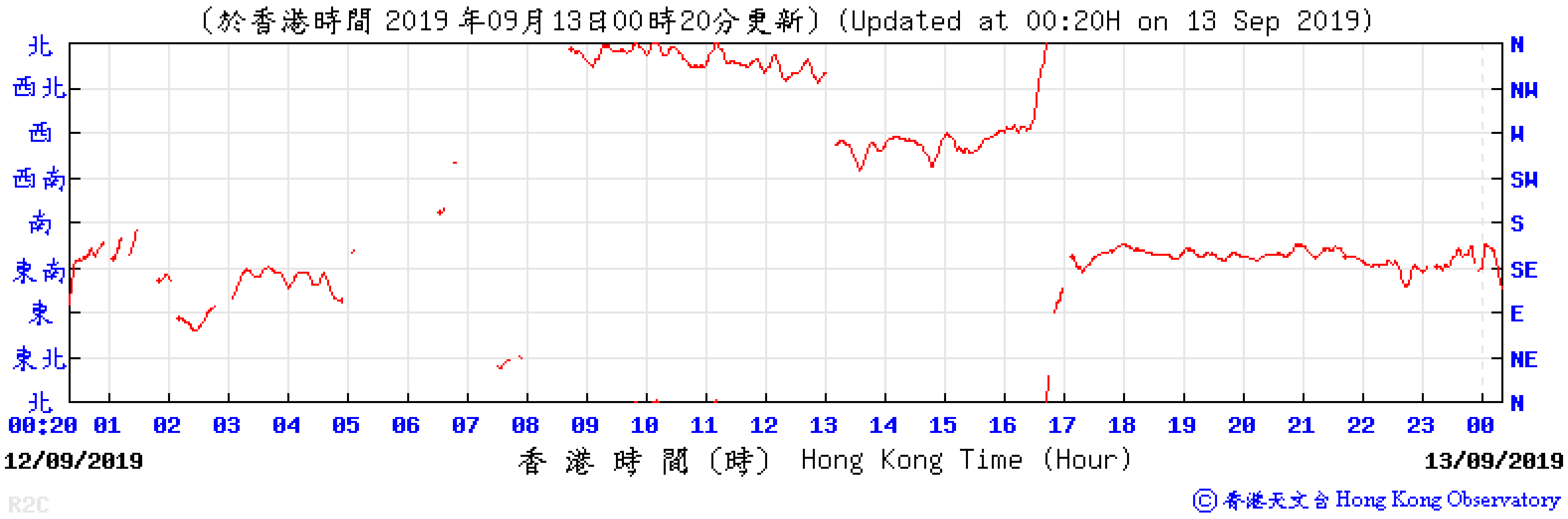


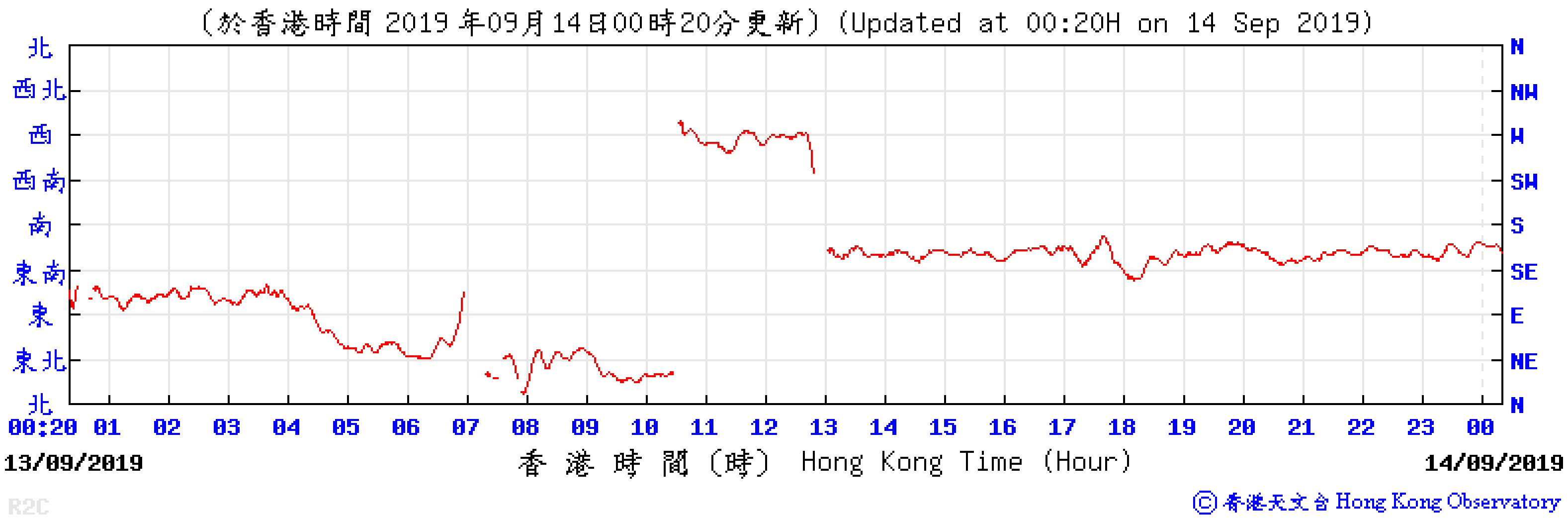


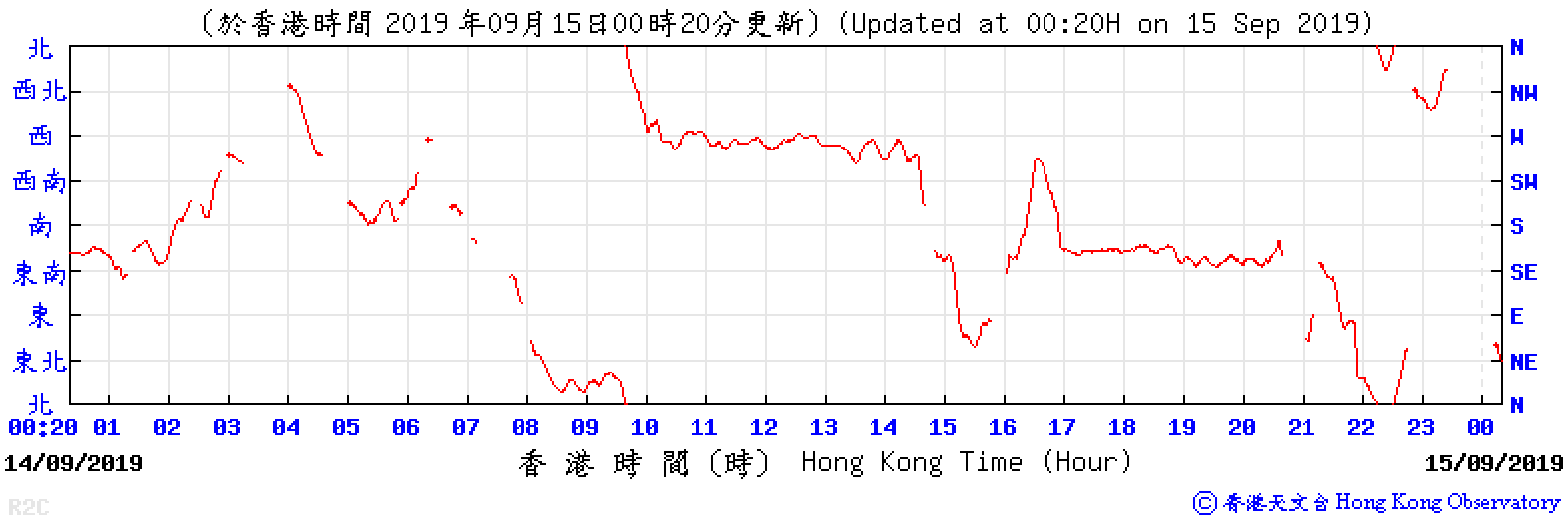
Extracted from Hong Kong Observatory's Chek Lap Kok Weather Station











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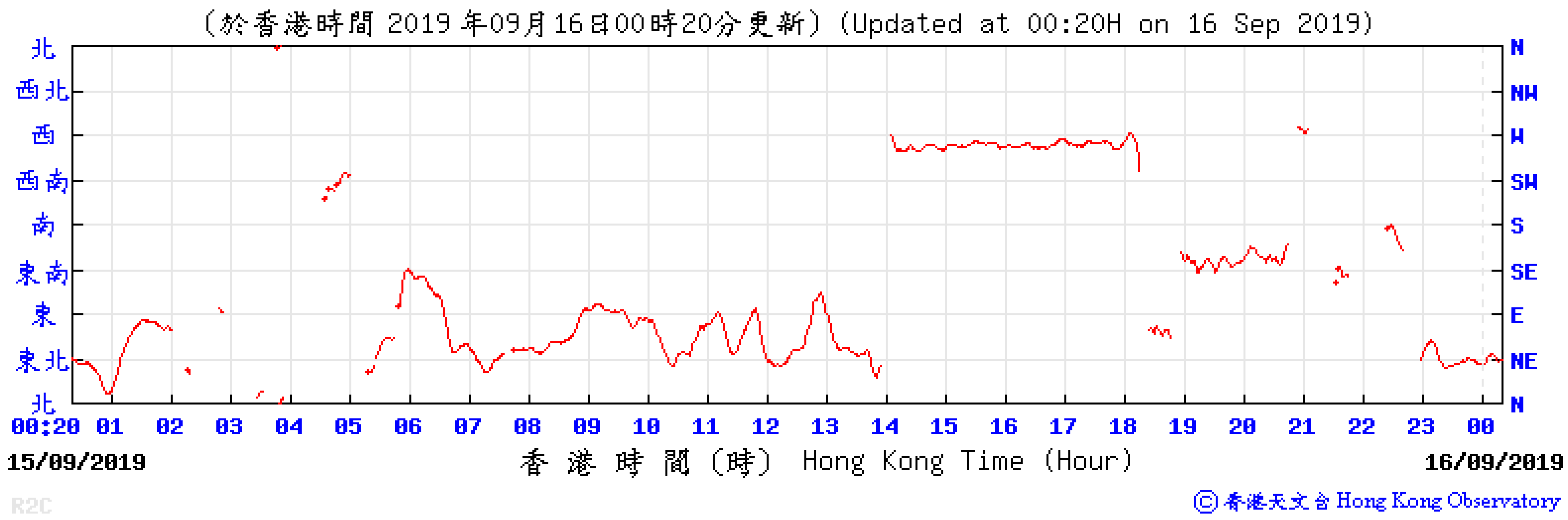

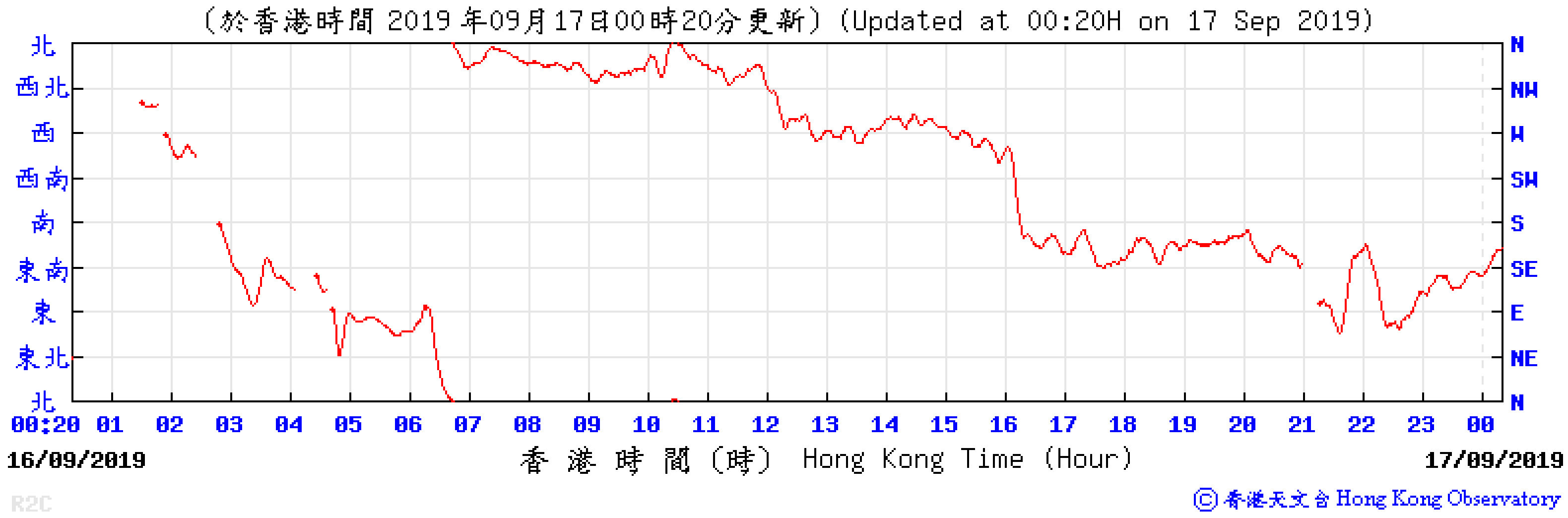

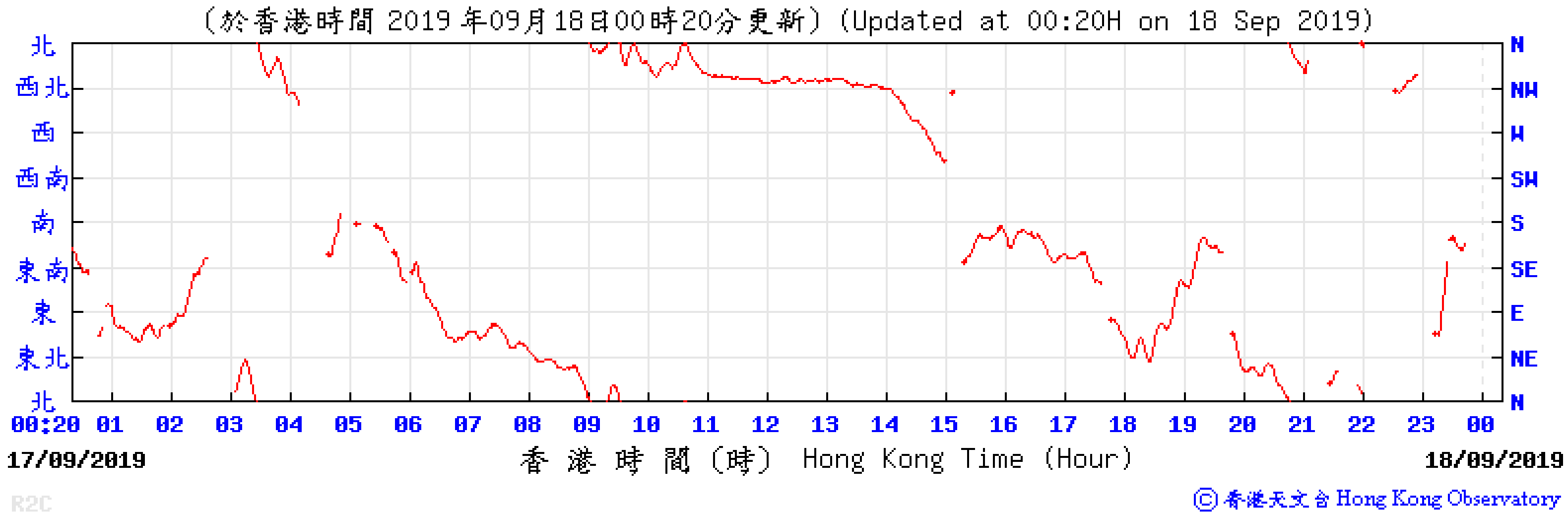

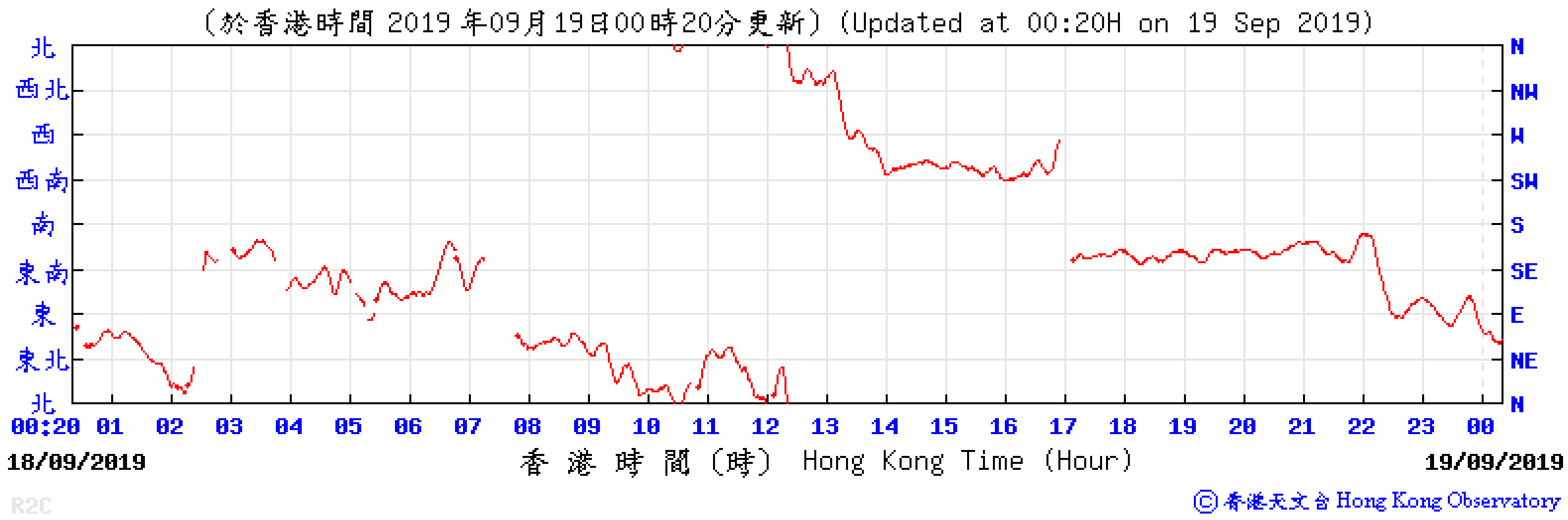

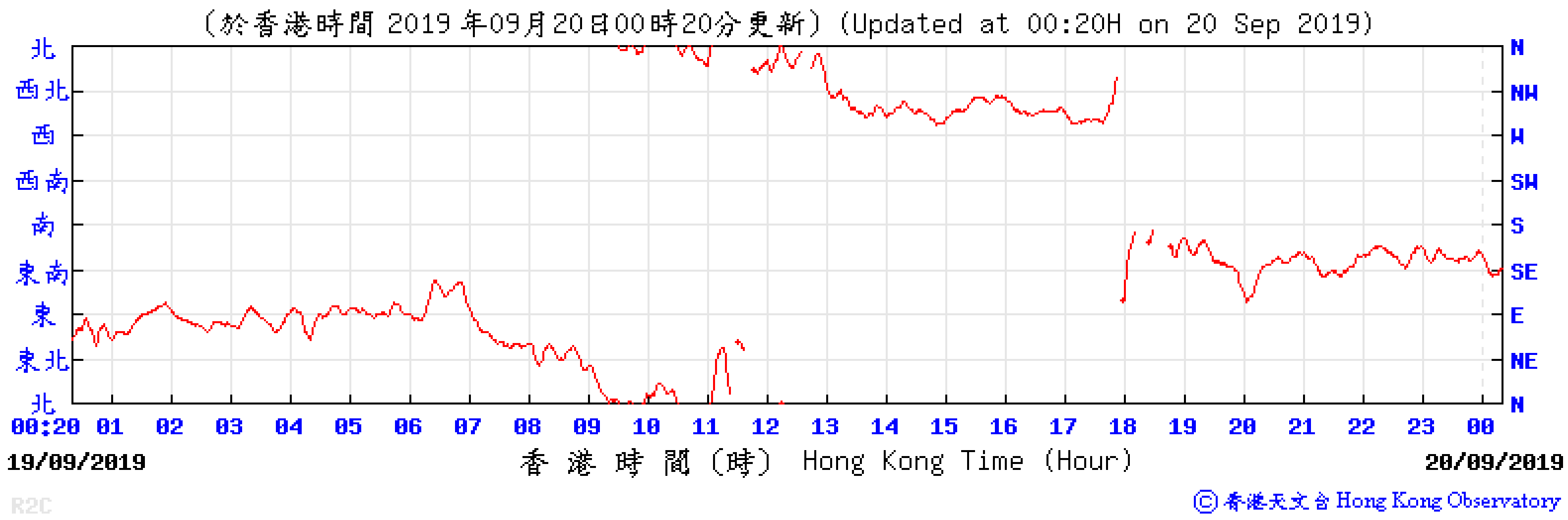

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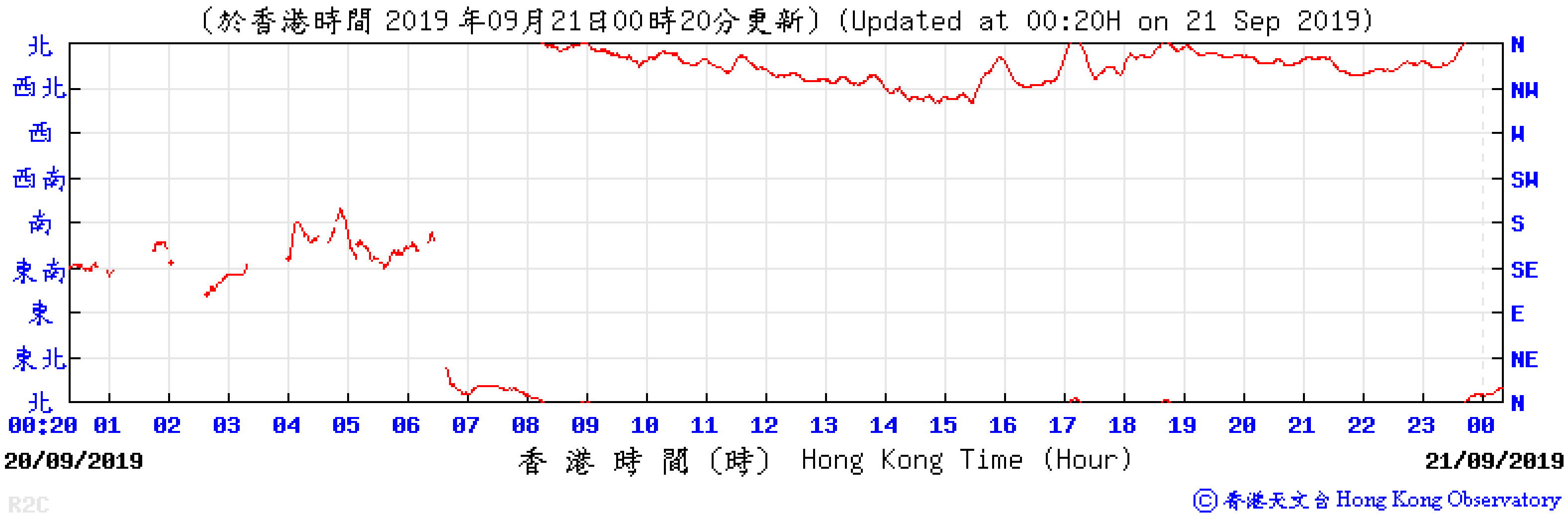

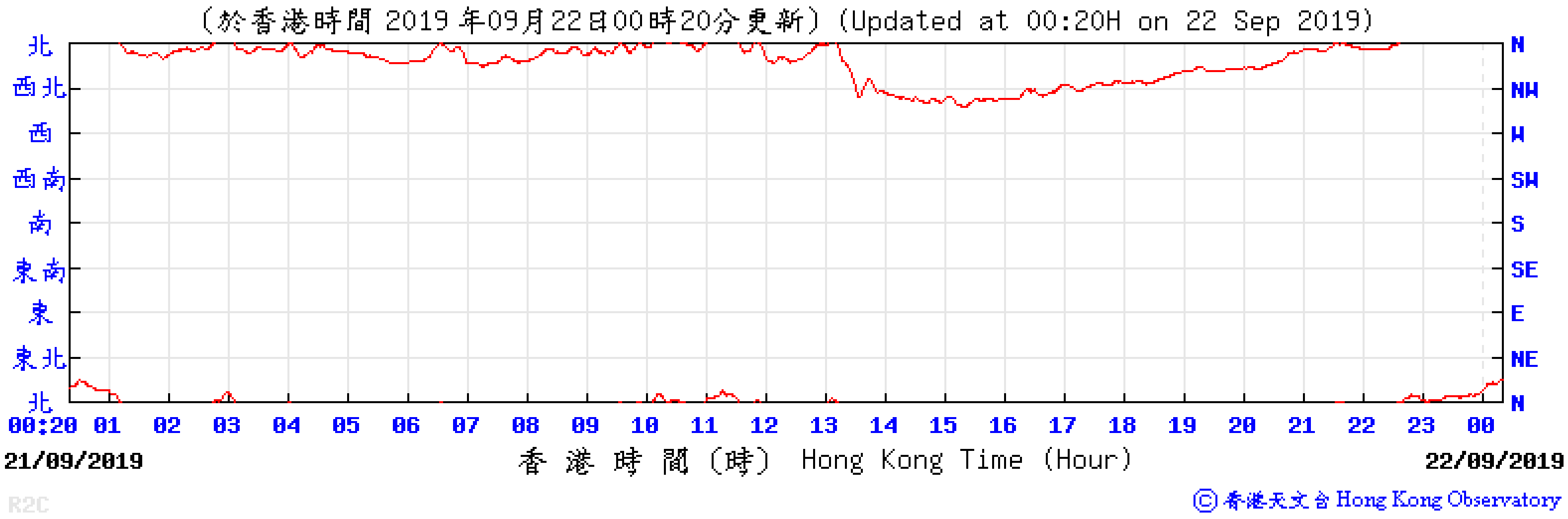

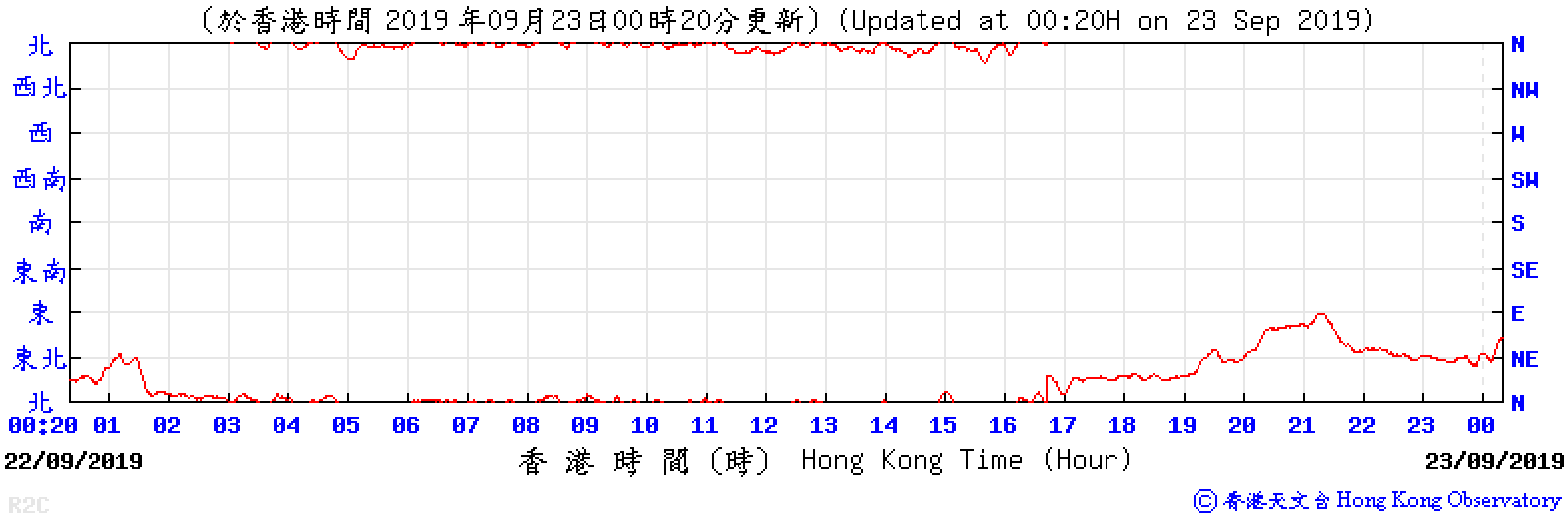

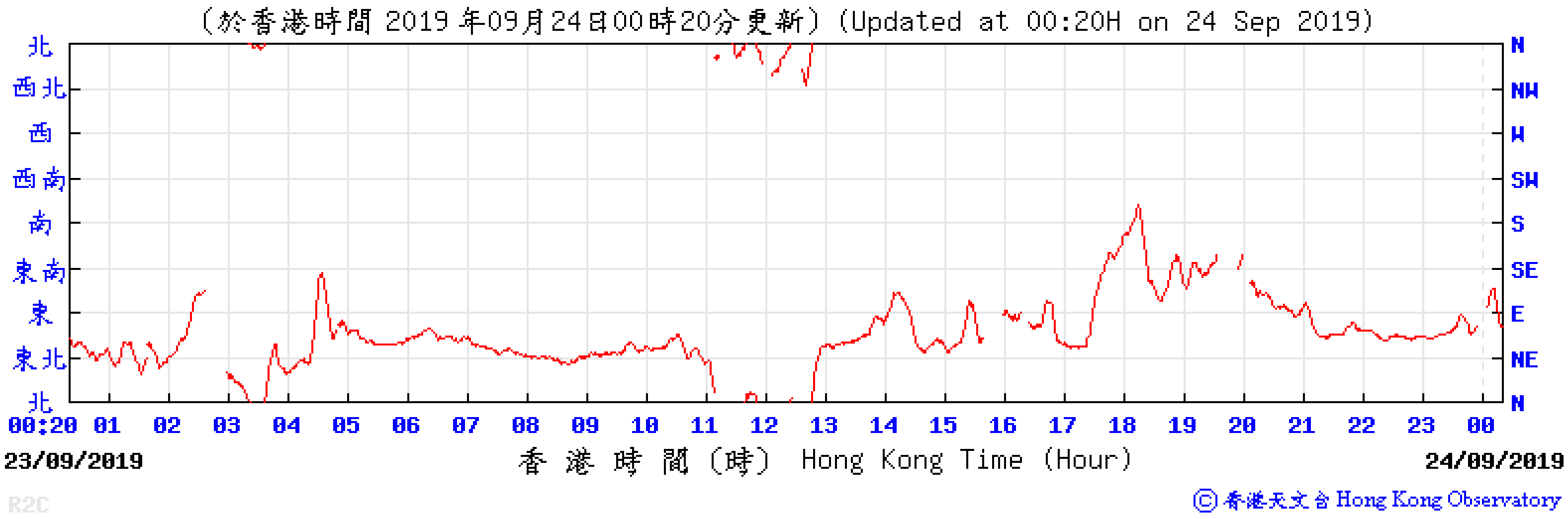

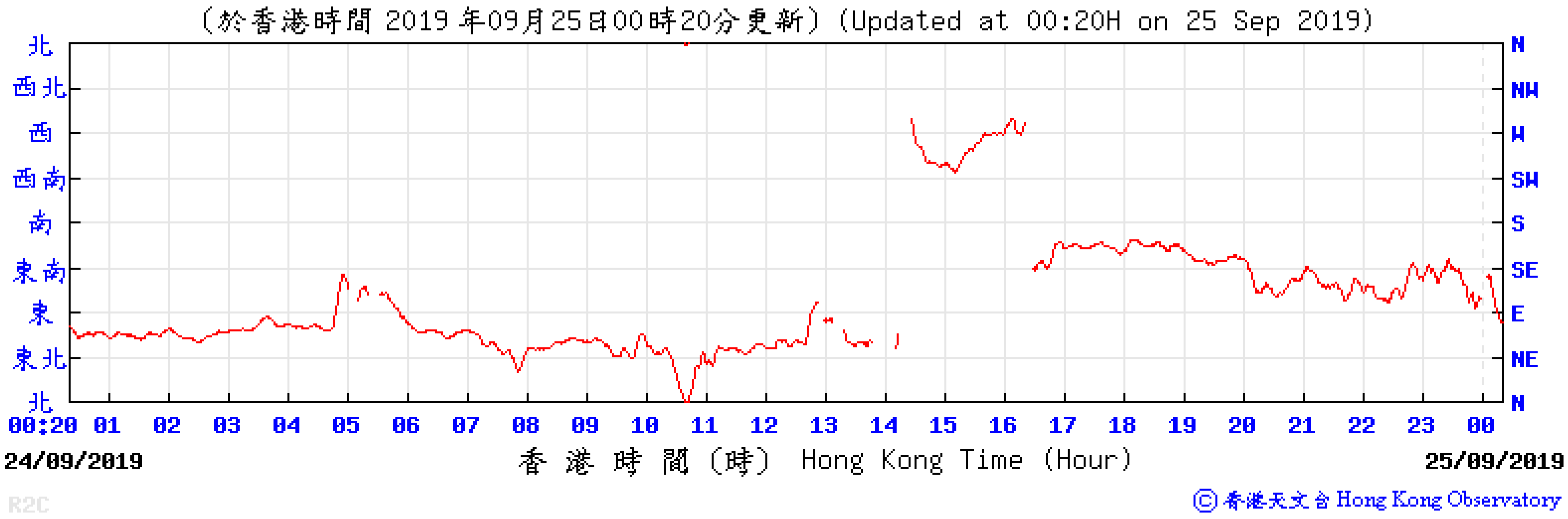

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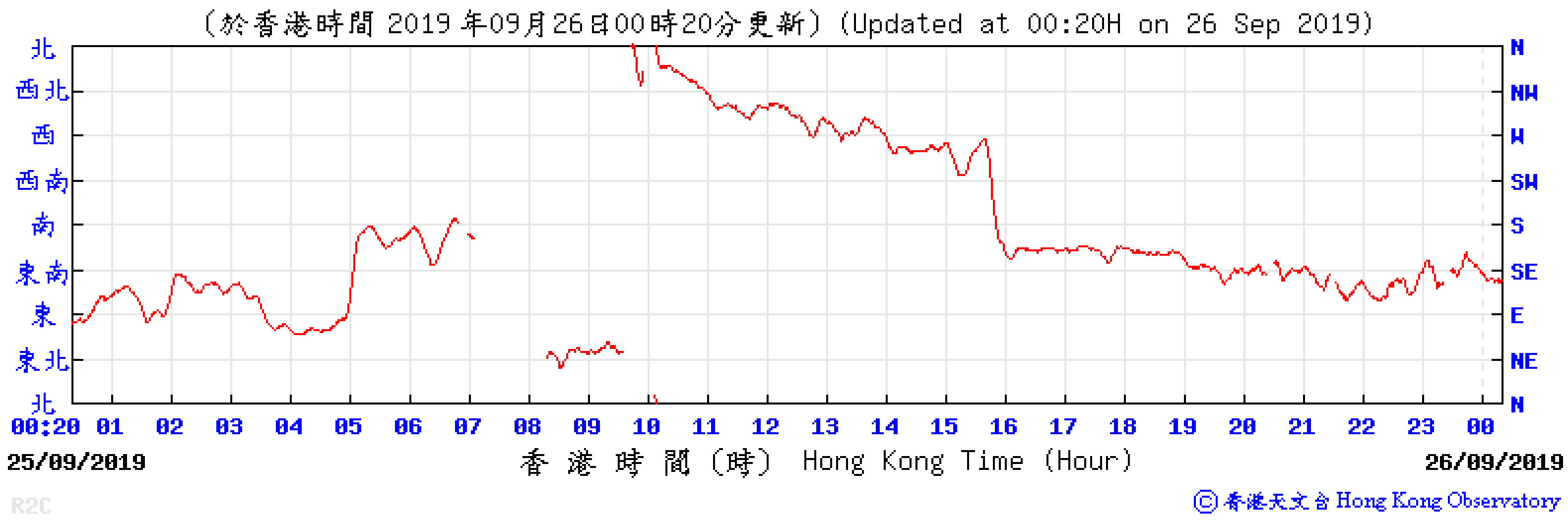

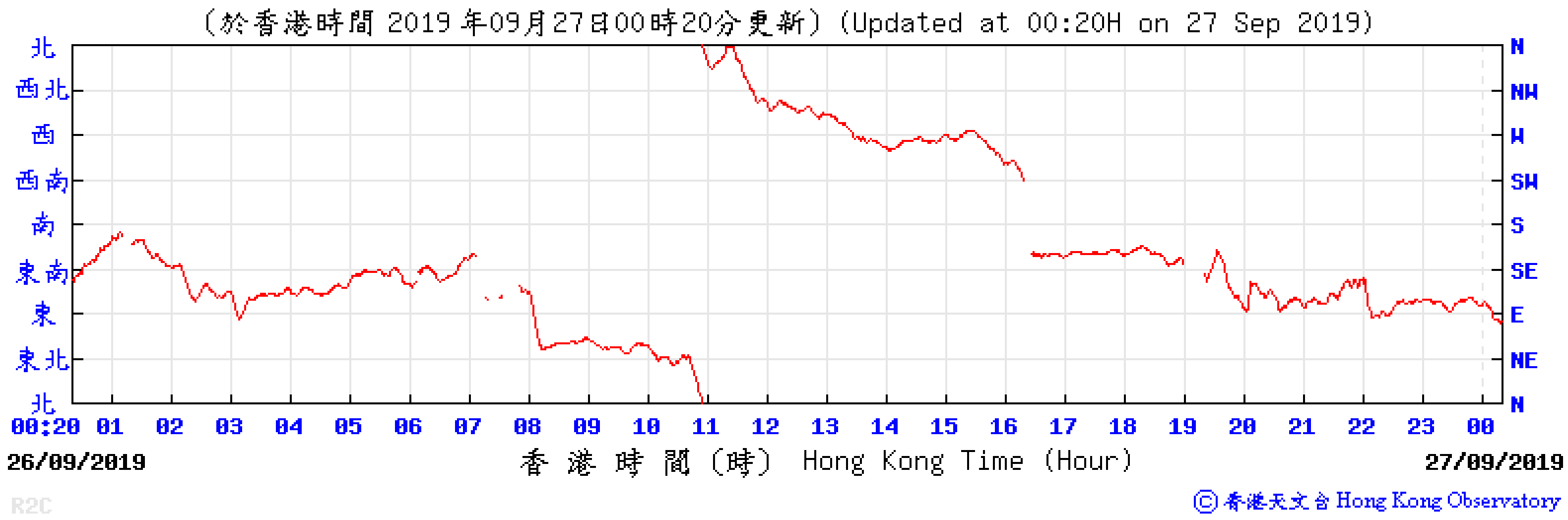

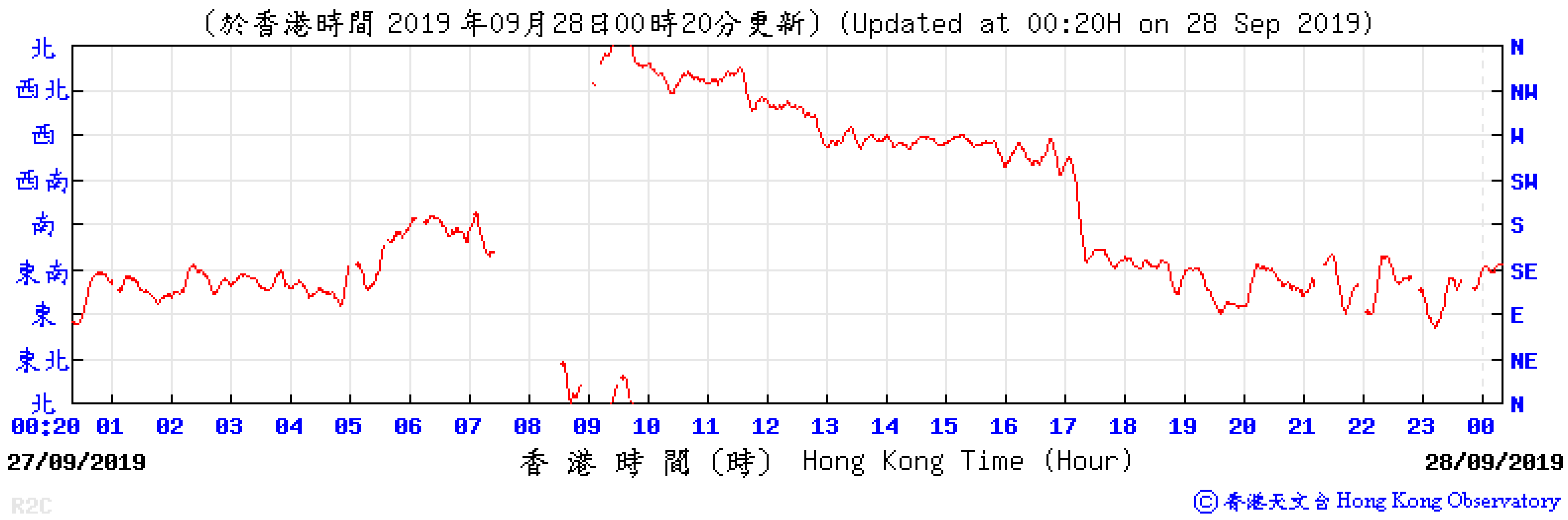

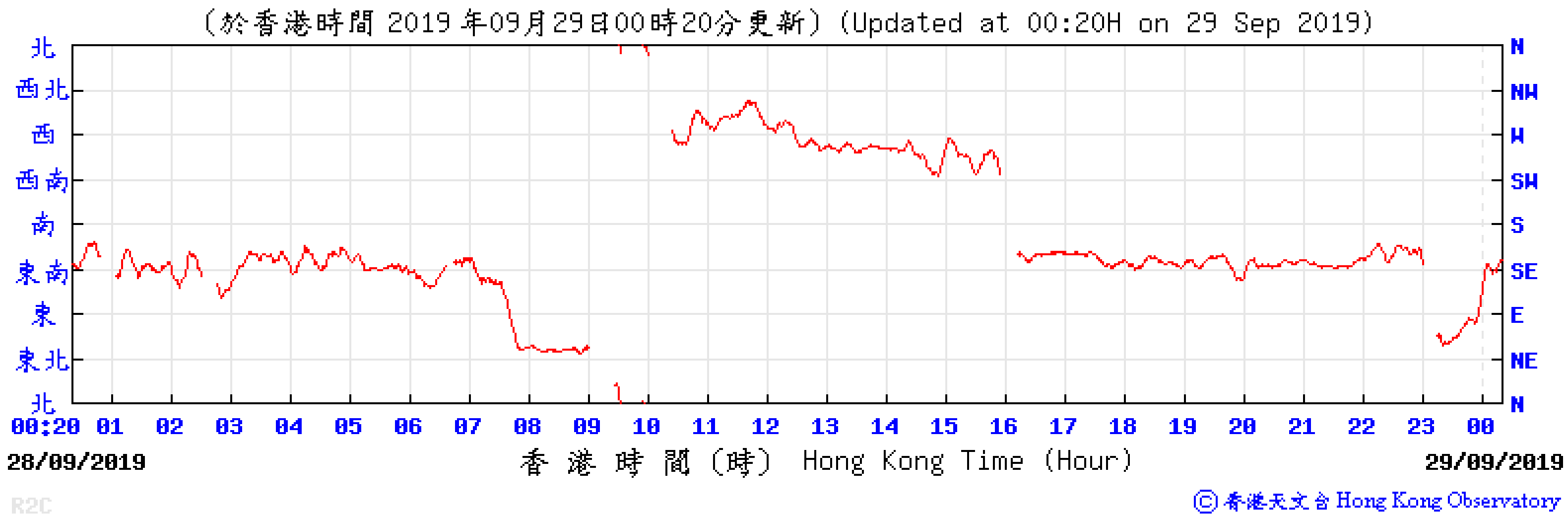

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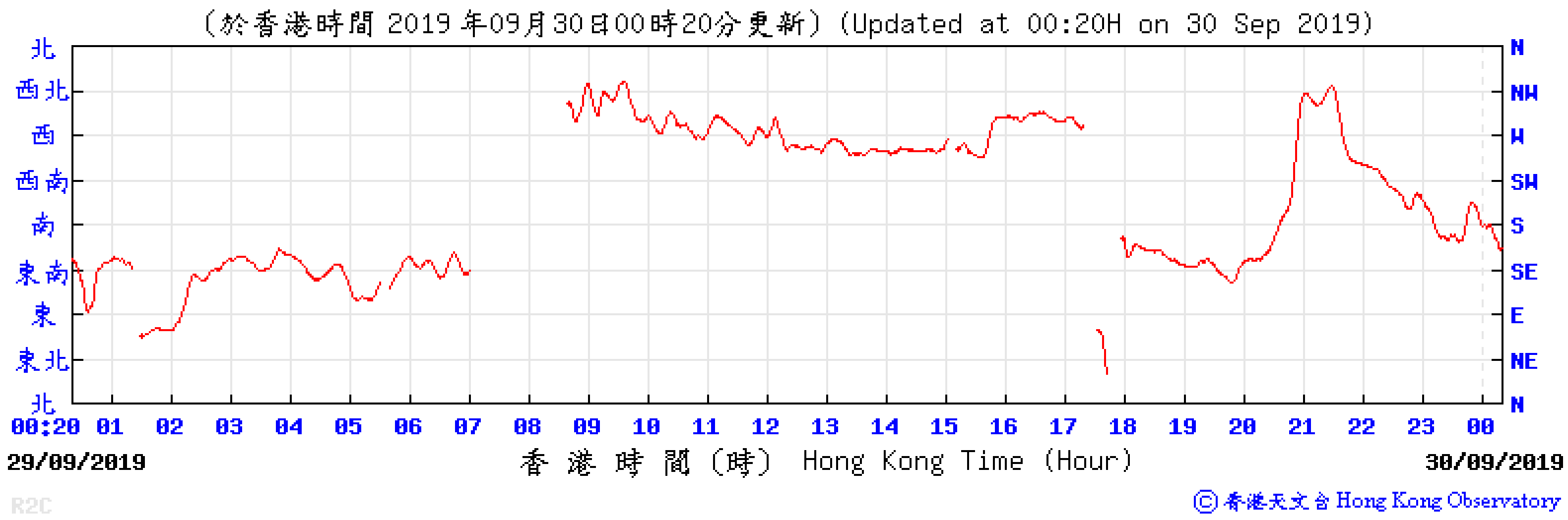

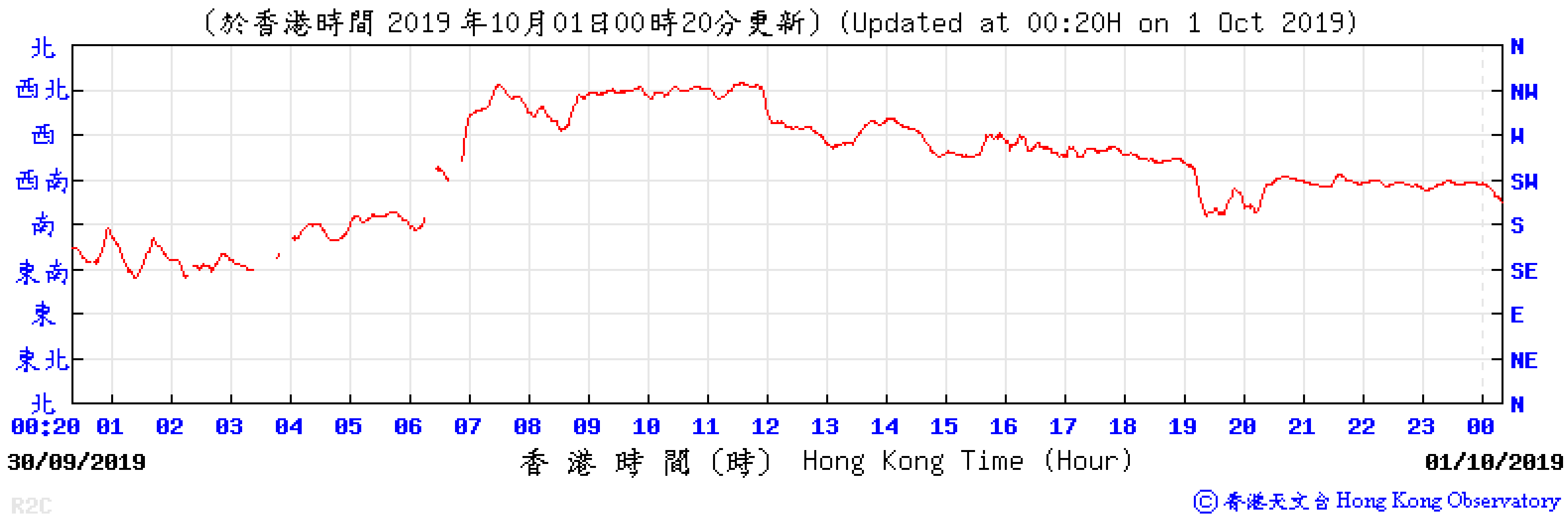

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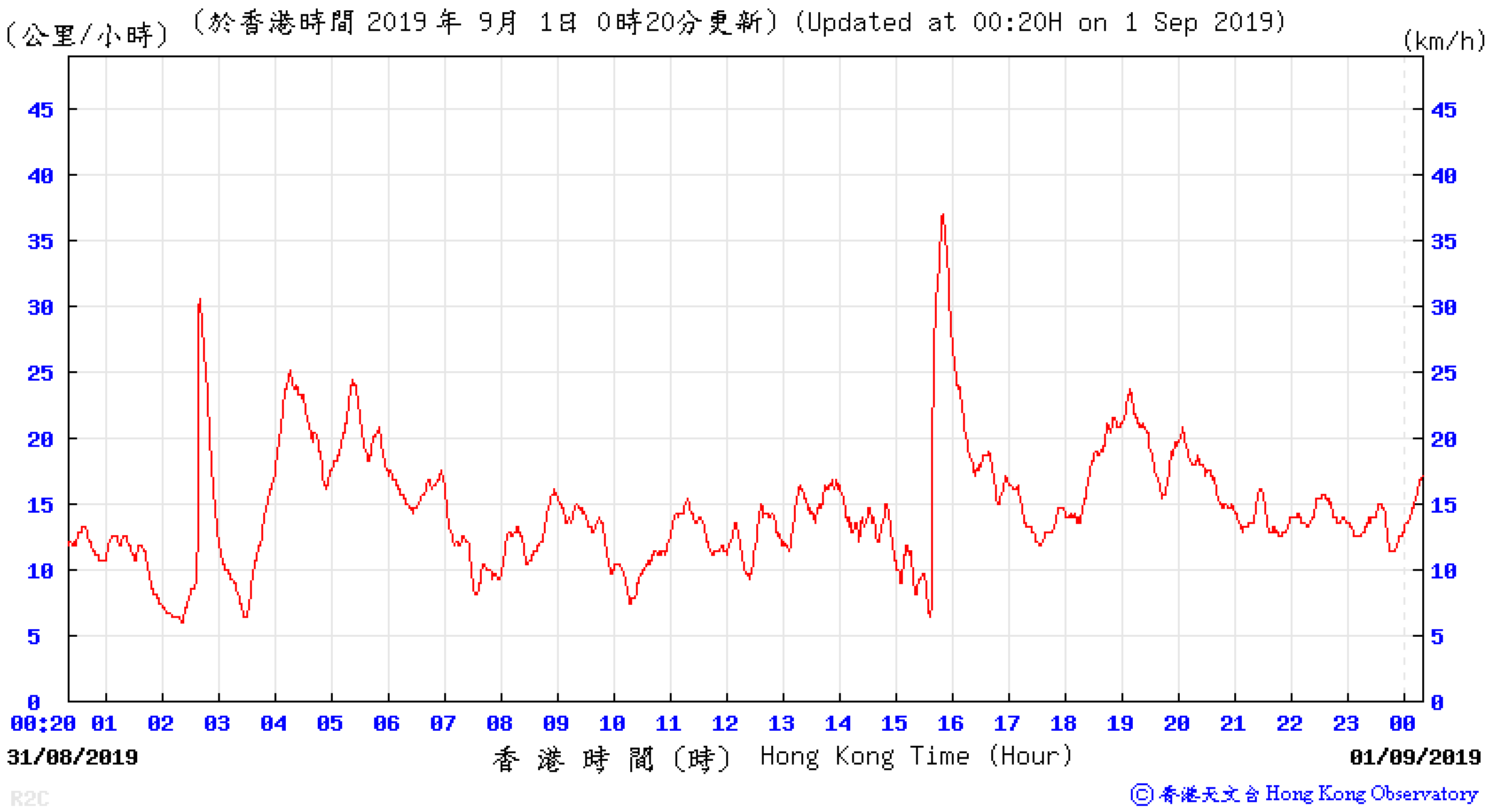

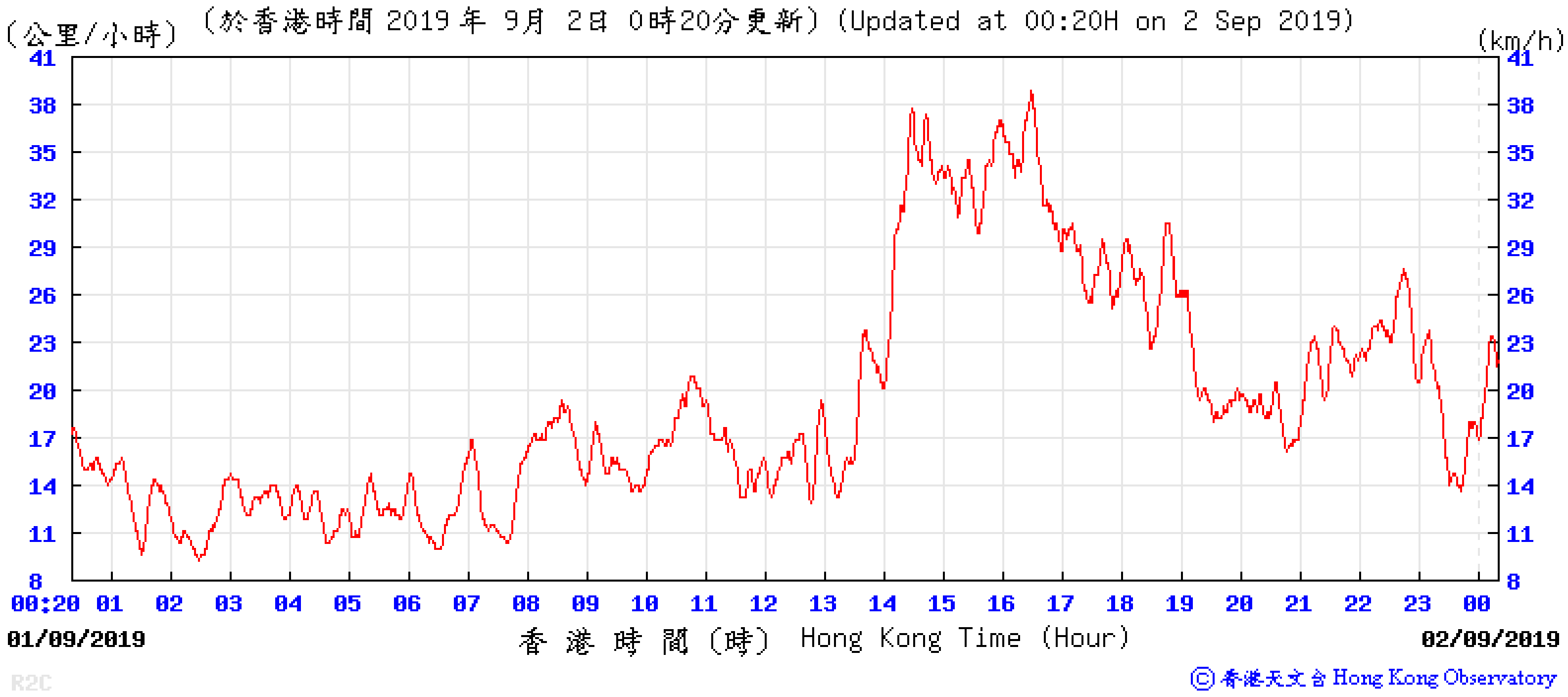

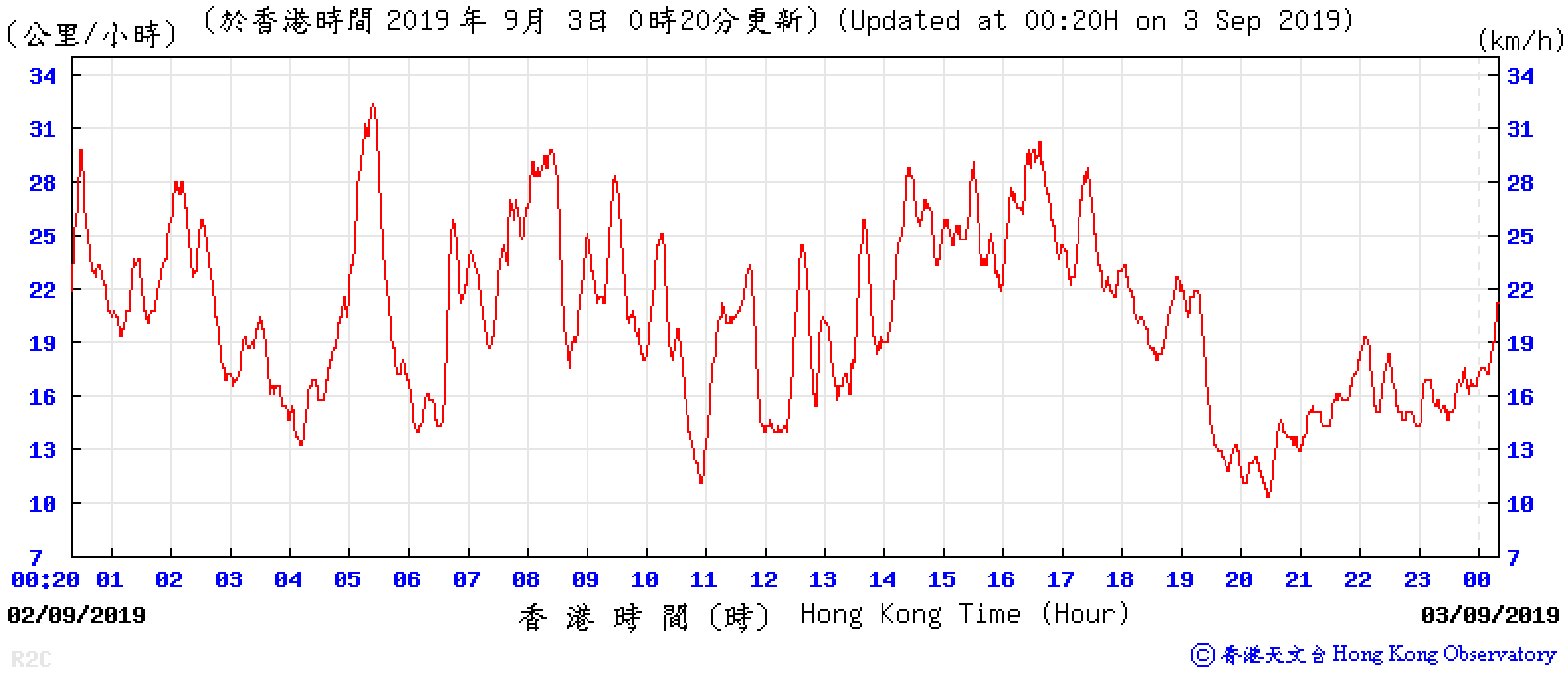

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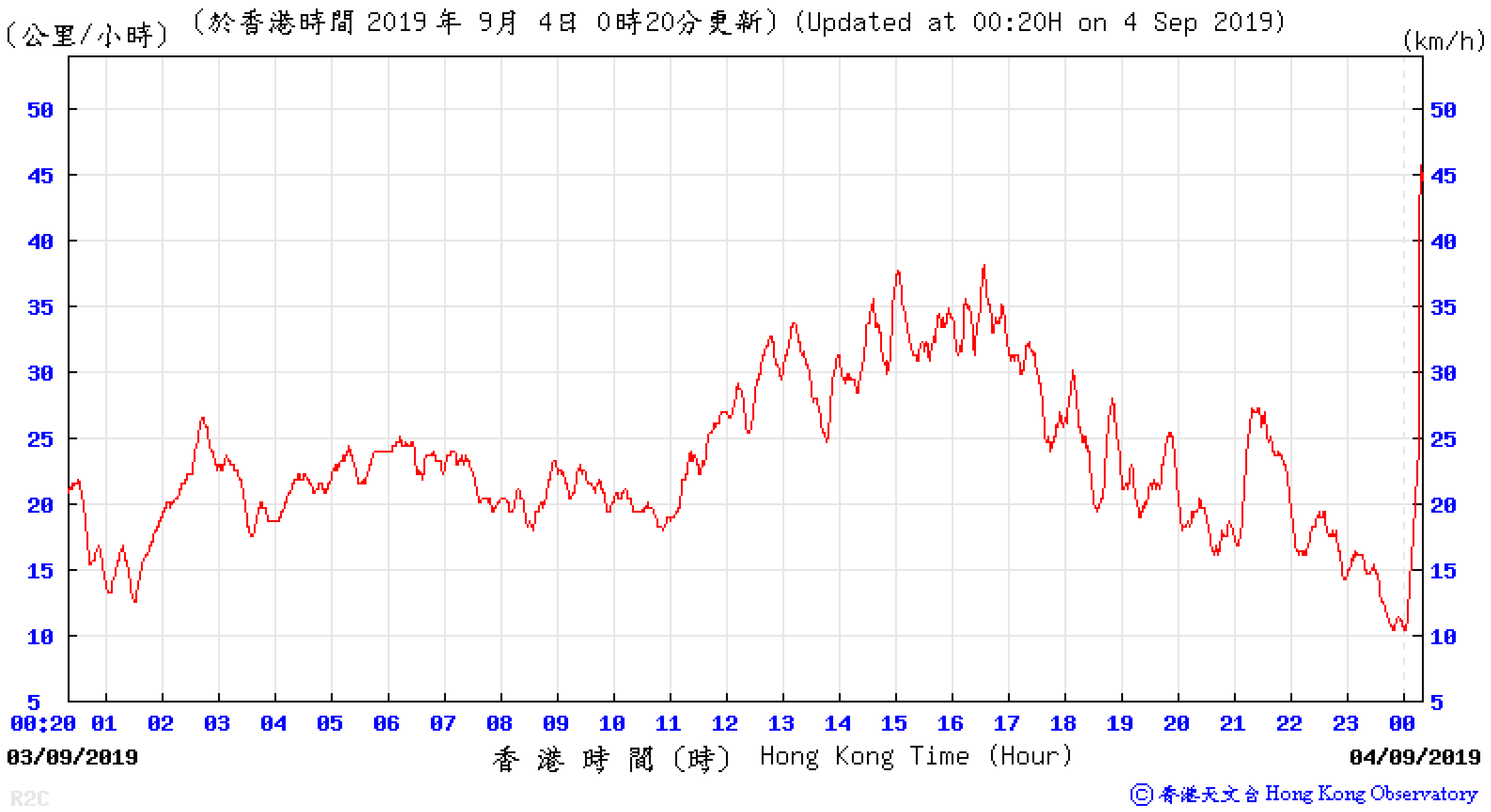

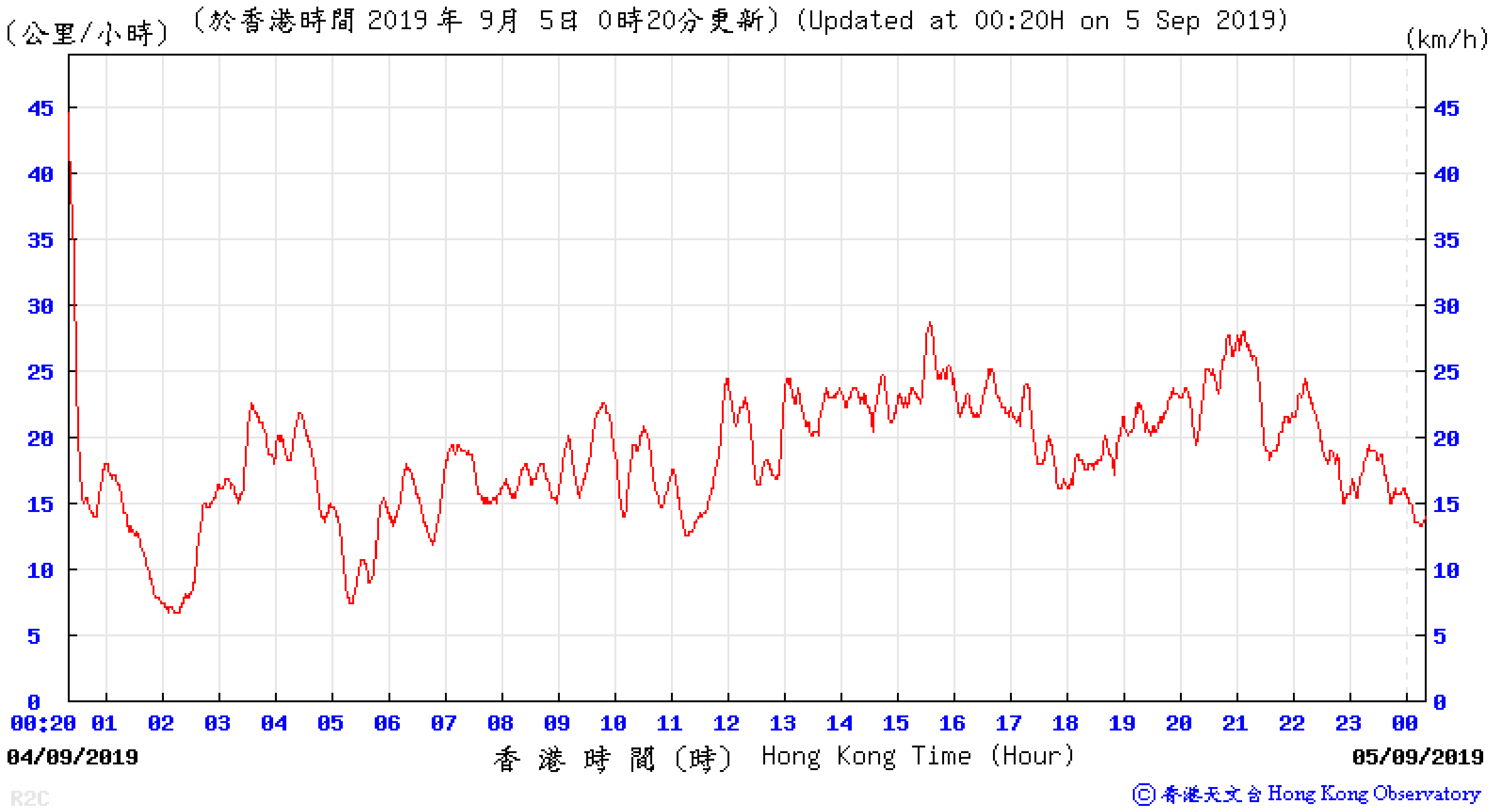

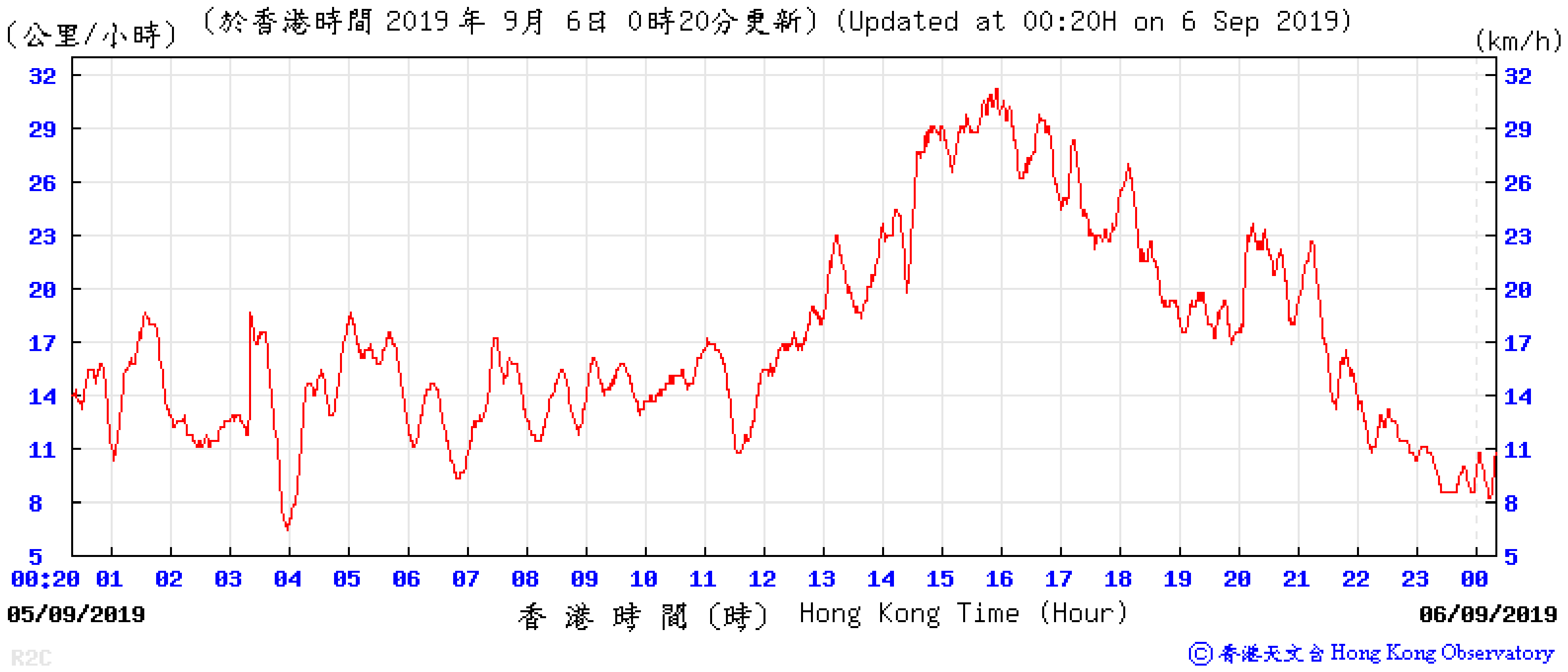

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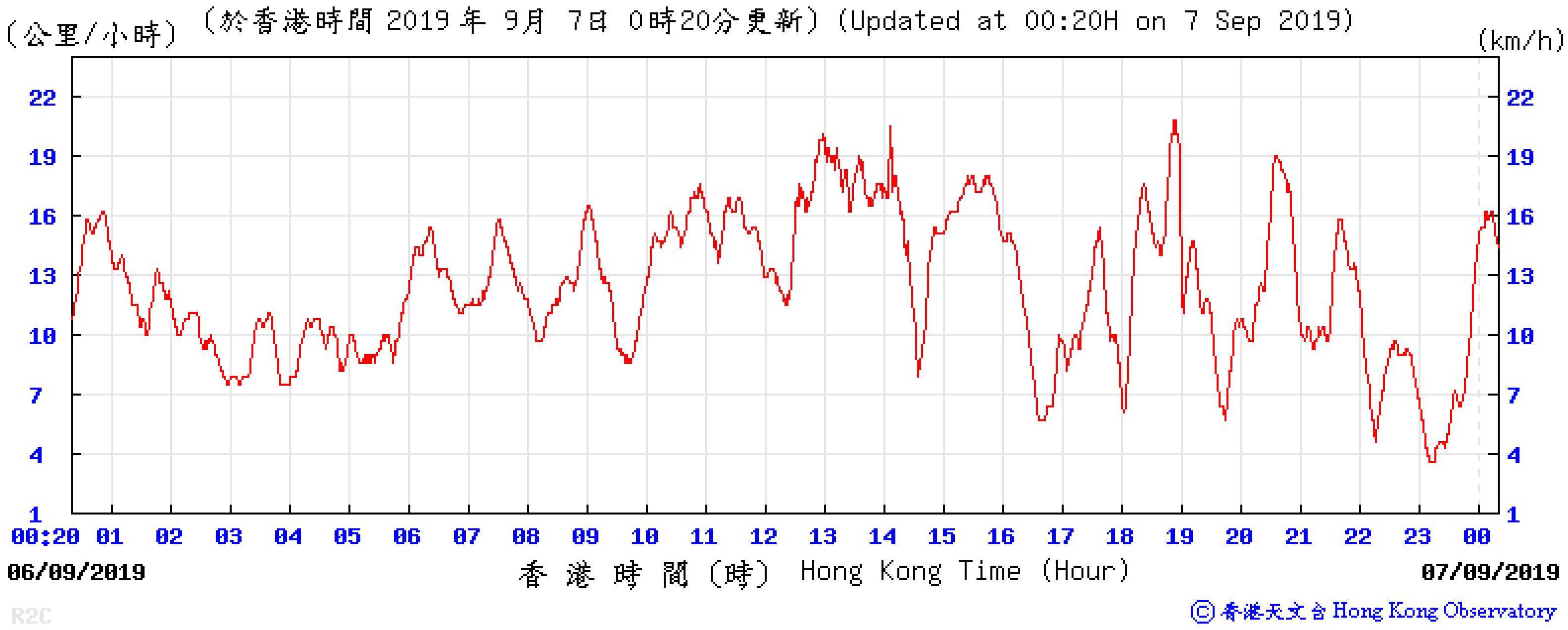

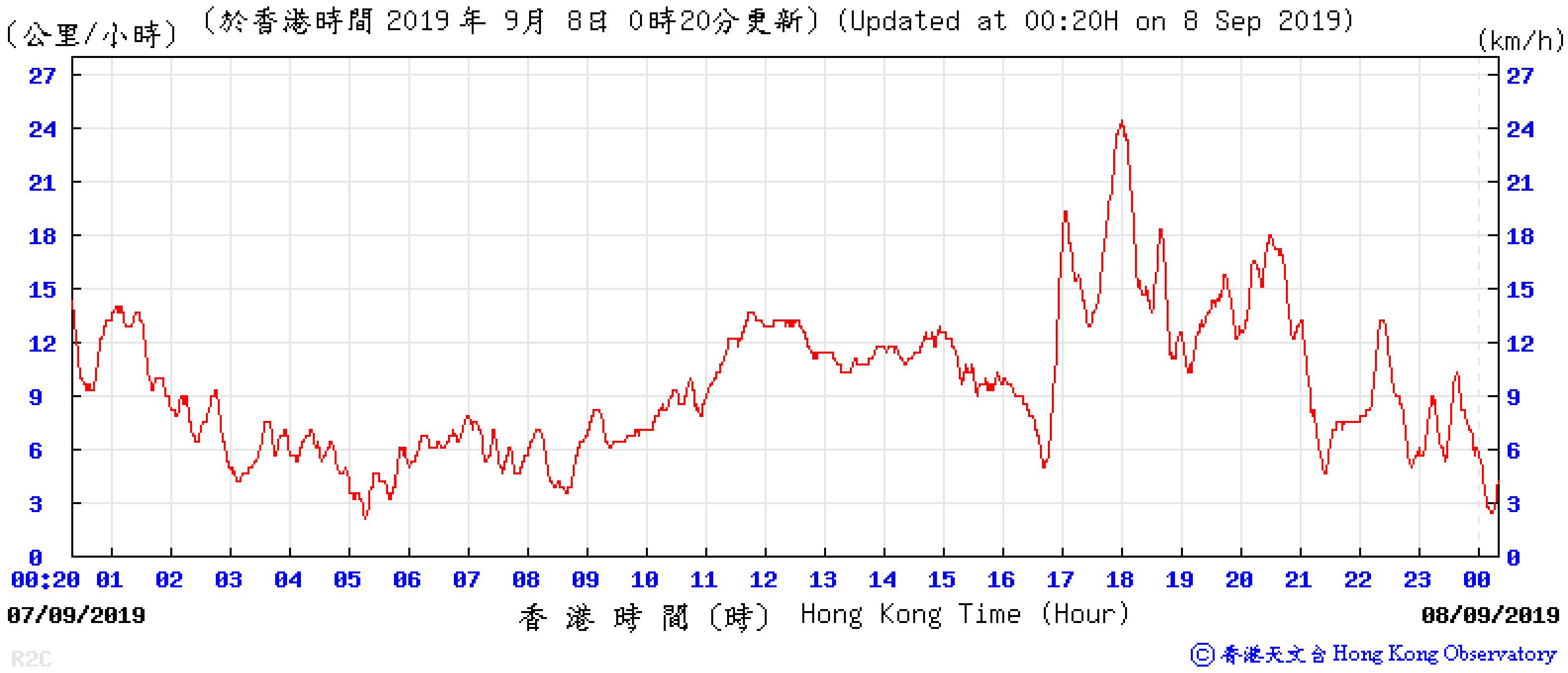

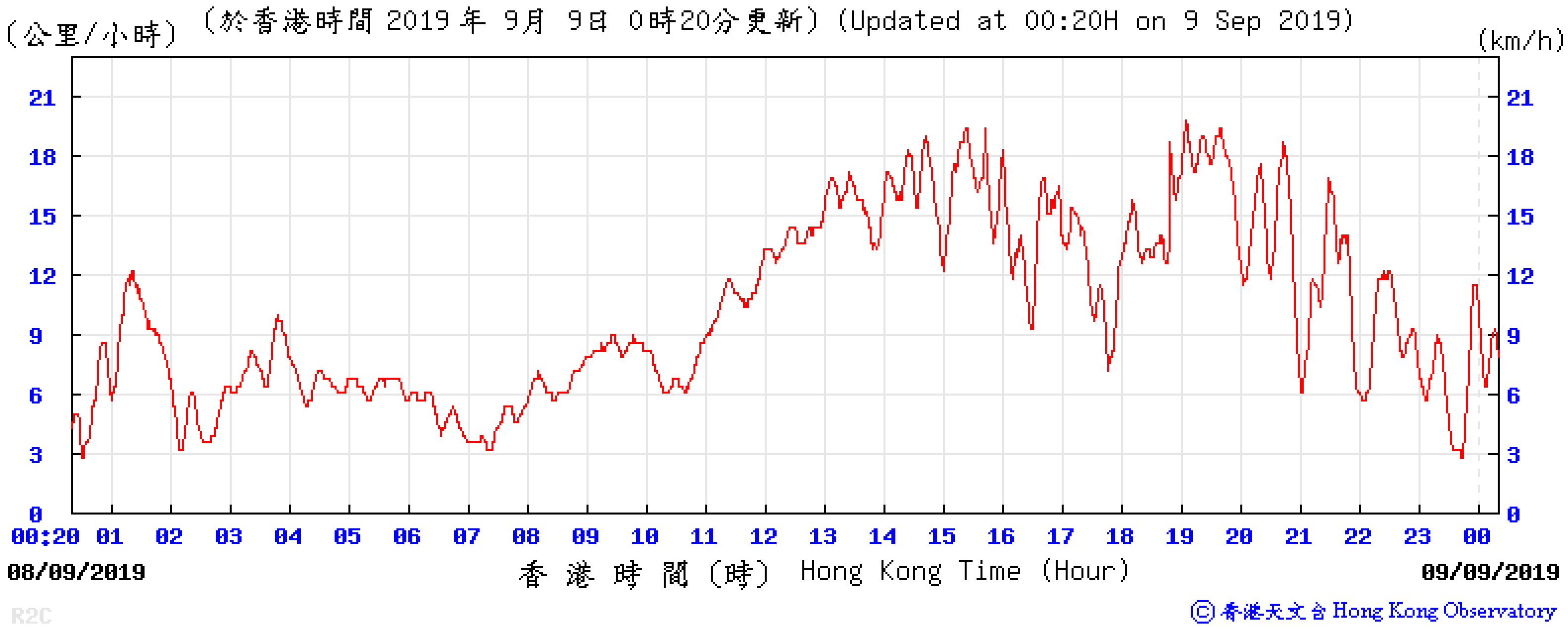

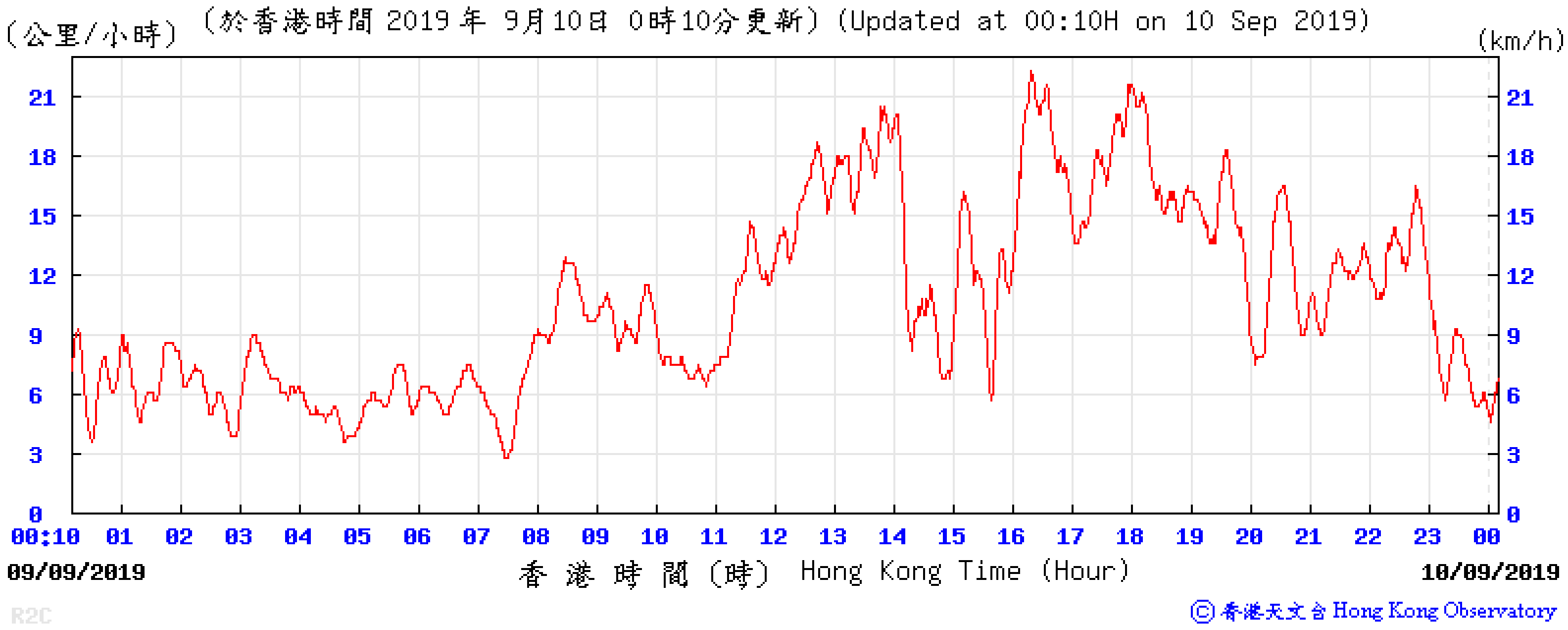

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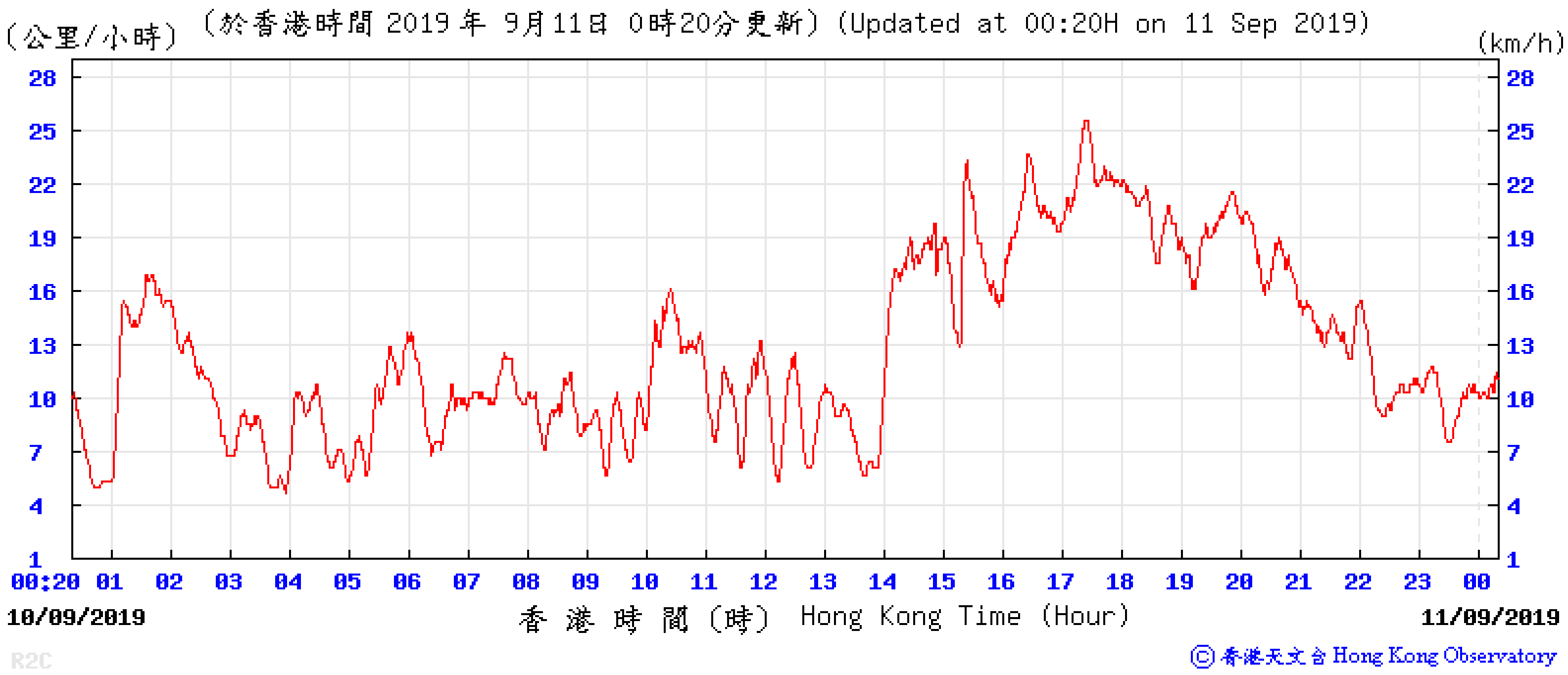

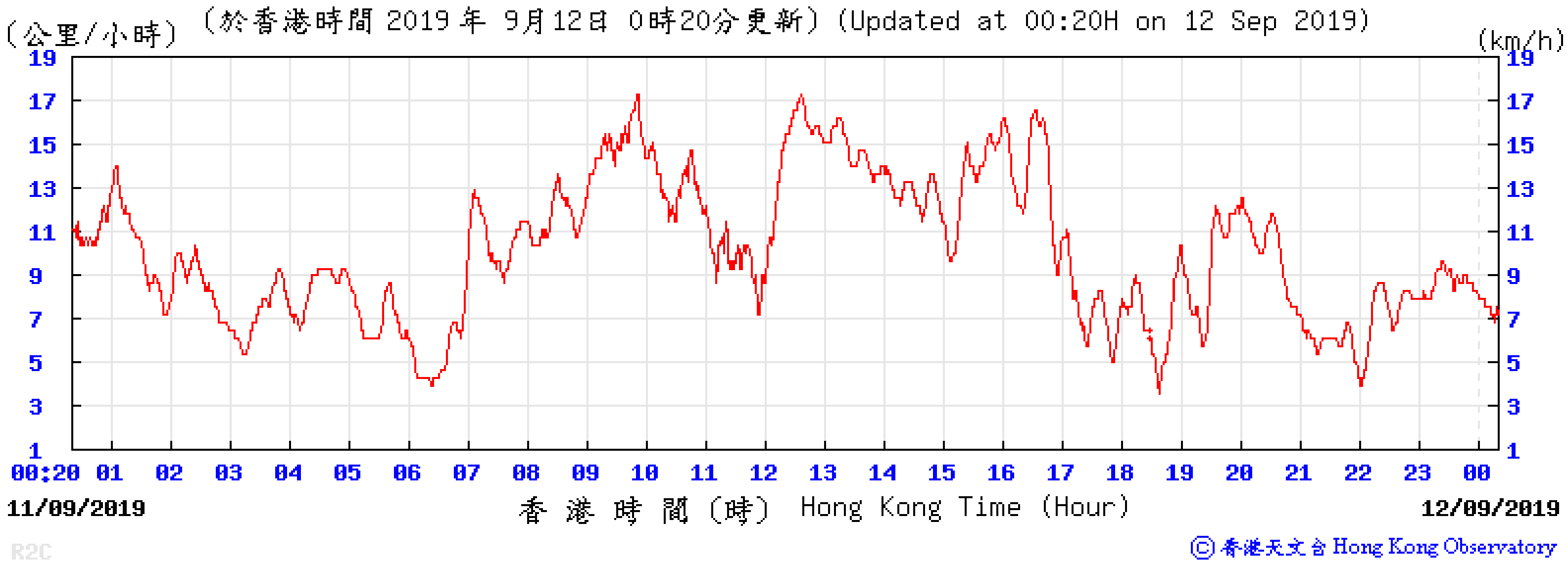

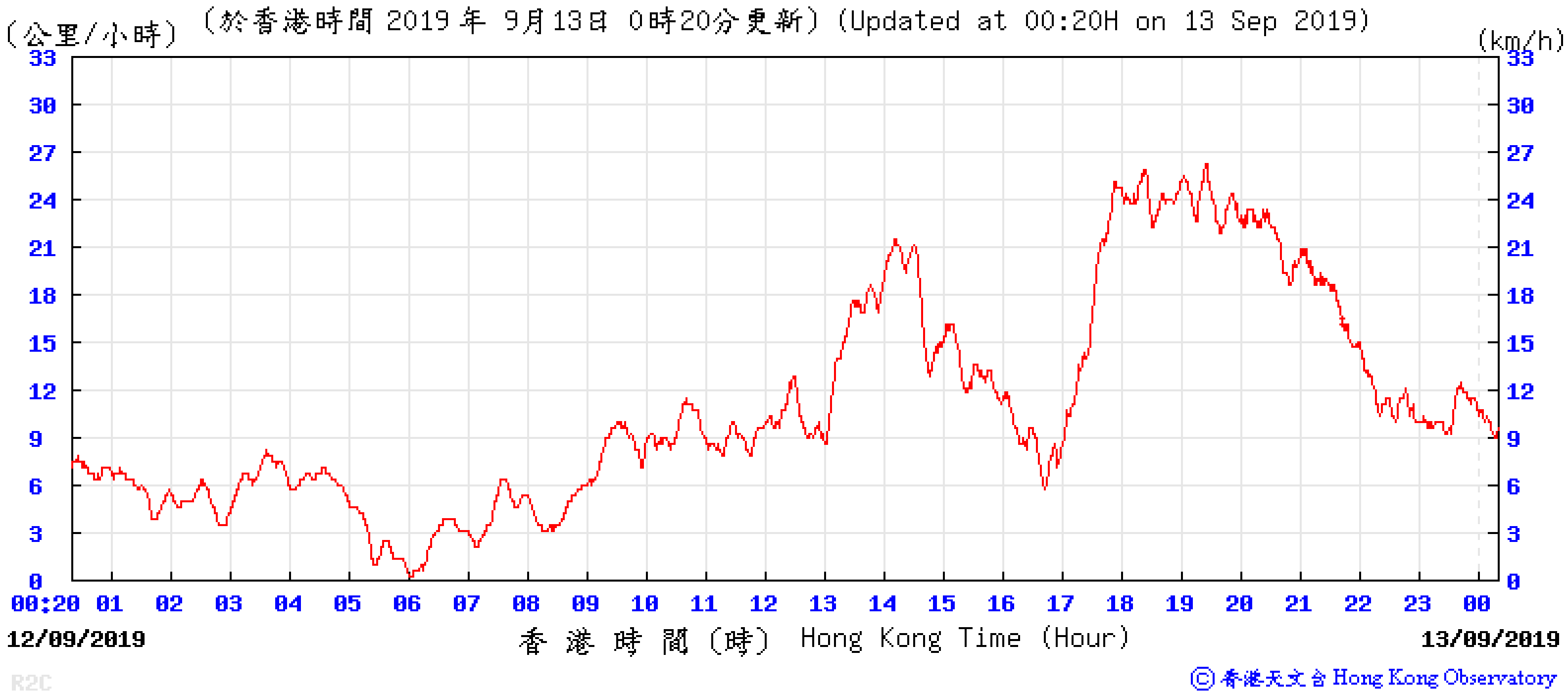

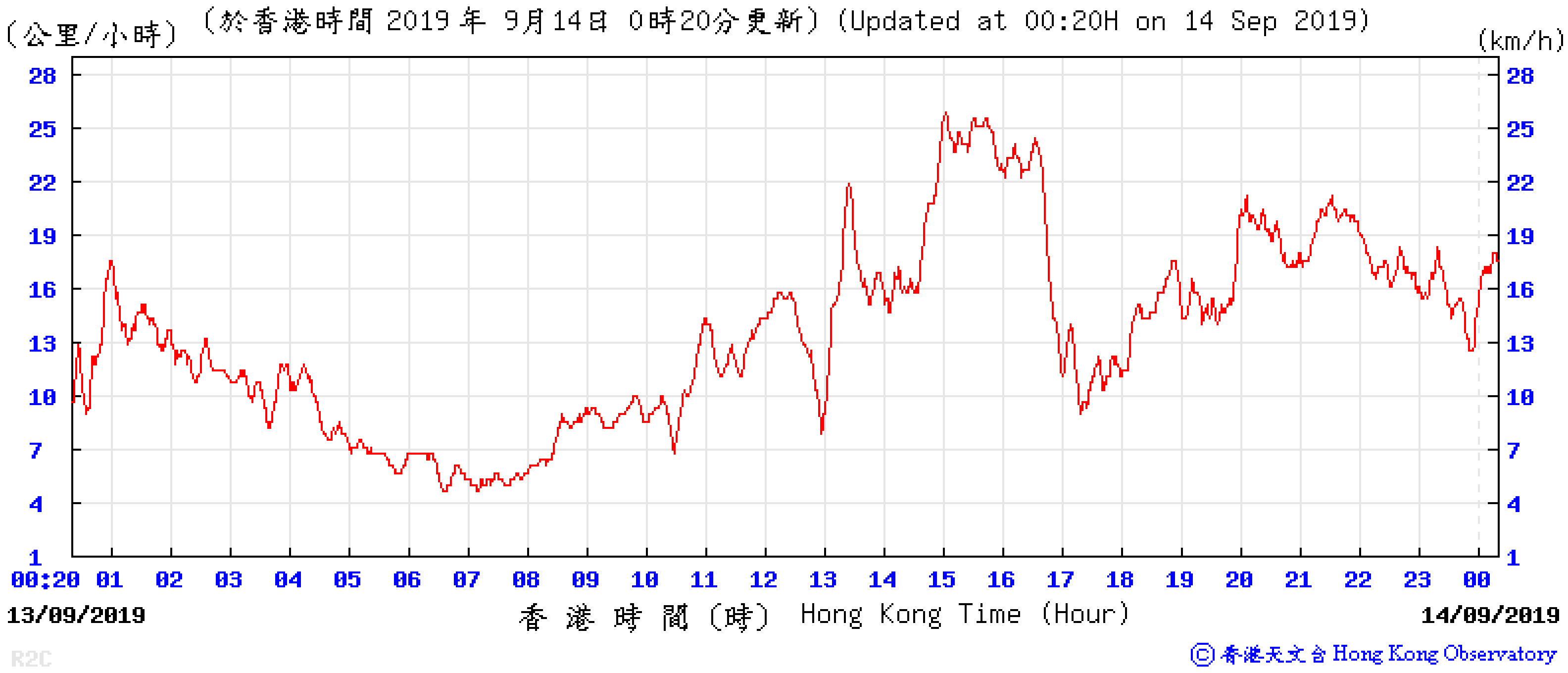

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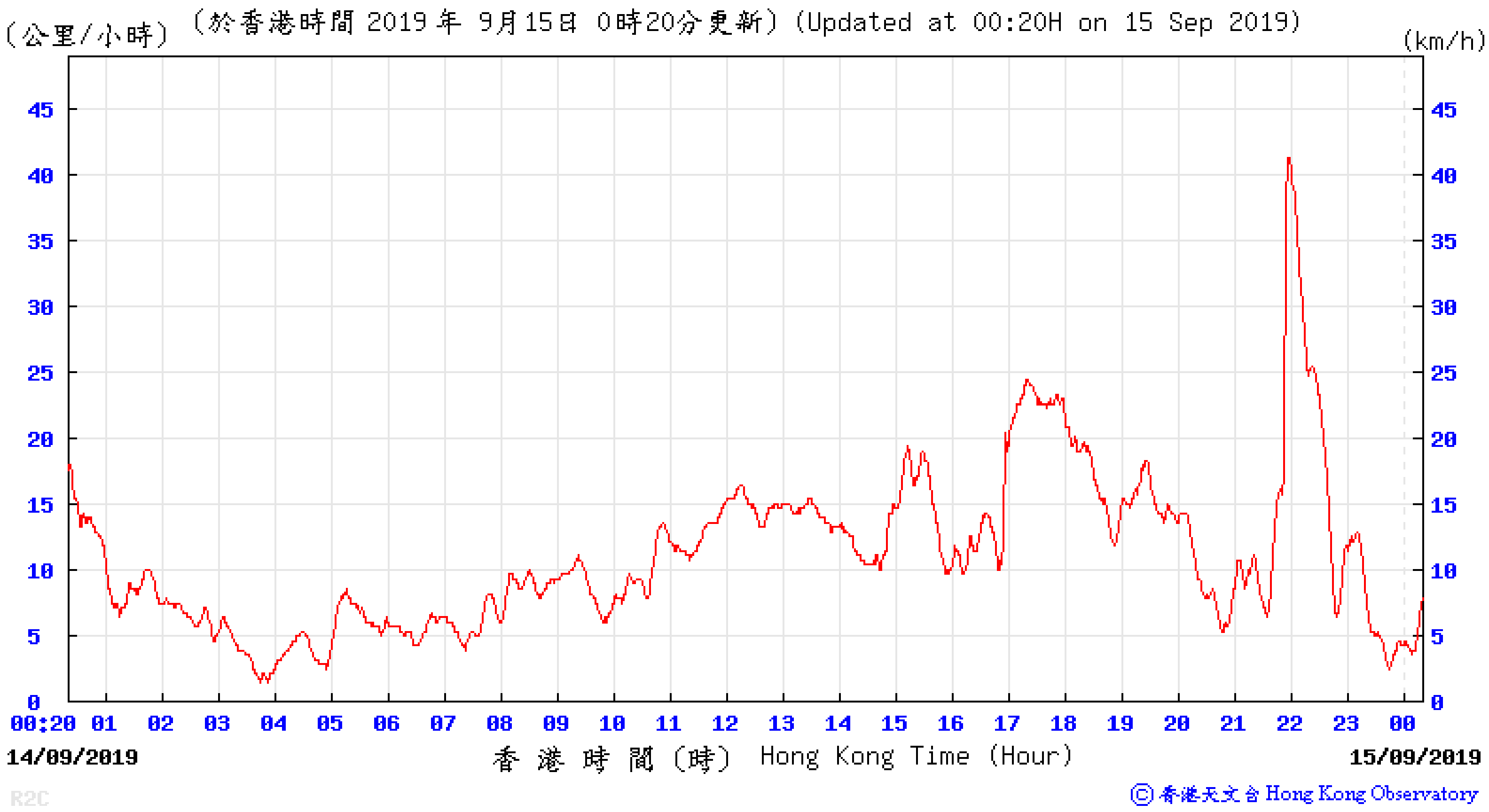

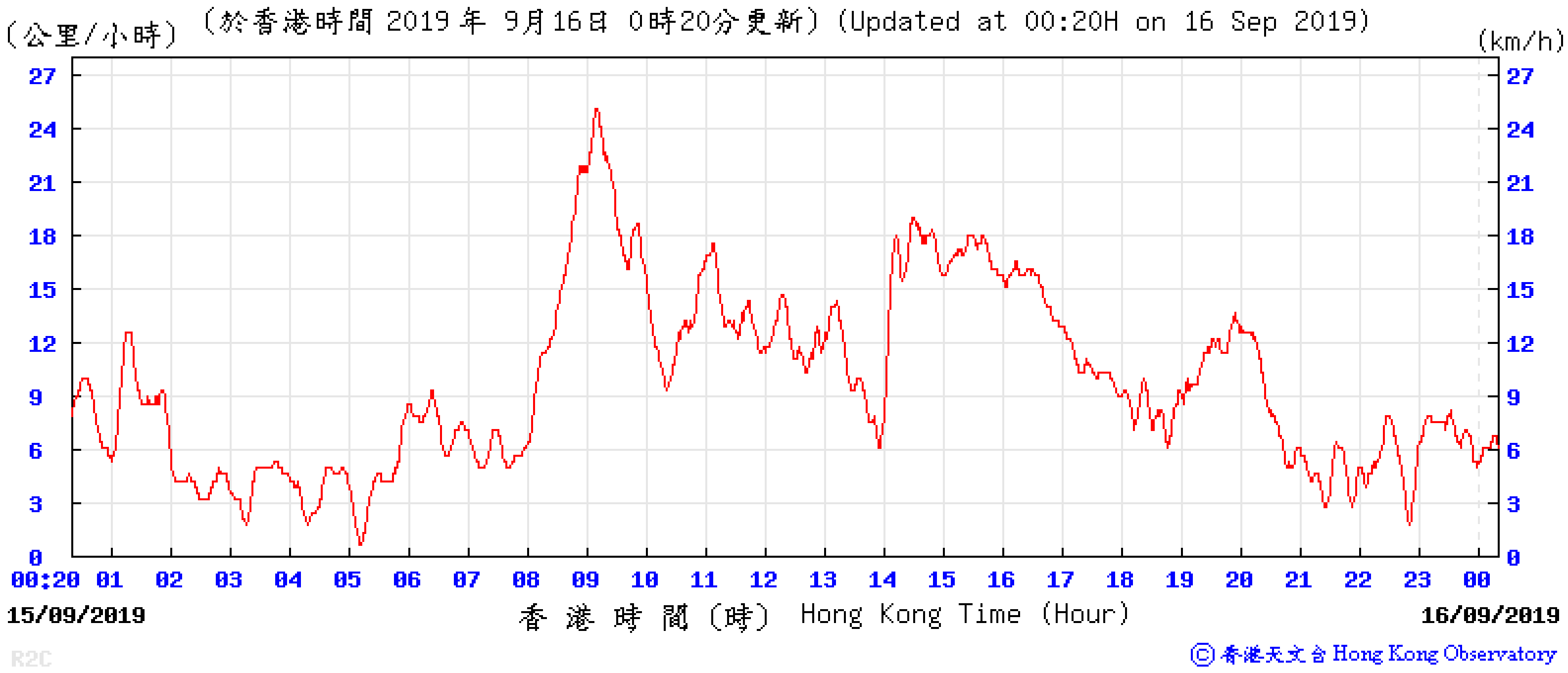

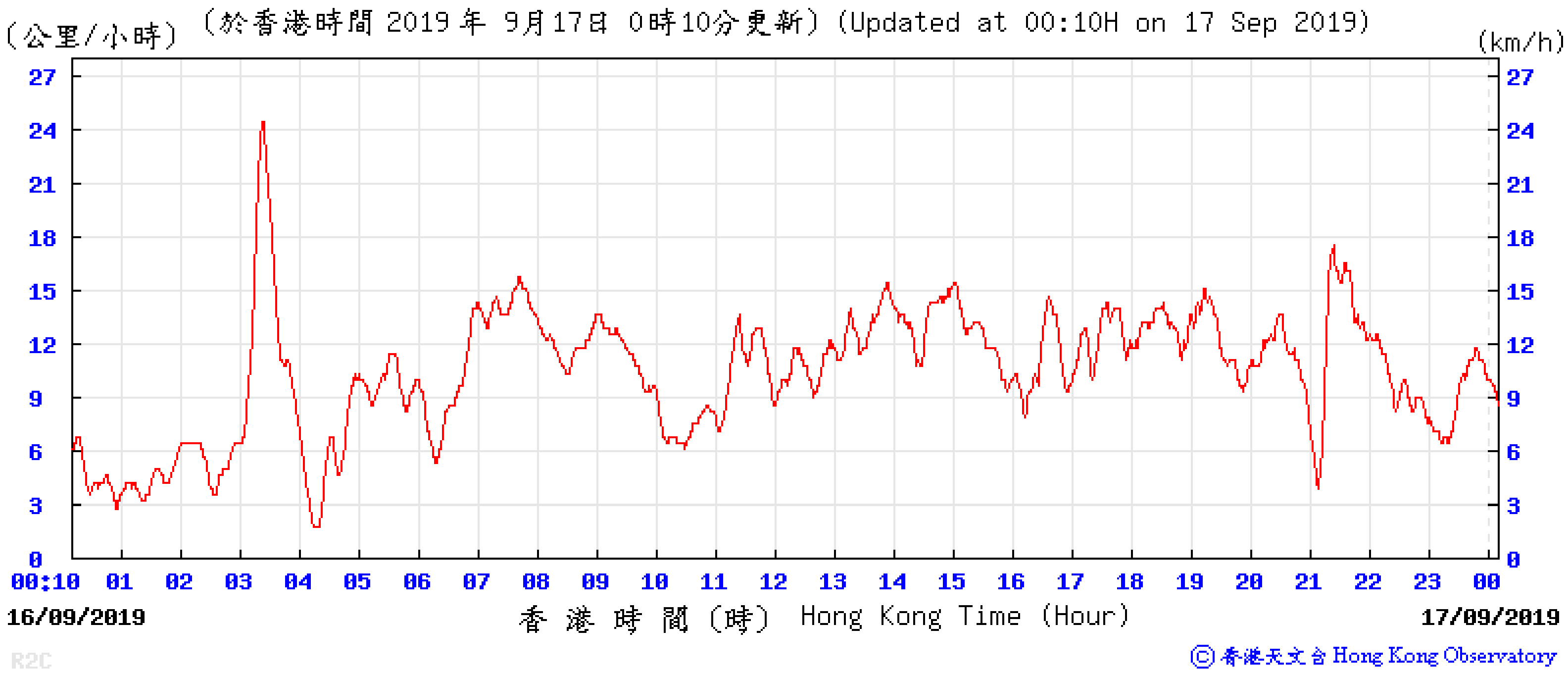

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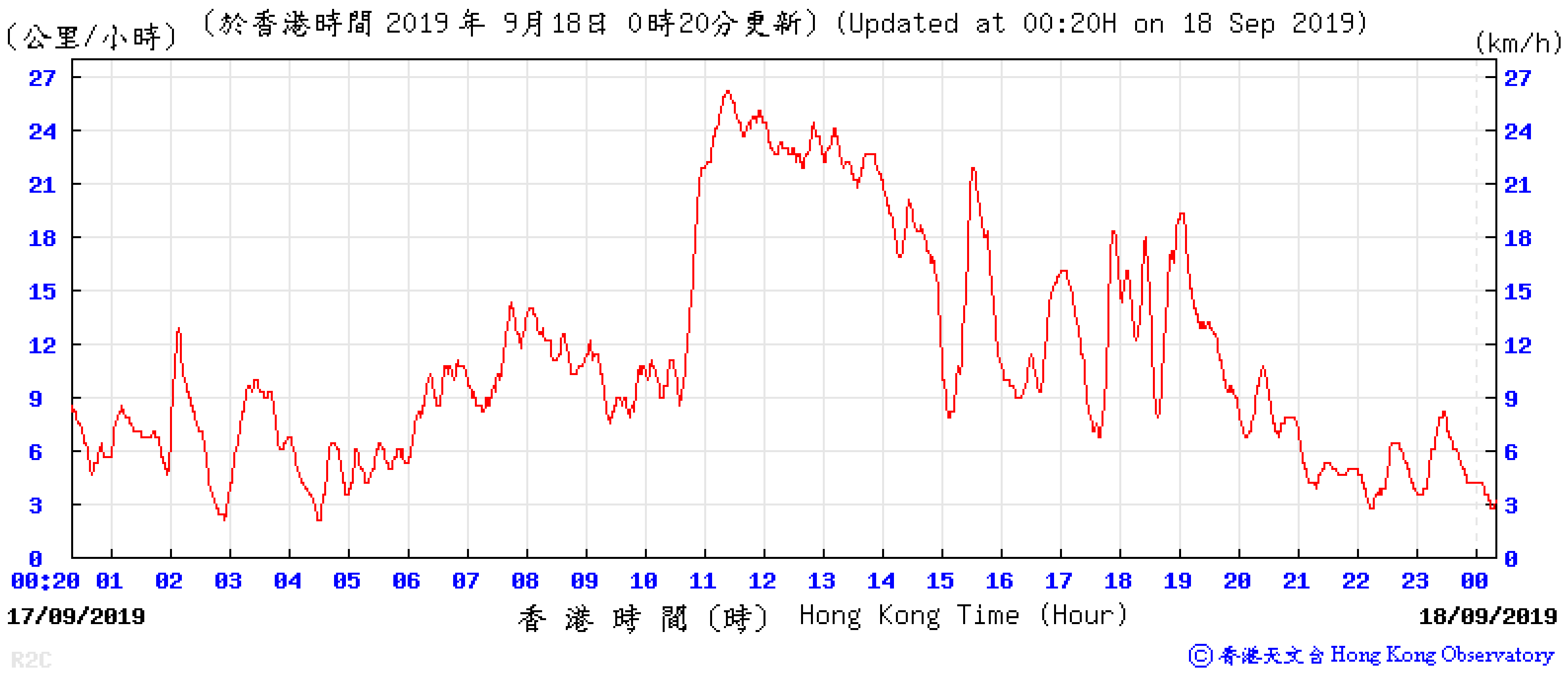

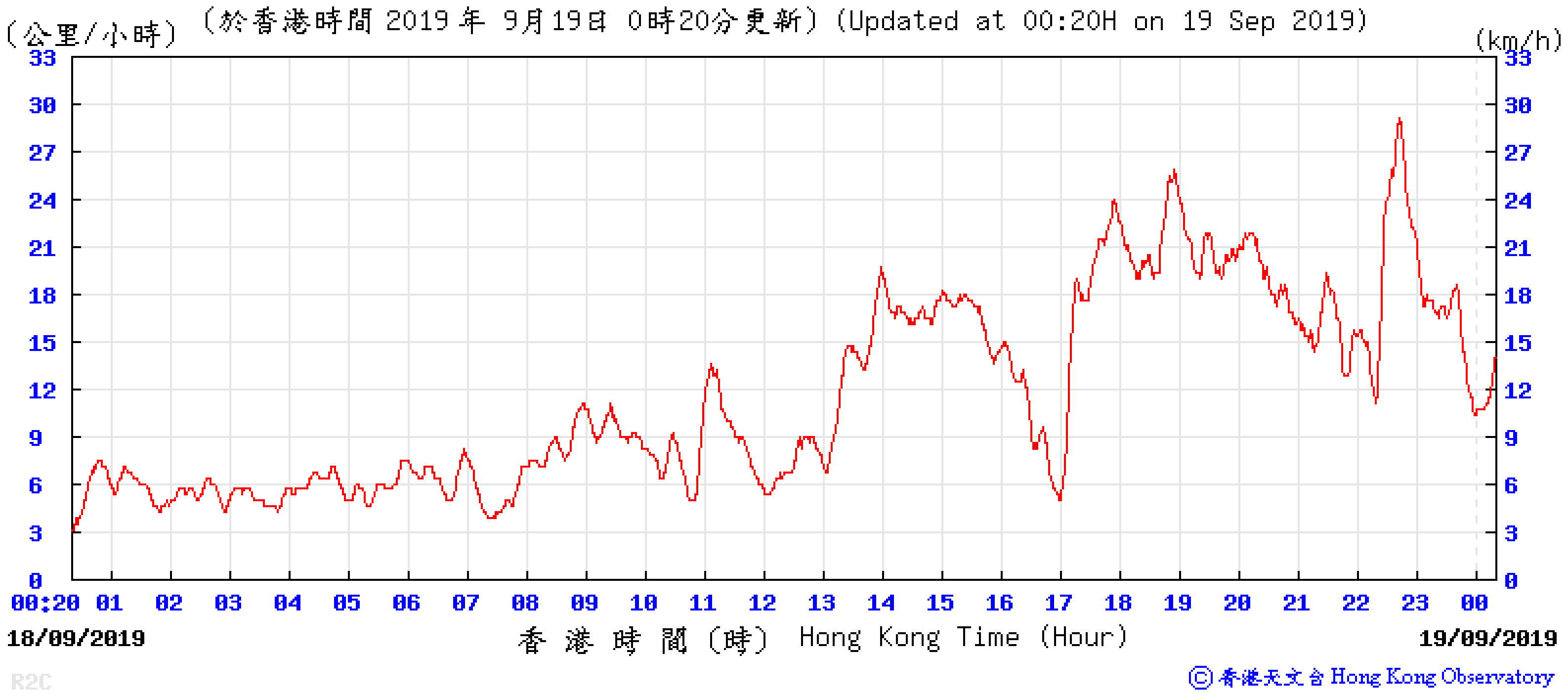

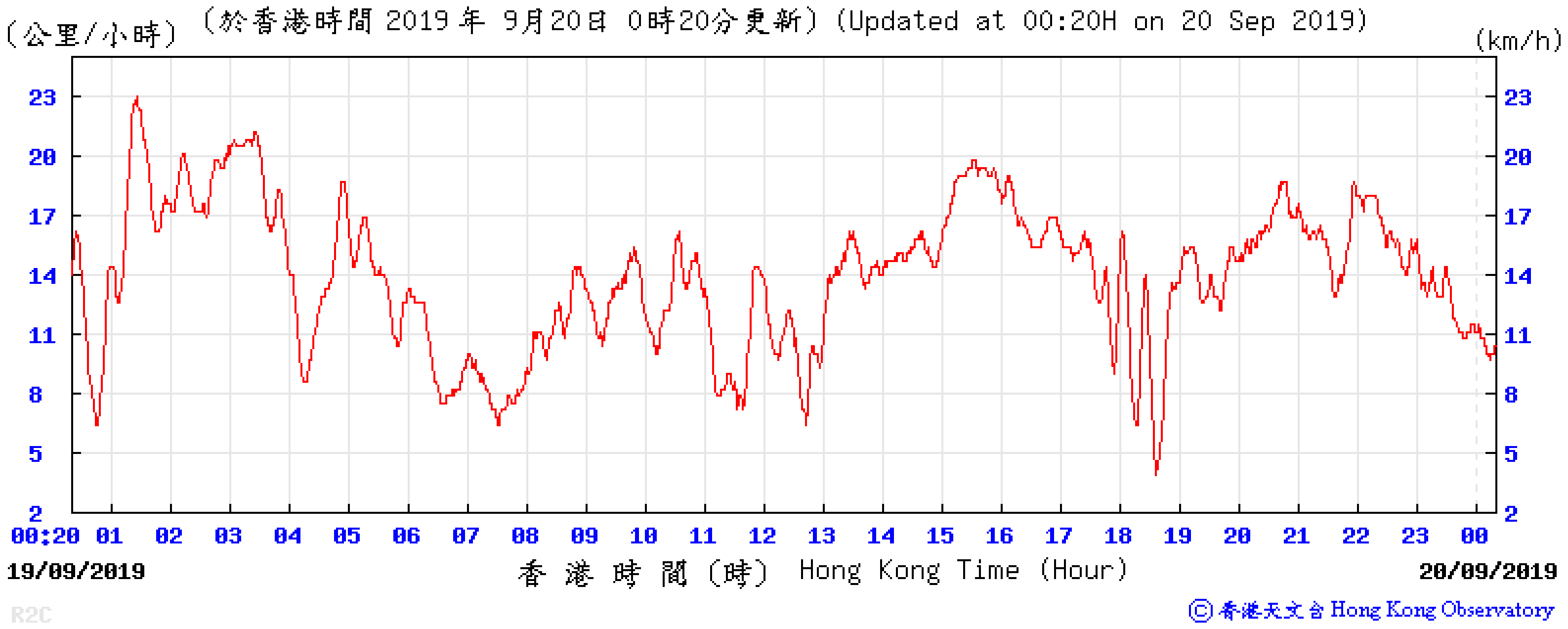

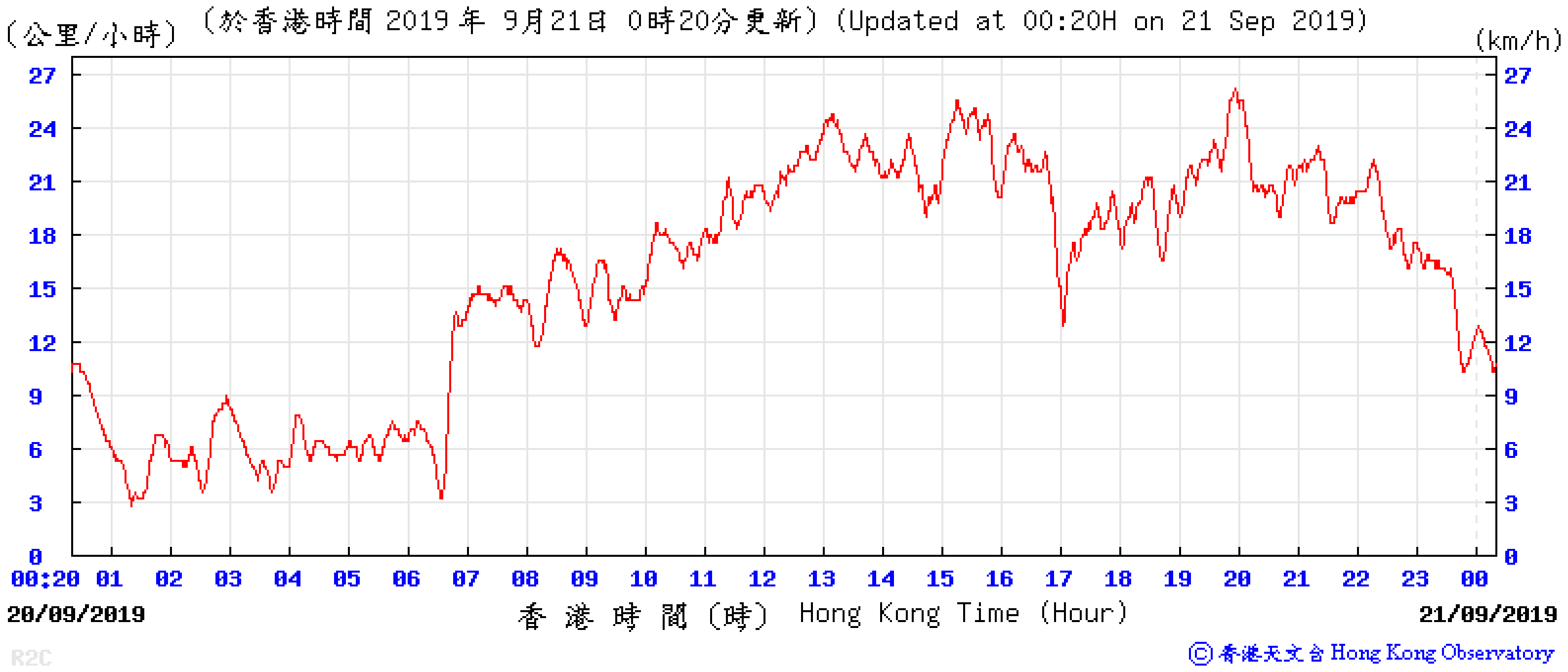

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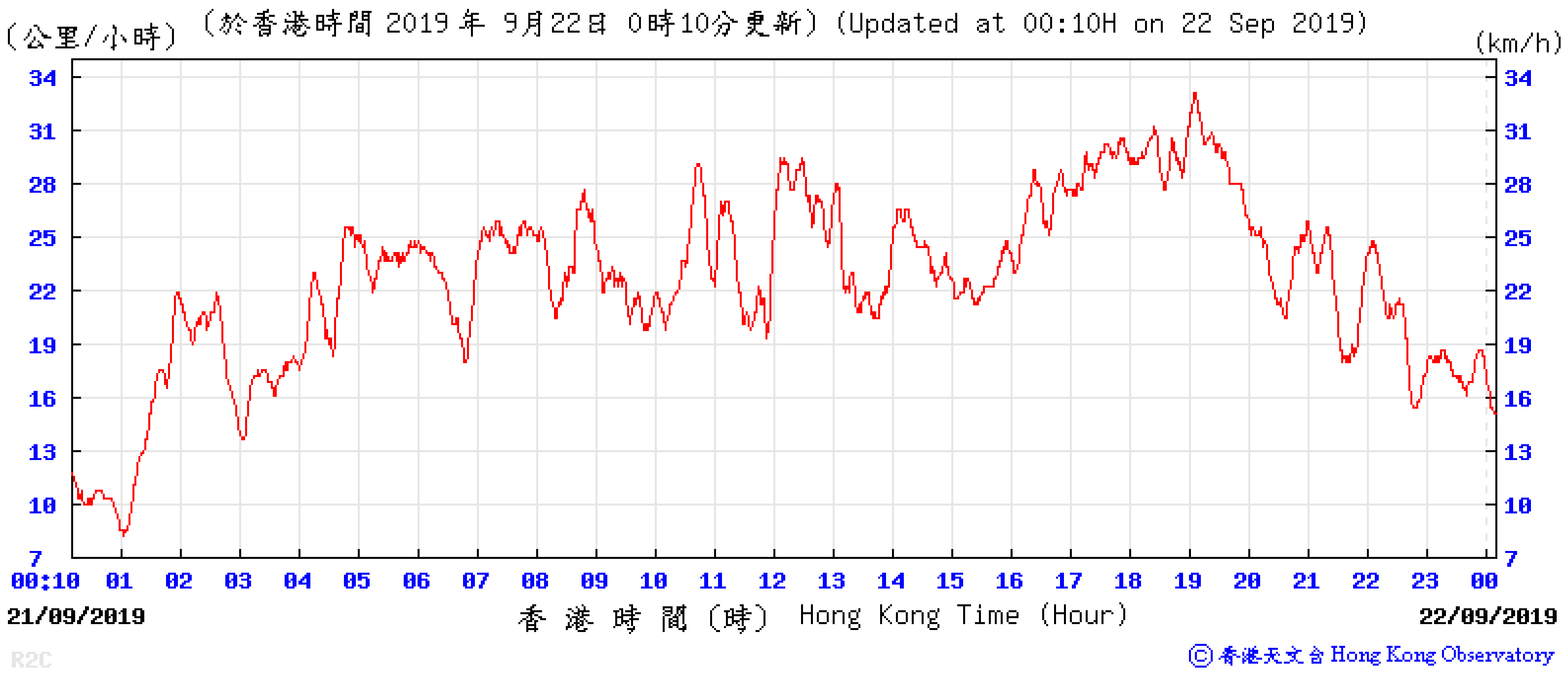

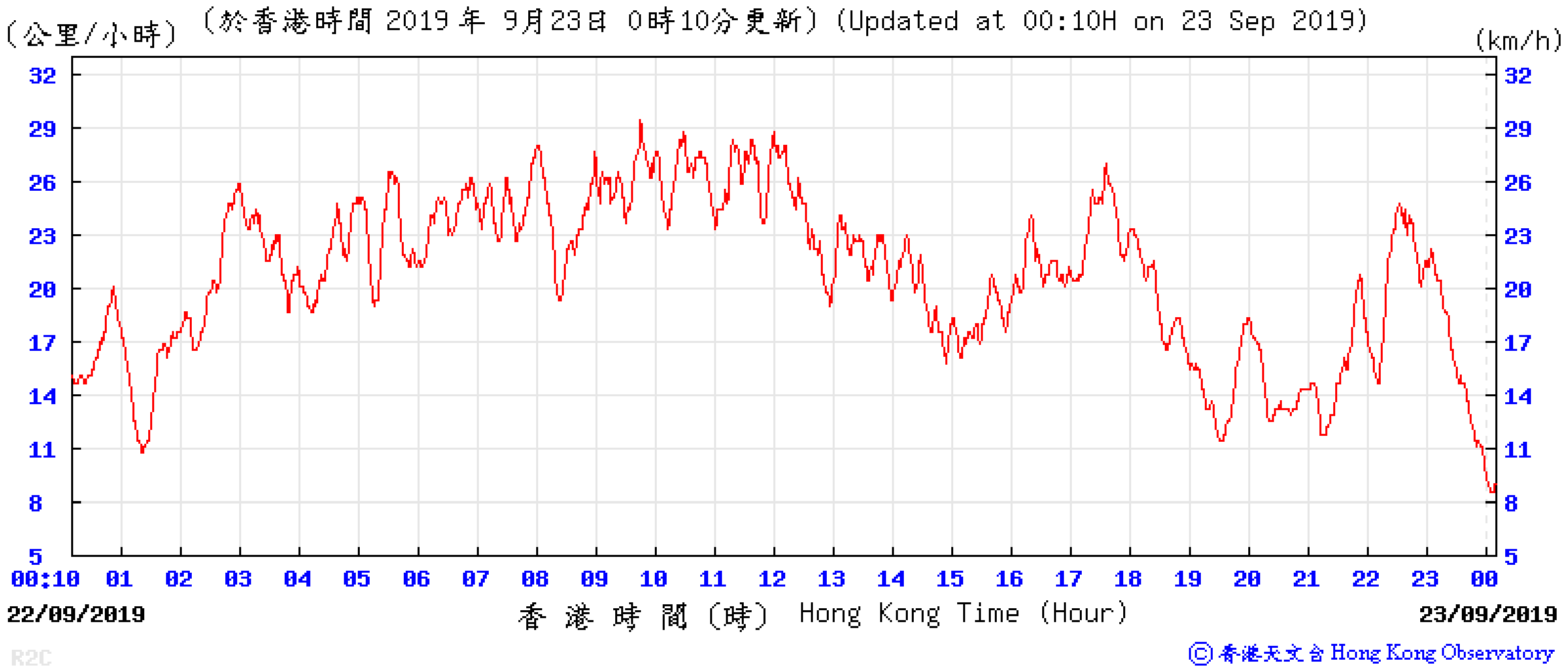

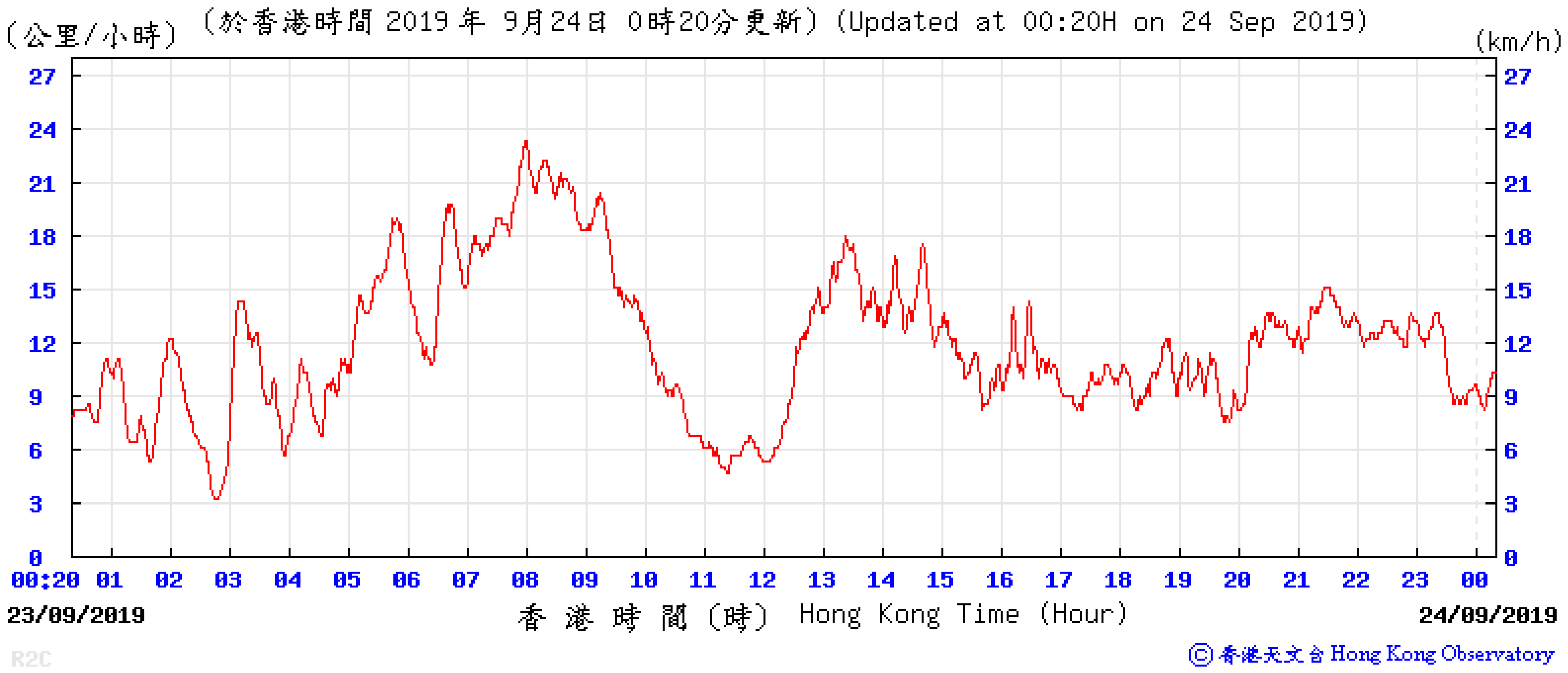

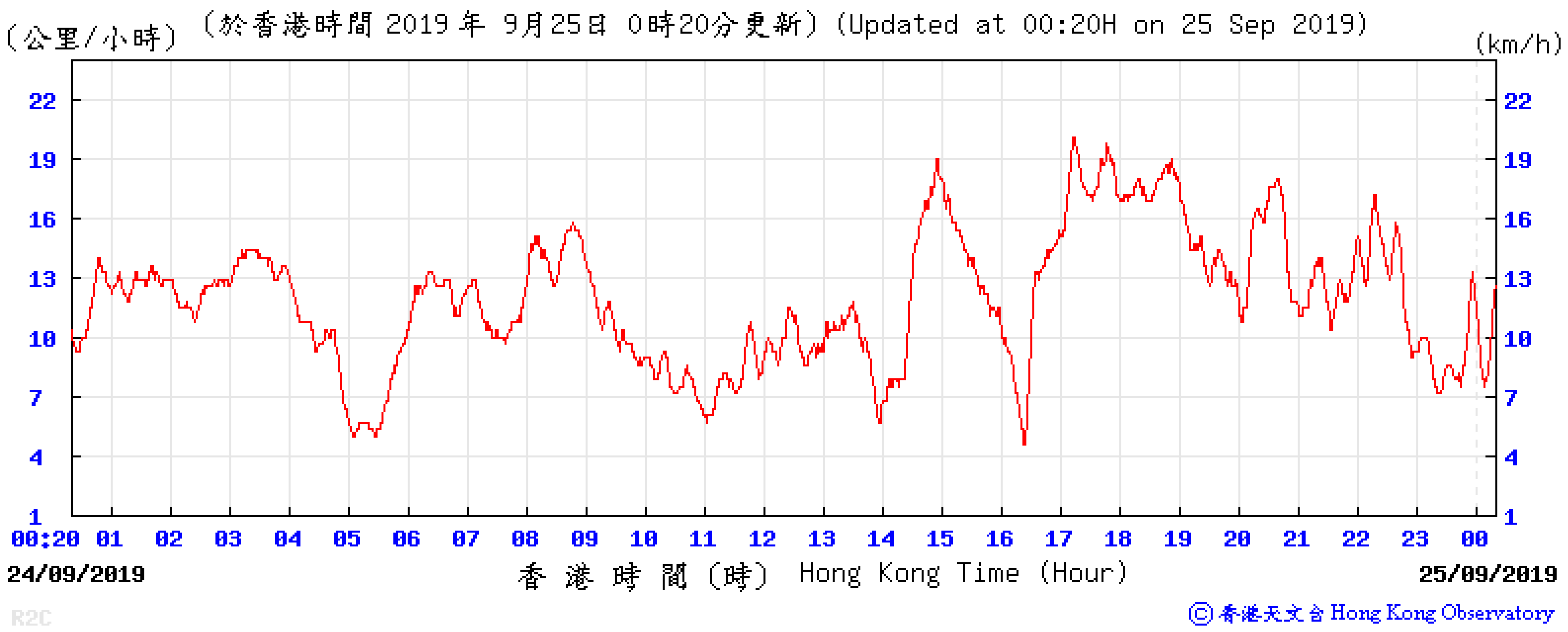

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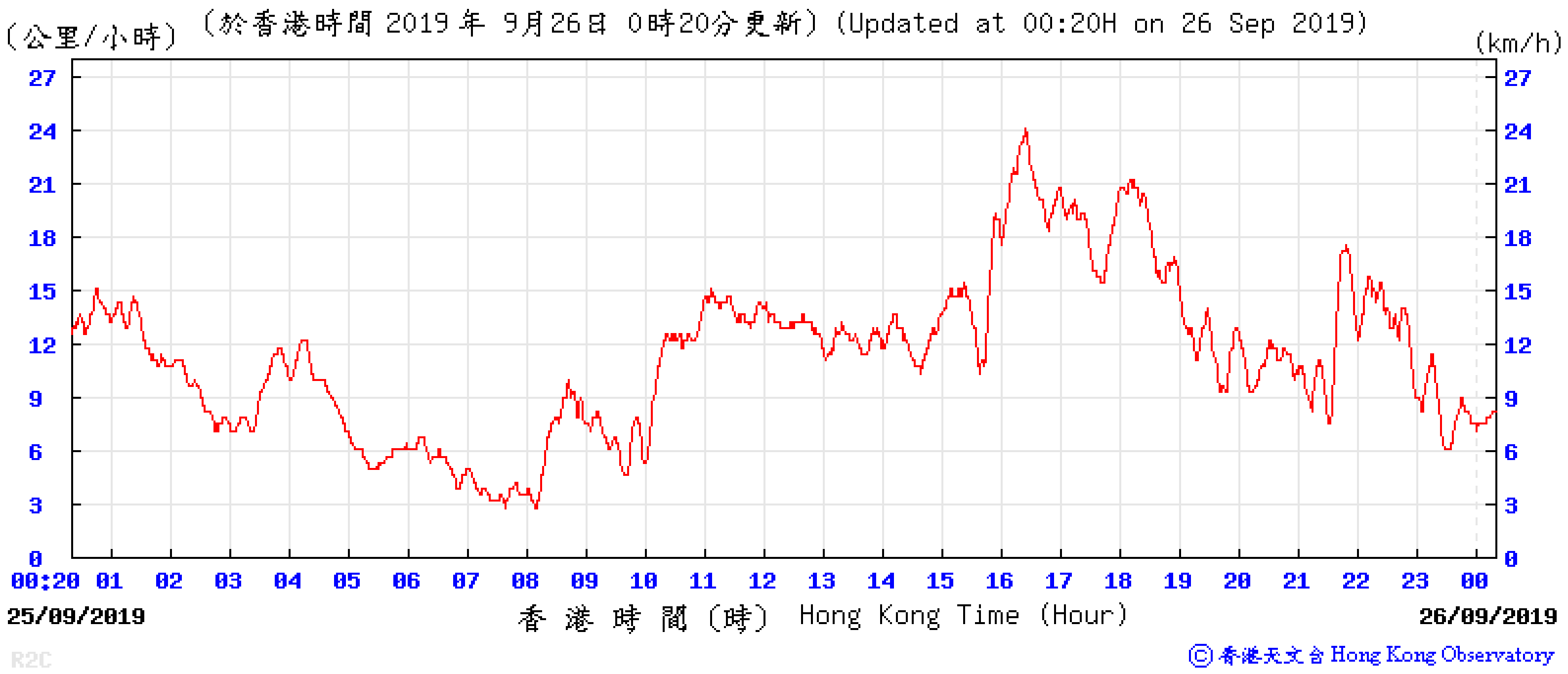

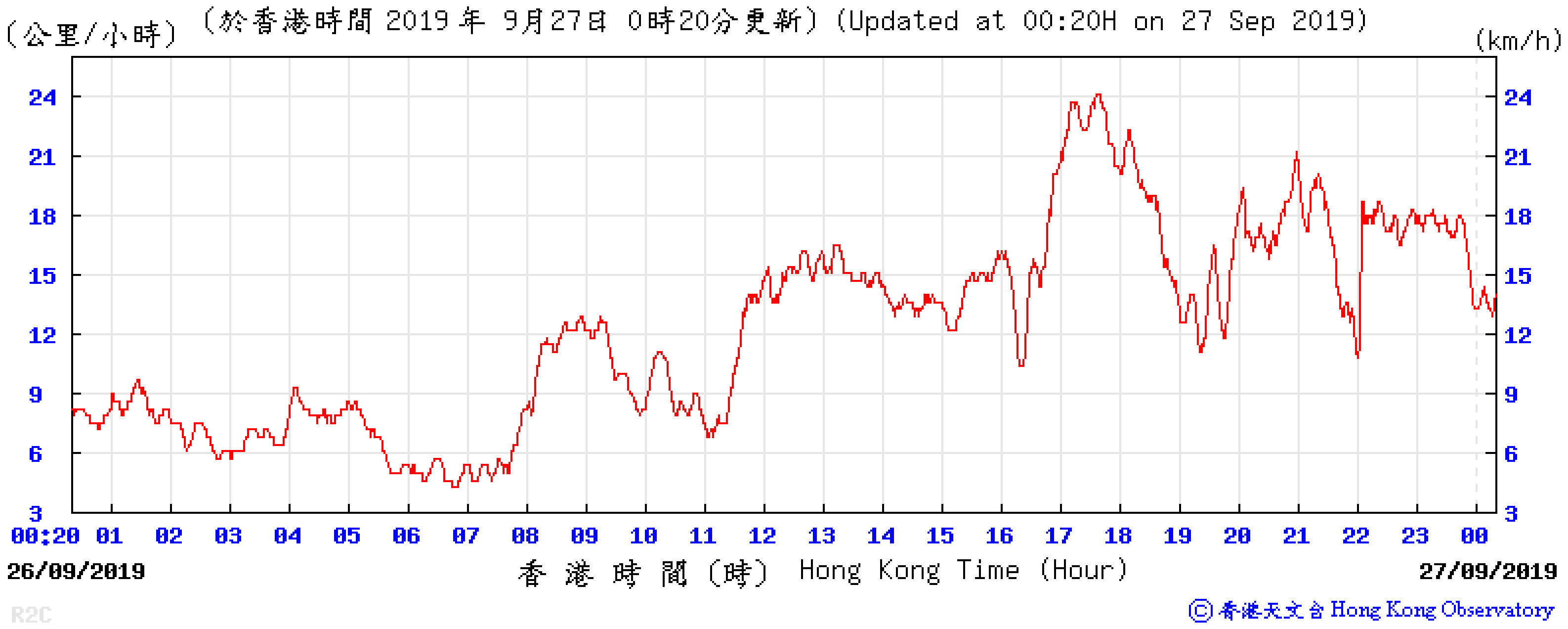

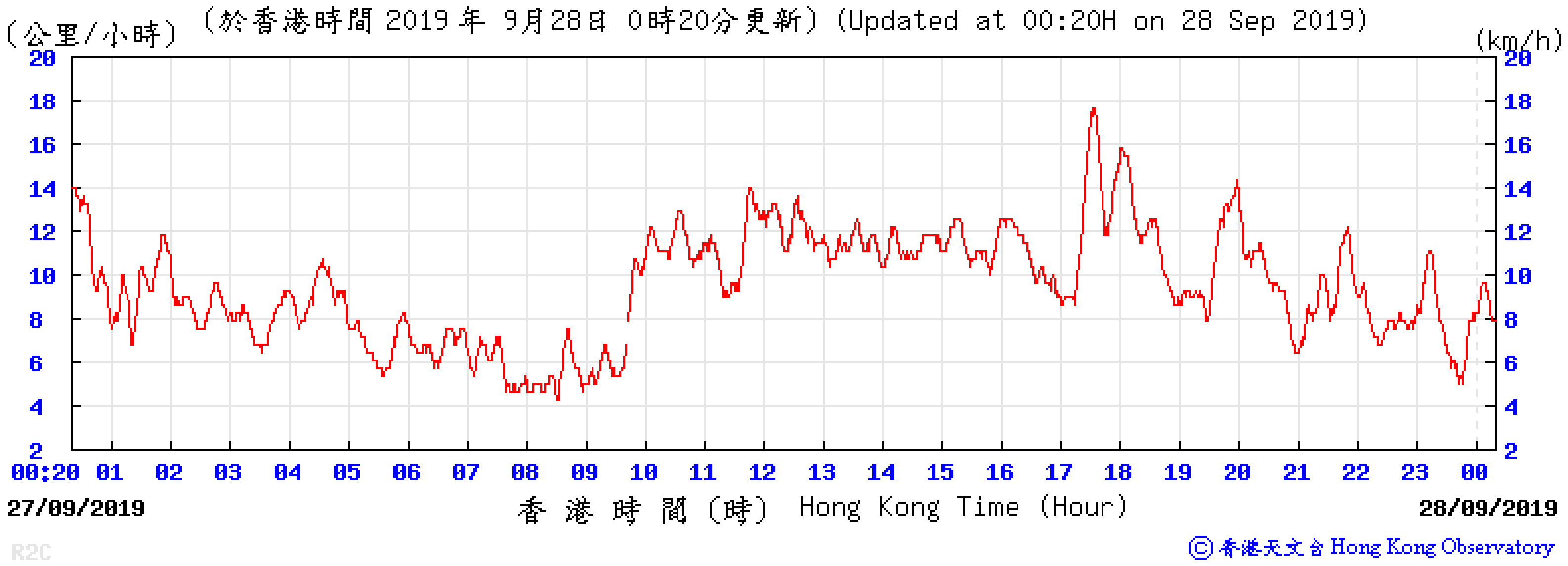

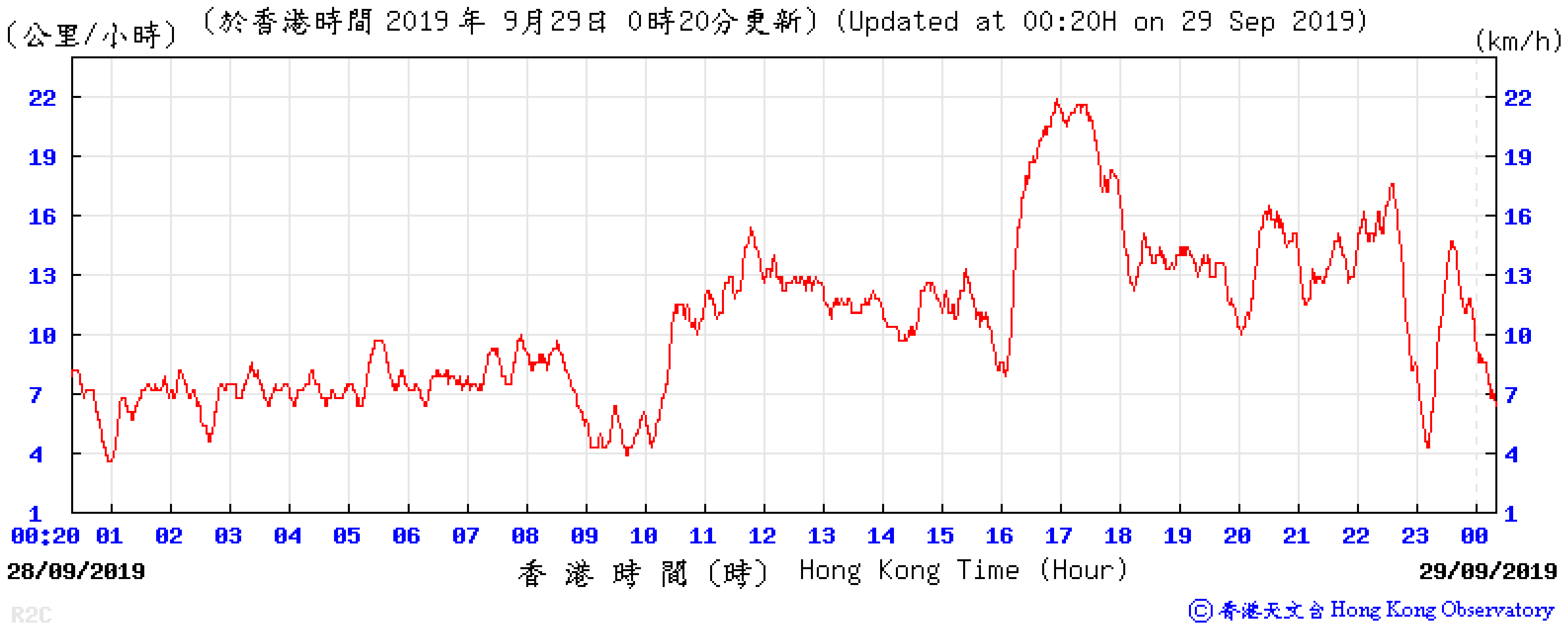

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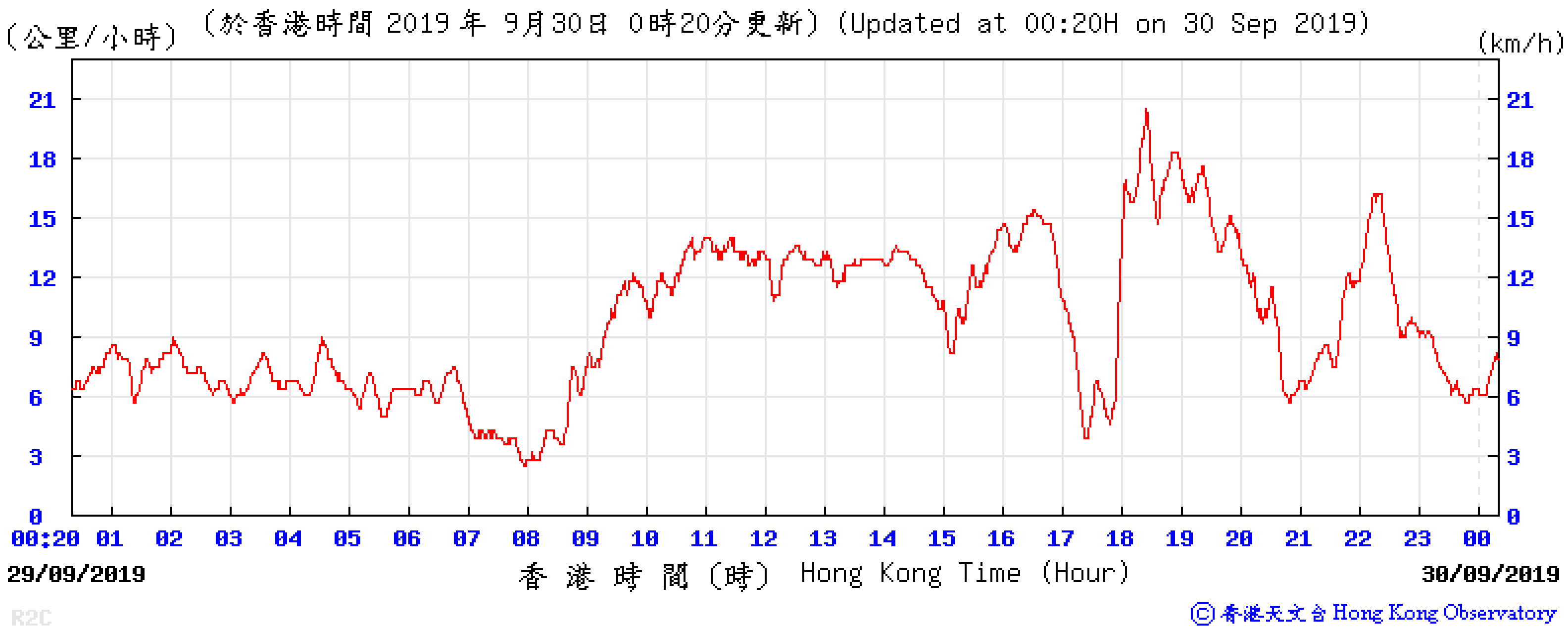
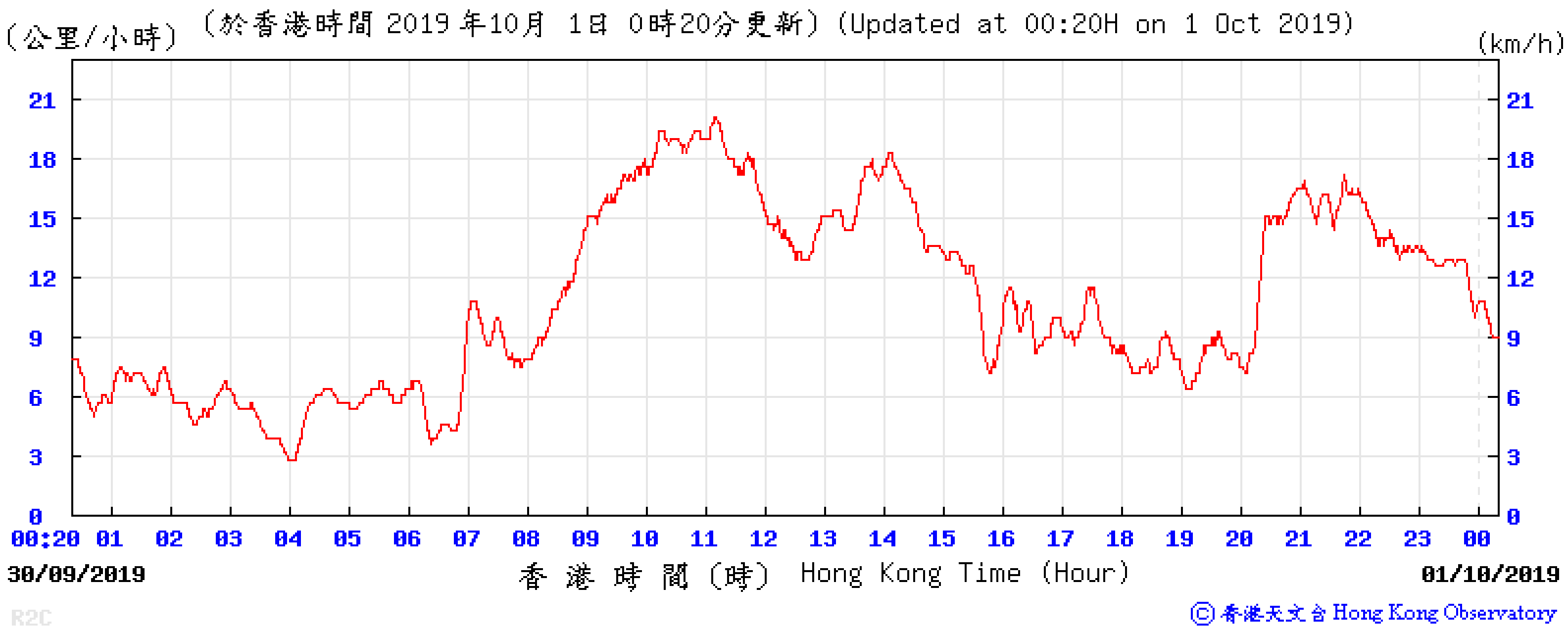




APPENDIX H

Dolphin Monitoring Results

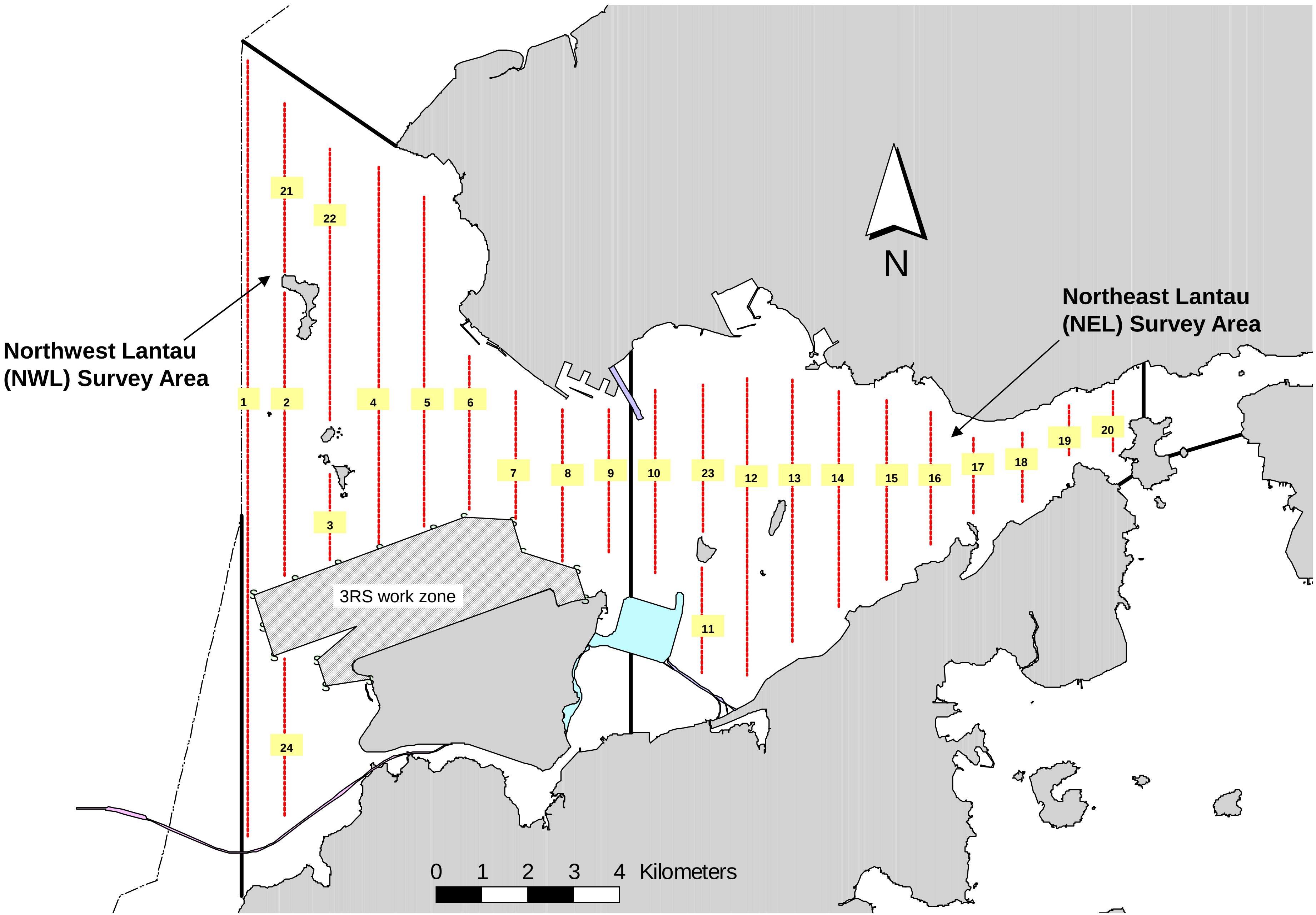


Figure 1. Transect Line Layout in Northwest and Northeast Lantau Survey Areas

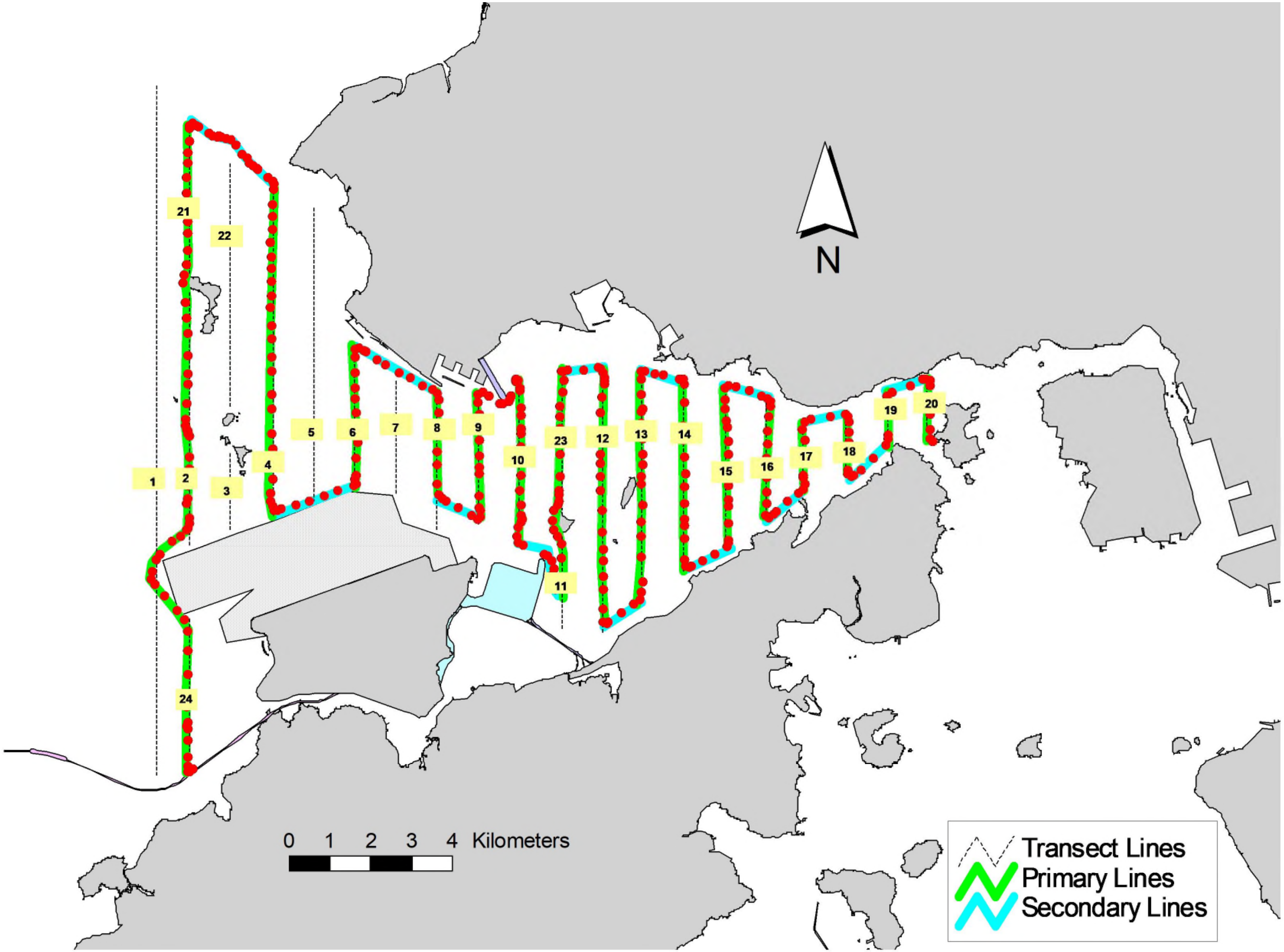


Figure 2. Survey Route on September 4th, 2019

Remark: There were some construction boats working close to southern end of transect line no. 11 during dolphin monitoring on 4 September 2019. Due to safety reason, the southern end of transect line no. 11 cannot be travelled at all on 4 September 2019.

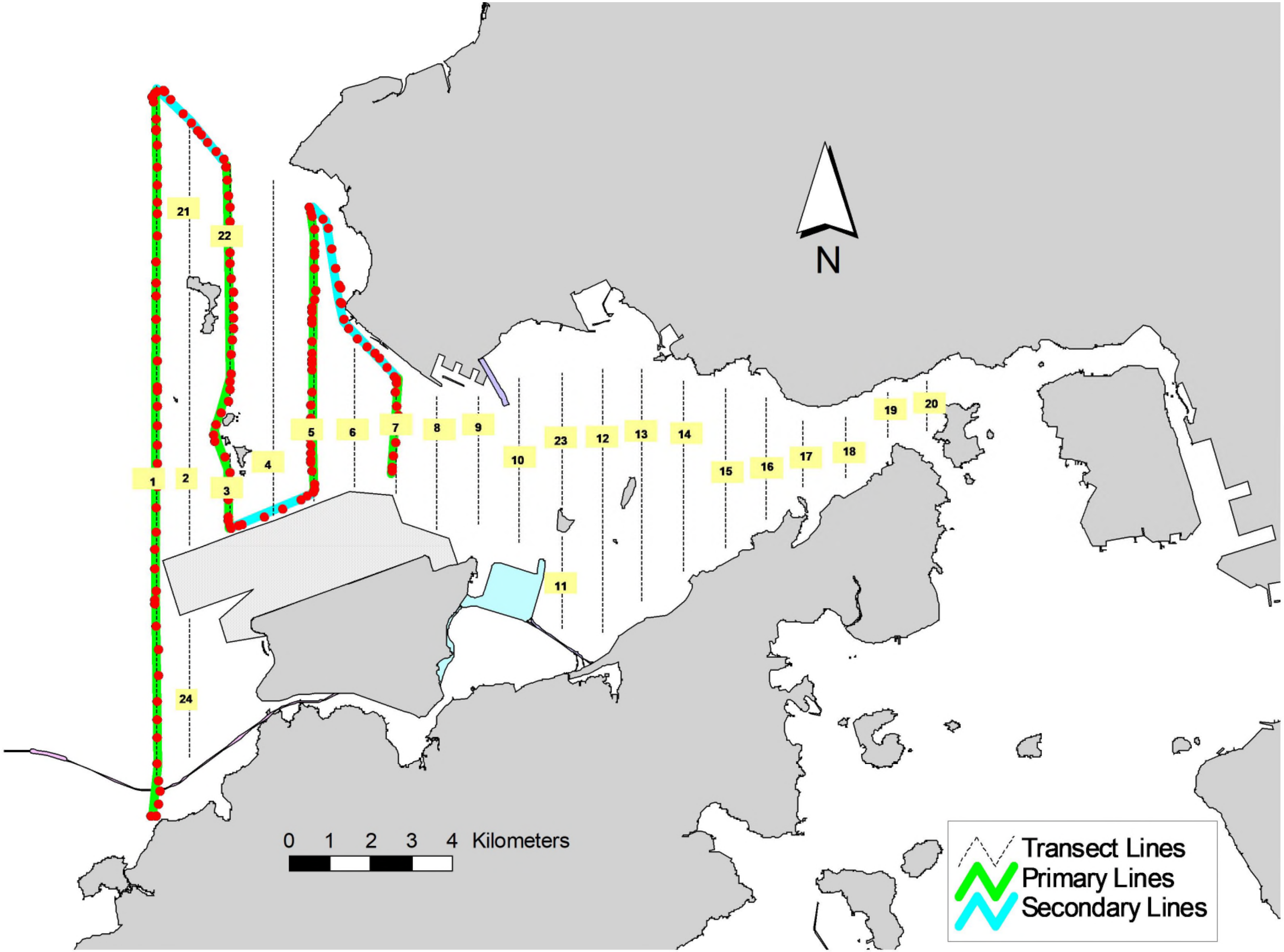


Figure 3. Survey Route on September 11th, 2019

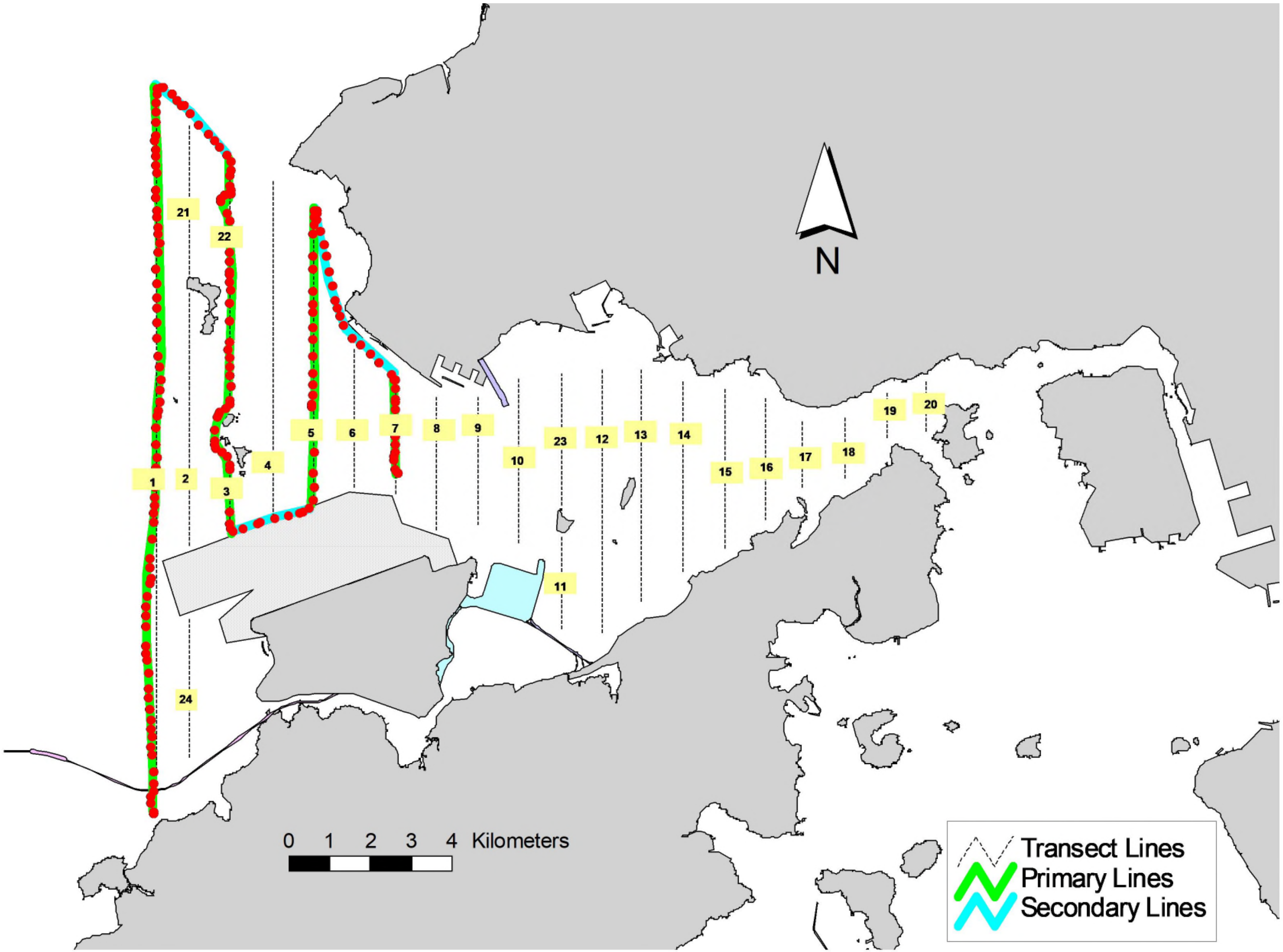


Figure 4. Survey Route on September 17th, 2019

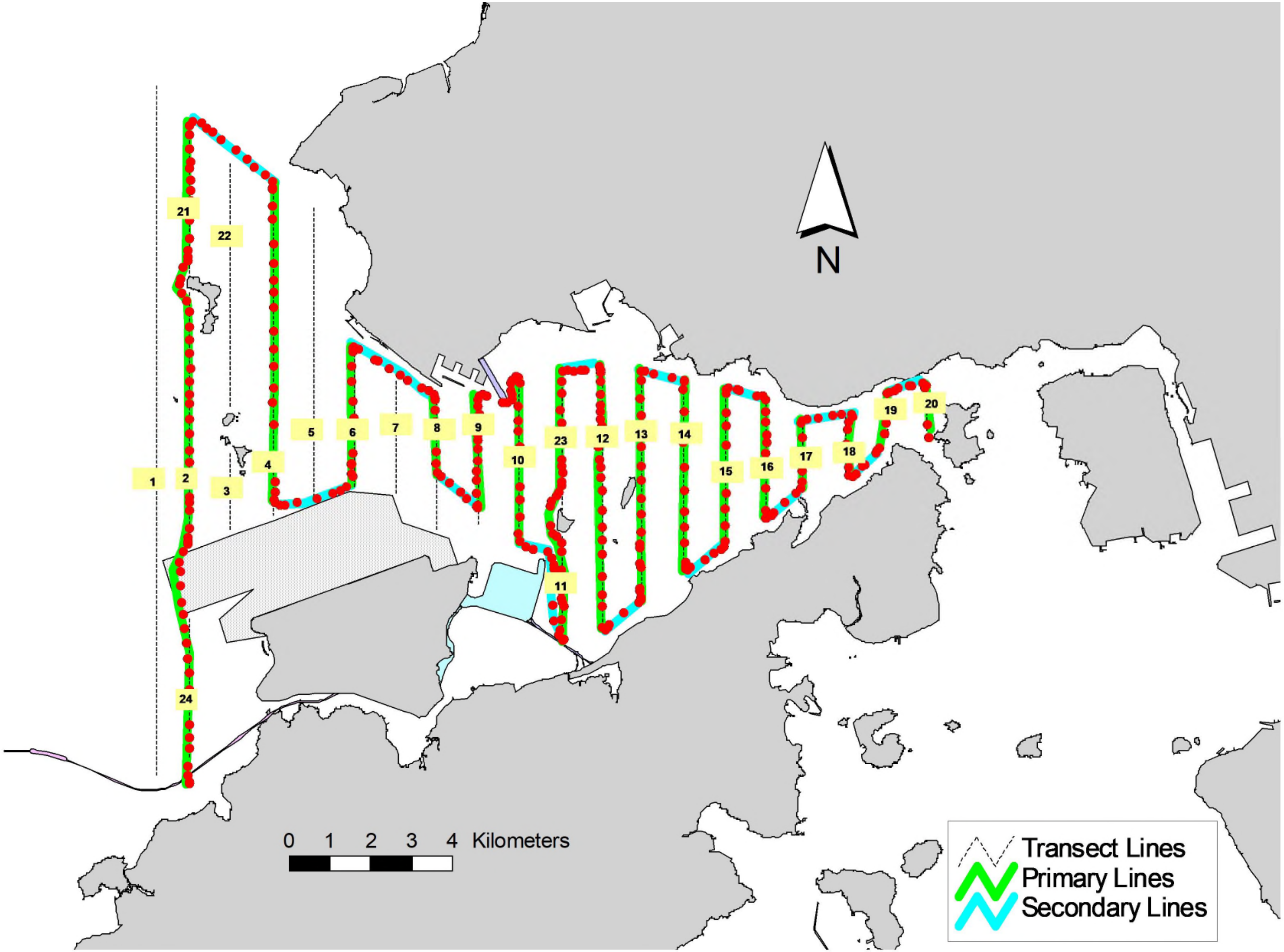


Figure 5. Survey Route on September 23rd, 2019

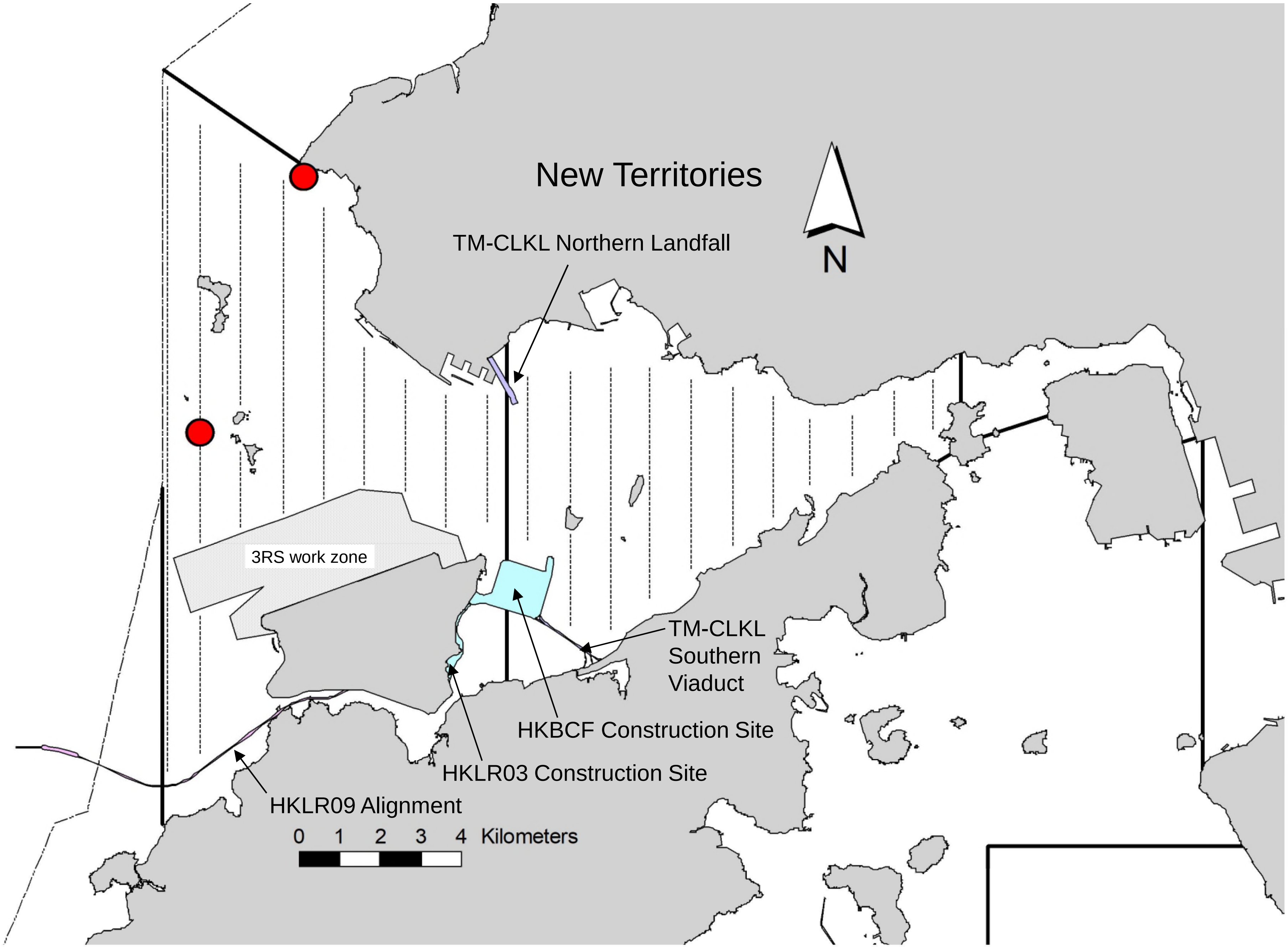


Figure 6. Distribution of Chinese White Dolphin Sightings during September 2019 HKLR03 Monitoring Surveys

Annex I. HKLR03 Survey Effort Database (September 2019)

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

DATE	AREA	BEAU	EFFORT	SEASON	VESSEL	TYPE	P/S
4-Sep-19	NW LANTAU	2	21.38	AUTUMN	STANDARD36826	HKLR	P
4-Sep-19	NW LANTAU	3	6.40	AUTUMN	STANDARD36826	HKLR	P
4-Sep-19	NW LANTAU	2	9.12	AUTUMN	STANDARD36826	HKLR	S
4-Sep-19	NW LANTAU	3	2.52	AUTUMN	STANDARD36826	HKLR	S
4-Sep-19	NE LANTAU	2	16.70	AUTUMN	STANDARD36826	HKLR	P
4-Sep-19	NE LANTAU	3	18.83	AUTUMN	STANDARD36826	HKLR	P
4-Sep-19	NE LANTAU	2	7.75	AUTUMN	STANDARD36826	HKLR	S
4-Sep-19	NE LANTAU	3	5.12	AUTUMN	STANDARD36826	HKLR	S
11-Sep-19	NW LANTAU	1	1.60	AUTUMN	STANDARD36826	HKLR	P
11-Sep-19	NW LANTAU	2	29.50	AUTUMN	STANDARD36826	HKLR	P
11-Sep-19	NW LANTAU	3	2.10	AUTUMN	STANDARD36826	HKLR	P
11-Sep-19	NW LANTAU	1	1.40	AUTUMN	STANDARD36826	HKLR	S
11-Sep-19	NW LANTAU	2	8.99	AUTUMN	STANDARD36826	HKLR	S
17-Sep-19	NW LANTAU	2	8.96	AUTUMN	STANDARD36826	HKLR	P
17-Sep-19	NW LANTAU	3	22.90	AUTUMN	STANDARD36826	HKLR	P
17-Sep-19	NW LANTAU	4	1.90	AUTUMN	STANDARD36826	HKLR	P
17-Sep-19	NW LANTAU	2	4.54	AUTUMN	STANDARD36826	HKLR	S
17-Sep-19	NW LANTAU	3	4.90	AUTUMN	STANDARD36826	HKLR	S
17-Sep-19	NW LANTAU	4	1.20	AUTUMN	STANDARD36826	HKLR	S
23-Sep-19	NW LANTAU	2	19.22	AUTUMN	STANDARD36826	HKLR	P
23-Sep-19	NW LANTAU	3	7.79	AUTUMN	STANDARD36826	HKLR	P
23-Sep-19	NW LANTAU	2	9.84	AUTUMN	STANDARD36826	HKLR	S
23-Sep-19	NW LANTAU	3	4.25	AUTUMN	STANDARD36826	HKLR	S
23-Sep-19	NE LANTAU	1	11.30	AUTUMN	STANDARD36826	HKLR	P
23-Sep-19	NE LANTAU	2	25.35	AUTUMN	STANDARD36826	HKLR	P
23-Sep-19	NE LANTAU	1	3.61	AUTUMN	STANDARD36826	HKLR	S
23-Sep-19	NE LANTAU	2	10.74	AUTUMN	STANDARD36826	HKLR	S

Annex II. HKLR03 Chinese White Dolphin Sighting Database (September 2019)

(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
4-Sep-19	1	1046	2	NW LANTAU	2	311	ON	HKLR	823375	805440	AUTUMN	NONE	P
11-Sep-19	1	1058	3	NW LANTAU	2	430	ON	HKLR	829316	807975	AUTUMN	NONE	S

Annex III. Individual dolphins identified during HKLR03 monitoring surveys in (September 2019)

ID#	DATE	STG#	AREA
NL136	11/09/19	1	NW LANTAU
NL202	11/09/19	1	NW LANTAU
NL286	11/09/19	1	NW LANTAU

Annex IV. Photographs of Identified Individual Dolphins in September 2019 (HKLR03)

APPENDIX I

Mudflat Monitoring Results

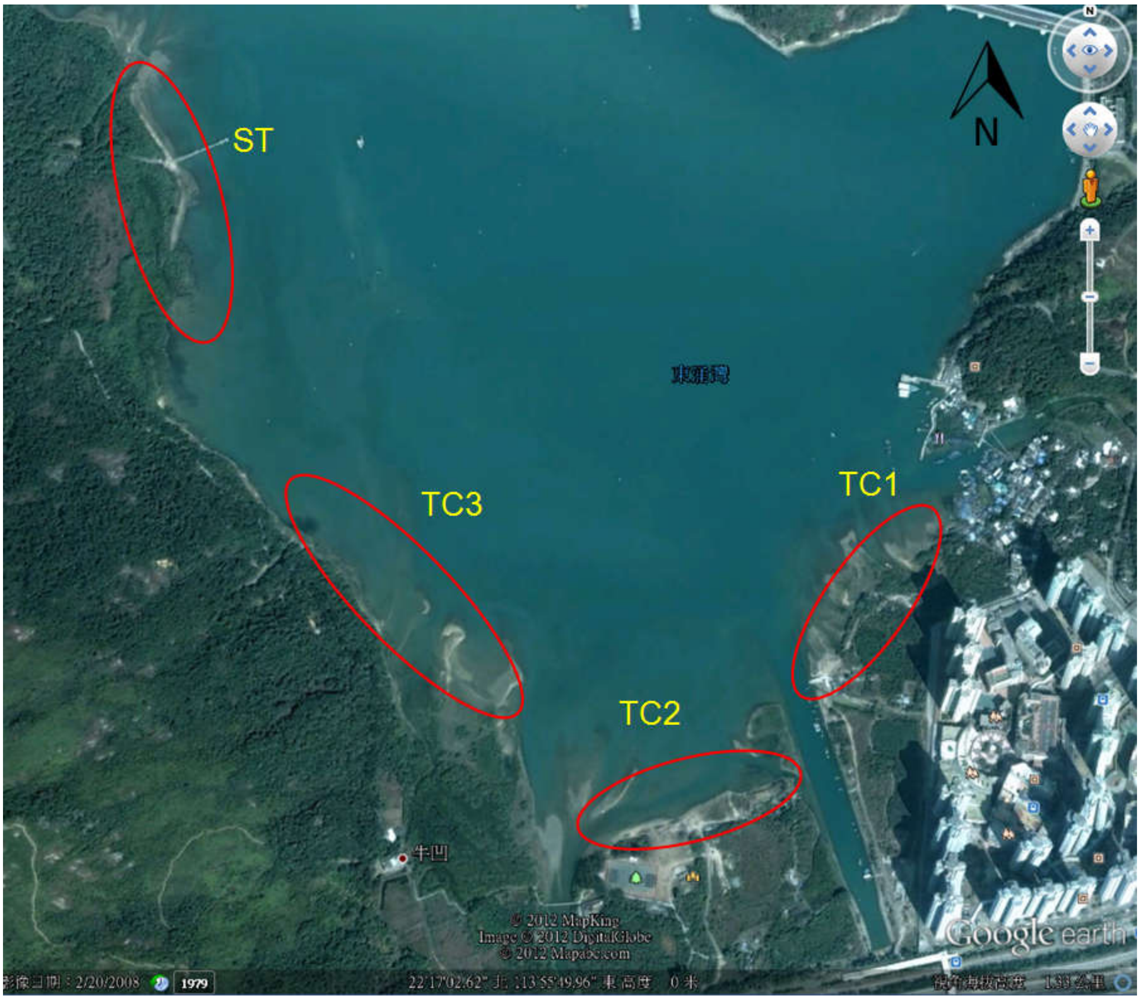


Figure 2.1 *Locations of sampling zones. The study site was divided into three sampling zones (TC1, TC2, TC3) in Tung Chung Bay and one zone in San Tau (ST) (map generated from Google Map).*

TC1

TC2

TC3

ST

Figure 2.2 *Photographic record of the environment in every sampling zone. (September 2019)*

TC1

Plastic waste

Trash gill net

TC3

Boat wreckage

ST

Trash gill net and hand trolley

A tangled horseshoe crab on a trash net (record in June 2017)

Figure 2.3 *Examples of photographic record of the big trashes found on the mudflat.*

TC3 ***Carcinoscorpius rotundicauda***

TC3 Tachypleus tridentatus

Figure 3.1 *Examples of photographic records of horseshoe crab (September 2019)*

ST ***Carcinoscorpius rotundicauda***

TC2 ***Carcinoscorpius rotundicauda***

Figure 3.1 (CON'T) *Examples of photographic records of horseshoe crab (September 2019)*

Table 3.1.*Summary of juvenile horseshoe crab survey in every sampling zone*

	TC1	TC2	TC3	ST
Search duration (hr)	2	2	3	3
Carcinoscorpius rotundicauda				
No. of individuals	0	1	32	9
Mean prosomal width (mm)	\	20.32	37.02	26.8
Max..prosomal width (mm)	\	\	70.71	35.41
Min. prosomal width (mm)	\	\	10.13	18.25
Search record (ind. hr^{-1} $person^{-1}$)	0.00	0.25	5.33	1.50
Tachypleus tridentatus				
No. of individuals	0	0	8	0
Mean prosomal width (mm)	\	\	47.62	\
Max..prosomal width (mm)	\	\	98.14	\
Min. prosomal width (mm)	\	\	20.52	\
Search record (ind. hr^{-1} $person^{-1}$)	0.00	0.00	1.33	0.00

March 2015 - ST

June 2017 – TC2

(Female)

(Male)

June 2017 – TC3

Figure 3.2 Photographic records of mating pairs of horseshoe crab

December 2017 – TC3

June 2018 – TC3

(Female) (Male)

Figure 3.2(Cont'd) *Photographic records of mating pair of* horseshoe crab

March 2019 – TC2

June 2019 – TC3

Figure 3.2 (Cont'd). *Photographic records of mating pair of horseshoe crab*

TC1

TC2

Figure 3.3 *Photographic records of newly hatched individuals of horseshoe crab (September 2018)*

December 2017 **December 2018**

March 2019

Figure 3.4 *Photographic records of large individuals (>100 mm) of horseshoe crabs records were excluded from data analysis*

Tachypleus tridentatus

September 2017

June 2019

Figure 3.4 (Cont'd) *Photographic records of large individuals (>100 mm) of horseshoe crabs records were excluded from data analysis*

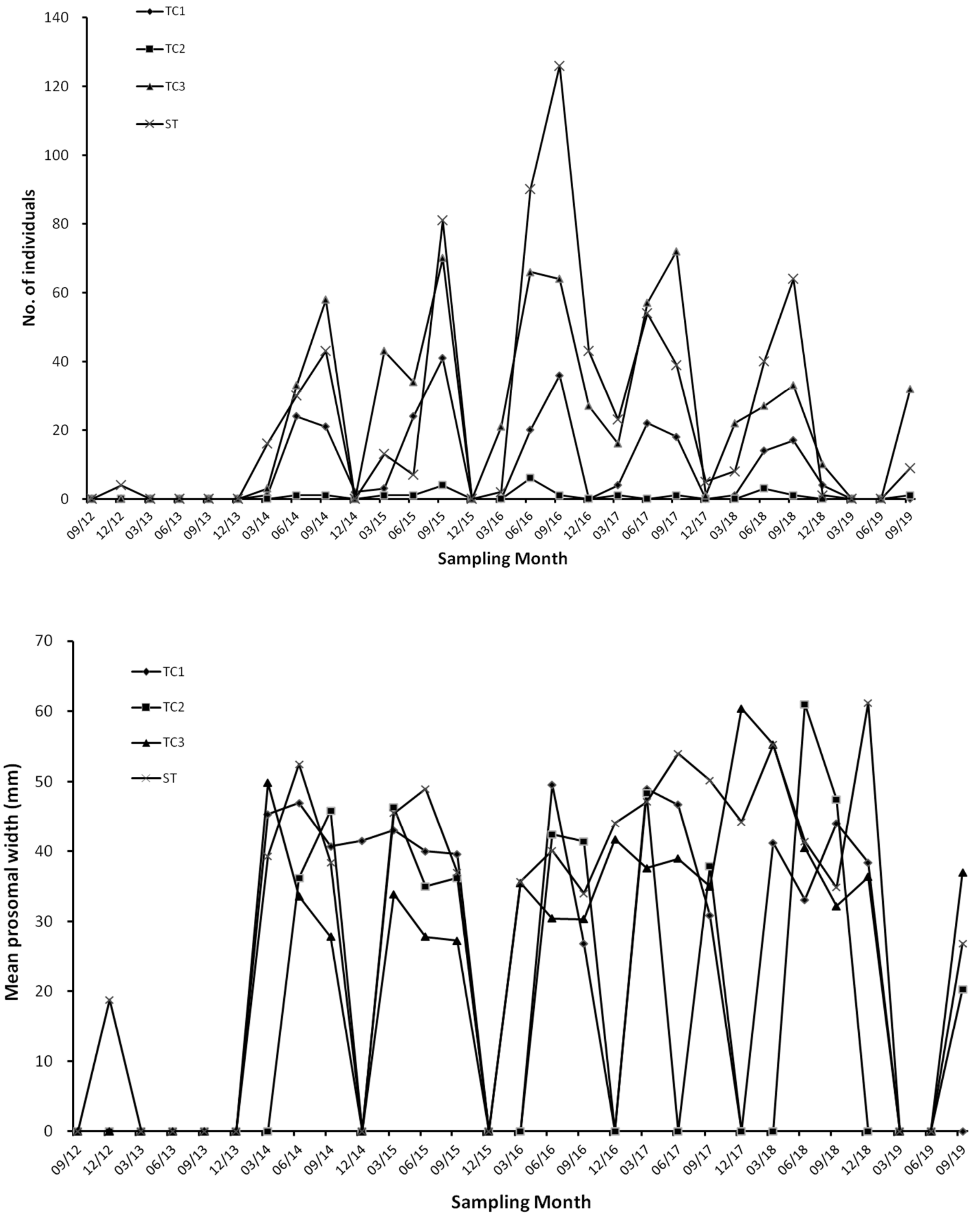


Figure 3.5 *Changes of number of individuals mean prosomal width and search record of horseshoe crab Carcinoscorpius rotundicauda in every sampling zone along the sampling months*

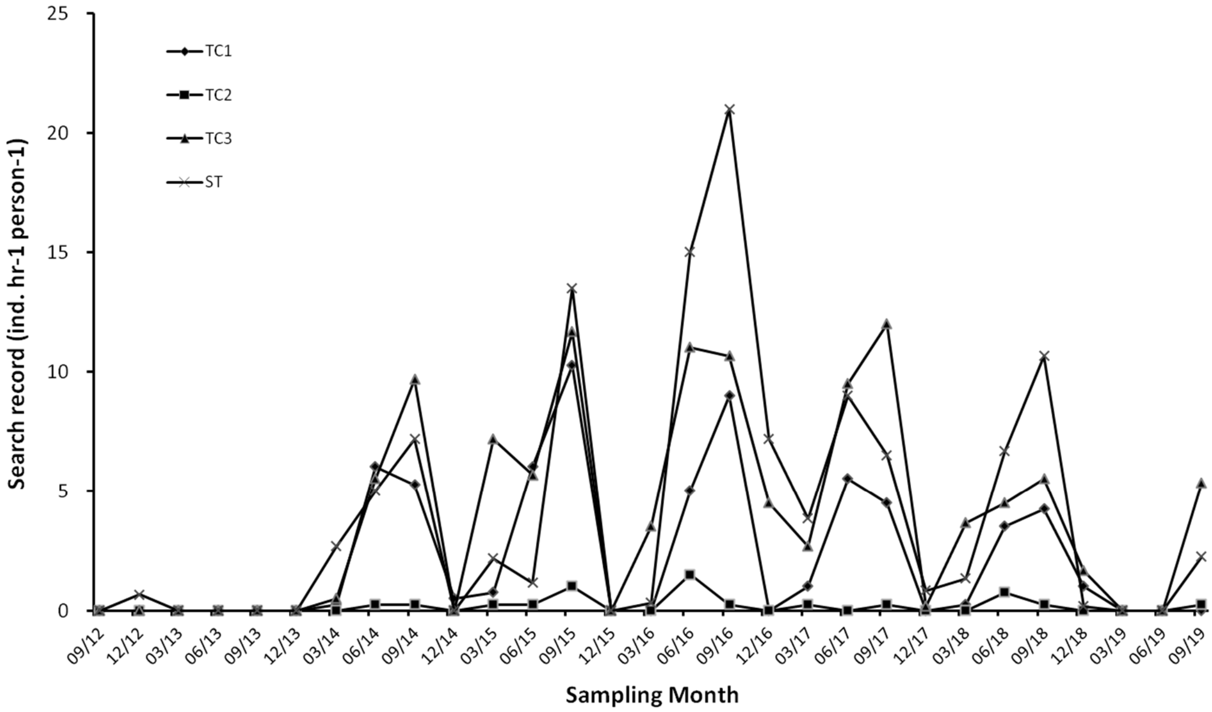
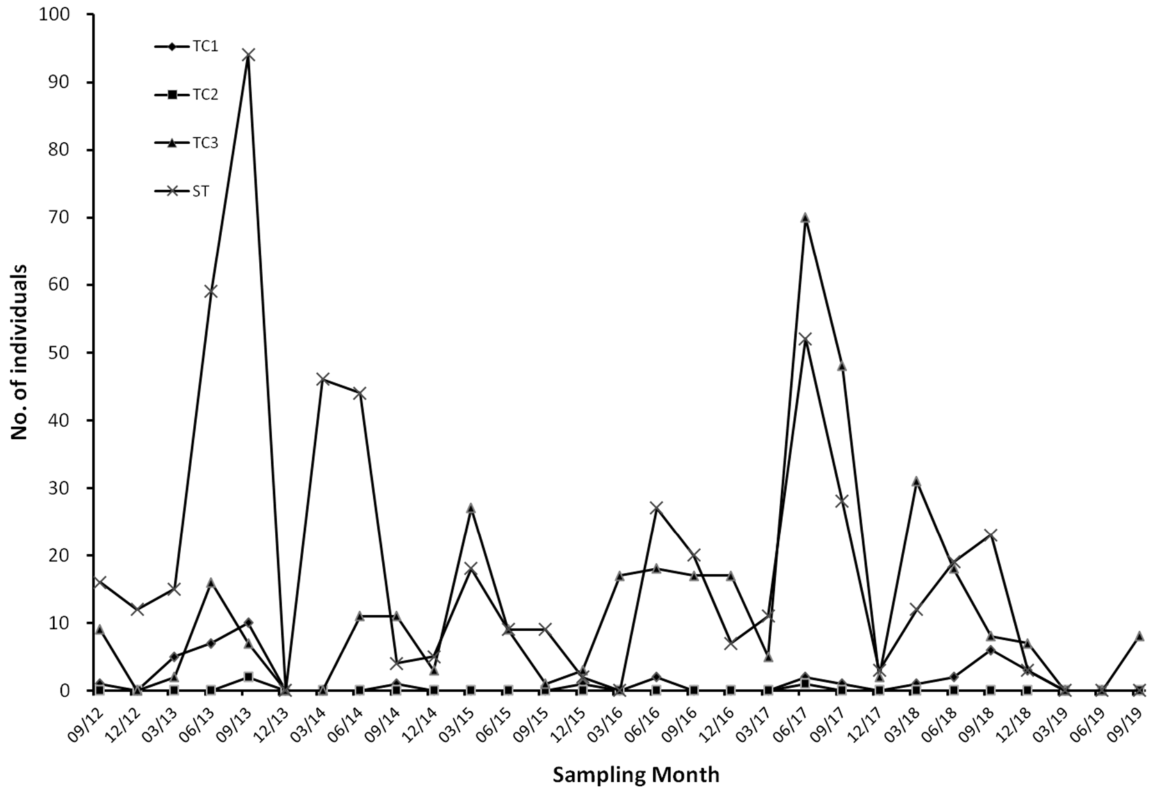


Figure 3.5 (Cont'd) *Changes of number of individuals mean prosomal width and search record of horseshoe crab Carcinoscorpius rotundicauda in every sampling zone along the sampling months*



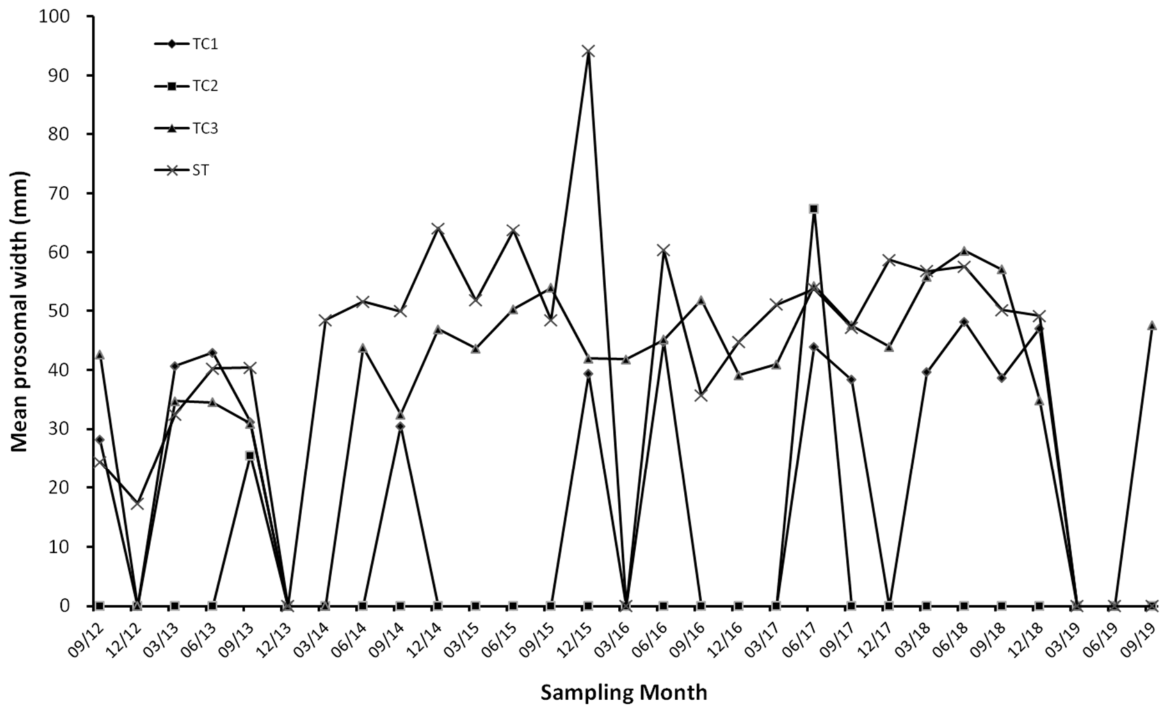


Figure 3.6 *Changes of number of individuals mean prosomal width and search record of horseshoe crab Tachypleus tridentatus in every sampling zone along the sampling months*

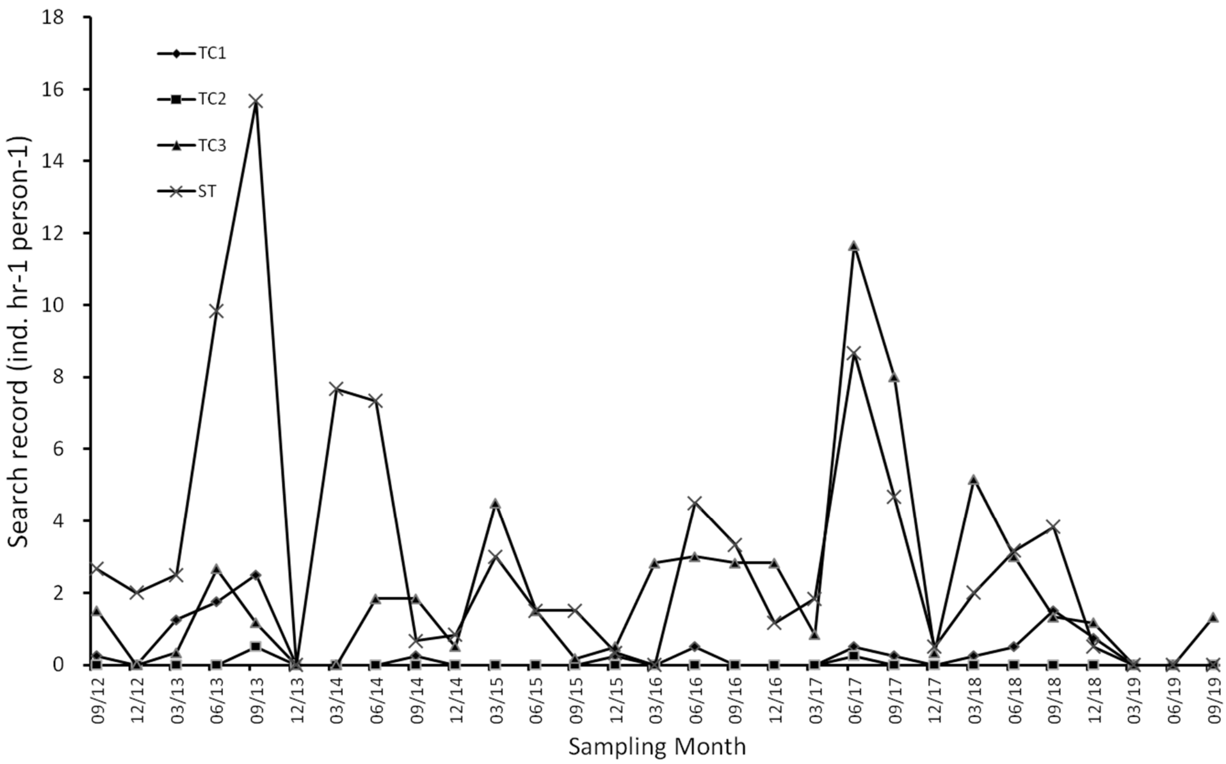
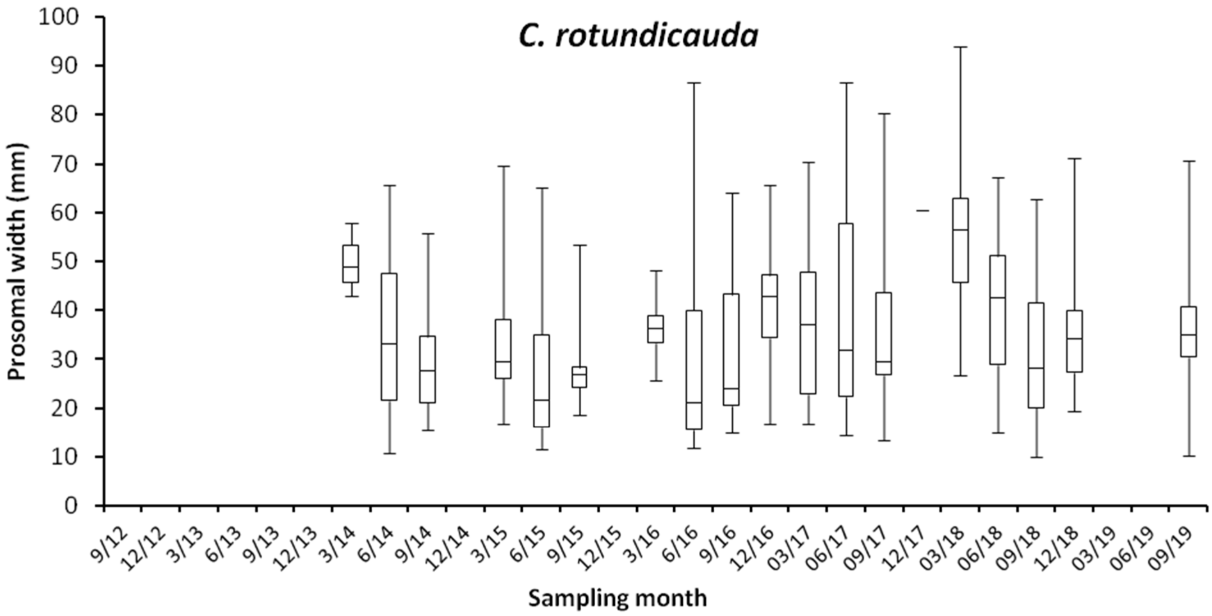


Figure 3.6 (Cont'd) *Changes of number of individuals mean prosomal width and search record of horseshoe crab Tachypleus tridentatus in every sampling zone along the sampling months*



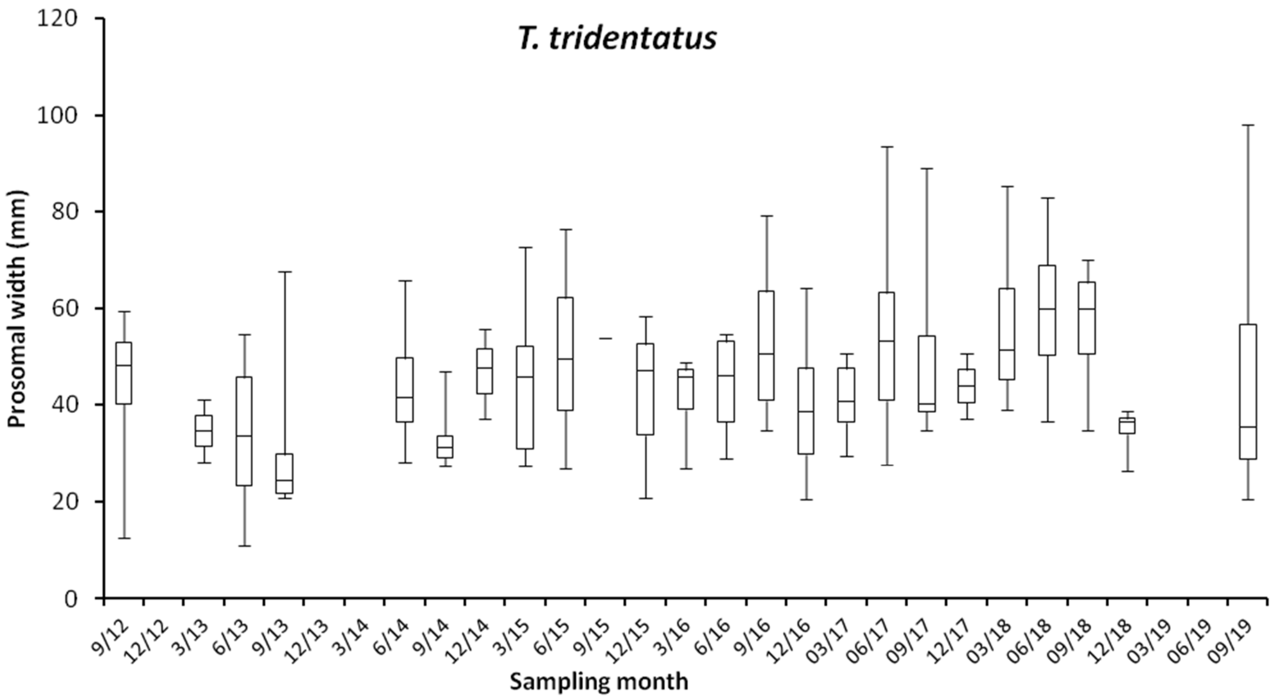
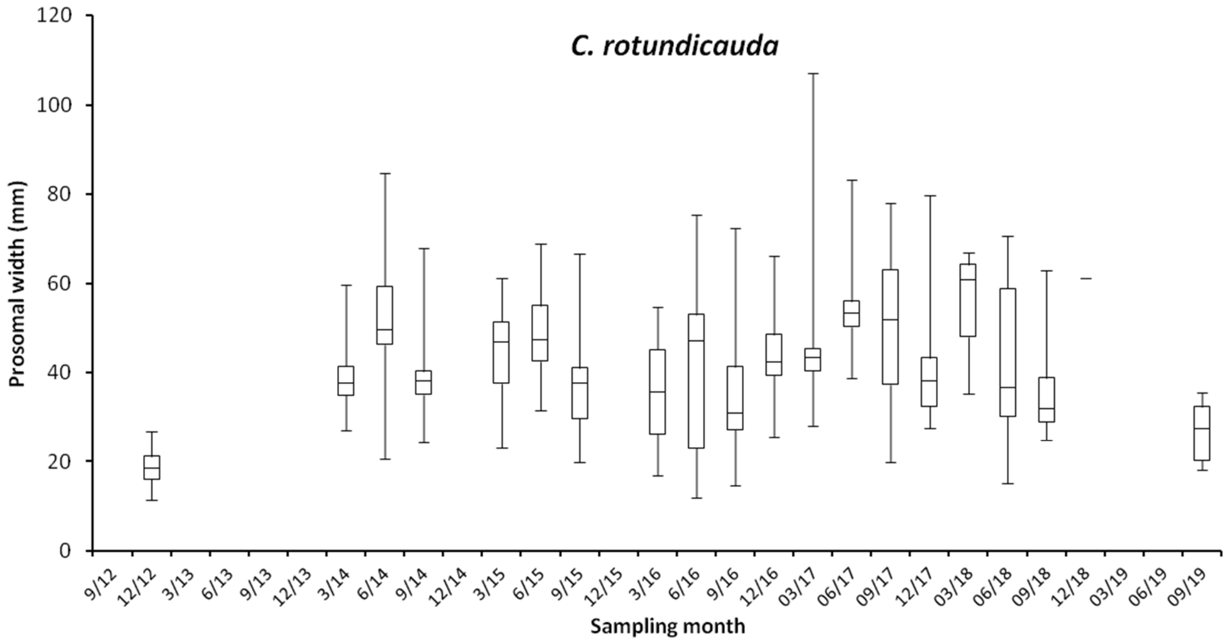


Figure 3.7 *Box plot of prosomal width of horseshoe crab in the sampling zone TC3 along the sampling months. (The box represents 50% of the sample (upper to lower quartile) with a middle line showing the median value. The upper whisker and lower whisker showed the 25% of sample above upper quartile and below the lower quartile respectively)*



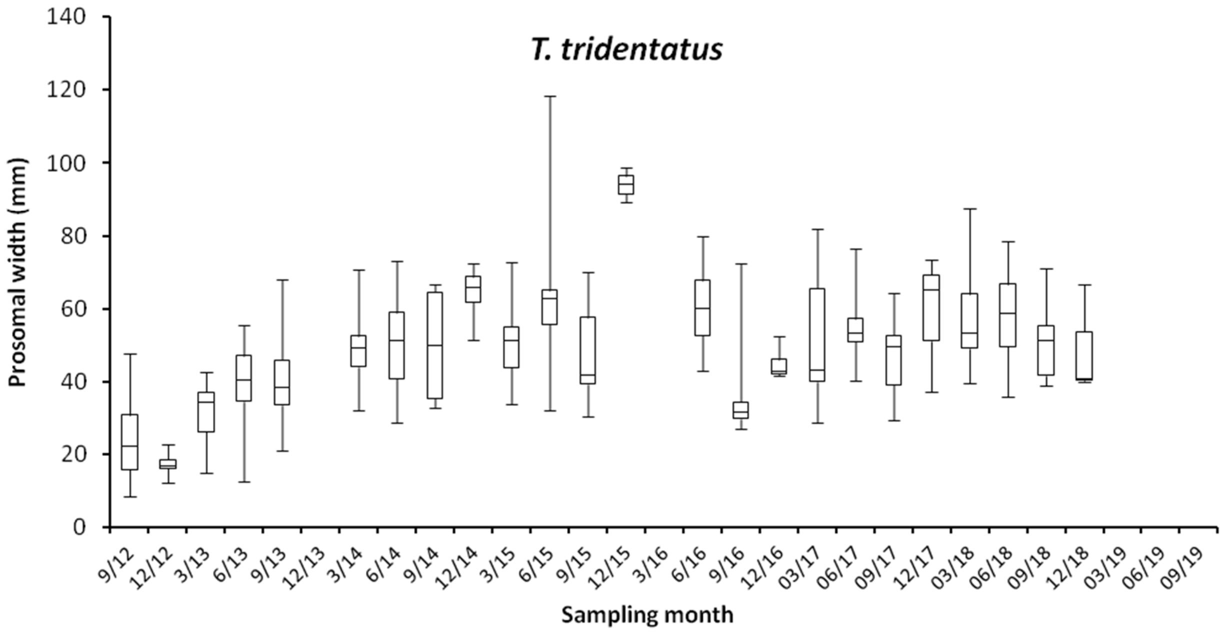


Figure 3.8 *Box plot of prosomal width of horseshoe crabin the sampling zone ST along the sampling months. (The box represents 50% of the sample (upper to lower quartile) with a middle line showing the median value. The upper whisker and lower whisker showed the 25% of sample above upper quartile and below the lower quartile respectively.)*

Halophila ovalis **in TC3**

Halophila ovalis **in ST**

Figure 3.9 *Photographic record of seagrass beds in present survey.*

TC3

Single patch of *Halophila ovalis*

TC3 - ST

Extensive patch of *Halophila ovalis*

ST

Medium, horizontal patch of *Zostera japonica*

Figure 3.10 *Examples of photographic records of seagrass beds (record in June 2017)*

Table 3.2.*Summary of seagrassbeds survey*

Sampling zone	TC3 *Halophila ovalis*	ST *Halophila ovalis*
Number of patches	4	2
Total area (m^2)	17.3	1200
Average area (m^2)	4.3	600

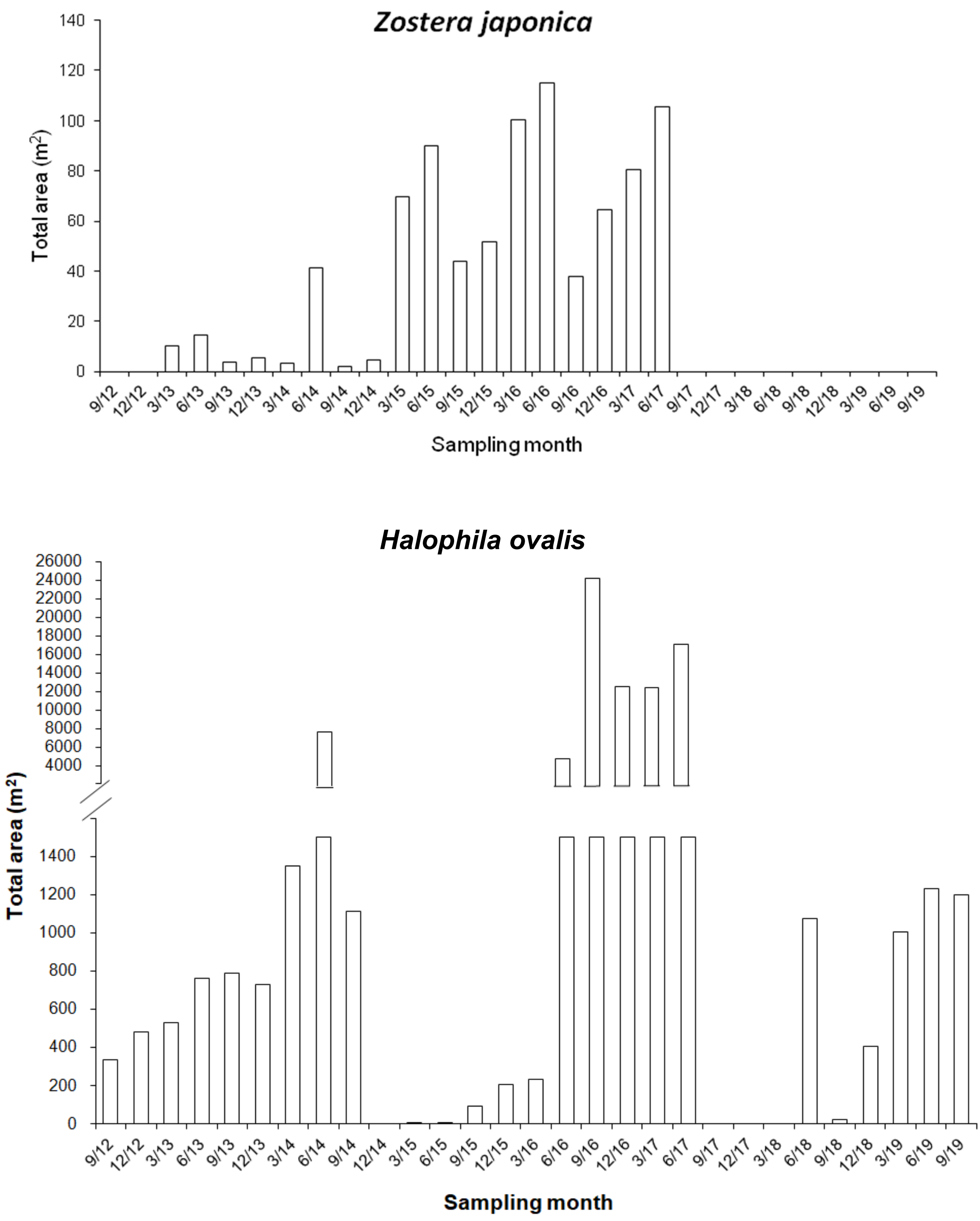


Figure 3.11 *Temporal changes of estimated total area of seagrass beds in ST*

June 2014

December 2014 (no seagrass)

September 2015

June 2017

September 2017-March 2018 (no seagrass)

September 2018

Figure 3.12 *Comparison of pictures taken in different sampling months shows the successive disappearance and recolonization of seagrass beds. The picture of December 2018 was lacking due to night-dawn survey time.*

J

March 2019

une 2019

September 2019

Figure 3.12 (Cont'd) *Comparison of pictures taken in different sampling months shows the successive disappearance and recolonization of seagrass beds. The picture of December 2018 was lacking due to night-dawn survey time.*

Table 3.3.*Relative distribution (%) of types of substratum along the horizontal transect at every tidal level and in every sampling zone.*

		Percentage		
Sampling zone	Tidal level	Gravels and Boulders	Sands	Soft mud
TC1	H	90	10	
	M	70	30	
	L	50	10	40
TC2	H	80	20	
	M	60	10	30
	L	40	20	40
TC3	H	50	30	20
	M	40	40	20
	L	70	10	20
ST	H	90	10	
	M	70	30	
	L	40	30	30

H: 2.0 m above C.D.; M: 1.5 m above C.D.; L: 1.0 m above C.D.

TC1 H

TC1 L

23/9/2019

TC2 H

TC2 L

10/9/2019

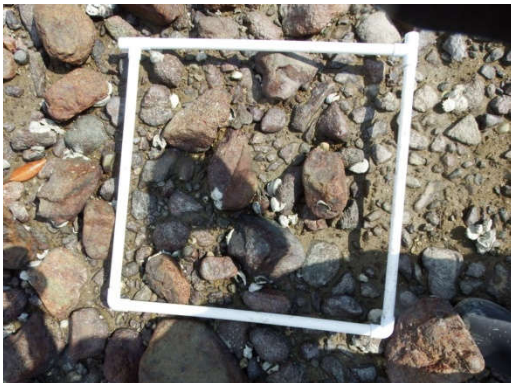
TC3 H

TC3 L

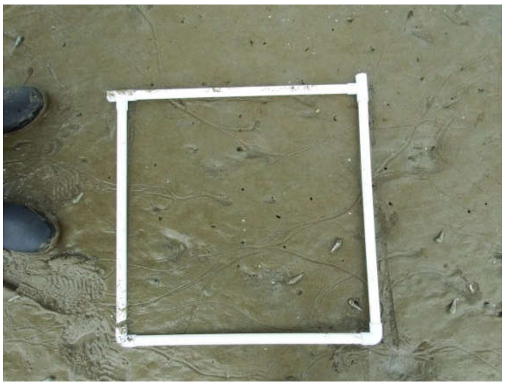
25/9/2019

Figure 3.13 *Examples of photographic records of quadrat for intertidal soft shore community survey (H: 2.0 m above C.D.; M: 1.5 m above C.D.; L: 1.0 m above C.D.)*

ST H



ST L



9/9/2019

Figure 3.13.(Cont'd)*Examples of photographic records of quadrat for intertidal soft shore community survey (H: 2.0 m above C.D.; M: 1.5 m above C.D.; L: 1.0 m above C.D.)*

Table 3.4 *Total abundance, density and number of taxon of every phylum*

Phylum	Total Abundance	%	Density (ind. m^{-2})	Number of Taxon
September 2019				
Mollusca	10594	94.2	353.1	40
Arthropoda	506	4.5	16.9	9
Annelida	45	0.4	1.5	7
Chordata	2	0.0	0.1	1
Sipuncula	49	0.4	1.6	3
Nemertea	5	0.0	0.2	1
Cnidaria	39	0.3	1.3	1
Platyhelminthes	3	0.0	0.1	1
Total	12243			

0.0 %: Total abundance of the phylum is less than 0.1% of relative abundance.

0 ind. m^{-2}: Density of the phylum is less than 1 ind. m^{-2}.

Table 3.5 *The number of individuals, relative abundance (percentage) and density of each phylum in every sampling zone*

Phylum	TC1	%	Density (ind. m^{-2})	TC2	%	Density (ind. m^{-2})	TC3	%	Density (ind. m^{-2})	ST	%	Density (ind. m^{-2})
Mollusca	3360	98	448	2649	92	353	1761	87	235	2824	97	377
Arthropoda	28	1	4	181	6	24	216	11	29	81	3	11
Annelida	10	0	1	5	0	1	28	1	4	2	0	0
Chordata	0	0	0	0	0	0	0	0	0	2	0	0
Sipuncula	9	0	1	29	1	4	2	0	0	9	0	1
Nemertea	1	0	0	1	0	0	3	0	0	0	0	0
Cnidaria	2	0	0	16	1	2	20	1	3	1	0	0
Platyhelminthes	2	0	0	0	0	0	0	0	0	1	0	0
Sub-total	3412			2881			2030			2920		

0.0 %: Total abundance of the phylum is less than 0.1% of relative abundance of the sampling zone.

0 ind. m^{-2}: Density of the phylum is less than 1 ind. m^{-2} of the sampling zone.

Table 3.6 *The abundant species (relative abundance >10%) in every sampling zone*

Sampling zone TC1	Group	Species	Mean density (ind. m^{-2})	Relative abundance (%)	Cumulative relative abundance (%)
High	Bi	*Saccostrea cucullata*	66	23	4
	G	*Batillaria zonalis*	44	15	1
	G	*Monodonta labio*	43	15	5
	G	*Batillaria multiformis*	42	14	64
Mid	Bi	*Saccostrea cucullata*	144	33	17
	G	*Monodonta labio*	62	14	31
	G	*Batillaria multiformis*	59	13	63
Low	Bi	*Saccostrea cucullata*	186	29	33
	G	*Nodilittorina radiata*	108	17	7
	G	*Monodonta labio*	99	16	61

Bi = Bivalve, G = Gastropod

Table 3.6(Cont'd) *The abundant species (relative abundance >10%) in every sampling zone*

Sampling zone TC2	Group	Species	Mean density (ind. m^{-2})	Relative abundance (%)	Cumulative relative abundance (%)
High	G	*Batillaria multiformis*	72	20	82
	Bi	*Saccostrea cucullata*	60	17	45
	G	*Batillaria zonalis*	47	13	71
Mid	Bi	*Saccostrea cucullata*	94	23	34
	G	*Batillaria multiformis*	89	22	6
	G	*Monodonta labio*	66	16	7
Low	Bi	*Saccostrea cucullata*	108	27	51
	G	*Monodonta labio*	60	15	4

Bi = Bivalve, G = Gastropod

Table 3.6 (Cont'd) *The abundant species (relative abundance >10%) in every sampling zone*

Sampling zone TC3	Group	Species	Mean density (ind. m^{-2})	Relative abundance (%)	Cumulative relative abundance (%)
High	Bi	*Saccostrea cucullata*	86	28	2
	G	*Batillaria multiformis*	38	12	73
Mid	Bi	*Saccostrea cucullata*	43	18	4
	G	*Monodonta labio*	24	10	3
	G	*Batillaria multiformis*	24	10	82
Low	Bi	*Saccostrea cucullata*	74	28	37
	Ba	*Balanus amphitrite*	31	12	9
	G	*Lunella granulata*	28	11	1

Bi = Bivalve, G = Gastropod

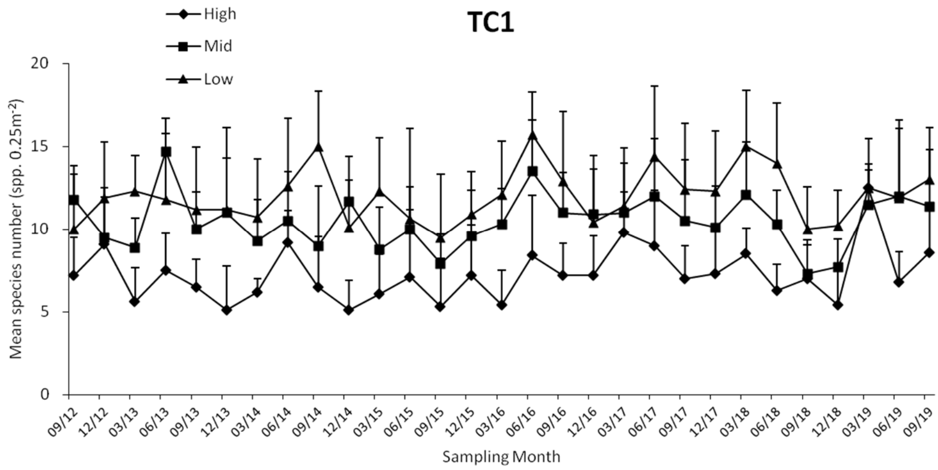
Table 3.6(Cont'd). *The abundant species (relative abundance >10%) in every sampling zone*

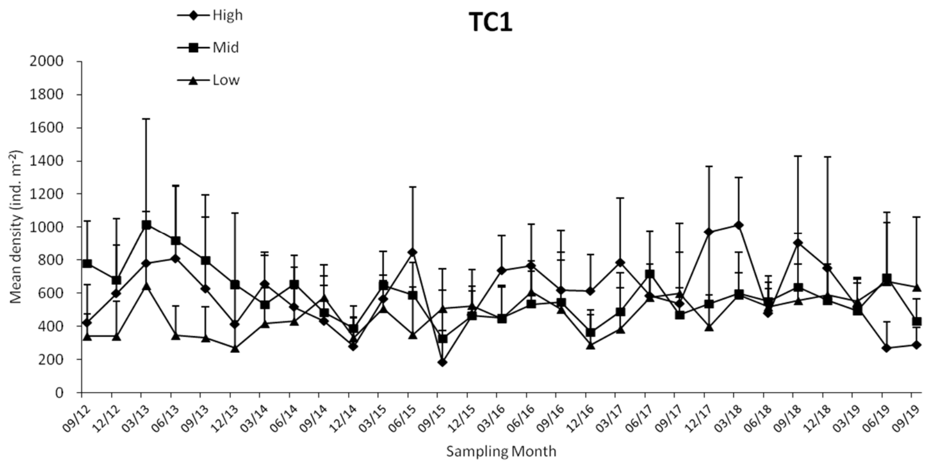
Sampling zone ST	Group	Species	Mean density (ind. m^{-2})	Relative abundance (%)	Cumulative relative abundance (%)
High	Bi	*Saccostrea cucullata*	61	28	12
	G	*Monodonta labio*	47	21	44
Mid	Bi	*Saccostrea cucullata*	80	18	27
	G	*Batillaria zonalis*	73	16	2
	G	*Monodonta labio*	62	13	52
Low	Bi	*Saccostrea cucullata*	146	30	23
	G	*Monodonta labio*	65	13	46

Bi = Bivalve, G = Gastropod

Table 3.7 *Mean values of species number, density, Shannon-Weaver Diversity Index (H') and Pielou's Species Evenness (J) at every tidal level and in every sampling zone*

Samling zone	Tidal	Mean species number (spp. $0.25m^{-2}$)	Mean species number across tidal levels	Mean density (ind. m^{-2})	Mean density across tidal levels	Mean H'	Mean H' across tidal levels	Mean J	Mean J across tidal levels
TC1	H	9		291		1.7		0.8	
	M	11	11	435	455	1.8	1.83	0.8	0.80
	L	13		639		2.0		0.8	
TC2	H	10		352		1.8		0.8	
	M	9	10	406	384	1.7	1.70	0.8	0.80
	L	11		394		1.6		0.8	
TC3	H	10		310		1.8		0.8	
	M	10	10	235	271	2.0	1.90	0.8	0.80
	L	11		268		1.9		0.8	
ST	H	6		221		1.3		0.7	
	M	11	8	459	389	2.0	1.57	0.8	0.77
	L	7		488		1.4		0.8	





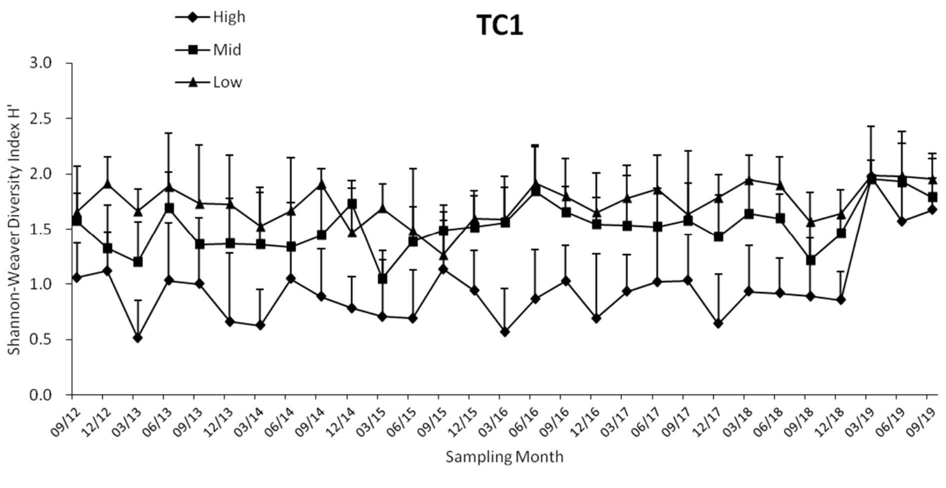


Figure 3.14 *Temporal changes of mean number of species, mean density, Shannon-Weaver Diversity Index (H') and Pielou's Species Evenness (J) (mean + SD)at every tidal level in sampling zone TC1*

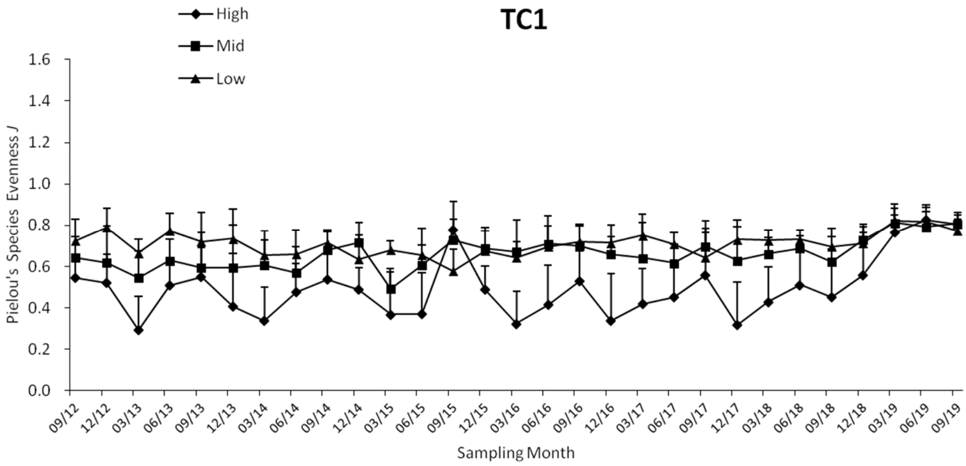
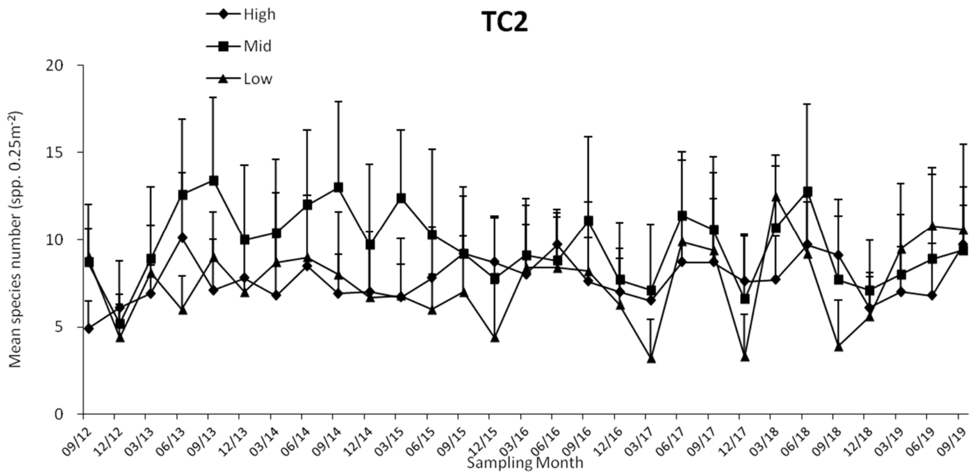
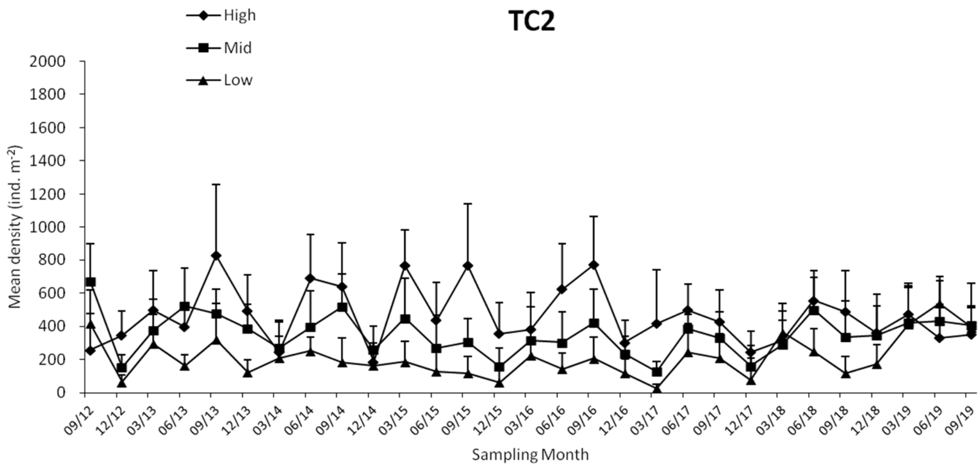


Figure 3.14(Cont'd) *Temporal changes of mean number of species, mean density, Shannon-Weaver Diversity Index (H') and Pielou's Species Evenness (J) (mean + SD)at every tidal level in sampling zone TC1*





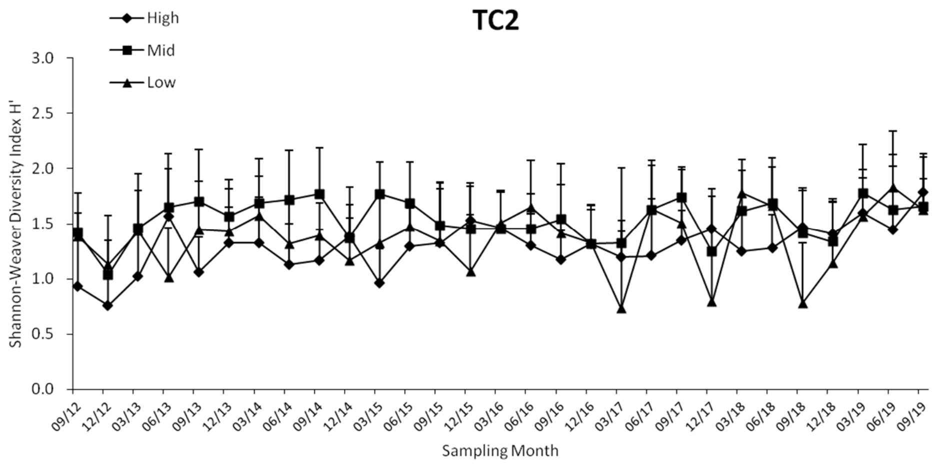


Figure 3.15 *Temporal changes of mean number of species, mean density, Shannon-Weaver Diversity Index (H') and Pielou's Species Evenness (J) (mean + SD) at every tidal level in sampling zone TC2*

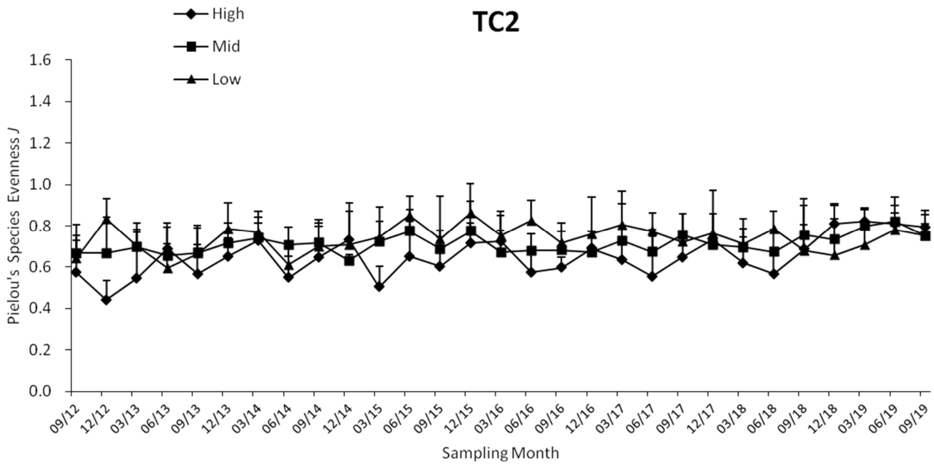
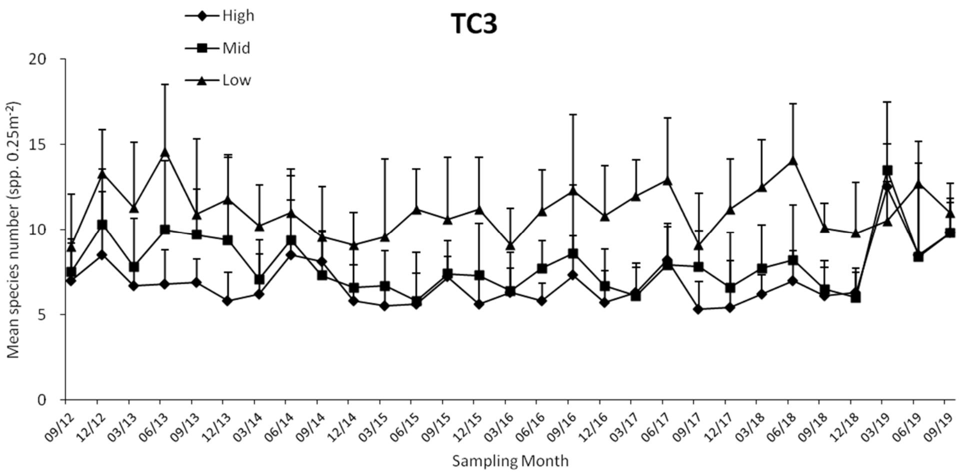
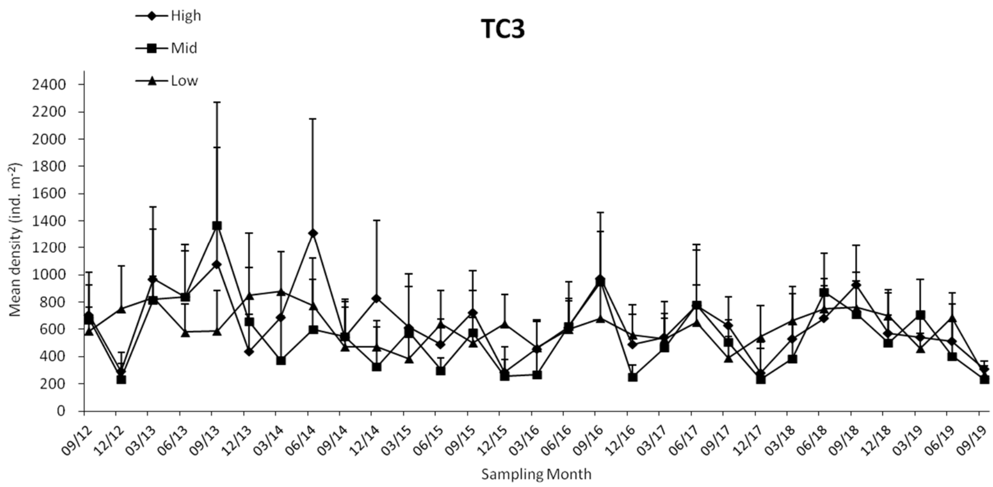


Figure3.15(Cont'd) *Temporal changes of mean number of species, mean density, Shannon-Weaver Diversity Index (H') and Pielou's Species Evenness (J) (mean + SD) at every tidal level in sampling zone TC2*





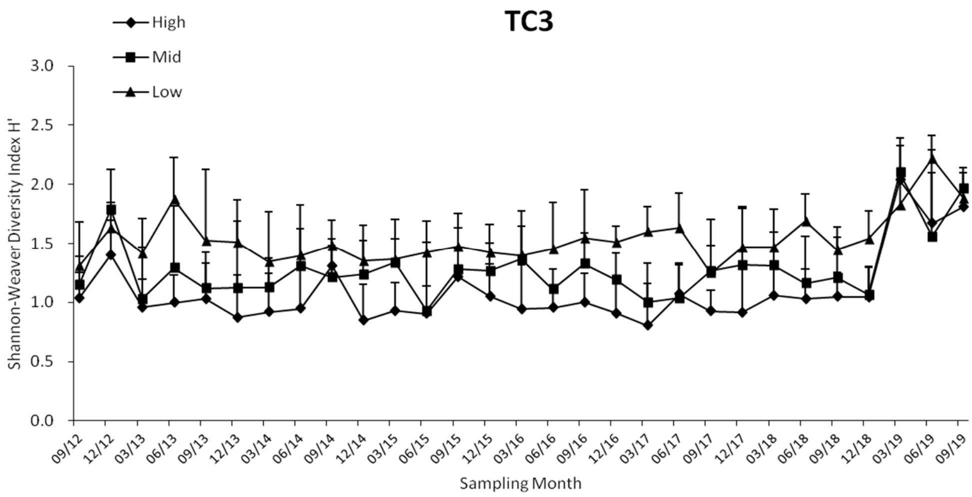


Figure 3.16 *Temporal changes of mean number of species, mean density, Shannon-Weaver Diversity Index (H') and Pielou's Species Evenness (J) (mean + SD) at every tidal level in sampling zone TC3*

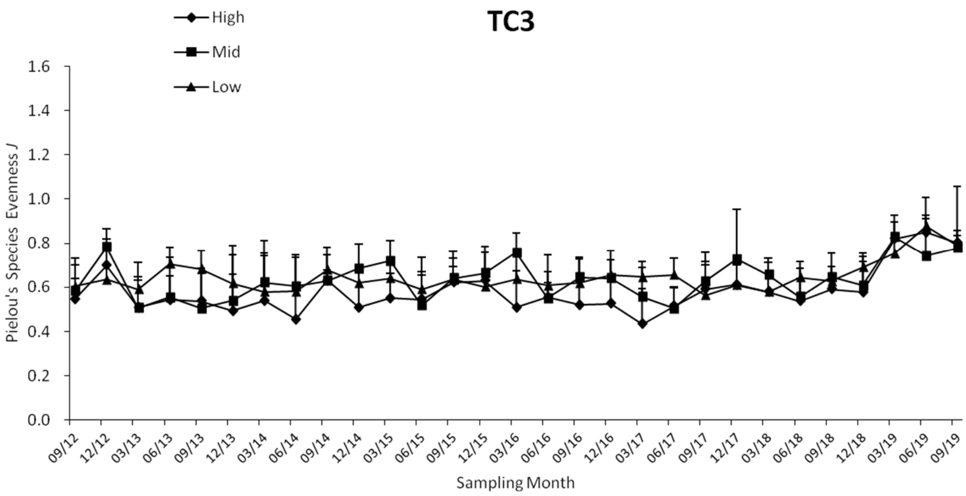
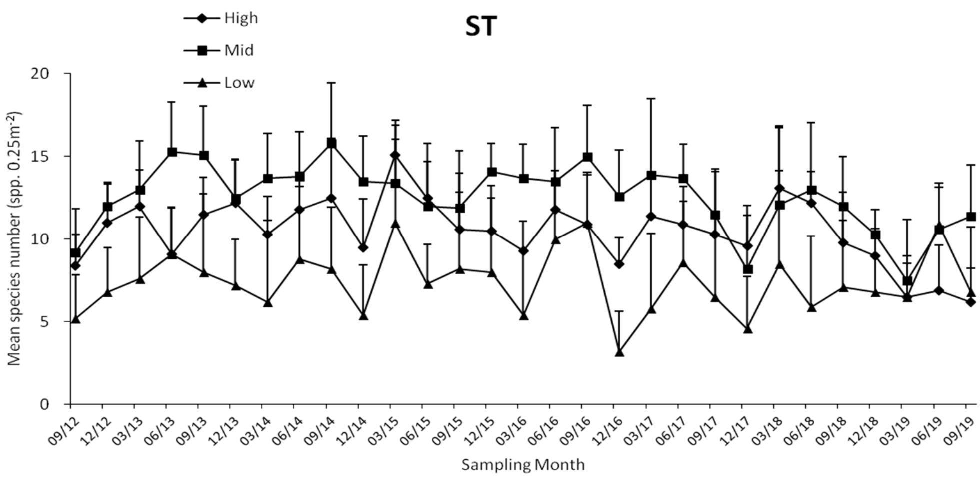
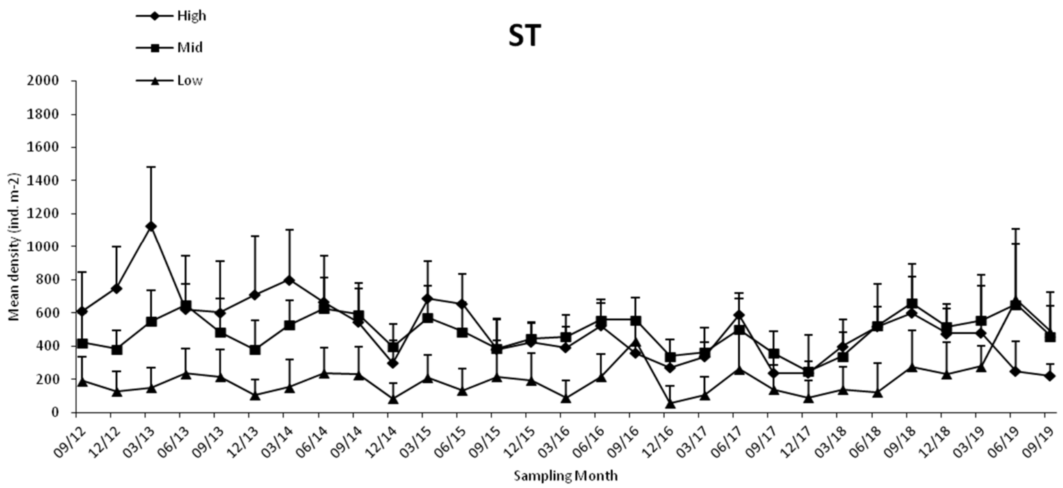


Figure 3.16(Cont'd) *Temporal changes of mean number of species, mean density, Shannon-Weaver Diversity Index (H') and Pielou's Species Evenness (J) (mean + SD) at every tidal level in sampling zone TC3*





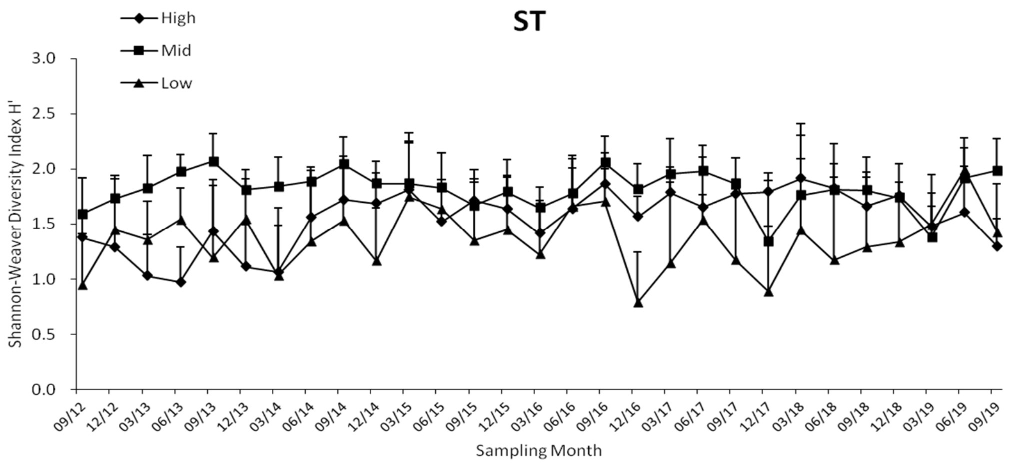


Figure 3.17 *Temporal changes of mean number of species, mean density, Shannon-Weaver Diversity Index (H') and Pielou's Species Evenness (J) (mean + SD) at every tidal level in sampling zone S*

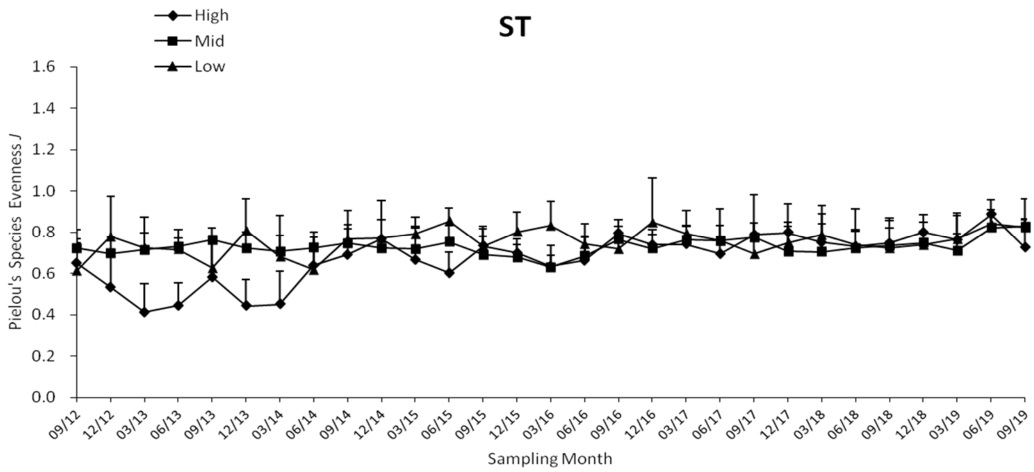


Figure 3.17(Cont'd) *Temporal changes of mean number of species, mean density, Shannon-Weaver Diversity Index (H') and Pielou's Species Evenness (J) (mean + SD) at every tidal level in sampling zone ST*

Annex I. *Location of sampling zones (map from ATKINS Chin Ltd.)*

Annex II *Record of horseshoe crab survey in every sampling zone.*

No.	Sub.	GPS coordinate		Record of prosomal width (mm)	
Sampling site TC1 (Search hour = 2 hrs)				*Carcinoscorpius rotundicauda*	*Tachypleus tridentatus*
		No Record			
		No. of ind.		**0**	**0**
Sampling site TC2 (Search hour = 2 hrs)				*Carcinoscorpius rotundicauda*	*Tachypleus tridentatus*
1	M	22°16'055''N	113°55'052"E	20.32	
		No. of ind.		**1**	**0**

Ind. #: number of Individuals (individuals in a group are shown at the same row)

Underlined: size of mating pair or large individual (excluded from data analysis)

Sub.: Substratum type; G = Gravel and Boulders, M = Soft mud, S = Sand

Annex II (Cont'd) *Record of horseshoe crab survey in every sampling zone.*

No.	Sub.	GPS coordinate		Record of prosomal width (mm)	
Sampling site TC3 (Search hour = 3 hrs)				*Carcinoscorpius rotundicauda*	*Tachypleus tridentatus*
1	M	22°17'005"N	113°55'034"E	30.5	25.23
2	M	22°17'006"N	113°55'033"E		98.14
3	M	22°17'005"N	113°55'033"E	40.02	
4	S	22°17'006"N	113°55'033"E	20.14 10.13	90.52
5	M	22°17'006"N	113°55'033"E		45.44
6	M	22°17'006"N	113°55'034"E		30.45 30.10
7	S	22°17'006"N	113°55'035"E		35.57
8	M	22°17'006"N	113°55'035"E	25.53	20.52
9	M	22°17'005"N	113°55'035"E	22.21	
10	M	22°17'006"N	113°55'036"E	31.35 30.11 32.14 34.98	
11	M	22°17'004"N	113°55'005"E	33.54 33.01 35.05. 42.82. 38.24	
12	M	22°16'043"N	113°56'005"E	37.43 43.43 45.44 33.20 31.54 29.93 48.21	
13	M	22°16'063"N	113°56'009"E	37.65 39.44 44.47	
14	M	22°16'060"N	113°56'009"E	35.14 37.47 70.71 30.55	
15	M	22°17'005"N	113°56'036"E	70.41 60.07 30.05	
		No. of ind.		**32**	**8**

Ind. #: number of Individuals (individuals in a group are shown at the same row)

Underlined: size of mating pair or large individual (excluded from data analysis)

Sub.: Substratum type; G = Gravel and Boulders, M = Soft mud, S = Sand

Annex II (Cont'd) *Record of horseshoe crab survey in every sampling zone.*

No.	Sub.	GPS coordinate		Record of prosomal width (mm)	
Sampling site ST (Search hour = 3 hrs)				*Carcinoscorpius rotundicauda*	*Tachypleus tridentatus*
1	M	22°17'009"N	113°55'030"E	25.25 30.36 27.53	
2	M	22°17'008"N	113°55'032"E	32.4	
3	M	22°17'039"N	113°55'036"E	33.33 35.41 20.25	
4	M	22°17'010"N	113°55'030"E	18.52	
5	M	22°17'015"N	113°55'031"E	18.25	
		No. of ind.		**9**	**0**

Ind. #: number of Individuals (individuals in a group are shown at the same row)

Underlined: size of mating pair or large individual (excluded from data analysis)

Sub.: Substratum type; G = Gravel and Boulders, M = Soft mud, S = Sand

Annex III *Record of seagrass beds survey in every sampling zone*

Estimated area (m^2)	Estimated coverage (%)		GPS coordinate		Remark
TC1& TC2 (search hour = 2 hrs)					
No record					
TC3 *Halophila ovalis* **(search hour = 3 hrs)**					
0.25	90-100	horizontal line	22°17'001"N 22°17'001"N	113°55'038"E 113°55'038"E	A horizontal strand of seagrass bed nearby the seaward side of mangrove area at tidal level 2.0 m above C.D.
4	90-100	horizontal line	22°17'003"N 22°17'003"N	113°55'036"E 113°55'036"E	A horizontal strand of seagrass bed nearby the seaward side of mangrove area at tidal level 2.0 m above C.D.
4	90-100	horizontal line	22°17'003"N 22°17'003"N	113°55'036"E 113°55'036"E	A horizontal strand of seagrass bed nearby the seaward side of mangrove area at tidal level 2.0 m above C.D.
9	90-100	horizontal line	22°16'053"N 22°16'053"N	113°56'005"E 113°56'005"E	A horizontal strand of seagrass bed nearby the seaward side of mangrove area at tidal level 2.0 m above C.D.
ST *Halophila ovalis* **(search hour = 3 hrs)**					
200	10-20	horizontal line	22°17'014"N 22°17'015"N	113°55'029"E 113°55'029"E	A horizontal strand of seagrass bed nearby the seaward side of mangrove area at tidal level 2.0 m above C.D.
1000	90-100	horizontal line	22°17'013"N 22°17'014"N	113°55'029"E 113°55'029"E	A horizontal strand of seagrass bed nearby the seaward side of mangrove area at tidal level 2.0 m above C.D.

Annex IV. *Taxonomic resolution of every recorded species of intertidal soft shore community survey*

Kingdom	Phylum	Class	Order	Family	Species
Animalia	Annelida	Polycheata	Echiuroidea	Thalassematidae	*Listriolobus riukiuensis*
Animalia	Annelida	Polycheata	Phyllodocida	Nereididae	*Nereididae* spp.
Animalia	Annelida	Polycheata	Phyllodocida	Nereididae	*Perinereis* sp.
Animalia	Annelida	Polycheata	Sabellida	Oweniidae	*Oweniidae* spp.
Animalia	Annelida	Polycheata	Sabellida	Sabellidae	*Sabellidae imbricatus*
Animalia	Annelida	Polycheata	Terebellida	Ampharetidae	*Ampharetidae* spp.
Animalia	Annelida	Polycheata		Maldanidae	*Maldanidae* spp.
Animalia	Arthropoda	Malacostraca	Decapoda	Grapsidae	*Gaetice depressus*
Animalia	Arthropoda	Malacostraca	Decapoda	Grapsidae	*Metopograpsus latifrons*
Animalia	Arthropoda	Malacostraca	Decapoda	Grapsidae	*Metopograpsus quadridentatus*
Animalia	Arthropoda	Malacostraca	Decapoda	Leucosiidae	*Pyrhila pisum*
Animalia	Arthropoda	Malacostraca	Decapoda	Paguridae	*Pagurus dubius*
Animalia	Arthropoda	Malacostraca	Decapoda	Sesarmidae	*Parasesarma bidens*
Animalia	Arthropoda	Malacostraca	Decapoda	Varuniae	*Hemigrapsus penicillatus*
Animalia	Arthropoda	Malacostraca	Decapoda	Varunidae	*Chasmagnathus convexus*
Animalia	Arthropoda	Maxillopoda	Sessilia	Balanidae	*Balanus amphitrite*
Animalia	Chordata	Actinopterygii	Blenniformes	Blenniidae	*Omobranchus fasciolatoceps*
Animalia	Cnidaria	Anthozoa	Actiniaria	Diadumenidae	*Diadumene lineata*
Animalia	Mollusca	Bivalvia	Arcoida	Arcidae	*Barbatia virescens*
Animalia	Mollusca	Bivalvia	Mytioida	Mytilidae	*Xenostrobus atratus*
Animalia	Mollusca	Bivalvia	Ostreoida	Mytilidae	*Brachidontes variabilis*
Animalia	Mollusca	Bivalvia	Ostreoida	Ostreidae	*Saccostrea cucullata*
Animalia	Mollusca	Bivalvia	Pterioida	Pteriidae	*Isognomon isognomum*
Animalia	Mollusca	Bivalvia	Venerida	Cyrenidae	*Geloina erosa*
Animalia	Mollusca	Bivalvia	Venerida	Glauconomidae	*Glauconome chinensis*
Animalia	Mollusca	Bivalvia	Veneroida	Tellinidae	*Anomalocardia squamosa*
Animalia	Mollusca	Bivalvia	Veneroida	Veneridae	*Ruditapes philippinarum*
Animalia	Mollusca	Gastropoda	Archaeogastropoda	Nacellidae	*Cellana grata*
Animalia	Mollusca	Gastropoda	Archaeogastropoda	Nacellidae	*Cellana toreuma*
Animalia	Mollusca	Gastropoda	Archaeogastropoda	Trochidae	*Monodonta labio*
Animalia	Mollusca	Gastropoda	Archaeogastropoda	Trochidae	*Omphalius nigerrima*
Animalia	Mollusca	Gastropoda	Archaeogastropoda	Turbinidae	*Lunella coronata*
Animalia	Mollusca	Gastropoda	Archaeogastropoda	Turbinidae	*Lunella granulata*
Animalia	Mollusca	Gastropoda	Caenogastropoda	Batillariidae	*Batillaria multiformis*
Animalia	Mollusca	Gastropoda	Caenogastropoda	Batillariidae	*Batillaria sordida*

Kingdom	Phylum	Class	Order	Family	Species
Animalia	Mollusca	Gastropoda	Caenogastropoda	Batillariidae	*Batillaria zonalis*
Animalia	Mollusca	Gastropoda	Caenogastropoda	Potamididae	*Terebralia sulcata*
Animalia	Mollusca	Gastropoda	Caenogastropoda	Potamididae	*Pirenella asiatica*
Animalia	Mollusca	Gastropoda	Caenogastropoda	Potamididae	*Pirenella incisa*
Animalia	Mollusca	Gastropoda	Cycloneritimorpha	Neritidae	*Clithon faba*
Animalia	Mollusca	Gastropoda	Cycloneritimorpha	Neritidae	*Clithon oualaniensis*
Animalia	Mollusca	Gastropoda	Cycloneritimorpha	Neritidae	*Clithon retropictus*
Animalia	Mollusca	Gastropoda	Cycloneritimorpha	Neritidae	*Nerita chamaeleon*
Animalia	Mollusca	Gastropoda	Cycloneritimorpha	Neritidae	*Nerita lineata*
Animalia	Mollusca	Gastropoda	Cycloneritimorpha	Neritidae	*Nerita polita*
Animalia	Mollusca	Gastropoda	Cycloneritimorpha	Neritidae	*Nerita squamulata*
Animalia	Mollusca	Gastropoda	Littorinimorpha	Littorinidae	*Littoraria articulata*
Animalia	Mollusca	Gastropoda	Neogastropoda	Muricidae	*Cronia margariticola*
Animalia	Mollusca	Gastropoda	Neogastropoda	Muricidae	*Thais sp.*
Animalia	Mollusca	Gastropoda	Neogastropoda	Nassariidae	*Nassarius festivus*
Animalia	Mollusca	Gastropoda	Neotaenioglossa	Cerithiidae	*Clypeomorus moniliferum*
Animalia	Mollusca	Gastropoda	Neotaenioglossa	Littorinidae	*Nodilittorina radiata*
Animalia	Mollusca	Gastropoda	Neotaenioglossa	Littorinidae	*Nodilittorina vidua*
Animalia	Mollusca	Gastropoda	Patellogastropoda	Lottiidae	*Lottia dorsuosa*
Animalia	Mollusca	Gastropoda	Patellogastropoda	Lottiidae	*Lottia luchuana*
Animalia	Mollusca	Gastropoda	Patellogastropoda	Lottiidae	*Nipponacmea concinna*
Animalia	Mollusca	Gastropoda		Lottiidae	*Patelloida pygmaea*
Animalia	Mollusca	Polyplacophora	Chitonida	Ischnochitonidae	*Lepidozona* spp.
Animalia	Nemertea				
Animalia	Platyhelminthes				*Platyhelminthes sp.*
Animalia	Sipuncula	Sipunculidae	Golfingiida	Sipunculidae	*Sipunculidae sp.*
Animalia	Sipuncula	Sipunculidae	Golfingiida	Sipunculidae	*Sipunculus nudus*
Animalia	Sipuncula	Sipunculidae	Golfingiida	Sipunculidae	*Sipunculus sp.*

AnnexV. *List of recorded fauna of intertidal soft shore community survey in every sampling zone*

Sep 2019 Sampling Zone TC1 High tidal level (2.0 m above C.D.)

		1		2		3		4		5		6		7		8		9		10		
Gp	Taxon	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Sub-total
Bi	*Barbatia virescens*	2								3								5		9		19
Bi	*Glauconome chinensis*													1		1				1		3
Bi	*Saccostrea cucullata*			2		21		20		20				16		29		32		26		166
Bi	*Xenostrobus atratus*					5												4				9
C	*Gaetice depressus*											1		1				1		1		4
G	*Batillaria multiformis*	10		10		15		10		12		15		21		11						104
G	*Batillaria zonalis*	10		10		20		20		8		12		26		4						110
G	*Cellana toreuma*																			1		1
G	*Clithon faba*													1				2		3		6
G	*Clithon retropictus*							1										1		5		7
G	*Littoraria articulata*																			1		1
G	*Lottia dorsuosa*	1				1								2				1				5
G	*Lottia luchuana*																	2				2
G	*Lunella coronata*	5						3		2												10
G	*Lunella granulata*	2				4										5						11
G	*Monodonta labio*	20				10		10		20		12		26		9						107
G	*Nodilittorina radiata*	5						8										19				32
G	*Patelloida pygmaea*							1						1						7		9
G	*Pirenella asiatica*	2						15		2						16		23				58

AnnexV (Cont'd) *List of recorded fauna of intertidal soft shore community survey in every sampling zone*

Sep 2019 Sampling Zone TC1 High tidal level (2.0 m above C.D.)

		1		2		3		4		5		6		7		8		9		10		
Gp	Taxon	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Sub-total
G	*Pirenella incisa*											24		21		5		3				53
Ne	*Nemertea* sp.																	1				1
P	*Listriolobus riukiuensis*									3					1							4
Sp	*Sipunculus* sp.											1						1	1			3
Sp	*Sipunculus nudus*							1				1								1		3
																					Total	**728**

Key for faunal groups (Gp):

Ba: Barnacle, Bi: Bivalve, C: Crab, Cn: Cnidarin, Eh: Echiuran, F: Fish, G: Gastropod, Hc: Hermit crab, Ne: Nemertean, Ol: Oligochaete, P: Polychaete, Pl: Platyhelminthes, Po: Polyplacophores, S: Shrimp, Sc: Scaphopods, Sp: Sipunculan

Annex V (Cont'd) *List of recorded fauna of intertidal soft shore community survey in every sampling zone*

Sep 2019	Sampling Zone TC1	Mid tidal level (1.5 m above C.D.)																				
		1		2		3		4		5		6		7		8		9		10		
Gp	Taxon	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Sub-total
Bi	*Barbatia virescens*			1						3				1		4		4		9		22
Bi	*Glauconome chinensis*													1		2				1		4
Bi	*Saccostrea cucullata*	42		44		37		27		64		20		38		21		28		38		359
Bi	*Xenostrobus atratus*			13		4								16		5		12		24		74
C	*Metopograpsus latifrons*													4								4
G	*Batillaria multiformis*	22		7		36		14		25		18		14		5				5		146
G	*Batillaria zonalis*					14										12						26
G	*Clithon oualaniensis*																	2				2
G	*Clithon retropictus*					1								2		5		8				16
G	*Littoraria articulata*															1				2		3
G	*Lottia dorsuosa*			2								2						1				5
G	*Lottia luchuana*			4												1		5		6		16
G	*Lunella coronata*			2		2												1		5		10
G	*Lunella granulata*			14						2		10						11		16		53
G	*Monodonta labio*	26		8		30				20				21		15		15		20		155
G	*Nerita chamaeleon*							2				2						1		1		6
G	*Nerita polita*											10										10
G	*Nerita squamulata*													1		1						2
G	*Nipponacmea concinna*																	7				7
G	*Nodilittorina radiata*															8		20		24		52
G	*Patelloida pygmaea*															2		1				3

Annex V (Cont'd) *List of recorded fauna of intertidal soft shore community survey in every sampling zone*

Sep 2019	Sampling Zone TC1	Mid tidal level (1.5 m above C.D.)																				
		1		2		3		4		5		6		7		8		9		10		
Gp	Taxon	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Sub-total
G	*Pirenella asiatica*	10		8		10				14												42
G	*Pirenella incisa*	17		16		7		8		10		5										63
Hc	*Pagurus dubius*																			1		1
P	*Nereididae* spp.						1											1	1			3
P	*Perinereis* sp.	1																				1
Sp	*Siphonosoma*sp.									1		1										2
																				Total		**1087**

Key for faunal groups (Gp):

Ba: Barnacle, Bi: Bivalve, C: Crab, Cn: Cnidarin, Eh: Echiuran, F: Fish, G: Gastropod, Hc: Hermit crab, Ne: Nemertean, Ol: Oligochaete,

P: Polychaete, Pl: Platyhelminthes, Po: Polyplacophores, S: Shrimp, Sc: Scaphopods, Sp: Sipunculan

Annex V (Cont'd) *List of recorded fauna of intertidal soft shore community survey in every sampling zone*

Sep 2019 Sampling Zone TC1 Low tidal level (0.5 m above C.D.)

		1		2		3		4		5		6		7		8		9		10		
Gp	Taxon	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Sub-total
Ba	*Balanus amphitrite*					2						2						1		2		7
Bi	*Anomalocardia squamosa*											1										1
Bi	*Barbatia virescens*	1				13		7				4				1				8		34
Bi	*Glauconome chinensis*	1				5				3		6		1						4		20
Bi	*Ruditapes philippinarum*													1								1
Bi	*Saccostrea cucullata*	70		25		150		42		27		22		29		17		36		48		466
Bi	*Xenostrobus atratus*	16				40		20		1		5		4		5						91
C	*Gaetice depressus*			3						1						2				1		7
C	*Hemigrapsus penicillatus*							1												1		2
C	*Metopograpsus latifrons*													1				1				2
Cn	*Diadumene lineata*											1		1								2
G	*Batillaria multiformis*															5		15				20
G	*Batillaria zonalis*	10						20		20								3				53
G	*Cellana grata*															1						1
G	*Clithon faba*															1		1		3		5
G	*Clithon retropictus*					21														2		23
G	*Littoraria articulata*													4								4
G	*Lottia dorsuosa*	15				2						2						4				23
G	*Lottia luchuana*	7																1				8
G	*Lunella coronata*					2				3		6		5		8						24
G	*Lunella granulata*	5										26		6				26				63

Annex V (Cont'd) *List of recorded fauna of intertidal soft shore community survey in every sampling zone*

Sep 2019 Sampling Zone TC1 Low tidal level (0.5 m above C.D.)

		1		2		3		4		5		6		7		8		9		10		
Gp	Taxon	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Sub-total
G	*Monodonta labio*	33		38		77		50				12		19						19		248
G	*Nerita lineata*					2												1		1		4
G	*Nerita polita*													1								1
G	*Nipponacmea concinna*	6										1				1				2		10
G	*Nodilittorina radiata*	36		20		83		40		24		15		20		12		6		15		271
G	*Nodilittorina vidua*	1		7		17				1								4		1		31
G	*Patelloida pygmaea*					7		1		1		5		2		2		5		3		26
G	*Pirenella asiatica*	16		62				10		12												100
G	*Pirenella incisa*	15						10		8				2		2						37
Hc	*Pagurus dubius*													1								1
P	*Ampharetidae* sp.																1					1
P	*Nereididae* sp.					1																1
Pl	*Platyhelminthes*											2										2
Po	*Lepidozona* spp.	2				1						1				2						6
Sp	*Siphonosoma* sp.															1						1
Sp	*Siphonosoma* sp.															1						1
																					Total	**1597**

Key for faunal groups (Gp):

Ba: Barnacle, Bi: Bivalve, C: Crab, Cn: Cnidarin, Eh: Echiuran, F: Fish, G: Gastropod, Hc: Hermit crab, Ne: Nemertean, Ol: Oligochaete, P: Polychaete, Pl: Platyhelminthes, Po: Polyplacophores, S: Shrimp, Sc: Scaphopods, Sp: Sipunculan

Annex V (Cont'd) *List of recorded fauna of intertidal soft shore community survey in every sampling zone*

Sep 2019	Sampling Zone TC2	High tidal level (2.0 m above C.D.)																				
		1		2		3		4		5		6		7		8		9		10		
Gp	Taxon	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Sub-total
Ba	*Balanus amphitrite*											58		18				1		1		78
Bi	*Barbatia virescens*					10						6		5		1				2		24
Bi	*Saccostrea cucullata*	9		7		21		13		13		24		36		4		6		16		149
Bi	*Xenostrobus atratus*	3		3		13						5		16				2				42
C	*Gaetice depressus*											1		1								2
C	*Hemigrapsus penicillatus*					1				1		4		1		1						8
Cn	*Diadumene lineata*					1														15		16
G	*Batillaria multiformis*	12		5		11		27		35		28		5		16		16		24		179
G	*Batillaria zonalis*	15		2		15		8		6		11		6		25		30				118
G	*Clithon faba*					1								6						5		12
G	*Clithon retropictus*													1						1		2
G	*Lunella coronata*					1								21				1				23
G	*Lunella granulata*			1		9				2		7		19				2				40
G	*Monodonta labio*	21		8		9		6				19										63
G	*Nipponacmea concinna*	2																				2
G	*Nodilittorina radiata*	14		12								5		4				17		6		58
G	*Patelloida pygmaea*	9												5				5				19
G	*Pirenella asiatica*							1										15				16
G	*Pirenella incisa*									2		5		1		5						13
Po	*Lepidozona* spp.							1						2		6						9

Annex V (Cont'd) *List of recorded fauna of intertidal soft shore community survey in every sampling zone*

Sep 2019 Sampling Zone TC2 High tidal level (2.0 m above C.D.)

		1		2		3		4		5		6		7		8		9		10		
Gp	Taxon	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Sub-total
Sp	*Siphonosoma* sp.							2		1		1		1		1						6
Sp	*Sipunculus nudus*					1																1
																					Total	**880**

Key for faunal groups (Gp):

Ba: Barnacle, Bi: Bivalve, C: Crab, Cn: Cnidarin, Eh: Echiuran, F: Fish, G: Gastropod, Hc: Hermit crab, Ne: Nemertean, Ol: Oligochaete,

P: Polychaete, Pl: Platyhelminthes, Po: Polyplacophores, S: Shrimp, Sc: Scaphopods, Sp: Sipunculan

Annex V (Cont'd) *List of recorded fauna of intertidal soft shore community survey in every sampling zone*

Sep 2019 Sampling Zone TC2 Mid tidal level (1.5 m above C.D.)

		1		2		3		4		5		6		7		8		9		10		
Gp	Taxon	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Sub-total
Ba	*Balanus amphitrite*							2		2		4								6		14
Bi	*Barbatia virescens*									1		5				3				1		10
Bi	*Glauconome chinensis*															1						1
Bi	*Saccostrea cucullata*	45		38		56		10		5		11				40				30		235
Bi	*Xenostrobus atratus*			9		2										16				12		39
C	*Chasmagnathus convexus*			3														1				4
C	*Gaetice depressus*													2								2
C	*Hemigrapsus penicillatus*					12						1										13
C	*Metopograpsus latifrons*													4								4
C	*Metopograpsus quadridentatus*													1								1
C	*Parasesarma bidens*			2																		2
G	*Batillaria multiformis*					16		50	1	33	2	33		36		20		32				223
G	*Batillaria zonalis*							2		20		9		2		2		7				42
G	*Clithon faba*																			2		2
G	*Clithon retropictus*			1										5		1				2		9
G	*Lunella coronata*	8														24				2		34
G	*Lunella granulata*	5		11		7		2		1		3								3		32
G	*Monodonta labio*	30		32		24		12		12		5		29				4				148
G	*Nipponacmea concinna*					2						3				2						7
G	*Nodilittorina radiata*	26		41		20		8				1								22		118
G	*Patelloida pygmaea*					3		2				3				1				1		10

Annex V (Cont'd) *List of recorded fauna of intertidal soft shore community survey in every sampling zone*

Sep 2019	Sampling Zone TC2	Mid tidal level (1.5 m above C.D.)																			
		1		2		3		4		5		6		7		8		9		10		
Gp	Taxon	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Sub-total
G	*Pirenella asiatica*							2		5	1	5		14				4				31
G	*Pirenella incisa*							3				10				3		6				22
Hc	*Pagurus dubius*			2																		2
P	*Nereididae* sp.																1					1
P	*Oweniidae* spp.											4										4
Sp	*Sipunculus nudus*			2						1				2								5
																					Total	**1015**

Key for faunal groups (Gp):

Ba: Barnacle, Bi: Bivalve, C: Crab, Cn: Cnidarin, Eh: Echiuran, F: Fish, G: Gastropod, Hc: Hermit crab, Ne: Nemertean, Ol: Oligochaete,

P: Polychaete, Pl: Platyhelminthes, Po: Polyplacophores, S: Shrimp, Sc: Scaphopods, Sp: Sipunculan

Annex V (Cont'd) *List of recorded fauna of intertidal soft shore community survey in every sampling zone*

Sep 2019 Sampling Zone TC2 Low tidal level (0.5 m above C.D.)

		1		2		3		4		5		6		7		8		9		10		
Gp	Taxon	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Sub-total
Ba	*Balanus amphitrite*	4										16								2		22
Bi	*Barbatia virescens*			7								2				2				6		17
Bi	*Glauconome chinensis*	3		1		14										1		2		1		22
Bi	*Isognomon isognomum*											1								2		3
Bi	*Saccostrea cucullata*	50		48		45		4				28		24		18		25		29		271
Bi	*Xenostrobus atratus*													3								3
C	*Chasmagnathus convexus*	1				1								1								3
C	*Gaetice depressus*			2								1										3
C	*Hemigrapsus penicillatus*	3				7																10
C	*Metopograpsus latifrons*																			1		1
C	*Metopograpsus quadridentatus*					7																7
C	*Parasesarma bidens*	2																				2
G	*Batillaria multiformis*	8		26		26						10		15								85
G	*Batillaria zonalis*	10		12		9		2				4										37
G	*Cellana grata*																			15		15
G	*Cellana toreuma*	1												2				2				5
G	*Clithon faba*	8				10												1				19
G	*Clithon retropictus*					1												2				3
G	*Lunella coronata*	8		12		5						2				2				1		30
G	*Lunella granulata*	9		11		10								5		18		7		6		66
G	*Monodonta labio*			20		84						12		15						20		151

Annex V (Cont'd) *List of recorded fauna of intertidal soft shore community survey in every sampling zone*

Sep 2019 Sampling Zone TC2 Low tidal level (0.5 m above C.D.)

		1		2		3		4		5		6		7		8		9		10		
Gp	Taxon	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Sub-total
G	*Nerita polita*															1						1
G	*Nerita squamulata*	2												1				2				5
G	*Nipponacmea concinna*	2				2										1		4				9
G	*Nodilittorina radiata*			4		20								3		12				10		49
G	*Nodilittorina vidua*													2						2		4
G	*Patelloida pygmaea*					8								1						1		10
G	*Pirenella asiatica*			5				6		25												36
G	*Pirenella incisa*							26		24		20										70
G	*Thais* sp.					3																3
Hc	*Pagurus dubius*					2										1						3
Ne	*Nemertea* sp.																				1	1
Po	*Lepidozona* spp.			1								1		1								3
Sp	*Sipunculus nudus*	8		6																3		17
																				Total		**986**

Key for faunal groups (Gp):

Ba: Barnacle, Bi: Bivalve, C: Crab, Cn: Cnidarin, Eh: Echiuran, F: Fish, G: Gastropod, Hc: Hermit crab, Ne: Nemertean, Ol: Oligochaete,

P: Polychaete, Pl: Platyhelminthes, Po: Polyplacophores, S: Shrimp, Sc: Scaphopods, Sp: Sipunculan

Annex V (Cont'd) *List of recorded fauna of intertidal soft shore community survey in every sampling zone*

Sep 2019	Sampling Zone TC3	High tidal level (2.0 m above C.D.)																				
		1		2		3		4		5		6		7		8		9		10		
Gp	Taxon	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Sub-total
Ba	*Balanus amphitrite*					6				8		5		1						5		25
Bi	*Geloina erosa*	1										1								1		3
Bi	*Glauconome chinensis*			3		5								1		1						10
Bi	*Saccostrea cucullata*	3		32		27		37		23		16		16		29		3		29		215
Bi	*Xenostrobus atratus*							18						5		8		3				34
C	*Gaetice depressus*					1				1										6		8
C	*Hemigrapsus penicillatus*													1		3						4
C	*Metopograpsus latifrons*			1										1				1				3
Cn	*Diadumene lineata*	1				1						2				15		1				20
G	*Batillaria multiformis*	25		8		22		18		23												96
G	*Batillaria zonalis*							6		10								2				18
G	*Clithon retropictus*							1				4		8		3		25				41
G	*Clypeomorus moniliferum*													1								1
G	*Littoraria articulata*											2				3				1		6
G	*Lottia dorsuosa*																			4		4
G	*Lunella coronata*									7		1								5		13
G	*Lunella granulata*			9		6						4		10						15		44
G	*Nerita squamulata*							7		1				1								9
G	*Nodilittorina radiata*															5						5
G	*Nodilittorina vidua*			12																5		17
G	*Patelloida pygmaea*					3						1				1				4		9

Annex V (Cont'd) *List of recorded fauna of intertidal soft shore community survey in every sampling zone*

Sep 2019 Sampling Zone TC3 High tidal level (2.0 m above C.D.)

		1		2		3		4		5		6		7		8		9		10		
Gp	Taxon	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Sub-total
G	*Pirenella asiatica*	15		12		10				17												54
G	*Pirenella incisa*	10		12		8		7						1				15				53
G	*Terebralia sulcata*	18				2						15		15				18				68
Hc	*Pagurus dubius*															1		2		1		4
P	*Maldanidae* spp.																	4				4
Po	*Lepidozona* spp.					3				1		1		1								6
																					Total	**774**

Key for faunal groups (Gp):

Ba: Barnacle, Bi: Bivalve, C: Crab, Cn: Cnidarin, Eh: Echiuran, F: Fish, G: Gastropod, Hc: Hermit crab, Ne: Nemertean, Ol: Oligochaete,

P: Polychaete, Pl: Platyhelminthes, Po: Polyplacophores, S: Shrimp, Sc: Scaphopods, Sp: Sipunculan

Annex V (Cont'd) *List of recorded fauna of intertidal soft shore community survey in every sampling zone*

Sep 2019	Sampling Zone TC3	Mid tidal level (1.5 m above C.D.)																				
		1		2		3		4		5		6		7		8		9		10		
Gp	Taxon	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Sub-total
Ba	*Balanus amphitrite*	12						17				2				2		1		11		45
Bi	*Barbatia virescens*	2				3						2				2		5		4		18
Bi	*Glauconome chinensis*					2		7				1										10
Bi	*Isognomon isognomum*									1												1
Bi	*Saccostrea cucullata*			6		13		13		6		15		18		6		13		18		108
Bi	*Xenostrobus atratus*					2								8		3		8				21
C	*Gaetice depressus*	2						2								1				1		6
C	*Hemigrapsus penicillatus*							1						5								6
C	*Metopograpsus latifrons*	1						1										15				17
G	*Batillaria multiformis*	4		23		4		12		12		1								4		60
G	*Batillaria zonalis*			17																15		32
G	*Clithon retropictus*	2				5						1				1						9
G	*Lottia dorsuosa*	2												4		5						11
G	*Terebralia sulcata*	7		8		17				6		5		4				8		5		60
G	*Monodonta labio*	8		7		22		7		3		1		3				1		4		56
G	*Nerita squamulata*	8				4		4								5		2		5		28
G	*Pirenella asiatica*	5		7				5		8		4		5						4		38
G	*Pirenella incisa*	3		8		8		5		1				4				1		24		54
Ne	*Nemertea* spp.		1									1						1				3
P	*Sabellidae imbricatus*			2								1				1						4
																				Total		**587**

Key for faunal groups (Gp):

Ba: Barnacle, Bi: Bivalve, C: Crab, Cn: Cnidarin, Eh: Echiuran, F: Fish, G: Gastropod, Hc: Hermit crab, Ne: Nemertean, Ol: Oligochaete, P: Polychaete, Pl: Platyhelminthes, Po: Polyplacophores, S: Shrimp, Sc: Scaphopods, Sp: Sipunculan

Annex V (Cont'd) *List of recorded fauna of intertidal soft shore community survey in every sampling zone*

Sep 2019 Sampling Zone TC3 Low tidal level (0.5 m above C.D.)

		1		2		3		4		5		6		7		8		9		10		
Gp	Taxon	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Sub-total
Ba	*Balanus amphitrite*	18		17		12		14		12		2				1		2				78
Bi	*Barbatia virescens*	1				2						1				3		2				9
Bi	*Glauconome chinensis*			1						3		1				1		2				8
Bi	*Saccostrea cucullata*	22		10		6		5		16		23		35		21		32		15		185
Bi	*Xenostrobus atratus*	5		25				6		3				6		9		15				69
C	*Gaetice depressus*	1						1		2						1						5
C	*Hemigrapsus penicillatus*			1						1		1										3
C	*Metopograpsus latifrons*	1		1						3										2		7
C	*Metopograpsus quadridentatus*	2																				2
G	*Batillaria zonalis*			1										1						26		28
G	*Clithon retropictus*					1		2				1						1				5
G	*Lottia dorsuosa*	1										6		4		5		5				21
G	*Lunella coronata*			2				4						1		2		4				13
G	*Lunella granulata*			4		9				14		15		10				18				70
G	*Monodonta labio*	1																				1
G	*Nerita squamulata*			1				3		5		6		1		4		19		4		43
G	*Omphalius nigerrima*					1										2						3
G	*Patelloida pygmaea*	2				9								1		2		1				15
G	*Pirenella asiatica*	2				5		3		2				5						15		32
G	*Pirenella incisa*	5				10				6										8		29
Hc	*Pagurus dubius*			1						1								1				3

Annex V (Cont'd) *List of recorded fauna of intertidal soft shore community survey in every sampling zone*

Sep 2019	Sampling Zone TC3	Low tidal level (0.5 m above C.D.)																			
		1		2		3		4		5		6		7		8		9		10		
Gp	Taxon	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Sub-total
P	*Sabellidae imbricatus*			5		7				6		1				1						20
Po	*Lepidozona* spp.	12				3								2						1		18
Sp	*Siphonosoma* sp.							1												1		2
																				Total		**669**

Key for faunal groups (Gp):

Ba: Barnacle, Bi: Bivalve, C: Crab, Cn: Cnidarin, Eh: Echiuran, F: Fish, G: Gastropod, Hc: Hermit crab, Ne: Nemertean, Ol: Oligochaete,

P: Polychaete, Pl: Platyhelminthes, Po: Polyplacophores, S: Shrimp, Sc: Scaphopods, Sp: Sipunculan

Annex V (Cont'd) *List of recorded fauna of intertidal soft shore community survey in every sampling zone*

Sep 2019 Sampling Zone ST High tidal level (2.0 m above C.D.)

		1		2		3		4		5		6		7		8		9		10		
Gp	Taxon	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Sub-total
Bi	*Barbatia virescens*													1		2				1		4
Bi	*Saccostrea cucullata*	18		10		8		22		7		15		25		16		5		26		152
Bi	*Xenostrobus atratus*													2								2
C	*Gaetice depressus*					1		1				2										4
C	*Metopograpsus latifrons*					1		1												2		4
G	*Batillaria multiformis*	4		7						2		24		1				15				53
G	*Batillaria zonalis*											2						26				28
G	*Clithon faba*	1																		2		3
G	*Clithon retropictus*					1		2														3
G	*Littoraria articulata*											3										3
G	*Lottia dorsuosa*	1																				1
G	*Lunella coronata*			4		2		4				4								1		15
G	*Lunella granulata*	18		4				1				5				10						38
G	*Monodonta labio*	31		17		2		32										17		18		117
G	*Nassarius festivus*									36												36
G	*Nerita squamulata*															1						1
G	*Nodilittorina radiata*	12				10		11				2								21		56
G	*Pirenella asiatica*					3				4				16		5						28
G	*Pirenella incisa*									4												4
																					Total	**552**

Key for faunal groups (Gp):

Ba: Barnacle, Bi: Bivalve, C: Crab, Cn: Cnidarin, Eh: Echiuran, F: Fish, G: Gastropod, Hc: Hermit crab, Ne: Nemertean, Ol: Oligochaete,
P: Polychaete, Pl: Platyhelminthes, Po: Polyplacophores, S: Shrimp, Sc: Scaphopods, Sp: Sipunculan

Annex V (Cont'd) *List of recorded fauna of intertidal soft shore community survey in every sampling zone*

Sep 2019	Sampling Zone ST	Mid tidal level (1.5 m above C.D.)																				
		1		2		3		4		5		6		7		8		9		10		
Gp	Taxon	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Sub-total
Ba	*Balanus amphitrite*					7																7
Bi	*Barbatia virescens*			12						4		2										18
Bi	*Brachidontes variabilis*									1												1
Bi	*Glauconome chinensis*	3		8		9								1		4				4		29
Bi	*Saccostrea cucullata*	27		34		31		14		8		8		12		19		25		23		201
Bi	*Xenostrobus atratus*					4										1						5
C	*Gaetice depressus*									2								1				3
C	*Metopograpsus latifrons*			1																1		2
C	*Metopograpsus quadridentatus*			1										1								2
C	*Pyrhila pisum*																	1				1
Cn	*Diadumene lineata*			1																		1
F	*Omobranchus fasciolatoceps*																			1		1
G	*Batillaria multiformis*	16		20		5		6				13		18		10				14		102
G	*Batillaria sordida*			6																		6
G	*Batillaria zonalis*	28				20	1	24		17		20		18		22	2	18		12		182
G	*Clithon faba*	7						1				2		2						1		13
G	*Clithon oualaniensis*			2										2						2		6
G	*Clithon retropictus*	3				1				1		2		1		3				1		12
G	*Lottia dorsuosa*											2				1						3
G	*Lunella coronata*	20				3		15														38
G	*Lunella granulata*	26		30		15				18				34				22				145

Annex V (Cont'd) *List of recorded fauna of intertidal soft shore community survey in every sampling zone*

Sep 2019	Sampling Zone ST	Mid tidal level (1.5 m above C.D.)																				
		1		2		3		4		5		6		7		8		9		10		
Gp	Taxon	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Sub-total
G	*Monodonta labio*	18		32		18		16		8				24		15		16		7		154
G	*Nerita lineata*			4												35						39
G	*Nipponacmea concinna*					1				2		2				2						7
G	*Nodilittorina radiata*	12		32		8				11				10		19						92
G	*Patelloida pygmaea*					4																4
G	*Pirenella asiatica*	12		3		4				15		5										39
G	*Pirenella incisa*	9		3						7												19
Hc	*Pagurus dubius*													7								7
P	*Baseodiscus hemprichii*																			1		1
P	*Sabellidae imbricatus*		1																			1
Pl	*Platyhelminthes*										1											1
Sp	*Siphonosoma* sp.		1					2														3
Sp	*Sipunculus nudus*																1			2		3
																					Total	**1148**

Key for faunal groups (Gp):

Ba: Barnacle, Bi: Bivalve, C: Crab, Cn: Cnidarin, Eh: Echiuran, F: Fish, G: Gastropod, Hc: Hermit crab, Ne: Nemertean, Ol: Oligochaete,

P: Polychaete, Pl: Platyhelminthes, Po: Polyplacophores, S: Shrimp, Sc: Scaphopods, Sp: Sipunculan

Annex V (Cont'd) *List of recorded fauna of intertidal soft shore community survey in every sampling zone*

Sep 2019	Sampling Zone ST	Low tidal level (0.5 m above C.D.)																				
		1		2		3		4		5		6		7		8		9		10		
Gp	Taxon	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Sub-total
Ba	*Balanus amphitrite*							22														22
Bi	*Barbatia virescens*									16		6										22
Bi	*Glauconome chinensis*							1				7										8
Bi	*Saccostrea cucullata*	96		6		38		50		65		62								49		366
Bi	*Xenostrobus atratus*											20										20
C	*Gaetice depressus*									1		6								6		13
C	*Metopograpsus latifrons*											2								6		8
C	*Metopograpsus quadridentatus*							2		2										4		8
F	*Omobranchus fasciolatoceps*											1										1
G	*Batillaria multiformis*							16						24		28		20				88
G	*Batillaria zonalis*	28				20		13		18		22								17		118
G	*Clithon retropictus*					8														1		9
G	*Cronia margariticola*							24												8		32
G	*Lottia dorsuosa*											1										1
G	*Lunella coronata*	34																				34
G	*Lunella granulata*	31						7				14								24		76
G	*Monodonta labio*			12		12		28		24		14		16		21		28		8		163
G	*Nerita chamaeleon*					2										13				1		16
G	*Nodilittorina radiata*	15						17		14		6								18		70
G	*Pirenella asiatica*											13		30		24		16				83
G	*Pirenella incisa*											17		12		5		25				59

Annex V (Cont'd) *List of recorded fauna of intertidal soft shore community survey in every sampling zone*

Sep 2019	Sampling Zone ST	Low tidal level (0.5 m above C.D.)																				
		1		2		3		4		5		6		7		8		9		10		
Gp	Taxon	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Sub-total
Sp	*Sipunculus nudus*																			3		3
																					Total	**1220**

Key for faunal groups (Gp):

Ba: Barnacle, Bi: Bivalve, C: Crab, Cn: Cnidarin, Eh: Echiuran, F: Fish, G: Gastropod, Hc: Hermit crab, Ne: Nemertean, Ol: Oligochaete,

P: Polychaete, Pl: Platyhelminthes, Po: Polyplacophores, S: Shrimp, Sc: Scaphopods, Sp: Sipunculan

APPENDIX J

Waste Flow Table

MONTHLY SUMMARY WASTE FLOW TABLE
Name of Department: HyD

Contract No.: HY/2011/03

Monthly Summary Waste Flow Table for 2019

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 *(Note 8)*	Reused in Other Projects *(Note 8)*	Disposed as Public Fill *(Note 6)*	Imported Fill *(Note 6)*	Metals	Paper / Cardboard Packaging	Plastics *(Note 3)*	Chemical Waste	Others, e.g. general refuse *(Note 8)*
	(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	2.309	0.000	1.725	0.000	0.584	8.048	4.627	0.000	0.000	0.000	0.371
Feb	3.040	0.000	1.536	0.000	1.504	0.000	2.915	0.000	0.000	0.000	0.247
Mar	1.798	0.000	1.030	0.000	0.768	1.476	1.180	0.000	0.000	0.000	0.228
Apr	1.203	0.000	0.715	0.000	0.488	1.413	2.161	0.000	0.000	0.000	0.169
May	1.027	0.000	0.827	0.000	0.200	1.385	0.918	0.000	0.000	0.000	0.098
Jun	1.036	0.000	0.508	0.000	0.528	3.126	1.158	0.000	0.000	0.000	0.189
Sub-total	10.413	0.000	6.341	0.000	4.072	15.448	12.959	0.000	0.000	0.000	1.300
Jul	0.753	0.000	0.721	0.000	0.032	0.990	0.840	0.000	0.000	0.000	0.176
Aug	0.533	0.000	0.429	0.000	0.104	0.360	0.281	0.000	0.000	0.000	0.143
Sep	0.314	0.000	0.226	0.000	0.088	0.045	0.385	0.000	0.000	0.000	0.137
Oct											
Nov											
Dec											
Sub- total	1.600	0.000	1.376	0.000	0.224	1.395	1.506	0.000	0.000	0.000	0.455
Total											

Forecast of Total Quantities of C&D Materials to be Generated from the Contract*										
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)**
310.805	21.788	224.130	40.265	24.622	1362.000	10.000	4.600	0.500	3.400	2.350

Notes:
(1) The performance target are given in ER Appendix 8J Clause 14
(2) The waste flow table shall also include C&D materials that are not specified in the Contract to be imported for use at the Site
(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material
(4) The Contractor shall also submit the latest forecast of the amount of C&D materials expected to be generated from the Works, together with a break down of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000m^3
(5) All recyclable materials, including metals, paper / cardboard packaging, plastics, etc. will be collected by registered collector for recycling.
(6) Conversion factors for reporting purpose:
excavated (bulk): rock = 2.0 tonnes/m^3; soil = 1.8 tonnes/m^3; sand=1.9 tonnes/m^3 ; Metal=7.85 tonnes/m^3
(7) Numbers are rounded off to the nearest three decimal places
(8) 30T dump truck carries C&D waste of 8.0m^3; 24T dump truck carries C&D waste of 6.5m^3

APPENDIX K

Cumulative Statistics on Complaints

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

Complaint Register

Complaint No.	Received Date	Received Time	Source	Category	Complaint Details	Location	Improvement Measures Taken	Status	Remarks
COM-2012-008	22-Oct-2012	16:41	EPD	Environmental (Water Pollution)	X先生投訴東涌機場對出港珠澳大橋地盤，有污水排到海中（懷疑是油污），污染環境，要求跟進及回覆。 (Photos attached). The "phenomenon"was observed over the past week. The photos attached were taken on 19.10.2012, 22.10.2012 and 23.10.2012	Portion X	The pelican barge as shown in the photos provided on 24 October 2012 did not belong to the Contractor.	Closed	–
COM-2012-009	05-Nov-2012	–	1823 CASE: 1-391341859	Environmental (Noise and light)	The citizen complained about noise and light pollution from the barges working on the Zhuhai Macau Bridge project. Barge machinery working to about 10pm at night and sometimes can be heard intermittently through the night. The noise is more audible because the machinery is sited on/over the water.	Portion X	The Contractor has adjusted the emission angle of the lights on working vessels with a view to minimizing the glaring effect to the adjoining residential areas	Closed	–
COM-2012-009(2)	11-Nov-2012	–	1823 CASE: 1-391341859	Environmental (Noise, water quality & air quality)	The complainant noted that the barges are still working on a Sunday, up until 10pm at night, very noisy, causing pollution of the water and at times expelling black smoke from their engines. A photograph taken at 10.40am on Sunday 11 November 2012 was attached.	Portion X	–	Closed	–
COM-2012-009(3)	14-Nov-2012	–	1823 CASE: 1-391341859	Environmental (Noise)	The complainant did not accept the reply. He further said that "All staff has to do is come out either at night or a Sunday to check, so easy. If this continues I will have no choice to call the police out."	Portion X	The Contractor has taken the following further mitigation measures for the reclamation works: (a) Mitigation Measures for Noise Nuisance: • Improvement of noise covers onto the generators / motors on barges; and • Increase frequency of applying lubricant to all moving parts and gear wheels of the working barges. (b) Mitigation Measures for Smoke Emission: • Increase frequency of maintenance and checking of engines on barges that may emit smoke; and • Installation/ replacement of smoke suppression device such as air filter, at engines where necessary.	Closed	–
COM-2012-010(1)	06-Nov-2012	–	<hzmbenquiry@hyd.gov.hk>	Environmental (Noise)	The complainant stated that lately work has started opposite Le Bleu Deux estate using barges. The work in process is generated high level of noise from powered tools used on those barges. Even if the noise was acceptable on weekdays during daytime, it is definitely creating nuisance to local resident at night (past 7pm) and on Sunday. Basically as 5 November 12 evening, he could not leave his window open as the elevel of noise prevent his baby to sleep and he could not even hear the TV in his flat. the noise coming from the site is higher then the sounds from my TV. He would like to know what measure you are planning to put in place to address this issue. He did not think that the current level of noise are acceptable past 7pm and on Sunday.	Portion X	–	Closed	–
COM-2012-010(2)	15-Nov-2012	–	<hzmbenquiry@hyd.gov.hk>	Environmental (Noise & air quality)	The noise can be very annoying, on days depending of the wind direction, you are making more noise than the plane taking off (I measured it myself), to give you an idea of the disturbance you are creating again. *I would also like to bring an other topic beside the noise. Since the beginning of the filling operation, very strong smell of exhaust pipe gas can be smelt in the residential area and I think this is a huge health concern for the local population. On certain days when the wind is blowing towards the residential areas, I have the feeling that there is a diesel engine running in my living room! I would like to know how you are planning to address this?*	Portion X	–	Closed	–

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

Complaint Register

Complaint No.	Received Date	Received Time	Source	Category	Complaint Details	Location	Improvement Measures Taken	Status	Remarks
COM-2012-010(3)	15-Nov-2012	–	EPD	Environmental (Noise, water quality & air quality)	The complainant has copied his reply from HyD dated 15 Nov 2012 to EPD and Health Department and he further complained on the following issues: • Noise nuisance generated by diesel engine; • Smell of exhaust pipe gas in his residence; and • Suspected marine water pollution (see enclosed photo). The complainant also requested EPD to install noise and air quality monitoring at Le Bleu Deux estate.	WA6 Portion X	Noise from blowing horn from vessels and barges and Metallic Parts thrown on Ground • Reminded the Contractor to request the captains of the vessels and barges not blowing the horn except in case of emergency or prevention of ship collisions/serious safety matters; • The supervision teams would enhance their tight control on the vessels and barges working at that location, and monitor the situation and take corresponding actions; and • To enhance the work force of RSS to supervise each step of construction activities and the use of hand tools until the completion of the site office erection. Noise from Engines and Cranes of the Barges during Marine Operation • Installation of noise covers onto the generators / motors on all working barges; • Increase frequency of applying lubricant to all moving parts and gear wheels of the working barges to avoid generation of abnormal sound; and • Review of working hours for the reclamation works and switching off all unnecessary machinery and plants at night time and Sundays. Noise from power generators • All generators shall be either screened or covered by adequate sound reducing materials; • All generators situated in front of Le Bleu Deux estate will be switched off at 19:00 hrs, except two generators will be kept running up to 22:00hrs and one generator will be kept running overnight for maintaining minimum power requirement; and • Arrangement with CLP Power HK Ltd (CLP) for the permanent power supply to the site offices has been chased in a matter of urgency. The use of power generators will be terminated in phase starting from 6 December 2012. Exhaust Fume Emission • Tight control on using the machine and generators in the vicinity of Le Bleu Deux estate; and • Closely monitor the frequency on engine cleansing and replacement of dust filter. Change of Sea Water in Yellow • The Contractor was reminded to move their vessels and barges at areas with adequate water depth as practically as possible.	Closed	–
COM-2012-010(4)	19-Nov-2012	22:25 hrs.	EPD	Environmental (Air quality and Noise)	The complainant filed again a complaint for the strong exhaust pipe fumes smell coming for the construction site in Tung Chung tonight as well as the extremely high level of noise as at at 10:30 pm (19/11/12).	WA6			
COM-2012-010(5)	24-Nov-2012 25-Nov-2012	13:42 hrs. 13:49 hrs 22:02 hrs. 22:08 hrs.	EPD (cc to HyD) EPD (cc to HyD)	Environmental (Air quality and Noise)	The noise is coming for the following sources: - power generator - engines from the barges used for marine operation - noise from the cranes use of the construction barges. - engine from the boat used to transport staff in and out - boats blowing their horn late in the evening and at night Gas emissions: - power generators - marine operation The complainant file again a complaint against the strong exhaust pipe emission flowing towards le Bleu Deux estate this afternoon 24/11/10 at 13:47. I can assure you that is it not "not that bad" whatever that means for you. And again strong noise of metallic parts being thrown on the ground. *I thought you have already sorted out that problem according to your multiple replies to my complaints since July???"* A pictures taken this morning (25/11/12) around 9:30am-10am showing the water pollution in different area outside the floating barriers. At 21:56 hrs., boat used by the Highway Department against blew their horn repetitively at close proximity from the residential estate.	WA6 Portion X			
COM-2012-012(1)	13-Nov-2012	22:27 hrs.	HyD	Environmental (Noise)	Once again your site continues to work late. The attached photo was taken at 10.15pm on Tuesday 13 Nov. The machinery used on the barges is very noisy. Why do you continue to work till 10pm and why do you work on a Sunday. Surely this is classified as a construction site for which you are in breach of various ordinances. An early reply is appreciated.	Portion X	The following further mitigation measures during the course of the reclamation works will be taken: • Installation of noise covers onto the generators / motors on all working barges; • Increase frequency of applying lubricant to all moving parts and gear wheels of the working barges to avoid generation of abnormal sound; and • Review of working hours for the reclamation works and switching off all unnecessary machinery and plants at nighttime and Sundays.	Closed	–
COM-2013-015	17-Jan-2013	–	EPD	Environmental (Air)	The complainant raised that construction dust was arising from construction site of China State Contruction Engineering (Hong Kong) Ltd near Siu Ho Wan Sewage Treatment Works due to insufficient dust suppression and inadequate wheel washing.	WA3	The Contractor of HY/2011/03 would take the following actions with immediate effect • To ensure no loosed earth material exposed at the edges of eth stockpiled earth materials i.e. to prevent erosion by wind and water ; • To cover the stockpiled earth material by adequate tarpaulin; • To enhance the frequency of watering (3 times per day) onto existing haul road and other area as appropriate; and • To install a water sprinkler system to enhance the existing dust suppression measures once the water point is ready for water supply by WSD.	Closed	

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

Complaint Register

Complaint No.	Received Date	Received Time	Source	Category	Complaint Details	Location	Improvement Measures Taken	Status	Remarks
COM-2013-016	18-Jan-2013	–	EPD	Environmental (Water)	The complainant advised that turbid water and concrete/cement has been arising from the Hong Kong-Zhuhai-Macao Bridge Hong Kong Projects to marine water. The complainant did not specify the soure of the turbid water and concrete/cement.	N/A	–	Closed	–
COM-2013-018	02-Mar-2013	–	HyD	Environmental (Noise)	The complainant advised that "It seems that the Contractor's cranes operating on the barges are again in need of bit of lubricant, as this evening i.e. 2 March 2013, the cranes are again polluting the neighborhood with intolerable noise." The complainant requested Mr. Ng from EPD to take note of this complaint and expected a detailed report.	Portion X	The Contractor has been reminded to continue the process of applying lubricant/ grease to all barges which are to be worked in the site area near Le Bleu Deux.	Closed	–
COM-2013-018 (2)	04-Mar-2013	–	EPD	Environmental (Noise)	The complainant complained that the cranes operating on the barges for the HZMB HK project generating squeak noise in the evening of 1 March 2013 causing an annoyance to him/her.	Portion X	The Contractor implemented the following measures : - Briefing given to the operator for the proper operation of marine vessels; - Keep adequate routine maintenance ; - Minimize the quantities of plant after 7pm; & - Review the working hours of night time works and switch off all unnecessary machinery and plants at night time.	Closed	–
COM-2013-018 (3)	13-Mar-2013	–	HyD	Environmental (Noise)	The complainant asked what noise mitigation the Contractor was taking. The complainant pointed out that the noise in question was so strong that it woke up his baby girl.	Portion X	–	Closed	–
COM-2013-018 (4)	22-Mar-2013 24-Mar-2013	14:19 hrs 10:28 hrs	HyD	Environmental (Noise)	The complainant complained that "the lifting appliance was operated gently and softly to keep the noise emission as low as possible" but the noise still woke up his baby. "Lubricant was regularly applied to smoothen all moving parts and gear wheels of the working barges" that did not seem to be the case at all. The complainant pointed that the crane operating at 10:27 hrs on 24 March 2012 needed lubricant.	Portion X	The Contractor will keep on closely monitoring the situation and carry out the necessary noise mitigation measures while barges are working in the site area nearby residential area.	Closed	–
COM-2013-018 (5)	31-Mar-2013 1-Apr-2013	10:25 hrs 10:32 hrs	HyD	Environmental (Noise)	The complainant complained that noise emitted from a crane at 10:19 hrs. The complainant further complained that noise was generated from a barge at 07:30 hrs.	Portion Y	–	Closed	–
COM-2013-018 (6), (7) & (9)	15-Apr-2013	15:41 hrs	EPD	Environmental (Noise)	The complainant complained that machinery noise generated from the construction site near Tung Chung Development Pier operating for the Hong Kong-Zhuhai-Macao Bridge Hong Kong during the normal working hours on 6 April 2013 and 13 April 2013 and the late evening of 10 April 2013 causing nuisance to public.	Portion X	The Contractor has been reminded to comply with CNP conditions for construction works undertaken during restricted hours. To minimize the potential noise impact during restricted hours and non-restricted hours, the Contractor has implemented the following additional measures: - Briefing given to the operator of the barges for proper operation of marine vessels; - Operating barge by experienced operators only; - Keeping adequate routine maintenance for barges e.g. application of lubricants into moving parts in order to minimize squeak noise; - Install noise covers onto noisy equipment where practicable. - Remind subcontractor only well-maintained plant should be operated on-site. - Minimized the quantities of plant used after 7pm as far as practicable; - Speed up of construction works in order to shorten the duration (days) of potential noise impact/nuisance to the surrounding environment; and - Regular review of working hours for night time works and switch off all unnecessary machinery and plants at night time.	Closed	–

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

Complaint Register

Complaint No.	Received Date	Received Time	Source	Category	Complaint Details	Location	Improvement Measures Taken	Status	Remarks
COM-2013-018 (11)	28-Apr-2013	15:44	EPD	Environmental (Noise)	The complainant complained that machinery noise generated from the reclamation site near Tung Chung Development Pier at around 22:00 of 28 April 2013 causing nuisance to public.	Portion X	The Contractor has been reminded to comply with CNP conditions for construction works undertaken during restricted hours. To minimize the potential noise impact during restricted hours, the Contractor has implemented the following additional measures: - Briefing given to the operator of the barges for proper operation of marine vessels; - Operating barge by experienced operators only; - Keeping adequate routine maintenance for barges e.g. application of lubricants into moving parts in order to avoid squeak noise; - Install noise covers onto noisy equipment where practicable. - Remind subcontractor only well-maintained plant should be operated on-site. - Speed up of construction works in order to shorten the duration (days) of potential noise impact/nuisance to the surrounding environment; and - Regular review of working hours for night time works and switch off all unnecessary machinery and plants at night time.	Closed	–
COM-2013-022	08-Apr-2013	--	EPD	Environmental (Water)	The complaint alleged that oil was dumped from various vessels operating for HZMB HK projects near Tung Chung Development Pier over the past few months. Photos were provided by the complainant.	Portion X	The Contractor has checked the photos provided by the complainant and confirmed that the vessels and boats shown in the photos do not belong to Contract No. HY/2011/03.As this complaint is not related to this Contract, no follow up action is required. The Contractor has reminded their subcontractors to implement the measures recommended in the Spill Response Plan (SRP) in case of accidental release of oils from vessel.	Closed	–
COM-2013-022(2)	23-May-2013	09:15 hrs	EPD	Environmental (Water)	This complaint was a follow-up of a previous complaint received by EPD on 8 April 2013 regarding oil slicks caused by vessels. It was alleged that oil was still being dumped from various vessels operating for HZMB HK projects near Tung Chung Development Pier over the past few months. On the other hand, the complainant would also like to know whether the owners of the vessels could present engine oil disposal records for the vessels which supported the HZMB project.	Portion X	The Contractor has reminded their subcontractors to implement the measures recommended in the Spill Response Plan in case of accidental release of oils from vessel and handle the chemical waste (waste oil) in accordance with the requirements provided in the EM&A Manual.	Closed	–
COM-2013-023	02-May-2013	--	HyD	Environmental (Noise)	The complainant alleged that there were metal parts dropped on the ground creating noise at 12:58 on 1 May 2013	WA6	If there are metal handling works, the Contractor will not carry out the metal handling works in early morning in order to minimize potential noise disturbance as far as practicable in future.	Closed	–
COM-2013-024	23-May-2013	09:50 hrs	EPD	Environmental (Noise)	A complaint was received on 23 May 2013 regarding noise generated from dropping metal parts on numerous occasion on the pier opposite Le Blau Deux at around 08:45 to 10:00 hrs of 18 May 2013 and loading/unloading activities creating noise disturbance by the contractor of HY/2011/03.	WA6	If there are metal handling works, the Contractor will not carry out the metal handling works in early morning in order to minimize potential noise disturbance as far as practicable in future.	Closed	–
COM-2013-027	29-Jun-2013	10:02 hrs	RSS	Environmental (Noise)	A complaint was received on 29 June 2013 regarding noise generated from the works area near the site office (WA6) around 10:00 hrs on 29 June 2013	WA6	The Contractor was recommended to minimize the potential noise impacts generated from the construction sites as far as practicable in future.	Closed	–
COM-2013-033	13-Sep-2013	Around 22:00 hrs	RSS	Environmental (Noise)	A complaint was received regarding the noise nuisance from barge at about 22:20 hrs on 13 September 2013 and 02:30 hrs on 14 September 2013.	Portion X	The Contractor has been reminded to comply with CNP conditions for construction works undertaken during restricted hours. To minimize the potential noise impact during restricted hours, the Contractor has implemented the following additional measures: - Minimized the quantities of plant used after 7pm as far as practicable; and - Regular review of working hours for night time works and switch off all unnecessary machinery and plants at night time.	Closed	–
COM-2013-034	17-Sep-2013	--	HyD	Environmental (Noise)	A complaint was received on 17 September 2013 regarding the noise nuisance from tree transplanting activities in the morning of 14 September 2013.	Portion Y	The Contractor has been reminded to comply with CNP conditions for construction works undertaken during restricted hours. To minimize the potential noise impact during restricted hours, the Contractor has implemented the following additional measures: - Minimized the quantities of plant used after 7pm as far as practicable; and - Regular review of working hours for night time works and switch off all unnecessary machinery and plants at night time.	Closed	–
COM-2013-037	8-Oct-2013 9-Oct-2013 16-Oct-2013	--	Supervising Officer's Representative	Environmental (Noise)	The complainant complained the noise from barge operation from 21:30 to 22:30 hrs on 4 October 2013. The complainant complained that several loud bangs were heard starting from 21:00 hrs on 7 October 2013. The complainant complained that it was very noisy at the noon of 14 October 2013.	Portion X	The Contractor has been reminded to comply with CNP conditions for construction works undertaken during restricted hours. To minimize the potential noise impact during restricted hours, the Contractor has implemented the following additional measures: -minimize the quantities of plant used during restricted hours as far as practicable; and -regular review of working duration for restricted hours works and switch off all unnecessary machinery and plants during restricted hours.	Closed	-

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

Complaint Register

Complaint No.	Received Date	Received Time	Source	Category	Complaint Details	Location	Improvement Measures Taken	Status	Remarks
COM-2013-041	31-Oct-2013	21:52 hrs	EPD	Environmental (Noise)	A complaint was received on 31 October 2013 regarding the noise generated from a barge being moved by a tug boat in the morning of 31 October 2013 (around 05:55).	N/A	The Contractor has been reminded to comply with CNP conditions for construction works undertaken during restricted hours. To minimize the potential noise impact during restricted hours, the Contractor has implemented the following additional measures: - minimize the quantities of plant used during restricted hours as far as practicable; and - regular review of working duration for restricted hours works and switch off all unnecessary machinery and plants during the night-time and early morning period (7pm to 7am).	Closed	-
COM-2013-043	11-Nov-2013	--	EPD	Environmental (Noise)	A complaint was received on 11 November 2013 regarding a barge moving through the southern channel of HyD's construction site after 23:00 hrs on 8 November 2013.	Portion X	The Contractor has been reminded to comply with CNP conditions for construction works undertaken during restricted hours. To minimize the potential noise impact during restricted hours, the Contractor has implemented the following additional measures: - minimize the quantities of plant used during restricted hours as far as practicable; and - regular review of working duration for restricted hours works and switch off all unnecessary machinery and plants during restricted hours.	Closed	-
COM-2013-045	27-Dec-2013	--	HyD	Environmental (Noise)	A complaint was received on 27 December 2013 regarding barges operating at the south channel of Portion X in the afternoon of 26 December 2013.	Portion X	The Contractor has been reminded to comply with CNP conditions for construction works undertaken during restricted hours. To minimize the potential noise impact during restricted hours, the Contractor has implemented the following additional measures: - minimize the quantities of plant used during restricted hours as far as practicable; and - regular review of working duration for restricted hours works and switch off all unnecessary machinery and plants during restricted hours.	Closed	-
COM-2014-046	16-Jan-2014	17:22 hrs	HyD	Environmental (Air Quality)	A complaint was received on 16 January 2014 regarding heavy exhausts generated at around 8 a.m. and 10 a.m. over past few months and or even midnight.	N/A	The Contractor has implemented the following measure to minimize exhaust fumes generated from machinery: - Maintenance for the all machinery regularly.	Closed	-
COM-2014-048	18-Jan-2014	--	EPD	Environmental (Other: Blackish mud)	A complaint was received on 18 January 2014 regarding blackish mud along the edge of the construction site of Hong Kong-Zhuhai-Macao Bridge Hong Kong Project near the airport in the morning of 18 January 2014.	Portion X	Based on the investigation results, it is considered that the blackish mud raised in the complaint was not related to HKLR03 Contract. In this case, no follow up action is required.	Closed	-
COM-2014-050	24-Mar-2014	--	EPD	Environmental (Other: Dredged Marine Sediment)	A complaint was received by EPD on 24 March 2014. The complainant advised that there was dredged material found being mixed with soil in the construction site of Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road Project in the vicinity of CAD headquarters and transported out of the site. The complainant suspected that there was improper disposal of dredged marine sediment.	Portion X	Based on the investigation results, it is considered that the complaint is invalid. In this case, no follow up action is required.	Closed	-
COM-2014-051	29-Apr-2014	--	SOR	Environmental (Noise)	A complaint was received on 29 April 2014 regarding loud bang coming from the site at 21:37 hrs on 28 April 2014.	Portion X	Based on the Contractor's site dairy and our investigation, no non-compliance was identified.	Closed	-
COM-2014-053	02-May-2014	--	EPD	Environmental (Noise)	A complaint was received by EPD on 1 May 2014. The complainant advised that there was noise nuisance arising during the evening of 1 May 2014.	Portion X	The Contractor has been reminded to comply with CNP conditions for construction works undertaken during restricted hours. To minimize the potential noise impact during restricted hours, the Contractor has implemented the following additional measures: - minimize the quantities of plant used during restricted hours as far as practicable; and - regular review of working duration for restricted hours works and switch off all unnecessary machinery and plant during restricted hours.	Closed	-
COM-2014-063	03-Dec-14	--	Arup	Environmental (Noise)	According to Arup's email to CSCE and DCVJV on 3 December 2014, "A resident living in Le Bleu Duex addressed a complaint to CE of HyD at about 20:04 hrs last night. He complained about the noise nuisance coming from site office since 19:30 hrs last night. epetitively metal parts had been dropped on the ground by people who seem to be loading or unloading a boat at the pier. Noise was still going on right now at 20:04."	WA6	Based on the investigation results, it is found that the noise complaint is not related to Contract No. HY/2011/03. In this case, no follow up action is required.	Closed	-

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Complaint Register

Complaint No.	Received Date	Received Time	Source	Category	Complaint Details	Location	Improvement Measures Taken	Status	Remarks
COM-2014-065	24-Dec-14	Nil	EPD	Environmental (Water Qulity)	A complaint was received on 24 December 2014 regarding the increase of marine refuse (water bottles and debris) along the shore from Yat Tung to Tai O, where the complainant considered might be in relation to the HZMB project(s).	Portion X	Based on the investigation results, it is considered that the complaint is unlikely related to HKLR03 Contract. Nevertheless, the Contractor is reminded to implement all recommended mitigation measures for waste management and avoid dumping rubbish into the sea.	Closed	-
COM-2015-066	08-Apr-15	Nil	EPD (An email forwarded by Arup)	Environmental (Dust)	According to Arup's email to CSCE on 8 April 2015, the ET was informed that a complaint had been received by EPD at about 18:29 hrs on 2 Apr 2015 regarding construction dust from construction site (S15) at Kwo Lo Wan Road, Tung Chung."	S15	Based on the Contractor's information and our investigation, no non-compliance was identified. The Contractor is reminded to continuously implement the dust suppression measures to minimize potential dust impact.	Closed	-
COM-2015-068	10-Apr-15	Nil	EPD (An email forwarded by Arup)	Environmental (Noise)	According to Arup's email to CSCE on 10 April 2015, it is noted that EPD received a noise complaint from a resident of Caribbean Coast. According to the complainant, he was disturbed by noise from construction activities of the HZMB Project during weekends and holidays. The complainant was referring to those activities carried out between Scenic Hill and HKBCF because the complainant mentioned the contractor was China State.	N/A	Based on the information provided and our investigation, the Contractor had complied with the conditions laid down in Construction Noise Permit (CNP) Nos. GW-RS0113-15 and GW-RS0356-15. Hence, no non-compliance was identified. The Contractor has been reminded to comply with CNP conditions for construction works undertaken during restricted hours and recommended to implement the following measures to minimize the potential noise impact during restricted hours: minimize the quantities of plant used during restricted hours as far as practicable; and regular review of working duration for restricted hours works and switch off all unnecessary machinery and plant during restricted hours.	Closed	-
COM-2015-074	16-Jul-15	Nil	EPD	Environmental (Wastewater)	According to EPD's email to Highways Department, ET, SOR and ENPO, a complaint was received on 16 July 2015 regarding wastewater splashing from vehicles to pedestrian at Tung Fai Road. The complainant complained that wastewater was splashed to people waiting at the bus stop near Civil Aviation Department Headquarters Office Building when vehicles leaving the HZMB site to Tung Fai Road.	Tung Fai Road	Based on the investigation results, it is considered that the complaint is unlikely related to HKLR03 Contract. The Contractor has been reminded to slow down their vehicles when leaving the concerned construction site.	Closed	-
COM-2015-076	17-Jul-15	Nil	EPD (An email forwarded by ENPO)	Environmental (Noise)	According to EPD's email to ENPO on 17 July 2015, it is noted that EPD received a noise complaint from public. The complainant said that he/she was disturbed by the noise generated from construction sites of the HZMB Project during the daytime period of past few Sundays. Afterwards, EPD contacted the complainant and confirmed that the noise was generated from construction sites along Kwo Lo Wan Road and signs of "China State Construction Engineering (HK) Ltd" were noted.	Kwo Lo Wan Road	Based on the information provided and our investigation, the Contractor complied with the conditions laid down in Construction Noise Permit (CNP) Nos. GW-RS0733-15 and GW-RS0740-15 and no noncompliance was found. The Contractor has been reminded to comply with CNP conditions for construction works undertaken during restricted hours and recommended to implement the following measures to minimize the potential noise impact during restricted hours: - minimize the quantities of plant used during restricted hours as far as practicable; and - regular review of working duration for restricted hours works and switch off all unnecessary machinery and plant during restricted hours.	Closed	-
COM-2015-079	07-Dec-15	Nil	ENPO (EPD referred the email from Complainant to ENPO)	Environmental (Water Quality)	According to ENPO's email to SOR and ET on 7 December 2015, a complaint was received by EPD on 2 December 2015 regarding water quality near HKLR work site. The complainant mentioned that "I moved to Tung Chung since July and it was the second time I saw similar situation polluting the sea. Last time it was even worse in red colour. Please look into this matter and let me know what was being dropped into the sea and whether it was hazardous to the sea.". EPD has contacted the complainant and obtained the additional information from the complainant. EPD suspected that the incident happened in the afternoon on 28 November 2015.	Portion X	According to the information provided by the Contractor, the derrick barge belongs to Contract No. HY/2011/03. The concerned sediment plume was likely to be caused by stirring up of mud in the seabed by the derrick barge sailed at the navigation channel situated at shallow water zone where the water depth ranging from 3.25m – 3.75m. Public fill materials were placed on the derrick barge. The barge was in good conditions with no materials being dumped into the sea. The Contractor has been implementing the mitigation measure as specified in the Implementation Schedule of Environmental Mitigation Measures that is all vessels to 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. The Contractor is recommended to arrange vessels to move out of the site area during high tide to avoid the disturbance to the seabed as far as practicable and deploy marine vessels effectively in order to minimize the number of trips and disturbance to seabed in shallow waters.	Closed	-
COM-2016-087	28-Jun-16	Nil	EPD	Environmental (Water Quality)	According to EPD's email, a complaint was received on 28 June 2016 regarding polluted water discharge incident opposite to Tung Chung Development Pier.	N/A	The Contractor has designated competent persons to operate, check and maintain individual wastewater treatment plant as an existing control measures. In case of breakdown of wastewater treatment plants, no discharge of wastewater will be allowed until repair is completed to resume the normal operation of the treatment plant. Specific toolbox / refreshment training trainings have been providing for the staff and workers for each of the wastewater treatment plants. The Contractor has been reminded to implement the above control measures and ensure no untreated wastewater will be discharged into open channel.	Closed	-
COM-2016-098	11-Nov-16	16:33	ENPO (EPD referred the email from Complainant to ENPO)	Environmental (Water Quality)	According to ENPO's email to the Environmental Team, Supervising Officer's Representative and Contractor on 11 November 2016, it is noted that EPD received a complaint lodged by a member of the public regarding sediment plume generated by a vessel named "長盛308 (Chang Sheng 308)" during the vessel travelling from construction site of Hong Kong- Zhuhai- Macao Bridge near Scenic Hill to Tung Chung New Development Ferry Pier.	Portion X	The Contractor has been reminded to schedule the vessel to move in / out of the construction site during higher tide and minimize number of trips to avoid the stirring up of the seabed mud when the vessel travelling in very shallow water areas as much as practicable. Also, the Contractor was reminded to implement environmental mitigation measures in accordance with Environmental Mitigation Implementation Schedule (EMIS).	Closed	-
COM-2016-099	02-Dec-16	Nil	ENPO (EPD referred the email from Complainant to ENPO)	Environmental (Other: Slurry on public road)	It was noted from ENPO's email to the Environmental Team, Supervising Officer's Representative and Contractor on 2 December 2016 that EPD received a complaint lodged by a member of the public regarding slurry on East Coast Road. The complainant considered the slurry might relate to the construction site of China Harbour Engineering Company Limited next to a hotel.	East Coast Road	During the weekly site inspection undertaken on 7 December 2016, no slurry was observed at the section of East Coast Road adjoining the site boundary of Contract No. HY/2011/03. The Contractor has constructed wheel washing facilities at all the site accesses, including the one near the site access of China Harbour Engineering Company Limited next to the Marriott Hotel (which is believed to be the hotel mentioned by the complainant), to wash and clean all vehicles before allowing them to leave the construction site to ensure that no mud or other debris would be brought to the public area. In addition, regular watering is conducted by water truck at least twice per day at the section of East Coast Road adjoining the site boundary of Contract No. HY/2011/03 to minimize dust emission. Based on the investigation results, it is considered that the complaint unlikely related to Contract No. HY/2011/03. Notwithstanding that, the Contractor has been reminded to clean wheels and body of vehicles as usual before allowing them to leave construction site.	Closed	-
COM-2016-100	14-Dec-16	Nil	ENPO (Contract No. HY/2010/02 project team received an environmental complaint referred by Government's hotline (1823) on 2 December 2016. ENPO forwarded the Complaint to Contract No. HY/2011/03.)	Environmental (Other: mud/ derbris on public road)	It was noted from ENPO's email to the Environmental Team, Supervising Officer's Representative and Contractor on 14 December 2016 that EPD received a complaint lodged by a member of the public regarding mud/debris on public road. The complainant complained that "the whole stretch of East Coast Road & Tung Fai Road is truly disgusting. The stone debris big and small and the mud is a nuisance to those who use the road every day. When dry there is a lot of dust and when it rains or when the road washing trucks are out it becomes a muddy mess. Cars and pedestrians are covered in dust or mud, cars are hit by stones is a daily hazard. Washing of construction vehicles is inadequate as the sand and soil is carried out onto the roads. Oversight of road conditions are not carried out by the Airport Authority. An alternative route should be created for the large number of construction vehicles as they drive fast.".	East Coast Road and Tung Fai Road	During the ET's inspection on 7 December 2016 (weekly routine inspection) and 16 December 2016, no mud or debris was observed at the section of East Coast Road adjoining the site boundary of Contract No. HY/2011/03 as well as the section of Tung Fai Road leading to the site access of Contract No. HY/2011/03. The Contractor provided wheel washing facilities at all the site accesses, including the one accessing East Coast Road and the one accessing Tung Fai Road, to wash and clean all vehicles before allowing them to leave the construction site to ensure that no mud or debris would be brought to the public area. It was observed that the areas of the wheel washing facilities and the respective road section between the wheel washing facilities and the site accesses of East Coastal Road and of Tung Fai Road were paved with concrete. High pressure jets were also provided at the wheel washing facilities for cleaning of vehicles before the vehicles were allowed to leave the construction site. In addition, regular watering at the section of East Coast Road adjoining the site boundary of Contract No. HY/2011/03 was conducted by water trucks at least twice per day to minimize dust emission. Based on our investigation result, it is considered that the complaint is unlikely related to Contract No. HY/2011/03. Notwithstanding that, the Contractor has been reminded to clean the wheels and body of vehicles as usual before allowing them to leave construction site.	Closed	-

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Complaint Register

Complaint No.	Received Date	Received Time	Source	Category	Complaint Details	Location	Improvement Measures Taken	Status	Remarks
COM-2016-103	14-Dec-16	Nil	ENPO (EPD referred the email from Complainant to ENPO)	Environmental (Noise)	It was noted from ENPO's email to the Environmental Team, Supervising Officer's Representative and Contractor on 14 December 2016 that EPD received a noise complaint lodged by a member of public. The complaint was about hammering noise generated from construction sites at midnight in the past month. The complainant could not identify the source but suspected that the noise was generated from HZMB Project. It was also noted from ENPO's email on 21 December 2016 that EPD supplemented that the complainant lives in Seaview Crescent. The complainant sometimes heard noise created by impacting metals or metal/ground, particularly in December 2016.	N/A	The Contractor confirmed that no hammering works was conducted and no impact noise was generated at midnight in November 2016 and December 2016. The Contractor complied with the conditions laid down CNP No. GW-RS740-16 and no non-compliance was found. Based on our investigation result, it is considered that the complaint is unlikely related to Contract No. HY/2011/03. In this case, no follow up action is required. However, the Contractor has been reminded to comply with the conditions stipulated in the Construction Noise Permit for construction works undertaken during restricted hours and has been recommended to implement the following measures to minimize the potential noise impact during restricted hours: - minimize the number of machinery and plant used during restricted hours as far as practicable; - regularly review the working duration for restricted hours works; and - switch off all unnecessary machinery and plant during restricted hours.	Closed	-
COM-2017-104	09-Jan-17	Nil	IEC (EPD referred the email from Complainant to IEC)	Environmental (Other: Cleanliness problem at East Coast Road and Tung Fai Road)	It was noted from IEC's email to the Environmental Team, Supervising Officer's Representative and Contractor on 9 January 2017 that EPD received a complaint lodged by a member of the public (a bus operator at the HKIA) regarding cleanliness problem at East Coast Road and Tung Fai Road.	East Coast Road and Tung Fai Road	During the ET's inspection on 10 January 2017, it was observed that the Contractor provided wheel washing facilities at all the site accesses, including the one accessing East Coast Road and the one accessing Tung Fai Road, to wash and clean all vehicles before allowing them to leave the construction site to ensure that no mud or debris would be brought to the public area. No mud was observed at the section of Tung Fai Road leading to the site access of Contract No. HY/2011/03. However, some mud was observed at the section of East Coast Road adjoining the site boundary of Contract No. HY/2011/03. Based on our investigation result, although there is no direct evidence showing that the complaint is related to Contract No. HY/2011/03, the Contractor has been reminded to clean the wheels and body of vehicles as usual before allowing them to leave construction site. Road sweeper will be employed to sweep along the East Coast Road twice per week and remove the deposited mud underneath the water-filled barrier to facilitate the road-washing water to be drained away from the carriageway. It should be of note that the ground level of site boundary of HY/2011/03 adjoining the East Coast Road is lower than that of East Coast Road and the Site of HY/2011/03 receives unidirectional flow of surface runoff from the East Coast Road. In addition, the following measures will be implemented to enhance dust suppression: 1. Stockpile along East Coast Road will be reduced in height and compacted as far as practicable 2. Haul road will be demarcated to prevent vehicles from going into non-wetted surface. 3. Site access S16 will be thoroughly cleaned and all vehicles will be stopped for second washing after being washed in the wheel washing bay. 4. Water sprinklers will be installed and operated at the stockpiles behind the water-filled barriers along East Coast Road.	Closed	-
COM-2017-108	23 February 2017 and 2 March 2017	Nil	Airport Authority Hong Kong (AAHK) via SOR / Referred to ENPO by HyD	Environmental (Air quality, Water quality and Other: Cleanliness problem at East Coast Road)	AAHK stated in their email to SOR on 23 February 2017 that there was sand/muddy water accumulating along the water barriers at East Coast Road Southbound. AAHK also lodged a complaint to HyD, which HyD referred to ENPO on 1 March 2017 (received by ET on 2 March 2017). AAHK reported that the cleanliness of East Coast Road remained unsatisfactory with dust all over the water barriers/traffic aids, and sands accumulating along the carriageway.	East Coast Road	During ET's observation on 3 and 13 March 2017, properly functioning wheel washing facilities were provided to wash all vehicles prior to leaving the site. The section of road between the wheel washing facilities and the site access (S25) was hard paved and no mud/ silt was observed at the concerned road section and the site access. As the ground level of site boundary of HY/2011/03 adjoining the East Coast Road is lower than that of East Coast Road, the possibility of muddy water seepage from S25 to East Coast Road is low.Based on our investigation result, the complaint is unlikely to be related to Contract No. HY/2011/03. Nevertheless, the Contractor has been reminded to strictly upkeep the proper practice of washing all vehicles leaving the site access (S25). Also, the Contractor has raised the majority of the temporary traffic signs to a higher level to avoid muddy water splashing on them. Also, the temporary traffic signs will be cleaned regularly.	Closed	-
COM-2017-112	27 March 2017	Nil	ENPO (EPD referred the email from Complainant to ENPO)	Environmental (Noise and Water quality)	It was noted from ENPO's email to the Environmental Team, Supervising Officer's Representative and Contractor on 28 March 2017 that EPD received a noise complaint lodged by a resident of Century Link on 27 March 2017. The complaint was about "昨晚 (i.e. 26 March 2017) 大約十時起，屋外間歇有非常響亮聲音，經觀察應該是從港珠澳大橋近人工島的工程發出，噪音一直至深夜。另今早發現住處對出海面受到一大遍污染（見相片）。以上都應該是大橋工程所造成的污染"i.e. "At around ten o'clock last night (i.e. 26 March 2017), there was intermittent very loud voice outside. According to observation, the noise should be from the Hong Kong-Zhuhai-Macao Bridge project near the artificial island, the noise lasted until late at night. In this morning, there was a plume of pollution found on the sea (see photo). These should be caused by the bridge project.".	Nil	Based on the information provided by the Contractor and our investigation, it was concluded that the Contractor had complied with the conditions laid down in CNPs No. GW-RS-1135-16 and GW-RS0016-17 and that no non-compliance on water quality was found. It is considered that the complaint is unlikely related to Contract No. HY/2011/03. In this case, no follow up action is required. However, the Contractor has been reminded to comply with the conditions stipulated in the Construction Noise Permit for construction works undertaken during restricted hours and has been recommended to implement the following measures to minimize the potential noise impact during restricted hours: - minimize the number of machinery and plant used during restricted hours as far as practicable; - regularly review the working duration for restricted hours works; and - switch off all unnecessary machinery and plant during restricted hours. The Contractor was also reminded to schedule, according to the predicted tides of the Hong Kong Observatory, their working vessels to travel to and from work site at high tide in order to reduce the sediment plume at shallow water areas.	Closed	-
COM-2017-113	20-Apr-17	Nil	ENPO (EPD referred the email from Complainant to ENPO)	Environmental (Water quality)	It was noted from ENPO's email to the Environmental Team, Supervising Officer's Representative and Contractor on 20 April 2017 that EPD received a complaint on 19 April 2017 lodged by a green group. The complaint was about "本會XXX投訴港珠澳大橋承辦商於２０１５年設置隔泥網的方向不當，產生污染。而圖片是由路政署提供，是真確圖片。本會期望環保署調查圖片中的情況，並對承辦商作出警告，以及要求承辦商準確放置現時的隔泥網，確保其雙重設計是有效。"	Portion X	Based on the information provided by the Contractor and ET's investigation, It was suspected that the concerned silt plume may be caused by sea current. There was no evidence that the concerned silt plume was caused by any activities arising from the Contract. The Contractor was reminded once again to implement the mitigation measure as specified in the Implementation Schedule of Environmental Mitigation Measures. The Contractor is also recommended to fully and properly maintain the silt curtain throughout the works in accordance with the requirements in the Updated EM&A Manual through undertaking monthly measurement on the overlapping and separation openings for vessels access for prompt rectification.	Closed	-

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Complaint Register

Complaint No.	Received Date	Received Time	Source	Category	Complaint Details	Location	Improvement Measures Taken	Status	Remarks
COM-2016-095(3)	27-May-17	Nil	SOR (HyD referred the email from Complainant to SOR)	Environmental (Noise)	It was noted from SOR's email to the Environmental Team and Contractor on 26 May 2017 that HyD received a complaint on 12 May 2017 lodged by a member of public. The complaint was about "We'd like to follow up on this case. Pls help take pictures & point out to us where your noise barriers are located. If those seen in the attached pics are so-called noise barriers, then we believe the contractor needs a lot of improvement in helping to reduce this noise pollution".	Near Dragonair / CNAC (Group) Building (HKIA)	Upon the receipt of the complaint in May 2017, the Contractor had been instructed to immediately install additional noise barriers at the appropriate location and cover the breaker tip with acoustic materials as noise mitigation measure against the noise emission associated with the aforesaid construction activities. Moreover, the noise barriers have been located as close as possible to the noise source (rock breaking work). Also, gaps and openings at joints in the barrier material have been minimized. The rock breaking work was completed on 31 May 2017 and the rock breaking machine had been demobilized off site. According to information from Contractor, removal C&D materials will be carried out at the site near CAD and CNAC buildings in the future. As such, noise nuisance generated from a site will be minimized. Notwithstanding that, the Contractor has been reminded to implement noise mitigation measures on the site to minimize any potential nuisance to the public. Based on our investigation result, it is considered that the complaint is likely related to Contract No. HY/2011/03. The Contractor has implemented the following measures to minimize the potential noise impact: - Additional noise barriers have been erected in the active working area to further mitigate the associated noise emissions as far as practicable; - Cover the breaker tip with acoustic material. - Noise barriers have been located as close as possible to the noise source. Also, gaps and openings at joints in the barriers material have been minimized. - Speed up of construction works in order to shorten the duration noise impact/nuisance to the surrounding. - Minimize the quantities of noisy plant as far as practicable. - Regular review of working duration and switch off all unnecessary machinery and plant.	Closed	-
COM-2016-095(4)	15-Aug-17	Nil	HyD	Environmental (Noise)	HyD received a complaint concerning the rock breaking works near CNAC Buildings, as described below: "I am writing to let you know re-captioned works interrupted seriously our staff daily office works. Understand the rock encountered was much stronger than the original expected, the rock breaking works near CNAC Tower has been never ending. Recently a bulldozer is working nearby and no noise barriers/sound proofs were set up. Please take corrective action asap. Kindly advise us when this bulldozing work is scheduled to complete."	Near Dragonair / CNAC (Group) Building (HKIA)	The major rock breaking works near CNAC Tower were substantially completed on 31 May 2017. However, survey record revealed that minor rock breaking/trimming work was required at the formation level for the construction of box culvert no. PR14. Hence, the Contractor used a hydraulic breaker for minor rock breaking/trimming work in the afternoon on 15 August 2017. According to the photos provided by the complainant, movable noise barriers were not located near the noise source (rock breaking/trimming work). As such, noise generated by rock breaking/ trimming work was not efficiently screened by the noise barriers. According to the Contractor's records and the photos provided by the complainant, no bulldozer was used at PR14 on 15 August 2017. In addition, no bulldozing work is scheduled at PR14 in near future. ET conducted an investigation on 16 August 2017. The minor rock breaking/ rock trimming work was completed. Only one excavator was operating for forming the haul road at the concerned location. No significant noisy activity was observed during the investigation on 16 August 2017. Also, bulldozer was not observed on the site. Based on our investigation result, it was likely that concerned noise emission was due to the minor rock breaking/ trimming works by the hydraulic breaker. It is considered that the complaint is likely related to Contract No. HY/2011/03. According to Contractor's information, no substantial rock breaking works will be conducted at near CNAC Tower. Only minor rock breaking/ trimming work may be occasionally conducted at the concerned work area. The Contractor has been recommended to implement the following measures to minimize the potential noise impact when minor rock breaking/ trimming work to be conducted: - Schedule noisy work (i.e. rock breaking) during non-office hours as far as practicable subject to actual site progress; - Cover the breaker tip with acoustic material; - Locate noise barriers as close as possible to the noise source. Also, gaps and openings at joints in the barriers material should be minimized; - Regular review of working duration and switch off all unnecessary machinery and plant; - Speed up of construction works in order to shorten the duration noise impact/nuisance to the surrounding; and - Minimize the quantities of noisy plant as far as practicable.	Closed	-
COM-2017-122	03-Oct-17	Nil	1823 Integrated Call Centre received a complaint lodged by a member of the public on 30 September 2017. SOR referred the complaint details from 1823 - HyD to ET on 3 Oct 2017	Environmental (Other: Cleanliness problem at Tung Fai Road)	1823 Integrated Call Centre received a complaint lodged by a member of the public regarding cleanliness problem at Tung Fai Road, as described below: "投訴大嶼山赤鱲角東輝路 11號港龍大廈對出，巴士站附近，是港珠澳大橋地盤其中一個出入口，經常有大量重型工程車輛進出地盤。每逢有巴士或重型車輛經過時，路面沙塵揚起引起"沙塵暴"，等候巴士的乘客便遭殃。以前有灑水車噴水減低沙塵，現在灑水車都沒有出現。 要求部門改善沙塵問題。 "	S16	During the ET's inspection on 3 October 2017, it was observed that the Contractor did provide wheel washing facility with high pressure jets at the site access S16 at Tung Fai Road to wash and clean all vehicles before allowing them to leave the construction site to ensure that no mud or debris would be brought to the public area. It was also observed that the Contractor did provide water bowser to thoroughly clean Tung Fai Road. No mud was observed at the section of Tung Fai Road leading to the site access S16 of Contract No. HY/2011/03. Another inspection was conducted on 12 October 2017, the section of the road between the wheel washing facility and the site access S16 was hard paved and no mud/silt was observed at the concerned road section and the site access S16. Although Contract No. HY/2011/03 is the only construction site connecting to the Tung Fai Road and the mentioned bus stop, wheel washing facility with high pressure jets is provided at the site access S16 to wash and clean all vehicles before allowing them to leave the construction site. No mud or debris would be brought to the public area. Therefore, there is no direct evidence showing that the complaint is related to Contract No. HY/2011/03. Nevertheless, in order to enhance dust suppression measures, the Contractor will increase the frequency of road cleaning by water bowser from three times per day to four times per day, subject to regular review with relevant stakeholders in the vicinity.	Closed	-
COM-2017-129	08-Jan-18	Nil	ENPO's email to the Supervising Officer's Representative and Contractor on 8 January 2018 that HyD received a complaint lodged by a member of the public regarding cleanliness problem at East Coast Road on 29 December 2017	Environmental (Other: Cleanliness problem at East Coast Road)	HyD received a complaint lodged by a member of the public regarding cleanliness problem at East Coast Road on 29 December 2017. The complaint details are described below: "投訴人投訴於大嶼山東岸路，因港珠澳大橋工程的沙塵問題，部門安排了有關洗街車及吸塵車處理有關沙塵問題，但有關車輛就上述問題的處理成效未如理想。投訴人表示洗街車在清洗有關路面時，只是向路面灑水，令原本的沙塵變成泥漿，但卻沒有清理有關泥漿，道路問題根本沒有根治。另外，有關吸塵車的隔濾亦未如理想，吸塵車吸了地上的沙塵後所噴出來的氣體佈滿沙塵，以致有關沙塵除了未被吸走外，更導致道路沙塵滾滾。要求部門監察有關承辦商，煩請部門跟進及回覆 。"	East Coast Road	Based on our investigation result, there is no direct evidence showing that that the complaint is related to Contract No. HY/2011/03. The Contractor has been reminded to implement the following measures to minimize dust impact/ improve cleanliness at East Coast Road: • display notice at site access to remind drivers to wash the wheels thoroughly before leaving the site. • manual control by rope stopping vehicles entering public road without wheel washing. • provide training for drivers to ensure that they can use water truck and road sweeper properly for road washing. • close monitor on the proper functioning of the road sweeper and water truck and provide maintenance to water truck and road sweeper if necessary. • implement environmental mitigation measures in accordance with Environmental Mitigation Implementation Schedule as per the EM&A Manual. ET will also step up the site inspections to ensure the cleanliness of the concerned section of East Coast Road is properly maintained.	Closed	-

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Complaint No.	Received Date	Received Time	Source	Category	Complaint Details	Location	Improvement Measures Taken	Status	Remarks
COM-2018-132	13, 14 February 2018	Nil	HyD (SOR referred the email from HyD to Contractor and ET) and EPD (ENPO referred the email from EPD to SOR, SOR sent the email to Contractor and ET)	Dust, Water Quality, Construction Waste, Noise and vibration	The complaint was received from the SOR's email on 13 February 2018 with the following details: *"We have witnessed increased construction activities causing concerns such as nuisance, air and water pollution, construction waste landfill which may cause health and safety to the surroundings.* *Nuisance – construction noise and vibration* *Air and Water Pollution – poor dust control causing air pollution* *Construction Waste Landfill Hill – increased height, size and degree of the slope of the construction waste landfill* *Moreover, we are particularly concerned with the stability of the construction waste landfill hill, and has grown taller and larger in size with steep slopes which may cause potential danger and hazardous to the surrounding area.* *It is appreciated that if you can investigate on the issue, and rectify the situation to a safe and healthy condition. Please confirm when and how the rectification will be completed."* Another complaint to EPD was received from the SOR's email on 14 February 2018. The complaint was the same as the abovementioned with two figures showing the location of Dragonair & CNAC (Group) Building and Cathay Dragon House.	Near Dragonair / CNAC (Group) Building (HKIA)	Based on our investigation result, the complaint was related to Contract No. HY/2011/03. The Contractor has implemented Environmental Mitigation Implementation Schedule as per the EM&A Manual. Also, the Contractor was reminded to remove the concerned stockpile of the fill materials as soon as possible to minimize the potential nuisance caused to the nearby sensitive receivers.	Closed	-
Follow-ups of Complaint No COM-2018-132	16 March 2018 and 21 March 2018	Nil	HyD (SOR referred the email from HyD to the Contractor and ET) and EPD (ENPO referred the email from EPD to SOR, who sent the email to the Contractor and ET)	Dust and Construction Waste,	The complaint of 16 March 2018 was addressed to HyD and its details were as follows: "1) It was observed from daily photos that: a. Inadequate dust suppression measures implemented. b. Green tarp does not cover the entire pile of the waste land fill. c. Dry soil constantly being observed, and constantly picked-up by strong gusty winds within CLK area. d. Large boulders and steep slopes on waste landfill, with inadequate safety measures implemented. 2) It was noted that the open stockpile of construction waste landfill will be removed by the end of March 2018. Please confirm the date of completion of the removal of the stockpile. 3) Please advise if the slope and setting of the piles of earth complies within Building and other relevant Regulations. 4) The works on the site should be within a valid gazetted period, please confirm if the works are within a valid gazette period, within CLK Lot No1 Land lease or otherwise." The complaint of 21 March 2018 was addressed to EPD and its details were as follows: "Re: Large construction landfill waste outside Cathay Dragon House, CLK, We refer to your letter ref: [EP3/N09/RS00004678-18] dated 09 March 2018, would like to further draw your attention to the open stockpile of construction waste landfill, and the enclosed daily photo. We have continued to observe the following: - Inadequate dust suppression measures implemented. o Green tarp does not cover the whole of the waste landfill. o Dry soil constantly observed, and constantly picked-up strong gusty winds within CLK area. - Large boulders and and steep slopes on waste landfill, with inadequate safety measures implemented. - Poor housekeeping of the construction site. Furthermore, we would like to raise the query regarding the validity period for the occupation of the site under the current gazette. It is appreciated that if you can continue to investigate on the issue, provide close monitoring of the situation, and request the contractor to rectify to a safe and healthy condition."	Near Dragonair / CNAC (Group) Building (HKIA)	Based on our investigation result, the complaint was related to Contract No. HY/2011/03. It was noted that no Action and Limit Level exceedances of 1-hr and 24-hr TSP were recorded at air monitoring station AMS6 - Dragonair Building during the period from 1 February 2018 to 30 April 2018. Part of the stockpile was observed dry during ET's site inspection on 27 March 2018. Proper watering on the stockpiles was observed undertaken afterwards. The Contractor has been continuously reminded to properly implement Environmental Mitigation Measures as per the EM&A Manual. The Contractor was also reminded to remove the concerned stockpile of the fill materials as soon as possible to minimize the potential nuisance caused to the nearby sensitive receivers.	Closed	-
COM-2018-142	29 June 2018 & 6 July 2018	Nil	EPD (ENPO referred the email to SOR, Contractor and ET)	Noise	The complaint of 29 June 2018 was received from EPD and its details were as follows:- EPD have recently received a complaint regarding frequent noise from construction works next to Cathay Dragon House, facing Tung Chung direction. The complaint details are described as below: "We would like to raise your attention and forward a complaint regarding frequent noise from construction works next to our Cathay Dragon House, facing Tung Chung direction. From the video link below, it seems like the noise is mainly from the breaking of rocks using powered mechanical equipment. https://www.dropbox.com/s/634sf2p3op39s9v/IMG_3137.MOV?dl=0 Our colleagues at Cathay Dragon House has complaint that such disturbance has been going on for a week and works are carried out throughout the whole day. Please advise whether: 1. Such noisy works have been carried out with EPD or Highways' "Approved Permit"; 2. The noise level have been limited by your permit; 3. Any regular monitoring works or report have been sent to your department. 4. When will the work/noise stops; Furthermore, 5. Mr Lai mentioned in your previous email 18 April 2018 that the works should have completed end April 2018. Why is the works still going on? 6. Mr Lo mentioned in the letter dated 11 April 2018, you would conduct site inspections. Have you noticed any non-compliance? Your prompt response is appreciated."	Near Dragonair / CNAC (Group) Building (HKIA)	Based on our investigation result, the complaint was related to Contract No. HY/2011/03. The Contractor has implemented Environmental Mitigation Implementation Schedule as per the EM&A Manual, such as cover the breaker tip with muffler; minimize the quantities of noisy plant as far as practicable. Although the rock breaking works outside the Cathay Dragon House/ Dragonair & CNAC (Group) Building were completed on 9 July 2018, the Contractor has been continuously reminded to properly implement Environmental Mitigation Measures as per the EM&A Manual to minimize the potential noise nuisance caused to the public/ surrounding.	Closed	-

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

Complaint Register

Complaint No.	Received Date	Received Time	Source	Category	Complaint Details	Location	Improvement Measures Taken	Status	Remarks
					"A further complaint was received on 6 July 2018 from EPD and its details were as follows:- "Further to our previous complaints which are in vain, we would like to continue to put forward the complaint against the noise from the construction works next to Cathay Dragon House at CLK, which has never been ceased and been causing great disturbance to the accommodations (aviation control centre) and staff within our Cathay Dragon building and CNAC tower. Below is the time schedule our staff regarding the noise disturbance from the site which is frequent and continuous. Date Time 3 July 2018 8:30am – 11:30am, 1:30pm – 5:30pm 4 July 2018 8:30am – 11:30am, 1:30pm – 5:30pm 5 July 2018 8:30am – 11:30am, 1:30pm – 5:30pm Please advise what has been your action upon this matter. This has been intolerable for months. If there is nothing that your depts., can impose to stop the disturbance, we may need to seek other alternative complain channel. Your immediate action on this matter is highly appreciated." "We would like to get your urgent attention to the noise nuisance matters that is occurring outside Cathay Dragon House (facing seaside Tung Chung). There have been extreme noisy works conducted, without proper noise mitigation matter, with noise DB levels reaching 70-100dB, and is seriously affecting our company operations. Please urgently attend to the matter and advise further on the email below, and implement the proper noise reducing and mitigation procedures. Lastly, we also understand the works should have been completed. Therefore, why are there still construction site works going on?"				
COM-2018-158	24-Dec-18	10:17 AM	HyD (SOR referred the email from HyD to Contractor, ET and IEC/ENPO on 10:17 am, on 24 Dec 2018)	Other: Construction work on Sunday Morning	The details of the complaint were as follows: Email received by HyD on 23 December 2018 at 10:49hrs "How come someone is doing some construction work on sunday morning (23/12/18, 10:30am)??? Looks like your christmas holidays i going to turn into an investigation holiday!!! Looking forwards to hearing from you? I am sure David will be more than happy to assist your investigation over the holidays!!" Email received by HyD on 23 December 2018 at 11:11hrs "by the way have you issue a "permit to annoy people" based on merit to operate a crane this sunday? If not I am looking forwards to know the action you will take. Don't esitate to contact Chief Lam he will surely be very happy to provide any assistance you need to find out who is the rogue employee working under him so you can take the necessary legal action."	N.A.	Based on our investigation result, the concerned work activity complied with the valid CNP. In this case, no follow up action is required. However, the Contractor has been reminded to comply with the conditions stipulated in the Construction Noise Permit for construction works undertaken during restricted hours.	Closed	-
N/A	03-Apr-19	Nil	EPD (ENPO referred the email from EPD to HyD, SOR, Contractor and ET) through email	Dust	Email received by EPD on 3 April 2019 ""投訴人表示海堤灣畔對面有港珠澳大橋的地盤正進行工程，工程期間會揚起大量塵土，引起污染，影響海堤灣畔居民。要求部門跟進事宜。"	N.A.	Based on our investigation result, there is no observation of dust emissions arising from the Contract No. HY/2011/03. The Contractor has implemented the Environmental Mitigation Implementation Schedule as per the EM&A Manual, the Contractor has been reminded to strictly maintain the dust mitigation measures during carrying out of their construction works to minimize the dust nuisances to nearby sensitive receivers.	Closed	-
COM-2019-163	30-Apr-19	Nil	SOR referred details of complaint to Contractor, ET and IEC/ENPO through email	Waste	The details of the complaint were as follows:- "rubbish and refuse pile up by the road near a bus stop breeding numerous flies and pests. huge annoyance and hygiene problem to the public. pls clean up."	Near Dragonair / CNAC (Group) Building (HKIA)	Based on our investigation result, there was no observation of works in the area of complaint on issue of general refuse arising from the Contract No. HY/2011/03. The Contractor has implemented the Environmental Mitigation Implementation Schedule as per the EM&A Manual, the Contractor has been reminded to strictly maintain waste management procedures during their construction works to avoid the hygiene impacts to nearby sensitive receivers.	Closed	-

APPENDIX L

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
04.12.2014	VEP issued	22.12.2014	EP-352/2009/D	Highways Department	N/A
24.03.2016	VEP Issued	11.04.2016	EP-353/2009/K	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

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

Date Notification Submitted	Notification Ref. No.	Valid Since	Expiry Date
31.07.2015	391702	31.07.2015	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

Item 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	02.08.2017	Site Office for China States (WA6)	Application Ref. No. 419562 Water Discharge License WT00029546-2017 was granted on 13 Nov 2017	Valid until 30 Sept 2022
3	04.01.2018	WA 3	Application Ref No.356237 Water Discharge License Ref. WT00030320-2018 was granted on 22 Feb 2018	Valid until 31/03/2023
4	15.01.2013	WA 4	Application Ref No. 356240 Water Discharge License Ref. WT00016158-2013 was surrendered on 24 May 2018	N/A
5	04.01.2018	Airport Road (Southern)	Application Ref No. EP/RS/0000354266 Water discharge license Ref. WT00032071-2018 was granted on 23 Oct 2018.	Valid until 30/04/2023
6	04.01.2018	Airport Road (Northern)	Application Ref No. EP/RS/0000354018 Water discharge license Ref. WT00031778-2018 was granted on 23 Oct 2018.	Valid until 30/04/2023
7	10.03.2017	WA7	Application Ref. No. 414487 Water Discharge License Ref. WT00027958-2017 was surrendered on 01 Feb 2018	N/A

Construction Noise Permit

Item No.	Date Application Submitted	Works Area Applied	Description	Status	CNP No.	Validity of CNP	
						From	To
1	19.03.2019	WA3	Stockpiling/ wastewater treatment	CNP issued on 02.04.2019	GW-RS0284-19	05.04.2019 0000	03 .10.2019 2400
3	30.04.2019	All Works Area	All Works	CNP issued on 14.05.2019	GW-RS0409-19	20.05.2019 0000	19.11.2019 2400

APPENDIX M

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 extended 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 properly maintained throughout the construction period; • Any skip hoist for material transport should be totally enclosed by impervious sheeting;	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
S5.5.6.2	A2	• 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; • 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;	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	• 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 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.	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
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	√
S5.5.71	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 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.	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
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	√
Noise							
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 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;	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 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
		• 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.					
S8.3.9 - S8.3.11	WM2	C&D Waste • 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 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.	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 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
S8.2.12-S8.3.15	WM3	Chemical Waste • 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. • 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.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	P

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
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 waste management procedure, including reduction, reuse and recycling of wastes.	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	P

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
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 filling work, 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 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. 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 filling for Portion 1 of HKLR.	To control construction water quality	Contractor	During seawall filling	Construction stage	√
S9.11.1-S9.11.1. 2	W1	• Single layer silt curtains will be applied around all works; • Silt curtain shall be fully maintained throughout the works.	To control construction water quality	Contractor	During seawall 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
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 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 shall be controlled to prevent splashing of filling materials to the surrounding water. • barges shall not be filled to a level which will cause overflow of materials or pollution of water during loading or transportation; • 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.	To control construction water quality	Contractor	During seawall filling	Construction stage	√
S9.11.1.3	W2	Land Works 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;	To control construction water quality	Contractor	During seawall 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
S9.11.1.3	W2	• 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 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 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;	To control construction water quality	Contractor	During seawall 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
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 filling	Construction stage	√
S9.14	W3	• Implement a water quality monitoring programme	Control water quality	Contractor	At identified monitoring location	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
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	• Install silt curtain during the construction; • Construct seawall prior to reclamation filling where practicable; • Good site practices; • Site runoff control; • 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; • 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.	Minimize temporary marine habitat loss impact to 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
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 • Good site practices • 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	√
S11.7	F4	• Maritime Oil Spill Response Plan (MOSRP); • Contingency plan.	Minimise impacts on marine water quality impacts	Management	HKLR	During operation 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
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. • 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 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).	Minimise visual & landscape impact	Detailed designer	HKLR	Design 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
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. Not Applicable. G5 Vegetation reinstatement and upgrading to disturbed areas. G6. Maximize new tree, shrub and other vegetation planting to compensate tree felled and vegetation removed. G7. Provide planting area around peripheral of and within HKLR for tree screening buffer effect. G8. Plant salt tolerant native tree and shrubs etc along the planter strip at affected seawall. G9. 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	Mitigate Visual Impacts V1.Minimize time for construction activities during construction period. 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.					

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
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	√

Legends:
√ Implemented
X Not Implemented
P Partially Implemented
N/A Not Applicable

APPENDIX N

Records of “Notification of Environmental Quality Limit Exceedances and Record of “Notification of Summons and Prosecutions

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.: 298s ver 0

Date of Notification: 9 October 2019

Works Inspected: Data collected from water sampling works on 30 September 2019 and the test report was issued on 8 October 2019.

Monitoring Location: Water Quality Monitoring Station

Parameter: ~~Dissolved Oxygen (DO)/~~ Suspended Solid (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	IS10(N)	DA	**23.5** and 120% of upstream control station's suspended solids at the same tide of the same day (i.e. CS2(A): 18.63 x 120% = **22.4** for mid ebb; CS(Mf)5: 10.17 x 120% = **12.2** for mid flood)	**34.4** and 130% of upstream control station's suspended solids at the same tide of the same day (i.e. CS2(A): 18.63x 130% = **24.2** for mid ebb; CS(Mf)5: 10.17 x 130% = **13.2** for mid flood)	***31.9***	19.5
SS	SR5(N)	DA			20.5	***31.7***

Notes:
1) DA means depth average.
2) ***Bold Italic*** means AL exceedances.
3) ***<u>Bold Italic with underline</u>*** means LL exceedances.

Possible reasons for Action Level Non-compliance:

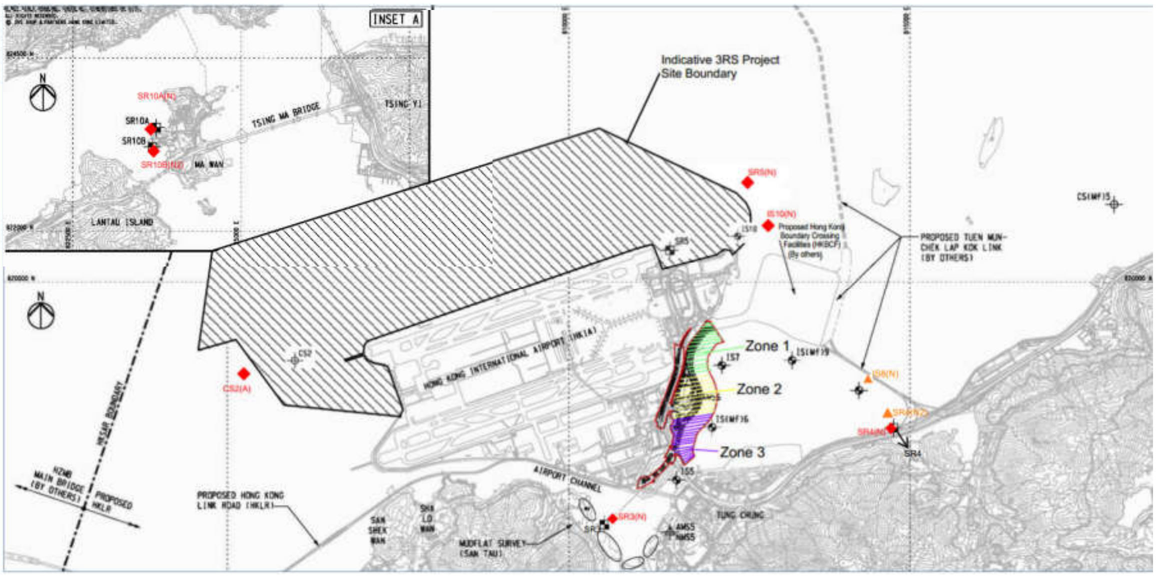
On 30 September 2019, an Action Level exceedance of suspended solid was recorded at station IS10(N) during mid-ebb tide and an Action Level exceedance of suspended solid was recorded at station SR5(N) during mid-flood tide. The exceedances have been investigated and are considered unlikely to be related to the contract works due to the following reasons:

1. Land-based work including landscaping works at Zone 1 and Zone 3 were carried out on 30 September 2019. No wastewater was discharged from work areas of this Contract to the open water on 30 September 2019. It is also noted that exceedances were not recorded at stations IS5, IS(Mf)6 and IS7 which are located close to the site boundary of this Contract. As confirmed by the Contractor of this Contract, there were no marine based works and no marine transportation in the vicinity of stations IS10(N) and SR5(N) which are located far away the site boundary of this Contract (over 1.5 km).
2. Water appearance was observed clear at stations IS10(N) and SR5(N) during sampling exercise. No silt plume was observed in the vicinity of stations IS10(N) and SR5(N) during the sampling exercise. Also, no abnormity or malpractice for the contract works was observed during the sampling exercise.
3. There were no specific activities recorded during the monitoring period that would cause any significant impacts on the monitoring results. As such, the exceedances of suspended solid level are considered to be attributed to other external factors such as sea condition, rather than the contract works.

Actions taken/ to be taken:

As the suspended solid level recorded beyond the water quality criteria were not related to the contract works, no immediate actions are considered necessary. However, the Contractor is reminded to ensure that the silt curtain is fully maintained throughout the construction works and construction works are carried out under stringent supervision to prevent any water quality impacts to the seawater.

Location Plan:



Reviewed by:	Claudine Lee	Title :	ET Leader
		Date :	9 October 2019

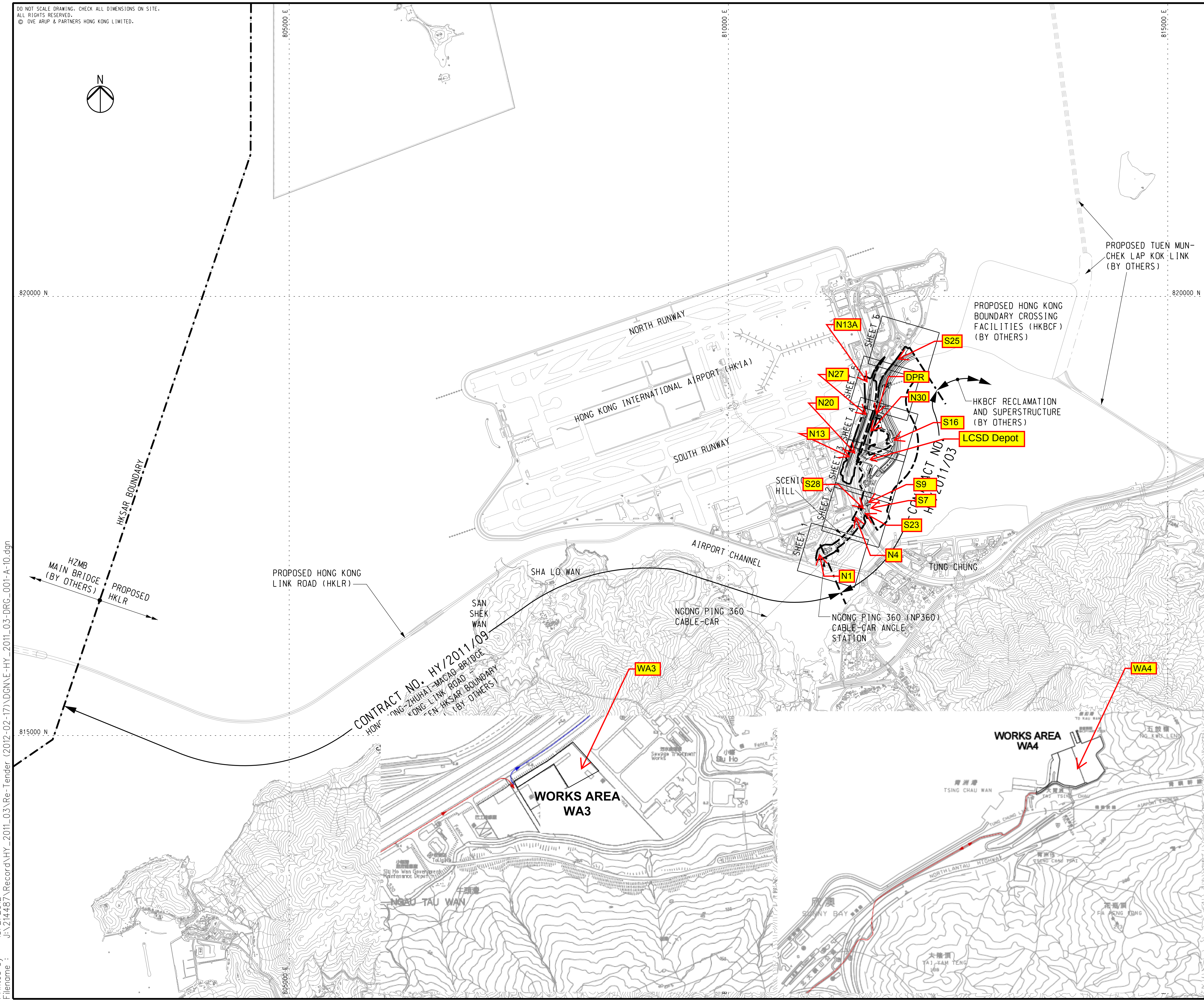
Copied to: Supervising Officer, IEC/ENPO and Contractor

Summary of Notifications of Summons and Prosecutions

Total No. of Notifications of Summons / Prosecutions Received	No. of Notifications of Summons / Prosecutions Received during Reporting Period	Status of Notifications of Summons / Prosecutions
0	0	N/A

APPENDIX O

Location of Works Areas



NOTES

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRG. NOS. 2144BT/2/T/002 - 007.

LEGEND

SITE BOUNDARY

Rev	Description	By	Date
A	TENDER ISSUE	IL	02/12

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
GENERAL LAYOUT
KEY PLAN

Drawing no.		Rev.	
214487/2/T/001		A	
Drawn RY	Date 02/12	Checked IL	Approved SK
Scale 1:20000 @A1		Status TENDER	

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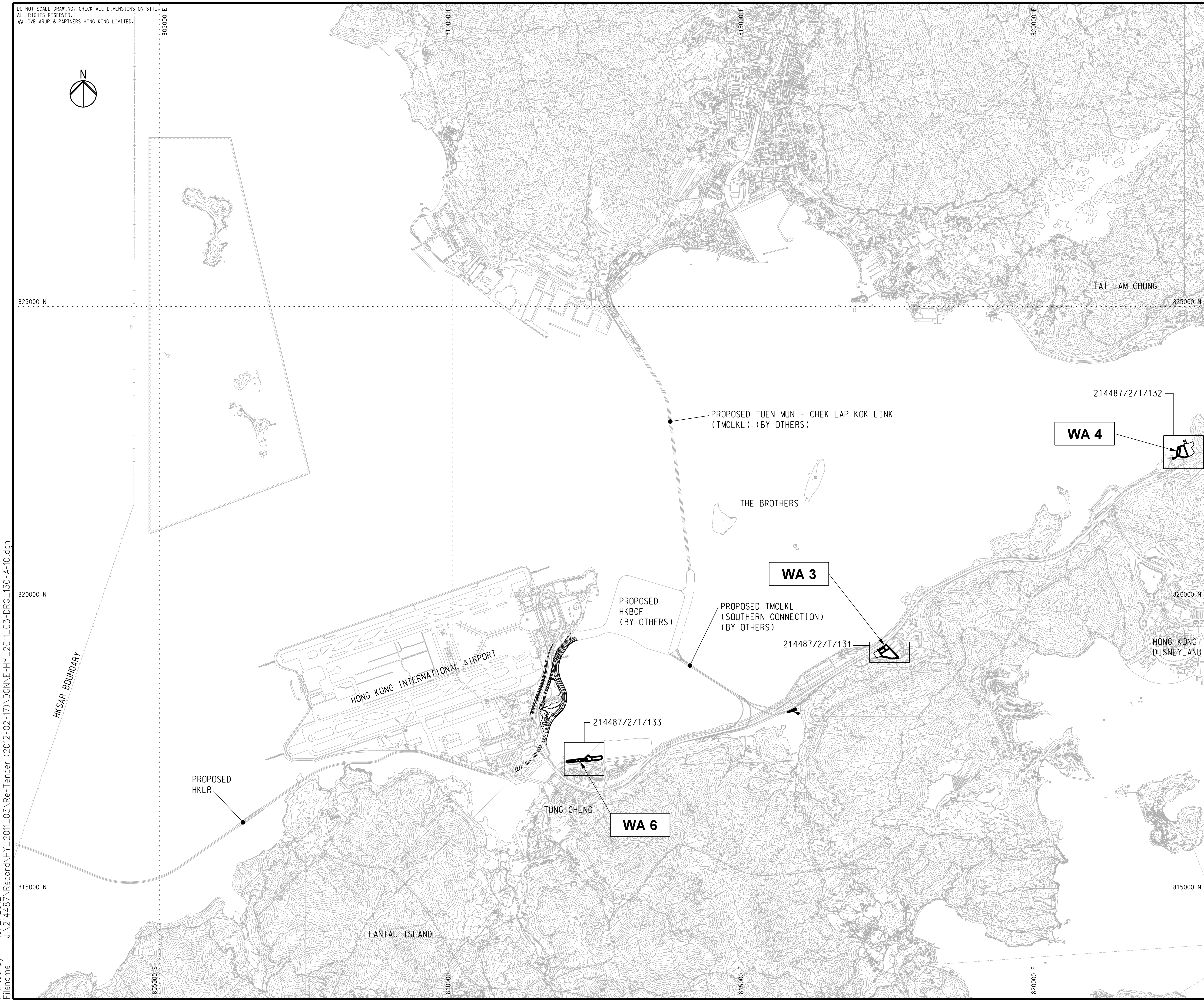

NOTES

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRG. NOS. 214487/2/T/131 - 133.

Rev	Description	By	Date
A	TENDER ISSUE	IL	02/12

Consultant

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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

WORKS AREAS
KEY PLAN

Drawing no.		Rev.	
214487/2/T/130		A	
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1:30000 @A1		TENDER	

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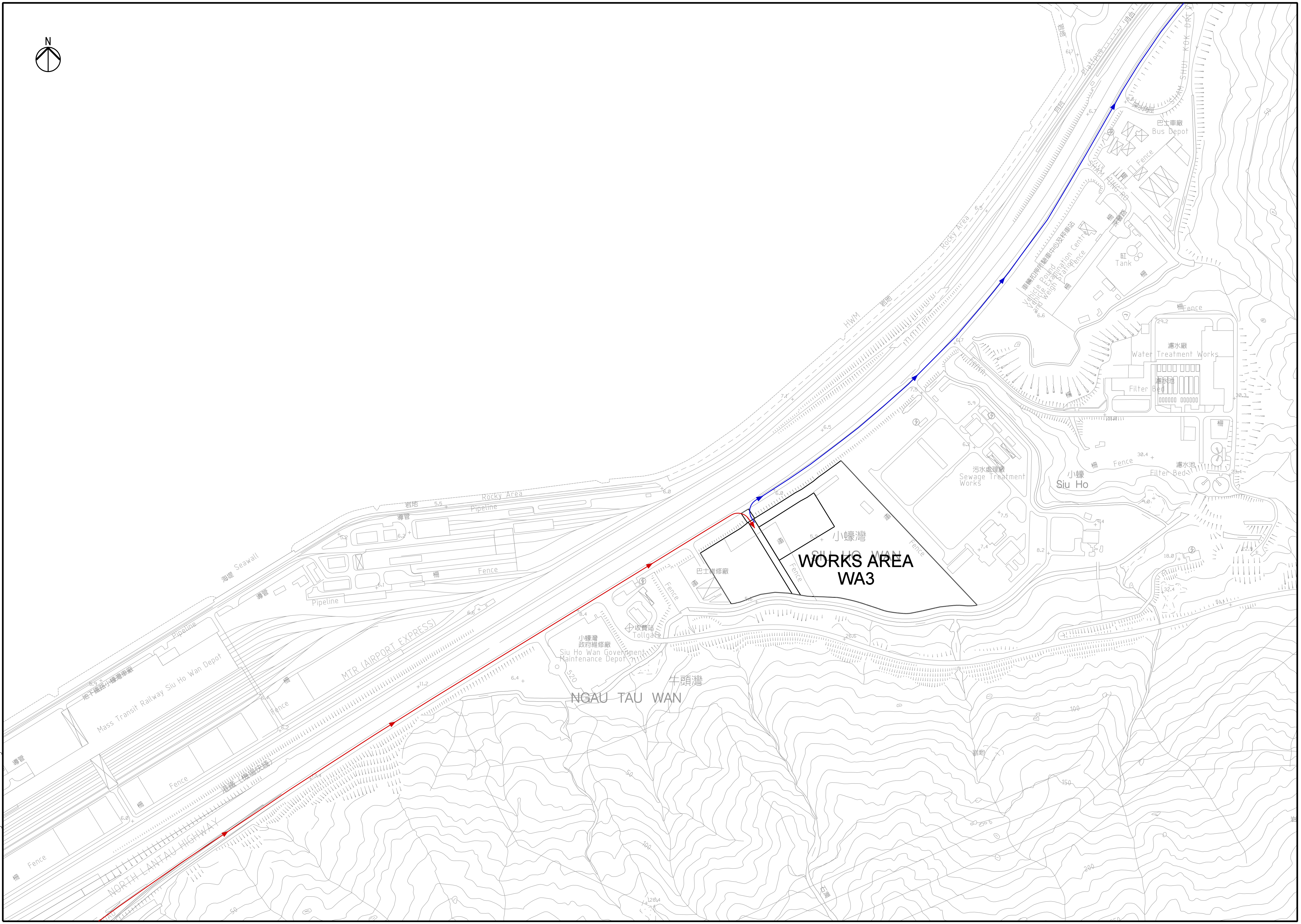

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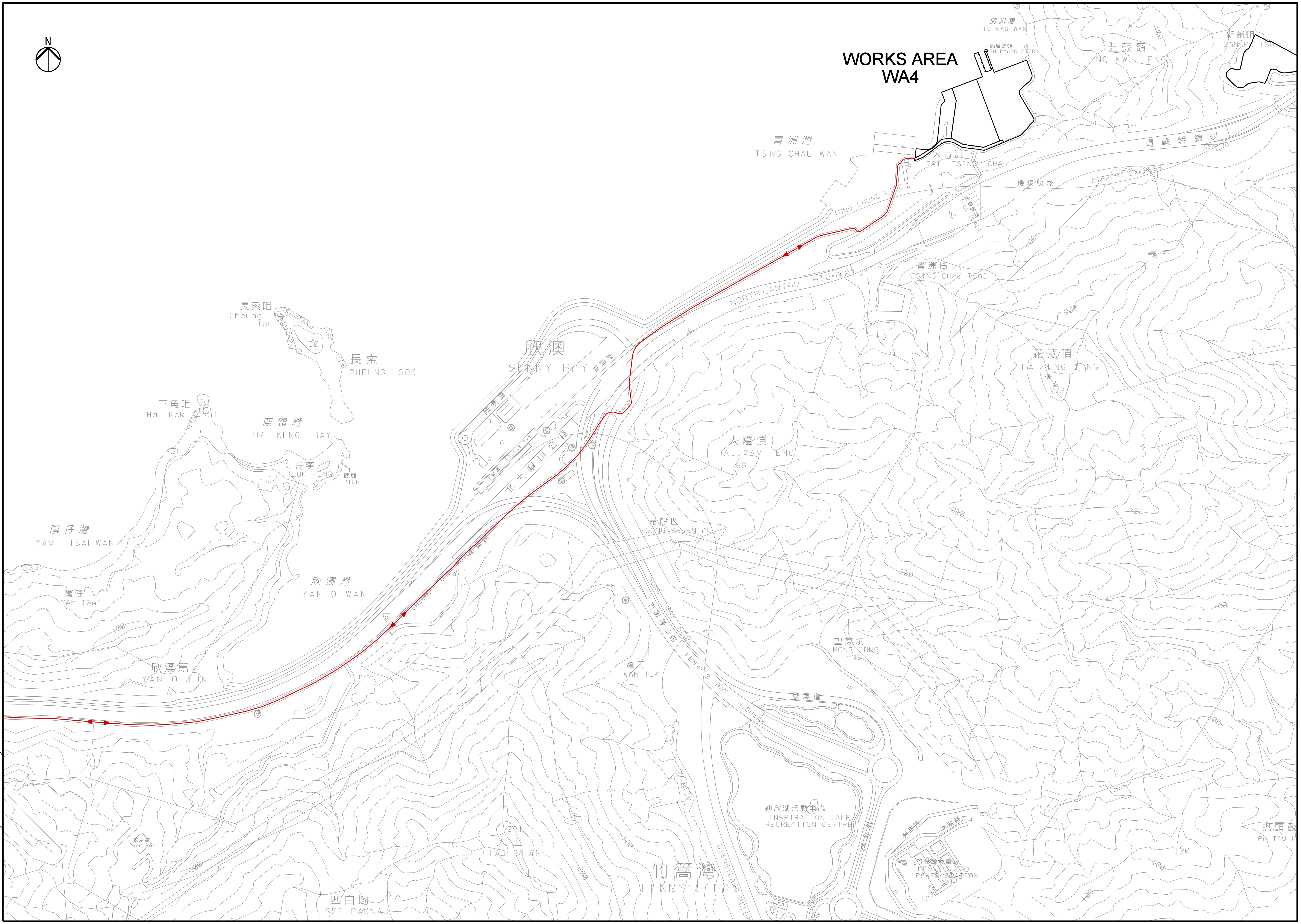

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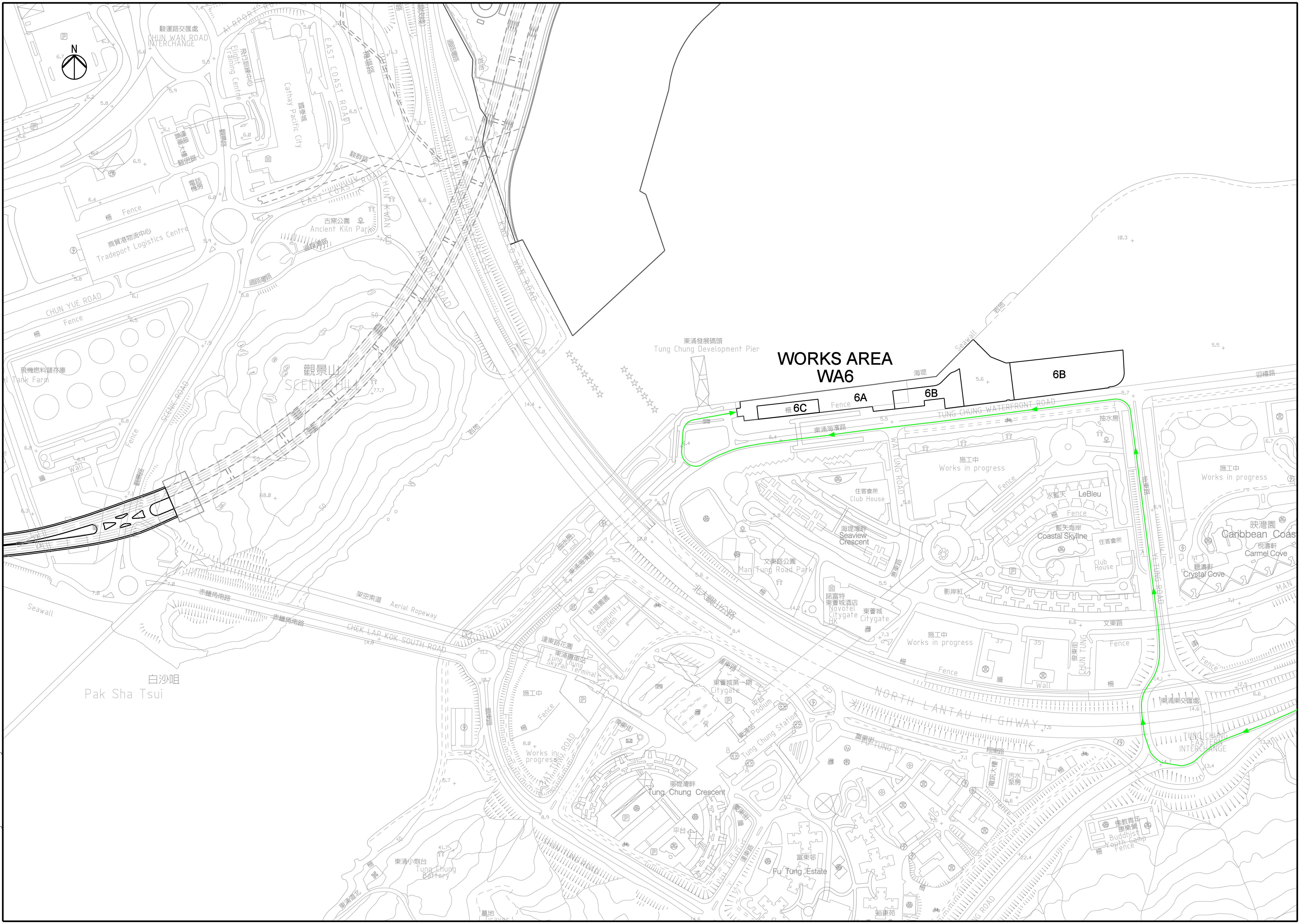

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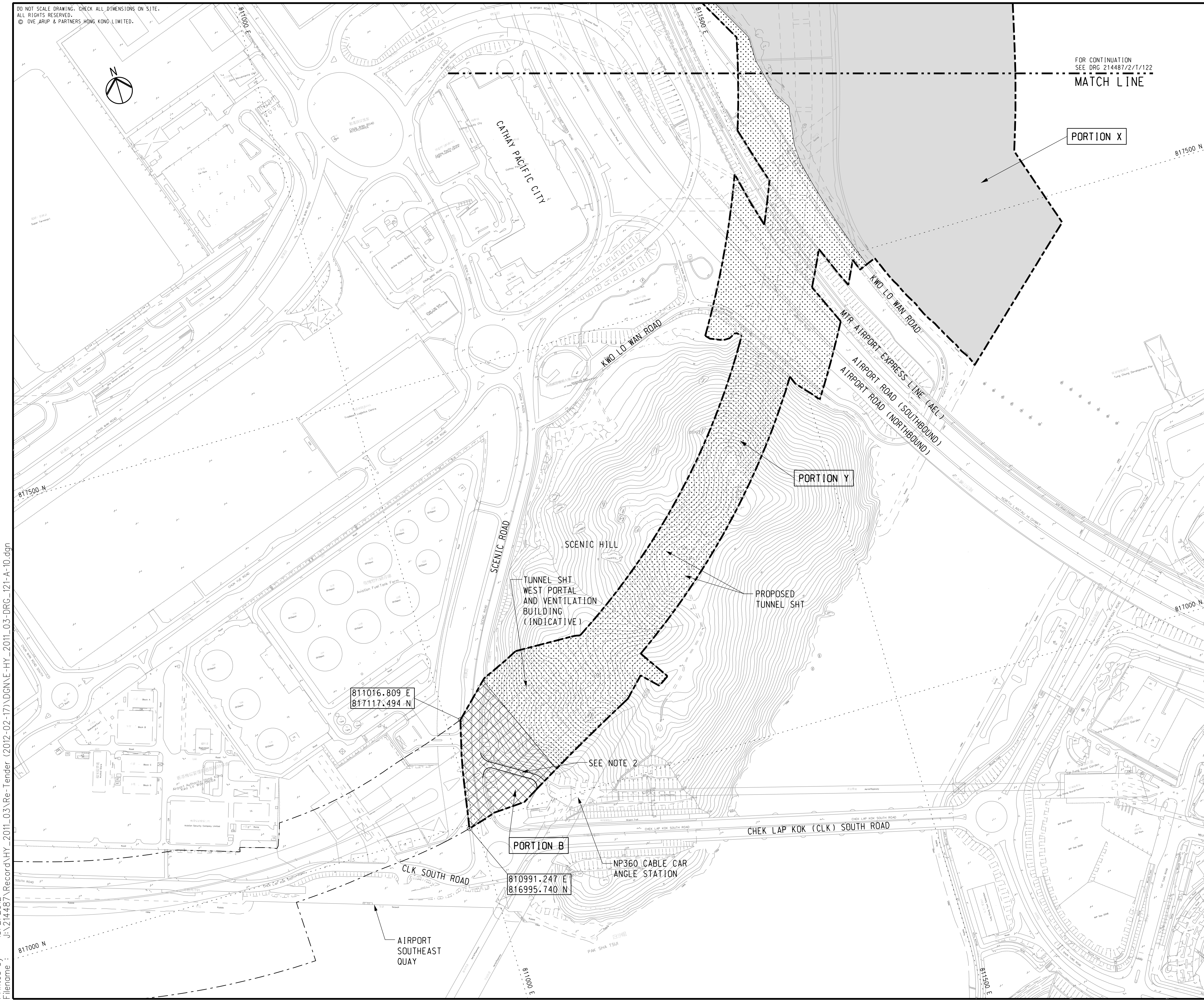

NOTES

1. FOR DETAILED DESCRIPTION OF PORTION OF SITE, REFER TO ER PART 2 GENERAL SITE DATA.
2. ACCESS ROAD TO NP360 CABLE CAR ANGLE STATION SHALL BE MAINTAINED AT ALL TIMES.

LEGEND

- SITE BOUNDARY
- PORTION X
- PORTION Y
- PORTION B
- PORTION C
- PORTION D1

Rev	Description	By	Date
A	TENDER ISSUE	IL	02/12

Consultant

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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

PORTION OF SITE
(SHEET 1 OF 3)

Drawing no.		Rev.	
214487/2/T/121		A	
Drawn: RY	Date: 02/12	Checked: IL	Approved: SK
Scale: 1:2000 @A1		Status: TENDER	

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NOTES

1. FOR GENERAL NOTES AND LEGEND, REFER TO DRG. NO. 214487/2/T/121.

Rev	Description	By	Date
A	TENDER ISSUE	IL	02/12

Consultant

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Contract No. and Title:

Contract No. HY/2011/03

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Hong Kong Link Road -
Section Between Scenic Hill and
Hong Kong Boundary Crossing Facilities

Drawing title

PORTION OF SITE
(SHEET 2 OF 3)

Drawing no.	Rev.
214487/2/T/122	A

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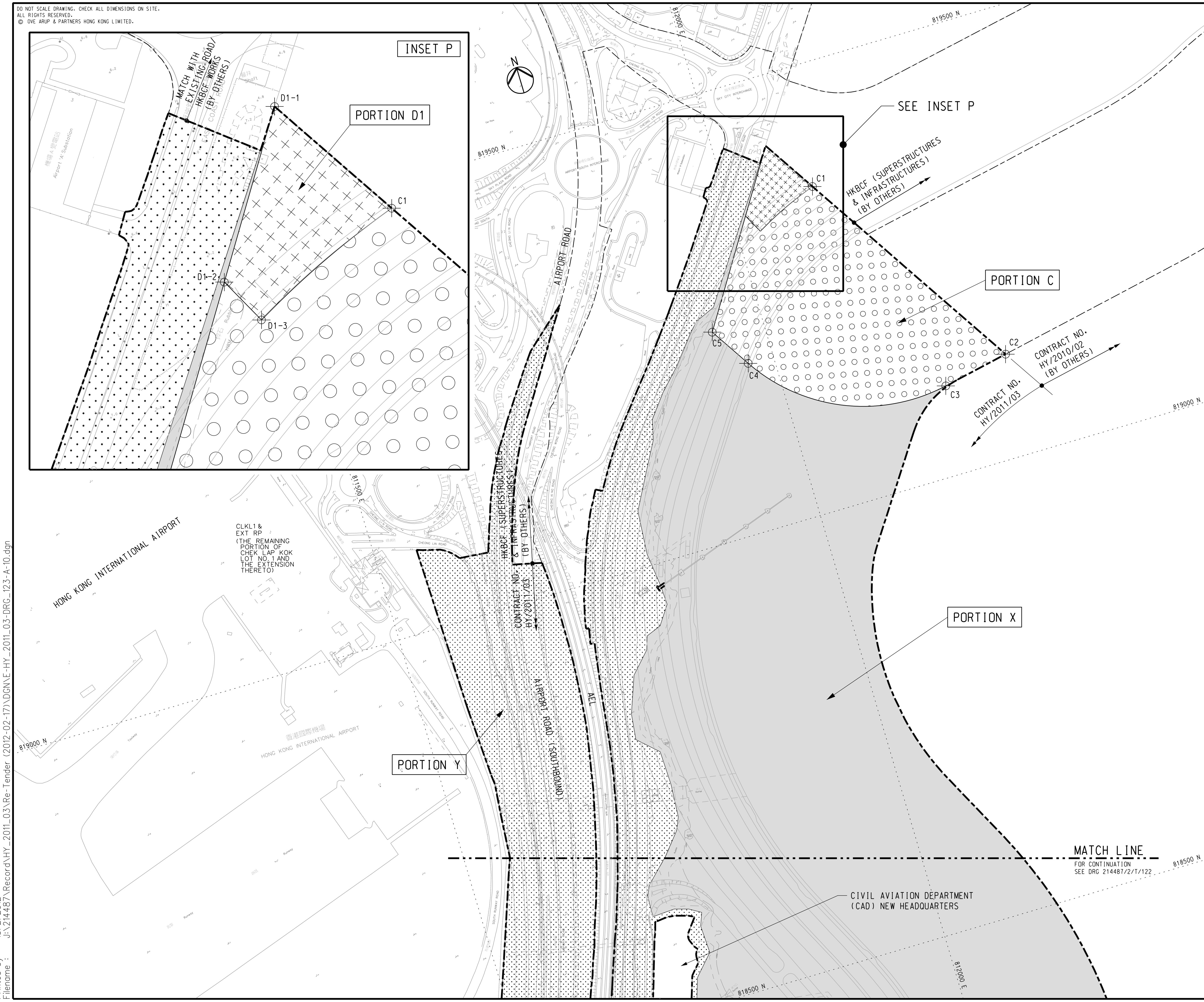
DO NOT SCALE DRAWING. CHECK ALL DIMENSIONS ON SITE.



NOTES

1. FOR GENERAL NOTES AND LEGEND, REFER TO DRG. NO. 214487/2/T/121.

SETTING OUT CO-ORDINATES OF SITE PORTION C

POINT	CO-ORDINATES	
	EASTING	NORTHING
C1	812097.481	819361.966
C2	812254.199	819116.562
C3	812178.695	819101.208
C4	811970.282	819189.551
C5	811941.125	819235.206

SETTING OUT CO-ORDINATES OF SITE PORTION D1

POINT	CO-ORDINATES	
	EASTING	NORTHING
D1-1	812059.460	819421.497
D1-2	812014.853	819351.273
D1-3	812026.200	819329.938

Rev	Description	By	Date
A	TENDER ISSUE	IL	02/12

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
PORTION OF SITE
(SHEET 3 OF 3)

Drawing no.	Rev.
214487/2/T/123	A

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