



# **Expansion of Hong Kong International Airport into a Three-Runway System**

Construction Phase Monthly EM&A Report No.69  
(For September 2021)

October 2021

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**This Monthly EM&A Report No. 69 has been reviewed and certified by**

**the Environmental Team Leader (ETL) in accordance with**

**Condition 3.5 of Environmental Permit No. EP-489/2014.**

**Certified by:**

A handwritten signature in black ink, appearing to read 'Terence Kong', written in a cursive style.

---

Terence Kong  
Environmental Team Leader (ETL)  
Mott MacDonald Hong Kong Limited

**Date**

15 October 2021



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**By Email**

Airport Authority Hong Kong  
HKIA Tower, 1 Sky Plaza Road  
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Lantau, Hong Kong

Attn: Mr. Lawrence Tsui, Principal Manager, Environmental Compliance

15 October 2021

Dear Sir,

**Contract No. 3102**  
**3RS Independent Environmental Checker Consultancy Services**

**Submission of Monthly EM&A Report No. 69 (September 2021)**

Reference is made to the Environmental Team's submission of the Monthly EM&A Report No. 69 under Condition 3.5 of the Environmental Permit No. EP-489/2014 certified by the ET Leader on 15 October 2021.

We write to verify the captioned submission in accordance with the requirement stipulated in Condition 3.5 of EP-489/2014.

Should you have any query, please feel free to contact the undersigned at 3922 9376.

Yours faithfully,  
AECOM Asia Co. Ltd.

Jackel Law  
Independent Environmental Checker

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# Abbreviations

3RS	Three-Runway System
AAHK	Airport Authority Hong Kong
AECOM	AECOM Asia Company Limited
AFCD	Agriculture, Fisheries and Conservation Department
AIS	Automatic Information System
ANI	Encounter Rate of Number of Dolphins
APM	Automated People Mover
AW	Airport West
BHS	Baggage Handling System
C&D	Construction and Demolition
CAP	Contamination Assessment Plan
CAR	Contamination Assessment Report
CTCC	Construction Traffic Control Centre
CWD	Chinese White Dolphin
DCM	Deep Cement Mixing
DEZ	Dolphin Exclusion Zone
DO	Dissolved Oxygen
EIA	Environmental Impact Assessment
EM&A	Environmental Monitoring & Audit
EP	Environmental Permit
EPD	Environmental Protection Department
EPSS	Emergency Power Supply Systems
ET	Environmental Team
FCZ	Fish Culture Zone
HKBCF	Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities
HKIA	Hong Kong International Airport
HOKLAS	Hong Kong Laboratory Accreditation Scheme
HSF	High Speed Ferry
HVS	High Volume Sampler
IEC	Independent Environmental Checker
LKC	Lung Kwu Chau
MMHK	Mott MacDonald Hong Kong Limited
MMWP	Marine Mammal Watching Plan
MSS	Maritime Surveillance System
MTRMP-CAV	Marine Travel Routes and Management Plan for Construction and Associated Vessel
NEL	Northeast Lantau
NWL	Northwest Lantau
PAM	Passive Acoustic Monitoring
PM	Project Manager
SC	Sha Chau
SCZ	Speed Control Zone

SCLKCMP	Sha Chau and Lung Kwu Chau Marine Park
SS	Suspended Solids
SSSI	Site of Special Scientific Interest
STG	Encounter Rate of Number of Dolphin Sightings
SWL	Southwest Lantau
T2	Terminal 2
The Project	The Expansion of Hong Kong International Airport into a Three-Runway System
The SkyPier Plan	Marine Travel Routes and Management Plan for High Speed Ferries of SkyPier
The Manual	The Updated EM&A Manual
TSP	Total Suspended Particulates
WL	West Lantau
WMP	Waste Management Plan

# Executive Summary

The “Expansion of Hong Kong International Airport into a Three-Runway System” (the Project) serves to meet the future air traffic demands at Hong Kong International Airport (HKIA). On 7 November 2014, the Environmental Impact Assessment (EIA) Report (Register No.: AEIAR-185/2014) for the Project was approved and an Environmental Permit (EP) (Permit No.: EP-489/2014) was issued for the construction and operation of the Project.

Airport Authority Hong Kong (AAHK) commissioned Mott MacDonald Hong Kong Limited (MMHK) to undertake the role of Environmental Team (ET) for carrying out the Environmental Monitoring & Audit (EM&A) works during the construction phase of the Project in accordance with the Updated EM&A Manual (the Manual).

This is the 69<sup>th</sup> Construction Phase Monthly EM&A Report for the Project which summarises the monitoring results and audit findings of the EM&A programme during the reporting period from 1 to 30 September 2021.

## **Key Activities in the Reporting Period**

The key activities of the Project carried out in the reporting period included reclamation works and land-based works. Works in the reclamation areas included marine filling, seawall and facilities construction, together with runway and associated works such as bored piling for approach lights. Land-based works on existing airport island involved mainly airfield works, foundation and substructure work for Terminal 2 expansion, modification and tunnel work for Automated People Mover (APM) and Baggage Handling System (BHS), and preparation work for utilities, with activities include site establishment, site office construction, road and drainage works, cable ducting, demolition, piling, and excavation works.




## **EM&A Activities Conducted in the Reporting Period**

The monthly EM&A programme was undertaken in accordance with the Manual of the Project. Summary of the monitoring activities during this reporting period is presented as below:

<b>Monitoring Activities</b>	<b>Number of Sessions</b>
1-hour Total Suspended Particulates (TSP) air quality monitoring	30
Noise monitoring	16
Water quality monitoring	13
Vessel line-transect surveys for Chinese White Dolphin (CWD) monitoring	2
Land-based theodolite tracking survey effort for CWD monitoring	2

Environmental auditing works, including weekly site inspections of construction works conducted by the ET and bi-weekly site inspections conducted by the Independent Environmental Checker (IEC), audit of SkyPier High Speed Ferries (HSF), audit of construction and associated vessels, and audit of implementation of Marine Mammal Watching Plan (MMWP) and Dolphin Exclusion Zone (DEZ) Plan, were conducted in the reporting period. Based on information including ET’s observations, records of Maritime Surveillance System (MSS), and contractors’ site records, it is noted that environmental pollution control and mitigation measures were properly implemented and construction activities of the Project in the reporting period did not introduce adverse impacts to the sensitive receivers.

### **Snapshots of EM&A Activities in the Reporting Period**

		
<p>Impact Water Quality Monitoring conducted by ET</p>	<p>Dump Truck with Mechanical Truck Cover used for Delivering C&amp;D Materials</p>	<p>Dust Suppression Measure conducted by Contractor</p>

### **Results of Impact Monitoring**

The monitoring works for construction dust, construction noise, water quality, construction waste, landscape & visual, and CWD were conducted during the reporting period in accordance with the Manual.

Monitoring results of construction dust, construction noise, construction waste, and CWD did not trigger the corresponding Action and Limit Levels in the reporting period.

The water quality monitoring results for all parameters, except dissolved oxygen (DO) and suspended solids (SS), obtained during the reporting period were within the corresponding Action and Limit Levels stipulated in the EM&A programme. Relevant investigation and follow-up actions will be conducted according to the EM&A programme if the corresponding Action and Limit Levels are triggered. For DO and SS, some of the testing results triggered the relevant Action or Limit Levels, and the corresponding investigations were conducted accordingly. The investigation findings revealed that the cases were not related to the Project. To conclude, the construction activities in the reporting period did not introduce adverse impact to all water quality sensitive receivers.

### **Summary of Upcoming Key Issues**

#### **Reclamation Works:**

##### **Contract 3206 Main Reclamation Works**

- Land-based ground improvement works; and
- Seawall construction.

#### **Airfield Works**

##### **Contract 3301 North Runway Crossover Taxiway**

- Cable ducting works; and
- Paving works.

##### **Contract 3302 Eastern Vehicular Tunnel Advance Works**

- Piling and structure works;
- Ducting works; and
- Backfilling and reinstatement works.

##### **Contract 3303 Third Runway and Associated Works**

- Footing and utilities work;
- Piling work;

- Construction of approach light;
- Operation of asphalt plant; and
- Cable laying and ducting works.

**Contract 3305 Airfield Ground Lighting System**

- Genset installation; and
- Site establishment.

**Contract 3307 Fire Training Facility**

- Architectural, Builder's and Finishing works; and
- Drainage and utilities works.; and
- Building construction.

**Contract 3308 Foreign Object Debris Detection System**

- Site formation.

**Contract 3310 North Runway Modification Works**

- Ground improvement works.

**Third Runway Concourse:****Contract 3403 New Integrated Airport Centres Building and Civil Works**

- Architectural, Builder's Work and Finishing works;
- Footing works; and
- Underground utilities construction.

**Contract 3405 Third Runway Concourse Foundation and Substructure Works**

- Foundation works;
- Piling work;
- Excavation and backfilling; and
- Road formation.

**Contract 3408 Third Runway Concourse and Apron Works**

- Site setup works; and
- Excavation and lateral support works.

**Terminal 2 Expansion:****Contract 3503 Terminal 2 Foundation and Substructure Works**

- T2 re-configuration;
- Excavation works;
- Utilities road works; and
- Piling and structure works.

**Contract 3508 Terminal 2 Expansion Works**

- Excavation and footing construction;
- Site formation;
- Drainage works;
- Piling work; and
- Builders' works.

**Automated People Mover (APM) and Baggage Handling System (BHS):****Contract 3601 New Automated People Mover System (TRC Line)**

- Pull out test for guideway;
- Guidebeam installation; and
- Concreting work.

**Contract 3602 Existing APM System Modification Works**

- Car modification;
- Formwork erection and;
- Concreting work.

**Contract 3603 Baggage Handling System (BHS)**

- BHS installation; and
- Dismantling works.

**Construction Support (Facilities):****Contract 3721 Construction Support Infrastructure Works**

- Laying of drainage pipes and ducts;
- Site clearance;
- Paving works; and
- Road works.

**Contract 3722 Construction Support Facilities**

- Clearance works

**Contract 3723 Construction Support Facilities**

- Erection of site office;
- Electrical and mechanical installation; and
- Sewage pump and treatment system installation

**Airport Support Infrastructure:****Contract 3801 APM and BHS Tunnels on Existing Airport Island**

- Excavation and backfilling; and
- Casting.

**Contract 3802 APM and BHS Tunnels and Related Works**

- Construction of Airside Fire Station and marine sediment treatment plant;
- Installation of sheet piles and dewatering well;
- Pre-drilling;
- Ground investigation works; and
- Ducting works.

**Construction Support (Services / Licences):****Contract 3901A Concrete Batching Facility**

- Operation of concrete batching plant; and
- Material conveyor belt construction.

**Contract 3901B Concrete Batching Facility**

- Operation of concrete batching plant; and
- Foundation and superstructure works for conveyor belt.

## Summary Table

The following table summarises the key findings of the EM&A programme during the reporting period:

	Yes	No	Details	Analysis / Recommendation / Remedial Actions
Breach of Limit Level <sup>^</sup>	√		No breach of Limit Level was recorded.	Nil
Breach of Action Level <sup>^</sup>	√		No breach of Action Level was recorded.	Nil
Complaint Received		√	In the previous reporting period, a complaint regarding dust issue at 3RS construction site area was received on 13 July 2021.	ET requested the relevant contractor to provide information related to the complaint. During regular site inspections, fugitive dust from vehicular movement and slightly dry haul road were observed in the concerned location, and were followed up by the contractor afterwards. The contractor conducted water spraying according to their dust control management plan and no dust issue was observed at the concerned location during <i>ad-hoc</i> inspections. The contractor was reminded to continue implementing their environmental mitigation measures on dust control on haul road and stockpiles especially on sunny days. The case was considered closed.
			No construction activities-related complaint was received during the reporting period.	Nil
Notification of any summons and status of prosecutions		√	No notification of summons or prosecution was received.	Nil
Change that affect the EM&A		√	There was no change to the construction works that may affect the EM&A.	Nil

Note:

<sup>^</sup> Only triggering of Action or Limit Level found related to Project works is counted as Breach of Action or Limit Level.

# 1 Introduction

## 1.1 Background

On 7 November 2014, the Environmental Impact Assessment (EIA) Report (Register No.: AEIAR-185/2014) for the “Expansion of Hong Kong International Airport into a Three-Runway System” (the Project) was approved and an Environmental Permit (EP) (Permit No.: EP-489/2014) was issued for the construction and operation of the Project.

Airport Authority Hong Kong (AAHK) commissioned Mott MacDonald Hong Kong Limited (MMHK) to undertake the role of Environmental Team (ET) for carrying out the Environmental Monitoring & Audit (EM&A) works during the construction phase of the Project in accordance with the Updated EM&A Manual (the Manual) submitted under EP Condition 3.1<sup>1</sup>. AECOM Asia Company Limited (AECOM) was employed by AAHK as the Independent Environmental Checker (IEC) for the Project.

The Project covers the expansion of the existing airport into a three-runway system (3RS) with key project components comprising land formation of about 650 ha and all associated facilities and infrastructure including taxiways, aprons, aircraft stands, a passenger concourse, an expanded Terminal 2, all related airside and landside works and associated ancillary and supporting facilities. The submarine aviation fuel pipelines and submarine power cables also require diversion as part of the works.

Construction of the Project is to proceed in the general order of diversion of the submarine aviation fuel pipelines, diversion of the submarine power cables, land formation, and construction of infrastructure, followed by construction of superstructures.

The summary of construction works programme can be referred to **Section 1.4**. Description of relevant contracts is presented in **Appendix A**.

## 1.2 Scope of this Report

This is the 69<sup>th</sup> Construction Phase Monthly EM&A Report for the Project which summarises the key findings of the EM&A programme during the reporting period from 1 to 30 September 2021.

## 1.3 Project Organisation

The Project’s organisation structure presented in Appendix B of the Construction Phase Monthly EM&A Report No.1 remained unchanged during the reporting period. Contact details of the key personnel are presented in **Table 1.1**.

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<sup>1</sup> The Manual is available on the Project’s dedicated website (accessible at: <http://env.threerunwaysystem.com/en/index.html>).

**Table 1.1: Contact Information of Key Personnel**

Party	Position	Name	Telephone
Project Manager's Representative (Airport Authority Hong Kong)	Principal Manager, Environmental Compliance, Sustainability	Lawrence Tsui	2183 2734
Environmental Team (ET) (Mott MacDonald Hong Kong Limited)	Environmental Team Leader	Terence Kong	2828 5919
	Deputy Environmental Team Leader	Heidi Yu	2828 5704
Independent Environmental Checker (IEC) (AECOM Asia Company Limited)	Independent Environmental Checker	Jackel Law	3922 9376
	Deputy Independent Environmental Checker	Roy Man	3922 9141

**Reclamation Works:**

Party	Position	Name	Telephone
Contract 3206 Main Reclamation Works (ZHEC-CCCC-CDC Joint Venture)	Project Manager	Alan Mong	3763 1352
	Environmental Officer	Zhang Bin Wang	3763 1451

**Airfield Works:**

Party	Position	Name	Telephone
Contract 3301 North Runway Crossover Taxiway (FJT-CHEC-ZHEC Joint Venture)	Deputy Project Director	Kin Hang Chung	9800 0048
	Environmental Officer	Joe Wong	6182 0351
Contract 3302 Eastern Vehicular Tunnel Advance Works (China Road and Bridge Corporation)	Project Manager	Dickey Yau	5699 4503
	Environmental Officer	Dennis Ho	5645 0563
Contract 3303 Third Runway and Associated Works (SAPR Joint Venture)	Project Manager	Andrew Keung	6277 6628
	Environmental Officer	Max Chin	6447 5707
Contract 3305 Airfield Ground Lighting System (ADB Safegate Hong Kong Limited)	Project Manager	Allam Al-Turk	2944 9725
	Environmental Officer	Calvin Sze	9205 9277
Contract 3307 Fire Training Facility (Paul Y. Construction Company Limited)	Project Manager	Steven Meredith	6109 1813
	Environmental Officer	Albert Chan	9700 1083
Contract 3308 Foreign Object Debris Detection System (DAS Aviation Services Group)	Project Manager	Jeffrey Yau	9873 7422
	Environmental Officer	Terry Siu	9141 2511

Party	Position	Name	Telephone
Contract 3310 North Runway Modification Works (China State Construction Engineering (Hong Kong) Ltd. - Fujita Corporation Joint Venture)	Project Manager	Kingsley Chiang	9424 8437
	Environmental Officer	Federick Wong	9842 2703

### Third Runway Concourse:

Party	Position	Name	Telephone
Contract 3402 New Integrated Airport Centres Enabling Works (Wing Hing Construction Co., Ltd.)	Contract Manager	Michael Kan	9206 0550
	Environmental Officer	Lisa He	5374 3418
Contract 3403 New Integrated Airport Centres Building and Civil Works (Sun Fook Kong Construction Limited)	Project Manager	Alice Leung	9220 3162
	Environmental Officer	Ray Cheung	9785 1566
Contract 3405 Third Runway Concourse Foundation and Substructure Works (China Road and Bridge Corporation – Bachy Soletanche Group Limited – LT Sambo Co., Ltd. Joint Venture)	Project Manager	Francis Choi	9423 3469
	Environmental Officer	Jacky Lai	9028 8975
Contract 3408 Third Runway Concourse and Apron Works (Beijing Urban Construction Group Company Limited and Chevalier (Construction) Company Limited Joint Venture)	Assistant Project Manager	Qian Zhang	5377 7976
	Environmental Officer	Malcolm Leung	7073 7559

### Terminal 2 (T2) Expansion:

Party	Position	Name	Telephone
Contract 3503 Terminal 2 Foundation and Substructure Works (Leighton – Chun Wo Joint Venture)	Project Manager	Eric Wu	3973 1718
	Environmental Officer	Rex Yiu	6465 6861
Contract 3508 Terminal 2 Expansion Works (Gammon Engineering & Construction Company Limited)	Project Director	Richard Ellis	6201 5637
	Environmental Manager	Michelle Tang	9267 8866

**Automated People Mover (APM) and Baggage Handling System (BHS):**

Party	Position	Name	Telephone
Contract 3601 New Automated People Mover System (TRC Line) (CRRC Puzhen Bombardier Transportation Systems Limited and CRRC Nanjing Puzhen Co., Ltd. Joint Venture)	Project Manager	Hongdan Wei	158 6180 9450
	Environmental Officer	P L Wong	9143 2185
Contract 3602 Existing APM System Modification Works (Niigata Transys Co., Ltd.)	Project Manager	Kunihiro Tatecho	9755 0351
	Environmental Officer	Carrie Kwan	9276 0551
Contract 3603 3RS Baggage Handling System (VISH Consortium)	Project Manager	K C Ho	9272 9626
	Environmental Officer	Eric Ha	9215 3432

**Construction Support (Facilities):**

Party	Position	Name	Telephone
Contract 3721 Construction Support Infrastructure Works (China State Construction Engineering (Hong Kong) Ltd.)	Site Agent	Thomas Lui	9011 5340
	Environmental Officer	Xavier Lam	9493 2944
Contract 3722 Western Support Area – Construction Support Facilities (Tapbo Construction Company Limited and Konwo Modular House Limited Joint Venture)	Deputy Project Director	Philip Kong	9049 3161
	Environmental Officer	Eddie Suen	6338 8862
Contract 3723 Eastern Support Area – Construction Support Facilities (Tapbo Construction Company Limited and Konwo Modular House Ltd. Joint Venture.)	Deputy Project Director	Philip Kong	9049 3161
	Environmental Officer	Eddie Suen	6338 8862
Contract 3728 Minor Site Works (Shun Yuen Construction Company Limited)	Contract Manager	C K Liu	9194 8739
	Environmental Officer	K F Li	9086 1793

**Airport Support Infrastructure:**

Party	Position	Name	Telephone
Contract 3801 APM and BHS Tunnels on Existing Airport Island (China State Construction Engineering (Hong Kong) Ltd.)	Project Manager	Kingsley Chiang	9424 8437
	Environmental Officer	Eunice Kwok	9243 1331
Contract 3802 APM and BHS Tunnels and Related Works (Gammon Construction Limited)	Project Director	John Adams	6111 6989
	Environmental Officer	Phoebe Ng	9869 1105

**Construction Support (Services / Licences):**

Party	Position	Name	Telephone
Contract 3901A Concrete Batching Facility (K. Wah Concrete Company Limited)	Project Manager	Benedict Wong	9553 2806
	Environmental Officer	C P Fung	9874 2872
Contract 3901B Concrete Batching Facility (Gammon Construction Limited)	Senior Project Manager	Gabriel Chan	2435 3260
	Environmental Officer	Rex Wong	2695 6319

**1.4 Summary of Construction Works**

The key activities of the Project carried out in the reporting period included reclamation works and land-based works. Works in the reclamation areas included seawall and facilities construction, together with runway and associated works such as bored piling for approach lights. Land-based works on existing airport island involved mainly airfield works, foundation and substructure work for Terminal 2 expansion, modification and tunnel work for APM and BHS systems, and preparation work for utilities, with activities include site establishment, site office construction, road and drainage works, cable ducting, demolition of existing facilities, piling, and excavation works.

The locations of key construction activities are presented in **Figure 1.1. Summary of EM&A Programme Requirements**

The status for all environmental aspects are presented in **Table 1.2. The EM&A requirements remained unchanged during the reporting period.**

**Table 1.2: Summary of Status of All Environmental Aspects under the Updated EM&A Manual**

Parameters	EM&A Requirements	Status
<b>Air Quality</b>		
Baseline Monitoring	At least 14 consecutive days before commencement of construction work	The baseline air quality monitoring result has been reported in Baseline Monitoring Report and submitted to EPD under EP Condition 3.4.
Impact Monitoring	At least 3 times every 6 days	On-going
<b>Noise</b>		
Baseline Monitoring	Daily for a period of at least two weeks prior to the commencement of construction works	The baseline noise monitoring result has been reported in Baseline Monitoring

Parameters	EM&A Requirements	Status
		Report and submitted to EPD under EP Condition 3.4.
Impact Monitoring	Weekly	On-going
<b>Water Quality</b>		
General Baseline Water Quality Monitoring for reclamation, water jetting and field joint works	Three days per week, at mid-flood and mid-ebb tides, for at least four weeks prior to the commencement of marine works.	The baseline water quality monitoring result has been reported in Baseline Water Quality Monitoring Report and submitted to EPD under EP Condition 3.4.
General Impact Water Quality Monitoring for reclamation, water jetting and field joint works	Three days per week, at mid-flood and mid-ebb tides.	On-going for reclamation works. General impact water quality monitoring for water jetting works was completed on 23 May 2017.
Initial Intensive Deep Cement Mixing (DCM) Water Quality Monitoring	At least four weeks	The Initial Intensive DCM Monitoring Report was submitted and approved by EPD in accordance with the Detailed Plan on DCM.
Regular DCM Water Quality Monitoring	Three times per week until completion of DCM works.	Due to the completion of all marine-based DCM works within May 2021, regular DCM monitoring is ceased at all monitoring stations starting from 24 June 2021 and would be resumed if there are marine-based DCM works in the coming future.
<b>Sewerage and Sewage Treatment</b>		
Methodology for carrying out annual sewage flow monitoring for concerned gravity sewer	Methodology to be prepared and submitted to EPD one year before the scheduled commencement of operation of the proposed third runway	The proposed methodology of the annual sewage flow monitoring was approved by EPD. The annual flow monitoring has been started since June 2021.
Details of the routine H <sub>2</sub> S monitoring system for the sewerage system of 3RS	Details to be prepared and submitted to EPD at least one year before commencement of the operation of 3RS	The details of the routine H <sub>2</sub> S monitoring system will be prepared and submitted to EPD at least one year before commencement of operation of 3RS.
<b>Waste Management</b>		
Waste Monitoring	At least weekly	On-going
<b>Land Contamination</b>		
Supplementary Contamination Assessment Plan (CAP)	At least 3 months before commencement of any soil remediation works.	The Supplementary CAP was submitted and approved by EPD under EP Condition 2.20.
Contamination Assessment Report (CAR) for Golf Course	CAR to be submitted for golf course	The CAR for Golf Course was submitted and accepted by EPD.
Contamination Assessment Reports (CAR) for Terminal 2 Emergency Power Supply Systems	CAR to be submitted for Terminal 2 Emergency Power Supply Systems	The CARs for Terminal 2 Emergency Power Supply Systems were submitted and accepted by EPD.
<b>Terrestrial Ecology</b>		
Pre-construction Egret Survey Plan	Once per month in the breeding season between April and July, prior to the commencement of HDD drilling works.	The Egret Survey Plan was submitted and approved by EPD under EP Condition 2.14.
Ecological Monitoring	Monthly monitoring during the HDD construction works period from August to March.	The terrestrial ecological monitoring at Sheung Sha Chau was completed in January 2019.
<b>Marine Ecology</b>		
Pre-Construction Phase Coral Dive Survey	Prior to marine construction works	The Coral Translocation Plan was submitted and approved by EPD under EP Condition 2.12.
Coral Translocation	-	The coral translocation was completed.
Post-Translocation Coral Monitoring	As per an enhanced monitoring programme based on the Coral Translocation Plan	The post-translocation monitoring programme according to the Coral

Parameters	EM&A Requirements	Status
		Translocation Plan was completed in April 2018.
<b>Chinese White Dolphins (CWD)</b>		
Baseline Monitoring	6 months of baseline surveys before the commencement of land formation related construction works. Vessel line transect surveys: Two full surveys per month; Land-based theodolite tracking surveys: Two days per month at the Sha Chau station and two days per month at the Lung Kwu Chau station; and Passive Acoustic Monitoring (PAM): For the whole duration of baseline period.	Baseline CWD results were reported in the CWD Baseline Monitoring Report and submitted to EPD in accordance with EP Condition 3.4.
Impact Monitoring	Vessel line transect surveys: Two full surveys per month; Land-based theodolite tracking surveys: One day per month at the Sha Chau station and one day per month at the Lung Kwu Chau station; and PAM: For the whole duration for land formation related construction works.	On-going
<b>Landscape &amp; Visual</b>		
Landscape & Visual Plan	At least 3 months before the commencement of construction works on the formed land of the Project.	The Landscape & Visual Plan was submitted and approved by EPD under EP Condition 2.18
Baseline Monitoring	One-off survey within the Project site boundary prior to commencement of any construction works	The baseline landscape & visual monitoring result has been reported in Baseline Monitoring Report and submitted to EPD under EP Condition 3.4.
Impact Monitoring	Weekly	On-going
<b>Environmental Auditing</b>		
Regular site inspection	Weekly	On-going
Marine Mammal Watching Plan (MMWP) implementation measures	Monitor and check	On-going
Dolphin Exclusion Zone (DEZ) Plan implementation measures	Monitor and check	On-going
SkyPier High Speed Ferries (HSF) implementation measures	Monitor and check	On-going
Construction and Associated Vessels Implementation measures	Monitor and check	On-going
Silt Curtain Deployment Plan implementation measures	Monitor and check	On-going
Spill Response Plan implementation measures	Monitor and check	On-going
Complaint Hotline and Email channel	Construction phase	On-going
Environmental Log Book	Construction phase	On-going

Taking into account the construction works in this reporting period, impact monitoring of air quality, noise, water quality, waste management, landscape & visual, and CWD were carried out in the reporting period.

The EM&A programme also involved weekly site inspections and related auditing conducted by the ET for checking the implementation of the required environmental mitigation measures recommended in the approved EIA Report. To promote the environmental awareness and enhance the environmental performance of the contractors, environmental trainings and regular environmental management meetings were conducted during the reporting period, which are summarised as below:

- Two skipper training sessions provided by ET: 1 and 29 September 2021.
- Seventeen environmental management meetings for EM&A review with works contracts: 2, 3, 15, 16, 20, 21, 23, 24, 27 and 28 September 2021.

The EM&A programme has been following the recommendations presented in the approved EIA Report and the Manual. A summary of implementation status of the environmental mitigation measures for the construction phase of the Project during the reporting period is provided in **Appendix B**.

## 2 Air Quality Monitoring

Air quality monitoring of 1-hour Total Suspended Particulates (TSP) was conducted three times every six days at two representative monitoring stations in the vicinity of air sensitive receivers in Tung Chung and villages in North Lantau in accordance with the Manual. **Table 2.1** describes the details of the monitoring stations. **Figure 2.1** shows the locations of the monitoring stations.

**Table 2.1: Locations of Impact Air Quality Monitoring Stations**

Monitoring Station	Location
AR1A	Man Tung Road Park
AR2	Village House at Tin Sum

### 2.1 Action and Limit Levels

In accordance with the Manual, baseline air quality monitoring of 1-hour TSP levels at the two air quality monitoring stations were established as presented in the Baseline Monitoring Report. The Action and Limit Levels of the air quality monitoring stipulated in the EM&A programme for triggering the relevant investigation and follow-up procedures under the programme are provided in **Table 2.2**.

**Table 2.2: Action and Limit Levels of Air Quality Monitoring**

Monitoring Station	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
AR1A	306	500
AR2	298	

### 2.2 Monitoring Equipment

Portable direct reading dust meter was used to carry out the air quality monitoring. Details of equipment used in the reporting period are given in **Table 2.3**.

**Table 2.3: Air Quality Monitoring Equipment**

Equipment	Brand and Model	Last Calibration Date	Calibration Certificate Provided in
Portable direct reading dust meter (Laser dust monitor)	SIBATA LD-3B-2 (Serial No. 296098)	20 Oct 2020	Monthly EM&A Report No. 58, Appendix E
	SIBATA LD-3B-1 (Serial No. 597337)	10 May 2021	Monthly EM&A Report No. 65, Appendix D

### 2.3 Monitoring Methodology

#### 2.3.1 Measuring Procedure

The measurement procedures involved in the impact air quality monitoring can be summarised as follows:

- a. The portable direct reading dust meter was mounted on a tripod at a height of 1.2m above the ground.

- b. Prior to the measurement, the equipment was set up for 1 minute span check and 6 second background check.
- c. The one hour dust measurement was started. Site conditions and dust sources at the nearby area were recorded on a record sheet.
- d. When the measurement completed, the “Count” reading per hour was recorded for result calculation.

### 2.3.2 Maintenance and Calibration

The portable direct reading dust meter is calibrated every year against high volume sampler (HVS) to check the validity and accuracy of the results measured by direct reading method. The calibration record of the HVS provided in Appendix D of Construction Phase Monthly EM&A Report No. 65, and the calibration certificates of portable direct reading dust meters listed in **Table 2.3** are valid in the reporting period.

## 2.4 Summary of Monitoring Results

The air quality monitoring schedule involved in the reporting period is provided in **Appendix C**.

The air quality monitoring results in the reporting period are summarised in **Table 2.4**. Detailed impact monitoring results are presented in **Appendix D**.

**Table 2.4: Summary of Air Quality Monitoring Results**

Monitoring Station	1-hr TSP Concentration Range ( $\mu\text{g}/\text{m}^3$ )	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
AR1A	16 - 38	306	500
AR2	16 - 72	298	

The monitoring results were within the corresponding Action and Limit Levels at all monitoring stations in the reporting period.

General meteorological conditions throughout the impact monitoring period were recorded. Wind data including wind speed and wind direction for each monitoring day were collected from the Chek Lap Kok Wind Station.

## 2.5 Conclusion

No dust emission source was observed at the monitoring stations during the monitoring sessions. As the sensitive receivers were far away from the construction activities, with the implementation of dust control measures, there was no adverse impact at the sensitive receivers attributable to the works of the Project.

## 3 Noise Monitoring

Noise monitoring in the form of 30-minute measurements of  $L_{eq}$ ,  $L_{10}$ , and  $L_{90}$  levels was conducted once per week between 0700 and 1900 on normal weekdays at four representative monitoring stations in the vicinity of noise sensitive receivers in Tung Chung and villages in North Lantau in accordance with the Manual. **Table 3.1** describes the details of the monitoring stations. **Figure 2.1** shows the locations of the monitoring stations.

**Table 3.1: Locations of Impact Noise Monitoring Stations**

Monitoring Station	Location	Type of measurement
NM1A	Man Tung Road Park	Free field
NM2 <sup>(1)</sup>	Tung Chung West Development	To be determined
NM3A <sup>(2)</sup>	Site Office	Facade
NM4	Ching Chung Hau Po Woon Primary School	Free field
NM5	Village House in Tin Sum	Free field
NM6	House No. 1, Sha Lo Wan	Free field

Note:

- (1) As described in Section 4.3.3 of the Manual, noise monitoring at NM2 will only commence after occupation of the future Tung Chung West Development.
- (2) According to Section 4.3.3 of the Manual, the noise monitoring at NM3A was temporarily suspended starting from 1 September 2018 and would be resumed with the completion of the Tung Chung East Development.

### 3.1 Action and Limit Levels

In accordance with the Manual, baseline noise levels at the noise monitoring stations were established as presented in the Baseline Monitoring Report. The Action and Limit Levels of the noise monitoring stipulated in the EM&A programme for triggering the relevant investigation and follow-up procedures under the programme are provided in **Table 3.2**.

**Table 3.2: Action and Limit Levels for Noise Monitoring**

Monitoring Stations	Time Period	Action Level	Limit Level, $L_{eq(30mins)}$ dB(A)
NM1A, NM2, NM3A, NM4, NM5 and NM6	0700-1900 hours on normal weekdays	When one documented complaint is received from any one of the sensitive receivers	75dB(A) <sup>(1)</sup>

Note:

- (1) The Limit Level for NM4 is reduced to 70dB(A) for being an educational institution. During school examination period, the Limit Level is further reduced to 65dB(A).

### 3.2 Monitoring Equipment

Noise monitoring was performed using sound level meter at each designated monitoring station. The sound level meters deployed comply with the International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) specifications. Acoustic calibrator was used to check the sound level meters by a known sound pressure level for field measurement. Details of equipment used in the reporting period are given in **Table 3.3**.

**Table 3.3: Noise Monitoring Equipment**

Equipment	Brand and Model	Last Calibration Date	Calibration Certificate Provided in
Integrated Sound Level Meter	Rion NL-52 (Serial No. 00998505)	20 Mar 2021	Monthly EM&A Report No. 63, Appendix E
	Rion NL-52 (Serial No. 01287679)	20 Jun 2021	Monthly EM&A Report No. 66, Appendix D
Acoustic Calibrator	Casella CEL-120/1 (Serial No. 2383737)	20 Jun 2021	Monthly EM&A Report No. 66, Appendix D
	Castle GA607 (Serial No. 040162)	20 Mar 2021	Monthly EM&A Report No. 63, Appendix E

### 3.3 Monitoring Methodology

#### 3.3.1 Monitoring Procedure

The monitoring procedures involved in the noise monitoring can be summarised as follows:

- a. The sound level meter was set on a tripod at least a height of 1.2m above the ground for free-field measurements at monitoring stations NM1A, NM4, NM5 and NM6. A correction of +3dB(A) was applied to the free field measurements.
- b. Façade measurements were made at the monitoring station NM3A.
- c. Parameters such as frequency weighting, time weighting and measurement time were set.
- d. Prior to and after each noise measurement, the meter was calibrated using the acoustic calibrator. If the difference in the calibration level before and after measurement was more than 1dB(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,  $L_{eq}$ ,  $L_{10}$  and  $L_{90}$  were recorded. In addition, site conditions and noise sources were recorded on a record sheet.
- f. Noise measurement results, when higher than the baseline monitoring levels, were corrected with reference to the baseline monitoring levels.
- g. Observations were recorded when high intrusive noise (e.g. dog barking, helicopter noise) was observed during the monitoring.

#### 3.3.2 Maintenance and Calibration

The maintenance and calibration procedures are summarised below:

- 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 laboratory accredited under Hong Kong Laboratory Accreditation Scheme (HOKLAS) to check and calibrate at yearly intervals.

Calibration certificates of the sound level meters and acoustic calibrators used in the noise monitoring listed in **Table 3.3** are valid in the reporting period.

### 3.4 Summary of Monitoring Results

The noise monitoring schedule involved in the reporting period is provided in **Appendix C**.

The noise monitoring results in the reporting period are summarised in **Table 3.4**. Detailed impact monitoring results are presented in **Appendix D**.

**Table 3.4: Summary of Construction Noise Monitoring Results**

Monitoring Station	Noise Level Range, dB(A)	Limit Level, dB(A)
	L <sub>eq</sub> (30mins)	L <sub>eq</sub> (30mins)
NM1A <sup>(1)</sup>	63 - 69	75
NM4 <sup>(1)</sup>	63 - 66	70 <sup>(2)</sup>
NM5 <sup>(1)(3)</sup>	55 - 61	75
NM6 <sup>(1)(3)</sup>	62 - 67	75

**Notes:**

- (1) +3dB(A) Façade correction included;
- (2) Reduced to 65dB(A) during school examination periods at NM4. No school examination took place during this reporting period.
- (3) Some of the noise measurement results were higher than the baseline monitoring levels. In order to reduce the influence of non-Project related noise on the monitoring results, these measurement results were corrected with reference to the baseline monitoring levels.

No complaints were received from any sensitive receiver that triggered the Action Level. All monitoring results were also within the corresponding Limit Levels at all monitoring stations in the reporting period.

### 3.5 Conclusion

As the construction activities were far away from the monitoring stations, major sources of noise dominating the monitoring stations observed during the construction noise impact monitoring were traffic noise near NM1A, school activities at NM4 and aircraft noise near NM6 during this reporting period. It is considered that the monitoring work during the reporting period was effective and there was no adverse impact attributable to the Project activities.

## 4 Water Quality Monitoring

Water quality monitoring of DO, pH, temperature, salinity, turbidity and suspended solids (SS) was conducted three days per week, at mid-ebb and mid-flood tides, at a total of 23 water quality monitoring stations, comprising 12 impact (IM) stations, 8 sensitive receiver (SR) stations and 3 control (C) stations in the vicinity of water quality sensitive receivers around the airport island in accordance with the Manual. The purpose of water quality monitoring at the IM stations is to promptly capture any potential water quality impact from the Project before it could become apparent at sensitive receivers (represented by the SR stations). **Table 4.1** describes the details of the monitoring stations. **Figure 4.1** shows the locations of the monitoring stations.

**Table 4.1: Monitoring Locations of Impact Water Quality Monitoring**

Monitoring Station	Description	Coordinates	
		Easting	Northing
C1	Control Station	804247	815620
C2	Control Station	806945	825682
C3 <sup>(2)</sup>	Control Station	817803	822109
IM1	Impact Station	807132	817949
IM2	Impact Station	806166	818163
IM3	Impact Station	805594	818784
IM4	Impact Station	804607	819725
IM5	Impact Station	804867	820735
IM6	Impact Station	805828	821060
IM7	Impact Station	806835	821349
IM8	Impact Station	808140	821830
IM9	Impact Station	808811	822094
IM10	Impact Station	809794	822385
IM11	Impact Station	811460	822057
IM12	Impact Station	812046	821459
SR1A <sup>(1)</sup>	Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities (HKBCF) Seawater Intake for cooling	812660	819977
SR2	Planned marine park / hard corals at The Brothers / Tai Mo To	814166	821463
SR3	Sha Chau and Lung Kwu Chau Marine Park / fishing and spawning grounds in North Lantau	807571	822147
SR4A	Sha Lo Wan	807810	817189
SR5A	San Tau Beach SSSI	810696	816593
SR6A <sup>(3)</sup>	Tai Ho Bay, Near Tai Ho Stream SSSI	814739	817963
SR7	Ma Wan Fish Culture Zone (FCZ)	823742	823636
SR8 <sup>(4)</sup>	Seawater Intake for cooling at Hong Kong International Airport (East)	811623	820390

## Notes:

- (1) With the operation of HKBCF, water quality monitoring at SR1A station was commenced on 25 October 2018. To better reflect the water quality in the immediate vicinity of the intake, the monitoring location of SR1A has been shifted closer to the intake starting from 5 January 2019.
- (2) According to the Baseline Water Quality Monitoring Report, C3 station is not adequately representative as a control station of impact/ SR stations during the flood tide. The control reference has been changed from C3 to SR2 from 1 September 2016 onwards.
- (3) As the access to SR6 was obstructed by the construction activities and temporary structures for Tung Chung New Town Extension, the monitoring location has been relocated to SR6A starting from 8 August 2019.
- (4) The monitoring location for SR8 is subject to further changes due to silt curtain arrangements and the progressive relocation of this seawater intake.

## 4.1 Action and Limit Levels

In accordance with the Manual, baseline water quality levels at the above-mentioned representative water quality monitoring stations were established as presented in the Baseline Water Quality Monitoring Report. The Action and Limit Levels of general water quality monitoring stipulated in the EM&A programme for triggering the relevant investigation and follow-up procedures under the programme are provided in **Table 4.2**. The control and impact stations during ebb tide and flood tide for general water quality monitoring are presented in **Table 4.3**.

**Table 4.2: Action and Limit Levels for General Water Quality Monitoring**

Parameters	Action Level (AL)		Limit Level (LL)	
<b>Action and Limit Levels for general water quality monitoring (excluding SR1A &amp; SR8)</b>				
DO in mg/l (Surface, Middle & Bottom)	Surface and Middle		Surface and Middle	
	4.5mg/l		4.1mg/l	5mg/l for Fish Culture Zone (SR7) only
Suspended Solids (SS) in mg/l	Bottom		Bottom	
	3.4mg/l		2.7mg/l	
Turbidity in NTU	23	or 120% of upstream control station at the same tide of the same day, whichever is higher	37	or 130% of upstream control station at the same tide of the same day, whichever is higher
	22.6		36.1	
<b>Action and Limit Levels SR1A</b>				
SS (mg/l)	33		42	
<b>Action and Limit Levels SR8</b>				
SS (mg/l)	52		60	

## Notes:

- (1) For DO measurement, non-compliance occurs when monitoring result is lower than the limits.
- (2) For parameters other than DO, non-compliance of water quality results when monitoring results is higher than the limits.
- (3) Depth-averaged results are used unless specified otherwise.

**Table 4.3: The Control and Impact Stations during Flood Tide and Ebb Tide for General Water Quality Monitoring**

Control Station	Impact Stations
<b>Flood Tide</b>	
C1	IM1, IM2, IM3, IM4, IM5, IM6, IM7, IM8, SR3
SR2 <sup>(1)</sup>	IM7, IM8, IM9, IM10, IM11, IM12, SR1A, SR3, SR4A, SR5A, SR6A, SR8
<b>Ebb Tide</b>	
C1	SR4A, SR5A, SR6A
C2	IM1, IM2, IM3, IM4, IM5, IM6, IM7, IM8, IM9, IM10, IM11, IM12, SR1A, SR2, SR3, SR7, SR8

Note:

- (1) As per findings of Baseline Water Quality Monitoring Report, the control reference has been changed from C3 to SR2 from 1 September 2016 onwards.

## 4.2 Monitoring Equipment

**Table 4.4** summarises the equipment used in the reporting period for monitoring of specific water quality parameters under the water quality monitoring programme.

**Table 4.4: Water Quality Monitoring Equipment**

Equipment	Brand and Model	Last Calibration Date	Calibration Certificate Provided in
Multifunctional Meter (measurement of DO, pH, temperature, salinity and turbidity)	YSI ProDSS (Serial No. 21G105356)	24 Sep 2021	<b>Appendix E</b>
	YSI ProDSS (Serial No. 18A104824)	24 Sep 2021	<b>Appendix E</b>
	YSI ProDSS (Serial No. 15M100005)	26 Jul 2021	Monthly EM&A Report No. 67, Appendix D
	YSI ProDSS (Serial No. 16H104233)	27 Aug 2021	Monthly EM&A Report No. 68, Appendix D
	YSI ProDSS (Serial No. 16H104234)	27 Aug 2021	Monthly EM&A Report No. 68, Appendix D
	YSI ProDSS (Serial No. 17E100747) <sup>(1)</sup>	18 Jun 2021	Monthly EM&A Report No. 66, Appendix D
	YSI ProDSS (Serial No. 17H105557)	26 Jul 2021	Monthly EM&A Report No. 67, Appendix D

Note:

- (1) The monitoring equipment was not used in the reporting period after the expiry date of the calibration certificate.

Other equipment used as part of the impact water quality monitoring programme are listed in **Table 4.5**.

**Table 4.5: Other Monitoring Equipment**

Equipment	Brand and Model
Water Sampler	Van Dorn Water Sampler
Positioning Device (measurement of GPS)	Garmin eTrex Vista HCx
Current Meter (measurement of current speed and direction, and water depth)	Sontek HydroSurveyor

## 4.3 Monitoring Methodology

### 4.3.1 Measuring Procedure

Water quality monitoring samples were taken at three depths (at 1m below surface, at mid-depth, and at 1m above bottom) for locations with water depth >6m. For locations with water depth between 3m and 6m, water samples were taken at two depths (surface and bottom). For locations

with water depth <3m, only the mid-depth was taken. Duplicate water samples were taken and analysed.

The water samples for all monitoring parameters were collected, stored, preserved and analysed according to the Standard Methods, APHA 22<sup>nd</sup> ed. and/or other methods as agreed by the EPD. In-situ measurements at monitoring locations including temperature, pH, DO, turbidity, salinity and water depth were collected by equipment listed in **Table 4.4** and **Table 4.5**. Water samples for SS analysis were stored in high density polythene bottles with no preservative added, packed in ice (cooled to 4°C without being frozen), delivered to the laboratory within 24 hours of collection.

#### 4.3.2 Maintenance and Calibration

##### Calibration of In-situ Instruments

All in-situ monitoring instrument was checked, calibrated and certified by a laboratory accredited under HOKLAS before use. Responses of sensors and electrodes were checked with certified standard solutions before each use.

Wet bulb calibration for a DO meter was carried out before commencement of monitoring and after completion of all measurements each day. Calibration was not conducted at each monitoring location as daily calibration is adequate for the type of DO meter employed. A zero check in distilled water was performed with the turbidity probe at least once per monitoring day. The probe was then calibrated with a solution of known NTU. In addition, the turbidity probe was calibrated at least twice per month to establish the relationship between turbidity readings (in NTU) and levels of SS (in mg/l).

Calibration certificates of the monitoring equipment used in the reporting period are listed in **Table 4.4**.

#### 4.3.3 Laboratory Measurement / Analysis

Analysis of SS have been carried out by a HOKLAS accredited laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066). Sufficient water samples were collected at all the monitoring stations for carrying out the laboratory SS determination. The SS determination works were started within 24 hours after collection of the water samples. The analysis of SS have followed the standard methods summarised in **Table 4.6**. The QA/QC procedures for laboratory measurement/ analysis of SS were presented in Appendix F of the Construction Phase Monthly EM&A Report No.8.

**Table 4.6: Laboratory Measurement/ Analysis of SS**

Parameters	Instrumentation	Analytical Method	Reporting Limit
SS	Analytical Balance	APHA 2540D	2mg/l

#### 4.4 Summary of Monitoring Results

The water quality monitoring schedule for the reporting period is updated and provided in **Appendix C**.

The water quality monitoring results for all parameters, except DO and SS, obtained during the reporting period were within their corresponding Action and Limit Levels. The detailed monitoring results are presented in **Appendix D**.

For DO, some of the testing results triggered the corresponding Action and Limit Levels; while for SS, some of the testing results triggered the corresponding Action Level, and investigations were conducted accordingly.



Note: Detailed results are presented in <b>Appendix D</b> .	
Legend:	
	The monitoring results were within the corresponding Action and Limit Levels
	Monitoring result triggered the Action Level at monitoring station located upstream of the Project based on dominant tidal flow
D	Monitoring result triggered the Action Level at monitoring station located downstream of the Project based on dominant tidal flow
	Monitoring result triggered the Limit Level at monitoring station located upstream of the Project based on dominant tidal flow
D	Monitoring result triggered the Limit Level at monitoring station located downstream of the Project based on dominant tidal flow
	Upstream station with respect to the Project during the respective tide based on dominant tidal flow

Monitoring results triggered the corresponding Action and Limit Levels on three monitoring days. Some cases occurred at monitoring stations upstream of the Project during ebb and flood tide and would unlikely be affected by the Project.

In accordance with Event and Action Plan stipulated in the Manual, EPD, IEC and Contractor were informed when the corresponding Action or Limit Levels were triggered. Repeat measurements were conducted on 3 and 19 September 2021 according to the requirements as stipulated in the Manual. For DO results obtained on 9 September 2021, SR7 was the only monitoring station located at the upstream of the project area (more than 14km away from the marine construction works) triggering the corresponding Limit Level during flood tide, and no exceedance of general water quality monitoring parameters was recorded at other monitoring stations which are closer to the marine construction works. The preliminary information that could be obtained on the day of monitoring suggested the case was unlikely due to 3RS project construction works. Moreover, as agreed with IEC, if the exceedance occurs at a monitoring station located upstream of the project, repeat monitoring of this station is automatically not required. Therefore, the repeat measurement for SR7 was not required.

Investigation focusing on the cases which occurred at monitoring stations located downstream of the Project was carried out. Details of the Project's marine construction activities and site observations of the concerned monitoring days were collected. Findings were summarized in **Table 4.10** and **Table 4.11**.

**Table 4.10: Summary of Findings from Investigation of DO Monitoring Results**

Date	Marine construction works nearby	Approximate distance from marine construction works	Status of water quality measures (if applicable)	Construction vessels in the vicinity	Turbidity / Silt plume observed near the monitoring station	Action or Limit Level triggered due to Project
02/09/2021	Marine Piling	At least 0.5 km	Silt curtain deployed	No	No	No
09/09/2021	Marine Piling	At least 14 km	Silt curtain deployed	No	No	No
18/09/2021	Marine Piling	At least 4.5 km	Silt curtain deployed	No	No	No

**Table 4.11: Summary of Findings from Investigation of SS Monitoring Results**

Date	Marine construction works nearby	Approximate distance from marine construction works	Status of water quality measures (if applicable)	Construction vessels in the vicinity	Turbidity / Silt plume observed near the monitoring station	Action or Limit Level triggered due to Project
09/09/2021	Marine Piling	At least 5 km	Silt curtain deployed	No	No	No

The investigation confirmed that marine piling was conducted with silt curtains deployed during the concerned monitoring days. The silt curtains were maintained properly and checked by ET regularly. No muddy water discharges from outfalls of the reclaimed land were observed. All of the repeat measurement results were within the corresponding Action or Limit Levels.

For cases triggering Action or Limit Levels of DO at IM1, IM2, IM3, SR4A and SR7 on 2 and 18 September 2021, it is noted that most of the monitoring stations (i.e. IM1, IM2, IM3 and SR4A) were located at the western side of the project area, while SR7 located far away from the marine works location with at least 14 km. This suggests that the DO concentrations at these stations might be affected by other external factors. As there were no abnormal observations on construction activities during the monitoring, the cases were considered unlikely due to the Project.

For the DO result recorded at IM11 on 2 September 2021 triggering Action Level, it is noted that Action Level was also triggered at its adjacent upstream monitoring station (i.e. IM10). This suggests that the source of the low DO concentrations is not restricted to the downstream area of the Project. No silt plume, construction vessel, spillage incident or specific observation at outfalls were observed in the vicinity when monitoring was undertaken at these monitoring stations. Therefore, the case was considered unlikely due to the Project.

For the DO result recorded at SR6A on 18 September 2021 triggering Action Level, it is observed that the DO concentrations at other downstream stations closer to the marine works area (e.g. IM11 and IM12) were within the corresponding Action or Limit Levels, implying that the case might be due to external factors out of the Project area. No silt plume, construction vessel, spillage incident or specific observation at outfalls were observed in the vicinity when monitoring was undertaken at the monitoring station. Therefore, the case was considered unlikely due to the Project.

## 4.5 Conclusion

During the reporting period, it is noted that most of the monitoring results were within their corresponding Action and Limit Levels, while some DO measurement results triggered the corresponding Action and Limit Levels and some SS measurement results triggered the corresponding Action Levels, investigations were conducted accordingly.

Based on the investigation findings, all results that triggered the corresponding Action or Limit Levels were not due to the Project. Therefore, the Project did not cause adverse impact at the water quality sensitive receivers. All required actions under the Event and Action Plan were followed. These cases appeared to be due to natural fluctuation or other sources not related to the Project.

Nevertheless, as part of the EM&A programme, the construction methods and mitigation measures for water quality will continue to be monitored and opportunities for further enhancement will continue to be explored and implemented where possible, to strive for better protection of water quality and the marine environment.

In the meantime, the contractors were reminded to implement and maintain all mitigation measures as recommended in the Manual during weekly site inspection and regular environmental management meetings.

## 5 Waste Management

In accordance with the Manual, the waste generated from construction activities was audited once per week to determine if wastes are being managed in accordance with the Waste Management Plan (WMP) prepared for the Project, contract-specific WMP, and any statutory and contractual requirements. All aspects of waste management including waste generation, storage, transportation and disposal were assessed during the audits.

### 5.1 Action and Limit Levels

The Action and Limit Levels of the construction waste are provided in **Table 5.1**.

**Table 5.1: Action and Limit Levels for Construction Waste**

Monitoring Stations	Action Level	Limit Level
Construction Area	When one valid documented complaint is received	Non-compliance of the WMP, contract-specific WMPs, any statutory and contractual requirements

### 5.2 Waste Management Status

Weekly monitoring on all works contracts were carried out by the ET to check and monitor the implementation of proper waste management practices during the construction phase.

Recommendations made included provision and maintenance of proper chemical waste storage area, as well as handling, segregation, and regular disposal of general refuse. The contractors have taken actions to implement the recommended measures. Waste management audits were carried out by ET according to the requirement of the Waste Management Plan, Updated EM&A Manual and the implementation schedule of the waste management mitigation measures in **Appendix B**.

Based on updated information provided by contractors, construction waste generated in the reporting period is summarised in **Table 5.2**. Proactive measures have been undertaken during the re-configuration of T2 building. The contractor has established the recycling strategy for C&D materials with proper planning and design to maximize recycling and reuse. Dedicated recyclers were employed for different kinds of recyclable materials by the contractor, and ET and IEC have carried out site visit to recyclers' facilities to review recycling process. Dedicated areas for sorting of materials are established on site. Recyclable materials such as steel, reinforcement bar, structural steel, aluminum, copper, other metals and glass are sorted on-site and transported off-site for recycling. ET and IEC have carried out site audits regularly and reviewed the trip ticket system.

**Table 5.2: Construction Waste Statistics**

	C&D <sup>(1)</sup> Material Stockpiled for Reuse or Recycle (m <sup>3</sup> )	C&D Material Reused in the Project (m <sup>3</sup> )	C&D Material Reused in other Projects (m <sup>3</sup> )	C&D Material Transferred to Public Fill (m <sup>3</sup> )	Chemical Waste (kg)	Chemical Waste (l)	General Refuse (tonne)
August 2021 <sup>(2)(3)</sup>	17,930	*94,765	464	4,059	0	1,200	2,064
September 2021 <sup>(2)(4)</sup>	13,736	72,778	294	4,178	0	0	1,986

**Notes:**

- (1) C&D refers to Construction and Demolition.
- (2) Metals, paper and/or plastics were recycled in the reporting period.
- (3) Updated figure for the previous month is reported and marked with an asterisk (\*). Updated figures for earlier months will be reported in the forthcoming Quarterly and Annual EM&A Reports.
- (4) The data was based on the information provided by contractors up to the submission date of this Monthly EM&A Report, and might be updated in the forthcoming Monthly EM&A Report.

There were no complaints, non-compliance of the WMP, contract-specific WMPs, statutory and contractual requirements that triggered Action and Limit Levels in the reporting period.

Along with the design and construction progress, further development on the treatment level/details and the re-use mode for marine sediment generated from 3RS Project has been conducted according to the EIA recommendation.

### 5.3 Marine Sediment Management

Marine sediment is managed according to the EIA Report, Updated EM&A Manual and Waste Management Plan of the Project. The sampling process, storage conditions of the excavated marine sediment, treatment process, final backfilling location as well as associated records were inspected and checked by ET and verified by IEC to ensure they were in compliance with the requirements as stipulated in the Waste Management Plan.

Sampling works for marine sediment generated from the reclaimed land area was on-going during the reporting period. The details of the marine sediment sampling, treatment and backfilling will be reported in the subsequent EM&A Reports upon completion.

## 6 Chinese White Dolphin Monitoring

In accordance with the Manual, CWD monitoring by small vessel line-transect survey supplemented by land-based theodolite tracking survey and passive acoustic monitoring should be conducted during construction phase.

The small vessel line-transect survey should be conducted at a frequency of two full surveys per month, while land-based theodolite tracking survey should be conducted at a frequency of one day per month per station at Sha Chau (SC) and Lung Kwu Chau (LKC) during the construction phase as stipulated in the Manual.

### 6.1 Action and Limit Levels

The Action and Limit Levels for CWD monitoring were formulated by the action response approach using the running quarterly dolphin encounter rates STG and ANI derived from the baseline monitoring data, as presented in the CWD Baseline Monitoring Report. The derived values of Action and Limit Levels for CWD monitoring were summarised in **Table 6.1**.

**Table 6.1: Derived Values of Action and Limit Levels for Chinese White Dolphin Monitoring**

NEL, NWL, AW, WL and SWL as a Whole	
Action Level <sup>(3)</sup>	Running quarterly <sup>(1)</sup> STG < 1.86 & ANI < 9.35
Limit Level <sup>(3)</sup>	Two consecutive running quarterly <sup>(2)</sup> (3-month) STG < 1.86 & ANI < 9.35

Notes: (referring to the baseline monitoring report)

- (1) Action Level – running quarterly encounter rates STG & ANI of this month will be calculated from the reporting period and the two preceding survey months.
- (2) Limit Level – two consecutive running quarters mean both the running quarterly encounter rates of the preceding month and the running quarterly encounter rates of this month.
- (3) Action Level and/or Limit Level will be triggered if both STG and ANI fall below the criteria.

### 6.2 CWD Monitoring Transects and Stations

#### 6.2.1 Small Vessel Line-transect Survey

Small vessel line-transect surveys were conducted along the transects covering Northeast Lantau (NEL), Northwest Lantau (NWL), Airport West (AW), West Lantau (WL) and Southwest Lantau (SWL) areas as proposed in the Manual, which are consistent with the Agriculture, Fisheries and Conservation Department (AFCD) long-term monitoring programme (except the addition of AW). The AW transect has not been previously surveyed in the AFCD programme due to the restrictions of HKIA Approach Area, nevertheless, this transect was established during the EIA of the 3RS Project and refined in the Manual with the aim to collect project specific baseline information within the HKIA Approach Area to fill the data gap that was not covered by the AFCD programme. This also provided a larger sample size for estimating the density, abundance and patterns of movements in the broader study area of the project.

The planned vessel survey transect lines following the waypoints set for construction phase monitoring as proposed in the Manual are depicted in **Figure 6.1** with the waypoint coordinates of all transect lines given in **Table 6.2**, which are subject to on-site refinement based on the actual survey conditions and constraints.

**Table 6.2: Coordinates of Transect Lines in NEL, NWL, AW, WL and SWL Survey Areas**

Waypoint	Easting	Northing	Waypoint	Easting	Northing
<b>NEL</b>					
1S	813525	820900	6N	818568	824433
1N	813525	824657	7S	819532	821420
2S	814556	818449	7N	819532	824209
2N	814559	824768	8S	820451	822125
3S	815542	818807	8N	820451	823671
3N	815542	824882	9S	821504	822371
4S	816506	819480	9N	821504	823761
4N	816506	824859	10S	822513	823268
5S	817537	820220	10N	822513	824321
5N	817537	824613	11S	823477	823402
6S	818568	820735	11N	823477	824613
<b>NWL</b>					
1S	804671	814577	5S	808504	821735
1N	804671	831404	5N	808504	828602
2Sb	805475	815457	6S	809490	822075
2Nb	805476	818571	6N	809490	825352
2Sa	805476	820770	7S	810499	822323
2Na	805476	830562	7N	810499	824613
3S	806464	821033	8S	811508	821839
3N	806464	829598	8N	811508	824254
4S	807518	821395	9S	812516	821356
4N	807518	829230	9N	812516	824254
<b>AW</b>					
1W	804733	818205	2W	805045	816912
1E	806708	818017	2E	805960	816633
<b>WL</b>					
1W	800600	805450	7W	800400	811450
1E	801760	805450	7E	802400	811450
2W	800300	806450	8W	800800	812450
2E	801750	806450	8E	802900	812450
3W	799600	807450	9W	801500	813550
3E	801500	807450	9E	803120	813550
4W	799400	808450	10W	801880	814500
4E	801430	808450	10E	803700	814500
5W	799500	809450	11W	802860	815500
5E	801300	809450	12S/11E	803750	815500
6W	799800	810450	12N	803750	818500
6E	801400	810450			
<b>SWL</b>					
1S	802494	803961	6S	807467	801137
1N	802494	806174	6N	807467	808458
2S	803489	803280	7S	808553	800329
2N	803489	806720	7N	808553	807377
3S	804484	802509	8S	809547	800338
3N	804484	807048	8N	809547	807396
4S	805478	802105	9S	810542	800423
4N	805478	807556	9N	810542	807462

Waypoint	Easting	Northing	Waypoint	Easting	Northing
5S	806473	801250	10S	811446	801335
5N	806473	808458	10N	811446	809436

## 6.2.2 Land-based Theodolite Tracking Survey

Land-based theodolite tracking survey stations were set up at two locations, one facing east/south/west on the southern slopes of Sha Chau (SC), and the other facing north/northeast/northwest at Lung Kwu Chau (LKC). The stations (D and E) are depicted in **Figure 6.2** and shown in **Table 6.3** with position coordinates, height of station and approximate distance of consistent theodolite tracking capabilities for CWD.

**Table 6.3: Land-based Theodolite Survey Station Details**

Stations	Location	Geographical Coordinates	Station Height (m)	Approximate Tracking Distance (km)
D	Sha Chau (SC)	22° 20' 43.5" N 113° 53' 24.66" E	45.66	2
E	Lung Kwu Chau (LKC)	22° 22' 44.83" N 113° 53' 0.2" E	70.40	3

## 6.3 CWD Monitoring Methodology

### 6.3.1 Small Vessel Line-transect Survey

Small vessel line-transect surveys provided data for density and abundance estimation and other assessments using distance-sampling methodologies, specifically, line-transect methods.

The surveys involved small vessel line-transect data collection and have been designed to be similar to, and consistent with, previous surveys for the AFCD for their long-term monitoring of small cetaceans in Hong Kong. The survey was designed to provide systematic, quantitative measurements of density, abundance and habitat use.

As mentioned in **Section 6.2.1**, the transects covered NEL, NWL, AW, WL and SWL areas as proposed in the Manual, which are consistent with the AFCD long-term monitoring programme (except AW). There are two types of transect lines:

- Primary transect lines: the parallel and zigzag transect lines as shown in **Figure 6.1**; and
- Secondary transect lines: transect lines connecting between the primary transect lines and going around islands.

All data collected on both primary and secondary transect lines were used for analysis of sighting distribution, group size, activities including association with fishing boat, and mother-calf pairs. Only on-effort data collected under favourable conditions of Beaufort 0-3 and visibility of approximately 1200 m or beyond were used for analysis of the CWD encounter rates.

A 15-20m vessel with a flying bridge observation platform about 4 to 5m above water level and unobstructed forward view, and a team of three to four observers were deployed to undertake the surveys. Two observers were on search effort at all times when following the transect lines with a constant speed of 7 to 8 knots (i.e. 13 to 15 km per hour), one using 7X handheld binoculars and the other using unaided eyes and recording data.

During on-effort survey periods, the survey team recorded effort data including time, position (waypoints), weather conditions (Beaufort sea state and visibility) and distance travelled in each

series with assistance of a handheld GPS device. The GPS device also continuously and automatically logged data including time, position (latitude and longitude) and vessel speed throughout the entire survey.

When CWDs were seen, the survey team was taken off-effort, the dolphins were approached and photographed for photo-ID information (using a Canon 7D [or similar] camera and long 300 mm+ telephoto lens), then followed until they were lost from view. At that point, the boat returned (off effort) to the survey line at the closest point after obtaining photo records of the dolphin group and began to survey on effort again.

Focal follows of dolphins would be used for providing supplementary information only where practicable (i.e. when individual dolphins or small stable groups of dolphins with at least one member that could be readily identifiable with unaided eyes during observations and weather conditions are favourable). These would involve the boat following (at an appropriate distance to minimise disturbance) an identifiable individual dolphin for an extended period of time, and collecting detailed data on its location, behaviour, response to vessels, and associates.

### 6.3.2 Photo Identification

CWDs can be identified by their unique features like presence of scratches, nick marks, cuts, wounds, deformities of their dorsal fin and distinguished colouration and spotting patterns.

When CWDs were observed, the survey team was taken off-effort, the dolphins were approached and photographed for photo-ID information (using a Canon 7D [or similar] camera and long 300 mm+ telephoto lens). The survey team attempted to photograph both sides of every single dolphin in the group as the colouration and spotting pattern on both sides may not be identical. The photos were taken at the highest available resolution and stored on Compact Flash memory cards for transferring into a computer.

All photos taken were initially examined to sort out those containing potentially identifiable individuals. These sorted-out images would then be examined in detail and compared to the CWD photo-identification catalogue established for 3RS Project during the baseline monitoring stage.

### 6.3.3 Land-based Theodolite Tracking Survey

Land-based theodolite tracking survey obtains fine-scale information on the time of day and movement patterns of the CWDs. A digital theodolite (Sokkia/Sokkisha Model DT5 or similar equipment) with 30-power magnification and 5-s precision was used to obtain the vertical and horizontal angle of each dolphin and vessel position. Angles were converted to geographic coordinates (latitude and longitude) and data were recorded using *Pythagoras* software, Version 1.2. This method delivers precise positions of multiple spatially distant targets in a short period of time. The technique is fully non-invasive, and allows for time and cost-effective descriptions of dolphin habitat use patterns at all times of daylight.

Three surveyors (one theodolite operator, one computer operator, and one observer) were involved in each survey. Observers searched for dolphins using unaided eyes and handheld binoculars (7X50). Theodolite tracking sessions were initiated whenever an individual CWD or group of CWDs was located. Where possible, a distinguishable individual was selected, based on colouration, within the group. The focal individual was then continuously tracked via the theodolite, with a position recorded each time the dolphin surfaced. In case an individual could not be positively distinguished from other members, the group was tracked by recording positions based on a central point within the group whenever the CWD surfaced. Tracking continued until animals were lost from view; moved beyond the range of reliable visibility (>1-3km, depending on station height); or environmental conditions obstructed visibility (e.g., intense haze, Beaufort sea state >4, or sunset), at which time the research effort was terminated. In addition to the tracking

of CWD, all vessels that moved within 2-3km of the station were tracked, with effort made to obtain at least two positions for each vessel.

Theodolite tracking included focal follows of CWD groups and vessels. Priority was given to tracking individual or groups of CWD. The survey team also attempted to track all vessels moving within 1 km of the focal CWD.

## 6.4 Monitoring Results and Observations

### 6.4.1 Small Vessel Line-transect Survey

#### Survey Effort

Within this reporting period, two complete sets of small vessel line-transect surveys were conducted on the 6, 7, 8, 10, 14, 16, 20 and 23 September 2021, covering all transects in NEL, NWL, AW, WL and SWL survey areas for twice.

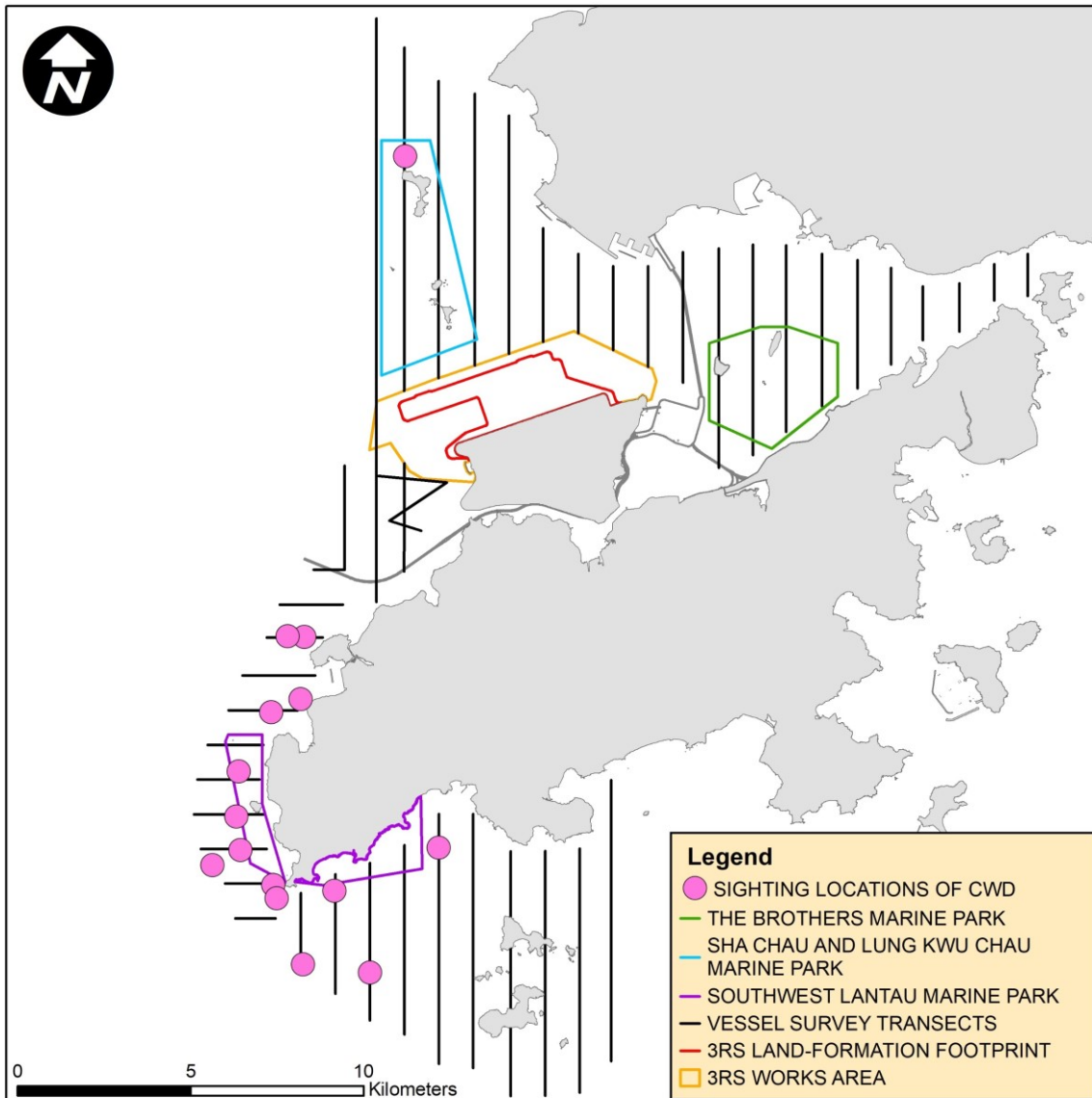
A total of around 442.28km of survey effort was collected from these surveys and 423.04 km of the survey effort was being conducted under favourable weather condition (i.e. Beaufort Sea State 3 or below with favourable visibility). Details of the survey effort are given in **Appendix D**.

#### Sighting Distribution

In September 2021, 15 sightings with 52 dolphins were sighted. All these sightings are on-effort records under favourable weather condition (i.e. Beaufort Sea State 3 or below with favourable visibility). Details of cetacean sightings are presented in **Appendix D**.

Distribution of all CWD sightings recorded in September 2021 is illustrated in **Figure 6.3**. In NWL, one CWD sighting was recorded north-off Lung Kwu Chau. In WL, CWD groups were quite evenly sighted from Tai O to Fan Lau. While in SWL, the four CWD sightings were scattered in central and western parts of the survey area. There was no CWD sighting recorded in NEL survey area during the reporting period.

**Figure 6.3: Sightings Distribution of Chinese White Dolphins**



Remarks: (1) Please note that there are 15 pink circles on the map indicating the sighting locations of CWDs. Some of them were very close to each other and therefore may appear overlapped on this distribution map. (2) Marine park excludes land area and the landward boundary generally follows the high water mark along the coastline.

**Encounter Rate**

Two types of dolphin encounter rates were calculated based on the vessel survey data. They included the number of dolphin sightings per 100 km survey effort (STG) and total number of dolphins per 100 km survey effort (ANI) in the whole survey area (i.e. NEL, NWL, AW, WL and SWL). In the calculation of dolphin encounter rates, only survey data collected under favourable weather condition (i.e. Beaufort Sea State 3 or below with favourable visibility) were used. The formulae used for calculation of the encounter rates are shown below:

Encounter Rate by Number of Dolphin Sightings (STG)

$$STG = \frac{\text{Total No. of On – effort Sightings}}{\text{Total Amount of Survey Effort (km)}} \times 100$$

Encounter Rate by Number of Dolphins (ANI)

$$ANI = \frac{\text{Total No. of Dolphins from On – effort Sightings}}{\text{Total Amount of Survey Effort (km)}} \times 100$$

(Notes: Only data collected under Beaufort 3 or below condition were used)

In September 2021, a total of around 423.04 km of survey effort were conducted under Beaufort Sea State 3 or below with favourable visibility, whilst a total number of 15 on-effort sightings with 52 dolphins were sighted under such condition. Calculation of the encounter rates for the month are shown in **Appendix D**.

For the running quarter of the reporting period (i.e., from July to September 2021), a total of around 1300.40 km of survey effort were conducted under Beaufort Sea State 3 or below with favourable visibility, whilst a total number of 50 on-effort sightings and a total number of 161 dolphins from on-effort sightings were obtained under such condition. Calculation of the running quarterly encounter rates are shown in **Appendix D**.

The STG and ANI of CWD in the whole survey area (i.e. NEL, NWL, AW, WL and SWL) during the month of September 2021 and during the running quarter are presented in **Table 6.4** below and compared with the Action Level. The running quarterly encounter rates STG and ANI remain above the Action Level, thus the Action Level is not triggered.

**Table 6.4: Comparison of CWD Encounter Rates of the Whole Survey Area with Action Levels**

	Encounter Rate (STG)	Encounter Rate (ANI)
September 2021	3.55	12.29
Running Quarter from July to September 2021 <sup>(1)</sup>	3.84	12.38
Action Level	Running quarterly <sup>(1)</sup> STG < 1.86 & ANI < 9.35	

Note: (1) Running quarterly encounter rates STG & ANI were calculated from data collected in the reporting period and the two preceding survey months, i.e. the data from July to September 2021, containing six sets of transect surveys for all monitoring areas. Action Level will be triggered if both STG and ANI fall below the criteria.

**Group Size**

In September 2021, 15 groups of 52 dolphins in total were sighted, and the average group size of CWDs was 3.5 dolphins per group. Numbers of sightings with small group size (i.e. 1-2 dolphins) and medium group size (i.e. 3-9 dolphins) were identical. There was one CWD sighting with large group size (i.e. 10 or more dolphins) recorded in WL.

**Activities and Association with Fishing Boats**

One CWD sighting was recorded engaging in feeding activities in September 2021 without association with fishing boats.

## **Mother-calf Pair**

In September 2021, there were two CWD sightings recorded with the presence of mother-and-unspotted juvenile pair(s). These two sightings were recorded in WL and SWL respectively.

### **6.4.2 Photo Identification**

In September 2021, a total number of 27 different CWD individuals were identified for totally 33 times. A summary of photo identification works is presented in **Table 6.5**. Representative photos of these individuals are given in **Appendix D**.

**Table 6.5: Summary of Photo Identification**

Individual ID	Date of Sighting (dd-mmm-yy)	Sighting Group No.	Area	Individual ID	Date of Sighting (dd-mmm-yy)	Sighting Group No.	Area
NLMM013	20-Sep-21	1	NWL	WLMM004	23-Sep-21	3	WL
NLMM027	16-Sep-21	6	WL	WLMM007	08-Sep-21	5	SWL
NLMM061	16-Sep-21	3	WL		16-Sep-21	6	WL
SLMM003	16-Sep-21	6	WL	WLMM019	20-Sep-21	1	NWL
SLMM007	08-Sep-21	5	SWL	WLMM056	16-Sep-21	2	WL
	16-Sep-21	6	WL	WLMM063	23-Sep-21	3	WL
SLMM010	23-Sep-21	2	WL	WLMM065	16-Sep-21	3	WL
SLMM014	08-Sep-21	2	SWL	WLMM067	08-Sep-21	5	SWL
	16-Sep-21	6	WL	WLMM073	08-Sep-21	5	SWL
SLMM022	16-Sep-21	3	WL		16-Sep-21	5	WL
SLMM023	16-Sep-21	5	WL	WLMM079	16-Sep-21	6	WL
SLMM029	08-Sep-21	4	SWL	WLMM111	16-Sep-21	3	WL
SLMM064	08-Sep-21	4	SWL	WLMM114	23-Sep-21	3	WL
	16-Sep-21	6	WL	WLMM131	23-Sep-21	2	WL
SLMM070	08-Sep-21	3	SWL	WLMM152	16-Sep-21	3	WL
SLMM073	08-Sep-21	5	SWL	WLMM167	16-Sep-21	6	WL
	16-Sep-21	6	WL				

### **6.4.3 Land-based Theodolite Tracking Survey**

#### **Survey Effort**

Land-based theodolite tracking surveys were conducted at LKC on 3 September 2021 and at SC on 9 September 2021, with a total of two days of land-based theodolite tracking survey effort accomplished in this reporting period. No CWD group was tracked during the reporting period. Information of survey effort and CWD groups are presented in **Table 6.6**. Details of the survey effort are presented in **Appendix D**.

**Table 6.6: Summary of Survey Effort and CWD Group of Land-based Theodolite Tracking**

Land-based Station	No. of Survey Sessions	Survey Effort (hh:mm)	No. of CWD Groups Sighted	CWD Group Sighting per Survey Hour
Lung Kwu Chau	1	6:00	0	0
Sha Chau	1	6:00	0	0
<b>TOTAL</b>	<b>2</b>	<b>12:00</b>	<b>0</b>	<b>0</b>

## **6.5 Progress Update on Passive Acoustic Monitoring**

Underwater acoustic monitoring using Passive Acoustic Monitoring (PAM) should be undertaken during land formation related construction works. Both C-POD and F-POD are considered as

effective PAM devices in detecting CWD occurrence, and F-POD was the main PAM device deployed where feasible. During this reporting period, the F-POD was remained underwater and positioned at south of Sha Chau Island inside the SCLKCMP (**Figure 6.5**). The F-POD was last deployed on 4 August 2021 and the next re-deployment is scheduled in early October 2021 to retrieve the data for analysis. Acoustic data would be reviewed to give an indication of CWDs occurrence patterns and anthropogenic noise information. Analysis would involve use of proprietary software for objective automated data analyses and experienced analysts to perform visual validation for assessment of dolphin detection. As the period of data collection and analysis takes about four months, PAM results could not be reported in monthly intervals but report for supplementing the annual CWD monitoring analysis.

## 6.6 Site Audit for CWD-related Mitigation Measures

During the reporting period, silt curtains were in place by the contractor for marine filling and bored piling, in which dolphin observers were deployed by contractor in accordance with the MMWP. Overall, 2 to 7 dolphin observation stations and teams of at least two dolphin observers were deployed by the contractors for continuous monitoring of the DEZ for bored piling and seawall construction related works in accordance with the DEZ Plan. Trainings for the proposed dolphin observers on the implementation of MMWP and DEZ monitoring were provided by the ET prior to the aforementioned works, with a cumulative total of 704 individuals being trained and the training records kept by the ET. From the contractors' MMWP observation records, no dolphin or other marine mammals were observed within or around the silt curtains. As for DEZ monitoring records, no dolphin or other marine mammals were observed within or around the DEZs in this reporting month. These contractors' records were also audited by the ET during site inspection.

Audits of acoustic decoupling measures for construction vessels were carried out during weekly site inspection and the observations are summarised in **Section 7.1**. Audits of SkyPier high speed ferries route diversion and speed control and construction vessel management are presented in **Section 7.4** and **Section 7.5** respectively.

## 6.7 Timing of Reporting CWD Monitoring Results

Detailed analysis of CWD monitoring results collected by small vessel line-transect survey will be provided in future quarterly reports. Detailed analysis of CWD monitoring results collected by land-based theodolite tracking survey and PAM will be provided in future annual reports after a larger sample size of data has been collected.

## 6.8 Summary of CWD Monitoring

Monitoring of CWD was conducted with two complete sets of small vessel line-transect surveys and two days of land-based theodolite tracking survey effort as scheduled. The running quarterly encounter rates STG and ANI in the reporting period did not trigger the Action Level for CWD monitoring.

## 7 Environmental Site Inspection and Audit

### 7.1 Environmental Site Inspection

Site inspections of the construction works were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. The weekly site inspection schedule of the construction works is provided in **Appendix C**. Bi-weekly site inspections were also conducted by the IEC. Besides, *ad-hoc* site inspections were conducted by ET and IEC if environmental problems were identified, or subsequent to receipt of an environmental complaint, or as part of the investigation work. These site inspections provided a direct means to reinforce the specified environmental protection requirements and pollution control measures in construction sites.

During site inspections, environmental situation, status of implementation of pollution control and mitigation measures were observed. Environmental documents and site records, including waste disposal record, maintenance record of environmental equipment, and relevant environmental permit and licences, were also checked on site. Observations were recorded in the site inspection checklist and passed to the contractor together with the recommended mitigation measures where necessary in order to advise contractors on environmental improvement, awareness and on-site enhancement measures. The observations were made with reference to the following information during the site inspections:

- The EIA and EM&A requirements;
- Relevant environmental protection laws, guidelines, and practice notes;
- The EP conditions and other submissions under the EP;
- Monitoring results of EM&A programme;
- Works progress and programme;
- Proposal of individual works;
- Contract specifications on environmental protection; and
- Previous site inspection results.

Good site practices were observed in site inspections during the reporting period. Advice were given when necessary to ensure the construction workforce were familiar with relevant procedures, and to maintain good environmental performance on site. Regular toolbox talks on environmental issues were organised for the construction workforce by the contractors to ensure understanding and proper implementation of environmental protection and pollution control mitigation measures.

A summary of implementation status of the environmental mitigation measures for the construction phase of the Project during the reporting period is provided in **Appendix B**.

### 7.2 Landscape and Visual Mitigation Measures

Implementation of applicable landscape and visual mitigation measures (reference to the environmental protection measures CM1 – CM10 in **Appendix B**) was monitored in accordance with the Manual. All measures undertaken by both the contractor and the landscape contractor during the construction phase and first year of the operation phase shall be audited by a landscape architect, as a member of the ET, on a regular basis to ensure compliance with the

intended aims of the measures. Site inspections shall be undertaken at least once every two months during the operation phase.






The implementation status of the environmental protection measures are summarized below in **Table 7.1**. Examples of landscape and visual mitigation measures are shown in **Table 7.2**. The monitoring programme for detailed design, construction, establishment works and long term management (10 years) stages is presented in **Table 7.3**. Event and Action Plan for Landscape and Visual impacts is stated in **Table 7.4**.

**Table 7.1: Landscape and Visual – Construction Phase Audit Summary**

Landscape and Visual Mitigation Measures during Construction	Implementation Status	Relevant Contract(s) in the Reporting Period
CM1- The construction area and contractor's temporary works areas shall be minimised to avoid impacts on adjacent landscape.	The implementation of mitigation measures were checked by ET during weekly site inspection and clarified by the Contractors during the monthly Environmental Management Meetings. Implementation of the measures CM5, CM6 and CM7 by Contractors was observed.	3RS Project contracts
CM2 – Reduction of construction period to practical minimum		
CM3 – Phasing of the construction stage to reduce visual impacts during the construction phase.		
CM4 – Construction traffic (land and sea) including construction plants, construction vessels and barges shall be kept to a practical minimum.		
CM5 – Erection of decorative mesh screens or construction hoardings around works areas in visually unobtrusive colours.		
CM6 – Avoidance of excessive height and bulk of site buildings and structures		
CM7 – Control of night-time lighting by hooding all lights and through minimisation of night working periods		
CM8 – All existing trees shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas	Tree Protection Specifications have been provided in the relevant Contract Specifications respectively for implementation by the Contractors under the Project.	3302, 3503, 3508, 3602, 3801  3802 (To be implemented)
	The Contractors' performance on the implementation of the tree maintenance and protection measures were observed and checked by the ET weekly during construction period.	

Landscape and Visual Mitigation Measures during Construction	Implementation Status	Relevant Contract(s) in the Reporting Period
<p>CM9 – Trees unavoidably affected by the works shall be transplanted where practical. A detailed Tree Transplanting Specification shall be provided in the Contract Specification, if applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme</p>	<p>Tree Transplanting Specifications have been provided in the relevant Contract Specifications respectively for implementation by the Contractors under the Project where trees will unavoidably be affected by the construction works.</p> <p>The Contractors were required to submit Method Statements for tree transplanting prior to the transplanting works. Tree inspections were conducted by ET to check the tree transplanting works implemented by the Contractors on site.</p> <p>The Contractors’ performance on the implementation of trees maintenance and protection measures on transplanted trees were observed and checked by the ET bi-monthly during the 12-month establishment period after the completion of each batch of transplanting works.</p> <p>Long term management of the transplanted trees were currently monitored by ET annually.</p>	<p>3503, 3508, 3801</p> <p>3802 (To be implemented)</p>
<p>CM 10 – Land formation works shall be followed with advanced hydroseeding around taxiways and runways as soon as practical</p>	<p>To be implemented around taxiways and runways as soon as practicable.</p>	<p>To be implemented</p>

**Table 7.2: Examples of Landscape and Visual Mitigation Measures in the Reporting Period**

		
<p>Erection of site hoardings around works area in unobtrusive colours (CM5)</p>	<p>Avoidance of excessive height and bulk of site buildings (CM6)</p>	<p>Control of night-time lighting by hooding and minimisation of night working period (CM7)</p>
		
<p>General view of tree protection zone for retained tree (CM8)</p>	<p>General view of a transplanted tree (CM9)</p>	

In accordance with the EM&A Manual, all existing trees shall be protected carefully during construction. Trees unavoidably affected by the works shall be transplanted where practical. In this reporting period, the cumulative total number of retained and transplanted trees under the Project were 89 and 26, respectively. A works area including 1 retained tree was handed over from Contract 3801 to Contract 3802, and was subsequently felled during this reporting period. Details of the retained trees, transplanted trees and to-be-transplanted trees under the Project are summarized in **Table 7.5**.

Details of the retained trees are to be discussed in the Quarterly EM&A reports.

**Table 7.3: Monitoring Programme for Landscape and Visual**

Stage	Monitoring Task	Monitoring Report	Form of Approval	Frequency
Detailed Design	Checking of design works against the recommendations of the landscape and visual impact assessments within the EIA shall be undertaken during detailed design and tender stage, to ensure that they fulfil the intention of the mitigation measures. Any changes to the design, including design changes on site shall also be checked.	Report by AAHK / PM confirming that the design conforms to requirements of EP.	Approved by Client	At the end of the Detailed Design Phase
Construction	Checking of the contractor's operations during the construction period.	Report on Contractor's compliance, by ET	Counter signature of report by IEC	Weekly
Establishment Works	Checking of the planting works during the twelve-month Establishment Period after completion of each batch of transplanting works.	Report on Contractor's compliance, by ET	Counter signature of report by IEC	Every two months
Long Term Management (10 year)	Monitoring of the long-term management of the planting works in the period up to 10 years after completion of each batch of transplanting works.	Report on Compliance by ET or Maintenance Agency as appropriate	Counter signature of report by Management Agency	Annually

**Table 7.4: Event and Action Plan for Landscape and Visual**

Event	Action Level			
	ET	IEC	AAHK / PM	Contractor
Design Check	Check final design conforms to the requirements of EP and prepare report.	Check report. Recommend remedial design if necessary.	Undertake remedial design if necessary.	
Non-conformity on one occasion	Identify source. Inform IEC and AAHK / PM. Discuss remedial actions with IEC, AAHK / PM and Contractor. Monitor remedial actions until rectification has been completed.	Check report. Check Contractor's working method. Discuss with ET and Contractor on possible remedial measures. Advise AAHK / PM on effectiveness of proposed remedial measures. Check implementation of remedial measures.	Notify Contractor. Ensure remedial measures are properly implemented.	Amend working methods to prevent recurrence of non-conformity. Rectify damage and undertake additional action necessary.
Repeated Non-conformity	Identify source. Inform IEC and AAHK / PM. Increase monitoring frequency. Discuss remedial actions with IEC, AAHK / PM and Contractor. Monitor remedial actions until rectification has been completed. If non-conformity stops, cease additional monitoring.	Check monitoring report. Check Contractor's working method. Discuss with ET and Contractor on possible remedial measures. Advise AAHK / PM on effectiveness of proposed remedial measures. Supervise implementation of remedial measures.	Notify Contractor. Ensure remedial measures are properly implemented.	Amend working methods to prevent recurrence of non-conformity. Rectify damage and undertake additional action necessary.

**Table 7.5: Summary of the Number of Retained, Transplanted and To-be-transplanted Trees in the Reporting Period**

Existing				
Contract	Retain (nos.)	Transplanted (nos.)		To-be-transplanted (nos.)
		Establishment Period	Maintenance Period	
3302	9	0	0	0
3503	8	6	3	0
3508 <sup>(1)</sup>	25	12	0	0
3602	2	0	0	0
3801	45	0	5 <sup>(2)</sup>	0
Sub-total	89	18	8	0
Provisional				
Contract	Retain (nos.)	Transplanted (nos.)		To-be-transplanted (nos.)
3508 <sup>(1)</sup>	51	0		10
Sub-total	51	0		10
<b>Grand Total</b>	<b>140</b>	<b>26</b>		<b>10</b>

## Notes:

- (1) As some of the site areas have been handed over to Contract 3508, Contractor of Contract 3508 is currently managing some of the trees. Existing trees to be managed by Contract 3508 is subject to change after initial tree surveys for each batch of site areas have been conducted by the Contractor.
- (2) Three transplanted trees (CT1194, CT1794 and CT1795) were subsequently felled after transplantation. Please refer to **Table 7.6** for details.

Summary of the updated transplanted trees and photos are presented in **Table 7.6** and **Table 7.7** respectively.

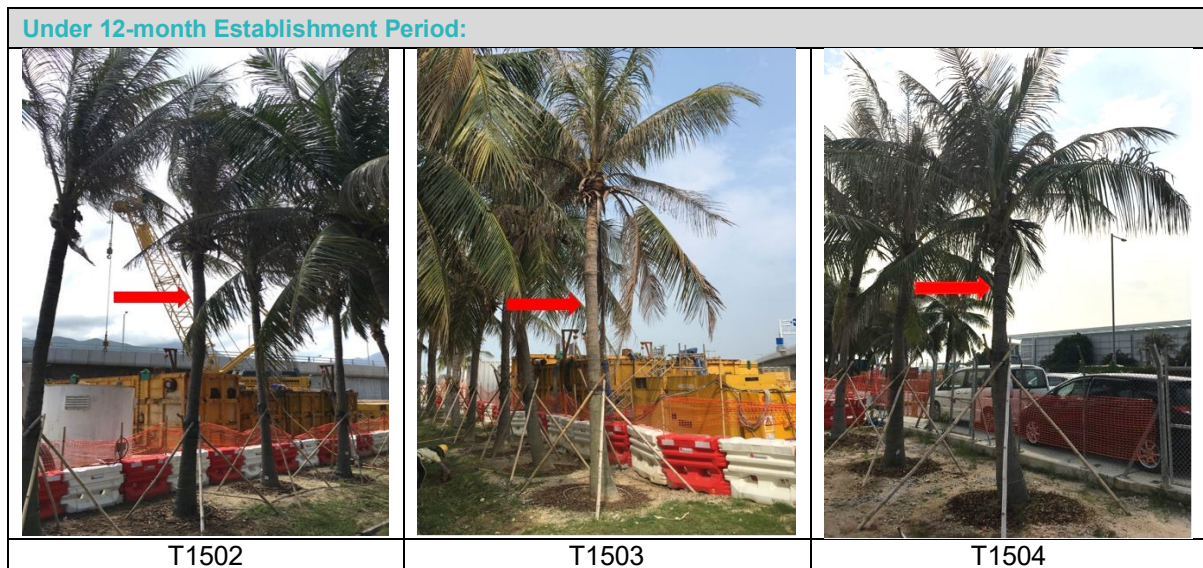
**Table 7.6: Summary of the Transplanted Trees Updated in the Reporting Period**

Tree ID	Transplant Date	Management Stage	Management Agency	Remarks
CT276	3 May 2018	<u>Establishment period</u> 4 May 2018 – May 2019	Contract 3801	Next inspection will be conducted in February 2022. Photos of the last inspection in February 2021 can be referred to Table 7.7 of the Construction Phase Monthly EM&A Report No.62.
		<u>Long Term Management period</u> Jun 2019 – May 2028	Southern Landside Petrol Filling Station	
CT1253	4 May 2018	<u>Establishment period</u> 5 May 2018 – May 2019	Contract 3801	
		<u>Long Term Management period</u> Jun 2019 – May 2028	Southern Landside Petrol Filling Station	
T835	22 Jan 2020	<u>Establishment period</u> 23 Jan 2020 – Jan 2021	Contract 3503	Next inspection will be conducted in February 2022. Photos of the last inspection in February 2021 can be referred to Table 7.7 of the Construction Phase Monthly EM&A Report No.62.
		<u>Long Term Management period</u> Feb 2021 – Jan 2030		
T836	13 Dec 2019	<u>Establishment period</u> 14 Dec 2020 – Jan 2021	Contract 3503	
		<u>Long Term Management period</u> Feb 2021 – Jan 2030		
T838	22 Jan 2020	<u>Establishment period</u> 23 Jan 2020 – Jan 2021	Contract 3503	
		<u>Long Term Management period</u> Feb 2021 – Jan 2030		
T812	21 Dec 2020	<u>Establishment period</u> 22 Dec 2020 – Dec 2021	Contract 3503	Next inspection will be conducted in October 2021. Photos of the last inspection in August 2021 can be referred to Table 7.7 of the Construction Phase Monthly EM&A Report No.68.
T814	20 Dec 2020	<u>Establishment period</u> 21 Dec 2020 – Dec 2021	Contract 3503	
T815	15 Dec 2020	<u>Establishment period</u> 16 Dec 2020 – Dec 2021	Contract 3503	
T829	18 Dec 2020	<u>Establishment period</u> 19 Dec 2020 – Dec 2021	Contract 3503	
T830	14 Dec 2020	<u>Establishment period</u> 15 Dec 2020 – Dec 2021	Contract 3503	
T831	19 Dec 2020	<u>Establishment period</u> 20 Dec 2020 – Dec 2021	Contract 3503	
T1493	6 Jul 2021	<u>Establishment period</u> 7 Jul 2021 – Jul 2022	Contract 3508	Next inspection will be conducted in October 2021. Photos of the last

Tree ID	Transplant Date	Management Stage	Management Agency	Remarks
T1494	6 Jul 2021	<u>Establishment period</u> 7 Jul 2021 – Jul 2022	Contract 3508	inspection in September 2021 were shown in <b>Table 7.7</b> .
T1495	10 Jul 2021	<u>Establishment period</u> 11 Jul 2021 – Jul 2022	Contract 3508	
T1496	5 Jul 2021	<u>Establishment period</u> 6 Jul 2021 – Jul 2022	Contract 3508	
T1497	5 Jul 2021	<u>Establishment period</u> 6 Jul 2021 – Jul 2022	Contract 3508	
T1498	29 Jun 2021	<u>Establishment period</u> 30 Jun 2021 – Jul 2022	Contract 3508	
T1499	29 Jun 2021	<u>Establishment period</u> 30 Jun 2021 – Jul 2022	Contract 3508	
T1500	30 Jun 2021	<u>Establishment period</u> 1 Jul 2021 – Jul 2022	Contract 3508	
T1501	30 Jun 2021	<u>Establishment period</u> 1 Jul 2021 – Jul 2022	Contract 3508	
T1502	5 Jul 2021	<u>Establishment period</u> 6 Jul 2021 – Jul 2022	Contract 3508	
T1503	6 Jul 2021	<u>Establishment period</u> 7 Jul 2021 – Jul 2022	Contract 3508	
T1504	24 Jun 2021	<u>Establishment period</u> 25 Jun 2021 – Jul 2022	Contract 3508	
CT1194	4 May 2018	<u>Establishment period</u> 5 May 2018 – May 2019  <u>Long Term Management period</u> Jun 2019 – May 2028	Contract 3801  Southern Landside Petrol Filling Station	NA  Uprooted and collapsed due to Typhoon Higos on 18 August 2020. Tree removal was conducted as recommended by tree specialist of the contractor of Southern Landside Petrol Filing Station.
CT1794	3 May 2018	<u>Establishment period</u> 4 May 2018 – May 2019  <u>Long Term Management period</u> Jun 2019 – May 2028	Contract 3801  AsiaWorld-Expo	NA  The tree within the land parcel was acquired by the government for construction of emergency hospital to handle COVID19 pandemic at AsiaWorld-Expo. The tree was felled in late 2020.
CT1795	3 May 2018	<u>Establishment period</u> 4 May 2018 – May 2019  <u>Long Term Management period</u> Jun 2019 – May 2028	Contract 3801  AsiaWorld-Expo	NA  The tree within the land parcel was acquired by the government for construction of emergency hospital to handle COVID19 pandemic at AsiaWorld-Expo. The tree was felled in late 2020.

**Table 7.7: Photos of the Existing Transplanted Trees**

Under 12-month Establishment Period:		
		
T1493	T1494	T1495
		
T1496	T1497	T1498
		
T1499	T1500	T1501



### 7.3 Land Contamination Assessment

The Supplementary CAP was submitted to EPD pursuant to EP Condition 2.20. The CARs for Golf Course and T2 Emergency Power Supply Systems (EPSS) were submitted to EPD in accordance with EP Condition 1.9 and the Supplementary CAP in which no land contamination issues were identified. EPD has issued no further comment for aforesaid CARs. No leakage was found after the removal of underground fuel pipelines of T2 EPSS and all required additional photos have been submitted to EPD.

According to the approved supplementary CAP, there are 3 remaining locations where site re-appraisal / additional site investigation are proposed. Based on the latest construction information, there is no development programme for these locations at this stage. As such, the status of site re-appraisal/ additional site investigation shall be further updated upon latest development programme is available.

### 7.4 Audit of SkyPier High Speed Ferries

The Marine Travel Routes and Management Plan for High Speed Ferries of SkyPier (the SkyPier Plan) was submitted to the Advisory Council on the Environment for comment and subsequently submitted to and approved by EPD in November 2015 under EP Condition 2.10. The approved SkyPier Plan is available on the dedicated website of the Project. In the SkyPier Plan, AAHK has committed to implement the mitigation measure of requiring HSFs of SkyPier travelling between HKIA and Zhuhai / Macau to start diverting the route with associated speed control across the area, i.e. Speed Control Zone (SCZ), with high CWD abundance. The route diversion and speed restriction at the SCZ have been implemented since 28 December 2015.

Due to the COVID-19 pandemic, all SkyPier HSF services to/from Zhuhai and Macau have been suspended from 25 March 2020 until further notice. No ferry movement between HKIA SkyPier and Zhuhai and Macau was recorded in September 2021. Key audit findings for the SkyPier HSFs travelling to/from Zhuhai and Macau against the requirements of the SkyPier Plan during the reporting period are summarised in **Table 7.8**.

The daily movement of all SkyPier HSFs, including those not using the diverted route, in this reporting period (i.e., 9 to 11 daily movements) were within the maximum daily cap of 125 daily movements. Status of compliance with the annual daily average of 99 movements will be further reviewed in the Annual EM&A Report.

As updated by CLP Power, the construction works of the Hong Kong Offshore LNG Terminal Project may affect the route diversion operation of the SkyPier HSFs from Q3 to Q4 2021. The captains were informed on the issue and ET will continue to closely monitor the implementation of the SkyPier Plan in the period.

**Table 7.8: Summary of Key Audit Findings against the SkyPier Plan**

Requirements in the SkyPier Plan	1 to 30 September 2021
Total number of ferry movements recorded and audited for HSF to/from Zhuhai and Macau	0
Use diverted route and enter / leave SCZ through Gate Access Points	0 deviation
Daily Cap for all SkyPier HSFs including those not using diverted route	9 to 11 daily movement (within the maximum daily cap - 125 daily movements)

## 7.5 Audit of Construction and Associated Vessels

The updated Marine Travel Routes and Management Plan for Construction and Associated Vessel (MTRMP-CAV) was submitted and approved in May 2020 by EPD under EP Condition 2.9. The approved Plan is available on the dedicated website of the Project.

ET carried out the following actions during the reporting period:

- Two skipper training sessions were held for contractors' concerned skippers of relevant construction vessels to familiarize them with the predefined routes; general education on local cetaceans; guidelines for avoiding adverse water quality impact; the required environmental practices / measures while operating construction and associated vessels under the Project; and guidelines for operating vessels safely in the presence of CWDs. The list of all trained skippers was properly recorded and maintained by ET.
- Four skipper training sessions were held by contractors' Environmental Officers. Competency tests were subsequently conducted with the trained skippers by ET. The list of all trained skippers was properly recorded and maintained by ET.
- In this reporting period, 4 skippers were trained by ET and 5 skippers were trained by contractors' Environmental Officers. In total, 1813 skippers were trained from August 2016 to September 2021.
- The MSS automatically recorded deviation cases such as speeding, entering no entry zone and not travelling through the designated gate. ET conducted checking to ensure the MSS records deviation cases accurately.
- Deviations such as speeding in the works area, entered no entry zone, and entering from non-designated gates were identified. All the concerned contractors were reminded to comply with the requirements of the MTRMP-CAV during the bi-weekly Construction Traffic Control Centre (CTCC) audit.
- Three-month rolling programmes (one month record and three months forecast) for construction vessel activities were received from the contractors in order to help maintain the number of construction and associated vessels on site to a practicable minimal level.

## 7.6 Implementation of Dolphin Exclusion Zone

The DEZ Plan was submitted in accordance with EP Condition 3.1 (v) requirement and Section 10.3 of the Manual, and approved in April 2016 by EPD. The 24-hour DEZs with a 250m radius for marine works were established and implemented by the contractors for bored piling and

seawall construction according to their Method Statement for DEZ Monitoring that followed the specifications and requirements of the DEZ Plan.

During the reporting period, ET was notified that no dolphin sightings were recorded within the DEZ by the contractors. The ET checked the dolphin sighting record and relevant records by the contractors to audit the implementation of DEZ.

## 7.7 Status of Submissions under Environmental Permits

The current status of submissions under the EP up to the reporting period is presented in **Table 7.9**.

**Table 7.9: Status of Submissions under Environmental Permit**

EP Condition	Submission	Status
2.1	Complaint Management Plan	
2.4	Management Organizations	
2.5	Construction Works Schedule and Location Plans	
2.7	Marine Park Proposal	
2.8	Marine Ecology Conservation Plan	
2.9	Marine Travel Routes and Management Plan for Construction and Associated Vessels	
2.10	Marine Travel Routes and Management Plan for High Speed Ferries of SkyPier	
2.11	Marine Mammal Watching Plan	
2.12	Coral Translocation Plan	Accepted / approved by EPD
2.13	Fisheries Management Plan	
2.14	Egretty Survey Plan	
2.15	Silt Curtain Deployment Plan	
2.16	Spill Response Plan	
2.17	Detailed Plan on Deep Cement Mixing	
2.18	Landscape & Visual Plan	
2.19	Waste Management Plan	
2.20	Supplementary Contamination Assessment Plan	
3.1	Updated EM&A Manual	
3.4	Baseline Monitoring Reports	

## 7.8 Compliance with Other Statutory Environmental Requirements

During the reporting period, environmental related licenses and permits required for the construction activities were checked. No non-compliance with environmental statutory requirements was recorded. The environmental licenses and permits which are valid in the reporting period are presented in **Appendix F**.

## 7.9 Analysis and Interpretation of Complaints, Notification of Summons and Status of Prosecutions

### 7.9.1 Complaints

#### **Complaint received in July 2021**

As reported in the previous Monthly EM&A Report, a complaint regarding dust issue at 3RS construction site was received on 13 July 2021.

The case was investigated by ET in accordance with the Manual and the Complaint Management Plan of the Project. From the photo provided by the complainant, ET recognised the concerned location, identified a related contractor and requested them to provide information regarding the complaint. Based on the information provided by the contractor, lifting and concreting works were carried out at the concerned location during the concerned period in which watering of vehicular accesses, following the circuits as set out in contractor's dust control management plan, had been arranged. The contractor also provided water spraying record for their fleet of working watering trucks from 1 to 14 July 2021. Based on ET's weekly site inspections, dust generation from the vehicular movement was observed on 6 July 2021, and the related contractor subsequently followed up issue by implementing water spraying on the concerned location. Haul road was appeared slightly dry even though water spraying was observed in progress during the weekly site inspection on 13 July 2021 and the related contractor was advised to provide adequate dust suppression measures to keep haul road in a damp condition. The contractor committed to enhance their fleet by adding one more water truck and stated that they would provide refresher training for their water truck drivers to refresh them on the arrangement of water spraying on haul road and stockpiles. Eventually, ET observed the related contractor was conducting water spraying in concerned location during the weekly site inspection on 22 July 2021 and no dust issue was observed at the concerned location during *ad-hoc* inspections on 10 and 16 July 2021. The dust mitigation performance was also improved after the enhancement during weekly site inspections on 3, 9 and 17 August 2021. It was worth noting that Hong Kong Observatory recorded a maximum of 35.1°C on 13 July 2021 in which the hot and sunny conditions might increase the evaporation rate of water that was sprayed, leading to haul road and stockpiles drying up quickly. Nevertheless, all air quality monitoring results from 1 to 14 July 2021 were within the corresponding Action and Limit Levels. ET reminded the related contractor to continue implementing their environmental mitigation measures regarding dust control on their haul road and stockpiles especially on sunny days. Hence, the complaint case was considered closed.

#### **Complaint received in this reporting period**

No construction activities-related complaint was received during the reporting period.

#### **7.9.2 Notifications of Summons or Status of Prosecution**

Neither notification of summons nor prosecution was received during the reporting period.

#### **7.9.3 Cumulative Statistics**

Cumulative statistics on complaints, notifications of summons and status of prosecutions are summarised in **Appendix G**.

## 8 Future Key Issues and Other EIA & EM&A Issues

### 8.1 Construction Programme for the Coming Reporting Period

Key activities anticipated in the next reporting period for the Project will include the following:

#### **Reclamation Works:**

##### **Contract 3206 Main Reclamation Works**

- Land-based ground improvement works; and
- Seawall construction.

#### **Airfield Works:**

##### **Contract 3301 North Runway Crossover Taxiway**

- Cable ducting works; and
- Paving works.

##### **Contract 3302 Eastern Vehicular Tunnel Advance Works**

- Piling and structure works;
- Ducting works; and
- Backfilling and reinstatement works.

##### **Contract 3303 Third Runway and Associated Works**

- Footing and utilities work;
- Piling work;
- Construction of approach light;
- Operation of asphalt plant; and
- Cable laying and ducting works.

##### **Contract 3305 Airfield Ground Lighting System**

- Genset installation; and
- Site establishment.

##### **Contract 3307 Fire Training Facility**

- Architectural, Builder's and Finishing works;
- Drainage and utilities works; and
- Building construction.

##### **Contract 3308 Foreign Object Debris Detection System**

- Site formation.

##### **Contract 3310 North Runway Modification Works**

- Ground improvement works.

**Third Runway Concourse:****Contract 3403 New Integrated Airport Centres Building and Civil Works**

- Architectural, Builder's Work and Finishing works;
- Footing works; and
- Underground utilities construction.

**Contract 3405 Third Runway Concourse Foundation and Substructure Works**

- Foundation works;
- Piling work;
- Excavation and backfilling; and
- Road formation.

**Contract 3408 Third Runway Concourse and Apron Works**

- Site setup works; and
- Excavation and lateral support works.

**Terminal 2 Expansion:****Contract 3503 Terminal 2 Foundation and Substructure Works**

- T2 re-configuration;
- Excavation works;
- Utilities and road works; and
- Piling and structure works.

**Contract 3508 Terminal 2 Expansion Works**

- Excavation and footing construction;
- Site formation;
- Drainage works;
- Piling work; and
- Builders' works.

**Automated People Mover (APM) and Baggage Handling System (BHS):****Contract 3601 New Automated People Mover System (TRC Line)**

- Pull out test for guideway;
- Guidebeam installation; and
- Concreting work.

**Contract 3602 Existing APM System Modification Works**

- Car modification;
- Formwork erection and;
- Concreting work.

**Contract 3603 Baggage Handling System (BHS)**

- BHS installation; and
- Dismantling works.

**Construction Support (Facilities):****Contract 3721 Construction Support Infrastructure Works**

- Laying of drainage pipes and ducts;
- Site clearance;

- Paving works; and
- Road works.

#### **Contract 3722 Construction Support Facilities**

- Clearance works

#### **Contract 3723 Construction Support Facilities**

- Erection of site office;
- Electrical and mechanical installation; and
- Sewage pump and treatment system installation

#### **Airport Support Infrastructure:**

#### **Contract 3801 APM and BHS Tunnels on Existing Airport Island**

- Excavation and backfilling; and
- Casting.

#### **Contract 3802 APM and BHS Tunnels and Related Works**

- Construction of Airside Fire Station and marine sediment treatment plant;
- Installation of sheet piles and dewatering well;
- Pre-drilling;
- Ground investigation works; and
- Ducting works.

#### **Construction Support (Services / Licenses):**

#### **Contract 3901A Concrete Batching Facility**

- Operation of concrete batching plant; and
- Material conveyor belt construction.

#### **Contract 3901B Concrete Batching Facility**

- Operation of concrete batching plant; and
- Foundation and superstructure works for conveyor belt.

## **8.2 Key Environmental Issues for the Coming Reporting Period**

The key environmental issues for the Project in the coming reporting period expected to be associated with the construction activities include:

- Generation of dust from construction works and stockpiles;
- Noise from operating equipment and machinery on-site;
- Generation of site surface runoffs and wastewater from activities on-site;
- Water quality from marine filling;
- DEZ monitoring for seawall construction and bored piling for approach lights;
- Implementation of MMWP for silt curtain deployment;
- Sorting, recycling, storage and disposal of general refuse and construction waste;
- Reuse of treated marine sediments from piling and excavation works;
- Management of chemicals and avoidance of oil spillage on-site; and
- Acoustic decoupling measures for equipment on marine vessels.

The implementation of required mitigation measures by the contractors will be monitored by the ET.

### 8.3 Monitoring Schedule for the Coming Reporting Period

A tentative schedule of the planned environmental monitoring work in the next reporting period is provided in **Appendix C**.

### 8.4 Review of the Key Assumptions Adopted in the EIA Report

With reference to Appendix E of the Manual, it is noted that the key assumptions adopted in approved EIA report for the construction phase are still valid and no major changes are involved. The environmental mitigation measures recommended in the approved EIA Report remain applicable and shall be implemented in undertaking construction works for the Project.

## 9 Conclusion and Recommendation

The key activities of the Project carried out in the reporting period included reclamation works and land-based works. Works in the reclamation areas included marine filling, seawall and facilities construction, together with runway and associated works such as bored piling for approach lights. Land-based works on existing airport island involved mainly airfield works, foundation and substructure works for Terminal 2 expansion, modification and tunnel work for APM and BHS systems, and preparation work for utilities, with activities include site establishment, site office construction, road and drainage works, cable ducting, demolition of existing facilities, piling, and excavation works.

All the monitoring works for construction dust, construction noise, water quality, construction waste, landscape & visual, and CWD were conducted during the reporting period in accordance with the Manual.

Monitoring results of construction dust, construction noise, construction waste, and CWD did not trigger the corresponding Action and Limit Levels during the reporting period.

The water quality monitoring results for all parameters, except DO and SS, obtained during the reporting period were within the corresponding Action and Limit Levels stipulated in the EM&A programme. Relevant investigation and follow-up actions will be conducted according to the EM&A programme if the corresponding Action and Limit Levels are triggered. For DO and SS, some of the testing results triggered the relevant Action or Limit Levels, and the corresponding investigations were conducted accordingly. The investigation findings concluded that the cases were not related to the Project. To conclude, the construction activities in the reporting period did not introduce adverse impact to all water quality sensitive receivers.

Weekly site inspections of the construction works were carried out by the ET to audit the implementation of proper environmental pollution control and mitigation measures for the Project. Bi-weekly site inspections were also conducted by the IEC. Site inspection findings were recorded in the site inspection checklists and provided to the contractors to follow up.

On the implementation of the SkyPier Plan, due to the COVID-19 pandemic, all SkyPier HSF services to/from Zhuhai and Macau have been suspended from 25 March 2020 until further notice. No HSF movement between HKIA SkyPier and Zhuhai and Macau was recorded during the reporting period. Therefore, no deviation was recorded in the HSF monitoring in the reporting period. The daily movements of all SkyPier HSFs in the reporting period, including those not using the diverted route, were in the range of 9 to 11 daily movements, which are within the maximum daily cap of 125 daily movements.

On the implementation of MTRMP-CAV, the MSS automatically recorded the deviation case such as speeding, entering no entry zone and not travelling through the designated gates. ET conducted checking to ensure the MSS records all deviation cases accurately. Trainings have been provided for the concerned skippers to facilitate them in familiarising with the requirements of the MTRMP-CAV. Deviations including speeding in the works area, entered no entry zone, and entry from non-designated gates were reviewed by ET. All the concerned captains were reminded by the contractor's CTCC representative to comply with the requirements of the MTRMP-CAV. The ET reminded contractors that all vessels shall avoid entering the no-entry zone, in particular the Brothers Marine Park and the Sha Chau & Lung Kwu Chau Marine Park. Three-month rolling

programmes for construction vessel activities, which ensures the proposed vessels are necessary and minimal through good planning, were also received from contractors.

# Figures

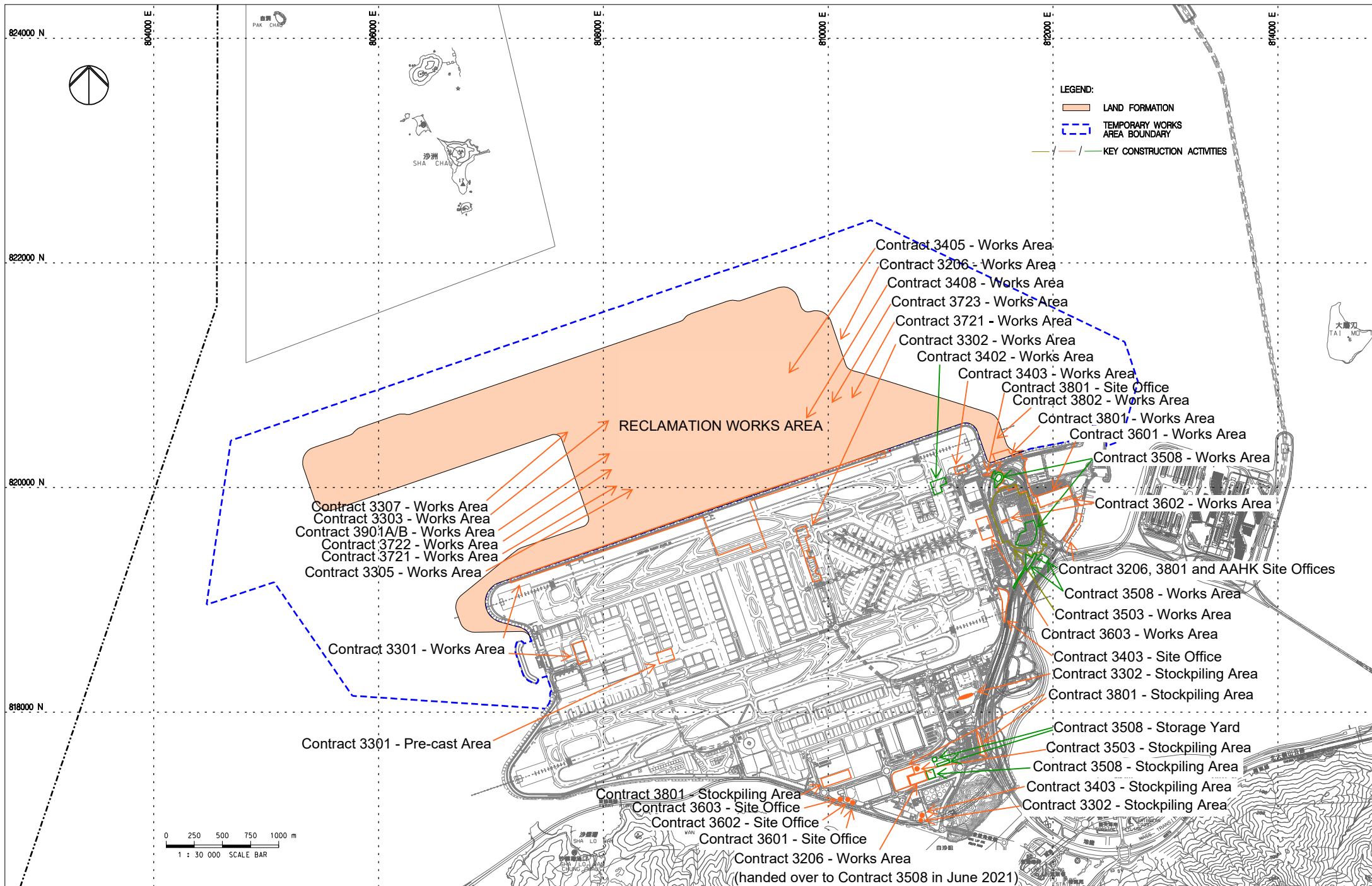


FIGURE 1.1 LOCATIONS OF KEY CONSTRUCTION ACTIVITIES

Note: The locations are for indicative purpose. The actual construction work locations are in accordance with the construction work programme.



80000 E

80000 E

81000 E

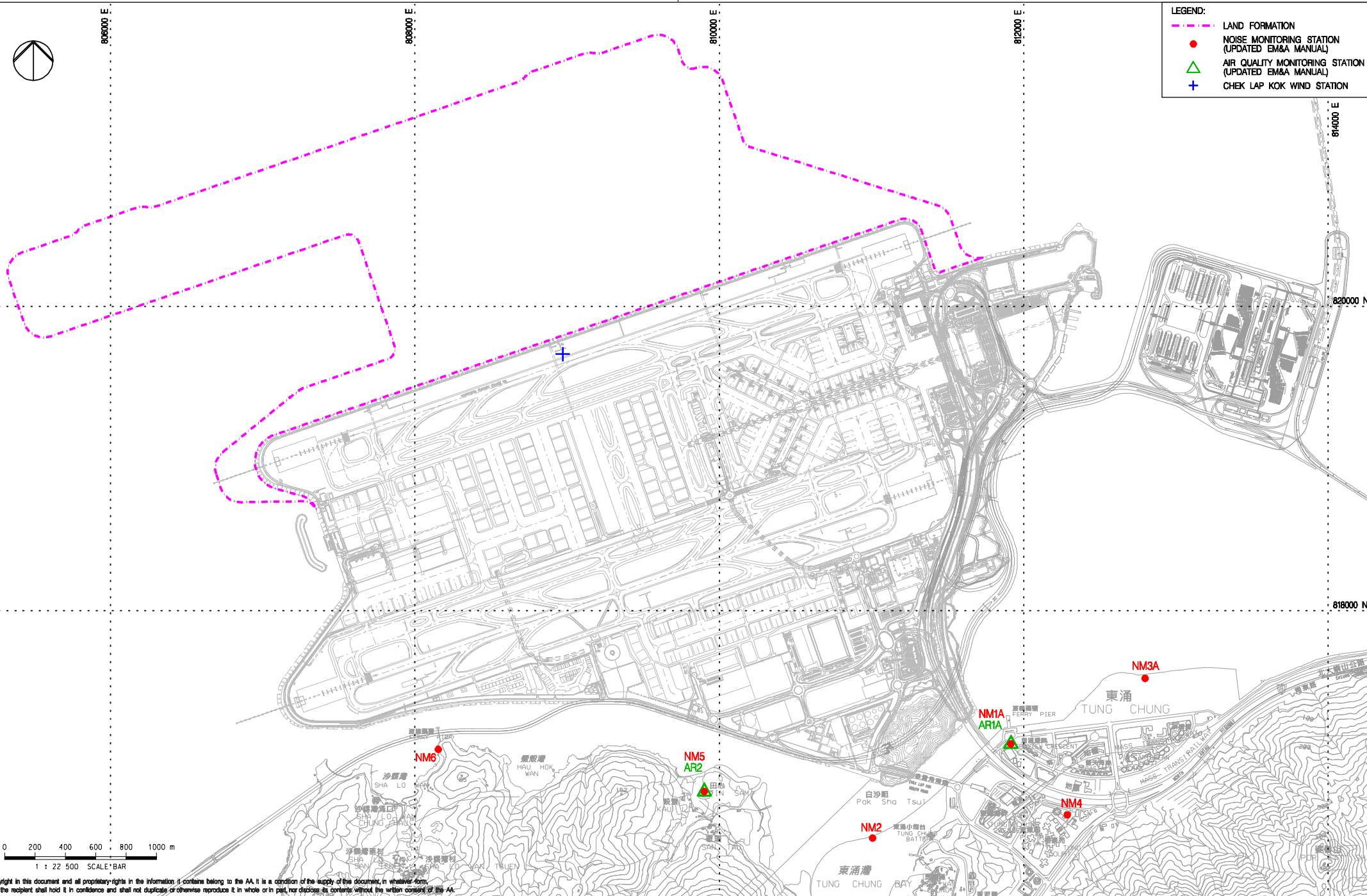
82000 E

84000 E

82000 N

81800 N

- LEGEND:
- LAND FORMATION
  - NOISE MONITORING STATION (UPDATED EM&A MANUAL)
  - AIR QUALITY MONITORING STATION (UPDATED EM&A MANUAL)
  - CHEK LAP KOK WIND STATION



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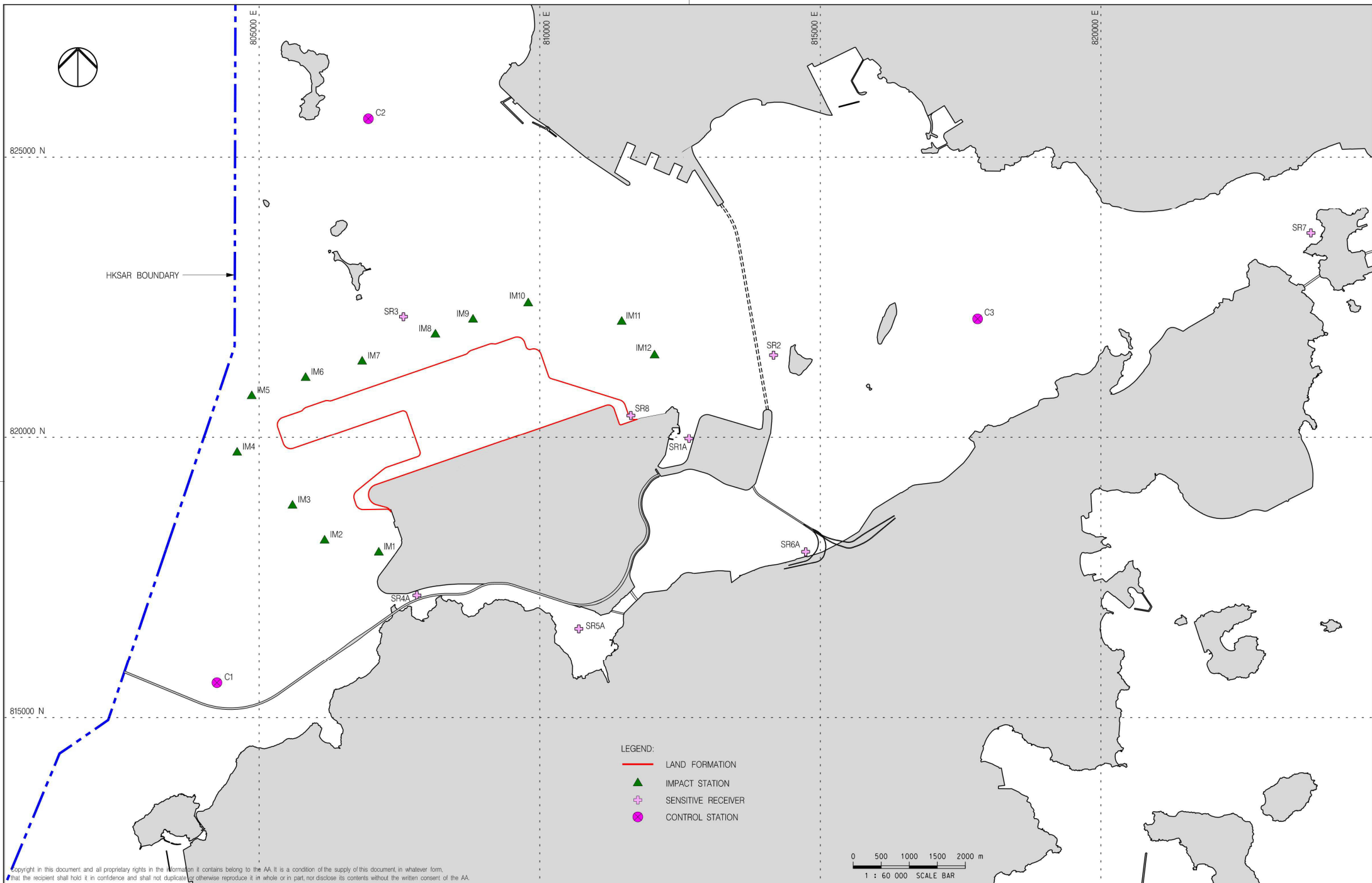
Rev.	Date	Description	Checked
A	06JAN16	FIRST ISSUE	RO
B	29JAN16	GENERAL REVISION	RO
C	11FEB16	GENERAL REVISION	RO
D	29OCT18	GENERAL REVISION	SH



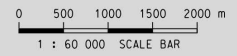
Title  
LOCATIONS OF AIR AND NOISE MONITORING STATIONS AND CHEK LAP KOK WIND STATION

Consultant's Signatures for Approval		Date
Design	TK	29OCT18
Checkers	TK	29OCT18
Approver	EC	29OCT18

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM		Scale at A3
Drawing No.		1 : 22500
FIGURE 2.1		Rev. D



- LEGEND:
- LAND FORMATION
  - ▲ IMPACT STATION
  - + SENSITIVE RECEIVER
  - CONTROL STATION



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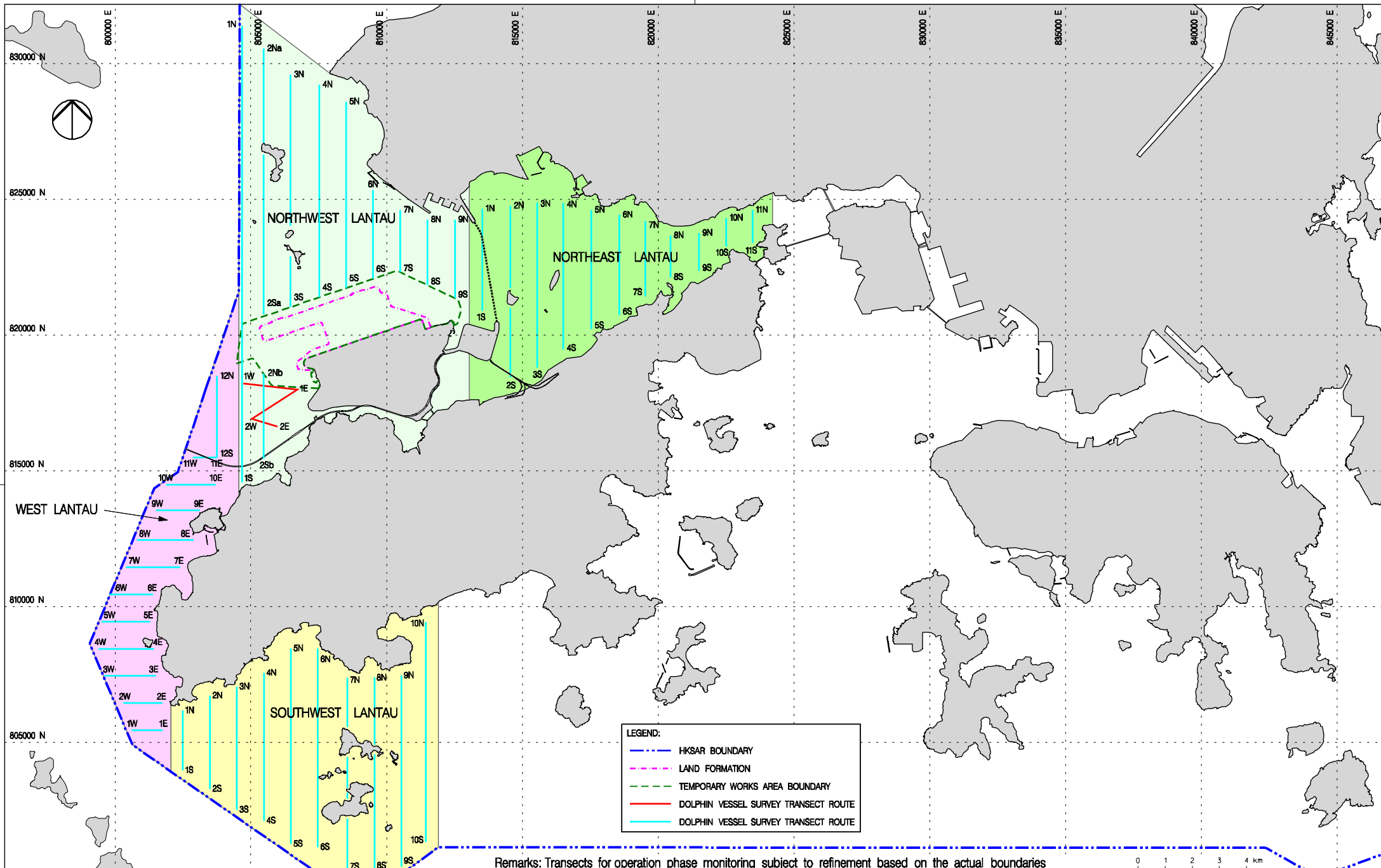
Rev.	Date	Description	Checked
A	21AUG19	FIRST ISSUE	VL



Title  
**WATER QUALITY MONITORING STATIONS**

Consultant's Signatures for Approval		Date
Design	DC	21AUG19
Checkers	DC / TK	21AUG19
Approver	EC	21AUG19

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM	
Drawing No.	Scale at A3 1 : 60000
<b>FIGURE 4.1</b>	Rev. A



Remarks: Transects for operation phase monitoring subject to refinement based on the actual boundaries for the extension of Hong Kong International Airport Approach Areas (HKIAAA) and 3RS Marine Park

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Rev.	Date	Description	Checked
B	27JUL16	GENERAL REVISION	JT
C	08FEB17	GENERAL REVISION	JT
D	01MAR17	GENERAL REVISION	JT
E	29OCT18	GENERAL REVISION	SH
F	04APR19	GENERAL REVISION	SH

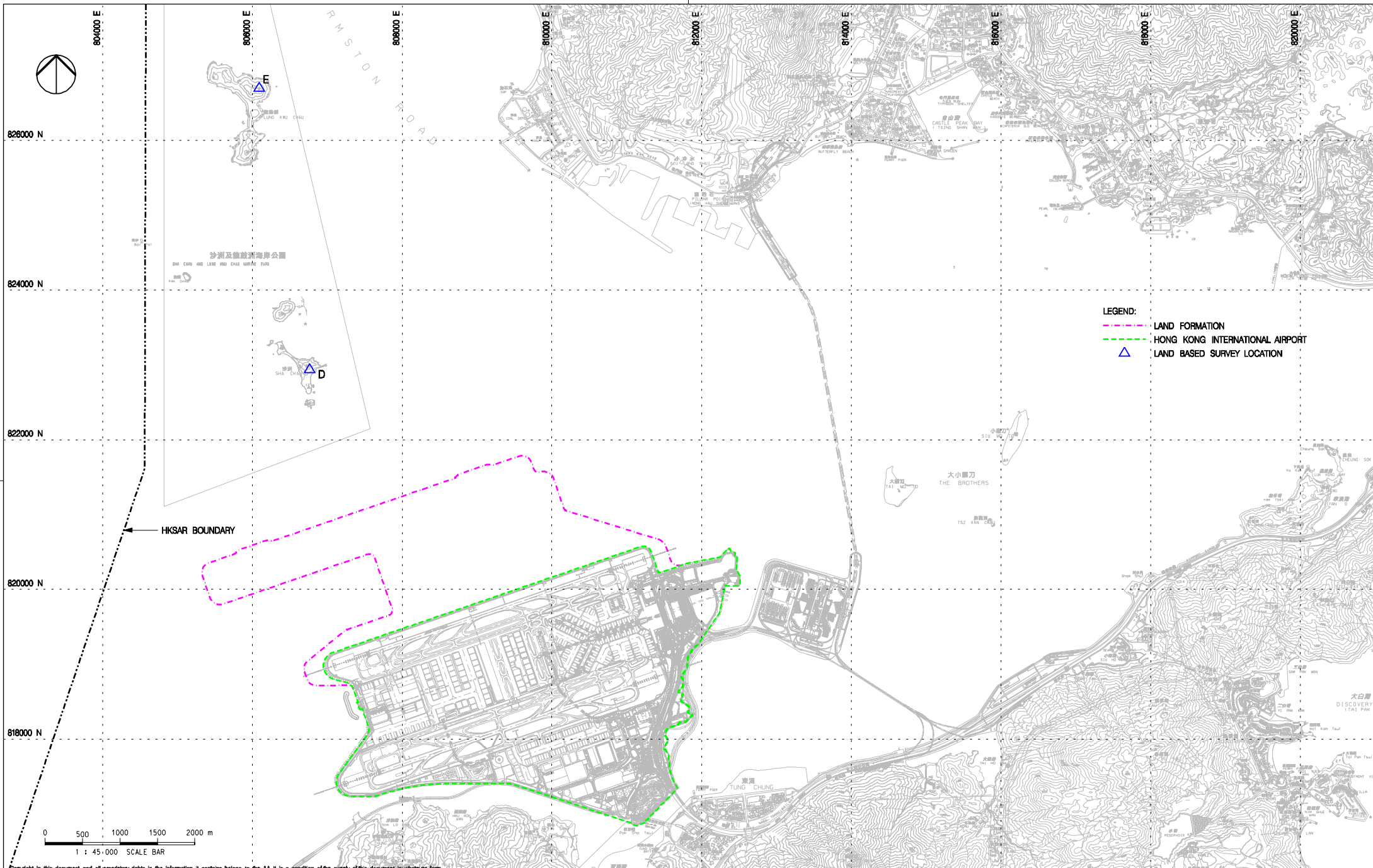


Title  
VESSEL BASED DOLPHIN MONITORING  
TRANSECTS IN CONSTRUCTION,  
POST-CONSTRUCTION AND OPERATION PHASES

Consultant's Signatures for Approval		Date
Design	JC	04APR19
Checkers	JC / TK	04APR19
Approver	EC	04APR19

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM	
Drawing No.	Scale at A3 1 : 125000
Rev.	F

FIGURE 6.1



- LEGEND:**
- - - LAND FORMATION
  - - - HONG KONG INTERNATIONAL AIRPORT
  - ▲ LAND BASED SURVEY LOCATION

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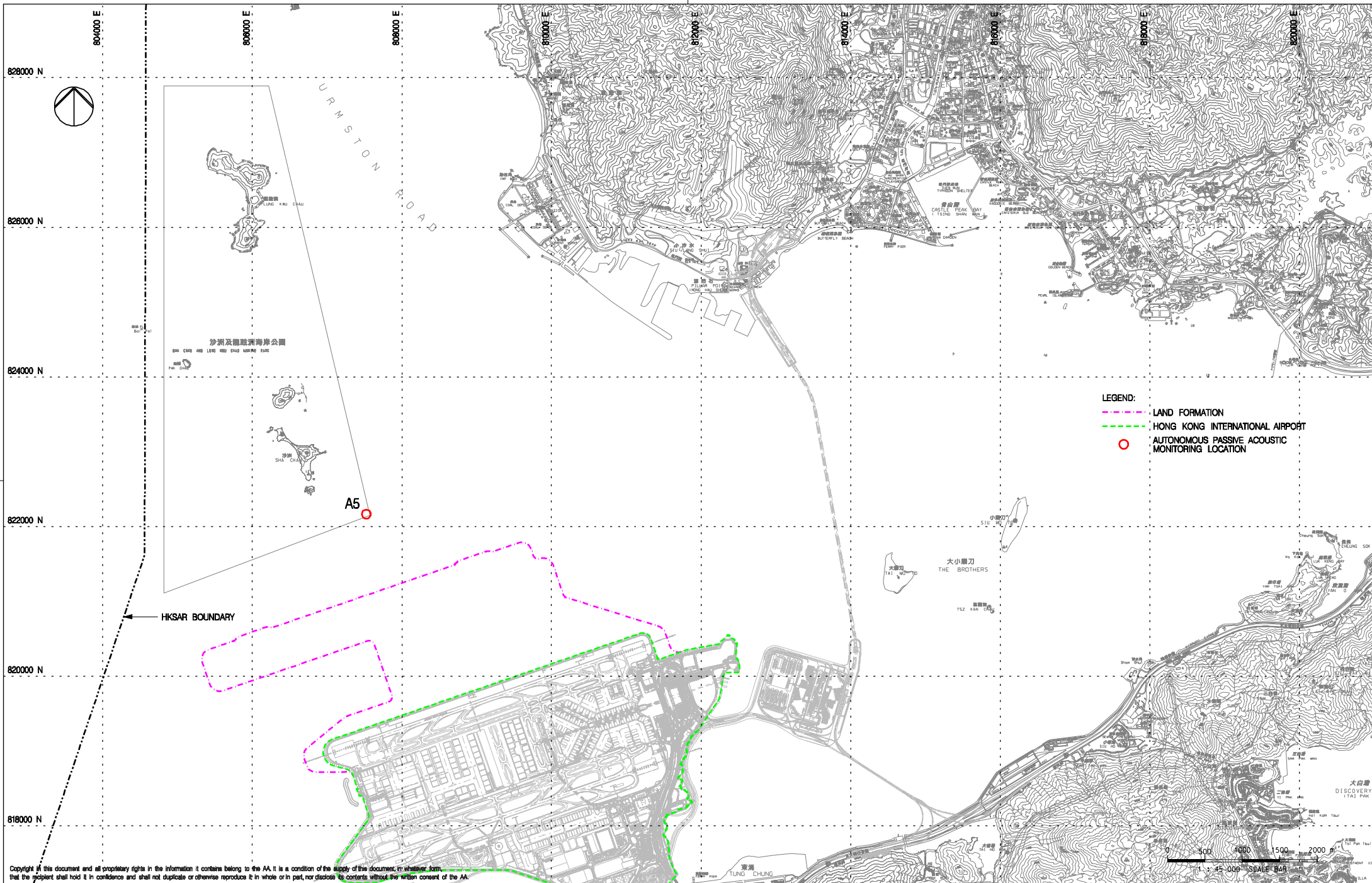
Rev.	Date	Description	Checked
A	02DEC15	FIRST ISSUE	JC
B	06FEB17	GENERAL REVISION	JC
C	29OCT18	GENERAL REVISION	SH



**Title**  
**LAND BASED DOLPHIN MONITORING  
 IN BASELINE AND CONSTRUCTION PHASES**

Consultant's Signatures for Approval		Date
Design	JC	29OCT18
Checkers	JC / TK	29OCT18
Approver	EC	29OCT18

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM	
Drawing No.	FIGURE 6.2
Scale at A3	1 : 45000
Rev.	C



- LEGEND:**
- - - LAND FORMATION
  - - - HONG KONG INTERNATIONAL AIRPORT
  - AUTONOMOUS PASSIVE ACOUSTIC MONITORING LOCATION

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Rev.	Date	Description	Checked
A	29AUG17	FIRST ISSUE	JT
B	10OCT17	GENERAL REVISION	PL
C	29OCT18	GENERAL REVISION	SH



Title  
**LOCATION FOR AUTONOMOUS PASSIVE ACOUSTIC MONITORING**

Consultant's Signatures for Approval		Date
Design	JC	29OCT18
Checkers	JC / TK	29OCT18
Approver	EC	29OCT18

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM	
Drawing No.	<b>FIGURE 6.5</b>
Scale at A3	1:45000
Rev.	C

# Appendix A. Contract Description

## Contract Description

Contract No.	Contract Title	Contractor	Key Construction Activities
3206	Reclamation Contract	Zhen Hua Engineering Company Ltd.-China Communications Construction Company Ltd.-CCCC Dredging (Group) Company Ltd. Joint Venture	<p>The works covered by the Contract 3206 comprise the formation of approximately 650 hectares of land north of the existing airport island for the project, the major construction activities including without limitation the following</p> <ul style="list-style-type: none"> <li>• Geotechnical and ground improvement works;</li> <li>• Seawall construction;</li> <li>• Marine and land filling works; and</li> <li>• Civil works.</li> </ul>
3301	North Runway Crossover Taxiway	Fujita Corporation-China Harbour Engineering Company Ltd.-Zhen Hua Engineering Company Ltd. Joint Venture	<p>The works covered by the Contract 3301 comprise the construction of a new dual taxiway across the existing north runway and utility services and cable ducting systems. The major construction activities include without limitation the following:</p> <ul style="list-style-type: none"> <li>• Construction of a new dual taxiway;</li> <li>• Cable ducting works;</li> <li>• Extension of existing portable water supply system; and</li> <li>• All associated works.</li> </ul>
3302	Eastern Vehicular Tunnel Advance Works	China Road and Bridge Corporation	<p>The works covered by the Contract 3302 comprise the design and construction of the first section of the new Eastern Vehicular Tunnel and a Road Tunnel Plant Building. The major construction activities include without limitation the following:</p> <ul style="list-style-type: none"> <li>• Foundation and structural works;</li> <li>• Cast-in / Underground electrical &amp; mechanical works and utility services; and</li> <li>• All associated testing and commissioning works.</li> </ul>
3303	Third Runway and Associated Works	Sinohydro Corporation Limited, Powerchina Airport Construction Company Limited, Paul Y. Construction Company Limited, and Rock-One	<p>The works covered by the Contract 3303 comprise all elements of permanent works and temporary works required for the completion, commissioning and operation of the new North Runway and existing South Runway following the closure of the existing North Runway. The major construction activities include without limitation the following:</p> <ul style="list-style-type: none"> <li>• New runway, taxiways, and associated works;</li> </ul>

<b>Contract No.</b>	<b>Contract Title</b>	<b>Contractor</b>	<b>Key Construction Activities</b>
		Engineering Company Limited Joint Venture	<ul style="list-style-type: none"> <li>• Infrastructure works;</li> <li>• Construction of ancillary buildings and facilities;</li> <li>• Set up of various airport systems; and</li> <li>• All associated testing and commissioning works.</li> </ul>
3305	Airfield Ground Lighting System	ADB Safegate Hong Kong Limited	<p>The works covered by the Contract 3305 comprise the design, manufacture, installation and handover of the Airfield Ground Lighting (AGL) System. The major construction activities include without limitation the following:</p> <ul style="list-style-type: none"> <li>• Light fittings works;</li> <li>• Power Supply System installation;</li> <li>• Fibre optic cables and data cables supply and connection;</li> <li>• Set up Control and Communication system;</li> <li>• All associated testing and commissioning works.</li> </ul>
3307	Fire Training Facility	Paul Y. Construction Company Limited	<p>The works covered by the Contract 3307 comprise the construction of a Fire Training Facility on the new reclamation area to replace the existing facility at the Airport Island. The major construction activities include without limitation the following:</p> <ul style="list-style-type: none"> <li>• Building services works;</li> <li>• Civil works; and</li> <li>• All associated testing and temporary works.</li> </ul>
3308	Foreign Object Debris Detection System	DAS Aviation Services Group	<p>The works cover by the Contract 3308 comprise the entire expanded Foreign Object Debris (FOD) detection system required for the operation of new Three-Runway System at Hong Kong International Airport. The major construction activities include without limitation the following:</p> <ul style="list-style-type: none"> <li>• Excavation works;</li> <li>• Construction of FOD sensor towers;</li> <li>• Set up FOD detection system;</li> <li>• Civil and structural works; and</li> <li>• All associated electrical and mechanical works.</li> </ul>
3310	North Runway Modification Works	China State Construction Engineering (Hong Kong) Ltd. - Fujita Corporation Joint Venture	<p>The works cover by the Contract 3310 comprise the modification of north runway and the connections of taxiways to the modified north runway on existing airport island. The major construction activities include without limitation the following:</p> <ul style="list-style-type: none"> <li>• Modification works for existing north runway;</li> </ul>

Contract No.	Contract Title	Contractor	Key Construction Activities
			<ul style="list-style-type: none"> <li>• Connections works for new taxiways;</li> <li>• Construction of ancillary buildings/ facilities;</li> <li>• Building services and airport systems;</li> <li>• Infrastructure Works;</li> <li>• Underground utilities and services; and</li> <li>• All associated asphalt pavement work and earthwork.</li> </ul>
3402	New Integrated Airport Centers Enabling Works	Wing Hing Construction Co., Ltd.	<p>The works covered by the Contract 3402 comprise the enabling works for the new Integrated Airport Centers. The major construction activities include without limitation the following:</p> <ul style="list-style-type: none"> <li>• Site clearance and demolition;</li> <li>• Building services works;</li> <li>• Utilities diversion and installation works;</li> <li>• Roadworks including associated facilities; and</li> <li>• All associated testing and commissioning works.</li> </ul>
3403	New Integrated Airport Centres – Building and Civil Works	Sun Fook Kong Construction Limited	<p>The works covered by the Contract 3403 comprise the construction of a new Integrated Airport Centre (IAC) and a number of ancillary facilities and Additions and Alteration (A&amp;A) works for converting the existing IAC into a back-up IAC, including without limitation the following:</p> <ul style="list-style-type: none"> <li>• Site clearance and demolition;</li> <li>• Building structure and envelope;</li> <li>• Building Services and Airport Systems; and</li> <li>• Utilities division and installations.</li> </ul>
3405	Third Runway Concourse Foundation and Substructure Works	China Road and Bridge Corporation - Bachy Soletanche Group Limited - LT Sambo Co., Ltd. Joint Venture	<p>The works covered by the Contract 3405 comprise without limitation the following:</p> <ul style="list-style-type: none"> <li>• Piled foundation works;</li> <li>• Basement and tunnel structure works;</li> <li>• Associated internal reinforced concrete structures;</li> <li>• Backfilling and compaction of works area; and</li> <li>• Associated testing and temporary works.</li> </ul>

<b>Contract No.</b>	<b>Contract Title</b>	<b>Contractor</b>	<b>Key Construction Activities</b>
3408	Third Runway Concourse and Apron Works	Beijing Urban Construction Group Company Limited and Chevalier (Construction) Company Limited Joint Venture	The works covered by the Contract 3408 comprise the design and construction of the Third Runway Concourse (TRC), the TRC Apron, two cross-field taxiways, Ancillary Buildings, specific section of the Eastern Vehicular Tunnel (EVT), and the associated infrastructure, testing, and commissioning works.
3503	Terminal 2 Foundation and Substructure Works	Leighton - Chun Wo Joint Venture	<p>The works covered by the Contract 3503 comprise the foundations for the new T2 terminal, two annex buildings and associated viaducts, construction of the new T2 basement and south annex building structures, diaphragm walls, utility services and other advance works.</p> <p>The major construction activities include without limitation the following:</p> <ul style="list-style-type: none"> <li>• Re-configuration and demolition of existing utilities and structures;</li> <li>• Pile foundations for the expanded T2 Terminal Building, South Annex Building, and North Annex Building;</li> <li>• Construction of new South Annex Building;</li> <li>• Diversion and provisions of utilities; and</li> <li>• All associated testing and commissioning works.</li> </ul>
3508	Terminal 2 Expansion Works	Gammon Engineering and Construction Co., Ltd	<p>The works covered by the Contract 3508 comprise the construction of T2, North Annex Building (NAB) and South Annex Building (SAB) with interconnecting bridges, landside transport infrastructure including viaducts and at grade roads, underground utility services, one sewage pumping station with the associated electrical building, footbridges, external works and modification works to existing facilities. The major construction activities include without limitation the following:</p> <ul style="list-style-type: none"> <li>• Superstructure, interior landscaping, building services and airport system of T2, NAB, SAB and associated footbridges;</li> <li>• Additions and Alteration (A&amp;A) works of the existing Airport World Trade Centre (AWTC);</li> <li>• Modification of the existing APM and BHS tunnels;</li> <li>• External works and road networks around T2; and</li> <li>• Utilities.</li> </ul>

<b>Contract No.</b>	<b>Contract Title</b>	<b>Contractor</b>	<b>Key Construction Activities</b>
3601	New Automated People Mover System (TRC Line)	CRRC Puzhen Bombardier Transportation Systems Limited and CRRC Nanjing Puzhen Co., Ltd. Joint Venture	<p>The works covered by the Contract 3601 comprise the initial phase of the Automated People Mover (APM) system connecting the Third Runway Concourse (TRC) and the APM Interchange Station in the modified T2, and extension of the new APM system into the new APM Depot east of T2.</p> <p>The major construction activities include without limitation the following:</p> <ul style="list-style-type: none"> <li>• New 3-guideway APM system between TRC and T2;</li> <li>• Extension of the TRC Line into the new APM Depot;</li> <li>• APM associated sub-systems (communications, signalling, etc.)</li> <li>• Associated civil works; and</li> <li>• All associated testing, commissioning works.</li> </ul>
3602	Existing APM System Modification Works	Niigata Transys Co., Ltd.	<p>The works covered by the Contract 3602 comprise the detailed design, supply, manufacture, fabrication, implementation, testing and commissioning of the following modification works of the existing APM systems:</p> <ul style="list-style-type: none"> <li>• Modification of existing APM depot and APM cars;</li> <li>• Modification of existing T1 &amp; T2 tunnels; and</li> <li>• Preparation of new APM depot.</li> </ul>
3603	3RS Baggage Handling System	Vanderlande Industries Hong Kong Limited and Shun Hing Systems Integration Company Limited	<p>The works covered by the Contract 3603 comprise the design, supply, manufacture, delivery, installation, testing and commissioning of the high-speed baggage handling system.</p>
3721	Construction Support Infrastructure Works	China State Construction Engineering (Hong Kong) Limited	<p>The works covered by the Contract 3721 comprise the construction of the infrastructure works and building facilities on the reclaimed land formation.</p> <p>The major construction activities include without limitation the following:</p> <ul style="list-style-type: none"> <li>• Project site road;</li> <li>• Utilities;</li> <li>• Cargo loading quays; and</li> <li>• Security fencing and hoarding.</li> </ul>
3722	Western Support Area – Construction	Tapbo Construction Company Limited and Konwo Modular House Limited Joint Venture	<p>The works covered by the Contract 3722 comprise the design and construction of support facilities, including site office, Canteen, Safety Induction Centre and Medical Centre, Material Testing Laboratories and Typhoon Shelter, Vehicle Maintenance Facility and Fuel Storage Facility.</p>

<b>Contract No.</b>	<b>Contract Title</b>	<b>Contractor</b>	<b>Key Construction Activities</b>
	Support Facilities		<p>The major construction activities include without limitation the following:</p> <ul style="list-style-type: none"> <li>• Construction of support facilities;</li> <li>• Foundation and structural works; and</li> <li>• Building services works.</li> </ul>
3723	Eastern Support Area – Construction Support Facilities	Tapbo Construction Company Limited and Konwo Modular House Ltd. Joint Venture	<p>The works covered by the Contract 3723 comprise the design and construction of support facilities, including site office, sewage treatment facility, canteen, and centralised power supply building. The major construction activities include without limitation the following:</p> <ul style="list-style-type: none"> <li>• Construction of support facilities;</li> <li>• Foundation, structural and superstructure works;</li> <li>• Sewage pipe network and connection works; and</li> <li>• Building services works.</li> </ul>
3728	Minor Site Works	Shun Yuen Construction Company Limited	<p>The works to be executed by the Contract 3728 comprise minor works within the Airside and Landside areas of the existing airport island to support the Project.</p>
3801	APM and BHS Tunnels on Existing Airport Island	China State Construction Engineering (Hong Kong) Limited	<p>The works covered by the Contract 3801 comprise the construction of the APM and Baggage Handling System (BHS) tunnels on existing airport island. The major construction activities include without limitation the following:</p> <ul style="list-style-type: none"> <li>• Construction of APM and BHS tunnels;</li> <li>• Construction of ventilation building and associated infrastructure; and</li> <li>• Construction, testing and commissioning of sewerage pumping station; and</li> <li>• Civil and structural engineering works.</li> </ul>
3802	APM and BHS Tunnels and Related Works	Gammon Construction Limited	<p>The works covered by the Contract 3802 comprise the construction of the APM and BHS tunnels on existing airport island. The major construction activities include without limitation the following:</p> <ul style="list-style-type: none"> <li>• Construction of APM/ BHS Tunnels;</li> <li>• Construction of ancillary buildings/ facilities;</li> <li>• Building services and airport systems;</li> <li>• Infrastructure Works;</li> <li>• Underground utilities and services; and</li> <li>• All associated testing and commissioning works.</li> </ul>

Contract No.	Contract Title	Contractor	Key Construction Activities
3901A	Concrete Batching Facility	K. Wah Concrete Company Limited	<p>The works covered by the Contract 3901A comprise the establishment, operation and maintenance of a concrete batching facility at the Project Site and the supply of concrete products. The major construction activities include without limitation the following:</p> <ul style="list-style-type: none"> <li>• Supply of all equipment for the installation of the Facility to the Site; and</li> <li>• Supply of all raw materials required for the production of ready mixed concrete products and the continual operation of the Facility.</li> </ul>
3901B	Concrete Batching Facility	Gammon Construction Limited	<p>The works covered by the Contract 3901B comprise the establishment, operation and maintenance of a concrete batching facility at the Project Site and the supply of concrete products. The major construction activities include without limitation the following:</p> <ul style="list-style-type: none"> <li>• Supply of all equipment for the installation of the Facility to the Site; and</li> <li>• Supply of all raw materials required for the production of ready mixed concrete products and the continual operation of the Facility.</li> </ul>

# **Appendix B. Environmental Mitigation Implementation Schedule (EMIS) for Construction Phase**

# Environmental Mitigation Implementation Schedule (EMIS) for Construction Phase

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
<b>Air Quality Impact – Construction Phase</b>					
5.2.6.2	2.1	-	<b>Dust Control Measures</b> <ul style="list-style-type: none"> <li>Water spraying for 12 times a day or once every two hours for 24-hour working at all active works area.</li> </ul>	Within construction site / Duration of the construction phase	I
5.2.6.3	2.1	-	<ul style="list-style-type: none"> <li>Covering of at least 80% of the stockpiling area by impervious sheets. Water spraying of all dusty materials immediately prior to any loading transfer operation so as to keep the dusty material wet during material handling.</li> </ul>	Within construction site / Duration of the construction phase	I
5.2.6.4	2.1	-	Dust control practices as stipulated in the Air Pollution Control (Construction Dust) Regulation should be adopted. These practices include: Good Site Management <ul style="list-style-type: none"> <li>Good site management is important to help reducing potential air quality impact down to an acceptable level. As a general guide, the Contractor should maintain high standard of housekeeping to prevent emission of fugitive dust. Loading, unloading, handling and storage of raw materials, wastes or by-products should be carried out in a manner so as to minimise the release of visible dust emission. Any piles of materials accumulated on or around the work areas should be cleaned up regularly. Cleaning, repair and maintenance of all plant facilities within the work areas should be carried out in a manner minimising generation of fugitive dust emissions. The material should be handled properly to prevent fugitive dust emission before cleaning.</li> </ul>	Within construction site / Duration of the construction phase	I
			Disturbed Parts of the Roads <ul style="list-style-type: none"> <li>Each and every main temporary access should be paved with concrete, bituminous hardcore materials or metal plates and kept clear of dusty materials; or</li> <li>Unpaved parts of the road should be sprayed with water or a dust suppression chemical so as to keep the entire road surface wet.</li> </ul>	Within construction site / Duration of the construction phase	I
			Exposed Earth <ul style="list-style-type: none"> <li>Exposed earth should be properly treated by compaction, hydroseeding, vegetation planting or seating with latex, vinyl, bitumen within six months after the last construction activity on the site or part of the site where the exposed earth lies.</li> </ul>	Within construction site / Duration of the construction phase	I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<p>Loading, Unloading or Transfer of Dusty Materials</p> <ul style="list-style-type: none"> <li>All dusty materials should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.</li> </ul>	Within construction site / Duration of the construction phase	
			<p>Debris Handling</p> <ul style="list-style-type: none"> <li>Any debris should be covered entirely by impervious sheeting or stored in a debris collection area sheltered on the top and the three sides; and</li> <li>Before debris is dumped into a chute, water should be sprayed so that it remains wet when it is dumped.</li> </ul>	Within construction site / Duration of the construction phase	
			<p>Transport of Dusty Materials</p> <ul style="list-style-type: none"> <li>Vehicle used for transporting dusty materials/spoils should be covered with tarpaulin or similar material. The cover should extend over the edges of the sides and tailboards.</li> </ul>	Within construction site / Duration of the construction phase	
			<p>Wheel washing</p> <ul style="list-style-type: none"> <li>Vehicle wheel washing facilities should be provided at each construction site exit. Immediately before leaving the construction site, every vehicle should be washed to remove any dusty materials from its body and wheels.</li> </ul>	Within construction site / Duration of the construction phase	
			<p>Use of vehicles</p> <ul style="list-style-type: none"> <li>The speed of the trucks within the site should be controlled to about 10km/hour in order to reduce adverse dust impacts and secure the safe movement around the site;</li> <li>Immediately before leaving the construction site, every vehicle should be washed to remove any dusty materials from its body and wheels; and</li> <li>Where a vehicle leaving the construction site is carrying a load of dusty materials, the load should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle.</li> </ul>	Within construction site / Duration of the construction phase	
			<p>Site hoarding</p> <ul style="list-style-type: none"> <li>Where a site boundary adjoins a road, street, service lane or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length of that portion of the site boundary except for a site entrance or exit.</li> </ul>	Within construction site / Duration of the construction phase	
5.2.6.5	2.1	-	<p><b>Best Practices for Concrete Batching Plant</b></p> <p>The relevant best practices for dust control as stipulated in the Guidance Note on the Best Practicable Means for Cement Works (Concrete Batching Plant) BPM 3/2 as well as in the future Specified Process licence should be adopted. The best practices are recommended to be applied to both the land based and floating concrete batching plants. Best practices include:</p> <p>Cement and other dusty materials</p>	Within Concrete Batching Plant / Duration of the construction phase	

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<ul style="list-style-type: none"> <li>▪ The loading, unloading, handling, transfer or storage of cement, pulverised fuel ash (PFA) and/or other equally dusty materials shall be carried in a totally enclosed system acceptable to EPD. All dust-laden air or waste gas generated by the process operations shall be properly extracted and vented to fabric filtering system to meet the required emission limit;</li> <li>▪ Cement, PFA and/or other equally dusty materials shall be stored in storage silo fitted with audible high level alarms to warn of over-filling. The high-level alarm indicators shall be interlocked with the material filling line such that in the event of the silo approaching an overfilling condition, an audible alarm will operate, and after 1 minute or less the material filling line will be closed;</li> <li>▪ Vents of all silos shall be fitted with fabric filtering system to meet the required emission limit;</li> <li>▪ Vents of cement/PFA weighing scale shall be fitted with fabric filtering system to meet the required emission limit; and</li> <li>▪ Seating of pressure relief valves of all silos shall be checked, and the valves re-seated if necessary, before each delivery.</li> </ul>		
			<p>Other raw materials</p> <ul style="list-style-type: none"> <li>▪ The loading, unloading, handling, transfer or storage of other raw materials which may generate airborne dust emissions such as crushed rock, sand, stone aggregate, shall be carried out in such a manner to prevent or minimize dust emissions;</li> <li>▪ The materials shall be adequately wetted prior to and during the loading, unloading and handling operations. Manual or automatic water spraying system shall be provided at all unloading areas, stock piles and material discharge points;</li> <li>▪ All receiving hoppers for unloading relevant materials shall be enclosed on three sides up to 3 m above the unloading point. In no case shall these hoppers be used as the material storage devices;</li> <li>▪ The belt conveyor for handling materials shall be enclosed on top and two sides with a metal board at the bottom to eliminate any dust emission due to wind-whipping effect. Other type of enclosure will also be accepted by EPD if it can be demonstrated that the proposed enclosure can achieve same performance;</li> <li>▪ All conveyor transfer points shall be totally enclosed. Openings for the passage of conveyors shall be fitted with adequate flexible seals;</li> <li>▪ Scrapers shall be provided at the turning points of all conveyors to remove dust adhered to the belt surface;</li> <li>▪ Conveyors discharged to stockpiles of relevant materials shall be arranged to minimize free fall as far as practicable. All free falling transfer points from conveyors to stockpiles shall be enclosed with chute(s) and water sprayed;</li> <li>▪ Aggregates with a nominal size less than or equal to 5 mm should be stored in totally enclosed structure such as storage bin and should not be handled in open area. Where there is sufficient buffer area surrounding the concrete batching plant, ground stockpiling may be used;</li> </ul>	<p>Within Concrete Batching Plant / Duration of the construction phase</p>	I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<ul style="list-style-type: none"> <li>▪ The stockpile shall be enclosed at least on top and three sides and with flexible curtain to cover the entrance side;</li> <li>▪ Aggregates with a nominal size greater than 5 mm should preferably be stored in a totally enclosed structure. If open stockpiling is used, the stockpile shall be enclosed on three sides with the enclosure wall sufficiently higher than the top of the stockpile to prevent wind whipping; and</li> <li>▪ The opening between the storage bin and weighing scale of the materials shall be fully enclosed.</li> </ul>		
			<p>Loading of materials for batching</p> <ul style="list-style-type: none"> <li>▪ Concrete truck shall be loaded in such a way as to minimise airborne dust emissions. The following control measures shall be implemented:                             <ul style="list-style-type: none"> <li>(a) Pre-mixing the materials in a totally enclosed concrete mixer before loading the materials into the concrete truck is recommended. All dust-laden air generated by the pre-mixing process as well as the loading process shall be totally vented to fabric filtering system to meet the required emission limit; and</li> <li>(b) If truck mixing batching or other types of batching method is used, effective dust control measures acceptable to EPD shall be adopted. The dust control measures must have been demonstrated to EPD that they are capable to collect and vent all dust-laden air generated by the material loading/mixing to dust arrestment plant to meet the required emission limit.</li> </ul> </li> <li>▪ The loading bay shall be totally enclosed during the loading process.</li> </ul>	Within Concrete Batching Plant / Duration of the construction phase	
			<p>Vehicles</p> <ul style="list-style-type: none"> <li>▪ All practicable measures shall be taken to prevent or minimize the dust emission caused by vehicle movement; and</li> <li>▪ All access and route roads within the premises shall be paved and adequately wetted.</li> </ul>	Within Concrete Batching Plant / Duration of the construction phase	
			<p>Housekeeping</p> <ul style="list-style-type: none"> <li>▪ A high standard of housekeeping shall be maintained. All spillages or deposits of materials on ground, support structures or roofs shall be cleaned up promptly by a cleaning method acceptable to EPD. Any dumping of materials at open area shall be prohibited.</li> </ul>	Within Concrete Batching Plant / Duration of the construction phase	
5.2.6.6	2.1	-	<p><b>Best Practices for Asphaltic Concrete Plant</b></p> <p>The relevant best practices for dust control as stipulated in the Guidance Note on the Best Practicable Means for Tar and Bitumen Works (Asphaltic Concrete Plant) BPM 15 (94) as well as in the future Specified Process licence should be adopted. These include:</p> <p>Design of Chimney</p> <ul style="list-style-type: none"> <li>▪ The chimney shall not be less than 3 metres plus the building height or 8 metres above ground level, whichever is the greater;</li> <li>▪ The efflux velocity of gases from the main chimney shall not be less than 12 m/s at full load condition;</li> </ul>	Within Concrete Batching Plant / Duration of the construction phase	

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<ul style="list-style-type: none"> <li>▪ The flue gas exit temperature shall not be less than the acid dew point; and</li> <li>▪ Release of the chimney shall be directed vertically upwards and not be restricted or deflected.</li> </ul>		
			<p>Cold feed side</p> <ul style="list-style-type: none"> <li>▪ The aggregates with a nominal size less than or equal to 5 mm shall be stored in totally enclosed structure such as storage bin and shall not be handled in open area;</li> <li>▪ Where there is sufficient buffer area surrounding the plant, ground stockpiling may be used. The stockpile shall be enclosed at least on top and three sides and with flexible curtain to cover the entrance side. If these aggregates are stored above the feeding hopper, they shall be enclosed at least on top and three sides and be wetted on the surface to prevent wind-whipping;</li> <li>▪ The aggregates with a nominal size greater than 5 mm should preferably be stored in totally enclosed structure. Aggregates stockpile that is above the feeding hopper shall be enclosed at least on top and three sides. If open stockpiling is used, the stockpiles shall be enclosed on three sides with the enclosure wall sufficiently higher than the top of the stockpile to prevent wind whipping;</li> <li>▪ Belt conveyors shall be enclosed on top and two sides and provided with a metal board at the bottom to eliminate any dust emission due to the wind-whipping effect. Other type of enclosure will also be accepted by EPD if it can be demonstrated that the proposed enclosure can be achieve the same performance;</li> <li>▪ Scrapers shall be provided at the turning points of all belt conveyors inside the chute of the transfer points to remove dust adhered to the belt surface;</li> <li>▪ All conveyor transfer points shall be totally enclosed. Openings for the passages of conveyors shall be fitted with adequate flexible seals; and</li> <li>▪ All materials returned from dust collection system shall be transferred in enclosed system and shall be stored inside bins or enclosures.</li> </ul>	<p>Within Concrete Batching Plant / Duration of the construction phase</p>	
			<p>Hot feed side</p> <ul style="list-style-type: none"> <li>▪ The inlet and outlet of the rotary dryer shall be enclosed and ducted to a dust extraction and collection system such as a fabric filter. The particulate and gaseous concentration at the exhaust outlet of the dust collector shall not exceed the required limiting values;</li> <li>▪ The bucket elevator shall be totally enclosed and the air be extracted and ducted to a dust collection system to meet the required particulates limiting value;</li> <li>▪ All vibratory screens shall be totally enclosed and dust tight with close-fitted access inspection opening. Gaskets shall be installed to seal off any cracks and edges of any inspection openings;</li> <li>▪ Chutes for carrying hot material shall be rigid and preferably fitted with abrasion resistant plate inside. They shall be inspected daily for leakages;</li> </ul>	<p>Within Concrete Batching Plant / Duration of the construction phase</p>	

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<ul style="list-style-type: none"> <li>▪ All hot bins shall be totally enclosed and dust tight with close-fitted access inspection opening. Gaskets shall be installed to seal off any cracks and edges of any inspection openings. The air shall be extracted and ducted to a dust collection system to meet the required particulates limiting value; and</li> <li>▪ Appropriate control measures shall be adopted in order to meet the required bitumen emission limit as well as the ambient odour level (2 odour units).</li> </ul>		
			<p>Material transportation</p> <ul style="list-style-type: none"> <li>▪ The loading, unloading, handling, transfer or storage of other raw materials which may generate airborne dust emissions such as crushed rocks, sands, stone aggregates, reject fines, shall be carried out in such a manner as to minimize dust emissions;</li> <li>▪ Roadways from the entrance of the plant to the product loading points and/or any other working areas where there are regular movements of vehicles shall be paved or hard surfaced; and</li> <li>▪ Haul roads inside the Works shall be adequately wetted with water and/or chemical suppressants by water trucks or water sprayers.</li> </ul>	Within Concrete Batching Plant / Duration of the construction phase	
			<p>Control of emissions from bitumen decanting</p> <ul style="list-style-type: none"> <li>▪ The heating temperature of the particular bitumen type and grade shall not exceed the corresponding temperature limit of the same type listed in Appendix 1 of the Guidance Note;</li> <li>▪ Tamper-free high temperature cut-off device shall be provided to shut off the fuel supply or electricity in case the upper limit for bitumen temperature is reached;</li> <li>▪ Proper chimney for the discharge of bitumen fumes shall be provided at high level;</li> <li>▪ The emission of bitumen fumes shall not exceed the required emission limit; and</li> </ul> <p>The air-to-fuel ratio shall be properly controlled to allow complete combustion of the fuel. The fuel burners, if any, shall be maintained properly and free from carbon deposits in the burner nozzles.</p>	Within Concrete Batching Plant / Duration of the construction phase	
			<p>Liquid fuel</p> <ul style="list-style-type: none"> <li>▪ The receipt, handling and storage of liquid fuel shall be carried out so as to prevent the release of emissions of organic vapours and/or other noxious and offensive emissions to the air.</li> </ul>	Within Concrete Batching Plant / Duration of the construction phase	
			<p>Housekeeping</p> <ul style="list-style-type: none"> <li>▪ A high standard of housekeeping shall be maintained. Waste material, spillage and scattered piles gathered beneath belt conveyors, inside and around enclosures shall be cleared frequently. The minimum clearing frequency is on a weekly basis.</li> </ul>	Within Concrete Batching Plant / Duration of the construction phase	
5.2.6.7	2.1	-	<p><b>Best Practices for Rock Crushing Plants</b></p> <p>The relevant best practices for dust control as stipulated in the Guidance Note on the Best Practicable Means for Mineral Works (Stone Crushing Plant) BPM 11/1 (95) as well as in the future Specified Process licence should be adopted. These include:</p>	Within Concrete Batching Plant / Duration of the construction phase	N/A

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<p>Crushers</p> <ul style="list-style-type: none"> <li>▪ The outlet of all primary crushers, and both inlet and outlet of all secondary and tertiary crushers, if not installed inside a reasonably dust tight housing, shall be enclosed and ducted to a dust extraction and collection system such as a fabric filter;</li> <li>▪ The inlet hopper of the primary crushers shall be enclosed on top and 3 sides to contain the emissions during dumping of rocks from trucks. The rock while still on the trucks shall be wetted before dumping;</li> <li>▪ Water sprayers shall be installed and operated in strategic locations at the feeding inlet of crushers; and</li> <li>▪ Crusher enclosures shall be rigid and be fitted with self-closing doors and close-fitting entrances and exits. Where conveyors pass through the crusher enclosures, flexible covers shall be installed at entries and exits of the conveyors to the enclosure.</li> </ul>		
			<p>Vibratory screens and grizzlies</p> <ul style="list-style-type: none"> <li>▪ All vibratory screens shall be totally enclosed in a housing. Screenhouses shall be rigid and reasonably dust tight with self-closing doors or close-fitted entrances and exits for access. Where conveyors pass through the screenhouse, flexible covers shall be installed at entries and exits of the conveyors to the housing. Where containment of dust within the screenhouse structure is not successful then a dust extraction and collection system shall be provided; and</li> <li>▪ All grizzlies shall be enclosed on top and 3 sides and sufficient water sprayers shall be installed at their feeding and outlet areas.</li> </ul>	Within Concrete Batching Plant / Duration of the construction phase	N/A
			<p>Belt conveyors</p> <ul style="list-style-type: none"> <li>▪ Except for those conveyors which are placed within a totally enclosed structure such as a screenhouse or those erected at the ground level, all conveyors shall be totally enclosed with windshield on top and 2 sides;</li> <li>▪ Effective belt scraper such as the pre-cleaner blades made by hard wearing materials and provided with pneumatic tensioner, or equivalent device, shall be installed at the head pulley of designated conveyor as required to dislodge fine dust particles that may adhere to the belt surface and to reduce carry-back of fine materials on the return belt. Bottom plates shall also be provided for the conveyor unless it has been demonstrated that the corresponding belt scraper is effective and well maintained to prevent falling material from the return belt; and</li> <li>▪ Except for those transfer points which are placed within a totally enclosed structure such as a screenhouse, all transfer points to and from conveyors shall be enclosed. Where containment of dust within the enclosure is not successful, then water sprayers shall be provided. Openings for any enclosed structure for the passage of conveyors shall be fitted with flexible seals.</li> </ul>	Within Concrete Batching Plant / Duration of the construction phase	N/A

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<p>Storage piles and bins</p> <ul style="list-style-type: none"> <li>Where practicable, free falling transfer points from conveyors to stockpiles shall be fitted with flexible curtains or be enclosed with chutes designed to minimize the drop height. Water sprays shall also be used where required.</li> <li>The surface of all surge piles and stockpiles of blasted rocks or aggregates shall be kept sufficiently wet by water spraying wherever practicable;</li> <li>All open stockpiles for aggregates of size in excess of 5 mm shall be kept sufficiently wet by water spraying where practicable; or</li> <li>The stockpiles of aggregates 5 mm in size or less shall be enclosed on 3 sides or suitably located to minimize wind-whipping. Save for fluctuations in stock or production, the average stockpile shall stay within the enclosure walls and in no case the height of the stockpile shall exceed twice the height of the enclosure walls.</li> <li>Scattered piles gathered beneath belt conveyors, inside and around enclosures shall be cleared regularly.</li> </ul>	Within Concrete Batching Plant / Duration of the construction phase	N/A
			<p>Rock drilling equipment</p> <ul style="list-style-type: none"> <li>Appropriate dust control equipment such as a dust extraction and collection system shall be used during rock drilling activities.</li> </ul>	Within Concrete Batching Plant / Duration of the construction phase	N/A
<b>Hazard to Human Life – Construction Phase</b>					
Table 6.40	3.2	-	<ul style="list-style-type: none"> <li>Precautionary measures should be established to request barges to move away during typhoons.</li> </ul>	Construction Site / Construction Period	I
Table 6.40	3.2	-	<ul style="list-style-type: none"> <li>An appropriate marine traffic management system should be established to minimize risk of ship collision.</li> </ul>	Construction Site / Construction Period	I
Table 6.40	3.2	-	<ul style="list-style-type: none"> <li>Location of all existing hydrant networks should be clearly identified prior to any construction works.</li> </ul>	Construction Site / Construction Period	I
<b>Noise Impact – Construction Phase</b>					
7.5.6	4.3	-	<p><b>Good Site Practice</b></p> <p>Good site practice and noise management can significantly reduce the impact of construction site activities on nearby NSRs. The following package of measures should be followed during each phase of construction:</p> <ul style="list-style-type: none"> <li>only well-maintained plant to be operated on-site and plant should be serviced regularly during the construction works;</li> <li>machines and plant that may be in intermittent use to be shut down between work periods or should be throttled down to a minimum;</li> </ul>	Within the Project site / During construction phase / Prior to commencement of operation	I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<ul style="list-style-type: none"> <li>▪ plant known to emit noise strongly in one direction, should, where possible, be orientated to direct noise away from the NSRs;</li> <li>▪ mobile plant should be sited as far away from NSRs as possible; and</li> <li>▪ material stockpiles and other structures to be effectively utilised, where practicable, to screen noise from on-site construction activities.</li> </ul>		
7.5.6	4.3	-	<p><b>Adoption of QPME</b></p> <ul style="list-style-type: none"> <li>▪ QPME should be adopted as far as applicable.</li> </ul>	Within the Project site / During construction phase / Prior to commencement of operation	I
7.5.6	4.3	-	<p><b>Use of Movable Noise Barriers</b></p> <ul style="list-style-type: none"> <li>▪ Movable noise barriers should be placed along the active works area and mobile plants to block the direct line of sight between PME and the NSRs.</li> </ul>	Within the Project site / During construction phase / Prior to commencement of operation	I
7.5.6	4.3	-	<p><b>Use of Noise Enclosure/ Acoustic Shed</b></p> <ul style="list-style-type: none"> <li>▪ Noise enclosure or acoustic shed should be used to cover stationary PME such as air compressor and generator.</li> </ul>	Within the Project site / During construction phase / Prior to commencement of operation	I
<b>Water Quality Impact – Construction Phase</b>					

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
8.8.1.2 and 8.8.1.3	5.1	2.26	<p><b>Marine Construction Activities</b></p> <p><u>General Measures to be Applied to All Works Areas</u></p> <ul style="list-style-type: none"> <li>▪ Barges or hoppers shall not be filled to a level which will cause overflow of materials or pollution of water during loading or transportation;</li> <li>▪ Use of Lean Material Overboard (LMOB) systems shall be prohibited;</li> <li>▪ Excess materials shall be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessels are moved;</li> <li>▪ Plants should not be operated with leaking pipes and any pipe leakages shall be repaired quickly;</li> <li>▪ Adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action;</li> <li>▪ 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;</li> <li>▪ 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; and</li> <li>▪ For ground improvement activities including DCM, the wash water from cleaning of the drilling shaft should be appropriately treated before discharge. The Contractor should ensure the waste water meets the WPCO/TM requirements before discharge. No direct discharge of contaminated water is permitted.</li> </ul>	Within construction site / Duration of the construction phase	I
			<p><u>Specific Measures to be Applied to All Works Areas</u></p> <ul style="list-style-type: none"> <li>▪ The daily maximum production rates shall not exceed those assumed in the water quality assessment in the EIA report;</li> <li>▪ A maximum of 10 % fines content to be adopted for sand blanket and 20 % fines content for marine filling below +2.5 mPD prior to substantial completion of seawall (until end of Year 2017) shall be specified in the works contract document;</li> </ul>	Within construction site / Duration of the construction phase	I
			<ul style="list-style-type: none"> <li>▪ An advance seawall of at least 200m to be constructed (comprising either rows of contiguous permanent steel cells completed above high tide mark or partially completed seawalls with rock core to high tide mark and filter layer on the inner side) prior to commencement of marine filling activities;</li> <li>▪ Closed grab dredger shall be used to excavate marine sediment;</li> <li>▪ Silt curtains surrounding the closed grab dredger shall be deployed in accordance with the Silt Curtain Deployment Plan; and</li> </ul>		<p>N/A</p> <p>*(The arrangement of silt curtain has been modified. The details can be referred to Silt Curtain Deployment Plan)</p>
			<ul style="list-style-type: none"> <li>▪ The Silt Curtain Deployment Plan shall be implemented.</li> </ul>		I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<p><u>Specific Measures to be Applied to Land Formation Activities prior to Commencement of Marine Filling Works</u></p> <ul style="list-style-type: none"> <li>Double layer 'Type III' silt curtains to be applied around the active eastern works areas prior to commencement of sand blanket laying activities. The silt curtains shall be configured to minimise SS release during ebb tides. A silt curtain efficiency test shall be conducted to validate the performance of the silt curtains;</li> </ul>	Within construction site / Duration of the construction phase	<p>N/A</p> <p>*(The arrangement of silt curtain has been modified. The details can be referred to Silt Curtain Deployment Plan)</p>
			<ul style="list-style-type: none"> <li>Double layer silt curtains to enclose WSRs C7a and silt screens installed at the intake points for both WSR C7a and C8 prior to commencement of construction; and</li> </ul>		<p>For C7a, I</p> <p>For C8, I</p> <p>*(The requirement of silt curtain / screen has been modified. The details can be referred to Silt Curtain Deployment Plan)</p>
			<ul style="list-style-type: none"> <li>The silt curtains and silt screens should be regularly checked and maintained.</li> </ul>		I
			<p><u>Specific Measures to be Applied to Land Formation Activities during Marine Filling Works</u></p> <ul style="list-style-type: none"> <li>Double layer 'Type II' or 'Type III' silt curtains to be applied around the eastern openings between partially completed seawalls prior to commencement of marine filling activities. The silt curtains shall be configured to minimise SS release during ebb tides;</li> </ul>	Within construction site / Duration of the construction phase	<p>I</p> <p>*(The arrangement of silt curtain has been modified. The details can be referred to Silt Curtain Deployment Plan)</p>
			<ul style="list-style-type: none"> <li>Double layer silt curtains to be applied at the south-western opening prior to commencement of marine filling activities;</li> </ul>		<p>N/A</p> <p>*(The arrangement of silt curtain has been modified. The details can be referred to Silt Curtain Deployment Plan)</p>
			<ul style="list-style-type: none"> <li>Double layer silt curtain to enclose WSR C7a and silt screens installed at the intake points for both WSR C7a and C8 prior to commencement of marine filling activities; and</li> </ul>		<p>N/A</p> <p>*(The requirement of silt curtain / screen has been modified. The details can be referred to Silt Curtain Deployment Plan)</p>
			<ul style="list-style-type: none"> <li>The silt curtains and silt screens should be regularly checked and maintained.</li> </ul>		I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<p><u>Specific Measures to be Applied to the Field Joint Excavation Works for the Submarine Cable Diversion</u></p> <ul style="list-style-type: none"> <li>Only closed grabs designed and maintained to avoid spillage shall be used and should seal tightly when operated. Excavated materials shall be disposed at designated marine disposal area in accordance with the Dumping at Sea Ordinance (DASO) permit conditions; and</li> <li>Silt curtains surrounding the closed grab dredger to be deployed as a precautionary measure.</li> </ul>	Within construction site / Duration of the construction phase	N/A
8.8.1.4	5.1	-	<p><b>Modification of the Existing Seawall</b></p> <ul style="list-style-type: none"> <li>Silt curtains shall be deployed around the seawall modification activities to completely enclose the active works areas, and care should be taken to avoid splashing of rockfill / rock armour into the surrounding marine environment. For the connecting sections with the existing outfalls, works for these connection areas should be undertaken during the dry season in order that individual drainage culvert cells may be isolated for interconnection works.</li> </ul>	At the existing northern seawall / Duration of the construction phase	I
8.8.1.5	5.1	-	<p><b>Construction of New Stormwater Outfalls and Modifications to Existing Outfalls</b></p> <ul style="list-style-type: none"> <li>During operation of the temporary drainage channel, runoff control measures such as bunding or silt fence shall be provided on both sides of the channel to prevent accumulation and release of SS via the temporary channel. Measures should also be taken to minimise the ingress of site drainage into the culvert excavations.</li> </ul>	Within construction site / Duration of the construction phase	I
8.8.1.6 8.8.1.7	5.1	2.27	<p><b>Piling Activities for Construction of New Runway Approach Lights and HKIAAA Marker Beacons</b></p> <p>Silt curtains shall be deployed around the piling activities to completely enclose the piling works and care should be taken to avoid spillage of excavated materials into the surrounding marine environment.</p> <p><u>For construction of the eastern approach lights at the CMPs</u></p> <ul style="list-style-type: none"> <li>Ground improvement via DCM using a close-spaced layout shall be completed prior to commencement of piling works;</li> <li>Steel casings shall be installed to enclose the excavation area prior to commencement of excavation;</li> <li>The excavated materials shall be removed using a closed grab within the steel casings;</li> <li>No discharge of the cement mixed materials into the marine environment will be allowed; and</li> <li>Excavated materials shall be treated and reused on-site.</li> </ul>	Within construction site / Duration of the construction phase	I I
8.8.1.8	5.1	-	<p><b>Construction of Site Runoff and Drainage</b></p> <p>The site practices outlined in ProPECC Note PN 1/94 should be followed as far as practicable in order to minimise surface runoff and the chance of erosion. The following measures are recommended:</p> <ul style="list-style-type: none"> <li>Install perimeter cut-off drains to direct off-site water around the site and implement internal drainage, erosion and sedimentation control facilities. Channels, earth bunds or sand bag barriers should be provided on site to direct storm water to silt removal facilities. The design of the temporary on-site</li> </ul>	Within construction site / Duration of the construction phase	I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<p>drainage system should be undertaken by the Contractors prior to the commencement of construction (for works areas located on the existing Airport island) or as soon as the new land is completed (for works areas located on the new landform);</p> <hr/> <ul style="list-style-type: none"> <li>▪ Sand/silt removal facilities such as sand/silt traps and sediment basins should be provided to remove sand/silt particles from runoff to meet the requirements of the TM-DSS standards under the WPCO. The design of efficient silt removal facilities should make reference to the guidelines in Appendix A1 of ProPECC Note PN 1/94. Sizes may vary depending upon the flow rate. The detailed design of the sand/silt traps should be undertaken by the Contractors prior to the commencement of construction;</li> </ul> <hr/> <ul style="list-style-type: none"> <li>▪ All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly during rainstorms. Deposited silt and grit should be regularly removed, at the onset of and after each rainstorm to ensure that these facilities are functioning properly;</li> </ul> <hr/> <ul style="list-style-type: none"> <li>▪ Measures should be taken to minimize the ingress of site drainage into excavations. If excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from foundation excavations should be discharged into storm drains via silt removal facilities;</li> </ul> <hr/> <ul style="list-style-type: none"> <li>▪ In the event that contaminated groundwater is identified at excavation areas, this should be treated on-site using a suitable wastewater treatment process. The effluent should be treated according to the requirements of the TM-DSS standards under the WPCO prior to discharge to foul sewers or collected for proper disposal off-site. No direct discharge of contaminated groundwater is permitted; and</li> </ul> <hr/> <ul style="list-style-type: none"> <li>▪ All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facility should be provided at construction site exits. Wash-water should have sand and silt settled out and removed regularly to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. All washwater should be treated according to the requirements of the TM-DSS standards under the WPCO prior to discharge.</li> </ul>		
8.8.1.9	5.1	-	<p><b>Sewage Effluent from Construction Workforce</b></p> <ul style="list-style-type: none"> <li>▪ Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site where necessary to handle sewage from the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.</li> </ul>	Within construction site / During construction phase	
8.8.1.10 8.8.1.11	5.1		<p><b>General Construction Activities</b></p> <ul style="list-style-type: none"> <li>▪ Construction solid waste, debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering any nearby storm water drain. Stockpiles of cement and other construction materials should be kept covered when not being used; and</li> </ul>	Within construction site / During construction phase	

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
8.8.1.12 8.8.1.13	5.1	2.28	<ul style="list-style-type: none"> <li>▪ Oils and fuels should only be stored in designated areas which have pollution prevention facilities. To prevent spillage of fuels and solvents to any nearby storm water drain, all fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. The bund should be drained of rainwater after a rain event.</li> </ul> <p><b>Drilling Activities for the Submarine Aviation Fuel Pipelines</b></p> <p>To prevent potential water quality impacts at Sha Chau, the following measures shall be applied:</p> <ul style="list-style-type: none"> <li>▪ A 'zero-discharge' policy shall be applied for all activities to be conducted at Sha Chau;</li> <li>▪ No bulk storage of chemicals shall be permitted; and</li> <li>▪ A containment pit shall be constructed around the drill holes. This containment pit shall be lined with impermeable lining and bunded on the outside to prevent inflow from off-site areas.</li> </ul>	Within construction site / During construction phase	I
			<p>At the airport island side of the drilling works, the following measures shall be applied for treatment of wastewater:</p> <ul style="list-style-type: none"> <li>▪ During pipe cleaning, appropriate desilting or sedimentation device should be provided on site for treatment before discharge. The Contractor should ensure discharge water from the sedimentation tank meet the WPCO/TM requirements before discharge; and</li> <li>▪ Drilling fluid used in drilling activities should be reconditioned and reused as far as possible. Temporary enclosed storage locations should be provided on-site for any unused chemicals that needs to be transported away after all the related construction activities are completed. The requirements in ProPECC Note PN 1/94 should be adhered to in the handling and disposal of bentonite slurries.</li> </ul>	Within construction site / During construction phase	I
<b>Waste Management Implication – Construction Phase</b>					
10.5.1.1	7.1	-	<p>Opportunities to minimise waste generation and maximise the reuse of waste materials generated by the project have been incorporated where possible into the planning, design and construction stages, and the following measures have been recommended:</p> <ul style="list-style-type: none"> <li>▪ The relevant construction methods (particularly for the tunnel works) and construction programme have been carefully planned and developed to minimise the extent of excavation and to maximise the on-site reuse of inert C&amp;D materials generated by the project as far as practicable. Temporary stockpiling areas will also be provided to facilitate on-site reuse of inert C&amp;D materials;</li> <li>▪ Priority should be given to collect and reuse suitable inert C&amp;D materials generated from other concurrent projects and the Government's PFRF as fill materials for the proposed land formation works;</li> <li>▪ Only non-dredged ground improvement methods should be adopted in order to completely avoid the need for dredging and disposal of marine sediment for the proposed land formation work;</li> <li>▪ Excavation work for constructing the APM tunnels, BHS tunnels and airside tunnels will not be down to the CMPs beneath the fill materials in order to avoid excavating any sediments; and</li> </ul>	Project Site Area / During design and construction phase	I
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EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<ul style="list-style-type: none"> <li>▪ For the marine sediments expected to be excavated from the piling works of TRC, APM &amp; BHS tunnels, airside tunnels and other facilities on the proposed land formation area, piling work of marine sections of the approach lights and HKIAAA beacons, basement works for some of T2 expansion area and excavation works for the proposed APM depot should be treated and reused on-site as backfilling materials, although required treatment level / detail and the specific re-use mode are under development.</li> </ul>		I
10.5.1.1	7.1	-	<p>The following good site practices should be performed during the construction activities include:</p> <ul style="list-style-type: none"> <li>▪ Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site;</li> <li>▪ Training of site personnel in proper waste management and chemical waste handling procedures;</li> <li>▪ Provision of sufficient waste disposal points and regular collection for disposal;</li> <li>▪ Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks by tarpaulin/ similar material or by transporting wastes in enclosed containers. The cover should be extended over the edges of the sides and tailboards;</li> <li>▪ Stockpiles of C&amp;D materials should be kept wet or covered by impervious sheets to avoid wind-blown dust;</li> <li>▪ All dusty materials including C&amp;D materials should be sprayed with water immediately prior to any loading transfer operation so as to keep the dusty material wet during material handling at the barging points/ stockpile areas;</li> <li>▪ C&amp;D materials to be delivered to and from the project site by barges or by trucks should be kept wet or covered to avoid wind-blown dust;</li> <li>▪ The speed of the trucks including dump trucks carrying C&amp;D or waste materials within the site should be controlled to about 10 km/hour in order to reduce the adverse dust impact and secure the safe movement around the site; and</li> <li>▪ To avoid or minimise dust emission during transport of C&amp;D or waste materials within the site, each and every main temporary access should be paved with concrete, bituminous hardcore materials or metal plates and kept clear of dusty materials. Unpaved parts of the road should be sprayed with water or a dust suppression chemical so as to keep the entire road surface wet.</li> </ul>	Project Site Area / Construction Phase	I
10.5.1.3	7.1	-	<p>The following practices should be performed to achieve waste reduction include:</p> <ul style="list-style-type: none"> <li>▪ Use of steel or aluminium formworks and falseworks for temporary works as far as practicable;</li> <li>▪ Adoption of repetitive design to allow reuse of formworks as far as practicable;</li> <li>▪ Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal;</li> </ul>	Project Site Area / Construction Phase	I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<ul style="list-style-type: none"> <li>Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force;</li> <li>Any unused chemicals or those with remaining functional capacity should be collected for reused as far as practicable;</li> <li>Proper storage and site practices to minimise the potential for damage or contamination of construction materials; and</li> <li>Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.</li> </ul>		
10.5.1.5	7.1		<ul style="list-style-type: none"> <li>Inert and non-inert C&amp;D materials should be handled and stored separately to avoid mixing the two types of materials.</li> </ul>	Project Site Area / Construction Phase	I
10.5.1.5	7.1	-	<ul style="list-style-type: none"> <li>Any recyclable materials should be segregated from the non-inert C&amp;D materials for collection by reputable licensed recyclers whereas the non-recyclable waste materials should be disposed of at the designated landfill site by a reputable licensed waste collector.</li> </ul>	Project Site Area / Construction Phase	I
10.5.1.6	7.1	-	<ul style="list-style-type: none"> <li>A trip-ticket system promulgated shall be developed in order to monitor the off-site delivery of surplus inert C&amp;D materials that could not be reused on-site for the proposed land formation work at the PFRF and to control fly tipping.</li> </ul>	Project Site Area / Construction Phase	I
10.5.1.6	7.1	2.32	<ul style="list-style-type: none"> <li>The Contractor should prepare and implement a Waste Management Plan detailing various waste arising and waste management practices.</li> </ul>	Construction Phase	I
10.5.1.16	7.1	-	<p>The following mitigation measures are recommended during excavation and treatment of the sediments:</p> <ul style="list-style-type: none"> <li>On-site remediation should be carried out in an enclosed area in order to minimise odour/dust emissions;</li> <li>The loading, unloading, handling, transfer or storage of treated and untreated sediment should be carried out in such a manner to prevent or minimise dust emissions;</li> <li>All practical measures, including but not limited to speed control for vehicles, should be taken to minimise dust emission;</li> <li>Good housekeeping should be maintained at all times at the sediment treatment facility and storage area;</li> <li>Treated and untreated sediment should be clearly separated and stored separately; and</li> <li>Surface runoff from the enclosed area should be properly collected and stored separately, and then properly treated to levels in compliance with the relevant effluent standards as required by the Water Pollution Control Ordinance before final discharge.</li> </ul>	Project Site Area / Construction Phase	I I I I I
10.5.1.18	7.1	-	<p>The marine sediments to be removed from the cable field joint area would be disposed of at the designated disposal sites to be allocated by the MFC. The following mitigation measures should be strictly</p>	Project Site Area / Construction Phase	N/A

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<p>followed to minimise potential impacts on water quality during transportation of the sediments requiring Type 1 disposal:</p> <ul style="list-style-type: none"> <li>Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material;</li> <li>Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by EPD; and</li> <li>Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation.</li> </ul>		
10.5.1.19	7.1	-	<p>Contractor should register with the EPD as a chemical waste producer and to follow the relevant guidelines. The following measures should be implemented:</p> <ul style="list-style-type: none"> <li>Good quality containers compatible with the chemical wastes should be used;</li> <li>Incompatible chemicals should be stored separately;</li> <li>Appropriate labels must be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc.; and</li> <li>The contractor will use a licensed collector to transport and dispose of the chemical wastes at the approved Chemical Waste Treatment Centre or other licensed recycling facilities, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.</li> </ul>	Project Site Area / Construction Phase	I
10.5.1.20	7.1	-	<ul style="list-style-type: none"> <li>General refuse should be stored in enclosed bins or compaction units separated from inert C&amp;D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site for disposal at designated landfill sites. An enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.</li> </ul>	Project Site Area / Construction Phase	I
10.5.1.21	7.1	-	<ul style="list-style-type: none"> <li>The construction contractors will be required to regularly check and clean any refuse trapped or accumulated along the newly constructed seawall. Such refuse will then be stored and disposed of together with the general refuse.</li> </ul>	Project Site Area / Construction Phase	I
<b>Land Contamination – Construction Phase</b>					
11.10.1.2 to 11.10.1.3	8.1	2.32	<p>For areas inaccessible during site reconnaissance survey</p> <ul style="list-style-type: none"> <li>Further site reconnaissance would be conducted once the areas are accessible in order to identify any land contamination concern for the areas.</li> </ul>	Project Site Area inaccessible during site reconnaissance / Prior to Construction Phase	I
			<ul style="list-style-type: none"> <li>Subject to further site reconnaissance findings, a supplementary Contamination Assessment Plan (CAP) for additional site investigation (SI) (if necessary) may be prepared and submitted to EPD for endorsement prior to the commencement of SI at these areas.</li> </ul>		I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<ul style="list-style-type: none"> <li>After completion of SI, the Contamination Assessment Report (CAR) will be prepared and submitted to EPD for approval prior to start of the proposed construction works at the golf course, the underground and above-ground fuel storage tank areas, emergency power generation units, airside petrol filling station and fuel tank room.</li> </ul>		I *(CAR for golf course and Terminal 2 Emergency Power Supply System Nos.1, 2, 3, 4 and 5)
			<ul style="list-style-type: none"> <li>Should remediation be required, Remediation Action Plan (RAP) and Remediation Report (RR) will be prepared for EPD's approval prior to commencement of the proposed remediation and any construction works respectively.</li> </ul>		N/A
11.8.1.2	8.1	-	<p>If contaminated soil is identified, the following mitigation measures are for the excavation and transportation of contaminated materials (if any):</p> <ul style="list-style-type: none"> <li>To minimize the incidents of construction workers coming in contact with any contaminated materials, bulk earth-moving excavation equipment should be employed;</li> <li>Contact with contaminated materials can be minimised by wearing appropriate clothing and personal protective equipment such as gloves and masks (especially when working directly with contaminated material), provision of washing facilities and prohibition of smoking and eating on site;</li> <li>Stockpiling of contaminated excavated materials on site should be avoided as far as possible;</li> <li>The use of any contaminated soil for landscaping purpose should be avoided unless pre-treatment was carried out;</li> <li>Vehicles containing any excavated materials should be suitably covered to reduce dust emissions and/or release of contaminated wastewater;</li> <li>Truck bodies and tailgates should be sealed to prevent any discharge;</li> <li>Only licensed waste haulers should be used to collect and transport contaminated material to treatment/disposal site and should be equipped with tracking system to avoid fly tipping;</li> <li>Speed control for trucks carrying contaminated materials should be exercised. 8km/h is the recommended speed limit;</li> <li>Strictly observe all relevant regulations in relation to waste handling, such as Waste Disposal Ordinance (Cap 354), Waste Disposal (Chemical Waste) (General) Regulation (Cap 354) and obtain all necessary permits where required; and</li> <li>Maintain records of waste generation and disposal quantities and disposal arrangements.</li> </ul>	Project Site Area / Construction Phase	N/A
<b>Terrestrial Ecological – Construction Phase</b>					
12.10.1.1	9.2	2.14	<p><b>Pre-construction Egretty Survey</b></p> <ul style="list-style-type: none"> <li>Conduct ecological survey for Sha Chau egretty to update the latest boundary of the egretty.</li> </ul>	Breeding season (April - July) prior to commencement of	I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
				HDD drilling works at HKIA	
12.7.2.3 and 12.7.2.6	9.1	2.30	<b>Avoidance and Minimisation of Direct Impact to Egret</b> <ul style="list-style-type: none"> <li>The daylighting location will avoid direct encroachment to the Sheung Sha Chau egret. The daylighting location and mooring of flat top barge, if required, will be kept away from the egret;</li> <li>In any event, controls such as demarcation of construction site boundary and confining the lighting within the site will be practised to minimise disturbance to off-site habitat at Sheung Sha Chau Island; and</li> <li>The containment pit at the daylighting location shall be covered or camouflaged.</li> </ul>	During construction phase at Sheung Sha Chau Island	
12.7.2.5	9.1	2.30	<b>Preservation of Nesting Vegetation</b> <ul style="list-style-type: none"> <li>The proposed daylighting location and the arrangement of connecting pipeline will avoid the need of tree cutting, therefore the trees that are used by ardeids for nesting will be preserved.</li> </ul>	During construction phase at Sheung Sha Chau Island	
12.7.2.4 and 12.7.2.6	9.1	2.30	<b>Timing the Pipe Connection Works outside Ardeid's Breeding Season</b> <ul style="list-style-type: none"> <li>All HDD and related construction works on Sheung Sha Chau Island will be scheduled outside the ardeids' breeding season (between April and July). No night-time construction work will be allowed on Sheung Sha Chau Island during all seasons.</li> </ul>	During construction phase at Sheung Sha Chau Island	
12.10.1.1	9.3	-	<b>Ecological Monitoring</b> <ul style="list-style-type: none"> <li>During the HDD construction works period from August to March, ecological monitoring will be undertaken monthly at the HDD daylighting location on Sheung Sha Chau Island to identify and evaluate any impacts with appropriate actions taken as required to address and minimise any adverse impact found.</li> </ul>	at Sheung Sha Chau Island	
<b>Marine Ecological Impact – Pre-construction Phase</b>					
13.11.4.1	10.2.2	-	<ul style="list-style-type: none"> <li>Pre-construction phase Coral Dive Survey.</li> </ul>	HKIAAA artificial seawall	
<b>Marine Ecological Impact – Construction Phase</b>					
13.11.1.3 to 13.11.1.6	-	-	<b>Minimisation of Land Formation Area</b> <ul style="list-style-type: none"> <li>Minimise the overall size of the land formation needed for the additional facilities to minimise the overall loss of habitat for marine resources, especially the CWD population.</li> </ul>	Land formation footprint / during detailed design phase to completion of construction	
13.11.1.7 to 13.11.1.10	-	2.31	<b>Use of Construction Methods with Minimal Risk/Disturbance</b> <ul style="list-style-type: none"> <li>Use of non-dredge method for the main land formation and ancillary works including the diversion of the aviation fuel pipeline to the AFRF;</li> </ul>	During construction phase at marine works area	

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<ul style="list-style-type: none"> <li>Use of Deep Cement Mixing (DCM) method instead of conventional seabed dredging for the land formation works to reduce the risk of negative impacts through the elevation of suspended solids and contaminants on CWDs, fisheries and the marine environment;</li> </ul>		
			<ul style="list-style-type: none"> <li>Use of bored piling in short duration to form the new approach lights and marker beacons for the new runway;</li> </ul>		
			<ul style="list-style-type: none"> <li>Avoid bored piling during CWD peak calving season (Mar to Jun);</li> </ul>		
			<ul style="list-style-type: none"> <li>Prohibition of underwater percussive piling; and</li> </ul>		
			<ul style="list-style-type: none"> <li>Use of horizontal directional drilling (HDD) method and water jetting methods for placement of submarine cables and pipelines to minimise the disturbance to the CWDs and other marine ecological resources.</li> </ul>		
13.11.2.1 to 13.11.2.7	-	-	<p><b>Mitigation for Indirect Disturbance due to Deterioration of Water Quality</b></p> <ul style="list-style-type: none"> <li>Water quality mitigation measures during construction phases include consideration of alternative construction methods, deployment of silt curtain and good site practices;</li> <li>Alternative construction methods including use of non-dredge methods for ground improvement (e.g. Deep Cement Mixing (DCM), prefabricated vertical drains (PVD), sand compaction piles, steel cells, stone columns and vertical sand drains);</li> <li>Use of bored piling in short duration to form the new approach lights and marker beacons for the new runway; and</li> </ul> <p>Use of horizontal directional drilling (HDD) method and water jetting methods for placement of undersea cables and pipelines to minimise the disturbance to the CWDs and other marine ecological resources.</p>	All works area during the construction phase	
13.11.1.12	-	-	<p><b>Strict Enforcement of No-Dumping Policy</b></p> <ul style="list-style-type: none"> <li>A policy prohibiting dumping of wastes, chemicals, oil, trash, plastic, or any other substance that would potentially be harmful to dolphins and/or their habitat in the work area;</li> <li>Mandatory educational programme of the no-dumping policy be made available to all construction site personnel for all project-related works;</li> <li>Fines for infractions should be implemented; and</li> <li>Unscheduled, on-site audits shall be implemented.</li> </ul>	All works area during the construction phase	
13.11.1.13	-	-	<p><b>Good Construction Site Practices</b></p> <ul style="list-style-type: none"> <li>Regular inspection of the integrity and effectiveness of all silt curtains and monitoring of effluents to ensure that any discharge meets effluent discharge guidelines;</li> <li>Keep the number of working or stationary vessels present on-site to the minimum anytime; and</li> <li>Unscheduled, on-site audits for all good site practice restrictions should be conducted, and fines or penalties sufficient to be an effective deterrent need to be levied against violators.</li> </ul>	All works area during the construction phase	

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
13.11.1.3 to 13.11.1.6	-	-	<b>Minimisation of Land Formation Area</b> <ul style="list-style-type: none"> <li>Minimise the overall size of the land formation needed for the additional facilities to minimise the overall loss of habitat for marine resources, especially the CWD population.</li> </ul>	Land formation footprint / during detailed design phase to completion of construction	I
13.11.5.4 to 13.11.5.13	10.3.1	-	<b>SkyPier High Speed Ferries' Speed Restrictions and Route Diversions</b> <ul style="list-style-type: none"> <li>SkyPier HSFs operating to / from Zhuhai and Macau would divert north of SCLKC Marine Park with a 15 knot speed limit to apply for the part-journeys that cross high CWD abundance grid squares as indicatively shown in <b>Drawing No. MCL/P132/EIA/13-023</b> of the EIA Report. Both the alignment of the northerly route and the portion of routings to be subject to the speed limit of 15 knots shall be finalised prior to commencement of construction based on the future review of up-to-date CWD abundance and EM&amp;A data and taking reference to changes in total SkyPier HSF numbers; and</li> <li>A maximum of 10 knots will be enforced through the designated SCLKC Marine Park area at all times.</li> </ul> <b>Other mitigation measures</b> <ul style="list-style-type: none"> <li>The ET will audit various parameters including actual daily numbers of HSFs, compliance with the 15-knot speed limit in the speed control zone and diversion compliance for SkyPier HSFs operating to / from Zhuhai and Macau; and</li> <li>The effectiveness of the CWD mitigation measures after implementation of initial six month SkyPier HSF diversion and speed restriction will be reviewed.</li> </ul>	Area between the footprint and SCLKC Marine Park during construction phase	I
13.11.5.14 to 13.11.5.18	10.3.1	2.31	<b>Dolphin Exclusion Zone</b> <ul style="list-style-type: none"> <li>Establishment of a 24 hr Dolphin Exclusion Zone (DEZ) with a 250 m radius around the land formation works areas;</li> <li>A DEZ would also be implemented during ground improvement works (e.g. DCM), water jetting works for submarine cables diversion, open trench dredging at the field joint locations and seawall construction; and</li> <li>A DEZ would also be implemented during bored piling work but as a precautionary measure only.</li> </ul>	Marine waters around land formation works area during construction phase	I
13.11.5.19	10.4	2.31	<b>Acoustic Decoupling of Construction Equipment</b> <ul style="list-style-type: none"> <li>Air compressors and other noisy equipment that must be mounted on steel barges should be acoustically-decoupled to the greatest extent feasible, for instance by using rubber or air-filled tyres; and</li> <li>Specific acoustic decoupling measures shall be specified during the detailed design of the project for use during the land formation works.</li> </ul>	Around coastal works area during construction phase	I
13.11.5.20	10.6.1	2.29	<b>Spill Response Plan</b>	Construction phase	I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<ul style="list-style-type: none"> <li>An oil and hazardous chemical spill response plan is proposed to be established during the construction phase as a precautionary measure so that appropriate actions to prevent or reduce risks to CWDs can be undertaken in the event of an accidental spillage.</li> </ul>		
13.11.5.21 to 13.11.5.23	10.6.1	-	<p><b>Construction Vessel Speed Limits and Skipper Training</b></p> <ul style="list-style-type: none"> <li>A speed limit of 10 knots should be strictly observed for construction vessels at areas with the highest CWD densities; and</li> <li>Vessels traversing through the work areas should be required to use predefined and regular routes (which would presumably become known to resident dolphins) to reduce disturbance to cetaceans due to vessel movements. Specific marine routes shall be specified by the Contractor prior to construction commencing.</li> </ul>	All areas north and west of Lantau Island during construction phase	
<b>Fisheries Impact – Construction Phase</b>					
14.9.1.2 to 14.9.1.5	-	-	<p><b>Minimisation of Land Formation Area</b></p> <ul style="list-style-type: none"> <li>Minimise the overall size of the land formation needed for the additional facilities to minimise the overall loss of habitat for fisheries resources.</li> </ul>	Land formation footprint / during detailed design phase to completion of construction	
14.9.1.6	-	-	<p><b>Use of Construction Methods with Minimal Risk/Disturbance</b></p> <ul style="list-style-type: none"> <li>Use of non-dredge method for the main land formation and ancillary works including the diversion of the aviation fuel pipeline to the AFRF;</li> </ul>	During construction phase at marine works area	
			<ul style="list-style-type: none"> <li>Use of Deep Cement Mixing (DCM) method instead of conventional seabed dredging for the land formation works to reduce the risk of negative impacts through the elevation of suspended solids and contaminants on fisheries and the marine environment;</li> </ul>		
			<ul style="list-style-type: none"> <li>Use of bored piling in short duration to form the new approach lights and marker beacons for the new runway; and</li> </ul>		
			<ul style="list-style-type: none"> <li>Use of horizontal directional drilling (HDD) method and water jetting methods for placement of undersea cables and pipelines to minimise the disturbance to fisheries resources.</li> </ul>		
14.9.1.11	-	-	<p><b>Strict Enforcement of No-Dumping Policy</b></p> <ul style="list-style-type: none"> <li>A policy prohibiting dumping of wastes, chemicals, oil, trash, plastic, or any other substance that would potentially be harmful to dolphins and/or their habitat in the work area;</li> <li>Mandatory educational programme of the no-dumping policy be made available to all construction site personnel for all project-related works;</li> <li>Fines for infractions should be implemented; and</li> <li>Unscheduled, on-site audits shall be implemented.</li> </ul>	All works area during the construction phase	

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
14.9.1.12	-		<b>Good Construction Site Practices</b> <ul style="list-style-type: none"> <li>Regular inspection of the integrity and effectiveness of all silt curtains and monitoring of effluents to ensure that any discharge meets effluent discharge guidelines;</li> <li>Keep the number of working or stationary vessels present on-site to the minimum anytime; and</li> <li>Unscheduled, on-site audits for all good site practice restrictions should be conducted, and fines or penalties sufficient to be an effective deterrent need to be levied against violators.</li> </ul>	All works area during the construction phase	
14.9.1.13 to 14.9.1.18	-		<b>Mitigation for Indirect Disturbance due to Deterioration of Water Quality</b> <ul style="list-style-type: none"> <li>Water quality mitigation measures during construction phases include consideration of alternative construction methods, deployment of silt curtain and good site practices;</li> <li>Alternative construction methods including use of non-dredge methods for ground improvement (e.g. Deep Cement Mixing (DCM), prefabricated vertical drains (PVD), sand compaction piles, steel cells, stone columns and vertical sand drains);</li> <li>Use of bored piling in short duration to form the new approach lights and marker beacons for the new runway; and</li> <li>Use of horizontal directional drilling (HDD) method and water jetting methods for placement of undersea cables and pipelines to minimise the disturbance to fisheries resources.</li> </ul>	All works area during the construction phase	
<b>Landscape and Visual Impact – Construction Phase</b>					
Table 15.6	12.3	-	<b>CM1</b> - The construction area and contractor’s temporary works areas should be minimised to avoid impacts on adjacent landscape.	All works areas for duration of works; Upon handover and completion of works.	
Table 15.6	12.3	-	<b>CM2</b> - Reduction of construction period to practical minimum.	All works areas for duration of works; Upon handover and completion of works.	
Table 15.6	12.3	-	<b>CM3</b> - Phasing of the construction stage to reduce visual impacts during the construction phase.	All works areas for duration of works; Upon handover and completion of works.	
Table 15.6	12.3	-	<b>CM4</b> - Construction traffic (land and sea) including construction plants, construction vessels and barges should be kept to a practical minimum.	All works areas for duration of works; Upon handover and completion of works.	

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
Table 15.6	12.3	-	<b>CM5</b> - Erection of decorative mesh screens or construction hoardings around works areas in visually unobtrusive colours.	All works areas for duration of works; Upon handover and completion of works. – may be disassembled in phases	I
Table 15.6	12.3	-	<b>CM6</b> - Avoidance of excessive height and bulk of site buildings and structures.	New passenger concourse, terminal 2 expansion and other proposed airport related buildings and structures under the project; Upon handover and completion of works.	I
Table 15.6	12.3	-	<b>CM7</b> - Control of night-time lighting by hooding all lights and through minimisation of night working periods.	All works areas for duration of works; Upon handover and completion of works. – may be disassembled in phases	I
Table 15.6	12.3	-	<b>CM8</b> - All existing trees shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas.	All existing trees to be retained; Upon handover and completion of works.	I
Table 15.6	12.3	-	<b>CM9</b> - Trees unavoidably affected by the works shall be transplanted where practical. A detailed Tree Transplanting Specification shall be provided in the Contract Specification, if applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme.	All existing trees to be affected by the works; Upon handover and completion of works.	I
Table 15.6	12.3	-	<b>CM10</b> - Land formation works shall be followed with advanced hydroseeding around taxiways and runways as soon as practical.	All affected existing grass areas around runways and verges/Duration of works;	N/A

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
				Upon handover and completion of works.	
			<b>Cultural Heritage Impact – Construction Phase</b>		
			Not applicable.		
			<b>Health Impact – Aircraft Emissions</b>		
			Not applicable.		
			<b>Health Impact – Aircraft Noise</b>		
			Not applicable.		

Notes:

“ - ” For items denoted as “ - ” provided under the columns of EM&A Ref. or EP Condition, environmental protection measures should be referred to the relevant paragraph(s) / table(s) in the approved EIA Report.

“ I ” Implemented where applicable.

“ N/A ” Not applicable to the construction works implemented during the reporting month.

“ ^ ” Checked by ET through site inspection and record provided by the Contractor.

## **Appendix C. Monitoring Schedule**

# **Monitoring Schedule of This Reporting Period**

# Sep-21

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1 Site Inspection	2 Site Inspection  WQ General mid-ebb: 9:42 mid-flood: 22:15	3 Site Inspection  CWD Survey (Land-based)	4  AR1A, AR2  WQ General mid-ebb: 11:23 mid-flood: 18:40
5	6 Site Inspection  CWD Survey (Vessel)	7 Site Inspection  CWD Survey (Vessel)  WQ General mid-ebb: 13:22 mid-flood: 6:37	8 CWD Survey (Vessel)  NM4, NM6	9 Site Inspection  CWD Survey (Land-based)  WQ General mid-ebb: 14:34 mid-flood: 8:08	10 Site Inspection  CWD Survey (Vessel) AR1A, AR2 NM1A, NM5	11  WQ General mid-ebb: 15:53 mid-flood: 9:47
12	13 Site Inspection	14 Site Inspection  WQ General mid-ebb: 6:13 mid-flood: 18:47	15  NM4, NM6	16 Site Inspection  CWD Survey (Vessel) AR1A, AR2 NM1A, NM5  WQ General mid-ebb: 9:08 mid-flood: 17:19	17 Site Inspection  CWD Survey (Vessel)	18  WQ General mid-ebb: 11:14 mid-flood: 18:34
19	20 Site Inspection  CWD Survey (Vessel)  NM4, NM6	21 Site Inspection  AR1A, AR2 NM1A, NM5  WQ General mid-ebb: 13:17 mid-flood: 6:49	22	23 Site Inspection  CWD Survey (Vessel)  WQ General mid-ebb: 14:20 mid-flood: 8:11	24 Site Inspection	25  WQ General mid-ebb: 15:18 mid-flood: 9:32
26	27 Site Inspection  AR1A, AR2 NM1A, NM5	28 Site Inspection  NM4, NM6  WQ General mid-ebb: 5:05 mid-flood: 17:21	29	30 Site Inspection  WQ General mid-ebb: 7:15 mid-flood: 20:16		
<b>Notes:</b> CWD - Chinese White Dolphin Air quality and Noise Monitoring Station WQ - Water Quality NM1A/AR1A - Man Tung Road Park NM4 - Ching Chung Hau Po Woon Primary School NM5/AR2 - Village House, Tin Sum NM6 - House No. 1, Sha Lo Wan						

# **Tentative Monitoring Schedule of Next Reporting Period**

# Oct-21

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					<b>1</b>	<b>2</b>  AR1A, AR2  WQ General mid-ebb: 09:56 mid-flood: 17:33
<b>3</b>	<b>4</b> Site Inspection	<b>5</b> Site Inspection  WQ General mid-ebb: 12:14 mid-flood: 05:43	<b>6</b> CWD Survey (Vessel)  NM4, NM6	<b>7</b> Site Inspection CWD Survey (Vessel)  WQ General mid-ebb: 13:32 mid-flood: 07:18	<b>8</b> Site Inspection CWD Survey (Vessel) AR1A, AR2 NM1A, NM5	<b>9</b>  WQ General mid-ebb: 14:56 mid-flood: 09:01
<b>10</b>	<b>11</b> Site Inspection	<b>12</b> Site Inspection CWD Survey (Vessel, Land-based)  NM4, NM6 WQ General mid-ebb: 04:48 mid-flood: 12:39	<b>13</b> Site Inspection CWD Survey (Vessel) AR1A, AR2 NM1A, NM5	<b>14</b>  WQ General mid-ebb: 07:12 mid-flood: 20:11	<b>15</b> Site Inspection CWD Survey (Vessel, Land-based)	<b>16</b>  WQ General mid-ebb: 10:00 mid-flood: 17:27
<b>17</b>	<b>18</b> Site Inspection CWD Survey (Vessel)  NM4, NM6	<b>19</b> Site Inspection CWD Survey (Vessel) AR1A, AR2 NM1A, NM5 WQ General mid-ebb: 12:14 mid-flood: 06:00	<b>20</b>	<b>21</b> Site Inspection  WQ General mid-ebb: 13:19 mid-flood: 07:24	<b>22</b> Site Inspection	<b>23</b>  WQ General mid-ebb: 14:21 mid-flood: 08:45
<b>24</b>	<b>25</b> Site Inspection  AR1A, AR2 NM1A, NM5	<b>26</b> Site Inspection  NM4, NM6 WQ General mid-ebb: 15:52 mid-flood: 11:08	<b>27</b>	<b>28</b> Site Inspection  WQ General mid-ebb: 05:12 mid-flood: 17:36	<b>29</b> Site Inspection	<b>30</b>  AR1A, AR2  WQ General mid-ebb: 07:28 mid-flood: 16:21
<b>31</b>		<b>Notes:</b> CWD - Chinese White Dolphin Air quality and Noise Monitoring Station WQ - Water Quality NM1A/AR1A - Man Tung Road Park NM4 - Ching Chung Hau Po Woon Primary School NM5/AR2 - Village House, Tin Sum NM6 - House No. 1, Sha Lo Wan				

## **Appendix D. Monitoring Results**

## **Air Quality Monitoring Results**

**1-hour TSP Results**

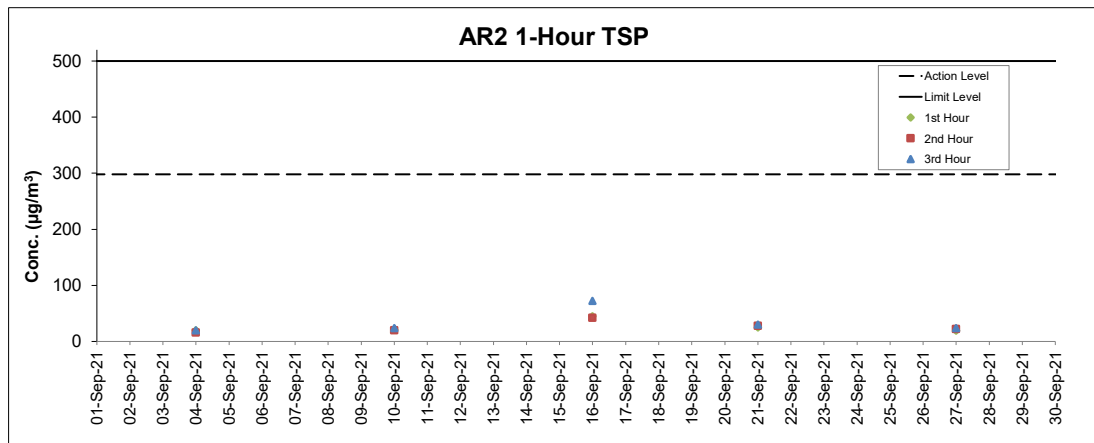
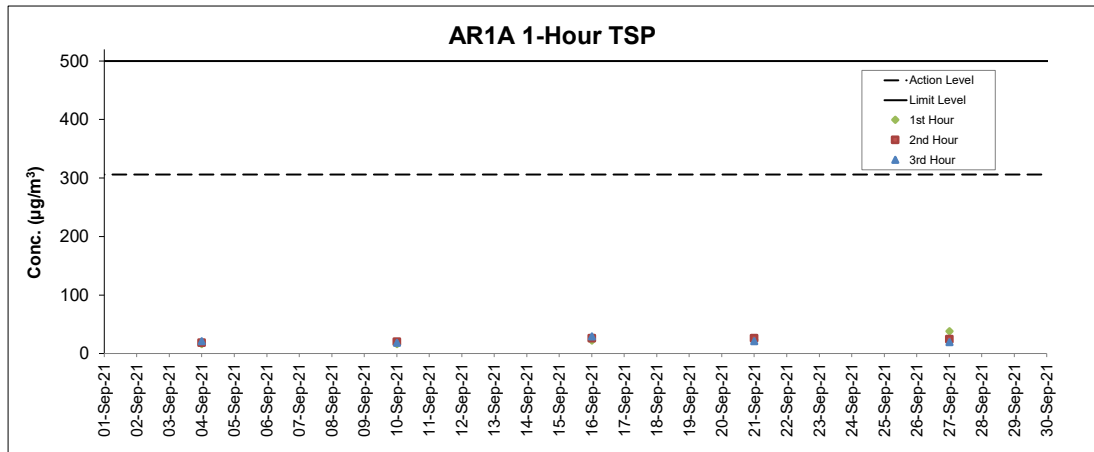
**Station: AR1A- Man Tung Road Park**

Date	Time	Weather	Wind Speed (m/s)	Wind Direction (deg)	1-hr TSP ( $\mu\text{g}/\text{m}^3$ )	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
04-Sep-21	8:32	Cloudy	2.8	Variable	16	306	500
04-Sep-21	9:32	Cloudy	4.2	322	18	306	500
04-Sep-21	10:32	Cloudy	1.7	355	21	306	500
10-Sep-21	14:10	Cloudy	4.7	261	16	306	500
10-Sep-21	15:10	Cloudy	3.6	277	20	306	500
10-Sep-21	16:10	Cloudy	1.9	301	18	306	500
16-Sep-21	14:15	Sunny	1.7	290	22	306	500
16-Sep-21	15:15	Sunny	1.4	Variable	26	306	500
16-Sep-21	16:15	Sunny	4.2	232	29	306	500
21-Sep-21	13:04	Cloudy	5.3	207	23	306	500
21-Sep-21	14:04	Cloudy	7.8	66	26	306	500
21-Sep-21	15:04	Cloudy	3.9	162	21	306	500
27-Sep-21	13:22	Cloudy	3.9	249	38	306	500
27-Sep-21	14:22	Cloudy	3.9	268	24	306	500
27-Sep-21	15:22	Cloudy	3.3	251	19	306	500

**1-hour TSP Results**

**Station: AR2- Village House, Tin Sum**

Date	Time	Weather	Wind Speed (m/s)	Wind Direction (deg)	1-hr TSP ( $\mu\text{g}/\text{m}^3$ )	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
04-Sep-21	13:41	Cloudy	1.7	Variable	20	298	500
04-Sep-21	14:41	Cloudy	4.2	271	16	298	500
04-Sep-21	15:41	Cloudy	3.3	280	20	298	500
10-Sep-21	14:32	Sunny	4.7	267	21	298	500
10-Sep-21	15:32	Sunny	3.1	263	20	298	500
10-Sep-21	16:32	Sunny	2.8	268	24	298	500
16-Sep-21	14:03	Cloudy	1.7	259	45	298	500
16-Sep-21	15:03	Cloudy	1.4	Variable	42	298	500
16-Sep-21	16:03	Cloudy	5.0	232	72	298	500
21-Sep-21	9:12	Cloudy	2.2	335	25	298	500
21-Sep-21	10:12	Cloudy	2.2	343	28	298	500
21-Sep-21	11:12	Cloudy	3.9	318	30	298	500
27-Sep-21	9:10	Cloudy	3.1	60	19	298	500
27-Sep-21	10:10	Cloudy	2.5	76	22	298	500
27-Sep-21	11:10	Cloudy	2.8	331	24	298	500



**Notes**

1. Major site activities carried out during the reporting period are summarized in Section 1.4 of the monthly EM&A report.
2. Weather conditions during monitoring are presented in the data tables above.
3. QA/QC requirements as stipulated in the EM&A Manual were carried out during measurement.

## Noise Monitoring Results

### Noise Measurement Results

#### Station: NM1A- Man Tung Road Park

Date	Weather	Time	Measured L <sub>10</sub> dB(A)	Measured L <sub>90</sub> dB(A)	L <sub>eq(30mins)</sub> dB(A) ^
10-Sep-21	Cloudy	14:32	69.6	54.4	66
10-Sep-21	Cloudy	14:37	65.4	55.0	
10-Sep-21	Cloudy	14:42	59.7	53.5	
10-Sep-21	Cloudy	14:47	59.8	52.8	
10-Sep-21	Cloudy	14:52	61.8	52.3	
10-Sep-21	Cloudy	14:57	62.5	51.5	63
16-Sep-21	Sunny	14:05	61.8	50.5	
16-Sep-21	Sunny	14:10	65.0	50.3	
16-Sep-21	Sunny	14:15	61.7	49.9	
16-Sep-21	Sunny	14:20	64.3	49.5	
16-Sep-21	Sunny	14:25	64.8	49.9	
16-Sep-21	Sunny	14:30	60.6	50.7	69
21-Sep-21	Cloudy	14:07	72.7	55.2	
21-Sep-21	Cloudy	14:12	69.2	54.6	
21-Sep-21	Cloudy	14:17	68.3	51.8	
21-Sep-21	Cloudy	14:22	68.2	52.1	
21-Sep-21	Cloudy	14:27	68.9	56.0	
21-Sep-21	Cloudy	14:32	70.1	50.7	69
27-Sep-21	Cloudy	13:54	67.9	54.5	
27-Sep-21	Cloudy	13:59	69.0	54.9	
27-Sep-21	Cloudy	14:04	67.9	52.6	
27-Sep-21	Cloudy	14:09	65.7	58.0	
27-Sep-21	Cloudy	14:14	67.2	57.2	
27-Sep-21	Cloudy	14:19	68.9	57.8	

Remarks:

(^) +3dB (A) correction in Leq(30mins) dB(A) was applied to free-field measurement.

### Noise Measurement Results

#### Station: NM4- Ching Chung Hau Po Woon Primary School

Date	Weather	Time	Measured L <sub>10</sub> dB(A)	Measured L <sub>90</sub> dB(A)	L <sub>eq(30mins)</sub> dB(A) ^
08-Sep-21	Cloudy	13:04	66.1	57.3	65
08-Sep-21	Cloudy	13:09	63.8	55.9	
08-Sep-21	Cloudy	13:14	64.8	55.8	
08-Sep-21	Cloudy	13:19	65.1	55.6	
08-Sep-21	Cloudy	13:24	64.5	54.3	
08-Sep-21	Cloudy	13:29	65.6	55.2	65
15-Sep-21	Cloudy	13:15	62.6	59.2	
15-Sep-21	Cloudy	13:20	63.0	59.2	
15-Sep-21	Cloudy	13:25	63.5	59.4	
15-Sep-21	Cloudy	13:30	63.8	58.7	
15-Sep-21	Cloudy	13:35	62.4	58.2	
15-Sep-21	Cloudy	13:40	63.0	59.5	66
20-Sep-21	Cloudy	13:00	63.3	60.4	
20-Sep-21	Cloudy	13:05	62.9	59.5	
20-Sep-21	Cloudy	13:10	62.5	59.2	
20-Sep-21	Cloudy	13:15	63.5	60.1	
20-Sep-21	Cloudy	13:20	64.1	58.4	
20-Sep-21	Cloudy	13:25	65.6	59.2	63
28-Sep-21	Cloudy	11:02	60.0	52.7	
28-Sep-21	Cloudy	11:07	61.0	53.3	
28-Sep-21	Cloudy	11:12	60.0	52.2	
28-Sep-21	Cloudy	11:17	63.4	55.2	
28-Sep-21	Cloudy	11:22	61.9	53.4	
28-Sep-21	Cloudy	11:27	64.1	53.4	

Remarks:

(^) +3dB (A) correction in Leq(30mins) dB(A) was applied to free-field measurement.

### Noise Measurement Results

#### Station: NM5- Village House, Tin Sum

Date	Weather	Time	Measured	Measured	L <sub>eq(30mins)</sub> dB(A) ^
			L <sub>10</sub> dB(A)	L <sub>90</sub> dB(A)	
10-Sep-21	Sunny	14:16	46.3	44.2	55
10-Sep-21	Sunny	14:21	53.2	44.9	
10-Sep-21	Sunny	14:26	52.1	50.8	
10-Sep-21	Sunny	14:31	52.0	50.7	
10-Sep-21	Sunny	14:36	52.4	50.8	
10-Sep-21	Sunny	14:41	52.8	50.4	
16-Sep-21	Cloudy	14:04	51.1	44.1	55
16-Sep-21	Cloudy	14:09	58.4	44.2	
16-Sep-21	Cloudy	14:14	50.1	43.8	
16-Sep-21	Cloudy	14:19	56.4	43.3	
16-Sep-21	Cloudy	14:24	48.0	43.8	
16-Sep-21	Cloudy	14:29	47.9	42.8	
21-Sep-21	Cloudy	09:18	55.2	46.0	57
21-Sep-21	Cloudy	09:23	44.2	41.0	
21-Sep-21	Cloudy	09:28	46.5	40.9	
21-Sep-21	Cloudy	09:33	50.0	43.0	
21-Sep-21	Cloudy	09:38	51.0	41.0	
21-Sep-21	Cloudy	09:43	58.1	41.4	
27-Sep-21	Cloudy	09:22	62.5	50.1	61*
27-Sep-21	Cloudy	09:27	61.1	46.8	
27-Sep-21	Cloudy	09:32	61.6	45.5	
27-Sep-21	Cloudy	09:37	62.2	48.2	
27-Sep-21	Cloudy	09:42	61.4	48.6	
27-Sep-21	Cloudy	09:47	59.4	51.1	

Remarks:

(^) +3dB (A) correction in Leq(30mins) dB(A) was applied to free-field measurement.

(\*) The measurement result was corrected with reference to the baseline monitoring levels.

### Noise Measurement Results

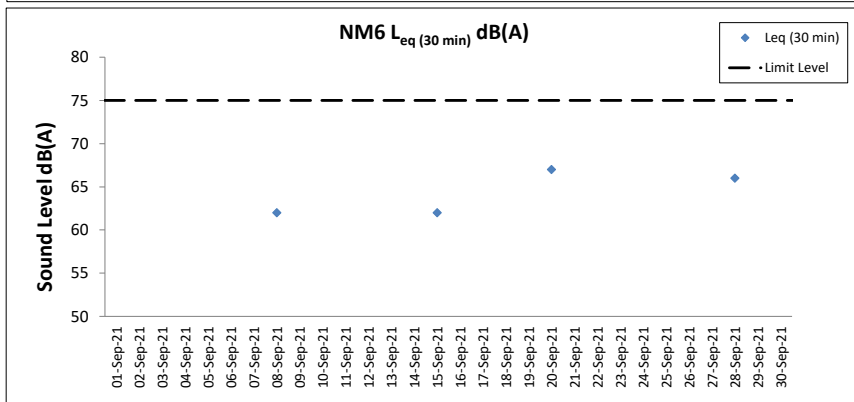
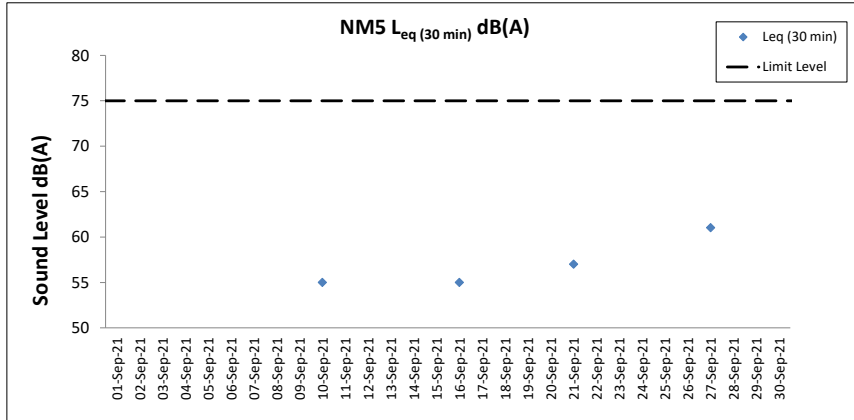
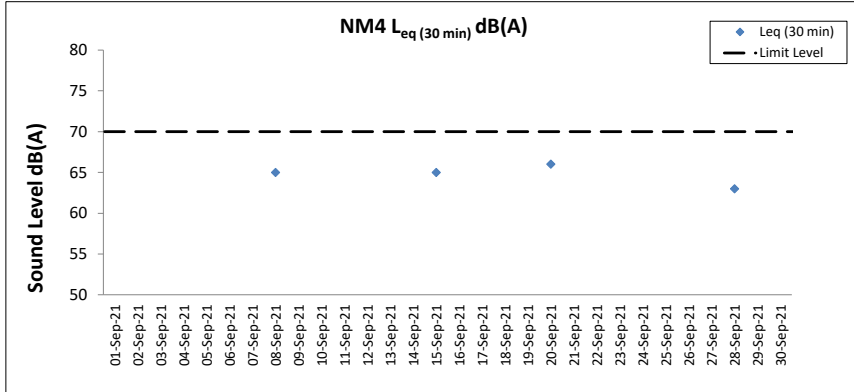
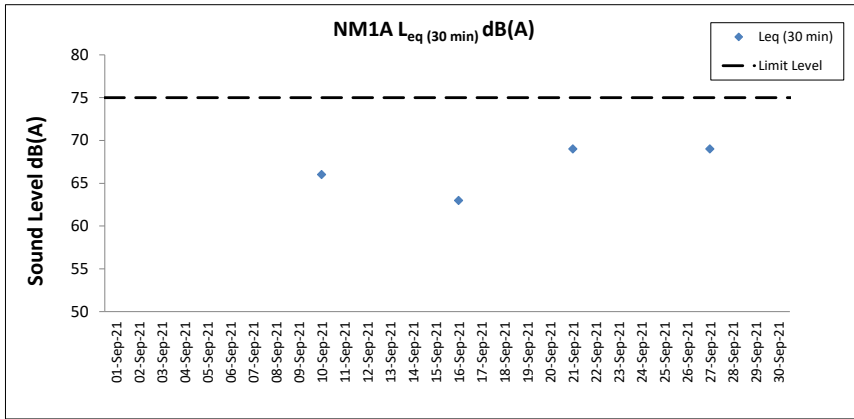
#### Station: NM6- House No.1 Sha Lo Wan

Date	Weather	Time	Measured	Measured	L <sub>eq(30mins)</sub> dB(A) ^
			L <sub>10</sub> dB(A)	L <sub>90</sub> dB(A)	
08-Sep-21	Cloudy	15:42	68.8	59.5	62*
08-Sep-21	Cloudy	15:47	68.9	61.5	
08-Sep-21	Cloudy	15:52	69.5	60.1	
08-Sep-21	Cloudy	15:57	67.2	56.7	
08-Sep-21	Cloudy	16:02	69.9	62.1	
08-Sep-21	Cloudy	16:07	69.4	60.6	
15-Sep-21	Cloudy	15:44	60.2	44.3	62*
15-Sep-21	Cloudy	15:49	65.4	42.1	
15-Sep-21	Cloudy	15:54	65.9	41.9	
15-Sep-21	Cloudy	15:59	71.2	44.9	
15-Sep-21	Cloudy	16:04	72.9	44.3	
15-Sep-21	Cloudy	16:09	63.6	45.0	
20-Sep-21	Cloudy	15:47	73.7	55.1	67
20-Sep-21	Cloudy	15:52	62.4	55.1	
20-Sep-21	Cloudy	15:57	62.4	53.1	
20-Sep-21	Cloudy	16:02	65.7	53.5	
20-Sep-21	Cloudy	16:07	64.4	55.4	
20-Sep-21	Cloudy	16:12	64.0	54.8	
28-Sep-21	Cloudy	09:44	63.1	52.2	66
28-Sep-21	Cloudy	09:49	68.0	57.2	
28-Sep-21	Cloudy	09:54	65.8	55.9	
28-Sep-21	Cloudy	09:59	68.9	58.9	
28-Sep-21	Cloudy	10:04	66.8	54.9	
28-Sep-21	Cloudy	10:09	62.2	52.9	

Remarks:

(^) +3dB (A) correction in Leq(30mins) dB(A) was applied to free-field measurement.

(\*) The measurement result was corrected with reference to the baseline monitoring levels.



**Notes**

1. Major site activities carried out during the reporting period are summarized in Section 1.4 of the monthly EM&A report.
2. Weather conditions during monitoring are presented in the data tables above.
3. QA/QC requirements as stipulated in the EM&A Manual were carried out during measurement.

## **Water Quality Monitoring Results**

**Expansion of Hong Kong International Airport into a Three-Runway System  
Water Quality Monitoring**

**Water Quality Monitoring Results on 02 September 21 during Mid-Ebb Tide**

Monitoring Station	Weather Condition	Sea Condition	Sampling Time	Water Depth (m)	Sampling Depth (m)		Current Speed (m/s)	Current Direction	Water Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen		Turbidity (NTU)		Suspended Solids (mg/L)		Coordinate HK Grid (Northing)	Coordinate HK Grid (Easting)
									Value	Average	Value	Average	Value	Average	Value	Average	Value	DA	Value	DA	Value	DA		
C1	Fine	Calm	09:09	8.6	Surface	1.0	0.3	229	26.8	26.8	7.6	7.6	29.4	29.4	73.3	73.2	5.0	4.9	2.8	3.6	3	4	815610	804226
						1.0	0.4	241	26.8	7.6	7.6	29.4	29.4	73.0	71.8	5.0	4.9	2.7	3					
						4.3	0.4	226	26.9	7.6	7.6	29.7	29.7	72.0	71.8	4.9	4.9	3.9	4					
					Middle	4.3	0.4	233	26.9	7.6	7.6	29.8	29.8	71.6	71.8	4.8	4.8	4.0	5					
						7.6	0.3	219	27.3	7.6	7.6	29.7	29.5	71.5	74.4	4.8	5.0	4.0	5					
						7.6	0.3	227	27.4	7.6	7.6	29.3	29.5	77.2	74.4	5.2	5.0	4.1	6					
C2	Sunny	Moderate	10:38	10.8	Surface	1.0	0.6	174	26.7	26.7	7.9	7.9	25.5	25.5	68.3	67.8	4.8	4.2	4.0	7.3	4	4	825670	806949
						1.0	0.6	184	26.6	7.9	7.9	25.6	25.6	67.3	67.8	4.7	4.2	4.0	5					
						5.4	0.3	174	25.7	7.8	7.8	27.9	28.0	52.2	52.2	3.6	3.3	4.5	3					
					Middle	5.4	0.3	176	25.6	7.8	7.8	28.0	28.0	52.1	52.2	3.6	3.3	4.7	3					
						9.8	0.4	159	25.2	7.8	7.8	28.8	28.8	46.9	47.0	3.3	3.3	13.1	3					
						9.8	0.4	164	25.2	7.8	7.8	28.8	28.8	47.1	47.0	3.3	3.3	13.4	3					
C3	Sunny	Moderate	08:30	10.6	Surface	1.0	0.7	103	26.4	26.4	7.9	7.9	26.6	26.6	70.5	70.5	4.9	4.7	2.6	5.7	4	4	822117	817789
						1.0	0.7	107	26.4	7.9	7.9	26.6	26.6	70.4	70.5	4.9	4.7	2.7	3					
						5.3	0.4	87	25.9	7.9	7.9	27.9	28.0	64.0	63.9	4.5	4.4	3.7	4					
					Middle	5.3	0.4	89	25.8	7.9	7.9	28.0	28.0	63.8	63.9	4.4	3.7	3.8	5					
						9.6	0.5	35	25.0	7.8	7.8	29.4	29.4	53.5	53.5	3.7	3.7	10.4	4					
						9.6	0.5	35	25.0	7.9	7.9	29.4	29.4	53.5	53.5	3.7	3.7	11.1	5					
IM1	Fine	Calm	09:31	4.2	Surface	1.0	0.0	181	26.6	26.6	7.6	7.6	29.7	29.7	65.2	65.7	4.5	4.5	5.4	5.7	5	4	817930	807121
						1.0	0.0	189	26.6	7.6	7.6	29.7	29.7	66.1	65.7	4.5	4.5	5.4	5					
						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
					Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
						3.2	0.0	149	26.5	26.5	7.6	7.6	29.8	29.8	66.5	66.8	4.5	4.6	6.1	3				
						3.2	0.0	153	26.5	7.6	7.6	29.8	29.8	67.1	66.8	4.6	4.6	6.0	4					
IM2	Fine	Calm	09:39	6.2	Surface	1.0	0.1	141	26.6	26.6	7.6	7.6	29.8	29.9	67.8	67.4	4.6	4.5	3.8	4.5	5	4	818155	806159
						1.0	0.1	148	26.5	7.6	7.6	29.9	29.9	67.0	67.4	4.6	4.5	3.8	4					
						3.1	0.2	123	26.4	7.6	7.6	30.2	30.2	65.1	65.2	4.4	4.4	4.3	4					
					Middle	3.1	0.2	127	26.4	7.6	7.6	30.2	30.2	65.2	65.2	4.4	4.4	4.4	4					
						5.2	0.1	135	26.4	7.6	7.6	30.2	30.1	63.9	64.6	4.4	4.5	5.3	4					
						5.2	0.1	135	26.5	7.6	7.6	30.0	30.1	65.3	64.6	4.5	4.5	5.2	3					
IM3	Fine	Calm	09:45	6.4	Surface	1.0	0.3	162	26.4	26.4	7.6	7.6	30.1	30.2	68.3	68.2	4.6	4.5	7.6	8.5	3	3	818805	805585
						1.0	0.3	172	26.4	7.6	7.6	30.2	30.2	68.1	68.2	4.6	4.5	7.7	3					
						3.2	0.2	154	26.4	7.6	7.6	30.3	30.4	64.1	64.2	4.3	4.4	8.5	3					
					Middle	3.2	0.2	160	26.4	7.6	7.6	30.4	30.4	64.3	64.2	4.4	4.4	8.5	3					
						5.4	0.1	135	26.3	7.6	7.6	30.5	30.4	65.5	65.5	4.5	4.5	9.4	3					
						5.4	0.1	138	26.4	7.6	7.6	30.4	30.4	65.4	65.5	4.4	4.5	9.4	<2					
IM4	Fine	Calm	09:56	8.0	Surface	1.0	0.8	196	28.0	28.0	7.6	7.6	23.8	23.8	81.6	81.4	5.6	5.2	7.2	8.1	2	2	819712	804598
						1.0	0.8	199	28.0	7.6	7.6	23.8	23.8	81.2	81.4	5.6	5.2	7.1	2					
						4.0	0.7	203	26.7	7.6	7.6	29.4	29.5	69.9	69.5	4.8	4.7	8.1	2					
					Middle	4.0	0.7	220	26.7	7.6	7.6	29.6	29.5	69.1	69.5	4.7	5.0	8.2	2					
						7.0	0.4	178	26.6	7.6	7.6	29.8	29.7	70.2	72.5	4.8	5.0	9.0	<2					
						7.0	0.4	181	26.7	7.6	7.6	29.7	29.7	74.8	72.5	5.1	5.0	9.0	<2					
IM5	Fine	Calm	10:05	7.2	Surface	1.0	0.6	203	27.2	27.2	7.6	7.6	25.5	25.6	77.2	77.1	5.3	5.3	2.0	2.4	3	3	820722	804864
						1.0	0.7	212	27.1	7.6	7.6	25.7	25.6	77.0	77.1	5.3	5.3	2.0	3					
						3.6	0.6	218	27.0	7.6	7.6	28.2	28.2	77.1	77.4	5.3	5.3	2.2	3					
					Middle	3.6	0.6	238	27.0	7.6	7.6	28.2	28.2	77.6	77.4	5.3	5.3	2.2	3					
						6.2	0.4	208	27.0	7.6	7.6	28.4	28.3	80.3	80.9	5.5	5.5	3.0	3					
						6.2	0.4	214	27.0	7.6	7.6	28.2	28.3	81.4	80.9	5.5	5.5	3.0	3					
IM6	Fine	Calm	10:14	6.6	Surface	1.0	0.4	208	27.4	27.4	7.6	7.6	26.6	26.6	81.8	81.7	5.6	5.6	1.0	1.9	3	2	821075	805815
						1.0	0.4	220	27.3	7.6	7.6	26.7	26.6	81.6	81.7	5.6	5.6	1.1	3					
						3.3	0.3	210	27.3	7.6	7.6	27.0	27.0	81.2	81.2	5.5	5.5	1.9	2					
					Middle	3.3	0.3	216	27.2	7.6	7.6	27.1	27.0	81.2	81.2	5.5	5.5	1.9	2					
						5.6	0.3	240	27.2	7.6	7.6	27.4	27.4	82.1	82.9	5.6	5.7	2.9	2					
						5.6	0.3	262	27.2	7.6	7.6	27.3	27.4	83.7	82.9	5.7	5.7	2.9	2					
IM7	Fine	Calm	10:22	7.8	Surface	1.0	0.2	254	27.2	27.2	7.6	7.6	27.5	27.6	79.6	77.9	5.4	5.2	1.3	2.4	4	4	821358	806822
						1.0	0.2	260	27.1	7.6	7.6	27.7	27.6	76.1	77.9	5.2	5.2	1.2	4					
						3.9	0.2	242	27.0	7.6	7.6	28.0	28.0	75.1	74.9	5.1	5.1	2.5	4					
					Middle	3.9	0.2	243	27.0	7.6	7.6	28.1	28.0	74.6	74.9	5.1	5.1	2.4	3					
						6.8	0.1	242	26.9	7.6	7.6	28.3	28.1	74.0	75.6	5.0	5.2	3.5	3					
						6.8	0.1	261	27.0	7.6	7.6	27.9	28.1	77.2	75.6	5.3	5.3	3.5	3					
IM8	Sunny	Moderate	10:13	7.4	Surface	1.0	0.1	73	27.0	27.0	7.9	7.9	25.1	25.1	72.8	72.8	5.0	5.0	2.3	4.8	5	4	821808	808139
						1.0	0.1	74	27.0	7.9	7.9	25.1	25.1	72.7	72.8	5.0	5.0	2.3	4					
						3.7	0.2	109	27.0	7.9	7.9	25.1	25.1	72.3	72.4	5.0	4.7	2.9	4					
					Middle	3.7	0.2	115	26.9	7.9	7.9	25.2	25.1	72.4	72.4	5.0	4.7	3.1	4					
						6.4	0.2	54	26.4	7.9	7.9	26.7	26.7	67.1	67.1	4.7	4.7	9.0	4					
						6.4	0.2	56	26.4	7.9	7.9	26.7	26.7	67.1	67.1	4.7	4.7	9.4	3					

DA: Depth-Averaged

Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

Value exceeding Action Level is underlined. Value exceeding Limit Level is **bolded and underlined**



Expansion of Hong Kong International Airport into a Three-Runway System  
Water Quality Monitoring

Water Quality Monitoring Results on 02 September 21 during Mid-Flood Tide

Monitoring Station	Weather Condition	Sea Condition	Sampling Time	Water Depth (m)	Sampling Depth (m)		Current Speed (m/s)	Current Direction	Water Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen		Turbidity(NTU)		Suspended Solids (mg/L)		Coordinate HK Grid (Northing)	Coordinate HK Grid (Easting)
									Value	Average	Value	Average	Value	Average	Value	Average	Value	DA	Value	DA	Value	DA		
C1	Fine	Calm	21:35	7.6	Surface	1.0	0.8	36	26.9	26.9	7.6	7.6	27.5	27.2	78.8	78.2	5.4	5.4	3.2	3				
						1.0	0.8	39	26.8	26.8	7.6	7.6	26.8	27.2	77.5	78.2	5.4	5.4	3.1	3				
					Middle	3.8	0.5	21	26.8	26.8	7.6	7.6	29.7	29.7	71.1	71.2	4.8	4.8	3.5	2				
						3.8	0.5	24	26.8	26.8	7.6	7.6	29.7	29.7	71.2	71.2	4.8	4.8	3.6	2				
					Bottom	6.6	0.4	35	26.7	26.7	7.6	7.6	29.8	29.8	76.7	77.8	5.2	5.3	4.7	2				
						6.6	0.4	33	26.7	26.7	7.6	7.6	29.8	29.8	76.9	77.8	5.3	5.3	4.6	2				
C2	Cloudy	Moderate	20:38	11.2	Surface	1.0	0.3	343	26.5	26.5	7.8	7.8	25.1	25.2	65.8	65.7	4.6	4.6	3.9	3				
						1.0	0.3	343	26.4	26.4	7.8	7.8	25.2	25.2	65.5	65.7	4.6	4.6	3.9	2				
					Middle	5.6	0.5	1	25.9	25.9	7.8	7.8	27.6	27.7	51.9	51.9	3.6	3.6	4.3	3				
						5.6	0.5	1	25.8	25.8	7.8	7.8	27.7	27.7	51.9	51.9	3.6	3.6	4.4	3				
					Bottom	10.2	0.4	348	25.2	25.2	7.8	7.8	28.8	28.8	45.6	45.8	3.2	3.2	5.5	4				
						10.2	0.5	320	25.2	25.2	7.8	7.8	28.8	28.8	45.9	45.8	3.2	3.2	5.3	4				
C3	Cloudy	Moderate	22:19	11.8	Surface	1.0	0.5	296	26.3	26.3	7.9	7.9	27.0	27.0	59.3	59.3	4.1	4.1	5.9	3				
						1.0	0.5	313	26.3	26.3	7.9	7.9	27.0	27.0	59.3	59.3	4.1	4.1	5.9	3				
					Middle	5.9	0.4	272	25.6	25.6	7.9	7.9	28.2	28.2	58.2	58.2	4.1	4.1	5.6	3				
						5.9	0.4	272	25.5	25.5	7.9	7.9	28.3	28.3	58.2	58.2	4.1	4.1	5.5	3				
					Bottom	10.8	0.4	280	25.0	25.0	7.9	7.9	29.1	29.1	52.6	52.8	3.7	3.7	5.6	5				
						10.8	0.4	304	25.0	25.0	7.9	7.9	29.0	29.0	52.9	52.8	3.7	3.7	5.6	5				
IM1	Fine	Calm	21:15	4.0	Surface	1.0	0.1	355	26.7	26.7	7.6	7.6	30.0	30.0	68.1	67.8	4.6	4.6	5.8	<2				
						1.0	0.1	327	26.6	26.6	7.6	7.6	30.1	30.1	67.5	67.8	4.6	4.6	5.8	<2				
					Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<2		
						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<2		
					Bottom	3.0	0.1	14	26.6	26.6	7.6	7.6	30.4	30.4	72.4	73.1	4.9	5.0	6.1	6.0	<2			
						3.0	0.1	15	26.6	26.6	7.6	7.6	30.3	30.3	73.8	73.1	5.0	5.0	6.2	6.0	<2			
IM2	Fine	Calm	21:08	6.0	Surface	1.0	0.1	50	26.5	26.5	7.6	7.6	30.2	30.3	65.3	65.3	4.5	4.5	5.4	2				
						1.0	0.1	62	26.4	26.5	7.6	7.6	30.3	30.3	65.2	65.3	4.5	4.5	5.3	3				
					Middle	3.0	0.1	37	26.4	26.4	7.6	7.6	30.7	30.8	67.2	67.4	4.5	4.5	6.9	2				
						3.0	0.1	38	26.4	26.4	7.6	7.6	30.8	30.8	67.5	67.4	4.5	4.5	6.9	2				
					Bottom	5.0	0.1	63	26.4	26.4	7.6	7.6	30.9	30.9	65.1	65.3	4.4	4.4	7.3	6.5	<2			
						5.0	0.1	63	26.4	26.4	7.6	7.6	30.9	30.9	65.5	65.3	4.4	4.4	7.3	6.5	<2			
IM3	Fine	Calm	21:02	6.2	Surface	1.0	0.2	58	27.3	27.3	7.6	7.6	28.4	28.4	77.7	77.7	5.3	5.3	2.1	2				
						1.0	0.2	61	27.3	27.3	7.6	7.6	28.4	28.4	77.7	77.7	5.3	5.3	2.1	2				
					Middle	3.1	0.2	53	27.2	27.2	7.6	7.6	28.6	28.7	77.5	77.5	5.2	5.2	3.1	3.3	<2			
						3.1	0.2	60	27.2	27.2	7.6	7.6	28.7	28.7	77.4	77.5	5.2	5.2	3.2	3.3	<2			
					Bottom	5.2	0.1	72	27.1	27.2	7.6	7.6	28.9	28.9	79.7	80.5	5.4	5.5	4.6	6.0	<2			
						5.2	0.1	77	27.2	27.2	7.6	7.6	28.8	28.9	81.3	80.5	5.5	5.5	4.5	6.0	<2			
IM4	Fine	Calm	20:54	7.8	Surface	1.0	0.9	49	27.4	27.4	7.6	7.6	25.1	25.1	84.0	83.8	5.8	5.8	7.0	2				
						1.0	0.9	43	27.3	27.4	7.6	7.6	25.1	25.1	83.5	83.8	5.8	5.8	6.9	2				
					Middle	3.9	0.7	29	27.0	27.0	7.6	7.6	28.0	28.0	77.8	76.0	5.3	5.3	7.8	7.9	2			
						3.9	0.7	30	27.0	27.0	7.6	7.6	28.1	28.1	74.1	76.0	5.0	5.0	7.7	7.9	2			
					Bottom	6.8	0.4	28	27.0	27.1	7.6	7.6	28.2	28.1	74.6	75.4	5.1	5.2	9.0	7.9	2			
						6.8	0.5	29	27.1	27.1	7.6	7.6	27.9	28.1	76.2	75.4	5.2	5.2	9.0	7.9	2			
IM5	Fine	Calm	20:49	7.2	Surface	1.0	0.7	32	27.2	27.2	7.6	7.6	25.6	25.6	84.3	84.1	5.8	5.8	4.8	3				
						1.0	0.8	33	27.1	27.2	7.6	7.6	25.6	25.6	83.9	84.1	5.8	5.8	4.7	4				
					Middle	3.6	0.7	34	27.0	27.0	7.6	7.6	28.3	28.4	74.6	72.4	5.1	5.1	5.2	5.5	2			
						3.6	0.7	32	26.9	27.0	7.6	7.6	28.6	28.4	70.1	72.4	4.8	4.8	5.3	5.5	3			
					Bottom	6.2	0.5	23	27.0	27.1	7.6	7.6	29.2	29.1	71.9	72.7	4.9	5.0	6.5	6.0	3			
						6.2	0.6	26	27.1	27.1	7.6	7.6	29.1	29.1	73.4	72.7	5.0	5.0	6.5	6.0	2			
IM6	Fine	Calm	20:41	6.4	Surface	1.0	0.4	21	27.5	27.5	7.6	7.6	26.2	26.3	86.7	85.1	5.9	5.9	1.1	4				
						1.0	0.5	22	27.5	27.5	7.6	7.6	26.4	26.3	83.5	85.1	5.7	5.8	1.1	4				
					Middle	3.2	0.4	22	27.4	27.4	7.6	7.6	26.6	26.6	83.7	83.8	5.7	5.7	2.2	2.1	3			
						3.2	0.4	24	27.4	27.4	7.6	7.6	26.7	26.6	83.8	83.8	5.7	5.7	2.2	2.1	3			
					Bottom	5.4	0.3	23	27.4	27.4	7.6	7.6	26.7	26.6	85.0	85.4	5.8	5.8	3.0	3				
						5.4	0.3	23	27.4	27.4	7.6	7.6	26.6	26.6	85.7	85.4	5.8	5.8	3.1	3				
IM7	Fine	Calm	20:32	8.0	Surface	1.0	0.2	25	26.9	26.9	7.6	7.6	26.7	26.8	78.8	78.0	5.4	5.4	3.1	2				
						1.0	0.2	21	26.8	26.9	7.6	7.6	26.8	26.8	77.2	78.0	5.3	5.3	3.0	2				
					Middle	4.0	0.2	22	26.8	26.9	7.6	7.6	29.2	29.3	66.5	64.1	4.5	4.5	3.0	3.2	2			
						4.0	0.2	22	26.9	26.9	7.6	7.6	29.4	29.4	61.7	64.1	4.2	4.2	2.9	3.2	2			
					Bottom	7.0	0.0	25	27.2	27.3	7.6	7.6	29.6	29.6	63.8	64.9	4.3	4.4	3.5	3.2	<2			
						7.0	0.0	26	27.3	27.3	7.6	7.6	29.6	29.6	66.0	64.9	4.4	4.4	3.5	3.2	<2			
IM8	Cloudy	Moderate	20:56	7.2	Surface	1.0	0.5	262	27.3	27.3	7.9	7.9	24.5	24.6	75.4	75.4	5.2	5.2	2.4	<2				
						1.0	0.5	275	27.3	27.3	7.9	7.9	24.7	24.6	75.4	75.4	5.2	5.2	2.4	<2				
					Middle	3.6	0.4	272	26.6	26.6	7.9	7.9	26.1	26.1	66.5	66.5	4.6	4.6	3.0	3.7	<2			
						3.6	0.4	294	26.6	26.6	7.9	7.9	26.1	26.1	66.5	66.5	4.6	4.6	3.0	3.7	<2			
					Bottom	6.2	0.2	271	26.3	26.3	7.9	7.9	27.2	27.2	65.8	65.8	4.6	4.6	5.4	4.6	<2			
						6.2	0.3	275	26.3	26.3	7.9	7.9	27.2	27.2	65.8	65.8	4.6	4.6	5.9	4.6	<2			

DA: Depth-Averaged

Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

Value exceeding Action Level is underlined; Value exceeding Limit Level is bolded and underlined



Expansion of Hong Kong International Airport into a Three-Runway System

Water Quality Monitoring

Water Quality Monitoring Results on 04 September 21 during Mid-Ebb Tide

Monitoring Station	Weather Condition	Sea Condition	Sampling Time	Water Depth (m)	Sampling Depth (m)		Current Speed (m/s)	Current Direction	Water Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen		Turbidity (NTU)		Suspended Solids (mg/L)		Coordinate HK Grid (Northing)	Coordinate HK Grid (Easting)		
									Value	Average	Value	Average	Value	Average	Value	Average	Value	DA	Value	DA	Value	DA				
C1	Cloudy	Rough	11:16	7.1	Surface	1.0	0.8	208	28.1	28.1	8.0	8.0	26.4	26.4	82.6	82.6	5.6	5.2	4.8	4.4	5	4	815639	804269		
						1.0	0.8	208	28.1	8.0	8.0	26.4	26.4	82.5	82.5	5.6	5.2	4.8	4.4	5						
						3.6	0.6	224	27.4	8.0	8.0	29.3	29.3	70.5	70.5	4.7	5.4	3.8	4.4	4						
						3.6	0.6	226	27.4	8.0	8.0	29.3	29.3	70.4	70.5	4.7	5.4	3.7	4.4	4						
						6.1	0.5	253	27.3	8.0	8.0	30.0	30.0	68.3	68.3	4.6	4.6	4.7	4.4	3						
						6.1	0.5	264	27.3	8.0	8.0	30.0	30.0	68.2	68.3	4.6	4.6	4.6	4.4	4						
C2	Cloudy	Moderate	12:49	10.6	Surface	1.0	1.0	173	28.2	28.2	8.1	8.1	24.0	24.0	90.3	90.2	6.2	5.4	3.4	7.9	2	4	825673	806955		
						1.0	1.0	183	28.1	8.1	8.1	24.0	24.0	90.0	90.2	6.2	5.4	3.9	7.9	4						
						5.3	0.8	175	27.1	8.0	8.0	28.3	28.4	67.3	67.3	4.6	4.3	9.3	7.9	4						
						5.3	0.9	182	27.1	8.0	8.0	28.5	28.4	67.2	67.3	4.6	4.3	9.6	7.9	3						
						9.6	0.3	158	26.8	8.0	8.0	29.2	29.2	63.4	63.6	4.3	4.3	10.7	7.9	5						
						9.6	0.3	167	26.8	8.0	8.0	29.2	29.2	63.8	63.6	4.3	4.3	10.6	7.9	4						
C3	Cloudy	Moderate	10:22	12.6	Surface	1.0	0.4	113	27.3	27.3	8.1	8.1	28.3	28.3	79.6	79.5	5.4	5.3	3.7	5.4	5	4	822089	817786		
						1.0	0.4	117	27.2	8.1	8.1	28.3	28.3	79.3	79.5	5.4	5.3	3.7	5.4	5						
						6.3	0.2	89	27.1	8.1	8.1	28.8	28.8	77.1	77.1	5.2	5.3	3.8	5.4	5						
						6.3	0.2	96	27.0	8.1	8.1	28.8	28.8	77.0	77.1	5.2	5.3	3.9	5.4	4						
						11.6	0.3	51	26.3	8.0	8.0	30.3	30.3	71.1	71.1	4.8	4.8	8.5	5.4	4						
						11.6	0.4	56	26.3	8.0	8.0	30.3	30.3	71.1	71.1	4.8	4.8	8.6	5.4	3						
IM1	Sunny	Calm	11:39	4.4	Surface	1.0	0.0	167	28.1	28.1	8.0	8.0	28.5	28.5	81.3	81.2	5.4	5.4	3.5	5.0	4	3	817961	807113		
						1.0	0.0	169	28.1	8.0	8.0	28.5	28.5	81.1	81.2	5.4	5.4	3.5	5.0	3						
						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-	3
						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-	3
						3.4	0.0	161	27.2	8.0	8.0	30.9	30.9	64.5	64.6	4.3	4.3	6.5	5.0	3						
						3.4	0.0	169	27.2	8.0	8.0	30.9	30.9	64.6	64.6	4.3	4.3	6.5	5.0	3						
IM2	Sunny	Calm	11:46	6.2	Surface	1.0	0.1	42	27.8	27.8	8.0	8.0	29.3	29.2	71.0	71.0	4.7	4.7	4.1	7.1	3	4	818156	806155		
						1.0	0.1	43	27.8	8.0	8.0	29.2	29.2	71.0	71.0	4.7	4.7	4.0	7.1	4						
						3.1	0.1	160	27.1	8.0	8.0	30.3	30.3	70.7	70.7	4.7	4.7	9.3	7.1	4						
						3.1	0.1	160	27.1	8.0	8.0	30.3	30.3	70.7	70.7	4.7	4.7	9.4	7.1	3						
						5.2	0.0	69	27.0	8.0	8.0	31.2	31.2	63.1	63.2	4.2	4.2	7.7	7.1	4						
						5.2	0.0	73	27.0	8.0	8.0	31.2	31.2	63.3	63.2	4.2	4.2	7.8	7.1	4						
IM3	Sunny	Calm	11:53	6.1	Surface	1.0	0.1	179	28.2	28.2	8.0	8.0	27.3	27.3	81.6	81.6	5.5	5.3	3.0	3.5	4	3	818782	805606		
						1.0	0.2	184	28.2	8.0	8.0	27.3	27.3	81.5	81.6	5.5	5.3	3.0	3.5	5						
						3.1	0.1	166	27.9	8.0	8.0	28.9	28.9	75.2	75.2	5.0	5.3	3.1	3.5	3						
						3.1	0.1	175	27.9	8.0	8.0	28.8	28.9	75.1	75.2	5.0	5.3	3.1	3.5	2						
						5.1	0.0	270	27.0	7.9	7.9	30.7	30.7	59.6	59.7	4.0	4.0	4.5	3.5	2						
						5.1	0.0	281	27.0	7.9	7.9	30.7	30.7	59.7	59.7	4.0	4.0	4.6	3.5	3						
IM4	Sunny	Calm	12:04	7.1	Surface	1.0	1.1	208	28.5	28.5	8.0	8.0	25.7	25.7	89.5	89.4	6.0	5.7	3.1	5.8	2	3	819720	804629		
						1.0	1.1	223	28.5	8.0	8.0	25.7	25.7	89.3	89.4	6.0	5.7	3.1	5.8	2						
						3.6	0.8	209	28.1	8.0	8.0	26.8	26.8	79.9	79.9	5.4	5.4	6.2	5.8	3						
						3.6	0.9	229	28.1	8.0	8.0	26.8	26.8	79.9	79.9	5.4	5.4	6.2	5.8	2						
						6.1	0.7	207	28.0	8.0	8.0	26.9	26.9	79.6	79.7	5.4	5.4	8.2	5.8	3						
						6.1	0.8	217	28.0	8.0	8.0	26.9	26.9	79.8	79.7	5.4	5.4	8.3	5.8	3						
IM5	Sunny	Calm	12:16	6.9	Surface	1.0	1.1	182	28.8	28.8	8.0	8.0	24.7	24.7	95.5	95.5	6.4	5.9	2.6	5.2	4	4	820746	804852		
						1.0	1.1	192	28.8	8.0	8.0	24.7	24.7	95.5	95.5	6.4	5.9	2.6	5.2	3						
						3.5	0.9	186	27.9	7.9	7.9	27.2	27.2	79.0	79.0	5.3	5.3	5.6	5.2	5						
						3.5	0.9	203	27.9	7.9	7.9	27.2	27.2	79.0	79.0	5.3	5.3	5.6	5.2	4						
						5.9	0.7	178	27.9	7.9	7.9	27.3	27.3	78.0	78.0	5.3	5.3	7.5	5.2	5						
						5.9	0.7	189	27.9	7.9	7.9	27.3	27.3	78.0	78.0	5.3	5.3	7.5	5.2	5						
IM6	Sunny	Calm	12:26	6.8	Surface	1.0	1.0	206	28.3	28.3	8.0	8.0	26.0	26.0	87.6	87.6	5.9	5.4	2.4	6.9	5	4	821047	805804		
						1.0	1.0	207	28.3	8.0	8.0	26.0	26.0	87.5	87.6	5.9	5.4	2.4	6.9	4						
						3.4	0.9	203	27.7	7.9	7.9	27.9	27.9	71.0	71.0	4.8	4.8	8.6	6.9	4						
						3.4	0.9	219	27.7	7.9	7.9	27.9	27.9	71.0	71.0	4.8	4.8	8.6	6.9	3						
						5.8	0.7	201	27.7	7.9	7.9	27.9	27.9	70.7	70.8	4.8	4.8	9.6	6.9	3						
						5.8	0.8	220	27.7	7.9	7.9	27.9	27.9	70.8	70.8	4.8	4.8	9.6	6.9	3						
IM7	Sunny	Calm	12:36	7.5	Surface	1.0	0.6	270	28.5	28.5	8.0	8.0	25.8	25.8	86.7	86.7	5.8	5.7	2.6	4.8	3	3	821359	806841		
						1.0	0.7	291	28.5	8.0	8.0	25.8	25.8	86.7	86.7	5.8	5.7	2.5	4.8	2						
						3.8	0.7	269	28.3	7.9	7.9	26.3	26.3	83.3	83.3	5.6	5.5	2.7	4.8	2						
						3.8	0.7	288	28.3	7.9	7.9	26.3	26.3	83.3	83.3	5.6	5.5	2.7	4.8	3						
						6.5	0.6	269	28.1	7.9	7.9	26.7	26.7	81.2	81.2	5.5	5.5	9.1	4.8	2						
						6.5	0.6	291	28.1	7.9	7.9	26.7	26.7	81.2	81.2	5.5	5.5	9.1	4.8	3						
IM8	Cloudy	Moderate	12:16	7.0	Surface	1.0	0.3	210	28.5	28.5	8.2	8.2	24.5	24.5	96.6	96.4	6.6	6.1	3.3	4.1	2	2	821827	808153		
						1.0	0.4	219	28.4	8.2	8.2	24.4	24.4	96.2	96.4	6.5	6.1	3.3	4.1	2						
						3.5	0.2	235	28.0	8.1	8.1	26.7	26.8	85.1	84.2	5.7	5.2	4.3	4.1	2						
						3.5	0.2	241	28.0	8.1	8.1	26.7	26.8	85.1	84.2	5.7	5.2	4.3	4.1	2						
						6.0	0.1	250	27.9	8.1	8.1	27.1	27.1	76.4	76.5	5.2	5.2	4.8	4.1	2						
						6.0	0.1	272	27.9	8.1	8.1	27.1	27.1	76.5	76.5	5.2	5.2	4.8	4.1	2						

DA: Depth-Averaged

Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

Value exceeding Action Level is underlined; Value exceeding Limit Level is bolded and underlined



Expansion of Hong Kong International Airport into a Three-Runway System  
Water Quality Monitoring

Water Quality Monitoring Results on 04 September 21 during Mid-Flood Tide

Monitoring Station	Weather Condition	Sea Condition	Sampling Time	Water Depth (m)	Sampling Depth (m)		Current Speed (m/s)	Current Direction	Water Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen		Turbidity (NTU)		Suspended Solids (mg/L)		Coordinate HK Grid (Northing)	Coordinate HK Grid (Easting)
									Value	Average	Value	Average	Value	Average	Value	Average	Value	DA	Value	DA	Value	DA		
C1	Fine	Moderate	18:08	6.8	Surface	1.0	0.3	72	27.9	27.9	7.9	7.9	27.6	27.6	70.5	70.5	4.8	4.6	3.1	3	3	815634	804251	
						1.0	0.4	75	27.9	7.9	7.9	27.6	27.6	70.5	70.5	4.8	4.6	3.1	3					
						3.4	0.2	78	27.5	27.5	7.9	7.9	29.1	29.1	65.2	65.2	4.4	4.3	4.3	3				
						3.4	0.2	76	27.5	27.5	7.9	7.9	29.1	29.1	65.2	65.2	4.4	4.3	4.3	3				
					Middle	5.8	0.2	58	27.4	27.4	8.0	8.0	29.5	29.5	66.4	66.5	4.5	4.5	6.9	4				
						5.8	0.2	58	27.4	27.4	8.0	8.0	29.5	29.5	66.6	66.6	4.5	4.5	6.9	3				
						Bottom	1.0	1.0	61	28.3	28.3	8.1	8.1	23.1	23.1	87.0	86.7	6.0	5.3	4.0				3
							1.0	1.1	69	28.2	28.2	8.1	8.1	23.1	23.1	86.3	86.3	5.9	5.3	4.1				3
C2	Sunny	Moderate	16:58	10.7	Surface	1.0	1.0	61	27.4	27.4	8.0	8.0	26.1	26.1	67.2	67.1	4.6	5.3	6.2	3	3	825669	806950	
						5.4	1.0	64	27.3	27.3	8.0	8.0	26.1	26.1	67.0	67.0	4.6	5.3	6.2	3				
						5.4	1.0	64	27.3	27.3	8.0	8.0	26.1	26.1	67.0	67.0	4.6	5.3	6.2	3				
						9.7	0.3	93	26.9	26.9	8.0	8.0	28.8	28.8	60.1	60.0	4.1	4.1	10.4	3				
					Middle	9.7	0.3	93	26.9	26.9	8.0	8.0	28.8	28.8	60.1	60.0	4.1	4.1	10.4	3				
						9.7	0.3	96	26.9	26.9	8.0	8.0	28.8	28.8	59.9	59.9	4.1	4.1	11.0	3				
						Bottom	1.0	0.3	230	28.4	28.4	8.2	8.2	26.2	26.2	92.7	92.6	6.2	5.6	4.6				5
							1.0	0.3	233	28.3	28.3	8.2	8.2	26.3	26.3	92.4	92.4	6.2	5.6	4.7				4
C3	Sunny	Moderate	18:53	10.9	Surface	5.5	0.2	232	27.5	27.5	8.1	8.1	27.8	27.8	74.2	74.1	5.0	5.6	6.1	4	4	822125	817820	
						5.5	0.2	239	27.5	27.5	8.1	8.1	27.8	27.8	74.0	74.0	5.0	5.6	6.3	4				
						9.9	0.3	268	26.1	26.1	8.0	8.0	30.6	30.6	64.6	64.8	4.4	4.4	6.7	4				
						9.9	0.3	268	26.2	26.2	8.0	8.0	30.7	30.7	65.0	65.0	4.4	4.4	6.5	4				
					Middle	1.0	0.1	201	27.8	27.8	8.0	8.0	29.5	29.5	76.0	76.1	5.1	5.1	3.2	4				
						1.0	0.1	217	27.8	27.8	8.0	8.0	29.5	29.5	76.1	76.1	5.1	5.1	3.3	3				
						Bottom	3.1	0.0	191	27.2	27.2	8.0	8.0	31.0	31.0	63.9	64.0	4.3	4.3	5.2				5
							3.1	0.0	208	27.2	27.2	8.0	8.0	31.0	31.0	64.0	64.0	4.3	4.3	5.2				4
IM1	Fine	Moderate	17:48	4.1	Surface	1.0	0.2	23	28.6	28.6	8.0	8.0	28.5	28.5	86.0	86.0	5.7	5.3	3.2	2	4	818174	806168	
						1.0	0.2	23	28.6	28.6	8.0	8.0	28.5	28.5	86.0	86.0	5.7	5.3	3.1	2				
						3.1	0.3	358	27.9	27.9	8.0	8.0	29.4	29.4	71.9	71.9	4.8	5.3	4.2	4				
						3.1	0.3	329	27.9	27.9	8.0	8.0	29.4	29.4	71.8	71.8	4.8	5.3	4.2	4				
					Middle	5.2	0.1	6	27.1	27.1	8.0	8.0	31.0	31.0	61.9	62.0	4.1	4.2	5.7	4				
						5.2	0.1	6	27.1	27.1	8.0	8.0	31.0	31.0	62.0	62.0	4.1	4.2	5.7	4				
						Bottom	1.0	0.1	310	28.1	28.1	8.0	8.0	28.7	28.7	78.8	78.6	5.3	4.6	3.4				4
							1.0	0.1	326	28.1	28.1	8.0	8.0	28.7	28.7	78.3	78.6	5.2	4.6	3.4				4
IM3	Fine	Moderate	17:34	6.1	Surface	3.1	0.1	308	27.1	27.1	7.9	7.9	30.6	30.6	58.9	59.1	3.9	4.6	5.2	4	5	818805	805605	
						3.1	0.1	322	27.1	27.1	7.9	7.9	30.6	30.6	59.2	59.1	4.0	4.6	5.2	4				
						5.1	0.2	337	27.0	27.0	7.9	7.9	31.2	31.2	58.0	58.1	3.9	3.9	9.7	6				
						5.1	0.2	310	27.0	27.0	7.9	7.9	31.2	31.2	58.1	58.1	3.9	3.9	9.7	5				
					Middle	1.0	1.0	49	28.4	28.4	8.0	8.0	25.9	25.9	85.5	85.5	5.8	5.8	3.2	3				
						1.0	1.0	48	28.4	28.4	8.0	8.0	25.9	25.9	85.5	85.5	5.8	5.8	3.2	3				
						Bottom	3.4	0.8	49	28.4	28.4	8.0	8.0	26.0	26.0	85.0	85.0	5.7	5.8	5.2				5
							3.4	0.9	51	28.4	28.4	8.0	8.0	26.0	26.0	84.9	85.0	5.7	5.8	5.2				5
IM4	Fine	Moderate	17:26	6.8	Surface	5.8	0.6	29	28.3	28.3	8.0	8.0	26.1	26.1	84.4	84.4	5.7	5.7	6.9	5	4	819706	804609	
						5.8	0.6	27	28.3	28.3	8.0	8.0	26.1	26.1	84.4	84.4	5.7	5.7	6.9	5				
						Bottom	1.0	1.0	24	28.9	28.9	8.0	8.0	25.4	25.4	89.4	89.5	6.0	5.8	4.4				4
							1.0	1.0	29	28.9	28.9	8.0	8.0	25.3	25.3	89.5	89.5	6.0	5.8	4.5				5
					Middle	3.6	1.0	29	28.5	28.5	7.9	7.9	26.3	26.3	84.0	84.3	5.6	5.8	6.8	4				
						3.6	1.1	25	28.5	28.5	7.9	7.9	26.3	26.3	84.5	84.3	5.7	5.8	6.8	5				
						Bottom	6.1	1.0	22	28.0	28.0	7.9	7.9	27.4	27.4	76.0	76.0	5.1	5.1	12.5				6
							6.1	1.1	23	28.0	28.0	7.9	7.9	27.4	27.4	76.0	76.0	5.1	5.1	12.5				5
IM5	Fine	Moderate	17:20	7.1	Surface	1.0	1.0	25	28.2	28.2	7.9	7.9	26.4	26.4	83.1	83.1	5.6	5.5	4.9	3	4	821073	805814	
						1.0	1.1	26	28.2	28.2	7.9	7.9	26.4	26.4	83.1	83.1	5.6	5.5	4.9	4				
						3.3	1.0	24	28.1	28.1	7.9	7.9	26.8	26.8	79.4	79.5	5.4	5.5	8.3	3				
						3.3	1.0	22	28.1	28.1	7.9	7.9	26.8	26.8	79.5	79.5	5.4	5.5	8.3	4				
					Middle	5.5	0.7	19	28.1	28.1	7.9	7.9	26.9	26.9	79.6	79.7	5.4	5.4	12.1	5				
						5.5	0.8	21	28.1	28.1	7.9	7.9	26.9	26.9	79.7	79.7	5.4	5.4	12.1	6				
						Bottom	1.0	1.0	28	29.1	29.1	8.0	8.0	24.1	24.1	96.2	96.2	6.5	6.1	2.9				5
							1.0	1.0	29	29.1	29.1	8.0	8.0	24.1	24.1	96.1	96.1	6.5	6.1	2.9				6
IM6	Fine	Moderate	17:14	6.5	Surface	3.4	0.8	27	28.4	28.4	8.0	8.0	26.0	25.9	85.0	85.0	5.7	6.1	7.6	5	5	821371	806839	
						3.4	0.9	25	28.4	28.4	8.0	8.0	25.9	25.9	84.9	85.0	5.7	6.1	7.6	4				
						5.7	0.7	20	28.3	28.3	8.0	8.0	26.2	26.2	83.3	83.3	5.6	5.6	8.4	4				
						5.7	0.7	22	28.3	28.3	8.0	8.0	26.2	26.2	83.3	83.3	5.6	5.6	8.4	5				
					Middle	1.0	0.4	322	28.4	28.4	8.2	8.1	24.4	24.4	99.5	99.7	6.8	6.5	3.2	3				
						1.0	0.4	323	28.4	28.4	8.1	8.1	24.5	24.4	99.8	99.7	6.8	6.5	3.3	4				
						Bottom	3.6	0.3	320	28.3	28.3	8.1	8.1	25.1	25.2	91.9	91.7	6.2	6.1	4.7				3
							3.6	0.3	303	28.3	28.3	8.1	8.1	25.2	25.2	91.5	91.7	6.2	6.1	4.8				4
IM8	Sunny	Moderate	17:20	7.2	Surface	6.2	0.3	324	28.3	28.3	8.1	8.1	25.4	25.4	90.3	90.4	6.1	6.1	9.1	5	4	821841	808146	
						6.2	0.3	323	28.3	28.3	8.1	8.1	25.4	25.4	90.5	90.4	6.1	6.1	9.2	4				
						Bottom	1.0	0.4	322	28.4	28.4	8.2	8.1	24.4	24.4	99.5	99.7	6.8	6.5	3.2				3
							1.0	0.4	323	28.4	28.4	8.1	8.1	24.5	24.4	99.8	99.7	6.8	6.5	3.3				4

DA: Depth-Averaged  
Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher  
Value exceeding Action Level is underlined; Value exceeding Limit Level is bolded and underlined



Expansion of Hong Kong International Airport into a Three-Runway System  
Water Quality Monitoring

Water Quality Monitoring Results on 07 September 21 during Mid-Ebb Tide

Monitoring Station	Weather Condition	Sea Condition	Sampling Time	Water Depth (m)	Sampling Depth (m)	Current Speed (m/s)	Current Direction	Water Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen		Turbidity (NTU)		Suspended Solids (mg/L)		Coordinate HK Grid (Northing)	Coordinate HK Grid (Easting)							
								Value	Average	Value	Average	Value	Average	Value	Average	Value	DA	Value	DA	Value	DA			Value	DA					
C1	Misty	Moderate	13:10	7.6	Surface	1.0	0.3	226	28.5	28.5	7.7	7.7	28.3	28.3	92.9	92.8	6.2	6.8	7	7	815632	804240								
						1.0	0.4	234	28.5	7.7	7.7	28.3	28.4	92.7	91.4	6.2	6.8	8												
						3.8	0.3	214	28.5	7.7	7.7	28.4	28.4	91.6	91.4	6.1	7.1	8												
					Middle	3.8	0.3	227	28.5	28.5	7.7	7.7	28.4	28.4	91.2	91.4	6.1	7.1	7											
						6.6	0.4	205	28.6	28.6	7.7	7.7	28.3	28.3	90.1	92.3	6.0	8.1	5											
						6.6	0.4	216	28.6	28.6	7.7	7.7	28.2	28.2	94.4	92.3	6.3	8.0	6											
					C2	Misty	Moderate	11:38	12.4	Surface	1.0	0.6	163	28.5	28.5	7.6	7.6	27.6	27.6				91.1	91.0	6.1	7.3	5	4	825663	806939
											1.0	0.6	172	28.5	28.5	7.6	7.6	27.7	27.6				90.8	88.5	6.1	7.3	4			
											6.2	0.5	150	28.1	28.1	7.6	7.6	28.3	28.3				88.8	88.5	5.9	8.2	5			
Middle	6.2	0.5	159	28.1						28.1	7.6	7.6	28.4	28.3	88.1	88.5	5.9	8.1	4											
	11.4	0.3	143	27.9						27.9	7.6	7.6	28.7	28.7	81.8	81.9	5.5	9.7	4											
	11.4	0.3	150	27.9						27.9	7.6	7.6	28.7	28.7	82.0	81.9	5.5	9.8	3											
C3	Misty	Moderate	14:16	12.2						Surface	1.0	0.2	115	28.5	28.5	7.7	7.7	28.3	28.3	90.5	90.6	6.0	4.4	7	7	822106	817797			
											1.0	0.2	115	28.5	28.5	7.7	7.7	28.4	28.4	90.6	90.6	6.0	4.5	8						
											6.1	0.2	114	28.5	28.5	7.7	7.7	29.3	29.2	91.4	91.5	6.0	5.4	7						
					Middle	6.1	0.2	114	28.5	28.5	7.7	7.7	29.2	29.2	91.6	91.5	6.1	5.5	8											
						11.2	0.2	80	28.6	28.6	7.7	7.7	28.0	28.0	91.2	91.3	6.1	6.4	7											
						11.2	0.2	84	28.6	28.6	7.7	7.7	28.0	28.0	91.3	91.3	6.1	6.4	6											
					IM1	Misty	Moderate	12:50	4.0	Surface	1.0	0.1	134	28.7	28.7	7.7	7.7	27.9	27.9	94.6	94.6	6.3	6.9	5				6	817952	807148
											1.0	0.1	140	28.7	28.7	7.7	7.7	27.9	27.9	94.6	94.6	6.3	6.9	6						
											-	-	-	-	-	-	-	-	-	-	-	-	-	7.4						
Middle	-	-	-	-						-	-	-	-	-	-	-	-	-	-											
	3.0	0.1	311	28.7						28.7	7.7	7.7	27.9	27.9	95.3	95.5	6.3	7.8	7											
	3.0	0.1	319	28.7						28.7	7.7	7.7	27.9	27.9	95.7	95.5	6.3	7.9	7											
IM2	Misty	Moderate	12:43	6.0						Surface	1.0	0.1	186	28.3	28.3	7.7	7.7	28.2	28.2	91.9	91.4	6.1	6.6	7	7	818177	806156			
											1.0	0.1	196	28.3	28.3	7.7	7.7	28.2	28.2	90.9	91.4	6.1	6.7	6						
											3.0	0.1	167	28.4	28.4	7.7	7.7	28.2	28.2	83.4	83.3	5.6	7.7	7.5						
					Middle	3.0	0.1	176	28.4	28.4	7.7	7.7	28.2	28.2	83.1	83.3	5.5	7.6	6											
						5.0	0.1	118	28.7	28.7	7.7	7.7	28.0	27.9	85.6	86.7	5.7	8.2	7											
						5.0	0.1	124	28.7	28.7	7.7	7.7	27.9	27.9	87.8	86.7	5.8	8.1	7											
					IM3	Misty	Moderate	12:37	6.2	Surface	1.0	0.1	182	28.1	28.1	7.7	7.7	28.5	28.5	91.7	91.3	6.1	5.5	4				5	818801	805609
											1.0	0.1	198	28.1	28.1	7.7	7.7	28.5	28.5	90.8	91.3	6.1	5.5	5						
											3.1	0.2	156	28.2	28.2	7.7	7.7	28.5	28.5	81.0	80.9	5.4	6.3	6						
Middle	3.1	0.2	164	28.2						28.2	7.7	7.7	28.5	28.5	80.7	80.9	5.4	6.4	5											
	5.2	0.2	89	28.6						28.6	7.7	7.7	28.3	28.3	82.5	83.5	5.5	7.1	5											
	5.2	0.2	93	28.6						28.6	7.7	7.7	28.3	28.3	84.5	83.5	5.6	7.2	6											
IM4	Misty	Moderate	12:29	7.8						Surface	1.0	0.4	211	28.4	28.4	7.7	7.7	28.2	28.2	91.9	91.6	6.1	6.2	5	6	819723	804618			
											1.0	0.5	216	28.4	28.4	7.7	7.7	28.2	28.2	91.3	91.6	6.1	6.1	6						
											3.9	0.3	181	28.2	28.2	7.7	7.6	28.4	28.5	89.2	88.5	5.9	7.3	7.3						
					Middle	3.9	0.3	193	28.1	28.1	7.6	7.6	28.5	28.5	87.8	88.5	5.9	7.3	6											
						6.8	0.2	158	28.1	28.3	7.6	7.6	28.6	28.4	87.0	89.8	5.8	8.4	6											
						6.8	0.2	159	28.4	28.3	7.7	7.7	28.3	28.3	92.5	89.8	6.1	8.5	6											
					IM5	Misty	Moderate	12:24	7.2	Surface	1.0	0.4	243	28.3	28.3	7.7	7.7	28.3	28.4	91.3	90.7	6.1	5.9	6				5	820730	804874
											1.0	0.4	265	28.3	28.3	7.7	7.7	28.4	28.4	90.0	90.7	6.0	6.0	5						
											3.6	0.3	205	28.6	28.7	7.7	7.7	28.5	28.5	87.4	87.7	5.8	6.0	6.3						
Middle	3.6	0.3	221	28.7						28.7	7.7	7.7	28.5	28.5	87.9	87.7	5.8	6.0	5											
	6.2	0.2	173	28.8						28.8	7.7	7.7	28.4	28.3	88.8	88.9	5.9	7.1	4											
	6.2	0.2	186	28.8						28.8	7.7	7.7	28.3	28.3	89.0	88.9	5.9	7.1	4											
IM6	Misty	Moderate	12:16	6.4						Surface	1.0	0.3	260	28.3	28.3	7.7	7.7	28.5	28.5	92.0	89.2	6.1	6.2	5	5	821069	805839			
											1.0	0.3	284	28.3	28.3	7.7	7.7	28.5	28.5	86.4	89.2	5.7	6.1	4						
											3.2	0.2	219	28.5	28.6	7.7	7.7	28.5	28.5	84.5	84.9	5.6	7.4	7.4						
					Middle	3.2	0.2	231	28.6	28.6	7.7	7.7	28.5	28.5	85.3	84.9	5.6	7.4	6											
						5.4	0.2	191	28.8	28.8	7.7	7.7	28.4	28.3	89.7	89.8	5.9	8.6	5											
						5.4	0.2	191	28.8	28.8	7.7	7.7	28.3	28.3	89.8	89.8	5.9	8.7	5											
					IM7	Misty	Moderate	12:07	8.0	Surface	1.0	0.1	224	28.4	28.4	7.7	7.7	27.9	28.0	95.3	95.4	6.3	6.1	4				5	821372	806836
											1.0	0.2	237	28.3	28.4	7.7	7.7	28.1	28.0	95.4	95.4	6.4	6.2	5						
											4.0	0.1	182	28.2	28.2	7.7	7.7	28.5	28.5	85.1	85.4	5.7	7.2	7.3						
Middle	4.0	0.1	198	28.2						28.2	7.7	7.7	28.6	28.5	85.6	85.4	5.7	7.1	6											
	7.0	0.1	140	28.2						28.2	7.7	7.6	28.5	28.4	91.1	91.6	6.1	8.8	6											
	7.0	0.1	152	28.2						28.2	7.6	7.6	28.3	28.4	92.0	91.6	6.1	8.7	5											
IM8	Misty	Moderate	12:00	8.2						Surface	1.0	0.1	145	28.3	28.3	7.6	7.6	27.9	28.0	91.6	91.5	6.1	6.7	3	4	821847	808153			
											1.0	0.1	159	28.3	28.3	7.6	7.6	28.0	28.0	91.3	91.5	6.1	6.6	4						
											4.1	0.2	83	28.4	28.4	7.6	7.6	27.9	27.9	83.5	83.4	5.6	7.1	7.3						
					Middle	4.1	0.2	83	28.4	28.4	7.6	7.6	27.8	27.9	83.2	83.4	5.5	7.2	3											
						7.2	0.2	79	28.6	28.7	7.6	7.6	27.4	27.4	83.6	84.3	5.6	8.2	3											
						7.2	0.2	83	28.7	28.7	7.6	7.6	27.3	27.3	84.9	84.3	5.7	8.2	4											

DA: Depth-Averaged  
Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher  
Value exceeding Action Level is underlined; Value exceeding Limit Level is bolded and underlined



Expansion of Hong Kong International Airport into a Three-Runway System

Water Quality Monitoring

Water Quality Monitoring Results on 07 September 21 during Mid-Flood Tide

Monitoring Station	Weather Condition	Sea Condition	Sampling Time	Water Depth (m)	Sampling Depth (m)		Current Speed (m/s)	Current Direction	Water Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen		Turbidity (NTU)		Suspended Solids (mg/L)		Coordinate HK Grid (Northing)	Coordinate HK Grid (Easting)
									Value	Average	Value	Average	Value	Average	Value	Average	Value	DA	Value	DA	Value	DA		
C1	Misty	Moderate	07:08	8.6	Surface	1.0	0.5	26	28.0	28.0	7.7	7.7	27.6	27.6	93.0	92.9	6.2	6.1	2.9	3.8	6	7	815640	804266
						1.0	0.5	27	28.0	28.0	7.7	7.7	27.7	27.7	92.7	92.9	6.2	6.1	2.9	3.8	6	7		
						4.3	0.5	40	28.0	28.0	7.6	7.6	27.8	27.7	89.0	89.0	6.0	6.0	4.1	4.3	7	8		
					Middle	4.3	0.5	40	28.0	28.0	7.6	7.6	27.7	27.7	89.0	89.0	6.0	6.0	4.2	4.3	6	7		
						7.6	0.4	30	28.1	28.1	7.6	7.6	27.6	27.6	89.8	90.0	6.0	6.1	4.2	4.3	7	8		
						7.6	0.4	31	28.1	28.1	7.6	7.6	27.6	27.6	90.1	90.0	6.1	6.1	4.3	4.3	8	9		
					Bottom	1.0	0.2	336	28.0	28.0	7.7	7.7	27.7	27.7	88.4	88.4	5.9	5.9	7.6	7.2	5	5		
						1.0	0.2	309	28.0	28.0	7.7	7.7	27.7	27.7	88.3	88.3	5.9	5.9	7.6	7.2	5	5		
6.1	0.3	5	28.2	28.2		7.7	7.7	27.6	27.6	88.8	89.2	5.9	5.9	8.6	8.6	4	4							
C2	Misty	Moderate	08:19	12.2	Surface	6.1	0.4	5	28.2	28.2	7.7	7.7	27.5	27.5	89.5	89.2	6.0	6.0	8.5	8.5	5	5	825690	806940
						11.2	0.6	36	28.2	28.2	7.7	7.7	27.3	27.3	94.3	94.2	6.3	6.3	9.5	9.5	5	5		
						11.2	0.6	38	28.1	28.1	7.7	7.7	27.4	27.4	94.1	94.1	6.3	6.3	9.5	9.5	4	4		
					Middle	1.0	0.8	282	26.8	26.8	7.6	7.6	29.8	29.8	81.5	80.9	5.5	5.5	6.3	6.3	4	4		
						5.5	0.7	271	26.7	26.7	7.6	7.6	29.9	29.9	80.2	80.2	5.4	5.4	6.4	6.4	5	5		
						5.5	0.8	286	26.9	26.9	7.5	7.5	30.2	30.1	72.9	73.0	4.9	4.9	7.2	7.2	5	5		
					Bottom	10.0	0.5	267	27.2	27.2	7.5	7.5	29.9	29.9	75.4	76.0	5.1	5.1	8.1	8.1	5	5		
						10.0	0.5	290	27.3	27.3	7.5	7.5	29.9	29.9	76.6	76.6	5.1	5.1	8.1	8.1	5	5		
1.0	0.2	29	28.1	28.1		7.7	7.7	27.6	27.6	91.4	91.5	6.1	6.1	5.6	5.6	6	6							
IM1	Misty	Moderate	07:30	4.2	Surface	1.0	0.2	31	28.2	28.2	7.7	7.7	27.6	27.6	91.6	91.5	6.1	6.1	5.6	5.6	7	7	817944	807151
						3.2	0.0	209	28.2	28.2	7.7	7.7	27.6	27.6	92.7	92.9	6.2	6.2	6.3	6.2	8	8		
						3.2	0.0	209	28.2	28.2	7.7	7.7	27.5	27.5	93.1	92.9	6.2	6.2	6.2	6.2	8	8		
					Middle	1.0	0.4	7	28.3	28.3	7.6	7.6	26.7	26.7	90.7	90.8	6.1	6.1	4.0	4.0	6	6		
						1.0	0.4	7	28.3	28.3	7.6	7.6	26.7	26.7	90.8	90.8	6.1	6.1	4.0	4.0	7	7		
						3.1	0.3	0	28.1	28.1	7.6	7.6	26.8	26.8	91.7	92.1	6.2	6.2	4.5	4.5	9	9		
					Bottom	3.1	0.4	0	28.1	28.1	7.6	7.6	26.8	26.8	92.4	92.4	6.2	6.2	4.5	4.5	9	9		
						5.2	0.2	339	28.1	28.1	7.7	7.7	27.5	27.5	91.8	91.8	6.2	6.2	5.4	5.4	9	9		
5.2	0.2	341	28.1	28.1		7.7	7.7	27.6	27.6	91.7	91.8	6.2	6.2	5.4	5.4	10	10							
IM2	Misty	Moderate	07:38	6.2	Surface	1.0	0.4	355	28.4	28.4	7.6	7.6	26.5	26.5	92.6	92.6	6.2	6.2	7.8	7.8	8	8	818160	806187
						1.0	0.5	327	28.4	28.4	7.6	7.6	26.5	26.5	92.6	92.6	6.2	6.2	7.8	7.8	9	9		
						3.2	0.4	346	28.4	28.4	7.6	7.6	26.5	26.5	92.4	92.3	6.2	6.2	8.6	8.6	8	8		
					Middle	3.2	0.5	318	28.4	28.4	7.6	7.6	26.5	26.5	92.2	92.3	6.2	6.2	8.7	8.7	9	9		
						5.4	0.2	301	28.4	28.4	7.6	7.6	26.6	26.6	90.8	90.8	6.1	6.1	9.6	9.6	6	6		
						5.4	0.2	309	28.4	28.4	7.6	7.6	26.6	26.6	90.7	90.8	6.1	6.1	9.6	9.6	7	7		
					Bottom	1.0	0.8	4	28.5	28.5	7.6	7.6	26.6	26.6	91.4	91.3	6.1	6.1	7.3	7.3	9	9		
						1.0	0.9	4	28.5	28.5	7.6	7.6	26.6	26.6	91.1	91.3	6.1	6.1	7.3	7.3	9	9		
4.0	0.7	354	28.5	28.5		7.6	7.6	26.6	26.6	89.4	89.5	6.0	6.0	8.3	8.3	9	9							
IM3	Misty	Moderate	07:44	6.4	Surface	4.0	0.8	326	28.5	28.5	7.6	7.6	26.6	26.6	89.6	89.5	6.0	6.0	8.3	8.3	8	8	818761	805602
						7.0	0.5	343	28.4	28.4	7.6	7.6	26.5	26.5	92.9	93.0	6.2	6.2	9.2	9.2	9	9		
						7.0	0.5	350	28.4	28.4	7.6	7.6	26.5	26.5	93.1	93.0	6.2	6.2	9.2	9.2	8	8		
					Middle	1.0	1.2	8	28.4	28.4	7.7	7.6	26.5	26.5	93.6	93.6	6.3	6.3	2.2	2.2	8	8		
						1.0	1.2	8	28.4	28.4	7.6	7.6	26.5	26.5	93.5	93.6	6.3	6.3	2.2	2.2	7	7		
						3.6	1.0	11	28.4	28.4	7.6	7.6	26.5	26.5	93.3	93.3	6.3	6.3	2.3	2.3	7	7		
					Bottom	3.6	1.0	11	28.4	28.4	7.6	7.6	26.5	26.5	93.2	93.3	6.3	6.3	2.4	2.4	8	8		
						6.2	0.6	12	28.4	28.4	7.6	7.6	26.5	26.3	92.8	92.7	6.2	6.2	3.2	3.2	8	8		
6.2	0.6	12	28.4	28.4		7.6	7.6	26.0	26.0	92.5	92.7	6.2	6.2	3.2	3.2	8	8							
IM4	Misty	Moderate	07:55	8.0	Surface	1.0	0.1	203	28.5	28.5	7.6	7.6	26.6	26.6	90.7	90.8	6.1	6.1	1.2	1.2	8	8	820713	804880
						1.0	0.1	211	28.5	28.5	7.6	7.6	26.6	26.6	90.8	90.8	6.1	6.1	1.2	1.2	8	8		
						3.3	0.1	82	28.5	28.5	7.6	7.6	26.6	26.6	91.6	91.8	6.1	6.1	2.1	2.1	7	7		
					Middle	3.3	0.1	89	28.5	28.5	7.6	7.6	26.6	26.6	92.0	91.8	6.2	6.2	2.1	2.1	8	8		
						5.6	0.1	73	28.4	28.4	7.6	7.6	26.5	26.5	92.9	93.1	6.2	6.3	3.1	3.1	8	8		
						5.6	0.2	78	28.4	28.4	7.6	7.6	26.5	26.5	93.2	93.1	6.3	6.3	3.1	3.1	7	7		
					Bottom	1.0	0.0	357	28.5	28.5	7.6	7.6	26.6	26.6	91.4	91.5	6.1	6.1	1.5	1.4	7	6		
						1.0	0.0	328	28.5	28.5	7.6	7.6	26.6	26.6	91.5	91.5	6.1	6.1	1.4	1.4	6	6		
3.9	0.2	121	28.5	28.5		7.6	7.6	26.6	26.6	92.1	92.2	6.2	6.2	2.7	2.6	6	6							
IM5	Misty	Moderate	08:13	6.6	Surface	3.9	0.2	128	28.5	28.5	7.6	7.6	26.6	26.6	92.3	92.2	6.2	6.2	2.6	2.6	6	6	821057	805823
						6.8	0.2	75	28.4	28.4	7.6	7.6	26.5	26.5	92.9	93.0	6.2	6.2	3.7	3.7	7	7		
						6.8	0.2	79	28.4	28.4	7.6	7.6	26.5	26.5	93.0	93.0	6.2	6.2	3.7	3.7	6	6		
					Middle	1.0	0.3	88	27.9	27.9	7.6	7.6	27.7	27.7	88.0	88.0	5.9	6.0	4.7	4.6	5	4		
						1.0	0.3	90	27.9	27.9	7.6	7.6	27.7	27.7	87.9	87.9	5.9	6.0	4.6	4.6	4	4		
						3.9	0.3	82	27.9	27.9	7.6	7.6	27.5	27.4	89.0	90.7	6.0	6.0	5.9	5.9	5	5		
					Bottom	3.9	0.3	86	27.9	27.9	7.6	7.6	27.3	27.3	92.4	90.7	6.2	6.2	5.9	5.9	4	4		
						6.8	0.3	73	27.8	27.8	7.6	7.6	27.9	27.9	87.9	87.8	5.9	5.9	6.8	6.8	16	16		
6.8	0.4	73	27.8	27.8		7.6	7.6	28.0	28.0	87.7	87.7	5.9	5.9	6.7	6.7	5	5							

DA: Depth-Averaged

Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

Value exceeding Action Level is underlined; Value exceeding Limit Level is bolded and underlined



Expansion of Hong Kong International Airport into a Three-Runway System  
Water Quality Monitoring

Water Quality Monitoring Results on 09 September 21 during Mid-Ebb Tide

Monitoring Station	Weather Condition	Sea Condition	Sampling Time	Water Depth (m)	Sampling Depth (m)		Current Speed (m/s)	Current Direction	Water Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen		Turbidity (NTU)		Suspended Solids (mg/L)		Coordinate HK Grid (Northing)	Coordinate HK Grid (Easting)
									Value	Average	Value	Average	Value	Average	Value	Average	Value	DA	Value	DA	Value	DA		
C1	Cloudy	Moderate	14:07	8.6	Surface	1.0	0.3	198	28.0	28.0	7.9	7.9	27.0	27.0	73.6	73.6	5.0	5.0	6.9	13	14	815613	804240	
						1.0	0.3	211	28.0	7.9	7.9	27.0	27.0	73.6	73.6	5.0	5.0	6.8	14					
						4.3	0.3	204	28.0	7.9	7.9	27.0	27.0	73.8	73.8	5.0	5.0	6.2	15					
					Middle	4.3	0.3	221	28.0	28.0	7.9	7.9	27.0	27.0	73.7	73.8	5.0	5.0	6.3	14				
						7.6	0.3	226	27.4	27.4	7.9	7.9	27.7	27.6	67.1	67.1	4.6	4.6	12.9	15				
						7.6	0.3	246	27.4	27.4	7.9	7.9	27.6	27.6	67.1	67.1	4.6	4.6	12.2	14				
					Bottom	1.0	0.7	174	28.3	28.3	7.9	7.9	26.3	26.3	74.1	74.1	5.0	5.0	7.2	10				
						1.0	0.8	187	28.3	28.3	7.9	7.9	26.3	26.3	74.1	74.1	5.0	5.0	7.2	11				
						6.2	0.4	163	27.5	27.5	7.9	7.9	27.3	27.3	68.1	68.1	4.6	4.6	12.5	8				
Middle	6.2	0.4	165	27.5	27.5	7.9	7.9	27.3	27.3	68.1	68.1	4.6	4.6	12.7	7									
	11.4	0.3	164	27.2	27.2	7.9	7.9	27.7	27.7	66.5	66.5	4.5	4.5	14.2	8									
	11.4	0.3	179	27.2	27.2	7.9	7.9	27.7	27.7	66.8	66.7	4.5	4.5	14.3	7									
Bottom	1.0	0.3	47	27.7	27.7	7.9	7.9	27.2	27.2	70.8	70.8	4.8	4.8	9.5	10									
	1.0	0.3	49	27.7	27.7	7.9	7.9	27.2	27.2	70.7	70.7	4.8	4.8	9.4	10									
	5.9	0.2	59	27.2	27.2	7.9	7.9	27.8	27.8	66.5	66.5	4.5	4.5	15.9	9									
Middle	5.9	0.2	62	27.2	27.2	7.9	7.9	27.8	27.8	66.5	66.5	4.5	4.5	16.1	8									
	10.8	0.2	66	27.2	27.2	7.9	7.9	27.9	27.9	67.6	67.6	4.6	4.6	13.4	8									
	10.8	0.2	66	27.2	27.2	7.9	7.9	27.9	27.9	67.7	67.7	4.6	4.6	14.1	7									
Bottom	1.0	0.1	233	28.3	28.3	7.9	7.9	26.7	26.7	75.2	75.3	5.1	5.1	12.3	11									
	1.0	0.1	236	28.2	28.2	7.9	7.9	26.7	26.7	75.3	75.3	5.1	5.1	12.6	12									
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-									
Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.9	13	817948	807129			
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							
	4.4	0.1	233	28.2	28.2	7.9	7.9	26.8	26.8	77.3	77.6	5.2	5.2	13.4	15									
Bottom	4.4	0.1	252	28.2	28.2	7.9	7.9	26.8	26.8	77.8	77.8	5.2	5.2	13.2	14									
	1.0	0.1	211	28.4	28.4	7.9	7.9	26.6	26.6	75.1	75.1	5.0	5.0	13.3	7									
	1.0	0.1	219	28.4	28.4	7.9	7.9	26.6	26.6	75.0	75.0	5.0	5.0	13.4	8									
Middle	3.6	0.2	126	28.3	28.3	7.9	7.9	26.7	26.7	73.7	73.7	5.0	5.0	14.3	9									
	3.6	0.2	137	28.3	28.3	7.9	7.9	26.7	26.7	73.7	73.7	5.0	5.0	14.1	10									
	6.2	0.1	62	28.2	28.2	7.9	7.9	26.8	26.8	73.1	73.3	4.9	4.9	18.7	10									
Bottom	6.2	0.1	64	28.2	28.2	7.9	7.9	26.8	26.8	73.4	73.4	4.9	4.9	18.7	11									
	1.0	0.1	251	28.4	28.4	7.9	7.9	26.6	26.6	74.6	74.6	5.0	5.0	12.1	6									
	1.0	0.1	253	28.4	28.4	7.9	7.9	26.6	26.6	74.5	74.5	5.0	5.0	12.2	16									
Middle	3.5	0.1	192	28.3	28.3	7.9	7.9	26.7	26.7	73.3	73.3	4.9	4.9	14.7	9									
	3.5	0.1	204	28.3	28.3	7.9	7.9	26.7	26.7	73.3	73.3	4.9	4.9	14.6	10									
	5.9	0.1	93	28.2	28.2	7.9	7.9	26.8	26.7	73.5	73.6	4.9	4.9	17.3	11									
Bottom	5.9	0.2	94	28.3	28.3	7.9	7.9	26.8	26.7	73.7	73.6	5.0	5.0	17.2	12									
	1.0	0.8	195	28.3	28.3	7.9	7.9	26.7	26.7	75.4	75.4	5.1	5.1	8.2	11									
	1.0	0.8	211	28.3	28.3	7.9	7.9	26.7	26.7	75.3	75.3	5.1	5.1	8.2	11									
Middle	3.8	0.5	186	28.0	28.0	7.9	7.9	26.9	26.9	72.4	72.4	4.9	4.9	12.2	10									
	3.8	0.5	188	28.0	28.0	7.9	7.9	26.9	26.9	72.4	72.4	4.9	4.9	12.2	9									
	6.5	0.4	179	27.6	27.6	7.9	7.9	27.4	27.4	68.8	68.8	4.7	4.7	18.7	9									
Bottom	6.5	0.4	181	27.6	27.6	7.9	7.9	27.4	27.4	68.8	68.8	4.7	4.7	18.8	8									
	1.0	0.7	207	28.8	28.8	7.9	7.9	26.4	26.5	79.8	79.7	5.3	5.3	6.6	5									
	1.0	0.7	220	28.7	28.7	7.9	7.9	26.5	26.5	79.6	79.6	5.3	5.3	6.8	6									
Middle	3.3	0.6	229	28.2	28.2	7.9	7.9	27.0	27.0	73.6	73.7	4.9	4.9	7.1	6									
	3.3	0.6	247	28.2	28.2	7.9	7.9	27.0	27.0	73.7	73.7	4.9	4.9	7.0	6									
	5.5	0.4	198	27.7	27.7	7.9	7.9	27.1	27.1	70.1	70.2	4.7	4.8	15.9	8									
Bottom	5.5	0.4	205	27.7	27.7	7.9	7.9	27.1	27.1	70.3	70.3	4.8	4.8	15.9	8									
	1.0	0.5	222	28.2	28.2	7.9	7.9	26.4	26.4	76.3	76.3	5.1	5.1	6.1	8									
	1.0	0.5	222	28.2	28.2	7.9	7.9	26.4	26.4	76.2	76.2	5.1	5.1	6.1	9									
Middle	3.1	0.5	256	28.2	28.2	7.9	7.9	26.8	26.8	74.7	74.8	5.0	5.0	12.3	8									
	3.1	0.5	262	28.2	28.2	7.9	7.9	26.8	26.8	74.8	74.8	5.0	5.0	12.2	7									
	5.2	0.3	260	28.3	28.3	8.0	8.0	27.4	27.4	77.0	77.2	5.2	5.2	16.9	7									
Bottom	5.2	0.3	280	28.3	28.3	8.0	8.0	27.4	27.4	77.4	77.4	5.2	5.2	16.9	8									
	1.0	0.2	254	28.3	28.3	7.9	7.9	26.4	26.4	74.2	74.3	5.0	5.0	10.8	9									
	1.0	0.2	262	28.3	28.3	7.9	7.9	26.5	26.5	74.3	74.3	5.0	5.0	10.8	8									
Middle	3.6	0.3	251	28.3	28.3	7.9	7.9	26.5	26.5	74.7	75.0	5.0	5.0	10.8	9									
	3.6	0.4	255	28.3	28.3	7.9	7.9	26.6	26.6	75.2	75.2	5.1	5.1	10.5	8									
	6.1	0.2	249	28.4	28.4	8.0	8.0	27.2	27.2	76.8	76.7	5.1	5.1	9.2	11									
Bottom	6.1	0.2	257	28.4	28.4	8.0	8.0	27.2	27.2	76.6	76.6	5.1	5.1	9.8	11									
	1.0	0.0	262	28.3	28.3	7.9	7.9	26.3	26.3	74.5	74.5	5.0	5.0	10.8	11									
	1.0	0.0	270	28.3	28.3	7.9	7.9	26.3	26.3	74.5	74.5	5.0	5.0	10.8	11									
Middle	4.2	0.2	189	28.3	28.3	8.0	8.0	26.7	26.8	75.1	75.2	5.0	5.0	11.9	10									
	4.2	0.2	189	28.3	28.3	8.0	8.0	26.7	26.9	75.1	75.2	5.0	5.0	12.5	10									
	7.3	0.1	218	28.2	28.2	8.0	8.0	27.7	27.7	75.6	75.7	5.1	5.1	16.3	10									
Bottom	7.3	0.1	233	28.2	28.2	8.0	8.0	27.7	27.7	75.7	75.7	5.1	5.1	16.2	11									

DA: Depth-Averaged

Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

Value exceeding Action Level is underlined; Value exceeding Limit Level is bolded and underlined

Expansion of Hong Kong International Airport into a Three-Runway System

Water Quality Monitoring

Water Quality Monitoring Results on 09 September 21 during Mid-Ebb Tide

Monitoring Station	Weather Condition	Sea Condition	Sampling Time	Water Depth (m)	Sampling Depth (m)		Current Speed (m/s)	Current Direction	Water Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen		Turbidity (NTU)		Suspended Solids (mg/L)		Coordinate HK Grid (Northing)	Coordinate HK Grid (Easting)							
									Value	Average	Value	Average	Value	Average	Value	Average	Value	DA	Value	DA	Value	DA									
IM9	Cloudy	Moderate	13:24	7.8	Surface	1.0	0.2	130	28.2	28.2	7.9	7.9	26.4	26.4	75.8	75.8	5.1	5.1	6.3	8	7	822085	808819								
						1.0	0.2	135	28.2	7.9	26.4	26.4	75.8	5.1	6.3	8															
						3.9	0.2	137	28.2	7.9	26.9	26.9	74.1	5.0	13.0	8															
					Middle	3.9	0.2	140	28.2	28.2	7.9	7.9	26.9	26.9	74.2	74.2	5.0	5.0	12.8	7											
						6.8	0.2	122	28.3	28.3	8.0	8.0	27.5	27.5	74.7	74.7	5.0	5.0	18.5	7											
						6.8	0.2	125	28.3	28.3	8.0	8.0	27.5	27.5	74.7	74.7	5.0	5.0	18.1	6											
					IM10	Cloudy	Moderate	13:31	7.6	Surface	1.0	0.5	125	29.1	29.1	7.9	7.9	26.3	26.3	80.0				80.0	5.3	5.3	6.2	8	7	822379	809772
											1.0	0.6	137	29.1	29.1	7.9	26.3	26.3	79.9	5.3				6.3	9						
											3.8	0.5	131	28.5	28.5	7.9	26.9	26.9	75.3	5.0				7.1	8						
Middle	3.8	0.6	139	28.4						28.4	7.9	26.9	26.9	75.0	5.0	7.1	7														
	6.6	0.3	127	27.7						27.7	7.9	27.1	27.1	70.9	4.8	17.7	6														
	6.6	0.4	134	27.8						27.8	7.9	27.0	27.1	71.0	4.8	17.6	5														
IM11	Cloudy	Moderate	13:42	8.7						Surface	1.0	0.5	104	28.3	28.3	7.9	7.9	26.6	26.6	75.7	75.7	5.1	5.1	9.1	12	10	822046	811447			
											1.0	0.6	113	28.3	28.3	7.9	26.6	26.6	75.7	5.1	9.0	11									
											4.4	0.4	106	27.9	27.9	7.9	27.0	27.0	71.6	4.8	12.2	10									
					Middle	4.4	0.5	109	27.9	27.9	7.9	27.0	27.0	71.4	4.8	12.0	9														
						7.7	0.2	102	27.5	27.5	7.9	27.5	27.4	67.9	4.6	16.7	9														
						7.7	0.2	111	27.5	27.5	7.9	27.4	27.4	68.0	4.6	16.3	10														
					IM12	Cloudy	Moderate	13:48	9.4	Surface	1.0	0.5	108	28.4	28.4	7.9	7.9	26.6	26.6	75.4	75.4	5.1	5.1	12.0	12				11	821475	812026
											1.0	0.5	108	28.4	28.4	7.9	26.6	26.6	75.4	5.1	11.9	11									
											4.7	0.5	106	28.3	28.3	7.9	26.7	26.7	73.7	5.0	12.1	12									
Middle	4.7	0.5	107	28.3						28.3	7.9	26.7	26.7	73.7	5.0	12.2	12														
	8.4	0.2	77	28.2						28.2	7.9	26.7	26.7	74.9	5.0	17.2	11														
	8.4	0.2	84	28.2						28.2	7.9	26.7	26.7	75.5	5.1	16.8	11														
SR1A	Cloudy	Calm	14:21	4.6						Surface	1.0	-	-	28.6	28.6	7.9	7.9	26.3	26.3	80.6	80.8	5.4	5.4	8.2	9	10	819979	812660			
											1.0	-	-	28.5	28.5	7.9	26.4	26.4	81.0	5.4	7.8	9									
											2.3	-	-	-	-	-	-	-	-	-	-	-	-	-							
					Middle	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-												
						3.6	-	-	28.5	28.5	7.9	26.5	26.4	82.3	82.4	5.5	5.5	6.8	11												
						3.6	-	-	28.5	28.5	7.9	26.4	26.4	82.4	5.5	6.7	10														
					SR2	Cloudy	Moderate	14:35	4.0	Surface	1.0	0.4	86	28.4	28.4	7.9	7.9	26.6	26.6	76.2	76.1	5.1	5.1	10.4	10				9	821450	814161
											1.0	0.4	90	28.3	28.3	7.9	26.6	26.6	76.0	5.1	10.7	9									
											-	-	-	-	-	-	-	-	-	-	-	-	-								
Middle	-	-	-	-						-	-	-	-	-	-	-	-	-													
	3.0	0.2	75	28.2						28.2	7.9	26.7	26.7	75.4	75.5	5.1	5.1	13.5	9												
	3.0	0.2	81	28.2						28.2	7.9	26.7	26.7	75.5	5.1	13.1	8														
SR3	Cloudy	Moderate	13:11	9.0						Surface	1.0	0.2	200	28.2	28.3	7.9	7.9	26.4	26.4	74.2	74.3	5.0	5.1	12.7	9	8	822170	807561			
											1.0	0.3	217	28.3	28.3	7.9	26.4	26.4	74.4	5.0	12.3	9									
											4.5	0.3	178	28.3	28.3	7.9	26.6	26.6	75.3	5.1	11.9	8									
					Middle	4.5	0.3	192	28.3	28.3	7.9	26.6	26.6	75.6	5.1	12.1	7														
						8.0	0.1	210	28.4	28.4	8.0	27.6	27.6	78.2	5.2	13.5	7														
						8.0	0.1	230	28.4	28.4	8.0	27.5	27.5	78.4	5.2	13.2	8														
					SR4A	Cloudy	Moderate	14:32	8.8	Surface	1.0	0.1	215	28.1	28.1	7.9	7.9	26.9	26.9	75.0	75.0	5.1	5.1	5.7	11				13	817206	807786
											1.0	0.1	224	28.1	28.1	7.9	26.9	26.9	75.0	5.1	5.7	12									
											4.4	0.1	65	28.1	28.1	7.9	27.0	27.0	74.5	5.0	5.7	14									
Middle	4.4	0.1	66	28.1						28.1	7.9	27.0	27.0	74.4	5.0	5.7	14														
	7.8	0.1	131	27.9						27.9	7.9	27.1	27.1	72.7	4.9	7.1	14														
	7.8	0.1	132	27.9						27.9	7.9	27.1	27.1	72.9	4.9	7.0	14														
SR5A	Cloudy	Calm	14:56	4.8						Surface	1.0	0.0	315	28.5	28.5	7.9	7.9	26.6	26.6	83.1	83.1	5.6	5.6	3.9	11	12	816606	810712			
											1.0	0.0	343	28.4	28.4	7.9	26.6	26.6	83.0	5.6	3.9	12									
											-	-	-	-	-	-	-	-	-	-	-	-	-								
					Middle	-	-	-	-	-	-	-	-	-	-	-	-	-													
						3.8	0.0	335	28.2	28.2	7.9	26.9	26.9	80.9	81.0	5.4	5.5	3.9	12												
						3.8	0.0	339	28.2	28.2	7.9	26.9	26.9	81.1	5.5	3.9	12														
					SR6A	Cloudy	Calm	15:31	4.3	Surface	1.0	0.0	85	28.5	28.5	7.9	7.9	26.6	26.6	83.1	82.9	5.6	5.6	3.8	10				11	817943	814752
											1.0	0.0	89	28.4	28.4	7.9	26.6	26.6	82.6	5.5	3.8	11									
											-	-	-	-	-	-	-	-	-	-	-	-	-								
Middle	-	-	-	-						-	-	-	-	-	-	-	-	-													
	3.3	0.0	74	28.3						28.3	7.9	26.8	26.8	81.9	82.1	5.5	5.5	3.8	11												
	3.3	0.0	75	28.3						28.3	7.9	26.8	26.8	82.3	5.5	3.8	12														
SR7	Cloudy	Moderate	15:21	15.8						Surface	1.0	0.8	94	28.4	28.4	7.9	7.9	26.6	26.6	82.4	82.4	5.5	5.3	4.0	6	5	823645	823740			
											1.0	0.8	103	28.4	28.4	7.9	26.6	26.6	82.4	5.5	4.0	7									
											7.9	0.3	78	27.8	27.8	7.9	27.3	27.3	75.5	5.1	3.9	5									
					Middle	7.9	0.3	82	27.8	27.8	7.9	27.3	27.3	75.3	5.1	3.9	4														
						14.8	0.1	47	27.4	27.4	7.9	27.8	27.8	71.5	4.8	7.5	5														
						14.8	0.1	51	27.4	27.4	7.9	27.8	27.8	71.6	4.9	7.5	5														
					SR8	Cloudy	Calm	13:58	4.8	Surface	1.0	-	-	29.1	29.1	7.9	7.9	26.4	26.4	81.5	81.5	5.4	5.4	7.7	11				11	820405	811643
											1.0	-	-	29.0	29.0	7.9	26.4	26.4	81.4	5.4	7.7	10									
											-	-	-	-	-	-	-	-	-	-	-	-									
Middle	-	-	-	-						-	-	-	-	-	-	-	-														
	3.8	-	-	28.3						28.3	7.9	26.7	26.7	76.4	5.1	9.7	11														
	3.8	-	-	28.3						28.3	7.9	26.6	26.6	76.6	5.1	9.4	12														

DA: Depth-Averaged

Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

Value exceeding Action Level is underlined; Value exceeding Limit Level is bolded and underlined

Expansion of Hong Kong International Airport into a Three-Runway System  
 Water Quality Monitoring

Water Quality Monitoring Results on 09 September 21 during Mid-Flood Tide

Monitoring Station	Weather Condition	Sea Condition	Sampling Time	Water Depth (m)	Sampling Depth (m)		Current Speed (m/s)	Current Direction	Water Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen		Turbidity (NTU)		Suspended Solids (mg/L)		Coordinate HK Grid (Northing)	Coordinate HK Grid (Easting)							
									Value	Average	Value	Average	Value	Average	Value	Average	Value	DA	Value	DA	Value	DA									
C1	Cloudy	Calm	08:01	8.9	Surface	1.0	0.3	52	28.0	28.0	7.9	7.9	26.7	26.7	76.4	76.4	5.2	5.1	9.2	10.8	16	17	815628	804224							
						1.0	0.3	54	28.0	7.9	7.9	26.7	26.7	76.4	76.4	5.2	5.1	9.2	10.8	17											
						4.5	0.3	35	27.8	27.8	7.9	7.9	26.9	26.9	73.2	73.2	5.0	4.9	10.8	16											
					Middle	4.5	0.3	36	27.8	27.8	7.9	7.9	26.9	26.9	73.1	73.1	4.9	4.9	10.6	16											
						7.9	0.2	29	27.8	27.9	7.9	7.9	26.9	26.8	74.8	75.1	5.1	5.1	12.7	18											
						7.9	0.2	29	27.9	27.9	7.9	7.9	26.8	26.8	75.3	75.3	5.1	5.1	12.6	19											
					C2	Cloudy	Moderate	09:39	12.5	Surface	1.0	0.4	171	28.0	28.0	7.9	7.9	25.4	25.4	71.6	71.6				4.9	4.9	5.7	7	7	825696	806926
											1.0	0.5	171	28.0	28.0	7.9	7.9	25.4	25.4	71.5	71.5				4.9	4.9	5.7	7			
											6.3	0.1	330	27.9	27.9	7.9	7.9	25.8	25.8	70.6	70.6				4.8	4.8	11.8	6			
Middle	6.3	0.1	304	27.9						27.9	7.9	7.9	25.8	25.8	70.5	70.5	4.8	4.8	12.0	7											
	11.5	0.3	322	27.8						27.8	7.9	7.9	26.3	26.3	69.4	69.4	4.7	4.7	12.2	6											
	11.5	0.3	322	27.8						27.8	7.9	7.9	26.4	26.4	69.4	69.4	4.7	4.7	12.5	6											
C3	Cloudy	Moderate	07:29	11.5						Surface	1.0	0.3	240	27.6	27.6	7.9	7.9	27.1	27.2	71.4	71.4	4.8	4.8	3.8	6	6	822113	817815			
											1.0	0.3	243	27.6	27.6	7.9	7.9	27.2	27.2	71.3	71.3	4.8	4.8	3.9	7						
											5.8	0.2	256	27.5	27.5	7.9	7.9	27.3	27.3	69.5	69.5	4.7	4.7	3.8	6						
					Middle	5.8	0.2	267	27.5	27.5	7.9	7.9	27.4	27.4	69.1	69.3	4.7	4.7	3.8	7											
						10.5	0.1	288	27.0	27.0	7.9	7.9	28.0	28.0	65.9	66.0	4.5	4.5	17.8	5											
						10.5	0.1	289	27.0	27.0	7.9	7.9	28.0	28.0	66.0	66.0	4.5	4.5	18.0	5											
					IM1	Cloudy	Moderate	08:27	5.2	Surface	1.0	0.2	327	28.0	28.0	7.9	7.9	26.8	26.6	73.9	73.9	5.0	5.0	5.7	4				7	817942	807123
											1.0	0.2	334	28.0	28.0	7.9	7.9	26.8	26.6	73.8	73.8	5.0	5.0	5.7	4						
											-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Middle	-	-	-	-						-	-	-	-	-	-	-	-	-	-	-	-										
	4.2	0.2	258	28.0						28.0	7.9	7.9	26.6	26.6	73.7	73.7	5.0	5.0	6.8	4											
	4.2	0.2	265	28.0						28.0	7.9	7.9	26.6	26.6	73.7	73.7	5.0	5.0	6.6	2											
IM2	Cloudy	Moderate	08:42	7.1						Surface	1.0	0.5	350	28.0	28.0	7.9	7.9	26.5	26.5	74.6	74.6	5.0	5.0	4.6	5	6	818176	806153			
											1.0	0.6	322	28.0	28.0	7.9	7.9	26.5	26.5	74.6	74.6	5.0	4.7	6							
											3.6	0.4	329	28.0	28.0	7.9	7.9	26.6	26.6	72.6	72.6	4.9	4.9	5.9	6						
					Middle	3.6	0.5	355	28.0	28.0	7.9	7.9	26.6	26.6	72.6	72.6	4.9	4.9	5.7	7											
						6.1	0.2	266	28.0	28.0	7.9	7.9	26.8	26.7	72.4	72.6	4.9	4.9	11.6	7											
						6.1	0.2	287	28.0	28.0	7.9	7.9	26.7	26.7	72.7	72.6	4.9	4.9	11.7	6											
					IM3	Cloudy	Moderate	08:54	6.8	Surface	1.0	0.6	326	27.9	27.9	7.9	7.9	26.9	26.9	72.2	72.2	4.9	4.9	7.2	20				24	818792	805609
											1.0	0.6	356	27.9	27.9	7.9	7.9	26.9	26.9	72.1	72.1	4.9	4.9	7.4	21						
											3.4	0.4	307	27.9	27.9	7.9	7.9	27.0	27.0	71.8	71.8	4.9	4.9	11.9	25						
Middle	3.4	0.4	308	27.9						27.9	7.9	7.9	27.0	27.0	71.7	71.7	4.8	4.8	12.1	25											
	5.8	0.2	285	27.9						27.9	7.9	7.9	26.9	26.9	71.9	72.0	4.9	4.9	14.9	25											
	5.8	0.2	298	27.9						27.9	7.9	7.9	26.9	26.9	72.0	72.0	4.9	4.9	14.9	26											
IM4	Cloudy	Moderate	09:06	7.7						Surface	1.0	0.5	327	27.9	27.9	7.9	7.9	26.8	26.8	72.7	72.7	4.9	4.9	11.1	27	26	819702	804620			
											1.0	0.6	344	27.9	27.9	7.9	7.9	26.8	26.8	72.6	72.6	4.9	4.9	11.0	26						
											3.9	0.4	330	27.8	27.8	7.9	7.9	26.9	26.9	72.2	72.2	4.9	4.9	13.0	26						
					Middle	3.9	0.5	353	27.8	27.8	7.9	7.9	26.9	26.9	72.2	72.2	4.9	4.9	13.2	25											
						6.7	0.3	339	27.8	27.8	7.9	7.9	26.9	26.9	72.4	72.5	4.9	4.9	15.4	26											
						6.7	0.3	347	27.8	27.8	7.9	7.9	26.9	26.9	72.5	72.5	4.9	4.9	15.1	25											
					IM5	Cloudy	Moderate	09:19	6.4	Surface	1.0	0.4	344	28.1	28.1	7.9	7.9	26.6	26.6	76.7	76.7	5.2	5.2	10.6	17				17	820713	804849
											1.0	0.4	316	28.1	28.1	7.9	7.9	26.6	26.6	76.6	76.6	5.2	5.2	10.8	16						
											3.2	0.5	357	28.0	28.0	7.9	7.9	26.7	26.7	76.3	76.3	5.2	5.2	15.5	16						
Middle	3.2	0.5	328	28.0						28.0	7.9	7.9	26.7	26.7	76.2	76.2	5.2	5.2	15.3	17											
	5.4	0.2	17	28.0						28.0	7.9	7.9	26.7	26.7	76.1	76.1	5.1	5.1	18.2	17											
	5.4	0.3	18	28.0						28.0	7.9	7.9	26.7	26.7	76.1	76.1	5.1	5.1	17.9	17											
IM6	Cloudy	Moderate	09:25	6.3						Surface	1.0	0.4	271	28.2	28.2	7.9	7.9	24.7	24.7	76.2	76.2	5.2	5.2	3.4	4	5	821079	805822			
											1.0	0.4	281	28.2	28.2	7.9	7.9	24.7	24.7	76.1	76.1	5.2	5.2	3.5	4						
											3.2	0.1	337	28.1	28.1	7.9	7.9	25.8	25.8	74.1	74.2	5.0	5.1	7.1	5						
					Middle	3.2	0.1	356	28.1	28.1	7.9	7.9	25.8	25.8	74.2	74.2	5.0	5.0	7.4	5											
						5.3	0.1	46	28.2	28.2	7.9	7.9	25.3	25.2	75.5	75.6	5.1	5.1	5.9	6											
						5.3	0.1	49	28.2	28.2	7.9	7.9	25.1	25.1	75.7	75.7	5.1	5.1	5.3	5											
					IM7	Cloudy	Moderate	09:39	7.2	Surface	1.0	0.4	247	28.3	28.3	7.8	7.8	24.0	24.0	76.8	76.8	5.2	5.2	3.2	4				4	821335	806819
											1.0	0.4	271	28.3	28.3	7.9	7.9	24.0	24.0	76.8	76.8	5.2	5.2	3.2	3						
											3.6	0.4	263	28.1	28.1	7.9	7.9	25.2	25.2	73.5	73.5	5.0	5.1	5.4	4						
Middle	3.6	0.4	268	28.1						28.1	7.9	7.9	25.3	25.2	73.5	73.5	5.0	5.0	5.6	5											
	6.2	0.2	196	28.1						28.1	7.9	7.9	25.8	25.8	74.0	74.2	5.0	5.0	6.8	5											
	6.2	0.2	202	28.1						28.1	7.9	7.9	25.8	25.8	74.3	74.3	5.0	5.0	6.5	4											
IM8	Cloudy	Moderate	09:14	8.1						Surface	1.0	0.0	125	28.3	28.3	7.8	7.8	24.0	24.0	76.9	76.9	5.2	5.2	3.2	3	4	821822	808136			
											1.0	0.0	132	28.3	28.3	7.8	7.8	24.0	24.0	76.8	76.8	5.2	5.2	3.2	3						
											4.1	0.0	103	28.1	28.1	7.9	7.9	25.2	25.3	73.7	73.7	5.0	5.1	5.8	4						
					Middle	4.1	0.0	106	28.1	28.1	7.9	7.9	25.3	25.3	73.7	73.7	5.0	5.0	6.1	4											
						7.1	0.1	211	28.1	28.1	7.9	7.9	25.8	25.7	74.7	75.0	5.1	5.1	8.4	4											
						7.1	0.1	227	28.1	28.1	7.9	7.9	25.7	25.7	75.3	75.3	5.1	5.1	8.5	5											

DA: Depth-Averaged  
 Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher  
 Value exceeding Action Level is underlined; Value exceeding Limit Level is bolded and underlined



Expansion of Hong Kong International Airport into a Three-Runway System  
Water Quality Monitoring

Water Quality Monitoring Results on 11 September 21 during Mid-Ebb Tide

Monitoring Station	Weather Condition	Sea Condition	Sampling Time	Water Depth (m)	Sampling Depth (m)		Current Speed (m/s)	Current Direction	Water Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen		Turbidity (NTU)		Suspended Solids (mg/L)		Coordinate HK Grid (Northing)	Coordinate HK Grid (Easting)	
									Value	Average	Value	Average	Value	Average	Value	Average	Value	DA	Value	DA	Value	DA			
C1	Sunny	Rough	15:17	7.8	Surface	1.0	0.2	195	28.9	28.9	8.0	8.0	30.0	30.0	83.1	83.1	5.4	5.4	6.9	9.5	5	4	815601	804230	
						1.0	0.2	211	28.9	8.0	8.0	30.0	30.0	83.1	80.9	5.4	5.3	6.9	4	4					
						3.9	0.2	194	28.8	8.0	8.0	30.0	30.0	80.8	80.9	5.3	5.3	8.9	4	4					
					Middle	3.9	0.2	209	28.8	8.0	8.0	30.0	30.0	80.9	80.9	5.3	5.3	9.0	5	4					
						6.8	0.1	194	28.7	8.0	8.0	30.3	30.3	80.7	80.8	5.3	5.3	12.5	4	4					
						6.8	0.2	196	28.7	8.0	8.0	30.3	30.3	80.8	80.8	5.3	5.3	12.6	4	4					
C2	Misty	Moderate	14:09	11.2	Surface	1.0	0.3	148	28.8	28.8	7.9	7.9	26.1	26.2	76.2	76.2	5.1	5.1	6.9	7.9	3	4	825703	806943	
						1.0	0.4	157	28.7	7.9	7.9	26.2	26.2	76.2	70.7	5.1	4.9	6.8	4	4					
						5.6	0.4	144	28.3	7.9	7.9	27.3	27.3	70.6	70.7	4.7	4.7	8.0	4	4					
					Middle	5.6	0.4	149	28.3	7.9	7.9	27.4	27.4	70.8	70.7	4.7	4.7	8.0	3	4					
						10.2	0.3	151	28.3	7.9	7.9	27.3	27.2	71.6	71.8	4.8	4.8	8.7	4	4					
						10.2	0.3	165	28.3	7.9	7.9	27.2	27.2	72.0	71.8	4.8	4.8	8.8	3	4					
C3	Misty	Moderate	15:54	12.2	Surface	1.0	0.5	63	27.8	27.8	7.9	7.9	27.8	27.8	70.4	69.6	4.7	4.5	4.3	5.0	4	5	822126	817805	
						1.0	0.5	65	27.7	7.9	7.9	27.9	27.9	68.8	65.5	4.6	4.4	4.2	6	5					
						6.1	0.3	65	27.6	7.9	7.9	28.0	28.0	65.4	65.5	4.4	4.4	5.1	6	5					
					Middle	6.1	0.3	68	27.6	7.9	7.9	28.0	28.0	65.5	65.5	4.4	4.4	5.1	5	5					
						11.2	0.2	82	27.6	7.9	7.9	28.0	28.0	71.8	72.3	4.8	4.9	5.5	6	5					
						11.2	0.2	89	27.6	7.9	7.9	28.0	28.0	72.7	72.3	4.9	4.9	5.6	5	5					
IM1	Sunny	Moderate	14:55	3.4	Surface	1.0	0.1	148	29.9	29.9	7.9	7.9	29.1	29.2	92.0	92.0	5.9	5.9	6.7	9.1	5	5	817958	807110	
						1.0	0.1	151	29.9	7.9	7.9	29.2	29.2	92.0	92.0	5.9	5.9	6.7	6	5					
						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4			5
					Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4			5
						2.4	0.1	136	29.2	29.2	7.9	7.9	29.3	29.3	83.5	83.6	5.4	5.5	11.3	4	4				
						2.4	0.1	138	29.2	29.2	7.9	7.9	29.3	29.3	83.6	83.6	5.5	5.5	11.5	4	4				
IM2	Sunny	Moderate	14:47	7.0	Surface	1.0	0.1	141	29.4	29.5	7.9	7.9	29.3	29.3	84.4	84.4	5.5	5.5	6.9	9.2	4	4	818151	806175	
						1.0	0.2	146	29.5	29.5	7.9	7.9	29.3	29.3	84.3	84.4	5.5	5.5	6.9	5	4				
						3.5	0.1	119	29.1	29.1	7.9	7.9	29.6	29.6	82.1	82.1	5.4	5.4	7.7	3	4				
					Middle	3.5	0.1	128	29.1	29.1	7.9	7.9	29.6	29.6	82.1	82.1	5.4	5.4	7.7	3	4				
						6.0	0.2	66	28.8	28.8	7.9	7.9	30.1	30.1	81.7	81.8	5.3	5.4	13.0	3	4				
						6.0	0.2	67	28.8	28.8	7.9	7.9	30.1	30.1	81.8	81.8	5.4	5.4	13.0	3	4				
IM3	Sunny	Rough	14:41	7.2	Surface	1.0	0.0	227	29.8	29.8	7.9	7.9	29.4	29.4	86.4	86.5	5.6	5.6	6.3	8.4	5	4	818776	805570	
						1.0	0.0	230	29.7	29.8	7.9	7.9	29.4	29.4	86.5	86.5	5.6	5.6	6.3	4	4				
						3.6	0.1	107	29.1	29.1	7.9	7.9	29.7	29.7	83.4	83.4	5.4	5.4	6.4	4	4				
					Middle	3.6	0.1	116	29.1	29.1	7.9	7.9	29.8	29.7	83.4	83.4	5.4	5.4	6.4	3	4				
						6.2	0.1	48	28.9	28.9	7.9	7.9	30.0	30.0	82.1	82.2	5.4	5.4	12.4	4	4				
						6.2	0.1	51	28.9	28.9	7.9	7.9	30.0	30.0	82.2	82.2	5.4	5.4	12.4	3	4				
IM4	Sunny	Rough	14:33	8.6	Surface	1.0	0.2	156	29.9	29.9	7.9	7.9	28.6	28.6	87.1	87.1	5.6	5.6	5.7	8.9	4	5	819723	804604	
						1.0	0.2	158	29.9	29.9	7.9	7.9	28.6	28.6	87.1	87.1	5.6	5.6	5.7	4	5				
						4.3	0.1	174	29.1	29.1	7.9	7.9	29.4	29.5	81.6	81.6	5.3	5.3	8.3	5	5				
					Middle	4.3	0.1	176	29.1	29.1	7.9	7.9	29.5	29.5	81.6	81.6	5.3	5.3	8.2	6	5				
						7.6	0.1	89	28.8	28.8	7.9	7.9	30.0	30.0	80.0	80.0	5.2	5.2	12.7	6	5				
						7.6	0.1	95	28.8	28.8	7.9	7.9	30.0	30.0	80.0	80.0	5.2	5.2	12.7	5	5				
IM5	Sunny	Rough	14:27	8.8	Surface	1.0	0.3	205	29.5	29.5	7.9	7.9	27.7	27.7	87.3	87.3	5.7	5.7	4.8	7.4	5	4	820757	804860	
						1.0	0.3	205	29.5	29.5	7.9	7.9	27.7	27.7	87.2	87.3	5.7	5.7	4.8	4	4				
						4.4	0.2	204	29.1	29.1	7.9	7.9	29.3	29.2	80.9	80.9	5.3	5.3	7.5	3	4				
					Middle	4.4	0.2	223	29.1	29.1	7.9	7.9	29.2	29.2	80.9	80.9	5.3	5.3	7.5	4	4				
						7.8	0.1	127	29.0	29.0	7.9	7.9	29.8	29.8	79.1	79.2	5.2	5.2	10.0	4	4				
						7.8	0.1	135	29.0	29.0	7.9	7.9	29.8	29.8	79.2	79.2	5.2	5.2	10.0	3	4				
IM6	Sunny	Rough	14:19	7.2	Surface	1.0	0.1	220	29.5	29.6	7.9	7.9	28.0	28.0	86.5	86.5	5.7	5.7	5.2	8.4	5	5	821082	805816	
						1.0	0.1	227	29.6	29.6	7.9	7.9	28.0	28.0	86.5	86.5	5.7	5.7	5.2	5	5				
						3.6	0.0	241	29.2	29.2	7.9	7.9	29.2	29.2	80.4	80.4	5.3	5.3	7.8	4	5				
					Middle	3.6	0.0	245	29.2	29.2	7.9	7.9	29.2	29.2	80.4	80.4	5.3	5.3	7.9	5	5				
						6.2	0.1	108	29.2	29.2	7.9	7.9	29.3	29.3	79.4	79.4	5.2	5.2	12.1	4	4				
						6.2	0.1	113	29.2	29.2	7.9	7.9	29.3	29.3	79.4	79.4	5.2	5.2	12.2	5	5				
IM7	Sunny	Rough	14:11	7.1	Surface	1.0	0.0	168	29.4	29.4	7.9	7.9	28.6	28.6	83.0	83.0	5.4	5.4	7.3	9.1	5	6	821331	806858	
						1.0	0.0	168	29.4	29.4	7.9	7.9	28.6	28.6	83.0	83.0	5.4	5.4	7.3	5	6				
						3.6	0.0	174	29.3	29.3	7.9	7.9	29.0	29.0	81.4	81.4	5.3	5.3	7.8	6	6				
					Middle	3.6	0.0	186	29.3	29.3	7.9	7.9	29.0	29.0	81.4	81.4	5.3	5.3	7.7	6	6				
						6.1	0.1	178	29.2	29.2	7.9	7.9	29.4	29.4	79.6	79.6	5.2	5.2	12.4	6	6				
						6.1	0.1	182	29.2	29.2	7.9	7.9	29.4	29.4	79.6	79.6	5.2	5.2	12.4	6	6				
IM8	Misty	Moderate	14:31	8.2	Surface	1.0	0.3	110	28.9	28.9	7.9	7.9	26.0	26.0	79.4	79.3	5.3	5.2	7.2	8.3	4	3	821822	808149	
						1.0	0.3	116	28.9	28.9	7.9	7.9	26.1	26.0	79.2	79.3	5.3	5.2	7.1	3	3				
						4.1	0.3	119	28.7	28.7	8.0	8.0	27.2	27.2	74.8	74.8	5.0	5.0	8.1	2	3				
					Middle	4.1	0.3	122	28.7	28.7	8.0	8.0	27.3	27.2	74.8	74.8	5.0	5.0	8.1	3	3				
						7.2	0.3	84	28.6	28.6	8.0	8.0	27.5	27.5	75.5	75.6	5.0	5.0	9.7	3	3				
						7.2	0.3	87	28.6	28.6	8.0	8.0	27.4	27.4	75.7	75.6	5.0	5.0	9.7	2	3				

DA: Depth-Averaged

Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

Value exceeding Action Level is underlined. Value exceeding Limit Level is **bolded and underlined**



Expansion of Hong Kong International Airport into a Three-Runway System  
Water Quality Monitoring

Water Quality Monitoring Results on 11 September 21 during Mid-Flood Tide

Monitoring Station	Weather Condition	Sea Condition	Sampling Time	Water Depth (m)	Sampling Depth (m)		Current Speed (m/s)	Current Direction	Water Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen		Turbidity (NTU)		Suspended Solids (mg/L)		Coordinate HK Grid (Northing)	Coordinate HK Grid (Easting)							
									Value	Average	Value	Average	Value	Average	Value	Average	Value	DA	Value	DA	Value	DA									
C1	Sunny	Moderate	09:54	7.5	Surface	1.0	0.4	59	28.9	28.9	7.9	7.9	29.4	29.4	81.0	81.1	5.3	5.7	7	9	8	815605	804248								
						1.0	0.4	59	28.9	28.9	7.9	7.9	29.4	29.4	81.1	81.1	5.3	5.7	8	8											
						3.8	0.3	55	28.9	28.9	7.9	7.9	29.4	29.4	80.5	80.5	5.3	7.7	7	7											
					Middle	3.8	0.4	57	28.9	28.9	7.9	7.9	29.4	29.4	80.5	80.5	5.3	7.7	8	8											
						6.5	0.3	56	28.9	28.9	7.9	7.9	29.4	29.4	82.2	82.3	5.4	8.9	7	7											
						6.5	0.3	61	28.9	28.9	7.9	7.9	29.4	29.4	82.3	82.3	5.4	9.0	8	8											
					C2	Misty	Moderate	10:45	12.0	Surface	1.0	0.4	27	28.6	28.6	7.9	7.9	24.9	25.0	72.8				72.7	4.9	4.2	4	4	4	825704	806945
											1.0	0.4	28	28.6	28.6	7.9	7.9	25.0	25.0	72.5				72.5	4.9	4.3	4	4			
											6.0	0.3	44	28.5	28.5	7.9	7.9	25.6	25.6	71.6				71.6	4.8	5.0	4	4			
Middle	6.0	0.4	44	28.5						28.5	7.9	7.9	25.6	25.6	71.6	71.6	4.8	5.1	4	4											
	11.0	0.2	7	28.5						28.6	7.9	7.9	25.5	25.5	72.0	72.5	4.9	6.1	4	4											
	11.0	0.2	7	28.6						28.6	7.9	7.9	25.4	25.4	72.9	72.9	4.9	6.1	3	3											
C3	Misty	Moderate	08:55	12.2						Surface	1.0	0.6	261	28.3	28.3	7.9	7.9	27.0	27.0	71.0	71.0	4.8	5.9	6	6	5	822127	817790			
											1.0	0.6	277	28.3	28.3	7.9	7.9	27.0	27.0	71.0	71.0	4.8	5.9	5	5						
											6.1	0.7	263	27.9	27.9	7.9	7.9	27.5	27.5	66.8	66.8	4.5	6.5	6	6						
					Middle	6.1	0.7	272	27.9	27.9	7.9	7.9	27.5	27.5	66.7	66.7	4.5	6.4	5	5											
						11.2	0.6	262	27.7	27.7	7.9	7.9	27.7	27.7	69.7	70.1	4.7	7.9	3	3											
						11.2	0.6	287	27.7	27.7	7.9	7.9	27.7	27.7	70.4	70.4	4.8	7.9	4	4											
					IM1	Sunny	Moderate	10:07	4.4	Surface	1.0	0.1	324	28.9	28.9	8.0	8.0	29.2	29.2	85.7	85.7	5.6	5.6	7	7				7	817942	807127
											1.0	0.1	345	28.9	28.9	8.0	8.0	29.2	29.2	85.7	85.7	5.6	5.5	7	7						
											-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Middle	-	-	-	-						-	-	-	-	-	-	-	-	-	-	-	-										
	3.4	0.1	325	28.9						28.9	8.0	8.0	29.2	29.2	86.1	86.1	5.6	6.3	7	7											
	3.4	0.1	335	28.9						28.9	8.0	8.0	29.2	29.2	86.1	86.1	5.6	6.4	8	8											
IM2	Sunny	Moderate	10:19	6.9						Surface	1.0	0.2	355	29.1	29.1	7.9	7.9	29.1	29.1	81.4	81.4	5.3	5.9	8	8	8	818172	806186			
											1.0	0.2	327	29.1	29.1	7.9	7.9	29.1	29.1	81.4	81.4	5.3	6.0	9	9						
											3.5	0.2	349	28.9	28.9	7.9	7.9	29.2	29.2	80.6	80.6	5.3	4.3	9	9						
					Middle	3.5	0.2	321	28.9	28.9	7.9	7.9	29.2	29.2	80.6	80.6	5.3	4.3	8	8											
						5.9	0.2	333	28.9	28.9	7.9	7.9	29.2	29.2	81.5	81.6	5.3	6.0	7	7											
						5.9	0.2	346	28.9	28.9	7.9	7.9	29.2	29.2	81.6	81.6	5.3	6.0	6	6											
					IM3	Sunny	Moderate	10:28	7.3	Surface	1.0	0.5	301	29.3	29.3	7.9	7.9	28.8	28.8	82.6	82.6	5.4	5.0	9	9				9	818769	805607
											1.0	0.6	307	29.3	29.3	7.9	7.9	28.8	28.8	82.5	82.5	5.4	5.1	8	8						
											3.7	0.5	296	28.9	28.9	7.9	7.9	29.4	29.4	79.4	79.4	5.2	6.2	9	9						
Middle	3.7	0.5	320	28.9						28.9	7.9	7.9	29.4	29.4	79.4	79.4	5.2	6.3	10	10											
	6.3	0.4	286	28.9						28.9	7.9	7.9	29.4	29.4	79.7	79.7	5.2	8.4	10	10											
	6.3	0.4	314	28.9						28.9	7.9	7.9	29.4	29.4	79.7	79.7	5.2	8.5	9	9											
IM4	Sunny	Moderate	10:35	7.8						Surface	1.0	0.8	27	29.0	29.0	7.9	7.9	28.9	28.8	81.2	81.2	5.3	5.3	6	6	6	819730	804619			
											1.0	0.8	28	29.0	29.0	7.9	7.9	28.8	28.8	81.2	81.2	5.3	5.3	7	7						
											3.9	0.7	19	28.9	28.9	7.9	7.9	29.2	29.2	79.3	79.3	5.2	7.0	6	6						
					Middle	3.9	0.7	20	28.9	28.9	7.9	7.9	29.2	29.2	79.3	79.3	5.2	7.0	7	7											
						6.8	0.4	13	28.9	28.9	7.9	7.9	29.3	29.3	79.6	79.6	5.2	8.1	6	6											
						6.8	0.5	14	28.9	28.9	7.9	7.9	29.3	29.3	79.6	79.6	5.2	8.1	6	6											
					IM5	Sunny	Moderate	10:40	7.9	Surface	1.0	0.8	18	29.1	29.1	7.9	7.9	28.9	28.9	80.1	80.1	5.3	10.6	14	14				12	820736	804877
											1.0	0.9	19	29.1	29.1	7.9	7.9	28.9	28.9	80.1	80.1	5.3	10.6	14	14						
											4.0	0.7	20	29.0	29.0	7.9	7.9	28.9	28.9	79.7	79.7	5.2	9.3	12	12						
Middle	4.0	0.8	21	29.0						29.0	7.9	7.9	28.9	28.9	79.7	79.7	5.2	9.3	11	11											
	6.9	0.6	21	29.0						29.0	7.9	7.9	28.9	28.9	80.4	80.4	5.3	11.7	10	10											
	6.9	0.6	21	29.0						29.0	7.9	7.9	28.9	28.9	80.4	80.4	5.3	11.7	11	11											
IM6	Sunny	Moderate	10:46	6.7						Surface	1.0	0.8	35	29.2	29.2	7.9	7.9	28.9	28.8	81.3	81.3	5.3	5.1	13	13	13	821070	805828			
											1.0	0.8	35	29.2	29.2	7.9	7.9	28.8	28.8	81.2	81.2	5.3	5.1	13	13						
											3.4	0.7	37	29.1	29.1	7.9	7.9	29.0	29.0	80.5	80.5	5.3	6.1	13	13						
					Middle	3.4	0.8	40	29.1	29.1	7.9	7.9	29.0	29.0	80.5	80.5	5.3	6.1	13	13											
						5.7	0.7	40	29.1	29.1	7.9	7.9	29.0	29.0	80.7	80.8	5.3	9.7	12	12											
						5.7	0.7	40	29.1	29.1	7.9	7.9	29.0	29.0	80.8	80.8	5.3	9.8	13	13											
					IM7	Sunny	Moderate	10:52	7.1	Surface	1.0	0.1	125	29.4	29.4	7.9	7.9	26.8	26.8	83.9	83.9	5.5	5.7	8	8				8	821332	806832
											1.0	0.1	130	29.4	29.4	7.9	7.9	26.9	26.9	83.9	83.9	5.5	5.7	7	7						
											3.6	0.2	112	29.2	29.2	7.9	7.9	28.1	28.1	82.1	82.1	5.4	7.8	8	8						
Middle	3.6	0.2	115	29.2						29.2	7.9	7.9	28.1	28.1	82.1	82.1	5.4	7.7	9	9											
	6.1	0.4	104	29.2						29.2	7.9	7.9	28.8	28.8	80.8	80.8	5.3	14.5	9	9											
	6.1	0.4	109	29.2						29.2	7.9	7.9	28.8	28.8	80.8	80.8	5.3	14.5	8	8											
IM8	Misty	Moderate	10:20	7.8						Surface	1.0	0.2	44	28.8	28.8	7.9	7.9	24.7	24.7	76.9	76.8	5.2	3.4	5	5	5	821833	808132			
											1.0	0.2	44	28.8	28.8	7.9	7.9	24.7	24.7	76.7	76.7	5.2	3.4	6	6						
											3.9	0.2	62	28.7	28.7	7.9	7.9	25.1	25.1	76.7	76.8	5.2	4.2	5	5						
					Middle	3.9	0.2	67	28.7	28.7	7.9	7.9	25.1	25.1	76.9	76.9	5.2	4.2	6	6											
						6.8	0.2	84	28.6	28.6	7.9	7.9	25.2	25.2	77.9	78.1	5.3	5.4	5	5											
						6.8	0.2	92	28.6	28.6	7.9	7.9	25.2	25.2	78.3	78.3	5.3	5.4	5	5											

DA: Depth-Averaged  
Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher  
Value exceeding Action Level is underlined; Value exceeding Limit Level is bolded and underlined







**Expansion of Hong Kong International Airport into a Three-Runway System  
Water Quality Monitoring  
Water Quality Monitoring Results on 14 September 21 during Mid-Flood Tide**

Monitoring Station	Weather Condition	Sea Condition	Sampling Time	Water Depth (m)	Sampling Depth (m)		Current Speed (m/s)	Current Direction	Water Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen		Turbidity (NTU)		Suspended Solids (mg/L)		Coordinate HK Grid (Northing)	Coordinate HK Grid (Easting)										
									Value	Average	Value	Average	Value	Average	Value	Average	Value	DA	Value	DA	Value	DA												
C1	Rainy	Calm	17:52	7.6	Surface	1.0	0.3	33	28.7	28.7	8.0	8.0	26.7	26.8	76.1	75.6	5.1		5.9		8		8	815616	804258									
						1.0	0.3	33	28.7	8.0	8.0	26.9	27.4	75.1	75.6	5.0	4.9	5.9	8															
						3.8	0.3	36	28.7	28.7	8.0	8.0	27.4	27.4	70.6	70.6	4.7	4.9	6.7	8														
						3.8	0.3	37	28.7	8.0	8.0	27.4	27.4	70.5	70.5	4.7	4.9	6.7	8															
					Bottom	6.6	0.3	34	28.9	29.0	8.0	8.0	27.4	27.4	71.0	71.5	4.7	4.8	8.0	8														
						6.6	0.3	34	29.0	8.0	8.0	27.4	27.4	72.0	72.0	4.8	4.8	7.9	7															
						C2	Fine	Moderate	17:07	7.9	Surface	1.0	0.3	65	30.2	30.2	8.0	8.0	23.0	23.0	88.2	88.2				5.9		4.9		3		4	825701	806951
												1.0	0.4	60	30.2	8.0	8.0	23.0	23.0	88.2	88.2	5.9				5.6	4.9	2						
4.0	0.3	61	29.7	29.7	8.0							8.0	26.1	26.2	81.2	81.2	5.3	5.0	5.0	4														
4.0	0.3	65	29.7	8.0	8.0							26.2	26.2	81.2	81.2	5.3	5.0	4																
Bottom	6.9	0.1	35	29.8	29.8						8.1	8.1	26.2	26.2	81.6	81.7	5.4	5.4	5.3	4														
	6.9	0.1	35	29.8	8.1						8.1	26.2	26.2	81.8	81.8	5.4	5.4	5.2	5															
	C3	Fine	Moderate	19:11	12.5						Surface	1.0	0.2	209	29.4	29.4	8.0	8.0	27.9	27.9	80.0	80.0	5.2		4.3		4		4	822112	817825			
												1.0	0.2	216	29.4	29.4	8.0	8.0	28.0	29.9	79.9	79.9	5.2	4.9	4.4	3								
6.3						0.2	246	28.4	28.4	8.0		8.0	29.9	30.0	68.4	68.0	4.5	4.5	4.9	4														
6.3						0.2	248	28.4	8.0	8.0		30.0	30.0	67.6	67.6	4.5	4.5	4.9	4															
Bottom						11.5	0.3	258	28.3	28.3	8.0	8.0	30.3	30.3	71.5	71.9	4.7	4.8	5.7	5														
						11.5	0.3	271	28.3	8.0	8.0	30.3	30.3	72.3	72.3	4.8	4.8	5.7	4															
						IM1	Rainy	Calm	17:39	4.0	Surface	1.0	0.2	1	29.0	29.0	8.0	8.0	25.7	25.7	76.9	77.0	5.1		7.1		4					5	817936	807110
												1.0	0.3	1	29.0	8.0	8.0	25.7	25.7	77.0	77.0	5.1	5.1	7.1	3									
-	-	-	-	-	-							-	-	-	-	-	-	-	-	-	-	7.3												
-	-	-	-	-	-							-	-	-	-	-	-	-	-	-	-	6												
Bottom	3.0	0.1	330	29.1	29.1						8.0	8.0	26.0	26.0	77.4	77.5	5.2	5.2	7.5	6														
	3.0	0.1	335	29.1	8.0						8.0	26.0	26.0	77.6	77.6	5.2	5.2	7.4	5															
	IM2	Rainy	Calm	17:32	6.0						Surface	1.0	0.3	13	28.7	28.7	8.0	8.0	26.6	26.7	76.5	74.5	5.1		7.5		5		6	818166	806173			
												1.0	0.3	14	28.7	8.0	8.0	26.8	27.2	72.5	71.8	4.8	4.9	7.4	6									
3.0						0.3	3	28.7	28.8	8.0		8.0	27.2	27.2	71.8	71.8	4.8	4.8	8.6	6														
3.0						0.3	3	28.8	8.0	8.0		27.3	27.2	71.7	71.7	4.8	4.8	8.6	6															
Bottom						5.0	0.3	348	29.0	29.1	8.0	8.0	27.3	27.2	72.7	73.2	4.8	4.9	9.1	7														
						5.0	0.3	320	29.1	8.0	8.0	27.2	27.2	73.6	73.2	4.9	4.9	9.0	7															
						IM3	Rainy	Calm	17:25	6.2	Surface	1.0	0.4	337	28.8	28.8	8.0	8.0	25.1	25.1	78.6	78.3	5.3		6.8		5					6	818788	805614
												1.0	0.4	344	28.7	8.0	8.0	25.1	27.0	78.0	73.0	5.3	5.1	6.8	6									
3.1	0.4	325	28.7	28.7	8.0							8.0	27.0	27.0	73.1	73.0	4.9	4.9	7.9	5														
3.1	0.4	335	28.6	8.0	8.0							27.0	27.0	72.9	72.9	4.9	4.9	7.9	6															
Bottom	5.2	0.3	311	28.5	28.5						8.0	8.0	27.2	27.1	73.8	74.2	4.9	5.0	8.3	8														
	5.2	0.4	334	28.4	8.0						8.0	27.1	27.1	74.5	74.2	5.0	5.0	8.2	8															
	IM4	Rainy	Calm	17:22	7.8						Surface	1.0	0.5	350	29.1	29.1	8.0	8.0	26.1	26.2	76.9	76.9	5.1		6.9		5		6	819736	804598			
												1.0	0.6	322	29.0	8.0	8.0	26.3	27.1	76.8	73.2	5.1	5.0	6.9	5									
3.9						0.5	339	28.9	28.9	8.0		8.0	27.1	27.1	73.1	73.2	4.9	4.9	7.2	5														
3.9						0.5	345	28.9	8.0	8.0		27.1	27.1	73.2	73.2	4.9	4.9	7.1	5															
Bottom						6.8	0.4	319	29.2	29.3	7.9	7.9	27.1	27.0	75.1	75.9	5.0	5.1	8.1	6														
						6.8	0.5	332	29.3	8.0	8.0	27.0	27.0	76.7	76.7	5.1	5.1	8.0	7															
						IM5	Rainy	Calm	17:14	7.2	Surface	1.0	0.2	318	29.5	29.5	7.9	7.9	24.0	24.0	82.6	82.7	5.5		6.6		4					4	820752	804855
												1.0	0.2	319	29.4	8.0	8.0	24.0	24.8	82.7	77.8	5.5	5.4	6.7	5									
3.6	0.3	351	29.3	29.3	7.9							7.9	24.8	24.8	78.1	77.8	5.2	5.2	7.2	3														
3.6	0.3	323	29.3	8.0	8.0							24.8	24.8	77.5	77.5	5.2	5.2	7.1	4															
Bottom	6.2	0.4	3	29.4	29.5						7.9	7.9	26.6	26.5	78.6	79.6	5.2	5.3	8.7	3														
	6.2	0.4	3	29.5	8.0						8.0	26.5	26.5	80.5	80.5	5.3	5.3	8.8	4															
	IM6	Rainy	Calm	17:09	6.4						Surface	1.0	0.3	277	29.6	29.6	7.9	7.9	22.4	22.4	84.2	84.1	5.7		3.3		2		4	821041	805843			
												1.0	0.4	286	29.6	8.0	8.0	22.4	22.6	84.0	84.9	5.7	5.7	3.2	3									
3.2						0.3	282	29.6	29.6	7.9		7.9	22.6	22.6	84.7	84.9	5.7	5.7	4.0	4														
3.2						0.3	285	29.6	8.0	8.0		22.6	22.6	85.0	85.0	5.7	5.7	4.0	5															
Bottom						5.4	0.2	275	29.7	29.7	7.9	7.9	22.7	22.6	85.6	85.7	5.7	5.8	5.7	5														
						5.4	0.3	282	29.7	8.0	8.0	22.6	22.6	85.7	85.7	5.8	5.8	5.6	4															
						IM7	Rainy	Calm	17:04	8.0	Surface	1.0	0.4	248	29.6	29.6	7.9	7.9	22.5	22.5	83.8	83.8	5.6		3.7		5					4	821345	806834
												1.0	0.4	258	29.6	8.0	8.0	22.6	22.7	83.7	84.0	5.6	5.6	3.8	4									
4.0	0.4	254	29.6	29.6	7.9							7.9	22.7	22.7	83.9	84.0	5.6	5.6	4.9	5														
4.0	0.4	277	29.6	8.0	8.0							22.7	22.7	84.0	84.0	5.6	5.6	4.9	4															
Bottom	7.0	0.3	248	29.6	29.6						7.9	7.9	22.6	22.6	84.8	85.1	5.7	5.7	5.3	3														
	7.0	0.3	258	29.6	8.0						8.0	22.6	22.6	85.3	85.3	5.7	5.7	5.2	4															
	IM8	Fine	Moderate	17:26	6.5						Surface	1.0	0.2	199	30.3	30.3	8.0	8.0	23.1	23.1	92.2	92.2	6.1		4.0		2		2	821835	808120			
												1.0	0.2	205	30.3	8.0	8.0	23.2	23.2	92.1	92.1	6.1	6.1	4.0	3									
3.3						0.1	216	30.2	30.2	8.0		8.0	23.9	23.9	91.8	92.0	6.1	6.1	5.3	2														
3.3						0.1	216	30.2	8.0	8.0		23.9	23.9	92.2	92.2	6.1	6.1	5.3	2															
Bottom						5.5	0.1	208	30.2	30.2	8.0	8.0	23.8	23.8	93.7	93.9	6.2	6.2	5.5	<2														
						5.5	0.1	227	30.2	8.0	8.0	23.7	23.7	94.0	94.0	6.2	6.2	5.6	<2															

DA: Depth-Averaged  
 Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher  
 Value exceeding Action Level is underlined; Value exceeding Limit Level is **bolded and underlined**



**Expansion of Hong Kong International Airport into a Three-Runway System**

**Water Quality Monitoring**

**Water Quality Monitoring Results on 16 September 21 during Mid-Ebb Tide**

Monitoring Station	Weather Condition	Sea Condition	Sampling Time	Water Depth (m)	Sampling Depth (m)		Current Speed (m/s)	Current Direction	Water Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen		Turbidity (NTU)		Suspended Solids (mg/L)		Coordinate HK Grid (Northing)	Coordinate HK Grid (Easting)		
									Value	Average	Value	Average	Value	Average	Value	Average	Value	DA	Value	DA	Value	DA				
C1	Misty	Moderate	08:26	8.6	Surface	1.0	0.4	222	29.2	29.2	8.0	8.0	23.8	23.8	82.0	81.8	5.5	5.4	4.5	5.2	2	2	815601	804256		
						1.0	0.4	224	29.1	8.0	8.0	23.8	23.8	81.5	80.5	5.5	5.4	4.6	5.2	3	2					
						4.3	0.4	211	29.0	8.0	8.0	24.1	24.2	77.8	77.3	5.2	5.1	3	3							
					4.3	0.4	221	29.0	8.0	8.0	24.2	29.0	76.7	77.3	5.2	5.1	2	2								
					7.6	0.4	211	29.1	8.0	8.0	26.5	26.5	79.4	80.5	5.3	5.4	6.0	6.0	2	2						
					7.6	0.4	219	29.1	8.0	8.0	26.5	29.1	81.5	80.5	5.4	5.4	6.0	6.0	2	2						
C2	Misty	Moderate	09:45	12.0	Surface	1.0	0.1	205	28.9	28.9	8.0	7.9	23.5	23.5	77.6	77.1	5.3	4.9	1.2	4.9	3	3	825700	806936		
						1.0	0.1	210	28.9	7.9	7.9	23.6	26.4	76.5	67.9	5.2	4.7	1.2	4.4	2	3					
						6.0	0.1	348	28.8	7.9	7.9	26.3	26.4	70.0	67.9	4.7	2.1	3	2							
					6.0	0.1	357	28.8	7.9	7.9	26.4	29.1	65.7	67.8	4.4	2.2	2	2								
					11.0	0.2	342	29.0	7.9	7.9	26.9	26.8	67.1	67.8	4.5	3.7	3	3								
					11.0	0.2	356	29.1	7.9	7.9	26.8	29.1	68.5	67.8	4.5	3.8	3	3								
C3	Misty	Moderate	07:55	12.2	Surface	1.0	0.4	205	28.6	28.6	7.9	7.9	26.6	26.7	75.4	75.1	5.0	4.8	1.0	4.8	2	2	822121	817813		
						1.0	0.5	213	28.5	7.9	7.9	26.9	26.7	74.7	75.1	5.0	4.7	1.0	4.7	2	2					
						6.1	0.5	246	28.4	7.9	7.9	27.1	27.1	68.5	68.2	4.6	3.0	<2	<2	2	2					
					6.1	0.5	263	28.4	7.9	7.9	27.1	28.7	67.9	68.2	4.5	2.9	<2	<2	2	2						
					11.2	0.4	254	28.6	7.9	7.9	27.0	26.8	68.3	69.1	4.6	3.1	<2	<2	2	2						
					11.2	0.5	271	28.7	7.9	7.9	26.7	26.8	69.8	69.1	4.7	3.1	<2	<2	2	2						
IM1	Misty	Moderate	08:48	4.2	Surface	1.0	0.3	175	29.3	29.3	8.0	8.0	23.8	23.8	84.8	84.8	5.7	5.7	1.5	5.7	<2	<2	817943	807140		
						1.0	0.3	180	29.3	8.0	8.0	23.8	29.3	84.8	84.8	5.7	5.7	1.6	5.7	<2	<2					
						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-
					3.2	0.2	211	29.3	8.0	8.0	23.7	23.7	84.8	84.8	5.7	5.7	2.6	5.7	2	2						
					3.2	0.2	226	29.3	8.0	8.0	23.7	29.3	84.7	84.8	5.7	5.7	2.6	5.7	2	2						
					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-
IM2	Misty	Moderate	08:57	6.2	Surface	1.0	0.3	160	29.0	29.0	7.9	7.9	22.5	22.5	83.0	82.3	5.6	5.1	5.1	5.1	3	3	818166	806172		
						1.0	0.3	174	29.0	7.9	7.9	22.5	29.0	81.5	82.3	5.5	5.1	2	5.1	2	2					
						3.1	0.2	152	29.0	7.9	7.9	26.7	26.7	70.9	71.0	4.7	6.2	4	6.2	4	4					
					3.1	0.2	165	29.0	7.9	7.9	26.7	28.8	71.0	71.0	4.7	6.2	3	6.2	3	3						
					5.2	0.1	167	28.8	7.9	7.9	26.9	26.9	73.5	74.2	4.9	7.0	4	7.0	4	4						
					5.2	0.2	175	28.7	7.9	7.9	27.0	28.8	74.8	74.2	5.0	7.0	5	7.0	5	5						
IM3	Misty	Moderate	09:04	6.0	Surface	1.0	0.3	148	29.1	29.1	8.0	8.0	22.5	22.5	82.4	82.0	5.6	5.1	2.2	5.1	4	4	818774	805581		
						1.0	0.3	152	29.0	8.0	8.0	22.5	29.0	81.6	82.0	5.5	2.3	4	5.5	4	4					
						3.0	0.2	137	29.0	8.0	8.0	26.6	26.6	70.1	70.0	4.7	3.0	4	4.6	3	3					
					3.0	0.2	142	29.0	8.0	8.0	26.7	29.2	69.8	70.0	4.6	3.0	3	4.6	3	3						
					5.0	0.2	143	29.2	8.0	8.0	26.7	26.6	72.3	73.5	4.8	4.9	3	4.9	3	3						
					5.0	0.2	148	29.2	8.0	8.0	26.5	29.2	74.7	73.5	4.9	4.9	2	4.9	2	2						
IM4	Misty	Moderate	09:13	8.0	Surface	1.0	0.4	182	29.2	29.2	8.0	8.0	22.7	22.8	85.2	84.9	5.8	5.5	2.5	5.5	2	2	819703	804590		
						1.0	0.5	191	29.2	8.0	8.0	22.8	29.2	84.5	84.9	5.7	2.5	3	5.7	3	3					
						4.0	0.4	172	29.2	8.0	8.0	23.6	23.7	77.8	77.2	5.2	3.6	2	5.2	2	2					
					4.0	0.4	175	29.2	8.0	8.0	23.9	29.3	76.6	77.2	5.2	3.5	3	5.2	3	3						
					7.0	0.3	172	29.2	8.0	8.0	25.9	25.7	76.8	78.4	5.1	4.6	3	76.8	5.1	5.2	4.6	3			3	
					7.0	0.4	174	29.3	8.0	8.0	25.5	29.3	79.9	78.4	5.3	4.5	3	79.9	5.3	5.2	4.5	3			3	
IM5	Misty	Moderate	09:23	7.0	Surface	1.0	0.3	184	29.2	29.2	8.0	8.0	22.3	22.4	85.3	84.9	5.8	5.4	5.0	5.4	3	3	820734	804856		
						1.0	0.3	188	29.1	8.0	8.0	22.5	29.2	84.4	84.9	5.7	4.9	3	84.4	5.7	5.7	4.9			3	3
						3.5	0.2	196	29.1	8.0	8.0	24.0	24.2	77.6	75.4	5.2	5.5	3	77.6	5.2	5.5	5.5			3	3
					3.5	0.3	202	29.1	8.0	8.0	24.3	29.2	73.1	75.4	4.9	5.5	2	73.1	4.9	5.5	5.5	2			2	
					6.0	0.2	201	29.2	8.0	8.0	26.6	26.6	74.2	76.1	4.9	6.6	3	74.2	4.9	6.6	6.6	3			3	
					6.0	0.2	204	29.2	8.0	8.0	26.6	29.2	78.0	76.1	5.2	6.6	2	78.0	5.2	6.6	6.6	2			2	
IM6	Misty	Moderate	09:32	6.6	Surface	1.0	0.3	226	29.2	29.2	8.0	8.0	22.4	22.5	86.6	86.4	5.9	5.8	3.2	5.8	3	3	821074	805811		
						1.0	0.3	238	29.1	8.0	8.0	22.5	29.2	86.2	86.4	5.8	3.1	2	86.2	5.8	5.8	3.1			2	2
						3.3	0.2	232	29.1	8.0	8.0	22.7	29.0	84.0	83.0	5.7	4.2	2	84.0	5.7	5.7	4.2			2	2
					3.3	0.2	246	28.9	8.0	8.0	22.8	29.0	81.9	83.0	5.6	4.1	3	81.9	5.6	5.6	4.1	3			3	
					5.6	0.3	240	28.7	7.9	7.9	26.3	26.3	78.4	80.3	5.2	5.0	3	78.4	5.2	5.2	5.0	3			3	
					5.6	0.3	252	28.5	7.9	7.9	26.3	28.6	82.2	80.3	5.5	5.0	2	82.2	5.5	5.5	5.0	2			2	
IM7	Misty	Moderate	09:42	7.2	Surface	1.0	0.1	160	29.0	29.0	8.0	8.0	22.6	22.7	82.1	81.0	5.6	5.1	2.5	5.1	2	2	821332	806829		
						1.0	0.1	171	29.0	8.0	8.0	22.7	29.0	79.8	81.0	5.4	2.4	3	79.8	5.4	5.4	2.4			3	3
						3.6	0.2	138	29.0	8.0	8.0	26.7	26.7	71.0	71.1	4.7	3.1	2	71.0	4.7	4.7	3.1			2	2
					3.6	0.2	143	29.0	8.0	8.0	26.7	29.2	71.1	71.1	4.7	3.1	2	71.1	4.7	4.7	3.1	2			2	
					6.2	0.1	169	29.2	8.0	8.0	26.8	26.7	73.2	73.9	4.8	4.6	2	73.2	4.8	4.8	4.6	2			2	
					6.2	0.1	175	29.2	8.0	8.0	26.7	29.2	74.6	73.9	4.9	4.7	2	74.6	4.9	4.9	4.7	2			2	
IM8	Misty	Moderate	09:20	7.8	Surface	1.0	0.1	267	29.0	29.0	7.9	7.9	23.6	23.7	80.8	80.4	5.5	5.3	3.7	5.3	<2	<2	821820	808134		
						1.0	0.1	278	29.0	7.9	7.9	23.7	29.0	80.0	80.4	5.4	3.7	<2	80.0	5.4	5.4	3.7			<2	<2
						3.9	0.1	333	28.9	7.9	7.9	24.1	24.1	77.8	76.8	5.2	4.4	2	77.8	5.2	5.2	4.4			2	2
					3.9	0.1	347	28.9	7.9	7.9	24.1	28.9	75.7	76.8	5.1	4.5	2	75.7	5.1	5.1	4.5	2			2	
					6.8	0.0	178	28.4	7.9	7.9	25.8	25.7	75.6	77.4	5.1	5.6	2	75.6	5.1	5.1	5.6	2			2	
					6.8	0.0	181	28.4	7.9	7.9	25.6	28.4	79.1	77.4	5.4	5.7	2	79.1	5.4	5.4	5.7	2			2	

DA: Depth-Averaged  
 Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher  
 Value exceeding Action Level is underlined; Value exceeding Limit Level is bolded and underlined

Expansion of Hong Kong International Airport into a Three-Runway System

Water Quality Monitoring

Water Quality Monitoring Results on 16 September 21 during Mid-Ebb Tide

Monitoring Station	Weather Condition	Sea Condition	Sampling Time	Water Depth (m)	Sampling Depth (m)		Current Speed (m/s)	Current Direction	Water Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen		Turbidity (NTU)		Suspended Solids (mg/L)		Coordinate HK Grid (Northing)	Coordinate HK Grid (Easting)
									Value	Average	Value	Average	Value	Average	Value	Average	Value	DA	Value	DA	Value	DA		
IM9	Misty	Moderate	09:14	7.2	Surface	1.0	0.2	304	29.2	29.2	8.0	8.0	22.8	22.8	83.5	83.2	5.7	5.4	1.1	1.9	3	2	822087	808813
						1.0	0.2	309	29.1	8.0	8.0	22.8	22.8	82.8	83.2	5.6	5.4	1.2	1.9	3	2			
						3.6	0.1	304	29.1	8.0	8.0	24.9	25.0	76.3	76.1	5.1	5.1	2.1	1.9	<2	<2			
					Middle	3.6	0.1	319	29.1	8.0	8.0	25.1	25.1	75.8	76.1	5.1	5.1	2.1	1.9	<2	<2			
						6.2	0.2	269	29.1	8.0	8.0	25.4	25.4	76.4	76.9	5.1	5.2	2.6	1.9	<2	<2			
						6.2	0.2	270	29.2	8.0	8.0	25.4	25.4	77.4	76.9	5.2	5.2	2.6	1.9	<2	<2			
					Bottom	1.0	0.4	329	29.0	29.0	7.9	7.9	23.3	23.3	79.3	77.8	5.4	4.9	1.2	2.3	2	3	822401	809782
						1.0	0.4	303	28.9	28.8	7.9	7.9	23.4	26.4	76.2	66.5	5.2	4.4	1.2	2.3	2	3		
						4.1	0.4	327	28.8	28.8	7.9	7.9	26.4	26.4	66.5	66.5	4.4	4.4	2.1	2.3	3	3		
Middle	4.1	0.4	346	28.8	28.8	7.9	7.9	26.5	26.5	66.4	66.4	4.4	4.4	2.1	2.3	2	3							
	7.2	0.3	306	28.9	28.9	7.9	7.9	26.5	26.5	66.8	67.0	4.4	4.5	3.5	2.3	4	3							
	7.2	0.3	335	28.9	28.9	7.9	7.9	26.5	26.5	67.2	67.0	4.5	4.5	3.6	2.3	5	3							
Bottom	1.0	0.5	294	29.0	29.0	7.9	7.9	23.3	23.4	79.0	78.0	5.3	4.9	1.2	2.2	<2	<2							
	1.0	0.5	294	28.9	28.9	7.9	7.9	23.5	26.2	77.0	68.2	5.2	4.6	1.1	2.2	2	<2							
	3.9	0.5	292	28.9	28.9	7.9	7.9	26.2	26.2	68.2	68.2	4.6	4.5	2.2	2.3	<2	<2							
Middle	3.9	0.5	311	28.9	28.9	7.9	7.9	26.3	26.3	68.1	68.1	4.5	4.5	2.3	2.3	<2	<2							
	6.8	0.2	306	29.0	29.1	8.0	8.0	26.5	26.5	69.9	70.7	4.6	4.7	3.1	2.2	<2	<2							
	6.8	0.3	336	29.1	29.1	8.0	8.0	26.4	26.5	71.4	70.7	4.7	4.7	3.1	2.2	<2	<2							
Bottom	1.0	0.3	253	29.1	29.1	7.9	7.9	23.0	23.0	81.9	81.5	5.5	5.1	1.2	2.5	2	3	821470	812067					
	1.0	0.3	275	29.0	28.9	7.9	7.9	23.0	26.1	81.1	69.5	5.5	4.6	1.1	2.6	2	3							
	5.0	0.3	259	28.9	28.9	7.9	7.9	26.1	26.1	69.5	69.4	4.6	4.6	2.6	2.7	2	3							
Middle	5.0	0.3	276	28.8	28.8	7.9	7.9	26.1	26.2	69.3	69.4	4.6	4.6	2.7	2.7	3	3							
	9.0	0.2	276	28.8	28.8	7.9	7.9	26.3	26.2	70.8	72.0	4.7	4.8	3.7	2.7	4	3							
	9.0	0.3	280	28.8	28.8	7.9	7.9	26.1	26.2	73.2	72.0	4.9	4.8	3.8	2.7	4	3							
Bottom	1.0	-	-	28.8	28.8	7.9	7.9	26.2	26.3	76.8	76.8	5.1	5.1	2.7	3.2	2	2	819978	812658					
	1.0	-	-	28.8	28.8	7.9	7.9	26.3	26.3	76.7	76.8	5.1	5.1	2.7	3.2	3	2							
	2.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2						
Middle	2.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2					
	4.0	-	-	28.8	28.8	7.9	7.9	26.5	26.5	77.7	78.3	5.2	5.3	3.6	3.2	<2	<2							
	4.0	-	-	28.8	28.8	7.9	7.9	26.5	26.5	78.9	78.3	5.3	5.3	3.6	3.2	<2	<2							
Bottom	1.0	0.5	321	28.8	28.8	7.9	7.9	26.0	26.0	77.9	77.9	5.2	5.2	1.1	1.5	3	3	821446	814186					
	1.0	0.5	347	28.8	28.8	7.9	7.9	26.0	26.0	77.9	77.9	5.2	5.2	1.0	1.5	3	3							
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3						
Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3					
	4.0	0.2	310	28.8	28.8	7.9	7.9	26.1	26.1	78.7	79.0	5.3	5.3	1.8	1.5	<2	<2							
	4.0	0.2	320	28.8	28.8	7.9	7.9	26.0	26.1	79.3	79.0	5.3	5.3	1.9	1.5	<2	<2							
Bottom	1.0	0.2	260	28.8	28.8	7.9	7.9	23.5	23.5	77.5	76.8	5.3	4.8	4.2	5.3	3	3	822125	807579					
	1.0	0.2	272	28.7	28.8	7.9	7.9	23.6	26.8	76.1	64.3	5.2	4.3	4.1	5.3	3	3							
	4.5	0.1	237	28.7	28.8	7.9	7.9	26.8	26.8	64.4	64.3	4.3	4.3	5.2	5.3	3	3							
Middle	4.5	0.1	253	28.8	28.8	7.9	7.9	26.8	26.8	64.2	64.3	4.3	4.3	5.1	5.3	3	3							
	8.0	0.1	175	29.0	29.1	8.0	8.0	26.7	26.6	67.2	68.4	4.5	4.6	6.6	5.3	3	3							
	8.0	0.1	191	29.1	29.1	8.0	8.0	26.5	26.6	69.5	68.4	4.6	4.6	6.7	5.3	2	3							
Bottom	1.0	0.1	71	29.1	29.1	8.0	8.0	23.8	23.8	83.3	83.1	5.6	5.4	4.2	5.4	2	2	817200	807811					
	1.0	0.2	73	29.1	29.1	8.0	8.0	23.8	24.0	82.9	83.1	5.6	5.4	4.1	5.4	3	2							
	4.3	0.1	60	29.1	29.1	7.9	7.9	24.0	24.0	79.9	77.8	5.4	5.1	5.5	5.4	2	2							
Middle	4.3	0.1	62	29.1	29.1	7.9	7.9	24.0	24.0	75.7	77.8	5.1	5.1	5.4	5.4	3	2							
	7.6	0.0	223	28.8	28.8	7.9	7.9	26.5	26.5	76.8	77.9	5.1	5.2	6.7	5.2	<2	<2							
	7.6	0.0	227	28.7	28.8	7.9	7.9	26.5	26.5	79.0	77.9	5.3	5.2	6.8	5.2	<2	<2							
Bottom	1.0	0.1	331	29.1	29.1	8.0	8.0	23.3	23.3	82.3	80.4	5.6	5.5	3.7	4.0	2	2	816600	810684					
	1.0	0.1	342	29.1	29.1	8.0	8.0	23.3	25.2	78.4	79.2	5.3	5.4	3.6	4.4	3	2							
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2						
Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2						
	2.2	0.1	323	29.2	29.2	8.0	8.0	25.3	25.2	77.9	79.2	5.2	5.3	4.4	4.0	<2	<2							
	2.2	0.1	325	29.2	29.2	8.0	8.0	25.2	25.2	80.4	79.2	5.4	5.3	4.5	4.0	<2	<2							
Bottom	1.0	0.1	64	29.2	29.2	8.0	8.0	23.5	23.5	83.6	83.5	5.6	5.6	2.8	3.0	<2	<2							
	1.0	0.1	67	29.2	29.2	8.0	8.0	23.6	23.5	83.4	83.5	5.6	5.6	2.9	3.0	<2	<2							
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2						
Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2						
	4.0	0.1	264	29.2	29.2	8.0	8.0	24.0	23.9	83.8	84.2	5.6	5.7	3.2	3.0	2	2	817956	814754					
	4.0	0.1	290	29.2	29.2	8.0	8.0	23.9	23.9	84.6	84.2	5.7	5.7	3.2	3.0	2	2							
Bottom	1.0	0.2	180	28.7	28.7	7.9	7.9	26.4	26.5	75.8	76.0	5.1	5.2	2.0	2.1	2	2	823646	823736					
	1.0	0.2	186	28.7	28.7	7.9	7.9	26.5	26.5	76.1	77.7	5.1	5.2	1.9	2.1	3	2							
	7.7	0.1	38	28.7	28.7	7.9	7.9	26.5	26.5	77.5	77.7	5.2	5.2	2.1	2.1	2	2							
Middle	7.7	0.1	38	28.7	28.7	7.9	7.9	26.5	26.5	77.8	77.7	5.2	5.2	2.1	2.1	3	2							
	14.4	0.1	134	28.7	28.7	7.9	7.9	26.5	26.5	79.0	79.4	5.3	5.3	2.1	2.1	<2	<2							
	14.4	0.1	134	28.7	28.7	7.9	7.9	26.5	26.5	79.8	79.4	5.3	5.3	2.2	2.1	<2	<2							
Bottom	1.0	-	-	28.8	28.8	7.9	7.9	26.3	26.3	75.4	75.4	5.0	5.0	3.8	3.9	3	2	820369	811643					
	1.0	-	-	28.8	28.8	7.9	7.9	26.4	26.3	75.3	75.4	5.0	5.0	3.8	3.9	2	2							
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2						
Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2						
	4.0	-	-	28.8	28.8	7.9	7.9	26.5	26.5	75.9	76.2	5.1	5.1	4.0	3.9	2	2							
	4.0	-	-	28.8	28.8	7.9	7.9	26.5	26.5	76.4	76.2	5.1	5.1	4.0	3.9	2	2							

DA: Depth-Averaged

Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

Value exceeding Action Level is underlined; Value exceeding Limit Level is bolded and underlined





Expansion of Hong Kong International Airport into a Three-Runway System  
Water Quality Monitoring

Water Quality Monitoring Results on 18 September 21 during Mid-Ebb Tide

Monitoring Station	Weather Condition	Sea Condition	Sampling Time	Water Depth (m)	Sampling Depth (m)		Current Speed (m/s)	Current Direction	Water Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen		Turbidity (NTU)		Suspended Solids (mg/L)		Coordinate HK Grid (Northing)	Coordinate HK Grid (Easting)							
									Value	Average	Value	Average	Value	Average	Value	Average	Value	DA	Value	DA	Value	DA									
C1	Sunny	Rough	10:34	8.4	Surface	1.0	0.5	227	28.0	28.0	8.0	8.0	27.9	27.9	81.3	81.3	5.4	5.2	2.1	4.8	6	7	815604	804223							
						1.0	0.5	244	28.0	8.0	8.0	27.9	27.9	81.3	81.3	5.5	5.2	2.1	7												
						4.2	0.3	209	27.5	8.0	8.0	29.7	29.7	73.8	73.8	4.9	4.9	2.2	6												
					Middle	4.2	0.4	214	27.5	8.0	8.0	29.7	29.7	73.8	73.8	4.9	4.9	2.3	7												
						7.4	0.3	215	26.8	7.9	7.9	30.1	30.1	55.3	55.4	3.7	3.7	10.0	7												
						7.4	0.3	225	26.8	7.9	7.9	30.1	30.1	55.4	55.4	3.7	3.7	10.0	7												
					C2	Fine	Calm	12:58	12.0	Surface	1.0	0.6	207	29.1	29.1	7.6	7.6	28.8	28.8	80.0	79.9	5.2			5.2	2.5	3.7	6	6	825684	806955
											1.0	0.7	227	29.1	7.6	7.6	28.8	28.8	79.8	79.9	5.2	5.2			2.5	6					
											6.0	0.6	211	29.1	7.6	7.6	28.9	28.9	79.9	80.1	5.2	5.2			3.9	6					
Middle	6.0	0.6	231	29.2						7.6	7.6	28.9	28.9	80.3	80.3	5.3	5.3	3.8	6												
	11.0	0.3	244	29.3						7.6	7.6	28.9	28.9	82.3	83.1	5.4	5.5	4.7	5												
	11.0	0.4	249	29.3						7.6	7.6	28.9	28.9	83.8	83.8	5.5	5.5	4.6	6												
C3	Fine	Calm	10:16	12.2						Surface	1.0	0.3	81	27.1	27.1	7.5	7.5	31.2	31.2	65.7	65.6	4.4	4.3	2.4	3.4	5	5	822085	817820		
											1.0	0.3	88	27.1	7.5	7.5	31.2	31.2	65.4	65.6	4.4	4.3	2.5	6							
											6.1	0.3	70	27.1	7.5	7.5	31.3	31.3	64.0	63.8	4.3	4.3	3.7	5							
					Middle	6.1	0.3	76	27.1	7.5	7.5	31.3	31.3	63.6	63.8	4.2	4.3	3.7	6												
						11.2	0.3	74	27.3	7.5	7.5	31.4	31.4	63.6	64.3	4.2	4.3	4.1	5												
						11.2	0.3	81	27.3	7.5	7.5	31.4	31.4	64.9	64.3	4.3	4.3	4.0	4												
					IM1	Sunny	Moderate	10:57	4.6	Surface	1.0	0.1	140	28.2	28.2	7.9	7.9	28.6	28.6	63.4	63.4	4.2	4.2	4.4	6.3	8	8			817965	807147
											1.0	0.1	143	28.2	7.9	7.9	28.6	28.6	63.4	63.4	4.2	4.2	4.4	9							
											-	-	-	-	-	-	-	-	-	-	-	-	-	-							
Middle	-	-	-	-						-	-	-	-	-	-	-	-	-	-	-	-	-	8	8							
	3.6	0.1	153	27.4						7.9	7.9	29.2	29.2	58.1	58.2	3.9	3.9	8.3	6												
	3.6	0.1	163	27.4						7.9	7.9	29.2	29.2	58.2	58.2	3.9	3.9	8.3	7												
IM2	Sunny	Rough	11:04	6.9						Surface	1.0	0.2	152	28.0	28.0	8.0	8.0	28.5	28.5	69.5	69.5	4.6	4.1	3.1	6.2	6	6	818166	806173		
											1.0	0.2	156	28.0	8.0	8.0	28.5	28.5	69.4	69.5	4.6	4.6	3.0	6							
											3.5	0.3	145	27.2	7.9	7.9	29.4	29.4	53.2	53.3	3.6	3.6	5.5	6							
					Middle	3.5	0.3	157	27.2	7.9	7.9	29.4	29.4	53.3	53.3	3.6	3.6	5.4	6												
						5.9	0.1	149	27.1	7.9	7.9	29.5	29.5	55.3	55.4	3.7	3.7	10.0	5												
						5.9	0.1	163	27.1	7.9	7.9	29.5	29.5	55.4	55.4	3.7	3.7	10.1	6												
					IM3	Sunny	Rough	11:12	6.3	Surface	1.0	0.4	143	27.4	27.4	7.9	7.9	29.1	29.1	54.3	54.3	3.7	3.7	6.7	9.6	10	10			818797	805571
											1.0	0.4	145	27.4	7.9	7.9	29.1	29.1	54.3	54.3	3.7	3.7	6.7	10							
											3.2	0.3	137	27.3	7.9	7.9	29.2	29.2	52.6	52.6	3.6	3.6	8.3	9							
Middle	3.2	0.3	138	27.3						7.9	7.9	29.2	29.2	52.6	52.6	3.6	3.6	8.3	9												
	5.3	0.2	126	27.2						7.9	7.9	29.2	29.2	52.6	52.6	3.6	3.6	13.7	10												
	5.3	0.3	136	27.2						7.9	7.9	29.2	29.2	52.6	52.6	3.6	3.6	13.7	10												
IM4	Sunny	Rough	11:22	7.2						Surface	1.0	0.9	204	28.3	28.3	8.0	8.0	27.6	27.6	71.6	71.6	4.8	4.7	3.5	6.5	6	6	819703	804590		
											1.0	0.9	223	28.3	8.0	8.0	27.6	27.6	71.6	71.6	4.8	4.8	3.5	6							
											3.6	0.8	198	28.0	8.0	8.0	27.9	27.9	69.0	69.0	4.6	4.6	6.4	5							
					Middle	3.6	0.8	202	28.0	8.0	8.0	27.9	27.9	69.0	69.0	4.6	4.6	6.3	5												
						6.2	0.5	181	27.6	7.9	7.9	28.5	28.5	62.7	62.7	4.2	4.2	9.7	5												
						6.2	0.5	187	27.6	7.9	7.9	28.5	28.5	62.6	62.7	4.2	4.2	9.7	5												
					IM5	Sunny	Moderate	11:32	7.3	Surface	1.0	0.7	208	28.3	28.3	8.0	8.0	26.4	26.4	78.5	78.5	5.3	4.9	2.7	6.2	5	5			820720	804877
											1.0	0.8	223	28.3	8.0	8.0	26.4	26.4	78.4	78.4	5.3	5.3	2.7	5							
											3.7	0.8	205	27.8	8.0	8.0	27.8	27.8	64.5	65.4	4.3	4.3	4.2	4							
Middle	3.7	0.8	222	27.8						8.0	8.0	27.7	27.7	66.3	65.4	4.5	4.5	4.3	5												
	6.3	0.5	204	27.4						7.9	7.9	28.7	28.7	59.5	59.5	4.0	4.0	11.8	4												
	6.3	0.6	214	27.4						7.9	7.9	28.7	28.7	59.5	59.5	4.0	4.0	11.8	5												
IM6	Sunny	Moderate	11:41	6.9						Surface	1.0	0.6	243	28.5	28.5	8.0	8.0	27.1	27.0	73.5	73.5	4.9	4.9	3.7	4.8	5	6	821075	805829		
											1.0	0.6	264	28.5	8.0	8.0	27.0	27.0	73.5	74.0	4.9	4.9	3.7	4							
											3.5	0.5	234	28.2	8.0	8.0	27.6	27.6	74.0	74.0	4.9	4.9	3.3	5							
					Middle	3.5	0.5	244	28.2	8.0	8.0	27.6	27.6	73.9	74.0	4.9	4.9	3.2	6												
						5.9	0.4	240	27.4	7.9	7.9	28.8	28.8	57.3	57.3	3.9	3.9	7.5	7												
						5.9	0.4	257	27.4	7.9	7.9	28.8	28.8	57.3	57.3	3.9	3.9	7.6	6												
					IM7	Sunny	Moderate	11:50	8.0	Surface	1.0	0.3	241	28.7	28.7	8.0	8.0	26.6	26.6	78.0	78.0	5.2	4.8	2.8	5.1	6	6			821336	806816
											1.0	0.3	260	28.7	8.0	8.0	26.6	26.6	78.0	78.0	5.2	5.2	2.9	5							
											4.0	0.3	233	27.9	8.0	8.0	28.0	28.0	64.5	64.5	4.3	4.3	4.3	6							
Middle	4.0	0.3	239	27.9						8.0	8.0	28.0	28.0	64.5	64.5	4.3	4.3	4.3	5												
	7.0	0.2	242	27.3						7.9	7.9	29.1	29.1	52.1	52.2	3.5	3.5	8.2	7												
	7.0	0.2	260	27.3						7.9	7.9	29.1	29.1	52.3	52.2	3.5	3.5	8.2	6												
IM8	Fine	Calm	12:42	7.8						Surface	1.0	0.6	139	29.0	29.0	7.6	7.6	28.8	28.8	86.4	85.9	5.7	5.4	1.5	2.5	8	5	821829	808120		
											1.0	0.7	150	29.0	7.6	7.6	28.8	28.8	85.3	85.9	5.6	5.4	1.5	9							
											3.9	0.5	129	29.2	7.6	7.6	28.6	28.5	79.1	79.1	5.2	5.2	2.2	4							
					Middle	3.9	0.5	134	29.3	7.6	7.6	28.5	28.5	79.1	79.1	5.2	5.2	2.2	5												
						6.8	0.4	104	29.4	7.6	7.6	28.3	28.3	80.5	80.9	5.3	5.3	3.8	3												
						6.8	0.5	105	29.5	7.6	7.6	28.3	28.3	81.2	80.9	5.3	5.3	3.8	3												

DA: Depth-Averaged

Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

Value exceeding Action Level is underlined; Value exceeding Limit Level is bolded and underlined







Expansion of Hong Kong International Airport into a Three-Runway System  
Water Quality Monitoring

Water Quality Monitoring Results on 21 September 21 during Mid-Ebb Tide

Monitoring Station	Weather Condition	Sea Condition	Sampling Time	Water Depth (m)	Sampling Depth (m)		Current Speed (m/s)	Current Direction	Water Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen		Turbidity(NTU)		Suspended Solids (mg/L)		Coordinate HK Grid (Northing)	Coordinate HK Grid (Easting)
									Value	Average	Value	Average	Value	Average	Value	Average	Value	DA	Value	DA	Value	DA		
C1	Fine	Rough	12:45	8.3	Surface	1.0	0.4	243	28.7	28.7	7.9	7.9	27.3	27.3	74.5	74.4	5.0	4.9	3.7	6.3	6	5	815632	804235
						1.0	0.4	255	28.7	7.9	7.9	27.3	27.3	74.3	74.2	4.9	4.9	3.7	5	5				
						4.2	0.4	214	28.6	7.9	7.9	27.5	27.5	72.9	72.9	4.9	4.9	6.3	4	4				
					Middle	4.2	0.5	231	28.6	28.6	7.9	7.9	27.5	27.5	72.8	72.9	4.8	4.8	6.4	5	5			
						7.3	0.4	204	28.5	28.5	7.9	7.9	27.7	27.7	71.2	71.3	4.7	4.7	8.8	4	4			
						7.3	0.4	222	28.5	28.5	7.9	7.9	27.7	27.7	71.3	71.3	4.7	4.7	9.0	5	5			
					Bottom	1.0	0.2	135	28.5	28.5	7.9	7.9	27.3	27.2	70.9	71.0	4.7	4.7	4.4	4	4			
						1.0	0.2	148	28.5	28.5	7.9	7.9	27.2	27.2	71.0	71.0	4.7	4.7	4.6	3	3			
						6.1	0.5	154	27.7	27.7	7.9	7.9	28.4	28.4	64.5	64.6	4.3	4.3	5.6	4	4			
Middle	6.1	0.5	168	27.7	27.7	7.9	7.9	28.4	28.4	64.6	64.6	4.3	4.3	5.6	3	3								
	11.2	0.5	144	27.6	27.6	7.9	7.9	28.6	28.6	64.7	64.8	4.4	4.4	7.2	4	4								
	11.2	0.5	158	27.6	27.6	7.9	7.9	28.6	28.6	64.8	64.8	4.4	4.4	7.6	3	3								
Bottom	1.0	0.4	286	28.3	28.3	7.9	7.9	27.9	27.9	74.7	74.7	5.0	5.0	5.3	4	4								
	1.0	0.4	288	28.3	28.3	7.9	7.9	27.9	27.9	74.7	74.7	5.0	5.0	5.4	5	5								
	5.6	0.2	257	28.1	28.1	7.9	7.9	28.0	28.0	73.1	73.1	4.9	4.9	6.9	4	4								
Middle	5.6	0.2	280	28.1	28.1	7.9	7.9	28.0	28.0	73.1	73.1	4.9	4.9	6.8	5	5								
	10.2	0.1	120	28.1	28.1	7.9	7.9	28.0	28.0	73.8	73.9	4.9	4.9	7.6	4	4								
	10.2	0.1	126	28.1	28.1	7.9	7.9	28.0	28.0	73.9	73.9	5.0	5.0	7.6	5	5								
Bottom	1.0	0.2	184	29.4	29.4	7.9	7.9	27.4	27.4	79.5	79.5	5.2	5.2	4.0	3	3								
	1.0	0.2	191	29.3	29.3	7.9	7.9	27.4	27.4	79.4	79.5	5.2	5.2	4.1	4	4								
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							
	4.4	0.2	165	28.7	28.7	7.9	7.9	27.6	27.6	74.5	74.5	5.0	5.0	6.1	5	5								
	4.4	0.2	171	28.7	28.7	7.9	7.9	27.6	27.6	74.5	74.5	5.0	5.0	6.2	4	4								
Bottom	1.0	0.1	169	28.5	28.5	7.9	7.9	27.4	27.4	73.1	73.2	4.9	4.9	3.2	6	6								
	1.0	0.1	183	28.5	28.5	7.9	7.9	27.4	27.4	73.2	73.2	4.9	4.9	3.2	5	5								
	3.6	0.2	163	28.5	28.5	7.9	7.9	27.4	27.4	72.5	72.5	4.8	4.8	4.7	4	4								
Middle	3.6	0.2	176	28.5	28.5	7.9	7.9	27.4	27.4	72.5	72.5	4.8	4.8	5.0	5	5								
	6.2	0.2	173	28.5	28.5	7.9	7.9	27.4	27.4	72.5	72.5	4.8	4.8	7.6	4	4								
	6.2	0.2	182	28.5	28.5	7.9	7.9	27.4	27.4	72.5	72.5	4.8	4.8	7.6	5	5								
Bottom	1.0	0.0	253	28.4	28.4	8.0	8.0	27.7	27.7	72.5	72.5	4.8	4.8	3.8	4	4								
	1.0	0.0	267	28.4	28.4	8.0	8.0	27.7	27.7	72.4	72.5	4.8	4.8	3.8	5	5								
	3.8	0.1	119	28.2	28.2	7.9	7.9	27.9	27.9	69.8	69.8	4.7	4.7	5.8	4	4								
Middle	3.8	0.1	129	28.2	28.2	7.9	7.9	27.9	27.9	69.7	69.8	4.7	4.7	5.8	5	5								
	6.5	0.2	119	27.9	27.9	7.9	7.9	28.3	28.3	67.5	67.6	4.5	4.5	8.4	4	4								
	6.5	0.2	123	27.9	27.9	7.9	7.9	28.3	28.3	67.6	67.6	4.5	4.5	8.4	3	3								
Bottom	1.0	0.3	200	28.4	28.4	8.0	8.0	27.6	27.6	75.0	75.0	5.0	5.0	2.9	7	7								
	1.0	0.3	212	28.3	28.3	8.0	8.0	27.7	27.7	74.9	74.9	5.0	5.0	2.9	7	7								
	4.3	0.2	203	28.1	28.1	7.9	7.9	28.0	28.0	68.1	68.1	4.6	4.6	4.3	6	6								
Middle	4.3	0.2	215	28.1	28.1	7.9	7.9	28.0	28.0	68.0	68.1	4.6	4.6	4.2	7	7								
	7.6	0.2	171	28.1	28.1	8.0	8.0	28.0	27.9	68.5	68.6	4.6	4.6	6.5	6	6								
	7.6	0.2	173	28.1	28.1	8.0	8.0	27.9	27.9	68.6	68.6	4.6	4.6	6.5	6	6								
Bottom	1.0	0.4	230	28.7	28.7	7.9	7.9	27.1	27.1	73.9	73.9	4.9	4.9	3.8	6	6								
	1.0	0.4	247	28.7	28.7	7.9	7.9	27.1	27.1	73.8	73.8	4.9	4.9	4.1	6	6								
	3.9	0.2	207	28.5	28.5	8.0	8.0	27.2	27.2	72.2	72.2	4.8	4.8	6.3	6	6								
Middle	3.9	0.2	207	28.5	28.5	8.0	8.0	27.2	27.2	72.2	72.2	4.8	4.8	6.0	6	6								
	6.7	0.1	156	28.3	28.3	8.0	8.0	27.6	27.6	72.2	72.2	4.8	4.8	8.0	6	6								
	6.7	0.2	157	28.3	28.3	8.0	8.0	27.6	27.6	72.2	72.2	4.8	4.8	7.8	7	7								
Bottom	1.0	0.3	260	28.7	28.7	7.9	7.9	27.1	27.1	73.6	73.5	4.9	4.9	4.7	7	7								
	1.0	0.3	271	28.6	28.6	8.0	8.0	27.1	27.1	73.4	73.4	4.9	4.9	4.8	6	6								
	3.8	0.2	238	28.4	28.4	8.0	8.0	27.4	27.4	72.4	72.4	4.8	4.8	6.0	5	5								
Middle	3.8	0.2	247	28.4	28.4	8.0	8.0	27.4	27.4	72.3	72.4	4.8	4.8	6.0	6	6								
	6.5	0.2	220	28.2	28.2	8.0	8.0	27.9	27.8	71.4	71.5	4.8	4.8	7.6	6	6								
	6.5	0.2	231	28.2	28.2	8.0	8.0	27.8	27.8	71.6	71.6	4.8	4.8	7.6	5	5								
Bottom	1.0	0.1	245	28.7	28.7	7.9	7.9	26.9	26.9	73.6	73.6	4.9	4.9	3.5	7	7								
	1.0	0.1	260	28.7	28.7	7.9	7.9	26.9	26.9	73.6	73.6	4.9	4.9	3.5	6	6								
	4.5	0.0	92	28.4	28.4	7.9	7.9	27.2	27.2	72.3	72.3	4.8	4.8	4.5	7	7								
Middle	4.5	0.0	100	28.4	28.4	7.9	7.9	27.2	27.2	72.3	72.3	4.8	4.8	4.4	6	6								
	7.9	0.1	108	28.4	28.4	8.0	8.0	27.4	27.4	72.5	72.5	4.8	4.8	6.6	9	9								
	7.9	0.1	110	28.4	28.4	8.0	8.0	27.3	27.3	72.5	72.5	4.8	4.8	6.5	8	8								
Bottom	1.0	0.0	185	28.7	28.7	7.9	7.9	27.0	27.0	73.9	73.9	4.9	4.9	6.8	3	3								
	1.0	0.0	188	28.7	28.7	7.9	7.9	27.0	27.0	73.9	73.9	4.9	4.9	6.9	4	4								
	4.2	0.1	142	28.4	28.4	8.0	8.0	27.4	27.4	73.1	73.1	4.9	4.9	8.0	4	4								
Middle	4.2	0.1	147	28.4	28.4	8.0	8.0	27.4	27.4	73.0	73.1	4.9	4.9	8.3	3	3								
	7.3	0.2	72	28.2	28.2	8.0	8.0	27.8	27.8	71.6	71.7	4.8	4.8	9.6	5	5								
	7.3	0.2	78	28.2	28.2	8.0	8.0	27.8	27.8	71.7	71.7	4.8	4.8	9.5	4	4								
Bottom	1.0	0.0	185	28.7	28.7	7.9	7.9	27.0	27.0	73.9	73.9	4.9	4.9	6.8	3	3								
	1.0	0.0	188	28.7	28.7	7.9	7.9	27.0	27.0	73.9	73.9	4.9	4.9	6.9	4	4								
	4.2	0.1	142	28.4	28.4	8.0	8.0	27.4	27.4	73.1	73.1	4.9	4.9	8.0	4	4								
Middle	4.2	0.1	147	28.4	28.4	8.0	8.0	27.4	27.4	73.0	73.1	4.9	4.9	8.3	3	3								
	7.3	0.2	72	28.2	28.2	8.0	8.0	27.8	27.8	71.6	71.7	4.8	4.8	9.6	5	5								
	7.3	0.2	78	28.2	28.2	8.0	8.0	27.8	27.8	71.7	71.7	4.8	4.8	9.5	4	4								

DA: Depth-Averaged

Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

Value exceeding Action Level is underlined; Value exceeding Limit Level is **bolded and underlined**



Expansion of Hong Kong International Airport into a Three-Runway System  
Water Quality Monitoring

Water Quality Monitoring Results on 21 September 21 during Mid-Flood Tide

Monitoring Station	Weather Condition	Sea Condition	Sampling Time	Water Depth (m)	Sampling Depth (m)		Current Speed (m/s)	Current Direction	Water Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen		Turbidity(NTU)		Suspended Solids (mg/L)		Coordinate HK Grid (Northing)	Coordinate HK Grid (Easting)							
									Value	Average	Value	Average	Value	Average	Value	DA	Value	DA	Value	DA	Value	DA									
C1	Fine	Rough	06:40	8.0	Surface	1.0	0.5	28	28.4	28.4	7.9	7.9	27.6	27.6	70.3	70.3	4.7	4.7	2.1	7	9	815637	804227								
						1.0	0.5	28	28.4	7.9	7.9	27.6	27.6	70.3	70.3	4.7	4.7	2.2	8												
						4.0	0.5	23	28.4	7.9	7.9	27.7	27.7	70.1	70.1	4.7	4.7	3.6	8												
					Middle	4.0	0.6	23	28.4	28.4	7.9	7.9	27.7	27.7	70.1	70.1	4.7	4.7	3.4	7											
						7.0	0.5	38	28.4	28.4	7.9	7.9	27.7	27.7	69.8	69.8	4.7	4.7	6.5	7											
						7.0	0.5	38	28.4	28.4	7.9	7.9	27.7	27.7	69.8	69.8	4.7	4.7	6.3	16											
					C2	Fine	Moderate	08:28	12.6	Surface	1.0	0.3	350	28.6	28.6	8.0	8.0	27.2	27.2	73.7				73.6	4.9	4.9	2.7	3	5	825696	806938
											1.0	0.3	322	28.5	28.5	8.0	8.0	27.2	27.2	73.5				73.5	4.9	4.9	2.7	2			
											6.3	0.4	28	28.5	28.5	7.9	7.9	27.2	27.2	72.0				72.0	4.8	4.8	3.1	6			
Middle	6.3	0.4	29	28.5						28.5	7.9	7.9	27.2	27.2	71.9	71.9	4.8	4.8	3.3	6											
	11.6	0.4	346	28.5						28.5	7.9	7.9	27.2	27.2	71.4	71.4	4.8	4.8	4.7	6											
	11.6	0.4	318	28.4						28.4	7.9	7.9	27.2	27.2	71.4	71.4	4.8	4.8	5.0	6											
C3	Fine	Moderate	06:02	11.9						Surface	1.0	0.3	241	28.0	28.0	7.9	7.9	27.9	27.9	71.0	71.2	4.8	4.8	3.4	7	6	822120	817806			
											1.0	0.3	248	28.0	28.0	7.9	7.9	29.1	29.1	62.3	62.4	4.2	4.2	4.9	7						
											6.0	0.4	252	27.2	27.2	7.9	7.9	29.1	29.1	62.3	62.4	4.2	4.2	5.0	6						
					Middle	6.0	0.4	270	27.2	27.2	7.9	7.9	29.1	29.1	62.4	62.4	4.2	4.2	5.0	5											
						10.9	0.4	266	27.2	27.2	7.9	7.9	29.0	29.0	62.6	62.7	4.2	4.2	6.1	5											
						10.9	0.4	288	27.2	27.2	7.9	7.9	29.0	29.0	62.7	62.7	4.2	4.2	6.3	5											
					IM1	Fine	Moderate	07:02	5.3	Surface	1.0	0.2	2	28.3	28.3	7.9	7.9	27.6	27.6	70.8	70.8	4.7	4.7	3.8	20				20	817937	807148
											1.0	0.2	2	28.3	28.3	7.9	7.9	27.6	27.6	70.7	70.7	4.7	4.7	3.8	19						
											-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Middle	-	-	-	-						-	-	-	-	-	-	-	-	-	-	-	-	-									
	4.3	0.2	15	28.1						28.1	7.9	7.9	27.9	27.9	68.4	68.5	4.6	4.6	6.2	21											
	4.3	0.2	15	28.1						28.1	7.9	7.9	27.9	27.9	68.5	68.5	4.6	4.6	5.8	20											
IM2	Fine	Moderate	07:07	7.1						Surface	1.0	0.4	7	28.2	28.2	7.9	7.9	27.7	27.7	70.1	70.0	4.7	4.7	2.6	22	21	818150	806158			
											1.0	0.4	7	28.2	28.2	7.9	7.9	27.7	27.7	69.9	69.9	4.7	4.7	2.6	21						
											3.6	0.3	359	28.2	28.2	7.9	7.9	27.7	27.7	69.4	69.4	4.6	4.6	4.5	21						
					Middle	3.6	0.3	330	28.2	28.2	7.9	7.9	27.7	27.7	69.4	69.4	4.6	4.6	4.5	22											
						6.1	0.2	343	28.2	28.2	7.9	7.9	27.7	27.7	69.4	69.4	4.6	4.6	7.5	20											
						6.1	0.2	316	28.2	28.2	7.9	7.9	27.7	27.7	69.4	69.4	4.6	4.6	7.7	19											
					IM3	Fine	Moderate	07:13	7.3	Surface	1.0	0.4	337	28.2	28.2	7.9	7.9	27.7	27.7	69.3	69.2	4.6	4.6	3.3	16				21	818762	805582
											1.0	0.5	310	28.2	28.2	7.9	7.9	27.7	27.7	69.1	69.1	4.6	4.6	3.3	17						
											3.7	0.5	341	28.0	28.0	7.9	7.9	27.9	27.9	67.8	67.8	4.5	4.5	5.9	20						
Middle	3.7	0.5	314	28.0						28.0	7.9	7.9	27.9	27.9	67.8	67.8	4.5	4.5	5.8	21											
	6.3	0.4	341	28.0						28.0	7.9	7.9	28.0	28.0	67.6	67.6	4.5	4.5	8.7	25											
	6.3	0.4	358	28.0						28.0	7.9	7.9	28.0	28.0	67.8	67.7	4.6	4.6	8.8	24											
IM4	Fine	Rough	07:20	8.4						Surface	1.0	0.9	350	28.5	28.6	7.9	7.9	27.1	27.1	72.8	72.8	4.9	4.9	3.1	21	12	819727	804605			
											1.0	0.9	322	28.6	28.6	7.9	7.9	27.1	27.1	72.8	72.8	4.9	4.9	3.1	21						
											4.2	0.8	351	28.2	28.2	7.9	7.9	27.7	27.7	68.7	68.7	4.6	4.6	4.3	9						
					Middle	4.2	0.9	352	28.2	28.2	7.9	7.9	27.8	27.8	68.6	68.6	4.6	4.6	4.8	8											
						7.4	0.8	356	28.2	28.2	7.9	7.9	27.8	27.8	68.0	68.0	4.6	4.6	6.3	8											
						7.4	0.8	356	28.2	28.2	7.9	7.9	27.8	27.8	68.0	68.0	4.6	4.6	6.3	7											
					IM5	Fine	Moderate	07:30	6.6	Surface	1.0	1.1	14	28.7	28.7	7.9	7.9	26.4	26.4	73.6	73.5	4.9	4.9	2.7	9				8	820741	804874
											1.0	1.2	14	28.7	28.7	7.9	7.9	26.4	26.4	73.3	73.3	4.9	4.9	2.8	10						
											3.3	1.0	16	28.6	28.6	7.9	7.9	26.7	26.7	72.1	72.2	4.8	4.8	4.3	8						
Middle	3.3	1.1	16	28.6						28.6	7.9	7.9	26.7	26.7	72.2	72.2	4.8	4.8	4.6	7											
	5.6	0.9	11	28.5						28.5	7.9	7.9	26.9	26.9	70.9	70.9	4.7	4.7	7.9	8											
	5.6	1.0	11	28.5						28.5	7.9	7.9	26.9	26.9	70.9	70.9	4.7	4.7	7.7	7											
IM6	Fine	Moderate	07:38	7.4						Surface	1.0	0.0	4	28.7	28.7	7.9	7.9	26.3	26.3	73.4	73.4	4.9	4.9	2.7	10	10	821042	805809			
											1.0	0.0	4	28.7	28.7	7.9	7.9	26.4	26.4	73.3	73.3	4.9	4.9	2.8	11						
											3.7	0.2	52	28.5	28.5	7.9	7.9	27.1	27.1	72.9	72.9	4.9	4.9	3.5	10						
					Middle	3.7	0.2	54	28.4	28.4	8.0	8.0	27.1	27.1	72.8	72.8	4.9	4.9	3.5	11											
						6.4	0.1	36	28.4	28.4	7.9	7.9	27.5	27.5	72.5	72.5	4.8	4.8	6.0	7											
						6.4	0.1	38	28.4	28.4	7.9	7.9	27.5	27.5	72.5	72.5	4.8	4.8	6.0	8											
					IM7	Fine	Moderate	07:46	8.7	Surface	1.0	0.1	238	28.5	28.5	8.0	8.0	26.6	26.6	73.4	73.3	4.9	4.9	2.5	8				7	821372	806844
											1.0	0.1	243	28.5	28.5	8.0	8.0	26.6	26.6	73.1	73.1	4.9	4.9	2.5	8						
											4.4	0.2	112	28.3	28.3	8.0	8.0	27.6	27.6	71.6	71.6	4.8	4.8	3.8	7						
Middle	4.4	0.2	117	28.3						28.3	8.0	8.0	27.6	27.6	71.6	71.6	4.8	4.8	3.8	8											
	7.7	0.1	73	28.3						28.3	8.0	8.0	27.6	27.6	71.7	71.7	4.8	4.8	6.2	6											
	7.7	0.1	73	28.3						28.3	8.0	8.0	27.6	27.6	71.7	71.7	4.8	4.8	6.2	5											
IM8	Fine	Moderate	07:59	8.6						Surface	1.0	0.2	74	28.7	28.7	7.9	7.9	26.3	26.3	73.8	73.9	4.9	4.9	2.4	24	23	821814	808153			
											1.0	0.2	77	28.7	28.7	7.9	7.9	26.3	26.3	73.9	73.9	4.9	4.9	2.4	23						
											4.3	0.1	72	28.5	28.5	7.9	7.9	26.7	26.7	73.0	73.0	4.9	4.9	3.3	24						
					Middle	4.3	0.1	76	28.5	28.5	7.9	7.9	26.7	26.7	73.0	73.0	4.9	4.9	3.2	23											
						7.6	0.1	105	28.4	28.4	8.0	8.0	27.4	27.4	72.9	73.0	4.9	4.9	4.1	22											
						7.6	0.1	113	28.4	28.4	8.0	8.0	27.4	27.4	73.0	73.0	4.9	4.9	4.5	21											

DA: Depth-Averaged  
Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher  
Value exceeding Action Level is underlined; Value exceeding Limit Level is bolded and underlined



























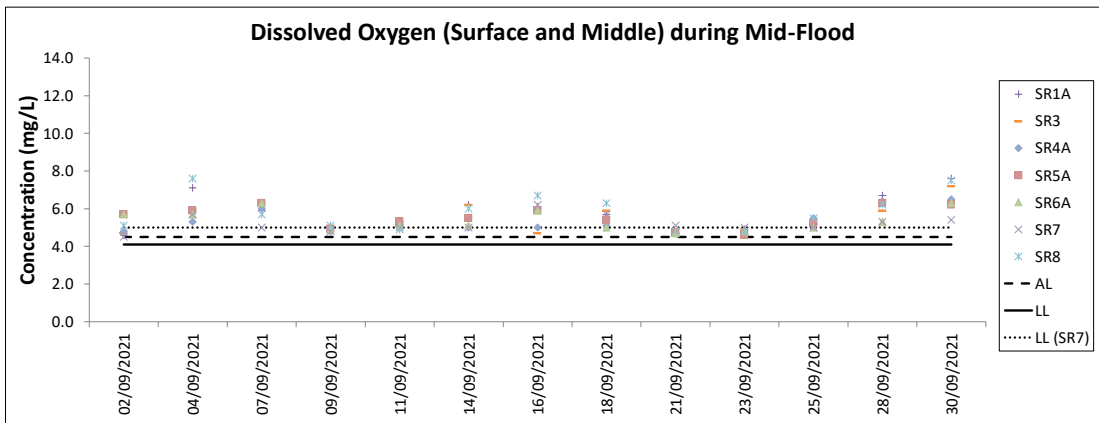
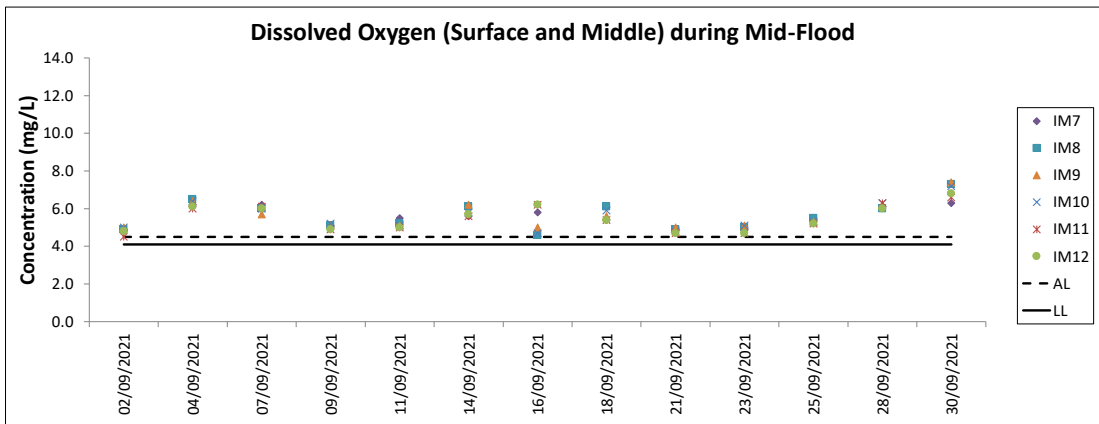
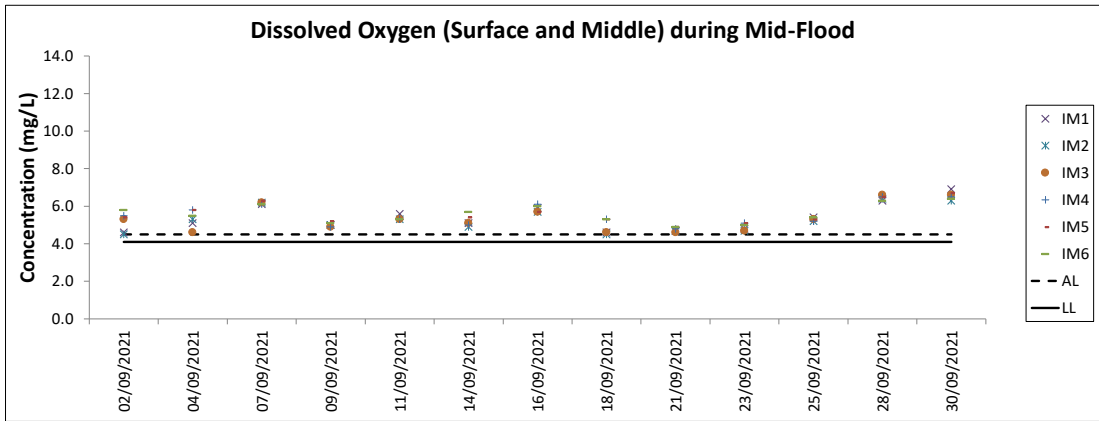
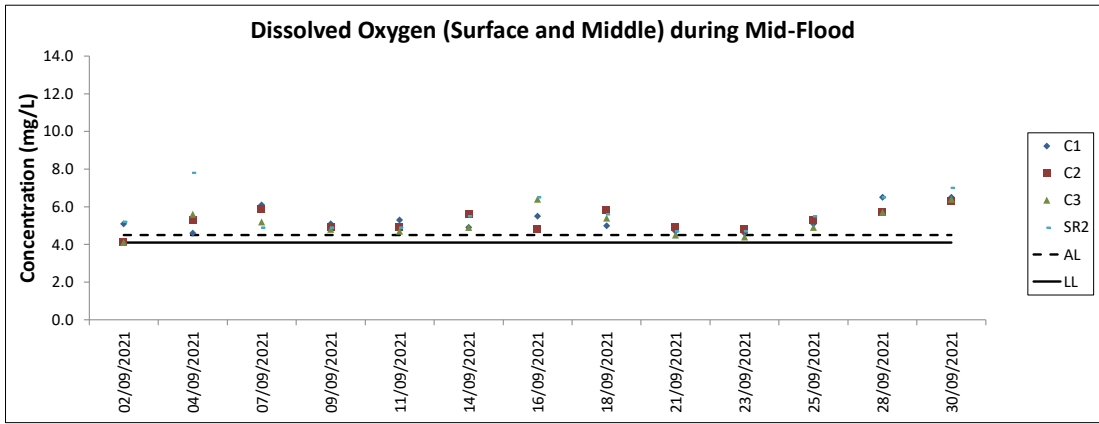


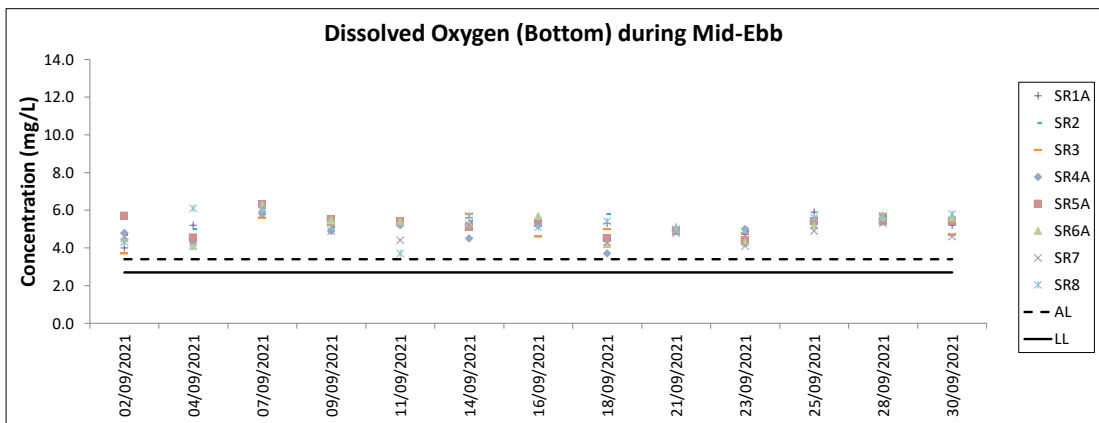
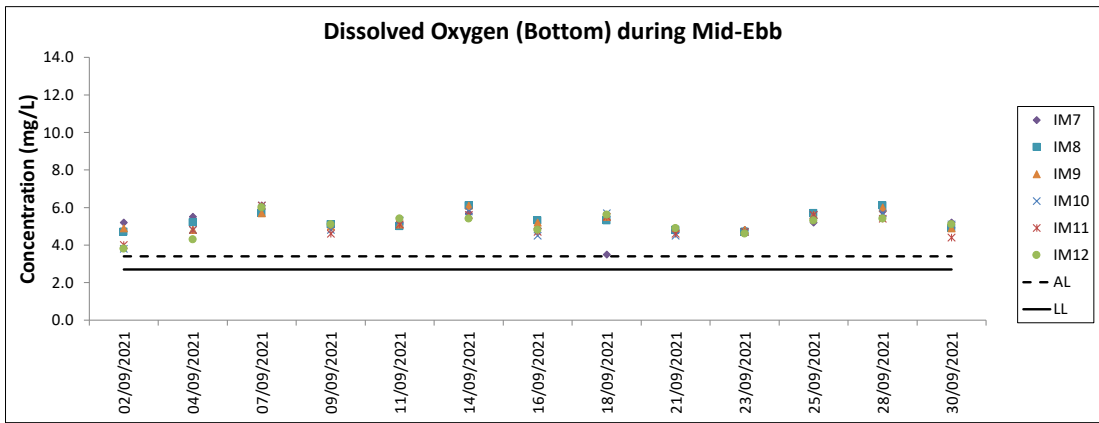
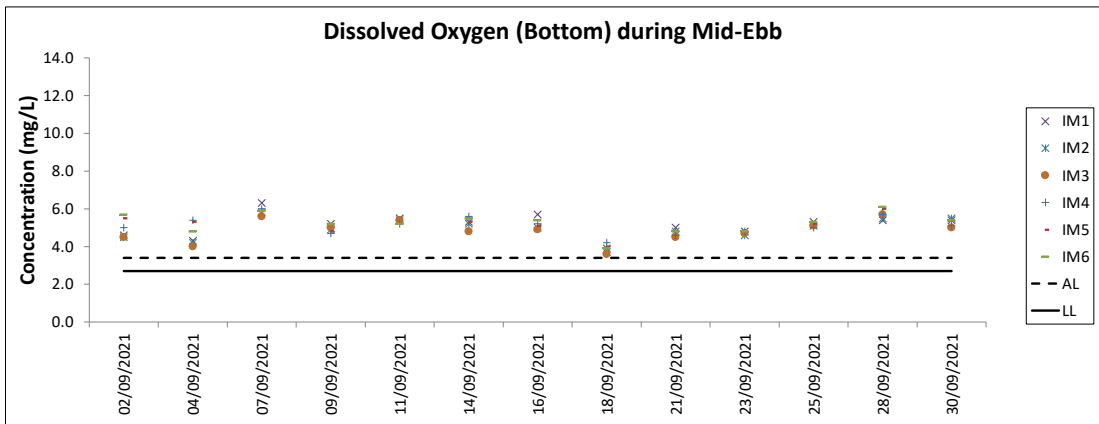
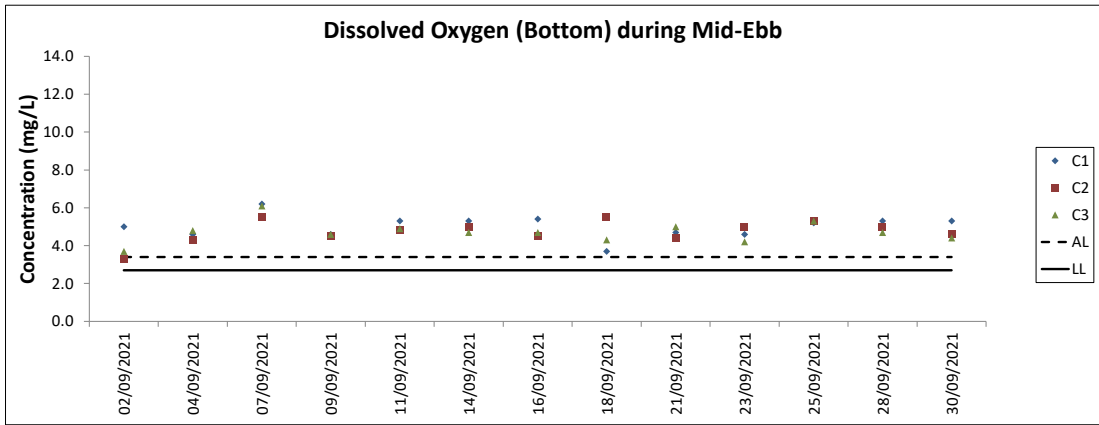


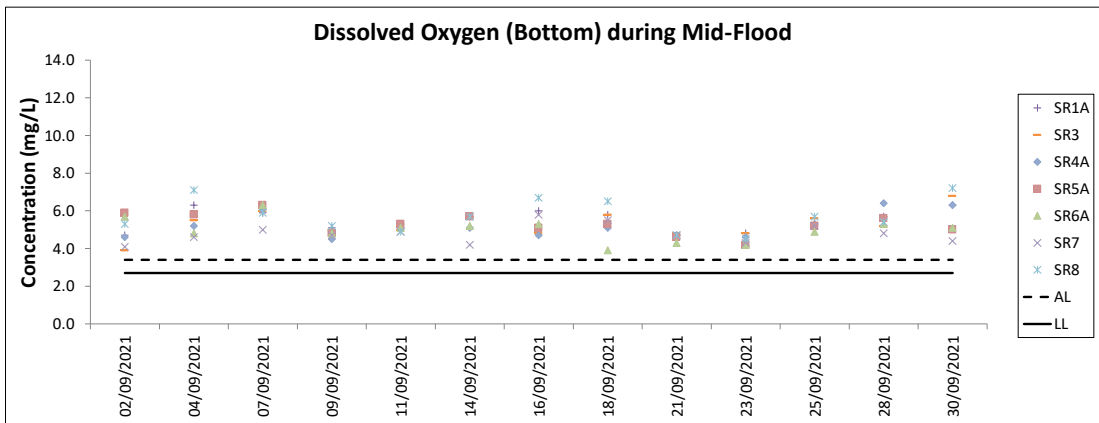
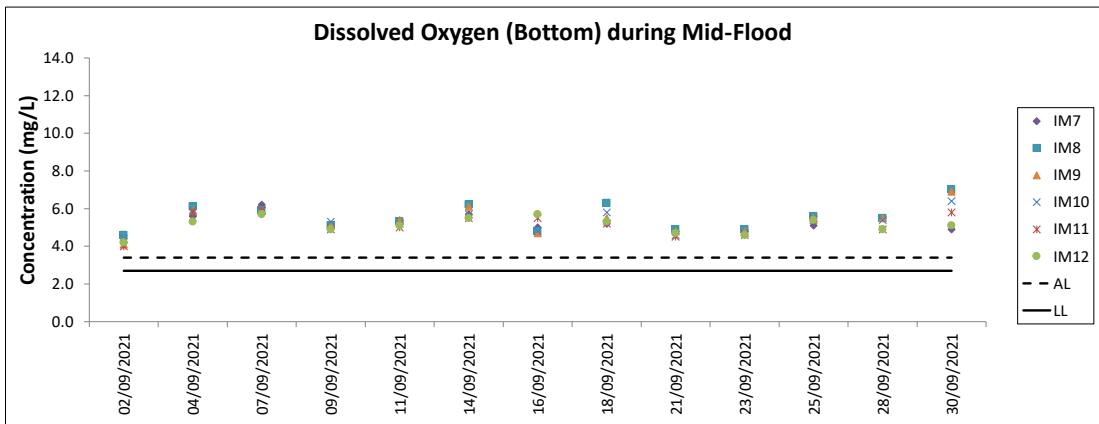
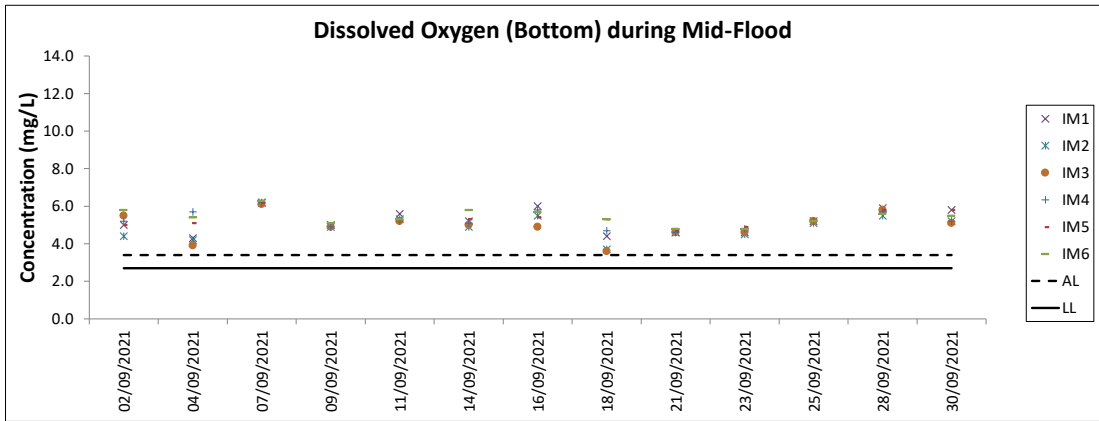
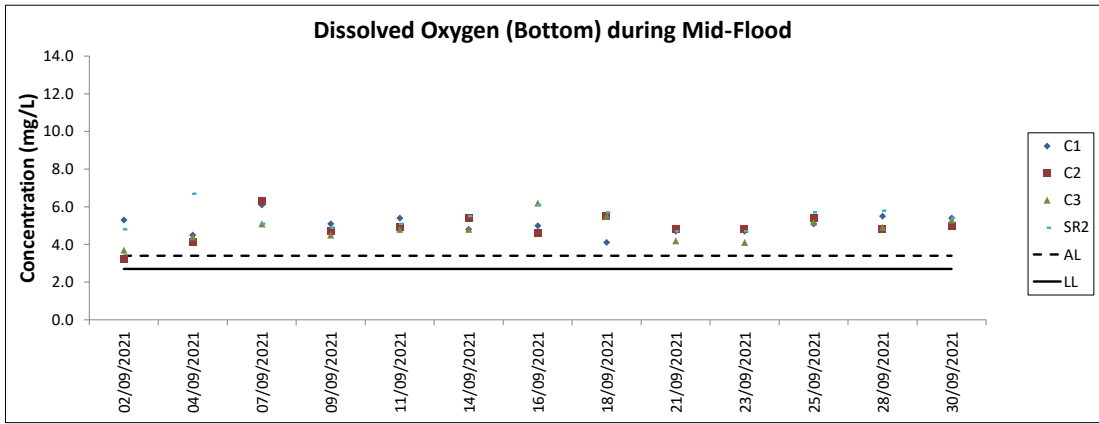


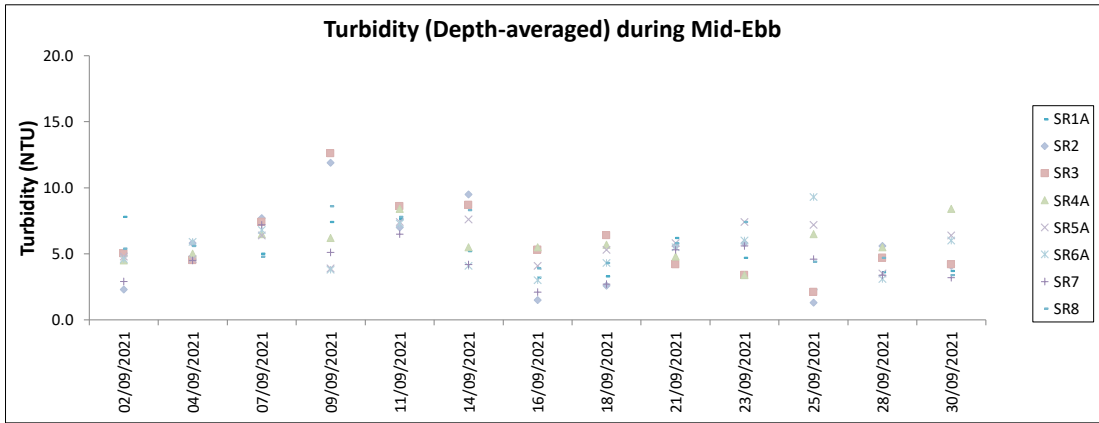
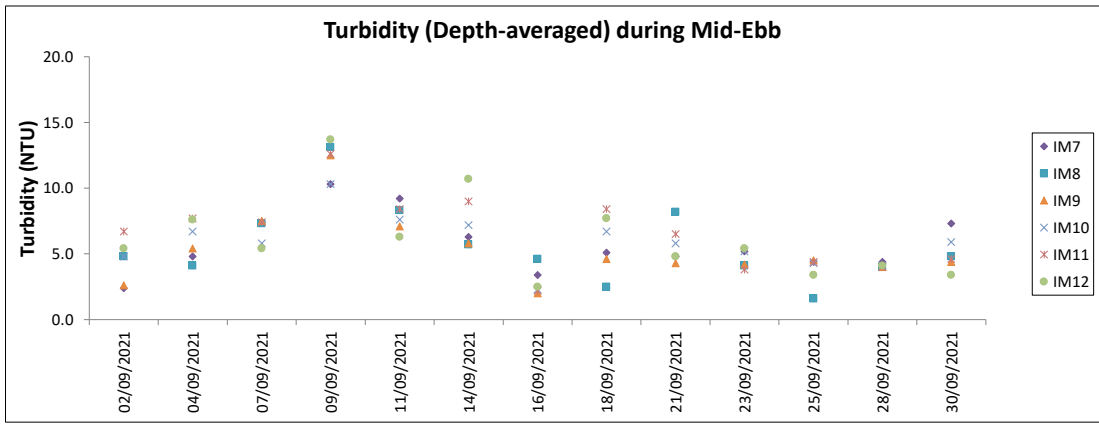
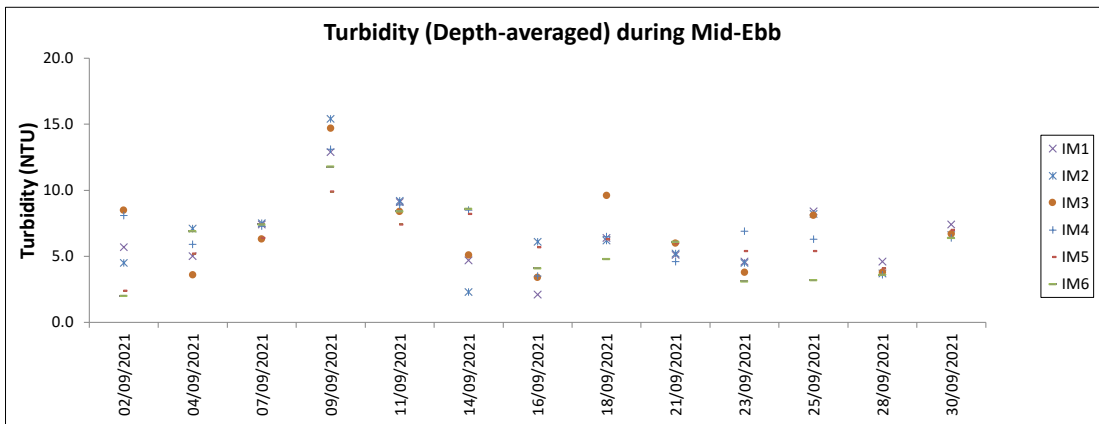
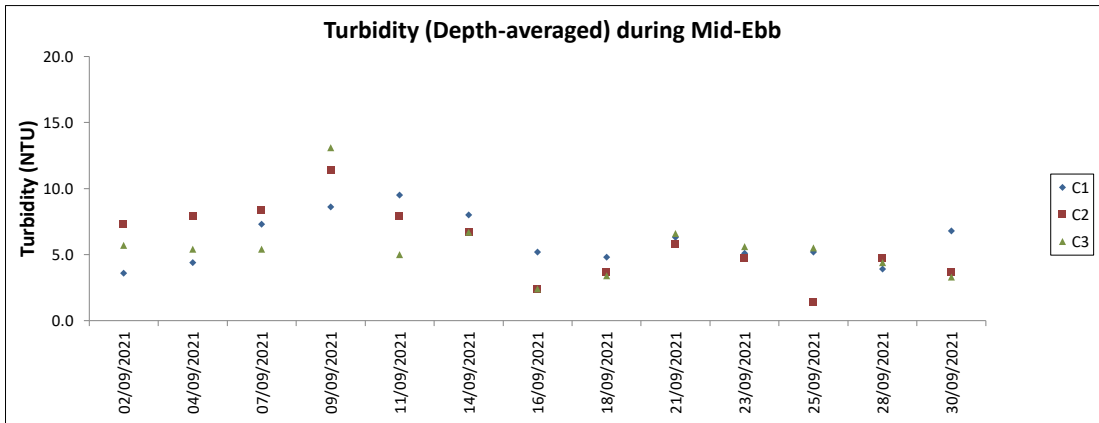




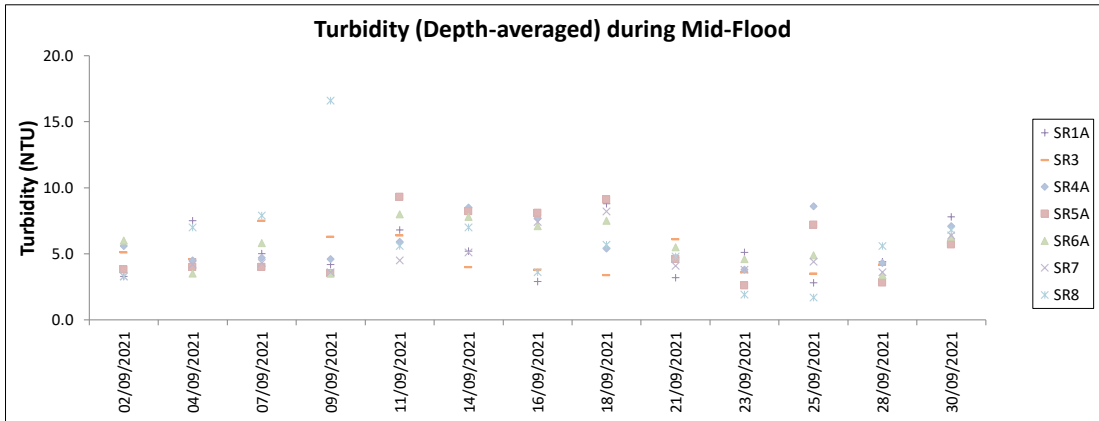
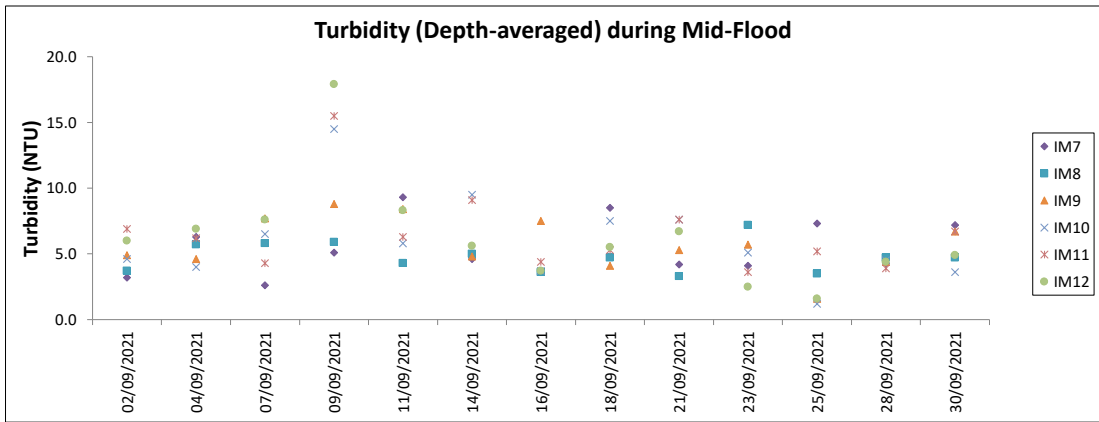
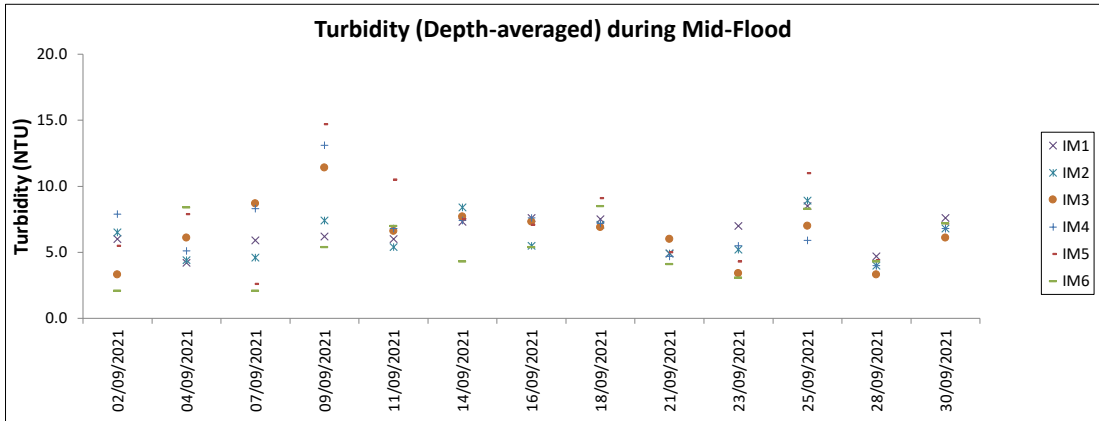
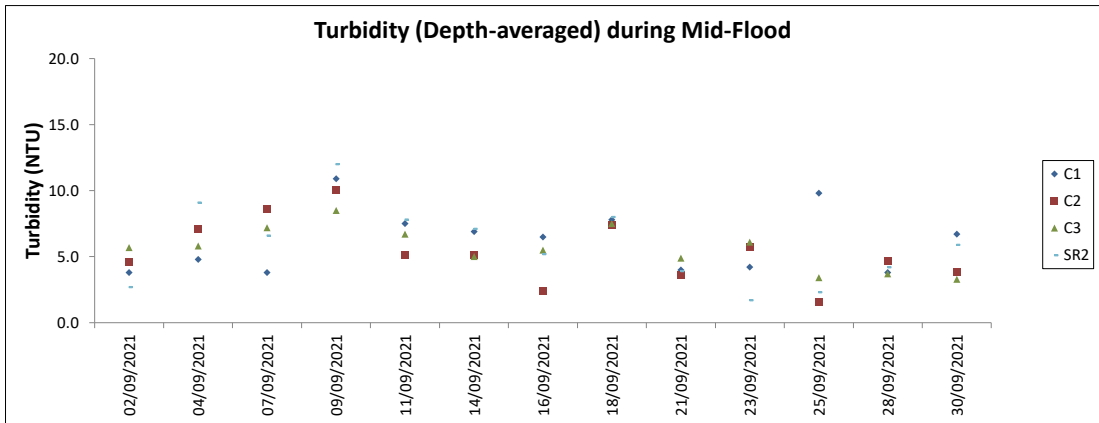




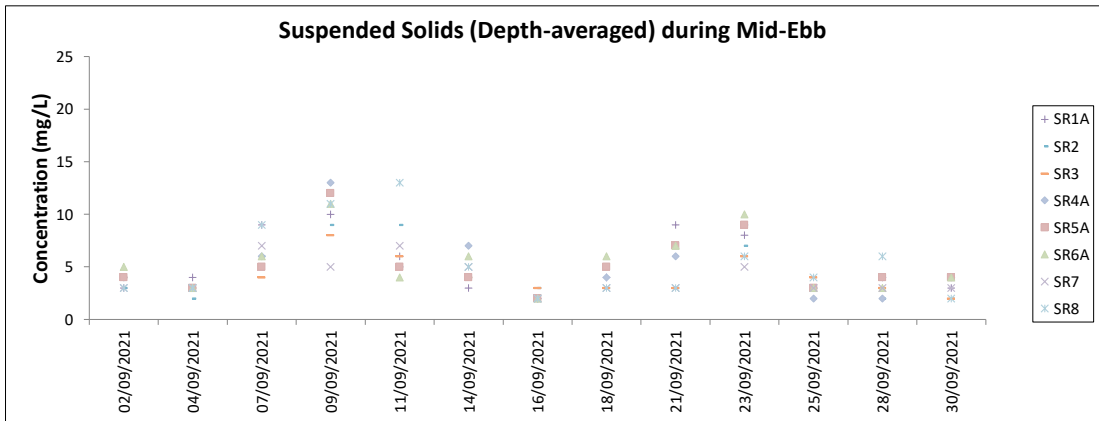
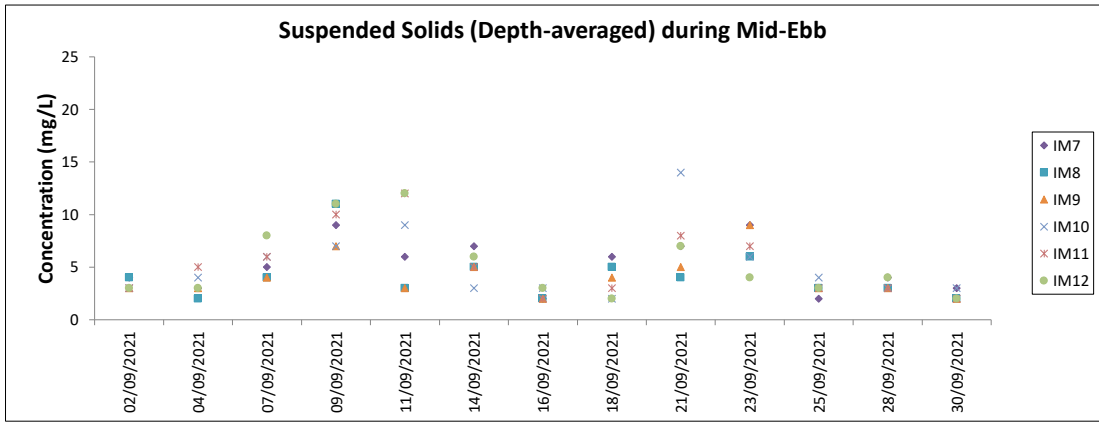
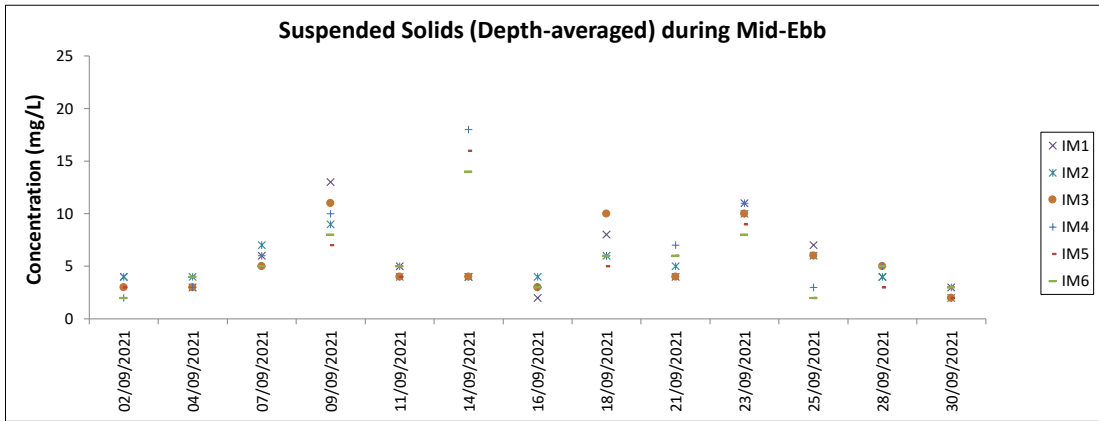
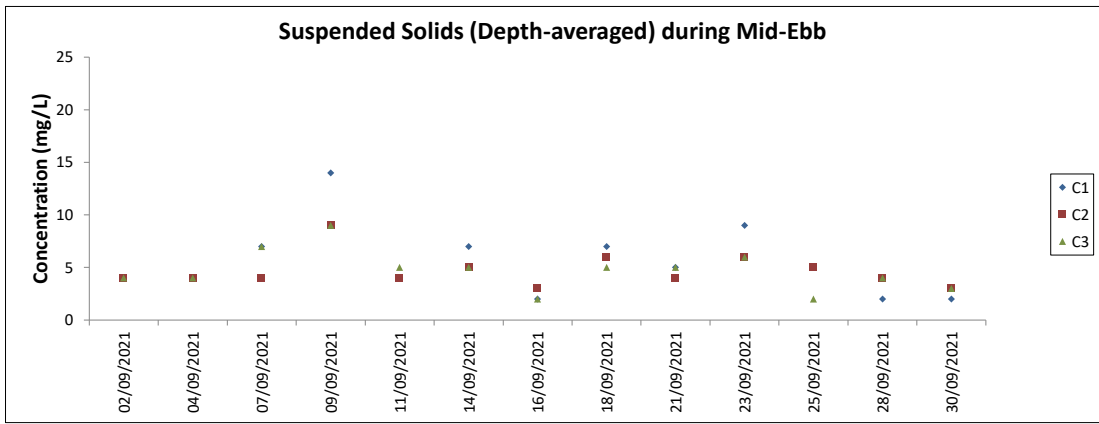




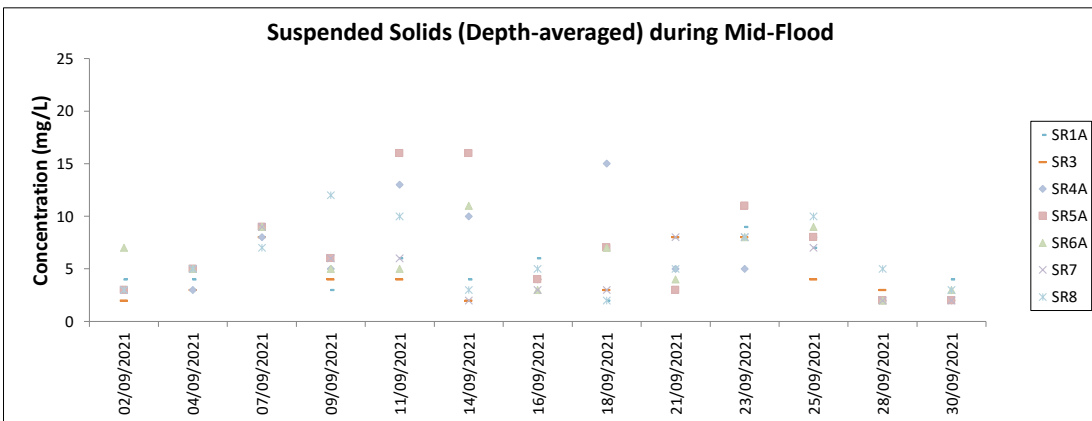
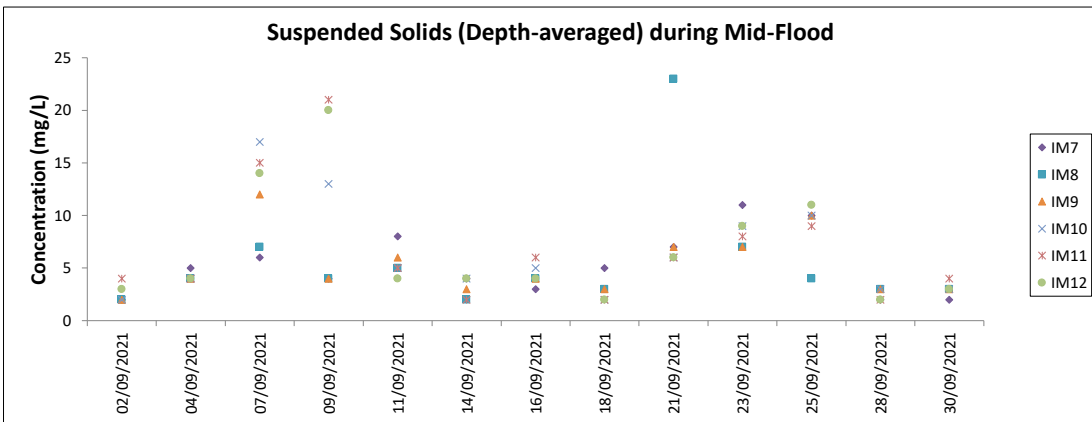
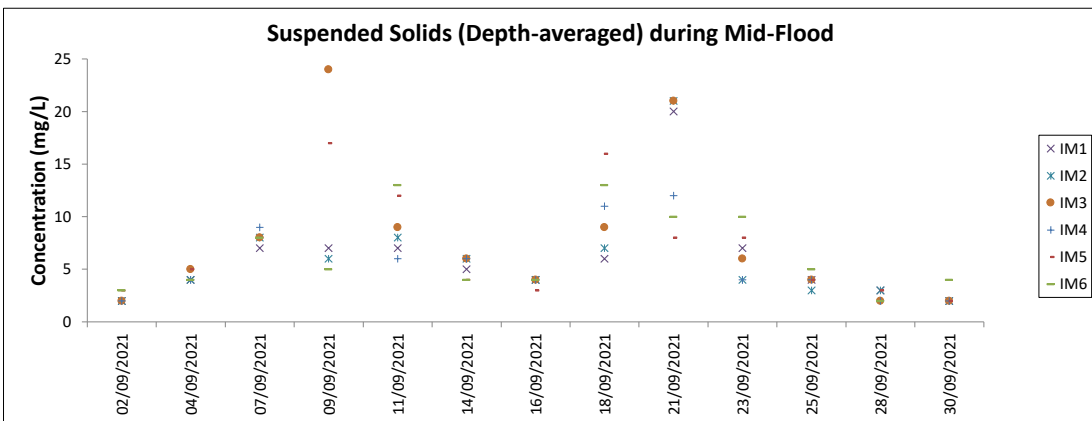
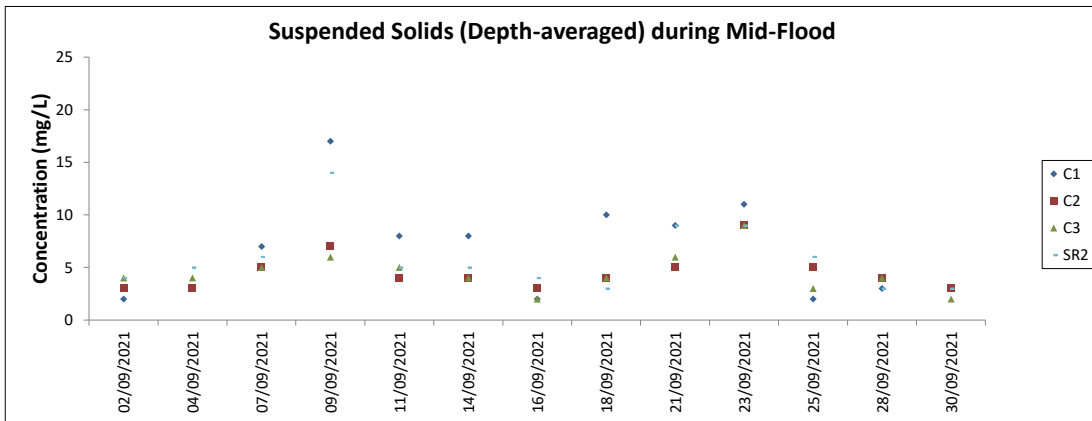
Note: The Action and Limit Level of turbidity can be referred to Table 4.2 of the monthly EM&A report.



Note: The Action and Limit Level of turbidity can be referred to Table 4.2 of the monthly EM&A report.



Note: The Action and Limit Level of suspended solids can be referred to Table 4.2 of the monthly EM&A report.



Note: The Action and Limit Level of suspended solids can be referred to Table 4.2 of the monthly EM&A report.  
Major site activities carried out during the reporting period are summarized in Section 1.4 of the monthly EM&A report.

# **Chinese White Dolphin Monitoring Results**

## CWD Small Vessel Line-transect Survey

## Survey Effort Data

DATE	AREA	BEAU	KM SEARCHED	SEASON	VESSEL	TYPE	P/S
12-Jul-21	SWL	2	25.750	SUMMER	32166	3RS ET	P
12-Jul-21	SWL	3	25.520	SUMMER	32166	3RS ET	P
12-Jul-21	SWL	2	8.900	SUMMER	32166	3RS ET	S
12-Jul-21	SWL	3	6.610	SUMMER	32166	3RS ET	S
13-Jul-21	SWL	1	1.050	SUMMER	32166	3RS ET	P
13-Jul-21	SWL	2	35.764	SUMMER	32166	3RS ET	P
13-Jul-21	SWL	3	14.402	SUMMER	32166	3RS ET	P
13-Jul-21	SWL	1	1.160	SUMMER	32166	3RS ET	S
13-Jul-21	SWL	2	9.900	SUMMER	32166	3RS ET	S
13-Jul-21	SWL	3	4.150	SUMMER	32166	3RS ET	S
14-Jul-21	AW	2	4.740	SUMMER	32166	3RS ET	P
14-Jul-21	WL	1	0.970	SUMMER	32166	3RS ET	P
14-Jul-21	WL	2	6.905	SUMMER	32166	3RS ET	P
14-Jul-21	WL	3	8.190	SUMMER	32166	3RS ET	P
14-Jul-21	WL	2	4.141	SUMMER	32166	3RS ET	S
14-Jul-21	WL	3	5.059	SUMMER	32166	3RS ET	S
19-Jul-21	NEL	3	31.750	SUMMER	32166	3RS ET	P
19-Jul-21	NEL	4	5.200	SUMMER	32166	3RS ET	P
19-Jul-21	NEL	3	8.950	SUMMER	32166	3RS ET	S
19-Jul-21	NEL	4	1.300	SUMMER	32166	3RS ET	S
21-Jul-21	NEL	2	5.200	SUMMER	32166	3RS ET	P
21-Jul-21	NEL	3	31.980	SUMMER	32166	3RS ET	P
21-Jul-21	NEL	2	4.000	SUMMER	32166	3RS ET	S
21-Jul-21	NEL	3	6.120	SUMMER	32166	3RS ET	S
22-Jul-21	AW	2	2.010	SUMMER	32166	3RS ET	P
22-Jul-21	AW	3	2.980	SUMMER	32166	3RS ET	P
22-Jul-21	WL	2	9.208	SUMMER	32166	3RS ET	P
22-Jul-21	WL	3	5.108	SUMMER	32166	3RS ET	P
22-Jul-21	WL	4	0.310	SUMMER	32166	3RS ET	P
22-Jul-21	WL	2	2.660	SUMMER	32166	3RS ET	S
22-Jul-21	WL	3	4.919	SUMMER	32166	3RS ET	S
22-Jul-21	WL	4	0.660	SUMMER	32166	3RS ET	S
26-Jul-21	NWL	2	62.210	SUMMER	32166	3RS ET	P
26-Jul-21	NWL	2	10.690	SUMMER	32166	3RS ET	S
28-Jul-21	NWL	2	34.380	SUMMER	32166	3RS ET	P
28-Jul-21	NWL	3	28.060	SUMMER	32166	3RS ET	P
28-Jul-21	NWL	4	0.600	SUMMER	32166	3RS ET	P
28-Jul-21	NWL	2	3.370	SUMMER	32166	3RS ET	S
28-Jul-21	NWL	3	7.420	SUMMER	32166	3RS ET	S
11-Aug-21	NWL	2	50.150	SUMMER	32166	3RS ET	P
11-Aug-21	NWL	3	10.620	SUMMER	32166	3RS ET	P
11-Aug-21	NWL	2	11.950	SUMMER	32166	3RS ET	S
16-Aug-21	SWL	2	38.120	SUMMER	32166	3RS ET	P
16-Aug-21	SWL	3	16.400	SUMMER	32166	3RS ET	P
16-Aug-21	SWL	2	12.480	SUMMER	32166	3RS ET	S
16-Aug-21	SWL	3	3.200	SUMMER	32166	3RS ET	S
18-Aug-21	AW	2	2.970	SUMMER	32166	3RS ET	P

DATE	AREA	BEAU	KM SEARCHED	SEASON	VESSEL	TYPE	P/S
18-Aug-21	AW	3	1.820	SUMMER	32166	3RS ET	P
18-Aug-21	WL	2	3.420	SUMMER	32166	3RS ET	P
18-Aug-21	WL	3	15.902	SUMMER	32166	3RS ET	P
18-Aug-21	WL	2	1.090	SUMMER	32166	3RS ET	S
18-Aug-21	WL	3	8.908	SUMMER	32166	3RS ET	S
19-Aug-21	NWL	2	35.700	SUMMER	32166	3RS ET	P
19-Aug-21	NWL	3	28.600	SUMMER	32166	3RS ET	P
19-Aug-21	NWL	2	9.900	SUMMER	32166	3RS ET	S
19-Aug-21	NWL	3	1.300	SUMMER	32166	3RS ET	S
20-Aug-21	SWL	1	1.087	SUMMER	32166	3RS ET	P
20-Aug-21	SWL	2	48.720	SUMMER	32166	3RS ET	P
20-Aug-21	SWL	3	3.500	SUMMER	32166	3RS ET	P
20-Aug-21	SWL	1	14.483	SUMMER	32166	3RS ET	S
20-Aug-21	SWL	2	2.300	SUMMER	32166	3RS ET	S
24-Aug-21	AW	2	4.770	SUMMER	32166	3RS ET	P
24-Aug-21	WL	2	6.700	SUMMER	32166	3RS ET	P
24-Aug-21	WL	3	13.750	SUMMER	32166	3RS ET	P
24-Aug-21	WL	2	3.190	SUMMER	32166	3RS ET	S
24-Aug-21	WL	3	7.610	SUMMER	32166	3RS ET	S
25-Aug-21	NEL	2	27.950	SUMMER	32166	3RS ET	P
25-Aug-21	NEL	3	9.200	SUMMER	32166	3RS ET	P
25-Aug-21	NEL	2	6.650	SUMMER	32166	3RS ET	S
25-Aug-21	NEL	3	3.400	SUMMER	32166	3RS ET	S
26-Aug-21	NEL	2	26.405	SUMMER	32166	3RS ET	P
26-Aug-21	NEL	3	10.375	SUMMER	32166	3RS ET	P
26-Aug-21	NEL	2	7.360	SUMMER	32166	3RS ET	S
26-Aug-21	NEL	3	3.160	SUMMER	32166	3RS ET	S
6-Sep-21	NEL	2	36.750	AUTUMN	32166	3RS ET	P
6-Sep-21	NEL	2	8.950	AUTUMN	32166	3RS ET	S
6-Sep-21	NEL	3	1.200	AUTUMN	32166	3RS ET	S
7-Sep-21	NWL	2	19.780	AUTUMN	32166	3RS ET	P
7-Sep-21	NWL	3	37.420	AUTUMN	32166	3RS ET	P
7-Sep-21	NWL	4	6.000	AUTUMN	32166	3RS ET	P
7-Sep-21	NWL	2	5.300	AUTUMN	32166	3RS ET	S
7-Sep-21	NWL	3	6.000	AUTUMN	32166	3RS ET	S
7-Sep-21	NWL	4	1.100	AUTUMN	32166	3RS ET	S
8-Sep-21	SWL	2	28.388	AUTUMN	32166	3RS ET	P
8-Sep-21	SWL	3	23.140	AUTUMN	32166	3RS ET	P
8-Sep-21	SWL	2	10.386	AUTUMN	32166	3RS ET	S
8-Sep-21	SWL	3	4.150	AUTUMN	32166	3RS ET	S
10-Sep-21	NEL	2	7.300	AUTUMN	32166	3RS ET	P
10-Sep-21	NEL	3	26.580	AUTUMN	32166	3RS ET	P
10-Sep-21	NEL	4	3.200	AUTUMN	32166	3RS ET	P
10-Sep-21	NEL	2	2.820	AUTUMN	32166	3RS ET	S
10-Sep-21	NEL	3	7.300	AUTUMN	32166	3RS ET	S
14-Sep-21	SWL	2	29.785	AUTUMN	32166	3RS ET	P
14-Sep-21	SWL	3	20.800	AUTUMN	32166	3RS ET	P
14-Sep-21	SWL	4	2.450	AUTUMN	32166	3RS ET	P
14-Sep-21	SWL	2	9.852	AUTUMN	32166	3RS ET	S

DATE	AREA	BEAU	KM SEARCHED	SEASON	VESSEL	TYPE	P/S
14-Sep-21	SWL	3	7.200	AUTUMN	32166	3RS ET	S
16-Sep-21	AW	2	4.860	AUTUMN	32166	3RS ET	P
16-Sep-21	WL	2	9.094	AUTUMN	32166	3RS ET	P
16-Sep-21	WL	3	5.730	AUTUMN	32166	3RS ET	P
16-Sep-21	WL	2	3.753	AUTUMN	32166	3RS ET	S
16-Sep-21	WL	3	4.210	AUTUMN	32166	3RS ET	S
20-Sep-21	NWL	2	57.280	AUTUMN	32166	3RS ET	P
20-Sep-21	NWL	3	6.990	AUTUMN	32166	3RS ET	P
20-Sep-21	NWL	2	9.500	AUTUMN	32166	3RS ET	S
20-Sep-21	NWL	3	1.630	AUTUMN	32166	3RS ET	S
23-Sep-21	AW	2	1.200	AUTUMN	32166	3RS ET	P
23-Sep-21	AW	3	3.820	AUTUMN	32166	3RS ET	P
23-Sep-21	WL	2	6.040	AUTUMN	32166	3RS ET	P
23-Sep-21	WL	3	7.319	AUTUMN	32166	3RS ET	P
23-Sep-21	WL	4	4.400	AUTUMN	32166	3RS ET	P
23-Sep-21	WL	2	5.350	AUTUMN	32166	3RS ET	S
23-Sep-21	WL	3	3.161	AUTUMN	32166	3RS ET	S
23-Sep-21	WL	4	2.090	AUTUMN	32166	3RS ET	S

Notes: CWD monitoring survey data of the two preceding survey months are presented for reference only.

## CWD Small Vessel Line-transect Survey

## Sighting Data

DATE	STG #	TIME	CWD/FP	GP SZ	AREA	BEAU	PSD	EFFORT	TYPE	DEC LAT	DEC LON	SEASON	BOAT ASSOC.	P/S
12-Jul-21	1	1225	CWD	1	SWL	3	70	ON	3RS ET	22.1605	113.8981	SUMMER	NONE	S
12-Jul-21	2	1314	CWD	1	SWL	3	1	ON	3RS ET	22.1962	113.8975	SUMMER	NONE	P
12-Jul-21	3	1426	CWD	2	SWL	2	531	ON	3RS ET	22.1933	113.8785	SUMMER	NONE	P
12-Jul-21	4	1507	CWD	5	SWL	3	41	ON	3RS ET	22.1860	113.8690	SUMMER	NONE	P
12-Jul-21	5	1540	CWD	3	SWL	2	63	ON	3RS ET	22.1944	113.8590	SUMMER	NONE	P
12-Jul-21	6	1610	CWD	4	SWL	3	573	ON	3RS ET	22.1894	113.8497	SUMMER	NONE	P
13-Jul-21	1	1357	CWD	3	SWL	2	379	ON	3RS ET	22.2073	113.8789	SUMMER	PURSE SEINER	S
13-Jul-21	2	1413	CWD	2	SWL	2	15	ON	3RS ET	22.2061	113.8780	SUMMER	NONE	P
13-Jul-21	3	1538	CWD	7	SWL	3	14	ON	3RS ET	22.1906	113.8495	SUMMER	PURSE SEINER	P
14-Jul-21	1	1036	CWD	1	WL	2	127	ON	3RS ET	22.2621	113.8558	SUMMER	NONE	S
14-Jul-21	2	1044	CWD	2	WL	1	343	ON	3RS ET	22.2616	113.8506	SUMMER	NONE	P
14-Jul-21	3	1055	CWD	5	WL	2	44	ON	3RS ET	22.2608	113.8475	SUMMER	NONE	P
14-Jul-21	4	1109	CWD	3	WL	2	779	ON	3RS ET	22.2546	113.8355	SUMMER	NONE	S
14-Jul-21	5	1147	CWD	4	WL	3	325	ON	3RS ET	22.2399	113.8277	SUMMER	NONE	S
14-Jul-21	6	1214	CWD	2	WL	3	17	ON	3RS ET	22.2300	113.8381	SUMMER	NONE	S
14-Jul-21	7	1240	CWD	3	WL	3	466	ON	3RS ET	22.2143	113.8223	SUMMER	NONE	P
22-Jul-21	1	1037	CWD	8	WL	2	453	ON	3RS ET	22.2644	113.8574	SUMMER	PURSE SEINER	S
22-Jul-21	2	1117	CWD	7	WL	3	411	ON	3RS ET	22.2499	113.8377	SUMMER	NONE	P
22-Jul-21	3	1147	CWD	2	WL	2	358	ON	3RS ET	22.2419	113.8391	SUMMER	NONE	P
22-Jul-21	4	1202	CWD	3	WL	3	32	ON	3RS ET	22.2326	113.8240	SUMMER	NONE	S
22-Jul-21	5	1211	CWD	2	WL	3	221	ON	3RS ET	22.2316	113.8299	SUMMER	NONE	P
22-Jul-21	6	1234	CWD	6	WL	3	22	ON	3RS ET	22.2141	113.8254	SUMMER	NONE	P
22-Jul-21	7	1314	CWD	3	WL	4	20	ON	3RS ET	22.2010	113.8252	SUMMER	NONE	S
22-Jul-21	8	1323	CWD	1	WL	3	170	ON	3RS ET	22.1963	113.8363	SUMMER	NONE	P
22-Jul-21	9	1336	CWD	4	WL	2	115	ON	3RS ET	22.1930	113.8426	SUMMER	PURSE SEINER	S
26-Jul-21	1	1204	CWD	1	NWL	2	567	ON	3RS ET	22.3826	113.8878	SUMMER	NONE	P
26-Jul-21	2	1309	CWD	4	NWL	2	490	ON	3RS ET	22.3885	113.8978	SUMMER	NONE	P
28-Jul-21	1	1035	CWD	1	NWL	2	32	ON	3RS ET	22.2820	113.8694	SUMMER	NONE	P
28-Jul-21	2	1105	CWD	2	NWL	2	302	ON	3RS ET	22.2920	113.8774	SUMMER	NONE	P
28-Jul-21	3	1305	CWD	1	NWL	2	63	ON	3RS ET	22.3522	113.8980	SUMMER	NONE	P
11-Aug-21	1	0948	CWD	3	NWL	3	29	ON	3RS ET	22.39316	113.87011	SUMMER	NONE	P
11-Aug-21	2	1226	CWD	4	NWL	2	415	ON	3RS ET	22.38048	113.88752	SUMMER	NONE	P

DATE	STG #	TIME	CWD/FP	GP SZ	AREA	BEAU	PSD	EFFORT	TYPE	DEC LAT	DEC LON	SEASON	BOAT ASSOC.	P/S
11-Aug-21	3	1328	CWD	1	NWL	2	27	ON	3RS ET	22.38116	113.89752	SUMMER	NONE	P
16-Aug-21	1	1109	FP	1	SWL	2	145	ON	3RS ET	22.16096	113.92744	SUMMER	NONE	P
18-Aug-21	1	1110	CWD	1	WL	3	75	ON	3RS ET	22.24156	113.84087	SUMMER	NONE	P
18-Aug-21	2	1221	CWD	6	WL	3	177	ON	3RS ET	22.19608	113.84060	SUMMER	PURSE SEINER	P
20-Aug-21	1	1048	FP	1	SWL	1	22	ON	3RS ET	22.15401	113.93612	SUMMER	NONE	P
20-Aug-21	2	1102	FP	1	SWL	2	352	ON	3RS ET	22.15871	113.92758	SUMMER	NONE	P
24-Aug-21	1	1148	CWD	4	WL	2	598	ON	3RS ET	22.20577	113.83268	SUMMER	NONE	P
8-Sep-21	1	1312	FP	4	SWL	2	119	ON	3RS ET	22.1520	113.8973	AUTUMN	NONE	P
8-Sep-21	2	1350	CWD	1	SWL	2	141	ON	3RS ET	22.2059	113.8879	AUTUMN	NONE	P
8-Sep-21	3	1436	CWD	1	SWL	3	133	ON	3RS ET	22.1733	113.8687	AUTUMN	NONE	P
8-Sep-21	4	1502	CWD	3	SWL	2	95	ON	3RS ET	22.1946	113.8587	AUTUMN	NONE	P
8-Sep-21	5	1537	CWD	6	SWL	3	729	ON	3RS ET	22.1754	113.8499	AUTUMN	NONE	P
14-Sep-21	1	1037	FP	3	SWL	2	157	ON	3RS ET	22.1819	113.9359	AUTUMN	NONE	P
14-Sep-21	2	1048	FP	1	SWL	2	170	ON	3RS ET	22.1602	113.9368	AUTUMN	NONE	P
14-Sep-21	3	1050	FP	4	SWL	2	35	ON	3RS ET	22.1577	113.9368	AUTUMN	NONE	P
14-Sep-21	4	1108	FP	2	SWL	2	179	ON	3RS ET	22.1582	113.9277	AUTUMN	NONE	P
14-Sep-21	5	1114	FP	5	SWL	2	234	ON	3RS ET	22.1666	113.9280	AUTUMN	NONE	P
14-Sep-21	6	1123	FP	2	SWL	2	63	ON	3RS ET	22.1830	113.9276	AUTUMN	NONE	P
16-Sep-21	1	1044	CWD	1	WL	3	154	ON	3RS ET	22.2606	113.8501	AUTUMN	NONE	P
16-Sep-21	2	1123	CWD	3	WL	3	170	ON	3RS ET	22.2410	113.8409	AUTUMN	NONE	P
16-Sep-21	3	1151	CWD	9	WL	2	67	ON	3RS ET	22.2255	113.8318	AUTUMN	NONE	P
16-Sep-21	4	1221	CWD	2	WL	2	215	ON	3RS ET	22.2051	113.8324	AUTUMN	NONE	P
16-Sep-21	5	1236	CWD	3	WL	2	141	ON	3RS ET	22.2012	113.8245	AUTUMN	NONE	S
16-Sep-21	6	1250	CWD	10	WL	2	208	ON	3RS ET	22.1961	113.8416	AUTUMN	NONE	P
16-Sep-21	7	1308	CWD	1	WL	2	31	ON	3RS ET	22.1926	113.8425	AUTUMN	NONE	S
20-Sep-21	1	1201	CWD	3	NWL	2	7	ON	3RS ET	22.3859	113.8781	AUTUMN	NONE	P
23-Sep-21	1	1046	CWD	1	WL	2	71	ON	3RS ET	22.2608	113.8454	AUTUMN	NONE	P
23-Sep-21	2	1110	CWD	2	WL	2	1497	ON	3RS ET	22.2444	113.8491	AUTUMN	NONE	S
23-Sep-21	3	1203	CWD	6	WL	3	22	ON	3RS ET	22.2139	113.8312	AUTUMN	NONE	P

Abbreviations: STG# = Sighting Number; GP SZ = Group Size; BEAU = Beaufort Sea State; PSD = Perpendicular Distance (in metres); N/A = Not Applicable;  
DEC LAT = Latitude (WGS84 in Decimal), DEC LON = Longitude (WGS84 in Decimal); BOAT ASSOC. = Fishing Boat Association; P/S = Primary Transect / Secondary Transect

Notes:

CWD monitoring survey data of the two preceding survey months are presented for reference only. No relevant figure or text will be mentioned in this monthly EM&A report.

Sighting data of finless porpoise (FP) are presented for reference only. No relevant figure or text will be mentioned in the monthly EM&A report. All FP sightings are excluded in calculation.

Calculation of the encounter rates STG and ANI in the whole survey area (NEL, NWL, AW, WL, SWL):

A total of 423.038 km of survey effort was collected under Beaufort Sea State 3 or below with favourable visibility; total no. of 15 on-effort sightings and total number of 52 dolphins from on-effort sightings were collected under such condition. Calculation of the encounter rates in September 2021 are shown as below:

Encounter Rate by Number of Dolphin Sightings (STG) in September 2021

$$STG = \frac{15}{423.038} \times 100 = 3.55$$

Encounter Rate by Number of Dolphins (ANI) in September 2021

$$ANI = \frac{52}{423.038} \times 100 = 12.29$$

Calculation of the running quarterly STG and ANI in the whole survey area (NEL, NWL, AW, WL, SWL):

A total of 1300.404 km of survey effort was collected under Beaufort Sea State 3 or below with favourable visibility; total no. of 50 on-effort sightings and total number of 161 dolphins from on-effort sightings were collected under such condition. Calculation of the running quarterly encounter rates are shown as below:

Running Quarterly Encounter Rate by Number of Dolphin Sightings (STG)

$$STG = \frac{50}{1300.404} \times 100 = 3.84$$

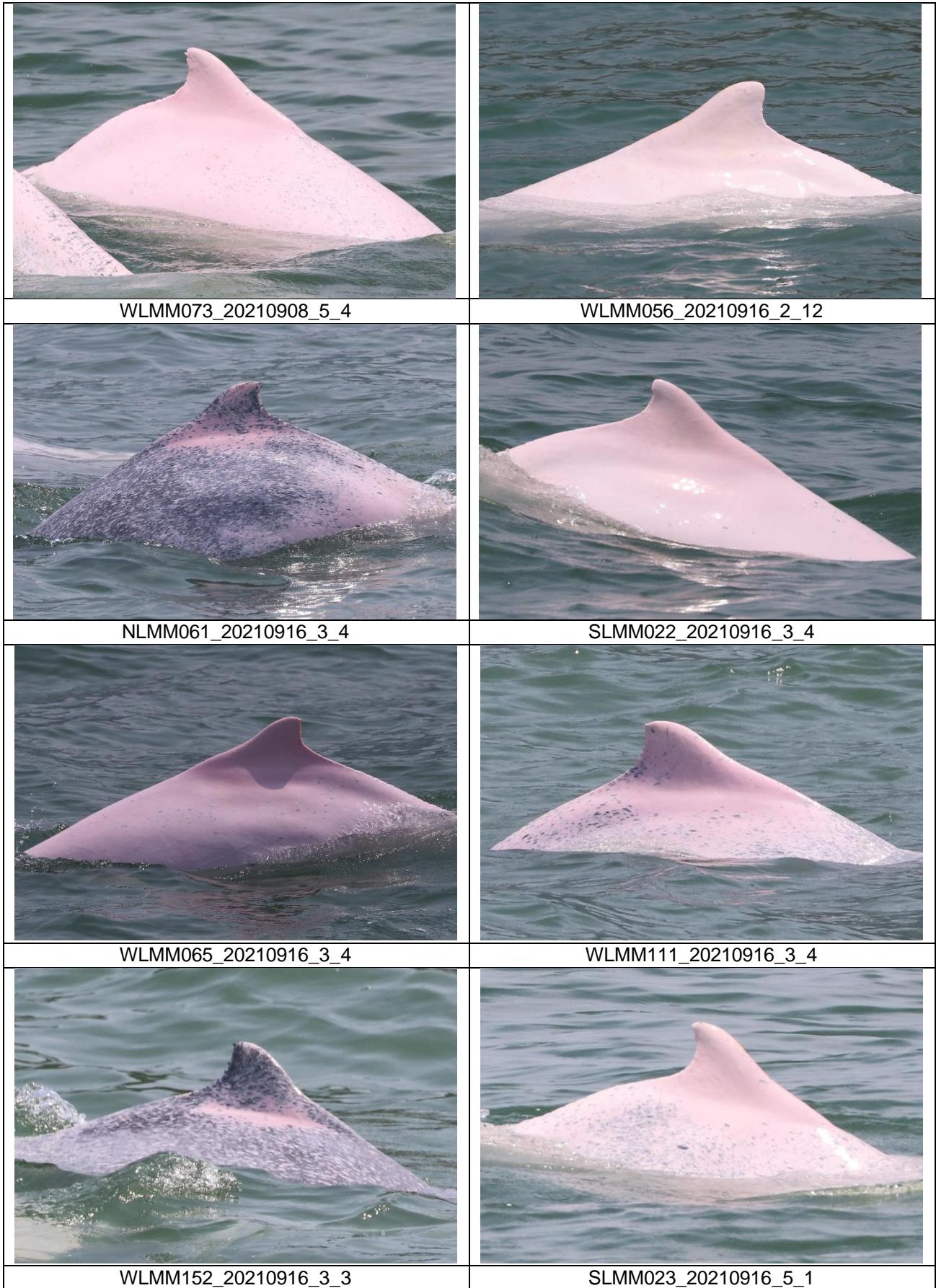
Running Quarterly Encounter Rate by Number of Dolphins (ANI)

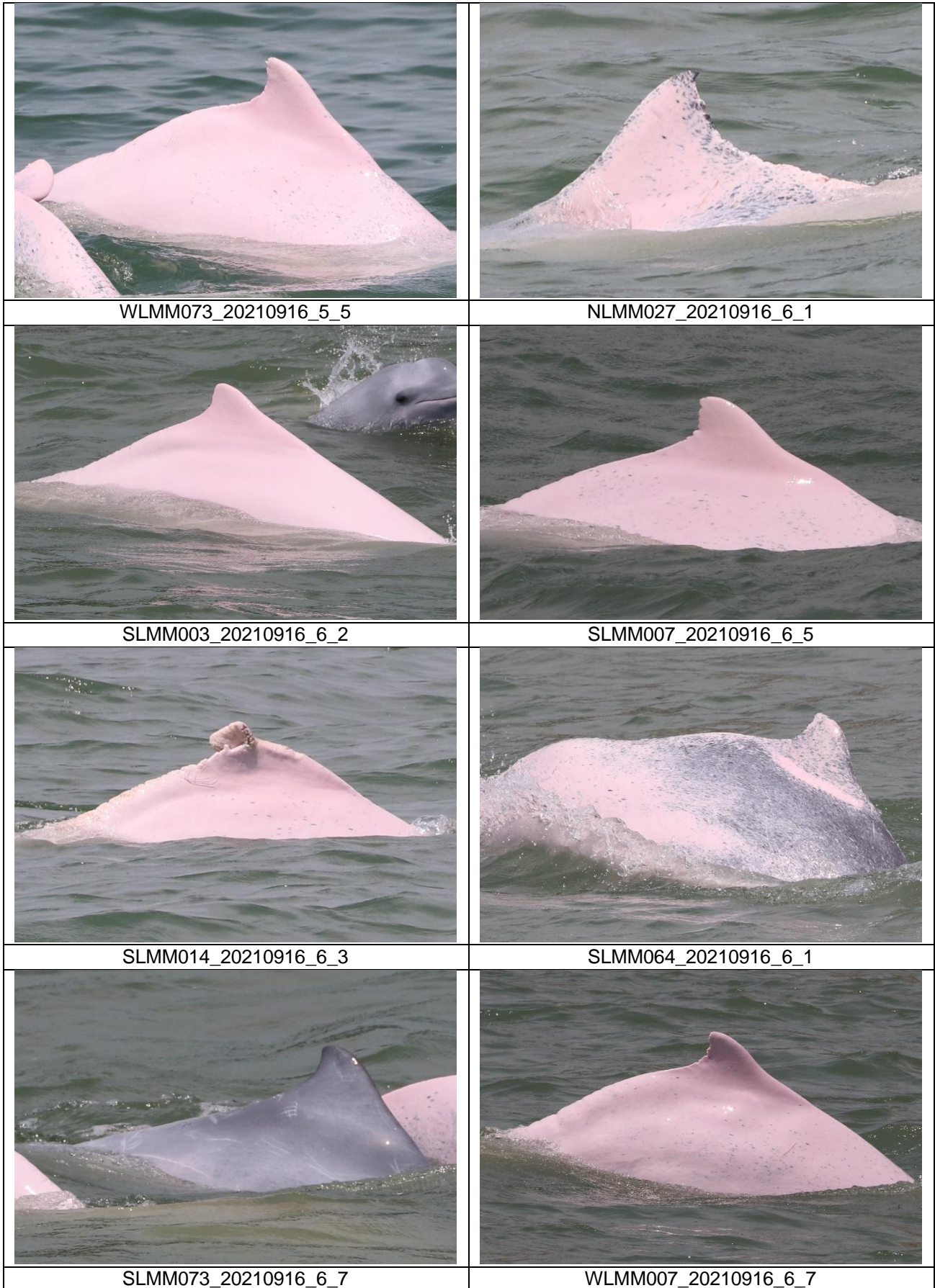
$$ANI = \frac{161}{1300.404} \times 100 = 12.38$$

CWD Small Vessel Line-transect Survey

Photo Identification

	
SLMM014_20210908_2_3	SLMM070_20210908_3_5
	
SLMM029_20210908_4_1	SLMM064_20210908_4_4
	
SLMM007_20210908_5_3	SLMM073_20210908_5_4_Right
	
WLMM007_20210908_5_5	WLMM067_20210908_5_1







WLMM079\_20210916\_6\_6



WLMM167\_20210916\_6\_1



NLMM013\_20210920\_1\_2



WLMM019\_20210920\_1\_3



SLMM010\_20210923\_2\_3



WLMM131\_20210923\_2\_4



WLMM004\_20210923\_3\_4



WLMM063\_20210923\_3\_6



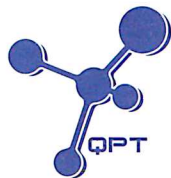
WLMM114\_20210923\_3\_1

**CWD Land-based Theodolite Tracking Survey****CWD Groups by Survey Date**

<b>Date</b>	<b>Station</b>	<b>Start Time</b>	<b>End Time</b>	<b>Duration</b>	<b>Beaufort Range</b>	<b>Visibility</b>	<b>No. of Focal Follow Dolphin Groups Tracked</b>	<b>Dolphin Group Size Range</b>
3/Sep/21	Lung Kwu Chau	9:09	15:09	6:00	1-2	1	0	-
9/Sep/21	Sha Chau	10:59	16:59	6:00	1-2	3-4	0	-

Visibility: 1=Excellent, 2=Good, 3=Fair, 4=Poor

## **Appendix E. Calibration Certificates**



專業化驗有限公司  
QUALITY PRO TEST-CONSULT LIMITED

Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong  
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## REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : BA090071  
Date of Issue : 27 September 2021  
Page No. : 1 of 2

### PART A – CUSTOMER INFORMATION

Enovative Environmental Service Ltd.  
Flat 2207, Yu Fun House,  
Yu Chui Court, Shatin  
New Territories, Hong Kong  
Attn: Mr. Thomas WONG

### PART B – DESCRIPTION

Name of Equipment : YSI ProDSS (Multi-Parameters)  
Manufacturer : YSI (a xylem brand)  
Serial Number : 18A104824  
Date of Received : Sep 24, 2021  
Date of Calibration : Sep 24, 2021  
Date of Next Calibration<sup>(a)</sup> : Dec 23, 2021

### PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
pH at 25°C	APHA 21e 4500-H <sup>+</sup> B
Dissolved Oxygen	APHA 21e 4500-O G
Conductivity at 25°C	APHA 21e 2510 B
Salinity	APHA 21e 2520 B
Turbidity	APHA 21e 2130 B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

### PART D – CALIBRATION RESULTS<sup>(b,c)</sup>

#### (1) pH at 25°C

Target (pH unit)	Displayed Reading <sup>(d)</sup> (pH Unit)	Tolerance <sup>(e)</sup> (pH Unit)	Results
4.00	4.03	0.03	Satisfactory
7.42	7.46	0.04	Satisfactory
10.01	9.96	-0.05	Satisfactory

Tolerance of pH should be less than  $\pm 0.20$  (pH unit)

#### (2) Temperature


Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
10	10.0	0.0	Satisfactory
24	24.0	0.0	Satisfactory
48	48.0	0.0	Satisfactory

Tolerance limit of temperature should be less than  $\pm 2.0$  (°C)

~ CONTINUED ON NEXT PAGE ~

#### Remark(s): -

- <sup>(a)</sup> The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted form relevant international standards.  
<sup>(b)</sup> The results relate only to the calibrated equipment as received  
<sup>(c)</sup> The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.  
<sup>(d)</sup> "Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.  
<sup>(e)</sup> The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted form relevant international standards..

  
LEE Chun-ning  
Senior Chemist



## REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : BA090071  
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### PART D – CALIBRATION RESULTS (Cont'd)

#### (3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.18	0.30	0.12	Satisfactory
2.71	2.66	-0.05	Satisfactory
5.00	5.09	0.09	Satisfactory
7.48	7.48	0.00	Satisfactory

Tolerance limit of dissolved oxygen should be less than  $\pm 0.50$  (mg/L)

#### (4) Conductivity at 25°C

Conc. of KCl (M)	Expected Reading ( $\mu\text{S/cm}$ )	Displayed Reading ( $\mu\text{S/cm}$ )	Tolerance (%)	Results
0.001	146.9	147.6	0.48	Satisfactory
0.01	1412	1451	2.76	Satisfactory
0.1	12890	12758	-1.02	Satisfactory
0.5	58670	58927	0.44	Satisfactory
1.0	111900	110688	-1.08	Satisfactory

Tolerance limit of conductivity should be less than  $\pm 10.0$  (%)

#### (5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.98	-0.20	Satisfactory
20	19.87	-0.65	Satisfactory
30	29.80	-0.67	Satisfactory

Tolerance limit of salinity should be less than  $\pm 10.0$  (%)

#### (6) Turbidity

Expected Reading (NTU)	Displayed Reading <sup>(f)</sup> (NTU)	Tolerance <sup>(g)</sup> (%)	Results
0	0.17	--	Satisfactory
10	9.94	-0.6	Satisfactory
20	19.88	-0.6	Satisfactory
100	98.93	-1.1	Satisfactory
800	794.52	-0.7	Satisfactory

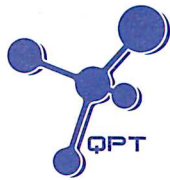
Tolerance limit of turbidity should be less than  $\pm 10.0$  (%)

~ END OF REPORT ~

#### Remark(s): -

<sup>(f)</sup> "Displayed Reading" presents the figures shown on item under calibration/ checking regardless of equipment precision or significant figures.

<sup>(g)</sup> The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.



專業化驗有限公司

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## REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : BA090072  
Date of Issue : 27 September 2021  
Page No. : 1 of 2

### PART A – CUSTOMER INFORMATION

Enovative Environmental Service Ltd.  
Flat 2207, Yu Fun House,  
Yu Chui Court, Shatin  
New Territories, Hong Kong  
Attn: Mr. Thomas WONG

### PART B – DESCRIPTION

Name of Equipment : YSI ProDSS (Multi-Parameters)  
Manufacturer : YSI (a xylem brand)  
Serial Number : 21G105356  
Date of Received : Sep 24, 2021  
Date of Calibration : Sep 24, 2021  
Date of Next Calibration<sup>(a)</sup> : Dec 23, 2021

### PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
pH at 25°C	APHA 21e 4500-H <sup>+</sup> B
Dissolved Oxygen	APHA 21e 4500-O G
Conductivity at 25°C	APHA 21e 2510 B
Salinity	APHA 21e 2520 B
Turbidity	APHA 21e 2130 B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

### PART D – CALIBRATION RESULTS<sup>(b,c)</sup>

#### (1) pH at 25°C

Target (pH unit)	Displayed Reading <sup>(d)</sup> (pH Unit)	Tolerance <sup>(e)</sup> (pH Unit)	Results
4.00	4.01	0.01	Satisfactory
7.42	7.45	0.03	Satisfactory
10.01	10.05	0.04	Satisfactory

Tolerance of pH should be less than  $\pm 0.20$  (pH unit)

#### (2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
10	10.0	0.0	Satisfactory
24	24.0	0.0	Satisfactory
48	48.0	0.0	Satisfactory

Tolerance limit of temperature should be less than  $\pm 2.0$  (°C)

~ CONTINUED ON NEXT PAGE ~

#### Remark(s) :-

- <sup>(a)</sup> The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted from relevant international standards.  
<sup>(b)</sup> The results relate only to the calibrated equipment as received  
<sup>(c)</sup> The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.  
<sup>(d)</sup> "Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.  
<sup>(e)</sup> The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards..

LEE Chun-ning  
Senior Chemist



## REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

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### PART D – CALIBRATION RESULTS (Cont'd)

#### (3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.18	0.30	0.12	Satisfactory
2.71	2.60	-0.11	Satisfactory
5.00	5.13	0.13	Satisfactory
7.48	7.49	0.01	Satisfactory

Tolerance limit of dissolved oxygen should be less than  $\pm 0.50$  (mg/L)

#### (4) Conductivity at 25°C

Conc. of KCl (M)	Expected Reading ( $\mu\text{S}/\text{cm}$ )	Displayed Reading ( $\mu\text{S}/\text{cm}$ )	Tolerance (%)	Results
0.001	146.9	147.5	0.41	Satisfactory
0.01	1412	1466	3.82	Satisfactory
0.1	12890	12747	-1.11	Satisfactory
0.5	58670	59430	1.30	Satisfactory
1.0	111900	110667	-1.10	Satisfactory

Tolerance limit of conductivity should be less than  $\pm 10.0$  (%)

#### (5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.97	-0.30	Satisfactory
20	20.36	1.80	Satisfactory
30	30.77	2.57	Satisfactory

Tolerance limit of salinity should be less than  $\pm 10.0$  (%)

#### (6) Turbidity

Expected Reading (NTU)	Displayed Reading <sup>(f)</sup> (NTU)	Tolerance <sup>(g)</sup> (%)	Results
0	0.18	--	Satisfactory
10	10.13	1.3	Satisfactory
20	19.74	-1.3	Satisfactory
100	102.36	2.4	Satisfactory
800	796.41	-0.4	Satisfactory

Tolerance limit of turbidity should be less than  $\pm 10.0$  (%)

~ END OF REPORT ~

#### Remark(s): -

<sup>(f)</sup> "Displayed Reading" presents the figures shown on item under calibration/ checking regardless of equipment precision or significant figures.

<sup>(g)</sup> The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.

## Appendix F. Status of Environmental Permits and Licences

	Description	Permit/ Reference No.	Status
EIAO	Environmental Permit	EP-489/2014	Approved on 7 Nov 2014

Contract No.	Description	Location	Permit/ Reference No.	Status
3206	Notification of Construction Work under APCO	Works area of 3206	409237	Receipt acknowledged by EPD on 25 Oct 2016
	Registration as Chemical Waste Producer	Site office of 3206	WPN 5213-951-Z4035-01	Completion of Registration on 18 Nov 2016
		Works area of 3206	WPN 5213-951-Z4035-02	Completion of Registration on 18 Nov 2016
	Construction Noise Permit (General Works)	Works Area of 3206	GW-RS0505-21	Valid from 7 Jul 2021 to 5 Jan 2022
	Bill Account for disposal	Works area of 3206	A/C 7026398	Approval granted from EPD on 16 Nov 2016
3301	Notification of Construction Work under APCO	Works area of 3301	415821	Receipt acknowledged by EPD on 19 Apr 2017
	Registration as Chemical Waste Producer	Works area of 3301	WPN 5213-951-F2718-02	Completion of Registration on 9 Jun 2017
	Discharge License under WPCO	Works area of 3301	WT00029286-2017	Valid from 20 Sep 2017 to 30 Sep 2022
	Bill Account for disposal	Works area of 3301	A/C 7027728	Approval granted from EPD on 8 May 2017
	Construction Noise Permit (General Works)	Works area of 3301	GW-RS0631-21	Valid from 22 Aug 2021 to 21 Feb 2022
		Works area of 3301 (Cable ducting works) (Special Case)	GW-RS0188-21 GW-RS0744-21	Superseded by GW-RS0744-21 Valid from 2 Oct 2021 to 29 Mar 2022
3302	Notification of Construction Work under APCO	Works area of 3302	440222	Receipt acknowledged by EPD on 10 Dec 2018
		Staging area of 3302	2018CES1	Receipt acknowledged by EPD on 21 Dec 2018
			454882	Receipt acknowledged by EPD on 2 Apr 2020
	Registration as Chemical Waste Producer	Works area of 3302	5296-951-C4331-01	Completion of Registration on 4 Jan 2019
	Discharge License under WPCO	Works area of 3302	WT00034539-2019	Valid from 11 Mar 2020 to 31 Mar 2025
		Works area of 3302	WT00034541-2019	Valid from 14 Oct 2019 to 31 Oct 2024
	Bill Account for disposal	Works area of 3302	A/C 7032881	Approval granted from EPD on 8 Jan 2019

Contract No.	Description	Location	Permit/ Reference No.	Status
	Construction Noise Permit (General Works)	Works area of 3302	GW-RS0497-21	Valid from 7 July 2021 to 6 Jan 2022
GW-RS0501-21			Valid from 7 July 2021 to 6 Jan 2022	
PP-RS0005-21			Valid from 3 May 2021 to 1 Nov 2021	
3303	Notification of Construction Work under APCO	Works area of 3303	445611	Receipt acknowledged by EPD on 27 May 2019
	Specified Process license under APCO	Works area of 3303	L-15-040 (1)	Valid from 29 Mar 2021 to 28 Mar 2025
	Registration as Chemical Waste Producer	Works area of 3303	5213-951-S4174-01	Completion of Registration on 17 Jun 2019
	Discharge License under WPCO	Works area of 3303	WT00035689-2020	Valid from 11 May 2020 to 31 May 2025
		Works area of 3303	WT00036734-2020	Valid from 1 Dec 2020 to 31 Dec 2025
	Bill Account for disposal	Works area of 3303	A/C 7034272	Approval granted from EPD on 10 Jun 2019
	Construction Noise Permit (General Works)	Works area of 3303 (Existing airport)	GW-RS0286-21	Valid from 16 May 2021 to 15 Nov 2021
Works area of 3303 (Reclamation area)		GW-RS0630-21	Valid from 27 Aug 2021 to 24 Feb 2022	
3305	Notification of Construction Work under APCO	Works area of 3305	460857	Receipt acknowledged by EPD on 12 Oct 2020
	Registration as Chemical Waste Producer	Works area of 3305	5213-951-A3024-01	Completion of Registration on 13 Nov 2020
	Bill Account for disposal	Works area of 3305	A/C 7035360	Approval granted from EPD on 9 Oct 2019
3307	Notification of Construction Work under APCO	Works area of 3307	454964	Receipt acknowledged by EPD on 6 Apr 2020
	Registration as Chemical Waste Producer	Works area of 3307	5211-951-P3379-01	Completion of Registration on 8 Jun 2020
	Discharge License under WPCO	Works area of 3307	WT00036926-2020	Valid from 31 Dec 2020 to 31 Dec 2025
	Bill Account for disposal	Works area of 3307	A/C 7037129	Approval granted from EPD on 5 May 2020
	Construction Noise Permit (General Works)	Works area of 3307	GW-RS0562-21	Valid from 6 Aug 2021 to 5 Feb 2022
3308	Construction Noise Permit (General Works)	Works area of 3308	GW-RS0655-21	Valid from 2 Sep 2021 to 28 Feb 2022
3310	Notification of Construction Work under APCO	Works area of 3310	469170	Receipt acknowledged by EPD on 6 Jul 2021
	Registration as Chemical Waste Producer	Works area of 3310	5213-951-C4620-01	Approval granted from EPD on 26 Jul 2021
	Bill Account for disposal	Works area of 3310	A/C 7040969	Approval granted from EPD on 8 Jul 2021
	Construction Noise Permit (General Works)	Works area of 3310	GW-RS0768-21	Valid from 6 Oct 2021 to 5 Apr 2022

Contract No.	Description	Location	Permit/ Reference No.	Status
3402	Notification of Construction Work under APCO	Works area of 3402	464622	Receipt acknowledged by EPD on 18 Feb 2021
	Bill Account for disposal	Works area of 3402	A/C 7032577	Approval granted from EPD on 27 Nov 2018
	Construction Noise Permit (General Works)	Works area of 3402	GW-RS0129-21	Valid from 20 Mar 2021 to 9 Sep 2021
3403	Notification of Construction Work under APCO	Works area of 3403	450860	Receipt acknowledged by EPD on 11 Nov 2019
		Works area of 3403 (with Area 17 and Area 15)	453912	Receipt acknowledged by EPD on 3 Mar 2020
	Registration as Chemical Waste Producer	Works area of 3403	WPN 5213-951-S4218-01	Completion of Registration on 9 Jan 2020
	Discharge License under WPCO	Works area of 3403	WT00035841-2020	Valid from 5 Jun 2020 to 30 Jun 2025
	Bill Account for disposal	Works area of 3403	A/C 7035267	Approval granted from EPD on 30 Sep 2019
	Construction Noise Permit (General Works)	Works area of 3403	GW-RS0329-21	Superseded by GW-RS0653-21
		Works area of 3403	GW-RS0653-21	Valid from 4 Sep 2021 to 28 Feb 2022
Construction Noise Permit (Special Case)	Works area of 3403	GW-RS0338-21	Valid from 1 June 2021 to 30 Nov 2021	
3405	Notification of Construction Work under APCO	Works area of 3405	453447	Receipt acknowledged by EPD on 18 Feb 2020
	Registration as Chemical Waste Producer	Works area of 3405	WPN 5218-951-C4431-01	Completion of Registration on 12 Mar 2020
	Discharge License under WPCO	Works area of 3405	WT00037084-2020	Valid from 17 Mar 2021 to 31 Mar 2026
	Bill Account for disposal	Works area of 3405	A/C 7036796	Approval granted from EPD on 20 Mar 2020
	Construction Noise Permit (General Works)	Works area of 3405	GW-RS0339-21	Superseded by GW-RS0700-21
Works area of 3405		GW-RS0700-21	Valid from 16 Sep 2021 to 14 Mar 2022	
3408	Notification of Construction Work under APCO	Works area of 3408	461958	Receipt acknowledged by EPD on 17 Nov 2020
	Registration as Chemical Waste Producer	Works area of 3408	WPN 5218-951-B2621-01	Completion of Registration on 14 Jan 2021
	Discharge License under WPCO	Works area of 3408	WT00038836-2021	Valid from 27 Sep 2021 to 30 Sep 2026
	Bill Account for disposal	Works area of 3408	A/C 7039063	Approval granted from EPD on 2 Dec 2020
	Construction Noise Permit (General Works)	Works area of 3408	GW-RS0594-21	Valid from 6 Aug 2021 to 31 Jan 2022
3503		Works area of 3503	459394	Receipt acknowledged by EPD on 28 Aug 2020

Contract No.	Description	Location	Permit/ Reference No.	Status	
	Notification of Construction Work under APCO	Stockpiling area of 3503	459392	Receipt acknowledged by EPD on 28 Aug 2020	
	Registration as Chemical Waste Producer	Works area of 3503	WPN 5113-951-L2845-02	Completion of Registration on 3 Sep 2019	
		Stockpiling area of 3503	WPN 5113-951-L2845-04	Completion of Registration on 19 Jun 2020	
	Discharge License under WPCO	Works area of 3503	WT00031258-2018	Valid from 6 Aug 2019 to 30 Jun 2023	
			WT00036551-2020	Valid from 17 Sep 2020 to 30 Sep 2025	
			WT00036697-2020	Valid from 2 Nov 2020 to 30 Nov 2025	
	Bill Account for disposal	Works area of 3503	A/C 7029665	Approval granted from EPD on 27 Dec 2017	
	Construction Noise Permit (General Works)	Works area of 3503	GW-RS0588-21	Superseded by GW-RS0695-21	
		Works area of 3503	GW-RS0695-21	Valid from 16 Sep 2021 to 14 Feb 2022	
		Stockpiling area of 3503	GW-RS0215-21	Valid from 19 Apr 2021 to 18 Oct 2021	
3508	Notification of Construction Work under APCO	Works area of 3508	459017	Receipt acknowledged by EPD on 19 Aug 2020	
			459469	Receipt acknowledged by EPD on 4 Sep 2020	
			Works area of 3508 (Area J)	467132	Receipt acknowledged by EPD on 3 May 2021
		Registration as Chemical Waste Producer	Works area of 3508	WPN-5218-951-G2898-01	Completion of Registration on 28 Sep 2020
	Discharge License under WPCO	Works area of 3508	WT00037209-2020	Valid from 11 Mar 2021 to 31 Mar 2026	
			WT00037523-2021	Valid from 1 Apr 2021 to 30 Apr 2026	
			WT00037225-2020	Valid from 1 Apr 2021 to 30 Apr 2026	
			WT00037549-2021	Valid from 1 Apr 2021 to 30 Apr 2026	
		Bill Account for disposal	Works area of 3508	7038224	Approval granted from EPD on 8 Sep 2020
	Construction Noise Permit (General Works)	Works area of 3508	GW-RS0608-21	Superseded by GW-RS0710-21	
			GW-RS0710-21	Valid from 23 Sep 2021 to 22 Mar 2022	
		Works area of 3508 (Area 3, Area C, Area J, Area K)	GW-RS0534-21	Valid from 16 Jul 2021 to 14 Jan 2022	
		Works area of 3508 (Area 10)	GW-RS0493-21	Valid from 27 Jun 2021 to 24 Dec 2021	
		Works area of 3508 (Special Case)	GW-RS0414-21	Valid from 30 May 2021 to 25 Nov 2021	

Contract No.	Description	Location	Permit/ Reference No.	Status
		Works area of 3508 (Special Case)	GW-RS0315-21	Valid from 12 May 2021 to 9 Nov 2021
		Works area of 3508 (Area 10)	GW-RS0566-21	Valid from 19 Jul 2021 to 19 Sep 2021
		Works area of 3508 (Area 13)	GW-RS0711-21	Valid from 17 Sep 2021 to 30 Nov 2021
3601	Notification of Construction Work under APCO	Works area of 3601	451762	Receipt acknowledged by EPD on 10 Dec 2019
	Registration as Chemical Waste Producer	Works area of 3601	WPN 7119-951-C4421-01	Completion of Registration on 9 Jan 2020
	Bill Account for disposal	Works area of 3601	A/C 7029991	Approval granted from EPD on 1 Feb 2018
	Construction Noise Permit (General Works)	Works area of 3601	GW-RS0407-21	Valid from 3 June 2021 to 30 Nov 2021
3602	Notification of Construction Work under APCO	Works area of 3602	421278	Receipt acknowledged by EPD on 18 Sep 2017
	Registration as Chemical Waste Producer	Works area of 3602	WPN 5296-951-N2673-01	Completion of Registration on 9 Oct 2017
		Site office of 3602	WPN 5296-951-N2673-02	Completion of Registration on 11 Dec 2017
	Bill Account for disposal	Works area of 3602	A/C 7028942	Approval granted from EPD on 6 Oct 2017
	Construction Noise Permit (General Works)	Works area of 3602	GW-RS0186-21	Valid from 31 Mar 2021 to 30 Sep 2021
3603	Notification of Construction Work under APCO	Site office of 3603	433604	Receipt acknowledged by EPD on 16 May 2018
	Registration as Chemical Waste Producer	Site office of 3603	5296-951-S4069-01	Completion of Registration on 22 Jan 2018
		Test Loop Site of 3603	8334-512-S4273-01	Completion of Registration on 17 Sep 2020
	Bill Account for disposal	Works area of 3603	A/C 7030002	Approval granted from EPD on 1 Feb 2018
	Construction Noise Permit (General Works)	Works area of 3603	GW-RS0367-21	Valid from 24 May 2021 to 23 Nov 2021
3721	Notification of Construction Work under APCO	Works area of 3721	448657	Receipt acknowledged by EPD on 02 Sep 2019
	Registration as Chemical Waste Producer	Works area of 3721	WPN 5218-951-C4412-01	Completion of Registration on 9 Dec 2019
	Bill Account for disposal	Works area of 3721	A/C 7035234	Approval granted from EPD on 25 Sep 2019
	Construction Noise Permit (General Works)	Works area of 3721	GW-RS0326-21	Valid from 15 May 2021 to 12 Nov 2021
3722		Works area of 3722A	465843	Receipt acknowledged by EPD on 14 Aug 2020

Contract No.	Description	Location	Permit/ Reference No.	Status	
	Notification of Construction Work under APCO	Works area of 3722B	465845	Receipt acknowledged by EPD on 14 Aug 2020	
		Works area of 3722C	465842	Receipt acknowledged by EPD on 14 Aug 2020	
		Works area of 3722D	465846	Receipt acknowledged by EPD on 14 Aug 2020	
	Registration as Chemical Waste Producer	Works area of 3722A	WPN 5218-951-T3863-01	Completion of Registration on 18 Mar 2020	
		Works area of 3722B	WPN 5218-951-T3864-01	Completion of Registration on 18 Mar 2020	
		Works area of 3722C	WPN 5218-951-T3862-01	Completion of Registration on 18 Mar 2020	
		Works area of 3722D	WPN 5218-951-T3865-01	Completion of Registration on 18 Mar 2020	
	Discharge License under WPCO	Sewage Treatment Facility of 3722D	WT00037491-2021	Valid from 30 Mar 2021 to 31 Mar 2026	
	Bill Account for disposal	Works area of 3722A	A/C 7036752	Approval granted from EPD on 11 Mar 2020	
		Works area of 3722B	A/C 7036966	Approval granted from EPD on 6 Apr 2020	
		Works area of 3722C	A/C 7036967	Approval granted from EPD on 6 Apr 2020	
		Works area of 3722D	A/C 7036795	Approval granted from EPD on 20 Mar 2020	
	Construction Noise Permit (General Works)	Works area of 3722A, 3722B, 3722C and 3722D	GW-RS0153-21	Valid from 15 Mar 2021 to 14 Sep 2021	
	3723	Notification of Construction Work under APCO	3723A	464440	Receipt acknowledged by EPD on 9 Feb 2021
			3723B	464444	Receipt acknowledged by EPD on 9 Feb 2021
		Registration as Chemical Waste Producer	3723A	WPN 5218-951-T3920-01	Completion of Registration on 9 Feb 2021
3723B			WPN 5218-951-T3921-01	Completion of Registration on 9 Feb 2021	
Discharge License under WPCO		Works area of 3723A & 3723B	/	Application submitted on 15 March 2021	
Bill Account for disposal		Works area of 3723A	A/C 7039755	Approval granted from EPD on 24 Feb 2021	
		Works area of 3723B	A/C 7039754	Approval granted from EPD on 24 Feb 2021	
Construction Noise Permit (General Works)		Works area of 3723A & 3723B	GW-RS0320-21	Valid from 13 May 2021 to 11 Nov 2021 Superseded by GW-RS0697-21 since 16 Sep 2021	
		Works area of 3723A & 3723B	GW-RS0697-21	Valid from 16 Sep 2021 to 13 Mar 2022	
3728		Registration as Chemical Waste Producer	Works area of 3728	WPN 5111-951-S3467-03	Completion of Registration on 7 May 2021
	Discharge License under WPCO	Works area of 3728	WT00037809-2021	Valid from 27 Jul 2021 to 31 Jul 2026	

Contract No.	Description	Location	Permit/ Reference No.	Status
3801	Bill Account for disposal	Works area of 3728	A/C 7039409	Approval granted from EPD on 22 Jan 2021
	Notification of Construction Work under APCO	Works area of 3801	418345	Receipt acknowledged by EPD on 26 Jun 2017
			430372	Receipt acknowledged by EPD on 2 Feb 2018
			435652	Receipt acknowledged by EPD on 16 Jul 2018
			451991	Receipt acknowledged by EPD on 18 Dec 2019
		Stockpiling area of 3801	450940	Receipt acknowledged by EPD on 13 Nov 2019
	Registration as Chemical Waste Producer	Works area of 3801	WPN 5296-951-C1169-53	Completion of Registration on 14 Aug 2018
	Discharge License under WPCO	Works and stockpiling area of 3801	WT00029535-2017	Valid from 24 Nov 2017 to 30 Nov 2022
		Stockpiling area of 3801	WT00037354-2021	Valid from 8 Mar 2021 to 31 Mar 2026
	Bill Account for disposal	Works area of 3801	A/C 7028254	Approval granted from EPD on 3 Jul 2017
Construction Noise Permit (General Works)	Works area of 3801	GW-RS0634-21	Valid from 27 Aug 2021 to 26 Feb 2022	
3802	Notification of Construction Work under APCO	Works area of 3802	458122	Receipt acknowledged by EPD on 14 Jul 2020
	Registration as Chemical Waste Producer	Works area of 3802	WPN 5218-951-G2895-01	Completion of Registration on 28 Aug 2020
		Works area of 3802	WPN 5218-951-G2945-01	Completion of Registration on 29 Sep 2020
	Discharge License under WPCO	Works area of 3802	WT00037032-2020	Valid from 25 May 2021 to 31 May 2026
	Bill Account for disposal	Works area of 3802	A/C 7037575	Approval granted from EPD on 15 Jun 2020
	Construction Noise Permit (General Works)	Works area of 3802	GW-RS0404-21	Valid from 31 May 2021 to 30 Nov 2021
3901A	Notification of Construction Work under APCO	Works area of 3901A	466883	Receipt acknowledged by EPD on 26 Apr 2021
	Specified Process license under APCO	Works area of 3901A	L-3-261(1)	Valid from 14 Sep 2020 to 13 Sep 2024
	Registration as Chemical Waste Producer	Works area of 3901A	WPN 5218-951-K3400-01	Completion of Registration on 17 Jul 2020
	Landfill disposal of waste concrete from batching plant	Works area of 3901A	EP195/01/18	Valid from 5 May 2021 to 2 Feb 2022
	Bill Account for disposal	Works area of 3901A	A/C7037889	Approval granted from EPD on 20 Jul 2020
	Construction Noise Permit (General Works)	Works area of 3901A	GW-RS0597-21	Valid from 7 Aug 2021 to 4 Feb 2022

Contract No.	Description	Location	Permit/ Reference No.	Status
3901B	Notification of Construction Work under APCO	Works area of 3901B	466885	Receipt acknowledged by EPD on 26 Apr 2021
	Specified Process license under APCO	Works area of 3901B	L-3-262(1)	Valid from 17 Nov 2020 to 16 Nov 2024
	Registration as Chemical Waste Producer	Works area of 3901B	WPN 5218-951-G2880-01	Completion of Registration on 17 Jan 2020
	Bill Account for disposal	Works area of 3901B	A/C 7032417	Approval granted from EPD on 13 Nov 2018
	Construction Noise Permit (General Works)	Works area of 3901B	GW-RS0146-21	Valid from 14 Mar 2021 to 10 Sep 2021 Superseded by GW-RS0702-21 since 16 Sep 2021
			GW-RS0702-21	Valid from 16 Sep 2021 to 13 Mar 2022

# Appendix G. Cumulative Statistics on Exceedances, Environmental Complaints, Notification of Summons and Status of Prosecutions

## Statistics for Exceedances for 1-hour TSP, Noise, Water, Waste, CWD Monitoring

		Total no. recorded in the reporting period	Total no. recorded since the project commenced
1-hr TSP	Action	0	0
	Limit	0	0
Noise	Action	0	0
	Limit	0	0
Water	Action	0	0
	Limit	0	0
Waste	Action	0	0
	Limit	0	0
CWD	Action	0	0
	Limit	0	0

Remark: Exceedances, which are not project related, are not shown in this table.

## Statistics for Complaints, Notifications of Summons and Prosecutions

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of Summons	Prosecutions
This reporting period	0	0	0
From 28 December 2015 to end of the reporting period	40	1	1