JOB NO.: TCS00874/16

CEDD CONTRACT NO. CV/2012/05
DEVELOPMENT OF A BATHING BEACH AT LUNG MEI, TAI PO

MONTHLY ENVIRONMENTAL MONITORING AND AUDIT REPORT (NOVEMBER 2018)

PREPARED FOR

WELCOME CONSTRUCTION CO., LTD

Date	Reference No.	Prepared By	Certified By
13 December 2018	TCS00874/16/600/R0366v2	Nicola Hon (Environmental Consultant)	T.W. Tam (Environmental Team Leader)

Version	Date	Remarks
1	7 December 2018	First Submission
2	13 December 2018	Amended according to the IEC's comments on 10 and 13 December 2018

土木工程拓展署
Civil Engineering and Development Department

ERM

Environmental Permit No. EP-388/2010

Development of a Bathing Beach at Lung Mei, Tai Po

Independent Environmental Checker Verification

Reference Document/Plan

Document/~~Plan~~ to be ~~Certified~~/ Verified:	Monthly Environmental Monitoring and Audit Report (November 2018)
Date of Report:	13 December 2018
Date received by IEC:	13 December 2018

Reference EP Condition / Updated EM&A Manual Requirement

Environmental Permit Condition / ~~Updated EM&A Manual Reference~~ Condition 4.4

Three hard copies and one electronic copy of monthly EM&A Report shall be submitted to the Director within 2 weeks after the end of the reporting month. The EM&A Reports shall include a summary of all non-compliance (exceedances) of the environmental quality performance limits (Action and Limit Levels). The submissions shall be certified by the ET Leader and verified by the IEC. Additional copies of the submission shall be provided to the Director upon request by the Director.

IEC Verification

I hereby verify that the above referenced document/~~plan~~ complies with the above referenced condition of EP-388/2010.

Mr Terence Fong

Independent Environmental Checker

Date: 13 December 2018

Our ref: P:\Projects\0206709 IEC for Lung Mei EM&A\07_ET Submission\23_Monthly EM&A Report\12_November 2018\20181213 v2

EXECUTIVE SUMMARY

ES.01 Civil Engineering and Development Department (hereafter referred as "CEDD") is the Project Proponent and the Permit Holder of *Agreement No. CE 59/2005 (EP) Development of a Bathing Beach at Lung Mei, Tai Po* (hereinafter referred as "the Project"), which is a Designated Project to be implemented under Environmental Permit number EP-388/2010 (hereinafter referred as "the EP-388/2010" or "the EP").

ES.02 Action-United Environmental Services & Consulting (hereinafter referred as "AUES") has been commissioned as the Environmental Team for the Project (hereinafter referred as "the ET") to perform relevant Environmental Monitoring and Audit (EM&A) programme, including baseline and impact environmental monitoring in accordance with the EM&A Manual approved under the Environmental Impact Assessment Ordinance (EIAO).

ES.03 According to the Approved Environmental Monitoring and Audit (EM&A) Manual [November 2007] (hereinafter referred as 'the EM&A Manual'), air quality, construction noise and water quality monitoring should be required to be monitored for baseline and during the construction phase of the Project. In January 2018, an updated EM&A Manual (AUES Ref.: TCS00874/16/300/L0085 dated 11 January 2018) was prepared to update of noise and air sensitive receivers and recent site condition for the EM&A Programme and it was submitted and approved by EPD in January 2018.

ES.04 This is the **12th** monthly EM&A report presenting the monitoring results and inspection findings for the reporting period from **1 to 30 November 2018** (hereinafter 'the Reporting Period'). In the Reporting Period, the impact monitoring covered air quality, construction noise and water quality.

ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

ES.05 Environmental monitoring activities under the EM&A program in the Reporting Period are summarized in the following table.

Issues	Environmental Monitoring Parameters / Inspection	Sessions [Note 1]
Air Quality	1-hour TSP	5
	24-hour TSP	5
Construction Noise	$L_{Aeq(30min)}$ Daytime	4
Water Quality	Marine Water Sampling	13
Inspection / Audit	ET Regular Environmental Site Inspection	2
	Independent Environmental Checker (IEC) Monthly Environmental Site Audit	1

Note: 1.) Total sessions are counted by monitoring days.

BREACH OF ACTION AND LIMIT (A/L) LEVELS

ES.06 No exceedance of air quality and construction noise monitoring were recorded in this Reporting Period. For water quality monitoring, a total of 87 Action/Limit Level exceedances were recorded for parameters of Turbidity and Suspended Solids as shown in below table. NOEs were issued to relevant parties upon confirmation of the monitoring result and investigation for the causes of exceedances were carried out by ET subsequently. The statistics of environmental exceedance, NOE issued and investigation of exceedance are summarized in the following table.

Environmental Issues	Monitoring Parameters	Exceedance		Event & Action	
		Action Level	Limit Level	Investigation	Corrective Actions
Air Quality	1-hour TSP	0	0	-	-
	24-hour TSP	0	0	-	-
Construction Noise	$L_{Aeq(30min)}$	0	0	-	-
Water Quality	DO	0	0	-	-
	Turbidity	**7**	**36**	Refer to ES.07	
	SS	**20**	**24**		
	Chlorophyll-*a*	0	0		

ES.07 As advised by the Contractor and confirmed by the Resident Engineers, there were no marine works (dredge work and landfilling) conducted during 2 to 21 November 2018. During the course of marine water quality monitoring, no abnormal and turbid discharge was observed made from the construction site. Having reviewed environmental performance of the project site and the monitoring results of the reference stations, impact stations as well as the sensitive receiver stations and the weather condition during the monitoring days, it is considered that all the exceedances were not caused by the works under the Project. The investigation for cause of exceedances recorded on 23 to 30 November 2018 is underway by ET. Nevertheless, the Contractor was reminded to strictly implement the water quality mitigation measures as recommended implementation schedule for environmental mitigation measures in the EM&A Manual and EP's condition.

ENVIRONMENTAL COMPLAINT

ES.08 No environmental complaint was recorded or received in this Reporting Period. The statistics of environmental complaint are summarized in the following table.

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 30 November 2018	0	0	N/A

NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

ES.09 No environmental summons or successful prosecutions were recorded in this Reporting Period. The statistics of environmental complaint are summarized in the following tables.

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 30 November 2018	0	0	N/A

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 30 November 2018	0	0	N/A

REPORTING CHANGE

ES.10 There was no reporting change in the EM&A programme in this Reporting Period.

SITE INSPECTION

ES.11 In the Reporting Period, joint site inspection by CEDD, ET and the Contractor was performed on **14** and **30 November 2018**. During the two occasions of site inspection, no non-compliance was noted.

FUTURE KEY ISSUES

ES.12 The construction activities in **December 2018** include site formation, construction of western open channel/ box culvert and eastern box culvert, dredging and construction of groynes and construction of retaining wall and seawall. The potential environmental impacts arising from the forthcoming construction activities include construction waste, air quality, construction noise and water quality.

ES.13 In regards to the marine works, special attention should be paid on the groynes construction (Eastern and Western) and dredging works in which water quality mitigation measures such as erection of silt curtain should be properly implemented and maintained.

ES.14 During dry season, it is reminded that dust mitigation measures, such as provide water spraying during dusty activities (such as breaking) and cover stockpile with impervious sheets, should be fully implemented as appropriate in order to minimize dust impact. Moreover, all dump trucks leaving the Site should be thoroughly washed by wheel washing facilities and provided with mechanical covers in good service condition.

ES.15 In addition, the Contractor is reminded to prevent surface runoff entering the sea or public area, such as cover the exposed slope by impervious sheets and maintain the temporary drain and wastewater treatment system in good function properly.

ES.16 Construction noise should be a key environmental impact during the works. Noise mitigation measures such as use of quiet plants and installation of temporary noise barrier at the construction noise predominate area should be fully implemented in accordance with the EM&A requirement.

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1 Civil Engineering and Development Department (hereafter referred as "CEDD") is the Project Proponent and the Permit Holder of *Agreement No. CE 59/2005 (EP) Development of a Bathing Beach at Lung Mei, Tai Po* (hereinafter referred as "the Project"), which is a Designated Project to be implemented under Environmental Permit number EP-388/2010 (hereinafter referred as "the EP-388/2010" or "the EP").

1.1.2 The major construction activities of the Project comprise construction of 200-metre long bathing beach with a groyne at each end, a shark prevention net; a public car park; retaining walls; and the associated roadworks, drainage and sewerage works. Layout plan of the Project is shown in ***Appendix A***. Designated works of the Project under the EP shall include:

(i) Construction of a 200m long beach with a groyne at each end of the beach which includes dredging and sandfilling works;

(ii) Construction of one culvert at the eastern side of the beach and another small section of culvert and open drainage channel with gabion embankments at the western end, both to collect and divert surface runoff from upstream locations; and

(iii) Construction of a beach building with associated beach building facilities, kiosk and a carpark and associated road improvement works adjoining the facility.

1.1.3 CEDD is Site Resident Engineers (hereinafter referred as "SRE") responsible for the Project management; Welcome Construction CO., Ltd is a Main Contractor (hereinafter referred as "Contractor") responsible for construction of the Project; and Action-United Environmental Services & Consulting (hereinafter referred as "AUES") has been commissioned as an Independent Environmental Team (hereinafter referred as "the ET") to implement the relevant EM&A program in accordance with the approved EM&A Manual, as well as the associated duties. Moreover, Environmental Resources Management is Independent Environmental Checker (hereinafter referred as "IEC") of the Project.

1.1.4 As part of the EM&A program, baseline monitoring to determine the ambient environmental conditions including air quality, noise and water quality were undertaken between ***7 June 2017*** and ***21 October 2017***. After completed baseline monitoring, Baseline Monitoring Report for Air Quality and Noise *(AUES Ref.: TCS00874/16/600/R0022v3)* and Baseline Monitoring Report for Water Quality *(AUES Ref.: TCS00874/16/600/R0036v2)* were verified by IEC and submitted to EPD for endorsement. These Baseline Monitoring Reports have summarized the key findings of baseline condition and determined a set of Action and Limit Levels (A/L Levels) based on the baseline data. The A/L Levels will serve as the yardsticks for assessing the acceptability of the environmental impact during construction phase of the Project Works impact monitoring.

1.1.5 The construction phase of the Project commenced on 1st December 2017. Accordingly, the impact monitoring of the EM&A programme commenced on the same date

1.1.6 This is the **12th** monthly EM&A report presenting the monitoring results and inspection findings for the reporting period from **1 to 30 November 2018**.

1.2 REPORT STRUCTURE

1.2.1 The Monthly Environmental Monitoring and Audit (EM&A) Report is structured into the following sections:-

Section 1	Introduction
Section 2	Project Organization and Construction progress
Section 3	Summary of Impact Monitoring Requirements
Section 4	Air Quality Monitoring
Section 5	Construction Noise Monitoring
Section 6	Water Quality Monitoring
Section 7	Waste Management

2. PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS

2.1 PROJECT ORGANIZATION AND MANAGEMENT STRUCTURE

2.1.1 Organization structure and contact details of relevant parties with respect to on-site environmental management are shown in ***Appendix B***. The responsibilities of respective parties are:

Engineer or Engineers Representative (ER)

2.1.2 The ER is responsible for overseeing the construction works and for ensuring that the works are undertaken by the Contractor in accordance with the specification and contract requirements. The duties and responsibilities of the ER with respect to EM&A are:

- monitor the Contractor's compliance with contract specifications, including the effective implementation and operation of environmental mitigation measures and other aspects of the EM&A programme;
- instruct the Contractor to follow the agreed protocols or those in the Contract Specifications in the event of exceedances or complaints;
- comply with the agreed Event and Action Plans in the event of any exceedance;
- liaise with the IEC and assist as necessary in the implementation of the EM&A program; and
- participate in joint site inspection undertaken by the ET and IEC.

The Contractor

2.1.3 The duties and responsibilities of the Contractor are:

- work within the scope of the construction contract and other tender conditions;
- provide assistance to the ET in carrying out monitoring;
- Submit proposals on mitigation measures in case of exceedances of Action and Limit levels in accordance with the Event and Action Plans;
- implement measures to reduce impact where Action and Limit levels are exceeded;
- implement the corrective actions instructed by ER/ET/IEC;
- participate in the site inspections undertaken by the ET and the IEC, as required, and undertake any corrective actions instructed by ER/ET/IEC; and
- adhere to the procedures for carrying out complaint investigation.

Environmental Team (ET)

2.1.4 The ET will be led and managed by the ET Leader. The ET leader will have relevant education, training, knowledge, experience and professional qualifications and the appointment will be subject to the approval of the Director of Environmental Protection and ER. Suitably qualified staff will be included in the ET, and the ET should not be in any way an associated body of the Contractor or the Independent Environmental Checker (IEC) for the Project.

2.1.5 The duties and responsibilities of the ET are:

- monitor various environmental parameters as required in this EM&A Manual;
- assess the EM&A data and review the success of the EM&A programme determining the adequacy of the mitigation measures implemented and the validity of the EIA predictions as well as identify any adverse environmental impacts before they arise;
- carry out regular site inspection to investigate and audit the Contractor's site practice, equipment and work methodologies with respect to pollution control and environmental mitigation, and effect proactive action to pre-empt issues;
- review the Contractor's working programme and methodology, and comment as necessary;
- review and prepare reports on the environmental monitoring data, site environmental conditions and audits;
- report on the environmental monitoring and audit results and conditions to the IEC, Contractor, EPD and ER;
- recommend suitable mitigation measures to the Contractor in the case of exceedance of Action and Limit levels in accordance with the Event and Action Plans;

- adhere to the procedures for carrying out complaint investigation; and,
- the ET Leader will keep a contemporaneous log-book and record each and every instance or circumstance or change of circumstances which may affect the environmental impact assessment and every non-conformance with the recommendations of the EIA Reports or the EPs.

Independent Environmental Checker (IEC)

2.1.6 The duties and responsibilities of the IEC are:

- review and monitor the implementation of the EM&A programme and the overall level of environmental performance being achieved;
- arrange and conduct monthly independent site inspections/audits of the works;
- validate and confirm the accuracy of monitoring results, monitoring equipment, monitoring stations, monitoring procedures and locations of sensitive receivers;
- carry out random sample check and audit on monitoring data and sampling procedures, etc;
- audit the EIA recommendations and requirements against the status of implementation of environmental protection measures on site;
- on needed basis, audit the Contractor's construction methodology and agree the appropriate, reduced impact alternative in consultation with ER, the ET and the Contractor;
- provide specialist advice to ER and the Contractor on environmental matters;
- check complaint cases and the effectiveness of corrective measures;
- check that the necessary mitigation measures recommended in the EIA, EP and Contract documents, or as subsequently required, are effectively implemented;
- review EM&A report submitted by the ET leader and feedback audit results to ET by signing off relevant EM&A proformas;
- report the findings of site inspections/ audits and other environmental performance reviews to ER, ET, EPD and the Contractor;

2.2 CONSTRUCTION PROGRESS

2.2.1 The 3-month rolling construction program is enclosed in ***Appendix C*** and the major construction activities undertaken in the Reporting Period are listed below:-

- Site formation
- Construction of Western Open Channel / Box Culvert
- Construction of Eastern Box Culvert
- Dredging and Construction of Groynes (East and West)
- Construction of Retaining Wall
- Construction of Seawall

2.3 SUMMARY OF ENVIRONMENTAL SUBMISSIONS

2.3.1 Summary of currently relevant permits, licenses, and/or notifications on environmental protection for this Project in this Reporting Period is presented in ***Table 2-1***.

Table 2-1 Status of Environmental Licenses and Permits

Item	Description	License/Permit Status		
		Permit no./Account no./ Ref. no.	From	To
1	Air pollution Control (Construction Dust) Regulation	Ref. Number: 418137	N/A	N/A
2	Chemical Waste Producer Registration	Waste Producers Number (WPN): 5213-728-W3437-01	21 August 2017	End of Project
3	Water Pollution Control Ordinance	License No.: WT00028905-2017	24 October 2017	31 October 2022
4	Waste Disposal (Charges for Disposal of	Billing Account for Disposal of Construction Waste: Account	3 July 2013	End of Project

Item	Description	License/Permit Status		
		Permit no./Account no./ Ref. no.	From	To
	Construction Waste) Regulation	No. 7017686		
5	Construction Noise Permit (Noise Control Ordinance)	GW-RN0495-18	29 Sep 2018	28 Nov 2018
6	Construction Noise Permit (Noise Control Ordinance)	GW-RN0623-18	29 Nov 2018	28 Mar 2019
7	Permit issued under the dumping at sea ordinance	Permit no. EP/MD/18-094	13 Aug 2018	31 Dec 2018
8	Permit issued under the dumping at sea ordinance	Permit no. EP/MD/18-044	13 Oct 2018	12 Nov 2018
9	Permit issued under the dumping at sea ordinance	Permit no. EP/MD/19-062	16 Nov 2018	15 Dec 2018

NOTE: CNP GW-RN0495-18 was superseded by CNP GW-RN0623-18 since 29 November 2018.

2.3.2 The submission status as under the EP requirement is presented in ***Table 2-2***.

Table 2-2 Submission Status as under the EP Stipulation

Item	EP condition	Description	Status
1	2.3	Management Organization of the Main Construction Companies	The updated version was submitted in May 2018
2	2.4	Report for Capture and Relocation of Common Rat Snake	Approved by EPD on 15 Sep 2017 (EPD ref.: (15) in EP2/N5/C/46 Pt.6 dated 15 Sep 2017)
3	2.5	Landscape Plan	Submitted to EPD on 28 June 2017
4	3.12	Mangrove Seedling Planting Proposal	Not yet submitted
5	3.13	Detailed Landscape As-built Drawing(s)	Not yet submitted
6	4.3	Baseline Monitoring Report for Air Quality and Noise (*AUES Ref.: TCS00874/16/600/R0022v3)*	Approved by EPD on 8 Jan 2018 (EPD ref.: (36) in EP2/N5/C/46 Pt.6 dated 8 Jan 2018)
7		Baseline Monitoring Report for Water Quality*(AUES Ref.: TCS00874/16/600/R0036v2)*	Approved by EPD on 10 Jan 2018 (EPD ref.: (37) in EP2/N5/C/46 Pt.6 dated 10 Jan 2018)

3. SUMMARY OF IMPACT MONITORING REQUIREMENTS

3.1 GENERAL

3.1.1 The Environmental Monitoring and Audit requirements are set out in the EM&A manual. Environmental issues such as air quality, construction noise and water quality were identified as the key issues during the construction phase of the Project. A summary of the EM&A requirements for air quality, noise monitoring and water quality are presented in the sub-sections below.

3.2 MONITORING PARAMETERS

3.2.1 According to the Project EM&A Manual, the Impact monitoring program covers the following environmental issues:

- Air Quality;
- Construction Noise; and
- Water Quality

3.2.2 A summary of the monitoring parameters is presented in ***Table 3-1*** below.

Table 3-1 Summary of EM&A Impact Monitoring Requirements

Environmental Issue	Parameters
Air Quality	• 1-hour TSP • 24-hour TSP
Noise	• Leq (30min) in six consecutive Leq(5 min) between 07:00-19:00 on normal weekdays
Water Qaulity	**In-situ Measurements** • Dissolved Oxygen Concentration (mg/L); • Dissolved Oxygen Saturation (%); • Salinity (mg/L); • Temperature (℃); • Turbidity (NTU); • pH unit; • Current direction (degree); • Current speed (m/s); and • Water depth (m) **Laboratory Analysis** • Suspended Solids (mg/L); and • Chlorophyll-*a* (μg/L)

3.3 MONITORING LOCATIONS

Air Quality

3.3.1 There are air quality monitoring locations (A4 and A6) recommended in Section 3.1 of the EM&A Manual. During liaison with the landlord of A6, he refused to provide access and location for installation of High Volume Air Sampler (HVAS). Therefore, alternative location (A7) was proposed by ET in accordance with Section 3.4 of the EM&A Manual. The proposed alternative locations are considered capable of effectively representing the baseline conditions at the impact monitoring locations. The proposal (*ref no.: TCS00874/16/300/L0016b*) for alternative monitoring locations was verified by IEC and it has been submitted to EPD for approval on 8 May 2017. The air quality monitoring locations are in ***Table 3-2*** and illustrated in ***Appendix D***.

Table 3-2 Location of Air Quality Monitoring

Station ID	Location
A4	No. 101 Lung Mei Tsuen
A7	Hong Kong Eco-Farm

Construction Noise

3.3.2 According to Section 4.1 of the EM&A Manual, four designated noise sensitive receivers (N1, N2, N3 and N4) were recommended and they are listed in ***Table 3-3*** and illustrated in ***Appendix D***.

Table 3-3 Designated Noise Monitoring Station according to the EM&A Manual

NSR	Location
N1	Village house - No. 165A Lung Mei
N2*	Village house - No. 103 Lung Mei
N3	Village house - No. 70 Lo Tsz Tin
N4	Village house - No. 79 Lo Tsz Tin

Remarks: (*)Noise monitoring should be conducted at N2a (i.e House No. 101 Lung Mei) if it is changed to residential use during construction phase.

3.3.3 As confirmed on the first day of baseline monitoring, N2a (House no. 101 Lung Mei) has been changed to residential use. Therefore, the noise monitoring is conducted at N2a and to replace N2. Moreover, due to the lack of accessibility of noise monitoring at N3 (Village house – No. 70 Lo Tsz Tin), alternative location was proposed to replace N3 to carry out the noise monitoring. Having reviewed the surrounding condition, N3a (Village house – No. 66C Lo Tsz Tin) was proposed with the rationales summarized in below.

1) The distance between N3 and N3a is about 18 meter apart and N3a locates at close proximity of the project site and major site activities which are likely to have noise impacts;
2) N3a is a village type residential house and it is a noise sensitive receiver (NSR);
3) Accessibility for noise monitoring work at N3a is available; and
4) Minimal disturbance would be only caused to the proposed monitoring location N3a.

3.3.4 The proposal (*ref no.: TCS00874/16/300/L0016b*) for alternative monitoring locations was verified by IEC and it has been submitted to EPD for approval on 8 May 2017. The noise monitoring stations under the EM&A programme are listed in ***Table 3-4*** and illustrated in ***Appendix D***.

Table 3-4 Noise Monitoring Stations of the EM&A Programme

Station ID	Address
N1	Village house No. 165A of Lung Mei
N2a	Village house No. 101 of Lung Mei
N3a	Village house No. 66C of Lo Tsz Tin
N4	Village house No. 79 of Lo Tsz Tin

Water Quality

3.3.5 According to *Section 5.1.2 of the Approved EM&A Manual,* two Reference Stations (R1 and R2), three impact stations (I1, I2 and I3), three sensitive receivers (FCZ1, W1 and M1) and one Gradient station (G1), were identified to perform water quality monitoring. Detailed and coordinates of water quality monitoring stations is described in ***Table 3-5*** and the graphical is shown in ***Appendix D***.

Table 3-5 Location of Marine Water Quality Monitoring Station

Station	Coordinates		Description
	Easting	Northing	
G1	841483.9	835936.1	**Gradient Station** - to assist in the identification of the source of any impact.
R1	842307.4	835718.4	**Reference Station** - for the background water quality for Tolo Harbour as it is at the channel where the water exchange between the enclosed Plover Cove and Tolo Harbour take place. It is located at south of the Project dredging/sandfilling area.
R2	840739.4	836212.4	**Reference Station** - for the background water quality in the Plover Cove region. It is located at southwest of the Project dredging/sandfilling area.

Station	Coordinates		Description
	Easting	Northing	
I1	841338.5	836588.5	**Impact Station** - located outside the mixing zone of dredging/sandfilling works of the Project.
I2	841590.3	836601.2	**Impact Station** - located outside the mixing zone of dredging/sandfilling works of the Project.
I3	841807.0	836680.9	**Impact Station** - located outside the mixing zone of dredging/sandfilling works of the Project.
W1	841858.9	836571.0	**Sensitive Receiver** - located at the Water Sport Centre, which is about 0.25 km distance to the southeast of the dredging/sandfilling area.
M1	840822.2	836416.4	**Sensitive Receiver -** located at the Ting Kok SSSI, which is about 0.8 km distance to the west of the dredging/sandfilling area.
FCZ1	841180.6	835230.8	**Sensitive Receiver** - located at the Yim Tin Tsai East Fish Culture Zone, which is about 1.5 km distance to the southwest of the dredging/sandfilling area.

3.4 MONITORING FREQUENCY AND PERIOD

3.4.1 The frequency and the duration for impact monitoring are summarized below.

Air Quality Monitoring

- Parameters: 1-hour TSP and 24-hour TSP
- Frequency: 3 times every six days for 1-hour TSP and once every 6 days for 24-hour TSP
- Duration: Throughout the construction period

Noise Monitoring

- Parameters: $L_{Aeq(30min)}$ and statistical results L_{10} & L_{90}
- Frequency: Leq (30min) in 6 consecutive Leq(5min) for once a week during 07:00-19:00 on normal weekdays
- Duration: Throughout the construction period

Water Quality (Marine) Monitoring

- Parameters: In-situ measurements including water depth, Dissolved Oxygen (DO) concentration (mg/L) & saturation (%), Salinity (mg/L), Temperature (ºC) and Turbidity (NTU); and Suspended Solids (mg/L) and Chlorophyll-*a* (μg/L) are analyzed by HOKLAS-accredited laboratory.
- Frequency: Three days a week, at mid ebb and mid flood tides. The interval between 2 sets of monitoring will be more than 36 hours.
- Sampling Depth
  1) Three depths: 1m below water surface, 1m above sea bottom and at mid-depth when the water depth exceeds 6m;
  2) If the water depth is between 3m and 6m, two depths: 1m below water surface and 1m above sea bottom; and
  3) If the water depth is less than 3m, 1 sample at mid-depth is taken
- Duration: During marine works proceeding such as the dredging and sand filling

3.4.2 In addition to the water quality parameters, other relevant data will also be to measure and record, which are included the location of the sampling stations, water depth, time, weather conditions, sea conditions, tidal stage, current water flow direction and speed, special phenomena and work activities undertaken around the monitoring and works area that may influence the monitoring results. Observations on any special phenomena and work underway at the Project site during the time of sampling will also be to record.

3.5 MONITORING INSTRUMENT

Air Quality Monitoring

3.5.1 The 24-hour and 1-hour TSP levels shall be measured by following the standard high volume sampling method as set out in the *Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50), Appendix B*. If the ET proposes to use a direct reading dust meter to measure 1-hour TSP levels, it shall submit sufficient information to the IEC to prove that the instrument is capable of achieving a comparable results to the HVS. The instrument should be calibrated regularly, and the 1-hour sampling shall be determined on yearly basis by the HVS to check the validity and accuracy of the results measured by direct reading method. The filter paper of 24-hour TSP measurement shall be determined by HOKLAS accredited laboratory.

3.5.2 All equipment to be used for air quality monitoring is listed in ***Table 3-6***.

Table 3-6 Air Quality Monitoring Equipment

Equipment	Model
24-Hour TSP	
High Volume Air Sampler	TISCH High Volume Air Sampler, HVS Model TE-5170
Calibration Kit	TISCH Calibration Kit Mode TE-5025A
1-Hour TSP	
Portable Dust Meter	Sibata LD-3B Laser Dust Meter

Noise Monitoring

3.5.3 Sound level meter in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications shall be used for carrying out the noise monitoring. The sound level meter shall be checked using an acoustic calibrator. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in ms^{-1} for reference.

3.5.4 Monitoring equipment to be used for construction noise measurement is listed in ***Table 3-7***.

Table 3-7 Construction Noise Monitoring Equipment

Equipment	Model
Integrating Sound Level Meter	Rion NL-31 or Rion NL-52 or Brüel & Kjær 2238
Acoustic Calibrator	Rion NC-74 or Brüel & Kjær 4231
Portable Wind Speed Indicator (#)	Anemometer AZ Instrument 8908

(#) Wind speed is reference data only and there is no calibration certificate for portable wind speed indicator.

Water Quality Monitoring

3.5.5 For water quality monitoring, the used equipment should be fulfill the requirements under *the Approved EM&A Manual Section 5.1.1*. Requirement of instruments is described in the following sections.

3.5.6 Instruments to be used for Water quality monitoring is listed in ***Table 3-8***.

Table 3-8 Instrument of Water Quality Monitoring

Equipment	Model
A Digital Global Positioning System	Garmin eTrex
Water Depth Detector	Garmin ECHO 100
Water Sampler	Aquatic Research Transparent PC Vertical Water Sampler 2.2L / 3L / 5L
Thermometer & DO meter	YSI 69201V2-M Multi-parameter Water Quality Meter
pH meter	
Turbidimeter	

Equipment	Model
Salinometer	
Current Meter	Valeport Current Meter 106CM
Storage Container	'Willow' 33-litre plastic cool box with Ice pad

3.5.7 The following equipment and facilities shall be provided and used for the monitoring of water quality impacts:

Dissolved Oxygen and Temperature Measuring Equipment

3.5.8 DO and water temperature shall be measured in-situ by a DO/ temperature meter. The instrument shall be portable and weatherproof using a DC power source. It shall have a membrane electrode or an optical dissolved oxygen sensor with automatic temperature compensation complete with a cable. The equipment shall be capable of measuring:

- DO level in the range of 0-20 mg/l and 0-200% saturation; and
- Temperature of between 0 and 45 degree Celsius with a capability of measuring ± 0.1 degree Celsius.

Turbidity Measurement Instrument

3.5.9 The instrument shall be portable and weatherproof using a DC power source. It shall have a photoelectric sensor capable of measuring turbidity between 0-1000 NTU.

Salinity

3.5.10 A portable salinometer with measuring range of 0-40 mg/l shall be used to determine the salinity of the water.

Water Depth Detector

3.5.11 A portable, battery-operated echo sounder shall be used for the measurement of water depth at each designated monitoring station. The unit shall be either handheld or affixed to the bottom of the work boat, if the same vessel is to be used throughout the monitoring programme.

Positioning Device

3.5.12 A hand-held or boat-fixed type digital Global Positioning System (dGPS) with way point bearing indication or other equivalent instrument of similarly accuracy should be provided and used during monitoring to ensure the monitoring vessel is at the correct location before taking measurements.

Water Sampling Equipment

3.5.13 A water sampler comprises a transparent PVC cylinder, with a capacity of not less than 2 litres, and could be effectively sealed with latex cups at both ends shall be used. The sampler has a positive latching system to keep it open and prevent premature closure until it is released by a messenger when the sampler is at the predetermined water depth (Kahlsico Water Sampler or other approved instrument).

3.5.14 Water samples shall be collected in high density polythene bottles, packed in ice (cooled to 4°C without being frozen), and delivered to the laboratory within 24 hours possible after collection. Each bottle will be labelled on the surface with date, location, tide, parameter and replicate information of the sample.

3.6 MONITORING PROCEDURES

Air Quality

1-hour TSP

3.6.1 Operation of the 1-hour TSP meter will follow manufacturer's Operation and Service Manual.

3.6.2 The 1-hour TSP monitor, brand named "Sibata LD-3B Laser Dust Meter" is a portable, battery-operated laser photometer. The 1-hour TSP meter provides a real time 1-hour TSP measurement based on 90^0 light scattering. The 1-hour TSP monitor consists of the following:

a. A pump to draw sample aerosol through the optic chamber where TSP is measured;
b. A sheath air system to isolate the aerosol in the chamber to keep the optics clean for maximum reliability; and
c. A built-in data logger compatible with Windows based program to facilitate data collection, analysis and reporting.

3.6.3 The 1-hour TSP meter to be used will be within the valid period, calibrated by the manufacturer prior to purchasing. Zero response of the instrument will be checked before and after each monitoring event. Annually calibration with the High Volume Sampler (HVS) in same condition would be undertaken by the Laboratory.

24-hour TSP

3.6.4 The equipment used for 24-hour TSP measurement is the High Volume Sampler (hereinafter the "HVS") brand named TISCH, Model TE-5170 TSP High Volume Air Sampler, which complied with *EPA Code of Federal Regulation, Appendix B to Part 50*. The HVS consists of the following:

a. An anodized aluminum shelter;
b. A 8"x10" stainless steel filter holder;
c. A blower motor assembly;
d. A continuous flow/pressure recorder;
e. A motor speed-voltage control/elapsed time indicator;
f. A 7-day mechanical timer, and
g. A power supply of 220v/50 hz

3.6.5 For HVS for 24-hour TSP monitoring, the HVS is mounted in a metallic cage with a top for protection and also it is sat on the existing ground or the roof of building. The flow rate of the HVS between $0.6m^3$/min and $1.7m^3$/min will be properly set in accordance with the manufacturer's instruction to within the range recommended in *EPA Code of Federal Regulation, Appendix B to Part 50*. Glass Fiber Filter 8" x 10" of TE-653 will be used for 24-Hour TSP monitoring and would be supplied by laboratory. The general procedures of sampling are described as below:-

- A horizontal platform with appropriate support to secure the samples against gusty wind should be provided;
- No two samplers should be placed less than 2 meters apart;
- The distance between the sampler and an obstacle, such as building, must be at least twice the height that the obstacle protrudes above the sample;
- A minimum of 2 meters of separation from any supporting structure, measured horizontally is required;
- Before placing any filter media at the HVS, the power supply will be checked to ensure the sampler work properly;
- The filter paper will be set to align on the screen of HVS to ensure that the gasket formed an air tight seal on the outer edges of the filter. Then filter holder frame will be tightened to the filter hold with swing bolts. The holding pressure should be sufficient to avoid air leakage at the edge.
- The mechanical timer will be set for a sampling period of 24 hours (00:00 mid-night to 00:00 mid-night next day). Information will be recorded on the field data sheet, which would be included the sampling data, starting time, the weather condition at current and the filter paper

ID with the initial weight;

- After sampling, the filter paper will be collected and transfer from the filter holder of the HVS to a sealed envelope and sent to a local HOKLAS accredited laboratory for quantifying.

3.6.6 All the sampled 24-hour TSP filters will be collected and put into the filter envelope provided by the laboratory. The sample will be kept in normal air conditioned room conditions, i.e. 70% HR (Relative Humidity) and 25^{o}C and delivery to the office within 48 hours and sent to laboratory for analysis. The sampled filter will be kept in the laboratory for six months prior to disposal.

3.6.7 The HVS used for 24-hour TSP monitoring will be calibrated before the commencement for sampling, and after in two months interval for 1 point checking of maintenance and six months interval for five points calibrate in accordance with the manufacturer's instruction using the NIST-certified standard calibrator (TISCH Calibration Kit Model TE-5025A) to establish a relationship between the follow recorder meter reading in cfm (cubic feet per minute) and the standard flow rate, Qstd, in m^3/min. Motor brushes of HVS will be regularly replaced of about five hundred hours per time.

Construction Noise

3.6.8 As referred to in the Technical Memorandum (TM) issued under the NCO, sound level meters in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804:1985 (Type 1) specifications shall be used for carrying out the noise monitoring. Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0 dB.

3.6.9 All noise measurements will be performed with the meter set to FAST response and on the A-weighted equivalent continuous sound pressure level (Leq). $Leq_{(30\ min)}$ in six consecutive $Leq_{(5\ min)}$ measurements will be used as the monitoring parameter for the time period between 07:00-19:00 hours on weekdays.

3.6.10 The sound level meter will be mounted on a tripod at a height of 1.2 m and placed at the assessment point and oriented such that the microphone is pointed to the site with the microphone facing perpendicular to the line of sight. The windshield will be fitted for all measurements. Where a measurement is to be carried out at a building, the assessment point would normally be at a position 1 m from the exterior of the building façade. Where a measurement is to be made for noise being received at a place other than a building, the assessment point would be at a position 1.2 m above the ground in a free-field situation, i.e. at least 3.5 m away from reflective surfaces such as adjacent buildings or walls.

3.6.11 Immediately prior to and following each noise measurement the accuracy of the sound level meter will be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements will be accepted as valid only if the calibration level from before and after the noise measurement agrees to within 1.0 dB.

3.6.12 Noise measurements will not be made in fog, rain, wind with a steady speed exceeding 5m/s or wind with gusts exceeding 10m/s. The wind speed will be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

Water Quality (Marine) Monitoring

3.6.13 Marine water quality monitoring will be conducted at the designated locations in accordance with EM&A Manual. The operating and analytical of sampling procedures are described as below:

- Water quality monitoring locations shall be located by GPS prior to in-situ monitoring and sampling. Water depth should be determined by using portable echo sounder for each monitoring location.
- Measurements shall be taken at 3 water depths: 1m below water surface, mid-depth and 1m

above sea bed, except where the water depth less than 6m, the mid-depth station may be omitted. Should the water depth be less than 3 m, only the mid-depth station will be monitored.

- Water samples should be collected repeatedly using the water sampler as described in Section 3.5.13 to obtain adequate water samples for laboratory analysis.
- Sample container should be pre-labeled with date, location, tide, parameter and replicate information of the sample. The container should be rinsed using a portion of the marine water sample before the container is filled. Container is sealed with a screw cap after the filling is completed. The filled sample containers are then packed in ice (cooled to 4°C without being frozen), and delivered to the laboratory on the same day of collection for analysis.
- Two consecutive in-situ readings of water temperature, turbidity, dissolved oxygen, salinity, pH and water depth should taken at a predetermined depth. Where the difference in the value between the first and second readings of each set is more than 25% of the value of the first reading, the reading is discarded and further readings is taken.

3.6.14 All in-situ monitoring instruments shall be checked, calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme before use, and subsequently re-calibrated at 3 months intervals throughout the water quality monitoring programme. Responses of sensors and electrodes shall be checked with certified standard solutions before each use. Certificate for calibration of in-situ instruments shall also be provided for auditing.

3.6.15 Wet bulb calibration for a DO probe shall be carried out at least once per monitoring day. A zero check in distilled water shall be performed with the turbidity probe at least once per monitoring day. The probe shall then be calibrated with a solution of known NTU. In addition, the turbidity probe shall be calibrated at least twice per month to establish the relationship between turbidity readings (in NTU) and levels of suspended solids (in mg/L).

3.6.16 For the on-site calibration of field equipment, the BS 1427: 1993, Guide to Field and On-Site Test Methods for the Analysis of Waters should be observed. Sufficient stocks of spare parts shall be maintained for replacements when necessary. Backup monitoring equipment shall also be made available so that monitoring is uninterrupted even when some equipment is under maintenance or calibration etc.

3.6.17 Before each round of monitoring, the dissolved oxygen probe will be calibrated by wet bulb method; a zero check in distilled water will be performed with the turbidity and salinity probes; 4 and 10 values of the standard solution will be undertaken to check the accuracy of pH value.

LABORATORY ANALYSIS

3.6.18 Sufficient water samples shall be collected at the monitoring stations for carrying out laboratory determination. Analysis of suspended solids and Chlorophyll-a should be carried out in a HOKLAS or other international accredited laboratory. The chemicals analysis method and reporting limit is shown ***Table 3-9***.

Table 3-9 Testing Method and Reporting Limit of the Chemical Analysis

Parameter	ALS Method Code	In-house Method Reference [1]	Reporting Limit
Total Suspended Solids	EA025	APHA 2540D	2 mg/L
Chlorophyll-a	EP008F	APHA 10200H	1 µg/L

Note: The exact method shall depend on the laboratory accredited method. APHA = Standard Methods for the Examination of Water and Wastewater by the American Public Health Association.

3.6.19 Valid calibration certificates of monitoring equipment of air quality, construction noise and water quality are shown in ***Appendix E***.

3.7 METEOROLOGICAL INFORMATION

3.7.1 The meteorological information including wind direction, wind speed, humidity, rainfall, air pressure and temperature etc. during impact monitoring is extracted from the closest Hong Kong Observatory Station. To obtain the most appropriate meteorological information where available, Air Temperature/Pressure and Relative Humidity will be extracted from Tai Po Station and wind speed and direction will be extracted from Tai Mei Tuk Station.

3.8 DETERMINATION OF ACTION/LIMIT (A/L) LEVELS

3.8.1 The baseline results form the basis for determining the environmental acceptance criteria for the impact monitoring. A summary of the Action/Limit (A/L) Levels for air quality, construction noise and water quality are shown in ***Table 3-10, 3-11*** and ***3-12*** respectively.

Table 3-10 Action and Limit Levels for Air Quality

Monitoring Station	Action Level ($\mu g/m^3$)		Limit Level ($\mu g/m^3$)	
	1-hour TSP	24-hour TSP	1-hour TSP	24-hour TSP
A4	275	142	500	260
A7	274	141	500	260

Table 3-11 Action and Limit Levels for Construction Noise, dB(A)

Time Period: 0700-1900 hours on normal weekdays		
Monitoring Location	**Action Level**	**Limit Level** Note 1 & Note 2
N1, N2a, N3a, and N4	When one documented complaint is received	75

Note 1: Acceptable Noise Levels for school should be reduced to 70 dB(A) and65 dB(A) during examination period

Note 2: If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the NCA have to be followed.

Table 3-12 Action and Limit Levels for Water Quality

Monitoring Location	Action Level		Limit Level	
	Depth Average of SS (mg/L)			
I1	7.0	**OR** 120% of any reference stations at the same tide of the same day	7.5	**OR** 130% of any reference stations at the same tide of the same day
I2	7.0		8.1	
I3	8.3		15.0	
W1	8.0		8.6	
M1	10.0		11.0	
FCZ1	7.0		8.0	
Monitoring Location	**Dissolved Oxygen (mg/L)**			
	Depth Average of Surface & Mid-depth	**Bottom**	**Depth Average of Surface & Mid-depth**	**Bottom**
I1	5.08	N/A	4.80	N/A
I2	5.26	3.64	4.88	3.37
I3	5.03	4.09	4.77	3.19
W1	4.67	2.41	4.54	2.33
M1	4.73	N/A	4.70	N/A
FCZ1	5.00	3.43	5.00	3.18
Monitoring Location	**Depth Average of Turbidity (NTU)**			
I1	2.8	**OR** 120% of any reference stations at the same tide of the same day	2.9	**OR** 130% of any reference stations at the same tide of the same day
I2	3.5		7.7	
I3	2.6		3.0	
W1	2.9		3.3	
M1	5.2		6.6	
FCZ1	3.2		3.4	

Monitoring Location	Surface, Middle & Bottom of Chlorophyll-*a* (µg/L)	
I1	11.1	12.1
I2	11.0	13.1
I3	11.3	14.5
W1	11.3	16.1
M1	16.9	42.4
FCZ1	11.8	12.5

Notes:

(a) For DO, non-compliance of water quality limits occurs when monitoring result is lower than the limits

(b) For SS, chlorophyll-a and turbidity, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

(c) Both Action and Limit Levels for DO (surface and middle) in the FCZ1 are less than 5 mg/L.

Event Action Plan

3.8.2 Should non-compliance of the environmental quality criteria occurs, remedial actions will be triggered according to the Event and Action Plan which presented in ***Appendix F.***

3.9 DATA MANAGEMENT AND DATA QA/QC CONTROL

3.9.1 The impact monitoring data were handled by the ET's in-house data recording and management system.

3.9.2 The monitoring data recorded in the equipment were downloaded directly from the equipment at the end of each monitoring day. The downloaded monitoring data were input into a computerized database properly maintained by the ET. The laboratory results were input directly into the computerized database and checked by personnel other than those who input the data.

3.9.3 For monitoring parameters that require laboratory analysis, the local laboratory shall follow the QA/QC requirements as set out under the HOKLAS scheme for the relevant laboratory tests.

4. AIR QUALITY MONITORING

4.1 GENERAL

4.1.1 In the Reporting Period, air quality monitoring were performed at the proposed monitoring locations A4 and A7. The air quality monitoring schedule is presented in ***Appendix G*** and the monitoring results are summarized in the following sub-sections.

4.2 RESULTS OF AIR QUALITY MONITORING

4.2.1 In the Reporting Period, ***5*** sessions of 1-hour TSP and ***5*** sessions 24-hour TSP were performed at Stations A4 and A7. The monitoring results for air quality monitoring are summarized in ***Tables 4-1 to 4-2***. The detailed 24-hour TSP and 1-hour TSP monitoring data are presented in ***Appendix H*** and the relevant graphical plots are shown in ***Appendix I***. The meteorological data during the impact monitoring period are summarized in ***Appendix J***.

Table 4-1 Summary of 24-hour and 1-hour TSP Monitoring Results (A4)

Date	24-hour TSP ($\mu g/m^3$)	1-hour TSP ($\mu g/m^3$)				
		Date	Start Time	1st reading	2nd reading	3rd reading
2-Nov-18	72	5-Nov-18	9:31	47	49	50
8-Nov-18	44	10-Nov-18	9:47	35	39	44
14-Nov-18	87	16-Nov-18	9:47	45	46	50
20-Nov-18	22	22-Nov-18	13:14	52	43	45
26-Nov-18	56	28-Nov-18	13:10	33	37	38
Average (Range)	**56 (22 – 87)**	Average (Range)		**44 (33 – 52)**		

Table 4-2 Summary of 24-hour and 1-hour TSP Monitoring Results (A7)

Date	24-hour TSP ($\mu g/m^3$)	1-hour TSP ($\mu g/m^3$)				
		Date	Start Time	1st reading	2nd reading	3rd reading
2-Nov-18	61	5-Nov-18	12:47	49	50	50
8-Nov-18	41	10-Nov-18	9:36	33	35	41
14-Nov-18	56	16-Nov-18	9:34	41	43	46
20-Nov-18	66	22-Nov-18	9:30	39	39	35
28-Nov-18 (#)	34	28-Nov-18	13:29	32	35	38
Average (Range)	**52 (34 – 66)**	Average (Range)		**40 (32 – 50)**		

Remark (#) 24-hour TSP monitoring at Location A7 scheduled on 26 November 2018 was failure due to power shortage and make up for lost sample has been taken on 28 November 2018.

4.2.2 As shown in ***Tables 4-1 to 4-2***, all the 1-hour TSP and 24-hour TSP monitoring results were below the Action / Limit Level. No Notification of Exceedance (NOE) was issued in this Reporting Period.

5. CONSTRUCTION NOISE MONITORING

5.1 GENERAL

5.1.1 In the Reporting Period, construction noise quality monitoring were performed at the designated monitoring locations N1, N2a, N3a and N4. The noise quality monitoring schedule is presented in ***Appendix G*** and the monitoring results are summarized in the following sub-sections.

5.2 RESULTS OF NOISE MONITORING

5.2.1 In the Reporting Period, ***4*** sessions of noise monitoring were carried out at the designated locations. Free-field status were performed at N1 and N3a and façade correction (+3 dB(A)) has been added for the correction in according to the acoustical principles and EPD guidelines. The noise monitoring results at the designated locations are summarized in ***Tables 5-1 to 5-4.*** The detailed noise monitoring data are presented in ***Appendix H*** and the relevant graphical plots are shown in ***Appendix I***.

Table 5-1 Construction Noise Monitoring Results of N1, dB(A)

Date	Start Time	$L_{eq30min}$	*Corrected $L_{eq30min}$
5-Nov-18	10:01	52	55
16-Nov-18	10:21	57	60
22-Nov-18	9:46	59	62
28-Nov-18	14:11	56	59

Remark: (*) A façade correction of +3dB(A) has been added according to acoustical principles and EPD guidelines.

Table 5-2 Construction Noise Monitoring Results of N2a, dB(A)

Date	Start Time	$L_{eq30min}$	Corrected $L_{eq30min}$
5-Nov-18	9:30	69	NA
16-Nov-18	9:50	57	NA
22-Nov-18	10:16	59	NA
28-Nov-18	13:40	57	NA

Table 5-3 Construction Noise Monitoring Results of N3a, dB(A)

Date	Start Time	$L_{eq30min}$	*Corrected $L_{eq30min}$
5-Nov-18	10:36	52	55
16-Nov-18	10:56	56	59
22-Nov-18	10:51	52	55
28-Nov-18	14:45	52	55

Remark: (*) A façade correction of +3dB(A) has been added according to acoustical principles and EPD guidelines.

Table 5-4 Construction Noise Monitoring Results of N4, dB(A)

Date	Start Time	$L_{eq30min}$	Corrected $L_{eq30min}$
5-Nov-18	11:09	55	NA
16-Nov-18	11:28	59	NA
22-Nov-18	13:07	59	NA
28-Nov-18	13:02	58	NA

5.2.2 As shown in ***Table 5-1 to Table 5-4***, all the designated locations measured results were below 75dB(A) of the acceptance criteria. Furthermore, no complaint on construction noise was registered, indicating no exceedance of Action Level. No non-compliance was therefore found during the Reporting Period.

6. WATER QUALITY MONITORING

6.1 GENERAL

6.1.1 The water quality monitoring schedule is presented in ***Appendix G*** and the monitoring results are summarized in the following sub-sections.

6.2 RESULTS OF WATER QUALITY MONITORING

6.2.1 In this Reporting Period, a total of **thirteen** (***13***) sampling days were performed at the nine designated locations. Monitoring results of 4 key parameters: dissolved oxygen (DO), turbidity, suspended solids and Chlorophyll-*a* are summarized in ***Tables 6-1*** to ***6-5***.

Table 6-1 Results Summary of Depth Average (Surface & Middle Layer) of DO (mg/L)

Tidal	Sampling Date	G1	R1	R2	I1	I2	I3	W1	M1	FCZ1
Mid-Ebb	2-Nov-18	6.69	6.65	6.53	5.75	6.01	6.02	6.32	5.38	6.86
	5-Nov-18	6.81	6.53	7.12	6.75	6.44	6.63	6.18	7.17	6.66
	7-Nov-18	7.34	7.42	7.15	7.16	7.09	6.96	7.26	6.89	7.01
	9-Nov-18	7.50	7.42	7.10	7.30	7.38	6.90	7.30	7.10	7.39
	12-Nov-18	7.41	6.85	7.00	7.28	6.31	6.64	6.61	7.01	7.12
	14-Nov-18	6.88	6.02	6.99	6.80	6.00	6.00	6.05	6.91	6.89
	16-Nov-18	6.13	6.16	6.33	6.38	6.12	5.78	6.05	6.21	6.43
	19-Nov-18	6.87	6.70	6.15	6.37	6.29	6.40	6.53	6.05	6.18
	21-Nov-18	6.33	6.37	7.01	6.65	5.95	6.05	6.44	6.62	6.49
	23-Nov-18	6.19	6.33	6.28	6.38	6.20	6.25	6.30	6.80	6.31
	26-Nov-18	6.73	6.45	6.82	6.84	6.04	5.97	6.21	6.52	7.11
	28-Nov-18	7.32	6.51	7.25	5.39	6.76	6.57	7.13	6.67	6.61
	30-Nov-18	7.41	7.43	5.56	7.42	7.18	6.46	7.19	6.32	7.41
Mid-Flood	2-Nov-18	6.73	6.96	6.88	6.44	6.82	6.72	6.60	6.39	6.82
	5-Nov-18	7.28	6.91	7.24	6.93	6.38	7.10	6.75	7.36	7.03
	7-Nov-18	7.09	7.28	6.97	7.04	6.90	6.67	6.66	7.00	7.08
	9-Nov-18	7.23	7.73	6.66	7.21	7.10	7.01	7.52	6.90	7.11
	12-Nov-18	6.98	6.45	6.71	6.71	6.92	6.92	6.88	6.24	6.97
	14-Nov-18	7.05	6.28	7.01	7.00	6.76	6.78	6.74	6.81	6.95
	16-Nov-18	6.49	6.45	6.42	6.47	6.32	6.07	6.13	6.43	6.33
	19-Nov-18	6.67	6.85	6.64	6.54	6.66	6.62	6.84	6.94	6.51
	21-Nov-18	6.80	6.91	6.76	6.67	6.39	6.30	6.77	6.59	7.02
	23-Nov-18	6.26	6.18	5.84	6.06	5.69	5.56	6.05	5.97	6.55
	26-Nov-18	6.58	6.05	5.23	6.01	5.74	5.70	6.28	5.50	6.44
	28-Nov-18	6.36	6.45	6.61	6.58	5.98	5.90	6.19	6.37	7.07
	30-Nov-18	7.94	7.82	7.48	7.55	7.64	7.59	7.65	7.43	7.96

Table 6-2 Results Summary of Bottom Depth of DO (mg/L)

Tidal	Sampling Date	G1	R1	R2	I1	I2	I3	W1	M1	FCZ1
Mid-Ebb	2-Nov-18	6.42	6.07	6.33	5.69	5.91	5.72	5.71	N/A	6.52
	5-Nov-18	5.27	4.45	5.54	5.99	4.92	5.19	4.17	N/A	5.59
	7-Nov-18	7.33	7.23	6.91	6.26	6.92	6.77	7.04	N/A	7.21
	9-Nov-18	5.58	6.31	6.54	7.07	6.57	5.86	5.84	N/A	5.67
	12-Nov-18	5.39	5.85	5.91	5.20	5.01	4.71	5.37	N/A	5.46
	14-Nov-18	5.72	4.71	4.68	4.72	4.70	4.90	4.65	N/A	5.83
	16-Nov-18	5.81	4.61	5.85	6.02	5.98	4.49	5.44	N/A	6.26
	19-Nov-18	6.57	5.55	5.67	4.41	4.30	4.36	5.12	N/A	5.57
	21-Nov-18	4.98	3.89	5.87	5.65	4.06	4.52	4.00	N/A	5.63
	23-Nov-18	5.21	5.16	4.76	4.68	5.30	4.93	5.48	N/A	5.19
	26-Nov-18	4.50	5.70	4.03	6.04	4.55	4.80	4.94	N/A	6.09
	28-Nov-18	6.37	5.35	5.39	3.88	5.45	5.37	5.27	N/A	4.92
	30-Nov-18	4.85	4.61	3.50	5.72	4.71	4.32	4.06	N/A	6.81
Mid-Flood	2-Nov-18	6.25	6.77	6.52	5.70	6.27	5.79	5.81	N/A	6.50

Tidal	Sampling Date	G1	R1	R2	I1	I2	I3	W1	M1	FCZ1
	5-Nov-18	6.17	6.14	5.98	4.65	4.65	5.10	4.70	N/A	5.70
	7-Nov-18	6.60	6.90	6.06	5.74	6.59	4.28	5.27	N/A	6.88
	9-Nov-18	5.76	7.53	5.76	6.18	5.06	4.48	6.54	N/A	6.34
	12-Nov-18	6.94	5.22	6.44	6.46	5.19	4.41	5.82	N/A	6.38
	14-Nov-18	6.24	5.84	5.65	6.71	6.02	6.10	6.38	N/A	6.93
	16-Nov-18	6.35	6.07	6.22	6.36	6.18	6.05	6.01	N/A	5.90
	19-Nov-18	6.17	5.17	4.89	5.72	5.36	5.59	5.18	N/A	6.12
	21-Nov-18	5.52	5.65	5.76	5.74	4.49	4.92	5.10	N/A	6.45
	23-Nov-18	4.59	5.79	4.36	4.32	4.66	4.57	4.42	N/A	5.37
	26-Nov-18	4.64	4.84	4.12	4.84	4.33	4.87	4.86	N/A	5.03
	28-Nov-18	4.53	4.89	4.70	5.27	4.25	4.71	4.78	N/A	4.50
	30-Nov-18	7.88	4.36	7.42	7.39	5.35	5.61	7.16	N/A	7.93

Table 6-3 Results Summary of Depth Average of Turbidity (NTU)

Tidal	Sampling Date	G1	R1	R2	I1	I2	I3	W1	M1	FCZ1
Mid-Ebb	2-Nov-18	1.5	0.9	0.8	**1.6**	**1.5**	0.8	**1.1**	0.8	1.0
	5-Nov-18	0.8	1.3	0.9	0.6	0.7	0.5	0.6	0.9	0.8
	7-Nov-18	0.2	0.4	0.4	**1.2**	0.1	0.2	0.2	**0.7**	0.4
	9-Nov-18	1.9	0.7	1.4	0.4	0.2	0.5	0.4	**4.0**	**1.3**
	12-Nov-18	0.9	1.1	1.3	0.7	0.8	0.7	0.9	0.9	0.7
	14-Nov-18	0.5	0.6	0.6	0.4	0.6	0.5	0.7	0.3	**1.2**
	16-Nov-18	0.8	1.6	0.6	0.4	0.4	**1.1**	0.5	0.4	0.6
	19-Nov-18	0.8	0.8	0.5	**1.2**	0.6	0.6	0.6	**0.9**	**0.9**
	21-Nov-18	0.5	0.5	0.6	0.6	0.5	0.5	0.6	***0.7***	0.3
	23-Nov-18	0.9	1.3	1.4	0.9	0.9	0.8	0.8	1.1	0.8
	26-Nov-18	0.6	0.5	1.0	0.4	0.5	0.6	0.5	**1.0**	***0.7***
	28-Nov-18	0.6	0.3	0.6	**2.6**	0.3	0.3	**0.6**	**0.9**	**1.6**
	30-Nov-18	1.5	0.8	1.3	0.8	0.5	0.7	1.0	0.4	0.6
Mid-Flood	2-Nov-18	2.3	0.7	0.8	**1.5**	***0.9***	**1.4**	***0.9***	**1.7**	***0.9***
	5-Nov-18	0.8	0.9	1.3	0.9	0.9	0.8	0.5	1.1	0.7
	7-Nov-18	0.4	0.6	1.4	**1.0**	0.1	**1.3**	0.6	0.7	0.5
	9-Nov-18	0.4	0.6	1.1	**1.0**	0.4	**1.3**	**0.9**	0.4	0.4
	12-Nov-18	0.5	0.8	0.7	0.5	0.6	0.5	0.8	**1.0**	0.5
	14-Nov-18	2.9	0.5	1.9	**2.8**	0.6	0.5	0.5	**0.8**	**0.9**
	16-Nov-18	0.6	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.5
	19-Nov-18	0.6	0.8	1.1	0.4	0.5	0.9	0.6	**1.5**	1.0
	21-Nov-18	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.3	0.5
	23-Nov-18	0.8	0.7	1.1	**1.0**	0.6	0.5	0.7	0.4	0.8
	26-Nov-18	0.5	1.3	1.0	0.7	0.4	0.4	0.5	0.4	0.5
	28-Nov-18	0.9	0.8	0.2	**1.4**	**1.5**	***0.3***	**0.5**	**2.0**	**1.1**
	30-Nov-18	0.5	1.1	0.5	***0.7***	0.5	0.3	0.4	0.5	0.5

Remark: Italic and bold value indicated Action Level exceedance
Underlined and bold value indicated Limit Level exceedance

Table 6-4 Results Summary of Depth Average of Suspended Solids (mg/L)

Tidal	Sampling Date	G1	R1	R2	I1	I2	I3	W1	M1	FCZ1
Mid-Ebb	2-Nov-18	4.2	4.5	3.7	4.0	4.2	4.3	3.5	4.0	3.8
	5-Nov-18	3.0	3.0	2.5	2.8	2.5	2.3	2.3	2.5	2.0
	7-Nov-18	3.3	3.2	3.3	2.8	3.2	3.5	2.8	3.0	3.3
	9-Nov-18	2.8	2.7	3.0	2.8	2.7	3.0	2.5	3.0	2.5
	12-Nov-18	2.8	3.0	2.8	3.0	3.0	3.3	2.7	2.5	2.7
	14-Nov-18	2.8	3.0	2.8	***3.5***	2.8	3.0	3.0	***3.5***	2.5
	16-Nov-18	3.0	2.5	2.7	***3.3***	2.8	3.0	**3.5**	**12.5**	2.3
	19-Nov-18	3.8	3.0	2.7	***3.5***	3.2	2.8	2.5	2.5	2.7

Tidal	Sampling Date	G1	R1	R2	I1	I2	I3	W1	M1	FCZ1
	21-Nov-18	4.3	2.8	2.8	**4.3**	2.8	2.7	**4.7**	3.0	**3.8**
	23-Nov-18	2.7	2.5	2.5	3.0	***3.2***	2.8	3.0	**3.5**	2.7
	26-Nov-18	3.0	3.0	3.8	3.5	***3.7***	**4.0**	**4.2**	**5.0**	**4.0**
	28-Nov-18	3.8	3.8	4.7	3.0	4.2	3.3	3.5	***5.0***	3.8
	30-Nov-18	6.8	5.7	4.2	4.3	3.7	4.5	4.7	***5.5***	**6.5**
Mid-Flood	2-Nov-18	3.0	3.3	2.8	2.8	3.2	3.3	3.3	***3.5***	3.3
	5-Nov-18	2.5	2.8	2.2	2.5	2.3	***2.8***	***2.8***	2.5	2.3
	7-Nov-18	2.8	2.8	3.2	3.0	***3.5***	**3.8**	2.3	**4.0**	2.8
	9-Nov-18	2.3	2.5	2.2	***2.8***	**3.0**	**3.2**	**3.2**	**3.5**	**3.3**
	12-Nov-18	2.0	2.7	2.8	2.5	2.7	2.8	2.5	2.5	2.3
	14-Nov-18	2.3	3.0	3.0	2.8	3.2	3.2	2.8	**4.0**	2.5
	16-Nov-18	2.3	2.5	2.7	**3.5**	2.5	3.0	2.5	3.0	***3.3***
	19-Nov-18	2.7	2.7	2.8	3.0	2.3	2.7	3.0	***3.5***	3.0
	21-Nov-18	3.0	3.7	3.5	2.7	2.3	2.3	4.0	***4.5***	***4.3***
	23-Nov-18	3.0	3.0	2.5	**3.5**	3.0	***3.3***	2.7	2.5	2.2
	26-Nov-18	2.5	3.2	3.0	3.2	3.0	**4.0**	3.2	3.5	3.0
	28-Nov-18	2.3	3.2	3.0	2.5	3.2	2.8	3.3	**5.0**	***3.8***
	30-Nov-18	4.3	4.2	6.2	4.3	4.8	**5.8**	***5.2***	2.5	4.3

Remark: Italic and bold value indicated Action Level exceedance
Underlined and bold value indicated Limit Level exceedance

Table 6-5 Results Summary of Depth Average of Chlorophyll-a (µg/L)

Tidal	Sampling Date	G1	R1	R2	I1	I2	I3	W1	M1	FCZ1
Mid-Ebb	2-Nov-18	8.6	6.8	6.0	6.7	7.0	6.4	6.9	2.7	5.9
	5-Nov-18	6.0	6.5	5.3	5.6	6.0	5.3	5.8	3.3	5.2
	7-Nov-18	2.8	3.5	3.2	3.1	3.4	3.3	4.1	2.8	3.6
	9-Nov-18	2.8	3.0	3.3	3.0	3.3	3.3	3.2	3.5	3.2
	12-Nov-18	3.1	3.4	3.1	3.1	3.1	3.1	3.2	3.1	3.1
	14-Nov-18	3.1	3.8	3.3	3.0	3.0	3.3	3.4	3.3	2.8
	16-Nov-18	3.3	2.9	2.7	2.9	3.4	2.9	3.4	3.2	3.0
	19-Nov-18	2.8	3.1	2.7	2.4	2.8	3.4	3.5	1.4	2.1
	21-Nov-18	2.8	3.3	2.6	3.4	3.6	4.3	3.1	2.7	2.8
	23-Nov-18	2.2	2.8	2.4	2.1	1.9	2.9	2.6	2.4	2.5
	26-Nov-18	7.2	6.2	6.9	6.3	6.4	7.5	7.4	5.4	4.2
	28-Nov-18	8.3	8.1	8.1	8.5	8.2	8.2	8.7	6.7	8.5
	30-Nov-18	4.5	5.4	3.4	4.6	4.3	3.9	5.2	1.2	3.7
Mid-Flood	2-Nov-18	5.9	6.2	5.9	5.2	4.7	5.4	5.6	6.1	5.8
	5-Nov-18	5.2	5.6	4.5	4.8	4.2	5.0	5.0	4.7	4.6
	7-Nov-18	2.8	3.2	3.4	3.5	3.3	3.4	3.8	3.7	3.3
	9-Nov-18	2.8	3.1	3.4	3.4	3.2	3.4	3.5	3.0	3.4
	12-Nov-18	4.0	3.6	3.6	3.5	3.5	3.6	3.9	1.5	3.4
	14-Nov-18	3.0	4.1	3.5	3.5	3.5	3.6	3.5	3.1	3.3
	16-Nov-18	4.1	4.6	4.0	5.2	4.8	4.7	6.4	4.2	4.6
	19-Nov-18	2.9	3.0	4.5	4.9	4.6	4.4	5.4	5.3	4.4
	21-Nov-18	3.4	3.8	3.0	3.6	2.7	3.8	3.7	3.2	3.1
	23-Nov-18	4.7	4.6	1.9	2.5	2.4	2.5	4.7	2.5	2.0
	26-Nov-18	5.7	7.0	3.6	3.8	4.4	4.3	4.4	2.6	4.7
	28-Nov-18	9.0	7.8	5.5	5.4	5.1	5.2	5.4	5.2	8.2
	30-Nov-18	5.6	5.6	4.6	4.4	4.2	4.7	6.4	4.4	5.0

6.2.2 During the Reporting Period, field measurements showed that temperatures of marine water were within 24.9°C to 38.4°C; the salinity concentrations within 19.61 to 30.69 ppt and pH values within 7.3 to 7.7.

6.2.3 The monitoring results including in-situ measurements and laboratory testing results are attached

in ***Appendix H***. The graphical plots are shown in ***Appendix I***.

6.2.4 In this Reporting Period, there were total of 87 exceedances recorded, included 43 AL/LL exceedances of Turbidity and 44 AL/LL exceedances of Suspended Solids. A summary of water quality monitoring exceedance is shown in ***Table 6-6.***

Table 6-6 Summary of Water Quality Exceedance

Station	DO (Ave of Top & mid-depth)		DO (Bottom Depth)		Turbidity (Depth Ave)		SS (Depth Ave)		Chlorophyll-*a* (Depth Ave)		Total Exceedance for the Station	
	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL
I1	0	0	0	0	1	10	4	3	0	0	5	13
I2	0	0	0	0	1	2	3	1	0	0	4	3
I3	0	0	0	0	1	4	2	5	0	0	3	9
W1	0	0	0	0	1	4	2	4	0	0	3	8
M1	0	0	0	0	1	10	6	7	0	0	7	17
FCZ1	0	0	0	0	2	6	3	4	0	0	5	10
No of Exceedance	0	0	0	0	7	36	20	24	0	0	27	60

6.3 EXCEEDANCE INVESTIGATION

6.3.1 Upon confirmation of the monitoring result, Notification of Exceedances (NOEs) has had issued to relevant parties. Investigation for the cause of exceedance was carried out by ET subsequently.

Exceedances on 18, 20, 22, 24, 26, 29 and 31 October 2018 (last Reporting Month)

The construction activity carried out on 18 to 24 October 2018 included rock fill at East Groyne marine enclosed by silt curtain while no marine work during 26 to 31 October 2018. As water quality mitigation measures, silt curtains were properly implemented and maintained at locations in accordance with EP's condition. During the course of marine water quality monitoring, no abnormal and turbid discharge was observed made from the construction site. Having reviewed environmental performance of the project site and the monitoring results of the reference stations, impact stations as well as the sensitive receiver stations and the weather condition during the monitoring days, it is considered that all the exceedances were not caused by the works under the Project. Nevertheless, the Contractor was reminded to strictly implement the water quality mitigation measures as recommended implementation schedule for environmental mitigation measures in the EM&A Manual and EP's condition.

Exceedances on 2, 5, 7, 9, 12, 14, 16, 19 and 21 November 2018

There were no marine works conducted during 2 to 21 November 2018. As water quality mitigation measures, silt curtains were properly implemented and maintained at locations in accordance with EP's condition. During the course of marine water quality monitoring, no abnormal and turbid discharge was observed made from the construction site. Having reviewed environmental performance of the project site and the monitoring results of the reference stations, impact stations as well as the sensitive receiver stations and the weather condition during the monitoring days, it is considered that all the exceedances were not caused by the works under the Project. Nevertheless, the Contractor was reminded to strictly implement the water quality mitigation measures as recommended implementation schedule for environmental mitigation measures in the EM&A Manual and EP's condition.

Exceedances on 23, 26, 28 and 30 November 2018

(To be reported in next Reporting Month)

7. WASTE MANAGEMENT

7.1 GENERAL

7.1.1 Waste management was carried out by an on-site Environmental Officer or an Environmental Supervisor from time to time.

7.2 RECORDS OF WASTE QUANTITIES

7.2.1 All types of waste arising from the construction work are classified into the following:

- Construction & Demolition (C&D) Material;
- Chemical Waste;
- General Refuse; and
- Excavated Soil.

7.2.2 The quantities of waste for disposal in this Reporting Period are summarized in ***Tables 7-1*** and ***7-2*** and the Monthly Summary Waste Flow Table is shown in ***Appendix K***. Whenever possible, materials were reused on-site as far as practicable.

Table 7-1 Summary of Quantities of Inert C&D Materials

Types of Waste	Quantity	Disposal Location
Total C&D Materials (Inert) ('000m^3)	0.224	Tuen Mun Area 38
Reused in this Contract (Inert) ('000m^3)	0	NA
Reused in other Projects (Inert) ('000m^3)	0	NA
Disposal as Public Fill (Inert) ('000m^3)	0.224	Tuen Mun Area 38

Table 7-2 Summary of Quantities of C&D Wastes

Types of Waste	Quantity	Disposal Location
Recycled Metal ('000kg)	0	NA
Recycled Paper / Cardboard Packing ('000kg)	0	NA
Recycled Plastic ('000kg)	0	NA
Chemical Wastes ('000kg)	0	NA
General Refuse ('000m^3)	0.0065	NENT

8. ECOLOGY

8.1 ECOLOGY MONITORING (MARINE-BASED)

Seahorse Translocation Surveys

8.1.1 The seahorse captured and translocation was conducted in the period of ***17*** to ***20 January 2018***. Since the two tagged seahorses were not recorded at the Ting Kok East reception site during the first 7 days Post-translocation Seahorse Survey on 21 to 27 January 2018, Option 2 of monitoring programme was therefore adopted to perform the Post-translocation Seahorse Survey in accordance with the approved method statement (Seahorses Translocation Plan (Version 1, 11 January 2018) refers). The Post-translocation Seahorse Survey should be performed in the first year for a period of one year after the completion of seahorse translocation. The proposed survey time would be at least 28 man-hours (including 14 man-hours during daytime and 14 man-hours during nighttime for each survey). The survey frequency is listed below:

- Daily for first week
- three times per week for the second to fourth week
- once a week for the second to fourth month
- once a month for the fifth to twelve month

8.1.2 The ninth month post-translocation Seahorse Survey was carried out on 15 and 16 November 2018 at Ting Kok East reception site. According to the survey result, no tagged seahorses #051 and #052 were found during the survey. The corresponding post-translocation Seahorse Survey Report will be submitted in stand-alone copy.

9. SITE INSPECTION

9.1 REQUIREMENTS

9.1.1 According to the approved EM&A Manual, the environmental site inspection shall be formulation by ET Leader. The site inspection and audits should be conducted twice per month by ET.

9.2 FINDINGS / DEFICIENCIES DURING THE REPORTING MONTH

9.2.1 In the Reporting Period, joint site inspection and audit to evaluate site environmental performance was carried out by the RE, ET and the Contractor on **14 and 30 November 2018**. No non-compliance was noted within this reporting period.

9.2.2 The findings / deficiencies that observed during the weekly site inspection are listed in ***Table 9-1***.

Table 9-1 Site Observations

Date	Findings / Deficiencies	Follow-Up Status
14 November 2018	• The Contractor was reminded to properly maintain silt curtain during the course of marine work.	No required for reminder.
30 November 2018	• The Contractor was reminded to properly maintain silt curtain during the course of marine work.	No required for reminder.

10. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

10.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

10.1.1 In the Reporting Period, no environmental complaint, summons and prosecution was received.

10.1.2 In the Reporting Period, no summons and prosecution under the EM&A Programme was lodged for the project. The statistical summary table of environmental complaint is presented in ***Tables 10-1, 10-2*** and ***10-3***.

Table 10-1 Statistical Summary of Environmental Complaints

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 30 November 2018	0	0	NA

Table 10-2 Statistical Summary of Environmental Summons

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Summons Nature
1 – 30 November 2018	0	0	NA

Table 10-3 Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Prosecution Nature
1 – 30 November 2018	0	0	NA

11. IMPLEMENTATION STATUS OF MITIGATION MEASURES

11.1 GENERAL

11.1.1 The environmental mitigation measures that recommended in the Implementation Schedule for Environmental Mitigation Measures (ISEMM) in the approved EM&A Manual covered the issues of dust, noise, water, ecology and waste etc. and they are summarized presented in ***Appendix L*.**

11.1.2 The Contractor had been implementing the required environmental mitigation measures according to the Environmental Monitoring and Audit Manual subject to the site condition. Environmental mitigation measures generally implemented by the Contractor in this Reporting Month are summarized in ***Table 11-1***.

Table 11-1 Environmental Mitigation Measures in the Reporting Month

Issues	Environmental Mitigation Measures
Construction Noise	• Regularly to maintain all plants, so only the good condition plants were used on-site ; • If possible, all mobile plants onsite operation has located far from NSRs; • When machines and plants (such as trucks) were not in using, it was switched off; • Wherever possible, plant was prevented oriented directly the nearby NSRs; • Provided quiet powered mechanical equipment to use onsite; • Moveable noise barriers were temporary used for construction work, where necessary; and • Weekly noise monitoring was conducted to ensure construction noise meet the criteria.
Air Quality	• Stockpile of dusty material was covered entirely with impervious sheeting or sprayed with water so as to maintain the entire surface wet; • The construction plants regularly maintained to avoid the emissions of black smoke; • The construction plants switched off when it not in use; • Water spraying on haul road and dry site area was provided regularly; • Where a vehicle leaving the works site is carrying a load of dusty materials, the load has covered entirely with clean impervious sheeting; and • Before any vehicle leaving the works site, wheel watering has been performed.
Water Quality	• Impervious sheeting was provided on exposed soil surfaces to reduce the potential of soil erosion; • Debris and refuse generated on-site collected daily; • Stockpiles of the cement and other construction materials were covered when not being used; • Oils and fuels were stored in designated areas with locks; • The chemical waste storage as sealed area provided with locks; • Sedimentation facilities was provided to remove silt particles from groundwater; • Site hoarding with sealed foot were provided surrounding the boundary of working site to prevent wastewater or site surface water runoff get into public areas; and • Portable chemical toilets were provided on-site. A licensed contractor was regularly disposal and maintenance of these facilities. • Silt curtain was installed and maintained in accordance with EP condition

Issues	Environmental Mitigation Measures
Waste and Chemical Management	• Excavated material reused on site as far as possible to minimize off-site disposal. Scrap metals or abandoned equipment should be recycled if possible; • Waste arising kept to a minimum and be handled, transported and disposed of in a suitable manner; • Disposal of C&D wastes to any designated public filling facility and/or landfill followed a trip ticket system; and • Chemical waste handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes.
General	• The site is generally kept tidy and clean. • Mosquito control is performed to prevent mosquito breeding on site.

11.2 IMPACT FORECAST

11.2.1 Construction activities to be undertaken in **December 2018** should be included below:-

- Site formation
- Construction of Western Open Channel / Box Culvert
- Construction of Eastern Box Culvert
- Dredging and Construction of Groynes (East and West)
- Construction of Retaining Wall
- Construction of Seawall

11.2.2 Potential environmental impacts arising from the works include:

- Construction waste
- Air quality
- Construction noise
- Water quality

11.2.3 Environmental mitigation measures will be properly implemented and maintained as per the Mitigation Implementation Schedule in **Appendix L** to ensure site environmental performance is acceptable.

12. CONCLUSIONS AND RECOMMENTATIONS

12.1 CONCLUSIONS

12.1.1 This is the **12th** monthly EM&A report presenting the monitoring results and inspection findings for the reporting period from **1** to **30 November 2018**.

12.1.2 In this Reporting Period, no construction noise monitoring results that triggered the Limit Level was recorded. No NOE or the associated corrective actions were therefore issued. Moreover, no noise complaint (which is an Action Level exceedance) was received for the Project.

12.1.3 In this Reporting Period, no air quality monitoring exceedance was recorded. No NOE or the associated corrective actions were therefore issued.

12.1.4 For water quality monitoring, there were total of 87 water quality monitoring exceedances included 43 AL/LL exceedances of Turbidity and 44 AL/LL exceedances of Suspended Solids. As advised by the Contractor and confirmed by Resident Engineer, there were no marine works conducted during 2 to 21 November 2018. During the course of marine water quality monitoring, no abnormal and turbid discharge was observed made from the construction site. Having reviewed environmental performance of the project site and the monitoring results of the reference stations, impact stations as well as the sensitive receiver stations and the weather condition during the monitoring days, it is considered that all the exceedances were not caused by the works under the Project. The investigation for cause of exceedances recorded on 23 to 30 November 2018 is underway by ET.

12.1.5 In the Reporting Period, joint site inspection and audit to evaluate site environmental performance was carried out by the CEDD, ET and the Contractor on **14 and 30 November 2018**. No non-compliance was noted within this reporting period.

12.1.6 No environmental complaints, notification of summons or successful prosecution were received in this Reporting Period.

12.2 RECOMMENDATIONS

12.2.1 The forthcoming construction activities include site formation, construction of western open channel/ box culvert and eastern box culvert, dredging and construction of groynes and construction of retaining wall and seawall. The potential environmental impacts arising from the construction activities include construction waste, air quality, construction noise and water quality.

12.2.2 In regards to the marine works, special attention should be paid on the groynes construction (Eastern and Western) and dredging works in which water quality mitigation measures such as erection of silt curtain should be properly implemented and maintained.

12.2.3 During dry season, it is reminded that dust mitigation measures should be fully implemented such water spraying during dust work to minimize dust impact as appropriate. All dump trucks leaving the Site should be thoroughly washed by wheel washing facilities and provided with mechanical covers in good service condition.

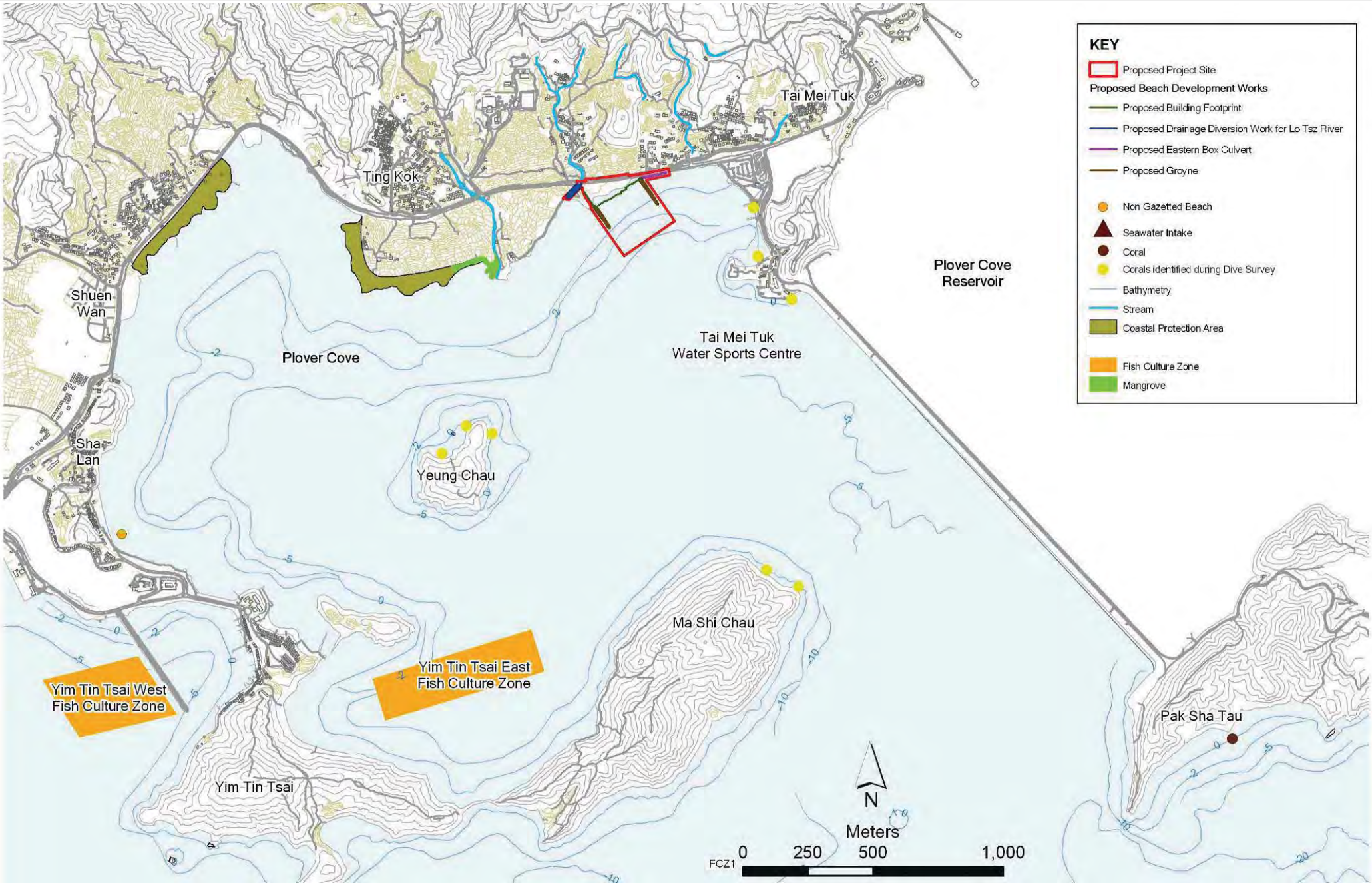
12.2.4 Construction noise should be a key environmental impact during the works. The noise mitigation measures such as use of quiet plants and installation of temporary noise barrier at the construction noise predominate area should be fully implemented as accordance with the EM&A requirement.

12.2.5 In addition, it is reminded that housekeeping and site tidiness should be properly maintained. Chemical waste management such as drip tray should be provided for chemical container to prevent land contamination.

Appendix A

Layout plan of the Project

(The content of Appendix A is modified from the previous EM&A Manual - Development of a Bathing Beach at Lung Mei, Tai Po (Register No. AEIAR-123/2008): Environmental Monitoring and Audit (EM&A) Manual (November 2007))



Client: CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Main Contractor: 偉金建築有限公司 Welcome Construction Co., Ltd.	Agreement No.: CE 59/2005(EP)	ENVIRONMENTAL MONITORING AND AUDIT MANUAL	**FIGURE 1.1**
		Project Title: DEVELOPMENT OF A BATHING BEACH AT LUNG MEI, TAI PO	Figure Title: PROJECT LOCATION AND ENVIRONMENTAL SENSITIVE RECEIVERS	Checked: TF; Scale: AS SHOWN; Rev.: 1; Designed: -; Drawn: AM; Date: 13/03/2007

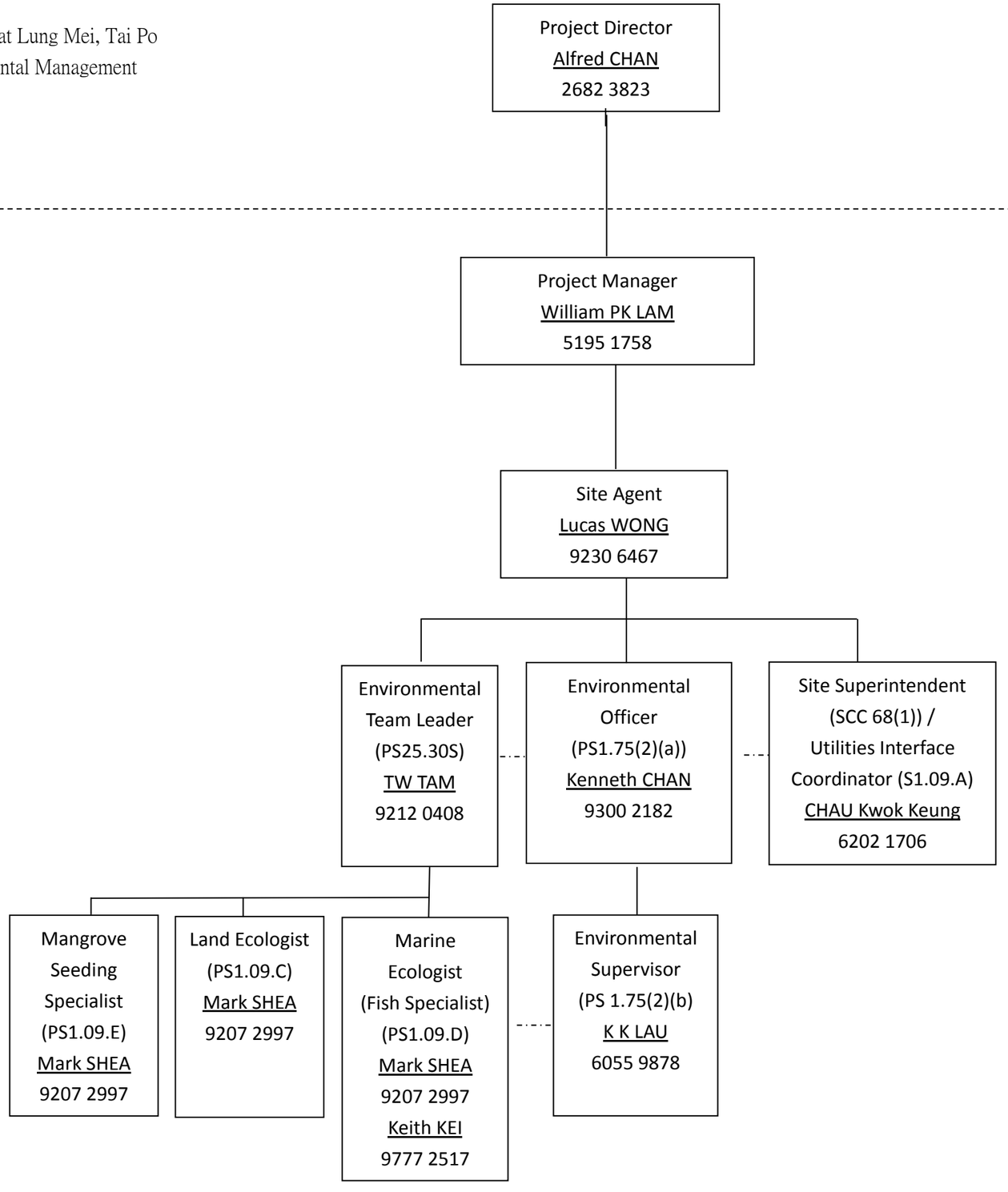
Appendix B

Organization structure and contact details

Welcome Construction Co. Ltd.
Contract No. CV/2012/05 Bathing Beach at Lung Mei, Tai Po
Project Organization Chart On Environmental Management
2018/7/10

Head Office

Site Management



Contact Details of Key Personnel – CV/2012/05

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
CEDD	Engineer's Representative	Mr. K F Chan	2762 5532	2714 2054
ERM	Independent Environmental Checker	Mr. Terence Fong	2271 3156	2723 5660
Welcome	Project Manager	Mr. William Lam	5195 1758	2682 3222
Welcome	Site Agent	Mr. Lucas Wong	9230 6467	2682 3222
Welcome	Environmental Officer	Mr. Kenneth Chan	9300 2182	2682 3222
Welcome	Environmental Supervisor	Mr. K K Lau	6055 9878	2682 3222
AUES	Environmental Team Leader	T. W. Tam	2959 6059	2959 6079
AUES	Environmental Consultant	Nicola Hon	2959 6059	2959 6079
AUES	Environmental Consultant	Ben Tam	2959 6059	2959 6079

Legend:
CEDD (Engineer) – Civil Engineering and Development Department
Welcome (Contractor) – Welcome Construction Company Limited
ERM (IEC) – Environmental Resources Management
AUES (ET) – Action-United Environmental Services & Consulting

Appendix C

3-Month Rolling Construction Program

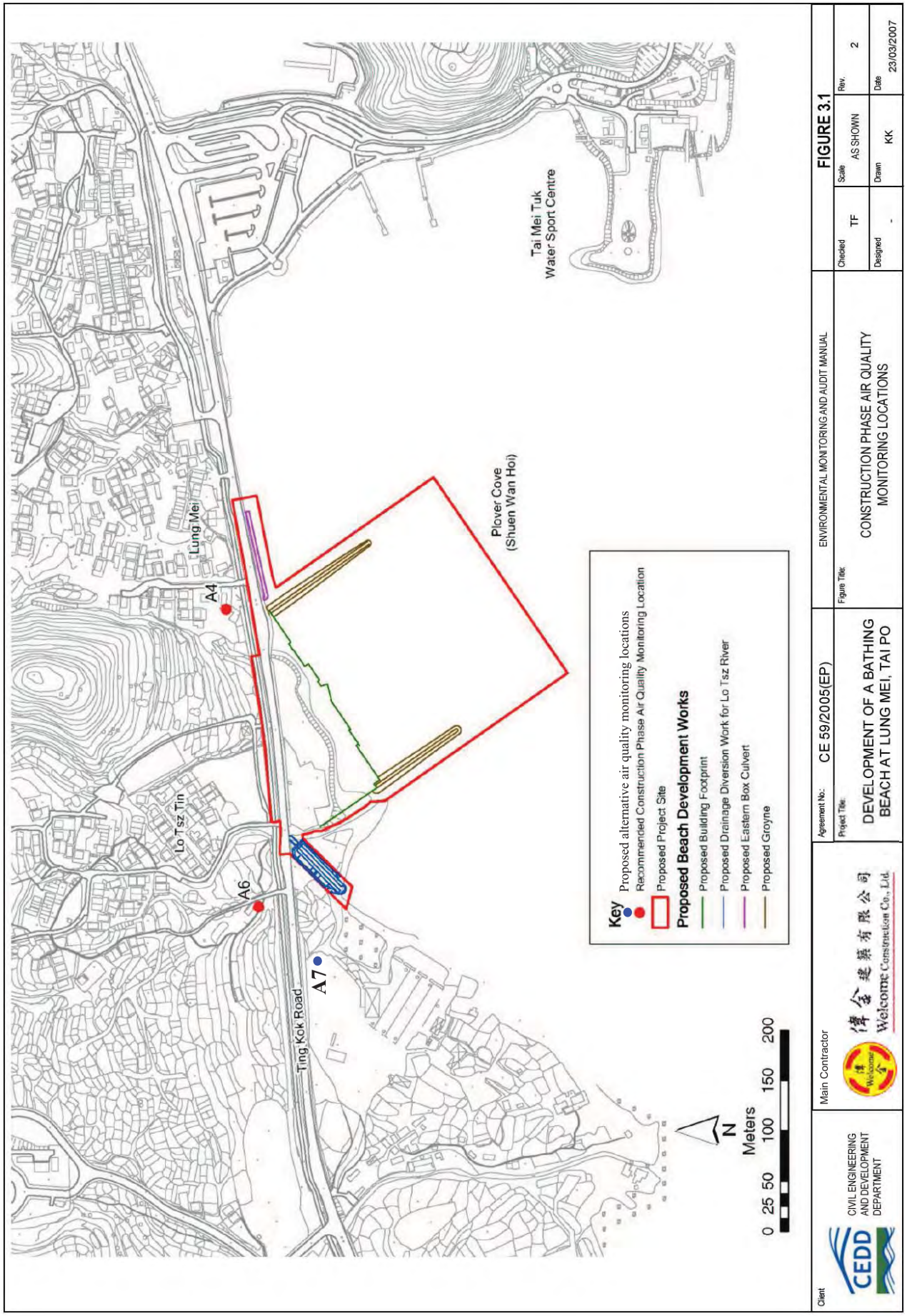
3-month Construction Program (November 2018 to January 2019)

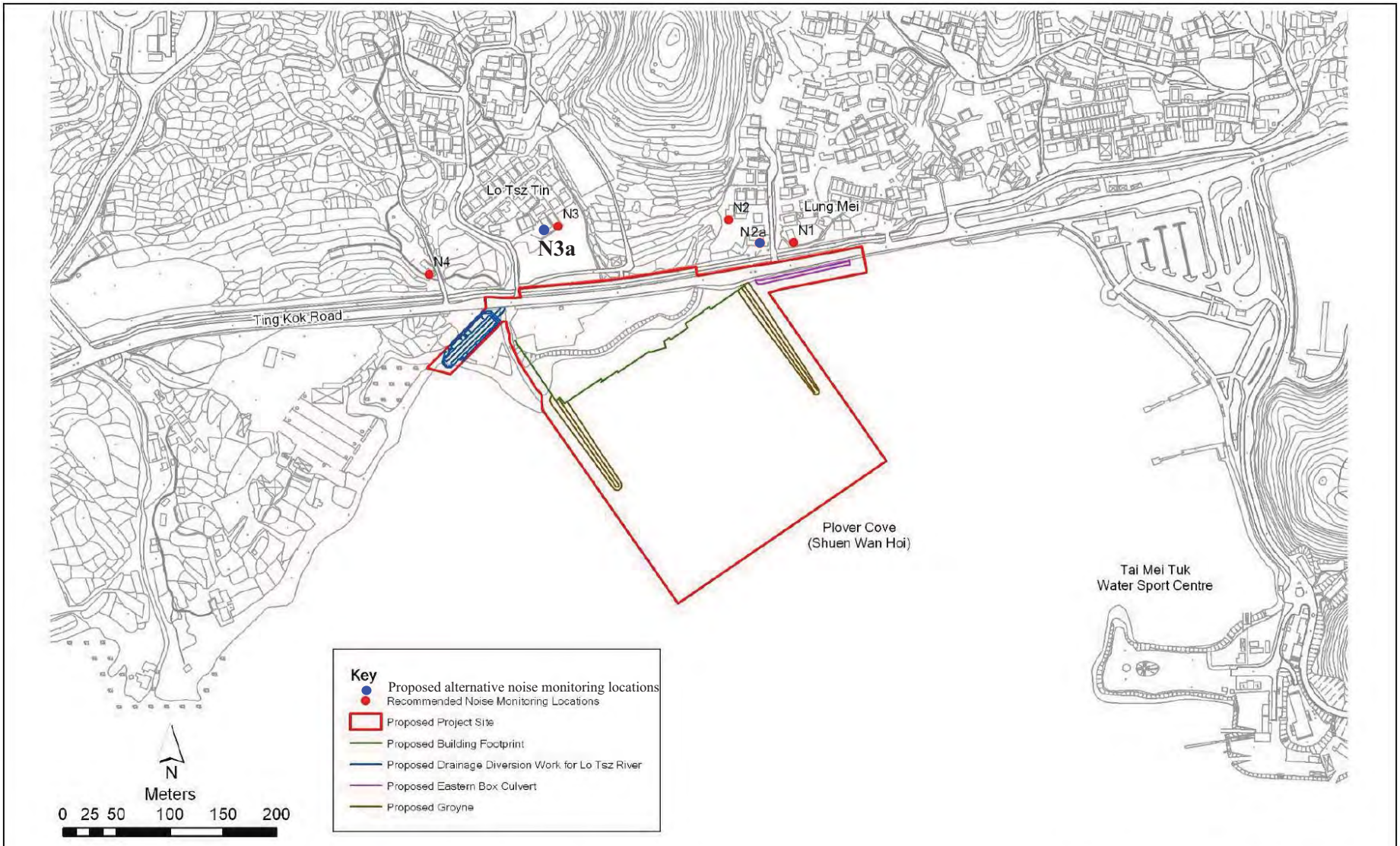
Construction Work	November 2018	December 2018	January 2019
Site Formation	✓	✓	✓
Construction of Western Open Channel / Box Culvert	✓	✓	✓
Construction of Eastern Box Culvert	✓	✓	✓
Dredging and Construction of Groynes (East and West)	✓	✓	✓
Construction of Retaining Wall	✓	✓	✓
Construction of Seawall	✓	✓	✓

Appendix D

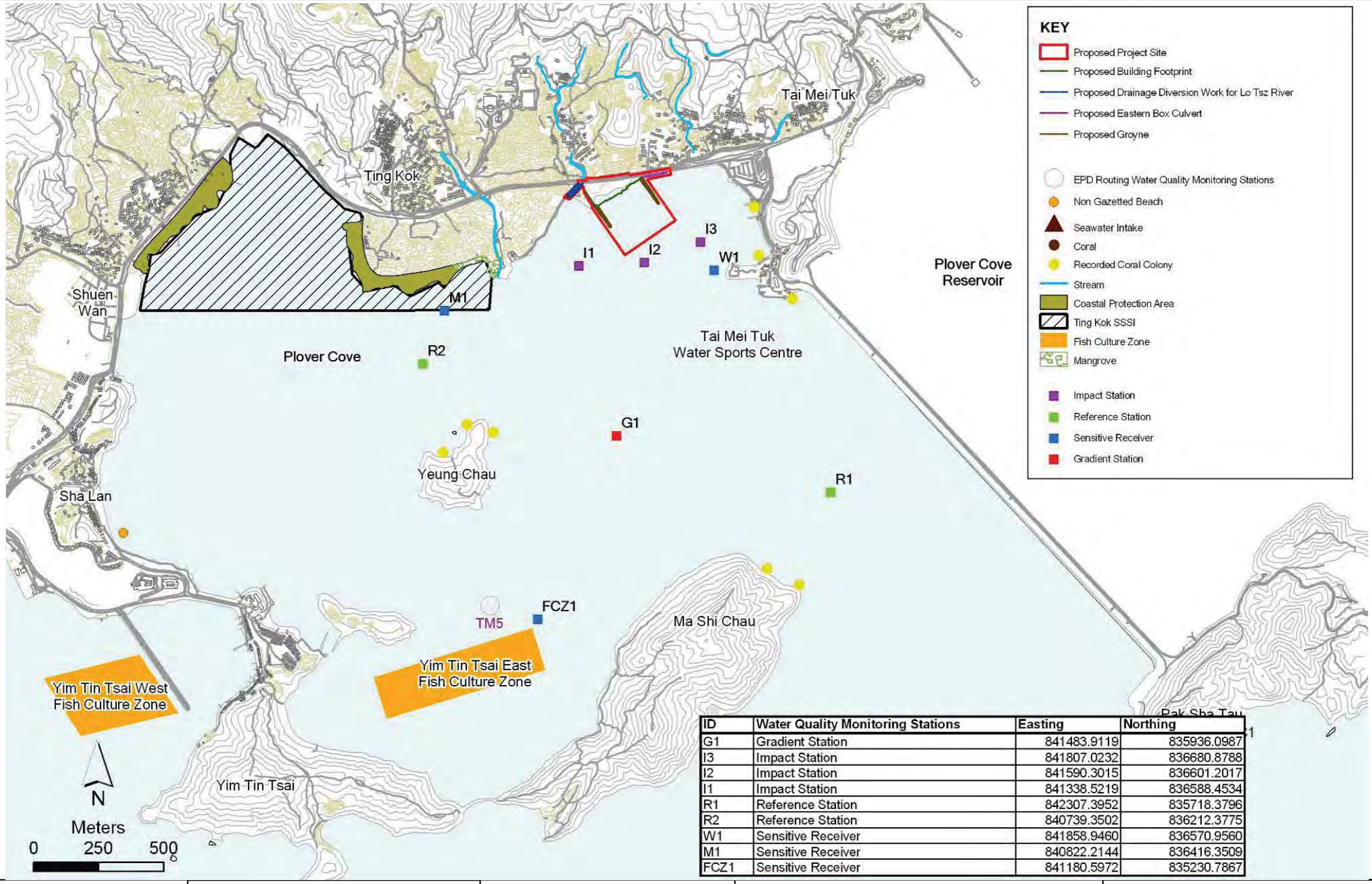
Monitoring Location

(The Figures of Appendix D are modified from the previous EM&A Manual - Development of a Bathing Beach at Lung Mei, Tai Po (Register No. AEIAR-123/2008): Environmental Monitoring and Audit (EM&A) Manual (November 2007))


Tai Mei Tuk
Water Sport Centre
Plover Cove
(Shuen Wan Hoi)
Lung Mei
Lo Tsz Tin
Ting Kok Road
A4
A6
A7
Key
Proposed alternative air quality monitoring locations
Recommended Construction Phase Air Quality Monitoring Location
Proposed Project Site
Proposed Beach Development Works
Proposed Building Footprint
Proposed Drainage Diversion Work for Lo Tsz River
Proposed Eastern Box Culvert
Proposed Groyne
N
Meters
0 25 50 100 150 200
Client
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT
Main Contractor
Welcome Construction Co., Ltd.
Agreement No.: CE 59/2005(EP)
Project Title:
DEVELOPMENT OF A BATHING BEACH AT LUNG MEI, TAI PO
ENVIRONMENTAL MONITORING AND AUDIT MANUAL
Figure Title:
CONSTRUCTION PHASE AIR QUALITY MONITORING LOCATIONS
FIGURE 3.1
Checked TF
Designed -
Scale AS SHOWN
Drawn KK
Rev. 2
Date 23/03/2007



Client: CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	偉金建築有限公司 Welcome Construction Co., Ltd.	Agreement No.: CE 59/2005(EP)	ENVIRONMENTAL MONITORING AND AUDIT MANUAL	**FIGURE 4.1**
		Project Title: DEVELOPMENT OF A BATHING BEACH AT LUNG MEI, TAI PO	Figure Title: CONSTRUCTION PHASE NOISE MONITORING LOCATIONS	Checked: TF; Scale: AS SHOWN; Rev.: 2; Designed: -; Drawn: KK; Date: 29/08/2007



ID	Water Quality Monitoring Stations	Easting	Northing
G1	Gradient Station	841483.9119	835936.0987
I3	Impact Station	841807.0232	836680.8788
I2	Impact Station	841590.3015	836601.2017
I1	Impact Station	841338.5219	836588.4534
R1	Reference Station	842307.3952	835718.3796
R2	Reference Station	840739.3502	836212.3775
W1	Sensitive Receiver	841858.9460	836570.9560
M1	Sensitive Receiver	840822.2144	836416.3509
FCZ1	Sensitive Receiver	841180.5972	835230.7867

Client: CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

Main Contractor: 偉金建築有限公司 Welcome Construction Co., Ltd.

Agreement No.: CE 59/2005(EP)

ENVIRONMENTAL MONITORING AND AUDIT MANUAL

FIGURE 5.1

Project Title: DEVELOPMENT OF A BATHING BEACH AT LUNG MEI, TAI PO

Figure Title: WATER QUALITY MONITORING LOCATIONS IN THE VICINITY OF THE PROPOSED BEACH DEVELOPMENT

Checked	Scale	Rev.
TF	AS SHOWN	1
Designed	Drawn	Date
-	AM	13/03/2007

Photograph Records for Air Quality Monitoring

Air Quality Monitoring (24-Hour TSP & 1-Hour TSP)

A4

A7

Photograph Records for Noise Monitoring

Noise Monitoring
 **N1**
 **N2a**

Noise Monitoring

N3a

N4

Appendix E

Calibration Certificate of Monitoring Equipment

MONITORING EQUIPMENT CALIBRATION CERTIFICATES

Items	Aspect	Description of Equipment	Date of Calibration	Date of Next Calibration
1	Air	TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for A4	28 Sep 18	28 Nov 18
1a		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for A4	27 Nov 18	27 Jan 19
2		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for A7	28 Sep 18	28 Nov 18
2a		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for A7	27 Nov 18	27 Jan 19
3		Calibration Kit TISCH Model TE-5025A Orifice ID 1612 and Rootsmeter S/N 438320	13 Feb 18	13 Feb 19
4		Laser Dust Monitor, Model LD-3B (Serial No. 456658) – EQ115	15 Mar 18	15 Mar 19
5		Laser Dust Monitor, Model LD-3B (Serial No. 456659) – EQ116	15 Mar 18	15 Mar 19
6		Laser Dust Monitor, Model LD-3B (Serial No. 456660) – EQ117	15 Mar 18	15 Mar 19
7		Laser Dust Monitor, Model LD-3B (Serial No. 456662) – EQ118	15 Mar 18	15 Mar 19
8	Noise	Brüel & Kjær 2238 Sound Level Meter (Serial No. 2285722) – EQ009	10 Jun 18	10 Jun 19
9		Rion NL-52 Sound Level Meter (Serial No. 00142581) – EQ015	12 May 18	12 May 19
10		Rion NL-31 Sound Level Meter (Serial No. 00410247) – EQ068	9 Jun 18	9 Jun 19
11		Brüel & Kjær 4231 Acoustical Calibrator (Serial No. 2713428) – EQ082	12 May 18	12 May 19
12		Rion Sound Level Calibrator NC-74 (Serial No.: 34657230) - EQ086	18 Jun 18	18 Jun 19
13	Water	Valeport Current Meter 106CM (Serial No. 67738)	5 Sep 2018	--
14		YSI 69201V2-M multi-parameter water quality meter (Serial No. 14A102907)	14 Sep 2018	13 Dec 2018

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : No. 101 Lung Mei Tsuen	Date of Calibration: 28-Sep-18
Location ID : A4	Next Calibration Date: 28-Nov-18
Name and Model: TISCH HVS Model TE-5170	Technician: Fai So

CONDITIONS

Sea Level Pressure (hPa)	1009.9	Corrected Pressure (mm Hg)	757.425
Temperature (°C)	27.6	Temperature (K)	301

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.02017
Model->	5025A	Qstd Intercept ->	-0.03691
Serial # ->	1612		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	5.10	5.10	10.2	1.590	41	40.58	Slope = 24.2135
13	4.10	4.10	8.2	1.427	36	35.63	Intercept = 1.5516
10	3.30	3.30	6.6	1.282	33	32.66	Corr. coeff. = 0.9971
7	2.10	2.10	4.2	1.027	26	25.73	
5	1.30	1.30	2.6	0.812	22	21.77	

Calculations :

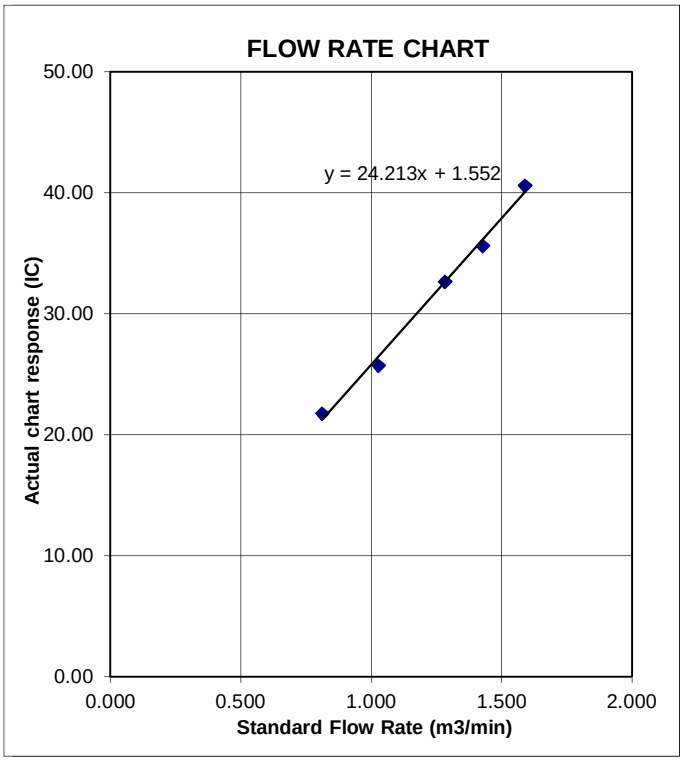
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart respones
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Hong Kong Eco-Farm	Date of Calibration: 28-Sep-18
Location ID : A7	Next Calibration Date: 28-Nov-18
Name and Model: TISCH HVS Model TE-5170	Technician: Fai So

CONDITIONS

Sea Level Pressure (hPa)	1009.9	Corrected Pressure (mm Hg)	757.425
Temperature (°C)	27.6	Temperature (K)	301

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.02017
Model->	5025A	Qstd Intercept ->	-0.03691
Serial # ->	1612		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	5.50	5.50	11.0	1.650	50	49.48	Slope = 30.3185
13	4.20	4.20	8.4	1.444	44	43.55	Intercept = -0.8130
10	3.20	3.20	6.4	1.263	37	36.62	Corr. coeff. = 0.9969
7	2.00	2.00	4.0	1.002	29	28.70	
5	1.20	1.20	2.4	0.781	24	23.75	

Calculations :

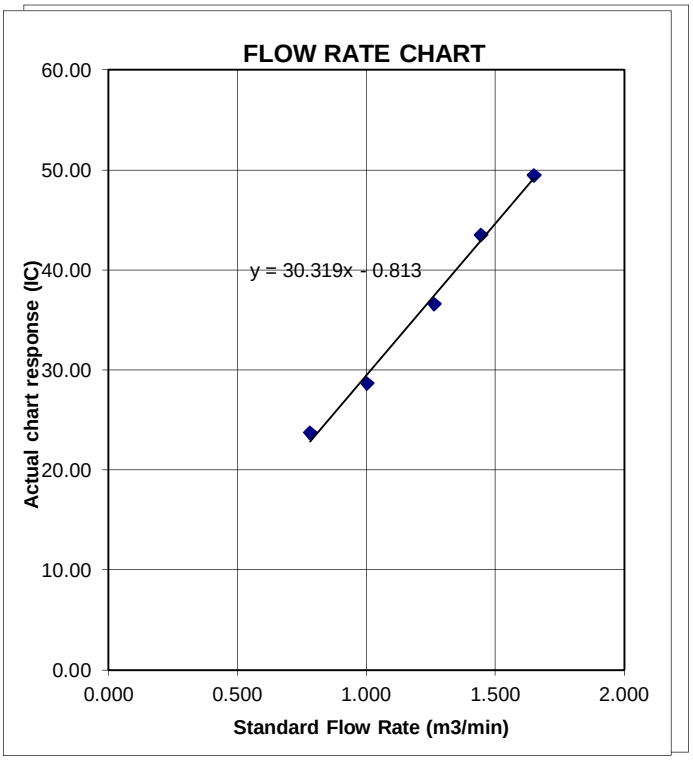
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart respones
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : No. 101 Lung Mei Tsuen	Date of Calibration: 27-Nov-18
Location ID : A4	Next Calibration Date: 27-Jan-19
Name and Model: TISCH HVS Model TE-5170	Technician: Fai So

CONDITIONS

Sea Level Pressure (hPa)	1019.0	Corrected Pressure (mm Hg)	764.25
Temperature (ºC)	20.5	Temperature (K)	294

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.02017
Model->	5025A	Qstd Intercept ->	-0.03691
Serial # ->	1612		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	5.10	5.10	10.2	1.616	42	42.76	Slope = 25.8659
13	4.20	4.20	8.4	1.468	37	37.67	Intercept = 0.1830
10	3.30	3.30	6.6	1.303	33	33.60	Corr. coeff. = 0.9968
7	2.10	2.10	4.2	1.043	26	26.47	
5	1.20	1.20	2.4	0.793	21	21.38	

Calculations :

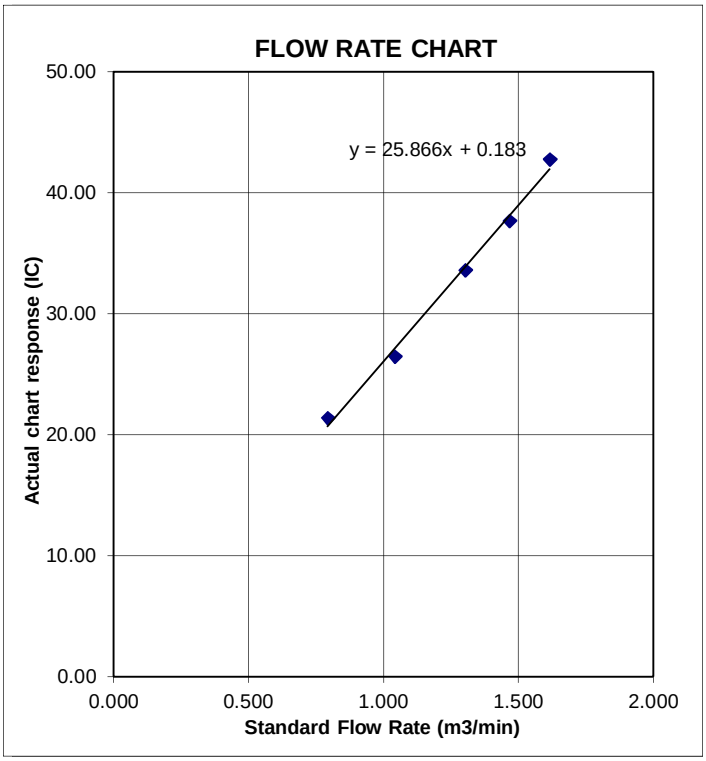
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart respones
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Hong Kong Eco-Farm
Location ID : A7
Name and Model: TISCH HVS Model TE-5170

Date of Calibration: 27-Nov-18
Next Calibration Date: 27-Jan-19
Technician: Fai So

CONDITIONS

Sea Level Pressure (hPa)	1019.0	Corrected Pressure (mm Hg)	764.25
Temperature (°C)	20.5	Temperature (K)	294

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.02017
Model->	5025A	Qstd Intercept ->	-0.03691
Serial # ->	1612		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	5.60	5.60	11.2	1.692	50	50.91	Slope = 30.1292
13	4.20	4.20	8.4	1.468	44	44.80	Intercept = -0.1716
10	3.20	3.20	6.4	1.284	37	37.67	Corr. coeff. = 0.9975
7	2.10	2.10	4.2	1.043	30	30.55	
5	1.20	1.20	2.4	0.793	24	24.44	

Calculations :

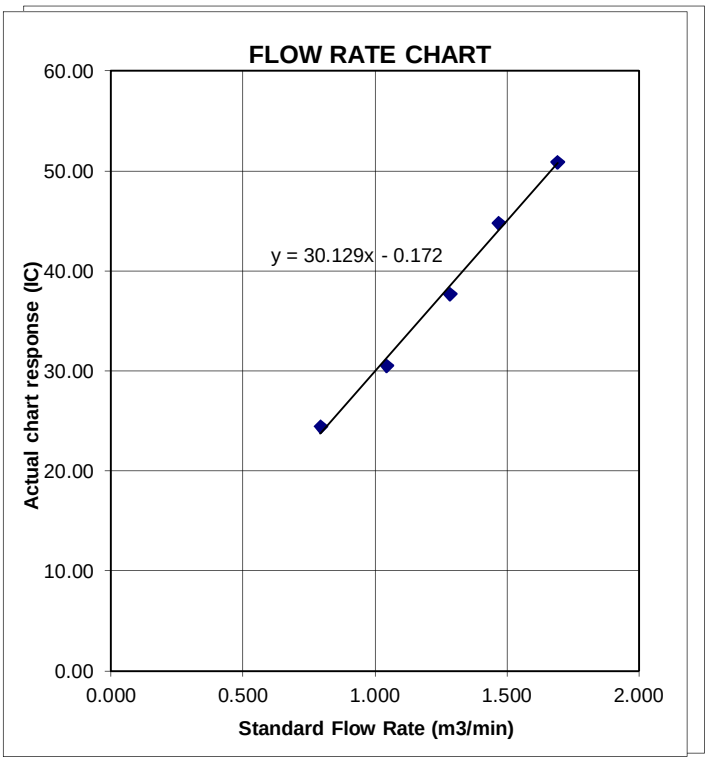
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart respones
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



TISCH Environmental

RECALIBRATION DUE DATE:
February 13, 2019

Certificate of Calibration

Calibration Certification Information				
Cal. Date:	February 13, 2018	**Rootsmeter S/N:** 438320	**Ta:** 293	°K
Operator:	Jim Tisch		**Pa:** 763.3	mm Hg
Calibration Model #:	TE-5025A	**Calibrator S/N:** **1612**		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.3970	3.2	2.00
2	3	4	1	1.0000	6.3	4.00
3	5	6	1	0.8900	7.9	5.00
4	7	8	1	0.8440	8.7	5.50
5	9	10	1	0.7010	12.6	8.00

Data Tabulation

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis)
1.0172	0.7281	1.4293	0.9958	0.7128	0.8762
1.0130	1.0130	2.0213	0.9917	0.9917	1.2392
1.0109	1.1358	2.2599	0.9896	1.1120	1.3854
1.0098	1.1964	2.3702	0.9886	1.1713	1.4530
1.0046	1.4331	2.8586	0.9835	1.4030	1.7524
QSTD	**m=**	**2.02017**	**QA**	**m=**	**1.26500**
	b=	**-0.03691**		**b=**	**-0.02263**
	r=	**0.99988**		**r=**	**0.99988**

Calculations

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

For subsequent flow rate calculations:

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

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

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg

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

RECALIBRATION

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

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

www.tisch-env.cor
TOLL FREE: (877)263-761(
FAX: (513)467-900

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER	: **HK1825892**
CLIENT	: ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING		
ADDRESS	: RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG	SUB-BATCH	: 1
		DATE RECEIVED	: 12-APR-2018
		DATE OF ISSUE	: 19-APR-2018
PROJECT	: ----	NO. OF SAMPLES	: 1
		CLIENT ORDER	: ----

General Comments

- Sample(s) were received in ambient condition.
- Sample(s) analysed and reported on an as received basis.
- Calibration was subcontracted to and analysed by Action United Enviro Services.

Signatories

This document has been signed by those names that appear on this report and are the authorised signatories

Signatories	*Position*
Richard Fung	General Manager

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

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

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group
11/F. Chung Shun Knitting Centre 1 - 3 Wing Yip Street Kwai Chung N.T. Hong Kong
Tel. +852 2610 1044 Fax. +852 2610 2021 www.alsglobal.com

WORK ORDER	: HK1825892
SUB-BATCH	: 1
CLIENT	: ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING
PROJECT	: ----

ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK1825892-001	S/N: 456660	Equipments	12-Apr-2018	S/N: 456660

Equipment Verification Report (TSP)

Equipment Calibrated:

Type:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	456660
Equipment Ref:	EQ117
Job Order	HK1825892

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 018
Last Calibration Date:	27 February 2018

Equipment Verification Results:

Calibration Date: 12 & 13 March 2018

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr07min	9:50 ~ 11:57	19.6	1019.0	0.073	4016	31.7
2hr14min	12:05 ~ 14:19	19.6	1019.0	0.075	4544	33.8
2hr17min	9:50 ~ 12:07	20.9	1016.7	0.075	4912	35.7

Sensitivity Adjustment Scale Setting (Before Calibration) 615 (CPM)

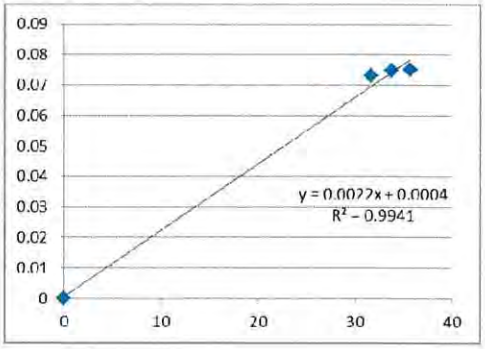
Sensitivity Adjustment Scale Setting (After Calibration) 615 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0022

Correlation Coefficient (R) 0.9970

Date of Issue 15 March 2018



Remarks:

1. **Strong** Correlation (R>0.8)
2. Factor 0.0022 should be apply for TSP monitoring

*If R<0.5, repair or re-verification is required for the equipment

Operator : Martin Li Signature : Date : 15 March 2018

QC Reviewer : Ben Tam Signature : Date : 15 March 2018

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration:	27-Feb-18
Location ID :	Calibration Room	Next Calibration Date:	27-May-18

CONDITIONS

Sea Level Pressure (hPa)	1017.3	Corrected Pressure (mm Hg)	762.975
Temperature (°C)	19.1	Temperature (K)	292

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11965
Model->	5025A	Qstd Intercept ->	-0.02696
Calibration Date->	28-Feb-17	Expiry Date->	28-Feb-18

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.2	6.2	12.4	1.694	52	52.63	Slope = 39.8525
13	5.1	5.1	10.2	1.538	46	46.55	Intercept = -14.3322
10	3.9	3.9	7.8	1.346	40	40.48	Corr. coeff. = 0.9974
8	2.6	2.6	5.2	1.101	30	30.36	
5	1.7	1.7	3.4	0.893	20	20.24	

Calculations :

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

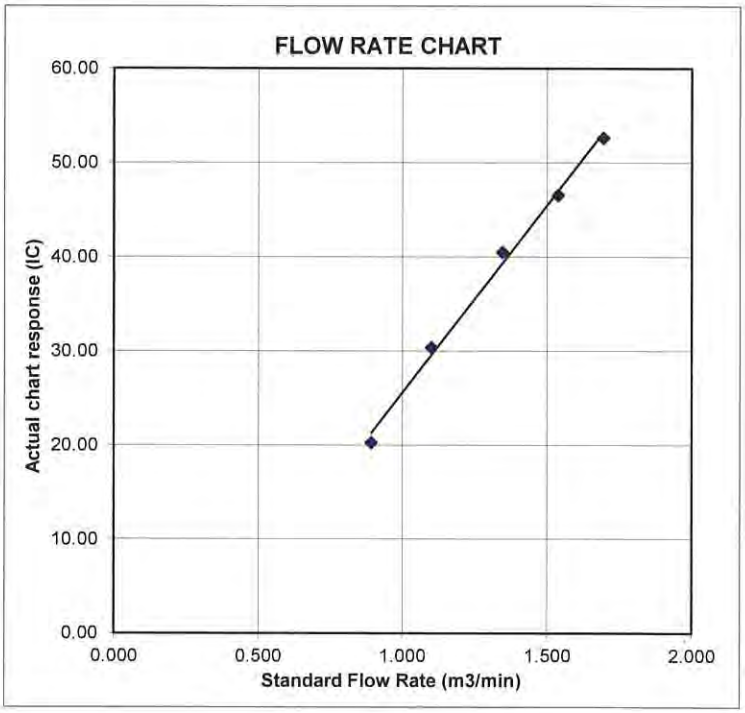
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER	: **HK1825891**
CLIENT	: ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING		
ADDRESS	: RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG	SUB-BATCH	: 1
		DATE RECEIVED	: 12-APR-2018
		DATE OF ISSUE	: 19-APR-2018
PROJECT	: ----	NO. OF SAMPLES	: 1
		CLIENT ORDER	: ----

General Comments

- Sample(s) were received in ambient condition.
- Sample(s) analysed and reported on an as received basis.
- Calibration was subcontracted to and analysed by Action United Enviro Services.

Signatories

This document has been signed by those names that appear on this report and are the authorised signatories

Signatories	*Position*
Richard Fung	General Manager

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

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

ALS Technichem (HK) Pty Ltd
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Tel. +852 2610 1044 Fax. +852 2610 2021 www.alsglobal.com

WORK ORDER	: HK1825891
SUB-BATCH	: 1
CLIENT	: ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING
PROJECT	: ----

ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK1825891-001	S/N: 456659	Equipments	12-Apr-2018	S/N: 456659

Equipment Verification Report (TSP)

Equipment Calibrated:

Type:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	456659
Equipment Ref:	EQ116
Job Order	HK1825891

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 018
Last Calibration Date:	27 February 2018

Equipment Verification Results:

Calibration Date: 12 & 13 March 2018

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m^3 (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr07min	9:50 ~ 11:57	19.6	1019.0	0.073	4313	34.1
2hr14min	12:05 ~ 14:19	19.6	1019.0	0.075	4413	32.8
2hr17min	9:50 ~ 12:07	20.9	1016.7	0.075	4906	35.7

Sensitivity Adjustment Scale Setting (Before Calibration) 726 (CPM)

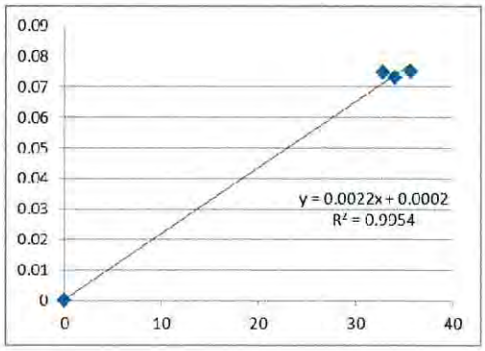
Sensitivity Adjustment Scale Setting (After Calibration) 724 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0022

Correlation Coefficient (R) 0.9977

Date of Issue 15 March 2018



Remarks:

1. **Strong** Correlation (R>0.8)
2. Factor 0.0022 should be apply for TSP monitoring

*If R<0.5, repair or re-verification is required for the equipment

Operator : Martin Li Signature : Date : 15 March 2018

QC Reviewer : Ben Tam Signature : Date : 15 March 2018

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration:	27-Feb-18
Location ID :	Calibration Room	Next Calibration Date:	27-May-18

CONDITIONS

Sea Level Pressure (hPa)	1017.3	Corrected Pressure (mm Hg)	762.975
Temperature (°C)	19.1	Temperature (K)	292

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11965
Model->	5025A	Qstd Intercept ->	-0.02696
Calibration Date->	28-Feb-17	Expiry Date->	28-Feb-18

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.2	6.2	12.4	1.694	52	52.63	Slope = 39.8525
13	5.1	5.1	10.2	1.538	46	46.55	Intercept = -14.3322
10	3.9	3.9	7.8	1.346	40	40.48	Corr. coeff. = 0.9974
8	2.6	2.6	5.2	1.101	30	30.36	
5	1.7	1.7	3.4	0.893	20	20.24	

Calculations :

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

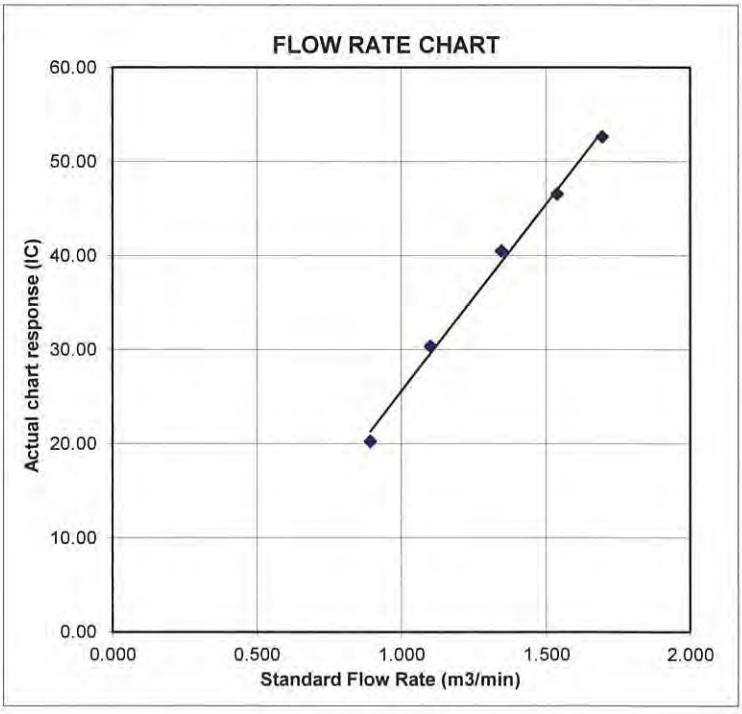
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart respones
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER	: **HK1825890**
CLIENT	: ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING		
ADDRESS	: RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG	SUB-BATCH	: 1
		DATE RECEIVED	: 12-APR-2018
		DATE OF ISSUE	: 19-APR-2018
PROJECT	: ----	NO. OF SAMPLES	: 1
		CLIENT ORDER	: ----

General Comments

- Sample(s) were received in ambient condition.
- Sample(s) analysed and reported on an as received basis.
- Calibration was subcontracted to and analysed by Action United Enviro Services.

Signatories

This document has been signed by those names that appear on this report and are the authorised signatories

Signatories	*Position*
Richard Fung	General Manager

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

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

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Tel. +852 2610 1044 Fax. +852 2610 2021 www.alsglobal.com

WORK ORDER	: HK1825890
SUB-BATCH	: 1
CLIENT	: ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING
PROJECT	: ----

ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK1825890-001	S/N: 456658	Equipments	12-Apr-2018	S/N: 456658

Equipment Verification Report (TSP)

Equipment Calibrated:

Type:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	456658
Equipment Ref:	EQ115
Job Order	HK1825890

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 018
Last Calibration Date:	27 February 2018

Equipment Verification Results:

Calibration Date: 12 & 13 March 2018

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m^3 (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr07min	9:50 ~ 11:57	19.6	1019.0	0.073	4333	34.2
2hr14min	12:05 ~ 14:19	19.6	1019.0	0.075	4469	33.3
2hr17min	9:50 ~ 12:07	20.9	1016.7	0.075	4912	35.7

Sensitivity Adjustment Scale Setting (Before Calibration) 705 (CPM)

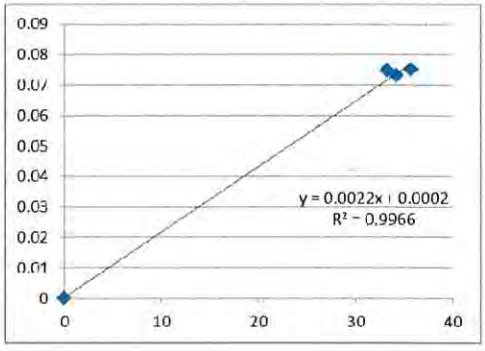
Sensitivity Adjustment Scale Setting (After Calibration) 705 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0022

Correlation Coefficient (R) 0.9983

Date of Issue 15 March 2018



Remarks:

1. **Strong** Correlation (R>0.8)
2. Factor 0.0022 should be apply for TSP monitoring

*If R<0.5, repair or re-verification is required for the equipment

Operator : Martin Li Signature : Date : 15 March 2018

QC Reviewer : Ben Tam Signature : Date : 15 March 2018

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration:	27-Feb-18
Location ID :	Calibration Room	Next Calibration Date:	27-May-18

CONDITIONS

Sea Level Pressure (hPa)	1017.3	Corrected Pressure (mm Hg)	762.975
Temperature (°C)	19.1	Temperature (K)	292

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11965
Model->	5025A	Qstd Intercept ->	-0.02696
Calibration Date->	28-Feb-17	Expiry Date->	28-Feb-18

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.2	6.2	12.4	1.694	52	52.63	Slope = 39.8525
13	5.1	5.1	10.2	1.538	46	46.55	Intercept = -14.3322
10	3.9	3.9	7.8	1.346	40	40.48	Corr. coeff. = 0.9974
8	2.6	2.6	5.2	1.101	30	30.36	
5	1.7	1.7	3.4	0.893	20	20.24	

Calculations :

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

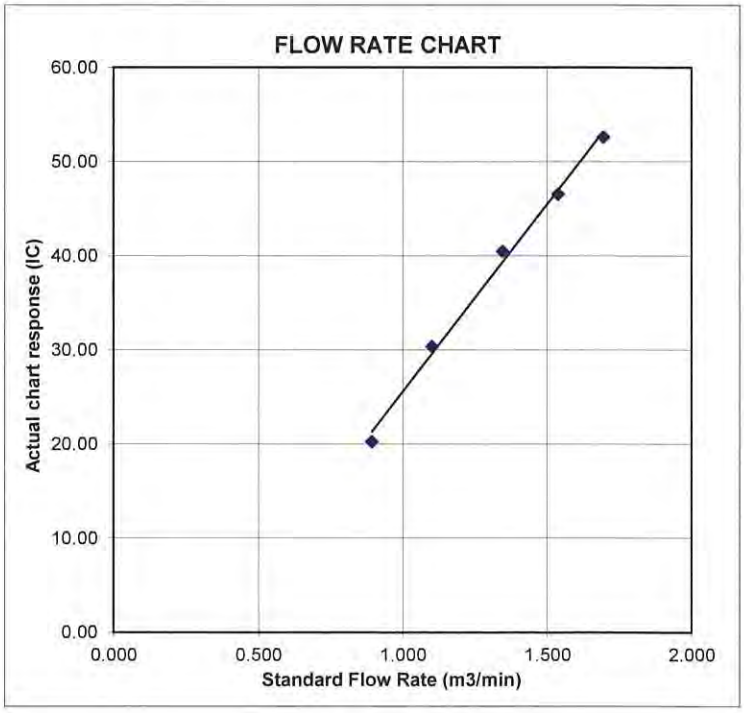
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart respones
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER	: **HK1825893**
CLIENT	: ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING		
ADDRESS	: RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG	SUB-BATCH	: 1
		DATE RECEIVED	: 12-APR-2018
		DATE OF ISSUE	: 19-APR-2018
PROJECT	: ----	NO. OF SAMPLES	: 1
		CLIENT ORDER	: ----

General Comments

- Sample(s) were received in ambient condition.
- Sample(s) analysed and reported on an as received basis.
- Calibration was subcontracted to and analysed by Action United Enviro Services.

Signatories

This document has been signed by those names that appear on this report and are the authorised signatories

Signatories	*Position*
P.p Richard Fung	General Manager

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

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

ALS Technichem (HK) Pty Ltd
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Tel. +852 2610 1044 Fax. +852 2610 2021 www.alsglobal.com

WORK ORDER	: HK1825893
SUB-BATCH	: 1
CLIENT	: ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING
PROJECT	: ----

ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK1825893-001	S/N: 456662	Equipments	17-Apr-2018	S/N: 456662

Equipment Verification Report (TSP)

Equipment Calibrated:

Type:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	456662
Equipment Ref:	EQ118
Job Order	HK1825893

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 018
Last Calibration Date:	27 February 2018

Equipment Verification Results:

Calibration Date: 12 & 13 March 2018

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr07min	9:50 ~ 11:57	19.6	1019.0	0.073	4108	32.4
2hr14min	12:05 ~ 14:19	19.6	1019.0	0.075	4532	33.7
2hr17min	9:50 ~ 12:07	20.9	1016.7	0.075	5016	36.5

Sensitivity Adjustment Scale Setting (Before Calibration) 591 (CPM)

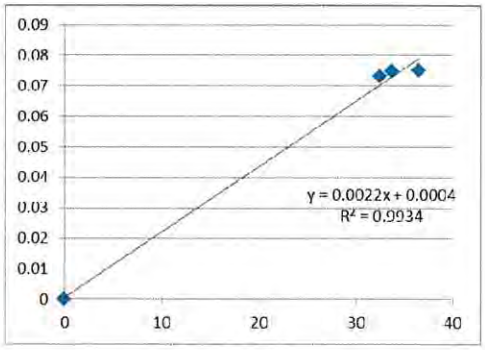
Sensitivity Adjustment Scale Setting (After Calibration) 591 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0022

Correlation Coefficient (R) 0.9967

Date of Issue 15 March 2018



Remarks:

1. **Strong** Correlation (R>0.8)
2. Factor 0.0022 should be apply for TSP monitoring

*If R<0.5, repair or re-verification is required for the equipment

Operator : Martin Li Signature : Date : 15 March 2018

QC Reviewer : Ben Tam Signature : Date : 15 March 2018

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration:	27-Feb-18
Location ID :	Calibration Room	Next Calibration Date:	27-May-18

CONDITIONS

Sea Level Pressure (hPa)	1017.3	Corrected Pressure (mm Hg)	762.975
Temperature (°C)	19.1	Temperature (K)	292

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11965
Model->	5025A	Qstd Intercept ->	-0.02696
Calibration Date->	28-Feb-17	Expiry Date->	28-Feb-18

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.2	6.2	12.4	1.694	52	52.63	Slope = 39.8525
13	5.1	5.1	10.2	1.538	46	46.55	Intercept = -14.3322
10	3.9	3.9	7.8	1.346	40	40.48	Corr. coeff. = 0.9974
8	2.6	2.6	5.2	1.101	30	30.36	
5	1.7	1.7	3.4	0.893	20	20.24	

Calculations :

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

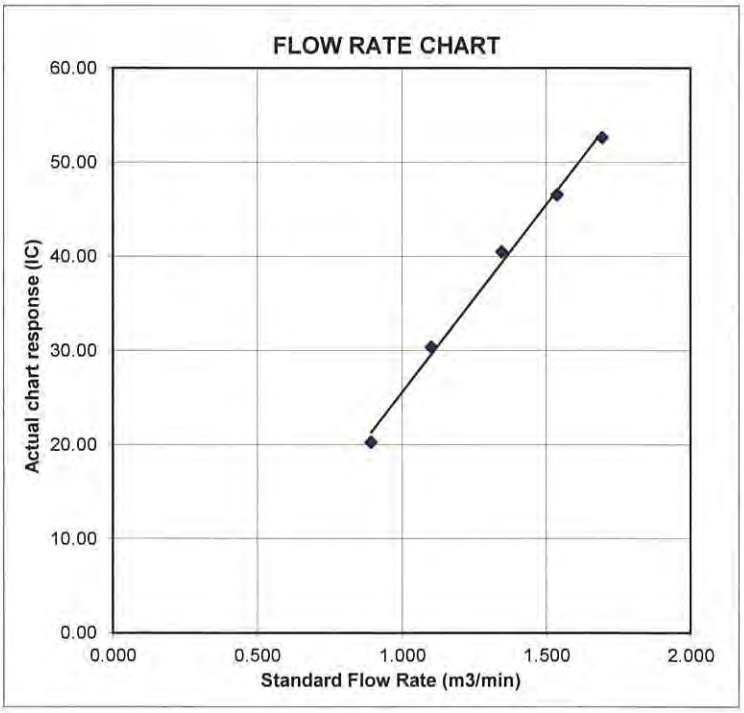
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart respones
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



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

Certificate of Calibration
校正證書

Certificate No. : C183086
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC18-0867) Date of Receipt / 收件日期 : 29 May 2018

Description / 儀器名稱 : Integrating Sound Level Meter (EQ009)
Manufacturer / 製造商 : Brüel & Kjær
Model No. / 型號 : 2238
Serial No. / 編號 : 2285722
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 10 June 2018

TEST RESULTS / 測試結果

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

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

Tested By 測試 : K C Lee
Engineer

Certified By 核證 : H C Chan
Engineer

Date of Issue 簽發日期 : 11 June 2018

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

Certificate of Calibration
校正證書

Certificate No. : C183086
證書編號

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

2. Self-calibration using laboratory acoustic calibrator was performed before the test from 6.1.1.2 to 6.4.

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

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C180024
CL281	Multifunction Acoustic Calibrator	PA160023

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Self-calibration

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

6.1.1.2 After Self-calibration

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L_{AFP}	A	F	94.00	1	94.0	± 0.7

6.1.2 Linearity

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

IEC 60651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

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

Certificate of Calibration
校正證書

Certificate No. : C183086
證書編號

6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L_{AFP}	A	F	94.00	1	94.0	Ref.
	L_{ASP}		S			94.1	± 0.1
	L_{AIP}		I			94.1	± 0.1

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
30 - 110	L_{AFP}	A	F	106.0	Continuous	106.0	Ref.
	L_{AFMax}				200 ms	104.9	-1.0 ± 1.0
	L_{ASP}		S		Continuous	106.0	Ref.
	L_{ASMax}				500 ms	102.0	-4.1 ± 1.0

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L_{AFP}	A	F	94.00	31.5 Hz	54.5	-39.4 ± 1.5
					63 Hz	67.8	-26.2 ± 1.5
					125 Hz	77.8	-16.1 ± 1.0
					250 Hz	85.3	-8.6 ± 1.0
					500 Hz	90.8	-3.2 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	95.2	+1.2 ± 1.0
					4 kHz	95.0	+1.0 ± 1.0
					8 kHz	92.8	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.7	-4.3 (+3.0 ; -6.0)

Certificate of Calibration
校正證書

Certificate No. : C183086
證書編號

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L_{CFP}	C	F	94.00	31.5 Hz	90.9	-3.0 ± 1.5
					63 Hz	93.1	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.0
					250 Hz	94.0	0.0 ± 1.0
					500 Hz	94.0	0.0 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	93.8	-0.2 ± 1.0
					4 kHz	93.1	-0.8 ± 1.0
					8 kHz	90.9	-3.0 (+1.5 ; -3.0)
					12.5 kHz	87.7	-6.2 (+3.0 ; -6.0)

6.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Integrating Time	Frequency (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)		
30 - 110	L_{Aeq}	A	10 sec.	4	1	1/10	110.0	100	99.9	± 0.5
						$1/10^2$		90	90.0	± 0.5
			60 sec.			$1/10^3$		80	79.0	± 1.0
			5 min.			$1/10^4$		70	69.1	± 1.0

Remarks : - UUT Microphone Model No. : 4188 & S/N : 2658547

- Mfr's Spec. : IEC 60651 Type 1 & IEC 60804 Type 1

- Uncertainties of Applied Value :

94 dB	: 31.5 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	12.5 kHz	: ± 0.70 dB
104 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
Burst equivalent level		: ± 0.2 dB (Ref. 110 dB continuous sound level)

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

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

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

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

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

Certificate of Calibration
校正證書

Certificate No. : C182473
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC18-0867) Date of Receipt / 收件日期 : 26 April 2018

Description / 儀器名稱 : Sound Level Meter (EQ015)
Manufacturer / 製造商 : Rion
Model No. / 型號 : NL-52
Serial No. / 編號 : 00142581
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 12 May 2018

TEST RESULTS / 測試結果

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

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

Tested By 測試 : H T Wong
Technical Officer

Certified By 核證 : K C Lee
Engineer

Date of Issue 簽發日期 : 15 May 2018

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

Certificate of Calibration
校正證書

Certificate No. : C182473
證書編號

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

2. Self-calibration was performed before the test.

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

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C180024
CL281	Multifunction Acoustic Calibrator	PA160023

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L_A	A	Fast	94.00	1	94.3	± 1.1

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 130	L_A	A	Fast	94.00	1	94.3 (Ref.)
				104.00		104.3
				114.00		114.3

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

6.2 Time Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L_A	A	Fast	94.00	1	94.3	Ref.
			Slow			94.3	± 0.3

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

Certificate No. : C182473
證書編號

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L_A	A	Fast	94.00	63 Hz	68.0	-26.2 ± 1.5
					125 Hz	78.1	-16.1 ± 1.5
					250 Hz	85.6	-8.6 ± 1.4
					500 Hz	91.0	-3.2 ± 1.4
					1 kHz	94.3	Ref.
					2 kHz	95.5	+1.2 ± 1.6
					4 kHz	95.3	+1.0 ± 1.6
					8 kHz	93.3	-1.1 (+2.1 ; -3.1)
					12.5 kHz	89.9	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L_C	C	Fast	94.00	63 Hz	93.5	-0.8 ± 1.5
					125 Hz	94.1	-0.2 ± 1.5
					250 Hz	94.3	0.0 ± 1.4
					500 Hz	94.3	0.0 ± 1.4
					1 kHz	94.3	Ref.
					2 kHz	94.1	-0.2 ± 1.6
					4 kHz	93.5	-0.8 ± 1.6
					8 kHz	91.4	-3.0 (+2.1 ; -3.1)
					12.5 kHz	87.9	-6.2 (+3.0 ; -6.0)

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 06015

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

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

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

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

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

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

Certificate of Calibration
校正證書

Certificate No. : C183083
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC18-0867) Date of Receipt / 收件日期 : 28 May 2018

Description / 儀器名稱 : Sound Level Meter (EQ068)
Manufacturer / 製造商 : Rion
Model No. / 型號 : NL-31
Serial No. / 編號 : 00410247
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 9 June 2018

TEST RESULTS / 測試結果

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

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

Tested By 測試 : K C Lee
Engineer

Certified By 核證 : H C Chan
Engineer

Date of Issue 簽發日期 : 11 June 2018

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

Certificate No. : C183083
證書編號

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

2. Self-calibration was performed before the test.

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

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C180024
CL281	Multifunction Acoustic Calibrator	PA160023

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L_A	A	Fast	94.00	1	93.7	± 1.1

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 120	L_A	A	Fast	94.00	1	93.7 (Ref.)
				104.00		103.7
				114.00		113.7

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

6.2 Time Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L_A	A	Fast	94.00	1	93.7	Ref.
			Slow			93.7	± 0.3

Certificate of Calibration
校正證書

Certificate No. : C183083
證書編號

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L_A	A	Fast	94.00	63 Hz	67.3	-26.2 ± 1.5
					125 Hz	77.4	-16.1 ± 1.5
					250 Hz	84.9	-8.6 ± 1.4
					500 Hz	90.4	-3.2 ± 1.4
					1 kHz	93.7	Ref.
					2 kHz	94.9	+1.2 ± 1.6
					4 kHz	94.8	+1.0 ± 1.6
					8 kHz	92.6	-1.1 (+2.1 ; -3.1)
					12.5 kHz	89.7	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L_C	C	Fast	94.00	63 Hz	92.8	-0.8 ± 1.5
					125 Hz	93.5	-0.2 ± 1.5
					250 Hz	93.6	0.0 ± 1.4
					500 Hz	93.7	0.0 ± 1.4
					1 kHz	93.7	Ref.
					2 kHz	93.6	-0.2 ± 1.6
					4 kHz	93.0	-0.8 ± 1.6
					8 kHz	90.7	-3.0 (+2.1 ; -3.1)
					12.5 kHz	87.9	-6.2 (+3.0 ; -6.0)

Certificate of Calibration
校正證書

Certificate No. : C183083
證書編號

Remarks : - UUT Microphone Model No. : UC-53A & S/N : 319841

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

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

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

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

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

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

Certificate of Calibration
校正證書

Certificate No. : C182470
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC18-0867) Date of Receipt / 收件日期 : 26 April 2018

Description / 儀器名稱 : Acoustical Calibrator (EQ082)
Manufacturer / 製造商 : Brüel & Kjær
Model No. / 型號 : 4231
Serial No. / 編號 : 2713428
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 12 May 2018

TEST RESULTS / 測試結果

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

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

Tested By 測試 : H T Wong
Technical Officer

Certified By 核證 : K C Lee
Engineer

Date of Issue 簽發日期 : 15 May 2018

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 — 校正及檢測實驗所
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輝創工程有限公司
Sun Creation Engineering Limited
Calibration & Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C182470
證書編號

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

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

3. Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C173864
CL281	Multifunction Acoustic Calibrator	PA160023
TST150A	Measuring Amplifier	C181288

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.0	± 0.2	± 0.2
114 dB, 1 kHz	114.1		

5.2 Frequency Accuracy

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

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

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

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

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

Certificate of Calibration
校正證書

Certificate No. : C183261
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC18-0867) Date of Receipt / 收件日期 : 12 June 2018

Description / 儀器名稱	:	Sound Calibrator (EQ086)
Manufacturer / 製造商	:	Rion
Model No. / 型號	:	NC-74
Serial No. / 編號	:	34657230
Supplied By / 委託者	:	Action-United Environmental Services and Consulting Unit A, 20/F., Gold King Industrial Building, 35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 18 June 2018

TEST RESULTS / 測試結果

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

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

Tested By 測試 : H T Wong, Technical Officer

Certified By 核證 : K C Lee, Engineer

Date of Issue 簽發日期 : 20 June 2018

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
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c/o 香港新界屯門興安里一號四樓
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輝創工程有限公司
Sun Creation Engineering Limited
Calibration & Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C183261
證書編號

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

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

3. Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C173864
CL281	Multifunction Acoustic Calibrator	PA160023
TST150A	Measuring Amplifier	C181288

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.1	± 0.3	± 0.2

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	1.002	1 kHz ± 1 %	± 1

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

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

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Sun Creation Engineering Limited – Calibration & Testing Laboratory
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輝創工程有限公司 — 校正及檢測實驗所
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Website : www.fugro.com

MateriaLab

Report No. : 142626WA181659(2)

Report on Calibration of YSI 69201V2-M Multi-parameter Water Quality Meter

Information Supplied by Client

Client	:	MateriaLab Consultants Limited
Client's address	:	Rm. 723-726, 7/F, Profit Industrial Building, No. 1-15, Kwai Fung Crescent, Kwai Chung, N.T.
Project	:	CV/2013/04 – Providing Sufficient Water Depth for Kwai Tsing Container Basin and its Approach Channel
Sample description	:	One YSI 69201V2-M Multi-parameter Water Quality Meter
Client sample ID	:	Serial No. 14A102907
Test required	:	Calibration of the YSI 69201V2-M Multi-parameter Water Quality Meter

Laboratory Information

Lab. sample ID	:	WA181659/3
Date sample received	:	29/08/2018
Date of calibration	:	14/09/2018
Next calibration date	:	13/12/2018
Test method used	:	In-house comparison method

Note : This report refers only to the sample(s) tested.

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre,
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Tel : +852 2450 8233
Fax : +852 2450 6138
E-mail : matlab@fugro.com
Website : www.fugro.com

MateriaLab

Report No. : 142626WA181659(2)

Results :

A. pH calibration

pH reading at 22°C for Q.C. solution(6.86) and at 22°C for Q.C. solution(9.18)		
Theoretical	Measured	Deviation
9.18	9.14	-0.04
6.86	6.84	-0.02

B. Salinity calibration

Salinity, ppt			
Theoretical	Measured	Deviation	Maximum acceptable Deviation
10	10.16	+0.16	± 0.5
20	20.36	+0.36	± 1.0
30	29.71	-0.29	± 1.5
40	40.12	+0.12	± 2.0

C. Dissolved Oxygen calibration

Trial No.	Dissolved oxygen content, mg/L	
	By Titration	By D.O. meter
1	7.96	8.04
2	7.96	8.06
3	7.96	8.08
Average	7.96	8.06

Differences of D.O. Content between Wrinkler Titration and D.O. meter should be less than 0.4 mg/L

Certified by : _____
Approved Signatory : HO Kin Man, John
Assistant General Manager – Laboratories

Date : 26/9/2018

Note : This report refers only to the sample(s) tested.

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Website : www.fugro.com

MateriaLab

Report No. : 142626WA181659(2)

Results :

D. Temperature calibration

Thermometer reading, °C	Meter reading, °C
24.3	23.55

E. Turbidity calibration

Turbidity, N.T.U.			
Theoretical	Measured	Deviation	Maximum acceptable Deviation
0	-	-	± 0.5
4	-	-	± 0.6
8	-	-	± 0.8
40	-	-	± 3.0
80	-	-	± 4.0

Certified by : _____
Approved Signatory : HO Kin Man, John
Assistant General Manager – Laboratories

Date : 26/9/2018

** End of Report **

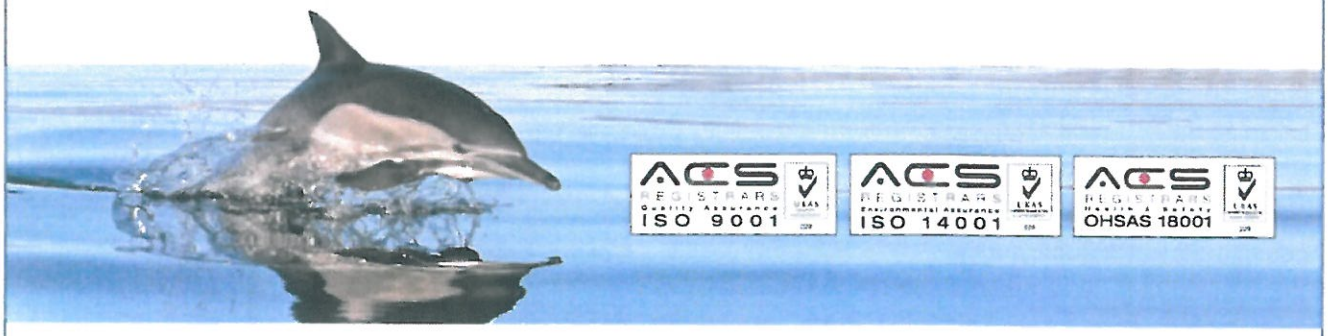
Note : This report refers only to the sample(s) tested.

VALEPORT

This document certifies that the instrument detailed below has been calibrated according to Valeport Limited's Standard Procedures, using equipment with calibrations traceable to UKAS or National Standards.

Calibration Certificate Number:	55566
Instrument Type:	106CM
Instrument Serial Number:	67738
Calibrated By:	P.HARRINGTON
Date:	05/09/2018
Signed:	

Full details of the results from the calibration procedure applied to each fitted sensor are available, on request, via email. This summary certificate should be kept with the instrument.



Valeport Limited St. Peter's Quay Totnes Devon TQ9 5EW UK
+44 (0) 1803 869292 sales@valeport.co.uk www.valeport.co.uk

Hong Kong Accreditation Service
香港認可處

Certificate of Accreditation
認可證書

This is to certify that
特此證明

FUGRO TECHNICAL SERVICES LIMITED
輝固技術服務有限公司

Fugro Development Centre, 5 Lok Yi Street, Tai Lam, Tuen Mun, New Territories, Hong Kong
香港新界屯門大欖樂怡街五號輝固發展中心

has been accepted by the HKAS Executive, on the recommendation of the Accreditation Advisory Board, as a
在認可諮詢委員會的建議下獲香港認可處執行機關接受為

HOKLAS Accredited Laboratory
「香港實驗所認可計劃」認可實驗所

This laboratory meets the requirements of ISO/IEC 17025:2005 and it has been accredited for performing specific tests or calibrations as listed in the scope of accreditation within the test category of

Environmental Testing

此實驗所符合ISO/IEC 17025:2005所訂的要求
並獲認可進行載於認可範圍內下述測試類別中的指定測試或校正工作

環境測試

This accreditation to ISO/IEC 17025:2005 demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (see joint IAF-ILAC-ISO Communiqué).
此項 ISO/IEC 17025:2005 的認可資格證明此實驗所具備指定範疇內所須的技術能力並實施一套實驗所質量管理體系(見國際認可論壇、國際實驗所認可合作組織及國際標準化組織的聯合公報)。

The common seal of the Hong Kong Accreditation Service is affixed hereto by the authority of the HKAS Executive
現經香港認可處執行機關授權在此蓋上香港認可處的印章

WONG Wang-wah, Executive Administrator
執行幹事 黃宏華
Issue Date : 20 December 2016
簽發日期：二零一六年十二月二十日

Registration Number : HOKLAS 015
註冊號碼：

Date of First Registration : 23 March 1989
首次註冊日期：一九八九年三月二十三日

This certificate is issued subject to the terms and conditions laid down by HKAS
本證書按照香港認可處訂立的條款及條件發出

L001526

Appendix F

Event and Action Plan

Event and Action Plan for Air Quality

EVENT	ACTION			
	ET	IEC	ER	Contractor
Action Level Exceedance for One Sample	1. Identify source(s) of impact; 2. Inform the IEC and the ER; 3. Repeat measurement to confirm findings; 4. Carry out investigation for the cause of exceedance, if the exceedance is project-related, increase monitoring frequency to daily	1. Check monitoring data submitted by ET; 2. Check Contractor's working method	1. Notify Contractor	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate
Action Level Exceedance for Two or More Consecutive Samples	1. Identify source(s) of impact; 2. Inform the IEC and ER; 3. Repeat measurement to confirm findings; 4. Carry out investigation for the cause of exceedance, if the exceedance is project-related, increase monitoring frequency to daily 5. Discuss with IEC and Contractor on remedial action required; 6. If exceedance continues, arrange meeting with IEC and ER; 7. If exceedance stops, cease additional monitoring	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented	1. Submit proposals for remedial actions to IEC within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate
Limit Level Exceedance for One Sample	1. Identify source(s) of impact; 2. Inform the EPD and the ER; 3. Repeat measurement to confirm findings; 4. Carry out investigation for the cause of exceedance, if the exceedance is project-related, increase monitoring frequency to daily	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if

EVENT	ACTION			
	ET	**IEC**	**ER**	**Contractor**
	5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of results	remedial measures; 5. Supervise implementation of remedial measures		appropriate
Limit Level Exceedance for Two or More Consecutive Samples	1. Notify IEC, ER, Contractor and EPD; 2. Identify source(s) of impact; 3. Repeat measurement to confirm findings; 4. Carry out investigation for the cause of exceedance, if the exceedance is project-related, increase monitoring frequency to daily 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial action and keep IEC, EPD and ER informed of the result; 8. If exceedance stop, cease additional monitoring	1. Discuss amongst ER, ET and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated

Event and Action Plan for Construction Noise

EXCEEDANCE	ACTION			
	ET	**IEC**	**ER**	**Contractor**
Action Level	1. Notify IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 5. Increase monitoring frequency to check mitigation effectiveness	1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Supervise the implementation of remedial measures	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures are properly implemented	1. Submit noise mitigation proposals to IEC; 2. Implement noise mitigation proposals
Limit Level	1. Notify IEC, ER, EPD and Contractor; 2. Identify source; 3. Carry out investigation; 4. Report the results of investigation to the IEC and Contractor; 5. Discuss with the Contractor and formulate remedial measures; 6. Increase monitoring frequency to check mitigation effectiveness	1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Supervise the implementation of remedial measures	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures are properly implemented	1. Submit noise mitigation proposals to IEC; 2. Implement noise mitigation proposals

Event and Action Plan for Water Quality

EVENT	ACTION			
	ET	IEC	ER	Contractor
Action Level being exceeded by one sampling day	1. Repeat *in-situ* measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform the IEC and the Contractor; 4. Check monitoring data, all plant, equipment and the Contractor's working methods; 5. Discuss mitigation measures with the IEC and the Contractor;	1. Discuss with the ET and the Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by the Contractor; 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with the IEC on the proposed mitigation measures; 2. Make agreement on the mitigation measures to be implemented.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with the ET and the IEC and propose mitigation measures to the IEC and ER; 6. Implement the agreed mitigation measures.
Action Level being exceeded by more than one consecutive sampling days	1. Repeat *in-situ* measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform the IEC and the Contractor; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with the IEC and the Contractor; 6. Ensure mitigation measures are implemented;	1. Discuss with the ET and the Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by the Contractor accordingly; 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with the IEC on the proposed mitigation measures; 2. Make agreement on the mitigation measures to be implemented; 3. Assess effectiveness of the implemented mitigation measures.	1. Inform the ER and confirm notification of the noncompliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with the ET and the IEC and propose mitigation measures to the IEC and ER within 3 working days; 6. Implement the agreed mitigation measures.
Limit Level being exceeded by one consecutive sampling day	1. Repeat *in-situ* measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform the IEC, the Contractor and the EPD; 4. Check monitoring data, all plant, equipment and the Contractor's working methods; 5. Discuss mitigation measures with	1. Discuss with the ET / Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by the Contractor and advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with the IEC, the ET and the Contractor on the proposed mitigation measures; 2. Request the Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented;	1. Inform the ER and confirm notification of the noncompliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with the ET, the IEC and the ER and propose mitigation

EVENT	ACTION			
	ET	**IEC**	**ER**	**Contractor**
	the IEC, the ER and the Contractor; 6. Ensure mitigation measures are implemented.		4. Assess the effectiveness of the implemented mitigation measures.	measures to the IEC and the ER within 3 working days; 6. Implement the agreed mitigation measures.
Limit Level being exceeded by more than one consecutive sampling days	1. Repeat *in-situ* measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform the IEC, the Contractor and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with the IEC, the ER and the Contractor; 6. Ensure mitigation measures are implemented;	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by the Contractor and advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with the IEC, the ET and the Contractor on the proposed mitigation measures; 2. Request Contractor to critically review working methods; 3. Make agreement on the mitigation measures to be implemented; 4. Assess effectiveness of the implemented mitigation measures; 5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit Level.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Discuss with the ET, the IEC and the ER and propose mitigation measures to the IEC and the ER within 3 working days; 6. Implement the agreed mitigation measures; 7. As directed by the ER, slow down or stop all or part of the construction activities.

Appendix G

Impact Monitoring Schedule

Impact Monitoring Schedule for the Reporting Period

Date		Noise Monitoring (0700 – 1900)	Air Quality Monitoring		Water Quality*
			1-hour TSP	24-hour TSP	
Thu	1-Nov-18				
Fri	2-Nov-18			✓	✓
Sat	3-Nov-18				
Sun	4-Nov-18				
Mon	5-Nov-18	✓	✓		✓
Tue	6-Nov-18				
Wed	7-Nov-18				✓
Thu	8-Nov-18			✓	
Fri	9-Nov-18				✓
Sat	10-Nov-18		✓		
Sun	11-Nov-18				
Mon	12-Nov-18				✓
Tue	13-Nov-18				
Wed	14-Nov-18			✓	✓
Thu	15-Nov-18				
Fri	16-Nov-18	✓	✓		✓
Sat	17-Nov-18				
Sun	18-Nov-18				
Mon	19-Nov-18				✓
Tue	20-Nov-18			✓	
Wed	21-Nov-18				✓
Thu	22-Nov-18	✓	✓		
Fri	23-Nov-18				✓
Sat	24-Nov-18				
Sun	25-Nov-18				
Mon	26-Nov-18			✓ **(A4)**	✓
Tue	27-Nov-18				
Wed	28-Nov-18	✓	✓	✓ **(A7)**	✓
Thu	29-Nov-18				
Fri	30-Nov-18				✓

* Water Quality Monitoring Schedule was provided by Fugro Technical Services Limited

\# Power failure was occurred at A7 on 26 November 2018 and make up for lost samples was taken on 28 November 2018.

✓	Monitoring Day
	Sunday or Public Holiday

Marine Water Quality Monitoring Schedule

Impact Monitoring Schedule (November 2018)

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2 WQM Mid-Ebb(06:30-09:30) Mid-Flood(13:26-16:26)	3
4	5 WQM Mid-Ebb (09:31-12:31) Mid-Flood(15:49-18:49)	6	7 WQM Mid-Flood(06:29-08:24) Mid-Ebb (11:04-14:04)	8	9 WQM Mid-Flood(06:27-09:27) Mid-Ebb (12:23-15:23)	10
11	12 WQM Mid-Flood(08:37-11:37) Mid-Ebb (13:47-16:47)	13	14 WQM# Mid-Ebb (06:40-08:10) Mid-Flood(09:40-12:40)	15	16 WQM Mid-Ebb (06:29-08:29) Mid-Flood(13:24-16:24)	17
18	19 WQM Mid-Ebb (08:09-11:09) Mid-Flood(15:09-18:09)	20	21 WQM Mid-Ebb (09:56-12:56) Mid-Flood(16:09-19:09)	22	23 WQM Mid-Flood(07:01-08:50) Mid-Ebb (11:19-14:19)	24
25	26 WQM Mid-Flood(07:46-10:46) Mid-Ebb (12:55-15:55)	27	28 WQM Mid-Flood(09:32-12:32) Mid-Ebb (14:31-17:31)	29	30 WQM Mid-Ebb (06:00-7:55) Mid-Flood(11:44-14:44)	

Remarks

1. Monitoring Locations – G1, R1, R2, I1, I2, I3, W1, M1 and FCZ1
2. Actual monitoring will be subjected to change due to any safety concern or adverse weather condition

(*) The tidal range for the flood and ebb tide is less than 0.5m.
(#) The water quality sampling will be undertaken within a 3-hour window of 1.5 hour before and 1.5 hour after mid flood and mid ebb.

Impact Monitoring Schedule for next Reporting Period

Date		Noise Monitoring (0700 – 1900)	Air Quality Monitoring		Water Quality*
			1-hour TSP	24-hour TSP	
Sat	1-Dec-18			✓	
Sun	2-Dec-18				
Mon	3-Dec-18				✓
Tue	4-Dec-18	✓	✓		
Wed	5-Dec-18				✓
Thu	6-Dec-18				
Fri	7-Dec-18			✓	✓
Sat	8-Dec-18				
Sun	9-Dec-18				
Mon	10-Dec-18	✓	✓		✓
Tue	11-Dec-18				
Wed	12-Dec-18				✓
Thu	13-Dec-18			✓	
Fri	14-Dec-18				✓
Sat	15-Dec-18		✓		
Sun	16-Dec-18				
Mon	17-Dec-18				✓
Tue	18-Dec-18				
Wed	19-Dec-18			✓	✓
Thu	20-Dec-18				
Fri	21-Dec-18	✓	✓		✓
Sat	22-Dec-18				
Sun	23-Dec-18				
Mon	24-Dec-18			✓	✓
Tue	25-Dec-18				
Wed	26-Dec-18				
Thu	27-Dec-18	✓	✓		✓
Fri	28-Dec-18				
Sat	29-Dec-18			✓	✓
Sun	30-Dec-18				
Mon	31-Dec-18				✓

* Water Quality Monitoring Schedule was provided by *Fugro Technical Services Limited*

✓	Monitoring Day
	Sunday or Public Holiday

Marine Water Quality Monitoring Schedule

Impact Monitoring Schedule (December 2018)

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3 WQM Mid-Ebb (08:09-11:09) Mid-Flood(14:30-17:30)	4	5 WQM Mid-Ebb (09:55-12:55) Mid-Flood(15:58-18:58)	6	7 WQM Mid-Flood(07:00-08:32) Mid-Ebb (11:21-14:21)	8
9	10 WQM Mid-Flood(07:38-10:38) Mid-Ebb (12:44-15:44)	11	12 WQM Mid-Flood(09:10-12:10) Mid-Ebb (14:15-17:15)	13	14 WQM Mid-Ebb (05:16-07:16) Mid-Flood(11:23-14:23)	15
16	17 WQM Mid-Flood(05:50-08:50) Mid-Ebb (13:23-14:23)	18	19 WQM Mid-Ebb (08:16-11:16) Mid-Flood(14:37-17:37)	20	21 WQM Mid-Ebb (10:01-13:01) Mid-Flood(16:00-19:00)	22
23	24 WQM Mid-Flood(06:48-09:48) Mid-Ebb (12:03-15:03)	25	26	27 WQM Mid-Flood(09:14-12:14) Mid-Ebb (14:37-17:37)	28	29 WQM Mid-Ebb (5:37-07:27) Mid-Flood(11:07-14:07)
30	31 WQM Mid-Ebb (06:32-09:32) Mid-Flood(12:58-15:58)					

Remarks

1. Monitoring Locations – G1, R1, R2, I1, I2, I3, W1, M1 and FCZ1
2. Actual monitoring will be subjected to change due to any safety concern or adverse weather condition

(*) The tidal range for the flood and ebb tide is less than 0.5m.
(#) The water quality sampling will be undertaken within a 3-hour window of 1.5 hour before and 1.5 hour after mid flood and mid ebb.

Appendix H

Database of Monitoring Result

24-hour TSP Monitoring Data

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED	24-Hr TSP (μg/m³)	ACTION LEVEL (μg/m³)	LIMIT LEVEL (μg/m³)
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m³/min)	(std m³)	INITIAL	FINAL	(g)			
A4 - No. 101 Lung Mei Tsuen																	
2-Nov-18	23233	13642.47	13666.47	1440.00	30	31	30.5	22.4	1015.5	1.20	1731	2.6488	2.7740	0.1252	72	142	260
8-Nov-18	23268	13666.47	13690.47	1440.00	29	30	29.5	23	1016.4	1.16	1671	2.6652	2.7385	0.0733	44	142	260
14-Nov-18	23236	13690.47	13715.00	1471.80	28	28	28.0	23.1	1017.4	1.10	1617	2.6478	2.7882	0.1404	87	142	260
20-Nov-18	23383	13715.00	13739.33	1459.80	31	32	31.5	20.8	1018.4	1.25	1824	2.7090	2.7494	0.0404	22	142	260
26-Nov-18	23348	13739.33	13763.65	1459.20	30	31	30.5	20.8	1018.4	1.21	1762	2.6759	2.7742	0.0983	56	142	260
A7 - Hong Kong Eco-Farm																	
2-Nov-18	23234	20132.89	20156.91	1441.20	26	27	26.5	22.4	1015.5	0.91	1305	2.6438	2.7240	0.0802	61	141	260
8-Nov-18	23269	20156.91	20180.52	1416.60	26	27	26.5	23	1016.4	0.91	1282	2.6594	2.7117	0.0523	41	141	260
14-Nov-18	23237	20180.52	20204.53	1440.60	27	28	27.5	22.2	1017.2	0.94	1354	2.6370	2.7135	0.0765	56	141	260
20-Nov-18	23293	20204.53	20228.53	1440.00	30	30	30.0	23.1	1017.4	1.02	1471	2.6646	2.7621	0.0975	66	141	260
28-Nov-18	23382	20228.53	20252.52	1439.40	30	30	30.0	20.8	1018.4	1.01	1455	2.7164	2.7662	0.0498	34	141	260

1-hour TSP Monitoring Data

Date	Start Time	End Time	1st reading	2nd reading	3rd reading	Action Level (μg/m³)	Limit Level (μg/m³)
A4 - No. 101 Lung Mei Tsuen							
5-Nov-18	9:31	12:31	47	49	50	275	500
10-Nov-18	9:47	12:47	35	39	44	275	500
16-Nov-18	9:47	12:47	45	46	50	275	500
22-Nov-18	13:14	16:14	52	43	45	275	500
28-Nov-18	13:10	16:10	33	37	38	275	500
A7 - Hong Kong Eco-Farm							
5-Nov-18	12:47	15:47	49	50	50	274	500
10-Nov-18	9:36	12:36	33	35	41	274	500
16-Nov-18	9:34	12:34	41	43	46	274	500
22-Nov-18	9:30	12:30	39	39	35	274	500
28-Nov-18	13:29	16:29	32	35	38	274	500

Construction Noise Monitoring Results, dB(A)

Date	Start Time	1st Leq_{5min}	L10	L90	2nd Leq_{5min}	L10	L90	3rd Leq_{5min}	L10	L90	4th Leq_{5min}	L10	L90	5th Leq_{5min}	L10	L90	6th Leq_{5min}	L10	L90	Leq30	façade correction	Limit Level (dB(A))
N1 - Village house - No. 165A Lung Mei																						
5-Nov-18	10:01	56.0	62.0	45.0	56.5	48.0	44.5	47.2	48.5	44.5	46.3	47.5	44.5	46.3	48.0	44.5	45.6	46.5	44.5	52	55	75
16-Nov-18	10:21	57.4	61.3	47.7	56.8	60.5	46.8	58.7	61.9	49.9	56.8	60.1	48.8	57.7	61.0	48.2	56.3	60.8	47.0	57	60	75
22-Nov-18	9:46	57.0	60.8	47.7	59.1	62.1	47.4	59.3	63.1	48.6	60.3	64.1	49.8	60.7	64.5	48.9	56.6	60.2	47.3	59	62	75
28-Nov-18	14:11	54.4	57.5	45.5	55.9	59.2	43.8	54.8	58.4	46.6	57.4	60.3	47.0	55.7	58.9	45.3	54.3	57.4	44.6	56	59	75
N2a - Village house - No. 101 Lung Mei																						
5-Nov-18	9:30	55.1	59.0	46.0	47.8	49.0	45.0	76.4	54.0	47.0	56.7	62.0	48.5	58.0	64.5	48.0	54.5	50.5	47.0	69	N/A	75
16-Nov-18	9:50	57.9	61.4	49.8	59.0	61.2	49.9	56.1	59.3	47.4	56.1	58.7	47.9	57.8	59.3	48.9	56.1	58.1	47.1	57	N/A	75
22-Nov-18	10:16	56.2	59.1	50.4	57.7	61.0	51.0	58.9	62.5	51.3	60.9	63.9	51.7	60.9	64.5	52.4	59.9	63.9	50.3	59	N/A	75
28-Nov-18	13:40	58.6	61.9	48.1	57.6	61.4	48.3	56.7	59.6	48.4	56.4	60.1	48.3	57.8	61.0	48.1	56.1	60.3	48.7	57	N/A	75
N3a - Village house - No. 66C Lo Tsz Tin																						
5-Nov-18	10:36	55.4	56.5	50.0	57.2	62.5	45.5	45.5	45.5	44.5	47.1	45.5	44.5	44.9	45.0	44.5	44.8	45.0	44.5	52	55	75
16-Nov-18	10:56	51.6	54.5	45.3	49.0	51.3	42.9	55.7	57.5	47.1	59.3	61.3	47.4	56.8	59.1	48.9	55.2	58.1	47.0	56	59	75
22-Nov-18	10:51	55.1	57.1	46.4	52.8	55.4	44.9	50.2	52.9	43.9	52.7	55.5	44.4	51.2	55.3	43.5	50.4	52.9	45.4	52	55	75
28-Nov-18	14:45	53.8	53.2	46.1	50.2	51.8	45.4	50.5	52.7	45.3	51.6	53.4	44.5	51.2	53.5	43.6	52.2	53.2	44.0	52	55	75
N4 - Village house - No. 79 Lo Tsz Tin																						
5-Nov-18	11:09	54.8	55.0	54.0	54.8	55.0	54.0	54.8	55.0	54.5	54.6	55.0	54.0	54.6	55.0	54.0	54.7	55.0	54.0	55	N/A	75
16-Nov-18	11:28	60.0	63.4	51.8	58.9	62.3	51.0	59.1	62.3	51.1	58.8	62.8	48.2	58.5	62.2	49.3	59.7	63.6	50.3	59	N/A	75
22-Nov-18	13:07	62.3	63.9	46.6	57.9	61.0	49.2	60.5	62.8	44.1	56.6	60.9	43.9	58.2	61.4	45.7	56.8	61.2	41.6	59	N/A	75
28-Nov-18	13:02	57.5	61.4	42.8	58.0	61.2	46.6	58.4	62.5	47.5	58.6	62.3	48.4	57.6	61.4	47.8	58.8	62.9	48.4	58	N/A	75

Remark:
Sound level meter set at N1 and N3a are made free-field measurement, façade correction (+3dB(A)) has added according to acoustical principles and EPD guidelines;

Contract No. CV/2012/05
Bathing Beach at Lung Mei, Tai Po

Impact Water Quality Monitoring Result

Sampling Date: 2-Nov-18
Weather: Fine
Sea Condition: Moderate

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Current Direction	Current Speed	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Chlorophyll-a
			East	North	m	m	degrees	m/s	℃	mg/L	%	NTU	ppt	unit	mg/L	µg/L
7:51	G1	ME	841483.9	835936.1	6.7	1.00	38	0.169	24.1	6.73	95.3	0.7	30.30	7.60	6	9.3
									24.1	6.72	95.2	0.7	30.33	7.59	3	8.2
						3.35			24.2	6.67	94.4	1.2	30.45	7.59	5	8.5
									24.2	6.65	94.2	1.2	30.42	7.59	4	8.5
						5.70			24.2	6.42	91.3	2.6	30.61	7.58	4	8.8
									24.2	6.41	91.2	2.6	30.62	7.58	3	8.3
8:08	R1	ME	842307.4	835718.4	7.7	1.00	349	0.133	24.2	6.88	97.9	0.4	30.69	7.61	6	6.3
									24.3	6.85	97.5	0.4	30.67	7.61	5	6.1
						3.85			24.5	6.45	92.4	0.8	30.73	7.58	4	5.8
									24.4	6.42	92.1	0.8	30.70	7.58	3	6.5
						6.70			24.4	6.07	86.8	1.5	30.82	7.55	4	7.1
									24.3	6.06	86.7	1.5	30.85	7.55	5	8.7
7:21	R2	ME	840739.4	836212.4	7.8	1.00	295	0.038	24.0	6.58	92.9	0.4	29.99	7.58	3	5.4
									24.0	6.57	92.8	0.4	29.98	7.58	5	4.9
						3.90			24.0	6.49	91.7	0.8	30.01	7.58	3	6.1
									24.0	6.48	91.6	0.8	30.02	7.58	4	6.4
						6.80			24.0	6.33	89.2	1.1	30.12	7.56	4	6.5
									23.9	6.32	89.1	1.1	30.14	7.56	3	6.7
7:00	I1	ME	841338.5	836588.5	7.2	1.00	281	0.128	24.1	5.80	81.9	0.7	29.60	7.50	4	6.0
									24.1	5.78	81.6	0.7	29.65	7.50	5	6.2
						3.60			24.0	5.71	80.5	1.2	29.75	7.50	3	6.3
									24.0	5.70	80.3	1.2	29.74	7.50	3	7.1
						6.20			24.0	5.69	80.2	2.9	29.78	7.50	4	6.9
									24.0	5.69	80.3	2.9	29.77	7.50	5	7.7
6:47	I2	ME	841590.3	836601.2	10.0	1.00	61	0.217	24.0	6.13	86.30	0.5	29.21	7.48	3	6.7
									24.1	6.06	85.50	0.5	29.25	7.48	5	7.0
						5.00			24.1	5.91	83.20	1.4	29.34	7.50	4	6.9
									24.1	5.92	83.30	1.4	29.35	7.50	4	7.6
						9.00			24.1	5.91	83.20	2.6	29.38	7.50	4	6.8
									24.1	5.90	83.20	2.6	29.40	7.50	5	7.0
6:32	I3	ME	841807.0	836680.9	9.6	1.00	67	0.207	24.0	6.11	85.1	0.2	27.70	7.45	5	6.1
									24.1	6.08	84.6	0.2	27.80	7.45	7	5.7
						4.80			24.1	5.95	83.3	0.8	28.09	7.46	5	6.0
									24.1	5.93	83.0	0.8	28.13	7.46	3	6.4
						8.60			24.1	5.74	80.3	1.4	28.37	7.44	3	7.4
									24.1	5.70	79.8	1.4	28.42	7.44	3	6.8
8:23	W1	ME	841858.9	836571.0	9.2	1.00	44	0.053	24.1	6.57	94.0	0.6	31.40	7.56	3	7.1
									24.1	6.53	93.6	0.6	31.33	7.56	4	6.6
						4.60			24.1	6.11	87.0	0.8	31.41	7.55	3	5.7
									24.1	6.06	86.5	0.8	31.43	7.55	5	6.3
						8.20			24.1	5.71	81.2	1.8	31.51	7.52	2	7.2
									24.1	5.70	81.1	1.8	31.55	7.52	4	8.2
7:13	M1	ME	840822.2	836416.4	0.7		225	0.038								
						0.35			23.7	5.37	75.4	0.8	30.10	7.44	5	2.9
									23.7	5.38	76.0	0.8	30.05	7.44	3	2.5
7:37	FCZ1	ME	841180.6	835230.8	5.1	1.00	336	0.041	23.9	6.87	96.7	0.5	29.75	7.57	5	6.3
									23.9	6.85	95.9	0.5	29.81	7.57	3	7.0
						4.10			23.7	6.54	92.0	1.5	29.95	7.57	3	6.6
									23.7	6.50	91.7	1.5	29.94	7.57	4	3.7
14:44	G1	MF	841483.9	835936.1	6.7	1.00	27	0.393	24.3	6.92	101.3	0.8	35.35	7.64	2	6.0
									24.3	6.90	101.1	0.8	35.34	7.64	3	5.5
						3.35			24.2	6.56	96.6	2.5	35.39	7.61	3	6.0
									24.2	6.53	96.4	2.5	35.38	7.61	3	6.0
						5.70			24.2	6.24	91.1	3.6	35.52	7.60	2	5.9
									24.2	6.26	91.3	3.6	35.54	7.60	5	5.7
14:58	R1	MF	842307.4	835718.4	9.4	1.00	340	0.506	24.6	7.02	103.5	0.2	35.68	7.65	3	6.2
									24.4	7.01	103.7	0.2	35.70	7.65	4	5.8
						4.70			24.3	6.90	101.3	0.6	35.85	7.63	3	5.9
									24.3	6.89	101.2	0.6	35.84	7.63	3	6.8
						8.40			24.4	6.80	99.9	1.3	35.91	7.57	4	6.2
									24.4	6.73	99.6	1.3	35.93	7.57	3	6.0
14:16	R2	MF	840739.4	836212.4	7.3	1.00	222	0.445	24.1	6.95	101.1	0.2	35.02	7.61	3	5.8
									24.0	6.93	100.8	0.2	35.00	7.61	3	6.2
						3.65			24.0	6.83	99.2	0.7	35.18	7.60	3	6.0
									23.9	6.81	99.0	0.7	35.20	7.60	2	6.0
						6.30			24.0	6.53	95.4	1.6	35.41	7.59	3	5.8
									24.0	6.50	95.1	1.6	35.43	7.59	3	5.7
13:53	I1	MF	841338.5	836588.5	6.4	1.00	211	0.520	24.4	6.75	98.5	0.3	34.85	7.57	3	4.7
									24.3	6.74	98.1	0.3	34.83	7.57	2	5.1
						3.20			24.1	6.13	89.7	1.5	34.99	7.55	2	5.0
									24.1	6.12	89.6	1.5	34.98	7.55	3	5.4
						5.40			24.1	5.71	83.4	2.6	35.23	7.53	4	5.1
									24.1	5.69	83.2	2.6	35.20	7.53	3	5.6
13:40	I2	MF	841590.3	836601.2	11.0	1.00	158	0.082	24.4	6.94	101.1	0.1	34.71	7.63	2	4.2
									24.3	6.90	100.8	0.1	34.68	7.63	4	4.5
						5.50			24.2	6.73	98.8	0.6	34.82	7.61	3	4.7
									24.2	6.71	98.6	0.6	34.81	7.61	3	4.8
						10.00			24.1	6.26	91.1	1.9	34.93	7.54	3	5.1
									24.1	6.28	91.3	1.9	34.95	7.54	4	4.9
13:29	I3	MF	841807.0	836680.9	12.0	1.00	152	0.245	24.4	6.96	101.6	0.2	34.60	7.63	3	6.2
									24.4	6.85	101.4	0.2	34.58	7.63	4	4.9
						6.00			24.3	6.56	95.7	0.8	34.80	7.59	4	5.3
									24.3	6.51	95.3	0.8	34.81	7.59	4	5.2
						11.00			24.2	5.79	84.6	3.1	35.11	7.51	3	5.2
									24.1	5.78	84.5	3.1	35.13	7.51	2	5.5
15:13	W1	MF	841858.9	836571.0	9.5	1.00	48	0.067	24.5	6.69	99.4	0.5	38.28	7.60	3	5.3
									24.5	6.70	99.5	0.5	38.23	7.60	3	5.6
						4.75			24.3	6.51	95.8	0.9	38.41	7.59	3	6.0
									24.3	6.48	95.4	0.9	38.42	7.59	4	5.6
						8.50			24.2	5.82	86.0	1.4	38.62	7.54	4	5.5
									24.1	5.80	85.8	1.4	38.64	7.54	3	5.3
14:08	M1	MF	840822.2	836416.4	0.5		303	0.018								
						0.25			24.3	6.40	93.2	1.7	34.70	7.56	3	6.1
									24.3	6.38	93.0	1.7	34.73	7.56	4	6.1
14:31	FCZ1	MF	841180.6	835230.8	6.7	1.00	285	0.094	24.2	6.93	100.8	0.2	35.00	7.61	5	6.0
									24.2	6.91	100.6	0.2	35.08	7.61	2	5.9
						3.35			23.9	6.73	97.8	0.8	35.14	7.60	3	5.8
									23.9	6.72	97.7	0.8	35.12	7.60	4	5.8
						5.70			23.9	6.51	94.4	1.7	35.24	7.60	2	5.4
									23.8	6.49	94.2	1.7	35.22	7.60	4	5.8

Remarks: MF - Middle Flood tide
ME - Middle Ebb tide
For SS, if the monitoring result is less than Limit of Report 2mg/L, the result value will be assumed as 2 for the calculation.
For Chorophyll-*a*, if the monitoring result is less than Limit of Report 0.1µg/L, the result value will be assumed as 0.1 for the calculation.

Contract No. CV/2012/05
Bathing Beach at Lung Mei, Tai Po

Impact Water Quality Monitoring Result

Sampling Date: 5-Nov-18
Weather: Fine
Sea Condition: Moderate

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Current Direction	Current Speed	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Chlorophyll-*a*
			East	North	m	m	degrees	m/s	℃	mg/L	%	NTU	ppt	unit	mg/L	µg/L
10:46	G1	ME	841483.9	835936.1	5.7	1.00	318	0.575	24.6	6.81	97.9	0.6	33.65	7.45	4	6.2
									24.6	6.80	97.7	0.6	33.64	7.46	3	5.9
						4.70			24.3	5.26	75.5	1.0	34.83	7.33	3	6.2
									24.3	5.27	75.5	1.0	34.85	7.32	2	5.8
11:00	R1	ME	842307.4	835718.4	9.0	1.00	244	0.232	24.3	6.87	99.0	0.6	33.52	7.50	4	6.4
									24.3	6.88	99.2	0.6	33.53	7.49	3	6.6
						4.50			23.9	6.18	89.1	1.3	34.01	7.32	3	6.2
									23.9	6.17	89.0	1.4	34.00	7.31	4	6.6
						8.00			23.7	4.44	64.7	1.9	34.89	7.25	2	6.8
									23.7	4.45	64.9	2.0	34.90	7.24	2	6.1
10:23	R2	ME	840739.4	836212.4	5.8	1.00	94	0.467	24.5	7.12	102.7	0.6	33.72	7.41	3	5.3
									24.5	7.12	102.6	0.6	33.71	7.42	2	5.4
						4.80			24.1	5.53	79.8	1.2	34.41	7.35	3	4.7
									24.1	5.55	80.0	1.2	34.40	7.34	2	5.6
10:02	I1	ME	841338.5	836588.5	5.3	1.00	88	0.198	24.6	6.74	97.0	0.3	33.49	7.40	3	5.9
									24.6	6.76	97.3	0.3	33.50	7.39	2	5.4
						4.30			24.4	5.98	86.2	0.8	34.17	7.30	3	5.5
									24.4	5.99	86.4	0.8	34.18	7.31	3	5.7
9:49	I2	ME	841590.3	836601.2	10.0	1.00	237	0.115	24.5	6.95	101.10	0.2	33.29	7.42	4	5.7
									24.5	6.96	100.30	0.2	33.30	7.41	3	5.8
						5.00			24.0	5.91	85.90	0.7	34.34	7.30	2	5.9
									24.0	5.92	86.00	0.7	34.44	7.29	2	6.0
						9.00			23.6	4.91	70.90	1.2	35.03	7.16	2	6.1
									23.6	4.92	71.00	1.3	35.00	7.15	2	6.3
9:35	I3	ME	841807.0	836680.9	9.5	1.00	351	0.182	24.5	6.98	100.8	0.1	35.04	7.39	2	5.6
									24.5	7.01	101.0	0.1	33.06	7.40	2	5.5
						4.75			24.0	6.26	90.2	0.4	33.98	7.26	2	5.7
									24.0	6.25	90.0	0.4	33.99	7.25	3	4.8
						8.50			23.7	5.18	74.6	0.9	34.47	7.18	2	4.8
									23.7	5.19	74.8	0.9	34.48	7.19	3	5.4
11:13	W1	ME	841858.9	836571.0	9.9	1.00	33	0.095	24.6	6.35	97.3	0.2	33.64	7.54	2	5.6
									24.5	6.36	97.5	0.2	33.65	7.55	3	5.8
						4.95			24.6	6.00	87.0	0.6	34.27	7.37	3	5.8
									24.6	6.01	87.2	0.7	34.28	7.38	2	5.3
						8.90			24.6	4.16	60.8	0.9	34.51	6.90	2	6.0
									24.6	4.17	60.9	0.9	35.42	6.91	2	6.2
10:15	M1	ME	840822.2	836416.4	1.2		306	0.259								
						0.60			24.3	7.16	102.9	0.9	34.26	7.40	3	3.2
									24.3	7.17	103.0	0.9	34.27	7.39	2	3.4
10:32	FCZ1	ME	841180.6	835230.8	5.8	1.00	211	0.562	24.6	6.65	95.5	0.6	33.59	7.44	2	4.9
									24.6	6.67	95.8	0.5	33.58	7.43	2	5.4
						4.80			24.1	5.58	80.4	1.0	35.03	7.21	2	5.2
									24.1	5.60	80.7	1.0	35.02	7.20	2	5.3
17:03	G1	MF	841483.9	835936.1	5.9	1.00	317	0.842	24.8	7.27	104.9	0.3	31.76	7.67	2	5.3
									24.8	7.28	105.0	0.3	31.75	7.66	2	5.2
						4.90			24.2	6.18	88.3	1.3	31.85	7.59	2	5.1
									24.2	6.16	88.0	1.4	31.86	7.60	4	5.1
17:13	R1	MF	842307.4	835718.4	9.4	1.00	270	0.912	24.6	7.27	104.8	0.4	32.09	7.62	3	5.1
									24.6	7.28	105.0	0.4	32.10	7.61	3	5.5
						4.70			24.2	6.55	94.0	0.7	32.26	7.55	4	5.2
									24.2	6.54	93.9	0.8	32.27	7.54	2	7.1
						8.40			24.2	6.14	88.0	1.4	32.56	7.32	2	5.4
									24.2	6.13	87.9	1.5	32.57	7.31	3	5.4
16:51	R2	MF	840739.4	836212.4	6.2	1.00	244	0.016	24.8	7.45	107.5	0.6	31.52	7.68	2	4.4
									24.8	7.46	107.6	0.7	31.51	7.69	2	4.5
						3.10			24.4	7.03	100.5	0.9	31.58	7.62	3	4.5
									24.3	7.02	100.3	1.0	31.59	7.61	2	4.6
						5.20			24.3	5.97	83.1	2.1	32.09	7.56	2	4.5
									24.3	5.98	83.3	2.2	32.10	7.55	2	4.6
16:18	I1	MF	841338.5	836588.5	5.3	1.00	249	0.348	24.9	6.93	99.6	0.5	31.25	7.66	3	5.0
									24.9	6.92	99.3	0.6	31.25	7.65	2	5.0
						4.30			24.8	4.64	67.0	1.2	31.44	7.60	3	4.7
									24.7	4.66	67.3	1.3	31.45	7.59	2	4.6
16:04	I2	MF	841590.3	836601.2	9.6	1.00	288	0.642	24.6	7.18	102.8	0.4	31.24	7.67	2	3.9
									24.6	7.20	103.0	0.5	31.25	7.66	3	4.2
						4.80			24.6	5.58	81.2	0.8	31.45	7.60	3	4.1
									24.6	5.57	81.1	0.9	31.44	7.59	2	4.6
						8.60			24.6	4.64	66.4	1.4	32.39	7.50	2	4.4
									24.6	4.65	66.5	1.5	32.40	7.49	2	4.2
15:50	I3	MF	841807.0	836680.9	9.5	1.00	306	0.297	24.8	7.34	105.5	0.3	31.49	7.63	2	4.8
									24.8	7.35	105.7	0.3	31.59	7.64	2	5.0
						4.75			24.3	6.86	98.2	0.8	31.61	7.58	3	5.1
									24.3	6.85	98.0	0.9	61.60	7.57	3	5.1
						8.50			24.6	5.10	73.8	1.2	32.09	7.49	4	5.1
									24.6	5.09	73.7	1.1	32.10	7.50	3	4.9
17:27	W1	MF	841858.9	836571.0	9.7	1.00	267	0.025	24.3	7.10	104.5	0.3	36.85	7.60	3	4.6
									24.3	7.09	104.4	0.3	36.84	7.61	3	4.9
						4.85			24.4	6.40	93.7	0.4	35.99	7.57	4	4.8
									24.4	6.41	93.9	0.4	35.98	7.56	2	5.0
						8.70			24.6	4.70	69.1	0.7	35.84	7.46	2	4.9
									24.6	4.70	69.0	0.7	35.83	7.45	3	5.6
16:28	M1	MF	840822.2	836416.4	0.8		294	0.272								
						0.40			25.1	7.36	106.5	1.1	31.26	7.62	3	4.6
									25.1	7.35	106.4	1.0	31.25	7.63	2	4.8
16:51	FCZ1	MF	841180.6	835230.8	6.2	1.00	176	0.065	24.5	7.37	105.7	0.2	31.39	7.64	2	4.5
									24.5	7.35	105.5	0.2	31.40	7.65	2	4.7
						3.10			24.2	6.70	95.5	0.7	31.53	7.60	2	4.6
									24.2	6.71	95.6	0.8	31.54	7.59	3	4.4
						5.20			24.1	5.69	79.1	1.2	31.66	7.55	2	4.7
									24.0	5.70	79.2	1.3	31.67	7.54	3	4.8

Remarks: *MF - Middle Flood tide*
ME - Middle Ebb tide
For SS, if the monitoring result is less than Limit of Report 2mg/L, the result value will be assumed as 2 for the calculation.
For Chorophyll-*a* , if the monitoring result is less than Limit of Report 0.1µg/L, the result value will be assumed as 0.1 for the calculation.

Contract No. CV/2012/05
Bathing Beach at Lung Mei, Tai Po

Impact Water Quality Monitoring Result

Sampling Date: 7-Nov-18
Weather: Fine
Sea Condition: Moderate

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Current Direction	Current Speed	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Chlorophyll-a
			East	North	m	m	degrees	m/s	℃	mg/L	%	NTU	ppt	unit	mg/L	µg/L
12:30	G1	ME	841483.9	835936.1	7.4	1.00	127	0.071	25.1	7.30	105.6	0.1	31.07	7.60	4	2.6
									25.1	7.32	105.8	0.1	31.06	7.60	4	2.7
						3.70			25.0	7.37	106.3	0.3	30.98	7.61	4	2.5
									25.0	7.38	106.4	0.3	30.98	7.60	2	2.5
						6.40			24.9	7.34	105.7	0.1	30.95	7.61	4	3.0
									24.9	7.32	105.5	0.1	30.97	7.61	2	3.2
12:42	R1	ME	842307.4	835718.4	9.1	1.00	291	0.064	25.1	7.36	106.1	0.6	31.25	7.65	3	3.0
									25.1	7.41	106.9	0.6	31.21	7.65	3	4.6
						4.55			25.0	7.45	107.5	0.4	31.05	7.65	2	4.8
									25.0	7.44	107.3	0.4	31.05	7.65	4	2.9
						8.10			24.7	7.23	103.8	0.2	30.99	7.63	3	2.9
									24.7	7.22	103.8	0.2	30.98	7.62	4	3.0
12:03	R2	ME	840739.4	836212.4	7.0	1.00	71	0.189	25.3	7.16	104.1	0.2	31.27	7.59	4	3.4
									25.3	7.17	104.2	0.2	31.25	7.59	4	3.0
						3.50			25.1	7.15	104.0	0.2	31.13	7.58	3	3.3
									25.1	7.13	103.5	0.2	31.12	7.58	3	3.6
						6.00			24.9	6.92	99.8	0.7	31.09	7.57	3	2.9
									24.9	6.90	99.6	0.8	31.09	7.57	3	3.0
11:33	I1	ME	841338.5	836588.5	5.7	1.00	104	0.108	25.1	7.15	103.8	0.3	31.58	7.57	2	3.2
									25.1	7.17	103.9	0.3	31.57	7.58	3	2.8
						4.70			24.6	6.28	90.4	2.1	31.50	7.53	2	3.1
									24.6	6.24	89.8	2.1	31.51	7.54	4	3.2
11:20	I2	ME	841590.3	836601.2	8.6	1.00	135	0.149	25.1	7.05	102.60	0.2	32.19	7.59	3	3.1
									25.1	7.07	102.80	0.2	32.17	7.59	3	3.7
						4.30			24.8	7.11	102.90	0.1	32.12	7.60	3	3.2
									24.7	7.13	103.00	0.1	32.12	7.60	3	3.5
						7.60			24.6	6.98	100.80	0.1	32.06	7.59	3	3.3
									24.6	6.86	99.20	0.1	32.06	7.58	4	3.5
11:08	I3	ME	841807.0	836680.9	9.8	1.00	92	0.083	25.0	6.92	102.2	0.4	34.55	7.58	3	3.2
									25.0	6.95	102.5	0.4	34.54	7.59	5	3.1
						4.90			24.8	6.98	102.0	0.2	34.24	7.60	5	4.2
									24.8	6.97	101.9	0.2	34.18	7.59	4	3.4
						8.80			24.6	6.78	98.9	0.1	33.82	7.59	2	3.2
									24.6	6.75	98.2	0.1	33.81	7.58	2	2.7
12:56	W1	ME	841858.9	836571.0	9.2	1.00	181	0.267	25.3	7.20	103.9	0.3	30.97	7.55	2	4.3
									25.2	7.21	104.0	0.3	30.96	7.56	3	3.7
						4.60			24.8	7.32	105.1	0.1	30.81	7.59	4	3.6
									24.8	7.32	105.2	0.1	30.82	7.60	3	3.9
						8.20			24.6	7.06	101.1	0.1	30.85	7.60	2	3.9
									24.6	7.02	100.7	0.1	30.85	7.59	3	5.0
11:50	M1	ME	840822.2	836416.4	1.0		51	0.131								
						0.50			25.5	6.89	100.5	0.7	31.21	7.54	2	2.4
									25.5	6.88	100.4	0.7	31.23	7.54	4	3.2
12:17	FCZ1	ME	841180.6	835230.8	5.3	1.00	31	0.032	25.4	7.00	101.7	0.5	30.87	7.55	2	3.6
									25.4	7.01	101.8	0.5	30.88	7.55	4	3.6
						4.30			24.9	7.20	103.5	0.3	30.88	7.58	3	3.6
									24.9	7.21	103.7	0.3	30.90	7.59	4	3.5
8:00	G1	ME	841483.9	835936.1	8.5	1.00	138	0.175	24.7	7.20	103.2	0.3	30.93	7.56	4	3.1
									24.7	7.21	103.3	0.3	30.92	7.57	2	2.7
						4.25			24.6	7.00	100.3	0.1	30.96	7.57	2	2.7
									24.6	6.96	100.1	0.1	30.97	7.56	2	2.7
						7.50			24.6	6.60	94.7	0.9	31.02	7.55	4	2.7
									24.6	6.59	94.5	0.8	31.02	7.54	3	2.9
8:14	R1	ME	842307.4	835718.4	8.2	1.00	172	0.179	24.9	7.39	106.3	0.7	31.12	7.61	3	2.8
									24.9	7.39	106.2	0.8	31.11	7.61	3	4.1
						4.10			24.7	7.18	103.3	0.5	31.15	7.58	3	3.3
									24.7	7.14	102.6	0.5	31.16	7.58	3	2.7
						7.20			24.7	6.91	99.4	0.5	31.25	7.57	2	3.1
									24.7	6.89	99.2	0.5	31.26	7.57	3	3.0
7:28	R2	ME	840739.4	836212.4	7.2	1.00	74	0.154	24.8	7.00	100.4	0.2	30.83	7.54	2	3.2
									24.8	7.00	100.5	0.2	30.82	7.54	4	3.0
						3.60			24.7	6.94	99.7	0.2	30.84	7.54	4	3.8
									24.7	6.93	99.5	0.2	30.84	7.54	3	3.3
						6.20			24.6	6.07	87.1	3.8	30.88	7.51	4	3.8
									24.6	6.05	86.8	3.7	30.88	7.50	2	3.2
6:59	I1	ME	841338.5	836588.5	6.5	1.00	229	0.049	24.7	7.05	101.0	0.2	30.76	7.54	3	3.7
									24.7	7.06	101.1	0.2	30.75	7.53	3	3.5
						3.25			24.7	7.02	100.6	0.1	30.77	7.53	3	3.6
									24.7	7.01	100.4	0.1	30.77	7.53	2	3.6
						5.50			24.5	5.74	82.1	2.6	30.94	7.44	4	3.3
									24.5	5.73	81.9	2.6	30.94	7.43	3	3.2
6:45	I2	ME	841590.3	836601.2	9.5	1.00	113	0.083	24.7	6.98	99.9	0.1	30.52	7.52	3	3.2
									24.7	6.99	100.0	0.1	30.52	7.52	5	3.2
						4.75			24.7	6.82	98.0	0.1	30.76	7.52	3	3.5
									24.7	6.80	97.5	0.1	30.77	7.52	3	3.5
						8.50			24.5	6.60	94.3	0.1	30.89	7.51	3	3.1
									24.5	6.58	94.1	0.1	30.96	7.51	4	3.2
6:32	I3	ME	841807.0	836680.9	8.2	1.00	134	0.122	24.8	7.10	100.7	0.3	29.30	7.44	4	3.4
									24.8	7.09	100.5	0.3	29.32	7.47	5	3.6
						4.10			24.5	6.25	89.3	0.1	30.54	7.45	4	3.3
									24.5	6.22	88.9	0.1	30.55	7.44	3	2.9
						7.20			24.4	4.28	61.3	3.5	31.34	7.36	5	3.8
									24.4	4.27	61.2	3.4	31.34	7.36	2	3.5
8:28	W1	ME	841858.9	836571.0	9.9	1.00	237	0.107	24.7	6.95	99.6	0.4	30.90	7.56	3	3.1
									24.7	6.95	99.3	0.4	30.90	7.56	2	3.6
						4.95			24.5	6.38	91.3	0.1	30.99	7.53	3	4.1
									24.5	6.35	91.0	0.1	31.00	7.53	2	4.4
						8.90			24.5	5.28	75.7	1.2	31.18	7.50	2	3.8
									24.5	5.26	75.5	1.1	31.19	7.49	2	4.0
7:12	M1	ME	840822.2	836416.4	1.3		44	0.203								
						0.65			24.8	7.00	100.8	0.7	30.69	7.54	5	3.8
									24.8	6.99	100.4	0.6	30.69	7.54	3	3.6
7:41	FCZ1	MF	841180.6	835230.8	5.9	1.00	207	0.098	25.0	7.08	102.1	0.5	31.02	7.55	4	3.4
									25.0	7.08	102.1	0.5	31.01	7.55	3	3.3
						4.90			24.7	6.88	98.9	0.4	30.98	7.56	2	3.5
									24.7	6.87	98.6	0.4	30.97	7.56	2	3.0

Remarks: MF - Middle Flood tide
ME - Middle Ebb tide
For SS, if the monitoring result is less than Limit of Report 2mg/L, the result value will be assumed as 2 for the calculation
For Chorophyll-*a* , if the monitoring result is less than Limit of Report 0.1µg/L, the result value will be assumed as 0.1 for the calculation

Contract No. CV/2012/05
Bathing Beach at Lung Mei, Tai Po

Impact Water Quality Monitoring Result

Sampling Date: 9-Nov-18
Weather: Fine
Sea Condition: Smooth

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Current Direction	Current Speed	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Chlorophyll-a
			East	North	m	m	degrees	m/s	℃	mg/L	%	NTU	ppt	unit	mg/L	µg/L
13:20	G1	ME	841483.9	835936.1	5.2	1.00	79	0.347	26.2	7.50	107.8	0.5	31.40	7.62	3	2.8
									26.2	7.49	107.8	0.4	31.03	7.61	3	2.8
						4.20			24.9	5.58	80.8	3.3	31.89	7.53	2	2.9
									24.9	5.57	80.7	3.2	31.88	7.52	3	2.8
13:28	R1	ME	842307.4	835718.4	7.8	1.00	66	0.151	26.0	7.58	111.2	0.5	31.00	7.59	2	2.9
									26.0	7.57	111.1	0.5	31.10	7.58	3	3.5
						3.90			24.9	7.26	106.8	0.9	32.03	7.54	3	2.5
									24.9	7.25	106.7	0.9	32.02	7.53	3	3.0
						6.80			24.9	6.31	91.7	0.6	31.97	7.50	2	3.1
									24.9	6.30	91.6	0.6	31.96	7.51	3	3.0
13:04	R2	ME	840739.4	836212.4	6.4	1.00	121	0.340	25.7	7.22	105.3	1.0	30.79	7.56	2	3.5
									25.7	7.21	105.2	1.0	30.78	7.55	2	3.3
						3.20			25.5	6.98	102.3	1.3	31.25	7.56	4	3.4
									25.5	6.97	102.2	1.4	31.24	7.55	3	3.1
						5.40			25.2	6.55	90.7	1.8	31.44	7.50	3	3.0
									25.2	6.53	90.6	1.7	31.42	7.50	4	3.5
12:50	I1	ME	841338.5	836588.5	5.1	1.00	160	0.141	25.8	7.30	106.8	0.3	31.16	7.59	3	2.9
									25.8	7.29	106.7	0.3	31.16	7.58	2	2.9
						4.10			25.2	7.07	103.2	0.4	31.62	7.52	3	3.1
									25.2	7.07	103.1	0.4	31.61	7.53	3	3.0
12:42	I2	ME	841590.3	836601.2	6.8	1.00	211	0.096	25.7	7.47	110.00	0.1	32.05	7.61	3	3.2
									25.7	7.46	109.80	0.1	32.04	7.60	2	3.0
						3.40			25.3	7.30	106.50	0.4	32.30	7.62	3	3.5
									25.2	7.29	106.40	0.3	32.29	7.62	2	3.6
						5.80			25.0	6.57	96.80	0.2	32.46	7.57	3	3.3
									25.0	6.56	96.70	0.2	32.45	7.57	3	3.2
12:25	I3	ME	841807.0	836680.9	7.4	1.00	243	0.121	25.3	7.32	108.1	0.4	35.73	7.63	3	3.2
									25.3	7.33	108.2	0.4	35.72	7.63	3	3.3
						3.70			24.8	6.48	98.5	0.4	34.79	7.53	3	3.6
									24.8	6.47	98.4	0.4	34.78	7.52	3	3.1
						6.40			24.8	5.85	86.2	0.8	34.50	7.55	3	3.3
									24.8	5.87	86.1	0.8	34.50	7.55	3	3.0
13:39	W1	ME	841858.9	836571.0	9.1	1.00	41	0.227	25.5	7.49	109.1	0.2	31.36	7.60	2	3.1
									25.5	7.48	109.0	0.2	31.35	7.60	3	3.3
						4.55			25.1	7.12	103.1	0.4	31.69	7.58	2	3.2
									25.1	7.11	103.0	0.4	31.68	7.57	2	3.2
						8.10			24.8	5.84	87.3	0.7	32.02	7.52	3	3.3
									24.8	5.83	87.2	0.7	32.01	7.51	3	3.0
12:55	M1	ME	840822.2	836416.4	1.4		113	0.117								
						0.70			26.0	7.10	104.2	4.0	30.94	7.56	2	3.1
									26.0	7.10	104.3	3.9	30.92	7.55	4	3.8
13:12	FCZ1	ME	841180.6	835230.8	5.7	1.00	59	0.112	25.6	7.39	107.5	0.4	31.17	7.57	3	3.1
									25.6	7.38	107.5	0.4	31.16	7.56	2	3.1
						4.70			25.6	5.67	85.3	2.3	31.00	7.51	3	3.4
									25.6	5.66	85.2	2.2	30.99	7.52	2	3.3
8:57	G1	MF	841483.9	835936.1	7.2	1.00	134	0.092	25.3	7.53	109.1	0.4	30.70	7.60	2	2.8
									25.3	7.52	109.0	0.3	30.70	7.60	2	2.8
						3.60			25.1	6.93	101.2	0.4	30.75	7.57	2	2.7
									25.1	6.92	101.1	0.3	30.75	7.57	3	3.0
						6.20			24.9	5.76	82.8	0.5	30.95	7.51	3	2.8
									24.9	5.75	82.7	0.4	30.95	7.51	2	2.8
8:55	R1	MF	842307.4	835718.4	9.1	1.00	318	0.169	25.3	7.85	113.4	0.5	30.35	7.65	3	3.0
									25.3	7.83	113.2	0.4	30.35	7.65	3	3.3
						4.55			25.1	7.63	110.3	0.5	30.54	7.62	2	3.0
									25.1	7.62	110.2	0.4	30.54	7.62	3	3.1
						8.10			24.9	7.53	95.4	0.8	30.88	7.55	2	3.3
									24.9	7.52	95.3	0.7	30.88	7.55	2	3.1
9:09	R2	MF	840739.4	836212.4	6.7	1.00	75	0.129	25.2	6.87	99.1	0.4	30.05	7.54	2	3.3
									25.2	6.88	99.2	0.3	30.05	7.54	2	3.3
						3.35			25.2	6.44	93.1	0.5	30.35	7.52	2	3.2
									25.2	6.43	93.0	0.4	30.35	7.52	2	3.6
						5.70			25.0	5.76	83.1	2.6	30.49	7.49	3	3.5
									25.0	5.75	83.0	2.5	30.49	7.49	2	3.4
9:20	I1	MF	841338.5	836588.5	5.8	1.00	177	0.081	25.4	7.21	104.2	0.5	30.16	7.54	3	3.5
									25.4	7.20	104.1	0.4	30.16	7.54	3	3.1
						4.80			25.1	6.17	90.1	1.6	30.64	7.48	3	3.3
									25.1	6.18	90.2	1.5	30.64	7.48	2	3.5
9:25	I2	MF	841590.3	836601.2	8.4	1.00	329	0.080	25.4	7.34	106.5	0.5	25.43	7.52	3	3.1
									25.4	7.33	106.4	0.4	25.43	7.52	3	3.4
						4.20			25.2	6.87	99.3	0.4	25.20	7.53	4	3.1
									25.2	6.86	99.2	0.3	25.20	7.53	2	3.1
						7.40			24.6	5.06	72.6	0.4	24.64	7.43	3	3.0
									24.6	5.05	72.5	0.3	24.64	7.43	3	3.2
9:30	I3	MF	841807.0	836680.9	8.5	1.00	242	0.086	25.4	7.25	103.1	0.4	25.18	7.40	4	3.2
									25.4	7.24	103.0	0.5	25.18	7.40	3	3.0
						4.25			25.2	6.77	98.3	0.4	30.67	7.40	3	3.2
									25.2	6.76	98.2	0.3	30.67	7.40	3	3.8
						7.50			24.6	4.48	65.8	3.1	31.36	7.28	3	3.4
									24.6	4.47	65.7	3.0	31.36	7.28	3	3.5
8:48	W1	MF	841858.9	836571.0	9.8	1.00	203	0.090	25.8	7.70	110.9	0.8	30.30	7.64	3	3.3
									25.8	7.69	110.8	0.7	30.30	7.64	3	3.5
						4.90			25.1	7.36	105.7	0.7	30.52	7.67	3	3.5
									25.1	7.34	105.3	0.6	30.52	7.63	4	3.4
						8.80			24.9	6.54	87.4	1.2	30.75	7.58	3	3.4
									24.9	6.53	87.3	1.1	30.75	7.58	3	3.7
9:14	M1	MF	840822.2	836416.4	0.3		191	0.066								
						0.15			25.3	6.90	99.7	0.4	30.25	7.52	4	3.1
									25.3	6.89	99.6	0.3	30.25	7.52	3	2.8
9:03	FCZ1	MF	841180.6	835230.8	6.0	1.00	222	0.045	25.4	7.26	105.1	0.5	30.63	7.56	2	3.4
									25.4	7.25	105.0	0.4	30.63	7.56	3	3.6
						3.00			25.1	6.96	100.7	0.4	30.74	7.58	4	3.4
									25.1	6.95	100.6	0.3	30.74	7.58	4	3.5
						5.00			25.1	6.34	89.5	0.5	30.93	7.44	4	3.4
									25.1	6.33	89.4	0.4	30.93	7.44	3	3.3

Remarks: *MF - Middle Flood tide*
ME - Middle Ebb tide
For SS, if the monitoring result is less than Limit of Report 2mg/L, the result value will be assumed as 2 for the calculation
For Chorophyll-a , if the monitoring result is less than Limit of Report 0.1µg/L, the result value will be assumed as 0.1 for the calculation

Contract No. CV/2012/05
Bathing Beach at Lung Mei, Tai Po

Impact Water Quality Monitoring Result

Sampling Date: 12-Nov-18
Weather: Fine
Sea Condition: Moderate

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Current Direction	Current Speed	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Chlorophyll-a
			East	North	m	m	degrees	m/s	℃	mg/L	%	NTU	ppt	unit	mg/L	µg/L
15:03	G1	ME	841483.9	835936.1	5.8	1.00	177	0.302	25.5	7.41	107.2	0.4	30.01	7.59	3	3.2
									25.5	7.40	107.1	0.5	30.00	7.58	2	2.9
						4.80			24.9	5.38	77.4	1.2	30.69	7.49	3	3.1
									24.9	5.40	77.7	1.3	30.70	7.48	3	3.2
15:16	R1	ME	842307.4	835718.4	9.1	1.00	280	0.222	25.4	7.24	104.5	0.4	30.18	7.63	3	3.1
									25.4	7.23	104.4	0.5	30.17	7.64	4	3.1
						4.55			25.0	6.46	93.1	0.9	30.61	7.55	3	3.0
									25.0	6.45	93.0	1.0	30.60	7.54	3	2.9
						8.10			24.8	5.84	84.0	1.8	30.86	7.50	3	4.3
									24.8	5.85	84.1	1.9	30.85	7.49	2	4.0
14:39	R2	ME	840739.4	836212.4	6.6	1.00	40	0.580	25.9	7.27	105.8	0.4	29.76	7.57	2	3.2
									25.9	7.28	105.9	0.5	29.75	7.58	3	2.9
						3.30			25.2	6.72	97.1	1.2	30.33	7.53	3	3.3
									25.3	6.71	97.0	1.3	30.32	7.52	3	3.2
						5.60			25.2	5.91	85.4	2.2	30.47	7.26	2	3.1
									25.2	5.90	85.3	2.3	30.48	7.27	4	3.1
14:16	I1	ME	841338.5	836588.5	5.9	1.00	198	0.070	25.7	7.27	105.9	0.3	30.88	7.61	4	3.7
									25.7	7.28	106.0	0.3	30.87	7.60	2	2.9
						4.90			24.8	5.19	74.9	1.2	31.76	7.46	3	3.0
									24.7	5.20	75.0	1.1	31.75	7.47	3	2.9
14:03	I2	ME	841590.3	836601.2	9.2	1.00	252	0.477	25.6	7.09	103.90	0.3	31.94	7.59	4	3.4
									25.6	7.10	104.00	0.3	31.93	7.60	2	3.1
						4.60			24.8	5.52	80.10	0.7	32.60	7.48	3	3.2
									24.8	5.51	80.00	0.6	32.61	7.47	3	2.8
						8.20			24.7	5.00	72.50	1.3	32.65	7.43	2	3.1
									24.7	5.01	72.60	1.4	32.66	7.42	4	3.1
13:50	I3	ME	841807.0	836680.9	11.0	1.00	338	0.438	25.6	6.80	101.9	0.3	36.70	7.59	2	2.8
									25.6	6.81	102.0	0.3	36.71	7.58	2	3.1
						5.50			25.1	6.48	95.6	0.6	36.90	7.54	5	2.9
									25.1	6.47	95.5	0.7	36.91	7.55	4	3.4
						10.00			25.0	4.70	69.0	1.2	37.21	7.48	4	3.0
									25.0	4.71	69.1	1.1	37.22	7.49	3	3.4
15:30	W1	ME	841858.9	836571.0	9.1	1.00	225	0.524	25.6	7.15	103.6	0.5	30.14	7.60	3	3.2
									25.6	7.14	103.5	0.6	30.13	7.59	3	3.4
						4.55			24.9	6.07	87.5	0.9	30.68	7.53	2	2.9
									24.9	6.08	87.6	0.8	30.69	7.52	2	3.0
						8.10			24.7	5.36	77.0	1.3	30.94	7.44	3	3.2
									24.7	5.37	77.2	1.4	30.95	7.45	3	3.5
14:29	M1	ME	840822.2	836416.4	0.8		202	0.143								
						0.40			26.1	7.00	102.6	0.8	30.48	7.55	2	3.1
									26.1	7.01	102.7	0.9	30.47	7.54	3	3.0
14:53	FCZ1	ME	841180.6	835230.8	6.5	1.00	264	0.037	25.3	7.27	105.0	0.3	30.48	7.57	3	2.9
									25.3	7.28	105.2	0.3	30.47	7.56	3	3.0
						3.25			25.0	6.96	100.2	0.7	30.56	7.43	3	3.2
									25.0	6.95	100.1	0.6	30.57	7.44	2	3.2
						5.50			25.1	5.45	78.7	1.1	30.83	7.38	3	3.1
									25.1	5.46	78.8	1.0	30.84	7.39	2	3.3
10:02	G1	MF	841483.9	835936.1	5.8	1.00	21	0.201	25.0	6.97	100.3	0.3	30.62	7.54	2	4.2
									25.0	6.98	100.5	0.3	30.61	7.53	2	4.0
						4.80			24.9	6.94	100.0	0.6	31.03	7.48	2	3.8
									24.9	6.93	99.8	0.7	31.04	7.47	2	3.9
10:15	R1	MF	842307.4	835718.4	7.9	1.00	98	0.073	24.8	7.23	103.6	0.2	30.72	7.56	3	3.5
									24.8	7.24	103.8	0.2	30.71	7.55	3	3.7
						3.95			24.8	5.66	81.6	0.7	31.20	7.50	3	3.6
									24.8	5.65	81.5	0.8	31.19	7.49	2	3.6
						6.90			24.6	5.21	75.0	1.3	31.65	7.45	2	3.5
									24.6	5.22	75.2	1.4	31.64	7.44	3	3.6
9:40	R2	MF	840739.4	836212.4	5.5	1.00	137	0.091	25.0	6.71	96.6	0.4	30.57	7.51	2	3.6
									24.9	6.70	96.4	0.5	30.56	7.52	3	3.6
						4.50			25.0	6.44	92.8	0.8	30.71	7.48	3	3.6
									25.0	6.40	92.3	0.9	30.70	7.47	3	3.4
9:17	I1	MF	841338.5	836588.5	5.1	1.00	158	0.084	24.9	6.71	96.4	0.3	24.93	7.52	3	3.4
									24.9	6.70	96.3	0.3	24.92	7.51	2	3.3
						4.10			25.0	6.46	93.0	0.6	25.01	7.46	3	3.5
									25.0	6.45	92.9	0.7	25.02	7.45	2	3.6
9:04	I2	MF	841590.3	836601.2	8.5	1.00	241	0.243	25.0	6.90	98.9	0.3	24.95	7.50	3	3.5
									25.0	6.86	97.3	0.3	24.96	7.49	3	3.3
						4.25			25.0	6.93	99.5	0.5	25.00	7.35	2	3.4
									25.0	6.94	99.6	0.6	25.01	7.36	2	3.5
						7.50			24.8	5.20	74.6	1.0	24.81	7.31	3	3.7
									24.8	5.18	74.3	0.9	24.80	7.32	3	3.6
8:50	I3	MF	841807.0	836680.9	7.4	1.00	185	0.018	24.9	7.01	98.3	0.2	24.82	7.42	3	3.5
									25.0	7.00	98.2	0.2	24.83	7.43	3	3.8
						3.70			25.0	6.83	96.7	0.4	27.72	7.37	3	3.3
									25.0	6.82	96.6	0.5	27.73	7.38	2	3.4
						6.40			24.8	4.40	62.6	0.9	29.17	7.32	3	3.4
									24.7	4.41	62.8	1.0	29.18	7.31	3	4.0
10:28	W1	MF	841858.9	836571.0	9.5	1.00	249	0.164	25.0	6.97	100.5	0.3	30.87	7.58	3	3.9
									25.0	6.96	100.4	0.3	30.86	7.58	3	4.0
						4.75			25.0	6.80	98.1	0.8	30.91	7.50	2	3.6
									24.9	6.79	98.0	0.9	30.92	7.50	2	3.8
						8.50			25.0	5.81	84.0	1.3	30.99	7.48	2	3.8
									25.0	5.84	84.6	1.4	31.00	7.47	3	4.0
9:29	M1	MF	840822.2	836416.4	0.8		191	0.021								
						0.40			25.1	6.24	90.0	0.9	30.35	7.43	2	1.5
									25.1	6.23	89.5	1.0	30.34	7.42	3	1.5
9:52	FCZ1	MF	841180.6	835230.8	5.6	1.00	164	0.076	25.0	6.97	100.4	0.3	30.78	7.54	2	3.4
									25.0	6.96	100.3	0.3	30.77	7.53	2	3.8
						4.60			25.1	6.38	92.2	0.6	30.87	7.48	2	3.4
									25.1	6.37	92.1	0.7	30.88	7.49	3	2.9

Remarks: *MF - Middle Flood tide*
ME - Middle Ebb tide
For SS, if the monitoring result is less than Limit of Report 2mg/L, the result value will be assumed as 2 for the calculation
For Chorophyll-a , if the monitoring result is less than Limit of Report 0.1µg/L, the result value will be assumed as 0.1 for the calculation

Contract No. CV/2012/05
Bathing Beach at Lung Mei, Tai Po

Impact Water Quality Monitoring Result

Sampling Date: 14-Nov-18
Weather: Fine
Sea Condition: Moderate

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Current Direction	Current Speed	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Chlorophyll-a
			East	North	m	m	degrees	m/s	℃	mg/L	%	NTU	ppt	unit	mg/L	µg/L
7:43	G1	ME	841483.9	835936.1	5.8	1.00	222	0.120	24.8	6.87	98.5	0.3	28.62	7.60	3	3.2
									24.8	6.88	98.6	0.3	28.63	7.61	3	3.0
						4.80			24.8	5.71	79.3	0.6	28.77	7.56	2	3.1
									24.8	5.73	79.4	0.6	28.78	7.57	3	3.0
7:53	R1	ME	842307.4	835718.4	8.0	1.00	242	0.131	24.8	6.84	96.4	0.3	28.89	7.55	3	3.8
									24.8	6.83	96.3	0.3	28.91	7.56	3	3.8
						4.00			24.7	5.20	80.1	0.6	29.91	7.59	3	3.9
									24.7	5.21	80.2	0.5	29.92	7.61	3	3.7
						7.00			24.5	4.70	70.4	0.9	29.99	7.62	2	3.8
									24.5	4.71	70.5	1.0	30.01	7.63	4	3.6
7:23	R2	ME	840739.4	836212.4	5.8	1.00	65	0.044	25.0	6.98	99.2	0.3	28.27	7.56	3	3.0
									25.1	6.99	99.3	0.3	28.29	7.57	3	3.1
						4.80			25.0	4.68	69.9	0.9	28.51	7.55	2	3.5
									25.0	4.67	69.8	0.9	28.52	7.56	3	3.4
7:02	I1	ME	841338.5	836588.5	4.7	1.00	15	0.176	24.9	6.79	96.2	0.3	28.03	7.54	3	3.1
									24.9	6.80	96.4	0.3	28.04	7.55	4	2.9
						3.70			24.9	4.71	72.4	0.5	28.19	7.58	3	2.8
									24.9	4.72	72.5	0.5	28.21	7.59	4	3.0
6:52	I2	ME	841590.3	836601.2	6.4	1.00	155	0.142	24.9	6.79	95.9	0.3	27.50	7.51	3	3.2
									24.9	6.78	95.8	0.3	27.53	7.52	4	3.0
						3.20			24.9	5.21	93.4	0.5	27.82	7.56	3	2.9
									24.9	5.22	93.5	0.5	27.83	7.58	2	3.2
						5.40			24.8	4.69	70.4	0.9	27.92	7.58	2	2.8
									24.8	4.70	70.5	0.9	27.93	7.59	3	3.1
6:42	I3	ME	841807.0	836680.9	7.4	1.00	173	0.117	25.0	6.69	92.5	0.2	22.04	7.44	3	3.3
									25.1	6.70	92.6	0.2	22.06	7.43	2	3.1
						3.70			25.1	5.32	84.3	0.6	25.08	7.46	4	3.2
									25.0	5.30	84.0	0.6	25.03	7.45	3	3.8
						6.40			24.4	4.89	73.4	0.8	28.41	7.52	3	3.1
									24.4	4.90	73.5	0.8	28.43	7.54	3	3.1
8:03	W1	ME	841858.9	836571.0	8.6	1.00	144	0.112	24.8	6.92	98.4	0.2	28.90	7.56	3	3.5
									24.8	6.93	98.5	0.2	28.91	7.56	4	3.4
						4.30			24.8	5.18	79.4	0.7	29.12	7.59	2	3.2
									24.8	5.17	79.3	0.7	29.13	7.59	3	3.0
						7.60			24.7	4.65	69.1	1.0	29.21	7.61	4	3.5
									24.7	4.64	69.0	1.1	29.23	7.62	2	3.5
7:12	M1	ME	840822.2	836416.4	0.8		51	0.083								
						0.40			24.9	6.90	98.2	0.3	28.47	7.55	4	3.0
									25.0	6.91	98.3	0.3	28.46	7.54	3	3.6
7:33	FCZ1	ME	841180.6	835230.8	5.0	1.00	101	0.101	24.7	6.88	97.5	0.3	28.42	7.56	3	2.8
									24.7	6.90	97.6	0.3	28.43	7.57	2	2.8
						4.00			24.8	5.82	81.1	2.1	28.64	7.51	3	2.8
									24.9	5.83	81.2	2.0	28.63	7.52	2	2.9
10:46	G1	MF	841483.9	835936.1	5.9	1.00	242	0.128	24.9	7.05	100.6	0.6	29.12	7.59	2	2.8
									24.9	7.04	100.5	0.5	29.11	7.58	3	3.1
						4.90			24.8	6.24	91.2	5.2	29.00	7.59	2	3.0
									24.8	6.23	91.1	5.1	29.00	7.59	2	2.9
10:57	R1	MF	842307.4	835718.4	8.7	1.00	242	0.128	24.9	6.53	93.3	0.6	29.19	7.56	3	5.0
									24.9	6.52	93.2	0.6	29.18	7.55	3	3.9
						4.35			24.8	6.04	87.1	0.4	29.27	7.56	3	3.9
									24.9	6.03	86.9	0.4	29.26	7.56	3	3.8
						7.70			24.9	5.84	82.5	0.4	29.30	7.53	3	4.1
									25.0	5.83	82.4	0.4	29.29	7.53	3	4.0
10:24	R2	MF	840739.4	836212.4	5.6	1.00	92	0.082	25.1	7.01	100.0	0.6	28.67	7.57	3	3.4
									25.1	7.00	99.9	0.6	28.66	7.56	3	3.3
						4.60			25.1	5.65	82.5	3.2	28.97	7.47	3	3.6
									25.1	5.64	82.4	3.3	28.99	7.48	3	3.6
10:02	I1	MF	841338.5	836588.5	5.8	1.00	14	0.605	24.9	7.00	99.6	0.2	26.67	7.56	3	3.4
									24.9	7.00	99.5	0.2	26.66	7.55	2	3.4
						4.80			24.9	6.71	95.3	5.3	28.78	7.57	3	3.5
									24.9	6.70	95.3	5.3	28.77	7.56	3	3.8
9:50	I2	MF	841590.3	836601.2	7.8	1.00	22	0.186	24.9	6.97	98.9	0.8	28.35	7.57	3	3.6
									24.9	6.96	98.8	0.8	28.35	7.57	4	3.4
						3.90			25.0	6.55	93.5	0.6	28.59	7.52	3	3.5
									24.9	6.54	93.4	0.5	28.58	7.51	3	3.7
						6.80			25.0	6.02	85.3	0.4	28.82	7.45	3	3.2
									25.0	6.01	85.2	0.4	28.81	7.44	3	3.7
9:40	I3	MF	841807.0	836680.9	8.7	1.00	57	0.541	24.9	6.89	96.3	0.5	26.19	7.54	3	3.5
									24.9	6.88	96.1	0.4	26.18	7.54	3	3.6
						4.35			25.0	6.65	94.3	0.5	26.87	7.54	3	3.4
									25.0	6.68	94.2	0.5	26.87	7.53	4	3.5
						7.70			25.1	6.10	88.7	0.6	27.50	7.49	4	3.5
									25.1	6.10	88.6	0.6	27.51	7.48	2	3.9
11:08	W1	MF	841858.9	836571.0	10.0	1.00	26	1.300	25.1	6.80	97.5	0.5	29.24	7.57	3	3.5
									25.1	6.79	97.4	0.4	29.23	7.56	3	3.5
						5.00			25.0	6.68	95.8	0.5	29.33	7.54	2	3.4
									25.0	6.67	95.7	0.5	29.32	7.55	3	3.3
						9.00			24.9	6.38	91.2	0.6	29.38	7.54	3	3.4
									24.9	6.37	91.1	0.6	29.37	7.54	3	3.6
10:13	M1	MF	840822.2	836416.4	0.7		1	0.086								
						0.35			25.1	6.81	96.8	0.8	28.61	7.56	4	3.0
									25.8	6.81	96.7	0.7	28.60	7.55	4	3.1
10:35	FCZ1	MF	841180.6	835230.8	4.9	1.00	70	0.045	25.0	6.95	99.3	0.8	28.89	7.57	2	3.1
									25.0	6.94	99.2	0.8	28.87	7.56	3	3.6
						3.90			24.9	6.93	98.5	0.9	28.85	7.58	3	3.2
									24.9	6.92	98.4	0.9	28.84	7.57	2	3.3

Remarks: *MF - Middle Flood tide*
ME - Middle Ebb tide
For SS, if the monitoring result is less than Limit of Report 2mg/L, the result value will be assumed as 2 for the calculation
For Chorophyll-*a*, if the monitoring result is less than Limit of Report 0.1µg/L, the result value will be assumed as 0.1 for the calculation

Contract No. CV/2012/05
Bathing Beach at Lung Mei, Tai Po

Impact Water Quality Monitoring Result

Sampling Date: 16-Nov-18
Weather: Fine
Sea Condition: Smooth

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Current Direction	Current Speed	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Chlorophyll-a
			East	North	m	m	degrees	m/s	℃	mg/L	%	NTU	ppt	unit	mg/L	µg/L
8:14	G1	ME	841483.9	835936.1	6.5	1.00	118	0.144	24.4	6.18	86.9	0.6	27.94	7.48	3	4.6
									24.4	6.17	86.8	0.5	27.94	7.48	3	4.5
						3.25			24.4	6.08	85.5	0.5	27.96	7.48	3	2.8
									24.4	6.09	85.6	0.4	27.96	7.48	3	2.6
						5.50			24.5	5.80	81.8	1.3	28.01	7.48	3	2.7
									24.5	5.81	81.9	1.2	28.01	7.48	3	2.8
8:20	R1	ME	842307.4	835718.4	8.0	1.00	111	0.169	24.4	6.23	87.6	0.7	28.10	7.48	2	2.8
									24.4	6.24	87.5	0.6	28.10	7.48	3	3.1
						4.00			24.5	6.08	85.6	0.8	28.16	7.51	3	2.9
									24.5	6.09	86.7	0.9	28.16	7.51	2	3.0
						7.00			24.6	4.61	65.6	3.2	28.42	7.43	3	2.8
									24.7	4.60	65.5	3.1	28.42	7.43	2	2.8
8:02	R2	ME	840739.4	836212.4	6.0	1.00	227	0.057	24.4	6.36	89.6	0.6	27.61	7.48	3	3.0
									24.4	6.35	89.5	0.5	27.61	7.48	4	3.0
						3.00			24.4	6.30	88.3	0.6	27.68	7.49	2	2.3
									24.4	6.29	88.2	0.5	27.68	7.49	2	2.5
						5.00			24.4	6.10	85.5	0.8	27.73	7.48	3	3.0
									24.4	5.59	85.4	0.7	27.73	7.48	2	2.3
7:48	I1	ME	841338.5	836588.5	5.5	1.00	231	0.079	24.9	6.38	90.2	0.4	27.73	7.49	4	2.7
									24.9	6.37	90.1	0.3	27.73	7.49	4	2.7
						4.50			24.4	6.02	84.5	0.4	27.77	7.46	3	3.1
									24.4	6.01	84.4	0.3	27.77	7.46	2	3.1
7:40	I2	ME	841590.3	836601.2	9.1	1.00	85	0.151	24.4	6.15	86.3	0.4	27.50	7.46	3	3.2
									24.4	6.14	86.2	0.3	27.50	7.46	2	2.9
						4.55			24.4	6.09	85.4	0.4	27.57	7.47	3	2.9
									24.4	6.08	85.3	0.3	27.57	7.47	3	2.5
						8.10			24.5	5.98	84.2	0.4	27.68	7.48	3	2.9
									24.5	5.97	84.1	0.5	27.68	7.48	3	5.9
7:32	I3	ME	841807.0	836680.9	8.9	1.00	349	0.092	24.5	5.80	80.9	0.4	26.09	7.41	4	2.8
									24.4	5.79	80.8	0.3	26.09	7.41	3	2.9
						4.45			24.5	5.78	80.9	0.4	26.96	7.41	3	2.8
									24.5	5.76	80.8	0.3	26.96	7.41	2	2.8
						7.90			24.7	4.48	63.8	2.5	27.39	7.33	3	3.0
									24.7	4.49	63.9	2.6	27.39	7.33	3	2.9
8:25	W1	ME	841858.9	836571.0	9.1	1.00	115	0.150	24.5	6.12	86.4	0.4	28.18	7.48	4	2.3
									24.5	6.11	86.3	0.3	28.18	7.48	4	2.6
						4.55			24.5	5.99	84.4	0.6	28.18	7.50	3	3.8
									24.5	5.98	84.3	0.5	28.18	7.50	4	3.8
						8.10			24.7	5.44	78.1	0.5	28.30	7.49	3	4.0
									24.7	5.43	78.0	0.6	28.30	7.49	3	4.1
7:56	M1	ME	840822.2	836416.4	0.6		90	0.129								
						0.30			24.4	6.2	87.10	0.4	27.64	7.46	12	3.2
									24.4	6.2	87.00	0.3	27.64	7.46	13	3.2
8:08	FCZ1	ME	841180.6	835230.8	5.1	1.00	64	0.049	24.5	6.43	90.1	0.5	28.06	7.48	2	3.1
									24.5	6.42	90.0	0.4	28.06	7.48	2	3.0
						4.10			24.5	6.25	88.0	0.6	27.98	7.49	3	2.9
									24.5	6.26	88.1	0.7	27.98	7.49	2	2.8
14:14	G1	MF	841483.9	835936.1	5.7	1.00	120	0.018	24.5	6.49	91.8	0.5	28.41	7.54	2	4.0
									24.5	6.48	91.7	0.6	28.41	7.54	2	4.2
						4.70			24.5	6.35	89.5	0.6	28.24	7.53	2	4.1
									24.5	6.34	89.6	0.5	28.24	7.53	3	3.9
14:21	R1	MF	842307.4	835718.4	8.1	1.00	98	0.211	24.5	6.53	92.4	0.4	28.63	7.53	3	4.4
									24.5	6.54	92.5	0.3	28.63	7.53	2	4.6
						4.05			24.5	6.36	89.7	0.4	28.47	7.54	3	4.6
									24.5	6.37	89.8	0.3	28.47	7.54	2	4.6
						7.10			24.5	6.06	86.1	0.5	28.48	7.53	2	4.7
									24.5	6.07	86.2	0.4	28.48	7.53	3	4.7
14:00	R2	MF	840739.4	836212.4	6.2	1.00	194	0.292	24.6	6.49	91.7	0.4	28.12	7.55	2	3.9
									24.6	6.48	91.6	0.3	28.12	7.55	2	4.0
						3.10			24.6	6.36	89.7	0.4	28.10	7.55	3	4.0
									24.6	6.35	89.6	0.3	28.10	7.55	2	3.8
						5.20			24.6	6.22	87.7	0.6	28.09	7.54	4	3.9
									24.6	6.21	87.6	0.5	28.09	7.54	3	4.1
13:28	I1	MF	841338.5	836588.5	4.7	1.00	150	0.232	24.6	6.47	91.1	0.4	28.27	7.53	4	5.2
									24.6	6.46	91.0	0.3	28.27	7.53	4	5.7
						3.70			24.5	6.36	80.5	0.4	28.21	7.53	4	5.6
									24.5	6.35	80.4	0.5	28.21	7.53	2	4.4
13:32	I2	MF	841590.3	836601.2	8.6	1.00	76	0.143	24.5	6.36	89.7	0.5	28.16	7.54	2	4.6
									24.5	6.35	89.6	0.4	28.16	7.54	3	5.0
						4.30			24.4	6.29	88.4	0.5	28.17	7.54	2	5.0
									24.4	6.28	88.3	0.4	28.17	7.54	3	4.9
						7.60			24.4	6.18	87.0	0.6	28.17	7.55	3	4.6
									24.4	6.17	86.9	0.5	28.17	7.55	2	4.7
13:25	I3	MF	841807.0	836680.9	6.9	1.00	117	0.139	24.5	6.11	86.4	0.4	28.18	7.52	3	4.6
									24.5	6.12	86.5	0.3	28.18	7.52	2	4.8
						3.45			24.5	6.02	85.0	0.4	28.20	7.52	4	4.7
									24.5	6.01	84.9	0.3	28.20	7.52	4	4.7
						5.90			24.5	6.05	85.1	0.5	28.17	7.53	2	4.7
									24.5	6.04	85.0	0.4	28.17	7.53	3	4.9
14:29	W1	MF	841858.9	836571.0	8.5	1.00	194	0.121	24.6	6.20	88.4	0.6	30.32	7.52	3	6.1
									24.6	6.19	88.3	0.5	30.32	7.52	2	6.2
						4.25			24.5	6.06	86.2	0.4	29.67	7.52	2	6.2
									24.5	6.06	86.1	0.3	29.67	7.52	3	6.5
						7.50			24.5	6.01	85.2	0.4	29.36	7.52	2	6.5
									24.5	6.00	85.1	0.3	29.36	7.52	3	6.8
13:49	M1	MF	840822.2	836416.4	0.5		181	0.034								
						0.25			24.6	6.43	90.7	0.4	28.11	7.54	2	4.1
									24.6	6.42	90.8	0.3	28.11	7.54	4	4.3
14:07	FCZ1	MF	841180.6	835230.8	6.8	1.00	202	0.018	24.5	6.42	90.8	0.6	28.20	7.54	4	4.7
									24.5	6.41	90.7	0.5	28.20	7.54	3	4.8
						3.40			24.6	6.24	87.9	0.4	28.12	7.53	3	4.3
									24.6	6.23	87.8	0.3	28.12	7.53	4	4.4
						5.80			24.8	5.90	82.1	0.6	28.27	7.48	3	4.8
									24.8	5.89	82.0	0.6	28.27	7.48	3	4.6

Remarks: *MF - Middle Flood tide*
ME - Middle Ebb tide
For SS, if the monitoring result is less than Limit of Report 2mg/L, the result value will be assumed as 2 for the calculation
For Chorophyll-a , if the monitoring result is less than Limit of Report 0.1µg/L, the result value will be assumed as 0.1 for the calculation

Contract No. CV/2012/05
Bathing Beach at Lung Mei, Tai Po

Impact Water Quality Monitoring Result

Sampling Date: 19-Nov-18
Weather: Fine
Sea Condition: Smooth

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Current Direction	Current Speed	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Chlorophyll-a
			East	North	m	m	degrees	m/s	℃	mg/L	%	NTU	ppt	unit	mg/L	µg/L
10:30	G1	ME	841483.9	835936.1	5.5	1.00	126	0.073	24.3	6.86	94.9	0.8	25.74	7.57	3	2.7
									24.3	6.87	94.8	0.7	25.74	7.57	3	2.9
						4.50			24.3	6.59	91.4	0.9	25.84	7.57	5	2.8
									24.3	6.54	91.3	0.8	25.84	7.57	4	2.8
10:38	R1	ME	842307.4	835718.4	8.6	1.00	130	0.070	24.3	6.77	94.1	0.7	26.09	7.56	3	3.3
									24.3	6.76	94.0	0.6	26.09	7.56	3	3.3
						4.30			24.3	6.63	91.9	0.7	25.99	7.57	2	3.2
									24.3	6.62	91.8	0.6	25.99	7.57	3	3.2
						7.60			24.4	5.55	79.2	1.0	26.02	7.57	3	2.8
									24.4	5.54	79.1	0.9	26.02	7.57	4	2.8
10:18	R2	ME	840739.4	836212.4	7.5	1.00	133..4	0.060	24.5	5.84	81.3	0.5	25.66	7.48	3	2.8
									24.5	5.83	81.2	0.4	25.66	7.48	3	2.8
						3.75			24.4	6.46	89.6	0.5	25.59	7.51	2	2.6
									24.4	6.45	89.5	0.4	25.59	7.51	3	2.7
						6.50			24.4	5.67	78.6	0.6	25.74	7.51	3	2.7
									24.4	5.66	78.5	0.5	25.74	7.51	2	2.8
9:53	I1	ME	841338.5	836588.5	5.8	1.00	194	0.104	24.3	6.37	88.1	0.5	25.63	7.53	4	2.4
									24.3	6.36	88.0	0.4	25.63	7.53	4	2.3
						4.80			24.5	4.41	63.4	2.0	25.94	7.44	3	2.3
									24.5	4.40	63.3	1.9	25.94	7.44	3	2.4
9:48	I2	ME	841590.3	836601.2	8.4	1.00	358	0.029	24.1	6.50	90.3	0.6	25.50	7.52	3	2.7
									24.1	6.53	90.4	0.5	25.50	7.52	3	3.0
						4.20			24.3	6.04	84.2	0.5	25.64	7.53	3	2.6
									24.3	6.03	84.1	0.4	25.64	7.53	3	2.8
						7.40			24.6	4.30	61.6	0.8	26.04	7.43	3	2.7
									24.6	4.29	61.5	0.9	26.04	7.43	4	2.8
9:41	I3	ME	841807.0	836680.9	8.3	1.00	214	0.133	24.4	6.56	91.0	0.5	26.00	7.54	3	3.4
									24.4	6.55	90.9	0.4	26.00	7.54	2	3.9
						4.15			24.4	6.25	86.8	0.5	25.81	7.50	4	3.4
									24.4	6.24	86.7	0.4	25.81	7.50	2	3.2
						7.30			24.6	4.36	62.2	0.9	26.02	7.37	3	3.3
									24.6	4.35	62.1	0.8	26.02	7.37	3	3.3
10:43	W1	ME	841858.9	836571.0	9.3	1.00	118	0.800	24.4	6.53	90.9	0.6	26.07	7.57	2	3.6
									24.4	6.52	90.8	0.5	26.07	7.57	3	3.6
						4.65			24.3	6.53	90.5	0.6	26.01	7.58	2	3.5
									24.3	6.54	90.4	0.5	26.01	7.58	2	3.5
						8.30			24.5	5.12	75.1	0.7	26.19	7.52	4	3.4
									24.4	5.11	75.0	0.6	26.19	7.52	2	3.5
10:04	M1	ME	840822.2	836416.4	0.3	0.15	291	0.089	24.2	6.1	83.9	0.9	25.42	7.46	2	1.4
									24.2	6.0	83.8	0.8	25.42	7.46	3	1.4
10:24	FCZ1	ME	841180.6	835230.8	6.2	1.00	146	0.061	24.2	6.37	88.2	0.9	25.73	7.47	3	2.1
									24.2	6.35	87.8	0.8	25.73	7.47	3	2.0
						3.10			24.4	5.91	92.7	0.9	25.83	7.48	3	2.1
									24.4	6.00	83.8	0.8	25.83	7.48	2	2.0
						5.20			24.5	5.57	78.3	0.9	25.90	7.48	2	2.1
									24.5	5.56	78.2	0.8	25.90	7.48	3	2.5
15:47	G1	MF	841483.9	835936.1	6.8	1.00	105	0.191	24.9	6.86	99.4	0.9	32.08	7.54	3	3.0
									24.9	6.87	99.3	0.8	32.08	7.54	3	2.9
						3.40			24.5	6.46	93.3	0.4	32.51	7.55	2	2.6
									24.5	6.47	93.4	0.5	32.51	7.55	3	3.0
						5.80			24.5	6.16	88.8	0.4	32.71	7.54	3	3.0
									24.5	6.17	88.9	0.5	32.71	7.54	2	3.0
15:54	R1	MF	842307.4	835718.4	10.0	1.00	52	0.166	24.5	6.88	99.4	0.7	32.78	7.57	3	2.9
									24.5	6.89	99.5	0.8	32.78	7.57	3	2.9
						5.00			24.6	6.81	98.6	0.8	32.73	7.58	2	3.1
									24.6	6.80	98.5	0.7	32.73	7.58	2	2.9
						9.00			24.6	5.17	76.3	0.8	33.25	7.48	3	2.9
									24.6	5.16	76.2	0.7	33.25	7.48	3	3.0
15:30	R2	MF	840739.4	836212.4	7.0	1.00	90	0.065	24.9	6.58	94.7	0.7	32.76	7.48	4	4.4
									24.9	6.59	94.8	0.8	32.76	7.48	3	4.3
						3.50			24.8	6.69	96.9	0.5	32.43	7.50	3	4.2
									24.8	6.70	97.0	0.6	32.43	7.50	2	4.2
						6.00			24.6	4.89	73.2	1.9	32.96	7.44	3	5.6
									24.6	4.88	73.1	1.8	32.96	7.44	2	4.5
15:14	I1	MF	841338.5	836588.5	7.9	1.00	270	0.035	25.2	6.64	96.9	0.4	33.37	7.50	3	4.8
									25.2	6.63	96.9	0.3	33.37	7.50	2	5.0
						3.95			24.6	6.44	93.5	0.4	32.81	7.54	3	4.9
									24.6	6.43	93.4	0.3	32.81	7.54	4	5.0
						6.90			24.7	5.72	82.6	0.5	33.32	7.46	3	5.1
									24.7	5.71	82.5	0.4	33.32	7.46	3	4.8
15:09	I2	MF	841590.3	836601.2	8.2	1.00	81	0.185	25.2	6.76	93.9	0.7	32.79	7.51	2	4.6
									25.2	6.75	93.8	0.6	32.79	7.51	3	4.5
						4.10			24.7	6.56	93.0	0.4	33.04	7.53	3	4.7
									24.7	6.55	92.9	0.3	33.04	7.53	2	4.7
						7.20			24.6	5.36	80.3	0.5	33.66	7.46	2	4.4
									24.6	5.35	80.2	0.4	33.66	7.46	2	4.4
15:05	I3	MF	841807.0	836680.9	9.5	1.00	99	0.180	25.0	6.81	101.4	1.0	36.82	7.56	3	4.1
									25.0	6.82	101.5	1.1	36.82	7.56	2	4.5
						4.75			24.6	6.42	94.5	0.9	35.74	7.55	3	4.6
									24.6	6.43	94.6	1.0	35.74	7.55	3	4.4
						8.50			24.6	5.58	82.6	0.7	35.42	7.51	3	4.4
									24.6	5.59	82.8	0.8	35.42	7.51	2	4.5
16:02	W1	MF	841858.9	836571.0	9.6	1.00	103	0.067	25.0	6.87	99.9	0.5	32.23	7.56	3	5.3
									25.0	6.86	99.8	0.4	32.23	7.56	2	5.4
						4.80			24.7	6.82	98.6	0.6	32.37	7.56	4	5.5
									24.7	6.81	98.5	0.5	32.37	7.56	3	5.5
						8.60			24.6	5.18	76.2	0.9	33.13	7.46	3	5.5
									24.6	5.17	76.1	0.8	33.13	7.46	3	5.3
15:22	M1	MF	840822.2	836416.4	0.6	0.30	71	0.266	25.2	6.94	101.0	1.5	31.95	7.51	3	5.2
									25.2	6.93	100.8	1.4	31.95	7.51	4	5.4
15:38	FCZ1	MF	841180.6	835230.8	6.2	1.00	304	0.035	24.9	6.52	94.4	0.9	32.70	7.49	3	4.4
									24.9	6.51	94.3	0.8	32.71	7.49	2	4.5
						3.10			24.5	6.50	93.6	0.8	32.54	7.52	3	4.3
									24.5	6.51	93.7	0.9	32.54	7.52	3	4.3
						5.20			24.6	6.12	89.0	1.4	32.74	7.52	3	4.4
									24.6	6.11	88.9	1.3	32.74	7.52	4	4.2

Remarks: *MF - Middle Flood tide*
ME - Middle Ebb tide
For SS, if the monitoring result is less than Limit of Report 2mg/L, the result value will be assumed as 2 for the calculation.
For Chorophyll-*a*, if the monitoring result is less than Limit of Report 0.1µg/L, the result value will be assumed as 0.1 for the calculation.

Contract No. CV/2012/05
Bathing Beach at Lung Mei, Tai Po

Impact Water Quality Monitoring Result

Sampling Date: 21-Nov-18
Weather: Fine
Sea Condition: Moderate

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Current Direction	Current Speed	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Chlorophyll-a
			East	North	m	m	degrees	m/s	℃	mg/L	%	NTU	ppt	unit	mg/L	µg/L
11:05	G1	ME	841483.9	835936.1	6.0	1.00	317	0.134	24.7	6.69	96.6	0.3	30.11	7.53	5	2.6
									24.7	6.70	96.7	0.3	30.12	7.52	3	2.7
						3.00			24.5	5.96	84.3	0.5	30.97	7.54	4	2.7
									24.5	5.97	84.2	0.5	30.96	7.52	3	2.7
						5.00			24.5	4.97	71.3	0.8	30.98	7.50	6	2.8
									24.5	4.98	71.4	0.8	30.99	7.51	5	3.0
11:20	R1	ME	842307.4	835718.4	9.4	1.00	323	0.040	24.6	6.70	96.1	0.2	31.25	7.56	3	3.5
									24.6	6.71	96.2	0.2	31.26	7.55	2	3.3
						4.70			24.3	6.03	86.3	0.5	31.20	7.52	4	3.3
									24.3	6.04	86.4	0.5	31.21	7.53	2	3.2
						8.40			24.5	3.89	56.2	0.8	31.66	7.40	4	3.3
									24.5	3.88	56.1	0.8	31.66	7.41	2	3.4
10:45	R2	ME	840739.4	836212.4	5.8	1.00	225	0.140	24.4	7.00	99.7	0.4	30.50	7.51	2	2.5
									24.3	7.01	99.6	0.3	30.51	7.52	3	2.5
						4.80			24.3	5.86	82.3	0.8	30.71	7.50	3	2.4
									24.3	5.87	82.4	0.8	30.73	7.52	3	2.8
10:20	I1	ME	841338.5	836588.5	5.8	1.00	17	0.066	24.5	6.64	94.8	0.4	30.77	7.54	4	4.3
									24.5	6.65	94.9	0.4	30.78	7.53	5	3.4
						4.80			24.2	5.64	81.4	0.8	30.78	7.39	4	3.1
									24.3	5.65	81.3	0.7	30.79	7.40	4	2.9
10:10	I2	ME	841590.3	836601.2	8.2	1.00	156	0.099	24.6	6.27	89.6	0.3	30.72	7.53	2	3.1
									24.6	6.28	89.7	0.3	30.73	7.52	3	3.4
						4.10			24.4	5.62	80.3	0.5	30.96	7.54	2	3.4
									24.4	5.62	80.2	0.5	30.97	7.55	3	3.1
						7.20			24.7	4.05	61.3	0.8	31.43	7.33	4	4.3
									24.7	4.06	61.2	0.8	31.42	7.32	3	4.1
9:57	I3	ME	841807.0	836680.9	8.7	1.00	161	0.279	24.5	6.47	92.3	0.2	30.72	7.53	3	3.0
									24.5	6.48	92.4	0.2	30.73	7.54	2	3.2
						4.35			24.5	5.61	80.1	0.5	30.97	7.52	3	4.4
									24.5	5.62	80.2	0.5	30.98	7.53	2	4.2
						7.70			24.7	4.52	63.9	0.8	29.46	7.40	3	5.3
									24.7	4.51	63.8	0.8	29.47	7.41	3	5.4
11:30	W1	ME	841858.9	836571.0	9.5	1.00	110	0.136	24.6	6.75	97.4	0.4	31.65	7.55	4	3.4
									24.6	6.76	97.5	0.4	31.66	7.56	3	3.3
						4.75			24.5	6.12	87.4	0.6	31.17	7.52	6	1.5
									24.5	6.13	87.5	0.6	31.18	7.53	4	3.4
						8.50			24.6	3.99	60.5	0.9	31.62	7.44	6	3.4
									24.6	4.01	60.6	0.8	31.63	7.45	5	3.3
10:35	M1	ME	840822.2	836416.4	1.0		327	0.018								
						0.50			24.7	6.61	94.8	0.7	30.67	7.52	3	2.7
									24.7	6.62	94.7	0.6	30.68	7.53	3	2.7
10:55	FCZ1	ME	841180.6	835230.8	5.6	1.00	255	0.228	24.4	6.48	92.6	0.2	30.91	7.51	6	3.1
									24.4	6.49	92.7	0.2	30.92	7.52	2	2.6
						4.60			24.3	5.62	81.5	0.4	30.96	7.50	4	2.5
									24.3	5.63	81.6	0.5	30.97	7.51	3	3.1
17:35	G1	MF	841483.9	835936.1	7.6	1.00	326	0.135	25.0	7.05	102.4	0.3	30.99	7.59	3	3.4
									25.0	7.06	102.3	0.3	31.10	7.60	3	3.4
						3.80			24.4	6.54	96.7	0.6	31.96	7.54	2	3.3
									24.4	6.53	96.6	0.6	31.95	7.53	3	3.6
						6.60			24.5	5.51	80.4	1.1	32.08	7.57	4	3.4
									24.5	5.52	80.3	1.0	32.10	7.58	3	3.5
17:59	R1	MF	842307.4	835718.4	9.1	1.00	343	0.167	24.9	7.29	105.6	0.3	31.51	7.64	3	3.9
									25.0	7.28	105.4	0.3	31.52	7.63	2	3.9
						4.55			24.5	6.53	93.5	0.6	32.01	7.60	4	3.7
									24.5	6.54	93.6	0.7	32.02	7.61	4	3.8
						8.10			24.5	5.65	80.3	1.1	32.30	7.58	4	3.9
									24.5	5.64	80.4	1.2	32.31	7.60	5	3.7
17:10	R2	MF	840739.4	836212.4	6.6	1.00	290	0.430	25.2	7.12	103.6	0.3	31.81	7.45	4	2.9
									25.2	7.13	103.7	0.3	31.82	7.46	2	2.8
						3.30			24.7	6.39	93.5	0.6	31.93	7.50	4	3.6
									24.7	6.40	93.6	0.5	31.92	7.49	5	2.8
						5.60			24.6	5.75	83.4	0.9	31.99	7.56	2	2.9
									24.6	5.76	83.5	1.1	32.01	7.57	4	3.2
16:30	I1	MF	841338.5	836588.5	6.0	1.00	343	0.345	25.4	6.92	100.9	0.2	32.07	7.49	2	3.6
									25.4	6.91	100.8	0.2	32.08	7.50	3	3.6
						3.00			24.6	6.41	92.6	0.6	32.14	7.55	3	3.7
									24.7	6.42	92.7	0.6	32.15	7.56	3	3.8
						5.00			24.6	5.73	83.0	0.9	32.26	7.49	2	3.5
									24.6	5.74	83.1	0.9	32.27	7.50	3	3.6
16:20	I2	MF	841590.3	836601.2	8.4	1.00	355	0.137	25.3	7.13	104.0	0.2	32.29	7.57	2	2.8
									25.3	7.14	104.1	0.2	32.30	7.59	2	2.6
						4.20			24.6	5.64	80.1	0.6	32.10	7.55	2	2.6
									24.6	5.65	80.2	0.6	32.11	7.54	3	2.7
						7.40			24.6	4.48	65.2	1.0	32.54	7.43	3	2.6
									24.6	4.49	65.3	1.1	32.55	7.44	2	2.8
16:10	I3	MF	841807.0	836680.9	8.6	1.00	337	0.105	25.4	6.82	100.5	0.3	33.77	7.56	3	3.5
									25.4	6.81	100.4	0.3	33.76	7.57	2	3.9
						4.30			24.7	5.78	81.4	0.6	33.45	7.54	3	4.1
									24.7	5.77	81.3	0.6	33.46	7.53	2	3.8
						7.60			24.7	4.91	70.1	0.9	33.23	7.30	2	3.8
									24.7	4.92	70.2	1.0	33.23	7.31	2	3.7
18:09	W1	MF	841858.9	836571.0	11.0	1.00	249	0.061	25.4	7.05	103.1	0.2	31.54	7.52	3	3.8
									25.4	7.06	103.2	0.3	31.54	7.51	4	3.9
						5.50			24.7	6.49	91.4	0.6	31.98	7.61	4	3.6
									24.7	6.48	91.3	0.5	31.99	7.62	4	3.7
						10.00			24.7	5.09	79.3	0.9	32.03	7.59	5	3.5
									24.7	5.10	79.4	1.0	32.04	7.60	4	3.6
16:50	M1	MF	840822.2	836416.4	1.1		294	0.331								
						0.55			25.6	6.58	100.8	0.3	32.06	7.55	5	3.1
									25.6	6.59	100.9	0.3	32.06	7.56	4	3.2
17:25	FCZ1	MF	841180.6	835230.8	5.8	1.00	295	0.531	24.9	7.01	101.5	0.3	32.01	7.57	4	3.1
									24.9	7.02	101.6	0.3	32.00	7.55	3	3.2
						4.80			24.5	6.45	94.7	0.6	31.87	7.55	4	3.0
									24.5	6.44	94.6	0.6	31.86	7.56	6	3.1

Remarks: *MF - Middle Flood tide*
ME - Middle Ebb tide
For SS, if the monitoring result is less than Limit of Report 2mg/L, the result value will be assumed as 2 for the calculation.
For Chorophyll-a , if the monitoring result is less than Limit of Report 0.1µg/L, the result value will be assumed as 0.1 for the calculation.

Contract No. CV/2012/05
Bathing Beach at Lung Mei, Tai Po

Impact Water Quality Monitoring Result

Sampling Date: 23-Nov-18
Weather: Fine
Sea Condition: Moderate

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Current Direction	Current Speed	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Chlorophyll-a
			East	North	m	m	degrees	m/s	℃	mg/L	%	NTU	ppt	unit	mg/L	µg/L
12:47	G1	ME	841483.9	835936.1	7.0	1.00	214	0.019	24.0	6.84	97.8	0.4	32.48	7.56	4	2.3
									24.0	6.83	97.7	0.5	32.47	7.55	2	2.2
						3.50			24.1	5.54	80.4	0.9	32.74	7.52	3	2.3
									24.1	5.55	80.5	1.0	32.73	7.51	2	2.1
						6.00			24.5	5.20	75.4	1.2	33.28	7.47	2	2.1
									24.5	5.21	75.6	1.3	33.29	7.48	3	2.1
13:00	R1	ME	842307.4	835718.4	9.6	1.00	194	0.134	23.9	7.06	100.9	0.7	32.37	7.57	2	2.8
									23.9	7.05	100.7	0.6	32.38	7.56	2	2.7
						4.80			24.4	5.60	81.1	1.3	33.30	7.47	3	2.9
									24.4	5.61	81.2	1.4	33.29	7.48	3	2.6
						8.60			24.3	5.15	74.5	1.8	33.47	7.43	2	2.7
									24.3	5.16	74.6	1.9	33.48	7.42	3	2.9
12:20	R2	ME	840739.4	836212.4	8.1	1.00	168	0.017	24.1	6.83	97.6	0.5	32.10	7.53	3	2.3
									24.1	6.82	97.4	0.6	32.09	7.54	2	2.4
						4.05			24.5	5.73	83.2	1.3	33.09	7.50	3	2.4
									24.5	5.72	83.1	1.4	33.10	7.49	2	2.4
						7.10			24.6	4.76	69.1	2.2	33.42	7.44	2	2.3
									24.6	4.75	69.0	2.1	33.43	7.43	3	2.5
11:57	I1	ME	841338.5	836588.5	6.8	1.00	307	0.022	23.8	6.72	96.1	0.4	32.45	7.55	4	1.9
									23.8	6.71	96.0	0.5	32.44	7.54	2	2.4
						3.40			24.5	6.04	87.6	0.8	33.12	7.50	3	2.1
									24.5	6.05	87.7	0.9	33.10	7.49	3	2.1
						5.80			24.6	4.68	68.1	1.3	33.46	7.45	3	2.1
									24.6	4.67	68.0	1.4	33.47	7.44	3	2.2
11:44	I2	ME	841590.3	836601.2	10.0	1.00	320	0.018	23.8	6.50	96.1	0.4	32.69	7.52	3	1.8
									23.8	6.49	96.0	0.5	32.70	7.53	3	2.1
						5.00			24.5	5.90	87.6	0.8	33.47	7.45	2	1.8
									24.5	5.89	87.7	0.9	33.48	7.44	4	1.8
						9.00			24.7	5.30	68.1	1.3	33.68	7.40	3	2.0
									24.7	5.29	68.0	1.4	33.69	7.39	4	2.0
11:30	I3	ME	841807.0	836680.9	9.3	1.00	292	0.018	24.0	6.64	97.4	0.3	37.36	7.60	2	3.0
									24.1	6.65	97.5	0.3	37.35	7.59	3	3.1
						4.65			24.5	5.85	86.0	0.7	35.80	7.54	3	2.6
									24.5	5.86	86.1	0.8	35.79	7.53	2	2.8
						8.30			24.5	4.93	72.5	1.3	35.27	7.44	3	3.0
									24.5	4.92	72.3	1.4	35.26	7.43	4	3.1
13:14	W1	ME	841858.9	836571.0	9.4	1.00	253	0.114	24.2	6.59	94.6	0.3	32.57	7.51	2	2.8
									24.2	6.58	94.5	0.3	32.58	7.50	2	2.5
						4.70			24.4	6.00	86.8	0.7	33.19	7.46	4	2.6
									24.4	6.01	87.0	0.8	33.18	7.45	3	2.5
						8.40			24.5	5.48	79.6	1.2	33.37	7.40	3	2.5
									24.5	5.47	79.5	1.3	33.36	7.39	4	2.7
12:11	M1	ME	840822.2	836416.4	1.1		78	0.041								
						0.55			24.3	6.80	97.8	1.0	32.43	7.53	3	2.3
									24.3	6.79	97.6	1.1	32.42	7.52	4	2.4
12:34	FCZ1	ME	841180.6	835230.8	6.7	1.00	24	0.021	24.0	6.61	94.6	0.4	32.79	7.54	3	2.4
									23.9	6.60	94.5	0.4	32.78	7.53	2	2.6
						3.35			24.1	6.01	81.0	0.7	33.13	7.50	3	2.4
									24.2	6.02	81.2	0.8	33.12	7.49	3	2.4
						5.70			24.5	5.18	74.8	1.2	33.40	7.46	2	2.5
									24.5	5.19	74.9	1.3	33.41	7.45	3	2.6
8:14	G1	MF	841483.9	835936.1	6.7	1.00	271	0.074	23.6	6.64	94.7	0.8	32.42	7.55	2	4.9
									23.6	6.64	94.8	0.9	32.42	7.55	2	4.4
						3.35			24.1	5.89	85.6	0.7	32.59	7.54	2	4.8
									24.1	5.88	85.5	0.6	32.59	7.54	4	4.6
						5.70			24.5	4.58	67.0	0.9	32.92	7.44	4	4.9
									24.5	4.59	67.1	1.0	32.92	7.44	4	4.7
8:23	R1	MF	842307.4	835718.4	8.9	1.00	269	0.091	24.0	6.27	90.2	0.5	32.80	7.56	3	4.5
									24.0	6.26	90.1	0.4	32.80	7.56	3	4.7
						4.45			23.9	6.09	87.1	0.8	32.70	7.56	3	4.5
									23.9	6.08	87.0	0.7	32.70	7.56	3	4.9
						7.90			24.2	5.79	83.5	0.9	33.01	7.52	3	4.7
									24.2	5.78	83.4	0.8	33.01	7.52	3	4.4
7:58	R2	MF	840739.4	836212.4	9.3	1.00	256	0.103	23.4	6.34	89.4	0.6	31.73	7.51	3	1.8
									23.4	6.34	89.5	0.7	31.73	7.51	2	1.9
						4.65			24.3	5.34	77.2	0.5	32.41	7.46	3	1.8
									24.3	5.33	77.1	0.4	32.41	7.46	3	1.8
						8.30			24.5	4.36	63.5	2.2	32.83	7.42	2	1.9
									24.5	4.35	63.4	2.1	32.83	7.42	2	1.9
7:39	I1	MF	841338.5	836588.5	7.0	1.00	35	0.910	23.7	6.50	92.6	0.6	32.11	7.52	2	2.6
									23.7	6.49	92.5	0.5	32.11	7.52	2	2.5
						3.50			24.5	5.62	82.5	0.6	32.48	7.48	5	2.4
									24.5	5.61	82.4	0.5	32.48	7.48	3	2.5
						6.00			24.5	4.31	62.2	1.9	32.77	7.42	4	2.6
									24.5	4.32	62.3	2.0	32.77	7.42	5	2.4
7:32	I2	MF	841590.3	836601.2	8.3	1.00	37	0.090	23.5	6.04	85.9	0.8	31.92	7.48	3	2.5
									23.5	6.05	85.8	0.7	31.92	7.49	3	2.3
						4.15			24.4	5.33	77.3	0.5	32.45	7.48	3	2.4
									24.4	5.32	77.2	0.4	32.45	7.48	3	2.4
						7.30			24.5	4.66	67.9	0.6	32.66	7.45	3	2.5
									24.5	4.65	67.8	0.5	32.66	7.45	3	2.2
7:24	I3	MF	841807.0	836680.9	8.8	1.00	82	0.086	23.7	6.12	87.1	0.7	32.25	7.52	5	2.5
									23.7	6.11	87.0	0.6	32.25	7.52	4	2.7
						4.40			24.4	5.01	72.3	0.4	32.37	7.46	2	2.5
									24.4	5.00	72.2	0.3	32.37	7.46	2	2.5
						7.80			24.5	4.57	66.6	0.5	32.68	7.45	4	2.5
									24.5	4.56	66.5	0.4	32.68	7.45	3	2.4
8:34	W1	MF	841858.9	836571.0	11.0	1.00	296	0.080	23.7	6.62	95.0	0.6	32.66	7.51	2	4.7
									23.7	6.63	95.1	0.5	32.66	7.51	3	4.7
						5.50			24.4	5.48	81.4	0.8	32.90	7.47	2	4.8
									24.4	5.47	81.3	0.7	32.90	7.47	3	4.8
						10.00			24.5	4.42	64.1	0.8	33.16	7.43	3	4.7
									24.5	4.41	64.0	0.7	33.16	7.43	3	4.7
7:47	M1	MF	840822.2	836416.4	1.3		316	0.192								
						0.65			22.8	5.97	83.4	0.4	31.57	7.45	2	2.5
									22.8	5.96	83.3	0.3	31.57	7.45	3	2.5
8:06	FCZ1	MF	841180.6	835230.8	6.6	1.00	293	0.153	23.5	6.59	94.0	0.6	32.05	7.54	2	2.0
									23..5	6.58	93.9	0.5	32.05	7.54	2	2.0
						3.30			23.5	6.52	92.1	0.7	31.93	7.53	2	1.9
									23.5	6.51	92.0	0.6	31.93	7.53	3	2.0
						5.60			24.2	5.36	78.8	1.2	32.53	7.50	2	2.0
									24.2	5.37	78.9	1.3	32.53	7.50	2	2.2

Remarks: *MF - Middle Flood tide*
ME - Middle Ebb tide
For SS, if the monitoring result is less than Limit of Report 2mg/L, the result value will be assumed as 2 for the calculation.
For Chorophyll-*a* , if the monitoring result is less than Limit of Report 0.1µg/L, the result value will be assumed as 0.1 for the calculation.

Contract No. CV/2012/05
Bathing Beach at Lung Mei, Tai Po

Impact Water Quality Monitoring Result

Sampling Date: 26-Nov-18
Weather: Rainy
Sea Condition: Smooth

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Current Direction	Current Speed	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Chlorophyll-*a*
			East	North	m	m	degrees	m/s	℃	mg/L	%	NTU	ppt	unit	mg/L	µg/L
13:54	G1	ME	841483.9	835936.1	6.8	1.00	69	0.034	23.3	6.92	97.5	0.5	31.70	7.54	4	6.8
									23.3	6.91	97.4	0.4	31.70	7.54	3	7.3
						3.40			23.4	6.55	92.5	0.4	31.71	7.52	3	7.2
									23.4	6.54	92.4	0.3	31.71	7.52	3	7.3
						5.80			24.0	4.50	64.4	1.0	32.36	7.42	2	7.3
									24.0	4.49	64.3	1.1	32.36	7.42	3	7.2
14:03	R1	ME	842307.4	835718.4	11.0	1.00	53	0.063	23.8	6.61	94.6	0.5	32.21	7.54	3	6.2
									23.8	6.60	94.5	0.4	32.21	7.54	2	6.3
						5.50			23.7	6.30	89.6	0.5	32.15	7.53	2	6.2
									23.7	6.29	89.5	0.4	32.15	7.53	3	6.2
						10.00			23.9	5.70	81.6	0.7	32.39	7.49	4	6.2
									23.9	5.69	81.5	0.6	32.39	7.49	4	6.2
13:34	R2	ME	840739.4	836212.4	7.6	1.00	293	0.090	23.1	6.93	97.1	0.6	31.29	7.55	4	6.5
									23.1	6.94	97.2	0.5	31.29	7.55	4	7.2
						3.80			23.2	6.70	94.5	0.4	31.38	7.55	3	6.9
									23.2	6.69	94.4	0.3	31.38	7.55	3	6.8
						6.60			24.1	4.03	58.2	2.2	32.19	7.43	5	6.9
									24.1	4.02	58.1	2.1	32.19	7.43	4	6.8
13:20	I1	ME	841338.5	836588.5	5.6	1.00	220	0.102	23.2	6.84	95.9	0.4	31.41	7.55	3	6.3
									23.2	6.83	95.8	0.3	31.41	7.55	3	6.2
						4.60			23.8	6.04	86.0	0.5	31.89	7.52	4	6.4
									23.8	6.03	85.9	0.4	31.89	7.52	4	6.3
13:12	I2	ME	841590.3	836601.2	7.2	1.00	64	0.109	23.5	6.55	92.9	0.4	31.92	7.54	5	6.6
									23.5	6.56	93.0	0.5	31.92	7.54	4	6.6
						3.60			24.1	5.52	80.4	0.4	32.32	7.49	3	6.4
									24.1	5.51	80.3	0.3	32.32	7.49	3	6.2
						6.20			24.1	4.54	65.0	0.6	32.54	7.45	4	6.6
									24.1	4.55	65.1	0.5	32.54	7.45	3	5.8
13:00	I3	ME	841807.0	836680.9	9.0	1.00	84	0.199	23.5	6.59	93.7	0.4	33.27	7.57	5	7.2
									23.5	6.54	93.4	0.3	33.27	7.57	5	7.4
						4.50			24.1	5.38	76.7	0.5	32.97	7.51	4	7.6
									24.1	5.37	76.6	0.4	32.97	7.51	4	7.7
						8.00			24.0	4.80	69.4	0.9	33.06	7.47	3	7.6
									24.0	4.79	69.3	0.8	33.06	7.47	3	7.5
14:10	W1	ME	841858.9	836571.0	8.9	1.00	118	0.087	23.7	6.73	95.4	0.6	31.77	7.54	5	7.5
									23.7	6.74	95.5	0.7	31.77	7.54	5	7.6
						4.45			24.1	5.68	83.0	0.4	32.41	7.48	3	7.4
									24.1	5.69	83.1	0.3	32.41	7.48	3	7.2
						7.90			24.0	4.94	71.1	0.5	32.63	7.45	4	7.4
									24.0	4.93	71.0	0.4	32.63	7.45	5	7.4
13:26	M1	ME	840822.2	836416.4	0.3		359	0.085								
						0.15			23.3	6.52	91.8	1.0	31.16	7.51	5	5.4
									23.3	6.51	91.7	0.9	31.16	7.51	5	5.3
13:48	FCZ1	ME	841180.6	835230.8	5.6	1.00	335	0.037	23.2	7.11	100.0	0.6	31.43	7.55	4	5.2
									23.2	7.10	99.9	0.5	31.45	7.55	3	2.9
						4.60			23.6	6.08	65.4	0.7	31.79	7.52	5	3.0
									23.6	6.09	65.5	0.8	31.79	7.52	4	5.5
8:48	G1	MF	841483.9	835936.1	7.4	1.00	71	0.053	22.9	6.89	96.1	0.4	31.04	7.53	2	5.4
									22.9	6.88	96.0	0.3	31.04	7.53	2	5.8
						3.70			23.2	6.28	88.4	0.4	31.22	7.51	3	5.7
									23.2	6.27	88.3	0.3	31.22	7.51	3	5.7
						6.40			24.0	4.63	70.1	0.7	31.87	7.42	3	5.8
									24.0	4.64	70.2	0.6	31.87	7.42	2	5.9
8:56	R1	MF	842307.4	835718.4	9.2	1.00	72	0.117	23.5	6.20	87.1	0.5	31.36	7.52	3	7.2
									23.5	6.17	86.9	0.4	31.36	7.52	4	7.1
						4.60			23.7	5.92	84.0	0.6	31.59	7.52	3	7.0
									23.7	5.89	83.5	0.5	31.59	7.52	3	6.8
						8.20			23.9	4.84	69.1	2.8	32.04	7.45	3	6.9
									23.9	4.83	69.0	2.7	32.04	7.45	3	7.0
8:30	R2	MF	840739.4	836212.4	8.0	1.00	287	0.027	23.1	5.94	82.7	0.8	30.69	7.44	4	7.3
									23.1	5.93	82.6	0.7	30.69	7.44	2	2.8
						4.00			23.5	4.51	71.5	0.5	30.93	7.40	4	2.9
									23.5	4.52	71.6	0.6	30.93	7.40	2	3.0
						7.00			24.2	4.11	58.7	1.6	31.77	7.38	4	2.8
									24.2	4.12	58.8	1.7	31.77	7.38	2	2.9
8:17	I1	MF	841338.5	836588.5	6.3	1.00	192	0.102	22.9	6.36	88.4	0.7	30.58	7.50	3	3.7
									22.9	6.35	88.3	0.6	30.58	7.50	3	3.7
						3.15			23.9	5.68	81.0	0.5	31.18	7.47	4	4.0
									23.9	5.64	79.8	0.4	31.18	7.47	3	3.8
						5.30			24.1	4.84	70.4	0.9	31.49	7.42	3	3.5
									24.1	4.83	70.3	0.8	31.49	7.42	3	3.8
8:10	I2	MF	841590.3	836601.2	9.6	1.00	302	0.103	23.1	6.26	87.5	0.6	30.69	7.48	2	4.4
									23.1	6.25	87.4	0.5	30.69	7.48	3	4.4
						4.80			23.9	5.23	75.4	0.4	31.08	7.44	3	4.4
									23.9	5.22	75.3	0.3	31.08	7.44	3	4.4
						8.60			24.2	4.33	62.9	0.4	31.58	7.39	3	4.4
									24.2	4.32	62.8	0.3	31.58	7.39	4	4.5
8:00	I3	MF	841807.0	836680.9	12.0	1.00	234	0.150	23.1	6.18	86.5	0.5	30.81	7.49	4	4.1
									23.1	6.18	86.4	0.4	30.81	7.49	5	4.6
						6.00			24.0	5.23	75.0	0.4	31.47	7.46	4	4.2
									24.0	5.22	74.9	0.3	31.47	7.46	4	4.2
						11.00			24.0	4.87	69.3	0.4	31.63	7.46	3	4.4
									24.0	4.86	69.2	0.3	31.63	7.46	4	4.1
9:04	W1	MF	841858.9	836571.0	10.0	1.00	120	0.110	23.9	7.50	78.0	0.4	31.55	7.48	3	4.5
									23.9	7.49	77.9	0.5	31.55	7.48	4	4.3
						5.00			24.0	5.07	72.5	0.5	31.75	7.47	3	4.4
									24.0	5.06	72.4	0.4	31.75	7.47	3	4.7
						9.00			24.0	4.85	69.3	0.6	31.92	7.47	4	4.4
									24.0	4.86	69.4	0.5	31.92	7.47	2	4.3
8:24	M1	MF	840822.2	836416.4	0.5		360	0.198								
						0.25			22.9	5.49	76.7	0.4	30.19	7.42	3	2.6
									22.9	5.50	76.8	0.3	30.19	7.42	4	2.6
8:39	FCZ1	MF	841180.6	835230.8	5.7	1.00	41	0.031	23.1	6.44	90.0	0.4	31.05	7.50	2	4.6
									23.1	6.43	89.8	0.3	31.05	7.50	4	4.9
						4.70			23.8	5.03	71.6	0.6	31.44	7.46	3	4.7
									23.8	5.02	71.7	0.5	31.44	7.46	3	4.7

Remarks: *MF - Middle Flood tide*
ME - Middle Ebb tide
For SS, if the monitoring result is less than Limit of Report 2mg/L, the result value will be assumed as 2 for the calculation.
For Chorophyll-*a*, if the monitoring result is less than Limit of Report 0.1µg/L, the result value will be assumed as 0.1 for the calculation.

Contract No. CV/2012/05
Bathing Beach at Lung Mei, Tai Po

Impact Water Quality Monitoring Result

Sampling Date: 28-Nov-18
Weather: Rainy
Sea Condition: Moderate

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Current Direction	Current Speed	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Chlorophyll-*a*
			East	North	m	m	degrees	m/s	℃	mg/L	%	NTU	ppt	unit	mg/L	µg/L
15:27	G1	ME	841483.9	835936.1	7.1	1.00	262	0.647	23.3	7.50	105.8	0.6	32.15	7.63	4	8.1
									23.3	7.49	105.7	0.5	32.14	7.62	4	8.1
						3.55			23.6	7.15	101.4	0.3	32.47	7.54	4	8.2
									23.6	7.14	101.3	0.3	32.46	7.53	4	8.2
						6.10			32.6	6.37	91.1	0.8	32.48	7.55	4	8.4
									23.6	6.36	91.0	0.8	32.47	7.54	3	8.7
15:38	R1	ME	842307.4	835718.4	9.7	1.00	151	0.258	23.5	7.03	100.1	0.5	32.55	7.56	4	8.0
									23.5	7.02	100.0	0.4	32.54	7.55	3	8.3
						4.85			23.8	6.00	87.6	0.1	32.77	7.46	4	8.1
									23.8	5.99	87.5	0.1	32.76	7.46	4	8.0
						8.70			23.7	5.35	76.3	0.2	32.72	7.48	4	8.5
									23.7	5.34	76.2	0.2	32.71	7.47	4	7.9
15:06	R2	ME	840739.4	836212.4	7.7	1.00	291	0.782	23.2	7.60	106.8	0.2	31.82	7.58	4	8.1
									23.1	7.59	106.7	0.2	31.81	7.57	5	8.3
						3.85			23.5	6.90	98.1	0.6	32.20	7.50	5	8.0
									23.5	6.90	97.9	0.6	32.19	7.49	5	7.8
						6.70			23.7	5.39	76.5	0.9	32.27	7.42	4	8.0
									23.7	5.38	76.3	0.9	32.26	7.42	5	8.3
14:50	I1	ME	841338.5	836588.5	5.7	1.00	238	0.103	23.2	5.39	75.6	1.8	31.79	7.59	3	8.1
									23.1	5.38	75.5	1.7	31.78	7.58	3	8.5
						4.70			24.0	3.88	55.3	3.3	32.97	7.36	3	8.8
									24.0	3.87	55.2	3.4	32.98	7.36	3	8.5
14:43	I2	ME	841590.3	836601.2	9.0	1.00	155	0.037	23.3	7.35	103.4	0.6	31.79	7.56	5	8.1
									23.3	7.30	102.9	0.6	31.78	7.55	4	8.2
						4.50			23.9	6.19	84.0	0.2	32.78	7.41	3	8.1
									23.9	6.17	84.0	0.1	32.77	7.40	5	7.8
						8.00			23.9	5.45	78.0	0.2	32.64	7.38	5	8.1
									23.9	5.44	77.9	0.2	32.63	7.36	3	8.9
14:31	I3	ME	841807.0	836680.9	9.6	1.00	106	0.086	23.3	7.11	100.0	0.4	31.25	7.55	4	8.0
									23.3	7.10	99.8	0.4	31.24	7.53	3	7.9
						4.80			23.6	6.03	85.5	0.3	31.84	7.48	3	8.3
									23.5	6.02	85.4	0.3	31.84	7.47	3	8.4
						8.60			23.9	5.37	76.5	0.2	32.69	7.39	3	8.3
									23.9	5.36	76.4	0.2	32.68	7.38	4	8.2
15:48	W1	ME	841858.9	836571.0	10.0	1.00	160	0.097	23.3	7.24	101.8	0.6	32.08	7.59	4	8.8
									23.3	7.24	101.3	0.6	32.08	7.57	3	9.6
						5.00			23.7	7.02	99.8	0.4	32.73	7.45	3	8.3
									23.7	7.01	99.7	0.4	32.72	7.44	4	8.5
						9.00			23.9	5.27	76.7	0.9	32.83	7.46	3	8.7
									23.8	5.26	76.6	0.9	32.82	7.46	4	8.3
15:00	M1	ME	840822.2	836416.4	1.0		230	0.019								
						0.50			23.3	6.67	94.1	0.9	31.91	7.52	5	6.7
									23.3	6.66	94.0	0.8	31.91	7.51	5	6.7
15:17	FCZ1	ME	841180.6	835230.8	5.3	1.00	287	0.258	22.6	6.61	92.1	0.8	31.40	7.58	5	8.1
									22.6	6.60	92.0	0.8	31.39	7.57	2	8.2
						4.30			24.1	4.92	73.0	2.5	32.91	7.37	5	8.8
									24.1	4.91	72.9	2.4	32.90	7.36	3	8.7
11:11	G1	MF	841483.9	835936.1	7.3	1.00	110	0.469	23.2	6.98	98.0	0.2	31.69	7.60	2	8.9
									23.2	6.97	98.0	0.2	31.68	7.59	2	9.2
						3.65			23.9	5.74	84.1	0.4	32.74	7.44	3	9.1
									23.9	5.73	84.0	0.4	32.74	7.43	3	9.2
						6.30			24.0	4.53	65.7	2.2	32.76	7.39	2	8.6
									24.0	4.52	65.6	2.1	32.76	7.38	2	8.9
11:25	R1	MF	842307.4	835718.4	9.4	1.00	111	0.240	23.5	6.67	94.7	0.5	32.19	7.51	3	8.1
									23.5	6.66	94.6	0.6	32.18	7.50	2	7.8
						4.70			23.7	6.24	86.4	0.4	32.67	7.45	4	7.9
									23.7	6.23	86.3	0.3	32.66	7.44	3	7.5
						8.40			23.7	4.90	71.1	1.6	32.60	7.45	3	7.9
									23.8	4.88	70.8	1.5	32.59	7.45	4	7.6
10:44	R2	MF	840739.4	836212.4	5.7	1.00	347	0.310	23.1	6.61	92.5	0.3	31.22	7.53	2	5.7
									23.1	6.60	92.4	0.3	31.21	7.52	2	5.4
						4.70			24.0	4.70	72.6	0.4	32.31	7.38	4	5.2
									24.0	4.69	72.5	0.4	32.30	7.37	4	5.5
10:24	I1	MF	841338.5	836588.5	5.9	1.00	276	0.399	23.2	6.58	92.3	0.6	31.48	7.53	2	5.3
									23.2	6.57	92.2	0.5	31.47	7.52	2	5.6
						4.90			23.6	5.27	76.5	2.3	31.83	7.47	3	5.4
									23.6	5.26	76.4	2.2	31.82	7.46	3	5.4
10:17	I2	MF	841590.3	836601.2	8.4	1.00	233	0.068	23.2	6.84	96.0	1.0	31.53	7.56	4	5.1
									23.2	6.83	95.9	1.0	31.53	7.55	3	5.0
						4.20			23.9	5.13	73.7	0.7	32.33	7.44	2	4.8
									23.9	5.12	73.6	0.7	32.31	7.43	3	5.1
						7.40			24.0	4.25	62.1	2.7	32.61	7.37	3	5.4
									23.9	4.24	62.0	2.6	32.61	7.36	4	5.2
10:00	I3	MF	841807.0	836680.9	9.2	1.00	245	0.019	23.3	6.54	92.6	0.3	31.56	7.53	2	5.1
									23.3	6.53	92.5	0.3	31.55	7.52	3	5.0
						4.60			23.9	5.26	76.0	0.2	32.32	7.43	3	5.1
									23.9	5.26	76.0	0.2	32.31	7.43	3	5.6
						8.20			23.7	4.71	67.5	0.5	32.20	7.44	3	5.3
									23.7	4.70	67.4	0.5	32.20	7.44	3	5.3
11:38	W1	MF	841858.9	836571.0	10.0	1.00	97	0.513	23.6	6.38	90.7	0.5	32.28	7.52	4	5.2
									23.6	6.37	90.6	0.5	32.27	7.51	3	5.4
						5.00			23.8	6.00	86.5	0.8	32.45	7.49	3	5.1
									23.8	5.99	86.4	0.6	32.44	7.48	4	5.5
						9.00			23.9	4.78	68.4	0.4	32.75	7.41	3	5.7
									23.9	4.78	68.3	0.4	32.74	7.40	3	5.6
10:32	M1	MF	840822.2	836416.4	0.6		151	0.283								
						0.30			23.2	6.37	89.3	2.0	31.29	7.51	5	4.9
									23.2	6.36	89.2	2.0	31.28	7.50	5	5.5
10:59	FCZ1	MF	841180.6	835230.8	5.7	1.00	187	0.180	22.8	7.07	98.6	0.8	31.33	7.59	4	8.3
									22.8	7.06	98.5	0.7	31.31	7.58	3	8.0
						4.70			24.0	4.50	72.0	1.3	32.54	7.37	3	8.6
									24.0	4.50	71.9	1.4	32.53	7.36	5	8.0

Remarks: *MF - Middle Flood tide*
ME - Middle Ebb tide
For SS, if the monitoring result is less than Limit of Report 2mg/L, the result value will be assumed as 2 for the calculation.
For Chorophyll-*a* , if the monitoring result is less than Limit of Report 0.1µg/L, the result value will be assumed as 0.1 for the calculation.

Contract No. CV/2012/05
Bathing Beach at Lung Mei, Tai Po

Impact Water Quality Monitoring Result

Sampling Date: 30-Nov-18
Weather: Fine
Sea Condition: Moderate

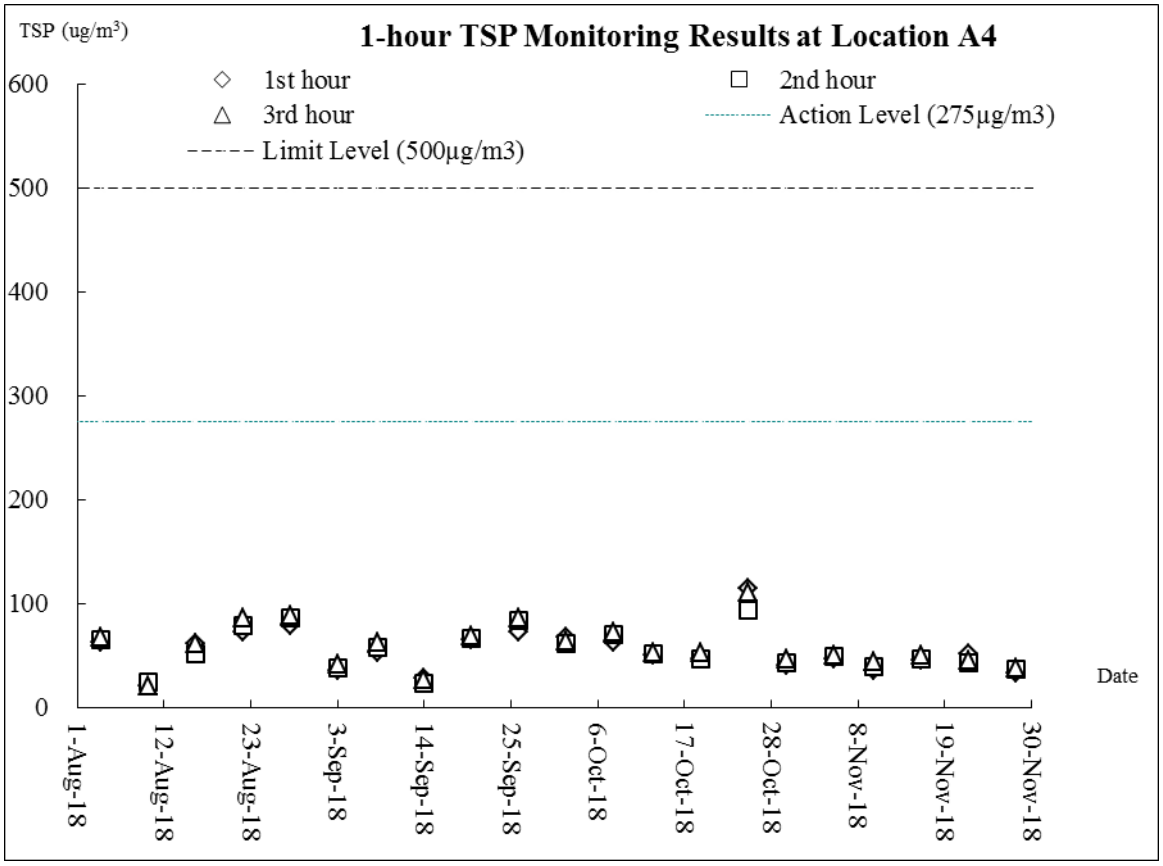
Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Current Direction	Current Speed	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Chlorophyll-*a*
			East	North	m	m	degrees	m/s	℃	mg/L	%	NTU	ppt	unit	mg/L	µg/L
7:40	G1	ME	841483.9	835936.1	7.3	1.00	22	0.111	23.1	7.44	104.2	0.6	32.01	7.59	5	4.3
									23.1	7.43	104.1	0.5	32.01	7.59	2	4.7
						3.65			23.1	7.38	103.7	0.4	31.80	7.60	6	4.4
									23.1	7.37	103.6	0.3	31.80	7.60	5	4.5
						6.30			23.9	4.84	72.7	3.5	32.72	7.39	10	4.6
									23.9	4.85	72.8	3.6	32.72	7.39	13	4.3
7:48	R1	ME	842307.4	835718.4	8.4	1.00	118	0.221	23.0	7.44	104.3	0.5	32.12	7.62	10	5.4
									23.0	7.45	104.4	0.6	32.12	7.62	8	5.4
						4.20			23.0	7.42	103.9	0.6	31.97	7.62	4	5.3
									23.0	7.41	103.8	0.5	31.97	7.62	4	5.7
						7.40			23.9	4.60	65.5	1.3	32.71	7.41	5	5.1
									23.9	4.62	65.7	1.4	32.71	7.41	3	5.4
7:25	R2	ME	840739.4	836212.4	7.4	1.00	195	0.010	23.2	5.76	94.7	0.5	31.53	7.53	4	3.6
									23.2	5.75	94.6	0.4	31.53	7.53	3	3.5
						3.70			23.3	5.36	89.3	0.5	31.45	7.48	5	3.5
									23.3	5.37	89.4	0.6	31.45	7.48	4	3.6
						6.40			24.1	3.50	51.0	3.0	32.45	7.77	3	3.2
									24.1	3.49	50.9	2.9	32.45	7.77	6	3.2
7:10	I1	ME	841338.5	836588.5	5.4	1.00	167	0.094	23.0	7.41	103.2	0.5	31.17	7.60	4	4.8
									23.0	7.42	103.3	0.4	31.17	7.60	4	4.4
						4.40			23.7	5.72	81.0	1.1	31.74	7.51	4	4.5
									23.7	5.71	80.8	1.0	31.74	7.51	5	4.5
7:02	I2	ME	841590.3	836601.2	8.5	1.00	60	0.057	23.2	7.36	102.7	0.4	30.93	7.57	3	4.3
									23.2	7.35	102.4	0.3	30.97	7.53	3	4.4
						4.25			23.5	7.01	99.3	0.4	31.31	7.56	3	4.2
									23.5	7.00	99.2	0.3	31.31	7.56	4	4.3
						7.50			23.9	4.70	70.0	0.8	32.21	7.37	4	4.6
									23.9	4.71	70.1	0.9	32.21	7.37	5	4.2
6:53	I3	ME	841807.0	836680.9	9.4	1.00	59	0.135	23.4	7.12	99.1	0.5	29.42	7.49	3	4.0
									23.4	7.11	99.0	0.5	29.42	7.49	8	4.0
						4.70			23.9	6.00	87.2	0.5	30.60	7.43	3	4.0
									23.9	5.59	87.1	0.4	30.60	7.43	4	3.7
						8.40			23.9	4.32	62.2	1.1	31.68	7.32	5	4.0
									23.9	4.31	62.1	1.0	31.68	7.32	4	3.7
7:55	W1	ME	841858.9	836571.0	9.0	1.00	123	0.222	23.0	7.29	102.1	0.6	31.74	7.62	5	5.0
									23.0	7.28	102.0	0.5	31.74	7.62	3	5.2
						4.50			23.7	7.10	98.5	0.4	32.36	7.46	5	5.1
									23.7	7.09	98.6	0.4	32.36	7.46	4	5.5
						8.00			23.9	4.05	57.8	2.1	32.79	7.38	3	5.3
									23.9	4.06	57.9	2.2	32.79	7.38	8	5.0
7:19	M1	ME	840822.2	836416.4	0.3		324	0.169								
						0.15			22.5	6.32	87.5	0.4	31.07	7.46	7	1.2
									22.5	6.31	87.4	0.4	31.07	7.46	4	1.1
7:32	FCZ1	ME	841180.6	835230.8	5.6	1.00	193	0.049	22.7	7.41	103.2	0.9	31.62	7.55	6	3.7
									22.7	7.40	103.1	0.8	31.62	7.55	4	3.7
						4.60			22.8	6.81	93.6	0.3	31.53	7.56	7	3.6
									22.8	6.80	93.5	0.3	31.53	7.56	9	3.7
12:38	G1	MF	841483.9	835936.1	5.8	1.00	34	0.100	23.2	7.94	111.3	0.4	31.66	7.71	3	6.1
									23.2	7.93	111.2	0.4	31.66	7.71	6	5.3
						4.80			23.2	7.88	110.8	0.5	31.87	7.69	4	5.4
									23.2	7.88	110.8	0.5	31.87	7.69	4	5.4
12:46	R1	MF	842307.4	835718.4	10.0	1.00	295	0.011	23.1	8.01	112.5	0.5	32.22	7.68	3	5.7
									23.1	8.06	112.4	0.6	32.22	7.68	3	5.7
						5.00			23.3	7.60	109.0	0.5	32.21	7.68	5	5.8
									23.3	7.59	108.9	0.5	32.21	7.68	4	5.5
						9.00			23.8	4.36	62.9	2.3	33.21	7.44	6	5.7
									23.8	4.35	62.8	2.2	33.21	7.44	4	5.4
12:22	R2	MF	840739.4	836212.4	6.0	1.00	126	0.300	23.3	7.44	104.7	0.5	32.10	7.66	4	4.8
									23.3	7.43	104.6	0.5	32.10	7.66	5	4.6
									23.3	7.53	106.0	0.4	32.03	7.66	4	4.7
									23.3	7.52	105.9	0.4	32.03	7.66	13	4.4
						5.00			23.2	7.42	104.6	0.6	32.07	7.65	4	4.6
									23.2	7.41	104.5	0.5	32.07	7.65	7	4.7
12:06	I1	MF	841338.5	836588.5	5.5	1.00	117	0.176	23.3	7.54	105.9	0.3	32.12	7.67	4	4.6
									23.3	7.55	106.1	0.3	32.12	7.67	4	4.5
						4.50			23.3	7.39	104.5	1.2	32.25	7.67	3	4.0
									23.3	7.38	104.4	1.1	32.25	7.67	6	4.3
11:58	I2	MF	841590.3	836601.2	6.9	1.00	170	0.159	23.5	7.56	107.2	0.4	32.70	7.69	5	4.2
									23.5	7.55	107.1	0.4	32.70	7.69	4	4.1
						3.45			23.4	7.72	108.8	0.5	32.70	7.70	4	4.2
									23.4	7.71	108.7	0.5	32.70	7.70	4	4.2
						5.90			24.0	5.35	79.0	0.6	33.64	7.47	7	4.1
									24.0	5.34	78.9	0.6	33.64	7.47	5	4.2
11:56	I3	MF	841807.0	836680.9	9.9	1.00	31	0.170	23.7	7.48	107.8	0.3	35.64	7.68	8	4.6
									23.7	7.47	107.7	0.3	35.64	7.68	5	4.7
						4.95			23.3	7.70	109.6	0.3	34.22	7.72	4	4.6
									23.3	7.69	109.5	0.3	34.22	7.72	8	4.8
						8.90			23.9	5.61	83.6	0.4	34.81	7.52	5	4.8
									23.9	5.60	83.5	0.4	34.81	7.52	5	4.5
12:52	W1	MF	841858.9	836571.0	11.0	1.00	134	0.212	23.8	7.61	107.8	0.4	32.07	7.62	4	6.4
									23.8	7.66	107.7	0.4	32.07	7.62	8	6.2
						5.50			23.6	7.67	108.7	0.4	32.07	7.65	5	6.6
									23.6	7.66	108.6	0.4	32.07	7.65	6	6.3
						10.00			23.7	7.16	102.4	0.5	32.23	7.61	5	6.6
									23.7	7.15	102.3	0.5	32.23	7.61	3	6.3
12:14	M1	MF	840822.2	836416.4	1.0		65	0.183								
						0.50			23.8	7.43	105.5	0.4	31.98	7.67	3	4.3
									23.8	7.43	105.6	0.5	31.98	7.67	2	4.4
12:30	FCZ1	MF	841180.6	835230.8	4.9	1.00	359	0.093	23.1	7.96	111.5	0.5	31.84	7.66	4	4.9
									23.1	7.95	111.4	0.4	31.84	7.66	4	5.0
						3.90			23.4	7.93	112.4	0.5	31.99	7.69	4	5.1
									23.4	7.92	112.3	0.5	31.99	7.69	5	5.1

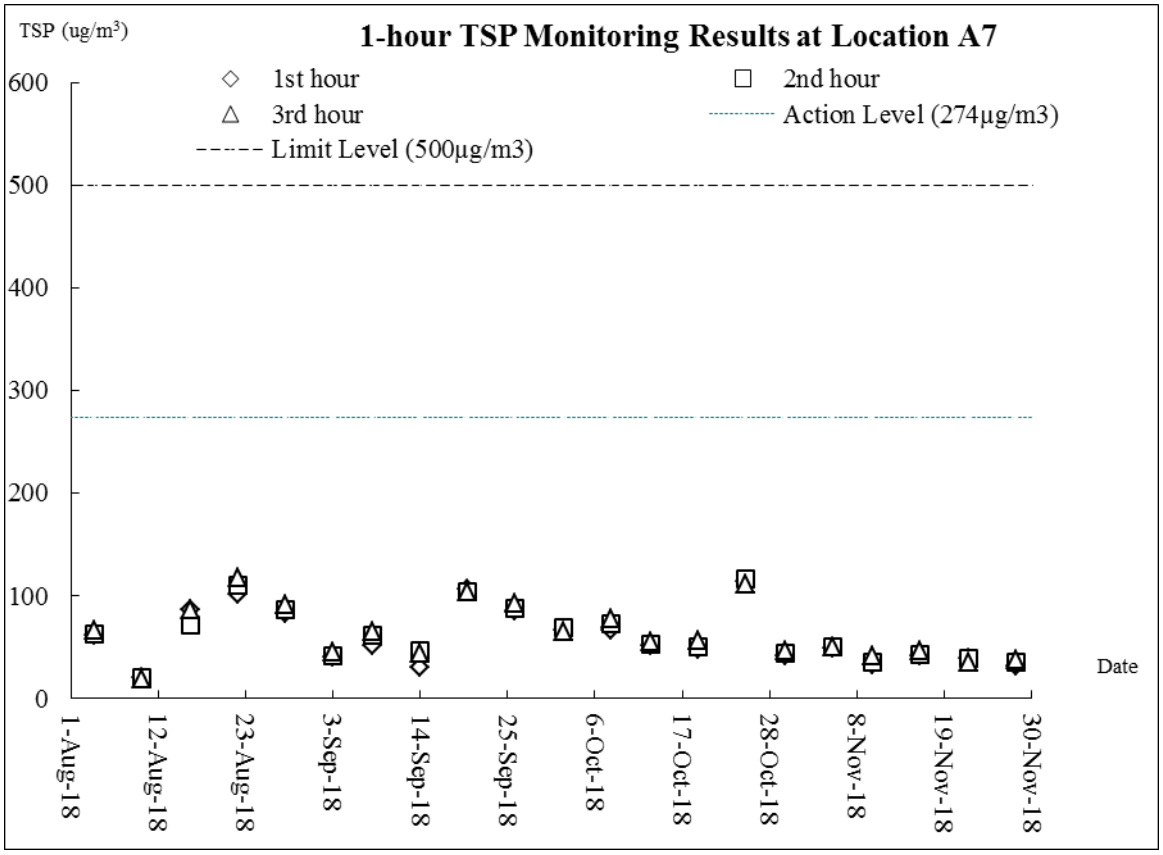
Remarks: *MF - Middle Flood tide*
ME - Middle Ebb tide
For SS, if the monitoring result is less than Limit of Report 2mg/L, the result value will be assumed as 2 for the calculation.
For Chorophyll-*a* , if the monitoring result is less than Limit of Report 0.1µg/L, the result value will be assumed as 0.1 for the calculation.

Appendix I

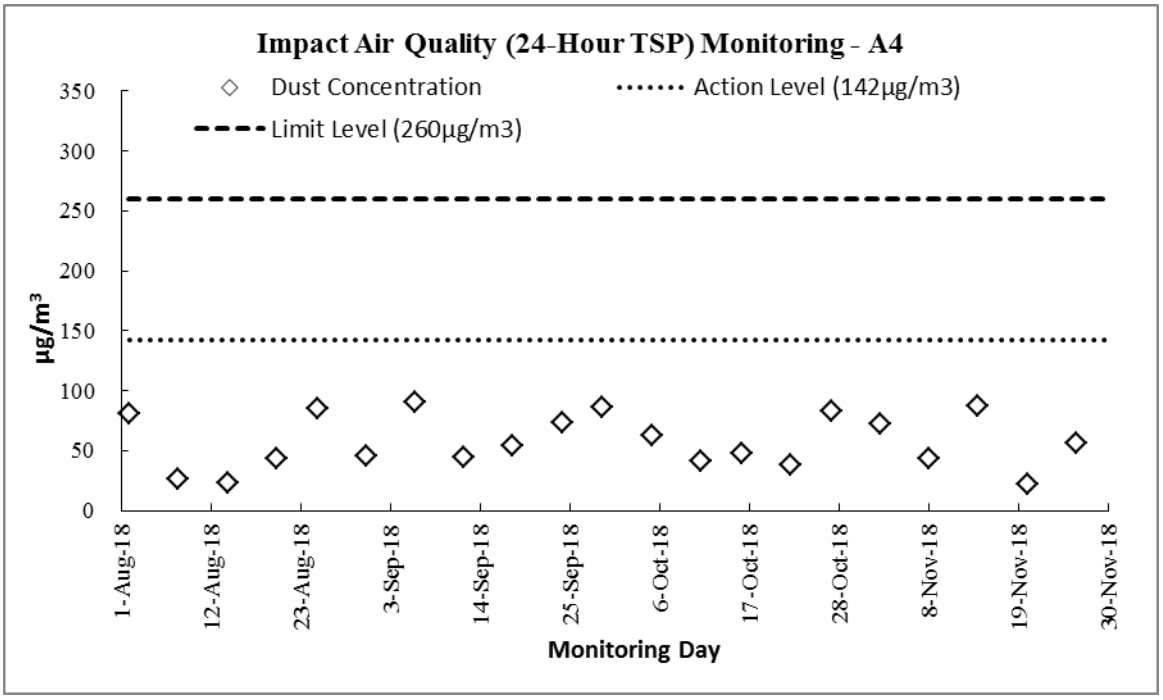
Graphical Plots for Monitoring Results

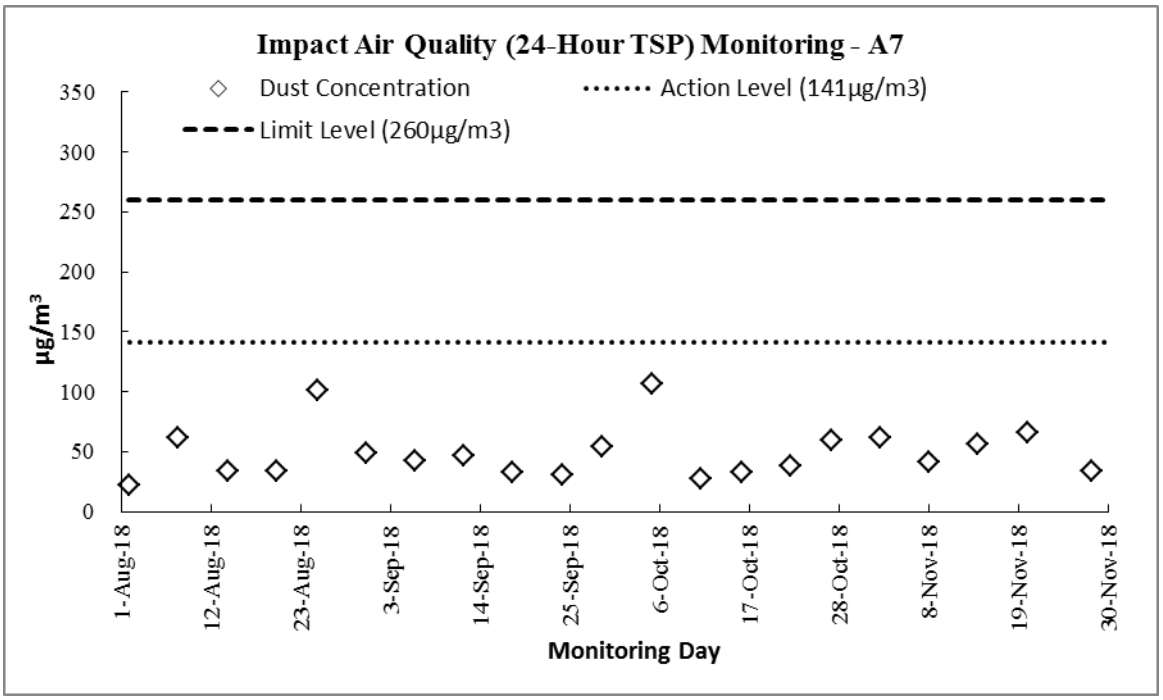
Air Quality – 1-hour TSP



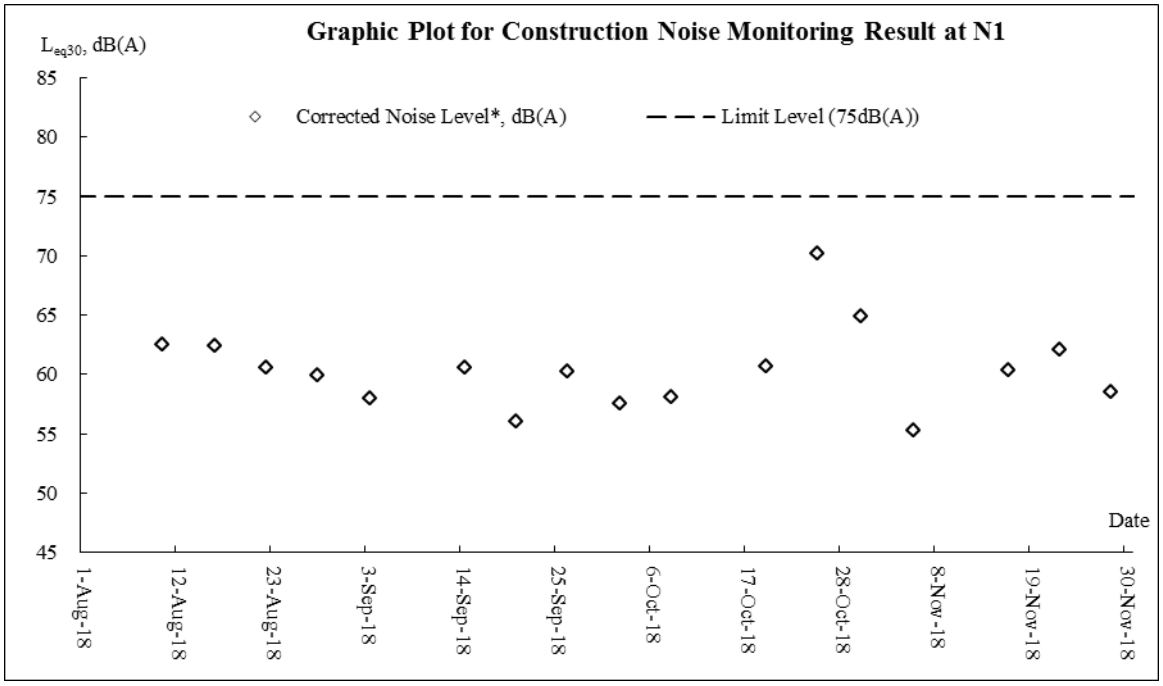


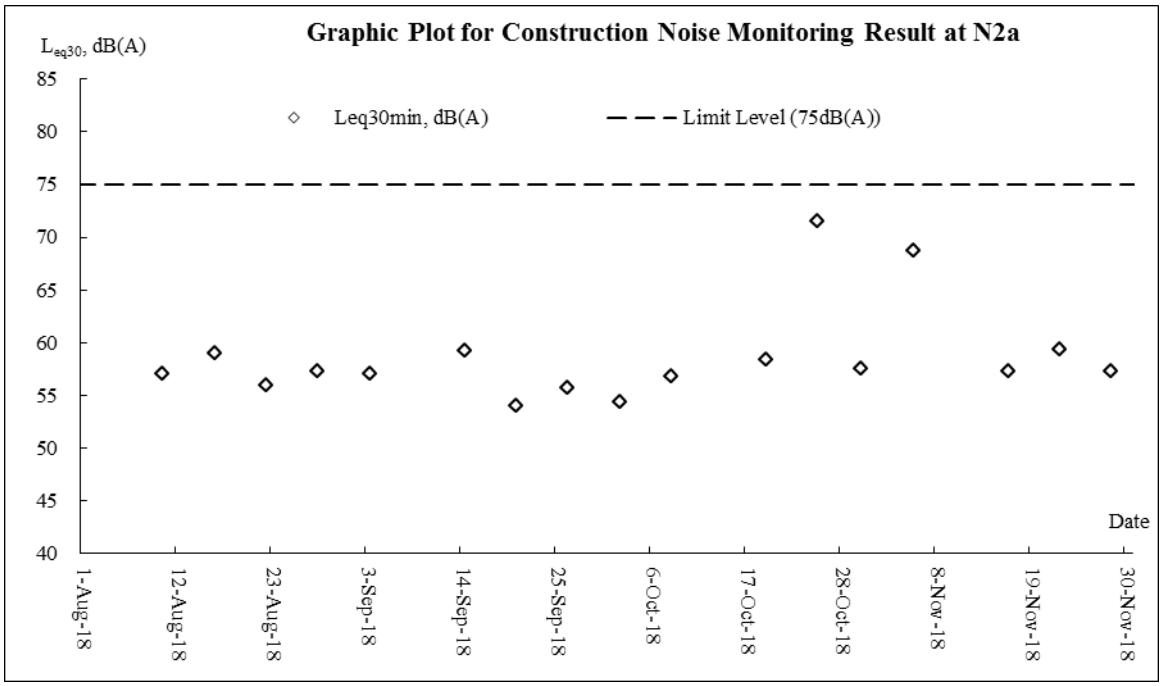
Air Quality – 24-hour TSP

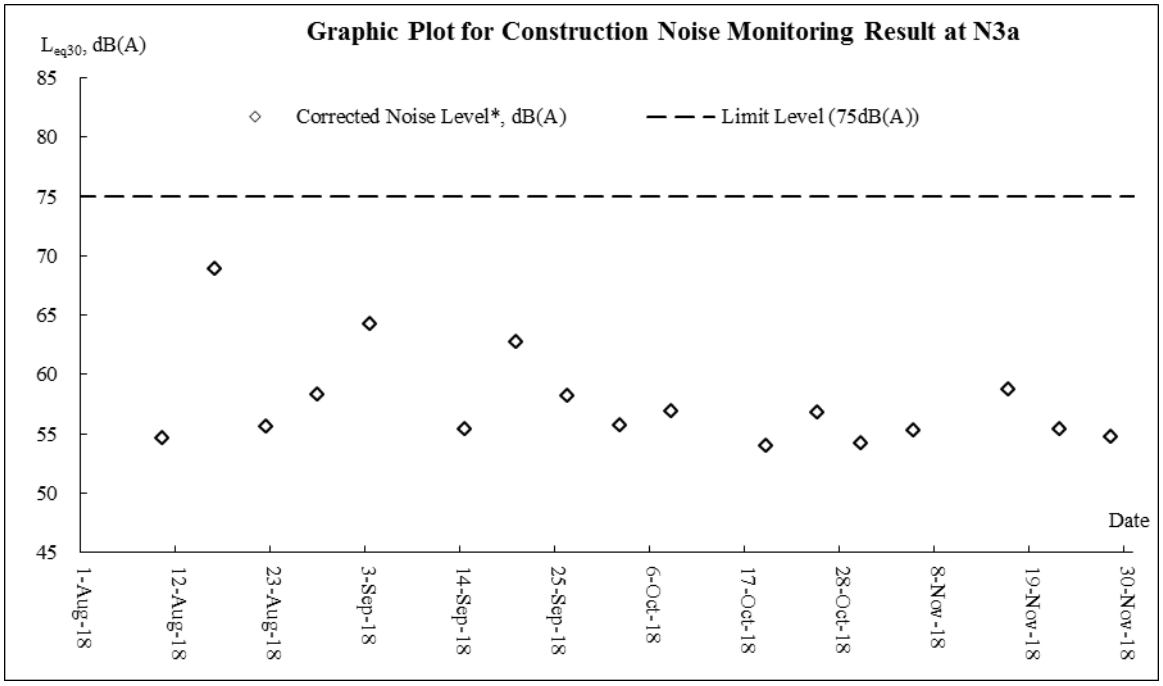


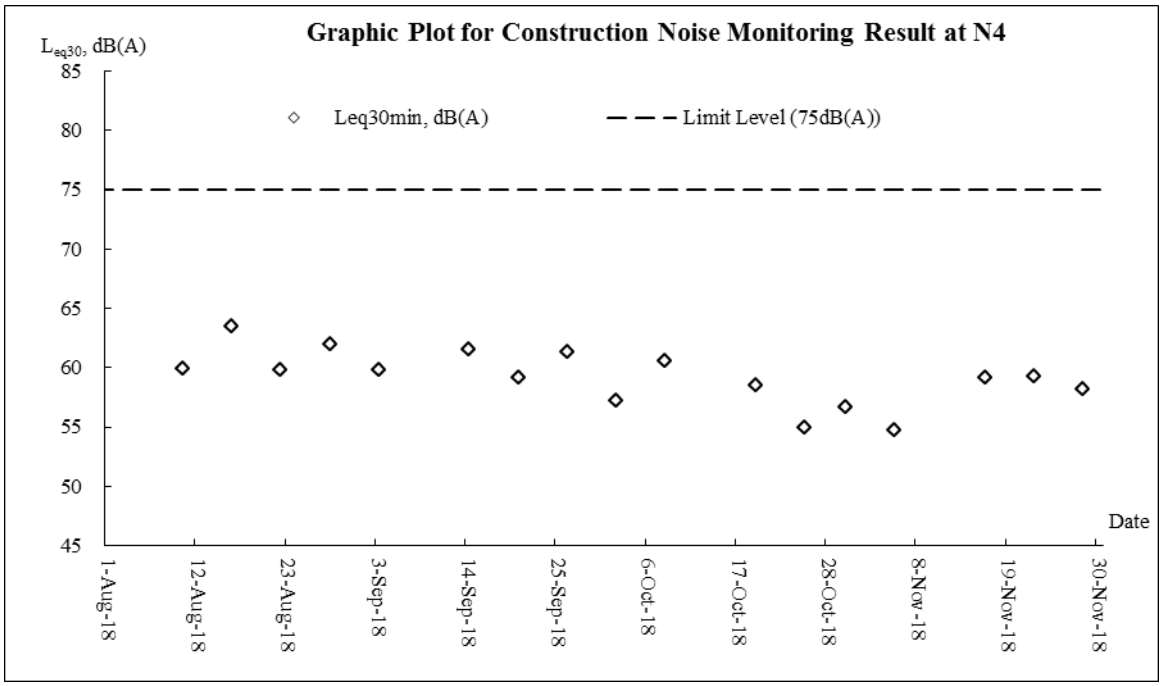


Construction Noise

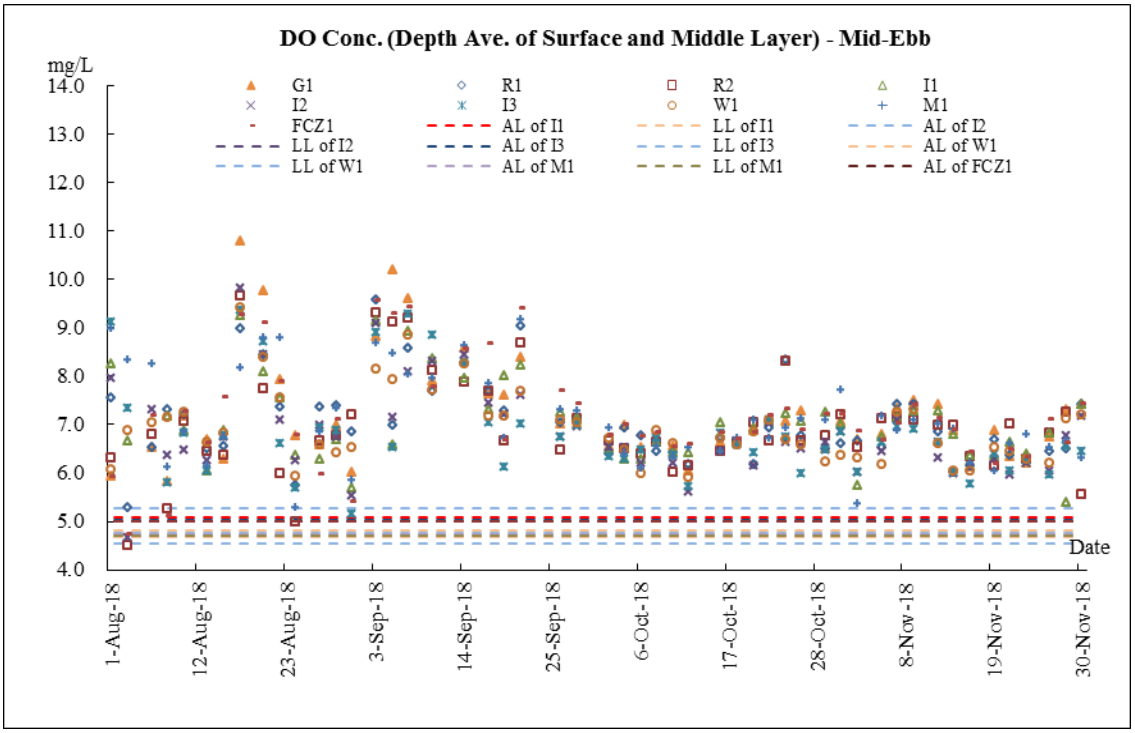


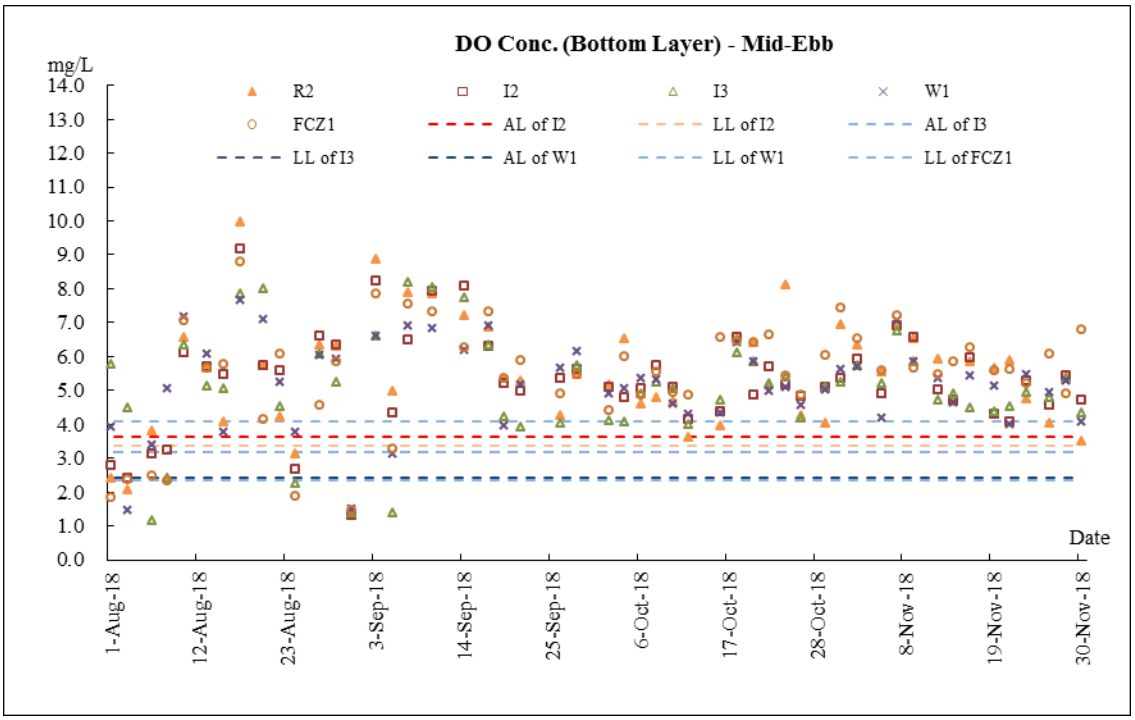


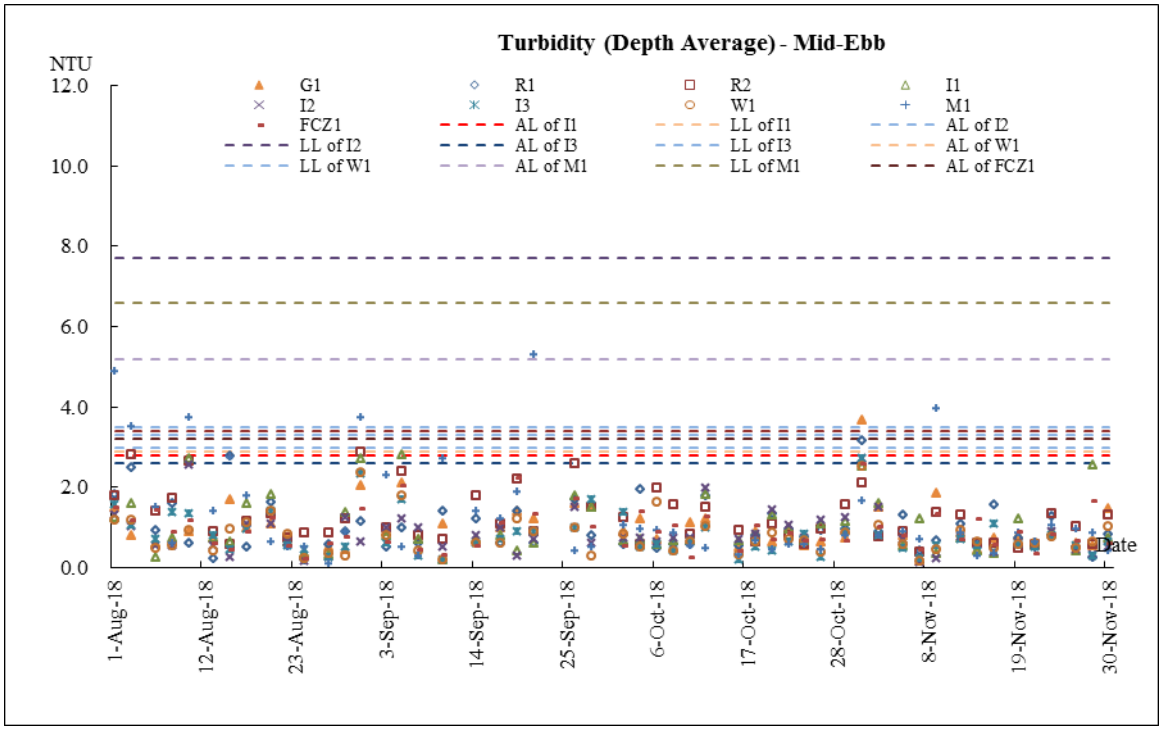

Graphic Plot for Construction Noise Monitoring Result at N3a
L_{eq30}, dB(A)
Corrected Noise Level*, dB(A)
Limit Level (75dB(A))
85
80
75
70
65
60
55
50
45
Date
1-Aug-18
12-Aug-18
23-Aug-18
3-Sep-18
14-Sep-18
25-Sep-18
6-Oct-18
17-Oct-18
28-Oct-18
8-Nov-18
19-Nov-18
30-Nov-18

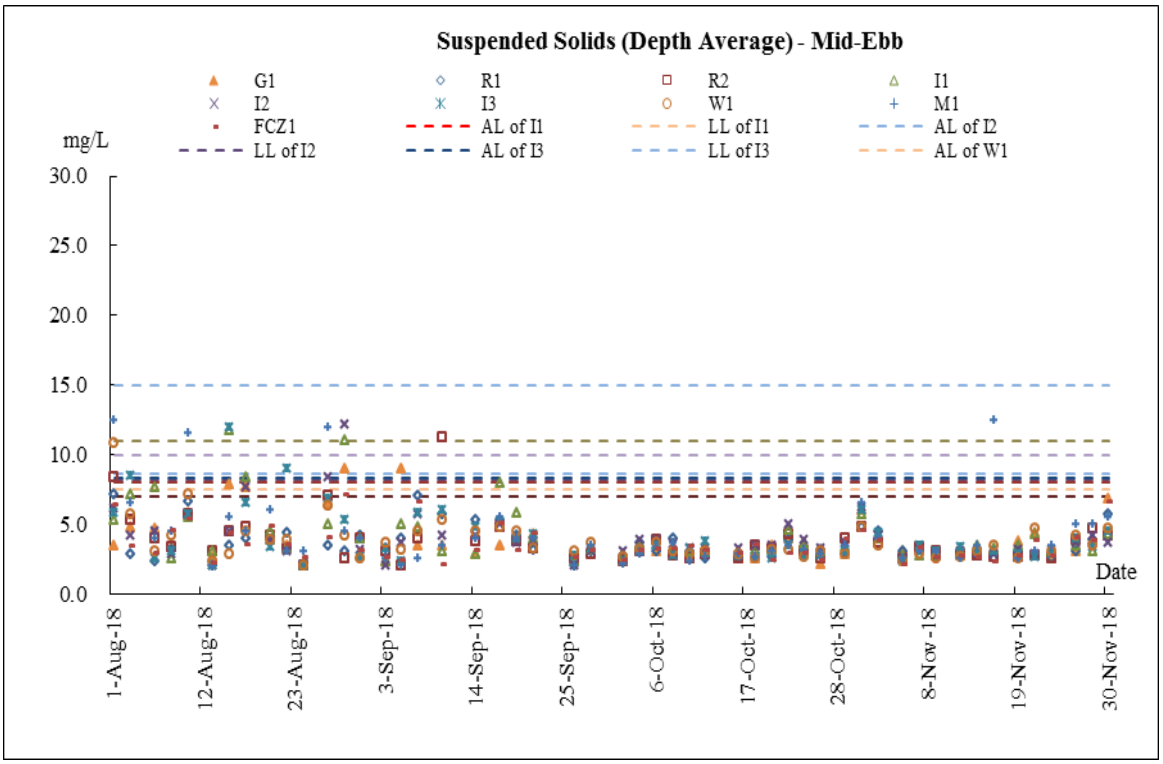

Graphic Plot for Construction Noise Monitoring Result at N4
L_{eq30}, dB(A)
Leq30min, dB(A)
Limit Level (75dB(A))
85
80
75
70
65
60
55
50
45
Date
1-Aug-18
12-Aug-18
23-Aug-18
3-Sep-18
14-Sep-18
25-Sep-18
6-Oct-18
17-Oct-18
28-Oct-18
8-Nov-18
19-Nov-18
30-Nov-18

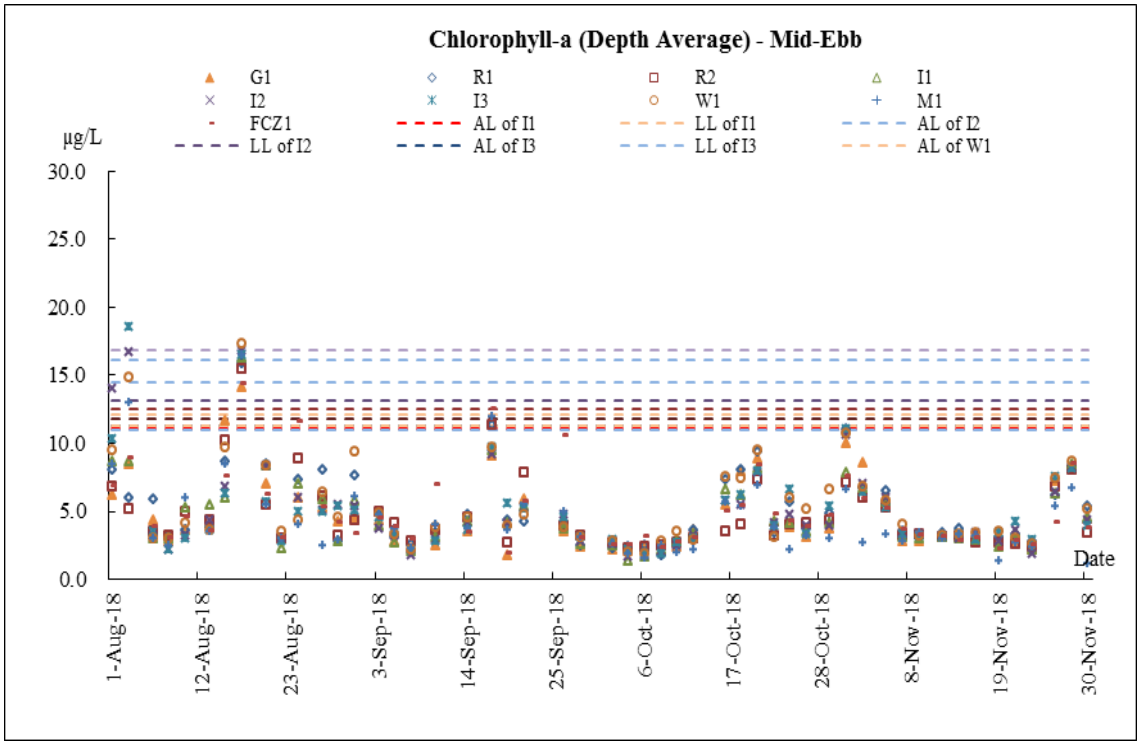
Water Quality

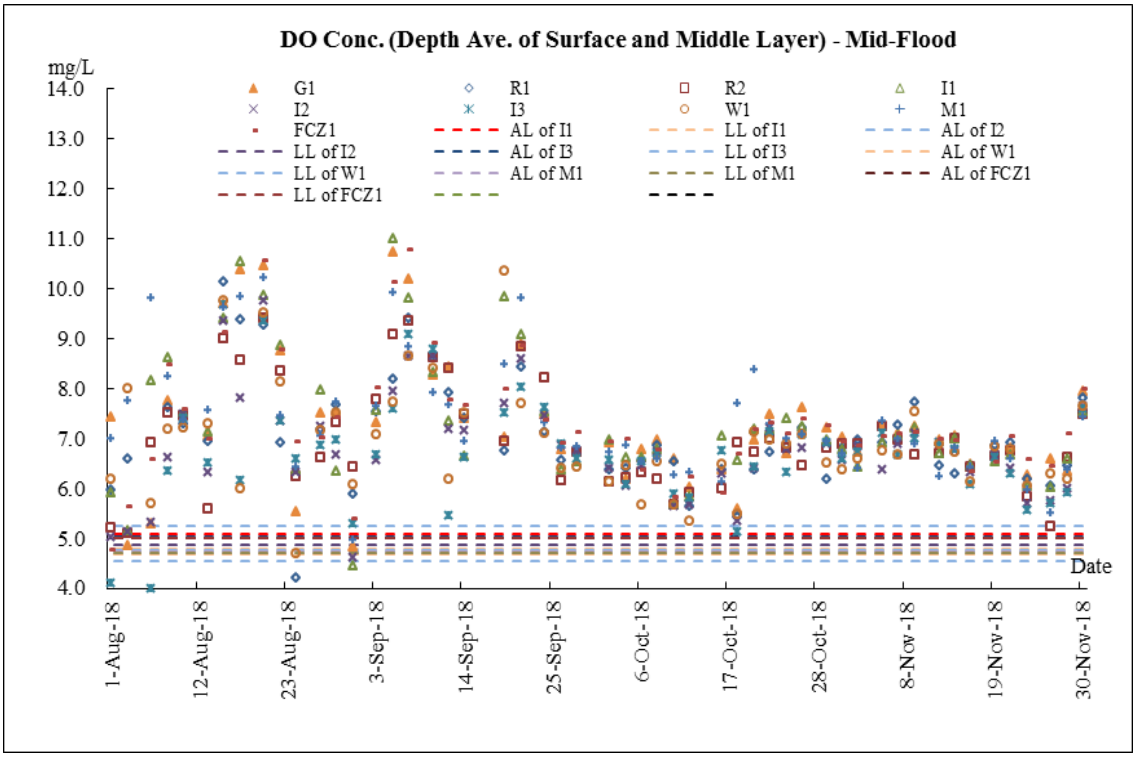


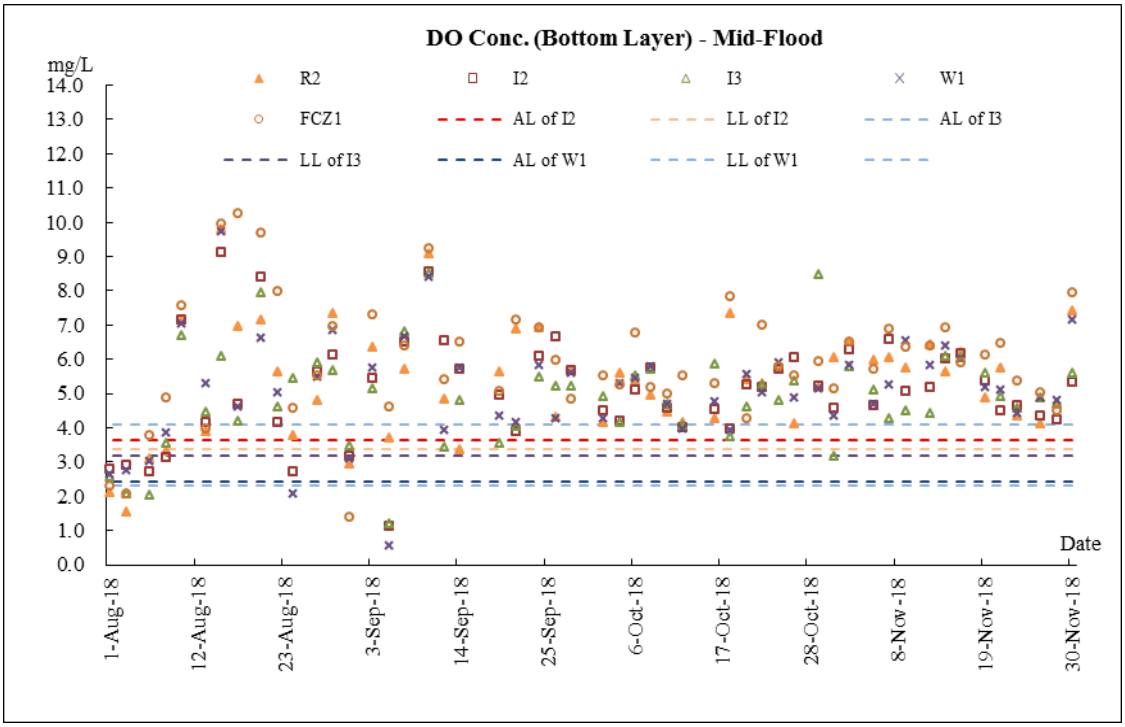


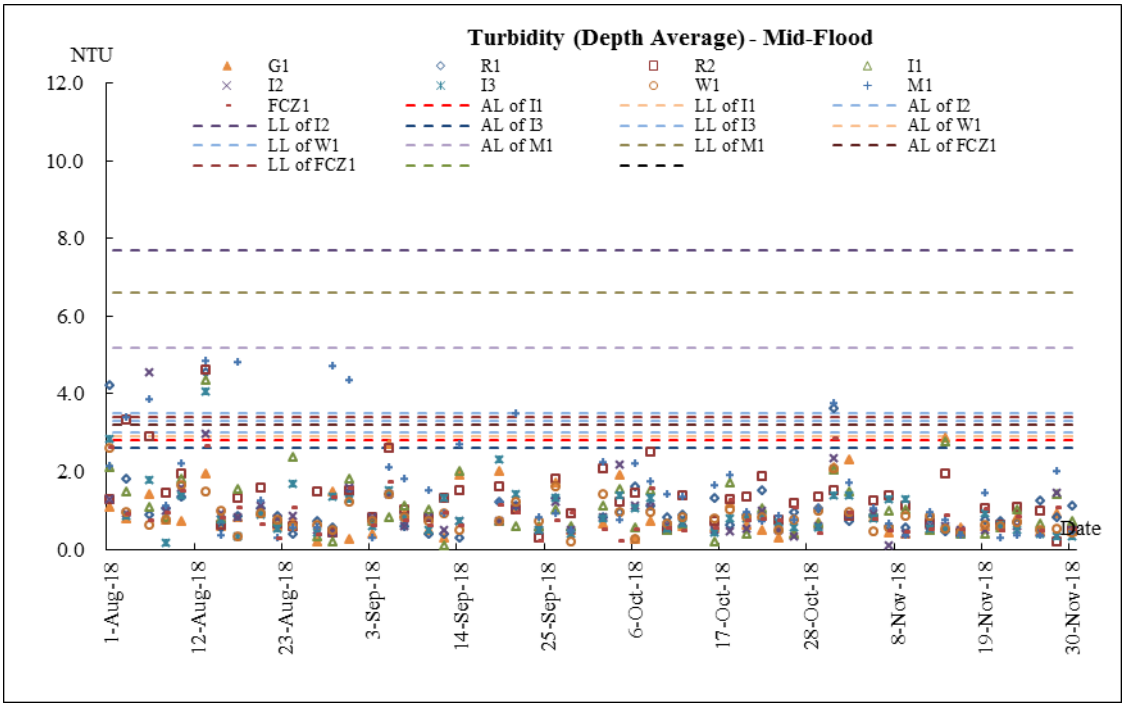

Turbidity (Depth Average) - Mid-Ebb
NTU
G1
R1
R2
I1
I2
I3
W1
M1
FCZ1
AL of I1
LL of I1
AL of I2
LL of I2
AL of I3
LL of I3
AL of W1
LL of W1
AL of M1
LL of M1
AL of FCZ1
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Date
1-Aug-18
12-Aug-18
23-Aug-18
3-Sep-18
14-Sep-18
25-Sep-18
6-Oct-18
17-Oct-18
28-Oct-18
8-Nov-18
19-Nov-18
30-Nov-18

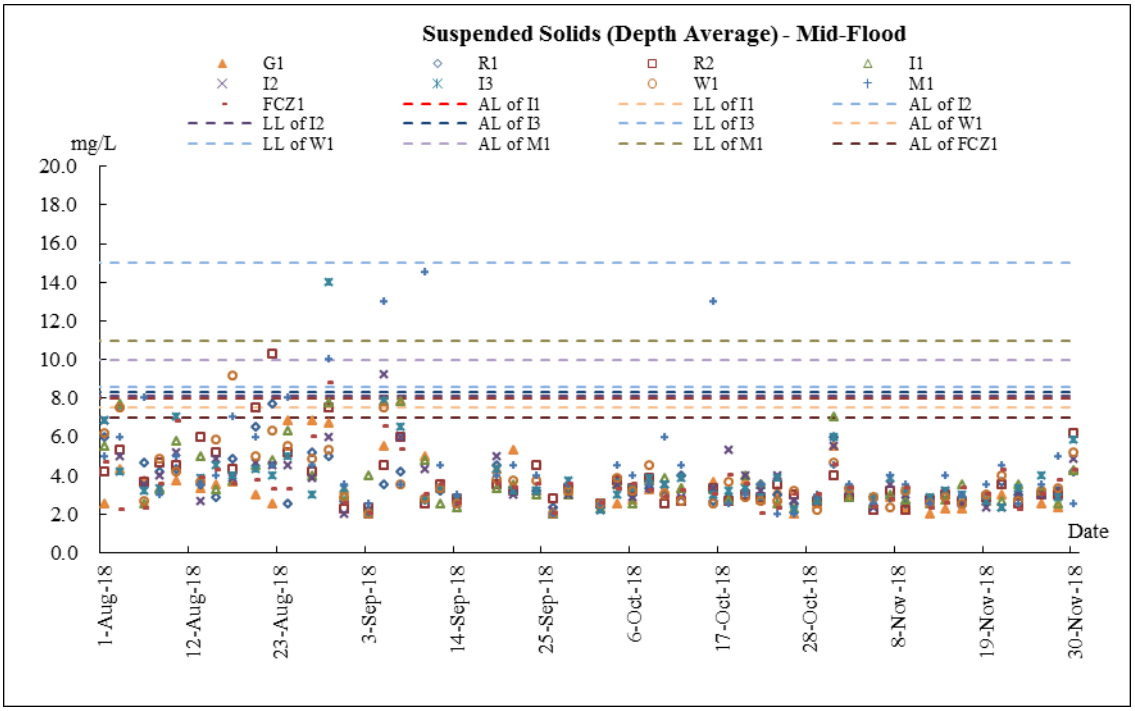

Suspended Solids (Depth Average) - Mid-Ebb
G1
R1
R2
I1
I2
I3
W1
M1
FCZ1
AL of I1
LL of I1
AL of I2
LL of I2
AL of I3
LL of I3
AL of W1
mg/L
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Date
1-Aug-18
12-Aug-18
23-Aug-18
3-Sep-18
14-Sep-18
25-Sep-18
6-Oct-18
17-Oct-18
28-Oct-18
8-Nov-18
19-Nov-18
30-Nov-18

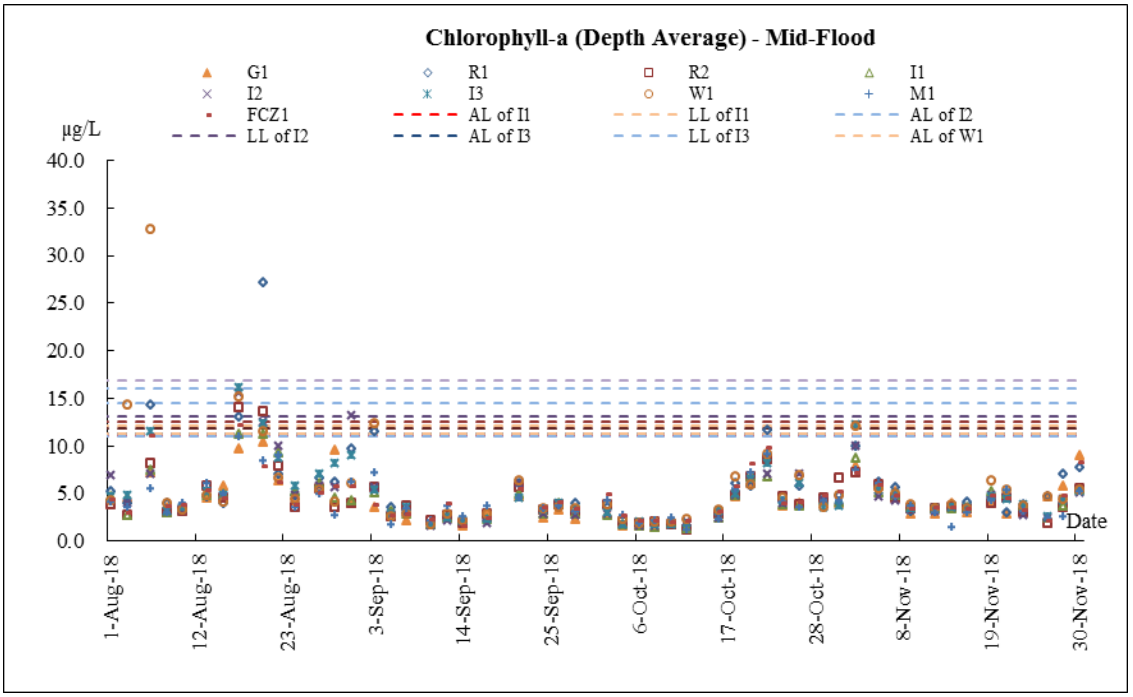

Chlorophyll-a (Depth Average) - Mid-Ebb
G1
R1
R2
I1
I2
I3
W1
M1
FCZ1
AL of I1
LL of I1
AL of I2
LL of I2
AL of I3
LL of I3
AL of W1
µg/L
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Date
1-Aug-18
12-Aug-18
23-Aug-18
3-Sep-18
14-Sep-18
25-Sep-18
6-Oct-18
17-Oct-18
28-Oct-18
8-Nov-18
19-Nov-18
30-Nov-18


DO Conc. (Depth Ave. of Surface and Middle Layer) - Mid-Flood
G1
R1
R2
I1
I2
I3
W1
M1
FCZ1
AL of I1
LL of I1
AL of I2
LL of I2
AL of I3
LL of I3
AL of W1
LL of W1
AL of M1
LL of M1
AL of FCZ1
LL of FCZ1
mg/L
14.0
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
Date
1-Aug-18
12-Aug-18
23-Aug-18
3-Sep-18
14-Sep-18
25-Sep-18
6-Oct-18
17-Oct-18
28-Oct-18
8-Nov-18
19-Nov-18
30-Nov-18


DO Conc. (Bottom Layer) - Mid-Flood
mg/L
R2
I2
I3
W1
FCZ1
AL of I2
LL of I2
AL of I3
LL of I3
AL of W1
LL of W1
14.0
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Date
1-Aug-18
12-Aug-18
23-Aug-18
3-Sep-18
14-Sep-18
25-Sep-18
6-Oct-18
17-Oct-18
28-Oct-18
8-Nov-18
19-Nov-18
30-Nov-18


Turbidity (Depth Average) - Mid-Flood
NTU
G1
R1
R2
I1
I2
I3
W1
M1
FCZ1
AL of I1
LL of I1
AL of I2
LL of I2
AL of I3
LL of I3
AL of W1
LL of W1
AL of M1
LL of M1
AL of FCZ1
LL of FCZ1
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Date
1-Aug-18
12-Aug-18
23-Aug-18
3-Sep-18
14-Sep-18
25-Sep-18
6-Oct-18
17-Oct-18
28-Oct-18
8-Nov-18
19-Nov-18
30-Nov-18


Suspended Solids (Depth Average) - Mid-Flood
G1
R1
R2
I1
I2
I3
W1
M1
FCZ1
AL of I1
LL of I1
AL of I2
LL of I2
AL of I3
LL of I3
AL of W1
LL of W1
AL of M1
LL of M1
AL of FCZ1
mg/L
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Date
1-Aug-18
12-Aug-18
23-Aug-18
3-Sep-18
14-Sep-18
25-Sep-18
6-Oct-18
17-Oct-18
28-Oct-18
8-Nov-18
19-Nov-18
30-Nov-18


Chlorophyll-a (Depth Average) - Mid-Flood
G1
R1
R2
I1
I2
I3
W1
M1
FCZ1
AL of I1
LL of I1
AL of I2
LL of I2
AL of I3
LL of I3
AL of W1
µg/L
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Date
1-Aug-18
12-Aug-18
23-Aug-18
3-Sep-18
14-Sep-18
25-Sep-18
6-Oct-18
17-Oct-18
28-Oct-18
8-Nov-18
19-Nov-18
30-Nov-18

Appendix J

Meteorological Data

Date		Weather	Total Rainfall (mm)	Tai Po Station		Tai Mei Tuk Station	
				Mean Air Temp. (°C)	Mean Relative Humidity (%)	Wind Speed (km/h)	Wind Direction
1-Nov-18	Thu	Mainly cloudy. Very dry with sunny intervals at first.	0	23.7	42.2	26.7	N/NE
2-Nov-18	Fri	Mainly cloudy with one or two showers and bright periods.	0.1	20.2	70.2	12.5	N/NE
3-Nov-18	Sat	Sunny periods. Moderate easterly winds, occasionally fresh offshore.	8.3	19.6	86.0	17.3	N
4-Nov-18	Sun	Moderate easterly winds, occasionally fresh offshore.	Trace	22	86.7	10.5	E
5-Nov-18	Mon	Mainly fine. Moderate east to northeasterly winds.	Trace	24.2	81.7	14.6	E
6-Nov-18	Tue	Moderate east to northeasterly winds	0	24.6	80.5	13.8	E
7-Nov-18	Wed	Mainly fine. Moderate east to northeasterly winds.	0	24.3	82.2	11.7	E/NE
8-Nov-18	Thu	Mainly fine and dry.Moderate north to northeasterly winds.	Trace	24.2	80	9.7	NE
9-Nov-18	Fri	Sunny periods. Moderate northeasterly winds	0	22.5	71.5	14.2	E
10-Nov-18	Sat	Mainly cloudy with sunny periods. Moderate east to northeasterly winds.	Trace	23	78.0	45.2	E
11-Nov-18	Sun	Mainly cloudy. Moderate to fresh easterly winds	0	22.6	80.5	13.5	E/NE
12-Nov-18	Mon	Moderate to fresh easterly winds	Trace	23.8	80.5	6.5	S/SE
13-Nov-18	Tue	Moderate to fresh easterly winds	Trace	23.1	81.5	13.5	N/NE
14-Nov-18	Wed	Moderate to fresh easterly winds, occasionally strong offshore at first.	Trace	23.1	76.7	23.4	E
15-Nov-18	Thu	Cloudy with a few rain patches.	Trace	22.2	83.2	20.2	E
16-Nov-18	Fri	Mainly cloudy with a few rain patches.	1.1	22.9	90	16.7	E
17-Nov-18	Sat	Sunny intervals. Moderate north to northeasterly winds	0.5	22.7	87.0	35.3	NE
18-Nov-18	Sun	Mainly cloudy. Bright periods in the afternoon	0	23.3	87	9.7	E/NE
19-Nov-18	Mon	Moderate east to northeasterly winds, occasionally fresh.	0	22.3	79.5	12.5	E/NE
20-Nov-18	Tue	Sunny periods and relatively low visibility in the afternoon.	0.1	21.6	85.2	15.3	E
21-Nov-18	Wed	Moderate easterly winds. Becoming fresh northerlies with a few rain patches later.	2.4	22.7	85.7	15	E/NE
22-Nov-18	Thu	Dry and appreciably cooler. Sunny periods.	0.2	19.5	63.2	20	NE
23-Nov-18	Fri	Mainly fine. Moderate northerly winds	Trace	19.3	64.2	7.6	S/SE
24-Nov-18	Sat	Mainly fine. Moderate northerly winds	Trace	20.6	82	6	NE
25-Nov-18	Sun	Cloudy with a few rain patches.	21	18.5	83.7	9.1	NE
26-Nov-18	Mon	Cloudy with a few rain patches.Moderate northeasterly winds.	15.7	18.3	87.5	13.2	NE
27-Nov-18	Tue	Cloudy with a few rain patches. Slightly cooler tonight.	16.3	19.9	83.7	9.3	N/NE
28-Nov-18	Wed	Mainly fine.Moderate easterly winds, occasionally fresh.	7.7	19.6	89.5	14.7	NE
29-Nov-18	Thu	Mainly fine.Moderate easterly winds, occasionally fresh.	Trace	20.5	76.7	9.1	NE
30-Nov-18	Fri	Mainly fine. Dry in the afternoon. Moderate easterly winds	0	20.8	71.5	13	E/NE

;

Appendix K

Waste Flow Table

Year	Mth	Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of Import Fill	Actual Quantities of Non-inert C&D Waste Generated Monthly				
		Total Quantities Generated	Broken Concrete (see Note 3)	Reused in the Contract	Reused in Other Projects	Disposed in Public Fill		Metal	Paper / Cardboard Packaging	Plastics (see Note 2)	Chemical Waste	Others: tree branches, root and leaves
		(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
2013	Jun	0	0	0	0	0	0	0	0	0	0	0
	Jul	0	0	0	0	0	0	0	0	0	0	0
	Aug	0	0	0	0	0	0	0	0	0	0	0
	Sep	0	0	0	0	0	0	0	0	0	0	0
	Oct	0	0	0	0	0	0	0	0	0	0	0
	Nov	0	0	0	0	0	0	0	0	0	0	0
	Dec	0	0	0	0	0	0	0	0	0	0	0
2014-2016	Jan	0	0	0	0	0	0	0	0	0	0	0
	:	0	0	0	0	0	0	0	0	0	0	0
	Jun	0	0	0	0	0	0	0	0	0	0	0
	Sub-total:	0	0	0	0	0	0	0	0	0	0	0
	:	0	0	0	0	0	0	0	0	0	0	0
	Oct	0	0	0	0	0	0	0	0	0	0	0
2016	Nov	0	0	0	0	0	0	0	0	0	0	0
	Dec	0	0	0	0	0	0	0	0	0	0	0
	Total:	0	0	0	0	0	0	0	0	0	0	0
2017	Jan	0	0	0	0	0	0	0	0	0	0	0
	Feb	0	0	0	0	0	0	0	0	0	0	0.0024
	Mar	0	0	0	0	0	0	0	0	0	0	0
	Apr	0	0	0	0	0	0	0	0	0	0	0
	May	0	0	0	0	0	0	4.97	0	0	0	0.103644
	Jun	0	0	0	0	0	0	0	0	0	0	0.0064
	Sub-total:	0	0	0	0	0	0	4.97	0	0	0	0.112444
	Jul	0	0	0	0	0	0	0	0	0	0	0.01104
	Aug	0	0	0	0	0	0	0	0	0	0	0
	Sep	0	0	0	0	0	0	0	0	0	0	0.02883
	Oct	0	0	0	0	0	0	0	0	0	0	0
	Nov	0.04875	0	0	0	0.04875	0	0	0	0	0	0.26
	Dec	0	0	0	0	0	0	0	0	0	0	0.0325
	Total:	0.04875	0	0	0	0.04875	0	4.97	0	0	0	0.444814
2018	Jan	0	0	0	0	0	0	0	0	0	0	0.078
	Feb	0	0	0	0	0	0	0	0	0	0	0
	Mar	1.633125	0	0	0	1.633125	0	0	0	0	0	0.0065
	Apr	1.31625	0	0	0	1.31625	0.62548	0	0	0	0	0
	May	0	0	0	0	0	1.94848	0	0	0	0	0.0065
	Jun	0	0	0	0	0	2.728	0	0	0	0	0
	Sub-total:	2.998125	0	0	0	2.998125	5.30196	4.97	0	0	0	0.535814
	Jul	0	0	0	0	0	4.88	0	0	0	0	0
	Aug	1.14	0	0	0	1.14	4.832	0	0	0	0	0
	Sep	1.08	0	0	0	1.08	2.472	0	0	0	0	0
	Oct	0	0	0	0	0	3.608	0	0	0	0	0.0195
	Nov	0.224	0	0	0	0.224	0.548	0	0	0	0	0.0065
	Dec											
	Total:	5	0	0	0	5.442125	21.64196	4.97	0	0	0	0.561814

Appendix L

Implementation Schedule for Environmental Mitigation Measures

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure & Main Concerns to address	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage				Relevant Legislation Guidelines
						Des	C	O	Dec	
Air Quality – Construction Phase										
4.5.1	-	Dust Control a Vehicle washing facilities should be provided at the designated vehicle exit point; b Every vehicle should be washed to remove any dusty materials from its body and wheels immediately before leaving the worksite; c The load carried by the trucks should be covered entirely to ensure no leakage from the vehicles; d Hoarding of not less than 2.4 m high from ground level should be provided along the entire length of that portion of the site boundary adjoining a road or other area accessible to the public except for a site entrance or exit; e The main haul road should be kept clear of dusty materials and should be sprayed with water so as to maintain the entire road surface wet at all the time; f The stockpile of dusty materials should be either covered entirely by	To ensure dust emission is controlled and compliance with relevant statutory requirements	Project Site / During construction	Contractor		✓			*Air Pollution Control (Construction Dust) Regulations*

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure & Main Concerns to address	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage				Relevant Legislation Guidelines
						Des	C	O	Dec	
		impervious sheets; place in an area sheltered on the top and three sides; or sprayed with water to maintain the entire surface wet at all the time; g Belt conveyor system should be enclosed on the top and two sides; h The height of the belt conveyor should be kept as low as possible to avoid delivery at height; and i All the exposed area should be kept wet always to minimise dust emission.								
4.5.1	-	<u>Air Quality Control</u> a All dump trucks entering or leaving the Project Site should be provided with mechanical covers in good service condition; and b Ultra-low-sulphur diesel (ULSD) should be used for all construction plant on site.	To ensure air quality standards compliance with relevant statutory requirements	Project Site / During construction	Contractor		✓			*ETWB TCW No 19/2005*
4.7.1	-	<u>EM&A Requirements</u> Regular site audits (at a frequency of not								

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure & Main Concerns to address	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage				Relevant Legislation Guidelines
						Des	C	O	Dec	
		less than once every two weeks) are recommended.	To ensure that appropriate dust control measures are implemented and good site practices are adopted	Project Site / During construction	ET and Contractor		✓			*Air Pollution Control (Construction Dust) Regulations*
4.7.1	3.0-3.7	Implementation of a construction dust monitoring in every six days	To ensure compliance with the relevant criterion during the construction works.	ASRs A4 (No. 101 Lung Mei Tsuen) and A6 (No. 79 Lo Tsz Tin tsuen) / during construction	ET and Contractor		✓			*Air Pollution Control (Construction Dust) Regulations*
Noise – Construction Phase										
5.6.1		Site hoardings at the particular work site boundary may be provided for achieving screening effect, provided that the hoardings have no openings or gaps and meet the same specifications for movable noise barriers. The proposed movable noise barriers should be at least 3m high with a surface density of not less than 7 kg m^{-2}, which could provide a minimum of 5 dB(A) attenuation. Skid footing of movable noise barriers should be located at a distance not more than a few metres of stationary plant and mobile plant such that the NSRs would not have direct line of sight to the plant. The length of the barriers should also be at least five times greater than its height.	To reduce the construction noise impact.	Project Site / During construction	ET and Contractor		✓			*Noise Control Ordinance* (NCO) and *Annex 5* of the *EIAO-TM*
5.7.1	-	The following Quiet Powered Mechanical	To reduce the construction	Project Site / During	Contractor		✓			*Noise Control*

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure & Main Concerns to address	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage				Relevant Legislation Guidelines
						Des	C	O	Dec	
(Table 5.12)		Equipment (PME) should be used during the construction Phase. • Mobile Crane, SWL listed in the data base of quality powered mechanical equipment prepared by the Noise Control Authority, 107 dB(A); • Tracked Loader, British Standard 5228 – Table C3, Reference No. 16, 104 dB(A); • Pneumatic breaker, British Standard 5228 – Table C2, Reference No. 10, 110 dB(A); • Concrete Lorry Mixer British Standard 5228 – Table C6, Reference No. 23, 100 dB(A); and • Excavator British Standard 5228 - Table C3, Reference No. 97, 105 dB(A).	noise impact.	construction phase						*Ordinance* (NCO) and *Annex 5* of the *EIAO-TM*
5.7.1 (Table 5.13)	-	<u>Construction Works on Land</u> Movable noise barrier should be provided for excavator and mobile crane; Timber sawing machine should be operated behind site hoarding/ movable noise barrier; and Concrete lorry mixer should be operated behind site hoarding/movable noise barrier.	To reduce the construction noise impact.	Project Site / During the Site Formation, construction of seawall, ramp, staircase, retaining walls, sump tanks for grey water system and superstructure	Contractor		✓			*Noise Control Ordinance* (NCO) and *Annex 5* of the *EIAO-TM*

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure & Main Concerns to address	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage				Relevant Legislation Guidelines
						Des	C	O	Dec	
				foundation						
5.7.1 (Table 5.13)	-	Timber sawing machine should be operated behind movable noise barrier; and Movable noise barrier should be provided for excavator and mobile crane.	To reduce the construction noise impact.	Project Site / During the localised road widening works along Ting Kok Road	Contractor		✓			*Noise Control Ordinance* (NCO) and *Annex 5* of the *EIAO-TM*
5.7.1 (Table 5.13)	-	<u>Car Park Paving</u> Movable noise barrier should be provided for excavator.	To reduce the construction noise impact.	Project Site / During the car park paving	Contractor		✓			*Noise Control Ordinance* (NCO) and *Annex 5* of the *EIAO-TM*
5.7.1 (Table 5.13)	-	<u>Building Works</u> Movable noise barrier should be provided for excavator, mobile crane and earth auger; and Timber sawing machine should be operated behind site hoarding/ movable noise barrier.	To reduce the construction noise impact.	Project Site / During foundation and tanking works	Contractor		✓			*Noise Control Ordinance* (NCO) and *Annex 5* of the *EIAO-TM*
5.7.1 (Table 5.13)	-	Movable noise barrier should be provided for mobile crane; and Timber sawing machine should be operated behind site hoarding/ movable noise barrier.	To reduce the construction noise impact.	Project Site / During superstructure works	Contractor		✓			*Noise Control Ordinance* (NCO) and *Annex 5* of the *EIAO-TM*

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure & Main Concerns to address	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage				Relevant Legislation Guidelines
						Des	C	O	Dec	
5.7.1 (Table 5.13)	-	Movable noise barrier should be provided for mobile crane.	To reduce the construction noise impact.	Project Site / During building finishes & internal fitting-out	Contractor		✓			*Noise Control Ordinance* (NCO) and *Annex 5* of the *EIAO-TM*
5.7.1 (Table 5.13)	-	<u>Rock filling for the Groynes</u> Movable noise barrier should be provided for excavator and derrick lighter.	To reduce the construction noise impact.	Project Site / During the construction of gabion channel	Contractor		✓			*Noise Control Ordinance* (NCO) and *Annex 5* of the *EIAO-TM*
5.7.1 (Table 5.13)	-	<u>Box Culvert Construction</u> Movable noise barrier should be provided for excavator.	To reduce the construction noise impact.	Project Site / During the construction of gabion channel	Contractor		✓			*Noise Control Ordinance* (NCO) and *Annex 5* of the *EIAO-TM*
5.7.1 (Table 5.13)	-	Movable noise barrier should be provided for excavator, mobile crane; and Concrete lorry mixer should be operated behind site hoarding/movable noise barrier.	To reduce the construction noise impact.	Project Site / During the construction of western culvert	Contractor		✓			*Noise Control Ordinance* (NCO) and *Annex 5* of the *EIAO-TM*
5.7.1 (Table 5.13)	-	Concrete lorry mixer should be operated behind site hoarding/movable noise barrier.	To reduce the construction noise impact.	Project Site / During the construction of eastern culvert	Contractor		✓			*Noise Control Ordinance* (NCO) and *Annex 5* of the *EIAO-TM*
5.7.1	-	Site hoarding should be provided for work	To reduce the construction	Project Site / During	Contractor		✓			*Noise Control*

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure & Main Concerns to address	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage				Relevant Legislation Guidelines
						Des	C	O	Dec	
(Table 5.13)		site.	noise impact.	the construction of 90m box culvert						*Ordinance* (NCO) and *Annex 5* of the *EIAO-TM*
5.7.1 (Table 5.13)	-	<u>Sand Filling</u> Movable noise barrier should be provided for excavator.	To reduce the construction noise impact.	Project Site / During the construction of gabion channel	Contractor		✓			*Noise Control Ordinance* (NCO) and *Annex 5* of the *EIAO-TM*
5.7.1	-	<u>Good Site Practice</u> Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction programme; Mobile plant, if any, should be sited as far from NSRs as possible; Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; Plant known to emit noise strongly in one direction should, wherever possible, be	To reduce the construction noise impact.	Project Site / Throughout the construction period	Contractor		✓			*Noise Control Ordinance* (NCO) and *Annex 5* of the *EIAO-TM*

EIA Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measure & Main Concerns to address	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage				Relevant Legislation Guidelines
						Des	C	O	Dec	
		orientated so that the noise is directed away from the nearby NSRs; and Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities.								
5.9.1	4.1	<u>EM&A Requirements</u> Implementation of weekly construction noise monitoring at the representative NSRs.	To ensure compliance with the relevant criterion during the construction works.	N1, N2/N2a, N3 & N4/ Throughout the construction period	ET and Contractor		✓			*Noise Control Ordinance* (NCO) and *Annex 5* of the *EIAO-TM*
Water Quality – Construction Phase										
6.6.1	-	<u>Dredging and Sandfilling Operations</u> Sandfilling works should be carried out after the completion of groyne construction.	To further minimise the SS level during sandfilling works	Project Site / During sandfilling	Contractor		✓			-
6.6.1 and Figure 6.20	-	A movable cage type / metal frame type silt curtain will be deployed around the dredging area next to the grab dredger prior to commencement of dredging works.	To further minimise the SS level during the dredging and sandfilling works	Project Site / During dredging and sandfilling	Contractor		✓			*Annex 6 of the EIAO-TM*
6.6.1 and Figure 6.21	-	Standing type silt curtains will be deployed around the proposed sandfilling extent prior to commencement of sandfilling works.	To further minimise the SS level during the dredging and sandfilling works	Project Site / During dredging and sandfilling	Contractor		✓			*Annex 6 of the EIAO-TM*
6.6.1	-	A hourly dredging rate of a closed grab dredger (with a minimum grab size of 3 m^3) should be less than 31 m^3 hr^{-1}, with	To further minimise the SS level during the dredging works	Project Site / During dredging	Contractor		✓			-

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		reference to the maximum rate for dredging, which was derived in the EIA.								
6.6.1	-	A daily filling rate should be less than 1,000 m^3 day^{-1}, which was defined in the EIA.	To further minimise the SS level during the sandfilling works	Project Site / During sandfilling	Contractor		✓			-
6.6.1	-	Mechanical grabs should be designed and maintained to avoid spillage and should seal tightly while being lifted.	To further minimise the SS level during the dredging works	Project Site / During dredging	Contractor		✓			-
6.6.1	-	Barges or hoppers should have tight fitting seals to their bottom openings to prevent leakage of material.	To further minimise the SS level during the dredging and sandfilling works	Project Site / During dredging and sandfilling	Contractor		✓			-
6.6.1	-	Loading of barges or hoppers shall be controlled to prevent splashing of dredged material to the surrounding water.	To further minimise the SS level during the dredging works	Project Site / During dredging	Contractor		✓			-
6.6.1	-	Barges or hoppers should not be filled to a level which will cause overflow of materials or pollution of water during loading or transportation.	To further minimise the SS level during the dredging and sandfilling works	Project Site / During dredging and sandfilling	Contractor		✓			-
6.6.1	-	Excess material should be cleaned from the decks and exposed fittings of barges or hoppers before the vessel is moved.	To further minimise the SS level during the dredging and sandfilling works	Project Site / During dredging and sandfilling	Contractor		✓			-
6.6.1	-	Adequate freeboard should be maintained on barges to reduce the likelihood of decks being washed by wave action.	To further minimise the SS level during the dredging and sandfilling works	Project Site / During dredging and sandfilling	Contractor		✓			-
6.6.1	-	All vessels should be sized such that adequate clearance is maintained between vessels and the seabed at all states of the	To further minimise the SS level during the dredging and sandfilling works	Project Site / During dredging and sandfilling	Contractor		✓			-

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		tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash.								
6.6.1	-	The works should not cause foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the Project Site.	To further minimise the SS level during the dredging and sandfilling works	Project Site / During dredging and sandfilling	Contractor		✓			*ProPECC PN 1/94*
6.6.1	-	<u>Construction Site Runoff</u> The excavation works for the drainage diversions should be carried out to minimise any seawater influx entering the works area and hence to keep the works area dry as much as possible.	To ensure the works area will be kept dry as much as possible and hence avoid construction site runoff	Project Site / During excavation for the drainage diversions	Contractor		✓			-
6.6.1 and Figure 6.21	-	Silt curtains at the inshore waters should be deployed to enclose the works area before the commencement of the excavation works for two drainage diversions until the completion of the diversions.	To avoid any adverse water quality impacts resulting from the site runoff due to heavy rainfall	Project Site / During excavation for the drainage diversions	Contractor		✓			-
6.6.1	-	At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed and internal drainage works and erosion and sedimentation control facilities implemented. Channels, earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of efficient silt removal facilities should be based on the guidelines in *Appendix A1* of *ProPECC PN 1/94*.	To minimise the construction site runoff	Project Site / During land based construction works	Contractor		✓			*ProPECC PN 1/94*
6.6.1	-	All the surface runoff should be collected by	To minimise the	Project Site / During	Contractor		✓			*ProPECC PN*

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		the on-site drainage system and diverted through the silt traps prior to discharge into storm drain.	construction site runoff	land based construction works						*1/94*
6.6.1	-	All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks, where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or by other means.	To minimise the construction site runoff	Project Site / During land based construction works	Contractor		✓			*ProPECC PN 1/94*
6.6.1	-	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 following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas.	To minimise the construction site runoff	Project Site / During land based construction works	Contractor		✓			*ProPECC PN 1/94*
6.6.1	-	Measures should be taken to reduce the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal	To minimise the construction site runoff	Project Site / During land based construction works	Contractor		✓			*ProPECC PN 1/94*

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		facilities.								
6.6.1	-	Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50 m^3 should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.	To minimise the construction site runoff	Project Site / During land based construction works	Contractor		✓			*ProPECC PN 1/94*
6.6.1	-	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system.	To minimise the construction site runoff	Project Site / During land based construction works	Contractor		✓			*ProPECC PN 1/94*
6.6.1	-	Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarised in *Appendix A2* of *ProPECC PN 1/94*. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes.	To minimise the construction site runoff	Project Site / During land based construction works	Contractor		✓			*ProPECC PN 1/94*
6.6.1	-	Oil interceptors should be provided in the	To minimise the	Project Site / During	Contractor		✓			*ProPECC PN*

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		drainage system and regularly emptied to prevent the release of oil and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	construction site runoff	land based construction works						*1/94*
6.6.1	-	All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment traps should be regularly cleaned and maintained. The temporary diverted drainage should be reinstated to the original condition when the construction work has finished or the temporary diversion is no longer required.	To minimise the construction site runoff	Project Site / During land based construction works	Contractor		✓			*ProPECC PN 1/94*
6.6.1	-	<u>Sewage Generated by Workforce</u> Sewage from toilets should be collected by a licensed waste collector.	To prevent contamination to nearby environment	Project Site / During land based construction works	Contractor		✓			*Water Pollution Control Ordinance*
6.6.1	-	<u>Storage and Handling of Oil, Other Petroleum Products and Chemicals</u> Waste streams classifiable as chemical wastes should be properly stored, collected and treated for compliance with *Waste Disposal Ordinance or Disposal (Chemical Waste) (General) Regulation* requirements.	To prevent contamination to nearby environment	Project Site / During land based construction works	Contractor		✓			*Waste Disposal Ordinance*
6.6.1	-	All fuel tanks and chemical storage areas should be provided with locks and be sited	To prevent contamination to	Project Site / During land based construction	Contractor		✓			*Waste Disposal*

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		on paved areas.	nearby environment	works						*Ordinance*
6.6.1	-	The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled oil, fuel and chemicals from reaching the receiving waters.	To prevent contamination to nearby environment	Project Site / During land based construction works	Contractor		✓			*Waste Disposal Ordinance*
6.6.1	-	Oil leakage or spillage should be contained and cleaned up immediately. Waste oil should be collected and stored for recycling or disposal, in accordance with the *Waste Disposal Ordinance*. The Contractors should prepare guidelines and procedures for immediate clean-up actions following any spillages of oil, fuel or chemicals.	To prevent contamination to nearby environment	Project Site / During land based construction works	Contractor		✓			*Waste Disposal Ordinance*
6.6.1	-	Vehicle and plant servicing areas, vehicle wash bays and lubrication bays should, as far as possible, be located within roofed areas. The drainage in these covered areas should be connected to foul sewers via a petrol interceptor.	To prevent contamination to nearby environment	Project Site / During land based construction works	Contractor		✓			*Waste Disposal Ordinance*
6.9.1 and 11.6.1	5.1	<u>EM&A Requirements</u> Monitoring of marine water quality during the construction phase is considered necessary to evaluate whether any impacts would be posed by these marine works on the surrounding waters during the operation of dredging and filling works.	To ensure the construction works would not arise any impacts to the surrounding waters	Marine water outside the Project Site / During dredging and filling works	ET and Contractor		✓			-

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Water Quality – Post-Construction Phase (After the completion of the construction and before the operation of the beach)										
6.9.2 and 11.6.2	5.2	<u>EM&A Requirements</u> *E. coli* monitoring should be conducted at the outlet of two diverted drains and at EPD's beach water monitoring stations for the identification of pollution loading and to establish relationship between the loading and EPD's beach monitoring programme.	To investigate the pollution loading of *E. coli* and to establish relationship with EPD's beach monitoring data	Two diverted drains and the Bathing Beach/ Within six weeks after the completion of the construction works	ET	Post-Construction Phase (After the completion of the construction and before the operation of the beach)				-
Water Quality – Operational Phase										
6.6.2	-	<u>Surface Runoff from Project Site</u> A petrol interceptor should be provided in the drainage system and regularly emptied to prevent the release of oil and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain. Where appropriate, the design should follow or of similar functions as stated in the *ProPECC PN*	To prevent contamination to nearby environment	Beach Park area / During operation	Operator		✓	✓		*Water Pollution Control Ordinance and ProPECC PN 1/94*

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		1/94.								
6.6.2	-	Oil leakage or spillage should be contained and cleaned up immediately. Waste oil should be collected and stored for recycling or disposal in accordance with the *Waste Disposal Ordinance*.	To prevent contamination to nearby environment	Beach Building Facility / During operation	Operator	✓		✓		*Waste Disposal Ordinance*
Waste Management – Construction Phase										
7.6	-	The Contractor should submit the plan to Project Proponent's Engineer Representative for endorsement prior to the commencement of the construction works. The plan should incorporate site-specific factors, such as the designation of areas for the segregation and temporary storage of reusable and recyclable materials.	To ensure that adverse environmental impacts are prevented	Project Site / Contract mobilisation and during construction	Contractor	✓	✓			-
7.6	-	It will be the Contractor's responsibility to ensure that only reputable licensed waste collectors are used and that appropriate measures to reduce adverse impacts, including windblown litter and dust from the transportation of these wastes, are employed.	To ensure that adverse environmental impacts are prevented	Project Site / Contract mobilisation and during construction	Contractor	✓	✓			-
7.6	-	The Contractor must ensure that all the necessary permits or licences required under the Waste Disposal Ordinance are obtained for the construction phase.	To ensure compliance with relevant statutory requirements	Project Site / Contract mobilisation and during construction	Contractor	✓	✓			-
7.6	-	<u>Waste Management Hierarchy</u> • Nomination of approved personnel to be responsible for good site practices,	To ensure that adverse environmental impacts are prevented	Project Site / Contract mobilisation and during construction	Contractor	✓	✓			*Waste Disposal (Charges for Disposal of*

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		arrangements for collection and effective disposal to an appropriate facility of all wastes generated at the site; • Training of site personnel in proper waste management and chemical handling procedures; • Provision of sufficient waste disposal points and regular collection for disposal; • Appropriate measures to reduce windblown litter and dust transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Centre; • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and • A recording system for the amount of wastes generated/recycled and disposal sites.								*Construction Waste) Regulation;* *ETWB TCW No.31/2004; and* *Appendix C of ETWB TCW No. 19/2005*
	-	<u>Waste Reduction Measures</u> • Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse	To reduce construction waste generation	Project Site / During construction	Contractor		✓			-

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		or recycling of material and their proper disposal; • Encourage collection of aluminium cans and waste paper by individual collectors during construction with separate labelled bins being provided to allow the segregation of these wastes from other general refuse generated by the workforce; • Any unused chemicals and those with remaining functional capacity be recycled as far as possible; • Use of reusable non-timber formwork to reduce the amount of C&D materials; • Prior to disposal of construction waste, wood, steel and other metals should be separated, to the extent practical for re-use and/or recycling to reduce the quantity of waste to be disposed at landfills; • Proper storage and site practices to reduce the potential for damage or contamination of construction materials; and • Plan and stock construction materials carefully to reduce amount of waste generated and avoid unnecessary generation of waste.							

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7.6.1	-	<u>Dredging Materials</u> The final disposal site for the dredged sediments should be determined by the MFC and a dumping licence should be obtained from EPD prior to the commencement of the dredging works. Uncontaminated sediments should be disposed of at open sea disposal sites designated by the MFC. For contaminated sediments requiring Type 2 confined marine disposal, relevant contract documents should specify the allocation conditions of the MFC and EPD.	To ensure adverse environmental impacts are prevented	Dredging area / During construction	Contractor		✓			*Dumping at Sea Ordinance*
7.6.2	-	<u>Excavated Materials and C&D Waste</u> *Management of Waste Disposal* The contractor should open a billing account with EPD in accordance with the Waste Disposal (Charges for Disposal of Construction Waste) Regulation for the payment of disposal charges. Every waste load transferred to Government waste disposal facilities such as public fill, sorting facilities, or landfills should require a valid "chit" which contains the information of the account holder to facilitate waste transaction recording and billing to the waste producer. A trip-ticket system should be established in accordance with TCW No. 6/2010 to monitor the reuse of surplus excavated materials off-site and disposal of construction waste and general refuse at	To properly handle the excavated materials and C&D waste and thus avoid any adverse impacts	Project Site / During construction	Contractor		✓			*Waste Disposal (Charges for Disposal of Construction Waste) Regulation*

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		transfer stations/landfills, and to control fly-tipping. The billing "chit" and trip-ticket system should be included as one of the contractual requirements and implemented by the contractor. Regular audits of the waste management measures implemented on-site as described in the Waste Management Plan should be conducted. A recording system (similar to summary table as shown in Annex 4 and Annex 5 of *Appendix C* of ETWB TWC No. 19/2005) for the amount of waste generated, recycled and disposed of (including the disposal sites) will be established during the construction phase.								
7.6.2	-	*Reduction of C&D Materials Generation* Public fill and construction waste should be segregated and stored in different containers or skips to facilitate reuse or recycling of the public fill and proper disposal of the construction waste. Specific areas of the work site should be designated for such segregation and storage if immediate use is not practicable. To reduce the potential dust and water quality impacts of site formation works, C&D materials should be wetted as quickly as possible to the extent practicable after excavation/filling.	To reduce the generation of C&D waste	Project Site / During construction	Contractor		✓			-

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7.6.3	-	<u>Chemical Waste</u> The Contractor should register as a chemical waste producer with the EPD. Chemical waste, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes. Containers used for the storage of chemical wastes should: • Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; • Have a capacity of less than 450 L unless the specifications have been approved by the EPD; and • Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations. The storage area for chemical wastes will: • Be clearly labelled and used solely for the storage of chemical waste; • Be enclosed on at least 3 sides;	To ensure proper handling of chemical waste	Project Site / During construction	Contractor		✓			*Code of Practice on the Packaging, Handling and Storage of Chemical Wastes*

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		• Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest; • Have adequate ventilation; • Be covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and • Be arranged so that incompatible materials are appropriately separated. Chemical waste should be collected by a licensed chemical waste collector to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Facility.								

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7.6.4	-	Sewage An adequate number of portable toilets should be provided for the on-site construction workforce during construction phase. All portable toilets should be maintained in a state that will not deter the users from using them. Night soil should be regularly collected by a licensed collector for disposal. The sewage generated from the visitors during operation of the Proposed Beach Development should be discharged to the adjacent foul sewer conveying to Tai Po Sewage Treatment Works for treatment.	To ensure proper handling of sewage	Project Site / During construction	Contractor		✓			-
7.6.5	-	General Refuse General refuse should be stored in enclosed bins or compaction units separately from construction and chemical wastes. A reputable waste collector should be employed to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to reduce odour, pest and litter impacts. The burning of refuse on construction sites is prohibited by law. Recycling bins should be provided at strategic locations to facilitate recovery of aluminium cans and waste paper from the Project Site. Materials recovered should be sold for recycling.	To ensure proper handling of general refuse	Project Site / During construction	Contractor		✓			-

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7.6.6	-	Staff Training Training should be provided to workers on the concept of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling at the beginning of the construction works.	To ensure that adverse environmental impacts are prevented	Project Site / Contract mobilisation and during construction	Contractor	✓	✓			-
7.7	6.1	EM&A Requirements Joint site audits by the Environmental Team and the Contractor should be undertaken on a weekly basis. Particular attention should be given to the Contractor's provision of sufficient spaces, adequacy of resources and facilities for on-site sorting and temporary storage of C&D materials. The C&D materials to be disposed of from the Project Site should be visually inspected. The public fill for delivery to the off-site stockpiling area should contain no observable non-inert materials (e.g., general refuse, timber, etc). The waste to be disposed of at refuse transfer stations or landfills should as far as possible contains no observable inert or reusable/recyclable C&D materials (e.g., soil, broken rock, metal, and paper/cardboard packaging, etc). Any irregularities observed during the weekly site audits should be raised promptly to the Contractor for rectification.	To ensure that adverse environmental impacts are prevented	Project Site / During construction	ET and Contractor		✓			-

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Ecology – Construction Phase										
8.10.2	7.1	<u>Measures for Common Rat Snake</u> To undertake a search of the Common Rat Snake within the land based Project Site just before the commencement of the construction works. Due to the small size of the Project Site and given that there are no optimal habitats for Common Rat Snake, one day-time search is considered sufficient. The surveyor(s) should actively search the areas within the Project Site and pay special attention to the leaf litters and rocks. All recorded Common Rat Snake should be caught by hand and translocated to the shrubland at the north of the Study Area, immediately after the search. The Common Rat Snake search and translocation works should be undertaken by a qualified ecologist with relevant experience in faunal translocation works.	To ensure that adverse impacts arising from the Project to Common Rat Snake are prevented	Project Site (land based) / prior to commencement of construction works	ET / Qualified Ecologist	✓				-
-	7.2	<u>Measures for marine ecology</u> (1) To translocate target marine fauna, including fishes, starfish, sea urchins and sea cucumbers, from the intertidal area of the Site at Lung Mei to the intertidal area at the reception site of Ting Kok East before commencement of sand filling works or any other works that may cause disturbances to the	To ensure that adverse impacts arising from the Project to marine ecology	Project Site (marine based) / prior to commencement of marine works	ET / Qualified Ecologist	✓				

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		existing marine ecology. The translocation works shall cover capturing, handling, holding transporting and releasing of the captured target marine fauna. (2) Translocation of seahorses, including identifying, capturing, handling, protecting, transporting and placing the target seahorse species from Site at Lung Mei to the reception site of Ting Kok East, as well as pre- and post-translocation monitoring and post-construction monitoring shall be conducted. Seahorse translocation shall be undertaken before the commencement of marine construction works. The identifying, capturing, handling, protecting, transporting and placing of seahorses shall be led and supervised by the Fish Specialist.								
8.10.2	-	<u>Dredging and Sand Filling Operations</u> It is predicted that the sediment plume and the sediment deposition will not be large in extent and no unacceptable water impacts including DO depletion, release of contaminants and nutrients are expected. Although no unacceptable water quality impacts would result, the following good construction site practice and proactive precautionary measures are recommended to	To minimise ecological impacts arising from dredging and sand filling works	Project Site / During dredging and sand filling works	Contractor		✓			-

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		ensure dredging and sandfilling operations would be undertaken in such a manner as to avoid any uncontrolled or unexpected incidents during the marine works: • A movable cage type / metal frame type silt curtain should be deployed around the dredging area next to the grab dredger prior to commencement of dredging works; • Standing type silt curtains should be deployed around the proposed sandfilling extent prior to commencement of sandfilling works; and Proper equipment, dredging rate, filling rate and good construction practices should be implemented, details refer to *Section 6.6.1*.								
8.10.2	-	<u>Measures for Controlling Construction Runoff</u> • Storm water run-off from the construction site should be directed into existing drainage channel via adequately designed sand/silt removal facilities such as sand/silt traps and oil interceptors. Channels, earth bunds or sand bag	To minimise ecological impacts of construction runoff	Project Site / During dredging and filling works	Contractor		✓			-

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		barriers should be provided on site to properly direct storm water to such silt removal facilities.								
8.10.2	-	<u>Planting along the Western Drainage Diversion</u> • Provide tree/ shrub/ climber planting along the gabion wall of the new drainage channel. Regular monitoring and removal of the weed plant *Mikania micrantha* during the establishment and maintenance period.	To provide an ecological habitat	Along gabion wall of the new western drainage channel/ After completion of the gabion	Contractor		✓	✓		-
8.10.2	-	<u>Good Construction Practices</u> • Erect fences along the boundary of the Extension Site before the commencement of works to prevent vehicle movements, and encroachment of personnel, onto adjacent areas; and • Regularly check the work site boundaries to ensure that they are not breached and that damage does not occur to surrounding areas.	To avoid any adverse ecological impacts	Project Site / During construction works	Contractor		✓			-
Fisheries – Construction Phase										
9.10.1	-	<u>EM&A Requirements</u> EM&A is not required during the	To ensure that no water quality deterioration in the	Details refer to Section 12.6 of the EM&A	ET and Contractor		✓			*Environmental Impact*

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		construction phase of the Project. However, water quality monitoring will be conducted at the Yim Tin Tsai Fish Culture Zone. Details should be referred to the Water Quality Section.	Fish Culture Zone as a result of the dredging and sandfilling works	Manual.						*Assessment Ordinance, Annex 21* of the *EIAO-TM*
Landscape and Visual Impact – Construction Phase										
10.5.1	-	<u>Landscape Mitigation</u>								
		A Landscape Plan will be submitted before the commencement of Works.	To provide landscaping work.	Before commencement of construction phase	ET and Contractor	✓				-
10.6.10	-	*Cultivation of areas impacted during construction.* Areas impacted during the construction phase that are not required during the operation phase, are to be cultivated to a depth of 300mm in accordance with accepted Hong Kong practice and guidelines. The cultivation shall involve ripping of compacted soil by mechanical means and the addition gypsum and/or organic fertiliser if required.	To improve the soil allowing plants to thrive	Project Site / During construction	Contractor		✓			-
10.6.10	-	*Car Park Tree Planting.* Advanced trees are to be planted in the car park.	To provide shade to the carpark areas and to reduce the mass of the paved areas	Project Site / During construction	Contractor		✓			-
10.6.10	-	*Tree and shrub planting.* All planting of trees and shrubs is to be carried out in accordance with the relevant best practice guidelines. Plant densities are to be provided in future detailed design documents and are to be selected so as to achieve a finished landscape that matches	To improve the appearance of the development	Project Site / During construction	Contractor			✓		-

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		the surrounding, undisturbed, equivalent landscape types. Regular monitoring and removal of the weed plant *Mikania micrantha* during the establishment and maintenance period.								
10.6.10	-	*Roof Terrace Planting.* Trees, shrubs and climbers shall be established in planters on the roof terraces of the new structures where possible.	To improve the appearance of the development by softening the building element	Project Site / During construction	Contractor		✓			-
10.6.10	-	*Natural Rock Groynes* New rock groynes are needed to contain the sand of the new beach. Natural stones will be used for construction of the Groynes.	To improve the appearance of the development to make the man-made feature be more compatible with the surroundings	Project Site / During construction	Contractor		✓			-
10.6.10	-	*Inter-Tidal Re-generation*. It is likely that a build up of sediment and sand will occur at the outer edges of the rock groyne. This is a natural process and the development proponent has no control over the implementation of this mitigation measure.	To improve the appearance of the development	Adjacent areas	Nil			✓		-
10.6.10	-	*Mangrove Re-generation*. Mangroves of similar species to existing to be manually established by planting of droppings.	To improve the ecological value of the project	Project Site / During post-construction	Contractor		✓			-
10.6.10	-	*Buffer Planting.* Trees and shrubs are to be planted along Ting Kok road to screen the development from the nearby Village/Developed Areas.	To improve the appearance of the development	Project Site / During post-construction	Contractor		✓			-

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10.6.10	-	*Early Planting Works* Where technically feasible, new plantings are to be installed during the construction works to reduce landscape impacts.	To improve the appearance of the development	Project Site / During construction	Contractor		✓			-
10.6.10	-	*Tree Protection/Transplantation.* Where technically feasible, existing trees in the Trees/Backshore Vegetation LR are to be retained. Those trees that cannot be retained that are of value are to be transplanted.	To improve the appearance of the development	Project Site / Before commencement of construction	Contractor	✓				-
10.7.9	-	<u>Visual Mitigation</u>								-
		Design of Structures. The structure shown in the photomontages are to illustrate the mass of the structures only. During the design phase of the development, features such as the location of doors, windows, eaves etc. will be detailed. All of these elements will greatly improve the appearance of the structures. Where possible, built structures will utilise appropriate designs to complement the surrounding landscape. Materials and finishes will also be considered during detailed design.	To reduce visual impacts and improve the appearance of the development	Project Site / During construction	Architect	✓				
10.7.9	-	*Colour Scheme.* Colours for the structures can be used to complement the surrounding area. Lighter colours such as shades of light grey, off-white and light brown may be utilised where technically feasible to reduce the visibility of the structures.	To reduce visual impacts and improve the appearance of the development	Project Site / During construction	Architect	✓				-
10.7.9	-	*Plantings.* In addition to the landscape	To help integrate the new	Project Site / During	Contractor		✓			-

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		mitigation plantings proposed in Section 10.5.9 of the EIA report, appropriate new plantings will be installed as appropriate to help integrate the new structures into the surrounding landscape.	structures into the surrounding landscape	post-construction						
10.7.9	-	*Colour of Site Hoardings*. In order to mitigate the visual impact of these temporary hoardings, it is recommended that the hoardings be erected at a uniform height, with a uniform colour that complements the existing surrounding landscape.	To mitigate the visual impact of temporary hoardings	Project Site / During construction	Contractor		✓			-
-	9.2	<u>EM&A Requirements</u>								
		A specialist Landscape Sub-Contractor should be employed for the implementation of landscape construction works and subsequent maintenance operations during a 12-month establishment period. A Registered Landscape Architect should be employed to supervise the specialist Landscape Sub-contractor for the implementation of landscape works, both hard and soft, involved. Measures undertaken by both the Contractor(s) and the specialist Landscape Sub-Contractor during the construction phase and first year post-construction will be audited by the Registered Landscape Architect of the ET. Site inspections should be undertaken at	To check the implementation and maintenance of landscape mitigation measures and ensure that they are fully realised and that potential conflicts between the proposed landscape measures and any other project works and operational requirements are resolved at the earliest practical date and without compromise to the intention of the mitigation measures	Project Site / During construction and post-construction phase	Specialist Landscape Sub-contractor,Registered Landscape Architect and ET		✓			-

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		least once every two weeks throughout the landscaping plants establishment period when planting works are being undertaken.								
		A tree survey should be prepared, for DLO submission, and for the purpose of existing trees protection. Removal of existing trees to be minimized. The Contractor should consider to employ a certified arborist when sizable and valuable existing tree(s) protection of transplant is required. Post-construction phase auditing will be restricted to the 12-month establishment works of the landscaping proposals. Advance planting- monitoring of implementation and maintenance of planting, and against potential incursion, physical damage, fire, pollution, surface erosion, etc. Protection of trees to be retained-identification and demarcation of trees / vegetation to be retained, erection of physical protection (e.g. fencing), monitoring against potential incursion, physical damage, fire, pollution, surface erosion, etc. Clearance of existing vegetation-identification and demarcation of trees / vegetation to be cleared, checking of								

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		extent of works to reduce damage, monitoring of adjacent areas against potential incursion, physical damage, fire, pollution, surface erosion, etc. Transplanting of trees-identification and demarcation of trees / vegetation to be transplanted, monitoring of extent of pruning / lifting works to reduce damage, timing of operations, implementation of the stages of preparatory and translocation works, and maintenance of transplanted vegetation, etc. Plant supply-monitoring of operations relating to the supply of specialist plant material (including the collecting, germination and growth of plants from seed) to ensure that plants will be available in time to be used within the construction works. Soiling, planting, etc-monitoring of implementation and maintenance of soiling and planting works and against potential incursion, physical damage, fire, pollution, surface erosion, etc. Architectural design and treatment of all structures (where practicable), retaining walls, elevated road structures and other engineering works-implementation and maintenance of mitigation measures, to ensure conformity with agreed designs. Erection of Site Hoardings/Fences-									

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		Erection of site hoardings/fences during the construction phase to reduce visual impacts. Establishment Works- monitoring of implementation of maintenance operations during Establishment Period.								

Remark: Des – Design; C – Construction; O – Operation; Dec – Decommissioning