PROJECT NO.: TCS/00477/09

VERSION: 2

CEDD CONTRACT NO. ST/2008/02 ROADS, DRAINAGE AND SEWEAGE WORKS AT WHITEHEAD AND LOK WO SHA, PHASE 1

30TH MONTHLY ENVIRONMENTAL MONITORING AND AUDIT (EM&A) REPORT – MARCH 2012

PREPARED FOR
CHINA ROAD & BRIDGE CORPORATION

Quality Index Date	Reference No.	Prepared By	Certified By
30 April 2012	TCS00477/09/600/R0355v2	 Ben Tam Environmental Consultant	 T.W. Tam Environmental Team Leader

Version	Date	Description
1	24 April 2012	First Submission
2	30 April 2012	Amended against IEC's comments on 30 April 2012

edms
3D Visualisation
Environment & Energy
Information Technology

ISO 9001 : 2008
Certificate No.: CC 3988

Civil Engineering and Development Department
New Territories East Development Office
Suite 1213 Chinachem Golden Plaza
77 Mody Road
Tsim Sha Tsui East
Kowloon

Your reference:

Our reference: HKCEDD01/50/101129

Date: 3 May 2012

Attn.: Mr Kevin C W Lam and Mr Tom W K Lee

BY FAX ONLY
(Fax no.: 2739 0076)

Dear Sirs

Agreement No. NTE 01/2009
Ma On Shan Development Roads, Drainage and Sewerage Works
at Whitehead and Lok Wo Sha Phase 1
Monthly EM&A Report No. 30

Reference is made to the Environmental Team's submission of the Monthly EM&A Report No. 29 for the captioned project by emails on 27 and 30 April 2012 for our review and comment.

Please be informed that we have no adverse comment on the captioned submission. We write to verify the captioned Monthly EM&A Report in accordance with Condition 5.3 of the Environmental Permit no. EP-332/2009.

Should you have any queries, please do not hesitate to contact the undersigned on 2869 6018.

Yours faithfully
EDMS CONSULTING LIMITED

p.p.
James Choi
Independent Environmental Checker

CPSJ/LYMA/csym

cc RE – Mr Angus Law (Fax: 2631 7226)

EDMS Consulting Limited
1009 World Wide House, 19 Des Voeux Road Central, Central, Hong Kong
Tel: (852) 2869 6018 Fax: (852) 3007 8556
Email: info@edms.com.hk Web: www.edms.com.hk

EXECUTIVE SUMMARY

ES.01 The China Road & Bridge Corporation (CRBC) have been awarded the *Contract ST/2008/02 Ma On Shan Development – Roads, Drainage and Sewerage Works at Whitehead and Lok Wo Sha Phase 1* (the Project) by the Civil Engineering & Development Department (CEDD) on 18 June 2009. The Project is part of an overall plan approved under a statutory EIA (Register No. AEIAR-068/2002) for a *Feasibility Study for Housing Development at Whitehead & Lee on in Man On Shan* commissioned by the Territory Development Department.

ES.02 An Environmental Permit (No. EP-332/2009) for Road D1(N), Road D1(W) and Box Culvert of Whitehead & Lok Wo Sha Phase One Project (EP) has been obtained by the CEDD on 24 March 2009 under the Project. According to the Environmental Permit No. EP-332/2009 and Section 25 of the Particular Specification (PS), the overall scope of environmental monitoring including the aspect of air quality, construction noise, water quality, landscaping and visual and site environmental audit should be undertaken in accordance with the Final Report Environmental Monitoring and Audit Manual [2095/13.3] by an independent Environmental Team (ET).

ES.03 Action-United Environmental Services and Consulting (AUES) have been commissioned by CRBC as the ET to implement the relevant EM&A program except the monitoring and audit works of landscaping and visual, which is undertaken by other.

ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

ES.04 This is the **30th** Monthly EM&A Report which presents the monitoring results and inspection findings for the period from **26 February 2012** to **21 March 2012** (the Reporting Period). Upon agreement among the ER, IEC, ET and Contractor, termination of the EM&A under the Project has been proposed by the ET since 21 March 2012 and pending EPD's formal agreement.

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

Issues	Environmental Monitoring Parameters / Inspection	Occasions
Air Quality	1-hour TSP	**15**
	24-hour TSP	**4**
Construction Noise	Leq (30min) Daytime	**5**
Water Quality	Marine Water Sampling	**10**
Inspection / Audit	ER and Contractor regular Environmental Site Inspection	**4**

BREACH OF ACTION AND LIMIT (A/L) LEVELS

ES.06 No construction noise complaint (an Action Level exceedance) was received and no exceedance was recorded in construction noise monitoring in this Reporting Period.

ES.07 No 1-hour and 24-hour TSP monitoring results that triggered the Action or Limit Level in this Reporting Period. Therefore, no associated corrective actions were required.

ES.08 No marine water monitoring results that triggered the Action or Limit Level in this Reporting Period. Therefore, no associated corrective actions were then required.

ES.09 Exceedances registered during the Reporting Period were summarized below:

Exceedance	Construction Noise	Air Quality		Marine Water Quality			Total
		24-hour TSP	1-hour TSP	DO	Turbidity	Suspended Solids	
Action Level	0	0	0	0	0	0	0
Limit Level	0	0	0	0	0	0	0

ENVIRONMENTAL COMPLAINT, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

ES.10 No environmental complaint, summons and successful prosecutions was recorded or received.

SITE INSPECTION BY EXTERNAL PARTIES

ES.11 In this Reporting Period, no site visit by EPD/ AFCD was recorded.

REPORTING CHANGE

ES.12 As the certificate of completion was issued on 13 January 2012 and no adverse environmental impacts generated from the construction activities under the Project are anticipated after 21 March 2012, when all the works under the Project, including the remaining outstanding construction works, has been completed. Upon agreement among the ER, IEC, ET and Contractor, termination of the EM&A under the Project has been proposed by the ET since 21 March 2012 and pending EPD's formal agreement.

FUTURE KEY ISSUES

ES.13 According to Chapter 4.7.2 of the Final EM&A Manual, a post project monitoring exercise on water quality is required. Upon agreement among the ER, IEC, ET and Contractor, commencement of the post project monitoring exercise on water quality and the associated schedule has been proposed since 21 March 2012 and pending EPD's formal agreement.

TABLE OF CONTENTS

LIST OF ANNEXES

LIST OF TABLES

1 INTRODUCTION

1.1 PROJECT BACKGROUND

The China Road & Bridge Corporation (CRBC) has been awarded the *Contract ST/2008/02 Ma On Shan Development – Roads, Drainage and Sewerage Works at Whitehead and Lok Wo Sha Phase* 1 (the Project) by the Civil Engineering & Development Department (CEDD) on 18 June 2009. Total project time is expected to be 23 months.

The Project includes civil engineering infrastructure works for the construction of District Distributors: Road D1(N) & Road D1(W) and Local Road L3 with the associated footpath, cycle tracks, planting areas, drains, sewers, water-mains and landscaping works. There are also one box culvert, one sewage pumping station with pressurized sewers and two site formation works for G/IC and LWS-B areas at Lok Wo Sha to be constructed under the Project. The site layout plan is shown in ***Annex A***.

The Project is part of an overall plan approved under a statutory EIA (Register No. AEIAR-068/2002) for a Feasibility Study for Housing Development at Whitehead & Lee On in Man On Shan commissioned by the then Territory Development Department. An Environmental Permit (EP-332/2009) for Road D1(N), Road D1(W) and Box Culvert of Whitehead & Lok Wo Sha Phase One Project (EP) has been obtained by the CEDD on 24 March 2009 for the relevant works.

According to the Particular Specification (PS) Section 25 and the Environmental Permit No. EP-332/2009, overall scope of environmental monitoring including air quality, construction noise, water quality, and site environmental audit should be undertaken in accordance with the Final Report Environmental Monitoring and Audit Manual [2095/13.3] by an independent Environmental Team (ET). Also, monitoring and audit works for landscaping and visual will be undertaken as part of the EM&A programme.

Action-United Environmental Services and Consulting (AUES) has been commissioned by CRBC as the ET to implement the relevant EM&A program. As part of the EM&A program, baseline monitoring is required to determine the ambient environmental conditions.

This is the **30th** monthly EM&A report presenting the monitoring results and inspection findings for the Reporting Period from **26 February 2012** to **21 March 2012**. Upon agreement among the ER, IEC, ET and Contractor, termination of the EM&A under the Project has been proposed by the ET since 21 March 2012 and pending EPD's formal agreement.

1.2 REPORT STRUCTURE

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 MONITORING REQUIREMENTS**
SECTION 4	**IMPACT MONITORING RESULTS**
SECTION 5	**WASTE MANAGEMENT**
SECTION 6	**SITE INSPECTIONS**
SECTION 7	**ENVIRONMENTAL COMPLAINTS AND NON-COMPLIANCE**
SECTION 8	**IMPLEMENTATION STATUES OF MITIGATION MEASURES**
SECTION 9	**IMPACT FORECAST**
SECTION 10	**CONCLUSIONS AND RECOMMENDATION**

2 PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS

2.1 PROJECT ORGANIZATION AND MANAGEMENT STRUCTURE

Organization structure and contact details of relevant parties with respect to on-site environmental management are shown in ***Annex B***.

2.2 CONSTRUCTION PROGRESS

Upon agreement among the ER, IEC, ET and Contractor, termination of the EM&A under the Project has been proposed by the ET since 21 March 2012 and pending EPD's formal agreement. Therefore, no further master and three month rolling construction programs are enclosed and the certificate of completion is enclosed in ***Annex C***.

2.3 SUMMARY OF ENVIRONMENTAL SUBMISSIONS

Summary of the relevant permits, licences, 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
1	Environmental Permit EP-332/2009 - Road D1(N), Road D1(W) and Box Culvert of Whitehead & Lok Wo Sha Phase One Project	Permit Issued on 24 March 2009
2	Air pollution Control (Construction Dust)	Notified EPD on 12 June 09
3	Chemical waste Producer Registration (WPN: 5123-757-C3124-31)	Application date: 16/07/2009 Date approved: 20/8/2009
4	Water Pollution Control Ordinance (Discharge License) (License no.: WT00005406-2009)	Application date: 06/07/2010 Date approved: 22/07/2010
5	Billing Account for Disposal of Construction Waste (Account Number: 700892117)	Application no. :RN/00606 Valid to: 28/2/2015
6	Landscape Master Plan for Roads D1(N) and D1(W)	Application date: 02/10/2009 Status : Approved on 28/5/2010

The "Baseline/Impact Monitoring Methodology (R0009 Version 6)" was set out in accordance with the Final Report Environmental Monitoring and Audit Manual [2095/13.3]. It was approved by the ER and agreed with the Independent Environmental Checker (IEC) and submitted to the EPD for endorsement.

Baseline Monitoring Report (TCS00477/09/600/R0023Ver.3) for the Project was issued by the ETL and verified by the IEC on 5 October 2009. The report was also submitted to the EPD for endorsement.

3 SUMMARY OF MONITORING REQUIREMENTS

The Environmental Monitoring and Audit requirements are set out in the project EM&A manual. Air quality, construction noise and water quality have been identified to be the key issues during the construction phase of the Project. Also, monitoring and audit works for landscaping and visual will be undertaken as part of the EM&A programme by others during construction period.

A summary of the Impact EM&A requirements for air, noise and marine water monitoring are presented in the sub-sections below.

3.1 MONITORING PARAMETERS

The EM&A Impact monitoring program covers the following environmental issues:

- Air quality;
- Construction noise;
- Water quality; and
- Landscape and visual resources (to be provided by others separately)

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

Table 3-1 Summary of EM&A Requirements

Environmental Issue	Parameters
Air Quality	• 1-hour TSP Monitoring by Real-Time Portable Dust Meter; and • 24-hour TSP Monitoring by High Volume Air Sampler.
Noise	• $Leq_{(30min)}$ during normal working hours.; and • $Leq_{(15min)}$ during the construction works is undertaken in Restricted Hours.
Marine Water Quality*	**In-situ Measurements** • Dissolved Oxygen Concentration (mg/L); • Dissolved Oxygen Saturation (%); • Turbidity (NTU); • pH unit; • Salinity (ppt); • Water depth (m); and • Temperature (℃).
	Laboratory Analysis • Suspended Solids (mg/L)
Landscape and Visual Resources	• Vegetation survey undertaken on an "area" basis to identify representative types and species composition; • Assessment of landscape character; and • Tree survey report.

* ***Notes****: Since there will be no workshop, vehicle repair area, canteens, workers' facilities or chemical storage facilities with water discharge points within the site boundaries, no measurements for oil and grease, BOD_5 or COD will be necessary based on Section 4.2.2 of the EM&A Manual.*

3.2 MONITORING LOCATIONS

Some monitoring locations have been recommended in the *EM&A Manual* and shown in ***Annex D***. However, as the *EM&A Manual* was originally approved for a much greater area, some of the monitoring locations have been refined in order to monitor the specific impacts of this Project only. Before the commencement of this EM&A progamme, the proposed monitoring locations had been verified by the IEC and endorsed by the EPD.

Air Quality

Two designated monitoring stations: A1 and A2 were recommended in the *EM&A Manual*. Location A1 is situated at a village house in To Tau near a new pumping station to be constructed under the Project, and Location A2 is at the existing Li Po Chung United World College.

However, owing to the much reduced scale of the Project compare to the original scope envisaged in the 2002 EIA Study, it is considered, from experience, that it would be sufficient for both the baseline and impact monitoring programmes to be carried out at A1 only. The recommendation and proposal was issued by ET and verified by the IEC and endorsed by the EPD. The final Air Sensitive Receiver where monitoring shall be performed is listed in ***Table 3-2*** and shown in ***Annex E*****.**

Table 3-2 Location of Air Quality Monitoring Station

Sensitive Receiver	Location
A1	Village house in To Tau near the proposed pumping station

Construction Noise

Two designated monitoring stations: CN1 and CN2 were recommended by the *EM&A Manual*. They are identical to Locations A1 and A2 respectively for air monitoring.

Similarly, it is necessary to carry out baseline and impact monitoring at CN1 only. The noise sensitive receiver was performed in baseline monitoring period under the Project is renamed as N1 for brevity and shown in ***Table 3-3*** and ***Annex E***.

Table 3-3 Location of Noise Monitoring Station

Sensitive Receiver	Location
N1	Village house in To Tau near the proposed pumping station

Marine Water Quality

Totally ten designated water monitoring stations are identified in the *EM&A Manual* including two control stations (C1-C2) and eight impact stations (W1-W8). Impact stations W1-W4 were identified near the discharge outfalls of the stormwater drainage systems at the north and west shore of Whitehead development; W5 & W6 were identified at the box culver outfall and natural stream outfall of Starfish Bay respectively; and W7 & W8 were located offshore near the Tolo Channel. Two control stations: C1 & C2 were recommended at the sea body of the Whitehead development and within Starfish Bay respectively.

Review of Monitoring Locations

According to *Section 4.5.1* of the *EM&A Manual*, the monitoring locations designated in the manual are subject to change to cater for possible updates in the scale of development, design of works packages and surrounding sensitive receivers. A review in relation to the latest monitoring locations is given below.

A Due to the relocation of the box culvert which is now diverted to discharge into the north of Whitehead development instead of Starfish Bay, one location, the old W6 location in the *EM&A Manual*, which was located at the immediate exit of the culvert may be deleted in the future.

B As the new discharge point at the north of Whitehead development is very close to one old station (W3 of the *EM&A Manual*), there is no need to provide an additional station for the new culvert exit.

For ease of administration, the new impact station's ID are renumbered as M1-M8 (meaning Marine Stations 1-8) to replace the old impact stations ID: W1-W8. The location of sampling points ID are listed in ***Table 3-4*** and a map showing these monitoring stations is presented in ***Annex E*****.**

Table 3-4 Location of Marine Water Quality Monitoring Stations

Sensitive Receiver	Monitoring Station	Status	Co-ordnance		Location/Remarks
			East	North	
The Sea Zone of the Project West and North (Tolo Harbour)	C1	Control Station	833014	0842187	Upstream of sea body located at north-west of Whitehead development
	M1 (old W1)	Impact Station	832561	842518	Near the shore of Cheung Kang Village
	M2 (old W2)	Impact Station	832795	842535	The shore of To Tau near the proposed sewage pumping station
	M3 (old W3)	Impact Station	833094	842649	Close to the new box culvert outfall of the Project.
	M4 (old W4)	Impact Station	833110	843038	The shore of Wo Kwai Sha Tsoi
The Sea Zone of Starfish Bay	C2	Control Station	832995	843819	Upstream of sea body located at Starfish Bay
	M5 (old W7)	Impact Station	832784	843484	Located offshore near the Tolo Channel in Starfish Bay
	M6 (old W5)	Impact Station	832713	843393	Located at the natural stream outfall in Starfish Bay
	M7 (old W8)	Impact Station	832649	843643	Located offshore near the Tolo Channel in Starfish Bay
	M8 (old W6)	Impact Station	832584	843470	Located at the natural stream outfall in Starfish Bay

3.3 MONITORING FREQUENCY AND PERIOD

The requirements of impact monitoring are stipulated in ***Sections 2.7***, ***3.6***, and ***4.7*** of the EM&A Manual and listed as follows.

1-hour TSP Monitoring

Parameters : 1-hour TSP monitoring
Frequency : 3 times every six days for 1-hour TSP
Duration : Throughout out the construction period

24-hour TSP Monitoring

Parameters : 24-hour TSP monitoring
Frequency : once every 6 days for 24-hour TSP
Duration : Throughout out the construction period

Noise Monitoring

Parameters : One set of Leq(30min) as 6 consecutive Leq(5min) between 0700-1900 hours on normal weekdays
Frequency : Once every week
Duration : Throughout out the construction period

Marine Water Quality Monitoring

Parameters : In-situ measurements including water depth, temperature, DO, pH, turbidity and salinity; and Suspended Solids is 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 :
(a) Three depths: 1m below water surface, 1m above sea bottom and at mid-depth when the water depth exceeds 6m.
(b) If the water depth is between 3m and 6m, two depths: 1m below water surface and 1m above sea bottom.
(c) If the water depth is less than 3m, 1 sample at mid-depth is taken

Duration: (a) Stations C1, M1, M2, M3 and M4 will be carried out during the construction works is still on-going after stormwater drainage systems are built and operated or marine works undertaken (in accordance with the Section 4.5.4 EM&A Manual).

(b) Station C2, M5, M6, M7 and M8 will be carried out throughout construction period (in accordance with the Section 4.5.3 EM&A Manual).

3.4 MONITORING EQUIPMENT

Air Quality Monitoring

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 approve. The filter paper of 24-hour TSP measurement shall be determined by HOKLAS accredited laboratory.

Noise Monitoring

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 m s^{-1}.

Water Quality Monitoring

i. **Dissolved Oxygen and Temperature Measuring Equipment** – The instrument should be a portable and weatherproof dissolved oxygen (DO) measuring instrument complete with cable and sensor, and use a DC power source. The equipment should be capable of measuring as included a DO level in the range of 0 – 20mg L-1 and 0 – 200% saturation; and a temperature of 0 – 45 degree Celsius.

ii. **pH Meter** – The instrument shall consist of a potentiometer, a glass electrode, a reference electrode and a temperature-compensating device. It shall be readable to 0.1 pH in arrange of 0 to 14.

iii. **Turbidity (NTU) Measuring Equipment** – The instrument should be a portable and weatherproof turbidity measuring instrument using a DC power source. It should have a photoelectric sensor capable of measuring turbidity between 0 - 1000 NTU.

iv. **Water Sampling Equipment** – A water sampler should comprise a transparent PVC cylinder, with a capacity of not less than 2 litres, which can be effectively sealed with latex cups at both ends. The sampler should have a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler is at the selected water depth.

v. **Water Depth Detector** – A portable, battery-operated echo sounder should be used for the determination of water depth at each designated monitoring station. This unit can either be hand held or affixed to the bottom of the work boat.

vi. **Salinity Measuring Equipment** – A portable salinometer capable of measuring salinity in the range of 0 - 40 parts per thousand (ppt) should be provided for measuring salinity of the water at each monitoring location.

vii. **Sample Containers and Storage** – Water samples for SS should be stored in high density polythene bottles with no preservative added, packed in ice (cooled to 4℃ without being frozen).

viii. **Monitoring Position Equipment** - A hand-held or boat-fixed type digital Differential Global Positioning System (DGPS) with way point bearing indication and Radio Technical Commission for maritime (RTCM) Type 16 error message 'screen pop-up' facilities (for real-time auto-display of error messages and DGPS corrections from the Hong Kong Hydrographic Office), or other equipment instrument of similar accuracy, should be provided and used during marine water monitoring to ensure the monitoring vessel is at the

correct location before taking measurements.

ix. **Suspended Solids Analysis** – Analysis of suspended solids shall be carried out in a HOKLAS or other international accredited laboratory.

The monitoring equipments using for the EM&A program were proposed by the ET and verified by the IEC prior to the commencement of the monitoring. Details of the equipments used for impact monitoring are listed in ***Table 3-5*** below.

Table 3-5 Monitoring Equipments Used in EM&A Program

Equipment	Model
Air Quality Monitoring	
High Volume Sampler – 24 hour TSP	TE-5170 TSP MFC Sampler System
Calibration Kit – 24-hour TSP	TISCH Model TE-5025A
Portable dust meter – 1-hour TSP	TSI DustTrak Model 8520
Construction Noise	
Integrating Sound Level Meter	B&K Type 2238
Calibrator	B&K Type 4231
Portable Wind Speed Indicator	Testo Anemometer
Water quality	
A Digital Global Positioning System	GPS12 Garmin
Water Depth Detector	Eagle Sonar
Water Sampler	A 2-litre transparent PVC cylinder with latex cups at both ends
Thermometer & DO meter	YSI Professional Plus Multimeter and Hach 2100Q Turbidimeter
pH meter	
Turbidimeter	
Salinometer	
Sample Container	High density polythene bottles (provided by laboratory)
Storage Container	'Willow' 33-litter plastic cool box with Ice pad
Suspended Solids	HOKLAS-accredited laboratory (ALS Technichem (HK) Pty Ltd)

3.5 MONITORING METHODOLOGY

1-hour TSP Monitoring

The 1-hour TSP monitor was either a TSI Dust Track Aerosol Monitor Model 8520 which is a portable, battery-operated laser photometer. The 1-hour TSP meter provides a real time 1-hour TSP measurement based on 90^{o} 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.

The 1-hour TSP meter is used within the valid period as follow manufacturer's Operation and Service Manual.

24-hour TSP Monitoring

The equipment used for 24-hour TSP measurement is T TE-5170 TSP MFC Sampler System, which complied with *EPA Code of Federal Regulation, Appendix B to Part 50*. The High Volume Air Sampler (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

The HVS is operated and calibrated on a regular basis in accordance with the manufacturer's instruction using the NIST-certified standard calibrator (Tisch Calibration Kit Model TE-5025A). One point checking would carry out in two month interval while full point checking in every 6 month.

24-hour TSP is collected by the ET on filters of HVS and quantified by a local HOKLAS accredited laboratory, ALS Technichem (HK) Pty Ltd (ALS), upon receipt of the samples. The ET keep all the sampled 24-hour TSP filters in normal air conditioned room conditions, i.e. 70% RH (Relative Humidity) and 25°C, for six months prior to disposal.

Noise Monitoring

Noise measurements were taken in terms of the A-weighted equivalent sound pressure level (L_{eq}) measured in decibels (dB). Supplementary statistical results (L_{10} and L_{90}) were also obtained for reference.

Sound level meters listed in ***Table 3-5*** are complied with the *International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1)* specifications, as recommended in Technical Memorandum (TM) issued under the *Noise Control Ordinance (NCO)*.

During the monitoring, all noise measurements were performed with the meter set to FAST response and on the A-weighted equivalent continuous sound pressure level (L_{eq}). $Leq_{(30min)}$ in six consecutive $Leq_{(5min)}$ measurements were used as the monitoring parameter for the time period between 0700-1900 hours on weekdays; and also $Leq_{(15min)}$ in three consecutive $Leq_{(5min)}$ measurements is used as monitoring parameter for other time periods (e.g. during restricted hours), if necessary.

During the measurement, the sound level meter is mounted on a tripod with a height of 1.2m above ground 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 is fitted for all measurements. The assessment point is normally set as free-field situation for the measurement.

Prior of noise measurement, the accuracy of the sound level meter is checked using an acoustic calibrator generating a known sound pressure level at a known frequency. The checking was performed before and after the noise measurement.

Water Quality

Water quality monitoring is conducted at the designated locations. The sampling produce with the in-situ monitoring are presented as below:

Sampling Procedure

A Digital Global Positioning System (GPS) is used to identify the designated monitoring stations prior to water sampling. A portable, battery-operated echo sounder is used for the determination of water depth at each station. At each station, marine water samples is collected at three depths: 1m below water surface, 1m above sea bottom and at mid-depth when the water depth exceeds 6m. Samples at 1m below water surface and 1m above sea bottom are collected when the water depth is between 3m and 6m. Only 1 sample at mid-depth is taken when the water depth is below 3m.

The marine water sampler is lowered into the water body at the predetermined depth. The trigger system of the sampler should been activated with a messenger. The opening ends of the sampler then is closed accordingly and water sample is collected.

The sample container is rinsed with a portion of the water sample. The water sample then is transferred to the high-density polythene bottles as provided by the laboratory, labeled with a unique sample number and sealed with a screw cap.

Before commencement of the sampling, general information such as the date and time of sampling, weather condition and tidal condition as well as the personnel responsible for the monitoring are to be recorded on the monitoring field data sheet.

A 'Willow' 33-litter plastic cool box packed with ice is used to preserve the collected water samples prior to arrival at the laboratory for chemical determination. The water temperature of the cool box is maintained at a temperature as close to 4^0C as possible without being frozen. Samples collected are delivered to the laboratory upon collection

In-situ Measurement

Positioning of Monitoring Locations

A digital Global Positioning System (GPS) is used during marine water monitoring to ensure the monitoring vessel is at the correct location when taking measurement and samples.

Depth, Dissolved Oxygen (DO), Temperature, Turbidity, Salinity and pH value

The *YSI Model 6820 Multi-parameter Water Quality Monitoring System* is used for marine water in-situ measures, which automates the measurements and data logging of depth, temperature, dissolved oxygen, dissolved oxygen saturation, turbidity, pH and salinity simultaneously. Before each round of monitoring, the dissolved oxygen probe is calibrated by the wet bulb method and the turbidity and salinity probes checked with distilled water.

Laboratory Analysis

All water samples are analyzed with Suspended Solids (SS) as specified in the *EM&A Manual* by a local HOKLAS-accredited testing laboratory (ALS Technichem (HK) Pty Ltd HOKLAS registration no. 66). SS analysis is determined by the laboratory upon receipt of the water samples using HOKLAS accredited analytical methods namely ALS Method EA-025. The HOKLAS accredited certificate of laboratory is provided in ***Annex F***.

3.6 EQUIPMENT CALIBRATION

Calibration of the HVS is performed upon installation in accordance with the manufacturer's instruction using the NIST-certified standard calibrator (Tisch Calibration Kit Model TE-5025A). The calibration data are properly documented and the records are maintained by ET for future reference.

The 1-hour TSP meter was calibrated by the supplier prior to purchase. Zero response of the equipment was checked before and after each monitoring event. In-house calibration with the High Volume Sampler (HVS) in same condition was undertaken in yearly basis.

The sound level meter and calibrator are calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme at yearly basis.

The Multi-parameter Water Quality Monitoring System is calibrated by HOKLAS accredited laboratory of three month intervals.

All updated calibration certificates of the monitoring equipment used for the impact monitoring program in this Reporting Period are attached in ***Annex F***.

3.7 METEOROLOGICAL INFORMATION

The meteorological information during the construction phase is obtained from Tai Po and Shatin Stations of the Hong Kong Observatory (HKO).

3.8 DATA MANAGEMENT AND DATA QA/QC CONTROL

The impact monitoring data are handled by the ET's systematic data recording and management, which complies with in-house Quality Management System. Standard Field Data Sheets (FDS) are used in the impact monitoring program.

The monitoring data recorded in the equipment e.g. 1-hour TSP meter, noise meter and Multi-parameter Water Quality Monitoring System are downloaded directly from the equipment at the end of each monitoring day. The downloaded monitoring data are input into a computerized database properly maintained by the ET. The laboratory results are input directly into the computerized database and QA/QC checked by personnel other than those who input the data. For monitoring activities require laboratory analysis, the local laboratory follows the QA/QC requirements as set out under the HOKLAS scheme for all laboratory testing.

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

According to the Final Report Environmental Monitoring and Audit Manual [2095/13.3], the air quality, construction noise and water quality criteria with Landscape and Visual Impact were set up, namely Action and Limit levels are listed in ***Tables 3-6, 3-7, 3-8*** and ***3-9*** as below.

Table 3-6 Action and Limit Levels for Air Quality Monitoring

Monitoring Stations	Action Level ($\mu g/m^3$)		Limit Level ($\mu g/m^3$)	
	1-hour	24-hour	1-hour	24-hour
A1	302	172	500	260

Table 3-7 Action and Limit Levels for Construction Noise

Time Period	Action Level in dB(A)	Limit Level in dB(A)
0700-1900 hours on normal weekdays	When one documented complaint is received	> 75* dB(A)

*Note: * Reduces to 70 dB(A) for schools and 65 dB(A) during the school examination periods.*

Table 3-8 Action and Limit Levels for Water Quality

Monitoring Location	DO (mg/L) (Surface & Mid)		DO (mg/L) (Bottom)		Turbidity (NTU) (Depth Averaged)		SS (mg/L) (Depth Averaged)	
	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level
M1	2.73	1.61	NA	NA	5.73	6.44	8.00	8.77
M2	2.85	1.98	NA	NA	6.26	6.45	10.40	14.08
M3	2.51	1.62	NA	NA	5.10	5.64	4.00	4.00
M4	2.60	1.74	2.57	1.65	5.32	5.83	5.50	6.27
M5	1.94	1.45	NA	NA	8.01	8.7	31.55	48.09
M6	2.36	1.38	NA	NA	8.47	9.36	12.00	18.93
M7	1.98	1.57	NA	NA	7.11	7.24	7.85	10.31
M8	2.67	1.08	NA	NA	6.27	7.19	7.00	11.62

Notes:

- *"Depth-averaged" is calculated by taking the arithmetic means of reading of all three depths;*
- *For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.*
- *For turbidity and SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.*

Table 3-9 Action Level for Landscape and Visual Impact in Construction Phase

Parameter	Action Level	Limit Level
Any trespass by the contractor outside the limit of the works, including any damage to existing trees, woodland and vegetation	• Non-conformity on one occasion • Repeated non-conformity	NA

Should non-compliance of the environmental quality criteria occurs, remedial actions will be triggered according to the Event and Action Plan enclosed in ***Annex G***.

4 IMPACT MONITORING RESULTS

Further to the instruction by CRBC, the EM&A program was commenced on 20 October 2009 and the monitoring schedule of this reporting period and the forthcoming month are presented in ***Annex H***. The monitoring results are presented in the following sub-sections.

4.1 RESULTS OF AIR QUALITY MONITORING

In this reporting period, a total of **4** events of 24-hour TSP monitoring and **15** events of 1-hour TSP monitoring were undertaken. The results for air quality monitoring are summarized in ***Tables 4-1***. The 24-hour TSP data are shown in ***Annex I*** and the graphical plots of 24-hour and 1-hour TSP are shown in ***Annex J***.

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

Date	24-hour TSP (μg/m³)	1-hour TSP (μg/m³)				
		Date	Start Time	1st hour measured	2nd hour measured	3rd hour measured
1-Mar-12	31	28-Feb-12	9:45	79	81	80
7-Mar-12	27	3-Mar-12	13:02	67	69	73
13-Mar-12	18	8-Mar-12	11:24	112	110	107
19-Mar-12	33	14-Mar-12	10:03	128	116	109
-	-	20-Mar-12	10:59	144	131	149
Average (Range)	**33 (18-27)**	Average (Range)		**104 (67–149)**		

As shown in ***Tables 4-1***, all the monitoring results for 1-hour and 24-hour TSP were well below the Action/ Limit Level. No associated corrective actions were therefore required.

The meteorological data during the impact monitoring days are summarized in ***Annex K***.

4.2 RESULTS OF CONSTRUCTION NOISE MONITORING

5 events of construction noise monitoring were undertaken in this Reporting Period. The noise monitoring results at the designated location (N1) are summarized in ***Table 4-2***. The sound level were measured as a free field situation, therefore, a façade correction of +3 dB(A) has been added accordance to acoustical principles of the EPD guidelines.

Table 4-2 Summary of Construction Noise Monitoring Results

Date	Start Time	1st Leq_{5min}	2nd Leq_{5min}	3rd Leq_{5min}	4th Leq_{5min}	5th Leq_{5min}	6th Leq_{5min}	Leq_{30min}	Corrected* Leq_{30min}
28-Feb-12	9:48	56.1	55.4	57.3	52.1	54.9	53.8	55.2	58.2
3-Mar-12	13:04	50.4	52.3	56.9	54.7	58.2	54.9	55.3	58.3
8-Mar-12	11:29	54.8	56.1	53.9	58.6	54.4	52.7	55.5	58.5
14-Mar-12	10:03	59.3	58.8	61.2	60.8	57.4	59.9	59.7	62.7
20-Mar-12	10:56	56.2	53.9	54.8	60.3	55.1	54.4	56.4	59.4

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

It was noted that no noise complaint (which is an Action Level exceedance) and exceedances were received in this reporting month. The monitoring result is shown in ***Tables 4-2*** and the graphical plot is shown in ***Annex J***.

4.3 RESULTS OF MARINE WATER QUALITY OF MONITORING

According to the information provided by the Contractor, the box culvert has built and operated since 8 June 2011. The concern monitoring at C1 and other four designed monitoring stations was commenced accordingly. After the stormwater drainage system was built, Starfish Bay and the sea zone of the project west and north (Tolo Harbour) are the potential impact area during construction phase as it would receive all the site runoff of the project. Therefore the control stations C1 & C2 and eight designated monitoring stations M1-M8 were ongoing adopted to carry out impact monitoring in this Reporting Period in accordance with Section 4.5 of the Final

EM&A Manual.

The monitoring results including in-situ measurements and laboratory testing results are provided in ***Annex I***. The graphical plots are shown in ***Annex J***.

During the Reporting Period, field measurements showed that marine water of the depth average of temperature was within **14.88 to 19.60**℃, the salinity concentration was within **30.54 to 34.51** ppt, and pH value was within **6.95 to 8.48.**

Monitoring results of 3 key parameters: dissolved oxygen (DO), turbidity and suspended solids in this Reporting Period, are summarized in ***Tables 4-3*** to ***4-6***.

Table 4-3 Summary of Water Quality Results – Ebb Tides (The Sea Zone of the Project West and North)

Sampling date	DO conc. of Depth Ave. of Surf. and Mid Layer (mg/L)				DO Conc. Bottom layer (mg/L)	Turbidity Depth Ave. (NTU)				SS Depth Ave. (mg/L)			
	M1	M2	M3	M4	M4	M1	M2	M3	M4	M1	M2	M3	M4
28-Feb-12	4.73	5.11	4.93	5.14	4.92	2.30	2.00	2.10	1.93	6.00	4.00	4.00	3.50
1-Mar-12	4.27	4.54	4.62	4.64	4.58	1.65	1.65	1.60	1.70	2.00	4.00	3.00	3.50
3-Mar-12	7.61	8.01	6.86	6.84	6.56	2.70	3.80	1.70	1.68	3.00	4.00	4.00	4.00
6-Mar-12	5.54	5.89	5.47	5.54	5.35	1.45	1.45	2.10	1.75	8.00	9.00	3.00	4.00
8-Mar-12	5.24	5.17	4.70	4.97	5.23	1.80	1.90	1.75	1.93	5.00	6.00	4.00	5.50
10-Mar-12	7.01	7.58	7.31	7.51	7.55	2.75	2.20	2.25	2.03	7.00	9.00	4.00	5.00
12-Mar-12	7.85	7.92	7.54	7.75	7.67	2.15	2.50	2.35	2.10	2.00	2.00	2.00	4.00
14-Mar-12	7.96	8.00	7.58	7.77	7.58	1.90	1.95	2.10	2.23	2.00	2.00	2.00	2.50
16-Mar-12	8.80	8.54	7.78	8.13	8.29	2.20	2.05	2.15	2.33	4.00	3.00	3.00	3.50
20-Mar-12	10.40	10.24	9.45	10.02	10.12	1.65	1.75	1.65	1.70	2.00	2.00	2.00	2.00

Table 4-4 Summary of Water Quality Results – Flood Tides (The Sea Zone of the Project West and North)

Sampling date	DO conc. of Depth Ave. of Surf. and Mid Layer (mg/L)				DO Conc. Bottom layer (mg/L)	Turbidity Depth Ave. (NTU)				SS Depth Ave. (mg/L)			
	M1	M2	M3	M4	M4	M1	M2	M3	M4	M1	M2	M3	M4
28-Feb-12	4.51	4.85	5.19	5.17	5.05	2.15	2.20	2.35	2.08	4.00	4.00	3.00	3.00
1-Mar-12	6.70	6.67	4.93	5.02	4.89	1.60	1.95	1.70	1.95	3.00	4.00	2.00	2.50
3-Mar-12	6.19	6.28	5.58	5.75	5.71	1.90	1.85	1.70	1.78	4.00	8.00	4.00	5.00
6-Mar-12	5.80	5.94	5.24	5.31	5.21	3.35	3.55	2.55	1.73	2.00	3.00	4.00	3.50
8-Mar-12	7.58	7.58	7.17	7.43	7.57	1.90	2.10	2.10	2.10	4.00	10.00	3.00	4.50
10-Mar-12	7.51	7.40	6.73	7.02	7.10	2.25	2.15	2.85	2.28	4.00	7.00	3.00	5.50
12-Mar-12	8.68	8.58	8.02	8.08	7.99	2.40	2.25	2.15	2.28	6.00	3.00	2.00	3.00
14-Mar-12	8.34	8.25	7.58	7.77	7.67	2.00	2.25	2.00	2.45	2.00	6.00	3.00	2.50
16-Mar-12	8.30	8.44	7.60	8.22	8.28	2.10	2.05	2.30	2.20	3.00	4.00	2.00	2.00
20-Mar-12	10.68	10.65	10.51	10.50	10.78	1.65	1.65	1.75	1.83	2.00	2.00	2.00	2.50

Table 4-5 Summary of Water Quality Results – Ebb Tides (The Sea Zone of the Starfish Bay)

Sampling date	DO conc. of Depth Ave. of Surf. and Mid Layer (mg/L)				Turbidity Depth Ave. (NTU)				SS Depth Ave. (mg/L)			
	M5	M6	M7	M8	M5	M6	M7	M8	M5	M6	M7	M8
28-Feb-12	5.06	4.94	5.01	4.86	2.05	2.30	2.15	2.05	6.00	7.00	5.00	7.00
1-Mar-12	4.57	4.56	4.51	4.57	1.70	1.95	1.65	1.70	4.00	2.00	4.00	4.00
3-Mar-12	6.42	6.38	6.35	6.06	1.85	1.80	1.85	1.90	3.00	3.00	7.00	2.00
6-Mar-12	5.35	5.30	5.29	5.16	3.20	2.10	3.65	2.00	4.00	5.00	2.00	2.00
8-Mar-12	5.05	4.99	5.06	4.68	1.85	2.20	1.75	1.80	7.00	12.00	7.00	6.00
10-Mar-12	7.51	7.42	7.53	6.95	2.10	2.30	2.65	2.20	8.00	6.00	6.00	7.00
12-Mar-12	7.94	8.67	7.85	7.53	2.55	2.35	2.30	2.10	6.00	2.00	4.00	2.00
14-Mar-12	7.66	7.73	7.65	7.79	2.15	2.05	2.10	1.95	2.00	3.00	2.00	2.00
16-Mar-12	8.23	8.06	8.31	7.41	2.15	2.15	2.05	2.15	2.00	3.00	6.00	3.00
20-Mar-12	9.77	9.50	9.86	8.61	1.60	1.65	1.50	1.60	2.00	2.00	2.00	2.00

Table 4-6 Summary of Water Quality Results – Flood Tides (The Sea Zone of the Starfish Bay)

Sampling date	DO conc. of Depth Ave. of Surf. and Mid Layer (mg/L)				Turbidity Depth Ave. (NTU)				SS Depth Ave. (mg/L)			
	M5	M6	M7	M8	M5	M6	M7	M8	M5	M6	M7	M8
28-Feb-12	4.52	4.57	4.50	4.60	1.90	1.95	2.10	2.80	3.00	4.00	3.00	2.00
1-Mar-12	4.81	4.77	4.79	4.64	1.60	1.65	1.70	1.55	3.00	2.00	2.00	3.00
3-Mar-12	6.14	5.80	6.08	5.71	1.80	1.85	1.80	1.60	2.00	8.00	6.00	5.00
6-Mar-12	5.16	5.05	5.12	4.98	2.60	1.70	1.85	1.45	4.00	4.00	6.00	3.00
8-Mar-12	7.53	7.47	7.56	7.38	1.85	1.90	1.90	1.85	7.00	5.00	5.00	4.00
10-Mar-12	6.98	6.89	7.02	6.43	2.10	2.35	2.25	2.35	6.00	10.00	7.00	6.00
12-Mar-12	7.83	7.77	7.84	7.44	2.05	2.05	2.10	2.20	3.00	4.00	5.00	4.00
14-Mar-12	7.32	7.35	7.24	7.42	2.10	1.95	1.95	2.05	3.00	2.00	2.00	2.00
16-Mar-12	8.37	8.26	8.42	7.65	2.00	2.15	2.15	2.00	3.00	2.00	3.00	3.00
20-Mar-12	10.33	10.19	10.42	9.45	1.70	1.95	1.70	1.80	2.00	3.00	2.00	4.00

A summary of exceedances for the three parameters: dissolved oxygen (DO), turbidity and suspended solids are shown in ***Table 4-7***.

Table 4-7 Summarized Exceedances of Marine Water Quality

Station	DO (Ave of Top & mid-depth)		Turbidity (Depth Ave.)		SS (Depth Ave)		Total Exceedance	
	Action	Limit	Action	Limit	Action	Limit	Action	Limit
Mid-Ebb								
M1	0	0	0	0	0	0	0	0
M2	0	0	0	0	0	0	0	0
M3	0	0	0	0	0	0	0	0
M4	0	0	0	0	0	0	0	0
M5	0	0	0	0	0	0	0	0
M6	0	0	0	0	0	0	0	0
M7	0	0	0	0	0	0	0	0
M8	0	0	0	0	0	0	0	0
Mid-Flood								
M1	0	0	0	0	0	0	0	0
M2	0	0	0	0	0	0	0	0
M3	0	0	0	0	0	0	0	0
M4	0	0	0	0	0	0	0	0
M5	0	0	0	0	0	0	0	0
M6	0	0	0	0	0	0	0	0
M7	0	0	0	0	0	0	0	0
M8	0	0	0	0	0	0	0	0
No of Exceedance	0	0	0	0	0	0	0	0

For marine water monitoring, no exceedance of Action/Limit level was recorded in this reporting month. Based on temporary discharge drainage system and air quality mitigation measures, all waste water or runoff as come from the work site should not be discharged into natural streams and flow to the Starfish Bay, due to its was collected and reused for dust mitigation measures at the site. It is therefore no corrective action required.

5 WASTE MANAGEMENT

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

5.1 RECORDS OF WASTE QUANTITIES

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.

The quantities of waste for disposal in this Reporting Period are summarized in ***Table 5-1*** and ***5-2*** and the Monthly Summary Waste Flow Table is shown in ***Annex L***. Whenever possible, materials were reused on-site as far as practicable.

Table 5-1 Summary of Quantities of Inert C&D Materials

Type of Waste	Quantity	Disposal Location
Reused in this Contract (Inert) (m^3)	0	Reuse in the contract
Reused in other Projects (Inert) (m^3)	0	-
Disposal as Public Fill (Inert) (m^3)	0	-

Table 5-2 Summary of Quantities of C&D Wastes

Type of Waste	Quantity	Disposal Location
Recycled Metal (kg)	0	-
Recycled Paper / Cardboard Packing (kg)	0	-
Recycled Plastic (kg)	0	-
Chemical Wastes (kg)	0	-
General Refuses (m^3)	13	NENT Landfill

There was no site effluent or surface runoff discharged in this monthly period.

6 SITE INSPECTION

According to the Final Report Environmental Monitoring and Audit Manual [2095/13.3], the environmental site inspection should be formulated by ET Leader. Regular environmental site inspections had been carried out by the Contractor and ER to confirm the environmental performance.

Due to the completion of the project, no join site inspections were carried out by the RE, IEC, and the Contractor with ET on **March 2012** during the Reporting Period.

7 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

7.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

No environmental complaint, summons and prosecution was received in this Reporting Period. The statistical summary table of environmental complaint is presented in ***Tables 7-1, 7-2*** and ***7-3***.

Table 7-1 Statistical Summary of Environmental Complaints

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
26 November 2009 – 25 February 2012	0	0	NA
26 February 2012 – 21 March 2012	0	0	NA

Table 7-2 Statistical Summary of Environmental Summons

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
26 November 2009 – 25 February 2012	0	0	NA
26 February 2012 – 21 March 2012	0	0	NA

Table 7-3 Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
26 November 2009 – 25 February 2012	0	0	NA
26 February 2012 – 21 March 2012	0	0	NA

8 IMPLEMENTATION STATUS OF MITIGATION MEASURES

The environmental mitigation measures that recommended in the Final Report Environmental Monitoring and Audit Manual [2095/13.3] covered the issues of dust, noise and waste and they are summarized as following:

Dust Mitigation Measure

(a) The contractor shall frequently clean and water the site to minimize fugitive dust emissions.
(b) Effective water sprays shall be used during the delivery ad handling of aggregate, and other similar materials, when dust is likely to be created and to dampen all sited material during dry and windy weather.
(c) Watering of exposed surfaces shall be exercised as often as possible depending on the circumstance.
(d) Areas within the site where there is regular movement of vehicles must be regularly watered as often as necessary for effective suppression of dust or as often as directed by the Engineer.
(e) Where dusty materials are being discharged to vehicle from a conveying system at a fixed transfer point, a three-sided roofed enclosure with a flexible curtain across the entry shall be provided. Exhausted fans shall be provided for this enclosure and vented to a suitable fabric filer system.
(f) The Contractor shall restrict all motorized vehicles within the site, excluding those on public roads, to a maximum speed of 15km per hour and confine haulage and delivery vehicles to designated roadways inside the site.
(g) Wheel washing facilities shall be installed and used by all vehicles leaving the site. No earth, mud, debris, dust and the like shall be deposited on public roads, water in wheel cleaning facility shall be changed at frequent intervals and sediments shall be removed regularly. The Contractor shall submit detailed proposals for the wheel cleaning facilities to the Engineer prior to construction of the facility. Such wheel washing facilities shall be usable prior to any earthworks excavating activity in the site.
(h) Any material dropped in the roads will need to be cleaned up immediately to prevent dust nuisance.

Noise Mitigation Measure

(a) Noisy equipment and activities should be sited by the Contractor as far from close-proximity sensitive receivers as practical. Prolonged operation of noisy equipment close to dwellings and schools should be avoided.
(b) The Contractor should minimise construction noise exposure to the schools (especially during examination periods) as much as possible. The Contractor should liaise with the school and the Examination Authority to ascertain the exact dates and times of all examination periods during the course of the contract and to avoid noisy activities during these periods.
(c) Noisy plant or processes should be replaced by quieter alternatives where possible. Silenced diesel and gasoline generators and power units, as well as silenced and super-silenced air compressors should be used.
(d) Noisy activities should be scheduled to minimize exposure of nearby sensitive receivers to high levels of construction noise. For example, noisy activities can be scheduled for midday, or at times coinciding with periods of high background noise (such as during peak traffic hours).
(e) Idle equipment should be turned off or throttled down. Noisy equipment should be properly maintained and used no more often than is necessary.
(f) The power units of non-electric stationary plant and earth-moving plant should be quietened by vibration isolation and partial or full acoustic enclosures for individual noise-generating components.
(g) Construction activities should be planned so that parallel operation of several sets of equipment close to a given receiver is avoided, thus reducing the cumulative impacts between operations. The numbers of operating items of powered mechanical equipment

should be minimized.

(h) Construction plant should be properly maintained (well-greased, damage and worn parts promptly replaced) and operated. Construction equipment often has silencing measures built in or added on, e.g. bulldozer silencers, compressor panels, and mufflers. Silencing measures should be properly maintained and utilized. Where possible, rubber or damping materials should be introduced between metal panels to avoid rattle and reverberation of noise.

(i) Equipment known to emit sound strongly in one direction, should where possible, be oriented so that the noise is directed away from nearby NSRs.

(j) Material stockpiles and other structures (such as site offices) should be effectively utilized, where practicable, to screen noise from on-site construction activities. Alternatively, noise barriers having a surface density of 10 kg/m2 should be used to protect nearby NSRs if necessary.

(k) The Contractor should devise, arrange methods of working and carry out the works in such manner as to minimize noise impacts on the surrounding environment, and should provide experienced personnel with suitable training to ensure that these measures are implemented properly.

Waste Mitigation Measures

(a) The Contractor shall observe and comply with the Waste Disposal Ordinance (WDO) and its subsidiary regulations.

(b) The Contractor shall submit to the Engineer for approval a Waste Management Plan with appropriate mitigation measures including the allocation of an area for waste segregation and shall ensure that the day-to-day site operations comply with the approved waste management plan.

(c) The Contractor shall minimize the generation of waste from his work. Avoidance and minimization of waste generation can be achieved through changing or improving design and practices, careful planning and good site management.

(d) The reuse and recycling of waste shall be practiced as far as possible. The recycled materials shall include paper/cardboard, timber and metal etc.

(e) The Contractor shall ensure that Construction and Demolition (C&D) materials are sorted into public fill (inert portion) and C&D waste (non-inert portion). The public fill which comprises soil, rock, concrete, brick, cement plaster/mortar, inert building debris, aggregates and asphalt shall be reused in earth filling, reclamation or site formation works. The C&D waste which comprises metal, timber, paper, glass, junk and general garbage shall be reused or recycled where possible and, as the last resort, disposal of at landfills.

(f) The Contractor shall record the amount of wastes generated, recycled and disposed of (including the disposal sites). The Contractor shall use a trip ticket system for the disposal of C&D materials to any designated public filling facility and/or landfill.

(g) In order to avoid dust or odour impacts, any vehicles leaving a works area carrying construction waste or public fill shall have their load covered.

(h) To avoid the excessive use of wood, reusable steel shutters shall be used as a preferred alternative to formwork and falsework where possible.

(i) The Contractor shall observe and comply with the Waste Disposal (Chemical Waste) (General) Regulation. The Contractor shall apply for registration as chemical waste producer under the Waste Disposal (Chemical Waste) (General) Regulation when chemical waste is produced. All chemical waste shall be properly stored, labeled, packaged and collected in accordance with the Regulation.

CRBC had been implementing the required environmental mitigation measures according to the Final Report Environmental Monitoring and Audit Manual [2095/13.3] subject to the site condition. Environmental mitigation measures generally implemented by CRBC in this Reporting Period are summarized in ***Table 8-1***.

Table 8-1 Environmental Mitigation Measures

Issues	Environmental Mitigation Measures
Water Quality	• Wastewater were appropriately treated by treatment facilities; • Drainage channels were provided to convey run-off into the treatment facilities; and • Drainage systems were regularly and adequately maintained. • De-silting facility was provided to treat the discharged water; also the treated water is reused for spraying the road surface.
Air Quality	• Regular watering to reduce dust emissions from all exposed site surface, particularly during dry weather; • Frequent watering for particularly dusty construction areas and areas close to air sensitive receivers; • Cover all excavated or stockpile of dusty material by impervious sheeting or sprayed with water to maintain the entire surface wet; • Public roads around the site entrance/exit had been kept clean and free from dust; and • Tarpaulin covering of any dusty materials on a vehicle leaving the site. • Sprinkler of water spray system is provided at haul road to reduce dust emissions during the vehicles passing through the haul road • Wheel washing facility is provided at the site exit.
Noise	• Good site practices to limit noise emissions at the sources; • Use of quiet plant and working methods; • Use of site hoarding or other mass materials as noise barrier to screen noise at ground level of NSRs; • Use of shrouds/temporary noise barriers to screen noise from relatively static PMEs; • Scheduling of construction works outside school examination period in critical area; and • Alternative use of plant items within one worksite, where practicable.
Waste and Chemical Management	• Excavated material should be reused on site as far as possible to minimize off-site disposal. Scrap metals or abandoned equipment should be recycled if possible; • Waste arising should be kept to a minimum and be handled, transported and disposed of in a suitable manner; • The Contractor should adopt a trip ticket system for the disposal of C&D materials to any designed public filling facility and/or landfill; and • Chemical waste shall be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes.
General	• The site was generally kept tidy and clean.

9 IMPLEMENTATION STATUS OF MITIGATION MEASURES

9.1 MAJOR FORTHCOMING ACTIVITIES

- Post Environmental monitoring

9.2 KEY ISSUES FOR THE COMING MONTH

Key issues to be considered in the coming month include:

- Implementation of dust suppression measures at all times;
- Potential wastewater quality impact due to surface runoff;
- Potential fugitive dust quality impact due from the dry/loose/exposure soil surface/dusty material;
- Disposal of empty engine oil containers within site area;
- Ensure dust suppression measures are implemented properly;
- Sediment catch-pits and silt removal facilities should be regularly maintained;
- Management of chemical wastes;
- Discharge of site effluent to the nearby wetland, stockpiling or disposal of materials, and any dredging or construction area at this area are prohibited;
- Follow-up of improvement on general waste management issues; and
- Implementation of construction noise preventative control measures

10 CONCLUSIONS AND RECOMMENTATIONS

10.1 CONCLUSIONS

This is the **30th** monthly EM&A report, covering the construction period from **26 February 2012** to **21 March 2012** (the Reporting Period).

No construction noise complaint (an Action Level exceedance) was received and no exceedance was recorded in construction noise monitoring in this Reporting Period.

No 1-hour and 24-hour TSP monitoring results that triggered the Action or Limit Level were recorded in this Reporting Period.

No marine water monitoring results that triggered the Action or Limit Level in this Reporting Period. Therefore, no associated corrective actions were then required.

No documented complaint, notification of summons or successful prosecution was received.

Due to the completion of the project, no join site inspections were carried out by the RE, IEC, and the Contractor with ET on **March 2012** during the Reporting Period.

In this Reporting Period, no site visit by EPD/ AFCD was recorded.

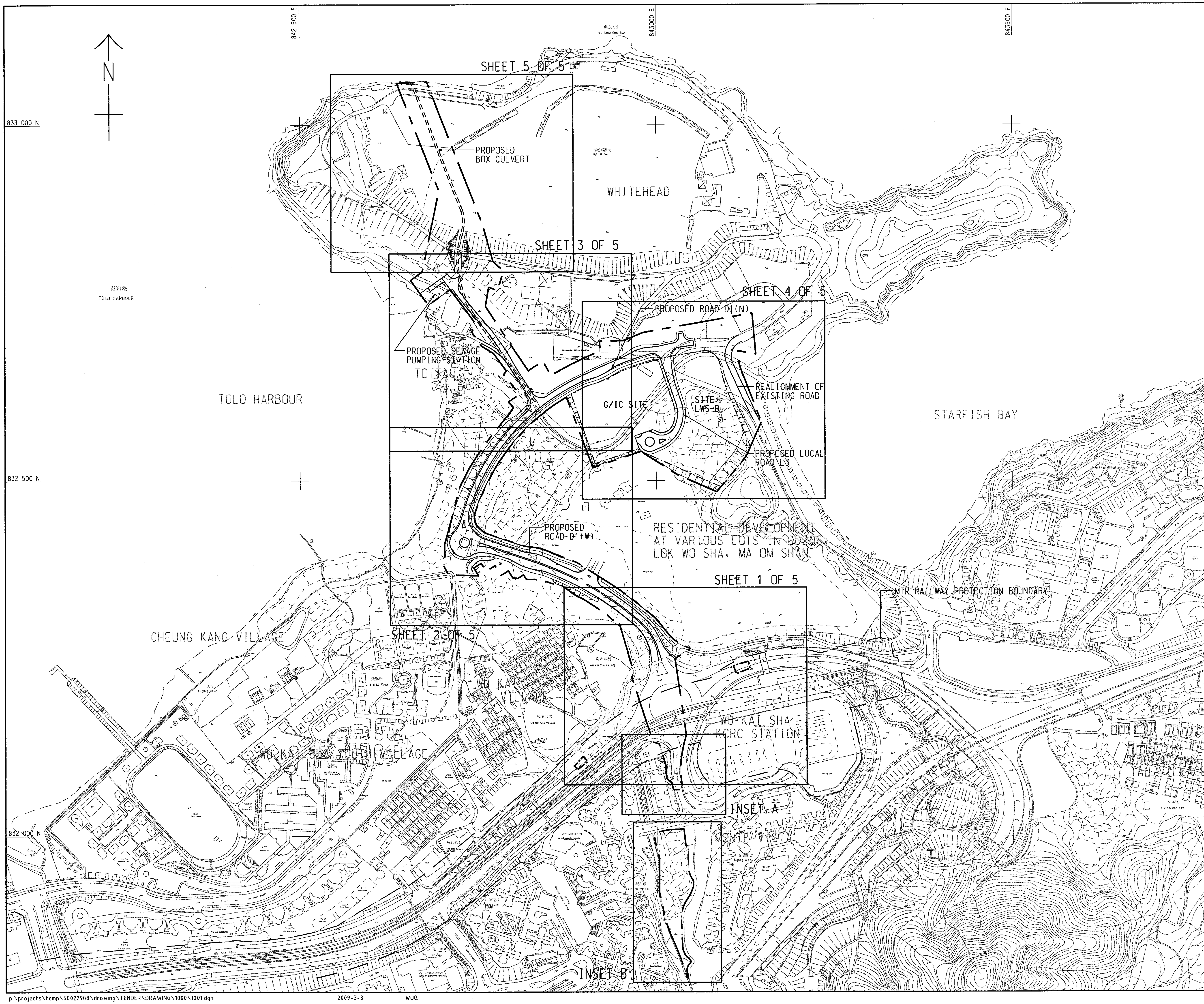
The landscape and visual impacts monitoring was undertaken by the landscape sub-contractor. The monitoring results will be submitted separately as a stand-alone document.

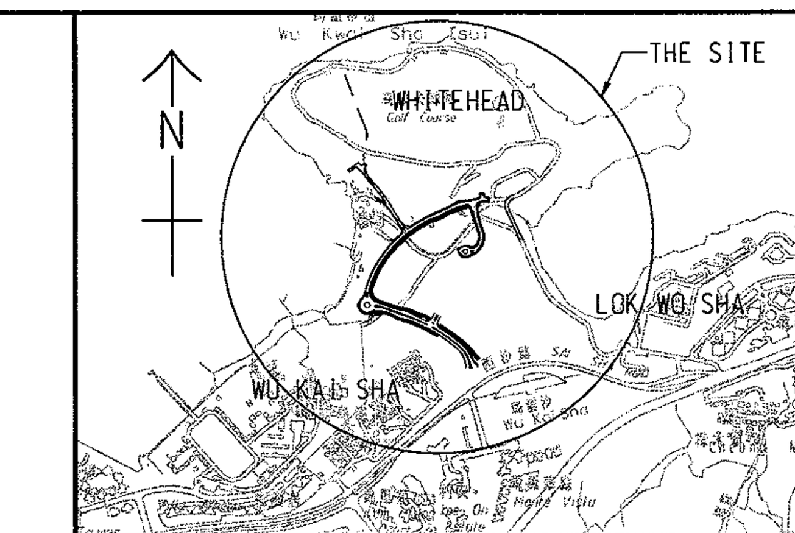
As the certificate of completion was issued on 13 January 2012 and no adverse environmental impacts generated from the construction activities under the Project are anticipated after 21 March 2012, when all the works under the Project, including the remaining outstanding construction works, has been completed. The construction phase of EM&A activities for the caption project was terminated on 21 March 2012.

Upon agreement among the ER, IEC, ET and Contractor, termination of the EM&A under the Project has been proposed by the ET since 21 March 2012 and pending EPD's formal agreement. According to Chapter 4.7.2 of the Final EM&A Manual, the post project monitoring exercise on water quality and the associated schedule has also been proposed since 21 March 2012 and pending EPD's formal agreement.

Annex A

Project Site Layout Plan





LOCATION PLAN

SCALE 1 : 20000

REV. 修訂	DESCRIPTION 內容摘要	CHECKED 複核 D.E.	CHECKED 複核 P.E.	DATE 日期
-	TENDER DRAWING	SSKK	PLCK	MAR.09

Civil Engineering and Development Department
土木工程拓展署

NT EAST DEVELOPMENT OFFICE
新界東拓展處

CEDD

MA ON SHAN DEVELOPMENT

ROADS, DRAINAGE AND SEWERAGE WORKS AT WHITEHEAD AND LOK WO SHA PHASE 1

KEY AND LOCATION PLAN

MAUNSELL | AECOM
Maunsell Consultants Asia Ltd.
茂盛(亞洲)工程顧問有限公司

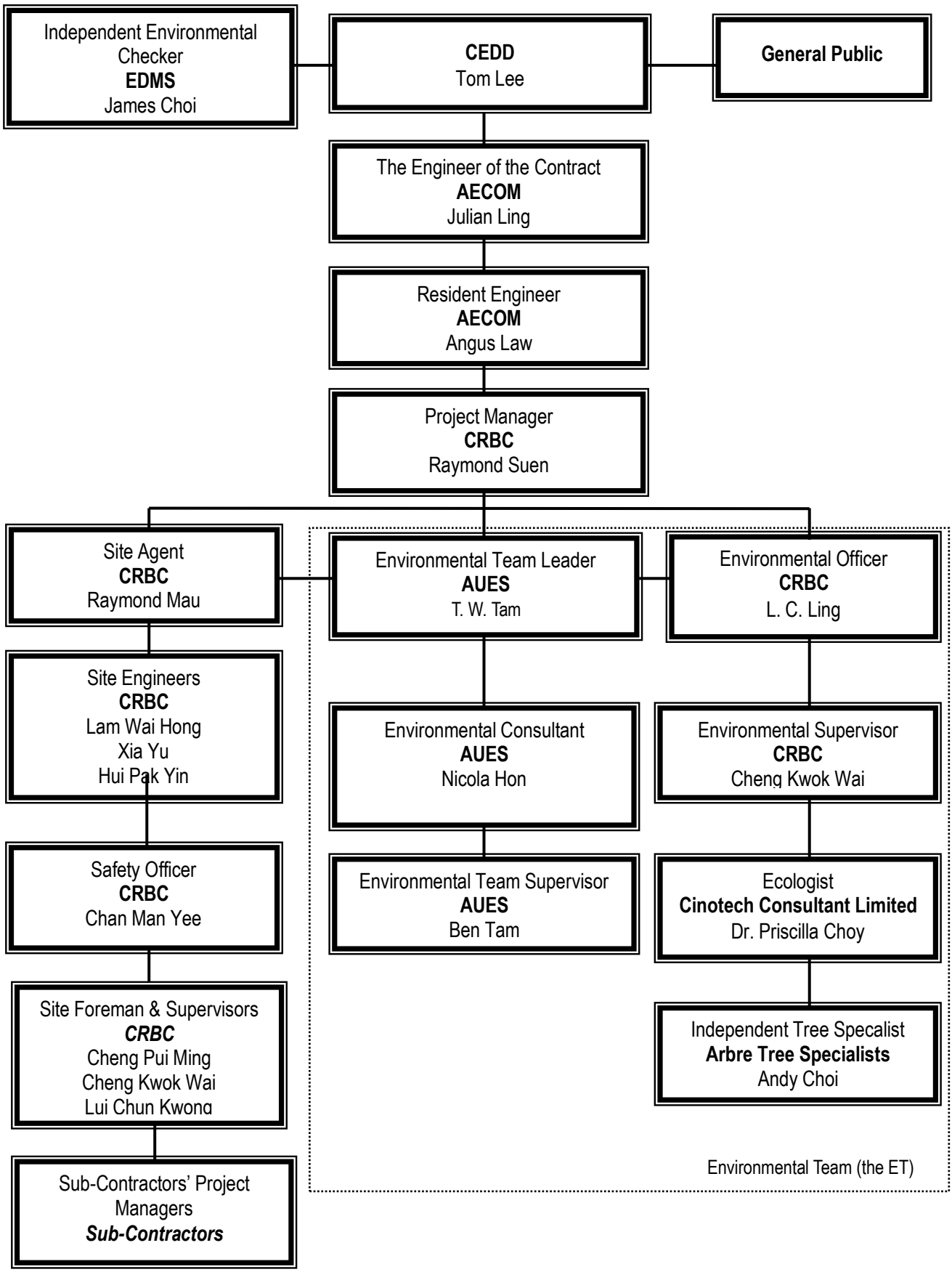
DRG.NO. 圖紙編號: 60022908/1001

DESIGNED BY 設計: SS	CONTRACT NO. 合約編號: ST/2008/02	P. Dir. APPROVED 批准人
DRAWN BY 繪圖: WQ	STATUS 階段	
SCALE 比例: A1 1 : 2500		
DIMENSIONS ARE IN 尺寸單位: METER		

p:\projects\temp\60022908\drawing\TENDER\DRAWING\1000\1001.dgn 2009-3-3 WUQ

Annex B

Organization Structure
and
Contact Details of the CRBC & Relevant Parties


Independent Environmental Checker
EDMS
James Choi
CEDD
Tom Lee
General Public
The Engineer of the Contract
AECOM
Julian Ling
Resident Engineer
AECOM
Angus Law
Project Manager
CRBC
Raymond Suen
Site Agent
CRBC
Raymond Mau
Environmental Team Leader
AUES
T. W. Tam
Environmental Officer
CRBC
L. C. Ling
Site Engineers
CRBC
Lam Wai Hong
Xia Yu
Hui Pak Yin
Environmental Consultant
AUES
Nicola Hon
Environmental Supervisor
CRBC
Cheng Kwok Wai
Safety Officer
CRBC
Chan Man Yee
Environmental Team Supervisor
AUES
Ben Tam
Ecologist
Cinotech Consultant Limited
Dr. Priscilla Choy
Site Foreman & Supervisors
CRBC
Cheng Pui Ming
Cheng Kwok Wai
Lui Chun Kwong
Independent Tree Specalist
Arbre Tree Specialists
Andy Choi
Sub-Contractors' Project Managers
Sub-Contractors
Environmental Team (the ET)

Contact Details of Key Personnel

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
CEDD	Employer	Mr. Tom Lee	2301-1317	2739-0076
AECOM	The Engineer of the Contract	Julian Ling	2631-7796	2631-7226
AECOM	Engineer's Representative	Mr. Angus Law	2631-7796	2631-7226
EDMS	Independent Environmental Checker	Mr. James Choi	2869-6018	3007-8556
CRBC	Project Director	Mr. Wang Yanhua	2283-1688	2283-1689
CRBC	Project Manager	Mr. Raymond Suen	9779-8871	2631-8993
CRBC	Site Agent	Mr. Raymond Mau	9048-3669	2631-8993
CRBC	Site Engineer	Mr. Lam Wai Hong	2631-8823	2631-8993
CRBC	Site Engineer	Mr. Xia Yu	2631-8823	2631-8993
CRBC	Site Engineer	Mr. Hui Pak Yin	2631-8823	2631-8993
CRBC	Environmental Officer	Mr. L.C. Ling	9858-1378	2631-8993
CRBC	Environmental Supervisor	Mr. Cheng Kwok Wai	2631-8823	2631-8993
CRBC	Safety Officer	Ms. Chan Man Yee	2631-8823	2631-8993
CRBC	Assistant Safety Officer	Ms. Wong Yih Tin	2631-8823	2631-8993
AUES	Environmental Team Leader	Mr. T. W. Tam	2959-6059	2959-6079
AUES	Environmental Consultant	Ms. Nicola Hon	2959-6059	2959-6079
AUES	Team Supervisor	Mr. Ben Tam	2959-6059	2959-6079
ATS	Independent Tree Specialist	Andy Choi	9461-7173	-
CCL	Ecologist	Dr. Priscilla Choy	2151-2083	3107-1388

Legend:

CEDD (Employer) – Civil Engineering and Development Department

AECOM (Engineer) – AECOM

CRBC (Main Contractor) – China Road and Bridge Corporation

EDMS (IEC) – EDMS Consulting Limited

AUES (ET) – Action-United Environmental Services & Consulting

Annex C

Certificate of Completion

AECOM
8/F Grand Central Plaza, Tower 2
138 Shatin Rural Committee Road
Shatin, Hong Kong
香港新界沙田鄉事會路138號
新城市中央廣場第2座8樓
www.aecom.com

+852 3922 9000 tel
+852 3922 9797 fax

Your Ref : (out)CRBC/ST200802/S210(2)/005
Our Ref : JYL:VLUI:ccm:60022908/44-1219

13 January 2012

China Road and Bridge Corporation
Units 07-11, 23A/F, K Wah Centre
191 Java Road
North Point
Hong Kong

(Attn : Mr. Raymond S.W. Mau)

Dear Sir,

Ma On Shan Development
Contract No. ST/2008/02
Roads, Drainage and Sewerage Works at Whitehead and Lok Wo Sha Phase 1

Certificate of Completion No. 4 in respect of Sections I, IA and V of the Works

In accordance with Clause 53(1)(a) of the General Conditions of Contract, we hereby certify that Sections I, IA and V of the Works were substantially completed on 7 January 2012.

This certificate is issued following the receipt of your letter referenced above dated 9 January 2012 with notice that the said Sections had been substantially completed on 7 January 2012 and that you undertake to complete any outstanding works and to rectify any defects as identified during the maintenance period.

The maintenance period for the completed works shall commence on the day following the date of completion stated above.

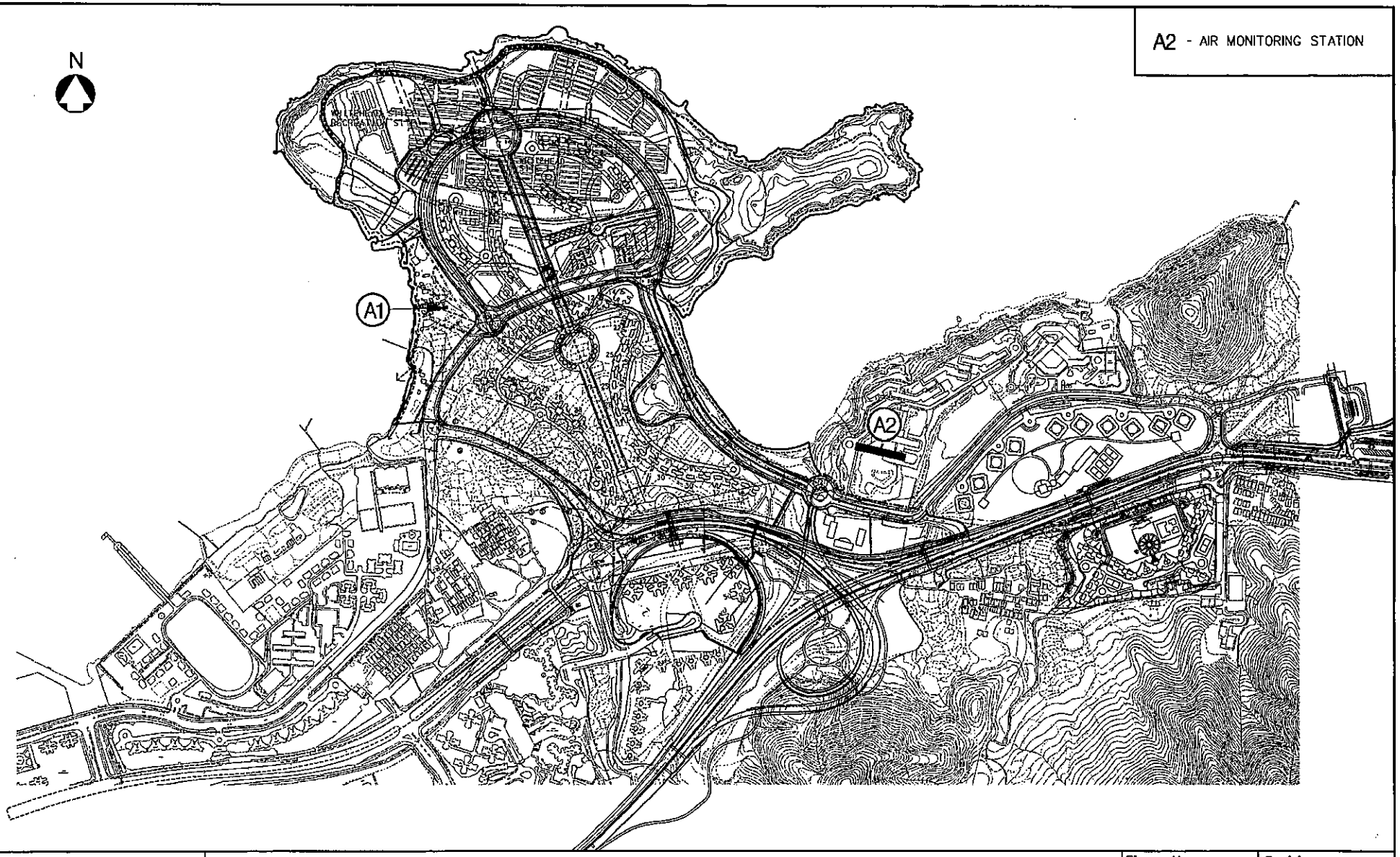
Yours faithfully,
For and on behalf of
AECOM Asia Co. Ltd.

Julian Ling
Project Director
Water & Urban Development

cc D of A
CTA(F), DEVB
PM/NTE, CEDD – Attn: Mr. S. M. Ma
STA
SE/CA
RE/LWS
CRBC Site Office c/o RE/LWS

Annex D

Monitoring Locations Designated in the EM&A Manual



AGREEMENT NO. CE 16/99
FEASIBILITY STUDY FOR HOUSING DEVELOPMENT AT WHITEHEAD AND LEE ON IN MA ON SHAN, SHATIN

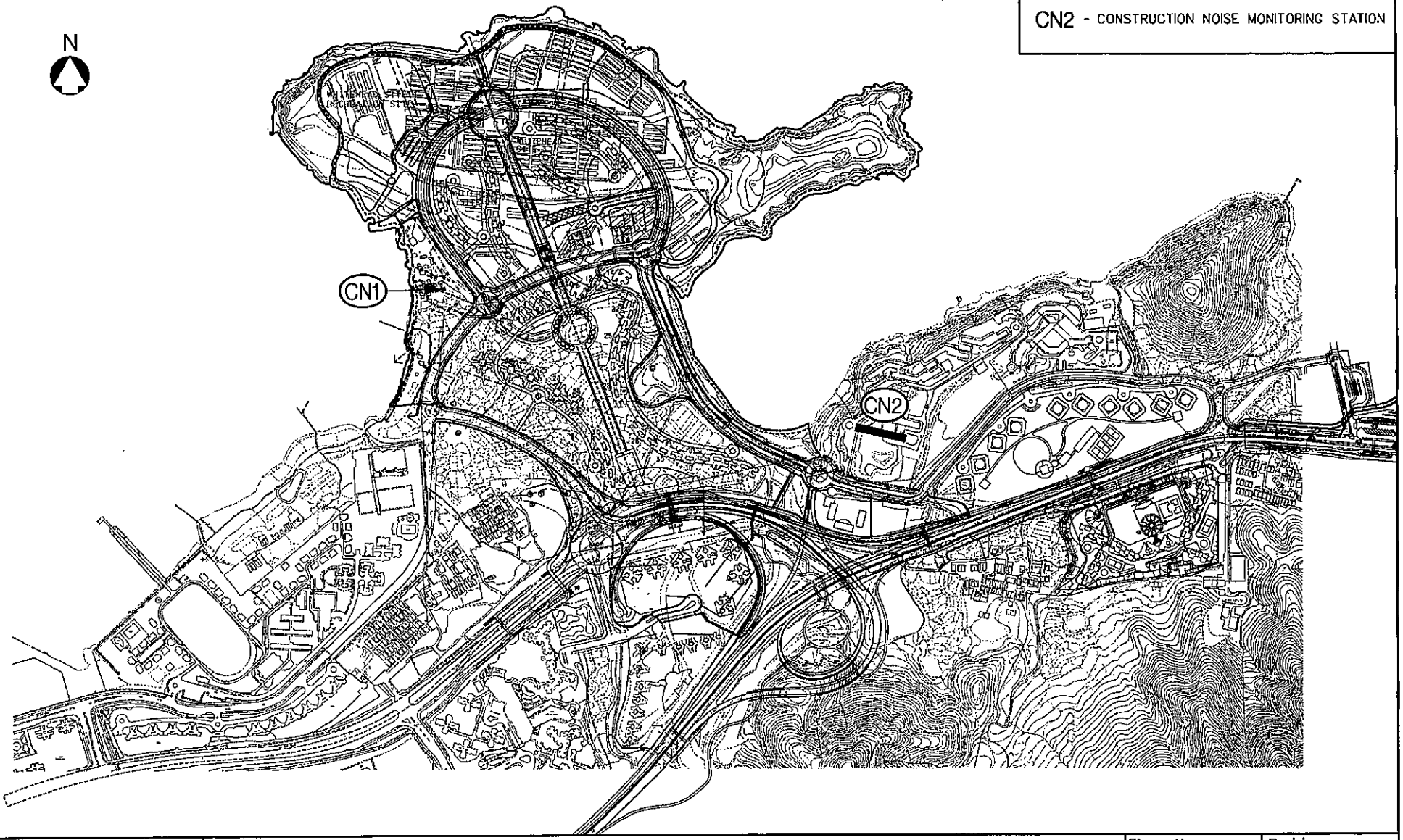
Binnie Black & Veatch Hong Kong Limited
博威工程顧問有限公司
Engineers and Scientists

Title :

LOCATIONS OF AIR MONITORING STATION

Figure No.	Revision
2.2	0
Reference	File Name
-	3820950206-76.DGN
Prepared	Checked
MC	YWL
Date	Scale
MAY. 2002	N.T.S.

CN2 - CONSTRUCTION NOISE MONITORING STATION



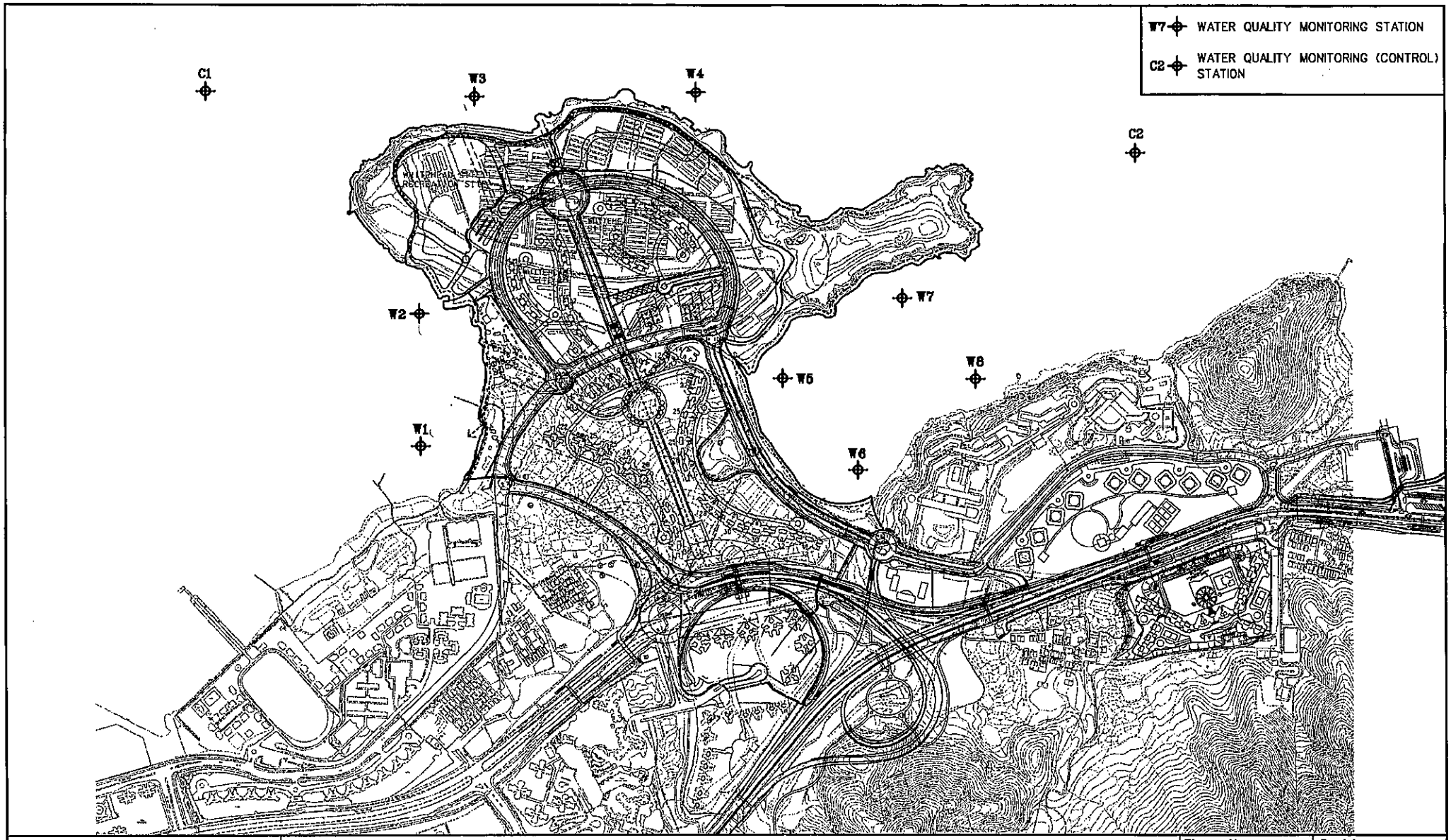
AGREEMENT NO. CE 16/99
FEASIBILITY STUDY FOR HOUSING DEVELOPMENT AT WHITEHEAD AND LEE ON IN MA ON SHAN, SHATIN

Binnie Black & Veatch Hong Kong Limited
博威工程顧問有限公司

Title :

LOCATIONS OF CONSTRUCTION NOISE MONITORING STATION

Figure No.	Revision
3.2	0
Reference	File Name
-	3820950206-77.DGN
Prepared	Checked
MC	YWL
Date	Scale
MAY. 2002	N.T.S.



AGREEMENT NO. CE 16/99
FEASIBILITY STUDY FOR HOUSING DEVELOPMENT AT WHITEHEAD AND LEE ON IN MA ON SHAN, SHATIN

Binnie Black & Veatch Hong Kong Limited
博威工程顧問有限公司

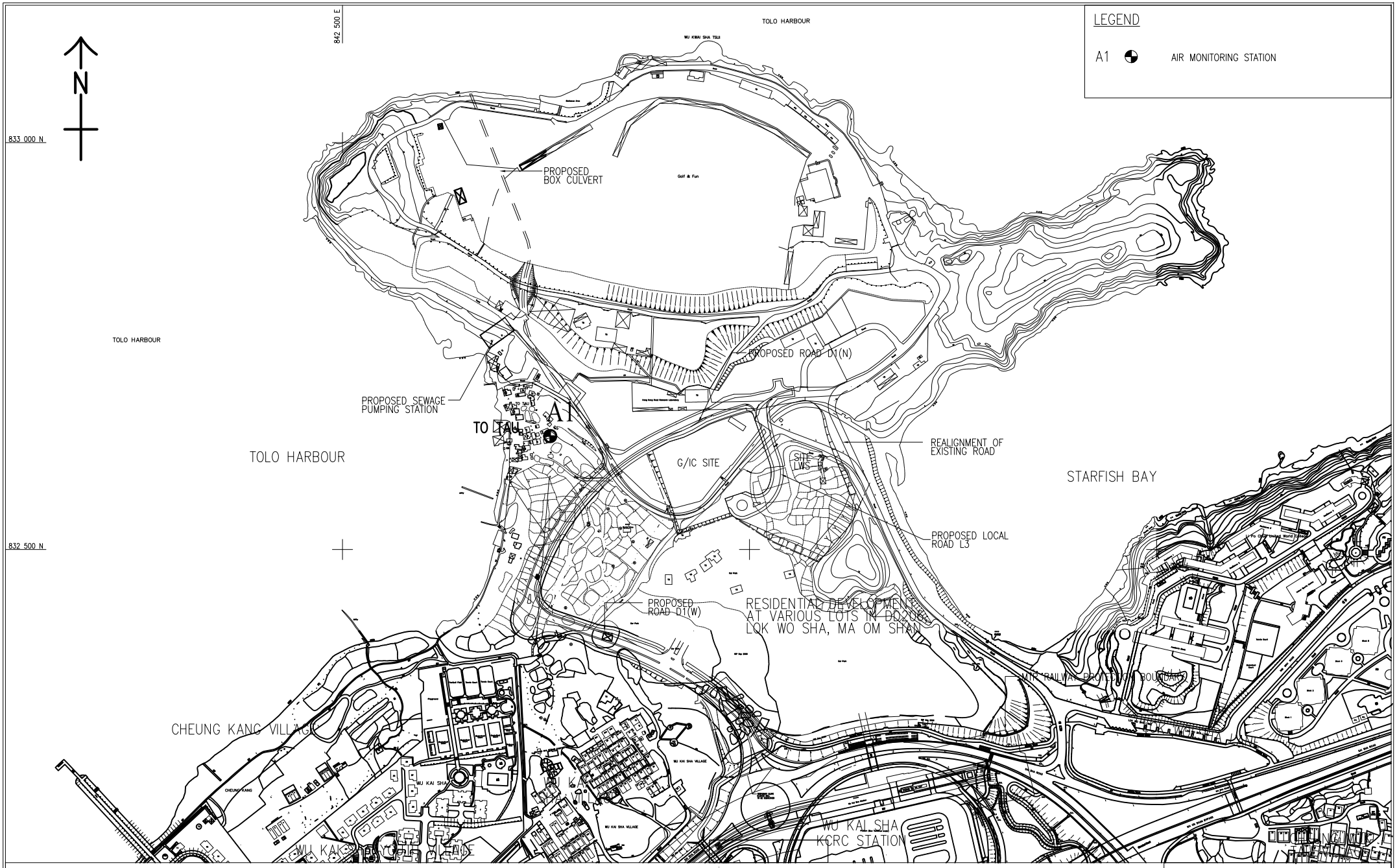
Title :

LOCATIONS OF WATER QUALITY MONITORING STATIONS

Figure No.	Revision
4.2	0
Reference	File Name
-	3820950206-94.DGN
Prepared	Checked
MC	YWL
Date	Scale
May. 2002	N.T.S.

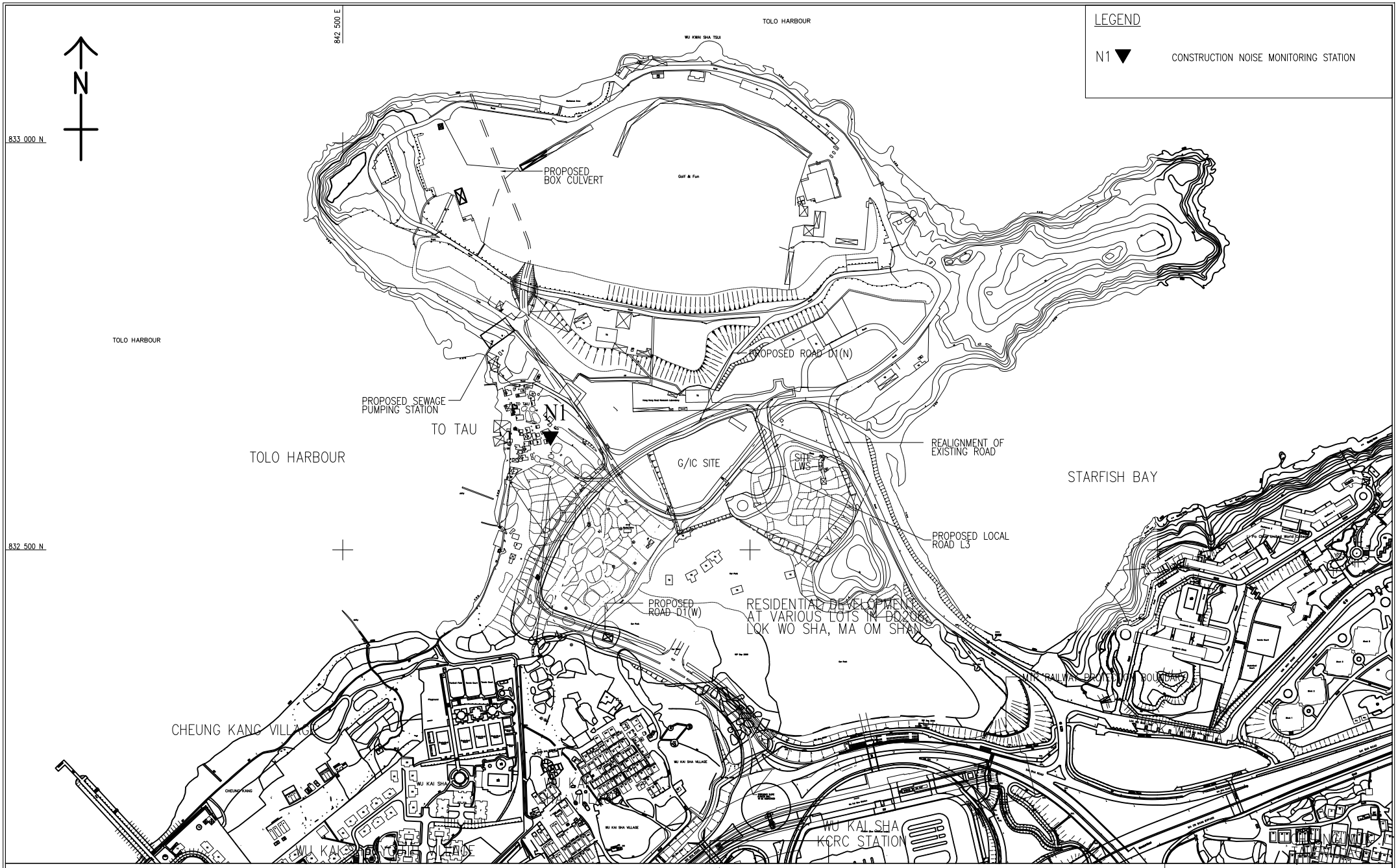
Annex E

Current Impact Monitoring Stations



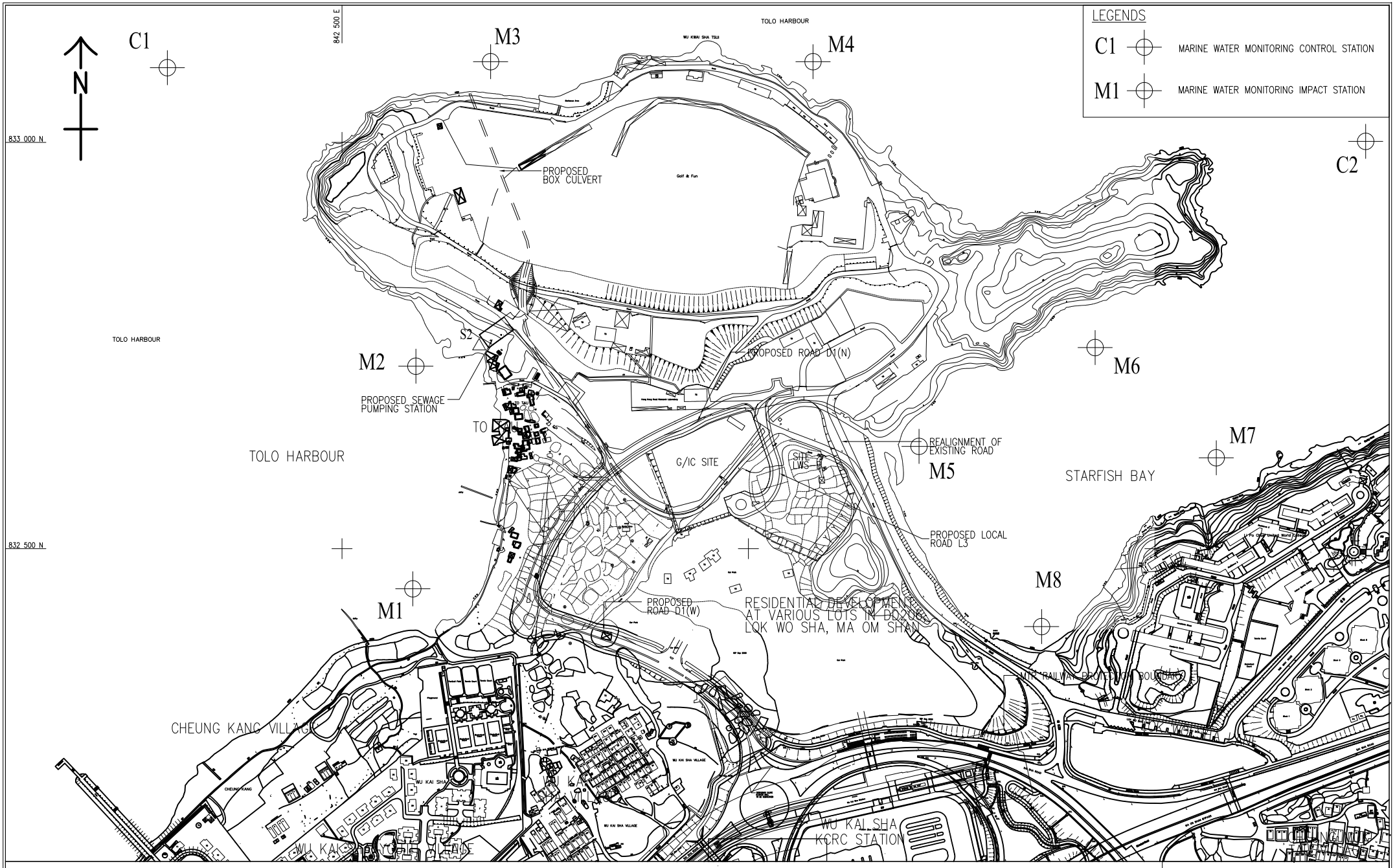
LOCATION OF AIR MONITORING STATION

AUES



LOCATION OF NOISE MONITORING STATION

AUES



LOCATION OF WATER QUALITY MONITORING STATION

AUES

Annex F

Monitoring Equipment Calibrated Certificates and Laboratory Certificate

輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C112473

Certificate of Calibration

This is to certify that the equipment

Description : Acoustical Calibrator (EQ081)

Manufacturer : Bruel & Kjaer

Model No. : 4231

Serial No. : 2326408

has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C112473.

The equipment is supplied by

Co. Name : Action-United Environmental Services and Consulting

Address : Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

Date of Issue : 5 May 2011

Certified by : _____
H C Chan

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

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

Report No. : C112473

Calibration Report

ITEM TESTED

DESCRIPTION : Acoustical Calibrator (EQ081)
MANUFACTURER : Bruel & Kjaer
MODEL NO. : 4231
SERIAL NO. : 2326408

TEST CONDITIONS

AMBIENT TEMPERATURE : (23 ± 2)°C RELATIVE HUMIDITY : (55 ± 20)%
LINE VOLTAGE : ---

TEST SPECIFICATIONS

Calibration check

DATE OF TEST : 4 May 2011 ***JOB NO.*** : IC11-0947

TEST RESULTS

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

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

Tested by : *K C Lee* *Date : 5 May 2011*

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

Report No. : C112473

Calibration Report

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 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	C103289
CL281	Multifunction Acoustic Calibrator	C1006860
TST150A	Measuring Amplifier	C101008

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

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

5.2 Frequency Accuracy

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

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

Note :
The values given in this Calibration Report 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.

輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C112474

Certificate of Calibration

This is to certify that the equipment

Description : Integrating Sound Level Meter (EQ008)

Manufacturer : Bruel & Kjaer

Model No. : 2238

Serial No. : 2285690

has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C112474.

The equipment is supplied by

Co. Name : Action-United Environmental Services and Consulting

Address : Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

Date of Issue : 5 May 2011

Certified by : *H C Chan*

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

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

Report No. : C112474

Calibration Report

ITEM TESTED

DESCRIPTION : Integrating Sound Level Meter (EQ008)
MANUFACTURER : Bruel & Kjaer
MODEL NO. : 2238
SERIAL NO. : 2285690

TEST CONDITIONS

AMBIENT TEMPERATURE : (23 ± 2)°C RELATIVE HUMIDITY : (55 ± 20)%
LINE VOLTAGE : ---

TEST SPECIFICATIONS

Calibration check

DATE OF TEST : 4 May 2011 ***JOB NO.*** : IC11-0947

TEST RESULTS

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

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

Tested by : K C Lee *Date : 5 May 2011*

Report No. : C112474

Calibration Report

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration using the B & K Acoustic Calibrator 4231, S/N : 2326408 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	C110018
CL281	Multifunction Acoustic Calibrator	C1006860

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 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	94.3	± 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	94.3 (Ref.)
				104.00		104.3
				114.00		114.3

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

Report No. : C112474

Calibration Report

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	94.3	Ref.
	L_{ASP}		S			94.3	± 0.1
	L_{AIP}		I			94.3	± 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	105.0	-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	55.0	-39.4 ± 1.5
					63 Hz	68.1	-26.2 ± 1.5
					125 Hz	78.1	-16.1 ± 1.0
					250 Hz	85.6	-8.6 ± 1.0
					500 Hz	91.1	-3.2 ± 1.0
					1 kHz	94.3	Ref.
					2 kHz	95.5	+1.2 ± 1.0
					4 kHz	95.3	+1.0 ± 1.0
					8 kHz	93.2	-1.1 (+1.5 ; -3.0)
					12.5 kHz	90.1	-4.3 (+3.0 ; -6.0)

Report No. : C112474

Calibration Report

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	91.4	-3.0 ± 1.5
					63 Hz	93.5	-0.8 ± 1.5
					125 Hz	94.1	-0.2 ± 1.0
					250 Hz	94.3	0.0 ± 1.0
					500 Hz	94.3	0.0 ± 1.0
					1 kHz	94.3	Ref.
					2 kHz	94.1	-0.2 ± 1.0
					4 kHz	93.5	-0.8 ± 1.0
					8 kHz	91.3	-3.0 (+1.5 ; -3.0)
					12.5 kHz	88.2	-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	Time Weighting	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	90.1	± 0.5
			60 sec.			$1/10^3$		80	79.8	± 1.0
			5 min.			$1/10^4$		70	69.7	± 1.0

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

- Uncertainties of Applied Value :

94 dB :	31.5 Hz - 125 Hz	: ± 0.40 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz	: ± 0.40 dB
	4 kHz	: ± 0.50 dB
	8 kHz	: ± 0.70 dB
	12.5 kHz	: ± 1.20 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 :
The values given in this Calibration Report 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.

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Village house in To Tau near the proposed pumping station
Location ID : A1

Date of Calibration: 29-Feb-12
Next Calibration Date: 29-Apr-12
Technician: Mr. Ben Tam

CONDITIONS

Sea Level Pressure (hPa)	1014.2	Corrected Pressure (mm Hg)	760.65
Temperature (°C)	14.7	Temperature (K)	288

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11693
Model->	5025A	Qstd Intercept ->	-0.02568
Calibration Date->	2-Jun-11	Expiry Date->	2-Jun-12

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	4.6	4.6	9.2	1.471	51	52.85	Slope = 33.3503
13	3.1	3.1	6.2	1.210	44	45.59	Intercept = 4.2097
10	2.2	2.2	4.4	1.021	36	37.30	Corr. coeff. = 0.9963
7	1.5	1.5	3.0	0.845	32	33.16	
5	1.1	1.1	2.2	0.726	27	27.98	

Calculations :

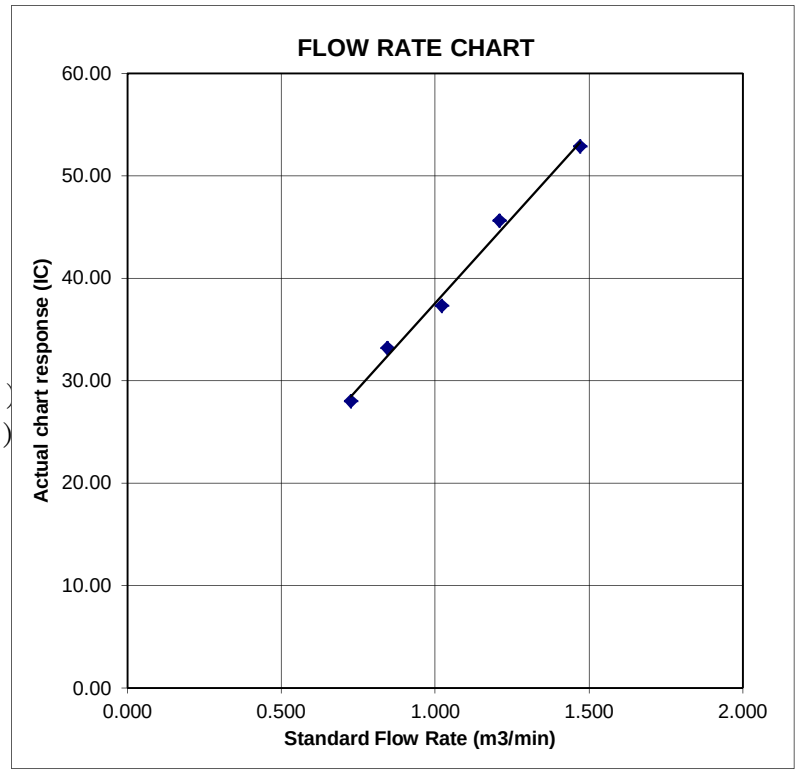
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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



REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1129081
Date of Issue: 16/12/2011
Client: ACTION UNITED ENVIRO SERVICES

Description: YSI Sonde
Brand Name: YSI
Model No.: YSI 6820 / 650MDS
Serial No.: 02J0912/02K0788 AA
Equipment No.: --
Date of Calibration: 16 December, 2011 Date of next Calibration: 16 March, 2012

Parameters:

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

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
5.70	5.83	0.13
6.91	7.05	0.14
8.00	8.08	0.08
	Tolerance Limit (±mg/L)	0.20

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

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	3.95	-0.05
7.0	6.95	-0.05
10.0	9.92	-0.08
	Tolerance Limit (±unit)	0.20

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

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	--
10	10.05	0.5
20	20.10	0.5
30	30.89	3.0
	Tolerance Limit (±%)	10.0

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

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)
11.0	10.80	-0.2
22.0	21.40	-0.6
32.0	31.83	-0.2
	Tolerance Limit (°C)	2.0

Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1129081
Date of Issue: 16/12/2011
Client: ACTION UNITED ENVIRO SERVICES

Description: YSI Sonde
Brand Name: YSI
Model No.: YSI 6820 / 650MDS
Serial No.: 02J0912/02K0788 AA
Equipment No.: --
Date of Calibration: 16 December, 2011 Date of next Calibration: 16 March, 2012

Parameters:

Turbidity **Method Ref: APHA 21st Ed. 2130B**

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.6	--
4	4.3	7.5
10	10.0	0.0
20	21.5	7.5
50	50.9	1.8
100	99.4	-0.6
	Tolerance Limit (±%)	10.0

Mr Chan Kwok Fai, Godfrey
Laboratory Manager – Hong Kong

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1204157
Amendment: 1
Date of Issue: 23/02/2012
Client: ACTION UNITED ENVIRO SERVICES

Description: YSI Professional Plus
Brand Name: YSI
Model No.: YSI Professional Plus
Serial No.: 10G101946
Equipment No.: --
Date of Calibration: 16 February, 2012 Date of next Calibration: 16 May, 2012

Parameters:

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

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
7.00	6.90	-0.1
7.40	7.22	-0.18
8.85	8.70	-0.15
	Tolerance Limit (±mg/L)	0.20

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

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	3.96	-0.04
7.0	7.00	0.00
10.0	10.01	0.01
	Tolerance Limit (±unit)	0.20

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

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)
0	0.00	--
10	9.83	-1.7
20	19.35	-3.2
30	29.66	-1.1
	Tolerance Limit (±%)	10.0

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

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)
10.0	10.0	0.0
21.5	21.0	-0.5
31.0	30.9	-0.1
	Tolerance Limit (°C)	2.0

Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1200383
Date of Issue: 10/01/2012
Client: ACTION UNITED ENVIRO SERVICES

Description: Turbidimeter
Brand Name: HACH
Model No.: 2100Q
Serial No.: 11030C008499
Equipment No.: --
Date of Calibration: 09 January, 2012 Date of next Calibration: 09 April, 2012

Parameters:

Turbidity

Method Ref: APHA 21st Ed. 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.15	--
4	4.19	4.8
40	39.3	-1.8
80	78.9	-1.4
400	370	-7.5
800	817	2.1
	Tolerance Limit (±%)	10.0

Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Annex G

Event and Action Plan

Event and Action Plan for Air Quality

EVENT	ACTION			
	ET leader	*IEC*	*ER*	*Contractor*
ACTION LEVEL				
1. Exceedance for one sample	1. Identify source 2. Inform IEC, ER and Contractor 3. Repeat measurement to confirm findings 4. Increase monitoring frequency to daily	1. Check monitoring data submitted by ET leader 2. Check Contractor's working method	1. Notify Contractor	1. Rectify any unacceptable practice 2. Amend working methods if appropriate
2. Exceedance for two or more consecutive samples	1. Identify source 2. Inform IEC, ER and Contractor 3. Repeat measurement to confirm findings 4. Increase monitoring frequency to daily 5. Discuss with IEC, Contractor and ER on remedial actions required 6. If exceedance continue, arrange meeting with IEC, ER and Contractor 7. If exceedance stops, cease additional monitoring	1. Checking monitoring data submitted by ET leader. 2. Check Contractor's working method 3. Discuss with ET leader 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 and ER within 3 working days of notification 2. Implement the agreed proposals 3. Amend proposal if appropriate
LIMIT LEVEL				
1. Exceedance for one sample	1. Identify source 2. Inform IEC, ER, EPD and Contractor 3. Repeat measurement to confirm findings 4. Increase monitoring frequency to daily 5. Assess effectiveness of Contractor's remedial actions and kept IEC, EPD and ER informed of the results	1. Check monitoring data submitted by ET leader 2. Check Contractor's working method 3. Discuss with ET leader and Contractor on possible remedial measures 4. Advise the ER on the effectiveness of the proposed remedial measures 5. Audit implementation of remedial measures	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. Ensure remedial measures properly implemented	1. Take immediate action to avoid for the exceedance 2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification 3. Amend proposal if appropriate
2. Exceedance for two or more consecutive samples	1. Notify IEC, ER, Contractor and EPD 2. Identify source 3. Repeat measurement to confirm findings 4. Increase monitoring frequency to daily 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented 6. Arrange meeting with IEC, Contractor and ER to discuss the remedial actions to be taken 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results 8. If exceedance stops, cease additional monitoring	1. Discuss amongst ER, ET leader 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. Audit the implementation of remedial measures	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. In consultation with 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 for the exceedance 2. Submit proposals for remedial actions to IEC and ER 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 abate.

Event and Action Plan for Construction Noise Quality

EVENT	ACTION			
	ET Leader	IEC	ER	Contractor
Action Level	1. Notify IEC, Contractor and ER 2. Carry out investigation 3. Report the results of investigation to the IEC, Contractor and ER 4. Discuss with the Contractor and formulate remedial measures 5. Double monitoring frequency 6. Check compliance to Action/Limit Levels after application of mitigation measures	1. Review the analysed results submitted by the ET leader 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly 3. Review the implementation of remedial measures	1. Confirm receipt of notification of complaint 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 ER and IEC 2. Implement noise mitigation proposals
Limit Level	1. Notify IEC, ER, EPD and Contractor 2. Identify Source 3. Repeat measurement to confirm findings 4. Increase monitoring frequency 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented 6. Inform IEC, ER and EPD the causes & actions taken for the exceedances 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results 8. If exceedance stops, cease additional monitoring	1. Discuss amongst ER, ET leader and Contractor on the potential remedial actions 2. Review remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly 3. Audit 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 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 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 Water Quality

Event	ET leader	IEC	ER	Contractor
Action level being exceeded by one sampling day	Repeat in-situ measurement to confirm findings Identify source(s) of impact Inform IEC and Contractor Check monitoring data, all plant, equipment and Contractor's working methods Discuss mitigation measures with IEC and Contractor Repeat measurement on next day of exceedance	Discuss with ET leader and Contractor on the mitigation measures Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly Assess the effectiveness of the implemented mitigation measures	Discuss with IEC on the proposed mitigation measures Make agreement on the mitigation measures to be implemented	Inform the ER and confirm notification of the non-compliance in writing Rectify unacceptable practice Check all plant and equipment Consider changes of working method Discuss with ET leader and IEC and propose mitigation measures to IEC and ER Implement the agreed mitigation measures
Action level being exceeded by more than one consecutive sampling days	Repeat in-situ measurement to confirm findings Identify source(s) of impact Inform IEC and Contractor Check monitoring data, all plant, equipment and Contractor's working methods Discuss mitigation measures with IEC and Contractor Ensure mitigation measures are implemented Prepare to increase the monitoring frequency to daily Repeat measurement on next day of exceedance	Discuss with ET leader and Contractor on the mitigation measures Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly Assess the effectiveness of the implemented mitigation measures	Discuss with IEC on the proposed mitigation measures Make agreement on the mitigation measures to be implemented Assess the effectiveness of the implemented mitigation measures	Inform the ER and confirm notification of the non-compliance in writing Rectify unacceptable practice Check all plant and equipment Consider changes of working method Discuss with ET leader and IEC and propose mitigation measures to IEC and ER Implement the agreed mitigation measures
Limit level being exceeded by one sampling day	Repeat in-situ measurement to confirm findings Identify source(s) of impact Inform IEC, Contractor and EPD Check monitoring data, all plant, equipment and Contractor's working methods Discuss mitigation measures with IEC and Contractor Ensure mitigation measures are implemented Increase the monitoring frequency to daily until no exceedance of Limit level	Discuss with ET leader and Contractor on the mitigation measures Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly Assess the effectiveness of the implemented mitigation measures	Discuss with IEC on the proposed mitigation measures Request Contractor to critically review the working methods Make agreement on the mitigation measures to be implemented Assess the effectiveness of the implemented mitigation measures	Inform the ER and confirm notification of the non-compliance in writing Rectify unacceptable practice Check all plant and equipment Consider changes of working method Discuss with ET leader and IEC and propose mitigation measures to IEC and ER within 3 working days Implement the agreed mitigation measures
Limit level being exceeded by more than one consecutive sampling days	Repeat i n-situ measurement to confirm findings Identify source(s) of impact Inform IEC, Contractor and EPD Check monitoring data, all plant, equipment and Contractor's working methods Discuss mitigation measures with IEC and Contractor Ensure mitigation measures are implemented Increase the monitoring frequency to daily until no exceedance of Limit level	Discuss with ET leader and Contractor on the mitigation measures Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly Assess the effectiveness of the implemented mitigation measures	Discuss with IEC on the proposed mitigation measures Request Contractor to critically review the working methods Make agreement on the mitigation measures to be implemented Assess the effectiveness of the implemented mitigation measures 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	Inform the ER and confirm notification of the non-compliance in writing Rectify unacceptable practice Check all plant and equipment Consider changes of working method Discuss with ET leader and IEC and propose mitigation measures to IEC and ER within 3 working days Implement the agreed mitigation measures As directed by the Engineer, to slow down or to stop all or part of the marine work or construction activities

Annex H

Monitoring Schedule This Reporting Month And Next Reporting Month

Monitoring Schedule in the Reporting Month

Date		Air Quality		Noise	Water Quality
		1-hour TSP	24-hour TSP	Leq (30min)	
Sun	26-February-12				
Mon	27-February-12				
Tue	28-February-12	✓		✓	✓ (C1, C2, M1 – M8)
Wed	29-February-12				
Thu	1-March-12		✓		✓ (C1, C2, M1 – M8)
Fri	2-March-12				
Sat	3-March-12	✓		✓	✓ (C1, C2, M1 – M8)
Sun	4-March-12				
Mon	5-March-12				
Tue	6-March-12				✓ (C1, C2, M1 – M8)
Wed	7-March-12		✓		
Thu	8-March-12	✓		✓	✓ (C1, C2, M1 – M8)
Fri	9-March-12				
Sat	10-March-12				✓ (C1, C2, M1 – M8)
Sun	11-March-12				
Mon	12-March-12				✓ (C1, C2, M1 – M8)
Tue	13-March-12		✓		
Wed	14-March-12	✓		✓	✓ (C1, C2, M1 – M8)
Thu	15-March-12				
Fri	16-March-12				✓ (C1, C2, M1 – M8)
Sat	17-March-12				
Sun	18-March-12				
Mon	19-March-12		✓		
Tue	20-March-12	✓		✓	✓ (C1, C2, M1 – M8)
Wed	21-March-12				

Time Schedule for Impact Water Quality Monitoring for March 2012

Week	Scheduled Monitoring Day		Scheduled Time for Measurements	
			Mid-Flood	Mid-Ebb
1	28-February-12	Tuesday	10:15	17:00
	1-March-12	Thursday	10:32	18:00*
	3-March-12	Saturday	11:58	18:00*
2	6-March-12	Tuesday	17:08	11:25
	8-March-12	Thursday	18:00*	12:54
	10-March-12	Saturday	8:14	14:20
3	12-March-12	Monday	9:30	15:48
	14-March-12	Wednesday	10:52	17:34
	16-March-12	Friday	12:49	8:00*
4	20-March-12	Tuesday	17:32	11:37

***** Due to safety precaution, the subsequent monitoring time the most early will be 8:00 and the latest will be 17:00.

Post Monitoring Schedule

Date		Water Quality
Thu	22-March-12	✓ (C1, C2, M1 – M8)
Fri	23-March-12	
Sat	24-March-12	✓ (C1, C2, M1 – M8)
Sun	25-March-12	
Mon	26-March-12	✓ (C1, C2, M1 – M8)
Tue	27-March-12	
Wed	28-March-12	✓ (C1, C2, M1 – M8)
Thu	29-March-12	
Fri	30-March-12	✓ (C1, C2, M1 – M8)
Sat	31-March-12	
Sun	1-April-12	
Mon	2-April-12	
Tue	3-April-12	✓ (C1, C2, M1 – M8)
Wed	4-April-12	
Thu	5-April-12	✓ (C1, C2, M1 – M8)
Fri	6-April-12	
Sat	7-April-12	
Sun	8-April-12	
Mon	9-April-12	
Tue	10-April-12	✓ (C1, C2, M1 – M8)
Wed	11-April-12	
Thu	12-April-12	✓ (C1, C2, M1 – M8)
Fri	13-April-12	
Sat	14-April-12	✓ (C1, C2, M1 – M8)
Sun	15-April-12	
Mon	16-April-12	
Tue	17-April-12	✓ (C1, C2, M1 – M8)
Wed	18-April-12	
Thu	19-April-12	✓ (C1, C2, M1 – M8)

Time Schedule for Post Water Quality Monitoring

Scheduled Monitoring Day		Scheduled Time for Measurements	
		Mid-Flood	Mid-Ebb
22-March-12	Thursday	18:00*	12:55
24-March-12	Saturday	8:00*	14:08
26-March-12	Monday	8:53	15:16
28-March-12	Wednesday	8:00*	14:43
30-March-12	Friday	9:53	18:00*
3-April-12	Tuesday	15:44	10:10
5-April-12	Thursday	17:56	11:47
10-April-12	Tuesday	9:03	15:31
12-April-12	Thursday	10:22	17:15
14-April-12	Saturday	12:28	18:00*
17-April-12	Tuesday	16:23	10:29
19-April-12	Thursday	18:00*	11:55

***** Due to safety precaution, the subsequent monitoring time the most early will be 8:00 and the latest will be 17:00.

Annex I

Database of Monitoring Results

Impact 24-hour TSP Monitoring Results - A1 (Village house in To Tau near the proposed pumping station)

Date of Calibration: 29-Feb-12 Slope = 33.3503

Next Calibration Date: 29-Apr-12 Intercept = 4.2097

DATE	SAMPLE NUMBER	ELAPSED TIME INITIAL	ELAPSED TIME FINAL	ELAPSED TIME (min)	MIN CHART READING	MAX CHART READING	AVG CHART READING	AVG TEMP (oC)	STANDARD			BLANK SAMPLE NUMBER	BLANK INTIAL WEIGHT (g)	BLANK FINAL WEIGHT (g)	BLANK DIFF WEIGHT (g)	INITIAL FILTER WEIGHT (g)	FINAL FILTER WEIGHT (g)	WEIGHT DUST COLLECTED (g)	DUST 24-hour TSP IN AIR (ug/m^3)
									AVG PRESS (hPa)	FLOW RATE (m3/min)	AIR VOLUME (std m3)								
1-Mar-12	24547	6551.61	6575.82	1452.60	32	34	33.0	16.7	1014.1	0.88	1275	NA	3.5669	3.5670	0.0001	2.7661	2.8058	0.0397	31
7-Mar-12	24548	6575.82	6600.53	1482.60	32	35	33.5	18.7	1009	0.89	1315	NA	2.8566	2.8570	0.0004	2.7738	2.8092	0.0354	27
13-Mar-12	24590	6600.53	6625.12	1475.40	33	34	33.5	14.2	1021	0.90	1329	NA	3.5674	3.5676	0.0002	2.7504	2.7742	0.0238	18
19-Mar-12	24591	6625.12	6649.55	1465.80	32	33	32.5	20.8	1014.1	0.86	1254	NA	2.8432	2.8440	0.0008	2.7437	2.7858	0.0421	33

Contract ST/2008/02
Ma On Shan Development - Roads, Drainage and Sewerage Works at whitehead and Lok Wo Sha, Phase 1
Baseline Marine Water Quality Monitoring

AUES

Impact Data 28-Feb-12

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS
			North	East	m	m	℃	mg/L	%	NTU	ppt	unit	mg/l
2012/2/28 16:45:25	M1	ME	842518	832561	2.2	1.110	15.34	4.70	57.0	2.3	31.84	8.48	6
2012/2/28 16:45:32						1.140	15.33	4.76	57.8	2.3	31.84	8.47	
2012/2/28 16:49:10	M2	ME	842535	832795	1.9	0.948	15.34	5.12	62.1	2.0	31.86	8.47	4
2012/2/28 16:49:17						0.956	15.33	5.10	61.9	2.0	31.85	8.47	
2012/2/28 16:53:48	C1	ME	842187	833014	7.6	1.035	15.34	5.31	64.5	2.1	31.85	8.48	6
2012/2/28 16:53:54						1.035	15.32	5.17	62.8	2.1	31.85	8.47	
2012/2/28 16:54:19						3.788	15.63	5.19	63.5	2.1	32.32	8.45	4
2012/2/28 16:54:26						3.830	15.64	5.04	61.7	1.8	32.35	8.44	
2012/2/28 16:54:57						6.645	15.66	4.95	60.9	3.1	33.14	8.39	8
2012/2/28 16:55:05						6.651	15.65	4.88	60.0	2.4	33.02	8.39	
2012/2/28 17:00:53	M3	ME	842649	833094	2.4	1.221	15.32	4.90	59.4	2.0	31.86	8.47	4
2012/2/28 17:01:01						1.135	15.31	4.95	60.1	2.2	31.86	8.47	
2012/2/28 17:06:30	M4	ME	843038	833110	4.6	1.030	15.31	5.15	62.5	1.9	31.86	8.48	3
2012/2/28 17:06:37						1.002	15.32	5.13	62.3	2.0	31.87	8.47	
2012/2/28 17:06:47						3.668	15.55	4.96	60.6	1.9	32.21	8.46	4
2012/2/28 17:06:53						3.641	15.58	4.87	59.6	1.9	32.28	8.45	
2012/2/28 17:13:23	C2	ME	832995	843811	9	1.042	15.37	5.16	62.7	2.1	31.93	8.48	6
2012/2/28 17:13:29						1.087	15.36	5.07	61.5	2.0	31.91	8.47	
2012/2/28 17:13:49						4.502	15.65	5.16	63.1	1.9	32.30	8.44	4
2012/2/28 17:13:56						4.576	15.63	5.05	61.8	1.9	32.29	8.44	
2012/2/28 17:14:12						8.094	15.66	4.64	57.2	3.2	33.20	8.39	3
2012/2/28 17:14:20						8.010	15.66	4.86	59.9	3.0	33.20	8.38	
2012/2/28 17:24:57	M8	ME	832650	843634	2	1.008	15.42	4.81	58.6	2.2	32.02	8.48	7
2012/2/28 17:25:03						1.039	15.42	4.90	59.6	1.9	32.02	8.48	
2012/2/28 17:28:28	M6	ME	832580	843477	1.6	0.827	15.38	4.92	59.9	2.0	31.97	8.47	7
2012/2/28 17:28:35						0.811	15.37	4.96	60.3	2.6	31.94	8.48	
2012/2/28 17:32:10	M5	ME	832717	843396	2.2	1.175	15.36	5.13	62.3	2.2	31.93	8.48	6
2012/2/28 17:32:22						1.151	15.35	4.98	60.5	1.9	31.92	8.48	
2012/2/28 17:35:56	M7	ME	832779	843492	2.4	1.262	15.38	5.00	60.8	2.2	31.98	8.48	5
2012/2/28 17:36:04						1.219	15.38	5.01	60.8	2.1	31.96	8.48	
2012/2/28 10:19:40	M1	MF	842518	832561	2.4	1.285	14.88	4.50	53.7	2.1	30.53	8.39	4
2012/2/28 10:19:47						1.261	14.88	4.52	53.9	2.2	30.55	8.41	
2012/2/28 10:23:46	M2	MF	842535	832795	2.2	1.135	14.89	4.85	57.9	2.4	30.58	8.45	4
2012/2/28 10:23:54						1.161	14.89	4.85	57.9	2.0	30.59	8.45	
2012/2/28 10:31:03	C1	MF	842187	833014	8	1.051	15.37	5.50	66.8	2.0	31.88	8.47	2
2012/2/28 10:31:10						1.107	15.38	5.46	66.4	2.0	31.87	8.47	
2012/2/28 10:31:37						4.054	15.68	5.38	65.9	2.1	32.36	8.43	5
2012/2/28 10:31:44						4.055	15.68	5.29	64.9	1.9	32.37	8.42	
2012/2/28 10:32:03						7.127	15.65	5.04	62.0	2.7	33.14	8.39	7
2012/2/28 10:32:10						7.019	15.65	5.06	62.3	2.8	33.15	8.39	
2012/2/28 10:38:39	M3	MF	842649	833094	2.6	1.279	15.36	5.19	63.1	2.5	31.87	8.48	3
2012/2/28 10:38:47						1.345	15.38	5.18	62.9	2.2	31.87	8.48	
2012/2/28 10:43:18	M4	MF	843038	833110	5.4	1.010	15.35	5.17	62.8	2.0	31.86	8.48	3
2012/2/28 10:43:23						1.007	15.40	5.16	62.7	2.1	31.89	8.46	
2012/2/28 10:43:37						4.472	15.68	5.04	61.8	2.2	32.45	8.44	3
2012/2/28 10:43:46						4.477	15.69	5.05	62.0	2.0	32.46	8.43	
2012/2/28 10:49:47	C2	MF	832999	843826	10	0.982	15.35	4.88	59.2	2.0	31.86	8.46	3
2012/2/28 10:49:55						0.992	15.36	4.91	59.6	1.9	31.88	8.48	
2012/2/28 10:50:28						5.037	15.63	4.80	58.8	2.4	32.54	8.44	3
2012/2/28 10:50:35						5.016	15.63	4.74	58.1	2.1	32.52	8.43	
2012/2/28 10:50:56						9.035	15.63	4.59	56.6	3.1	33.18	8.39	4
2012/2/28 10:51:03						8.989	15.63	4.59	56.4	3.2	33.19	8.39	
2012/2/28 11:01:55	M8	MF	832640	843644	2.5	1.215	15.36	4.61	56.0	2.8	31.86	8.47	<2
2012/2/28 11:02:01						1.324	15.36	4.58	55.7	2.8	31.87	8.48	
2012/2/28 11:05:22	M6	MF	832577	843479	2	1.084	15.34	4.56	55.4	2.1	31.88	8.48	4
2012/2/28 11:05:29						1.070	15.32	4.58	55.6	1.8	31.85	8.48	
2012/2/28 11:08:54	M5	MF	832710	843394	2.6	1.325	15.31	4.51	54.7	2.0	31.85	8.48	3
2012/2/28 11:09:01						1.332	15.32	4.53	55.0	1.8	31.85	8.48	
2012/2/28 11:12:29	M7	MF	832784	843493	2.5	1.272	15.37	4.49	54.6	1.9	31.87	8.48	3
2012/2/28 11:12:36						1.248	15.36	4.51	54.7	2.3	31.87	8.46	

Remarks: MF - Middle Flood tida
ME - Middle Ebb tida

Contract ST/2008/02
Ma On Shan Development - Roads, Drainage and Sewerage Works at whitehead and Lok Wo Sha, Phase 1
Baseline Marine Water Quality Monitoring

AUES

Impact Data 1-Mar-12

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS
			North	East	m	m	℃	mg/L	%	NTU	ppt	unit	mg/l
2012/3/1 17:33:31	M1	ME	842518	832561	2.2	1.136	15.47	4.22	51.6	1.7	32.83	8.39	<2
2012/3/1 17:33:38						1.141	15.47	4.31	52.8	1.6	32.82	8.39	
2012/3/1 17:37:04	M2	ME	842535	832795	2	1.030	15.47	4.51	55.2	1.6	32.81	8.38	4
2012/3/1 17:37:11						1.022	15.48	4.57	55.9	1.7	32.80	8.39	
2012/3/1 17:40:34	C1	ME	842187	833014	8	1.031	15.49	4.60	56.3	1.6	32.80	8.39	4
2012/3/1 17:40:41						1.050	15.49	4.61	56.4	1.6	32.80	8.39	
2012/3/1 17:41:12						4.030	15.37	4.53	55.5	1.7	33.12	8.33	4
2012/3/1 17:41:19						4.006	15.37	4.50	55.1	1.8	33.11	8.33	
2012/3/1 17:41:41						6.995	15.49	4.31	52.9	1.9	33.20	8.33	3
2012/3/1 17:41:51						7.082	15.50	4.41	54.2	1.9	33.20	8.32	
2012/3/1 17:49:30	M3	ME	842649	833094	2.2	1.141	15.46	4.61	56.4	1.6	32.83	8.38	3
2012/3/1 17:49:36						1.135	15.48	4.63	56.6	1.6	32.82	8.39	
2012/3/1 17:54:06	M4	ME	843038	833110	4.1	1.006	15.49	4.63	56.7	1.8	32.80	8.39	3
2012/3/1 17:54:13						1.010	15.49	4.64	56.8	1.5	32.81	8.39	
2012/3/1 17:54:30						3.128	15.37	4.60	56.3	1.9	33.08	8.34	4
2012/3/1 17:54:37						3.154	15.37	4.55	55.6	1.6	33.09	8.34	
2012/3/1 17:59:32	C2	ME	832995	843811	9	0.999	15.49	4.50	55.0	1.6	32.82	8.37	3
2012/3/1 17:59:39						0.993	15.48	4.52	55.3	1.6	32.81	8.39	
2012/3/1 18:00:52						4.524	15.41	4.37	53.5	1.9	33.15	8.33	3
2012/3/1 18:01:00						4.520	15.42	4.35	53.3	2.0	33.15	8.33	
2012/3/1 18:01:34						8.025	15.52	4.22	51.9	1.9	33.27	8.32	4
2012/3/1 18:01:44						8.035	15.52	4.22	51.9	1.9	33.28	8.32	
2012/3/1 18:13:25	M8	ME	832650	843634	2.4	1.305	15.46	4.56	55.8	1.9	32.86	8.39	4
2012/3/1 18:13:33						1.244	15.46	4.58	56.1	1.5	32.86	8.39	
2012/3/1 18:17:12	M6	ME	832580	843477	2	1.258	15.44	4.58	56.0	1.7	32.87	8.38	2
2012/3/1 18:17:19						1.035	15.45	4.54	55.6	2.2	32.86	8.38	
2012/3/1 18:21:05	M5	ME	832717	843396	2.6	1.308	15.44	4.58	56.1	1.7	32.88	8.38	4
2012/3/1 18:21:44						1.364	15.43	4.55	55.7	1.7	32.89	8.37	
2012/3/1 18:25:09	M7	ME	832779	843492	2.4	1.238	15.46	4.50	55.1	1.7	32.86	8.38	4
2012/3/1 18:25:16						1.258	15.44	4.52	55.3	1.6	32.88	8.38	
2012/3/1 10:02:21	M1	MF	842518	832561	2.4	1.190	15.72	6.63	81.3	1.7	32.35	8.23	3
2012/3/1 10:02:28						1.238	15.71	6.77	83.1	1.5	32.35	8.22	
2012/3/1 10:05:54	M2	MF	842535	832795	2.2	1.076	15.72	6.68	81.9	2.1	32.36	8.26	4
2012/3/1 10:06:00						1.124	15.69	6.66	81.6	1.8	32.36	8.26	
2012/3/1 10:13:15	C1	MF	842187	833014	8.2	0.988	15.47	5.23	64.0	1.6	32.75	8.37	5
2012/3/1 10:13:22						0.978	15.47	5.21	63.8	1.5	32.75	8.37	
2012/3/1 10:13:51						4.093	15.38	5.13	62.8	1.9	33.06	8.31	5
2012/3/1 10:13:57						4.159	15.38	5.08	62.2	1.7	33.06	8.31	
2012/3/1 10:14:15						7.261	15.52	4.74	58.3	1.8	33.21	8.30	3
2012/3/1 10:14:23						7.208	15.52	4.81	59.0	1.7	33.20	8.30	
2012/3/1 10:21:06	M3	MF	842649	833094	2.4	1.204	15.45	4.92	60.3	1.7	32.80	8.36	<2
2012/3/1 10:21:13						1.239	15.46	4.94	60.4	1.7	32.79	8.36	
2012/3/1 10:26:38	M4	MF	843038	833110	5.1	0.945	15.46	4.98	60.9	2.1	32.77	8.36	<2
2012/3/1 10:26:44						0.993	15.47	5.06	61.9	2.1	32.76	8.36	
2012/3/1 10:26:59						4.137	15.38	4.79	58.6	1.8	33.07	8.31	3
2012/3/1 10:27:07						4.162	15.38	4.98	60.9	1.8	33.07	8.31	
2012/3/1 10:32:52	C2	MF	832999	843826	9.5	1.026	15.47	4.88	59.7	1.5	32.77	8.36	4
2012/3/1 10:32:59						1.024	15.47	4.89	59.8	1.6	32.77	8.37	
2012/3/1 10:33:35						4.821	15.39	4.78	58.5	1.9	33.09	8.30	4
2012/3/1 10:33:46						4.857	15.40	4.71	57.7	1.8	33.10	8.31	
2012/3/1 10:34:36						8.639	15.40	4.55	55.8	2.5	33.34	8.29	2
2012/3/1 10:34:48						8.595	15.40	4.52	55.4	2.4	33.34	8.29	
2012/3/1 10:48:07	M8	MF	832640	843644	2.4	1.255	15.49	4.63	56.7	1.6	32.79	8.39	3
2012/3/1 10:48:13						1.267	15.49	4.64	56.8	1.5	32.79	8.38	
2012/3/1 10:52:42	M6	MF	832577	843479	2.2	1.178	15.49	4.77	58.4	1.6	32.80	8.38	2
2012/3/1 10:52:50						1.173	15.49	4.77	58.4	1.7	32.79	8.38	
2012/3/1 10:56:41	M5	MF	832710	843394	2.4	1.244	15.49	4.81	58.8	1.5	32.80	8.38	3
2012/3/1 10:56:48						1.267	15.49	4.80	58.8	1.7	32.80	8.38	
2012/3/1 11:00:31	M7	MF	832784	843493	2.4	1.231	15.49	4.80	58.8	1.7	32.80	8.38	2
2012/3/1 11:00:38						1.229	15.49	4.77	58.5	1.7	32.79	8.38	

Remarks: MF - Middle Flood tida
ME - Middle Ebb tida

Contract ST/2008/02
Ma On Shan Development - Roads, Drainage and Sewerage Works at whitehead and Lok Wo Sha, Phase 1
Baseline Marine Water Quality Monitoring

AUES

Impact Data 3-Mar-12

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS
			North	East	m	m	℃	mg/L	%	NTU	ppt	unit	mg/l
2012/3/3 11:47:38	M1	ME	842518	832561	2.4	1.301	16.06	7.39	91.3	2.9	32.43	8.19	3
2012/3/3 11:47:49						1.299	16.03	7.82	96.6	2.5	32.44	8.21	
2012/3/3 11:51:18	M2	ME	842535	832795	2.2	1.146	16.05	8.04	99.3	2.1	32.44	8.22	4
2012/3/3 11:51:27						1.170	16.04	7.98	98.5	5.5	32.44	8.22	
2012/3/3 11:55:11	C1	ME	842187	833014	8	1.001	16.22	7.90	97.8	2.6	32.29	8.25	6
2012/3/3 11:55:18						1.043	16.24	7.89	97.8	2.4	32.28	8.25	
2012/3/3 11:55:45						4.062	15.80	7.39	91.0	1.8	32.69	8.25	4
2012/3/3 11:55:53						4.077	15.77	7.49	92.1	1.8	32.70	8.25	
2012/3/3 11:56:42						6.980	15.52	6.95	85.3	2.5	33.14	8.19	4
2012/3/3 11:56:55						7.048	15.56	6.95	85.3	2.6	33.10	8.21	
2012/3/3 12:11:34	M3	ME	842649	833094	2.4	1.214	16.10	6.83	84.4	1.7	32.37	8.29	4
2012/3/3 12:11:41						1.223	16.14	6.89	85.3	1.7	32.35	8.29	
2012/3/3 12:17:11	M4	ME	843038	833110	5.2	1.065	16.22	6.81	84.4	1.7	32.28	8.30	4
2012/3/3 12:17:22						1.090	16.29	6.86	85.0	1.7	32.23	8.30	
2012/3/3 12:18:09						4.174	15.74	6.61	81.3	1.7	32.78	8.29	4
2012/3/3 12:18:16						4.229	15.74	6.51	80.1	1.6	32.78	8.29	
2012/3/3 12:24:02	C2	ME	832995	843811	9.6	1.057	15.99	6.37	78.6	1.6	32.46	8.30	4
2012/3/3 12:24:08						1.075	16.01	6.33	78.1	1.7	32.46	8.30	
2012/3/3 12:25:02						4.754	15.73	6.15	75.7	1.6	32.84	8.28	4
2012/3/3 12:25:08						4.797	15.73	6.16	75.8	1.7	32.82	8.29	
2012/3/3 12:25:27						8.650	15.51	5.89	72.4	2.5	33.22	8.24	4
2012/3/3 12:25:40						8.618	15.54	5.74	70.5	2.4	33.19	8.22	
2012/3/3 12:36:25	M8	ME	832650	843634	2.4	1.248	16.16	6.01	74.3	1.6	32.39	8.32	<2
2012/3/3 12:36:32						1.238	16.19	6.10	75.5	2.2	32.37	8.32	
2012/3/3 12:40:57	M6	ME	832580	843477	2	1.020	16.26	6.33	78.4	1.8	32.32	8.33	3
2012/3/3 12:41:03						1.023	16.21	6.42	79.5	1.8	32.39	8.31	
2012/3/3 12:44:32	M5	ME	832717	843396	2.4	1.251	16.24	6.42	79.6	1.8	32.38	8.32	3
2012/3/3 12:44:39						1.254	16.23	6.42	79.5	1.9	32.40	8.32	
2012/3/3 12:48:07	M7	ME	832779	843492	2.4	1.275	16.27	6.36	78.8	1.8	32.38	8.32	7
2012/3/3 12:48:16						1.255	16.28	6.33	78.6	1.9	32.38	8.31	
2012/3/3 17:40:50	M1	MF	842518	832561	2.4	1.215	16.49	6.12	76.2	1.9	32.18	8.30	4
2012/3/3 17:40:56						1.216	16.52	6.26	77.9	1.9	32.15	8.31	
2012/3/3 17:44:18	M2	MF	842535	832795	1.8	0.986	16.59	6.25	77.9	1.7	32.07	8.30	8
2012/3/3 17:44:26						0.950	16.65	6.31	78.7	2.0	32.02	8.32	
2012/3/3 17:47:50	C1	MF	842187	833014	7.8	1.007	16.66	6.30	78.5	1.8	32.02	8.31	3
2012/3/3 17:47:56						1.007	16.86	6.26	78.3	1.6	31.83	8.32	
2012/3/3 17:48:07						3.789	15.76	5.76	70.9	1.7	32.79	8.31	5
2012/3/3 17:48:22						3.864	15.75	5.91	72.8	1.7	32.84	8.31	
2012/3/3 17:49:00						6.820	15.76	5.52	68.0	2.0	33.02	8.27	7
2012/3/3 17:49:07						6.836	15.76	5.49	67.7	2.0	33.03	8.27	
2012/3/3 17:56:44	M3	MF	842649	833094	2.6	1.345	16.06	5.57	68.9	1.7	32.56	8.31	4
2012/3/3 17:56:50						1.397	16.04	5.59	69.1	1.7	32.59	8.31	
2012/3/3 18:01:14	M4	MF	843038	833110	4.7	0.996	16.13	5.72	70.8	2.0	32.52	8.32	5
2012/3/3 18:01:21						1.018	16.16	5.77	71.4	1.7	32.51	8.31	
2012/3/3 18:01:34						3.818	15.75	5.72	70.4	1.7	32.82	8.31	5
2012/3/3 18:01:40						3.799	15.75	5.69	70.1	1.7	32.81	8.31	
2012/3/3 18:07:19	C2	MF	832999	843826	9	1.029	16.38	6.08	75.5	1.7	32.32	8.31	4
2012/3/3 18:07:25						1.046	16.19	5.86	72.7	1.7	32.50	8.31	
2012/3/3 18:07:42						4.540	15.75	5.66	69.8	2.0	32.94	8.30	4
2012/3/3 18:07:47						4.534	15.76	5.64	69.5	1.8	32.96	8.29	
2012/3/3 18:08:00						8.090	15.54	5.46	67.1	2.4	33.29	8.26	4
2012/3/3 18:08:06						8.070	15.48	5.41	66.4	2.5	33.32	8.25	
2012/3/3 18:19:28	M8	MF	832640	843644	2.2	1.115	16.43	5.72	71.1	1.6	32.30	8.32	5
2012/3/3 18:19:35						1.137	16.30	5.70	70.7	1.6	32.43	8.31	
2012/3/3 18:21:56	M6	MF	832577	843479	1.9	0.871	16.83	5.71	71.4	1.7	31.91	8.33	8
2012/3/3 18:22:02						0.870	16.71	5.88	73.4	2.0	32.02	8.33	
2012/3/3 18:25:24	M5	MF	832710	843394	2.2	1.219	17.02	6.15	77.1	1.8	31.74	8.33	2
2012/3/3 18:25:31						1.160	16.71	6.13	76.5	1.8	32.08	8.33	
2012/3/3 18:29:00	M7	MF	832784	843493	2.4	1.223	16.78	6.03	75.4	1.8	31.98	8.34	6
2012/3/3 18:29:07						1.223	16.72	6.12	76.5	1.8	32.03	8.35	

Remarks: MF - Middle Flood tida
ME - Middle Ebb tida

Contract ST/2008/02
Ma On Shan Development - Roads, Drainage and Sewerage Works at whitehead and Lok Wo Sha, Phase 1
Baseline Marine Water Quality Monitoring

AUES

Impact Data 6-Mar-12

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS
			North	East	m	m	℃	mg/L	%	NTU	ppt	unit	mg/l
2012/3/6 11:16:50	M1	ME	842518	832561	2.2	1.141	19.00	5.44	66.6	1.4	31.78	8.05	8
2012/3/6 11:16:59						1.172	18.89	5.63	69.1	1.5	31.81	8.05	
2012/3/6 11:20:53	M2	ME	842535	832795	1.9	0.836	19.21	5.89	72.2	1.4	31.78	8.06	9
2012/3/6 11:21:01						0.879	19.18	5.88	72.1	1.5	31.79	8.06	
2012/3/6 11:24:38	C1	ME	842187	833014	6.9	0.974	19.05	5.94	72.9	1.5	31.78	8.06	8
2012/3/6 11:24:45						1.025	18.83	5.89	72.3	1.4	31.84	8.06	
2012/3/6 11:29:32						3.584	16.68	5.70	70.0	2.0	32.52	8.08	6
2012/3/6 11:29:40						3.553	16.65	5.68	69.6	2.1	32.54	8.08	
2012/3/6 11:30:03						5.991	15.70	5.40	66.4	2.0	33.11	7.98	5
2012/3/6 11:30:14						5.995	15.71	5.41	66.5	2.0	33.10	7.97	
2012/3/6 11:38:36	M3	ME	842649	833094	2.4	1.256	18.90	5.45	66.7	2.1	31.78	8.11	3
2012/3/6 11:38:45						1.203	18.86	5.49	67.3	2.1	31.86	8.12	
2012/3/6 11:43:13	M4	ME	843038	833110	4.5	1.018	18.92	5.53	67.9	2.1	31.90	8.13	4
2012/3/6 11:43:20						1.042	18.98	5.54	68.0	1.6	31.85	8.13	
2012/3/6 11:43:45						3.444	17.14	5.39	66.1	1.5	32.41	8.14	4
2012/3/6 11:43:52						3.505	17.19	5.31	65.1	1.8	32.40	8.13	
2012/3/6 11:49:37	C2	ME	832995	843811	8.7	1.026	19.03	5.34	65.4	1.9	31.86	8.14	7
2012/3/6 11:49:44						0.977	19.02	5.31	65.0	2.3	31.87	8.14	
2012/3/6 11:50:07						4.356	16.23	5.23	64.1	2.0	32.81	8.12	8
2012/3/6 11:50:15						4.478	16.15	5.19	63.6	2.4	32.83	8.11	
2012/3/6 11:50:59						7.873	15.45	4.92	60.5	2.5	33.23	7.75	6
2012/3/6 11:51:15						7.798	15.45	4.94	60.8	2.1	33.24	7.77	
2012/3/6 12:03:58	M8	ME	832650	843634	2	1.067	18.33	5.13	62.9	2.1	32.04	8.11	<2
2012/3/6 12:04:06						1.075	18.34	5.19	63.7	1.9	32.05	8.10	
2012/3/6 12:07:36	M6	ME	832580	843477	1.8	0.974	18.42	5.28	64.8	2.1	32.05	8.10	5
2012/3/6 12:07:43						0.951	18.42	5.31	65.1	2.1	32.05	8.10	
2012/3/6 12:12:14	M5	ME	832717	843396	2.2	1.115	18.54	5.38	66.0	3.1	32.02	8.09	4
2012/3/6 12:12:22						1.141	18.59	5.32	65.2	3.3	32.00	8.09	
2012/3/6 12:15:46	M7	ME	832779	843492	2.2	1.197	18.60	5.29	64.9	3.7	32.00	8.05	2
2012/3/6 12:15:53						1.198	18.63	5.29	64.9	3.6	31.99	8.05	
2012/3/6 17:05:31	M1	MF	842518	832561	2.2	1.235	18.80	5.75	70.4	3.4	31.92	8.03	<2
2012/3/6 17:05:39						1.187	18.74	5.85	71.6	3.3	31.96	8.03	
2012/3/6 17:09:03	M2	MF	842535	832795	1.8	0.945	18.83	5.93	72.6	3.5	31.95	8.04	3
2012/3/6 17:09:10						0.959	18.86	5.94	72.7	3.6	31.94	8.04	
2012/3/6 17:12:36	C1	MF	842187	833014	8	1.030	18.89	5.68	69.8	4.1	31.93	8.04	5
2012/3/6 17:12:43						1.031	18.90	5.64	69.5	4.2	31.93	8.05	
2012/3/6 17:13:01						4.013	16.41	5.42	66.5	3.9	32.74	8.03	4
2012/3/6 17:13:07						4.036	16.37	5.43	66.6	3.7	32.75	8.03	
2012/3/6 17:13:28						7.077	15.68	5.10	62.8	3.2	33.23	7.89	4
2012/3/6 17:14:19						7.055	15.68	5.12	63.0	3.2	33.22	7.88	
2012/3/6 17:20:07	M3	MF	842649	833094	2.4	1.158	19.05	5.23	64.1	2.5	31.90	8.03	4
2012/3/6 17:20:14						1.254	19.06	5.24	64.1	2.6	31.88	8.04	
2012/3/6 17:24:51	M4	MF	843038	833110	5.2	0.968	19.08	5.29	64.8	1.9	31.92	8.10	3
2012/3/6 17:24:56						1.033	19.09	5.33	65.3	1.8	31.91	8.11	
2012/3/6 17:25:11						4.202	16.58	5.18	63.6	1.6	32.79	8.00	4
2012/3/6 17:25:20						4.225	16.59	5.24	64.3	1.6	32.75	8.01	
2012/3/6 17:34:57	C2	MF	832999	843826	10	1.016	19.04	5.28	64.8	2.1	32.02	8.11	<2
2012/3/6 17:35:04						0.984	19.02	5.22	64.0	2.1	31.41	8.10	
2012/3/6 17:35:28						4.993	16.18	5.08	62.4	2.0	32.91	7.98	<2
2012/3/6 17:35:36						4.967	16.14	5.03	61.8	2.0	32.93	7.97	
2012/3/6 17:35:57						8.988	15.47	4.87	59.8	2.2	33.32	7.91	4
2012/3/6 17:36:04						9.007	15.48	4.84	59.4	2.3	33.32	7.93	
2012/3/6 17:46:47	M8	MF	832640	843644	2.2	1.164	19.05	4.99	61.3	1.5	31.95	8.21	3
2012/3/6 17:46:54						1.192	19.06	4.97	61.1	1.4	31.95	8.19	
2012/3/6 17:50:17	M6	MF	832577	843479	2	1.005	19.06	5.01	61.7	1.7	31.96	8.11	4
2012/3/6 17:50:24						1.050	19.07	5.08	62.5	1.7	31.95	8.11	
2012/3/6 17:54:47	M5	MF	832710	843394	2.4	1.261	19.03	5.16	63.5	2.6	31.98	8.14	4
2012/3/6 17:54:54						1.227	19.06	5.15	63.4	2.6	31.97	8.15	
2012/3/6 17:59:17	M7	MF	832784	843493	2.4	1.250	19.02	5.11	62.9	1.9	31.98	8.22	6
2012/3/6 17:59:24						1.257	19.01	5.13	63.2	1.8	31.98	8.23	

Remarks: MF - Middle Flood tida
ME - Middle Ebb tida

Contract ST/2008/02
Ma On Shan Development - Roads, Drainage and Sewerage Works at whitehead and Lok Wo Sha, Phase 1
Baseline Marine Water Quality Monitoring

AUES

Impact Data 8-Mar-12

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS
			North	East	m	m	℃	mg/L	%	NTU	ppt	unit	mg/l
2012/3/8 12:15:30	M1	ME	842518	832561	2.4	1.245	17.93	5.25	67.1	1.9	31.89	8.04	5
2012/3/8 12:15:51						1.268	17.93	5.23	66.7	1.7	31.92	8.07	
2012/3/8 12:20:56	M2	ME	842535	832795	2	1.081	17.93	5.17	66.0	2.1	31.94	8.09	6
2012/3/8 12:21:21						1.043	17.93	5.16	66.0	1.7	31.94	8.10	
2012/3/8 12:26:16	C1	ME	842187	833014	7.4	0.991	17.92	5.14	65.7	1.8	31.97	8.10	6
2012/3/8 12:26:23						1.001	17.93	5.13	65.5	1.7	31.96	8.10	
2012/3/8 12:26:43						3.724	16.83	5.37	67.5	2.0	32.67	8.08	5
2012/3/8 12:26:50						3.746	16.83	5.24	65.9	2.0	32.69	8.09	
2012/3/8 12:27:17						6.423	15.86	5.20	64.3	2.1	33.09	8.09	12
2012/3/8 12:27:24						6.488	15.85	5.19	64.1	2.2	33.09	8.10	
2012/3/8 12:34:00	M3	ME	842649	833094	2.4	1.248	17.92	4.61	58.9	1.7	31.96	8.11	4
2012/3/8 12:34:07						1.284	17.92	4.78	61.1	1.8	31.96	8.10	
2012/3/8 12:38:28	M4	ME	843038	833110	4.4	1.022	17.92	4.95	63.3	1.8	31.97	8.12	5
2012/3/8 12:38:34						1.026	17.92	4.99	63.8	1.9	31.98	8.12	
2012/3/8 12:38:50						3.431	16.80	5.28	66.2	2.0	32.73	8.10	6
2012/3/8 12:38:57						3.497	16.93	5.17	65.1	2.0	32.67	8.11	
2012/3/8 12:43:31	C2	ME	832995	843811	8.3	1.064	17.92	4.82	61.6	1.7	31.98	8.12	6
2012/3/8 12:43:41						1.018	17.92	4.90	62.6	3.3	31.99	8.12	
2012/3/8 12:44:07						4.368	16.49	5.22	65.2	2.1	32.83	8.10	6
2012/3/8 12:44:14						4.273	16.47	5.21	65.0	2.2	32.86	8.10	
2012/3/8 12:44:45						7.389	15.73	5.06	62.4	2.0	33.14	8.09	4
2012/3/8 12:44:51						7.320	15.75	5.04	62.1	2.3	33.14	8.10	
2012/3/8 12:55:30	M8	ME	832650	843634	2.2	1.135	17.90	4.59	58.7	1.7	32.03	8.12	6
2012/3/8 12:55:37						1.162	17.90	4.77	60.9	1.9	32.02	8.12	
2012/3/8 12:59:07	M6	ME	832580	843477	1.8	0.942	17.92	4.97	63.5	2.2	32.00	8.13	12
2012/3/8 12:59:13						0.945	17.91	5.00	63.8	2.2	32.02	8.14	
2012/3/8 13:03:39	M5	ME	832717	843396	2.2	1.146	17.90	5.04	64.3	1.9	32.04	8.14	7
2012/3/8 13:03:46						1.129	17.90	5.05	64.5	1.8	32.05	8.14	
2012/3/8 13:07:08	M7	ME	832779	843492	2.4	1.235	17.91	5.06	64.7	1.7	32.04	8.15	7
2012/3/8 13:07:16						1.223	17.90	5.06	64.6	1.8	32.05	8.14	
2012/3/8 17:19:04	M1	MF	842518	832561	2.4	1.221	17.89	7.58	96.8	1.9	32.09	8.16	4
2012/3/8 17:19:11						1.241	17.89	7.57	96.7	1.9	32.08	8.16	
2012/3/8 17:22:38	M2	MF	842535	832795	1.8	1.054	17.89	7.59	96.9	2.3	32.09	8.16	10
2012/3/8 17:22:45						0.987	17.89	7.57	96.7	1.9	32.08	8.17	
2012/3/8 17:26:19	C1	MF	842187	833014	8	1.044	17.89	7.90	100.9	2.2	32.08	8.16	7
2012/3/8 17:26:22						1.023	17.89	7.66	97.8	2.0	32.09	8.17	
2012/3/8 17:26:40						4.092	17.00	7.67	96.7	2.1	32.64	8.16	5
2012/3/8 17:26:46						4.060	17.05	7.62	96.1	2.1	32.65	8.15	
2012/3/8 17:27:09						7.062	15.63	7.79	95.9	2.4	33.21	8.13	7
2012/3/8 17:27:18						7.051	15.65	7.64	94.1	2.2	33.22	8.13	
2012/3/8 17:33:54	M3	MF	842649	833094	2.4	1.334	17.88	7.11	90.8	2.1	32.13	8.16	3
2012/3/8 17:34:00						1.262	17.88	7.23	92.4	2.1	32.12	8.17	
2012/3/8 17:38:25	M4	MF	843038	833110	5.1	1.087	17.88	7.40	94.5	2.0	32.12	8.16	5
2012/3/8 17:38:31						1.026	17.88	7.45	95.2	2.0	32.15	8.17	
2012/3/8 17:38:48						4.100	16.97	7.62	96.0	2.2	32.70	8.16	4
2012/3/8 17:38:59						4.137	17.03	7.51	94.7	2.2	32.64	8.15	
2012/3/8 17:44:29	C2	MF	832999	843826	9.1	0.972	17.88	7.28	93.0	1.8	32.15	8.17	7
2012/3/8 17:44:36						1.055	17.89	7.40	94.6	1.9	32.13	8.17	
2012/3/8 17:44:48						4.450	16.98	7.56	95.2	2.3	32.72	8.16	5
2012/3/8 17:44:54						4.440	17.02	7.54	95.0	2.0	32.69	8.16	
2012/3/8 17:45:13						8.002	15.63	7.71	94.9	2.3	33.24	8.13	7
2012/3/8 17:45:23						8.135	15.62	7.57	93.2	2.7	33.25	8.13	
2012/3/8 17:56:59	M8	MF	832640	843644	2.3	1.258	17.87	7.37	94.1	1.8	32.19	8.18	4
2012/3/8 17:57:07						1.310	17.85	7.39	94.4	1.9	32.20	8.18	
2012/3/8 18:00:25	M6	MF	832577	843479	1.8	0.962	17.87	7.46	95.3	1.9	32.19	8.19	5
2012/3/8 18:00:32						0.991	17.86	7.48	95.6	1.9	32.21	8.18	
2012/3/8 18:03:56	M5	MF	832710	843394	2.6	1.299	17.86	7.53	96.2	1.9	32.19	8.19	7
2012/3/8 18:04:03						1.300	17.86	7.53	96.2	1.8	32.20	8.18	
2012/3/8 18:07:25	M7	MF	832784	843493	2.4	1.237	17.87	7.55	96.4	1.9	32.19	8.19	5
2012/3/8 18:07:32						1.236	17.87	7.57	96.8	1.9	32.19	8.19	

Remarks: MF - Middle Flood tida
ME - Middle Ebb tida

Contract ST/2008/02
Ma On Shan Development - Roads, Drainage and Sewerage Works at whitehead and Lok Wo Sha, Phase 1
Baseline Marine Water Quality Monitoring

AUES

Impact Data 10-Mar-12

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS
			North	East	m	m	℃	mg/L	%	NTU	ppt	unit	mg/l
2012/3/10 14:09:40	M1	ME	842518	832561	2.2	1.132	16.71	7.00	87.4	3.3	32.02	7.15	7
2012/3/10 14:09:54						1.133	16.71	7.02	87.6	2.2	32.04	7.17	
2012/3/10 14:14:12	M2	ME	842535	832795	1.8	0.951	16.71	7.58	94.6	2.2	32.04	7.17	9
2012/3/10 14:14:18						0.985	16.71	7.57	94.6	2.2	32.03	7.16	
2012/3/10 14:17:46	C1	ME	842187	833014	7.2	1.036	16.71	7.57	94.4	2.1	32.03	7.15	6
2012/3/10 14:17:54						1.063	16.70	7.60	94.8	2.0	32.05	7.16	
2012/3/10 14:18:16						3.644	16.69	7.62	95.2	2.0	32.04	7.17	8
2012/3/10 14:18:23						3.669	16.70	7.60	94.8	2.0	32.05	7.17	
2012/3/10 14:18:34						6.204	16.01	7.87	97.3	3.4	32.75	7.14	9
2012/3/10 14:18:41						6.252	15.96	7.85	97.0	3.6	32.77	7.14	
2012/3/10 14:26:23	M3	ME	842649	833094	2.4	1.217	16.70	7.28	90.9	2.4	32.03	7.18	4
2012/3/10 14:26:30						1.206	16.70	7.34	91.6	2.1	32.03	7.18	
2012/3/10 14:30:52	M4	ME	843038	833110	4.7	1.040	16.69	7.51	93.7	2.0	32.05	7.19	5
2012/3/10 14:30:59						1.018	16.70	7.50	93.6	2.0	32.05	7.18	
2012/3/10 14:31:19						3.780	16.71	7.54	94.1	2.1	32.05	7.18	5
2012/3/10 14:31:25						3.792	16.70	7.55	94.2	2.0	32.05	7.18	
2012/3/10 14:36:58	C2	ME	832995	843811	9.1	1.054	16.71	7.54	94.1	2.1	32.04	7.24	10
2012/3/10 14:37:05						1.086	16.71	7.54	94.1	2.2	32.05	7.23	
2012/3/10 14:37:22						4.609	16.70	7.59	94.8	2.0	32.06	7.22	6
2012/3/10 14:37:33						4.566	16.70	7.58	94.6	1.9	32.06	7.22	
2012/3/10 14:38:02						8.219	15.83	7.55	93.1	3.1	32.85	7.18	10
2012/3/10 14:38:11						8.176	15.82	7.32	90.3	3.3	32.87	7.17	
2012/3/10 14:47:51	M8	ME	832650	843634	2.2	1.130	16.71	6.83	85.3	2.3	32.04	7.19	7
2012/3/10 14:47:57						1.111	16.71	7.06	88.1	2.1	32.04	7.19	
2012/3/10 14:51:26	M6	ME	832580	843477	1.9	0.885	16.71	7.41	92.6	2.5	32.04	7.19	6
2012/3/10 14:51:32						0.823	16.71	7.42	92.6	2.1	32.04	7.19	
2012/3/10 14:55:03	M5	ME	832717	843396	2.2	1.102	16.72	7.50	93.7	2.1	32.04	7.19	8
2012/3/10 14:55:10						1.123	16.72	7.51	93.8	2.1	32.03	7.19	
2012/3/10 14:58:36	M7	ME	832779	843492	2.2	1.141	16.85	7.53	94.2	2.6	31.93	7.20	6
2012/3/10 14:58:42						1.132	16.85	7.52	94.1	2.7	31.93	7.20	
2012/3/10 08:09:42	M1	MF	842518	832561	2.4	1.216	16.78	7.51	93.7	2.2	31.75	7.18	4
2012/3/10 08:09:49						1.253	16.76	7.50	93.5	2.3	31.79	7.16	
2012/3/10 08:13:18	M2	MF	842535	832795	1.8	1.018	16.78	7.41	92.5	2.1	31.76	7.16	7
2012/3/10 08:13:25						0.960	16.79	7.38	92.2	2.2	31.75	7.10	
2012/3/10 08:16:56	C1	MF	842187	833014	8.2	0.972	16.78	7.21	89.9	3.0	31.76	7.15	10
2012/3/10 08:17:03						0.997	16.78	7.23	90.3	2.3	31.76	7.15	
2012/3/10 08:17:19						4.100	16.61	7.29	90.9	2.3	32.12	7.14	8
2012/3/10 08:17:26						4.136	16.60	7.28	90.8	2.3	32.14	7.14	
2012/3/10 08:17:44						7.273	15.90	7.34	90.6	3.2	32.73	7.10	3
2012/3/10 08:17:52						7.252	15.89	7.15	88.2	3.4	32.73	7.10	
2012/3/10 08:24:35	M3	MF	842649	833094	2.6	1.362	16.75	6.69	83.5	3.5	31.84	7.16	3
2012/3/10 08:24:42						1.332	16.75	6.76	84.3	2.2	31.85	7.16	
2012/3/10 08:29:14	M4	MF	843038	833110	5.2	1.013	16.77	7.01	87.4	2.2	31.81	7.19	8
2012/3/10 08:29:20						1.001	16.76	7.03	87.7	2.5	31.81	7.18	
2012/3/10 08:29:38						4.245	16.67	7.10	88.6	2.2	32.10	7.23	3
2012/3/10 08:29:46						4.227	16.67	7.10	88.6	2.2	32.10	7.24	
2012/3/10 08:36:14	C2	MF	832999	843826	10.4	1.058	16.75	7.06	88.1	2.2	31.85	7.27	4
2012/3/10 08:36:20						1.034	16.75	7.06	88.1	2.0	31.84	7.26	
2012/3/10 08:36:43						5.229	16.44	7.18	89.4	2.3	32.36	7.27	10
2012/3/10 08:36:49						5.232	16.45	7.17	89.2	2.2	32.35	7.25	
2012/3/10 08:37:13						9.475	15.79	7.06	87.0	6.4	32.82	7.20	4
2012/3/10 08:37:24						9.486	15.78	6.68	82.3	3.6	32.83	7.21	
2012/3/10 08:47:08	M8	MF	832640	843644	2.4	1.222	16.71	6.38	79.6	2.7	31.96	7.26	6
2012/3/10 08:47:13						1.237	16.71	6.48	80.9	2.0	31.94	7.25	
2012/3/10 08:50:37	M6	MF	832577	843479	2	1.049	16.70	6.88	85.9	2.4	32.00	7.27	10
2012/3/10 08:50:44						1.083	16.71	6.89	86.0	2.3	31.97	7.27	
2012/3/10 08:54:13	M5	MF	832710	843394	2.4	1.236	16.70	6.97	86.9	2.1	32.01	7.24	6
2012/3/10 08:54:19						1.235	16.70	6.99	87.3	2.1	32.01	7.23	
2012/3/10 08:58:43	M7	MF	832784	843493	2.4	1.270	16.71	7.02	87.6	2.4	32.04	7.24	7
2012/3/10 08:58:49						1.279	16.71	7.02	87.6	2.1	32.05	7.25	

Remarks: MF - Middle Flood tida
ME - Middle Ebb tida

Contract ST/2008/02
Ma On Shan Development - Roads, Drainage and Sewerage Works at whitehead and Lok Wo Sha, Phase 1
Baseline Marine Water Quality Monitoring

AUES

Impact Data 12-Mar-12

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS
			North	East	m	m	℃	mg/L	%	NTU	ppt	unit	mg/l
2012/3/12 15:13:10	M1	ME	842518	832561	2.4	1.203	15.92	7.85	96.7	2.2	32.31	7.10	2
2012/3/12 15:13:24						1.223	15.94	7.84	96.6	2.1	32.32	7.10	
2012/3/12 15:16:34	M2	ME	842535	832795	2.2	1.158	15.93	7.93	97.6	2.9	32.35	7.15	<2
2012/3/12 15:16:42						1.130	15.93	7.90	97.4	2.1	32.33	7.16	
2012/3/12 15:20:13	C1	ME	842187	833014	8	1.061	15.93	7.82	96.3	2.2	32.33	7.17	<2
2012/3/12 15:20:21						1.079	15.92	7.83	96.4	2.1	32.33	7.17	
2012/3/12 15:20:36						4.055	16.00	7.77	96.0	2.3	32.50	7.16	3
2012/3/12 15:20:47						4.087	15.99	7.76	95.7	2.3	32.51	7.16	
2012/3/12 15:21:02						7.065	16.05	7.70	95.2	2.7	32.66	7.17	2
2012/3/12 15:21:12						7.065	16.06	7.62	94.4	2.5	32.70	7.18	
2012/3/12 15:27:57	M3	ME	842649	833094	2.4	1.206	15.91	7.51	92.4	2.4	32.35	7.18	<2
2012/3/12 15:28:07						1.273	15.92	7.56	93.1	2.3	32.31	7.17	
2012/3/12 15:32:55	M4	ME	843038	833110	5	1.063	15.92	7.74	95.3	2.1	32.30	7.16	<2
2012/3/12 15:33:03						1.022	15.93	7.75	95.4	2.1	32.30	7.16	
2012/3/12 15:33:25						4.011	16.01	7.67	94.8	2.1	32.54	7.18	6
2012/3/12 15:33:32						4.026	16.00	7.67	94.8	2.1	32.52	7.17	
2012/3/12 15:40:17	C2	ME	832995	843811	9	1.022	15.90	7.66	94.3	2.3	32.28	7.16	4
2012/3/12 15:40:27						1.002	15.88	7.72	95.0	2.0	32.30	7.17	
2012/3/12 15:40:48						4.594	16.02	7.68	94.8	2.2	32.55	7.16	<2
2012/3/12 15:41:03						4.543	16.03	7.63	94.3	2.1	32.55	7.16	
2012/3/12 15:41:15						8.008	16.13	7.51	93.2	3.3	32.93	7.15	3
2012/3/12 15:41:23						8.086	16.14	7.50	93.1	3.2	32.92	7.15	
2012/3/12 15:51:19	M8	ME	832650	843634	2.2	1.173	15.87	7.46	91.7	2.2	32.27	7.16	<2
2012/3/12 15:51:34						1.131	15.86	7.59	93.3	2.0	32.27	7.16	
2012/3/12 15:55:43	M6	ME	832580	843477	1.8	0.982	15.88	8.85	108.8	2.1	32.27	7.16	2
2012/3/12 15:55:51						0.992	15.86	8.48	104.3	2.6	32.28	7.17	
2012/3/12 15:59:38	M5	ME	832717	843396	2.4	1.251	15.86	7.96	97.9	2.2	32.26	7.16	6
2012/3/12 15:59:49						1.231	15.86	7.91	97.2	2.9	32.27	7.16	
2012/3/12 16:03:20	M7	ME	832779	843492	2.2	1.202	15.88	7.84	96.4	2.3	32.26	7.15	4
2012/3/12 16:03:27						1.194	15.87	7.85	96.6	2.3	32.26	7.16	
2012/3/12 09:00:32	M1	MF	842518	832561	2.6	1.295	15.96	8.70	107.1	2.5	32.17	6.94	6
2012/3/12 09:00:40						1.316	15.95	8.66	106.7	2.3	32.17	6.96	
2012/3/12 09:04:10	M2	MF	842535	832795	2.2	1.115	15.96	8.57	105.5	2.4	32.19	6.98	3
2012/3/12 09:04:18						1.139	15.94	8.58	105.6	2.1	32.19	6.97	
2012/3/12 09:07:46	C1	MF	842187	833014	8.7	0.993	15.95	8.46	104.2	2.1	32.20	7.00	7
2012/3/12 09:07:54						1.004	15.95	8.46	104.2	2.1	32.20	7.01	
2012/3/12 09:08:11						4.361	16.01	8.38	103.5	2.3	32.42	7.00	<2
2012/3/12 09:08:22						4.388	16.02	8.33	102.8	2.4	32.41	7.01	
2012/3/12 09:08:39						7.755	16.05	8.24	101.8	2.2	32.52	7.00	8
2012/3/12 09:08:50						7.742	16.04	8.17	100.9	2.4	32.53	7.01	
2012/3/12 09:15:32	M3	MF	842649	833094	2.6	1.300	15.96	8.01	98.7	2.1	32.26	7.03	<2
2012/3/12 09:15:38						1.339	15.96	8.03	98.9	2.2	32.28	7.05	
2012/3/12 09:21:02	M4	MF	843038	833110	5.5	1.079	15.96	8.08	99.5	2.1	32.27	7.04	2
2012/3/12 09:21:09						1.015	15.96	8.07	99.4	2.2	32.26	7.04	
2012/3/12 09:21:30						4.554	16.02	8.02	99.1	2.5	32.52	7.08	4
2012/3/12 09:21:38						4.591	16.03	7.96	98.4	2.3	32.52	7.08	
2012/3/12 09:27:19	C2	MF	832999	843826	10.4	1.043	15.96	7.92	97.6	2.2	32.30	7.10	4
2012/3/12 09:27:26						1.146	15.95	7.89	97.2	2.3	32.31	7.10	
2012/3/12 09:27:51						5.206	16.03	7.91	97.7	2.4	32.51	7.09	<2
2012/3/12 09:27:59						5.264	16.01	7.89	97.4	2.1	32.46	7.09	
2012/3/12 09:28:20						9.440	16.02	7.69	95.3	4.0	32.94	7.08	3
2012/3/12 09:28:29						9.447	16.03	7.43	92.1	3.9	32.93	7.08	
2012/3/12 09:39:20	M8	MF	832640	843644	2.4	1.248	15.94	7.37	90.8	2.2	32.31	7.09	4
2012/3/12 09:39:27						1.246	15.95	7.51	92.5	2.2	32.31	7.08	
2012/3/12 09:42:49	M6	MF	832577	843479	2.2	1.127	15.95	7.75	95.5	2.0	32.32	7.09	4
2012/3/12 09:42:56						1.123	15.94	7.78	95.9	2.1	32.33	7.10	
2012/3/12 09:46:19	M5	MF	832710	843394	2.4	1.289	15.94	7.83	96.4	2.0	32.32	7.07	3
2012/3/12 09:46:27						1.293	15.96	7.82	96.3	2.1	32.32	7.07	
2012/3/12 09:49:52	M7	MF	832784	843493	2.6	1.380	15.93	7.85	96.7	2.2	32.33	7.09	5
2012/3/12 09:50:01						1.318	15.94	7.83	96.4	2.0	32.32	7.09	

Remarks: MF - Middle Flood tida
ME - Middle Ebb tida

Contract ST/2008/02
Ma On Shan Development - Roads, Drainage and Sewerage Works at whitehead and Lok Wo Sha, Phase 1
Baseline Marine Water Quality Monitoring

AUES

Impact Data 14-Mar-12

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS
			North	East	m	m	℃	mg/L	%	NTU	ppt	unit	mg/l
2012/3/14 17:19:27	M1	ME	842518	832561	2.4	1.180	15.92	7.92	97.7	1.9	32.58	7.07	<2
2012/3/14 17:19:33						1.219	15.93	7.99	98.6	1.9	32.56	7.07	
2012/3/14 17:22:57	M2	ME	842535	832795	1.8	0.996	15.92	7.99	98.5	1.9	32.57	7.05	2
2012/3/14 17:23:03						0.953	15.93	8.00	98.7	2.0	32.54	7.06	
2012/3/14 17:26:48	C1	ME	842187	833014	7.4	1.044	15.97	7.95	98.1	2.0	32.52	7.07	4
2012/3/14 17:26:55						1.064	15.94	7.96	98.2	2.0	32.54	7.06	
2012/3/14 17:27:10						3.759	15.94	7.83	96.8	2.4	32.86	7.05	3
2012/3/14 17:27:19						3.723	15.95	7.78	96.2	2.5	32.85	7.06	
2012/3/14 17:27:35						6.483	15.87	7.65	94.5	2.6	33.02	7.06	<2
2012/3/14 17:27:48						6.451	15.82	7.51	92.7	2.5	33.08	7.05	
2012/3/14 17:35:44	M3	ME	842649	833094	2.4	1.246	15.95	7.57	93.4	2.1	32.54	7.15	<2
2012/3/14 17:35:50						1.256	15.96	7.58	93.6	2.1	32.53	7.15	
2012/3/14 17:41:40	M4	ME	843038	833110	5	1.008	15.96	7.77	95.8	2.5	32.53	7.10	<2
2012/3/14 17:41:50						1.014	15.95	7.77	95.9	2.0	32.54	7.09	
2012/3/14 17:42:29						4.009	15.82	7.59	93.6	2.1	32.93	7.08	3
2012/3/14 17:42:37						4.003	15.85	7.56	93.3	2.3	32.86	7.09	
2012/3/14 17:48:39	C2	ME	832995	843811	8.6	1.022	15.96	7.80	96.3	2.0	32.54	7.09	3
2012/3/14 17:48:46						1.018	15.97	7.76	95.7	2.1	32.53	7.10	
2012/3/14 17:49:06						4.319	15.86	7.60	93.8	2.1	32.92	7.10	<2
2012/3/14 17:49:21						4.343	15.86	7.49	92.5	2.1	32.97	7.09	
2012/3/14 17:49:54						7.655	15.79	7.21	89.0	3.4	33.09	7.09	3
2012/3/14 17:50:16						7.640	15.78	7.14	88.1	3.0	33.10	7.09	
2012/3/14 18:07:17	M8	ME	832650	843634	2.2	1.191	15.95	7.80	96.2	1.9	32.55	7.11	<2
2012/3/14 18:07:25						1.155	15.97	7.78	96.0	2.0	32.52	7.12	
2012/3/14 18:10:58	M6	ME	832580	843477	1.8	0.882	15.94	7.73	95.4	2.2	32.54	7.11	3
2012/3/14 18:11:05						0.885	15.96	7.72	95.3	1.9	32.51	7.12	
2012/3/14 18:15:04	M5	ME	832717	843396	2.2	1.166	15.98	7.65	94.4	2.0	32.50	7.12	2
2012/3/14 18:15:12						1.183	15.94	7.66	94.5	2.3	32.54	7.10	
2012/3/14 18:18:37	M7	ME	832779	843492	2.4	1.187	15.98	7.65	94.4	2.2	32.50	7.11	2
2012/3/14 18:18:49						1.218	15.98	7.64	94.3	2.0	32.50	7.11	
2012/3/14 10:24:37	M1	MF	842518	832561	2.4	1.268	15.94	8.33	102.6	2.0	32.24	7.04	<2
2012/3/14 10:24:45						1.254	15.94	8.34	102.7	2.0	32.24	7.04	
2012/3/14 10:28:22	M2	MF	842535	832795	2.2	1.148	15.94	8.26	101.7	2.4	32.25	7.02	6
2012/3/14 10:28:29						1.152	15.95	8.23	101.3	2.1	32.24	7.02	
2012/3/14 10:32:28	C1	MF	842187	833014	8	1.047	15.93	8.09	99.6	2.4	32.26	7.02	4
2012/3/14 10:32:36						0.995	15.96	8.07	99.4	2.1	32.22	7.03	
2012/3/14 10:33:03						3.991	15.95	7.84	96.8	2.4	32.69	7.01	<2
2012/3/14 10:33:14						4.057	15.97	7.72	95.3	2.8	32.67	7.02	
2012/3/14 10:33:36						6.972	15.89	7.49	92.5	4.7	32.93	7.02	5
2012/3/14 10:33:46						7.004	15.90	7.31	90.3	4.8	32.92	7.02	
2012/3/14 10:40:42	M3	MF	842649	833094	2.4	1.279	15.98	7.54	92.9	2.1	32.23	7.03	3
2012/3/14 10:40:49						1.278	15.99	7.61	93.8	1.9	32.23	7.03	
2012/3/14 10:46:19	M4	MF	843038	833110	5.1	1.026	15.97	7.76	95.6	2.0	32.25	7.05	3
2012/3/14 10:46:26						0.969	15.96	7.77	95.8	2.1	32.26	7.04	
2012/3/14 10:46:44						4.172	15.96	7.72	95.3	2.6	32.72	7.04	2
2012/3/14 10:46:53						4.127	15.94	7.62	94.1	3.1	32.75	7.03	
2012/3/14 10:51:55	C2	MF	832999	843826	9	1.071	15.98	7.60	93.7	2.1	32.25	7.05	<2
2012/3/14 10:52:01						1.076	15.97	7.63	94.0	2.2	32.26	7.05	
2012/3/14 10:52:20						4.502	15.98	7.58	93.6	3.1	32.72	7.04	2
2012/3/14 10:52:29						4.557	15.97	7.45	92.0	2.9	32.71	7.04	
2012/3/14 10:55:44						8.042	15.78	7.62	94.0	2.7	33.11	6.99	3
2012/3/14 10:55:52						8.081	15.78	7.50	92.5	3.2	33.11	6.99	
2012/3/14 11:06:27	M8	MF	832640	843644	2.6	1.337	15.96	7.47	92.2	2.1	32.59	7.00	<2
2012/3/14 11:06:33						1.314	15.97	7.36	90.9	2.0	32.57	7.01	
2012/3/14 11:09:54	M6	MF	832577	843479	2.2	1.165	15.96	7.35	90.7	1.9	32.57	7.01	2
2012/3/14 11:10:05						1.165	15.96	7.35	90.7	2.0	32.57	7.01	
2012/3/14 11:13:29	M5	MF	832710	843394	2.4	1.357	15.93	7.33	90.4	2.2	32.60	7.01	3
2012/3/14 11:13:36						1.283	15.93	7.31	90.1	2.0	32.60	7.02	
2012/3/14 11:17:01	M7	MF	832784	843493	2.4	1.282	15.94	7.24	89.3	2.0	32.57	7.03	2
2012/3/14 11:17:07						1.270	15.94	7.24	89.3	1.9	32.58	7.02	

Remarks: MF - Middle Flood tida
ME - Middle Ebb tida

Contract ST/2008/02
Ma On Shan Development - Roads, Drainage and Sewerage Works at whitehead and Lok Wo Sha, Phase 1
Baseline Marine Water Quality Monitoring

AUES

Impact Data 16-Mar-12

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS
			North	East	m	m	℃	mg/L	%	NTU	ppt	unit	mg/l
2012/3/16 08:01:21	M1	ME	842518	832561	2.2	1.199	16.69	8.72	108.7	2.1	31.81	7.37	4
2012/3/16 08:01:29						1.174	16.70	8.87	110.5	2.3	31.80	7.35	
2012/3/16 08:03:54	M2	ME	842535	832795	2	1.010	16.70	8.57	106.8	2.1	31.80	7.26	3
2012/3/16 08:04:01						1.021	16.72	8.51	106.1	2.0	31.79	7.24	
2012/3/16 08:08:57	C1	ME	842187	833014	7.8	1.005	16.73	8.27	103.2	2.2	31.98	7.14	<2
2012/3/16 08:09:04						1.032	16.72	8.34	104.1	2.0	31.98	7.14	
2012/3/16 08:09:28						3.812	16.41	8.42	104.7	2.3	32.21	7.14	2
2012/3/16 08:09:35						3.863	16.41	8.37	104.0	2.2	32.22	7.12	
2012/3/16 08:10:10						6.648	16.07	7.45	92.3	2.7	32.80	7.10	6
2012/3/16 08:10:16						6.686	16.07	7.35	91.1	2.8	32.80	7.11	
2012/3/16 08:17:10	M3	ME	842649	833094	2.4	1.244	16.70	7.73	96.5	2.1	31.99	7.14	3
2012/3/16 08:17:15						1.227	16.70	7.82	97.5	2.2	31.98	7.13	
2012/3/16 08:23:40	M4	ME	843038	833110	4.8	1.010	16.73	8.11	101.3	2.1	31.98	7.13	3
2012/3/16 08:23:46						0.987	16.72	8.15	101.7	2.2	31.99	7.13	
2012/3/16 08:24:06						3.848	16.38	8.32	103.3	2.7	32.24	7.13	4
2012/3/16 08:24:14						3.857	16.38	8.25	102.4	2.3	32.24	7.13	
2012/3/16 08:30:20	C2	ME	832995	843811	9.6	1.015	16.77	8.02	100.1	2.5	31.96	7.13	3
2012/3/16 08:30:27						1.014	16.73	8.13	101.5	2.0	31.97	7.13	
2012/3/16 08:30:55						4.627	16.33	8.09	100.4	2.3	32.46	7.11	3
2012/3/16 08:31:06						4.676	16.35	7.95	98.8	2.4	32.43	7.12	
2012/3/16 08:31:40						8.608	15.72	7.81	96.2	3.5	32.98	7.09	6
2012/3/16 08:31:50						8.635	15.72	7.40	91.1	3.5	32.97	7.10	
2012/3/16 08:42:07	M8	ME	832650	843634	2.2	1.204	16.74	7.24	90.4	2.3	31.98	7.14	3
2012/3/16 08:42:14						1.191	16.76	7.57	94.6	2.0	31.96	7.14	
2012/3/16 08:45:36	M6	ME	832580	843477	2	0.998	16.74	8.02	100.1	2.2	31.98	7.14	3
2012/3/16 08:45:43						1.003	16.76	8.09	101.1	2.1	31.97	7.15	
2012/3/16 08:49:02	M5	ME	832717	843396	2.4	1.273	16.75	8.21	102.6	2.1	31.98	7.16	<2
2012/3/16 08:49:09						1.260	16.76	8.24	103.0	2.2	31.98	7.16	
2012/3/16 08:52:36	M7	ME	832779	843492	2.4	1.208	16.75	8.31	103.7	2.0	31.98	7.23	6
2012/3/16 08:52:45						1.266	16.78	8.30	103.7	2.1	31.96	7.21	
2012/3/16 12:24:38	M1	MF	842518	832561	2.4	1.275	16.79	8.26	103.3	2.1	31.99	7.18	3
2012/3/16 12:24:45						1.242	16.80	8.34	104.2	2.1	31.98	7.19	
2012/3/16 12:28:11	M2	MF	842535	832795	2	1.100	16.77	8.44	105.5	2.0	32.00	7.19	4
2012/3/16 12:28:18						1.077	16.81	8.43	105.4	2.1	31.97	7.19	
2012/3/16 12:32:43	C1	MF	842187	833014	8	1.018	16.80	8.46	105.8	2.0	31.99	7.19	2
2012/3/16 12:32:50						1.030	16.79	8.47	105.9	2.0	31.99	7.19	
2012/3/16 12:33:06						4.083	16.40	8.53	106.1	2.6	32.37	7.18	3
2012/3/16 12:33:14						4.017	16.40	8.39	104.3	2.4	32.37	7.18	
2012/3/16 12:33:44						7.052	16.05	7.51	93.1	3.7	32.91	7.15	2
2012/3/16 12:33:51						7.080	16.04	7.39	91.5	3.7	32.91	7.15	
2012/3/16 12:40:34	M3	MF	842649	833094	2.4	1.206	16.73	7.45	93.0	2.3	31.99	7.19	2
2012/3/16 12:40:41						1.222	16.74	7.74	96.6	2.3	31.99	7.19	
2012/3/16 12:45:05	M4	MF	843038	833110	5.1	1.015	16.74	8.18	102.1	1.9	32.01	7.18	<2
2012/3/16 12:45:12						1.018	16.77	8.25	103.0	2.3	31.99	7.19	
2012/3/16 12:45:31						4.112	16.36	8.33	103.5	2.3	32.39	7.17	2
2012/3/16 12:45:38						4.131	16.35	8.22	102.1	2.3	32.41	7.18	
2012/3/16 12:52:12	C2	MF	832999	843826	10	1.054	16.79	8.02	100.2	2.0	31.99	7.19	2
2012/3/16 12:52:19						1.044	16.81	8.14	101.8	2.2	31.99	7.19	
2012/3/16 12:52:33						5.058	16.32	8.31	103.2	2.3	32.51	7.18	<2
2012/3/16 12:52:42						5.008	16.32	8.18	101.7	2.4	32.51	7.18	
2012/3/16 12:53:24						8.950	15.71	7.64	94.1	4.0	33.03	7.16	4
2012/3/16 12:53:34						9.099	15.72	7.35	90.5	4.2	33.03	7.16	
2012/3/16 13:04:21	M8	MF	832640	843644	2.4	1.291	16.78	7.52	93.9	2.0	31.98	7.20	3
2012/3/16 13:04:28						1.283	16.78	7.77	97.1	2.0	31.98	7.20	
2012/3/16 13:07:54	M6	MF	832577	843479	2.2	1.145	16.80	8.21	102.7	2.1	31.98	7.20	2
2012/3/16 13:08:06						1.148	16.78	8.30	103.8	2.2	32.00	7.19	
2012/3/16 13:11:26	M5	MF	832710	843394	2.4	1.226	16.79	8.35	104.3	2.0	31.98	7.21	3
2012/3/16 13:11:33						1.235	16.79	8.38	104.7	2.0	31.99	7.21	
2012/3/16 13:15:53	M7	MF	832784	843493	2.4	1.298	16.81	8.41	105.2	2.3	31.96	7.21	3
2012/3/16 13:15:59						1.268	16.77	8.42	105.2	2.0	31.99	7.22	

Remarks: MF - Middle Flood tida
ME - Middle Ebb tida

Contract ST/2008/02
Ma On Shan Development - Roads, Drainage and Sewerage Works at whitehead and Lok Wo Sha, Phase 1
Baseline Marine Water Quality Monitoring

AUES

Impact Data 20-Mar-12

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS
			North	East	m	m	℃	mg/L	%	NTU	ppt	unit	mg/l
2012/3/20 11:20:34	M1	ME	842518	832561	2.4	1.202	19.06	10.42	137.6	1.7	33.91	7.50	<2
2012/3/20 11:20:42						1.225	19.07	10.38	137.1	1.6	33.93	7.51	
2012/3/20 11:24:33	M2	ME	842535	832795	2	1.058	19.02	10.25	135.2	2.0	33.88	7.51	<2
2012/3/20 11:24:46						1.052	19.17	10.22	135.2	1.5	33.85	7.52	
2012/3/20 11:29:21	C1	ME	842187	833014	7.4	1.029	19.01	10.24	135.0	1.8	33.87	7.53	3
2012/3/20 11:29:32						1.046	18.98	10.31	135.8	1.8	33.88	7.51	
2012/3/20 11:29:53						3.688	18.60	10.34	135.5	1.7	34.06	7.49	<2
2012/3/20 11:30:00						3.706	18.62	10.24	134.2	1.6	34.03	7.49	
2012/3/20 11:30:31						6.411	16.10	9.44	118.8	2.1	35.30	7.27	<2
2012/3/20 11:30:42						6.463	16.10	8.92	112.2	2.0	35.30	7.27	
2012/3/20 11:38:06	M3	ME	842649	833094	2.4	1.223	18.94	9.35	123.2	1.7	33.91	7.57	<2
2012/3/20 11:38:12						1.228	18.96	9.54	125.7	1.6	33.89	7.57	
2012/3/20 11:44:43	M4	ME	843038	833110	4.6	1.004	19.11	10.00	132.1	1.6	33.84	7.58	2
2012/3/20 11:44:51						1.002	19.03	10.04	132.5	1.4	33.88	7.58	
2012/3/20 11:45:24						3.650	18.48	10.17	133.0	1.9	34.15	7.55	<2
2012/3/20 11:45:31						3.664	18.51	10.07	131.7	1.9	34.11	7.54	
2012/3/20 11:52:22	C2	ME	832995	843811	8.8	1.014	19.36	9.85	130.6	1.3	33.69	7.59	2
2012/3/20 11:52:29						1.009	19.49	9.83	130.7	1.6	33.66	7.60	
2012/3/20 11:53:12						4.427	17.82	10.20	132.0	1.8	34.46	7.49	7
2012/3/20 11:53:19						4.432	17.76	10.09	130.5	1.5	34.47	7.50	
2012/3/20 11:53:52						7.875	15.92	9.00	112.8	2.5	35.34	7.31	3
2012/3/20 11:54:01						7.865	15.90	8.58	107.6	2.8	35.35	7.33	
2012/3/20 12:05:43	M8	ME	832650	843634	2	1.098	19.11	8.50	112.3	1.6	33.78	7.63	<2
2012/3/20 12:05:50						1.085	19.13	8.72	115.2	1.6	33.80	7.63	
2012/3/20 12:09:17	M6	ME	832580	843477	1.8	0.918	19.29	9.45	125.2	1.9	33.71	7.62	2
2012/3/20 12:09:24						0.922	19.31	9.54	126.4	1.4	33.70	7.64	
2012/3/20 12:12:57	M5	ME	832717	843396	2.2	1.167	19.03	9.78	128.9	1.5	33.86	7.59	<2
2012/3/20 12:13:04						1.167	19.17	9.75	128.9	1.7	33.78	7.59	
2012/3/20 12:16:56	M7	ME	832779	843492	2.4	1.206	19.25	9.85	130.4	1.2	33.73	7.61	2
2012/3/20 12:17:05						1.219	19.28	9.86	130.5	1.8	33.71	7.62	
2012/3/20 17:26:54	M1	MF	842518	832561	2.4	1.220	19.01	10.70	141.0	1.6	33.76	7.60	<2
2012/3/20 17:27:02						1.246	19.13	10.65	140.6	1.7	33.70	7.60	
2012/3/20 17:29:35	M2	MF	842535	832795	2	1.073	19.12	10.66	140.8	1.8	33.70	7.62	<2
2012/3/20 17:29:49						1.049	19.30	10.63	140.7	1.5	33.60	7.62	
2012/3/20 17:33:19	C1	MF	842187	833014	8.4	1.020	19.29	10.62	140.5	1.5	33.60	7.62	<2
2012/3/20 17:33:25						1.032	19.33	10.61	140.5	1.6	33.63	7.63	
2012/3/20 17:33:44						4.204	17.84	11.01	142.4	1.6	34.40	7.56	<2
2012/3/20 17:33:57						4.274	17.87	10.77	139.5	1.7	34.39	7.55	
2012/3/20 17:34:29						7.477	15.80	9.55	119.5	2.5	35.26	7.33	<2
2012/3/20 17:34:37						7.461	15.76	9.13	114.1	2.7	35.30	7.36	
2012/3/20 17:42:35	M3	MF	842649	833094	2.4	1.214	18.99	10.51	138.5	1.5	33.82	7.62	2
2012/3/20 17:42:43						1.225	19.09	10.51	138.7	2.0	33.71	7.61	
2012/3/20 17:48:44	M4	MF	843038	833110	5.3	1.044	19.39	10.51	139.4	1.9	33.64	7.62	<2
2012/3/20 17:48:53						1.023	19.49	10.48	139.2	1.7	33.64	7.63	
2012/3/20 17:49:06						4.348	18.06	10.88	141.3	1.8	34.35	7.57	3
2012/3/20 17:49:21						4.331	18.01	10.67	138.5	1.9	34.38	7.56	
2012/3/20 17:59:48	C2	MF	832999	843826	10	1.035	19.40	10.10	134.1	1.6	33.73	7.66	<2
2012/3/20 17:59:55						1.032	19.60	10.17	135.4	1.6	33.61	7.66	
2012/3/20 18:00:26						5.008	17.24	10.45	133.9	2.0	34.56	7.53	<2
2012/3/20 18:00:33						5.025	17.15	10.45	133.6	2.1	34.60	7.51	
2012/3/20 18:00:53						9.058	15.74	9.91	123.8	2.3	35.27	7.36	2
2012/3/20 18:01:00						9.060	15.72	9.24	115.4	2.5	35.27	7.36	
2012/3/20 18:12:22	M8	MF	832640	843644	2.4	1.278	19.16	9.27	122.5	1.7	33.73	7.68	4
2012/3/20 18:12:29						1.267	19.15	9.62	127.0	1.9	33.73	7.68	
2012/3/20 18:15:57	M6	MF	832577	843479	2.2	1.121	19.29	10.15	134.4	2.0	33.63	7.67	3
2012/3/20 18:16:04						1.150	19.22	10.22	135.2	1.9	33.71	7.66	
2012/3/20 18:19:27	M5	MF	832710	843394	2.4	1.222	19.27	10.30	136.3	1.7	33.64	7.65	<2
2012/3/20 18:19:34						1.234	19.17	10.36	136.8	1.7	33.69	7.66	
2012/3/20 18:23:55	M7	MF	832784	843493	2.4	1.210	19.10	10.39	137.2	1.6	33.78	7.64	<2
2012/3/20 18:24:02						1.279	19.04	10.44	137.6	1.8	33.83	7.64	

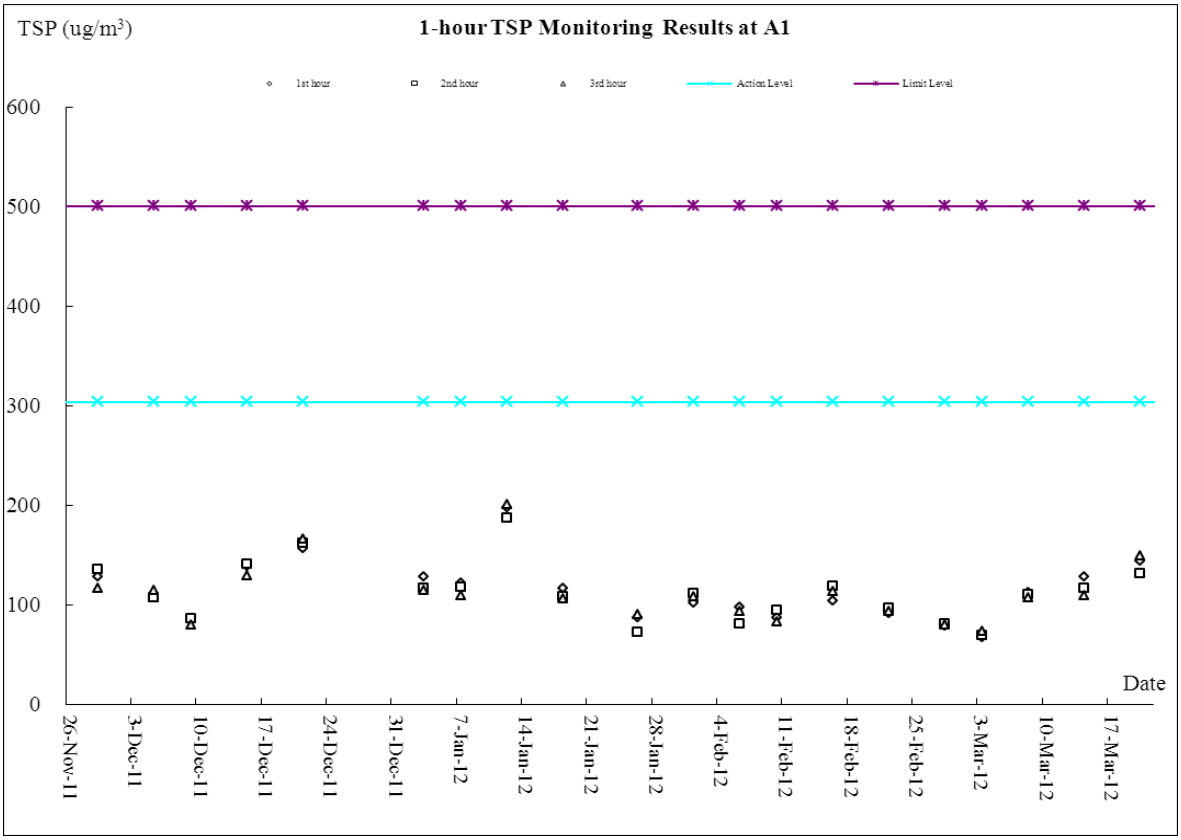
Remarks: MF - Middle Flood tida
ME - Middle Ebb tida

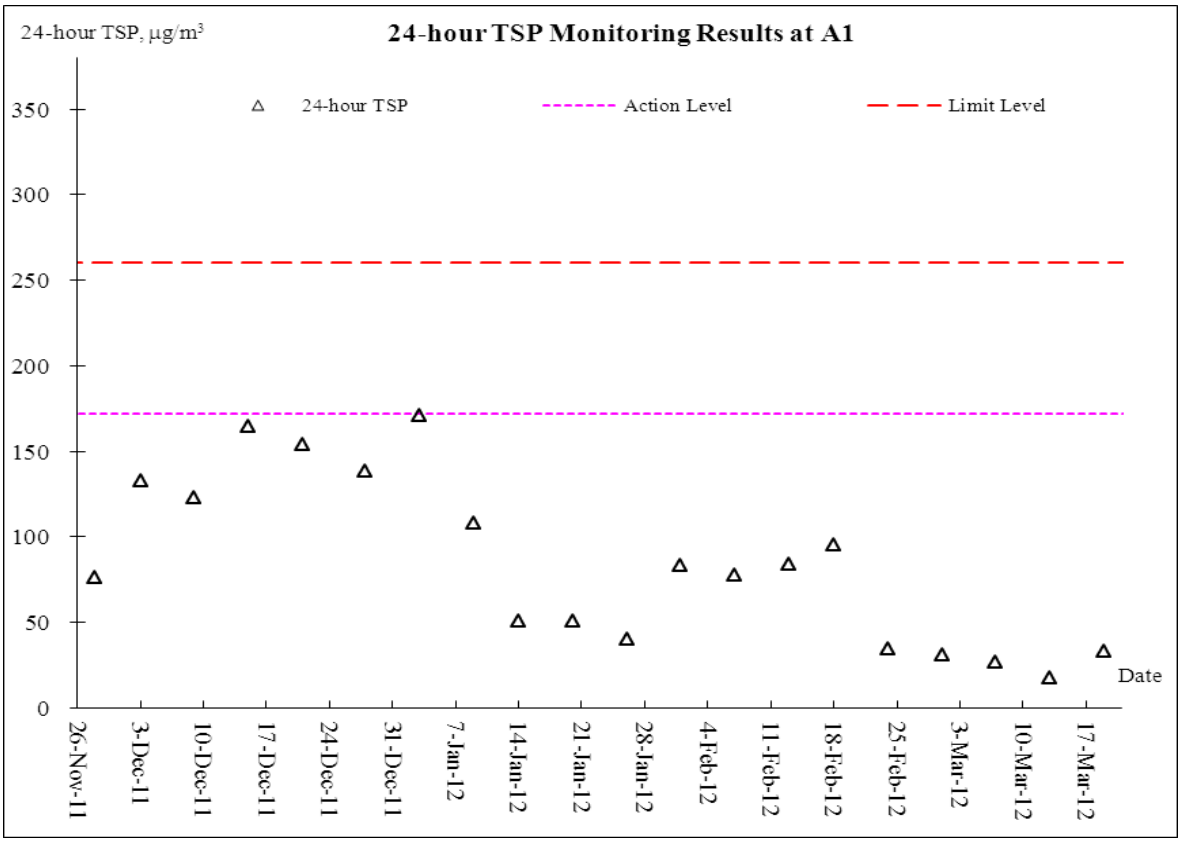
Annex J

Graphical Plots of Impact Monitoring

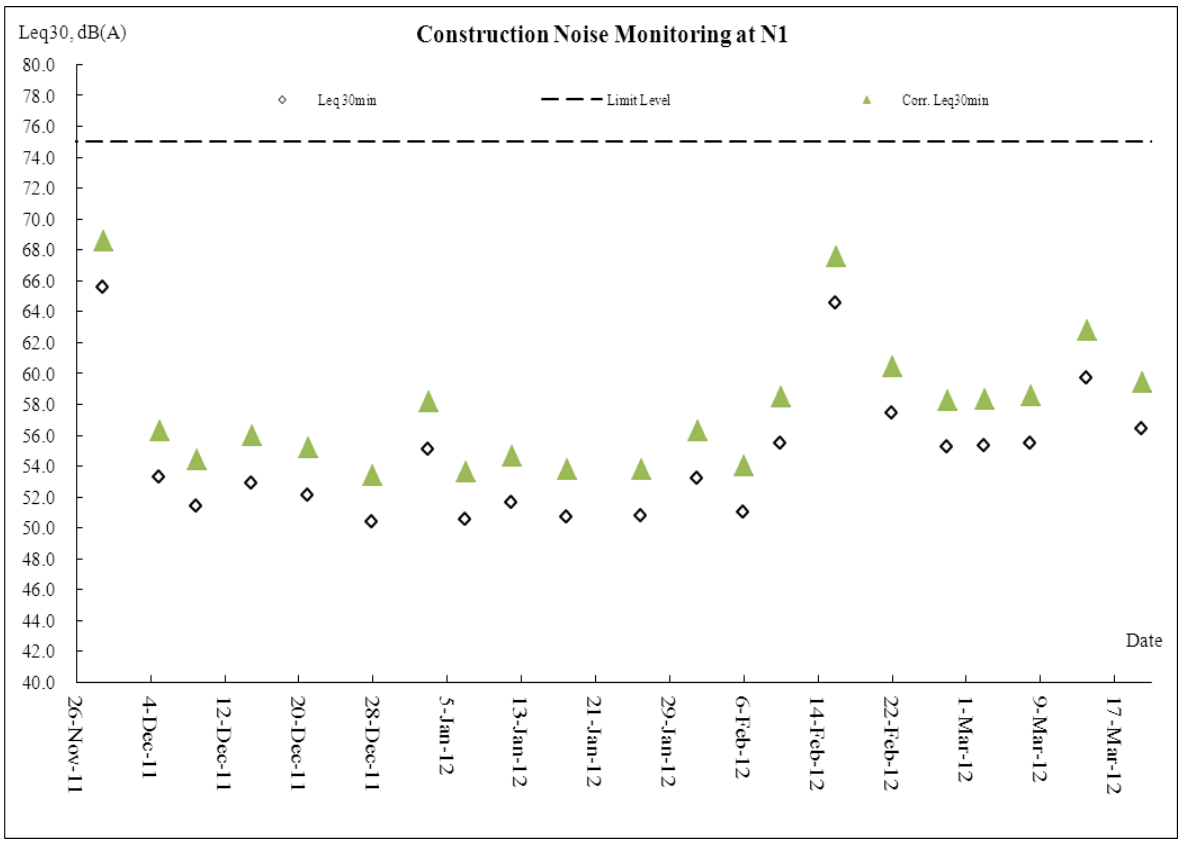
1. Air
2. Noise
3. Marine Water

Air Quality


TSP (ug/m3)
1-hour TSP Monitoring Results at A1
1st hour
2nd hour
3rd hour
Action Level
Limit Level
600
500
400
300
200
100
0
Date
26-Nov-11
3-Dec-11
10-Dec-11
17-Dec-11
24-Dec-11
31-Dec-11
7-Jan-12
14-Jan-12
21-Jan-12
28-Jan-12
4-Feb-12
11-Feb-12
18-Feb-12
25-Feb-12
3-Mar-12
10-Mar-12
17-Mar-12

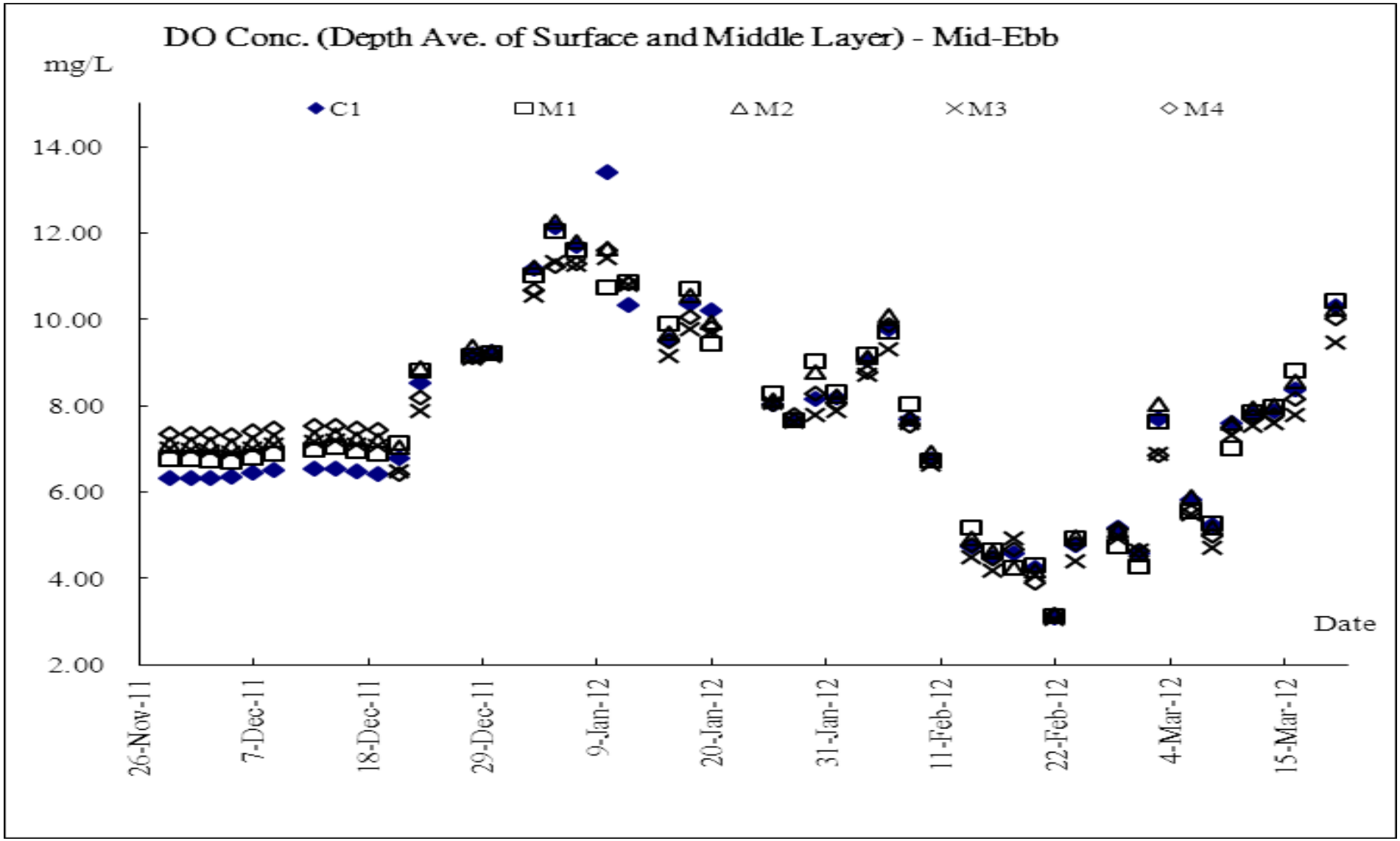

24-hour TSP, µg/m3
24-hour TSP Monitoring Results at A1
24-hour TSP
Action Level
Limit Level
350
300
250
200
150
100
50
0
Date
26-Nov-11
3-Dec-11
10-Dec-11
17-Dec-11
24-Dec-11
31-Dec-11
7-Jan-12
14-Jan-12
21-Jan-12
28-Jan-12
4-Feb-12
11-Feb-12
18-Feb-12
25-Feb-12
3-Mar-12
10-Mar-12
17-Mar-12

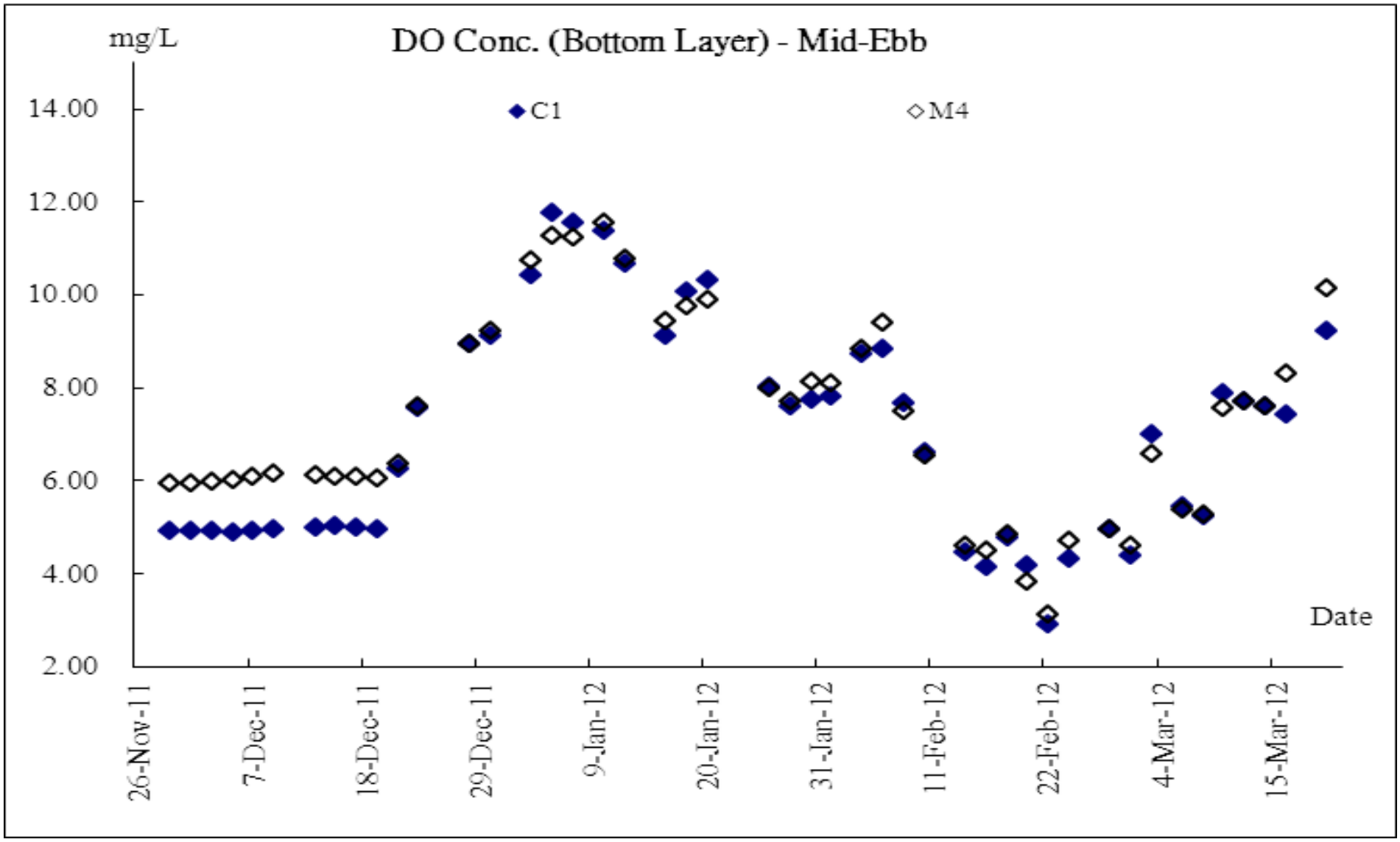
Construction Noise

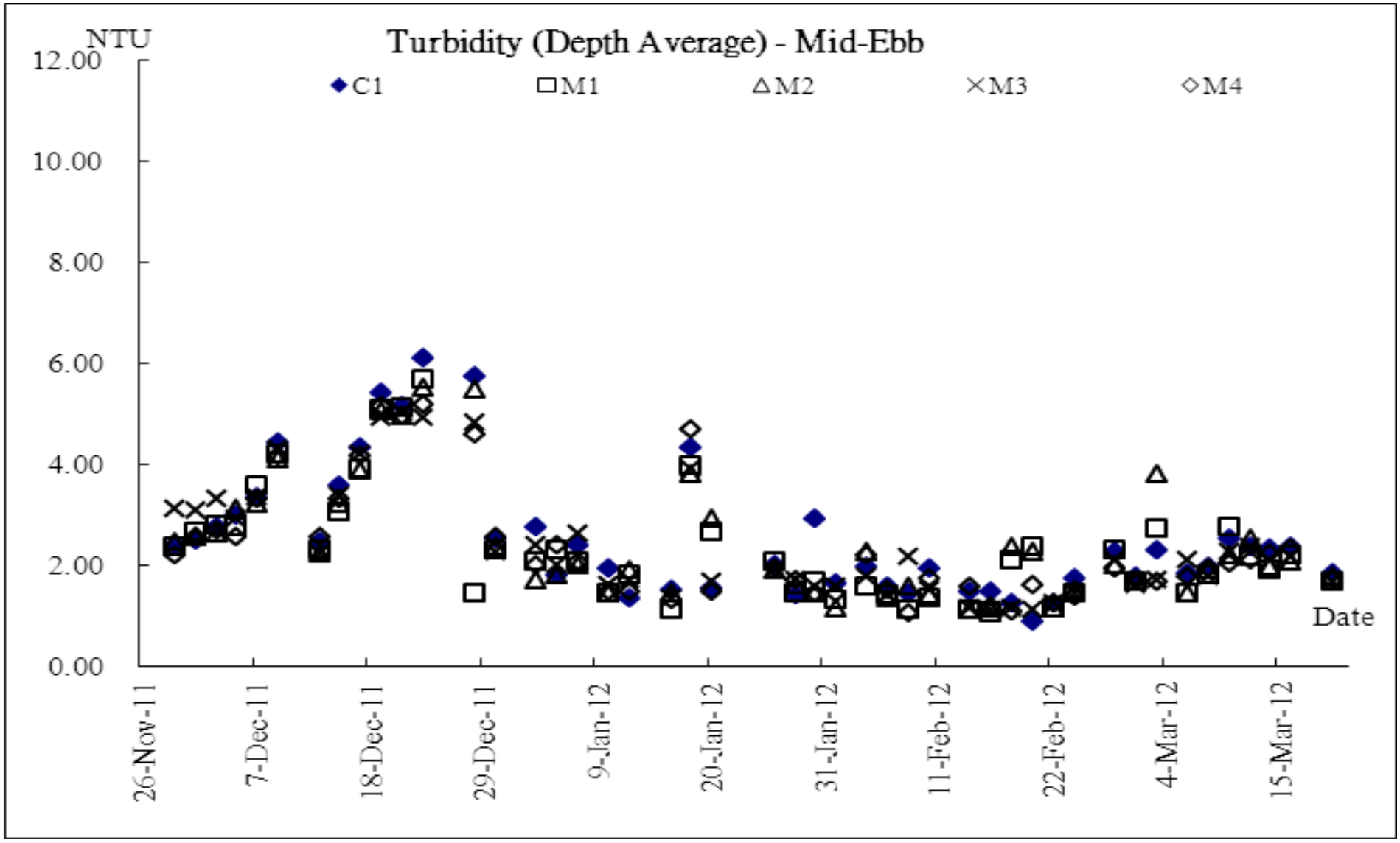

Construction Noise Monitoring at N1
Leq30, dB(A)
Leq 30min
Limit Level
Corr. Leq30min
80.0
78.0
76.0
74.0
72.0
70.0
68.0
66.0
64.0
62.0
60.0
58.0
56.0
54.0
52.0
50.0
48.0
46.0
44.0
42.0
40.0
Date
26-Nov-11
4-Dec-11
12-Dec-11
20-Dec-11
28-Dec-11
5-Jan-12
13-Jan-12
21-Jan-12
29-Jan-12
6-Feb-12
14-Feb-12
22-Feb-12
1-Mar-12
9-Mar-12
17-Mar-12

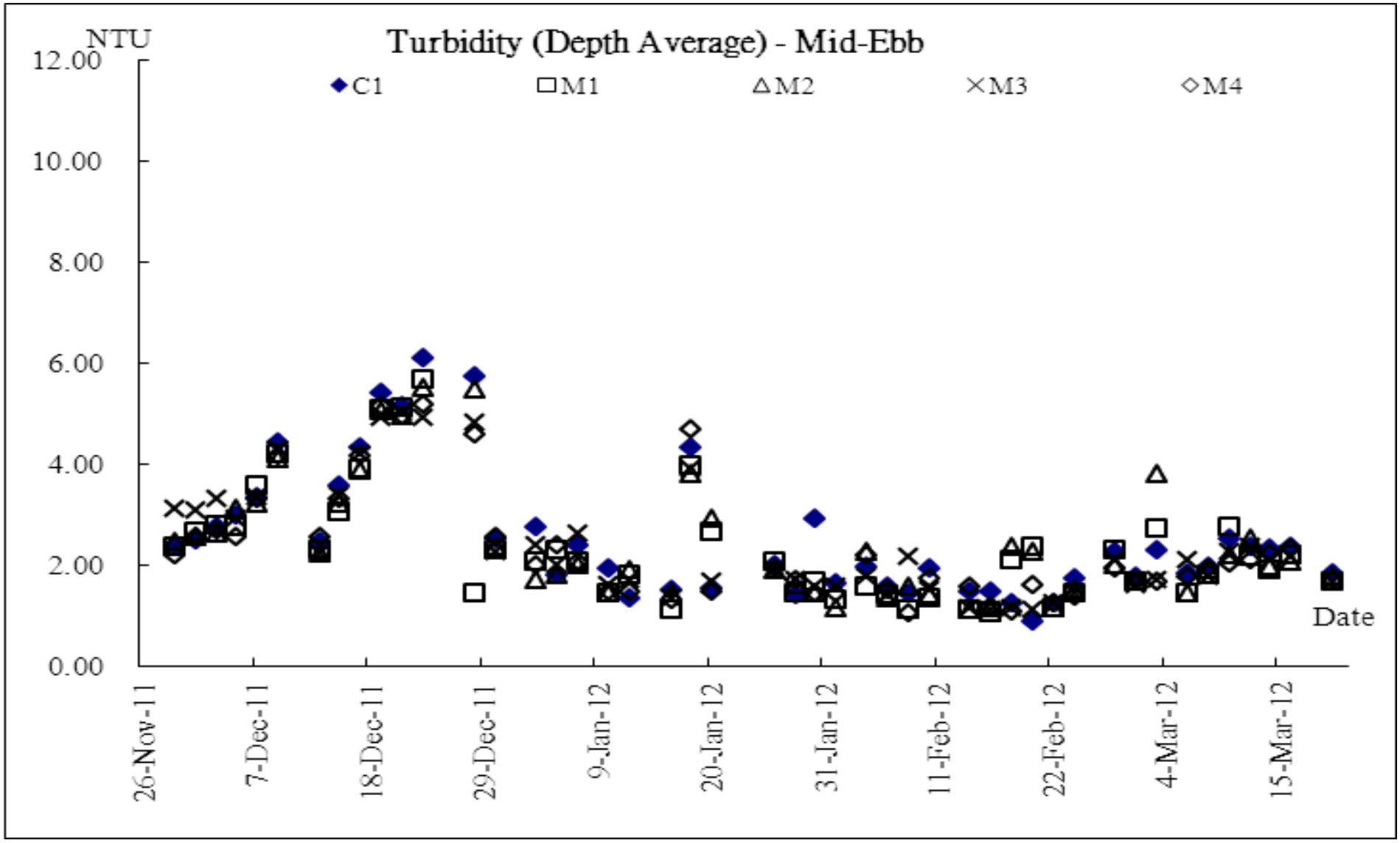
Marine Water

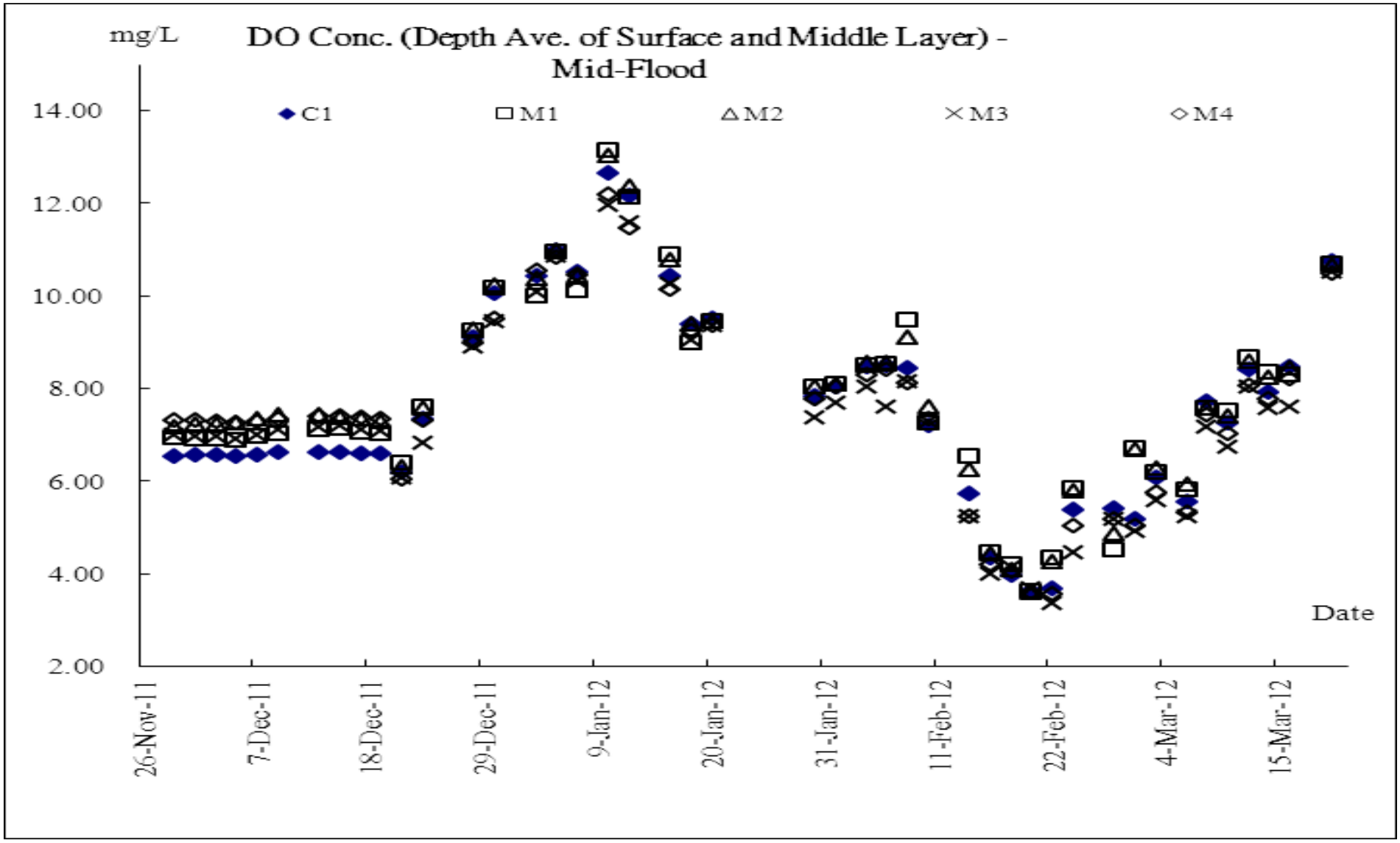
The Sea Zone of the Project West and North (Tolo Harbour)

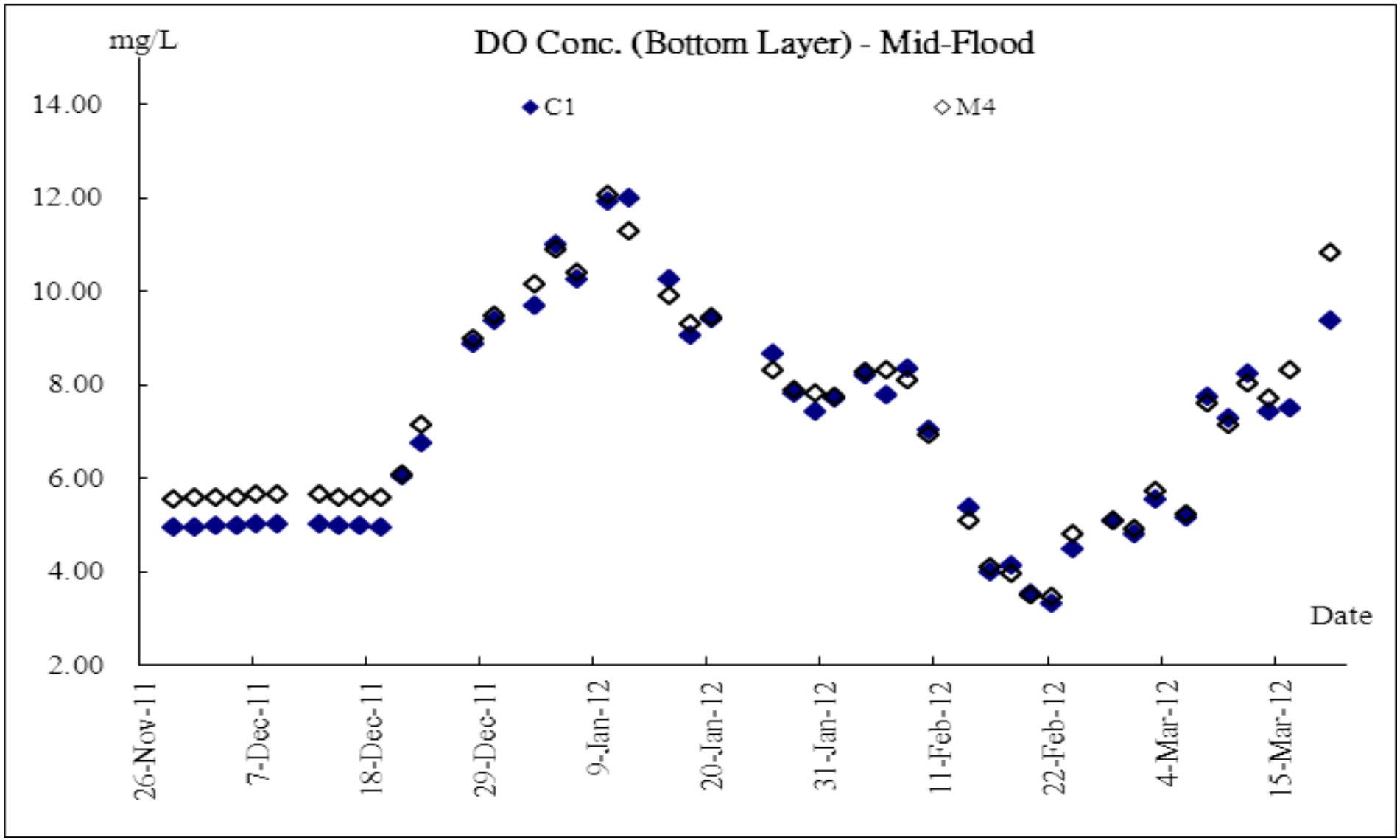

DO Conc. (Depth Ave. of Surface and Middle Layer) - Mid-Ebb
mg/L
C1
M1
M2
M3
M4
14.00
12.00
10.00
8.00
6.00
4.00
2.00
Date
26-Nov-11
7-Dec-11
18-Dec-11
29-Dec-11
9-Jan-12
20-Jan-12
31-Jan-12
11-Feb-12
22-Feb-12
4-Mar-12
15-Mar-12

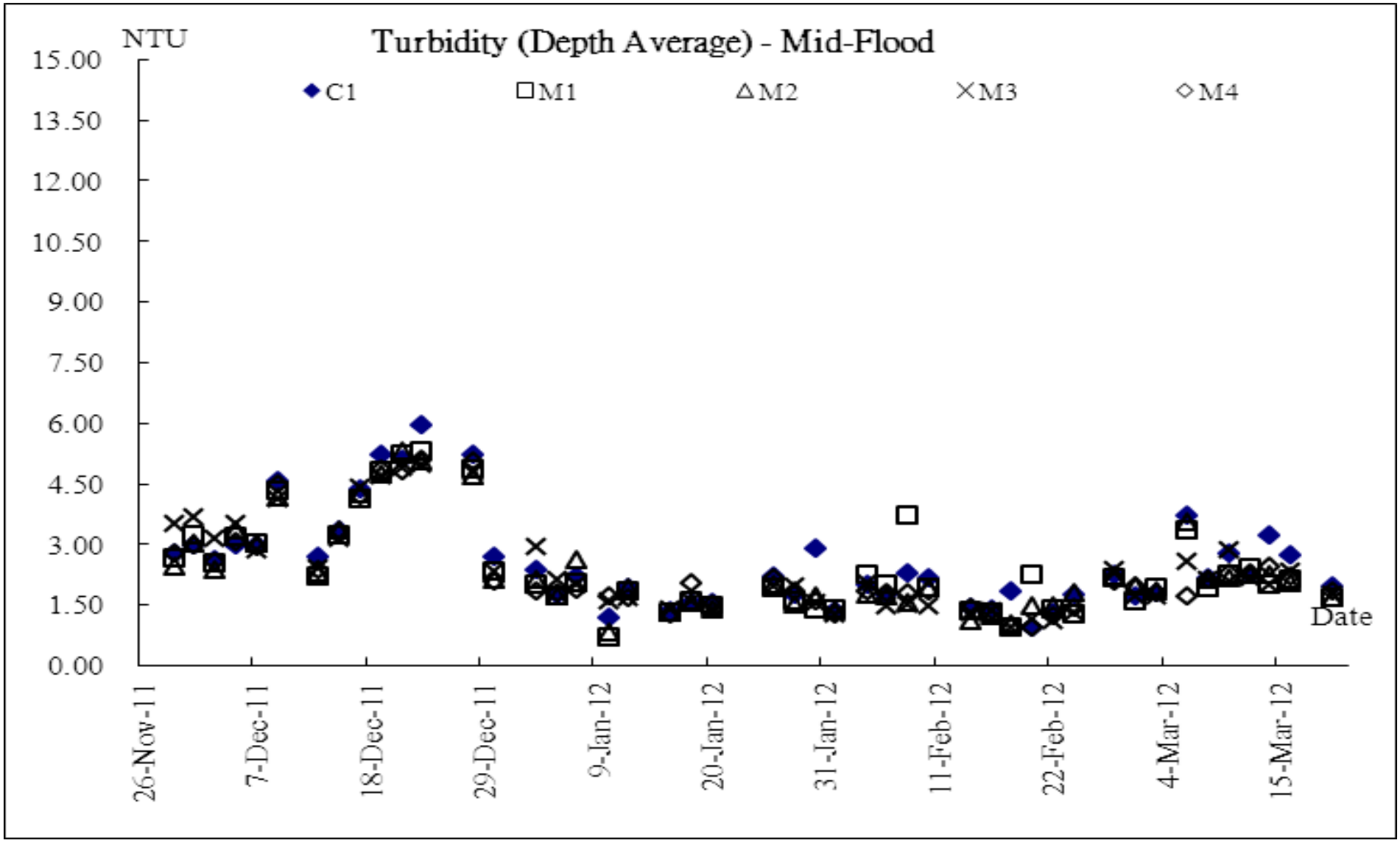

DO Conc. (Bottom Layer) - Mid-Ebb
mg/L
C1
M4
14.00
12.00
10.00
8.00
6.00
4.00
2.00
Date
26-Nov-11
7-Dec-11
18-Dec-11
29-Dec-11
9-Jan-12
20-Jan-12
31-Jan-12
11-Feb-12
22-Feb-12
4-Mar-12
15-Mar-12

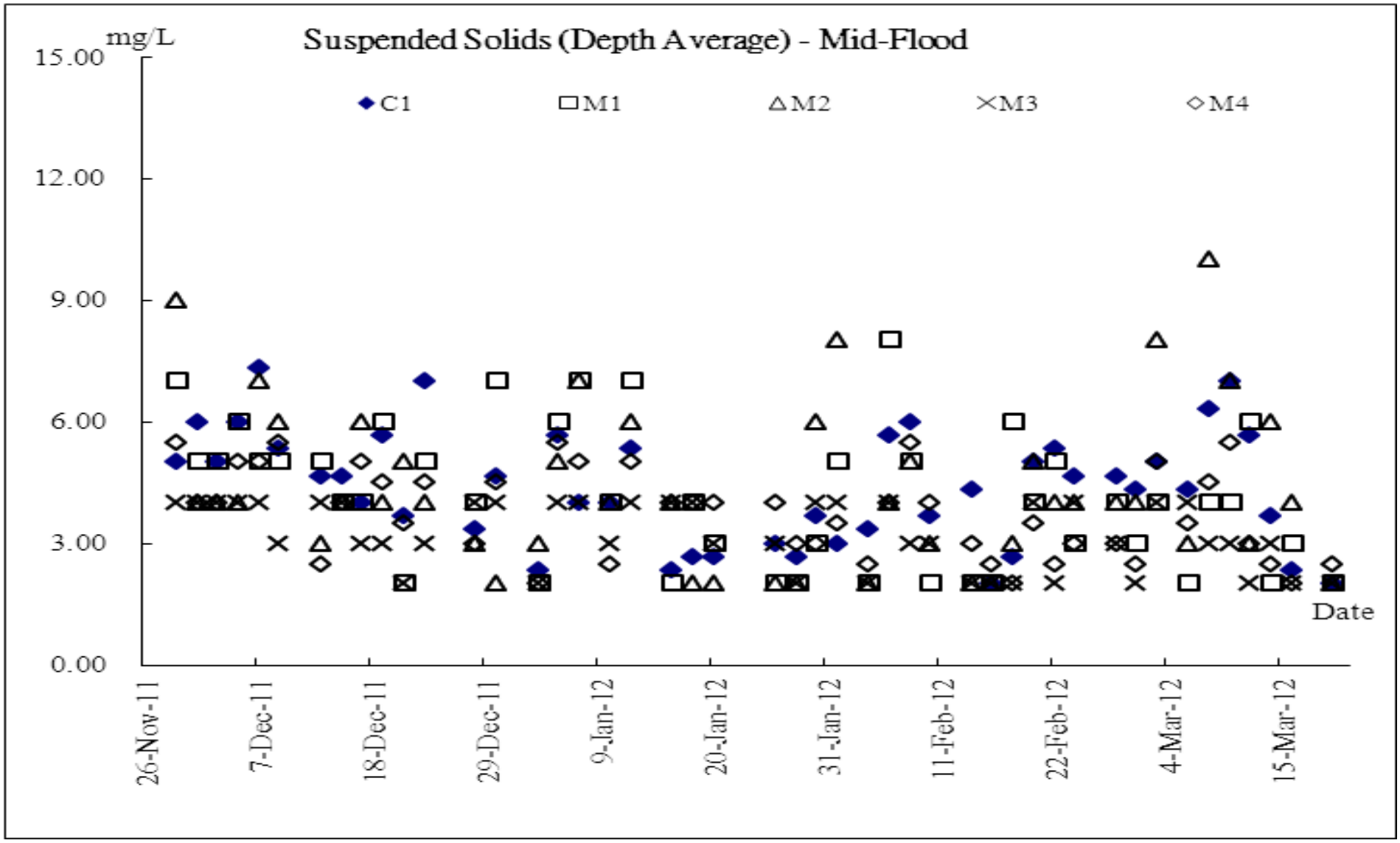

Turbidity (Depth Average) - Mid-Ebb
NTU
12.00
10.00
8.00
6.00
4.00
2.00
0.00
C1
M1
M2
M3
M4
Date
26-Nov-11
7-Dec-11
18-Dec-11
29-Dec-11
9-Jan-12
20-Jan-12
31-Jan-12
11-Feb-12
22-Feb-12
4-Mar-12
15-Mar-12


Turbidity (Depth Average) - Mid-Ebb
NTU
12.00
10.00
8.00
6.00
4.00
2.00
0.00
C1
M1
M2
M3
M4
Date
26-Nov-11
7-Dec-11
18-Dec-11
29-Dec-11
9-Jan-12
20-Jan-12
31-Jan-12
11-Feb-12
22-Feb-12
4-Mar-12
15-Mar-12

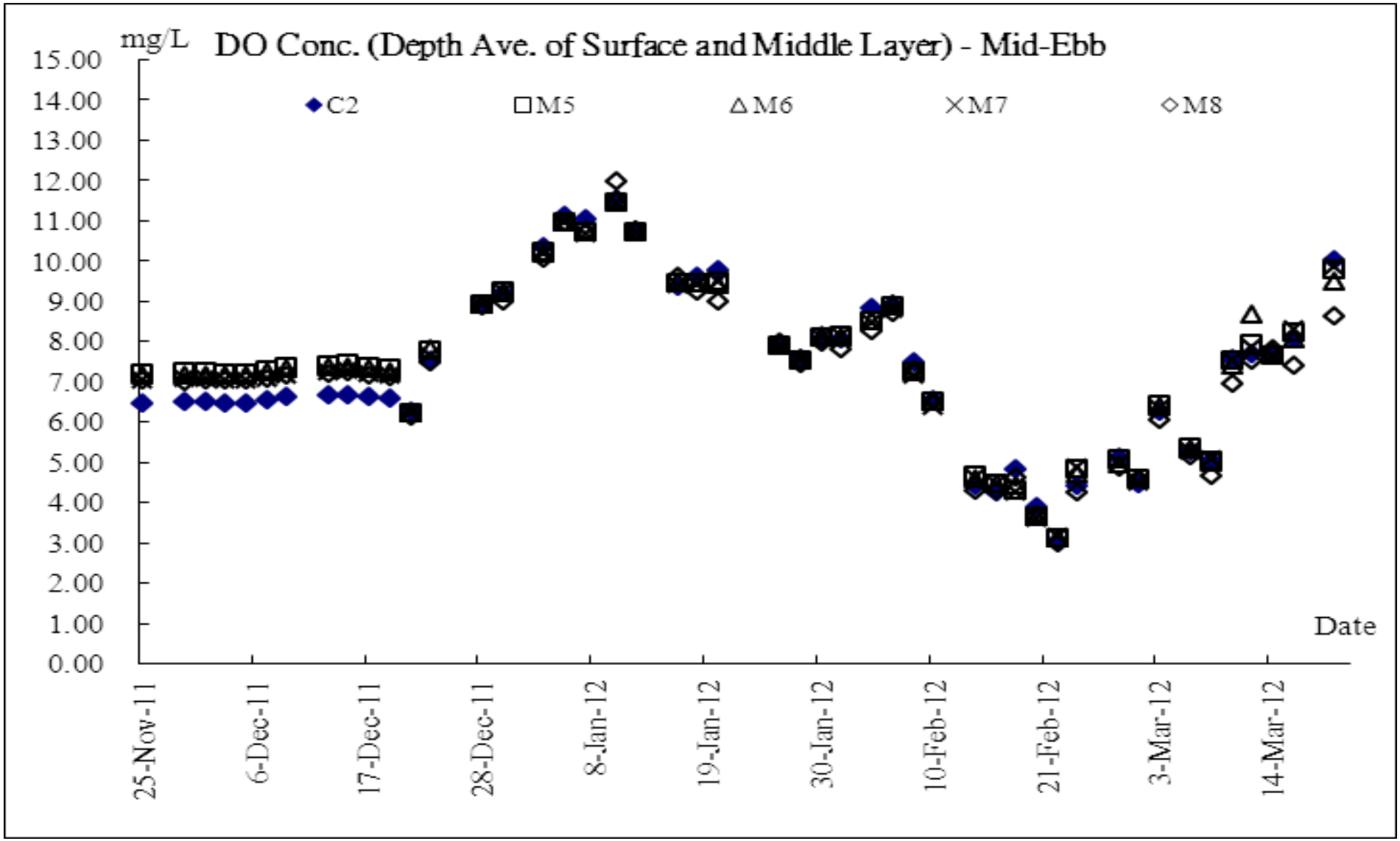

mg/L
DO Conc. (Depth Ave. of Surface and Middle Layer) - Mid-Flood
C1
M1
M2
M3
M4
14.00
12.00
10.00
8.00
6.00
4.00
2.00
Date
26-Nov-11
7-Dec-11
18-Dec-11
29-Dec-11
9-Jan-12
20-Jan-12
31-Jan-12
11-Feb-12
22-Feb-12
4-Mar-12
15-Mar-12

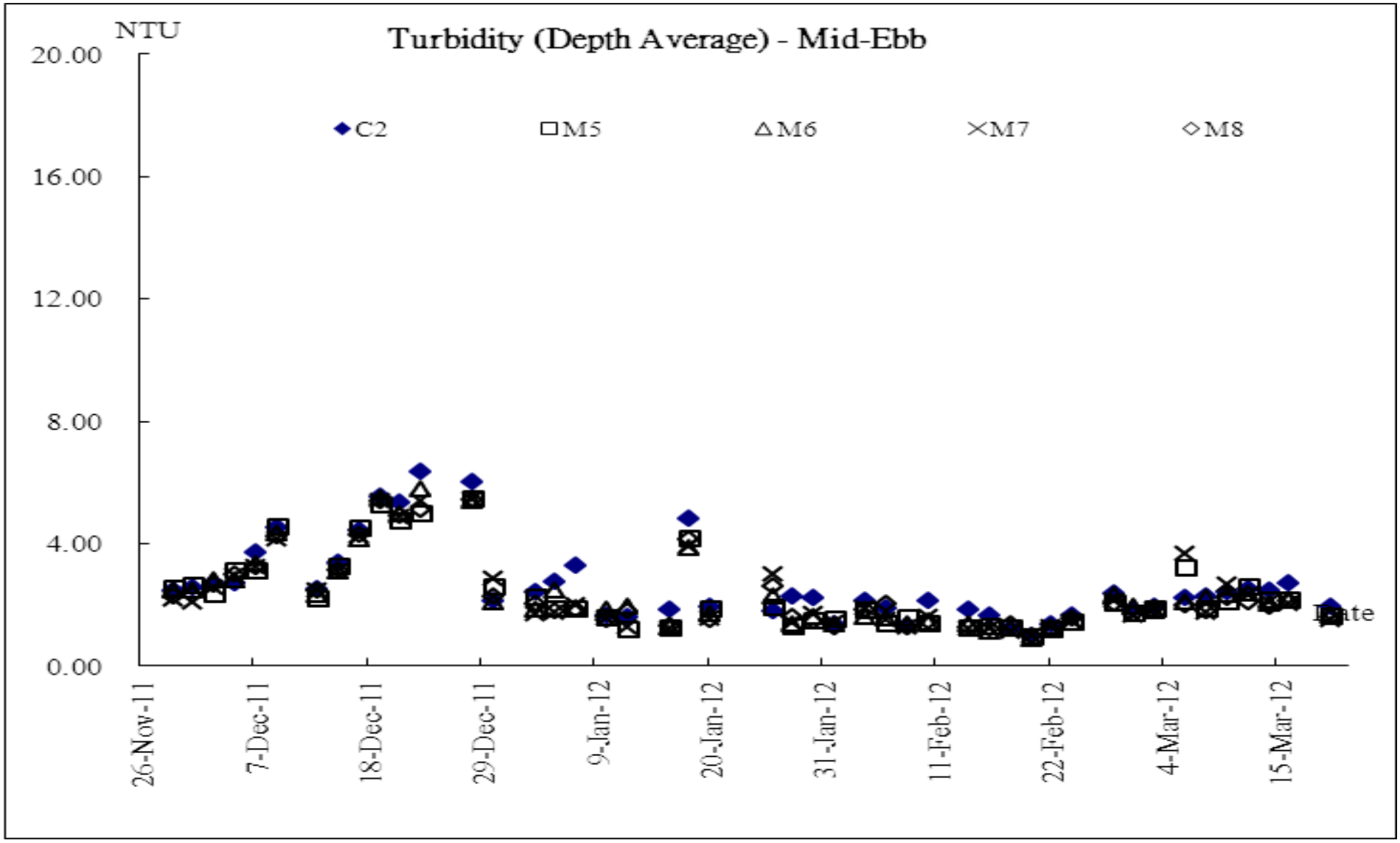

DO Conc. (Bottom Layer) - Mid-Flood
mg/L
C1
M4
14.00
12.00
10.00
8.00
6.00
4.00
2.00
Date
26-Nov-11
7-Dec-11
18-Dec-11
29-Dec-11
9-Jan-12
20-Jan-12
31-Jan-12
11-Feb-12
22-Feb-12
4-Mar-12
15-Mar-12

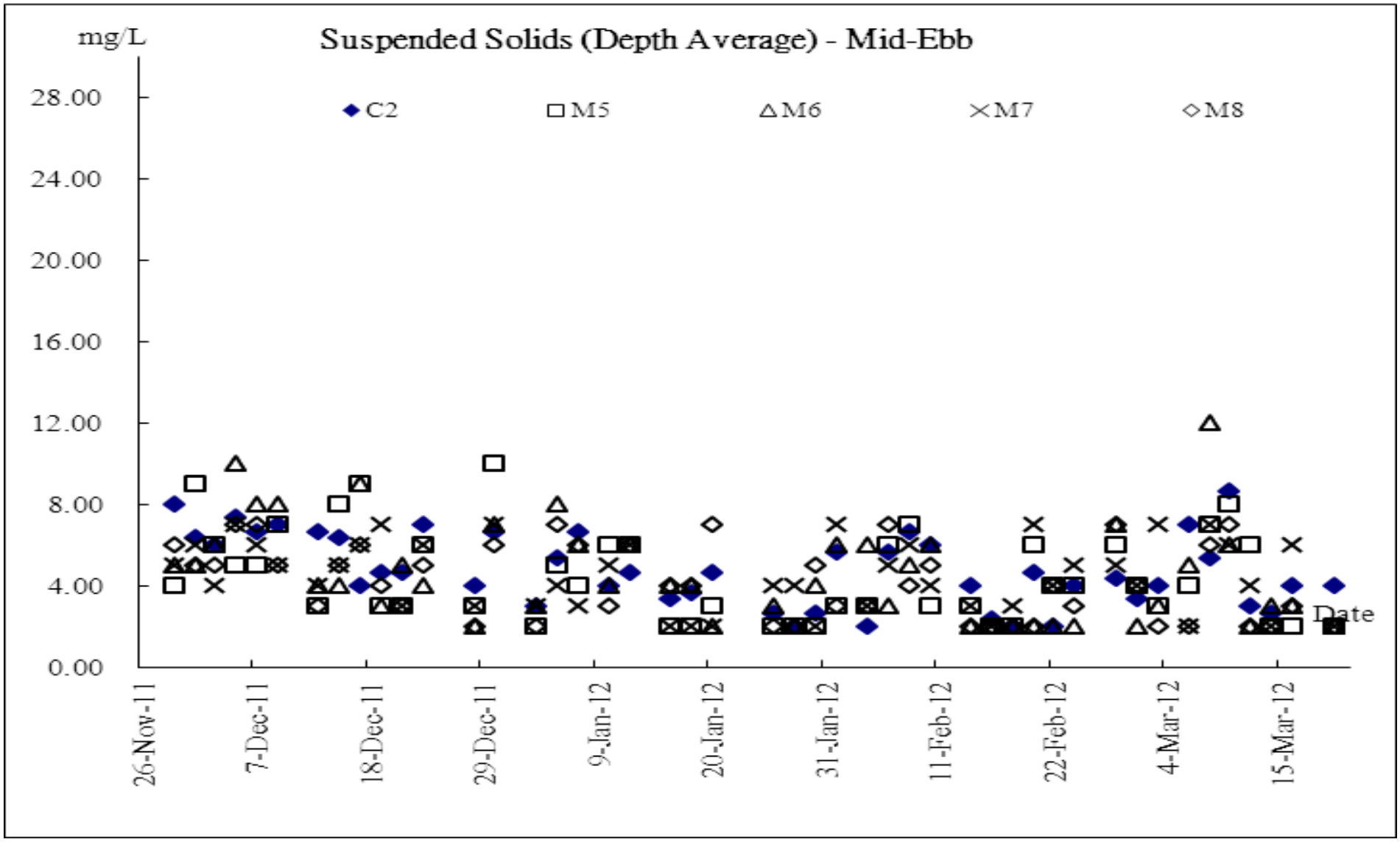

Turbidity (Depth Average) - Mid-Flood
NTU
C1
M1
M2
M3
M4
15.00
13.50
12.00
10.50
9.00
7.50
6.00
4.50
3.00
1.50
0.00
Date
26-Nov-11
7-Dec-11
18-Dec-11
29-Dec-11
9-Jan-12
20-Jan-12
31-Jan-12
11-Feb-12
22-Feb-12
4-Mar-12
15-Mar-12

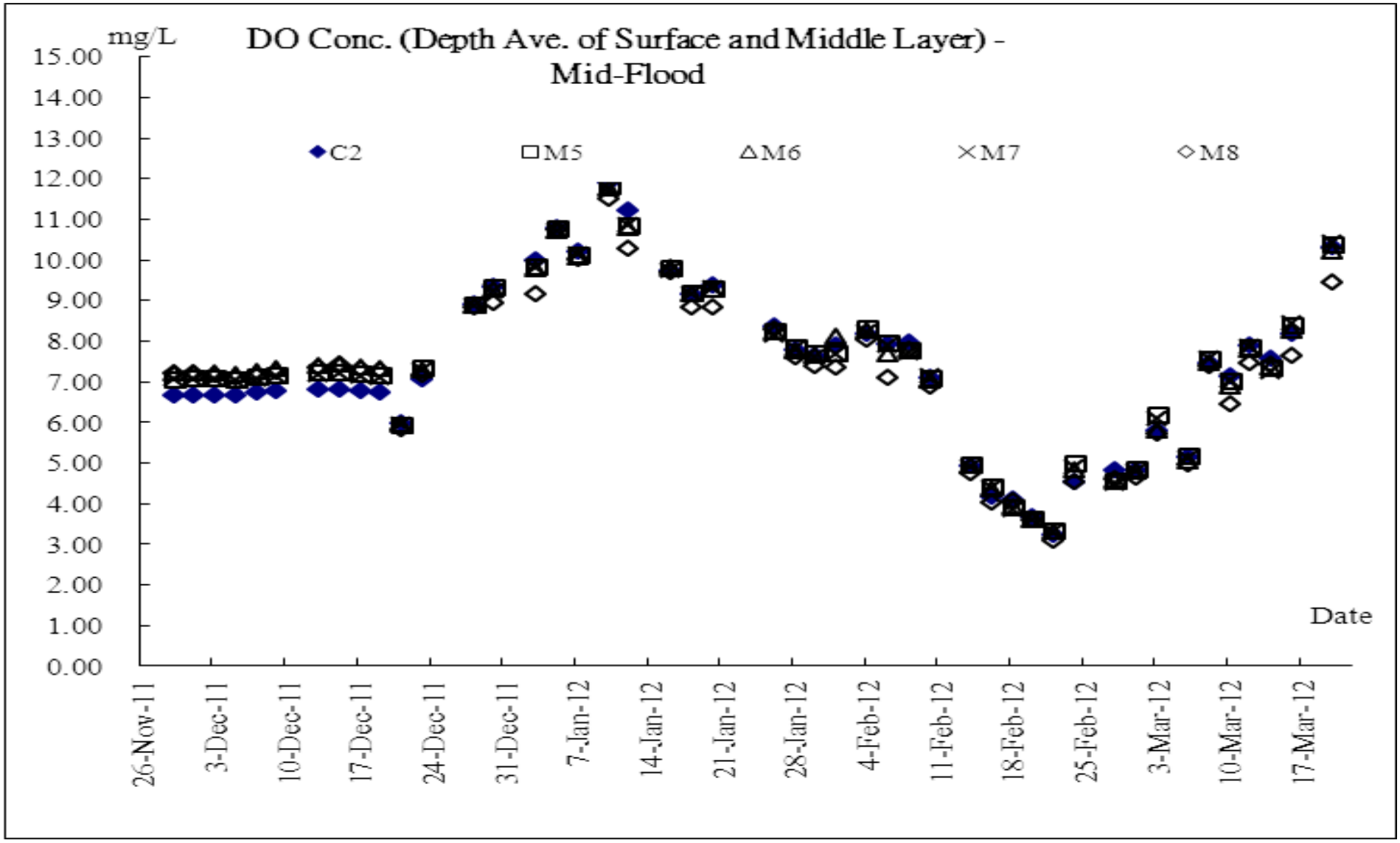

Suspended Solids (Depth Average) - Mid-Flood
mg/L
15.00
12.00
9.00
6.00
3.00
0.00
C1
M1
M2
M3
M4
Date
26-Nov-11
7-Dec-11
18-Dec-11
29-Dec-11
9-Jan-12
20-Jan-12
31-Jan-12
11-Feb-12
22-Feb-12
4-Mar-12
15-Mar-12

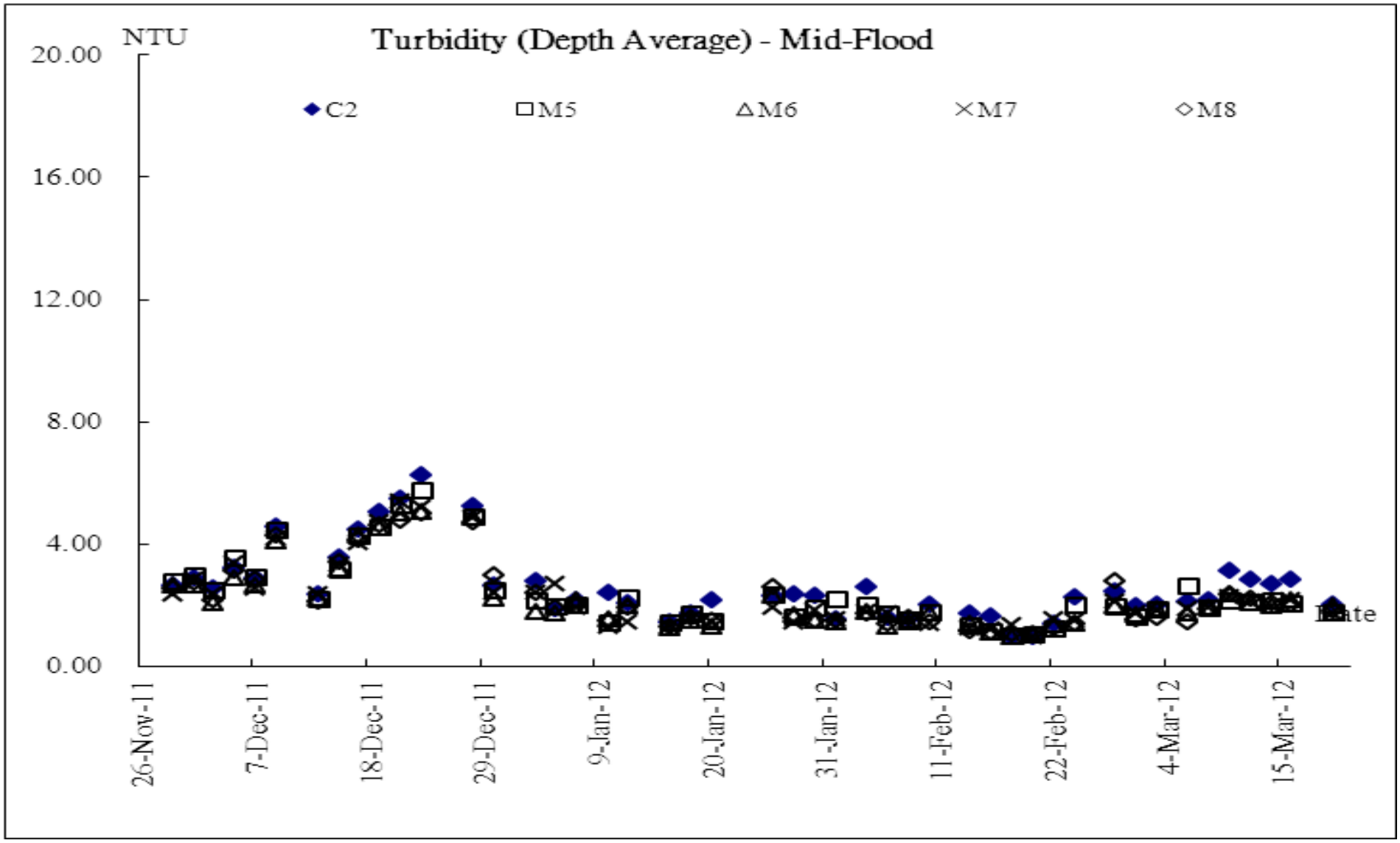
The Sea Zone of Starfish Bay

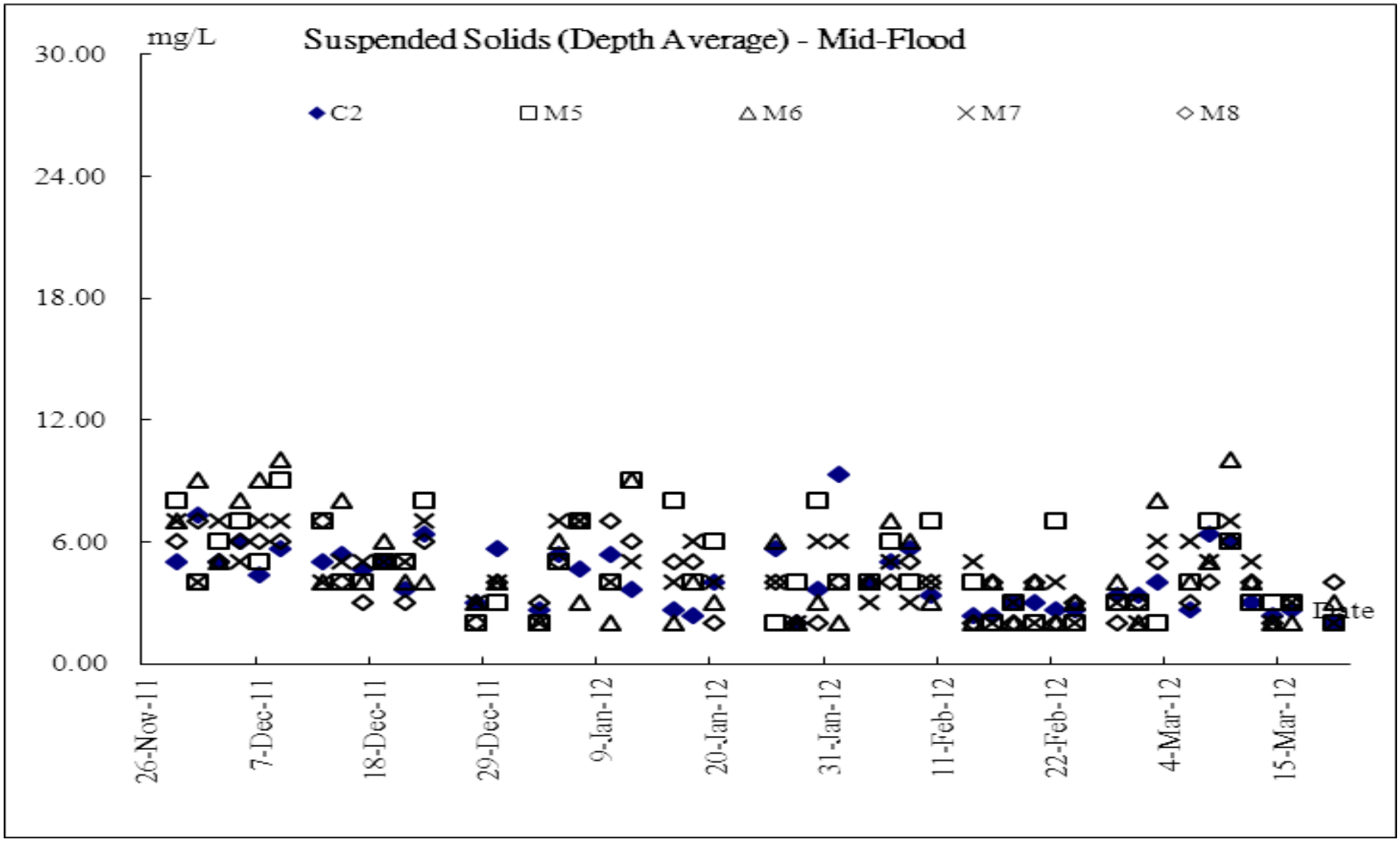

DO Conc. (Depth Ave. of Surface and Middle Layer) - Mid-Ebb
mg/L
C2
M5
M6
M7
M8
15.00
14.00
13.00
12.00
11.00
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
Date
25-Nov-11
6-Dec-11
17-Dec-11
28-Dec-11
8-Jan-12
19-Jan-12
30-Jan-12
10-Feb-12
21-Feb-12
3-Mar-12
14-Mar-12


Turbidity (Depth Average) - Mid-Ebb
NTU
20.00
16.00
12.00
8.00
4.00
0.00
C2
M5
M6
M7
M8
Date
26-Nov-11
7-Dec-11
18-Dec-11
29-Dec-11
9-Jan-12
20-Jan-12
31-Jan-12
11-Feb-12
22-Feb-12
4-Mar-12
15-Mar-12


Suspended Solids (Depth Average) - Mid-Ebb
mg/L
C2
M5
M6
M7
M8
28.00
24.00
20.00
16.00
12.00
8.00
4.00
0.00
Date
26-Nov-11
7-Dec-11
18-Dec-11
29-Dec-11
9-Jan-12
20-Jan-12
31-Jan-12
11-Feb-12
22-Feb-12
4-Mar-12
15-Mar-12


DO Conc. (Depth Ave. of Surface and Middle Layer) - Mid-Flood
mg/L
15.00
14.00
13.00
12.00
11.00
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
C2
M5
M6
M7
M8
Date
26-Nov-11
3-Dec-11
10-Dec-11
17-Dec-11
24-Dec-11
31-Dec-11
7-Jan-12
14-Jan-12
21-Jan-12
28-Jan-12
4-Feb-12
11-Feb-12
18-Feb-12
25-Feb-12
3-Mar-12
10-Mar-12
17-Mar-12


Turbidity (Depth Average) - Mid-Flood
NTU
20.00
16.00
12.00
8.00
4.00
0.00
C2
M5
M6
M7
M8
26-Nov-11
7-Dec-11
18-Dec-11
29-Dec-11
9-Jan-12
20-Jan-12
31-Jan-12
11-Feb-12
22-Feb-12
4-Mar-12
15-Mar-12


Suspended Solids (Depth Average) - Mid-Flood
mg/L
C2
M5
M6
M7
M8
30.00
24.00
18.00
12.00
6.00
0.00
Date
26-Nov-11
7-Dec-11
18-Dec-11
29-Dec-11
9-Jan-12
20-Jan-12
31-Jan-12
11-Feb-12
22-Feb-12
4-Mar-12
15-Mar-12

Annex K

Meteorological Data of Reporting Month

Meteorological Data in This Reporting Period

Date		Weather	Total Rainfall (mm)	Tai Po Station (Wind Speed & Direction use Shatin Station)			
				Mean Air Temp. (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction
26-Feb-12	Sun	Fresh easterly winds	Trace	11.9	11.4	83	NE
27-Feb-12	Mon	Moderate to fresh northerly winds	Trace	10	9.1	89.2	N
28-Feb-12	Tue	Mainly cloudy with one or two rain patches.	18	11.5	7.4	92	N
29-Feb-12	Wed	Cloudy with a few rain patches at first	0.5	14.7	11.6	85	E
1-Mar-12	Thu	Cloudy.	Trace	16.7	9.4	94.5	E/NE
2-Mar-12	Fri	Coastal fog and one or two light rain patches at first.	0	21.4	8.2	85	N/NE
3-Mar-12	Sat	Moderate easterly winds.	0.2	18.7	8.5	92	N/NE
4-Mar-12	Sun	Moderate east to southeasterly winds.	0.5	18.6	13	91	E
5-Mar-12	Mon	Mainly cloudy with coastal mist.	Trace	23	10.2	84.7	N/NE
6-Mar-12	Tue	Moderate easterly winds.	0.3	23.8	9	85.5	S/SE
7-Mar-12	Wed	Mainly cloudy with a few light rain patches.	Trace	20.1	12	92	E
8-Mar-12	Thu	Moderate to fresh easterly winds.	3.3	14.7	11.7	93	E
9-Mar-12	Fri	Mainly cloudy with coastal mist.	0.2	14.7	8.2	95	N/NW
10-Mar-12	Sat	Mainly cloudy with a few light rain patches.	Trace	12.5	7.7	89.5	N/NE
11-Mar-12	Sun	Moderate east to northeasterly winds, freshening gradually.	8.4	12	8.7	93	N/NE
12-Mar-12	Mon	Moderate northeasterly winds	6.6	11.6	8.6	94.7	N
13-Mar-12	Tue	Cloudy with mist and a few light rain patches.	1.7	13.8	7	90.5	N/NE
14-Mar-12	Wed	Cloudy with mist and a few light rain patches.	Trace	16.1	7.7	84	N
15-Mar-12	Thu	Fresh easterly winds	0.6	17.9	9.8	85	E/SE
16-Mar-12	Fri	Cloudy with fog.	0.2	21.1	7	87.5	N/NE
17-Mar-12	Sat	Light to moderate easterly winds.	Trace	23.1	6.5	89	N/NE
18-Mar-12	Sun	Cloudy and misty.	0	23.9	9	72.2	S/SW
19-Mar-12	Mon	Moderate easterly winds, occasionally fresh offshore.	Trace	20.1	9.7	86	E/SE
20-Mar-12	Tue	Cloudy.	Trace	20.8	9.5	83.5	E/NE
21-Mar-12	Wed	Mainly cloudy with a few mist patches.	Trace	18.2	12.2	83.5	E/SE

Annex L

Monthly Summary Waste Flow Table

Name of Department: CEDD

Contract No. ST/2008/02

Monthly Summary Waste Flow Table for March 2012											
Month /Year	Actual Quantities of Inert C & D Materials Generated Monthly						Actual Quantities of C & D Wastes Generated Monthly				
	Total Quantitiy Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ Cardboard packaging	Plastics (see note 3)	Chemical Waste	Others, e.g. General refuse
	(in '000M^3)	(in '000M^3)	(in '000M^3)	(in '000M^3)	(in '000M^3)	(in '000M^3)	(in '000KG)	(in '000KG)	(in '000KG)	(in '000KG)	(in '000M^3)
Accumulate	0.000	18.334	18.334	0.000	0.000	16.909	0.000	0.000	0.000	0.000	0.512
Jan-12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.014
Feb-12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004
Mar-12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.013
Apr-12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
May-12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jun-12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sub-Total	0.000	18.334	18.334	0.000	0.000	16.909	0.000	0.000	0.000	0.000	0.543
Jul-12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug-12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep-12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Oct-12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nov-12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dec-12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	0.000	18.334	18.334	0.000	0.000	16.909	0.000	0.000	0.000	0.000	0.543

Forecast of Total Quantities of C&D Materials to be Generated from the Contract*										
Total Quantity Generated	Hard Rock and Large Broken	Reused in the Contract	Reused in other projects	Disposed as Public Fill	Imported Fill	Metals	Paper / cardboard	Plastics (See Note 3)	Chemical Waste	Others, e.g. general refuse
(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
0.00	20.00	7.00	13.00	0.00	23.00	2.00	2.00	1.00	1.00	5.00

Notes: (1) The performance targets are given in PS Clause 1.100(14).

(2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the site.

(3) Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material.

* (4) The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the natrue where the total amou C&D materials expected to be generated from the works is equal to or exceeding 50,000m^3.